BTL Engineering Services, Inc.

5802 N. Occident Street P.O. Box 15718 Tampa, Florida 33684
(813) 884-0755 - Hillsborough (727) 733-9347 - Pinellas (727) 846-1703 - Pasco (813) 886-5377 - Fax

November 11, 2015

Mr. Jaime P. Girardi, P.E., President
Regency Design & Engineering, Inc.
9400 River Crossing Blvd., Suite 104
New Port Richey, Florida 34655

Re: Subsurface Investigation
Proposed Hunters Ridge Multi-Family Townhome Buildings
Rancho Del Rio Drive
New Port Richey, Florida
Pasco County ID: 11-26-16-0020-03300-0000
BTL Job No. 5253-15-1934

Dear Mr. Girardi:

BTL Engineering Services, Inc. has completed a subsurface investigation at the referenced project site located in New Port Richey, Florida. This geotechnical report is prepared in accordance with Pasco County Land Development Code, Chapter 800 of Section 807. There are no indications of geological hazards noted within the depths of our SPT borings. This report describes the project site, discusses methods of testing, presents investigation results and provides geotechnical recommendations for site preparation, foundation design, and pavement design.

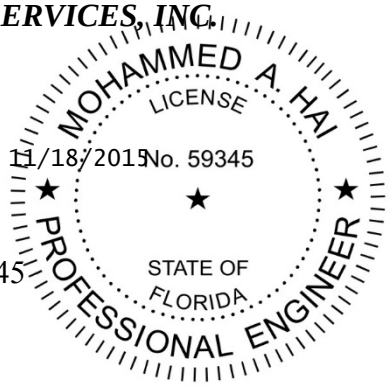
Please feel free to request any further information or clarifications that may be needed. Thank you for choosing *BTL Engineering Services, Inc.*, to perform this subsurface investigation. We would be pleased to assist you further in other phases of geotechnical engineering and construction material testing as project needs develop.

Sincerely,

BTL ENGINEERING SERVICES, INC.
CA 2352

M. AHai

Mohammed A. Hai, P.E.
Vice President
FL Registration No. 59345



EXECUTIVE SUMMARY[1]

BTL Engineering Services, Inc. has completed a geotechnical exploration on the proposed one story townhome buildings with associated roadway & parking lot, located at Rancho Del Rio Drive, New Port Richey, Florida. The results of our findings are briefly summarized below. The text of this report should be reviewed for discussion of these items.

1. *BTL Engineering Services, Inc.* performed twenty-six (26) standard penetration test (SPT) borings to depths ranging from 20 to 25 feet below ground surface (BGS) within the proposed one story townhome buildings footprints and five (5) SPT borings to depths of 6 feet BGS in the roadway & parking areas at locations indicated in the Boring Location Plan (Appendix B). Generally, the soil profile consists of fine sand up to the boring termination depths of 25 feet BGS. Few occasional layers of silty sand were noted to depths ranging from 13.5 to 25 feet BGS and from 13.5 to 18.5 feet BGS in the borings SPT-3 and SPT-26, respectively. We noted clayey sand layers to depths ranging from 24 to 25 feet BGS and from 8.5 to 12.5 feet BGS in the borings SPT-5 and SPT-17, respectively. The soil strength of the subsurface soils excluding limestone layers revealed with standard penetration resistance values (N-values) ranging from 4 to 49 blows per foot (bpf). The soil strength of the limestone layer revealed with N-value in excess of 50 bpf.

2. Upon completing the recommended site preparation, it is our opinion that the proposed one story townhome buildings can be supported on shallow foundations on existing suitable bearing soils or structural fill. A net allowable soil bearing pressure of up to 3,000 pounds per square foot may be utilized for footing designs when the footings bear 16-inches to 24-inches below the finished grade. Based on the log of borings, site soil improvement as noted in the report and our experience with this type of soil, BTL Engineering Services, Inc. recommends that a maximum wall load of 7 kips per linear foot for continuous footings and a maximum isolated column load of 200 kips may be used for design purpose. To reduce the possibility of localized shear failures, we recommend that isolated column footings should be at least 30 inches in width and continuous strip footings should have a width of at least 18 inches, regardless of contact pressure.

