UNITED CONSULTING

REPORT

For The Macallan Group

Preliminary Geotechnical Exploration
Cloverleaf
71 W. Felton Road
Cartersville, Georgia

Project No.: MACPR-22-GA-06446-01

625 Holcomb Bridge Road, Norcross, GA 30071 • 770-209-0029 • unitedconsulting.com

UNITED CONSULTING

MACPR-22-GA-06446-01

August 5, 2022

Mr. James R. Baker
Vice President, Investments
The Macallan Group
1642 Powers Ferry Road SE
Suite 250
Marietta, Georgia 30067

Via Email: j.baker@macallangroup.com

RE: Report of Preliminary Geotechnical Exploration
Cloverleaf
71 W. Felton Road
Cartersville, Georgia
Project No.: MACPR-22-GA-06446-01

Dear Mr. Baker:

United Consulting is pleased to submit this report of our Preliminary Geotechnical Exploration for the above-referenced project. We appreciate the opportunity to assist you with this project and look forward to our continued participation. Please contact us if you have any questions or if we can be of further assistance.

Sincerely,

UNITED CONSULTING

GEORGIA REGISTERED No. 20383 PROFESSIONAL ENGINEER MICHAEL A. KEMP

Michael A. Kemp, P.E.
Senior Geotechnical Engineer

Scott D. Smelter
Principal

SRT/MAK/SDS/nj

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1.0 EXECUTIVE SUMMARY

United Consulting has completed a Preliminary Geotechnical Exploration on Cloverleaf site located at 71 W. Felton Road in Cartersville, Bartow County, Georgia. Please refer to the text of the report for a more detailed discussion of the items summarized below.

1. Borings B-3, B-5, B-7, B-8, and B-9 encountered 8 feet of fill soils and borings B-1, B-2, B-4, B-6, B-10, B-12, B-13, and B-16 encountered 3 feet of fill soils. The fill encountered generally appeared to be debris-free and moderately compacted. However, low consistency (N < 5 bpf) fill was encountered in borings B-3 at a depth of 3 feet. Because of the presence of undocumented fill materials, it would not be unusual to encounter localized areas of buried trash, debris or other deleterious materials intermediate of the boring locations that would not be suitable for reuse. <u>We recommend test pits be performed prior to construction to better evaluate the composition of the existing fill materials.</u>

2. Based on the test boring results, it appears that the onsite soils, including most of the existing fill, should generally be suitable for reuse as engineered fill. As mentioned above, because of the presence of undocumented fill materials, it would not be unusual to encounter localized areas of buried trash, debris or other deleterious materials intermediate of the boring locations that would not be suitable for reuse.

3. Partially Weathered Rock (PWR) was encountered only in boring B-14 starting at a depth of 13 feet. Auger refusal occurred in borings B-12, B-13, and B-16 at depths ranging from 8 feet to 11 feet. Difficult excavation conditions (ripping and blasting in mass excavation and blasting for trench/utility excavations) associated with PWR or rock should be expected if excavations extend below or near these refusal levels encountered in these borings. Due to natural geologic variation, we note that shallower PWR or rock may be also present between or away from the areas explored.

4. Groundwater was encountered only in boring B-2 at a depth of 11 feet at the time of drilling. Shallow groundwater is not expected to significantly impact construction. However, it is possible that shallow groundwater could be present in unexplored portions of the site. In addition, groundwater levels should be anticipated to fluctuate with yearly and seasonal rainfall variations and may rise in the future.

5. If the site is prepared as recommended herein, the proposed lightly loaded wood framed structures can be supported on conventional shallow foundations designed for a preliminary allowable soil bearing pressure of up to 2,500 pounds per square foot (psf). Due to the presence of existing fill materials, greater than normal soil remediation during foundation construction should be anticipated and should be budgeted for.

6. The infiltration rate was measured to be 0.3 inches/hour (0.6 feet/day) at the infiltration test location.

2.0 PROJECT INFORMATION

The Project Site is located at 71 W. Felton Road in Cartersville, Bartow County, Georgia. The Project Site was approximately 10.275-acre site and was developed with a number of structures and sheds, driveways, and vacant areas.

The Project Site was in a residential and commercial area. The site was bound to the north and west by commercial structures; to the east by a railway line and vacant areas; and to south by Felton Road and residential structures. The general location of the Project Site is shown on the attached Boring Location Plan (Figure 1).

No topographic plans were provided, but based on visual observations, the site was sloping down from the northern areas to the southern portion. The Finished Floor Elevations (FFEs) were not provided. Based on the relatively gently sloping ground, maximum cuts and fills on the order of 5 feet are expected.

Based on provided preliminary development plans, we understand that this project will consist of a condominium/townhome development. The buildings are planned to be 2-story, wood-framed structures. The anticipated maximum column loads were not provided. However, past experience indicates that maximum column and wall loads will be on the order of 40 to 60 kips and 3 to 4 kips per lineal foot, respectively.

Once the final site plans and site grading information are available, United Consulting must be contacted to determine if our recommendations should be re-evaluated and/or revised.

3.0 PURPOSE

The purpose of this Preliminary Geotechnical Exploration was to assess the general type and condition of the subsurface materials at the Project Site and to provide preliminary recommendations regarding potential foundation types, site grading, earthwork, quality control and other geotechnical related issues, deemed pertinent to this project.

4.0 SCOPE

The scope of our preliminary geotechnical exploration included the following items:

1. A visual reconnaissance of the site from a geotechnical standpoint;
2. Drilling sixteen (16) Standard Penetration Test (SPT) borings;
3. Visual evaluation of the soil samples obtained during our field testing program for further identification and classification;
4. Performing one (1) infiltration test;
5. Analyzing the existing soil conditions with respect to the proposed construction; and
6. Preparing this report to document the results of our field-testing program, laboratory testing, engineering analysis, and to provide our findings and preliminary recommendations.

5.0 SUBSURFACE CONDITIONS

A total of 16 soil test borings were performed for this exploration. Each of the borings were drilled in the proposed buildings footprints, apart from borings B-8 and B-3 which were drilled in the proposed parking areas and the detention pond, respectively.

Initially, a layer of topsoil or asphalt and GAB was encountered at each of the boring locations. Below this, borings B-3, B-5, B-7, B-8, and B-9 encountered 8 feet of fill soils and borings B-1, B-2, B-4, B-6, B-10, B-12, B-13, and B-16 encountered 3 feet of fill soils. The fill soils encountered consisted of soft to hard silt with varying amounts of sand, clay, rock fragments and mica; or firm to stiff clay with varying amounts of silt, sand, and rock fragments. Standard Penetration Test resistances (N-values) within the fill soils ranged from 3 to 32 blows per foot (bpf). Low consistency (N < 5 bpf) fill was encountered in borings B-3 at a depth of 3 feet

Below the fill soils in the aforementioned borings and below the ground surface in the remaining borings, typical residual soils of the Piedmont Physiographic Province of Georgia were encountered. The residual soils encountered generally consisted of very soft to very stiff clay; firm to hard silt; or medium dense to very dense sand. The N-values within the residual soils ranged from 2 bpf to 77 bpf. Low consistency (N < 5 bpf) residual soils were encountered from 13 feet to 18 feet in boring B-9.

Partially Weathered Rock (PWR) was encountered only in boring B-14 starting at a depth of 13 feet. PWR is a term for the residuum that can be penetrated by a soil drilling auger and has an N-value in excess of 100 bpf.

Auger refusal occurred in borings B-12, B-13, and B-16 at depths ranging from 8 feet to 11 feet. Auger refusal is the depth that the boring cannot be advanced with a soil drilling auger. Auger refusal below residual soils generally represents a seam of rock, a boulder, or the upper surface of relatively sound, massive rock.

Groundwater was encountered only in boring B-2 at a depth of 11 feet at the time of drilling. Groundwater levels will fluctuate with yearly and seasonal rainfall variations and may rise in the future. Shallower perched water levels may also develop during periods of wet weather.

For a more detailed description of the subsurface conditions encountered, please refer to the boring logs in The Appendix. A boring summary table is presented below:

Table 1: Summary of Boring Subsurface Conditions

Boring No.	Bottom of Fill Soils Depth (ft.)	Shallowest Groundwater Depth (ft.)	Top of PWR (ft.)	Refusal Depth (ft.)	Termination Depth (ft.)
B-1	3	NE	NE	NE	15
B-2	3	11	NE	NE	15
B-3	8	NE	NE	NE	10
B-4	3	NE	NE	NE	15
B-5	8	NE	NE	NE	15
B-6	3	NE	NE	NE	15
B-7	8	NE	NE	NE	15
B-8	8	NE	NE	NE	15
B-9	8	NE	NE	NE	20
B-10	3	NE	NE	NE	15
B-11	NE	NE	NE	NE	15
B-12	3	NE	NE	8	8
B-13	3	NE	NE	11	11
B-14	NE	NE	13	NE	15
B-15	NE	NE	NE	NE	15
B-16	3	NE	NE	8.5	8.5

NE – Not Encountered

6.0 DISCUSSION AND PRELIMINARY RECOMMENDATIONS

The following preliminary recommendations are based on our understanding of the proposed construction, the data obtained from the soil test borings, a site reconnaissance, and our experience with subsurface conditions similar to those encountered at the project site.

