

ECS Mid-Atlantic, LLC

Geotechnical Engineering Report for Stormwater Management

Proposed Ritner Highway Warehouses

3485 Ritner Highway Newville, Cumberland County, Pennsylvania

ECS Project Number 18:5941

May 30, 2023



Geotechnical • Construction Materials • Environmental • Facilities

May 30, 2023

Mr. Andrew Kronenberg AAMPA Holdings, LLC 1514 Commerce Avenue, Suite 203 Carlisle, PA 17015

ECS Project No. 18:5941

Reference: Geotechnical Engineering Report for Stormwater Management

> **Proposed Ritner Highway Warehouses** Newville, Cumberland County, Pennsylvania

Dear Mr. Kronenberg:

ECS Mid-Atlantic, LLC (ECS) has completed the subsurface exploration and geotechnical engineering analyses for the above-referenced project. Our services were performed in general accordance with our Proposal No. 18:9133-GP, dated February 1, 2023. This report presents our understanding of the geotechnical aspects of the project, results of the field exploration, laboratory testing, and our design and construction recommendations.

It has been our pleasure to be of service to AAMPA Holdings, LLC during this phase of this project. We would appreciate the opportunity to remain involved during the continuation of the design phase and to provide our services during construction phase operations as well to verify the assumptions of subsurface conditions made for this report. Should you have any questions concerning the information contained in this report, or if we can be of further assistance to you, please contact us.

Respectfully submitted,

ECS Mid-Atlantic, LLC

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EXECUTIVE SUMMARY

The following summarizes the main findings of the exploration, particularly those that may have a cost impact on the planned development. Further, our principal recommendations are summarized. Information gleaned from the Executive Summary should not be utilized in lieu of reading the entire geotechnical report.

- Groundwater was not encountered in the areas explored. No apparent or visible signs of the seasonal high water table were observed while probing below the infiltration testing depths.
- Several potential karst features were identified during our site walk. We recommend that the identified sinkholes and surficial depression be explored with a test pit at each location under the supervision of ECS prior to construction at the site in order to determine if potential repairs are necessary. Their approximate locations can be found in Section 3.3.4.
- Infiltration rates ranged between 0.00 in/hr to 6.85 in/hr, including a factor of safety of 2 or 3, depending on testing method and materials encountered. We recommend that design infiltration rates be proportion based on the area testing was completed as presented in the table in **Section 4.1.1.a.**
- This site is underlain by carbonate geology, which presents a risk of sinkhole development, especially within stormwater management facilities. Careful site preparations and observation in accordance with this report, and proper repair of sinkholes will be key to site development.
- Given the proposed basin bottoms and the encountered refusal depths, rock excavation will be
 necessary. Bucket refusal was encountered as shallow as approximately 3 feet below exiting
 grade. When bedrock is encountered prior to the proposed invert elevation, overexcavation and
 replacement utilizing a suitable backfill as provided in Section 4.1.3.b. In below-grade facilitieis,
 the backfill will need to meet the specifications for Structural Fill and be placed under engineering
 control.
- It should also be noted that variable limestone bedrock elevations are likely at this site; therefore, some rock excavation should be expected.

Refer to the text of the report for site specific design and construction recommendations.

1.0 INTRODUCTION

The purpose of this study was to provide geotechnical information for design and construction of the proposed Ritner Highway Warehouse Development at the project site. The recommendations developed for this report are based on project information supplied by Frederick Seibert & Associates.

Our services were provided in accordance with the Proposal No. 18:9133-GP, dated February 1, 2023, as authorized by AAMPA Holdings, LLC, which includes our Terms and Conditions of Service.

This report contains the procedures and results of our subsurface exploration and laboratory testing programs, review of existing site conditions, engineering analyses, and recommendations for the design and construction of the project relative to stormwater management.

The report includes the following items:

- A brief review and description of our field procedures.
- A review of surface topographical features and site conditions.
- A review of area and site geologic conditions.
- A review of subsurface soil stratigraphy with pertinent available physical properties.
- Final copies of our test pit logs.
- Infiltration testing results and recommendations for stormwater management.
- Evaluation and recommendations relative to groundwater.
- A discussion of potential of karst geology issues and a carbonate assessment.

2.0 PROJECT INFORMATION

2.1 PROJECT LOCATION

The project site is located at the physical address of 3485 Ritner Highway in Newville, Pennsylvania. The site is located on the west side of Ritner Highway and consists of agricultural fields with localized wooded areas. At the time of exploration, the existing site grades were highly variable with a total topographic relief on the order of approximately ±60 feet.

Refer to Figure 2.1.A and the Site Location Diagram in Appendix A for a detailed depiction of the project site location.

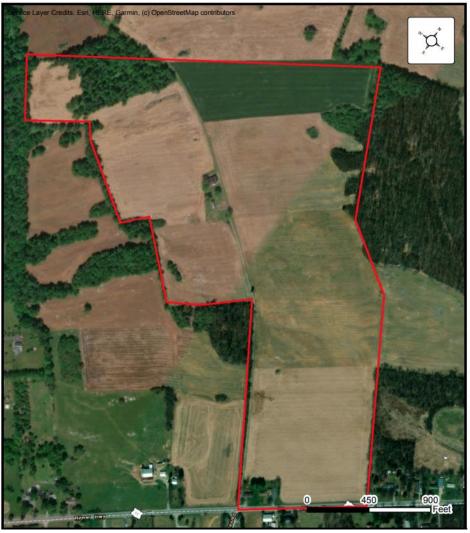


Figure 2.1.A - Site Location

2.2 PROPOSED CONSTRUCTION

The proposed construction is comprised of a Proposed Warehouse Development consisting of three (3) Warehouses with associated pavement areas, retaining walls, and stormwater management (SWM) facilities.

Based on the provided "Conditional Use Plan- Ritner Highway AAMPA," dated February 24, 2023, by Frederick, Seibert & Associates, Inc. the SWM facilities are comprised of a combination of below grade and at-grade facilities. Specifically, nine (9) facilities are proposed to consist of below-pavement facilities while seven (7) of the facilities are proposed to consist of at-grade basins.

This report addresses only the stormwater management structures of this development

3.0 FIELD EXPLORATION AND LABORATORY TESTING

Our scope of work included excavating 66 test pits and performing corresponding infiltration testing in each. Our test pits were located with a handheld GPS unit and their approximate locations are shown on the Exploration Location Plan in Appendix A.

3.1 SUBSURFACE CHARACTERIZATION

The following sections provide generalized characterizations of the subsurface conditions observed across the site. Please refer to the test pit logs in Appendix B for more detailed information.

SUBSURFACE SUMMARY						
Stratum	Description					
n/a	Approximately 6 to 22 inches of Topsoil					
ı	LEAN CLAY (CL), FAT CLAY (CH), or SILT (ML), varying amounts of gravel and sand, brown, reddish brown, orangish brown, moist, very stiff to hard, 2.5YR5/8, 2.5YR6/8, 5YR5/8, 5YR6/8, 7.5YR6/8, 7.5YR5/8, 10YR6/8, 10YR6/6, contained limestone rock fragments and limestone pinnacles were observed at the surface and during excavation across the site					

3.1.1 Stormwater Infiltration Testing

The infiltration testing was completed using the double ring infiltration and percolation methods in general accordance with Appendix C of the Pennsylvania Stormwater Best Management Practices (PA BMP) Manual. Infiltration test results are provided in the following table. The provided safety factors were either 2 or 3 depending on the testing methodology and the encountered soil type.

INFILTRATION TESTING RESULTS								
Test	Surface Elevation (Feet, MSL) ¹	Probed Depth (Feet)	Probed Elevation (Feet, MSL)	Infiltration Test Depth (Feet)	Test Elevation (Feet, MSL)	Field Infiltration Rate (inches / hour) (Includes FS)		
	Facility A- Proposed Basin Bottom= El. 589.0 ft							
TP-01	586.0	3.0	583.0	1.0	585.0	1.00 0.73 ²		
TP-02	589.2	4.0	585.2	0.8	588.4	0.19 0.28 ²		
TP-03	593.2	7.2	586.0	4.2	589.0	0.00 0.23 ²		
	Facility B- Proposed Basin Bottom= El. 583-584.0 ft							
TP-04	585.5	6.0	579.5	2.5	583.0	2.81 0.43 ²		
TP-05	586.0	6.0	580.0	3.0	583.0	0.94 0.06 ²		

INFILTRATION TESTING RESULTS							
Test	Surface Elevation (Feet, MSL) ¹	Probed Depth (Feet)	Probed Elevation (Feet, MSL)	Infiltration Test Depth (Feet)	Test Elevation (Feet, MSL)	Field Infiltration Rate (inches / hour) (Includes FS)	
TP-06	584.5	6.0	578.5	1.5	583.0	0.19 0.58 ²	
TP-07	585.5	5.0	580.5	1.5	584.0	0.53 0.75 ²	
TP-08	587.1	6.5	580.6	3.1	584.0	0.16 0.06 ²	
TP-09	586.0	5.0	581.0	2.0	584.0	0.00	
		Facility C	· Duamasad [Pasin Battam-	TI FOF O ft	0.34 ²	
		racility C	- Proposed t	Basin Bottom=	- EI. 303.U ft	0.09	
TP-10	586.2	5.0	581.2	1.2	585.0	0.09 0.73 ²	
TP-11	586.0	3.5 ³	582.5 ³	1.0	585.0	0.03 0.41 ²	
TP-12	587.0	4.0 ³	583.0 ³	1.5	585.5	0.00 1.65 ²	
		Facility D	- Proposed I	Basin Bottom=	El. 601.0 ft		
TD 42	507.0					1.44	
TP-13	597.8	3.0 ³	594.8 ³	0.8	597.0	1.45 ²	
TP-14	601.2	4.0	597.2	0.8	600.4	0.00	
	001.2		337.2	0.0	000.1	1.19 ²	
TP-15	606.5	6.0^{3}	600.5 ³	4.0	602.5	0.00 0.49 ²	
		Facility	F- Proposed	Basin Bottom	- El EQE N	0.49	
		racility	L- PTOPOSEU	Dasin Bottom	- Li. 363. U	0.06	
TP-16	587.5	6.0	581.5	2.5	585.0	0.70^{2}	
			-01.0			0.13	
TP-17	586.2	5.0	581.2	1.2	585.0	0.75 ²	
TP-18	585.5	5.0	580.5	1.0	584.5	0.19	
11-10	363.3	5.0	360.3	1.0	304.3	0.37 ²	
TP-19	587.8	6.5	581.3	2.0	585.8	0.00	
						0.94 ²	
TP-20	592.0	7.0	585.0	3.0	589.0	0.03 0.38 ²	
	Facili	tv F- Prope	osed Basin R	ottom= El. 59	9.0 ft and 61		
						0.00	
TP-21	597.5	5.5	592.0	1.5	596.0	0.45 ²	
						0.16	
TP-22	599.8	3.5 ³	596.3 ³	1.2	598.6	0.412	

INFILTRATION TESTING RESULTS								
Test	Surface Elevation (Feet, MSL) ¹	Probed Depth (Feet)	Probed Elevation (Feet, MSL)	Infiltration Test Depth (Feet)	Test Elevation (Feet, MSL)	Field Infiltration Rate (inches / hour) (Includes FS)		
TP-23	617.5	4.5 ³	613.0 ³	2.0	615.5	0.00 0.39 ²		
TP-24	615.5	6.5	609.0	3.5	612.0	0.03 0.16 ²		
TP-25	621.2	8.0 ³	613.2 ³	5.5	615.7	0.75 0.45 ²		
TP-26	630.0	5.0 ³	625.0 ³	3.0	627.0	0.88 0.61 ²		
		Facility G	- Proposed E	Basin Bottom=	El. 604.0 ft	0.01		
TD 0-	647.0		<u> </u>			1.97		
TP-27	617.0	6.0 ³	611.0 ³	4.0	613.0	1.82 ²		
TP-28	610.8	5.0 ³	605.8 ³	3.0	607.8	0.06 0.73 ²		
TP-29	604.0	3.5	600.5	1.0	603.0	0.00 3.40 ²		
	Facility H- Proposed Basin Bottom= El. 606.0 ft							
TP-30	614.0	5.0 ³	609.0 ³	3.0	611.0	0.00 0.24 ²		
TP-31	612.0	4.0 ³	608.0 ³	2.0	610.0	0.00 0.63 ²		
		Facility I	- Proposed B	Basin Bottom=	El. 590.0 ft	0.03		
aa						6.56		
TP-32	597.5	4.0 ³	593.5 ³	2.0	595.5	1.24 ²		
TP-33	598.0	9.0³	589.0 ³	7.0	591.0	0.00 0.48 ²		
TP-34	594.8	3.5 ³	591.3 ³	1.5	593.3	0.44 0.33 ²		
TP-35	596.8	10.0	586.8	6.8	590.0	0.00 0.10 ²		
TP-36	590.2	4.0	586.2	1.3	588.9	3.01 0.48 ²		
TP-37	593.5	7.0	586.5	3.5	590.0	1.16 0.17 ²		
		Facility J	- Proposed B	Basin Bottom=	El. 600.0 ft	0.17		
TD 00	600 =		•			1.79		
TP-38	600.5	4.0	596.5	1.0	599.5	1.17 ²		
						0.50		
TP-39	606.5	6.0 ³	600.5 ³	4.0	602.5	0.49 ²		

INFILTRATION TESTING RESULTS							
Test	Surface Elevation (Feet, MSL) ¹	Probed Depth (Feet)	Probed Elevation (Feet, MSL)	Infiltration Test Depth (Feet)	Test Elevation (Feet, MSL)	Field Infiltration Rate (inches / hour) (Includes FS)	
TP-40	610.8	10.0	600.8	8.0	602.8	0.75 1.71 ²	
		Facility K	- Proposed E	Basin Bottom=	El. 603.0 ft		
TP-41	607.0	5.0 ³	602.0 ³	2.5	604.5	0.22 0.55 ²	
TP-42	605.5	4.0 ³	601.5 ³	1.5	604.0	4.69 1.25 ²	
TP-43	613.0	3.0 ³	610.0 ³	1.0	612.0	2.26	
TP-44	604.5	6.0	598.5	1.5	603.0	1.28 ² 2.63	
TP-45	603.8	4.5	599.3	1.7	602.1	6.46 ² 0.07 0.10 ²	
		Facility I	- Proposed F	 Basin Bottom=	Fl. 603.0 ft	0.10	
TP-46	619.8	10.0	609.8	8.0	611.8	0.00 0.06 ²	
TP-47	617.5	6.0 ³	611.5³	1.0	616.5	0.00	
TP-48	603.8	4.5	599.3	1.0	602.8	0.29 ² 0.03	
		Facility M	1- Proposed	Basin Bottom	- FI 601 0 ft	1.40 ²	
		Tacility iv	i- Froposeu		- 11. 001.0 10	0.63	
TP-49	603.2	6.5	596.7	2.2	601.0	0.03 ²	
TP-50	604.2	6.5	597.7	3.2	601.0	0.10 0.25 ²	
TP-51	613.8	4.0 ³	609.8³	2.0	611.8	0.66 0.64 ²	
TP-52	615.5	6.0 ³	609.5 ³	4.0	611.5	0.38 0.75 ²	
		Facility N	l- Proposed I	Basin Bottom=	El. 620.0 ft		
TP-53	624.5	4.5³	620.0 ³	2.0	622.5	0.00 1.32 ²	
TP-54	625.5	5.5 ³	620.0 ³	3.5	622.0	0.13 0.42 ²	
TP-55	627.0	5.0 ³	622.0 ³	2.5	624.5	2.36 0.99 ²	
						0.03	
TP-56	629.2	10.0	619.2	8.0	621.2	0.042	

INFILTRATION TESTING RESULTS								
Test	Surface Elevation (Feet, MSL) ¹	Probed Depth (Feet)	Probed Elevation (Feet, MSL)	Infiltration Test Depth (Feet)	Test Elevation (Feet, MSL)	Field Infiltration Rate (inches / hour) (Includes FS)		
		Facility O	- Proposed E	Basin Bottom=	El. 620.0 ft.			
TP-57	626.8	5.0 ³	621.8 ³	3.0	623.8	0.06 0.82 ²		
TP-58	622.8	3.0 ³	619.8 ³	1.0	621.8	0.16 0.78 ²		
TP-59	623.0	4.0 ³	619.0 ³	2.0	621.0	3.38 1.90 ²		
	Facility P- Proposed Basin Bottom= El. 607.0 to 626.0							
TP-60	608.0	5.0	603.0	1.0	607.0	0.31 0.78 ²		
TP-61	609.0	5.5	603.5	2.0	607.0	0.00 0.07 ²		
TP-62	612.8	5.0 ³	607.8 ³	3.0	609.8	5.63 0.61 ²		
TP-63	625.0	5.0 ³	620.0 ³	3.0	622.0	6.85 0.66 ²		
TP-64	627.0	3.8 ³	623.3 ³	1.0	626.0	1.19 1.09 ²		
TP-65	633.0	4.3 ³	628.8 ³	2.0	631.0	3.67 0.53 ²		
TP-66	634.2	10.0	624.2	8.0	626.2	0.00 0.00 ²		

Note¹: Please note that the ground surface was not surveyed by a licensed surveyor; these elevations are approximate based on the provided plans; therefore, elevation ranges are approximate +/- half a foot.

Note²: Percolation test.

Note³: Bedrock/bucket refusal encountered

3.2 SOIL SURVEY MAPPING

Based on our review of the Soil Survey (USDA - Natural Resources Conservation Service (websoilsurvey.ncrs.usda.gov), the site soils are mapped Duffield silt loam, 3 to 8 percent slopes, Hagerstown silt loam, Hagerstown silt loam, rocky, Hagerstown-Rock outcrop complex, and Huntington silt loam. These soil types are described as having the following properties:

	SOIL MAPPING SUMMARY						
Mapped Soil Unit	Soil Unit Symbol	Origin/ Type	Depth to Restrictive Feature	Depth to Water Table	Hydrologic Soil Group	KSat (in/hr)	
Duffield silt loam, 3 to 8 percent slopes	DuB	Residuum weathered from limestone	60 to 80 inches to lithic bedrock	>80 inches	В	(0.60 – 2.00)	

SOIL MAPPING SUMMARY							
Mapped Soil Unit	Soil Unit Symbol	Origin/ Type	Depth to Restrictive Feature	Depth to Water Table	Hydrologic Soil Group	KSat (in/hr)	
Hagerstown silt loam, 3 to 8 percent slopes	НаВ	Clayey residuum weathered from limestone	43 to 98 inches to lithic bedrock	>80 inches	В	(0.60 – 2.00)	
Hagerstown silt loam, rocky, 3 to 15 percent slopes	HcB / HcC	Clayey residuum weathered from argillaceous limestone	40 to 84 inches to lithic b0edrock	>80 inches	В	(0.60 – 2.00)	
Hagerstown-Rock outcrop complex, 0 to 25 percent slopes	HdB / HdD	Residuum weathered from limestone	40 to 84 inches to lithic bedrock	>80 inches	В	(0.60 – 2.00)	
Huntington silt loam, 0 to 5 percent slopes	HuA	Colluvium derived from limestone and shale	>80 inches	>80 inches	В	(0.60 – 2.00)	

3.3 CARBONATE ASSESSMENT

3.3.1 Site Geology

According to the Geologic Map of Pennsylvania (1980)¹, the site is underlain by the Rockdale Run Formation, the Shadygrove Formation, and the Stonehenge Formation. When a site is located near existing geologic contacts, the site often exhibits characteristic of those rock types. These formations are included in the *Engineering Characteristics of the Rocks of Pennsylvania*², and are described as having the following characteristics.

The Rockdale Run Formation consists of very light gray, finely laminated, fine-grained limestone with pink to brown lenses of chert, minor dolomite beds, and abundant quartz. The bottom portion of the formation is medium-bedded and thick bedded in the upper portion. Jointing and fracturing is moderately well developed in a blocky manner, regularly spaced, and open and steeply dipping throughout the formation. It is moderately resistant to weathering. Prolonged exposure and weathering has formed a highly uneven and pinnacled soil-rock interface. It should be expected that the depth to bedrock and/or large cobbles and boulders will be variable. Solution channel openings provide moderate to high secondary porosity.

The Shadygrove Formation consists of light gray to pinkish gray, finely crystalline limestone, with abundant nodules of brown chert, few sandstone beds, and few beds of laminated dolomite. Jointing and fracturing is moderately well developed in a blocky manner, regularly spaced, and open and steeply

¹ Berg, T. M., Edmunds, W. E., Geyer, A. R., and others, compilers, 1980, Geologic map of Pennsylvania (2nd ed.): Pennsylvania Geological Survey, 4th ser., Map 1, 3 sheets, scale 1:250,000

² Geyer, A. R., and Wilshusen, J. P., (1982), Engineering Characteristics of the Rocks of Pennsylvania. Bureau of Topographic and Geologic Survey.

dipping throughout the formation. It is moderately resistant to weathering. Prolonged exposure and weathering have formed a highly uneven and pinnacled soil-rock interface. It should be expected that the depth to bedrock and/or large cobbles and boulders will be variable. Solution channel openings provide moderate to high secondary porosity.

The Stonehenge Formation is included within the Beekmantown Group (ob) and is composed of gray, finely crystalline limestone and dark gray laminated limestone with numerous flat-pebble breccia and shale interbeds. The formation is moderately well to well bedded in a thin to flaggy manner. Fracturing and jointing is poorly to moderately well-developed and abundant, seamy, open, and steeply dipping. Moderate weathering to a shallow depth takes the form of rectangular fragments. Due to the pinnacled nature of the bedrock surface the soil mantle varies greatly. The formation has good subsurface drainage due to joint-, bedding-, solution channel openings providing moderate to high magnitude secondary porosity.

Limestone is carbonate based, and therefore, prone to dissolution in water and karst processes including sinkhole formation.

3.3.2 Karst Mapping

The Rockdale Run, Shadygrove, and Stonehenge Formations are composed of carbonate bedrock that is prone to karst activity. Karst activity can take the form of soft and loose soils above the bedrock, uneven bedrock surfaces, closed surficial depressions, and sinkholes. The Karst Features Map located in Appendix A depicts a scale of the level of karst activity in the vicinity of the site. The Karst Features Map shows one (1) apparent sinkhole and 49 surface depressions within about 1/2 mile of the project site; however, the data is incomplete as there is not a requirement within the State to track and document the naturally developing karst activity. Based on our experience in the area and known karst features at nearby sites, the risk of sinkholes and related karst activity near this location is high.

3.3.3 Aerial Photograph Review

An aerial photograph study was performed to review the presence of karst features across the project site. Aerial photographs taken in 1938, 1946, 1958, 1971, 1984, 1994, 1999, 2003, 2005, 2007, 2008, 2010, 2012, 2013, 2016, and 2020 were reviewed. The digital aerial photographs used for this study were obtained from publicly available resources (PASDA: https://maps.psiee.psu.edu/ImageryNavigator and Google Earth).

The subject property has historically been used for agricultural purposes dating back to 1938. Given our review of the available aerial photographs, the subject property has not experienced any development or drastic changes, except overgrowth around the borders and localized areas onsite, throughout the timeline of the reviewed photographs.

Several circular tonal features which can be interpreted as possible areas of elevated moisture and/or karst activity associated with potential closed depression/surface depression features were identified across the property during our review of aerial photographs. In reviewing the aerial images from 2003 to present day surficial rock is visible at the surface in most of the photos reviewed. It is worth mentioning that during the site reconnaissance, surficial rock was identified at several areas across the project site

and appear to align with the rock observed in these images. We have included a Carbonate Assessment Map identifying rock observed at the surface during our time onsite, attached in Appendix A.

It should be noted that possible fracture traces may be present in the central portion of the site dominantly running in the north/south direction however, the orientation and alignment does not stay consistent between reviewed images. Based on existing grading and onsite observations these may be associated with an old stream bed, or a drainage ditch associated with stormwater management.

Indications of caverns, intermittent lakes were not noted on the subject property on any of the reviewed aerial photographs. These interpolations were based on judgement and experience of the photo-interpreter.

3.3.4 Site Reconnaissance

A site walk was performed during our fieldwork activities on May 5, 2023, to verify the results of the desktop study and to further evaluate the property for any potential karst features. At the time of our site walk, the project site consisted of a large agricultural field.

At the time of our fieldwork, no apparent signs of lineaments, fracture traces, caverns, or intermittent lakes were observed. Potential karst features in the form of two (2) sinkholes, five (5) surface depressions, and surficial rock were observed. The locations of the observed sinkholes and surface depressions are presented in the table below. Photographs of the observed features and their approximate locations are presented on the Carbonate Assessment Map within Appendix A.

OBSERVED FEATURES						
Location	Latitude	Longitude				
SH-01	40.133460°	-77.385790°				
SH-02	40.133010°	-77.385300°				
SD-01	40.134580°	-77.392900°				
SD-02	40.137790°	-77.389050°				
SD-03	40.134760°	-77.385610°				
SD-04	40.134039°	-77.384831°				
SD-05	40.130670°	-77.382400°				

ECS recommends the potential surface depressions and sinkholes be explored with a test pit at each location under the supervision of ECS prior to construction at the site in order to determine if potential repairs are necessary.

Apparent animal burrows were also observed during the site walk, which can potentially be indicative of soft/loose soils associated with karst activity. The observed surficial bedrock is noted on the attached Carbonate Assessment Map in Appendix A as well.

3.4 GROUNDWATER OBSERVATIONS

Groundwater was not encountered during our subsurface exploration at the locations and depths explored. Additionally, no apparent signs of the seasonal high ground water table were observed while

probing below the infiltration testing depths. Variations in the long term water table may occur as a result of changes in precipitation, evaporation, surface water runoff, construction activities, and other factors.

3.5 LABORATORY TESTING

Each sample was visually classified on the basis of texture and plasticity in accordance with ASTM D2488 Standard Practice for Description and Identification of Soils (Visual-Manual Procedures) and including USCS classification symbols, and ASTM D2487 Standard Practice for Classification for Engineering Purposes (Unified Soil Classification System (USCS)). After classification, the samples were grouped in the major zones noted on the test pit logs in Appendix B. The group symbols for each soil type are indicated in parentheses along with the soil descriptions. The stratification lines between strata on the logs are approximate; in situ, the transitions may be gradual.

The laboratory testing performed by ECS for this project consisted of selected tests performed on samples obtained during our field exploration operations. Classification and index property tests were performed on representative soil samples obtained from the test pits in order to aid in classifying soils according to the Unified Soil Classification System (USCS) and to quantify and correlate engineering properties. The laboratory results can be found in Appendix C.

4.0 DESIGN RECOMMENDATIONS

4.1 STORMWATER MANAGEMENT AREAS

4.1.1 Stormwater Management Facilities

General: The plan provided to ECS displayed the proposed location for the stormwater management facilities. Stormwater management facilities are expected to consist of both above-grade and below-grade facilities. The recommendations presented below should be considered during design and construction.

4.1.1.a Infiltration Characteristics

Infiltration rates ranged between 0.00 in/hr to 6.85 in/hr, including a factor of safety of 2 or 3, depending on testing method and materials encountered. We recommend that design infiltration rates be proportion based on the area testing was completed. The Table below displays the recommended design rate of infiltration associated with each proposed basin onsite at the tested elevations. Please refer to the attached Exploration Location Plans which display the approximate location of testing and which facility it corresponds to.

DESIGN INFILTRATION RATES						
Facility	Test Locations	Recommended Design Rate of Infiltration (in/hr)				
Α	TP-01 through TP-03	0.30				
В	TP-04 through TP-09	0.34				
С	TP-10 through TP-12	0.22				
D	TP-13 through TP-15	0.51				
E	TP-16 through TP-20	0.26				
F	TP-21 through TP-26	0.29				
G	TP-27 through TP-29	0.87				
Н	TP-30 through TP-31	0.00				
I	TP-32 through TP-37	0.53				
J	TP-38 through TP-40	0.60				
K	TP-41 through TP-45	1.09				
L	TP-46 through TP-48	0.00				
M	TP-49 through TP-52	0.37				
N	TP-53 through TP-56	0.34				
0	TP-57 through TP-59	0.63				
Р	TP-60 through TP-66	0.75				

If volume reduction cannot be met with these infiltration rates, stormwater management may also need to incorporate water quality and rate control measures. Water quality can be enhanced with the use of amended soils in BMP facilities for filtering of the water, while volume control can be provided with adequate sizing of facilities combined with an appropriate underdrain system.

The clay soils in Facility H and L resulted in negligible rates of infiltration. A Managed Release Concept (MRC) basin may be considered for these two facilities.

Additionally, any backfill soils placed in below-grade basins must also meet the characteristics of Structural Fill as they will be supporting pavements. Materials satisfactory for use as Structural Fill should consist of inorganic soils with the following engineering properties and compaction requirements presented in the tables below.

STRUCTURAL FILL INDEX PROPERTIES				
Subject	Property			
Building and Pavement Areas	LL < 40, PI <20			
Max. Particle Size	4 inches			
Minimum Dry Density	105 pcf			

STRUCTURAL FILL COMPACTION REQUIREMENTS							
Subject	Requirement						
Compaction Standard	Standard Proctor, ASTM D698						
Required Compaction	95% of Max. Dry Density						
Moisture Content	±2 % points of the soil's optimum value						
Loose Thickness	8 inches prior to compaction						

It should be noted that infiltration of stormwater directly below paved areas within karst settings creates a risk of higher potential cost associated with the repair of karst activity (i.e. sinkholes) than traditional at-grade basins.

ECS recommends that specific construction notes appear on the plans requiring full-time observation of the excavation of the basins by the authorized ECS representative to verify suitable conditions are present. ECS can assist in developing these notes once plans become more final.

4.1.1.b Embankment/Outlet Structures/Slopes

Embankment construction or cut slopes to facilitate pond construction should incorporate side slopes of 3(H):1(V) or flatter. If steeper slopes are necessary, ECS should be contacted to review the proposed slope geometry.

Fill materials should be placed to a minimum of 95% of the maximum dry density of the material, as determined by the Standard Proctor method (ASTM D698). The moisture content of the materials should be within ±3% of the optimum.

Storm water management facilities with embankments should include the construction of a clay core having a minimum thickness of 2 feet. Clay suitable for this use should consist of CL or CH materials, having a minimum of 70% fines (passing the No. 200 sieve), a minimum liquid limit (LL) of 40 and minimum plasticity index (PI) of 20. This fill material must be approved by the ECS. Clay materials should be compacted to 95% of the standard Proctor maximum dry density at a moisture content that is at or up to

3% above the optimum. Based on the limited laboratory testing performed, soils that meet this criterion do appear to be present onsite.

4.1.1.c Temporary Sediment Basin Fill Embankments

Soils used in temporary sediment basin fill embankments should satisfy the requirements for fill discussed above and should be placed and compacted to the specification requirements for Structural Fill. Care should be taken not to track heavy equipment over the basin bottom during construction.

4.1.2 Stormwater Management Considerations

The property is underlain by carbonate geology which is prone to sinkhole development. The owner must understand that the concentrated influx of stormwater to a select area will increase the potential of sinkhole development. In order to reduce the rate of sinkhole development, and in keeping with the guidelines and recommendations of the PA BMP Manual, ECS recommends that the following design principles be incorporated:

- Use existing drainage patterns
- Keep stormwater away from known sinkholes or problematic subsidence areas
- Avoid concentrating stormwater
- Reduce runoff volume and velocity
- Use broad shallow basins
- Maintain the facilities post construction
- Provide underdrains or other means for dewatering in stormwater management facilities if needed

4.1.3 Stormwater Management Facilities - Design Notes

It has been our experience that construction of basins may encounter conditions that were not anticipated as a result of the subsurface exploration. As a result, we have developed the following sequence of items for addressing construction related difficulties or discrepancies with the design assumptions. We recommend that these recommendations be included in the stormwater management feature construction notes on the plans.

