

P.C. Simonton & Associates, Inc.
Consulting Engineers

309 North Main Street
Post Office Box 649
Hinesville, Georgia 31310

1020 Founders Row
Suite 118
Greensboro, Georgia 30642

Addendum No. Four

Date: December 5, 2014

Project: Hinesville/Ft Stewart WWTP Modification
For the City of Hinesville
PCS No. 2009-63

Engineer: P.C. Simonton & Associates, Inc.
Hinesville, Georgia

The original plans, specifications, and bid documents are amended to include the following:

Bid Documents:

- Instruction to Bidder
 - 10. Supplied Equipment – Change the influent screen from Parkson to Spaans Babcock, include the attached proposal form Spaans Babcock and note that there are two screens in the proposal but only one compactor.
- Subsurface Investigation – Add the attached soils analysis to the subsurface investigation report contained in the original bid documents.

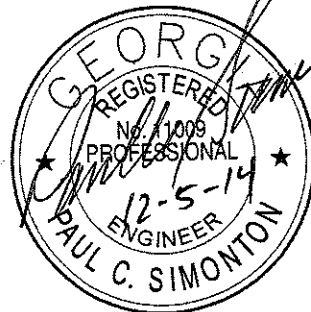
Specifications:

- Specification Sections 04100 Masonry, Section 04220 Concrete Masonry Unit, 04230 Reinforced Unit Masonry– Add Section 04100, 04220 and 04230 to the Specification section of the Bid Document.

Plans:

- Plan Sheet M-1 – Remove the dumpster pad on the west side of the headworks. Removal of the dumpster pad will apply to all associated sheets showing the dumpster pad included in the plans

-END-



QUOTATION



Date : November 06, 2014
To : Paul Simonton
Attn. :
Email address : psimonton@pcsimonton.com
Phone Number : 912-368-5212
No. of pages : 4
Your ref. :

80 Toronto St
Barrie, ON
L4V 1N2
T. 905-884-1100
F. 905-884-8811
www.spaansbabcock.com

Our Quotation:

SBI Q11573-A

Contact person	Function	Direct dial	E-mail
Adam Chappell	Area Sales Manager	+1 416 707 3530	achappell@spaansbabcock.net
Lieuwe Pietersen	Sales Engineer	+31 514 608 275	l.pietersen@spaansbabcock.nl

Subject : Hinesville

Dear Mr. Simonton,

We thank you for your enquiry and would like to send you our quotation considering our general terms of delivery as follows:

1. Price sheet / Scope of supply / Remarks
2. Terms and conditions
3. Attachments

We trust to have offered according to your expectations, nevertheless please do not hesitate to contact us if you should require further information or clarification.

Yours faithfully,
Spaans Babcock

A handwritten signature in blue ink, appearing to read 'Adam Chappell'.

Adam Chappell
Area Sales Manager

A handwritten signature in blue ink, appearing to read 'Lieuwe Pietersen'.

Lieuwe Pietersen
Sales Engineer



1 Price sheet / Scope of supply

1.1 Our quotation is based on the following

- Technical data as stated in this quotation

1.2 Price sheet

Pos	Description	Total price
010	<p>1 x Bormet EKO BLOK MC56</p> <p>Heavy duty continuous filter belt screen with ABS filter elements and rotating brush for optimal cleaning.</p> <ul style="list-style-type: none"> - Capacity : 8 MGD - Slot width : 6 mm (0.24 inch) - Channel width : 3 ft - Channel depth : 4.33 ft - Material : SS304 <p>Includes: freight, packing, site service as specified, local control panels, level transducers, 1 lot spares as specified, covers, washer/compactor and screen discharge chute</p> <p>Excluded: installation of screens, compactor discharge chute, interconnections of devices, motors, sensors and all other electrical or mechanical connections, factory testing is not possible</p> <p style="text-align: right;">Delivery DDP jobsite</p>	\$137,800.00
020	<p>OPTION</p> <p>2 x Bormet EKO BLOK MC56</p> <p>Heavy duty continuous filter belt screen with ABS filter elements and rotating brush for optimal cleaning.</p> <ul style="list-style-type: none"> - Capacity : 8 MGD - Slot width : 6 mm (0.24 inch) - Channel width : 3 ft - Channel depth : 4.33 ft - Material : SS304 <p>Includes: freight, packing, site service as specified, 2 x local control panels, 2 x set level transducers, 1 lot spares as specified, covers, 2 x washer/compactor and 2 x screen discharge chutes</p> <p>Excluded: installation of screens, compactor discharge chute, interconnections of devices, motors, sensors and all other electrical or mechanical connections, factory testing is not possible</p> <p style="text-align: right;">Delivery DDP jobsite</p>	\$229,200.00

030	<p>OPTION 2 x Bormet EKO BLOK MC56</p> <p>Heavy duty continuous filter belt screen with ABS filter elements and rotating brush for optimal cleaning.</p> <ul style="list-style-type: none"> - Capacity : 8 MGD - Slot width : 6 mm (0.24 inch) - Channel width : 3 ft - Channel depth : 4.33 ft - Material : SS304 <p>Includes: freight, packing, site service as specified, 2 x local control panels, 2 x set level transducers, 1 lot spares as specified, covers, 1 x larger washer/compactor and 2 x screen discharge chutes</p> <p>Excluded: installation of screens, compactor discharge chute, interconnections of devices, motors, sensors and all other electrical or mechanical connections, factory testing is not possible</p> <p style="text-align: right;">Delivery DDP jobsite</p>	\$224,000.00
Total:		

1.3 Standards

The work will be carried out in accordance with a number of standards including:

Safety

Our equipment is designed according to the latest health and safety requirements. However, the majority of our equipment will form a partial delivery which will be integrated into a complete system. In these cases it is the responsibility of the client to ensure that the health and safety requirements of the complete system and its surrounding area are complied with.

ISO9001 Manufacture

Welding methods according EN 15614-1, welders qualified according EN 287-1, ASME IX and AWS.

1.4 Excluded items, unless specifically included in our offer

- on site off loading, craneage,
- Pre-cabing on the machine, cable glands, VSD (variable speed device)
- All civil engineering, materials and works
- All electrical engineering, materials and works
- Project manager site visits, inspections, certificates and tests

2 Terms and conditions

In addition to below conditions, the terms and conditions of Orgalime S2012 shall be exclusively applicable. A copy of these conditions can be downloaded via following link:

<http://www.spaansbabcock.com/de/Download.aspx?File=1267>

Unless otherwise agreed in writing, applicable law is Dutch law under the jurisdiction of a Dutch judge.

2.1 Validity

2 months after date of quotation. Please note that our material costs can fluctuate due to the world steel prices, therefore the final pricing will be based on steel prices at the time of order placement.

