

**APPENDIX H**  
**GEO TECHNICAL REPORT**

March 21, 2019

Ms. Megan Royer  
Prologis  
6711 Columbia Gateway Drive, Suite 130  
Columbia, MD 21046

**RE: Preliminary Geotechnical Engineering Report  
7600 Linglestown Road  
West Hanover Township, Dauphin County, Pennsylvania  
Advantage Project No.: 1900271001**

Dear Ms. Royer:

In accordance with your request, Advantage Engineers, LLC. (Advantage) has completed a preliminary geotechnical engineering evaluation at the above referenced project site. This correspondence serves to transmit the results of the data obtained and our preliminary conclusions regarding development of the property.

## **SITE AND PROJECT DESCRIPTION**

The project site currently consists of an agricultural and densely wooded parcel of land located north of Linglestown Road in West Hanover Township, Dauphin County, Pennsylvania. The project site is bordered to the north by agricultural fields, to the east and west by wooded areas and to the south by Linglestown Road. Topography across the project site consists of gentle to steep rolling terrain sloping generally down-gradient towards the southeast with approximately 150 feet of grade variation across the project site. The approximate location of the site in relation to the surrounding area is depicted on the *Topographic Map* (Figure 1) presented within the Appendix.

According to the *Conceptual Site Plan* (Plan), prepared by Snyder-Secary & Associates, LLC, the project will consist of constructing a new warehouse/distribution facility. The structure is anticipated to measure 763,840 square feet in plan area, have a finished floor elevation situated at approximately 576 feet, comprised of conventional steel-frame construction with exterior, tilt-up cast-in-place (or pre-fabricated) concrete walls with the ground floor slab supported on grade. Based on existing and proposed grades, maximum cuts and fills of approximately 40 and 60 feet respectively, are anticipated to be required to reach the finished floor elevation. At the time of this report, column and wall loads were not known, therefore maximum column and wall footing loads of 150 kips and 5 kips per lineal foot, respectively, are assumed for the structure. Development of this project will also include constructing parking areas, truck aprons, drive lanes, subsurface utilities and stormwater management facilities.

## **SCOPE OF WORK**

The objective of our work was to complete a preliminary evaluation of the subsurface conditions to provide preliminary recommendations and conclusions regarding development of the site. The scope of work for this project included a subsurface exploration, laboratory testing program and geotechnical engineering analysis. This report summarizes the results of the work performed and provides preliminary geotechnical and construction recommendations.

## **SITE GEOLOGY**

According to the Pennsylvania Geologic Survey's *Atlas of Preliminary Geologic Quadrangles*, Fourth Series, 1981, the project site is underlain by the Hamburg Sequence and the Limestone of Hamburg Sequence (geologic symbols Oh and Ohl). The property within its geologic settings is presented on the *Geologic Map* (Figure 2) found within the Appendix.



*The Engineering Characteristics of the Rocks of Pennsylvania*, second edition, 1982, published by the Pennsylvania State Geologic Survey, describes the rock in these formations as transported rocks of the Hamburg overthrust; gray, greenish-gray and maroon shale, silty and siliceous in many places, dark-gray impure sandstone; medium to light gray, finely crystalline limestone and shaley limestone.

The shale in the formations is moderately well bedded and thin, while the sandstone is well bedded and thick. The limestone is also well bedded, but flaggy. Shale fractures form a seamy to platy pattern, are well developed, highly abundant; variably spaced, open and steeply dipping. Sandstone fractures form a blocky pattern, are well developed, moderately abundant; evenly spaced, open and steeply dipping. Limestone fractures form a platy pattern, are poorly developed, moderately abundant; open and steeply dipping.

The shale in the formations is moderately resistant to weathering and is moderately to highly weathered to a deep depth, resulting in loose rubble of pencil-like fragments to rectangular plates. The sandstone is moderately resistant to weathering and is moderately weathered to a shallow depth, resulting in medium to large, irregular. Excavation of the shale bedrock of the Hamburg Sequence is described as moderately easy, while the sandstone, limestone and graywacke will be more difficult.

**The Limestone of Hamburg Sequence is comprised of carbonate lithology which is subject to dissolution and the development of sinkholes and other karst-related features.** The *Sinkhole Map of Pennsylvania*, prepared by William Kochonov of the Pennsylvania Geologic Survey, does not show any mapped karst features within or surrounding the site. No karst features (i.e. sinkholes, closed depressions and/or bedrock outcrops) were observed at the time of the fieldwork.

## SUBSURFACE EXPLORATION PROGRAM

To evaluate subsurface conditions across the project site, 32 test pits were excavated on March 7 and 8, 2019. Supervision and monitoring of the subsurface exploration were provided by a representative of Advantage, who field located the test pits utilizing a hand-held GPS unit based on the previously referenced Plan. The approximate locations of the test pits are shown on the *Exploration Plan* (Figure 3) presented within the Appendix.

The test pits were excavated utilizing a Caterpillar 325B tracked excavator and extended to depths ranging from approximately 6 to 20 feet below existing site grades. Data pertaining to the subsurface exploration was documented in the field and is presented in detail on the *Test Pit Logs* presented within the Appendix. The *Test Pit Logs* contain visual classifications of the subsurface materials encountered including soil types, existing fill, or other noteworthy items at each test pit location. Data pertaining to the approximate depths to bedrock and corresponding bedrock surface elevations are provided on the *Bedrock Summary Table* found within the appendix.

## LABORATORY TESTING

Soil samples retrieved from the site were visually reviewed and classified by Advantage. Representative soil samples were subjected to laboratory analyses to verify visual classifications and aid in establishing preliminary engineering parameters for foundation design analysis in accordance with the following schedule:

- Natural Moisture Content (ASTM D2216)
- Sieve Analysis (ASTM D422)
- Atterberg Limits Determination (ASTM D4318)

Unified Soil Classification System (USCS) Group Symbols and ASTM Group Names have been assigned to the soils analyzed. The results of the laboratory analyses are presented within the table below and graphical depictions of the particle size analyses are presented in the Appendix.



STANDARD CLASSIFICATION RESULTS											
Location	Depth (feet)	Soil Type	% Gravel	% Sand	% Fines	LL	PL	PI	Natural Moisture Content	USCS Group Symbol	ASTM Group Name
TP-15	1-10	Stratum I	2.3	45.6	52.1	59	32	27	31.8%	CH	Sandy Fat CLAY
TP-2	1-10	Stratum II	61.1	32.0	6.8	36	23	13	10.3%	GW-GC	Well-graded GRAVEL with Clay and Sand
TP-30	1-10	Stratum II	64.3	23.9	11.8	Non-Plastic			12.1%	GC	Clayey GRAVEL with Sand

LL-Liquid Limit; PL-Plastic Limit; PI-Plasticity Index

## SUBSURFACE CONDITIONS

### SOIL

#### Surficial Materials

The test pits were covered by approximately 8 to 12 inches of topsoil, with exception to TP-31 and TP-32 where no topsoil was present. Topsoil thickness may vary in unexplored areas of the project site.

#### Fill – Brown Clayey GRAVEL with Sand

The existing Fill was only encountered within test pit TP-21 and extended to a depth of approximately 8 feet below existing site grades. Upon review, the Fill was observed to be moderately well-graded and predominantly comprised of GRAVEL with secondary amounts of Clay and Sand.

The Fill was found to be free of deleterious materials (i.e. ash, cinder, slag and/or organic debris). However, the sample was taken from a discrete location and the possibility exists for deleterious materials to be present in unexplored portions of the site.

#### Stratum I – Orange to brown Sandy CLAY

Stratum I was encountered within 8 test pits completed and extended to depths ranging from approximately 5 to 20 feet below existing site grades. Laboratory testing conducted on a representative sample of Stratum I shows this soil to be moderately graded and highly plastic, with a natural moisture content of 31.8%. Stratum I is described under the USCS as Sandy Fat CLAY (CH).