3. The on-site excavated fine sand should generally be suitable for reuse as engineered fill with proper moisture control. Density tests should be used to control subgrade and fill compaction. Density tests should be performed at the subgrade level, at each fill lift and at the bottom of the footing elevations to assure uniform compaction.

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1 This Executive Summary is not intended to be used or relied upon without reference to the entire report and cannot otherwise be properly understood and interpreted. It is provided solely for the convenience of the Client and not as a substitute for the report or review of the report.

TABLE OF CONTENTS

APPENDICES

1.0 AUTHORIZATION

Mr. Jaime P. Girardi, P.E., President, Regency Design & Engineering, Inc., requested our testing services through correspondence and telephone conversations with *BTL Engineering* staff. *BTL Engineering Services, Inc*. was retained by *Mr. Jaime P. Girardi, P.E., President, Regency Design & Engineering, Inc.,* to perform a geotechnical exploration on the project site. After receiving a written agreement from *Mr. Jaime P. Girardi, P.E., President, Regency Design & Engineering, Inc.,* dated October 28, 2015, of *BTL Engineering's* Proposal No. 15-395, a geotechnical exploration was performed.

2.0 SCOPE

The scope of our services included the following items:

1. A visual reconnaissance of the site from a geotechnical standpoint;
2. Conducting twenty-six (26) standard penetration test (SPT) borings to depths ranging from 20 to 25 feet below ground surface (BGS) within the proposed one story townhome building footprints and five (5) SPT borings to depths of 6 feet BGS in the roadway & parking areas to assess subsurface soil conditions;
3. Classification of the soil samples obtained during our fieldwork program;
4. Analyzing the existing soil conditions with respect to the proposed construction;
5. Preparing this report to document the results of the fieldwork program, general information regarding soil types, and to provide recommendations for site work, geotechnical foundation design, pavement design, and evaluation of recovered soils or groundwater.

3.0 PURPOSE

The primary purpose of the geotechnical exploration was to determine the general type and condition of the subsurface materials at the project site, and to provide recommendations for site work, geotechnical foundation design, pavement design, and evaluation of recovered soils or groundwater.

4.0 SITE AND PROJECT DESCRIPTION

The project site is located at Rancho Del Rio Drive, New Port Richey, Florida (Pasco County ID: 11-26-16-0020-03300-0000). A site plan was provided by the client to determine the general boundaries of the project site. The project site is relatively level ground surface. Based on the site plan and client's provided information, one story townhome buildings with associated roadway & parking lot will be constructed at the project site. No structural loading information was provided at the time of geotechnical report preparation. We anticipate that cuts and fills are to be about 1 to 3 feet. BTL Engineering staff determined boring locations based on site plan.

If the above information is significantly different than we anticipated, please inform *BTL Engineering Services, Inc.*, so that we may review our recommendations with respect to any modifications.

5.0 FIELD EXPLORATION METHODS

5.1 Standard Penetration Test Boring

BTL Engineering Services, Inc. performed the standard penetration test (SPT) borings on October 30, November 3 & 5, 2015, using a TMG, Standard Penetration Test drill rig to advance SPT borings. The SPT boring permits soil classification of samples retained during the test and allows the standard penetration resistance to be determined at selected depth intervals. These data permit estimation of soil properties such as continuity, strength, compressibility, and permeability. Drilling and standard penetration tests are performed in general conformance with ASTM D-1586. Conventional rotary drilling procedures were utilized along with a bentonite drilling fluid to stabilize the borehole.

In performing the SPT test, borings are advanced to the desired test depth by rotary drilling methods whereupon the drill bit is withdrawn and the penetration test performed using a standard 1.4-inch I.D., 2.0-inch O.D., split-barrel sampler. Spacing between each

test interval varies by no more than 2.0 feet in the top 10 feet of each boring and by not more than 5.0 feet at depths greater than 10 feet.

