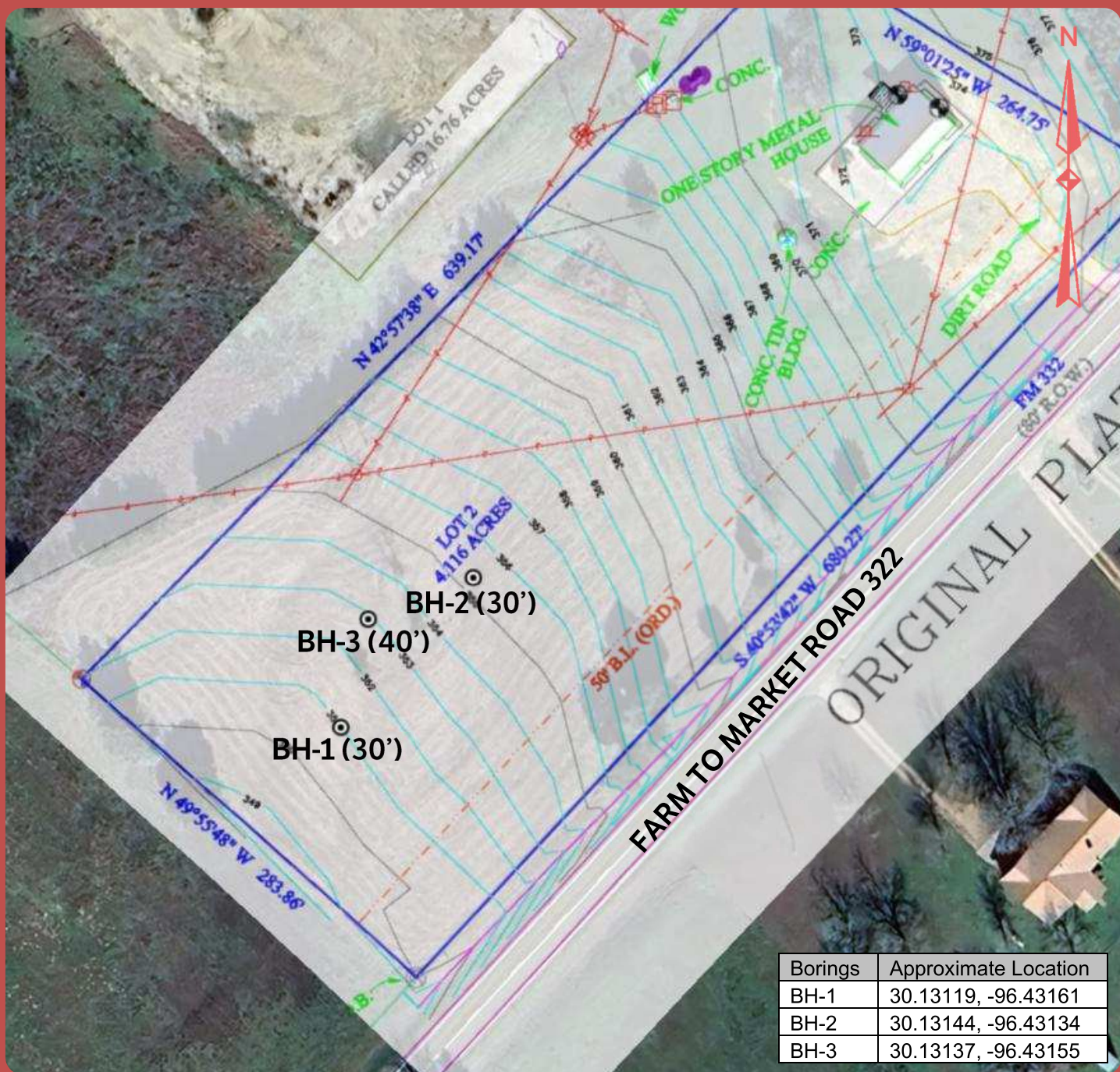




Borings	Approximate Location
BH-1	30.13119, -96.43161
BH-2	30.13144, -96.43134
BH-3	30.13137, -96.43155



GESSNER
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ZENITH POWER WAREHOUSE
2788 FARM TO MARKET ROAD 332
BRENHAM, TEXAS

PROJECT LAYOUT

Corporate: 401 W 26th Street, Suite 3 | Bryan, Texas 77803
www.gessnerengineering.com | 1-877-GESSNER
Bryan | Brenham | Fort Worth | Georgetown | San Antonio

