Taylors Mill Rd. Culvert Repair
Peach County Board of Commissioners
TPE NO. PCO 049 **21 October 2019**

ADDENDUM NUMBER NO. 1

Bidders are advised that bidding documents on the above named project are amended as follows:

PRE-BID MEETING ITEMS

Peach County will make the borrow pit located on Peach County parcels 022 027 & 022 026 available to the Contractor for staging, equipment storage, and as a source of fill material. The entrance to the borrow pit is situated approximately 0.31 miles south of the project site on Taylors Mill Road. The County requires that the Contractor keep the gate to the borrow area closed and locked when not in use.

The successful bidder shall coordinate with the Peach County Engineering Department at 478-825-2535 for traffic control and road closures. If excessive vehicle speed is an issue at the work site, the contractor shall request that the Peach County Engineering Department contact the Peach County Sherriff's office.

Any personnel working on Peach County Right-Of-Ways shall take appropriate safety precautions and shall wear ANSI Class 2 or Class 3 high visibility outer clothing at all times.

Per Sheet 4.0 of the plan, the Contractor shall coordinate with utility owners for temporary removal or relocation of utility lines/poles during and after construction as necessary.

No working hour restrictions have been imposed for this project.

A geotechnical report is available for this site; the aggregate pier contractor will likely need this report to provide their bid to the Contractor.

The due date for receiving sealed bids is unchanged. Sealed bids for furnishing all materials, labor, tools, equipment and appurtenances necessary for the Taylors Mill Rd. Culvert Repair for Peach County must be received by 2:00 P.M. local time, October 29, 2019 at the following address:

Daniel Flores Garcia
Peach County Board of Commissioners
ATTN: RFB # 19-006
213 Persons Street
Fort Valley, GA 31030

Bids by e-mail or fax are not acceptable. No late bids will be accepted.

As stated in the Pre-Bid Meeting, two bound copies of the bid and the required attachments shall be submitted, and one copy shall be submitted on a removable (flash) drive in pdf format. No unbound bids will be accepted.

Bids will be determined to be responsive only if all of the requirements listed in the Instructions to Bidders (Section 00100) are met, including submittal of the Required Submittal Documentation and the Additional Information to be Submitted. Responsive bids will be scored per paragraph 17.4 of Section 00100, Instructions to Bidders.

A bid tabulation will be provided to all bidders following a decision by the Board of Commissioners to award the project. The Board will review the bids at their regularly scheduled meeting on November 12, 2019 unless a special called meeting occurs in advance of the November 12, 2019 meeting.

All questions must be directed to Triple Point Engineering, Inc. in writing by 5:00 PM October 22, 2019. Bidders shall not contact Peach County employees regarding this project. Direct questions to Dan Wallace or Russell Wheeler (dwallace@tpointeng.com, rwheeler@tpointeng.com or by US Mail to 5223 Riverside Drive, Suite 101, Macon, GA 31210).

A copy of the pre-bid meeting attendance list, a list of plan holders, the Geotechnical Report and the Pre-Bid Meeting Agenda are attached.

END OF ADDENDUM NO. 1

Pre-Bid Sign-In Sheet

10/17/2019 ~~14:00~~ 10:00 a.m. RFB. No. 19-015 B,Tennis Courts and Basketball Courts Rehabilitation

Name	Company/Organization	Address	Phone	E-mail
ALLEN HARP	HARDY GEORGIA CORP.	180 ROBINSON DR FAYETTEVILLE GA 30214	770-461-0040	aharp@hardygeorgiaconcrete.com
DAN WALLACE	TPE	5223 RIVERSIDE DR, MACON	478-476-0740	dwallace@tpeinteg.com
Trevor Porter	Chase Reline	6101 Airways Blvd Chattanooga, TN 37421	423-713-7201	Trevor@chasereline.us
Robby Chase	Chase Reline Inc.	6101 Airways Blvd Chattanooga TN 37421	423-834-1298	Robby@chasereline.us
MICHAEL INMAN	SNAP TITE	68 A HUDSON RD GRIFFIN GA 30224	770-380-0083	MIKE@INMANANDASSOCIATES.COM
Don Hall	Sam Hall & Sons	5432 Tinker Dr Macon GA 31210	(478)788-1108	dhall@samhallandsons.com
Anita Clyne	Utility Asset Management	478-472-1964		anita@uamonline.com
Paul Schwindler	Peach County ENGINEERING	213 PERSONS STREET FORT VALLEY, GA 31030	478-827-5532	pschwindler@peachcounty.net
Daniel G. Flores	Peach County BOC	213 Persons St FT. Valley GA 31030	478 825-3150	daniel-garciaflores@peachcounty.org
BILL GOFF	GRIFFIN-FOLSOM	PO BOX 682 Cordele GA. 31015	229 938 4425	bgoFF6@Gmail.com
ERIC MCLEROY	MCLEROY INC	8945 US HWY 19 ZEBULON, GA 30295	770.567.3514	eric@mcleroyinc.com.

Taylors Mill Road Culvert Repair Plan Holders List						
Firm	Address	Contact	Title	Phone No.	Fax No.	E-Mail Address
Georgia Bridge and Concrete	4635 North Royal Atlanta Drive, Tucker GA 30084-3802	Eric Ashley	Project Coordinator	770-702-4194	770-939-7386	eashley@georgiabridge.net
The Blue Book	800 E Main Street, Jefferson Valley, NY 10535	Erin McVeigh	Bid News Specialist	800-431-2584	914-243-4936	emcveigh@mail.thebluebook.com
Construct Connect	30 Technology Parkway South Suite 100, Norcross Ga 30092	Gwen Tanghai	Content Specialist	323-602-5079 x75247		gwen.tanghal@constructconnect.com
Utility Asset Management, Inc.	1381 Macon Road, Perry Ga 31069	Anita Clyne	President/Owner	478-472-1964	678-623-0282	anita@uamonline.com
Sam Hall & Sons	432 Tinker Drive, Macon Ga 31216	Landon Hall	Project Manager	478-788-1108		lhall@samhallandsons.com
SAR Contracting Group LLC	800 Bottoms Rd, Concord, Ga 30206	Stephanie Richardson	Owner/Operator	706-741-4394		info@sarcontractinggroup.com
Piedmont Paving, Inc.	1226 Highway 16 East, Newnan, Ga 30263	Scott Marchman	Estimator	678-423-0586	678-423-0588	scott@piedmontpaving.com
Chase Reline, Inc.	6101 Airways Blvd., Chattanooga, Tn 37421	Aundrea Perkins	Office Administrator	423-713-7201	423-713-7951	aundrea@chasereline.us
Enviro Trenchless, LLC	4501 Russell Parkway, Suite 19, Warner Robins, Ga 31088	Diane Warner	Accounting Supervisor	478-333-3880 x2	678-550-9121	diane.warner@envirotrenchless.com
McLeRoy, Inc.	8945 US Hwy 19, Zebulon, Ga 30295	Eric B. McLeRoy	VP	770-567-3514	770-567-3300	eric@mcleroyinc.com
Murphy Clearing and Grading, Inc.	242 N. Green St., Thomaston, Ga. 30286	Linda Murphy	Secretary	770-550-4116	706-648-9194	linda@murphyclearingnadgrading.com
North Georgia Concrete, Inc.	85 Chestatee Industrial Park Dr., Dahlonega, Ga. 30533	Jeff Rudiger	Vice President	406-867-1774	706-867-1608	jrudiger@northgeorgiaconcrete.com
Inman & Associates, Inc. (Snap Tite)	108-A Hudson Industrial Drive, Griffin, GA 30224-4536	Michael Inman	CEO	770-380-0083	678-688-3094	mike@inmanandassociates.com
Griffin Folsom Construction	P.O. Box 682, Cordele, GA 31015	Bill Goff	Business Development	229-938-4425	229-276-1245	bgoff6@gmail.com
MixOnSite USA, Inc.	1501 Abbott Court, Buffalo Grove IL 60089	Betty Thomas		847-415-9613	847-415-9713	bthomas@mixonsite.com

