CONTRACT DOCUMENTS
BID FORM AND SPECIFICATIONS

BID 039-19 – SIDE STREAM STORAGE VESSELS

PW010-19- SIDE STREAM STORAGE VESSELS

FOR

CITY OF FAIRHOPE PUBLIC UTILITIES

WASTEWATER DEPARTMENT

AND

THE CITY OF FAIRHOPE
Karin Wilson, Mayor

THE FAIRHOPE CITY COUNCIL
Jack Burrell, Council President

Set No_____

Posted:_____

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ADVERTISEMENT

Sealed bids will be received by the City of Fairhope, in Baldwin County, Alabama, at the City of Fairhope offices located at 555 S. Section Street, Fairhope, Alabama, until 2:00 P.M. Thursday, September 26, 2019, then publicly opened thereafter, for furnishing all labor and materials, and performing all work required by the City of Fairhope and described as follows:

BID 039-19; SIDE STREAM STORAGE VESSELS

This project consists of up to three (3) Side Stream Storage vessels, including, but not limited to, the design, fabrication and construction (erection) of the side stream storage vessels as specified and shown herein. One hundred and fifty (150) days are allowed for the construction of the project.

Bid documents will be posted on the City of Fairhope website: www.fairhopeal.gov or a copy may be obtained by emailing the Purchasing Manager at: deedeeb@farihopeal.gov. Specifications are on file and may be seen in the Purchasing Department of the City of Fairhope, Alabama, located at 555 S. Section Street. Prior to opening, Bid packages may be picked up at that location during normal operation, between 7:00 A.M. and 4:00 P.M. local time.

Questions or comments pertaining to this bid must be presented in writing and sent as e-mail to the attention of the Purchasing Manager, Dee Dee Brandt at: deedeeb@farihopeal.gov, no later than seven (7) days prior to the bid opening or will be forever waived.

All Bids must be on blank bid forms provided in the Bid documents. Bids shall be accompanied by a BID SECURITY equal to 5% (percent) of the bid price, but in no event more than $10,000.00. BID SECURITY shall be in the form of a Bid Bond signed by a Bonding company authorized to do business in the State of Alabama, or a Cashier's Check payable to the City of Fairhope.

The City of Fairhope is an Equal Opportunity Employer and requires that all contractors comply with the Equal Employment Opportunity laws and the provisions of the Contract documents in this regard. The City also encourages and supports the utilization of Minority Business Enterprises on this and all public bids.

All bids, with their guarantee (when required), must be enclosed in a sealed, opaque envelope, clearly identified on the outside as "**Sealed Bid**" **with Bid Name, Bid Number, City of Fairhope's name and address, and the Bidder's name and address.** Each bid must be in a separate envelope. Bids made out in pencil will not be accepted. Failure to observe the instructions contained herein will constitute grounds for rejection of your bid. The City reserves the right to accept or reject all bids, or any portions thereof, and to waive informalities, and to furnish any item of material or work to change the amount of the **CONTRACT**, whichever is in the best interest of the City of Fairhope.

The **CONTRACTOR** must furnish to the City of Fairhope at the time of the signing of the **Contract**, a Certificate of Insurance coverage as provided in the contract documents which will include Comprehensive Insurance, **CONTRACTOR'S** Automobile, and where applicable, Owner's Protective Liability insurance, Subcontractor's Public Liability and Property Damage Insurance. The company that is awarded the bid must have Workman's Compensation Insurance on all of its employees if work is to be performed on City of Fairhope premises. General Liability Insurance, specifying coverage, must be maintained to hold the City of Fairhope harmless in the event of an accident. See bid packet for details.

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No bids will be considered unless the bidder, whether resident or non-resident of Alabama, is properly qualified to submit a proposal for this type of work in accordance with all applicable laws of the State of Alabama. Where applicable, this shall include evidence of holding a current license from the State licensing board for General Contractors, Montgomery, Alabama, as required by Chapter 8, Title 34, of the Code of Alabama, 1975. In addition, the awarded vendor, if a non-resident of the State, and if a Corporation, shall show evidence of having qualified with the Secretary of State to do business in the State of Alabama, http://www.sos.alabama.gov/BusinessServices/ForeignCorps.aspx .

Bidder must have a current business license, or purchase a business license with the City of Fairhope prior to work performed. No bids shall be withdrawn for the period of thirty (30) days subsequent to the opening of Bids without the consent of the City of Fairhope, Baldwin County, Alabama. Once completed, a tabulation of the responsive and responsible bids will be available for public viewing by visiting the following web address: www.fairhopeal.gov

Dee Dee Brandt, Purchasing Manager
City of Fairhope
Posted _____

ITEM II
INVITATION AND INSTRUCTIONS TO BIDDERS

1.00 BID INVITATION

Notice is hereby given that the City of Fairhope will receive bids on the project described herein. Qualified bidders are invited to bid on this contract.

1.01 BID NO. 039-19
PROJECT NAME: Side Stream Storage Vessels
PROJECT LOCATION: City of Fairhope
Twin Beech Road, Quail Creek Drive and The Woodlands
PROJECT NUMBER: PW010-19

1.02 SUMMARY:
Project summary as detailed in the attached Scope of Work.

1.03 BID DEADLINE
Bids will be received until 2:00 P.M. local time, Thursday, September 26, 2019, at the City of Fairhope offices located at 555 S. Section Street, Fairhope, Alabama, and publicly opened shortly thereafter. If sending by USPS: P.O. Drawer 429, Fairhope, Al 36533. Fairhope is not responsible for receiving any bid package the day of the bid by way of any third party delivery service unless it is delivered to the front office reception desk at 555 South Section Street, Fairhope, AL 36532 10 minutes before the bid opening.

1.04 AVAILABILITY OF DOCUMENTS
Bid documents (including plans and drawings) are available on line or at the office of the Purchasing Manager for the City of Fairhope, located at 555 South Section Street, Fairhope, AL 36532

Bid Documents may be viewed at the City of Fairhope Offices, 555 South Section St., Fairhope, Alabama.

1.05 INQUIRIES
Questions or comments pertaining to this bid must be presented in writing, and sent as e-mail to the attention of the Purchasing Manager, Dee Dee Brandt, at deedeeb@farihopeal.gov, no less than Seven (7) days prior to the bid opening, or will be forever waived.

1.06 SITE EXAMINATION

The City of Fairhope will not furnish any labor, material or supplies unless specifically stated in the Contract documents. Contractor must be properly licensed to perform the work as outlined in the Scope of Work. Bidder must have a current business license, or purchase a business license with the City of Fairhope prior to or (upon) bid being awarded. Where required by State law, State of Alabama Contractor's license is required.

Except for contracts funded in whole or in part by funds received from a federal agency, preference shall be given to resident contractors on the same basis as the non-resident bidder's state awards contracts to Alabama contractors bidding under similar circumstances. Therefore, non-resident bidders shall submit with their bid a written opinion of an attorney at law licensed to practice law in the non-residents bidder's state of domicile as to preferences granted by the state to entities doing business in that state when letting public contracts.

1.07 BID SECURITY
Bids shall be accompanied by a Bid Security equal to 5% (percent) of the bid price, but in no event more than $10,000.00. Bid Security shall be in the form of a Bid Bond or Cashier's Check payable to the City of Fairhope. No Bid Security is required on bid less than $10,000.00.

1.08 PERFORMANCE ASSURANCE AND INSURANCE
The bidder to who award is made shall provide a Performance Bond equal to 100% (percent) of the Contract amount and a Labor and Materials Bond equal to 50% (percent) of the Contract amount. The accepted Bidder shall also provide insurance as required in ITEM VII INSURANCE REQUIREMENTS.

1.09 DURATION OF OFFER

Bids may be withdrawn in written or telegraphic request received from the bidder prior to the time fixed for opening. No bid shall be withdrawn for a period of THIRTY (30) days subsequent to the opening of bid without the consent of the City Council of the City of Fairhope.

1.10 EQUAL OPPORTUNITY

The City of Fairhope is an Equal Opportunity Employer and requires that all contractors comply with the Equal Employment Opportunity Laws and the provisions of the Contract documents in this regard. The City also encourages and supports the utilization of Minority Business Enterprises on this and all public bids

1.11 BID SUBMISSION AND PREPARATION

Sealed Bids, signed, executed, and dated will be received by the City of Fairhope as noted in section 1.03 above. For the purposes of this bid, the bid response form, bid bond and all qualifying information including Contractor's License shall be submitted along with the entire bid document package.

Submit one copy of the executed offer, on the Bid Form provided, along with the required Bid Security. The bid shall be enclosed in a sealed opaque envelope approximately 9X12 inches or larger, clearly identified on the outside as a SEALED BID with PROJECT NUMBER, PROJECT NAME, OWNER'S NAME AND ADDRESS, BIDDER'S NAME AND ADDRESS, BIDDER'S ALABAMA GENERAL CONTRACTOR'S LICENSE NUMBER.

Forms furnished, or copies thereof, shall be used, and strict compliance with the requirements of the Invitation, these instructions, and the instructions printed on the forms is necessary. Special care should be exercised in the preparation of bids. Bidders must make their own estimates of the facilities and difficulties attending the performance of the proposed contract, including local conditions, uncertainty of weather, and all other contingencies. All designations and prices shall be fully and clearly set forth. The proper space in the bid and guaranty forms shall be suitable filled in.

Fill in all blanks on the Bid Form with non-erasable ink or type. Erasers or other changes must be explained or noted over the signature of the bidder.

The Bid Form may have a Contingency Allowance listed. Add this amount to the Bid Base to derive the Total Bid. The Contingency Allowance covers unforeseen conditions and shall not be used by the Contractor without the written authorization of the Owner. At the conclusion of the project, the unused portion of the Contingency Allowance shall revert to the Owner.

Each bid must give the full business address of the bidder and must be signed by him with his usual signature. Bids by partnerships must furnish the full names of all names of all partners and must be signed with the partnership name by one of the members of the partnership, or by an authorized representative, followed by the signature and designation of the person signing. Bids by corporations must be signed with the partnership name by one of the members of the partnership, or by an authorized representative, followed by the signature and designation of the person signing. Bids by corporations must be signed with the legal name of the corporation followed by the name of the State of Incorporation and by the signature and designation of the president, secretary, or other person authorized to bind it in the matter. The name of each person who affixes to this signature the word "president", "secretary", "agent", or other designation without disclosing his principal, may be held to be the bid of the individual signing. When requested by the City of Fairhope, satisfactory evidence of the authority of the officer signing in behalf of the corporation shall be furnished.

Each project will be bid separately unless otherwise expressly requested in the contract document. Combination bids, that is, bids on separate projects lumped together as a single bid or on all or none basis, will not be accepted unless the contract document expressly requests or permits same.

Alternate bids will not be considered unless requested.

1.12 BID INELIGIBILITY

Bids that contain irregularities of any kind may be declared unacceptable at the discretion of the Owner. The Owner may waive any irregularities and may reject any or all bids.
Bids received after the deadline will be returned to the bidder unopened.

1.13 CONTRACT TIME

The contractor agrees to perform the work within the time stated in the Bid Form. The bidder in submitting an offer accepts the conditions of the contract period stated for performing the work.

1.14 CONSTRUCTION DOCUMENT IDENTIFICATION

The Construction documents are the Project Manual, Drawings, Addenda, and all other related documents bearing the Project Title and Number.

Bidders shall use complete sets of Construction Documents in preparing their Bids. The City will not assume responsibility for errors or misinterpretation resulting from the use of incomplete sets of Construction Documents.

1.15 INQUIRIES/ADDENDA

Questions or comments pertaining to this bid must be presented in writing, sent as e-mail to the attention of the Purchasing Manager, Dee Dee Brandt, at deedeeb@farihopeal.gov, seven (7) days prior to the bid opening or will be forever waived. Direct questions to the Purchasing Manager, Dee Dee Brandt.

All Addenda are part of the Contract documents. Include resultant costs in the Bid. Addenda will be issued by email to all plan holders on record and posted on the City's website www.fairhopeal.gov. It is the responsibility of the bidder to verify that all addenda have been received.

1.16 BID ACCEPTANCE

Bid with lowest Total Bid amount from a responsive and responsible bidder may be accepted if within the Contract Budget. In the event that alternates are listed on the Bid Form, the lowest combination of Total Bid and Alternate Bids accepted by the owner shall be the accepted bid. Alternates shall be awarded in the order in which they are listed on the Bid Form.

1.17 BIDDERS INTERESTED IN MORE THAN ONE BID

If more than one bid is offered by any one party, by or in a name of his clerk, partner, corporation in which he has a substantial interest, or in which he is an officer, or other person, all such bids may be rejected. A party who has quoted prices on materials to a bid is not thereby disqualified from quoting prices to other bidders or from submitting a bid directly for the materials or work. The City reserves the right to determine in its discretion whether the provisions of this clause have been violated by any bidder.

1.18 ERRORS IN BIDS

Bidders or their authorized agents are expected to examine the maps, drawings, specifications, and all other instructions pertaining to the work, which will be open to their inspection. Failure to do so will be at the bidder's own risk. In case of error, in the extension of prices the unit price will govern.

1.19 CONTRACT AND BOND

The bidder to whom award is made must, when requested, enter into written contract on the standard form as set out herein, with satisfactory security in the amount required, within the period specified, or, if no period be specified, within 15 days after the required forms are presented for signature.

1.20 COLLUSION

If there is any reason for believing that collusion exists among the Bidders, any or all bids may be rejected, and those participating in such collusion may be barred from submitting bids on the same or other work with the City.

1.21 SUBLETTING OR ASSIGNING OF CONTRACT

Limitations: The contractor shall not sublet, assign, transfer, convey, sell or otherwise dispose of any portions of the contract, his right, title, or interest therein, or his power to execute such contact, to any person, firm or corporation without written consent of the City, and such written consent shall not be construed to relieve the Contractor of any responsibility for the fulfillment of the contract. Unless otherwise stipulated in the proposal or special provisions, the contractor shall perform with

his own organization, and with the assistance of workmen under his immediate superintendence and reported on his payroll, all contract work of a value not less than 50 percent of the total contract amount, except that any items designated in the contract as “Specialty Items” so performed by sub-contract may be deducted from the total contract amount before computing the amount of work required to be performed by the Contractor with his own organization.

Sub-contractor’s Status: A Sub-contractor shall be recognized only in the capacity of an employee or agent of the Contractor and the Contractor will be responsible to the City for all of the subcontractor’s work, including failures or omissions; and his removal may be required by the Project Manager, as in the case of an employee.

1.22 PROSECUTION OF WORK

THE Contractor shall commence work within 10 days of issuance of the Notice to Proceed (NTP) by the Project Manager or as otherwise directed in writing.

The Contractor shall prosecute the work continuously and diligently in the order and manner set out in his schedule as approved by the Project Manager. He shall provide sufficient satisfactory materials, labor, and equipment to insure that the work will be completed in a satisfactory manner within the time specified in the contract.

Should the Contractor fail to maintain a satisfactory rate of progress, the Project Manger may require that additional forces and/or equipment be placed on the work to bring the project up to schedule and maintain it at that level.

Should the Contract fail to furnish sufficient satisfactory equipment and/or labor for maintaining the quality and progress of the work at satisfactory level, the Project Manager may withhold all estimates that may become due until satisfactory quality and progress are maintained; or the contract may be annulled.

ITEM III
BID FORM

Date _____

Bid No.: 039-19
Bid Name: Side Stream Storage Vessels
Project No.: PW010-19
Project Name: Side Stream Storage Vessels

Base bid will include all labor, materials, equipment, shipping, overhead, profit, bonds, insurance and all other costs necessary to provide the complete services out lined within this contract and scope of work.

The quantities appearing in the bid schedule are approximate only and are prepared for the comparison of bids. Payment to the Contractor will be made only for the actual quantities of work performed and accepted or materials furnished, in accordance with the contract. The scheduled quantities or work to be done and materials to be furnished may each be increased, decreased, or omitted as provided herein.

The Owner aggress to provide the following materials: NONE

The Contractor agrees to complete all the work within 150 calendar days from date given in the Notice to Proceed (NTP) unless other arrangements are approved by the Project Manager.

BASE BID

BID ITEM NUMBER 1 (Twin Beech Site)

This bid is to provide one fifty (50) foot diameter by twelve (12) feet tall side stream storage vessel with a 12" diameter inlet main and a 16" diameter outlet main, 1 – 24" diameter manway opening located 30" above the floor of the vessel, two 24" by 24" access hatches on the roof, 8 – 6" diameter flanged piping connections and one 24" by 24" roof ventilation outlet as shown in the schematic drawings and specified herein. The bid price shall include all cost, including mobilization, vessel and foundation design, vessel foundation, vessel fabrication and delivery, vessel erection, all equipment, materials, supervision and overhead costs required to provide complete side stream storage vessel ready for use by the owner.

TOTAL – BID ITEM NUMBER 1 **$**_____

BID ITEM NUMBER 2 (Woodlands Site)

This bid is to provide one fifty (50) foot diameter by twelve (12) feet tall side stream storage vessel with a 12" diameter inlet main and a 16" diameter outlet main, 1 – 24" diameter manway opening located 30" above the floor of the vessel, two 24" by 24" access hatches on the roof, 8 – 6" diameter flanged piping connections and one 24" by 24" roof ventilation outlet as shown in the schematic drawings and specified herein. The bid price shall include all cost, including mobilization, vessel and foundation design, vessel foundation, vessel fabrication and delivery, vessel erection, all equipment, materials, supervision and overhead costs required to provide complete side stream storage vessel ready for use by the owner.

TOTAL – BID ITEM NUMBER 2 **$**_____

BID ITEM NUMBER 3 (Quail Creek Site)

This bid is to provide one sixty (60) foot diameter by twelve (12) feet tall side stream storage vessel with a 12" diameter inlet main and a 16" diameter outlet main, 1 – 24" diameter manway opening located 30" above the floor of the vessel, two 24" by 24" access hatches on the roof, 8 – 6" diameter flanged piping connections and one 24" by 24" roof ventilation outlet as shown in the schematic drawings and specified herein. The bid price shall include all cost, including mobilization, vessel and foundation design, vessel foundation, vessel fabrication and delivery, vessel erection, all equipment, materials, supervision and overhead costs required to provide complete side stream storage vessel ready for use by the owner.

TOTAL – BID ITEM NUMBER 3 **$**_____

CONTINGENCY ALLOWANCE **$** **75,000.00**

TOTAL BASE BID (sum of Bid Items 1, 2, 3 and contingency allowance)

$_____

Written: _____

_____

Receipt of the following Addenda to these documents is hereby acknowledged by the undersigned (bidder to complete below).

ADDENDUM NO	DATE ISSUED	ADDENDUM NO	DATE ISSUED
_____	_____	_____	_____
_____	_____	_____	_____

Each bid must give the full business address of the bidder and must be signed by him with his usual signature. Bids by partnerships must furnish the full names of all partners and must be signed with the partnership name by one of the members of the partnership, or by an authorized representative, followed by the signature and designation of the person signing. Bids by corporations must be signed with the legal name of the corporation followed by the name of the State of Incorporation and by the signature and designation of the president, secretary, or other person authorized to bind it in the matter. The name of each person shall also be typed or printed below the signature. A bid by a person who affixes to this signature the word "president", "secretary", "agent", or other designation without disclosing his principal may be held to be the bid of the individual signing. When requested by the City of Fairhope, Baldwin County, Alabama, satisfactory evidence of the authority of the officer signing in behalf of the corporation shall be furnished.

The undersigned agrees to furnish the goods/services as requested by you for the City of Fairhope, Baldwin County, Alabama in your invitation to bid, and certifies that they will meet or exceed the specifications called for. The undersigned has read all information pertaining to this bid and has resolved all questions. It is also understood and agreed that all prices quoted are F.O.B. described in the bid documents and specifications. The undersigned also affirms he/she has not been in any agreement or collusion among bidders or prospective bidders in restraint of freedom of competition, by agreement to bid at a fixed price or to refrain from bidding or otherwise.

IF CORPORATION OR LLC

Company_____ State of Incorporation_____

Company Representative_____
(SIGNATURE of Representative authorized to sign Bids and Contracts for the company)

Company Representative_____
(PRINT name of Representative authorized to sign Bids and Contracts for the company)

_____
(Address)

_____
(Address)

_____
(Address)

Phone_____ Fax No_____

Primary e-mail_____

Alabama Contractor's License_____ Foreign Corp. Entity ID Number _____
(required of out-of-state Vendors)

THIS MUST BE NOTARIZED!

NOTARIZATION OF THE BID

STATE of _____}

COUNTY of _____}

I, the undersigned authority in and for said State and County, hereby certify that _____,
Name

as_____, respectively of _____, whose
(title) Company

name is signed to the foregoing document and who is known to me, acknowledged before me on this day, that, being informed of the contents of the document they executed the same voluntarily on the day the same bears date.

Given under my hand and Notary Seal on this _____day of _____2014.

Notary _____

My Commission expires _____

ACCOUNTING OF SALES TAX
Attachment to Bid Response
(see item XII)

To: City of Fairhope **Date:**_____

Project:_____

_____

Sales Tax Accounting

Pursuant to **Code of Alabama (1975) Section 40-9-14.1**, the Contractor accounts for the sales tax NOT included in the bid proposal form as follows:

ESTIMATED SALES TAX AMOUNT

BASE BID:_____ **$**_____

Alternate No. 1 (……) (add)(deduct) $_____
Insert keyword for alternate

Alternate No. 2 (……) (add)(deduct) $_____

Alternate No. 3 (……) (add)(deduct) $_____

Alternate No. 4 (……) (add)(deduct) $_____
Alternate No. 5 (……) (add)(deduct) $_____

Alternate No. 6 (……) (add)(deduct) $_____

Failure to provide an accounting of Sales Tax shall render the bid non-responsive. Other than determining responsiveness, sales tax accounting shall not affect the bid pricing nor be considered in the determination of the lowest responsible and responsive bidder.

Legal Name of Bidder _____

Mailing Address _____

*__By (Legal Signature)__ _____

*Name (type or Print) _____ (Seal)

*Title _____

*Telephone _____

ITEM IV
BID BOND

The PRINCIPAL

_____

_____

The OWNER
City of Fairhope
P.O. Drawer 429
Fairhope, Al 36533

The PROJECT for which the Principal's Bid is submitted:

Project No. PW 010-19
Project Name: Side Stream Storage Vessels

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned Principal and Surety, jointly and severally, hereby bind ourselves, our heirs, executors, administrators, successors, and assigns to the OWNER in the PENAL SUM of five percent (5%) of the amount of the Principal's bid, but in no event more than Ten Thousand dollars($10,000).

THE CONDITION OF THIS OBLIGATION is that the Principal has submitted to the Owner the attached bid, which is incorporated herein by reference, for the Project identified above.

NOW, THEREFORE, if, within the terms of the Bid Document, the OWNER accepts the Principals bid and the Principal thereafter either:

(a) executes and delivers a Construction Contract with the required Performance and Payment Bonds (each form contained in the Bid Documents and properly completed in accordance with the bid) and delivers evidence of insurance as prescribed in the Bid Documents, or

(b) fails to execute and deliver such Construction Contract with such Bonds and evidence of insurance, but pays the OWNER the difference, not to exceed the Penal Sum of this Bond, between the amount of the Principal's Bid and the larger amount for which the OWNER may award a Construction Contract for the same work to another Bidder, then this obligation shall be null and void, otherwise it shall remain in full force and effect.

The Surety, for value received, hereby stipulates and agrees that the obligation of the Surety under this Bond shall not in any manner be impaired or affected by any extension of the time within which the OWNER may accept the Principal's bid, and the Surety does hereby waive notice of any such extension.

SIGNED AND SEALED this_____ day of _____, 2019

_____
Principal (Company)

ATTEST:

_____ By_____

_____
Print name and title

SURETY ATTEST

_____
SURETY COMPANY

_____ By_____

_____

Print name and title

ITEM V

PERFORMANCE BOND

KNOW ALL MEN: That _____as Principal,
(name & address of legal title of contractor)

and _____ and
(name & address of legal title of one or more sureties)

_____
(name & address of legal title of one or more sureties)

Hereinafter called the Surety or Sureties, are held and firmly bound unto the CITY OF FAIRHOPE, ALABAMA, hereinafter called the OWNER in the sum of _____Dollars ($_____), for the payment whereof the Principal and the Surety or Sureties bind themselves, their heirs, executors, administrators, successors, and assigns, jointly and severally, firmly by these presents.

WHEREAS, The Principal has, by means of a written agreement, dated ___/___/____, entered into a contract with the OWNER for Bid No.PW010-19, Side Stream Storage Vessels, which agreement is by reference made a part hereof.

NOW THEREFORE, the conditions of this obligation is such that if the Principal shall faithfully perform the contract on his part, and satisfy all claims and demands, incurred for the same, and shall fully indemnify and save harmless the OWNER from all cost and damage which he may suffer by reason of failure to do so, and shall reimburse and repay OWNER all outlay and expense which the OWNER may incur in making good for any such default thence this obligation shall be null and void: otherwise, it shall remain in full force and effect.

PROVIDED, HOWEVER, that no suit, action or proceedings, by reason of any default whatever be brought on his Bond after twelve months from the day on which the final payment under the Contract falls due.

PROVIDED, further, that the said surety or sureties, for value received hereby stipulate and agree that no change, extension of time, or addition to the terms of the Contract or to the work to be performed thereunder of the specifications thereof shall in any way effect their obligations on this bond, and they do hereby waive notice of any such change, extension of time, alteration or addition to the terms of the contract, or to the work, or to the Specifications.

WITNESS our hands this _____ day of _____, 2019.

IF INDIVIDUAL

_____, Doing Business As, _____
(SIGNATURE of Individual Bidder) (Business Name)

Business Mailing Address_____

IF CORPORATION

_____
(Name of Corporation, Partnership , or Joint Venture)

Business Mailing Address_____

By:_____ _____
(SIGNATURE of officer authorized to sign Bids and Contracts for the company) (Position or Title)

ATTEST:

_____ _____
(Secretary) (Name of State of incorporation)

_____ By: _____
(Name of Surety) (Attorney in Fact)

ITEM VI
LABOR AND MATERIALS BOND

KNOW ALL MEN BY THESE PRESENTS, that we _____ as

Principal, and _____ as Surety, are held and firmly bound unto said **City of Fairhope** hereinafter call the OBLIGEE, in the penal sum of _____

_____ Dollars ($_____) lawful money of the United States, for the payment of which sum and truly to be made, we bind ourselves, our heirs, personal representative, successors and assigns, jointly and severally, firmly by these presents.

WHEREAS, said principal has entered into a certain Contract with said OBLIGEE, dated ___/___/____. (Hereinafter called the Contract) **FAIRHOPE BID NO.039-19 PROJECT NO.PW010-19**, **Side Stream Storage Vessels,** which Contract and the Specifications for said work shall be deemed a part hereof as fully as if set out herein.

NOW, THEREFORE, THE CONDITION OF THIS OBLIGATION IS SUCH THAT if the said Principal and all sub-contractors to whom any portion of the work in said contract is sublet and all assignees of said Principal and of such sub-contractors shall promptly make payments to all persons supplying him or them with labor, materials, or supplies for or in the prosecution of the work provided for in such Contract, or any amendment or extension of or addition to said Contract, and for the Payment of reasonable attorney's fees incurred by the successful claimant or plaintiffs in suits or claims against the Contractor arising out of or in connection with the said Contract, then the above obligation shall be void: otherwise to remain in full force and effect.

PROVIDED, HOWEVER, that this bond is subject to the following conditions and limitations.

(a) Any person, firm or corporation that has furnished labor, materials, or supplies for or in the prosecution of the work provided for in said Contract shall have a direct right to action against the Principal and Surety on this bond, which right of action shall be asserted in a proceeding, instituted in the County in which the work provided for in said Contract is to be performed or in any County in which Principal or Surety does business. Such right of action shall be asserted in a proceeding instituted in the name of the claimant or claimants for his or their use and benefit against the Principal and Surety or either of them (but not later than one year after the final settlement of said Contract falls due) in which actin such claim or claims shall be adjusted and judgment rendered thereon.

(b)The Principal and Surety hereby designate and appoint the Mayor of the City of Fairhope or his successor or representative, as the agent of each of them, to receive and accept services of process or other pleading issued, or filed in any proceeding instituted on this bond and hereby consent that such service shall be the same as personal services on the Principal and/or Surety.

(c) The Surety shall not be liable hereunder for any damages or compensation recoverable under Workmen's Compensation or Employer's Liability Statute.

(d) In no event shall the Surety be liable for a greater sum than the penalty of this bond, or subject to any suit, action or proceeding thereon that is instituted later that one year after the final settlement of said contract.

€ This Bond is given pursuant to the terms of an Act of Legislature of the State of Alabama approved February 8, 1935, entitled: "An Act to further provide for Bonds and Contractors on State and other public works and suits thereon".

Witness our hands this ____ day of _____ 2019.

IF INDIVIDUAL

_____, Doing Business As, _____
(SIGNATURE of Individual Bidder) (Company Name)

Business Mailing Address_____

_____

IF CORPORATION

_____
(Name of Corporation, Partnership, or Joint Venture

By:_____ _____
(SIGNATURE of Officer authorized to sign Bid and Contracts for the company) (Position or Title)

_____ _____
(Alabama General Contractor's License Number) Foreign Corp. Entity ID (required of out-of-state Vendors)

ATTEST:

_____ _____
(Secretary) (Name of State of Incorporation)

_____ _____
(Name of Surety) (Attorney in Fact)

ITEM VII
INSURANCE

7.0 INSURANCE REQUIREMENTS

Awarded Contractor, at its sole expense, shall obtain and maintain in full force the following insurance to protect the Contractor and the City of Fairhope at limits and coverages specified herein. The City of Fairhope will be listed as an additional insured under the Contractor's General Liability insurance and automobile liability insurance policies, and all other applicable policies and certificates of insurance. These limits and coverages specified are the minimum to be maintained and are not intended to represent the correct insurance needed to fully and adequately protect the awarded bidder.

7.01 All insurance will be provided by insurers by admitted carriers in the State of Alabama, shall have a minimum A.M. Best rating of A-VII and must be acceptable to the City. Self-insured plans and/or group funds not having an A.M. Best rating must be submitted to the City for prior approval.

7.02 **NO WORK IS TO BE PERFORMED UNTIL PROOF OF COMPLIANCE WITH THE INSURANCE REQUIREMENTS HAS BEEN RECEIVED BY THE CITY.**

7.03 Worker's Compensation and Employer's Liability

Part One:	Statutory Benefits as required by the State of Alabama		
Part Two:	Employer's Liability	$1,000,000	each accident
		$1,000,000	each employee
		$1,000,000	Policy Limit

Change to higher amount

7.04 U.S. Longshoreman & Harbor Workers Act (USL&H)
Required if contract involves work near a navigable waterway that may be subject to the USL&H law.

7.05 Maritime Endorsement (Jones Act)
Endorsement required if contract involves the use of a Vessel. Or include coverage for "Master or Member or Crew" under "Protection and Indemnity" coverage (P&I) unless crew is covered under Workers Compensation.

Bodily injury by accident	$1,000,000	each accident
Bodily injury by disease	$1,000,000	aggregate

7.06 Commercial General Liability
Coverage on an Occurrence from with a combined single limit of (Bodily Injury and Property Damage combined as follows:

Each occurrence	$1,000,000

Personal and Advertising Injury	$1,000,000
Products/Completed Operation Aggregate	$2,000,000
General Aggregate	$2,000,000

Coverage to include:

Premises and operations
Personal injury and Advertising Injury
Products/completed operations
Independent Contractors
Blanket Contractual Liability
Explosion, Collapse and Underground hazards
Broad Form Property Damage
Railroad Protective Liability Insurance if work involves construction, demolition, or maintenance operations on or within 50 feet of a railroad.

7.07 Automobile Liability

Covering all owned, non-owned and hired vehicles with a limit of no less than $1,000,000 combined single limit of Bodily injury and property damage per occurrence.

7.08 Certificates of Insurance

A Certificate of Insurance evidencing the above minimum requirements must be provided to and accepted by the City PRIOR to commencement of any work on the contract. Each policy shall be endorsed to provide ten (10) days written notice of cancellation to the City.

7.08.1 The Contractor shall require certificates of insurance from sub-contractors.. Sub- contractors will carry limits of insurance equal to or greater than those carried by the Contractor. These certificates shall evidence waivers of subrogation in favor of the Contractor and the City, and shall be made available to the City upon request.

ITEM VIII
SCOPE OF WORK AND SPECIFICATIONS

STANDARD SPECIFICATION
SECTION 02110 CLEARING, GRUBBING, AND STRIPPING

PART 1 - GENERAL

1.01 DESCRIPTION

This section describes the work included in clearing, grubbing, stripping, and preparing the project site for construction operations.

1.02 CLEARING

Remove and dispose of trees, snags, stumps, shrubs, brush, limbs, and other vegetative growth. Remove all evidence of their presence from the surface including sticks and branches greater than 1-inch in diameter or thickness. Remove and dispose of trash piles and rubbish. Protect trees, shrubs, other vegetative growth and fencing which are not designated for removal.

1.03 GRUBBING

After clearing, remove and dispose of wood or root matter including stumps, trunks, roots, or root systems greater than 1-inch in diameter or thickness to a depth of 12 inches below the ground surface.

1.04 STRIPPING

Remove and dispose of all organic sod, topsoil, grass and grass roots, and other objectionable material remaining after clearing and grubbing from the areas designated to be stripped.

PART 2 - MATERIALS

2.01 EXISTING TREES, SHRUBS, AND OTHER VEGETATIVE GROWTH

Existing trees, shrubs, and other vegetative growth may not be shown on the Drawings. Inspect the site as to the nature, location, size, and extent of vegetative growth to be removed or preserved, as specified herein. Preserve in place trees that are specifically shown on the Drawings and designated to be preserved.

2.02 PRESERVATION OF TREES, SHRUBS, AND OTHER VEGETATIVE GROWTH

A. Save and protect all trees, shrubs, and other vegetative growth beyond the limits of clearing and grubbing from damage resulting from the work. No filling, excavating, trenching, or stockpiling of materials will be permitted within the drip line of these plant materials. The drip line is defined as a circle drawn by extending a line vertically to the ground from the outermost branches of a plant or group of plants. To prevent soil compaction within the drip line area, no equipment will be permitted within this area.

B. When trees are close together, restrict entry to area within drip line by fencing. In areas where no fence is erected, protect the trunks of all trees 2 inches or greater in diameter by

encircling the trunk entirely with boards held securely by 12-gage wire and staples. This protection shall extend from ground level to a height of 6 feet. Cut and remove tree branches where necessary for construction. Remove branches other than those required to affect the work to provide a balanced appearance of any tree. Treat cuts with a tree sealant.

PART 3 - EXECUTION

3.01 CLEARING AND GRUBBING LIMITS

Clear and grub excavation and embankment areas associated with new structures, slabs, roadways, and pipelines.

3.02 DISPOSAL OF CLEARING AND GRUBBING DEBRIS

Do not burn combustible materials. Remove all cleared and grubbed material from the worksite and dispose of in accordance with all local laws, codes, and ordinances.

3.03 AREAS TO BE STRIPPED

Strip excavation and embankment areas associated with new structures, slabs, walks, and roadways. Strip all stockpile areas.

