

Consulting Geotechnical Engineers
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Earth Instrumentation Services



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Chattahoochee Consulting Group, Inc.

December 8, 2022
Project No. 5256.003.22

Landworks Associates, Inc.
P.O. Box 88834
Atlanta, Georgia 30356

Attention: Mr. William J. Cripps

Re: Report of Geotechnical Exploration
Proposed Convenience Store
Hiram Douglasville Highway
Hiram, Georgia

William,

Chattahoochee Consulting Group, Inc. is pleased to present this Geotechnical Evaluation for the aforementioned project site. This report includes the results of our geotechnical exploration and foundation recommendations based upon this evaluation.

We have enjoyed working with Landworks Associates, Inc. on this project. Should you have any questions about this report, please do not hesitate to contact this office.

Sincerely,

CHATTAHOOCHEE CONSULTING GROUP, INC.

William T. Sheppard
Project Engineer



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REPORT OF GEOTECHNICAL EXPLORATION PROPOSED CONVENIENCE STORE

Hiram Douglasville Highway Hiram, Georgia

Prepared for:

Landworks Associates, Inc.
P.O. Box 88834
Atlanta, Georgia 30356

December 8, 2022

Prepared by:

Chattahoochee Consulting Group, Inc.,
5871 New Peachtree Road
Doraville, Georgia 30340

Project 5256.003.22

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FIGURE 1 – Boring Location Map

APPENDIX A - Field Procedures

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1 EXECUTIVE SUMMARY

The site is located at the southwest corner of the intersection of Hiram Douglasville Highway and Bill Carruth Highway in Hiram, Georgia. The site is the northeast corner of a larger, approximately 39 acre tract, where a convenience store is proposed on an out-parcel of a proposed larger retail development.

We understand that the proposed development for this site will consist of a convenience store which will be located in the northeast portion of the site, with a gas canopy located east of the building along Hiram Douglasville Highway and a diesel canopy located west of the building along Bill Carruth Parkway. The site elevations within the proposed convenience store area vary from a high of approximately 972 feet, MSL in the southeast corner of the diesel area, to a low of approximately 936 feet, MSL in the southwest corner of the development, where an entrance from Bill Carruth Parkway is proposed. The existing site topography in the proposed convenience store area, generally slopes to the west/northwest. The proposed site final site elevations have not been determined at the time of this exploration; however, we understand that site cuts in the 15 foot deep range are anticipated.

No specific building loads were provided at the time of this report. We anticipate that the proposed structures will have exterior wall loads in the range of 2 to 4 kips per linear foot and interior column loads up to 30 kips.

A total of five (5) Standard Penetration Test (SPT) borings and three auger borings were advanced at the approximate locations shown on the attached Boring Location Plan which is designated as Figure 1. The auger borings were performed on a knoll adjacent to the convenience store site, which will be utilized as a borrow area for the larger overall development. The borings generally encountered a surficial stratum of existing soft fill soils to depths of approximately 3 to 4 feet, overlying generally firm to stiff residual and saprolitic soils to depths of 20 to 25 feet below the existing grades where the borings were terminated. A notable exception was encountered in boring B-2, where the fill was comprised of debris and organic-laden materials from the ground surface to a depth of 3 feet below the existing grades.

A stratum of debris-laden fill was encountered in boring B-2, in the northern end of the proposed canopy to a depth of 2 vertical feet. These materials will be excavated during the grading operation and are not anticipated to impact the proposed construction. It should be noted that these materials will not be suitable for reuse as fill and should be wasted outside the areas of proposed construction or hauled off-site for proper disposal.

We recommend proofrolling the subgrade in the area of proposed construction after grading and prior to foundation construction or paving operations. Any soft or unsuitable areas identified in the proofrolling operations should be undercut to firm soils and replaced with properly compacted structural fill.

No groundwater or rock was encountered in the borings to the termination depths of 20 to 25 feet below the existing grades and groundwater is not anticipated to impact the proposed construction, based on the currently proposed final site grades.

Shallow foundations will adequately support the proposed structures provided that the organic materials encountered in boring B-2 are excavated. New shallow foundations should be sized to exert a maximum bearing pressure of 2500 pounds per square foot (psf).