GEC
GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS, INC

November 14, 2017

Mr. Dan Wallace
Triple Point Engineering
5223 Riverside Drive Suite 101
Macon, Georgia

SUBJECT: Subsurface Exploration and Geotechnical Engineering Evaluation
Taylors Mill Road Culvert Replacement
Fort Valley, Georgia
GEC Project No. 170708.210

Dear Mr. Wallace:

Geotechnical & Environmental Consultants, Inc. (GEC) is pleased to present this report of our subsurface exploration and geotechnical engineering evaluation for the above site. The purpose of the exploration was to obtain data to evaluate the site and subsurface conditions in order to provide recommendations relative to the geotechnical aspects of the project.

We greatly appreciate the opportunity to provide these services to you. If you have any questions, or if we can be of further assistance, please do not hesitate to call.

Sincerely,

GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS, INC.

Rebecca Schilling
Project Engineer

Richard L. Curtis, P.E., D.GE
Chief Geotechnical Engineer
Ga. Reg. #16617

514 Hillcrest Industrial Boulevard, Macon, GA 31204 • Phone: (478) 757-1606 • Fax: (478) 757-1608
5031 Milgen Court, Columbus, GA 31907 • Phone: (706) 569-0008 • Fax: (706) 569-0940

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TAYLORS MILL ROAD CULVERT REPLACEMENT
FORT VALLEY, GEORGIA
GEC PROJECT NO. 170708.210

APPENDIX

GEC

1.0 PROJECT INFORMATION

The proposed site consists of the section of Taylors Mill Road that crosses Mossy Creek in Fort Valley, Peach City, Georgia. The site area is located just north of Chestnut Hill Road and directly east of Taylors Pond where the culvert is to be remediated or replaced. The site is surrounded by wooded tracts, wild grasses. The site was generally flat due to the paved road above the existing culvert, with the exception of steep slopes from the road to the creek bed. A site location map is included in the Appendix.

Based on a Georgia Department of Transportation (GDOT) culvert inspection report, the existing culvert was constructed in 1970 and consists of 3-barrel corrugated metal pipes. Each barrel is 11 feet in width and height and 41 feet in length. Each of the pipes are experiencing heavy corrosion and the formation of holes with minor bending. Additionally, the surrounding soils are beginning to erode and slip away, causing the guardrails to become unstable. The road atop the culvert is at an approximate elevation of 403 feet. The toe of slope extends approximately 15 to 20 feet on either side of the existing road.

We understand that the county is considering the following options for the culvert: 1) the construction of a bridge (such as a Con/Span structure) to replace the existing culvert; 2) to install a concrete box culvert in place of the existing culvert; 3) to replace the existing culvert with a new pipe system; or 4) to repair the existing pipes of the culvert.

2.0 METHOD OF EXPLORATION

2.1 Site Reconnaissance and Boring Layout

GEC performed a general review of the proposed project site and surrounding areas prior to the performance of our subsurface exploration activities. The review was performed to evaluate surface conditions that could impact our exploration techniques or the proposed construction.

The locations and depths of the borings were selected by GEC based on the site plans provided as well as discussions with Dan Wallace, Triple Point Engineering. Borings were field-located using a hand-held GPS device and coordinates established by overlaying the provided site plan onto internet-based aerial photography. Boring elevations were determined using the topographic information provided. Since the borings were not located by survey, the locations and boring elevations should be considered approximate.

2.2 Soil Test Borings

A total of two (2) soil test borings were performed at the project site. Borings designated B-1 and B-2 were performed in the area of the culvert replacement and were extended to a depth of 100

feet below the existing ground surface. The approximate locations of the borings are presented on the *Boring Location Plan* located in the Appendix.

Both borings were backfilled with the auger cuttings and topped with asphalt patch prior to site demobilization. The split-spoon samples were returned to our laboratory and were manually and visually examined and classified. The samples were classified according to the Unified Soil Classification System (USCS). Detailed records of the soil test borings, indicating the N-values (blow counts) obtained from the Standard Penetration Testing (SPT) and a more detailed description of the drilling and sampling processes, are presented in the Appendix.

3.0 SITE AND SUBSURFACE CONDITIONS

3.1 Site Description

The proposed site consists of the section of Taylors Mill Road that crosses Mossy Creek in Fort Valley, Peach County, Georgia. The site area is located just north of Chestnut Hill Road and directly east of Taylors Pond where the culvert is to be replaced. The site is surrounded by wooded tracts, wild grasses. The site was generally flat due to the paved road above the existing culvert, with the exception of steep slopes from the road to the creek bed.

3.2 Local Geology

The site is located in the Coastal Plain Physiographic Province of Georgia. Soils in the Coastal Plain are the result of deposition of sediments in a former marine environment. Coastal Plain sedimentary deposits make up about 60 percent of Georgia's surface area, and consist of a southwardly thickening wedge of sediments, which are bordered on the north by the parent rocks of the Piedmont Physiographic Province. The border between these provinces is known as the "Fall-Line." The Coastal Plain sediments range in age from the Cretaceous to the recent, with the oldest exposed along the "Fall-Line" and the youngest along the coast. Typically, the surface soils consist of complexly interbedded sands, silts, and clays of various mixtures. Sandstones, shales, and limestones comprise the characteristic lithology of the Coastal Plain. These formations are usually found at depths greater than fifty feet, but can also be found at or near the ground surface. They are not known to occur near the surface in the site area. Topography in this region of the Coastal Plain is generally flat to gently rolling.