Once site design has been finalized, United Consulting should review such documents to determine the extent of any additional exploration, or modifications to the recommendations in this report, that may be required.

6.1 Existing Fill

Borings B-3, B-5, B-7, B-8, and B-9 encountered 8 feet of fill soils and borings B-1, B-2, B-4, B-6, B-10, B-12, B-13, and B-16 encountered 3 feet of fill soils. The fill encountered generally appeared to be debris-free and moderately compacted. However, low consistency (N < 5 bpf) fill was encountered in borings B-3 at a depth of 3 feet and is not suitable for building support.

The existing fill materials generally appear suitable for reuse as engineered fill. With any undocumented fill, it is possible that areas of poor-quality fill, debris or other deleterious materials could be present intermediate of the boring locations. As such, we suggest that test pits be performed to better determine the composition of the existing fill. We also recommend that contingency funds be budgeted for remediation of buried debris or otherwise poor quality fill materials that may be encountered in proposed construction areas.

If the site is graded during wet weather and the existing fill materials become wet, it may not be practical to dry adequately using conventional aeration. And excavated wet fill soils may need to be dried with the use of chemical additives such as lime or cement, or replaced with drier soils.

6.2 Site Preparation

The site was developed with a number of structures and sheds. As such, the existing structures, foundations, pavement, walls, curbs, etc. should be demolished and removed from the areas of the proposed construction. Existing underground utilities should be relocated to at least 10 feet outside the perimeter of the proposed building footprint. The abandoned lines should then be excavated and removed from the area of the proposed construction. All excavations should be subsequently backfilled with properly compacted engineered fill. We do not recommend active or non-active utility lines located below the area of the proposed structures be left in place. Any abandoned utility pipes, if left in place and outside of the proposed building footprint, should be filled-in under pressure with cement grout having a minimum 28-day compressive strength of 500 pounds per square inch (psi). This would prevent localized cave-in upon eventual deterioration and loss of structural integrity of the pipe. Also, septic tanks, septic fields, and associated underground structures, if present, should be properly removed. The excavated trenches and pits associated with the removal of the buried structures should be backfilled with engineered fill.

Existing topsoil, vegetation and isolated trees including their root mats should also be removed from the area of the proposed construction. Removal of trees should include removal of their root ball, which may extend to several feet below grade.

After lowering the site grade where planned and prior to placement of engineered fill or commencement of construction, areas to receive fill, foundations, slabs, and pavements, including the area of the proposed structures, should be proofrolled with a fully loaded tandem-axle dump truck. Proofrolling should be performed under the observation of the Geotechnical Engineer or his representatives so that areas which exhibit “pumping” (wave type displacement) during proofrolling may be treated by a method recommended by the Geotechnical Engineer. This method may consist of undercutting, and backfilling with suitable engineered fill, replacing with surge stone, and a layer of crusher run, or some other method that is deemed suitable.

As discussed above in report Section 6.1, because of the presence of undocumented existing fill materials, greater than normal remediation of poor quality fill materials should be expected, and contingency funds included for such. The need for stabilization and/or removal and recompaction or replacement of these soils should be determined by the Geotechnical Engineer based on conditions encountered during site grading.

6.3 Caving Considerations

All excavations should be conducted in accordance with the Occupational Safety and Health Administration (OSHA) guidelines. Flattening of the excavation sidewalls and/or the use of bracing may be needed to maintain stability during construction.

6.4 Difficult Excavation

Partially Weathered Rock (PWR) was encountered only in boring B-14 starting at a depth of 13 feet. Auger refusal occurred in the borings B-12, B-13, and B-16 at depths ranging from 8 feet to 11 feet.

Difficult excavation conditions (ripping and blasting in mass excavation and blasting for trench/utility excavations) should be expected where mass excavation or deeper trench excavations extend below the levels at which PWR or rock were encountered in these test borings.

It is also important to note that depths to PWR and rock can vary over short horizontal distances in the Piedmont Physiographic Province, and PWR and rock could be encountered during construction at shallower depths intermediate of the boring locations for this study.

If PWR or rock is present near proposed building subgrade elevations, we recommend that the PWR or rock be over excavated and backfilled with new engineered fill to depth of at least 12 inches below foundation bearing elevations, or deeper as needed to allow for installation of utilities within the building area with conventional light equipment.

Excavation techniques will vary based on the weathering of the materials, fracturing and jointing in the rock, and the overall stratigraphy of the feature. Actual field conditions usually display a gradual weathering progression with poorly defined and uneven boundaries between layers of different materials. We recommend that the following definitions for rock in earthwork excavation be included in bid documents:

1. <u>General Excavation</u>: Any material occupying an original volume of more than 1 cubic yard which cannot be excavated with a single-tooth ripper drawn by a crawler tractor having a minimum draw bar pull rating of not less than 80,000 lbs. usable pull (Caterpillar D-8 or larger).

2. <u>Trench Excavation</u>: Any material occupying an original volume of more than 1/2 cubic yard which cannot be excavated with a backhoe having a bucket curling force rated at not less than 40,000 lbs. (Caterpillar 330 or larger), using a rock bucket and rock teeth.

6.5 Groundwater Considerations

Groundwater was encountered only in boring B-2 at a depth of 11 feet at the time of drilling. However, it is possible that shallower groundwater could be present in unexplored portions of the site. Groundwater levels will also fluctuate with yearly and seasonal rainfall variations and may rise in the future. Further, the soils at this site are also susceptible to formation of perched water levels during extended periods of wet weather. Although, shallow groundwater is not generally expected to be problematic for this project, the contractor should be prepared to remove perched water and/or groundwater as needed.

6.6 Preliminary Foundation Design and Construction

Following site preparation as recommended, the proposed lightly loaded wood framed structures could be supported on shallow foundation systems. The shallow foundations may consist of shallow strip and/or isolated column footings supported within and underlain by suitable bearing soils. Based on the subsurface exploration data obtained, a maximum net allowable soil bearing pressure of 2,500 pounds per square foot (psf) is recommended for preliminary foundation design.

Due to the presence of existing, undocumented fill, some localized excavation and replacement of soft or otherwise unsuitable fill from below the foundation bearing locations may be required in order for shallow foundations to be feasible.

We recommend minimum footing dimensions of 20 inches for strip footings and 24 inches for square footings. Footings should bear at least 12 inches below outside finished grades for frost protection. The Geotechnical Engineer must evaluate each footing excavation prior to steel reinforcement or concrete placement. Conditions that are observed should be compared to the test boring data and design requirements. If unsuitable bearing material is encountered, it should be excavated and replaced or otherwise treated as recommended by the Geotechnical Engineer.

Surface water control should be maintained to prevent accumulation of water in footing excavations. Standing water in footing excavations should be removed promptly. Soil softened by the water should be removed, and the Geotechnical Engineer or his representative should reexamine the area.

6.7 Ground Floor Slabs

A slab-on-grade may be utilized for proposed structures. We recommend a subgrade modulus of 120 pounds per cubic inch (pci) be used for slab design. It has been our experience that the floor slab subgrade is often disturbed by weather, foundation and utility line installation, and other construction activities between completion of grading and slab construction. For this reason, our geotechnical engineer should evaluate the subgrade immediately prior to placing the concrete. Areas judged by the geotechnical engineer to be unstable should be re-compacted or undercut and replaced with engineered fill compacted to at least 98 percent of its standard Proctor maximum dry density.

Subgrades for both floor slab and pavements should be evaluated by proofrolling with a fully loaded tandem axle dump truck at the direction of the Geotechnical Engineer. Areas judged to deflect excessively under the moving load should be remediated at the direction of the Geotechnical Engineer. Such remediation typically includes removal and replacement with new engineered fill, the use of geotextiles, crushed stone or other methods.

6.8 Earthwork

The onsite soils, if free of organics and other deleterious materials, should generally be suitable for reuse as engineered fill with proper moisture control. Due to the presence of relatively high silt contents, some of the onsite soil may be sensitive to moisture variation. If construction takes place during a period of wet weather and these materials become wet, the soils may become unstable under construction equipment, and conventional drying by aeration may not be feasible without the use of chemical additives such as lime or cement.

Soils should be placed within a narrow range of their optimum moisture content to achieve proper compaction. Typical restrictions on suitable fill are no organics, plasticity index less than 30, and maximum particle size of four inches, with not more than 30 percent greater than 3/4-inch. These restrictions should also be applied to imported borrow soils if needed.