2 PROJECT DESCRIPTION

2.1 Location/Site Description

The site is located at the southwest corner of the intersection of Hiram Douglasville Highway and Bill Carruth Highway in Hiram, Georgia. The majority of the property is lightly wooded with the exception of the area near the intersection, which is relatively level and open. The overall property encompasses approximately 39 acres and is currently developed with two structures. A vacant house is present in the proposed convenience store area, in the northeast corner of the property and a second vacant house, as well as remnant foundations of a third structure, are present on the knoll southeast of the proposed convenience store. The majority of the property is lightly wooded with the exception of the areas near the existing houses which are relatively open with existing asphalt driveways. The site is bordered to the west by Bill Carruth Parkway, to the north by Hiram-Douglasville Highway (Hwy 92) and to the south and east by undeveloped property. A review of the proposed site plan indicates that the proposed building will be located in the northeast portion of the site, with the gas canopy located east of the building along Hiram Douglasville Highway and the diesel canopy located west of the building along Bill Carruth Parkway.

Based on the preliminary site plans provided by Landmark Associates, Inc. dated September 16, 2022, the existing site elevations range from a high of approximately 974 feet, Mean Sea Level (MSL) in the east center of the property where a knoll is present, to a low of approximately 928 feet, MSL along the creek on the eastern side of the property. The site elevations within the proposed convenience store area vary from a high of approximately 972 feet, MSL in the southeast corner of the diesel area, to a low of approximately 936 feet, MSL in the southwest corner of the development, where an entrance from Bill Carruth Parkway is proposed. The existing site topography in the proposed convenience store area generally slopes to the west/northwest. The proposed site final site elevations have not been determined at the time of this exploration; however, we understand that site cuts in the 15 foot deep range are anticipated.

2.2 Explanation

This report has been prepared in accordance with accepted geotechnical engineering practices. It should be noted that subsurface explorations are conducted in inconsistent media and existing man-placed fill soils are present in some areas. Significant variations may occur between or away from the boring locations. Furthermore, the discussions and recommendations presented are based on the project information supplied to date. Should the scope of the project change or if soil conditions differing significantly from those described in Section 3.2 are encountered, this office should be notified immediately so that the impact of this new information may be assessed and any remedial measures necessary can be prescribed. This report has been prepared for the exclusive use of Landworks Associates and their clients and consultants. No other third party beneficiaries may rely on this report without the express written approval by CCG, Inc.

The professional opinions presented in this geotechnical report are not final. Field observations and foundation installation monitoring by the geotechnical engineer, as well as soil density

testing and other quality assurance functions associated with the earthwork and foundation construction, are an extension of this report. Retaining CCG, Inc. who developed this report to provide construction observations including earthwork and foundation construction to verify that the conditions anticipated in this study actually exist and to finalize and amend our conclusions and recommendations, is a cost effective method for managing the risks associated with unanticipated conditions.

3 GEOTECHNICAL EXPLORATION

3.1 General Geology

The site is located in the Northern 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 is steeper near rivers and large creeks.

According to mapping by the Georgia Geologic Survey (GGS), the basement rocks that occur in the vicinity of the subject site belong to an unnamed unit of the larger New Georgia Group and consist of intermixed amphibolites, hornblende gneisses and felsic gneisses. The weathering characteristics of the saprolitic soils encountered on the site were generally consistent with the mapping of the GGS. Overlying these areas 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 characteristics of the parent rocks, such as color and texture, are known as saprolites. Soils which have been deposited in-place by water are known as alluvium. These are the types of soils which are typically found near creeks and rivers. Recently deposited alluvial soils are potentially compressible and may contain layers of organic matter.

3.2 Soil Conditions

The exploration program consisted of five Standard Penetration Test (SPT) borings and three auger borings. This exploration was limited to the proposed convenience store area and the adjacent knoll where proposed site fill will be generated. The borings were conducted at the approximate locations shown on the attached Site Development and Exploration Plan, Figure 1. 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 generally performed at five-foot intervals in each SPT boring. Split-spoon samples were recovered at the selected intervals, placed in clean, closed containers, and returned to the laboratory for further analysis. All testing was performed in general compliance with pertinent American Society for Testing and Materials (ASTM) procedures.

