GEOTECHNICAL ENGINEERING REPORT
SIEMENS EXPANSION
99 BOLTON SULLIVAN DRIVE
HEBER SPRINGS, ARKANSAS

PROJECT NO. G2026006

April 24, 2026

8155 East 46th Street, Tulsa, OK 74145 **p:** 918.622.7021

April 24, 2026
Project No. G2026006

Mrs. Gabby Madera-Walter
Cyntergy
810 South Cincinnati Avenue, Suite 200
Tulsa, Oklahoma 74119

Subject: **Geotechnical Engineering Report**
Siemens Expansion
99 Bolton Sullivan Drive
Heber Springs, Arkansas

Dear Mrs. Madera-Walter:

GFAC TEXAS PLLC (GFAC) has completed the authorized geotechnical engineering evaluation for the above-referenced project. The purpose of the geotechnical study was to explore and evaluate the subsurface conditions at various locations on the site and develop geotechnical design and construction recommendations for the project. The attached GFAC report contains a description of the findings of our field exploration and laboratory testing program, our engineering interpretation of the results with respect to the project characteristics, and our geotechnical site development and foundation design recommendations as well as construction guidelines for the planned project.

Recommendations provided herein are contingent on the provisions outlined in the ADDITIONAL SERVICES and LIMITATIONS sections of this report. The project Owner should become familiar with these provisions in order to assess further involvement by GFAC and other potential impacts to the proposed project.

We appreciate the opportunity to be of service and are prepared to provide the recommended additional services. Please call us if you have any questions concerning this report.

Respectfully submitted,
GFAC TEXAS PLLC
Certificate of Authorization #3917

CERTIFICATE OF AUTHORIZATION
GFAC, PLLC
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ARKANSAS

Dale L. Kelley II, P.E.
Not Licensed in Arkansas

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GFAC PROJECT NO. G2026006
EXECUTIVE SUMMARY

Site:

- We understand that the building associated with the Siemens Expansion will be constructed in an asphalt covered area east of the existing facility located at 99 Bolton Sullivan Drive in Heber Springs, Arkansas. New pavements associated with the expansion will be located south, east and north of the existing facility.
- The project site is currently occupied by at least two buildings. The larger building is located in the central portion of the site and the smaller building is located in the northern portion of the site. Areas of the site not occupied by the existing buildings ae covered by pavements or grass. Several trees are located at the site, the majority of which are in the northwest portion of the lot. A gravel parking area/drive is located in the southwest portion of the site. A grade differential of less than 1 foot was noted between the borings drilled within the building area. A grade differential of approximately 9 feet was noted between the borings drilled at the project site.
- Proofrolling of the exposed subgrade and proper compaction of fill is required to detect and correct unstable or undesirable material to create suitable support for structural elements.
- Based upon the conditions encountered in the borings and the lab testing performed, the majority of the soils encountered at the site are suitable for use as “non-expansive” select fill within the building pad. Soils with a Plasticity Index (PI) in excess of 22 are NOT suitable for use as “non-expansive” select fill. The soils encountered at the site can be used as structural fill outside of the building pad.
- Lower consistency/relative density soils were encountered in Boring B-5 to an approximate depth of 3 feet. Removal and replacement of the lower consistency/relative density soils is required to provide a subgrade suitable for fill placement and a subgrade suitable for support of the proposed building and pavements. All lower consistency/relative density soils present within the building pad should be undercut full depth and be replaced with “non-expansive” select fill. It should be noted that these lower consistency soils may extend to other areas of the site and to deeper depths than indicated in this report.
- The subsurface conditions encountered across the portions of the site are favorable for the development of perched groundwater conditions. In a “perched’ groundwater condition, precipitation will infiltrate the upper lower plasticity/non plastic more permeable soils and sit (perch) on the underlying higher plasticity clay soils or shallow bedrock.
- Existing/Possible fill consisting of combinations of lean clay with varying amounts of gravel, silty gravel, clayey gravel and clayey sand with gravel was encountered below the surface materials in Borings B-1.1, B-2, B-5, B-7 and B-10. The fill materials continued to approximate depths ranging from 1.3 to 5 feet.
- It is our recommendation that a portion of the existing/possible fill materials within the proposed building footprint be undercut and be replaced with “non-expansive” select fill.

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- Existing/Possible fill not removed during the recommended undercutting should be further evaluated by proofrolling and test pits. Unsuitable conditions encountered during the proofrolling and test pits should be undercut full depth.

Building:

- The building pad should be undercut at least 36 inches below existing grade or 18 inches below the finish subgrade level, whichever extends to a lower elevation.
- Undercutting and placement of “non-expansive” select fill should extend a minimum of 5 feet beyond the perimeter of the building.
- All fill placed within the building pad should consist of “non-expansive” select fill material.
- The site is suitable for support of the building on a shallow foundation system bearing in “non-expansive” select fill, evaluated and approved existing fill or suitable native soils.
- The shallow foundation system for the proposed building bearing in “non-expansive” select fill, evaluated and approved existing fill or suitable native soils can be proportioned based upon a maximum allowable bearing pressure of 2,500 psf.

Pavements:

- Light duty and heavy duty pavements will also be constructed at the site. Traffic data was not provided. Typical pavement sections for similar facilities have been provided.
- Lower consistency/relative density soils may also be present within the pavement areas. Correction of the lower consistency/relative density soils within the pavement areas should be anticipated at the time of construction.
- The pavement subgrade will likely consist of a combination of newly placed structural fill, evaluated and approved existing fill and native soils.
- Prior to placement of fill materials and/or aggregate base within the pavement areas, the exposed subgrade shall be scarified, moisture conditioned and recompacted to a minimum depth of 8 inches.
- A minimum of 6 inches of aggregate base material, such as AHTD Class 7, should be placed below the pavements.
- Consideration could be given to installing an edge drain where the new pavements ae constructed adjacent to grass areas to limit the possibility of perched water developing below the new pavements.

The information stated above is a brief summary of the recommendations presented within this report. The report should be reviewed in its entirety for proper implementation of the recommendations.

GEOTECHNICAL ENGINEERING REPORT
SIEMENS EXPANSION
99 BOLTON SULLIVAN DRIVE
HEBER SPRINGS, ARKANSAS

1. INTRODUCTION

1.1 GENERAL

GFAC has completed the authorized geotechnical engineering evaluation for the Siemens Expansion to be constructed at the existing facility located at 99 Bolton Sullivan Drive in Heber Springs, Arkansas. This report includes our recommendations related to the geotechnical aspects of the project design and construction. Conclusions and recommendations presented in the report are based on the subsurface information encountered at the location of our exploration and the provisions and requirements outlined in the ADDITIONAL SERVICES and LIMITATIONS sections of this report.

1.2 PROPOSED CONSTRUCTION

We understand that a new addition will be constructed along the east side of the existing facility located at 99 Bolton Sullivan Drive in Heber Springs, Arkansas. We anticipate the facility will be a single-story pre-engineered metal building with a footprint on the order of 8,000 to 10,000 square feet. The eave height of the new addition is anticipated to match the eave height of the existing facility which is anticipated to be on the order of 25 to 30 feet. We anticipate the building will have a metal frame, a metal panel exterior, and a slab on grade. No information regarding the presence of overhead cranes within the proposed construction area was provided.

It is our understanding that maximum column loads will be on the order of 25 kips and maximum continuous footing loads will be on the order of 1.5 kips per linear foot. It has been assumed that maximum floor loads will be less than 150 pounds per square foot (psf).

A grading plan was not available at the time this report was prepared. For the purpose of this report, it has been assumed that maximum cuts and fill of less than 1 to 2 feet will be required to achieve finish grades at the project site.

In addition, it is our understanding that new pavements will be constructed along the southern portion of the existing facility and north of the existing facility. The new pavements will include both light-duty and heavy-duty parking and drive areas are also planned at the proposed facility. Anticipated traffic data was not available at the time this report was prepared. Typical pavement sections have been provided.

It is further understood that the existing pavements have experienced failure due to the presence of apparent shallow groundwater that may be connected to an existing natural spring.

Recommendations related to the design of retaining walls, retention/detention basins, below grade walls, embankment slopes, and slope stability are beyond the scope of services for this study.

The scope of the engineering evaluation for this study, as well as the conclusions and recommendations in this report, were based on our understanding of the project as described above. If pertinent details of the project have changed or otherwise differ from our descriptions, we must be notified and engaged to review the changes and modify our recommendations, if needed.

2. SITE CONDITIONS

2.1 SITE DESCRIPTION

We understand that the building associated with the Siemens Expansion will be constructed in an asphalt covered area east of the existing facility located at 99 Bolton Sullivan Drive in Heber Springs, Arkansas. New pavements associated with the expansion will be located south, east and north of the existing facility. The proposed project location is indicated on Plate 1 included in APPENDIX A.

The project site is currently occupied by at least two buildings. The larger building is located in the central portion of the site and the smaller building is located in the northern portion of the site. Areas of the site not occupied by the existing buildings ae covered by pavements or grass. Several trees are located at the site, the majority of which are in the northwest portion of the lot. A gravel parking area/drive is located in the southwest portion of the site. A grade differential of less than 1 foot was noted between the borings drilled within the building area. A grade differential of approximately 9 feet was noted between the borings drilled at the project site.

Existing utilities in the vicinity of the project site include, but most likely are not limited to electric lines, sewer lines, gas lines, phone lines, and water lines. Additional utility lines may be present at the project site.

2.2 SUBSURFACE CONDITIONS

The following presents a general summary of the major strata encountered at the project site during our subsurface exploration. Specific subsurface conditions encountered at the boring locations are presented on the respective logs in APPENDIX A. The stratification lines shown on the logs represent the approximate boundaries between material types; in situ, the transitions may vary or be gradual.

Surficial Materials: A 3 to 4 inches thick layer of topsoil was present at the ground surface at the location of Borings B-1.1, B-7, B-9 and B-10. Exposed soil was present

at the ground surface and the location of Boring B-1.2. Aggregate was present at the ground surface at the location of Boring B-8 and continue to an approximate depth of 3 feet. A 5 to 6 inches thick layer of asphalt underlain by 5 to 9 inches of aggregate was present at the ground surface at the locations of Borings B-2, B-3, B-4, B-5 and B-6

Existing/Possible Fill: Existing/Possible fill consisting of combinations of lean clay with varying amounts of gravel, silty gravel, clayey gravel and clayey sand with gravel was encountered below the surface materials in Borings B-1.1, B-2, B-5, B-7 and B-10. The fill materials continued to approximate depths ranging from 1.3 to 5 feet.