Positive drainage should be maintained at all times to prevent saturation of exposed soils in case of sudden rains. Rolling the surface of disturbed soils will also improve runoff and reduce the soil moisture and construction delays. The degree of soil stability problems will also be dependent upon the precautions taken by the contractor to help protect the soils from saturation during construction.

6.9 Fill Placement

Moisture-density determinations should be performed for each soil type used to provide data necessary for quality assurance testing. The natural moisture content at the time of compaction should be within moisture content limits that will allow the required compaction to be obtained. This is generally within three percentage points of the optimum moisture. The contractor should be prepared to increase or decrease soil water content as needed to achieve adequate compaction.

The fill should be placed in thin lifts (not to exceed 8-inch loose thickness) and compacted. We recommend the fill within the top two feet of final grades be compacted to at least 98 percent of Standard Proctor (ASTM D-698) maximum dry density, and to at least 95 percent of Standard Proctor maximum dry density elsewhere on the site.

A Geotechnical Engineer on a full-time basis should observe grading operations. In-place density tests taken by that individual will assess the degree of compaction being obtained. The frequency of the testing should be determined by the Geotechnical Engineer.

6.10 Field Infiltration Tests

The infiltration test location was shown on the provided plan which was overlaid onto Google Earth to create a KMZ file. The test was located on site by using the KMZ file and a hand-held GPS unit. Due to the methods used, the boring location should be considered approximate. The infiltration test was performed at the proposed depth of approximately 10 feet in boring B-3.

The infiltration test was performed using an Aardvark Permeameter (Model 2840K2) in order to obtain automated hydraulic conductivity readings. The Aardvark is a constant–head permeameter, meaning that the depth of the water in the borehole does not change during the measurement period. The rate of water supplied corresponds to soil infiltration rate from the bottom and side surfaces of the borehole.

Preparation of the test hole consisted of drilling approximately 6-inch diameter boreholes to the proposed depth, scarifying the sides of the test holes, and lowering the Aardvark Permeameter into the boreholes.

Once steady state flow rate was established in the borehole, the saturated hydraulic conductivity (K_{sat}) rates were calculated using the Reynolds and Elrick Solution method and converted into the final infiltration rate using a reduction factor as outlined in Appendix C of the City of Atlanta Stormwater Management Practices for Small Commercial Development. The reduction factor is determined by the following formula:

Rf = (2D1 – Δd)/DIA + 1

D1 = initial water depth (in)
Δd = average/final water level drop (in)
DIA = diameter of the percolation test hole (in)

Table 3 provides the result of the infiltration testing. It should be noted that the results are estimates of the infiltration rates at the location and depth tested. Variations in soil conditions across the full extent of the proposed stormwater detention system may result in different infiltration rates at other locations. Changes in atmospheric conditions or site-specific conditions may also result in varied test results if additional tests are conducted at a later date.

Table 3 – Summary of Infiltration Rate

Boring Number	Depth (ft.)	Average Infiltration Rate	
		in/hr.	ft./day
B-3	10	0.3	0.6

7.0 LIMITATIONS

This report is for the exclusive use of **The Macallan Group** and the designers of the project described herein, and may only be applied to this specific project. Our conclusions and recommendations have been prepared using generally accepted standards of Geotechnical Engineering practice in the State of Georgia. No other warranty is expressed or implied. Our firm is not responsible for conclusions, opinions or recommendations of others.

The right to rely upon this report and the data within may not be assigned without UNITED CONSULTING'S written permission.

The scope of this evaluation was limited to an evaluation of the load-carrying capabilities and stability of the subsoils. Oil, hazardous waste, radioactivity, irritants, pollutants, molds, or other dangerous substance and conditions were not the subject of this study. Their presence and/or absence are not implied or suggested by this report, and should not be inferred.

Our conclusions and recommendations are based upon design information furnished to us, data obtained from the previously described exploration and testing program and our past experience. They do not reflect variations in subsurface conditions that may exist intermediate of our borings, and in unexplored areas of the site. Should such variations become apparent during construction, it will be necessary to re-evaluate our conclusions and recommendations based upon "on-site" observations of the conditions.

If the design or location of the project is changed, the preliminary recommendations contained herein must be considered invalid, unless our firm reviews the changes and our recommendations are either verified or modified in writing. When design is complete, we should be given the opportunity to review the foundation plan, grading plan, and applicable portions of the specifications to confirm that they are consistent with the intent of our recommendations.

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APPENDIX

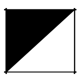
General Notes/Narrative of Drilling Operations
Figure 1– Boring Location Plan
Exploration Procedures
SPT Boring Logs (16)
Typical Benching Detail
Typical Retaining Wall Drainage Detail

GENERAL NOTES

The soil classifications noted on the Boring Logs are visual classifications unless otherwise noted. Minor constituents of a soil sample are termed as follows:

Trace	0 - 10%
Some	11 - 35%
Suffix "y" or "ey"	36 - 49%

LEGEND

	Split Spoon Sample obtained during Standard Penetration Testing
	Relatively Undisturbed Shelby Tube Sample
	Groundwater Level at Time of Boring Completion
	Groundwater Level at 24 hours (or as noted) after Termination of Boring
w	Natural Moisture Content
LL	Liquid Limit
PL	Plastic Limit Atterberg Limits
PI	Plasticity Index
PF	Percent Fines (Percent Passing #200 Sieve)
γ_d	Dry Unit Weight (Pounds per Cubic Foot or PCF
γ_m	Moist or In-Situ Unit Weight (PCF)
γ_{sat}	Saturated Unit Weight (PCF)

