ADDENDUM NO. 01

DATE: Tuesday June 21, 2016

PROJECT: City of Sugar Hill EpiCenter

CPL PROJECT NO.: 13886.00

FROM: Clark Patterson Lee
3011 Sutton Gate Drive
Suite 130
Suwanee, GA 30024

TO: Prospective Proposers

This Addendum supplements portions of the original Request for Proposal, the extent of which shall remain, except for the additional information provided herein to assist in preparation of proposals;

1. C2.1 Site Plan
2. C3.1 Grading Plan
3. C4.1 Utility Site Plan
4. C4.2 Utility Site Plan
5. Geotechnical report

Should you have any questions or concerns please do not hesitate to contact us.

END OF ADDENDUM NO. 01

SITE LEGEND

- (A) ACCESSIBLE RAMP, GDOT STD.TYPE A
- (B) WHITE PARKING STRIPE
- (C) 4 INCH THICK CONCRETE SIDEWALK, WIDTH VARIES
- (D) 24 INCH WIDE CURB AND GUTTER
- (E) HANDICAP PARKING SIGN
- (F) 24 INCH WHITE STOP BAR
- (G) HANDICAP STRIPING TO MEET ADA STANDARDS
- (H) TRAFFIC ARROWS (SEE DETAIL SHEET C7.1)
- (I) CONCRETE TRANSFORMER PAD
- (J) STOP SIGN-MUTCD STD R1-1
- (K) BRICK PAVING TO MATCH EXISTING
- (L) MEDIUM DUTY ASPHALT PAVEMENT
- (M) PEDESTRIAN CROSS WALK (TO MEET GDOT STDS)
- (N) RETAINING WALL (SEE ARCHITECTURAL DWGs)
- (O) 6' X 6' CONCRETE LANDING
- (P) HEAVY DUTY CONCRETE
- (Q) BOLLARD

PROJECT SITE DATA:

OWNER/DEVELOPER:	CITY OF SUGAR HILL 5039 WEST BROAD STREET SUGAR HILL, GA 30518
SITE AREA:	3.394 ACRES
PROPOSED USE:	MULTI-USE DEVELOPMENT
ZONING:	LM-CBD LIGHT MANUFACORING
FLOOD NOTE:	THIS TRACT OF LAND DOES NOT LIE WITHIN THE 100 YEAR FLOOD INTERMEDIATE FLOOD ZONE AS PER FEMA COMMUNITY PANEL #13135C0014G, LAST REVISED MARCH 4, 2013.
PARKING:	26 REGULAR SPACES 2 H/C SPACES 28 SPACES PROVIDED*

*DOES NOT INCLUDE PARKING DECK

PROJECT STANDARDS:

MINIMUM FRONT YARD:	50 FEET
MINIMUM SIDE YARD:	20 FEET
MINIMUM REAR YARD:	20 FEET
BUILDING HEIGHT:	50 FEET
MIN.LOT SIZE	43,560 SQ. FEET

OWNER / DEVELOPER

CITY OF SUGAR HILL
5039 WEST BROAD STREET
SUGAR HILL, GA 30518
CONTACT: TROY BESSECHE
PHONE:7770-945-6716
EMAIL: TBESSECHE@CITYOFSUGARHILL.COM

ENGINEER

PRECISION PLANNING, INC.
400 PIKE BOULEVARD
LAWRENCEVILLE, GA 30046
CONTACT: ERIC SIMPSON
PHONE: 770-338-8000
EMAIL: 827ES@PPI.US

NOTE:
1. PROPOSED IMPROVEMENTS TO LEVEL CREEK ROAD WILL BE DESIGNED BY OTHERS

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

PRIMARY PERMITTEE:
CITY OF SUGAR HILL
770-945-6716

24-HOUR EMERGENCY CONTACT
TROY BESSECHE
770-945-6716

GEORGIA811 Utilities Protection Center, Inc.
Know what's below. Call before you dig.

INFORMATION REGARDING THE REPUTED PRESENCE, SIZE, CHARACTER AND LOCATION OF EXISTING UNDERGROUND UTILITIES AND STRUCTURES IS SHOWN HEREON. THERE IS NO CERTAINTY OF THE ACCURACY OF THIS INFORMATION AND IT SHALL BE CONSIDERED IN THAT LIGHT BY THOSE USING THIS DRAWING. THE LOCATION AND ARRANGEMENT OF UNDERGROUND UTILITIES AND STRUCTURES SHOWN HEREON MAY BE INACCURATE AND UTILITIES AND STRUCTURES NOT SHOWN MAY BE ENCOUNTERED. THE OWNER, HIS EMPLOYEES, HIS CONSULTANTS AND HIS CONTRACTORS SHALL HEREBY DISTINCTLY UNDERSTAND THAT THE SURVEYOR IS NOT RESPONSIBLE FOR THE CORRECTNESS OR SUFFICIENCY OF THIS INFORMATION.

GEORGIA REGISTERED No. 30196 PROFESSIONAL ENGINEER ERIC L. SIMPSON

STAMP

PRECISION Planning Inc.
planners • engineers • architects • surveyors
400 Pike Boulevard, Lawrenceville, Ga 30046
770.338.8000 • www.ppi.us

CITY OF SUGAR HILL EPICENTER
MIXED-USE DOWNTOWN
DEVELOPMENT

Land Lots 291 & 292, 7th District
Parcel 7291 085
5009 West Broad Street
Sugar Hill, GA 30518

SITE PLAN

SHEET TITLE

DESIGN	DRAWN	CHECKED
MB	MB	ES

NO.	DESCRIPTION	DATE
0	60% CONSTRUCTION DOCUMENTS	4/22/16
1	90% CONSTRUCTION DOCUMENTS	5/18/16
2	100% CONSTRUCTION DOCUMENTS	5/06/16

RELEASE

3/22/2016
DATE

A14-217SH
PPI PROJECT NO.

C2.1

GEORGIA REGISTERED ENGINEER
No. 30436
PROFESSIONAL
ERIC L. SIMPSON
6/29/16

STAMP

PRECISION Planning Inc.
planners • engineers • architects • surveyors
400 Pike Boulevard, Lawrenceville, Ga 30046
770.338.8000 • www.ppi.us

CITY OF SUGAR HILL EPICENTER
MIXED-USE DOWNTOWN DEVELOPMENT

Land Lots 291 & 292, 7th District
Parcel 7291 085
5009 West Broad Street
Sugar Hill, GA 30518

GRADING AND DRAINAGE PLAN

SHEET TITLE

DESIGN	DRAWN	CHECKED
MB	MB	ES

NO	DESCRIPTION	DATE
0	60% CONSTRUCTION DOCUMENTS	4/22/16
1	90% CONSTRUCTION DOCUMENTS	5/18/16
2	100% CONSTRUCTION DOCUMENTS	5/06/16

RELEASE

3/22/2016
DATE

A14-217SH
PPI PROJECT NO.

C3.1

GEORGIA811 Utilities Protection Center, Inc.
Know what's below. Call before you dig.

INFORMATION REGARDING THE REPUTED PRESENCE, SIZE, CHARACTER AND LOCATION OF EXISTING UNDERGROUND UTILITIES AND STRUCTURES IS SHOWN HEREON. THERE IS NO CERTAINTY OF THE ACCURACY OF THIS INFORMATION AND IT SHALL BE CONSIDERED IN THAT LIGHT BY THOSE USING THIS DRAWING. THE LOCATION AND ARRANGEMENT OF UNDERGROUND UTILITIES AND STRUCTURES SHOWN HEREON MAY BE INACCURATE AND UTILITIES AND STRUCTURES NOT SHOWN MAY BE ENCOUNTERED. THE OWNER, HIS EMPLOYEES, HIS CONSULTANTS AND HIS CONTRACTORS SHALL HEREBY DISTINCTLY UNDERSTAND THAT THE SURVEYOR IS NOT RESPONSIBLE FOR THE CORRECTNESS OR SUFFICIENCY OF THIS INFORMATION.