The borings generally encountered a surficial stratum of existing soft fill soils to depths of approximately 3 to 4 feet, overlying generally firm to stiff residual and saprolitic soils to depths of 20 to 25 feet below the existing grades where the borings were terminated. A notable exception was encountered in boring B-2, where the fill was comprised of debris and organic-laden materials from the ground surface to a depth of 3 feet below the existing grades.

Generalized descriptions of the soils conditions encountered across the project site are presented in Table 1 below.

TABLE 1

Stratum	Depth to Top of Stratum (feet)	Stratum Thickness (feet)	Description
II	0	3 to 4	FILL: SILT, soft, brown, trace to some clay, trace mica, sand, wet, low plastic
III	3 to 4	17 to 22*	SILT & SAND, loose to firm, red, white, black, brown, trace mica, dry to moist, non-plastic, mottled: SAPROLITE

* Strata thickness not determined; the borings were terminated at depths of 20 to 25 feet below the existing grades within Stratum II.

A notable exception was encountered in boring B-2, in the northern end of the proposed gas canopy, where Strata I was comprised of debris and organic laden fill to a depth of 2 feet below the existing grades.

For specific details of the soil conditions encountered, please refer to the individual boring logs in Appendix B.

3.2.1 Seismic Considerations

The project site is located in Hiram, Paulding County, Georgia which employs the 2018 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 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 (2018) probabilistic ground acceleration values and site coefficients for the general site area were using the ASCE Hazards Tool which incorporates ASCE 7-16 which has been incorporated into the IBC 2018 codes. The data is presented in the table below:

Hiram-Douglasville Hwy Ground Motion Values *

Period (sec)	Mapped MCE Spectral Response Acceleration** (g)	Site Coefficients	Adjusted MCE Spectral Response Acceleration (g)	Design Spectral Response Acceleration (g)
0.2	<i>S_s</i> 0.213	<i>F_a</i> 1.6	<i>SM_s</i> 0.341	<i>SD_s</i> 0.227
1.0	<i>S_l</i> 0.089	<i>F_v</i> 2.4	<i>SM_l</i> 0.213	<i>SD_l</i> 0.142

*2% Probability of Exceedence in 50 years for Latitude 33.855895°N and Longitude 84.758998°W

**At top of bedrock

MCE = Maximum Considered Earthquake

The Site Coefficients, *F_a* and *F_v* presented in the above tables 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 2018, Tables 1613.3.5(1) and 1613.3.5(2).

3.3 Groundwater

No groundwater was encountered in the borings to the termination depths of 20 to 25 feet below the existing grades. Based on the anticipated final site elevations, groundwater is not anticipated to impact the proposed construction. It should be noted that the depth to groundwater may vary significantly with rainfall and other seasonal and climatic variations and shall be verified prior to construction.

3.4 Shallow Foundation Considerations

3.4.1 Summary of Recommendations

No significant development concerns were identified by the borings. The borings generally encountered a surficial stratum of fill comprised of soft to firm, moist Sands and Silts to depths of approximately 2 to 3 feet overlying undisturbed residual soils comprised of firm to stiff Silts and firm Sands to the boring termination depths of 20 to 25 feet below the existing grades. It should be noted that based on the currently proposed site cuts of 15 feet, the surficial soft soils will be excavated and will not impact the proposed construction. Conventional shallow foundations will adequately support the proposed structures.

All existing structures, driveways, remnant foundations and site vegetation should be removed prior to grading operations. All demolition materials removed from the site should be disposed of in accordance with applicable local, state and federal regulations and laws. We recommend thorough proofrolling of the existing site subgrade be performed, prior to the placement of any new structural fill soils or the construction of foundations or pavements. Any soft areas or materials with significant organic topsoil or debris, identified during the proofrolling operations should be undercut and replaced with suitable structural fill materials.

3.4.2 Site Preparation

Based on the preliminary site plans provided, the majority of the site is above the final site grades and will require site cuts of up to 15 vertical feet. Site fills will be limited to the northwestern corner of the development and are estimated to be on the order of 5 feet or less.

All existing structures and site vegetation should be removed prior to grading operations. The subgrade in areas of the proposed new fill shall be proofrolled prior to fill placement. Any areas identified as soft or unstable shall be excavated and recompact or replaced as required to provide a stable base for the proposed new fill embankments.

