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September 22, 2017
Project Number: 4976.004.17

Kaizen Collaborative
2390 Main Street
Tucker, Georgia 30084

Attention: Ms. Greta G. deMayo, PLA

RE: Subsurface Exploration
Peachtree Creek Greenway Phase I
DeKalb County, Georgia

Ladies & Gentlemen:

We have completed our subsurface exploration and are providing our recommendations, together with the results of our field testing and our conclusions based on them. This work was authorized by Ms. Greta G. deMayo, PLA.

If you should have any questions concerning this information, please feel free to call. It has been a pleasure working with you and we look forward to being of continued service to Kaizen Collaborative.

Sincerely,

CHATTAHOOCHEE CONSULTING GROUP, INC.

William T. Sheppard
Project Engineer



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**REPORT OF
SUBSURFACE EXPLORATION**

**PEACHTREE CREEK GREENWAY PHASE I
RETAINING WALLS & BRIDGE ABUTMENTS**

Dekalb County, Georgia

Prepared for:

**KAIZEN COLLABORATIVE
2390 Main Street
Tucker, Georgia 30084**

September 2017

Prepared by:

Chattahoochee Consulting Group, Inc.

Project No. 4976.004.17

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FIGURE 1- Boring Location Plan – Corporate Boulevard to Mixing Plaza

FIGURE 2- Boring Location Plan – Mixing Plaza to Sewer Bridge Crossing

FIGURE 3- Boring Location Plan – Villas at Druid Hills Apartments

FIGURE 4- Boring Location Plan – Briarwood Road Trailhead

APPENDIX A - Field Procedures

APPENDIX B - Boring Logs

**REPORT OF
SUBSURFACE EXPLORATION**

**Peachtree Creek Greenway Phase I
Retaining Walls & Bridge Abutments**

Dekalb County, Georgia

The findings of this exploration are presented below, together with the analyses and conclusions based on them. The field and exploratory procedures are discussed in the Appendix.

PROJECT CONSIDERATIONS

1. Scope of Work - The purpose of this exploration was to determine the subsurface conditions at the proposed pedestrian bridge abutments and along the proposed retaining walls which will be constructed in conjunction with the Phase I development of the Peachtree Creek Greenway. The composition and consistencies of the existing overburden soils were explored, as well as the depth to rock and groundwater at each of these areas. Appropriate recommendations are made in this report for the foundation designs.

2. Description of Project - Information for this project was provided by Ms. Greta de Mayo of Kaizen Collaborative and Mr. Jonathan McCaig of the Path Foundation. We understand that the first phase of the Peachtree Creek Greenway will run along Peachtree Creek from near Corporate Boulevard to Briarwood Road in a generally southwest to northeast direction. A pedestrian bridge crossing, (borings B-8 & B-9), is proposed to span approximately 170 linear feet over Peachtree Creek. Additionally, the approaches to the bridge will consist of elevated trail sections (borings B-7, B-10 & B-11). A second smaller bridge will span over the sewer pipe between borings B-12 and B-13. The proposed bridge abutment foundations and raised trail support foundations are anticipated to bear on deep foundations. A structural slab crossing is proposed near the southeast end of the trail, west of Corporate Boulevard. Several retaining walls are currently proposed to allow for construction of the mixing plazas and to allow transitions between the high and low sections of the trail. We anticipate that the retaining walls will be cast-in-place concrete cantilevered walls, which will vary in height from less than 2 feet to approximately 10 vertical feet. The retaining walls and structural slab crossing are anticipated to be supported on shallow foundations, where the soil conditions allow and on deep foundations where the soils are unsuitable.

3. Limitations - The analyses and recommendations presented in this report are based on the preceding project information, as well as on the result of the exploration.

While it is not likely that conditions will differ greatly from those observed in the boring, it is always possible that variations can occur between or away from the borehole locations. If it becomes apparent during construction that soil conditions differing significantly from those discussed in Paragraph (5) are being encountered, this office should be notified at once so that their effects can be determined and any remedial measures necessary be prescribed. Also, should the nature of the project change to a major degree, these recommendations may have to be re-evaluated. All testing was performed in general compliance with ASTM guidelines. This report has been prepared for the exclusive use of Kaizen Collaborative and their consultants. No other third party beneficiaries may rely on this report without express written approval by CCG, Inc.

SITE CONDITIONS

4. Site Description - The project site is the Peachtree Creek Greenway Phase I located between Corporate Boulevard and Briarwood Road. A pedestrian bridge crossing is proposed to span approximately 170 linear feet over Peachtree Creek. Additionally, the approaches to the bridge will consist of elevated trail sections. The proposed bridge abutment foundations and raised trail support foundations are anticipated to bear on deep foundations. A second smaller bridge will span over the sewer pipe between the Jackson Square condominiums and the Villas at Druid Hills apartment complex. A structural slab crossing is also proposed near the southeast end of the trail, west of Corporate Boulevard. Several retaining walls are currently proposed to allow for construction of the mixing plazas and to allow transitions between the high and low sections of the trail.

The site is located in the Southern Piedmont Physiographic Province of Georgia. This Province is characterized as a broad, gently sloping plateau that decreases in total relief toward the Coastal Plain Province. The Piedmont is intricately dissected by a generally dendritic stream pattern. The topography is generally moderate, but commonly steeper near rivers and small creeks.

According to the mapping of the Georgia Geologic Survey, the rocks that occur in the general vicinity of the site belong to Clairmont Formation of the larger Atlanta Group and consist primarily of gneisses and amphibolites. This is generally consistent with the partially weathered rock materials encountered in the borings. Overlying these rocks are residual, or in-place, soils that have formed as a result of weathering. This weathering is a function of several factors such as mineral composition of the parent rock and degree of natural fracturing. As a result, these residual soils frequently are highly variable in consistency or relative density. Also, they often contain lenses of highly to partially weathered rock of variable sizes which occur at different depths. Residual soils that retain structural characteristics of the parent rocks, such as color and texture, are known as saprolites.

5. Soil Conditions - A total of twenty (20) Standard Penetration Test (SPT) borings were conducted at the approximate locations shown on the attached Boring Location Plans, Figures 1, 2 and 3. Two borings were performed for the proposed bridge crossing over Peachtree Creek, two borings were performed for each of the structural grade crossings and the remaining borings were performed along the areas of the proposed retaining walls and pedestrian plazas. Additionally, one boring was added along the top of the slope adjacent to the parking lot for Corporate Square. The borings were located by our field engineer, who supervised the field operations and maintained logs of the borings. The boring logs indicate the depths, consistencies and field classification of the soils encountered during the drilling operations. Groundwater levels and any unusual subsurface conditions, if encountered during the drilling operations, are also described on the logs.

Standard Penetration Tests (SPT) were performed at minimum five-foot intervals in each SPT boring. Split-spoon samples were recovered at these intervals, placed in clean, closed containers, and returned to the laboratory for further analysis.

Bridge Crossings & Elevated Trail Sections

Two borings, (B-8 & B-9) were performed for the proposed bridge crossing over Peachtree Creek, two borings were performed for the smaller bridge crossing between Jackson Square and the Villas at Druid Hills (B-12 & B-13) and three borings (B-7, B-10 & B-11) were performed for the adjacent elevated trail sections and lookout deck. Borings B-7 and B-8 were located on the south side of the creek and borings B-9, B-10, B-11, B-12 and B-13 were located on the north side of the creek. These borings encountered similar soils generally consisting of alluvial soils comprised of loose SANDS and soft SILTS and CLAYS to depths of approximately 17 to 23 feet below the existing ground surface. These alluvial soils were underlain by a stratum of saprolitic soils generally comprised of firm to stiff SILTS and firm to dense SANDS to depths of 25 to 35 feet below the existing grades. Partially weathered rock was present at depths of 31 and 33 feet in borings B-9 and B-10. Boring B-10 refused on apparent competent rock at a depth of 33 feet below the existing grades. The remaining borings were terminated in the saprolitic soils at depths of 28 to 35 feet below the existing grades. Generally, the soil conditions encountered at the proposed bridge crossings can be described as shown on the following page:

Stratum	Depth to Top of Stratum (feet)	Stratum Thickness (feet)	Description
I	0	17 to 23	SAND, very loose to firm, brown, trace mica, silt, clay moist to wet, non to low plastic; ALLUVIAL or CLAY & SILT, very soft to firm, dark gray, wet, plastic: ALLUVIAL
II	17 to 28	9 to 15*	SAND & SILT, firm to stiff, black, white, brown, trace to some mica, moist to wet, non-plastic: SAPROLITE
III	31 to 40	1 to 2**	PARTIALLY WEATHERED ROCK

*Stratum thickness not determined, borings B-7, B-8 and B-11 were terminated in Stratum II and boring B-9 was terminated in Stratum III.

** Stratum thickness determined by auger refusal on apparent competent rock at a depth of approximately 23 feet below the existing ground surface in boring B-10, 36 feet below existing grades in boring B-12 and 41 feet below existing grades in boring B-13.

Notable exceptions were encountered in borings B-12 and B-13 where a stratum of fill soils comprised of loose SANDS at boring B-12 and stiff Silts at boring B-13 were present overlying the alluvial soils of Stratum I and in boring B-13 where Stratum III was not encountered.

Structural Slab Crossing

Two borings, (B-2 & B-3) were performed for the proposed structural slab crossing near the southeast end of the trail, west of Corporate Boulevard. Boring B-2 was performed using hand auger techniques due to access restrictions. These borings encountered similar soils generally consisting of a surficial stratum of fill comprised of Rocky TOPSOIL to a depth of 1 to 1.5 feet below the existing grades. Underlying these fill soils, a stratum of undisturbed saprolitic soils, comprised of stiff, brown Sandy SILTS was present to a depth of 7 feet at boring B-2, where the boring was terminated and to a depth of 11 feet at boring B-3. Underlying the saprolitic soils at boring B-3, a stratum of partially weathered rock was encountered to a depth of approximately 12.5 feet where the boring refused on apparent competent rock. Generally, the soil conditions encountered at the proposed structural slab crossing can be described as shown on the following page:

Stratum	Depth to Top of Stratum (feet)	Stratum Thickness (feet)	Description
I	0	1 to 1.5	Rocky TOPSOIL
II	1 to 1.5	5.5 to 10*	Sandy SILT, stiff, black, tan, brown, trace mica, dry to moist, non-plastic, laminated: SAPROLITE
III	11	2.5**	PARTIALLY WEATHERED ROCK

*Stratum thickness not determined, boring B-2 was terminated in Stratum II at a depth of 5 feet.