- A) If redoximorphic features (soil mottling and coloration patterns formed by the reduction of iron and/or manganese from saturated conditions in the soil) are encountered:
 - A qualified professional should determine if the features observed are associated with a historic condition (associated with fill, previous site condition, or natural coloration) or are associated with conditions that could presently occur (seasonal variations in the water table).
 - Evaluate the elevation of the features relative to the proposed design elevation of the SWM feature and determine if the size and elevation of the SWM feature can be adjusted to alleviate the conflict.
 - Retain ECS and Civil Engineer to evaluate alternate design concepts. Alternate designs proposed by the Professional should be sealed and submitted to the Township for approval.
- B) If the field verified infiltration rates are excessively high (greater than 6 inches per hour):

- Determine the extent of the materials exhibiting the high infiltration rates through a combination
 of visual-manual classification, hand probing, density testing, or other suitable methods as
 determined by ECS.
- Overexcavate the materials to the depth where the material type changes or a maximum depth of 2 feet, whichever is encountered first.
- If excessive rates are associated with weathered or broken rock, the rock surface should be examined by ECS, prior to replacement of suitable material.
- Replace the excavated material with finer grained materials approved by ECS. Suitable soil
 mixtures can consist of a blend of on-site and/or off-site materials available to the Contractor
 generally conforming to the table below, with field infiltration rates post placement determined
 and approved by ECS.

RECOMMENDED SOIL MEDIA BLEND									
Permissible Soil Types for Soil Media, based on	Ranges of USDA Particle Size Percentages						Typical Infiltration Rates for Permissible Soil Types (in/hr)*		
UDSA Classification	Sa	nd	Silt		Clay		Min	B.4	
	Min	Max	Min	Max	Min	Max	IVIIII	Max	
Sand, Loamy Sand, Sandy Loam, Loam	50	100	0	50	0	20	0.5	6.0	

- Materials should be lightly tracked into place in non-structural areas.
- If material replacement is required in structural areas (Ex: below-grade SWM facilities in paved areas), material placement specifications, including materials type, mix ratio, compactive effort and required density should be determined by ECS. Technical recommendations should be sealed by ECS and submitted to the Township for approval.
- C) If the field verified infiltration rates are excessively low (less than 0.1 in/hr):
 - Determine the extent of the materials exhibiting the low infiltration rates through a combination
 of visual-manual classification, hand probing, density testing, or other suitable methods as
 determined by the ECS.
 - Overexcavate the materials to the depth where the material type changes or a maximum depth of 2 feet, whichever is encountered first.
 - If bedrock is encountered, the rock should be removed to a minimum depth of 2 feet below the bottom of basin and should be examined by ECS, prior to replacement of suitable material.
 - Replace the excavated material with more coarsely grained materials approved by ECS. Suitable
 soil mixtures can consist of a blend of on-site and/or off-site materials available to the Contractor,
 and subject to testing and approval of ECS.
 - Suitable soil mixtures may consist of materials blended by volume ratios as determined by ECS.
 - Materials should be lightly tracked into place in non-structural areas.

If material replacement is required in structural areas (Ex: below-grade SWM facilities in paved areas), material placement specifications, including materials type, mix ratio, compactive effort and required density should be determined by ECS. Suitable soil mixtures can consist of a blend of on-site and/or off-site materials available to the Contractor generally conforming the table above, with field infiltration rates post placement determined and approved by ECS.

5.0 SITE CONSTRUCTION RECOMMENDATIONS

5.1 KARST RELATED – GENERAL RISK

If subsidence features such as sinkholes, surface depressions, and exposed rock pinnacles are encountered, ECS must be consulted to provide a recommendation for repair on a case by case basis.

Although sinkholes stem from geologic conditions within the underlying rock, they are often triggered by changes in the surface and subsurface drainage patterns. In order to reduce the potential for future sinkhole development which could impact foundation performance, positive surface drainage should be maintained both during and after construction. ECS recommends that the following preventative measures be followed to reduce the potential inducement of sinkhole formation in proposed development areas and to incorporate good construction practices:

- 1. Earthwork operations should be graded to drain away from the building areas at times. Upon completion of daily earthwork operations, the ground surface should be sealed by thorough rolling to reduce infiltration of precipitation and facilitate runoff.
- Sediment control management facilities should be located outside of planned construction areas. Inlets associated with storm drain systems should not be utilized as temporary sediment control devices during construction.
- 3. During construction, care should be taken to reduce the ponding of surface water in and/or adjacent to buildings.
- 4. Visual observations during earthwork operations should be carried out in order to detect any previous unexposed or recently created collapse features. Any such feature should be called to the ECS's attention for remedial improvement.
- 5. Final site grading should include sloping grades and piping of downspouts away from the building.
- 6. Storm piping should be designed such that joints and structure tie-ins remain watertight with allowance for some settlement. Leaking storm pipes promote subsurface seepage and can instigate sinkhole development in the form of surficial dropouts with little or no warning. It may be beneficial to use bentonite clay around pipe joints to reduce the potential for long-term leaking.

Areas identified to be suspect during the initial earthwork phase should be further explored during construction to determine the extent, both vertically and horizontally, of possible solution activity. We recommend that available geotechnical data be made available to ECS during earthwork operations.

5.2 CONSTRUCTION RECOMMENDATIONS

It is recommended that verification of the subgrade conditions at the time of construction be conducted by an authorized ECS representative.

During excavation of the basin, the materials at the bottom of basin should be verified to be consistent with those encountered in the exploration. Proper performance of infiltration facilities will be influenced by the variability in the subsurface.

Given the proposed basin bottoms and the encountered refusal depths, rock excavation will be necessary. Bucket refusal was encountered as shallow as approximately 3 feet below existing grade. When bedrock is encountered prior to the proposed invert elevation, overexcavation and replacement should be conducted utilizing a suitable backfill as provided in **Section 4.1.3.B.** It should be noted that the required buffer below the basin subgrade will also need to be maintained. It will be important that construction equipment does not traffic on the materials at the infiltration bed elevation, and that hand probing on an approximately 25 foot grid or isolated test pits be provided to evaluate proper offset distances from bedrock limiting zones.

We recommend SWM facilities be located a minimum of 25 feet from adjacent buildings, taken from edge of SWM facility to outside of footing. The allowable buffer distance is highly dependent on site constraints including but not limited to, foundation type, subgrade soils, geology, structural loading, foundation bearing elevation, invert elevation, and groundwater. If site constraints prohibit this recommendation, the facility may be located closer to a building subject to the review and approval of ECS.

5.3 SINKHOLE REPAIR

If a sinkhole develops at the project site, ECS can provide observation, documentation, and recommendations for repair. Due to the karst nature of the project site, proper repair is imperative. Typical sinkhole repair details are included in Appendix D.

6.0 CLOSING

ECS has prepared this report to guide the geotechnical-related design and construction aspects of the project. We performed these services in accordance with the standard of care expected of professionals in the industry performing similar services on projects of like size and complexity at this time in the region. No other representation, expressed or implied, and no warranty or guarantee is included or intended in this report.

The description of the proposed project is based on information provided to ECS by AAMPA Holdings, LLC. If any of this information is inaccurate or changes, either because of our interpretation of the documents provided or site or design changes that may occur later, ECS should be contacted so we can review our recommendations and provide additional or alternate recommendations that reflect the proposed construction.

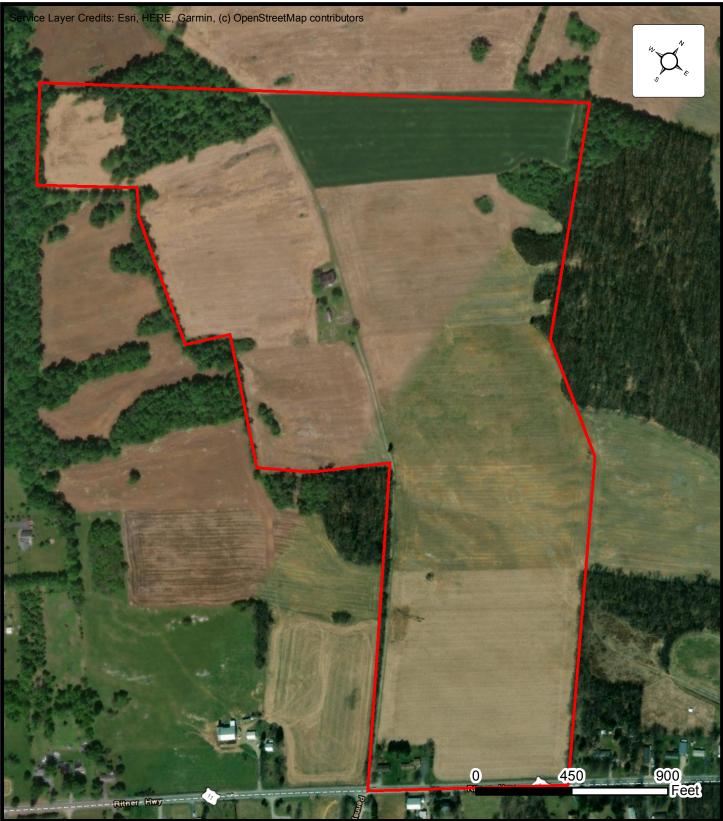
We recommend that ECS review the project plans and specifications so we can confirm that those plans/specifications are in accordance with the recommendations of this geotechnical report.

Field observations, and quality assurance testing during earthwork and foundation installation are an extension of, and integral to, the geotechnical design. We recommend that ECS be retained to apply our expertise throughout the geotechnical phases of construction, and to provide consultation and recommendation should issues arise.

ECS is not responsible for the conclusions, opinions, or recommendations of others based on the data in this report.

APPENDIX A – Diagrams & Reports

Site Location Diagram
Exploration Location Diagram
Geologic Map
Soil Survey Map
Karst Features Map
Carbonate Assessment Maps





SITE LOCATION DIAGRAM PROPOSED RITNER HIGHWAY WAREHOUSE DEVELOPMENT

3485 RITNER HIGHWAY, NEWVILLE, PENNSYLVANIA

APPALACHIAN ASSET MANAGEMENT

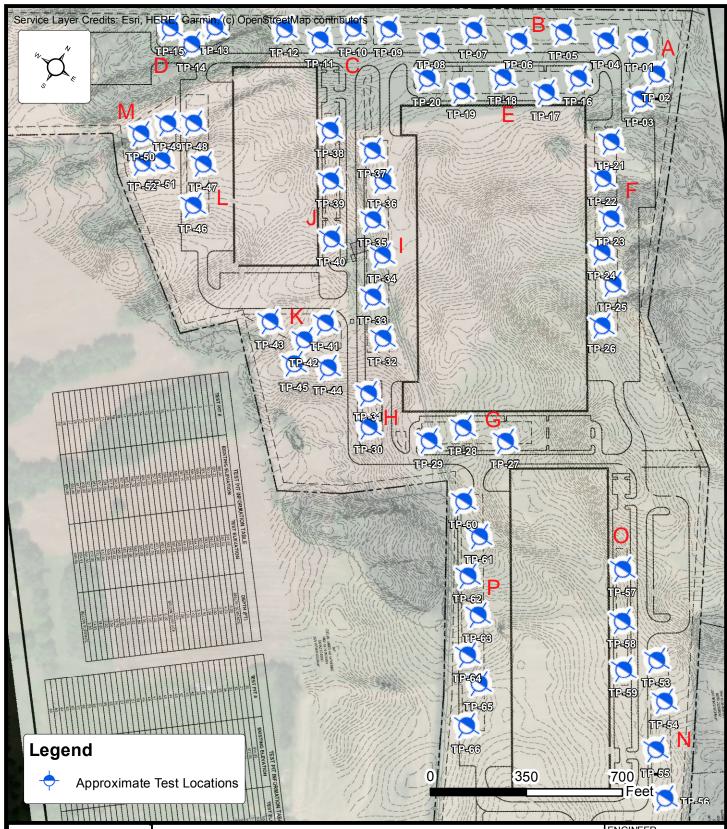
ENGINEER DGR

SCALE AS NOTED

PROJECT NO. 18:5941

FIGURE 1 OF 1

DATE 5/18/2023





EXPLORATION LOCATION DIAGRAM PROPOSED RITNER HIGHWAY

3485 RITNER HIGHWAY, NEWVILLE, PENNSYLVANIA

APPALACHIAN ASSET MANAGEMENT

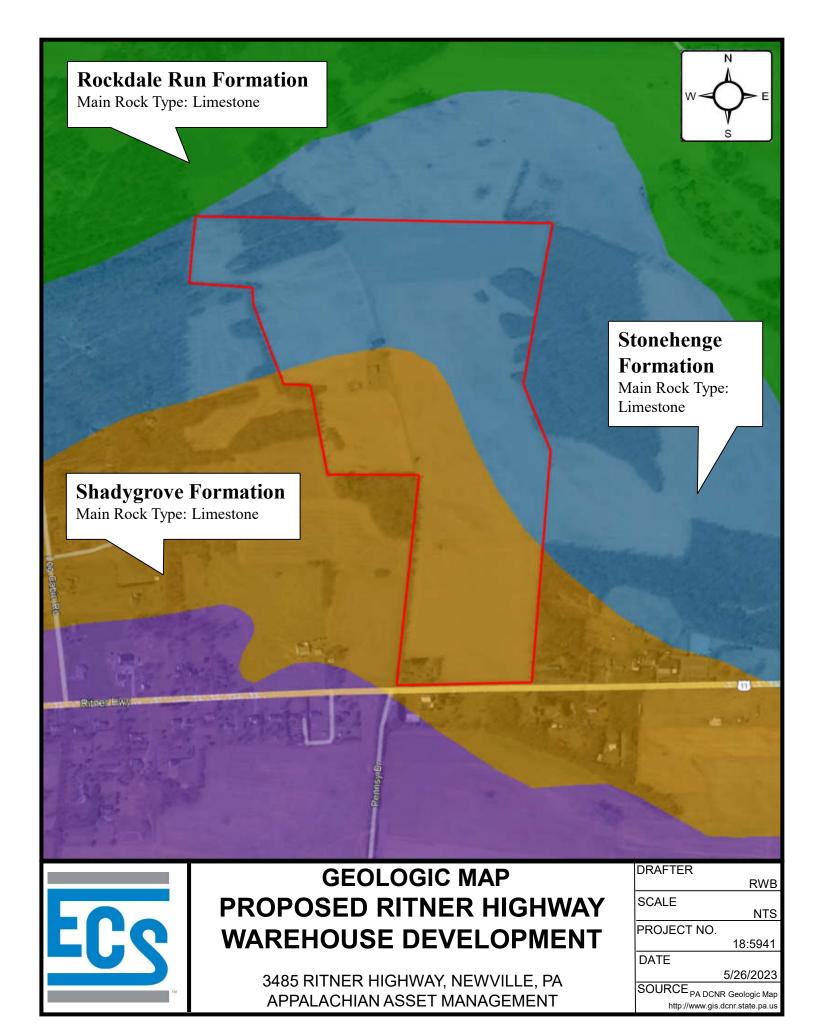
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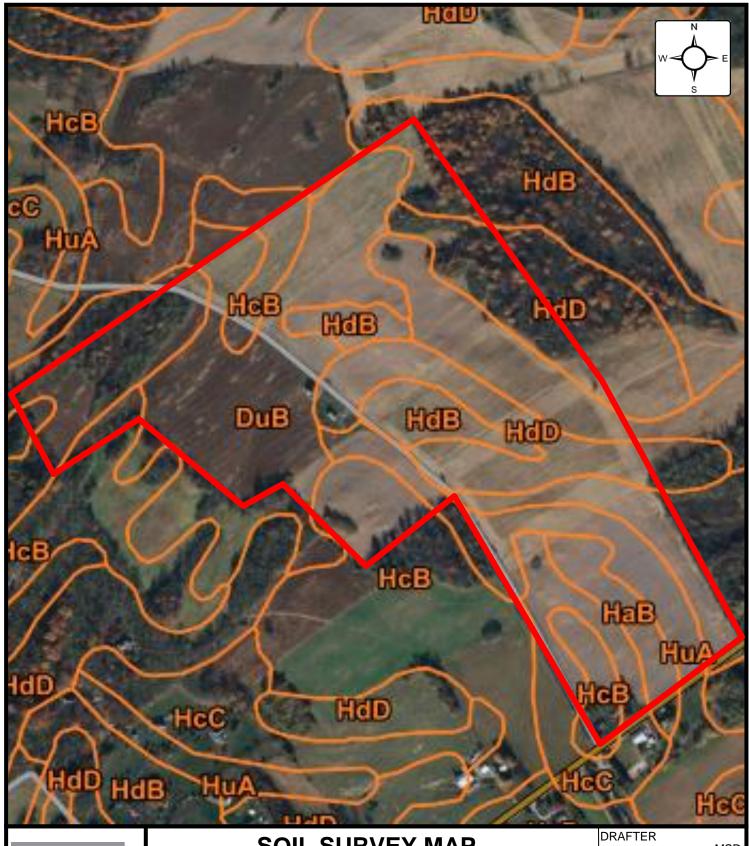
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FIGURE 1 OF 1

DATE 5/18/2023







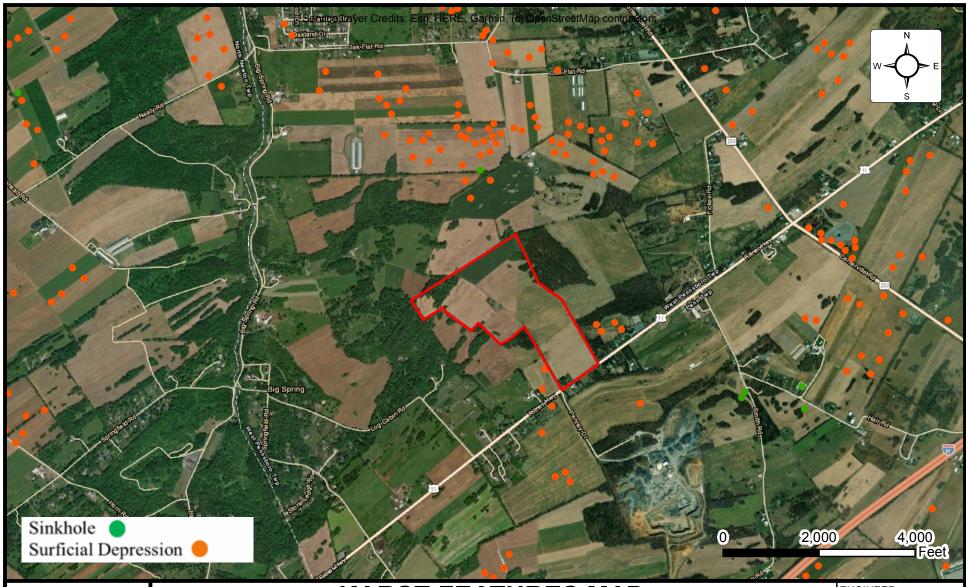
SOIL SURVEY MAP PROPOSED RITNER HIGHWAY WAREHOUSE DEVELOPMENT

3485 RITNER HIGHWAY, NEWVILLE, PA APPALACHIAN ASSET MANAGEMENT

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SOURCE Web Soil Survey https://websoilsurvey.nrcs.usda.gov





KARST FEATURES MAP PROPOSED RITNER HIGHWAY WAREHOUSE DEVELOPMENT

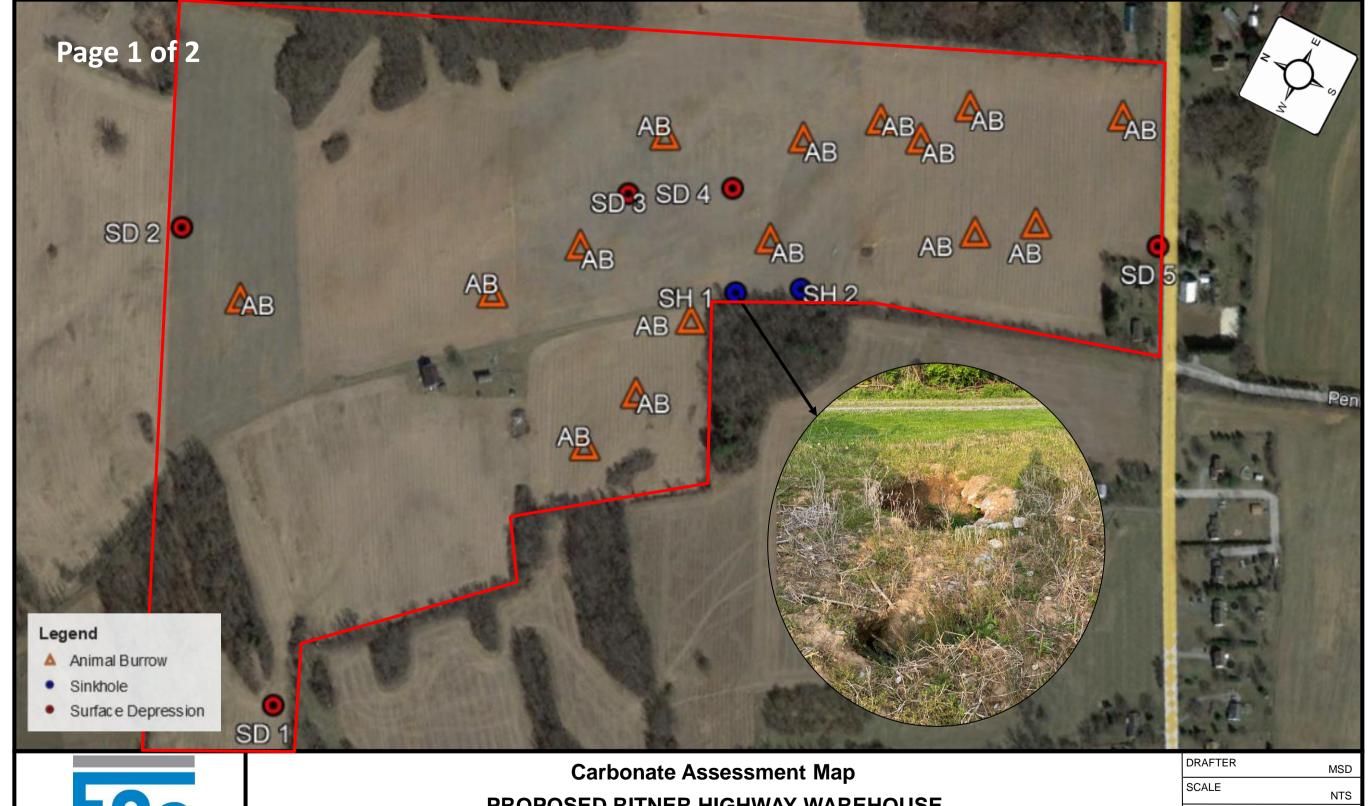
3485 RITNER HIGHWAY, NEWVILLE, PENNSYLVANIA APPALACHIAN ASSET MANAGEMENT ENGINEER DGR

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PROJECT NO. 18:5941

FIGURE 1 OF 1

DATE 5/30/2023

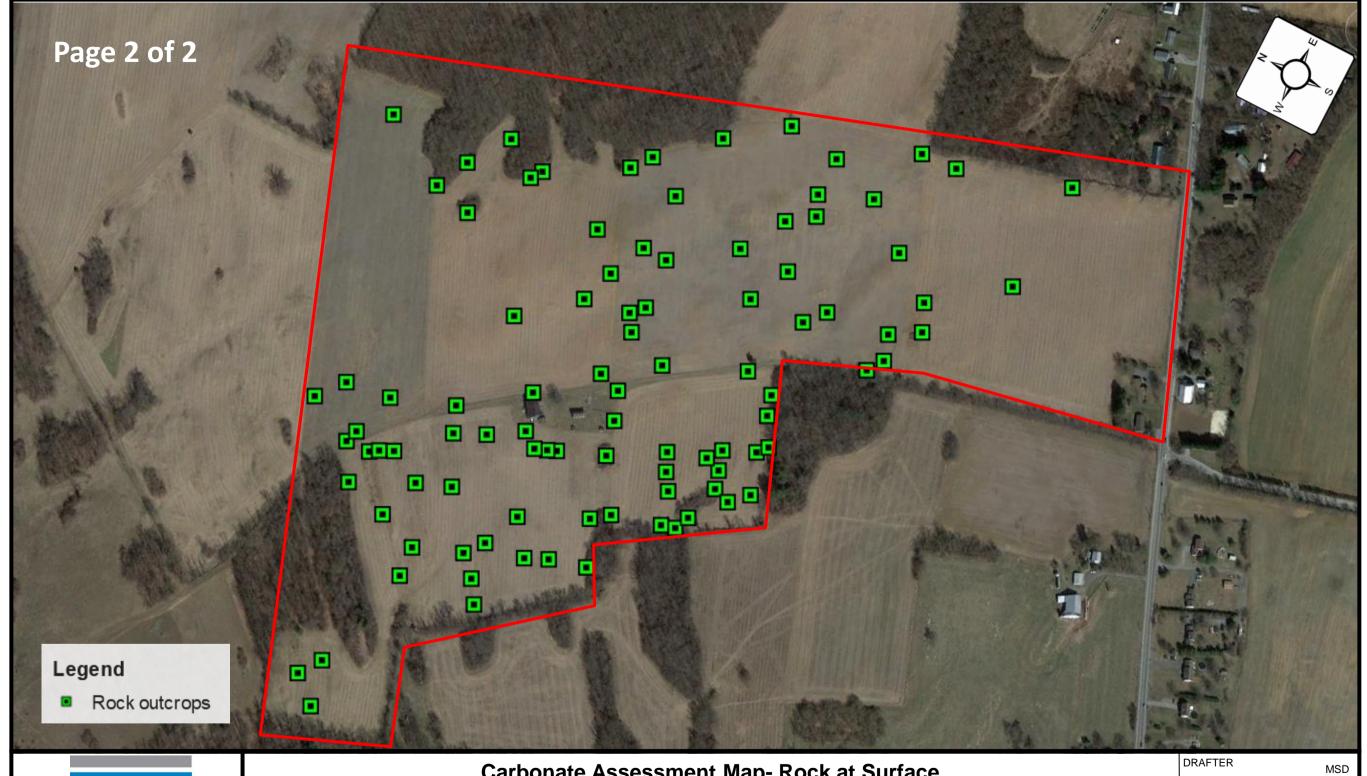




PROPOSED RITNER HIGHWAY WAREHOUSE

3485 RITNER HIGHWAY NEWVILLE, PA APPALACHIAN ASSET MANAGEMENT

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PROJECT NO.	18:5941
DATE	5/26/2023
SOURCE	Google Earth





Carbonate Assessment Map-Rock at Surface PROPOSED RITNER HIGHWAY WAREHOUSE

3485 RITNER HIGHWAY NEWVILLE, PA APPALACHIAN ASSET MANAGEMENT

DRAFTER	MSD
SCALE	NTS
PROJECT NO.	18:5941
DATE	5/26/2023
SOURCE	Google Earth

APPENDIX B – Field Operations

Subsurface Exploration Procedure: Test Pit Excavation Test Pit Logs TP-01 through TP-66 Infiltration Tests Results Test Pit Photographs Carbonate Assessment Photographs



SUBSURFACE EXPLORATION PROCEDURE: STANDARD PENETRATION TESTING (SPT) ASTM D 1586

Split-Barrel Sampling

Standard Penetration Testing, or **SPT**, is the most frequently used subsurface exploration test performed worldwide. This test provides samples for identification purposes, as well as a measure of penetration resistance, or N-value. The N-Value, or blow counts, when corrected and correlated, can approximate engineering properties of soils used for geotechnical design and engineering purposes.

SPT Procedure:

- Involves driving a hollow tube (split-spoon) into the ground by dropping a 140-lb hammer a height of 30-inches at desired depth
- Recording the number of hammer blows required to drive split-spoon a distance of 18-24 inches (in 3 or 4 Increments of 6 inches each)
- Auger is advanced* and an additional SPT is performed
- One SPT typically performed for every two to five feet. An approximate 1.5 inch diameter soil sample is recovered.





^{*}Drilling Methods May Vary— The predominant drilling methods used for SPT are open hole fluid rotary drilling and hollow-stem auger drilling.