2.2 Price basis

Net, excl. VAT, other taxes and duties.

Prices are calculated on the basis of time/days as described in the scope of supply. Any additional time over and above this will be charged extra.

2.3 Terms of payment

30% with order, at sight

30% of the order value at half-way manufacturing, within 14 days

40% of the order value at delivery ex works, within 14 days

All payments against an irrevocable L/C confirmed by a bank of our own choice, all costs borne by opener. The L/C shall be opened immediately with the order. The parts or equipment remain the property of the vendor until full payment has been received.

2.4 Delivery time

Total Ex Works delivery time is 18-20 weeks based on the following conditions:

- After receipt of the signed and accepted order, the general arrangement drawings will be supplied in 12-15 working days.
- The client has to approve these drawings within two weeks. (Should approval take more time and/or major revisions are to be implemented, delivery time may have to be rescheduled).
- Manufacturing and purchasing will start after drawing approval. At present, delivery time is 14-18 working weeks.

Payments received as under par. 2.3.

In the event that the site is not ready to receive the equipment on the agreed delivery date, the equipment will either be delivered and offloaded for storage at the site with any additional costs for this being borne by the client and an invoice raised, or delivered into storage and invoiced against a vesting certificate, storage charges would then be applicable in accordance with our standard rates which are available on request.

2.4.1 Terms of delivery

DDP Hinesville WWTP, GA in accordance with the INCOTERMS 2010.

2.4.2 Transfer risk

The purchaser shall assume risk for the goods or parts thereof on departure from Balk, responsibility for insurance therefore passes on departure.

In the event that the site is not ready to receive the equipment on the agreed delivery date, the equipment will either be delivered and offloaded for storage at the site with any additional costs for this being borne by the client and an invoice raised, or delivered into storage and invoiced against a vesting certificate, storage charges would then be applicable in accordance with our standard rates which are available on request. In this case, we consider the goods as being delivered as in 2.4.1.

2.5 Installation not in scope of supply

2.6 Liability

We shall not accept liability for any damages, including any consequential losses, and for (stagnation) associated with the installation, testing, etc.

Any work done or any services rendered by third parties shall only be paid upon submission of an order signed by Spaans Babcock.

2.7 Quality assurance / Control / Inspection / Testing and Certificates

Spaans Babcock will exercise full and adequate assurance / control which will include; handling, engineering and inspection of the goods before and during manufacturing as well as assembling according to the Spaans Babcock standard ISO 9001 QA/QC-plan and procedures.

2.8 Guarantee

Offered equipment is guaranteed during a period of 12 months after start-up with a maximum time limit of 18 months after notice ready for shipment, whichever expires first. However, this guarantee is only valid when installation has been checked by a Spaans supervisor. Also, claims shall only be considered if the equipment has been operated in accordance with the details included in our Operation & Maintenance Manuals.

2.9 Design conditions

The design as well as the design parameters of the solution offered is based upon information obtained from the client. Should the client fail to provide any data, information (design parameters), necessary to design the system, all calculations, values, data, made by Spaans Babcock in order to perform the contract, shall be for the account and exclusive risk of the client and fall outside the responsibility of Spaans Babcock.

If any changes are required in the design or design parameters, Spaans Babcock will requote based on the latest information received. For any changes in the parameters and equipment design requested or deemed necessary after signing of the contract, all costs related to such modifications will be charged to the client.

All our equipment is designed to operate in the following conditions, unless specifically detailed in our quotation:

- A well ventilated area (wind speed >2m/s)
- Protected from direct sunlight
- Ambient temperature between 0 and 30°C
- Altitude above sea level between 0 and 1000m

For optimum performance it is essential that the plant operates according to the design parameters and the plant is operated and maintained in accordance with instructions and the Operations and Maintenance Manual provided by Spaans Babcock.

2.10 Documents and drawings

In case of an order a GA (general arrangement) drawing will be prepared and sent for approval. Comments, if any, will be incorporated in the final GA drawing. Any alternations in the general arrangement drawing, which cause a change in our scope of supply will be notified, together with the resulting change in price.

The GA drawing contains the following:

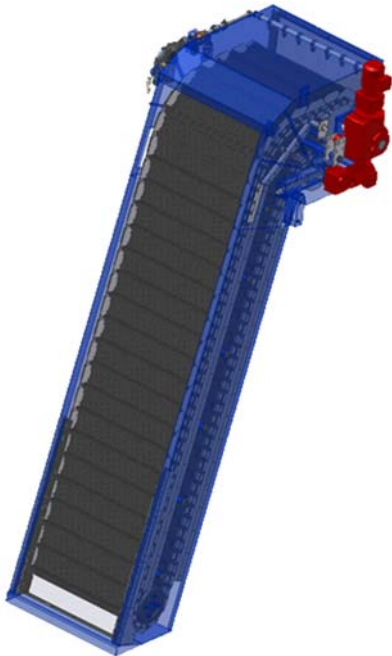
- Lay out of the ordered equipment
- Overall dimensions
- Foundation loading data


2.11 Changes in work

The client may, prior to shipment, by written request, make reasonable changes in the drawings, designs, specifications, methods of shipment or packing, or time or place of delivery or require additional or reduced work. If any such changes causes an increase or decrease in the cost of, or the time required for, performance hereunder, the purchaser shall be liable to the seller for any such increases in cost, or Seller shall be liable to Purchaser for any such decrease in cost, and a prompt and equitable adjustment shall be made to any shipping or delivery schedules previously agreed to by the parties.

