District 4 Senior Center

Feasibility Study

4875 Elam Road
Stone Mountain, GA 30083
Parcel ID# 15 256 01 007

Prepared for: DeKalb County Government
Facilities Management Department
130 Commerce Drive, 3rd Floor
Decatur, GA 30030

Date: July 14, 2017

Prepared by: Amec Foster Wheeler Environment & Infrastructure, Inc.
1075 Big Shanty Road, Suite 100
Kennesaw, Georgia 30144

Project No.: 6166-17-0527

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1.0 Introduction

The DeKalb County Department of Community Development plans to construct a new Senior Center in the County's 4th District. Several possible locations will be evaluated, and based on the findings, the County will select the most suitable location for the proposed Senior Center. Amec Foster Wheeler was tasked to perform due diligence and to generate a feasibility study for one of the possible sites: the County-owned parcel at 4875 Elam Road, Stone Mountain, GA 30083, parcel ID# 15 256 01 007 (see Appendix 1 for GIS map). The purpose of this feasibility study is to complete a preliminary site investigation to include a geotechnical investigation and jurisdictional waters delineation, and to verify the capacity of the site to accommodate a modern senior center facility. A topographic and planimetric survey of the 2.7-acre parcel at Elam Road was performed by our subcontractor, Accura Engineering and Consulting Services, Inc., a registered local small business enterprise (LSBE) in DeKalb County. The survey was conducted from June 21 through June 26 and is depicted as the existing conditions plan in Appendix 4.

It is our understanding that the District 4 Senior Center will be designed and built based on an existing, recently built facility. The proposed Center is expected to total approximately 15,000 square feet and to have a minimum of 100 parking spaces.

2.0 Geotechnical Investigation and Reporting

Our team conducted a geotechnical exploration on the Elam Road parcel on June 16. The purpose of the investigation was to explore the subsurface conditions and to analyze these conditions as they relate to foundation design and construction. In order to explore the subsurface conditions in the possible areas of construction, four soil test borings were performed at the approximate locations shown on the boring location plan in Appendix 2. The borings, laid out in likely areas of future facility location, were drilled to approximate termination depths of 15 to 30 feet below existing site grades. The exploratory procedures, conclusions, and preliminary recommendations are presented in the Report of Geotechnical Exploration, Appendix 2.

3.0 Natural Resources

3.1 Jurisdictional Waters

Jurisdictional waters of the U.S., including streams and wetlands, are defined by 33 CFR Part 328.3 and are protected by Section 404 and other applicable sections of the Clean Water Act (33 USC 1344). Impacts to these regulated resources are administered and enforced by the U.S. Army Corps of Engineers (USACE), as well as other federal and state government agencies. Jurisdictional wetlands are defined in the USACE Wetland Delineation Manual and the Eastern Mountains and Piedmont regional supplement (USACE 1987, 2012). These techniques use a multi-parameter approach that requires positive evidence of three criteria: hydrophytic vegetation, hydric soils, and wetland hydrology.

We conducted jurisdictional waters screening to assess the potential presence/absence of jurisdictional waters, including wetlands. The in-house research included a review of readily available public information sources, including:

- U.S. Geological Survey (USGS) 7.5-minute quadrangle topographic maps;
- U.S. Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS) soil survey report; and
- U.S. Fish and Wildlife Service (USFWS) National Wetland Inventory (NWI) maps (see Appendix 3).

USGS topographic maps indicate features (ponds, marshes, streams, etc.) that may potentially be waters of the U.S. Streams indicated as “dashed” blue line streams on the USGS topographic maps are categorized as intermittent streams, while streams indicated as “solid” blue line streams on the USGS topographic maps are categorized as perennial streams.

Field delineation of jurisdictional waters was conducted subsequent to the desktop screening of the study area on June 16, 2017.

The USGS topographic map indicates that the study area consists of a ridge that drops off to the south and west and is bounded by Elam Road to the north and South Hairston Road to the east.

The topography is moderately steep with a drainage swale along the southern edge of the parcel, flowing off-site to the southwest toward the lake at Hairston Park. No streams are denoted on the USGS topographic map within the property boundary (Appendix 3). The USDA-NRCS Soil Survey for DeKalb County does not indicate any hydric soils or soils with hydric inclusions mapped within the property boundary. Areas mapped as hydric soils have a high likelihood of containing wetland areas. The USFWS-NWI map does not indicate any wetlands or streams within the property boundary (Appendix 3).

No wetlands were observed; however, an ephemeral stream (Ephemeral Stream 1) was delineated along the southern property boundary collocated with the swale observed on the topographic map, which flows southwest toward the lake at Hairston Park. Photographs are provided in Appendix 3.

Ephemeral Stream 1 is an unnamed ephemeral tributary to Barbashela Creek, which flows into Snapfinger Creek and subsequently into the South River. The channel is approximately 2 to 3 feet (ft) wide and 0.5 to 1 ft deep, with a substrate dominated by clay and smaller components of sand, silt, and pebbles. Flow was absent during the field survey, but standing pools 0.1 to 1.5 ft in depth were noted below headcuts.

3.2 Protected Species

Plants and animals listed as federally threatened and endangered are protected under the Endangered Species Act (P.L. 92-205) administered and enforced by USFWS. USACE Individual Permits and Nationwide Permit (NWP) General Condition 11 require that projects authorized by USACE do not adversely affect federally protected species. A current list of federally protected species and other ecological resources in DeKalb County was obtained from the USFWS Information, Planning, and Conservation System (IPaC) and Georgia Department of Natural Resources (GADNR) websites on June 15, 2017.

A pedestrian survey was conducted for protected species subsequent to the desktop screening of the study area on June 16, 2017. According to the USFWS IPaC and GADNR databases, two federally protected plants species, Michaux's sumac (*Rhus michauxii*) and black-spored quillwort (*Isoetes melanospora*), potentially occur within the area. Neither the species nor their preferred habitats were observed within the property boundary during the June 16, 2017, pedestrian survey.

4.0 Architectural – Programming

It is our understanding that the District 4 Senior Center will be designed and built based on an existing, recently built facility. The proposed new Senior Center is expected to total approximately 15,000 square feet and to have a minimum of 100 parking spaces. The existing facility plan and programming were reviewed and evaluated against new site conditions and current zoning and building code requirements. Recommendations are provided for proposed new building design modifications to better complement the new site and achieve greater building efficiency and internal space functionality.

The new District 4 Senior Center is programmed to include zoned multi-functional activity and dedicated classroom spaces, administrative support spaces, building services and support spaces, and medium to large multi-functional group activity spaces. Multiple spaces are configured to be provided with movable partition separation to allow for combining of select adjacent spaces into larger shared space configurations. Program areas can be categorized as outlined below, including related spaces with nominal square footage sizes.

Administrative Support:	
Director	180 sq. ft.
Manager	100 sq. ft.
Health/Counseling	150 sq. ft.
Workroom & Storage	135 sq. ft.
Zoned Activity & Classrooms:	
Sewing	315 sq. ft.
Arts & Crafts	300 sq. ft.
Exercise	450 sq. ft.
Billiards	320 sq. ft.
Yoga	560 sq. ft.
Pottery/Kiln	425 sq. ft.
Computer Classroom	750 sq. ft.
Classrooms	500 sq. ft.
Group Activity Areas:	
Game Room	700 sq. ft.
Multipurpose Room w/Stage	3,000 sq. ft.
Building Services:	
Mechanical Room	200 sq. ft.

Electrical Room	150 sq. ft.
IT/Storage	120 sq. ft.
Janitor Closet	100 sq. ft.
Outdoor Storage	150 sq. ft.
Lounge	600 sq. ft.
Restrooms	1,000 sq. ft.
Dressing Rooms	150 sq. ft.
Kitchen/Serveries	450 sq. ft.
Stage Storage	225 sq. ft.
Interior Circulation	As Required
Exterior Mechanical Equipment & Service Yard	As Required

Building Design Recommendations:

- Provide a main building entry point and vestibule to enhance a sense of arrival
- Provide a primary central circulation zone for a majority of space access to enhance staff monitoring of facility operations and enhance overall building security
- Minimize use of long single and double-loaded circulation corridors
- Locate administrative support spaces adjacent to the primary entry point to enhance facility security monitoring and user support services
- Group similar functional activity spaces together to zone interior spaces by function, noise level, and building infrastructure support (i.e., water) to create environmental and operational efficiencies
- Locate spaces that will benefit from natural daylight to the building perimeter with other spaces located to the building interior to create environmental and operational efficiencies
- Provide movable partitions between similar types of adjacent spaces to enhance space functionality and flexibility
- Locate interior and exterior building support spaces to enhance and/or buffer interior building area zoning away from the user exterior building and site access points and circulation routes
- Develop exterior functional areas and spaces that can serve to expand select adjacent interior spaces and/or provide for a logical and pleasing exterior user experience for the building and any developed site amenities
- Develop a clear and logical hierarchy to building circulation spaced and wayfinding elements

5.0 Conclusion

The preliminary/conceptual site layout in Appendix 4 depicts 134 parking spaces, thus significantly exceeding the Community Development Department's goal of having a minimum of 100 parking spaces.

Regarding available utilities to connect the proposed Senior Center, an 8" DIP (ductile iron pipe) water main is available along Elam Road. Our team surveyed Sanitary Sewer Manhole 16-256-s032, located east of Parcel 145, and Manhole 16-001-s079 (see Appendix 1 – GIS map). It will be feasible to discharge sewage from the proposed Senior Center into existing Manhole 16-256-s032; 15 feet of elevation difference is available for the gravity sewer to be installed. Top and invert elevations for Manhole 16-256-s032 are depicted as a detail on the Conceptual Site Plan in Appendix 4.

Regarding stormwater management, we recommend that green infrastructure, such as rain gardens and bioswales, be designed and implemented. This recommendation not only will provide stormwater detention but will beautify the space surrounding the proposed facility.

In conclusion, the geotechnical investigation, jurisdictional water delineation, and protected species survey did not reveal conditions that could preclude the use of the Elam Road parcel for future design and construction of the District 4 Senior Center.