#### Stratum II – Red to orange to brown GRAVEL with varying amounts of Clay Silt and Sand

Stratum II was encountered within 25 test pits completed and extended to depths ranging from approximately 6 to 20 feet below existing site grades. Laboratory testing conducted on representative samples of Stratum II show this soil to be well graded and varying in plasticity (plastic and non-plastic), with natural moisture contents of 10.3% and 12.1%. Stratum II is described under the USCS as GRAVEL with Clay and Sand (GW-GC) and Clayey GRAVEL with Sand (GC).

### BEDROCK

The bedrock surface was only encountered within test pits TP-9, TP-26, TP-31 and TP-32 at depths ranging from approximately 6 to 9 feet below existing site grades with corresponding bedrock surface elevations ranging from 578 to 552 feet. The bedrock surface was defined as the depth at which the bucket of the excavator could no longer penetrate. Bedrock data associated within each test pit is provided on the *Bedrock Summary Table* presented within the appendix. It should be noted, the bucket of the excavation equipment could only reach approximately 20 feet below existing site grades and the proposed finished grade could not be reached in all cases.

**Published data associated with carbonate geologic formations can be highly be highly pinnacled with a considerable variation with the bedrock surface elevation over short lateral distances. As such, the bedrock surface may be encountered at depths which vary from those stated above during construction.**



## GROUNDWATER

Groundwater was not encountered during the subsurface exploration. This observation was made at the time of the field operation and the groundwater table elevation will vary with daily, seasonal, climatological variations and anthropogenic activities.

## CONSIDERATION OF KARST GEOLOGY

The following construction considerations are provided to minimize the potential for development of sinkholes at the site both during and following construction.

- Surface water should not be allowed to collect or pool in low lying areas of the site and should be directed to appropriate stormwater channels. Expeditious backfilling or grading of low-lying areas will also help minimize the potential for the development of sinkholes.
- The bases of all foundation excavations should be reviewed for unusually soft or wet soil conditions. Any unstable areas encountered should be further excavated and reviewed by the geotechnical engineer to determine the extent of any solution activity so that remedial measures can be designed and implemented.
- The extent of excavations should be kept to a minimum and the influx of surface water into excavations should be minimized.
- Positive drainage away from the proposed structure should always be maintained. Roof drains should also be directed away from the structure and into designated storm sewer connections.
- Storm sewer conveyance lines should be constructed with watertight joints
- Unpaved areas, swales, and/or surface/subsurface stormwater management facilities should be avoided adjacent to building/foundation areas.
- Exterior backfill around foundations and utilities should consist of fine-grained, low permeable soils (i.e. silt and clay) in an effort to limit concentrated stormwater infiltration.

**The above recommendations constitute best management practices for construction and development in areas underlain by karst geologic formations. The site Owner must recognize the risks associated with development in areas underlain by karst geologic formations. Contingencies should be made in the construction schedule and budget for the repair of sinkholes and unstable soil conditions encountered during development of the site.**

## STORMWATER INFILTRATION ANALYSIS

Infiltration testing was intended to be completed at the proposed invert elevation within test pits TP-31 and TP-32, using the double-ring infiltrometer method in accordance with the Pennsylvania Stormwater Best Management Practices Manual, latest edition. However, based on the limiting zones encountered (bedrock), no infiltration testing was performed within any test pits. The infiltration data is provided within the table below.

INFILTRATION TEST RESULTS				
Test Location	Surface Elevation (feet)	Proposed Invert Elevation (feet)	Limiting Zone Elevation (feet)	Infiltration Rate (inches/hour)
TP-31	560	552	Bedrock @ 554	No Test Conducted
TP-32	560	552	Bedrock @ 552	No Test Conducted



## PRELIMINARY CONCLUSIONS

Based upon geotechnical engineering review of the data gathered during the field exploration, preliminary conclusions have been formulated regarding the project site are as follows:

- Excavation during construction of the project will take place within the existing Fill layer and naturally-occurring soils of Stratum I and Stratum II, which we expect can be removed using conventional earth moving equipment and techniques. However, due to the difficulties encountered the during test pit excavations, deeper portions of Stratum II may require larger equipment for removal.
- The bedrock surface was encountered above the proposed finished grades within 4 of the 32 test pits excavated. Excavation of the bedrock will likely necessitate the use of pneumatic/hydraulic equipment or blasting techniques.
- Groundwater was not encountered during the subsurface exploration. This observation was made at the time of the field operation and the groundwater table elevation will vary with daily, seasonal, climatological variations and anthropogenic activities.
- The existing fill, soils of Stratum I and Stratum II along with the excavated bedrock will be suitable for reuse as structural fill.
- Based on the engineering review of the conditions encountered, it is estimated that allowable soil bearing capacities are expected to range from approximately 3,000 to 4,000 psf, and conventional shallow foundations are expected to be suitable for support of the proposed building.
- Cut and fill slopes on the project site should be designed to a maximum of 2H:1V, unless a specific slope stability analysis is completed to confirm the stability of steeper inclinations.

## FINAL GEOTECHNICAL ENGINEERING SERVICES

The scope of work completed for this report was intended to provide a preliminary review of the subsurface conditions beneath the project site. It is recommended a final detailed subsurface exploration be completed across the site improvements prior to the issuance of final design criteria for the project.

## LIMITATIONS

The conclusions and recommendations contained in this report are based upon the analysis of the subsurface data collected. Should conditions arise which differ from those specifically stated herein, our office should be notified immediately so that our recommendations can be reviewed and revised, if necessary.

It is emphasized this preliminary engineering analysis was completed for the proposed warehouse/distribution facility to be located at 7600 Linglestown Road in West Hanover Township, Dauphin County, Pennsylvania. Advantage does not warrant the use of the data presented herein for any other purpose.

**The subject property is underlain by carbonate lithology which carries with it the potential for sinkhole development.** The Owner must evaluate this risk and come to their own conclusion regarding their tolerance for risk regarding the impact of sinkholes on the planned construction. Advantage makes no warranty or guarantee to the development of sinkholes on the project site.



We trust this is the information you require. Should you have any additional questions or if we may be of further assistance with this matter, please do not hesitate to contact our office.

Sincerely,  
**advantage engineers**

A handwritten signature in blue ink that reads "Jason E. Trimble".

Jason E. Trimble  
Geotechnical Specialist III

A handwritten signature in black ink that reads "Kevin R. Barnhart".