Naturally occurring soils can be covered by fill that resulted from man's activities during construction, farming, waste disposal, or other ground disturbing activities. Fill materials can be highly variable and can contain debris. The engineering properties of fill depend primarily on composition, moisture content, and density. No density test reports or quality assurance reports were provided for any previous construction at the site. Where density tests or other construction-related testing reports are not provided, fill materials are designated as undocumented.

In drainage swales, floodplains and other low-lying areas, the Coastal Plain soils may be covered by alluvium that has been transported and deposited by flowing water. Alluvium may differ significantly from the residual soils and vary from fine grained clays and silts to coarse grained sands and gravels depending on how they were deposited. Alluvium frequently is soft or loose and the soils types can change drastically in short horizontal and vertical distances.

3.3 Subsurface Conditions

Details of the subsurface conditions encountered by the soil test borings are shown on the *Soil Boring Records* in the Appendix of this report. These records represent an estimate of the subsurface conditions based on our interpretation of the boring data using normally accepted engineering judgment. Stratification lines on the *Soil Boring Records* represent approximate boundaries between soil types. However, the in-situ transition is typically more gradual. Although individual test borings are representative of the subsurface conditions at the boring locations on the dates shown, they are not necessarily indicative of the subsurface conditions at other locations or at other times. The general soil conditions and their pertinent characteristics are discussed in the following paragraphs.

General Stratigraphy

The general subsurface stratigraphy of the site consisted of asphalt pavement and base underlain by fill and alluvial materials. Coastal Plain soils were encountered below the alluvial soils and extended to the maximum depths explored.

Asphalt/Subgrade

Asphalt pavement of approximately 3-inch thickness was encountered in both borings at the site and was underlain by approximately 3 inches of graded aggregate base.

Fill

Fill was encountered below the asphalt pavement and base in both borings at the site and extended to a depth of 10 feet below existing ground surface. The fill generally consisted of very loose to firm silty sands (SM). Standard penetration test (SPT) N-values ranged from 2 to 16 blows per foot (bpf) in the fill.

Alluvium

Alluvial materials consistent with the flood plain area surrounding the creek present at the site were encountered in both borings. The alluvium generally classified as silty sand (SM) and sandy silt (ML). SPT blow counts (N-values) in the alluvium were generally low, ranging from 0 to 5 blows per foot (bpf).

Coastal Plain Sediments

The Coastal Plain soils encountered in all of the borings generally consisted of silty sands (SM) with various clay and mica contents, as well as sandy silts (ML) with various clay and mica contents. The standard penetration test (SPT) N-values in these soils ranged from 12 to 67 blows per foot (bpf) with most above 20 bpf.

A layer of high-plasticity silt (MH) was encountered at depth of approximately 87 feet below ground surface and extended to a depth of 92 feet in B-1. It was also encountered in B-2 at a depth of 42 feet below ground surface and extended to a depth of 52 feet. The standard penetration test (SPT) N-values in these soils ranged from 27 to 32 blows per foot (bpf).

Groundwater

Groundwater was encountered at a depth of approximately 10 feet below ground surface, at an approximate elevation of 393 feet, in both borings at the time of boring. It is anticipated that groundwater will impact earthwork activities and may require special groundwater control.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 Site and Subgrade Preparation

The initial step in site preparation should consist of the removal of any asphalt, debris, topsoil, trees, vegetation and root systems, and any soft/loose near-surface soils in the planned construction areas. Any utility lines in the project area should be removed and relocated. Excavations or holes resulting from the removal of trees or utilities should be backfilled with structural fill to the compaction requirements presented in Section 5.2, *Earthwork.* All topsoil should be stripped from construction areas.

4.2 Earthwork

Wetting or drying of the soils at the site may be necessary to achieve the required compaction criteria. The contractor should be required to have equipment available on site for both wetting and drying of the soils.

In general, all fill placed at the site, including on-site soils, should not contain rocks or lumps larger than four (4) inches in greatest dimension and contain no more than 15 percent larger than 2.5 inches. Structural fill soils should have a liquid limit less than 50, plastic index less than 30 and a standard Proctor maximum dry density (ASTM D698) greater than 90 pcf. Generally, soils classified as SP, SM, SC, ML or CL according to the Unified Soil Classification System are considered suitable for fill providing they meet the above criteria. The high-plasticity silt (MH) encountered in both borings should not be considered suitable for fill.

Structural fill should be moisture-conditioned to slightly above the optimum moisture content, spread in relatively thin lifts (8-inch maximum loose lifts) and methodically compacted with heavy compaction equipment to at least 95 percent of the standard Proctor maximum dry density (ASTM D698). The upper one-foot of fill material should be compacted to a 98 percent compaction criterion. Structural fill criteria should be utilized beneath proposed and future structural areas. Due to the silty nature of the on-site soils, we recommend that the moisture content of the fill soils be maintained within 3% of the optimum moisture content during compaction. Specifically, moisture levels should be maintained low enough to allow for satisfactory compaction to be achieved without pumping when proofrolled.

Upon completion of filling and grading, care should be taken to maintain the subgrade moisture content prior to construction of 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 pavement subgrades or in excavations. Any accumulated surface water should be removed as promptly as possible. 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 pavement construction. As noted previously, some of the fine-grained soils at this site will be susceptible to degradation from weather and construction activities. Therefore, some remediation of exposed subgrade should be expected.

In paved areas, fill slopes should extend horizontally at least five feet beyond the edge of pavement prior to sloping. Utility trenches should be backfilled with materials satisfying the criteria described above for general fill, placed in lifts of approximately eight (8) inches in uncompacted thickness.

4.3 Foundations

Based on discussions with Mr. Dan Wallace of Triple Point Engineering, it is our understanding that Peach County is requiring a feasibility study of the Taylors Mill Road culvert under concern in order to evaluate possible options for repair or replacement. The complete feasibility study is to include four options to remediate the culvert as follows: 1) the construction of a bridge (such as a Con/Span structure) to replace the existing culvert; 2) to install a concrete box culvert in place of the existing culvert; 3) to replace the existing culvert with a new pipe system; or 4) to repair the existing pipes of the culvert. Each of these options will require a specific foundation recommendation as given in detail in the following sections.