A 140-pound hammer falling 30 inches drives the sampler. Because of disturbance effects, the number of blows required to drive the sampler the first six inches is not considered in the standard penetration test value. The SPT value is based on the second and third 6-inch increments and this resistance is designated the "penetration resistance." Penetration resistance is an index of the soil strength and density that is used in engineering design.

After each penetration test, the driller classifies the split-barrel sample according to color, texture, material type and moisture content. A portion of each sample is collected in a sealed container and transported to the laboratory where it is further examined to verify field condition. The samples are temporarily stored in the laboratory for future reference.

6.0 SUBSURFACE CONDITIONS

BTL Engineering Services, Inc. performed twenty-six (26) standard penetration test (SPT) borings to depths ranging from 20 to 25 feet below ground surface (BGS) within the proposed one story townhome buildings footprints and five (5) SPT borings to depths of 6 feet BGS in the roadway & parking areas at locations indicated in the Boring Location Plan (Appendix B). Generally, the soil profile consists of fine sand up to the boring termination depths of 25 feet BGS. Few occasional layers of silty sand were noted to depths ranging from 13.5 to 25 feet BGS and from 13.5 to 18.5 feet BGS in the borings SPT-3 and SPT-26, respectively. We noted clayey sand layers to depths ranging from 24 to 25 feet BGS and from 8.5 to 12.5 feet BGS in the borings SPT-5 and SPT-17, respectively. We also noted clay layers to depths ranging from 13.5 to 22 feet BGS, from 12.5 to 20 feet BGS, from 18.5 to 25 feet BGS and from 18.5 to 25 feet BGS in the borings SPT-16, SPT-17, SPT-18 and SPT-26, respectively. An isolated layer of limestone was noted to depths ranging from 22 to 25 feet BGS in the boring SPT-16.

The soil strength of the subsurface soils excluding limestone layers revealed with standard penetration resistance values (N-values) ranging from 4 to 49 blows per foot (bpf). The soil strength of the limestone layer revealed with N-value in excess of 50 bpf.

We also noted fine sand to depths of 6 feet BGS in the SPT borings at the roadway and parking areas.

Groundwater table was recorded at depths ranging from 2.5 to 5.5 feet BGS at the time of drilling. Fluctuation in groundwater levels should be expected due to seasonal climatic changes, construction activity, rainfall variations, surface water runoff, re-direction of water flow as a result of natural or by anthropogenic activities and other site-specific factors. For a more precise description of the conditions encountered within the soil test borings, we refer you to the boring log sheets and subsurface soil profiles included in the Appendix C & D to this report.

6.1 Estimated Seasonal High Water Table

The estimated seasonal high water table (ESHWT) means the highest level of the saturated soil zone in a year with normal rainfall (the upper limit of soil saturated with water for periods long enough for anaerobic conditions to affect soil color). Some factors that we consider in determining the ESHWT are 1) Soil color, 2) Soil mottles, 3) Depth of root zone and 4) Depth to clay layer, if present. Soil classifications, ground water table (GWT) and estimated seasonal high water table (ESHWT) are shown on the SPT boring logs completed at the roadway and parking areas and appended to this report. Data obtained from maps and tables published by National Resources Conservation Service (NRCS) are shown in the tabulation of ESHWT in Table 1.

Table 1 - Tabulation of ESHWT for Roadway & Parking Area SPT Borings

Boring No.	Soil Name	Month	ESHWT (NRCS) [1]	ESHWT (Observed) [1]	GWT
RB – 1	Basinger fine sand, depressional, 0 to 1 percent slopes	January to December	0.0 - 2.0 feet	1.5 feet	3.0 feet
RB – 2	Basinger fine sand, depressional, 0 to 1 percent slopes	January to December	0.0 - 2.0 feet	2.0 feet	3.5 feet
RB – 3	Basinger fine sand, depressional, 0 to 1 percent slopes	January to December	0.0 - 2.0 feet	2.5 feet	4.0 feet
RB – 4	Myakka-Myakka, wet, fine sands, 0 to 2 percent slopes	January to December	0.5 - 3.5 feet	3.0 feet	5.0 feet
RB – 5	Myakka-Myakka, wet, fine sands, 0 to 2 percent slopes	January to December	0.5 - 3.5 feet	2.5 feet	4.5 feet

[1] +/- 0.5 feet

7.0 DISCUSSION AND RECOMMENDATIONS

The following recommendations are based on our understanding of the proposed construction, the data obtained in our soil test borings, visual soil classification, a site reconnaissance, and our experience with subsurface conditions similar to those encountered at the project site.

