Intertek-PSI
2828 S. 44th Street
Kansas City, Kansas 66106

Tel +1 913 310 1600
Fax +1 913 310 1601
intertek.com/building

July 23, 2026

Kimley-Horn
7300 College Blvd, Suite 500
Overland Park, KS 66210

Re: Preliminary Geotechnical Engineering Services Report
Bluestem Data Center
16502-16898 214 Street
Tonganoxie, Kansas 66086
PSI Project Number: 03382650

Thank you for choosing Professional Service Industries, Inc. (PSI), an Intertek company, as your consultant for Bluestem Data Center in Tonganoxie, Kansas. Per your authorization, PSI has completed a preliminary geotechnical engineering study for the referenced project.

Should there be questions pertaining to this report, please contact our office at (913) 310-1600. PSI would be pleased to continue providing geotechnical services throughout the implementation of the project, and we look forward to working with you and your organization on this and future projects.

Respectfully submitted,

Professional Service Industries, Inc.

Joshua A. Fayemi, E.I.T.
Staff Engineer

Tyler K. Bernius, P.E.
Regional Engineer

Reviewed By:
Chris Carson, P.E.
Principal Consultant

Preliminary Geotechnical Engineering
Services Report

for the
Bluestem Data Center
16502-16898 214 Street
Tonganoxie, Kansas 66086

Prepared for

Kimley-Horn
7300 College Blvd, Suite 500
Overland Park, KS 66210

Prepared by

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, Kansas 66106

July 23, 2026

PSI Project 03382650

Joshua A. Fayemi, E.I.T.
Staff Engineer

TYLER KRISTOFOR BERNIUS LICENSED 30433 KANSAS PROFESSIONAL ENGINEER
7/23/2026

Tyler K. Bernius, P.E.
Regional Engineer

Reviewed by:
Chris Carson, P.E.
Principal Consultant

The above Professional Engineering Seal and signature is an electronic reproduction of the original seal and signature. This electronic reproduction shall not be construed as an original or certified document.

TABLE OF CONTENTS

1 PROJECT INFORMATION 1

1.1 Project Description 1
1.2 Purpose of This Preliminary Report 1
1.3 Purpose and Scope of Services 5

2 SITE AND SUBSURFACE CONDITIONS 6

2.1 Site Location and Description 6
2.2 Site Geology 6
2.3 Geologic Hazards 6
2.4 Exploration Procedures and Subsurface Conditions 7
2.5 Subsurface Conditions 7
2.6 Water Level Measurements 8

3 GEOTECHNICAL EVALUATION 9

3.1 Geotechnical Discussion 9
3.2 High Plasticity Clay 9
3.3 Previous Agricultural Areas 9
3.4 Equipment Mobility 9
3.5 Existing Trees 10

4 PRELIMINARY GEOTECHNICAL RECOMMENDATIONS 11

4.1 Site Preparation 11
4.2 Preliminary Shallow - Foundation Recommendations 13
4.3 Ground Improvement 13
4.4 Preliminary Recommendations - Mat Foundations for Substation, BESS, Power Plant, and Above Grade Storage Tanks 14
4.5 Deep Foundations 14
4.6 Preliminary Vertical Design Recommendations – Drilled Shafts 14
4.7 Preliminary - Lateral Design Recommendations - Drilled Shafts 15
4.8 Floor Slab Recommendations 15
4.9 Preliminary Earthquake and Seismic Design Consideration 17
4.10 Utilities Trenching 17
4.11 Preliminary Pavement Recommendations 18
4.12 Asphalt Pavement 18
4.13 Portland Cement Concrete Pavement 19
4.14 Pavement Subgrade Preparation 19
4.15 Pavement Drainage & Maintenance 20
4.16 Slopes 20

5 CONSTRUCTION CONSIDERATIONS 21

5.1 Moisture Sensitive Soils/Weather Related Concerns 21

5.2 Drainage and Groundwater Considerations 21
5.3 Excavations 21

6 GEOTECHNICAL RISK 22

7 REPORT LIMITATIONS 23

LIST OF TABLES

TABLE 1: PROJECT DESCRIPTION AND PROPOSAL BASIS 2
TABLE 2: ASSUMED LOADING INFORMATION (PROPOSAL BASIS) 3
TABLE 3: DETAILED LOADING INFORMATION 4
TABLE 4: POTENTIAL GEOLOGIC HAZARDS 6
TABLE 5:FIELD DENSITY AND COMPACTION 12
TABLE 6: SHAFT ALLOWABLE COMPRESSIVE CAPACITIES 15
TABLE 7: LATERAL LOADS PARAMETERS 15
TABLE 8: EARTHQUAKE AND SEISMIC DESIGN PARAMETERS 17
TABLE 9: RECOMMENDED MINIMUM PAVEMENT SECTION 18

LIST OF APPENDICES

APPENDIX A - TOPOGRAPHIC MAP
APPENDIX B - SITE VICINITY MAP
APPENDIX C - BORING LOCATION PLAN
APPENDIX D - BORING LOGS
APPENDIX E - FENCE DIAGRAM
APPENDIX F - ROCK CORE PHOTOS
APPENDIX G - GENERAL NOTES/SOIL CLASSIFICATION CHART
APPENDIX H - DRILLING, FIELD AND LAB TESTING PROCEDURES

1 PROJECT INFORMATION

1.1 PROJECT DESCRIPTION

The project site is known as Bluestem Data Center in Tonganoxie, Kansas. Based on the information provided in the meeting with Kimley-Horn on November 18, 2025, and based on previous experience and project understanding, a summary of the proposed project is provided below in the following Project Description table. It is important to note that the end user of this report may have their own specifications, equipment and structures which are not known at the time of this report. The intention of this geotechnical report is to capture spectrum of different equipment and buildings that will be included in the development of this site.

1.2 PURPOSE OF THIS PRELIMINARY REPORT

PSI understands that the client acquired additional parcels totaling approximately 583 acres south and northeast of the initial project area, resulting in an expansion of the proposed project site. On January 23, 2026, Ms. Lydia Leslie requested, via email, additional preliminary subsurface exploration across the newly acquired parcels. This resulted in thirty-three (33) additional soil test borings.

TABLE 1: PROJECT DESCRIPTION AND PROPOSAL BASIS

Project Items	The project consists of construction of a new datacenter facility on an approximately **1,135 acres in Tonganoxie, Kansas.** The project may consist of the following: • **1-Story Data Center(s)** • **138kV and 345kV Step down three phase 500 MVA transformers (or similar)** • **200 MW Combustion Turbines (or similar)** • **100 MW BESS (or similar)** • **Pipe and Conduit Trenches** • **Greenfield Electrical Substation** • **Tanks (Water or other liquid/gas)** • **Ancillary Structures e.g. Office, Warehouse, Guard Shack, Power generation etc.**
Current Grade Change within Project Site	± 20 Feet Estimate (Google Earth Pro)
Finished Floor Elevations	Not available at this time
Foundation Types (loading dependent)	Drilled Shafts; Drilled and Underreamed Piers; Monolithic Stiffened Beam; Shallow Foundations and Slab on Grade; Mat Foundations, with or without ground improvement.
Pavement for Parking and Drives	Flexible Asphalt (HMAC) and/or Rigid Concrete Pavement
Design Traffic Load	30,000 equivalent 18-kip single axle loads (ESAL's) for light duty pavements, 60,000 ESAL's for medium duty pavement, and 250,000 ESAL's for heavy duty pavements. 20 year pavement life.

TABLE 2: ASSUMED LOADING INFORMATION (PROPOSAL BASIS)

STURCTURAL LOAD/PROPERTY	
1-Story Data Center Building	
Maximum Anticipated Column Loads	500 kips Isolated Columns
Maximum Anticipated Wall loads	12.5 kips per lineal foot
Maximum Floor Slab Loads	350 psf
Ancillary Structures	
Maximum Anticipated Column Loads	150 kips Isolated Columns
Maximum Anticipated Wall loads	6 kips per lineal foot
Maximum Floor Slab Loads	150 psf
Transformer/Combustion Turbine and Substation	
Maximum Anticipated Loads	800 kips for electrical transformer
Anticipated Foundation Type	Mat Foundations and drilled piers ranging from diameter of 2.5-ft to 5.0 feet and depths from approximately 10 to 30+ feet in depth.
Battery Energy Storage System (BESS)	
Maximum Anticipated Loads	Less than 100 Kips

TABLE 3: DETAILED LOADING INFORMATION

DESCRIPTION	LOCATION	MAX. LOADS (DL+LL) AT STRUCTURE-FOUNDATION INTERFACE
1-story structure DC Hall and FSA	Isolated interior columns (typ. spacing = 80 ft by 90 ft (24.4 m by 27.4 m)	500 kip (2225 kN) (sustained = 325 kip (1446 kN; transient = 175 kip (778 kN))
	Joist girder bearing at wall	560 kip (2490 kN) (sustained = 390 kip (1735 kN); transient = 170 kip (756 kN))
	Perimeter building & interior walls	12.5 kip/LF (183 kN/m) (sustained = 8.5 kip/LF (124 kN/m); transient load = 4 kip/LF (59 kN/m))
	Floor ground slab	LL = 350 psf (16.8 kPa)
1-story structures	Electrical and Mechanical (EYD & MYD), including substation	Total load <500 kip (<2225 kN) with 800 psf compression exerted on the soil. Conduite and bus supports with up to 40 kips compression, 10 kips of uplift, and 10 kips lateral.
Make-up Water Tank	On base of foundation	3300 psf (158 kPa)
Steel Framing Pipe / Conduit Trestles	Per column (per CFD analysis)	DL = 25 kip (111 kN) LL = 15 kip (67 kN) Ultimate lateral = 10 kip (45 kN)
Dry Cooler (per Vendor)	Per column (typ. spacing = 23 ft by 23 ft (7.0 m by 7.0 m))	DL = 60 kip (267 kN) LL = 100 kip (445 kN) Seismic = 160 kip (712 kN)
EYD & MYD Double Generators	On base slab, 40 ft by 64 ft	DL = 276 kip

The geotechnical recommendations presented in this report are based on the preliminary project information, proposed structure location, and the subsurface materials encountered during the field investigation. Should any of the above information or design basis made by PSI be inconsistent with the planned construction, it is requested that you contact us immediately to allow us to make any necessary modifications to this report. PSI will not be held responsible for changes to the project if not provided with the opportunity to review the information and provide modifications to our recommendations.

Additionally, the geotechnical related recommendations, parameters, and general construction guidance presented in this preliminary report supersede our previously issued report for the project. Accordingly, the Previous Report No. 03382650 (March 4, 2026) was hereby amended and should be considered void and null where inconsistent with this Report.

1.3 PURPOSE AND SCOPE OF SERVICES

The primary purpose of this exploration was to explore the subsurface conditions at the site and to prepare preliminary recommendations for the grading, foundations, floor slab and pavements for the proposed construction. PSI's scope of services included drilling fifty-three (53) borings, select laboratory testing, and preparation of this preliminary geotechnical engineering report. Test borings extended to depths of approximately 12½ to 48½ feet below the existing ground surface.

This report briefly outlines the testing procedures performed, summarizes provided project information, describes the site and subsurface conditions encountered, and presents preliminary recommendations regarding the following:

- Review of geologic setting
- Site grading including placement and compaction of fill, including an assessment of the suitability of the existing on-site soils for use as fill material
- Design and construction of foundations including foundation types, allowable soil bearing capacity, deep foundations capacities and estimated potential settlements
- Seismic site class determination (per ASCE 7-16)
- Floor slab design including estimated subgrade modulus
- Lateral earth pressures for at-rest, active and passive conditions
- Minimum pavement sections and subgrade preparation
- Construction considerations, including observed subsurface conditions which could possibly impact grading and foundation construction activities

The scope of services did not include an environmental assessment for determining the presence or absence of wetlands, or hazardous or toxic materials in the soil, bedrock, surface water, groundwater, or air on, below, or around this site. Any statements in this report or on the boring logs regarding odors, colors, and unusual or suspicious items or conditions are strictly for informational purposes. PSI's geotechnical scope also did not include any service to investigate or detect the presence of moisture, mold or other biological contaminants in or around any structure, or any service that was designed or intended to prevent or lower the risk of the occurrence or the amplification of the same. Client should be aware that mold is ubiquitous to the environment with mold amplification occurring when building materials are impacted by moisture. Client should also be aware that site conditions are outside of PSI's control, and that mold amplification will likely occur, or continue to occur, in the presence of moisture. As such, PSI cannot and shall not be held responsible for the occurrence or recurrence of mold amplification.

2 SITE AND SUBSURFACE CONDITIONS

2.1 SITE LOCATION AND DESCRIPTION

The approximate 1,135-acre proposed project site is located at 16502-16898 214 Street in Tonganoxie, Kansas. The center of the site is approximately 39.0696° North and 95.0848° West. The proposed project site is bordered by Tonganoxie Business Park and agricultural areas to the north, Hemphill Road to the south, agricultural, wooded areas, and 206th street to the east, and 222nd Street to the west, respectively. At the time of drilling the areas around the test borings were covered by grass and Trees. There are three small farm barns currently located at the northwest portion of the project site, PSI believes that these metal buildings will be demolished. The ground surface elevation across the site consists of undulating slopes and it was estimated to range between approximately 870 to 1,007 feet above mean sea level. Approximate site elevations are based on available topographic information from Google Earth Pro.

2.2 SITE GEOLOGY

Based on a review of the historical Geological Investigations of Kansas, the bedrock within the general geographical area of the proposed site belongs to the Douglas Group which consists of Lawrence FM (base LA)-mostly gray shale and sandstone with minor red shale, coal, gray limestone and conglomerate. Stranger FM-five members containing sandstone, shale, and minor limestone, coal and conglomerate. Drift which comprises of sand, silt, clay, and some gravel is also present within the project site.

The surficial geology is dominated by unsorted sediment deposited by glaciers, residuum weathered from shale, colluvium derived from limestone and shale, and some wind-blown deposits.

2.3 GEOLOGIC HAZARDS

Information obtained from the Kansas geological survey website indicated that no known abandoned mines were recorded within the general vicinity of the subject site. Their Karst sinkholes information indicates that no karst (potential sinkholes) areas are documented within the general vicinity of the project site. No mapped Holocene-aged faults were listed at or near the subject site. The following table summarizes the documented potential geologic hazards within the general geographical area of the subject site.

TABLE 4: POTENTIAL GEOLOGIC HAZARDS

HAZARD	RELATIVE RISK	COMMENTS
Liquefaction	Low	The soils are within a seismically inactive zone
Slope Stability	Low	The site is relatively level with minimal slopes
Surface Rupture	Low	The site is not underlain by a mapped Holocene-aged fault
Flood Zone	Low	The site is not located within a flood zone

2.4 EXPLORATION PROCEDURES AND SUBSURFACE CONDITIONS

The soil borings were performed with a track-mounted CME-55LC and Mobile Drill B-57 drill rigs and were advanced using hollow stem auger drilling techniques. Representative samples were obtained employing split-spoon and thin-wall tube sampling procedures in general accordance with ASTM procedures. When practical auger/SPT split-spoon refusal occurred in relatively intact bedrock, a 1.875-inch inside diameter NQ barrel was used to obtain representative rock cores. The laboratory testing program was conducted in general accordance with applicable ASTM specifications. The results of these tests are to be found on the accompanying boring logs located in Appendix D.

2.5 SUBSURFACE CONDITIONS

The site subsurface conditions were explored with fifty-three (53) soil test borings. The boring depths ranged from 12½ to 48½ feet.

The boring locations and depths were suggested by PSI and reviewed with the client prior to drilling. PSI personnel staked the approximate boring locations in the field using a non-survey grade hand-held GPS unit or by measuring distances from available surface features. The surface elevations at the borings were interpolated Google Earth Pro.

At the time of PSI's field activities, the surface material at the test borings generally consisted of approximately 7 inches or less of topsoil below existing grade (bgs).

Fine-grained apparent fill soils were present beneath the topsoil layer to depths of approximately 3½ feet bgs in borings BP-17 and BP-29, The apparent fill generally consisted of high plasticity soils (CH).

The generalized subsurface profile encountered at the borings beneath the topsoil and apparent fill layers primarily included fine-grained soils, coarse-grained soils, and bedrock formations that extended to the terminal depths of the borings. Based on results of visual classification and select laboratory testing, the soils were classified as low plasticity clay (CL), high plasticity clay (CH), Clayey Sand (SC), and Clayey Gravel (GC) in accordance with the Unified Soil Classification System (USCS) while bedrock formations were classified as Shale, Sandstone, and Limestone.

Auger refusal materials were encountered in some of the borings during PSI's field exploration. Auger refusal is a designation applied to materials that cannot be further penetrated by the power auger with ordinary effort and is normally indicative of a very hard or very dense material, such as boulders or gravel lenses or the upper surface of bedrock. In addition to the refusal materials, weathered rock layers were encountered above the refusal materials at all borings with the exception of BP-8, BP-9, BP-12, BP-14, BP-23, BP-24, BP-35, BP-36, BP-38, and BP-39. Rock coring was also performed for this exploration; to determine the character and continuity of the refusal materials. The recovery percentages range from 0 to 100 percent, and the rock quality designation (RQD) values range from 0 to 100 percent.

The above subsurface description is of a generalized nature to highlight the major subsurface stratification features and material characteristics. The boring logs included in Appendix D should be reviewed for specific information at individual boring locations. These records include soil/rock descriptions, stratifications, penetration resistances, and locations of the samples and laboratory test data. The stratifications shown on the boring logs represent the conditions only at the actual boring locations. Variations may occur and should be expected between boring locations. The stratifications represent the approximate boundary between subsurface materials and the actual

transition may be gradual. Water level information obtained during field operations is also shown on these boring logs. The samples that were not altered by laboratory testing will be retained for sixty (60) days from the date of this report and then will be discarded.

2.6 WATER LEVEL MEASUREMENTS

Free-flowing groundwater was not encountered during drilling operations at the time of field exploration. PSI believes the groundwater level recorded in borings BP-20, BP-23, BP-33 BP-35, BP-38, and BP-39 ranging from 14 to 25 feet bgs may be perched. This indicates that groundwater at the site during the exploration was either below the termination depths of the borings or that sufficient time was not allowed for water levels to stabilize within the boreholes. Please note that discontinuous lenses of saturated soils are common within residual deposits and can discharge significant quantities of groundwater into excavations for foundations and utilities. The groundwater levels at this site, as well as perched water levels and volumes, will fluctuate significantly based on variations in rainfall, snowmelt, evaporation, surface run-off and other related hydrogeologic factors. The groundwater levels in the boreholes are often not representative of the actual groundwater level because the boreholes remained open for a relatively short time. Since residual soils are created from the in-place weathering of rock, groundwater is often encountered at the soil rock interface or deeper within the parent bedrock formations.

To obtain longer-term measurements, it is necessary to install groundwater level observation wells or piezometers. The water level measurements in this report are the levels measured at the time of PSI's field activities.

3 GEOTECHNICAL EVALUATION

3.1 GEOTECHNICAL DISCUSSION

There are five (5) primary geotechnical characteristics at this site, which will affect the selection and performance of the foundations for this structure and the development of the site. The following summarizes those concerns:

1. Structural loads of proposed building may be supported by either shallow (with or without ground improvement) or deep foundation systems depending on acceptable post construction settlement.
2. This fine-grained soils is sensitive to changes in moisture content and can exhibit a loss of stability when subjected to wet weather during site grading and construction traffic.
3. High plasticity “fat” clays were encountered in the exploration that may require remediation.
4. Previous agricultural activity on the majority of the site will impact grading and site preparation.
5. Existing trees on the site will impact grading and site preparation.

3.2 HIGH PLASTICITY CLAY

High plasticity "fat" clays are present within the project area that may expand and shrink thereby impacting the proposed construction. High plasticity clays were generally encountered between approximate depths of 1 and 29 feet below current site grades in the proposed project areas. We anticipate significant grade changes at the site; however, these soils would be encountered during foundation construction or utility installations. Fat clays have the potential for volume change with changes in the soil moisture content. In severe cases, movement and distress to footings and foundation walls can occur. Remedial measures are recommended in select areas of the site to reduce the shrink/swell potential. If encountered, these materials should be undercut and removed at least 6 inches below utility installations. The bearing grade should be reestablished with Structural Fill in accordance with the site preparation section of this report.

Where these soils are within about two (2) feet of grade supported pavements or slabs, remediation with class “C” fly ash, Portland cement or lime-treatment of the high plastic clays can be performed. Class “C” fly ash, Portland cement or lime-treatment of the high plastic clay would reduce the plasticity index, improve workability, promote drying, and reduce shrink/swell potential. Grading the subgrade to drain and not trap water below the slabs is recommended to further reduce the potential of distress from these soils.

3.3 PREVIOUS AGRICULTURAL AREAS

Due to the existing conditions and current agricultural use of the site, additional remediation is required. The majority of the site contains up to 5 inches of very loose tilled soil. PSI anticipates that these relatively uncompacted soils will need to be removed and the exposed surface be scarified and recompacted. The removed soils will likely be able to be reused and placed as properly compacted fill to bring the surface back to finish grade. The organically rich portions of the upper soils should not be reused as fill and should be wasted or used in non-structural areas.

3.4 EQUIPMENT MOBILITY

The presence of wet, potentially moisture sensitive shallow soils will increase the difficulty of site grading. PSI has been involved with projects in this region where these soils can undergo a loss of stability during wetter portions of the year. PSI anticipates that the soils at their current moisture levels will become easily disturbed if subjected to conventional rubber tire or narrow track-type equipment resulting in a loss of strength and characteristic

"pumping". Soils that become disturbed would need to be excavated and replaced; however, this remedial excavation may expose progressively wetter soils with depth, thus compounding the condition. Thus, a normal approach to subgrade preparation may not be possible.

3.5 EXISTING TREES

Due to the existing trees, additional remediation will likely be required during site grading. The trees on site are mature and could have an extensive root system that will be required to be removed during the stripping of the site. Any roots greater than ¼ inch in thickness or pockets of rootlets great than 5 percent by volume should be planned to be removed from the site.

4 PRELIMINARY GEOTECHNICAL RECOMMENDATIONS

The following geotechnical related recommendations have been developed on the basis of the subsurface conditions encountered and PSI's understanding of the proposed development. We anticipate that changes in the project criteria may occur, and a review must be made by PSI to determine if modifications to our recommendations prior to structural design.

4.1 SITE PREPARATION

PSI recommends that topsoil, vegetation, roots, soft, organic, frozen, or unsuitable soils in the construction areas be stripped from the site and either wasted or stockpiled for later use in non-structural areas. In the event that roots/rootlets are observed within the existing soils, it would be acceptable for the soils to consist of 5 percent by volume of root/rootlets to be left in place of roots that are ¼ inch or less in diameter. Larger roots or tree root bulbs should be removed and replaced with new structural fill as recommended below. Depth of the topsoil layer in our borings ranged from 4 to 6 inches. It is typical for the topsoil layer thickness to vary from these values. A representative of the geotechnical engineer should evaluate and document the required depth of removal at the time of construction.

Agricultural rich organic clays should be removed where they are present beneath proposed foundations, slabs, and pavements. This material should be replaced with a low plasticity compacted soil or a dense positively-drained graded crushed stone. A representative of PSI's geotechnical engineer should observe the remediation procedures for compliance with the project plans and specifications.

It is likely that stripping and excavating to the proposed subgrade level will require the use of wide-track or other equipment that has a low contact pressure on the subgrade. Otherwise, the soils at the excavation bottom may become disturbed and additional excavation would be recommended.

After stripping to the proposed subgrade level, as required, the building area, power plant area, and substation area along with parking areas should be proof-rolled with a fully loaded 10-cy tandem axle dump truck or similar heavy sheep foot roller (typically with an axle load greater than nine (9) tons) or proof compacted with a smooth drum vibratory roller. Soils that are observed to rut or deflect excessively (typically greater than one (1) inch) under the moving load should be undercut and replaced with properly compacted low plasticity fill material. The proof-rolling and undercutting activities should be witnessed by a representative of the geotechnical engineer and should be performed during a period of dry weather. Care should be taken during construction activities not to allow excessive drying or wetting of exposed soils. The subgrade soils should be scarified and compacted to at least 95% of the materials' standard Proctor maximum dry density, in general accordance with ASTM procedures, to a depth of at least twelve (12) inches below the surface. New fill for building structures, asphalt, and concrete should not be placed on frozen ground or while the fill is frozen.

Moisture content changes, typically either higher than 3% above the plastic limit or lower than the plastic limit, in the highly plastic soils should not be permitted during or after construction. Increases in moisture content can cause swelling of the high plasticity soils during construction and increase shrinkage potentials due to drying after construction. If the exposed fat clays become inundated or desiccated, PSI recommends they be removed prior to new fill placement. Ideally, excavation should be performed during a period of dry weather.

After subgrade preparation and observation have been completed, fill placement required to establish grade may begin. Low-plasticity structural fill materials placed beneath the loaded structural features or slabs should be free of organic or other deleterious materials and have a maximum particle size of less than three (3) inches. Low-plasticity soils are defined as having a liquid limit less than forty-five (45) and plasticity index less than twenty- five (25). The on-site low plasticity clay soils are suitable for use as structural fill, but some moisture conditioning, such as scarifying and drying, may be needed to achieve compaction. A representative of PSI should be on-site to observe, test, and document the placement of the fill. If the fill is too dry, water should be uniformly applied and thoroughly mixed into the soil by disking or scarifying. Close moisture content control will be required to achieve the recommended degree of compaction.

Fill should be placed in maximum loose lifts of eight (8) inches and compacted to at least 95% of the materials' standard Proctor maximum dry density, and within a range of the optimum moisture content as designated in the table below, as determined in general accordance with ASTM procedures. Each lift of compacted-structural fill should be tested and documented by a representative of the geotechnical engineer prior to placement of subsequent lifts. The edges of compacted fill should extend a minimum of five (5) feet beyond the building footprint, or a distance equal to the depth of fill beneath the footings, whichever is greater. The measurement should be taken from the outside edge of the footing to the toe of the excavation prior to sloping.