4.3.1 Con/Span Bridge

If the option of replacing the culvert with the construction of a Con/Span bridge is selected, it is our recommendation that aggregate piers be installed in order to improve the existing soils at the site. Based on the conditions of the soils surrounding the culvert, it is anticipated that excessive

settlements would occur with the construction of a bridge. To mitigate excessive settlements, it is recommended that aggregate piers be installed prior to construction

Aggregate pier elements provide vertical reinforcement to the in-situ subgrade soils and produce a composite system that increases bearing capacity above pre-improvement values for the shallow foundations. This in turn reduces total and differential settlement.

For this site, we expect typical aggregate piers to be embedded about 25 to 30 feet below natural grade for the bridge structure. From experience, we anticipate a spacing of 8 to 12 feet on center may be appropriate across the entire foundation.

Aggregate pier systems are proprietary, design-build systems and are installed under a trade name such as Vibro Piers by Hayward Baker Inc. or Impact/Geopiers by the Geopier Foundation Company. Typically, these elements are constructed by pre-drilling a nominal 30-inch diameter hole into the subsurface soils to the design depth. Casing or a bottom feed process is utilized to prevent hole caving. Subsequently, crushed stone is placed in the excavation in lifts and densified with a special, high-energy compactor. The process repeats until the hole is filled to the ground surface. The resulting stiff aggregate pier engages the surrounding soil providing reinforcement and increased shear strength.

Upon completion of the aggregate pier construction, conventional spread foundations can be constructed in accordance with commonly accepted methods. We estimate that treatment of the on-site soils with aggregate piers will increase the allowable bearing capacity for the design of shallow foundations to 6,000 psf with a maximum total settlement of less than one inch.

4.3.2 Culvert Replacement with Pipe System or Box Culvert

If the option of replacing the existing culvert with either a new pipe system or concrete box culvert is chosen, it is recommended that stabilization and excavation be completed along with the possible use of a coffer dam. Based on the boring data, over 15 feet of very loose or very soft alluvial soils were encountered below the existing culvert invert elevation. Therefore, extensive subgrade remediation will be required for any culvert replacement. The remediation would likely include substantial undercutting of soft or loose soils and dewatering during undercutting and backfilling. Stabilization of the undercut subgrade with stone, geotextiles/geogrids would likely be required.

As an alternative, stabilization of the subgrade soils prior to culvert replacement could be achieved by installing aggregate piers as described in the above section.

4.3.3 Repair of Existing Culvert Pipes

If the option of repairing the existing culvert is chosen, it is anticipated that this will include filling the erosion holes of the existing pipes, lining the culverts, and protecting the steep banks with riprap. It is our recommendation that subgrade remediation may be necessary prior to conducting repairs if those repairs should include any foundations for new structures due to the unsatisfactory conditions of the site soils. With the current conditions, the surrounding shoulders and guardrails will most likely require remediation as well. To prevent slipping and movement of shoulders and guardrails during remedial construction activities, the installation of sheet piles may be necessary to retain the soils and structures. Additional information would be needed prior to making detailed sheet pile recommendations. It is also recommended that the existing metal guardrails be replaced with concrete-wall parapet walls to meet GDOT standards. Actual remediation would depend on the loads and elevations of any structures to be re-constructed.

4.4 Slopes

Based on our experience with soils similar to those encountered during our exploration, we recommend excavated slopes less than 10 feet high be laid back at least to a 2H:1V (Horizontal to Vertical) slope. Permanent fill slopes up to 10 feet high that are placed on suitable subgrade may be constructed at 2.5:1 or flatter. All fill slopes should be adequately compacted as recommended in this report. Permanent slopes of 3:1 or flatter may be used to facilitate mowing. All sloped surfaces should be protected from erosion by grassing or other means. Pavements should be set back at least 5 feet from the crest edge. All temporary slopes and confined excavations should conform to the latest OSHA Regulations.

4.5 Drainage Considerations

It is anticipated that special groundwater control measures will be required during construction. Fluctuation of groundwater levels should be anticipated. We recommend that the Contractor determine the actual groundwater levels at the time of construction to determine groundwater impact on the construction procedures.

Water should not be allowed to collect in the foundation excavations or on prepared subgrade of the construction area either during or after construction. The subgrade beneath structures should be sloped to a low point to facilitate removal of any collected rainwater, groundwater, or surface runoff. Positive site drainage (i.e. sloping grade) should be provided to reduce infiltration of surface water around the perimeter of any structures.

4.6 Geotechnical Controls

1. The Geotechnical Engineer should be provided the opportunity for a general review of the final design documents in order to assess proper interpretation of the earthwork and foundation recommendations.

2. The Geotechnical Engineer, or his qualified representative, should observe undercutting and proofrolling operations.

3. A qualified engineering technician, under the supervision of the Geotechnical Engineer, should observe fill operations and perform a minimum of one field density test per 2,500 square feet of area for each one-foot thickness of fill.

4. The Geotechnical Engineer, or his qualified representative, should check each foundation excavation utilizing hand probing and auger and dynamic cone penetrometer testing. This will reduce the risk of unsuitable or soft materials directly underlying the footings, which may be detrimental to the integrity of the structures.

4.7 Limitations

This report is for the exclusive use of Triple Point Engineering, the engineers, owners, and subcontractors for the project described herein, and may only be applied to this specific project. The analyses, conclusions and recommendations presented in this report are based on the preceding project information, and the results of this evaluation. Conditions may vary from those observed in the borings.