Kevin R. Barnhart  
Project Manager



## **APPENDIX**

FIGURE 1 – TOPOGRAPHIC MAP

FIGURE 2 – GEOLOGIC MAP

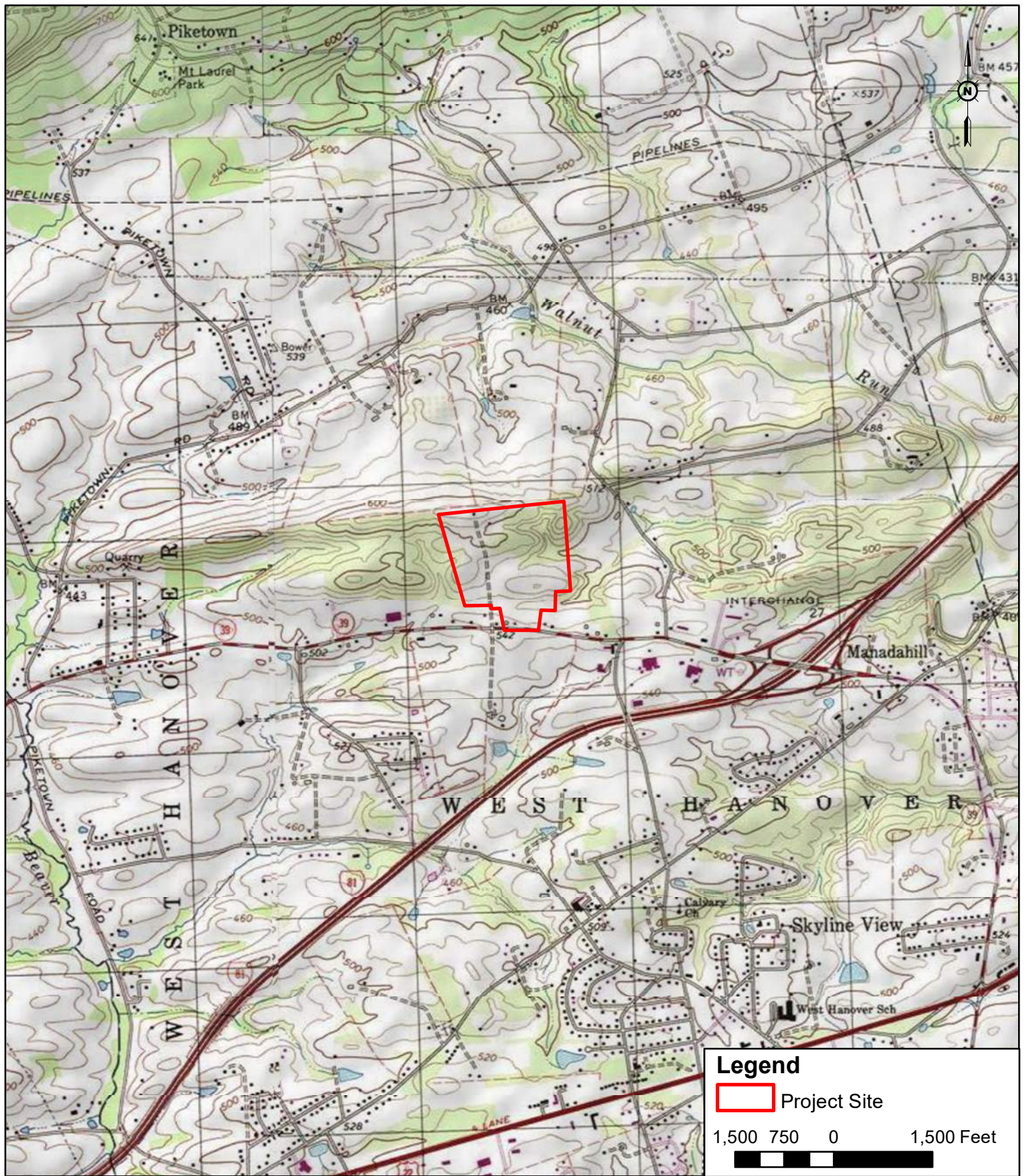
FIGURE 3 – EXPLORATION PLAN

BEDROCK SUMMARY TABLE

LABORATORY TESTING RESULTS

TEST PIT LOGS



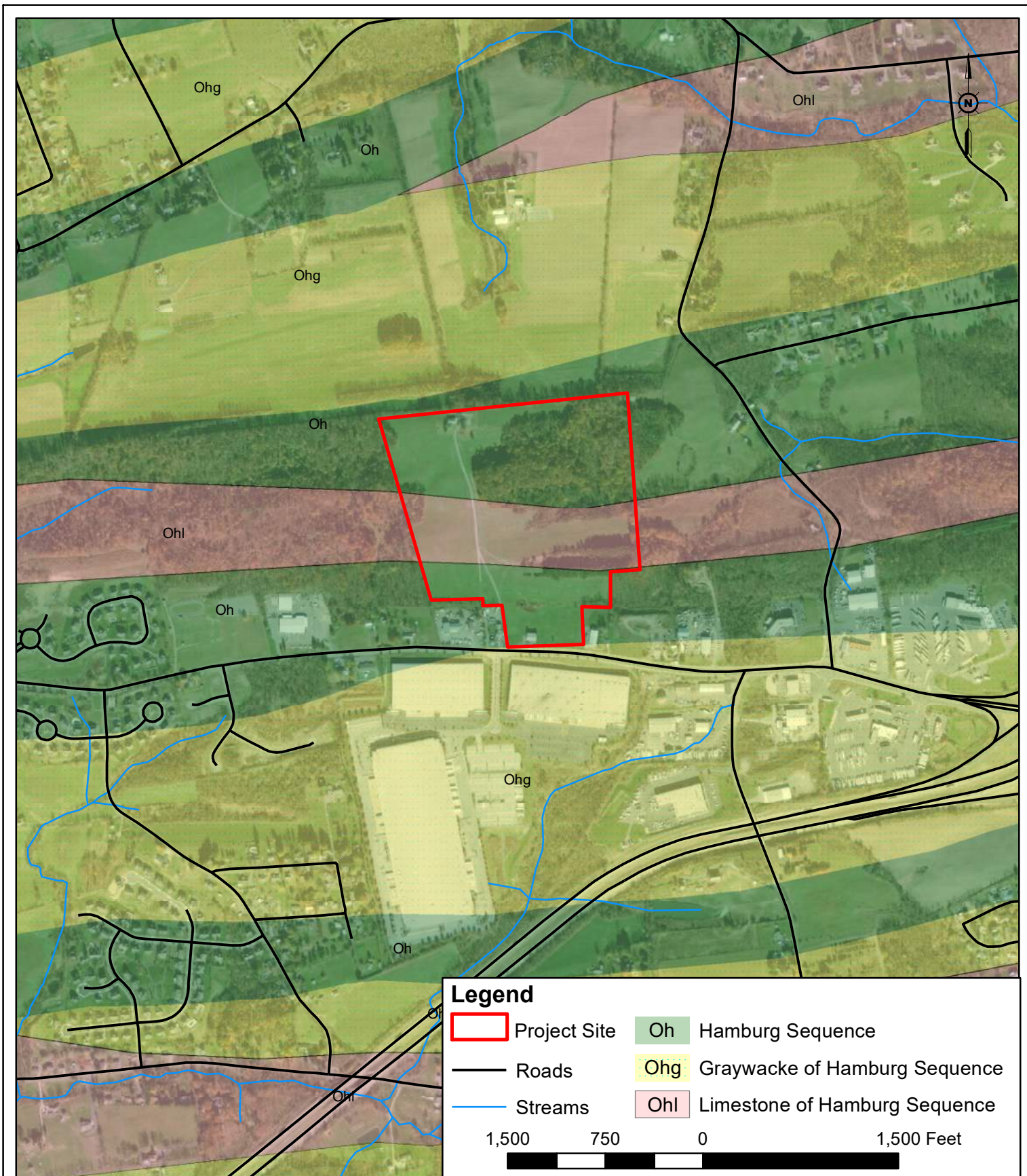


\*Source - USGS 15 - Minute Topographic Quadrangle, Provided by ESRI

SCALE: AS SHOWN	DRAWING NUMBER: FIGURE 1
DRAWN BY: C. WEEMS	CHECKED BY: J. TRIMBLE
APPROVED BY: K. BARNHART	DATE: 3-4-2019

**TOPOGRAPHIC MAP**  
 PREPARED FOR  
**7600 LINGLESTOWN ROAD**  
 WEST HANOVER TOWNSHIP      DAUPHIN COUNTY      PENNSYLVANIA