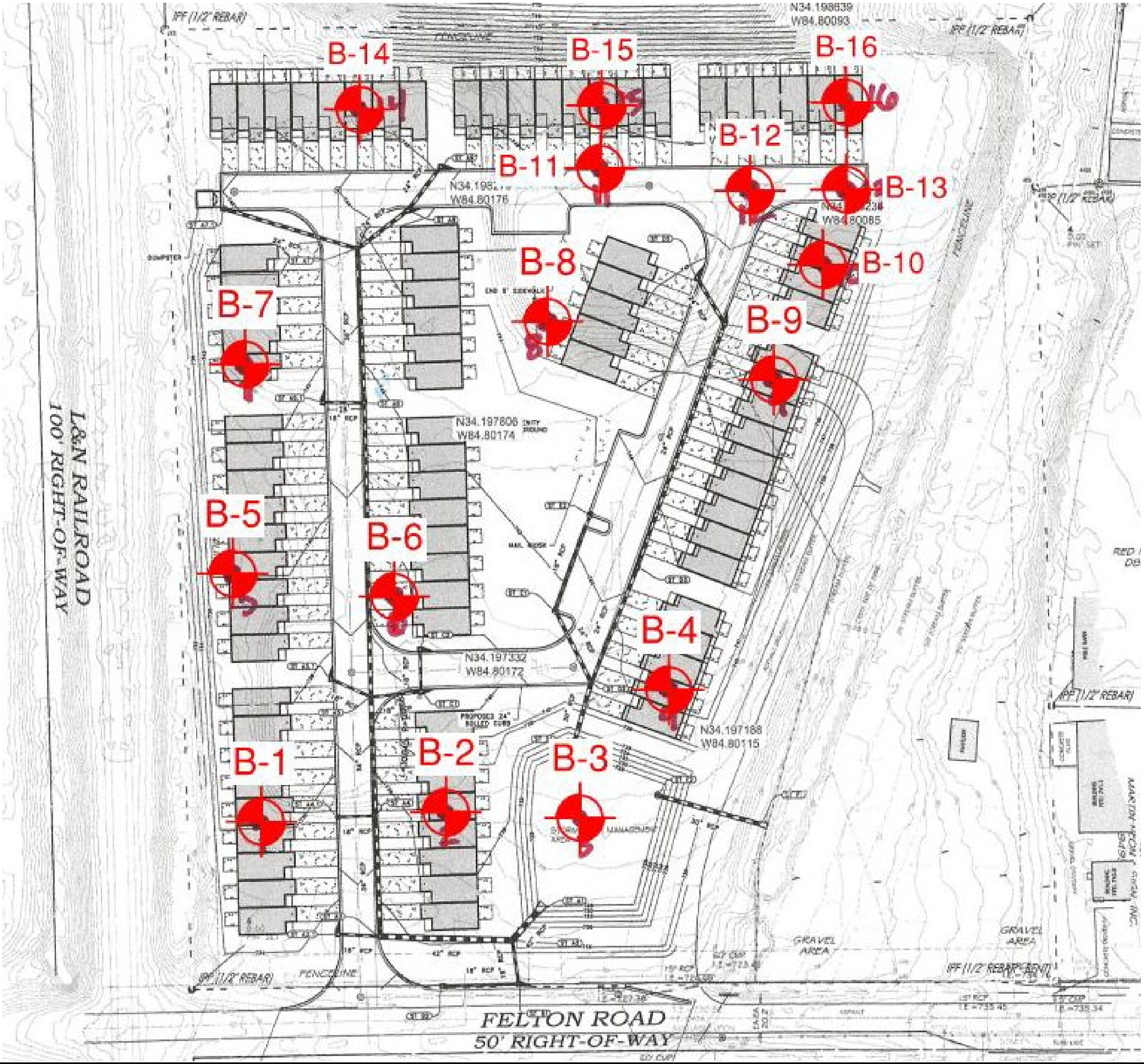
BORING LOG DATA NARRATIVE OF DRILLING OPERATION

The test borings were made by mechanically advancing helical hollow stem augers into the ground. Samples were collected at regular intervals in each of the borings following established procedures for performing the Standard Penetration Test in accordance with ASTM Specification D 1586. Soil samples were obtained with a standard 1.4” I.D. x 2.0” O.D. split barrel sampler. The sampler is first seated 6” to penetrate any loose cuttings and then driven an additional foot with the blows required of a 140-pound hammer freely falling a distance of 30 inches. The number of blows required to drive the sampler the final foot is designated the “standard penetration resistance.” The driving resistance, known as the “N” value, can be correlated with the relative density of granular soils and the consistency of cohesive deposits.

The following table describes soil consistency and relative densities based on standard penetration resistance values (N) determined by the Standard Penetration Test (SPT).

	“N”	Consistency
Clay and Silt	0-2	Very Soft
	3-4	Soft
	5-8	Firm
	9-15	Stiff
	16-30	Very Stiff
	Over 31	Hard

	“N”	Relative Density
Sand	0-4	Very Loose
	5-10	Loose
	11-19	Firm
	20-29	Medium Dense
	30-49	Dense
	50+	Very Dense



We're here for you UNITED CONSULTING	N	Scale: NTS	Notes	Client:	The Macallan Group	FIG. 1
		Prepared: SRT		Site:	Cloverleaf 71 W. Felton Road Cartersville, Bartow County, Georgia	
		Checked: MAK				
		Project No.: MACPR-22-GA-06446-01		Title:	Boring Location Plan	

EXPLORATION PROCEDURES

Sixteen (16) SPT borings (designated B-1 through B-16) were drilled at approximate locations indicated on the attached Boring Location Plan (Figure 1). The SPT borings were performed in general accordance with ASTM D 1586. Soil samples obtained during testing were visually evaluated by the Project Engineer and classified according to the visual-manual procedure described in ASTM D 2488. A narrative of field operations is included in The Appendix.

The test locations in the field were determined by the Project Engineer using a handheld GPS unit. The test locations shown on the Boring Location Plan should, therefore, be considered *approximate*.

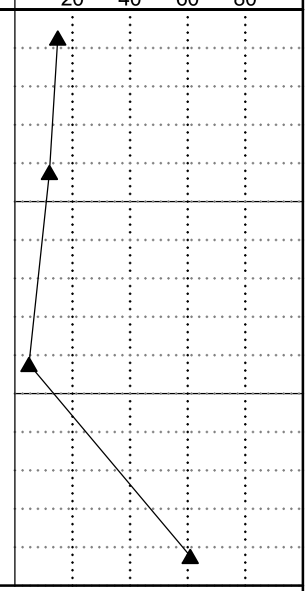
BORING NUMBER B-01

United Consulting Group

CLIENT The Macallan Group
PROJECT NAME Cloverleaf Cartersville
PROJECT NUMBER MACPR-22-GA-06446-01
PROJECT LOCATION 71 W Felton Rd, Cartersville, Georgia

DATE STARTED 07/15/2022 **COMPLETED** 07/15/2022
GROUND ELEVATION **HOLE SIZE**
DRILLING CONTRACTOR ArcOne
GROUND WATER LEVELS:
DRILLING METHOD 2.25 Hollow Stem Auger
AT TIME OF DRILLING --- not encountered
LOGGED BY Grace Hamilton **CHECKED BY**
AT END OF DRILLING ---
NOTES Automatic Hammer with Efficiency=90%
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY - inch (RQD - inch.)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ 20 40 60 80; PL MC LL 20 40 60 80; ☐ FINES CONTENT (%) ☐ 20 40 60 80
0		Topsoil						
		Silt; some sand, trace rock fragments, stiff; white tan (fill)	SPT 1	14	8-7-8 (15)			
		Silt; trace sand, trace clay, trace roots, stiff; orange tan with gray (residuum)	SPT 2	12	4-5-7 (12)			
5								
		Some clay, trace rock fragments, firm; light gray and dark orange tan	SPT 3	12	4-2-3 (5)			
10								
		Some sand, some rock fragments, hard; orange tan to gray	SPT 4	14	4-23-38 (61)			
15								



Boring terminated at 15.0 feet.

GEOTECH BH PLOTS INCHES REC - DF STD US LAB.GDT - 7/23/22 01:19 - H:\GINT DATABASE\PROJECTS\2022\MACPR-22-GA-06446-01 - CLOVERLEAF.GPJ

BORING NUMBER B-02

United Consulting Group

CLIENT The Macallan Group
PROJECT NAME Cloverleaf Cartersville
PROJECT NUMBER MACPR-22-GA-06446-01
PROJECT LOCATION 71 W Felton Rd, Cartersville, Georgia

DATE STARTED 07/15/2022 **COMPLETED** 07/15/2022
GROUND ELEVATION ______ **HOLE SIZE** ______
DRILLING CONTRACTOR ArcOne
GROUND WATER LEVELS:
DRILLING METHOD 2.25 Hollow Stem Auger
▽ **AT TIME OF DRILLING** 11.00 ft
LOGGED BY Grace Hamilton **CHECKED BY** ______
AT END OF DRILLING ---
NOTES Automatic Hammer with Efficiency=90%
AFTER DRILLING ---

DEPTH (ft)	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY - inch (RQD - inch.)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)
0	Topsoil					
	Silt; some sand, some rock fragments, very stiff; light brown with orange (fill)	SPT 1	12	4-8-9 (17)		
	Silt; some clay, trace sand, trace mica, firm; tan (residuum)					
5		SPT 2	2	3-3-3 (6)		
	Some rock fragments, firm; moist; gray					
10		SPT 3	10	4-3-5 (8)		
	▽					
	Clayey; very stiff; wet; gray and brown					
15		SPT 4	14	6-4-14 (18)		

▲ SPT N VALUE ▲ 20 40 60 80
PL MC LL 20 40 60 80
☐ FINES CONTENT (%) ☐ 20 40 60 80

Boring terminated at 15.0 feet.

United Consulting Group

BORING NUMBER B-03

CLIENT The Macallan Group
PROJECT NAME Cloverleaf Cartersville
PROJECT NUMBER MACPR-22-GA-06446-01
PROJECT LOCATION 71 W Felton Rd, Cartersville, Georgia

DATE STARTED 07/14/2022 **COMPLETED** 07/14/2022
GROUND ELEVATION ______ **HOLE SIZE** ______
DRILLING CONTRACTOR ArcOne
GROUND WATER LEVELS:
DRILLING METHOD 2.25 Hollow Stem Auger
AT TIME OF DRILLING --- not encountered
LOGGED BY Grace Hamilton **CHECKED BY** ______
AT END OF DRILLING ---
NOTES Automatic Hammer with Efficiency=90%
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY - inch (RQD - inch.)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0		2" asphalt and 3" base						
		Silt-clayey; trace sand, trace rock fragments, stiff; tan and gray (fill)	SPT 1	6	5-5-7 (12)			
		Soft; moist; orange tan with brown						
5			SPT 2	6	3-2-1 (3)			
		Silt; some clay, stiff; (residuum)						
10			SPT 3	14	2-7-4 (11)			

Boring terminated at 10.0 feet.