APPENDIX 1 - GIS Map

4875 Elam Rd.

May 25, 2017

1:2,376

0 0.0275 0.055 0.11 mi

0 0.045 0.09 0.18 km

- WTP Sewer Treatment Facility
- Air Valves
- ● Atlanta
- ● DeKalb
- ● Not In County
- ● private

- — DeKalb
- — Atlanta
- — Not In County
- — private
- 🟩 LIFT STATIONS
- — FlowArrows

- — SEWER FORCE MAINS
- ● VALVE
- — .75-10
- — 12-96
- ✚ HYDRANT
- P PUMP

- STORAGE
- SOURCE
- WTP TREATMENT PLANT
- ☐ District
- ☐ Land_Lot
- ☐ TaxParcel

APPENDIX 2 – Geotechnical Report

REPORT OF PRELIMINARY GEOTECHNICAL EXPLORATION

District 4 Senior Center

Stone Mountain, DeKalb County, Georgia

Prepared for:

DeKalb County Facilities Management
1300 Commerce Drive
Decatur, Georgia 30030

Prepared by:

Amec Foster Wheeler Environment & Infrastructure, Inc.
2677 Buford Highway
Atlanta, Georgia 30324

June 27, 2017

Project No. 6166-17-0527

June 27, 2017

Mr. Jaren Abedania
Facilities Management
1300 Commerce Drive
Decatur, Georgia 30030

Subject: **Report of Preliminary Geotechnical Exploration**
District 4 Senior Center
4875 Elam Road
Stone Mountain, Georgia – DeKalb County
Amec Foster Wheeler Project No. 6166-17-0527

Dear Mr. Abedania:

Amec Foster Wheeler Environment & Infrastructure, Inc. (Amec Foster Wheeler) has completed the authorized geotechnical exploration for the proposed District 4 Senior Center at 4875 Elam Road, Stone Mountain, DeKalb County, Georgia. This exploration was conducted in general accordance with Amec Foster Wheeler Proposal dated May 26, 2017 as authorized by you.

We have enjoyed assisting you and look forward to serving as your geotechnical and construction materials testing consultant on the remainder of this project and on future projects. If you have any questions concerning this report, please contact us.

Sincerely,

Amec Foster Wheeler Environment & Infrastructure, Inc.

Mackenzie R. Fioca, E.I.T.
Project Engineer

J. Todd Jackson, P.E.
Associate Engineer

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APPENDIX

1 INTRODUCTION

1.1 PURPOSE

Amec Foster Wheeler has completed the authorized preliminary geotechnical exploration for the proposed District 4 Senior Center project located at 4875 Elam Road in Stone Mountain, DeKalb County, Georgia. The purpose of this study was to explore the subsurface conditions at the site and to provide preliminary recommendations related to foundation design and construction. This report briefly discusses our understanding of the project, describes our exploratory procedures and presents our conclusions and preliminary recommendations.

1.2 PROJECT INFORMATION

The project site is an approximate 2.7-acre parcel in the southwestern quadrant of the intersection of Elam Road and South Hairston Road near Stone Mountain, Georgia. DeKalb County is evaluating the site for a proposed senior center. The project will also include associated parking and driveway areas.

No preliminary building or grading plans were provided at the time of this report. Proposed site grading or topographic plans were not available at the time of this report. Site elevations vary; therefore, cut and fill depths will be dependent on the buildings FFE and site placement. Structural loads were not provided at the time of this report. However, we anticipate maximum column loads of 150 kips with maximum wall loads of 2 to 4 kips.

2 FIELD EXPLORATION

In order to explore the subsurface conditions in the possible areas of construction, a total of four soil test borings were performed at the approximate locations shown on the attached boring location plan. The borings were drilled to approximate termination depths of 15 to 30 feet below existing site grades. Borings were laid out in likely areas of development based on input from the client.

All standard penetration tests were performed using a CME-55 drill rig utilizing an automatic hammer. The borings were drilled by Betts Environmental, Inc. subcontracted by Amec Foster Wheeler. Prior to the commencement of drilling operations, GA811 was contacted as well as a private utility locator, OneVision Utility Services, LLC, subcontracted by Amec Foster Wheeler, checked for the presence of unmarked underground all utilities within the near-by vicinity of the boring locations.

The boring locations were staked in the field by a geotechnical engineer using a hand-held GPS device. The boring locations are shown on the Boring Location Plan (Figure 2) in the Appendix and should be considered approximate. The boring elevations shown on the Boring Logs in the Appendix should be considered approximate and were estimated from various internet sources.

The Soil Test Boring Records, in the Appendix, graphically show the penetration resistances and present the soil descriptions for selected SPT borings. The stratification lines and depth designations on the boring records represent the approximate boundaries between soil types. In some instances, the transition between types may be gradual. Brief descriptions of the exploratory drilling and sampling techniques used are presented in the Field and Laboratory Procedures section of the Appendix.

3 SITE AND SUBSURFACE CONDITIONS

3.1 AREA AND SITE GEOLOGY

The project site is in the Piedmont Physiographic Province, an area underlain by metamorphic rocks with localized igneous intrusions. Published geologic maps[1] indicate the site is underlain by rock formations consisting of Biotite Gneiss.

The residual soils encountered in the Piedmont are the product of in-place chemical and physical weathering of the parent rock. Typically, weathering is most advanced at the surface and decreases with depth. This results in a residual soil profile consisting of slightly clayey soils near the surface underlain by sandy silts and silty sands that generally become harder or denser and coarser with depth to the top of the unweathered bedrock. In deeper residual soil strata, known as saprolites, the banded structural appearance of the parent rock is typically evident.

The boundary between soil and rock in the Piedmont is typically not sharply defined. A transitional zone termed "partially weathered rock" is normally found overlying bedrock. Partially weathered rock (PWR) is defined for engineering purposes as residual material with a standard penetration

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[1] Lawton, D.E., and others, 1976, Geologic Map of Georgia: Georgia Geological Survey

resistance exceeding 100 blows per foot (bpf). Weathering is facilitated by fractures, joints, and by the presence of less resistant rock types. Consequently, the surface elevation of PWR and unweathered rock can vary significantly over short horizontal distances. Lenses and boulders of hard rock and zones of PWR may be present within the soil mantle, above the general bedrock level.

3.2 SITE CONDITIONS

Site topography in the project area is generally flat and open on the west portion of the site Historic aerial photography indicates a building previously existed that may have been demolished around 2002 (with an approximate Elevation from 910 to 920[2] feet). The north edge and east portions of the site are wooded and have some relatively steep grade changes with an approximate Elevation from 910 to 940[2] feet. Underground utilities were observed to be marked on the north and east property boarders near the roads. Some overhead utilities were observed on a pole near the center of the property.

3.3 SUBSURFACE CONDITIONS

3.3.1 General

The subsurface conditions discussed in the following paragraphs and those shown on the Soil Test Boring Records represent an interpretation of the boring and other data using normally accepted geotechnical engineering judgments considering local geology and experience.

The Boring Records represent our interpretation of the field conditions based on the driller's field logs and an engineer's examination of the split-barrel samples. The groundwater condition indicated on the Soil Test Boring Records represent observations at the time of drilling. The lines designating the interfaces between various strata represent approximate boundaries only, as transitions between materials may be gradual. Soil conditions may vary between and away from the boring locations. Soil samples will be discarded after 30 days from the date of this report unless otherwise requested.

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2 Various Internet Resources

3.3.2 Soils

In general, The borings encountered surficial fill underlain by residual soils, partially weathered rock and refusal materials. Fill was encountered in the upper 5 feet in borings B-1, B-2 and B-3. The fill typically consist of red, lean clays, trace gravel with standard penetration resistances generally ranging from 10 to 28 blows per foot (bpf).

Beneath the fill in borings B-1, B-2 and B-3, to between depths of 13 and 20 feet, the borings penetrated medium stiff residuals soils typical of the Piedmont Geologic Province geology. These soils consist of reddish brown to reddish tan sandy silts with an average penetration resistances typically between 6 and 11 bpf. Below the sandy silts, the borings penetrated medium dense to very dense silty sands and partially weathered rock (B-1 and B-2) with an average penetration resistance typically between 20 and 50/5 bpf to auger refusal (B-1 and B-2) or termination (B-3) of boring. B-4 encountered reddish brown lean clays to approximately 8.5 feet then silty sands to approximately 13.5 feet. At 13.5 feet, partially weathered rock, collected as soft rock chips was encountered and auger refusal was encountered at 15 feet.

3.3.3 Groundwater

Groundwater was not encountered at the time of drilling. Groundwater levels can fluctuate with changes in weather, climate, local drainage, and with construction activity in the area. Since groundwater level variations are anticipated, design drawings and specifications should accommodate such possibilities and construction planning should be based on the assumption that variations will occur.

4 CONCLUSIONS AND PRELIMINARY RECOMMENDATIONS

4.1 BASIS FOR RECOMMENDATIONS

The following evaluations and recommendations are based upon the previously presented project information and the assumed structural conditions along with the data obtained in this exploration, and our previous experience with similar projects. If the structural information is incorrect, or if the location of the proposed construction is changed, please contact us so that our recommendations can be reviewed and modified, if necessary.

4.2 SITE PREPARATION

We anticipate construction will be initiated by striping vegetation, and loose, soft or otherwise unsuitable material. Stripped materials consisting of vegetation and organic materials should be wasted off site, or used to vegetate landscaped areas or exposed slopes after completion of grading operations. Stripping depths across the site could vary considerably and as such, we recommend actual stripping depths be evaluated by a representative of Amec Foster Wheeler during construction to aid in preventing removal of excess material.

The silty soils encountered in the borings will be sensitive to disturbance from the construction activity and water seepage. If precipitation occurs prior to or during construction, the near surface soils could increase in moisture content and become more susceptible to disturbance. Construction activity should be monitored, and should be curtailed if the construction activity is causing subgrade disturbance. An Amec Foster Wheeler representative can help with monitoring and developing recommendations to aid in limiting subgrade disturbance.

Fill should be suspect of concealing zones of organic matter or poorly compacted material and should generally be removed or undercut if encountered below the proposed building area during the site preparation, unless the risks of future settlement associated with these masked conditions are acceptable to the owner or cost prohibitive. If these risks are not acceptable, we recommend excavating all existing fill until undisturbed, residual soils are encountered. In pavement areas, removal would be the least risk option. If a moderate risk of pavement distress due to long term decay or consolidation of organic matter in the fill is acceptable, an alternative would be to thoroughly proofroll the site and excavate areas of soft, weak, or organic soil discovered during proofrolling, although this might allow some deeper pockets of low quality fill to remain.

After stripping, proofrolling should be performed with heavy rubber tire construction equipment such as a loaded scraper or fully loaded tandem-axle dump truck. A geotechnical engineer or his representative should observe proofrolling to aid in locating unstable subgrade materials. Proofrolling should be performed after a suitable period of dry weather to avoid degrading an otherwise acceptable subgrade and to reduce the amount of undercutting/remedial work required. Unstable materials located should be stabilized as directed by the engineer based on conditions observed during construction. Undercut and replacement and densification in place are typical remediation methods.

