CONTOUR ENGINEERING, LLC
Geotechnical Services • Materials Testing Services • Environmental Services

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REPORT OF GEOTECHNICAL EXPLORATION
Avalon Hotel, Conference Center & Parking Deck
Alpharetta, Fulton County, Georgia
Project No.: G14NAP02
April 29, 2014

Prepared For:

Stormont Hospitality Group, LLC
Riverwood 100
3350 Riverwood Parkway, Suite 1590
Atlanta, Georgia 30339

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April 29, 2014

Stormont Hospitality Group, LLC
Riverwood 100
3350 Riverwood Parkway, Suite 1590
Atlanta, Georgia 30339

Attention: Mr. Jim Stormont
President

Reference: **Report of Geotechnical Exploration**
Avalon Hotel, Conference Center & Parking Deck
Alpharetta, Fulton County, Georgia
Contour Project No.: G14NAP02

Dear Jim:

Contour Engineering, LLC has completed the geotechnical exploration for the project referenced above in general accordance with our Proposal No. G14NAP-103RII dated March 24, 2014.

We appreciate the opportunity to work with you on this project and look forward in assisting you with any future projects. Should you have any questions regarding this report or if we may be of further service, please contact our office.

Sincerely,
Contour Engineering, LLC

James E. Gough, P.E.
Geotechnical Services Manager

GEORGIA REGISTERED No. 17553 PROFESSIONAL ENGINEER JACK M. REBEIZ

Jack M. Rebeiz, P.E.
President
Principal Engineer

Copies Submitted: Addressee (3)

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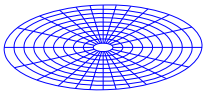

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1.0 EXECUTIVE SUMMARY

This executive summary presents an overview of pertinent findings, conclusions, and recommendations. This overview should not be utilized in design or construction without reviewing the entire report.

- The project site lies within the eastern portion of the Avalon development located in Alpharetta, Georgia. Proposed for development is the construction of a Hotel and Conference Center with an approximate 97,500 square foot building footprint. The proposed hotel will be a fifteen-story tower with column loads ranging from approximately 300 to 1150 kips. The conference center will be a one-story structure with column loads ranging from approximately 25 to 175 kips. In addition to the Hotel and Conference Center, a four-story parking deck will be constructed. The proposed parking deck will have column loads ranging from approximately 275 kips to 750 kips and maximum wall loads of 25 kips per linear foot.

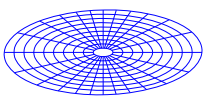
- Based on the results of the subsurface exploration and provided loads, the proposed 4-story parking structure and 15-story hotel tower will require deep foundation support. We recommend 16-inch or greater diameter auger-cast piles. The piles should be advanced to refusal in rock material. Capacities for 16-inch and 18-inch diameter piles bearing into rock are summarized as follows:

Allowable Capacity in Tons**			
Compression		Tension	
16-inch	18-inch	16-inch	18-inch
110	150	25	40

- Due to the depth of rock within the proposed parking deck (up to 127 feet), we recommend 18-inch diameter friction auger-cast piles with a minimum length of 105 feet. The 18-inch diameter friction piles will have 100 tons capacity for compression and 40 tons for tension.

- Deep zones of organic / unsuitable fill materials and boulders are anticipated to be encountered within the proposed single-story conference center. Indicated on the boring and test pit location plans included in the Appendix is a transition line between the clean fill materials and deep zones of organic / unsuitable fill materials. Single-story conference center building west of the transition line may be supported by a conventional shallow foundation system. Single-story conference center building structure (including slab area) that lies east of the transition line should be supported on an Aggregate Pier/ Grouted Pier System. Please refer to sections 6.1 through 6.3.

- For proposed pavement areas located east of the transition line, in-place stabilization of the exposed subgrade will be required. Please refer to section 5.1 for more information regarding subgrade stabilization.



2.0 INTRODUCTION

2.1 Site and Project Description

The project site lies within the eastern portion of the Avalon development located in Alpharetta, Georgia. More specifically, the Avalon development is located northwest of the intersection of Georgia Highway 400 and Old Milton Parkway.

Proposed for development is the construction of a Hotel and Conference Center with an approximate 97,500 square foot building footprint. The proposed hotel will be a fifteen-story tower with column loads ranging from approximately 300 to 1150 kips. The conference center will be a one-story structure with column loads ranging from approximately 25 to 175 kips. In addition to the Hotel and Conference Center, a four-story parking deck will be constructed. The proposed parking deck will have column loads ranging from approximately 275 kips to 750 kips and maximum wall loads of 25 kips per linear foot.

The proposed Hotel and Conference Center will have a finished floor elevation of 1064 feet. The majority of the Hotel and Conference Center structure is near or at proposed finished grade; however, to accommodate for the proposed Hotel and Conference Center building layout, the existing slope located on the eastern boundary of the site will require re-grading and construction of a 4 to 6 foot tall concrete retaining wall. The proposed parking deck will be partially underground and will require cuts up to 12 feet to achieve proposed finished grades.

2.2 Scope of Work

This report presents the results of our Geotechnical Exploration performed for the Avalon Hotel and Conference Center at the Avalon development in Alpharetta, Georgia. The purpose of this study was to provide a geotechnical exploration within the proposed development and determine the effects as they relate to the site development.

Our services were provided in generally accordance with the scope of services outlined in Contour's Proposal G14NAP-103RII, dated March 24, 2014. The services rendered by this firm included a site reconnaissance, drilling and sampling of seventeen (17) soil test borings, excavating eight (8) test pits, engineering analyses of obtained information, and preparation of this report. Specifically, our report addresses the following:

- Description of existing conditions including detailed records of the previous and new soil test borings and soil profiles and a Boring Location Plan,
- A description of the area and site geologic conditions,
- Determine groundwater elevations and provide recommendations for subsurface groundwater control,
- Recommendations for site preparation, excavation and grading, backfilling and compaction;
- Recommendations for subgrade preparation and slab-on-grade construction recommendations,
- Excavation conditions and the presence of very dense materials, partially weathered rock, or rock and the degree of difficulty of excavation,

- Recommendation for foundation design and construction including allowable bearing pressures and settlements,
- Lateral earth pressures for retaining walls;
- Recommendations for temporary and permanent slopes, and
- Seismic information based on the International Building Code 2012.

This report also includes information concerning subsurface exploration and soil test borings previously conducted and submitted to Prospect Park Partners North, LLC (c/o North American Properties, LLC) as the report titled "Final Report of Geotechnical Exploration, Avalon Development" dated May 1, 2012. More specifically, soil test borings H-1, H-2, H-3, H-4, Q-1, Q-2, Q-3, Q-4, P-37, P-38, P-39, P-45, and P-47 and test pits TP-10 through TP-12 and TP-17 through TP-19 have been included from the previous report.

The scope of our services did not include any environmental assessment or exploration for the presence or absence of hazardous or toxic materials in the soil, groundwater, or surface water within or beyond the site.

3.0 FIELD EXPLORATION AND LABORATORY PROGRAM

3.1 Field Exploration

Our field exploration consisted of a site reconnaissance and performing a total of seventeen (17) soil test borings designated as C-1 through C-17. More specifically, eleven (11) soil test borings designated as C-1 through C-11 were performed within the proposed Hotel and Conference Center. Borings C-1 though C-9 extended to planned termination depths of 70 feet; while borings C-10 and C-11 extended to auger refusal depths of 71 and 76 feet, respectively.

Five (5) soil test borings designated as C-12 through C-16 were performed within the proposed parking deck. Borings C-12, C-14, and C-15 extended to planned termination depths of 70 feet; while borings C-13 and C-16 extended to auger refusal depths of 127 and 92 feet, respectively. One (1) soil test boring C-17 was performed within proposed parking and drive area and extended to planned termination depth of 70 feet.

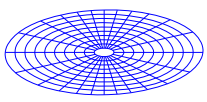
In addition to the soil test borings, eight (8) test pits were excavated within the proposed Hotel and Conference Center. Designated as TP-20 through TP-27, the test pits were excavated to depths of 15 feet below existing ground surface.

The soil test boring and test pit locations were determined utilizing and Ashtech GPS receiver in the field by Contour personnel. Therefore, the boring locations should be considered accurate. The boring locations are shown on the attached Boring Location Plan in Appendix.

The sampling and penetration procedures of the soil test borings were performed in accordance with ASTM D-1586, using a power rotary drill. The standard penetration tests were performed by driving a standard 1-$^3/_8$" I.D. and 2" O.D. split spoon sampler with an automatic 140-pound hammer falling 30 inches. The number of hammer blows required to drive the sampler a total of 18 inches, in 6-inch increments, were recorded. The penetration resistance or "N" value is the summation of the last two 6-inch increments and is illustrated on the attached boring logs adjacent to their corresponding depths. In very dense soils or weathered rock, the sample is driven a few inches rather than the 6-inch increment and the number of blows required versus the penetration depth is recorded. The penetration resistance is used as an index to derive soil parameters from various empirical correlations.

3.2 Laboratory Program

A representative portion of each recovered sample was sealed in a glass container and transported to our laboratory for further visual classification (ASTM D-2487). Using the Unified Soil Classification system, the subsoil conditions are described and stratified in an illustrated form of soil profiles on the attached boring logs.



4.0 SITE AND SUBSURFACE CONDITIONS

4.1 Area Geology

Published information concerning the geology of the area indicates that the site is located in the Piedmont Geologic Region, a broad northeasterly trending province underlain by crystalline rocks up to 600 million years old. The Piedmont is bounded on the northwest by the Blue Ridge Range of the Appalachian Mountains, and on the southeast by the leading edge of Coastal Plain sediments, commonly referred to as the "Fall Line". Numerous episodes of crystal deformation have produced varying degrees of metamorphism, folding and shearing in the underlying rock. The resulting metamorphic rock types in this area of the Piedmont are predominantly a series of Precambrian age schists and gneisses, with scattered granitic or quartzite intrusions.

The Piedmont consists of surficial soils that are the residual products of the in-place weathering of the parent rock. The residual soils are sometimes overlain by alluvial soils, which were transported and deposited by flowing water, or by man placed filled materials. The underlying rocks are primarily metamorphic gneiss, schist, and granite. The residual soils are generally clayey silts near the ground surface underlain by sandy silts and silty sands.

The closest Fault Zone to the site is the Brevard Fault Zone, which is an inactive Fault.

