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

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

COMMONWEALTH OF PENNSYLVANIA
REGISTERED PROFESSIONAL
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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.

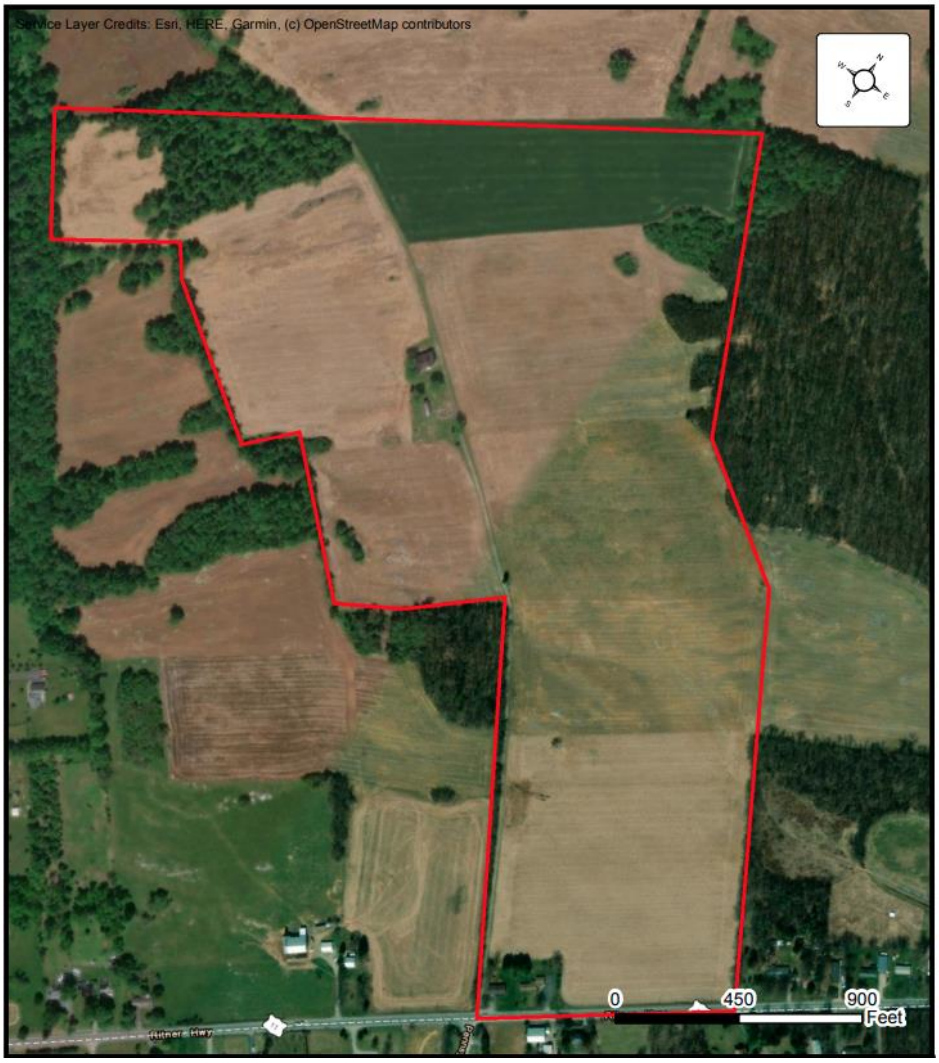


Figure 2.1.A – Site Location

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
I	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
						0.34[2]
Facility C- Proposed Basin Bottom= El. 585.0 ft						
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 Basin Bottom= El. 601.0 ft						
TP-13	597.8	3.0[3]	594.8[3]	0.8	597.0	1.44
						1.45[2]
TP-14	601.2	4.0	597.2	0.8	600.4	0.00
						1.19[2]
TP-15	606.5	6.0[3]	600.5[3]	4.0	602.5	0.00
						0.49[2]
Facility E- Proposed Basin Bottom= El. 585. 0						
TP-16	587.5	6.0	581.5	2.5	585.0	0.06
						0.70[2]
TP-17	586.2	5.0	581.2	1.2	585.0	0.13
						0.75[2]
TP-18	585.5	5.0	580.5	1.0	584.5	0.19
						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]
Facility F- Proposed Basin Bottom= El. 599.0 ft and 612.0 ft						
TP-21	597.5	5.5	592.0	1.5	596.0	0.00
						0.45[2]
TP-22	599.8	3.5[3]	596.3[3]	1.2	598.6	0.16
						0.41[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-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 Basin Bottom= El. 604.0 ft						
TP-27	617.0	6.0[3]	611.0[3]	4.0	613.0	1.97
						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 Basin Bottom= El. 590.0 ft						
TP-32	597.5	4.0[3]	593.5[3]	2.0	595.5	6.56
						1.24[2]
TP-33	598.0	9.0[3]	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 Basin Bottom= El. 600.0 ft						
TP-38	600.5	4.0	596.5	1.0	599.5	1.79
						1.17[2]
TP-39	606.5	6.0[3]	600.5[3]	4.0	602.5	0.50
						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 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 1.28[2]
TP-44	604.5	6.0	598.5	1.5	603.0	2.63 6.46[2]
TP-45	603.8	4.5	599.3	1.7	602.1	0.07 0.10[2]
Facility L- Proposed Basin Bottom= El. 603.0 ft						
TP-46	619.8	10.0	609.8	8.0	611.8	0.00 0.06[2]
TP-47	617.5	6.0[3]	611.5[3]	1.0	616.5	0.00 0.29[2]
TP-48	603.8	4.5	599.3	1.0	602.8	0.03 1.40[2]
Facility M- Proposed Basin Bottom= El. 601.0 ft						
TP-49	603.2	6.5	596.7	2.2	601.0	0.63 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]	609.8[3]	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- Proposed Basin Bottom= El. 620.0 ft						
TP-53	624.5	4.5[3]	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]
TP-56	629.2	10.0	619.2	8.0	621.2	0.03 0.04[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)**
Facility O- Proposed 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]

Note[1]: 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.
Note[2]: Percolation test.
Note[3]: 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	B	(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	HaB	Clayey residuum weathered from limestone	43 to 98 inches to lithic bedrock	>80 inches	B	(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	B	(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	B	(0.60 – 2.00)
Huntington silt loam, 0 to 5 percent slopes	HuA	Colluvium derived from limestone and shale	>80 inches	>80 inches	B	(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)**
A	TP-01 through TP-03	0.30
B	TP-04 through TP-09	0.34
C	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
H	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
O	TP-57 through TP-59	0.63
P	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 UDSA Classification	**Ranges of USDA Particle Size Percentages**						**Typical Infiltration Rates for Permissible Soil Types (in/hr)***	
	Sand		**Silt**		**Clay**		**Min**	**Max**
	Min	**Max**	**Min**	**Max**	**Min**	**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.

2. 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.

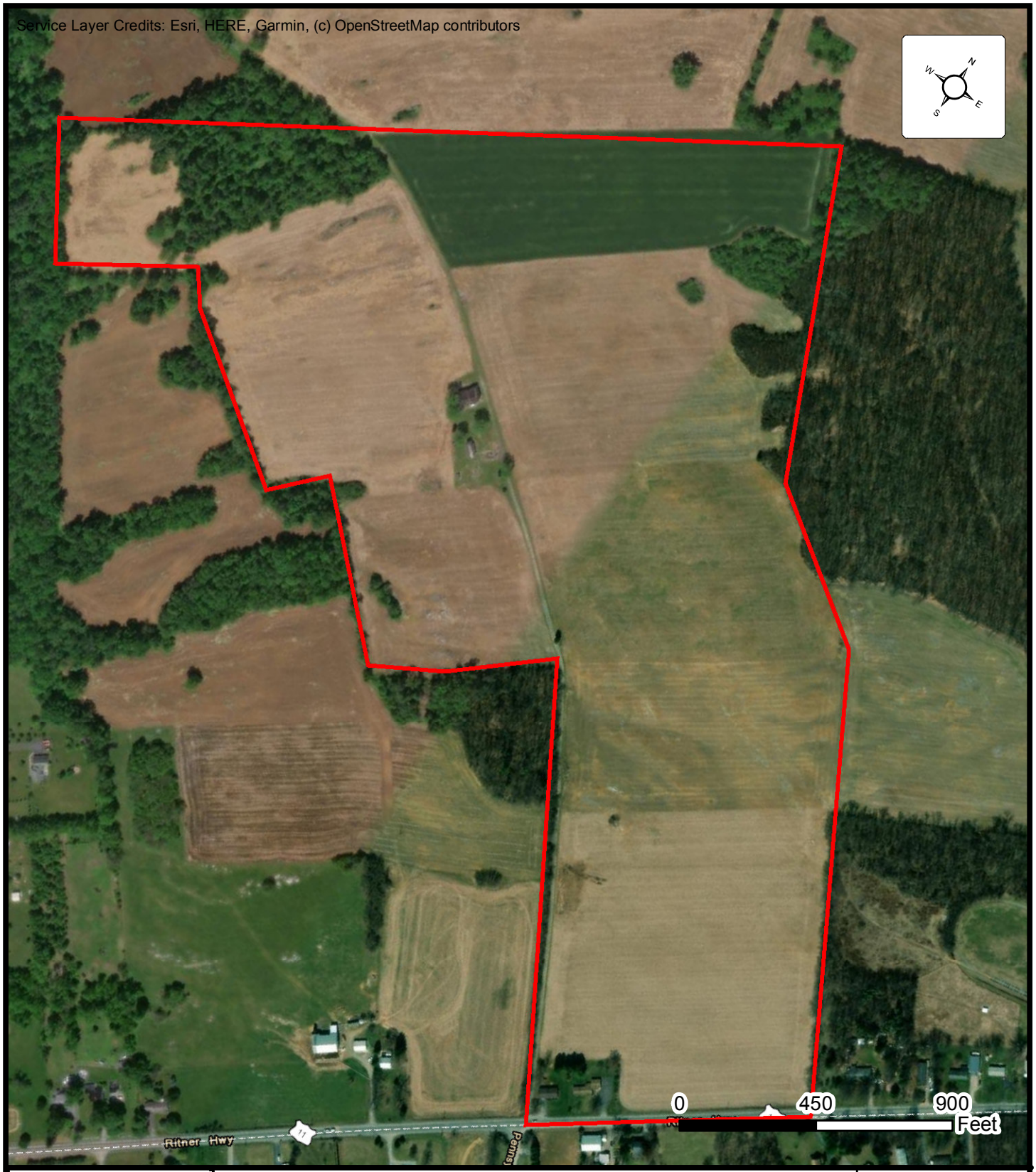
We recommend that ECS review the project plans and specifications so we can confirm that those plans/specifications are in accordance with the recommendations of this geotechnical report.

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

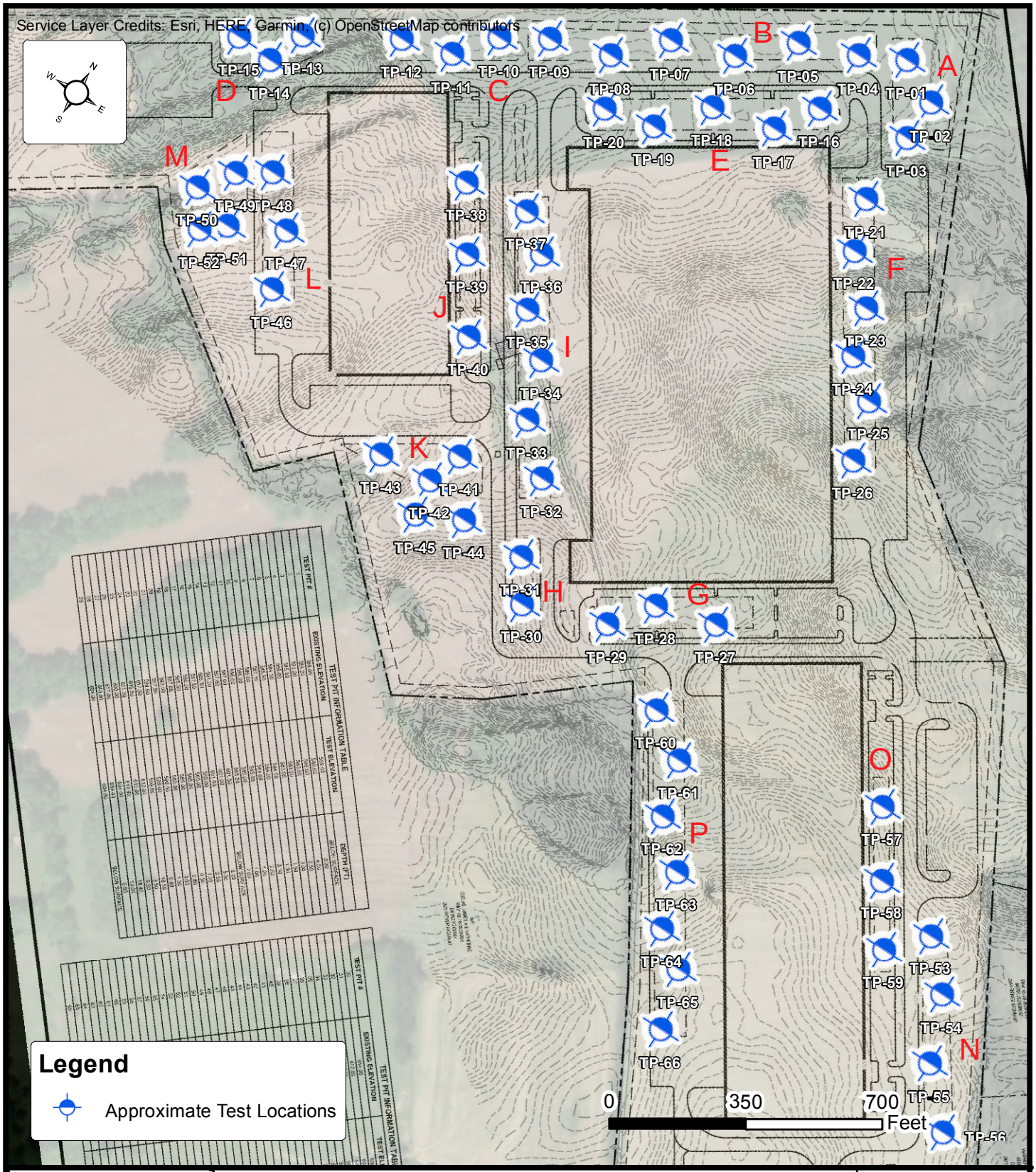
Site Location Diagram
Exploration Location Diagram
Geologic Map
Soil Survey Map
Karst Features Map
Carbonate Assessment Maps



