Seller's Acknowledgement/Disclaimer

The enclosed documents were prepared by various companies to have an assessment of the property for the seller. These documents were prepared from the year 2000 - 2006. To the best of seller's knowledge, the property has not been altered since that time other than the timber being harvested. The seller has provided these documents to help assist bidders in the due diligence process. However, it is the responsibility of the bidder and/or bidder's representative to verify all information and conduct their own due diligence prior to bidding on the property. The seller makes no warranty as to the accuracy or completeness of these documents.

Geotechnical, Environmental and Materials Engineers

REPORT OF SUBSURFACE EXPLORATION AND GEOTECHNICAL ENGINEERING EVALUATION
EDWARDS LAKE ROAD TRACT
BIRMINGHAM, ALABAMA
BUILDING & EARTH PROJECT NUMBER: 25316

PREPARED FOR:
Sterling Companies LLC
820 Shades Creek Parkway Suite 2300
Birmingham, Alabama 35209

PREPARED BY:
BUILDING & EARTH SCIENCES, INC.

DATE:
SEPTEMBER 2, 2005

BUILDING & EARTH
Geotechnical, Environmental and Materials Engineers
5545 Derby Drive • Birmingham, AL 35210-5414 • Ph: (205) 836-6300 • Fax: (205) 836-9007

September 2, 2005

Sterling Companies LLC
820 Shades Creek Parkway Suite 2300
Birmingham, Alabama 35209

Attention: Mr. Ingram Tynes

Subject: Report of Subsurface Exploration
and Geotechnical Engineering Evaluation
Edwards Lake Road Tract
Trussville, Alabama
Building & Earth Project Number: 25316

Dear Mr. Tynes:

Building & Earth Sciences, Inc. has completed the subsurface exploration and geotechnical engineering evaluation for the subject project. Our services were performed in accordance with our proposal number 7183 dated July 21, 2005.

The purpose of our exploration and evaluation was to help determine the subsurface conditions at the site and perform an engineering analysis to determine the potential impact the conditions will have on site grading and foundation design for the proposed development. This report summarizes the subsurface conditions encountered at the site and contains construction recommendations.

We recommend that additional subsurface information be obtained when the site development plans are completed. The data found in this investigation indicate that the site geotechnical conditions are highly variable. A major fault is mapped on the site. Additional borings, drilled at specific building locations, would reduce the risks and cost over-runs associated with unknown (or unanticipated) subsurface conditions.

We appreciate the opportunity to provide consultation services for the Edwards Lake Road Tract located in Trussville, Alabama. If you have any questions regarding the information in this report or need any additional information, please call us.

Respectfully submitted,
BUILDING & EARTH SCIENCES, INC.

Dale Castleberry

Dale Castleberry
Field Engineer

R. A. Bourquard

Richard A. Bourquard, P.E.
Senior Geotechnical Engineer

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1.0 PROJECT DESCRIPTION

We understand that the proposed development will include construction of approximately 303 lots for residential development. Specific site grading plans are not available, however, the layout is indicated on the Preliminary Master Plan (revised 7-15-05) prepared by Jeff Pate Design. The layout includes two new lakes within the development.

2.0 SCOPE OF SERVICES

The recommendations and considerations presented in this report are based on information gathered during our field exploration. The scope of work included in our proposal is presented below:

a. A description of the geology and subsurface conditions at the soil boring locations.

b. Laboratory test results and presence of unsuitable soils that may impact site costs.

c. Site preparation, grading, and excavation considerations

d. Bearing capacity and settlement analysis

e. Groundwater conditions

An environmental site assessment was not preformed as part of this study. Any mention of unusual odors or materials on the boring logs or in the report is provided for the client's information only. The scope of our services also did not include a mine study evaluation.

3.0 SITE DESCRIPTION

The planned development area is located adjacent to Turncliff Parkway in Trussville, Alabama. The site is a sloping terrain, ranging in elevations from 880 to 1120. The site topography visible from Turncliff Parkway has apparently been altered in the past; however the surface is currently covered in kudzu.

4.0 AREA GEOLOGY

Based on observations and our familiarity with the site, we understand that a portion of the site was used as a dump at some time in the past. The site topography visible from Turncliff Parkway has apparently been altered in the past; however, the surface is currently covered in kudzu. Review of the geologic information shows that a portion of the site was strip mined in the past. Therefore, the rock walls visible from Turncliff Parkway were most likely left as highwalls from the previous mining operation.

The Engineering Geology of Jefferson County publication prepared by the Alabama Geologic Survey (Atlas 14) indicates that the project site is underlain by the Red Mountain formation along the east side of the property. Past strip mines are also shown within the Red Mountain formation. The Red Mountain contains iron ore seams, which were mined in the early 1900's. The iron ore was stripped where the seam was close to the surface, and some underground mining also occurred where the ore beds penetrated too deep below the ground surface for strip mining to be feasible.

5.0 SUBSURFACE EXPLORATION

The subsurface conditions at the site were evaluated by observation and classification of soil samples obtained from a total of ten boring locations. Rock samples were obtained from two boring locations. All boring locations were established in the field by representatives of Building & Earth by measuring right angles and estimating distances from existing building corners. The boring location plan is provided in the Appendix.

5.1 SOIL TEST BORINGS

The borings were initially advanced to the sample depth by augering, and the sampling tools were placed in the open hole. The sampler was then driven into the ground 18 inches by blows from a 140-pound hammer falling 30 inches. The number of blows required to drive the sampler each 6-inch increment was recorded. The initial increment is considered the "seating" blows, where the sampler penetrates any loose or disturbed soil in the bottom of the borehole. The blows required to penetrate the final two increments are added together, and referred to as the Standard Penetration Test (SPT) N-Value. The N-Value, when properly evaluated, gives an indication of the soil's strength and ability to support structural loads. Many factors can affect the SPT N-Value, so this result should not be used exclusively to evaluate soil conditions.

In the upper 10 feet of the soil boring, samples were obtained at 2.5-foot intervals. Below 10 feet, samples were obtained at five-foot intervals until refusal. The samples retrieved from the split-tube sampler were stored in plastic bags on the jobsite, labeled, and transported to our laboratory.

The SPT sampling was performed in general accordance with ASTM D 1586 and D 1587, respectively. The field crew prepared Boring Logs on site summarizing the subsurface conditions at the boring location, which were verified by the project engineer. The Boring Logs are presented in the Appendix of this report.