A stratum of debris-laden fill was encountered in boring B-2, in the northern end of the proposed canopy to a depth of 2 vertical feet. These materials will be excavated during the grading operations and are not anticipated to impact the proposed construction. It should be noted that these materials will not be suitable for reuse as fill and should be wasted outside the areas of proposed construction or hauled-off site for proper disposal.

The majority of the excavated clean materials should be suitable for reuse as structural fill dependent on the moisture content. Any organic or debris laden materials excavated from the site shall be wasted in the proposed landscape areas or hauled off-site for disposal. It is recommended that all site grading and utility construction operations be monitored by geotechnical personnel.

3.4.3 Bearing Capacity

The existing firm residual and saprolitic soils, as well as any newly placed structural fill will provide adequate support for shallow foundations. Any existing soft or organic laden soils shall be excavated and replaced to provide a stable subgrade for construction. Shallow foundations for the proposed structures shall be proportioned to exert a maximum allowable bearing pressure of 2500 pounds per square foot (psf). The upper 18 inches of any fill placed directly beneath the building area should be compacted to 98 percent of the appropriate maximum Standard Proctor dry density. We recommend that minimum footing widths of 16 inches for walls and 24 inches for isolated square footings be utilized to help reduce the risk of a local shear failure of the foundation soils.

3.4.4 Settlement

A settlement analysis was performed for the project in order to determine the magnitude of the estimated settlement due to the proposed construction. Estimated total settlements across the proposed building area, (due to anticipated building loads), were calculated to be less than 1 inch. We anticipate that the majority of the settlement will occur during fill placement and construction. Post construction settlements are estimated to be less than 0.5 inch.

3.4.5 Excavation Operations & Backfill/Fill Placement

The site should be thoroughly stripped of all soft and unsuitable soils in the areas of proposed construction. We recommend that a thorough proofroll be performed to the existing site subgrade, (following proposed site excavations), prior to the placement of any new structural fill soils, foundation construction or paving preparations. Some isolated areas of shallow soft or unsuitable soils may be encountered across the site. Any soft or unsuitable areas identified during the proofrolling operations should be undercut or stabilized prior to beginning new fill placement or foundation construction.

The auger borings, (A-1, A-2 & A-3), performed in the proposed borrow area encountered similar soils to those encountered in the convenience store area. The soils generally were comprised of a surficial stratum of clean fill materials underlain by undisturbed residual soils consisting of Sandy Silts to the boring termination depths of 25 feet below the existing grades. No rock or groundwater was encountered in the borings. Based on the borings, we anticipate that the soils in the borrow area will be suitable for reuse as structural fill, dependent on moisture content.

A stratum of debris-laden fill was encountered in boring B-2, in the northern end of the proposed gas canopy to a depth of 2 feet below the existing grades. These materials will be excavated during the grading operations and should not impact the proposed new construction

Prior to foundation or pavement construction, all subgrades shall be thoroughly proofrolled to verify that no soft areas are present which may impact the construction. It should be noted that the potential for isolated areas of soft or unsuitable soils exists between or away from the boring locations. The majority of any excavated soils are anticipated to be suitable for reuse as structural fill; however, drying of these materials could be required prior to their re-use. Any soft or unsuitable soils identified during the site grading operations or subsequent proofroll shall be excavated and replaced with properly compacted structural fill or properly stabilized if they extend below the proposed subgrade elevations. Any excavated organic-laden or debris laden soils will not be suitable for re-use as structural fill and shall either be hauled off-site or placed in proposed landscape areas.

We recommend that the site development guidelines presented below be adhered to:

1. All existing structures, pavements, site utilities and vegetation shall be removed during the demolition operations. Excavated suitable soils present may be re-used as structural fill, provided they are free of organic materials or debris and are within an acceptable moisture range. All materials removed from the site should be disposed of in accordance with applicable local, state and federal regulations and laws.
2. The site shall be thoroughly proofrolled following site excavations in order to help detect any soft or unsuitable soils. Any soft or unsuitable materials shall be excavated and replaced with properly compacted structural fill.
3. Embankment fill (where required) should be compacted to a minimum of 95 percent of the appropriate maximum Standard Proctor dry density (ASTM D-698). The structural fill placed beneath the upper 2 feet of pavements should be densified to 98 percent of the maximum Standard Proctor dry density.
4. Soils should be placed in thin, even lifts (approximately 8 to 10 inches in thickness) and compacted using sheepsfoot or vibratory sheepsfoot rollers.
5. During fill placement, it is very important to keep soil moisture contents to within 3 to 4 percentage points of the applicable optimum moisture content.
6. Permanent embankment slopes shall not exceed 2(H):1(V).
7. A qualified soils engineering technician shall be present during construction to verify adequate proofrolling, undercutting, fill material suitability and placement, as well as compaction control and foundation evaluation.