4.2 Soil Survey

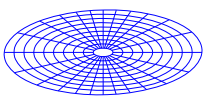
According to the Natural Resource Conservation Service (NRCS) On-line Soil Survey of Fulton County, Georgia, the following soil series were identified within the site location: Cecil sandy loam, 6 to 10 percent slopes, moderately eroded (CeC2), Grover-Mountain Park complex, 20 to 60 percent slopes, stony (GaF), and Pacolet-Saw Complex, 6 to 10 percent slopes (PgC2). The soil series identified are further described as follows:

- The Cecil Series consists of very deep, well-drained moderately permeable soils on ridges and side slopes of the Piedmont uplands. They are deep to saprolite and very deep to bedrock. They formed in residuum weathered from felsic, igneous and high-grade metamorphic rocks of the Piedmont uplands.

- The Grover Series consists of very deep, well drained soils on ridges and side slopes on Piedmont uplands. They formed in residuum that is affected by soil creep in the upper part on steep slopes, and is weathered from high-grade metamorphic rocks high in mica such as biotite gneiss and schist.

- The Mountain Series consists of moderately deep, well drained, moderately permeable soils on Piedmont uplands. . They formed in residuum that is weathered from high-grade metamorphic rocks high in mica such as biotite gneiss and mica schist.

- The Pacolet Series consists of very deep, well drained, moderately permeable soils that formed in residuum weathered mostly from felsic igneous and metamorphic rocks of the Piedmont uplands.



- The Saw Series consists of moderately deep, well drained soils on ridges and side slopes of the Piedmont uplands. They formed in residuum weathered from felsic igneous rocks such as porphyritic granite and granite. Slopes range from 2 to 45 percent.

4.3 Subsurface Soil Conditions

Hotel and Conference Center

Below the ground surface, the soil test borings encountered fill materials, residual soils, partially weathered rock and auger refusal. **Fill materials**, soils that have been transported and placed by man, were encountered in all of the borings performed within the proposed Hotel and Conference Center. The fill materials extended to depths ranging from 17 to 45 feet below existing ground surface. Borings H-2, H-3, P-37, P-47 and Q-4 were terminated in fill materials at depths of 20 feet. Boulder fill was initially encountered in boring C-3 at an approximate depth of 13 feet which resulted in auger refusal. Boring C-3A was offset approximately 20 feet east of the original location and was able to penetrate through the fill material.

Residual soils, soils formed by in-place weathering of the parent rock, were encountered beneath the fill materials and extended to planned boring termination depths of 20 and 70 feet or its interface with partially weathered rock. The sampled residual soils were classified as silty sands (SM) and sandy silts (ML) with Standard Penetration Test (SPT) values ranging from 5 to 80 blows per foot (bpf).

Partially weathered rock (PWR), locally defined as very dense soils or highly weathered rock with penetration values of more than 100 blows per foot, was encountered in borings C-10 and C-11 at depths of 65 and 70 feet respectively, corresponding elevations of 1001 and 995 feet.

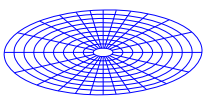
Auger refusal material (rock), material that cannot be penetrated any further by the power auger, was encountered in borings C-10 and C-11 at depths of 71 and 76 feet, corresponding elevations of 995 and 989 feet.

Parking Deck

Below the ground surface, the soil test borings encountered fill materials, residual soils, partially weathered rock and auger refusal. **Fill materials** were encountered in all of the borings performed within the proposed parking deck. The fill materials extended to depths ranging from 7 to 40 feet below existing ground surface.

Residual soils were encountered beneath the fill materials and extended to planned boring termination depths of 20, 35, and 70 feet or its interface with partially weathered rock or auger refusal material. The sampled residual soils were classified as silty sands (SM) and sandy silts (ML) with SPT values ranging from 6 to 37 bpf.

Partially weathered rock was encountered in boring C-16 at a depth of 85 feet, corresponding elevation of 975 feet.



Auger refusal material (rock) was encountered in borings C-13 and C-16 at depths of 127 and 92 feet, corresponding elevations of 939 and 968 feet.

South Parking Area

Below the ground surface, the soil test borings encountered fill materials and residual soils. **Fill materials** were encountered in all of the borings performed within the proposed parking deck. The fill materials extended to depths ranging from 20 to 37 feet below existing ground surface. Boring P-45 was terminated in fill materials at a depth of 20 feet.

Residual soils were encountered beneath the fill materials and extended to planned boring termination depths of 40 and 70 feet. The sampled residual soils were classified as silty sands (SM) and sandy silts (ML) with SPT values ranging from 8 to 54 bpf.

Individual soil boring profiles are depicted on the Boring Log Records included in the Appendix. Three (3) Subsurface Profile Plates illustrating the subsurface surface conditions encountered within the proposed Hotel and Conference Center and parking deck including fill materials, residual soils, PWR, auger refusal material, and groundwater conditions are included in Appendix. The stratification lines indicated on the Boring Log Records and Subsurface Profile Plates represent the approximate boundaries between soil types. The actual transitions between soil strata may be gradual.

4.4 Groundwater Conditions

The measurement to the depth below the existing ground surface to the groundwater table was attempted immediately following and 24 hours after the completion of each boring. Groundwater was encountered at depths varying from 46 to 60 feet below ground surface. The groundwater levels in this area will fluctuate in response to local variations of precipitation and temperature and may be different at other times and areas.

5.0 EARTHWORK RECOMMENDATIONS

5.1 Site Preparation

Unsuitable materials containing topsoil and organics were used to construct portions of the existing slope located east of the proposed Hotel and Conference Center. Test pits were excavated along the slope to delineate the unsuitable materials. The location of the test pits are shown on the attached Test Pit Location Plan included in the Appendix. An approximate transition line between suitable fill materials and unsuitable organic laden material is shown on the Test Pit and Boring Location Plans. Photographic documentation of the excavated test pits is also included in the Appendix.

For proposed pavement areas located east of the transition line, we recommend evaluating the subgrade and if found unstable or underlain with unsuitable fill materials, undercut subgrade to depths of 7 feet below finished subgrade and then stabilize the exposed subgrade. We envision in-place stabilization will consist of either of a soil bridge lift (if exposed subgrade conditions allow during construction) or placement of a stabilization fabric overlain by 2 feet of crushed stone. Once the exposed subgrades are stabilized in-place, structural fill should be placed and compacted to proposed grades in accordance with the project specifications.

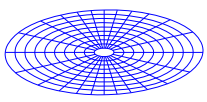
For slab and foundation subgrade support located east of the transition line please refer to sections 6.1 through 6.3.

For areas of west of the transition line, we recommend a geotechnical engineer carefully evaluate the areas intended to support floor slabs, pavements, new fill, and foundations. At that time, the engineer may require proofrolling of the subgrade with a 20 to 30-ton loaded tandem-axle dump truck or other pneumatic-tired vehicle of similar size and weight. The purpose of the evaluation is to locate soft, weak, or excessively wet soils present at the time of construction. Any unsuitable materials observed during the evaluation and/or proofrolling operations should be undercut and replaced with compacted fill or stabilized in-place.

5.2 Excavation Conditions

PWR and auger refusal material was encountered within the proposed Hotel and Conference Center at elevations ranging from 1001 to 995 feet for PWR and 995 to 989 feet for auger refusal material. Based on provided grading information, PWR and auger refusal material was not encountered above proposed finished floor elevation of 1064 feet.

PWR and auger refusal material was encountered within the proposed parking deck at an elevation of 975 feet for PWR and elevations ranging from 968 to 975 feet for auger refusal material. Based on provided grading information, PWR and auger refusal material was not encountered above proposed finished floor elevation of 1054 feet.



5.3 Structural Fill

Based on the boring and laboratory data, the encountered residual soils and existing fill material free of organics appear suitable for reuse as structural fill. Off-site borrow material may also be used as structural fill provided that they have a liquid limit (LL) and a plastic index (PI) not exceeding 40 and 20 percent, respectively. All structural fill should be moisture conditioned to maintain a moisture content within two percentage points above and below the soil's optimum moisture content as determined by the Standard Proctor test (ASTM D-698). Therefore, the grading contractor should be prepared to moisture condition the soil as required during fill placement.

Structural fill should be placed in thin loose lifts not exceeding 8 inches in thickness and compacted accordingly. A Contour Engineering soils technician should test any new fill to determine the compaction percentage. Field density testing should be performed as one test per 2-foot lift for every 5,000 square feet in the building areas and 10,000 square feet in the pavement areas.

Based on our experience with soils similar to those on this site and similar types of construction, we recommend that the following minimum level of compaction be achieved:

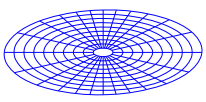
- Building Areas and Interior Slabs - 98 percent of the soil's maximum standard Proctor density value (ASTM D-698) or 95 percent of soil's maximum Modified Proctor (ASTM D-1557). In cut areas, the subgrade should be proofrolled and if found unstable, it should be scarified and re-compacted to 98 percent of the soil's maximum standard Proctor density value.

- Pavement Areas - Compact the upper 18 inches of subgrade in fill areas and the upper 12 inches in cut areas to 98 percent of the soil's maximum standard Proctor density value (ASTM D-698) or 95 percent of soil's maximum Modified Proctor (ASTM D-1557) prior to placement of the base course material and 95 percent of the soil's maximum standard Proctor density value below this level. In cut areas, the subgrade shall be proofrolled and if found unstable, should be scarified and re-compacted to 98 percent of the soil's maximum standard Proctor density value.

- Utility Trenches – Compact the upper 18 inches of the subgrade to 98 percent of the soil's maximum standard Proctor density value (ASTM D-698) or 95 percent of soil's maximum Modified Proctor (ASTM D-1557) and 95 percent of the soil's maximum standard Proctor density value below this level.

- Landscape Areas – 92 percent of the soil's maximum standard Proctor density value (ASTM D-698).

- Sidewalks, Exterior Slabs, Stormwater Pond Embankments - Compact the upper 24 inches of subgrade in fill areas and the upper 12 inches in cut areas to 98 percent of the soil's maximum standard Proctor density value (ASTM D-698) or 95 percent of

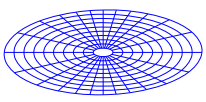


soil's maximum Modified Proctor (ASTM D-1557) and 95 percent of the soil's maximum standard Proctor density value below this level

5.4 Groundwater and Drainage Considerations

Groundwater was encountered at varying depths from 46 to 60 feet below ground surface at the time of drilling. Based on provided grading information, groundwater is not anticipated to be encountered during mass grading operations. Utility plans were not available for our review. Should groundwater be encountered during remedial work or utility installations, we recommend that the contractor implement dewatering techniques to maintain groundwater levels a minimum of 36 inches below working subgrades.