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Appalachian Asset Management 18-594 1 of 1 1 of 1 1 1 1 1 1 1 1 1 1	CLIEN						PROJECT NO.:		SHEE	T:			
Proposed Rither Highway Newville, Pennsylvania, 17241 SASTING: STATION:				t Management						CE ELEVATION:			
SASS INTERMENTATION OF MATERIAL FASTING:	Propos	sed R	Ritner H	lighway Wareho	ouse Developm	nent							<u>:0</u>
EASTINGS				. N. W. B.					STATIC	DN:			23
DESCRIPTION OF MATERIAL A SO SHOW AND A SET TO PAT CLAY, brown to orangish brown, moist, very stiff to hard, 7.5YR 5/8, 10YR 6/8 END OF TEST PIT AT 7.2 FT THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDITY LINES BETWEEN SOIL TYPES. IN SITU THE TRANSITION MAY BE CRADUAL EXCANATION EFFORT: 5 - EASY M - MEDIUM D - DIFFICULT VO - VIEW DIFFICULT W. M. (Einst Encountered) Not Enc. THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDITY LINES BETWEEN SOIL TYPES. IN SITU THE TRANSITION MAY BE CRADUAL EXCANATION EFFORT: 5 - EASY M - MEDIUM D - DIFFICULT VO - VIEW DIFFICULT W. M. (Einst Encountered) Not Enc. THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDITY LINES BETWEEN SOIL TYPES. IN SITU THE TRANSITION MAY BE CRADUAL EXCANATION EFFORT: 5 - EASY M - MEDIUM D - DIFFICULT VO - VIEW DIFFICULT SALWY & Son Excanding. THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDITY LINES BETWEEN SOIL TYPES. IN SITU THE TRANSITION MAY BE CRADUAL EXCANATION EFFORT: 5 - EASY M - MEDIUM D - DIFFICULT VO - VIEW DIFFICULT SALWY & Son Excanding. THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDITY LINES BETWEEN SOIL TYPES. IN SITU THE TRANSITION MAY BE CRADUAL EXCANATION EFFORT: 5 - EASY M - MEDIUM D - DIFFICULT VO - VIEW DIFFICULT SALWY & Son Excanding. THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDITY LINES BETWEEN SOIL TYPES. IN SITU THE TRANSITION MAY BE CRADUAL EXCANATION EFFORT: 5 - EASY M - MEDIUM D - DIFFICULT VO - VIEW DIFFICULT SALWY & Son Excanding. THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDITY LINES BETWEEN SOIL TYPES. IN SITU THE TRANSITION MAY BE CRADUAL EXCANATION EFFORT: 5 - EASY M - MEDIUM D - DIFFICULT VO - VIEW DIFFICULT SALWY & SON EXCANATION EFFORT: 5 - EASY M - MEDIUM D - DIFFICULT VO - VIEW DIFFICULT SALWY & SON EXCANATION EFFORT: 5 - EASY M - MEDIUM D - DIFFICULT VO - VIEW DIFFICULT SALW				ay, Newville, Pe	ennsylvania, 17	7241	EASTING:						
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES, IN SITU THE TRANSITION MAY BE GRADUAL EXCAVATION EFFORT: E - FASY M - MEDIUM D - DIFFICUIT VD - VERY DIFFICUIT W. (First Encountered) Not Enc. W. W.L (First Encountered) Not Enc. W. W.L (Completion) Not Enc. T. W.L (Completion) Not Enc. DATE COMPLETED: MSD Apr 24 2023 English M. 4.50 S-1 29-1 A.50 Apr 24 2023 English M. A.50 S-1 29-1 CONTRACTOR: OPERATOR: MAKE/MODEL: MAKE/MODEL: MSD Apr 24 2023 English													<u> </u>
CCL/CH) LEAN TO FAT CLAY, brown to orangish brown, moist, very stiff to hard, 7.5YR 5/8, 10YR 6/8	ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESCI	RIPTION OF MATERIA	L		EXCAVATION EFFOR	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTEN (%)
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT VW ((First Encountered) Not Fin.: VW ((Completion) Not Fin.: VW ((Completion) Not Fin.: DATE COMPRETED: MSD (Apr 24 2023) English MM 4.50 5-1 29:1 29:1 4.50 5-1 29:1 29:1 29:1 4.50 5-1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29:1 29			_	Topsoil Thi	ckness[8.00	"]							
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THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT WL (First Encountered) Not Enc. WL (Seasonal High) Not Enc. CONTRACTOR: SA Way & Son Excavating CAVE-IN-DEPTH: MSD Apr 24 2023 English													
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			ay, Newville, P	ennsvlvania. 1	7241			SIAII	ON.			
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	ST	Ē						EXCAVATION EFFORT			SAMPLE NUMBER	MOISTURE CONTENT (%)
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	N N	ELE						CAV.			AM	TSIC
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			Topsoil Th	ickness[10.0	00"]							
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_		-			ish brown, moist	, very stiff,	- V////					
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_		-					- V////					
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∇	WL	(First F	incountered)	Not Enc.	▼ WL (Season	al High) Not Fnc	CONTRACTO	DR:	OPERATOR:	I _V	1AKE/MOD	 EL:
							SA Way & So					
	(,						Excavating		Tim		obcat E32	
ECS R	EP.:			DATE COMP	LETED:		UNITS:		CAVE-IN-DEPT	H:		
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		NAME:	t wanagement		18:5941 TEST PIT NO.:			ACE ELEVATION:				
			lighway Warehouse Develo	ppment	TP-05		586			E	.0	
SITE L			vay, Newville, Pennsylvania	. 17241			STATIO	ON:				
NOR			ay, recurring, remisyruma	,	EASTING:							
							RT			~	L _N	
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)	DE	ESCRIPTION OF MATERIA	AL		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)	
-		-	Topsoil Thickness[12	2.00"]								
-		-	(ML) SILT WITH SAN 10YR 6/6	D, reddish brown,	moist, 5YR 5/8,		М			- S-1		
5-		581 -										
-		-	END	OF TEST PIT AT 6.0	FT							
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-												
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10-		576 -										
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REMA	I IRKS.	<u>. </u>	I						l			
Т	HE S	TRATIF	ICATION LINES REPRESEN						ISITION M	AY BE GRA	DUAL	
				VATION EFFORT: E - E								
			incountered) Not Enc.	▼ WL (Season	al High) Not Enc.	CONTRACTO SA Way & Sor		OPERATOR:		ake/Mode	L:	
	WL	(Comp	letion) Not Enc.			Excavating	•	Tim	Bol	ocat E32		
ECS R	EP.:		DATE CON	MPLETED:		UNITS:		CAVE-IN-DEPTH	l :			
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CLIEN		n Acco	t Management		PROJECT NO.: 18:5941		SHEET 1 of 1	:				
PROJE					TEST PIT NO.:			CE ELEVATION:				
			lighway Warehouse		TP-06		584.5				.0	
SITE L			ay, Newville, Pennsylva	ania 179/1			STATIO	N:				
NORT			ay, Newville, Fellisylve	ama, 17241	EASTING:							
							RT				Z	
Ē	WATER LEVELS	ELEVATION (FT)					EXCAVATION EFFORT		<u></u>	SAMPLE NUMBER	MOISTURE CONTENT (%)	
DЕРТН (FT)	R LE	TION		DESCRIPTION OF MATERIA	L		NO.	DCP	QP (TSF)	E NO	3E CC (%)	
DEF	NATE	LEV					AVAT		ð	MPL	ISTUI	
		ш					EXC			SA	MO	
_		_	Topsoil Thickness	s[9.00"]								
_		-	(CL) LEAN CLAY, o	orangish brown, moist,	very stiff, 7.5YR							
-		-	5/8, 7.5YR 6/8			Y////			2.75	S-1		
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	15.00	FD 47:-	ICATION LINES SEE	CENT THE ADDROVE	DOLING DVI WES -	ETMEEN CO.: =	N/DEC :::	NTI I TUE TO	CITION	IAV DE CO	DUAL	
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			letion) Not En		arriigiij INULEIIC.	SA Way & Son		FERATOR.		bcat E32	L.	
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PROJE	CT N	IAME:				18:5941 TEST PIT NO.:		SURFA	CE ELEVATION:			
			lighway Warehou	ise		TP-07		585.5			EC	.6
SITE L 3485 F			ay, Newville, Pen	ınsylvania, 172	241			STATIC	JN:			
NORT						EASTING:						
DЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESCR	IPTION OF MATERIA	ıL		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thic	kness[9.00"]							
-		- - - - - - - - 581 –	(ML) SILT W 10YR 6/6	ITH SAND, r	eddish brown, ı	moist, 5YR 5/8,		E			- 5-1	
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\Box	WL	(First E	ncountered) N	Not Enc.	▼ WL (Seasona	al High) Not Enc.	CONTRACTOR		OPERATOR:	M	ake/mode	L:
		(Comp	,	Not Enc.			SA Way & Son Excavating		Tim	Во	bcat E32	
	S REP.: UNITS: CAVE-IN-DEPTH:											
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Proposed Rither Highway, Warehouse TP-08 S87.1										CE ELEVATION:					
385 Riner Highway, Newville, Pennsylvania, 1721 Columbia Colu	Propos	sed F	Ritner H		se				587.1				[0		
STR				and the contract of		2244			STATIO	N:			2		
Section Sect				ray, Newville, Penr	nsylvania, 17	7241	EASTING:								
Topsoil Thickness[10.00"] (CL) LEAN CLAY, orangish brown, moist, very stiff, 10YR 6/8, 7.5YR 5/8 5	1.51(1						1					1	L,		
Topsoil Thickness[10.00"] (CL) LEAN CLAY, orangish brown, moist, very stiff, 10YR 6/8, 7.5YR 5/8 5	F.	ÆLS	(FT)						:FFOR			MBER	NTEN		
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(CL) LEAN CLAY, orangish brown, moist, very stiff, 10YR 6/8, 7.5YR 5/8 S83- END OF TEST PIT AT 6.5 FT 578- 10- 573-		>	111						EXC,			SA	Σ N		
6/8, 7.5YR 5/8 583 5- END OF TEST PIT AT 6.5 FT 578 10- 573			-	Topsoil Thick	ness[10.0	0"]									
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5 END OF TEST PIT AT 6.5 FT - 578			-					- <i>\///\</i>							
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573-			578 -												
	10-														
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			E70	1											
15			5/3-												
	15														
REMARKS:	REMA	RKS:		I							1				
THE CTRATICICATION LINES DEPRECENT THE ADDROVIMANTE DOLLNINGS DETAILED CONTINUES IN CITATION AND RECOVERY	T-1	IF C	TD 4717	ICATION LINES S	EDDECENT:	THE ADDROVIA A TE	DOLINDOV LINES 5	ETM/EEN CO!!	TVDEC IN	CITI I TUE TOAS	ICITION A	AV DE CDA	DIIAI		
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT	17	TE S	IKAHF	ICATION LINES R							ISHTON M	AY BE GKA	DUAL		
WL (First Encountered) Not Enc. WL (Seasonal High) Not Enc. CONTRACTOR: OPERATOR: MAKE/MODEL:		\\\/\	(First =	ncountered) M							NA.	VKE\MUDE	1.		
SA Way 8, San						→ vvr (seasona	aı⊓ıgıı/ NO(ENC.		.				L.		
▼ WL (Completion) Not Elic. Excavating IIII Bobcat E32			(comp			ETED:		Excavating				ucat E32			
ECS REP.: UNITS: CAVE-IN-DEPTH:		EY.:								CAVE-IN-DEPT	1:				
MSD May 05 2023 English TEST PIT LOG	INIZD			N N	viay 05 2023		TFST DIT I								

CLIEN		n Asso	t Management		PROJECT NO.: 18:5941		SHEET 1 of 1	:						
		IAME:	·unugement		TEST PIT NO.:			CE ELEVATION:						
			lighway Warehouse		TP-09		586.0				<u>:0</u>			
SITE L			ay, Newville, Pennsylvania	172/1			STATIO	N:						
NORT			ay, ivewville, reillisylvalla	, 1/241	EASTING:									
							RT			~	Z			
E	WATER LEVELS	ELEVATION (FT)					EXCAVATION EFFORT		<u></u>	SAMPLE NUMBER	MOISTURE CONTENT (%)			
DEРТН (FT)	R LE	TION	DE	SCRIPTION OF MATERIA	L		NOI	DCP	QP (TSF)	N N	3E CC (%)			
DEF	NATE	:LEV#					AVAT		ğ	MPL	ISTUI			
		Ш					EXC			SA	Σ			
			Topsoil Thickness[12	2.00"]										
		_												
_		_	(CL) LEAN CLAY WIT		own, moist, hard	, /////								
_		_	7.5YR 6/8, 7.5YR 5/8	3		- Y////			4.00	S-1				
-		-				\///\	E							
_		-												
-		-				V///\								
_		-				V///\								
_		501												
5- 581 - END OF TEST PIT AT 5.0 FT														
-														
_		_												
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10		-												
10-		576 –												
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15														
REMA	RKS:													
TI	HE ST	TRATIF	ICATION LINES REPRESEN	IT THE APPROXIMATF	BOUNDRY LINES B	ETWEEN SOIL	TYPES. IN-S	SITU THE TRAN	ISITION M	IAY BE GRA	DUAL			
				VATION EFFORT: E - E/						0.01	· · · -			
\Box	WL	(First E	ncountered) Not Enc.	▼ WL (Seasona		CONTRACTOR		DPERATOR:	M	AKE/MODE	L:			
			letion) Not Enc.	,	<u> </u>	SA Way & Son		Гim		bcat E32				
ECS R		,ν	DATE CON	 ИPLETED:		Excavating UNITS:		CAVE-IN-DEPTH						
MSD			May 05 20			English		, 2 0 2.1 11						
			, 0.5 2.0	-	TEST PIT LC									

CLIEN		n Asso	t Management		PROJECT NO.: 18:5941		SHEET 1 of 1	:					
		IAME:	. management		TEST PIT NO.:			CE ELEVATION:					
			lighway Warehouse		TP-10		586.2				. 0		
SITE L			ay, Newville, Pennsylvani	2 17241			STATIO	N:					
NORT			ay, Newville, Pellisylvalli	a, 1/241	EASTING:								
							T.			~	늘		
F	ŒLS	(FT)					EXCAVATION EFFORT			SAMPLE NUMBER	MOISTURE CONTENT (%)		
DЕРТН (FT)	₹ LEV	NOI		DESCRIPTION OF MATERIA	L		N B	DCP	QP (TSF)	N N	E CO %)		
DEPT	WATER LEVELS	ELEVATION (FT)					WATI		P,	APLE	TUR.		
	>	H					EXCA			SAN	MOIS		
		_	Topsoil Thickness[1	0.00"1									
-		-											
_		_		ldish brown, moist, v	ery stiff, 5YR 5/8	, [////]			3.75	S-1			
-		-	5YR 6/8										
_		-				V////							
		-				- V////	D						
		-				- Y////							
_		-				- Y////							
-		582 –											
5-		-	EN	D OF TEST PIT AT 5.0	ET			_					
END OF TEST FIT AT 5.0 FT													
-		_											
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-													
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15													
REMA	RKS:	•						1					
-	IE 67		ICATION LINES SESSES	NIT THE ADDROVA ATT	DOLINDRYLINGS	ETVA/EEAL COLL	DVDEC IN C	1T11 TUE TO 4	CITION	14V DE CD:	DIIAI		
	HE S	IKAHF	ICATION LINES REPRESE						SITION M	IAY BE GRA	υUAL		
	147	/F:		AVATION EFFORT: E - EA						A L/F /8 4005	I .		
			ncountered) Not Enc.	▼ WL (Seasona	ai High) Not Enc.	CONTRACTOR: SA Way & Son		OPERATOR:		ake/Mode	L:		
		(Comp	letion) Not Enc.			Excavating		Гim		bcat E32			
ECS R	ECS REP.: UNITS: CAVE-IN-DEPTH:												
MSD			May 05 2	2023		English							
					TEST PIT LC)G							

CLIENT:						PROJECT NO.:		SHE				
			Management			18:5941		1 of 1				
PROJEC			lighway Wareho	oueo.		TEST PIT NO.: TP-11		SURF/ 586.0	ACE ELEVATION	:		,0
SITE LO			ngnway warend	buse		IP-11		STATI				
			ay, Newville, Pe	ennsylvania, 1	7241			31, 111	O14.			
NORTH	HING	i:				EASTING:		, ,				
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESC	RIPTION OF MATERIA	L		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thi	ickness[10.0	00"]							
-		- - - -		CLAY, reddis	sh brown, moist,	hard, pinnacles,		D		4.50	- S-1	
-		-		BUCKE	T REFUSAL AT 3.	5 FT						
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5-		581 – -										
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REMAR	RKS:											
TH	E ST	RATIF	CATION LINES	REPRESENT	THE APPROXIMATE	BOUNDRY LINES E	BETWEEN SOI	L TYPES. IN	I-SITU THE TRAI	NSITION N	MAY BE GRA	ADUAL
				EXCAVA	TION EFFORT: E - E	ASY M - MEDIUM [) - DIFFICULT	VD - VERY	DIFFICULT			
▽ v	NL (First E	ncountered)	Not Enc.	▼ WL (Seasona	al High) Not Enc.	CONTRACTO	R:	OPERATOR:	M	AKE/MODI	EL:
	▼ WL (Completion) Not Enc.					<u> </u>	SA Way & So		Tim		bcat E32	
ECS REP.: DATE COMPLETED:						Excavating UNITS:		CAVE-IN-DEPT				
MSD				Apr 25 2023			English		SAVE IIV DEI I			
55						TEST PIT LO	_					

CLIENT:	nian ^a	set Management			PROJECT NO.: 18:5941		SHEET 1 of 1	Γ:				
PROJECT					TEST PIT NO.:			CE ELEVATION:				
		r Highway Wareho	ouse		TP-12		587.0				. 0	
SITE LOC		ા nway, Newville, Pe	nnsylvania 17	72/11			STATIO	N:				
NORTHII		iway, ivewville, re	iiiisyivaiiia, 17	2-7-1	EASTING:							
							RT			~	LN ⊢N	
DEPTH (FT)	VALENCES						EXCAVATION EFFORT			SAMPLE NUMBER	MOISTURE CONTENT (%)	
DEPTH (FT)			DESC	RIPTION OF MATERIA	L		NO	DCP	QP (TSF)	E N C	RE CC (%)	
DEP	FVA						AVAT		ğ	MPL	STUF	
	[*]						EXC			SA	MO	
		Topsoil Thi	ckness[10.0	0"]								
		(CL) FAN	CL AV - :-	h h								
		pinnacles,		h brown, moist, v	very stiff,	- V///A			2.25	S-1		
			, -			- Y///A	D					
-		-				- {////\						
		-										
-		-				 						
		-	BUCKE	T REFUSAL AT 4.0) FT	////						
_	-04	,										
5- 582-												
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10-	577	'										
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15												
REMARK.	S:											
ТЫЕ	STR AT	IEICATION LINES	REDRESENIT	THE ∆DDR∩YINAATE	BOUNDRY LINES B	ETWEEN SOII	TYPES IN	SITLL THE TRAN	ISITION N	IΔV RE GRΛ	DHAI	
ITIE	STIVAL	II ICATION LINES			ASY M - MEDIUM D				N MOLLIC	ואו מר מנא	DUAL	
\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	(Fire	Fncountered)	Not Enc.			CONTRACTOR		OPERATOR:	L/I	AKE/MODE	I ·	
✓ WL (First Encountered) Not Enc.✓ WL (Seasonal High) N✓ WL (Completion)✓ Not Enc.						SA Way & Son		Tim		bcat E32	L.	
		ιριστιυΠ	1	ETED:		Excavating				ocal E32		
ECS REP.: UNITS: CAVE-IN-DEPTH:												
MSD			May 05 2023		TEST PIT LO	English OG						

CLIEN		n Asset	t Management		PROJECT NO.: 18:5941		SHEET 1 of 1	Γ:					
PROJE			r Wanagement		TEST PIT NO.:			CE ELEVATION:					
			lighway Warehouse		TP-13		597.8				.0		
SITE L			ay, Newville, Pennsylv	ania 17241			STATIO	N:					
NORT			ay, recurring, remisyru	uma, 17241	EASTING:								
							ıRT			~	Z		
Ē	WATER LEVELS	ELEVATION (FT)					EXCAVATION EFFORT		<u></u>	SAMPLE NUMBER	MOISTURE CONTENT (%)		
DЕРТН (FT)	R LE	TION		DESCRIPTION OF MATERIA	L		NOI	DCP	QP (TSF)	ы N ∪	RE C((%)		
DEF	WATE	:LEV/					;AVA]		g	4MPL	USTU		
							EXC			<i>ts</i>	Σ		
		-	Topsoil Thicknes	s[10.00"]									
		_	(NAL) CUT brown	, moist, pinnacles, 10Y	D E /C 10VD C /C					S-1			
_		-	(IVIL) SILI, DIOWII	i, moist, piimacies, 101	K 5/0, 101K 0/0		VD						
_		-											
-		-											
-			В	SUCKET REFUSAL AT 3.0) FT								
-		_											
_		_											
5-		593 –											
-													
-													
-		_											
_		_											
10-		588											
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15		583											
REMA	RKS.												
ILIVIA	mns.												
Т	HE S	TRATIF		ESENT THE APPROXIMATE					SITION M	AY BE GRAI	DUAL		
			EX	XCAVATION EFFORT: E - EA	ASY M - MEDIUM D	- DIFFICULT VI	D - VERY D	IFFICULT					
∇	WL	(First E	ncountered) Not Er	nc. 🔽 WL (Seasona	al High) Not Enc.	CONTRACTOR:	: 0	OPERATOR:	MA	AKE/MODE	L:		
•	WL	(Comp	letion) Not En	nc.		SA Way & Son Excavating		Tim	Bol	bcat E32			
ECS REP.: DATE COMPLETED: UNITS: CAVE-IN-DEPTH:													
MSD			May 0	05 2023		English							
					TEST PIT LC	G							

CLIEN Appal		an Asse	t Management			PROJECT NO.: 18:5941		SHEE 1 of 1	ET:			
PROJE	CT N	IAME:				TEST PIT NO.:		SURFA	ACE ELEVATION:			
			lighway Wareho	ouse		TP-14		601.2				.6
SITE L 3485 F			ay, Newville, Pe	nnsvlvania. 1	7241			STATIO	JN:			
NOR			,	,		EASTING:		I				
								ORT			8	L Z
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESC	RIPTION OF MATERIA	ıL		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
DEI	WAT	ELEV/						EXCAVA ⁻		Q	SAMPI	MOISTU
-		-	Topsoil Thi								S-1	
-		- - -	ML) SILT, b	orown, mois	it, 2.5YR 4/8, 2.5	YR 5/8		E				
-		-										
_	1	597 -		END (OF TEST PIT AT 4	FT						
5-		-	_									
-		-										
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-		-	-									
-		587 -										
15		-										
REMA	L NRKS:	<u> </u>										
Т	HE S	TRATIF	ICATION LINES			BOUNDRY LINES B				ISITION M	AY BE GRA	DUAL
		,_,				ASY M - MEDIUM D						
			· · · · · · · · · · · · · · · · · · ·	Not Enc.	▼ WL (Seasona	al High) Not Enc.	CONTRACTO SA Way & Sor		OPERATOR:		AKE/MODE	L:
_		(Comp	<u> </u>	Not Enc.	LETED		Excavating		Tim		bcat E32	
ECS R	EP.:			DATE COMP			UNITS:		CAVE-IN-DEPTH	1:		
MSD				May 05 2023		TEST PIT LO	English IG					

CLIEN		n Asso	t Management		PROJECT NO.: 18:5941		SHEET	:				
		IAME:	t management		TEST PIT NO.:			E ELEVATION:				
			lighway Warehouse		TP-15		606.5				.0	
SITE L			ay, Newville, Pennsylvania, 172	41			STATION	N:				
NORT			ay, Newville, Pellisylvalia, 172	41	EASTING:							
							T.			~	F	
F	ELS	(FT)					EXCAVATION EFFORT			SAMPLE NUMBER	MOISTURE CONTENT (%)	
H.	\ LEV	NOI	DESCRI	PTION OF MATERIA	L		ON B	DCP	QP (TSF)	N N	E CO %)	
DEРТН (FT)	WATER LEVELS	ELEVATION (FT)					VATI		P P	APLE	TUR.	
	>	日日					EXCA			SAN	MOIS	
			Topsoil Thickness[12.00	<u>"</u> 1							_	
-		-	100501111110111035[12:00	,								
_		-	(ML) SILT WITH GRAVEL	, brown, moist,	10YR 5/4, 10YR							
-		_	5/6		, ,							
_		-										
-		_					N.4					
							М					
_		_								S-1		
_		602 -										
5-		-										
-		_										
_		-	BUCKET	REFUSAL AT 6.0) FT							
-		-										
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10-		597 –										
10-												
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-		592 -										
-15 -												
REMA	RKS:	•								'		
-	UE 67		ICATION LINES DEPOSESSATE	IE ADDDOVIA 4 ***	DOLIND BY LINES 2	ETVA/EEN COURT	VDEC IN S	1T11 TUE TO 4 * *	CITION	AV DE 65.	DITAL	
	HE S	IKAHE	ICATION LINES REPRESENT TH		ASY M - MEDIUM D				SITION M.	AY BE GKA	DUAL	
	180	/Figgs 5								VE/N4005	1.	
				▼ WL (Seasona	ai Hign) Not Enc.	CONTRACTOR: SA Way & Son		PERATOR:		KE/MODE	L:	
_		(Comp	letion) Not Enc.			Excavating		lim		ocat E32		
ECS R	EP.:		DATE COMPLE	TED:		UNITS:	C	CAVE-IN-DEPTH	l:			
MSD			May 05 2023		TEAT 5:= : 6	English						
					TEST PIT LC	G						

CLIEN		n Asso	t Management			PROJECT NO.: 18:5941		SHEE	T:			
PROJE						TEST PIT NO.:			CE ELEVATION:			
			lighway Warehou	se		TP-16		587.5			EC	<u>:0</u>
SITE L			ray, Newville, Pen	nsylvania 17	2/1			STATIC	N:			
NORT			ay, Newville, Fell	iisyivaiiia, 17	241	EASTING:						
								RT			~	F
Ē.	ÆLS	(FT)						EXCAVATION EFFORT			SAMPLE NUMBER	MOISTURE CONTENT (%)
ОЕРТН (FT)	R LE	NOIL		DESCF	RIPTION OF MATERIA	L		NO	DCP	QP (TSF)	D Z	(%)
DEP	WATER LEVELS	ELEVATION (FT)						AVAT		g	MPLE	STUF
	>	ш						EXC			SA	MOI
			Topsoil Thick	kness[11.00	0"]							
		_										
_		_	(ML) SILT WI 5YR 5/8	ITH SAND,	reddish brown, r	moist, 5YR 6/8,						
_		-	31K 3/6									
-		_									S-1	
-		-						M				
-		-										
_		-	-									
_		583 –										
5-		_										
END OF TEST PIT AT 6.0 FT												
-		_		END OF	- IESI PII AI 6.0	FI						
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10		578 –										
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45		573 -										
15												
REMA	RKS:											
TI	HE ST	ΓRATIF	ICATION LINES R	EPRESENT T	THE APPROXIMATE	BOUNDRY LINES B	ETWEEN SOIL	TYPES. IN-	SITU THE TRAN	ISITION M	1AY BE GRA	DUAL
						ASY M - MEDIUM D						
∇	WL ((First E	ncountered) N	lot Enc.	▼ WL (Seasona	al High) Not Enc.	CONTRACTOR	R:	OPERATOR:	M	ake/mode	L:
				lot Enc.			SA Way & Son	1	Tim		bcat E32	
ECS RI		· ·		ATE COMPL	ETED:		Excavating UNITS:		CAVE-IN-DEPTH			
MSD												
						TEST PIT LO						

CLIEN						PROJECT NO.:		SHEE	T:			
			t Management			18:5941		1 of 1	OF ELE (1=:=			
		IAME:	liaha			TEST PIT NO.:		l l	CE ELEVATION	:	L(0
SITE L			lighway Wareh	ouse		TP-17		586.2 STATIC)N.			•
			ay, Newville, Po	ennsvlvania. 1	7241			SIAIIC	Л Ч.			
NOR			,,		7 - 1 -	EASTING:						
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESC	RIPTION OF MATERIA	NL		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
-		-		ckness[12.0		very stiff, 5YR 5/8	3,	E		2.50	S-1	
5-		582 - -		END C	F TEST PIT AT 5.0) FT						
-		- - - -										
10-		577 - - - - - -										
- - - - 15		572										
	DVC	<u> </u>										
	HE S	TRATIF				E BOUNDRY LINES E ASY M - MEDIUM E		VD - VERY [IAY BE GRA	
	✓ WL (First Encountered) Not Enc.✓ WL (Seasonal✓ WL (Completion) Not Enc.				arriigii) NOLENC.	SA Way & Soi		Tim		bcat E32	- L .	
ECS R	ECS REP.: DATE COMPLETED:						UNITS:		CAVE-IN-DEPTI	H:		
MSD				May 05 2023	1	TEAT DIT : 4	English					
						TEST PIT LO	JG					

CLIEN		an Acco	t Management			PROJECT NO.: 18:5941		SHEE 1 of 1	T:			
PROJE	CT N	IAME:				TEST PIT NO.:			CE ELEVATION:			
			lighway Wareho	ouse		TP-18		585.5			L (:6
SITE L 3485 I			ay, Newville, Pe	nnsvlvania. 1	7241			STATIC)N:			
NOR			,			EASTING:		l				
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESC	RIPTION OF MATERIA	NL		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
-		-	Topsoil Thi		00"] EL, brown, moist,	. 10YR 4/4, 10YR					- S-1	
-		- - - 581 -						E				
5-		-		END O	F TEST PIT AT 5.0	FT			_			
-		_										
-		_										
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-		576 -										
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-												
_		-										
-		_										
-		571 -										
15		571										
REMA	I IRKS.	:										
Т	HE S	TRATIF	ICATION LINES	REPRESENT	THE APPROXIMATE	BOUNDRY LINES B	ETWEEN SOIL	TYPES. IN-	SITU THE TRAN	ISITION M	IAY BE GRA	DUAL
						ASY M - MEDIUM D						
-				Not Enc.	▼ WL (Seasona	al High) Not Enc.	CONTRACTO		OPERATOR:		ake/mode	L:
		(Comp	,	Not Enc.	LETED.		Excavating		CAVE IN DEDTI		bcat E32	
ECS R	EY.:			DATE COMP Apr 24 2023	LETED:		UNITS: English		CAVE-IN-DEPTH	1:		
11.50				, ipi 24 2023		TEST PIT LO	_					

CLIEN		n Asse	t Management	PROJECT NO. 18:5941		SHEE 1 of 1	T:					
PROJE			e management	TEST PIT NO.:			ACE ELEVATION:					
			lighway Warehouse	TP-19		587.8				.0		
SITE L			ay, Newville, Pennsylvania, 17241			STATIO	ON:					
NORT			ay, Newville, Pellisylvalla, 17241	EASTING:								
				<u>'</u>		T.			~	F		
(FT)	WATER LEVELS	ELEVATION (FT)				EXCAVATION EFFORT		(F)	SAMPLE NUMBER	MOISTURE CONTENT (%)		
ОЕРТН (FT)	ER LE	ATIO	DESCRIPTION OF	MATERIAL		NOIL	DCP	QP (TSF)	LE N	JRE C		
DE	WAT	ELEV				CAVA			AMP	OIST L		
					W////////	EX			S	ž		
-		-	Topsoil Thickness[14.00"]									
_		-										
-		_	(CL) LEAN CLAY, orangish browr 7/8, 10YR 6/8	, moist, very stiff, 7.	5YR /////							
-		-	776, 1011 076		V////	_						
_		_			V////	Е		3.75	S-1			
_		-			\////							
_		-			\////							
-		583 –			V///)							
5-		363 -			V////							
-		_			\////							
_		-										
_		-	END OF TEST P	T AT 6.5 FT								
_		-										
_		_										
-		_										
-		_										
10-		578 –										
10-		-										
_		_										
-		-										
-		_										
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_		-										
		_										
_		-										
15		573 -										
REMA	RKS:											
TI	HE ST	FRATIF	ICATION LINES REPRESENT THE ΔΡΡΡΙ	OXIMATE BOUNDRY LIN	JES BETWEEN SOI	L TYPES IN	-SITU THF TRAN	ISITION M	AY BF GRA	DUAI		
- 11	THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT											
∇	WL (First E		(Seasonal High) Not Er			OPERATOR:	MA	AKE/MODE	L:		
			letion) Not Enc.	- ,	SA Way & So Excavating	n	Tim		ocat E32			
ECS RI	EP.:		DATE COMPLETED:		UNITS:		CAVE-IN-DEPTH	l:				
MSD Apr 24 2023 English												
			1	TEST PI	T LOG		1					

CLIEN		an Acco	t Management			PROJECT NO.: 18:5941		SHEE 1 of 1	ET:			
		NAME:	t ividinagement			TEST PIT NO.:			ACE ELEVATION:			
			lighway Wareho	ouse		TP-20		592.0				.6
SITE L 3485 F			ay, Newville, Pe	ennsylvania, 1	7241			STATIO	JN:			
NOR				•		EASTING:						,
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESC	ription of materia	NL		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
-		-	Topsoil Thi	ckness[11.0	00"]							
-		-	(ML) SILT, c	orangish bro	own, moist, 7.5YF	R 5/8, 7.5YR 6/8		E			- 5-1	
5-		587 -										
-		-		END O								
10-		582 -										
-15 -												
REMA			ICATION LINES	REPRESENT	THE APPROXIMATE	E BOUNDRY LINES B	ETWEEN SOIL	_ TYPES. IN	-SITU THE TRAN	ISITION M.	AY BE GRA	DUAL
				EXCAVA	TION EFFORT: E - E	ASY M - MEDIUM D	- DIFFICULT \	VD - VERY	DIFFICULT			
			Incountered)	Not Enc.	▼ WL (Seasona	al High) Not Enc.	CONTRACTO SA Way & Sor		OPERATOR:		AKE/MODE	L:
ECS R		ισοπρ	iction)	DATE COMP	I FTFD·		Excavating UNITS:		CAVE-IN-DEPTH		rout LJE	
MSD	LF			May 05 2023			English		CAVE-IIN-DEFT	1.		
ואוטט				IVIAY US 2023		TEST PIT LC						

CLIEN Appal		ın Asse	t Management			PROJECT NO.: 18:5941		SHEE 1 of 1	T:			
PROJE	CT N	IAME:				TEST PIT NO.:		SURFA	CE ELEVATION:			
			lighway Wareho	ouse		TP-21		597.5	NI.		EC	.6
SITE L 3485 F			ay, Newville, Pe	ennsylvania, 1	7241			STATIC	JN:			
NORT				· · · · · · · · · · · · · · · · · · ·		EASTING:		l				
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESC	RIPTION OF MATERIA	NL		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
-		-	Topsoil Thi			5/8 2 5VR 5/6					— S-1	
- - - - 5-		- - - - 593 -	(ML) SILI, r	eddish brov	wn, moist, 2.5YR	5/8, 2.5YR 5/6		E			3-1	
-	END OF TEST PIT AT 5.5 FT											
10-		588 - - - - - -										
583												
15												
REMA			ICATION LINES			E BOUNDRY LINES B ASY M - MEDIUM D				ISITION M	AY BE GRA	DUAL
\Box	WL	(First E	incountered)	Not Enc.	▼ WL (Season	al High) Not Enc.	CONTRACTOR	R:	OPERATOR:	M	AKE/MODE	L:
			letion)	Not Enc.	1 - (-1130)	5 , 115t 2.15t	SA Way & Son Excavating		Tim		bcat E32	
ECS R	EP.:			DATE COMP	LETED:		UNITS:		CAVE-IN-DEPTH	l:		
MSD				Apr 26 2023		TEAT 5:7 :	English					
						TEST PIT LC)G					