3.4.6 Pavement Design Recommendations

We anticipate that the proposed development will contain both heavy duty concrete and asphalt pavements as well as lighter duty asphalt pavements. It is currently proposed to use concrete pavements for the convenience store area and heavy duty asphalt pavements for the entrance road. The parking areas will be lighter duty asphalt pavement sections. Prior to pavement construction, we recommend thorough proofrolling of all subgrades to verify that no soft areas are present which may affect long term pavement performance. Proofrolling should be performed using a fully loaded, tandem-axled dump truck, or the equivalent. Unsuitable areas identified during the proofrolling should be undercut, backfilled with clean fill soils, and recompact to the specified maximum dry density.

We recommend that concrete pavement section consist of 8 inches of 4000 psi concrete underlain by a 4 inch thick drainage layer of compacted Graded Aggregate Base (GAB) be used for the heavy duty pavement sections. A uniform 15 foot joint spacing is also recommended for the concrete pavements. Positive load transfer between joints using 18 inch long, 1 ¼ inch diameter smooth dowel bars on 12 inch center to center spacing placed at mid-slab is recommended.

The heavy duty asphalt pavement section is recommended to consist of the following:

- 8 inches of Graded Aggregate Base (GAB)
- 4 inches of Superpave 19 mm Binder
- 2 inches of Superpave 9.5 mm Type I Topping

The lighter duty asphalt pavement sections are recommended to consist of the following:

- 6 inches of Graded Aggregate Base (GAB)
- 2 inches of Superpave 19 mm Binder
- 1 inch of Superpave 9.5 mm Type I Topping

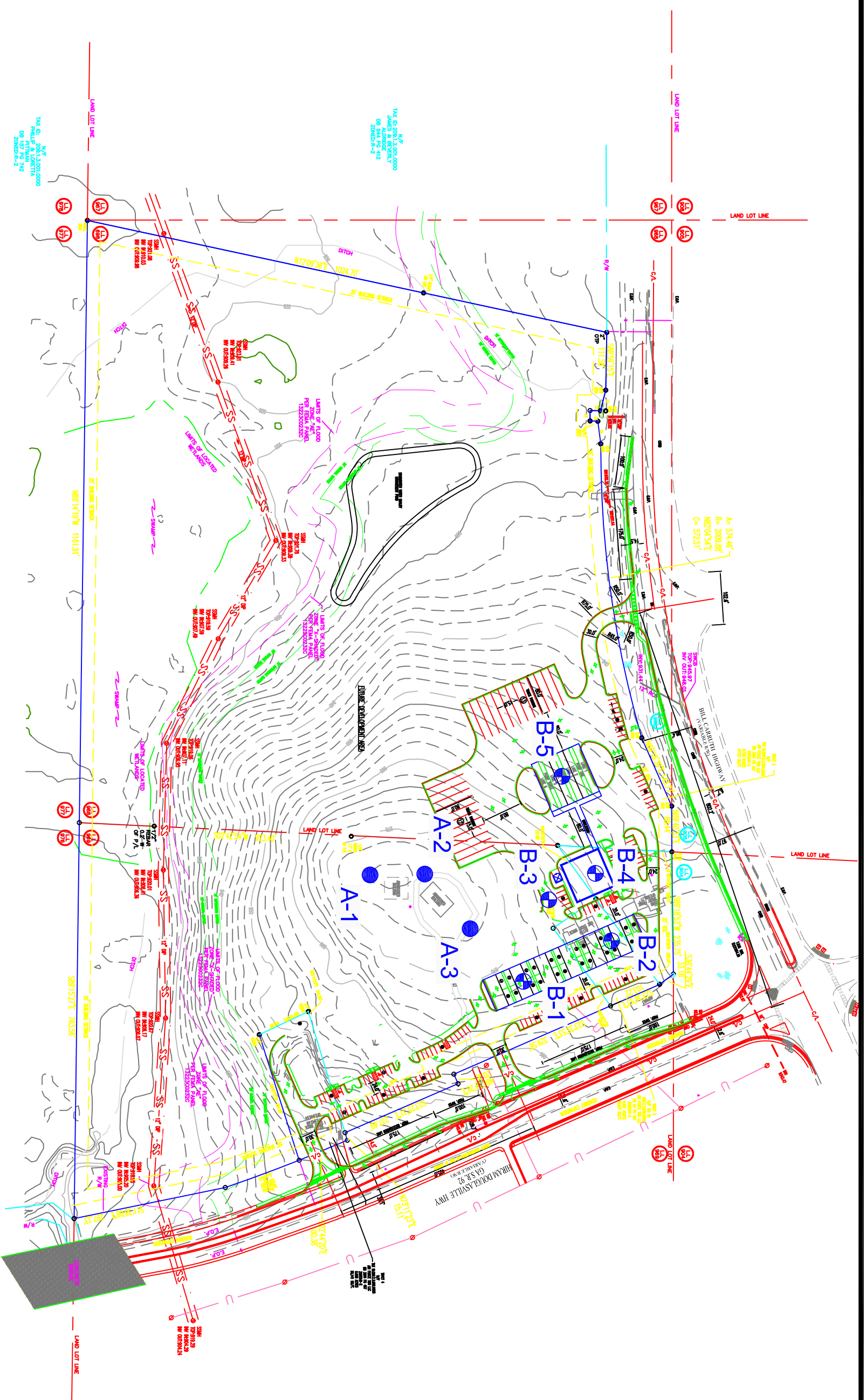
The graded aggregate base course should be compacted to 100% of the maximum Modified Proctor density (ASTM D 1557). The asphaltic pavements should be placed and compacted in accordance with the current Georgia Department of Transportation (DOT) specifications.

