



# STRATUM ENGINEERING, LLC

Geotechnical Engineering ♦ Testing and Inspection Services

August 13, 2013

Dammon Engineering, Inc.  
554 Old Spanish Trail  
Slidell, Louisiana 70458  
Phone: (985) 649-5832

Attn: Mr. Chuck Dammon

Re: Geotechnical Investigation  
Proposed Textron Marine & Land Expansion  
252 Stone Road  
Slidell, Louisiana  
SE Proposal No. G13-111R  
Revised September 10, 2013

Dear Chuck:

Stratum Engineering, LLC (SE) is pleased to submit the following proposal for performance of a subsurface exploration at the site of the above referenced project. The subsurface exploration will be performed so that cost effective foundation and pavement recommendations can be provided for the proposed Textron Marine & Land facility expansion in Slidell, Louisiana.

The expansion will take place on all four (4) sides of the existing facility located at 252 Stone Road. The south area is currently undeveloped and covered with surface vegetation while the west, north, and east areas are partially covered with concrete pavement. An existing drainage ditch also runs parallel to the building on the west side, and the east side of the building is a dock high truck well.

The project will include the construction of a single story addition on the south side of the facility used as a new lunch room and tool room. New roadways for the transit of 27 ton tanks will be constructed on the east, north, and west sides of the facility with a ramp structure provided at each location to transit in to the dock high facility. Detailed structural loading information was not provided at the time of this proposal, but will be provided at a later date. Grading information was also not provided at the time of this proposal. However, it is assumed that less than two (2) feet of fill will be needed in the building addition areas to achieve the finished floor elevation. Up to four (4) feet of fill will be needed at the west side ramp location to reach the design grade.

The subsurface exploration will include the following services:

- Sampling and testing of the subsurface materials and observations of the groundwater conditions on the site;
- Identification of the physical and engineering characteristics of the subsurface materials encountered during the sampling and testing;
- Recommendations of the type of foundations which would be suitable for the proposed structures;
- Rigid pavement recommendations;
- Seismic site classification;
- Site preparation including subgrade preparation and fill compaction requirements;
- Consideration of soil related factors that may impact construction.

It is proposed to explore the subsurface materials and groundwater conditions at the site by drilling soil borings. The number and depths of the soil borings will depend on the subsurface conditions encountered. Based on our experience in the area and discussions with Dammon Engineering, we recommend drilling two (2) borings to a depth of 20 feet below the existing ground surface within the proposed building addition. Three (3) borings will also be drilled to 10 feet in the ramp areas on each side of the building, and one (1) boring will be advanced to a depth of 6 feet in the new roadway alignment.

Drilling and sampling techniques will be accomplished in general accordance with ASTM Standard Procedures. Samples will generally be obtained continuously from the ground surface to a depth of about ten (10) feet and at a maximum of five (5) foot intervals thereafter to the borings completion depth. Samples will be obtained using a 3 inch diameter Shelby Tube in clays and split spoon sampler in sands and silts. The subsurface exploration will also include laboratory testing of the samples obtained to evaluate the classification, strength, and other characteristics of the subsurface materials involved. The results of the field exploration and laboratory tests will be used in the engineering analysis and in the formulation of the recommendations which will be presented in a written report prepared by a professional engineer.

It is proposed that the fee for the performance of the above outlined services is determined on a lump sum basis and that the work be performed pursuant to the SE General Conditions, a copy of which is enclosed herewith and incorporated into this proposal. On the basis of the above outlined scope of services, it is estimated that the total cost will be **\$4,600.00**. Any additional field, laboratory, or engineering services will be billed on a unit price basis in accordance with the attached Schedule of Services and Fees.

Prior to drilling at the project site, SE will notify the local utility companies and request that underground utilities be marked. However, it is our experience that the utility companies will not mark privately owned utilities. Our proposal assumes that private utility lines will be located in the field by others prior to mobilization of the drill rig. Therefore, SE will not be responsible for any loss, damage, or expenses that may be incurred or sustained in the event existing subsurface utilities are damaged during the course of our field exploration.

SE will proceed with the work based on verbal authorization; however, please sign and return one copy of this proposal intact along with a completed copy of the attached Project Data Sheet so that a formal file can be established. We appreciate the opportunity to offer our services to your project. If you have any questions, please feel free to contact us.