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

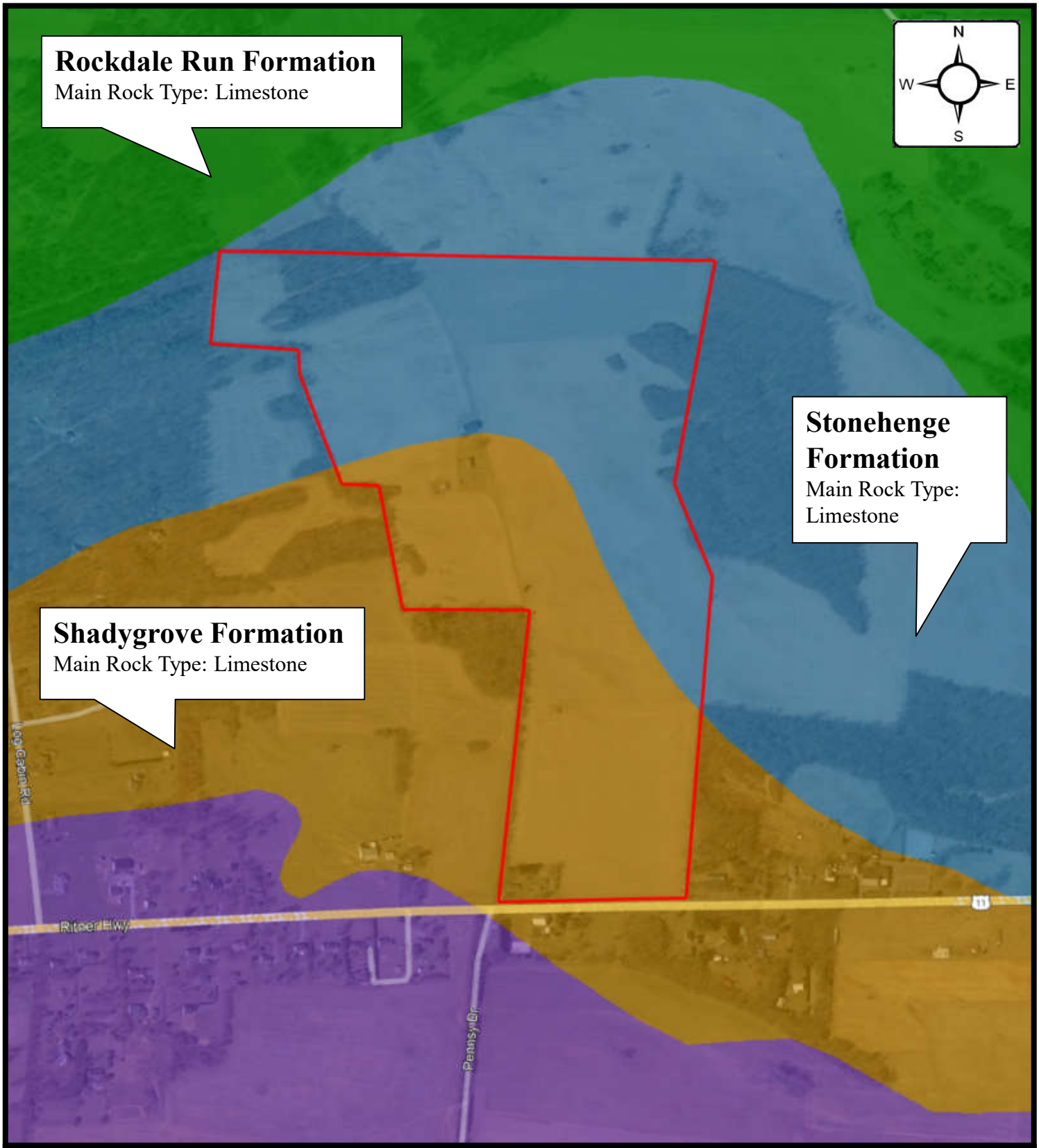


EXPLORATION LOCATION DIAGRAM
PROPOSED RITNER HIGHWAY

3485 RITNER HIGHWAY, NEWVILLE, PENNSYLVANIA

APPALACHIAN ASSET MANAGEMENT

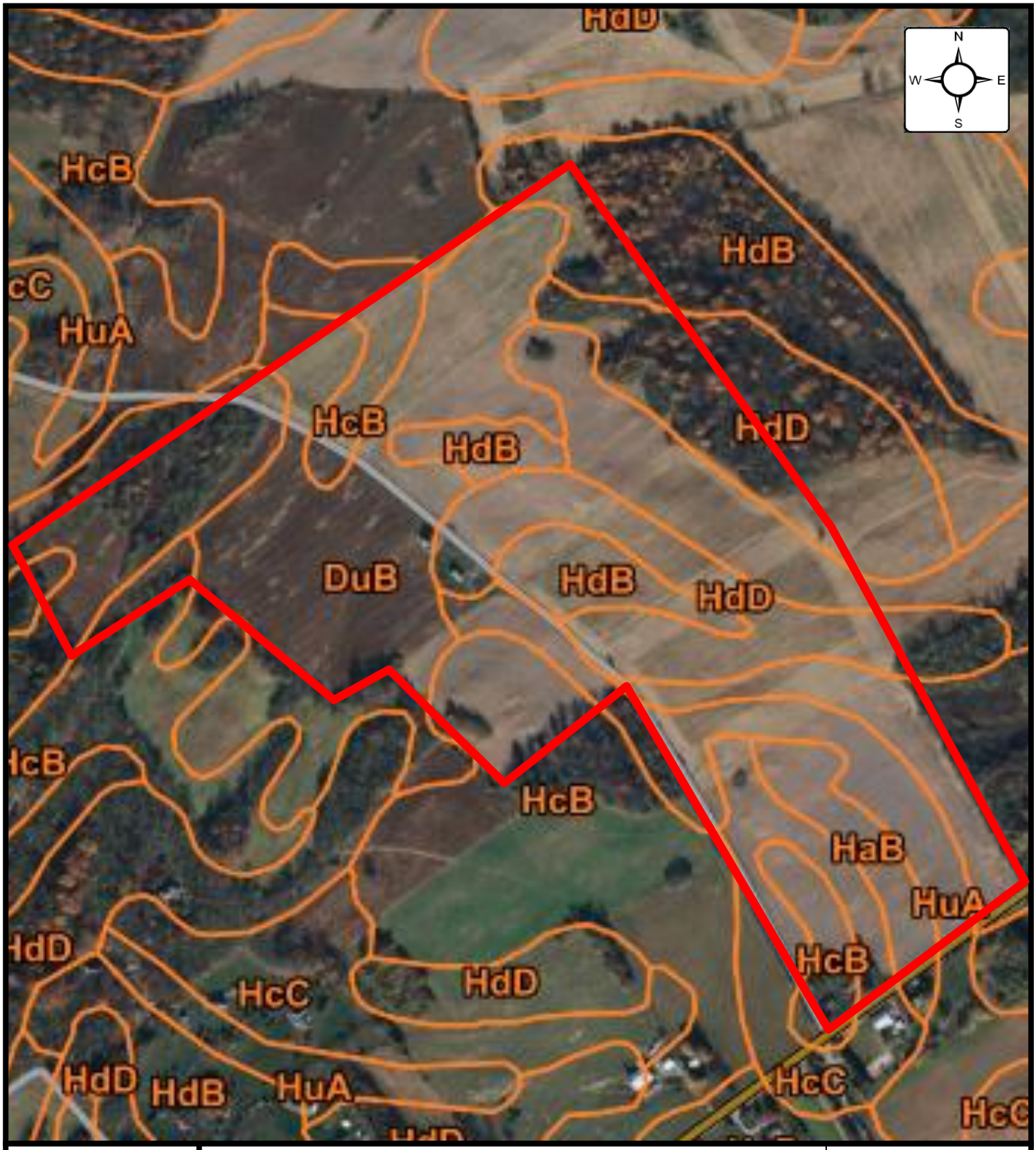
ENGINEER	DGR
SCALE	AS NOTED
PROJECT NO.	18:5941
FIGURE	1 OF 1
DATE	5/18/2023



GEOLOGIC MAP
PROPOSED RITNER HIGHWAY WAREHOUSE DEVELOPMENT

3485 RITNER HIGHWAY, NEWVILLE, PA
APPALACHIAN ASSET MANAGEMENT

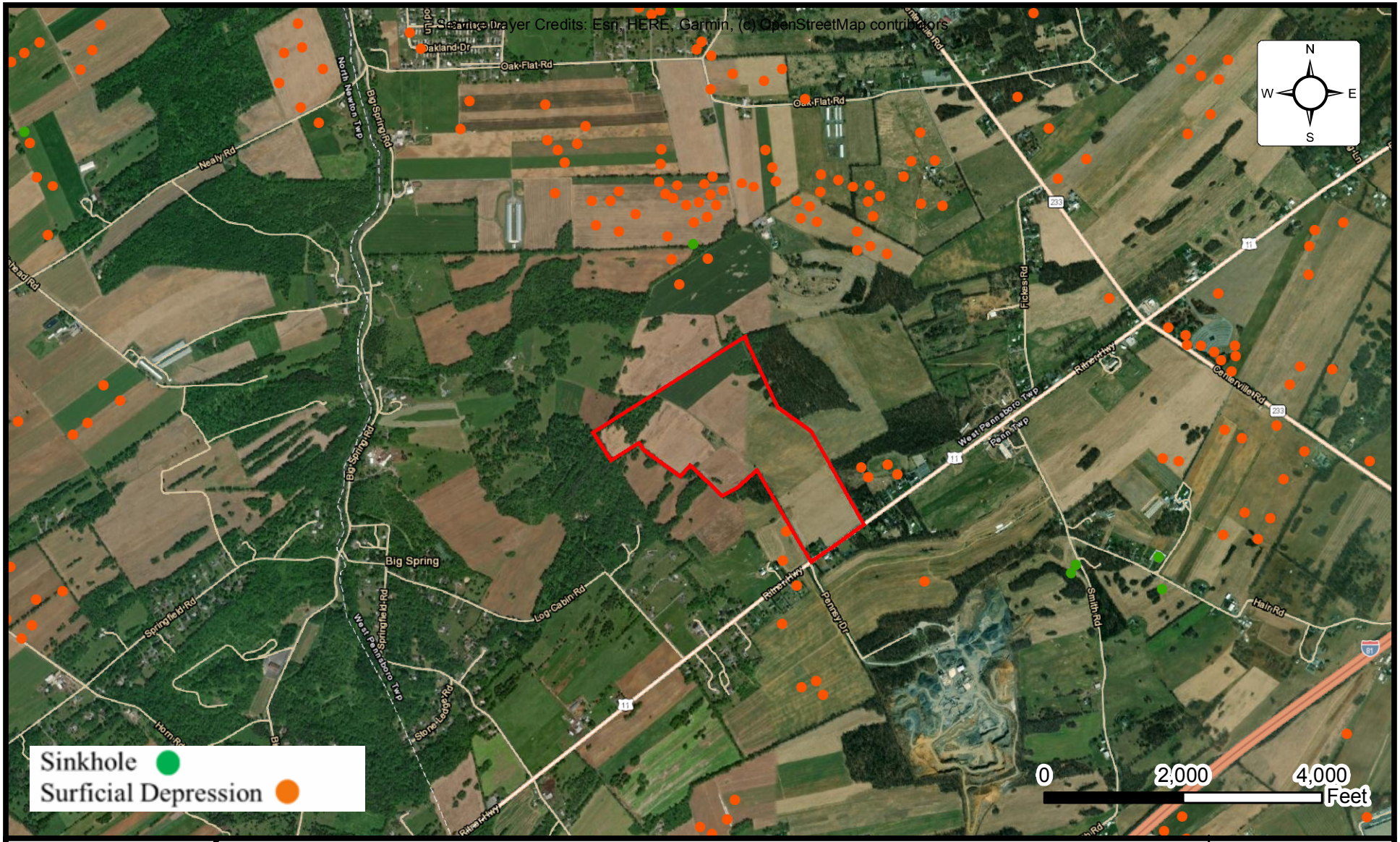
DRAFTER	RWB
SCALE	NTS
PROJECT NO.	18:5941
DATE	5/26/2023
SOURCE	PA DCNR Geologic Map http://www.gis.dcnr.state.pa.us



SOIL SURVEY MAP
PROPOSED RITNER HIGHWAY WAREHOUSE DEVELOPMENT

3485 RITNER HIGHWAY, NEWVILLE, PA
APPALACHIAN ASSET MANAGEMENT

DRAFTER	MSD
SCALE	NTS
PROJECT NO.	18:5941
DATE	5/18/2023
SOURCE	Web Soil Survey https://websoilsurvey.nrcs.usda.gov