OWNER / DEVELOPER

CITY OF SUGAR HILL
5039 WEST BROAD STREET
SUGAR HILL, GA 30518
CONTACT: TROY BESSECHE
PHONE: 7770-945-6716
EMAIL: TBESSECHE@CITYOFSUGARHILL.COM

ENGINEER

PRECISION PLANNING, INC.
400 PIKE BOULEVARD
LAWRENCEVILLE, GA 30046
CONTACT: ERIC SIMPSON
PHONE: 770-338-8000
EMAIL: 827ES@PPI.US

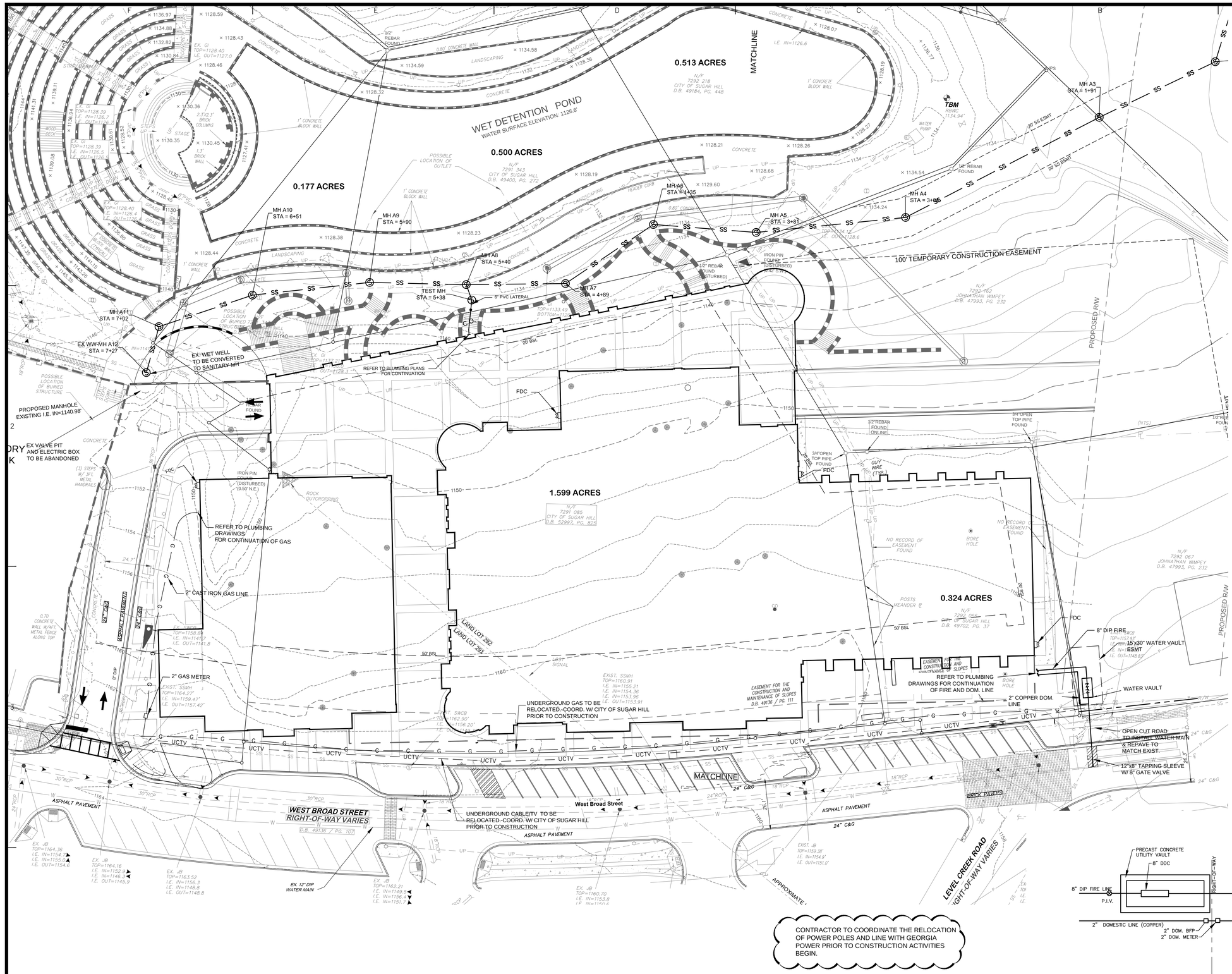
PRIMARY PERMITTEE:
CITY OF SUGAR HILL
770-945-6716

24-HOUR EMERGENCY CONTACT
TROY BESSECHE
770-945-6716

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

NOTES:
1. SEE PLUMBING DRAWING FOR LOCATION OF DRAIN INLET IN PLAZA AREA
2. LEVEL CREEK ROAD IMPROVEMENTS TO BE DESIGNED BY OTHERS
3. SEE DETAIL SHEET FOR TRENCH DRAIN DETAILS & PRODUCT INFORMATION

PLOT DATE: 7/7/2016 9:16 AM
FILE PATH: E:\PROJECTS\2014\14-217SH-SYDPEPICENTER\CIVIL\EPICENTER CONTRACT DOCUMENTS\14217_C03_GRADING AND DRAINAGE PLAN.DWG 2016-06-30 MAX BLOOM



SANITARY SEWER NOTES:

1. Use of pre-cast invert manholes is acceptable provided inverts are not modified.
2. All new pipe tie-ins require new inverts in manholes.
3. A construction permit is to be acquired by a GCDWR approved contractor prior to installation. Call 678-518-6175 for information and copy of approved contractor's list. A mandatory pre-construction conference with inspector, by appointment only, is required 48 hours prior to any utility construction. Any utility design changes must be approved by the Water and Sewer review section of P&D prior to installation. (3.1)
4. Plug to be installed at the tie-in manhole and first manhole upstream. Plug to be removed at the direction of the utility inspector. Failure to comply may result in citation and/or suspension from approved contractor's list.
5. As-built\record drawings for water system required prior to requesting final plat approval. Temporary certificate of occupancy or issuance of certificate of occupancy allow min. 10 business days for initial review &i additional time for re-review(s). Drawings to be submitted & approved by department of water resources.
6. All work to be performed according to Gwinnett County Department of Water Resources Sanitary Sewer Standards, current edition. Actual field conditions could dictate more stringent requirements, if deemed necessary by inspector.
7. Owner shall maintain plugs in dumpster drains at all times so as to prohibit liquid drainage from dumpster. (policy)
8. GCDWR does not authorize any pavement cuts - if cut is necessary permission must be obtained from the owner of the street.
9. Maintain 10' separation between water and sewer lines.
10. Exterior grease traps will be required for all restaurants.
11. No trees or permanent structures allowed in sanitary sewer easements.
12. Sewer laterals must be installed to extend to 5 feet outside right of way and include a 6" clean out.
13. Per the Fee Resolution there is a "Penalty Fee" of 100% of the permit fee for site activity prior to issuance of appropriate permits (Land Disturbance, Development, Utility Construction, or Grease Trap installations).
14. ALL UTILITIES TO BE INSPECTED BY DEPARTMENT OF WATER RESOURCES.

