BECC
Geotechnical, Materials, and Environmental Engineers

LISA K. MORRISON
CEO
MARTIN T. BURFORD, P.E.
President
RICHARD A. RHINEHART, P.E.
Vice President

February 24, 2025

Mr. Tracy Colburn
Colburn Properties LLC
507 Hollis Avenue
Panama City, Florida 32401

Subject: Report of Phase I Environmental Site Assessment for
Colburn Properties LLC-Attalla Apartments – Jones St. SE
Attalla, Etowah County, Alabama
BECC Job No. 225010

Dear Mr. Colburn:

BECC has completed the authorized Subsurface Exploration and Geotechnical Engineering Evaluation for the subject project. This work was conducted in accordance with our proposal number Q1-24137 dated December 19, 2024.

The purpose of BECC's work was to perform a subsurface exploration and geotechnical engineering evaluation for the proposed apartments along Jone St. SE in Attalla, Alabama. This report outlines the exploration procedures used, exhibits the data obtained, and presents our conclusions and recommendations.

We appreciate the opportunity to work with you on this project. If you have any questions or we may be of further service to you, please call us.

Respectfully submitted,

BECC, Inc.

Jeremy Mitchell
Richard A. Rhinehart

Jeremy Mitchell, P.E.
Technical Services Division Manager

Richard A. Rhinehart, P.E.
Principal Geotechnical Engineer

Geotechnical, Materials & Environmental Engineers
360 Industrial Lane | Birmingham, Alabama 35211
Ph. (205) 941-1119 | Fax (205) 941-1198
www.beccinc.com

FEBRUARY 24, 2025

REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION FOR

Attalla Apartments

Jones Street SE
Attalla, Etowah County, Alabama 35954

BECC Project Number: 225010

PREPARED FOR:
Colburn Properties LLC
c/o Mr. Tracy Colburn
507 Hollis Avenue
Panama City, Florida 32401

BECC
GEOTECHNICAL, MATERIALS, AND ENVIRONMENTAL ENGINEERS
360 Industrial Lane, Birmingham, AL 35211 - (205) 941-1119 - www.beccinc.com

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EXECUTIVE SUMMARY

The project will consist of the construction of a new multi-unit residential development in Attalla, Alabama. The following is a brief summary of the exploration including our findings, conclusion and recommendations. Refer to subsequent sections within the text for detailed discussions of these topics.

- BECC performed ten (10) soil test borings (designated B-1 through B-10) on February 5, 2025. Approximately 3 to 4 inches of topsoil was encountered throughout the site. Most of the boring locations encountered approximately 3 to 5 feet of fill. Based on N-values and laboratory tests in the fill material, the fill is generally a medium stiff high-plasticity clay.

- Residual soils were encountered just below the fill or topsoil and extended to boring termination or auger refusal depths. Based on N-values and laboratory tests in the residual soils, the material is generally a medium stiff to stiff high-plasticity clay.

- Auger refusal was achieved in B-1, B-2, B-3, B-5, B-9, and B-10 ranging from 8.5 feet to 13 feet BSG.

- Groundwater was encountered in three boring locations: B-1 at 8 feet, B-5 at 13 feet, and B-6 at 3.5 feet.

- Because of the high shrink/swell potential of the expansive clays at the site, special design considerations and site preparation will be required to minimize potential differential volumetric changes in the expansive clays. All existing fill should be undercut from proposed building areas and replaced with controlled select fill. This will require the excavation of existing soils to depths ranging from 3 to 5 feet BSG. The exposed surface soils in building and paving areas should be recompacted to a minimum of 98% of the soil's maximum dry density (ASTM D698), at a moisture content at optimum to +3% of the soil's optimum moisture content.

- New structural engineered fill soils should be compacted to a minimum of 98% of the Standard Proctor maximum dry density (ASTM D698) at a moisture content within optimum to +3% of the soil's optimum moisture content. The highly plastic soils encountered at the site will not be suitable for use as controlled structural fill.

- The foundations can be designed to bear on new structural fill using a maximum net allowable bearing pressure of 2,500 psf for foundation design. In order to design a foundation to withstand the potential shrink-swell movements of the highly expansive clay subgrade and reconditioned shallow soft clays, BECC recommends a minimum of 3 feet of select fill should be beneath the foundation bottom.

- Floor slabs can be soil supported and designed using a modulus of subgrade reaction of 100 pci. In addition, we suggest that all ground supported slabs be founded on a minimum of 4 inches of open graded stone (#57) or 6 inches of dense graded stone (#610 or #825). In order to design a floor slab to withstand the potential shrink-swell movements of the highly expansive clay subgrade and reconditioned shallow soft clays, BECC recommends a minimum of 2 feet of select fill should be beneath the floor slab bottom.

- Depending on the foundation option selected, the floor slab will need to be supported by the piers (suspended or structural slab) or supported on grade in new select engineered fill soils. We recommend a maximum standard modulus of soil reaction of 100-pci for floor support. Floor slabs should be underlain by either 4” of open-graded crushed stone or 6” of dense-graded crushed stone.

- Standard duty pavement sections should be designed using a minimum of 6 inches of crushed aggregate base, 2 inches of binder course asphalt pavement, and 1 inch surface course asphalt pavement. Heavy duty pavement sections should be designed using a minimum of 8 inches of crushed aggregate base, 2.5 inches of binder course asphalt pavement, and 1.5 inches surface course asphalt pavement. Portland cement alternative pavement recommendations are also provided in the report. BECC recommends a minimum of 1 foot of select fill should be beneath the pavement structure bottom.

NOTE: *It should be noted that this executive summary presents selected elements of our findings and recommendations* ***only.*** *It* ***does not*** *present crucial details needed for the proper application of our findings and recommendations. Our findings, recommendations, and application are related* ***only through the full report****, and are best evaluated with the active participation of the geotechnical engineer who developed them.*

Table of Contents

LIST OF TABLES

LIST OF APPENDICES

SECTION 1: SCOPE OF WORK

The purpose of the geotechnical exploration was to evaluate general soil conditions for a new multi-unit residential development in Attalla, Alabama. This work was conducted in accordance with our proposal number Q1-24137 dated December 20, 2024. The following items were included as part of our scope of work:

1. Ten (10) soil test borings were to be drilled to depths of 10 to 15 feet: 5 locations to 10 feet at approximate proposed pavement areas and 5 to 15 feet in the potential building pad areas, or auger refusal whichever is less.

2. Laboratory tests to include natural moisture content (ASTM D2216), Atterberg limits (ASTM D4318), and percent passing #200 sieve (ASTM D1140).

3. A geotechnical engineering report is to include the following items:

    - A site plan illustrating the boring locations;
    - Boring logs describing the subsurface and groundwater conditions encountered;
    - Description of field and laboratory procedures;
    - Discussion of site geology;
    - Results of the laboratory tests performed;
    - Recommendations relative to site preparation (earthwork, cut and fill recommendations, compaction requirements, unsuitable soil, etc.);
    - Foundation design recommendations and bearing capacity;
    - Excavation considerations;
    - Recommendations for pavement design.

NOTE: BECC's work scope did not include exploration of the site for environmental contaminants in the subsurface soils or groundwater. However, a Phase I Environmental Site Assessment was performed and provided under separate cover.

SECTION 2: PROJECT DESCRIPTION

The project will consist of the design and construction of approximately 100 new apartment units on a 5 acre site in Attalla, Alabama. The property is located within a larger area once part of Camp Sibert. Camp Sibert was decommissioned in 1946 and once part of munitions manufacturing and storage. The buildings are expected to be along the outer boundary of the site with paved parking and driveways in the middle. The intent of this exploration will be to determine the general site conditions that may aid in placement of the buildings.