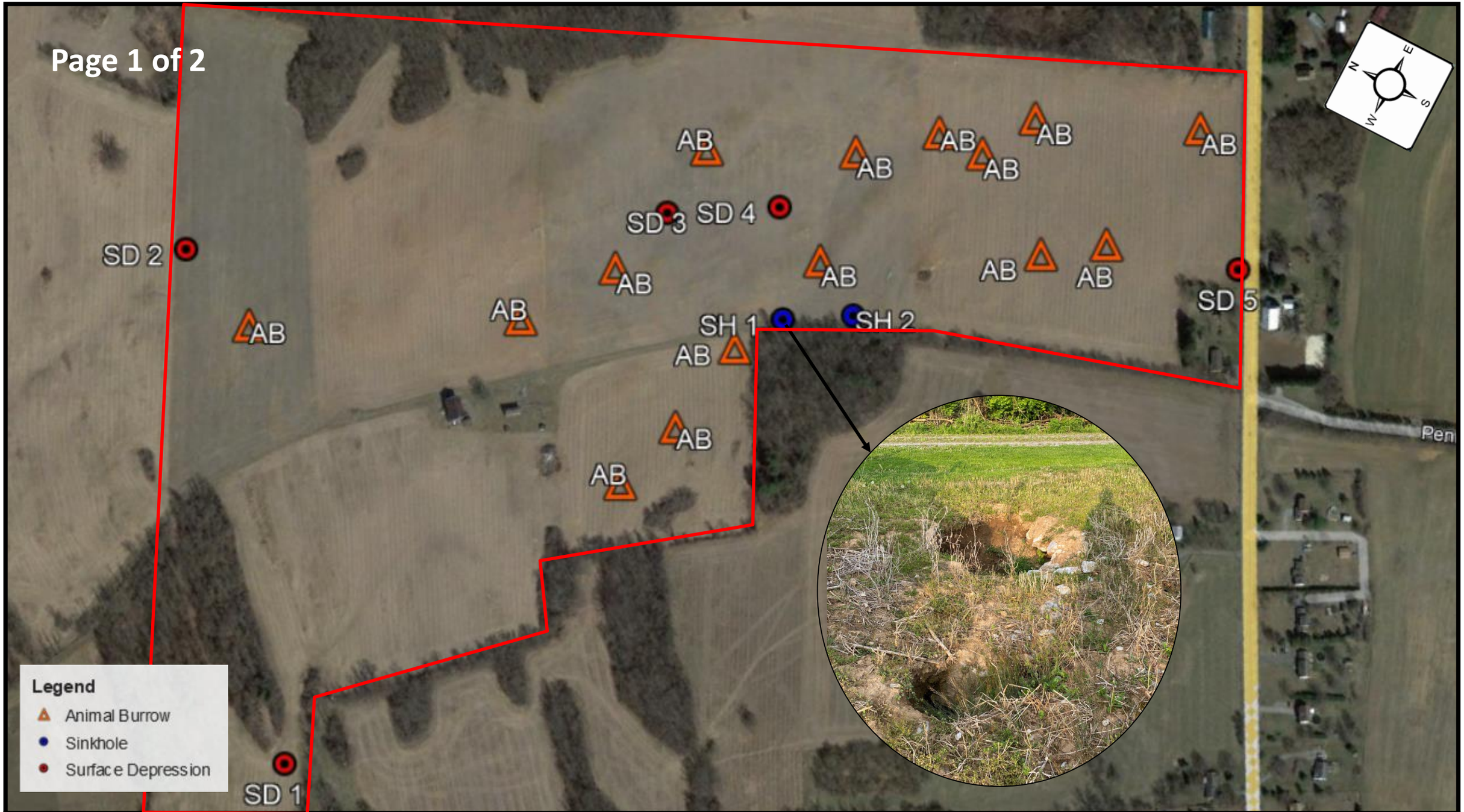


KARST FEATURES MAP
PROPOSED RITNER HIGHWAY WAREHOUSE DEVELOPMENT

3485 RITNER HIGHWAY, NEWVILLE, PENNSYLVANIA

APPALACHIAN ASSET MANAGEMENT

ENGINEER	DGR
SCALE	AS NOTED
PROJECT NO.	18:5941
FIGURE	1 OF 1
DATE	5/30/2023

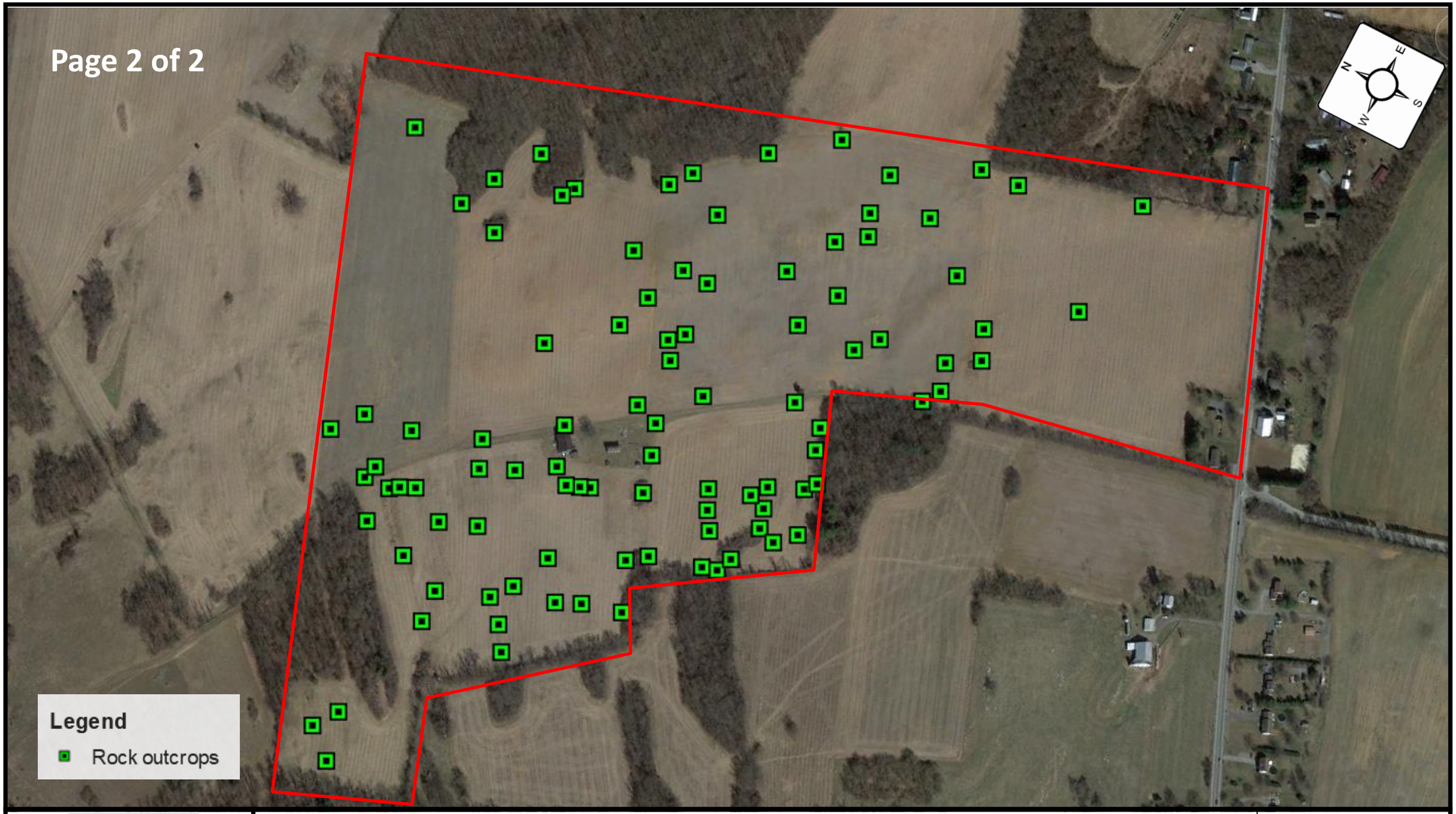


Carbonate Assessment Map

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



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.

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-01**	**586**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[12.00"]					
			(CL) LEAN CLAY, brown, moist, hard, pinnacle exposed at surface, 10YR 4/6,10YR 5/6	E		4.00	S-1	
			END OF TEST PIT AT 3.0 FT					
5		581						
10		576						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
ZRR	**May 05 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-02**	**589.2**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[10.00"]					
			(CL) LEAN CLAY, brown, moist, hard, 7.5YR 5/8	E		4.50	S-1	
		585	**END OF TEST PIT AT 4.0 FT**					
5								
		580						
10								
		575						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD	**Apr 26 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse Development	**TP-03**	**593.2**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[8.00"]					
			(CL/CH) LEAN TO FAT CLAY, brown to orangish brown, moist, very stiff to hard, 7.5YR 5/8, 10YR 6/8			3.00		
				M				
5		589				4.50	S-1	29.1
			END OF TEST PIT AT 7.2 FT					
		584						
10								
		579						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**

ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
MSD	**Apr 24 2023**	**English**	

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-04**	**585.5**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[10.00"]					
			(CL) LEAN CLAY, orangish brown, moist, very stiff, contains boulders, 7.5YR 5/8	M		2.50	S-1	
5		581						
			END OF TEST PIT AT 6.0 FT					
10		576						
		571						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD	**May 05 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse Development	**TP-05**	**586**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[12.00"]					
			(ML) SILT WITH SAND, reddish brown, moist, 5YR 5/8, 10YR 6/6	M			S-1	
5		581						
			END OF TEST PIT AT 6.0 FT					
10		576						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD	**May 05 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-06**	**584.5**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[9.00"]					
			(CL) LEAN CLAY, orangish brown, moist, very stiff, 7.5YR 5/8, 7.5YR 6/8	E		2.75	S-1	
5		580						
			END OF TEST PIT AT 6.0 FT					
10		575						
		570						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD	**Apr 24 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-07**	**585.5**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[9.00"]					
			(ML) SILT WITH SAND, reddish brown, moist, 5YR 5/8, 10YR 6/6	E			S-1	
		581						
5			**END OF TEST PIT AT 5.0 FT**					
		576						
10								
		571						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD	**May 05 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-08**	**587.1**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[10.00"]					
			(CL) LEAN CLAY, orangish brown, moist, very stiff, 10YR 6/8, 7.5YR 5/8	M		3.00	S-1	
5		583						
			END OF TEST PIT AT 6.5 FT					
10		578						
		573						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**

ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
MSD	**May 05 2023**	**English**	

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-09**	**586.0**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[12.00"]					
			(CL) LEAN CLAY WITH SAND, reddish brown, moist, hard, 7.5YR 6/8, 7.5YR 5/8	E		4.00	S-1	
5		581	**END OF TEST PIT AT 5.0 FT**					
10		576						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD	**May 05 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-10**	**586.2**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[10.00"]					
			(CL) LEAN CLAY, reddish brown, moist, very stiff, 5YR 5/8, 5YR 6/8	D		3.75	S-1	
		582						
5			**END OF TEST PIT AT 5.0 FT**					
		577						
10								
		572						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**

ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
MSD	**May 05 2023**	**English**	

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-11**	**586.0**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[10.00"]					
			(CL) LEAN CLAY, reddish brown, moist, hard, pinnacles, 5YR 5/8, 5YR 6/8	D		4.50	S-1	
			BUCKET REFUSAL AT 3.5 FT					
5		581						
10		576						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD	**Apr 25 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-12**	**587.0**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[10.00"]					
			(CL) LEAN CLAY, reddish brown, moist, very stiff, pinnacles, 5YR 5/8	D		2.25	S-1	
			BUCKET REFUSAL AT 4.0 FT					
5		582						
10		577						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD	**May 05 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-13**	**597.8**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[10.00"]					
			(ML) SILT, brown, moist, pinnacles, 10YR 5/6, 10YR 6/6	VD			S-1	
			BUCKET REFUSAL AT 3.0 FT					
5		593						
10		588						
15		583						

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD	**May 05 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-14**	**601.2**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[10.00"]					
			(ML) SILT, brown, moist, 2.5YR 4/8, 2.5YR 5/8	E			S-1	
		597	**END OF TEST PIT AT 4 FT**					
5								
		592						
10								
		587						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD	**May 05 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-15**	**606.5**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
0		606	Topsoil Thickness[12.00"]					
			(ML) SILT WITH GRAVEL, brown, moist, 10YR 5/4, 10YR 5/6	M			S-1	
5		602	**BUCKET REFUSAL AT 6.0 FT**					
10		597						
15		592						

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.	CONTRACTOR: **SA Way & Son Excavating**	OPERATOR: **Tim**	MAKE/MODEL: **Bobcat E32**
▼ WL (Completion)	Not Enc.					
ECS REP.: **MSD**	DATE COMPLETED: **May 05 2023**			UNITS: **English**	CAVE-IN-DEPTH:	

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-16**	**587.5**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[11.00"]					
			(ML) SILT WITH SAND, reddish brown, moist, 5YR 6/8, 5YR 5/8	M			S-1	
5		583						
			END OF TEST PIT AT 6.0 FT					
10		578						
		573						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD	**Apr 24 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-17**	**586.2**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[12.00"]					
			(CL) LEAN CLAY, reddish brown, moist, very stiff, 5YR 5/8, 5YR 6/8	E		2.50	S-1	
		582						
5			**END OF TEST PIT AT 5.0 FT**					
		577						
10								
		572						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD	**May 05 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-18**	**585.5**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[12.00"]					
			(ML) SILT WITH GRAVEL, brown, moist, 10YR 4/4, 10YR 5/8	E			S-1	
		581						
5			**END OF TEST PIT AT 5.0 FT**					
		576						
10								
		571						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD	**Apr 24 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-19**	**587.8**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[14.00"]					
			(CL) LEAN CLAY, orangish brown, moist, very stiff, 7.5YR 7/8, 10YR 6/8	E		3.75	S-1	
5		583						
			END OF TEST PIT AT 6.5 FT					
10		578						
15		573						