** Stratum thickness determined by auger refusal on apparent competent rock at a depth of 12.5 feet in boring B-3.

Retaining Wall Areas

The remaining borings, (B-1, B-4 through B-6A & B-14 through B-19), were performed in the trail sections where retaining walls are currently proposed; borings B-1 and B-4 through B-6A were performed for the retaining walls, which will be located along the south side of Peachtree Creek in the Corporate Square area, borings B-14 through B-16 were performed along the proposed wall alignment adjacent to the Villas at Druid Hills apartments and borings B-17 through B-19 were performed near the Briarwood Trailhead.

Borings B-1 and B-4 through B-6A were performed along the south side of Peachtree Creek along the proposed wall alignment. The soils in this area generally encountered a surficial stratum of fill comprised of firm to stiff SILTS to depths of 6 to 11 feet below the existing grades. It should be noted that borings B-1 and B-6 refused on large rocks within the fill at depths of 5 to 5.5 feet below the existing grades. Underlying these fill soils, a stratum of undisturbed saprolitic soils, comprised of firm to stiff SANDS and SILTS was present to depths of 10 to 14 feet. Underlying the fill soils, a stratum of firm to stiff saprolitic SILTS was encountered to a depth of 10 feet at boring B-5, where the boring was terminated and to a depth of approximately 14 feet at boring B-4. A stratum of hard partially weathered rock was present underlying the saprolitic soils at boring B-4 to a depth of 15.5 feet where the boring refused on apparent competent rock. An exception was at boring B-6A where a stratum of organic laden TOPSOIL was present immediately underlying the fill from a depth of approximately 12 to 18 feet below the existing grades. Underlying these topsoil materials at boring B-6A was a stratum of very stiff alluvial CLAYS from a depth approximately 18 to 21 feet. Beneath the alluvial soils was a stratum of very dense saprolitic SANDS to the boring termination depth of 25 feet below the existing grades.

Borings B-14 through B-16 were performed along the proposed wall alignment adjacent to the Villas at Druid Hills apartments. These borings generally encountered a surficial

stratum of fill comprised of loose SANDS to a depth of 5 feet below the existing grades. It should be noted that borings B-15 and B-16 refused on large rocks within the fill at depths of 3 feet below the existing grades. Three hand auger borings were also performed in the slope along the proposed wall alignment, where the wall will be located. These hand auger borings encountered fill soils comprised of rock-laden SANDS to depths of 3 to 6 feet below the existing grades where the borings refused on large rocks in the fill. Underlying the surficial fill soils, alluvial soils comprised of loose Sands and very soft, organic SILTS were present to a depth of approximately 19 feet below the existing grades. The alluvial soils were generally underlain by firm to stiff saprolitic SILTS and SANDS to a depth of approximately 23 feet, where the boring refused on apparent competent rock.

Borings B-17 through B-19 were performed near the Briarwood Trailhead. These borings generally encountered a surficial stratum of fill comprised of stiff to very stiff SILTS and Sandy SILTS to depths of 2 to 5 feet below the existing grades. Underlying these fill soils, a stratum of undisturbed saprolitic soils, comprised of very stiff to hard SANDS and SILTS was present at boring B-17 to a depth of 15 feet where the boring was terminated. A stratum of hard partially weathered rock was present in boring B-18 from a depth of 2 to 4 feet where the boring refused on apparent competent rock. Underlying the surficial fill soils at boring B-19 was a stratum of very alluvial SILTS to a depth of 10.5 feet where the boring refused on apparent competent rock.

For more precise details of the soil conditions encountered at each borehole, please refer to the individual boring logs in the Appendix.

6. Groundwater - The borings were dry augured their full depth in an attempt to locate groundwater levels. Stabilized groundwater was measured in the majority of the borings at depths ranging from approximately 8 to 14 feet below the existing grades. No groundwater was encountered in borings B-1, B-2, B-6, B-15 or B-16 which refused at depths of less than 5 feet, borings B-17, B-18 or B-19 located at the Briarwood Trailhead or in boring B-6A. Groundwater levels are subject to seasonal and climatic fluctuations and can change significantly with time. The borings were backfilled with soils from the drilling operations following measurements for groundwater.

SEISMIC DESIGN PARAMETERS

7. Site Class - The project site is located in Brookhaven, Dekalb County, Georgia which employs the 2012 International Building Code® (IBC). As part of this Code, the design of structures must consider dynamic forces resulting from seismic events which are dependent upon the magnitude of the earthquake event, as well as the properties of the soils that underlie the site. As part of evaluating seismic forces, the Code requires the evaluation of the Seismic Site Class, which categorizes the site based upon the characteristics of the subsurface profile within the upper 100 feet of the ground surface.

To define the Site Class for this project, the results of soil test borings drilled for the project site and estimated appropriate soil properties below the base of the borings to a depth of 100 feet, were interpreted, as permitted by the Code. The estimated soil properties were based upon our experience with subsurface conditions in the general site area.

Based upon the SPT N-values and refusal depths recorded during the field exploration, the subsurface conditions within the site are consistent with the characteristics of a **Site Class “D”** as defined in Table 1613.5.2 of the Code. The associated IBC (2012) probabilistic ground acceleration values and site coefficients for the general site area were obtained from the USGS U.S. Seismic Design Maps Web Application and are presented in the table below:

Peachtree Creek Greenway Ground Motion Values *

Period (sec)	Mapped MCE Spectral Response Acceleration** (g)	Site Coefficients	Adjusted MCE Spectral Response Acceleration (g)	Design Spectral Response Acceleration (g)
0.25	S_s 0.191	F_a 1.6	SM_s 0.305	SD_s 0.203
1.0	S_l 0.091	F_v 2.4	SM_l 0.218	SD_l 0.146

**2% Probability of Exceedence in 50 years for Latitude 33.83859°N and Longitude 84.33362°W*

***At top of bedrock*

MCE = Maximum Considered Earthquake

The Site Coefficients, F_a and F_v presented in the above table were also obtained from the noted USGS webpage, as a function of the site classification and mapped spectral response acceleration at the short (S_s) and 1-second (S_l) periods.

Based on Spectral Response Coefficients SD_s and SD_l above, the Seismic Design Category for this site is **Category C** for Occupancy Categories I, II and III as prescribed by IBC 2012, Tables 1613.3.5(1) and 1613.3.5(2).

BRIDGE FOUNDATION RECOMMENDATIONS

Bridge Crossings & Raised Trail Sections – Boring B-7 thru B-13

8. General - Shallow foundations will not adequately support the proposed bridge abutments, raised trail approaches or any associated retaining walls adjacent to the bridge over Peachtree Creek or the smaller bridge crossing over the sewer line due to the soft consistencies of the existing alluvial and saprolitic soils. Generally, the soils underlying these areas were comprised of very loose alluvial Sands and soft Clays to depths of 17 to

28 feet below the existing grades. These soils exhibited allowable soil bearing pressures of less than 1000 pounds-per-square foot (psf). The alluvial soils were generally underlain by firm to stiff saprolitic SILTS and SANDS. Furthermore, the presence of relatively shallow groundwater will limit deep foundation alternatives to hydraulically advanced helical piles or driven piles.

Information concerning design and installation of deep foundations is presented in the paragraphs which follow.

9. Helical Piles – We recommend that the proposed bridge crossing and raised trail sections be supported using a small diameter pile system such as A.B. Chance™. These piles utilize a helical bearing plate on the end of the anchor, to develop the pile capacity and are hydraulically advanced into firm soils or rock. The pile capacities are dependent on the installation torque or pressures encountered and the anchor size. Ultimate pile capacities of up to 50 tons may be achieved for larger anchors. Due to the anticipated large loads associated with the bridge abutments, a higher capacity anchor such as a Chance RS2875.262 Helical Pile (or its equivalent) which is rated for an ultimate capacity in compression of up to 30 tons is recommended. The pile installation should be monitored by qualified geotechnical personnel in order to help ensure the piles adequately penetrate into the weathered rock materials in order to achieve the desired capacities. If a factor of safety of 2.5 or greater is achieved between the allowable design capacities and the estimated field capacities based on the installation torque, a field load test may be omitted. Helical piles should be placed on minimum center to center spacing's of 3 helix diameters. Based on the boring data, we anticipate minimum pile depths of 35 to 40 feet will be required.

10. Driven Piles – Alternatively, driven piles comprised of either steel H-piles or open ended thick-wall steel pipe piles may be used to support the proposed abutments. Of the two types, the pipe piles can be considered to have a slightly higher capacity than the H-piles due to their increased section modulus. Consequently, these piles are often capable of penetrating weathered rock layers due to their resistance to crippling. We recommend the use of a driving shoe for both of these pile systems to help penetrate the partially weathered rock.

Load capacities (compression) for driven piling normally range in the 60 to 200 kips (30 to 100 ton) range. Based on the soils and underlying weathered rock horizon encountered on this site, we estimate that ultimate individual pile capacities using steel H piles (HP 10x42) will be approximately 100 kips (50 tons) per pile where the piles are driven to practical refusal in the hard partially weathered to competent rock. In addition, we believe that somewhat higher capacities will be possible using 9-5/8 inch open ended pipe piles. Based on our soil test boring results, it appears that pile bearing depths between 30 and 40 feet below existing grades should be anticipated in the proposed abutments for both the Peachtree Creek bridge crossing and the smaller bridge over the sewer pie in the

area of boring B-12 and B-13 as well as the raised trail supports (boring B-10 & B-11). Additionally, Variations in tip elevations should be anticipated, requiring pile lengths to be determined in the field based on driving criteria established during initial load testing procedures. The attached boring logs may be referenced for specific auger refusal and weathered rock depth information for use in estimating pile lengths. Piles driven to firm tip embedment on rock will be essentially end bearing and will need no reductions for group efficiency in compression. It should be noted that the vibration from driven pile operations should be carefully monitored and can potentially create damage to nearby structures.

Uplift load capacities for driven piling are highly dependent on the type of piling used, as well as the subsurface conditions. Uplift load capacities of approximately one-third of the estimated compression pile load capacities may be used for estimating purposes. A detailed analysis should be performed for both compression and uplift capacities if piles are utilized.

STRUCTURAL SLAB CROSSING FOUNDATION RECOMMENDATIONS

11. General – We understand that a structural slab crossing is proposed near the southeast end of the trail, west of Corporate Boulevard. The proposed crossing will bear at or near the existing grades in the areas of borings B-2 and B-3. Based on the boring data, shallow foundations will adequately support the proposed crossing. Generally, the soils underlying the proposed crossing, below the surficial topsoil stratum, were comprised of stiff, saprolitic Silts which exhibited allowable soil bearing pressures of 2500 pounds-per-square foot (psf). Information concerning design and installation of shallow foundations is presented in the paragraphs which follow.