Native Soils: Native soils primarily consisting of lean clay with varying amounts of gravel, silty gravel, clayey gravel, fat clay, clayey sand with gravel and shaley clay were encountered either at the ground surface, below the topsoil, below the pavement materials or the existing/possible fill and continued to approximate depths ranging from 4.4 to 9.5 feet.

Bedrock: Bedrock was encountered below the native soils and existing/possible fill and continued to the bottom of the borings at an approximate depth ranging from 12.9 to 18.8 feet. Table 2.2 indicates the bedrock depth at each boring location.

Table 2.2 – Bedrock Depth

Boring No.	Ground Surface Elevation (feet)	Bedrock Depth (feet)	Bedrock Elevation (feet)
B-1.1	276.0	4.7	271.3
B-1.2	279.0	6.0	273.0
B-2	276.0	4.7	271.3
B-3	275.0	4.4	270.6
B-4	275.0	4.4	270.6
B-5	275.0	7.7	267.3
B-6	275.0	7.7	267.3
B-7	282.0	7.4	274.6

Boring No.	Ground Surface Elevation (feet)	Bedrock Depth (feet)	Bedrock Elevation (feet)
B-8	277.0	7.3	269.7
B-9	273.0	7.7	265.3
B-10	274.5	9.5	265.0

2.3 GENERAL SITE GEOLOGY

According to the Geologic Map of Arkansas from the U.S. Geological Society, 1993, the project site appears to be located within an area designated as the Bloyd Shale, and Prairie Grove Member of the Hale Formation (Pbh): A brief general description of the unit is provided below. The description was obtained from Geology of the Van Buren and Lavaca Quadrangles, Arkansas and Oklahoma By Boyd R. Haley and Thomas A. Hendrick.

The Bloyd Shale consists of dark gray shale with medium gray sandy limestone and some medium gray siltstone, the limestone in the upper part of the Bloyd grades laterally into a fine to medium grained limy sandstone.

The Prairie Grove Member of the Hale Formation consists mostly of light gray limy fine to medium grained sandstone that grades laterally into light to medium gray fine to medium sandy limestone. Some medium gray siltstone and dark gray shale is present.

2.4 GROUNDWATER OBSERVATIONS

Groundwater observations were made both during and after completion of drilling operations. Table 2.4 presents the observed groundwater levels within the borings at the time of the field exploration. Borings not included in the table were dry during and immediately following the drilling operations. Extended water levels were not taken.

Table 2.4 – Groundwater Observations

Boring No.	Water Depth/Elevation at Time of Drilling - ATD (feet)*	Water Depth/Elevation at End of Drilling - EOD (feet)**
B-1.1	12.7263.3	7.7/268.3 6.2/269.8 at 30 hours AD***
B-1.2	Dry	Dry 4.3/284.7 at 30 hours AD***
B-2	9.1/266.9	8.6/267.4
B-3	12.3/262.7	7.3/267.7
B-4	13.9/261.1	Dry
B-5	2.0/273.0	3.0/272.0
B-6	3.7/271.3	Dry
B-7	Dry	Dry
B-8	Dry	Dry
B-9	14.1/258.9	9.7/263.3
B-10	12.7/261.8	13.3/261.2

*ATD – At Time of Drilling **EOD – End of Drilling ***AD – After Drilling

The materials encountered in the borings have a wide range of hydraulic conductivity and observations over an extended period of time may show the presence of groundwater. Use of piezometers would be required to better define current groundwater conditions and groundwater level fluctuations with time. Fluctuations of groundwater levels can occur due to seasonal variations in the amount of rainfall, runoff, and other factors not evident at the time the borings were performed. The possibility of groundwater level fluctuations should be considered when developing the design and construction plans for the project.

The subsurface conditions encountered across the site are favorable for the development of perched groundwater conditions. In a “perched’ groundwater condition, precipitation

will infiltrate the upper lower plasticity/non plastic more permeable soils and sit (perch) on the underlying higher plasticity clay soils. Generally, perched water is of limited volume and can be controlled with typical dewatering methods. However, it should be noted, that depending upon site grades, the subsurface stratigraphy, and the volume of water, more sophisticated dewatering methods/equipment may be required if a perched groundwater condition is encountered at the time of construction. Perched groundwater can cause the upper layers of soils to become soft and unstable.

3. ANALYSIS AND DISCUSSION

3.1 GENERAL

Based on the results of our evaluation, it is our professional opinion that the proposed project site could be developed for the proposed building using conventional grading and foundation construction techniques.

3.2 SITE DEVELOPMENT

3.2.1 Demolition

Demolition shall include complete removal of any at grade floor slabs, sidewalks, pavements, and/or shallow foundations. All debris resulting from the demolition process shall be removed from the site. Areas disturbed during demolition shall be thoroughly evaluated by the geotechnical engineer prior to placement of structural fill. All disturbed soils shall be undercut prior to placement of structural fill. Structural fill shall be placed in the excavations created by the demolition/removal process in accordance with the recommendations presented in Section 4.3 of this report. Use of construction debris as fill material shall not be allowed.

3.2.2 Stripping and Grubbing

Following any required demolition, site development should commence with the stripping of any vegetation, organic soils, and associated root systems from planned construction areas. Any required tree removal should be completed at this time. Care shall be taken to thoroughly remove all root systems from the construction areas. Materials disturbed during stripping operations should be stabilized in place or undercut and replaced with structural fill.

3.2.3 Existing Utility Trenches and Proposed Utilities

Existing utilities encountered during construction within the zone of influence of proposed construction areas should be relocated/abandoned as part of the site development. All existing utility lines within the proposed building footprint should be relocated to areas outside of the proposed construction. Excavations created by removal of the existing lines should be cut wide enough to allow for the use of heavy construction equipment to compact backfill. If the lines are to be left in place, thorough evaluation of the backfill will be required.

If the existing utility lines are to be left in place, thorough evaluation of the backfill will be required. As a minimum, evaluation of the backfill would include test pits to observe the consistency and composition of the backfill material. Unsuitable materials encountered during excavation of the test pits should be removed full depth and be replaced with controlled structural fill.

All underground utility lines for the proposed project should be located outside the zone of influence of proposed foundations; that is a zone extending from the bottom edge of the footing at a slope of 1 Horizontal to 1 Vertical, 1(H):1(V). If utility lines are within the zone of influence of the foundations, settlements in excess of those presented in this report may occur.

3.2.4 Scarification, Moisture Conditioning and Compaction

Following any required undercutting (see Section 3.5) an prior to placement of any structural fill material, the exposed subgrade should be scarified, moisture conditioned, and recompacted in preparation for fill placement. Extremely wet or unstable areas that hamper compaction of the subgrade may require undercutting and replacement with structural fill or discing and aeration may be required to lower moisture contents to levels that will allow proper compaction of the exposed grade.

3.2.5 Proofrolling

Following moisture conditioning and prior to placement of structural fill, the exposed grade should be proofrolled. Proofrolling of the subgrade aids in identifying soft (lower consistency/loose) or disturbed areas. Unsuitable areas identified by the proofrolling operation should be: 1) undercut and replaced with structural fill, 2) scarified, aerated, and recompacted, 3) stabilized in place with shot/crushed rock with a maximum diameter of 6 inches, or 4) spanned through the use of bi-axial geogrid, depending upon the nature/location of the unstable/disturbed area. Proofrolling can be accomplished through use of a fully-loaded, tandem-axle dump truck or similar equipment providing an equivalent subgrade loading.

3.2.6 Lower Consistency/Relative Density Soils

Lower consistency/relative density soils were encountered in Boring B-5 to an approximate depth of 3 feet. Removal and replacement of the lower consistency/relative density soils is required to provide a subgrade suitable for fill placement and a subgrade suitable for support of the proposed building and pavements. **All lower consistency/relative density soils present within the building pad should be undercut full depth and be replaced with "non-expansive" select fill.** It should be noted that these lower consistency soils may extend to other areas of the site and to deeper depths than indicated in this report.

Lower consistency/relative density soils may also be present within the pavement areas. Correction of the lower consistency/relative density soils within the pavement areas should be anticipated at the time of construction.

3.2.7 Existing Fill

Existing/Possible fill consisting of combinations of lean clay with varying amounts of gravel, silty gravel, clayey gravel and clayey sand with gravel was encountered below the surface materials in Borings B-1.1, B-2, B-5, B-7 and B-10. The fill materials continued to approximate depths ranging from 1.3 to 5 feet. It is unknown if the existing

fill material was placed in a controlled manner. It is our recommendation that a portion of the existing/possible fill materials within the proposed building footprint be undercut and be replaced with “non-expansive” select fill. Existing/Possible fill not removed during the recommended undercutting should be further evaluated by proofrolling and test pits. Unsuitable conditions encountered during the proofrolling and test pits should be undercut full depth.

If not completely removed during initial site grading, any existing fill present within the proposed pavement areas should be evaluated through the use of proofrolling and/or test pits. The test pits should be excavated into any existing fill to further evaluate the composition and consistency of this material. Soft/loose or otherwise unsuitable material encountered during excavation of the test pits and the proofrolling operations should be undercut to suitable material and replaced with structural fill. The test pits for fill evaluation should be excavated prior to placement of any structural fill at the project site.

3.2.8 Perched Groundwater

The subsurface conditions encountered at the site are susceptible to a “perched” groundwater condition. In a “perched’ groundwater condition, precipitation will infiltrate the upper lower plasticity/non plastic more permeable soils and sit (perch) on the underlying higher plasticity clay soils or bedrock. Generally, perched water is of limited volume and can be controlled with typical dewatering methods. However, it should be noted, that depending upon site grades, the subsurface stratigraphy, and the volume of water, more sophisticated dewatering methods/equipment may be required if a perched groundwater condition is encountered at the time of construction. Perched groundwater can cause the upper layers of soils to become soft and unstable.