3.04 DISPOSAL OF STRIPPINGS

Remove all stripped material and dispose offsite.

END OF SECTION

SECTION 300
CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 DESCRIPTION:

This section specifies cast-in-place structural concrete and materials and mixes for other concrete.

1.2 RELATED WORK:

A. Materials testing and inspection during construction: **BY OWNER**

1.3 CONCRETE MIX DESIGN:

A. Concrete mix design shall be submitted to the owner prior to construction for approval from the concrete supplier for this job. All concrete shall be designed to meet a 4,000 PSI compressive strength in 28 days.

1.4 TOLERANCES:

A. Formwork: ACI 117, except the elevation tolerance of formed surfaces before removal of shores is +0 mm (+0 inch) and -20 mm (-3/4 inch).

B. Reinforcement Fabricating and Placing: ACI 117, except that fabrication tolerance for bar sizes Nos. 10, 13, and 16 (Nos. 3, 4, and 5) (Tolerance Symbol 1 in Fig. 2.1(a), ACI, 117) used as column ties or stirrups is +0 mm (+0 inch) and -13 mm (-1/2 inch) where gross bar length is less than 3600 mm (12 feet), or +0 mm (+0 inch) and -20 mm (-3/4 inch) where gross bar length is 3600 mm (12 feet) or more.

C. Cross-Sectional Dimension: ACI 117, except tolerance for thickness of slabs 12 inches or less is +20 mm (+3/4 inch) and - 6 mm (-1/4 inch). Tolerance of thickness of beams more than 300 mm (12 inch) but less than 900 mm (3 feet) is +20 mm (+3/4 inch) and -10 mm (-3/8 inch).

D. Slab Finishes: ACI 117, Section 4.5.6, F-number method in accordance with ASTM E1155, except as follows:

1. Test entire slab surface, including those areas within 600 mm (2 feet) of construction joints and vertical elements that project through slab surface.
2. Maximum elevation change which may occur within 600 mm (2 feet) of any column or wall element is 6 mm (0.25 inches).
3. Allow sample measurement lines that are perpendicular to construction joints to extend past joint into previous placement no further than 1500 mm (5 feet).

1.5 REGULATORY REQUIREMENTS:

A. ACI SP-66 – ACI Detailing Manual.

B. ACI 318 - Building Code Requirements for Reinforced Concrete.

C. ACI 301 – Standard Specifications for Structural Concrete.

1.6 SUBMITTALS:

A. Submit in accordance with Section 01 33 23, SHOP DRAWINGS, PRODUCT DATA, and SAMPLES.

B. Shop Drawings: Reinforcing steel: Complete shop drawings

C. Test Report for Concrete Mix Designs: Trial mixes including water-cement // fly ash // ratio curves, concrete mix ingredients, and admixtures.

PART 2 – PRODUCTS:

2.1 FORMS:

A. Wood: PS 20 free from loose knots and suitable to facilitate finishing concrete surface specified; tongue and grooved.

B. Plywood: PS-1 Exterior Grade B-B (concrete-form) 16 mm (5/8 inch), or 20 mm (3/4 inch) thick for unlined contact form. B-B High Density Concrete Form Overlay optional.

C. Metal for Concrete Rib-Type Construction: Steel (removal type) of suitable weight and form to provide required rigidity.

D. Permanent Steel Form for Concrete Slabs: Corrugated, ASTM A653, Grade E, and Galvanized, ASTM A653, G90. Provide venting where insulating concrete fill is used.

E. Corrugated Fiberboard Void Boxes: Double faced, completely impregnated with paraffin and laminated with moisture resistant adhesive, size as shown. Design forms to support not less than 48 KPa (1000 psf) and not lose more than 15 percent of their original strength after being completely submerged in water for 24 hours and then air dried.

F. Form Lining:

1. Hardboard: ANSI/AHA A135.4, Class 2 with one (S1S) smooth side)
2. Plywood: Grade B-B Exterior (concrete-form) not less than 6 mm (1/4 inch) thick.
3. Plastic, fiberglass, or elastomeric capable of reproducing the desired pattern or texture.

G. Concrete products shall comply with following standards for biobased materials:

Material Type	Percent by Weight
Concrete Penetrating Liquid	79 percent biobased material
Concrete form Release Agent	87 percent biobased material
Concrete Sealer	11 percent biobased material

The minimum-content standards are based on the weight (not the volume) of the material.

H. Form Ties: Develop a minimum working strength of 13.35 kN (3000 pounds) when fully assembled. Ties shall be adjustable in length to permit tightening of forms and not have any lugs, cones, washers to act as spreader within form, nor leave a hole larger than 20 mm (3/4 inch) diameter, or a depression in exposed concrete surface, or leave metal closer than 40 mm (1 1/2 inches) to concrete surface. Wire ties not permitted. Cutting ties back from concrete face not permitted.

PART 3 – EXECUTION

3.1 FORMWORK:

A. General: Design in accordance with ACI 347 is the responsibility of the Contractor. The Contractor shall retain a registered Professional Engineer to design the formwork, shores, and reshores.

1. Form boards and plywood forms may be reused for contact surfaces of exposed concrete only if thoroughly cleaned, patched, and repaired and Owner approves their reuse.
2. Provide forms for concrete footings unless Owner determines forms are not necessary.
3. Corrugated fiberboard forms: Place forms on a smooth firm bed, set tight, with no buckled cartons to prevent horizontal displacement, and in a dry condition when concrete is placed.

B. Treating and Wetting: Treat or wet contact forms as follows:
1. Coat plywood and board forms with non-staining form sealer. In hot weather, cool forms by wetting with cool water just before concrete is placed.
2. Clean and coat removable metal forms with light form oil before reinforcement is placed. In hot weather, cool metal forms by thoroughly wetting with water just before placing concrete.
3. Use sealer on reused plywood forms as specified for new material.

C. Size and Spacing of Studs: Size and space studs, wales and other framing members for wall forms so as not to exceed safe working stress of kind of lumber used nor to develop deflection greater than 1/270 of free span of member.

D. Unlined Forms: Use plywood forms to obtain a smooth finish for concrete surfaces. Tightly butt edges of sheets to prevent leakage. Back up all vertical joints solidly and nail edges of adjacent sheets to same stud with 6d box nails spaced not over 150 mm (6 inches) apart.

E. Lined Forms: May be used in lieu of unlined plywood forms. Back up form lining solidly with square edge board lumber securely nailed to studs with all edges in close contact to prevent bulging of lining. No joints in lining and backing may coincide. Nail abutted edges of sheets to same backing board. Nail lining at not over 200 mm (8 inches) on center along edges and with at least one nail to each square foot of surface area; nails to be 3d blued shingle or similar nails with thin flatheads.

F. Architectural Liner: Attach liner as recommended by the manufacturer with tight joints to prevent leakage.

G. Wall Form Ties: Locate wall form ties in symmetrically level horizontal rows at each line of wales and in plumb vertical tiers. Space ties to maintain true, plumb surfaces. Provide one row of ties within 150 mm (6 inches) above each construction joint. Space through-ties adjacent to horizontal and vertical construction joints not over 450 mm (18 inches) on center.
1. Tighten row of ties at bottom of form just before placing concrete and, if necessary, during placing of concrete to prevent seepage of concrete and to obtain a clean line. Ties to be entirely removed shall be loosened 24 hours after concrete is placed and shall be pulled from least important face when removed.
2. Coat surfaces of all metal that is to be removed with paraffin, cup grease or a suitable compound to facilitate removal.

H. Inserts, Sleeves, and Similar Items: Flashing reglets, steel strips, masonry ties, anchors, wood blocks, nailing strips, grounds, inserts, wire hangers, sleeves, drains, guard angles, forms for floor hinge boxes, inserts or bond blocks for elevator guide rails and supports, and other items specified as furnished under this and other sections of specifications and required to be in their

final position at time concrete is placed shall be properly located, accurately positioned, and built into construction, and maintained securely in place.

1. Locate inserts or hanger wires for furred and suspended ceilings only in bottom of concrete joists, or similar concrete member of overhead concrete joist construction.
2. Install sleeves, inserts and similar items for mechanical services in accordance with drawings prepared specially for mechanical services. Contractor is responsible for accuracy and completeness of drawings and shall coordinate requirements for mechanical services and equipment.
3. Do not install sleeves in beams, joists or columns except where shown or permitted by Owner. Install sleeves in beams, joists, or columns that are not shown, but are permitted by the Owner, and require no structural changes, at no additional cost to the Government.
4. Minimum clear distance of embedded items such as conduit and pipe is at least three times diameter of conduit or pipe, except at stub-ups and other similar locations.
5. Provide recesses and blockouts in floor slabs for door closers and other hardware as necessary in accordance with manufacturer's instructions.

I. Construction Tolerances:

1. Set and maintain concrete formwork to assure erection of completed work within tolerances specified and to accommodate installation of other rough and finish materials. Accomplish remedial work necessary for correcting excessive tolerances. Erected work that exceeds specified tolerance limits shall be remedied or removed and replaced, at no additional cost to the Government.
2. Permissible surface irregularities for various classes of materials are defined as "finishes" in specification sections covering individual materials. They are to be distinguished from tolerances specified which are applicable to surface irregularities of structural elements.

3.2 PLACING REINFORCEMENT:

A. General: Details of concrete reinforcement in accordance with ACI 318 unless otherwise shown.

B. Placing: Place reinforcement conforming to CRSI DA4, unless otherwise shown.

1. Place reinforcing bars accurately and tie securely at intersections and splices with 1.6 mm (16 gauge) black annealed wire. // Use epoxy-coated tie wire with epoxy-coated reinforcing. // Secure reinforcing bars against displacement during the placing of concrete by spacers, chairs, or other similar supports. Portions of supports, spacers, and chairs in contact with formwork shall be made of plastic in areas that will be exposed when building is occupied. Type, number, and spacing of supports conform to ACI 318. Where concrete slabs are placed on ground, use concrete blocks or other non-corrodible material of proper height, for support of reinforcement. Use of brick or stone supports will not be permitted.
2. Lap welded wire fabric at least 1 1/2 mesh panels plus end extension of wires not less than 300 mm (12 inches) in structural slabs. Lap welded wire fabric at least 1/2 mesh panels plus end extension of wires not less than 150 mm (6 inches) in slabs on grade.
3. Splice column steel at no points other than at footings and floor levels unless otherwise shown.

C. Spacing: Minimum clear distances between parallel bars, except in columns and multiple layers of bars in beams shall be equal to nominal diameter of bars. Minimum clear spacing is 25 mm (1 inch) or 1-1/3 times maximum size of coarse aggregate.

D. Splicing: Splices of reinforcement made only as required or shown or specified. Accomplish splicing as follows:

1. Lap splices: Do not use lap splices for bars larger than Number 36 (Number 11). Minimum lengths of lap as shown.
2. Welded splices: Splicing by butt-welding of reinforcement permitted providing the weld develops in tension at least 125 percent of the yield strength (fy) for the bars. Welding conform to the requirements of AWS D1.4. Welded reinforcing steel conform to the chemical analysis requirements of AWS D1.4.
    a. Submit test reports indicating the chemical analysis to establish weldability of reinforcing steel.
    b. Submit a field quality control procedure to insure proper inspection, materials and welding procedure for welded splices.
    c. Department of Veterans Affairs retained testing agency shall test a minimum of three splices, for compliance, locations selected by Owner.
3. Mechanical Splices: Develop in tension and compression at least 125 percent of the yield strength (fy) of the bars. Stresses of transition splices between two reinforcing bar sizes based on area of smaller bar. Provide mechanical splices at locations indicated. Use approved exothermic, tapered threaded coupling, or swaged and threaded sleeve. Exposed threads and swaging in the field not permitted.
    a. Initial qualification: In the presence of Owner, make three test mechanical splices of each bar size proposed to be spliced. Department of Veterans Affairs retained testing laboratory will perform load test.
    b. During installation: Furnish, at no additional cost to the Government, one companion (sister) splice for every 50 splices for load testing. Department of Veterans Affairs retained testing laboratory will perform the load test.

E. Bending: Bend bars cold, unless otherwise approved. Do not field bend bars partially embedded in concrete, except when approved by Owner.

F. Cleaning: Metal reinforcement, at time concrete is placed, shall be free from loose flaky rust, mud, oil, or similar coatings that will reduce bond.

G. Future Bonding: Protect exposed reinforcement bars intended for bonding with future work by wrapping with felt and coating felt with a bituminous compound unless otherwise shown.

3.3 VAPOR BARRIER:

A. Except where membrane waterproofing is required, interior concrete slab on grade shall be placed on a continuous vapor barrier.

1. Place 100 mm (4 inches) of fine granular fill over the vapor barrier to act as a blotter for concrete slab.

2. Vapor barrier joints lapped 150 mm (6 inches) and sealed with compatible waterproof pressure-sensitive tape.
3. Patch punctures and tears.

3.4 SLABS RECEIVING RESILIENT COVERING

A. Slab shall be allowed to cure for 6 weeks minimum prior to placing resilient covering. After curing, slab shall be tested by the Contractor for moisture in accordance with ASTM D4263 or ASTM F1869. Moisture content shall be less than 3 pounds per 1000 sf prior to placing covering.

B. In lieu of curing for 6 weeks, Contractor has the option, at his own cost, to utilize the Moisture Vapor Emissions & Alkalinity Control Sealer as follows:

1. Sealer is applied on the day of the concrete pour or as soon as harsh weather permits, prior to any other chemical treatments for concrete slabs either on grade, below grade or above grade receiving resilient flooring, such as, sheet vinyl, vinyl composition tile, rubber, wood flooring, epoxy coatings and overlays.
2. Manufacturer's representative will be on the site the day of concrete pour to install or train its application and document. He shall return on every application thereafter to verify that proper procedures are followed.
    a. Apply Sealer to concrete slabs as soon as final finishing operations are complete and the concrete has hardened sufficiently to sustain floor traffic without damage.
    b. Spray apply Sealer at the rate of 20 m^2 (200 square feet) per gallon. Lightly broom product evenly over the substrate and product has completely penetrated the surface.
    c. If within two (2) hours after initial application areas are subjected to heavy rainfall and puddling occurs, reapply Sealer product to these areas as soon as weather condition permits.

3.5 CONSTRUCTION JOINTS:

A. Unless otherwise shown, location of construction joints to limit individual placement shall not exceed 24,000 mm (80 feet) in any horizontal direction, except slabs on grade which shall have construction joints shown. Allow 48 hours to elapse between pouring adjacent sections unless this requirement is waived by Owner.

B. Locate construction joints in suspended floors near the quarter-point of spans for slabs, beams or girders, unless a beam intersects a girder at center, in which case joint in girder shall be offset a distance equal to twice width of beam. Provide keys and inclined dowels as shown. Provide longitudinal keys as shown.

C. Place concrete for columns slowly and in one operation between joints. Install joints in concrete columns at underside of deepest beam or girder framing into column.

D. Allow 2 hours to elapse after column is cast before concrete of supported beam, girder or slab is placed. Place girders, beams, grade beams, column capitals, brackets, and haunches at the same time as slab unless otherwise shown.

E. Install polyvinyl chloride or rubber water seals, as shown in accordance with manufacturer's instructions, to form continuous watertight seal. //

3.6 EXPANSION JOINTS AND CONTRACTION JOINTS:

A. Clean expansion joint surfaces before installing premolded filler and placing adjacent concrete.

B. Install polyvinyl chloride or rubber water seals, as shown in accordance with manufacturer's instructions, to form continuous watertight seal. //

C. Provide contraction (control) joints in floor slabs as indicated on the contract drawings. Joints shall be either formed or saw cut, to the indicated depth after the surface has been finished. Complete saw joints within 4 to 12 hours after concrete placement. Protect joints from intrusion of foreign matter.

3.7 PLACING CONCRETE:

A. Preparation:

1. Remove hardened concrete, wood chips, shavings and other debris from forms.
2. Remove hardened concrete and foreign materials from interior surfaces of mixing and conveying equipment.
3. Have forms and reinforcement inspected and approved by Owner before depositing concrete.
4. Provide runways for wheeling equipment to convey concrete to point of deposit. Keep equipment on runways which are not supported by or bear on reinforcement. Provide similar runways for protection of vapor barrier on coarse fill.

B. Bonding: Before depositing new concrete on or against concrete which has been set, thoroughly roughen and clean existing surfaces of laitance, foreign matter, and loose particles.

1. Preparing surface for applied topping:
   a. Remove laitance, mortar, oil, grease, paint, or other foreign material by sand blasting. Clean with vacuum type equipment to remove sand and other loose material.
   b. Broom clean and keep base slab wet for at least four hours before topping is applied.
   c. Use a thin coat of one part Portland cement, 1.5 parts fine sand, bonding admixture; and water at a 50: 50 ratio and mix to achieve the consistency of thick paint. Apply to a damp base slab by scrubbing with a stiff fiber brush. New concrete shall be placed while the bonding grout is still tacky.

C. Conveying Concrete: Convey concrete from mixer to final place of deposit by a method which will prevent segregation. Method of conveying concrete is subject to approval of Owner.

D. Placing: For special requirements see Paragraphs, HOT WEATHER and COLD WEATHER.

1. Do not place concrete when weather conditions prevent proper placement and consolidation, or when concrete has attained its initial set, or has contained its water or cement content more than 1 1/2 hours.
2. Deposit concrete in forms as near as practicable in its final position. Prevent splashing of forms or reinforcement with concrete in advance of placing concrete.
3. Do not drop concrete freely more than 3000 mm (10 feet) for concrete containing the high-range water-reducing admixture (superplasticizer) or 1500 mm (5 feet) for conventional concrete. Where greater drops are required, use a tremie or flexible spout (canvas elephant trunk), attached to a suitable hopper.

4. Discharge contents of tremies or flexible spouts in horizontal layers not exceeding 500 mm (20 inches) in thickness, and space tremies such as to provide a minimum of lateral movement of concrete.
5. Continuously place concrete until an entire unit between construction joints is placed. Rate and method of placing concrete shall be such that no concrete between construction joints will be deposited upon or against partly set concrete, after its initial set has taken place, or after 45 minutes of elapsed time during concrete placement.
6. On bottom of members with severe congestion of reinforcement, deposit 25 mm (1 inch) layer of flowing concrete containing the specified high-range water-reducing admixture (superplasticizer). Successive concrete lifts may be a continuation of this concrete or concrete with a conventional slump.
7. Concrete on metal deck:
    a. Concrete on metal deck shall be minimum thickness shown. Allow for deflection of steel beams and metal deck under the weight of wet concrete in calculating concrete quantities for slab.
        1) The Contractor shall become familiar with deflection characteristics of structural frame to include proper amount of additional concrete due to beam/deck deflection.

E. Consolidation: Conform to ACI 309. Immediately after depositing, spade concrete next to forms, work around reinforcement and into angles of forms, tamp lightly by hand, and compact with mechanical vibrator applied directly into concrete at approximately 450 mm (18 inch) intervals. Mechanical vibrator shall be power driven, hand operated type with minimum frequency of 5000 cycles per minute having an intensity sufficient to cause flow or settlement of concrete into place. Vibrate concrete to produce thorough compaction, complete embedment of reinforcement and concrete of uniform and maximum density without segregation of mix. Do not transport concrete in forms by vibration.
    1. Use of form vibration shall be approved only when concrete sections are too thin or too inaccessible for use of internal vibration.
    2. Carry on vibration continuously with placing of concrete. Do not insert vibrator into concrete that has begun to set.

3.8 HOT WEATHER:

Follow the recommendations of ACI 305 or as specified to prevent problems in the manufacturing, placing, and curing of concrete that can adversely affect the properties and serviceability of the hardened concrete. Methods proposed for cooling materials and arrangements for protecting concrete shall be made in advance of concrete placement and approved by Owner.

3.9 COLD WEATHER:

Follow the recommendations of ACI 306 or as specified to prevent freezing of concrete and to permit concrete to gain strength properly. Use only the specified non-corrosive, non-chloride accelerator. Do not use calcium chloride, thiocyantes or admixtures containing more than 0.05

percent chloride ions. Methods proposed for heating materials and arrangements for protecting concrete shall be made in advance of concrete placement and approved by Owner.

3.10 PROTECTION AND CURING:

A. Conform to ACI 308: Initial curing shall immediately follow the finishing operation. Protect exposed surfaces of concrete from premature drying, wash by rain and running water, wind, mechanical injury, and excessively hot or cold temperatures. Keep concrete not covered with membrane or other curing material continuously wet for at least 7 days after placing, except wet curing period for high-early-strength concrete shall be not less than 3 days. Keep wood forms continuously wet to prevent moisture loss until forms are removed. Cure exposed concrete surfaces as described below. Other curing methods may be used if approved by Owner.

1. Liquid curing and sealing compounds: Apply by power-driven spray or roller in accordance with the manufacturer's instructions. Apply immediately after finishing. Maximum coverage $10m^2/L$ (400 square feet per gallon) on steel troweled surfaces and $7.5m^2/L$ (300 square feet per gallon) on floated or broomed surfaces for the curing/sealing compound.
2. Plastic sheets: Apply as soon as concrete has hardened sufficiently to prevent surface damage. Utilize widest practical width sheet and overlap adjacent sheets 50 mm (2 inches). Tightly seal joints with tape.
3. Paper: Utilize widest practical width paper and overlap adjacent sheets 50 mm (2 inches). Tightly seal joints with sand, wood planks, pressure-sensitive tape, mastic or glue.

3.11 REMOVAL OF FORMS:

A. Remove in a manner to assure complete safety of structure after the following conditions have been met.

1. Where structure as a whole is supported on shores, forms for beams and girder sides, columns, and similar vertical structural members may be removed after 24 hours, provided concrete has hardened sufficiently to prevent surface damage and curing is continued without any lapse in time as specified for exposed surfaces.
2. Take particular care in removing forms of architectural exposed concrete to insure surfaces are not marred or gouged, and that corners and arises are true, sharp and unbroken.

B. Control Test: Use to determine if the concrete has attained sufficient strength and curing to permit removal of supporting forms. Cylinders required for control tests taken in accordance with ASTM C172, molded in accordance with ASTM C31, and tested in accordance with ASTM C39. Control cylinders cured and protected in the same manner as the structure they represent. Supporting forms or shoring not removed until strength of control test cylinders have attained at least 70 percent of minimum 28-day compressive strength specified. // For post-tensioned systems supporting forms and shoring not removed until stressing is completed. // Exercise care to assure that newly unsupported portions of structure are not subjected to heavy construction or material loading.

C. Reshoring: Reshoring is required if superimposed load plus dead load of the floor exceeds the capacity of the floor at the time of loading. // In addition, for flat slab/plate, reshoring is required

immediately after stripping operations are complete and not later than the end of the same day. // Reshoring accomplished in accordance with ACI 347 at no additional cost to the Government.

3.12 CONCRETE SURFACE PREPARATION:

A. Metal Removal: Unnecessary metal items cut back flush with face of concrete members.

B. Patching: Maintain curing and start patching as soon as forms are removed. Do not apply curing compounds to concrete surfaces requiring patching until patching is completed. Use cement mortar for patching of same composition as that used in concrete. Use white or gray Portland cement as necessary to obtain finish color matching surrounding concrete. Thoroughly clean areas to be patched. Cut out honeycombed or otherwise defective areas to solid concrete to a depth of not less than 25 mm (1 inch). Cut edge perpendicular to surface of concrete. Saturate with water area to be patched, and at least 150 mm (6 inches) surrounding before placing patching mortar. Give area to be patched a brush coat of cement grout followed immediately by patching mortar. Cement grout composed of one part Portland cement, 1.5 parts fine sand, bonding admixture, and water at a 50:50 ratio, mix to achieve consistency of thick paint. Mix patching mortar approximately 1 hour before placing and remix occasionally during this period without addition of water. Compact mortar into place and screed slightly higher than surrounding surface. After initial shrinkage has occurred, finish to match color and texture of adjoining surfaces. Cure patches as specified for other concrete. Fill form tie holes which extend entirely through walls from unexposed face by means of a pressure gun or other suitable device to force mortar through wall. Wipe excess mortar off exposed face with a cloth.

C. Upon removal of forms, clean vertical concrete surface that is to receive bonded applied cementitious application with wire brushes or by sand blasting to remove unset material, laitance, and loose particles to expose aggregates to provide a clean, firm, granular surface for bond of applied finish.

3.13 CONCRETE FINISHES:

A. Vertical and Horizontal Surface Finishes:

1. Unfinished areas: Vertical and horizontal surfaces below finished grade, pipe trenches and other unfinished areas will not require additional finishing.
2. Interior and exterior exposed areas: Remove fins, burrs and similar projections on surfaces flush, and smooth by mechanical means approved by Owner, and by rubbing lightly with a fine abrasive stone or hone. Use ample water during rubbing without working up a lather of mortar or changing texture of concrete.
3. Interior and exterior exposed areas finished: Give a grout finish of uniform color and smooth finish treated as follows:
    a. After concrete has hardened and laitance, fins and burrs removed, scrub concrete with wire brushes. Clean stained concrete surfaces by use of a hone stone.
    b. Apply grout composed of one part of Portland cement, one part fine sand, smaller than a 600 µm (No. 30) sieve. Work grout into surface of concrete with cork floats or fiber brushes until all pits, and honeycombs are filled.

c. After grout has hardened slightly, but while still plastic, scrape grout off with a sponge rubber float and, about 1 hour later, rub concrete vigorously with burlap to remove any excess grout remaining on surfaces.

d. In hot, dry weather use a fog spray to keep grout wet during setting period. Complete finish of area in same day. Make limits of finished areas at natural breaks in wall surface. Leave no grout on concrete surface overnight.

B. Slab Finishes:

1. Float Finish: Slabs to receive unbonded toppings, steel trowel finish, fill, mortar setting beds, or a built-up roof, and ramps, stair treads, platforms (interior and exterior), and equipment pads shall be floated to a smooth, dense uniform, sandy textured finish. During floating, while surface is still soft, check surface for flatness using a 3000 mm (10 foot) highway straightedge. Correct high spots by cutting down and correct low spots by filling in with material of same composition as floor finish. Remove any surface projections and re-float to a uniform texture.
2. Steel Trowel Finish: Concrete surfaces to receive resilient floor covering or carpet, monolithic floor slabs to be exposed to view in finished work, future floor roof slabs, applied toppings, and other interior surfaces for which no other finish is indicated. Steel trowel immediately following floating. During final troweling, tilt steel trowel at a slight angle and exert heavy pressure to compact cement paste and form a dense, smooth surface. Finished surface shall be smooth, free of trowel marks, and uniform in texture and appearance.
3. Broom Finish: Finish exterior slabs, ramps, and stair treads with a bristle brush moistened with clear water after surfaces have been floated. Brush in a direction transverse to main traffic. Match texture approved by Owner from sample panel.

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SPECIFICATIONS FOR
FACTORY POWDER COATED
BOLTED STEEL TANK

PART 1 GENERAL

1.01 SCOPE

A. This specification covers the furnishing of all labor, material, equipment, tools, services and erection of as many as three (3) Factory Powder Coated Bolted Steel water storage tank, as manufactured by Superior Tank Co., Inc., Tank Connection Affiliate Group or pre-approved manufacturer meeting the specifications and as shown on the plans and specified herein.

B. The bolted steel tank shall conform to the requirements of American Water Works Association (AWWA) D103-09 Standard for Factory-Coated Bolted Carbon Steel Tanks for Water Storage.

1.02 SUBMITTALS

A. Shop Drawings: Submit shop drawings of the bolted steel tanks and all accessories for review and approval by the engineer prior to beginning any related shop fabrication or erection. Include sufficient data to show that the reservoir and accessories conform to the requirements to these Specifications.

Submittals shall include:

1. Design calculations signed by a civil or structural engineer registered in the State of Alabama**.** The current wind load design requirement in the 2018 IBC shall apply to this work.

2. Fabrication and erection drawings and details for the reservoir and all accessories.

3. Certified mill tests on steel plate and structural members demonstrating that the physical and chemical requirements of this Specification have been met.

PART 2 PRODUCTS

2.01 GENERAL DESCRIPTION

A. The Manufacturer shall furnish, erect and test the tank(s), as required by AWWA.D103-09. The Manufacturer shall be completely responsible for the construction and satisfactory performance of the tank during the guarantee period. The tank shall conform to AWWA 0103-09, to the latest edition Building Code, and to the requirements of the plans and these

Specifications. The supplier shall submit for approval complete and detailed plans for the tank and appurtenances.

B. The Factory Powder Coated, bolted steel tank shall have a nominal capacity as specified in the Appendix of the Bid Documents. Each tank shall have a nominal diameter and height as shown herein. A cone or dome roof, sloped to drain toward the shell, shall be provided. Provide the reservoir complete with all pipe connections, access openings, nozzles. taps, drains, ladders, vent, and other accessories as shown on the plans or required herein.

2.02 DESIGN DATA

A. The following data and information are supplied as a basis for design and erection of the tank and appurtenances:

1. Tank Capacity & Dimensions provided in the Appendix
   a. Nominal Capacity
   b. Usable Capacity
   c. Inside Diameter
   d. Tank Height

2. Seismic Design Criteria - Not Applicable

3. Design Wind Loading

a.	Design Wind Speed, V	160
b.	Exposure Category	B

4. Roof Design Loading

a.	Roof Live Load	20 PSF
b.	Ground Snow Load	Not Applicable

5. Liquid to be stored — Raw Wastewater

6. Allowable Soil Bearing Pressure — Refer to Geotech Report In the Appendix

2.03 MATERIALS

A. Plates and Sheets. Plates and sheets shall conform to appropriate ASTM designation as set forth in Section 4.4, AWWA D103-09, and shall have a minimum yield strength of 30,000 psi.

B. Structural Shapes. Structural shapes shall conform to the requirements and ASTM designations of AWWA D103-09 section 4.5

C. Bolts. Tank joint bolting shall be minimum ½" diameter, shall meet the requirements of AWWA D103-09 section 4.2.1. and have tensile strength of at least 120,000 pounds per square inch.

D. Gaskets and Sealant. All gaskets and sealants used on this tank shall conform to the requirements of AWWA D103-09 section 4.10.

2.04 ACCESSORIES

A. Shell Manhole: Provide one (1) - 30" diameter, minimum, hinged shell manhole located as shown on the drawings. The center of the manhole shall be located 30 inches above the bottom of the tank.

B. Pipe Connections:

1. Provide inlet and outlet piping as shown in the schematic design, and overflow and drain outlets as shown on the plans.

2. Provide Flanged tank connections the number, diameter and locations as shown on the plans for air or vent connections by others.

C. Overflow pipe: Provide steel internal or external overflow pipe, internal weir box, if required, and supports as shown on the plans. Overflow pipe assembly shall be powder epoxy lined and coated for corrosion protection.

D. Ladders:

1. Provide a galvanized steel welded exterior ladder with backguard as shown on the plans. The ladder shall have a lockable closure at the bottom.

2. Provide a galvanized steel welded interior ladder. Safe-T-Climb assembly is optional.

E. Roof Openings:

1. A 24 inch screened duct vent shall be provided on the roof. The vent shall be fabricated to provide removable screened openings between the vertical support members of the vent. The screened openings of the vent shall be sized by the manufacturer to allow venting of a 1,000 gpm pumping (fill) rate, and a 1,500 gpm pumping (discharge) rate, including a re-aeration system. An effective area of 75% of screen opening shall be assumed. The screen shall consist of one layer of Type 316 stainless steel: 16 x 16 x 0.018 wire mesh insect screen.

2. The tank roof shall have three (3) curbed, upward opening 24-inches square, minimum; hatches located with one (1), near the ladder and two (2), within the curtain system of the inlet structure. The curb shall extend at least 4 inches above the tank. The hatch cover shall be hinged and shall have locking provisions. The hatch

cover lip shall extend for a distance of 2-inches down on the outside of the curb.

F. Provide a Superior Tank Model # 2400, Liquid Level Indicator with Type 316 stainless steel internals and complete with float and target board assembly is optional. Not Required on these Tanks

G. Gaskets and sealants shall meet or exceed AWWA, FDA, and EPA standards for potable water.

H. Anchor bolts and stirrups, if required, to be furnished by the tank manufacturer.

2.05 FOUNDATION

A. Prepare site in accordance with Section 02110 - Site Preparation, Clearing and Grubbing. Cut and provide structural fill as required at each site. Refer to the Geotech Report for preparation of the site and design soil bearing capacities in the Appendix.

B. The foundation will consist of a perimeter concrete footing, concrete floor all necessary thickened spread or continuous footings to be constructed as shown on the plans. The entire foundation and tank area is to be designed by a professional engineer, registered in the State of Alabama, and prepared in accordance the tank manufacturers loading requirements, based on the Geotech Report for each site provided herein.

C. The foundation shall be constructed of reinforced concrete per Section 300 - Cast in Place Concrete, or an approved equal specification.

PART 3 EXECUTION

3.01 PROTECTIVE COATING

A. General: All metal plates, supports, members and miscellaneous parts, except bolts, shall be Factory Powder Coated in accordance with AWWA D103, Section 12.6 and this Section. Field coating, other than touch-up, will not be permitted.

B. Surface Preparation:

1. All steel surfaces shall be shot blasted to equivalent of a SP 10 or better near white metal finish. The surface anchor pattern shall be no less than 1.5 mils.

2. Spray a final Deionized water rinse with Silica-Zirconium (Si-Zr) sealer to prevent rusting prior to the powder coating application and provide additional level of corrosion protection

3. All steel surfaces shall drip dry for seven (7) minutes prior to entering the dry off oven for eight (8) minutes at 425 degrees F.

C. Coating:

1. All interior steel surfaces, support members and miscellaneous parts shall receive 5 mils minimum average dry film thickness using *Dupont/Axalta* "Tank Tan" (An NSF 61 Approved, Thermal Set Epoxy Powder Coating).

2. All exterior steel surfaces, support members and miscellaneous parts shall receive minimum 2 mils average dry film thickness “Tank Tan” primer under 3 mils minimum average dry film thickness using *Dupont* "Superior Sand" (A Thermal Set TGIC-Polyester Powder Coating), for a total of 5 mils.

3. NOTE: Painted, uncoated, or glass lined bolted tanks and FRP tanks are not considered equal

3.02 CONSTRUCTION

A. Field erection of Factory Powder Coated bolted steel tanks shall be in strict compliance with manufacturer's recommendations and performed by manufacturer's employees or certified erection crew to alleviate any potential disputes in coating quality or erection thereof. Particular care shall be exercised in handling and bolting of the tank plates, supports, and members to avoid abrasion or scratching the coating. Prior to placing water in the tank, a "holiday" inspection of the entire tank, corners included, will be provided and performed by the manufacturer in the presence of the owner. Touch-up coating shall be done per the manufacturer's recommendations where needed and as directed to achieve 100% holiday-free surface.

3.03 TESTING AND INSPECTION

A. General: Test storage tank after erection. Floor shall be clean and free from dirt, foreign substance and debris.

B. Bottom: Vacuum test seams in floor plates.

C. Shell: Test by filling with water to elevation of overflow. Completed storage tank shall show no leaks at end of 24 hour test period. No charge will be made for water required to fill tank.

D. Disinfection:

1. General: After testing has been satisfactorily completed, tank shall be disinfected.

2. Standards: Disinfecting of interior surfaces shall be performed in accordance with AWWA C652-86. After disinfection, the Owner shall take a water specimen for bacteriological test, as prescribed at Code 40 of the Federal Regulations, Sections 141.21 through 141.30, 141.41 and 141.42.