12. Shallow Foundations - Based on the boring data, shallow foundations may be utilized to support the proposed retaining wall foundations. Shallow foundations should bear through the surficial rocky topsoil at minimum depths of 1 to 1.5 feet below the existing grades

13. Bearing Capacity - Shallow foundations supporting the proposed structural slab crossing should bear in the stiff saprolitic soils of Stratum II at anticipated minimum depths of 1 to 1.5 vertical feet below the existing grades. Maximum allowable bearing pressures of 2500 pounds per square foot are recommended to be used in the design of the proposed wall foundations.

RETAINING WALL FOUNDATION RECOMMENDATIONS

BRIARWOOD ROAD TRAILHEAD

14. General – We understand that retaining walls and a staircase are proposed at the Briarwood Road Trailhead. The retaining walls are proposed to be 10 feet or less in height and are anticipated to be cast in-place concrete walls. The proposed retaining walls will bear at or near the existing grades in the areas of borings B-17 through B-19. These borings generally encountered a surficial stratum of fill comprised of stiff to very stiff SILTS and Sandy SILTS to depths of 2 to 5 feet below the existing grades. Underlying these fill soils, a stratum of undisturbed saprolitic soils, comprised of very stiff to hard SANDS and SILTS was present at boring B-17 to a depth of 15 feet where the boring was terminated. A stratum of hard partially weathered rock was present in boring B-18 from a depth of 2 to 4 feet where the boring refused on apparent competent rock. Underlying the surficial fill soils at boring B-19 was a stratum of alluvial SILTS to a depth of 10.5 feet where the boring refused on apparent competent rock. Based on the boring data, shallow foundations will adequately support the proposed retaining walls. Information concerning design and installation of shallow foundations is presented in the paragraphs which follow.

15. Shallow Foundations - Based on the boring data, shallow foundations may be utilized to support the proposed retaining wall foundations in the area of the Briarwood Road Trailhead. We anticipate minimum shallow foundation bearing depths in the 2 to 3 foot deep range for the retaining walls to be constructed in this area. It should be noted that difficult excavation will be encountered in the area of boring B-18, where a stratum hard partially weathered rock was present from a depth of 2 to 4 feet and which refused on apparent competent rock at a depth of approximately 4 feet below the existing grades.

16. Bearing Capacity - Shallow foundations supporting the proposed retaining walls are anticipated to bear in the stiff fill soils or the underlying stiff saprolitic or alluvial soils. Maximum allowable bearing pressures of 2500 pounds per square foot are recommended to be used in the design of the proposed wall foundations.

VILLAS at DRUID HILLS

17. General – We understand that retaining walls are proposed along the south side of the trail in the area of the Villas at Druid Hills apartments. The proposed walls will run near the top of the existing slope and will vary in height from less than 2 feet to approximately 10 vertical feet. The walls are anticipated to be cast in-place concrete walls and will bear in the existing fill embankment, approximately 30 linear feet behind the curb for the parking lot at the apartments and approximately 2 to 10 feet below the final site grades. The proposed retaining walls will bear in the existing slope, in the areas of borings B-14 through B-16. These borings generally encountered a surficial stratum of

fill comprised of loose SANDS to a depth of 5 feet below the existing grades. It should be noted that borings B-15 and B-16 refused on large rocks within the fill at depths of 3 feet below the existing grades. Boring B-14 encountered alluvial soils underlying the surficial fill soils. These soils were comprised of loose Sands and very soft, organic SILTS from a depth of approximately 19 to 23 feet below the existing grades. The alluvial soils were underlain by firm to stiff saprolitic SILTS and SANDS to a depth of approximately 23 feet where the boring refused on apparent competent rock. The presence of the loose alluvial soils and the potential for voids within the fill embankment due to the large rocks present, creates the potential for settlement of the walls; therefore, we recommend that the retaining walls in this area be supported on helical piles as outlined in Section 9 of this report. Based on the boring data we anticipate minimum pile depths in the range of 20 to 25 feet will be required. Helical piles will likely have difficulty penetrating the surficial rock fill layer. Excavation of these materials and replacement with structural fill will likely be required where the rock fill is present.

CORPORATE BOULEVARD TO BRIDGE CROSSING

18. General – We understand that retaining walls and a staircase are proposed along the south side of Peachtree Creek from west of Corporate Boulevard to the bridge crossing over Peachtree Creek. The retaining walls are proposed to be up to 12 feet in height and are anticipated to bear at or near the existing site elevations. The borings in this area generally encountered a surficial stratum of fill comprised of firm to stiff SILTS to depths of 6 to 11 feet below the existing grades. It should be noted that borings B-1 and B-6 refused on large rock fragments in the fill at depths of 5 to 5.5 feet below the existing grades. Underlying these fill soils, a stratum of undisturbed saprolitic soils, comprised of firm to stiff SANDS and SILTS was present to depths of 10 to 14 feet. Underlying the fill soils, a stratum of firm to stiff saprolitic SILTS was encountered to a depth of 10 feet at boring B-5, where the boring was terminated and to a depth of approximately 14 feet at boring B-4. A stratum of hard partially weathered rock was present underlying the saprolitic soils at boring B-4 to a depth of 15.5 feet where the boring refused on apparent competent rock. An exception was at boring B-6A where a stratum of organic laden TOPSOIL was present immediately underlying the fill from a depth of approximately 12 to 18 feet below the existing grades. These topsoil materials were underlain at boring B-6A by a stratum of very stiff alluvial CLAYS from a depth approximately 18 to 21 feet. Very dense saprolitic SANDS were present from a depth of 21 feet to the boring termination depth of 25 feet below the existing grades.

In the area of boring B-1, located east of Corporate Boulevard near the southeast end of the trail, further exploration will be required. Boring B-1, as well as several offset borings, located in the bottom of the detention pond near the Salvation Army building, refused on apparent rip-rap rock at depths of 2 to 5.5 feet below the existing grades.

Based on the boring data, shallow foundations will adequately support the majority of the proposed retaining walls along Peachtree Creek in this area. An exception is in the area of borings B-6 and B-6A, where the wall begins to step up the existing slope. The soils comprising the slope were determined to be comprised of very stiff, rock-laden fill soils underlain by a stratum of organic laden TOPSOIL. The presence of the topsoil creates the potential for settlement of the walls and therefore, we recommend that the retaining walls in this area be supported on helical piles as outlined in Section 9 of this report. Based on the boring data we anticipate minimum piles depths of 18 to 20 feet will be required. Information concerning design and installation of shallow foundations is presented in the paragraphs which follow.

19. Shallow Foundations - Based on the boring data, shallow foundations may be utilized to support the majority of the proposed retaining wall foundations along the south side of Peachtree Creek adjacent to Corporate Square. We anticipate minimum shallow foundation bearing depths in the 2 to 3 foot deep range for the retaining walls to be constructed in this area. a notable exception is near the northeast end of the proposed walls, in the area of borings B-6 and B-6A where the walls step up the existing slope. Due to the presence of soft, organic laden TOPSOIL, the walls in this area should be supported on helical piles.

20. Bearing Capacity - Shallow foundations supporting the proposed retaining walls are anticipated to bear in the stiff fill soils or the underlying stiff saprolitic or alluvial soils. Maximum allowable bearing pressures of 2000 pounds per square foot are recommended to be used in the design of the proposed wall foundations, along the south side of Peachtree Creek.

MISCELLANEOUS

21. Settlement - Total settlements will be negligible for the bridge abutments and retaining walls bearing on deep foundations. It should be noted that if additional fill soils are required behind the bridge abutments for the approach drives to the bridge, the weight of this additional fill placed on the existing alluvial soils will likely induce settlement of the new fill materials. The magnitude of settlements will be dependent upon the proposed depth of fill and the majority of settlement is anticipated to develop within approximately 60 to 90 days.

We estimate total settlements for shallow foundations for the retaining wall foundations will be in the range of 1 inch. This estimate is based on a design foundation load of 10 kips and is estimated using assumed elastic soils properties based on the SPT data, using the Westergaard Influence method. The majority of the estimated settlement should develop during construction and initial loading. Post construction settlements for the wall footings will be on the order of 0.5 inch or less.

22. Retaining Wall Design Parameters - The proposed retaining walls can be categorized as free standing walls which can withstand slight lateral displacement. The free standing walls should be designed for “active” lateral earth pressures. The earth pressure parameters outlined below are based on a wet soil density of 110 pounds per cubic foot (pcf) and an internal soil friction angle ϕ of 28°.

Equivalent Fluid Pressure (Active) soil	40 psf per foot of wall height
Equivalent Fluid Pressure (Passive) soil	300 psf per foot of wall height
Coefficient of Friction (Silts)	0.30
Coefficient of Friction (Sands)	0.35
Soil Angle of Internal Friction (ϕ)	28°
Soil Cohesion (c)	0

An appropriate factor of safety should be applied to the above parameters. Proper design and performance of retaining walls depend on properly compacted backfill soils and adequate drainage. The proposed retaining walls are anticipated to be backfilled. Where backfill soils are required we recommend that backfill soils be compacted to a minimum of 95% of the maximum Standard Proctor dry density (ASTM D 698) with a wet density in the range of 110 to 120 pcf. Also, footing drains with proper filtration should be installed.

23. Geotechnical Quality Control - We recommend that the following quality control measures be implemented in an effort to avoid unforeseen project costs or delays:

1. Chattahoochee Consulting Group should review all final construction plans to ensure that the geotechnical recommendations are properly implemented.
2. Evaluation of deep foundation installations to verify that the design capacities have been achieved and that unanticipated subsurface conditions that may affect the foundation capacities are not encountered.
3. Evaluation of shallow foundation excavations immediately prior backfilling with stone and prior to foundation concrete placement to verify allowable soil bearing pressures.
4. Permanent fill slopes should not exceed 2(H):1(V).
5. Embankment fill should be placed in 6 to 8 inch thick loose lifts and compacted to a minimum of 95% of the appropriate maximum Standard Proctor dry density (ASTM D 698).

24. Consultation - Often, during the final design and/or construction, questions can arise which are not small specifically in the report. These can normally be handled by a brief call or conference with the designers; please feel free to call

APPENDIX A

FIELD PROCEDURES

FIELD EXPLORATION

General. The Boring Plan of Figure 1 indicates the approximate location of the borings on the subject site. All borings were made with an all-terrain mounted, rotary-type drilling equipment between August 29th and September 5th, 2011. The exploration program consisted of approximately 394 linear feet of SPT borings. Detailed logs of the borings are attached.

Sampling Procedures. In these soil materials, Standard Penetration Tests were performed; these provide a measure of the in-situ characteristics of the soil and secure a disturbed sample. In this test, a 2 inch OD, 1.37 inch ID heavy-walled “split tube” sampler is driven into the undisturbed soil at the bottom of the borehole with a drop hammer weighing 140 pounds and having a stroke of 30 inches. It is first seated 6 inches, then driven two additional 6 inch increments. The “Penetration Resistance”, called N, is the number of such blows required to drive the spoon the final 12 inches. It is recorded on the boring logs in the following manner:

Highway 278

(13-12-11)

where the figures in parentheses indicate the number of blows required for each 6 inch increment.

