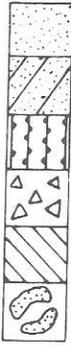


**SUBSOIL  
INVESTIGATIONS**



## **SOIL MECHANICS DRILLING CORP.**

3770 MERRICK ROAD • SEAFORD, L. I., NEW YORK 11783  
(516) 221-2333 • FAX (516) 221-0254

January 4, 2017

Andrew V. Giambertone & Assocs.  
62 Elm Street  
Huntington, NY 11743  
Att: Ernesto Silva

Re: Proposed Hotel  
Route 25  
Southold, NY  
Our Job #16-805

Gentlemen:

Forwarded herewith are the results of the borings drilled at the above referenced site.

The purpose of the subsurface investigation was to determine the nature and extent of the underlying soil deposits and determine the structural engineering characteristics of the soil at the site for the proposed 2 story hotel. Seven (7) test borings were drilled at the above referenced site at the locations shown on our drawing. Six (6) test borings were drilled to a depth of 27 feet each and one (1) boring was drilled to a depth of 52 feet. The borings were drilled using truck mounted drilling equipment and advanced using hollow stem auger casing. A 2" diameter, 2'0" long split spoon sampler was advanced into the subsurface by the use of a CME automatic 140 lb. trip hammer with a 30" drop. From the drops of the hammer, blow counts required to advance the split spoon sampler over each 6" intervals were recorded and is shown on the boring logs. Continuous split spoon samples were taken for the top 6 to 12 feet then every 5 feet thereafter to the final depth of the borings. A written description of the recovered soil samples per our geologist's visual identification of same is also presented on the logs.

The CME automatic hammer operates with an efficiency of approximately 90%. The original conventional use of rope, cathead and drop weight, on the other hand, operates with an efficiency of approximately 60%. As a consequence, the standard penetration test results obtained using the CME auto-hammer are on the order of two-thirds the value that would have been obtained had the original rope and cathead method been used. This is significant if you are using design charts for soil strength parameters based on historical data associated with the rope and cathead method. If so, you should adjust our data accordingly.

TEST BORINGS • GROUND WATER DETERMINATIONS • FOUNDATION RECOMMENDATIONS • HOLLOW STEM AUGER BORINGS  
LABORATORY ANALYSES • CONTROLLED LANDFILL • DIAMOND CORE DRILLING • SAND & GRAVEL PROSPECTING  
BEARING VALUES • WELL POINT INSTALLATIONS • ENGINEERING SUPERVISION • PERCOLATION TESTS  
SANITARY INVESTIGATIONS • UNDISTURBED SAMPLING • TEST PITS • TOP SOIL ANALYSES

Andrew V. Giambertone & Assocs.  
Att: Ernesto Silva

January 4, 2017  
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Our investigation revealed that the areas drilled are blanketed by from 1-1/2 to 3 feet of soft loam, underlain, generally, by a moderately dense naturally bedded coarse to fine sand with traces of silt and gravel extending to the deepest depths drilled.

Natural ground water was encountered within the deeper borehole (B-4) at a depth of 28'1" below existing grade at the time the work was done.

All soils below 3 feet will satisfactorily support foundation loads of 2 tons per square foot and exhibit excellent drainage characteristics.

Use of this bearing capacity will produce total settlement of 1/4 inch and differential settlement of 1/8 inch with the majority occurring during the construction phase.

We recommend densification of the sand by use of a vibratory compactor prior to pouring footing bottoms.

We have not been apprised of the finished floor elevations. However, we recommend removal of all of the loam and, if needed, be replaced with a supervised controlled fill consisting of clean inorganic granular material, placed in lifts not to exceed 12 inches in depth and be compacted, under independent supervision, to a minimum of 95% of the Modified Proctor maximum dry density at optimum moisture content per ASTM D 1557. Soils to be used for controlled fill shall have less than 10% passing a #200 sieve with no particle size larger than 2 inches. The natural sand from the site can be used as a controlled fill if needed.

Frost penetration in this area is 3 feet and all exterior foundations must have a minimum of 3 feet of cover.

Liquefaction is not a design consideration.

For seismic purposes the site is classified as Site Class "D" per the New York State Building Code. Site coefficient is  $F_a$  as a function of site class and mapped spectral response acceleration at short periods (SS)<sup>a</sup> is 1.51. Site Coefficient  $F_v$  as a function of site class and mapped spectral response acceleration at 1-second period ( $S_1$ )<sup>a</sup> is 2.4.

Soil samples recovered during drilling operations will be stored in our lab for a period of 30 days after which they will be destroyed. During this period we will deliver these samples to any prescribed location upon request.

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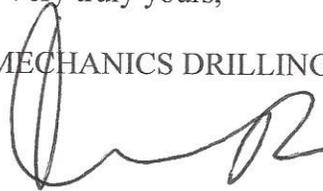
January 4, 2017  
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If after you examine the enclosed you have any further questions, please feel free to call and discuss them with us.

Billing is enclosed.

Very truly yours,

SOIL MECHANICS DRILLING CORP.

A handwritten signature in black ink, appearing to read 'Carl Vernick', written over the company name.

Carl Vernick, P.E.  
President

CV:mlf  
Encls.