The fill placed should be tested and documented by a geotechnical technician and directed by a geotechnical engineer to evaluate the placement of fill material. It should be noted that the geotechnical engineer of record can only certify the testing that is performed and the work observed by that engineer or staff in direct report to that engineer. The fill should be evaluated in accordance with the following table:

TABLE 5: FIELD DENSITY AND COMPACTION

MATERIAL TESTED	PROCTOR TYPE	MIN % DRY DENSITY	PLACEMENT MOISTURE CONTENT RANGE	FREQUENCY OF TESTING [1]
Structural Fine-Grained Clay Fill* (Cohesive)	Standard	95%	0 to +3 %	1 per 2,500 ft^2 of fill placed / lift
Structural Fill (Granular)*	Standard	95%	-3 to +3 %	1 per 2,500 ft^2 of fill placed / lift
Random Fill (non-load bearing)	Standard	90%	-3 to +3 %	1 per ,000 ft^2 of fill placed / lift
Utility Trench Backfill	Standard	95%	-1 to +2 %	1 per 150 lineal foot / lift

*Structural Fill is defined as fill beneath or supporting any improvements on site such as foundation, slabs, pavements, etc.
[1] Minimum 3 per lift.

The test frequency for the laboratory reference should be one laboratory Proctor or Relative Density test for each material used on the site. If the borrow or source of fill material changes, a new reference moisture/density test should be performed.

Tested fill materials that do not achieve either the required dry density or moisture content range shall be recorded, the location noted, and reported to the Contractor and Owner. A re-test of that area should be performed after the Contractor performs remedial measures.

4.2 PRELIMINARY SHALLOW - FOUNDATION RECOMMENDATIONS

Individual square spread footings for columns and continuous spread footings for bearing walls may be suited for supporting the maximum loads of the data center buildings depending on acceptable post construction total and differential settlement. Detailed analysis is needed when grading plan and final loading information is provided.

Individual square spread footings and small mats for support of up to loads of 500 kips in equipment and mechanical yards bearing on controlled-compacted and documented structural fill, could be designed for a net allowable soil bearing pressures of **2,500 psf and 1 inch post construction total settlement and 2 feet over-excavation and replacement of structural fill. The allowable bearing capacity can be increased to 3,000 psf if 1.5 inches of post construction settlement is acceptable.**.. The spread footing should have sufficient thickness relative to its width and steel reinforcement to assure a uniform pressure on the underlying subgrade and to resist all anticipated combinations of bending moments and shear forces. These bearing values applies to total of deal load plus frequently and/or permanently applied live loads and can be increased by one-third (1/3) for wind or seismic.

Further investigations of the site and finalized drawings are necessary to adequately perform settlement analyses. Additional borings, consolidation tests, and a grading plan will be needed for further analysis.

4.3 GROUND IMPROVEMENT

Ground improvement, such as vibro stone columns (VSC) or rammed aggregate piers (RAP), could be used on this site if additional bearing capacity is required or if the footing area needs to be reduced for cost savings. VSC/RAPs are essentially a column of stone that is tightly compacted, and the building foundation elements can rest directly on top of the stone column. It is PSI's experience that these systems are typically designed by the specialty contractor based on their equipment and the sensitivity to the installation method.

Shallow foundations can be used in conjunction with aggregate piers to provide a foundation system capable of supporting the proposed loads. A variety of companies provide aggregate piers, PSI has used the GEOPIER design methodology to formulate the preliminary recommendations contained herein. These systems are proprietary design-build systems, and the design-builder will design the system. This is based on the elements estimated to extend through soft near surface soils however, this will ultimately depend on the footing size and depth of influence of the footing loading condition. The element area to footing footprint coverage should be about 30 percent. The aggregate pier coverage areas may be less or greater depending on footing size and if the footings are isolated or continuous. At least one aggregate pier element (not a production element) should be subjected to a full-scale load test. An appropriate design-build firm should be contacted for final recommendations and design if this system is desirable.

As these are proprietary foundation systems, we recommend the design-builder be contacted to provide preliminary designs and costing for the system(s). Based on previous experience we anticipate that bearing pressures may be increased to on the order of 5,000 to 6,000 psf if these techniques are used. As footings will likely be used in conjunction with the ground improvement, we recommend footings be a minimum of 30 inches by 30 inches or 18 inches in width for isolated, square footings or continuous footings, respectively.

4.4 PRELIMINARY RECOMMENDATIONS - MAT FOUNDATIONS FOR SUBSTATION, BESS, POWER PLANT, AND ABOVE GRADE STORAGE TANKS

It is PSI's opinion that the planned substation and BESS equipment can be supported on a mat-type foundation supported on minimum of 2-feet of documented structural fill. A modulus of subgrade reaction , k value, of 15 pci may be used for initial analysis and can be geometrically modified depending on how the mat load is applied. If desired, shallow perimeter footings can be added using an allowable soil bearing pressure of 2,000 psf for a thickened edge that is embedded at least 12 inches and having a width of at least 12 inches.

During excavations, the Geotechnical Engineer should inspect the excavation bottoms to document its consistency and suitability**.**

For the water (or similar) tanks, a ring wall type foundation or mat system may be considered. However, differential settlement analysis of these structures may exceed tolerable limits and may require support on ground improved subgrade as described in the last section, or deep foundations. PSI recommends performance of test borings and additional laboratory testing at the locations of these tanks to identify the characteristics of the supporting soils.

4.5 DEEP FOUNDATIONS

Due to the laterally loaded controlled structures within the proposed substation we anticipate the use of deep foundation. Deep foundations may also be used when allowable settlement or anticipated costs determine that shallow foundations will be inadequate. This preliminary recommendations for deep foundations are provided below.

CIP Reinforced Concrete Drilled Shafts: This deep foundation type typically involves drilling a large diameter hole vertically through the subsurface materials to the designed depth by way of an auger in soils, and by way of a coring barrel for bedrock materials. During drilling, the drilling spoils are brought to the surface. Depending on the subsurface soil and water conditions, the use of slurry or casing may be necessary to maintain borehole wall integrity. After the design depth and/or bearing strata is achieved, steel reinforcement is placed within the excavated hole and thereafter filled with concrete in phases as necessary. This deep foundation type can be advanced through and supported by most soils and rock types. Therefore, sites containing problematic subsurface soils for this construction method, such as cobbles, boulders, and rubble fill may encounter considerable difficulties when advancing through these soils with augers, especially with larger drilled shafts. This foundation type can be designed to support heavy vertical, uplift, and lateral loads; however, the strength of the structural section will control the drilled shaft's capacities.

4.6 PRELIMINARY VERTICAL DESIGN RECOMMENDATIONS – DRILLED SHAFTS

As a result of the field explorations, bedrock refusal materials were generally encountered from an approximate depth of 13½ feet to an approximate depth of 48½ feet. Large sections of weathered rock or high quantities of granular material may be encountered between the borings that could cause problems advancing augers using standard soil excavation techniques. Depending on the size of the excavation machines and augers, refusal may be shallower than those stated in this report and should not be used as an exact depth in pricing of the deep foundation installation. Preliminary capacities for drilled shafts can be found in the table below. Building specific design recommendations should be provided as after the investigations are completed at those locations. Skin frictions and bearing capacities were calculated using a combination of methodologies, including Skempton Method for End-Bearing and Alpha Method for Skin Friction in SHAFT by Ensoft, Inc., and FHWA

guidelines. Drilled Shafts should be designed in consideration of limiting capacities, whether that is the strength of the structural section or the strength of the geologic materials.

The Table shown below contains Preliminary drilled shaft allowable capacities with the length of embedment from the existing ground surface at the time of drilling. Rock/Weathered rocks were encountered at varying depths ranging from 8 to 48½ feet in all the borings.

TABLE 6: SHAFT ALLOWABLE COMPRESSIVE CAPACITIES

Preliminary Drilled Shaft Allowable Compressive Capacities In Soil (Kips)							
	Pier Embedment						
Pier Diameter	10 FT	15 FT	20 FT	25 FT	30 FT	35 FT	40 FT
24 in	10	10	75	115	170	220	275
36 in	15	75	155	235	315	390	465
48 in	30	180	265	395	500	600	700
60 in	80	315	420	595	715	840	970

4.7 PRELIMINARY - LATERAL DESIGN RECOMMENDATIONS - DRILLED SHAFTS

The lateral loads on the piles can be calculated with the parameters given in the following table. These parameters are for analytical programs such as L-Pile or MFAD by FAD Tools which will analyze both the applied load verse strain resistance of the soil and the deflection of the structural element. In general, the upper 3-feet below grade of the element is ignored in the lateral capacity for exterior piers/piles and for areas exposed to footings.

These values are considered preliminary, final recommendations will be provided in the subsequent reports. These values can be considered a range of potential soil conditions.

TABLE 7: LATERAL LOADS PARAMETERS

Layer	Depth	Soil Type	Effective Unit Weight, pcf	Cohesion	E_{50}	Rock Uniaxial Compression, psi
1	0-2.5'	Stiff Clay w/o free water	120	1200	0.008	--
2	2.5-6'	Stiff Clay w/o free water	120	1500	0.007	--
3	6-20'	Stiff Clay w/o free water	115	900	0.008	--
4	20-30'	Stiff Clay w/o free water	130	4500	0.005	--
5	30+'	Strong Rock (Vuggy Limestone)	140	--	--	1500

4.8 FLOOR SLAB RECOMMENDATIONS

The floor slabs can be grade supported on controlled fill Proof-rolling, as discussed earlier in this report, should be accomplished to identify soft or unstable soils that should be removed from the floor slab area prior to fill placement and/or floor slab construction. These soils should be replaced with properly compacted structural fill as described earlier in this report.

PSI recommends that a minimum six (6) inch thick free-draining granular mat be placed beneath the floor slab to enhance drainage. The soil surface shall be graded to drain away from the building without low spots that can trap water prior to placing the granular drainage layer. Polyethylene sheeting should be placed to act as a vapor retarder where the floor will be in contact with moisture sensitive equipment or products such as tile, wood, carpet, etc., as directed by the design professional. The decision to locate the vapor retarder in direct contact with the slab or

beneath the layer of granular fill should be made by the design professional after considering the moisture sensitivity of subsequent floor finishes, anticipated project conditions, and the potential effects of slab curling and cracking. The floor slabs should have an adequate number of joints to reduce cracking resulting from differential movement and shrinkage.

For subgrade prepared as recommended and properly compacted fill, a modulus of subgrade reaction, *k* value, of 150 pounds per square inch per inch (psi/inch) may be used in the grade slab design based on correlation to values typically resulting from a 1 ft. x 1 ft. plate load test. However, depending on how the slab load is applied, the value will have to be geometrically modified. Where slab loading is distributed over more than a 1 foot by 1 foot area, the value k should be adjusted for larger areas using the following expression for cohesive and cohesionless soil:

Modulus of Subgrade Reaction, $k_s = (\frac{k}{B})$ for cohesive soil and

$k_s = k\,(\frac{B+1}{2B})^2$ for cohesionless soil

Where: k_s = coefficient of vertical subgrade reaction for loaded area,
k = coefficient of vertical subgrade reaction for 1 square foot area, and
B = effective width of area loaded, in feet

The precautions listed below should be followed for construction of slab-on-grade pads. These details will not reduce the amount of movement, but are intended to reduce potential damage should some settlement of the supporting subgrade take place. Some increase in moisture content is inevitable as a result of development and associated landscaping. However, extreme moisture content increases can be largely controlled by proper and responsible site drainage, building maintenance and irrigation practices.

- Cracking of slab-on-grade concrete is normal and should be expected. Cracking can occur not only as a result of heaving or compression of the supporting soil and/or bedrock material, but also as a result of concrete curing stresses. The occurrence of concrete shrinkage crack, and problems associated with concrete curing may be reduced and/or controlled by limiting the slump of the concrete, proper concrete placement, finishing, and curing, and by the placement of crack control joints at frequent intervals, particularly where re-entrant slab corners occur. The American Concrete Institute (ACI) recommends a maximum panel size (in feet) equal to approximately three times the thickness of the slab (in inches) in both directions. For example, joints are recommended at a maximum spacing of twelve (12) feet based on having a four-inch slab. PSI also recommends that the slab be independent of the foundation walls. Using fiber reinforcement in the concrete can also control shrinkage cracking.
- Areas supporting slabs should be properly moisture conditioned and compacted. Backfill in all interior and exterior water and sewer line trenches should be carefully compacted to reduce the shear stress in the concrete extending over these areas.

Exterior slabs should be isolated from the building. These slabs should be reinforced to function as independent units. Movement of these slabs should not be transmitted to the building foundation or superstructure.

4.9 PRELIMINARY EARTHQUAKE AND SEISMIC DESIGN CONSIDERATION

The 2018 International Building Code (IBC) requires that a site class be determined for the calculation of earthquake design forces in structures. The site class designation is a function of soil type (i.e., depth of soil and strata types). Based on PSI's borings and experience in this area, Site Class "C" is recommended. The USGS-NEHRP probabilistic ground motion values interpolated between the nearest four grid points from latitude 39.0749° and longitude –95.0854° are as follows:

TABLE 8: EARTHQUAKE AND SEISMIC DESIGN PARAMETERS

Period (Seconds)	2% Probability of Event in 50 Years (%g)	Site Coefficients	Max. Spectral Acceleration Parameters	Design Spectral Acceleration Parameters	
0.2 (S_s)	0.095	F_a = 1.3	S_{ms} = 0.123	S_{Ds}= 0.082	T_0= 0.160
1.0 (S_1)	0.066	F_v = 1.5	S_{m1} = 0.098	S_{D1}= 0.066	T_s= 0.805
			$S_{ms} = F_aS_s$ $S_{m1} = F_vS_1$	$S_{Ds} = ⅔*S_{ms}$ $S_{D1} = ⅔*S_{m1}$	$T_0 = 0.2*S_{D1}/S_{Ds}$ $T_s = S_{D1}/S_{Ds}$

The Site Coefficients, F_a and F_v were interpolated for IBC 2024 Tables 1613.3.3(1) and 1613.3.3(2) as a function of the site classifications and the mapped spectral response acceleration at the short (S_s) and 1-second (S_1) periods.

Based on the Spectral Acceleration values for this site, this site could be defined as a Seismic Design Category A as defined in Tables 1613.3.5(1) and 1613.3.5(2). The Risk Category is based on the nature of the occupancy of the structure and is typically determined by the design team (Architect/Structural Engineer) or building official. The determination of the Risk Category is beyond PSI's scope of service.

4.10 UTILITIES TRENCHING

Excavation for utility trenches shall be performed in accordance with OSHA regulations as stated in 29 CFR Part 1926. It should be noted that utility trench excavations have the potential to degrade the properties of the adjacent fill materials. Utility trench walls that are allowed to move laterally can lead to reduced bearing capacity and increased settlement of adjacent structural elements and overlying slabs.

Backfill for utility trenches is as important as the original subgrade preparation or structural fill placed to support either a foundation or slab. Therefore, it is imperative that the backfill for utility trenches be placed to meet the project specifications for the structural fill of this project. PSI recommends that flowable fill or lean mix concrete be utilized for utility trench backfill. If on-site soils are placed as trench backfill, the backfill for the utility trenches should be placed in four (4) to six (6) inch loose lifts and compacted to a minimum of 95% of the maximum dry density achieved by the standard Proctor test. The backfill soil should be moisture conditioned to be within 2% of the optimum moisture content as determined by the standard Proctor test. Up to four (4) inches of bedding material placed directly under the pipes or conduits placed in the utility trench can be compacted to the 90% compaction criteria with respect to the standard Proctor. Compaction testing should be performed for every 200 cubic yards of backfill place or each lift within 200 linear feet of trench, which ever is less. Backfill of utility trenches should not be performed with water standing in the trench. If granular material is used for the backfill of the utility trench, the granular material should have a gradation that will filter protect the backfill material from the adjacent soils. If this gradation is not available, a geosynthetic non-woven filter fabric should be used to reduce the potential for the migration of fines into the backfill material. Granular backfill material shall be compacted to meet the above

compaction criteria. The clean granular backfill material should be compacted to achieve a relative density greater than 75% or as specified by the geotechnical engineer for the specific material used.

4.11 PRELIMINARY PAVEMENT RECOMMENDATIONS

Pavement sections can be grade supported on a minimum of twelve (12) inches of properly compacted low plasticity structural fill.

Pavement sections were evaluated using Pavement Assessment Software (PAS), which is based on the 1993 AASHTO Design equations, a reliability of 85%, an annual growth rate of 2%, and a 20 year equivalent 18-kip single axle load (ESAL) of 30,000 for light duty pavements, 60,000 for medium duty pavements, and 250,000 for heavy duty pavements. Flexible Pavements were evaluated based on an initial serviceability of 4.2 and a terminal service of 2.0. Rigid Pavements were evaluated based on an initial serviceability of 4.5, a terminal service of 2.0, an unreinforced concrete mix with a 28-day modulus of rupture of 650 pounds per square inch (psi) (approximately 4,000 psi compressive strength), are to be edge supported, and dowel and mesh reinforced.

In large areas of pavement, or where pavements are subject to significant traffic, a more detailed analysis of the subgrade and traffic conditions should be made. The results of such a study will provide information necessary to design an economical and serviceable pavement.

The recommended thicknesses presented below are considered typical and minimum for the calculated parameters. The client, the owner, and the project principals should be aware that thinner pavement sections might result in increased maintenance costs and lower than anticipated pavement life. The pavement subgrade should be prepared as discussed below.

The PSI recommendation is based on the subgrade soils being prepared to achieve a minimum CBR of three (3). On this basis, it is possible to use a locally typical "standard" pavement section consisting of the following:

TABLE 9: RECOMMENDED MINIMUM PAVEMENT SECTION

RECOMMENDED THICKNESSES (INCHES)			
PAVEMENT MATERIALS *	**LIGHT**	**MEDIUM**	**HEAVY**
Asphaltic Course	3½	5	6½
Crushed stone (3/4-inch minus)	6	6	10
Or			
Portland Cement Concrete	6	6	6
Crushed stone (3/4-inch minus)	6	6	6

*Pavement materials should conform to local and state guidelines, if applicable.

4.12 ASPHALT PAVEMENT

The granular base course should be built at least two (2) feet wider than the pavement on each side to support the tracks of the slipform paver. This extra width is structurally beneficial for wheel loads applied at the pavement edge. The asphalt base course should be compacted to a minimum of 95% according to Section 305.3.2C of the Kansas Standard Specifications for State Road and Bridge Construction 2015 Edition.

Asphaltic surface mixture should have a minimum stability of 1,800 pounds and the surface course should be compacted to within a range of 92% to 97% of maximum theoretical density according to ASTM D2041. Asphalt mixes should comply with KDOT specifications.

Asphaltic concrete mix designs and Marshall characteristics should be reviewed to determine if they are consistent with the recommendations given in this report.

4.13 PORTLAND CEMENT CONCRETE PAVEMENT

Because the pavement at this site will be subjected to freeze-thaw cycles, PSI recommends that an air entrainment admixture be added to the concrete mix to achieve air content in the range of 5% to 7% to provide freeze-thaw durability in the concrete. PSI recommends that a Portland cement concrete with a 28-day specified compressive strength of 4,000 psi should be used. A mixture with a maximum slump of four (4) inches is acceptable. If a water reducing admixture is specified, the slump can be higher. It is recommended that admixtures be submitted to the owner in advance of use in the concrete.

Pavement for any dumpster areas or areas subject to consistent heavy loads should be constructed of Portland cement concrete with load transfer devices installed where construction joints are required. A thickened edge is recommended on the outside of slabs subjected to wheel loads. This thickened edge usually takes the form of an integral curb. Fill material should be compacted behind the curb or the edge of the outside slabs should be thickened. The following are recommended to enhance the quality of the pavement.

- Moisten subgrade just prior to placement of concrete.
- Cure fresh concrete with a liquid membrane-forming curing compound.
- Keep automobile traffic off the slab for three (3) days and truck traffic off the slab for seven (7) days, unless tests are made to determine that the concrete has gained adequate strength (i.e., usually 70% of design strength).

4.14 PAVEMENT SUBGRADE PREPARATION

Prior to paving, the prepared subgrade should be proof-rolled using a loaded tandem axle dump truck or similar type of pneumatic tired equipment with a minimum gross weight of nine (9) tons per single axle. Localized soft areas identified should be repaired prior to paving. Moisture content of the subgrade should be maintained between –2% and +3% of the optimum at the time of paving. It may require rework when the subgrade is either desiccated or wet. PSI highly recommends that parking and drive subgrade be sloped in a manner to drain water from under the pavement without pocketing or trapping water beneath the pavement. This grading should be accomplished prior to placing the base aggregate.

Construction traffic should be minimized to prevent unnecessary disturbance of the pavement subgrade. Disturbed areas, as verified by PSI, should be removed and replaced with properly compacted material.

The edges of compacted fill should extend a minimum two (2) feet beyond the edges of the pavement, or a distance equal to the depth of fill beneath the pavement, whichever is greater. The measurement should be taken from the outside edge of the pavement to the toe of the excavation prior to sloping.

4.15 PAVEMENT DRAINAGE & MAINTENANCE

PSI recommends pavements be sloped to provide rapid surface drainage. Water allowed to pond on or adjacent to the pavement could saturate the subgrade, cause premature deterioration of the pavements, and may require removal and replacement. PSI recommends the subgrade be sloped to drain prior to placing the crushed stone base. Consideration should be given to the use of interceptor drains to collect and remove water collecting in the crushed stone base. The interceptor drains could be incorporated with the storm drains of other utilities located in the pavement areas.

Periodic maintenance of the pavement should be anticipated. This should include sealing of cracks and joints and by maintaining proper surface drainage to avoid ponding of water on or near the pavement areas. Underdrains, sub-drains and underslab drains presented in this report will not prevent moisture vapor that can cause mold growth.

4.16 SLOPES

The benched placement of engineered structural fill on natural slopes steeper than five (5) horizontal to one (1) vertical where the final area will be uncontained is recommended. The placement of fill should begin at the base of the natural slope with benches or terraces. The benches or terraces should be a minimum of eight (8) feet wide laterally, and should be cut into the slope every five (5) feet of vertical rise. The naturally occurring existing soils should be prepared and fill placed in accordance with the previously described structural fill guidelines. A representative of the geotechnical engineer should monitor the benching and fill placement operations.

Unless specifically designed, temporary slopes shall not exceed steeper than a ratio of two (2) horizontal to one (1) vertical where workers or equipment will occupy space at the toe or of the movement of the excavated slope will jeopardize the stability of an adjacent structure. Temporary slopes exceeding ten (10) feet in vertical height should have a slope stability analysis. Temporary slopes exceeding twenty (20) feet in vertical height should have shear strength testing performed to assess the in-situ strength characteristics.

Permanent cut slopes shall not be excavated to a final grade steeper than a ratio of three (3) horizontal to one (1) vertical without a specific slope stability analysis. Specific shear strength testing should be performed to assess the in-situ strength characteristics for permanent slopes steeper than four (4) horizontal to one (1) vertical.

Special consideration must also be given to the stability of the natural cut ground when supporting substantial fills, to structural fills themselves, and to cut surfaces in natural soil and rock excavations. The evaluation of slope stability aspects of this site and the proposed development is beyond the scope of this exploration. Relatively detailed grading plans will have to be developed before meaningful evaluation of slope stability can be accomplished. All slope stability evaluations should be performed by qualified geotechnical engineering personnel prior to the initiation of any significant grading activities at this site.

5 CONSTRUCTION CONSIDERATIONS

PSI should be retained to provide observation and testing of construction activities involved in the foundation, earthwork, and related activities of this project. PSI cannot accept responsibility for conditions that deviate from those described in this report, nor for the performance of the foundation system if not engaged to also provide construction observation and testing for this project.

5.1 MOISTURE SENSITIVE SOILS/WEATHER RELATED CONCERNS

The upper fine-grained soils encountered at this site are expected to be sensitive to disturbances caused by construction traffic and to changes in moisture content. During wet weather periods, increases in the moisture content of the soil can cause significant reduction in the soil strength and support capabilities. In addition, soils that become wet may be slow to dry and thus significantly retard the progress of grading and compaction activities. It will, therefore, be advantageous to perform earthwork and foundation construction activities during dry weather.

5.2 DRAINAGE AND GROUNDWATER CONSIDERATIONS

PSI recommends that the Contractor determine the actual groundwater levels at the site at the time of the construction activities to assess the impact groundwater may have on construction. Water should not be allowed to collect in the foundation excavation, on floor slab areas, or on prepared subgrades of the construction area either during or after construction. Undercut or excavated areas should be sloped toward one corner to facilitate removal of collected rainwater, groundwater, or surface runoff. Positive site drainage should be provided to reduce infiltration of surface water around the perimeter of the building and beneath the floor slabs. The grades should be sloped away from the building and surface drainage should be collected and discharged such that water is not permitted to infiltrate the backfill and floor slab areas of the building.

5.3 EXCAVATIONS

In Federal Register, Volume 54, Number 209 (October 1989), the United States Department of Labor, Occupational Safety and Health Administration (OSHA) amended its "Construction Standards for Excavations, 29 CFR, part 1926, Subpart P". This document was issued to better enhance the safety of workers entering trenches or excavations. It is mandated by this federal regulation that excavations, whether they be utility trenches, basement excavation or footing excavations, be constructed in accordance with the new OSHA guidelines. It is PSI's understanding that these regulations are being strictly enforced and if they are not closely followed, the owner and the contractor could be liable for substantial penalties.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. The contractor's "responsible person", as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations.

PSI is providing this information solely as a service to our client. PSI does not assume responsibility for construction site safety or the contractor's or other parties' compliance with local, state, and federal safety or other regulations.