APPENDIX B
BORING LOGS



LOG of BORING

Project Name: Peachtree Creek Greenway - Phase I
Client: Kaizen Collaborative
Location: Brookhaven, Georgia

Project No.: 4976.004.17
Boring No.: B-1
Date: 8/30/2017

Table with 5 columns: Elevation, Description, Depth (feet), Samples (No. Type, Blows/6", Recov.), and Drilling Observations (SPT Boring). The table contains data for a boring log, including soil descriptions like 'FILL: ROCK FRAGMENTS & SAND' and 'Auger Refusal @ 5.5 ft.', sample records (e.g., '1 SS 50/0"', '2 SS 12-26-50/4"'), and drilling observations such as 'No groundwater encountered at the time of drilling.' and 'Boring refused on larger rock fragments (rip-rap) at a depth 5.5 ft below existing grades.'

LEGEND

SPT= Standard Penetration Test
SS = Split-Spoon (sample)
UDS= Undisturbed Sample
GS= Ground Surface
HWR= Highly Weathered Rock
PWR= Partially Weathered Rock



LOG of BORING

Project Name: **Peachtree Creek Greenway - Phase I**
 Client: **Kaizen Collaborative**
 Location: **Brookhaven, Georgia**

Project No.: **4976.004.17**
 Boring No.: **B-2**
 Date: **8/30/2017**

Elevation GS	Description Topsoil: 12"	Depth (feet)	Samples			Drilling Observations
			No. Type	Blows/6"	Recov.	SPT Boring
	Rocky TOPSOIL, dark brown					No groundwater encountered at the time of drilling. Due to access restrictions, this boring was performed using a hand auger.
	Sandy SILT, stiff, brown, black, tan, trace mica, dry to moist, non-plastic, laminated: SAPROLITE	5.0				
	Boring Terminated @ 5 ft.	10.0				
		15.0				
		20.0				
		25.0				
		30.0				
		35.0				
		40.0				
		45.0				
		50.0				
LEGEND						
SPT= Standard Penetration Test SS = Split-Spoon (sample) UDS= Undisturbed Sample GS= Ground Surface HWR= Highly Weathered Rock PWR= Partially Weathered Rock						



LOG of BORING

Project Name: **Peachtree Creek Greenway - Phase I**
 Client: **Kaizen Collaborative**
 Location: **Brookhaven, Georgia**

Project No.: **4976.004.17**
 Boring No.: **B-3**
 Date: **8/29/2017**

Elevation	Description	Depth (feet)	Samples			Drilling Observations
			No. Type	Blows/6"	Recov.	SPT Boring
GS	Topsoil: 12"					
	Rocky TOPSOIL, dark brown					Stabilized groundwater present at depth of 10 feet, 24 hours after drilling. Boring refused on apparent competent rock at a depth of 12.5 ft below existing grades.
	Sandy SILT, stiff, brown, black, tan, trace mica, dry to moist, non-plastic, laminated: SAPROLITE		1 SS	8-9-7		
		5.0	2 SS	8-7-7		
			3 SS	5-6-5		
		10.0	4 SS	7-8-12		
	Partially Weathered Rock					
	Auger Refusal @ 12.5 ft.	15.0				
		20.0				
		25.0				
		30.0				
		35.0				
		40.0				
		45.0				
		50.0				
LEGEND						
SPT= Standard Penetration Test SS = Split-Spoon (sample) UDS= Undisturbed Sample GS= Ground Surface HWR= Highly Weathered Rock PWR= Partially Weathered Rock						



LOG of BORING

Project Name: **Peachtree Creek Greenway - Phase I**
 Client: **Kaizen Collaborative**
 Location: **Brookhaven, Georgia**

Project No.: **4976.004.17**
 Boring No.: **B-4**
 Date: **8/29/2017**

Elevation	Description	Depth (feet)	Samples			Drilling Observations	
			No. Type	Blows/6"	Recov.		
GS	Topsoil: 0"					SPT Boring	
	FILL: Silty SAND, very loose to loose, brown, trace mica, dry to moist, non-plastic		1	SS 3-5-5		Stabilized groundwater present at depth of 10 feet, 24 hours after drilling. Boring refused on apparent competent rock at a depth of 15.5 ft below existing grades.	
		5.0	2	SS 3-2-3			
				3	SS 1-1-1		
			10.0	4	SS 1-1-1		
	SAND, loose, brown, white, trace silt, mica, rock, dry, non-plastic, mottled: SAPROLITE						
	Partially Weathered Rock	15.0	5	SS 6-19-42			
	Auger Refusal @ 15.5 ft.						
		20.0					
		25.0					
		30.0					
		35.0					
		40.0					
		45.0					
		50.0					
						LEGEND	
						SPT= Standard Penetration Test SS = Split-Spoon (sample) UDS= Undisturbed Sample GS= Ground Surface HWR= Highly Weathered Rock PWR= Partially Weathered Rock	



LOG of BORING

Project Name: **Peachtree Creek Greenway - Phase I**
 Client: **Kaizen Collaborative**
 Location: **Brookhaven, Georgia**

Project No.: **4976.004.17**
 Boring No.: **B-5**
 Date: **8/29/2017**

Elevation	Description	Depth (feet)	Samples			Drilling Observations
			No.	Type	Blows/6"	Recov.
GS	Topsoil: -0"					
	FILL: SAND, loose to firm, brown, trace to some silt, trace mica, dry to moist, non-plastic	5.0	1	SS	3-5-7	Stabilized groundwater present at depth of 9 feet, 24 hours after drilling. Boring refused on apparent competent rock at a depth of 10 ft below existing grades.
			2	SS	2-3-3	
	SAND, firm, brown, white, some silt, rock, trace mica, moist, non-plastic, mottled: SAPROLITE	10.0	3	SS	11-14-15	
			4	SS	6-7-7	
	Auger Refusal @ 10 ft.	15.0				
		20.0				
		25.0				
		30.0				
		35.0				
		40.0				
		45.0				
		50.0				
						LEGEND
						SPT= Standard Penetration Test SS = Split-Spoon (sample) UDS= Undisturbed Sample GS= Ground Surface HWR= Highly Weathered Rock PWR= Partially Weathered Rock



LOG of BORING

Project Name: **Peachtree Creek Greenway - Phase I**
 Client: **Kaizen Collaborative**
 Location: **Brookhaven, Georgia**

Project No.: **4976.004.17**
 Boring No.: **B-6**
 Date: **8/29/2017**

Elevation GS	Description Topsoil: 0"	Depth (feet)	Samples			Drilling Observations
			No. Type	Blows/6"	Recov.	SPT Boring
	FILL: SAND, loose to firm, tan, some silt, rock frags, trace mica, dry, non-plastic	5.0	1 SS	6-10-13		No groundwater encountered at the time of drilling. Boring refused on large rock fragments in the fill at a depth 5 ft below existing grades.
			2 SS	2-4-3		
	Auger Refusal @ 5 ft.	10.0				
		15.0				
	Boring Terminated @ 15 ft	20.0				
		25.0				
		30.0				
		35.0				
		40.0				
		45.0				
		50.0				
LEGEND						
SPT= Standard Penetration Test						
SS = Split-Spoon (sample)						
UDS= Undisturbed Sample						
GS= Ground Surface						
HWR= Highly Weathered Rock						
PWR= Partially Weathered Rock						



LOG of BORING

Project Name: **Peachtree Creek Greenway - Phase I**
 Client: **Kaizen Collaborative**
 Location: **Brookhaven, Georgia**

Project No.: **4976.004.17**
 Boring No.: **B-6A**
 Date: **8/29/2017**

Elevation	Description	Depth (feet)	Samples			Drilling Observations
			No.	Type	Blows/6" Recov.	
GS	Topsoil: 0"					Stabilized groundwater present at depth of 13 feet, 24 hours after drilling.
	FILL: ROCK FRAGMENTS & SAND, dense, tan, brown, dry, non-plastic		1	SS	25+	
	FILL: Sandy SILT, stiff to hard, brown, tan, some rock frags, trace mica, dry, mottled, non-plastic	5.0	2	SS	15-21-27	
		10.0	3	SS	8-9-13	
	TOPSOIL	15.0	4	SS	4-4-6	
	CLAY, very stiff, gray, brown, trace sand, moist, plastic, mottled: ALLUVIAL	20.0	5	SS	6-8-15	
	SAND, very dense, black, white, brown, trace mica, silt, rock, dry, non-plastic, mottled: SAPROLITE	25.0	6	SS	29-50/5"	
	Boring Terminated @ 25 ft.	30.0				
		35.0				
		40.0				
		45.0				
		50.0				
LEGEND						
SPT= Standard Penetration Test						
SS = Split-Spoon (sample)						
UDS= Undisturbed Sample						
GS= Ground Surface						
HWR= Highly Weathered Rock						
PWR= Partially Weathered Rock						



LOG of BORING

Project Name: **Peachtree Creek Greenway - Phase I**
 Client: **Kaizen Collaborative**
 Location: **Brookhaven, Georgia**

Project No.: **4976.004.17**
 Boring No.: **B-7**
 Date: **8/30/2017**

Elevation	Description	Depth (feet)	Samples			Drilling Observations
			No.	Type	Blows/6" Recov.	
GS	Topsoil: 0"					SPT Boring
	SAND, very loose to firm, brown, trace mica, silt, clay, dry to moist, low plastic: ALLUVIAL	5.0	1	SS	4-4-5	Stabilized groundwater present at depth of 9 feet, 24 hours after drilling.
			2	SS	3-3-4	
			3	SS	1-1-1	
	Silty CLAY, very soft to firm, dark gray, wet, plastic: ALLUVIAL	10.0	4	SS	1-1-1	
		15.0	5	SS	2-2-5	
	SAND, dense, black, white, some silt, trace mica, moist, non-plastic, mottled: SAPROLITE	20.0	6	SS	18-18-17	
		25.0	7	SS	12-25-20	
	Boring Terminated @ 25 ft.	30.0				
		35.0				
		40.0				
		45.0				
		50.0				
LEGEND						
SPT= Standard Penetration Test						
SS = Split-Spoon (sample)						
UDS= Undisturbed Sample						
GS= Ground Surface						
HWR= Highly Weathered Rock						
PWR= Partially Weathered Rock						



LOG of BORING

Project Name: **Peachtree Creek Greenway - Phase I**
 Client: **Kaizen Collaborative**
 Location: **Brookhaven, Georgia**