WATER NOTES:

1. Min. Horizontal separation of 10 ft shall be maintained between water and sanitary sewer facilities.
2. Hydrants are to be installed so that the large Fire Dept. connection faces the street. That same connection is to be no less than 18" or more than 36" above finished grade. Hydrants located in parking areas shall be protected by barriers that will prevent physical damage by vehicles.
3. Hydrants and mains shall be installed and under pressure before any combustible construction is started.
4. A construction permit is to be acquired by G.C.D.W.R. approved contractor prior to installation. Call 678-518-6175 for more information and copy of approved contractor's list. A mandatory pre-construction conference with inspector, by appointment only, is required 48 hours prior to any utility construction. Any utility design changes must be approved by GCDPU prior to installation.
5. All work to be done in accordance with Gwinnett County Department of Water Resources Main Standards, current edition. Actual field conditions could dictate more stringent requirements, if deemed necessary by inspector.
6. As-built\record drawings for water system required prior to requesting final plat approval. Temporary certificate of occupancy or issuance of certificate of occupancy. Allow min. 10 business days for initial review &i additional time for re-review(s). Drawings to be submitted & approved by department of water resources.
7. Curb shall be in place prior to installation of water main.
8. GCDWR does not permit any pavement cut. If pavement cut is required, contractor is responsible for obtaining proper approval from owner of street.
9. Note to Contractor: Valves and fittings may not be drawn to scale. Valves are not to be installed underneath road paving.
10. Note to Contractor: Coordinate with P&D Inspector as assigned on the construction permit for temporary hydrant meter prior to flushing or chlorinating new water mains.
11. Per the Fee Resolution there is a "Penalty Fee" of 100% of the permit fee for site activity prior to issuance of appropriate permits (Land Disturbance, Development, Utility Construction, or Grease Trap installations)
12. ALL UTILITIES TO BE INSPECTED BY DEPARTMENT OF WATER RESOURCES.
13. Meter fees must be paid prior to issuance of building permit or before issuance of construction permit or issuance of construction permit or issuance of construction permit for meters 3" or larger.
14. Double check back flow prevention devices for all meters and/or fire lines must be tested & approved before issuance of final certificate or occupancy.

1 C4.0 UTILITY SCHEMATIC CONNECTION
SCALE: N.T.S

GEORGIA REGISTERED No. 30498 PROFESSIONAL ENGINEER APRIL L. SIMPSON

STAMP

PRECISION Planning Inc.
planners • engineers • architects • surveyors
400 Pike Boulevard, Lawrenceville, Ga 30046
770.338.8000 • www.ppi.us

CITY OF SUGAR HILL EPICENTER
MIXED-USE DOWNTOWN DEVELOPMENT
Land Lots 291 & 292, 7th District
Parcel 7291 085
5009 West Broad Street
Sugar Hill, GA 30518

UTILITY SITE PLAN

SHEET TITLE

CHECKED	ES
DRAWN	MB
DESIGN	MB

NO	DATE	DESCRIPTION
0	4/22/16	60% CONSTRUCTION DOCUMENTS
1	5/18/16	90% CONSTRUCTION DOCUMENTS
2	5/06/16	100% CONSTRUCTION DOCUMENTS

RELEASE

3/22/2016
DATE

A14-217SH
PPI PROJECT NO.

C4.1

GEORGIA811 Utilities Protection Center, Inc.
Know what's below. Call before you dig.

INFORMATION REGARDING THE REPUTED PRESENCE, SIZE, CHARACTER AND LOCATION OF EXISTING UNDERGROUND UTILITIES AND STRUCTURES IS SHOWN HEREON. THERE IS NO CERTAINTY OF THE ACCURACY OF THIS INFORMATION AND IT SHALL BE CONSIDERED IN THAT LIGHT BY THOSE USING THIS DRAWING. THE LOCATION AND ARRANGEMENT OF UNDERGROUND UTILITIES AND STRUCTURES SHOWN HEREON MAY BE INACCURATE AND UTILITIES AND STRUCTURES NOT SHOWN MAY BE ENCOUNTERED. THE OWNER, HIS EMPLOYEES, HIS CONSULTANTS AND HIS CONTRACTORS SHALL HEREBY DISTINCTLY UNDERSTAND THAT THE SURVEYOR IS NOT RESPONSIBLE FOR THE CORRECTNESS OR SUFFICIENCY OF THIS INFORMATION.

PRIMARY PERMITTEE:
CITY OF SUGAR HILL
770-945-6718

24-HOUR EMERGENCY CONTACT
TROY BESSECHE
770-945-6716

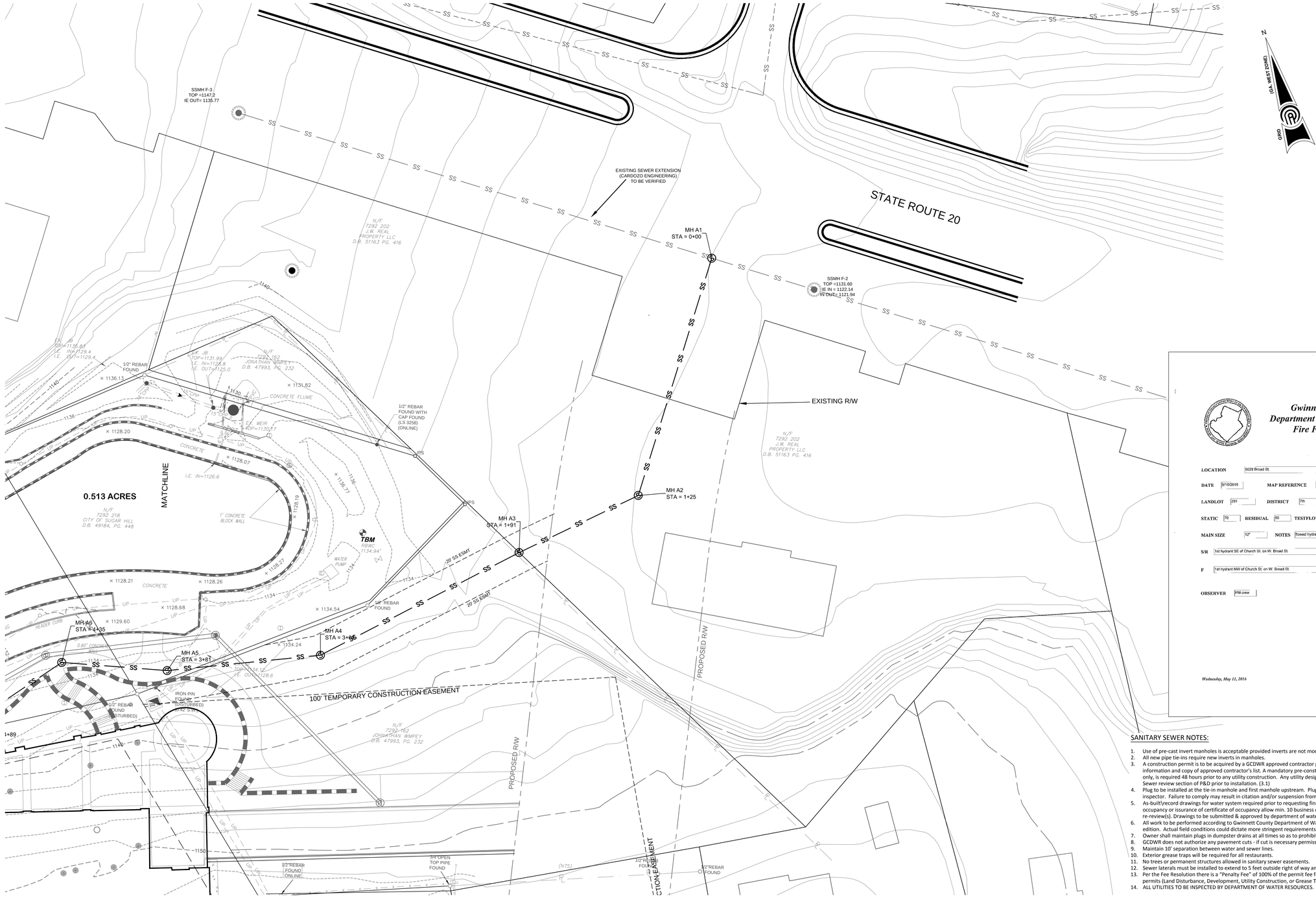
OWNER / DEVELOPER
CITY OF SUGAR HILL
5039 WEST BROAD STREET
SUGAR HILL, GA 30518
CONTACT: TROY BESSECHE
PHONE:7770-945-6716
EMAIL: TBESSECHE@CITYOFSUGARHILL.COM

ENGINEER
PRECISION PLANNING, INC.
400 PIKE BOULEVARD
LAWRENCEVILLE, GA 30046
CONTACT: ERIC SIMPSON
PHONE: 770-338-8000
EMAIL: 827ES@PPI.US

NOTE:
1. ALL WATER AND SEWER CONSTRUCTION TO BE IN ACCORDANCE WITH GWINNETT COUNTY DWR REGULATION.