3.4.7 Geotechnical Quality Control

We recommend that the following quality control measures be implemented in an effort to avoid unforeseen project costs or delays:

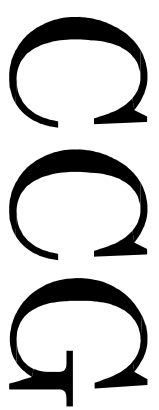
1. Review of all final construction plans to ensure that the geotechnical recommendations are properly implemented.

2. Grading operations, subgrade preparation and proofrolling shall be observed by a qualified soils engineering technician.
3. Testing of all earth fills in accordance with the site specific construction testing plan to ensure it meets the specified compactive effort.
4. Evaluation of shallow foundation excavations immediately prior to foundation concrete placement to verify allowable soil bearing pressures.



LEGEND

B-1 SPT BORING LOCATION



0 100 200 300
SCALE 1" = 200'

DATE: 12/8/22
 DWN.: WTS
 APPR.:
 REVIS.:
 PROJECT NO.: 5256.003.22

FIGURE NO. 1
 LANDWORKS ASSOCIATES, INC.
 HIRAM DOUGLASVILLE HWY TRACT
 BORING LOCATION PLAN

APPENDIX A

FIELD PROCEDURES

FIELD EXPLORATION

General. Figure 1 indicates the approximate location of the borings performed on the proposed site. All borings were made with an all-terrain mounted, rotary-type drilling equipment on December 1, 2022. The boring program consisted of approximately 100 linear feet of SPT borings and 75 feet of auger borings. Detailed logs of the borings are attached.

Sampling Procedures. In these soil materials, Standard Penetration Tests (SPT) were performed in each rotary boring; 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:

(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: **Hiram Douglasville Highway**
 Client: **Landworks Associates, Inc.**
 Location: **Hiram, Georgia**

Project No.: **5256.003.22**
 Boring No.: **B-1**
 Date: **12/1/2022**

Elevation GS	Description	Depth (feet)	Samples			Drilling Observations
			No. Type	Blows/6"	Recov	SPT Boring
	Topsoil: 5.5"					No groundwater encountered at the time of drilling. The boring was backfilled with native cuttings to the existing grade.
	FILL: SAND, very loose, brown, trace to some clay, wet, low plastic		1 SS	3-2-2		
	Sandy SILT, very stiff, red, tan, trace clay, dry, low plastic, mottled: SAPROLITE	5.0	2 SS	5-8-14		
	Silty SAND, firm, brown, red, white, trace mica, dry, non-plastic, mottled: SAPROLITE	10.0	3 SS	6-11-11		
			4 SS	5-8-9		
	SAND, loose, red, brown, some mica, dry to moist, non-plastic, mottled: SAPROLITE	15.0	5 SS	2-4-6		
		20.0	6 SS	3-4-4		
	Boring Terminated @ 20'					
		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 w.o.h. = Weight of Hammer