Project No.: **4976.004.17**
 Boring No.: **B-8**
 Date: **8/30/2017**

Elevation GS	Description	Depth (feet)	Samples			Drilling Observations SPT Boring
			No.	Type	Blows/6" Recov.	
	Topsoil: 0"					Stabilized groundwater present at depth of 10 feet, 24 hours after drilling.
	SAND, loose, brown, trace silt, clay, topsoil, dry to moist, non-plastic: ALLUVIAL	5.0	1	SS	2-4-5	
			2	SS	3-3-4	
			3	SS	2-3-3	
	SAND, very loose, dark gray, some clay, wet, low plastic: ALLUVIAL	10.0	4	SS	2-3-2	
			5	SS	2-1-2	
	SAND & GRAVEL, dense, gray, white, wet, non-plastic: ALLUVIAL	20.0	6	SS	9-16-18	
	Sandy SILT, very stiff, black, white, brown, some to trace mica, wet, non-plastic, mottled: SAPROLITE	25.0	7	SS	7-8-10	
	SAND, firm to dense, brown, white, some silt, trace mica, rock, wet, non-plastic, laminated: SAPROLITE	30.0	8	SS	11-19-26	
			35.0	9	SS	
	Boring Terminated @ 35 ft.	40.0				
		45.0				
		50.0				
LEGEND						
SPT= Standard Penetration Test						
SS = Split-Spoon (sample)						
UDS= Undisturbed Sample						
GS= Ground Surface						
HWR= Highly Weathered Rock						
PWR= Partially Weathered Rock						



LOG of BORING

Project Name: **Peachtree Creek Greenway - Phase I**
 Client: **Kaizen Collaborative**
 Location: **Brookhaven, Georgia**

Project No.: **4976.004.17**
 Boring No.: **B-9**
 Date: **8/30/2017**

Elevation	Description	Depth (feet)	Samples			Drilling Observations
			No. Type	Blows/6"	Recov.	
GS	Topsoil: 0"					
	SAND, very loose to loose, brown, dry to moist, non-plastic: ALLUVIAL	5.0	1 SS	1-1-1		Stabilized groundwater present at depth of 10 feet, 24 hours after drilling.
	SAND, loose, brown, tan, trace gravel, wet, non-plastic: ALLUVIAL	10.0	2 SS	2-2-3		
	SILT, firm to stiff, black, brown, some to trace mica, sand, wet, non-plastic, mottled: SAPROLITE	15.0	3 SS	3-5-6		
		20.0	4 SS	3-2-5		
		25.0	5 SS	3-3-4		
		30.0	6 SS	5-6-9		
	PARTIALLY WEATHERED ROCK	35.0	7 SS	5-6-12		
	Boring Terminated @ 35 ft.		8 SS	16-50/5"		
		40.0				
		45.0				
		50.0				
LEGEND						
SPT= Standard Penetration Test						
SS = Split-Spoon (sample)						
UDS= Undisturbed Sample						
GS= Ground Surface						
HWR= Highly Weathered Rock						
PWR= Partially Weathered Rock						



LOG of BORING

Project Name: **Peachtree Creek Greenway - Phase I**
 Client: **Kaizen Collaborative**
 Location: **Brookhaven, Georgia**

Project No.: **4976.004.17**
 Boring No.: **B-10**
 Date: **8/30/2017**

Elevation	Description	Depth (feet)	Samples			Drilling Observations
			No. Type	Blows/6"	Recov.	
GS	Topsoil: 0"					SPT Boring
	SILT & SAND, firm, brown, trace mica, dry, non-plastic: ALLUVIAL		1 SS	5-6-7		Stabilized groundwater present at depth of 11 feet, 24 hours after drilling. Boring refused on apparent competent rock at a depth of 33 ft below existing grades.
	SAND, firm, brown, tan, dry, non-plastic: ALLUVIAL	5.0	2 SS	3-6-5		
			3 SS	3-4-4		
	SILT, firm, gray, brown, some clay, moist, plastic, mottled: ALLUVIAL	10.0	4 SS	3-4-3		
	SAND, very loose, gray, trace mica, wet, non-plastic: ALLUVIAL	15.0	5 SS	2-1-2		
			6 SS	8-10-8		
	SAND & GRAVEL, firm, gray, white, wet, non-plastic: ALLUVIAL	20.0				
	SILT, stiff, black, white, some to trace mica, sand, wet, non-plastic, mottled: SAPROLITE	25.0	7 SS	6-7-9		
			8 SS	8-8-8		
	PARTIALLY WEATHERED ROCK					
	Auger Refusal @ 33 ft.	35.0				
		40.0				
		45.0				
		50.0				
LEGEND						
SPT= Standard Penetration Test						
SS = Split-Spoon (sample)						
UDS= Undisturbed Sample						
GS= Ground Surface						
HWR= Highly Weathered Rock						
PWR= Partially Weathered Rock						



LOG of BORING

Project Name: **Peachtree Creek Greenway - Phase I**
 Client: **Kaizen Collaborative**
 Location: **Brookhaven, Georgia**

Project No.: **4976.004.17**
 Boring No.: **B-11**
 Date: **9/1/2017**

Elevation GS	Description	Depth (feet)	Samples			Drilling Observations SPT Boring
			No. Type	Blows/6"	Recov.	
	FILL: SILT, firm, brown, red, trace sand, clay, moist, low plastic		1 SS	2-3-5		Stabilized groundwater present at depth of 11 feet, 24 hours after drilling.
	FILL: SAND, loose, brown, some silt, dry, non-plastic	5.0	2 SS	3-3-3		
	SILT, firm, gray, black, some to trace sand, clay, moist, plastic, mottled: ALLUVIAL	10.0	3 SS	1-2-4		
			4 SS	3-3-3		
	SAND & GRAVEL, very loose, gray, white, wet, non-plastic: ALLUVIAL	15.0	5 SS	w.o.h.-1-1		
			6 SS	3-5-4		
	Silty SAND, loose to firm, black, white, some to trace mica, wet, non-plastic, mottled: SAPROLITE	25.0	7 SS	16-18-16		
			Boring Terminated @ 28 ft.	30.0		
		35.0				
		40.0				
		45.0				
		50.0				

LEGEND

SPT= Standard Penetration Test
 SS = Split-Spoon (sample)
 UDS= Undisturbed Sample
 GS= Ground Surface
 HWR= Highly Weathered Rock
 PWR= Partially Weathered Rock



LOG of BORING

Project Name: **Peachtree Creek Greenway - Phase I**
 Client: **Kaizen Collaborative**
 Location: **Brookhaven, Georgia**

Project No.: **4976.004.17**
 Boring No.: **B-12**
 Date: **9/1/2017**

Elevation GS	Description	Depth (feet)	Samples			Drilling Observations SPT Boring
			No. Type	Blows/6"	Recov.	
	FILL: SAND, loose, brown, red, trace silt, dry to moist, non-plastic		1 SS	3-3-5		Stabilized groundwater present at depth of 14 feet, 24 hours after drilling. Boring refused on apparent competent rock at a depth of 41 ft below existing grades.
	SILT & SAND, loose, brown, dry, non-plastic: ALLUVIAL	5.0	2 SS	4-4-6		
	SAND, loose, brown, moist, non-plastic: ALLUVIAL	10.0	3 SS	3-3-3		
			4 SS	3-3-4		
	CLAY, very soft, gray, wet, plastic: ALLUVIAL	15.0	5 SS	1-1-1		
	Gravelly Coarse SAND, firm, gray, white, wet, non-plastic: ALLUVIAL	20.0	6 SS	6-8-9		
		25.0	7 SS	5-5-8		
		30.0	8 SS	8-11-14		
	SILT, very stiff to hard, black, white, some to trace mica, sand, wet, non-plastic, mottled: SAPROLITE	35.0	9 SS	11-17-16		
		40.0	10 SS	12-28-42		
	Partially Weathered Rock					
	Auger Refusal @ 41 ft.	45.0				
		50.0				
LEGEND						
SPT= Standard Penetration Test SS = Split-Spoon (sample) UDS= Undisturbed Sample GS= Ground Surface HWR= Highly Weathered Rock PWR= Partially Weathered Rock						



LOG of BORING

Project Name: **Peachtree Creek Greenway - Phase I**
 Client: **Kaizen Collaborative**
 Location: **Brookhaven, Georgia**

Project No.: **4976.004.17**
 Boring No.: **B-13**
 Date: **9/5/2017**

Elevation	Description	Depth (feet)	Samples			Drilling Observations
			No. Type	Blows/6"	Recov.	
GS	Topsoil: 0"					SPT Boring
	FILL: Sandy SILT, stiff, brown, trace mica, clay, dry, low plastic	5.0	1 SS	4-5-7		Stabilized groundwater present at depth of 13 feet, 24 hours after drilling. Boring refused on apparent competent rock at a depth of 36 ft below existing grades.
			2 SS	5-5-7		
	SILT, firm, brown, gray, trace mica, clay, moist, low plastic, mottled: ALLUVIAL	10.0	3 SS	6-4-5		
	SAND, loose, brown, moist, non-plastic: ALLUVIAL		4 SS	3-3-5		
	SILT, very soft, dark gray, trace sand, clay, wet, low plastic: ALLUVIAL	15.0	5 SS	1-1-1		
	Gravelly Coarse SAND, loose, gray, white, wet, non-plastic: ALLUVIAL	20.0	6 SS	2-3-4		
		25.0	7 SS	6-7-10		
	Sandy SILT, very stiff to hard, black, white, trace mica, wet, non-plastic, mottled: SAPROLITE	30.0	8 SS	6-7-7		
		35.0	9 SS	6-9-21		
	Auger Refusal @ 36 ft.	40.0				
		45.0				
		50.0				
LEGEND						
SPT= Standard Penetration Test						
SS = Split-Spoon (sample)						
UDS= Undisturbed Sample						
GS= Ground Surface						
HWR= Highly Weathered Rock						
PWR= Partially Weathered Rock						



LOG of BORING

Project Name: **Peachtree Creek Greenway - Phase I**
 Client: **Kaizen Collaborative**
 Location: **Brookhaven, Georgia**