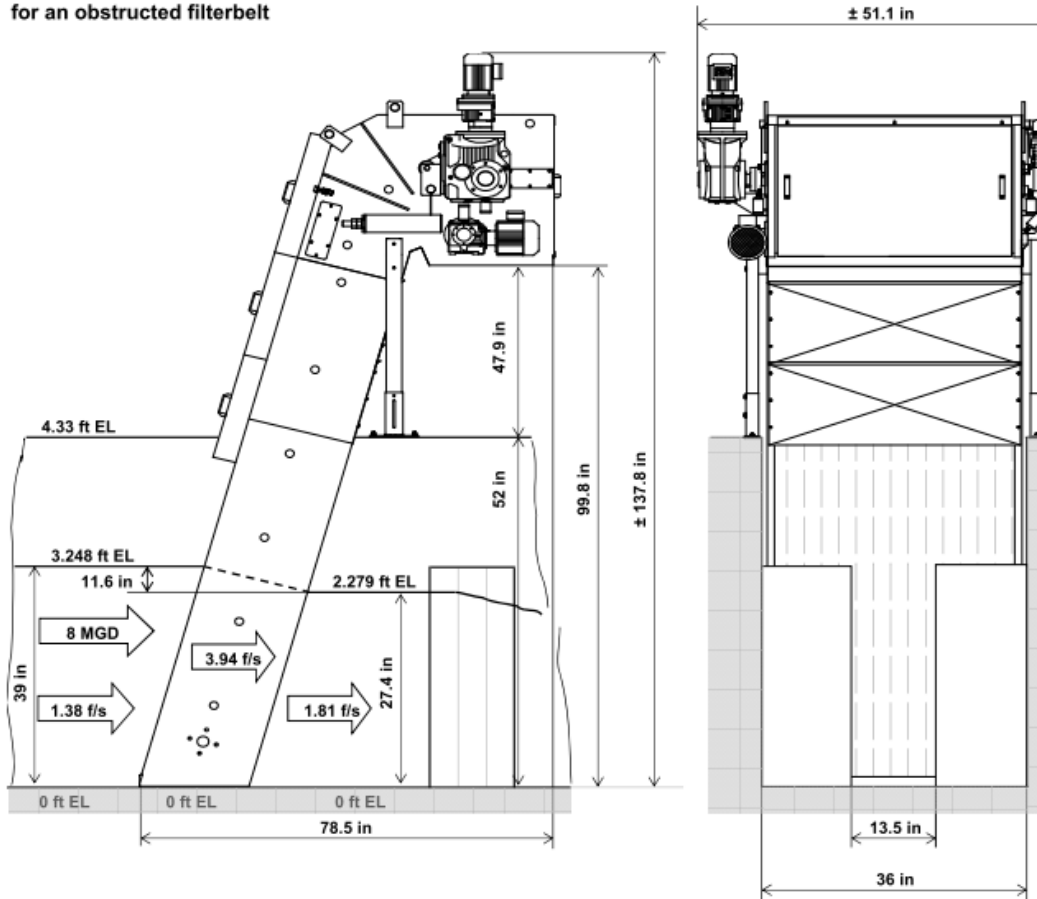
2.12 Assignment

Spaans Babcock shall have the right to assign or novate the contract, in whole or in part, to any of its affiliates or any third party.



 Spaans Babcock		HYDRAULIC SKETCH	
	Tender number	14-0099	
	description of project		
	city/ town of project	Hinesville	
	flow conditions/ medium	Q Max	
machine	machine	MC 56	
	slot width	6 mm	
	angle of inclination	75°	
	total weight a piece of machine	3197 lb	
	solids content	150 ppm	
electric	operating voltage	460 VAC/ 60 Hz	
	insulation class	IP55	
	explosion proof electrics	yes	
filter belt drive	motor power	0.7 HP	
	nominal amperage	1.75 A	
	number of filter belt velocities	1	
brush drive	motor power	1 HP	
	nominal amperage	2.1 A	
Materials of construction	synthetic filter elements	ABS	
	synthetic chain guide rails	HDPE	
	nuts and bolts	A4	
	all metall parts, except motor/ gearboxes and filterbelt chain	AISI 304	
	conveying chain	AISI 316TI	
Spray water	required quantity of spray water	12.4 GPM	
	spray water pressure	40 - 60 psi	
	water supply provided with an In-line liquid strainer	80 mesh	

for an obstructed filterbelt


This drawing is not to scale!

Part 1 General

1.01 Scope

The work covered by this Section consists of furnishing all labor, equipment and material required to ensure the proper proportioning of materials for masonry mortar and related work as described herein and or shown on the Drawings.

1.02 Submittals

Product Data: For each different masonry mortar product specified, Submit to P.C. Simonton & Associates.

1.03 Storage and Protection

- A. Cementitious materials shall be delivered to the site in unbroken bags or other approved containers, plainly marked and labeled with the manufacturer's name and brand.
- B. Cementitious materials shall be handled in a manner which will prevent the inclusion of foreign materials and damage by water or dampness.

1.04 Quality Assurance

- A. Materials shall conform to the current editions of the following standards:
 - 1. Masonry Cement: ASTM C91.
 - 2. Aggregate for Masonry Mortar: ASTM C 144.
 - 3. Portland Cement: ASTM C 150, Type I.
 - 4. Hydrated Lime for Masonry Purposes: ASTM C 207, Type S.
 - 5. Mortar for Unit Masonry: ASTM C 270.
- B. The Contractor shall submit to the Engineer written evidence that the cement, lime and aggregate is in conformance with the material and mechanical requirements specified herein. Certified copies of independent laboratory test results or mill test results from the cement, lime and/or aggregate supplier may be considered evidence of compliance provided such tests are performed in accordance with the appropriate ASTM testing standards by experienced, competent personnel. In case of doubt as to the accuracy or adequacy of mill tests, the Engineer may require that the Contractor furnish test reports from an independent testing laboratory on samples of cement, lime and/or aggregate.

Masonry Mortar

- C. In addition to these submittals, the Contractor shall submit to the Engineer test results in compliance with ASTM C 270, Section 9 for each type of mortar to be used in the work. The test report shall also include the average compressive strength of three 2-inch cubes of laboratory prepared mortar. Mortar mix ingredients and proportions shall not be changed during the course of the work without the Engineer's approval. Extreme care shall be taken to assure that the same proportion of each ingredient is used in each batch. Mortar color shall be proportioned by weight in individual containers prior to mixing. Measuring mortar color by volume during mixing shall not be allowed.

Part 2 Products

2.01 Materials

- A. **Masonry Cement**
1. Masonry cement shall be a mixture of Portland cement and Type S hydrated lime. The mix shall not contain inert or noncementitious mineral fillers. If package mix is used, other hydraulic cements may be substituted for a part of the Portland cement. However, the Portland cement shall not be less than 30 percent of the total. Packaged mixes shall conform to the requirements of ASTM C 91.
 2. The composition of the masonry cement shall be printed on each bag in terms that show compliance with these requirements.
 3. If a packaged mix is not used, the Portland cement shall conform to ASTM C 150, Portland Cement, Type I and hydrated lime shall conform to ASTM C 207, Type S. The hydrated lime may be used in dry or paste form.
- B. **Sand:** Aggregate for use in masonry mortar shall be clean, free from salt or other deleterious materials and conform to ASTM C 144, Aggregate for Masonry Mortar.
- C. **Water:** Water for mixing shall be potable, clean and free from oil, acids, salts and other deleterious matter.
- D. **Color**
1. Masonry cement used in interior non-load bearing smooth face CMU wall construction shall be grey.
 2. Masonry cement used in the split faced CMU veneer shall be colored. Colors shall be submitted to the owner (via P.C. Simonton & Associates) for approval.