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

PLOT DATE: 6/7/2016 9:17 AM
FILE PATH: E:\PROJECTS\2014\14217SH-SU-EPICENTER\DWG\EPICENTER CONTRACT DOCUMENTS\14217_C3D_UTILITIES SITE PLAN.DWG — 2016-06-07 — MAX BLOOM



Gwinnett County
Department of Water Resources
Fire Flow Test

LOCATION	5029 Broad St.						
DATE	5/10/2016	MAP REFERENCE	479-G8				
LANDLOT	291	DISTRICT	7th	SYSTEM			
STATIC	70	RESIDUAL	60	TESTFLOW	1060	FLOW@20	1739
MAIN SIZE	12"	NOTES	flowed hydrant at 12:15pm				
S/R	1st hydrant SE of Church St. on W. Broad St.			HYDRANT FID1	3215944		
F	1st hydrant NW of Church St. on W. Broad St.			HYDRANT FID2	3215924		
OBSERVER	PM crew						

Wednesday, May 11, 2016 *Page 976 of 977*

SANITARY SEWER NOTES:

1. Use of pre-cast invert manholes is acceptable provided inverts are not modified.
2. All new pipe tie-ins require new inverts in manholes.
3. A construction permit is to be acquired by a GCDWR approved contractor prior to installation. Call 678-518-6175 for information and copy of approved contractor's list. A mandatory pre-construction conference with inspector, by appointment only, is required 48 hours prior to any utility construction. Any utility design changes must be approved by the Water and Sewer review section of P&D prior to installation. (3.1)
4. Plug to be installed at the tie-in manhole and first manhole upstream. Plug to be removed at the direction of the utility inspector. Failure to comply may result in citation and/or suspension from approved contractor's list.
5. As-built\record drawings for water system required prior to requesting final plat approval. Temporary certificate of occupancy or issurance of certificate of occupancy allow min. 10 business days for initial review &i additional time for re-review(s). Drawings to be submitted & approved by department of water resources.
6. All work to be performed according to Gwinnett County Department of Water Resources Sanitary Sewer Standards, current edition. Actual field conditions could dictate more stringent requirements, if deemed necessary by inspector.
7. Owner shall maintain plugs in dumpster drains at all times so as to prohibit liquid drainage from dumpster. (policy)
8. GCDWR does not authorize any pavement cuts - if cut is necessary permission must be obtained from the owner of the street.
9. Maintain 10' separation between water and sewer lines.
10. Exterior grease traps will be required for all restaurants.
11. No trees or permanent structures allowed in sanitary sewer easements.
12. Sewer laterals must be installed to extend to 5 feet outside right of way and include a 6" clean out.
13. Per the Fee Resolution there is a "Penalty Fee" of 100% of the permit fee for site activity prior to issuance of appropriate permits (Land Disturbance, Development, Utility Construction, or Grease Trap installations).
14. ALL UTILITIES TO BE INSPECTED BY DEPARTMENT OF WATER RESOURCES.

NOTE:

1. EXISTING SSMH F-1 TO F-3 TAKEN FROM CONSTRUCTION PLANS PREPARED BY CARDOZO ENGINEERING, INC., TITLED "UTILITY RELOCATION PLANS", DRAWING # 44-34, 44-35, & 44-61, SEALED 10/19/12. LINE SHOULD BE VERIFIED PRIOR TO CONSTRUCTION.

GEORGIA811 Utilities Protection Center, Inc.
Know what's below. Call before you dig.

INFORMATION REGARDING THE REPUTED PRESENCE, SIZE, CHARACTER AND LOCATION OF EXISTING UNDERGROUND UTILITIES AND STRUCTURES IS SHOWN HEREON. THERE IS NO CERTAINTY OF THE ACCURACY OF THIS INFORMATION AND IT SHALL BE CONSIDERED IN THAT LIGHT BY THOSE USING THIS DRAWING. THE LOCATION AND ARRANGEMENT OF UNDERGROUND UTILITIES AND STRUCTURES SHOWN HEREON MAY BE INACCURATE AND UTILITIES AND STRUCTURES NOT SHOWN MAY BE ENCOUNTERED. THE OWNER, HIS EMPLOYEES, HIS CONSULTANTS AND HIS CONTRACTORS SHALL HEREBY DISTINCTLY UNDERSTAND THAT THE SURVEYOR IS NOT RESPONSIBLE FOR THE CORRECTNESS OR SUFFICIENCY OF THIS INFORMATION.

OWNER / DEVELOPER
CITY OF SUGAR HILL
5039 WEST BROAD STREET
SUGAR HILL, GA 30518
CONTACT: TROY BESSECHE
PHONE:7770-945-6716
EMAIL: TBESSECHE@CITYOFSUGARHILL.COM

ENGINEER
PRECISION PLANNING, INC.
400 PIKE BOULEVARD
LAWRENCEVILLE, GA 30046
CONTACT: ERIC SIMPSON
PHONE: 770-338-8000
EMAIL: 827ES@PPI.US

PRIMARY PERMITTEE:
CITY OF SUGAR HILL
770-945-6718

24-HOUR EMERGENCY CONTACT
TROY BESSECHE
770-945-6716

GRAPHIC SCALE
20 0 10 20 40 80
(IN FEET)
1 inch = 20 ft.

GEORGIA REGISTERED No. 30496 PROFESSIONAL ENGINEER ERIC L. SIMPSON
STAMP

PRECISION Planning Inc.
planners • engineers • architects • surveyors
400 Pike Boulevard, Lawrenceville, Ga 30046
770.338.8000 • www.ppi.us

CITY OF SUGAR HILL EPICENTER
MIXED-USE DOWNTOWN DEVELOPMENT
Land Lots 291 & 292, 7th District
Parcel 7291 085
5009 West Broad Street
Sugar Hill, GA 30518

UTILITY SITE PLAN

SHEET TITLE | DRAWN: MB | CHECKED: ES | DESIGN: MB

DATE	NO.	DESCRIPTION
4/22/16	0	60% CONSTRUCTION DOCUMENTS
5/18/16	1	90% CONSTRUCTION DOCUMENTS
5/06/16	2	100% CONSTRUCTION DOCUMENTS

RELEASE

3/22/2016
DATE

A14-217SH
PPI PROJECT NO.

C4.2

FILE PATH: E:\PROJECTS\2014\14217SH-SSI-EPICENTER\DWG\EPICENTER CONTRACT DOCUMENTS\14217_CSD1_UTILITIES SITE PLAN.DWG – 2016-06-07 – MAX BLOOM
PLOT DATE: 6/7/2016 9:17 AM

REPORT

Preliminary Geotechnical Exploration Sugar Hill Epicenter Gwinnett County Sugar Hill, GA

Project Number
2014.4901.01

September 16, 2014

We're here for you

UNITED CONSULTING

We're here for you
UNITED CONSULTING

September 16, 2014

Mr. Troy Besseche
City of Sugar Hill
5039 West Broad Street
Sugar Hill, Georgia, 30518

Via E-mail: ***tbesseche@cityofsugarhill.com***

RE: Report of Preliminary Geotechnical Exploration
Sugar Hill Epicenter
5009 West Broad Street
Sugar Hill, Gwinnett County, Georgia
Project No. 2014.4901.01

Dear Mr. Besseche:

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. Please contact us if you have any questions or if we can be of further assistance.