3. After disinfection, the tank shall be filled to the overflow level and allowed to stand for 5 days, minimum. After 5 days. the Owner shall take water specimens for V.O.C. test per EPA 502.2. The tank may be placed into service once acceptable test results are received.

3.04 WARRANTY

A. Superior Tank Co., Inc., Tank Connection Affiliate Group, or any pre-approved equal tank manufacturer, shall warrant the tank against any defects in workmanship and materials for a period of five (5) years from the date of acceptance. In the event any such defect should appear, it should be reported in writing to the manufacture during the warranty period.

END OF SECTION

SPECIFICATIONS FOR
WELDED STEEL GROUND STORAGE TANK

PART 1 **GENERAL**

1.01 SCOPE

A. This specification covers the furnishing of all labor, material, equipment, tools, services, and erection of three (3) Welded Steel Water Storage Tanks, as manufactured by Superior Tank Co., Inc., Rancho Cucamonga, CA or an approved equal, and as shown on the plans and specified herein.

1.02 REFERENCE SPECIFICATIONS

A. Perform the work in conformance with the following standards.

1. American Water Works Association (AWWA) Standard D100-11 Welded Carbon Steel Tanks for Water Storage.

1.03 SUBMITTALS

A. Shop Drawings: Submit shop drawings of the welded steel reservoirs and all accessories for review and approval by the engineer prior to beginning any related shop fabrication or erection. Include sufficient data to show that the reservoirs and accessories conform to the requirements to these Specifications. Submittals shall include:

4. Design calculations signed by a civil or structural engineer registered in the State of Alabama***.***

5. Fabrication and erection drawings and details for the reservoir and all accessories.

6. Certified mill tests on steel plate and structural members demonstrating that the physical and chemical requirements of this Specification have been met.

PART 2 **PRODUCTS**

2.01 GENERAL DESCRIPTION

A. The Contractor shall furnish, erect and test the tank on a gravel or concrete foundation, as required by AWWA D100-11. The Contractor shall be completely responsible for the design and construction and for the integrity and satisfactory performance of the tank during the guarantee period. The tank shall conform to AWWA D100-11, including Section 14, to the 2018 edition of the IBC, and to the requirements of the plans and these Specifications. The supplier shall submit for approval complete and detailed plans for the tank and appurtenances.

B. The welded steel tanks shall have a nominal capacity as referenced in the Appendix of the Bid Documents. The tanks shall have a nominal diameter and height shown to meet the nominal capacity required at each site. Provide the reservoir complete with all pipe connections, access openings, nozzles, taps, drains, ladders, vent, and other accessories as shown on the plans or required herein.

2.02 DESIGN DATA

A. The following data and information are supplied as a basis for design and erection of the tank and appurtenances:

7. Tank Capacity & Dimensions provided in the Appendix
   e. Nominal Capacity
   f. Usable Capacity
   g. Inside Diameter
   h. Tank Height

8. Seismic Design Criteria – Not Applicable

9. Design Wind Loading
   a. Design Wind Speed, V 160 mph
   b. Exposure Category B

10. Roof Design Loading
    a. Roof Live Load 20 PSF
    b. Ground Snow Load Not Applicable

11. Liquid to be stored Raw Wastewater

12. Allowable Soil Bearing Pressure Refer to Geotech Report In the Appendix

2.03 TANK DESIGN

A. All plate and structural steel shall conform to AWWA D100, Section 14.

B. Tubular structural shapes shall be hermetically sealed to prevent internal corrosion. Protection solely by means of an interior coating system is not allowed.

C. The roof of the steel tank shall be sloped a minimum of 1 in. per foot.

D. Joint Welds

1. All shell joints shall be butt-welded.

2. Floor joints may be butt-welded or lap welded. In both cases an additional layer of padding shall be placed under the joint and extend a minimum of 6” either side of the joint.

3. The roof shall be of a low-cone design with a slope of 1-inch on 12-inch minimum, or a self-supporting steel dome roof. The roof design shown on the plans shall be the basis of the roof design for the project.

B. Seal Welding:

1. All surface voids shall be seal welded. Surface voids include but are not limited to areas behind tank rafters, skip-welded lap joints, between back to back angle iron backing, and junction of rafters to column supports.

2.04 ACCESSORIES

A. Shell Manhole: Provide one (1) 30 inch, minimum, shell manholes located as shown on the drawings. The center of the manhole shall be located 30 inches above the bottom of the tank.

B. Pipe Connections:

1. Provide inlet and outlet piping as shown in the Schematic design, and overflow and drain outlets as shown on the plans.
2. Provide Flanged Tank Connections; the number, diameter and locations as shown on the plans air or ventilation connections by others.

C. Overflow Pipe:

1. Provide steel internal and external overflow pipe, internal weir box, if required, and supports as shown on the plans. Overflow pipe assembly shall be coated, inside and outside, according to the specifications herein.

D. Ladders:

1. Provide and install a steel tank ladder for the exterior of the tank. Equip the ladder with a safety cage and lockable cage cover. Ladder, safety cage, and other ladder accessories shall conform to the latest edition of the OSHA rules and regulations.

2. Provide a welded galvanized steel interior ladder as shown on the plans. Ladder shall conform to the latest edition of the OSHA rules and regulations.

E. Roof Openings:

1. A 24 inch screened duct vent shall be provided at the roof. The vent shall be fabricated to provide removable screened openings between the vertical support members of the vent. The screened openings of the vent shall be sized by the manufacturer to allow venting of a 1,000 gpm pumping (fill) rate, and a 1,500 gpm pumping (discharge) rate, including a re-aeration system. An effective area of 75% of screen opening shall be assumed. The screen shall consist of one layer of Type 316 stainless steel: 16 x 16 x 0.018 wire mesh insect screen.

2. The tank roof shall have three (3) curbed, upward opening 24-inches square, minimum; hatches with one (1), located near the ladder and two (2), located within the curtain of the inlet structure. The curb shall extend at least 4 inches above the tank. The hatch cover shall be hinged and shall have locking provisions. the hatch cover lip shall extend for a distance of 2-inches down on the outside of the curb. Location of the hatches shall be as shown on the schematic plans herein.

F. Gaskets and sealants shall meet or exceed AWWA, FDA, and EPA standards for potable water.

G. Anchor bolts and stirrups to be furnished by the Tank Contractor, if required by AWWA.

2.05 FOUNDATION

A. Prepare site in accordance with Section 02110 - Site Preparation, Clearing and Grubbing. Cut and provide structural fill as required at each site. Refer to the Geotech Report for preparation of the site and design soil bearing capacities in the Appendix.

B. The foundation will consist of a perimeter concrete footing, concrete floor all necessary thickened spread or continuous footings to be constructed as shown on the plans. The entire foundation and tank area is to be designed by a professional engineer, registered in the State of Alabama, and prepared in accordance the tank manufacturers loading requirements, based on the Geotech Report for each site provided herein.

C. The foundation shall be constructed of reinforced concrete per Section 300 - Cast in Place Concrete, or an approved equal specification.

PART 3 **EXECUTION**

3.01 CLEANING AND COATING

A. Cleaning and painting shall be done as specified in Section 09960 – Surface Preparation and Coatings Welded Steel Side Stream Storage Tanks

3.02 CONSTRUCTION

A. The tank and appurtenances shall be assembled, erected, and cleaned in accordance with Section 10 of AWWA Standard D100. All weld irregularities such as sharp edges, sharp corners, and weld spatter shall be ground to a smooth surface. A door sheet may be included in the construction schedule. The door sheet must be the full height of a wall ring. Cutting of a partial section of any wall ring sheet is unacceptable.

3.03 TESTING AND INSPECTION

A. General: Inspection, testing and repair of welds shall be performed in accordance with Section 11 of AWWA D100. Vertical and horizontal shell joints shall be radiographed in accordance with AWWA D100. In addition, junctions of vertical and horizontal joints shall be radiographed to show clearly not less than two inches of horizontal shell weld length on each side of the intersection. At completion of the work, the Contractor's representative who witnessed the inspection and test shall submit a report certifying that the tank is inspected in accordance with the above standard. The report shall include the content as specified in Section 11.2 of the Standard.

B. Bottom: All welds in the bottom of the tank shall be vacuum tested prior to the application of protective coatings. The surface of each weld shall be coated with soap suds and a vacuum tester passed over the weld. The tester shall be constructed with a suitable window to permit the operator to observe the effect of the soap suds as the tester is passed along the weld. Any leaks found shall be marked and the holes sealed by welding. Sealing by peening will not be permitted. The tester shall be equipped with a pressure gauge, and a partial vacuum of not less than 2 psi shall be maintained during the test.

C. Shell: Test by filling with water to elevation of overflow. Completed storage tank shall show no leaks at end of 24 hour test period. No charge will be made for water required to fill tank.

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3.04 WARRANTY

A. Superior Tank Co., Inc. or any pre-approved equal tank manufacturer, shall warrant the tank against any defects in workmanship and materials for a period of five (5) years from the date of acceptance. In the event any such defect should appear; it should be reported in writing to the manufacture during the warranty period.

END OF SECTION

SECTION 09960

SURFACE PREPARATION & COATING

For

Welded Steel Side Stream Storage Tanks

PART 1: GENERAL

1.01 Scope

A. This specification covers repair, preparation of surfaces, performance and completion of painting of all surfaces specified on the following structures:

- Side Stream Storage Tanks: All interior and exterior surfaces

B. The CONTRACTOR shall be responsible for all costs associated with surface preparation, coating application, environmental conditions monitoring, waste disposal, and any other aspects of the project.

1.02 Work Included

A. Preparation of surfaces which are to receive finishes

B. Disposal of blasting debris

C. Tank repairs

D. Finish surfaces

E. Testing and cleaning

1.03 Related Work and Applicable Requirements Specified Elsewhere

A. BIDDING REQUIREMENTS, CONTRACT FORM AND CONDITIONS OF THE CONTRACT AND GENERAL REQUIREMENTS shall apply to all work included in this section.

1.04 Documents and Standards

A. Coating manufacturer's printed instructions.

B. American Society of Testing Materials

1. ASTM B117 **Salt Spray (Fog)**
2. ASTM D149 **Dielectric Strength**
3. ASTM D4060 **Abrasion**
4. ASTM D4541 **Adhesion**
5. ASTM D4585 **Humidity**
6. ASTM G53 **QUV Exposure**
7. ASTM D 4141 **Exterior Exposure (EMMAQUA)**
8. AAMA 2604 **Exterior Exposure**

C. Code of Federal Regulations as the apply to the project

1. 29 CFR 1910 Occupational **Safety and Health Standards** (General Industry Standards)

2. 29 CFR 1910.134 Respiratory **Protection**

3. 29 CFR 1910.1020 Access **to Employee Exposure and Medical Records**

4. 29 CFR 1910.1200 Hazard **Communication**

5. 29 CFR 1926 Safety **and Health Regulations for Construction** (Construction Industry Standards)

6. 40 CFR 50 National **Primary and Secondary Ambient Air Quality Standards**

7. 40 CFR 261 **Identification and Listing of Hazardous Waste**

8. 40 CFR 268 **Land Disposal Restrictions**

9. All other Applicable State and Federal Regulations

D. National Institute for Occupational Health and Safety

1. All Applicable Regulations

E. Occupational Safety and Health Administration

1. All Applicable Regulations

F. Steel Structures Painting Council (SSPC)

1. SSPC-SP 1 **Solvent Cleaning**
2. SSPC-SP 2 **Hand Tool Cleaning**
3. SSPC-SP 3 **Power Tool Cleaning**

4. SSPC-SP 6 **Commercial Blast Cleaning**

5. SSPC-SP 10-63 **Near White Blast Cleaning**

1.05 Quality Assurance

A. Qualifications:

1. Provide products from a company specializing in the manufacture of high performance coatings with a minimum of 10 years' experience.

2. Applicator shall be trained in application techniques and procedures of coating materials and shall demonstrate a minimum of 5 years successful experience in such application.

   a. Maintain, throughout duration of application, a crew of painters who are fully qualified to satisfy specified qualifications.

3. Single Source Responsibility:

   a. Materials shall be products of a single manufacturer or items standard with manufacturer of specified coating materials.

   b. Provide secondary materials which are produced or are specifically recommended by coating system manufacturer to ensure compatibility of system.

B. Regulatory Requirements:

1. Conform to applicable codes and ordinances for flame, fuel, smoke, and volatile organic compound (VOC) ratings requirements for finishes at time of application.

C. Pre-Installation Meeting:

1. Schedule a conference and inspection to be held on-site before field application of coating systems begins.

2. Conference shall be attended by Contractor, Owner's representative, Engineer, coating

applicators, and a representative of coating material manufacturer.

3. Topics to be discussed at meeting shall include:

   a. A review of Contract Documents and accepted shop drawings shall be made and deviations or differences shall be resolved.

   b. Review items such as environmental conditions, surface conditions, surface preparation, application procedures, and protection following application. A surface mock-up of the surface preparation requirements for the project, both interior and exterior, shall be prepared by the Contractor. All parties shall agree to the degree of cleanliness and the mock-up shall be preserved for the duration of the project.

   c. Establish which areas on-site will be available for use as storage areas and working area

4. Pre-construction conference and inspection shall serve to clarify Contract Documents, application requirements and what work should be completed before coating application can begin.

5. Prepare and submit, to parties in attendance, a written report of pre-installation conference. Report shall be submitted within 3 days following conference.

PART 2: MATERIALS

2.01 **Quality of Coatings**

The paints and paint products of the *Tnemec Company, Inc.*, mentioned in the following specifications are set up as standards of quality. The usual "or equal" clause shall apply. No request for substitution will be considered which decreases the film thickness and/or the number of coats to be applied, or which offers a change from the generic type of coating specified. Request for substitution shall contain the following:

A. FULL NAME OF EACH PRODUCT

B. DESCRIPTIVE LITERATURE

C. DIRECTIONS FOR USE

D. GENERIC TYPE

E. NON VOLATILE CONTENT BY VOLUME

F. PERFORMANCE DATA LISTED IN SECTION 8.

Technical Information may be obtained from the following:

SteelCon Coating Systems, Inc.

2100 3rd Ave South

Irondale, AL 35201

Phone: 205-951-2086

E Mail: rcrumbaugh@tnemec.com

Bidders desiring to use paints other than those specified shall submit their proposal based on the specified materials. Submittals shall include a side by side comparison of the performance attributes of the proposed materials as compared to the specified coatings. In no case will the request be considered unless all information is received, in writing, ten days prior to the bid opening date.

2.02 Shipping, Storage and Handling

All paints shall be properly prepared by the manufacturer and delivered to the site for field painting in the original unbroken containers with manufacturer's label plainly printed thereon. Type of material to be applied at each location shall be submitted to the Engineer with the manufacturer's written recommendation of the type paint for each item to be painted.

All coatings shall be stored in an enclosed structure to protect them from weather and excessive heat or cold. Flammable coatings must be stored to conform to City, County, State and Federal safety codes for flammable coatings or paint materials. At all times coatings shall be protected from freezing.

PART 3: APPLICATION

3.01 General

A. Prepare surface and touch-up welds, burned and abraded areas on primed steel with specified primer before applying field coats.

B. The painter shall mix, thin and apply each coating at the rate and manner specified by the manufacturer's printed instructions. Deficiencies in film thickness shall be corrected by the application of an additional coat(s) of paint.

C. All coatings shall be applied in strict accordance with the applicable manufacturer's current printed product data sheet(s) and container labels. Coatings shall not be applied above or below the minimum and/or maximum surface temperatures as stated on the product data sheet(s) and shall not be applied to wet or damp surfaces, in rain, snow, fog or mist. Surface temperature must be at least 5°F above the dew point.

D. Painting shall be completed well in advance of the probable time of day when condensation will occur and/or the surface temperature is expected to drop below the minimum listed on the applicable product data sheet(s).

E. Finish coats shall be uniform in color and sheen without streaks, laps, runs, sags or missed areas.

F. The manufacturer's recommended curing time shall elapse before the next coat is applied. Adequate ventilation shall be provided for proper drying of paints on interior tank surfaces. A minimum of 7 days following the application of the final coat on the interior surfaces shall be allowed before the tank is flushed, disinfected or filled with water.

G. Clean-Up: All cloths and waste that might constitute a fire hazard shall be placed in closed metal containers or destroyed at the end of each day. Upon completion of the work, all staging, scaffolding, and containers shall be removed from the site and/or destroyed in an approved and legal manner. Paint spots, oil, or stains upon adjacent surfaces and floors shall be completely removed, and the entire job left clean and acceptable to the Engineer.

3.02 Existing Utilities, Structures and Properties

It shall be the responsibility of the contractor to locate and avoid damage to any and all existing water, gas, sewer, electric, telephone, and other utilities, structures, or appurtenances. The Contractor shall repair or pay for all damages caused by his operations or his personnel to existing utilities, structures, appurtenances, or properties, either below ground or above ground and shall settle in full all damage suites which may arise as a result of his operations.

3.03 Ventilation

It is essential that the solvent vapors released during and after application of coatings be removed from the tank. During coating application the capacity of ventilating fans shall be at least 300 cfm per gallon of coating applied per hour. Continuous forced ventilation at a rate of at least one complete air change per 4 hours shall be provided for at least 7 days after coating application is completed. Air shall be exhausted from the lowest portions of the tank with the top openings kept open and clear. A minimum of seven days (manufacturers printed instructions shall be followed for cure times at various temperatures) following application of the final coat on the interior shall be allowed before the tank is sterilized or filled with water.

PART 4: PAINTERS LOG AND TESTNG EQUIPEMENT:

4.01 Daily Log

The Contractor shall keep a daily log in which he shall record the following information shall be recorded:

A. Air Temperature: Air temperature readings shall be taken at intervals throughout the day's work. Readings shall be taken at the start of the mornings work, mid-day and afternoon. Should environmental conditions change, additional reading shall be taken to assure that coatings are being applied under the conditions as outlined by the coating's manufacturer.

B. Surface Temperature: Surface temperatures shall be taken in areas where work is being performed. Surface temperature shall be that as specified by the coating's manufacturer.

C. Material Temperature: Material temperature reading shall be taken prior to the application of the paint.

D. Relative Humidity: Relative humidity readings shall be taken at intervals throughout the day's work. Readings shall be taken at the start of the mornings work, mid-day and afternoon. Should environmental conditions change, additional reading shall be taken to assure that coatings are being applied under the conditions as outlined by the coating's manufacturer.

E. Dew Point: Dew point readings shall be taken at intervals throughout the day's work. Readings shall be taken at the start of the mornings work, mid-day and afternoon. Should environmental conditions change, additional reading shall be taken to assure that coatings are being applied under the conditions as outlined by the coating's manufacturer.

F. Blast Profile: Following blasting operations, the Contractor shall take and record the depth of the blast profile. Blast profile measurements shall be taken using Testex X Course Replica Tape. Replica Tape shall be included in the daily log.

G. Detail or Work Performed During the Day: Area where work was performed and the extent of the work performed shall be included in the daily log.

4.02 Testing Equipment

In addition to the equipment required to take measurements which will be included in the daily log, The Contractor shall have on the project site the following testing equipment. Equipment shall be in calibration and proper working order.

A. Dry Film Thickness Measurements Gauge: Dry film thickness reading shall be taken with a properly calibrated (per the manufacturer's instructions) Type 1 (magnetic) or Type 2 (electromagnetic) instrument. Dry film thickness reading will be taken and recorded in the in a frequency and manner as dictated by the Engineer.

B. High Voltage Holiday Detection Equipment: Interior surfaces, following a minimum of 48 hours cure, shall be holiday detected in accordance with NACE SP0188-99 high voltage holiday detection. Holiday detector shall be a Tinker & Rasor model AP/W Holiday Detector or equal. Areas found to have holidays shall be marked and repaired in accordance with the paint manufacturer's instructions. The Engineer shall be notified of time of testing so that he might be present to witness testing.

PART 5: SURFACE PRERPARATION AND PAINTING:

5.01 **Exterior Surface Preparation**: Prior to surface preparation, all surfaces shall be cleaned of all oil and grease in accordance with SSPC-SP 1 Solvent Cleaning. All exterior surfaces shall be abrasive blasted to remove all dust, rust and scale, as well as all other foreign matter and shall result in a surface preparation equal to that of SSPC-SP 10 Near White Blast Cleaned Surface. Surface profile shall be 1.5 - 2.5 mils.

5.02 **Interior Surface Preparation**: Prior to surface preparation, all surfaces shall be cleaned of all oil and grease in accordance with SSPC-SP 1 Solvent Cleaning. All interior surfaces shall be abrasive blasted to remove all dust, rust and scale, as well as all other foreign matter and shall result in a surface preparation equal to that of SSPC-SP 5 White Blast Cleaned Surface. Surface profile shall be a minimum of 3.0 mils.

5.03 **Debris Containment and Disposal During Paint Removal Operations**: The Contractor will be required to contain all blasting debris, as well as paint overspray and/or roller spatter, generated during the performance of the work. During surface preparation, airborne particulate and debris from the removal of the paint shall not be permitted to contaminate the air, soil or water surrounding the work site. The Contractor will be required to perform any site remediation required due to improper collection and disposal of paint removal debris. The Contractor shall develop a debris containment and disposal plan in accordance with these specifications and federal and state requirements. The Contractor shall submit his plan to the Engineer for written approval prior to starting work. All debris generated during the surface preparation and painting of the structure shall be disposed of offsite in a proper land fill.

5.04 **Coating System:** Following surface preparation, all interior and exterior surfaces shall be coated as hereinafter specified. The primer shall be applied in accordance with the recommendations of the manufacturer and not more than eight hours after surface preparation.

A. INTERIOR SURFACES

1. Prime: All interior surfaces shall receive one full prime coat of *Tnemec Series 20 Pota-Pox* applied at a rate to achieve 4.0 – 6.0 mils DFT

2. Seam Treatment: Following prime coat, all weld seams, ladders, sharp edges, and any other difficult to coat areas shall receive one coat of *Tnemec Series 20 Pota-Pox* applied, ***by brush***, at a rate to achieve 2.0 – 4.0 mils DFT.

3. Finish: After proper cure of the prime coat and stripe coat, all interior surfaces shall receive one full finish coat of *Tnemec Series 435 Perma-Glaze applied at a rate to achieve 25.0 – 35.0 mils DFT.*

4. THE INTERIOR LINING SYSTEM SHALL HAVE A MINIMUM DFT OF 29.0 MILS.

B. EXTERIOR SURFACES:

1. Prime: All surfaces shall receive one full prime coat of Tnemec Series 91 H20 Hydro-Zinc applied at a rate to achieve 2.5 – 3.5 mils DFT.

2. 1ST Intermediate: All surfaces shall receive one full intermediate coat of *Tnemec Series 20 Pota-Pox* applied at a rate to achieve 2.0 – 3.0 mils DFT.

3. 2nd Intermediate: All surfaces shall receive a second intermediate coat of Tnemec Series 73 Endura-Shield applied at a rate to achieve 2.0 – 3.0 mils DFT.

4. Finish: Following the full prime coat, all exterior surfaces shall receive one full finish coat of *Tnemec Series 700 HydroFlon* applied at a rate to achieve 2.0 – 3.0 mils DFT. Finish coat shall be applied by brush and roller only.

PART 6: ACCEPTANCE OF WORK:

6.01 Damaged coatings, pinholes, and holidays shall have edges feathered and repaired in accordance with the recommendations of the manufacturer, as approved by the Engineer.

6.02 All finish coats, including touch up and damage-repair coats shall be applied in a manner which will present a uniform texture and color-match appearance.

6.03 If the item has an improper finish, color, or insufficient film thickness, the surface shall be cleaned and topcoated with the specified material to obtain the specified color and coverage. Specific surface preparation information to be secured from the coating's manufacturer and the Engineer.

6.04 All visible areas of chipped, peeled, or abraded paint shall be hand or power-sanded, feathering the edges. The areas shall then be primed and finish coated in accordance with the specifications.

6.05 Work shall be free of runs, bridges, shiners, laps, or other imperfections. Evidence of these conditions shall be cause for rejection.

6.06 Any defects in the coating system shall be repaired by the Contractor per written recommendations of the coating manufacturer.

PART 7: GUARANTEE AND ANNIVERSARY INSPECTION:

7.01 **Guarantee:** All work shall be warranted for a period of five years from the date of completion.

7.02 **Anniversary Inspection:** The Owner will notify the Contractor at least 30 days prior to the anniversary date and shall establish a date for the inspection. The tank will be drained and the Owner's representative and the Contractor shall thoroughly inspect all surfaces both inside and out. Any defects in the coating system shall be repaired by the Contractor at no additional cost to the Owner. Should a failure occur to 25% of the painted surface, either interior or exterior, the entire surface shall be cleaned and painted in accordance with these specifications.

PART 8: PRODUCT PERFORMANCE CRITERIA:

Provide the following product information and **manufacturers published performance** data should coatings or coating system be submitted in lieu of the standard of quality established in the project documents. Should the data not be available in a published format, or if the duration of the test does not meet the specified requirement, please respond in the appropriate space with NT (Not Tested).

8.01 Organic Zinc Rich Urethane Primer (Exterior Primer)

A. Generic Type: Organic Zinc Rich Urethane Primer.
B. Special Qualifications: Certified in accordance with ANSI/NSF Std 61 for contact with potable water in tanks of 8,000 gallons capacity or greater after a 4 hour cure.
C. Solids By Volume: 63%
D. Zinc Content: 83% by weight. Zinc pigment shall conform to ASTM D 520 Type III.
E. Test Criteria:

Test Criteria	Test Duration	Proposed Product Test Results
ASTM B 117 Salt Spray (Fog)	50,000 hours (Scribed Panel)	Rust @ Scribe: Plane Rust: Blisters:
ASTM G 85 Prohesion	15,000 Hours	Rust @ Scribe: Plane Rust: Blisters:
ASTM D 4585 Humidity	4,000 hours	Rusting: Blistering:
ASTM 4541 Adhesion	Average of Three Tests	Adhesion PSI:

ASTM G8 Cathodic Disbondment	30 Days Exposure	
Immersion Service (Potable Water)	7 years – No Failure	

8.02 Polyamide Epoxy (Interior Primer and Exterior Intermediate)

A. Generic Type: Polyamide Epoxy
B. Special Qualifications: Certified in accordance with ANSI/NSF Std 61 for contact with potable water in tanks of 6,000 gallons capacity or greater.
C. Solids By Volume: 56%.
D. Test Criteria:

Test Criteria	Test Duration	Proposed Product Test Results
ASTM B 117 Salt Spray (Fog)	10,000 hours (Scribed Panel)	Rust @ Scribe: Plane Rust: Blisters:
ASTM G 85 Prohesion	15,000 Hours	Rust @ Scribe: Plane Rust: Blisters:
ASTM D 4585 Humidity	4,000 hours	Rusting: Blistering:
ASTM D 4060 Abrasion	CS-17 Wheel 1,000 Gram Load 1,000 Cycles	Report mg Loss / Average of three tests
ASTM 4541 Adhesion	Average of Three Tests	Adhesion PSI:
ASTM G8 Cathodic Disbondment	30 Days Exposure	
Immersion Service (Potable Water)	7 years – No Failure	

8.03 Exterior Intermediate Coat

A. Generic Type: Aliphatic Acrylic Polyurethane
B. Solids By Volume: 58%.
C. Test Criteria:

Test Criteria	Test Duration	Proposed Product Test Results
ASTM B 117 Salt Spray (Fog)	3,000 hours	Plane Rust: Blisters:
ASTM G 85 Prohesion	15,000 Hours	Plane Rust: Blisters:
ASTM D 4585 Humidity	2,000 hours	Rusting: Blistering:
ASTM D 4060 Abrasion	CS-17 Wheel 1,000 Gram Load 1,000 Cycles	Report mg Loss / Average of three tests
ASTM 4541 Adhesion	Average of Three Tests	Report PSI:
ASTM D 522 Flexibility	Method A Conical Mandrel	% Elongation:
ASTM D 522 Flexibility	Method B Cylindrical Mandrel	Elongation:
ASTM D 4141, Method C (EMMAQUA)	500 MJ/m2	% Gloss Retention: Color Change:
ASTM D 2794 Impact	Direct Impact	Report in/lbs:

8.04 Exterior Finish Coat

A. Generic Type: Fluoropolymer Polyurethane
B. Solids By Volume: 60%.
C. Test Criteria:

Test Criteria	Test Duration	Proposed Product Test Results
ASTM B 117	10,000 hours	Plane Rust: Blisters:

Salt Spray (Fog)		
ASTM D 4585 Humidity	3,000 hours	Rusting: Blistering:
ASTM D 4060 Abrasion	CS-17 Wheel 1,000 Gram Load 1,000 Cycles	Report mg Loss / Average of three tests
ASTM 4541 Adhesion	Average of Three Tests	Report PSI
ASTM D 4587 QUV Exposure Cycle 4: 8 hours UV – 4 hours condensation	16,000 hours	Gloss Retention:
ASTM D 4587 QUV Exposure Cycle 4: 8 hours UV – 4 hours condensation	25,000 hours	Gloss Retention: Color Change: DED FMCII
ASTM D 4141 (EMMAQUA) Exterior Exposure	1,500MJ/m2 Exposure	Gloss Retention: Color Change:
ASTM D 4141 (EMMAQUA) Exterior Exposure	2,000MJ/m2 Exposure	Gloss Retention: Color Change:
ASTM D 4141 (EMMAQUA) Exterior Exposure	3,500MJ/m2 Exposure	Gloss Retention: Color Change:
ASTM D 522 Flexibility	Method A Conical Mandrel	Cracking: % Elongation:
ASTM 2794	Average of Three Trials	Direct Impact:

Impact		
ASTMD 6695 Xenon Arc Weathering	3,000 hours	% Gloss Retention: Color Change: DED
ASTMD 6695 Xenon Arc Weathering	8,000 hours	% Gloss Retention: Color Change: DED
ASTM G 153 Carbon Arc Weathering	5,500 hours	% Gloss Retention: Color Change: DED
AAMA 2604-98	5 Years Exposure	Report: Color Retention: Gloss Retention: Chalking: Erosion:

8.05 Sanitary Sewer Lining System

A. Generic Type: 100% Solids Modified Polyamine Epoxy Lining
B. Standard of Quality: Tnemec Series 435 Perma-Glaze
C. Test Criteria:

Test Criteria	Test Duration	Proposed Product Test Results
ASTM G 210 Severe Wastewater Analysis Test	28 Days H2S AutoClave 150ºF, 500ppm H2S, 4,000 ppm NaCL, 10% H2S04	Report initial impedance (log z) and impedance after 28 days exposure (log z)
ASTM D 4060 Abrasion	CS-17 Wheel 1,000 Gram Load 1,000 Cycles	Report mg Loss / Average of three tests
ASTM 7234 Adhesion	Average of Three Tests	Results:
ASTM C 868	Immersion @ 100º F. in 25%	Results:

Chemical Resistance	Sulfuric Acid	
ASTM D 870 Immersion	140º F Deionized Water, 2,000 Hours	Blistering: Cracking: Rusting: Delamination:
NACE TM 0174 Chemical Immersion	Immersion 6 Months	Acetic Acid, 5% Calcium Hydroxide, 5% Calcium Hypochlorite, 5% Citric Acid. 5%, 20%, 50% Lactic Acid, 5%, 20% Nitric Acid, 5% Phosphoric Acid, 5% Potassium Hydroxide, 5% Sulfuric Acid. 10%
ASMT E 96 Moisture Vapor Transmission	Procedure D Average of 3 tests	Report Water Vapor Transmission and vapor permeance
ASTM D 2794 Impact	Direct Impact	Results:
ASTM D 695 Compressive Strength	Average of 5 tests	Report psi Compressive:
ASTM C 413 Water Absorption	----	Report % absorption
ASTM D 790 Flexural Strength and Modulus of Elasticity		Flexural Strength: Modulus of Elasticity:
ASTM D 4585 Humidity	4,000 Hours	Blistering: Cracking: Delamination:

End of Section

GeoCon
Engineering & Materials Testing, Inc.

Report of Geotechnical Exploration

Proposed Side Stream Wastewater Storage Vessels
Twin Beech Road
Fairhope, Alabama

GeoCon Project No. DL 1722-19

Prepared For:

The City of Fairhope Public Utilities
Mr. Richard Peterson, P.E.
P.O. Drawer 429
Fairhope, Alabama 36533

Date: June 11, 2019

Prepared By:
GeoCon Engineering & Materials Testing, Inc.
22885 McAuliffe Drive
Robertsdale, Alabama 36567

GeoCon
Engineering & Materials Testing, Inc.

June 11, 2019

The City of Fairhope Public Utilities
P.O. Drawer 429
Fairhope, AL 36533

Attn: Mr. Richard Peterson, P.E.

RE: **Report of Geotechnical Exploration**
Proposed Side Stream Wastewater Storage Vessels
Twin Beech Road
Fairhope, Alabama
GeoCon Project No. DL 1722-19

Dear Mr. Peterson:

GeoCon Engineering & Materials Testing, Inc. is pleased to submit this report of geotechnical exploration for the above referenced project. Included in this report is a summary of our understanding of the project, results of the field exploration, and our recommendations for site preparation and foundation design. This testing has been performed in general accordance with our signed proposal.

Enclosed please find our report with our evaluations and recommendations followed by an Appendix which includes a Site Location Map, Test Location Plan, graphical logs of the soundings and borings, laboratory data sheets, a Unified Soils Classification Chart, important notes about your Geotechnical Report and the Terms & Conditions that govern our work.

We appreciate the opportunity to have provided you with our geotechnical engineering services. If you have any questions concerning this report, or if we can be of any further assistance, please contact our office.

Sincerely,

GeoCon, Inc.

Jason J. Christian, P.E.
Geotechnical Engineer

ALABAMA LICENSED No. 31164 PROFESSIONAL ENGINEER JASON JAMES CHRISTIAN 6-11-19

22885 McAuliffe Drive Robertsdale, Alabama 36567
Phone (251) 947-1035

TABLE OF CONTENTS

1.0 Project Description

The project subject to this report is the construction of a new Side Stream Wastewater Storage Vessel at the Twin Beech Road site in Fairhope, Alabama. Specifically, the subject site is located on the south side of Twin Beech Road and to the east of Twin Beech Road South. The site is shown on the attached Site Location Map (Figure 1).

The provided information indicated that the project will include a ground storage tank that will exhibit a reservoir height of 12 feet with a diameter of 50 to 60 feet. We understand that the tank bottom will be at or close to the existing ground elevation. We understand that the tank shell will either be welded steel supported on a typical ringwall foundation or a concrete tank with an 8 inch thick concrete slab supported on perimeter footings and column footings to support roof loads. We also understand that the tank will exhibit loads of about 1,000 psf. The project also includes a pump building, a control building and an access driveway.

> Note: If our understanding of the above project information differs from the actual project plans and specifications or if revisions to the project plans are made after this report, we should be contacted for analysis and comment as needed.

2.0 Subsurface Exploration

Soil conditions were investigated by pushing one (1) Cone Penetration Test (CPT) sounding to a depth of about 30 feet in the proposed tank area, one (1) CPT sounding to a depth of about 12 feet in the proposed pump building area, one (1) hand auger boring to a depth of about 4 feet in the proposed control building area and one (1) hand auger boring to a depth of about 4 feet in the proposed access drive area. The locations of each test sounding and boring are shown on the attached Test Location Plan (Figure 2).