Part 3 Execution

3.01 Installation

A. Mixing and Placing

1. All mortar materials shall be accurately measured by volume and thoroughly mixed until they are evenly distributed throughout the batch. Mix mortar as follows: first, add approximately 3/4 of required water, 1/2 the sand and all the cement and lime; mix and add remainder of sand. Mix briefly; then add remainder of water in small quantities until workability of batch is satisfactory to masons. Mortar color when used shall be added to the 3/4 of required water prior to adding sand. After all materials have been added, mix for a minimum of five minutes. Completely empty drum before recharging for next batch.
2. All mortar shall be mixed in a powered, batch-type mechanical mixer. This requirement will not be waived except for minor jobs and then only upon the approval of the Engineer.
3. Mortars mixed for more than one hour shall not be used. A mortar which shows a tendency to become dry before this time shall have water added to it and shall be re-mixed. The use of a continuous mixer or retempered mortar shall not be permitted.
4. Mortar for pointing shall have integral waterproofing added in accordance with the manufacturer's instructions.

- B. Mix Proportions: All mortar shall conform to the requirements of ASTM C 270 and shall conform to section 2103.9 of the 2012 IBC.

1. Mortar Uses

- a. Use Type S for all load bearing masonry and in foundation walls where masonry materials occur.
- b. Use Type N for all interior non-load bearing masonry.
- c. Use Type S for all face brick work, backup and parging.
- d. Type M may be used in lieu of Type N or S.
- e. Type S may be used in lieu of Type N.

END OF SECTION

Concrete Unit Masonry**Part 1 General****1.01 Scope**

- A. The work covered by this Section consists of furnishing all labor, equipment and material required for the correct placement and construction of concrete masonry units and related work as described herein and/or shown on the Drawings.
- B. Work for Other Trades: Bolts, anchors and shelf angles shall be the responsibility of the Contractor. However, the subcontractors requiring such work are responsible for furnishing complete information to the Contractor.

1.02 Submittals

Certification: Furnish manufacturer's written certification accompanied by suitable laboratory or mill test reports that masonry units furnished meet or exceed the requirements of these Specifications.

1.03 Storage and Protection

Store masonry units above ground on level platforms which allow air circulation under stacked units. Cover and protect against wetting prior to use. Handle units on pallets or flat bed barrows. Do not permit free discharge from conveyor units or transporting in mortar trays.

Part 2 Products**2.01 Concrete Masonry Units**

- A. Concrete block shall have 8 x 16-inch face with 4, 6, 8, 10 or 12-inch nominal width, as required.
- B. Hollow masonry units shall comply with "Specification for Hollow Load-Bearing Concrete Masonry Units", ASTM C 90, Grade N. Hollow masonry units shall be one of the following:
 - 1. Light weight, concrete weighing less than 105 pcf. Minimum net compressive strength of 1,900 psi.
- C. Architectural Concrete Masonry Units: Provide Concrete Block load bearing units in accordance with Article 2.01, Paragraph A. of this Section manufactured by Metromont, with water repellent admixture. Nominal face dimensions 8 x 16-inches; thickness as indicated; external corners square with two finished faces. Minimum compressive strength shall be 1,900 psi. Provide all special shapes as required to complete concrete masonry work, including wraparound corner units.
- D. Color: Provide colored masonry units, as indicated on the Drawings, by Metromont.

2.02 Concrete Brick

Concrete brick shall comply with "Specifications for Concrete Building Brick", ASTM C 55, Grade N.

2.03 Reinforcement

- A. Block wall reinforcement shall be of the prefabricated type for use in masonry mortar joints. Wall reinforcement shall be of ladder design for composite wall construction with No. 9 gauge deformed hot-dipped galvanized side rods and No. 9 gauge galvanized cross rods. Joint reinforcement shall comply with "Standard Specification for Cold Drawn Steel Wire for Concrete Reinforcement", ASTM A 82.
- B. Dovetail anchors shall be hot-dipped galvanized steel, triangular shaped wire tie, sized to extend within 1-inch of masonry face complying with ASTM A 82.

2.04 Weepole Material

Weepholes shall be absorbent rope made from cotton, 1/4 to 3/8-inch in diameter in length to produce 18-inches in cavity of 4-inch cmu veneer.

Part 3 Execution

3.01 Erection and Workmanship

- A. Scaffolding shall be provided, as required. Scaffolding shall not be overloaded and shall be inspected regularly by the Contractor to verify that it is amply strong, well braced and securely positioned. The Contractor shall be unconditionally responsible for the safety of the scaffolding at all times.
- B. Masonry shall not be laid when the temperature is below 40 degrees F. Walls shall be carried up level and plumb all around. Unfinished work shall be stepped face for joining with new work; toothing shall not be permitted. Heights of masonry shall be checked by the Contractor with an instrument at each floor and at sills and heads of openings to maintain the level of the walls.
- C. Masonry units shall be handled with care to avoid chipping, cracking and spalling of faces and edges. Drilling, cutting, fitting and patching to accommodate the work of others shall be performed by qualified masons. Masonry shall be cut with a masonry saw outside of buildings. Chipping or breaking with a hammer will not be permitted.
- D. Door and window openings, louvered openings, anchors, pipes, ducts and conduits shall be built in carefully as the work progresses. Ties and anchors shall be placed accurately. Metal work specified elsewhere shall be placed in position as the work progresses. Grouting of ties and anchors into hardened mortar or grout shall not be permitted.

- E. Masonry units shall be laid in running bond. The first course of masonry shall be laid in a full bed of mortar; and the succeeding courses shall be shoved (not laid) in beds of mortar to fill the joints full without subsequent flushing and filling. Unless shown or specified otherwise, all joints shall be 3/8-inch thick. Where ties, anchors and bolts occur within the cells of the units, such cells shall be filled with mortar or grout as the work progresses.
- F. Concrete masonry units shall be dry when laid. Each unit shall be adjusted to final position in the wall while the mortar is still soft and plastic. Any unit disturbed after mortar has stiffened shall be removed and relaid with fresh mortar. Vertical cells to be filled with grout shall be aligned to provide a continuous unobstructed opening of the dimensions shown. Chases shall be plumb and shall be minimum one unit length from jambs of opening.
- G. Exterior or exposed masonry joints shall be finished with smooth concave contour. Procedure used in striking joints shall be as follows: first strike the bed joints; next strike the head joints; then strike bed joints as required to remove any spots, etc., from intersection of bed and head joints. After mortar has initial set but before mortar is hard, restrike the head joints to provide clean, smooth intersection of the head and bed joints. Interior and exterior joints to receive masonry coating shall be tooled flush.
- H. At the end of each day's work, the tops of exposed masonry walls shall be covered with a strong, nonstaining waterproof membrane well secured in place. Surfaces not being worked on shall be properly protected at all times. Unfinished work shall be stepped for joining with new work. Before new work is started, all loose mortar shall be removed and the exposed joint thoroughly wetted, not less than 30 minutes before laying new work.
- I. Control joints shall be installed where concrete masonry units abut dissimilar materials and shall be installed vertically in exterior walls at 30 feet on center, unless shown otherwise on the Drawings.