4.3 EXCAVATION AND EARTHWORK CONSTRUCTION CONSIDERATIONS

Difficult excavation conditions due to shallow rock, PWR, hard soils and groundwater may be encountered, depending on final grading plans. Groundwater, if encountered, can make excavation more difficult and delay re-use of excavated soils which may require drying.

Refusal materials that are generally indicative of materials that require difficult excavation were encountered along the northern portion of the site at depths approximately 15 to 20 feet below existing grades. Excavations approaching these depths along the higher elevations may require difficult excavation techniques, such as blasting.

Based on the soil test borings, most excavations to depths less than 13 feet are expected to encounter generally medium dense/medium stiff residual soils. Deeper excavations will likely encounter denser residual soils and PWR. Our past experience is that the residual soils described as very stiff sandy silts and medium dense silty sands can usually be excavated with conventional excavation equipment. Soils exhibiting standard penetration resistances in excess of 30 bpf may require loosening or ripping prior to excavation with loaders. The excavation difficulty of PWR is largely dependent on the capability of the equipment being used and the conditions under which it is being excavated. Hard or dense soils that can readily be loosened by a large single-tooth ripper may require blasting when in a confined excavation such as utility trenches. Any excavations below the refusal levels could encounter sound rock, which may require blasting to remove.

Upon completion of filling and grading, care should be taken to maintain the subgrade moisture content prior to construction of floor slabs and pavements. Construction traffic over the completed subgrade should be avoided to the extent practical. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. If the subgrade should become frozen, desiccated, saturated, or disturbed, the affected material should be removed or these materials should be scarified, moisture conditioned, and recompacted prior to floor slab and pavement construction and observed by Amec Foster Wheeler.

Surface water should not be allowed to pond on the site and soak into the soil during construction. Construction staging should provide drainage of surface water and precipitation away from the building and pavement areas. Any water that collects over or adjacent to construction areas should be promptly removed, along with any softened or disturbed soils. Surface water control in the form of sloping surfaces, drainage ditches and trenches, and sump pits and pumps will be important to avoid ponding and associated delays due to precipitation and seepage.

Groundwater was not encountered during our exploration; however, groundwater levels may vary and may affect construction. If groundwater is encountered during construction, some form of temporary or permanent dewatering may be required. Conventional dewatering methods, such as pumping from sumps, should likely be adequate for temporary removal of any groundwater encountered during excavation at the site. More significant groundwater control could require the use of underdrains in low lying areas of the site to lower groundwater levels.

All excavations should be sloped or braced as required by OSHA regulations to provide stability and safe working conditions. Temporary excavations will probably be required during grading operations. The grading contractor, by his contract, is usually responsible for designing and constructing stable, temporary excavations and should shore, slope or bench the sides of the excavations as required to maintain stability of both the excavation sides and bottom. All excavations should comply with applicable local, state and federal safety regulations, including the current Occupational Health and Safety Administration (OSHA) Excavation and Trench Safety Standards. Permanent slopes should generally be no steeper than 3 horizontal to 1 vertical to allow maintenance of erosion control grassing. Steeper permanent slopes, if well drained, as steep as 2 horizontal to 1 vertical may be stable, but will likely require armoring or other special measures for erosion control. OSHA guidelines should generally apply to temporary slope cuts. Slopes should be protected from concentrated water flows. Slopes excavated below the water table may have reduced stability due to seepage.

Construction site safety is the sole responsibility of the contractor who controls the means, methods and sequencing of construction operations. Under no circumstances shall the information provided herein be interpreted to mean that Amec Foster Wheeler is assuming any responsibility for construction site safety or the contractor's activities; such responsibility shall neither be implied nor inferred.

4.4 FILL PLACEMENT

New fill to raise grades, backfill trenches, or replace overexcavated areas should be low to moderate plasticity soil (PI less than 30), free of deleterious materials and rock fragments larger than about 3 inches in any dimension. Fill should be placed in thin (8-inch-thick loose measure) lifts and compacted to at least 95 percent of the soil's maximum dry density as determined by the standard Proctor compaction test (ASTM D 698) at moisture contents as required to achieve compaction, but in no case more than 3 percent above or below optimum moisture as determined by the standard Proctor test. The upper 2 feet of fill beneath foundations, slabs, or pavements should be compacted to 98 percent. Where access or other limitations require use of light compaction equipment, such as in utility trench excavations, the lift thickness should be reduced to achieve the required degree of compaction throughout the layer. All fill should be placed in horizontal lifts which are adequately keyed into the prepared and scarified subgrade soils.

We recommend that the grading contractor have equipment on site during earthwork for both drying and wetting fill. We do not anticipate difficulty in controlling moisture within the fill during dry weather, but moisture control may be difficult during winter or extended periods of rain.

Soils proposed to be used as fill should be laboratory tested before construction use to determine their standard Proctor parameters, plastic limit and liquid limit. Based on visual examination of the soils obtained from the soil test borings, we anticipate most of the site soils will be acceptable for use as structural fill. In some cases, boulders will have to be segregated from the onsite soils prior to reuse.

4.5 FOUNDATION RECOMMENDATIONS

Structures with the assumed bearing conditions are commonly supported on shallow spread footings bearing in undisturbed residual soils or compacted fill. We have not been informed as to the expected column loads, but assumed loading is discussed in the Project Information section of this report. Foundations bearing on residual soils with N-values greater than 10 bpf may be designed for a maximum allowable bearing pressure of 2,500 pounds per square foot (psf). Total settlement at individual footing locations would be expected to be on the order of one inch or less. Some undercut and replacement of lower consistency soils may be required, depending on the final siting of the buildings and grading.

We recommend widths of not less than 24 inches for footings for ease of construction and to reduce the possibility of localized shear failures. In addition, exterior footing bottoms should be at least 12 inches below exterior grades for protection against frost damage. A qualified geotechnical engineer should observe all footing excavations and assess if the foundations are placed on a competent bearing stratum similar to the soils encountered in our borings.

The planned footing excavations should be observed by the geotechnical engineer to confirm that soft, wet, or unsuitable soils have been removed. Undercut materials may be replaced with crushed stone, or with footing concrete. Footings should be placed shortly after excavation is complete. If foundation soils are exposed to rain, freezing, or wetting, the geotechnical engineer should

5 QUALIFICATIONS OF RECOMMENDATIONS

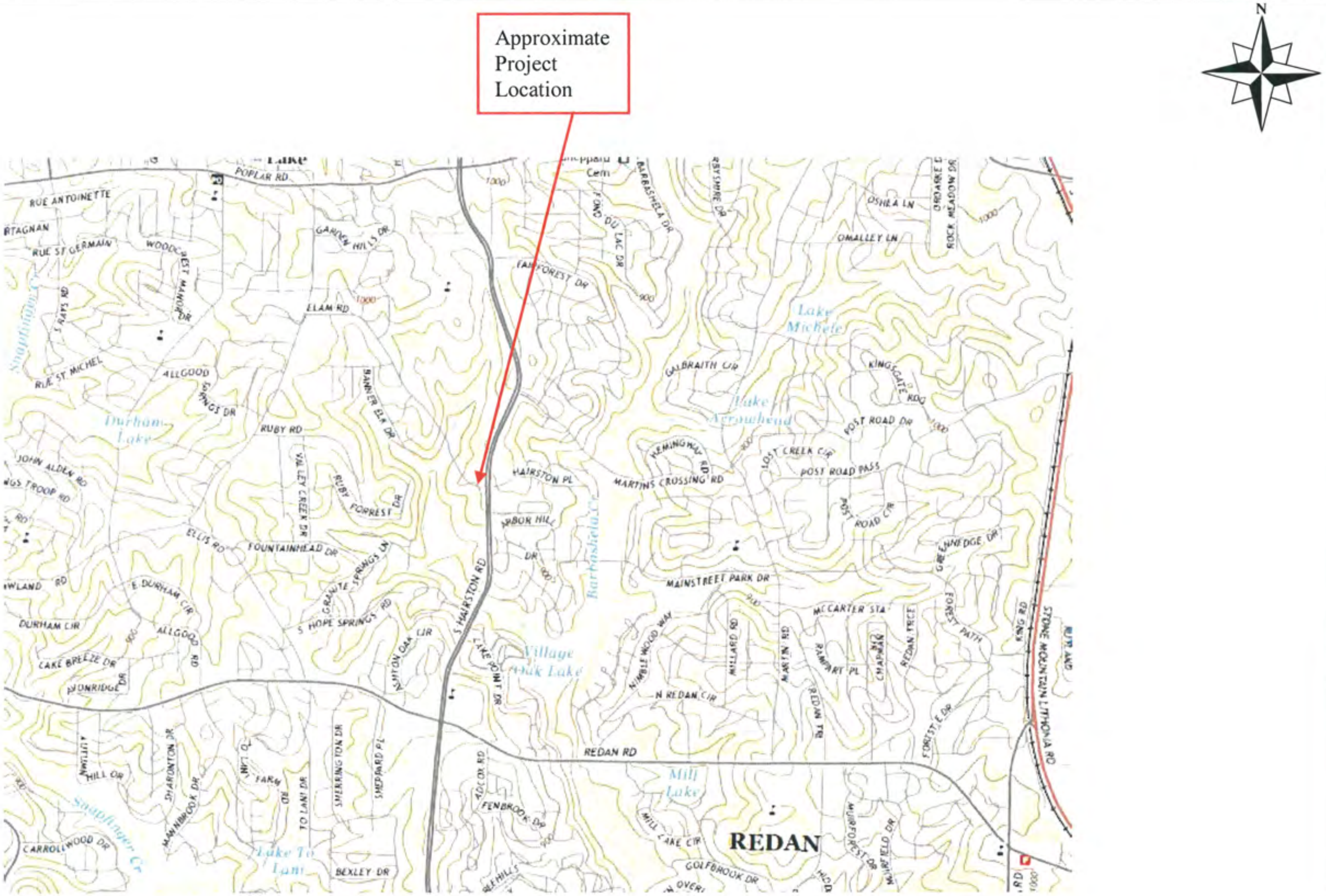
Our evaluation of foundation design and construction conditions has been based on our understanding of the site, the available project information, our assumptions and the data obtained during our field exploration as described herein. The general subsurface conditions used were based on interpolation of the subsurface data at our borings. The preliminary design recommendations in this report have been developed on the basis of the previously described project characteristics and subsurface conditions. If project criteria or locations change, we must be permitted to determine if our recommendations are still applicable or if they must be modified. The findings of such a review will be presented in a supplemental report.