5.2 ROCK CORING

Rock coring of the underlying bedrock was performed at two locations across the site. The coring was performed in accordance with ASTM Specification D 2113-99. During the coring operations the rock cores were placed in boxes at the site, and transported to our laboratory for identification and classification. At the laboratory the rock was identified and the "recovery" and "rock quality designation" (RQD) was determined. The recovery is the ratio of the length of sample obtained to the length of the run cored, as a percent. The RQD is the percentage of the length

of the core run which has rock segments of moderately hard or harder rock four inches or greater in length, compared to the total length of the run. The percent recovery and RQD are related to rock soundness and continuity. Generalized rock descriptions, percent recovery, and RQD values are shown on the boring records.

6.0 GEOTECHNICAL SITE CHARACTERIZATION

The geotechnical characterization of this site was developed by observation of subsurface features and a review of the subsurface conditions. It should be noted that anomalous conditions can (and likely will) occur due to the geologic conditions at the site, and it will be necessary to obtain additional geotechnical information as the project develops. We are especially concerned about the geological fault that is mapped to cross the northeast corner of the property. Poor rock and soil conditions in this area might have a large impact on project planning and construction costs. We can discuss a recommended plan for investigating this area as the site planning continues. The scope of our services also did not include a mine study evaluation. We do recommend that any underground mine areas encountered during the development process be evaluated for subsidence potential.

6.1 FILL MATERIAL

Soil classified as fill material was encountered at the B-1 boring location. The fill material consisted of soft to stiff sandy clay with organics, metal fragments, and rock fragments. The thickness of the fill ranged from about one to fifteen feet. Standard Penetration Test N-Values ranged from 10 to 12 blows per foot (bpf) within the fill material at the soil boring locations.

6.2 RESIDUAL SOIL

Residual soil is formed by the in-place weathering of the parent rock formation. Residual soil was encountered at all boring locations drilled at the site. The residual soil extended until auger refusal was encountered.

The residual soil at the site varied from soft to very stiff sandy clay to clayey sand with some rock fragments. Standard Penetration Test (SPT) N-Values ranged from 7 to greater than 50 bpf. The higher N-Values appeared to be the result of encountering bedrock within the sample interval. A layer of residual soil exhibiting a soft consistency was encountered at several boring locations immediately above auger refusal depth.

Natural Moisture Content tests performed on selected soil samples yielded test results ranging from 19% to 41%. The natural moisture contents within the upper 10 feet of residual soil generally ranged from 14% to 33%. The higher natural moisture content values were typically encountered in the deeper samples.

Atterberg Limits tests performed on selected soil samples yielded plasticity indices results ranging from 20 to 28. The following table summarizes our Atterberg Limits test results:

BORING LOCATION	DEPTH	LL	PL	PI	USCS
B-2	15'	49	29	20	CL
B-5	5'	49	29	20	CL
B-6	5'	54	26	28	CH

Soils with a liquid limit greater than 50 and a plasticity index greater than 25 usually exhibit significant volume change with varying moisture content and are considered to be highly plastic.

6.3 AUGER REFUSAL

Auger refusal is the drilling depth at which the borehole can no longer be advanced using standard soil drilling techniques. Refusal usually indicates that rock has been encountered in the borehole. However, the rock causing refusal does not necessarily indicate the top of continuous bedrock. The following table summarizes the auger refusal depths encountered during our initial exploration:

Boring Number	Auger Refusal Depth- Ft.	Notes
B-1	32	
B-2	25	
B-3	13	Off-set boring refused at 11 feet
B-4	16	
B-5	20	Off-set boring refused at 16 feet
B-6	33	
B-7	2	Off-set borings refused at less than 2 feet, and less than 2 feet
B-8	16	Off-set boring refused at 8 feet
B-9	5	Off-set borings refused at 3 feet, and 4.5 feet.

6.4 ROCK CORE

Rock cores were obtained from two locations within the site. The underlying rock at the site was identified as hard weathered sandstone.

The core recovery ratios and RQD values ranged between 0% and 66.7%. The quality of the rock mass, based on RQD values, ranged from very poor to fair. The recovery ratios and RQDs of the rock encountered are summarized in the Table below. The rock cores are described on the Boring Logs included in the Appendix.

SUMMARY OF RECOVERY RATIOs and RQDs

Boring Location		Recovery Ratio (%)	RQD (%)
B-1	**Depth**		
First Run	32' to 34'	8.3	0
Second Run	34' to 37'	75	50
Third Run	37' to 42'	70	50
Fourth Run	42' to 47'	60	33.3
Fifth Run	47' to 52'	63.3	23.3
Sixth Run	52' to 57'	88.3	66.7
Seventh Run	57' to 62'	83.3	35.8
Eight Run	62' to 67'	23.3	0
Ninth Run	67' to 72'	16.7	0
Tenth Run	72' to 75'	5.6	0
B-8			
First Run	18' to 23'	40	18.3
Second Run	23' to 28'	36.7	7.5
Third Run	28' to 38'	33.3	0
Fourth Run	38' to 40'	68.8	0

6.5 GROUNDWATER IN THE BOREHOLES

Free water was encountered in borings B-1 and B-6 at respective depths of 28 and 25 feet. Please note that short-term water level readings are not necessarily an accurate indication of the actual groundwater level. Also, fluctuations in the water level can occur due to seasonal rainfall. Water levels as observed within the site are accurate only for the time and date that the observations were made. Long term borehole monitoring was not included as part of this exploration.

7.0 SITE GRADING CONSIDERATIONS

Grading plans had not been developed at the time this report was prepared. The comments provided below are based on general construction considerations. We can provide additional site preparation recommendations when the grading plan is finalized.

7.1 SITE PREPARATION

The site is located in an area that has been developed for some time so there is a potential that past structures once occupied the site. Prior to the start of construction, we recommend that all remnant foundations and existing utility lines associated with previous construction be removed from the construction area.

7.2 PROOFROLLING

We recommend that all areas that are at subgrade or will require fill, be evaluated by the geotechnical engineer prior to fill placement. This evaluation may include proofrolling with a heavy vehicle with rubber tires prior to fill placement. The proofrolling will help densify the near surface soils and identify soils that may cause difficulty such as pumping or low compaction after the first lift of soil is placed.

7.3 UNDERCUTTING

Soil classified as fill material was encountered at the B-1 boring location. The fill material consisted of soft to stiff sandy clay with organics, metal fragments, and rock fragments. The fill material encountered at the boring locations was judged as inadequate to support the anticipated structural loads. Undercutting of the existing fill material will be required within the extent of the building footprint. The thickness of the fill ranged from about one to fifteen feet. We recommend that any fill material which could adversely affect the bearing capacity of the scheduled lots be removed from the site.