3.02 Wall Reinforcement

- A. Place wall reinforcement in first masonry bed joint above finished floor and in alternate bed joints (16-inches on center) thereafter.
- B. Masonry joint reinforcement shall be placed so that longitudinal wires are located over face shell mortar beds and are fully embedded in mortar for their entire length with minimum mortar cover of 5/8-inch of exterior side of walls and 1/2-inch at other locations. Reinforcement shall be placed in first and second bed joint above and below openings. Reinforcement in the first bed joint immediately above and below openings shall be continuous. In the second bed joint it shall extend two feet beyond each side of the opening.
- C. Reinforcing shall be lapped a minimum of 6-inches at splices. Corner and abutting wall reinforcement shall be prefabricated corner and tee sections.

3.03 Cleaning

- A. During construction, care shall be taken to keep exposed face of masonry clean of mortar and other stains. Joints shall be raked as they reach thumbprint hardness. The exposed work shall then be brushed with a soft fiber brush to remove adhering mortar. A wooden paddle shall be used to remove more tenacious material. Bases of walls shall be protected from splash stains by covering the adjacent floor or ground with sand, sawdust or polyethylene film.
- B. At completion of work, holes in exposed masonry shall be pointed and defective joints shall be cut out and tuck pointed solidly with mortar.
- C. If necessary, exposed masonry surfaces shall be scrubbed with warm water and soap and fiber brush and thoroughly rinsed with clear water. Work which may be damaged, discolored or stained shall be protected during the cleaning process. The use of sapolio or wire brushes or acid for washing down walls shall not be permitted.
- D. Protect all finished work against freezing, for a period of not less than 48 hours, by means of enclosures, temporary heat or such other protective methods as may be required and directed by the Engineer.

3.04 Weepholes

Install Weepholes in head joints in exterior wythes of first course of masonry immediately above embedded flashing.

END OF SECTION

Part 1 General

1.01 Scope

The work covered by this Section consists of furnishing all labor, equipment, and materials required for the correct placement and construction of reinforced masonry units and related work as described herein and/or shown on the Drawings.

1.02 Additional Requirements

Requirements of Section 03200 of these Specifications apply to work of this Section.

1.03 Submittals

- A. Mill Certificates: Submit steel producer's certificates of mill analysis, tensile and bend tests for reinforcement steel required for the Project.
- B. Shop Drawings: Submit shop drawings for fabrication, bending and placement of reinforcement bars. Comply with ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures". Show bar schedules, diagrams of bent bars, stirrup spacing, lateral ties and other arrangements and assemblies as required for fabrication and placement of reinforcement for unit masonry work.

1.04 Product Delivery, Storage, and Handling

Store masonry units above ground on level platforms which allow air circulation under stacked units. Cover and protect against wetting prior to use. Handle units on pallets or flat bed barrows. Do not permit free discharge from conveyor units or transporting in mortar trays.

Part 2 Products

2.01 Materials

- A. General: Refer to Section 04220 of these Specifications for masonry accessories not included in this Section.
- B. Reinforcement: Provide deformed bars of following grades complying with ASTM A 615, except as otherwise indicated.
- C. Shop fabricate reinforcement bars which are shown to be bent or hooked.

Part 3 Execution

3.01 Placing Reinforcement

- A. Clean reinforcement of loose rust, mill scale, earth, ice or other materials which will reduce bond to mortar or grout. Do not use reinforcement bars with kinks or bends not shown on the Drawings or final shop drawings, or bars with reduced cross-section due to excessive rusting or other causes.
- B. Position reinforcement accurately at the spacing indicated. Support and secure vertical bars against displacement. Horizontal reinforcement may be placed as the masonry work progresses. Where vertical bars are shown in close proximity, provide a clear distance between bars of not less than the nominal bar diameter or 1-inch, whichever is greater.
- C. Splice reinforcement bars where shown. Do not splice at other points unless acceptable to the Engineer. Provide lapped splices, unless otherwise indicated. In splicing vertical bars or attaching to dowels, lap ends, place in contact and wire tie. Provide not less than the minimum lap indicated, or if not indicated, as required by governing code.
- D. Anchoring: Anchor reinforced masonry work to supporting structure as indicated. Anchor reinforced masonry walls to non-reinforced masonry where they intersect.

3.02 Installation, General

- A. Refer to Section 04220 of these Specifications for general installation requirements of unit masonry.
- B. Temporary Formwork: Provide formwork and shores as required for temporary support of reinforced masonry elements.
- C. Construct formwork to conform to shape, line and dimensions shown. Make sufficiently tight to prevent leakage of mortar, grout or concrete, if any. Brace, tie and support as required to maintain position and shape during construction and curing of reinforced masonry.
- D. Do not remove forms and shores until reinforced masonry members have hardened sufficiently to carry their own weight and all other reasonable temporary loads that may be placed on them during construction. Allow not less than the following minimum time to elapse after completion of members before removing shores or forms, provided suitable curing conditions have been obtained during the curing period.
 - 1. Ten days for girders and beams.
 - 2. Seven days for slabs.
 - 3. Seven days for reinforced masonry soffits.