435 INDEPENDENCE AVE., SUITE C  
 MECHANICSBURG, PA 17055  
 PH (717) 458-0800  
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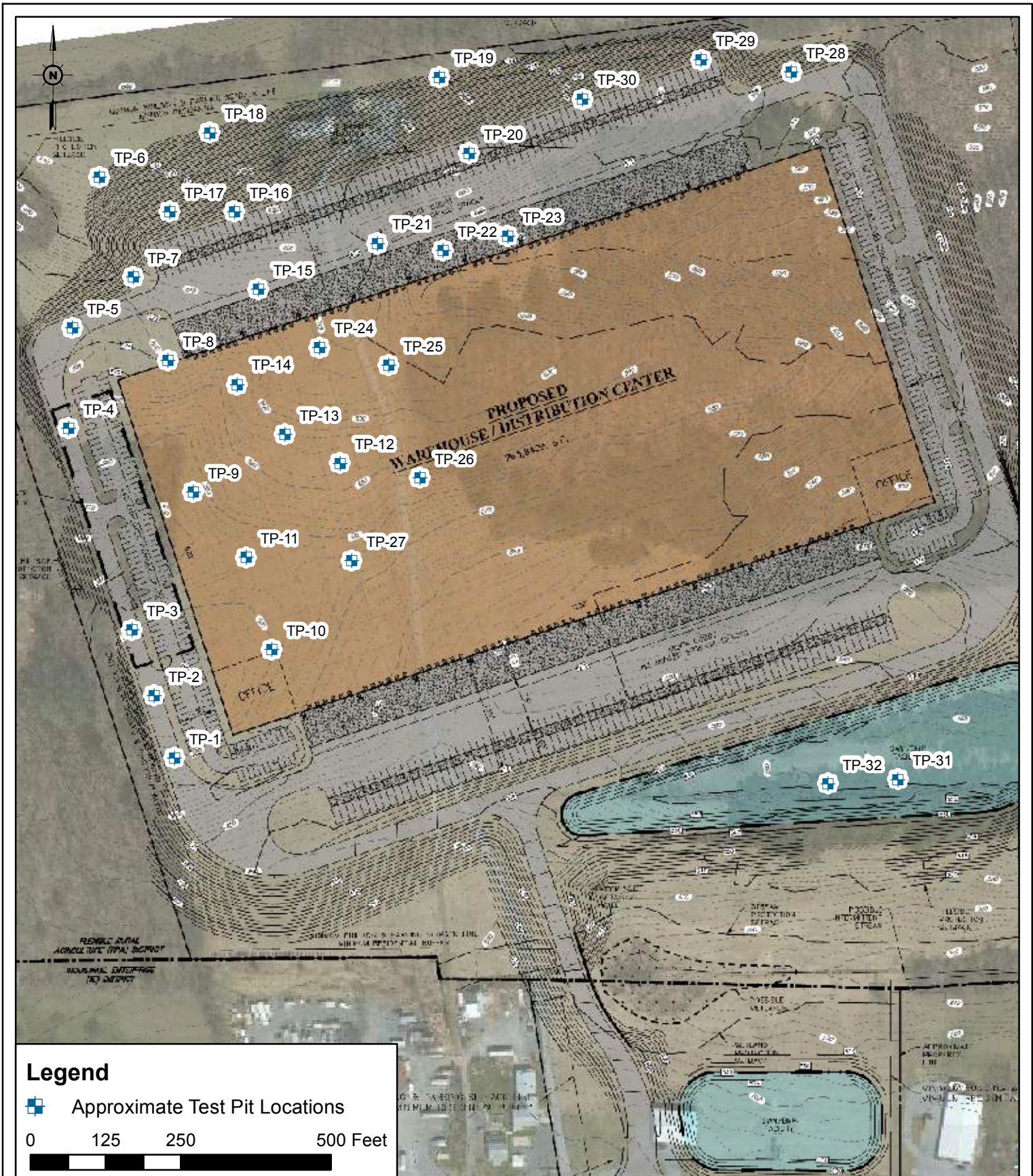


\*Source - Map 61 - Atlas of Preliminary Geologic Quadrangle Maps of Pennsylvania, 1981, Pa Geological Survey

SCALE: AS SHOWN	DRAWING NUMBER: FIGURE 2
DRAWN BY: C. WEEMS	CHECKED BY: J. TRIMBLE
APPROVED BY: K. BARNHART	DATE: 3-4-2019

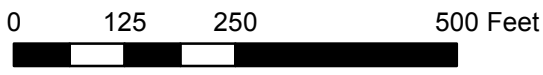
**GEOLOGIC MAP**  
 PREPARED FOR  
**7600 LINGLESTOWN ROAD**  
 WEST HANOVER TOWNSHIP      DAUPHIN COUNTY      PENNSYLVANIA

435 INDEPENDENCE AVE., SUITE C  
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**Legend**

Approximate Test Pit Locations



Service Layer Credits:

SCALE: AS SHOWN	DRAWING NUMBER: FIGURE 3
DRAWN BY: C. WEEMS	CHECKED BY: J. TRIMBLE
APPROVED BY: K. BARNHART	DATE: 3-12-2019

**EXPLORATION PLAN**  
PREPARED FOR  
**7600 LINGLESTOWN ROAD**  
WEST HANOVER TOWNSHIP      DAUPHIN COUNTY      PENNSYLVANIA



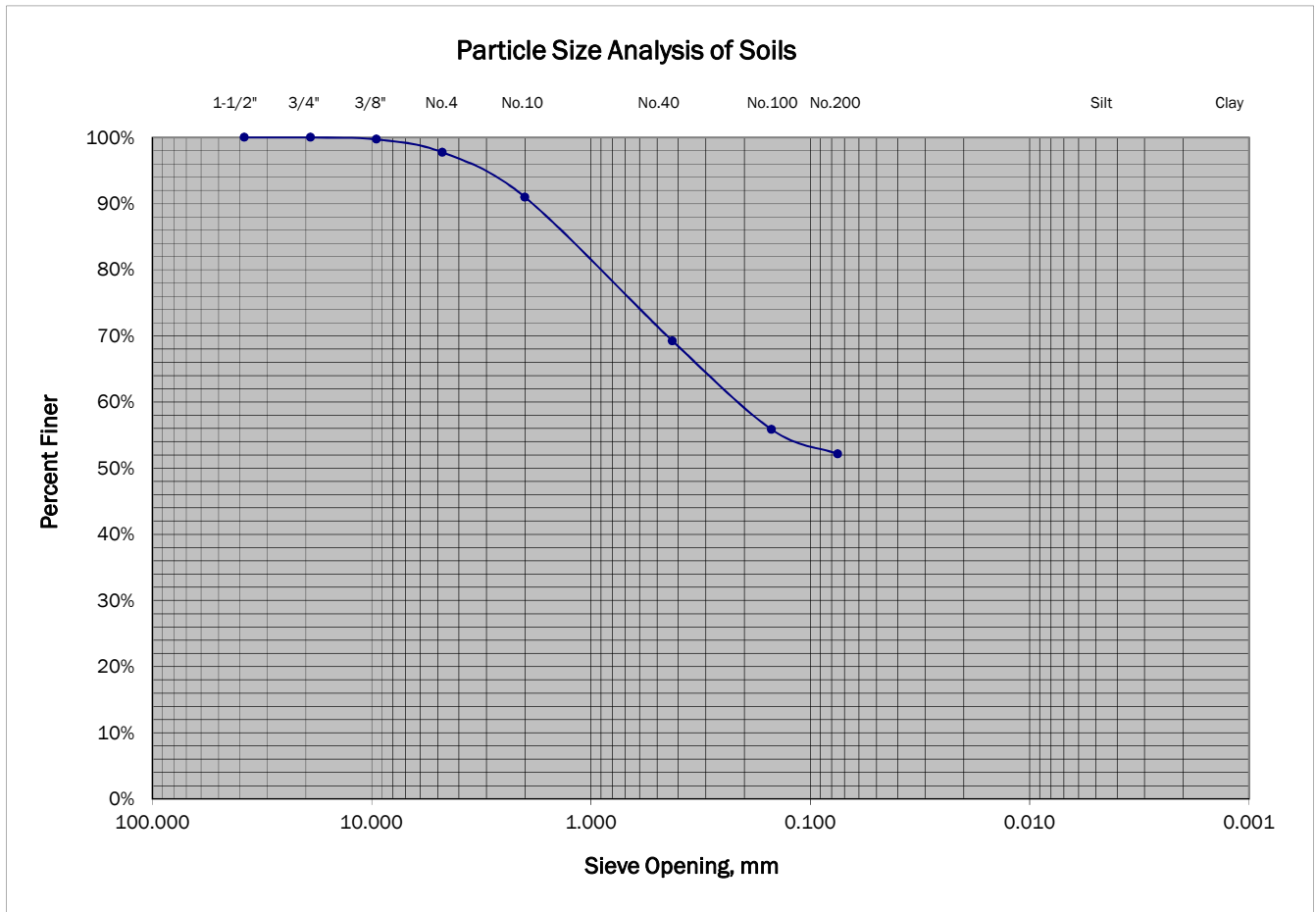
**advantage engineers**  
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<b>BEDROCK SUMMARY TABLE</b>				
<b>Test Location</b>	<b>Existing Surface Elevation (feet)</b>	<b>Proposed Finished Grade (feet)</b>	<b>Depth to Bedrock (feet)</b>	<b>Approximate Bedrock Surface Elevation (feet)</b>
TP-1	580	574	>10	<570
TP-2	588	575	>20	<568
TP-3	580	575	>10	<570
TP-4	585	575	>16	<569
TP-5	588	573	>20	<568
TP-6	640	638	>15	<625
TP-7	610	564	>20	<590
TP-8	600	574	>20	<580
TP-9	576	576	7	569
TP-10	580	576	>10	<570
TP-11	576	576	>8	<568
TP-12	593	576	>20	<573
TP-13	596	576	>20	<576
TP-14	594	576	>20	<574
TP-15	610	572	>20	<590
TP-16	630	568	>20	<610
TP-17	632	590	>20	<612
TP-18	647	640	>10	<637
TP-19	630	624	>20	<610
TP-20	633	570	>20	<613
TP-21	614	572	>20	<594
TP-22	598	572	>20	<578
TP-23	592	572	>20	<572
TP-24	608	576	>20	<588
TP-25	608	576	>20	<588
TP-26	587	576	9	578
TP-27	574	576	>8	<566
TP-28	596	576	>20	<576
TP-29	606	576	>20	<586
TP-30	619	576	>20	<599
TP-31	560	552	6	554
TP-32	560	552	8	552