Project No.: **4976.004.17**
 Boring No.: **B-14**
 Date: **9/5/2017**

Elevation	Description	Depth (feet)	Samples			Drilling Observations
			No. Type	Blows/6"	Recov.	
GS	Topsoil: 0"					SPT Boring
	FILL: SAND, loose, brown, tan, some silt, trace mica, dry to moist, non-plastic	5.0	1 SS	2-3-7		Stabilized groundwater present at depth of 14 feet, 24 hours after drilling. Boring refused on apparent competent rock at a depth of 23 ft below existing grades. Flowing sands prevented sampling at 20 feet below the existing grades.
	SAND, loose, brown, wet, non-plastic: ALLUVIAL		2 SS	3-3-4		
	Sandy SILT, very soft, dark gray, trace mica, wet, low plastic: ALLUVIAL	10.0	3 SS	3-4-3		
	Coarse SAND, very loose, gray, white, wet, non-plastic: ALLUVIAL	15.0	4 SS	1-1-1		
	SILT & SAND, firm to dense, black, white, trace mica, wet, non-plastic, mottled: SAPROLITE	20.0	5 SS	2-2-2		
	Auger Refusal @ 23 ft.	25.0				
		30.0				
		35.0				
		40.0				
		45.0				
		50.0				
LEGEND						
SPT= Standard Penetration Test						
SS = Split-Spoon (sample)						
UDS= Undisturbed Sample						
GS= Ground Surface						
HWR= Highly Weathered Rock						
PWR= Partially Weathered Rock						



LOG of BORING

Project Name: **Peachtree Creek Greenway - Phase I**
 Client: **Kaizen Collaborative**
 Location: **Brookhaven, Georgia**

Project No.: **4976.004.17**
 Boring No.: **B-15**
 Date: **9/5/2017**

Elevation GS	Description Topsoil: 0"	Depth (feet)	Samples			Drilling Observations
			No. Type	Blows/6"	Recov.	SPT Boring
	FILL: Sandy SILT, firm brown, some rock, dry, non-plastic					<p>No groundwater encountered at the time of drilling.</p> <p>Boring initially refused on large rock fragments at a depth of 3 ft below existing grades.</p> <p>Two offset borings also refused on rock in the fill at depths of 2 and 3 feet below the existing grades.</p>
	Auger Refusal @ 3 ft.	5.0				
		10.0				
		15.0				
		20.0				
		25.0				
		30.0				
		35.0				
		40.0				
		45.0				
		50.0				
LEGEND						
<p>SPT= Standard Penetration Test SS = Split-Spoon (sample) UDS= Undisturbed Sample GS= Ground Surface HWR= Highly Weathered Rock PWR= Partially Weathered Rock</p>						



LOG of BORING

Project Name: **Peachtree Creek Greenway - Phase I**
 Client: **Kaizen Collaborative**
 Location: **Brookhaven, Georgia**

Project No.: **4976.004.17**
 Boring No.: **B-16**
 Date: **9/5/2017**

Elevation GS	Description Topsoil: 0"	Depth (feet)	Samples			Drilling Observations
			No. Type	Blows/6"	Recov.	SPT Boring
	FILL: Sandy SILT, firm brown, some rock, dry, non-plastic					<p>No groundwater encountered at the time of drilling.</p> <p>Boring initially refused on large rock fragments at a depth of 3 ft below existing grades.</p> <p>Two offset borings also refused on rock in the fill at depths of 2 and 3 feet below the existing grades.</p>
	Auger Refusal @ 3 ft.	5.0				
		10.0				
		15.0				
		20.0				
		25.0				
		30.0				
		35.0				
		40.0				
		45.0				
		50.0				
LEGEND						
<p>SPT= Standard Penetration Test SS = Split-Spoon (sample) UDS= Undisturbed Sample GS= Ground Surface HWR= Highly Weathered Rock PWR= Partially Weathered Rock</p>						



LOG of BORING

Project Name: **Peachtree Creek Greenway - Phase I**
 Client: **Kaizen Collaborative**
 Location: **Brookhaven, Georgia**

Project No.: **4976.004.17**
 Boring No.: **B-17**
 Date: **8/29/2017**

Elevation	Description	Depth (feet)	Samples			Drilling Observations
			No. Type	Blows/6"	Recov.	SPT Boring
GS	Topsoil: 0"					
	FILL: Sandy SILT, very stiff, brown, trace mica, rock, dry, non-plastic		1 SS	5-10-8		No groundwater encountered at the time of drilling.
	SAND & SILT, very stiff to hard, brown, black, white, some rock, trace mica, dry, non-plastic, mottled: SAPROLITE	5.0	2 SS	8-12-15		
			3 SS	13-16-17		
	Sandy SILT, hard, black, white, trace mica, rock, dry, non-plastic, mottled: SAPROLITE	10.0	4 SS	8-12-17		
		15.0	5 SS	31-50/5"		
	Boring Terminated @ 15 ft.	20.0				
		25.0				
		30.0				
		35.0				
		40.0				
		45.0				
		50.0				
LEGEND						
SPT= Standard Penetration Test						
SS = Split-Spoon (sample)						
UDS= Undisturbed Sample						
GS= Ground Surface						
HWR= Highly Weathered Rock						
PWR= Partially Weathered Rock						



LOG of BORING

Project Name: **Peachtree Creek Greenway - Phase I**
 Client: **Kaizen Collaborative**
 Location: **Brookhaven, Georgia**

Project No.: **4976.004.17**
 Boring No.: **B-18**
 Date: **8/29/2017**

Elevation GS	Description	Depth (feet)	Samples			Drilling Observations
			No. Type	Blows/6"	Recov.	SPT Boring
	FILL: SILT, very stiff, dark brown, some rock, dry, non-plastic		1	SS	6-10-16	No groundwater encountered at the time of drilling. Boring refused on apparent competent rock at a depth of 4 ft below existing grades. Three offset borings refused on rock at depths of 3 to 4 feet below the existing grades.
	Partially Weathered Rock	5.0				
	Auger Refusal @ 4 ft.	10.0				
		15.0				
		20.0				
		25.0				
		30.0				
		35.0				
		40.0				
		45.0				
		50.0				
LEGEND						
SPT= Standard Penetration Test SS = Split-Spoon (sample) UDS= Undisturbed Sample GS= Ground Surface HWR= Highly Weathered Rock PWR= Partially Weathered Rock						

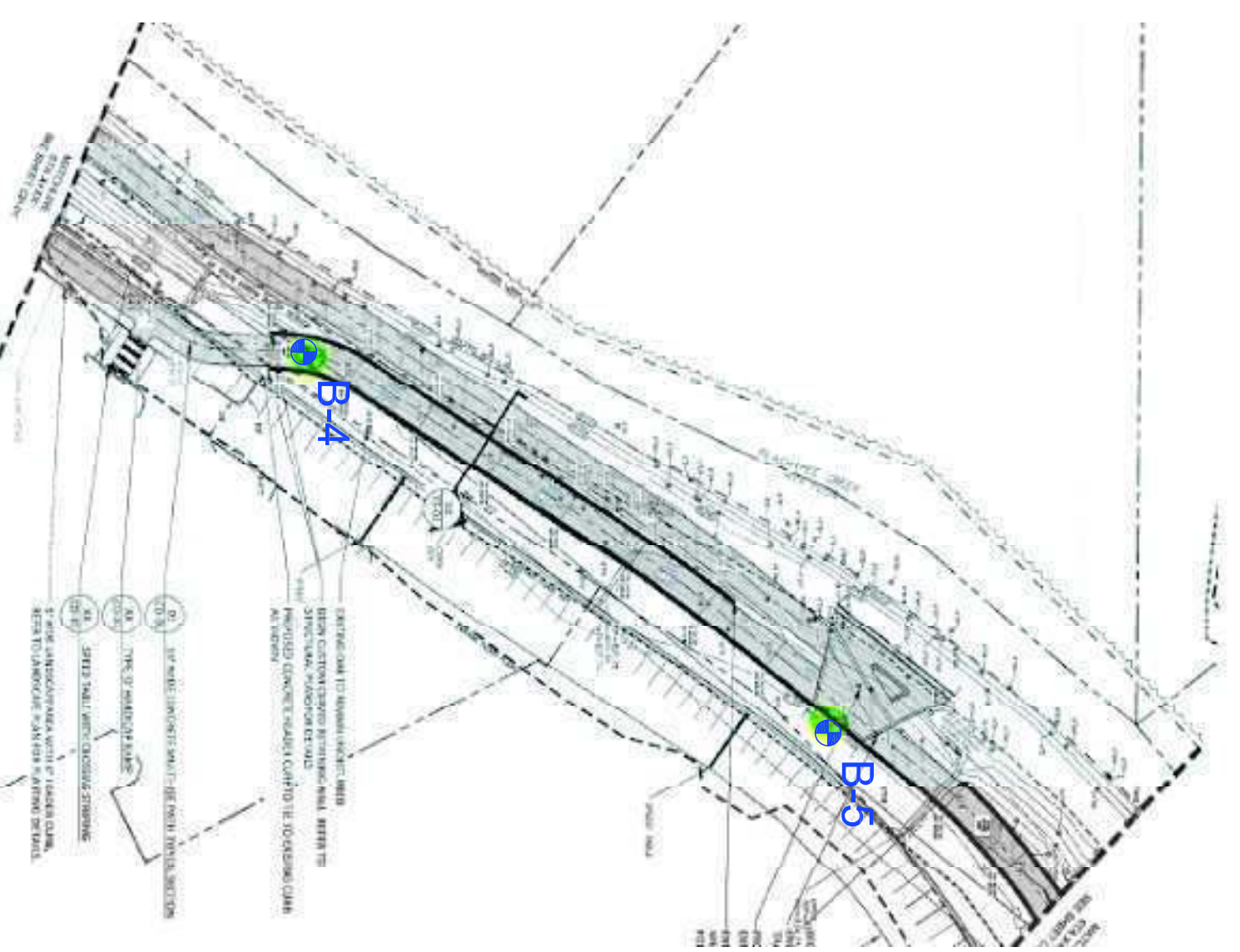
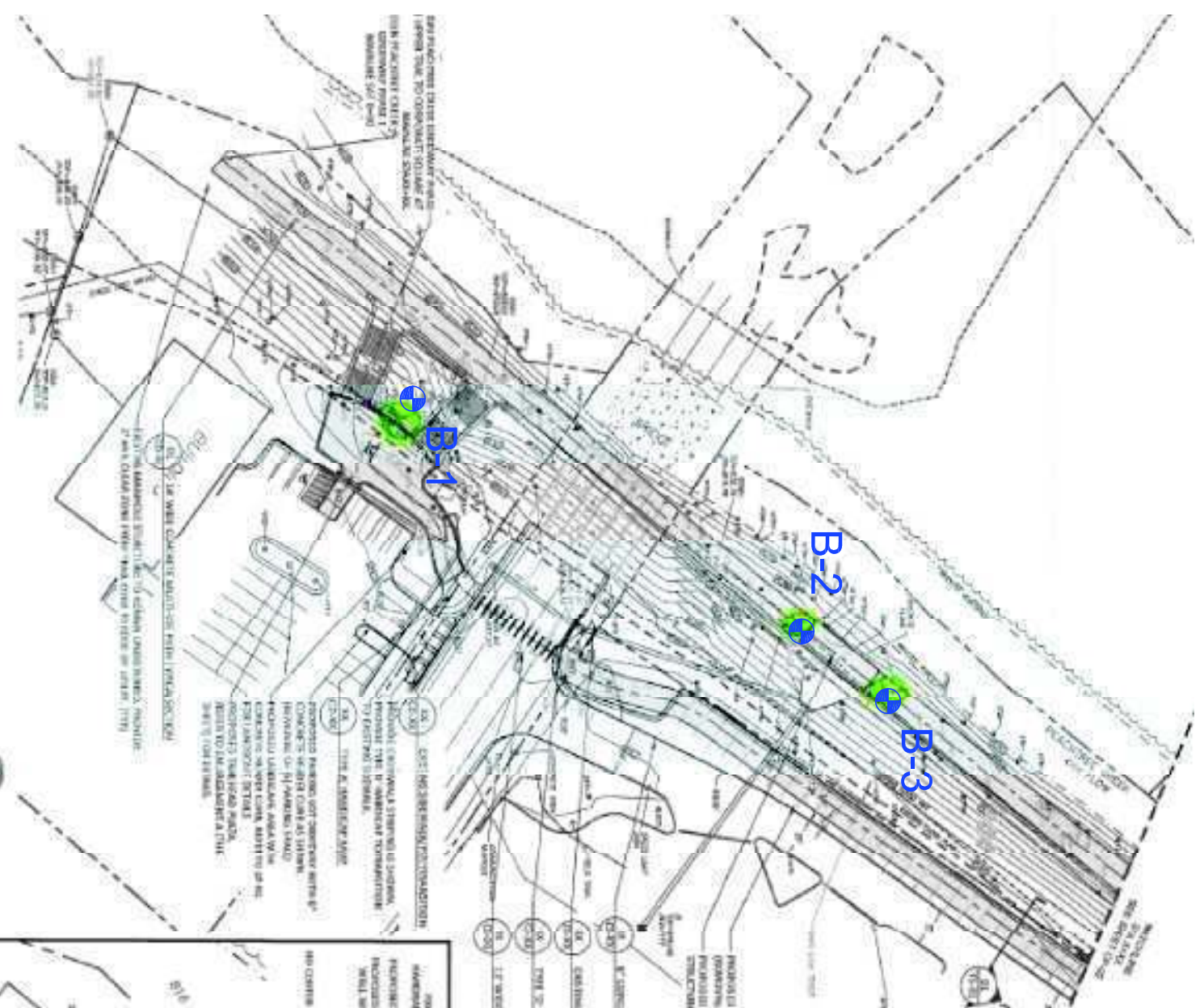