SECTION 3: SITE GEOLOGY

Published geologic maps by the United States Geological Survey (USGS) indicate that the site is underlain by Conasauga Formation. The Conasauga Formation consists of medium to thick-bedded medium bluish grey, fine-grained, argillaceous limestone with interbedded dark grey shale in varying proportions. The beds are folded and fractured, and parts of the outcrop area are more intensely fractured than others. Weathering of this formation results in a clayey or silty clay soil that ranges from 5 to 20+ feet in thickness. The bedrock surface is highly irregular. Pinnacles may project to the surface, and limestone boulders and fragments occur throughout the soil zone. The formation is also susceptible to vertical clay filled slots and seams. The soils developed from the Conasauga have been observed to have a moderate shrink-swell potential.

The groundwater is poorly defined and subject to seasonal changes. Flow is often very slow and non-uniform. In this formation, the groundwater flows along the bedding planes and joints, dissolving the rock and producing solution cavities. The geologic structure is the major influence on the movement of groundwater. Faulting and fracturing generally increase the secondary permeability of the rock, which results in severe rock weathering in these areas.

3.1 Potential for Sinkhole Development

Published geologic literature indicates that the site is underlain by carbonate units (sometimes referred as karst), which are prone to the development of sinkholes. Key factors involved in controlling the absence or presence of sinkhole activity in a particular area are the presence of soluble carbonate rock and the movement of groundwater through the rock. As groundwater fluctuates in the carbonate strata, cavities or voids within the rock that were once water-filled become open. Residual clay overlying the voids and situated between the bedrock and ground surface begins to “spall” or migrate into these voids. This spalling results in new voids which are located in the clay. As spalling continues upward, the overlying clay eventually can no longer support itself and a depression forms at the surface resulting in a sinkhole.

Our scope of work did not include exploration specifically designed to detect subsurface cavities. No visible surface sinkholes were observed at the site. However, the owner should acknowledge that there is always risks associated with constructing over geologic formations that are susceptible to bedrock dissolution and the occurrence of sinkholes.

3.2 Seismic Design Parameters

The subsurface conditions at the site consist of soils underlain by limestone bedrock. Based on the borings performed at the site and our knowledge of the site geology, we recommend a seismic site class definition of “C” be used in design calculations (International Building Code). Site Coefficient values for spectral response acceleration taken from ASCE 7 Hazard Tool are given below.

Site Location: 33.994706° N Latitude - 86.097467° W Longitude

Table 1: Seismic Design Parameters

Risk Category	S_S	S_1	S_{MS}	S_{M1}	S_{DS}	S_{D1}	PGA_M	T_L	V_{S30}
II	0.33	0.12	0.39	0.24	0.26	0.16	0.17	12	260

SECTION 4: SUBSURFACE EXPLORATION

BECC performed fifteen (10) soil test borings (designated B1 through B10) on February 5, 2025. Boring locations were located in the field by a BECC representative using GPS coordinates and mapping services and a proposed site development plan. Therefore, GPS locations in this report should be considered approximate. The boring locations are shown on the boring plans with approximate coordinates in **Appendix A**.

4.1 Soil Test Borings

Soil drilling and sampling operations were conducted according to ASTM D 1586. The test borings were advanced by mechanically twisting continuous steel auger flights. Within the test borings, soil samples were obtained with a standard 1.4-inch ID, 2-inch OD split spoon sampler. The sampler was first seated 6 inches to penetrate any loose cuttings and was then driven an additional 12 inches with blows of a 140-pound hammer falling 30 inches. The number of blows (N) required to drive the sampler the final 12 inches of penetration is the “Standard Penetration Resistance”. The penetration resistance, when properly evaluated, is an index of the soil strength.

Representative portions of the samples obtained were then sealed in air-tight containers and transported to our laboratory. In the laboratory, the samples were classified by a geotechnical engineer. The soil description and the penetration resistance at the specific boring locations are indicated on the Boring Logs in the Appendix. The samples were transported to our laboratory to perform additional tests. All the samples will be stored on our premises for 60 days from submittal of this report and then discarded unless additional storage time is requested.

SECTION 5: LABORATORY TESTS

In addition to the field exploration, a limited laboratory testing program was conducted to ascertain additional engineering characteristics of the foundation materials. To supplement the visual classification of the soil samples, the following tests were performed. The results of the tests are shown on the “Geotechnical Lab Summary” and the individual test reports in **Appendix B**.

5.1 Description of Soils (Visual-Manual Procedure) (ASTM D2488)

The soil samples were visually examined by our engineer and soil descriptions were provided. Representative samples were then selected and tested to determine soil classification as described above. This data was used to correlate our visual descriptions with the Unified Soil Classification.

5.2 Natural Moisture Content (ASTM D2216)

Natural moisture contents (*M%*) were determined on selected samples. The natural moisture content is the ratio, expressed as a percentage, of the weight of water in a given amount of soil to the weight of solid particles.

5.3 Percent Passing #200 Sieve (ASTM D1140)

Wash #200 tests were performed on the selected samples to determine the amount of “fines” in the represented soil. “Fines” are defined as particles with a grain size equal to or less than a diameter of 0.075 millimeters. These particles are typically found in silts, clays, and silty clays, as well as silty or clayey sands.

5.4 Atterberg Limits Tests (ASTM D4318)

Atterberg Limit tests were performed on the selected samples to determine how the characteristics change upon variation in moisture stage. The limits are bracketed by the Liquid Limit (*LL*) and the Plastic Limit (*PL*). The Liquid Limit is the moisture content at which the soil will flow as a heavy viscous fluid. The plastic Limit is the moisture content at which the soil is between the “plastic” and semi-solid stage. The soil’s Plasticity Index (*PI*) is the difference between the Liquid Limit and the Plastic Limit. The PI is often used as the indicator of the soil’s expansive tendencies. The greater the range between the LL and the PL, the more potentially expansive the soil can be.

SECTION 6: SUBSURFACE CONDITIONS

Details of the subsurface conditions encountered by the test borings are shown on the boring log sheets in **Appendix B**. The general subsurface conditions encountered, and their pertinent characteristics are described in the following paragraphs. The stratification lines indicated on the logs of boring represent approximate boundaries between soil types. However, the actual transition may be gradual. Conditions represented by the test borings should be considered applicable only at the test boring locations on the dates shown, and it should be assumed that the conditions may be different at other locations at other times.

6.1 Surface Materials

The soil borings encountered approximately 3 to 4 inches of topsoil at the ground surface. The term “topsoil” as used in this report refers to an upper zone of soil containing partially decayed organic matter or roots, and not in the context of landscape quality topsoil. The topsoil encountered at this site may or may not be suitable for landscaping purposes. We note that thicker zones of topsoil and root zones should be expected in more wooded portions of the site.

6.2 Fill Soils

Fill soils were encountered below the topsoil and were generally yellow-gray clay. Miscellaneous rock fragments as well as asphalt material (B-7) were encountered near the bottom of the fill depth. Fill soils were encountered in all boring locations with the exception of B-3 and B-9 and extended to depths between 3 and 5 feet below surface grade (BSG). Standard Penetration Resistances (N-values) tests were performed on select samples. The N-values ranged from 3 to greater than 100 blows per foot (bpf). The 100+ N-value resulted from miscellaneous rock in the sample. Typically, N-values ranged between 3 to 8bpf, averaging 5bpf and indicating a soft to medium stiff consistency. The lowest N-values were encountered in borings B-5, B-6, and B-10 with soft clays in the upper 3 feet of material. Generally, the boring location along the west boundary of the site exhibited softer consistencies in the shallow materials.