Sincerely,

UNITED CONSULTING

GEORGIA REGISTERED NO. PE032545 PROFESSIONAL ENGINEER KHEIBAR KHANIDOKHT

Kheibar Khanidokht, P.E.
Senior Geotechnical Engineer

Chris L. Roberds, P.G.
Senior Executive Vice President

Donald E. Hill, P.E.
Chief Engineer

CJC/KK/CLR/DEH/nj

ucblade10/sites/geotechenv/10327/2014.4901.01/Environmental Documents/Geotechnical/2014.4901.01.suger hill pre. geo.doc

TABLE OF CONTENTS

EXECUTIVE SUMMARY

United Consulting has completed a Preliminary Geotechnical Exploration on the **Sugar Hill Epicenter** tract located in Gwinnett County, Sugar Hill, Georgia. The results from this investigation are briefly summarized below. The text of the report should be reviewed for a discussion of these items.

1. The borings encountered fill soils to depths of 3 to 13 feet. The fill was highly variable and included occasional topsoil and rock fragments were noted in the fill. As is the case with any previously graded site, undocumented fill can contain soft soils, or buried trash, topsoil, boulders, or other unsuitable materials. Unsuitable materials, if encountered in the fill soils, shall be removed and replaced and/or stabilized per the geotechnical engineer's recommendations.

2. Partially Weathered Rock (PWR) was encountered in borings B-2 and B-6 at depths of about 49 feet and 44 feet below the existing grade. Auger refusal occurred in borings B-2 and B-6 at depths 56 feet and 71 feet, respectively**.** We do not generally envision significant excavation difficulties associated with massive PWR or rock for this project.

3. We envision that lightly loaded structures (timber framed structures with column loads not exceeding 150 kips and wall loads not exceeding 6 klf) can be supported on conventional shallow foundations. Due to the presence of variable condition existing fill, some excavation and replacement of soft or otherwise unsuitable soils from below the planned foundation bearing locations should be anticipated and budgeted for.
4. United Consulting believes that more heavily loaded (concrete or steel framed) multi-story residential structures and the concrete parking deck will likely require a deep foundation system (piles) or a shallow foundations constructed over compacted aggregate piers (Geopiers or Vibropiers). Preliminary recommendations for these foundation options are included in the text.

5. Groundwater was encountered in borings B-2 and B-6 at depths 35 and 37 feet at the time of boring. The influence of groundwater on the proposed development will depend on the finalized grading plan. The contractor should be prepared to remove groundwater or perched water, if encountered.

6. United Consulting recommends that a seismic site classification of "Site Class D" per Chapter 16 of the 2006 International Building Code (IBC) be utilized for the site.

7. Once final grades, finished floor elevations and foundation loads are determined, the preliminary recommendations in this report should be re-evaluated and, and additional geotechnical exploration be conducted.

SITE AND PROJECT INFORMATION

The project site is located on the northeast quadrant of the intersection between West Broad Street and Lee Street in Sugar Hill, Georgia. The client provided a site plan via e-mail dated September 9, 2014, prepared by Precision Planning, Inc., showing the client's desired boring locations. This site plan was used as a guide to locate the boundaries of the project site during this exploration. The locations of the borings are shown on the attached Boring Location Plan (Figure 1).

At the time of our visit, the site was accessed via West Broad Street to the southeast of the project site. The site consisted of 2 parcels totaling approximately 1.9 acres of land and contained one residential structure. The remainder of the site consisted of sparse landscaped areas around the residential structure and partially wooded land. The northeastern portion of the site contained a few parked trucks. These trucks appear to be associated with an off-site facility. The adjoining properties consisted of commercial and local government buildings.

At the time of completion of this report, no topographic information was provided. Based on our visual observation, the site generally slopes down to the north and east from higher areas in the south and west. Total relief across the site is approximately 10 feet.

We understand that the project is at the preliminary stage of design and the proposed development will consist of a mixed-use development that includes a gymnasium, a swimming pool, parking deck and other amenities. The existing structures within the proposed development will be demolished prior to the new construction.

No information on the building structural loads, grading plan, or finished ground floor elevations for the proposed structures was available at the time of this report.

The recommendations herein should be considered preliminary. Once the grading plans and proposed structural loads have been finalized, a final geotechnical exploration should be performed in order to finalize our recommendations.

PURPOSE

The purpose of this preliminary exploration was to determine the general type and condition of the subsurface materials at the project site, and to provide preliminary recommendations regarding potential foundation types and general information regarding soil types, fill availability and suitability, depth to groundwater and rock, and other geotechnical considerations that may impact site development plans.

SCOPE

The scope of our Preliminary Geotechnical Exploration has included the following items:

1. A visual reconnaissance of the site from a geotechnical standpoint;

2. Drilling eight (8) Standard Penetration Test (SPT) borings to determine the nature and condition of the subsurface soils;

3. Evaluation of soil samples obtained during our field exploration program for further identification and classification;

4. Determine IBC seismic site class based on average N-values;

5. Analyzing subsurface conditions with respect to the proposed construction; and

6. Preparing this report to document the results of our fieldwork program, general information regarding soil types, provide preliminary recommendations for site work, seismic site class, and foundation design for conceptual development based on subsurface soil exploration.

EXPLORATION PROCEDURES

Eight Standard Penetration Test (SPT) borings (designated as B-1 through B-8) were drilled at the approximate locations shown on the attached Boring Location Plan (Figure 1). Soil samples obtained using the split spoon sampler were examined by the Geotechnical Engineer and classified according to the visual-manual procedure described in ASTM D 2488-00. Soil test borings were performed in general accordance with ASTM D 1586. A narrative of field operations is included in The Appendix.

Boring locations were determined in the field by the Geotechnical Engineer who measured distances and estimated angles with the aid of a hand held compass, a measuring tape and existing site features. Therefore, the boring locations shown on the attached boring plan should be considered approximate. A topographic plan of the site was not available at the time of completion of the report, therefore, ground elevations are not provided on the boring logs.

SUBSURFACE CONDITIONS

The borings initially encountered 3 inches of topsoil. The borings encountered fill below the topsoil to depths 3 to 13 feet. The soils generally consisted of firm to very stiff sandy silt with traces of rock fragments, clay and mica with the N-values ranging from 5 to 16 blows per foot (bpf).

Below the fill soils, residual soils typical of the Piedmont Physiographic Region were encountered. The residual soils generally consisted of stiff to hard sandy silt or firm to dense silty sand with varying amounts of mica and rock fragments, and traces of clay with the N-values in the residual soils ranging from 11 to 49 bpf.

Partially Weathered Rock (PWR) was encountered in borings B-2 and B-6 at depths ranging from 50 to 70 feet below existing grade. PWR is a term for the residuum that can be penetrated by soil drilling techniques and has standard penetration resistance values (N-values) in excess of 100 bpf.

Auger refusal occurred in borings B-2 and B-6 at depths of 56 feet and 71 feet, respectively. Auger refusal indicates the depth at which the boring cannot be drilled further using soil drillings tools and techniques. Auger refusal levels may represent the top of massive bedrock, a boulder or other obstruction.

Groundwater was encountered in borings B-2 and B-6 at depths 35 feet and 37 feet at the time of drilling. No groundwater was encountered in the remaining borings. Groundwater levels should be anticipated to fluctuate with the change of seasons, during periods of very low or high precipitation, or due to changes in the floodplain or watershed upstream from the area.

For a more precise description of the conditions encountered within the soil test borings, we refer you to the Boring Logs included in The Appendix.

DISCUSSION AND PRELIMINARY RECOMMENDATIONS

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

Since finished floor elevation (FFE) and structural loads have not been finalized the following information and recommendations should be considered preliminary. Once the design drawings are finalized, additional subsurface exploration and engineering analyses will be required to finalize our preliminary recommendations.