Subsurface conditions in unexplored locations may vary from those encountered at specific boring location. The nature and extent of variations may not become evident until the course of construction. If such variations then appear evident, it will be necessary to re-evaluate the recommendations of this report after on-site observations of the conditions.

Regardless of the thoroughness of a subsurface exploration, there is the possibility that conditions will differ from those at the boring location, that conditions are not as anticipated by the designers, or that the construction process has altered the soil conditions. Therefore, experienced geotechnical engineers must observe earthwork and foundation construction to assess if the conditions anticipated in design actually exist.

Our professional services have been performed, our findings derived, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. This warranty is in lieu of all other warranties either express or implied. This company is not responsible for the conclusions, opinions or recommendations of others based on these data.

APPENDIX



NOT TO SCALE

Source: USGS Athens West Quadrangle, 2014

District 4 Senior Center **4875 Elam Road** **Stone Mountain, Georgia – DeKalb County**	amec foster wheeler Environment & Infrastructure, Inc. 2677 Buford Highway Atlanta, Georgia 30324 (404) 873 4761	**SITE LOCATION MAP**		
		PROJECT: 6166170527	DATE: July 27, 2017	FIGURE 1

Prepared by: MRF 6/27/2017
Checked by: JTJ 6/27/2017

NOT TO SCALE

● Approximate Boring Location

District 4 Senior Center
4875 Elam Road
Stone Mountain, Georgia – DeKalb County

amec foster wheeler
Environment & Infrastructure, Inc.
2677 Buford Highway
Atlanta, Georgia 30324 (404) 873 4761

BORING LOCATION PLAN

PROJECT: 6166170527
DATE: June 27, 2017
FIGURE 2

Prepared by: MRF 6/27/2017
Checked by: JTJ 6/27/2017

FIELD EXPLORATORY PROCEDURES

Field Operations: The general field procedures employed by Amec Foster Wheeler are summarized in ASTM D 420, which is entitled "Investigating and Sampling Soils and Rocks for Engineering Purposes." This recommended practice lists recognized methods for determining soil and rock distribution and groundwater conditions. These methods include geophysical and in situ methods as well as borings.

Borings are drilled to obtain subsurface samples using one of several alternate techniques depending upon the subsurface conditions. These techniques are:

a. Continuous 2-1/2 or 3-1/4 inch I.D. hollow stem augers;

b. Wash borings using roller cone or drag bits (mud or water);

c. Continuous flight augers (ASTM D 1425).

These drilling methods are not capable of penetrating through material designated as "refusal materials." Refusal, thus indicated, may result from hard cemented soil, soft weathered rock, coarse gravel or boulders, thin rock seams, or the upper surface of sound continuous rock. Core drilling procedures are required to determine the character and continuity of refusal materials.

The subsurface conditions encountered during drilling are reported on a field test boring record by the chief driller. The record contains information concerning the boring method, samples attempted and recovered, indications of the presence of various materials such as coarse gravel, cobbles, etc., and observations between samples. Therefore, these boring records contain both factual and interpretive information. The field boring records are on file in our office.

The soil and rock samples and the field boring records are reviewed by a geotechnical engineer. The engineer classifies the soils in general accordance with the procedures outlined in ASTM D 2488 and prepares the final boring records that are the basis for all evaluations and recommendations.

The final boring records represent our interpretation of the contents of the field records based on the results of the engineering examinations and tests of the field samples. These records depict subsurface conditions at the specific locations and at the particular time when drilled. Soil conditions at other locations may differ from conditions occurring at these boring locations. Also, the passage of time may result in a change in the subsurface soil and groundwater conditions at these boring locations. The lines designating the interface between soil or refusal materials on the records and on profiles represent approximate boundaries. The transition between materials may be gradual. The final boring records are included with this report.

The detailed data collection methods used during this study are discussed on the following pages.

Soil Test Borings: Soil test borings were made at the site at approximate locations shown on the attached Boring Location Plan. Soil sampling and penetration testing were performed in general accordance with ASTM D 1586.

Each boring was made by mechanically twisting a hollow-stem steel auger into the soil. At regular intervals, the drilling tools were removed and soil samples obtained with a standard 1.4-inch I.D., 2-inch O.D., split tube sampler. The sampler was first seated 6 inches to penetrate loose cuttings, then driven an additional foot with blows of a 140-pound hammer falling 30 inches. The number of hammer blows required to drive the sampler the final foot was recorded and is designated the "penetration resistance." The penetration resistance, when properly evaluated, is an index to the soil strength and foundation supporting capability.

Representative portions of the soil samples, thus obtained, were placed in glass jars and transported to the laboratory. In the laboratory, the samples were examined to evaluate the driller's field classifications. Test boring records are attached which graphically show the soil descriptions and penetration resistances.

Water Level Readings: Water table readings are normally taken in conjunction with borings and are recorded on the "Test Boring Records." These readings indicate the approximate location of the hydrostatic water table at the time of our field investigation. Where impervious soils are encountered (clayey soils) the amount of water seepage into the boring is small, and it is generally not possible to establish the location of the hydrostatic water table through water level readings. The groundwater table may also depend on the amount of precipitation at the site during a particular period. Fluctuations in the water table should be expected with variations in precipitation, surface run-off, evaporation and other factors.

The time of boring water level reported on the boring records is determined by field crews as the drilling tools are advanced. The time of boring water level is detected by changes in the drilling rate, soil samples obtained, etc. The readings are taken by dropping a weighted line down the boring or using an electrical probe to detect the water level surface.

MAJOR DIVISIONS			GROUP SYMBOLS		TYPICAL NAMES
COARSE GRAINED SOILS (More than 50% of material is LARGER than No. 200 sieve size)	GRAVELS (More than 50% of coarse fraction is LARGER than the No. 4 sieve size)	CLEAN GRAVELS (Little or no fines)	●	GW	Well graded gravels, gravel - sand mixtures, little or no fines.
			○	GP	Poorly graded gravels or grave - sand mixtures, little or no fines.
		GRAVELS WITH FINES (Appreciable amount of fines)	○	GM	Silty gravels, gravel - sand - silt mixtures.
			▨	GC	Clayey gravels, gravel - sand - clay mixtures.
	SANDS (More than 50% of coarse fraction is SMALLER than the No. 4 Sieve Size)	CLEAN SANDS (Little or no fines)	░	SW	Well graded sands, gravelly sands, little or no fines.
			░	SP	Poorly graded sands or gravelly sands, little or no fines.
		SANDS WITH FINES (Appreciable amount of fines)	▥	SM	Silty sands, sand - silt mixtures
			▨	SC	Clayey sands, sand - clay mixtures.
FINE GRAINED SOILS (More than 50% of material is SMALLER than No. 200 sieve size)	SILTS AND CLAYS (Liquid limit LESS than 50)		▥	ML	Inorganic silts and very fine sands, rock flour, silty of clayey fine sands or clayey silts and with slight plasticity.
			▨	CL	Inorganic lays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays.
			▤	OL	Organic silts and organic silty clays of low plasticity.
	SILTS AND CLAYS (Liquid limit GREATER than 50)		▥	MH	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts.
			▨	CH	Inorganic clays of high plasticity, fat clays
			▤	OH	Organic clays of medium to high plasticity, organic silts.
HIGHLY ORGANIC SOILS			⩊	PT	Peat and other highly organic soils.
FILL			▩		Fill

BOUNDARY CLASSIFICATIONS: Soils possessing characteristics of two groups are designated by combinations of group symbols.

SILT OR CLAY	SAND			GRAVEL		Cobbles	Boulders
	Fine	Medium	Coarse	Fine	Coarse		

No.200 No.40 No.10 No.4 3/4" 3" 12"

U.S. STANDARD SIEVE SIZE

Reference: The Unified Soil Classification System, Corps of Engineers, U.S. Army Technical Memorandum No 3-357, Vol. 1, March, 1953 (Revised April, 1960)

■	Undisturbed Sample	▮	Auger Cuttings
☒	Standard Penetration Test or Dynamic Cone Penetration Test	░	Bulk Sample
▯	Rock Core	▩	Crandall Sampler
▩	Dilatometer	▨	Pressure Meter
▯	Packer	○	No Recovery
▽	Water Table at time of boring	▼	Water Table after 24 hours

Correlation of Standard Penetration Resistance with Relative Density and Consistency

SAND & GRAVEL		SILT & CLAY	
No. of Blows	Relative Density	No. of Blows	Consistency
0 - 4	Very Loose	0 - 2	Very Soft
5 - 10	Loose	3 - 4	Soft
11 - 30	Medium Dense	5 - 8	Firm
31 - 50	Dense	9 - 15	Stiff
Over 50	Very Dense	16 - 30	Very Stiff
		31 - 50	Hard
		Over 50	Very Hard

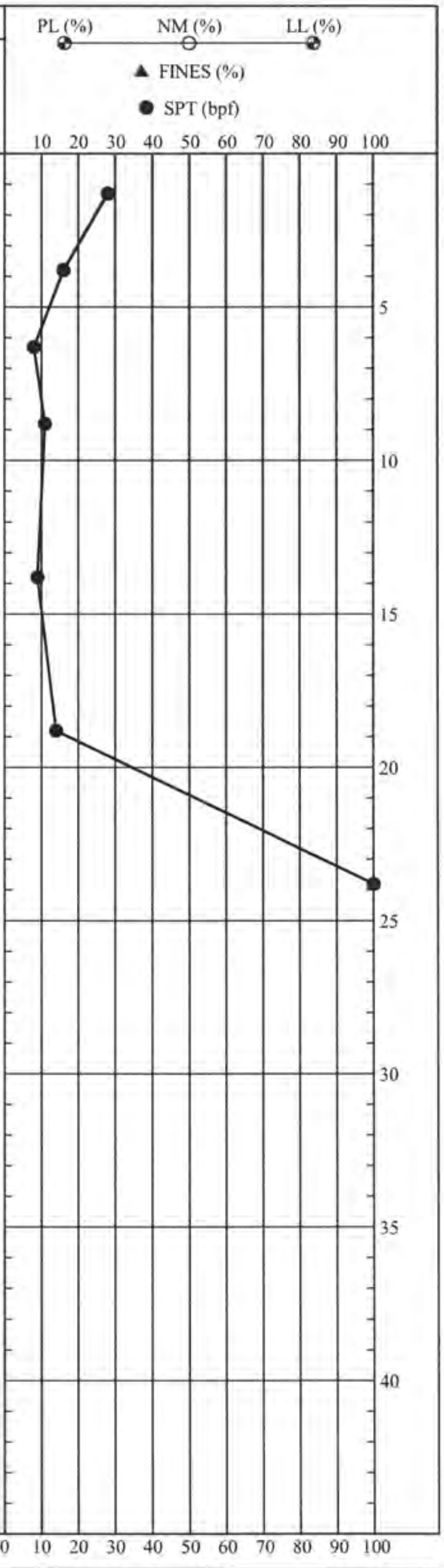
Correlation of Dynamic Cone Penetration Resistance with Relative Density and Consistency (Piedmont Residual Soils)