Laboratory tests were performed on representative samples of the residual soils. Natural moisture content ranged from 22.9% to 35.5%, averaging 28.0%. An Atterberg Limits test indicated a Liquid Limit (LL) of 67, Plasticity Index (PI) of 42, with 91.8% of material passing a #200 sieve. **Based on laboratory tests performed, the fill soils tested were classified as a high plasticity clays (CH).**

6.3 Residual Soils

Residual soils are those that have been formed by the in-place weathering of the parent rock. Residual soils were encountered below the topsoil or fill soils in all boring locations and were generally yellow-gray to red-bray clay with some chert rock fragments. Residual soils extended to boring termination depths between 8.5 and 15 feet below surface grade (BSG). N-values ranged from 6 to greater than 100 blows per foot (bpf). The 100+ N-value resulted from miscellaneous rock in the sample. Typically, N-values ranged between 6 to 23bpf, indicating a medium stiff to very stiff consistency. N-values greater than 100 bpf were due to fragmented rock in the samples. Lower N-value were generally encountered in borings B-5 and B-6 just below the fill material extending to 6 to 9 feet BSG.

Laboratory tests were performed on representative samples of the residual soils. Natural moisture content ranged from 12.5% to 37.9%, averaging 27.7%. Atterberg Limits test indicated Liquid Limits (LL) ranging from 60 to 63, Plasticity Index (PI) between 33 and 37, with 77.8% to 86.8% of material passing a #200 sieve. **Based on laboratory tests performed, the residual soils tested were classified as a high plasticity clays (CH).**

6.3 Auger Refusal

Auger refusal is the drilling depth at which advancement of the borehole can no longer be accomplished by standard soil drilling; rock coring must be employed for further penetration. Auger refusal was encountered during drilling operations at six boring locations, B-1 (13'), B-2 (8.5'), B-3 (12.5'), B-5 (14'), B-9 (8.5'), and B-10 (12.5').

6.4 Groundwater

Groundwater was encountered in three boring locations, B-1 (8'), B-5 (13'), and B-6 (3.5') at time of drilling. The presence or absence of water in the boreholes at the time of drilling does not necessarily mean that groundwater will or will not be present at other times. The groundwater "perched" or trapped condition can occur at the contact between fill soils, residual soils and bedrock. Groundwater levels fluctuate seasonally and are related to the amount of rainfall received in months prior to the observations.

SECTION 7: SITE PREPARATION & GRADING CONSIDERATIONS

A grading plan or proposed structure finished floor elevations were not available to BECC at the time of this geotechnical engineering report. The recommendations contained in this report may need modifications once the finished grades are determined. BECC should be supplied this information by the owner when it becomes available.

7.1 Existing Structures

All existing structures (including above and below ground construction) within the areas to be developed should be removed. Removal should include all vegetation, topsoil, underground pipes and lines, etc., that might interfere with construction. If abandoned underground utilities are to be removed prior to initiation of construction, provisions should be made in the construction specifications and budget to restore the subgrade to a stable condition. Restoration should include backfilling and compaction of the excavated areas.

7.2 Conditioning of Subgrade Soils

Following the removal of surface materials or deleterious materials, areas that are at grade or are to receive fill should be evaluated by the geotechnical engineer. This observation may include proofrolling with a loaded dump truck or other pneumatic-tired construction equipment or geotechnical probe evaluation. The geotechnical engineer, by field examination, can determine the extent of any undercutting or reconditioning necessary to prepare an adequate subgrade. Replacement with controlled structural fill should meet the requirements of **Section 7.3** of this report. The construction budget should have undercutting and backfilling allowances.

Based on subsurface material encountered, uncontrolled fill was encountered beneath surface materials. All existing fill should be undercut from proposed building areas and replaced with controlled select fill

- This will require the excavation of existing soils to depths ranging from 3 to 5 feet BSG. After excavation, the exposed subgrade should be evaluated by a geotechnical engineer via proofroll as discussed in **Section 7.2** and to verify material has been adequately removed. The exposed surface soils in building and paving areas should be recompacted to a minimum of 98% of the soil's maximum dry density (ASTM D698), at a moisture content at optimum to +3% of the soil's optimum moisture content.
- Material should be replaced with select controlled fill as discussed in **Section 7.3**.

7.3 Controlled Structural Fill

BECC recommends that the controlled structural fill meet the following recommendations:

- Have a Unified Soil Classification of CL with a minimum of 30% passing the #200 sieve.
- Have a maximum Liquid Limit (LL) less than 50.
- Have a maximum Plasticity Index (PI) between 10 and 29.
- Be free of organics, debris and rocks greater than 4 inches
- Have a maximum dry density greater than 100 pcf

The fill should be compacted to a minimum 98 percent of maximum dry density, as determined by the Standard Proctor ASTM D 698. A sufficient number of field density tests should be performed to evaluate the grading contractor's performance during filling. During mass grading, lift thickness for fill should be limited to a maximum of eight inches loose measure. Backfilling in limited access areas such as utility trenches should have a lift thickness limited to six inches loose measure.

It is also recommended that all structural fill be placed at optimum to +3% of optimum moisture content. The grading contractor should acknowledge the importance of proper fill moisture conditioning. **We suggest that the project specifications address that both fill compaction and acceptable fill moisture content will be required for the acceptance of structural fills.** It will be particularly important to have a water truck available if filling takes place during the hot, dry summer months.

7.4 Backfilling of Utility Trenches

Impervious non-expansive soils (SC or CL) should be used for backfilling around the building to eliminate seepage paths or moisture pockets around and under the structure. Backfilling of storm drain and utility trenches is often accomplished in an uncontrolled manner, leading to subsequent settlement of the fill and cracking of pavements. It is recommended that utility trenches be backfilled with acceptable fill in six-inch lifts and compacted with pneumatic-piston tampers to the project requirements. Should seepage occur in utility trenches, it may be necessary to "floor" the trench with open-graded gravel to provide a dry working surface.

7.5 Surface Drainage and Protection of Soils During Grading

The soils at the site are moisture sensitive and can become easily disturbed causing loss of strength. Proper surface drainage will be very important during grading at the site. If the soils become wet after being exposed it may become necessary to undercut or recondition. On many projects reworking of disturbed soils becomes a point of controversy. BECC recommends that the specifications for this project provide performance guidelines for protection of exposed soils and correction of disturbed areas.

Subgrade soils in building and paving areas should not be allowed to dry below the soils’ optimum moisture content limit. During the dryer times of the year, periodic wetting of the subgrade soils will be needed to maintain moisture in the subgrade.

SECTION 8: FOUNDATION RECOMMENDATIONS

The recommendations stated in the following sections are based on the data obtained through our exploration and experience with similar structures and subgrade conditions. Building loads were not available at the time this report was issued. BECC should be notified and given the opportunity to review our recommendations when the information becomes available.

8.1 General Discussion

The field and laboratory tests indicate the upper soils at the site consist of uncontrolled and soft highly plastic clays (CH). These clays have a high potential for volume change (shrinkage and swelling) with changes in soil moisture content resulting from seasonal rainfall variations and other factors. Therefore, because of the shrink/swell potential of the expansive clays, special design considerations and site preparation will be required to minimize potential differential volumetric changes in the expansive clays.

In order to design a foundation to withstand the potential shrink-swell movements of the highly expansive clay subgrade and reconditioned shallow soft clays, in addition to recommendations discussed in **Section 7.2**, BECC recommends a minimum of 3 feet of select fill should be beneath the foundation bottoms. This may require excavation beyond the existing fill material as previously discussed in **Section 7.2** in the area of foundations.

8.2 Bearing Capacity

It is our opinion the new building foundations can be designed for support using conventional spread footings bearing in new controlled structural fill or stiff on-site soils. We recommend the exposed soils be evaluated by proofrolling with a fully loaded tandem dump truck (min. 60,000 lbs.). Soils that rut or deflect excessively should be undercut or recompacted. The undercut soils can be backfilled with compacted structural fill. **The foundations can be designed to bear on the structural fill or stiff on-site soils using a maximum net allowable bearing pressure of 2,500 psf for foundation design.** Based on these loads, we expect total foundation settlement to be one (1) inch or less and differential settlements between adjacent columns (40' or less spacing) to be less than ½ inch.