LOG of BORING

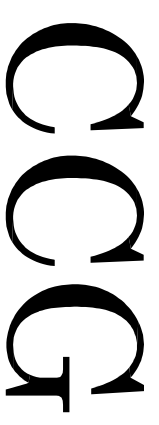
Project Name: **Peachtree Creek Greenway - Phase I**
 Client: **Kaizen Collaborative**
 Location: **Brookhaven, Georgia**

Project No.: **4976.004.17**
 Boring No.: **B-19**
 Date: **8/29/2017**

Elevation	Description	Depth (feet)	Samples			Drilling Observations
			No. Type	Blows/6"	Recov.	SPT Boring
GS	Topsoil: 0"					
	FILL: Sandy SILT, stiff, brown, trace clay, rock, dry to moist, low plastic	5.0	1 SS	3-6-7		No groundwater encountered at the time of drilling. Boring refused on apparent competent rock at a depth of 10.5 ft below existing grades.
			2 SS	3-5-6		
	SILT, very stiff, brown, tan, some clay, trace sand, moist, low plastic, mottled: ALLUVIAL	10.0	3 SS	8-12-15		
			4 SS	3-6-12		
	Auger Refusal @ 10.5 ft.	15.0				
		20.0				
		25.0				
		30.0				
		35.0				
		40.0				
		45.0				
		50.0				
						LEGEND
						SPT= Standard Penetration Test SS = Split-Spoon (sample) UDS= Undisturbed Sample GS= Ground Surface HWR= Highly Weathered Rock PWR= Partially Weathered Rock



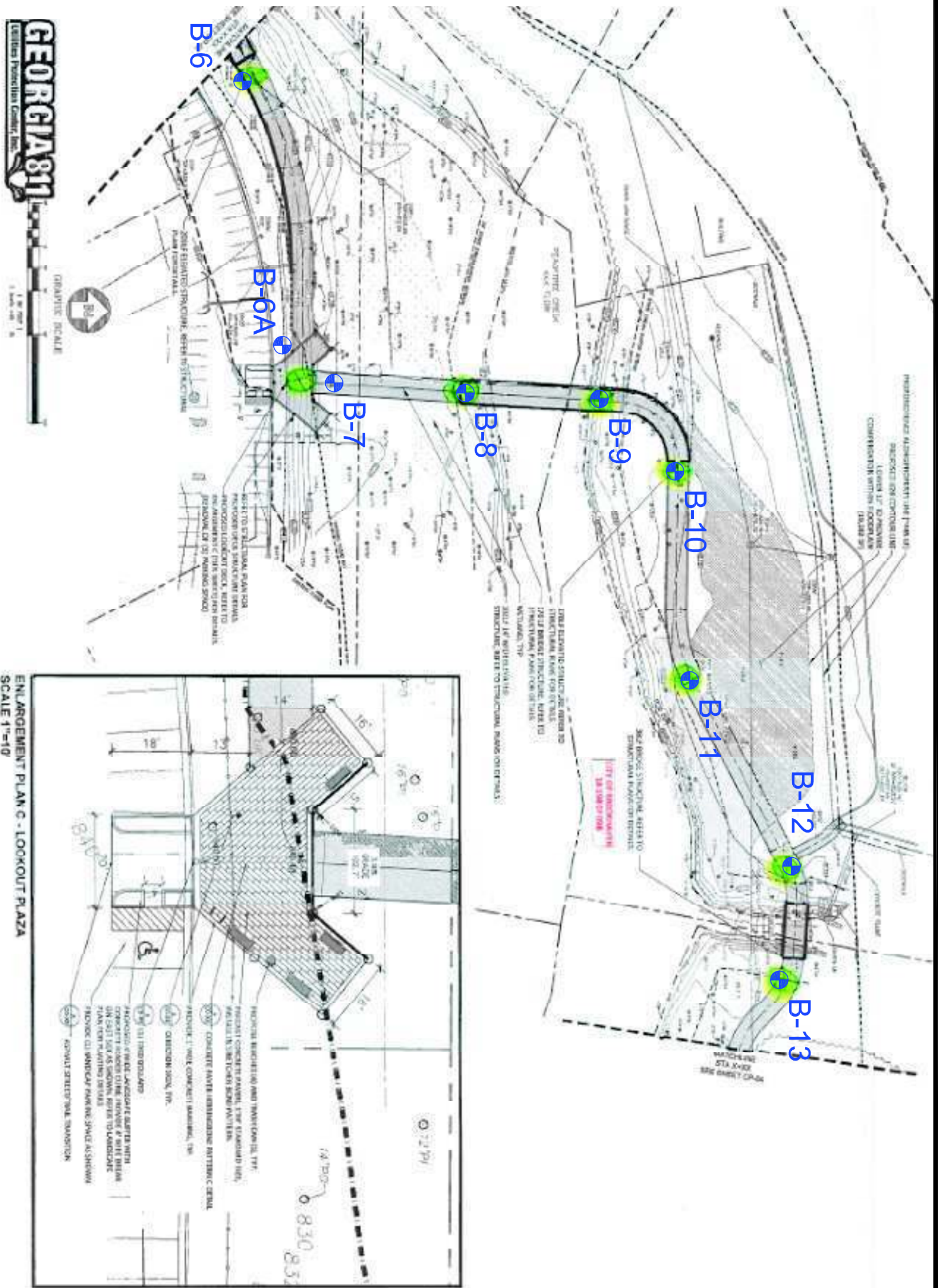
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 B-1 BORING LOCATION



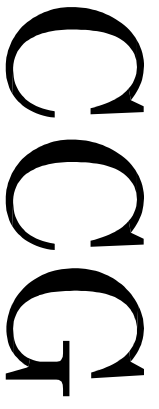
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DATE: 9/21/17
 DWN.: WTS
 APPR.:
 REVIS.:
 PROJECT NO.: 4976.004.17