SAND & GRAVEL		SILT & CLAY	
No. of Blows	Relative Density	No. of Blows	Consistency
0 - 4	Very Loose	0 - 2	Very Soft
5 - 15	Loose	3 - 4	Soft
16 - 30	Medium Dense	5 - 10	Firm
		11 - 30	Stiff

KEY TO SYMBOLS AND DESCRIPTIONS

amec
foster
wheeler

DEPTH (ft)	SOIL CLASSIFICATION AND REMARKS	LEGEND	ELEV (ft)	SAMPLES IDENT	TYPE	N-COUNT 1st 6" 2nd 6" 3rd 6"
0	**FILL** - Gray, sandy GRAVEL (GP), some asphalt pieces, medium dense			SS-1		15-15-13 (N = 28)
	Red, SILT (ML), little sand, low plasticity, very stiff			SS-2		4-7-9 (N = 16)
5	**RESIDUUM** - Orangish-tan, SILT (SM), some sand, slightly micaceous, low plasticity, medium stiff			SS-3		3-3-5 (N = 8)
	Same as above, stiff, more micaceous			SS-4		3-6-5 (N = 11)
10						
15	Light to medium brown, sandy SILT (SM), stiff, micaceous, dry			SS-5		3-4-5 (N = 9)
20	Gray, silty SAND (SM), little gravel, medium dense			SS-6		4-4-10 (N = 14)
	PWR - sampled as - Gray, Silty SAND (SM), little gravel, very dense			SS-7		50/5
25	Auger Refusal at 25 feet					
30						
35						
40						
45						



DRILLER: Betts Environmental
EQUIPMENT: CME-550 (Auto-Hammer)
METHOD: 2 1/4" HSA
HOLE DIA.: 6 inches
REMARKS: No groundwater encountered

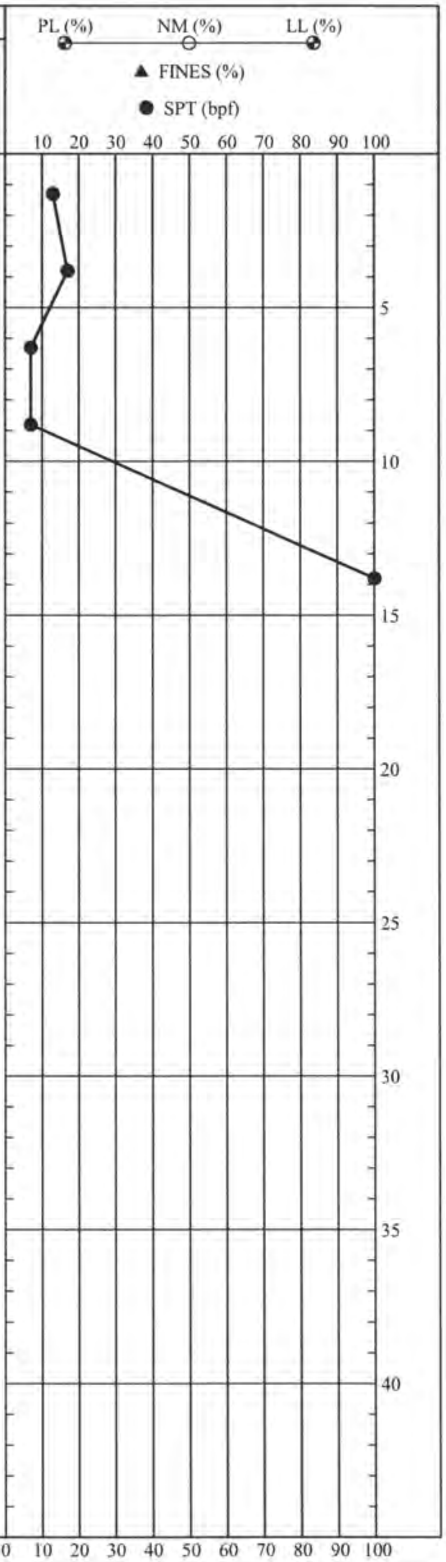
THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER.

AUGER BORING RECORD

BORING NO.: B-1
PROJECT: Dekalb County District 4 Senior Center
LOCATION: 4875 Elam Road, Stone Mountain, GA
DRILLED: June 16, 2017
PROJECT NO.: 6166170527 **PAGE** 1 **OF** 1

amec foster wheeler

DEPTH (ft)	SOIL CLASSIFICATION AND REMARKS	LEGEND	ELEV (ft)	SAMPLES IDENT	SAMPLES TYPE	SAMPLES N-COUNT 1st 6" 2nd 6" 3rd 6"
0	3 inches of TOPSOIL					
	FILL - Brown and red, lean CLAY (CL), medium plasticity, little sand, stiff	▨		SS-1	☒	7-5-8 (N = 13)
		▨		SS-2	☒	5-8-9 (N = 17)
	RESIDUUM - Orangish-tan, SILT (ML), some sand, micaceous, very stiff to medium stiff, low plasticity	▥		SS-3	☒	3-3-4 (N = 7)
		▥		SS-4	☒	2-3-4 (N = 7)
	PWR - sampled as - Gray, silty SAND (SM), little gravel, nonplastic, very dense	▒		SS-5	☒	35-50/2
15	Auger Refusal at 15 feet					



DRILLER: Betts Environmental
EQUIPMENT: CME-550 (Auto-Hammer)
METHOD: 2 1/4" HSA
HOLE DIA.: 6 inches
REMARKS: No groundwater encountered

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER.

AUGER BORING RECORD

BORING NO.: B-2
PROJECT: Dekalb County District 4 Senior Center
LOCATION: 4875 Elam Road, Stone Mountain, GA
DRILLED: June 16, 2017
PROJECT NO.: 6166170527 **PAGE** 1 **OF** 1

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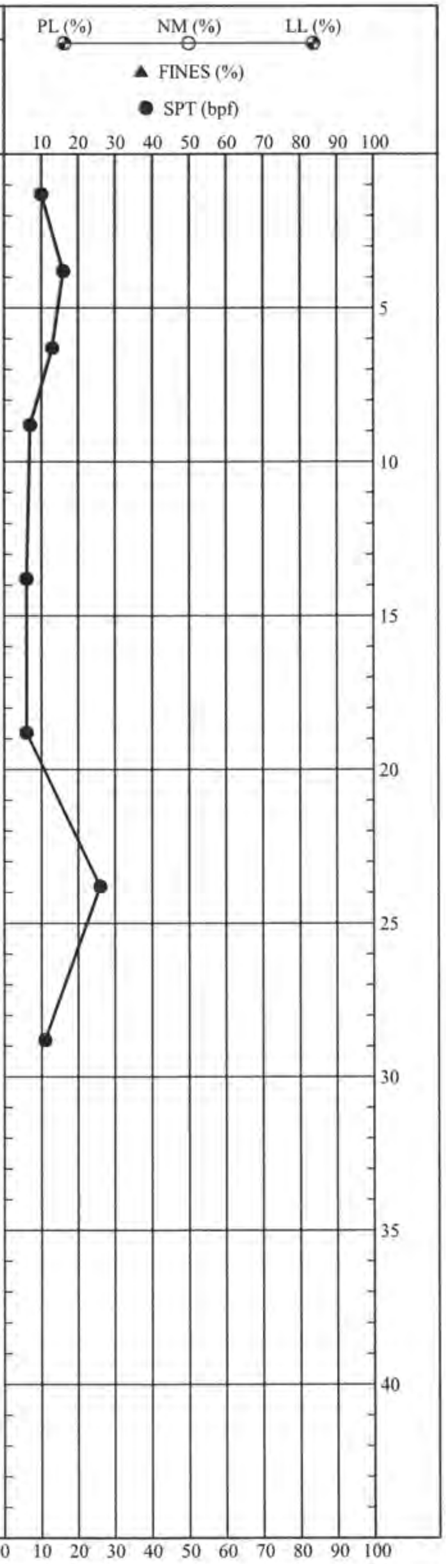
AUGER BORING 6166170527 BORING LOGS.GPJ AMEC.GDT 6/27/17

DEPTH (ft)	SOIL CLASSIFICATION AND REMARKS
0	**FILL** - Brown to red, lean CLAY (CL), little sand, stiff to very stiff, medium to low plasticity
	RESIDUUM - Light orange to tan, SILT (ML), little sand, micaceous, stiff to medium stiff, nonplastic to low plasticity
	Tan and gray, silty SAND (SM), little gravel, medium dense, nonplastic
30	Boring Terminated at 30 feet

SAMPLES IDENT	TYPE	N-COUNT 1st 6" 2nd 6" 3rd 6"
SS-1	☒	5-5-5 (N = 10)
SS-2	☒	5-6-10 (N = 16)
SS-3	☒	4-5-8 (N = 13)
SS-4	☒	2-4-3 (N = 7)
SS-5	☒	2-3-3 (N = 6)
SS-6	☒	3-3-3 (N = 6)
SS-7	☒	4-15-11 (N = 26)
SS-8	☒	2-4-7 (N = 11)