3.3 EXCAVATIONS

3.3.1 General

All excavations must comply with applicable local, state and federal safety regulations. ***The responsibility for excavation safety and stability of temporary construction slopes lies solely with the contractor.*** We are providing this information below solely as a service to our client. Under no circumstances should this information provided be interpreted to mean that GFAC is assuming responsibility for construction site safety or the contractors activities, such responsibility is not being implied and should not be inferred.

3.3.2 Foundation and Utility Excavations

It is anticipated that excavations for the proposed structure and shallow utilities will generally be in existing fill, newly placed structural fill, native soils and shale bedrock. The soil materials and weathered bedrock with a Standard Penetration Resistance (N) value of less than 25 blows per foot can generally be excavated with conventional heavy equipment such as backhoes, scrapers, loaders, etc.

Excavation of harder materials may require the use of single-tooth rippers mounted on large tractors such as a Caterpillar D-8 or larger, rock buckets or hammer attachments mounted on backhoes/trackhoes, or other rock excavating techniques to complete the excavations. Excavation of these materials in confined excavations will likely be difficult.

3.3.3 Excavation Slopes and Construction Considerations

Excavations should be cut to a stable slope or be temporarily braced, depending upon the excavation depths and the subsurface conditions encountered. ***Temporary construction slopes should be designed in strict compliance with the most recent governing regulations.*** Stockpiles should be placed well away from the edge of the excavation and their heights should be controlled so they do not surcharge the sides of

the excavation. Surface drainage should be carefully controlled to prevent flow of water into the excavations. Construction slopes should be closely observed for signs of mass movement: tension cracks near the crest, bulging at the toe, etc. If potential stability problems are observed, a geotechnical engineer should be immediately contacted.

3.4 STRUCTURAL FILL

Based upon the conditions encountered in the borings and the lab testing performed, the majority of the soils encountered at the site are suitable for use as “non-expansive” select fill within the building pad. Soils with a Plasticity Index (PI) in excess of 22 are NOT suitable for use as “non-expansive” select fill. The soils encountered at the site can be used as structural fill outside of the building pad.

All imported material shall meet the requirements as outlined in Section 4.3. Additional testing of the on-site soils at the time of construction should be performed prior to use as structural fill.

3.5 BUILDING PAD PREPARATION

3.5.1 General Discussion

Soils with a lower consistency/relative density and existing fill materials are present within the building footprint area. Perched groundwater was also present in the borings performed for the proposed building. A brief discussion of these items is provided below.

3.5.2 Lower Consistency/Relative Density Soils

Lower consistency/relative density soils were encountered in Boring B-5 to an approximate depth of 3 feet. Removal and replacement of the lower consistency/relative density soils is required to provide a subgrade suitable for fill placement and a subgrade suitable for support of the proposed building and pavements. **All lower consistency/relative density soils present within the building pad should be undercut full depth and be**

replaced with "non-expansive" select fill. It should be noted that these lower consistency soils may extend to other areas of the site and to deeper depths than indicated in this report.

3.5.3 Existing/Possible Fill

Existing/Possible fill consisting of combinations of lean clay with varying amounts of gravel, silty gravel, clayey gravel and clayey sand with gravel was encountered below the surface materials in Borings B-1.1, B-2, B-5, B-7 and B-10. The fill materials continued to approximate depths ranging from 1.3 to 5 feet. It is unknown if the existing fill material was placed in a controlled manner. It is our recommendation that a portion of the existing/possible fill materials within the proposed building footprint be undercut and be replaced with "non-expansive" select fill. Existing/Possible fill not removed during the recommended undercutting should be further evaluated by proofrolling and test pits. Unsuitable conditions encountered during the proofrolling and test pits should be undercut full depth.

3.5.4 Perched Groundwater

Perched groundwater was present in the borings performed for the proposed building. In a "perched' groundwater condition, precipitation will infiltrate the upper lower plasticity/non plastic more permeable soils and sit (perch) on the underlying higher plasticity clay soils or bedrock. Generally, perched water is of limited volume and can be controlled with typical dewatering methods. However, it should be noted, that depending upon site grades, the subsurface stratigraphy, and the volume of water, more sophisticated dewatering methods/equipment may be required if a perched groundwater condition is encountered at the time of construction. Perched groundwater can cause the upper layers of soils to become soft and unstable.

3.5.5 Building Undercut

In order to remove the lower consistency/relative density soils, to remove the upper portion of the existing fill and to provide a uniform subgrade for fill placement and

support of the floor slabs, the building pad should be undercut to a minimum depth of 36 inches below existing grades or 18 inches below the finish subgrade elevation, whichever extends to a lower level.

The undercutting should extend a minimum of 5 feet beyond the perimeter of the building, where possible. Following the recommended undercutting, the exposed grade shall be scarified, moisture conditioned, and recompacted to the requirements of structural fill. It is recommended that all fill placed within the building pad consist of "non-expansive" select fill material. Provided the recommendations presented in this report are implemented during construction, potential expansive soil movement should be 1 inch or less.

This subgrade modification option is intended to keep the swell potential at acceptable limits and to provide suitable support for ground-supported floor systems. However, be reminded that any ground-supported floor system is not as positive as a structurally suspended floor, and structures supported by shallow foundations over expansive soils will experience some movement over their design life.

3.6 FOUNDATIONS

It is our understanding that maximum column loads will be on the order of 25 kips and maximum continuous footing loads will be on the order of 1.5 kips per linear foot. The subsurface conditions at the site are suitable for support of the proposed structure on a shallow foundation system founded in "non-expansive" select fill, evaluated and approved existing fill or suitable native soils. Foundations should be founded at a minimum depth of 2 feet below final subgrade levels.

The footing excavations should be free of water and soft materials prior to placing concrete. Concrete should be placed as soon as feasible after excavating to limit drying or disturbance of the bearing materials. If the bearing materials become excessively dry, saturated or disturbed; the affected materials should be removed prior to placing concrete.

The footing excavations should be evaluated and tested by geotechnical engineering personnel immediately prior to placement of foundation concrete. Unsuitable areas identified at this time should be corrected. Corrective procedures would be dependent upon conditions encountered and may include deepening of foundation elements, or undercutting of unsuitable materials and replacement with controlled structural fill.

3.7 SETTLEMENTS

It is anticipated that shallow foundations will be founded in “non-expansive” select fill, evaluated and approved existing fill or suitable native soils. Settlement of the building foundations has been estimated to be 1 inch or less. Differential settlements are anticipated to be approximately ½ of total settlement.

3.8 CONCRETE SLABS SUPPORTED ON-GRADE

Recommendations outlined in Sections 4.2 and 4.3 of this report are intended to develop subgrades that are suitable for support of the building floor slabs. These recommendations include that all material imported to the project site meet the requirements outlined in Section 4.3. The building pad should be undercut to a level of 18 inches below existing grades or 18 inches below the finish floor subgrade elevation, whichever extends to a lower level. The potential vertical movement of the slab on grade is anticipated to be less than 1 inch.

Subsurface moisture and moisture vapor naturally migrate upward through the soil and, where the soil is covered by a building, this subsurface moisture will collect. To reduce the impact of this subsurface moisture and the potential impact of future induced moisture (such as landscape irrigation or precipitation) a vapor retarder is sometimes utilized below the compacted crushed limestone layer. This membrane typically consists of visqueen or polyvinyl plastic sheeting. It should be noted that although vapor retarder systems are frequently utilized, this system may not be completely effective in preventing floor slab moisture problems. These systems will not necessarily assure that floor slab moisture transmission rates will meet floor covering manufacturer

standards and that indoor humidity levels will be appropriate to inhibit mold growth. The design and construction of such systems are totally dependent on the proposed use and design of the proposed building and all elements of building design and function should be considered in the slab-on-grade floor design. Building design and construction may have a greater role in perceived moisture problems since sealed buildings/rooms or inadequate ventilation may produce excessive moisture in a building and affect indoor air quality.

Various factors such as surface grades, adjacent planters, the quality of slab concrete and the permeability of the on-site soils affect slab moisture and can influence future floor and moisture conditions. In many cases, floor moisture problems are the result of either improper curing of floor slabs or improper application of floor adhesives. We recommend contacting a flooring consultant experienced in the area of concrete slab-on-grade floors or the floor covering manufacturer for specific recommendations regarding your proposed flooring applications.

Special precautions must be taken during the placement and curing of all concrete slabs. Excessive slump (high water-cement ratio) of the concrete and/or improper curing procedures used during either hot or cold weather conditions could lead to excessive shrinkage, cracking or curling of the slabs. High water-cement ratio and/or improper curing also greatly increase the water vapor permeability of the concrete. We recommend that all concrete placement and curing operations be performed in accordance with the American Concrete Institute (ACI) Manual.

3.9 PAVEMENTS AND PAVEMENT SUBGRADE PREPARATION

Light duty and heavy duty pavements will also be constructed at the site. We anticipate that the pavement subgrade will consist of a combination of newly placed structural fill, evaluated and approved existing fill and native soils. In areas that are to receive fill and/or where soils are exposed at the pavement subgrade levels, the soils should be scarified, moisture conditioned, and recompacted to a minimum depth of 8 inches.

Construction traffic on the pavements has not been considered in the design. If construction scheduling dictates the pavements will be subject to traffic by construction equipment/vehicles, the designs should be reconsidered to include the effects of the additional traffic loading.

Construction scheduling, involving paving and grading by separate contractors, typically results in a time lapse between the end of grading operations and the commencement of paving. Disturbance, desiccation, and/or wetting of the subgrade between grading and paving can result in deterioration of the previously completed subgrade. A non-uniform subgrade can result in poor pavement performance and local failures relatively soon after pavements are constructed.

We recommend that the pavement subgrades be proofrolled and the moisture content and density of the top 12 inches of subgrade be checked within two days prior to commencement of actual paving operations. If any significant event, such as precipitation, occurs after proofrolling, the subgrade should be reviewed by qualified geotechnical engineering personnel immediately prior to placing the pavement. The subgrade should be in its finished form at the time of the final review.

Unsuitable materials, i.e. construction debris, organics, etc. encountered during mass grading at the site shall be undercut full depth and be removed from the project site.

3.9.1 Existing Pavements

The existing pavement has areas of distress. Review of readily available pictures of the pavement areas show that a portion of the pavements exhibited longitudinal cracking, block cracking and alligator cracking. Additional types of distress may be present at the site. A significant portion of the alligator cracks appear to have occurred along the longitudinal cracks and asphalt joints within the pavement. It is possible that water infiltration through the longitudinal cracks softened the subgrade leading to loss of subgrade support causing the alligator cracking.