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD	**Apr 24 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-20**	**592.0**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[11.00"]					
			(ML) SILT, orangish brown, moist, 7.5YR 5/8, 7.5YR 6/8					
							S-1	
5		587		E				
			END OF TEST PIT AT 7.0 FT					
10		582						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD	**May 05 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-21**	**597.5**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[16.00"]					
			(ML) SILT, reddish brown, moist, 2.5YR 5/8, 2.5YR 5/6				S-1	
		593		E				
5			**END OF TEST PIT AT 5.5 FT**					
		588						
10								
		583						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion)	Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:		UNITS:	CAVE-IN-DEPTH:	
MSD	**Apr 26 2023**		**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-22**	**599.8**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[14.00"]					
			(CL) LEAN CLAY, reddish brown, moist, hard, 5YR 5/8	D		4.00	S-1	
			BUCKET REFUSAL AT 3.5 FT					
5		595						
10		590						
15		585						

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD	**May 05 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-23**	**617.5**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[18.00"]					
			(CL) LEAN CLAY, brown, moist, very stiff, 7.5YR 5/6	M		2.25	S-1	
		613	**BUCKET REFUSAL AT 4.5 FT**					
5								
		608						
10								
		603						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD	**Apr 26 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-24**	**615.5**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[16.00"]					
			(CL) LEAN CLAY, orangish brown, moist, very stiff to hard, 7.5YR 5/8, 10YR 5/8	M		3.50 4.00	S-1	
5		611						
			END OF TEST PIT AT 6.5 FT					
10		606						
		601						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD	**Apr 26 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-25**	**621.2**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[22.00"]					
			(CL) GRAVELLY LEAN CLAY, orangish brown, moist, very stiff, 7.5YR 5/6, 7.5YR 6/8			3.25		
		617		M				
5						2.75	S-1	
			BUCKET REFUSAL AT 8.0 FT					
		612						
10								
		607						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**

ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
MSD	**Apr 26 2023**	**English**	

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-26**	**630.0**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[20.00"]					
			(CL) LEAN CLAY, orangish brown, moist, very stiff, pinnacles, 7.5YR 6/8, 5YR 5/8	D		2.25 2.00	S-1	
5		625	**BUCKET REFUSAL AT 5.0 FT**					
10		620						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD	**May 05 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-27**	**617.0**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[10.00"]					
			(CL) LEAN CLAY, brown and orangish brown, moist, stiff to very stiff, 5YR 6/8, 7.5YR 5/8	M		1.50		
5		612				3.75	S-1	
			BUCKET REFUSAL AT 6 FT					
10		607						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD2	**May 03 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-28**	**610.8**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[12.00"]					
			(ML) SILT, brown, moist, 5YR 5/8	D			S-1	
5		606	**BUCKET REFUSAL AT 5.0 FT**					
10		601						
15		596						

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD2	**May 05 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-29**	**604**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[12.00"]					
			(ML) SILT, brown, moist, pinnacles on west wall, 7.5YR 6/8, 7.5YR 5/8	D			S-1	
			END OF TEST PIT AT 3.5 FT					
5		599						
10		594						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD2	**May 05 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-30**	**614**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[12.00"]					
			(ML) SILT, orangish brown, moist, pinnacles on north wall, 7.5YR 5/8, 7.5YR 6/8	D			S-1	
5		609	**BUCKET REFUSAL AT 5.0 FT**					
10		604						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD2	**May 05 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-31**	**612**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[9.00"]					
			(ML) SILT, reddish brown, moist, pinnacles on east and north wall, 5YR 5/8, 5YR 6/8	D			S-1	
			BUCKET REFUSAL AT 4.0 FT					
5		607						
10		602						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ 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:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-32**	**597.5**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[14.00"]					
			(ML) SILT, orangish brown, moist, 5YR 5/8, 7.5YR 5/8	D			S-1	
			BUCKET REFUSAL AT 4.0 FT					
5		593						
10		588						
		583						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD2	**May 05 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-33**	**598**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[18.00"]					
			(CL FILL) FILL, LEAN CLAY, brown, moist, stiff, contains roots, 10YR 4/4			1.50		
5		593	(ML) SILT WITH SAND, orangish brown, moist, 5YR 6/8	M			S-1	
			BUCKET REFUSAL AT 9 FT					
10		588						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD2	**May 05 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-34**	**594.8**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[16.00"]					
			(ML) SILT, brown to orangish brown, moist, pinnacles on north wall, 10YR 6/6, 7.5YR 6/8	D			S-1	
			BUCKET REFUSAL AT 3.5 FT					
5		590						
10		585						
15		580						

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**

ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
MSD2	**Apr 27 2023**	**English**	

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-35**	**596.8**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[15.00"]					
			(ML) SILT WITH GRAVEL, orangish brown and reddish brown, moist, 5YR 6/8, 7.5YR 6/8					
5		592		M			S-1	
10		587	**END OF TEST PIT AT 10 FT**					
15		582						

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**

ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
MSD2	**Apr 27 2023**	**English**	

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-36**	**590.2**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[15.00"]					
			(ML) SILT, reddish brown, moist, 5YR 5/8	E			S-1	
		586	**END OF TEST PIT AT 4 FT**					
5								
		581						
10								
		576						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**

ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
MSD2	**Apr 27 2023**	**English**	

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-37**	**593.5**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[10.00"]					
			(ML) SILT, orangish brown, moist, 7.5YR 6/8, 7.5YR 5/8	M			S-1	
5		589						
			END OF TEST PIT AT 7 FT					
10		584						
		579						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**

ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
MSD2	**Apr 27 2023**	**English**	

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-38**	**600.5**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[12.00"]					
			(ML) SILT, reddish brown, moist, pinnnacles on south wall, 5YR 6/8, 5YR 5/8	D			S-1	
			END OF TEST PIT AT 4 FT					
5		596						
10		591						
15		586						

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD2	**Apr 27 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-39**	**606.5**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[10.00"]					
			(ML) SILT WITH GRAVEL, reddish brown, moist, pinnacles on north wall, 5YR 6/8, 5YR 5/8	D			S-1	
5		602						
			BUCKET REFUSAL AT 6 FT					
10		597						
		592						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**

ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
MSD2	**Apr 27 2023**	**English**	

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-40**	**610.8**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[12.00"]					
			(ML) SANDY SILT WITH GRAVEL, orangish brown and reddish brown, moist, 10YR 6/8, 5YR 6/8					
5		606		M			S-1	
10		601	**END OF TEST PIT AT 10 FT**					
15		596						

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**

ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
MSD2	**Apr 27 2023**	**English**	

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-41**	**607**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[13.00"]					
			(CL) LEAN CLAY, reddish brown, moist, very stiff, 5YR 5/8	M		2.75	S-1	
5		602	**BUCKET REFUSAL AT 5 FT**					
10		597						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ 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:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-42**	**605.5**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[14.00"]					
			(CL) LEAN CLAY WITH GRAVEL, reddish brown, moist, very stiff, pinnacle on west wall, 5YR 6/8, 5YR 5/8	D		2.75	S-1	
			BUCKET REFUSAL AT 4.0 FT					
5		601						
10		596						
15		591						

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ 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:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-43**	**613**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[12.00"]					
			(CL) LEAN CLAY WITH GRAVEL, reddish brown, moist, very stiff, contains boulders, 5YR 6/8, 5YR 5/8	D		2.75	S-1	
			BUCKET REFUSAL AT 3 FT					
5		608						
10		603						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ 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:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-44**	**604.5**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[12.00"]					
			(ML) SILT WITH SAND, reddish brown, moist, 5YR 5/8, 5YR 6/8	M			S-1	
5		600						
			END OF TEST PIT AT 6.0 FT					
10		595						
		590						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ 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:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-45A**	**603.8**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[20.00"]					
			(ML) SILT WITH SAND, reddish brown, moist, 5YR 5/8, 5YR 6/8	E			S-1	
5		599	**END OF TEST PIT AT 4.5 FT**					
10		594						
15		589						

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ 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:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-46**	**619.8**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[12.00"]					
			(CL) SANDY LEAN CLAY WITH GRAVEL, orangish brown, moist, very stiff, 5YR 6/8, 7.5YR 7/8			3.25		
5		615		M				
						2.75	S-1	
10		610	**END OF TEST PIT AT 10 FT**					
15		605						

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD2	**May 01 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse Development	**TP-47**	**617.5**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[6.00"]			2.00	S-1	31.3
			(CL/CH) LEAN TO FAT CLAY, reddish brown, moist, very stiff, contians boulders, 2.5YR 5/8, 2.5YR 4/8	VD				
5		613						
			BUCKET REFUSAL AT 6 FT					
10		608						
		603						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**

ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
MSD2	**May 01 2023**	**English**	

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-48**	**603.8**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[12.00"]					
			(ML) SILT, light brown and orangish brown, moist, 10YR 7/6, 10YR 6/6	E			S-1	
5		599	**END OF TEST PIT AT 4.5 FT**					
10		594						
15		589						

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.	CONTRACTOR: **SA Way & Son Excavating**	OPERATOR: **Tim**	MAKE/MODEL: **Bobcat E32**
▼ WL (Completion) Not Enc.				
ECS REP.: **MSD2**	DATE COMPLETED: **May 01 2023**	UNITS: **English**	CAVE-IN-DEPTH:	

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-49**	**603.2**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[10.00"]					
			(ML) SILT, reddish brown and brown, moist, 10YR 5/6, 5YR 5/8	E			S-1	
5		599						
			END OF TEST PIT AT 6.5 FT					
		594						
10								
		589						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD2	**May 01 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-50**	**604.2**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[6.00"]					
			(CL) LEAN CLAY, light brown and reddish brown, moist, very stiff, 5YR 5/8, 10YR 6/6	M		3.00	S-1	
5		600						
			END OF TEST PIT AT 6.5 FT					
10		595						
		590						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**

ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
MSD2	**May 01 2023**	**English**	

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-51**	**613.8**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[11.00"]					
			(ML) SILT WITH GRAVEL, reddish brown, moist, 5YR 5/6	M			S-1	
			BUCKET REFUSAL AT 4.0 FT					
5		609						
10		604						
15		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

▽ WL (First Encountered) Not Enc.	⧩ WL (Seasonal High) Not Enc.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD2	**May 01 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-52**	**615.5**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[9.00"]					
			(ML) SILT, orangish brown, moist, 5YR 6/8, 5YR 5/8	D			S-1	
5		611						
			BUCKET REFUSAL AT 6.0 FT					
10		606						
		601						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**

ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
MSD2	**May 01 2023**	**English**	

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-53**	**624.5**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[8.00"]					
			(CL) LEAN CLAY, red, moist, very stiff, pinnacles, 2.5YR 5/8, 2.5YR 6/8	D		3.00	S-1	
		620	**BUCKET REFUSAL AT 4.5 FT**					
5								
		615						
10								
		610						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD2	**May 02 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-54**	**625.5**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[20.00"]					
			(CL) LEAN CLAY, reddish brown, moist, very stiff, 2.5YR 5/8, 2.5YR 6/8	M		2.00		
						2.75	S-1	
5		621	**BUCKET REFUSAL AT 5.5 FT**					
10		616						
15		611						

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD2	**May 02 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-55**	**627**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[12.00"]					
			(CL) LEAN CLAY, orangish brown, moist, stiff, pinnacles on east wall, 5YR 5/8, 7.5YR 5/8	M		1.75	S-1	
5		622	**BUCKET REFUSAL AT 5.0 FT**					
10		617						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD2	**May 02 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-56**	**629.2**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[12.00"]					
			(ML) SILT, reddish brown, moist, 5YR 6/8, 5YR 5/8					
		625						
5				M				
							S-1	
		620						
10			**END OF TEST PIT AT 10 FT**					
		615						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD2	**May 02 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-57**	**626.8**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[12.00"]					
			(ML) SILT, brown, moist, pinnacles on north wall, 10YR 6/8, 10YR 6/6	M			S-1	
5		622	**BUCKET REFUSAL AT 5 FT**					
10		617						
15		612						

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**

ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
MSD2	**May 02 2023**	**English**	

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-58**	**622.8**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[12.00"]					
			(CL) LEAN CLAY, reddish brown, moist, very stiff, pinnacle ~1' on west wall, 5YR 5/8, 5YR 6/8	D		2.50	S-1	
			BUCKET REFUSAL AT 3.0 FT			2.00		
5		618						
10		613						
15		608						

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**

ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
MSD2	**May 02 2023**	**English**	

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-59**	**623**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[16.00"]					
			(SP) SAND WITH GRAVEL, brown, moist, 7.5YR 4/6	M			S-1	
			BUCKET REFUSAL AT 4 FT					
5		618						
10		613						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD2	**May 02 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-60**	**608**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[12.00"]					
			(CL) LEAN CLAY, orangish brown and reddish brown, moist, very stiff, 5YR 5/8, 5YR 6/8	M		3.50	S-1	
5		603	**END OF TEST PIT AT 5.0 FT**					
10		598						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD2	**May 03 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-61**	**609**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[16.00"]					
			(CL) LEAN CLAY, brown, moist, hard, 7.5YR 6/6	M		4.50	S-1	
5		604	**END OF TEST PIT AT 5.5 FT**					
10		599						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**

ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
MSD2	**May 03 2023**	**English**	

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-62**	**612.8**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[12.00"]					
			(CL) LEAN CLAY WITH SAND, brown and orangish brown, moist, very stiff, 5YR 6/8, 7.5YR 5/6	M		2.75	S-1	
5		608	**BUCKET REFUSAL AT 5 FT**					
10		603						
15		598						

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**

ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
MSD2	**May 03 2023**	**English**	

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-63**	**625**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[10.00"]					
			(CL) LEAN CLAY, orangish brown, moist, very stiff, pinnacles on east wall, 5YR 6/8	D		2.50	S-1	
5		620	**BUCKET REFUSAL AT 5.0 FT**					
10		615						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD2	**May 03 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-64**	**627**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[10.00"]					
			(CL) LEAN CLAY, brown, moist, very stiff, 10YR 6/6, 10YR 5/6	VD		3.25	S-1	
			BUCKET REFUSAL AT 3.75 FT					
5		622						
10		617						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD2	**May 03 2023**	**English**		

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse	**TP-65**	**633**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[9.00"]					
			(ML) SILT, brown, moist, pinnacles on west wall, 10YR 6/6	VD			S-1	
			BUCKET REFUSAL AT 4.25 FT					
5		628						
10		623						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**

ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:
MSD2	**May 03 2023**	**English**	

TEST PIT LOG

CLIENT:	PROJECT NO.:	SHEET:
Appalachian Asset Management	**18:5941**	**1 of 1**
PROJECT NAME:	TEST PIT NO.:	SURFACE ELEVATION:
Proposed Ritner Highway Warehouse Development	**TP-66**	**634.2**
SITE LOCATION:		STATION:
3485 Ritner Highway, Newville, Pennsylvania, 17241		
NORTHING:	EASTING:	

DEPTH (FT)	WATER LEVELS	ELEVATION (FT)	DESCRIPTION OF MATERIAL	EXCAVATION EFFORT	DCP	QP (TSF)	SAMPLE NUMBER	MOISTURE CONTENT (%)
			Topsoil Thickness[13.00"]					
			(CL) LEAN CLAY WITH SAND, reddish brown to orangish brown, moist, 5YR6/8, 5YR5/8					
5		630		M			S-1	22.0
		625						
10			**END OF TEST PIT AT 10 FT**					
		620						
15								

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.	CONTRACTOR:	OPERATOR:	MAKE/MODEL:
▼ WL (Completion) Not Enc.		**SA Way & Son Excavating**	**Tim**	**Bobcat E32**
ECS REP.:	DATE COMPLETED:	UNITS:	CAVE-IN-DEPTH:	
MSD2	**May 03 2023**	**English**		

TEST PIT LOG

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

Date Tested:	4/24/2023		4/24/2023		4/24/2023		4/24/2023		4/24/2023		4/24/2023	
Field Data	TP-01		TP-02		TP-03		TP-04		TP-05		TP-06	
Test Depth (ft)	1.0		0.8		4.2		2.5		3.0		1.5	
	Time	Reading	Time	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		6.00		6.00		6.00		6.00		6.00	
Initial Water Depth (in)	6.00		6.00		6.00		6.00		6.00		6.00	
Final Water Level Drop (in)	1.00		0.13		0.00		0.75		1.00		0.25	
Average Reading (in)	1.00		0.19		0.00		0.94		0.94		0.19	
Infiltration Rate (in/hr)	2.00		0.38		0.00		5.63		1.88		0.38	
Safety Factor	2.00		2.00		2.00		2.00		2.00		2.00	
Corrected Infiltration Rate (in/hr)	**1.00**		**0.19**		**0.00**		**2.81**		**0.94**		**0.19**	

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:	4/23/2023		4/25/2023		4/25/2023		4/25/2023		4/25/2023		4/25/2023	
Field Data	TP-07		TP-08		TP-09		TP-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	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		6.00		6.00		6.00		6.00		6.00	
Initial Water Depth (in)	6.00		6.00		6.00		6.00		6.00		6.00	
Final Water Level Drop (in)	0.63		0.38		0.00		0.13		0.00		0.00	
Average Reading (in)	0.53		0.16		0.00		0.09		0.03		0.00	
Infiltration Rate (in/hr)	1.07		0.32		0.00		0.19		0.06		0.00	
Safety Factor	2.00		2.00		2.00		2.00		2.00		2.00	
Corrected Infiltration Rate (in/hr)	**0.53**		**0.16**		**0.00**		**0.09**		**0.03**		**0.00**	

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:	4/25/2023		4/25/2023		4/25/2023		4/23/2023		4/23/2023		4/23/2023	
Field Data	TP-13		TP-14		TP-15		TP-16		TP-17		TP-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		6.00		6.00		6.00		6.00		6.00	
Initial Water Depth (in)	6.00		6.00		6.00		6.00		6.00		6.00	
Final Water Level Drop (in)	1.50		0.00		0.00		0.13		0.25		0.25	
Average Reading (in)	1.44		0.00		0.00		0.06		0.13		0.19	
Infiltration Rate (in/hr)	2.88		0.00		0.00		0.13		0.25		0.38	
Safety Factor	2.00		2.00		2.00		2.00		2.00		2.00	
Corrected Infiltration Rate (in/hr)	**1.44**		**0.00**		**0.00**		**0.06**		**0.13**		**0.19**	

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:	4/23/2023		4/23/2023		4/26/2023		4/26/2023		4/26/2023		4/26/2023	
Field Data	TP-19		TP-20		TP-21		TP-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	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		6.00		6.00		6.00		6.00		6.00	
Initial Water Depth (in)	6.00		6.00		6.00		6.00		6.00		6.00	
Final Water Level Drop (in)	0.00		0.00		0.00		0.25		0.00		0.00	
Average Reading (in)	0.00		0.03		0.00		0.16		0.00		0.03	
Infiltration Rate (in/hr)	0.00		0.06		0.00		0.31		0.00		0.06	
Safety Factor	2.00		2.00		2.00		2.00		2.00		2.00	
Corrected Infiltration Rate (in/hr)	**0.00**		**0.03**		**0.00**		**0.16**		**0.00**		**0.03**	

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:	4/26/2023		4/26/2023		5/3/2023		5/5/2023		5/5/2023		5/5/2023	
Field Data	TP-25		TP-26		TP-27		TP-28		TP-29		TP-30	
Test Depth (ft)	5.5		3.0		4.0		3.0		1.0		3.0	
	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		6.00		6.00		6.00		6.00		6.00	
Initial Water Depth (in)	6.00		1.13		6.00		6.00		6.00		6.00	
Final Water Level Drop (in)	0.88		0.88		0.50		0.00		0.00		0.00	
Average Reading (in)	0.75		0.88		0.66		0.06		0.00		0.00	
Infiltration Rate (in/hr)	1.51		1.76		3.95		0.13		0.00		0.00	
Safety Factor	2.00		2.00		2.00		2.00		2.00		2.00	
Corrected Infiltration Rate (in/hr)	**0.75**		**0.88**		**1.97**		**0.06**		**0.00**		**0.00**	

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:	5/4/2023		5/5/2023		5/5/2023		4/27/2023		4/27/2023		4/27/2023	
Field Data	TP-31		TP-32		TP-33		TP-34		TP-35		TP-36	
Test Depth (ft)	2.0		2.0		7.0		1.5		6.8		1.3	
	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading	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	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	30 min		10 min		30 min		30 min		30 min		10 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		6.00		6.00		6.00		6.00		6.00	
Initial Water Depth (in)	6.00		6.00		6.00		6.00		6.00		6.00	
Final Water Level Drop (in)	0.00		2.00		0.00		0.50		0.00		1.13	
Average Reading (in)	0.00		2.19		0.00		0.44		0.00		1.00	
Infiltration Rate (in/hr)	0.00		13.13		0.00		0.88		0.00		6.02	
Safety Factor	2.00		2.00		2.00		2.00		2.00		2.00	
Corrected Infiltration Rate (in/hr)	**0.00**		**6.56**		**0.00**		**0.44**		**0.00**		**3.01**	

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:	4/27/2023		4/27/2023		4/27/2023		4/27/2023		5/4/2023		5/4/2023	
Field Data	TP-37		TP-38		TP-39		TP-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	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		6.00		6.00		6.00		6.00		6.00	
Initial Water Depth (in)	6.00		6.00		6.00		6.00		6.00		6.00	
Final Water Level Drop (in)	1.25		0.50		0.50		0.75		0.13		0.75	
Average Reading (in)	1.16		0.60		0.50		0.75		0.22		1.56	
Infiltration Rate (in/hr)	2.32		3.57		1.00		1.51		0.44		9.38	
Safety Factor	2.00		2.00		2.00		2.00		2.00		2.00	
Corrected Infiltration Rate (in/hr)	**1.16**		**1.79**		**0.50**		**0.75**		**0.22**		**4.69**	

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:	5/4/2023		5/4/2023		5/4/2023		5/1/2023		5/1/2023		5/1/2023	
Field Data	TP-43		TP-44		TP-45		TP-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	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		6.00		6.00		6.00		6.00		6.00	
Initial Water Depth (in)	6.00		6.00		6.00		6.00		6.00		6.00	
Final Water Level Drop (in)	0.88		0.75		0.13		0.00		0.00		0.00	
Average Reading (in)	0.75		0.88		0.07		0.00		0.00		0.03	
Infiltration Rate (in/hr)	4.52		5.25		0.13		0.00		0.00		0.07	
Safety Factor	2.00		2.00		2.00		2.00		2.00		2.00	
Corrected Infiltration Rate (in/hr)	**2.26**		**2.63**		**0.07**		**0.00**		**0.00**		**0.03**	

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:	5/1/2023		5/1/2023		5/1/2023		5/1/2023		5/2/2023		5/2/2023	
Field Data	TP-49		TP-50		TP-51		TP-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	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		6.00		6.00		6.00		6.00		6.00	
Initial Water Depth (in)	6.00		6.00		6.00		6.00		6.00		6.00	
Final Water Level Drop (in)	0.75		0.13		0.63		0.25		0.00		0.25	
Average Reading (in)	0.63		0.10		0.66		0.38		0.00		0.13	
Infiltration Rate (in/hr)	1.25		0.19		1.32		0.75		0.00		0.26	
Safety Factor	2.00		2.00		2.00		2.00		2.00		2.00	
Corrected Infiltration Rate (in/hr)	**0.63**		**0.10**		**0.66**		**0.38**		**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	TP-55		TP-56		TP-57		TP-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	2.25	11:44	0.25	11:38	0.13	11:39	0.75	11:40	6.00	11:13	2.00
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	10 min		30 min		30 min		30 min		10 min		30 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		6.00		6.00		6.00		6.00		6.00	
Initial Water Depth (in)	6.00		6.00		6.00		6.00		6.00		6.00	
Final Water Level Drop (in)	0.63		0.13		0.13		0.25		1.00		0.25	
Average Reading (in)	0.79		0.03		0.06		0.16		1.13		0.31	
Infiltration Rate (in/hr)	4.71		0.06		0.13		0.31		6.75		0.63	
Safety Factor	2.00		2.00		2.00		2.00		2.00		2.00	
Corrected Infiltration Rate (in/hr)	**2.36**		**0.03**		**0.06**		**0.16**		**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	TP-61		TP-62		TP-63		TP-64		TP-65		TP-66	
Test Depth (ft)	2.0		3.0		3.0		1.0		2.0		8.0	
	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading	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	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	30 min		10 min		10 min		30 min		10 min		30 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		6.00		6.00		6.00		6.00		6.00	
Initial Water Depth (in)	6.00		6.00		6.00		6.00		6.00		6.00	
Final Water Level Drop (in)	0.00		2.00		1.75		1.13		1.25		0.00	
Average Reading (in)	0.00		1.88		2.28		1.19		1.22		0.00	
Infiltration Rate (in/hr)	0.00		11.25		13.70		2.38		7.34		0.00	
Safety Factor	2.00		2.00		2.00		2.00		2.00		2.00	
Corrected Infiltration Rate (in/hr)	**0.00**		**5.63**		**6.85**		**1.19**		**3.67**		**0.00**	

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

Percolation Testing Results
Proposed Ritner Highway Warehouse
ECS Project No. 18:5941

Date Tested:	4/24/2023		4/24/2023		4/24/2023		4/24/2023		4/24/2023		4/24/2023	
Field Data	TP-01		TP-02		TP-03		TP-04		TP-05		TP-06	
Test Depth (ft)	1.0		0.8		4.2		2.5		3.0		1.5	
	Time	Reading	Time	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	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	10 min		10 min		30 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		7.00		6.00		6.00		7.00		7.00	
Initial Water Depth (in)	6.00		6.00		6.00		6.00		6.00		6.00	
Final Water Level Drop (in)	1.00		0.50		1.00		0.50		0.25		0.63	
Average Reading (in)	0.94		0.38		0.97		0.63		0.25		0.76	
Infiltration Rate (in/hr)	5.63		2.25		1.95		3.75		0.50		4.53	
Reduction Factor	2.58		2.66		2.84		2.90		2.68		2.61	
Safety Factor	3.00		3.00		3.00		3.00		3.00		3.00	
Corrected Infiltration Rate (in/hr)	**0.73**		**0.28**		**0.23**		**0.43**		**0.06**		**0.58**	

Notes:
1. Refilled to water depth of 6 inches after each reading.

Percolation Testing Results
Proposed Ritner Highway Warehouse
ECS Project No. 18:5941

Date Tested:	4/23/2023		4/25/2023		4/25/2023		4/25/2023		4/25/2023		4/25/2023	
Field Data	TP-07		TP-08		TP-09		TP-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	10 min		30 min		10 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		7.00		6.00		7.00		6.00		7.00	
Initial Water Depth (in)	6.00		6.00		6.00		6.00		6.00		6.00	
Final Water Level Drop (in)	1.00		0.25		0.63		0.75		0.75		2.00	
Average Reading (in)	0.97		0.23		0.50		0.94		0.60		2.00	
Infiltration Rate (in/hr)	5.82		0.47		3.02		5.63		3.57		12.00	
Reduction Factor	2.58		2.68		2.92		2.58		2.90		2.43	
Safety Factor	3.00		3.00		3.00		3.00		3.00		3.00	
Corrected Infiltration Rate (in/hr)	**0.75**		**0.06**		**0.34**		**0.73**		**0.41**		**1.65**	

Notes:
1. Refilled to water depth of 6 inches after each reading.

Percolation Testing Results
Proposed Ritner Highway Warehouse
ECS Project No. 18:5941

Date Tested:	4/25/2023		4/25/2023		4/25/2023		4/23/2023		4/23/2023		4/23/2023	
Field Data	TP-13		TP-14		TP-15		TP-16		TP-17		TP-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	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	10 min		10 min		30 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		6.00		7.00		7.00		6.00		6.00	
Initial Water Depth (in)	6.00		6.00		6.00		6.00		6.00		6.00	
Final Water Level Drop (in)	0.75		1.75		1.75		0.75		1.00		0.63	
Average Reading (in)	1.94		1.63		1.81		0.91		1.06		0.54	
Infiltration Rate (in/hr)	11.63		9.75		3.63		5.45		6.38		3.21	
Reduction Factor	2.68		2.73		2.46		2.58		2.82		2.91	
Safety Factor	3.00		3.00		3.00		3.00		3.00		3.00	
Corrected Infiltration Rate (in/hr)	**1.45**		**1.19**		**0.49**		**0.70**		**0.75**		**0.37**	

Notes:
1. Refilled to water depth of 6 inches after each reading.