3.03 Installation Of Reinforced Concrete Unit Masonry

- A. General: Do not wet concrete masonry units (CMU). Lay CMU units with full-face shell mortar beds. Fill vertical head joints (end joints between units) solidly with mortar from face of unit to a distance behind face equal to not less than the thickness of longitudinal face shells. Solidly bed cross-webs of starting courses in mortar. Maintain head and bed joint widths shown, or if not shown, provide 3/8-inch joints.
- B. Walls
1. Pattern Bond: Lay CMU wall units in running bond with vertical joints in each course centered on units in courses above and below, unless otherwise indicated. Bond and interlock each course at corners and intersections. Use special-shaped units where shown, and as required for corners, jambs, sash, control joints, lintels, bond beams and other special conditions.
 2. Maintain vertical continuity of core or cell cavities, which are to be reinforced and grouted, to provide minimum clear dimension indicated and to provide minimum clearance and grout coverage for vertical reinforcement bars. Keep cavities free of mortar. Solidly bed webs in mortar where adjacent to reinforced cores or cells.
 3. Where horizontal reinforced beams (bond beams) are shown, use special units or modify regular units to allow for placement of continuous horizontal reinforcement bars. Place small mesh expanded metal lath or wire screening in mortar joints under bond beam courses over cores or cells or cells of non-reinforced vertical cells, or provide units with solid bottoms.
 4. Brace walls against wind and other forces during construction. Allow sufficient time between lifts to preclude displacement of solid masonry units or cracking of face shells of hollow masonry units. If blowouts, misalignment or cracking of face shells should occur during construction, tear down and re-build the wall.
- C. Grouting
1. Use "Fine Grout" per ASTM C 476 for filling spaces less than 4-inches in one or both horizontal directions.
 2. Use "Coarse Grout" per ASTM C 476 for filling 4-inch spaces or larger in both horizontal directions.
 3. Grouting Technique: Use low-lift grouting techniques subject to requirements which follow:
 - a. Provide minimum clear dimension of 2-inches and clear area of 8 square inches in vertical cores to be grouted.
 - b. Place vertical reinforcement prior to laying of CMU. Extend above elevation of maximum pour height as required for splicing. Support in position at vertical intervals not exceeding 192 bars diameters nor 10 feet.

- c. Lay CMU to maximum pour height. Do not exceed five feet in height or if bond beam occurs below five feet height, stop pour at course below bond beam.
- d. Pour grout using chute or container with spout. Rod or vibrate grout during placing. Place grout continuously; do not interrupt pouring of grout for more than one hour. Terminate grout pours 1-1/2-inches below top course of pour.
- e. Bond Beams: Stop grout in vertical cells 1-1/2-inches below bond beam course. Place horizontal reinforcing in bond beams; lap at corners and intersections as shown. Place grout in bond beam course before filling vertical cores above bond beam.

END OF SECTION



WHITAKER LABORATORY, INC.

P.O. Box 7078 2500 Tremont Road Savannah, Georgia 31418
(912) 234-0696 Fax (912) 233-5061 Email: info@whitakerlab.net

www.whitakerlab.net

Report No.: 12/04/14-153
Client: P.C. Simonton & Associates, Inc.
Project: Fort Stewart Wastewater Treatment Plant
Hinesville, GA

SITE INSPECTION

Date: 11/17/14
Inspected By: Louis Bragg
Area(s) Inspected: See the attached field sketch for the areas inspected
(See the important note at the end of this report)

REMARKS:

During this inspection, we observed the excavation of three (3) test pits to a depth of ($\pm 12'$) below existing grade. These test pits were made in an effort to determine if any usable structural fill material could be found.

Please see the attached test pit record and gradation tests for further information.

As a result of this inspection, the upper (SM-SC) soils may be suitable for use as structural fill beneath structures. However, we recommend they only be utilized at depths (36") below finish subgrade. And, only if they can be readily moisture conditioned and compacted so as to achieve the required bearing. Please note, the (SM-SC) soils will likely be difficult to work and compact during periods of wet weather. As such, the upper (SM-SC) soils will need to be placed and compacted in ($\pm 6'$) lifts and compacted with suitable equipment. At the end of each work day, these soils will also need to be appropriately sealed and sloped at the surface so as to prevent or limit ponding and stormwater infiltration.

We do not recommend using any of the (SM-SC) soils beneath areas of paving. Furthermore, we recommend the lower (CL) soils not be utilized as structural fill.

We thank you for the opportunity to be of service on this project. We appreciate your trust and look forward to a continuing relationship in the future. If you should have any questions, please do not hesitate to contact our office.

Respectfully submitted,
WHITAKER LABORATORY, INC.

Joseph F. Whitaker, P.E.

1 cc: psimonton@pcsimonton.com

1 cc: File

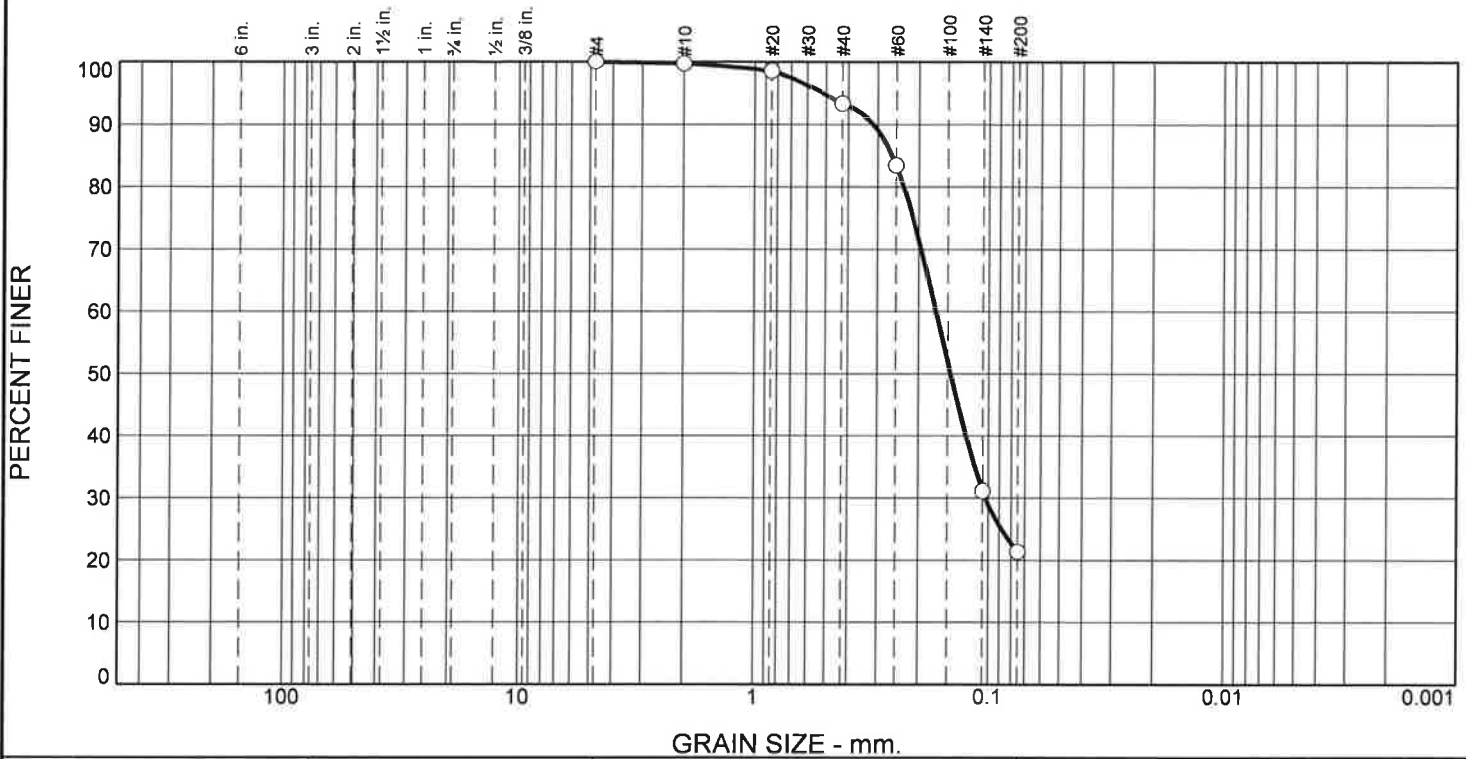
Note: This limited site inspection only reflects the condition of the materials at the depth and location tested. This inspection does not construe that the slab, footings or pavement have been properly designed so as to carry the applied load. This report also does not provide an evaluation with respect to pavement section thickness, foundation selection, bearing quality or potential settlement. The above test results are not to be considered as a substitute for a recommended site specific geotechnical investigation. A site specific geotechnical investigation which includes SPT or CPT data provides information on underlying deeper soil characteristics whereby recommendations can be provided to aid in the design process. Failure to conduct a site specific geotechnical investigation may affect the performance of the structure or pavement. By accepting and/or relying on this report, you acknowledge the potential consequences and liability if a site specific geotechnical investigation has not been conducted. If it is your desire to obtain site specific recommendations for foundation design and/or pavement construction, or if you have any questions about the meaning of the above statements, you must promptly notify us in writing and stop work until the geotechnical investigation has been completed or your questions have been sufficiently answered in writing.