A portion of the longitudinal cracks appear to correspond to the location of joints from the paving operations.

The longitudinal cracks located at the southeast corner of the building appear to be associated with a previous “lean to” type structure that had been removed in the past. These longitudinal cracks may be associated with different subgrade support, and even the presence of a concrete slab.

The pavements should be sloped a sufficient amount to allow water to drain as soon as is feasible from the pavement areas. If site grades do not allow for sheet flow, consideration could be given to installation of trench drains to remove water from the pavement areas more efficiently. Consideration could be given to installing an edge drain where the new pavements are constructed adjacent to grass areas to limit the possibility of perched water developing below the new pavements.

3.10 CLIMATIC CONDITIONS AND CONSTRUCTION CONSIDERATION

Weather conditions will influence the site preparation required. In spring and late fall, following periods of rainfall, the moisture content of the near-surface soils may be significantly above the optimum moisture content. Excessive moisture could seriously impede grading by causing an unstable subgrade condition. Typical remedial measures include aerating the wet subgrade, removal of the wet materials and replacing them with dry materials, reinforcing the subgrade with geotextiles/geogrid or applying lime, cement kiln dust (CKD), or Class “C” fly ash as a drying agent.

If construction of the project is to be performed during winter months, appropriate steps should be taken to prevent the soils from freezing. In no case should the fill, foundations, or other exterior flat work be placed on or against frozen or partially frozen materials. Frozen materials shall be removed and replaced with a suitable material. Frozen materials shall not be included in any compacted fills.

3.11 LANDSCAPING AND SITE GRADING CONSIDERATIONS

Provisions should be made to reduce the potential for large moisture changes within building subgrade soils located adjacent to landscape areas, to reduce the potential for subgrade movement. Positive drainage away from the building should be incorporated into the design plans. Ponding of water adjacent to the building could contribute to significant moisture increases in the subgrade soils and subsequent heaving.

Consideration should also be given to limiting landscaping and irrigation adjacent to the building. Trees and large bushes can develop intricate root systems that can draw moisture from the subgrade soils, causing them to shrink during dry periods of the year. Desiccation of soils below foundations can result in settlement of shallow foundations.

4. RECOMMENDATIONS

4.1 GENERAL

Based on the results of our evaluation, it is our professional opinion that the proposed project site could be developed for the proposed building using conventional grading and foundation construction techniques. The recommendations presented in this report are based upon our understanding that maximum column loads will be on the order of 25 kips and maximum continuous footing loads will be on the order of 1.5 kips per linear foot. Recommendations regarding geotechnical aspects of the project design and construction are presented below.

The recommendations submitted herein are based, in part, upon data obtained from our subsurface exploration. The nature and extent of subsurface variations that may exist at the proposed project site will not become evident until construction. If variations appear evident, then the recommendations presented in this report should be evaluated. In the event that any changes in the nature, design, location or depth of the proposed structure are planned, the conclusions and recommendations contained in this report will not be considered valid unless the changes are reviewed and our recommendations modified in writing.

4.2 SITE PREPARATION

We recommend the following for site preparation:

1. Demolition shall include complete removal of any at grade floor slabs, sidewalks, pavements, and/or shallow foundations. All debris resulting from the demolition process should be removed from the site. Areas disturbed during demolition should be thoroughly evaluated by the geotechnical engineer prior to placement of structural fill. Undercutting and replacement of soils disturbed during demolition prior to placement of fill will be required.

2. All vegetation and topsoil shall be stripped from the site. Any required tree removal should be performed at this time. Care shall be taken to thoroughly remove all root systems. All disturbed soils should be undercut prior to placement of structural fill.

3. Any existing utility lines present within the building area shall be removed. The excavations for existing utility line removal shall be wide enough for use of heavy construction equipment to backfill the excavation.

4. The building pad should be undercut at least 36 inches below existing grade or 18 inches below the finish floor subgrade level, whichever extends to a lower level.

5. Undercutting and placement of “non-expansive” select fill should extend a minimum of 5 feet beyond the building footprint areas.

6. Following stripping and any required undercutting operations, the exposed subgrade should be scarified, moisture conditioned, and recompacted to a depth of 8 inches.

7. The exposed subgrade should be proofrolled with a fully loaded, tandem-axle dump truck. Unsuitable areas identified by the proofrolling operation should be: 1) undercut and replaced with structural fill, 2) scarified, aerated, and recompacted, 3) stabilized in place with shot/crushed rock with a maximum diameter of 6 inches, or 4) spanned through the use of bi-axial geogrid, depending upon the nature/location of the soft areas. The method in which unsuitable areas are corrected would depend upon the location of the unsuitable areas and the conditions encountered at the site at the time of construction.

8. Any lower consistency/relative density soils encountered at the project site should be undercut prior to placement of controlled structural fill.

4.3 STRUCTURAL FILL

We recommend the following for structural fill:

1. **BUILDING PAD** - All fill placed within the building pad should consist of a “non-expansive” select fill material with the following properties:

    a. Maximum Liquid Limit of 45 and a Plasticity Index (PI) of 22 or less.

    b. “Non-expansive” select fill material shall consist of approved materials, free of organic matter (organic content less than 4 percent) and debris. Approved materials are defined as those soils classified by ASTM D 2487 as CL, GC, and SC.

2. **ON-SITE SOILS** – Based on the lab testing performed, the majority of the soils encountered at the site are suitable for use as “non-expansive” select fill within the building pad. The soils encountered at the site can be utilized as structural fill outside of the building area. Additional testing of the on-site soils at the time of construction should be performed prior to use as structural fill.

3. **OTHER IMPORTED MATERIAL** – We recommend the following criteria for imported materials to be used outside of the building area:

    a. The material should consist of approved materials, free of organic matter (organic content less than 4 percent) and debris. Approved materials are defined as those soils classified by ASTM D 2487 as CL, CH, GC, SC, and SP.

    b. A maximum Liquid Limit of 50 and a maximum Plasticity Index (PI) of less than 30.

4. All fill material should have a maximum particle size of 3 inches.

5. All fill should be placed in lifts having a maximum loose lift thickness of 9 inches.

6. All fill placed within the building pad shall be compacted to a minimum of 98 percent of the material's maximum dry density as determined by ASTM D 698, standard Proctor compaction.

7. All fill placed outside of the building pad shall be compacted to a minimum of 95 percent of the material's maximum dry density as determined by ASTM D 698, standard Proctor compaction.

8. The moisture content of the clay fill (Plasticity Index > 10) at the time of compaction should be within a range of 0 to 4 percent above optimum moisture content as defined by the standard Proctor compaction procedure.

9. For clay fills having lower plasticities (Plasticity Index < 10) and sand, it may be necessary to use a moisture range of 2 percent below to 2 percent above optimum moisture content.

10. In addition to the compaction requirements, the soil must be stable (i.e. no “rutting” or “pumping”) under construction traffic prior to placement of additional fill or constructing foundations, floor slabs, pavements.

11. Properly sized compaction equipment (i.e. sheepfoot roller for cohesive soils, smooth drum roller for non-cohesive soils) shall be utilized for placement of structural fill.

4.4 FOUNDATIONS

Following the recommended site preparation, the building foundations would be supported on “non-expansive” select fill, evaluated and approved existing fill or suitable native soils. We recommend the following design criteria:

1. Building footings may be proportioned for the maximum allowable bearing pressure presented in Table 4.4. The allowable bearing pressure is based on a minimum factor of safety of approximately three (3) with respect to shear failure of the foundation bearing materials.

Table 4.4 – Allowable Bearing Pressure

Bearing Material	Allowable Bearing Pressure (psf)	Estimated Settlement (inches)
"Non-Expansive" Select Fill, Evaluated and Approved Existing Fill or Suitable Native Soils	2,500	Total – 1 inch or less Differential – ½ inch or less

2. The frost depth at the project site is approximately 20 to 22 inches.

3. The foundations should extend a minimum of 24 inches below exterior grades due to freeze/thaw and wetting/drying cycles.

4.5 CONCRETE SLABS SUPPORTED ON-GRADE

Following the recommendations for site preparation, the site would be suitable for grade supported floor slabs. We recommend the following provisions for design and construction of the floor slab:

1. All material placed within the building footprint should meet the requirements of "non-expansive" select fill.

2. All utility trench backfill and foundation backfill should be placed in accordance with the requirements of structural fill.

3. A granular leveling course, having a minimum thickness of 4 inches, should be used below the building floor slab. The granular section provides a capillary

moisture break and acts as a leveling course. The granular leveling course should consist of clean, crushed limestone gravel with a nominal size of ½ to ¾ inch.

4. Immediately prior to construction of the building floor slab, it is recommended that the exposed subgrade be evaluated to determine whether moisture contents are within the recommended range and to identify areas disturbed by construction operations. Unsuitable or disturbed areas should be reworked prior to placement of the granular leveling course and construction of the floor slab.

4.6 PAVEMENTS

The following pavement sections are being provided for your consideration at the project site.

Table 4.6 – Pavement Sections

Pavement Area	Minimum Asphaltic Concrete (ACC) Design Thickness, Inches	Minimum Portland Cement Concrete (PCC) Design Thickness, Inches
Standard Duty (Parking Areas Passenger Vehicles Only	AC with Granular Base 2.0 AC Surface Course 2.5 AC Base Course 6.0 Aggregate Base (AHTD Class 7) Geotextile Separator Fabric 9.0 Recompacted Subgrade	Portland Cement Concrete 5.0 PCC 6.0 Aggregate Base (AHTD Class 7) Geotextile Separator Fabric 9.0 Recompacted Subgrade
Heavy Duty (Access Lanes Passenger Vehicles Only/Emergency Vehicles)	AC with Granular Base 2.0 AC Surface Course 3.5 AC Base Course 6.0 Aggregate Base (AHTD Class 7) Geotextile Separator Fabric 9.0 Recompacted Subgrade	Portland Cement Concrete 6.0 PCC 6.0 Aggregate Base (AHTD Class 7) Geotextile Separator Fabric 9.0 Recompacted Subgrade
Truck Traffic/Dumpster Pad	AC with Granular Base 2.0 AC Surface Course 5.0 AC Base Course 6.0 Aggregate Base (AHTD Class 7) Geotextile Separator Fabric 9.0 Recompacted Subgrade	Portland Cement Concrete 8.0 PCC 6.0 Aggregate Base (AHTD Class 7) Geotextile Separator Fabric 9.0 Recompacted Subgrade

1. The moisture content and density of pavement subgrade should be checked within two days prior to paving operations.

2. The pavement subgrade should be proofrolled prior to paving operations. Soft and unstable soils identified during proofrolling operations should be undercut or stabilized.