Percolation Testing Results
Proposed Ritner Highway Warehouse
ECS Project No. 18:5941

Date Tested:	4/23/2023		4/23/2023		4/26/2023		4/26/2023		4/26/2023		4/26/2023	
Field Data	TP-19		TP-20		TP-21		TP-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	10 min		10 min		10 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		7.00		7.00		6.00		6.00		8.00	
Initial Water Depth (in)	6.00		6.00		6.00		6.00		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		3.00		3.57		3.57		3.39		1.20	
Reduction Factor	2.78		2.64		2.63		2.90		2.91		2.43	
Safety Factor	3.00		3.00		3.00		3.00		3.00		3.00	
Corrected Infiltration Rate (in/hr)	**0.94**		**0.38**		**0.45**		**0.41**		**0.39**		**0.16**	

Notes:
1. Refilled to water depth of 6 inches after each reading.

Percolation Testing Results
Proposed Ritner Highway Warehouse
ECS Project No. 18:5941

Date Tested:	4/26/2023		4/26/2023		5/3/2023		5/5/2023		5/5/2023		5/5/2023	
Field Data	TP-25		TP-26		TP-27		TP-28		TP-29		TP-30	
Test Depth (ft)	5.5		3.0		4.0		3.0		1.0		3.0	
	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	10 min		10 min		10 min		10 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		6.00		6.00		6.00		6.00		6.00	
Initial Water Depth (in)	6.00		6.00		6.00		6.00		6.00		6.00	
Final Water Level Drop (in)	0.50		1.00		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		5.27		14.25		6.20		23.82		2.01	
Reduction Factor	2.63		2.85		2.60		2.83		2.34		2.83	
Safety Factor	3.00		3.00		3.00		3.00		3.00		3.00	
Corrected Infiltration Rate (in/hr)	**0.45**		**0.61**		**1.82**		**0.73**		**3.40**		**0.24**	

Notes:
1. Refilled to water depth of 6 inches after each reading.

Percolation Testing Results
Proposed Ritner Highway Warehouse
ECS Project No. 18:5941

Date Tested:	5/4/2023		5/5/2023		5/5/2023		4/27/2023		4/27/2023		4/27/2023	
Field Data	TP-31		TP-32		TP-33		TP-34		TP-35		TP-36	
Test Depth (ft)	2.0		2.0		7.0		1.5		6.8		1.3	
	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading	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	10 min		10 min		10 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		8.00		6.00		6.00		6.00		7.00	
Initial Water Depth (in)	6.00		6.00		6.00		6.00		6.00		6.00	
Final Water Level Drop (in)	0.88		1.00		0.75		1.25		0.50		0.75	
Average Reading (in)	0.82		1.44		0.69		1.38		0.44		0.63	
Infiltration Rate (in/hr)	4.89		8.63		4.14		2.75		0.88		3.77	
Reduction Factor	2.60		2.32		2.89		2.77		2.93		2.62	
Safety Factor	3.00		3.00		3.00		3.00		3.00		3.00	
Corrected Infiltration Rate (in/hr)	**0.63**		**1.24**		**0.48**		**0.33**		**0.10**		**0.48**	

Notes:
1. Refilled to water depth of 6 inches after each reading.

Percolation Testing Results
Proposed Ritner Highway Warehouse
ECS Project No. 18:5941

Date Tested:	4/27/2023		4/27/2023		4/27/2023		4/27/2023		5/4/2023		5/4/2023	
Field Data	TP-37		TP-38		TP-39		TP-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	30 min		10 min		10 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		7.00		8.00		6.00		7.00		7.00	
Initial Water Depth (in)	6.00		6.00		6.00		6.00		6.00		6.00	
Final Water Level Drop (in)	0.75		0.38		0.50		2.50		0.63		0.75	
Average Reading (in)	0.72		1.47		0.60		2.25		0.72		1.56	
Infiltration Rate (in/hr)	1.45		8.82		3.57		13.50		4.34		9.38	
Reduction Factor	2.88		2.50		2.43		2.63		2.61		2.49	
Safety Factor	3.00		3.00		3.00		3.00		3.00		3.00	
Corrected Infiltration Rate (in/hr)	**0.17**		**1.17**		**0.49**		**1.71**		**0.55**		**1.25**	

Notes:
1. Refilled to water depth of 6 inches after each reading.

Percolation Testing Results
Proposed Ritner Highway Warehouse
ECS Project No. 18:5941

Date Tested:	5/4/2023		5/4/2023		5/4/2023		5/1/2023		5/1/2023		5/1/2023	
Field Data	TP-43		TP-44		TP-45		TP-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	10 min		10 min		30 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		7.00		6.00		7.00		7.00		6.00	
Initial Water Depth (in)	6.00		6.00		6.00		6.00		6.00		6.00	
Final Water Level Drop (in)	1.50		6.00		0.50		0.25		1.13		1.75	
Average Reading (in)	1.60		6.00		0.44		0.25		1.10		1.88	
Infiltration Rate (in/hr)	9.57		36.00		0.88		0.51		2.20		11.25	
Reduction Factor	2.49		1.86		2.93		2.68		2.56		2.69	
Safety Factor	3.00		3.00		3.00		3.00		3.00		3.00	
Corrected Infiltration Rate (in/hr)	**1.28**		**6.46**		**0.10**		**0.06**		**0.29**		**1.40**	

Notes:
1. Refilled to water depth of 6 inches after each reading.

Percolation Testing 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	TP-49		TP-50		TP-51		TP-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	30 min		30 min		10 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		7.00		6.00		6.00		6.00		7.00	
Initial Water Depth (in)	6.00		6.00		6.00		6.00		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		0.97		0.91		1.06		1.79		1.57	
Infiltration Rate (in/hr)	0.25		1.95		5.45		6.38		10.71		3.13	
Reduction Factor	2.98		2.58		2.85		2.82		2.70		2.49	
Safety Factor	3.00		3.00		3.00		3.00		3.00		3.00	
Corrected Infiltration Rate (in/hr)	**0.03**		**0.25**		**0.64**		**0.75**		**1.32**		**0.42**	

Notes:
1. Refilled to water depth of 6 inches after each reading.

Percolation Testing 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	TP-55		TP-56		TP-57		TP-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	10 min		30 min		10 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		7.00		6.00		6.00		6.00		7.00	
Initial Water Depth (in)	6.00		6.00		6.00		6.00		6.00		6.00	
Final Water Level Drop (in)	1.25		0.25		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		6.57		10.34		6.02	
Reduction Factor	2.77		2.69		2.81		2.82		2.71		2.57	
Safety Factor	3.00		3.00		3.00		3.00		2.00		3.00	
Corrected Infiltration Rate (in/hr)	**0.99**		**0.04**		**0.82**		**0.78**		**1.90**		**0.78**	

Notes:
1. Refilled to water depth of 6 inches after each reading.

Percolation Testing 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	TP-61		TP-62		TP-63		TP-64		TP-65		TP-66	
Test Depth (ft)	2.0		3.0		3.0		1.0		2.0		8.0	
	Time	Reading	Time	Reading	Time	Reading	Time	Reading	Time	Reading	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	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	2.00	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	10 min		10 min		10 min		10 min		10 min		30 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			12:36	1.00						
Reading # 6 (in)	12:44	0.13										
Reading # 7 (in)												
Reading # 8 (in)												
Average Diameter of Hole (in)	6.00		6.00		6.00		6.00		6.00		7.00	
Initial Water Depth (in)	6.00		6.00		6.00		6.00		6.00		6.00	
Final Water Level Drop (in)	0.13		1.00		1.00		1.38		0.63		0.00	
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		4.53		0.00	
Reduction Factor	2.98		2.85		2.84		2.75		2.87		2.71	
Safety Factor	3.00		3.00		3.00		3.00		3.00		3.00	
Corrected Infiltration Rate (in/hr)	**0.07**		**0.61**		**0.66**		**1.09**		**0.53**		**0.00**	

Notes:
1. Refilled to water depth of 6 inches after each reading.

TP-01

TP-02

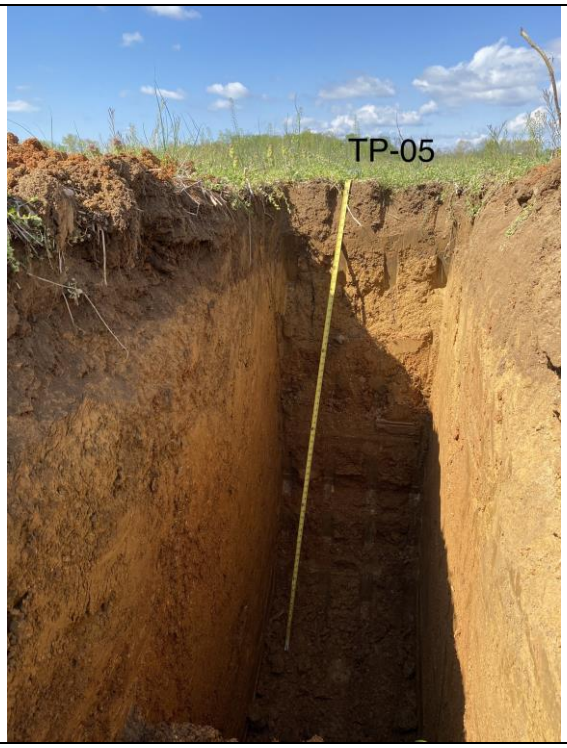
TP-03

TP-04

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

TEST PIT PHOTOGRAPHS

APRIL / MAY 2023



TP-05

TP-06

TP-07

TP-08

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

TEST PIT PHOTOGRAPHS

APRIL / MAY 2023

TP-09

TP-10

TP-11

TP-12

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

TEST PIT PHOTOGRAPHS

APRIL / MAY 2023

TP-13

TP-14

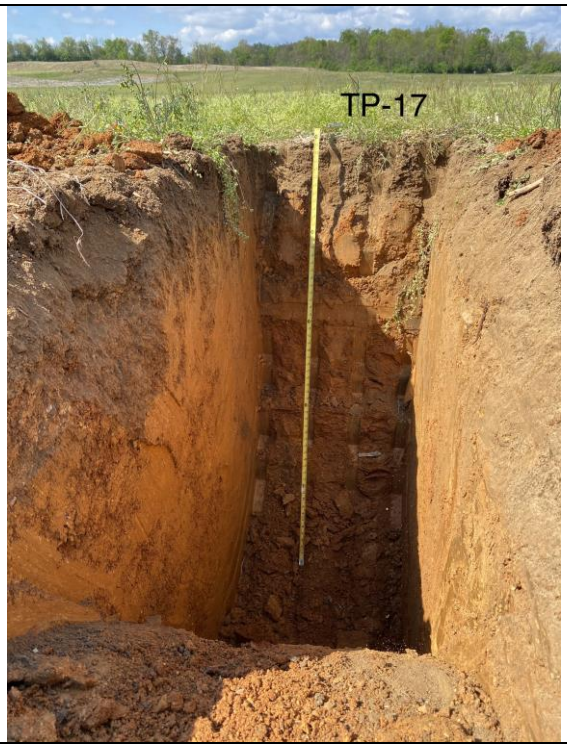
TP-15

TP-16

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

TEST PIT PHOTOGRAPHS

APRIL / MAY 2023



TP-17

TP-18

TP-19

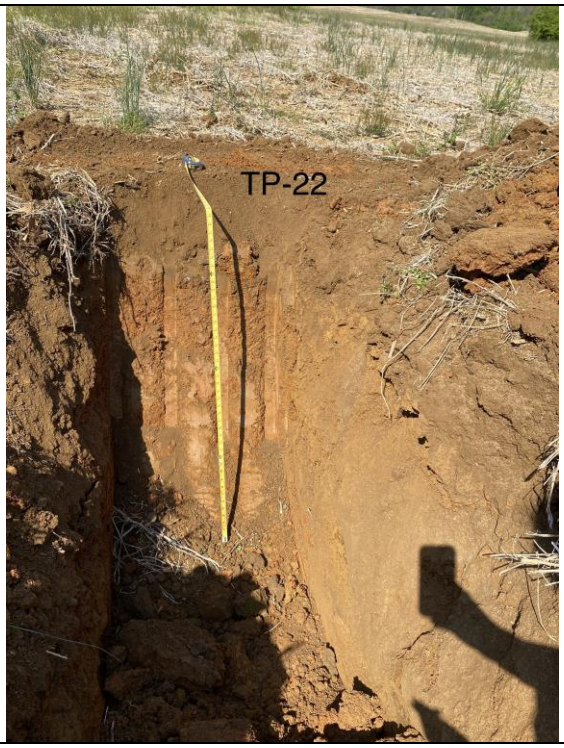
TP-20

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

TEST PIT PHOTOGRAPHS

APRIL / MAY 2023

TP-21



TP-22

TP-23

TP-24

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

TEST PIT PHOTOGRAPHS

APRIL / MAY 2023

TP-25

TP-26

TP-27

TP-28

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

TEST PIT PHOTOGRAPHS

APRIL / MAY 2023

TP-29

TP-30

TP-31

TP-32

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

TEST PIT PHOTOGRAPHS

APRIL / MAY 2023

TP-33

TP-34

TP-35

TP-36

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

TEST PIT PHOTOGRAPHS

APRIL / MAY 2023

TP-37

TP-38

TP-39

TP-40

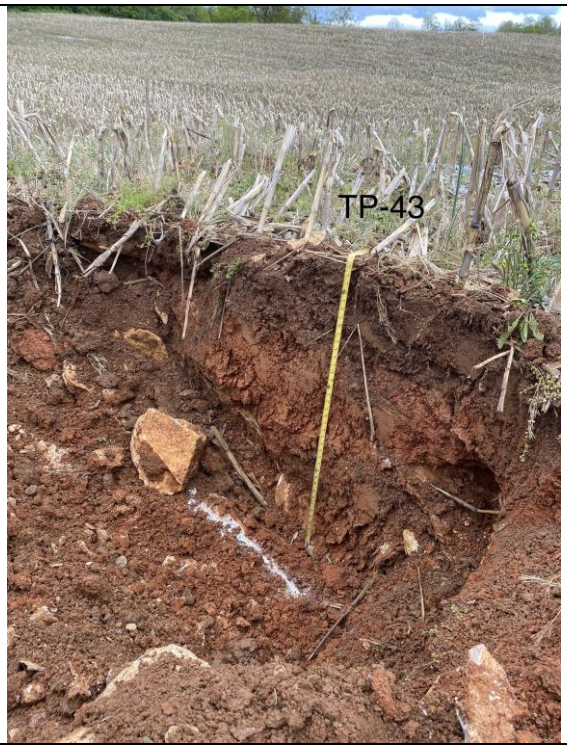
PROPOSED RITNER HIGHWAY WAREHOUSE
ECS PROJECT NO. 18:5941
CUMBERLAND COUNTY, PENNSYLVANIA