CLIEN		n Asso	t Management			PROJECT NO.: 18:5941		SHEE 1 of 1	T:				
		IAME:	t ivianagement			TEST PIT NO.:			CE ELEVATION:				
Propo	sed F	Ritner F	lighway Warehous	se		TP-22		599.8			E	<u>:0</u>	
SITE L			Naveilla Dani		244			STATIC	N:			23	
NORT			ay, Newville, Penr	nsylvania, 17	241	EASTING:							
												<u> </u>	
Ē	WATER LEVELS	ELEVATION (FT)						EXCAVATION EFFORT		(H	SAMPLE NUMBER	MOISTURE CONTENT (%)	
ОЕРТН (FT)	ER LE	ATIO		DESCF	RIPTION OF MATERIA	L		NOI	DCP	QP (TSF)	N N	RE C (%)	
DE	WAT	ELEV.						CAVA		σ	AMPI	JISTL	
								EX			S	M	
_		-	Topsoil Thick	ness[14.0	0"]								
_		_								4.00	S-1		
-		-	(CL) LEAN CL	.AY, reddisl	n brown, moist, l	nard, 5YR 5/8	1////	D		4.00	3-1		
_								U					
-		_					V///\						
		-											
		_		BUCKE	T REFUSAL AT 3.	5 FT							
-		-											
5-		595 –											
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		-											
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_		-											
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-		-											
-		_											
45		585 -											
15													
REMA	RKS:												
TI	HE S	ΓRATIF	ICATION LINES R	EPRESENT 1	THE APPROXIMATE	BOUNDRY LINES B	ETWEEN SOIL	TYPES. IN-	SITU THE TRAN	ISITION M	1AY BE GRA	DUAL	
				EXCAVAT	TION EFFORT: E - E	ASY M - MEDIUM D	- DIFFICULT VI	D - VERY D	OIFFICULT				
\Box	WL	(First E	ncountered) N	ot Enc.	▼ WL (Seasona	al High) Not Enc.	CONTRACTOR	:	OPERATOR:	M	ake/mode	L:	
•	WL	(Comp	letion) N	ot Enc.			SA Way & Son Excavating		Tim	Во	bcat E32		
ECS R	EP.:		D	ATE COMPL	ETED:		UNITS:		CAVE-IN-DEPTH	l:			
MSD May 05 2023 English													
			I			TEST PIT LC	G	I					

Appailable Management 385-594	CLIEN						PROJECT NO.:		SHEE	T:			
Proposed Rither Highway Newcolle, Pennsylvania, 17241 SASTING: STATION: SASS Rither Highway, Newcolle, Pennsylvania, 17241 SASTING:				t Management						OF FLEX.47.2			
SILE LOCALION: STATION:				liahway March	oueo.				I	CE ELEVATION:			10
SASS RITHOR Highway, Newville, Pennsylvania, 17241 LASTING:				ngnway waren	buse		1P-23)N·			
DESCRIPTION OF MATERIAL TOPSOIL THICKNESS[38.00"] C(L) LEAN CLAY, brown, moist, very stiff, 7.5YR 5/6 BUCKET REFUSAL AT 4.6 FT BUCKET REFUSAL AT 4.6 FT BUCKET REFUSAL AT 4.6 FT THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL EXCENSIVE STIFF TO SERVICE STIFF TO SERV				ay, Newville, P	ennsylvania, 1	7241			3,7,410				
Topsoil Thickness [18.00"] (CL) LEAN CLAY, brown, moist, very stiff, 7.5YR \$/6 M 2.25 S-1 603 608 608 10 608 HE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES, IN-SITU THE TRANSITION MAY BE GRADUAL EXCAVATION EFFORT; E - EASY M - MEDIUM D - DIFFICULT VO - VERY DIFFICULT W (First Encountered) Not Enc. W W/L (Completion) Not Enc. W W/L (Completion) Not Enc. Apr 26 2023 English CAVE-IN-DEPTH:							EASTING:		<u>'</u>				
CL) LEAN CLAY, brown, moist, very stiff, 7.5YR 5/6 M BUCKET REFUSAL AT 4.5 FT 608 608 608 THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL EXCAVATION EFFORT. E EASY M MEDIUM D DIFFICULT VD VERY DIFFICULT VWL (First Encountered) Not Enc. VWL (Seasonal High) Not Enc. CON IRACTOR: OPERATOR: MAKE/MODEL: Bobcat E32 80 May 8 Son Excavating TIM: SA Way 8 Son Excavating DATE COMPLETED: UNITS: CAVE-IN-DEPTH: Bobcat E32 ROBERT DATE COMPLETED: English	ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESC	eription of materi <i>a</i>	AL.		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
BUCKET REFUSAL AT 4.5 FT 608 608 608 608 THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT VD -	-		-				f 7 EVD E /G						
BUCKET REFUSALAT 4.5.51 608 -	-		-	(CL) LEAN	CLAY, brown	i, moist, very stir	I, 7.5YK 5/6		М		2.25	- S-1	
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT WL (First Encountered) Not Enc. WL (Completion) Not Enc. SA Way & Son Excavating ECS REP: DATE COMPLETED: UNITS: CAVE-IN-DEPTH: Bobcat E32	- - - -		- - - -		BUCKE	T REFUSAL AT 4.	5 FT						
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT WL (First Encountered) Not Enc. WL (Seasonal High) Not Enc. SA Way & Son Excavating EVEC REP.: DATE COMPLETED: UNITS: CAVE-IN-DEPTH: MSD DATE 2023	- - - - - - - -		 603										
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT WL (First Encountered) Not Enc. WL (Seasonal High) Not Enc. SA Way & Son Excavating EVEC REP.: DATE COMPLETED: UNITS: CAVE-IN-DEPTH: MSD DATE 2023		I NRKS:	<u> </u>										
ECS REP.: DATE COMPLETED: UNITS: CAVE-IN-DEPTH: MSD Apr 26 2023 English		HE S	TRATIF (First E	ncountered)	EXCAVA Not Enc.	TION EFFORT: E - E	ASY M - MEDIUM I	CONTRACTOF SA Way & Son	'D - VERY D	OPERATOR:	M	ake/modi	
MSD Apr 26 2023 English													
·		Lr.i								CAVL-IIN-DEPTI	1.		
	IVISD				Apr 26 2023		TEST DIT I						

CLIEN						PROJECT NO.:		SHEE	T:			
			t Management			18:5941		1 of 1	OF ELS. (1=: -			
		NAME:				TEST PIT NO.:			CE ELEVATION		E	0
			lighway Wareh	ouse		TP-24		615.5	NI.			•
SITE L			ay, Newville, P	ennsvlvania 1	7241			STATIC	JIN.			
NOR			iay, itemine, i	ciiiisyivaiiia, 1	, 2-72	EASTING:						
								FFORT			1BER	LTENT
DEРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESC	ERIPTION OF MATERIA	ı.L		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
-		-	Topsoil Th	ickness[16.(00"]							
-		-	(CL) LEAN 7.5YR 5/8,		ish brown, moist	, very stiff to harc	i,	M		3.50		
5-		611 -								4.00	S-1	
-		-		END C	F TEST PIT AT 6.5							
-		606										
10-		-										
- - - - 15		601 -										
REMA T			ICATION LINES			BOUNDRY LINES B ASY M - MEDIUM D				ISITION M	AY BE GRA	DUAL
$\overline{}$	\//I	/Firct =	ncountered)	Not Enc.	▼ WL (Season		CONTRACTO		OPERATOR:	N.4.	AKE/MODE	:1 ·
	▼ WL (Completion) Not Enc.				_ <u>▼</u> wr (season	arriigii/ NULEIIC.	SA Way & Sor Excavating	,	Tim		bcat E32	- L ·
ECS R	ECS REP.: DATE COMPLETED:						UNITS:		CAVE-IN-DEPT	- ⊣:		
MSD				Apr 26 2023		TEST DIT I	English					
						TEST PIT LO						

CLIEN	T:					PROJECT NO.:		SHEE	T:			
			t Management			18:5941		1 of 1				
		IAME:				TEST PIT NO.:		I	CE ELEVATION	:	L(0
			lighway Wareh	ouse		TP-25		621.2				-
SITE L			ay, Newville, P		7241			STATIC	DN:			
NORT			ay, Newville, P	ennsylvania, 1	7241	EASTING:						
NOIN		Ĭ.				L/OTIVO.						T
	S	Æ						EXCAVATION EFFORT			3ER	MOISTURE CONTENT (%)
DЕРТН (FT)	EVE	Z E								SF)	Σ	NON
TH	ER L	410		DESC	CRIPTION OF MATERIA	AL.		0	DCP	QP (TSF)	Z H	RE C (%)
DE	WATER LEVELS	ELEVATION (FT)						AVA A		Q	SAMPLE NUMBER	STU
	>	ш						EXC			SA	MO
		<u> </u>	Topsoil Th	ickness[22.0	00"1							
-		_	l opson m		,							
_		_										
-												
_			(CL) GRAV	ELLY LEAN C	CLAY, orangish bro	wn. moist. verv				3.25		
-		_		5/6, 7.5YR		, , , , , , , , , , , , , , , , , , , ,	- Y////I					
_		-	,				- Y////					
_		-					- Y///A					
		-					- Y///A	М				
		617 -					- Y///A	IVI				
		-					- Y///A					
5-		-					- Y////					
-		-					- Y////			2.75	S-1	
_		_					- V////					
-		_					- V////					
-		_					- V////					
-							- V///A					
_		-		BUCKE	T REFUSAL AT 8.	0 ET	////					
_		-		BUCKE	I REFUSALAI 6.	UFI						
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15												
REMA	RKS.											
ILLIVIA	IIINJ.											
Т	HE C	TRATIE	ICATION LINES	REDRESENT	THE APPROXIMATE	BULINDEA LINES I	RETIMEEN SOIL	TYPES IN	SITLI THE TRAF	NSITION N	1ΔV RE GRA	ULIAI
		. DOLL	IOMITON LINES		TION EFFORT: E - E					TOTAL ON IV	,, ii DE GIVE	DOAL
	\^/!	/First F	ncountar1				1				A V E / N A O D S	1.
-			ncountered)	Not Enc.	▼ WL (Season	ai Hign) Not Enc.	CONTRACTO		OPERATOR:		ake/mode	EL:
•	▼ WL (Completion) Not Enc.						Excavating	•	Tim	Вс	bcat E32	
ECS R	CCS REP.: DATE COMPLETED:						UNITS:		CAVE-IN-DEPT	H:		
MSD				Apr 26 2023			English					
						TEST PIT LO	OG					

Appailable Management 18594 1 of 1	CLIEN		n Acce	t Management		PROJECT NO.: 18:5941		SHEET 1 of 1	Γ:			
Proposed Rither Highway Newcolle, Pennsylvania, 17241 SASS Hither Highway, Newcolle, Pennsylvania, 17241 EASTING:				і іманадетені					CE ELEVATION:			
SASS RITHOR Highway, Newville, Pennsylvania, 17241 LASTING:	Propo	sed F	Ritner F	lighway Warehouse				630.0				[0
				No. No. 201 D	:- 47244			STATIO	N:			23
DESCRIPTION OF MATERIAL Value Part P				ay, Newville, Pennsylvan	ia, 1/241	EASTING:						
Topsoil Thickness[20.00"] (CL) LEAN CLAY, orangish brown, moist, very stiff, pinnacles, 7.5YR 6/8, 5YR 5/8 D 2.25 BUCKET REFUSAL AT 5.0 FT BUCKET REFUSAL AT 5.0 FT 10 - 620 -		•				1					1	L,
Topsoil Thickness[20.00"] (CL) LEAN CLAY, orangish brown, moist, very stiff, pinnacles, 7.5YR 6/8, 5YR 5/8 BUCKET REFUSAL AT 5.0 FT BUCKET REFUSAL AT 5.0 FT 10 - 620) E	ÆLS	(FT)					EFFOR		·:-	MBER	ONTEN
Topsoil Thickness[20.00"] (CL) LEAN CLAY, orangish brown, moist, very stiff, pinnacles, 7.5YR 6/8, 5YR 5/8 BUCKET REFUSAL AT 5.0 FT BUCKET REFUSAL AT 5.0 FT 10 - 620) H	R LE	NOIT		DESCRIPTION OF MATERIA	L		N 0	DCP	(TSF	N C	RE CC (%)
Topsoil Thickness[20.00"] (CL) LEAN CLAY, orangish brown, moist, very stiff, pinnacles, 7.5YR 6/8, 5YR 5/8 BUCKET REFUSAL AT 5.0 FT BUCKET REFUSAL AT 5.0 FT 10 - 620	DEP	VATE	LEVA					AVAT	_	ļ ģ	MPL	ISTUF
10 620 Second Figure 1		>	<u>ш</u>					EXC			SA	MO
pinnacles, 7.5YR 6/8, 5YR 5/8 BUCKET REFUSAL AT 5.0 FT 10 — 620 — 10 — 620 — 11 — 620 — 12 — 8EMARKS: THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL EXCAVATION EPPORT: E - LASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT WL (First Encountered) Not Enc. WL (Completion) Not Enc. WL (Completion) Not Enc. WAKE/MODEL: SA Way & Son Item Sharp Sale (May 05 2023) DATE COMPLETED: MSD May 05 2023 English CAVE-IN-DEPTH:			_	Topsoil Thickness[20.00"]							
pinnacles, 7.5YR 6/8, 5YR 5/8 BUCKET REFUSAL AT 5.0 FT 10 — 620 — 10 — 620 — 11 — 620 — 12 — 8EMARKS: THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL EXCAVATION EPPORT: E - LASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT WL (First Encountered) Not Enc. WL (Completion) Not Enc. WL (Completion) Not Enc. WAKE/MODEL: SA Way & Son Item Sharp Sale (May 05 2023) DATE COMPLETED: MSD May 05 2023 English CAVE-IN-DEPTH:			_									
pinnacles, 7.5YR 6/8, 5YR 5/8 BUCKET REFUSAL AT 5.0 FT 10 — 620 — 10 — 620 — 11 — 620 — 12 — 8EMARKS: THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL EXCAVATION EPPORT: E - LASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT WL (First Encountered) Not Enc. WL (Completion) Not Enc. WL (Completion) Not Enc. WAKE/MODEL: SA Way & Son Item Sharp Sale (May 05 2023) DATE COMPLETED: MSD May 05 2023 English CAVE-IN-DEPTH:	-		-									
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BUCKET REFUSAL AT 5.0 FT 10 — 620 — 16 — 620 — 16 — 620 — THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT V WL (First Encountered) Not Enc. V WL (Seasonal High) Not Enc. SA Way & Son Excavating Sobcate 32 ECS REP: DATE COMPLETED: MSD May 05 2023	-		-	pinnacles, 7.5YR 6	/8, 5YR 5/8		\///\l	D				
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NON	11114]				ENSTING.						E
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESC	RIPTION OF MATERIA	L		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
-		-	Topsoil Thi	ckness[10.0	0"]							
- - - -		- - - -		CLAY, brown YR 6/8, 7.5\		own, moist, stiff t	0	М		1.50	5.1	
5-		612 – -								3.75	S-1	
-		- - - -		BUCK	ET REFUSAL AT 6	FT						
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4.5		-										
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		IAME:	t management		PIT NO.:			E ELEVATION:			
			lighway Warehouse	TP-28	8		610.8			EO	.0
SITE L			ay, Newville, Pennsylvania, 17241				STATIO	N:			
NORT			ay, Newville, Perinsylvania, 17241	EAST	TING:						
				•			RT			· ·	L _N
E	WATER LEVELS	(FT)					EXCAVATION EFFORT		(c	SAMPLE NUMBER	MOISTURE CONTENT (%)
DЕРТН (FT)	R LE	NOIL	DESCRIPTION OF	MATERIAL			N O	DCP	QP (TSF)	E NC	3E CC (%)
DEF	NATE	ELEVATION (FT)					AVAT		ğ	MPL	ISTUI
		"					EXC			S	MO
		-	Topsoil Thickness[12.00"]								
		-									
_		-	(ML) SILT, brown, moist, 5YR 5/8	3							
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-		-					D				
-										S-1	
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5-		606 –									
		-	BUCKET REFUSA	AL AT 5.0 FT							
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∇	WL	(First E	ncountered) Not Enc. 🗷 WL	(Seasonal High	h) Not Enc.	CONTRACTOR:	C	PERATOR:	MA	AKE/MODE	L:
•	WL	(Comp	letion) Not Enc.			SA Way & Son Excavating	1	īm	Bol	bcat E32	
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		NAME:	t ivianagement			TEST PIT NO.:			ACE ELEVATION:			
			lighway Warehou	se		TP-29		604				.0
SITE L 3485 F			ay, Newville, Pen	nsvlvania. 17	7241			STATIO	ON:			
NOR			.,, .	., ,		EASTING:		l				
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESCI	RIPTION OF MATERIA	ıL		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
-			Topsoil Thick	kness[12.0	0"]							
-		-	(ML) SILT, br 6/8, 7.5YR 5		t, pinnacles on w	vest wall, 7.5YR		D			S-1	
_		_		END O	F TEST PIT AT 3.5	FT						
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			lighway Wareho	ouse		TP-30		614				.0
SITE LO 3485 R			ay, Newville, Pe	ennsvlvania. 1	7241			STATIO	ON:			
NORT			., .			EASTING:		l				
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESC	RIPTION OF MATERIA	NL		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
_		-	Topsoil Thi	ckness[12.0	00"]							
-		- - - -		orangish bro	own, moist, pinna 6/8	acles on north		D			S-1	
5-		609 –		BUCKE	T REFUSAL AT 5.0							
10-		604		BOOKE	TREI OGALAI 3.							
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			lighway Warehouse		TP-31		612				. 0
SITE L			ay, Newville, Pennsylva	ania. 17241			STATIO	ON:			
NOR					EASTING:						
							RT			~	Z
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESCRIPTION OF MATERIA	NL		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
-		- - - -	north wall, 5YR 5	n brown, moist, pinnac			D			S-1	
5-		607 -									
-		-									
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ECS R		/comb	,	COMPLETED:		Excavating UNITS:		CAVE-IN-DEPTH		- 344 1.74	
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SITE LOCATION: MARKENING: FASTING:	PROJE	CT N	NAME:				TEST PIT NO.:		SURFA				
MORTHING: EASTING:				lighway Wareho	ouse		TP-32						36
DESCRIPTION OF MATERIAL Topsoil Thickness[14.00"] (ML) SILT, orangish brown, moist, 5YR 5/8, 7.5YR 5/8 BUCKET REFUSAL AT 4.0 FT 5-1 588- 10- 588- THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL PROXIMATE REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL PROXIMATE REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL PROXIMATE REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL PROXIMATE REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL PROXIMATE REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL PROXIMATE REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL PROXIMATE REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL PROXIMATE REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL PROXIMATE REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL PROXIMATE REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL PROXIMATE REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL PROXIMATE REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL PROXIMATE REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL PROXIMATE REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL PROXIMATE REPRESENT THE APPROXIMATE REPRESENT THE				ay, Newville, Pe	ennsylvania, 1	7241			SIAIN	JIV.			
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-		_	-									
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		576 -										
15		-										
REMA	RKS.											
			ICATION LINES	DEDDESENIT	THE ADDROVINANTE	BOUNDRY LINES B	ETWEEN SOU	I TVDEC IN	SITI I THE TRAN	ISITIONI M	AV DE CDA	DUAL
	IL 3	INALIF	ICATION LINES			ASY M - MEDIUM D				ואו אוטוווכי	AI DE UKA	DOAL
\Box	\\/\/	(First F	incountered)	Not Enc.	▼ WL (Seasona		CONTRACTO		OPERATOR:	NA/	AKE/MODE	I ·
				Not Enc.	→ ANT (2692011¢	arringiij NOLENC.	SA Way & So		Tim		bcat E32	L.
		Comp	<u> </u>		I ETED.		Excavating UNITS:				ucdi E3Z	
ECS R				DATE COMP	LLIEU.				CAVE-IN-DEPTH	1.		
IVISUZ	•			Apr 27 2023		TEST PIT LO	English OG					

CLIEN		n Acce	t Management		PROJECT NO.: 18:5941		SHEET 1 of 1	:			
PROJE			. Management		TEST PIT NO.:			CE ELEVATION:			
			lighway Warehous	e	TP-37		593.5			EC	.0
SITE L			ay, Newville, Penn	sylvania 17241			STATIO	N:			
NORT			(ay) (10 00 0 mc) (cm.	(Sylvama) 17241	EASTING:						
							RT			~	F
Ê	WATER LEVELS	ELEVATION (FT)					EXCAVATION EFFORT		F)	SAMPLE NUMBER	MOISTURE CONTENT (%)
DЕРТН (FT)	ER LE	ATIO		DESCRIPTION OF MATERIA	L		NOIL	DCP	QP (TSF)	N H	RE C (%)
DE	WAT	ELEV,					CAVA		Ø	AMPI)ISTL
						V//8///8///	× E			S	Ĭ
-		_	Topsoil Thickr	ness[10.00"]							
-	-	-	(ML) SILT, ora	ngish brown, moist, 7.5YR	R 6/8, 7.5YR 5/8						
-		_									
		_									
_		-									
-	-	_					М			S-1	
-		-									
_		589 –									
5-		_									
-		-									
-	 										
-		-		END OF TEST PIT AT 7 I	FT			_			
		_									
-		_									
-		-									
-		584 –									
10-		-									
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-		579 –	-								
15		_									
REMA	RKS:							•		•	
Т	HE S	ΓRATIF	ICATION LINES RE	EPRESENT THE APPROXIMATE	BOUNDRY LINES B	ETWEEN SOIL T	YPES. IN-S	SITU THE TRAN	SITION M	AY BE GRAI	DUAL
				EXCAVATION EFFORT: E - EA	ASY M - MEDIUM D	- DIFFICULT VD	- VERY D	IFFICULT			
\Box	WL	(First E	ncountered) No	ot Enc. WL (Seasona	al High) Not Enc.	CONTRACTOR:	C	OPERATOR:	MA	AKE/MODE	L:
	WL	(Comp	letion) No	ot Enc.		SA Way & Son Excavating		Tim	Bol	bcat E32	
ECS R	EP.:		DA	ATE COMPLETED:		UNITS:	(CAVE-IN-DEPTH	: :		
MSD2 Apr 27 2023 English									_		
					TEST PIT LC)G					

CLIEN		n Asso	t Management		PROJECT NO.: 18:5941		SHEET 1 of 1	:			
		IAME:	t management		TEST PIT NO.:			CE ELEVATION:			
			lighway Warehouse		TP-38		600.5				.0
SITE L			ay, Newville, Pennsyl	luania 17241			STATIO	N:			
NORT			ay, Newville, Pellisyl	valia, 17241	EASTING:						
					I.		T.			T ~	늘
F	ELS	(FT)					EXCAVATION EFFORT			SAMPLE NUMBER	MOISTURE CONTENT (%)
DЕРТН (FT)	\ LEV	NOI		DESCRIPTION OF MATERIA	L		N B	DCP	QP (TSF)	N N	E CO %)
DEPT	WATER LEVELS	ELEVATION (FT)					WATI		QP	APLE	TUR.
	>						EXCA			SAN	MOIS
			Topsoil Thickne	ss[12.00"]							
-		-		35(==:00)							
_		-	(ML) SILT, reddi	sh brown, moist, pinnna	acles on south					S-1	
-		-	wall, 5YR 6/8, 5								
_		-					D				
-		_									
		-									
_		_									
END OF TEST PIT AT 4 FT											
5-		_									
-		_									
_		-									
-		-									
_		-									
-		-									
_		-									
-		591 –									
10 –		-									
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_											
_		586 –									
15											
REMA	RKS:										
I LIVI	mo.										
TI	HE ST	ΓRATIF	ICATION LINES REPF	RESENT THE APPROXIMATE	BOUNDRY LINES B	ETWEEN SOIL T	YPES. IN-S	SITU THE TRAN	SITION M	AY BE GRA	DUAL
				EXCAVATION EFFORT: E - E	ASY M - MEDIUM D	- DIFFICULT VI	O - VERY D	IFFICULT			
∇	WL ((First E	ncountered) Not E	Enc. W L (Seasona	al High) Not Enc.	CONTRACTOR:	(OPERATOR:	MA	AKE/MODE	L:
•	WL ((Comp	letion) Not E	Enc.		SA Way & Son Excavating	-	Гim	Bol	bcat E32	
ECS R				E COMPLETED:		UNITS:	(CAVE-IN-DEPTH	: :		
MSD2			Apr	27 2023		English					
			1		TEST PIT LC	G					

CLIENT: Appalachian Asset Management	PROJECT NO.: 18:5941		SHEET: 1 of 1				
PROJECT NAME:	TEST PIT NO.:			E ELEVATION:			
Proposed Ritner Highway Warehouse	TP-39		606.5				.0
SITE LOCATION: 3485 Ritner Highway, Newville, Pennsylvania, 17241			STATION	N:			
NORTHING:	EASTING:						
	·		RT			~	F
DEPTH (FT) WATER LEVELS ELECATION (FT) BATTER LEVELS ELECATION (FT)			EXCAVATION EFFORT		<u></u>	SAMPLE NUMBER	MOISTURE CONTENT (%)
DESCRIPTION OF MATER EVATION DESCRIPTION DESCRIPTION THE NAME OF THE NAME	RIAL		NOI	DCP	QP (TSF)	ni N ∪	RE CC (%)
MATE WATE			AVAT		ď	MPL	ISTU
			EXC			SA	Θ M
Topsoil Thickness[10.00"]							
(ML) SILT WITH GRAVEL, reddish bro	un maist ninnaala						
on north wall, 5YR 6/8, 5YR 5/8	wii, ilioist, piiliiacie	5					
			D				
602						S-1	
5-							
BUCKET REFUSAL AT	6 FT						
BOOKET KEI GOALAI							
- -							
597 –							
10 -							
592 –							
15							
REMARKS:				1	I	1	1
THE STRATIFICATION LINES REPRESENT THE APPROXIMA	TE DOLINDOV LINES D	ET/M/EFNICOU TV	DEC IN C	ITH THE TRAN	CITION! N 4	AV DE CDAI	TIAI .
EXCAVATION EFFORT: E -					JITION IVI	AI DL GNAI	JUAL
	onal High) Not Enc.	CONTRACTOR:		PERATOR:	I _M Z	AKE/MODE	l :
▼ WL (Completion) Not Enc.	marringii/ NOLLIIC.	SA Way & Son		im		bcat E32	- •
ECS REP.: DATE COMPLETED:		Excavating UNITS:		:AVE-IN-DEPTH		ocat L32	
MSD2 Apr 27 2023		English		ANT HA-DEFIE			
Apr 27 2023	TEST PIT LC						

CLIENT: Appalachian Asset Management						PROJECT NO.:	5941 1 of		Г:			
			t Management			18:5941		1 of 1	CE ELEVATION			
PROJE			lighway Wareho			TEST PIT NO.: TP-40		610.8	CE ELEVATION:		E	
SITE L			ngnway warenc	Juse		17-40		STATIO	ıN·			
			ay, Newville, Pe	ennsylvania, 17	7241			3,7,4,10				
NORT						EASTING:		'				
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESC	ription of materia	ıL		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
_		-	Topsoil Thi	ckness[12.0	0"]							
5-		606 -			GRAVEL, orangi: 10YR 6/8, 5YR 6,			М			- S-1	
10		601 — - - - - - - - 596 —		END O	F TEST PIT AT 10	FT						
REMA Ti			ICATION LINES			BOUNDRY LINES B ASY M - MEDIUM D				ISITION M	AY BE GRA	DUAL
∇	WL (First F	ncountered)	Not Enc.	▼ WL (Seasona	al High) Not Enc.	CONTRACTOR	R: (OPERATOR:	M	AKE/MODE	L:
▼ WL (Completion) Not Enc.						SA Way & Son Excavating		Tim		bcat E32	-	
ECS REP.: DATE COMPLETED:						UNITS:	ŀ	CAVE-IN-DEPTH	1 :			
MSD2	D2 Apr 27 2023						English					
1						TEST PIT LO	U					

CLIENT: Appalachian Asset Management PROJECT NAME: Proposed Ritner Highway Warehouse						PROJECT NO.: 18:5941		SHEET: 1 of 1 SURFACE ELEVATION:				
PROJE	CT N	NAME:				TEST PIT NO.:				•		
			lighway Wareh	ouse		TP-41		607	ON		L (:6
SITE L 3485 I			ay, Newville, P	ennsylvania, 1	7241			STATI	ON:			
NOR				•		EASTING:						
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESC	RIPTION OF MATERIA	ı.L		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
-		-	Topsoil Th	ickness[13.0	00"]							
-	(CL) LEAN CLAY, reddish brown, moist, very stiff, 602 BUCKET REFUSAL AT 5 FT							M		2.75	- 5- 1	
5-		602 -		BUCK	ET REFUSAL AT 5	FT						
-												
10-		597 - - - -										
-		-										
15												+
REMA			ICATION LINES	S REPRESENT	THE APPROXIMATE	BOUNDRY LINES B	ETWEEN SOII	L TYPES. IN	I-SITU THE TRAN	NSITION N	1AY BE GRA	ADUAL
EXCAVATION EFFORT: E - EASY M - MEDIUM I						- DIFFICULT	VD - VERY	DIFFICULT				
	✓ WL (First Encountered) Not Enc.✓ WL (Seasonal High) Not Enc.✓ WL (Completion)✓ WL (Completion)					al High) Not Enc.	CONTRACTO SA Way & Soi		OPERATOR:		AKE/MODE	ĒL:
ECS R		ισοιτιρ	neuon)	DATE COMP	I ETED:		Excavating UNITS:		CAVE-IN-DEPT		ωιαι Ε3 2	
							English		CAVE-IIN-DEPTI	11.		
IVISUZ	MSD2 May 04 2023 TEST											

Appalachian Asset Management PROJECT NAME: Proposed Ritner Highway Warehouse STE LOCATION: 3485 Ritner Highway, Newville, Pennsylvania, 17241 NORTHING: CL) HAD DESCRIPTION OF MATERIAL DESCRIPTION OF MATERIAL Test PIT NO.: SURFACE ELEVATION: 605.5 STATION: AD O O O O O O O O O O O O O O O O O O O	MOISTURE CONTENT (%)
SITE LOCATION: 3485 Ritner Highway, Newville, Pennsylvania, 17241 NORTHING: EASTING: DESCRIPTION OF MATERIAL Topsoil Thickness[14.00"] (CL) LEAN CLAY WITH GRAVEL, reddish brown, moist,	MOISTURE CONTENT (%)
NORTHING: EASTING: DESCRIPTION OF MATERIAL Topsoil Thickness[14.00"] (CL) LEAN CLAY WITH GRAVEL, reddish brown, moist, 2.75 S-1	MOISTURE CONTENT (%)
NORTHING: EASTING: DESCRIPTION OF MATERIAL Topsoil Thickness[14.00"] (CL) LEAN CLAY WITH GRAVEL, reddish brown, moist, 2.75 S-1	MOISTURE CONTENT (%)
Topsoil Thickness[14.00"] (CL) LEAN CLAY WITH GRAVEL, reddish brown, moist, 2.75 S-1	MOISTURE CONTENT (%)
Topsoil Thickness[14.00"] (CL) LEAN CLAY WITH GRAVEL, reddish brown, moist, 2.75 S-1	MOIST
(CL) LEAN CLAY WITH GRAVEL, reddish brown, moist,	
Very still, plillacie oli west wall, 51k 6/8, 51k 3/8	
BUCKET REFUSAL AT 4.0 FT	
596-	
REMARKS:	
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GR. EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT	
✓ WL (First Encountered) Not Enc. ▼ WL (Seasonal High) Not Enc. CONTRACTOR: OPERATOR: MAKE/MOD	EL:
▼ WL (Completion) Not Enc. SA Way & Son Excavating Tim Bobcat E32	
ECS REP.: DATE COMPLETED: UNITS: CAVE-IN-DEPTH:	
MSD2 May 04 2023 English TEST PIT LOG	

CLIENT: Appalachian Asset Management PROJECT NAME: Proposed Ritner Highway Warehouse						PROJECT NO.: 18:5941			SHEET: of 1 URFACE ELEVATION:			
			anagement			TEST PIT NO.:			CE ELEVATION:			
			lighway Wareho	ouse		TP-43		613				<u>:0</u>
SITE L			ay, Newville, Pe	nnsylvania 1	72/1			STATIC	DN:			
NORT			ay, Newville, Fe	iiiisyivaiiia, 1	,241	EASTING:						
DEPTH (FT)	WATER LEVELS	ELEVATION (FT)		DESC	ription of materia	L		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
- - - -		- - - -		CLAY WITH (ontains bou	GRAVEL, reddish Ilders, 5YR 6/8, 5	YR 5/8		D		2.75	S-1	
5		608										
▼ WL (Completion) Not Enc. SA Way & Son Excavating Tim Bobcat E32									ake/mode			
ECS R	CCS REP.: DATE COMPLETED:						UNITS:		CAVE-IN-DEPTH	H:		
MSD2							English					
1						TEST PIT LC)G					