8.3 General Spread Foundation & Soil Protection Recommendations

The following items should be included in the project specification in regard to spread foundation design and construction.

1. We recommend minimum footing dimensions of 18 and 24 inches for continuous strip footings and individual column footings, respectively.

2. The footing bearing surface should be observed by a BECC geotechnical engineer or his representative to verify that the soil complies with the above recommendations.

3. Where it is necessary to extend a footing beyond the planned bearing depth in order to reach a suitable bearing level, the over-excavation should be backfilled with compacted engineered clay fill or lean concrete.

4. If water is encountered in the footing excavations, extreme care should be exercised to ensure that the foundation subgrade is not disturbed. A thin concrete “mud mat” poured over surfaces should be used to protect them from any seepage which might enter foundation excavations.

5. The base of all satisfactory foundation excavations should be protected against any detrimental change in conditions such as disturbance from rain, frost, or flooding. Surface runoff water should be drained away from the excavation and not be allowed to pond.

6. If possible, all footing concrete should be poured during the same day the excavation is made. If this is not possible, then the footing excavation should be adequately protected.

7. Backfill adjacent to exterior walls should be composed of clean soil fill meeting the project fill requirements. No debris or rubble should be placed adjacent to the exterior walls. Fill should be compacted immediately after placement to preclude surface water infiltration into the foundation materials.

8. **We recommend that roof rainwater be collected in gutters, downspouts, leader pipes, and piped into storm sewers.** Exterior grades should be sloped away from the building to achieve positive drainage of surface water.

9. Positive surface drainage away from the structure is very important to control cyclic saturation – desiccation of soils under and around the foundations. We recommend a minimum slope of 8 inches in the first 10 feet out from the structures. Surface runoff flowing toward the structures from adjacent areas should be intercepted and diverted.

10. **During construction, soil subgrades should be protected from excessive drying or wetting prior to concrete placement. Exposure time should be limited to prevent saturation or desiccation. The subgrade can be protected by polyethylene sheeting. If the clays dry out below the optimum moisture content, the soils should be moistened, mixed and recompacted to above optimum moisture content. Or the dry soils could be skimmed off and replaced with soils of the correct moisture. Subgrade soils should be at optimum moisture content to +3% of optimum (ASTM D698).**

11. One of the most critical aspects of landscaping is the continual maintenance of properly designed slopes. Installing flowerbeds or shrubs next to the foundation and keeping the area flooded will result in a net increase in soil expansion. The expansion will occur at the foundation perimeter. It is recommended that initial landscaping be done on all sides, and that drainage away from the foundation should be provided and maintained. Partial landscaping on one side of a structure may result in swelling on the landscaping side of the structure and resulting differential swell of foundation and structural distress in a form of brick cracking, windows/door sticking, and slab cracking. Sprinkler systems can be used in areas where expansive soils are present, provided the sprinkler system is placed all around the structure to provide a uniform moisture condition. The excavations for the sprinkler system lines should be backfilled with impermeable clays. Gravel, sand or topsoil should not be used as pipe backfill. These soils should be properly compacted to minimize water flow into the excavation trench and seeping under the foundations, resulting in foundation and structural distress. Trees should not be planted within 20 feet of foundations.

SECTION 9: FLOOR SLAB CONSIDERATIONS

It is our opinion that the floor slab for the buildings can be built on-grade, achieving support from recompacted on-site stiff soils or new controlled structural fill. A modulus of subgrade reaction (k for a 1 square foot bearing plate) value of 100 pounds per cubic inch (pci) is recommended for floor slab design.

We recommend soils in floor slab areas be compacted to a minimum of 98% of the Standard Proctor maximum dry density (ASTM D698). Prior to any fill placement or floor slab construction, we recommend that the exposed sub-grade materials be evaluated by a BECC representative. This evaluation may include proofrolling with a tandem dump truck (min. 60,000 lbs.). In order to design a floor slab to withstand the potential shrink-swell movements of the highly expansive clay subgrade and reconditioned shallow soft clays, in addition to recommendations discussed in **Section 7.2**, BECC recommends a minimum of 2 feet of select fill should be beneath the floor slab bottom. This may require excavation beyond the existing fill material as previously discussed in **Section 7.2** in the building areas.

In addition, we recommend that all ground supported slabs be founded on a minimum of 4 inches of open graded stone (#57) or 6 inches of dense graded stone (#610 or #825). The granular materials will provide more uniform support, and also to act as a capillary break. We recommend that slab joints and construction be in accordance with the guidelines of the American Concrete Institute (ACI) and the Portland Cement Association (PCA).

On most projects, there is a significant time lag between initial grading and the time when the contractor is ready to construct the slab-on-grade. Even though the soils may have been placed and compacted adequately during initial grading, exposure to weather, construction traffic, etc., can destroy the integrity of subgrade soils. On many projects, this becomes a point of controversy when remedial work is required for proper slab support.

SECTION 10: PAVEMENT DESIGN CONSIDERATIONS

We recommend subgrade soils In paving areas be scarified, moisture conditioned and compacted to 98% of their standard proctor maximum dry density at within 3% of the soil's optimum moisture content. The pavement sections are designed based on a CBR of 5 or greater. Any new fill soils should meet this design requirement. In order to design a pavement subgrade to withstand the potential shrink-swell movements of the highly expansive clay subgrade and reconditioned shallow soft clays, in addition to recommendations discussed in **Section 7.2**, BECC recommends a minimum of 1 foot of select fill should be beneath the pavement structure bottom.

10.1 Design Pavement Sections (Soil CBR = 5)

Table 2: Standard Duty Pavement Build-Up

STANDARD DUTY	
OPTION 1	1" - Bituminous Concrete Wearing Surface Layer ALDOT 424-A, 1/2 Inch Maximum Size Aggregate 2" - Bituminous Concrete Binder Layer ALDOT 424-B, 3/4 Inch Maximum Size Aggregate 6" - Crushed Aggregate Base ALDOT 825 Type B
OPTION 2	5" - Portland Cement Concrete Pavement (f'c = 4000 Psi) ALDOT 450 4" - Crushed Stone Base ALDOT 825, Type B

Table 3: Heavy Duty Pavement Build-Up

HEAVY DUTY	
OPTION 1	1.5" - Bituminous Concrete Wearing Surface Layer ALDOT 424-A, ½ Inch Maximum Size Aggregate 2.5" - Bituminous Concrete Binder Layer ALDOT 424-B, 3/4 Inch Maximum Size Aggregate 8.0" - Crushed Aggregate Base ALDOT 825 Type B
OPTION 2	7" - Portland Cement Concrete Pavement (f'c = 4000 psi) ALDOT 450 4" - Crushed Stone Base ALDOT 825, Type B
DUMPSTER PAD	8" - Portland Cement Concrete Pavement (f'c = 4000 psi) ALDOT 450 4" - Crushed Stone Base ALDOT 825, Type B

In concrete paving, reinforcing steel is typically not necessary if a liberal joint pattern is used in design, and proper workmanship is conducted. Construction joints should not exceed a spacing of 30 times the concrete thickness. Therefore, a joint spacing no greater than 12-ft for 5-in thick concrete pavement and 17-ft for 7-in thick concrete pavement.