Test Pit Record

Project: Hinesville/Fort Stewart Wastewater Treatment Plant Date: 11/17/14

Test Pit No.	Layer Thickness, Feet	Soil Description	ASTM-D-2488 Classification
TP-1	0 – 6'	Gray-Brown, Fine, Silty Sand with Clay Lumps	SM-SC
	6' – 12'	Gray, Plastic Clay	CL
TP-2	0 – 6'	Gray-Brown, Fine, Silty Sand with Clay Lumps	SM-SC
	6' – 12'	Gray, Plastic Clay	CL
TP-3	0 – 6'	Tan, Fine, Silty Sand with Clay Lumps	SM-SC
	6' – 12'	Gray, Plastic Clay	CL

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.2	6.4	72.0	21.4	

TEST RESULTS			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#4	100.0		
#10	99.8		
#20	98.6		
#40	93.4		
#60	83.3		
#140	31.1		
#200	21.4		

* (no specification provided)

Material Description

Gray-Brown Fine Silty Sand with Clay Lumps

Atterberg Limits (ASTM D 4318)

PL= _____ LL= _____ PI= _____

Classification

USCS (D 2487)= SM-SC AASHTO (M 145)= _____

Coefficients

D₉₀= 0.3151 D₈₅= 0.2610 D₆₀= 0.1691
D₅₀= 0.1465 D₃₀= 0.1031 D₁₅= _____
D₁₀= _____ C_u= _____ C_c= _____

Remarks

Sampled by: Louis Bragg

Date Received: _____ Date Tested: 12/3/14
Tested By: Louis Bragg
Checked By: Joseph M Whitaker
Title: _____

Location: TP-1 Sample Number: 1 Depth: 0-6'

Date Sampled: 11/17/14

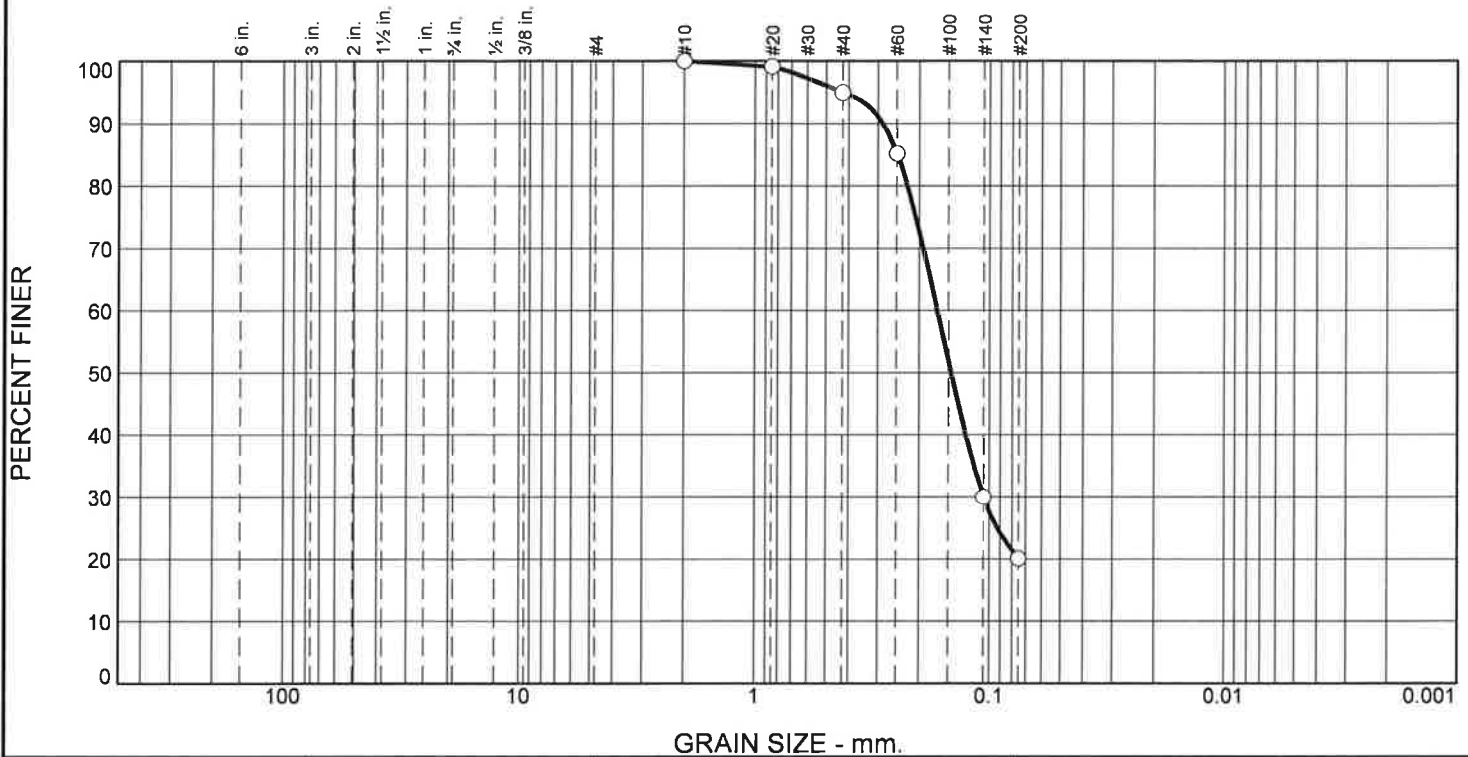
WHITAKER LABORATORY, INC.