Finished floor elevations are based on the "Conceptual Site Plan" provided by snyder Secary & Associates, LLC, dated December 12, 2018. Highlighted cells indicate where bedrock was encountered at or prior to the reaching proposed finished grade and/or invert elevation. It should be noted, the bucket of the excavation equipment could only reach approximately 20 feet below existing site grades and the proposed finished elevation could not be reached in all cases.

# Soil Classification Report

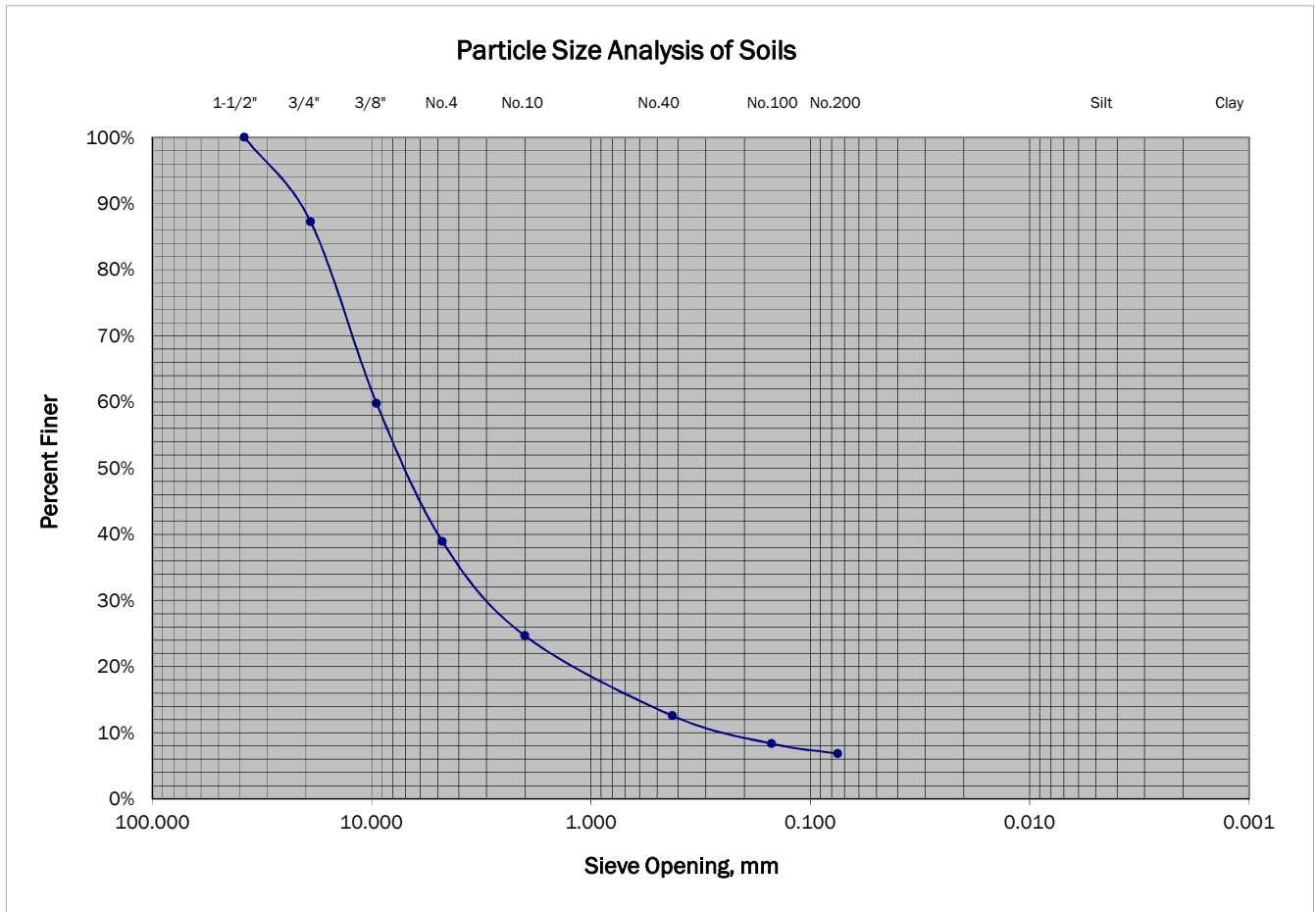
Per ASTM Designations D 2487 and D 2488, latest edition



<b>As-Received Moisture</b> 31.8%		<b>Particle Size Distribution</b>						
<b>USCS Classification:</b> Sandy Fat CLAY - CH		US Standard Sieve Size		Opening (mm)	%Finer			
<b>Gravel:</b> 2.3%	<b>Coarse:</b> 0.0%	<b>Fine:</b> 2.3%	<b>GRAVEL</b>	Coarse	1-1/2"	38.0	100.0%	
<b>Sand:</b> 45.6%	<b>Coarse:</b> 6.8%	<b>Medium:</b> 21.7%		<b>Fine:</b> 17.1%	Fine	3/4"	19.0	100.0%
<b>Fines:</b> 52.1%	<b>Silt:</b>	<b>Clay:</b>				3/8"	9.50	99.7%
<b>Gravel Description:</b> Subangular						No. 4	4.75	97.7%
<b>Sand Description:</b> Subangular			<b>SAND</b>	Coarse	No. 10	2.00	91.0%	
				Medium	No. 40	0.425	69.2%	
					No. 100	0.150	55.8%	
				Fine	No. 200	0.075	52.1%	
<b>Consistency:</b> Soft	<b>Dry Strength:</b> Medium		Hydrometer Analysis	Silt Size	0.005			
<b>Dilatancy:</b> Slow	<b>Toughness:</b> Medium			Clay Size	0.001			
<b>Structure:</b> Homogeneous	<b>Cementation:</b> N/A		D <sub>60</sub> :	D <sub>30</sub> :	D <sub>10</sub> :	Cu:	Cc:	
<b>Test Pit:</b> TP-15			<b>Atterberg Limits</b> LL: 59 PL: 32 PI: 27					
<b>Sample:</b> S-1	<b>Depth:</b> 1' - 10'		<b>Description:</b> Orange to brown Sandy Fat CLAY					
<b>Project:</b> 7600 Linglestown Road			<b>Remarks:</b> Stratum I					
<b>Client:</b> Prologis			<b>Report Date:</b> March 15, 2019					
<b>Advantage Project Number:</b> 1900271001								