We recommend that *BTL Engineering Services, Inc*. be consulted during construction to conduct Geotechnical Evaluations as described elsewhere in this report. The purpose is to verify the similarity of the actual subsurface conditions versus conditions anticipated by the designers.

7.1 General

Based on the presence of loose fine sand found within the foundation's load bearing zone of influence, anticipated design loads associated with the proposed one story townhome

buildings, and our experience on similar projects, it is our opinion that the soils at the site are generally suitable for shallow foundations to support the proposed structures.

If any unsuitable material is found during construction (i.e., organic material or debris) it should be excavated and replaced with compacted inorganic granular backfill. All backfill should be compacted to the density specified as noted in the report. Excavation of unsuitable material should extend a minimum distance of 5 feet beyond the footprint of the proposed structures.

7.2 Site Preparation –Shallow Foundation

Based on the existing loose soil layers found in the subsurface soil profile, the following geotechnical site preparation is recommended. This approach to improving and maintaining the site soils has been successful on projects with similar soil conditions. The site inspection by an experienced geotechnical engineer or his representative from this office will be recommended to perform field density.

1. Initial site preparation should consist of performing clearing, grubbing and removal of topsoil, vegetation, and associated root systems to a depth of their vertical reach. This should be done within and to a minimum distance of 5 feet beyond the perimeter of the proposed townhome building footprints. The stripped topsoil should be stockpiled on-site for later usage in landscape (non-structural) areas only.

2. Upon completion of the clearing, grubbing and removal of topsoil as noted above, perform proofrolling with a vibratory roller. We recommend a heavy weight vibratory drum roller having a total operating static weight (including fuel and water) of at least 5 tons and a drum diameter of 2.5 to 3 feet. Regardless of the degree of compaction achieved, a minimum of **6** perpendicular overlapping passes should be made in the building footprints with the compaction equipment in order to increase the density and improve the uniformity of the underlying loose sandy

soils. Upon completion of the proofrolling, density tests shall be performed to confirm a minimum compaction compliance of **95** percent of modified proctor maximum density (ASTM D-1557). The roller coverages should be divided evenly into two perpendicular directions, where possible. Additional passes may be necessary if compliance compaction is not achieved.

3. Place fill material in uniform lifts of 12 inches, to reach finished grade. The fill material should be inorganic (classified as SP, SW, GP, GW, SP-SM, SW-SM, GP-GM, GW-GM) containing not more than 5 percent (by weight) organic materials. Fill materials with silt-size soil fines in excess of 12% should not be used. Place fill in maximum 12-inch lifts and compact each lift to a minimum density of **95** percent of the Modified Proctor maximum dry density (ASTM D-1557) with a vibratory roller as mentioned in item #2.

4. Perform compliance tests within the fill at a frequency of not less than one test per 2,500 square feet per lift, or at a minimum of 3 tests per lift, whichever is greater.

5. Upon completion of the building footing excavation and prior to placement of reinforcing steel and concrete, we recommend compaction of the bottom of the footings with the vibratory compactor over each footing. The bottom of footings shall be examined by the engineer or his representative to determine if the soil is vertically free of all organic and/or deleterious material, and if the compaction and soil pressures are achieved or if additional compaction is required. Perform compliance tests within the footings as noted in section **7.4**.

6. The contractor shall take into account the final contours and grades as established by the plan when executing his backfilling and compaction operations.