6 GEOTECHNICAL RISK

The concept of risk is an important aspect of the geotechnical evaluation. The primary reason for this is that the analytical methods used to develop geotechnical recommendations do not comprise an exact science. The analytical tools which geotechnical engineers use are generally empirical and must be used in conjunction with engineering judgment and experience. Therefore, the solutions and recommendations presented in the geotechnical evaluation should not be considered risk-free and, more importantly, are not a guarantee that the interaction between the soils and the proposed construction will perform as planned. The engineering recommendations presented in the preceding section constitutes PSI's professional estimate of those measures that are necessary for the proposed improvements to perform according to the proposed design based on the information generated and referenced during this evaluation, and PSI's experience in working with these conditions.

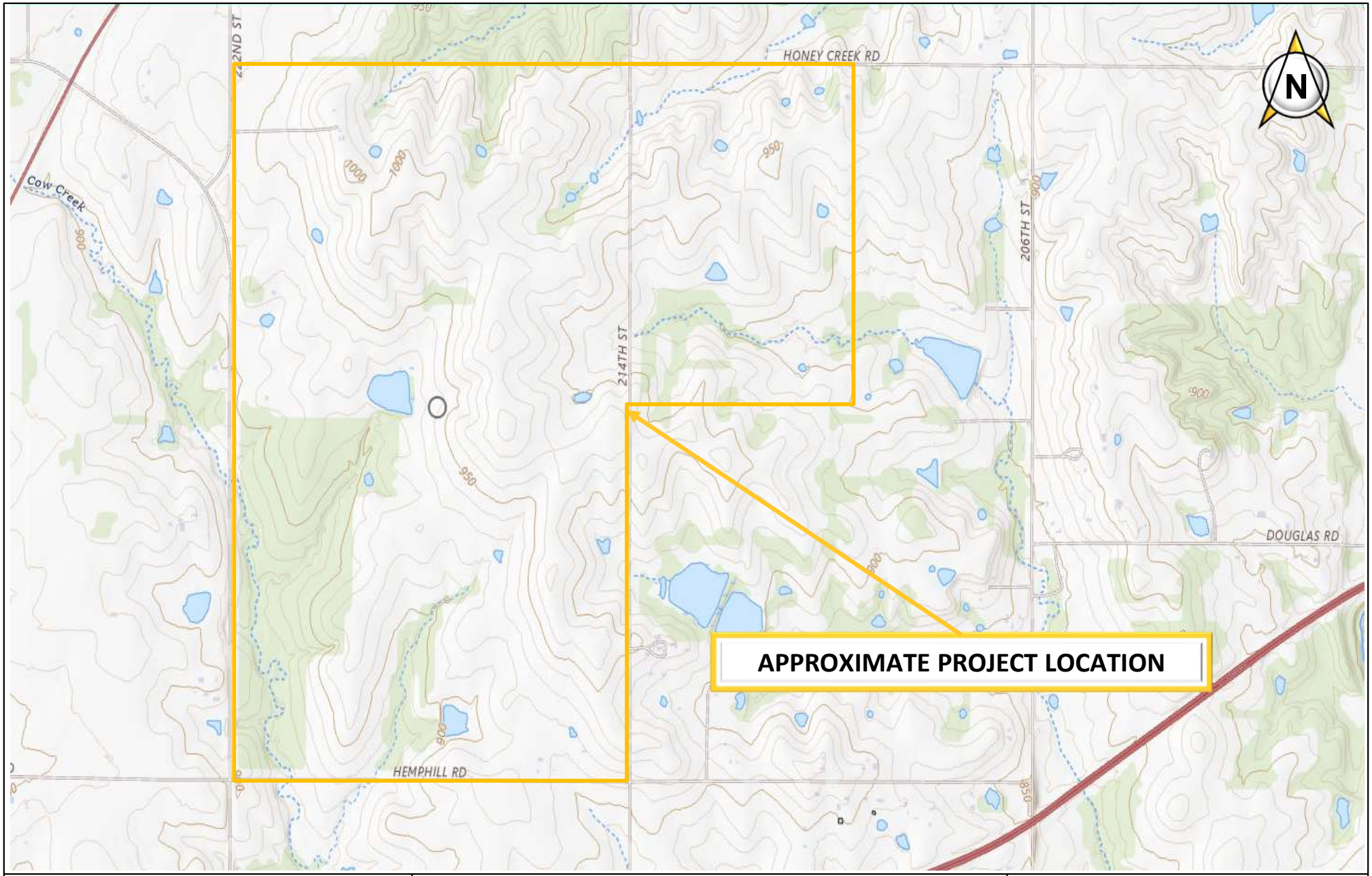
7 REPORT LIMITATIONS

The recommendations submitted are based on the available subsurface information obtained by PSI and design details furnished by Kimley-Horn. If there are revisions to the plans for this project or if deviations from the subsurface conditions noted in this report are encountered during construction, PSI should be notified immediately to determine if changes in the recommendations are required. If PSI is not retained to perform these functions, PSI will not be responsible for the impact of those conditions on the project.

The geotechnical engineer warrants that the findings, recommendations, specifications, or professional advice contained herein have been made in accordance with generally accepted professional geotechnical engineering practices in the local area. No other warranties are implied or expressed.

After the plans and specifications are more complete, the geotechnical engineer should be retained and provided the opportunity to review the final design plans and specifications to check that our engineering recommendations have been properly incorporated into the design documents. At that time, it may be necessary to submit supplementary recommendations. This report has been prepared for the exclusive use of Kimley-Horn for the specific application to the proposed Bluestem Data Center located at 16502-16898 214 Street in Tonganoxie, Kansas.

APPENDIX A - TOPOGRAPHIC MAP



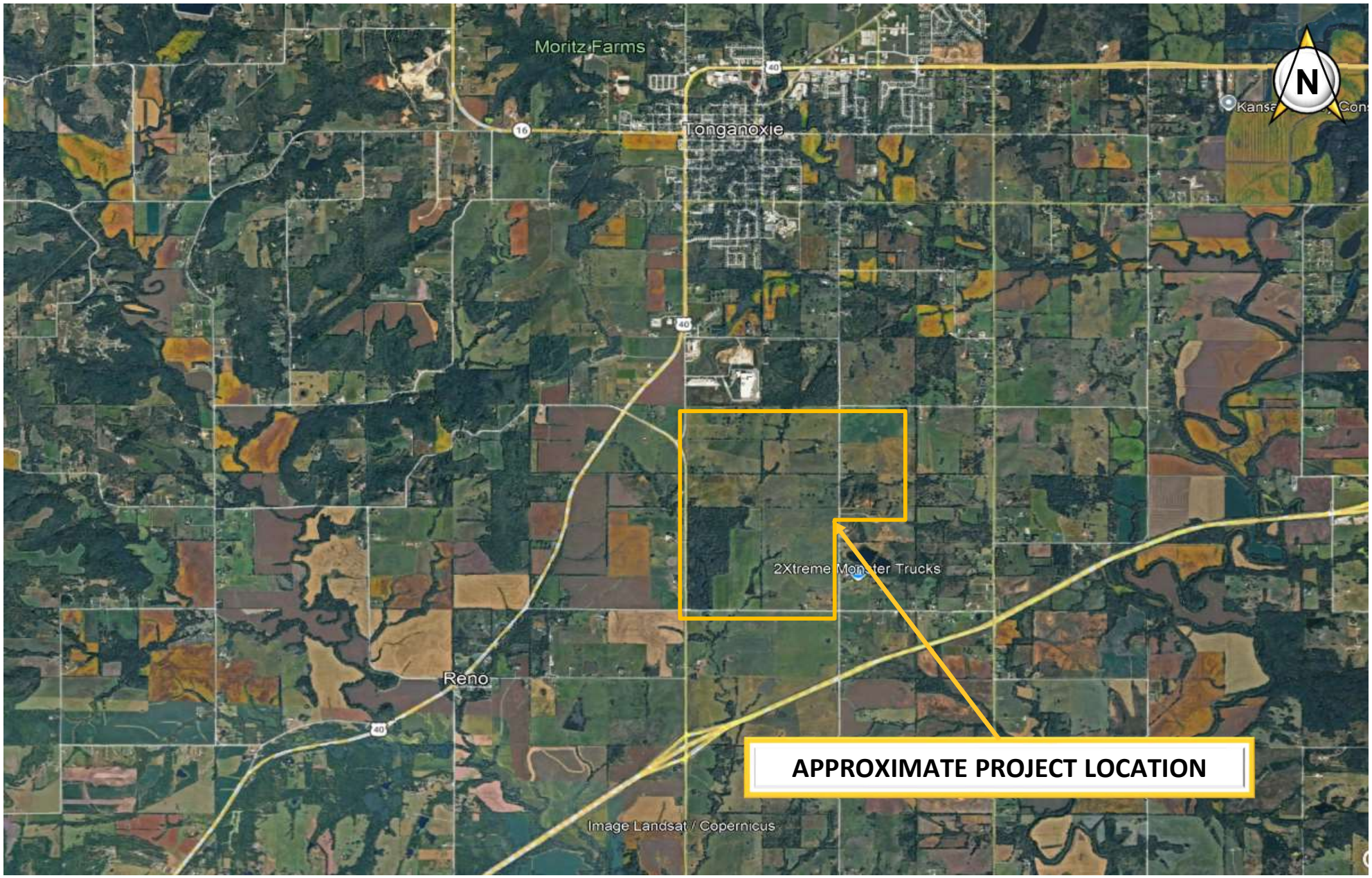
GEOTECHNICAL ENGINEERING SERVICES
BLUESTEM DATA CENTER
TONGANOXIE, KS

TOPOGRAPHIC MAP

PSI PROJECT NO.: 0338-2650

intertek psi

APPENDIX B - SITE VICINITY MAP



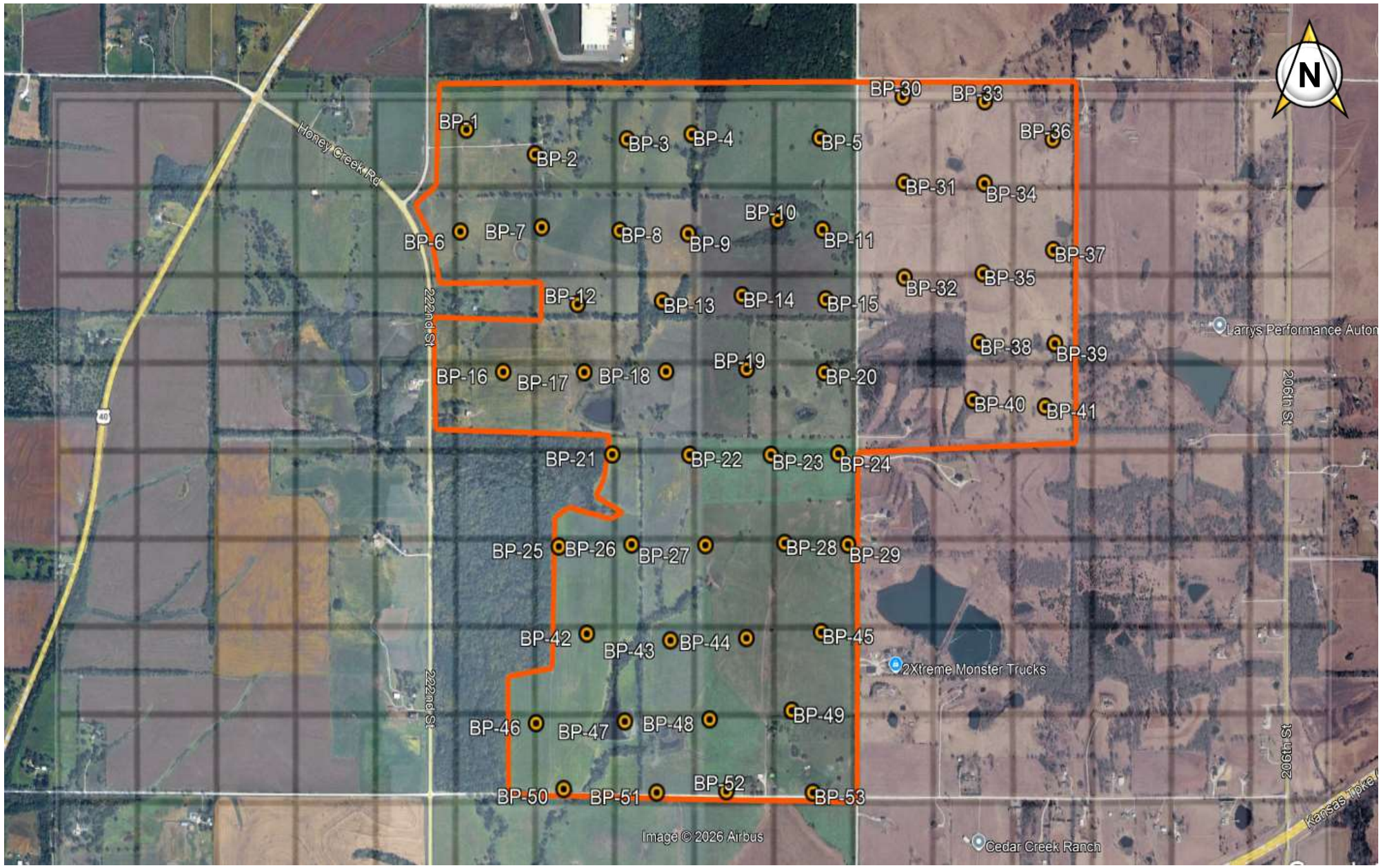
GEOTECHNICAL ENGINEERING SERVICES
BLUESTEM DATA CENTER
TONGANOXIE, KS

SITE VICINITY MAP

GOOGLE EARTH IMAGERY DATE: 2/2026
PSI PROJECT NO.: 0338-2650

intertek psi

APPENDIX C – BORING LOCATION PLAN



GEOTECHNICAL ENGINEERING SERVICES
BLUESTEM DATA CENTER
TONGANOXIE, KS

BORING LOCATION PLAN

GOOGLE EARTH IMAGERY DATE: 2/2026
PSI PROJECT NO.: 0338-2650

intertek psi

APPENDIX D – BORING LOGS

BORING BP-01

DATE STARTED:	2/15/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	2/15/26	**DRILLER:** SD	**LOGGED BY:** JO
COMPLETION DEPTH	31.0 ft	**DRILL RIG:**	CME-55LC
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	952 ft	**SAMPLING METHOD:**	2-in SS
LATITUDE:	39.0787°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0918°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	N/A	feet
Upon Completion	N/A	feet
Delay	N/A	

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ / STRENGTH, tsf	Additional Remarks
	0					Approximately 5 Inches of Topsoil					
950				1	6	Fat Clay, Medium Stiff, Dark Brown, Trace Rootlets, Moist	CH	2-2-5 N=7	29		
	2			2	23	Lean Clay, Very Stiff, Dark Brown, Trace Rootlets, Dry	CL	1000 psi	9		LL = 42 PL = 15 Fines=98.3%
	5					Fat Clay, Medium Stiff to Very Stiff, Brown-Gray to Brown, Moist					
945				3	12			2-3-7 N=10	22		
	10			4	18			2-3-5 N=8	25		
940							CH				
	15			5	18			3-5-9 N=14	21		
935											
	20			6	18			2-6-7 N=13	21		
930				1	36	Limestone, Slightly Weathered, Gray and White to Dark Gray		RQD=22.5 Rec=100%			>> Q_u = 639.4 tsf
	25					Clay Seam, Sandy Limestone, Slightly Weathered, Dark Gray Sandstone, Slightly Weathered, Tan					
925				2	57			RQD=0 Rec=95%			>> Q_u = 213.7 tsf
	30			3	21	Shale, Slightly Weathered, Gray		RQD=18 Rec=88%			
						End of Boring at 31 Feet					

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-02

DATE STARTED:	1/13/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	1/13/26	**DRILLER:** SD	**LOGGED BY:** JO
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	CME-55LC
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	990 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/-in Core
LATITUDE:	39.0779°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0888°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water		
	While Drilling	N/A feet
	Upon Completion	N/A feet
	Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
	0			Approximately 4 Inches of Topsoil				
		1	12	Fat Clay, Stiff to Very Stiff, Mottled Brown to Gray, Trace Sand and Gravel, Moist	CH	3-5-6 N=11	19	
985	5	2	7			6-7-6 N=13	22	
		3	20	Lean Clay, Very Stiff, Tan to Gray, With Sand, Moist	CL	750 psi	15	DD = 112 pcf LL = 38 PL = 13 Fines=65.5%
980	10	4	14			4-6-10 N=16	16	
975	15	5	18			4-6-11 N=17	20	
				Shale, Highly Weathered, Brown to Gray				
970	20	6	6			RQD=10 Rec=10%	19	
				Limestone, Highly Weathered, Clay Seams, Buff				
965	25	7	12					Q_u = 420.6 tsf
		8	47			RQD=78 Rec=78%		
960	30			Fat Clay with Sand and Gravel, Very Hard, Brown and Gray, Moist				
955	35	9	27			RQD=32 Rec=45%		
		10	20			RQD=42 Rec=42%		
950	40			End of Boring at 40 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft
Moisture PL LL
0 25 50
STRENGTH, tsf
Qu Qp
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-03

DATE STARTED:	1/14/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	1/14/26	**DRILLER:** SD	**LOGGED BY:** JO
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	CME-55LC
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	984 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/1.874-in Core
LATITUDE:	39.0784°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0849°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	N/A feet
Upon Completion	N/A feet
Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
	0					Approximately 5 Inches of Topsoil				
				1	10	Fat Clay, Stiff, Mottled Brown and Dark Brown, Trace Sand, Moist	CH	2-5-8 N=13	23	
980	5			2	18	Lean Clay, Very Stiff, Tan, Dry	CL	4-8-8 N=16	12	
				3	22	Fat Clay, Stiff, Mottled Tan and Brown, Trace Gravel, Moist		750 psi	15	
975	10			4	18		CH	3-3-7 N=10	18	
970	15			5	18	Fat Clay, Very Stiff, Tan, Moist	CH	4-8-8 N=16	18	
965	20			6	18	Lean Clay, Medium Stiff, Tan, Wet	CL	2-2-3 N=5	27	
960	25			7	18	Fat Clay, Stiff, Gray-Brown, Trace Sand and Gravel, Moist	CH	5-7-10 N=17	18	
955	30			8	4	Limestone, Highly Weathered, Gray		50/4"	14	
				9	12	Clay with Limestone Fragments				
950	35									
				10	48			48 psi		
945	40					End of Boring at 40 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-04

DATE STARTED:	1/15/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	1/16/26	**DRILLER:** SD	**LOGGED BY:** JO
COMPLETION DEPTH	40.5 ft	**DRILL RIG:**	CME-55LC
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	951 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/1.874-in Core
LATITUDE:	39.0786°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0821°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	N/A	feet
Upon Completion	N/A	feet
Delay	N/A	

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
950	0			Approximately 4 Inches of Topsoil				
		1	7	Fat Clay, Medium Stiff to Very Stiff, Dark Brown, Moist		1-3-11 N=14	23	
	5	2	21		CH	550 psi	20	DD = 105 pcf; LL = 70; PL = 17; Q_u = 2.8 tsf
945		3	8			2-3-3 N=6	24	
	10	4	17	Fat Clay, Stiff, Gray-Brown to Red-Brown, Moist	CH	3-3-6 N=9	25	
940		5	6	- Trace Sand to 15 Feet		4-6-50/1"	26	
	15	6	6	Limestone with Clay Seams, Slightly Weathered, Gray		RQD=100 Rec=100%		
935		7	59	Shale, Slightly Weathered, Gray		RQD=75 Rec=98%		
	20							
930		8	60			RQD=97 Rec=100%		
	25							
925		9	60			RQD=72 Rec=100%		
	30							>> Q_u = 218.7 tsf
920		10	60			RQD=57 Rec=100%		
	35							
915		11	60	Limestone interbedded with Shale, Slightly Weathered, Gray and Light Gray		RQD=68 Rec=100%		>> Q_u = 179.3 tsf
	40			End of Boring at 40.5 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
Moisture ✕ PL ◪ LL ✚
0 25 50
STRENGTH, tsf
Qu ▲ Qp ✳
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-05

DATE STARTED:	1/17/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	1/18/26	**DRILLER:** SD	**LOGGED BY:** JO
COMPLETION DEPTH	30.5 ft	**DRILL RIG:**	CME-55LC
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	946 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/1.874-in Core
LATITUDE:	39.0784°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0766°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	N/A feet
Upon Completion	N/A feet
Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
945	0			1	6	Approximately 4 Inches of Topsoil Fat Clay with Limestone Fragments, Stiff to Very Stiff, Dark Brown, Trace Rootlets, Moist	CH	40-50/1"	30	
	5			2	18			6-7-8 N=15	18	
940				3	22	Fat Clay, Soft to Stiff, Brown-Gray, Moist	CH	700 psi	17	DD = 108 pcf Q_u = 0.2 tsf
	10			4	15			3-5-7 N=12	30	
935				5	10	Sandstone, Highly Weathered		6-50/4"	12	
930	15			6	9	Shale, Highly Weathered, Gray to Black		30-50/3"	11	
925	20			7	44			RQD=38 Rec=73%		Q_u = 208.9 tsf
920	25			8	59			RQD=58 Rec=98%		Q_u = 171.5 tsf
	30					End of Boring at 30.5 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-06

DATE STARTED:	2/5/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	2/5/26	**DRILLER:** SD	**LOGGED BY:** JO
COMPLETION DEPTH	40.5 ft	**DRILL RIG:**	CME-55LC
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	936 ft	**SAMPLING METHOD:**	2-in SS/3-in ST
LATITUDE:	39.0756°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0921°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water		
	While Drilling	N/A feet
	Upon Completion	N/A feet
	Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST)	Moisture, %	Additional Remarks
935	0			Approximately 8 Inches of Topsoil				
		1	13	Fat Clay, Stiff to Very Stiff, Dark Brown and Tan to Brown and Gray, Moist		2-4-6 N=10	19	
	5	2	16		CH	4-6-9 N=15	16	
930		3	11			900 psi	20	
		4	11	Shale, Highly Weathered, Brown to Gray		12-50/5"	11	>>
925	10							
		5	14			4-26-50/2" N=76	9	>>
920	15			Shale, Slightly Weathered, Gray and Dark Gray				
		1	59	Sandstone, Slightly Weathered, Gray and White Gray to Tan and Brown		RQD=67 Rec=98%		>> Q_u = 121.9 tsf
915	20							
		2	57			RQD=0 Rec=95%		
910	25							
		3	58			RQD=47 Rec=97%		>> Q_u = 93.5 tsf >> Q_u = 299.1 tsf
905	30			Limestone, Slightly Weathered, Light Gray				
		4	56	Sandstone, Slightly Weathered, Light and Dark Gray		RQD=87 Rec=93%		>> Q_u = 150.1 tsf
900	35							>> Q_u = 133.7 tsf
		5	56			RQD=93 Rec=93%		>> Q_u = 146.6 tsf
	40			End of Boring at 40.5 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-07

DATE STARTED:	2/5/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	2/5/26	**DRILLER:** SD	**LOGGED BY:** JO
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	CME-55LC
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	970 ft	**SAMPLING METHOD:**	2-in SS/3-in ST
LATITUDE:	39.0757°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0885°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

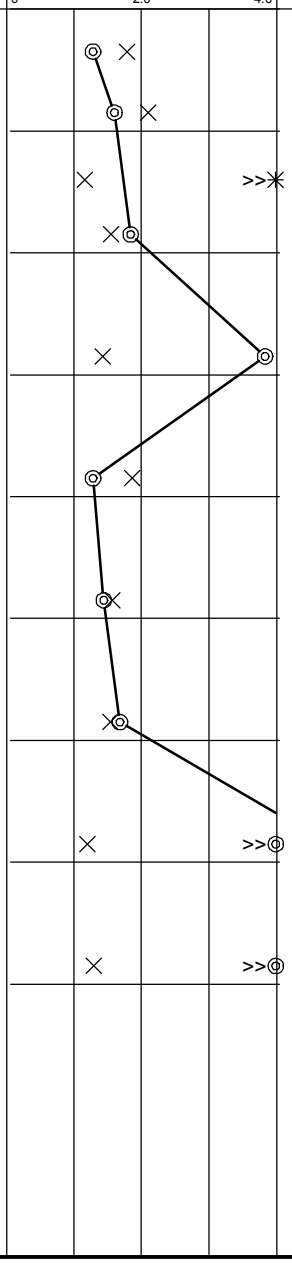
REMARKS:

Water

While Drilling	N/A	feet
Upon Completion	N/A	feet
Delay	N/A	

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST)	Moisture, %
	0	1	12	Approximately 5 Inches of Topsoil Fat Clay, Very Stiff, Dark Brown, Trace Rootlets, Moist	CH	3-9-7 N=16	22
965	5	2	8	Clayey Gravel, Medium Dense to Dense, Brown, Moist	GC	6-10-10 N=20	26
		3	5				14
960	10	4	16			4-12-11 N=23	19
955	15	5	7			12-19-29 N=48	18
950	20	6	18	Fat Clay, Very Stiff, Brown, Moist	CH	2-6-10 N=16	23
945	25	7	18	- Trace Gravel to 28.5 Feet		4-7-11 N=18	20
940	30	8	18			3-10-11 N=21	19
935	35	9	12	Shale, Brown to Gray, Highly Weathered		19-50	15
930	40	10	18			15-32-50 N=82	16
				End of Boring at 40 Feet			



Additional Remarks

intertek psi

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-08

DATE STARTED:	2/9/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	2/9/26	**DRILLER:** SD	**LOGGED BY:** JO
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	CME-55LC
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	994 ft	**SAMPLING METHOD:**	2-in SS/3-in ST
LATITUDE:	39.0756°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0852°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