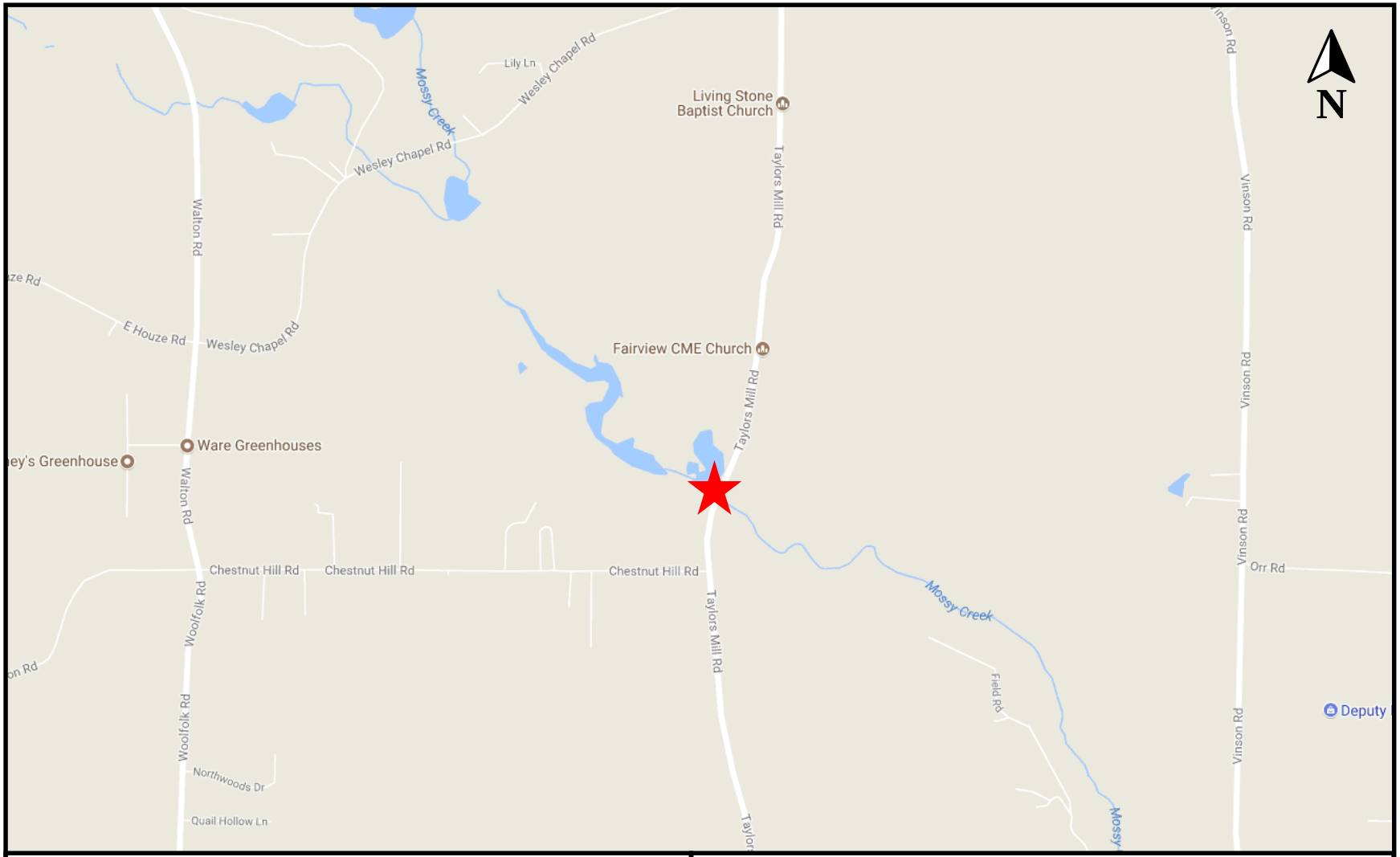
If it becomes apparent during construction that soil conditions differing from those discussed in this report are encountered, Geotechnical and Environmental Consultants, Inc. should be notified at once so that the effects may be determined and any remedial measures necessary may be prescribed.

This report has been prepared in accordance with 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 the written permission of Geotechnical and Environmental Consultants, Inc. If the design or location of the structure is changed, the recommendations contained herein must be considered invalid, unless our firm reviews 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 plans, grading plans and applicable portions of the specifications to determine if they are consistent with the intent of our recommendations.

APPENDIX

GEC



Site Location Map

Taylors Mill Road Culvert Replacement
Taylors Mill Road
Fort Valley, Georgia
GEC Project No. 170708.210
Source: Google Maps

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GEOTECHNICAL & ENVIRONMENTAL CONSULTANTS, INC

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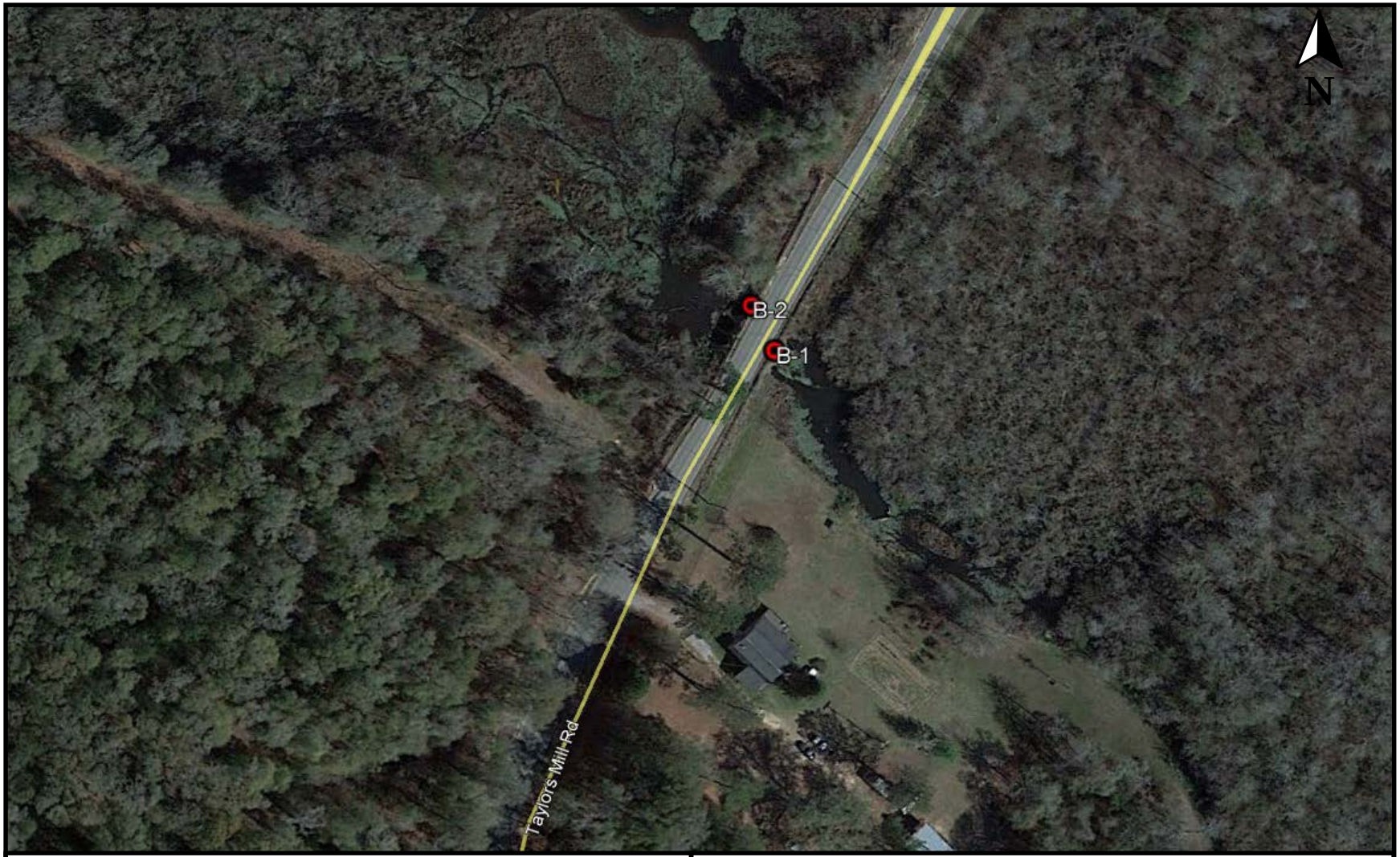