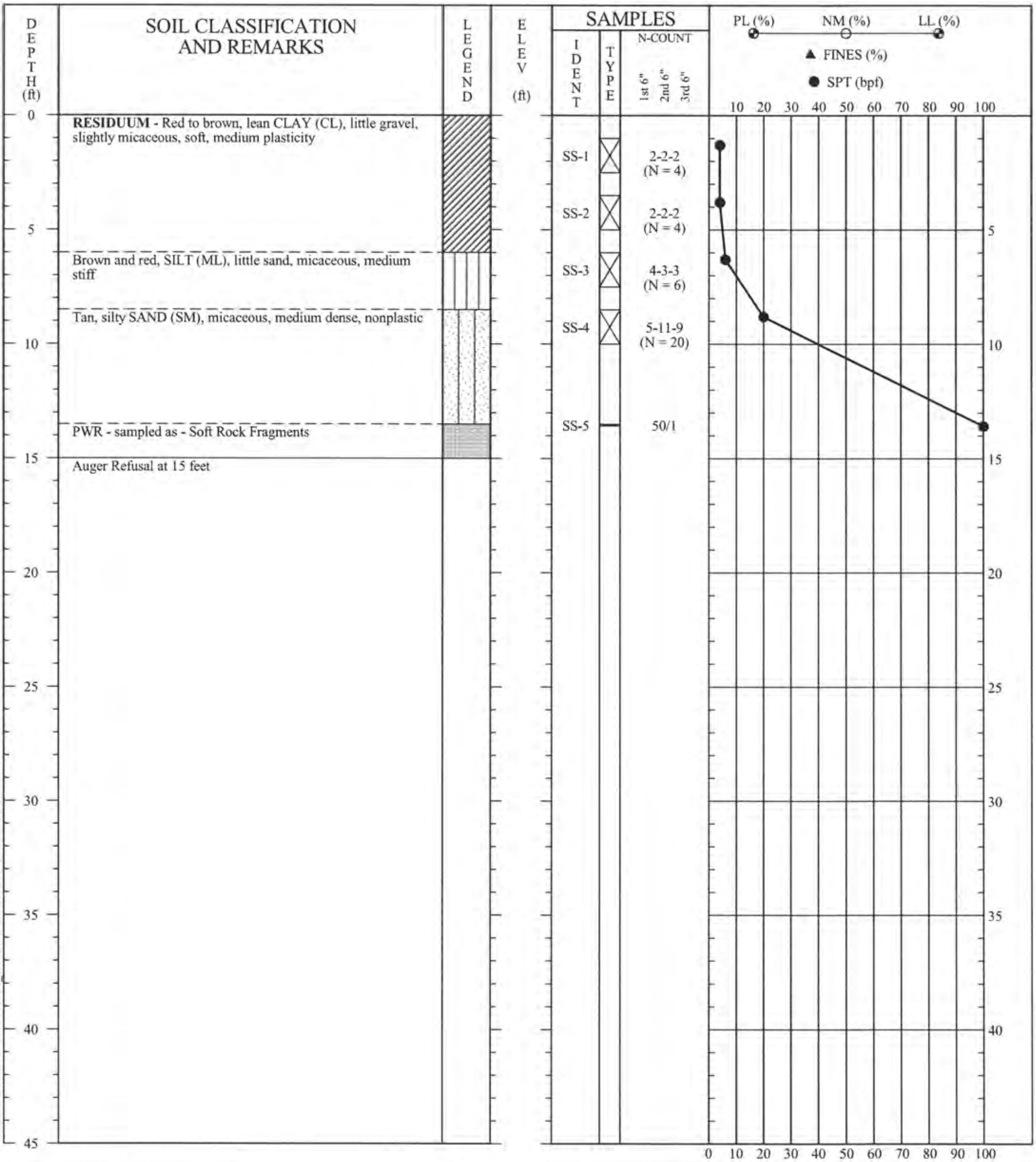
DRILLER: Betts Environmental
EQUIPMENT: CME-550 (Auto-Hammer)
METHOD: 2 1/4" HSA
HOLE DIA.: 6 inches
REMARKS: No groundwater encountered

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER.

AUGER BORING RECORD

BORING NO.: B-3
PROJECT: Dekalb County District 4 Senior Center
LOCATION: 4875 Elam Road, Stone Mountain, GA
DRILLED: June 16, 2017
PROJECT NO.: 6166170527 **PAGE** 1 **OF** 1

amec foster wheeler



SOIL CLASSIFICATION AND REMARKS
RESIDUUM - Red to brown, lean CLAY (CL), little gravel, slightly micaceous, soft, medium plasticity
Brown and red, SILT (ML), little sand, micaceous, medium stiff
Tan, silty SAND (SM), micaceous, medium dense, nonplastic
PWR - sampled as - Soft Rock Fragments
Auger Refusal at 15 feet

IDENT	N-COUNT
SS-1	2-2-2 (N = 4)
SS-2	2-2-2 (N = 4)
SS-3	4-3-3 (N = 6)
SS-4	5-11-9 (N = 20)
SS-5	50/1

AUGER BORING 6166170527_BORING LOGS.GPJ AMEC.GDT 6/27/17

DRILLER:	Betts Environmental
EQUIPMENT:	CME-550 (Auto-Hammer)
METHOD:	2 $^1/_4$" HSA
HOLE DIA.:	6 inches
REMARKS:	No groundwater encountered

THIS RECORD IS A REASONABLE INTERPRETATION OF SUBSURFACE CONDITIONS AT THE EXPLORATION LOCATION. SUBSURFACE CONDITIONS AT OTHER LOCATIONS AND AT OTHER TIMES MAY DIFFER.

AUGER BORING RECORD

BORING NO.: B-4
PROJECT: Dekalb County District 4 Senior Center
LOCATION: 4875 Elam Road, Stone Mountain, GA
DRILLED: June 16, 2017
PROJECT NO.: 6166170527

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wheeler

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

APPENDIX 3 – Wetlands, Photos, and Soil Map

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping, Aerogrid, IGN, IGP, swisstopo, and the GIS User Community

Dekalb County District 4 Senior Center

National Wetlands Inventory

Prepared By:
JAB - 6/19/2017

Checked By:
KPH - 6/19/2017

Project Number:
6166170527

amec foster wheeler

Figure: 1

Path: G:\Dekalb Co Senior Center\MXDs\Dekalb Senior Center NWI.mxd

District 4 Senior Center
DeKalb County

Photographic Log
Summer 2017

	Client: DeKalb County Location: Elam Road Project No.: 6166170527 Date: 06.16.17 Photo No.: 1 Photographer: KPH Description: View upstream of Stream 1, facing northeast.
	Client: DeKalb County Location: Elam Road Project No.: 6166170527 Date: 06.16.17 Photo No.: 2 Photographer: KPH Description: View downstream of Stream 1, facing southwest.

Soil Map—DeKalb County, Georgia

Map Scale: 1:8,030 if printed on A portrait (8.5" x 11") sheet.

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 16N WGS84

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:15,800.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: DeKalb County, Georgia
Survey Area Data: Version 8, Sep 13, 2016

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: May 4, 2014—Jun 18, 2014

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

DeKalb County, Georgia (GA089)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
AkB	Altavista fine sandy loam, 2 to 6 percent slopes	1.8	0.6%
AvF	Ashlar sandy loam, very rocky, 15 to 45 percent slopes	1.4	0.4%
Ca	Cartecay silt loam, frequently flooded	28.4	8.9%
CeB	Cecil sandy loam, 2 to 6 percent slopes	2.4	0.8%
CeC	Cecil sandy loam, 6 to 10 percent slopes	15.6	4.9%
CfC2	Cecil sandy clay loam, 2 to 10 percent slopes, eroded	0.2	0.1%
CuC	Cecil-Urban land complex, 2 to 10 percent slopes	26.5	8.3%
CvF	Chestatee stony sandy loam, 15 to 45 percent slopes	18.6	5.8%
GeB	Gwinnett sandy loam, 2 to 6 percent slopes	1.6	0.5%
GeC	Gwinnett sandy loam, 6 to 10 percent slopes	3.8	1.2%
GeD	Gwinnett sandy loam, 10 to 15 percent slopes	3.3	1.0%
GwC2	Gwinnett sandy clay loam, 2 to 10 percent slopes, eroded	33.3	10.4%
GwD2	Gwinnett sandy clay loam, 10 to 15 percent slopes, eroded	40.1	12.5%
GwE2	Gwinnett sandy clay loam, 15 to 25 percent slopes, eroded	0.6	0.2%
HsC	Hiwassee sandy loam, 6 to 10 percent slopes	3.1	1.0%
MdB	Madison sandy loam, 2 to 6 percent slopes	1.4	0.4%
MdD	Madison sandy loam, 10 to 15 percent slopes	4.9	1.5%
MdE	Madison sandy loam, 15 to 30 percent slopes	5.9	1.9%
MfC2	Madison sandy clay loam, 2 to 10 percent slopes, eroded	28.9	9.0%
MfD2	Madison sandy clay loam, 10 to 15 percent slopes, moderately eroded	9.7	3.0%
MfE2	Madison sandy clay loam, 15 to 25 percent slopes, eroded	2.3	0.7%