10.2 Subgrade Restoration

Typically, during construction, pavement subgrades become disturbed because of traffic and environmental conditions. Prior to construction of pavements, it is essential that the subgrade be restored to a properly compacted condition. The specifications should include notes pertaining to subgrade restoration immediately prior to pavement construction. The on-site soils have a tendency to lose shear strength (and consequently pavement support capability) if they are permitted to dry and are later exposed to free water. Thus, proper moisture conditioning of the subgrade prior to placement of the pavement base cause will result in better pavement performance. Pavements should be set back a minimum distance of 5 feet behind the crest of fill slopes in an effort to avoid building over the portion of the slope that is most likely to experience some long term "creep" type movement.

SECTION 11: CONSTRUCTION MONITORING

We strongly recommend that **BECC, Inc.** be retained to provide a comprehensive construction-monitoring program when the project proceeds. This program would assist the owner in determining that the work is being carried out in general conformance with the plans and specifications and help avoid the potential of change orders and cost overruns. Construction monitoring includes testing of construction materials such as compacted fill and concrete.

Monitoring/testing during the earthwork and foundation construction phases is particularly important since assumptions (and recommendations) have been made based on the soil boring data. Confirmation that actual subsurface conditions are comparable to the assumed conditions is an essential part of the subsurface exploration process.

11.1 Subgrade, Observations, Proofrolling

The purpose of proofrolling will be to densify the exposed near-surface soils and also to reveal soft pockets of soil that will require remedial measures. Areas that pump or rut during the proofrolling operations should be undercut or reconditioned. The geotechnical engineer can determine the depth and extent of areas that will require undercutting.

11.2 Fill Monitoring

We recommend that in-place density tests should be performed in the field by an engineering technician to evaluate the contractor's performance regarding meeting the project specifications for fill placement. A commonly used testing frequency is one (1) test per eight (8) inch lift to fill placed per 2,500 square feet of fill area. The engineering technician can assist the grading contractor in soil moisture content evaluation by performing on-site fill moisture content tests.

11.3 Foundation Excavations

We recommend that the excavations for foundations be observed and tested by a BECC representative. Such testing is necessary to determine the appropriateness of the bearing level, the adequacy of the bearing materials and the conformity of the foundation to the specification with respect to depth, planned dimensions, cleanliness, etc.

SECTION 12: GENERAL REMARKS/REPORT LIMITATIONS

This report has been prepared for the exclusive use of **Colburn Properties LLC and High Mark Developers LLC** for specific application to the subject project. All recommendations contained in this report have been made in accordance with generally accepted soil engineering practices. No other warranties are implied or expressed. In addition, the analysis and recommendations submitted in this report are based in part upon the data obtained from the test locations. The nature and extent of variations between the test locations may not become evident until construction. If variations then appear evident, it may be necessary to re-evaluate the recommendations of this report.

We emphasize that this report was for design purposes only and is not sufficient to prepare an accurate bid. Contractors reviewing this report should acknowledge that the recommendations and discussions herein are for design purposes.

If significant changes are made in the character of the proposed development, a consultation should be arranged to review them with respect to prevailing subsurface conditions. At that time, it may be necessary to submit supplementary recommendations.

It is imperative that the geotechnical engineer be provided the opportunity to review the final plans and specifications to verify that the recommendations in this report are properly interpreted and incorporated in the design. It will be the client's responsibility to furnish the final grading and foundation plans to BECC for the necessary review. If the geotechnical engineer is not accorded the privilege of making this recommended review, we can assume no responsibility for misinterpretation of our recommendations.

APPENDIX A

Boring Plans

Colburn Properties LLC- Attalla Apartments

GENERAL NOTES

1> Red boring locations were drilled to 15 feet BSG or auger refusal in planned structure areas.

2> Blue boring locations were drilled to 10 feet BSG or auger refusal in planned paving areas.

BORING COORDINATES (approximate)

B1	33.995187, -86.097220	**B6**	33.995513, -86.097509
B2	33.993990, -86.097256	**B7**	33.994917, -86.097705
B3	33.993696, -86.097522	**B8**	33.994704, -86.097467
B4	33.994351, -86.097751	**B9**	33.994332, -86.097311
B5	33.995384, -86.097776	**B10**	33.993925, -86.097683

Plan Notes

LOCATION: Jones St. SE, Attalla, Etowah County, Alabama 35954

BECC PROJECT NO.: 225010

DATE: 2/4/2025

PLANS DRAWN BY: J. Mitchell

BECC
Geotechnical, Materials, and Environmental Engineers

MAP SOURCE: http://earth.google.com

Colburn Properties LLC-Attalla Apartments

Aerial Boring Plan

LOCATION: Jones St. SE, Attalla, Etowah County, Alabama 35954

BECC PROJECT NO.: 225010

DATE: 2/4/2025

SHEET 1

MAP SCALE: 1” : 165’

BECC
Geotechnical, Materials, and Environmental Engineers

APPENDIX B

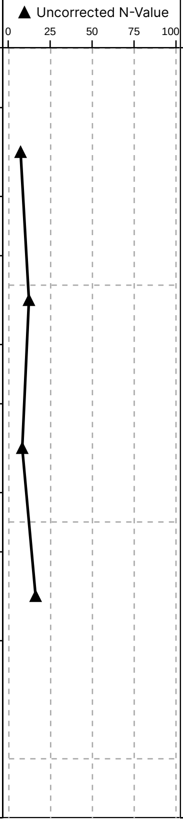
Boring Logs

Soil Boring: B-1

BECC, Inc.
360 Industrial Lane,
Birmingham, AL 35211
(205) 941-1119
www.beccinc.com

PROJECT Attalla Apartments
BECC PROJECT NO. 225010 **BORING NUMBER** B-1
BORING LOCATION 33.99519, -86.09722
GEOLOGY Conasauga Formation
DATE COMPLETED 02/05/2025 **GROUND ELEVATION** ~572.3'
METHOD Auger **HOLE DIAMETER** 6 in
CONTRACTOR Earthcore
LOGGED BY Jesse Jowers **REVIEWED BY** Richard Rhinehart

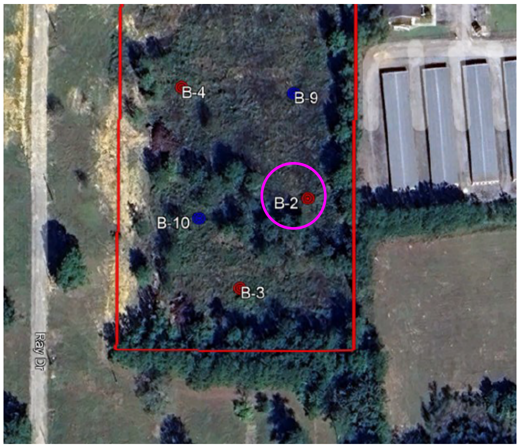
ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	UNIFIED CLASSIFICATION	MATERIAL DESCRIPTION	SAMPLE TYPE	NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N-VALUE)	SPT N Value	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	FINES CONTENT (%)	WATER LEVEL (ft)	REMARKS
				TOPSOIL: Approximately 3 to 4 inches 0.3											
570				FILL: Medium Stiff Yellow/Gray CLAY 3.0	☒			2-3-4 (7)		23.50					
			CH	RESIDUUM: Stiff to Medium Yellow/Gray High Plasticity CLAY	☒			4-7-5 (12)		34.20	63	37	86.8		
565	5			8.0	☒			4-4-4 (8)		34.30				▽	
560	10			Very Stiff Yellow/Gray CLAY 13.0	☒			6-8-8 (16)		31.30					Groundwater Encountered at 8' at Time of Drilling



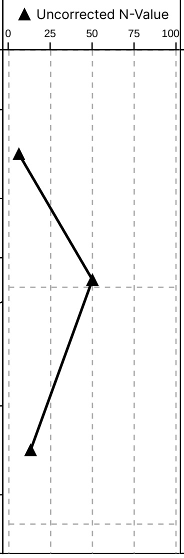
Boring Terminated at 13 Feet Due to Auger Refusal