# Soil Classification Report

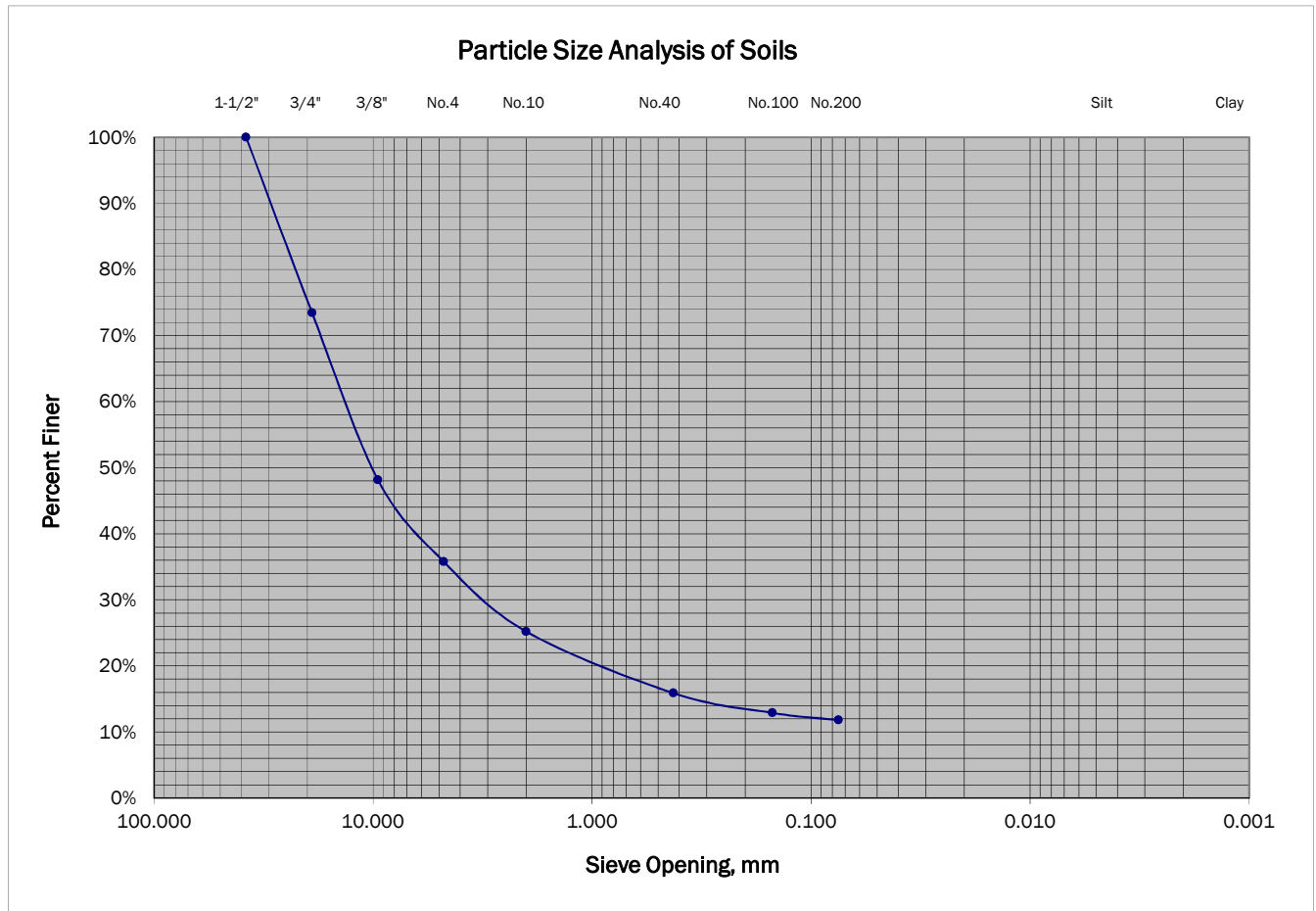
Per ASTM Designations D 2487 and D 2488, latest edition



As-Received Moisture 10.3%		Particle Size Distribution					
<b>USCS Classification:</b> Well-graded GRAVEL with Clay and Sand - GW-GC		US Standard Sieve Size		Opening (mm)	%Finer		
<b>Gravel:</b> 61.1%	<b>Coarse:</b> 12.7%	<b>Fine:</b> 48.4%		<b>GRAVEL</b>	Coarse		
<b>Sand:</b> 32.0%	<b>Coarse:</b> 14.2%	<b>Medium:</b> 12.1%	<b>Fine:</b> 5.7%		Fine		
<b>Fines:</b> 6.8%	<b>Silt:</b>	<b>Clay:</b>			Coarse		
<b>Gravel Description:</b> Subangular			Medium		Fine		
<b>Sand Description:</b> Subangular			<b>SAND</b>		Coarse		
<b>Consistency:</b> Soft	<b>Dry Strength:</b> Medium			Medium		Fine	
<b>Dilatancy:</b> Slow	<b>Toughness:</b> Medium			Hydrometer Analysis		Silt Size	
<b>Structure:</b> Homogeneous	<b>Cementation:</b> N/A			Clay Size		0.001	
		D <sub>60</sub> : 10		D <sub>30</sub> : 3	D <sub>10</sub> : 0.25	Cu: 40	Cc: 3.60
<b>Test Pit:</b> TP-2			<b>Atterberg Limits</b>		LL: 36	PL: 23	PI: 13
<b>Sample:</b> S-1	<b>Depth:</b> 1' - 10'		<b>Description:</b> Red to brown GRAVEL with Clay and Sand				
<b>Project:</b> 7600 Linglestown Road		<b>Remarks:</b> Stratum II					
<b>Client:</b> Prologis							
<b>Advantage Project Number:</b> 1900271001		<b>Report Date:</b> March 15, 2019					

# Soil Classification Report

Per ASTM Designations D 2487 and D 2488, latest edition



As-Received Moisture 12.1%		Particle Size Distribution					
USCS Classification: Clayey GRAVEL with Sand - GC		US Standard Sieve Size		Opening (mm)	%Finer		
Gravel: 64.3%	Coarse: 26.6%	Fine: 37.7%	GRAVEL	1-1/2"	100.0%		
Sand: 23.9%	Coarse: 10.5%	Medium: 9.3%		Fine	3/4"	73.4%	
Fines: 11.8%	Silt:	Clay:		3/8"	9.50	48.1%	
Gravel Description: Subangular				No. 4	4.75	35.7%	
Sand Description: Subangular			SAND	No. 10	2.00	25.2%	
Consistency: N/A	Dry Strength: N/A			Medium	No. 40	0.425	15.9%
Dilatancy: N/A	Toughness: N/A			Fine	No. 100	0.150	12.9%
Structure: Homogeneous	Cementation: Moderate			No. 200	0.075	11.8%	
			Hydrometer Analysis	Silt Size	0.005		
				Clay Size	0.001		
			D <sub>60</sub> :	D <sub>30</sub> :	D <sub>10</sub> :	Cu: Cc:	
Test Pit: TP-30			Atterberg Limits LL: NP PL: NP PI: NP				
Sample: S-1	Depth: 1' - 10'		Description: Orange to brown Clayey GRAVEL with Sand				
Project: 7600 Linglestown Road			Remarks: Stratum II				
Client: Prologis			Report Date: March 15, 2019				
Advantage Project Number: 1900271001							