Using vibratory compaction equipment at this site may disturb adjacent structures. Care shall be taken during the excavation, proofrolling and compaction operations to insure

any adjacent structures and utilities are not adversely affected. We recommend that you monitor nearby structures before and during proofrolling compaction operations.

7.3 Geotechnical Foundation Recommendations

Upon completing the recommended site preparation, it is our opinion that the proposed one story townhome buildings can be supported on shallow foundations on existing suitable bearing soils or structural fill. A net allowable soil bearing pressure of up to 3,000 pounds per square foot may be utilized for footing designs when the footings bear 16-inches to 24-inches below the finished grade.

Based on the log of borings, site soil improvement as noted above and our experience with this type of soil, *BTL Engineering Services, Inc*. recommends that a maximum wall load of 7 kips per linear foot for continuous footings and a maximum isolated column load of 200 kips may be used for design purpose.

To reduce the possibility of localized shear failures, we recommend that isolated column footings should be at least 30 inches in width and continuous strip footings should have a width of at least 18 inches, regardless of contact pressure.

7.4 Compliance Testing

Density tests should be used to control subgrade and fill compaction. Density tests should be performed at the subgrade level, at each fill lift and at the bottom of the footing elevations to assure uniform compaction.

A minimum testing frequency of one density test per 2,500 square feet of each lift or 3 tests per lift, whichever is greater should be used. Additional testing should be performed in the excavated footing areas to confirm that excavation operations have not loosened the subgrade. A minimum of one density test per 50 linear foot of load bearing wall and on each column pad should be performed.

7.5 Floor Slabs

Following proper site preparation, as previously described, it is our opinion that a conventional slab-on-grade may be utilized for the proposed structures. We recommend that the floor subgrade in the proposed building pad area be proofrolled and soil density be measured by a geotechnical engineer or his representative prior to floor slab concreting.

We suggest that a vapor barrier be placed immediately beneath the floor slab according to project specifications to reduce moisture migration through the concrete slab. Based on experience on similar soil types, an estimated sub-grade modulus of 120 lb/in^3 may be used to design the slab.

We recommend that expansion and control joints be incorporated between the floor slab and wall footings. Expansion joints should not be less than ¼ inch wide. Where appropriate, saw-cut control joints should be placed in the slab to help control the location and extent of cracking.

The contraction joints should be at least ¾ inch, and preferably 1 inch in depth. A practical rule of thumb guide for depth of contraction joints is a depth equal to at least one-fourth the thickness of the member.

We also recommend installing a gutter system for the entire townhome buildings which includes at least downspout extensions and splash guards to discharge the roof's rainwater away from the faces of load bearing walls.

7.6 Structural Fill Placement

The on-site excavated fine sand should generally be suitable for reuse as engineered fill with proper moisture control. Fill placed in confined areas that cannot be reached by the large roller should be compacted by lightweight vibratory equipment that can operate in

confined areas. The fill loose lift thickness should be reduced to 6 inches. Each lift should be thoroughly compacted with the compaction equipment until densities equivalent to at least **95** percent of the Modified Proctor maximum dry density (ASTM D-1557) are uniformly obtained.

8.0 PAVEMENT RECOMMENDATIONS

8.1 General Components

We have not performed limerock bearing ratio (LBR) and maximum dry density tests on existing soils from roadway and parking areas to determine the soil parameter needed for pavement design. We believe that a conventional flexible (asphalt surface) pavement section can be used for the internal roadway and parking areas. The following structural sections are typically used for light duty asphalt pavement. Light duty asphalt pavement sections are usually used for conventional roadway and parking areas with an average gross weight of 4,000 pounds contributed by cars and light pickup trucks.

Light Duty Asphalt Pavement	
Wearing Course	1.5-inch Type S-1 or S-3 asphalt concrete
Base Course	6- inch crushed limestone (LBR = 100 minimum)
Subgrade	12-inch stabilized subgrade material (LBR = 40 minimum)

These pavement thicknesses given are intended as a guideline only, as the pavement should be designed specifically for the vehicle load intensities and frequencies anticipated during the design life of the project.