TBPLS F-1093910

PLAN | DESIGN | VERIFY

TBPE F-7451

Scale: NTS
Job No. 25-0192
Drawn By: NAH
Checked By: ETC
Drawn Date: 02.20.25
Drawing No. 4



PAGE 1 OF 1

BOREHOLE LOCATION:	30.13119, -96.43161
GROUND SURFACE ELEVATION:	351 feet
BOREHOLE TERMINATION DEPTH:	30 feet
INITIAL GROUNDWATER DEPTH:	18 feet
FINAL GROUNDWATER DEPTH:	20 feet
GROUND COVER:	Moderate Grass
*ALL DEPTHS, ELEVATIONS, AND LOCATIONS ARE APPROXIMATE	

DEPTH (ft)	WATER LEVEL	GRAPHIC LOG	SAMPLE TYPE	PENETROMETER OR BLOW COUNT	LIQUID LIMIT	PLASTICITY INDEX	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	FINES CONTENT (%)	UNCONFINED COMPRESSION (tsf)	USCS CLASSIFICATION	MATERIAL DESCRIPTION
0												
5				1/3/4 2/4/5 3/3/5	19	7	18.0 16.1 14.8		47		SC-SM	SAND, Silty, Clayey, Loose, Brown and Gray
10				3/4/6 3/4/7	31	18	18.1 16.3		49		SC	SAND, Clayey, Loose to Medium Dense, Red and Tan
15				3/5/9		2	14.0		25		SM	SAND, Silty, Medium Dense to Very Dense, Gray, Red, and Tan
20				3/6/7			17.1					
25				Ref. -6"		1	20.2		17		SM	with clay seams from 23 to 28 feet
30				30/50-3"			17.0					



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LOG OF BORING NO: BH-2

PAGE 1 OF 1

CLIENT: Zenith Power Systems
PROJECT: Zenith Power Warehouse
2788 Farm to Market Road 332
Brenham, Texas
PROJECT NO: 25-0192
DATE: 2/28/2025
DRILLER: Gessner Engineering

BOREHOLE LOCATION: 30.13144, -96.43134
GROUND SURFACE ELEVATION: 355 feet
BOREHOLE TERMINATION DEPTH: 30 feet
INITIAL GROUNDWATER DEPTH: 26 feet
FINAL GROUNDWATER DEPTH: 26 feet
GROUND COVER: Moderate Grass
***ALL DEPTHS, ELEVATIONS, AND LOCATIONS ARE APPROXIMATE**

DEPTH (ft)	WATER LEVEL	GRAPHIC LOG	SAMPLE TYPE PENETROMETER OR BLOW COUNT	LIQUID LIMIT	PLASTICITY INDEX	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	FINES CONTENT (%)	UNCONFINED COMPRESSION (tsf)	USCS CLASSIFICATION	MATERIAL DESCRIPTION
0											
			1/2/3	26	14	22.4		53		CL	CLAY, Sandy, Firm to Very Stiff, Brown, Gray, Red, and Tan
			2/2/4			19.1					
5			4/6/7	27	14	15.1		55		CL	
			5/9/11			15.3					
10			5/7/5		2	8.4		22		SM	SAND, Silty, Medium Dense, Red and Tan
15			4/8/34			5.5					SAND, Dense to Very Dense, Gray, with silt
20			Ref. -4"			7.4					
25			Ref. -4"			9.7					
30			3/13/ 50-4"		1	16.8		12		SP-SM	