LOG of BORING

Project Name: **Hiram Douglasville Highway**
 Client: **Landworks Associates, Inc.**
 Location: **Hiram, Georgia**

Project No.: **5256.003.22**
 Boring No.: **B-2**
 Date: **12/1/2022**

Elevation GS	Description	Depth (feet)	Samples			Drilling Observations
			No. Type	Blows/6"	Recov	SPT Boring
	FILL: Debris & Organic Laden SILT, brown, black, some plastic, wet, non-plastic		1 SS	2-2-2		No groundwater encountered at the time of drilling. The boring was backfilled with native cuttings to the existing grade.
	Sandy SILT, stiff, red, trace clay, moist, low plastic: RESIDUAL	5.0	2 SS	2-3-7		
	Silty SAND, firm to stiff, red, white, trace mica, dry, non-plastic, mottled: SAPROLITE	10.0	3 SS	8-9-11		
			4 SS	4-7-8		
		15.0	5 SS	3-5-6		
			6 SS	3-4-4		
	Boring Terminated @ 20'	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 w.o.h. = Weight of Hammer						



LOG of BORING

Project Name: **Hiram Douglasville Highway**
 Client: **Landworks Associates, Inc.**
 Location: **Hiram, Georgia**

Project No.: **5256.003.22**
 Boring No.: **B-3**
 Date: **12/1/2022**

Elevation	Description	Depth (feet)	Samples			Drilling Observations
			No. Type	Blows/6"	Recov	SPT Boring
GS	Topsoil: 6"					
	FILL: SILT, soft, brown, trace to some clay, trace sand, wet, plastic		1 SS	1-2-2		<p>No groundwater encountered at the time of drilling.</p> <p>The boring was backfilled with native cuttings to the existing grade.</p>
	Sandy SILT, firm, brown, trace mica, dry, low plastic: RESIDUAL	5.0	2 SS	3-3-4		
	Silty SAND, firm, red, white, trace mica, dry, non-plastic, mottled: SAPROLITE	10.0	3 SS	5-6-6		
			4 SS	3-7-6		
	SAND, very loose, brown, trace mica, dry, non-plastic, mottled: SAPROLITE	15.0	5 SS	3-2-2		
	Silty SAND, loose, red, white, trace mica, dry, non-plastic, mottled: SAPROLITE	20.0	6 SS	4-4-6		
	Boring Terminated @ 20'					
		25.0				
		30.0				
		35.0				
		40.0				
		45.0				
		50.0				
						<p>LEGEND</p> <p>SPT= Standard Penetration Test SS = Split-Spoon (sample) UDS= Undisturbed Sample GS= Ground Surface HWR= Highly Weathered Rock PWR= Partially Weathered Rock w.o.h. = Weight of Hammer</p>



LOG of BORING

Project Name: **Hiram Douglasville Highway**
 Client: **Landworks Associates, Inc.**
 Location: **Hiram, Georgia**

Project No.: **5256.003.22**
 Boring No.: **B-4**
 Date: **12/1/2022**

Elevation GS	Description	Depth (feet)	Samples			Drilling Observations SPT Boring
			No. Type	Blows/6"	Recov	
	Topsoil: 8"					<p>No groundwater encountered at the time of drilling.</p> <p>The boring was backfilled with native cuttings to the existing grade.</p>
	FILL: SILT, firm, brown, trace to some clay, trace sand, wet, plastic		1 SS	2-3-2		
	SILT, stiff, brown, some to trace clay, trace sand, dry, plastic: RESIDUAL	5.0	2 SS	5-5-11		
	Sandy SILT, stiff, brown, white, trace mica, moist, non-plastic, mottled: SAPROLITE	10.0	3 SS	6-7-9		
			4 SS	3-5-6		
	SILT, firm, red, white, black, trace sand, moist, non-plastic, marled, mottled: SAPROLITE	15.0	5 SS	3-3-3		
		20.0	6 SS	2-3-5		<p>LEGEND</p> <p>SPT= Standard Penetration Test SS = Split-Spoon (sample) UDS= Undisturbed Sample GS= Ground Surface HWR= Highly Weathered Rock PWR= Partially Weathered Rock w.o.h. = Weight of Hammer</p>
	Boring Terminated @ 20'	25.0				
		30.0				
		35.0				
		40.0				
		45.0				
		50.0				