Existing Fill Consideration

Below the topsoil, the borings encountered fill to depths ranging from 3 to 13 feet. The fill generally appeared to be relatively clean and moderately compacted.

As is the case with any previously graded site, undocumented fill can contain soft soils, or buried trash, topsoil, boulders, or other unsuitable materials. For construction on an undocumented fill, the owner must assume the risk of greater than normal settlement due to the possible presence of soft soils or unsuitable materials within the fill. SPT borings alone are not well suited to evaluate existing fill.

We recommend excavating test pits to further evaluate the condition and lateral extent of the fill. If not removed during mass grading, some excavation of soft or otherwise unsuitable fill should be anticipated and budgeted for.

Excavation Conditions

Partially Weathered Rock (PWR) was encountered in borings B-2 and B-6 a depth of about 49 feet and 44 feet below the existing grade. Auger refusal occurred in borings B-2 and B-6 at depths 56 feet and 71 feet, respectively. We do not generally envision significant excavation difficulties associated with massive PWR or rock for this project.

Due to the geology of the area, depth to bedrock can vary significantly over short horizontal distances. Therefore, it is not uncommon to encountered PWR and rock at shallower depths than those encountered in the borings. Pinnacles, boulders or lenses of PWR or rock could therefore be present at higher elevations, between or away from the areas explored.

Conventional scrapers and loaders can generally excavate soils. PWR typically requires loosening by ripping with large dozers pulling single tooth rippers in mass excavation or the use of jackhammers or light blasting in confined (trench) excavation. Relatively sound, massive, rock typically requires blasting for removal in mass or trench excavation.

Caving Considerations

Due to the presence of existing fill and low-cohesive soil, some caving of excavations should be anticipated. Flattening of the excavation sidewalls and/or the use of bracing may be needed to maintain stability. All excavations must be performed in accordance with OSHA excavation safety standards.

Groundwater Conditions

Groundwater was encountered in borings B-2 and B-6 at depths 35 feet and 37 feet at the time of drilling. Due to presence of up to 13 feet of highly variable fill and silt, the site is also susceptible to formation of perched water. The contactor should be prepared to remove perched or groundwater as needed.

Overall, the actual impact of the groundwater on the planned development will depend greatly on the final grading plan, utility profiles, and building FFEs.

Preliminary Foundation Design

The most appropriate foundation system for the project will depend on the actual building/structure types, locations, FFEs, building loads, and settlement tolerances. Once this information becomes available we welcome the opportunity to assist you in developing final foundation recommendations for the project. We offer the following preliminary foundation recommendations for the project.

Lightly Loaded Structures - Conventional Shallow Foundations

We envision that lightly loaded structures (timber framed structures with column loads not exceeding 150 kips and wall loads not exceeding 6 klf) can be supported on conventional shallow foundations. Foundation area preparation will be dependent on the final grading plan and building FFEs. However, if existing fill is to remain below the proposed foundation areas, some excavation and replacement of the existing fill should be anticipated and budgeted for in order for shallow foundations to be feasible.

More Heavily Loaded Structures and Parking Deck

For the concrete parking deck and other more heavily loaded structures (concrete or steel framed structures with column loads exceeding 150 kips and wall loads exceeding 6 klf) we envision that shallow foundations will not likely be feasible due to the variability of the subsurface conditions across the site, and the potential for excessive settlements. United Consulting believes that a deep foundation system (auger cast piles) or possibly, a shallow foundation underlain by a ground improvement system (such as compacted aggregate columns) would most likely be required for support of the more heavily loaded structures. United Consulting offers the following preliminary discussions regarding possible foundation types for the project.

Deep Foundation – Auger-Cast Piles

An allowable pile capacity in the range of 70 to 150 tons per pile is typically available for 14 to 18-inch auger-cast piles installed to practical refusal or sufficient embedment into very dense PWR. We note that continuous PWR was encountered at depths ranging from 44 feet to 48 feet and rock was encountered at a depth of 56 and 71 feet in borings B-2 and B-6. As such auger-cast piles for the project could be designed as friction piles embedded into very dense PWR. Higher capacities might be available if piles are extended through the PWR to practical refusal in competent rock.

Deep Foundation – Ground Improvement (Compacted Stone Piers)

We envision that a properly designed and installed compacted stone pier system (Geopiers or Vibropiers) would also be suitable to improve soils such that the proposed structures could be supported on conventional shallow foundations underlain by stone piers.

The bearing capacity and settlement of the compacted stone piers are a function of the on-site soils, the strength (modulus) of the compacted aggregate within the stone columns, the length of the columns, and the percentage of the foundation bearing area that is directly supported by the stone piers. Typically, a conventional shallow foundation system bearing on a properly designed and installed compacted stone column system may be designed for an allowable bearing pressure in the range of 4,000 to 6,000 psf.

Additional subsurface exploration and engineering evaluation based on the actual planned building structural loads and FFEs will be required to further assess the feasibility of using compacted stone columns for support of the multi-story structures.

Seismic Site Class

The seismic design is covered by the provisions of Chapter 16 of the International Building Code (IBC). The site categories referenced in the IBC are defined in terms of the average shear wave velocity (V_s) in the top 100 ft of the profile. In absence of shear wave velocities, geotechnical parameters such as standard penetration resistance (N) and the undrained shear strength (S_u) can be utilized.

United Consulting utilized available geotechnical information (N-values) and our experience with the similar soil conditions to provide a seismic site class for the site. United Consulting recommends that a seismic site classification of **"Site Class D"** be utilized for the site. Based on published data, the liquefaction potential of the on-site soils is considered low.

A site class determination based on the average N values is necessarily conservative. A site-specific geophysical study acquiring soil shear wave velocity data may or may not demonstrate sufficient stiffness to allow a higher site class. Shear wave velocity measurements were beyond our authorized scope of work. United Consulting will be pleased to provide the additional seismic services, if requested.

Earthwork

The soils encountered at the project site should be generally suitable for re-use as engineered fill. Existing fill containing excessive boulders, topsoil, or other unsuitable materials, if encountered, would not be considered suitable. Again, test pits are recommended to further evaluate the extent and condition of the existing fill.

Final Geotechnical Exploration

The subsurface data gathered in this preliminary geotechnical exploration should be used to plan the site development, layout and earthwork so that difficult excavation and ground improvement requirements can be considered. Once the building FFEs, and foundation loads are finalized, additional borings with rock coring and test pits should be preformed to develop final geotechnical recommendations specific to the actual planned construction. The information provided in this preliminary geotechnical exploration report should be used to develop the scope the finial Geotechnical Exploration.

LIMITATIONS

This report is for the exclusive use of **City of Sugar Hill** and the designers of the project described herein, and may only be applied to this specific project. Our conclusions and preliminary 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.