We also recommend pavement consisting of a concrete slab (4,000 psi) at least 6-inches thick placed over a prepared subgrade for dumpster pad area or areas where heavy trucks will maneuver even if asphalt paving is used elsewhere on the project. Concrete pavement sections may be reinforced with at least 6 inch x 6 inch W1.4 x W1.4 welded wire mesh or equivalent. Reinforcement of concrete with wire mesh does not prevent

cracking of the concrete in any way. The purpose of the wire mesh is to inhibit shrinkage cracks that occur in concrete. Wire mesh should be located approximately 2 inches from the surface of the slab, not at the bottom where it is commonly found.

8.2 Subgrade Course

The subgrade or embankment fill is the layer that supports the structural pavement section. Subgrade and embankment fill should be placed and compacted in compliance to specifications presented later in the pavement site preparation procedure section of this report.

We recommend subgrade material be compacted to **98** percent of the Modified Proctor maximum dry density value (AASHTO T-180). The subgrade material should have a minimum Limerock Bearing Ratio (LBR) of 40. Perform compliance tests on the stabilized subgrade for full depth at a frequency of one test per 300 linear feet.

8.3 Base Course

The base course is the portion of the pavement section between the surface course and stabilized subbase / subgrade.

In areas where separation of at least 1½ feet between the estimated wet seasonal high groundwater table and the bottom of the base material occurs, we recommend the base course be crushed limerock with a minimum LBR of 100. Limerock material should be mined from an approved source. The limerock should be placed in lifts no greater than 6-inches and compacted to at least **98** percent of the Modified Proctor maximum dry density value (AASHTO T-180).

We recommend maintaining the bottom of base separated from high groundwater levels at least 1½ feet otherwise special pavement underdrainage system would be necessary.

8.4 Surface Course

The surface course is the portion of the pavement section, which is exposed directly to traffic. In the light duty areas where there is occasional truck traffic, but predominantly passenger cars, we recommend using 1.5 inches of asphaltic concrete, which has a stability of 1,500 pounds.

Samples of the materials delivered to the project should be tested to verify that the aggregate gradation and asphalt content satisfies the mix design specifications. Asphalt should be compacted to a minimum of **95** percent of the laboratory density. Perform compliance tests on the surface course, by coring to evaluate the material thickness and to perform laboratory densities, at a frequency of one test per 300 linear feet.

8.5 Pavement Site Preparation

Upon review of the site soil data, our recommendations of site preparation for pavement are noted below. This approach to improving and maintaining the site soils has been successful with similar soil conditions. The site inspection by an experienced geotechnical engineer or his representative from this office will be recommended to perform field density testing.

1. The proposed construction limits should be cleared, stripped and grubbed of all construction debris, vegetation and associated root systems to a depth of their vertical reach. This should be done within and to a distance of 5 feet beyond the road perimeter and parking lot.

2. Place fill material, as required. The subgrade should have at least 12 inches of stabilized subgrade material with a minimum Limerock Bearing Ratio (LBR) of 40. We recommend a medium weight roller be used to prepare the site for the proposed pavement section. Upon completion of the proof-rolling, density tests should be performed at a frequency of one test per 300 linear feet to confirm a minimum

compaction compliance of **98** percent of modified proctor maximum density (AASHTO T-180).

3. The fill material should be inorganic (classified as SP/GW) containing not more than 5 percent (by weight) organic materials. Fill materials with silt-size soil fines in excess of 12% should not be used. Place fill in maximum 12-inch lifts and compact each lift to a minimum density of **98** percent of the Modified Proctor maximum dry density (AASHTO T-180) with a roller as mentioned previously.

4. Perform compliance tests within the fill at a frequency of one test per 300 linear feet per lift in the pavement areas, or at a minimum of two test locations, whichever is greater.

5. The appropriate pavement section should be constructed in accordance to specification presented earlier in this report.

6. The contractor shall take into account the final contours and grades as established by the paving and drainage plan when executing any backfilling and / or compaction operations.