Atterberg Limits test results of representative soil samples indicated that the residual soils at the site exhibit characteristics of both low and highly plastic clays. Depending on the site grading and building locations, undercutting could be required if highly plastic clays are encountered at design subgrade elevations.

7.4 EXCAVATION CONSIDERATIONS

The subject site is underlain by the Red Mountain formation. It is a common occurrence within this geologic formation for isolated boulders or rock seams to be present within the soil strata. The contractor should acknowledge that some hard rock excavation (blasting) could be required during grading operations or foundation installation. We recommend that both the specifications and bid documents address hard rock excavation if encountered during construction.

7.5 STRUCTURAL FILL

We recommend that the structural soil fill be composed of material with a maximum density in excess of 100 pcf, Plasticity Index less than 25, and Liquid Limit less than 50. The laboratory tests indicated that the on-site residual soils would be suitable for re-use as engineered fill under structures. Generally, the highly plastic clays should be used below two to three feet of design subgrade elevations under pavements.

Our associate retrieved two bulk samples from on site boring locations for a Standard Proctor to be run on in accordance with ASTM D-698. Samples taken for Proctor tests were arbitrarily selected by our associate in an attempt to obtain two distinct residual soils. Listed below are the results for the tests run:

Boring Location	Description	Maximum Dry Density (PCF)	Optimum Moisture Content (%)
B-1	yellowish brown sandy clay	113.5	14
B-3	red sandy clay	130.5	11.5

The structural fill should be compacted to a minimum of 98% of the Standard Proctor value, and within 2±% of the optimum moisture as determined by ASTM D-698. The specifications should state that both density and moisture requirements should be met. The lifts should not exceed 8 to 12 inches thick, depending on the compaction equipment used. Density and moisture tests should be performed on each lift prior to placement of subsequent lifts. A commonly used testing criterion is one test per 2,500 square feet per lift in building areas, and one test per 5,000 square feet in parking or drive areas.

7.6 ROCK FILL

Rock fill may be used for structural fill. The following recommendations are provided for rock fill placed in building areas:

- All rock fill shall be constructed of sound, durable rock. It is important that a sufficient amount of compacted fines surround the rock fragments. Such a practice will aid in reducing the magnitude of future settlements of the rock fills. The maximum rock particle size shall be limited to about 12 inches.

- The practice of filling in lifts must be maintained and shall be conducted under the observation of the geotechnical engineer or his representative. A compactor equivalent to a Caterpillar 815 must be used on rock fills. Water should be applied to the fill to aid compaction.

- Isolated large boulders should be segregated from the building fill, and placed beneath parking and drive areas.

- All voids shall be completely filled with compacted gravel sized rock and soil. Rock fill beneath buildings shall contain a minimum of 60% soil fines (material passing #4 sieve). The soil fines can be blended with the rock, or created by the blasting or compaction process. Rock fill should de placed in maximum 16 inch lifts, sufficiently compacted, and moisture conditioned to create a tight, stable fill.

The upper layer of rock fill shall be topped with a layer of compacted soil not less than four (4) feet compacted depth building areas. The soil cap shall be compacted to the project requirements.

7.7 SETTLEMENT MONITORING

The site plan indicates that the building foundation support material will range from hard rock to as much as 80 feet of fill. Even well-compacted fill settles, primarily due to the weight of the fill itself. The settlement usually occurs during and shortly after the fill is placed.

For this reason, in structural fill greater than about 30 feet thick, we recommend a waiting period between the completion of site grading and building construction to allow most of the settlement to take place. The actual rate of settlement should be determined after fill placement by making periodic level readings at least weekly on monitoring points on the surface of the fill pad. Based on these readings, we can assess when construction of the structures can commence.

7.8 CUT/FILL SLOPES

The following table provides our recommendations for cut and fill slopes:

Material Type	Recommended Maximum Slope	Notes
cut slope in soil	2(H):1(V)	Appropriate to 20' maximum height
cut slope in rock		evaluated on site and location - see discussion below
Fill slope < 20 feet	2(H):1(V)	
Fill slope > 20 feet	2.5(H):1(V)	

The stability of rock cuts is a function of the geological conditions at the cut location. Joint and bedding orientation, discontinuities, height of cut, etc. will impact the recommended slope configuration. In favorable rock conditions, cut slopes of 1(H):2(V) are typical.

8.0 SUBGRADE REHABILITATION

The floor slabs and pavements are typically not constructed for an extended period after the mass grading is complete. The subgrade soils often become disturbed during the period between mass grading and construction of surface improvements. The amount (and depth) of disturbance will vary with soil type, weather conditions, construction traffic, and drainage. The subgrade soil at the site is plastic, and will be easily disturbed by construction traffic, especially during and after periods of wet weather.

The engineer should evaluate the subgrade soil during final grading, and prior to stone placement. The purpose of the recommended evaluation is to verify that the subgrade is suitable to receive pavement base or floor slabs. The final evaluation may include proofrolling or density tests. The contractor should be aware that the on-site soils are moisture sensitive and deteriorate significantly when exposed to moisture.

Rehabilitation of the subgrade can become a point of controversy when different contractors are responsible for mass and final grading. We recommend that the construction documents state specifically who will be responsible for maintaining and rehabilitating the subgrade. We note that rehabilitation may include wetting, mixing, and recompaction of subgrade soils, which have dried excessively, as well as drying of soils, which contain excessive moisture.

9.0 CONSTRUCTION MONITORING

Field verification of site conditions is an essential part of the services provided by the geotechnical consultant. In order to confirm our recommendations, it will be necessary for Building & Earth personnel to make periodic visits to the site during site grading and foundation installation. We will be happy to prepare a proposal for construction monitoring services based on the construction schedule and your risk management preferences.