Respectfully submitted,  
STRATUM ENGINEERING, LLC



William "Dean" McInnis, E.I.  
Project Manager



Tony Y. Maroun, P.E.  
Principal

Attachments: Schedule of Services & Fees  
Project Data Sheet  
General Conditions  
Boring Location Plan

AGREED TO THIS 11 DAY OF SEPT 2013  
SIGNATURE: Chuck Dammon  
PRINTED NAME: CHUCK DAMMON  
TITLE: VIP  
FIRM: DAMMON ENGINEERING

**STRATUM ENGINEERING, LLC  
GEOTECHNICAL ENGINEERING AND LABORATORY TESTING  
SCHEDULE OF SERVICES AND FEES  
EFFECTIVE JANUARY 2013**

**Technical Services**

Principal Engineer .....	Per Hour	\$140.00
Project Engineer/Field Engineer .....	Per Hour	\$110.00
Site Coordinator.....	Per Hour	\$75.00
Technician .....	Per Hour	\$65.00
Geotechnician .....	Per Hour	\$65.00
Clerical/Drafting Services.....	Per Hour	\$55.00

**Laboratory Testing Services**

Moisture Content Test (ASTM D2216) .....	Per Test	\$6.00
Density Determination.....	Per Test	\$15.00
Atterberg Limits Determination (ASTM D4318) .....	Per Test	\$60.00
Percent Passing #200 Sieve (ASTM D1140) .....	Per Test	\$40.00
Sieve Analysis (ASTM D422).....	Per Test	\$75.00
Hydrometer Analysis (ASTM D422).....	Per Test	\$100.00
Unconfined Compression (ASTM D2166) .....	Per Test	\$48.00
Moisture-Density Relationship		
a. ASTM D698 and D1557, Method A .....	Per Test	\$135.00
b. ASTM D698 and D1557, Methods B, C & D .....	Per Test	\$145.00
California Bearing Ratio (ASTM D1883) excluding MD Relationship.....	Per Test	\$225.00
Organic Content (ASTM D2974) .....	Per Test	\$65.00
pH Determination .....	Per Test	\$30.00
Specific Gravity (ASTM D854).....	Per Test	\$95.00
Triaxial Shear Test (unconsolidated undrained) ASTM D2850.....	Per Point	\$75.00
Consolidation Test (ASTM D2435).....	Per Test	\$400.00

**Mobilization and Demobilization**

Pre-mobilization and Project Coordination.....	See Personnel Rates	
Drill Rig, Support Vehicle and crew.....	Per Mile	\$5.00
Minimum Mob Charge .....	Lump Sum	\$200.00
ATV Mounted Drill Rig .....	Per Mile	\$6.50
Per Diem, Per Person.....	Per Day	\$100.00
Equipment Rental .....		Cost +15%

**Drilling Services**

<u>Drilling and Sampling Footage Rates. 0 – 50'</u>		
Intermittent – 5' Intervals .....	Per Foot	\$14.50
Continuous Sampling.....	Per Foot	\$21.00
<u>Drilling and Sampling Footage Rates. 50' – 100'</u>		
Intermittent – 5' Intervals .....	Per Foot	\$19.00
Continuous Sampling.....	Per Foot	\$27.00
<u>Drilling and Sampling Footage Rates. 100' – 150'</u>		
Intermittent – 5' Intervals .....	Per Foot	\$26.00
Continuous Sampling.....	Per Foot	\$36.00
<u>Additional Services</u>		
Grouting.....	Per Foot	\$4.75
Hand Auger Drilling and Sampling .....	Per Hour	\$90.00

Note: The rates apply only to geotechnical/foundation borings with level D personal protection equipment in areas which are not contaminated by hazardous constituents. Expedited services including overnight shipping will be billed at cost plus 15 percent.