Excessive moisture from rain runoff can significantly reduce the soil's bearing capacity and contribute to foundation settlement as well as pavement failure. Positive drainage should be provided around the perimeter of the buildings to reduce the infiltration of water. All grades should be sloped away from the building. Finger drains at catch basins and draintile at irrigated landscaped islands are recommended.



6.0 DESIGN RECOMMENDATIONS

6.1 Foundation Support Recommendations

Based on the results of the subsurface exploration and provided loads, the proposed 4-story parking structure and 15-story hotel tower will require deep foundation support. The single-story conference center may be supported on shallow foundation systems bearing on existing fill materials or improved subgrade soils.

A transition line as shown on the attached boring and test pit location plans delineates the approximate transition of the clean fill materials and deep zones of organic / unsuitable fill materials and boulders. Single-story conference center building west of the transition line may be supported by a conventional shallow foundation system. Single-story conference center building structure (including slab area) that lies east of the transition line should be supported on an Aggregate Pier/ Grouted Pier System. A contractor specializing in Pier Foundations should be consulted for the design of this foundation system.

Single-Story Buildings

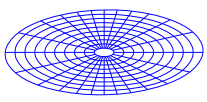
Shallow Footing Recommendations

Based on the results of the subsurface exploration and anticipated loads, the proposed single-story buildings (located west of the transition line) may be supported on a conventional shallow foundation system. Provided that the foundations are prepared in accordance with our recommendations, a maximum allowable bearing pressure of 3,000 pounds per square foot may be used in the design of the shallow foundation system parking structure and Ball Room.

To reduce the possibility of shear failure, wall bearing and column foundations should be designed with a minimum width of 18 and 24 inches, respectively. For frost protection, exterior wall bearing and column foundations should be designed with a minimum embedment depth of 18 inches, while interior foundations should be designed with a minimum embedment depth of 12 inches. The embedment depth should be measured from the base of the foundation to lowest adjacent outside grade.

Bottoms of foundation excavations should be evaluated by a geotechnical engineer prior to placement of reinforcing steel and concrete to verify that adequate bearing materials are present and that all debris, mud, and loose, frozen or water-softened soils are removed.

Foundation excavations should be concreted as soon as practical after they are excavated. Water should not be allowed to pond in any excavation. If an excavation is left open for an extended period, a thin mat of lean concrete should be placed over the bottom to minimize damage to the bearing surface from weather or construction activities. Foundation concrete should not be placed on frozen or saturated subgrades.



Hotel Tower & Parking Deck

Auger-Cast Piles- Design

Auger-cast piles may be used to support the parking deck and 15-story building foundations. Due to the presence of boulder fill, some piles may not penetrate through the fill and will require replacement. Premature refusal will be a field determination based on assumed depth of fill material and refusal criteria. The piles will be abandoned and replaced. A new pile configuration will be provided to the structural engineer for redesign of pile cap.

For the Hotel and Conference Center, we recommend 16-inch or greater diameter auger-cast piles. The piles should be advanced to refusal in rock material. Refusal should be defined as a penetration rate of one foot (or less) per minute using a drive box having a minimum dead weight of 5000 lbs. and a torque of 20,000 foot-pounds. Capacities for 16-inch and 18-inch diameter piles bearing into rock are summarized as follows:

Allowable Capacity in Tons**			
Compression		Tension	
16-inch	18-inch	16-inch	18-inch
110	150	25	40

The selection of pile diameter should be based on structural loads and economics. Minimum center-to-center auger-cast pile spacing should be at least three (3) pile diameters to reduce pile group settlements and minimize axial capacity reductions due to group effects. We anticipate that pile tip depths will be to within a few feet of our boring refusal elevations. Only two borings refused at depths of 71 and 76 feet in the Hotel and Conference Center. The rock surface is irregular and additional borings will be required to more accurately determine refusal depths of the piles.

Due to the depth of rock in the proposed parking deck (up to 127 feet), 18-inch diameter friction auger-cast piles with a minimum length of 105 feet may used to support the structure. The 18-inch diameter friction piles will have 100 ton capacity for compression and 40 tons for tension.

We have preliminarily evaluated lateral load resistance for single piles under a fixed-head condition. The following table summarizes lateral capacities based on an assumed pile top lateral deflection of 1/4 inch:

Preliminary Pile Lateral Load Analysis	
Pile Diameter (inches)	Lateral Load (kips) to Cause Pile Top Deflection of 1/4 inch
16	10
18	15

Auger-Cast Pile-Installation

The success of auger-cast pile construction is highly dependent on the skill of the piling contractor. Pile installation should be monitored by the geotechnical engineer. The grout pump should be calibrated prior to initiation of production piles, and as often as necessary throughout the installation of piles as deemed necessary by the engineer. The minimum grout head or grout return depth should be 5 feet. The grout filling operation should continue without interruption until the auger is extracted completely from the ground. Auger withdrawal during the grouting process should be at a constant rate and be completed in a continuous process. We recommend that the rate of auger withdrawal during grouting be coordinated such that a minimum of 115 percent of the theoretical pile volume is pumped into each 5-foot increment of length of pile. If the grouting process is interrupted, the pile should be reaugered at least 5 feet before grouting is continued. If the process is interrupted for more than 15 minutes, the pile should be completely reaugered and regrouted. Pile installation should be no closer than 3 pile diameters until the adjoining pile's grout has obtained its initial set or within 24 hours, whichever is greater.

The piles should be load tested prior to the installation of the production piles to verify the actual pile capacities. The load test should be performed in accordance with ASTM D-1143 under the observation of the geotechnical engineer. We also recommend that 15 probe piles be installed across the site prior to commencement of the load tests.

6.2 Floor Support

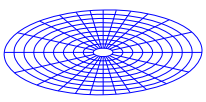
The building slabs located on the west of the transition line may be supported directly on stable soil subgrades. A modulus of subgrade reaction of 100 pounds per cubic inch (pci, pounds per square inch per inch of deflection) will be available if the slab is placed directly on stable soil subgrade.

If a higher modulus of subgrade reaction is required; then we recommend that a 4 to 6-inch layer of compacted crushed stone be placed underneath the building slab. The 4 to 6 inches of crushed stone will provide a protective cover as well as a uniform working surface and also serve as a capillary break. The crushed stone should consist of crushed aggregate base meeting the requirements of GDOT Section 815. Slabs underlain by 4 to 6 inches of stone will have moduli of subgrade reactions (K) of 130 and 150 pci, respectively.

Expansion and contraction joints should be used to isolate all floor slabs from the load bearing walls and/or isolated columns. This will allow for possible differential movement and diminish the potential of cracking the floor slabs.

6.3 Aggregate / Grouted Pier Foundation Systems

Aggregate Pier or Grouted Pier foundation systems are recommended for the support of the single-story buildings and slabs (including the slab for the 15-story building) located east of the transition line (see attached site plan delineating areas of unsuitable fill materials), which are underlain by deep zones of organic / unsuitable fill materials and boulders. Aggregate



Pier/Grouted Pier foundations are proprietary systems; therefore, the remedial work for support of the foundations and slab systems will be performed as a design/build application. If this is determined to be a feasible option by the design/build contractor, the design engineer of record for the Aggregate Pier/Grouted Pier foundation system should take the following into account during the design and construction phases:

- Our borings encountered unsuitable fill depths ranging from 3 to 40 feet below existing grades;

- The alternative Foundation System designed to support building slabs and foundations should be constructed at a minimum of 2 feet below building subgrades to eliminate point loading;

- The design/build contractor or general contractor should include provisions in their bids to stabilize the subgrade, if necessary, after completion of the installation of the Foundation System;

- The fill placed over the selected Foundation System should consist of structural fill or stone compacted to 98% of standard Proctor (ASTM 695);

- The Pier foundation system should be designed for total settlements of 1-inch or less with differential settlements of ½ inch in 40 feet of length, and a minimum subgrade modulus of 100 PCI; and

- Upon completion of the Aggregate / Grouted pier Foundation System installation, the design/build contractor and the design engineer of record should provide a pad and foundation certification letter signed by the design engineer of record confirming that the above-mentioned design criteria have been met.

We recommend that the above mentioned design criteria be included in the design/build contractor's contract. We appreciate the opportunity to be of service on this project. Should you have any questions regarding this report or if we may be of further service, please contact our office.

6.4 Seismic Recommendations

Based on the results of our boring data, published geological features of the project area, the Site data, and as described per Section 1613.5.2 of the 2012 International Building Code (IBC), it is our opinion that the Seismic Site Class Definition for the Site is "D". The soil profile named "Stiff Soil Profile" was determined from Table 1613.5.2 of the 2012 IBC.

6.5 Concrete and/or Below Grade Retaining Wall Design

It is our understanding that a concrete retaining wall will be constructed along the eastern boundary. Unsuitable materials may be encountered within the existing slope. If encountered during construction of the retaining wall, we recommend undercutting the unsuitable materials down to residual soils. The removal of the unsuitable material should be removed from the face of the wall and extend to a distance behind the wall equal to the height of the retaining wall. All unsuitable materials should be removed beneath the retaining wall footing. A Retaining Wall Detail is included in the Appendix illustrating recommended removal of unsuitable materials if encountered.

The loading dock walls, concrete retaining walls and any other on-site concrete below grade walls will be subjected to lateral earth pressures. Walls that are relatively rigid or fixed at the top and bottom may be subjected to "at-rest" earth pressures. Walls that are allowed to have sufficient movement and not fixed at the top will be subjected to "active" pressures.

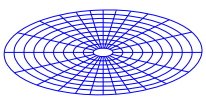
The following lateral earth pressure parameters are recommended for design in residual soils or structural fill. Fill materials with organic contents in excess of 3 percent are not suitable for re-use as select backfill for placement behind retaining walls.

Earth Pressure Coefficient	Earth Pressure Value	Equivalent Fluid Density (pcf)
At-Rest (K_O)	0.53	64
Active (K_A)	0.36	43
Passive (K_P)	2.77	332

These values assume that the wall has horizontal backfill and no surcharge loads such as from adjacent structures. A moist unit weight of 120 pounds cubic foot, a phi angle of 28 degrees and a sliding coefficient of 0.53 may be used in the *ultimate design value* of retaining walls. Typically, a factor of safety of 1.5 is used for the passive earth pressure and coefficient of friction.