Typical construction monitoring services are listed below:

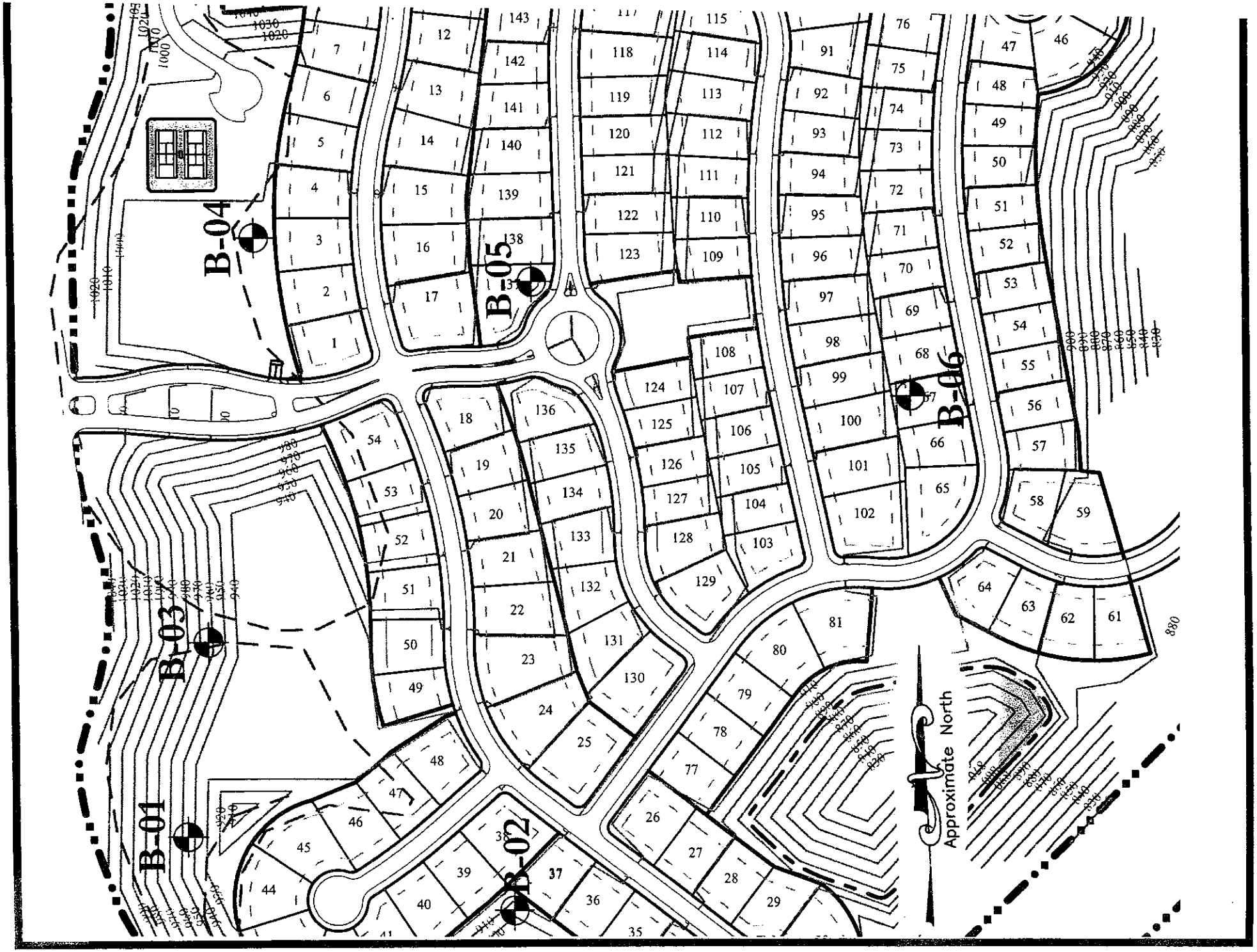
- Periodic observation and consultation by a member of our engineering staff during site grading.
- Field density tests during structural fill placement.
- Observation and verification of the bearing surfaces exposed after foundation excavation.
- Observation and documentation of the drilled pier installation process.
- Molding and testing of concrete cylinders.
- Structural steel testing.