9.0 LIMITATIONS

This report is for the exclusive use of ***Regency Design & Engineering, Inc.*** and the other designers of the project, and may only be applied to this specific project. Our conclusions and recommendations have been prepared using generally accepted standards of Geotechnical Engineering practice. No other warranty is expressed or implied. Our firm is not responsible for conclusions, opinions or recommendations of others.

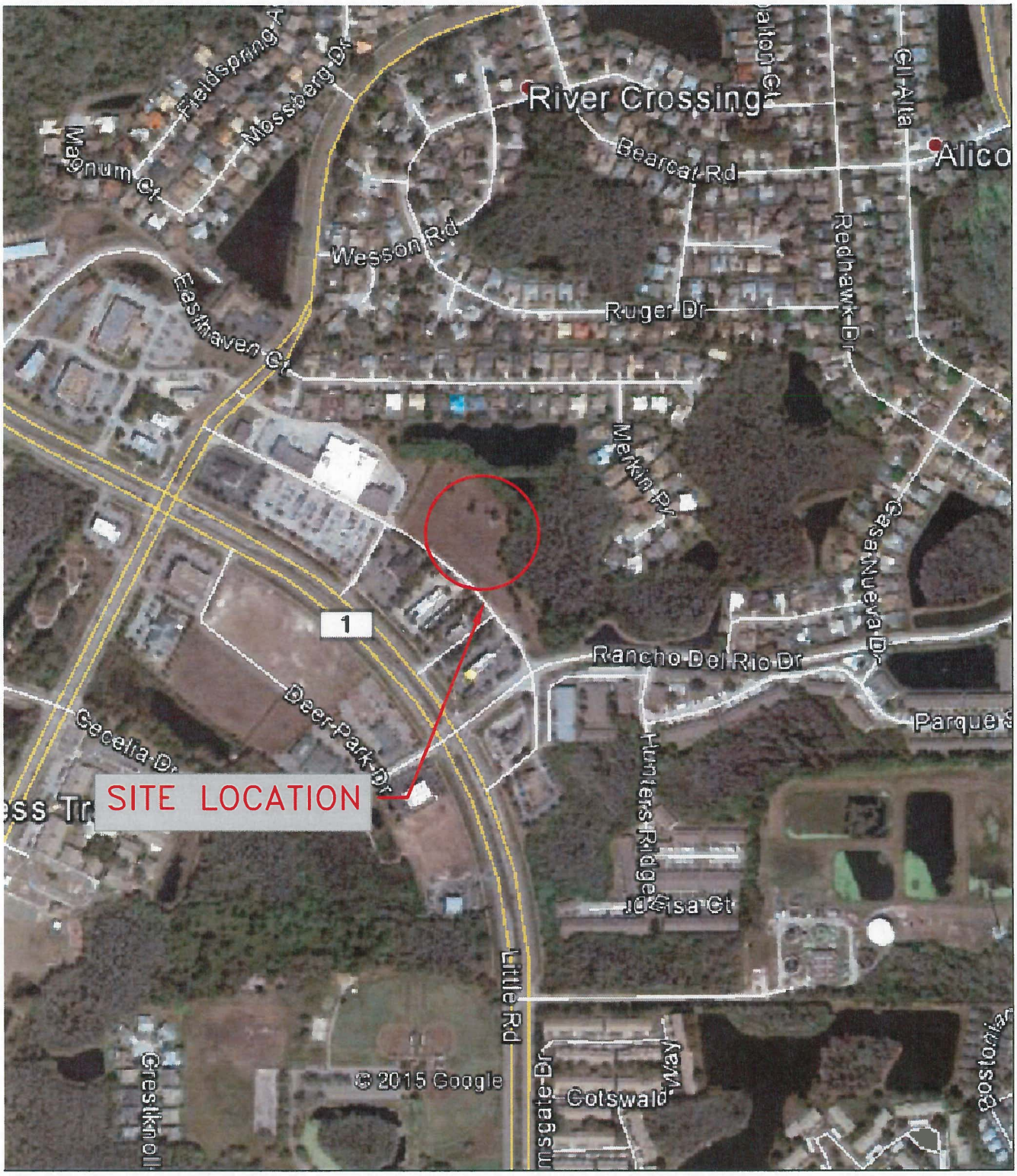
Our conclusions and recommendations are based upon preliminary information furnished to us, data obtained from the testing program and our past experience. They do not