Soil Boring: B-2

BECC, Inc.
360 Industrial Lane,
Birmingham, AL 35211
(205) 941-1119
www.beccinc.com



PROJECT Attalla Apartments
BECC PROJECT NO. 225010 **BORING NUMBER** B-2
BORING LOCATION 33.99399, -86.09726
GEOLOGY Conasauga Formation
DATE COMPLETED 02/05/2025 **GROUND ELEVATION** ~574.4'
METHOD Auger **HOLE DIAMETER** 6 in
CONTRACTOR Earthcore
LOGGED BY Jesse Jowers **REVIEWED BY** Richard Rhinehart

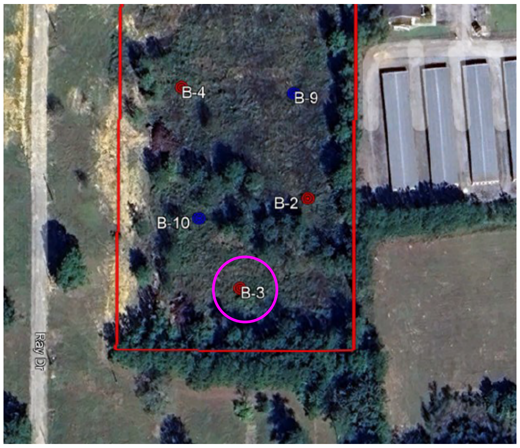
ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	UNIFIED CLASSIFICATION	MATERIAL DESCRIPTION	SAMPLE TYPE	NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N-VALUE)	SPT N Value	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	FINES CONTENT (%)	WATER LEVEL (ft)	REMARKS
				TOPSOIL: Approximately 3 to 4 inches 0.3											
				FILL: Medium Stiff Yellow/Gray CLAY 4.0				3-3-3 (6)		28.50					
570	5			RESIDUUM: Stiff Yellow/Gray High Plasticity CLAY N-value exaggerated due to miscellaneous rock in sample. 8.5				8-50/3' (50) 4-6-7 (13)		31.00 27.60					

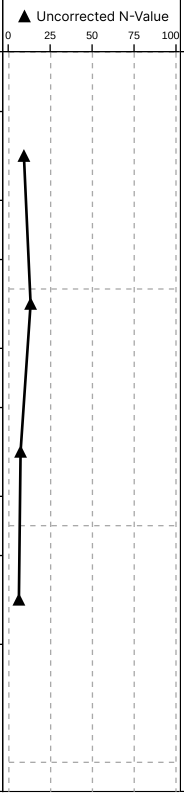
Boring Terminated at 8.5 Feet Due to Auger Refusal

Soil Boring: B-3

BECC, Inc.
360 Industrial Lane,
Birmingham, AL 35211
(205) 941-1119
www.beccinc.com

PROJECT Attalla Apartments
BECC PROJECT NO. 225010 **BORING NUMBER** B-3
BORING LOCATION 33.99369, -86.09752
GEOLOGY Conasauga Formation
DATE COMPLETED 02/05/2025 **GROUND ELEVATION** ~569.5'
METHOD Auger **HOLE DIAMETER** 6 in
CONTRACTOR Earthcore
LOGGED BY Jesse Jowers **REVIEWED BY** Richard Rhinehart



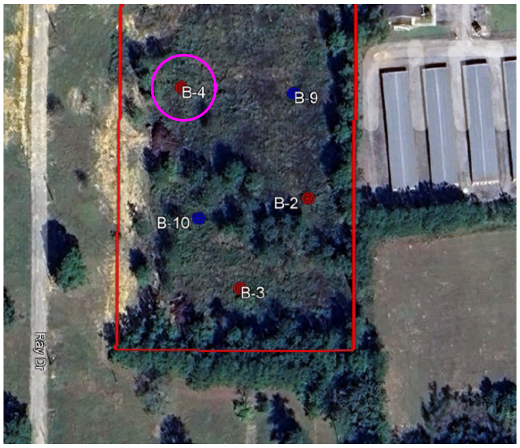
ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	UNIFIED CLASSIFICATION	MATERIAL DESCRIPTION	SAMPLE TYPE	NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N-VALUE)	SPT N Value	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	FINES CONTENT (%)	WATER LEVEL (ft)	REMARKS
				TOPSOIL: Approximately 3 to 4 inches 0.3											
				RESIDUUM: Stiff Yellow/Gray CLAY				3-4-5 (9)		36.30					
565								4-8-5 (13)		22.50					
	5			5.0											
				Medium Stiff Yellow/Gray CLAY				3-3-4 (7)							
560								2-2-4 (6)		37.90					
	10														
				12.5											

Boring Terminated at 12.5
Feet Due to Auger
Refusal

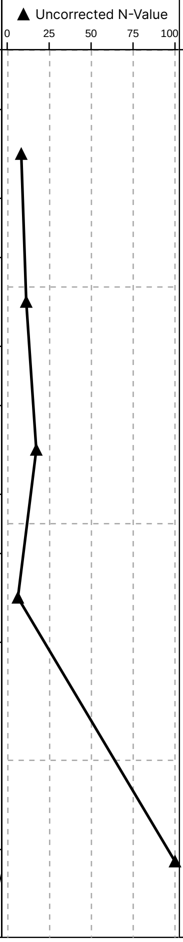
Soil Boring: B-4

BECC, Inc.
360 Industrial Lane,
Birmingham, AL 35211
(205) 941-1119
www.beccinc.com

PROJECT Attalla Apartments
BECC PROJECT NO. 225010 **BORING NUMBER** B-4
BORING LOCATION 33.99435, -86.09775
GEOLOGY Conasauga Formation
DATE COMPLETED 02/05/2025 **GROUND ELEVATION** ~574.2'
METHOD Auger **HOLE DIAMETER** 6 in
CONTRACTOR Earthcore
LOGGED BY Jesse Jowers **REVIEWED BY** Richard Rhinehart



ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	UNIFIED CLASSIFICATION	MATERIAL DESCRIPTION	SAMPLE TYPE	NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N-VALUE)	SPT N Value	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	FINES CONTENT (%)	WATER LEVEL (ft)	REMARKS
				TOPSOIL: Approximately 3 to 4 inches. 0.3											
				FILL: Stiff Yellow/Gray CLAY into organics 4.0				2-4-4 (8)							
570				RESIDUUM: Stiff to Very Stiff Yellow/Gray CLAY				3-6-5 (11)		34.20					
	5														
				8.0				10-11-6 (17)		14.50					
565				Medium Stiff Yellow/Gray CLAY				2-3-3 (6)							
	10														
560				N-value exaggerated due to fractured rock from underlying rock formation. 15.0				50/5' (100+)		18.30					
	15														



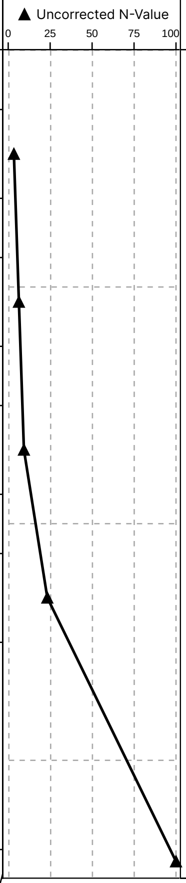
Boring Terminated at 15 Feet

Soil Boring: B-5

BECC, Inc.
360 Industrial Lane,
Birmingham, AL 35211
(205) 941-1119
www.beccinc.com

PROJECT Attalla Apartments
BECC PROJECT NO. 225010 **BORING NUMBER** B-5
BORING LOCATION 33.99538, -86.09777
GEOLOGY Conasauga Formation
DATE COMPLETED 02/05/2025 **GROUND ELEVATION** ~562.3'
METHOD Auger **HOLE DIAMETER** 6 in
CONTRACTOR Earthcore
LOGGED BY Jesse Jowers **REVIEWED BY** Richard Rhinehart