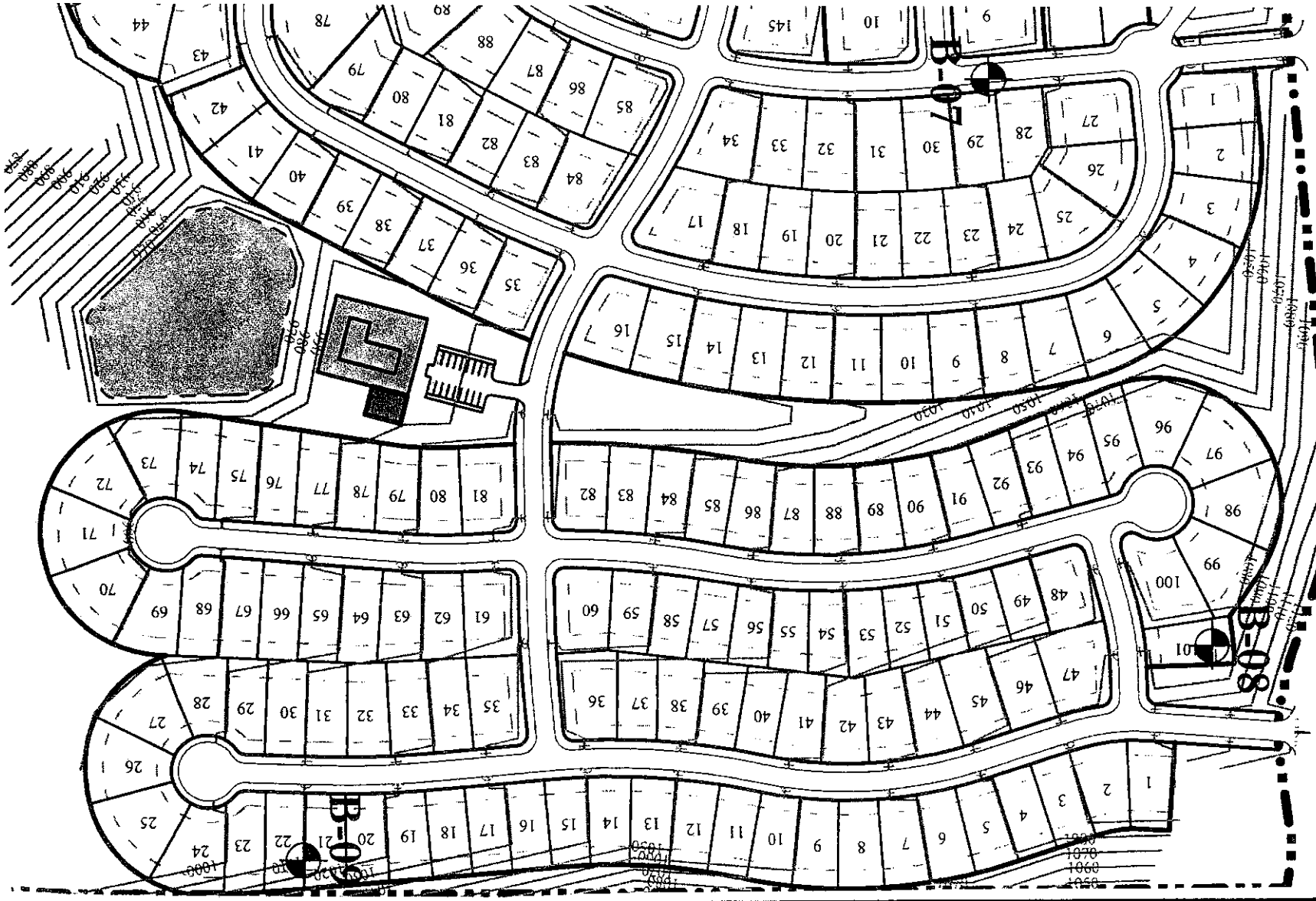
10.0 CLOSING

This report was prepared for the exclusive use of the **Sterling Companies LLC** for specific application to the subject project. The information in this report is not transferable. This report should not be used for a different development on the same property without first being evaluated by the engineer. The recommendations in this report were based on the information obtained from our field exploration, our understanding of the project, laboratory analysis and engineering judgment regarding conditions between borings. It will be necessary to confirm the anticipated subsurface conditions after the construction scheme and during site grading and foundation installation.

Structural loading conditions were not finalized at the time this report was prepared. Upon completion of final drawings and structural loading conditions, we should be provided the opportunity to review our recommendations in regard to final loading conditions. If the final structural loading conditions are different from our assumptions, then a supplemental report should be submitted to reflect such changes.

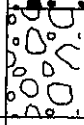
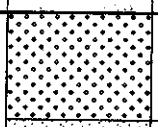
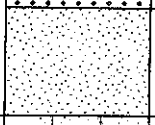
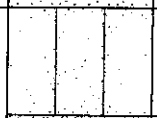
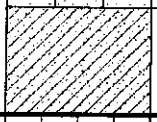
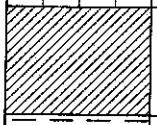
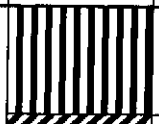
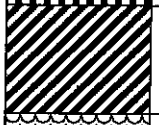
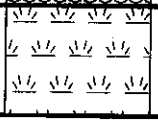
This report is intended for use during design and preparation of specifications and may not address all conditions at the site at the time of construction. Contractors reviewing this information should acknowledge that this document is for preliminary design information only.


B-01
B-02
B-03
B-04
B-05
B-06
Approximate North



REFERENCE USED TO PRODUCE THIS DRAWING:	BORING LOCATION PLAN		BUILDING & EARTH	
Electronic copy of "Preliminary Master Plan"- revised 07/15/05. Prepared by Jeff Pate Design	**PROJECT NAME:** Edwards Lake Road Tract Trussville, AL	**PROJECT NO:** 25316	**SCALE:** 1"=200'	**DATE:** 09-01-05

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS		TYPICAL DESCRIPTIONS
			GRAPH	LETTER	
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	(LITTLE OR NO FINES)		GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES, LITTLE OR NO FINES
		GRAVELS WITH FINES		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
		(APPRECIABLE AMOUNT OF FINES)		GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% OF MATERIAL IS LARGER THAN NO. 200 SIEVE SIZE	SAND AND SANDY SOILS	CLEAN SANDS		SW	WELL-GRADED SANDS, GRAVELLY SANDS, LITTLE OR NO FINES
		(LITTLE OR NO FINES)		SP	POORLY-GRADED SANDS, GRAVELLY SAND, LITTLE OR NO FINES
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES		SM	SILTY SANDS, SAND - SILT MIXTURES
		(APPRECIABLE AMOUNT OF FINES)		SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS AND VERY FINE SANDS, ROCK FLOUR, SILTY OR CLAYEY FINE SANDS OR CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% OF MATERIAL IS SMALLER THAN NO. 200 SIEVE SIZE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS FINE SAND OR SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS OF MEDIUM TO HIGH PLASTICITY, ORGANIC SILTS
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

BUILDING & EARTH SCIENCES, INC.

5545 Derby Drive Birmingham, AL 35210 (205) 836-6300

LOG OF BORING: B-01

Project Name: Edwards Lake Road Tract
Project Number: 25316
Drilling Method: Hollow stem auger
Boring Location:

Project Location: Birmingham AL
Date Drilled: 8/15/02
Surface Elevation: 997

DEPTH (ft)	SAMPLE TYPE	SAMPLE NO.	BLOWS PER 6" REC % RQD %	N-Value / Qu (tsf) / Atterberg Limits / % Moisture	SOIL DESCRIPTION	GRAPHIC	REMARKS
		1	7-6-6		Stiff, brown with gray, SILTY CLAY with rock fragments		
5		2	5-6-6				
		3	3-5-7		'" red		
		4	9-6-4		ORGANIC ROCKS, plastics with red clay and rocks		
10							
		5	4-5-6		15.0 982.0		
15							
		6	3-3-4		Medium stiff, red, CLAYEY SAND		
20							
		7	8-7-7				
25					▽		
		8	2-2-10		'" moist with chert		Groundwater encountered at 28 feet at time of boring
30					32.0 965.0		
		1	REC=8		Auger refusal at 32 feet. Rock coring began at 32 feet and ended at 75 feet.		Backfilled 8/15/05

SAMPLE TYPE ☒ Split Spoon ⊟ Rock Core

N-VALUE STANDARD PENETRATION RESISTANCE (ASTM D-1586)
% MOISTURE PERCENT NATURAL MOISTURE CONTENT
▽ GROUNDWATER LEVEL IN THE BOREHOLE
Qu UNCONFINED COMPRESSIVE STRENGTH ESTIMATE FROM POCKET PENETROMETER TEST
REC RECOVERY
RQD ROCK QUALITY DESIGNATION
UD UNDISTURBED

LOG OF BORING 2 25316E-1.GPJ BESI.GDT 9/1/05

BUILDING & EARTH SCIENCES, INC.