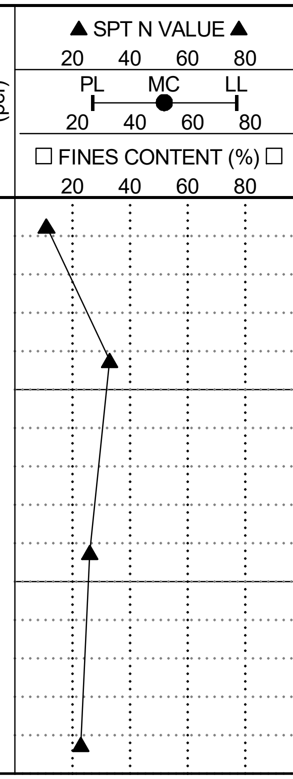
BORING NUMBER B-04

United Consulting Group

CLIENT The Macallan Group
PROJECT NAME Cloverleaf Cartersville
PROJECT NUMBER MACPR-22-GA-06446-01
PROJECT LOCATION 71 W Felton Rd, Cartersville, Georgia

DATE STARTED 07/14/2022 **COMPLETED** 07/14/2022
GROUND ELEVATION **HOLE SIZE**
DRILLING CONTRACTOR ArcOne
GROUND WATER LEVELS:
DRILLING METHOD 2.25 Hollow Stem Auger
AT TIME OF DRILLING --- not encountered
LOGGED BY Grace Hamilton **CHECKED BY**
AT END OF DRILLING ---
NOTES Automatic Hammer with Efficiency=90%
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY - inch (RQD - inch.)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)
0		2" asphalt and 3" base					
		Clay-silty; stiff; tan (fill)	SPT 1	8	8-7-4 (11)		
		Silt; some clay, some rock fragments, trace mica, hard; light tan and gray (residuum)	SPT 2	14	7-15-18 (33)		
5							
		Trace sand, very stiff; orange tan with gray	SPT 3	16	5-15-11 (26)		
10							
		Some sand, trace rock fragments, very stiff	SPT 4	16	11-13-10 (23)		
15							



Boring terminated at 15.0 feet.

GEOTECH BH PLOTS INCHES REC - DF STD US LAB.GDT - 7/23/22 01:19 - H:\GINT DATABASE\PROJECTS\2022\MACPR-22-GA-06446-01 - CLOVERLEAF.GPJ

BORING NUMBER B-05

United Consulting Group

CLIENT The Macallan Group

PROJECT NAME Cloverleaf Cartersville

PROJECT NUMBER MACPR-22-GA-06446-01

PROJECT LOCATION 71 W Felton Rd, Cartersville, Georgia

DATE STARTED 07/15/2022 **COMPLETED** 07/15/2022

GROUND ELEVATION **HOLE SIZE**

DRILLING CONTRACTOR ArcOne

GROUND WATER LEVELS:

DRILLING METHOD 2.25 Hollow Stem Auger

AT TIME OF DRILLING --- not encountered

LOGGED BY Grace Hamilton **CHECKED BY**

AT END OF DRILLING ---

NOTES Automatic Hammer with Efficiency=90%

AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY - inch (RQD - inch.)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0		Topsoil						
		Silt; some sand, trace rock fragments, stiff; red tan (fill)	SPT 1	12	5-7-8 (15)			
		Clay-silty; trace sand, trace rock fragments, firm; brown tan						
5			SPT 2	14	3-3-5 (8)			
		Silt; some clay, trace rock fragments, stiff; light tan (residuum)						
10			SPT 3	14	3-4-6 (10)			
		Trace sand, stiff; moist; light tan and white						
15			SPT 4	14	3-5-6 (11)			

Boring terminated at 15.0 feet.

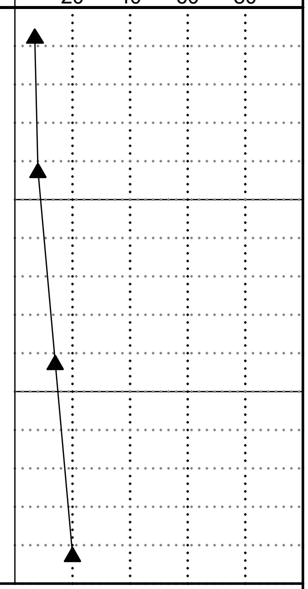
United Consulting Group

BORING NUMBER B-06

CLIENT The Macallan Group
PROJECT NAME Cloverleaf Cartersville
PROJECT NUMBER MACPR-22-GA-06446-01
PROJECT LOCATION 71 W Felton Rd, Cartersville, Georgia

DATE STARTED 07/14/2022 **COMPLETED** 07/14/2022
GROUND ELEVATION **HOLE SIZE**
DRILLING CONTRACTOR ArcOne
GROUND WATER LEVELS:
DRILLING METHOD 2.25 Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY Grace Hamilton **CHECKED BY**
AT END OF DRILLING ---
NOTES Automatic Hammer with Efficiency=90%
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY - inch (RQD - inch.)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ 20 40 60 80; PL MC LL 20 40 60 80; ☐ FINES CONTENT (%) ☐ 20 40 60 80
0		2" asphalt and 3" base						
		Clay-silty; some rock fragments, firm; tan with gray (fill)	SPT 1	12	4-3-4 (7)			
		Silt; some clay, trace sand, firm; light gray brown (residuum)	SPT 2	12	5-4-4 (8)			
5								
		Trace rock fragments, trace mica, stiff; gray with orange brown	SPT 3	12	3-5-9 (14)			
10								
		Some rock fragments, some mica, very stiff	SPT 4	12	9-10-10 (20)			
15								



Boring terminated at 15.0 feet.

United Consulting Group

BORING NUMBER B-07

CLIENT The Macallan Group
PROJECT NAME Cloverleaf Cartersville
PROJECT NUMBER MACPR-22-GA-06446-01
PROJECT LOCATION 71 W Felton Rd, Cartersville, Georgia

DATE STARTED 07/15/2022 **COMPLETED** 07/15/2022
GROUND ELEVATION **HOLE SIZE**
DRILLING CONTRACTOR ArcOne
GROUND WATER LEVELS:
DRILLING METHOD 2.25 Hollow Stem Auger
AT TIME OF DRILLING --- not encountered
LOGGED BY Grace Hamilton **CHECKED BY**
AT END OF DRILLING ---
NOTES Automatic Hammer with Efficiency=90%
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY - inch (RQD - inch.)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0		Topsoil						
		Silt; some sand, trace rock fragments, hard; gray brown with red (fill)	SPT 1	10	9-15-17 (32)			
		Clayey; some rock fragments, firm; gray brown and red tan						
5			SPT 2	12	3-3-5 (8)			
		Silt; some clay, trace sand, trace rock fragments, firm; orange tan and light gray (residuum)						
10			SPT 3	14	4-3-5 (8)			
		Stiff						
15			SPT 4	16	3-5-7 (12)			

Boring terminated at 15.0 feet.

BORING NUMBER B-08

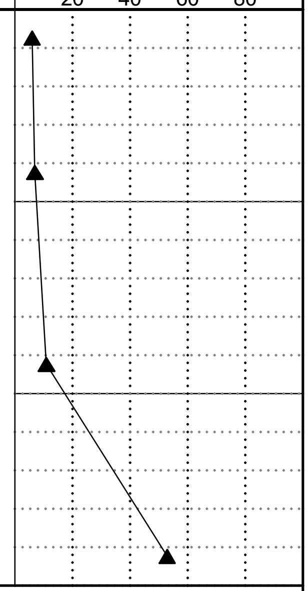
United Consulting Group

CLIENT The Macallan Group
PROJECT NAME Cloverleaf Cartersville
PROJECT NUMBER MACPR-22-GA-06446-01
PROJECT LOCATION 71 W Felton Rd, Cartersville, Georgia

DATE STARTED 07/15/2022 **COMPLETED** 07/15/2022
GROUND ELEVATION **HOLE SIZE**
DRILLING CONTRACTOR ArcOne
GROUND WATER LEVELS:
DRILLING METHOD 2.25 Hollow Stem Auger
AT TIME OF DRILLING --- not encountered
LOGGED BY Grace Hamilton **CHECKED BY**
AT END OF DRILLING ---
NOTES Automatic Hammer with Efficiency=90%
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY - inch (RQD - inch.)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)
0		2" asphalt and 3" base					
		Clay; some silt, some rock fragments, firm; brown tan (fill)	SPT 1	11	7-2-4 (6)		
		Trace sand, firm					
5			SPT 2	6	3-4-3 (7)		
		Silt; some clay, trace rock fragments, stiff; tan and light gray (residuum)					
10			SPT 3	14	2-4-7 (11)		
		Some sand, some rock fragments; dark tan and brown gray					
15			SPT 4	10	11-25-28 (53)		

▲ SPT N VALUE ▲ 20 40 60 80
PL MC LL 20 40 60 80
☐ FINES CONTENT (%) ☐ 20 40 60 80



Boring terminated at 15.0 feet.