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-1

PROJECT NUMBER: 1900271001

CLIENT: Prologis

E TOP OF GROUND: ±580.0'

LOCATION: See Exploration Plan (Figure 3)

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 10.0' Red to brown GRAVEL with Clay and Sand	
5		
10		<b>Stratum II</b>
	<b>-End of Test Pit at 10 Feet-</b>	
15		
20		
25		
30		



**advantage engineers**

435 Independence Ave, Suite C, Mechanicsburg, PA 17055  
 Office: (717) 458-0800 Fax: (717) 458-0801  
 www.advantageengineers.com

EXCAVATION METHOD: Tracked Excavator

ADVANTAGE REPRESENTATIVE: C. Weems

DATE EXCAVATED: March 7, 2019

DRAWN/COMPILED BY: C. Weems



# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-2

PROJECT NUMBER: 1900271001

CLIENT: Prologis

E TOP OF GROUND: ±588.0'

LOCATION: See Exploration Plan (Figure 3)

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 20.0' Red to brown GRAVEL with Clay and Sand	
5		
10		
15		
20		<b>Stratum II</b>
	<b>-End of Test Pit at 20 Feet-</b>	
25		
30		



**advantage engineers**

435 Independence Ave, Suite C, Mechanicsburg, PA 17055  
 Office: (717) 458-0800 Fax: (717) 458-0801  
[www.advantageengineers.com](http://www.advantageengineers.com)

EXCAVATION METHOD: Tracked Excavator  
 ADVANTAGE REPRESENTATIVE: C. Weems  
 DATE EXCAVATED: March 7, 2019  
 DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-3

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±580.0'

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 10.0' Red to brown GRAVEL with Clay and Sand	
5		
10		<b>Stratum II</b>
	<b>-End of Test Pit at 10 Feet-</b>	
15		
20		
25		
30		



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EXCAVATION METHOD: Tracked Excavator

ADVANTAGE REPRESENTATIVE: C. Weems

DATE EXCAVATED: March 7, 2019

DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-4

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±585.0'

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 16.0' Orange to brown Clayey GRAVEL with Sand	
5		
10		
15		<b>Stratum II</b>
	<b>-End of Test Pit at 16 Feet-</b>	
20		
25		
30		



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EXCAVATION METHOD: Tracked Excavator

ADVANTAGE REPRESENTATIVE: C. Weems

DATE EXCAVATED: March 7, 2019

DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-5

PROJECT NUMBER: 1900271001

CLIENT: Prologis

E TOP OF GROUND: ±588.0'

LOCATION: See Exploration Plan (Figure 3)

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 20.0' Orange to brown Clayey GRAVEL with Sand	
5		
10		
15		
20		<b>Stratum II</b>
	<b>-End of Test Pit at 20 Feet-</b>	
25		
30		



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EXCAVATION METHOD: Tracked Excavator  
 ADVANTAGE REPRESENTATIVE: C. Weems  
 DATE EXCAVATED: March 7, 2019  
 DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-6

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±640.0'

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 15.0' Orange to brown Sandy CLAY	
5		
10		
15		<b>Stratum I</b>
	<b>-End of Test Pit at 15 Feet-</b>	
20		
25		
30		



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EXCAVATION METHOD: Tracked Excavator

ADVANTAGE REPRESENTATIVE: C. Weems

DATE EXCAVATED: March 8, 2019

DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-7

PROJECT NUMBER: 1900271001

CLIENT: Prologis

E TOP OF GROUND: ±610.0'

LOCATION: See Exploration Plan (Figure 3)

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 20.0' Orange to brown Clayey GRAVEL with Sand	
5		
10		
15		
20		<b>Stratum II</b>
	<b>-End of Test Pit at 20 Feet-</b>	
25		
30		



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EXCAVATION METHOD: Tracked Excavator  
 ADVANTAGE REPRESENTATIVE: C. Weems  
 DATE EXCAVATED: March 7, 2019  
 DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-8

PROJECT NUMBER: 1900271001

CLIENT: Prologis

E TOP OF GROUND: ±600.0'

LOCATION: See Exploration Plan (Figure 3)

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 20.0' Red to brown GRAVEL with Clay and Sand	
5		
10		
15		
20		<b>Stratum II</b>
	<b>-End of Test Pit at 20 Feet-</b>	
25		
30		



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EXCAVATION METHOD: Tracked Excavator  
 ADVANTAGE REPRESENTATIVE: C. Weems  
 DATE EXCAVATED: March 7, 2019  
 DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-9

PROJECT NUMBER: 1900271001

CLIENT: Prologis

E TOP OF GROUND: ±576.0'

LOCATION: See Exploration Plan (Figure 3)

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 5.0' Brown Sandy CLAY	
5		<b>Stratum I</b>
	5.0' - 7.0' Red to brown GRAVEL with Clay and Sand	
	<b>-Bucket Refusal at 7 Feet-</b> <b>-End of Test Pit at 7 Feet-</b>	<b>Stratum II</b>
10		
15		
20		
25		
30		



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EXCAVATION METHOD: Tracked Excavator  
 ADVANTAGE REPRESENTATIVE: C. Weems  
 DATE EXCAVATED: March 7, 2019  
 DRAWN/COMPILED BY: C. Weems



# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-10

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±580.0'

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 10.0' Red to brown GRAVEL with Clay and Sand	
5		
10		<b>Stratum II</b>
	<b>-End of Test Pit at 10 Feet-</b>	
15		
20		
25		
30		



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EXCAVATION METHOD: Tracked Excavator

ADVANTAGE REPRESENTATIVE: C. Weems

DATE EXCAVATED: March 7, 2019

DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-11

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±576.0'

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 8.0' Red to brown GRAVEL with Clay and Sand	<b>Stratum II</b>
5		
10		
15		
20		
25		
30		

-End of Test Pit at 8 Feet-



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EXCAVATION METHOD: Tracked Excavator

ADVANTAGE REPRESENTATIVE: C. Weems

DATE EXCAVATED: March 7, 2019

DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-12

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±593.0'

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 20.0' Red to brown GRAVEL with Clay and Sand	
5		
10		
15		
20		<b>Stratum II</b>
	<b>-End of Test Pit at 20 Feet-</b>	
25		
30		



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EXCAVATION METHOD: Tracked Excavator

ADVANTAGE REPRESENTATIVE: C. Weems

DATE EXCAVATED: March 7, 2019

DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-13

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±596.0'

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 20.0' Red to brown GRAVEL with Clay and Sand	
5		
10		
15		
20		<b>Stratum II</b>
	<b>-End of Test Pit at 20 Feet-</b>	
25		
30		



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EXCAVATION METHOD: Tracked Excavator

ADVANTAGE REPRESENTATIVE: C. Weems

DATE EXCAVATED: March 7, 2019

DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-14

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±594.0'

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 20.0' Red to brown GRAVEL with Clay and Sand	
5		
10		
15		
20		<b>Stratum II</b>
	<b>-End of Test Pit at 20 Feet-</b>	
25		
30		



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EXCAVATION METHOD: Tracked Excavator

ADVANTAGE REPRESENTATIVE: C. Weems

DATE EXCAVATED: March 7, 2019

DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-15

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±610.0'

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 20.0' Orange to brown Sandy CLAY	
5		
10		
15		
20		<b>Stratum I</b>
	<b>-End of Test Pit at 20 Feet-</b>	
25		
30		