5545 Derby Drive Birmingham, AL 35210 (205) 836-6300

LOG OF BORING: B-01

Project Name: Edwards Lake Road Tract
Project Number: 25316
Drilling Method: Hollow stem auger
Boring Location:

Project Location: Birmingham AL
Date Drilled: 8/15/02
Surface Elevation: 997

DEPTH (ft)	SAMPLE TYPE	SAMPLE NO.	BLOWS PER 6" REC % RQD %	N-Value / Qu (tsf) / Atterberg Limits / % Moisture	SOIL DESCRIPTION	GRAPHIC	REMARKS
		2	REC=75	>>			
40		3	REC=70	>>	Brown WEATHERED SANDSTONE		
45		4	REC=60	>>			
50		5	REC=63	>>			
55		6	REC=88	>>			
60		7	REC=83	>>			
65		8	REC=23		Dark red WEATHERED SANDSTONE		
		9	REC=17				

SAMPLE TYPE ☒ Split Spoon ⊡ Rock Core

N-VALUE STANDARD PENETRATION RESISTANCE (ASTM D-1586)
% MOISTURE PERCENT NATURAL MOISTURE CONTENT
▽ GROUNDWATER LEVEL IN THE BOREHOLE
Qu UNCONFINED COMPRESSIVE STRENGTH ESTIMATE FROM POCKET PENETROMETER TEST
REC RECOVERY
RQD ROCK QUALITY DESIGNATION
UD UNDISTURBED

LOG OF BORING 2 25316E-1.GPJ BESI.GDT 9/1/05

BUILDING & EARTH SCIENCES, INC.

5545 Derby Drive Birmingham, AL 35210 (205) 836-6300

LOG OF BORING: B-01

Project Name: Edwards Lake Road Tract
Project Number: 25316
Drilling Method: Hollow stem auger
Boring Location:

Project Location: Birmingham AL
Date Drilled: 8/15/02
Surface Elevation: 997

DEPTH (ft)	SAMPLE TYPE	SAMPLE NO.	BLOWS PER 6" REC % RQD %	N-Value / Qu (tsf) / Atterberg Limits / % Moisture	SOIL DESCRIPTION	GRAPHIC	REMARKS
75		10	REC=6		"		
80							
85							
90							
95							
100							

N-Value: 10 20 30 40
Qu (tsf): 1 2 3 4
Atterberg Limits: 20 40 60 80
% Moisture: 20 40 60 80

SAMPLE TYPE ☒ Split Spoon ▮ Rock Core

N-VALUE STANDARD PENETRATION RESISTANCE (ASTM D-1586)
% MOISTURE PERCENT NATURAL MOISTURE CONTENT
▽ GROUNDWATER LEVEL IN THE BOREHOLE
Qu UNCONFINED COMPRESSIVE STRENGTH ESTIMATE FROM POCKET PENETROMETER TEST
REC RECOVERY
RQD ROCK QUALITY DESIGNATION
UD UNDISTURBED

LOG OF BORING 2 25316E-1.GPJ BESI.GDT 9/1/05

BUILDING & EARTH SCIENCES, INC.

5545 Derby Drive Birmingham, AL 35210 (205) 836-6300

LOG OF BORING: B-02

Project Name: Edwards Lake Road Tract
Project Number: 25316
Drilling Method: Hollow stem auger
Boring Location:

Project Location: Birmingham AL
Date Drilled: 8/15/02
Surface Elevation: 945

DEPTH (ft)	SAMPLE TYPE	SAMPLE NO.	BLOWS PER 6" REC % RQD %	N-Value / Qu (tsf) / Atterberg Limits / % Moisture	SOIL DESCRIPTION	GRAPHIC	REMARKS
		1	21-16-50/3"		Hard, yellowish-brown CLAY with rock fragments		
5		2	20-30-29				
		3	22-25-27				
		4	9-11-5		Very stiff, brown,SANDY CLAY		
10							
		5	8-3-6		"' stiff, brown with red		Sample No. 5 Atterberg Limit Test Results Liquid Limit = 49 Plastic Limit = 29 Plasticity Index = 20 USCS =
15							
		6	22-19-50/5"				
20							
		7	45-50/2"		"' brown with rock fragments		
25					25.0 920.0 Auger refusal at 25 feet		
30							Backfilled 8/16/05 No groundwater encountered at time of boring

SAMPLE TYPE ☒ Split Spoon

N-VALUE STANDARD PENETRATION RESISTANCE (ASTM D-1586)
% MOISTURE PERCENT NATURAL MOISTURE CONTENT
▽ GROUNDWATER LEVEL IN THE BOREHOLE
Qu UNCONFINED COMPRESSIVE STRENGTH ESTIMATE FROM POCKET PENETROMETER TEST
REC RECOVERY
RQD ROCK QUALITY DESIGNATION
UD UNDISTURBED

LOG OF BORING 2 25316E-1.GPJ BESI.GDT 9/1/05

BUILDING & EARTH SCIENCES, INC.

5545 Derby Drive Birmingham, AL 35210 (205) 836-6300

LOG OF BORING: B-03

Project Name: Edwards Lake Road Tract
Project Number: 25316
Drilling Method: Hollow stem auger
Boring Location:

Project Location: Birmingham AL
Date Drilled: 8/15/02
Surface Elevation: 1018

DEPTH (ft)	SAMPLE TYPE	SAMPLE NO.	BLOWS PER 6" REC % RQD %	N-Value / Qu (tsf) / Atterberg Limits / % Moisture	SOIL DESCRIPTION	GRAPHIC	REMARKS
		1	10-21-10		Dense, dark brown, CLAYEY SAND with rock fragments		
5		2	11-10-50/5"		Very dense, yellowish-brown, CLAYEY SAND		
		3	14-10-10		Very stiff, yellowish-brown, SANDY CLAY		
10		14	13-4-13		13.0 1005.0		
15					Auger refusal at 11 feet. Boring offset 10 feet south to continue log Auger refusal at 13 feet		
20							
25							
30							Backfilled 8/15/05

SAMPLE TYPE ☒ Split Spoon

N-VALUE STANDARD PENETRATION RESISTANCE (ASTM D-1586)
% MOISTURE PERCENT NATURAL MOISTURE CONTENT
▽ GROUNDWATER LEVEL IN THE BOREHOLE
Qu UNCONFINED COMPRESSIVE STRENGTH ESTIMATE FROM POCKET PENETROMETER TEST
REC RECOVERY
RQD ROCK QUALITY DESIGNATION
UD UNDISTURBED

LOG OF BORING 2 25316E-1.GPJ BESI.GDT 9/1/05

BUILDING & EARTH SCIENCES, INC.