Boring Location Plan

Taylors Mill Road Culvert Replacement
Taylors Mill Road
Fort Valley, Georgia
GEC Project No. 170708.210
Source: Google Maps

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SOIL TEST BORING PROCEDURES

The borings were advanced by a hollow-stem auger process. At the desired depth in all borings, the borehole was cleaned out and the sample tools inserted through the auger stems. At assigned intervals, soil samples were obtained with a standard 1.4-inch inside diameter, 2-inch outside diameter split tube sampler. The sampler was first seated six inches to penetrate any loose cuttings; then driven an additional foot with blows of a 140-pound hammer falling 30 inches. The number of blows required to drive the sampler the final foot was recorded and is designated as the standard penetration resistance (N-value). The penetration resistance, when properly evaluated, may be used as an index to the soil strength and foundation support capability. Soil sampling and penetration testing were performed in general accordance with ASTM D 1586.

The drilling method is not capable of penetrating 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 boring procedures are required to determine the character and continuity of refusal materials.

Representative portions of the split tube samples were placed in sample containers and transported to our laboratory. In the laboratory, the samples were examined and the visual classification was confirmed by a geotechnical engineer or geologist.

The final boring records represent our interpretation of the contents of the field records based on the results of the engineering examinations and testing of selected field samples. These records depict subsurface conditions at the specific locations and at the particular time drilled. Soil conditions at other locations may differ from conditions occurring at these boring locations. Also, the passage of time may result in changes in the ground water conditions at these boring locations. The lines designating the interface between strata on the re3cords and on profiles represent approximate boundaries. The transition between materials may be gradual. The final boring records are included with this report.

A record of the sampling operations and the descriptions of the soils encountered in each boring are shown on the following Soil Boring Record sheets.

CORRELATION OF PENETRATION RESISTANCE WITH RELATIVE DENSITY AND CONSISTENCY

SOIL TYPE	BLOWS PER FOOT (bpf)[1]	RELATIVE DENSITY / CONSISTENCY DESCRIPTION
SANDS and GRAVELS	0 – 4	Very Loose
	5 - 10	Loose
	11 - 20	Firm
	21 - 30	Very Firm
	31-50	Dense
	Over 50	Very Dense
SILTS and CLAYS	0 – 1	Very Soft
	2 – 4	Soft
	5 – 8	Firm
	9 - 15	Stiff
	16-30	Very Stiff
	31-50	Hard
	Over 50	Very Hard

[1] Standard Penetration Resistance blow count, N, which is equal to the sum of the second and third six-inch increments of the SPT test.

GEC

LABORATORY TESTING PROCEDURES

SOIL CLASSIFICATION

Soil classifications provide a general guide to the engineering properties of various soil types and enable the engineer to apply his past experience to current problems. In our evaluations, samples obtained during drilling operations are examined in our laboratory and visually classified by an engineer or geologist. The soils are classified according to consistency (based on number of blows from standard penetration tests), color and texture. These classification descriptions are included on our “Soil Boring” records.

The classification system discussed above is primarily qualitative. For detailed soil classification, two laboratory tests are routinely performed: grain size tests and Atterberg limits tests. Using these test results, the soil can be classified according to the AASHTO or Unified Classification Systems (ASTM D-2487). Each of these classification systems and the in-place physical soil properties provides an index for estimating the soil's behavior. The soil classification and physical properties obtained are presented in the report.

WATER LEVEL READINGS

Water table readings are normally taken in conjunction with borings and are recorded on the "Soil Boring Records". These readings indicate the approximate location of the hydrostatic water table at the time of our field exploration. Where relatively impervious soils (clayey soils) are encountered, 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 ground water table may also be dependent upon the amount of precipitation at the site during a particular period of time. Fluctuations in the water table should be expected with variations in precipitation, surface run-off, evaporation and other factors.

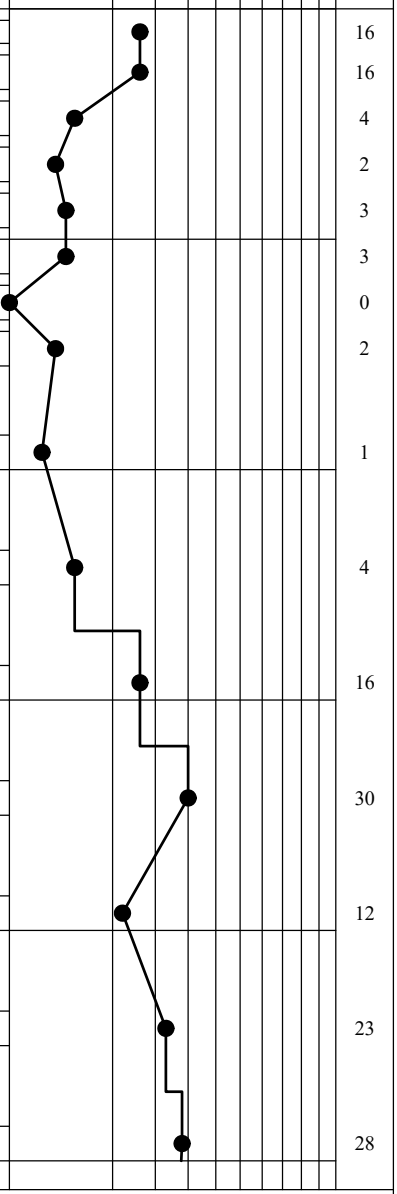
The time of boring (TOB) water level reported on the boring records is determined by field crews immediately after drilling. Additional water table readings may be obtained at least 24 hours after the borings are completed. The time lag of at least 24 hours is used to permit stabilization of the ground water table which has been disrupted by the drilling operations. The readings are taken by dropping a weighted line down the boring or using an electrical probe to detect the water level surface.