CPT soundings were performed in accordance with ASTM D-5778 using a Vertek S4 electronic CPT rig. CPT testing includes pushing an electronic cone on a series of rods into the ground at a constant rate. The electronic cone collects continuous measurements of the resistance to penetration of the cone tip and side friction sleeve. Correlations between Cone Resistance values and Standard Penetration Test (SPT) "N" values were performed using methods developed by Robertson, Campanella and Wightman. The CPT logs attached in the appendix shows the cone tip friction, sleeve friction, pore pressure, friction ratio, correlated "N" value and the soil behavior type (SBT).

At each test location, samples were collected of the soils encountered in the upper 4 feet of the soil-profile. These samples were visually classified by GeoCon, Inc. personnel, placed in containers and transported to our laboratory for further testing and for further review by our engineering staff. Samples will be retained at our lab for a period of 60 days after the date of this report. If no written instructions are given to GeoCon, we will discard the samples after 60 days.

3.0 Soil Conditions Encountered

The test borings and soundings initially encountered about 12 inches of organic topsoil material. Below the topsoil material, the soundings and borings encountered sand soils with varying amounts of silt to boring and sounding termination at depths of about 4 to 30 feet below the existing ground surface. Sounding C-2 penetrated a layer of sandstone at a depth of about 7 to 7½ feet below the existing ground surface.

Based on the cone tip friction values and correlated Standard Penetration Test (SPT) "N" values, the silty sand soils penetrated in the upper 2 feet of the soil profile were in very loose condition. The deeper sand soils were in a loose to very dense condition. The condition and consistency of the soils penetrated are described in more detail on the Sounding and Boring Logs attached in the Appendix of this report.

4.0 Ground Water Conditions Encountered

Ground water was encountered at sounding C-1 at a depth of about 10 feet below the existing ground surface. Ground water was not encountered at the remaining sounding and boring locations for the depths tested at the time of the field exploration. Ground water conditions are subject to seasonal variations and are expected to fluctuate in response to local variations in precipitation and drainage conditions. Considering the relatively short time frame of the field exploration, ground water levels may not have had sufficient time to stabilize. Therefore, actual depths to ground water may vary. Based on the soil conditions at the time of the field exploration, we do not anticipate that natural ground water will affect shallow foundation construction.

5.0 Laboratory Classification Testing

The soil samples taken from the borings were visually classified in general accordance with the guidelines of ASTM D-2487 Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System). The quantity and type of laboratory tests performed for this geotechnical study were determined and adjusted by GeoCon engineering personnel based on the uniformity and characteristics of the subsurface soil conditions encountered and our experience and knowledge of local soil conditions.

Laboratory soil tests were performed to aid in the classification of the soils and to help in the evaluation of engineering characteristics of the soils. Representative soil samples recovered from the soil test borings were selected for grain-size analysis (2 tests) and Atterberg limit determination (2 tests). The laboratory data is shown on the attached lab data sheets.

6.0 Tank Foundation and Pad Subgrade Preparation

Below and extending 5 feet beyond the tank should be considered the tank pad. We recommend that the tank pad be undercut by a depth at least 24 inches below the existing ground surface. We anticipate that the final subgrade elevation of the tank pad will be close to existing elevations. We also anticipate that the tank manufacturer will require a layer of sand

fill along with a 4 to 6 inch layer of crushed aggregate base material below the tank. Depending on final subgrade elevations, additional undercut may have to be performed to allow for placement of the required build-up below the tank.

Following the undercut and prior to the placement of fill, the exposed subgrade should be observed by a field representative of the Geotechnical Engineer of Record (GeoCon). At this time, hand probes should be used to help evaluate the stability of the exposed subgrade soils. Subgrade soils that are determined to be unsuitable or unstable should be further undercut as per the recommendations of the project geotechnical consultant. The resulting excavations should be replaced with compacted structural fill. Placement of structural fill should meet the requirements of Section 9.0 of this report.

Provided the undercut is performed as outlined above, foundations can be designed using an allowable soil bearing pressure of 1,500 psf. Following footing excavation, footing bearing soils should be compacted to at least 95% standard density. Proper compaction of footing bearing soils is important to help limit excessive foundation settlement.

GeoCon, Inc. should be called to observe and perform compaction testing on the footing excavations prior to the placement of reinforcing steel (rebar) and concrete to determine if the bearing soils are satisfactory for support of the foundations. Excessively loose footing bearing soils will require re-compaction or stabilization as per the recommendations of GeoCon's geotechnical engineer.

Foundation concrete should not be placed on soils that have been disturbed by ground water seepage or rain water. If the bearing soils are softened by ground water intrusion or exposure, the softened soils must be removed from the foundation excavation bottom prior to placement of concrete.

Soils exposed in the bottom of all satisfactory excavations should be protected against disturbance, excessive drying, freezing or rain. Surface runoff should be drained away from excavations and not allowed to pond. The saturation of soils at the footing bearing elevation level can reduce their strength and load carrying ability. Concrete for foundations should be placed as soon after completion of the excavations as possible. If a delay in concrete placement is expected or if exposed to wet weather, a 2 to 3 inch "mud mat" consisting of lean concrete should be placed in the footing excavations to protect the bearing soils.

Lateral and uplift loads can be resisted by passive pressure of the soil acting against the side of the individual footings and/or the friction developed between the base of the footing and the underlying soil. For compacted backfill and firm native soils, the passive pressure may be taken as the equivalent to the pressure exerted by a fluid weighing 350 pounds per cubic foot (pcf). A coefficient of friction equal to 0.32 may be used for calculating the frictional resistance at the base of spread footings. These lateral resistance values are based on the assumption that the foundations can withstand horizontal movements on the order of ¼ inch. Spread foundation depths can be increased for uplift resistance as required. A soil unit weight of 100 pcf can be used for backfill atop foundations.

7.0 Pump and Control Buildings Foundation and Pad Subgrade Preparation

Below and extending 3 feet beyond the buildings should be considered the building pads. The test soundings and borings located in the proposed pump and control buildings initially penetrated about 12 inches of organic topsoil material intermixed with fill and debris. We recommend the building pads be undercut by depths of 12 inches to remove the organic topsoil material.

Following the undercut and prior to placement of fill, the top 12 inches of the exposed native subgrade should be compacted to at least 95% ASTM D-698 standard compaction. The processed subgrade should be observed by a GeoCon earthwork technician. Subgrade soils which fail to properly compact or subgrade soils determined to be unsuitable should be undercut as per the recommendation of the project geotechnical engineer of record.

Provided the building pads are prepared as recommended above, foundations can be designed using an allowable soil bearing pressure of 1,500 psf. Following footing excavation, footing bearing soils should be compacted to at least 95% standard density. Proper compaction of footing bearing soils is important to help limit excessive foundation settlement.

8.0 Access Drive Subgrade Preparation

We anticipate that the access drive will include a crushed aggregate topping. Following the removal of organic topsoil and debris from the access drive areas, the exposed subgrade should be compacted to at least 95% ASTM D-698 standard compaction. The processed subgrade should be observed by a GeoCon earthwork technician. Structural fill required to achieve final subgrade elevation should be placed in 8 inch lifts and compacted to at least 98% ASTM D-698 standard density. Prior to placement of the crushed aggregate topping, we recommend that a layer of woven geotextile separation fabric be placed.

9.0 Placement of Structural Fill

Structural fill should be placed in 8 inch lifts and compacted to at least 98% ASTM D-698 standard density. Proper placement of the structural fill layers will be critical in the performance of the foundations. Structural fill should meet the following requirements:

1)Exhibit SM classification according to the Unified Soil Classification System
2)Have a minimum of 15% to maximum of 25% soil fines passing the No. 200 sieve
3)Have a maximum Liquid Limit (LL) of 25%
4)Have a Plasticity Index (PI) less than 3%
5)Have a minimum standard Proctor (ASTM D-698) maximum dry density of 110 pcf

10.0 Unit Costs

Although unsuitable soils were not encountered below the above recommended undercut depth, soils by nature are not uniform and soil variability within the construction areas could be encountered. Also, the amount of rain prior to and during site grading operations can affect the condition and stability of the subgrade soils. Therefore, we recommend that the contract documents establish a unit cost (per cubic yard) for undercutting and replacing unsuitable soils if they are encountered.

11.0 Weather Considerations

Weather conditions at the time of site preparation will directly impact earthmoving activities. Exposed cohesive subgrade soils and structural fill soils can be expected to degrade during wet weather conditions. Additional soil processing and drying efforts are typically required during wet weather conditions.

12.0 Site Drainage

The initial phase of site grading should also include providing positive drainage across the construction area. The "controlled areas" should be maintained in a well-drained condition that will promote the continual removal of surface water that may flow over the construction areas. Saturation of subgrade soils can result in substantial time delays in the construction and significant decreases in soil strengths. During construction (both site grading and building), the contractor should exercise caution during inclement weather to ensure the subgrade and structural fill courses are not degraded by construction traffic.

13.0 Closure and Limitations

This report has been prepared for the exclusive use of The City of Fairhope and their project design professionals for specific application to the above referenced project in accordance with generally accepted current standards of geotechnical engineering practices common to the local area.

The comments and recommendations of this report provide manageable and reasonable solutions to the advancement of the project based on the collected test data and the provided design information. Significant changes in site conditions or project design may result in alternative solutions to the design required or may permit more manageable and economical construction techniques. Should such significant changes occur, we will be available to offer supplemental comment.

The comments and recommendations of this report are based upon our interpretation of the information supplied by the client, the data collected at the two (2) CPT soundings, two (2) hand auger borings and the site conditions observed at the time of testing. A significant amount of interpolation was necessary. Because it is not possible to know or predict detailed conditions hidden beneath the ground surface, our comments and recommendations are presented as opinions and judgements, as opposed to statements of fact.

Improper site preparation, extremes in climatic conditions, significant changes in grade, time, etc., can affect the ground water, surface and subsurface conditions. If conditions are encountered as the construction advances which vary significantly from those described by this report, we should be contacted for additional comment.

Again, we appreciate the opportunity to provide our geotechnical engineering services for this project. To ensure that our recommendations are correctly interpreted and followed during construction, we recommend that the owner retain GeoCon, Inc. to provide construction observation and construction materials testing for the project.

APPENDIX

Figure 1 Date 5/21/2019	NOT TO SCALE **SITE LOCATION MAP** Proposed Side Stream Wastewater Storage Vessels Twin Beech Road Site Fairhope, AL DL 1722-19	***GEOCON, INC.*** 22885 McAuliffe Drive Robertsdale, AL 36567

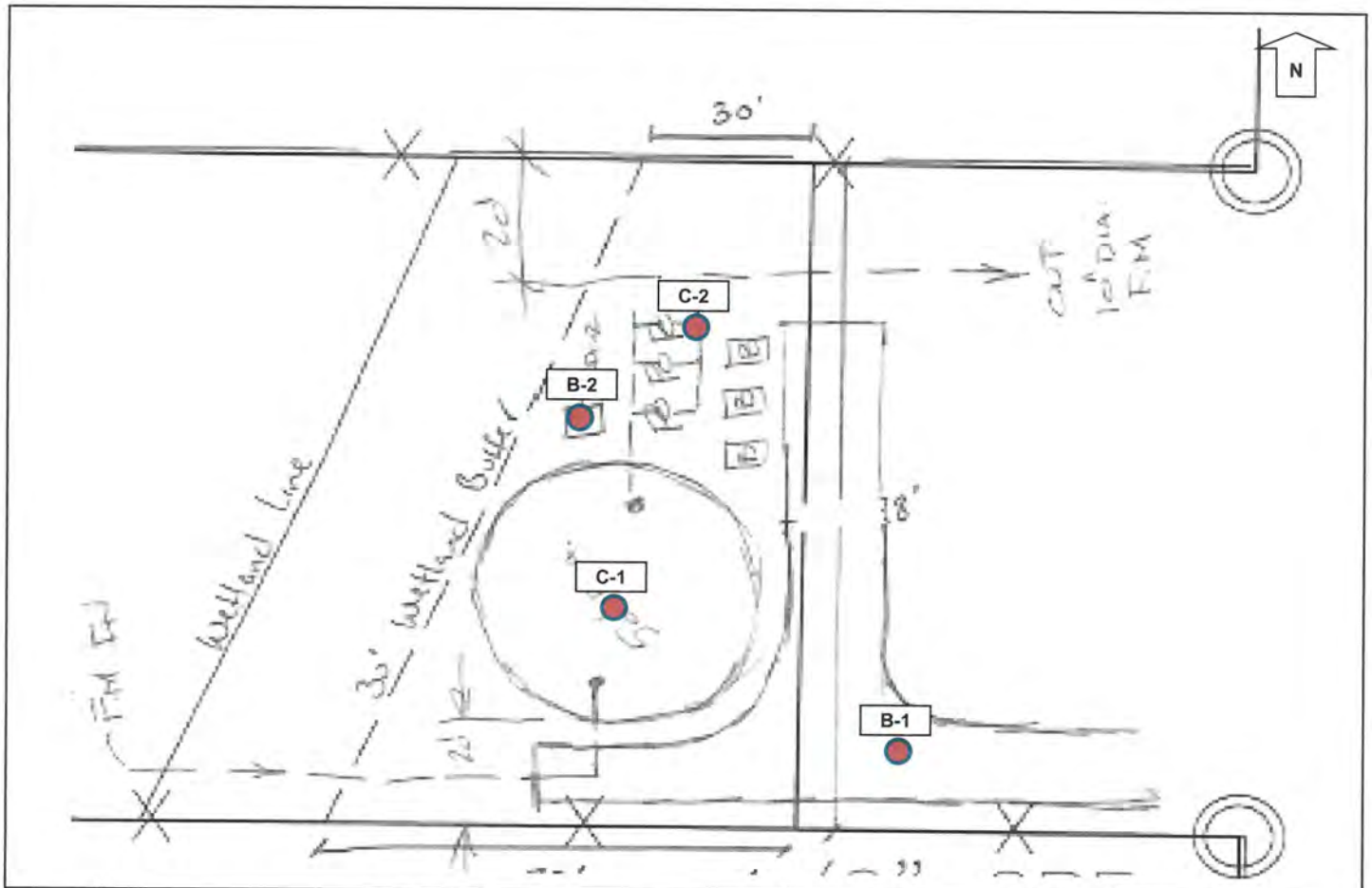


Figure 2 Date 5/21/2019	NOT TO SCALE **TEST LOCATION PLAN** Proposed Side Stream Wastewater Storage Vessels Twin Beech Road Site Fairhope, AL DL 1722-19	***GEOCON, INC.*** 22885 McAuliffe Drive Robertsdale, AL 36567

C-1

CPT Testing Done By: GeoCon
Proposed : Side Stream Wastewater Storage Vessels
CUSTOMER: City of Fairhope
LOCATION: Fairhope, AL
HOLE NUMBER: C-1

JOB NUMBER: DL 1722-19
TEST DATE: 5/20/2019
OPERATOR: Chris Rea

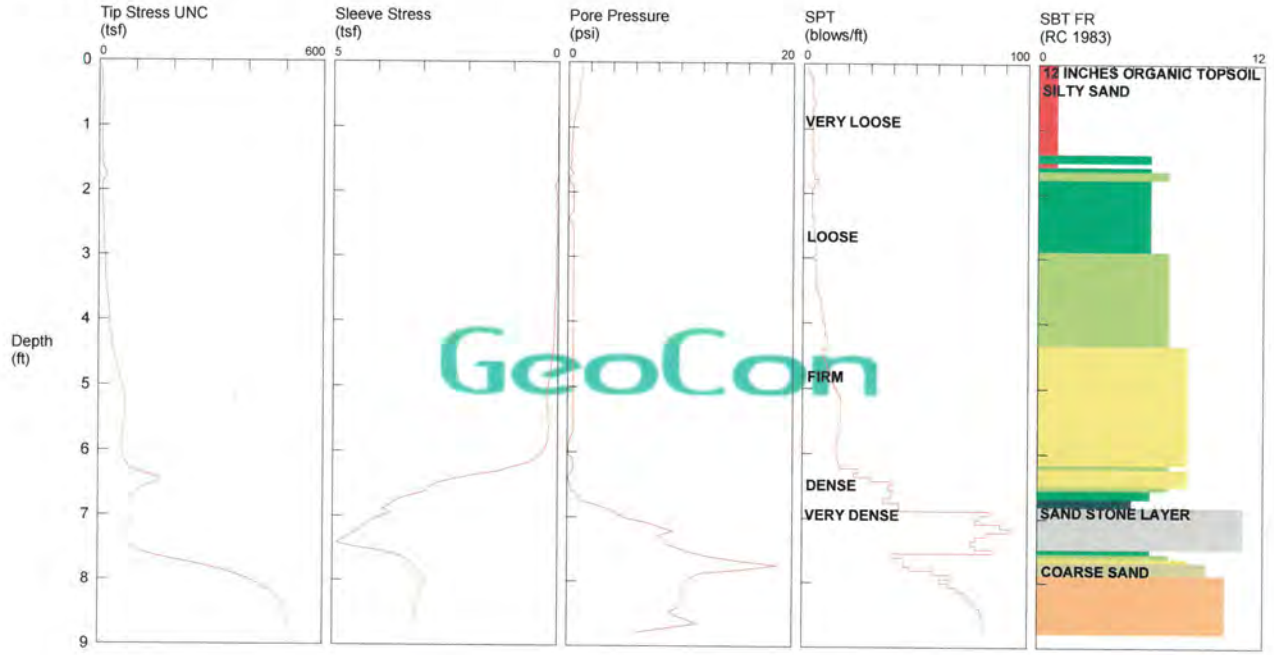
1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983

C-2

CPT Testing Done By: GeoCon
Proposed : Side Stream Wastewater Storage Vessels
CUSTOMER: City of Fairhope
LOCATION: Fairhope, AL
HOLE NUMBER: C-2

JOB NUMBER: DL 1722-19
TEST DATE: 5/20/2019
OPERATOR: Chris Rea



1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983

DRILL HOLE LOG
BORING NO.: B-1

PROJECT: Proposed Side Stream Wastewater Storage Vessels
CLIENT: City of Fairhope
LOCATION: Fairhope, AL
DRILLER: Chris Rea
DRILL RIG:
DEPTH TO WATER> INITIAL ▽ : AT COMPLETION ▽ :

PROJECT NO.: DL 1722-19
DATE: 5/19/2019
ELEVATION:
LOGGED BY: Jason Christian

ELEVATION/ DEPTH	WELL DETAIL	SOIL SYMBOLS, SAMPLERS AND TEST DATA	USCS	Description	NM	DD	STANDARD PENETRATION TEST DEPTH	N	CURVE 10 30 50
0				12 Inches Organic Topsoil					
1			SM	Dark Tan Silty Sand, Very Loose				3	●
2			SM	Orange, Tan Silty Sand					
3									
4				Boring Terminated at 4 ft					
5									
6									
7									

"N Value" Equal to DCP Soundings

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG

BORING NO.: B-2

PROJECT: Proposed Side Stream Wastewater Storage Vessels
CLIENT: City of Fairhope
LOCATION: Fairhope, AL
DRILLER: Chris Rea
DRILL RIG:
DEPTH TO WATER> INITIAL ▽ : AT COMPLETION ▼ :

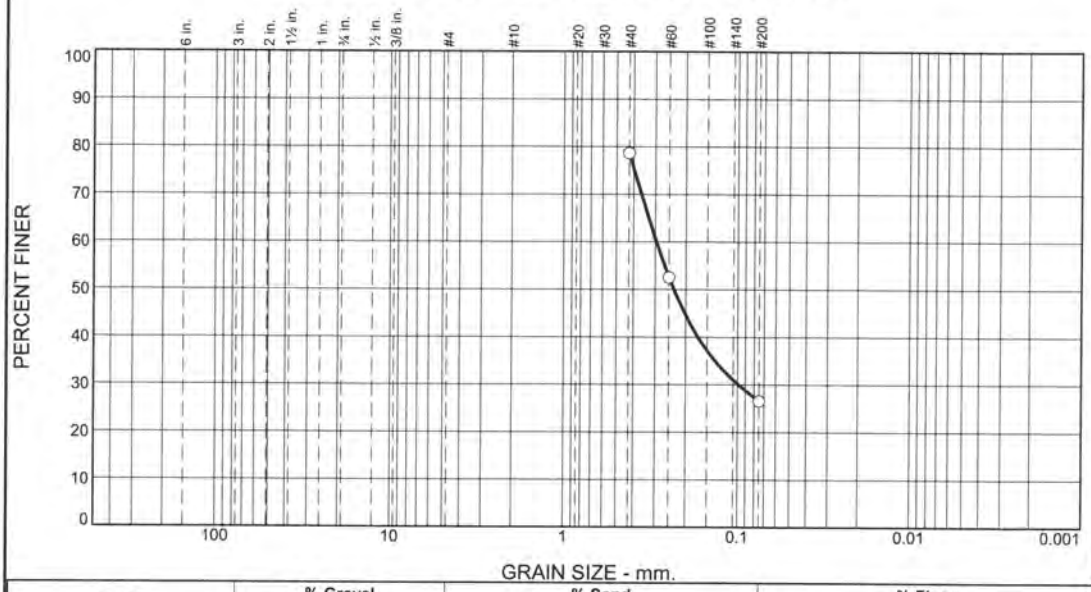
PROJECT NO.: DL 1722-19
DATE: 5/19/2019
ELEVATION:
LOGGED BY: Jason Christian

ELEVATION/ DEPTH	WELL DETAIL	SOIL SYMBOLS, SAMPLERS AND TEST DATA	USCS	Description	NM	DD	STANDARD PENETRATION TEST DEPTH	N	CURVE 10 30 50
0				12 Inches Organic Topsoil					
1			SM	Tan Silty Sand, Very Loose				3	●
2									
3									
4				Boring Terminated at 4 ft					
5									
6									
7									

"N Value" Equal to DCP Soundings

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
					52.1	26.6	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#40	78.7		
#60	52.6		
#200	26.6		

* (no specification provided)

Material Description

Tan Silty Sand

Atterberg Limits (ASTM D 4318)

PL= 13 LL= 14 PI= 1

Classification

USCS (D 2487)= SM AASHTO (M 145)=

Coefficients

D_{90}= D_{85}= D_{60}= 0.2956
D_{50}= 0.2340 D_{30}= 0.0985 D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: _____ **Date Tested:** 5/21/2019

Tested By: CR

Checked By: JJC

Title: _____

Location: Fairhope, AL
Sample Number: C-2 **Depth:** 2 ft

Date Sampled:

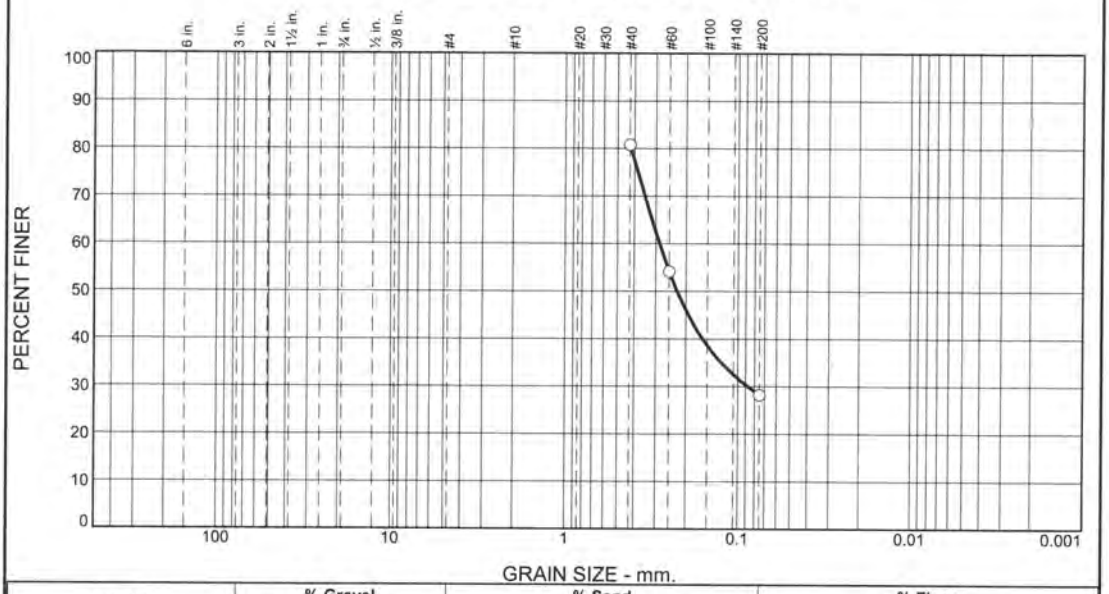
GeoCon

Robertsdale, Alabama

Client: City of Fairhope
Project: Proposed Side Stream Wastewater Storage Vessels

Project No: DL 1722-19 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
					52.6	28.2	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#40	80.8		
#60	54.1		
#200	28.2		

* (no specification provided)

Material Description

Dark Tan Silty Sand

Atterberg Limits (ASTM D 4318)

PL= 13 LL= 13 PI= 0

Classification

USCS (D 2487)= SM AASHTO (M 145)=

Coefficients

D_{90}= D_{85}= D_{60}= 0.2852
D_{50}= 0.2247 D_{30}= 0.0872 D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: **Date Tested:** 5/21/2019

Tested By: CR

Checked By: JJC

Title:

Location: Fairhope, AL
Sample Number: B-1 **Depth:** 1.5 ft **Date Sampled:**

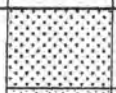
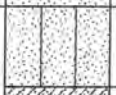
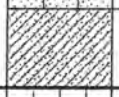
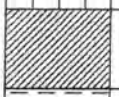
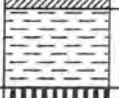
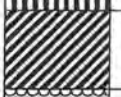
GeoCon

Robertsdale, Alabama

Client: City of Fairhope
Project: Proposed Side Stream Wastewater Storage Vessels

Project No: DL 1722-19 **Figure**

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

Important Information about Your

Geotechnical Engineering Report

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

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply the report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

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

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

Rely, on Your ASFE-Member Geotechncial Engineer for Additional Assistance

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

ASFE
THE BEST PEOPLE ON EARTH

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

IIGER06085.0MRP

TERMS AND CONDITIONS

SERVICES TO BE PROVIDED. GeoCon Engineering & Material Testing, Inc. (hereinafter GeoCon) is an independent consultant and agrees to provide Client, for its sole benefit and exclusive use, consulting services set forth in our proposal.

PAYMENT TERMS. Client agrees to pay our invoice upon receipt. If payment is not received within 30 days from the invoice date, Client agrees to pay a service charge on the past due amount at a rate of 1.5% per month, and GeoCon reserves the right to suspend all work until payment is received. No deduction shall be made from our invoice on account of liquidated damages or other sums withheld from payments to contractors or others.

TERMINATION. Either party may terminate this Agreement without cause upon 20 days advance notice in writing. In the event Client requests termination prior to completion of the proposed services, Client agrees to pay GeoCon for all costs incurred plus reasonable charges associated with termination of the work.

PROFESSIONAL LIABILITY. Notwithstanding any other provision of this Agreement, the Engineer's and GeoCon's total liability to the Owner for any loss or damages from claims arising out of or in connection with this Agreement from any cause including the Engineer's strict liability, breach of contract, or professional negligence, errors and omissions (whether claimed in tort, contract, strict liability, nuisance, by statute or otherwise) shall not exceed the lesser of the total contract price of this Agreement or the proceeds paid under Engineer's liability insurance in effect at the time such claims are made. The Owner hereby releases the Engineer from any liability exceeding such amount. In no event shall either party to this Agreement be liable to the other for special, indirect, incidental or consequential damages, whether or not such damages were foreseeable at the time of the commencement of the work under this Agreement.

SITE OPERATIONS. Client will arrange for right-of-entry to all applicable properties for the purpose of performing studies, tests and evaluations pursuant to the agreed services. Client represents that it possesses necessary permits and licenses required for its activities at the site.

OWNERSHIP AND USE OF PROJECT DOCUMENTS. All documents are instruments of service in respect to the Services, and Engineer shall retain an ownership and proprietary property interest therein (including the right of reuse at the discretion of the Engineer) whether or not the Services are completed. Client may make and retain copies of documents for information and reference in connection with the services by Client. Such documents are not intended or represented to be suitable for reuse by Client or others on extensions of the services or on any other project. Any such reuse or modification without written verification or adaptation by Engineer, as appropriate for the spedfic purpose intended, will be at Client's sole risk and without liability or legal exposure to Engineer or to Engineer's consultants. Client shall indemnify and hold harmless Engineer and Engineer's consultants from all claims, damages, and expenses including attorneys' fees arising out of or resulting therefrom.

ADDITIONAL SERVICES OF CONSULTANT. If authorized in writing by the Client, GeoCon shall furnish additional services that are not considered as an integral part of the Scope of Services outlined in the Proposal Acceptance Sheet. Under this Agreement, all costs for additional services will be negotiated as to activities and compensation. In addition, it is possible that unforeseen conditions may be encountered that could substantially alter the original scope of services. If this occurs, GeoCon will promptly notify and consult with Client and any additional services will be negotiated.

ASSIGNABI LITY, GeoCon shall not assign any interest on this Agreement, and shall not transfer any interest in the same (whether by assignment or novation), without the prior written consent of the Client; provided, however, that claims for money by GeoCon against Client under this Agreement may be assigned to a bank, trust company, or other financial institution without such approval. Written notice of any such assignment or transfer shall be promptly furnished to the Client.

SERVICES TO BE CONFIDENTIAL. All services, including opinions, designs, drawings, plans, specifications, reports and other services and information, to be furnished by GeoCon under this Agreement are confidential and shall not be divulged, in whole or in part, to any person, other than to duly authorized representatives of the client, without prior written approval of the Client, except by testimony under oath in a judicial proceeding or as otherwise required by law. GeoCon shall take all necessary steps to ensure that no member of its organization divulges any such information except as may be required by law.

CLAIMS. The parties agree to attempt to resolve any dispute without resort to litigation. However, in the event a claim is made that results in litigation, and the claimant does not prevail at trial, then the claimant shall pay all costs incurred in defending the claim, including reasonable attorney's fees. The claim will be considered proven if the judgment obtained and retained through any applicable appeal is at least ten percent greater than the sum offered to resolve the matter prior to the commencement of trial.

SEVERABILITY. It is understood and agreed by the parties hereto, that if any part, term or provision of this Agreement is held by any court of competent jurisdiction to be illegal or in conflict with any applicable law, the validity of the remaining portion or portions of this Agreement shall not be affected and the rights and obligations of the parties shall be construed and enforced as if the Agreement did not contain the particular part, term or provision held to be invalid.

SURVIVAL. All obligations arising prior to the termination of this Agreement and all provisions of this Agreement allocating responsibility or liability between Client and GEOCON shall survive the completion of the services and the termination of this Agreement.

INTEGRATION. This Agreement, the attached documents and those incorporated herein constitute the entire Agreement between the parties and cannot be changed except by a written instrument signed by both parties.

GOVERNING LAW. This Agreement shall be governed in all respects by the laws of the State of Alabama and venue shall be in Baldwin County, Alabama.

GeoCon
Engineering & Materials Testing, Inc.

Report of Geotechnical Exploration

Proposed Side Stream Wastewater Storage Vessel
Woodlands Site
Fairhope, Alabama

GeoCon Project No. DL 1721-19

Prepared For:

City of Fairhope Public Utilities
Mr. Richard Peterson, P.E.
P. O. Drawer 429
Fairhope, Alabama 36533

Date: June 14, 2019

Prepared By:
GeoCon Engineering & Materials Testing, Inc.
22885 McAuliffe Drive
Robertsdale, Alabama 36567

GeoCon
Engineering & Materials Testing, Inc.

June 14, 2019

The City of Fairhope Public Utilities
P.O. Drawer 429
Fairhope, AL 36533

Attn: Mr. Richard Peterson, P.E.

RE: **Report of Geotechnical Exploration**
Proposed Side Stream Wastewater Storage Vessel
Woodlands Site
Fairhope, Alabama
GeoCon Project No. DL 1721-19

Dear Mr. Peterson:

GeoCon Engineering & Materials Testing, Inc. is pleased to submit this report of geotechnical exploration for the above referenced project. Included in this report is a summary of our understanding of the project, results of the field exploration, and our recommendations for site preparation and foundation design. This testing has been performed in general accordance with our signed proposal.

Enclosed please find our report with our evaluations and recommendations followed by an Appendix which includes a Site Location Map, Test Location Plan, graphical logs of the soundings and borings, laboratory data sheets, a Unified Soils Classification Chart, important notes about your Geotechnical Report and the Terms & Conditions that govern our work.

We appreciate the opportunity to have provided you with our geotechnical engineering services. If you have any questions concerning this report, or if we can be of any further assistance, please contact our office.

Sincerely,

GeoCon, Inc.

ALABAMA LICENSED No. 31164 PROFESSIONAL ENGINEER JASON JAMES CHRISTIAN 6/14/19

Jason J. Christian, P.E.
Geotechnical Engineer

22885 McAuliffe Drive Robertsdale, Alabama 36567
Phone (251) 947-1035

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1.0 Project Description

The project subject to this report is the construction of a new Side Stream Wastewater Storage Vessel at the Woodlands site in Fairhope, Alabama. Specifically, the subject site is located on the east side of North Greeno Road, just north of Woodland Drive. The site is shown on the attached Site Location Map (Figure 1).

The provided information indicated that the project will include a ground storage tank that will exhibit a reservoir height of 12 feet with a diameter of 50 to 60 feet. We understand that the tank bottom will be at or close to the existing ground elevation. We understand that the tank shell will either be welded steel supported on a typical ringwall foundation or a concrete tank with an 8 inch thick concrete slab supported on perimeter footings and column footings to support roof loads. We also understand that the tank will exhibit loads of about 1,000 psf. The project also includes a pump building, a control building and an access driveway.

> Note: If our understanding of the above project information differs from the actual project plans and specifications or if revisions to the project plans are made after this report, we should be contacted for analysis and comment as needed.

2.0 Subsurface Exploration

Soil conditions were investigated by pushing one (1) Cone Penetration Test (CPT) sounding to a depth of about 32 feet in the proposed tank area, one (1) CPT sounding to a depth of about 12 feet in the proposed pump building area, one (1) hand auger boring to a depth of about 4 feet in the proposed control building area and one (1) hand auger boring to a depth of about 4 feet in the proposed access drive area. The locations of each test sounding and boring are shown on the attached Test Location Plan (Figure 2).

CPT soundings were performed in accordance with ASTM D-5778 using a Vertek S4 electronic CPT rig. CPT testing includes pushing an electronic cone on a series of rods into the ground at a constant rate. The electronic cone collects continuous measurements of the resistance to penetration of the cone tip and side friction sleeve. Correlations between Cone Resistance values and Standard Penetration Test (SPT) "N" values were performed using methods developed by Robertson, Campanella and Wightman. The CPT logs attached in the appendix shows the cone tip friction, sleeve friction, pore pressure, friction ratio, correlated "N" value and the soil behavior type (SBT).