The recommended equivalent fluid pressures assume that constantly functioning drainage systems are installed between walls and soil backfill to prevent the accidental buildup of hydrostatic pressures and lateral stresses in excess of those stated. If a functioning drainage system is not installed, then lateral earth pressures should be determined using the buoyant weight of the soil (approximately 58 pcf). Hydrostatic pressures calculated with the unit weight of water (62.4 pcf) should be added to these earth pressures to obtain the total stresses for design.

To facilitate drainage behind retaining walls / below grade walls, we recommend the use of weep holes/perforated pipe encased #57 stone (wrapped in Geotextile Filter Fabric, such as Mirafi 140N) and granular backfill. More specifically, the granular backfill to be used as free draining material shall consist of clean 1-inch crushed stone or gravel meeting the following gradation:



Granular Backfill Gradation Requirements	
Sieve Size	**Percent Passing**
4-inch	100
¾-inch	75 - 100
No. 4	0 - 10
No. 50	0 -50

A Typical Backfill/Retaining Wall Drainage Detail is included in Appendix of this report.

The surcharge and lateral loads from tractors and other heavy equipment operating within 10 feet of below grade walls should be added to the lateral loads cited in this section of the report. If foundations or other surcharge loadings are located a short distance outside below grade walls, they may also exert appreciable additional lateral pressures that must be considered.

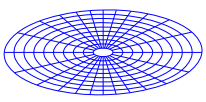
The retaining wall/below grade wall recommendations listed above should not be correlated with soil parameters for use in Segmental Retaining Wall design and/or Reinforced Slope Design.

6.6 Slope Recommendations

Temporary slopes not exceeding 10 feet in height for confined areas and constructed in the virgin soils or structural fill, should be configured no steeper than 1.5(H):1.0(V) provided no water is observed seeping from the sides of the excavation. These temporary slopes should be regularly monitored for signs of movement or unsafe conditions. Temporary slopes below the groundwater table will require shoring / bracing. Additionally, construction excavation should comply with OSHA Guidelines outlined in the Code of Federal Regulations Federal Register Volume 54, Number 209 (October 1989) "Construction Standards for Excavation, 29CFR Part 1926, Subpart P." Also, the contractor should have a designated "qualified engineer" as defined by OSHA on-site during the excavation to observe the slopes for signs of possible failure.

Proper management of groundwater seepage and surface water runoff around the excavations will also contribute to the stability of temporary slopes. Material removed from excavations should *not* be stockpiled within a distance of twenty (20) feet from the crest of temporary excavations. Furthermore, positive drainage should also be maintained with ditches or channels at the top and bottom of the slope. It is also very important to always keep these drainage channels free of dirt, debris and vegetation.

The existing slope located east of the proposed Hotel and Conference will be re-graded to allow for the construction of the proposed structures. It is critical that these fill soils are benched into the existing slopes in accordance with the Typical Benching Detail included in Appendix. Due to the presence of topsoil and organic laden material within the existing slope, we recommend that the slope be re-graded no steeper than 3.0 (H): 1(V) configuration. To prevent erosion and saturation of the slopes, surface runoff water should be diverted from the top of the slopes. A protective cover of grass or other vegetation should be established on the slopes as soon as possible for erosion protection. Depending on site conditions, a toe drain may also be required at the toe of cut slopes to collect water seepage.



Buildings should have a minimum setback of 10 feet from the slope shoulders. A minimum setback of 5 feet is recommended for the pavement curbs.

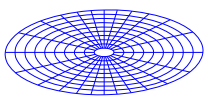
7.0 QUALIFICATION OF RECOMMENDATIONS

This report has been prepared based on currently accepted geotechnical engineering principles and practices in the local area for the specific application of this project.

The analyses and recommendations presented in this report are based upon our understanding of the site and project information and the data obtained from our field exploration. If there are any revisions to the plans for this project, we should be permitted to determine if the recommendations must be modified. The nature and extent of variations between borings will not be evident until the course of construction; if such variations become evident, it may be necessary to submit supplementary recommendations.

Regardless of the thoroughness of a geotechnical study, there is always a possibility that subsurface conditions will be different from those at the boring locations that conditions will not be as anticipated by the designers or contractors, or that the construction process will alter soil conditions. Therefore, the geotechnical engineer's representative should observe and confirm that the conditions indicated by the geotechnical exploration actually exist.

Once final design plans and specifications are complete, we recommend that Contour Engineering, LLC be provided the opportunity to review the final design and specifications in order that earthwork and foundation recommendations are properly interpreted and implemented.



APPENDIX

SITE VICINITY MAP

CONTOUR ENGINEERING, LLC

LEGEND

Source: GoogleEarth.com
Scale: Unknown

PROJECT
Geotechnical Exploration
Hotel and Conference Center - Avalon
Alpharetta, Fulton County, Georgia
Contour Project: G14NAP02

Q-1
Q-2
P-38
P-39
C-12
C-15
C-14
C-13
C-16
Q-3
Q-4
C-2
P-47
C-1
C-3
H-2
P-37
H-1
C-4
C-10
C-5
C-6
C-7
C-11
C-8
C-9
H-3
APPROXIMATE TRANSITION BETWEEN CLEAN FILL AND UNSUITABLE SOILS
H-4
P-45
C-17
P-44
PUBLIC SPACE 3.92 AC.
CMF
EXISTING 10' STORMWATER MANAGEMENT ACCESS EASEMENT (DEED BOOK 50634, PAGE 516)
10' LANDSCAPE STRIP
5' BUILDING SETBACK
60' GA

SHEET NUMBER: BLP–1 (1 OF 1 SHEET)	DRAWN BY: jeg CHECKED BY: jmr DATE: 04/29/2014 SCALE: 1"= 60' PROJECT No. G14NAP02	REVISIONS / BY	CONTOUR ENGINEERING, LLC 1955 Vaughn Road, Sulte 101, Kennesaw, GA 30144 Phone: (770) 794-0266 Fax: (770) 794-9483

LEGEND

C-1 - Soil Test Boring Performed 2014

H-1 - Soil Test Boring Performed 2012

BORING LOCATION PLAN

Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton, Georgia
Project No: G14NAP02

TP-19

TP-11

TP-20

APPROXIMATE TRANSITION BETWEEN CLEAN FILL MATERIAL AND UNSUITABLE SOILS

TP-21

TP-18

TP-22

TP-24

TP-23

TP-25

TP-10

TP-26

TP-27

TP-17

TP-12

SHEET NUMBER BLP–2 1 OF 1 SHEET	DRAWN BY jeg CHECKED BY jmr DATE: 04/29/2014 SCALE: 1"= 60' PROJECT No. G14NAP02	REVISIONS	BY	CONTOUR ENGINEERING, LLC 1955 Vaughn Road, Sulte 101, Kennesaw, GA 30144 Phone: (770) 794-0266 Fax: (770) 794-9483	LEGEND TP-11 - Test Pits Excavated 2014 TP-11 - Test Pits Excavated 2012

TEST PIT LOCATION PLAN
Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton, Georgia
Project No: G14NAP02

PHOTOGRAPHIC DOCUMENTATION
Avalon Phase II
Test Pits
Alpharetta, Fulton County, Georgia
Contour Project No: G14NAP02

Photograph 1
Test Pit TP-20.
Top soil encountered between -5 to -6 feet below current elevation.

Photograph 2
Spoils from TP-20

Photograph 3
TP-21. No top soil encountered in 15 feet below current elevation.

Photograph 4
Spoils from TP-21

PHOTOGRAPHIC DOCUMENTATION
Avalon Phase II
Test Pits
Alpharetta, Fulton County, Georgia
Contour Project No: G14NAP02

Photograph 5
Test Pit TP-22.
No top soil encountered in 15 feet.

Photograph 6
TP-22 Spoils.

Photograph 7
Test Pit TP-23.
Top soil encountered between 7 to 8 feet and 9 to 10 feet below current elevation.

Photograph 8
Organics found from TP-23.

PHOTOGRAPHIC DOCUMENTATION
Avalon Phase II
Test Pits
Alpharetta, Fulton County, Georgia
Contour Project No: G14NAP02

Photograph 9
Test Pit TP-24. Top soil encountered at -5′ below current elevation through bottom of test pit at -15′.

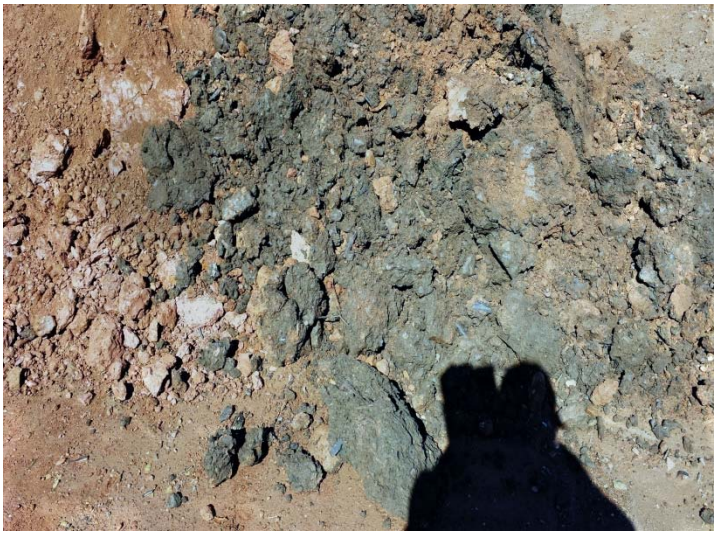
Photograph 10
Test Pit TP-24 excavated soils.

Photograph 11
Test pit TP-25. Top soil encountered at 6′ below current elevation through bottom of test pit at -15′.

Photograph 12
Test Pit TP-25 excavated soils.