5545 Derby Drive Birmingham, AL 35210 (205) 836-6300

LOG OF BORING: B-04

Project Name: Edwards Lake Road Tract
Project Number: 25316
Drilling Method: Hollow stem auger
Boring Location:

Project Location: Birmingham AL
Date Drilled: 8/16/05
Surface Elevation: 1060

DEPTH (ft)	SAMPLE TYPE	SAMPLE NO.	BLOWS PER 6" REC % RQD %	N-Value / Qu (tsf) / Atterberg Limits / % Moisture	SOIL DESCRIPTION	GRAPHIC	REMARKS
	⊠	1	7-6-24		Very stiff, red and gray CLAYEY SAND with distinct laminations		
	⊠	2	29-50/4"		Very dense CLAYEY SAND with tree root fibers		
5	⊠	3	33-50/3"		" brown with rock fragments		
	⊠	4	21-50/5"		" with no rock fragments		
10							
	⊠	5	14-15-26		" dark red		
15					16.0 1044.0 Auger refusal at 16 feet		Backfilled 8/16/05 No groundwater was encountered at time of boring
20							
25							
30							

N-Value: 10 20 30 40
Qu (tsf): 1 2 3 4
Atterberg Limits: 20 40 60 80
% Moisture: 20 40 60 80

SAMPLE TYPE ⊠ Split Spoon

N-VALUE STANDARD PENETRATION RESISTANCE (ASTM D-1586)
% MOISTURE PERCENT NATURAL MOISTURE CONTENT
▽ GROUNDWATER LEVEL IN THE BOREHOLE
Qu UNCONFINED COMPRESSIVE STRENGTH ESTIMATE FROM POCKET PENETROMETER TEST
REC RECOVERY
RQD ROCK QUALITY DESIGNATION
UD UNDISTURBED

LOG OF BORING 2 25316E-1.GPJ BESI.GDT 9/1/05

BUILDING & EARTH SCIENCES, INC.

5545 Derby Drive Birmingham, AL 35210 (205) 836-6300

LOG OF BORING: B-05

Project Name: Edwards Lake Road Tract
Project Number: 25316
Drilling Method: Hollow stem auger
Boring Location:

Project Location: Birmingham AL
Date Drilled: 8/16/05
Surface Elevation: 1019

DEPTH (ft)	SAMPLE TYPE	SAMPLE NO.	BLOWS PER 6" REC % RQD %	N-Value / Qu (tsf) / Atterberg Limits / % Moisture	SOIL DESCRIPTION	GRAPHIC	REMARKS
	⊠	1	10-12-15		Very stiff, red with gray, SANDY CLAY		Less than 2" topsoil
5	⊠	2	12-19-13		Very stiff, brown, SANDY CLAY with rock fragments		Sample No. 2 Atterberg Limit Test Results Liquid Limit = 49 Plastic Limit = 29 Plasticity Index = 20 USCS =
	⊠	3	6-10-15		"' yellowish-red and gray		
					8.5 Dense, dark brown SAND 1010.5		
10	⊠	4	11-14-26				
15	⊠	5	32-50/5"	>>	"' very dense		
					20.0 999.0		
20					Auger refusal at 16 feet. Boring offset 10 feet north to continue log Auger refusal at 20 feet		
25							
30							Backfilled 8/16/05 No groundwater encountered at time of boring

SAMPLE TYPE ⊠ Split Spoon

N-VALUE STANDARD PENETRATION RESISTANCE (ASTM D-1586)
% MOISTURE PERCENT NATURAL MOISTURE CONTENT
▽ GROUNDWATER LEVEL IN THE BOREHOLE
Qu UNCONFINED COMPRESSIVE STRENGTH ESTIMATE FROM POCKET PENETROMETER TEST
REC RECOVERY
RQD ROCK QUALITY DESIGNATION
UD UNDISTURBED

LOG OF BORING 2 25316E-1.GPJ BESI.GDT 9/1/05

BUILDING & EARTH SCIENCES, INC.

5545 Derby Drive Birmingham, AL 35210 (205) 836-6300

LOG OF BORING: B-06

Project Name: Edwards Lake Road Tract
Project Number: 25316
Drilling Method: Hollow stem auger
Boring Location:

Project Location: Birmingham AL
Date Drilled: 8/16/05
Surface Elevation: 943

DEPTH (ft)	SAMPLE TYPE	SAMPLE NO.	BLOWS PER 6" REC % RQD %	N-Value / Qu (tsf) / Atterberg Limits / % Moisture	SOIL DESCRIPTION	GRAPHIC	REMARKS
		1	6-9-9		Very stiff, reddish-brown, SANDY CLAY with rock fragments		Less than 2" topsoil
5		2	21-24-27	>>			Sample No. 2 Atterberg Limit Test Results Liquid Limit = 54 Plastic Limit = 26 Plasticity Index = 28 USCS =
		3	13-11-15				
10		4	13-14-16		Very stiff, reddish-brown, SANDY CLAY with rock fragments		Blow count could be exaggerated by rock content
		5	24-6-3		" stiff with rock fragments		
15					18.5 924.5		
20		6	27-19-9		Medium dense, brown, CLAYEY SAND		
		7	50/1"	>>	" very dense		
25					▽		Groundwater encountered at 25 feet at time of boring
		8	8-8-16		" medium dense		
30					33.0 910.0		Backfilled 8/16/05
					Auger refusal at 33 feet		

SAMPLE TYPE ☒ Split Spoon

N-VALUE STANDARD PENETRATION RESISTANCE (ASTM D-1586)
% MOISTURE PERCENT NATURAL MOISTURE CONTENT
▽ GROUNDWATER LEVEL IN THE BOREHOLE
Qu UNCONFINED COMPRESSIVE STRENGTH ESTIMATE FROM POCKET PENETROMETER TEST
REC RECOVERY
RQD ROCK QUALITY DESIGNATION
UD UNDISTURBED

LOG OF BORING 2 25316E-1.GPJ BESI.GDT 9/1/05

BUILDING & EARTH SCIENCES, INC.

5545 Derby Drive Birmingham, AL 35210 (205) 836-6300

LOG OF BORING: B-07

Project Name: Edwards Lake Road Tract
Project Number: 25316
Drilling Method: Hollow stem auger
Boring Location:

Project Location: Birmingham AL
Date Drilled: 8/16/05
Surface Elevation: 1082

DEPTH (ft)	SAMPLE TYPE	SAMPLE NO.	BLOWS PER 6" REC % RQD %	N-Value / Qu (tsf) / Atterberg Limits / % Moisture	SOIL DESCRIPTION	GRAPHIC	REMARKS
0	☒	1	50/5"	>>□	Very dense, reddish-brown, CLAYEY SAND with root fibers 2.0 1080.0		Exposed weathered rock at surface new boring location
					Auger refusal at 2 feet. Boring offset North 10 feet Auger refusal again at 2 feet. Boring offset North 10 feet		
5							
10							
15							
20							
25							
30							Backfilled 8/16/05 No groundwater encountered at time of boring

N-Value □ 10 20 30 40
▲ Qu (tsf) ▲ 1 2 3 4
Atterberg Limits 20 40 60 80
● % Moisture ● 20 40 60 80

SAMPLE TYPE ☒ Split Spoon

N-VALUE STANDARD PENETRATION RESISTANCE (ASTM D-1586)
% MOISTURE PERCENT NATURAL MOISTURE CONTENT
▽ GROUNDWATER LEVEL IN THE BOREHOLE
Qu UNCONFINED COMPRESSIVE STRENGTH ESTIMATE FROM POCKET PENETROMETER TEST
REC RECOVERY
RQD ROCK QUALITY DESIGNATION
UD UNDISTURBED

LOG OF BORING 2 25316E-1.GPJ BESI.GDT 9/1/05

BUILDING & EARTH SCIENCES, INC.