At each test location, samples were collected of the soils encountered in the upper 4 feet of the soil-profile. These samples were visually classified by GeoCon, Inc. personnel, placed in containers and transported to our laboratory for further testing and for further review by our engineering staff. Samples will be retained at our lab for a period of 60 days after the date of this report. If no written instructions are given to GeoCon, we will discard the samples after 60 days.

3.0 Soil Conditions Encountered

The test borings and soundings initially encountered about 12 inches of organic topsoil material. Below the topsoil material, the soundings and borings generally penetrated sand soils with varying amounts of silt to sounding and boring termination at depths of about 4 to 32 feet below the existing ground surface.

Based on the cone tip friction values and correlated Standard Penetration Test (SPT) "N" values, the sand soils penetrated across the soil profile were generally in a loose to very firm condition. The condition and consistency of the soils penetrated are described in more detail on the Sounding and Boring Logs attached in the Appendix of this report.

4.0 Ground Water Conditions Encountered

"Perched" ground water was encountered at the sounding and boring locations at depths of about 3 to 6½ feet at the time of the field exploration. Boring B-2 did not encounter ground water within the depth tested of about 4 feet. Ground water conditions are subject to seasonal variations and are expected to fluctuate in response to local variations in precipitation and drainage conditions. Considering the relatively short time frame of the field exploration, ground water levels may not have had sufficient time to stabilize. Therefore, actual depths to ground water may vary. Based on the soil conditions at the time of the field exploration, we do not anticipate that natural ground water will affect shallow foundation construction.

5.0 Laboratory Classification Testing

The soil samples taken from the borings were visually classified in general accordance with the guidelines of ASTM D-2487 Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System). The quantity and type of laboratory tests performed for this geotechnical study were determined and adjusted by GeoCon engineering personnel based on the uniformity and characteristics of the subsurface soil conditions encountered and our experience and knowledge of local soil conditions.

Laboratory soil tests were performed to aid in the classification of the soils and to help in the evaluation of engineering characteristics of the soils. Representative soil samples recovered from the soil test borings were selected for grain-size analysis (4 tests) and Atterberg limit determination (4 tests). The laboratory data is shown on the attached lab data sheets.

6.0 Tank Foundation and Pad Subgrade Preparation

Below and extending 5 feet beyond the tank should be considered the tank pad. We recommend that the tank pad be undercut by a depth at least 12 inches below the existing ground surface. We anticipate that the final subgrade elevation of the tank pad will be close to existing elevations. We also anticipate that the tank manufacturer will require a layer of sand fill along with a 4 to 6 inch layer of crushed aggregate base material below the tank. Depending on final subgrade elevations, additional undercut may have to be performed to allow for placement of the required build-up below the tank.

Following the undercut and prior to the placement of fill, the exposed subgrade should be observed by a field representative of the Geotechnical Engineer of Record (GeoCon). At this time, hand probes should be used to help evaluate the stability of the exposed subgrade soils. Subgrade soils that are determined to be unsuitable or unstable should be further undercut as per the recommendations of the project geotechnical consultant. The resulting excavations should be replaced with compacted structural fill. Placement of structural fill should meet the requirements of Section 9.0 of this report.

Provided the undercut is performed as outlined above, foundations can be designed using an allowable soil bearing pressure of 1,500 psf. Following footing excavation, footing bearing soils should be compacted to at least 95% standard density. Proper compaction of footing bearing soils is important to help limit excessive foundation settlement.

GeoCon, Inc. should be called to observe and perform compaction testing on the footing excavations prior to the placement of reinforcing steel (rebar) and concrete to determine if the bearing soils are satisfactory for support of the foundations. Excessively loose footing bearing soils will require re-compaction or stabilization as per the recommendations of GeoCon's geotechnical engineer.

Foundation concrete should not be placed on soils that have been disturbed by ground water seepage or rain water. If the bearing soils are softened by ground water intrusion or exposure, the softened soils must be removed from the foundation excavation bottom prior to placement of concrete.

Soils exposed in the bottom of all satisfactory excavations should be protected against disturbance, excessive drying, freezing or rain. Surface runoff should be drained away from excavations and not allowed to pond. The saturation of soils at the footing bearing elevation level can reduce their strength and load carrying ability. Concrete for foundations should be placed as soon after completion of the excavations as possible. If a delay in concrete placement is expected or if exposed to wet weather, a 2 to 3 inch "mud mat" consisting of lean concrete should be placed in the footing excavations to protect the bearing soils.

Lateral and uplift loads can be resisted by passive pressure of the soil acting against the side of the individual footings and/or the friction developed between the base of the footing and the underlying soil. For compacted backfill and firm native soils, the passive pressure may be taken as the equivalent to the pressure exerted by a fluid weighing 350 pounds per cubic foot (pcf). A coefficient of friction equal to 0.32 may be used for calculating the frictional resistance at the base of spread footings. These lateral resistance values are based on the assumption that the foundations can withstand horizontal movements on the order of ¼ inch. Spread foundation depths can be increased for uplift resistance as required. A soil unit weight of 100 pcf can be used for backfill atop foundations.

7.0 Pump and Control Buildings Foundation and Pad Subgrade Preparation

Below and extending 3 feet beyond the buildings should be considered the building pads. The test soundings and borings located in the proposed pump and control buildings initially penetrated about 12 inches of organic topsoil material. We recommend the building pads be undercut by depths of 12 inches to remove the organic topsoil and debris. Additional debris exposed during the undercut (if any) should be removed prior to placement of structural fill.

Following the undercut and prior to placement of fill, the top 12 inches of the exposed native subgrade should be compacted to at least 95% ASTM D-698 standard compaction. The processed subgrade should be observed by a GeoCon earthwork technician. Subgrade soils which fail to properly compact or subgrade soils determined to be unsuitable should be undercut as per the recommendation of the project geotechnical engineer of record.

Provided the building pads are prepared as recommended above, foundations can be designed using an allowable soil bearing pressure of 1,500 psf. Following footing excavation, footing bearing soils should be compacted to at least 95% standard density. Proper compaction of footing bearing soils is important to help limit excessive foundation settlement.

8.0 Access Drive Subgrade Preparation

We anticipate that the access drive will include a crushed aggregate topping. Following the removal of organic topsoil and debris from the access drive areas, the exposed subgrade should be compacted to at least 95% ASTM D-698 standard compaction. The processed subgrade should be observed by a GeoCon earthwork technician. Structural fill required to achieve final subgrade elevation should be placed in 8 inch lifts and compacted to at least 98% ASTM D-698 standard density. Prior to placement of the crushed aggregate topping, we recommend that a layer of woven geotextile separation fabric be placed.

9.0 Placement of Structural Fill

Structural fill should be placed in 8 inch lifts and compacted to at least 98% ASTM D-698 standard density. Proper placement of the structural fill layers will be critical in the performance of the foundations. Structural fill should meet the following requirements:

1) Exhibit SM classification according to the Unified Soil Classification System
2) Have a minimum of 15% to maximum of 25% soil fines passing the No. 200 sieve
3) Have a maximum Liquid Limit (LL) of 25%
4) Have a Plasticity Index (PI) less than 3%
5) Have a minimum standard Proctor (ASTM D-698) maximum dry density of 110 pcf

10.0 Unit Costs

Although unsuitable soils were not encountered at the test locations and extensive undercutting is not anticipated, soils by nature are not uniform and soil variability within the construction areas could be encountered. Also, the amount of rain prior to and during site grading operations can affect the condition and stability of the subgrade soils. Therefore, we recommend that the contract documents establish a unit cost (per cubic yard) for undercutting and replacing unsuitable soils if they are encountered.

11.0 Weather Considerations

Weather conditions at the time of site preparation will directly impact earthmoving activities. Exposed cohesive subgrade soils and structural fill soils can be expected to degrade during wet weather conditions. Additional soil processing and drying efforts are typically required during wet weather conditions.

12.0 Site Drainage

The initial phase of site grading should also include providing positive drainage across the construction area. The "controlled areas" should be maintained in a well-drained condition that will promote the continual removal of surface water that may flow over the construction areas. Saturation of subgrade soils can result in substantial time delays in the construction and significant decreases in soil strengths. During construction (both site grading and building), the contractor should exercise caution during inclement weather to ensure the subgrade and structural fill courses are not degraded by construction traffic.

13.0 Closure and Limitations

This report has been prepared for the exclusive use of The City of Fairhope and their project design professionals for specific application to the above referenced project in accordance with generally accepted current standards of geotechnical engineering practices common to the local area.

The comments and recommendations of this report provide manageable and reasonable solutions to the advancement of the project based on the collected test data and the provided design information. Significant changes in site conditions or project design may result in alternative solutions to the design required or may permit more manageable and economical construction techniques. Should such significant changes occur, we will be available to offer supplemental comment.

The comments and recommendations of this report are based upon our interpretation of the information supplied by the client, the data collected at the two (2) CPT soundings, two (2) hand auger borings and the site conditions observed at the time of testing. A significant amount of interpolation was necessary. Because it is not possible to know or predict detailed conditions hidden beneath the ground surface, our comments and recommendations are presented as opinions and judgements, as opposed to statements of fact.

Improper site preparation, extremes in climatic conditions, significant changes in grade, time, etc., can affect the ground water, surface and subsurface conditions. If conditions are encountered as the construction advances which vary significantly from those described by this report, we should be contacted for additional comment.

Again, we appreciate the opportunity to provide our geotechnical engineering services for this project. To ensure that our recommendations are correctly interpreted and followed during construction, we recommend that the owner retain GeoCon, Inc. to provide construction observation and construction materials testing for the project.

APPENDIX

Figure 1 Date 5/24/2019	NOT TO SCALE **SITE LOCATION MAP** Proposed Side Stream Wastewater Storage Vessels Woodlands Site Fairhope, AL DL 1721-19	***GEOCON, INC.*** 22885 McAuliffe Drive Robertsdale, AL 36567

Figure 2 Date 5/34/2019	NOT TO SCALE **TEST LOCATION PLAN** Proposed Side Stream Wastewater Storage Vessels Woodlands Site Fairhope, AL DL 1721-19	***GEOCON, INC.*** 22885 McAuliffe Drive Robertsdale, AL 36567

C-1

CPT Testing Done By: GeoCon
Proposed : Side Stream Wastewater Storage Vessels
CUSTOMER: City of Fairhope
LOCATION: Fairhope, AL
HOLE NUMBER: C-1

JOB NUMBER: DL 1721-19
TEST DATE: 5/24/2019
OPERATOR: Chris Rea

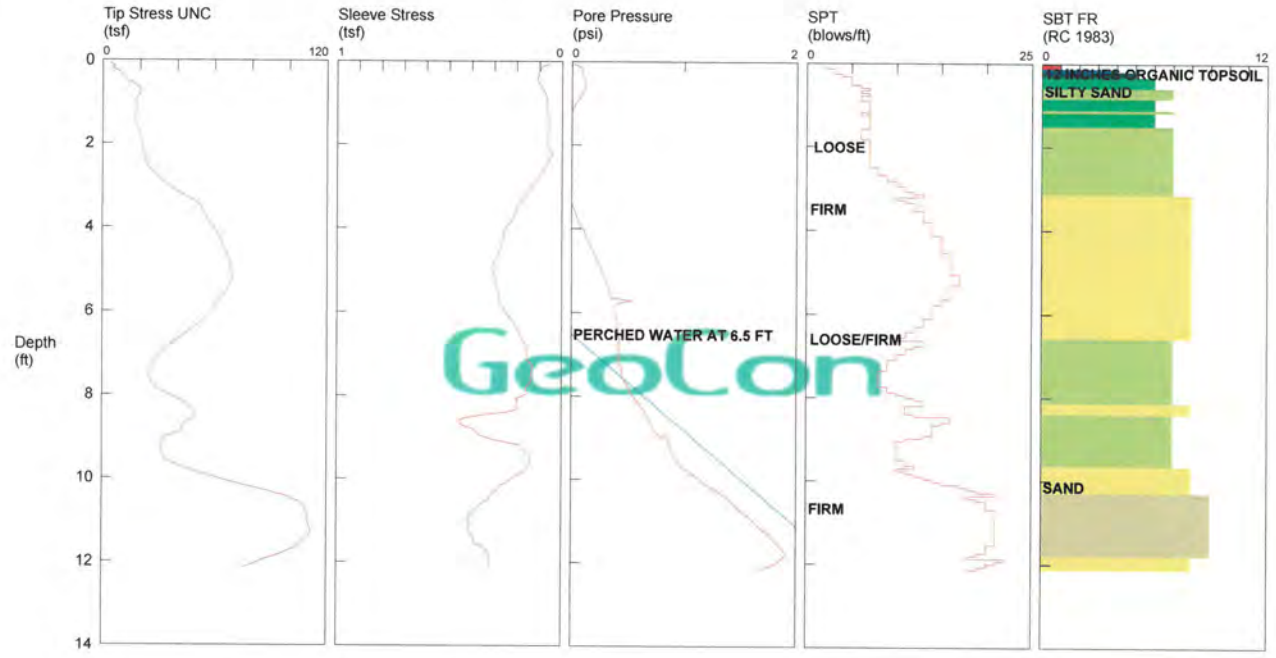
1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983

C-2

CPT Testing Done By: GeoCon
Proposed : Side Stream Wastewater Storage Vessels
CUSTOMER: City of Fairhope
LOCATION: Fairhope, AL
HOLE NUMBER: C-2

JOB NUMBER: DL 1721-19
TEST DATE: 5/24/2019
OPERATOR: Chris Rea



1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983

DRILL HOLE LOG
BORING NO.: B-1

PROJECT: Proposed Side Stream Wastewater Storage Vessels
CLIENT: City of Fairhope
LOCATION: Fairhope, AL
DRILLER: Chris Rea
DRILL RIG:
DEPTH TO WATER> INITIAL : 3 AT COMPLETION :

PROJECT NO.: DL 1721-19
DATE: 5/24/2019
ELEVATION:
LOGGED BY: Jason Christian

ELEVATION/ DEPTH	WELL DETAIL	SOIL SYMBOLS, SAMPLERS AND TEST DATA	USCS	Description	NM	DD	STANDARD PENETRATION TEST DEPTH	N	CURVE 10 30 50
0				12 Inches Organic Topsoil					
1			SM	Gray Silty Sand, Very Loose				3	●
2			SM	Light Gray Silty Sand					
3				Perched Water at 3 ft					
4				Boring Terminated at 4 ft					
5									
6									
7									

"N Value" Equal to DCP Soundings

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG
BORING NO.: B-2

PROJECT: Proposed Side Stream Wastewater Storage Vessels
CLIENT: City of Fairhope
LOCATION: Fairhope, AL
DRILLER: Chris Rea
DRILL RIG:
DEPTH TO WATER> INITIAL ▽ : AT COMPLETION ▼ :

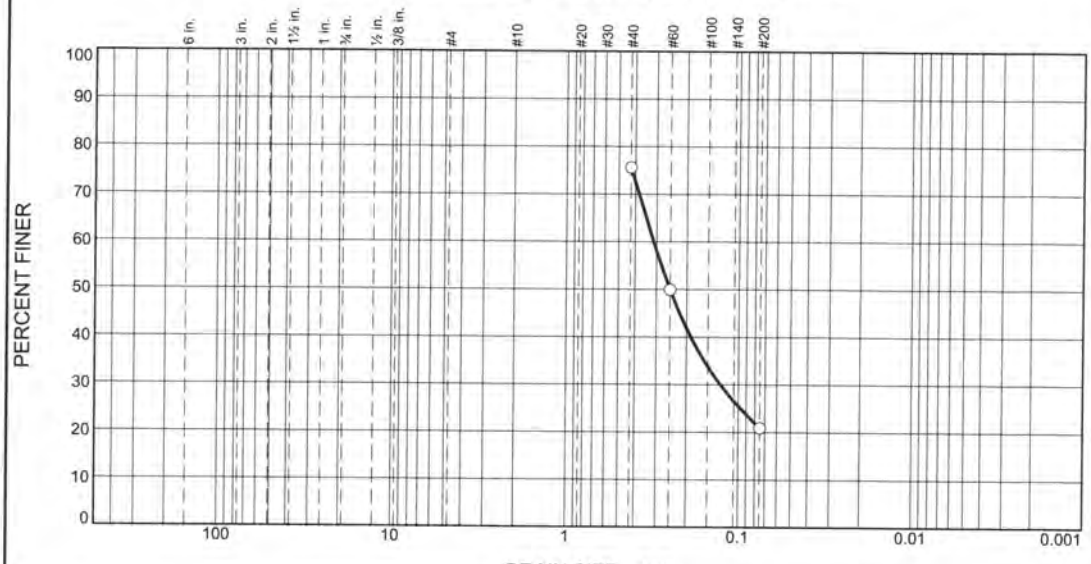
PROJECT NO.: DL 1721-19
DATE: 5/24/2019
ELEVATION:
LOGGED BY: Jason Christian

ELEVATION/ DEPTH	WELL DETAIL	SOIL SYMBOLS, SAMPLERS AND TEST DATA	USCS	Description	NM	DD	STANDARD PENETRATION TEST DEPTH	N	CURVE 10 30 50
0				12 Inches Organic Topsoil					
1			SM	Tan Silty Sand, Loose				4	●
2									
3									
4				Boring Terminated at 4 ft					
5									
6									
7									

"N Value" Equal to DCP Soundings

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
					54.8	20.9	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#40	75.7		
#60	49.9		
#200	20.9		

* (no specification provided)

Material Description

Dark Gray Silty Sand

Atterberg Limits (ASTM D 4318)

PL= 14 LL= 13 PI= 1

Classification

USCS (D 2487)= SM AASHTO (M 145)=

Coefficients

D_{90}= D_{85}= D_{60}= 0.3125
D_{50}= 0.2504 D_{30}= 0.1269 D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: Date Tested: 6/12/2019

Tested By: CR

Checked By: JJC

Title:

Location: Fairhope, AL
Sample Number: C-1 **Depth:** 10-12 ft

Date Sampled:

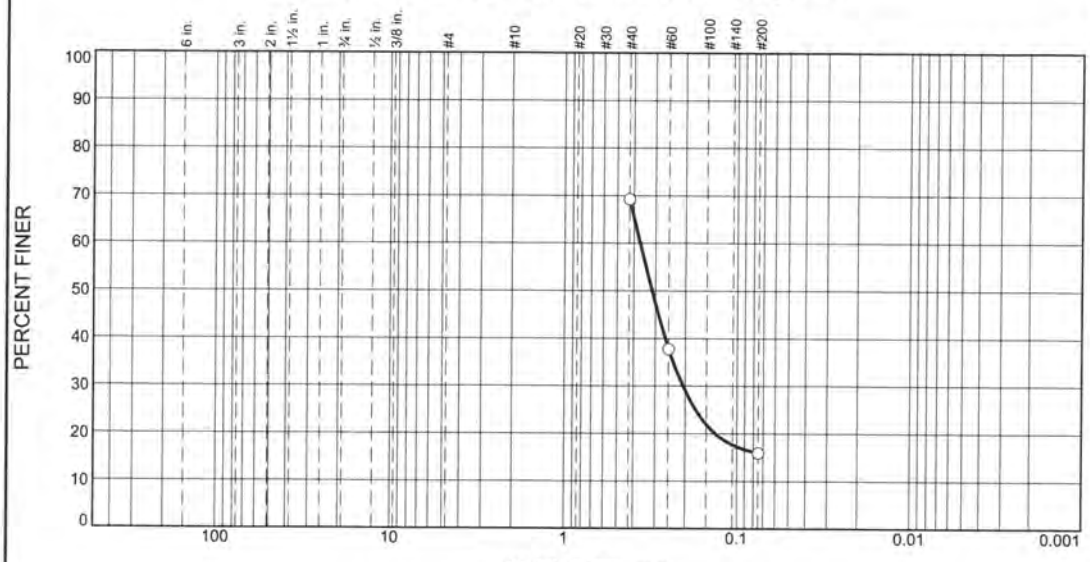
GeoCon

Robertsdale, Alabama

Client: City of Fairhope
Project: Proposed Side Stream Wastewater Storage Vessels

Project No: DL 1721-19 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
					53.3	16.0	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#40	69.3		
#60	37.8		
#200	16.0		

* (no specification provided)

Material Description

Tan Silty Sand

Atterberg Limits (ASTM D 4318)

PL= 13 LL= 13 PI= 0

Classification

USCS (D 2487)= SM AASHTO (M 145)=

Coefficients

D_{90}= D_{85}= D_{60}= 0.3687
D_{50}= 0.3139 D_{30}= 0.2060 D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: **Date Tested:** 5/28/2019

Tested By: CR

Checked By: JJC

Title:

Location: Fairhope, AL
Sample Number: C-2 **Depth:** 2 ft

Date Sampled:

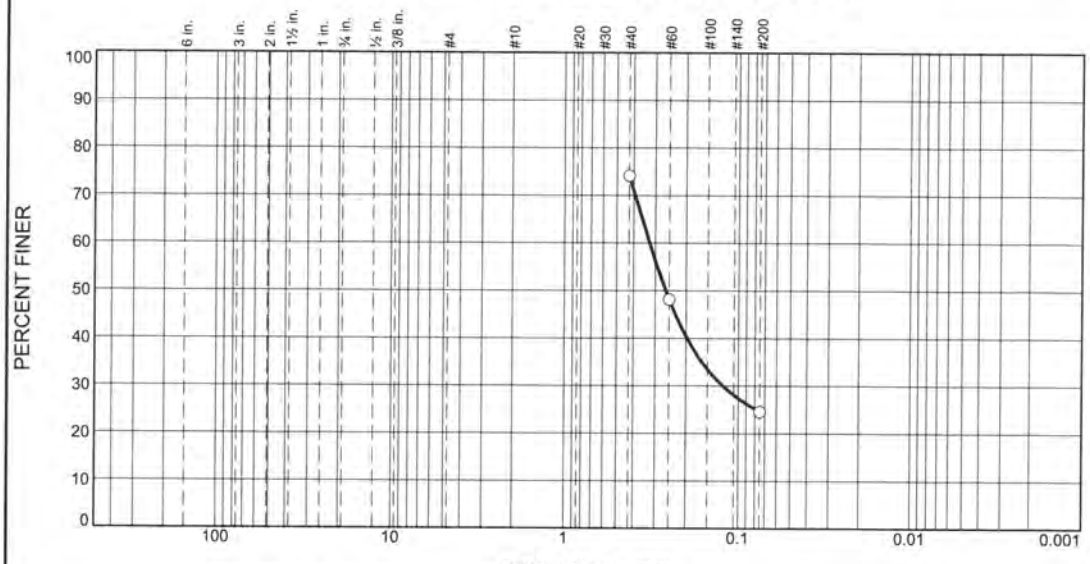
GeoCon

Robertsdale, Alabama

Client: City of Fairhope
Project: Proposed Side Stream Wastewater Storage Vessels

Project No: DL 1721-19 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
					49.6	24.6	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#40	74.2		
#60	48.2		
#200	24.6		

* (no specification provided)

Material Description

Light Gray Silty Sand

Atterberg Limits (ASTM D 4318)

PL= 13 LL= 15 PI= 2

Classification

USCS (D 2487)= SM AASHTO (M 145)=

Coefficients

D_{90}= D_{85}= D_{60}= 0.3242
D_{50}= 0.2614 D_{30}= 0.1224 D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: **Date Tested:** 5/28/2019

Tested By: CR

Checked By: JJC

Title:

Location: Fairhope, AL
Sample Number: B-1 **Depth:** 2.5 ft **Date Sampled:**

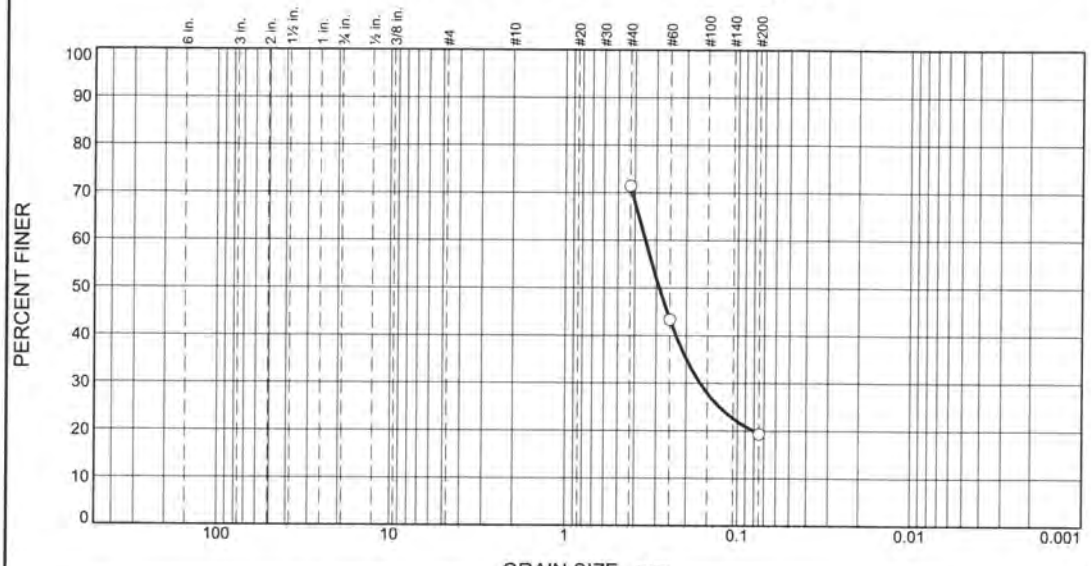
GeoCon

Robertsdale, Alabama

Client: City of Fairhope
Project: Proposed Side Stream Wastewater Storage Vessels

Project No: DL 1721-19 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
					52.2	19.2	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#40	71.5		
#60	43.4		
#200	19.3		

* (no specification provided)

Material Description

Tan Silty Sand

Atterberg Limits (ASTM D 4318)

PL= 13 LL= 14 PI= 1

Classification

USCS (D 2487)= SM AASHTO (M 145)=

Coefficients

D_{90}= D_{85}= D_{60}= 0.3480
D_{50}= 0.2883 D_{30}= 0.1656 D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: Date Tested: 5/28/2019

Tested By: CR

Checked By: JJC

Title:

Location: Fairhope, AL
Sample Number: B-2 **Depth:** 1.5 ft

Date Sampled:

GeoCon

Robertsdale, Alabama

Client: City of Fairhope
Project: Proposed Side Stream Wastewater Storage Vessels

Project No: DL 1721-19 **Figure**

SOIL CLASSIFICATION CHART

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

NOTE: DUAL SYMBOLS ARE USED TO INDICATE BORDERLINE SOIL CLASSIFICATIONS

Important Information about Your

Geotechnical Engineering Report

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

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply the report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

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

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final*, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

Rely, on Your ASFE-Member Geotechncial Engineer for Additional Assistance

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

ASFE
THE BEST PEOPLE ON EARTH

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

IIGER06085.0MRP

TERMS AND CONDITIONS

SERVICES TO BE PROVIDED. GeoCon Engineering & Material Testing, Inc. (hereinafter GeoCon) is an independent consultant and agrees to provide Client, for its sole benefit and exclusive use, consulting services set forth in our proposal.

PAYMENT TERMS. Client agrees to pay our invoice upon receipt. If payment is not received within 30 days from the invoice date, Client agrees to pay a service charge on the past due amount at a rate of 1.5% per month, and GeoCon reserves the right to suspend all work until payment is received. No deduction shall be made from our invoice on account of liquidated damages or other sums withheld from payments to contractors or others.

TERMINATION. Either party may terminate this Agreement without cause upon 20 days advance notice in writing. In the event Client requests termination prior to completion of the proposed services, Client agrees to pay GeoCon for all costs incurred plus reasonable charges associated with termination of the work.

PROFESSIONAL LIABILITY. Notwithstanding any other provision of this Agreement, the Engineer's and GeoCon's total liability to the Owner for any loss or damages from claims arising out of or in connection with this Agreement from any cause including the Engineer's strict liability, breach of contract, or professional negligence, errors and omissions (whether claimed in tort, contract, strict liability, nuisance, by statute or otherwise) shall not exceed the lesser of the total contract price of this Agreement or the proceeds paid under Engineer's liability insurance in effect at the time such claims are made. The Owner hereby releases the Engineer from any liability exceeding such amount. In no event shall either party to this Agreement be liable to the other for special, indirect, incidental or consequential damages, whether or not such damages were foreseeable at the time of the commencement of the work under this Agreement.

SITE OPERATIONS. Client will arrange for right-of-entry to all applicable properties for the purpose of performing studies, tests and evaluations pursuant to the agreed services. Client represents that it possesses necessary permits and licenses required for its activities at the site.

OWNERSHIP AND USE OF PROJECT DOCUMENTS. All documents are instruments of service in respect to the Services, and Engineer shall retain an ownership and proprietary property interest therein (including the right of reuse at the discretion of the Engineer) whether or not the Services are completed. Client may make and retain copies of documents for information and reference in connection with the services by Client. Such documents are not intended or represented to be suitable for reuse by Client or others on extensions of the services or on any other project. Any such reuse or modification without written verification or adaptation by Engineer, as appropriate for the spedfic purpose intended, will be at Client's sole risk and without liability or legal exposure to Engineer or to Engineer's consultants. Client shall indemnify and hold harmless Engineer and Engineer's consultants from all claims, damages, and expenses including attorneys' fees arising out of or resulting therefrom.

ADDITIONAL SERVICES OF CONSULTANT. If authorized in writing by the Client, GeoCon shall furnish additional services that are not considered as an integral part of the Scope of Services outlined in the Proposal Acceptance Sheet. Under this Agreement, all costs for additional services will be negotiated as to activities and compensation. In addition, it is possible that unforeseen conditions may be encountered that could substantially alter the original scope of services. If this occurs, GeoCon will promptly notify and consult with Client and any additional services will be negotiated.

ASSIGNABI LITY, GeoCon shall not assign any interest on this Agreement, and shall not transfer any interest in the same (whether by assignment or novation), without the prior written consent of the Client; provided, however, that claims for money by GeoCon against Client under this Agreement may be assigned to a bank, trust company, or other financial institution without such approval. Written notice of any such assignment or transfer shall be promptly furnished to the Client.

SERVICES TO BE CONFIDENTIAL. All services, including opinions, designs, drawings, plans, specifications, reports and other services and information, to be furnished by GeoCon under this Agreement are confidential and shall not be divulged, in whole or in part, to any person, other than to duly authorized representatives of the client, without prior written approval of the Client, except by testimony under oath in a judicial proceeding or as otherwise required by law. GeoCon shall take all necessary steps to ensure that no member of its organization divulges any such information except as may be required by law.

CLAIMS. The parties agree to attempt to resolve any dispute without resort to litigation. However, in the event a claim is made that results in litigation, and the claimant does not prevail at trial, then the claimant shall pay all costs incurred in defending the claim, including reasonable attorney's fees. The claim will be considered proven if the judgment obtained and retained through any applicable appeal is at least ten percent greater than the sum offered to resolve the matter prior to the commencement of trial.

SEVERABILITY. It is understood and agreed by the parties hereto, that if any part, term or provision of this Agreement is held by any court of competent jurisdiction to be illegal or in conflict with any applicable law, the validity of the remaining portion or portions of this Agreement shall not be affected and the rights and obligations of the parties shall be construed and enforced as if the Agreement did not contain the particular part, term or provision held to be invalid.

SURVIVAL. All obligations arising prior to the termination of this Agreement and all provisions of this Agreement allocating responsibility or liability between Client and GEOCON shall survive the completion of the services and the termination of this Agreement.

INTEGRATION. This Agreement, the attached documents and those incorporated herein constitute the entire Agreement between the parties and cannot be changed except by a written instrument signed by both parties.

GOVERNING LAW. This Agreement shall be governed in all respects by the laws of the State of Alabama and venue shall be in Baldwin County, Alabama.

GeoCon
Engineering & Materials Testing, Inc.

Report of Geotechnical Exploration

Proposed Side Stream Wastewater Storage Vessels
Quail Creek Site
Fairhope, Alabama

GeoCon Project No. DL 1720-19

Prepared For:

The City of Fairhope Public Utilities
Mr. Richard Peterson, P.E.
P.O. Drawer 429
Fairhope, Alabama 36533

Date: June 12, 2019

Prepared By:
GeoCon Engineering & Materials Testing, Inc.
22885 McAuliffe Drive
Robertsdale, Alabama 36567

GeoCon
Engineering & Materials Testing, Inc.

June 12, 2019

The City of Fairhope Public Utilities
P.O. Drawer 429
Fairhope, AL 36533

Attn: Mr. Richard Peterson, P.E.

RE: **Report of Geotechnical Exploration**
Proposed Side Stream Wastewater Storage Vessels
Quail Creek Site
Fairhope, Alabama
GeoCon Project No. DL 1720-19

Dear Mr. Peterson:

GeoCon Engineering & Materials Testing, Inc. is pleased to submit this report of geotechnical exploration for the above referenced project. Included in this report is a summary of our understanding of the project, results of the field exploration, and our recommendations for site preparation and foundation design. This testing has been performed in general accordance with our signed proposal.

Enclosed please find our report with our evaluations and recommendations followed by an Appendix which includes a Site Location Map, Test Location Plan, graphical logs of the soundings and borings, laboratory data sheets, a Unified Soils Classification Chart, important notes about your Geotechnical Report and the Terms & Conditions that govern our work.

We appreciate the opportunity to have provided you with our geotechnical engineering services. If you have any questions concerning this report, or if we can be of any further assistance, please contact our office.

Sincerely,

GeoCon, Inc.

Jason J. Christian, P.E.
Geotechnical Engineer

ALABAMA LICENSED No. 31164 PROFESSIONAL ENGINEER JASON JAMES CHRISTIAN 6-12-19

22885 McAuliffe Drive Robertsdale, Alabama 36567
Phone (251) 947-1035

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1.0 Project Description

The project subject to this report is the construction of a new Side Stream Wastewater Storage Vessel at the Quail Creek site in Fairhope, Alabama. Specifically, the subject site is located on the north side of Quail Creek Drive just east of Club Drive. The site is shown on the attached Site Location Map (Figure 1).

The provided information indicated that the project will include a ground storage tank that will exhibit a reservoir height of 12 feet with a diameter of 50 to 60 feet. We understand that the tank bottom will be at or close to the existing ground elevation. We understand that the tank shell will either be welded steel supported on a ringwall foundation or a concrete tank with an 8 inch thick concrete slab supported on perimeter footings and column footings to support roof loads. We also understand that the tank will exhibit loads of about 1,000 psf. The project also includes a pump building, a control building and an access driveway.

> Note: If our understanding of the above project information differs from the actual project plans and specifications or if revisions to the project plans are made after this report, we should be contacted for analysis and comment as needed.

2.0 Subsurface Exploration

Soil conditions were investigated by pushing one (1) Cone Penetration Test (CPT) sounding to a depth of about 30 feet in the proposed tank area, one (1) CPT sounding to a depth of about 12 feet in the proposed pump building area, one (1) hand auger boring to a depth of about 4 feet in the proposed control building area and one (1) hand auger boring to a depth of about 4 feet in the proposed access drive area. The locations of each test sounding and boring are shown on the attached Test Location Plan (Figure 2).

CPT soundings were performed in accordance with ASTM D-5778 using a Vertek S4 electronic CPT rig. CPT testing includes pushing an electronic cone on a series of rods into the ground at a constant rate. The electronic cone collects continuous measurements of the resistance to penetration of the cone tip and side friction sleeve. Correlations between Cone Resistance values and Standard Penetration Test (SPT) "N" values were performed using methods developed by Robertson, Campanella and Wightman. The CPT logs attached in the appendix shows the cone tip friction, sleeve friction, pore pressure, friction ratio, correlated "N" value and the soil behavior type (SBT).