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LOG OF BORING NO: BH-3

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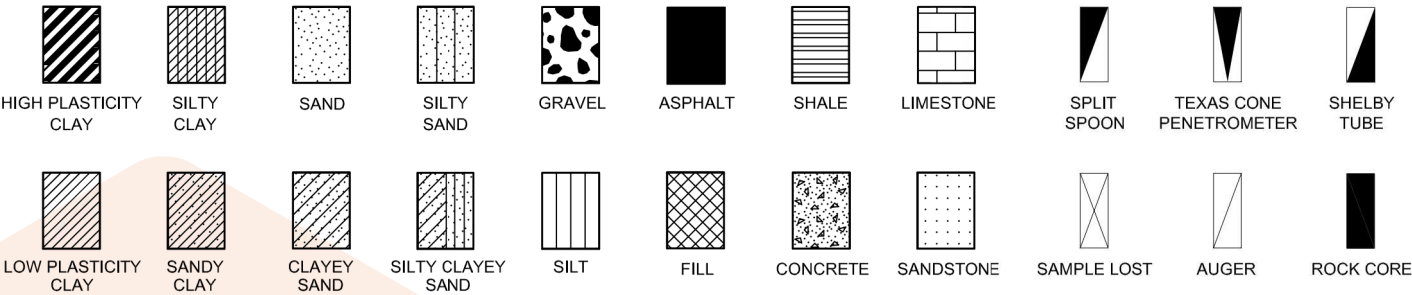
CLIENT: Zenith Power Systems
PROJECT: Zenith Power Warehouse
2788 Farm to Market Road 332
Brenham, Texas
PROJECT NO: 25-0192
DATE: 2/28/2025
DRILLER: Gessner Engineering

BOREHOLE LOCATION: 30.13137, -96.43155
GROUND SURFACE ELEVATION: 353 feet
BOREHOLE TERMINATION DEPTH: 40 feet
INITIAL GROUNDWATER DEPTH: 23 feet
FINAL GROUNDWATER DEPTH: 23 feet
GROUND COVER: Moderate Grass
***ALL DEPTHS, ELEVATIONS, AND LOCATIONS ARE APPROXIMATE**

DEPTH (ft)	WATER LEVEL	GRAPHIC LOG	SAMPLE TYPE PENETROMETER OR BLOW COUNT	LIQUID LIMIT	PLASTICITY INDEX	MOISTURE CONTENT (%)	DRY UNIT WT. (pcf)	FINES CONTENT (%)	UNCONFINED COMPRESSION (tsf)	USCS CLASSIFICATION	MATERIAL DESCRIPTION
0											
5			1/2/3			18.4					SAND, Clayey, Loose to Medium Dense, Brown, Gray, Red, and Tan
			2/3/5	18	8	16.7		43		SC	
			2/5/7			12.8					
			4/6/8	28	15	15.5		49		SC	
10			3/6/7			15.8					
15			4/6/6			8.0					
20			3/4/6	82	51	25.2		69		CH	CLAY, Sandy, Stiff, Gray and Tan
25			13/33/ 50-2"			18.8					SAND, Silty, Very Dense, Gray and Tan
30			6/50-6"			15.9					
35			Ref. -6"			18.4					
40					2	23.1		34		SM	NOTE: Due to soils caving while drilling, the boring was augered between 38 feet to termination.

SYMBOLS AND TERMS USED ON BORING LOGS

SOIL SYMBOLS AND DESCRIPTION



SAMPLER TYPES

GROUNDWATER SYMBOLS AND DESCRIPTION

- ▽ - GROUNDWATER ENCOUNTERED DURING DRILLING
▼ - GROUNDWATER DEPTH UPON DRILLING COMPLETION

TERMS DESCRIBING CONSISTENCY OR CONDITION

COARSE GRAINED SOILS (Major Portion Retained on No. 200 Sieve): Includes (1) clean gravels and sands and (2) silty or clayey gravels and sands. Condition is rated according to relative density, as determined by laboratory tests.

Standard Penetration, N-Value, blows/ft
0-4
4-10
10-30
30-50
>50

Relative Density
Very Loose
Loose
Medium Dense
Dense
Very Dense

FINE GRAINED SOILS (Major Portion Passing No. 200 Sieve): Includes (1) inorganic and organic silts and clays; (2) gravelly, sandy, or silty clays; and (3) clayey silts. Consistency is rated according to shearing strength, as indicated by penetrometer readings or by unconfined compression tests.

Standard Penetration, N-Value, blows/ft	Pocket Penetrometer Reading	Consistency	Cohesive Strength, tons/sf
0-2	0-0.25	Very Soft	less than 0.125
2-4	0.25-0.5	Soft	0.125 to 0.25
4-8	0.5-1.0	Firm	0.25 to 0.50
8-15	1.0-2.0	Stiff	0.50 to 1.00
15-30	2.0-4.0	Very Stiff	1.00 to 2.00
>30	>4.0	Hard	2.00 and higher

Note: Slickensided and fissured clays may have lower unconfined compressive strengths than shown above due to planes of weakness or cracks in the soil.