Client: P.C. Simonton
Project: Ft. Stewart Test Pits

Project No: _____

Figure 12/3/14-100

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.0	5.0	74.9	20.1	

TEST RESULTS			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#10	100.0		
#20	99.1		
#40	95.0		
#60	85.2		
#140	30.0		
#200	20.1		

* (no specification provided)

Material Description

Gray-Brown Fine Silty Sand With Clay Lumps

Atterberg Limits (ASTM D 4318)

PL= _____ LL= _____ PI= _____

Classification

USCS (D 2487)= SM-SC AASHTO (M 145)= _____

Coefficients

D₉₀= 0.2875 D₈₅= 0.2489 D₆₀= 0.1679
D₅₀= 0.1467 D₃₀= 0.1061 D₁₅= _____
D₁₀= _____ C_u= _____ C_c= _____

Remarks

Sampled by: Louis Bragg

Date Received: _____ Date Tested: 12/3/14
Tested By: Louis Bragg
Checked By: Joseph M Whitaker
Title: _____

Location: TP-2 Depth: 0-4'

Date Sampled: 11/17/14

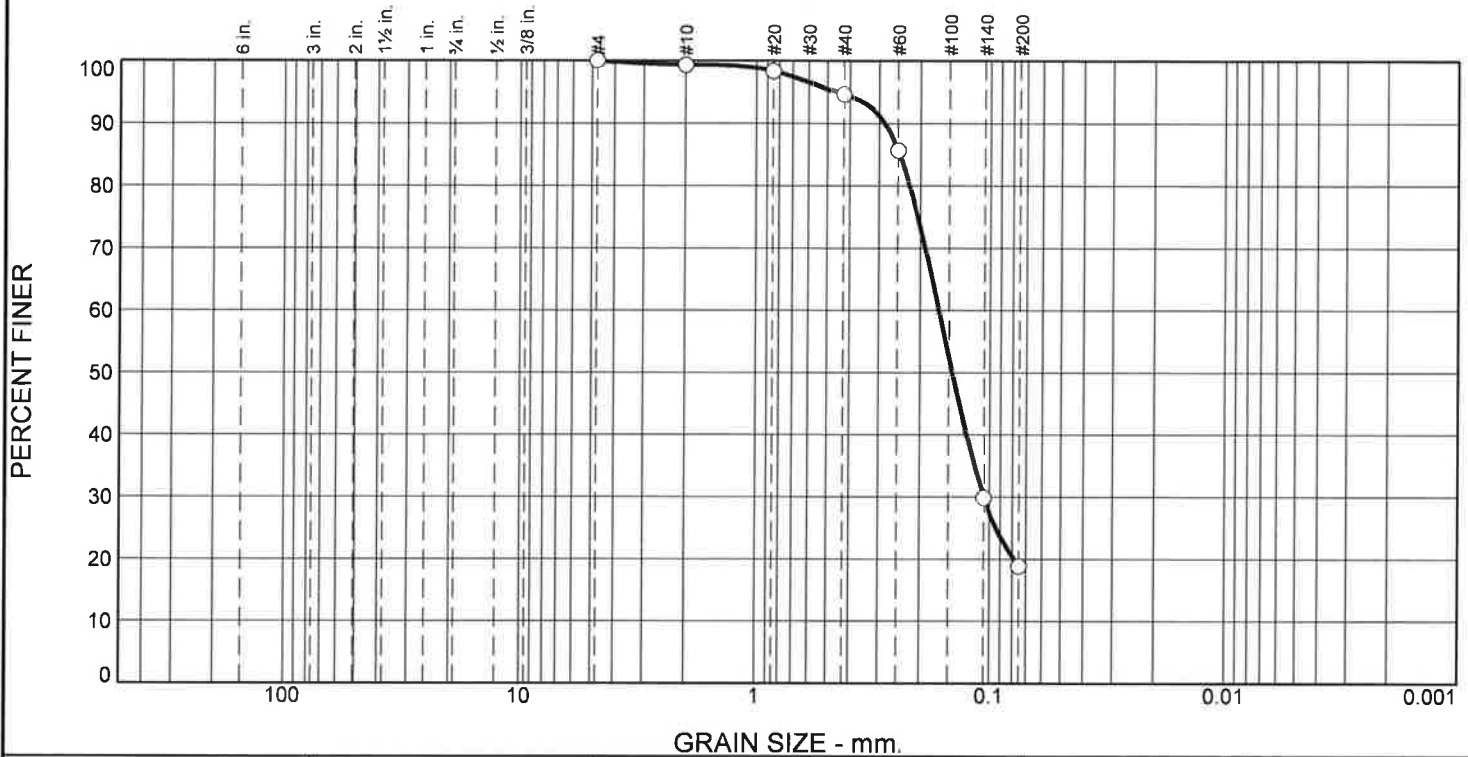
WHITAKER LABORATORY, INC.

Client: P.C. Simonton
Project: Ft. Stewart Test Pits

Project No: _____

Figure 12/3/14-101

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
0.0	0.0	0.0	0.7	4.7	75.7	18.9	

TEST RESULTS			
Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#4	100.0		
#10	99.3		
#20	98.4		
#40	94.6		
#60	85.6		
#140	29.8		
#200	18.9		

* (no specification provided)

Material Description

Tan Fine Silty Sand With Clay Lumps

Atterberg Limits (ASTM D 4318)

PL= _____ LL= _____ PI= _____

Classification

USCS (D 2487)= SM-SC AASHTO (M 145)= _____

Coefficients

D₉₀= 0.2851 D₈₅= 0.2465 D₆₀= 0.1666
D₅₀= 0.1457 D₃₀= 0.1064 D₁₅= _____
D₁₀= _____ C_u= _____ C_c= _____

Remarks

Sampled by: Louis Bragg

Date Received: _____ **Date Tested:** 12/3/14

Tested By: Louis Bragg

Checked By: Joseph M Whitaker

Title: _____

Location: TP-3 **Sample Number:** 1 **Depth:** 0-3.5'

Date Sampled: 11/17/14

WHITAKER
LABORATORY, INC.

Client: P.C. Simonton
Project: Ft. Stewart Test Pits

Project No: _____

Figure 12/3/14-102

11/18/2014

Traffic Bicycling Directions



TEST
PIT
LOCATIONS
11/17/14