Occasionally, the borings will cave-in, preventing water level readings from being obtained or trapping drilling water above the caved-in zone. The cave-in depth is often measured and recorded on the boring records.

SOIL BORING RECORD

Project: **Taylor's Mill Road Culvert Replacement** Peach County, Georgia	Boring No: **B-1** Project No: 170708.210
Location: **See Boring Location Plan**	GS Elevation:
Driller/Equipment: GEC/ CME 55 HSA 2.25/ROTARY	Drilling Date: October 16, 2017
Water Level: 10.0 ft at time of boring	Engineer/Geologist:

Depth (ft)	Soil Description	Sample Type	N-Value
	ASPHALT	SS-1	16
	3" OF ASPHALT	SS-2	16
	GRADED AGGREGATE BASE	SS-3	4
	3" OF GAB	SS-4	2
	FILL	SS-5	3
	firm, brownish-red, medium to fine, silty **SAND (SM)**		
10	very loose, brownish-red, medium to fine, silty **SAND (SM)**	SS-6	3
	ALLUVIUM		
	very loose, light brownish-red, medium to fine, silty **SAND (SM)**	SS-7	0
	very loose, grayish-brown, medium to fine, silty **SAND (SM)**	SS-8	2
	very loose, grayish-black, medium to fine, silty **SAND (SM)**; with roots	SS-9	1
20		SS-10	4
	COASTAL PLAIN SEDIMENTS		
30	firm, tan-gray, coarse to fine, silty **SAND (SM)**; with some mica	SS-11	16
	stiff to very stiff, light grayish-tan, fine / medium-plasticity, clayey, sandy **SILT (ML)**	SS-12	30
40		SS-13	12
		SS-14	23
	firm to very firm, tan-white, medium to fine, silty **SAND (SM)**; with some mica	SS-15	28
50			



- Boring and sampling performed in accordance with ASTM D 1586.
- Depths are measured from existing ground surface at time of drilling.
- Depths are shown to illustrate general arrangements of the strata encountered at the boring location.
- Do not use depths for determinations of quantities or distances.

NOTES: SWITCHED TO MUD ROTARY DRILLING AT 30'

GEOTECH 170708.210 TAYLOR'S MILL ROAD CULVER REPLACEMENT.GPJ GEC.GDT 10/24/17

514 Hillcrest Industrial Boulevard, Macon, GA 31204
5031 Milgen Court, Columbus , GA 31907
318 Airport Road, LaGrange, GA 30240

GEC
GEOTECHNICAL & ENVIRONMENTAL
CONSULTANTS

SOIL BORING RECORD

Project: **Taylor's Mill Road Culvert Replacement** Peach County, Georgia	Boring No: **B-1** Project No: 170708.210
Location: **See Boring Location Plan**	GS Elevation:
Driller/Equipment: GEC/ CME 55 HSA 2.25/ROTARY	Drilling Date: October 16, 2017
Water Level: 10.0 ft at time of boring	Engineer/Geologist:

Water Level (ft)	Depth (ft)	Soil Symbol	Soil Description	Sample Type	Standard Penetration Test Data (blows/ft) 0 10 20 30 60 80	N-Value
			firm to very firm, tan-white, medium to fine, silty **SAND (SM)**; with some mica *(continued)*			
				SS-16		26
				SS-17		22
	60					
				SS-18		24
				SS-19		28
	70					
				SS-20		25
				SS-21		29
	80					
				SS-22		27
			very stiff, tan-white, fine / high-plasticity, clayey, sandy **SILT (MH)**; with some mica	SS-23		27
	90					
			firm to very firm, tan-white, medium to fine, silty **SAND (SM)**	SS-24		25
				SS-25		20
	100		**BORING TERMINATED AT 100.0 ft**			

· Boring and sampling performed in accordance with ASTM D 1586.
· Depths are measured from existing ground surface at time of drilling.
· Depths are shown to illustrate general arrangements of the strata encountered at the boring location.
· Do not use depths for determinations of quantities or distances.

NOTES: SWITCHED TO MUD ROTARY DRILLING AT 30'

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SOIL BORING RECORD

Project: **Taylor's Mill Road Culvert Replacement**	Boring No: **B-2**
Peach County, Georgia	Project No: 170708.210
Location: **See Boring Location Plan**	GS Elevation:
Driller/Equipment: GEC/ CME 55 HSA 2.25/ROTARY	Drilling Date: October 17, 2017
Water Level: 10.0 ft at time of boring	Engineer/Geologist:

Depth (ft)	Soil Description	Sample Type	N-Value
	ASPHALT	SS-1	6
	3" OF ASPHALT	SS-2	7
	GRADED AGGREGATE BASE	SS-3	10
	3" OF GAB	SS-4	6
	FILL	SS-5	7
	loose, brownish-red, medium to fine, silty **SAND (SM)**		
10	**ALLUVIUM**	SS-6	4
	very loose to loose, grayish-brown, coarse to fine, silty **SAND (SM)**	SS-7	5
	very soft, grayish-black, fine, clayey, sandy **SILT (ML)**; with some mica	SS-8	1
20		SS-9	1
	very loose, light gray, medium to fine, clayey, silty **SAND (SM)**	SS-10	4
	COASTAL PLAIN SEDIMENTS		
30	loose, light tan-red, coarse to fine / high-plasticity, clayey, silty **SAND (SM)**	SS-11	5
	very dense, tan-white, medium to fine, silty **SAND (SM)**	SS-12	67
40		SS-13	63
	hard, purplish-white, fine, clayey, sandy **SILT (MH)**	SS-14	31
50		SS-15	32

Standard Penetration Test Data (blows/ft): 0 10 20 30 60 80

- Boring and sampling performed in accordance with ASTM D 1586.
- Depths are measured from existing ground surface at time of drilling.
- Depths are shown to illustrate general arrangements of the strata encountered at the boring location.
- Do not use depths for determinations of quantities or distances.