TEST PIT PHOTOGRAPHS

APRIL / MAY 2023

TP-41

TP-42



TP-43

TP-44

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

TEST PIT PHOTOGRAPHS

APRIL / MAY 2023

TP-45

TP-46

TP-47

TP-48

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

TEST PIT PHOTOGRAPHS

APRIL / MAY 2023

TP-49

TP-50

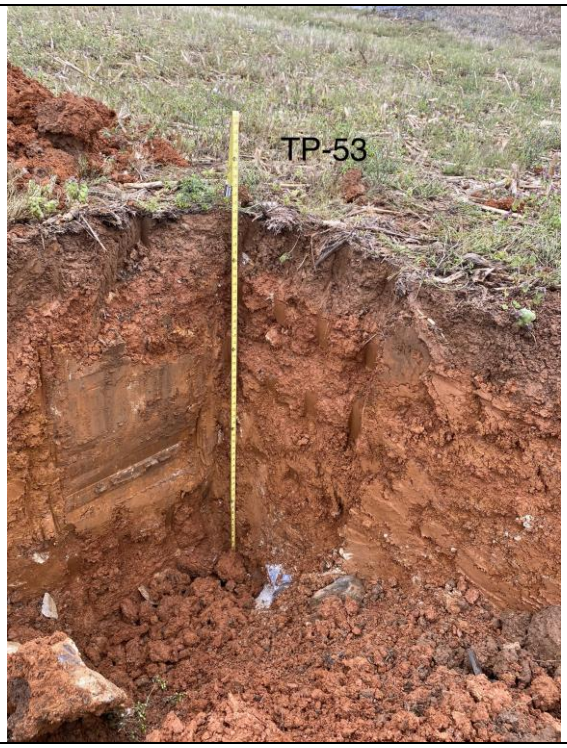
TP-51

TP-52

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

TEST PIT PHOTOGRAPHS

APRIL / MAY 2023



TP-53

TP-54

TP-55

TP-56

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

TEST PIT PHOTOGRAPHS

APRIL / MAY 2023

TP-57

TP-58

TP-59

TP-60

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

TEST PIT PHOTOGRAPHS

APRIL / MAY 2023

TP-61

TP-62

TP-63

TP-64

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

TEST PIT PHOTOGRAPHS

APRIL / MAY 2023

TP-65

TP-66

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

TEST PIT PHOTOGRAPHS

APRIL / MAY 2023

Surface Depression 1 >16’ diameter

Surface Depression 1 >16’ diameter

Surface Depression 2 ~3.5’ diameter

Surface Depression 2 ~3.5’ diameter

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

TEST PIT PHOTOGRAPHS

APRIL / MAY 2023

Surface Depression 3 ~13’ diameter

Surface Depression 3 ~13’ diameter

Surface Depression 4 ~4’ diameter

Surface Depression 4 ~4’ diameter

PROPOSED RITNER HIGHWAY WAREHOUSE
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CUMBERLAND COUNTY, PENNSYLVANIA

TEST PIT PHOTOGRAPHS

APRIL / MAY 2023

Surface Depression 5 ~7’ diameter

Surface Depression 5 ~7’ diameter

Sinkhole 1 ~6’ diameter

Sinkhole 1 ~6’ diameter

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

TEST PIT PHOTOGRAPHS

APRIL / MAY 2023

Sinkhole 2 ~4’ diameter

Sinkhole 2 ~4’ diameter

Example of Animal Borrows on site

Example of Animal Borrows on site

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

TEST PIT PHOTOGRAPHS

APRIL / MAY 2023

APPENDIX C – Laboratory Testing

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

Laboratory Testing Summary

Sample Location	Sample Number	Depth ()	^MC (%)	Soil Type	Atterberg Limits			**Percent Passing No. 200 Sieve	Moisture - Density		CBR (%)		#Organic Content (%)
					LL	PL	PI		<Maximum Density (pcf)	<Optimum Moisture (%)	0.1 in.	0.2 in.	
TP-03	S-1	4.2	29.1	CH	52	24	28	88.3					
TP-47	S-1	0.5	31.3	CH	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
Client: Appalachian Asset Management

Project No.: 18:5941
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

Sample Location	Sample Number	Depth ()	^MC (%)	Soil Type	Atterberg Limits			**Percent Passing No. 200 Sieve	Moisture - Density		CBR (%)		#Organic Content (%)
					LL	PL	PI		<Maximum Density (pcf)	<Optimum Moisture (%)	0.1 in.	0.2 in.	
TP-03	S-1	4.2	29.1	CH	52	24	28	88.3					
TP-47	S-1	0.5	31.3	CH	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

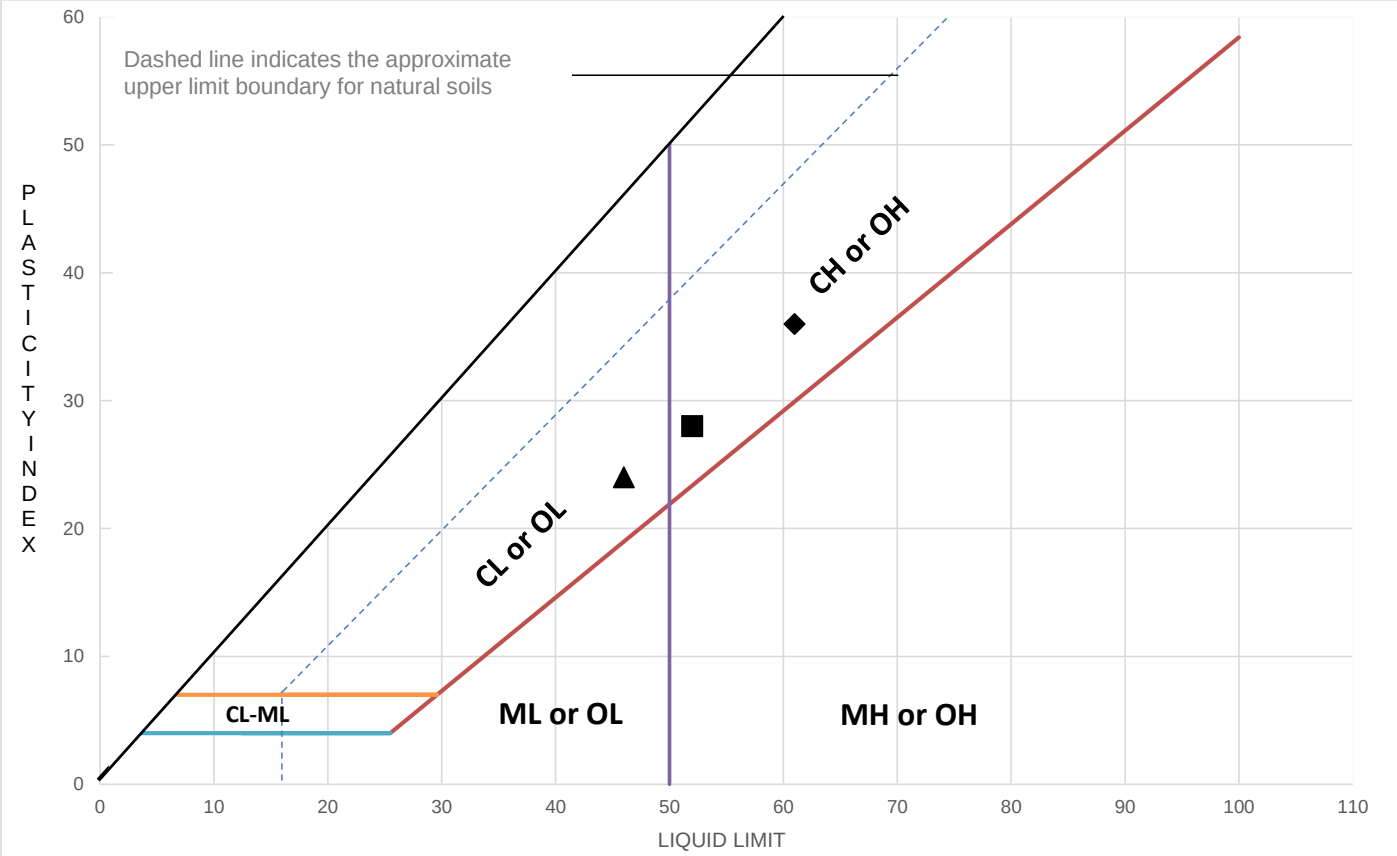
Project: Proposed Ritner Highway Warehouse
Client: Appalachian Asset Management

Project No.: 18:5941
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	

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	CH	Fat Clay
◆	TP-47	S-1	0.5	61	25	36	99.3	97.8	A-7-6	CH	Fat Clay
▲	TP-66	S-1	8	46	22	24	94.2	80.8	A-7-6	CL	Lean Clay with Sand

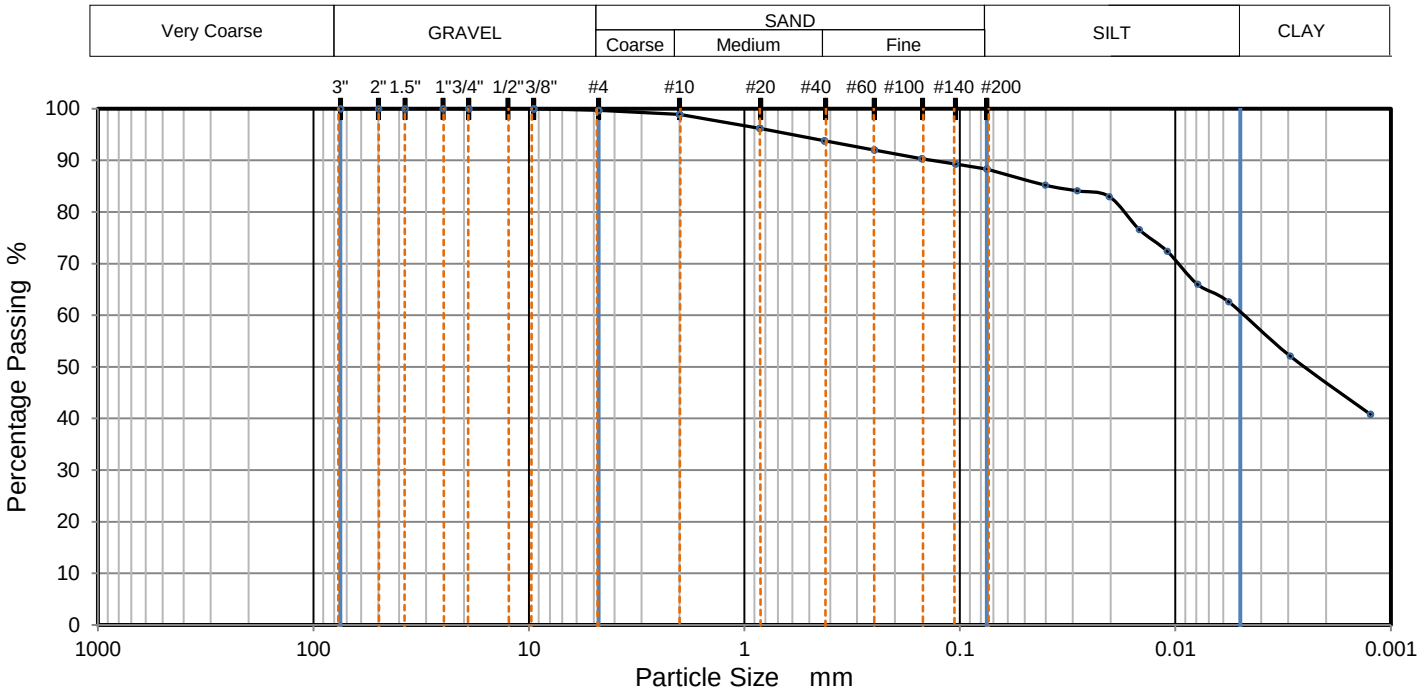
Project: Proposed Ritner Highway Warehouse
Client: Appalachian Asset Management

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

Office / Lab	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	

PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD B)

Sieving		Hydrometer Sedimentation	
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 Gravity (Historical)	
#100	90.3	2.65	
#140	89.3		
#200	88.3		