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	UNIFIED CLASSIFICATION	MATERIAL DESCRIPTION	SAMPLE TYPE	NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N-VALUE)	SPT N Value	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	FINES CONTENT (%)	WATER LEVEL (ft)	REMARKS
				TOPSOIL: Approximately 3 to 4 inches. 0.3											
560				FILL: Soft Yellow/Gray CLAY 4.0				1-1-2 (3)		35.50					Offset 2' West after AR @ 1'. Drilled through old asphalt below topsoil.
	5			RESIDUUM: Medium Stiff Yellow/Gray CLAY 6.0				2-3-3 (6)		17.30					
555			CH	Stiff Yellow/Gray High Plasticity CLAY 8.0				3-4-5 (9)		28.80	60	33	77.8		
550	10			Very Stiff Yellow/Gray CLAY 14.0				4-10-13 (23) 50/5' (100+)		20.30				▽	Groundwater Encountered at 13 Feet at the Time of Drilling

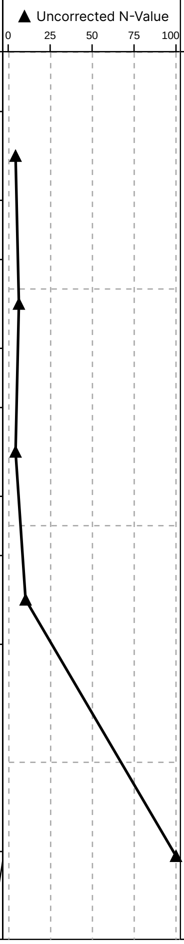


Boring Terminated at 14 Feet Due to Auger Refusal

Soil Boring: B-6

BECC, Inc.
360 Industrial Lane,
Birmingham, AL 35211
(205) 941-1119
www.beccinc.com

PROJECT Attalla Apartments
BECC PROJECT NO. 225010 **BORING NUMBER** B-6
BORING LOCATION 33.99551, -86.09751
GEOLOGY Conasauga Formation
DATE COMPLETED 02/05/2025 **GROUND ELEVATION** ~564.1'
METHOD Auger **HOLE DIAMETER** 6 in
CONTRACTOR Earthcore
LOGGED BY Jesse Jowers **REVIEWED BY** Richard Rhinehart

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	UNIFIED CLASSIFICATION	MATERIAL DESCRIPTION	SAMPLE TYPE	NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N-VALUE)	SPT N Value	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	FINES CONTENT (%)	WATER LEVEL (ft)	REMARKS
				TOPSOIL: Approximately 3 to 4 inches 0.3											
				FILL: Soft Yellow/Gray CLAY 3.0	☒			1-2-2 (4)		22.90					
560	5			RESIDUUM: Medium Stiff Yellow/Gray CLAY 6.0	☒			1-2-4 (6)						▽	Groundwater Encountered at 3.5 Feet at the Time of Drilling
				Soft Yellow/Gray CLAY 8.0	☒			2-2-2 (4)		26.80					
555 550	10 15			Stiff Yellow/Gray CLAY into Highly Weathered Rock 15.0	☒ ☒			4-5-5 (10) 50/2' (100+)							

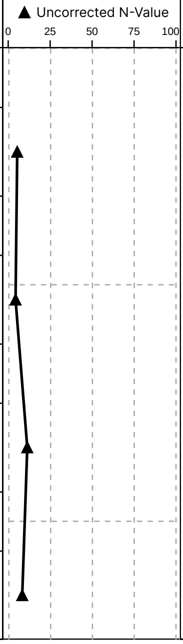
Boring Terminated at 15 Feet

Soil Boring: B-7

BECC, Inc.
360 Industrial Lane,
Birmingham, AL 35211
(205) 941-1119
www.beccinc.com

PROJECT Attalla Apartments
BECC PROJECT NO. 225010 **BORING NUMBER** B-7
BORING LOCATION 33.99492, -86.09771
GEOLOGY Conasauga Formation
DATE COMPLETED 02/05/2025 **GROUND ELEVATION** ~573.6'
METHOD Auger **HOLE DIAMETER** 6 in
CONTRACTOR Earthcore
LOGGED BY Jesse Jowers **REVIEWED BY** Richard Rhinehart

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	UNIFIED CLASSIFICATION	MATERIAL DESCRIPTION	SAMPLE TYPE	NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N-VALUE)	SPT N Value	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	FINES CONTENT (%)	WATER LEVEL (ft)	REMARKS
				TOPSOIL: Approximately 3 to 4 inches 0.3											
				FILL: Medium Stiff Yellow/Gray CLAY	☒			2-2-3 (5)		23.80					
570				Asphalt Fragments Encountered at 3.5 Feet 5.0	☒			3-2-2 (4)							
	5			RESIDUUM: Stiff to Medium Stiff Yellow/Gray CLAY	☒			6-6-5 (11)							
565				10.0	☒			4-4-4 (8)		35.70					
	10														



Boring Terminated at 10 Feet

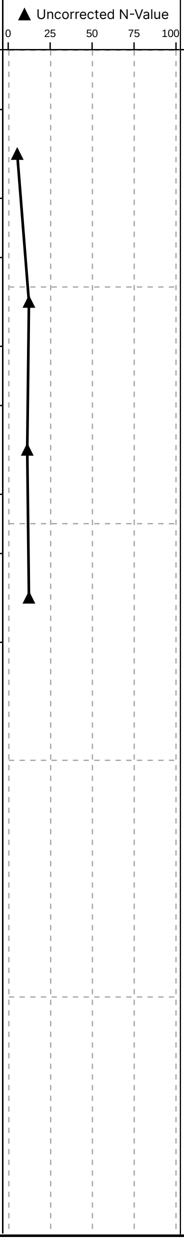
Soil Boring: B-8

BECC, Inc.
360 Industrial Lane,
Birmingham, AL 35211
(205) 941-1119
www.beccinc.com

PROJECT Attalla Apartments
BECC PROJECT NO. 225010 **BORING NUMBER** B-8
BORING LOCATION 33.99471, -86.09747
GEOLOGY Conasuaga Formation
DATE COMPLETED 02/05/2025 **GROUND ELEVATION** ~572.3'
METHOD Auger **HOLE DIAMETER** 6 in
CONTRACTOR Earthcore
LOGGED BY Jesse Jowers **REVIEWED BY** Richard Rhinehart

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	UNIFIED CLASSIFICATION	MATERIAL DESCRIPTION	SAMPLE TYPE	NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N-VALUE)	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	FINES CONTENT (%)	WATER LEVEL (ft)	REMARKS
				TOPSOIL: Approximately 3 to 4 inches 0.3										
570		▨	CH	FILL: Medium Stiff Red/Gray High Plasticity CLAY 3.0	☒			2-2-3 (5)	33.60	67	42	91.8		
	5	▨		RESIDUUM: Stiff Red/Gray CLAY 6.0	☒			2-6-6 (12)	33.80					
565		▨		Stiff Yellow/Gray CLAY w/ Fragmented Rock 8.0	☒			4-5-6 (11)	31.70					
	10	▨		Stiff Gray CLAY 10.0	☒			4-5-7 (12)						
560														
	15													
555														