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EXCAVATION METHOD: Tracked Excavator

ADVANTAGE REPRESENTATIVE: C. Weems

DATE EXCAVATED: March 8, 2019

DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-16

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±630.0'

L GROUNDWATER DATA: Dry

E DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 20.0' Orange to brown Sandy CLAY with Gravel	
5		
10		
15		
20		<b>Stratum I</b>
	<b>-End of Test Pit at 20 Feet-</b>	
25		
30		



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EXCAVATION METHOD: Tracked Excavator

ADVANTAGE REPRESENTATIVE: C. Weems

DATE EXCAVATED: March 8, 2019

DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-17

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±632.0'

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 20.0' Orange to brown Sandy CLAY with Gravel	
5		
10		
15		
20		<b>Stratum I</b>
	<b>-End of Test Pit at 20 Feet-</b>	
25		
30		



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EXCAVATION METHOD: Tracked Excavator

ADVANTAGE REPRESENTATIVE: C. Weems

DATE EXCAVATED: March 8, 2019

DRAWN/COMPILED BY: C. Weems



# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-18

PROJECT NUMBER: 1900271001

CLIENT: Prologis

E TOP OF GROUND: ±647.0'

LOCATION: See Exploration Plan (Figure 3)

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 10.0' Red to brown GRAVEL with Clay and Sand	
5		
10		<b>Stratum II</b>
	<b>-End of Test Pit at 10 Feet-</b>	
15		
20		
25		
30		



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EXCAVATION METHOD: Tracked Excavator

ADVANTAGE REPRESENTATIVE: C. Weems

DATE EXCAVATED: March 8, 2019

DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-19

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±630.0'

L GROUNDWATER DATA: Dry

E DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 20.0' Orange to brown Clayey GRAVEL with Sand	
5		
10		
15		
20		<b>Stratum II</b>
	<b>-End of Test Pit at 20 Feet-</b>	
25		
30		



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EXCAVATION METHOD: Tracked Excavator

ADVANTAGE REPRESENTATIVE: C. Weems

DATE EXCAVATED: March 8, 2019

DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-20

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±633.0'

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 20.0' Orange to brown Clayey GRAVEL with Sand	
5		
10		
15		
20		<b>Stratum II</b>
	<b>-End of Test Pit at 20 Feet-</b>	
25		
30		



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EXCAVATION METHOD: Tracked Excavator

ADVANTAGE REPRESENTATIVE: C. Weems

DATE EXCAVATED: March 8, 2019

DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-21

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±614.0'

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 0.7' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	0.7' - 8.0' Brown Clayey GRAVEL with Sand	
5		
		<b>Fill</b>
10	8.0' - 20.0' Orange to brown Sandy CLAY	
15		
20		<b>Stratum I</b>
	<b>-End of Test Pit at 20 Feet-</b>	
25		
30		



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EXCAVATION METHOD: Tracked Excavator

ADVANTAGE REPRESENTATIVE: C. Weems

DATE EXCAVATED: March 8, 2019

DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-22

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±598.0'

L GROUNDWATER DATA: Dry

E DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 20.0' Orange to brown Sandy CLAY	
5		
10		
15		
20		<b>Stratum I</b>
	<b>-End of Test Pit at 20 Feet-</b>	
25		
30		



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EXCAVATION METHOD: Tracked Excavator  
 ADVANTAGE REPRESENTATIVE: C. Weems  
 DATE EXCAVATED: March 8, 2019  
 DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-23

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±592.0'

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 20.0' Orange to brown Sandy CLAY	
5		
10		
15		
20		<b>Stratum I</b>
	<b>-End of Test Pit at 20 Feet-</b>	
25		
30		



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EXCAVATION METHOD: Tracked Excavator

ADVANTAGE REPRESENTATIVE: C. Weems

DATE EXCAVATED: March 8, 2019

DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-24

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±608.0'

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 20.0' Orange to red to brown Clayey GRAVEL with Sand	
5		
10		
15		
20		<b>Stratum II</b>
	<b>-End of Test Pit at 20 Feet-</b>	
25		
30		



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EXCAVATION METHOD: Tracked Excavator  
 ADVANTAGE REPRESENTATIVE: C. Weems  
 DATE EXCAVATED: March 7, 2019  
 DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-25

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±608.0'

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 20.0' Orange to red to brown Clayey GRAVEL with Sand	
5		
10		
15		
20		<b>Stratum II</b>
	<b>-End of Test Pit at 20 Feet-</b>	
25		
30		



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EXCAVATION METHOD: Tracked Excavator  
 ADVANTAGE REPRESENTATIVE: C. Weems  
 DATE EXCAVATED: March 8, 2019  
 DRAWN/COMPILED BY: C. Weems







# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-28

PROJECT NUMBER: 1900271001

CLIENT: Prologis

E TOP OF GROUND: ±596.0'

LOCATION: See Exploration Plan (Figure 3)

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 20.0' Orange to brown Clayey GRAVEL with Sand	
5		
10		
15		
20		<b>Stratum II</b>
	<b>-End of Test Pit at 20 Feet-</b>	
25		
30		



**advantage engineers**

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 Office: (717) 458-0800 Fax: (717) 458-0801  
 www.advantageengineers.com

EXCAVATION METHOD: Tracked Excavator  
 ADVANTAGE REPRESENTATIVE: C. Weems  
 DATE EXCAVATED: March 8, 2019  
 DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-29

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±606.0'

L GROUNDWATER DATA: Dry

E DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 20.0' Orange to brown Clayey GRAVEL with Sand	
5		
10		
15		
20		<b>Stratum II</b>
	<b>-End of Test Pit at 20 Feet-</b>	
25		
30		



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EXCAVATION METHOD: Tracked Excavator  
 ADVANTAGE REPRESENTATIVE: C. Weems  
 DATE EXCAVATED: March 8, 2019  
 DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-30

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±619.0'

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 1.0' Dark brown sandy clay with organic debris	<b>Topsoil</b>
	1.0' - 20.0' Orange to brown Clayey GRAVEL with Sand	
5		
10		
15		
20		<b>Stratum II</b>
	<b>-End of Test Pit at 20 Feet-</b>	
25		
30		



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EXCAVATION METHOD: Tracked Excavator

ADVANTAGE REPRESENTATIVE: C. Weems

DATE EXCAVATED: March 8, 2019

DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-31

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±560.0'

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 6.0' Red to brown Silty GRAVEL with Sand	
5		
		<b>Stratum II</b>
	<b>-Bucket Refusal at 6 Feet-</b>	
	<b>-End of Test Pit at 6 Feet-</b>	
10		
15		
20		
25		
30		



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EXCAVATION METHOD: Tracked Excavator

ADVANTAGE REPRESENTATIVE: C. Weems

DATE EXCAVATED: March 8, 2019

DRAWN/COMPILED BY: C. Weems

# TEST PIT LOG

PROJECT NAME: 7600 Linglestown Road

TEST PIT NO.: TP-32

PROJECT NUMBER: 1900271001

CLIENT: Prologis

LOCATION: See Exploration Plan (Figure 3)

E TOP OF GROUND: ±560.0'

L GROUNDWATER DATA: Dry

V DEPTH: Not Encountered Time: Completion

FIELD SURVEYED

TOPO ESTIMATE

DEPTH (feet)	SOIL DESCRIPTION	REMARKS
	0.0' - 8.0' Red to brown Silty GRAVEL with Sand	
5		
		<b>Stratum II</b>
	<b>-Bucket Refusal at 8 Feet-</b>	
10	<b>-End of Test Pit at 8 Feet-</b>	
15		
20		
25		
30		



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EXCAVATION METHOD: Tracked Excavator  
 ADVANTAGE REPRESENTATIVE: C. Weems  
 DATE EXCAVATED: March 8, 2019  
 DRAWN/COMPILED BY: C. Weems