3. Lower consistency soils exposed at the pavement subgrade elevation should be corrected as indicated in Section 4.2. If lower consistency soils extend to depths greater than 18 inches, we should be contacted to determine if modifications to the recommendations would be warranted.

4. Consideration could be given to installing an edge drain where the new pavements are constructed adjacent to grass areas to limit the possibility of perched water developing below the new pavements.

4.7 EXCAVATIONS

All excavations and excavation retention systems are the sole responsibility of the Contractor and should be in accordance with Oklahoma State law, and design by a licensed professional engineer. Attention is drawn to OSHA Standards 29 CFR - 1926 Subpart P for guidance in the design of such systems.

4.8 SEISMIC HAZARDS DETERMINATION

Based on the subsurface information, the project site would be characterized as a Seismic Site Class “C” per the International Building Code (IBC). In addition, there is no significant risk of liquefaction or mass movement of the on-site soils due to a seismic event.

5. ADDITIONAL SERVICES

5.1 PLANS AND SPECIFICATIONS REVIEW

We recommend that GFAC conduct a general review of the final plans and specifications to evaluate that our earthwork and foundation recommendations have been properly interpreted and implemented during design. In the event GFAC is not retained to perform this recommended review, we will assume no responsibility for misinterpretation of our recommendations.

5.2 CONSTRUCTION OBSERVATION AND TESTING

We recommend that all earthwork during construction be monitored by a representative of GFAC. These observations should include site preparation, placement of all engineered fill and trench backfill, construction of slab and pavement subgrades, and all foundation excavations. The purpose of these services would be to provide GFAC the opportunity to observe the soil conditions encountered during construction, evaluate the applicability of the recommendations presented in this report to the soil conditions encountered, and recommend appropriate changes in design or construction procedures if conditions differ from those described herein.

The following section outlines geotechnical engineering and construction testing services necessary to implement the recommendations presented in this report. The following services should be provided by a qualified testing firm:

1. An experienced engineering technician should observe the subgrade throughout the proposed construction areas immediately following stripping and undercutting to identify areas requiring additional undercutting and to evaluate the suitability of the exposed surface for fill placement.

2. An experienced engineering technician should monitor and test all fill placed within the building and pavement areas to determine

whether the type of material, moisture content and degree of compaction are within recommended limits.

3. An experienced engineering technician should observe the moisture conditioning and proofrolling of the subgrade prior to placement of structural fill to evaluate the suitability of the exposed surface for fill placement.

4. An experienced technician or engineer should observe and test all foundation excavations. Where unsuitable bearing conditions are observed, remedial procedures can be established in the field to avoid construction delays.

5. The condition of the subgrade should be evaluated immediately prior to construction of the building floor slab to determine whether the moisture content of subgrade soils and condition of soils are as recommended.

6. The condition of the pavement subgrade should be evaluated immediately prior to construction of the pavements to determine whether the moisture content of subgrade soils and condition of soils are as recommended. Proofrolling would aid in evaluation of the pavement subgrade soils.

6. LIMITATIONS

Recommendations contained in this report are based on our field observations and subsurface explorations, limited laboratory tests, and our present knowledge of the proposed construction. It is possible that subsurface conditions could vary between or beyond the points explored. If subsurface conditions are encountered during construction that differ from those described herein, we should be notified immediately in order that a review may be made and any supplemental recommendations provided. If the scope of the proposed construction, including the proposed loads or structural locations, changes from that described in this report, our recommendations should also be reviewed.

We have prepared this report in substantial accordance with the generally accepted geotechnical engineering practice as it exists in the site area at the time of our study. No warranty is expressed or implied. The recommendations provided in this report are based on the assumption that an adequate program of tests and observations will be conducted by GFAC during the construction phase in order to evaluate compliance with our recommendations. The scope of our services did not include any environmental assessment or exploration for the presence of hazardous or toxic materials in the soil, surface water, groundwater or air, on, below or around this site.

This report may be used only by owner and only for the purposes stated, within a reasonable time from its issuance, but in no event later than three years from the date of report. Land use, site conditions (both on-site and off-site), regulations, or other factors may change over time, and additional work may be required with the passage of time. Any party other than the client who wishes to use this report shall notify GFAC of such intended use. Based on the intended use of the report, GFAC may require that additional work be performed and that an updated report be issued. Non-compliance with any of these requirements by the client or anyone else will release GFAC from any liability resulting from the use of this report by any unauthorized party and client agrees to defend, indemnify and hold harmless GFAC from any claim or liability associated with such unauthorized or non-compliance.

APPENDIX A

FIELD EXPLORATION PROGRAM
PLATE 1 – SITE VICINITY MAP
PLATE 2 – BORING LOCATION DIAGRAM
SUBSURFACE DIAGRAM
BORING LOGS

FIELD EXPLORATION PROGRAM

The fieldwork for this study was performed on April 1 and 2, 2026. The exploration consisted of a total of eleven (11) borings that were extended to an approximate depth ranging from 12.9 to 18.8 feet below the existing ground surface levels. Representatives of GFAC established the boring locations in the field near the requested locations using a handheld GPS device. Elevations at the boring locations were estimated from the topographic survey of the project site. Locations and elevations of the borings should be considered accurate only to the degree implied by the methods used to obtain them.

The borings were drilled using a truck-mounted (CME 55) rotary drill rig using solid stem augers to advance the borings. Representative samples were obtained utilizing the split-barrel sampling procedures in general accordance with ASTM D 1586. The split-barrel sampling procedure utilizes a standard 2-inch O.D. split-barrel sampler that is driven into the bottom of the boring with a 140-pound auto-hammer falling a distance of 30 inches. The number of blows required to advance the sampler the last 12 inches of a normal 18-inch penetration is recorded as the Standard Penetration Resistance Value (N). These "N" values are indicated on the boring logs at their depth of occurrence and provide an indication of the consistency, relative density and relative hardness of the material.

Boring logs included in this appendix, present such data as soil and bedrock descriptions, depths, sampling intervals and observed groundwater conditions. Conditions encountered in each of the borings were monitored and recorded by the field engineer. Field logs included visual classification of the materials encountered during drilling, as well as drilling characteristics. Our final boring logs represent the engineer's interpretation of the field logs combined with laboratory observation and testing of the samples. Stratification boundaries indicated on the boring logs were based on observations during our fieldwork, an extrapolation of information obtained by examining samples from the borings and comparisons of soils with similar engineering

characteristics. Locations of these boundaries are approximate, and the transitions between material types may be gradual rather than clearly defined.

Not to Scale

GFAC ENGINEERING

Site Vicinity Map

Proposed Siemens Expansion
99 Bolton Sullivan Drive
Heber Springs, Arkansas

G2026006 April 22, 2026

Plate 1

Plan prepared by Cyntergy, modified by GFAC.

Boring locations are approximate.