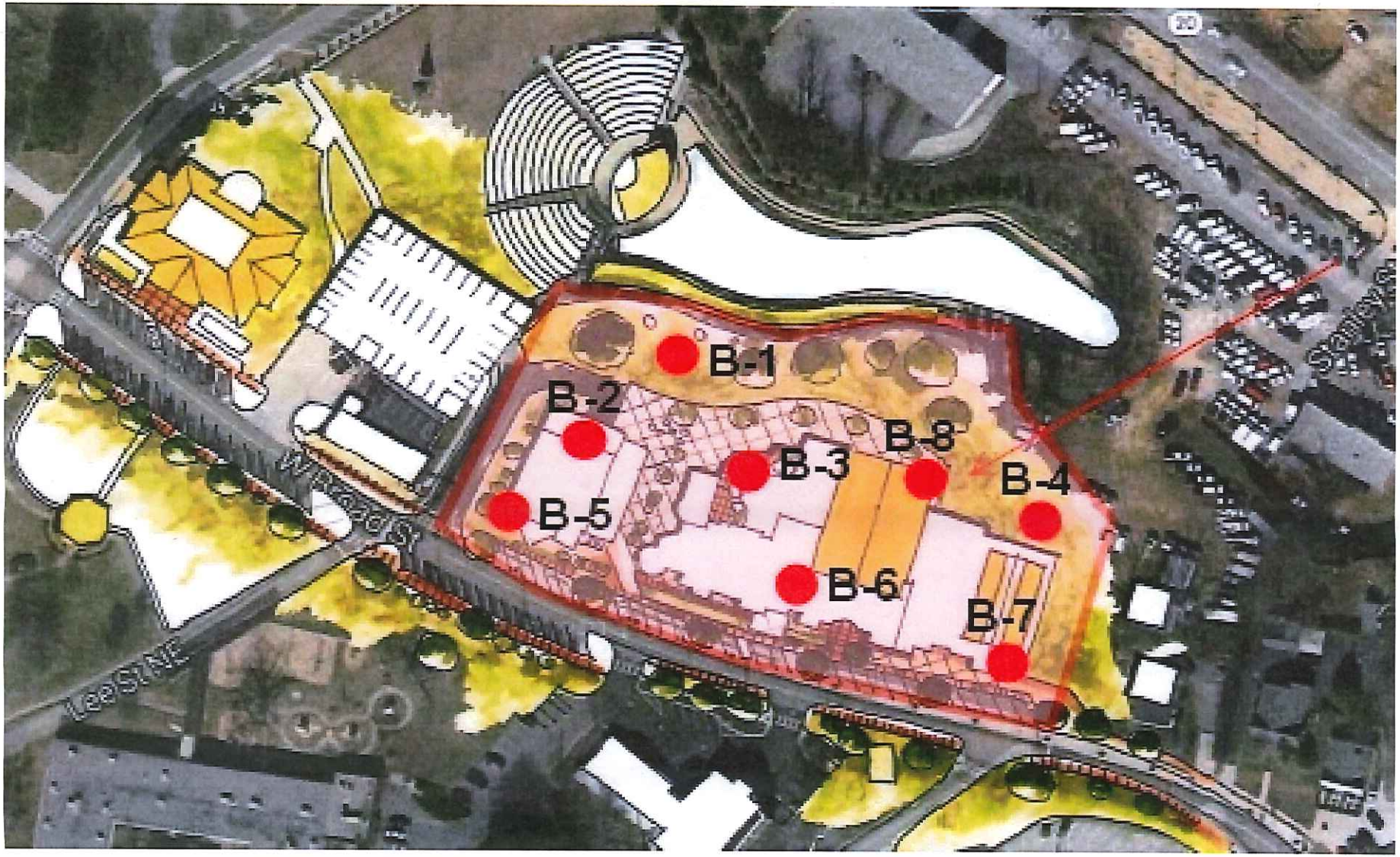
The right to rely upon this report and the data within may not be assigned without UNITED CONSULTING'S written permission.

The scope of this geotechnical 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 is not implied or suggested by this report, and should not be inferred.

Our conclusions and recommendations are based upon design information furnished us, data obtained from the previously described exploration and testing program and our 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 see if they are consistent with the intent of our recommendations.

UNITED CONSULTING



UNITED CONSULTING *We're here for you*	N	Scale:	NTS	Notes:	Client:	City of Sugar Hill
		Prepared:	KN		Site:	Sugar Hill Epicenter
		Checked:	KK			
		Project No.:	2014.4901.01		Title:	Boring Location Plan

FIG.1

APPENDIX

General Notes/Narrative of Drilling Operations
Boring Logs (8)

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 AND NARRATIVE OF DRILLING OPERATIONS

The test borings were made by mechanically advancing helical hollow stem augers into the ground. Samples were covered 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 of a 140 pound hammer freely falling a distance of 30". The number of blows required to drive the sampler each six inches is recorded on the Boring Logs. The total number of blows required to drive the sampler the final foot is designated the "standard penetration resistance." This driving resistance, known as the "N" value, is a measure of the relative density of granular soils and is an indication of the consistency of cohesive deposits.

The Following table describes soil consistencies and relative densities based on standard-penetration resistance values (N) determined by the Standard Penetration Test.

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

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

UNITED CONSULTING
625 HOLCOMB BRIDGE ROAD
NORCROSS, GEORGIA 30071
(770)209-0029, FAX (770)582-2800

BORING LOG

CONTRACTED WITH: CITY OF SUGAR HILL — BORING NO.: B-1
PROJECT NAME: SUGAR HILL EPICENTER — DATE: 09/10/2014
JOB NO.: 2014.4901.01 — DRILLER: BILLY/KILMAN — RIG: CME 55 — LOGGED BY: KN

ELEV.	DESCRIPTION	DEPTH in FEET	SAMPLES NO.	TYPE	BLOWS/6"	RECOV.	W	NOTES
	3" TOPSOIL	0						
	Silt-sandy, trace clay; firm; brown (Fill)		1		2-3-5	14		
	Silt-sandy, some mica; very stiff; tan (Residual)	5	2		10-12-12	10		
	-tan	10	3		6-7-11	18		
	-some sand	15	4		6-7-9	18		
	BORING TERMINATION AT 15'	20						No Groundwater encountered at the time of drilling
		25						
		30						
		35						
		40						

UNITED CONSULTING
625 HOLCOMB BRIDGE ROAD
NORCROSS, GEORGIA 30071
(770)209-0029, FAX (770)582-2800

BORING LOG

CONTRACTED WITH: CITY OF SUGAR HILL — BORING NO.: B-2
PROJECT NAME: SUGAR HILL EPICENTER — DATE: 09/10/2014
JOB NO.: 2014.4901.01 — DRILLER: BILLY/KILMAN — RIG: CME 55 — LOGGED BY: KN

ELEV.	DESCRIPTION	DEPTH in FEET	SAMPLES NO.	TYPE	BLOWS/6"	RECOV.	W	NOTES
	3" TOPSOIL	0						
	Silt-sandy, trace clay; firm; dark brown (Fill)		1		2-2-4	18		
	-stiff	5	2		4-5-6	13		
	-some mica	10	3		5-6-8	18		
	Silt-sandy, some mica; very stiff; tan (Residual)	15	4		7-10-12	18		
	-trace sand; stiff	20	5		5-5-7	18		
	-very stiff	25	6		7-10-13	12		
	-trace clay; stiff	30	7		3-5-6	18		
	-very stiff; brown	35 ▽	8		4-5-11	18		Groundwater encountered at depth 35' at the time of drilling
	Sand-trace silt; firm; light brown	40	9		5-7-7	18		

UNITED CONSULTING
625 HOLCOMB BRIDGE ROAD
NORCROSS, GEORGIA 30071
(770)209-0029, FAX (770)582-2800

BORING LOG

CONTRACTED WITH: CITY OF SUGAR HILL — BORING NO.: B-2
PROJECT NAME: SUGAR HILL EPICENTER — DATE: 09/10/2014
JOB NO.: KN — DRILLER: BILLY/KILMAN — RIG: CME 55 — LOGGED BY: KN

ELEV.	DESCRIPTION	DEPTH in FEET	SAMPLES NO.	TYPE	BLOWS/6"	RECOV.	W	NOTES
	-some silt and mica; medium dense	45	10		6-12-14	18		
	Partially Weathered Rock sampled as Sand-some silt and mica; very dense; white-brown	50	11		5-14-50/3	8		
		55	12		50/2	6		
	AUGER REFUSAL AT 56'	60						
		65						
		70						
		75						
		80						

UNITED CONSULTING
625 HOLCOMB BRIDGE ROAD
NORCROSS, GEORGIA 30071
(770)209-0029, FAX (770)582-2800

BORING LOG

CONTRACTED WITH: CITY OF SUGAR HILL — BORING NO.: B-3
PROJECT NAME: SUGAR HILL EPICENTER — DATE: 09/10/2014
JOB NO.: 2014.4901.01 — DRILLER: BILLY/KILMAN — RIG: CME 55 — LOGGED BY: KN