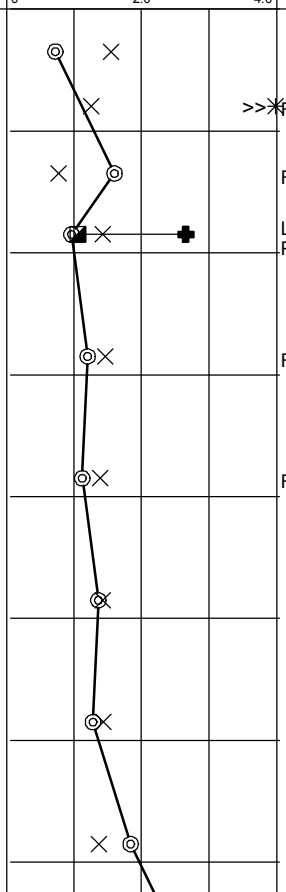
Water

While Drilling	N/A feet
Upon Completion	N/A feet
Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST)	Moisture, %	Additional Remarks
	0			Approximately 6 Inches of Topsoil				
		1	9	Fat Clay, Stiff, Brown, Moist	CH	2-4-5 N=9	19	
990	5	2	10			800 psi	16	>>>Fines=71.4%
		3	12	Clayey Sand, Medium Dense, Brown-Gray, Moist	SC	7-10-10 N=20	10	Fines=48.1%
985	10	4	16	Fat Clay With Sand, Stiff to Very Stiff, Brown-Gray, Sand, Moist	CH	4-5-7 N=12	18	LL = 33 PL = 13
980	15	5	11			3-6-9 N=15	18	Fines=69.0%
975	20	6	18	Fat Clay With Sand, Stiff, Brown-Gray, Trace Gravel, Moist	CH	3-6-8 N=14	17	Fines=69.9%
970	25	7	18	Lean Clay with Sand, Very Stiff, Brown, Moist	CL	5-7-10 N=17	18	
965	30	8	18	Lean Clay, Very Stiff to Hard, Brown to Brown-Gray, Trace Sand and Gravel, Moist		3-6-10 N=16	18	
960	35	9	18		CL	5-8-15 N=23	17	
955	40	10	18			7-17-17 N=34	17	LL = 37 PL = 17 Fines=82.2%
				End of Boring at 40 Feet without Auger Refusal				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0



intertek psi

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-09

DATE STARTED:	1/20/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	1/20/26	**DRILLER:** SD	**LOGGED BY:** JO
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	CME-55LC
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	999 ft	**SAMPLING METHOD:**	2-in SS/3-in ST
LATITUDE:	39.0755°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0822°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** 10 Feet North	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	N/A	feet
Upon Completion	N/A	feet
Delay	N/A	

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST)	Moisture, %	Additional Remarks
	0			Approximately 4 Inches of Topsoil				
		1	8	Fat Clay, Stiff to Very Stiff, Brown and Brown-Gray, Moist		5-10-10 N=20	20	
995	5	2	18		CH	6-7-10 N=17	16	>>Fines=85.7%
		3	17			3-6-8 N=14	23	
990	10	4	18	Clayey Sand, Medium Dense, Brown and Brown-Gray, Moist		3-4-6 N=10	21	Fines=45.8%
985	15	5	23		SC	650 psi		
980	20	6	18			3-5-7 N=12	22	
975	25	7	18	Lean Clay, Very Stiff, Brown, Trace Gravel, Moist	CL	5-7-10 N=17	22	
970	30	8	10	Lean Clay, Hard, Brown-Gray, Trace Sand, Moist	CL	20-20-13 N=33	17	
965	35	9	6	Lean Clay, Hard, Brown-Gray, Trace Gravel, Moist	CL	10-16-16 N=32	15	
960	40	10	15	Decomposed Shale, Very Stiff to Hard, Brown, Moist	CL	6-10-20 N=30	15	
				End of Boring at 40 Feet without Auger Refusal				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-10

DATE STARTED:	2/3/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	2/3/26	**DRILLER:** SD	**LOGGED BY:** JO
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	CME-55LC
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	946 ft	**SAMPLING METHOD:**	2-in SS/3-in ST
LATITUDE:	39.0759°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0784°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	N/A	feet
Upon Completion	N/A	feet
Delay	N/A	

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST)	Moisture, %	Additional Remarks
945	0					Approximately 5 Inches of Topsoil				
				1	6	Lean Clay, Medium Stiff to Stiff, Dark Brown, Trace Rootlets, Moist	CL	2-3-5 N=8	24	
	5			2	12	Lean Clay, Very Stiff, Light Brown, Trace Sand and Gravel, Dry	CL	2-7-12 N=19	11	
940				3	15	Fat Clay, Stiff to Very Stiff, Brown-Gray, Trace Sand, Moist	CH	4-7-8 N=15	23	
				4	14	Lean Clay, Very Stiff, Brown-Gray, Wth Decomposed Shale, Moist	CL	800 psi	19	>> LL = 47 PL = 24 Fines=71.4%
935	10									
				5	15	Shale, Highly Weathered, Gray-Brown		9-27-41 N=68	15	>>
930	15									
				6	16			9-19-27 N=46	18	
925	20									
				7	12			7-17-50 N=67	19	>>
920	25					Limestone, Slightly Weathered, Gray and White				
				1	60	Sandstone, Slightly Weathered, Dark and Light Gray		RQD=97 Rec=100%		
915	30									
				2	51			RQD=85 Rec=85%		>> Q_u = 164.9 tsf
910	35									
				3	48			RQD=100 Rec=100%		>> Q_u = 187.1 tsf
	40					End of Boring at 40 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.:	338-2650
PROJECT:	Bluestem Data Center
LOCATION:	214th and Honey Creek
	Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-11

DATE STARTED:	2/3/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	2/3/26	**DRILLER:** SD	**LOGGED BY:** JO
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	CME-55LC
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	960 ft	**SAMPLING METHOD:**	2-in SS/3-in ST
LATITUDE:	39.0757°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0765°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

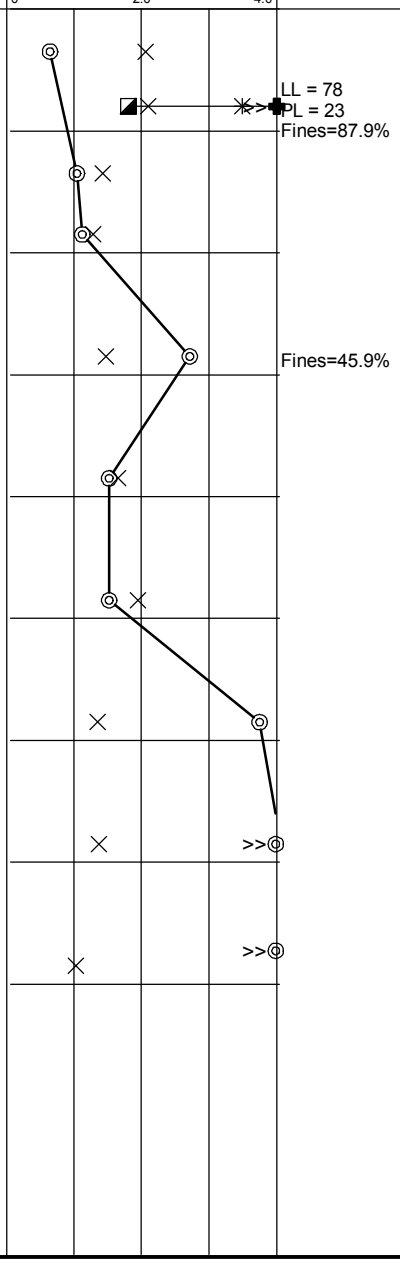
Water

While Drilling	N/A feet
Upon Completion	N/A feet
Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST)	Moisture, %	Additional Remarks
	0			Approximately 5 Inches of Topsoil				
		1	8	Fat Clay, Medium Stiff to Stiff, Brown, Trace Rootlets, Moist	CH	3-3-5 N=8	26	
		2	14	Fat Clay, Stiff to Very Stiff, Brown and Gray, Trace Sand, Moist		900 psi	26	LL = 78 PL = 23 Fines=87.9%
955	5	3	18			3-6-7 N=13	18	
		4	18		CH	3-7-7 N=14	16	
950	10							
		5	12	Clayey Sand, Dense, Mottled Light Brown and Gray, Trace Gravel, Moist	SC	3-10-24 N=34	18	Fines=45.9%
945	15							
		6	18	Fat Clay, Very Stiff, Mottled Light Brown and Gray, Trace Sand and Gravel, Moist		3-5-14 N=19	21	
940	20				CH			
		7	18			16-10-9 N=19	24	
935	25							
		8	16	Shale, Highly Weathered, Brown-Gray		9-15-32 N=47	17	
930	30							
		9	14			9-19-32 N=51	17	>>
925	35							
		10	3			50/3"	13	>>
920	40			End of Boring at 40 Feet without Auger Refusal				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0



intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-12

DATE STARTED:	2/3/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	2/4/26	**DRILLER:** SD	**LOGGED BY:** JO
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	CME-55LC
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	971 ft	**SAMPLING METHOD:**	2-in SS/3-in ST
LATITUDE:	39.0734°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.087°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

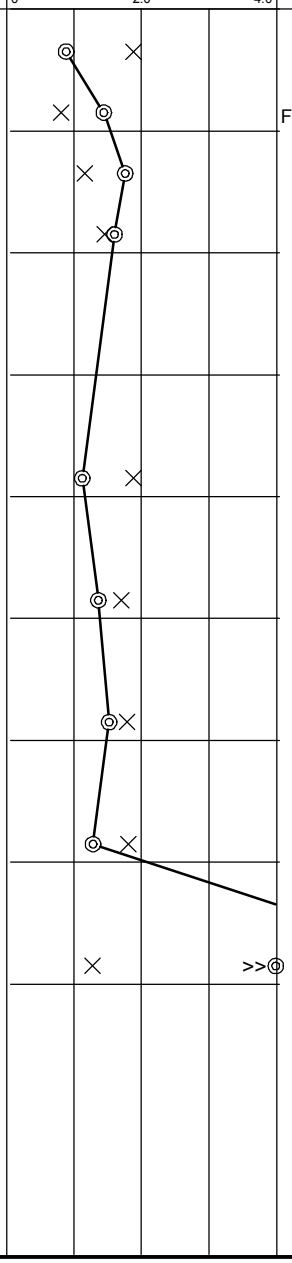
Water

While Drilling	N/A feet
Upon Completion	N/A feet
Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST)	Moisture, %	Additional Remarks
970	0			Approximately 5 Inches of Topsoil				
		1	8	Fat Clay, Stiff, Dark Brown, Moist	CH	2-4-7 N=11	23	
	5	2	12	Fat Clay, Very Stiff, Tan, Trace Sand, Dry to Moist	CH	5-8-10 N=18	10	Fines=74.0%
965		3	10			10-11-11 N=22	14	
	10	4	18	Lean Clay, Very Stiff, Tan, Trace Sand, Gravel, and Sandstone Fragments	CL	5-10-10 N=20	18	
960								
	15	5	20	Fat Clay, Stiff to Very Stiff, Brown, Moist	CH			
955								
	20	6	18			4-5-9 N=14	24	
950								
	25	7	18	Lean Clay, Very Stiff, Brown, Moist	CL	4-7-10 N=17	21	
945								
	30	8	18			5-8-11 N=19	22	
940								
	35	9	18			9-6-10 N=16	23	
935								
	40	10	8	Shale, Highly Weathered, Brown-Gray		10-35-50 N=85	16	>>
				End of Boring at 40 Feet without Auger Refusal				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0



intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-13

DATE STARTED:	1/20/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	1/21/26	**DRILLER:** SD	**LOGGED BY:** JO
COMPLETION DEPTH	44.5 ft	**DRILL RIG:**	CME-55LC
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	959 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/-in Core
LATITUDE:	39.0735°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0834°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

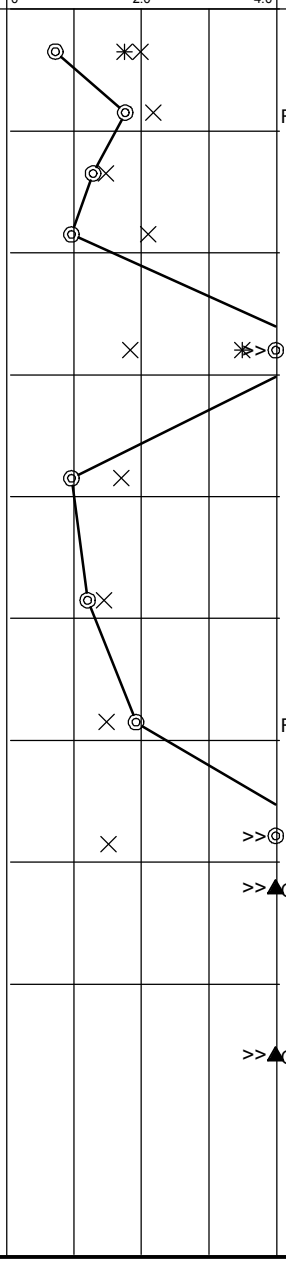
Water

While Drilling	N/A feet
Upon Completion	N/A feet
Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
	0			Approximately 4 Inches of Topsoil				
		1	10	Fat Clay, Stiff, Mottled Brown and Dark Brown, Trace Rootlets, Moist	CH	3-3-6 N=9	25	
955	5	2	16	Fat Clay With Sand, Stiff to Very Stiff, Brown-Gray, Trace Gravel, Moist		5-6-16 N=22	27	Fines=68.8%
		3	12			5-6-10 N=16	18	
950	10	4	16		CH	3-5-7 N=12	26	
945	15	5	6			700 psi	23	
940	20	6	18	Fat Clay, Stiff to Very Stiff, Brown and Gray to Red-Brown, Moist		5-5-7 N=12	21	
935	25	7	18		CH	3-6-9 N=15	18	
930	30	8	18	- Trace Sand to 33.5 Feet		4-10-14 N=24	19	Fines=97.1%
925	35	9	8	Limestone, Highly Weathered (Augered Through)		12-50/4"	19	
		10	14	Limestone, Slightly Weathered, Gray		RQD=43 Rec=100%		
		11	57	Sandstone, Slightly Weathered, Gray and Light Gray		RQD=95 Rec=95%		
920	40			Shale, Slightly to Moderately Weathered, Soft, Gray				
		12	42	Sandstone, Slightly Weathered, Gray and Light Gray		RQD=88 Rec=88%		
915				End of Boring at 44.5 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0



intertek psi

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-14

DATE STARTED:	1/21/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	1/21/26	**DRILLER:** SD	**LOGGED BY:** JO
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	CME-55LC
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	979 ft	**SAMPLING METHOD:**	2-in SS/3-in ST
LATITUDE:	39.0737°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0799°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	N/A	feet
Upon Completion	N/A	feet
Delay	N/A	

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST)	Moisture, %	Additional Remarks
	0					Approximately 4 Inches of Topsoil				
			SS	1	11	Fat Clay, Medium Stiff, Mottled Red-Brown, Dry	CH	1-2-4 N=6	7	
975	5		SS	2	15	Lean Clay, Soft to Very Stiff, Mottled Tan, Dark Gray, Black, Moist		5-8-12 N=20	14	Fines=73.5%
			SS	3	15			3-6-9 N=15	18	DD = 113 pcf LL = 37 PL = 13 Q_u = 0.4 tsf Fines=61.4%
970	10		ST	4	22		CL	650 psi	15	
965	15		SS	5	18	Lean Clay with Rock Fragments, Stiff to Hard, Tan to Gray, Trace Sand, Moist		4-5-7 N=12	16	
960	20		SS	6	15			4-30-15 N=45	16	
955	25		SS	7	18		CL	5-6-7 N=13	19	
950	30		SS	8	18			3-9-12 N=21	16	
945	35		SS	9	18	Lean Clay with Rock Fragments and Sand, Very Stiff to Very Hard, Tan, Moist	CL	20-27-24 N=51	14	>>
940	40		SS	10	18			7-8-11 N=19	18	
						End of Boring at 40 Feet without Auger Refusal				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-15

DATE STARTED:	1/22/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	1/22/26	**DRILLER:** SD	**LOGGED BY:** JO
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	CME-55LC
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	958 ft	**SAMPLING METHOD:**	2-in SS/3-in ST
LATITUDE:	39.0735°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0763°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

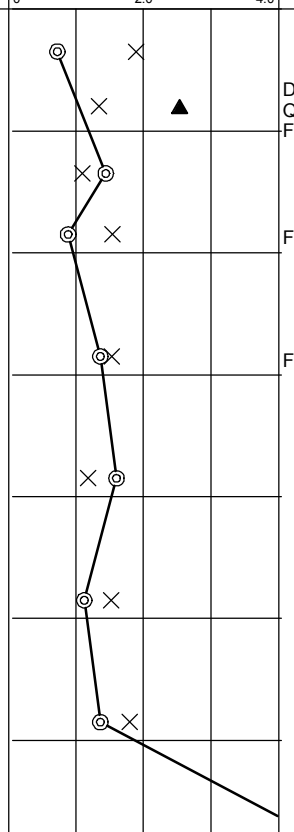
Water

While Drilling	N/A feet
Upon Completion	N/A feet
Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST)	Moisture, %	Additional Remarks
	0					Approximately 4 Inches of Topsoil				
955				1	10	Fat Clay, Stiff, Mottled Tan/Dark Brown/Brown, Trace Rootlets and Sand, Moist	CH	2-4-5 N=9	24	
	5			2	24			700 psi	17	DD = 105 pcf Q_u = 2.5 tsf Fines=73.5%
				3	14	Fat Clay, Stiff to Very Stiff, Mottled Tan and Gray, Trace Rootlets, Trace Sand and Gravel, Moist		3-6-12 N=18	14	
950										
	10			4	17		CH	3-5-6 N=11	19	Fines=79.0%
945										
	15			5	18	Fat Clay, Tan, Very Stiff, Trace Sand, Moist	CH	3-7-10 N=17	19	Fines=75.8%
940										
	20			6	14	Lean Clay, Very Stiff, Mottled Tan and Gray, Trace Gravel, Moist	CL	4-10-10 N=20	15	
935										
	25			7	14	Lean Clay, Stiff to Very Stiff, Brown and Dark Brown, Trace Sand, Moist	CL	4-6-8 N=14	19	
930										
	30			8	18	Shale, Highly Weathered, Gray		3-7-10 N=17	22	
925										
	35			9	14			15-50	15	>>
920										
	40			10	10			20-48-50 N=98	15	>>
						End of Boring at 40 Feet without Auger Refusal				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0



intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-16

DATE STARTED:	2/3/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	2/3/26	**DRILLER:** SD	**LOGGED BY:** JO
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	CME-55LC
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	920 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/-in Core
LATITUDE:	39.0713°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0902°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water		
	While Drilling	N/A feet
	Upon Completion	N/A feet
	Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %
	0			Approximately 5 Inches of Topsoil			
		1	13	Lean Clay, Stiff, Dark Brown, Trace Rootlets, Moist	CL	3-3-6 N=9	26
		2	9	Fat Clay, Tan to Dark Brown, Very Stiff, Moist		6-6-10 N=16	15
915	5	3	12			800 psi	18
		4	17		CH	4-16-22 N=38	17
910	10						
		5	9	Shale, Moderately to Highly Weathered, Gray		22-50/3"	10
905	15	6	11			RQD=46 Rec=46%	
		7	60			RQD=98 Rec=100%	
900	20						
		8	58			RQD=83 Rec=97%	
895	25			Limestone, Slightly Weathered, White and Gray			
				Sandstone, Slightly Weathered, Gray and Light Gray			
		9	57			RQD=48 Rec=95%	
890	30						
		10	60			RQD=15 Rec=100%	
885	35						
		11	37			RQD=47 Rec=100%	
880	40			End of Boring at 40 Feet			

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

Additional Remarks

>>✳

>>◎

>>▲Q_u = 101.9 tsf

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-17

DATE STARTED:	2/2/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	2/2/26	**DRILLER:** SD	**LOGGED BY:** JO
COMPLETION DEPTH	36.5 ft	**DRILL RIG:**	CME-55LC
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	932 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/-in Core
LATITUDE:	39.0713°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0867°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	N/A	feet
Upon Completion	N/A	feet
Delay	N/A	

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
	0			Approximately 5 Inches of Topsoil				
930		1	7	FILL, Fat Clay, Medium Stiff to Stiff, Mottled Dark Brown and Brown-Gray, Moist	FILL	2-3-5 N=8	31	
	5	2	12	Fat Clay, Stiff to Very Stiff, Brown to Gray, Trace Gravel, Moist	CH	3-5-11 N=16	20	
925		3	15			3-5-7 N=12	24	
	10	4	18	Lean Clay, Very Stiff, Brown, Trace Sand, Moist	CL	3-7-9 N=16	20	
920		5	18			700 psi	19	DD = 106 pcf LL = 44 PL = 19 Q_u = 1.2 tsf Fines=92.6%
915	15							
	20	6	15	Shale, Moderately to Highly Weathered, Brown to Gray		10-16-26 N=42	15	
910		7	15			17-34-50 N=84	16	>>
905	25	8	46	Limestone, Slightly Weathered, Gray and White		RQD=63 Rec=96%		>> Q_u = 640.9 tsf
	30			Sandy Shale, Slightly Weathered, Gray				
900		9	60			RQD=93 Rec=100%		
	35	10	12			RQD=100 Rec=100%		
				End of Boring at 36.5 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.:	338-2650
PROJECT:	Bluestem Data Center
LOCATION:	214th and Honey Creek Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-18

DATE STARTED:	1/30/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	2/1/26	**DRILLER:** SD	**LOGGED BY:** JO
COMPLETION DEPTH	48.5 ft	**DRILL RIG:**	CME-55LC
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	958 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/-in Core
LATITUDE:	39.0714°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0832°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water		
	While Drilling	N/A feet
	Upon Completion	N/A feet
	Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
	0			Approximately 5 Inches of Topsoil				
955		1	8	Fat Clay, Stiff to Very Stiff, Mottled Dark Brown and Tan, Trace Rootlets	CH	4-8-12 N=20	25	
	5	2	10	- With Rock Fragments to 6 Feet		6-8-7 N=15	14	
		3	13	Clayey Sand, Loose, Mottled Tan and Dark Brown, Trace Rootlets and Rock Fragments		3-4-3 N=7	49	
950		4	23		CH	550 psi	22	DD = 105 pcf Q_u = 1.6 tsf Fines=48.1%
	10							
945		5	9	Fat Clay, Stiff, Mottled Tan and Dark Brown, Trace Rootlets and Rock Fragments	CH	3-4-6 N=10	25	Fines=73.7%
	15							
940		6	17	Lean Clay, Very Stiff, Brown, Moist		3-5-7 N=12	24	Fines=97.7%
	20							
935		7	18			4-8-10 N=18	23	
	25							
930		8	18		CL	5-7-11 N=18	21	
	30							
925		9	18			4-6-11 N=17	22	Fines=95.8%
	35							
920		10	22	Limestone interbedded with Shale, Slightly Weathered, Gray and Light Gray		RQD=38 Rec=92%		>>Q_u = 315.5 tsf
	40							
915		11	55			RQD=58 Rec=92%		>>Q_u = 102.6 tsf
	45							
910		12	33			RQD=50 Rec=92%		
				End of Boring at 48.5 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
Moisture × PL ◪ LL ✚
0 25 50
STRENGTH, tsf
Qu ▲ Qp ✳
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.:	338-2650
PROJECT:	Bluestem Data Center
LOCATION:	214th and Honey Creek Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-19

DATE STARTED:	1/28/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	1/29/26	**DRILLER:** SD	**LOGGED BY:** JO
COMPLETION DEPTH	45.5 ft	**DRILL RIG:**	CME-55LC
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	978 ft	**SAMPLING METHOD:**	2-in SS/3-in ST
LATITUDE:	39.0714°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0797°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water		
	While Drilling	N/A feet
	Upon Completion	N/A feet
	Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST)	Moisture, %	Additional Remarks
	0			Approximately 5 Inches of Topsoil				
975		1		FILL, Lean Clay, Stiff to Very Stiff, Tan and Gray, Trace Sand and Gravel		3-4-7 N=11	20	
	5	2	23			725 psi	13	DD = 100 pcf Q_u = 3.1 tsf Fines=70.2%
		3	8		CL	3-10-16 N=26	14	
970	10	4	14			6-14-14 N=28	12	
965		5	12	Fat Clay, Very Stiff, Tan and Gray, Trace Sand, Moist	CH	4-6-16 N=22	13	
960	15							
	20	6	17	Lean Clay, Very Stiff, Tan, Trace Rock Fragments	CL	6-10-10 N=20	28	
955								
	25	7	18	Lean Clay with Sand and Rock Fragments, Very Stiff, Tan, Moist	CL	4-8-10 N=18	18	
950								
	30	8	18			8-10-12 N=22	15	
		9	18	Limestone, Moderately Weathered with Clay Seams, Gray and White		RQD=22 Rec=100%		
945		10	0			RQD=0 Rec=0%		
	35							
940		11	0			RQD=0 Rec=0%		
	40							
935		12	0			RQD=0 Rec=0%		
	45			End of Boring at 45.5 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-20

DATE STARTED:	1/27/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	1/28/26	**DRILLER:** SD	**LOGGED BY:** JO
COMPLETION DEPTH	40.5 ft	**DRILL RIG:**	CME-55LC
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	936 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/-in Core
LATITUDE:	39.0713°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0764°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	18 feet
Upon Completion	N/A feet
Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
935	0			Approximately 5 Inches of Topsoil				
		1	8	Lean Clay, Medium Stiff to Stiff, Dark Brown, Moist	CL	2-2-4 N=6	31	
	5	2	12			3-5-6 N=11	20	
930		3	24	Fat Clay, Soft to Medium Stiff, Mottled Brown and Dark Brown to Brown, Moist		500 psi		Q_u = 1.8 tsf
	10	4	16			2-2--3 N=5	26	
925					CH			
	15	5	18			1-2-1 N=3	30	
920								
	20	6	18	Shale, Highly Weathered, Brown to Gray		7-17-35 N=52	17	>>
915								
	25	7	18			15-35-50 N=85	17	>>
910								
	30	8	3	Limestone, Slightly Weathered, Gray to Dark Gray and White		50 RQD=89	35	>> Q_u = 689.1 tsf
905		9	18			Rec=100%		
		10	56	Sandstone, Slightly Weathered, Gray and Light Gray		RQD=93 Rec=93%		
	35							
900				Shale interbedded with Limestone, Gray, Slightly Weathered				
		11	45			RQD=65 Rec=75%		>> Q_u = 159.1 tsf
	40			End of Boring at 40.5 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-21