CLIENT: Appalachian Asset Management						PROJECT NO.:	1 of 1					
			t Management			18:5941			OF ELEV			
		NAME:	liaha 164t			TEST PIT NO.:		l l	CE ELEVATION	:	L(0
SITE L			lighway Wareh	ouse		TP-44		604.5 STATIC	NI.			, V
			ay, Newville, P	ennsvlvania. 1	7241			STATIC	/IN.			
NOR			ay, itemonic, i	cimoyitama, 1	72-72	EASTING:						
						1		EXCAVATION EFFORT			SER	MOISTURE CONTENT (%)
DЕРТН (FT)	WATER LEVELS	ELEVATION (FT)						<u> </u>		SF)	SAMPLE NUMBER	NO
PTH	ER L	ATIO		DESC	CRIPTION OF MATERIA	AL.		NOI	DCP	QP (TSF)	Z H	RE C (%)
DE	WAT	:LEV						AVA			MP	ISTL
								EX			<i>ts</i>	Σ
-		_	Topsoil Th	ickness[12.0	00"]							
_		-		WITH SAND	reddish brown,	moist, 5YR 5/8,					S-1	
-		-	5YR 6/8								3-1	
-		-						M				
_		600 -										
5-		600-										
]												
_												
_		_		END C	OF TEST PIT AT 6.0	FT						
_			_									
-		_	_									
_		-	-									
-		_	_									
_		-	_									
-		595 -	-									
10-	-		-									
-	1	-	_									
-	-	-	_									
-		-	-									
-	-											
-	-	-	-									
-	1	-	-									
-		-										
-	1	-	_									
-		590 -	_									
15												
REMA	IRKS.											
т	ΠΕ c.	TRATIC	ICATION LINE	SPEDDECENIT	THE ADDDOVINANT	BUINDDA LINEC	SET/W/EENI SOII	TVDEC IN	CITI I TUE TD A N	ISITION A	ANV DE CD	/DII/I
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY EXCAVATION EFFORT: E - EASY M - ME										N NIOITIE	ייעו מר מעד	NUOAL
✓ WL (First Encountered) Not Enc. ✓ WL (Seasonal High) N							CONTRACTOR		OPERATOR:	М	AKE/MODI	 EL:
▼ WL (Completion) Not Enc.						SA Way & Son	,	Tim		bcat E32		
ECS R	EP.:			DATE COMP	LETED:		UNITS:		CAVE-IN-DEPTI	 -		
MSD2							English					
				<u> </u>		TEST PIT LO	ÖG					

CLIEN		n Acce	t Managamast			PROJECT NO.: 18:5941		SHEE 1 of 1	T:			
		NAME:	t Management			TEST PIT NO.:			ACE ELEVATION:			
			lighway Wareh	ouse		TP-45A		603.8			E	<u>:C</u>
SITE L 3485 I			ay, Newville, Po	ennsvlvania. 1	7241			STATIC	ON:			
NOR				.,,		EASTING:		l				
DEPTH (FT)	WATER LEVELS	ELEVATION (FT)		DESC	eription of materia	sL		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
-		-	Topsoil Thi	ckness[20.0	00"]							
- - - -		-	(ML) SILT V	VITH SAND,	reddish brown, I	moist, 5YR 5/8,		Е			3-1	
5		599		END O	OF TEST PIT AT 4.5	FT						
	DVC	<u> </u>										
REMA			ICATION LINES		THE APPROXIMATE					ISITION M	1AY BE GRA	DUAL
▼ WL (First Encountered) Not Enc. ▼ WL (Seasonal High) Not Enc.						al High) Not Enc.	CONTRACTOR		OPERATOR:	M	AKE/MODE	L:
	▼ WL (Completion) Not Enc.						SA Way & Son Excavating		Tim	Во	bcat E32	
ECS R	ECS REP.: DATE COMPLETED:						UNITS:		CAVE-IN-DEPTI	H:		
MSD2							English					
						TEST PIT LC)G		<u> </u>			

CLIEN		_				PROJECT NO.:		SHEET	Γ:			
PROJE			t Management			18:5941 TEST PIT NO.:		1 of 1	CE ELEVATION:			
			lighway Wareho	ouse		TP-46		619.8	02 222 77 11 10 111		LC	
SITE LO								STATIO	N:			
3485 R NORT			ay, Newville, Pe	ennsylvania, 17	⁷ 241	EASTING:						
NORT	ПІМ	G: 				EASTING:						
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESCI	RIPTION OF MATERIA	ıL		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
_		-	Topsoil Thi	ckness[12.0	0"]							
5-		615			WITH GRAVEL, o	orangish brown,		M		2.75	- S-1	
10		610		END O	F TEST PIT AT 10	FT						
REMA	RK¢.											
			ICATION LINES			BOUNDRY LINES B ASY M - MEDIUM D				ISITION M	AY BE GRA	DUAL
∇	WL ((First E	ncountered)	Not Enc.	▼ WL (Seasona	al High) Not Enc.	CONTRACTOR	R: 0	OPERATOR:	MA	AKE/MODE	L:
▼ WL (Completion) Not Enc.						SA Way & Son Excavating		Tim		ocat E32		
ECS RE	P.:			DATE COMPI	LETED:		UNITS:		CAVE-IN-DEPTH	1:		
MSD2	May 01 2023						English					
						TEST PIT LC	JG					

CLIENT: Appalachian Asset Management						PROJECT NO.: SHEET: 1 of 1						
			t Management						OF ELEVATION:			
		NAME:	lighway Wareh	ouso Dovolos	mont	TEST PIT NO.: TP-47		SURFA 617.5	CE ELEVATION:			10
SITE L			ngnway waren	ouse Developi	nent	1P-47		STATIC)N·			
			ay, Newville, P	ennsylvania, 1	7241			3171110				
NOR	HIN	G:				EASTING:		1				
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESC	CRIPTION OF MATERIA	AL		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Th	ickness[6.00)"]					2.00	C 1	24.2
5-		613 -		ans boulder	CLAY, reddish bro s, 2.5YR 5/8, 2.5Y	(R 4/8	204040404040404040404040404040404040404	VD		2.00	S-1	31.3
10-		608 -										
15												+
THE STRATIFICATION LINES REPRESENT THE APPROXIMAL EXCAVATION EFFORT: E - ✓ WL (First Encountered) Not Enc. ✓ WL (Completion) Not Enc.							CONTRACTOF	'D - VERY D		М	IAY BE GRA AKE/MODE bcat E32	
					U ETED.		Excavating				ocal E32	
ECS REP.: DATE COMPLETED:							UNITS:		CAVE-IN-DEPTH	1:		
MSD2	SD2 May 01 2023					TECT DIT !	English					
						TEST PIT LO						

CLIEN		n Asso	t Management		PROJECT NO.: 18:5941		SHEET	:			
		IAME:	. management		TEST PIT NO.:			E ELEVATION:			
			lighway Warehouse		TP-48		603.8				.0
SITE L			ay, Newville, Pennsylvania, 1724	1			STATION	N:			
NORT			ay, Newville, Fermsylvama, 1724		EASTING:						
							RT			~	Z
E	WATER LEVELS	ELEVATION (FT)					EXCAVATION EFFORT			SAMPLE NUMBER	MOISTURE CONTENT (%)
DЕРТН (FT)	R LE	TION	DESCRIP	TION OF MATERIAL	L		NOI	DCP	QP (TSF)	E NO	3E CC (%)
DEF	WATE	.LEV#					AVAT		ğ	MPL	ISTUI
		Ш					EXC			SA	MO
		-	Topsoil Thickness[12.00"]							
		-								S-1	
_		-	(ML) SILT, light brown and	d orangish bro	wn, moist, 10YR					3-1	
_		_	7/6, 10YR 6/6								
-		-					E				
-											
-		_									
_		_									
5-		599 –	END OF T	TEST PIT AT 4.5	FT						
_		-									
_		-									
-		-									
-		_									
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-		_									
_		_									
10-		594 –									
10-		-									
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-		-									
_											
-		_									
_		_									
15 589 -											
REMARKS:											
REMA	RKS:	•									
Т	HE S	TRATIF	ICATION LINES REPRESENT TH	E APPROXIMATE	BOUNDRY LINES B	ETWEEN SOIL T	YPES. IN-S	ITU THE TRAN	SITION M	1AY BE GRA	DUAL
			EXCAVATIO	N EFFORT: E - EA	ASY M - MEDIUM D	- DIFFICULT VD	- VERY DI	FFICULT			
∇	WL	(First E	ncountered) Nøt Ene:	▼ WL (Seasona	l High) Not Enc.	CONTRACTOR:	С	PERATOR:	M	ake/mode	 L:
						SA Way & Son Excavating	1	īm	Во	bcat E32	
						UNITS:	C	AVE-IN-DEPTH	l:		
MSD2			May 01 2023			English					
			I		TEST PIT LC	G					

CLIEN		n Asso	t Management		PROJECT NO.: 18:5941		SHEET:	:			
		IAME:	t ivianagement		TEST PIT NO.:			E ELEVATION:			
			lighway Warehouse		TP-49		603.2				.0
SITE L			ay, Newville, Pennsylva	ania 172/11			STATION	٧:			
NORT			ay, Newville, Fermisylvi	ania, 17241	EASTING:						
							RT			~	Z
F.	ÆLS	ELEVATION (FT)					EXCAVATION EFFORT		(SAMPLE NUMBER	MOISTURE CONTENT (%)
ОЕРТН (FT)	R LE	NOIL		DESCRIPTION OF MATERIA	L		ON	DCP	QP (TSF)	N	(%)
DEP	WATER LEVELS	LEVA					AVAT		g	MPLE	STUF
	>	Ш					EXC			SA	MO
			Topsoil Thicknes	s[10.00"]							
-		-									
		_	(ML) SILI, reddisi 5YR 5/8	h brown and brown, m	oist, 10YR 5/6,						
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_		-	•	END OF TEST PIT AT 6.5	FI						
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REMA	RKS:										
TI	HE ST	ΓRATIF	ICATION LINES REPRE	ESENT THE APPROXIMATE	BOUNDRY LINES B	ETWEEN SOIL T	YPES. IN-S	ITU THE TRAN	SITION M	AY BE GRA	DUAL
				XCAVATION EFFORT: E - EA							
∇	WL ((First E	ncountered) Not Er	nc. V WL (Seasona	al High) Not Enc.	CONTRACTOR:	C	PERATOR:	MA	AKE/MODE	L:
			letion) Not En			SA Way & Son	1	im		bcat E32	
ECS REP.: DATE COMPLETED:						Excavating UNITS:	С	AVE-IN-DEPTH	 :		
MSD2 May 01 2023						English					
			, 0		TEST PIT LO						

CLIEN'		n Acco	t Management			PROJECT NO.: 18:5941	1 of 1					
PROJE			t ivialiagement			TEST PIT NO.:			CE ELEVATION:			
			lighway Wareho	use		TP-50		604.2			E	:0
SITE LO			ay, Newville, Pe	nnsulvania 17	7241			STATIC	ON:			
NORT			ay, Newville, Fe	illisylvailla, 17	7241	EASTING:						
								T.			~	F
(L	ELS	(FT)						EXCAVATION EFFORT			SAMPLE NUMBER	MOISTURE CONTENT (%)
Н (F	× LE√	NO!		DESC	RIPTION OF MATERIA	.L		NO	DCP	QP (TSF)	N N	E CO %)
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)						VATI		9	APLE	TUR.
	>	日日						EXCA			SAN	MOIS
		-	Topsoil Thic	ckness[6.00	"]							
-		-			rown and reddis	h brown, moist,						
		_	very stiff, 5									
		-					V///\					
		-					- V///A					
		-	_				V////					
		_					- Y///A	М		3.00	S-1	
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REMARKS:												
	HE ST	TRATIF	ICATION LINES	REPRESENT	THE APPROXIMATE	BOUNDRY LINES B	ETWEEN SOIL	TYPES: IN-	-SITU THE TRAN	SITION M	AY BE GRA	DUAL
7.			20			ASY M - MEDIUM D						
∇	WL ((First E	ncountered)	Not Enc.	▼ WL (Seasona	al High) Not Enc.	CONTRACTOR	R:	OPERATOR:	MA	AKE/MODE	L:
						SA Way & Son Excavating		Tim	Bol	ocat E32		
ECS RI	CCS REP.: DATE COMPLETED:						UNITS:		CAVE-IN-DEPTH	l:		
MSD2							English					
				i		G						

Application Asset Management 135-594 1.0 ft 1.0	CLIEN						PROJECT NO.:		SHEE	T:			
Proposed Riner Highway Newville, Pennsylvania, 17241 SASTINOS: STATIONS: STATIONS: SASTINOS: STATIONS: SASTINOS: SASTINOS:				t Management						CE ELEVATION			
3455 Street Highway, Newville, Pennsylvania, 37241 NORTHER: LASTING: L				lighway March	nuse				l l	ce elevation:			10
3485 REF. DATE COMPLETED: LASTING: LA				iigiiway waieii	buse		11-31			N:			
DESCRIPTION OF MATERIAL 10				ay, Newville, Po	ennsylvania, 1	7241							
Topsoil Thickness(11.00") (ML) SILT WITH GRAVEL, reddish brown, moist, 5YR 5/6 BUCKET REFUSAL AT 4.0 FT BUCKET REFUSAL	NOR	ΓΗIN	G:	1			EASTING:		•				
(ML) SILT WITH GRAVEL, reddish brown, moist, 5VR 5/6 BUCKET REFUSAL AT 4.0 FT 609 604 10 604 604 FREMARKS: THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL EXCAVATION EFFORT. E EASY M MEDIUM D DIFFICULT U VERY DIFFICULT V. WL (First Encountered) Not Enc. V. WL (Seasonal High) Not Enc. SON MAY 01 2023 AVM 9 & Son Excavating EXCAVATION: Bobcat €32 Bobcat €32 CAVE-IN-DEPTH: MSD2 May 01 2023 English	ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESC	CRIPTION OF MATERIA	AL		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
BUCKET REFUSAL AT 4.0 FT BUCKET REFUSAL AT 4.0 FT BOUGHT REFUSAL AT	-		-	Topsoil Thi	ckness[11.0	00"]							
609- 10 604- 16 599 REMARKS: THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES, IN-SITU THE TRANSITION MAY BE GRADUAL EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT W. W.L. (First Encountered) Not Enc. W. W.L. (Completion) Not Enc. W. W.L. (Completion) Not Enc. SA Way & Son Tim Bobcat E32 ECS REP: DATE COMPLETED: UNITS: CAVE-IN-DEPTH:	-		-	(ML) SILT \	VITH GRAVI	EL, reddish browi	n, moist, 5YR 5/6		М			- S-1	
10	_	1			BUCKE	T REFUSAL AT 4.	0 FT						
REMARKS: THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT ✓ WL (First Encountered) Not Enc. ✓ WL (Seasonal High) Not Enc. SA Way & Son Excavating ECS REP.: DATE COMPLETED: May 01 2023 English CAVE-IN-DEPTH:	10-		604 -										
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL EXCAVATION EFFORT: E - EASY M - MEDIUM D - DIFFICULT VD - VERY DIFFICULT WL (First Encountered) Not Enc. WL (Seasonal High) Not Enc. SA Way & Son Excavating EVEC REP.: DATE COMPLETED: May 01 2023 English DATE ON PROXIMATE BOUNDRY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL EXCAVATION MAY BE GRADUAL EXCAVATION MAY BE GRADUAL EVELOP OF THE TRANSITION MAY BE GRADUAL EXCAVATION MAY BE GRADUAL EVELOP OF THE TRANSITION MAY BE GRADUAL EXCAVATION EFFORT: UNITS: CAVE-IN-DEPTH: MSD2													
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MSD2 May 01 2023 English	•	▼ WL (Completion) Not Enc.				<u> </u>	SA Way & Son Excavating	1	Tim	Во			
	ECS R	ECS REP.: DATE COMPLETED:						UNITS:		CAVE-IN-DEPTI	H:		
	MSD2	2			May 01 2023	3	TFST DIT I						

CLIEN		n Acc-	t Managamart			PROJECT NO.: 18:5941		SHEET 1 of 1	:			
PROJE			t Management			TEST PIT NO.:			CE ELEVATION:			
			lighway Wareho	ouse		TP-52		615.5				.0
SITE L			ay, Newville, Pe	nnsylvania 1	72/1			STATIO	N:			
NORT			ay, ivewville, re	inisyivania, 1	,241	EASTING:						
DEРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESC	RIPTION OF MATERIA	ıL		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thi	ckness[9.00)"]							
		- (ML) SILT, orangish brown, moist, 5YR 6/8, 5YR 5/8										
BUCKET DEFLISAL AT 6 0 ET												
-		_		BUCKE	T REFUSAL AT 6.0	D FT						
10		606 -										
	DVC.											
	HE ST	ΓRATIF		EXCAVA	TION EFFORT: E - E/	BOUNDRY LINES B ASY M - MEDIUM D	- DIFFICULT VI	D - VERY D	IFFICULT			
			,	Not Enc.	▼ WL (Seasona	ai High) Not Enc.	CONTRACTOR SA Way & Son		OPERATOR:		AKE/MODE	L:
_		Comp	letion)	Not Enc.	LETED:		Excavating UNITS:		Tim Cave-IN-Depth		ocat E32	
ECS REP.: DATE COMPLETED: UNITS: CAVE-IN-DEPTH: MSD2 May 01 2023 English												
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CLIEN	T:	n Acco	t Management			PROJECT NO.: 18:5941		SHEE 1 of 1	T:			
PROJE			t Wanagement			TEST PIT NO.:			ACE ELEVATION:			
			lighway Wareho	use		TP-53		624.5			E	:0
SITE L			ay, Newville, Pe	nnauluania 1	7241			STATIO	ON:			
NORT			ay, Newville, Fe	illisylvailla, 17	7241	EASTING:						
						I.					1 ~	F
DЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESC	RIPTION OF MATERIA	L		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
DEP	WATE	ELEVA						EXCAVAT		g d	SAMPL	MOISTUR
_		_	Topsoil Thic	ckness[8.00	"]							
-		-	(CL) LEAN (5/8, 2.5YR (oist, very stiff, pi	nnacles, 2.5YR				3.00	- S-1	
-		-						D		3.00	3-1	
_		-					- {////					
-		620 -		BUCKE	T REFUSAL AT 4.	5 FT						
5-		-		200								
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REMA	RKS:											•
TI	HE ST	ΓRATIF	ICATION LINES	REPRESENT T	THE APPROXIMATE	BOUNDRY LINES B	ETWEEN SOIL	TYPES. IN	-SITU_THE TRAN	ISITION M	1AY BE GRA	DUAL
				EXCAVA	TION EFFORT: E - EA	ASY M - MEDIUM D	- DIFFICULT V	/D - VERY [DIFFICULT			
∇	WL ((First E	ncountered)	Not Enc.	▼ WL (Seasona	al High) Not Enc.	CONTRACTOR	₹:	OPERATOR:	M	AKE/MODE	L:
•	▼ WL (Completion) Not Enc.						SA Way & Son Excavating	ı	Tim	Во	bcat E32	
ECS RI	ECS REP.: DATE COMPLETED:								CAVE-IN-DEPTH	H:		
MSD2				May 02 2023		English						
						TEST PIT LC)G					

CLIEN						PROJECT NO.:		SHEE	T:			
			t Management			18:5941		1 of 1	OF ELS: (1=: -			
		NAME:				TEST PIT NO.:		I	ACE ELEVATION		L(
SITE L			lighway Wareh	ouse		TP-54		625.5 STATIC				•
			ay, Newville, P	ennsvlvania. 1	7241			STATIC	JIN.			
NOR			,,	, ivama, 1		EASTING:						
								FORT			1BER	TENT
DEРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESC	CRIPTION OF MATERIA	ıL		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
-		-	-	ickness[20.0								
-		-	(CL) LEAN 5/8, 2.5YR		sh brown, moist,	very stiff, 2.5YR		М		2.00	6.4	
5-		621 -								2.75	S-1	
-	-	-		BUCKE	T REFUSAL AT 5.	5 FT						
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REMA	DVC											
Т	HE S	TRATIF	ICATION LINES		THE APPROXIMATE					NSITION N	IAY BE GRA	DUAL
					ATION EFFORT: E - E.	ASY M - MEDIUM [O - DIFFICULT \	VD - VERY [DIFFICULT	1		
\Box	□ WL (First Encountered) Not Enc. □ WL (Seasonal High) Not E □ WL (Seasona					al High) Not Enc.	CONTRACTO		OPERATOR:	M	ake/mode	EL:
▼	▼ WL (Completion) Not Enc.						SA Way & Sor Excavating	n	Tim	Во	bcat E32	
ECS R	ECS REP.: DATE COMPLETED:						UNITS:		CAVE-IN-DEPT	H:		
MSD2	2			May 02 2023	3		English					
						TEST PIT LO	OG					

CLIEN						PROJECT NO.:		SHEE	T:			
			t Management			18:5941		1 of 1				
		NAME:				TEST PIT NO.:		I	CE ELEVATION	:		
			lighway Wareh	ouse		TP-55		627	\N.I			•
SITE L			ay, Newville, Po	ennsylvania 1	7241			STATIC	JN:			
NOR			uy, ivewville, P	cinisyivailla, 1	, 471	EASTING:						
		<u> </u>				127.07.117.07		— —				—
	LS	F.						EXCAVATION EFFORT			SAMPLE NUMBER	MOISTURE CONTENT (%)
DЕРТН (FT)	EVE.	Z						<u>н</u>	۵.	SF)	≥ ≥	0 (
PTH	ER L	ATIC		DESC	CRIPTION OF MATERIA	AL.		OE	DCP	QP (TSF)	LE	JRE C (%)
DE	WATER LEVELS	ELEVATION (FT)						XX.			MM	USTL
								EXC			<i>S</i>	MO
			Topsoil Thi	ickness[12.0	00"]							
-		-	•									
-		-	(CL) LEAN	CLAY, orang	ish brown, moist	. stiff. pinnacles c	n /////					
-		-		5YR 5/8, 7.5		, , , ,	- [//// <u> </u>					
-		-					[////					
-		-					- [//// <u>/</u>	M		1.75	S-1	
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5-		622 –		BIICKE	T REFUSAL AT 5.	0 ET						
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REMA	IRKS:											
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	HE 5	IKAHE	ICATION LINES		THE APPROXIMATE					NOTHER	MAY BE GRA	ADUAL
					TION EFFORT: E - E.		1			-		
\Box							CONTRACTO		OPERATOR:	M	AKE/MODE	EL:
•	▼ WL (Completion) Not Enc.						SA Way & Son	n	Tim	Во	bcat E32	
ECS R	ECS REP.: DATE COMPLETED:						UNITS:		CAVE-IN-DEPTI	 H:		
MSD2							English		52. 11			
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						TEST PIT LO	טע					

CLIENT:	PROJECT NO.: 18:5941		SHEET: 1 of 1									
Appalachian Asset Management PROJECT NAME:	TEST PIT NO.:			ELEVATION:								
Proposed Ritner Highway Warehouse	TP-56		629.2			E(.0					
SITE LOCATION: 3485 Ritner Highway, Newville, Pennsylvania, 17241			STATION	:								
NORTHING:	EASTING:											
	1		T.			~	늘					
(FT) (FT)			EXCAVATION EFFORT			SAMPLE NUMBER	MOISTURE CONTENT (%)					
DESCRIPTION OF MATERI DESCRIPTION OF MATERI	AL		ON	DCP	QP (TSF)	ION	(%)					
DEPTH (FT) MATER LEVELS ELECATION (FT) BELEVATION (FT)			AVAT		Q	MPLE	STUR					
			EXC			SA	MO					
Topsoil Thickness[12.00"]					<u> </u>							
1 -												
(ML) SILT, reddish brown, moist, 5YR 6	5/8, 5YR 5/8											
625												
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	-											
						S-1						
620												
10 - END OF TEST PIT AT 10) FT											
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615												
15												
REMARKS:												
THE STRATIFICATION LINES REPRESENT THE APPROXIMAT	E BOUNDRY LINES B	ETWEEN SOIL TY	PES. IN-SI	TU THE TRAN	SITION M	AY BE GRA	DUAL					
EXCAVATION EFFORT: E -						_ 2.01	· -					
		CONTRACTOR:		PERATOR:	МА	.KE/MODE	 L:					
▼ WL (Completion) Not Enc.	G /	SA Way & Son	Ti			cat E32						
ECS REP.: DATE COMPLETED:		Excavating UNITS:		··· AVE-IN-DEPTH								
SD2 May 02 2023 English												
IVIGY 02 2023	TEST PIT LO											

CLIEN		an Acco	t Management			PROJECT NO.: 18:5941		SHEE 1 of 1	T:			
		VAME:	t ivianagement			TEST PIT NO.:			CE ELEVATION:			
			lighway Warehou	ıse		TP-57		626.8			L	. C
		TION: r Highw	ay, Newville, Per	nsvlvania. 1	7241			STATIC	ON:			
NOR			., .	.,		EASTING:						
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESC	ription of materia	ıL		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
-		-	Topsoil Thic	kness[12.0	00"]							
-		-	(ML) SILT, bi		st, pinnacles on n	orth wall, 10YR		М			- S-1	
5-		622 -										
-		-										
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15												
REMA	ARKS.	:										
Т	HE S	TRATIF	ICATION LINES I	REPRESENT	THE APPROXIMATE	BOUNDRY LINES B	ETWEEN SOIL	TYPES. IN-	-SITU THE TRAN	ISITION M	AY BE GRA	DUAL
				EXCAVA	TION EFFORT: E - E	ASY M - MEDIUM D	- DIFFICULT \	/D - VERY [DIFFICULT			
∇	WL	(First E	ncountered)	Not Enc.	▼ WL (Seasona	al High) Not Enc.	CONTRACTO		OPERATOR:	MA	AKE/MODE	L:
▼	▼ WL (Completion) Not Enc.						SA Way & Sor Excavating	ı 	Tim	Во	bcat E32	
ECS R	EP.:			DATE COMP	LETED:		UNITS:		CAVE-IN-DEPTH	H:		
MSD2	2			May 02 2023			English					
						TEST PIT LO)G					

CLIEN		_				PROJECT NO.:		SHEE	Γ:			
		an Asset IAME:	t Management			18:5941 TEST PIT NO.:		1 of 1 SURFA	CE ELEVATION:			
			lighway Wareho	ouse		TP-58		622.8				
SITE L				_				STATIC	N:			
3485 F			ay, Newville, Pe	ennsylvania, 17	/241	EASTING:						
NON		Ī				LAJIIIVO.		<u> </u>				-
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESC	RIPTION OF MATERIA	L		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
_		-	Topsoil Thi	ckness[12.0	0"]							
-		- -			h brown, moist, v 5/8, 5YR 6/8	very stiff, pinnacle	2	D		2.50	S-1	
_		-		BUCKE	T REFUSAL AT 3.0) FT				2.00		
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15		608										
	EMARKS:											
NEIVIA	nns.											
TI	HE S	TRATIF	ICATION LINES	REPRESENT	THE APPROXIMATE	BOUNDRY LINES BI	TWEEN SOIL	_TYPES. IN-	SITU THE TRAN	ISITION M	AY BE GRA	DUAL
						ASY M - MEDIUM D	- DIFFICULT \	VD - VERY D	IFFICULT	ı		
\Box	✓ WL (First Encountered) Not Enc. ▼ WL (Seasonal High) Not Enc						CONTRACTO		OPERATOR:	MA	ke/mode	L:
	▼ WL (Completion) Not Enc.						SA Way & Sor Excavating	n	Tim	Bol	ocat E32	
ECS R	EP.:			DATE COMP	LETED:		UNITS:		CAVE-IN-DEPTH	1 :		
MSD2				May 02 2023		English						
						TEST PIT LO	G					

CLIEN		an Asset	t Management			PROJECT NO.: 18:5941		SHEE 1 of 1	T:			
		NAME:	anagement			TEST PIT NO.:			ACE ELEVATION:			
			lighway Warehou	use		TP-59		623			EC	<u>.</u>
SITE L			. N. 21. B.		10.44			STATIO	ON:			23
NORT			ay, Newville, Per	insylvania, 17	7241	EASTING:						
TTO ICI	· · · · ·	Ī				[E/ STITE.		—————————————————————————————————————				E
F	ÆLS	(FT)						EXCAVATION EFFORT			SAMPLE NUMBER	MOISTURE CONTENT (%)
DЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESC	RIPTION OF MATERIA	.L		ON	DCP	QP (TSF)	IN	RE CC
DEP	/ATE	EVA-						WATI		9	MPLE	STUR
	>							EXC			SAI	MO
			Topsoil Thic	kness[16.0	0"]							
-		-										
			(CD) CAND N	AUTH CDAY	III brown maist	+ 7 FVD 4/6						
_		_	(SP) SAIND V	VIII GRAV	EL, brown, moist	l, 7.51K 4/6		М			S-1	
-		_										
_		_										
-		-										
_		-		BUCK	ET REFUSAL AT 4	FT	1 1 1 1 1 1 1 1					
_		-										
5-		618 –										
_		_										
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_		-										
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10		-										
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_		_										
_		-										
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-		-										
-		-										
-		-										
15		-										
	DVC											
REMA	KKS:	:										
Т	HE S	TRATIF	ICATION LINES I	REPRESENT	THE APPROXIMATE	BOUNDRY LINES B	ETWEEN SOIL	TYPES. IN	-SITU THE TRAN	ISITION M	AY BE GRA	DUAL
				EXCAVA	TION EFFORT: E - E	ASY M - MEDIUM [- DIFFICULT \	/D - VERY [DIFFICULT			
\Box	WL	(First E	ncountered)	Not Enc.	▼ WL (Seasona	al High) Not Enc.	CONTRACTOR		OPERATOR:	M	AKE/MODE	L:
•	WL	(Comp	letion)	Not Enc.			SA Way & Son Excavating	1	Tim	Во	bcat E32	
ECS R	EP.:]	DATE COMPI	LETED:		UNITS:		CAVE-IN-DEPTH	l:		
MSD2 May 02 2023 English												
			1			TEST PIT LO	G		1			

CLIEN	T:	n Acco	t Management			PROJECT NO.: 18:5941		SHEE 1 of 1	T:			
PROJE			t ivianagement			TEST PIT NO.:			ACE ELEVATION:			
			lighway Wareho	use		TP-60		608				:0
SITE L			ay, Newville, Per	nnculvania 1	7241			STATIC	ON:			
NORT			ay, Newville, Pel	iiisyivaiiia, 1	7241	EASTING:						
						1		- X				F
Ē.	WATER LEVELS	ELEVATION (FT)						EXCAVATION EFFORT		<u></u>	SAMPLE NUMBER	MOISTURE CONTENT (%)
ОЕРТН (FT)	R LE	AOIT		DESC	RIPTION OF MATERIA	L		NOI	DCP	QP (TSF)	E NO	3E CC (%)
DEF	NATE	LEVA						AVAT		ð	MPL	ISTUI
		Ш						EXC			SA	MO
_		_	Topsoil Thic	ckness[12.0	0"]							
_		_								3.50	S-1	
-		_	(CL) LEAN C moist, very		sh brown and re	ddish brown,	- Y///A					
_		_	inoise, very	3till, 311t 3,	70, 3111 0, 0		- / ////					
-		-						М				
_		_					[////					
-		-					- V///A					
_		_					- Y///A					
5-		603 –					/////					
-		_		END O	F TEST PIT AT 5.0	FT						
_		_										
-		-										
_		_										
-		-										
-		_										
-		-										
_		_										
10-		598 –										
10-		596 -										
_												
-		-										
-		_										
-		-										
-		_										
-		-										
_		_										
15												
REMARKS:												
TEMATING.												
TI	HE ST	RATIF	ICATION LINES			BOUNDRY LINES B				ISITION M	AY BE GRA	DUAL
	14.0					ASY M - MEDIUM D				<u> </u>		
			,	Not Enc.	▼ WL (Seasona	al High) Not Enc.	CONTRACTOR SA Way & Son		OPERATOR:		AKE/MODE	L:
		Comp	,	Not Enc.	LETED		Excavating		Tim		ocat E32	
ECS RI				DATE COMP			UNITS:		CAVE-IN-DEPTH	1:		
MSD2				May 03 2023		TEST PIT LC	English OG					