ELEV.	DESCRIPTION	DEPTH in FEET	SAMPLES NO.	TYPE	BLOWS/6"	RECOV.	W	NOTES
	3" TOPSOIL	0						
	Silt-sandy, trace clay; firm; dark brown (Fill)		1		2-3-5	18		
	Silt-sandy, some mica; very stiff; dark brown (Residual)	5	2		11-13-15	18		
	-hard	10	3		14-20-20	18		
	-trace sand; very stiff; dark tan	15	4		11-12-18	12		
	BORING TERMINATION AT 15'	20						No Groundwater encountered at the time of drilling
		25						
		30						
		35						
		40						

UNITED CONSULTING
625 HOLCOMB BRIDGE ROAD
NORCROSS, GEORGIA 30071
(770)209-0029, FAX (770)582-2800

BORING LOG

CONTRACTED WITH: CITY OF SUGAR HILL — BORING NO.: B-4
PROJECT NAME: SUGAR HILL EPICENTER — DATE: 09/10/2014
JOB NO.: 2014.4901.01 DRILLER: BILLY/KILMAN RIG: CME 55 — LOGGED BY: KN

ELEV.	DESCRIPTION	DEPTH in FEET	SAMPLES NO.	TYPE	BLOWS/6"	RECOV.	W	NOTES
	3" TOPSOIL	0						
	Silt-sandy, trace clay and mica and rock fragments; stiff; brown (Fill)		1		4-7-6	18		
		5	2		4-6-6	18		
	Sand-silty, some mica and rock fragments; dense; brown (Residual)	10	3		15-22-27	18		
	-firm	15	4		4-6-7	18		
	BORING TERMINATION AT 15'	20						No Groundwater encountered at the time of drilling
		25						
		30						
		35						
		40						

UNITED CONSULTING
625 HOLCOMB BRIDGE ROAD
NORCROSS, GEORGIA 30071
(770)209-0029, FAX (770)582-2800

BORING LOG

CONTRACTED WITH: CITY OF SUGAR HILL — BORING NO.: B-5
PROJECT NAME: SUGAR HILL EPICENTER — DATE: 09/10/2014
JOB NO.: 2014.4901.01 — DRILLER: BILLY/KILMAN — RIG: CME 55 — LOGGED BY: KN

ELEV.	DESCRIPTION	DEPTH in FEET	SAMPLES NO.	TYPE	BLOWS/6"	RECOV.	W	NOTES
	3" TOPSOIL	0						
	Silt-sandy, some mica, trace clay; stiff; brown (Fill)		1		5-5-9	12		
	Sand-some silt; medium dense; tan (Residual)	5	2		8-12-15	14		
	-dense	10	3		15-15-15	18		
	-silty; medium dense	15	4		8-11-13	18		
	Silt-sandy, some mica; very stiff; tan	20	5		7-7-10	18		
	BORING TERMINATION AT 20'	25						No Groundwater at the time of drilling
		30						
		35						
		40						

UNITED CONSULTING
625 HOLCOMB BRIDGE ROAD
NORCROSS, GEORGIA 30071
(770)209-0029, FAX (770)582-2800

BORING LOG

CONTRACTED WITH: CITY OF SUGAR HILL — BORING NO.: B-6
PROJECT NAME: SUGAR HILL EPICENTER — DATE: 09/10/2014
JOB NO.: 2014.4901.01 — DRILLER: BILLY/KILMAN — RIG: CME 55 — LOGGED BY: KN

ELEV.	DESCRIPTION	DEPTH in FEET	SAMPLES NO.	TYPE	BLOWS/6"	RECOV.	W	NOTES
	3" TOPSOIL	0						
	Silt-sandy, trace clay and rock fragments; dark brown; firm (Fill)		1		1-2-3	18		
	Silt-trace sand; very stiff; brown (Residual)	5	2		4-9-9	18		
	Sand-some mica, trace silt; brown; dense	10	3		13-15-15	18		
	-medium dense	15	4		12-13-16	18		
	Silt-sandy; trace mica; very stiff	20	5		10-11-11	18		
	-tan	25	6		10-15-15	18		
	-trace sand and mica; dark tan	30	7		10-10-11	18		
	-some mica	35	8		3-8-8	18		
	-hard	40	9		12-25-24	18		Groundwater encountered at depth 37' at the time of drilling

UNITED CONSULTING
625 HOLCOMB BRIDGE ROAD
NORCROSS, GEORGIA 30071
(770)209-0029, FAX (770)582-2800

BORING LOG

CONTRACTED WITH: CITY OF SUGAR HILL — BORING NO.: B-6
PROJECT NAME: SUGAR HILL EPICENTER — DATE: 09/10/2014
JOB NO.: KN — DRILLER: BILLY/KILMAN — RIG: CME 55 — LOGGED BY: KN

ELEV.	DESCRIPTION	DEPTH in FEET	SAMPLES NO.	TYPE	BLOWS/6"	RECOV.	W	NOTES
	Partially Weathered Rock sampled as Silt-some mica, trace sand; hard; gray	45	10		26-50/5	18		
	-sandy	50	11		50/5	12		
	-some sand	55	12		50/3	12		
		60	13		23-50/2	12		
	-brown	65	14		33-38-50/6	18		
		70	15		29-50/4	12		
	AUGER REFUSAL AT 71'	75						
		80						

UNITED CONSULTING
625 HOLCOMB BRIDGE ROAD
NORCROSS, GEORGIA 30071
(770)209-0029, FAX (770)582-2800

BORING LOG

CONTRACTED WITH: CITY OF SUGAR HILL — BORING NO.: B-7
PROJECT NAME: SUGAR HILL EPICENTER — DATE: 09/10/2014
JOB NO.: 2014.4901.01 — DRILLER: BILLY/KILMAN — RIG: CME 55 — LOGGED BY: KN

ELEV.	DESCRIPTION	DEPTH in FEET	SAMPLES NO.	TYPE	BLOWS/6"	RECOV.	W	NOTES
	3" TOPSOIL	0						
	Silt-sandy, trace clay and rock fragments; very stiff; brown (Fill)		1		6-9-7	18		
	Silt-sandy, some mica and rock fragments; very stiff; brown (Residual)	5	2		3-9-7	18		
	-stiff	10	3		3-5-6	18		
		15	4		3-6-6	18		
	-trace sand; very stiff; brown	20	5		6-8-12	6		
	AUGER REFUSAL AT 20'	25						No Groundwater encountered at the time of drilling
		30						
		35						
		40						

UNITED CONSULTING
625 HOLCOMB BRIDGE ROAD
NORCROSS, GEORGIA 30071
(770)209-0029, FAX (770)582-2800

BORING LOG

CONTRACTED WITH: CITY OF SUGAR HILL
BORING NO.: B-8
PROJECT NAME: SUGAR HILL EPICENTER
DATE: 09/10/2014
JOB NO.: 2014.4901.01 DRILLER: BILLY/KILMAN RIG: CME 55
LOGGED BY: KN

ELEV.	DESCRIPTION	DEPTH in FEET	SAMPLES NO.	TYPE	BLOWS/6"	RECOV.	W	NOTES
	3" TOPSOIL	0						
	Silt-sandy, trace clay; stiff; dark brown (Fill)		1		4-5-9	9		
	Silt-sandy, trace clay; very stiff; tan (Residual)	5	2		11-11-16	18		
	-tan	10	3		8-11-16	18		
	-trace sand; gray	15	4		8-11-15	18		
	-hard	20	5		15-18-23	18		
	BORING TERMINATION AT 20'	25						No Groundwater encountered at the time of drilling
		30						
		35						
		40						

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 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.

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.*

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, a number of 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 ASFE-Member Geotechncial Engineer for Additional Assistance

Membership in ASFE/The Best People on Earth 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 you ASFE-member geotechnical engineer for more information.

ASFE
The Best People on Earth

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

IIGER06045.0M