DATE STARTED:	5/14/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	5/14/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	29.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	918 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/1.874-in Core
LATITUDE:	39.0688°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0855°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water		
	While Drilling	N/A feet
	Upon Completion	N/A feet
	Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
	0					Approximately 5 Inches of Topsoil				
915				1	12	Fat Clay, Stiff, Dark Brown to Brown, Moist	CH	6-6-5 N=11	25	
	5			2	20	Lean Clay with Sand, Very Stiff, Light Brown, Moist	CL		19	DD = 105 pcf Q_u = 2.4 tsf Fines=76.6%
910				3	18	Shale, Tan to Gray		5-12-12 N=24	12	LL = 36 PL = 19
	10			4	18			6-12-19 N=31	17	
905				5	16			10-49-50/4" N=99	13	
	15			6	2			50/6"		
900				1	7	Shale, Gray to Dark Gray, Moderately to Slightly Weathered		RQD=0 Rec=58%	5	
	20			2	60			RQD=7 Rec=100%		
895										
	25			3	48			RQD=50 Rec=100%		
890						End of Boring at 29 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
Moisture ✕ PL ◪ LL ✚
0 25 50
STRENGTH, tsf
Qu ▲ Qp ✳
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-22

DATE STARTED:	5/11/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	5/12/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	40.5 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	972 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/1.874-in Core
LATITUDE:	39.0688°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0822°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	N/A feet
Upon Completion	N/A feet
Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
970	0			Approximately 5 Inches of Topsoil				
		1	9	Fat Clay, Very Stiff, Brown, Trace Sand, Moist	CH	2-3-5 N=8	22	
	5	2	15			3-4-6 N=10	16	
965		3	20	Sandy Clay, Soft to Very Stiff, Light Brown to Brown, Moist			16	DD = 119 pcf LL = 36 PL = 17 Q_u = 2.3 tsf Fines=55.2% Fines=68.7%
		4	12			4-5-6 N=11	17	
960	10				CL			
		5	18			2-4-6 N=10	13	
955	15						16	
		6	18	Lean Clay, Hard, Brown and Gray, Moist	CL	2-4-6 N=10		
950	20							
		7	18	Fat Clay, Very Stiff, Brown and Gray, Trace Gravel, Moist	CH	6-9-10 N=19	18	
945	25							
		1	26	Limestone, Slightly Weathered, White and Gray, Moist		RQD=62 Rec=62%		
	30			Shale, Gray and Brown, Slightly Weathered				
940		2	43			RQD=72 Rec=72%		
	35							
935		3	48			RQD=80 Rec=80%		
	40			End of boring at 40.5 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
Moisture, PL, LL (0, 25, 50)
STRENGTH, tsf
Qu, Qp (0, 2.0, 4.0)

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-23

DATE STARTED:	5/9/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	5/9/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	971 ft	**SAMPLING METHOD:**	2-in SS/3-in ST
LATITUDE:	39.0688°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0787°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	25 feet
Upon Completion	N/A feet
Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST)	Moisture, %	Additional Remarks
970	0			Approximately 5 Inches of Topsoil				
		1	12	Fat Clay, Very Stiff, Brown, Moist	CH	2-2-3 N=5	26	
	5	2	17	Fat Clay, Hard, Brown, Trace Sand, Moist	CH	2-6-7 N=13	16	
965		3	14	Fat Clay, Stiff to Very Stiff, Brown and Gray, Trace Sand, Moist		2-2-4 N=6	20	LL = 39 PL = 15
		4	18				17	
960	10				CH			
		5	18			2-5-5 N=10	18	
955	15							
		6	18	Lean Clay, Very Stiff, Brown, Trace Sand, Moist	CL	9-7-11 N=18	16	
950	20							
		7	12	Clayey Sand with Gravel, Medium Dense, Tan, Moist to Wet	SC	16-12-13 N=25	18	Fines=43.5%
945	25							
		8	18	Fat Clay with Gravel, Very Stiff, Tan and Gray, Trace Sand, Wet	CH	7-12-10 N=22		Fines=58.3%
940	30							
		9	18	Lean Clay with Sand, Very Stiff, Brown, Wet	CL	6-12-17 N=29		
935	35							
		10	18	Lean Clay, Hard, Brown, Trace Sand, Wet	CL	3-4-7 N=11		
	40			End of Boring at 40 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
Moisture × PL ◪ LL ✚
0 25 50
STRENGTH, tsf
Qu ▲ Qp ✳
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-24

DATE STARTED:	5/9/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	5/9/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	979 ft	**SAMPLING METHOD:**	2-in SS/3-in ST
LATITUDE:	39.0689°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0758°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

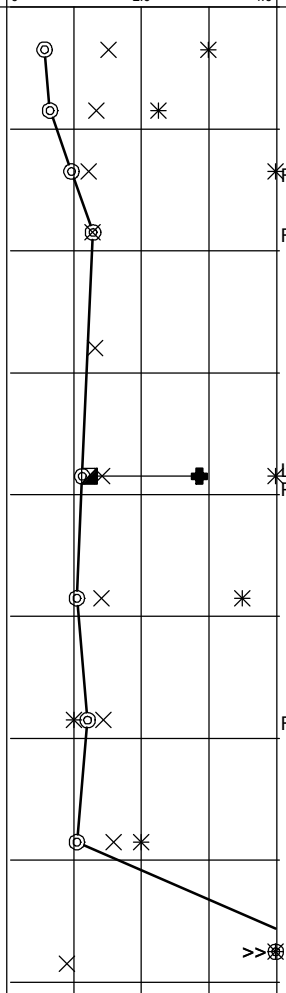
Water

While Drilling	N/A feet
Upon Completion	N/A feet
Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST)	Moisture, %	Additional Remarks
	0			Approximately 5 Inches of Topsoil				
		1	7	Lean Clay with Sand, Stiff to Very Stiff, Brown, Moist	CL	2-3-4 N=7	19	
975	5	2	12			2-3-5 N=8	17	
		3	13	Lean Clay, Hard, Gray-Brown, Trace Sand and Gravel, Moist	CL	2-5-7 N=12	15	Fines=69.5%
970	10	4	16	Sandy Clay, Stiff, Brown-Gray, Moist	CL	4-5-11 N=16	16	Fines=31.6%
965	15	5	20	Fat Clay, Very Stiff to Hard, Brown and Gray, Trace Sand, Moist			16	
960	20	6	18		CH	4-5-9 N=14	18	LL = 36 PL = 15
955	25	7	18			4-6-7 N=13	18	
950	30	8	18	Sandy Clay, Soft to Medium Stiff, Gray-Brown, Moist	CL	4-5-10 N=15	18	Fines=68.9%
945	35	9	18	Fat Clay, Medium Stiff to Stiff, Brown, Moist	CH	6-6-7 N=13	20	
940	40	10	6	Gravelly Clay with Rock Fragments, Hard, Moist End of Boring at 39 Feet at Sampler Refusal	GC	50/6"	11	>>

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0



intertek psi

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-25

DATE STARTED:	5/19/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	5/19/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	12.5 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	908 ft	**SAMPLING METHOD:**	2-in SS1.874-in Core
LATITUDE:	39.066°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0878°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water		
	While Drilling	N/A feet
	Upon Completion	N/A feet
	Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) RQD & Recovery % (NX)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ / STRENGTH, tsf	Additional Remarks
	0					Approximately 6 Inches of Topsoil					
				1	4	Fat Clay, Stiff, Brown, Moist	CH	50/4"	43		>>◎
905						Weathered Limestone and Clay Seams Sampler Refusal at 1.3 Feet					>>▲ Q_u = 488.4 tsf
				1	36	Limestone, Medium Hard, Gray to Buff, Slightly Weathered		RQD=22 Rec=100%			
	5					Sandstone interbedded with Limestone, Tan, Slightly Weathered					
900				2	54	Limestone interbedded with Sandstone, White and Buff, Slighlty Weathered		RQD=40 Rec=89%			
	10					Sandstone interbedded with Limestone, Tan, Moderately Weathered					
				3	20			RQD=0 Rec=83%			
						End of Boring at 12.5 Feet					

Moisture: × | PL: ◪ | LL: ✚ (0 — 25 — 50)

STRENGTH, tsf: ▲ Qu | ✳ Qp (0 — 2.0 — 4.0)

intertek psi

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-26

DATE STARTED:	5/19/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	5/19/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	40.5 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	931 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/1.874-in Core
LATITUDE:	39.0661°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0847°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water		
	While Drilling	N/A feet
	Upon Completion	N/A feet
	Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
930	0	1	14	Approximately 6 Inches of Topsoil Fat Clay, Stiff to Very Stiff, Brown and Gray, Moist		3-4-6 N=10	23	
	5	2	18		CH	3-5-6 N=11	25	
925		3	17				22	DD = 104 pcf LL = 50 PL = 17 Q_u = 2.0 tsf Fines=94.0%
	10	4	17	Lean Clay, Hard, Brown, Trace Sand, Moist	CL	2-6-9 N=15	18	
920		5	10	Lean Clay, Hard, Brown, Moist	CL	2-3-3 N=6	22	
915	15							
	20	6	15	Sandstone, Brown		13-46-50/3" N=96	11	
910		7	8	Sandstone, Gray and Light Gray, Slightly Weathered		22-50/2"	11	
	25	8	2			50/2"		
905		1	15	Sandstone, Medium Hard, Slightly Weathered, Light Gray to Gray		RQD=83 Rec=83%	4	Q_u = 372.3 tsf
	30							
900		2	60			RQD=100 Rec=100%		
	35							Q_u = 320.2 tsf
895		3	55			RQD=82 Rec=92%		
	40			End of Boring at 40.5 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-27

DATE STARTED:	5/13/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	5/13/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	29.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	933 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/1.874-in Core
LATITUDE:	39.0661°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0815°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

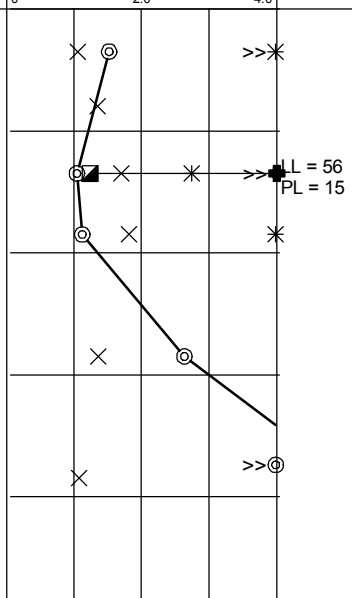
Water

BORING LOCATION:
See Boring Location Plan

REMARKS:

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %
	0			Approximately 6 Inches of Topsoil			
930		1	14	Fat Clay, Hard, Brown and Gray, Trace Gravel, Dry	CH	5-8-11 N=19	13
	5	2	14	Fat Clay, Stiff, Gray and Brown, Moist	CH		17
925		3	17			5-5-8 N=13	21
	10	4	17	Lean Clay (Shale Residuum), Very Stiff to Hard, Brown and Gray, Moist	CL	4-5-9 N=14	23
920		5	16			6-14-19 N=33	17
915	15	6	3	Shale, Red-Brown		50/5"	13
	20	1	11	Limestone, Gray and White, Slightly Weathered		RQD=33 Rec=88%	
910		2	51	Limestone interbedded with Shale, Gray, Slightly Weathered Sandy Shale, Gray and Dark Gray, Slightly Weathered		RQD=68 Rec=85%	
	25	3	47			RQD=81 Rec=98%	
905				End of Boring at 29 Feet			

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0



Additional Remarks

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-28

DATE STARTED:	5/12/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	5/13/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	956 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/1.874-in Core
LATITUDE:	39.0662°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0781°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
955	0	1	7	Approximately 5 Inches of Topsoil Fat Clay, Very Stiff to Hard, Brown and Gray, Dry to Moist		2-2-4 N=6	19	
	5	2	12		CH	3-5-7 N=12	22	
950		3	17				22	DD = 101 pcf LL = 59 PL = 16 Q_u = 2.8 tsf Fines=80.9%
	10	4	15	Lean Clay, Very Stiff, Gray, Trace Sand and Gravel, Moist	CL	2-17-14 N=31	19	
945		1	24	Limestone, Moderately Weathered, Gray		RQD=43 Rec=80%		
	15	2	5			RQD=0 Rec=8%		
940	20			Mudstone, Slightly Weathered, Brown				
935		3	3			RQD=0 Rec=5%		
930	25	4	56			RQD=82 Rec=93%		>> Q_u = 183.2 tsf
	30			Shale, Slightly Weathered, Gray to Brown				
925		5	60			RQD=80 Rec=100%		
920	35							
		6	40			RQD=37 Rec=67%		
	40			End of Boring at 40 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-29

DATE STARTED:	6/6/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	6/6/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	30.5 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	932 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/1.874-in Core
LATITUDE:	39.0661°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0754°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	N/A	feet
Upon Completion	N/A	feet
Delay	N/A	

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
930	0					Approximately 6 Inches of Topsoil				
				1	8	FILL, Fat Clay, Brown, Stiff, Trace Sand and Gravel, Dry	FILL	3-4-5 N=9	19	
	5			2	12	Fat Clay, Stiff to Very Stiff, Brown, Moist		3-5-6 N=11	19	
925				3	17			3-6-8 N=14	21	
				4	20		CH		23	DD = 107 pcf LL = 50 PL = 17 Q_u = 1.6 tsf
	10									
920										
				5	16	Shale, Tan to Gray		8-16-22 N=38	17	
	15									
915										
				6	12			9-18-22 N=40	18	
	20					Limestone, Gray, Moderately Weathered				
910						Limestone Interbedded with Shale, Gray, Slightly Weathered				
						Limestone, Gray and White, Slightly Weathered				
	25					Limestone Interbedded with Shale, White and Gray, Slightly Weathered				
905						Shale Interbedded with Limestone, Dark Gray and Gray, Slightly Weathered				>> Q_u = 29.8 tsf
						Shale, Gray, Slightly Weathered				
	30					Sandstone, Gray and Dark Gray, Slightly Weathered				
						End of Boring at 30.5 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.:	338-2650
PROJECT:	Bluestem Data Center
LOCATION:	214th and Honey Creek
	Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-30

DATE STARTED:	6/27/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	6/27/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	908 ft	**SAMPLING METHOD:**	2-in SS1.874-in Core
LATITUDE:	39.0797°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.073°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	N/A	feet
Upon Completion	N/A	feet
Delay	N/A	

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
905	0	1	12	Approximately 6 Inches of Topsoil Weathered Sandstone, Tan to Gray		1-11-50 N=61	12	
	5	2	8			34-50/2"	12	
		3	8			28-50/2"	14	
900		4	6			25-50/1"	12	
	10							
895		5	8			40-50/2"	10	
	15							
890		6	6			50/6"	9	
	20							
885								
	25	1	23	Sandstone, Gray and Light Gray, Slightly Weathered		RQD=17 Rec=96%		
880		2	54	Sandstone interbedded with Shale, Gray and Light Gray, Slightly Weathered Sandstone, Gray and Light Gray, Slightly Weathered		RQD=62 Rec=90%		>> Q_u = 430.1 tsf
	30							>> Q_u = 305.5 tsf
875		3	60			RQD=78 Rec=100%		
	35							>> Q_u = 223.8 tsf
870		4	48			RQD=0 Rec=100%		
	40			End of Boring at 40 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-31

DATE STARTED:	6/26/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	6/26/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	27.5 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	956 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/1.874-in Core
LATITUDE:	39.0771°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0729°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	N/A feet
Upon Completion	N/A feet
Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
955	0	1	9	Approximately 6 Inches of Topsoil Fat Clay, Stiff, Brown, Trace Sand, Moist	CH	2-2-4 N=6	21	
	5	2	14	Lean Clay with Sand, Stiff to Very Sitff, Brown, Moist	CL	3-4-7 N=11	19	
950		3	14	Lean Clay with Sand, Stiff to Very Stiff, Brown, Trace Gravel, Moist		3-8-10 N=18	16	
		4	14		CL		19	DD = 105 pcf Q_u = 2.0 tsf
945	10							
		5	18	Lean Clay, Very Stiff, Brown, Trace Sand and Gravel, Moist	CL	3-6-9 N=15	19	>>
940	15							
		1	15	Limestone with Clay Seams, Highly Weathered, White and Gray Core Loss		RQD=21 Rec=36%		
	20			Limestone with Clay Seams, Highly Weathered, White and Gray Core Loss				
935		2	33	Limestone, Slightly Weathered, Gray		RQD=31 Rec=55%		
	25			Clay Deposits, Trace Gravel, Light Brown				
930		3	14			RQD=78 Rec=78%		
				End of Boring at 27.5 Feet				>> Q_u = 841.6 tsf

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-32

DATE STARTED:	6/10/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	6/10/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	937 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/1.874-in Core
LATITUDE:	39.0742°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0729°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	N/A feet
Upon Completion	N/A feet
Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ / STRENGTH, tsf	Additional Remarks
	0					Approximately 6 Inches of Topsoil					
935				1	8	Lean Clay, Brown, Very Stiff, Brown, Trace Sand and Sandstone Fragments, Moist	CL	2-4-5 N=9	22		
	5			2	10	Lean Clay, Stiff to Very Stiff, Brown, Trace Gravel, Moist	CL	2-5-7 N=12	15		Fines=69.7%
930				3	9	Lean Clay, Stiff to Very Stiff, Brown, Trace Sand and Gravel, Moist			19		DD = 110 pcf Q_u = 2.1 tsf
	10			4	17		CL	4-8-10 N=18	18		
925											
	15			5	18	Lean Clay, Stiff, Light Brown and Gray, Moist	CL	7-6-8 N=14	31		Fines=99.3%
920				6	12	Fat Clay, Brown, Trace Gravel and Limestone Fragments, Moist	CH	21-13-50	18		>> Fines=49.4%
	20			1	12	Limestone, Gray and Buff, Highly Weathered		RQD=63 RQD=100 Rec=100%			
915				2	19			RQD=0 Rec=32%			
	25					Shale, Gray, Slightly Weathered					
910				3	60			RQD=100 Rec=100%			>> Q_u = 18.4 tsf
	30										
905				4	58	Sandstone, Gray and Dark Gray, Slightly Weathered		RQD=97 Rec=97%			>> Q_u = 28.5 tsf
	35					Shale, Gray, Slightly Weathered					>> Q_u = 46.1 tsf
900				5	60	Sandy Shale, Slighlty Westhered, Gray and Dark Gray		RQD=20 Rec=100%			
	40					End of Boring at 40.5 Feet					

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-33

DATE STARTED:	6/26/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	6/26/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	29.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	915 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/1.874-in Core
LATITUDE:	39.0796°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0694°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	14 feet
Upon Completion	N/A feet
Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
	0	1	12	Approximately 6 Inches of Topsoil Lean Clay, Soft to Stiff, Brown, Moist		1-3-3 N=6	26	
910	5	2	15		CL		25	DD = 99 pcf Q_u = 1.1 tsf
		3	16			1-1-2 N=3	26	
905	10	4	14	Shale, Tan to Gray		4-27-50/3" N=77	13	>>
900	15	5	7			50-50/1"	14	>>
		6	6			50/6"	14	>>
895	20	1	15	Sandstone interbedded with Shale, Moderately Weathered, Gray and Tan		RQD=19 Rec=63%		
				Sandstone, Slightly Weathered, Gray and Light Gray				
		2	56			RQD=50 Rec=93%		>> Q_u = 122.9 tsf
890	25							>> Q_u = 206.3 tsf
		3	36			RQD=11 Rec=100%		
				End of Boring at 29 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-34

DATE STARTED:	6/11/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	6/11/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	946 ft	**SAMPLING METHOD:**	2-in SS1.874-in Core
LATITUDE:	39.0771°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0695°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water		
	While Drilling	N/A feet
	Upon Completion	N/A feet
	Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) RQD & Recovery % (NX)	Moisture, %
945	0			Approximately 6 Inches of Topsoil			
		1	9	Fat Clay, Stiff, Brown to Light Brown, Trace Sand, Moist		2-3-5 N=8	22
	5	2	16		CH	3-3-6 N=9	19
940		3	21				
		4	18	Lean Clay, Stiff, Brown, Trace Sand nand Gravel, Moist	CL	3-8-14 N=22	17
935	10						
		5	6	Poorly Graded Gravel with Clay, Medium Dense, Brown, Moist	GP-GC	28-22-9 N=31	14
930	15						
		6	18	Lean Clay, Hard, Brown, Trace Sand, Moist	CL	5-7-10 N=17	18
925	20						
		7	12	Lean Clay, Medium Stiff to Stiff, Brown, Moist	CL	10-10-8 N=18	23
920	25						
		8	6	Limestone, Moderately to Slightly Weathered, Gray		50/6"	9
915	30			Sandstone, Highly Weathered, Tan and Brown			
		1	39	Core Loss		RQD=36 Rec=65%	
				Shale, Highly Weathered, Gray			
910	35			Shale, Slightly Weathered, Gray			
		2	51			RQD=85 Rec=85%	
	40			End of Boring at 40.5 Feet			

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

Additional Remarks

>>▲ Q_u = 34.7 tsf

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-35

DATE STARTED:	6/10/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	6/10/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	23.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	938 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/1.874-in Core
LATITUDE:	39.0743°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0695°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	17 feet
Upon Completion	N/A feet
Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
	0					Approximately 6 Inches of Topsoil				
935				1	12	Lean Clay, Stiff, Brown, Trace Gravel, Moist	CL	2-5-6 N=11	21	
	5			2	14	Sandy Clay, Stiff to Very Stiff, Brown, Trace Gravel, Moist	CL	6-5-13 N=18	11	
930				3	8			5-7-9 N=16	21	
	10			4	22	Lean Clay, Stiff to Very Stiff, Gray-Brown, Moist	CL		19	DD = 112 pcf LL = 43 PL = 17 Q_u = 2.5 tsf Fines=84.5%
925				5	18			2-4-8 N=12	24	
920	15									
	20			6	6	Gravelly Clay, Extremely Dense, Brown, Wet	GP-GC	25-50	21	>> >> Q_u = 554.8 tsf
915						End of Boring at 23.5 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-36

DATE STARTED:	6/25/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	6/25/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	947 ft	**SAMPLING METHOD:**	2-in SS
LATITUDE:	39.0784°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0665°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	N/A	feet
Upon Completion	N/A	feet
Delay	N/A	

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ × Moisture ◪ PL ✚ LL (0, 25, 50) STRENGTH, tsf ▲ Qu ✳ Qp (0, 2.0, 4.0)	Additional Remarks
	0					Approximately 6 Inches of Topsoil					
945				1	18	Fat Clay, Stiff, Brown, Moist	CH	2-3-5 N=8	26		
	5			2	18	Fat Clay, Stiff, Brown, Trace Gravel, Moist	CH	3-5-6 N=11	20		
940				3	18			2-4-6 N=10	21		
	10			4	18	Lean Clay, Hard, Brown and Gray, Trace Sand, Moist	CL	4-7-10 N=17	17	>>✳	
935											
	15			5	16	Fat Clay, Stiff to Very Stiff, Gray, Moist	CH	13-22-27 N=49	8		
930											
	20			6	18	Fat Clay, Stiff to Very Stiff, Gray, Trace Sand and Gravel, Moist	CH	5-8-9 N=17	19		
925											
	25			7	18			3-5-9 N=14	19		
920											
	30			8	18	Lean Clay with Sand, Very Stiff, Brown, Moist	CL	4-8-11 N=19	19		
915											
	35			9	18	Fat Clay, Very Stiff, Brown, Moist	CH	5-7-10 N=17	21	>>✳	
910											
	40			10	18			14-33-40 N=73	12	>>✳	
						End of Boring at 40 Feet					

intertek psi

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-37

DATE STARTED:	6/17/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	6/17/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	14.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	918 ft	**SAMPLING METHOD:**	2-in SS1.874-in Core
LATITUDE:	39.075°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0665°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water		
	While Drilling	N/A feet
	Upon Completion	N/A feet
	Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) RQD & Recovery % (NX)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ × Moisture ◪ PL ✚ LL (0, 25, 50) STRENGTH, tsf ▲ Qu ✳ Qp (0, 2.0, 4.0)	Additional Remarks
	0					Approximately 6 Inches of Topsoil					
915				1	12	Fat Clay, Stiff, Brown, Moist - Trace Sand to 3.5 Feet	CH	1-3-4 N=7	25		
	5			2	13			2-3-4 N=7	22		
				3	11	Fat Clay, Stiff, Brown, Trace Gravel, Moist	CH	2-4-3 N=7	37		
910				4	6	Weathered Limestone (Rock Fragments)		50/6"		>>	
	10					Limestone, Highly Weahtered, Buff					
				1	12	Sandstone, Gray, Highly Weathered Core Loss		RQD=13 Rec=20%			
905						End of Boring at 14 Feet					