At each test location, samples were collected of the soils encountered in the upper 4 feet of the soil-profile. These samples were visually classified by GeoCon, Inc. personnel, placed in containers and transported to our laboratory for further testing and for further review by our engineering staff. Samples will be retained at our lab for a period of 60 days after the date of this report. If no written instructions are given to GeoCon, we will discard the samples after 60 days.

3.0 Soil Conditions Encountered

The test borings and soundings initially encountered about 6 to 8 inches of organic topsoil material. Boring B-1 encountered about 4 inches of topsoil material followed by about 8 inches of silty sand soils described as "fill" material. Below the topsoil or "fill" material, the soundings and borings encountered silty sand, silty-clayey sand and clayey sand soils to depths of about 2 to 5 feet below the existing ground surface. Below a depth of about 2 to 5 feet, the deeper soundings penetrated sandy clay soils to depths of about 10 to 11 feet, followed by sand soils with varying amounts of silt to sounding termination at depths of 12 to 30 feet below the existing ground surface.

Based on the cone tip friction values and correlated Standard Penetration Test (SPT) "N" values, the soils penetrated in the upper 2 feet of the soil profile were in a very loose to loose condition. The deeper soils penetrated were in a firm to very stiff/dense condition. The condition and consistency of the soils penetrated are described in more detail on the Sounding and Boring Logs attached in the Appendix of this report.

4.0 Ground Water Conditions Encountered

Boring B-2 encountered "perched" ground water at a depth of about 4 feet below the existing ground surface. Ground water was not encountered at the remaining sounding and boring locations for the depths tested at the time of the field exploration. Ground water conditions are subject to seasonal variations and are expected to fluctuate in response to local variations in precipitation and drainage conditions. Considering the relatively short time frame of the field exploration, ground water levels may not have had sufficient time to stabilize. Therefore, actual depths to ground water may vary. Based on the soil conditions at the time of the field exploration, we do not anticipate that natural ground water will affect shallow foundation construction.

5.0 Laboratory Classification Testing

The soil samples taken from the borings were visually classified in general accordance with the guidelines of ASTM D-2487 Standard Classification of Soils for Engineering Purposes (Unified Soil Classification System). The quantity and type of laboratory tests performed for this geotechnical study were determined and adjusted by GeoCon engineering personnel based on the uniformity and characteristics of the subsurface soil conditions encountered and our experience and knowledge of local soil conditions.

Laboratory soil tests were performed to aid in the classification of the soils and to help in the evaluation of engineering characteristics of the soils. Representative soil samples recovered from the soil test borings were selected for grain-size analysis (3 tests) and Atterberg limit determination (3 tests). The laboratory data is shown on the attached lab data sheets.

6.0 Tank Foundation and Pad Subgrade Preparation

Below and extending 5 feet beyond the tank should be considered the tank pad. We recommend that the tank pad be undercut by a depth at least 24 inches below the existing

ground surface. We anticipate that the final subgrade elevation of the tank pad will be close to existing elevations. We also anticipate that the tank manufacturer will require a layer of sand fill along with a 4 to 6 inch layer of crushed aggregate base material below the tank. Depending on final subgrade elevations, additional undercut may have to be performed to allow for placement of the required build-up below the tank.

Following the undercut and prior to the placement of fill, the exposed subgrade should be observed by a field representative of the Geotechnical Engineer of Record (GeoCon). At this time, hand probes should be used to help evaluate the stability of the exposed subgrade soils. Subgrade soils that are determined to be unsuitable or unstable should be further undercut as per the recommendations of the project geotechnical consultant. The resulting excavations should be replaced with compacted structural fill. Placement of structural fill should meet the requirements of Section 9.0 of this report.

Provided the undercut is performed as outlined above, foundations can be designed using an allowable soil bearing pressure of 1,500 psf. Following footing excavation, footing bearing soils should be compacted to at least 95% standard density. Proper compaction of footing bearing soils is important to help limit excessive foundation settlement.

GeoCon, Inc. should be called to observe and perform compaction testing on the footing excavations prior to the placement of reinforcing steel (rebar) and concrete to determine if the bearing soils are satisfactory for support of the foundations. Excessively loose footing bearing soils will require re-compaction or stabilization as per the recommendations of GeoCon's geotechnical engineer.

Foundation concrete should not be placed on soils that have been disturbed by ground water seepage or rain water. If the bearing soils are softened by ground water intrusion or exposure, the softened soils must be removed from the foundation excavation bottom prior to placement of concrete.

Soils exposed in the bottom of all satisfactory excavations should be protected against disturbance, excessive drying, freezing or rain. Surface runoff should be drained away from excavations and not allowed to pond. The saturation of soils at the footing bearing elevation level can reduce their strength and load carrying ability. Concrete for foundations should be placed as soon after completion of the excavations as possible. If a delay in concrete placement is expected or if exposed to wet weather, a 2 to 3 inch "mud mat" consisting of lean concrete should be placed in the footing excavations to protect the bearing soils.

Lateral and uplift loads can be resisted by passive pressure of the soil acting against the side of the individual footings and/or the friction developed between the base of the footing and the underlying soil. For compacted backfill and firm native soils, the passive pressure may be taken as the equivalent to the pressure exerted by a fluid weighing 350 pounds per cubic foot (pcf). A coefficient of friction equal to 0.32 may be used for calculating the frictional resistance at the base of spread footings. These lateral resistance values are based on the assumption that the foundations can withstand horizontal movements on the order of ¼ inch. Spread foundation depths can be increased for uplift resistance as required. A soil unit weight of 100 pcf can be used for backfill atop foundations.

7.0 Pump and Control Buildings Foundation and Pad Subgrade Preparation

Below and extending 3 feet beyond the buildings should be considered the building pads. The test soundings and borings located in the proposed pump and control buildings initially penetrated about 6 to 8 inches of organic topsoil material. We recommend the building pads be undercut by depths of 18 inches to remove the organic topsoil and loose unsuitable soils.

Following the undercut and prior to placement of fill, the top 12 inches of the exposed native subgrade should be compacted to at least 95% ASTM D-698 standard compaction. The processed subgrade should be observed by a GeoCon earthwork technician. Subgrade soils which fail to properly compact or subgrade soils determined to be unsuitable should be undercut as per the recommendation of the project geotechnical engineer of record.

Provided the building pads are prepared as recommended above, foundations can be designed using an allowable soil bearing pressure of 1,500 psf. Following footing excavation, footing bearing soils should be compacted to at least 95% standard density. Proper compaction of footing bearing soils is important to help limit excessive foundation settlement.

8.0 Access Drive Subgrade Preparation

We anticipate that the access drive will include a crushed aggregate topping. We recommend that the access drive be undercut by a depth that would allow 18 inches of select fill below the bottom of base elevation. Following the required undercut, the exposed subgrade should be compacted to at least 95% ASTM D-698 standard compaction. The processed subgrade should be observed by a GeoCon earthwork technician. Structural fill required to achieve final subgrade elevation should be placed in 8 inch lifts and compacted to at least 98% ASTM D-698 standard density. Prior to placement of the crushed aggregate topping, we recommend that a layer of woven geotextile separation fabric be placed.

9.0 Placement of Structural Fill

Structural fill should be placed in 8 inch lifts and compacted to at least 98% ASTM D-698 standard density. Proper placement of the structural fill layers will be critical in the performance of the foundations. Structural fill should meet the following requirements:

1)Exhibit SM classification according to the Unified Soil Classification System
2)Have a minimum of 15% to maximum of 25% soil fines passing the No. 200 sieve
3)Have a maximum Liquid Limit (LL) of 25%
4)Have a Plasticity Index (PI) less than 3%
5)Have a minimum standard Proctor (ASTM D-698) maximum dry density of 110 pcf

10.0 Unit Costs

Although unsuitable soils below a depth of 2 feet were not encountered at the test locations, soils by nature are not uniform and soil variability within the construction areas could be encountered. Also, the amount of rain prior to and during site grading operations can affect the condition and stability of the subgrade soils. Therefore, we recommend that the contract documents establish a unit cost (per cubic yard) for undercutting and replacing unsuitable soils if they are encountered.

11.0 Weather Considerations

Weather conditions at the time of site preparation will directly impact earthmoving activities. Exposed cohesive subgrade soils and structural fill soils can be expected to degrade during wet weather conditions. Additional soil processing and drying efforts are typically required during wet weather conditions.

12.0 Site Drainage

The initial phase of site grading should also include providing positive drainage across the construction area. The "controlled areas" should be maintained in a well-drained condition that will promote the continual removal of surface water that may flow over the construction areas. Saturation of subgrade soils can result in substantial time delays in the construction and significant decreases in soil strengths. During construction (both site grading and building), the contractor should exercise caution during inclement weather to ensure the subgrade and structural fill courses are not degraded by construction traffic.

13.0 Closure and Limitations

This report has been prepared for the exclusive use of The City of Fairhope and their project design professionals for specific application to the above referenced project in accordance with generally accepted current standards of geotechnical engineering practices common to the local area.

The comments and recommendations of this report provide manageable and reasonable solutions to the advancement of the project based on the collected test data and the provided design information. Significant changes in site conditions or project design may result in alternative solutions to the design required or may permit more manageable and economical construction techniques. Should such significant changes occur, we will be available to offer supplemental comment.

The comments and recommendations of this report are based upon our interpretation of the information supplied by the client, the data collected at the two (2) CPT soundings, two (2) hand auger borings and the site conditions observed at the time of testing. A significant amount of interpolation was necessary. Because it is not possible to know or predict detailed conditions hidden beneath the ground surface, our comments and recommendations are presented as opinions and judgements, as opposed to statements of fact.

Improper site preparation, extremes in climatic conditions, significant changes in grade, time, etc., can affect the ground water, surface and subsurface conditions. If conditions are encountered as the construction advances which vary significantly from those described by this report, we should be contacted for additional comment.

Again, we appreciate the opportunity to provide our geotechnical engineering services for this project. To ensure that our recommendations are correctly interpreted and followed during construction, we recommend that the owner retain GeoCon, Inc. to provide construction observation and construction materials testing for the project.

APPENDIX

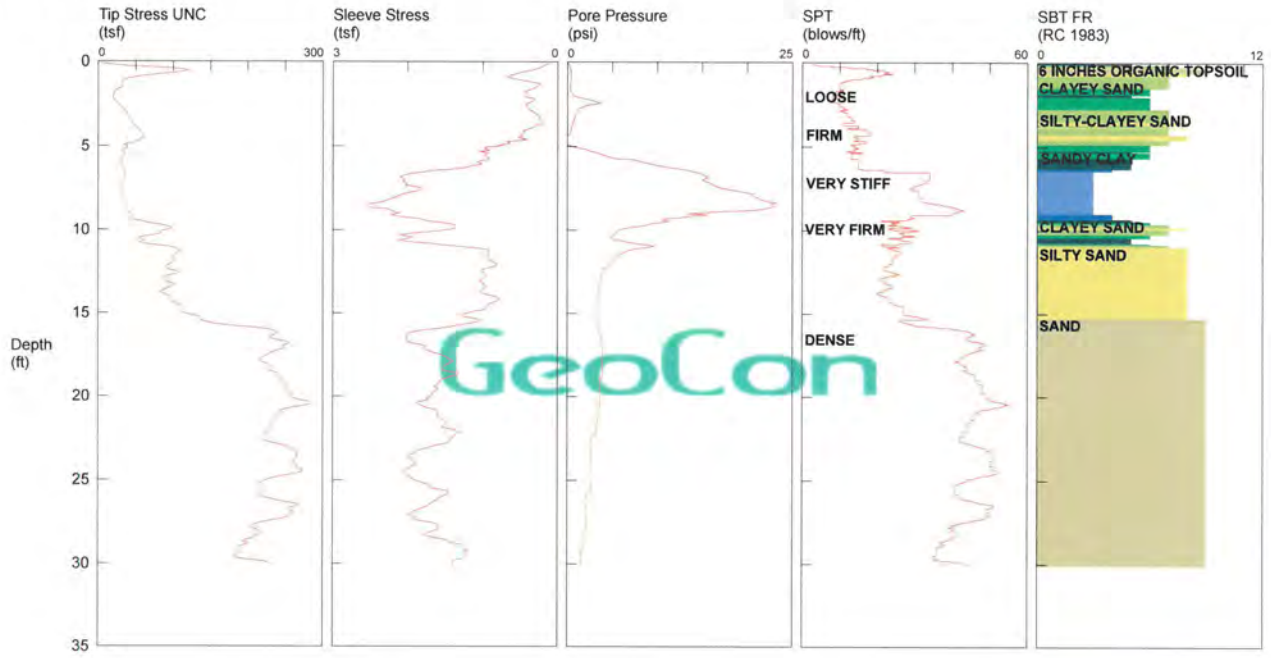
Figure 1 Date 5/24/2019	NOT TO SCALE **SITE LOCATION MAP** Proposed Side Stream Wastewater Storage Vessels Quail Creek Site Fairhope, AL DL 1720-19	***GEOCON, INC.*** 22885 McAuliffe Drive Robertsdale, AL 36567

Figure 2 Date 5/34/2019	NOT TO SCALE **TEST LOCATION PLAN** Proposed Side Stream Wastewater Storage Vessels Quail Creek Site Fairhope, AL DL 1720-19	***GEOCON, INC.*** 22885 McAuliffe Drive Robertsdale, AL 36567

C-1

CPT Testing Done By: GeoCon
Proposed : Side Stream Wastewater Storage Vessels
CUSTOMER: City of Fairhope
LOCATION: Fairhope, AL
HOLE NUMBER: C-1

JOB NUMBER: DL 1720-19
TEST DATE: 5/24/2019
OPERATOR: Chris Rea



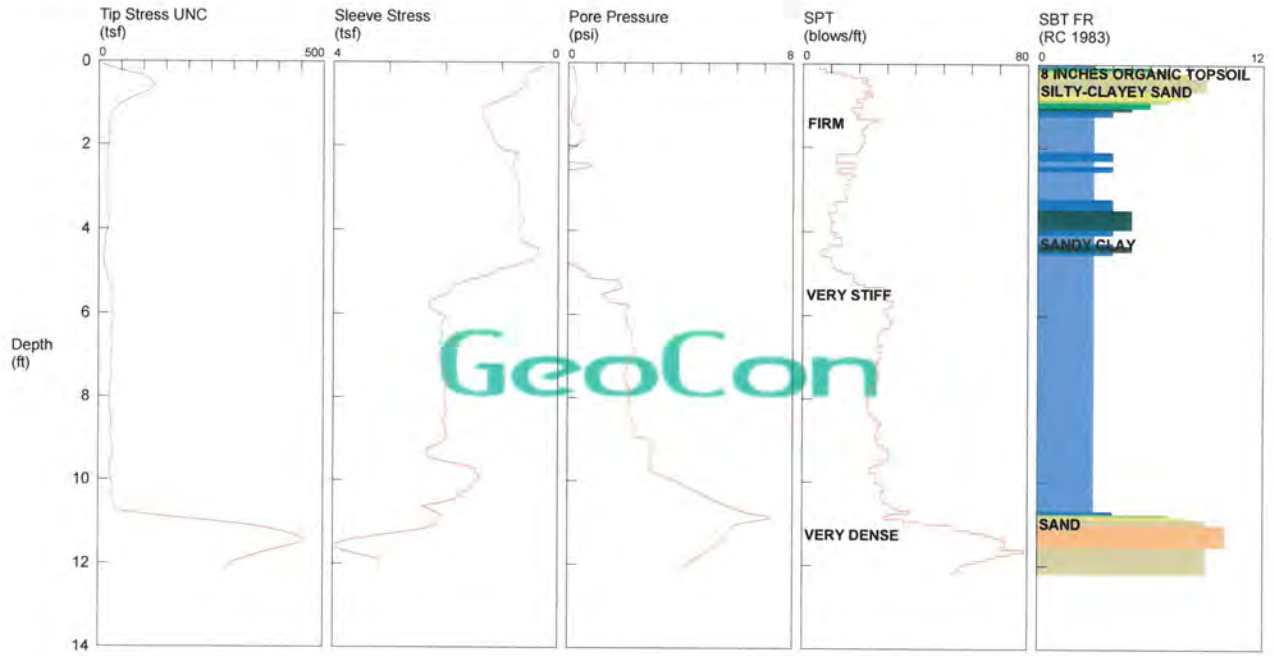
1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

*SBT/SPT CORRELATION: UBC-1983

C-2

CPT Testing Done By: GeoCon
Proposed : Side Stream Wastewater Storage Vessels
CUSTOMER: City of Fairhope
LOCATION: Fairhope, AL
HOLE NUMBER: C-2

JOB NUMBER: DL 1720-19
TEST DATE: 5/24/2019
OPERATOR: Chris Rea



1 sensitive fine grained
2 organic material
3 clay
4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt
7 silty sand to sandy silt
8 sand to silty sand
9 sand
10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

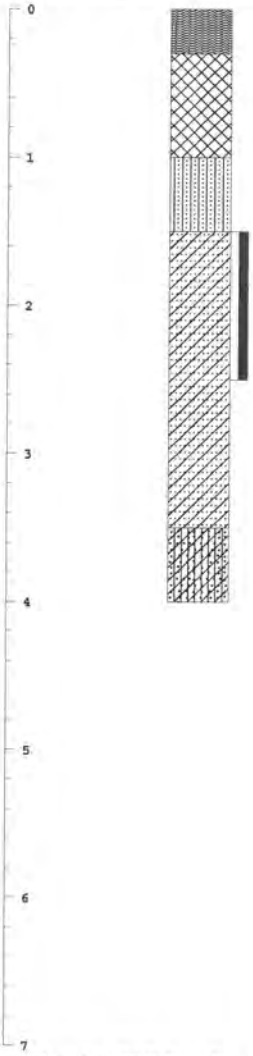
*SBT/SPT CORRELATION: UBC-1983

DRILL HOLE LOG

BORING NO.: B-1

PROJECT: Proposed Side Stream Wastewater Storage Vessels
CLIENT: City of Fairhope
LOCATION: Fairhope, AL
DRILLER: Chris Rea
DRILL RIG:
DEPTH TO WATER> INITIAL ▽ : AT COMPLETION ▽ :

PROJECT NO.: DL 1720-19
DATE: 5/24/2019
ELEVATION:
LOGGED BY: Jason Christian



ELEVATION/ DEPTH	WELL DETAIL	SOIL SYMBOLS, SAMPLERS AND TEST DATA	USCS	Description	NM	DD	STANDARD PENETRATION TEST DEPTH	N	CURVE 10 30 50
0				4 Inches Organic Topsoil					
			FILL	8 Inches Red Silty Sand					
1			SM	Gray Silty Sand					
			SC	Tan Clayey Sand, Loose				6	●
2									
3									
			SC-SM	Tan Silty-Clayey Sand					
4				Boring Terminated at 4 ft					
5									
6									
7									

"N Value" Equal to DCP Soundings

This information pertains only to this boring and should not be interpreted as being indicative of the site.

DRILL HOLE LOG

BORING NO.: B-2

PROJECT: Proposed Side Stream Wastewater Storage Vessels
CLIENT: City of Fairhope
LOCATION: Fairhope, AL
DRILLER: Chris Rea
DRILL RIG:
DEPTH TO WATER> INITIAL : 4 AT COMPLETION :

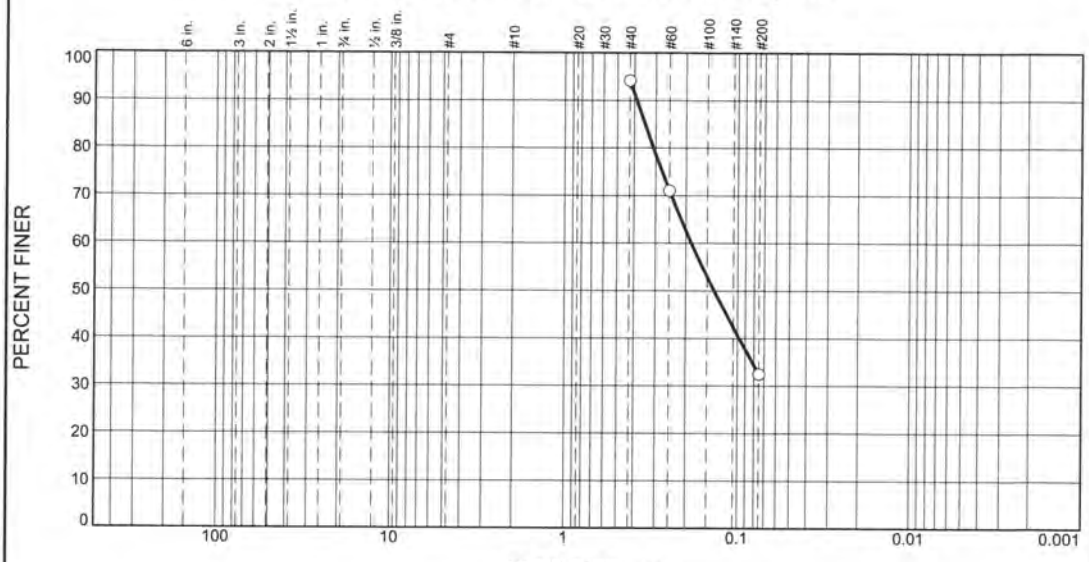
PROJECT NO.: DL 1720-19
DATE: 5/24/2019
ELEVATION:
LOGGED BY: Jason Christian

ELEVATION/ DEPTH	WELL DETAIL	SOIL SYMBOLS, SAMPLERS AND TEST DATA	USCS	Description	NM	DD	STANDARD PENETRATION TEST DEPTH	N	CURVE 10 30 50
0				8 Inches Organic Topsoil					
1			SC-SM	Gray, Tan Silty-Clayey Sand, Very Loose				3	
2			SC-SM	Dark Gray Silty-Clayey Sand					
3									
4				Perched Water at 4 ft Boring Terminated at 4 ft					
5									
6									
7									

"N Value" Equal to DCP Soundings

This information pertains only to this boring and should not be interpreted as being indicative of the site.

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
					61.7	32.5	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#40	94.2		
#60	71.1		
#200	32.5		

* (no specification provided)

Material Description

Tan Silty-Clayey Sand

Atterberg Limits (ASTM D 4318)

PL= 17 LL= 23 PI= 6

Classification

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

Coefficients

D_{90}= 0.3875 D_{85}= 0.3466 D_{60}= 0.1857
D_{50}= 0.1370 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: **Date Tested:** 5/28/2019

Tested By: CR

Checked By: JJC

Title:

Location: Fairhope, AL
Sample Number: C-2 **Depth:** 2 ft

Date Sampled:

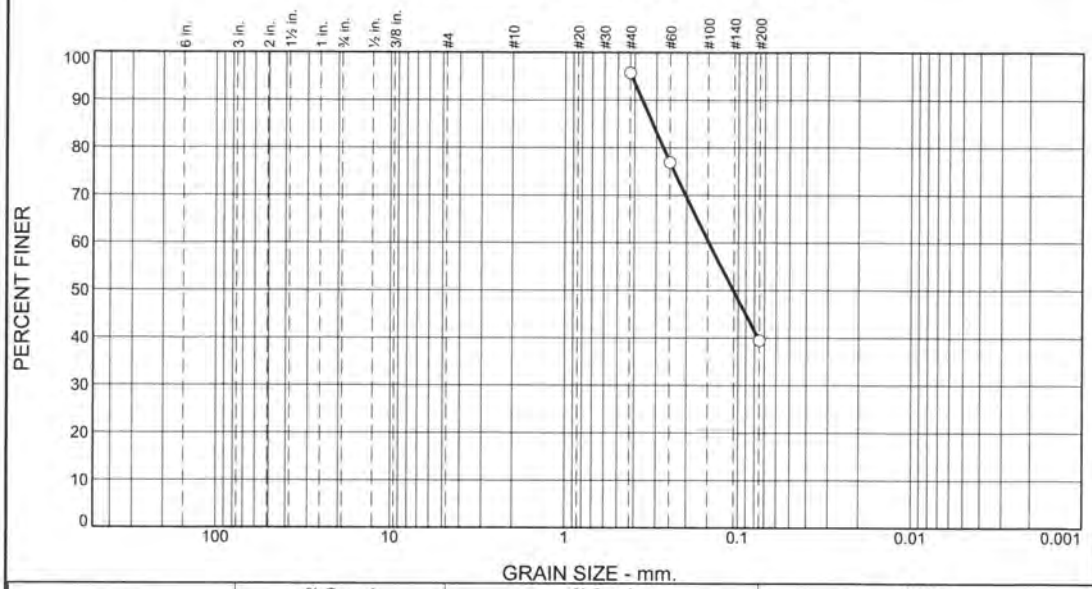
GeoCon

Robertsdale, Alabama

Client: City of Fairhope
Project: Proposed Side Stream Wastewater Storage Vessels

Project No: DL 1720-19 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
					56.2	39.5	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#40	95.7		
#60	76.9		
#200	39.5		

* (no specification provided)

Material Description

Tan Clayey Sand

Atterberg Limits (ASTM D 4318)

PL= 18 LL= 26 PI= 8

Classification

USCS (D 2487)= SC AASHTO (M 145)=

Coefficients

D_{90}= 0.3626 D_{85}= 0.3151 D_{60}= 0.1483
D_{50}= 0.1069 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: **Date Tested:** 5/28/2019

Tested By: CR

Checked By: JJC

Title:

Location: Fairhope, AL
Sample Number: B-1 **Depth:** 1.5 ft

Date Sampled:

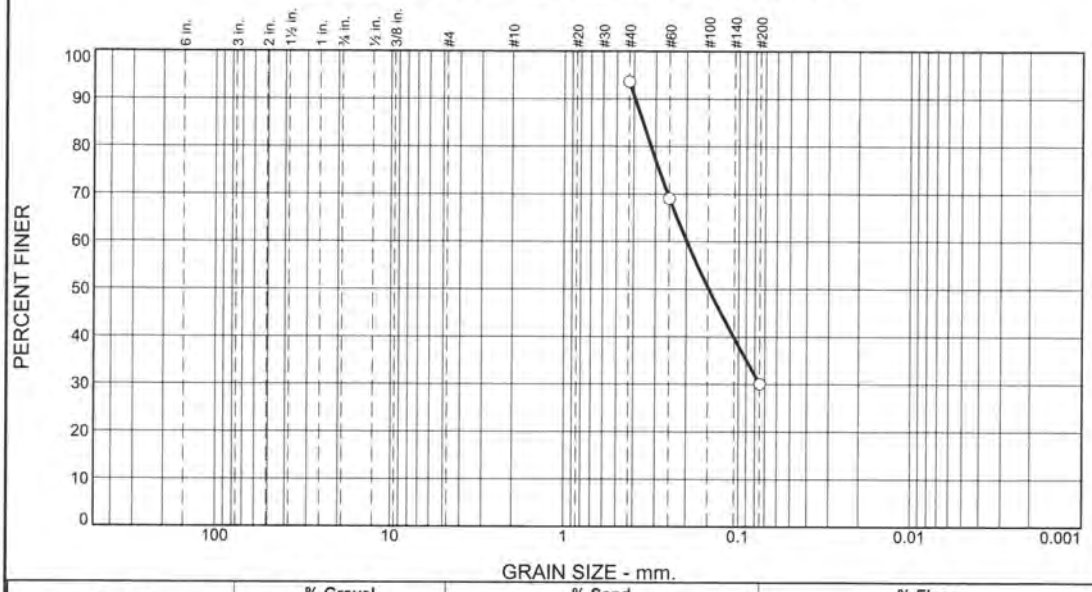
GeoCon

Robertsdale, Alabama

Client: City of Fairhope
Project: Proposed Side Stream Wastewater Storage Vessels

Project No: DL 1720-19 **Figure**

Particle Size Distribution Report



% +3"	% Gravel		% Sand			% Fines	
	Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
					63.5	30.1	

TEST RESULTS

Opening Size	Percent Finer	Spec.* (Percent)	Pass? (X=Fail)
#40	93.6		
#60	69.1		
#200	30.1		

* (no specification provided)

Material Description

Dark Gray Silty-Clayey Sand

Atterberg Limits (ASTM D 4318)

PL= 17 LL= 21 PI= 4

Classification

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

Coefficients

D_{90}= 0.3944 D_{85}= 0.3554 D_{60}= 0.1985
D_{50}= 0.1486 D_{30}= D_{15}=
D_{10}= C_u= C_c=

Remarks

Date Received: _____ **Date Tested:** 5/28/2019

Tested By: CR

Checked By: JJC

Title: _____

Location: Fairhope, AL
Sample Number: B-2 **Depth:** 2.5 ft

Date Sampled:

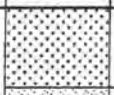
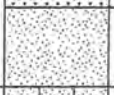
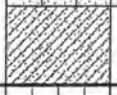
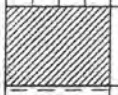
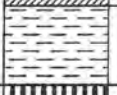
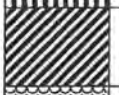
GeoCon

Robertsdale, Alabama

Client: City of Fairhope
Project: Proposed Side Stream Wastewater Storage Vessels

Project No: DL 1720-19 **Figure**

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

Important Information about Your

Geotechnical Engineering Report

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

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you* — should apply the report for any purpose or project except the one originally contemplated.

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

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

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,
- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final,* because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; ***none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.***

Rely, on Your ASFE-Member Geotechncial Engineer for Additional Assistance

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

ASFE
THE BEST PEOPLE ON EARTH

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

IIGER06085.0MRP

TERMS AND CONDITIONS

SERVICES TO BE PROVIDED. GeoCon Engineering & Material Testing, Inc. (hereinafter GeoCon) is an independent consultant and agrees to provide Client, for its sole benefit and exclusive use, consulting services set forth in our proposal.

PAYMENT TERMS. Client agrees to pay our invoice upon receipt. If payment is not received within 30 days from the invoice date, Client agrees to pay a service charge on the past due amount at a rate of 1.5% per month, and GeoCon reserves the right to suspend all work until payment is received. No deduction shall be made from our invoice on account of liquidated damages or other sums withheld from payments to contractors or others.

TERMINATION. Either party may terminate this Agreement without cause upon 20 days advance notice in writing. In the event Client requests termination prior to completion of the proposed services, Client agrees to pay GeoCon for all costs incurred plus reasonable charges associated with termination of the work.

PROFESSIONAL LIABILITY. Notwithstanding any other provision of this Agreement, the Engineer's and GeoCon's total liability to the Owner for any loss or damages from claims arising out of or in connection with this Agreement from any cause including the Engineer's strict liability, breach of contract, or professional negligence, errors and omissions (whether claimed in tort, contract, strict liability, nuisance, by statute or otherwise) shall not exceed the lesser of the total contract price of this Agreement or the proceeds paid under Engineer's liability insurance in effect at the time such claims are made. The Owner hereby releases the Engineer from any liability exceeding such amount. In no event shall either party to this Agreement be liable to the other for special, indirect, incidental or consequential damages, whether or not such damages were foreseeable at the time of the commencement of the work under this Agreement.

SITE OPERATIONS. Client will arrange for right-of-entry to all applicable properties for the purpose of performing studies, tests and evaluations pursuant to the agreed services. Client represents that it possesses necessary permits and licenses required for its activities at the site.

OWNERSHIP AND USE OF PROJECT DOCUMENTS. All documents are instruments of service in respect to the Services, and Engineer shall retain an ownership and proprietary property interest therein (including the right of reuse at the discretion of the Engineer) whether or not the Services are completed. Client may make and retain copies of documents for information and reference in connection with the services by Client. Such documents are not intended or represented to be suitable for reuse by Client or others on extensions of the services or on any other project. Any such reuse or modification without written verification or adaptation by Engineer, as appropriate for the spedfic purpose intended, will be at Client's sole risk and without liability or legal exposure to Engineer or to Engineer's consultants. Client shall indemnify and hold harmless Engineer and Engineer's consultants from all claims, damages, and expenses including attorneys' fees arising out of or resulting therefrom.

ADDITIONAL SERVICES OF CONSULTANT. If authorized in writing by the Client, GeoCon shall furnish additional services that are not considered as an integral part of the Scope of Services outlined in the Proposal Acceptance Sheet. Under this Agreement, all costs for additional services will be negotiated as to activities and compensation. In addition, it is possible that unforeseen conditions may be encountered that could substantially alter the original scope of services. If this occurs, GeoCon will promptly notify and consult with Client and any additional services will be negotiated.

ASSIGNABI LITY, GeoCon shall not assign any interest on this Agreement, and shall not transfer any interest in the same (whether by assignment or novation), without the prior written consent of the Client; provided, however, that claims for money by GeoCon against Client under this Agreement may be assigned to a bank, trust company, or other financial institution without such approval. Written notice of any such assignment or transfer shall be promptly furnished to the Client.

SERVICES TO BE CONFIDENTIAL. All services, including opinions, designs, drawings, plans, specifications, reports and other services and information, to be furnished by GeoCon under this Agreement are confidential and shall not be divulged, in whole or in part, to any person, other than to duly authorized representatives of the client, without prior written approval of the Client, except by testimony under oath in a judicial proceeding or as otherwise required by law. GeoCon shall take all necessary steps to ensure that no member of its organization divulges any such information except as may be required by law.

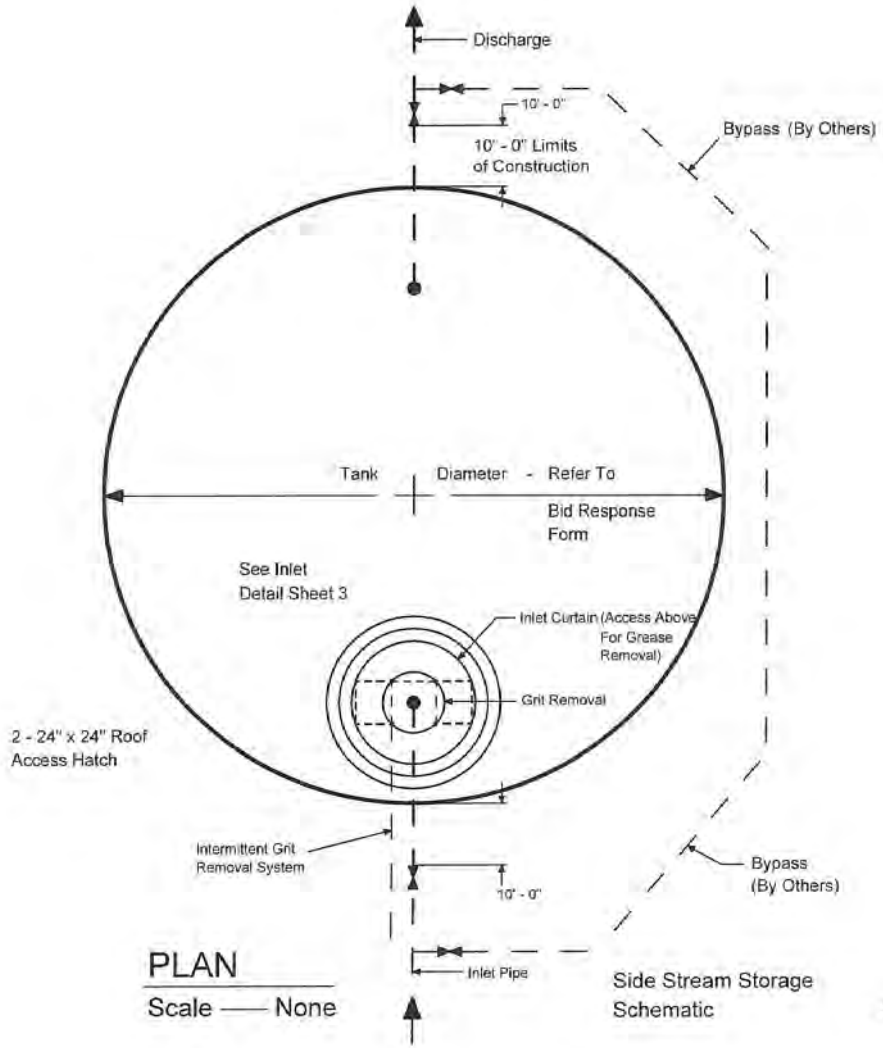
CLAIMS. The parties agree to attempt to resolve any dispute without resort to litigation. However, in the event a claim is made that results in litigation, and the claimant does not prevail at trial, then the claimant shall pay all costs incurred in defending the claim, including reasonable attorney's fees. The claim will be considered proven if the judgment obtained and retained through any applicable appeal is at least ten percent greater than the sum offered to resolve the matter prior to the commencement of trial.