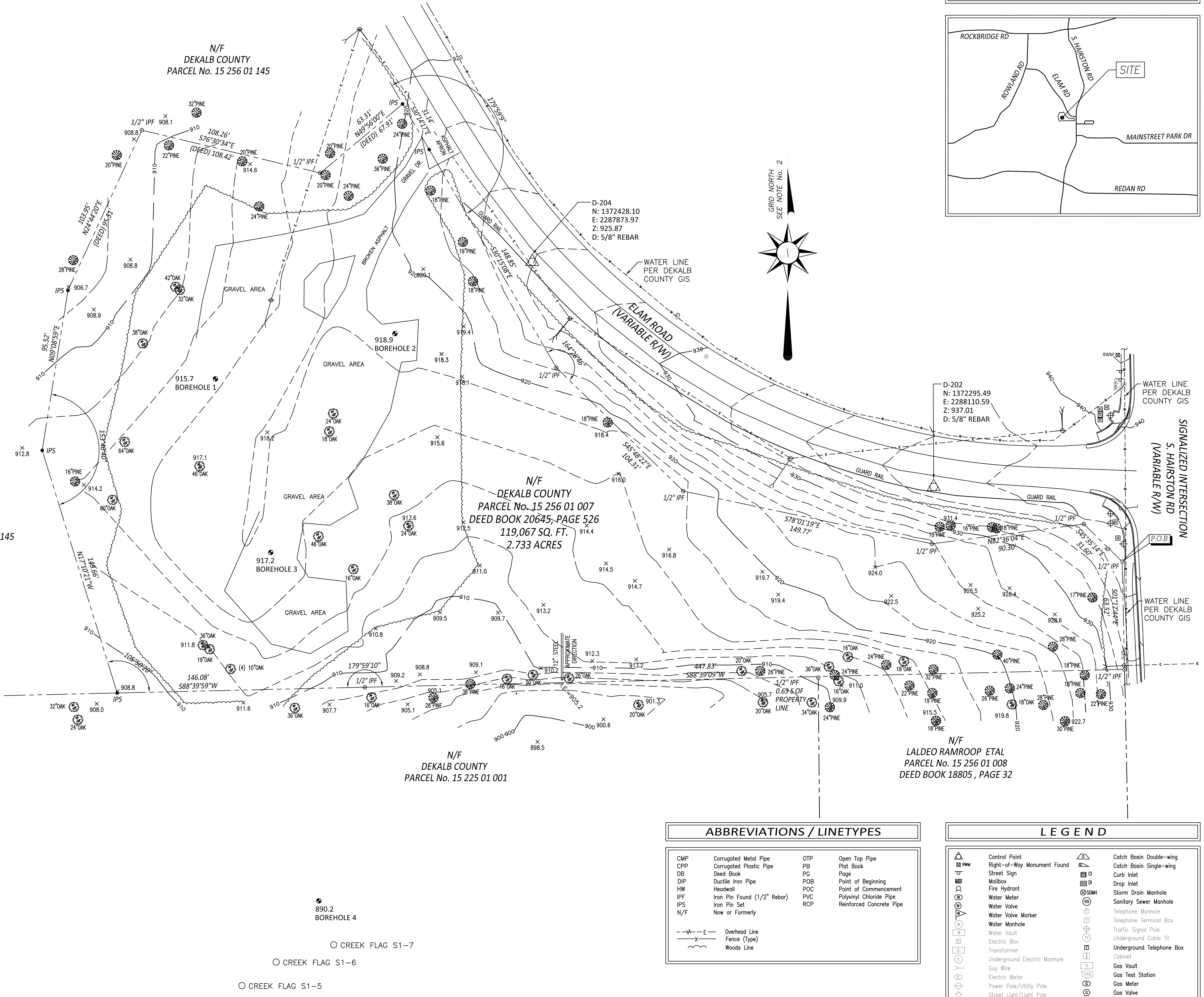
DeKalb County, Georgia (GA089)			
Map Unit Symbol	**Map Unit Name**	**Acres in AOI**	**Percent of AOI**
PfD	Pacolet sandy loam, 10 to 15 percent slopes	12.9	4.0%
PfE	Pacolet sandy loam, 15 to 30 percent slopes	1.8	0.6%
PgC2	Pacolet sandy clay loam, 2 to 10 percent slopes, eroded	0.1	0.0%
PuE	Pacolet-Urban land complex, 10 to 25 percent slopes	54.7	17.1%
SgF	Sweetapple-Grover complex, 15 to 45 percent slopes	2.0	0.6%
Ud	Urban land	0.4	0.1%
W	Water	5.6	1.7%
WeC	Wedowee sandy loam, 6 to 10 percent slopes	0.2	0.1%
Wf	Wehadkee silt loam, frequently flooded	8.9	2.8%
Totals for Area of Interest		**320.5**	**100.0%**

Appendix 4 - Existing Conditions and Preliminary Conceptual Plan

RESERVED

GENERAL NOTES

1. THE FIELD DATA UPON WHICH THIS SURVEY IS BASED HAS A CLOSURE PRECISION OF ONE FOOT IN 10,000+ FEET AND AN ANGULAR ERROR OF 5 SECOND PER ANGLE AND WAS ADJUSTED USING LEAST SQUARES. A TRIMBLE S6 WAS USED TO OBTAIN LINEAR AND ANGULAR MEASUREMENTS. WORK WAS COLLECTED DURING JUNE OF 2017. THIS PLAT HAS BEEN CALCULATED FOR CLOSURE AND HAS BEEN FOUND TO BE ACCURATE WITHIN ONE FOOT IN 196,428 FEET.
2. THIS SURVEY IS RELATIVE TO THE GEORGIA STATE PLANE COORDINATE SYSTEM OF 1985, WEST ZONE AS REFERENCED TO NAD 83(2011). VERTICAL DATUM IS NAVD 88. EGPS SOLUTIONS, INC VRS NETWORK ALONG WITH A CHAMPION TKO GPS RECEIVER WAS USED TO ESTABLISH CONTROL. COMBINED (GRID) FACTOR = 0.999859886.
3. NO PORTION OF THIS PROPERTY IS LOCATED WITHIN A SPECIAL FLOOD HAZARD AREA AS PER FEMA FLOOD INSURANCE RATE MAPS OF FULTON COUNTY, GEORGIA, AS SHOWN ON MAP NUMBER 13089C0089J, HAVING AN EFFECTIVE DATE OF 05/16/2013.
4. CORNERS NOTED HEREON AS IRON PIN SET (IPS) ARE 5/8 INCH REBARS WITH A PLASTIC CAP STAMPED “ACCURA ENG. LSF 001140”.
5. LAND SURVEYORS, AS LICENSED PROFESSIONALS BY THE STATE OF GEORGIA, ARE NOT EXPERTS IN THE IDENTIFICATION OF WETLANDS, CEMETERIES OR BURIAL GROUNDS, ITEMS OF HISTORICAL OR CULTURAL SIGNIFICANCE; THEREFORE EXCEPTION IS TAKEN TO ANY SUCH MATTERS WHICH MAY EXIST ON THIS PROPERTY.
6. THE PROPERTY MAY BE SUBJECT TO EASEMENTS, RESERVATIONS, RIGHTS OF WAY, OR RESTRICTIONS WHICH ARE NOT RECORDED OR NOT DISCLOSED BY THE TITLE COMMITMENT OR OTHERWISE UNKNOWN TO THE SURVEYOR; THEREFORE EXCEPTION IS TAKEN TO ANY SUCH ITEMS.
7. THE TWO MOST NORTHWESTERN PINS APPEAR TO HAVE BEEN SET 5-10 FEET TOO FAR NORTH. WE ADJUSTED THE BOUNDARY SURVEY TO FIT THE PINS AS SHOWN.
8. TREES 18” OR LARGER IN DIAMETER ARE SHOWN.
9. ABOVE GROUND “VISIBLE” UTILITIES ARE SHOWN WITH UNDERGROUND WATER LINES SHOWN PER DEKALB COUNTY GIS.
   UNDERGROUND UTILITY INVESTIGATION WAS NOT PERFORMED



This plat is a retracement of an existing parcel or parcels of land and does not subdivide or create a new parcel or make any changes to any real property boundaries. The recording information of the documents, maps, plats, or other instruments which created the parcel or parcels are stated hereon. RECORDATION OF THIS PLAT DOES NOT IMPLY APPROVAL OF ANY LOCAL JURISDICTION, AVAILABILITY OF PERMITS, COMPLIANCE WITH LOCAL REGULATIONS OR REQUIREMENTS, OR SUITABILITY FOR ANY USE OR PURPOSE OF THE LAND. Furthermore, the undersigned land surveyor certifies that this plat complies with the minimum technical standards for property surveys in Georgia as set forth in the rules and regulations of the Georgia Board of Registration for Professional Engineers and Land Surveyors and as set forth in O.C.G.A. Section 15-6-67.

ABBREVIATIONS / LINETYPES

CMP	Corrugated Metal Pipe	OTP	Open Top Pipe
CPP	Corrugated Plastic Pipe	PB	Plat Book
DB	Deed Book	PG	Page
DIP	Ductile Iron Pipe	POB	Point of Beginning
HW	Headwall	POC	Point of Commencement
IPF	Iron Pin Found (1/2" Rebar)	PVC	Polyvinyl Chloride Pipe
IPS	Iron Pin Set	RCP	Reinforced Concrete Pipe
N/F	Now or Formerly		

— —W— —E —	Overhead Line
———X———	Fence (Type)
⌒⌒	Woods Line

LEGEND

△	Control Point	⏢	Catch Basin Double-wing
☒ RWM	Right-of-Way Monument Found	▱	Catch Basin Single-wing
⊸	Street Sign	▥ CI	Curb Inlet
MB	Mailbox	▤ DI	Drop Inlet
♁	Fire Hydrant	⊗SDMH	Storm Drain Manhole
W	Water Meter	SS	Sanitary Sewer Manhole
W	Water Valve	T	Telephone Manhole
W	Water Valve Marker	T	Telephone Terminal Box
W	Water Manhole	⌖	Traffic Signal Pole
W	Water Vault	TV	Underground Cable TV
E	Electric Box	T	Underground Telephone Box
E	Transformer	◫	Cabinet
E	Underground Electric Manhole	G	Gas Vault
≻—	Guy Wire	GTS	Gas Test Station
E	Electric Meter	G	Gas Meter
⊖	Power Pole/Utility Pole	G	Gas Valve
☼	Street Light/Light Pole	M	Utility Marker
⌖	Traffic Signal Pole		
TC	Traffic Cabinet		
H	Traffic Signal HandHole		

ACCURA

ACCURA ENGINEERING AND CONSULTING SERVICES, INC.
3200 PRESIDENTIAL DRIVE • ATLANTA, GA 30340
OFFICE:404-241-8722 • ACCURA.COM

TOPOGRAPHIC & BOUNDARY SURVEY FOR:

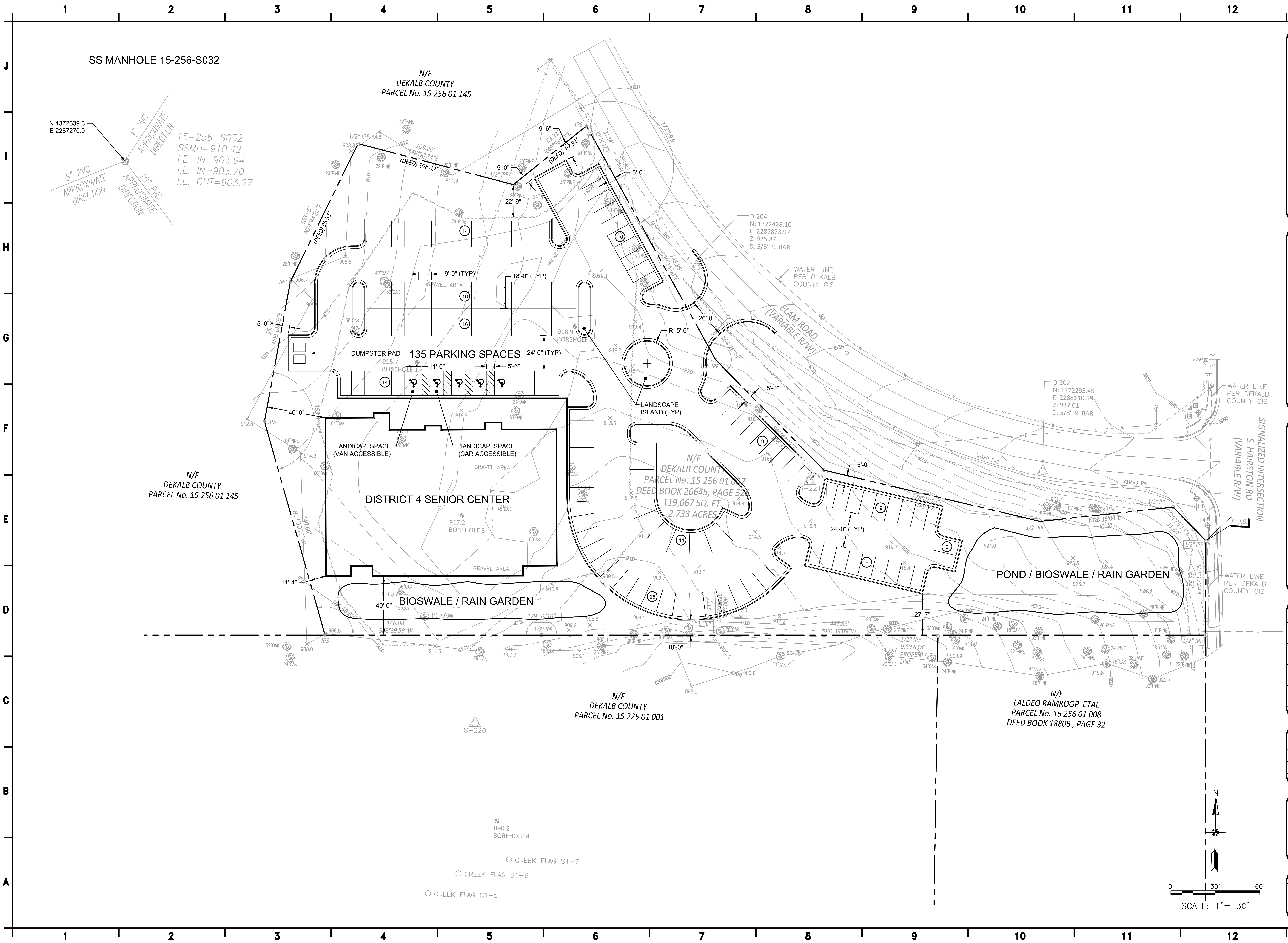
SENIOR CITIZENS SITE

LAND LOT 256 - 17th DISTRICT
DEKALB COUNTY, GEORGIA

CREW CHIEF: JAE
FIELD WORK: 06/29-30/2017
DRAWN BY: TS
CHECKED BY: PJS
DATE: 07/11/2017
SCALE: 1"=30'
JOB No. 20094

SHEET NUMBER

1 of 2



amec foster wheeler

ENVIRONMENT &
INFRASTRUCTURE, INC.
1075 BIG SHANTY ROAD, NW
SUITE 100
KENNESAW, GA 30144
TEL: (770) 421-3400

NOT VALID WITHOUT
SIGNATURE AND DATE

PROJECT:

DISTRICT 4 SENIOR CENTER

STONE MOUNTAIN, GEORGIA

DEKALB COUNTY FACILITIES
MANAGEMENT DEPARTMENT
1300 COMMERCE DRIVE, 3RD FLOOR
DECATUR, GEORGIA 30030

AMEC PROJECT No:
6616-17-0527

REVISIONS

NO.	DATE	BY	APPROVED

DESIGNED BY:	C. BUDSOCK
DRAWN BY:	C. BUDSOCK
CHECKED BY:	S. HUGHES
IN CHARGE:	M. ILIC
DATE:	12 JULY 2017

SHEET TITLE:

CONCEPTUAL SITE
PLAN FOR DISTRICT 4
SENIOR CENTER

SHEET NUMBER:	REV. #
	0

SHEET 2 OF 2 SHEETS

J:\6166-17-0527 District 4 Senior Center\Dwg\C-SP0001.dwg – Layout1 07/14/2017 3:01pm colleen.budsock

Appendix 5 – Zoning and Code Analysis

DeKalb County District 4 Senior Center
Zoning & Building Code Analysis
Property Location: 4875 Elam Road, Stone Mountain, GA 30083 (parcel ID# 15 256 01 007)
June 29, 2017

Zoning Analysis

Zoning: R-100 (Rural Residential) – Medium Lot-100
Land Use: COS
Class: E1
(Reference Table 4.1 for permitted uses)

Building Setbacks

- Front on thorough fares = 50 feet
- Front on arterials = 40 feet
- Front on collector & others = 35 feet
- Side = 10 feet
- Rear = 40 feet
- Main Structure = 35 feet max. height
- Accessory Structure = 24 feet max. height
- Open Space = Min. 20% (Reference Article 5) – 50% of Open Space = Enhanced Open Space (Reference Table 5.5 for enhanced open space types and min. sizes. Reference Table 5.6 for enhanced open space types and requirements)
  (Wetlands can apply towards required open space for a max. 50%)
  (Stormwater facilities may be located within open space if designed and approved as an amenity and/or low impact storm water management technique – comply with Chapter 14 of code)

Building Code Analysis (2012 IBC)

Building Program = One Story of approximately 15,000 sq.ft.

Chapter 3 – Use & Occupancy Classification

Section 303.4 = Assembly Group A-3 or Section 304.1 = Business Group B

Chapter 4 – Special Detail Requirements Based on Use & Occupancy

Section 410 – Stages, Platforms & Technical Production Areas
Section 410.3.1 – Stage Construction – Stages shall be constructed of the same materials as required for floors for the type of construction of the building in which such stages are located
Section 410.4 – Platform Construction – Permanent platforms shall be constructed of materials as required for the type of construction of the building in which the permanent platform is located. Where the space beneath the permanent platform is used only for equipment, wiring or plumbing , the underside of the permanent platform need not be protected
Section 410.5.1 – Dressing Rooms & Appurtenant Rooms Separation from Stage – The stage shall be separated from dressing rooms and other rooms appurtenant to the stage and other

parts of the building by fire barriers constructed in accordance with Section 707. The fire-resistance rating shall be not less than 1-hour for stage heights 50’ or less
Section 410.5.2 – Separation from each other – Dressing rooms and other rooms appurtenant to the stage shall be separated from each other by not less than 1-hour fire barriers constructed in accordance with Section 707.
Section 410.7 – Automatic Sprinkler System – Exception 2 – Sprinklers are not required for stages 1,000 sq. ft. or less in area and 50 feet or less in height where curtains, scenery and other combustible hangings are not retractable vertically. Combustible hangings shall be limited to a single main curtain, borders, legs and a single backdrop.

Chapter 5 – Building Heights & Areas

Table 503 – Type IIB Construction Group A3 – 9,500 sq. ft. / 55’ max. height / 2 story (Area Increase)
Group B - 23,000 sq. ft. / 55 max. height / 3 story

Section 506.3 – With sprinklers = area increase 300% (one-story)
Section 507.6 – A-3 / Type II = Unlimited Area (with no stage + sprinklered + 60’ open area all sides)

Chapter 6 – Types of Construction

Type IIB = Non-combustible construction

	Table 601	Table 602
Exterior bearing walls	0 hour	ext. walls x < 5’ separation = 1 hour
Interior bearing walls	0 hour	ext. walls 5’ < x < 10’ separation = 1 hour
Non-bearing	0 hour	ext. walls 10’ < x < 30’ separation = 1 hour
Floor	0 hour	ext. walls x > 30’ separation = hour
Roof	0 hour	

Chapter 7 – Fire & Smoke Protection Measures

Table 705.8 (percent wall openings) – 30’ or greater separation = UP, NS = No Limit

Chapter 8 – Interior Finishes (As Required)

Chapter 9 – Fire Protection Systems

Section 903.2 – Provide sprinkler system where required.
Section 903.2.1.3 – Group A3 Occupancy – Sprinkler system required
(No specific requirements for Group B Occupancy)

Table 906.3 – (2A) rated extinguisher for every 1,500 sq. ft. of area
Maximum travel distance to extinguisher = 75 feet

Section 907 – Fire Alarm & Detection Systems
Section 907.2 – Where Required (Required manual fire alarm system)
(No specific requirements for Group B Occupancy matching this project type/scope)

Chapter 10 – Means of Egress

Section 1005 – Means of egress sizing

Section 1005.3.1 – Stairways = Occupant # x 0.3 (48" min. width)
Section 1005.3.2 – Other = Occupant # x 0.2
Section 1005.5 – Distribution of egress capacity
Section 1008.1.1 – Egress door size = 3'-0" width typical
Section 1008.1.10 Swing in direction of egress travel (Panic hardware required)
Section 1009 – Stairways – As required
Section 1010 – Ramps – As required
Section 1011 – Exit signs – to be provided as required
Section 1012 – Handrails – As required
Section 1013 – Guards – As required

Table 1014.3 – Common path of egress travel requirements
Occupancy B – (>30 persons) – w/o sprinklers = 75'
w/sprinklers = 100'
Occupancy A – (>30 persons) – w/o sprinklers = 75'
w/sprinklers = 75'

Table 1015.1 – (<49 persons) = 1 exit required
Section 1015.2 – Exit access separation arrangement = ½ diagonal dimension minimum

Table 1016.2 – Exit Access Travel Distance
Occupancy A – w/o sprinklers = 200' – w/sprinklers = 250'
Occupancy B – w/o sprinklers = 200' – w/sprinklers = 300'

Section 1022 – Interior Exit Stairs & Ramps – As Required

Chapter 11 – Accessibility – As required to comply with ADA
Chapter 12 – Interior Environment – As Required
Chapter 13 – Energy Efficiency – As Required to Comply with IECC
Chapter 14 through 33 – As Required

IECC
Climate Zone = 3A
Table C301.3
Zone 3A = (ip) 4500 < CDD 50 degF < 6300 and HDD 65degF <5400
(si) 2500 < CDD10 degC <3500 and HDD 18 degC <3000
Windows = Dual Pane = 0.80 – w/thermal break = 0.65
Skylight = Dual Pane = 1.30 – w/thermal break = 1.0
Doors = Metal (uninsulated) = 1.20 / (insulated) = 0.60

Table C402.12 / C402.2 – Per ASHRAE 90
Roof = R-25ci
Attic = R-38
Walls = R-13 + R-7.5ci or R-13 + R3.8ci or R-20
Floors = Mass = R-10ci
Joists = R-30