NOTES: SWITCHED TO MUD ROTARY DRILLING AT 30'

GEOTECH 170708.210 TAYLOR'S MILL ROAD CULVER REPLACEMENT.GPJ GEC.GDT 10/24/17

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CONSULTANTS

SOIL BORING RECORD

Project: **Taylor's Mill Road Culvert Replacement** Peach County, Georgia	Boring No: **B-2** Project No: 170708.210
Location: **See Boring Location Plan**	GS Elevation:
Driller/Equipment: GEC/ CME 55 HSA 2.25/ROTARY	Drilling Date: October 17, 2017
Water Level: 10.0 ft at time of boring	Engineer/Geologist:

Water Level (ft)	Depth (ft)	Soil Symbol	Soil Description	Sample Type	Standard Penetration Test Data (blows/ft) 0 10 20 30 60 80	N-Value
			hard, purplish-white, fine, clayey, sandy **SILT (MH)** *(continued)*			
			firm to very firm, tan-white, medium to fine, silty **SAND (SM)**; with some mica	SS-16		15
				SS-17		18
	60			SS-18		23
				SS-19		27
	70			SS-20		22
				SS-21		17
	80		very stiff, tan-white, fine, clayey, sandy **SILT (ML)**	SS-22		21
				SS-23		23
	90			SS-24		24
				SS-25		25
	100		**BORING TERMINATED AT 100.0 ft**			

· Boring and sampling performed in accordance with ASTM D 1586.
· Depths are measured from existing ground surface at time of drilling.
· Depths are shown to illustrate general arrangements of the strata encountered at the boring location.
· Do not use depths for determinations of quantities or distances.

NOTES: SWITCHED TO MUD ROTARY DRILLING AT 30'

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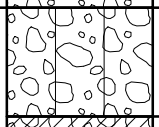
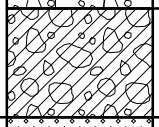
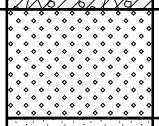
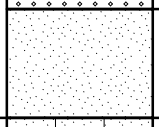
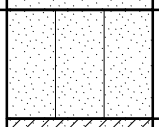
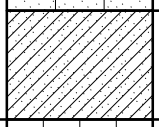
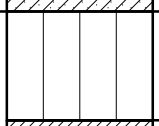
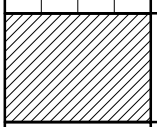
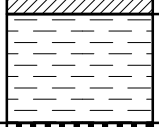
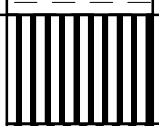
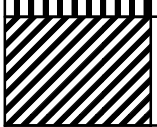
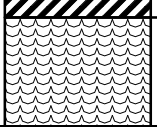
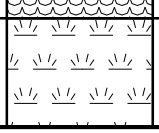
SOIL CLASSIFICATION CHART

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

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

TAYLORS MILL RD. CULVERT REPAIR
PEACH COUNTY, GEORGIA

PRE-BID CONFERENCE AGENDA
October 17, 2019
10:00 A.M.

A. INTRODUCTIONS

B. SIGN-IN SHEET

C. PROJECT DESCRIPTION AND SCOPE OF WORK
- 3-126" CMP Culverts to be repaired with 96" Snaptite Lining
- New Cast-In-Place Headwall with aggregate piers
- Guardrail, Site Grading & Stabilization
- Fence/Gate Relocation and Replacement
- All Erosion Control Services and Soil/Concrete Testing to be provided by contractor

D. DELIVERY METHOD
Single Prime Contractor

E. ALTERNATES, ALLOWANCES, AND UNIT PRICES
Additional bid item per ton of stabilization rock – provide unit price

F. WORK OR SERVICES BY OTHERS
- Contractor is responsible for cost of other services required, e.g. construction testing, traffic control, utility relocation.
- This project requires aggregate piers to stabilize the headwalls. Aggregate piers are proprietary designs provided by a separate company, which shall be contracted by the Prime Contractor for design and construction of the aggregate piers. Known companies that provide this service are:
  - Geopier
  - Hayward Baker

G. QUESTIONS DURING BID
- Questions must be submitted to the Engineer by 5:00 P.M. on October 22, 2019 (Russell Wheeler, 478-476-0700, rwheeler@tpointeng.com)
- Questions and answers will be provided to all bidders

H. BID ADDENDUM

Acknowledge receipt on Bid Form

I. BID OPENING

- Due by 2:00 P.M. local time, October 29, 2019

- Mail or deliver Sealed Bids to:

  Daniel Flores Garcia
  Peach County Board of Commissioners
  ATTN: RFB # 19-006
  213 Persons Street
  Fort Valley, GA 31030Bids by e-mail or fax are not acceptable

J. COMPLETION TIME & PROJECT SCHEDULE

120 consecutive calendar days adjusted based on date of signed agreement

K. OBTAINING PLANS AND SPECIFICATIONS

Once Contractor Information Form is complete, available through:

- .pdf (no charge)
- Printing company (Contractor pays printing company directly. Contractor must order a complete set of plans and documents.)
- Triple Point Engineering, Inc. ($250 + shipping)

L. REQUIRED BID SUBMITTALS (Details provided in Contract Documents)

- Bid
- Bid Bond (5%)
- Bidder Qualifications (See 00100-1)
- Utility Contractor License
- Additional Information (See 00100-3)
- Form A: Peach County Vendor Information Sheet
- Form B: W-9 (Taxpayer Identification Number)
- Form C: Contractor E-Verify Affidavit under O.C.G.A. 13-10-91(b) (1)
- Form D: S.A.V.E. Affidavit Verifying Status for County Public Benefit Application Contracts
- Form E: Subcontractor E-Verify Affidavit under O.C.G.A. 13-10-91(b) (1) (Required for ALL Subcontractors working for the Contractor)
- Form F: Sole Proprietor Exemption Affidavit Pursuant To O.C.G.A. 36-60-6(d), if applicable (Only if contractor has zero employees)
- Form G: Certification by Contractor, Non-Segregated
- Form H: Certification by Contractor, Drug-Free Workplace Act
- Form I: Non-Collusion Affidavit or Prime Contractor
- Form J: Conflict of Interest Certification
- Form K: Indemnity Agreement

- Form L: Title VI Civil Rights Act of 1964 Contractor Agreement
- Form M: Debarred Bidders/Integrity Certification
- Form O: Dispute Disclosure
- Form P: List of Subcontractors

M. SAFETY
- Hard hats and proper attire
- 811
- Meet or exceed OSHA requirements

N. SPECIAL CONSIDERATIONS
- Supplementary Conditions (Section 00800)
- Easements, Neighbors, Fences

O. STAGING, ACCESS, PARKING, USE OF FACILITIES
- All staging and construction must be performed on the Taylors Mill Road R/W or on the easements depicted on the drawings.

P. CLEAN UP, PROTECTION OF THE PREMISES, AND ENVIRONMENTAL CONSIDERATIONS
- Maintain work with access easements
- E&S control
- Protect Mossy Creek

Q. INSURANCE

Supplementary General Conditions (Section 00800 – Paragraph 20)

R. PAYMENT
- Pay Estimate Summary Sheet
- 10% retainage until 50% complete
- Retainage paid at end of project following punch list items and final stabilization.

S. QUESTIONS