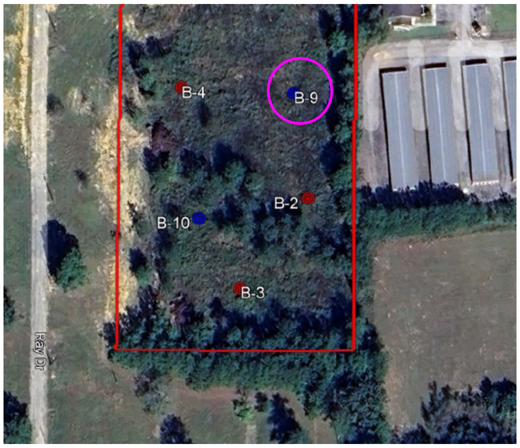
SPT N Value

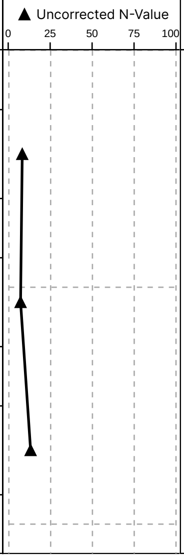


Soil Boring: B-9

BECC, Inc.
360 Industrial Lane,
Birmingham, AL 35211
(205) 941-1119
www.beccinc.com

PROJECT Attalla Apartments
BECC PROJECT NO. 225010 **BORING NUMBER** B-9
BORING LOCATION 33.99433, -86.09731
GEOLOGY Conasauga Formation
DATE COMPLETED 02/05/2025 **GROUND ELEVATION** ~573.3'
METHOD Auger **HOLE DIAMETER** 6 in
CONTRACTOR Earthcore
LOGGED BY Jesse Jowers **REVIEWED BY** Richard Rhinehart

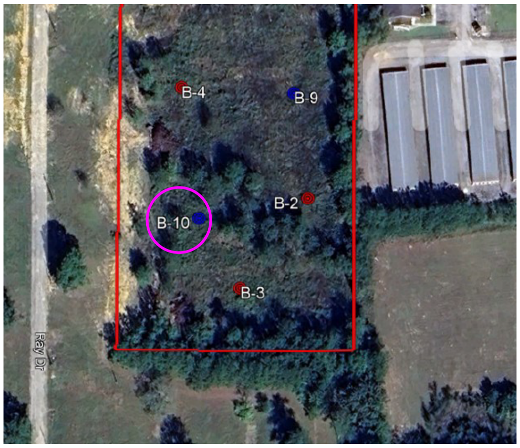


ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	UNIFIED CLASSIFICATION	MATERIAL DESCRIPTION	SAMPLE TYPE	NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N-VALUE)	SPT N Value	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	FINES CONTENT (%)	WATER LEVEL (ft)	REMARKS
				TOPSOIL: Approximately 3 to 4 inches 0.3											
				RESIDUUM: Stiff Yellow/Gray CLAY 3.0	☒			2-4-4 (8)		33.90					
570	5			Medium Stiff Yellow/Gray CLAY 6.0	☒			1-2-5 (7)							
565				Stiff Yellow/Gray CLAY w/ Rock Fragments N-value exaggerated due to underlying rock formation. 8.5	☒			4-6-7 (13)		27.90					

Boring Terminated at 8.5 Feet Due to Auger Refusal

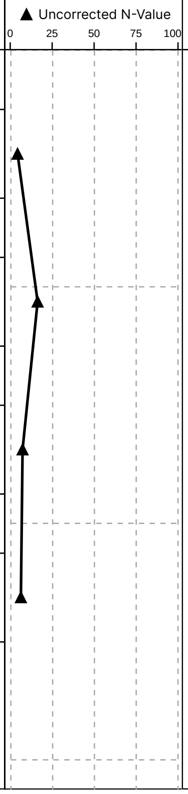
Soil Boring: B-10

BECC, Inc.
360 Industrial Lane,
Birmingham, AL 35211
(205) 941-1119
www.beccinc.com



PROJECT Attalla Apartments
BECC PROJECT NO. 225010 **BORING NUMBER** B-10
BORING LOCATION 33.99392, -86.09768
GEOLOGY Conasauga Formation
DATE COMPLETED 02/05/2025 **GROUND ELEVATION** ~571.8'
METHOD Auger **HOLE DIAMETER** 6 in
CONTRACTOR Earthcore
LOGGED BY Jesse Jowers **REVIEWED BY** Richard Rhinehart

ELEVATION (ft)	DEPTH (ft)	GRAPHIC LOG	UNIFIED CLASSIFICATION	MATERIAL DESCRIPTION	SAMPLE TYPE	NUMBER	RECOVERY % (RQD)	BLOW COUNTS (N-VALUE)	SPT N Value	MOISTURE CONTENT (%)	LIQUID LIMIT	PLASTICITY INDEX	FINES CONTENT (%)	WATER LEVEL (ft)	REMARKS
				TOPSOIL: Approximately 3 to 4 inches 0.3											
570				FILL: Soft Yellow/Gray CLAY w/ trace organic material 4.0	☒			2-2-2 (4)							
	5			RESIDUUM: Very Stiff Yellow/Gray CLAY 6.0	☒			4-8-8 (16)		22.70					
565				Medium Stiff Yellow/Gray CLAY w/ Fragmented Rock	☒			3-3-4 (7)							
					☒			2-2-4 (6)		12.50					
560	10			12.5											



Boring Terminated at 12.5 Feet Due to Auger Refusal

APPENDIX C

Geotechnical Laboratory Summary

GEOTECHNICAL LAB SUMMARY

Project Name: Attalla Apartments
BECC Project No.: 225010

Boring	Sample		Percent Passing #200 Sieve	Moisture (%)	Atterberg Limits			D10 Grain size (mm)	D30 Grain Size (mm)	D60 Grain Size (mm)	C_u	C_z	USCS
	Start Depth (ft.)	End Depth (ft.)			LL	PL	PI						
B-1	1.0	2.5		23.5			---				---	---	---
B-1	3.5	5.0	86.8	34.2	63	26	37				---	---	**CH**
B-1	6.0	7.5		34.3			---				---	---	---
B-1	8.5	10.0		31.3			---				---	---	---
B-2	1.0	2.5		28.5			---				---	---	---
B-2	3.5	5.0		31.0			---				---	---	---
B-2	6.0	7.5		27.6			---				---	---	---
B-3	1.0	2.5		36.3			---				---	---	---
B-3	3.5	5.0		22.5			---				---	---	---
B-3	8.5	10.0		37.9			---				---	---	---
B-4	3.5	5.0		34.2			---				---	---	---
B-4	6.0	7.5		14.5			---				---	---	---
B-4	13.5	15.0		18.3			---				---	---	---
B-5	1.0	2.5		35.5			---				---	---	---
B-5	3.5	5.0		17.3			---				---	---	---
B-5	6.0	7.5	77.8	28.8	60	27	33				---	---	**CH**
B-5	13.5	15.0		20.3			---				---	---	---
B-6	1.0	2.5		22.9			---				---	---	---
B-6	6.0	7.5		26.8			---				---	---	---

GEOTECHNICAL LAB SUMMARY

Project Name: Attalla Apartments
BECC Project No.: 225010

Boring	Sample		Percent Passing #200 Sieve	Moisture (%)	Atterberg Limits			D10 Grain size (mm)	D30 Grain Size (mm)	D60 Grain Size (mm)	C_u	C_z	USCS
	Start Depth (ft.)	End Depth (ft.)			LL	PL	PI						
B-7	1.5	2.5		23.8			---				---	---	**---**
B-7	8.5	10.0		35.7			---				---	---	**---**
B-8	1.0	2.5	91.8	33.6	67	25	42				---	---	**CH**
B-8	3.5	5.0		33.8			---				---	---	**---**
B-8	6.0	7.5		31.7			---				---	---	**---**
B-9	1.0	2.5		33.9			---				---	---	**---**
B-9	6.0	7.5		27.9			---				---	---	**---**
B-10	3.5	5.0		22.7			---				---	---	**---**
B-10	8.5	10.0		12.5			---				---	---	**---**