LOG of BORING

Project Name: **Hiram Douglasville Highway**
 Client: **Landworks Associates, Inc.**
 Location: **Hiram, Georgia**

Project No.: **5256.003.22**
 Boring No.: **B-5**
 Date: **12/1/2022**

Elevation GS	Description	Depth (feet)	Samples			Drilling Observations SPT Boring
			No. Type	Blows/6"	Recov	
	Topsoil: 6"					No groundwater encountered at the time of drilling. The boring was backfilled with native cuttings to the existing grade.
	FILL: SILT, firm, brown, trace to some sand, trace clay, wet, low plastic		1 SS	2-2-3		
	Sandy SILT, very stiff, red, tan, trace mica, clay, dry, low plastic, mottled: RESIDUAL	5.0	2 SS	4-9-13		
			3 SS	5-5-8		
	SAND, loose to firm, brown, white, some silt, trace mica, dry to moist, non-plastic, mottled: SAPROLITE	10.0	4 SS	6-6-6		
		15.0	5 SS	6-3-3		
		20.0	6 SS	3-5-6		
	Boring Terminated @ 20'					
		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
 w.o.h. = Weight of Hammer



LOG of BORING

Project Name: Hiram Douglasville Highway
Client: Landworks Associates, Inc.
Location: Hiram, Georgia

Project No.: 5256.003.22
Boring No.: A-1
Date: 12/1/2022

Table with 5 columns: Elevation, Description, Depth (feet), Samples (No. Type, Blows/6", Recov), and Drilling Observations (SPT Boring). The table contains soil data for depths from 0 to 50 feet, including descriptions like 'FILL: SILT, brown, trace to some sand...' and 'SILT & SAND, red, brown, white, black...'. It also includes a legend for SPT, SS, UDS, GS, HWR, PWR, and w.o.h.



LOG of BORING

Project Name: **Hiram Douglasville Highway**
 Client: **Landworks Associates, Inc.**
 Location: **Hiram, Georgia**

Project No.: **5256.003.22**
 Boring No.: **A-2**
 Date: **12/1/2022**

Elevation GS	Description	Depth (feet)	Samples			Drilling Observations
			No. Type	Blows/6"	Recov	SPT Boring
	FILL: SILT, brown, trace to some sand, trace clay, moist, low plastic					No groundwater encountered at the time of drilling. The boring was backfilled with native cuttings to the existing grade.
		5.0				
	SILT & SAND, red, brown, white, black, some to trace mica, dry to moist, very low plastic, mottled: SAPROLITE	10.0				
		15.0				
		20.0				
	SAND, brown, black, white, trace mica, rock, moist, non-plastic: SAPROLITE	25.0				
	Boring Terminated @ 25'	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 w.o.h. = Weight of Hammer						



LOG of BORING

Project Name: **Hiram Douglasville Highway**
 Client: **Landworks Associates, Inc.**
 Location: **Hiram, Georgia**

Project No.: **5256.003.22**
 Boring No.: **A-3**
 Date: **12/1/2022**

Elevation GS	Description	Depth (feet)	Samples			Drilling Observations
			No. Type	Blows/6"	Recov	SPT Boring
	FILL: SILT, brown, trace to some sand, trace clay, moist, low plastic					No groundwater encountered at the time of drilling. The boring was backfilled with native cuttings to the existing grade.
		5.0				
	SILT & SAND, red, brown, white, black, some to trace mica, dry to moist, very low plastic, mottled: SAPROLITE	10.0				
		15.0				
	SAND, brown, black, white, trace mica, rock, moist, non-plastic: SAPROLITE	20.0				
		25.0				
	Boring Terminated @ 25'	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 w.o.h. = Weight of Hammer						