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-38

DATE STARTED:	6/12/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	6/12/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	900 ft	**SAMPLING METHOD:**	2-in SS/3-in ST
LATITUDE:	39.0722°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0697°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water		
	While Drilling	18 feet
	Upon Completion	N/A feet
	Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST)	Moisture, %	Additional Remarks
	0			Approximately 7 Inches of Topsoil				
		1	9	Fat Clay, Stiff, Brown, Moist	CH	1-3-4 N=7	21	
895	5	2	14			1-4-4 N=8	24	LL = 52 PL = 16
		3	15	Lean Clay, Very Soft to Soft, Brown, Moist	CL		25	LL = 48 PL = 18 Q_u = 0.6 tsf Fines=97.0%
890	10	4	18			1-1-2 N=3		Fines=98.3%
		5	18	Lean Clay with Sand, Very Soft to Soft, Moist		0-1-1 N=2	30	Fines=80.6%
885	15							
880	20	6	18			0-1-1 N=2	22	LL = 38 PL = 17
		7	18		CL	1-0-0 N=0	24	Fines=77.4%
875	25							
870	30	8	14			1-1-2 N=3	24	
		9	12	Shale, Highly Weathered, Moist		40-50		>>
865	35				CL			
		10	12			39-50		>>
860	40			End of Boring without Refusal at 40 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
Moisture ✕ PL ◪ LL ✚
0 25 50
STRENGTH, tsf
Qu ▲ Qp ✳
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-39

DATE STARTED:	6/15/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	6/15/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	887 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/1.874-in Core
LATITUDE:	39.0722°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0664°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	18 feet
Upon Completion	N/A feet
Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
	0			Approximately 6 Inches of Topsoil				
885		1	11	Fat Clay, Stiff, Brown, Moist		2-3-5 N=8	21	
	5	2	12		CH	2-4-5 N=9	24	
880		3	12			2-3-4 N=7	25	DD = 113 pcf Q_u = 2.9 tsf
		4	15	Lean Clay,Soft to Medium Stiff, Trace Sand, Brown, Moist	CL		16 28	DD = 96 pcf LL = 41 PL = 18 Q_u = 0.9 tsf Fines=92.1%
875	10							
	15	5	18	Lean Clay with Sand, Very Soft to Soft, Moist		0-1-1 N=2	30	Fines=92.9%
870								
	20	6	18			0-0-2 N=2	22	
865					CL			
	25	7	18			2-3-3 N=6	24	LL = 32 PL = 15
860								
	30	8	12			2-3-4 N=7	24	Fines=81.9%
855								
	35	9	12	Shale, Highly Weathered, Moist		21-30-31 N=61	18	>>
850					CL			
		10	6			50/6"	14	>>
	40			End of Boring without Refusal at 40 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-40

DATE STARTED:	6/12/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	6/12/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	40.5 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	925 ft	**SAMPLING METHOD:**	2-in SS1.874-in Core
LATITUDE:	39.0705°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.07°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water		
	While Drilling	N/A feet
	Upon Completion	N/A feet
	Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
	0			Approximately 6 Inches of Topsoil				
		1	10	Fat Clay, Stiff, Brown, Moist	CH	2-3-4 N=7	23	
920	5	2	14			3-6-9 N=15	19	Fines=90.1%
		3	16	Lean Clay, Hard, Trace Sand, Brown, Moist	CL	5-9-20 N=29	13	
915	10	4	12	Shale, Decomposed, Soft, Moist		9-30-50/3" N=80	14	Fines=86.9%
910	15	5	6		CL	50/6"	11	
		6	2	Auger Refusal at 19 Feet		50/2"	10	
905	20			Sandstone, Slightly Weathered, Light Gray to Gray				Q_u = 289.1 tsf
								Q_u = 256.6 tsf
900	25							
895	30							Q_u = 329.5 tsf
								Q_u = 211.2 tsf
890	35							Q_u = 287.7 tsf
885	40			End of Boring at 40 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-41

DATE STARTED:	6/15/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	6/15/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	29.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	910 ft	**SAMPLING METHOD:**	2-in SS1.874-in Core
LATITUDE:	39.0703°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0668°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water		
	While Drilling	N/A feet
	Upon Completion	N/A feet
	Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) RQD & Recovery % (NX)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ / Moisture × / PL ◪ / LL ✚ (0–25–50) / STRENGTH, tsf ▲ Qu ✳ Qp (0–2.0–4.0)	Additional Remarks
	0					Approximately 6 Inches of Topsoil					
				1	11	Fat Clay, Stiff, Brown, Moist	CH	2-4-5 N=9	29		
905	5			2	14			2-5-7 N=12	21		
				3	18	Sandy Shale, Decomposed, Moist		11-31-50 N=81	14	>>	
				4	14			9-44-50/2" N=94	15	>>	
900	10						CL				
				5	6			50	12	>>	Fines=72.0%
895	15										
				6	2	Auger Refusal at 19 Feet				>>	
890	20			1	15	Sandstone, Slightly Weathered, Grey to Dark Grey		RQD=83 Rec=83%		>>	Q_u = 295.5 tsf
				2	57			RQD=86 Rec=95%		>>	Q_u = 186.0 tsf
885	25			3	42			RQD=52 Rec=100%			
						End of Boring at 29 Feet					

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-42

DATE STARTED:	5/20/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	5/20/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	914 ft	**SAMPLING METHOD:**	2-in SS1.874-in Core
LATITUDE:	39.0634°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0866°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	N/A feet
Upon Completion	N/A feet
Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
914	0			Approximately 6 Inches of Topsoil				
		1	16	Fat Clay, Brown, Very Stiff to Hard, Brown, Moist	CH	3-3-6 N=9	23	LL = 55 PL = 18
910	5	2	10	Limestone, Moderately Weathered, Buff Auger Refusal at 4.5 Feet		6-50/6"	22	
		1	29	Sandstone, Moderately to Highly Weathered, Tan		RQD=0 Rec=48%		
905	10			Shale, Medium Hard, Moderately to Highly Weathered, Tan to Gray				
		2	59			RQD=68 Rec=98%		
900	15							>> Q_u = 375.8 tsf
				Sandstone, Soft to Medium Hard, Slightly Weathered, Light Grey to Grey				>> Q_u = 327.8 tsf
		3	60			RQD=95 Rec=100%		
895	20							>> Q_u = 248.7 tsf
		4	59			RQD=93 Rec=98%		
890	25							>> Q_u = 368.4 tsf
		5	60			RQD=95 Rec=100%		>> Q_u = 276.5 tsf
885	30							
		6	58			RQD=82 Rec=97%		
880	35							>> Q_u = 277.2 tsf
								>> Q_u = 363.9 tsf
		7	59			RQD=93 Rec=98%		
875	40			End of Boring at 40 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-43

DATE STARTED:	6/3/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	6/3/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	24.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	918 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/1.874-in Core
LATITUDE:	39.0632°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.083°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water		
	While Drilling	N/A feet
	Upon Completion	N/A feet
	Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
	0					Approximately 5 Inches of Topsoil				
915				1	12	Fat Clay, Medium Stiff to Stiff, Red-Brown, Moist	CH	2-3-4 N=7	30	
	5			2	12				26	DD = 96 pcf LL = 79 PL = 22 Q_u = 1.5 tsf Fines=71.8%
910				3	16	Shale, Decomposed, Brown and Gray, Moist	CL	7-11-13 N=24	10	
	10			4	16			8-12-14 N=26	16	
905				5	6	Shale, Moderately Weathered, Gray		50/6"	7	Q_u = 524.9 tsf
	15			1	12	Sandstone, Medium Hard, Slightly Weathered, Gray and Dark Gray Sampler Refusal at 14 Feet		RQD=100 Rec=100%		
900				2	60			RQD=93 Rec=100%		Q_u = 345.6 tsf
	20			3	45			RQD=92 Rec=94%		Q_u = 331.4 tsf
895						End of Boring at 24 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
Moisture ✕ PL ◪ LL ✚
0 25 50
STRENGTH, tsf
Qu ▲ Qp ✳
0 2.0 4.0

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-44

DATE STARTED:	5/28/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	5/28/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	941 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/1.874-in Core
LATITUDE:	39.0633°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0797°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	N/A feet
Upon Completion	N/A feet
Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
940	0			Approximately 5 Inches of Topsoil				
		1	14	Fat Clay, Hard, Brown, Dry	CH	3-4-5 N=9	18	>>
	5	2	12	Fat Clay, Medium Stiff, Brown-Gray, Wet	CH	3-3-3 N=6	20	Fines=64.1%
935		3	22	Shale, Light Brown to Gray				
		4	18			4-20-12 N=32	16	
930	10							
		5	18			6-17-25 N=42	14	
925	15							
		6	18			4-15-18 N=33	16	
920	20							
		7	18			14-30-50 N=80	15	>>
915	25							
		8	18			8-18-16 N=34	17	
910	30							
		9	6	- Sampler Refusal at 34 Feet		50/6"		>>
905	35			Limestone, Medium Hard, Gray and White, Slightly Weathered				
		1	60			RQD=54 Rec=100%		>> Q_u = 476.5 tsf
	40			Limestone, Gray and Dark Gray, interbedded with Shale, Slightly Weathered				
				End of Boring at 40				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-45

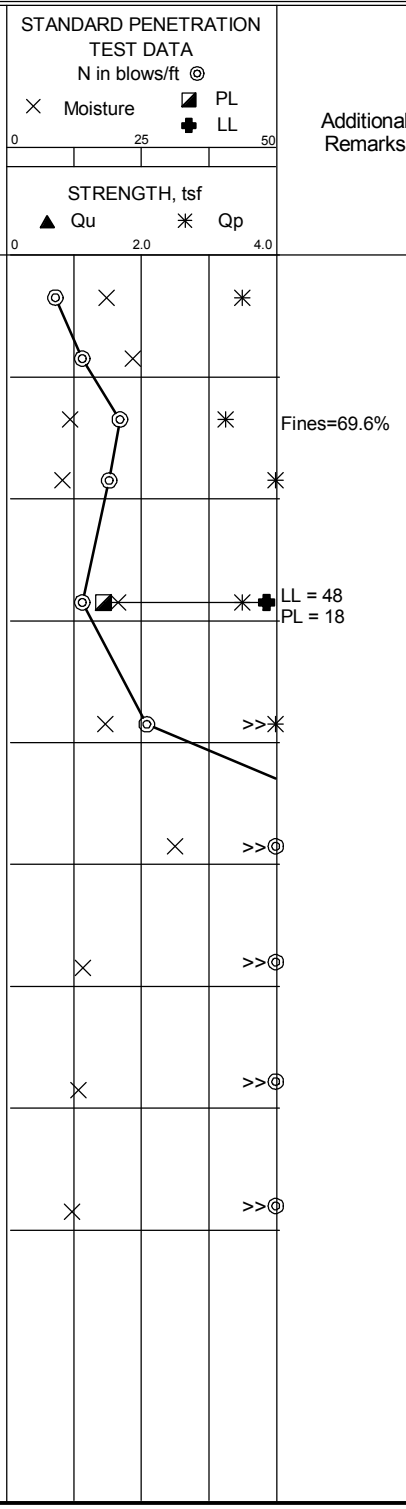
DATE STARTED:	5/29/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	5/29/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	951 ft	**SAMPLING METHOD:**	2-in SS
LATITUDE:	39.0635°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0765°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water		
	While Drilling	N/A feet
	Upon Completion	N/A feet
	Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS)	Moisture, %
950	0			Approximately 6 Inches of Topsoil			
		1	5	Fat Clay, Very Stiff, Brown, Moist	CH	3-4-5 N=9	19
	5	2	7	Lean Clay, Brown, Very Stiff to Hard, Moist		3-5-9 N=14	23
945		3	15	- Trace Sand to 13.5 Feet		5-9-12 N=21	12
		4	15	- Trace Gravel to 13.5 Feet	CL	6-9-10 N=19	10
940	10						
		5	18	Fat Clay, Very Stiff, Brown and Gray, Moist	CH	3-5-9 N=14	21
935	15						
		6	16	Lean Clay, Hard, Brown, Moist	CL	9-12-14 N=26	18
930	20						
		7	16	Shale, Brown and Gray to Gray		14-30-50 N=80	31
925	25						
		8	12			24-50	14
920	30						
		9	9			29-50/3"	13
915	35						
		10	12			36-50	12
	40			End of Boring at 40 Feet			



Additional Remarks

intertek psi

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-46

DATE STARTED:	5/21/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	5/21/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	898 ft	**SAMPLING METHOD:**	2-in SS1.874-in Core
LATITUDE:	39.0607°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0888°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	N/A feet
Upon Completion	N/A feet
Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
898	0			Approximately 6 Inches of Topsoil				
		1	17	Lean Clay with Sand, Stiff, Tan, Moist	CL	3-3-5 N=8	15	Fines=45.9%
895								
	5	2	18	Shale, Decomposed, Tan and Gray		6-23-25 N=48	14	
		3	18			5-6-8 N=14	18	
890		4	10			9-50/4"	15	
	10				CL			
885		5	5			50/5"	9	
	15							
880		6	4	Auger Refusal at 19 Feet		50/4"		
	20	1	16	Sandstone, Slightly Weathered, Light Grey to Grey		RQD=58 Rec=103%		Q_u = 262.3 tsf
875		2	59			RQD=92 Rec=98%		
	25							Q_u = 270.1 tsf
870		3	58			RQD=60 Rec=97%		
	30							
865		4	60			RQD=45 Rec=100%		
	35							
860		5	54			RQD=94 Rec=100%		Q_u = 314.3 tsf
	40			End of Boring at 40.5 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-47

DATE STARTED:	5/28/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	5/28/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	24.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	890 ft	**SAMPLING METHOD:**	2-in SS1.874-in Core
LATITUDE:	39.0607°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.085°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	N/A	feet
Upon Completion	N/A	feet
Delay	N/A	

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
	0			Approximately 6 Inches of Topsoil				
		1	15	Shale, Decomposed, Tan to Gray		6-20-50 N=70	12	
		2	7	- Sampler Refusal at 3.5 Feet		33-50/1"	12	
885	5	3	6			50/6"	11	
		4	6			50/6"	11	
880	10							
		5	6			50/6"	11	
875	15	1	13	Sandstone, Medium Hard, Gray and Light Gray, Slightly Weathered		RQD=83 Rec=83%		
		2	60			RQD=87 Rec=100%		
870	20							Q_u = 335.8 tsf
		3	41			RQD=93 Rec=98%		Q_u = 308.0 tsf
				End of Boring at 24 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
Moisture × PL ◪ LL ✚
0 25 50
STRENGTH, tsf
Qu ▲ Qp ✳
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-48

DATE STARTED:	6/2/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	6/2/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	914 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/1.874-in Core
LATITUDE:	39.0608°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0813°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water		
	While Drilling	N/A feet
	Upon Completion	N/A feet
	Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
	0			Approximately 5 Inches of Topsoil				
		1	12	Sandy Clay, Stiff to Hard, Orange-Brown to Tan, Moist		2-3-12 N=15	15	
910	5	2	16		CL	11-12-33 N=45	12	Fines=83.2%
		3	16				24	
905	10	4	14	Shale, Decomposed, Black		11-14-50/2" N=64	15	>>
				Sandstone, Medium Hard, Gray and Dark Gray, Slightly Weathered				
900	15	1	47			RQD=83 Rec=98%		>> Q_u = 250.6 tsf
895	20	2	60			RQD=82 Rec=100%		>> Q_u = 335.2 tsf >> Q_u = 368.2 tsf
890	25	3	60			RQD=60 Rec=100%		
885	30	4	59			RQD=38 Rec=98%		>> Q_u = 360.8 tsf
		5	58	Shale, Soft, Gray and Dark Gray, Slightly Weathered		RQD=34 Rec=96%		>> Q_u = 214.7 tsf
880	35							
875	40	6	56			RQD=37 Rec=104%		
				End of Boring at 40.5 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
× Moisture ◪ PL ✚ LL
0 25 50
STRENGTH, tsf
▲ Qu ✳ Qp
0 2.0 4.0

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-49

DATE STARTED:	6/2/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	6/2/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	CME-55LC
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	932 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/1.874-in Core
LATITUDE:	39.0611°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0778°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	N/A feet
Upon Completion	N/A feet
Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	Additional Remarks
	0			Approximately 5 Inches of Topsoil				
930		1	12	Fat Clay, Hard, Brown, Dry	CH	3-5-5 N=10	19	DD = 104 pcf
	5	2	24	Lean Clay, Very Stiff, Brown and Gray, Trace Sand, Moist	CL		21	LL = 46 PL = 17 Q_u = 2.2 tsf Fines=90.4%
925		3	15			2-5-8 N=13	18	
	10	4	18	Fat Clay, Stiff to Very Stiff, Brown and Gray, Moist	CH	2-4-6 N=10	22	LL = 53 PL = 17
920								
	15	5	18	- Trace Sand to 17 Feet		1-3-4 N=7	18	Fines=66.9%
915				Shale, Decomposed, Brown to Gray				
	20	6	17			4-14-30 N=44	16	
910								
	25	7	18			10-32-40 N=72	16	
905								
	30	8	18			19-34-45 N=79	16	
				Auger Refusal at 30.5 Feet				
900		1	49	Limestone, Medium Hard, Moderately to Slightly Weathered, Gray and Light Gray		RQD=45 Rec=82%		Q_u = 495.8 tsf Q_u = 371.4 tsf
	35			Limestone Interbedded with Shale, Gray and Dark Gray, Slightly Weathered				
895		2	51	Shale Interbedded with Limestone, Gray and Dark Gray, Slightly Weathered		RQD=51 Rec=94%		
	40			End of Boring at 40 Feet				

STANDARD PENETRATION TEST DATA
N in blows/ft ◎
Moisture × 0 25 50 PL ◪ LL ✚
STRENGTH, tsf
Qu ▲ Qp ✳ 0 2.0 4.0

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-50

DATE STARTED:	5/21/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	5/21/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	40.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	878 ft	**SAMPLING METHOD:**	2-in SS1.874-in Core
LATITUDE:	39.0587°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0876°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water		
	While Drilling	N/A feet
	Upon Completion	N/A feet
	Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) RQD & Recovery % (NX)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ / STRENGTH, tsf	Additional Remarks
	0					Approximately 6 Inches of Topsoil					
875				1	16	Lean Clay (Shale Residuum), Medium Stiff to Stiff, Tan	CL	1-3-20 N=23	15		
	5			2	9	Shale, Decomposed, Tan		23-50/3"	12		>>◎
				3	6			50/6"	14		>>◎
870				4	8			25-50/2"	12		>>◎
	10										
865				5	6			50/6"	11		>>◎
	15										
860				1	16	Sandstone, Medium Hard, Gray and Dark Gray, Moderately to Slightly Weathered		RQD=16 Rec=53%			>>▲ Q_u = 304.2 tsf
855	20			2	58			RQD=53 Rec=97%			>>▲ Q_u = 322.7 tsf
	25					Limestone interbedded with Shale, Medium Hard, Gray and Dark Gray, Slightly Weathered					>>▲ Q_u = 488.4 tsf
850				3	55	Sandstone, Gray and Dark Gray, Slighlty Weathered		RQD=53 Rec=92%			
	30					Limestone interbedded with Shale, Gray and Dark Gray, Slightly Weathered					>>▲ Q_u = 229.8 tsf
845				4	59	Sandstone, Soft, Gray and Dark Gray, Slightly Weathered		RQD=38 Rec=98%			
	35					Shale, Dark Gray, Slightly Weathered					
840				5	54	Sandstone, Medium Hard, Gray and Dark Gray, Slightly Weathered		RQD=38 Rec=100%			>>▲ Q_u = 360.2 tsf
	40					End of Boring at 40 Feet					

intertek psi

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-51

DATE STARTED:	6/4/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	6/4/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	14.5 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	914 ft	**SAMPLING METHOD:**	2-in SS1.874-in Core
LATITUDE:	39.0586°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0836°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water		
	While Drilling	N/A feet
	Upon Completion	N/A feet
	Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) RQD & Recovery % (NX)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ / STRENGTH, tsf	Additional Remarks
	0					Approximately 6 Inches of Topsoil					
				1	10	Lean Clay, Stiff, Brown, Moist	CL	2-4-4 N=8	22		
910				2	9	Fat Clay, Stiff, Brown, Moist	CH	1-4-50/2"	33		
	5			1	8	Limestone, Moderately Weathered, Buff		RQD=42 Rec=67%			
						- Sandy Limestone below 6 Feet					
				2	28	Core Loss / Washout		RQD=0 Rec=47%			
905											
	10					Shale, Slightly Weathered, Tan and Grey to Black					
				3	46			RQD=63 Rec=96%			
900											

Moisture: × — PL: ◪ — LL: ✚ (0 / 25 / 50)

STRENGTH, tsf: ▲ Qu — ✳ Qp (0 / 2.0 / 4.0)

LL = 52
PL = 19
Q_u = 590.0 tsf

intertek psi

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.:	338-2650
PROJECT:	Bluestem Data Center
LOCATION:	214th and Honey Creek Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-52

DATE STARTED:	6/5/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	6/5/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	40.5 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	922 ft	**SAMPLING METHOD:**	2-in SS1.874-in Core
LATITUDE:	39.0586°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0806°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water		
	While Drilling	N/A feet
	Upon Completion	N/A feet
	Delay	N/A

BORING LOCATION:
See Boring Location Plan

Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) RQD & Recovery % (NX)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ / STRENGTH, tsf	Additional Remarks
	0					Approximately 5 Inches of Topsoil					
920				1	10	Fat Clay, Medium Stiff to Very Stiff, Brown, Moist - Trace Rootlets to 5 Feet		2-3-5 N=8	29		
	5			2	15		CH	3-5-9 N=14	25		Fines=99.6%
915				3	12			3-5-9 N=14	31		LL = 86 PL = 12
	10			4	15			2-3-5 N=8	25		
910				1	43	Limestone, Gray to Buff, Moderately Weathered		RQD=30 Rec=80%			>> Q_u = 403.5 tsf
	15					Sandstone interbedded with Limestone, Slightly Weathered					
905				2	56			RQD=53 Rec=93%			>> Q_u = 24.7 tsf
	20					Shale, Gray to Dark Gray, Slightly Weathered					
900				3	60	Sandstone, Slightly Weathered, Light Gray to Gray		RQD=83 Rec=100%			>> Q_u = 277.0 tsf
	25										
895				4	60			RQD=92 Rec=100%			>> Q_u = 338.0 tsf
	30										
890				5	59			RQD=98 Rec=98%			>> Q_u = 368.0 tsf
	35										
885				6	59			RQD=90 Rec=98%			>> Q_u = 350.6 tsf
	40										
						End of Boring at 41.5 Feet					

intertek psi

Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

BORING BP-53

DATE STARTED:	6/5/26	**DRILL COMPANY:**	PSI, Inc.
DATE COMPLETED:	6/5/26	**DRILLER:** SD	**LOGGED BY:** JK
COMPLETION DEPTH	23.0 ft	**DRILL RIG:**	Mobile Drill B-57
BENCHMARK:	N/A	**DRILLING METHOD:**	Hollow Stem Auger
ELEVATION:	908 ft	**SAMPLING METHOD:**	2-in SS/3-in ST/1.874-in Core
LATITUDE:	39.0586°	**HAMMER TYPE:**	Automatic
LONGITUDE:	-95.0769°	**EFFICIENCY**	N/A
STATION: N/A	**OFFSET:** N/A	**REVIEWED BY:**	TKB

REMARKS:

Water

While Drilling	N/A	feet
Upon Completion	N/A	feet
Delay	N/A	

BORING LOCATION:
See Boring Location Plan

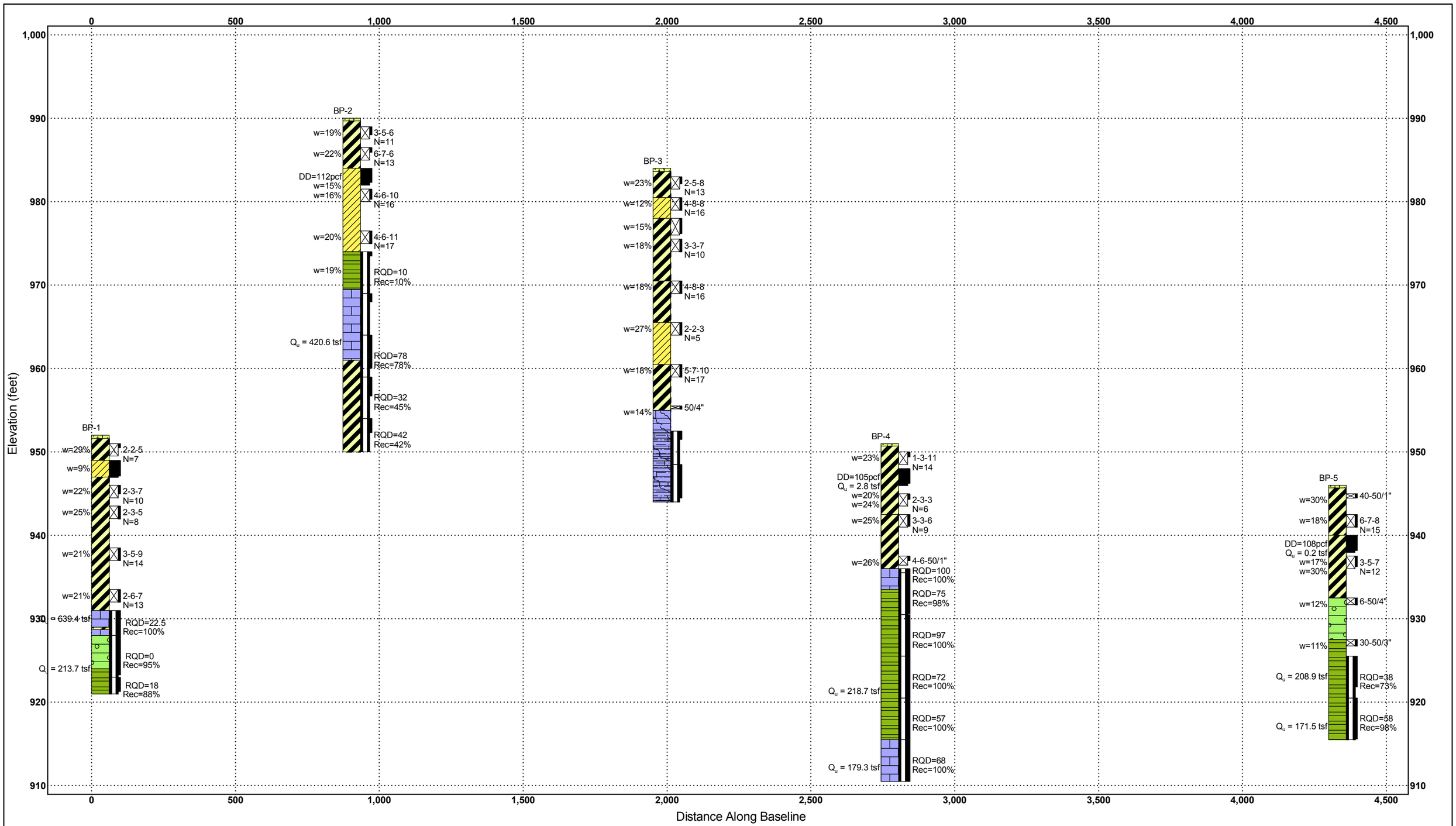
Elevation (feet)	Depth, (feet)	Graphic Log	Sample Type	Sample No.	Recovery (inches)	MATERIAL DESCRIPTION	USCS Classification	SPT Blows per 6-inch (SS) Push Pressure (ST) RQD & Recovery % (NX)	Moisture, %	STANDARD PENETRATION TEST DATA N in blows/ft ◎ / STRENGTH, tsf	Additional Remarks
	0					Approximately 6 Inches of Topsoil					
905				1	11	Fat Clay, Medium Stiff to Hard, Brown, Moist - Trace Rootlets to 3.5 Feet		1-4-4 N=8	26		
	5			2	18			2-3-8 N=11	23		
				3	15		CH	4-8-9 N=17	18		Fines=93.9% DD = 103 pcf LL = 60 PL = 17 Q_u = 0.9 tsf Fines=91.4%
900				4	21	- Trace Sand to 13 Feet			21		
	10										
895				1	22	Limestone, White and Buff, Slightly Weathered		RQD=44 Rec=92%			Q_u = 308.8 tsf
	15					Shale, Gray, Slightly Weathered					
890				2	58	Limestone Interbedded with Shale, Gray and Dark Gray, Slightly Weathered		RQD=97 Rec=97%			
	20					Shale, Gray, Slightly Weathered					
				3	34			RQD=83 Rec=94%			
885						End of Boring at 23 Feet					

intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

PROJECT NO.: 338-2650
PROJECT: Bluestem Data Center
LOCATION: 214th and Honey Creek
Tonganoxie, KS

The stratification lines represent approximate boundaries. The transition may be gradual.