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Boring Location Diagram

Proposed Siemens Expansion
99 Bolton Sullivan Drive
Heber Springs, Arkansas

G2026006 April 22, 2026

GFAC Texas PLLC
8155 East 46th Street
Tulsa OK 74145
Telephone: 918-622-7021

GFAC ENGINEERING

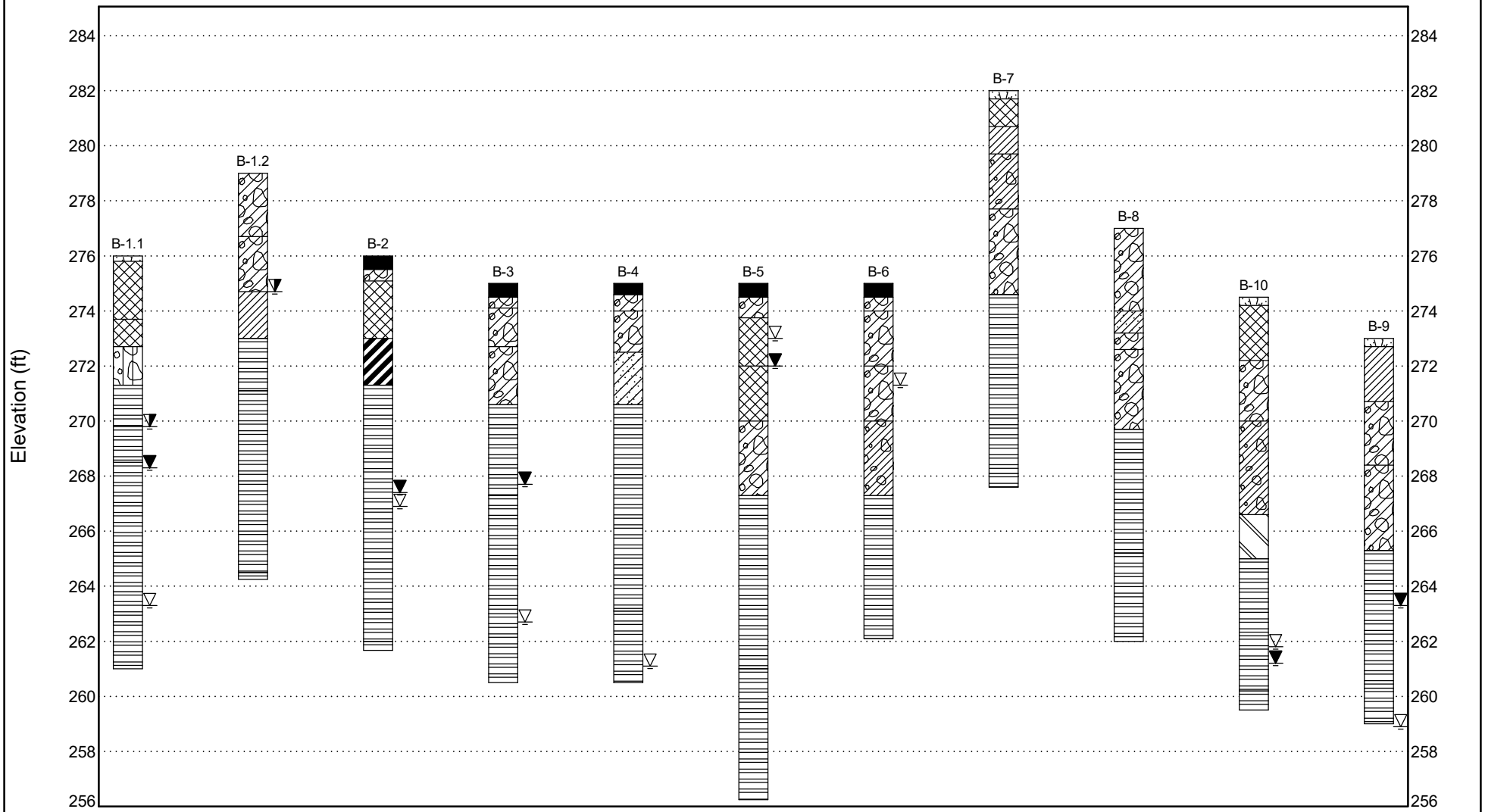
SUBSURFACE DIAGRAM

CLIENT Cyntergy

PROJECT NUMBER G2026006

PROJECT NAME Proposed Siemens Expansion

PROJECT LOCATION 99 Bolton Sullivan Drive, Heber Springs, AR



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BORING NUMBER B-1.1

CLIENT Cyntergy
PROJECT NAME Proposed Siemens Expansion
PROJECT NUMBER G2026006
PROJECT LOCATION 99 Bolton Sullivan Drive, Heber Springs, AR
DATE STARTED 4/1/26 **COMPLETED** 4/1/26
GROUND ELEVATION 276 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR GFAC
GROUND WATER LEVELS:
DRILLING METHOD Continuous Flight Auger 6"
AT TIME OF DRILLING 12.70 ft / Elev 263.30 ft
LOGGED BY AR **CHECKED BY** DLK
AT END OF DRILLING 7.70 ft / Elev 268.30 ft
NOTES
30hrs AFTER DRILLING 6.20 ft / Elev 269.80 ft

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	Texas Cone Penetrometer	BLOW COUNTS (N VALUE)	Uncon. Strength (psf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	TOPSOIL											
	POSSIBLE FILL - LEAN CLAY with gravel, moist, stiff, amber, gray trace orange	SS 1	100		3-5-7 (12)			17	33	16	17	73
	POSSIBLE FILL - SILTY GRAVEL, dry, dense, amber trace gray, white, red	SS 2	89		17-26-15 (41)			13				
	SILTY GRAVEL, dry, dense, gray, white, brown trace red											
5	HIGHLY WEATHERED SHALE, soft, gray, amber	SS 3	100		10-12-13 (25)			24	53	22	31	92
	WEATHERED SHALE, soft, dark gray trace orange, amber											
	WEATHERED SHALE, soft, gray, brown, amber, tan	SS 4	100		18-26-33 (59)			24				
10	WEATHERED SHALE, soft, dark gray trace brown	SS 5	94		26-40-48 (88)			17				
15	Bottom of borehole at 15.0 feet.											

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BORING NUMBER B-1.2

CLIENT Cyntergy
PROJECT NAME Proposed Siemens Expansion
PROJECT NUMBER G2026006
PROJECT LOCATION 99 Bolton Sullivan Drive, Heber Springs, AR
DATE STARTED 4/1/26 **COMPLETED** 4/1/26
GROUND ELEVATION 279 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR GFAC
GROUND WATER LEVELS:
DRILLING METHOD Continuous Flight Auger 6"
AT TIME OF DRILLING --- Dry
LOGGED BY AR **CHECKED BY** DLK
AT END OF DRILLING --- Dry
NOTES
30hrs AFTER DRILLING 4.30 ft / Elev 274.70 ft

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	Texas Cone Penetrometer	BLOW COUNTS (N VALUE)	Uncon. Strength (psf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		SILTY GRAVEL with sand, dry, very stiff, amber, tan trace white, gray, red	SS 1	94		13-23-26 (49)			12	20	17	3	24
		GRAVELLY CLAY/CLAYEY GRAVEL, dry to moist, tan, amber trace red, maroon	SS 2	89		35-33-18 (51)			4				
5		SHALEY CLAY/HIGHLY WEATHERED SHALE, stiff, amber trace tan, maroon	SS 3	94		5-7-11 (18)			26				
		HIGHLY WEATHERED SHALE, soft, amber trace tan, maroon											
		WEATHERED SHALE, soft, brown, gray trace dark brown, amber	SS 4	100		13-17-16 (33)			14	44	21	23	97
10													
			SS 5	93		18-27-50/ 3"			13				
		WEATHERED SHALE, moderately hard, gray, black trace dark brown											

Bottom of borehole at 14.8 feet.

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GFAC ENGINEERING

BORING NUMBER B-2

CLIENT Cyntergy
PROJECT NAME Proposed Siemens Expansion
PROJECT NUMBER G2026006
PROJECT LOCATION 99 Bolton Sullivan Drive, Heber Springs, AR
DATE STARTED 4/2/26 **COMPLETED** 4/2/26
GROUND ELEVATION 276 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR GFAC
GROUND WATER LEVELS:
DRILLING METHOD Continuous Flight Auger 6"
▽ **AT TIME OF DRILLING** 9.10 ft / Elev 266.90 ft
LOGGED BY AR **CHECKED BY** DLK
▼ **AT END OF DRILLING** 8.60 ft / Elev 267.40 ft
NOTES
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	Texas Cone Penetrometer	BLOW COUNTS (N VALUE)	Uncon. Strength (psf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		ASPHALT - 6 inches											
		AGGREGATE - 5 inches											
		POSSIBLE FILL - CLAYEY GRAVEL with sand, dry, dense, stiff, yellow trace brown, red	SS 1	94		18-21-36 (57)			9	29	14	15	20
		FAT CLAY, moist, stiff, gray, red	SS 2	94		3-3-6 (9)			25				
5		WEATHERED SHALE, soft, gray, black trace brown, amber	SS 3	100		10-15-21 (36)			14				
		WEATHERED SHALE, soft, gray trace dark gray, black											
		▼ ▽	SS 4	100		19-35-50/ 6"			12				
10													
		SHALE, moderately hard, dark gray, gray	SS 5	100		37-50/ 4"			13				

Bottom of borehole at 14.3 feet.

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GFAC ENGINEERING

BORING NUMBER B-3

CLIENT Cyntergy
PROJECT NAME Proposed Siemens Expansion
PROJECT NUMBER G2026006
PROJECT LOCATION 99 Bolton Sullivan Drive, Heber Springs, AR
DATE STARTED 4/2/26 **COMPLETED** 4/2/26
GROUND ELEVATION 275 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR GFAC
GROUND WATER LEVELS:
DRILLING METHOD Continuous Flight Auger 6"
▽ **AT TIME OF DRILLING** 12.30 ft / Elev 262.70 ft
LOGGED BY AR **CHECKED BY** DLK
▼ **AT END OF DRILLING** 7.30 ft / Elev 267.70 ft
NOTES
AFTER DRILLING ---

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	Texas Cone Penetrometer	BLOW COUNTS (N VALUE)	Uncon. Strength (psf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	ASPHALT - 6 inches											
	AGGREGATE - 5 inches											
	GRAVELLY CLAY/CLAYEY GRAVEL, dry, very stiff, yellow, brown, red	SS 1	94		9-9-13 (22)			12				
	GRAVELLY CLAY/CLAYEY GRAVEL, dry, very stiff, yellow, black, dark brown	SS 2	100		15-20-13 (33)			10				
5	WEATHERED SHALE, soft, gray, black trace brown, tan	SS 3	94		19-21-26 (47)			14				
	▼											
	WEATHERED SHALE, soft, dark gray, gray, brown	SS 4	100		17-26-33 (59)			13				
10	▽ WEATHERED SHALE, soft, dark gray, gray											
		SS 5	100		31-50/ 6"			18				

Bottom of borehole at 14.5 feet.

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GFAC ENGINEERING

BORING NUMBER B-4

CLIENT Cyntergy
PROJECT NAME Proposed Siemens Expansion
PROJECT NUMBER G2026006
PROJECT LOCATION 99 Bolton Sullivan Drive, Heber Springs, AR
DATE STARTED 4/2/26 **COMPLETED** 4/2/26
GROUND ELEVATION 275 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR GFAC
GROUND WATER LEVELS:
DRILLING METHOD Continuous Flight Auger 6"
▽ **AT TIME OF DRILLING** 13.90 ft / Elev 261.10 ft
LOGGED BY AR **CHECKED BY** DLK
AT END OF DRILLING --- Dry
NOTES
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	Texas Cone Penetrometer	BLOW COUNTS (N VALUE)	Uncon. Strength (psf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		ASPHALT - 5 inches											
		AGGREGATE - 6 1/2 inches											
		GRAVELLY CLAY/CLAYEY GRAVEL, moist, stiff, tan, amber	SS 1	100		3-6-9 (15)			15				
		CLAYEY SAND with gravel, dry to moist, very stiff, tan, amber	SS 2	39		9-5-17 (22)			13	27	13	14	34
5		WEATHERED SHALE, soft, gray, black trace yellow	SS 3	100		9-12-17 (29)			14				
			SS 4	100		11-17-23 (40)			13				
10		WEATHERED SHALE, soft, dark gray, black trace dark brown											
		▽	SS 5	100		31-50/ 6"			14				

Bottom of borehole at 14.5 feet.