FIGURE NO. 1
 KAIZEN COLLABRATIVE
 PEACHTREE CREEK GREENWAY - PHASE I
 BORING LOCATION PLAN



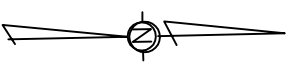
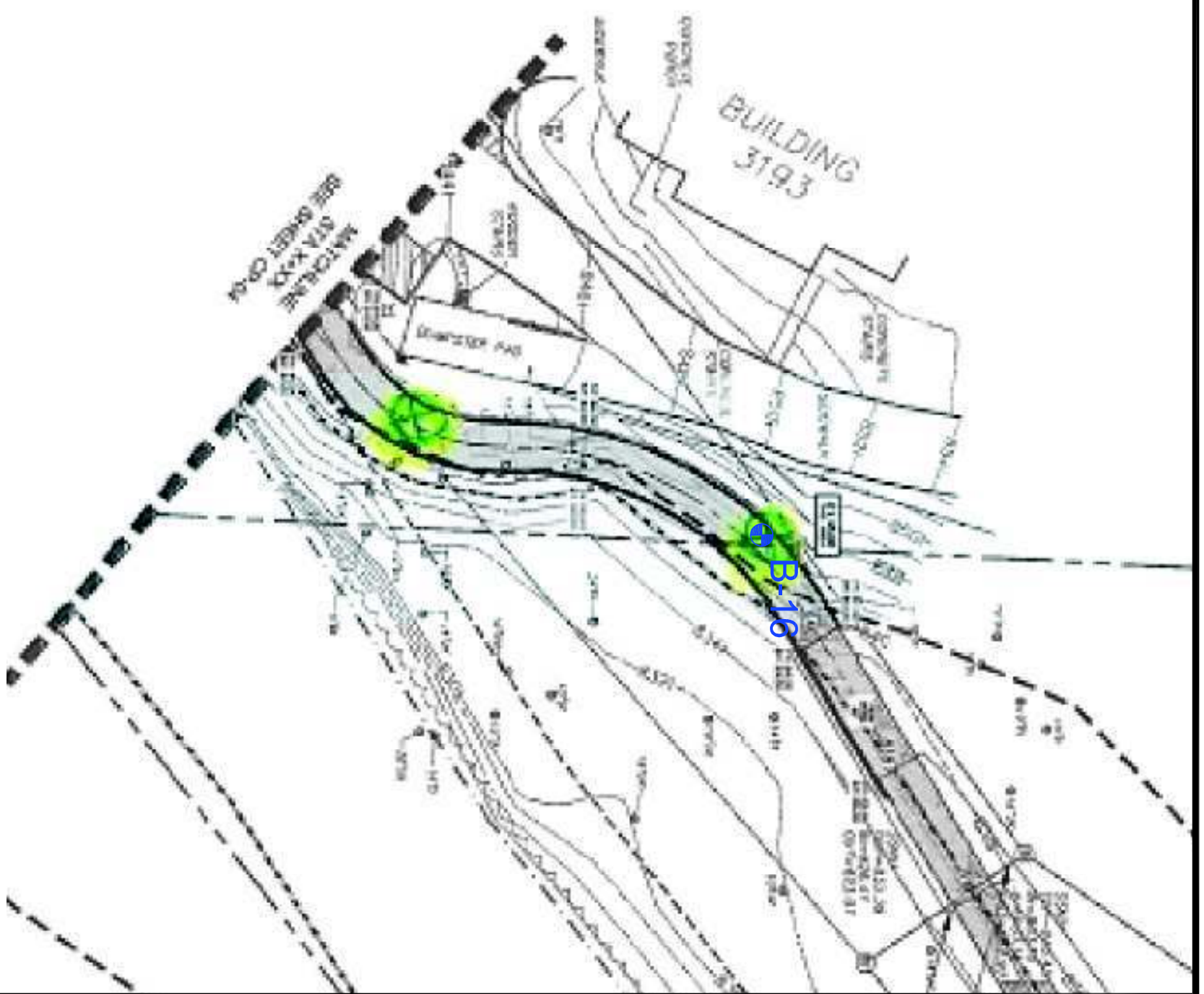
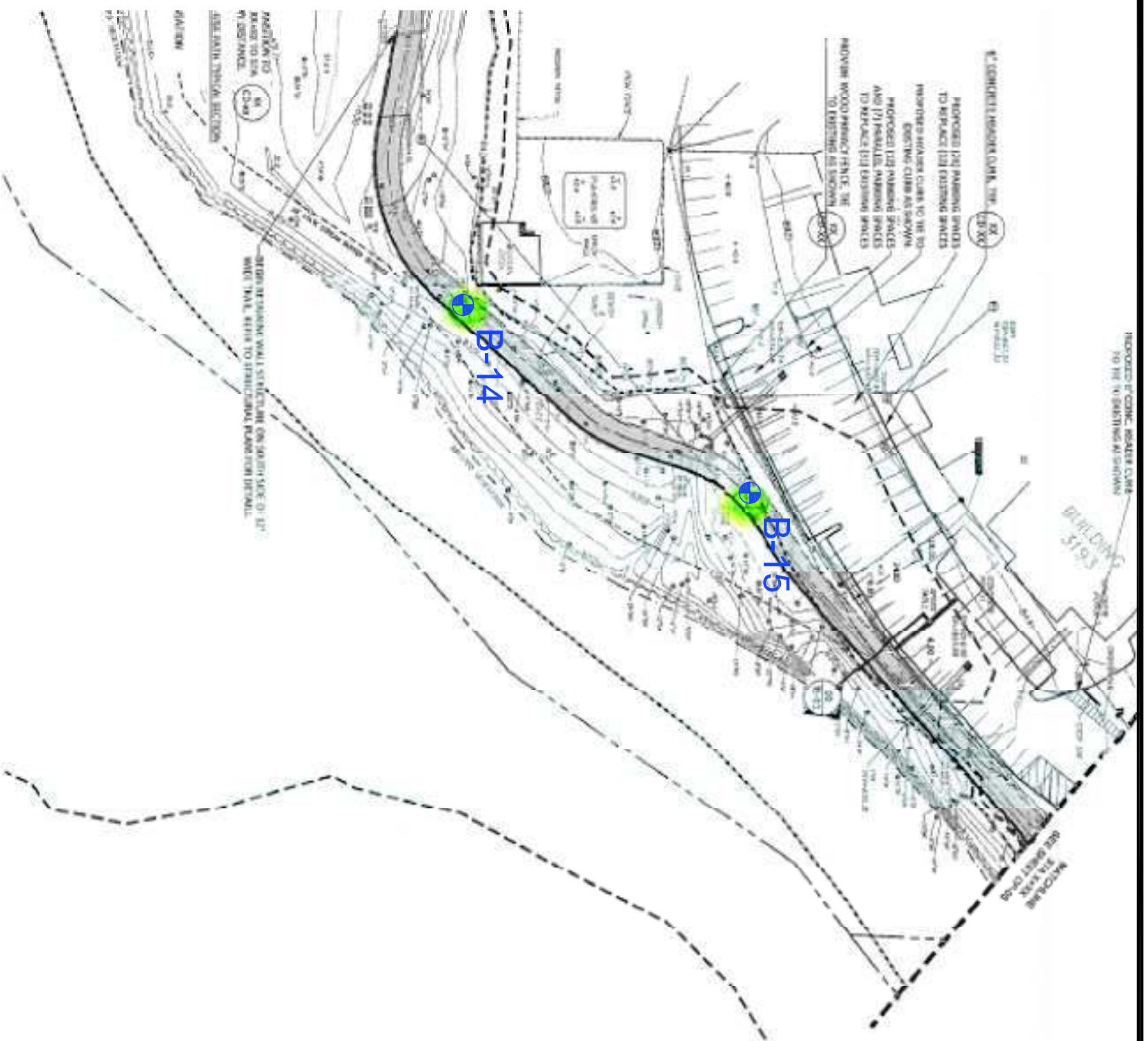
LEGEND
 B-1 BORING LOCATION



NOT-TO-SCALE

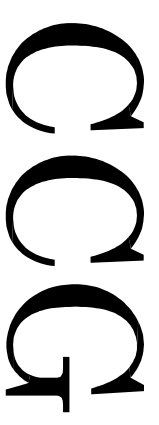
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 APPR.:
 REVIS.:
 PROJECT NO.: 4976.004.17

FIGURE NO. 2
 KAIZEN COLLABRATIVE
 PEACHTREE CREEK GREENWAY - PHASE I
 BORING LOCATION PLAN



LEGEND

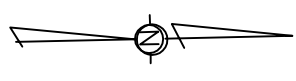
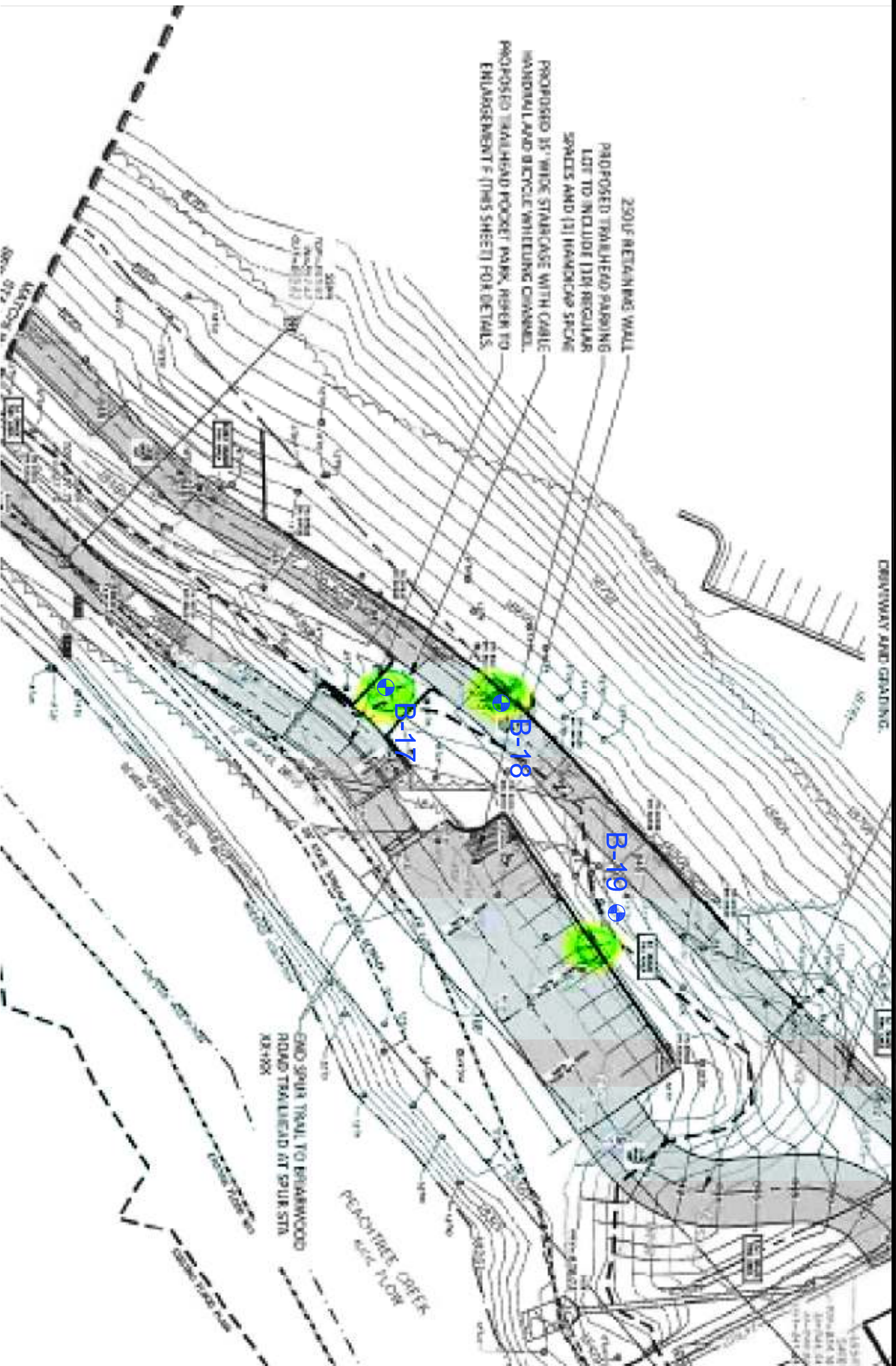
B-1  BORING LOCATION



NOT-TO-SCALE

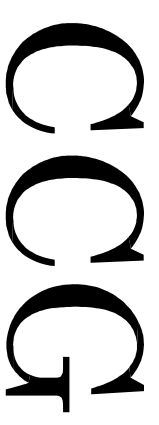
DATE: 9/21/17
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 PROJECT NO.: 4976.004.17

FIGURE NO. 3
 KAIZEN COLLABRATIVE
 PEACHTREE CREEK GREENWAY - PHASE I
 BORING LOCATION PLAN



LEGEND

B-1  BORING LOCATION



NOT-TO-SCALE

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FIGURE NO. 4
 KAIZEN COLLABRATIVE
 PEACHTREE CREEK GREENWAY - PHASE I
 BORING LOCATION PLAN