EXPANSION POTENTIAL OF COHESIVE SOILS

Plasticity Index	Degree of Expansive Potential
0-5	Nonplastic
5-10	Low
10-20	Moderate
20-40	High
>40	Very High

ROCK QUALITY DESIGNATION

RQD=Rock Quality Designation	REC = Recovery
The percentage of intact rock retrieved from a bore hole. All pieces of intact rock core equal to or greater than 4 inches long are summed and divided by the total length of the core run.	This is the total percentage of material recovered from a run.

TERMS CHARACTERIZING SOIL STRUCTURE

Slickensided	- having inclined planes of weakness that are slick and glossy in appearance
Fissured	- containing shrinkage cracks, frequently filled with fine sand or silt; usually more or less vertical
Laminated	- composed of thin layers of varying color and texture
Interbedded	- composed of alternate layers of different soil types
Calcareous	- containing appreciable quantities of calcium carbonate
Well graded	- having wide range in grain sizes and substantial amounts of all intermediate particle sizes
Poorly graded	- predominantly of one grain size, or having a range of sizes with some intermediate size missing
Flocculated	- pertaining to cohesive silts that exhibit a loose knit or flakey structure

GLOSSARY OF GEOLOGIC TERMS

Aphanitic	- dense, homogeneous rock with constituents so fine that they cannot be seen by the naked eye
Argillaceous	- containing, made of, or resembling clay; clayey
Bentonitic	- an absorbent aluminum silicate clay formed from volcanic ash and used in various adhesives, cements, and ceramic fillers
Carbonaceous	- consisting of, containing, relating to, or yielding carbon
Chert	- a siliceous rock of chalcedonic or opaline silica occurring in limestone
Conchoidal	- of, relating to, or being a surface characterized by smooth, shell-like convexities and concavities, as on fractured obsidian
Crossbedded	- intersecting layers of distinct soil deposits
Fluviatile	- produced by the action of a river or stream
Fossiliferous	- containing fossils
Friable	- readily crumbled, brittle
Glauconitic	- a greenish mineral of the mica group, a hydrous silicate of potassium, iron, aluminum, or magnesium found in <i>greensand</i> and used as a fertilizer and water softener
Gypsiferous	- containing gypsum; a widespread colorless, white, or yellowish mineral, used in the manufacture of various plaster products, and fertilizers
Igneous	- rocks formed by solidification from a molten state; pyrogenic
Inclusion	- a solid, liquid, or gaseous foreign body enclosed in a mineral or rock.
Indurated	- hardened soil that has been changed by extreme climate
Laminated	- a soil deposit divided into thin layers
Lateritic	- pertaining to red residual soil in humid tropical and subtropical regions that is leached of soluble minerals, aluminum hydroxides, and silica but still contains concentrations of iron oxides and iron hydroxides.
Lenticular	- lens-shaped grains of soil or rock
Lignitic	- pertaining to soft, brownish-black coal in which the alteration of vegetable matter has proceeded further than in peat but not as far as in bituminous coal; also called <i>brown coal</i>
Marl	- a loose and crumbling earthy deposit consisting mainly of calcite or dolomite; used as a fertilizer for soils deficient in lime
Metamorphic	- rocks changed in structure or composition as a result of metamorphism caused by chemical reaction or heat and pressure
Micaceous	- containing mica; any of a group of chemically and physically related aluminum silicate minerals, common in igneous and metamorphic rocks, characteristically splitting into flexible sheets used in insulation and electrical equipment
Montmorillonitic	- clays that are comprised mostly of montmorillonite; one of the three types of clay soil grains (illite, kaolinite, and montmorillonite)
Morphology	- refers to the geological characteristics, configuration, and evolution of rocks and landforms
Porous	- admitting the passage of gas or liquid through pores or interstices
Pyrite	- a brass-colored mineral occurring widely and used as an iron ore and in producing sulfur dioxide for sulfuric acid; also called <i>fool's gold</i>
Scarp	- a long steep slope or cliff at the edge of a plateau or ridge; usually formed by erosion
Siliceous	- containing, resembling, relating to, or consisting of silica; a white or colorless crystalline compound occurring abundantly as quartz, sand, flint, agate, and many other minerals and used to manufacture a wide variety of materials, especially glass and concrete
Surficial	- of, relating to, or occurring on or near the surface of the earth
Tuffaceous	- comprising rocks made of compacted volcanic ash varying in size from fine sand to coarse gravel; also called <i>tufa</i>