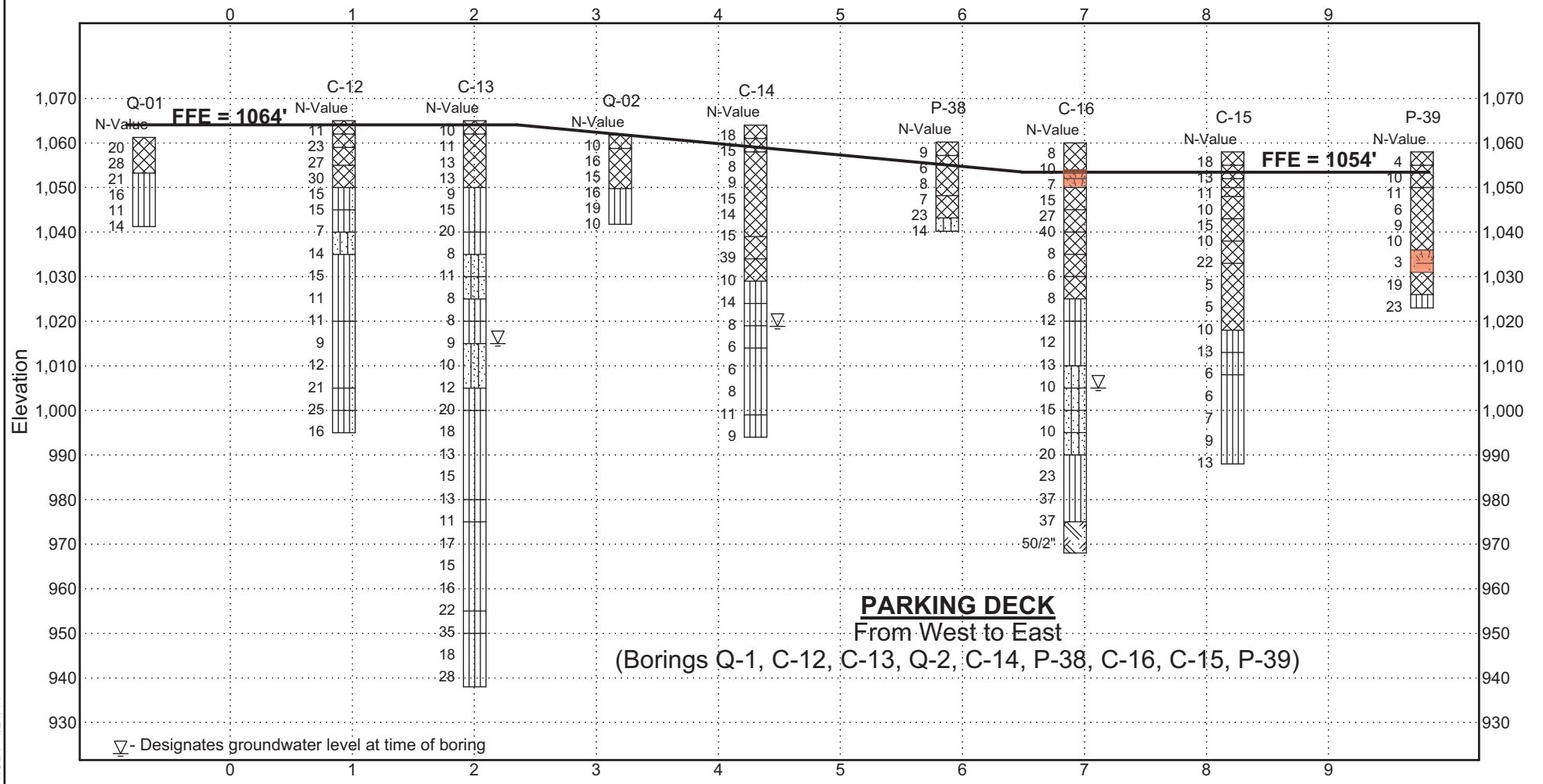
PHOTOGRAPHIC DOCUMENTATION
Avalon Phase II
Test Pits
Alpharetta, Fulton County, Georgia
Contour Project No: G14NAP02

Photograph 13
Test Pit TP-26. Top soil encountered at 8′ below current elevation through bottom of test pit at -15′.



Photograph 14
Test Pit T-26 excavated soils.

Photograph 15
Test Pit T-27.
Top soil encountered at 6′ below current elevation through bottom of test pit at -15′.



PARKING DECK
From West to East
(Borings Q-1, C-12, C-13, Q-2, C-14, P-38, C-16, C-15, P-39)

LEGEND:

- Designates FILL (placed by man) material
- Designates FILL material with organic content
- Designates RESIDUAL (virgin) soils classified as sands/silts
- Designates PARTIALLY WEATHERED ROCK (PWR)

Borehole	Top Elev.	Boring Depth	Termination or Refusal
C-12	1065.0	70.0	Boring Terminated
C-13	1066.0	127.0	Auger Refusal
C-14	1064.0	70.0	Boring Terminated
C-15	1058.0	70.0	Boring Terminated
C-16	1060.0	92.0	Auger Refusal
P-38	1060.2	20.0	Boring Terminated
P-39	1058.0	35.0	Boring Terminated
Q-01	1061.2	20.0	Boring Terminated
Q-02	1061.8	20.0	Boring Terminated

CONTOUR ENGINEERING, LLC

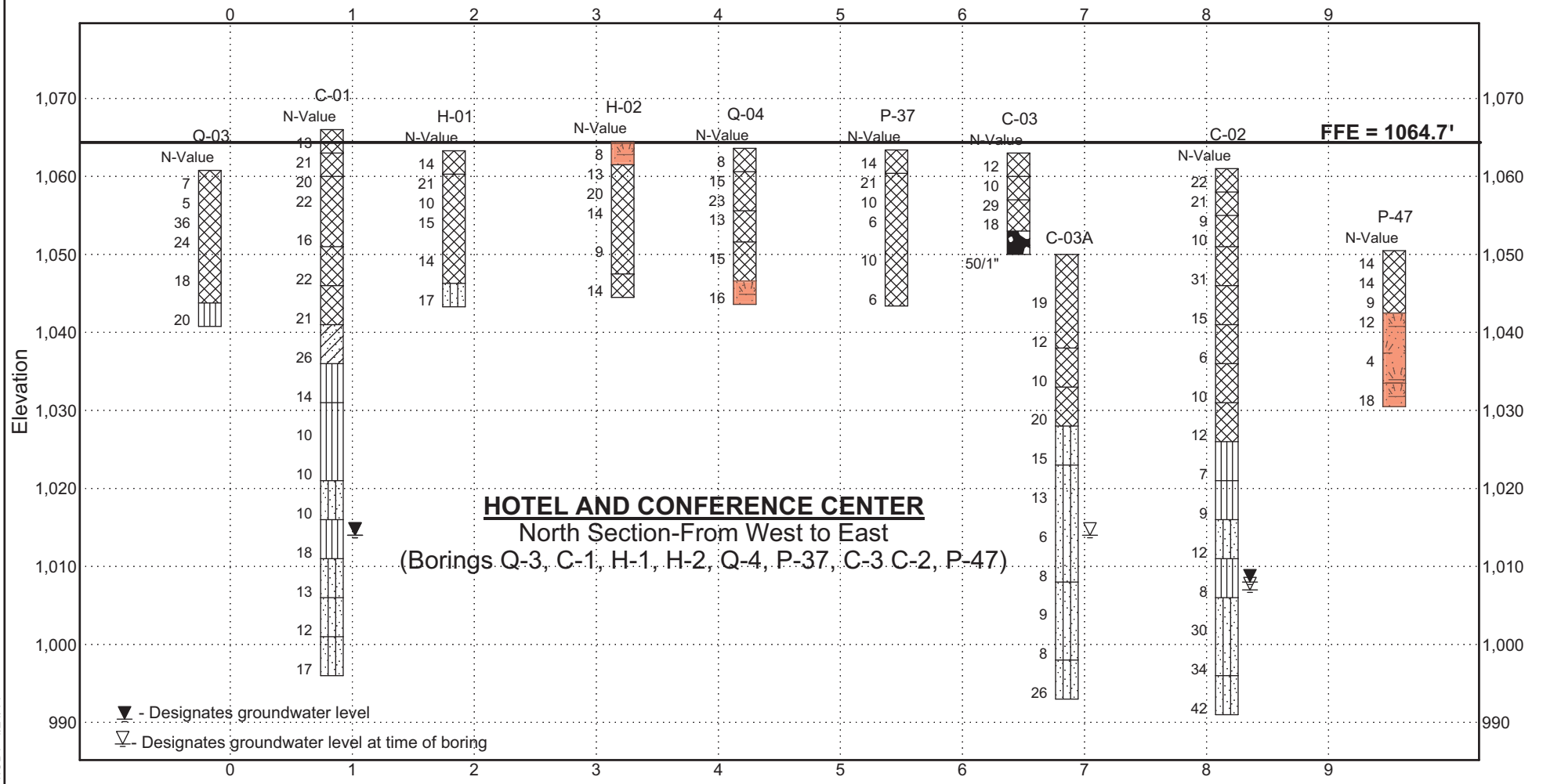
SUBSURFACE CROSS-SECTION
Parking Deck
(Borings C-12 through C-16, P-38, P-39, Q-1, Q-2)

Avalon Hotel, Conference Center, and Parking Deck

Alpharetta, Fulton County, Georgia

PROJECT #	DATE	PLATE NO.
G14NAP02	April 2014	1 of 3

FAGWGN01 AVALON PHASE II LOGS.GPJ FAGWGN01.GDT 4/24/14



LEGEND:

- Designates FILL (placed by man) material
- Designates FILL material with organic content
- Designates RESIDUAL (virgin) soils classified as sands/silts
- Designates BOULDER FILL (placed by man)

Borehole	Top Elev.	Boring Depth	Termination or Refusal
C-01	1066.0	70.0	Boring Terminated
C-02	1061.0	70.0	Boring Terminated
C-03	1063.0	13.0	Auger Refusal
H-01	1063.3	20.0	Boring Terminated
H-02	1064.5	20.0	Boring Terminated
P-37	1063.4	20.0	Boring Terminated
P-47	1050.5	20.0	Boring Terminated
Q-03	1060.8	20.0	Boring Terminated
Q-04	1063.6	20.0	Boring Terminated