APPENDIX E – FENCE DIAGRAMS

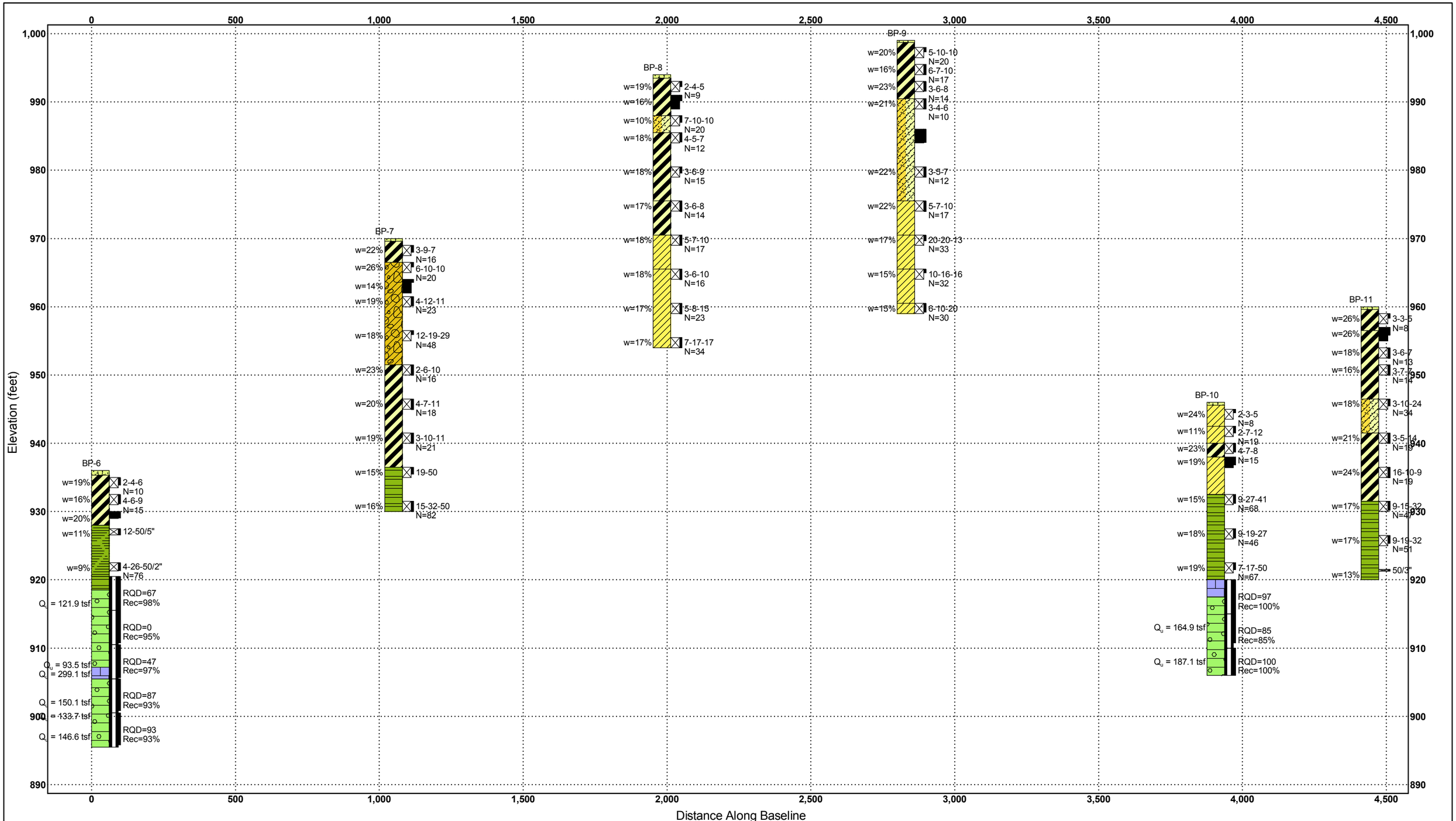


intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

Profile

Bluestem Data Center
PSI Project Number: 338-2650

214th and Honey Creek
Tonganoxie, KS

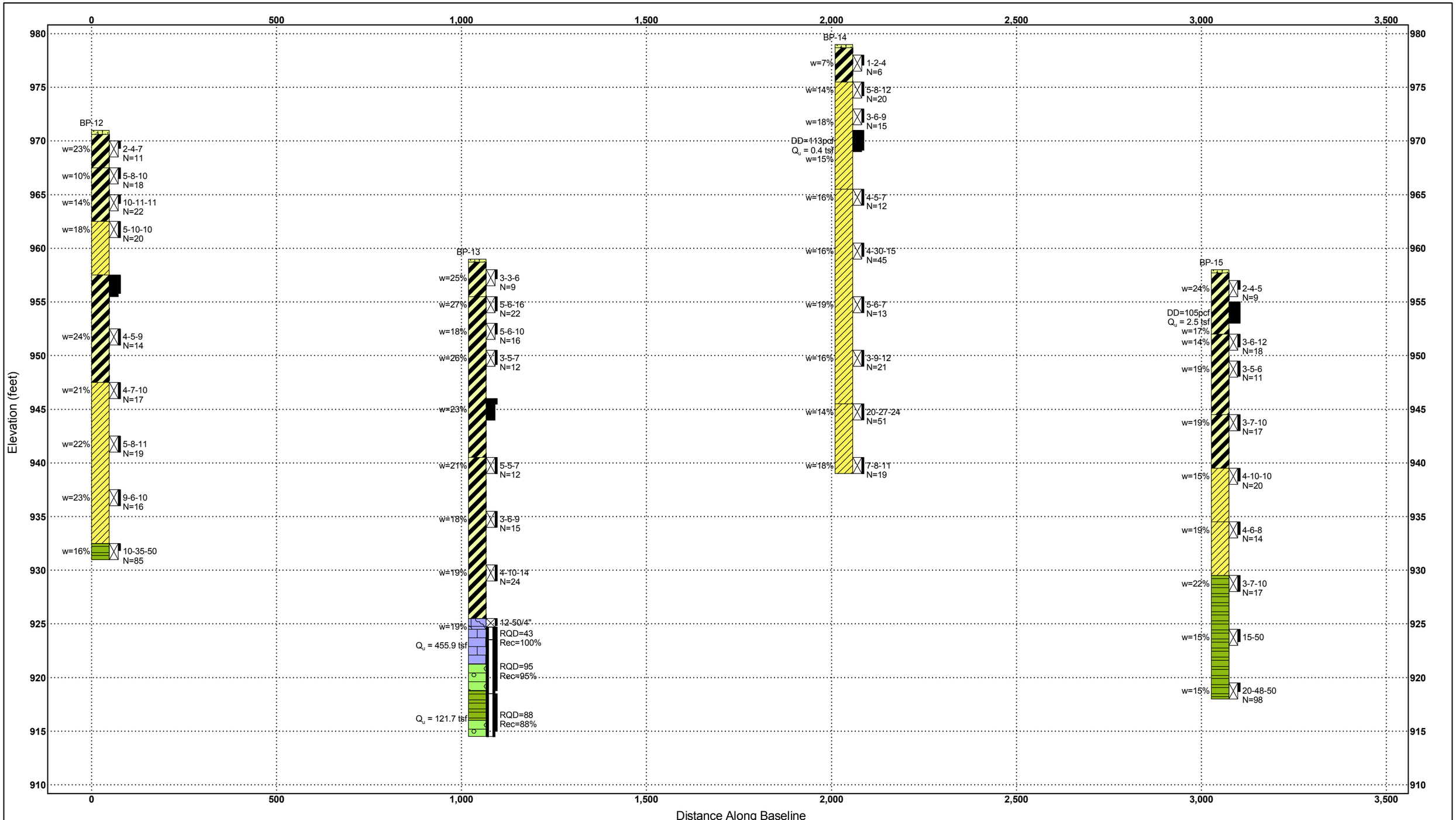


intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

Profile

Bluestem Data Center
PSI Project Number: 338-2650

214th and Honey Creek
Tonganoxie, KS

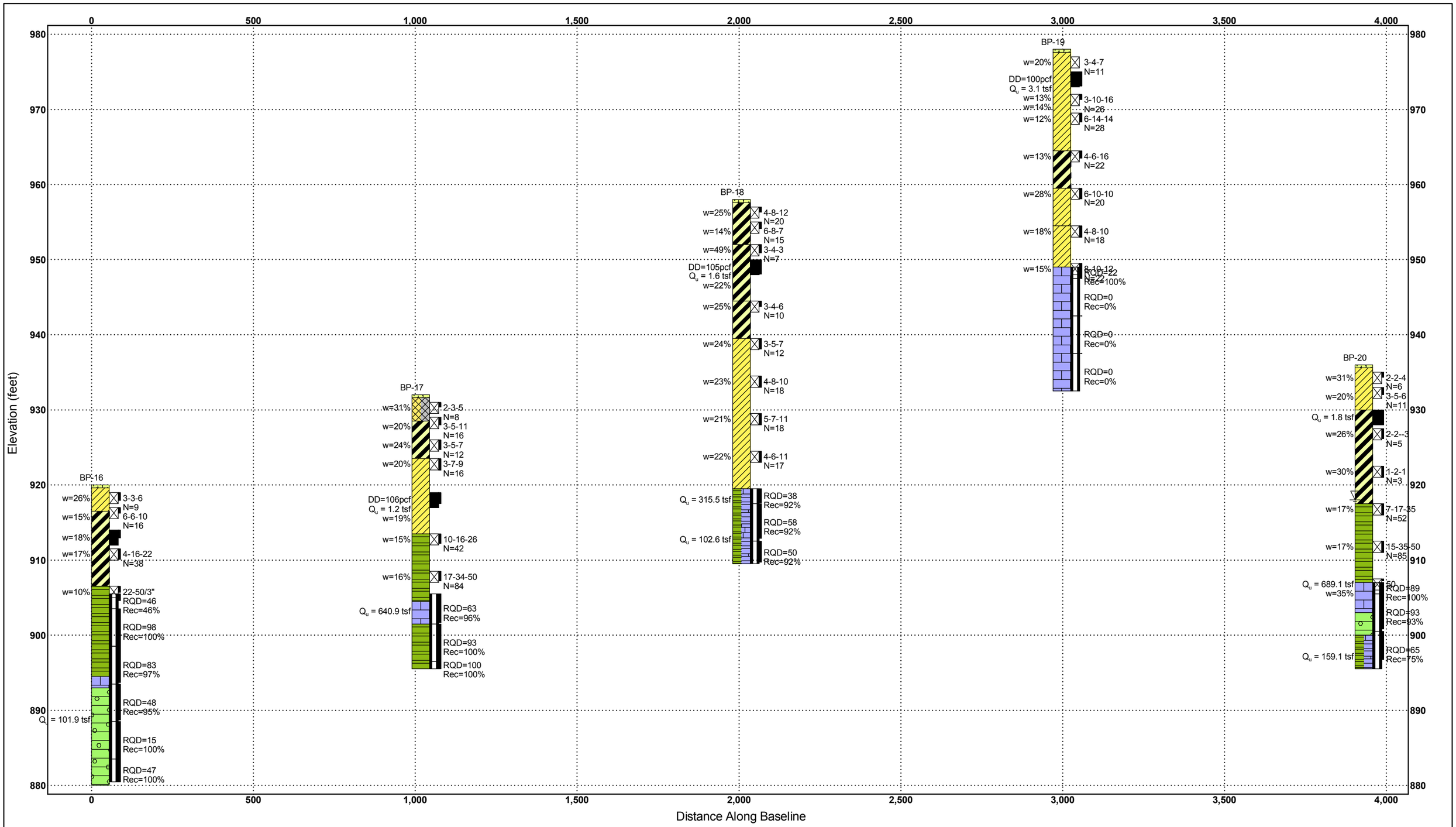


intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

Profile

Bluestem Data Center
PSI Project Number: 338-2650

214th and Honey Creek
Tonganoxie, KS

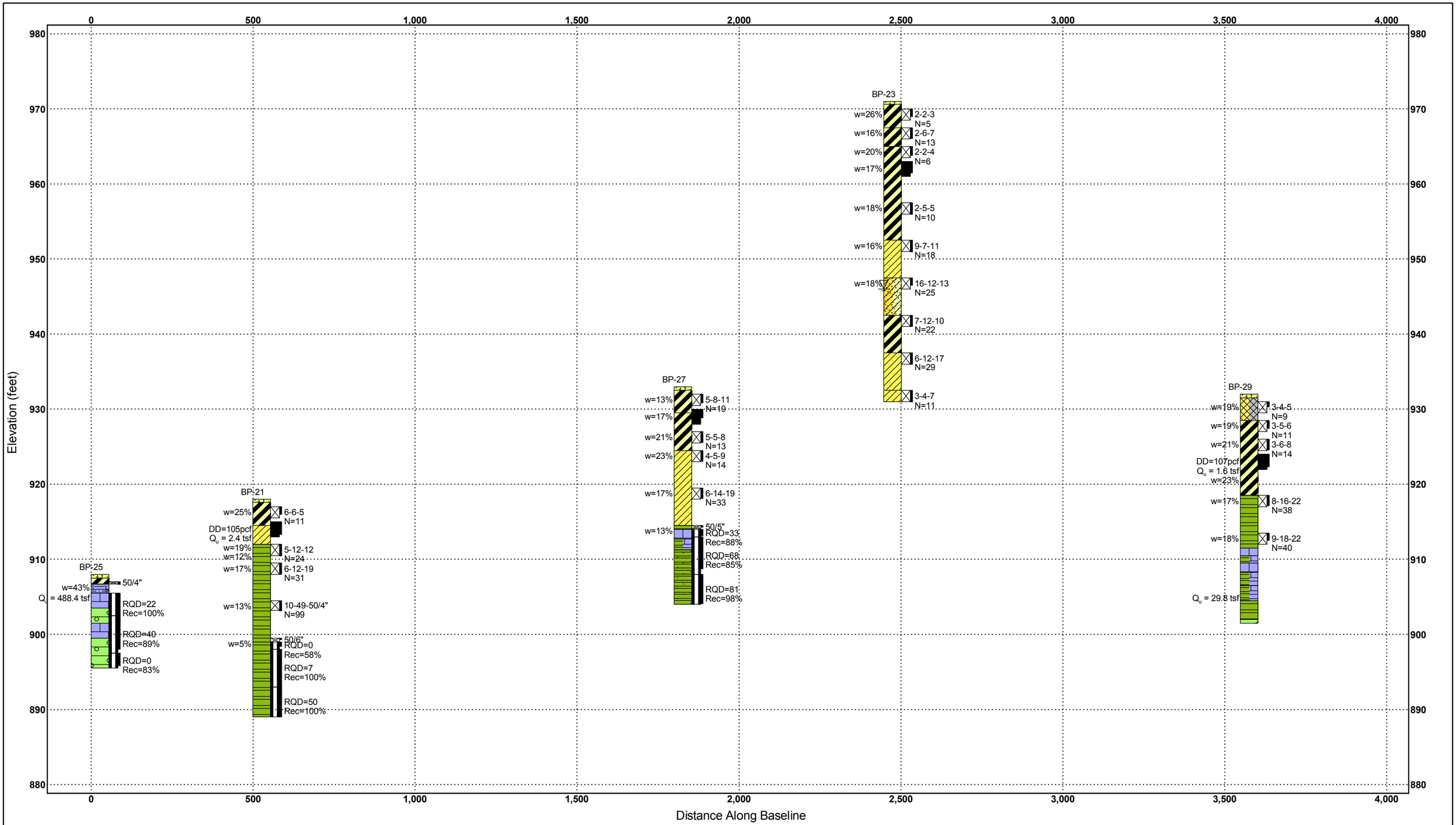


intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

Profile

Bluestem Data Center
PSI Project Number: 338-2650

214th and Honey Creek
Tonganoxie, KS

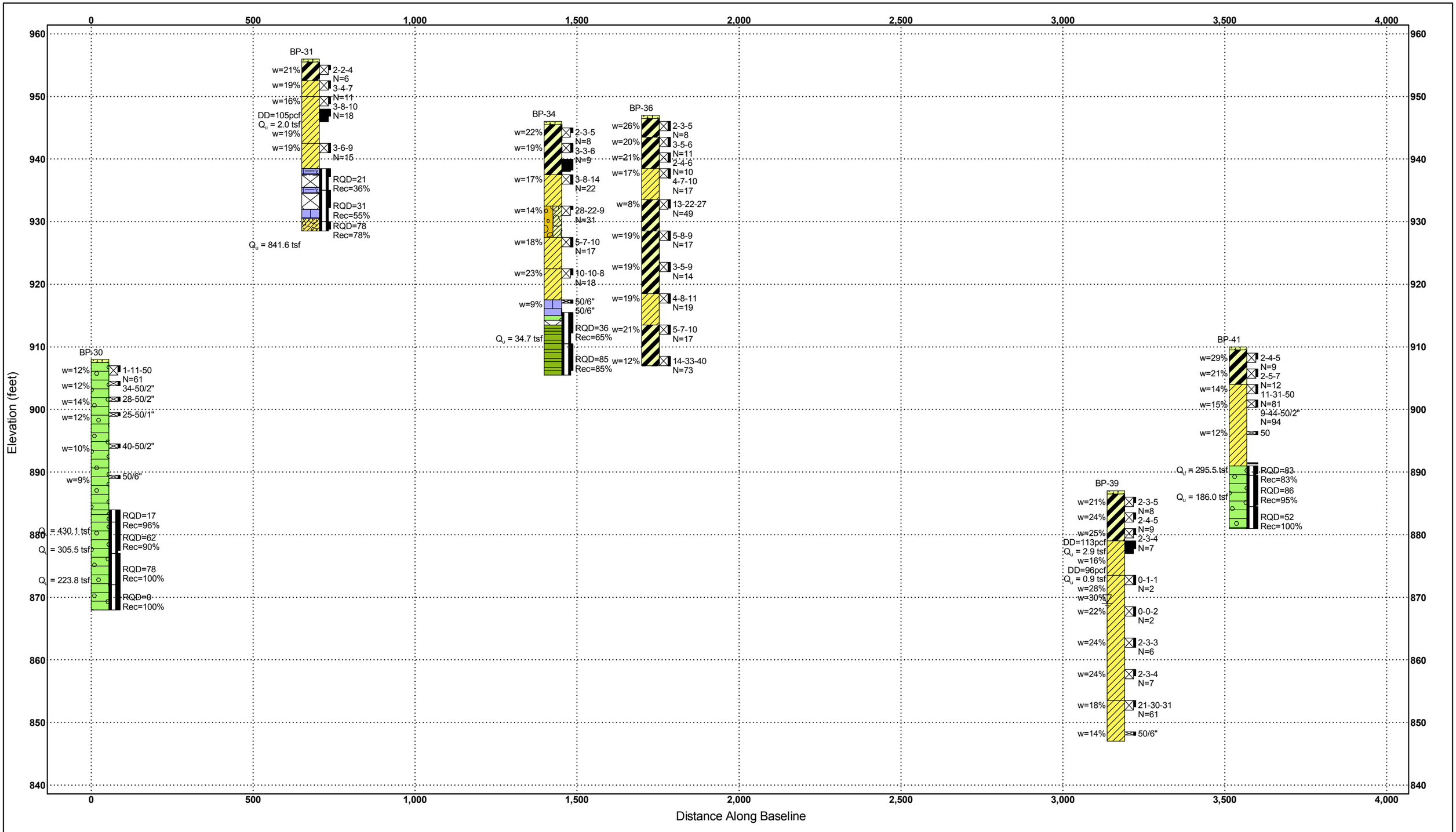


intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

Profile

Bluestem Data Center
PSI Project Number: 338-2650

214th and Honey Creek
Tonganoxie, KS

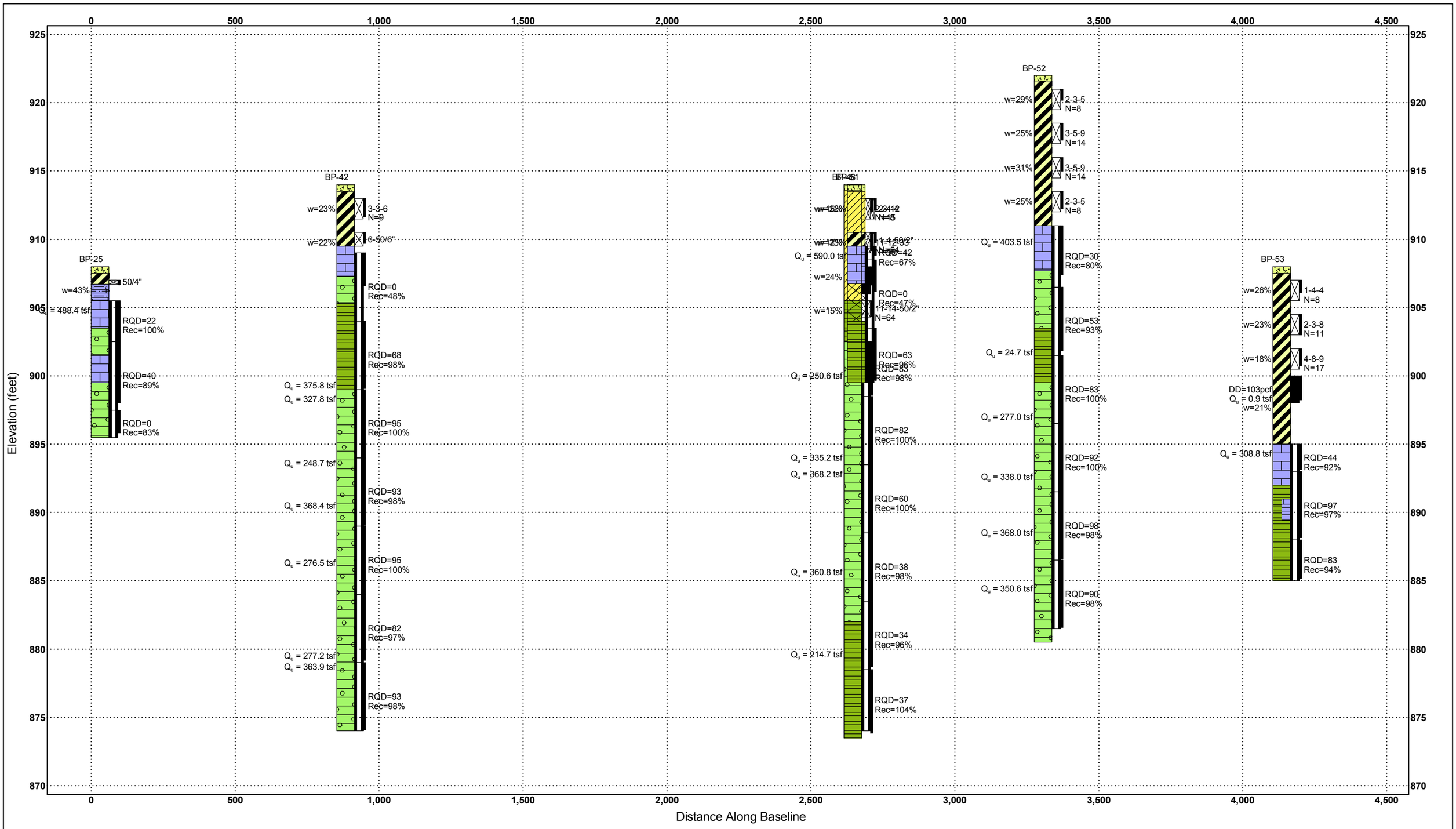


intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

Profile

Bluestem Data Center
PSI Project Number: 338-2650

214th and Honey Creek
Tonganoxie, KS



intertek psi
Professional Service Industries, Inc.
2828 S. 44th Street
Kansas City, KS 66106
Telephone: (913) 310-1600