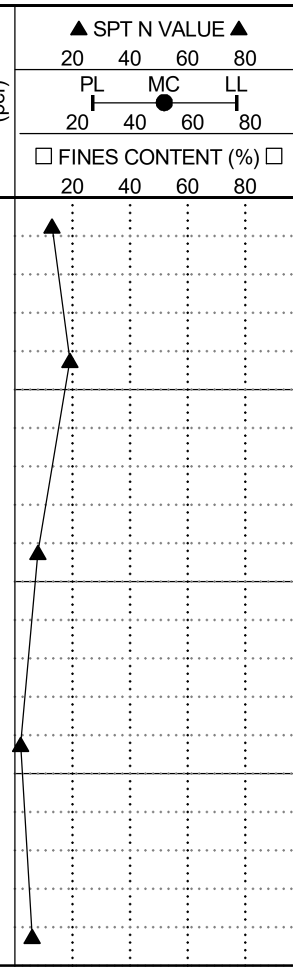
BORING NUMBER B-09

United Consulting Group

CLIENT The Macallan Group
PROJECT NAME Cloverleaf Cartersville
PROJECT NUMBER MACPR-22-GA-06446-01
PROJECT LOCATION 71 W Felton Rd, Cartersville, Georgia

DATE STARTED 07/14/2022 **COMPLETED** 07/14/2022
GROUND ELEVATION **HOLE SIZE**
DRILLING CONTRACTOR ArcOne
GROUND WATER LEVELS:
DRILLING METHOD 2.25 Hollow Stem Auger
AT TIME OF DRILLING --- not encountered
LOGGED BY Grace Hamilton **CHECKED BY**
AT END OF DRILLING ---
NOTES Automatic Hammer with Efficiency=90%
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY - inch (RQD - inch.)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)
0		#" asphalt and #" base					
		Clay-silty; trace rock fragments, stiff; orange tan with gray (fill)	SPT 1	8	15-5-8 (13)		
		Silt-clayey; some sand, trace rock fragments, very stiff; orange tan and red brown					
5			SPT 2	14	22-10-9 (19)		
		Silt; some clay, trace sand, firm; yellow tan (residuum)					
10			SPT 3	16	2-3-5 (8)		
		Clay; some silt, trace sand, trace rock fragments, very soft; moist; orange brown with red					
15			SPT 4	16	2-1-1 (2)		
		Wet; No recovery					
20			SPT 5	0	3-4-2 (6)		



Boring terminated at 20.0 feet.

BORING NUMBER B-10

United Consulting Group

CLIENT	The Macallan Group	**PROJECT NAME**	Cloverleaf Cartersville
PROJECT NUMBER	MACPR-22-GA-06446-01	**PROJECT LOCATION**	71 W Felton Rd, Cartersville, Georgia
DATE STARTED	07/14/2022	**COMPLETED**	07/14/2022
GROUND ELEVATION		**HOLE SIZE**	
DRILLING CONTRACTOR	ArcOne	**GROUND WATER LEVELS:**	
DRILLING METHOD	2.25 Hollow Stem Auger	**AT TIME OF DRILLING**	--- not encountered
LOGGED BY	Grace Hamilton	**CHECKED BY**	
		AT END OF DRILLING	---
NOTES	Automatic Hammer with Efficiency=90%	**AFTER DRILLING**	---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY - inch (RQD - inch.)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0		Topsoil						
		Silt; some sand, trace clay, some rock fragments, stiff; tan (fill)	SPT 1	12	6-6-7 (13)			▲ 13
		Silt; some clay, some sand, trace rock fragments, stiff; yellow and orange tan (residuum)	SPT 2	12	8-8-7 (15)			▲ 15
5								
		Firm	SPT 3	16	3-3-4 (7)			▲ 7
10								
		Clayey; firm; orange tan with gray	SPT 4	14	2-2-4 (6)			▲ 6
15								

Boring terminated at 15.0 feet.

BORING NUMBER B-11

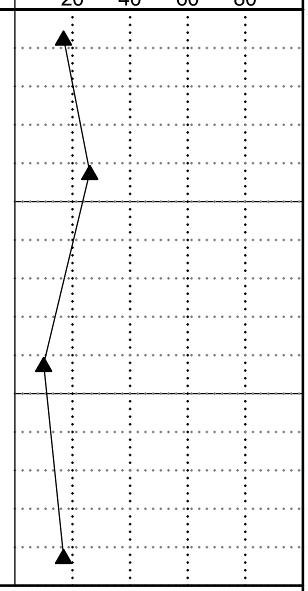
United Consulting Group

CLIENT The Macallan Group
PROJECT NAME Cloverleaf Cartersville
PROJECT NUMBER MACPR-22-GA-06446-01
PROJECT LOCATION 71 W Felton Rd, Cartersville, Georgia

DATE STARTED 07/15/2022 **COMPLETED** 07/15/2022
GROUND ELEVATION **HOLE SIZE**
DRILLING CONTRACTOR ArcOne
GROUND WATER LEVELS:
DRILLING METHOD 2.25 Hollow Stem Auger
AT TIME OF DRILLING --- not encountered
LOGGED BY Grace Hamilton **CHECKED BY**
AT END OF DRILLING ---
NOTES Automatic Hammer with Efficiency=90%
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY - inch (RQD - inch.)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)
0		Topsoil					
		Silt; trace sand, very stiff; tan with gray (residuum)	SPT 1	8	5-7-10 (17)		
		Very stiff	SPT 2	12	6-12-14 (26)		
5							
		Trace clay, trace rock fragments, stiff	SPT 3	14	13-5-5 (10)		
10							
		Some clay, very stiff; tan and white gray	SPT 4	14	4-6-11 (17)		
15							

▲ SPT N VALUE ▲ (20 40 60 80)
PL MC LL (20 40 60 80)
☐ FINES CONTENT (%) ☐ (20 40 60 80)



Boring terminated at 15.0 feet.

BORING NUMBER B-12

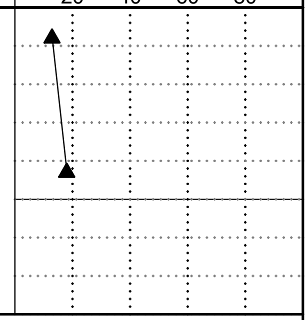
United Consulting Group

CLIENT The Macallan Group
PROJECT NAME Cloverleaf Cartersville
PROJECT NUMBER MACPR-22-GA-06446-01
PROJECT LOCATION 71 W Felton Rd, Cartersville, Georgia

DATE STARTED 07/14/2022 **COMPLETED** 07/14/2022
GROUND ELEVATION **HOLE SIZE**
DRILLING CONTRACTOR ArcOne
GROUND WATER LEVELS:
DRILLING METHOD 2.25 Hollow Stem Auger
AT TIME OF DRILLING ---
LOGGED BY Grace Hamilton **CHECKED BY**
AT END OF DRILLING ---
NOTES Automatic Hammer with Efficiency=90%
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY - inch (RQD - inch.)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)
0		Topsoil					
		Silt; some sand, some rock fragments, stiff; red brown (fill)	SPT 1	10	6-7-6 (13)		
		Clay; some silt, some sand, some rock fragments, very stiff; red brown and tan gray (residuum)					
5			SPT 2	12	3-4-14 (18)		

▲ SPT N VALUE ▲ 20 40 60 80
PL MC LL 20 40 60 80
☐ FINES CONTENT (%) ☐ 20 40 60 80



Refusal at 8.0 feet.
Boring terminated at 8.0 feet.

BORING NUMBER B-13

United Consulting Group

CLIENT The Macallan Group
PROJECT NAME Cloverleaf Cartersville
PROJECT NUMBER MACPR-22-GA-06446-01
PROJECT LOCATION 71 W Felton Rd, Cartersville, Georgia

DATE STARTED 07/15/2022 **COMPLETED** 07/15/2022
GROUND ELEVATION **HOLE SIZE**
DRILLING CONTRACTOR ArcOne
GROUND WATER LEVELS:
DRILLING METHOD 2.25 Hollow Stem Auger
AT TIME OF DRILLING --- not encountered
LOGGED BY Grace Hamilton **CHECKED BY**
AT END OF DRILLING ---
NOTES Automatic Hammer with Efficiency=90%
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY - inch (RQD - inch.)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	SPT N VALUE (20 40 60 80); PL MC LL (20 40 60 80); FINES CONTENT (%) (20 40 60 80)
0		Topsoil						
		Silt-sandy; trace rock fragments, trace roots, stiff; light gray with tan (fill)	SPT 1	12	7-7-8 (15)			
		Sand; some silt, trace clay, some rock fragments, medium dense; orange gray and brown (residuum)						
5			SPT 2	14	6-19-10 (29)			
		Gravelly; trace silt, very dense; white gray						
10			SPT 3	8	19-45-32 (77)			

Refusal at 11.0 feet.
Boring terminated at 11.0 feet.