CLIEN		n Acco	t Management			PROJECT NO.: 18:5941		SHEE 1 of 1	T:			
PROJE						TEST PIT NO.:			ACE ELEVATION:			
			lighway Warehous	se		TP-61		609			L (: C
SITE LO			ray, Newville, Penr	nsylvania 17	2241			STATIC	ON:			2
NORT			ay, ivewville, rem	nisyivanna, 17	241	EASTING:						
								RT			~	L _Z
Œ.	WATER LEVELS	ELEVATION (FT)						EXCAVATION EFFORT		(-	SAMPLE NUMBER	MOISTURE CONTENT (%)
БЕРТН (FT)	R LE	TION		DESCI	RIPTION OF MATERIA	L		NOI	DCP	QP (TSF)	N N	3E CC (%)
DEF	NATE	:LEV#						AVAT		ğ	MPL	ISTUI
		Ш						EXC			S. A.	MO
			Topsoil Thick	ness[16.0	0"]							
		_										
		_	(CL) LEAN CL	AV brown	, moist, hard, 7.5	VP 6/6						
_		_	(CL) LLAN CL	Ai, biowii	, moist, maru, 7.5	71K 0/0	- Y////			4.50	S-1	
-		-					- Y////					
-		_					- / ////	М				
=		-					- / ////					
		-					- V///A					
_		-					- Y////					
5-		604 –				<u> </u>						
		_		END O	F TEST PIT AT 5.5	FT						
_		_										
_		_										
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10-		599 –										
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		-										
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15												
REMA	RKS:											
TL	1F \$7	TR ATIE	ICATION LINES D	FDRESENT T	THE ∆DDROYINAATE	BOUNDRY LINES B	ETWEEN SOIL	TYPES IN	-SITI I THE TRAN	ISITION A	1ΔV RE CRA	.ΠΙΔΙ
1.5	ıL J	INATIF	ICATION LINES KI			ASY M - MEDIUM D				ISTITUTIVIV	INI DE GNA	ND OAL
	\\\/\	First F	incountered) N	lot Enc.	▼ WL (Seasona		CONTRACTO		OPERATOR:	NA	ake/mode	
	✓ WL (First Encountered) Not Enc.✓ WL (Seasonal High) No✓ WL (Completion) Not Enc.					arringii/ NOLETIC.	SA Way & Sor		Tim		bcat E32	- L·
	ECS REP.: DATE COMPLETED:						Excavating UNITS:				ividi E32	
MSD2				АГЕ СОМРІ Лау 03 2023	LLIED.		English		CAVE-IN-DEPTH	1.		
IVIOUZ			Į IV	nay US 2U23)G						

CLIEN						PROJECT NO.:		SHEE	T:			
Appal PROJE			t Management			18:5941		1 of 1	CE ELEVATION			
			lighway Wareho	OUSA		TEST PIT NO.: TP-62		612.8	ACE ELEVATION:			10
SITE L			iigiiway waiciic	ouse		117-02		STATIO	ON:			
			ay, Newville, Pe	ennsylvania, 1	7241							
NORT	HING	G:	T			EASTING:				1		_
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESC	RIPTION OF MATERIA	L		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
_		=	Topsoil Thi	ickness[12.0	00"]							
-		- - - - - - 608			SAND, brown and /8, 7.5YR 5/6	d orangish brown	,	М		2.75	- S-1 -	
5 –		000		BUCKI	ET REFUSAL AT 5	////						
-		-										
-		_										
-		-										
_		_										
_		-										
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		-										
		-										
		-										
10-		603 –										
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		-										
		_										
		-										
		_										
		-										
15		598 –										
	DVC.											
REMA	KKS:											
TH	HE ST	RATIF	ICATION LINES	REPRESENT	THE APPROXIMATE	BOUNDRY LINES B	ETWEEN SOII	L TYPES. IN	-SITU THE TRAN	ISITION M	IAY BE GRA	DUAL
				EXCAVA	TION EFFORT: E - E	ASY M - MEDIUM D	- DIFFICULT	VD - VERY [DIFFICULT	,		
✓ WL (First Encountered) Not Enc. ✓ WL (Seasonal High) Not Enc.						CONTRACTO		OPERATOR:	M	ake/mode	L:	
▼ WL (Completion) Not Enc.						SA Way & So Excavating	n	Tim		bcat E32		
ECS REP.: DATE COMPLETED:						UNITS:		CAVE-IN-DEPTI	H:			
MSD2				May 03 2023		English						
						TEST PIT LC)G					

CLIEN		an Acco	t Management			PROJECT NO.: 18:5941		SHEE 1 of 1	T:			
		NAME:	viunugement			TEST PIT NO.:			CE ELEVATION:			
			lighway Warehous	se		TP-63		625				.0
SITE L					244			STATIC	DN:			
NORT			ay, Newville, Penr	nsylvania, 17	241	EASTING:						
TTO ICI	T	<u> </u>				2,1311110.		———				<u> </u>
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESCR	IPTION OF MATERIA	AL.		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
- - - -		- - - -	Topsoil Thick (CL) LEAN CL pinnacles on	AY, orangis	sh brown, moist	, very stiff,		D		2.50	- S-1	
5-		620 –		BUCKET	REFUSAL AT 5.	0 FT	_{////		4			
10-		615		BUCKET	REFUSAL AT 5.	0 FT						
REMA	RKS	<u> </u>										
Т	HE S	TRATIF				E BOUNDRY LINES E ASY M - MEDIUM E		D - VERY [AY BE GRA	
		(Comp	,	ot Enc.	→ NAT (SEG2011	arriigii) NOLEIIC.	SA Way & Son		Tim		bcat E32	L.
ECS R		,p	,	ATE COMPL	ETED:		UNITS:		CAVE-IN-DEPTH			
MSD2	!		N	/lay 03 2023			English					
						TEST PIT LO	G					

CLIEN		n Acco	t Management		PROJECT NO.: 18:5941		SHEET 1 of 1	Т:			
		IAME:	t ivianagement		TEST PIT NO.:			CE ELEVATION:			
Propo	sed F	Ritner H	lighway Warehouse		TP-64		627				[0
SITE L			ay, Newville, Pennsylv	ania 17241			STATIO	N:			
NORT			ay, Newville, Pennsylv	ania, 17241	EASTING:						
		Ī									Ļ.
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESCRIPTION OF MATERIA	L		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
DEF	WATE	ELEVA					EXCAVAT		ď	SAMPL	MOISTUI
-		-	Topsoil Thicknes	s[10.00"] brown, moist, very stiff	10VR 6/6 10VR				3.25	- S-1	
- - -		- - -	5/6	brown, moist, very still	, 1018 0/0, 1018		VD		3.23		
_		_	В	UCKET REFUSAL AT 3.7	5 FT	1///					
-		-									
5-		622 -									
-		-									
_		_									
-		-									
-		-									
-		-									
_		-									
-		-									
_		-									
-											
10 -		617-									
-		-									
_		_									
-		-									
_		_									
_											
15											
REMA	RKC.										
Т	HE S	TRATIF		ESENT THE APPROXIMATE					SITION M	AY BE GRA	DUAL
				XCAVATION EFFORT: E - EA	ASY M - MEDIUM D	- DIFFICULT V	D - VERY D	IFFICULT			
∇	WL	(First E	ncountered) Not Er	nc. 🔻 WL (Seasona	al High) Not Enc.	CONTRACTOR	: 0	OPERATOR:	MA	ake/mode	L:
▼	WL	(Comp	letion) Not Er	nc.		SA Way & Son Excavating		Tim	Bol	bcat E32	
ECS R	EP.:		DATE	COMPLETED:		UNITS:		CAVE-IN-DEPTH	l:		
MSD2	!		May 0	03 2023		English					
					TEST PIT LC	G					

CLIEN		an Asse	t Management			PROJECT NO.: 18:5941		SHEE 1 of 1	ET:			
		NAME:				TEST PIT NO.:			ACE ELEVATION:			
			lighway Warehous	е		TP-65		633			E	:0
		TION: r Highw	ay, Newville, Penn	svlvania. 17	7241			STATIO	ON:			2
NOR			ay, reasone, rem	syrvaria, 17		EASTING:						
								RT			~	F
ОЕРТН (FT)	WATER LEVELS	ELEVATION (FT)		DESCI	RIPTION OF MATERIA	L		EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thick	ness[9.00	"]							
-		-				vest wall, 10YR 6/	6	VD			- 5-1	
		.		BUCKET	REFUSAL AT 4.2	25 FT						
5-		628 -										
	DVC											
REMA			ICATION LINES RE			BOUNDRY LINES B ASY M - MEDIUM D				ISITION M	IAY BE GRA	DUAL
\Box	WI	(First F	incountered) No	ot Enc.	▼ WL (Seasona		CONTRACTO		OPERATOR:	M	AKE/MODE	
-		(Comp	· · · · · · · · · · · · · · · · · · ·	ot Enc.	(1223)	J ,	SA Way & So Excavating		Tim		bcat E32	
ECS R	EP.:		DA	ATE COMPI	LETED:		UNITS:		CAVE-IN-DEPTH	H:		
MSD2	2		м	lay 03 2023			English					
						TEST PIT LC	G					

CLIEN		n Asso	t Management		PROJECT NO.: 18:5941		SHEET 1 of 1	:			
		IAME:	anagement		TEST PIT NO.:			E ELEVATION:			
			lighway Warehouse Developmen	t	TP-66		634.2			L (.0
SITE L			ay, Newville, Pennsylvania, 1724:	1			STATION	N:			
NORT			ay, Newville, Pellisylvalia, 1724.		EASTING:						
							ORT			R.	ENT
(FT)	WATER LEVELS	ELEVATION (FT)					EXCAVATION EFFORT		SF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
DEРТН (FT)	ER LI	/ATIO	DESCRIPT	TION OF MATERIAL	-		TION	DCP	QP (TSF)	Z LE	JRE (
	WAT	ELEV					CAVA			AMP	JISTU
				,		N/////////	<u> </u>			0)	Σ
_		-	Topsoil Thickness[13.00"]	J							
_		-	(CL) LEAN CLAY WITH SAN		own to orangish						
_		-	brown, moist, 5YR6/8, 5Y	/R5/8		- Y////					
-											
_		_									
-		-				V////					
		630 –				- Y////					
5-		-					М				
-											
_		_				V////					
-		-				- Y////					
_		-				- Y////					
		-								S-1	22.0
-		-								3-1	22.0
_		625 –				V///					
-		-				- Y////					
10 –		_	END OF T	TEST PIT AT 10 I	FT						
_		-									
_		-									
_		-									
-		_									
_		_									
-		-									
_		620 -									
15		-									
REMA	RKS:		l					<u> </u>			
-	JE C	TD ATIF	ICATION LINES DEDDESCRIT TUE		DOLINDOV LINICO D	ETIM/EEN COUR	TVDEC IN C	TILL THE TOAK	ICITION! N 4	AV DE CDA	DIIAI
	15 2	IKAIIF	ICATION LINES REPRESENT THE FXCAVATIO		'SA W - WEDINW D				ISHTUUN IVI	HT BE GKA	DUAL
	WI	(First F		▼ WL (Seasona		CONTRACTOR:		PERATOR:	MA	KE/MODE	L:
			letion) Not Enc.	- WE (SC030110	TINGIT/ NOT LITE.	SA Way & Son		rim		ocat E32	
ECS R			DATE COMPLET	ED:		Excavating UNITS:	C	AVE-IN-DEPTH			
MSD2			May 03 2023			English					
					TEST PIT LO						

Date Tested:	4/24	/2023	4/2	4/2023	4/2	4/2023	4/24	1/2023	4/2	4/2023	4/24	1/2023
Field Data	т	P-01	т	P-02	т	P-03	т	P-04	т	P-05	т	P-06
Test Depth (ft)		L.O		0.8		4.2		2.5		3.0		1.5
rest beptil (it)	Time	Reading		Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading
Presoak Start/Water Depth (in)	11:41	6.00	11:40	6.00	11:39	6.00	11:42	6.00	11:43	6.00	11:44	6.00
Presoak 30 Min (in)	12:11	1.50	12:10	0.50	12:09	0.25	12:12	6.00	12:13	1.00	12:14	0.00
Presoak 60 Min (in)	12:41	1.25	12:40	0.13	12:39	0.00	12:42	3.00	12:43	1.50	12:44	0.00
START TEST (in)	12:41	6.00	12:40	6.00	12:39	6.00	12:42	6.00	12:43	6.00	12:44	6.00
Reading Interval	30	min	30) min	30) min	10	min	30) min	30	min
Reading # 1 (in)	13:11	1.00	13:10	0.25	13:09	0.00	12:52	1.00	13:13	1.00	13:14	0.25
Reading # 2 (in)	13:41	1.00	13:40	0.13	13:39	0.00	13:02	1.00	13:43	0.75	13:44	0.00
Reading # 3 (in)	14:11	1.00	14:10	0.25	14:09	0.00	13:12	1.00	14:13	1.00	14:14	0.25
Reading # 4 (in)	14:41	1.00	14:40	0.13	14:39	0.00	13:22	0.75	14:43	1.00	14:44	0.25
Reading # 5 (in)												
Reading # 6 (in)												
Reading # 7 (in)												
Reading # 8 (in)												
O.D. of Double Ring Infiltrometer (in)	6	.00	6	5.00	(5.00	ε	5.00	6	5.00	6	5.00
Initial Water Depth (in)	6	.00	E	5.00	(5.00	ϵ	5.00	6	5.00	6	5.00
Final Water Level Drop (in)	1	.00	(0.13	(0.00	C).75	1	L.00	C	.25
Average Reading (in)	1	.00	().19	(0.00	C).94	().94	C).19
Infiltration Rate (in/hr)	2	.00	().38	(0.00	5	5.63	1	L.88	0	.38
Safety Factor	2	.00	2	2.00	2	2.00	2	2.00	2	2.00	2	.00
Corrected Infiltration Rate (in/hr)	1	.00	C).19	(0.00	2	2.81	C).94	0	.19

Notes:

Date Tested:	4/23	/2023	4/25	5/2023	4/2	5/2023	4/25	5/2023	4/2	5/2023	4/25	5/2023
Field Data	TF	P-07	TI	P-08	Т	P-09	ТІ	P-10	Т	P-11	ТІ	P-12
Test Depth (ft)	1	L.5		3.1		2.0		1.2		1.0		1.5
	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading
Presoak Start/Water Depth (in)	11:45	6.00	11:24	6.00	11:23	6.00	11:22	6.00	11:21	6.00	11:20	6.00
Presoak 30 Min (in)	12:15	0.75	11:54	1.00	11:53	0.13	11:52	0.50	11:51	0.38	11:50	0.25
Presoak 60 Min (in)	12:45	0.50	12:24	0.25	12:23	0.00	12:22	0.00	12:21	0.00	12:20	0.13
START TEST (in)	12:45	6.00	12:24	6.00	12:23	6.00	12:22	6.00	12:21	6.00	12:20	6.00
Reading Interval	30	min	30) min	30) min	30) min	30) min	30) min
Reading # 1 (in)	13:15	0.50	12:54	0.13	12:53	0.00	12:52	0.00	12:51	0.00	12:50	0.00
Reading # 2 (in)	13:45	0.50	13:24	0.13	13:23	0.00	13:22	0.25	13:21	0.00	13:20	0.00
Reading # 3 (in)	14:15	0.50	13:54	0.00	13:53	0.00	13:52	0.00	13:51	0.13	13:50	0.00
Reading # 4 (in)	14:45	0.63	14:24	0.38	14:23	0.00	14:22	0.13	14:21	0.00	14:20	0.00
Reading # 5 (in)												
Reading # 6 (in)												
Reading # 7 (in)												
Reading # 8 (in)												
O.D. of Double Ring Infiltrometer (in)	6	.00	ε	5.00	6	5.00	6	5.00	6	5.00	6	5.00
Initial Water Depth (in)	6	.00	ϵ	5.00	6	5.00	6	5.00	6	5.00	6	5.00
Final Water Level Drop (in)	0	.63	C).38	(0.00	C).13	(0.00	C	0.00
Average Reading (in)	0	.53	C).16	(0.00	C	0.09	(0.03	C	0.00
Infiltration Rate (in/hr)	1	.07	C).32	(0.00	C).19	(0.06	C	0.00
Safety Factor	2	.00	2	2.00	2	2.00	2	.00	2	2.00	2	2.00
Corrected Infiltration Rate (in/hr)	0	.53	C	0.16	(0.00	0	0.09	C	0.03	0	0.00

Notes:

Date Tested:	4/25	5/2023	4/2	5/2023	4/2	5/2023	4/23	3/2023	4/2	3/2023	4/23	3/2023
Field Data	TF	P-13	Т	P-14	Т	P-15	Т	P-16	Т	P-17	TI	P-18
Test Depth (ft)	(0.8		0.8		4.0		2.5		1.2		1.0
	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading
Presoak Start/Water Depth (in)	11:19	6.00	11:18	6.00	11:17	6.00	11:37	6.00	11:36	6.00	11:35	6.00
Presoak 30 Min (in)	11:49	2.00	11:48	0.50	11:47	0.00	12:07	0.00	12:06	0.00	12:05	1.00
Presoak 60 Min (in)	12:19	1.50	12:18	0.00	12:17	0.00	12:37	0.25	12:36	0.00	12:35	0.50
START TEST (in)	12:19	6.00	12:18	6.00	12:17	6.00	12:37	6.00	12:36	6.00	12:35	6.00
Reading Interval	30	min	30) min	30) min	30	min	30) min	30) min
Reading # 1 (in)	12:49	1.50	12:48	0.00	12:47	0.00	13:07	0.00	13:06	0.25	13:05	0.13
Reading # 2 (in)	13:19	1.50	13:18	0.00	13:17	0.00	13:37	0.13	13:36	0.00	13:35	0.25
Reading # 3 (in)	13:49	1.25	13:48	0.00	13:47	0.00	14:07	0.00	14:06	0.00	14:05	0.13
Reading # 4 (in)	14:19	1.50	14:18	0.00	14:17	0.00	14:37	0.13	14:36	0.25	14:35	0.25
Reading # 5 (in)												
Reading # 6 (in)												
Reading # 7 (in)												
Reading # 8 (in)												
O.D. of Double Ring Infiltrometer (in)	6	.00	6	5.00	6	5.00	ϵ	.00	6	5.00	6	5.00
Initial Water Depth (in)	6	.00	6	5.00	6	5.00	ϵ	.00	6	5.00	6	5.00
Final Water Level Drop (in)	1	.50	(0.00	(0.00	C	.13	().25	C).25
Average Reading (in)	1	.44	(0.00	(0.00	C	.06	().13	C).19
Infiltration Rate (in/hr)	2	.88	(0.00	(0.00	C	.13	().25	0).38
Safety Factor	2	.00	2	2.00	2	2.00	2	.00	2	2.00	2	2.00
Corrected Infiltration Rate (in/hr)	1	.44	C	0.00	(0.00	C	.06	C	0.13	0).19

Notes:

Date Tested:	4/23	/2023	4/23	3/2023	4/2	6/2023	4/26	5/2023	4/20	6/2023	4/26	5/2023
Field Data		P-19	_	P-20	_	P-21	-	P-22	_	P-23	-	P-24
Took Double (ft)				3.0		1.5		1.2		2.0		
Test Depth (ft)		2.0				_				-		3.5
	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading
Presoak Start/Water Depth (in)	11:34	6.00	11:33	6.00	11:12	6.00	11:13	6.00	11:15	6.00	11:17	6.00
Presoak 30 Min (in)	12:04	0.00	12:03	0.00	11:42	0.00	11:43	0.00	11:45	0.50	11:47	0.00
Presoak 60 Min (in)	12:34	0.00	12:33	0.00	12:12	0.00	12:13	0.13	12:15	0.00	12:17	0.00
START TEST (in)	12:34	6.00	12:33	6.00	12:12	6.00	12:13	6.00	12:15	6.00	12:17	6.00
Reading Interval	30	min	30) min	30) min	30) min	30) min	30) min
Reading # 1 (in)	13:04	0.00	13:03	0.00	12:42	0.00	12:23	0.13	12:45	0.00	12:47	0.00
Reading # 2 (in)	13:34	0.00	13:33	0.13	13:12	0.00	12:33	0.00	13:15	0.00	13:17	0.00
Reading # 3 (in)	14:04	0.00	14:03	0.00	13:42	0.00	12:43	0.25	13:45	0.00	13:47	0.13
Reading # 4 (in)	14:34	0.00	14:33	0.00	14:12	0.00	12:53	0.25	14:15	0.00	14:17	0.00
Reading # 5 (in)												
Reading # 6 (in)												
Reading # 7 (in)												
Reading # 8 (in)												
O.D. of Double Ring Infiltrometer (in)	6	.00	6	5.00	6	5.00	ϵ	5.00	6	5.00	6	5.00
Initial Water Depth (in)	6	.00	6	5.00	(5.00	6	5.00	6	5.00	6	5.00
Final Water Level Drop (in)	0	.00	(0.00	(0.00	C).25	(0.00	C	0.00
Average Reading (in)	0	.00	(0.03	(0.00	C).16	(0.00	C	0.03
Infiltration Rate (in/hr)	0	.00	(0.06	(0.00	C).31	(0.00	C	0.06
Safety Factor	2	.00	2	2.00	2	2.00	2	2.00	2	2.00	2	2.00
Corrected Infiltration Rate (in/hr)	0	.00	C	0.03	(0.00	C).16	C	0.00	0	0.03

Notes:

Date Tested:	4/26	5/2023	4/20	5/2023	5/3	/2023	5/5	/2023	5/5	/2023	5/5	/2023
Field Data	то	P-25	т	P-26	т	P-27	т	P-28	т	P-29	TI	P-30
Test Depth (ft)		5.5		3.0		4.0		3.0		1.0		3.0
rest beptil (it)	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading
Presoak Start/Water Depth (in)	11:18	6.00	11:19	6	10:42	6.00	10:01	6.00	10:00	6.00	9:59	6.00
Presoak 30 Min (in)	11:48	0.25	11:49	1.13	11:12	2.25	10:31	0.00	10:30	0.00	10:29	0.13
Presoak 60 Min (in)	12:18	0.63	12:19	1.00	11:42	2.00	11:01	0.00	11:00	0.00	10:59	0.00
START TEST (in)	12:18	6.00	12:19	6.00	11:42	6.00	11:01	6.00	11:00	6.00	10:59	6.00
Reading Interval	30	min	30) min	10) min	30	min	30) min	30) min
Reading # 1 (in)	12:48	0.75	12:49	1.00	11:52	0.75	11:31	0.25	11:30	0.00	11:29	0.00
Reading # 2 (in)	13:18	0.63	13:19	0.88	12:02	0.75	12:01	0.00	12:00	0.00	11:59	0.00
Reading # 3 (in)	13:48	0.75	13:49	0.75	12:12	0.63	12:31	0.00	12:30	0.00	12:29	0.00
Reading # 4 (in)	14:18	0.88	14:19	0.88	12:22	0.50	13:01	0.00	13:00	0.00	12:59	0.00
Reading # 5 (in)												
Reading # 6 (in)												
Reading # 7 (in)												
Reading # 8 (in)												
O.D. of Double Ring Infiltrometer (in)	6	.00	6	5.00	(5.00	6	5.00	6	5.00	6	5.00
Initial Water Depth (in)	6	.00	1	L.13	(5.00	ϵ	5.00	6	5.00	6	5.00
Final Water Level Drop (in)	0	.88	().88	().50	C	0.00	(0.00	C	0.00
Average Reading (in)	0	.75	().88	().66	C	0.06	(0.00	C	0.00
Infiltration Rate (in/hr)	1	.51	1	L.76	3	3.95	C).13	(0.00	C	0.00
Safety Factor	2	.00	2	2.00	- 2	2.00	2	.00	2	2.00	2	2.00
Corrected Infiltration Rate (in/hr)	0	.75	C).88	1	1.97	C	0.06	C	0.00	0	0.00

Notes:

Date Tested:	5/4,	/2023	5/5	/2023	5/5	/2023	4/27	7/2023	4/2	7/2023	4/27	7/2023
Field Data	T1	P-31	т	P-32	_	P-33	T	P-34	т	P-35	т	P-36
Toot Donth (ft)		2.0		2.0		7.0		1.5		6.8		1.3
Test Depth (ft)				-	Time	Reading	Time		Time		Time	-
Bernal Charles Barth (ta)	Time	Reading	Time	Reading				Reading		Reading		Reading
Presoak Start/Water Depth (in)	9:28	6.00	9:58	6.00	9:56	6.00	11:49	6.00	11:48	6.00	11:47	6.00
Presoak 30 Min (in)	9:58	0.00	10:28	6.00	10:26	0.00	12:19	3.50	12:18	0.00	12:17	4.50
Presoak 60 Min (in)	10:28	0.00	10:58	6.00	10:56	0.00	12:49	0.50	12:48	0.00	12:47	2.50
START TEST (in)	10:28	6.00	10:58	6.00	10:56	6.00	12:49	6.00	12:48	6.00	12:47	6.00
Reading Interval		min) min) min		min) min) min
Reading # 1 (in)	10:58	0.00	11:08	2.75	11:26	0.00	13:19	0.38	13:18	0.00	12:57	0.88
Reading # 2 (in)	11:28	0.00	11:18	2.63	11:56	0.00	13:49	0.38	13:48	0.00	13:07	1.00
Reading # 3 (in)	11:58	0.00	11:28	2.25	12:26	0.00	14:19	0.50	14:18	0.00	13:17	1.00
Reading # 4 (in)	12:28	0.00	11:38	2.25	12:56	0.00	14:49	0.50	14:48	0.00	13:27	1.13
Reading # 5 (in)			11:48	2.25								
Reading # 6 (in)			11:58	2.00								
Reading # 7 (in)												
Reading # 8 (in)												
O.D. of Double Ring Infiltrometer (in)	6	.00	6	5.00	6	5.00	6	5.00	6	5.00	6	5.00
Initial Water Depth (in)	6	.00	6	5.00	6	5.00	6	5.00	6	5.00	6	5.00
Final Water Level Drop (in)	0	.00	2	2.00	(0.00	C	.50	(0.00	1	13
Average Reading (in)	0	.00	2	2.19	(0.00	C	.44	(0.00	1	.00
Infiltration Rate (in/hr)	0	.00	1	3.13	(0.00	C	.88	(0.00	6	5.02
Safety Factor	2	.00	2	2.00	- 2	2.00	2	.00	2	2.00	2	2.00
Corrected Infiltration Rate (in/hr)	0	.00	6	5.56	(0.00	0	.44	C	0.00	3	3.01

Notes:

Date Tested:	4/27	//2023	4/2	7/2023	4/2	7/2023	4/27	7/2023	5/4	/2023	5/4	/2023
Field Data	т	P-37	т	P-38	т	P-39	т	P-40	т	P-41	ті	P-42
Test Depth (ft)		3.5		1.0		4.0		8.0		2.5		1.5
rest bepair (it)	Time	Reading		Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading
Presoak Start/Water Depth (in)	11:46	6.00	11:45	6.00	11:44	6.00	11:43	6.00	9:33	6.00	9:32	6.00
Presoak 30 Min (in)	12:16	1.50	12:15	2.00	12:14	1.00	12:13	1.00	10:03	0.50	10:02	6.00
Presoak 60 Min (in)	12:46	1.00	12:45	2.25	12:44	0.75	12:43	0.75	10:33	0.25	10:32	6.00
START TEST (in)	12:46	6.00	12:45	6.00	12:44	6.00	12:43	6.00	10:33	6.00	10:32	6.00
Reading Interval	30	min	10) min	30) min	30	min	30) min	10) min
Reading # 1 (in)	13:16	1.00	12:55	0.63	13:14	0.50	12:53	0.75	11:03	0.25	10:42	5.50
Reading # 2 (in)	13:46	1.13	13:05	0.75	13:44	0.50	13:03	0.63	11:33	0.25	10:52	6.00
Reading # 3 (in)	14:16	1.25	13:15	0.50	14:14	0.50	13:13	0.88	12:03	0.25	11:02	4.50
Reading # 4 (in)	14:46	1.25	13:25	0.50	14:44	0.50	13:23	0.75	12:33	0.13	11:12	2.00
Reading # 5 (in)											11:22	1.00
Reading # 6 (in)											11:32	3.50
Reading # 7 (in)											11:42	1.00
Reading # 8 (in)											11:52	0.75
O.D. of Double Ring Infiltrometer (in)	6	.00	6	5.00	(5.00	ε	5.00	6	5.00	6	5.00
Initial Water Depth (in)	6	.00	6	5.00	6	5.00	ϵ	5.00	6	5.00	6	5.00
Final Water Level Drop (in)	1	.25	().50	().50	C).75	(0.13	C).75
Average Reading (in)	1	.16	(0.60	().50	C).75	().22	1	L.56
Infiltration Rate (in/hr)	2	.32	3	3.57		L.00	1	51	().44	9	9.38
Safety Factor	2	.00	2	2.00	1	2.00	2	.00	2	2.00	2	2.00
Corrected Infiltration Rate (in/hr)	1	.16	1	l. 79	().50	C).75	C).22	4	1.69

Notes:

Date Tested:	5/4,	/2023	5/4	/2023	5/4	/2023	5/1	/2023	5/1	/2023	5/1	/2023
Field Data	т	P-43	т	P-44	т	P-45	т	P-46	т	P-47	т	P-48
Test Depth (ft)		L.0		1.5		1.7		3.0		1.0		1.0
rest beptil (it)	Time	Reading										
Presoak Start/Water Depth (in)	9:31	6.00	9:29	6.00	9:30	6.00	10:49	6.00	10:46	6.00	10:44	6.00
Presoak 30 Min (in)	10:01	6.00	9:59	4.50	10:00	0.25	11:19	0.00	11:16	0.25	11:14	0.25
Presoak 60 Min (in)	10:31	6.00	10:29	3.50	10:30	0.25	11:49	0.25	11:46	0.00	11:44	0.00
START TEST (in)	10:31	6.00	10:29	6.00	10:30	6.00	11:49	6.00	11:46	6.00	11:44	6.00
Reading Interval	10	min	10) min	30) min	30	min	30) min	30	min
Reading # 1 (in)	10:41	0.75	10:39	1.00	11:00	0.00	12:19	0.00	12:16	0.00	12:14	0.00
Reading # 2 (in)	10:51	0.75	10:49	1.00	11:30	0.00	12:49	0.00	12:46	0.00	12:44	0.00
Reading # 3 (in)	11:01	0.63	10:59	0.75	12:00	0.13	13:19	0.00	13:16	0.00	13:14	0.13
Reading # 4 (in)	11:11	0.88	11:09	0.75	12:30	0.13	13:49	0.00	13:46	0.00	13:44	0.00
Reading # 5 (in)												
Reading # 6 (in)												
Reading # 7 (in)												
Reading # 8 (in)												
O.D. of Double Ring Infiltrometer (in)	6	.00	6	5.00	(5.00	6	.00	6	5.00	6	5.00
Initial Water Depth (in)	6	.00	6	5.00	(5.00	6	.00	6	5.00	6	5.00
Final Water Level Drop (in)	0	.88	().75	().13	C	.00	(0.00	C	.00
Average Reading (in)	0	.75	().88	().07	C	.00	(0.00	C	.03
Infiltration Rate (in/hr)	4	.52	5	5.25	().13	C	.00	(0.00	C	.07
Safety Factor	2	.00	2	2.00	2	2.00	2	.00	2	2.00	2	.00
Corrected Infiltration Rate (in/hr)	2	.26	2	2.63	().07	0	.00	C	0.00	0	.03

Notes:

Double Ring Infiltration Test Results Proposed Ritner Highway Warehouse ECS Project No. 18:5941