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GFAC ENGINEERING

BORING NUMBER B-5

CLIENT Cyntergy
PROJECT NAME Proposed Siemens Expansion
PROJECT NUMBER G2026006
PROJECT LOCATION 99 Bolton Sullivan Drive, Heber Springs, AR
DATE STARTED 4/2/26 **COMPLETED** 4/2/26
GROUND ELEVATION 275 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR GFAC
GROUND WATER LEVELS:
DRILLING METHOD Continuous Flight Auger 6"
▽ **AT TIME OF DRILLING** 2.00 ft / Elev 273.00 ft
LOGGED BY AR **CHECKED BY** DLK
▼ **AT END OF DRILLING** 3.00 ft / Elev 272.00 ft
NOTES
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	Texas Cone Penetrometer	BLOW COUNTS (N VALUE)	Uncon. Strength (psf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		ASPHALT - 6 inches											
		AGGREGATE - 9 inches											
		FILL - Gravelly Lean Clay, moist, olive, brown, gray	SS 1	100		3-2-3 (5)			19	23	13	10	54
		FILL - Gravelly Clay/Clayey Gravel, moist, olive, gray	SS 2	72		5-6-7 (13)			12				
5		GRAVELLY CLAY/CLAYEY GRAVEL, moist, very stiff, tan, brown, red, white	SS 3	83		5-6-10 (16)			16				
		WEATHERED SHALE, soft, dark gray, gray trace brown	SS 4	94		15-29-28 (57)			15				
10													
		SHALE, moderately hard, dark gray	SS 5	100		30-50/ 4"			14				
15													
			SS 6	100		50/ 3"			7				

Refusal at 18.8 feet.
Bottom of borehole at 18.8 feet.

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GFAC ENGINEERING

BORING NUMBER B-6

CLIENT Cyntergy
PROJECT NAME Proposed Siemens Expansion
PROJECT NUMBER G2026006
PROJECT LOCATION 99 Bolton Sullivan Drive, Heber Springs, AR
DATE STARTED 4/2/26 **COMPLETED** 4/2/26
GROUND ELEVATION 275 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR GFAC
GROUND WATER LEVELS:
DRILLING METHOD Continuous Flight Auger 6"
▽ **AT TIME OF DRILLING** 3.70 ft / Elev 271.30 ft
LOGGED BY AR **CHECKED BY** DLK
AT END OF DRILLING --- Dry
NOTES
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	Texas Cone Penetrometer	BLOW COUNTS (N VALUE)	Uncon. Strength (psf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		ASPHALT - 5 inches											
		AGGREGATE - 7 inches											
		GRAVELLY LEAN TO FAT CLAY, moist, stiff to very stiff, brown, tan, orange	SS 1	100		6-7-9 (16)			15				
		▽ CLAYEY GRAVEL, wet, medium dense, brown trace orange	SS 2	94		5-9-11 (20)			22				
5		GRAVELLY LEAN CLAY, moist, medium stiff, brown, gray, amber	SS 3	11		3-2-3 (5)			25				
		WEATHERED SHALE, soft, gray trace brown	SS 4	100		31-50/ 6"			15				
10													

Refusal at 12.9 feet.
Bottom of borehole at 12.9 feet.

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GFAC ENGINEERING

BORING NUMBER B-7

CLIENT Cyntergy
PROJECT NAME Proposed Siemens Expansion
PROJECT NUMBER G2026006
PROJECT LOCATION 99 Bolton Sullivan Drive, Heber Springs, AR
DATE STARTED 4/2/26 **COMPLETED** 4/2/26
GROUND ELEVATION 282 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR GFAC
GROUND WATER LEVELS:
DRILLING METHOD Continuous Flight Auger 6"
AT TIME OF DRILLING --- Dry
LOGGED BY AR **CHECKED BY** DLK
AT END OF DRILLING --- Dry
NOTES
AFTER DRILLING ---

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	Texas Cone Penetrometer	BLOW COUNTS (N VALUE)	Uncon. Strength (psf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	TOPSOIL											
	POSSIBLE FILL - CLAYEY SAND with gravel, dry, medium dense, brown, tan, orange	SS 1	56		10-6-5 (11)			9	24	12	12	29
	LEAN CLAY with gravel, moist, stiff, brown, tan											
	GRAVELLY LEAN CLAY, moist, stiff, brown, dark brown	SS 2	67		6-8-3 (11)			14				
5	GRAVELLY CLAY/CLAYEY GRAVEL, moist to dry, very stiff, brown, orange trace black	SS 3	100		15-21-27 (48)			11				
	WEATHERED SHALE, soft, gray trace amber, brown, dark brown	SS 4	94		7-29-42 (71)			17				
10												
	SHALE, soft, dark gray, black trace brown	SS 5	100		31-50/ 5"			11				

Bottom of borehole at 14.4 feet.

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BORING NUMBER B-8

CLIENT Cyntergy
PROJECT NAME Proposed Siemens Expansion
PROJECT NUMBER G2026006
PROJECT LOCATION 99 Bolton Sullivan Drive, Heber Springs, AR
DATE STARTED 4/2/26 **COMPLETED** 4/2/26
GROUND ELEVATION 277 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR GFAC
GROUND WATER LEVELS:
DRILLING METHOD Continuous Flight Auger 6"
AT TIME OF DRILLING --- Dry
LOGGED BY AR **CHECKED BY** DLK
AT END OF DRILLING --- Dry
NOTES
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	Texas Cone Penetrometer	BLOW COUNTS (N VALUE)	Uncon. Strength (psf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		AGGREGATE - 3'											
		SANDY LEAN CLAY with gravel, moist, stiff, tan, amber, gray	SS 1	83		5-7-16 (23)			13				
		GRAVELLY CLAY/CLAYEY GRAVEL, moist to dry, very stiff, white, brown trace dark brown											
5		GRAVELLY CLAY/CLAYEY GRAVEL, moist to dry, very stiff, amber, tan trace orange, red	SS 2	94		18-13-8 (21)			15				
		WEATHERED SHALE, soft, gray, amber trace black, dark brown	SS 3	100		7-11-18 (29)			24				
10		WEATHERED SHALE, soft, gray, black, brown											
			SS 4	94		18-36-50/ 6"			12				
15													

Bottom of borehole at 15.0 feet.

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GFAC ENGINEERING

BORING NUMBER B-9

CLIENT Cyntergy
PROJECT NAME Proposed Siemens Expansion
PROJECT NUMBER G2026006
PROJECT LOCATION 99 Bolton Sullivan Drive, Heber Springs, AR
DATE STARTED 4/2/26 **COMPLETED** 4/2/26
GROUND ELEVATION 273 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR GFAC
GROUND WATER LEVELS:
DRILLING METHOD Continuous Flight Auger 6"
▽ **AT TIME OF DRILLING** 14.10 ft / Elev 258.90 ft
LOGGED BY AR **CHECKED BY** DLK
▼ **AT END OF DRILLING** 9.70 ft / Elev 263.30 ft
NOTES
AFTER DRILLING ---

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	Texas Cone Penetrometer	BLOW COUNTS (N VALUE)	Uncon. Strength (psf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0	TOPSOIL											
	LEAN CLAY with sand and gravel, moist, medium stiff to stiff, tan, amber	SS 1	94		3-3-4 (7)			11				
	CLAYEY GRAVEL with clay seams, moist, medium dense, tan, amber	SS 2	100		6-7-17 (24)			17	24	13	11	45
5	GRAVELLY CLAY/CLAYEY GRAVEL, moist, very stiff, tan, yellow trace brown	SS 3	83		6-7-11 (18)			12				
	WEATHERED SHALE, soft, dark gray, gray trace dark brown, brown	SS 4	100		23-34-43 (77)			13				
10												
	SHALE, soft, gray, dark gray	SS 5	100		50/ 6"			8				
	Bottom of borehole at 14.0 feet.											

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BORING NUMBER B-10

CLIENT Cyntergy
PROJECT NAME Proposed Siemens Expansion
PROJECT NUMBER G2026006
PROJECT LOCATION 99 Bolton Sullivan Drive, Heber Springs, AR
DATE STARTED 4/2/26 **COMPLETED** 4/2/26
GROUND ELEVATION 274.5 ft **HOLE SIZE** 6 inches
DRILLING CONTRACTOR GFAC
GROUND WATER LEVELS:
DRILLING METHOD Continuous Flight Auger 6"
▽ **AT TIME OF DRILLING** 12.70 ft / Elev 261.80 ft
LOGGED BY AR **CHECKED BY** DLK
▼ **AT END OF DRILLING** 13.30 ft / Elev 261.20 ft
NOTES
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY % (RQD)	Texas Cone Penetrometer	BLOW COUNTS (N VALUE)	Uncon. Strength (psf)	DRY UNIT WT. (pcf)	MOISTURE CONTENT (%)	ATTERBERG LIMITS: LIQUID LIMIT	ATTERBERG LIMITS: PLASTIC LIMIT	ATTERBERG LIMITS: PLASTICITY INDEX	FINES CONTENT (%)
0		TOPSOIL											
		POSSIBLE FILL - Lean Clay with trace gravel, dry to moist, stiff, gray, white, red	SS 1	94		4-4-5 (9)			14				
		GRAVELLY CLAY/CLAYEY GRAVEL, dry, stiff, tan, amber, red, gray	SS 2	94		3-4-5 (9)			11				
5		GRAVELLY LEAN CLAY, moist, very stiff, tan, gray trace orange	SS 3	44		18-17-9 (26)			16				
		SHALEY CLAY, moist, stiff, gray, amber	SS 4	94		5-7-11 (18)			19				
10		HIGHLY WEATHERED SHALE, soft, gray, amber											
		▽ WEATHERED SHALE, soft, gray with brown ▼											
		WEATHERED SHALE, soft, gray, dark gray	SS 5	100		14-35-42 (77)			14				
15		Bottom of borehole at 15.0 feet.											

APPENDIX B

LABORATORY TESTING PROGRAM
GRAIN SIZE DISTRIBUTION CURVES

LABORATORY TESTING PROGRAM

GENERAL

Laboratory tests were performed on select, representative samples to evaluate pertinent engineering properties of these materials. We directed our laboratory testing program primarily toward classifying the subsurface materials, and measuring index values of the on-site materials. Laboratory tests were performed in general accordance with applicable standards, and the results are presented on the respective boring logs. The laboratory testing program consisted of the following:

- **Moisture content tests** ASTM D 2216, Standard Test Method for Laboratory Determination of Water (Moisture) Content of Soil and Rock by Mass
- **Atterberg limits tests** ASTM D 4318, Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- **No. 200 sieve, ASTM D 1140,** Standard Test Methods for Amount of Material in Soils Finer Than the No. 200 Sieve
- **Grain Size Distribution, ASTM D 422,** Standard Test Methods for Particle-Size Analysis of Soils
- **Visual classification** ASTM D 2488, Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)

CLASSIFICATION

All samples were examined in the field by the drill crew using visual and manual procedures. The samples were classified in general accordance with the Unified Soil Classification System, and are shown on the boring logs.