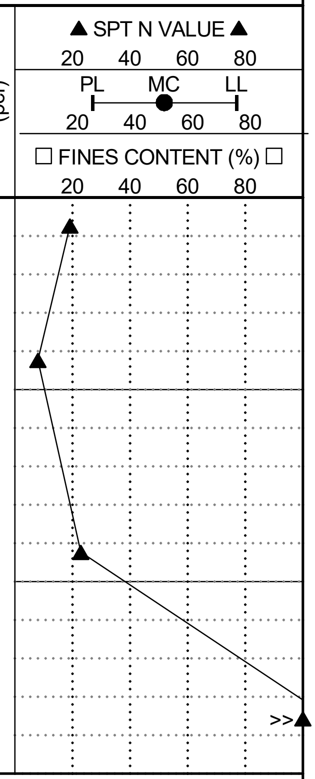
United Consulting Group

BORING NUMBER B-14

CLIENT The Macallan Group
PROJECT NAME Cloverleaf Cartersville
PROJECT NUMBER MACPR-22-GA-06446-01
PROJECT LOCATION 71 W Felton Rd, Cartersville, Georgia

DATE STARTED 07/15/2022 **COMPLETED** 07/15/2022
GROUND ELEVATION **HOLE SIZE**
DRILLING CONTRACTOR ArcOne
GROUND WATER LEVELS:
DRILLING METHOD 2.25 Hollow Stem Auger
AT TIME OF DRILLING --- not encountered
LOGGED BY Grace Hamilton **CHECKED BY**
AT END OF DRILLING ---
NOTES Automatic Hammer with Efficiency=90%
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY - inch (RQD - inch.)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)
0		Topsoil					
		Silt; trace sand, very stiff; gray white with tan (residuum)	SPT 1	12	10-9-10 (19)		
		Trace clay, firm; gray with dark orange tan	SPT 2	12	6-4-4 (8)		
5							
		Trace rock fragments, trace mica, very stiff	SPT 3	16	4-10-13 (23)		
10							
		Partially weathered rock: sampled as silt; some sand, trace rock fragments, hard; light gray with light tan	SPT 4	2	50/2"		
15							



Boring terminated at 15.0 feet.

BORING NUMBER B-15

United Consulting Group

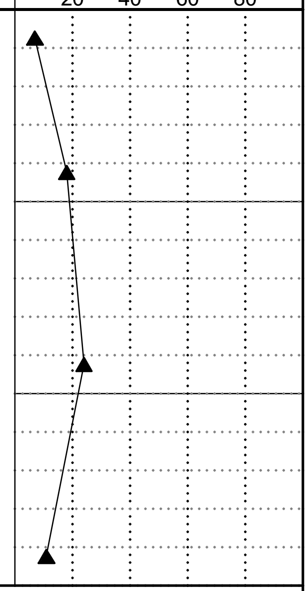
CLIENT The Macallan Group
PROJECT NAME Cloverleaf Cartersville
PROJECT NUMBER MACPR-22-GA-06446-01
PROJECT LOCATION 71 W Felton Rd, Cartersville, Georgia

DATE STARTED 07/15/2022 **COMPLETED** 07/15/2022
GROUND ELEVATION **HOLE SIZE**
DRILLING CONTRACTOR ArcOne
GROUND WATER LEVELS:
DRILLING METHOD 2.25 Hollow Stem Auger
AT TIME OF DRILLING --- not encountered
LOGGED BY Grace Hamilton **CHECKED BY**
AT END OF DRILLING ---
NOTES Automatic Hammer with Efficiency=90%
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY - inch (RQD - inch.)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)
0		Topsoil					
		Silt; trace sand, trace roots, firm; tan with gray (residuum)	SPT 1	10	6-4-3 (7)		
		Sandy; trace clay, some rock fragments, very stiff; red tan and gray	SPT 2	12	17-11-7 (18)		
5							
		Some sand, trace rock fragments; light white tan with gray	SPT 3	12	4-10-14 (24)		
10							
		Sandy; some clay, some rock fragments, stiff; white tan with orange brown	SPT 4	14	7-8-3 (11)		
15							

Boring terminated at 15.0 feet.

▲ SPT N VALUE ▲ 20 40 60 80
PL MC LL 20 40 60 80
☐ FINES CONTENT (%) ☐ 20 40 60 80



United Consulting Group

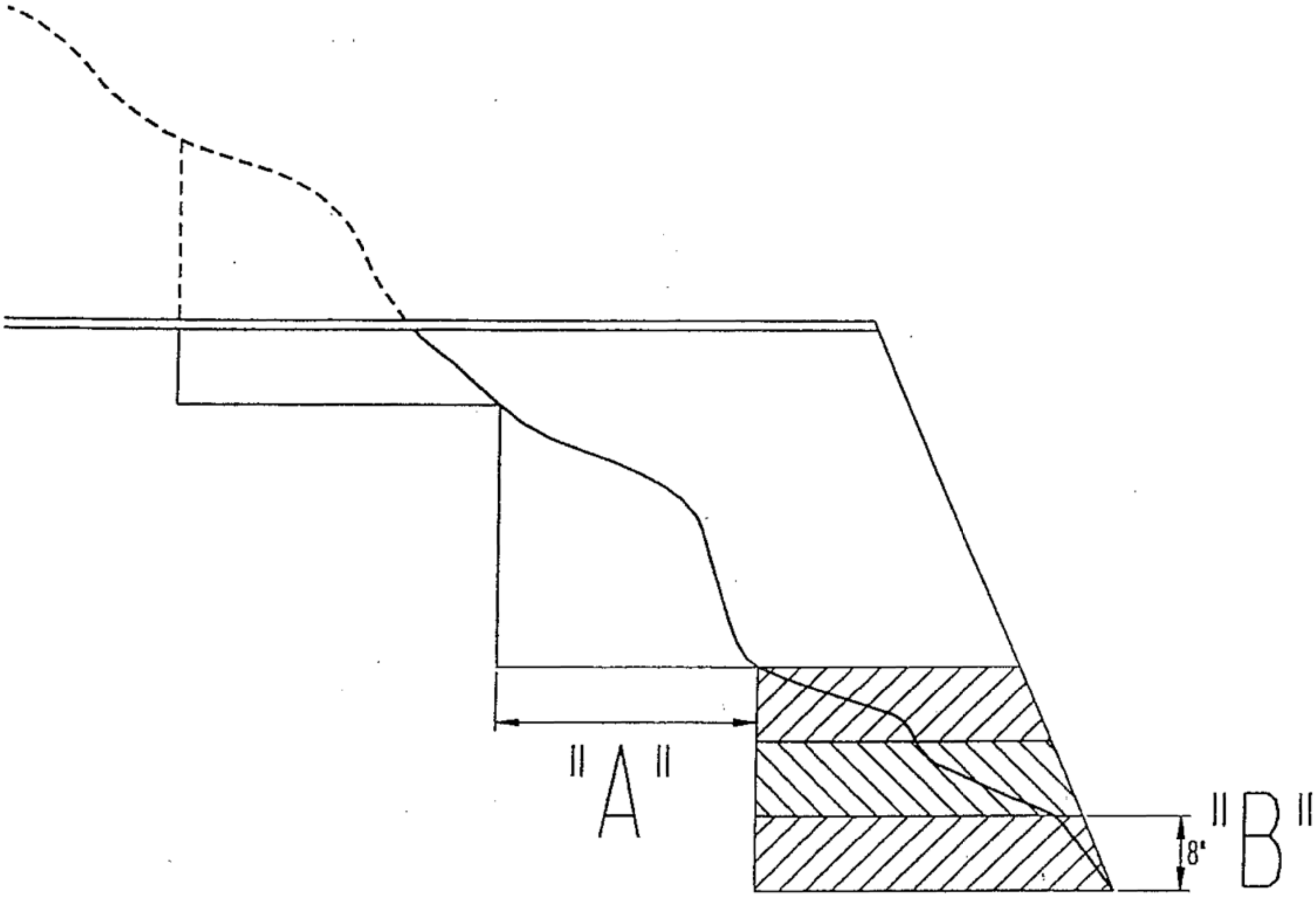
BORING NUMBER B-16

CLIENT The Macallan Group
PROJECT NAME Cloverleaf Cartersville
PROJECT NUMBER MACPR-22-GA-06446-01
PROJECT LOCATION 71 W Felton Rd, Cartersville, Georgia

DATE STARTED 07/15/2022 **COMPLETED** 07/15/2022
GROUND ELEVATION **HOLE SIZE**
DRILLING CONTRACTOR ArcOne
GROUND WATER LEVELS:
DRILLING METHOD 2.25 Hollow Stem Auger
AT TIME OF DRILLING --- not encountered
LOGGED BY Grace Hamilton **CHECKED BY**
AT END OF DRILLING ---
NOTES Automatic Hammer with Efficiency=90%
AFTER DRILLING ---

DEPTH (ft)	GRAPHIC LOG	MATERIAL DESCRIPTION	SAMPLE TYPE NUMBER	RECOVERY - inch (RQD - inch.)	BLOW COUNTS (N VALUE)	POCKET PEN. (tsf)	DRY UNIT WT. (pcf)	▲ SPT N VALUE ▲ 20 40 60 80 / PL MC LL 20 40 60 80 / ☐ FINES CONTENT (%) ☐ 20 40 60 80
0		Topsoil						
		Silt; trace sand, trace clay, very stiff; light orange tan with brown (fill)	SPT 1	10	4-7-9 (16)			▲ 16
		Silt; some clay, trace sand, firm; dark orange tan with gray (residuum)						
5			SPT 2	14	8-4-4 (8)			▲ 8

Refusal at 8.5 feet.
Boring terminated at 8.5 feet.