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		Cc	

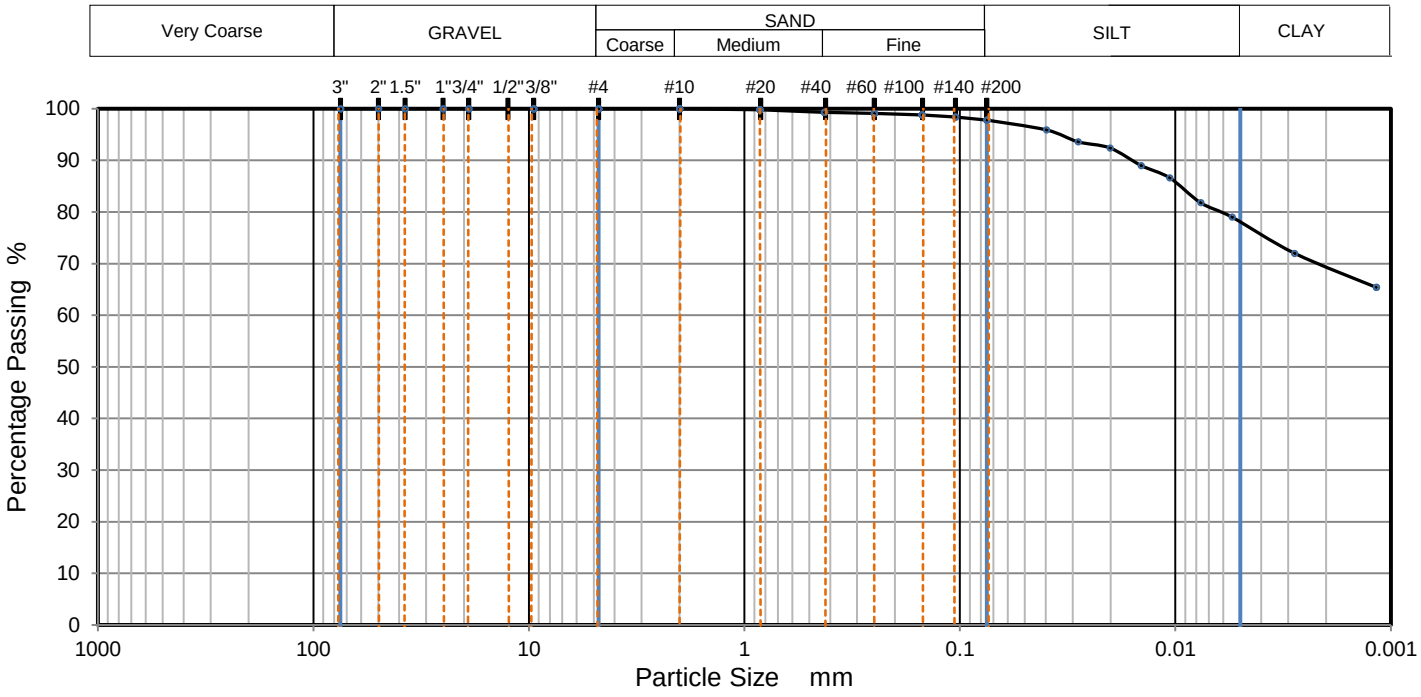
Project: Proposed Ritner Highway Warehouse
Client: Appalachian Asset Management
Sample Description: Fat Clay
Sample Source: TP-03

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

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	Remarks
JGates		agolihew		

PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD B)

Sieving		Hydrometer Sedimentation	
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 Gravity (Historical)	
#100	98.8	2.65	
#140	98.4		
#200	97.8		

Dry Mass of sample, g	112.0

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	CH	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		Cc	

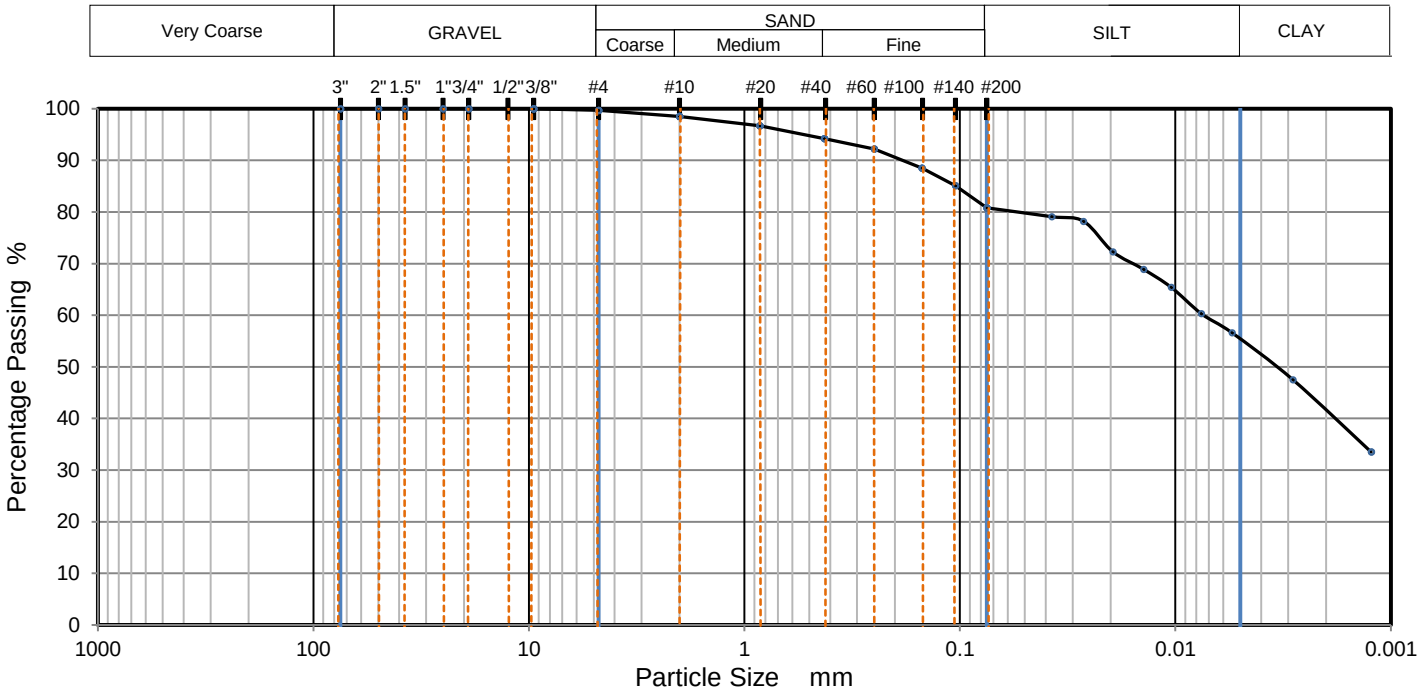
Project: Proposed Ritner Highway Warehouse
Client: Appalachian Asset Management
Sample Description: Fat Clay
Sample Source: TP-47

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

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	Remarks
JGates		agolihew		

PARTICLE SIZE DISTRIBUTION



TEST RESULTS (ASTM D6913M-17-METHOD B)

Sieving		Hydrometer Sedimentation	
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 Gravity (Historical)	
#100	88.5	2.65	
#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		Cc	

Project: Proposed Ritner Highway Warehouse
Client: Appalachian Asset Management
Sample Description: Lean Clay with Sand
Sample Source: TP-66

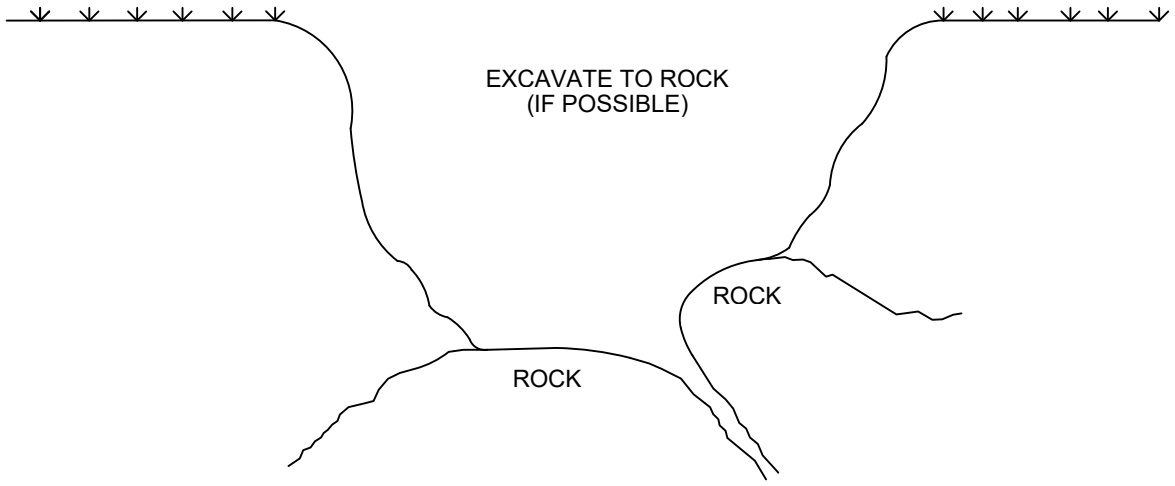
Project No.: 18:5941
Depth (ft): 8
Sample No.: S-1
Date Reported: 5/22/2023

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	Remarks
JGates		agolihew		

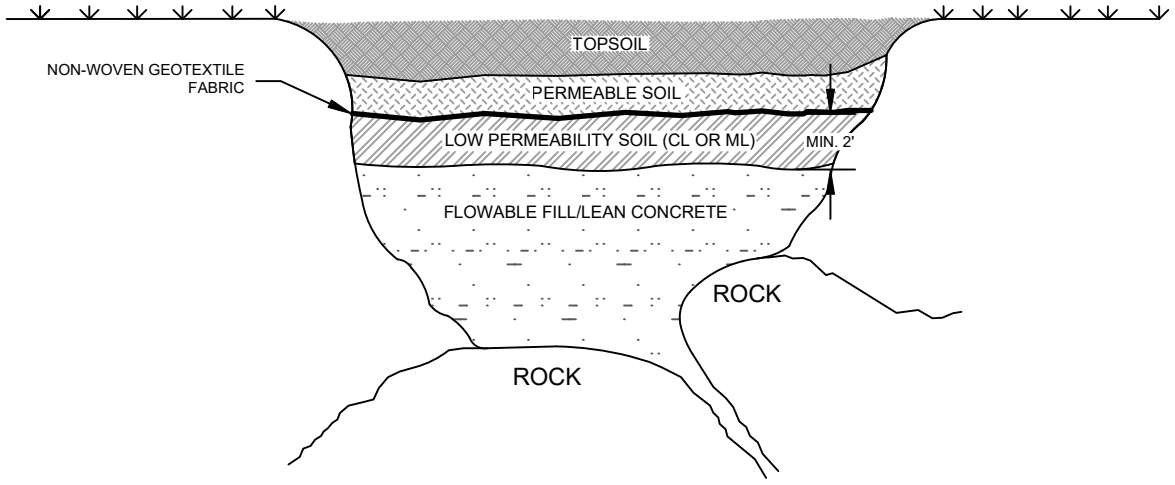
APPENDIX D – Details

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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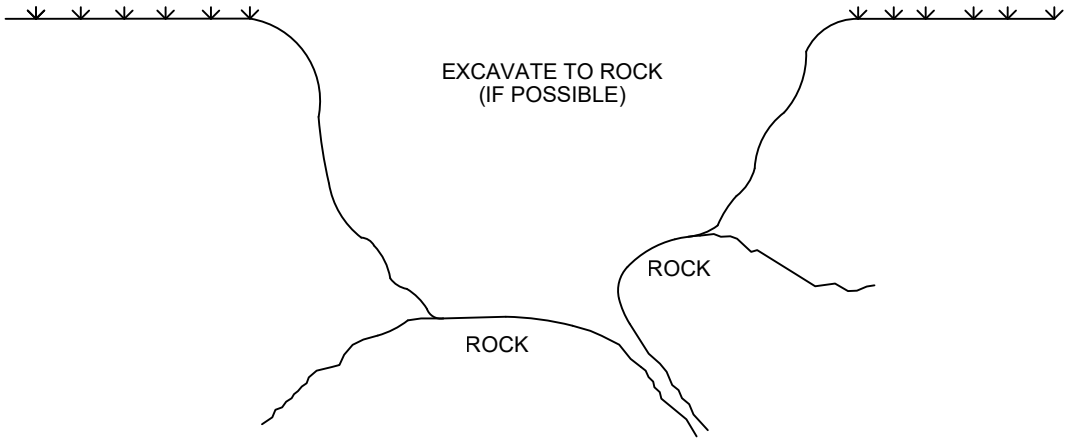
TYPICAL SINKHOLE REPAIR DETAIL

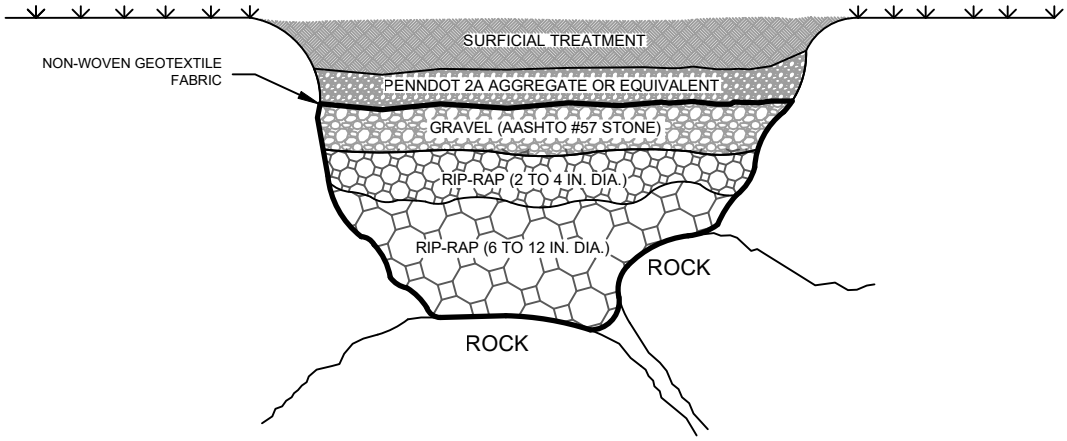
GROUTED REPAIR

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