Bedrock units encountered in the borings were described based on visual classification of disturbed auger cuttings and drilling characteristics. Core samples may reveal other rock types.

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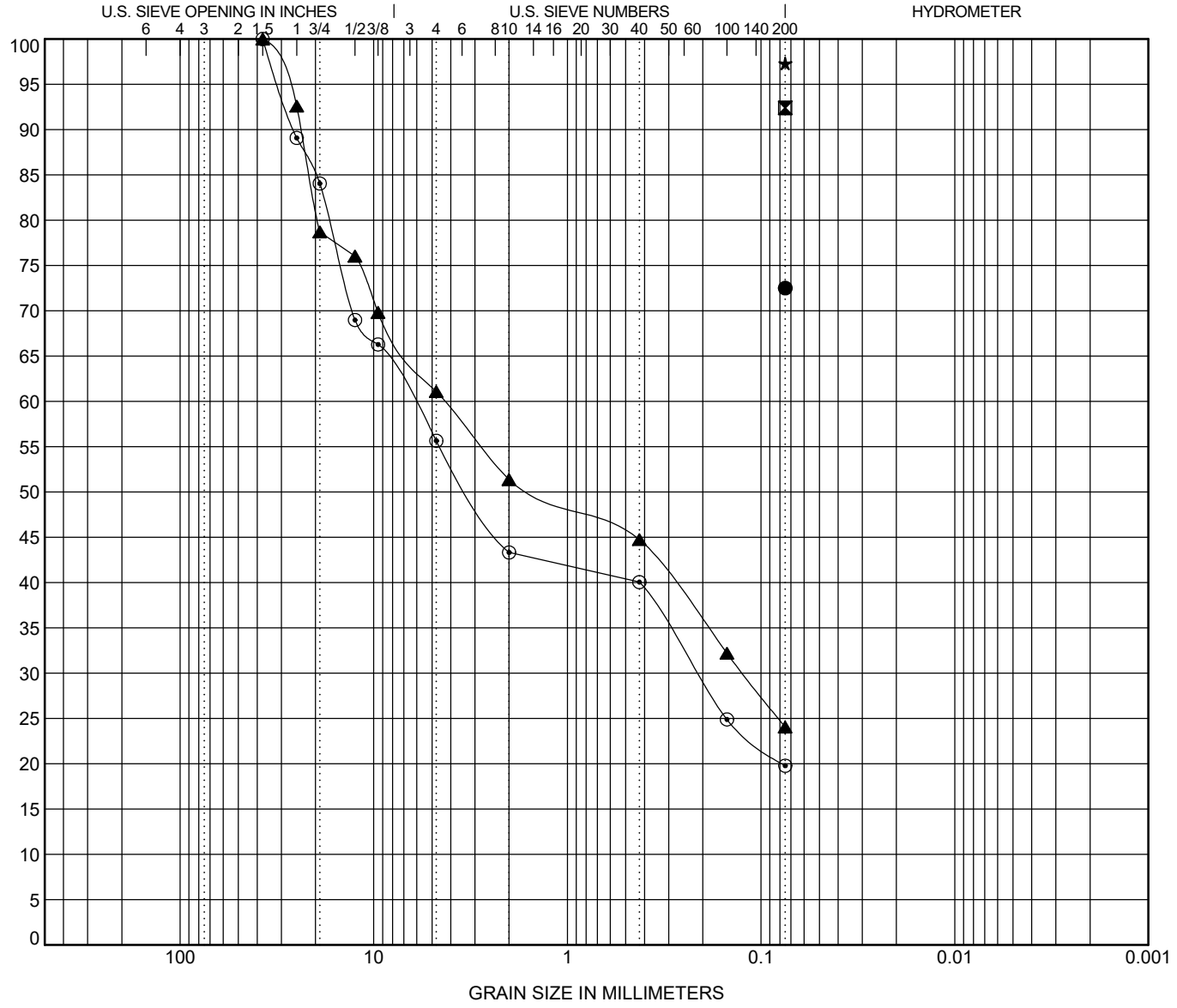
GRAIN SIZE DISTRIBUTION

CLIENT Cyntergy **PROJECT NAME** Proposed Siemens Expansion

PROJECT NUMBER G2026006 **PROJECT LOCATION** 99 Bolton Sullivan Drive, Heber Springs, AR



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

	BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
●	B-1.1	0.5	LEAN CLAY with GRAVEL(CL)	33	16	17		
⊠	B-1.1	5.0	FAT CLAY(CH)	53	22	31		
▲	B-1.2	0.5	SILTY GRAVEL with SAND(GM)	20	17	3		
★	B-1.2	8.5	LEAN CLAY(CL)	44	21	23		
⊙	B-2	1.7	CLAYEY GRAVEL with SAND(GC)	29	14	15		

	BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
●	B-1.1	0.5	0.075						72.5	
⊠	B-1.1	5.0	0.075						92.4	
▲	B-1.2	0.5	37.5	4.318	0.124		38.9	37.0	24.0	
★	B-1.2	8.5	0.075						97.3	
⊙	B-2	1.7	37.5	6.308	0.213		44.3	35.9	19.8	

GRAIN SIZE DISTRIBUTION

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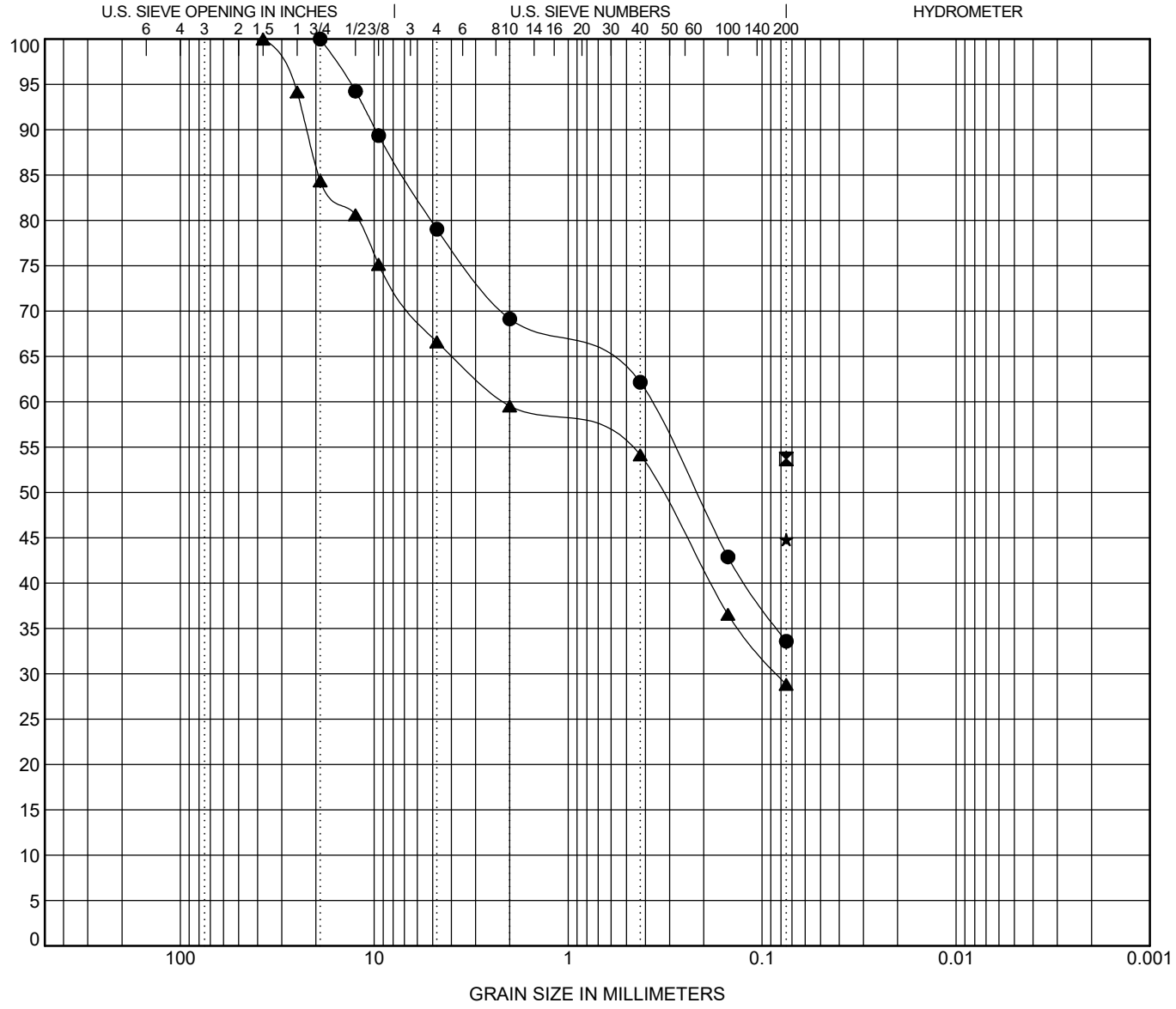
CLIENT Cyntergy **PROJECT NAME** Proposed Siemens Expansion

PROJECT NUMBER G2026006 **PROJECT LOCATION** 99 Bolton Sullivan Drive, Heber Springs, AR



COBBLES	GRAVEL		SAND			SILT OR CLAY
	coarse	fine	coarse	medium	fine	

BOREHOLE	DEPTH	Classification	LL	PL	PI	Cc	Cu
● B-4	2.5	CLAYEY SAND with GRAVEL(SC)	27	13	14		
⊠ B-5	1.5	GRAVELLY LEAN CLAY(CL)	23	13	10		
▲ B-7	0.5	CLAYEY SAND with GRAVEL(SC)	24	12	12		
★ B-9	2.5	CLAYEY GRAVEL(GC)	24	13	11		

BOREHOLE	DEPTH	D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay
● B-4	2.5	19	0.378			21.0	45.4	33.6	
⊠ B-5	1.5	0.075						53.7	
▲ B-7	0.5	37.5	2.118	0.083		33.4	37.8	28.8	
★ B-9	2.5	0.075						44.8	