Date Tested:	5/1,	/2023	5/1	/2023	5/1	./2023	5/1	/2023	5/2	/2023	5/2	/2023
Field Data	т.	P-49	_	P-50	-	P-51	т.	P-52	_	P-53	т.	P-54
Took Double (ft)		2.2		3.2		2.0		4.0		2.0		3.5
Test Depth (ft)				_		-		-		-		
	Time	Reading										
Presoak Start/Water Depth (in)	10:43	6.00	10:42	6.00	10:47	6.00	10:48	6.00	11:11	6.00	11:12	6.00
Presoak 30 Min (in)	11:13	1.50	11:12	0.25	11:17	1.50	11:18	0.50	11:41	0.00	11:42	0.50
Presoak 60 Min (in)	11:43	0.75	11:42	0.00	11:47	0.75	11:48	0.25	12:11	0.00	12:12	0.50
START TEST (in)	11:43	6.00	11:42	6.00	11:47	6.00	11:48	6.00	12:11	6.00	12:12	6.00
Reading Interval	30	min	30) min	30) min	30) min	30) min	30) min
Reading # 1 (in)	12:13	0.75	12:12	0.13	12:17	0.75	12:18	0.50	12:41	0.00	12:42	0.13
Reading # 2 (in)	12:43	0.50	12:42	0.00	12:47	0.75	12:48	0.50	13:11	0.00	13:12	0.13
Reading # 3 (in)	13:13	0.50	13:12	0.13	13:17	0.50	13:18	0.25	13:41	0.00	13:42	0.00
Reading # 4 (in)	13:43	0.75	13:42	0.13	13:47	0.63	13:48	0.25	14:11	0.00	14:12	0.25
Reading # 5 (in)												
Reading # 6 (in)												
Reading # 7 (in)												
Reading # 8 (in)												
O.D. of Double Ring Infiltrometer (in)	6	.00	6	5.00	6	5.00	6	5.00	6	5.00	6	5.00
Initial Water Depth (in)	6	.00	6	5.00	(5.00	6	5.00	6	5.00	6	5.00
Final Water Level Drop (in)	0	.75	().13	(0.63	C).25	(0.00	C).25
Average Reading (in)	0	.63	(0.10	(0.66	C	.38	(0.00	C).13
Infiltration Rate (in/hr)	1	.25	().19	:	L.32	C).75	(0.00	C).26
Safety Factor	2	.00	2	2.00	- 2	2.00	2	2.00	2	2.00	2	2.00
Corrected Infiltration Rate (in/hr)	0.63		C	0.10	().66	0).38	C	0.00	0).13

Notes:

1. Infiltrometer refilled to water depth of 6 inches (inner and outer ring) after each reading.

Double Ring Infiltration Test Results Proposed Ritner Highway Warehouse ECS Project No. 18:5941

Date Tested:	5/2,	/2023	5/2	/2023	5/2	/2023	5/2	/2023	5/2	/2023	5/3	/2023
Field Data	T1	P-55	т	P-56	_	P-57	т.	P-58	т	P-59	TI	P-60
Tost Donth (ft)		2.5		8.0		3.0		1.0		2.0		1.0
Test Depth (ft)	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading
Dunnal Chart (Materia Double (Sa)		6.00	11:14	6.00		6.00	11:09	6.00	11:10	6.00	10:43	6.00
Presoak Start/Water Depth (in)	11:13 11:43	2.25	11:14	0.25	11:08 11:38	0.13	11:09	0.75	11:10	6.00	10:43	2.00
Presoak 30 Min (in)												
Presoak 60 Min (in)	12:13	2.00	12:14	0.00	12:08	0.00	12:09	0.50	12:10	5.00	11:43	0.50
START TEST (in)	12:13	6.00	12:14	6.00	12:08	6.00	12:09	6.00	12:10	6.00	11:43	6.00
Reading Interval		min) min) min		min) min		min
Reading # 1 (in)	12:23	0.75	12:44	0.00	12:38	0.13	12:19	0.13	12:20	1.25	12:13	0.50
Reading # 2 (in)	12:33	0.88	13:14	0.00	13:08	0.00	12:29	0.00	12:30	1.25	12:43	0.25
Reading # 3 (in)	12:43	0.88	13:44	0.00	13:38	0.00	12:39	0.25	12:40	1.00	13:13	0.25
Reading # 4 (in)	12:53	0.63	14:14	0.13	14:08	0.13	12:49	0.25	12:50	1.00	13:43	0.25
Reading # 5 (in)												
Reading # 6 (in)												
Reading # 7 (in)												
Reading # 8 (in)												
O.D. of Double Ring Infiltrometer (in)	6	.00	6	5.00	6	5.00	6	5.00	6	5.00	6	5.00
Initial Water Depth (in)	6	.00	6	5.00	6	5.00	6	5.00	6	5.00	6	5.00
Final Water Level Drop (in)	0	.63	().13	().13	C).25	1	L.00	C	.25
Average Reading (in)	0	.79	(0.03	(0.06	C).16	1	L.13	C	.31
Infiltration Rate (in/hr)	4	.71	(0.06	(0.13	C	0.31	6	5.75	C	.63
Safety Factor	2	.00	2	2.00	- 2	2.00	2	2.00	2	2.00	2	.00
Corrected Infiltration Rate (in/hr)	2.00 2.36		C	0.03	().06	0).16	3	3.38	0	.31

Notes:

1. Infiltrometer refilled to water depth of 6 inches (inner and outer ring) after each reading.

Double Ring Infiltration Test Results Proposed Ritner Highway Warehouse ECS Project No. 18:5941

Date Tested:	5/3,	/2023	5/3	/2023	5/3	/2023	5/3	/2023	5/3	/2023	5/3	/2023
Field Data	TI	P-61	т	P-62	_	P-63	т	P-64	т	P-65	т	P-66
Tost Donth (ft)		2.0		3.0		3.0		1.0		2.0		8.0
Test Depth (ft)	Time	Reading	Time		Time	Reading	Time		Time		Time	
Books I Charles Books (2)				Reading				Reading		Reading		Reading
Presoak Start/Water Depth (in)	10:44	6.00	10:45	6.00	10:46	6.00	10:47	6.00	10:48	6.00	10:49	6.00
Presoak 30 Min (in)	11:14	0.00	11:15	6.00	11:16	6.00	11:17	3.00	11:18	4.00	11:19	0.25
Presoak 60 Min (in)	11:44	0.00	11:45	5.75	11:46	6.00	11:47	1.50	11:48	3.50	11:49	0.00
START TEST (in)	11:44	6.00	11:45	6.00	11:46	6.00	11:47	6.00	11:48	6.00	11:49	6.00
Reading Interval		min) min) min		min) min) min
Reading # 1 (in)	12:14	0.00	11:55	2.00	11:56	6.00	12:17	1.25	11:58	1.38	12:19	0.00
Reading # 2 (in)	12:44	0.00	12:05	1.75	12:06	4.00	12:47	1.25	12:08	1.13	12:49	0.00
Reading # 3 (in)	13:14	0.00	12:15	1.75	12:16	4.00	13:17	1.13	12:18	1.13	13:19	0.00
Reading # 4 (in)	13:44	0.00	12:25	2.00	12:26	3.75	13:47	1.13	12:28	1.25	13:49	0.00
Reading # 5 (in)					12:36	2.75						
Reading # 6 (in)					12:46	2.50						
Reading # 7 (in)					12:56	2.13						
Reading # 8 (in)					13:06	1.75						
O.D. of Double Ring Infiltrometer (in)	6	.00	6	5.00	6	5.00	ϵ	5.00	6	5.00	6	5.00
Initial Water Depth (in)	6	.00	6	5.00	6	5.00	ϵ	5.00	6	5.00	6	5.00
Final Water Level Drop (in)	0	.00	2	2.00	-	L.75	1	13	1	25	C	0.00
Average Reading (in)	0	.00	1	L.88	2	2.28	1	19	1	.22	C	0.00
Infiltration Rate (in/hr)	0	.00	1	1.25	1	3.70	2	38	7	7.34	C	0.00
Safety Factor	2	.00	2	2.00	2	2.00	2	2.00	2	2.00	2	2.00
Corrected Infiltration Rate (in/hr)	0.00		5	5.63	(5.85	1	19	3	3.67	0	0.00

Notes:

1. Infiltrometer refilled to water depth of 6 inches (inner and outer ring) after each reading.

Date Tested:	4/2	4/2023	4/2	4/2023	4/2	4/2023	4/2	4/2023	4/24	/2023	4/24,	/2023
Field Data	Т	P-01	Т	P-02	Т	P-03	Т	P-04	TP	-05	TP-	-06
Test Depth (ft)		1.0		0.8		4.2		2.5	3	.0	1	.5
	Time	Reading										
Presoak Start/Water Depth (in)	11:41	6.00	11:40	6.00	11:39	6.00	11:42	6.00	11:43	6.00	11:44	6.00
Presoak 30 Min (in)	12:11	4.00	12:10	3.00	12:09	1.50	12:12	6.00	12:13	1.25	12:14	3.00
Presoak 60 Min (in)	12:41	5.00	12:40	2.00	12:39	1.50	12:42	2.25	12:43	0.13	12:44	2.00
START TEST	12:41	6.00	12:40	6.00	12:39	6.00	12:42	6.00	12:43	6.00	12:44	6.00
Reading Interval	1	0 min	10) min	30	0 min	10) min	30	min	10	min
Reading # 1 (in)	12:51	0.75	12:50	0.25	13:09	1.13	12:52	0.50	13:13	0.13	12:54	0.88
Reading # 2 (in)	13:01	1.00	13:00	0.50	13:39	0.88	13:02	0.75	13:43	0.38	13:04	0.63
Reading # 3 (in)	13:11	1.00	13:10	0.25	14:09	0.88	13:12	0.75	14:13	0.25	13:14	0.88
Reading # 4 (in)	13:21	1.00	13:20	0.50	14:39	1.00	13:22	0.50	14:43	0.25	13:24	0.63
Reading # 5 (in)												
Reading # 6 (in)												
Reading # 7 (in)												
Reading # 8 (in)												
Average Diameter of Hole (in)		7.00	7	7.00		6.00	(6.00	7.	00	7.	00
Initial Water Depth (in)		6.00	6	5.00		6.00	(6.00	6.	00	6.	00
Final Water Level Drop (in)		1.00	().50		1.00	(0.50	0.	25	0.	63
Average Reading (in)		0.94	().38		0.97	(0.63	0.	25	0.	76
Infiltration Rate (in/hr)		5.63	2	2.25		1.95	:	3.75	0.	50	4.	53
Reduction Factor		2.58	2	2.66		2.84	7	2.90	2.	68	2.	61
Safety Factor		3.00	3	3.00		3.00	;	3.00	3.	00	3.	00
Corrected Infiltration Rate (in/hr)		0.73	().28		0.23		0.43	0.	06	0.	58

Notes:

Date Tested:	4/2	3/2023	4/2	5/2023	4/2	5/2023	4/2	5/2023	4/25,	/2023	4/25,	/2023
Field Data	7	P-07	Т	P-08	Т	P-09	Т	P-10	TP	-11	TP.	-12
Test Depth (ft)		1.5		3.1		2.0		1.2	1	.0	1	.5
	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading
Presoak Start/Water Depth (in)	11:45	6.00	11:24	6.00	11:23	6.00	11:22	6.00	11:21	6.00	11:20	6.00
Presoak 30 Min (in)	12:15	6.00	11:54	0.00	11:53	6.00	11:52	6.00	11:51	5.00	11:50	6.00
Presoak 60 Min (in)	12:45	3.00	12:24	0.00	12:23	2.00	12:22	4.00	12:21	4.00	12:20	5.00
START TEST	12:45	6.00	12:24	6.00	12:23	6.00	12:22	6.00	12:21	6.00	12:20	6.00
Reading Interval	1	0 min	30) min	10	0 min	10) min	10	min	10	min
Reading # 1 (in)	12:55	1.00	12:54	0.25	12:33	0.50	12:32	1.00	12:31	0.63	12:30	2.00
Reading # 2 (in)	13:05	1.00	13:04	0.18	12:03	0.50	12:42	1.00	12:41	0.50	12:40	2.00
Reading # 3 (in)	13:15	0.88	13:34	0.25	12:13	0.38	12:52	1.00	12:51	0.50	12:50	2.00
Reading # 4 (in)	13:25	1.00	14:04	0.25	12:23	0.63	13:02	0.75	13:01	0.75	13:00	2.00
Reading # 5 (in)												
Reading # 6 (in)												
Reading # 7 (in)												
Reading # 8 (in)												
Average Diameter of Hole (in)		7.00	7	7.00		6.00	-	7.00	6.	00	7.	00
Initial Water Depth (in)		6.00	6	5.00	(6.00	(5.00	6.	00	6.	00
Final Water Level Drop (in)		1.00	().25		0.63	(0.75	0.	75	2.	00
Average Reading (in)		0.97	().23	(0.50	(0.94	0.	60	2.	00
Infiltration Rate (in/hr)		5.82	().47		3.02	ļ	5.63	3.	57	12	.00
Reduction Factor		2.58	2	2.68		2.92		2.58	2.	90	2.	43
Safety Factor		3.00	(3)	3.00		3.00	;	3.00	3.	00	3.	00
Corrected Infiltration Rate (in/hr)	3.00 0.75		(0.06		0.34		0.73	0.	41	1.	65

Notes:

Date Tested:	4/2	5/2023	4/2	5/2023	4/2	5/2023	4/2	3/2023	4/23	/2023	4/23,	/2023
Field Data	7	-P-13	Т	P-14	Т	P-15	Т	P-16	TP	-17	TP.	-18
Test Depth (ft)		0.8		0.8		4.0		2.5	1	.2	1	.0
	Time	Reading										
Presoak Start/Water Depth (in)	11:19	6.00	11:18	6.00	11:17	6.00	11:37	6.00	11:36	6.00	11:35	6.00
Presoak 30 Min (in)	11:49	6.00	11:48	6.00	11:47	2.00	12:07	3.50	12:06	6.00	12:05	4.00
Presoak 60 Min (in)	12:19	6.00	12:18	6.00	12:17	1.25	12:37	2.25	12:36	4.00	12:35	2.25
START TEST	12:19	6.00	12:18	6.00	12:17	6.00	12:37	6.00	12:36	6.00	12:35	6.00
Reading Interval	1	0 min	10) min	30	0 min	10) min	10	min	10	min
Reading # 1 (in)	12:29	5.00	12:28	3.00	12:47	2.00	12:47	0.88	13:06	1.25	12:45	0.50
Reading # 2 (in)	12:39	3.00	12:38	2.00	13:07	1.75	12:57	1.00	13:36	1.00	12:55	0.63
Reading # 3 (in)	12:49	4.00	12:48	1.50	13:27	1.75	13:07	1.00	14:06	1.00	13:05	0.38
Reading # 4 (in)	12:59	4.00	12:58	1.75	13:47	1.75	13:17	0.75	14:36	1.00	13:15	0.63
Reading # 5 (in)	13:09	4.00	13:08	1.50								
Reading # 6 (in)	13:19	2.00	13:18	1.75								
Reading # 7 (in)	13:29	1.00										
Reading # 8 (in)	13:39	0.75										
Average Diameter of Hole (in)		6.00	(5.00		7.00	-	7.00	6.	00	6.	00
Initial Water Depth (in)		6.00	6	5.00		6.00		5.00	6.	00	6.	00
Final Water Level Drop (in)		0.75	1	L.75		1.75	(0.75	1.	00	0.	63
Average Reading (in)		1.94	1	L.63		1.81	(0.91	1.	06	0.	54
Infiltration Rate (in/hr)	1	1.63	9	9.75		3.63	ļ	5.45	6.	38	3.	21
Reduction Factor		2.68	2	2.73		2.46		2.58	2.	82	2.	91
Safety Factor		3.00	3	3.00	;	3.00	:	3.00	3.	00	3.	00
Corrected Infiltration Rate (in/hr)		1.45	1	1.19		0.49		0.70	0.	75	0.	37

Notes:

Date Tested:	4/2	3/2023	4/23	3/2023	4/2	6/2023	4/2	6/2023	4/26,	/2023	4/26,	/2023
Field Data	7	- P-19	Т	P-20	Т	P-21	Т	P-22	TP	-23	TP	-24
Test Depth (ft)		2.0		3.0		1.5		1.2	2	.0	3	.5
	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading
Presoak Start/Water Depth (in)	11:34	6.00	11:33	6.00	11:12	6.00	11:13	6.00	11:15	6.00	11:17	6.00
Presoak 30 Min (in)	12:04	6.00	12:03	3.00	11:42	6.00	11:43	6.00	11:45	4.00	11:47	0.25
Presoak 60 Min (in)	12:34	6.00	12:33	2.50	12:12	6.00	12:13	6.00	12:15	3.00	12:17	1.00
START TEST	12:34	6.00	12:33	6.00	12:12	6.00	12:13	6.00	12:15	6.00	12:17	6.00
Reading Interval	1	0 min	10) min	10	0 min	10) min	10	min	30	min
Reading # 1 (in)	12:44	1.50	12:43	0.50	12:22	6.00	12:23	0.38	12:25	0.50	12:47	0.63
Reading # 2 (in)	12:54	1.25	13:53	0.50	12:32	6.00	12:33	0.13	12:35	0.63	12:57	0.63
Reading # 3 (in)	13:04	1.25	14:23	0.50	12:42	1.00	12:43	0.25	12:45	0.50	13:07	0.50
Reading # 4 (in)	13:14	1.25	14:53	0.50	12:52	0.50	12:53	0.25	12:55	0.63	13:17	0.63
Reading # 5 (in)					13:02	0.63						
Reading # 6 (in)					13:12	0.75						
Reading # 7 (in)					13:22	0.50						
Reading # 8 (in)												
Average Diameter of Hole (in)		6.00	7	7.00		7.00		5.00	6.	00	8.	00
Initial Water Depth (in)		6.00	6	5.00	(6.00	(5.00	6.	00	6.	00
Final Water Level Drop (in)		1.25	(0.50	(0.50	(0.50	0.	63	0.	63
Average Reading (in)		1.31	(0.50	(0.60	(0.60	0.	57	0.	60
Infiltration Rate (in/hr)		7.88	3	3.00		3.57		3.57	3.	39	1.	20
Reduction Factor		2.78	2	2.64		2.63		2.90	2.	91	2.	43
Safety Factor		3.00	3	3.00		3.00		3.00	3.	00	3.	00
Corrected Infiltration Rate (in/hr)	3.00 0.94		().38		0.45	(0.41	0.	39	0.	16

Notes:

Date Tested:	4/2	6/2023	4/20	6/2023	5/3	3/2023	5/5	5/2023	5/5/	2023	5/5/	2023
Field Data	-	P-25	т	P-26	т	P-27	т	P-28	TD	-29	TD	-30
Test Depth (ft)	'	5.5		3.0		4.0		3.0		.0		.0
τεςτ σεριπ (π)	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading
Presoak Start/Water Depth (in)	11:18	6.00	11:19	6	10:42	6.00	10:01	6.00	10:00	6.00	9:59	6.00
Presoak 30 Min (in)	11:48	6.00	11:49	6.00	11:12	6.00	10:31	6.00	10:30	6.00	10:29	1.13
Presoak 60 Min (in)	12:18	3.00	12:19	2.25	11:42	6.00	11:01	6.00	11:00	6.00	10:59	1.00
START TEST	12:18	6.00	12:19	6.00	11:42	6.00	11:01	6.00	11:00	6.00	10:59	6.00
Reading Interval	1	0 min	10) min	10	0 min	10	0 min	10	min	30	min
Reading # 1 (in)	12:28	0.75	12:29	0.88	11:52	2.50	11:11	1.00	11:30	4.00	11:09	1.00
Reading # 2 (in)	12:38	0.63	12:39	0.75	12:02	2.25	11:21	1.00	12:00	4.00	11:19	1.13
Reading # 3 (in)	12:48	0.50	12:49	0.88	12:12	2.50	11:31	1.13	12:30	4.00	11:29	1.00
Reading # 4 (in)	12:58	0.50	12:59	1.00	12:22	2.25	11:41	1.00	13:00	3.88	11:39	0.88
Reading # 5 (in)												
Reading # 6 (in)												
Reading # 7 (in)												
Reading # 8 (in)												
Average Diameter of Hole (in)		7.00	6	5.00	(6.00	(6.00	6.	00	6.	00
Initial Water Depth (in)		6.00	ϵ	5.00		6.00		6.00	6.	00	6.	00
Final Water Level Drop (in)		0.50	1	L.00		2.25		1.00	3.	88	0.	88
Average Reading (in)		0.60	(0.88		2.38		1.03	3.	97	1.	00
Infiltration Rate (in/hr)		3.57	5	5.27	1	.4.25	(6.20	23	.82	2.	01
Reduction Factor		2.63	2	2.85		2.60		2.83	2.	34	2.	83
Safety Factor		3.00	3	3.00	;	3.00	;	3.00	3.	00	3.	00
Corrected Infiltration Rate (in/hr)		3.00 0.45		0.61	:	1.82	(0.73	3.	40	0.	24

Notes:

Date Tested:	5/	4/2023	5/5	/2023	5/5	5/2023	4/2	7/2023	4/27,	/2023	4/27,	/2023
Field Data	7	ΓP-31	Т	P-32	Т	P-33	Т	P-34	TP	-35	TP.	-36
Test Depth (ft)		2.0		2.0		7.0		1.5	6	.8	1	.3
	Time	Reading										
Presoak Start/Water Depth (in)	9:28	6.00	9:58	6.00	9:56	6.00	11:49	6.00	11:48	6.00	11:47	6.00
Presoak 30 Min (in)	9:58	6.00	10:28	2.75	10:26	3.00	12:19	1.00	12:18	0.63	12:17	6.00
Presoak 60 Min (in)	10:28	6.00	10:58	3.00	10:56	2.50	12:49	1.50	12:48	0.63	12:47	3.00
START TEST	10:28	6.00	10:58	6.00	10:56	6.00	12:49	6.00	12:48	6.00	12:47	6.00
Reading Interval	1	0 min	10) min	10	0 min	30) min	30	min	10	min
Reading # 1 (in)	10:38	4.00	11:08	1.75	11:06	0.75	13:19	1.50	13:18	0.38	12:57	0.50
Reading # 2 (in)	10:48	6.00	11:18	1.50	11:16	0.63	13:49	1.50	13:48	0.38	13:07	0.63
Reading # 3 (in)	10:58	3.00	11:28	1.50	11:26	0.63	13:19	1.25	13:18	0.50	13:17	0.63
Reading # 4 (in)	11:08	0.88	11:38	1.00	11:36	0.75	14:49	1.25	14:48	0.50	13:27	0.75
Reading # 5 (in)	11:18	0.75										
Reading # 6 (in)	11:28	0.75										
Reading # 7 (in)	11:38	0.88										
Reading # 8 (in)												
Average Diameter of Hole (in)		7.00	8	3.00		6.00		5.00	6.	00	7.	00
Initial Water Depth (in)		6.00	6	5.00	(6.00	(5.00	6.	00	6.	00
Final Water Level Drop (in)		0.88	1	L.00		0.75		1.25	0.	50	0.	75
Average Reading (in)		0.82	1	L.44	(0.69		1.38	0.	44	0.	63
Infiltration Rate (in/hr)		4.89	8	3.63		4.14	2	2.75	0.	88	3.	77
Reduction Factor		2.60	2	2.32		2.89	2	2.77	2.	93	2.	62
Safety Factor		3.00	(1)	3.00		3.00	;	3.00	3.	00	3.	00
Corrected Infiltration Rate (in/hr)	0.63		1	1.24		0.48		0.33	0.	10	0.	48

Notes:

Date Tested:	4/2	7/2023	4/2	7/2023	4/2	7/2023	4/2	7/2023	5/4/	2023	5/4/	2023
Field Data	7	P-37	Т	P-38	Т	P-39	Т	P-40	TP	-41	TP	-42
Test Depth (ft)		3.5		1.0		4.0		8.0	2	.5	1	.5
	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading
Presoak Start/Water Depth (in)	11:46	6.00	11:45	6.00	11:44	6.00	11:43	6.00	9:33	6.00	9:32	6.00
Presoak 30 Min (in)	12:16	3.00	12:15	6.00	12:14	3.00	12:13	6.00	10:03	3.00	10:02	6.00
Presoak 60 Min (in)	12:46	0.50	12:45	4.00	12:44	2.25	12:43	6.00	10:33	2.25	10:32	6.00
START TEST	12:46	6.00	12:45	6.00	12:44	6.00	12:43	6.00	10:33	6.00	10:32	6.00
Reading Interval	3	0 min	10) min	10	0 min	10) min	10	min	10	min
Reading # 1 (in)	13:16	0.88	12:55	0.75	12:54	0.63	12:53	6.00	10:43	0.88	10:42	5.50
Reading # 2 (in)	13:46	0.63	13:05	1.00	13:04	0.75	13:03	4.00	10:53	0.63	10:52	6.00
Reading # 3 (in)	14:16	0.63	13:15	0.50	13:14	0.50	13:13	3.25	11:03	0.75	11:02	4.50
Reading # 4 (in)	14:46	0.75	13:25	1.00	13:24	0.50	13:23	2.50	11:13	0.63	11:12	2.00
Reading # 5 (in)			13:35	0.25			13:33	2.00			11:22	1.00
Reading # 6 (in)			13:45	0.25			13:43	2.25			11:32	3.50
Reading # 7 (in)			13:55	5.00			13:53	2.25			11:42	1.00
Reading # 8 (in)			14:05	0.38			14:03	2.50			11:52	0.75
Average Diameter of Hole (in)		6.00	7	7.00		8.00		5.00	7.	00	7.	00
Initial Water Depth (in)		6.00	6	5.00	(6.00		5.00	6.	00	6.	00
Final Water Level Drop (in)		0.75	(0.38	(0.50	7	2.50	0.	63	0.	75
Average Reading (in)		0.72	1	L.47	(0.60	2	2.25	0.	72	1.	56
Infiltration Rate (in/hr)		1.45		3.82		3.57	1	3.50	4.	34	9.	38
Reduction Factor		2.88	2	2.50		2.43		2.63	2.	61	2.	49
Safety Factor		3.00	(3)	3.00		3.00		3.00	3.	00	3.	00
Corrected Infiltration Rate (in/hr)		0.17	1	l. 17		0.49	:	1.71	0.	55	1.	25

Notes:

Date Tested:	5/4	4/2023	5/4	/2023	5/4	1/2023	5/1	./2023	5/1/	2023	5/1/	2023
Field Data	7	-P-43	Т	P-44	Т	P-45	Т	P-46	TP	-47	TP.	-48
Test Depth (ft)		1.0		1.5		1.7		8.0	1	.0	1	.0
	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading
Presoak Start/Water Depth (in)	9:31	6.00	9:29	6.00	9:30	6.00	10:49	6.00	10:46	6.00	10:44	6.00
Presoak 30 Min (in)	10:01	4.00	9:59	6.00	10:00	0.75	11:19	1.00	11:16	6.00	11:14	6.00
Presoak 60 Min (in)	10:31	3.50	10:29	6.00	10:30	0.75	11:49	0.75	11:46	1.50	11:44	5.00
START TEST	10:31	6.00	10:29	6.00	10:30	6.00	11:49	6.00	11:46	6.00	11:44	6.00
Reading Interval	1	0 min	10) min	30	0 min	30) min	30	min	10	min
Reading # 1 (in)	10:41	1.50	10:39	6.00	11:00	0.50	12:19	0.13	12:16	1.13	11:54	1.75
Reading # 2 (in)	10:51	1.75	10:49	6.00	11:30	0.50	12:29	0.25	12:46	1.00	12:04	2.00
Reading # 3 (in)	11:01	1.63	10:59	6.00	11:40	0.25	12:39	0.38	13:46	1.13	12:14	2.00
Reading # 4 (in)	11:11	1.50	11:09	6.00	11:50	0.50	12:49	0.25	13:46	1.13	12:24	1.75
Reading # 5 (in)												
Reading # 6 (in)												
Reading # 7 (in)												
Reading # 8 (in)												
Average Diameter of Hole (in)		7.00	7	7.00	(6.00	-	7.00	7.	00	6.	00
Initial Water Depth (in)		6.00	6	5.00	(6.00	(5.00	6.	00	6.	00
Final Water Level Drop (in)		1.50	6	5.00		0.50	(0.25	1.	13	1.	75
Average Reading (in)		1.60	6	5.00		0.44	(0.25	1.	10	1.	88
Infiltration Rate (in/hr)		9.57	3	6.00		0.88		0.51	2.	20	11	.25
Reduction Factor		2.49	1	L.86		2.93		2.68	2.	56	2.	69
Safety Factor		3.00	3	3.00		3.00	:	3.00	3.	00	3.	00
Corrected Infiltration Rate (in/hr)	3.00 1.28		(5.46		0.10		0.06	0.	29	1.	40

Notes:

Date Tested:	5/:	1/2023	5/1	./2023	5/1	L/2023	5/1	./2023	5/2/	2023	5/2/	2023
Field Data	7	ΓP-49	Т	P-50	Т	P-51	Т	P-52	TP	-53	TP	-54
Test Depth (ft)		2.2		3.2		2.0		4.0	2	.0	3	.5
	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading
Presoak Start/Water Depth (in)	10:43	6.00	10:42	6.00	10:47	6.00	10:48	6.00	11:11	6.00	11:12	6.00
Presoak 30 Min (in)	11:13	0.50	11:12	1.25	11:17	5.00	11:18	6.00	11:41	6.00	11:42	6.00
Presoak 60 Min (in)	11:43	0.00	11:42	1.00	11:47	3.00	11:48	3.00	12:11	3.00	12:12	1.88
START TEST	11:43	6.00	11:42	6.00	11:47	6.00	11:48	6.00	12:11	6.00	12:12	6.00
Reading Interval	3	0 min	30) min	10	0 min	10) min	10	min	30	min
Reading # 1 (in)	11:53	0.25	12:12	1.00	12:17	1.00	11:58	1.25	12:41	1.88	12:42	1.63
Reading # 2 (in)	12:03	0.00	12:42	1.13	12:47	0.88	12:08	1.00	13:11	1.63	13:12	1.50
Reading # 3 (in)	12:13	0.25	13:12	0.88	13:17	1.00	12:18	1.00	13:41	1.88	13:42	1.50
Reading # 4 (in)	12:23	0.00	13:42	0.88	13:47	0.75	12:28	1.00	14:11	1.75	14:12	1.63
Reading # 5 (in)												
Reading # 6 (in)												
Reading # 7 (in)												
Reading # 8 (in)												
Average Diameter of Hole (in)		6.00	7	7.00		6.00		5.00	6.	00	7.	00
Initial Water Depth (in)		6.00	(5.00	(6.00	(5.00	6.	00	6.	00
Final Water Level Drop (in)		0.00	(0.88	(0.75	:	1.00	1.	75	1.	63
Average Reading (in)		0.13	().97	(0.91		1.06	1.	79	1.	57
Infiltration Rate (in/hr)		0.25	1	1.95	ļ	5.45		5.38	10	.71	3.	13
Reduction Factor		2.98	2	2.58		2.85		2.82	2.	70	2.	49
Safety Factor		3.00	3	3.00		3.00		3.00	3.	00	3.	00
Corrected Infiltration Rate (in/hr)		3.00 0.03).25		0.64		0.75	1.	32	0.	42

Notes:

Date Tested:	5/2	2/2023	5/2	/2023	5/2	2/2023	5/2	2/2023	5/2/2023		5/3/	2023
Field Data	7	P-55	Т	P-56	Т	P-57	Т	P-58	TP	-59	TP	-60
Test Depth (ft)		2.5		8.0	3.0		1.0		2.0		1.0	
	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading
Presoak Start/Water Depth (in)	11:13	6.00	11:14	6.00	11:08	6.00	11:09	6.00	11:10	6.00	10:43	6.00
Presoak 30 Min (in)	11:43	6.00	11:44	1.13	11:38	6.00	11:39	6.00	11:40	6.00	11:13	6.00
Presoak 60 Min (in)	12:13	6.00	12:14	0.00	12:08	3.00	12:09	5.00	12:10	6.00	11:43	5.50
START TEST	12:13	6.00	12:14	6.00	12:08	6.00	12:09	6.00	12:10	6.00	11:43	6.00
Reading Interval	1	0 min	30) min	10	0 min	10) min	10	min	10	min
Reading # 1 (in)	12:23	1.25	12:44	0.13	12:18	1.25	12:19	1.50	12:20	1.88	11:53	1.13
Reading # 2 (in)	12:33	1.50	13:14	0.00	12:28	1.13	12:29	1.25	12:50	1.75	12:03	1.00
Reading # 3 (in)	12:43	1.50	13:44	0.25	12:38	1.25	12:39	1.13	13:00	1.63	12:13	0.88
Reading # 4 (in)	12:53	1.25	14:14	0.25	12:48	1.00	12:49	1.00	13:10	1.63	12:23	1.00
Reading # 5 (in)							12:59	1.00				
Reading # 6 (in)												
Reading # 7 (in)												
Reading # 8 (in)												
Average Diameter of Hole (in)		6.00	7	7.00	6.00		6.00		6.00		7.00	
Initial Water Depth (in)		6.00	6	5.00		6.00	6.00		6.	00	6.	00
Final Water Level Drop (in)		1.25	().25		1.00		1.00	1.	63	1.	00
Average Reading (in)		1.38	(0.16		1.16		1.10	1.	72	1.	00
Infiltration Rate (in/hr)		8.25	(0.31	(6.95	(5.57	10	.34	6.	02
Reduction Factor		2.77	2	2.69		2.81		2.82	2.	71	2.	57
Safety Factor		3.00	3	3.00		3.00	3	3.00	2.	00	3.	00
Corrected Infiltration Rate (in/hr)		0.99	0.04		0.82		0.78		1.90		0.78	