SEVERABILITY. It is understood and agreed by the parties hereto, that if any part, term or provision of this Agreement is held by any court of competent jurisdiction to be illegal or in conflict with any applicable law, the validity of the remaining portion or portions of this Agreement shall not be affected and the rights and obligations of the parties shall be construed and enforced as if the Agreement did not contain the particular part, term or provision held to be invalid.

SURVIVAL. All obligations arising prior to the termination of this Agreement and all provisions of this Agreement allocating responsibility or liability between Client and GEOCON shall survive the completion of the services and the termination of this Agreement.

INTEGRATION. This Agreement, the attached documents and those incorporated herein constitute the entire Agreement between the parties and cannot be changed except by a written instrument signed by both parties.

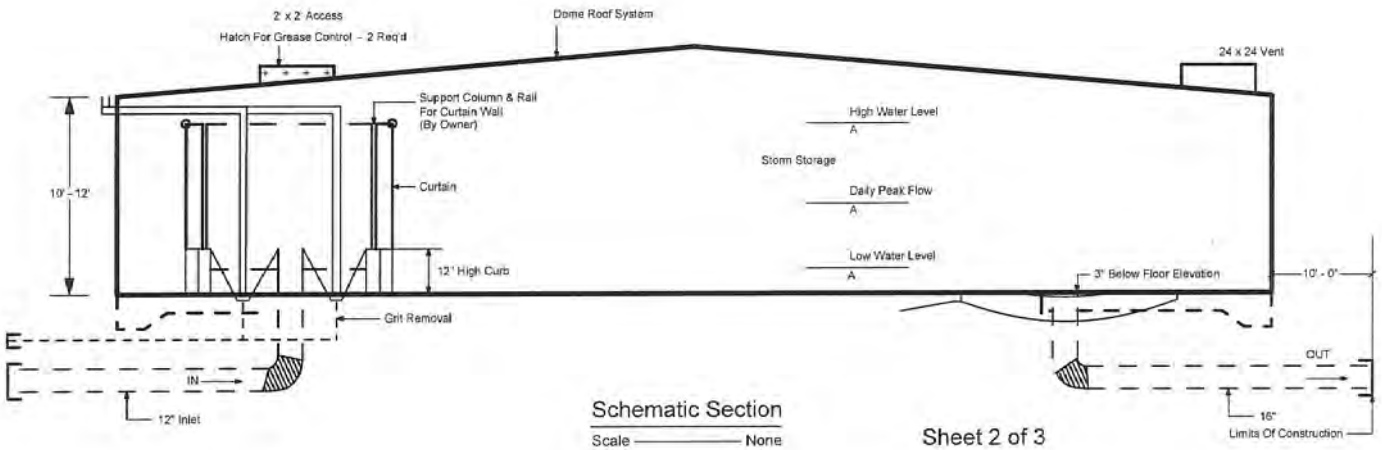
GOVERNING LAW. This Agreement shall be governed in all respects by the laws of the State of Alabama and venue shall be in Baldwin County, Alabama



PLAN

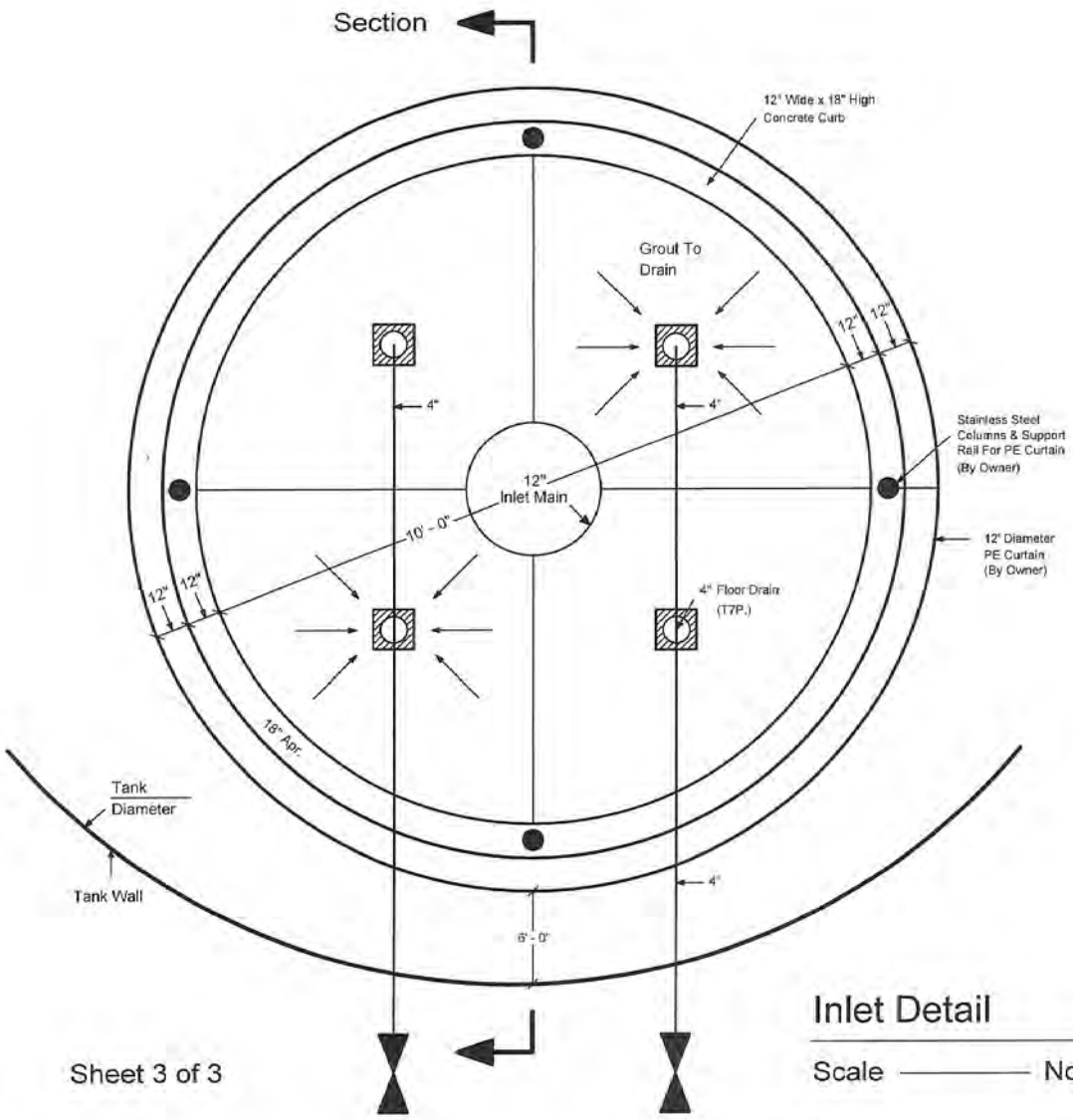
Scale — None

Side Stream Storage Schematic



Schematic Section

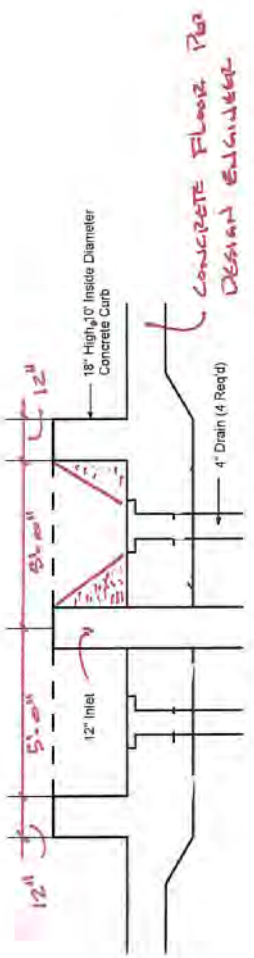
Scale ——— None



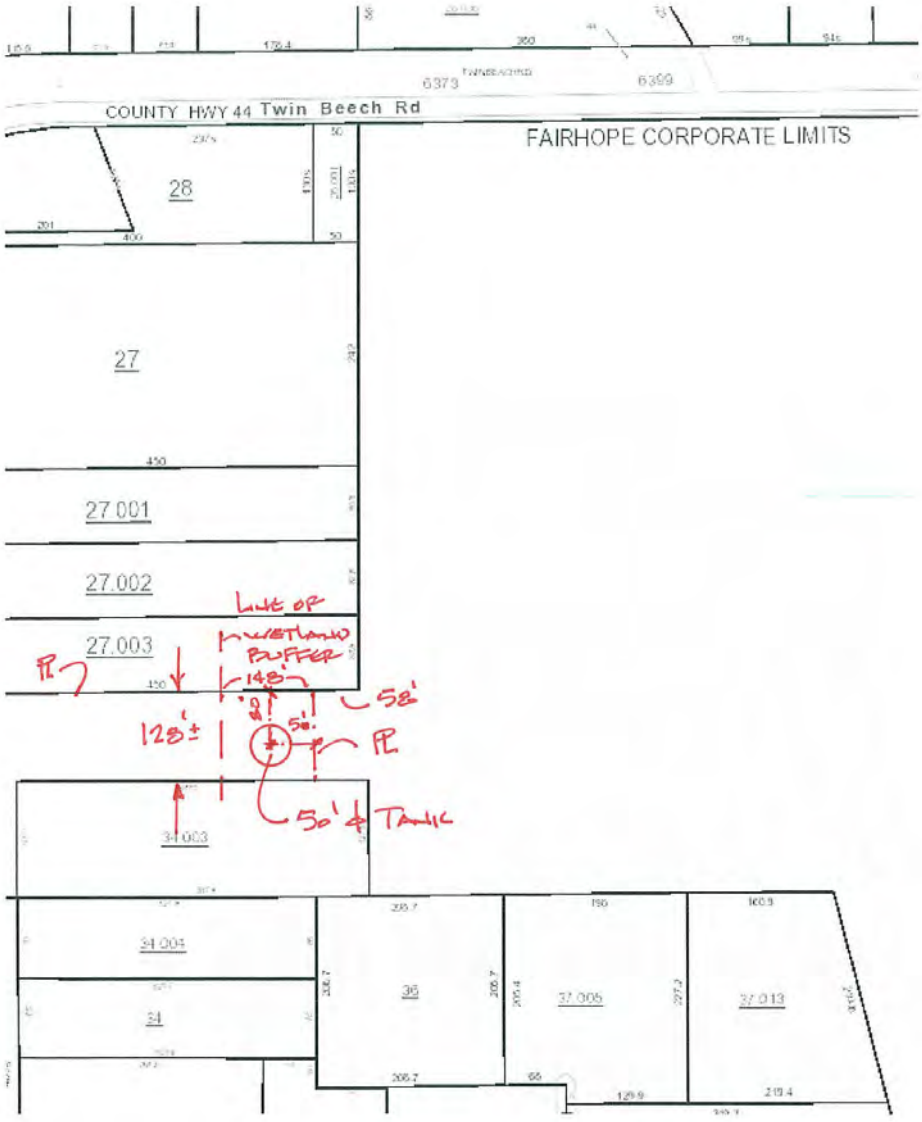
Inlet Detail

Scale ——— None

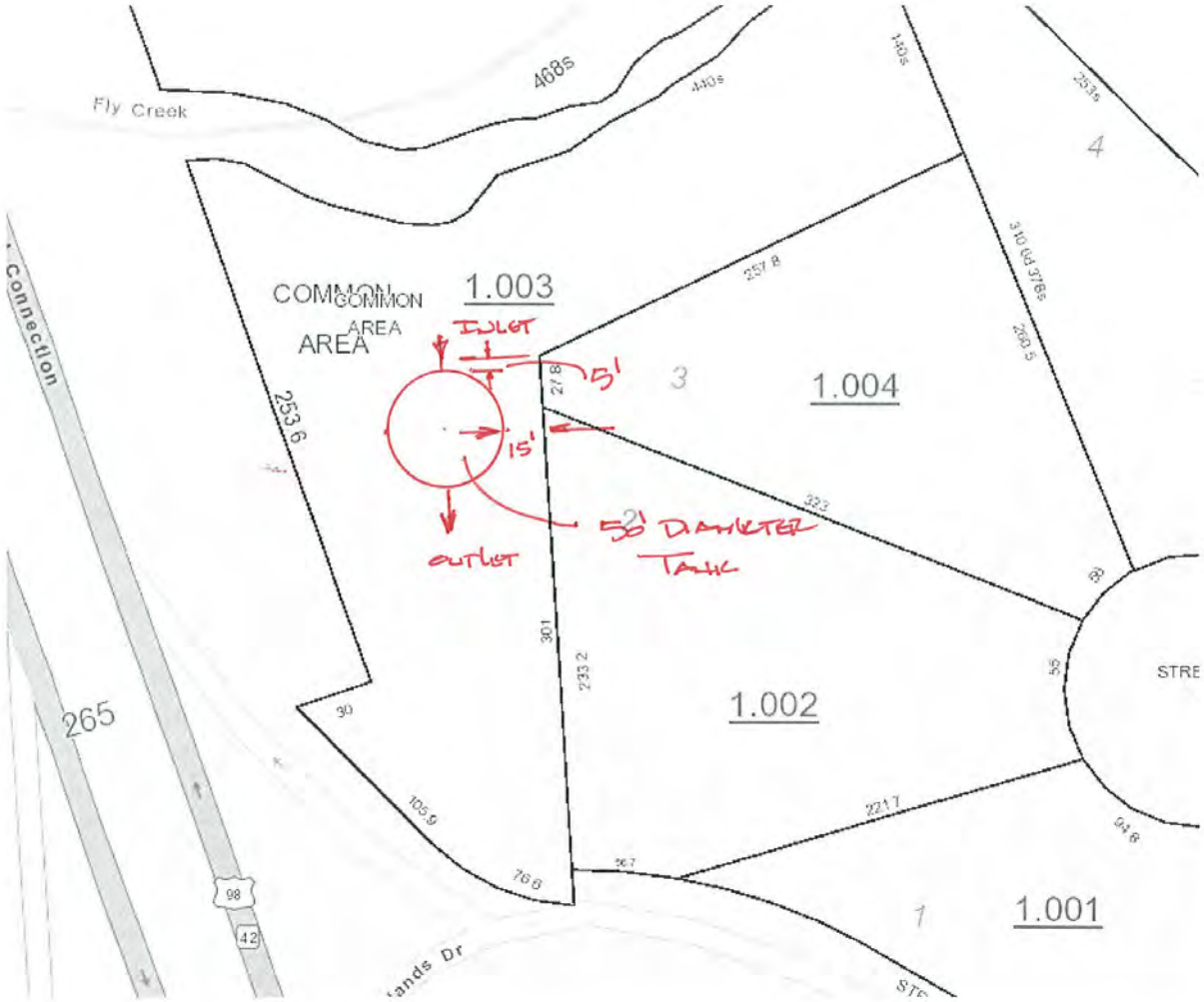
Sheet 3 of 3



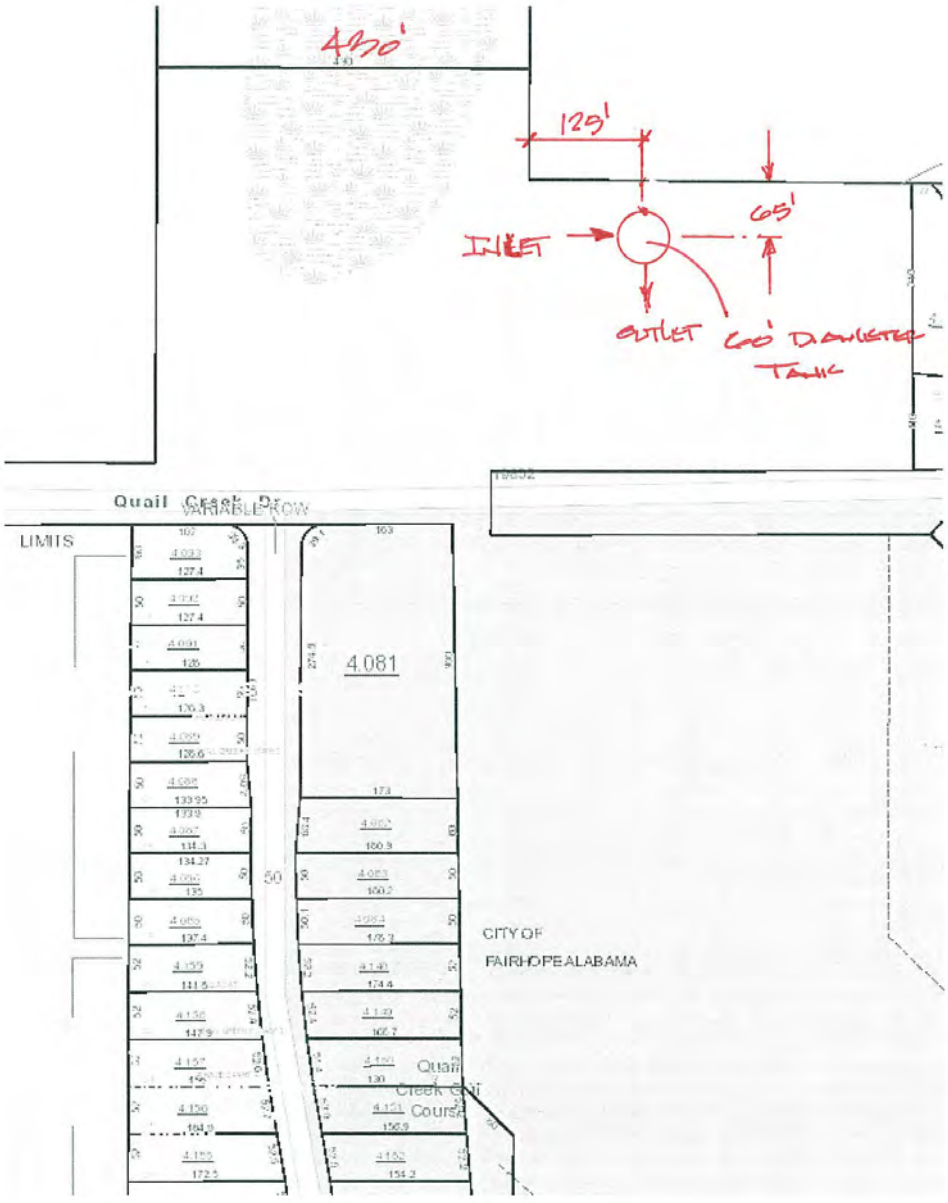
Section Inlet


COUNTY HWY 44 Twin Beech Rd
FAIRHOPE CORPORATE LIMITS
6373
6399
28
27
27.001
27.002
27.003
34.003
34
35
37.005
37.013
Line of WETLAND BUFFER
148'
58'
50'
125'±
PL
50' ± TANK

Twin Beech



The Woodlands


430'
125'
65'
INLET
OUTLET
60' DIAMETER TANK
Quail Creek Dr
VARIABLE ROW
LIMITS
4.081
CITY OF
FAIRHOPE ALABAMA
Quail Creek Golf Course

Quail Creek

Standard Terms and Conditions

City of Fairhope, AL

1. ACCEPTANCE OF AGREEMENT

This Agreement contains all terms and conditions agreed upon by the Owner and Winning bidder. No other agreement, oral or otherwise, regarding the subject matter of this Agreement shall be deemed to exist or to bind either party hereto. The Winning Bidder shall not employ Subcontractors without the express written permission of the Owner. No waiver, alteration, consent or modification of any of the provisions of the Agreement shall be binding unless in writing and signed by the Owner and Contractor. This Agreement shall not be construed against the party or parties preparing it. It shall be construed as if all the parties and each of them jointly prepared this Agreement, and any uncertainty or ambiguity shall not be interpreted against one or more parties.

2. ACCEPTANCE OF WORK

The City of Fairhope will be deemed to have accepted the Work after the City of Fairhope agrees the Work is completed by signature on delivery or service tickets. In the event Work furnished under the Contract / Agreement / Purchase Order is found to be defective or does not conform to the intent of the Contract / Agreement / Purchase Order, the awarded vendor shall, after receipt of notice from the City of Fairhope, correct the deficiencies. Failure on the part of the awarded vendor to properly correct the deficiencies within the time period allowed will constitute the City of Fairhope's right to cancel the Contract / Agreement / Purchase Order immediately, upon written notice to the awarded vendor.

3. ADDENDA

All Addenda are part of the Contract Documents. Include resultant costs in the Bid. Addenda will be issued by email to all Bidders on record, and posted to the City of Fairhope website www.fairhopeal.gov. It is the responsibility of the bidder to verify that all addenda have been received, and to include all signed addenda in the bid submission

4. ADDITIONAL ORDERS

Unless it is specifically stated to the contrary in the bid response, the City of Fairhope reserves the option to place additional orders against a contract awarded as a result of this solicitation at the same terms and conditions; to extend the renewal date until a new bid is in place, if it is mutually agreeable.

5. APPLICABLE LAW

This Agreement is deemed to be under and shall be governed by and construed according to the laws of the State of Alabama. Any litigation arising out of the Agreement shall be heard in the Courts of Baldwin County, Alabama.

6. ASSIGNMENT

The awarded vendor shall not assign the Contract / Agreement /Purchase Order or sublet it as a whole without the express written permission of the City of Fairhope. The awarded vendor shall not assign any payment due them hereunder, without the express written permission of City of Fairhope. The City of Fairhope may assign the Contract / Agreement / Purchase Order, or sublet it as a whole, without the consent of the awarded vendor.

7. ASSURANCE OF NON-CONVICTION OF BRIBERY

The bidder hereby declares and affirms that, to its best knowledge, none of its officers, directors, or partners and none of its employees directly involved in obtaining contracts has been convicted of bribery, attempted bribery or conspiracy to bribe under the laws of any state or Federal government.

8. AWARD CONSIDERATION

The following factors will be considered in determining the lowest responsible bidder: Overall quality, Conformity with specifications both general and specific, Purposes for which materials or services are required, Delivery dates and time required for delivery, Unit acquisition cost, financial ability to meet the contract, previous performance, facilities and equipment, availability of repair parts, experience, delivery promise, terms of payments, compatibility as required, other costs, and other objective and accountable factors which are reasonable.

9. AWARD OR REJECTION OF BIDS

The Bid will be awarded to the lowest responsible bidder complying with conditions of the invitation for bids, provided his bid is reasonable and it is in the interest of the City of Fairhope to accept it. The bidder to whom the award is made will be notified at the earliest possible date. The City of Fairhope, however, reserves the right to reject any and all bids and to waiver any informality in bids received whenever such rejection or waiver is in the interest to the City of Fairhope.

10. BACK ORDERS

If it is necessary to back order any items, the vendor must notify the Purchasing Department and advice as to the expected shipping or delivery date. If this date is not acceptable, the City of Fairhope may seek remedies for default.

11. BID AND PERFORMANCE SECURITY

If bid security is required, a bid bond or cashier's check in the amount indicated on the bid cover must accompany the bid and be made payable to The City of Fairhope of Baldwin County, Al. Corporate or certified checks are not acceptable. Bonds must be in a form satisfactory to the City and underwritten by a company licensed to issue bonds in the State of Alabama. If bid security fails to accompany the bid, it shall be deemed unresponsive, unless the Purchasing Manager deems the failure to be non-substantial. All checks will be returned to the bidders after the contract has been approved. If a performance bond is required, the successful bidder will be notified after the awarding of the contract.

12. BRAND NAMES

Reference to brand names and numbers is descriptive, but not restrictive, unless otherwise specified. Bids on equivalent items meeting the standards of quality thereby indicated will be considered, providing the bid clearly describes the article offered and indicates how it differs from the referenced brands. Descriptive literature or manufacturers specifications plus any supplemental information necessary for comparison purposes should be submitted with the bid or the bid on that item may be rejected. Reference to literature submitted with a previous bid or on file with the Division of Purchasing will not satisfy this requirement. The burden is on the bidder to demonstrate that the item bid is equivalent to the item specified in the ITB. Bids without sufficient documentation to fully support equality, may be considered non-responsive. Reference by the City of Fairhope in the ITB to available existing specifications shall be sufficient to make the terms of such specifications binding on the bidder. Unless the bidder specifies otherwise in its bid, it is understood the bidder is offering a referenced brand item as specified in the ITB or is bidding as specified when no brand is referenced. Failure to examine drawings, specifications and instructions will be at the bidder's risk.

13. BUSINESS LICENSE

The vendor selected to enter into a Contract / Agreement with the City of Fairhope must be licensed to do business in the City of Fairhope prior to commencement of any work under the contract. Delivery of goods or services to the City of Fairhope by Purchase Order have detailed and varied Business License requirements. In all instances that require a business license. Awarded vendor will provide proof of possessing a current City of Fairhope Business License. Prospective bidders will not be required to possess a City of Fairhope Business License prior to award.

14. CANCELLATION OF / CONTRACT / AGREEMENT / PURCHASE ORDER / LEASE

A purchase order can be canceled in whole or in part when awarded vendor fails to deliver or perform as specified. Cancellation of a purchase order can only be made by a written purchase order change (POC) from the City of Fairhope. A term contract, lease or agreement can be canceled by the City of Fairhope, for justifiable cause, or convenience, by written notice.

15. CERTIFICATION PURSUANT TO ACT NO. 2006-557

Alabama law (section 41-4-116, code of Alabama 1975) provides that every bid submitted and contract executed shall contain a certification that the vendor, contractor, and all of its affiliates that make sales for delivery into Alabama or leases for use in Alabama are registered, collecting, and remitting Alabama state and local sales, use, and/or lease tax on all taxable sales and leases into Alabama. By submitting this bid, the bidder is hereby certifying that they are in full compliance with act no. 2006-557, they are not barred from bidding or entering into a contract pursuant to 41-4-116, and acknowledges that the awarding authority may declare the contract void if the certification is false. All corporations must register to do business in Alabama with the Office of the Secretary of State. Their address is:

Office of the Secretary of State
P.O. Box 5616
Montgomery, AL 36103
(334) 242-5324
Fax: (334) 240-3138
http://www.sos.state.al.us/index.aspx

The Foreign Corporation form is online at http://www.sos.state.al.us/downloads/dl1.cfm.

16. COST OF REMEDYING DEFECTS

All defects, indirect and consequential costs of correcting, removing or replacing any or all of the defective materials or equipment will be charged against the awarded vendor.

17. DELIVERY OF BID

Bids must be received in the Purchasing Office by the date and time specified on the bid cover. All bids will be accepted until the time and date stated on the bid cover. No bids will be accepted that extend past the time and date on the bid cover. The time of receipt shall be determined by the time clock stamp in the Purchasing Department. Bids submitted by U.S. Mail must be received by the City of Fairhope of Baldwin County, Alabama, in the City of Fairhope offices, 555 South Section St., Fairhope, Al., unless otherwise specified.

18. DELIVERY

The number of calendar days required for delivery after receipt of a purchase order shall be stated in the RFQ / ITB / RFP and /or Purchase Orders. When no time is stated in the document, the time shall be fourteen (14) calendar days after receipt of order. If a shipment is not made within the time period specified, the Purchase Order may be canceled.

19. ENVIRONMENTAL REQUIREMENTS

All products will be clearly labeled for their intended use. Each delivery of product or materials will include a Material Safety Data Sheet (MSDS) for all materials that require an MSDS. All manufacturers/distributors of hazardous substances, including any of the items listed on this bid/quote/ contract and subsequent award must include completed material safety data sheet (MSDS) for each hazardous material. Additionally, each container of hazardous materials must be appropriately labeled with:

a) The identity of the hazardous material,
b) Appropriate hazard warnings, and manufacturer, importer, or other responsible party.

20. EQUIPMENT DEMONSTRATION

The City of Fairhope may require equipment/ product materials or service techniques to be demonstrated at a time, date and location to be specified by the City of Fairhope.

21. EQUIPMENT ELECTRICAL CERTIFICATION

All electrical equipment purchased shall conform to, and be identified in, the applicable standard(s), or otherwise be certified as applicable, as of the bid opening date and time, by Underwriters Laboratories, Inc. or other recognized laboratory facility. Bidder must provide satisfactory documentation with returned bid that all such equipment meets the applicable product standard or has otherwise been certified as outlined above. Unless indicated in the bid document, the above

certification shall apply to the equipment itself, not the individual components of that equipment.

22. ERRORS IN BID

Bidders are assumed to be informed regarding conditions, requirements and specifications prior to submitting bids. Failure to do so will be at the bidder's risk. Bids already submitted may be withdrawn without penalty prior to bid opening. Errors discovered after the bid opening may not be corrected.

23. FORCE MAJEURE

Neither the City nor the awarded vendor shall be deemed in breach of any contract / Purchase Order or Agreement which may result from this proposal submission if it is prevented from performing any of the obligations hereunder by reason of Acts of God, acts of the public enemy, acts of superior governmental authority, strikes or labor disputes, floods, riots, rebellion, sabotage, or any similar other unforeseeable causes beyond its control and not due to its fault or negligence. Each party shall notify the other immediately in writing of the cause of such after the beginning period thereof. The awarded vendor may request cancellation and the City of Fairhope may grant the request if performance is prevented by any of the above referenced causes, or other unavoidable circumstances not attributable to the fault or negligence of the vendor. The burden of proof for such relief rests with the vendor. All correspondence pertaining to cancellation of a purchase order or term contract must be addressed to the City of Fairhope Purchasing Manager.

24. HAZARDOUS AND TOXIC SUBSTANCES

Bidder must comply with all applicable Federal, State, County and City laws, ordinances and regulations relating to hazardous and toxic substances, including such laws, ordinances and regulations pertaining to information hazardous and toxic substances, and as amended from time to time. Bidder shall provide the City of Fairhope with a "Material Safety Data Sheet" for all goods that carry one.

25. INDEMNITY

Indemnity: The awarded vendor hereby agrees to indemnify and save harmless the City of Fairhope, its officers, agent, and employees, from and against any and all liabilities, claims, demands, damages, fines, fees, expenses, penalties, suits, proceedings, actions and cost of actions, including reasonable attorneys fees for trial and on appeal, of any kind and nature, arising or growing out of, or in any way connected with the performance of this Contract / Agreement / Purchase Order, to the extent caused by a negligent act or omission of the awarded vendor, their agents, servants, employees, Subcontractors, or others associated with the awarded vendor. The awarded vendor shall be responsible for damage to any equipment excluded from this agreement, or damage or injury caused by any equipment excluded from this agreement, only to the extent that the damage or injury is caused by a negligent act or omission of the awarded vendor, or caused by failure of the awarded vendor's supplied product to perform as specified.

26. INSPECTION

All materials, workmanship, equipment, and supplies are subject to inspection and test at any source or time. Final inspection, acceptance or rejection will be made at delivery destination. Goods that do not meet specifications will be rejected unless substitutions have been approved by the City of Fairhope. Failure to inspect or to reject upon receipt, however, does not relieve the awarded vendor of liability. When subsequent tests, after receipt, are conducted and when such tests reveal a failure to meet specifications, the City of Fairhope will reject the goods and the awarded vendor shall immediately supply goods meeting specifications or the City of Fairhope may seek damages including but not limited to the testing expense, regardless of whether a part of or all of the goods have been consumed through the testing process. Rejected goods shall be removed by the awarded vendor promptly after rejection, at his expense. If not removed in fourteen (14) calendar days, they may be disposed of at the discretion of the City of Fairhope. Disposal costs will be the awarded vendor's responsibility.

27. INSPECTION OF PREMISES

At reasonable times, the City may inspect those areas of the awarded vendor's place of business that are related to the performance of a Contract / Agreement / Purchase Order. If the City makes such an inspection, the awarded vendor must provide reasonable assistance. The City of Fairhope reserves the right on demand and without notice all the vendor's files associated with a subsequent Contract / Agreement / Purchase Order where payments are based on the awarded vendor's record of time, salaries, materials, or actual expenses. This same clause will apply to any subcontractors assigned to the Contract / Agreement / Purchase Order.

28. INSURANCE

If a Contract / Agreement / Purchase Order results from this RFQ /ITB /RFP, or other form of solicitation, the awarded vendor shall maintain such insurance as will indemnify and hold harmless the City of Fairhope from Workmen's Compensation and Public Liability claims from property damage and personal injury, including death, which may arise from the awarded vendor's operations under this Contract / Agreement / Purchase Order, or by anyone directly or indirectly employed by him/her.

29. INVITATION TO BID

Any provisions made in the RFQ / ITB / RFP, or other form of solicitation, supersedes any provisions outlined here in the General Terms and Conditions.

30. INVOICING, DELIVERY, PACKAGING

Invoices shall be prepared only after ordered materials have been delivered. All invoices must show the purchase order number. Unless otherwise specified in writing, vendors shall not ship any material without an authorized Purchase Order from the City of Fairhope Purchasing Department. All packages delivered must show the purchase order number. The awarded vendor will be required to furnish all materials, equipment and/or service called for at the bid price quoted. In the event the awarded vendor fails to deliver within a reasonable period of time, as determined by the City of Fairhope, the right is reserved to cancel the award and subsequent purchase order and purchase from the next lowest responsible bidder the items needed. The original awarded

vendor will be back charged the difference between the original contract price and the price the City of Fairhope has to pay as a result of the failure to perform by the original awarded vendor. All bids will remain firm for acceptance for 60 days from the date of bid opening. Prices shall be net F.O.B., Prepaid and Allow, City of Fairhope chosen site, Baldwin County, Al. The title and risk of loss of the goods will not pass to the City of Fairhope until receipt and acceptance takes place at the F.O.B. point.

31. LABELING

Individual shipping cartons shall be labeled with the name "City of Fairhope", Purchase Order Number, and where applicable, Contract Number, date of manufacture, batch number, storage requirements, conditions, and recommended shelf life. Bidders are encouraged to offer product packaging with recycled content.