1. THE ABOVE DIAGRAM ILLUSTRATES A TYPICAL BENCHING FOR PLACEMENT OF FILL ON A SLOPING SURFACE.

2. THE DIAGRAM SHOWS THAT BEFORE FILL IS PLACED, THE FIRST STEP IS CUT INTO THE SLOPE A MAXIMUM DISTANCE OF ABOUT 8 FEET 'A' (ABOUT 3/4 THE WIDTH OF USUAL D-8 BULLDOZER BLADE). SUCCESSIVE LAYERS OF FILL ARE THEN PLACED. BEFORE FINAL LAYER IS PLACED, THE SECOND STEP IS CUT 8 FEET INTO THE SLOPE AND SUCCESSIVE LAYERS ARE AGAIN PLACED.

3. SELECT FILL MATERIAL SHOULD BE PLACED IN 8 INCH LIFTS AND COMPACTED TO THE SPECIFIED DENSITY ('B').

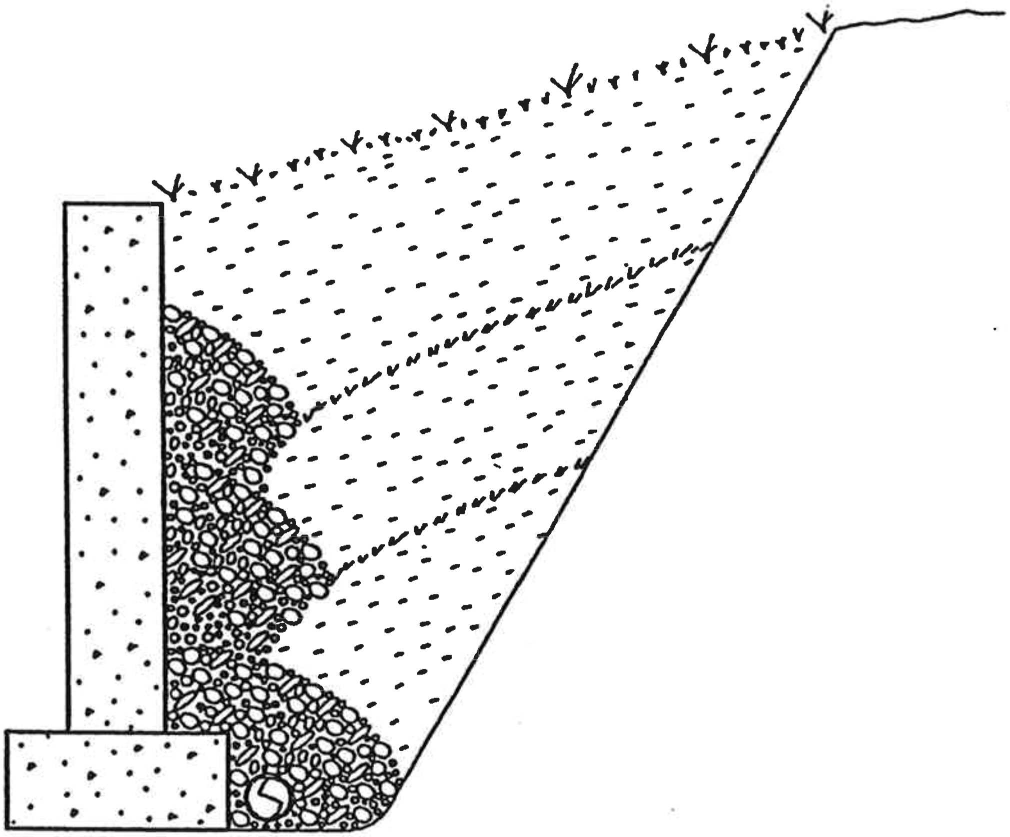
TYPICAL BENCHING DETAIL
NOT TO SCALE

2015/DETAILS/TYPBENCH.DGN

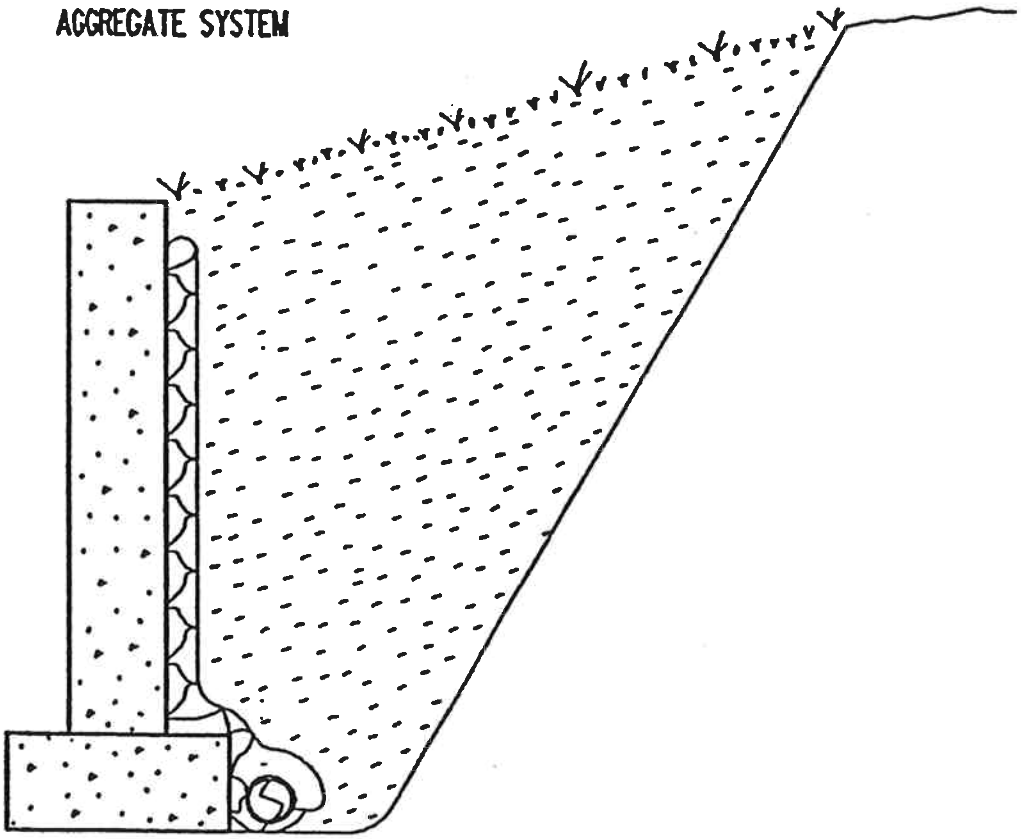
We're here for you

UNITED CONSULTING

625 Holcomb Bridge Road
Norcross, Georgia 30071
770-209-0029 Fax 582-2900
www.unitedconsulting.com



AGGREGATE SYSTEM



MIRADRAIN SYSTEM

RETAINING WALL
DRAIN DETAIL

UNITED CONSULTING
625 HOLCOMB BRIDGE ROAD, NORCROSS, GEORGIA 30071
OFFICE (770)-209-0029 FAX (770)-582-2900

UCOIBENCH

Important Information about This

Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a constructor — a construction contractor — or even another civil engineer. Because each geotechnical- engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply this report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

Geotechnical Engineers Base Each Report on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical-engineering report that was:

- not prepared for you;
- not prepared for your project;
- not prepared for the specific site explored; or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical-engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical-engineering report whose adequacy may have been affected by*: the passage of time; man-made events, such as construction on or adjacent to the site; or natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. *Contact the geotechnical engineer before applying this report to determine if it is still reliable.* A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ — sometimes significantly — from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide geotechnical-construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are Not Final

Do not overrely on the confirmation-dependent recommendations included in your report. *Confirmation-dependent recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's confirmation-dependent recommendations if that engineer does not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A Geotechnical-Engineering Report Is Subject to Misinterpretation

Other design-team members' misinterpretation of geotechnical-engineering reports has resulted in costly problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical-engineering report. Confront that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical-engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical-engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time* to perform additional study. Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and constructors fail to recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Environmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold- prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical- engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely, on Your GBC-Member Geotechnical Engineer for Additional Assistance

Membership in the Geotechnical Business Council of the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you GBC-Member geotechnical engineer for more information.

GBC GEOTECHNICAL BUSINESS COUNCIL of the Geoprofessional Business Association

8811 Colesville Road/Suite G106, Silver Spring, MD 20910
Telephone: 301/565-2733 Facsimile: 301/589-2017
e-mail: info@geoprofessional.org www.geoprofessional.org