Notes:

Date Tested:	5/3	3/2023	5/3	3/2023	5/3/2023		5/3/2023		5/3/2023		5/3/2023		
Field Data	,	ГР-61	_	P-62	_	.D. C.3	_	TD C4	TD	er.	TP-66		
Tost Donth (ft)	<u>'</u>	2.0		3.0		TP-63 3.0		TP-64 1.0		TP-65 2.0			
Test Depth (ft)	Time	Reading	Time			Time Reading		Time Reading		,		8.0 Time Reading	
Presoak Start/Water Depth (in)	10:44	6.00	10:45	6.00	10:46	6.00	10:47	6.00	10:48	Reading 6.00	10:49	6.00	
Presoak 30 Min (in)	11:14	6.00	11:15	4.00	11:16	6.00	11:17	6.00	11:18	2.75	11:19	0.50	
Presoak 60 Min (in)	11:44	3.00	11:45	3.00	11:46	6.00	11:47	4.50	11:48	2.73	11:49	0.00	
START TEST	11:44	6.00	11:45	6.00	11:46	6.00	11:47	6.00	11:48	6.00	11:49	6.00	
Reading Interval		0.00 0 min) min		0.00 0 min		0.00 0 min		min		min	
Reading # 1 (in)	11:54	1.00	11:55	0.75	11:56	2.00	11:57	1.63	11:58	0.88	11:59	0.00	
Reading # 2 (in)	12:04	0.75	12:05	0.75	12:06	1.00	12:07	1.50	12:08	0.63	12:09	0.00	
Reading # 3 (in)	12:14	0.00	12:15	1.00	12:16	1.00	12:17	1.50	12:18	0.88	12:19	0.00	
Reading # 4 (in)	12:24	0.13	12:25	1.00	12:26	0.75	12:27	1.38	12:28	0.63	12:29	0.00	
Reading # 5 (in)	12:34	0.13	12.23	1.00	12:36	1.00	12.27	1.50	12.20	0.05	12.23	0.00	
Reading # 6 (in)	12:44	0.13			12.50	1.00							
Reading # 7 (in)													
Reading # 8 (in)													
Average Diameter of Hole (in)		6.00	6	6.00		6.00		6.00		6.00		00	
Initial Water Depth (in)		6.00		5.00		6.00	6.00		6.00		6.00		
Final Water Level Drop (in)		0.13	-	1.00		1.00		1.38		63		00	
Average Reading (in)		0.10	(0.88		0.94		1.50	0.	76	0.	00	
Infiltration Rate (in/hr)		0.59		5.25		5.63		9.02		53		00	
Reduction Factor		2.98	-	2.85		2.84		2.75		87		71	
Safety Factor		3.00		3.00		3.00		3.00		00		00	
Corrected Infiltration Rate (in/hr)		0.07	(0.61	(0.66	1.09		0.	53	0.00		

Notes:





TP-01 TP-02





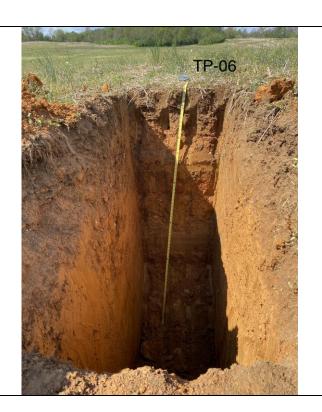
TP-03 TP-04

PROPOSED RITNER HIGHWAY WAREHOUSE ECS PROJECT NO. 18:5941 CUMBERLAND COUNTY, PENNSYLVANIA



TEST PIT PHOTOGRAPHS





TP-05 TP-06





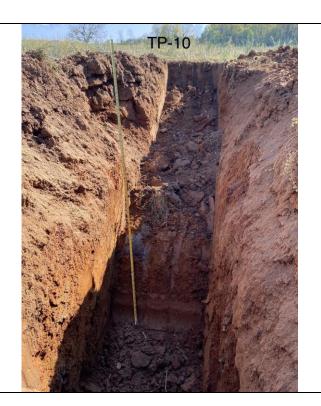
TP-07 TP-08

PROPOSED RITNER HIGHWAY WAREHOUSE ECS PROJECT NO. 18:5941 CUMBERLAND COUNTY, PENNSYLVANIA



TEST PIT PHOTOGRAPHS





TP-09 TP-10





TP-11 TP-12

PROPOSED RITNER HIGHWAY WAREHOUSE ECS PROJECT NO. 18:5941 CUMBERLAND COUNTY, PENNSYLVANIA



TEST PIT PHOTOGRAPHS





TP-13 TP-14



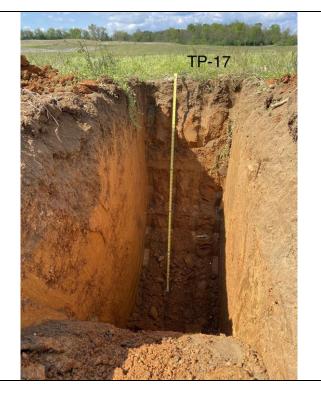


TP-15 TP-16

PROPOSED RITNER HIGHWAY WAREHOUSE ECS PROJECT NO. 18:5941 CUMBERLAND COUNTY, PENNSYLVANIA



TEST PIT PHOTOGRAPHS





TP-17 TP-18





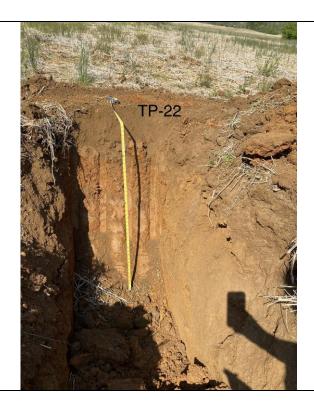
TP-19 TP-20

PROPOSED RITNER HIGHWAY WAREHOUSE ECS PROJECT NO. 18:5941 CUMBERLAND COUNTY, PENNSYLVANIA



TEST PIT PHOTOGRAPHS





TP-21 TP-22





TP-23 TP-24

PROPOSED RITNER HIGHWAY WAREHOUSE ECS PROJECT NO. 18:5941 CUMBERLAND COUNTY, PENNSYLVANIA



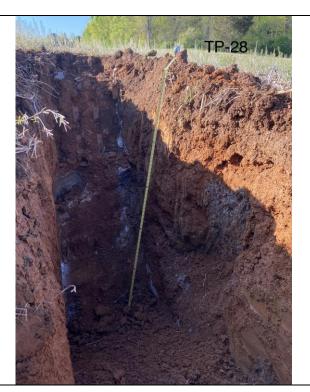
TEST PIT PHOTOGRAPHS





TP-25 TP-26



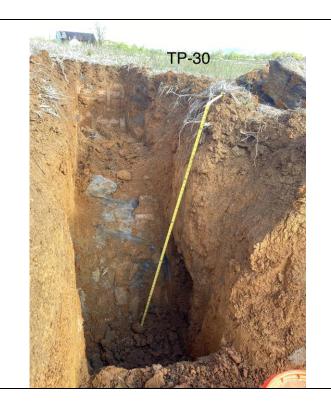


TP-27 TP-28

PROPOSED RITNER HIGHWAY WAREHOUSE ECS PROJECT NO. 18:5941 CUMBERLAND COUNTY, PENNSYLVANIA







TP-29 TP-30





TP-31 TP-32

PROPOSED RITNER HIGHWAY WAREHOUSE ECS PROJECT NO. 18:5941 CUMBERLAND COUNTY, PENNSYLVANIA











TP-37 TP-38





TP-39 TP-40

PROPOSED RITNER HIGHWAY WAREHOUSE ECS PROJECT NO. 18:5941 CUMBERLAND COUNTY, PENNSYLVANIA



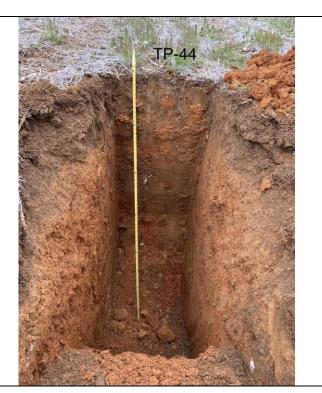
TEST PIT PHOTOGRAPHS





TP-41 TP-42



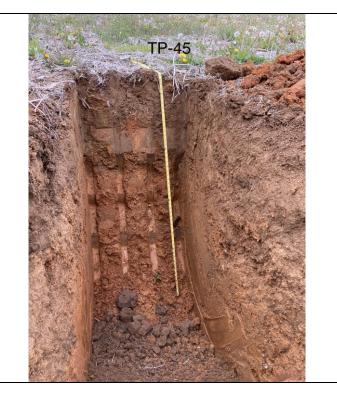


TP-43 TP-44

PROPOSED RITNER HIGHWAY WAREHOUSE ECS PROJECT NO. 18:5941 CUMBERLAND COUNTY, PENNSYLVANIA



TEST PIT PHOTOGRAPHS





TP-45 TP-46





TP-47 TP-48

PROPOSED RITNER HIGHWAY WAREHOUSE ECS PROJECT NO. 18:5941 CUMBERLAND COUNTY, PENNSYLVANIA







TP-49 TP-50





TP-51 TP-52

PROPOSED RITNER HIGHWAY WAREHOUSE ECS PROJECT NO. 18:5941 CUMBERLAND COUNTY, PENNSYLVANIA







TP-53 TP-54





TP-55 TP-56

PROPOSED RITNER HIGHWAY WAREHOUSE ECS PROJECT NO. 18:5941 CUMBERLAND COUNTY, PENNSYLVANIA



TEST PIT PHOTOGRAPHS





TP-57 TP-58





TP-59 TP-60

PROPOSED RITNER HIGHWAY WAREHOUSE ECS PROJECT NO. 18:5941 CUMBERLAND COUNTY, PENNSYLVANIA



TEST PIT PHOTOGRAPHS





TP-61 TP-62

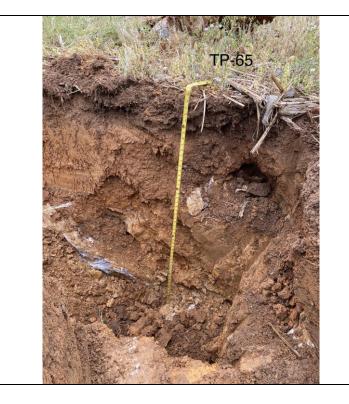




TP-63 TP-64

PROPOSED RITNER HIGHWAY WAREHOUSE ECS PROJECT NO. 18:5941 CUMBERLAND COUNTY, PENNSYLVANIA







TP-65 TP-66

PROPOSED RITNER HIGHWAY WAREHOUSE

ECS PROJECT NO. 18:5941

CUMBERLAND COUNTY, PENNSYLVANIA



TEST PIT PHOTOGRAPHS





Surface Depression 1 >16' diameter

Surface Depression 1 >16' diameter



Surface Depression 2 ~3.5' diameter

Surface Depression 2 ~3.5' diameter







Surface Depression 3 ~13' diameter

Surface Depression 3 ~13' diameter



Surface Depression 4 ~4' diameter

Surface Depression 4 ~4' diameter







Surface Depression 5 ~7' diameter

Surface Depression 5 ~7' diameter

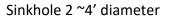


Sinkhole 1 ~6' diameter

Sinkhole 1 ~6' diameter









Sinkhole 2 ~4' diameter







Example of Animal Borrows on site

PROPOSED RITNER HIGHWAY WAREHOUSE ECS PROJECT NO. 18:5941 CUMBERLAND COUNTY, PENNSYLVANIA



APPENDIX C – Laboratory Testing

Laboratory Testing Summary Plasticity Charts Grain Size Analyses Textural Triangle USDA Test

Laboratory Testing Summary

		Depth ()	^MC (%)		Atterberg Limits			**Percent	Moisture	- Density	CBF	R (%)	#Organic
Sample Location	Sample Number			Soil Type	LL	PL	PI	Passing No. 200 Sieve	<maximum (pcf)<="" density="" th=""><th><optimum Moisture (%)</optimum </th><th>0.1 in.</th><th>0.2 in.</th><th>#Organic Content (%)</th></maximum>	<optimum Moisture (%)</optimum 	0.1 in.	0.2 in.	#Organic Content (%)
TP-03	S-1	4.2	29.1	СН	52	24	28	88.3					
TP-47	S-1	0.5	31.3	СН	61	25	36	97.8					
TP-66	S-1	8	22.0	CL	46	22	24	80.8					

Notes: See test reports for test method, ^ASTM D2216-19, *ASTM D2488, **ASTM D1140-17, #ASTM D2974-20e1 < See test report for D4718 corrected values

Definitions: MC: Moisture Content, Soil Type: USCS (Unified Soil Classification System), LL: Liquid Limit, PL: Plastic Limit, PI: Plasticity Index, CBR: California Bearing Ratio, OC: Organic Content

Project: Proposed Ritner Highway Warehouse Project No.: 18:5941
Client: Appalachian Asset Management Date Reported: 5/22/2023



Office / Lab Address Office Number / Fax

ECS Mid-Atlantic LLC - York 52-6 Grumbacher Road York, PA 17406

(717)767-4788

(717)767-5658

Tested by	Checked by	Approved by	Date Received
JGates		agolihew	

Laboratory Testing Summary

		Depth ()	^MC (%)		Atterberg Limits			**Percent	Moisture	- Density	CBF	R (%)	#Organic
Sample Location	Sample Number			Soil Type	LL	PL	PI	Passing No. 200 Sieve	<maximum (pcf)<="" density="" th=""><th><optimum Moisture (%)</optimum </th><th>0.1 in.</th><th>0.2 in.</th><th>#Organic Content (%)</th></maximum>	<optimum Moisture (%)</optimum 	0.1 in.	0.2 in.	#Organic Content (%)
TP-03	S-1	4.2	29.1	СН	52	24	28	88.3					
TP-47	S-1	0.5	31.3	СН	61	25	36	97.8					
TP-66	S-1	8	22.0	CL	46	22	24	80.8					

Notes: See test reports for test method, ^ASTM D2216-19, *ASTM D2488, **ASTM D1140-17, #ASTM D2974-20e1 < See test report for D4718 corrected values

Definitions: MC: Moisture Content, Soil Type: USCS (Unified Soil Classification System), LL: Liquid Limit, PL: Plastic Limit, PI: Plasticity Index, CBR: California Bearing Ratio, OC: Organic Content

Project: Proposed Ritner Highway Warehouse Project No.: 18:5941
Client: Appalachian Asset Management Date Reported: 5/22/2023



Office / Lab Address Office Number / Fax

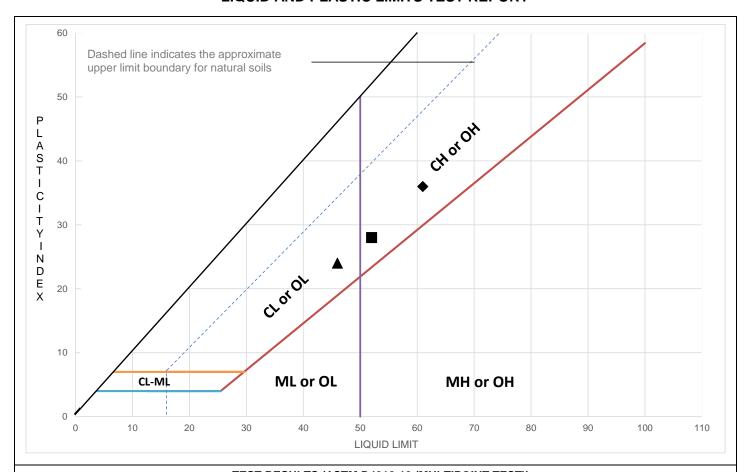
ECS Mid-Atlantic LLC - York 52-6 Grumbacher Road York, PA 17406

(717)767-4788

(717)767-5658

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JGates		agolihew	

LIQUID AND PLASTIC LIMITS TEST REPORT



TEST RESULTS (ASTM D4318-10 (MULTIPOINT TEST))

	Sample Location	Sample Number	Sample Depth (ft)	LL	PL	PI	%<#40	%<#200	AASHTO	USCS	Material Description			
	TP-03	S-1	4.2	52	24	28	93.8	88.3	A-7-6	СН	Fat Clay			
♦	TP-47	S-1	0.5	61	25	36	99.3	97.8	A-7-6	СН	Fat Clay			
A	TP-66	S-1	8	46	22	24	94.2	80.8	A-7-6	CL	Lean Clay with Sand			

Project: Proposed Ritner Highway Warehouse Client: Appalachian Asset Management

Project No.: 18:5941 Date Reported: 5/22/2023



Office / Lab

ECS Mid-Atlantic LLC - York

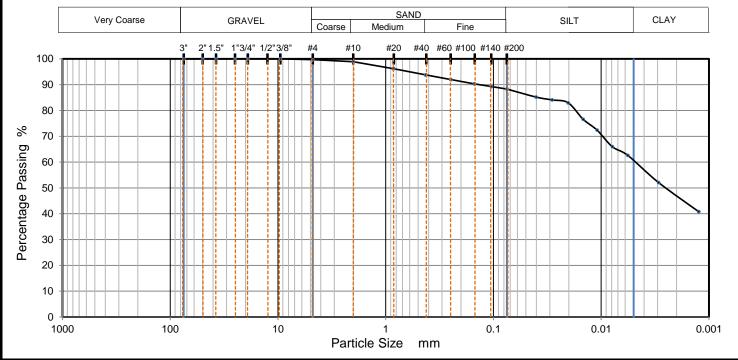
Address

52-6 Grumbacher Road York, PA 17406 Office Number / Fax

(717)767-4788 (717)767-5658

Tested by	Checked by	Approved by	Date Received
JGates		agolihew	

PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD B)

Sie	eving	Hydrometer S	edimentation
Particle Size	% Passing	Particle Size mm	% Passing
3"	100.0	0.0402	85.2
2"	100.0	0.0286	84.1
1 1/2"	100.0	0.0203	83.0
1"	100.0	0.0147	76.6
3/4"	100.0	0.0109	72.4
3/8"	100.0	0.0079	66.0
#4	99.7	0.0057	62.6
#10	98.9	0.0029	52.1
#20	96.2	0.0012	40.8
#40	93.8		
#60	92.0	Specific Gravi	ty (Historical)
#100	90.3	2.6	65
#140	89.3		
#200	88.3		
		II	

Dry Mass of sample, g	182.7
-----------------------	-------

Sample Proportions	% dry mass
Very coarse, >3" sieve	0.0
Gravel, 3" to # 4 sieve	0.3
Coarse Sand, #4 to #10 sieve	0.8
Medium Sand, #10 to #40	5.1
Fine Sand, #40 to #200	5.5
Silt, 75µm to 5 µm	27.7
Clay < 5µm	60.6

USCS	CH	Liquid Limit	52	D90	0.135	D50	0.003	D10	
AASHTO	A-7-6	Plastic Limit	24	D85	0.038	D30		Cu	
USCS Group Name	Fat clay	Plasticity Index	28	D60	0.005	D15		Сс	

Project: Proposed Ritner Highway Warehouse

Client: Appalachian Asset Management

Sample Description: Fat Clay Sample Source: TP-03

Project No.: 18:5941 Depth (ft): 4.2 Sample No.: S-1 Date Reported: 5/22/2023



ECS Mid-Atlantic LLC - York

Office / Lab

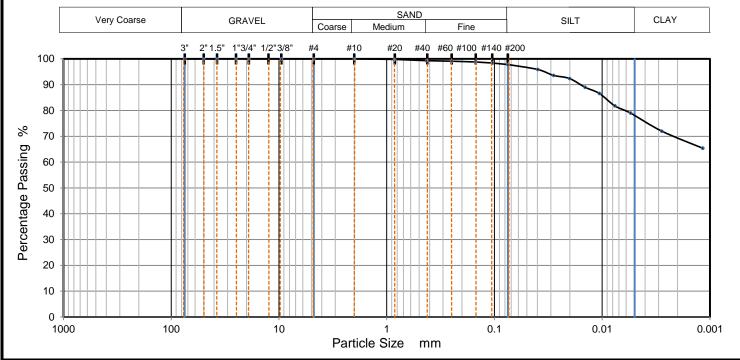
Address

Office Number / Fax

52-6 Grumbacher Road York, PA 17406 (717)767-4788(717)767-5658

Tested by	Checked by	Approved by	Date Received	Remarks
JGates		agolihew		

PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD B)

Sie	ving	Hydrometer S	edimentation
Particle Size	% Passing	Particle Size mm	% Passing
3"	100.0	0.0397	95.9
2"	100.0	0.0283	93.6
1 1/2"	100.0	0.0201	92.4
1"	100.0	0.0144	89.0
3/4"	100.0	0.0106	86.6
3/8"	100.0	0.0076	81.8
#4	100.0	0.0055	79.0
#10	100.0	0.0028	72.0
#20	99.8	0.0012	65.4
#40	99.3		
#60	99.1	Specific Grav	ity (Historical)
#100	98.8	2.6	65
#140	98.4		
#200	97.8		
		li .	

Dry Mass of sample, g	112.0
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Sample Proportions	% dry mass
Very coarse, >3" sieve	0.0
Gravel, 3" to # 4 sieve	0.0
Coarse Sand, #4 to #10 sieve	0.0
Medium Sand, #10 to #40	0.7
Fine Sand, #40 to #200	1.5
Silt, 75µm to 5 µm	19.7
Clay < 5µm	78.1

USCS	СН	Liquid Limit	61	D90	0.016	D50	D10	
AASHTO	A-7-6	Plastic Limit	25	D85	0.010	D30	Cu	
USCS Group Name	Fat clay	Plasticity Index	36	D60		D15	Сс	

Project: Proposed Ritner Highway Warehouse

Client: Appalachian Asset Management

Sample Description: Fat Clay Sample Source: TP-47

Project No.: 18:5941 Depth (ft): 0.5 Sample No.: S-1 Date Reported: 5/22/2023



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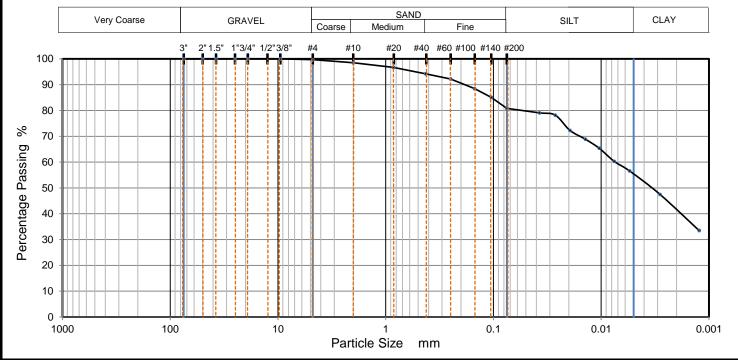
Office Number / Fax

52-6 Grumbacher Road York, PA 17406 (717)767-4788

(717)767-5658

Tested by	Checked by	Approved by	Date Received	Remarks
JGates		agolihew		

PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD B)

Sie	eving	Hydrometer S	edimentation
Particle Size	% Passing	Particle Size mm	% Passing
3"	100.0	0.0376	79.1
2"	100.0	0.0267	78.2
1 1/2"	100.0	0.0195	72.3
1"	100.0	0.0141	68.9
3/4"	100.0	0.0105	65.4
3/8"	100.0	0.0076	60.3
#4	99.7	0.0055	56.6
#10	98.5	0.0028	47.5
#20	96.7	0.0012	33.5
#40	94.2		
#60	92.2	Specific Grav	ity (Historical)
#100	88.5	2.0	65
#140	85.1		
#200	80.8		

Dry Mass of sample, g	194.9

Sample Proportions	% dry mass
Very coarse, >3" sieve	0.0
Gravel, 3" to # 4 sieve	0.3
Coarse Sand, #4 to #10 sieve	1.2
Medium Sand, #10 to #40	4.3
Fine Sand, #40 to #200	13.4
Silt, 75µm to 5 µm	25.4
Clay < 5µm	55.4

USCS	CL	Liquid Limit	46	D90	0.185	D50	0.003	D10	
AASHTO	A-7-6	Plastic Limit	22	D85	0.104	D30		Cu	
USCS Group Name	Lean clay with sand	Plasticity Index	24	D60	0.007	D15		Сс	

Project: Proposed Ritner Highway Warehouse

Client: Appalachian Asset Management

Sample Description: Lean Clay with Sand

Sample Source: TP-66

Project No.: 18:5941
Depth (ft): 8
Sample No.: S-1

Date Reported: 5/22/2023



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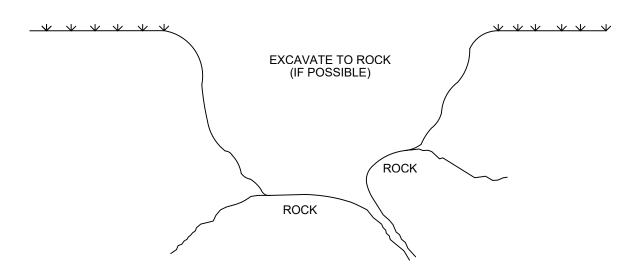
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(717)767-5658

Tested by	Checked by	Approved by	Date Received	Remarks
JGates		agolihew		

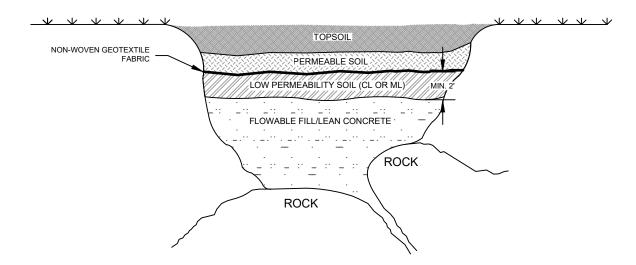
APPENDIX D – Details

Sinkhole Repair Details



STEP 1: EXCAVATE THE SINKHOLE DOWN TO ROCK, IF POSSIBLE.

STEP 2: CLEAN OUT ALL LOOSE SOIL AND EXPOSE THROAT. IF POSSIBLE.



STEP 3: PLACE APPROXIMATELY 2 TO 3 FEET (OR AS NEEDED) OF FLOWABLE FILL/LEAN CONCRETE.

STEP 4: COMPACT LOW PERMEABILITY SOIL (CL OR ML MATERIALS) OVER FLOWABLE FILL/LEAN CONCRETE TO A MINIMUM THICKNESS OF 2 FEET.

STEP 5: COVER THE SOIL WITH NON-WOVEN GEOTEXTILE FABRIC.

STEP 6: COVER GEOTEXTILE WITH PERMEABLE SOIL, COMPATIBLE WITH THE ON-SITE SOILS. COMPACT TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY (MDD) AS OBTAINED BY ASTM D698 (OR 92% OF THE MDD AS OBTAINED BY ASTM D1557.)

STEP 7: FILL THE REMAINDER OF THE HOLE WITH SOIL TO MATCH GRADE. THIS CAN BE LAYERED TO MATCH THE EXISTING SOIL PROFILE.

NOTE: ALL SINKHOLE REPAIRS SHOULD BE PERFORMED UNDER THE SUPERVISION OF A GEOTECHNICAL ENGINEER EXPERIENCED WITH CARBONATE GEOLOGY AND SINKHOLE REPAIR PROCEDURES. DETAILS CAN BE MODIFIED AT THE DESCRETION OF THE GEOTECHNICAL ENGINEER BASED ON THE ENCOUNTERED CONDITIONS.POSITIVE DRAINAGE AWAY FROM THE OPEN EXCAVATION SHOULD BE MAINTAINED.

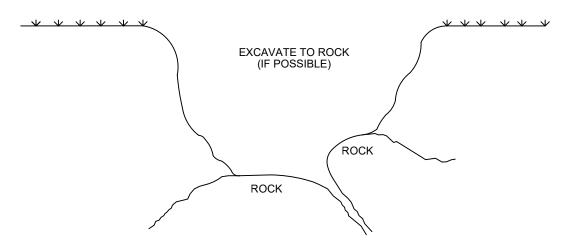


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TYPICAL SINKHOLE REPAIR DETAIL

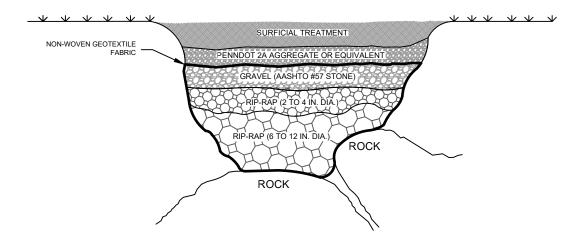
GROUTED REPAIR

NOT TO SCALE



STEP 1: EXCAVATE THE SINKHOLE DOWN TO ROCK, IF POSSIBLE.

STEP 2: CLEAN OUT ALL LOOSE SOIL AND EXPOSE THROAT, IF POSSIBLE.



STEP 3: LINE THE EXCAVATION WITH NON-WOVEN GEOTEXTILE FABRIC (MIRAFI 140N OR EQUIVALENT.

STEP 4: PLACE A LAYER OF LARGE STONE IN THE EXCAVATION. STONE SHOULD BE APPROXIMATELY 6 TO 12 INCHES IN DIAMETER.

STEP 5: PLACE A LAYER OF SMALLER STONE ON TOP. THIS LAYER SHOULD CONSIST OF STONES APPROXIMATELY 2 TO 4 INCHES IN DIAMETER.

STEP 6: PLACE A LAYER OF GRAVEL ON TOP OF THE SMALLER STONES. THE GRAVEL SHOULD BE AASHTO #57 STONE OR EQUIVALENT.

STEP 7: COVER THE GRAVEL WITH THE GEOTEXTILE FABRIC. THIS WILL PREVENT THE FINES FROM THE NEXT LAYER FROM BEING LOST IN THE VOID SPACE OF THE GRAVEL/STONE.

STEP 8: PLACE A LAYER OF PENNDOT 2A AGGREGATE OR EQUIVALENT ON TOP OF THE GEOTEXTILE FABRIC. COMPACT TO A MINIMUM OF 95% OF THE MAXIMUM DRY DENSITY (MDD) AS OBTAINED BY ASTM D698 (OR 92% OF THE MDD AS OBTAINED BY ASTM D1557.)

STEP 9: FILL THE REMAINDER OF THE HOLE WITH SOIL TO MATCH GRADE. THIS CAN BE LAYERED TO MATCH THE EXISTING SOIL PROFILE.

NOTE: IDEALLY EACH LAYER IS APPROXIMATELY 6 INCHES TO 2 FEET THICK; HOWEVER, THICKER LAYERS ARE SOMETIMES WARRANTED DEPENDING ON THE DEPTH OF THE FEATURE.ALL SINKHOLE REPAIRS SHOULD BE PERFORMED UNDER THE SUPERVISION OF A GEOTECHNICAL ENGINEER EXPERIENCED WITH CARBONATE GEOLOGY AND SINKHOLE REPAIR PROCEDURES. DETAILS CAN BE MODIFIED AT THE DESCRETION OF THE GEOTECHNICAL ENGINEER BASED ON THE ENCOUNTERED CONDITIONS. POSITIVE DRAINAGE AWAY FROM THE OPEN EXCVATION SHOULD BE MAINTAINED.



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TYPICAL SINKHOLE REPAIR DETAIL

STONE TYPE REPAIR

NOT TO SCALE