32. LOSS OR DAMAGE IN TRANSIT

Delivery by a vendor to a common carrier does not constitute delivery to the City of Fairhope. Any claim for loss or damage incurred during delivery shall be between the vendor and the carrier. The City of Fairhope accepts title only after satisfactory receipt at the delivery point. The City of Fairhope shall note all visible damages on the freight bill and may refuse the damaged goods. The vendor shall make immediate replacement of the damaged merchandise or be subject to damages for breach of contract. If damage is to a small portion of a total shipment and the City of Fairhope will not be inconvenienced because of the shortage, the vendor may be permitted by the Purchasing Manager to deduct the amount of damage or loss from its invoice, in lieu of replacement. Risk of loss during delivery is borne by the vendor until the goods have been accepted by the City of Fairhope, unless otherwise specified in the RFQ / ITB / RFP or other form of solicitation.

33. MANDATORY SITE VISIT

If the RFQ / ITB /RFP or other form of solicitation requires a mandatory site visit, bidders must inspect the site where installation or service is to take place to obtain a full understanding of scope of work outlined therein. Date of site visit will be determined by the City of Fairhope.

34 MONITORING OF SERVICES

Performance of services will be monitored by the requisitioning department and/or the Purchasing Department, and evaluation reports may be filed with the Purchasing Department. Performance not meeting specifications will result in cancellation of Contract / Agreement / Purchase Order and may result in vendor being removed from the vendor list.

35. NONCONFORMING MERCHANDISE

When merchandise received from the lowest responsible bidder is not in accordance with the purchase order, it will be returned to the bidder, at bidder's expense.

36. NON-DESCRIMINATION

The City of Fairhope is an Equal Opportunity Employer and requires that all contractors comply with the Equal Employment Opportunity laws and the provisions of the Contract / Agreement / Purchase Order documents in this regard. The City also encourages and supports the utilization of Minority Business Enterprises on this and all public bids.

37. NON EXCLUSIVE

Unless otherwise specified, this Contract / Agreement / Purchase Order is considered a non-exclusive Contract /Agreement / Purchase Order between the parties.

38. NOTIFICATION AND ACCIDENT REPORTS

In the event of accidents of any kind, in the performance of a Contract / Agreement / Purchase Order, the awarded vendor shall notify the City of Fairhope immediately and furnish, without delay, copies of all such accident reports to the City of Fairhope. If in the performance of their Work, the awarded vendor fails to immediately report an accident to the City of Fairhope, of which the awarded vendor has knowledge of and which results in a fine levied against the City of Fairhope then the awarded vendor shall be responsible for all fines levied against the City of Fairhope.

39. PACKAGING

All goods must be packaged in new packing containers. Packing that meets the requirements of common carriers is acceptable, unless otherwise required. A packing slip or invoice must accompany all shipments and must reference the purchase order number. Unless otherwise specified, goods are to be packaged in cartons meeting federal specifications and shipped on non-
returnable pallets.

. 40. PATENTS

Awarded Vendor guarantees that the sale and / or use of goods will not infringe upon any U.S. or foreign patent. Awarded vendor will at his / her own expense, indemnify, protect and save harmless the City of Fairhope, on any patent claims arising from the purchase of goods or services.

41. PAYMENT

Invoices -- Upon completion of service and delivery of materials specified in the applicable purchase order, awarded vendor will submit an invoice and signed delivery ticket to:

City of Fairhope
Accounts Payable Department
P.O. Box 429
Fairhope, Al. 36533

All invoices must reference appropriate Purchase Order Numbers Payment of Invoice: All invoices received by the City of Fairhope are payable within thirty (30) days from the date of receipt by the City of Fairhope, provided they are approved by the City of Fairhope.

42. PAYMENT WITHHELD

Payment may be withheld until all items have been delivered and all requirements of the Contract / Agreement / Purchase Order have been fulfilled

43. PRODUCT TESTING

Vendor shall incur all cost involved in obtaining an Independent Laboratory Test if the City deems necessary during the term of the Contract / Agreement / Purchase Order. The City of Fairhope reserves the right to request a demonstration of any and all items bid before making the award

44. PERMITS LICENSES AND CERTIFICATES

The awarded vendor is to procure all permits, licenses, and certificates, or any approvals of plans or specifications as may be required by Federal, State, Local Laws, ordinances, rules, and regulations, for the proper execution and completion of Work covered under the Contract / Agreement / Purchase Order.

45. PREPARATION OF BID

All bids / proposals shall be typewritten or in ink on the form(s) prepared by the City of Fairhope. Bids / proposals prepared in pencil will not be accepted. All bids / proposals must be signed by officials of the corporation or company duly authorized to sign bids / proposals. Any bid / proposal submitted without being signed will automatically be rejected. All corrections or erasures shall be initialed and dated by the person authorized to sign quotations /bids / proposals. If there are discrepancies between unit prices quoted and extensions, the unit price will prevail.

46. QUESTIONS / CONTACT

. Commencing with the issuance of the RFQ / ITB / RFP, or other form of solicitation, no vendor or anyone acting on a vendor's behalf, shall make direct or indirect contact with City personnel or undertake any activities or take any action to otherwise promote its quotation / bid / proposal to the City or its personnel. All communications shall be made to the contact identified in the quotation / bid / proposal documents. Violation of this requirement may, at the City's sole and absolute discretion, be grounds for disqualifying a vendor from further consideration.

47. RECEIPT BY CITY OF FAIRHOPE

If not otherwise stated in the order, the City of Fairhope will be said to have received goods when they have been delivered, unloaded and placed on the agency's dock or if there is no dock,inside an accessible building, and signed for by an authorized City employee. Shipments will be checked against the receiving copy of the Purchase Order. If the purchase order requires grading certificates, USDA Stamps, or any proof of quality, such proof must accompany the shipment.

48. REJECTION OF BIDS

The City of Fairhope reserves the right to accept or reject any or all bids in whole or in part for any reason, to waive technicalities or informalities, or to advertise for new proposals, if, in the judgment of the awarding authority, the best interest of the City of Fairhope will be promoted thereby. Bidders may be disqualified and rejection of proposals may be recommended for any of (but not limited to) the following causes: Failure to use the bid forms furnished by the City of Fairhope, Lack of signature by an authorized representative on the bid form, Failure to properly complete the bid form and vendor compliance, Evidence of collusion among bidders, Unauthorized alteration of the bid form.

50. RIGHT TO AUDIT

The awarded vendor shall maintain documentation of all work performed. The awarded vendor shall make any and all documentation available to the City of Fairhope at all reasonable times, for inspections and audit by the City of Purchase Order and for a period of Three (3) years after expiration of the Contract / Agreement / Purchase Order.

51. SAMPLES

Bidders will not be required to furnish samples at the time of bid opening, unless specifically called for. The City of Fairhope reserves the right to request samples after bid opening to assist in the evaluation of proposals submitted.

52. SAFETY MEASURES

The awarded vendor shall take all necessary precautions for the safety of the City of Fairhope's and awarded vendor's employees at the Work site, and shall erect and properly maintain at all times, all necessary safeguards for the protection of the workmen and the public. The awarded vendor shall post signs warning against hazards in and around the Work site.

53. SET-UP AND INSTALLATION

Unless otherwise specified, bid / quotation to include cost of all uncrating, disposal of shipping materials, set-up, testing and initial instruction to agency personnel.

54. SPILL CLEAN UP

The awarded vendor shall be responsible for spillage caused by their negligence, which occurs during transit or unloading operations. The awarded vendor shall immediately report and clean up any spillage. Upon failure to do so, the awarded vendor shall remain responsible for all actual related costs

55. SUBSTITUTIONS

Substitutions on a purchase order shall require the approval of the Originating Buyer. The City of Fairhope reserves the right to reject at destination and hold at the vendor's risk and expense any goods supplied by the vendor which do not conform to the specification or description embodied in the order or are inferior in any respect to the good specified. Any good bought by sample which is inferior in quality to the sample submitted by vendor will be rejected. Any goods delivered that do not meet specifications may be returned to the vendor at its expense. When a good is returned, the vendor must make immediate replacement with acceptable merchandise or the City of Fairhope may seek remedies for default.

56. TABULATION

Bid results are posted on The City of Fairhope's web site: www.fairhopeal.gov . The awarded vendor will be sent a written notification via mail.

57. TAXES

Prices quoted shall be delivered prices, exclusive of all federal or state excise, sales, and manufacturer's taxes. The City will assume no transportation or handling charges other than specified in the RFQ, ITB, RFP or other form of solicitation. The City is tax exempt by law – Code of Alabama 1975.

58. TERMINATION FOR CONVENIENCE

Any Contract / Agreement / Purchase Order may be terminated for convenience by the City of Fairhope, in whole or in part, by written notification to the awarded vendor.

59. TERMINATION FOR DEFAULT

Performance of Work under the Contract / Agreement / Purchase Order Agreement may be terminated by the City of Fairhope, in
whole or in part, in writing, whenever the City of Fairhope determines that the awarded vendor has failed to meet the requirements of the Contract / Agreement / Purchase Order.

60. TERMINATION FOR NON-APPROPRIATION

Termination for Non-appropriation – The continuation of any financial obligation beyond the current fiscal year is subject to and contingent upon sufficient funds being appropriated, budgeted, and otherwise made available by the local source, State Legislature and/or federal sources. The City of Fairhope may terminate any financial obligation, and awarded vendor waives any and all claim(s) for damages, effective immediately upon receipt of written notice (or any date specified therein) if for any reason the City of Fairhope's funding from local, State and/or federal sources is not appropriated, withdrawn or limited.

61. TIME IS OF THE ESSENCE

The City of Fairhope and awarded vendor agree that time is of the essence in the performance of work called for under this Contract / Agreement / Purchase Order. The awarded vendor agrees that all work will be accomplished regularly, diligently and uninterrupted at such a rate of progress as will ensure full completion thereof within reasonable time periods.

62. TITLE

All titles, fees, as well as other charges, are to be paid by awarded vendor. Awarded vendor is to furnish prepaid certificate of title in the name of the City of Fairhope, Title shall change upon acceptance of delivery at the City of Fairhope approved delivery location.

63. VENDOR LIST

A vendor may be removed from the City of Fairhope's Bidders List if a vendor fails to respond to three (3) consecutive ITB's. A properly submitted "No Bid" is considered as a response and the vendor will receive credit for the response.

64. WARRANTY

The awarded vendor expressly warrants that all articles, materials, and work offered shall conform to each and every specification, drawing, sample, or other description which is furnished to or adopted by the City of Fairhope, and that it will be fit and sufficient for the purpose intended, merchantable, of good material and workmanship, and free from defects. The awarded vendor further warrants all items for a period of one year, unless otherwise stated, from the date of acceptance of the items delivered and installed or work completed. All repairs, replacements, or adjustments during the warranty period will be at the awarded vendor's sole expense. Awarded vendor will provide written warranty for all parts and labor for a period of (1) one year commencing from date of written acceptance of delivery by City of Fairhope. Awarded vendor will provide written copies of all other applicable warranties, such as, Manufacturer's warranty. Those warranties, if any, will be in addition to the awarded vendor's warranty, and the terms of which will not be altered by the awarded vendor's warranty.

65. IMMIGRATION LAW

The Contractor agrees that it shall comply with all of the requirements of the Beason-Hammon Alabama Taxpayer and Citizen Protection Act, Act No 2011-535, Alabama Code (1975) Section 31-13-1, et. Seq., (also known as the Alabama Immigration Act) see Section 31-13-9, and the provisions of said Act, including all penalties for violation thereof, are incorporated herein.

ITEM X
CONTRACT

This **CONTRACT** is made this ____ day of _____, 2014, by and between the **CITY OF FAIRHOPE** (hereinafter "**OWNER**") and **CONTRACTOR NAME of City, _____State (**hereinafter **"CONTRACTOR"),** on the

BID NO. 039-19, SIDE STREAM STORAGE VESSELS

PROJECT NO. PW010-19, SIDE STREAMSTORAGE VESSELS

The **OWNER** and the **CONTRACTOR agree as set forth below:**

1. The **CONTRACT** consists of all the items contained within this contract, bid package, Project manual, drawings, and all addenda and amendments, and "City of Fairhope Standard Terms and Conditions", which are attached hereto and made a part hereof, as if fully contained herein; for the performance of all work and the furnishing of all labor and materials required for completion of **Project No. PW010-10 2019-SIDE STREAM STORAGE VESSELS**

2. The **CONTRACTOR** shall perform all the WORK described herein as awarded by the Fairhope City Council.

3. The **WORK** to be performed under this **CONTRACT** shall be commenced upon execution of the **CONTRACT** within **TEN (10)** days of the date specified in a *Notice to Proceed (NTP*) to be issued to the **CONTRACTOR** by the **OWNER**, or its authorized representative. The work shall be completed, subject to authorized adjustments, within **ONE HUDRED FIFTY (150) CALENDAR** days from and after the commencement date stipulated in said *Notice to Proceed*. Liquidated damages for non-completion of the work within this time limit will be assessed at the rate of **$500.00** per working day.

4. The **CONTACTOR** shall, before commencing the **WORK**, execute a **Performance Bond**, with penalty equal to One Hundred Percent (100%) of the amount of the **CONTRACT SUM**. The **CONTRACTOR** shall also, before commencing the **WORK**, execute a **Labor And Materials Bond**, payable to the **OWNER,** in an amount greater than Fifty Percent (50%) of the **CONTRACT SUM**, with the obligation that the **CONTRACTOR** promptly make all payments to all persons supplying labor, materials or supplies for, or in, prosecution of the **WORK** provided in the **CONTRACT** and for the payment of reasonable attorney's fees incurred by successful claimants. All bonds shall be executed by surety companies duly authorized and qualified to make such bonds in the State of Alabama in the amount required.

5. The **OWNER** shall pay the **CONTRACTOR** in current funds for the performance of the WORK, the **CONTRACT SUM** of _____

_____ **, ($)** _____.

Per **ALA. CODE § 39-2-12(b)(2)(c)**, as amended: **"In making the partial payments, there shall be retained not more than five percent of the estimated amount of work done and the value of materials stored on the site or suitably stored and insured off-site, and after 50 percent completion has been accomplished, nor further retainage shall be withheld"**.

Per **ALA. CODE §39-2-12(b)(1)**, as amended: "**Unless otherwise provided in the specifications, partial payments shall be made as the work progresses at the end of each calendar month, but in no case later than 35 days after the acceptance by the awarding authority that the estimate and terms of the contract providing for partial payments have been fulfilled"**.

Per **ALA. CODE §39-2-12(h)**as amended: **"All material and work covered by partial payments made shall become the sole property of the awarding authority but the contractor shall not be relieved from the sole responsibility for the care and protection of materials and work upon which payments have been made, and for the restoration of any damaged work" .**

The quantities appearing in the bid schedule are approximate only and are prepared for the comparison of bids. Payment to the **CONTRACTOR** will be made only for the actual quantities or work performed and accepted, or materials furnished, in accordance with the contract. The scheduled quantities or work to be done and materials to be furnished may increase decrease, or be omitted as provided herein.

The **CONTRACTOR** shall, immediately after the completion of the **CONTRACT**, give notice of the completion by an advertisement in a newspaper of general circulation published within the city or county in which the work has been done, for a period of four successive weeks. A final settlement shall not be made upon the **CONTRACT** until the expiration of 30 days after the completion of the notice. Proof of the publication of the notice shall be made by the **CONTRACTOR** to the **OWNER** by affidavit of the publisher and a printed copy of the notice published. The **CONTRACTOR** shall also provide to the **OWNER,** in

addition to the proof of advertisement, and in compliance with **ALA. CODE §39-2-12(i)(1) (a-c)**, as amended:

1) A properly executed and duly certified voucher for payment
2) Final Release of Liens. A release of all claims and claims of lien against the awarding Authority arising under and by virtue of the contract,
3) Contractor's one year warranty on all materials used,
4) Contractor's one year guarantee on workmanship,
5) All pertinent Manufacturer's warranty
6) Consent of Surety Co. to Final Payment
7) Contractor's Affidavit of Payment of Claims and Debt

Per ALA CODE §39-2-12(i)(2), as amended "**(2)** Such payment shall become due and owing 35 days after all the requirements of subdivision (1) are fulfilled, and any agreement to increase the 35-day period for payment after the execution of the contract is not enforceable."

6. The **CONTRACTOR** shall not commence work under this **CONTRACT** until it has purchased **INSURANCE** for protection from any and all claims that may arise out of or result from the **CONTRACTOR'S** operations under the **CONTRACT**. The **CONTRACTOR'S** shall maintain the required insurance in the minimum amounts as described in **ITEM VII INSURANCE**.

7 To the fullest extent permitted by law, the **CONTRACTOR** shall indemnify and hold harmless the **OWNER**, and its agents and employees from and against all claims, damages, losses and expenses, including but not limited to, attorney's fees arising out of or resulting from the performance of the **WORK.**

8. The **CONTRACTOR** has thoroughly and completely inspected the premises, and hereby agrees to perform the WORK for the **CONTRACT SUM**.

9. The **CONTRACTOR** warrants to the **OWNER** that all materials furnished under this **CONTRACT** will be new, and that all work will be of a good quality, free from faults and defects and in conformance with the **CONTRACT DOCUMENTS**. All **WORK** not conforming to these requirements, including substitutions not properly approved and authorized, may be considered defective. If required by the **OWNER**, the **CONTRACTOR** shall furnish satisfactory evidence as to the kind and quality of materials.

10 The **CONTRACTOR** shall promptly correct all work rejected by the **OWNER** as defective or failing to conform to the **CONTRACT DOCUMENTS**. The **CONTRACTOR** shall bear all costs of correcting such rejected **WORK**, regardless of whether the **WORK** is fabricated, installed or completed.

11. The **CONTRACTOR** shall remove from the site all portions of the **WORK** which are defective or non-conforming and which have not been corrected, unless removal is waived by the **OWNER**.

12. If the **CONTRACTOR** fails to correct defective or nonconforming **WORK** within a reasonable time fixed by written notice from the **OWNER**, the **OWNER** may correct and the **CONTRACTOR** shall bear the cost of making good all work of the **OWNER** or separate contractors.

13. If the **OWNER** prefers to accept the defective work, the **OWNER** may do so instead of requiring its removal and correction, in which case a reduction in the **CONTRACT SUM** shall be effected whether or not final payment has been made. The reduction shall be equitable and appropriate.

14. If the **CONTRACTOR** fails to correct defective **WORK** as set forth above or persistently fails to carry out the **WORK** in accordance with the **CONTRACT DOCUMENTS**, or fails to supply enough properly trained workers or proper materials or disregards laws, ordinances, rules or regulations, the **OWNER**, by a written order signed by its authorized agent, may order the **CONTRACTOR** to stop the **WORK**. If the **CONTRACTOR** fails within the seven (7) days after receipt of written notice to commence corrective action, the **OWNER** may, after those seven (7) days, without prejudice to any other remedy of the **OWNER**, terminate employment of the **CONTRACTOR** and take possession of the site and all materials thereon, and may finish the work by whatever methods the **OWNER** finds expedient.

15. If, within one (1) year after acceptance of the **WORK** by the **OWNER**, or within such longer period of time as may be prescribed by law or by the terms of any applicable special warranty required by the **CONTRACT DOCUMENT**, any of the **WORK** is found to be defective or not in conformity with the **CONTRACT DOCUMENTS**, the **CONTRACTOR** shall correct it promptly after receipt of a written notice

from the **OWNER** to do so unless the **OWNER** has previously given the **CONTRACTOR** a written acceptance of such condition. This obligation shall survive both final payment for the **WORK** and termination of the **CONTRACT**. The **OWNER** shall give such notice promptly after discovery of the condition.

16. All **TIME LIMITS** stated in the **CONTRACT DOCUMENTS** are of the essence of the contract.

17. If the **CONTRACTOR** is delayed at any time in the progress of the **WORK** by any act or neglect of the **OWNER**, any of its employees, labor disputes, fire, unusual delay in transportation, adverse weather conditions not reasonably anticipatable, unavoidable casualties, or any causes beyond the **CONTRACTOR'S** control, the **CONTRACT** time shall be extended to such reasonable time as the **OWNER** may determine.

18. The **CONTRACTOR** shall be responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the **WORK**. The **CONTRACTOR** shall perform the **WORK** in a manner that allows the **OWNER**, to the maximum extent possible, to continue its daily operations on the premises.

19. The **CONTRACTOR** shall at all times keep the premises free from accumulation of waste materials or rubbish caused by the **CONTRACTOR'S** operations. At the completion of the **WORK**, the **CONTRACTOR** shall remove all the **CONTRACTOR'S** waste materials and rubbish from and about the **PROJECT** as well as all the **CONTRACTOR'S** tools, construction equipment, machinery and surplus materials. If the **CONTRACTOR** fails to clean up at the completion of the WORK, the **OWNER** may do so and the cost thereof shall be charged to the **CONTRACTOR**.

20. WRITTEN NOTICE shall be deemed to have been duly served if delivered in person to the individual or member of the firm or entity or to an officer of the corporation for whom it was intended, or if delivered at or sent by registered or certified mail to the last business address known to the party giving the notice.

21 Per **ALA CODE §39-2-12(i)(2) (k-l)**, as amended: **(k)"**The contract between the awarding authority and contractor shall contain provisions outlining the source of sufficient funds to be utilized to full fill the awarding authority's obligations under the contract, including whether the funds are: ___ held by the awarding authority at the time of the execution of the contract, or ____ whether the funds will become available at a date following the execution of the contract.

(l) Should the source of funds for the payment be a grant, award, or direct reimbursement from the state, federal government, or other source which will not become available until after the execution of the contract, this shall be disclosed in the bid document and contract and the provisions of this chapter regarding prompt payment shall not apply until the awarding authority is in receipt of the funds as provided in the contract. Upon such receipt, the contracting agency shall process payment within 10 days and the requirement shall be enforceable as provided herein."

22. The duties and obligation imposed by the **CONTRACT DOCUMENTS** and the **RIGHTS AND REMEDIES** available thereunder shall be in addition to, and not a limitation of any duties, obligations, rights and remedies otherwise imposed or available by law.

23. Should either party to the **CONTRACT** suffer injury or damage to person or property because of any act or omission of the other party's employees or agents, claim shall be made in writing to such other party within a reasonable time after the first observance of such injury or damage.

24. The **OWNER** and **CONTRACTOR**, respectively, bind themselves, their partners, successors, assigns, and legal representative to the other party hereto and to the partners, successors, assigns, and legal representatives to the other party with respect to all covenants, agreements, and obligations contained in the **CONTRACT DOCUMENTS**. Neither party to the **CONTRACT** shall assign the **CONTRACT** or sublet it as a whole without the written consent of the other.

IN WITNESS WHEREOF, the parties hereto have executed this Contract as of the day and year first above written.

CITY OF FAIRHOPE, ALABAMA

BY:_____ ATTEST:_____
Karin Wilson, Mayor LISA A. HANKS, MMC
City Clerk

NOTARY FOR THE CITY

STATE OF ALABAMA

COUNTY OF BALDWIN
I, the undersigned authority, a Notary Public in and for said State and County, hereby certify that Karin Wilson whose name as Mayor of the City of Fairhope, a municipal corporation, is signed to the foregoing instrument, and who is known to me, acknowledged before me on this day that, being informed of the contents of the instrument, she, as such Officer and with full authority, executed the same voluntarily for and on behalf of said Municipal Corporation.

Given under my hand and seal on this the ___day of _____, 2019.

_____
Notary Public
My Commission Expires: _____

CONTRACTOR

Individual or Partnership

_____ _____
(Individual or Partnership) (PRINT name of Partner)

_____ _____
(SIGNATURE of representative authorized to sign Bids and Contracts for the company) (PRINT name of Partner)

_____
(PRINT name of representative authorized to sign Bids and Contracts for the company)

_____
Address

_____
Phone no._____ Fax no. _____
Primary email address_____
Alabama Contractor's License No _____ Foreign Corp Entity ID_____
(if required) (If out of state)

Corporation

Company_____ State of Incorporation_____

Company Representative _____
(SIGNATURE of representative authorized to sign Bids and Contracts for the company)

Company Representative _____
(PRINT name of representative authorized to sign Bids and Contracts for the company)

_____
Address

_____

Phone No. ( )_____Fax no. ( ) _____

Primary email address_____

Alabama Contractor's License No _____ Foreign Corp. Entity ID_____
(if required) (If out of state)

NOTARY FOR THE CONTRACTOR

STATE OF _____}
COUNTY OF_____}

I, the undersigned authority in and for said State and County, hereby certify that_____
as _____ of _____
(contractor name) title company name
whose name is signed to the foregoing document and who is known to me, acknowledged before me on this day, that being informed of the contents of the document he executed the same voluntarily on the day the same bears date.

Given under my hand and Notary seal on this ____ day of _____, 2019

Notary Public_____

My Commission Expires____/____/_____

ITEM XI
Alabama Immigration Act Contract Requirements

1.0 Background

The **Beason-Hammon Alabama Taxpayer and Citizen Protection Act, Act No 2011-535**, **as amended by Act No 2012-491, *Code of Alabama* (1975) Section 31-13-1** through **Section 31-13-30** (also known as and hereinafter referred to as "the Alabama Immigration Act") is applicable to contracts with the City of Fairhope, Alabama. All business entities entering into contracts with the City of Fairhope, Alabama will comply with the Alabama Immigration Act.

2.0 Definitions

ALIEN. Any person who is not a citizen or national of the United States, as described in 8 U.S.C. § 1101, et seq., and any amendments thereto.

BUSINESS ENTITY. Any person or group of persons employing one or more persons performing or engaging in any activity, enterprise, profession, or occupation for gain, benefit, advantage, or

livelihood, whether for profit or not for profit. Business entity shall include but not be limited to the following:

a. Self-employed individuals, business entities filling articles of incorporation, partnerships, limited partnerships, limited liability companies, foreign corporations, foreign limited partnerships, foreign liability companies authorized to transact business in this state, business trusts, and any business entity that registers with the Secretary of State.
b. Any business entity that possesses a business license, permit, certificate, approval, registration, charter, or similar form of authorization issued by the state, any business entity that is exempt by law from obtaining such a business license, an any business entity that is operating unlawfully without a business license.

CONTRACTOR. A person, employer, or business entity that enters into an agreement to perform any service or work or to provide a certain product in exchange for valuable consideration. This definition shall include, but not be limited to, a general contractor, subcontractor, independent contractor, contract employee, project manager, or a recruiting or staffing entity.

EMPLOYEE. Any person directed, allowed, or permitted to perform labor or service of any kind by an employer. The employees of an independent contractor working for a business entity shall not be regarded as the employees of the business entity, for the purposes of this chapter. This term does not include any inmate in the legal custody of the state, a county, or a municipality.

EMPLOYER. Any person, firm, corporation, partnership, joint stock association, agent, manager, representative, foreman, or other person having control or custody of any employment, place of employment, or of any employee, including any person or entity employing any person for hire within the State of Alabama, including a public employer. This term shall not include the occupant of a household contracting with another person to perform casual domestic labor within the household.

E-VERIFY. The electronic verification of federal employment authorization program of the Illegal Immigration Reform and Immigrant Responsibility Act of 1996, P.L. 104-208, Division c, Section 403 (a); 8 U.S.C. §1324(a), and operated by the United States Department of Homeland Security, or its successor program.

STATE-FUNDED ENTITY. Any governmental entity of the state or a political subdivision thereof or any other entity that receives any monies from the state or a political subdivision thereof; provided, however, an entity that merely provides a service or a product to any governmental entity of the state or a political subdivision thereof, and receives compensation for the same, shall not be considered a state-funded entity.

SUBCONTRACTOR. A person, business entity, or employer who is awarded a portion of an existing contract by a contractor, regardless of its tier.

UNAUTHORIZED ALIEN. An alien who is not authorized to work in the United States as defined in 8 U.S.C. § 1324a (h) (3) .

3.0 Mandatory Clause

All contracts or agreements to which the state, a political subdivision, or state-funded entity are a party shall include the following clause:

> ***"By signing this contract, the contracting parties affirm, for the duration of the agreement, that they will not violate federal immigration law or knowingly employ, hire for employment, or continue to employ an unauthorized alien within the state of Alabama. Furthermore, a contracting party found to be in violation of this provision shall be deemed in breach of the agreement and shall be responsible for all damages resulting therefrom."***

For purposes of this section, "contract" shall mean a contract awarded by the state, any political subdivision thereof, or any state-funded entity that was competitively bid or would, if entered into by the state or an agency thereof, be required to be submitted to the Contract Review Permanent Legislative Oversight Committee.

4.0 Contracts Involving Business Entity, or Employer

As a condition for the award of any contract, grant, or incentive by the state, any political subdivision thereof, or any state-funded entity to a business entity or employer that employs one or more employees, the business entity or employer shall not knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama.

As a condition for the award of any contract, grant, or incentive by the state, any political subdivision thereof, or any state-funded entity to a business entity or employer that employs one or more employees within the state of Alabama, **the business entity or employer shall provide documentation establishing that the business entity or employer is enrolled in the E-Verify program.** During the performance of the contract, the business entity or employer shall participate in the E-Verify program and shall verify every employee that is required to be verified according to the applicable federal rules and regulations.

5.0 Contracts Involving Subcontracting

Any subcontractor on a project paid for by contract, grant, or incentive by the state, any political subdivision thereof, or any state-funded entity shall not knowingly employ, hire for employment, or continue to employ an unauthorized alien within the State of Alabama and shall also enroll in the E-Verify program prior to performing any work on the project. Furthermore, during the performance of the contract, the subcontractor shall participate in the E-Verify program and shall verify every employee that is required to be verified according to the applicable federal rules and regulations. This subsection shall only apply to subcontractors performing work on a project subject to the provisions of this section and not to collateral persons or business entities hired by the subcontractor.

6.0 Proof of E-Verify documentation will be in the form of a copy of the signed Memorandum Of Understanding (MOU) generated upon completion of the E-Verify program.

ITEM XII
Sales Tax Exemption Requirements and Procedure

At the time of Bid, provide an accounting of sales tax on the form provided in ITEM III BID RESPONSE FORM. Failure to provide an accounting of sales tax shall render the bid non-responsive. Other than **determining responsiveness**, sales tax shall accounting shall not affect the bid pricing nor be considered in the determination of the lowest responsible and responsive bidder.

1.0 BACKGROUND

Legislative Act 2013-205, Code of Alabama (1975) Section 40-9-14.1, is applicable to certain construction contracts with the City of Fairhope, Alabama. This law allows a sales and use tax exemption When applicable, all business entities entering into construction contracts with the City of Fairhope, Alabama, will comply with the requirements of Section 40-9-14.1.

Code of Alabama (1975) Section 40-9-14.1

Certificates of exemption to governmental entities, contractors, etc., for certain tax exempt projects.

(a) For the purposes of this section, the term governmental entity means the State of Alabama and its political subdivisions, including a county, a municipality, and an industrial or economic development board or authority. A governmental entity shall also include an educational institution of any of the foregoing Alabama political subdivisions including a public college or university, a county or city board of education, and the State Board of Education.

(b)(1) The Department of Revenue shall issue a certificate of exemption to the governmental entity for each tax exempt project.

(2) The Department of Revenue shall grant a certificate of exemption from state and local sales and use taxes to any contractor licensed by the State Licensing Board for General Contractors, or any subcontractor working under the same contract, for the purchase of building materials, construction materials and supplies, and other tangible personal property that becomes part of the structure that is the subject of a written contract for the construction of a building or other project, not to include any contract for the construction of any highway, road, or bridge, for and on behalf of a governmental entity which is exempt from the payment of sales and use taxes.

(c) The use of a certificate of exemption for the purchase of tangible personal property pursuant to this section shall include only tangible personal property that becomes part of the structure that is the subject of the construction contract. Any contractor or subcontractor purchasing any tangible personal property pursuant to a certificate of exemption shall maintain an accurate cost accounting of the purchase and use of the property in the construction of the project.

(d) A contractor who has an exemption from sales and use tax for the purchase of materials to use on a government project shall file, in a manner as prescribed by the department, reports of all exempt purchases. The reports shall be filed as a prerequisite to renewal of a certificate of exemption.

(e)(1) The department may assess any contractor or subcontractor with state and local sales or use taxes on any item purchased with a certificate of exemption not properly accounted for and reported as required.

(2) Any contractor or subcontractor who intentionally uses a certificate of exemption in violation of this section shall, in addition to the actual sales or use tax liability due, be subject to a civil penalty levied by the department in the amount of not less than a minimum of two thousand dollars ($2,000) or two times any state and local sales or use tax due for the property and, based on the contractor's or subcontractor's willful misuse of the certificate of exemption, may be barred from the use of any certificate of exemption on any project for up to two years.

(f) The department may adopt rules to implement this section in order to effectuate the purposes of this section and to provide for accurate accounting and enforcement of this section.

(g) In bidding the work on a tax exempt project, the bid form shall provide for an accounting for the tax savings.

(h) The intent of this section is to lower the administrative cost for the governmental entity, contractor, and subcontractor for public works projects. It is not the intent of this section to change the basis for determining professional services from fair market value, which may include sales and use taxes.

(i) This section shall be operative for contracts entered into January 1, 2014, or thereafter, and shall not apply to any contract entered into prior to January 1, 2014. In addition, this section shall not apply to any contract change orders or contract extensions, including revised, renegotiated, or altered contracts, when the original contract was entered into prior to January 1, 2014. The Department of Revenue may adopt rules to implement this section after October 1, 2013. *(Act 2013-205, §1.)*

2.0 PROCEDURE

2.0.1 Each contractor and subcontractor must make application for qualification of the Sales and Use Tax exemption using Alabama Dept. of Revenue Form ST: EXC-01 for each tax-exempt project. The application is available on the Alabama Dept. of Revenue's website at http://revenue.alabama.gov/salestax/ST-EXC-0l.pdf. Applications should be submitted directly to the Sales and Use Tax Division Central Office, P.O Box 327710, Montgomery, AL 36132-7710.

2.0.2 Legislative Act 2013-205 requires the Department of Revenue to issue Form STC-1, *Sales and Use Tax Certificate of Exemption for Government Entity Projects,* to all contractors and subcontractors working on qualifying governmental entity projects once the Form ST: EXC-01 is approved.

2.0.3 Contractors and sub-contractors for qualifying projects will be required to file monthly consumers use tax returns and report all exempt purchases for ongoing projects, as well as all taxable purchases on one return. These returns are required to be filed through the Alabama Dept. of Revenue's online tax return filing and payment portal, My Alabama Taxes (https://myalabamataxes.alabama.gov).

CONTRACTOR INFORMATION

Please print this section and turn in with your response

Bid No. 039-19 **Name: SIDE STREAM STORAGE VESSELS**

Business Organization
Name of Bidder (exactly as it appears on W-9):
_____
Doing-Business-As Name of Bidder:
_____
Principal Office Address:
_____
_____
_____

Form of Business Entity [check one ("X"]
Corporation ____
Partnership ____
Individual ____
Joint Venture ____
Other (describe): _____

Corporation Statement
If a corporation, answer the following:
Date of incorporation: _____
Location of incorporation: _____
The corporation is held: Publicly ___
Privately ___

Partnership Statement

If a partnership, answer the following:
Date of organization: _____
Location of organization: _____
The partnership is: General ___
Limited ___

Joint Venture Statement
If a Joint Venture, answer the following:
Date of organization: _____
Location of organization: _____
JV Agreement recorded? Yes ___
No ___

Primary Contact _____
Title: _____
Telephone Number: _____
Fax Number: _____
Email Address: _____
Website: _____

END OF INFORMATION SECTION