CONTOUR ENGINEERING, LLC

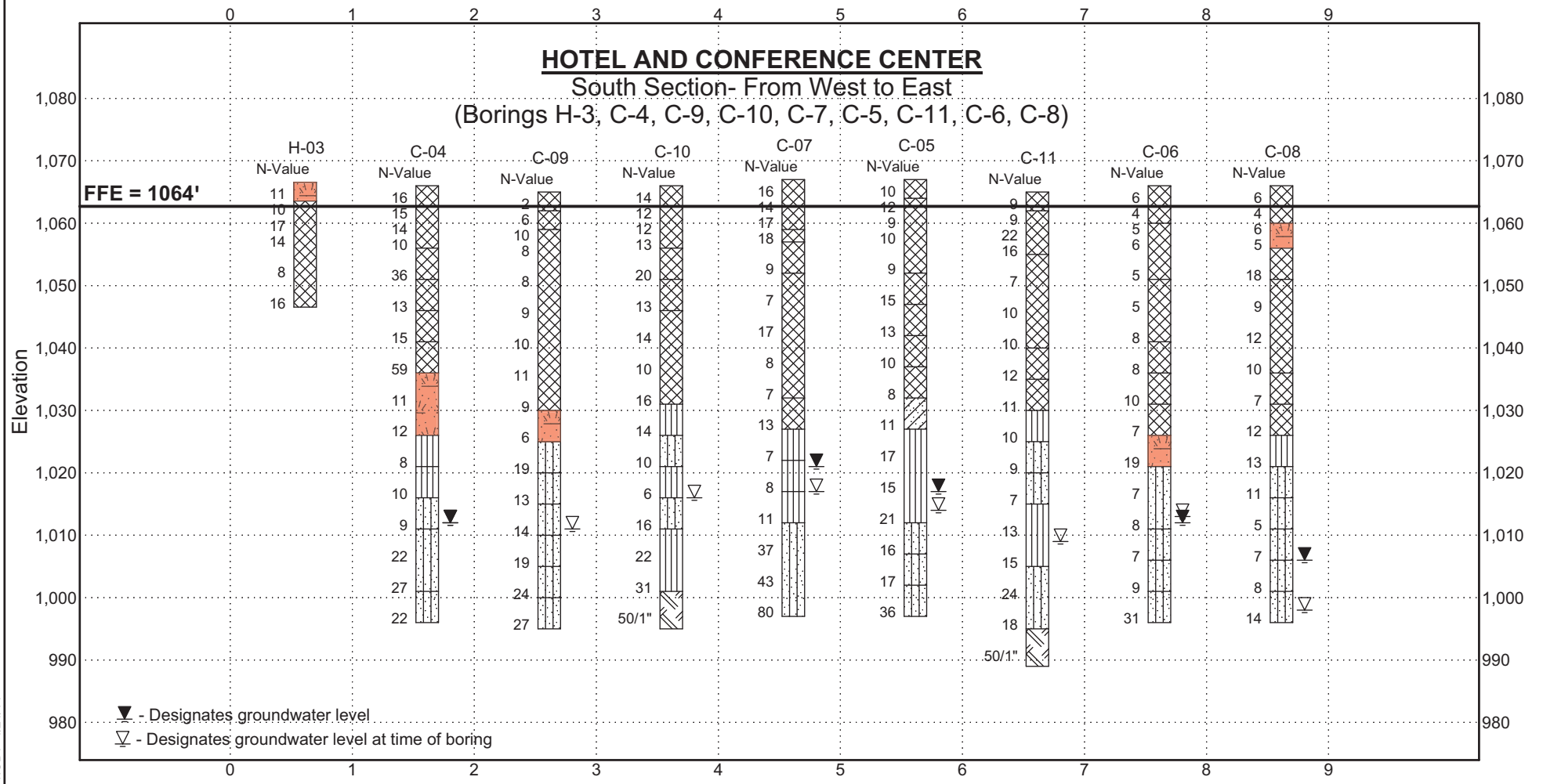
SUBSURFACE CROSS-SECTION
North section of Hotel
(Borings C-1, C-2, C-3, H-1, H-2, P-37, P-47, Q-3, Q-4)

Avalon Hotel, Conference Center, and Parking Deck

Alpharetta, Fulton County, Georgia

PROJECT #	DATE	PLATE NO.
G14NAP02	April 2014	2 of 3

FAGWGN01 AVALON PHASE II LOGS.GPJ FAGWGN01.GDT 4/24/14



LEGEND:

- Designates FILL (placed by man) material
- Designates FILL material with organic content
- Designates RESIDUAL (virgin) soils classified as sands/silts
- Designates PARTIALLY WEATHERED ROCK (PWR)

Borehole	Top Elev.	Boring Depth	Termination or Refusal
C-04	1066.0	70.0	Boring Terminated
C-05	1067.0	70.0	Boring Terminated
C-06	1066.0	70.0	Boring Terminated
C-07	1067.0	70.0	Boring Terminated
C-08	1066.0	70.0	Boring Terminated
C-09	1065.0	70.0	Boring Terminated
C-10	1066.0	71.0	Auger Refusal
C-11	1065.0	76.0	Auger Refusal
H-03	1066.6	20.0	Boring Terminated

CONTOUR ENGINEERING, LLC

SUBSURFACE CROSS-SECTION
South Section of Hotel
(Borings C-4 through C-11, H-3)

Avalon Hotel, Conference Center, and Parking Deck

Alpharetta, Fulton County, Georgia

PROJECT #	DATE	PLATE NO.
G14NAP02	April 2014	3 of 3

FAGWGN01 AVALON PHASE II LOGS.GPJ FAGWGN01.GDT 4/24/14

LOG OF BORING C-01

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1066.0 ft
DATE DRILLED: April 12, 2014	BORING DEPTH: 70 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: 52.0 ft / TOB WATER LEVEL: 52.0 ft

DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS	FIELD DATA: N Value, blows/ft. (1 5 10 50 100)
0.0	1066.0		**FILL:** Brown-pink, silty medium SAND (SM), trace rock fragments				4 5 8	
	1063.0		Brown-pink, silty coarse to medium SAND (SM), and rock fragments				9 11 10	
5.0	1060.0		Brown-red, sandy SILT (ML), trace rock fragments				10 10 10	
							14 14 8	
10.0							7 9 7	
15.0	1051.0		Tan-red, silty medium to fine SAND (SM), trace rock fragments				15 12 10	
20.0	1046.0		Brown-red, sandy SILT (ML)				8 12 9	
25.0	1041.0		**RESIDUUM:** Medium dense, red-brown, clayey fine SAND (SC)				8 12 14	
30.0	1036.0		Stiff to very stiff, brown-black, sandy SILT (ML)				5 5 9	
35.0	1031.0		Stiff to very stiff, red-tan, sandy SILT (ML), **moist**					

Continued Next Page

CONTOUR ENGINEERING, LLC

LEGEND

▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS

AUTO HAMMER

GEOTECH BORING LOG AVALON PHASE II LOGS.GPJ CONTOUR.GDT 4/29/14

LOG OF BORING C-01

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1066.0 ft
DATE DRILLED: April 12, 2014	BORING DEPTH: 70 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: 52.0 ft / TOB WATER LEVEL: 52.0 ft

DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS	FIELD DATA: N Value, blows/ft.
40.0			Stiff to very stiff, red-tan, sandy SILT (ML), **moist** *(Continued)*				2 4 6	
45.0	1021.0		Loose, white-gray-tan, silty medium to fine SAND (SM), **moist**				3 4 6	
50.0	1016.0		Very stiff, brown-red-black, sandy SILT (ML), **moist**				3 5 5	
55.0	1011.0		Medium dense, brown, silty fine SAND (SM), trace mica, **wet**				7 9 9	
60.0	1006.0		Medium dense, brown-gray, silty fine SAND (SM), trace mica, **moist**				4 6 7	
65.0	1001.0		Medium dense, gray, silty fine SAND (SM), trace mica, **moist**				7 7 5	
70.0	996.0		Boring Terminated at 70 feet.				6 8 9	

N Value, blows/ft. scale: 1, 5, 10, 50, 100

CONTOUR ENGINEERING, LLC

LEGEND
▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS
AUTO HAMMER

GEOTECH BORING LOG AVALON PHASE II LOGS.GPJ CONTOUR.GDT 4/29/14

LOG OF BORING C-02

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1061.0 ft
DATE DRILLED: April 11, 2014	BORING DEPTH: 70 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: 53.0 ft / TOB WATER LEVEL: 54.0 ft

DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS
0.0	1061.0		**FILL:** Brown-red, sandy SILT (ML)				3 9 13
	1058.0		Brown-red, sandy SILT (ML), trace rock fragments				6 10 11
5.0	1055.0		Red, silty medium SAND (SM), trace rock fragments				7 5 4
	1051.0						4 6 4
10.0			Red-white, silty coarse to medium SAND (SM), and rock fragments				16 20 11
15.0	1046.0		Brown-red, silty medium SAND (SM), trace rock fragments				7 7 8
20.0	1041.0		Red-brown, silty fine SAND (SM), trace rock fragments				5 3 3
25.0	1036.0		Red-brown, sandy SILT (ML), trace rock fragments, **moist**				3 5 5
30.0	1031.0		Red-brown, sandy SILT (ML)				4 5 7
35.0	1026.0		**RESIDUUM:** Firm, red-brown, sandy SILT (ML)				

Continued Next Page

FIELD DATA: N Value, blows/ft. (1, 5, 10, 50, 100)

CONTOUR ENGINEERING, LLC

LEGEND
▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS
AUTO HAMMER

GEOTECH BORING LOG AVALON PHASE II LOGS.GPJ CONTOUR.GDT 4/29/14

LOG OF BORING C-02

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1061.0 ft
DATE DRILLED: April 11, 2014	BORING DEPTH: 70 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: 53.0 ft / TOB WATER LEVEL: 54.0 ft

DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS	FIELD DATA: N Value, blows/ft.
			RESIDUUM: Firm, red-brown, sandy SILT (ML) *(Continued)*					
40.0	1021.0		Stiff, red-brown, sandy SILT (ML), trace mica, **moist**				2 3 4	
45.0	1016.0		Medium dense, gray-white, silty fine SAND (SM), trace mica, **moist**				2 3 6	
50.0	1011.0		Firm, brown, sandy SILT (ML), trace mica, **moist**				4 6 6	
55.0	1006.0		Medium dense, black-brown-white, silty coarse to medium SAND (SM), **moist**				3 3 5	
60.0							10 13 17	
65.0	996.0		Dense, white-brown, silty medium to fine SAND (SM), **moist**				12 14 20	
70.0	991.0		Boring Terminated at 70 feet.				10 29 13	

N Value, blows/ft. scale: 1, 5, 10, 50, 100

CONTOUR ENGINEERING, LLC

LEGEND
▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS
AUTO HAMMER

GEOTECH BORING LOG AVALON PHASE II LOGS.GPJ CONTOUR.GDT 4/29/14

LOG OF BORING C-03

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1063.0 ft
DATE DRILLED: April 11, 2014	BORING DEPTH: 13 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: ft / TOB WATER LEVEL: ft

DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS	FIELD DATA: N Value, blows/ft.
0.0	1060.0		**FILL:** Brown, sandy SILT (ML), trace mica, trace rock fragments				8 6 6	
5.0	1057.0		Brown-red, sandy SILT (ML)				6 4 6	
	1053.0		Brown-red, silty coarse to medium SAND (SM), trace rock fragments				6 16 13	
10.0	1050.0		**BOULDER FILL:** Sampled as gray, silty coarse SAND (SM), and rock fragments				9 10 8	
			Auger Refusal at 13 feet.					
15.0								
20.0								
25.0								
30.0								
35.0								