**STRATUM ENGINEERING, LLC  
PROJECT DATA SHEET  
GEOTECHNICAL ENGINEERING SERVICES**

1. Project Name: \_\_\_\_\_
2. Project Location: \_\_\_\_\_
3. Your Job No.: \_\_\_\_\_ Purchase Order No.: \_\_\_\_\_
4. Project Manager: \_\_\_\_\_ Telephone No.: \_\_\_\_\_
5. Number and Distribution of Reports:  

<input type="checkbox"/> Copies To: _____ _____ Attn: _____ E-mail: _____	<input type="checkbox"/> Copies To: _____ _____ Attn: _____ E-mail: _____
<input type="checkbox"/> Copies To: _____ _____ Attn: _____ E-mail: _____	<input type="checkbox"/> Copies To: _____ _____ Attn: _____ E-mail: _____
6. Invoicing Address: \_\_\_\_\_  
\_\_\_\_\_  

Attn: _____	E-mail: _____
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7. Type of Structure: \_\_\_\_\_ Number of Floors: \_\_\_\_\_
8. Special Equipment or Installation: \_\_\_\_\_
9. Interior Column Spacing: \_\_\_\_\_ Exterior Column Spacing: \_\_\_\_\_
10. Exterior Column Load: \_\_\_\_\_ Live: \_\_\_\_\_ Dead: \_\_\_\_\_
11. Interior Column Load: \_\_\_\_\_ Live: \_\_\_\_\_ Dead: \_\_\_\_\_
12. Floor Slab Load: \_\_\_\_\_ Slab on Grade: \_\_\_\_\_ Basement/Depth: \_\_\_\_\_
13. Will elevation of site be raised by filling: \_\_\_\_\_ How Much: \_\_\_\_\_
14. Pavement Type: \_\_\_\_\_ Traffic Load: \_\_\_\_\_ Traffic Type: \_\_\_\_\_
15. Is there any other subsurface information available? \_\_\_\_\_  
\_\_\_\_\_
16. Other pertinent information: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