5545 Derby Drive Birmingham, AL 35210 (205) 836-6300

LOG OF BORING: B-08

Project Name: Edwards Lake Road Tract
Project Number: 25316
Drilling Method: Hollow stem auger
Boring Location:

Project Location: Birmingham AL
Date Drilled: 8/16/05
Surface Elevation: 1122

DEPTH (ft)	SAMPLE TYPE	SAMPLE NO.	BLOWS PER 6" REC % RQD %	N-Value / Qu (tsf) / Atterberg Limits / % Moisture	SOIL DESCRIPTION	GRAPHIC	REMARKS
		1	23-25-12		Dense, red, clayey SAND		
		2	13-50/5"		"very dense, reddish-brown with rock fragments		
5		3	15-20-18		" dense		
		4	21-50/5"		" very dense		
10		5	50/5"				
15					16.0 1106.0		
					Auger refusal at 8 feet. Boring offset 10 feet North to continue log Auger refusal at 16 feet Rock coring began at 18 feet		
20		1	REC=40		Dark red WEATHERED SANDSTONE		
25		2	REC=37				
30		3	REC=33				Backfilled 8/16/05 No groundwater encountered at time of boring

SAMPLE TYPE ☒ Split Spoon ▮ Rock Core

N-VALUE STANDARD PENETRATION RESISTANCE (ASTM D-1586)
% MOISTURE PERCENT NATURAL MOISTURE CONTENT
▽ GROUNDWATER LEVEL IN THE BOREHOLE
Qu UNCONFINED COMPRESSIVE STRENGTH ESTIMATE FROM POCKET PENETROMETER TEST
REC RECOVERY
RQD ROCK QUALITY DESIGNATION
UD UNDISTURBED

LOG OF BORING 2 25316E-1.GPJ BESI.GDT 9/1/05

BUILDING & EARTH SCIENCES, INC.

5545 Derby Drive Birmingham, AL 35210 (205) 836-6300

LOG OF BORING: B-08

Project Name: Edwards Lake Road Tract
Project Number: 25316
Drilling Method: Hollow stem auger
Boring Location:

Project Location: Birmingham AL
Date Drilled: 8/16/05
Surface Elevation: 1122

DEPTH (ft)	SAMPLE TYPE	SAMPLE NO.	BLOWS PER 6" REC % RQD %	N-Value / Qu (tsf) / Atterberg Limits / % Moisture	SOIL DESCRIPTION	GRAPHIC	REMARKS
40		4	REC=69		"		
45							
50							
55							
60							
65							

N-Value: 10 20 30 40
Qu (tsf): 1 2 3 4
Atterberg Limits: 20 40 60 80
% Moisture: 20 40 60 80

SAMPLE TYPE ☒ Split Spoon ▩ Rock Core

N-VALUE STANDARD PENETRATION RESISTANCE (ASTM D-1586)
% MOISTURE PERCENT NATURAL MOISTURE CONTENT
▽ GROUNDWATER LEVEL IN THE BOREHOLE
Qu UNCONFINED COMPRESSIVE STRENGTH ESTIMATE FROM POCKET PENETROMETER TEST
REC RECOVERY
RQD ROCK QUALITY DESIGNATION
UD UNDISTURBED

LOG OF BORING 2 25316E-1.GPJ BESI.GDT 9/1/05

BUILDING & EARTH SCIENCES, INC.

5545 Derby Drive Birmingham, AL 35210 (205) 836-6300

LOG OF BORING: B-09

Project Name: Edwards Lake Road Tract
Project Number: 25316
Drilling Method: Hollow stem auger
Boring Location:

Project Location: Birmingham AL
Date Drilled: 8/15/05
Surface Elevation: 1043

DEPTH (ft)	SAMPLE TYPE	SAMPLE NO.	BLOWS PER 6" REC % RQD %	N-Value (10 20 30 40) / Qu (tsf) (1 2 3 4) / Atterberg Limits (20 40 60 80) / % Moisture (20 40 60 80)	SOIL DESCRIPTION	GRAPHIC	REMARKS
		1	7-11-8		Medium dense, reddish-brown, CLAYEY SAND		
		2	50/4"	>>	" very dense		
5					5.0 1038.0		
					Auger refusal at 3 feet. Boring offset 10 feet south to continue log Auger refusal at 4.5 feet. Boring offset 20 feet north to continue log Auger refusal at 5 feet		
10							
15							
20							
25							
30							Backfilled 8/15/06 No groundwater encountered at time of boring

SAMPLE TYPE ☒ Split Spoon

N-VALUE STANDARD PENETRATION RESISTANCE (ASTM D-1586)
% MOISTURE PERCENT NATURAL MOISTURE CONTENT
▽ GROUNDWATER LEVEL IN THE BOREHOLE
Qu UNCONFINED COMPRESSIVE STRENGTH ESTIMATE FROM POCKET PENETROMETER TEST
REC RECOVERY
RQD ROCK QUALITY DESIGNATION
UD UNDISTURBED

LOG OF BORING 2 25316E-1.GPJ BESI.GDT 9/1/05

Geotechnical, Environmental and Materials Engineers

Important Information About Your Geotechnical Engineering Report

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

The following information is provided to help you manage your risks.

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 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 your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one—not even you*—should apply the 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.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of 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,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- 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 study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the 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 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 construction recommendations included in your report. *Those 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 recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject To Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower 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. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing 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 Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors 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 contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors 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 contractors do not 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 such risks, 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.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental 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 geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Rely on Your Geotechnical Engineer for Additional Assistance

Membership in ASFE exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with your ASFE-member geotechnical engineer for more information.

ASFE

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