N Value, blows/ft. scale: 1, 5, 10, 50, 100

CONTOUR ENGINEERING, LLC

LEGEND

▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS

AUTO HAMMER

GEOTECH BORING LOG AVALON PHASE II LOGS.GPJ CONTOUR.GDT 4/29/14

LOG OF BORING C-03A

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1063.0 ft
DATE DRILLED: April 11, 2014	BORING DEPTH: 70 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: ft / TOB WATER LEVEL: 49.0 ft

DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS	FIELD DATA: N Value, blows/ft.
0			BORING OFFSET 20 FEET EAST TO EDGE OF SLOPE					
5.0			Auger only					
10.0								
	1050.0		**FILL:** Brown-red, silty medium to fine SAND (SM), trace rock fragments					
15.0								
20.0							5 10 9	
25.0	1038.0		Brown-red, sandy SILT (ML)				6 7 5	
30.0	1033.0		Brown-red, sandy SILT (ML), trace rock fragments				4 5 5	
35.0	1028.0						6 10 10	

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N Value, blows/ft. scale: 1, 5, 10, 50, 100

CONTOUR ENGINEERING, LLC

LEGEND

▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS

AUTO HAMMER

GEOTECH BORING LOG AVALON PHASE II LOGS.GPJ CONTOUR.GDT 4/29/14

LOG OF BORING C-03A

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1063.0 ft
DATE DRILLED: April 11, 2014	BORING DEPTH: 70 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: ft / TOB WATER LEVEL: 49.0 ft

DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS
40.0	1023.0		**RESIDUUM:** Medium dense, brown-red, silty fine SAND (SM) *(Continued)*				4 7 8
			Loose to medium dense, brown-orange, silty fine SAND (SM), **moist**				3 5 8
45.0							
							3 2 4
50.0							
							2 3 5
55.0	1008.0		Loose, brown-white-pink, silty fine SAND (SM), **wet**				
							3 4 5
60.0							
							4 4 4
65.0	998.0		Medium dense, brown, silty fine SAND (SM), **moist**				
							6 12 14
70.0	993.0		Boring Terminated at 70 feet.				

N Value, blows/ft. (1, 5, 10, 50, 100)

CONTOUR ENGINEERING, LLC

LEGEND
▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS
AUTO HAMMER

GEOTECH BORING LOG AVALON PHASE II LOGS.GPJ CONTOUR.GDT 4/29/14

LOG OF BORING C-04

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1066.0 ft
DATE DRILLED: April 10, 2014	BORING DEPTH: 70 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: 54.0 ft / TOB WATER LEVEL: 54.0 ft

DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS	FIELD DATA: N Value, blows/ft.
0.0			**FILL:** Red-brown, silty medium to fine SAND (SM), trace rock fragments				6 8 8	
							4 7 8	
5.0							6 6 8	
							5 5 5	
10.0	1056.0		Red-brown-black, sandy SILT (ML), some rock fragments				5 18 18	
15.0	1051.0		Red-brown, sandy SILT (ML)				4 5 8	
20.0	1046.0		Red-brown, sandy SILT (ML), some rock fragments				5 7 8	
25.0	1041.0		Red-brown, silty medium to fine SAND (SM), some rock fragments				5 35 24	
30.0	1036.0		Red-brown-black, sandy SILT (ML), **topsoil**				3 5 6	
35.0								

N Value, blows/ft. scale: 1 5 10 50 100

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CONTOUR ENGINEERING, LLC

LEGEND
▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS
AUTO HAMMER

GEOTECH BORING LOG AVALON PHASE II LOGS.GPJ CONTOUR.GDT 4/29/14

LOG OF BORING C-04

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1066.0 ft
DATE DRILLED: April 10, 2014	BORING DEPTH: 70 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: 54.0 ft / TOB WATER LEVEL: 54.0 ft

DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS	FIELD DATA: N Value, blows/ft. (1 5 10 50 100)
			Red-brown-black, sandy SILT (ML), **topsoil** *(Continued)*				5 5 7	
40.0	1026.0		**RESIDUUM:** Firm, orange-brown-black, sandy SILT (ML), **moist**				6 5 3	
45.0	1021.0		Stiff, orange-brown-black, sandy SILT (ML), **wet**				3 4 6	
50.0	1016.0		Loose, tan-brown, silty fine SAND (SM), trace mica, **moist**				2 4 5	
55.0	1011.0		Medium dense, gray-tan, silty fine SAND (SM)				11 11 11	
60.0							10 12 15	
65.0	1001.0		Medium dense, gray-tan-black, silty fine SAND (SM)				10 11 11	
70.0	996.0		Boring Terminated at 70 feet.					

CONTOUR ENGINEERING, LLC

LEGEND
▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS
AUTO HAMMER

GEOTECH BORING LOG AVALON PHASE II LOGS.GPJ CONTOUR.GDT 4/29/14

LOG OF BORING C-05

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1067.0 ft
DATE DRILLED: April 10, 2014	BORING DEPTH: 70 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: 50.0 ft / TOB WATER LEVEL: 53.0 ft

DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS	FIELD DATA: N Value, blows/ft.
0.0	1067.0		**FILL:** Gray-tan, silty fine SAND (SM)				5 5 5	
	1064.0		Brown-red, sandy SILT (ML), trace rock fragments				5 6 6	
5.0							4 4 5	
10.0							3 5 5	
15.0	1052.0		Brown-red, sandy SILT (ML), trace rock fragments, **trace organic material**				4 4 5	
20.0	1047.0		Red-brown, sandy SILT (ML)				4 6 9	
25.0	1042.0		Brown, silty fine SAND (SM), **moist**				4 5 8	
30.0	1037.0		Red-brown, sandy SILT (ML), **moist**				6 5 5	
35.0	1032.0						3 4 4	

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N Value, blows/ft. scale: 1, 5, 10, 50, 100

CONTOUR ENGINEERING, LLC

LEGEND
▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS
AUTO HAMMER

GEOTECH BORING LOG AVALON PHASE II LOGS.GPJ CONTOUR.GDT 4/29/14

LOG OF BORING C-05

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1067.0 ft
DATE DRILLED: April 10, 2014	BORING DEPTH: 70 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: 50.0 ft / TOB WATER LEVEL: 53.0 ft

DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS	FIELD DATA: N Value, blows/ft.
40.0	1027.0		**RESIDUUM:** Medium dense, brown-red, clayey fine SAND (SC), **moist** *(Continued)*				3 4 7	
			Stiff to very stiff, brown-orange, sandy SILT (ML), **moist**					
45.0							5 7 10	
50.0 ▼							7 7 8	
▽								
55.0	1012.0		Medium dense, gray-white, silty fine SAND (SM), trace mica, **moist**				7 10 11	
60.0	1007.0		Medium dense, brown, silty fine SAND (SM), trace mica, **moist**				6 7 9	
65.0	1002.0		Dense, gray-tan, silty fine SAND (SM), trace mica, **moist**				7 7 10	
70.0	997.0		Boring Terminated at 70 feet.				8 16 20	

N Value, blows/ft. scale: 1, 5, 10, 50, 100

CONTOUR ENGINEERING, LLC

LEGEND
▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS
AUTO HAMMER

GEOTECH BORING LOG AVALON PHASE II LOGS.GPJ CONTOUR.GDT 4/29/14

LOG OF BORING C-06

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1066.0 ft
DATE DRILLED: April 10, 2014	BORING DEPTH: 70 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: 54.0 ft / TOB WATER LEVEL: 53.0 ft

DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS	FIELD DATA: N Value, blows/ft.
0.0	1066.0		**FILL:** Black-brown, sandy SILT (ML), trace rock fragments, **trace organic material**				3 3 3	
5.0	1060.0		Black-brown, sandy SILT (ML), **with organic material, moist**				2 2 2	
10.0							2 3 2	
15.0	1051.0		Brown, sandy SILT (ML), trace rock fragments, **trace organic material, moist**				3 3 3	
20.0							2 2 3	
25.0	1041.0		Red-brown, silty medium to fine SAND (SM)				2 3 2	
30.0	1036.0		Brown-black, silty medium to fine SAND (SM), **trace organic material**				3 4 4	
35.0	1031.0						3 4 4	
							4 4 6	

N Value, blows/ft. scale: 1, 5, 10, 50, 100

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CONTOUR ENGINEERING, LLC

LEGEND
▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS
AUTO HAMMER

GEOTECH BORING LOG AVALON PHASE II LOGS.GPJ CONTOUR.GDT 4/29/14

LOG OF BORING C-06

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1066.0 ft
DATE DRILLED: April 10, 2014	BORING DEPTH: 70 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: 54.0 ft / TOB WATER LEVEL: 53.0 ft

DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS	FIELD DATA: N Value, blows/ft.
			Brown, sandy SILT (ML), **moist, trace organic material** *(Continued)*				3 3 4	
40.0	1026.0		Dark brown, sandy SILT (ML), **with organic material, topsoil**				22 10 9	
45.0	1021.0		**RESIDUUM:** Loose, red-tan, silty fine SAND (SM), trace mica, **moist**				2 3 4	
50.0							4 4 4	
55.0	1011.0		Loose, gray-white, silty fine SAND (SM), trace mica, **moist**				3 3 4	
60.0	1006.0		Loose, tan-orange, silty fine SAND (SM), trace mica, **moist**				3 4 5	
65.0	1001.0		Dense, brown-white, silty coarse to fine SAND (SM), trace mica				10 16 15	
70.0	996.0		Boring Terminated at 70 feet.					