## GENERAL CONDITIONS

1. **Parties and Scope of Work:** Stratum Engineering, LLC (hereinafter referred to as SE) shall include said company, or its particular division, subsidiary or affiliate performing the work. "Work" means the specific geotechnical, analytical, testing or other service to be performed by SE as set forth in SE's proposal, the clients' acceptance thereof and this General Conditions. "Client" refers to the person or business entity ordering the work to be done by SE. If the client is ordering the work on behalf of another, the client represents and warrants that the client is the duly authorized agent of said party for the purpose of ordering and directing said work. Unless otherwise stated in writing, the client assumes sole responsibility for determining whether the quantity and the nature of the work ordered by the client is adequate and sufficient for the clients' intended purpose. Client shall communicate these General Conditions to each and every third party to whom the client transmits any part of SE's work. SE shall have no duty or obligation to any third party greater than that set forth in SE's proposal, client's acceptance thereof and these General Conditions. The ordering of work from SE shall constitute acceptance of the terms of SE's proposal and these General Conditions.
2. **Tests and Inspections:** Client shall cause all tests and inspections of the site, materials and work performed by SE or others to be timely and properly performed in accordance with the plans, specifications and contract documents, and SE's recommendations. Client or any third party shall bring no claims for loss, damage or injury against SE unless all tests and inspections have been so performed and unless SE's recommendations have been followed. Client agrees to indemnify, defend and hold SE, its officers, employees and agents harmless from any and all claims, suits, losses, costs and expenses, including, but not limited to, court costs and reasonable attorney's fees in the event that all such tests and inspections are not so performed or SE's recommendations are not so followed except to the extent that such failure is the result of the negligence, willful or wanton act or omission of SE, its officers, agents or employees.
3. **Scheduling of Work:** The services set forth in SE's proposal and client's acceptance will be accomplished in a timely, workmanlike and professional manner by SE personnel at the prices quoted. If SE is required to delay commencement of the work or if, upon embarking upon its work, SE is required to stop or interrupt the progress of its work as a result of changes in the scope of the work requested by the client, to fulfill the requirements of third parties, interruptions in the progress of construction, or other causes beyond the direct reasonable control of SE, additional charges will be applicable and payable by client. Client will provide written notice to third party entities (if any) which are responsible for requesting services to be performed that they (third party) are required to arrange for those testing services to be performed. All field services will require a minimum 24 hour notice.
4. **Access to Site:** Client will arrange and provide such access to the site as is necessary for SE to perform the work. SE shall take reasonable measures and precautions to minimize damage to the site and any improvements located thereon as the result of its work or the use of its equipment; however, SE has not included in its fee the cost of restoration of damage which may occur. If client desires or requires SE to restore the site to its former condition, upon written request, SE will perform such additional work as is necessary to do so and client agrees to pay SE the cost thereof.
5. **Damage to Existing Man-Made Objects:** Unless SE has assumed in writing the responsibility of locating subsurface or latent conditions, client agrees to indemnify and save SE harmless from all claims, suits, losses, costs and expenses, including reasonable attorney's fees as a result of personal injury, death or property damage occurring with respect to SE's performance of its work and arising from subsurface or latent conditions or damage to subsurface or latent objects, structures, lines or conduits where the actual or potential presence and location thereof was not revealed to SE by client.
6. **Responsibility:** SE's work shall not include determining, supervising or implementing the means, methods, techniques, sequences or procedures of construction. SE shall not be responsible for evaluating, reporting or affecting job conditions concerning health, safety or welfare. SE's work or failure to perform it shall not in any way excuse any contractor, subcontractor or supplier from performance of its work in accordance with the contract documents.
7. **Sample Disposal:** Unless otherwise agreed, test specimens or samples will be disposed immediately upon completion of the test. All drilling samples or specimens will be disposed 60 days after submission of SE's report, unless written notice is given before commencement of services.
8. **Payment:** Client shall be invoiced once each month for work performed during the preceding period. Client agrees to pay each invoice within thirty (30) days of invoice date. The client further agrees to pay interest on all amounts invoiced and not paid or objected to for valid cause within said thirty (30) day period at the rate of eighteen (18) percent per annum (or the maximum interest rate permitted under applicable law, whichever is the lesser) until paid. Client agrees to pay SE's cost of collection of all amounts due and unpaid after sixty (60) days, including court costs and reasonable attorney's fees. Failure to make payment within 30 days of invoice shall constitute a release of SE from any and all claims which client may have, either in tort or contract, and whether known or unknown at the time.
9. **Termination:** Either party upon seven days prior written notice may terminate this Agreement. In the event of termination, SE shall be compensated by client for all services performed up to and including the termination date, including reimbursable expenses, and for the completion of such services and records as are necessary to place files in order and/or protect its professional reputation.
10. **Warranty:** SE's services will be performed, its findings obtained and its reports prepared in accordance with its proposal, client's acceptance thereof, this General Conditions, and with generally accepted principals and practices. In performing its professional services, SE will use that degree of care and skill ordinarily exercised under similar circumstances by members of its profession. This warranty is in lieu of all other warranties or representations either express or implied. Statements made in SE's reports are opinions based upon engineering judgment. Should SE or any of its professional employees be found to have been negligent in the performance of its work, or to have made and breached any expressed or implied warranty, representation or contract, client, all parties claiming through client and all parties claiming to have in any way relied upon SE's work agree that the maximum aggregate amount of the liability of SE, its officers, employees and agents shall be limited to \$25,000 or the total amount of the fee paid to SE for its work performed with respect to the project, whichever amount is greater.
11. **Indemnity:** Subject to the forgoing limitations, SE agrees to indemnify and hold client harmless from and against any and all claims suits costs and expenses including reasonable attorney's fees and court costs arising out of SE's negligence to the extent of SE's negligence. Client shall provide the same protection to the extent of its negligence. In the event that client or client's principal shall bring any suit, cause of action, claim or counterclaim against SE, the party initiating such action shall pay to SE the costs and expenses incurred by SE to investigate, answer and defend it, including reasonable attorney's and witness fees and court costs to the extent that SE shall prevail in such suit.
12. **Arbitration:** Anything contained in any other contract document notwithstanding, SE shall not be bound by any provision or agreement (a) requiring or providing for arbitration of disputes or controversies arising out of SE's work or this General Conditions, (b) wherein SE waives its rights to a mechanic's lien, or (c) conditioning SE's right to payment by a third party.
13. **Provisions Severable:** In the event any of the provisions of these General Conditions should be found to be unenforceable, it shall be stricken and the remaining provisions shall be enforceable.
14. **Entire Agreement:** This agreement constitutes the entire understanding of the parties, and there are not representations, warranties or undertakings made other than as set forth herein. This agreement may be modified only in writing, signed by each of the parties hereto.

**BORING LOCATION PLAN**

GEOTECHNICAL ENGINEERING SERVICES  
PROPOSED TEXTRON MARINE & LAND EXPANSION  
252 STONE ROAD  
SLIDELL, LOUISIANA

⊕ = BORING LOCATION