Profile

Bluestem Data Center
PSI Project Number: 338-2650

214th and Honey Creek
Tonganoxie, KS

APPENDIX F – ROCK CORE PHOTOGRAPHS



BP-1 Rock Core



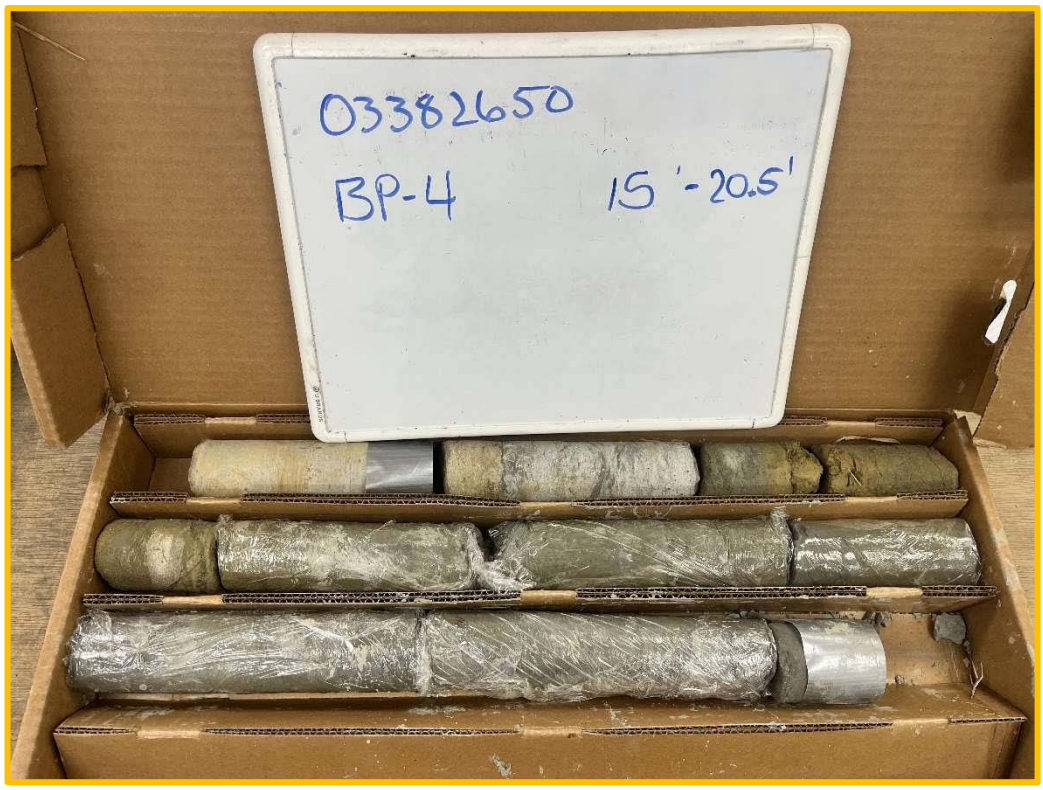
BP-2 Rock Core



BP-2 Rock Core



BP-3 Rock Core



BP-4 Rock Core



BP-4 Rock Core



BP-4 Rock Core



BP-5 Rock Core



BP-6 Rock Core



BP-6 Rock Core



BP-6 Rock Core



BP-10 Rock Core



BP-10 Rock Core



BP-13 Rock Core



BP-16 Rock Core



BP-16 Rock Core



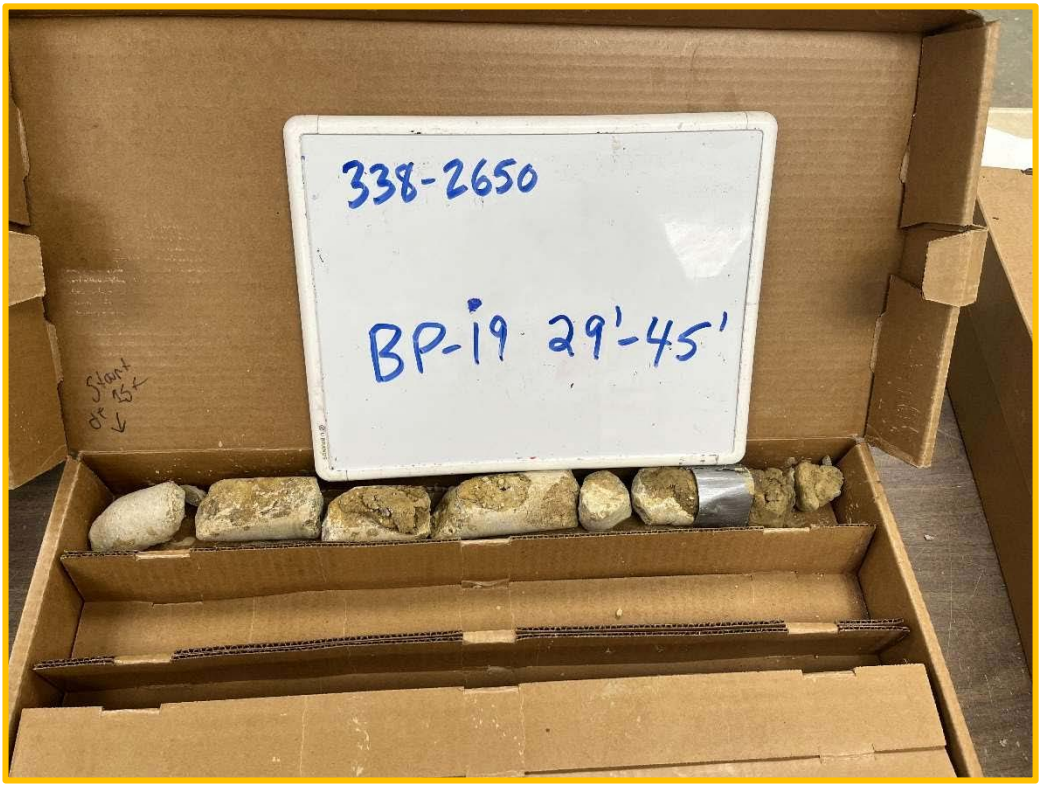
BP-16 Rock Core



BP-17 Rock Core



BP-18 Rock Core



BP-19 Rock Core



BP-20 Rock Core



BP-21 Rock Core



BP-22 Rock Core



BP-25 Rock Core



BP-26 Rock Core



BP-27 Rock Core



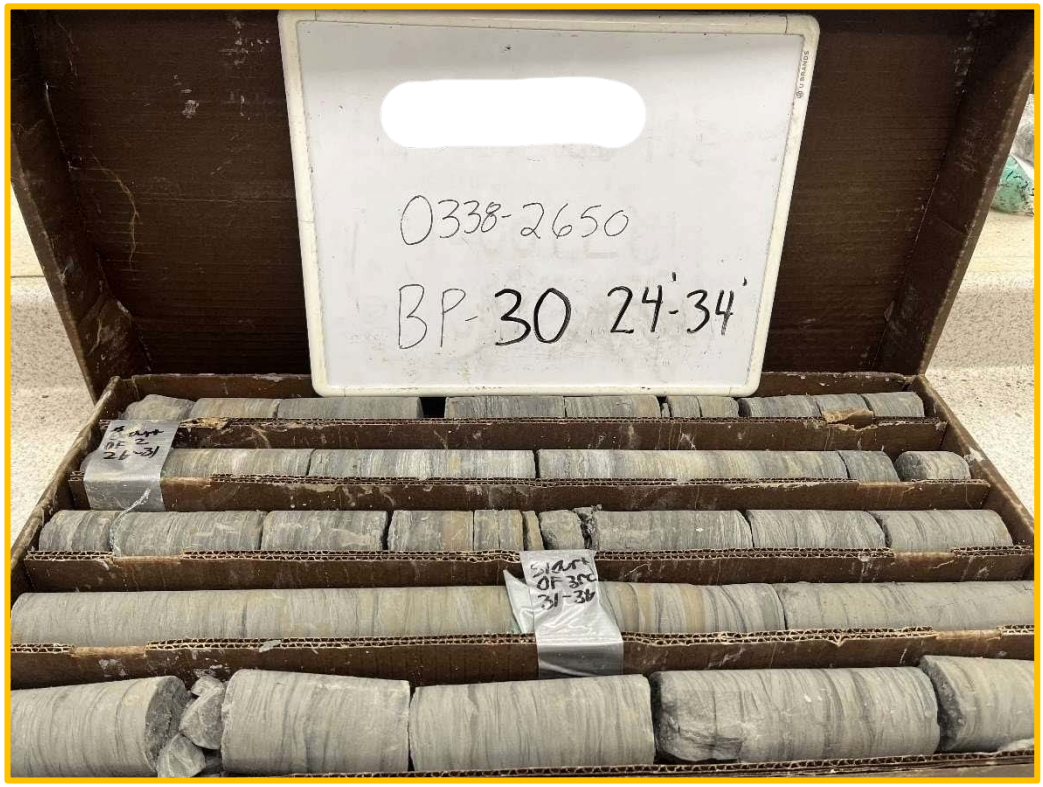
BP-28 Rock Core



BP-28 Rock Core



BP-29 Rock Core



BP-30 Rock Core



BP-30 Rock Core



BP-32 Rock Core



BP-32 Rock Core



BP-33 Rock Core



BP-34 Rock Core



BP-34 Rock Core



BP-35 Rock Core



BP-37 Rock Core



BP-40 Rock Core



BP-40 Rock Core



BP-41 Rock Core



BP-40 Rock Core (35.5’ – 40’)



BP-42 Rock Core



BP-42 Rock Core



BP-42 Rock Core



BP-42 Rock Core



BP-43 Rock Core



BP-44 Rock Core



BP-46 Rock Core



BP-46 Rock Core



BP-47 Rock Core



BP-48 Rock Core



BP-49 Rock Core



BP-50 Rock Core



BP-50 Rock Core



BP-50 Rock Core



BP-51 Rock Core



BP-52 Rock Core



BP-52 Rock Core



BP-52 Rock Core



BP-53 Rock Core

APPENDIX G – GENERAL NOTES/SOIL CLASSIFICATION CHART

GENERAL NOTES

SAMPLE IDENTIFICATION

The Unified Soil Classification System (USCS), AASHTO 1988 and ASTM designations D2487 and D-2488 are used to identify the encountered materials unless otherwise noted. Coarse-grained soils are defined as having more than 50% of their dry weight retained on a #200 sieve (0.075mm); they are described as: boulders, cobbles, gravel or sand. Fine-grained soils have less than 50% of their dry weight retained on a #200 sieve; they are defined as silts or clay depending on their Atterberg Limit attributes. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size.

DRILLING AND SAMPLING SYMBOLS

SFA: Solid Flight Auger - typically 4" diameter flights, except where noted.
HSA: Hollow Stem Auger - typically 3¼" or 4¼ I.D. openings, except where noted.
M.R.: Mud Rotary - Uses a rotary head with Bentonite or Polymer Slurry
R.C.: Diamond Bit Core Sampler
H.A.: Hand Auger
P.A.: Power Auger - Handheld motorized auger

SS: Split-Spoon - 1 3/8" I.D., 2" O.D., except where noted.
ST: Shelby Tube - 3" O.D., except where noted.
RC: Rock Core
TC: Texas Cone
BS: Bulk Sample
PM: Pressuremeter
CPT-U: Cone Penetrometer Testing with Pore-Pressure Readings

SOIL PROPERTY SYMBOLS

N: Standard "N" penetration: Blows per foot of a 140 pound hammer falling 30 inches on a 2-inch O.D. Split-Spoon.
N_{60}: A "N" penetration value corrected to an equivalent 60% hammer energy transfer efficiency (ETR)
Q_u: Unconfined compressive strength, TSF
Q_p: Pocket penetrometer value, unconfined compressive strength, TSF
w%: Moisture/water content, %
LL: Liquid Limit, %
PL: Plastic Limit, %
PI: Plasticity Index = (LL-PL),%
DD: Dry unit weight, pcf
▼,▽,▼ Apparent groundwater level at time noted

RELATIVE DENSITY OF COARSE-GRAINED SOILS

Relative Density	N - Blows/foot
Very Loose	0 - 4
Loose	4 - 10
Medium Dense	10 - 30
Dense	30 - 50
Very Dense	50 - 80
Extremely Dense	80+

ANGULARITY OF COARSE-GRAINED PARTICLES

Description	Criteria
Angular:	Particles have sharp edges and relatively plane sides with unpolished surfaces
Subangular:	Particles are similar to angular description, but have rounded edges
Subrounded:	Particles have nearly plane sides, but have well-rounded corners and edges
Rounded:	Particles have smoothly curved sides and no edges

GRAIN-SIZE TERMINOLOGY

Component	Size Range
Boulders:	Over 300 mm (>12 in.)
Cobbles:	75 mm to 300 mm (3 in. to 12 in.)
Coarse-Grained Gravel:	19 mm to 75 mm (¾ in. to 3 in.)
Fine-Grained Gravel:	4.75 mm to 19 mm (No.4 to ¾ in.)
Coarse-Grained Sand:	2 mm to 4.75 mm (No.10 to No.4)
Medium-Grained Sand:	0.42 mm to 2 mm (No.40 to No.10)
Fine-Grained Sand:	0.075 mm to 0.42 mm (No. 200 to No.40)
Silt:	0.005 mm to 0.075 mm
Clay:	<0.005 mm

PARTICLE SHAPE

Description	Criteria
Flat:	Particles with width/thickness ratio > 3
Elongated:	Particles with length/width ratio > 3
Flat & Elongated:	Particles meet criteria for both flat and elongated

RELATIVE PROPORTIONS OF FINES

Descriptive Term	% Dry Weight
Trace:	< 5%
With:	5% to 12%
Modifier:	>12%

GENERAL NOTES

(Continued)

CONSISTENCY OF FINE-GRAINED SOILS

Q_U - TSF	N - Blows/foot	Consistency
0 - 0.25	0 - 2	Very Soft
0.25 - 0.50	2 - 4	Soft
0.50 - 1.00	4 - 8	Firm (Medium Stiff)
1.00 - 2.00	8 - 15	Stiff
2.00 - 4.00	15 - 30	Very Stiff
4.00 - 8.00	30 - 50	Hard
8.00+	50+	Very Hard

MOISTURE CONDITION DESCRIPTION

Description	Criteria
Dry:	Absence of moisture, dusty, dry to the touch
Moist:	Damp but no visible water
Wet:	Visible free water, usually soil is below water table

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Term	% Dry Weight
Trace:	< 15%
With:	15% to 30%
Modifier:	>30%

STRUCTURE DESCRIPTION

Description	Criteria
Stratified:	Alternating layers of varying material or color with layers at least ¼-inch (6 mm) thick
Laminated:	Alternating layers of varying material or color with layers less than ¼-inch (6 mm) thick
Fissured:	Breaks along definite planes of fracture with little resistance to fracturing
Slickensided:	Fracture planes appear polished or glossy, sometimes striated
Blocky:	Cohesive soil that can be broken down into small angular lumps which resist further breakdown
Lensed:	Inclusion of small pockets of different soils
Layer:	Inclusion greater than 3 inches thick (75 mm)
Seam:	Inclusion 1/8-inch to 3 inches (3 to 75 mm) thick extending through the sample
Parting:	Inclusion less than 1/8-inch (3 mm) thick

SCALE OF RELATIVE ROCK HARDNESS

Q_U - TSF	Consistency
2.5 - 10	Extremely Soft
10 - 50	Very Soft
50 - 250	Soft
250 - 525	Medium Hard
525 - 1,050	Moderately Hard
1,050 - 2,600	Hard
>2,600	Very Hard

ROCK BEDDING THICKNESSES

Description	Criteria
Very Thick Bedded	Greater than 3-foot (>1.0 m)
Thick Bedded	1-foot to 3-foot (0.3 m to 1.0 m)
Medium Bedded	4-inch to 1-foot (0.1 m to 0.3 m)
Thin Bedded	1¼-inch to 4-inch (30 mm to 100 mm)
Very Thin Bedded	½-inch to 1¼-inch (10 mm to 30 mm)
Thickly Laminated	1/8-inch to ½-inch (3 mm to 10 mm)
Thinly Laminated	1/8-inch or less "paper thin" (<3 mm)

ROCK VOIDS

Voids	Void Diameter
Pit	<6 mm (<0.25 in)
Vug	6 mm to 50 mm (0.25 in to 2 in)
Cavity	50 mm to 600 mm (2 in to 24 in)
Cave	>600 mm (>24 in)

GRAIN-SIZED TERMINOLOGY

(Typically Sedimentary Rock)

Component	Size Range
Very Coarse Grained	>4.76 mm
Coarse Grained	2.0 mm - 4.76 mm
Medium Grained	0.42 mm - 2.0 mm
Fine Grained	0.075 mm - 0.42 mm
Very Fine Grained	<0.075 mm

ROCK QUALITY DESCRIPTION

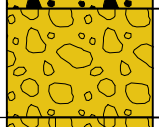
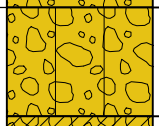
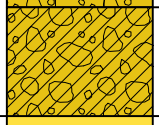
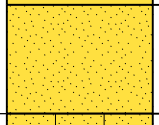
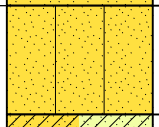
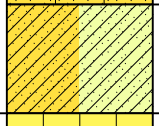
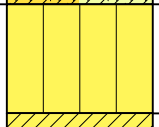
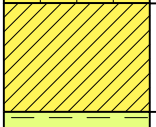
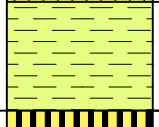
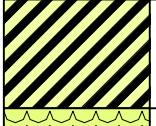
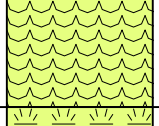
Rock Mass Description	RQD Value
Excellent	90 -100
Good	75 - 90
Fair	50 - 75
Poor	25 -50
Very Poor	Less than 25

DEGREE OF WEATHERING

Slightly Weathered:	Rock generally fresh, joints stained and discoloration extends into rock up to 25 mm (1 in), open joints may contain clay, core rings under hammer impact.
Weathered:	Rock mass is decomposed 50% or less, significant portions of the rock show discoloration and weathering effects, cores cannot be broken by hand or scraped by knife.
Highly Weathered:	Rock mass is more than 50% decomposed, complete discoloration of rock fabric, core may be extremely broken and gives clunk sound when struck by hammer, may be shaved with a knife.

SOIL CLASSIFICATION CHART

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	GRAVEL AND GRAVELLY SOILS MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
	SAND AND SANDY SOILS MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
				SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
		SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

intertek psi

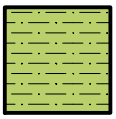
Graphic Symbols for Materials and Rock Deposits



CONCRETE
Portland Cement Concrete



BITUMINOUS CONCRETE



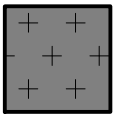
CLAYSTONE



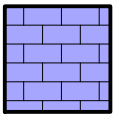
COAL
Coal, Anthracite Coal



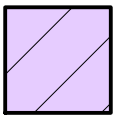
CONGLOMERATE/BRECCIA
Conglomerate, Breccia



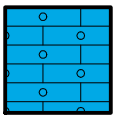
IGNEOUS ROCK
Anorthsite, Basalt, Metabasalt, Diabase (Gabbro), Gabbro, Granite/Granodionite, Homfels, Pegmatite, Rhyolite/Metarhyolite



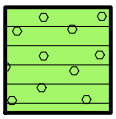
LIMESTONE
Limestone, Dolomite



METAMORPHIC ROCK
Amphibolite, Gneiss, Marble, Phyllite, Quartzite, Schist, Serpentinite, Slate



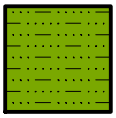
CHERT



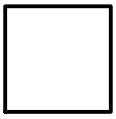
SANDSTONE
Sandstone, Orthoquarzite (Sandstone)



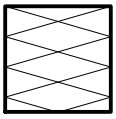
SHALE



SILTSTONE



NO RECOVERY



VOID

intertek
psi

APPENDIX H – DRILL, FIELD AND LAB TESTING PROCEDURES

Drilling and Sampling Procedures

The soil borings were performed with a truck-mounted rotary head drill rig. Borings were advanced using 3¼-inch inside diameter hollow-stem augers. Representative samples were obtained employing split-spoon and thin-wall tube sampling procedures in general accordance with ASTM procedures.

Field Tests and Measurements

Penetration Tests and Split-Barrel Sampling of Soils

During the sampling procedure, Standard Penetration Tests (SPT) were performed at regular intervals (2½-foot intervals to 10 feet and 5-foot intervals thereafter) to obtain the standard penetration value (N) of the soil. The results of the standard penetration test indicate the relative density and comparative consistency of the soils, and thereby provide a basis for estimating the relative strength and compressibility of the soil profile components. The split-barrel sampler provides a soil sample for identification purposes and for laboratory tests appropriate for soil obtained from a sampler that may produce large shear strain while obtaining the sample.

Thin-Walled (Shelby) Tube Geotechnical Sampling of Soils

Thin-walled tube samples are utilized to obtain a relatively undisturbed specimen suitable for laboratory tests of structural properties or other tests that might be influenced by soil properties. A relatively undisturbed sample is obtained by pressing a thin-walled metal tube (typically an outside diameter 3 inches) into the in-situ soil, removing the soil-filled tube, and sealing the ends to reduce the soil disturbance or moisture loss. These samples may be utilized in the laboratory to obtain the following information or perform the following tests: Unconfined Compressive Strength (q_u), Laboratory Determination of Water Content, Wet and Dry Density, Percent Saturation, and Atterberg Limits

Rock Coring

To explore the material encountered beyond auger refusal, PSI used a diamond studded core barrel attached to the drill rig. PSI performed the sampling in **5-foot** runs. The samples were brought to the surface and a recovery length and RQD values were obtained and documented on the field log.

Water Level Measurements

Water level observations were attempted during and upon completion of the drilling operation using a 100-foot tape measure. The depths of observed water levels in the boreholes are noted on the boring logs presented in the appendix of this report. In the borings where water was unable to be observed during the field activities, in relatively impervious soils, the accurate determination of the groundwater elevation may not be possible even after several days of observation. Seasonal variations, temperature and recent rainfall conditions may influence the levels of the groundwater table and volumes of water will depend on the permeability of the soils.

Ground Surface Elevations

The ground surface elevations presented within this report are based on the Client provided topographic plan, and the approximate locations of PSI's borings with respect to that plan. The ground surface elevations shown on the boring logs are approximate only and have not been surveyed by PSI or others at the time of this report. These ground surface elevations should not be used for design purposes in lieu of an actual survey of the boring locations and elevations. If a survey is performed, it should be provided to PSI during the design phase of this project.

Laboratory Testing Program

In addition to the field exploration, a supplemental laboratory-testing program was conducted to determine additional engineering characteristics of the foundation materials necessary in analyzing the behavior of the soils as it relates to the construction of the proposed structures. The laboratory testing program is as follows:

Laboratory Determination of Water (Moisture) Content of Soil by Mass

The water content is a significant index property used in establishing a correlation between soil behavior and its index properties. The water content is used in expressing the phase relationship of air, water, and solids in a given volume of material. In fine grained cohesive soils, the behavior of a given soil type often depends on its water content. The water content of a soil along with its liquid and plastic limits as determined by Atterberg Limit testing, is used to express its relative consistency or liquidity index.

Atterberg Limits

The Atterberg Limits are defined by the liquid limit (LL) and plastic limit (PL) states of a given soil. These limits are used to determine the moisture content limits where the soil characteristics changes from behaving more like a fluid on the liquid limit end to where the soil behaves more like individual soil particles on the plastic limit end. The liquid limit is often used to indicate if a soil is a low or high plasticity soil. The plasticity index (PI) is difference between the liquid limit and the plastic limit. The plasticity index is used in conjunction with the liquid limit to assess if the material will behave like a silt or clay. The material can also be classified as an organic material by comparing the liquid limit of the natural material to the liquid limit of the sample after being oven-dried.

Unconfined Compressive Strength of Cohesive Soil (q_u)

The primary purpose of the unconfined compressive strength test is to obtain the undrained compressive strength of soils that possess sufficient cohesion to permit testing in the unconfined state. Unconfined compressive strength (q_u) is the compressive stress at which an unconfined cylindrical specimen of soil will fail in a simple compression test. In this test method, unconfined compressive strength is taken as the maximum load obtained per unit area or the load per unit area at 15% axial strain, whichever is obtained first during the performance of a test. For the unconfined compressive strength test, the shear strength (s_u) is calculated to be half of the compressive stress at failure.

Unconfined Compressive Strength Rock (q_u)

The primary purpose of the unconfined compressive strength test is to obtain the compressive strength of rock. Unconfined compressive strength (q_u) is the compressive stress at which an unconfined cylindrical specimen of rock will fail in a simple compression test. In this test method, unconfined compressive strength is taken as the maximum load obtained per unit area or the load per unit area at 15% axial strain, whichever is obtained first during the performance of a test. For the unconfined compressive strength test, the shear strength (s_u) is calculated to be half of the compressive stress at failure.

Rock Quality Designation

The primary purpose in determining Rock Quality Designation (RQD) is to identify the condition of the rock. The RQD values is determined by summing the length of the pieces 4 inches long or greater and dividing by the total length of the core run. The higher the RQD value, the more intact the rock.

The laboratory testing program was conducted in general accordance with applicable ASTM specifications. The results of these tests are to be found on the accompanying boring logs located in the Appendix.