N Value, blows/ft. scale: 1, 5, 10, 50, 100

CONTOUR ENGINEERING, LLC

LEGEND
▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS
AUTO HAMMER

GEOTECH BORING LOG AVALON PHASE II LOGS.GPJ CONTOUR.GDT 4/29/14

LOG OF BORING C-07

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1067.0 ft
DATE DRILLED: April 9, 2014	BORING DEPTH: 70 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: 46.0 ft / TOB WATER LEVEL: 50.0 ft

DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS
0			**FILL:** Brown-red, silty medium to fine SAND (SM), trace rock fragments				5 7 9
5.0							4 6 8
	1059.0		Red-brown, silty fine SAND (SM)				5 7 10
10.0	1057.0		Red, silty medium SAND (SM), trace rock fragments				7 8 10
							6 5 4
15.0	1052.0		Red, sandy SILT (ML)				
20.0							2 3 4
25.0							4 8 9
30.0							3 4 4
35.0	1032.0						2 3 4

N Value, blows/ft. (1, 5, 10, 50, 100)

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CONTOUR ENGINEERING, LLC

LEGEND
▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS
AUTO HAMMER

GEOTECH BORING LOG AVALON PHASE II LOGS.GPJ CONTOUR.GDT 4/29/14

LOG OF BORING C-07

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1067.0 ft
DATE DRILLED: April 9, 2014	BORING DEPTH: 70 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: 46.0 ft / TOB WATER LEVEL: 50.0 ft

DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS	FIELD DATA: N Value, blows/ft. (1, 5, 10, 50, 100)
			Brown, silty fine SAND (SM), **trace wood fragments** *(Continued)*					
40.0	1027.0		**RESIDUUM:** Firm, red-brown, sandy SILT (ML)				5 5 8	
45.0	1022.0		Firm, red, sandy SILT (ML), trace mica, **wet**				2 3 4	
50.0	▽1017.0		Stiff, brown-red, sandy SILT (ML), **wet**				3 4 4	
55.0	1012.0		Dense to very dense, white-tan, silty fine SAND (SM), **moist**				3 4 7	
60.0							11 17 20	
65.0							10 19 24	
70.0	997.0		Boring Terminated at 70 feet.				28 41 39	

CONTOUR ENGINEERING, LLC

LEGEND
▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS
AUTO HAMMER

GEOTECH BORING LOG AVALON PHASE II LOGS.GPJ CONTOUR.GDT 4/29/14

LOG OF BORING C-08

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1066.0 ft
DATE DRILLED: April 11, 2014	BORING DEPTH: 70 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: 60.0 ft / TOB WATER LEVEL: 68.0 ft

DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS	FIELD DATA: N Value, blows/ft.
0.0			**FILL:** Brown-black, sandy SILT (ML), trace rock fragments, **trace organic material**				4 3 3	
5.0	1060.0		Brown-black, sandy SILT (ML), **trace asphalt, some organic material, moist**				2 2 2	
10.0	1056.0		Brown-black, sandy SILT (ML), trace rock fragments, **trace organic material**				2 2 4	
15.0	1051.0		Red-brown, sandy SILT (ML), trace rock fragments, **trace organic material**				3 3 2	
20.0							3 6 12	
25.0							4 4 5	
30.0	1036.0		Gray-brown, silty fine SAND (SM), trace mica, **moist**				4 5 7	
35.0	1031.0						3 4 6	
							3 4 3	

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N Value, blows/ft. scale: 1, 5, 10, 50, 100

CONTOUR ENGINEERING, LLC

LEGEND
▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS
AUTO HAMMER

GEOTECH BORING LOG AVALON PHASE II LOGS.GPJ CONTOUR.GDT 4/29/14

LOG OF BORING C-08

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1066.0 ft
DATE DRILLED: April 11, 2014	BORING DEPTH: 70 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: 60.0 ft / TOB WATER LEVEL: 68.0 ft

DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS	FIELD DATA: N Value, blows/ft. (1, 5, 10, 50, 100)
			Brown-red, sandy SILT (ML), trace rock fragments, **moist** *(Continued)*					
40.0	1026.0		**RESIDUUM:** Stiff, dark brown, sandy SILT (ML)				3 5 7	
45.0	1021.0		Medium dense, gray-tan, silty fine SAND (SM)				6 6 7	
50.0	1016.0		Loose, tan-red, silty fine SAND (SM), trace mica, **moist**				3 5 6	
55.0	1011.0		Loose, gray-white, silty fine SAND (SM), trace mica, **moist**				2 2 3	
60.0	1006.0		Loose, brown, silty fine SAND (SM), some mica, **wet**				3 4 3	
65.0	1001.0		Medium dense, red-brown, silty fine SAND (SM), trace mica, **wet**				3 4 4	
70.0	996.0		Boring Terminated at 70 feet.				5 6 8	

CONTOUR ENGINEERING, LLC

LEGEND
▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS
AUTO HAMMER

LOG OF BORING C-09

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1065.0 ft
DATE DRILLED: April 10, 2014	BORING DEPTH: 70 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: ft / TOB WATER LEVEL: 54.0 ft

DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS
0	1065.0		**FILL:** Red-brown, sandy SILT (ML), **moist**				0 0 2
	1062.0		Red-brown, silty medium to fine SAND (SM), **trace wood fragments**				2 3 3
5.0	1059.0		Red-brown, silty medium to fine SAND (SM), trace rock fragments				3 4 6
							3 4 4
10.0							
							3 4 4
15.0							
							3 4 5
20.0							
							3 4 6
25.0							
							3 4 7
30.0							
							3 4 5
35.0	1030.0						

FIELD DATA: N Value, blows/ft. (1, 5, 10, 50, 100)

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CONTOUR ENGINEERING, LLC

LEGEND
▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS
AUTO HAMMER

GEOTECH BORING LOG AVALON PHASE II LOGS.GPJ CONTOUR.GDT 4/29/14

LOG OF BORING C-09

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1065.0 ft
DATE DRILLED: April 10, 2014	BORING DEPTH: 70 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: ft / TOB WATER LEVEL: 54.0 ft

DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS
			Red-brown-black, sandy SILT (ML), trace clay, **and organic material***(Continued)*				3 3 3
40.0	1025.0		**RESIDUUM:** Medium dense, orange-red-brown, silty fine SAND (SM)				5 9 10
45.0	1020.0		Medium dense, white-tan-gray, silty fine SAND (SM)				5 7 6
50.0	1015.0		Medium dense, orange-brown-black, silty coarse to fine SAND (SM), some rock fragments, **wet**				5 7 7
55.0	1010.0		Medium dense, tan-orange-brown, silty fine SAND (SM), trace mica, **moist**				6 11 8
60.0	1005.0		Medium dense, tan-orange-brown, silty medium to fine SAND (SM), **moist**				7 14 10
65.0	1000.0		Medium dense, white-tan-brown, silty fine SAND (SM), trace mica, **moist**				6 12 15
70.0	995.0		Boring Terminated at 70 feet.				

FIELD DATA: N Value, blows/ft. (1, 5, 10, 50, 100)

CONTOUR ENGINEERING, LLC

LEGEND
▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS
AUTO HAMMER

GEOTECH BORING LOG AVALON PHASE II LOGS.GPJ CONTOUR.GDT 4/29/14

LOG OF BORING C-10

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1066.0 ft
DATE DRILLED: April 23, 2014	BORING DEPTH: 71 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: ft / TOB WATER LEVEL: 50.0 ft

DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS	FIELD DATA: N Value, blows/ft. (1 5 10 50 100)
0.0			**FILL:** Red-brown, sandy SILT (ML), trace rock fragments				4 5 9	
5.0							5 6 6	
							5 5 7	
							4 6 7	
10.0	1056.0		Red-brown, sandy SILT (ML), and rock fragments					
							8 9 11	
15.0	1051.0		Red-brown, sandy SILT (ML), trace rock fragments					
							5 6 7	
20.0	1046.0		Red-brown, sandy SILT (ML)					
							3 5 7	
25.0								
							3 3 7	
30.0								
							4 7 9	
35.0	1031.0							

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CONTOUR ENGINEERING, LLC

LEGEND
▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS
AUTO HAMMER

GEOTECH BORING LOG AVALON PHASE II LOGS.GPJ CONTOUR.GDT 4/29/14

LOG OF BORING C-10

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1066.0 ft
DATE DRILLED: April 23, 2014	BORING DEPTH: 71 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: ft / TOB WATER LEVEL: 50.0 ft

DEPTH (feet)	ELEVATION (feet)	GRAPHIC LOG	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS	FIELD DATA: N Value, blows/ft.
			RESIDUUM: Stiff, dark brown-red, sandy SILT (ML) *(Continued)*				3 5 9	
40.0	1026.0		Loose, red, silty medium to fine SAND (SM)				6 5 5	
45.0	1021.0		Firm, tan-brown, sandy SILT (ML), **moist**				2 3 3	
50.0	▽1016.0		Medium dense, brown-white, silty medium SAND (SM), **moist**				3 8 8	
55.0	1011.0		Very stiff, brown, sandy SILT (ML), trace mica, **moist**				3 8 14	
60.0							3 11 20	
65.0	1001.0		**PARTIALLY WEATHERED ROCK** Sampled as white-tan, silty medium SAND (SM)				50/1"	
70.0	995.0		Auger Refusal at 71 feet.					

1 5 10 50 100

CONTOUR ENGINEERING, LLC

LEGEND
▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS
AUTO HAMMER

GEOTECH BORING LOG AVALON PHASE II LOGS.GPJ CONTOUR.GDT 4/29/14

LOG OF BORING C-11

Avalon Hotel, Conference Center, and Parking Deck
Alpharetta, Fulton County, Georgia
PROJECT NO.: G14NAP02

LOGGED BY: Blake Summers	ELEVATION: 1065.0 ft
DATE DRILLED: April 22, 2014	BORING DEPTH: 76 ft
DRILLING METHOD: Hollow Stem Auger	24 HR WATER LEVEL: ft / TOB WATER LEVEL: 56.0 ft

DEPTH (feet)	ELEVATION (feet)	SAMPLE DESCRIPTION	LAB RESULTS: NATURAL MOISTURE CONTENT (%)	LAB RESULTS: LIQUID LIMIT (%)	LAB RESULTS: PLASTIC INDEX (%)	FIELD DATA: BLOW COUNTS
0.0	1062.0	**FILL:** Brown, silty fine SAND (SM)				3 4 5
		Red-brown, sandy SILT (ML), trace rock fragments				4 4 5
5.0						5 10 12
						5 7 9
10.0	1055.0	Brown-red, sandy SILT (ML), **moist**				
						2 2 5
15.0						
						4 4 6
20.0						
						5 4 6
25.0	1040.0	Gray-brown, sandy SILT (ML), trace mica, **moist**				
						3 6 6
30.0	1035.0	Brown-red, sandy SILT (ML), trace rock fragments, **moist**				
						3 4 7
35.0	1030.0					

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FIELD DATA: N Value, blows/ft. (1 5 10 50 100)

CONTOUR ENGINEERING, LLC

LEGEND
▽ = TIME OF BORING (TOB) ▼ = 24 HOUR READING

REMARKS
AUTO HAMMER

GEOTECH BORING LOG AVALON PHASE II LOGS.GPJ CONTOUR.GDT 4/29/14