reflect variations in subsurface conditions that may exist intermediate of our borings and in unexplored areas of the site. Should such variations become apparent during construction, it will be necessary to re-evaluate our conclusions and recommendations based upon "on-site" observations of the conditions. The recommendations contained herein, must be considered preliminary and limited.

APPENDIX A

Site Location Map

NORTH



Sheet: 1 of 1	Project: Hunters Ridge Multi-Family Townhomes Pasco County ID 11-26-16-0020-03300-0000 Pasco County, FL	Title: Site Location Map	BTL Engineering Services, Inc. 5802 N. Occident Street P.O. Box 15718 Tampa, Florida 33684 (813) 884-0755-Hillsborough (727) 733-9347-Pinellas (727) 846-1703-Pasco / (813) 886-5377-Fax
Date: 11/6/2015		Job Number: 5253-15-1934	
Drawn SW Checked MH	Client: Regency Design & Engineering, Inc	Scale: Not to Scale	

APPENDIX B

Boring Location Plan & GPS Coordinates

NORTH

Note:
All Locations & Measurements are Approximate

LEGEND:
SPT BORING

Sheet: 1 of 2	Project: Hunters Ridge Multi-Family Townhomes	Title: Boring Location Plan	BTL Engineering Services, Inc.
Date: 11/6/2015	Pasco Co ID 11-26-16-0020-03300-0000 Pasco County, FL	Job Number: 5253-15-1934	5802 N. Occident Street P.O. Box 15718 Tampa, Florida 33684 (813) 884-0755-Hillsborough (727) 733-9347-Pinellas (727) 846-1703-Pasco / (813) 886-5377-Fax
Drawn SW Checked MH	Client: Regency Design & Engineering, Inc	Scale: Not to Scale	

NORTH

Note:
All Locations & Measurements are Approximate

LEGEND:

● PAVEMENT SPT BORING

Sheet: 2 of 2	Project: Hunters Ridge Multi-Family Townhomes	Title: Boring Location Plan	BTL Engineering Services, Inc.
Date: 11/6/2015	Pasco Co ID 11-26-16-0020-03300-0000 Pasco County, FL	Job Number: 5253-15-1934	5802 N. Occident Street P.O. Box 15718 Tampa, Florida 33684 (813) 884-0755-Hillsborough (727) 733-9347-Pinellas (727) 846-1703-Pasco / (813) 886-5377-Fax
Drawn SW Checked MH	Client: Regency Design & Engineering, Inc	Scale: Not to Scale	

GPS Locations

For

Hunters Ridge

Boring Number	Latitude	Longitude
SPT-1	28.237448°	-82.666982°
SPT-2	28.237263°	-82.666664°
SPT-3	28.237061°	-82.666339°
SPT-4	28.237200°	-82.666971°
SPT-5	28.237003°	-82.666595°
SPT-6	28.236835°	-82.666426°
SPT-7	28.236788°	-82.666152°
SPT-8	28.236531°	-82.666227°
SPT-9	28.236169°	-82.666075°
SPT-10	28.236594°	-82.666485°
SPT-11	28.236282°	-82.666364°
SPT-12	28.235983°	-82.665881°
SPT-13	28.235737°	-82.665649°
SPT-14	28.235982°	-82.666165°
SPT-15	28.235757°	-82.665952°
SPT-16	28.235578°	-82.665657°
SPT-17	28.235429°	-82.665604°
SPT-18	28.235465°	-82.665774°
SPT-19	28.236917°	-82.667327°
SPT-20	28.236810°	-82.667152°
SPT-21	28.236764°	-82.667334°
SPT-22	28.236563°	-82.666832°
SPT-23	28.236413°	-82.666618°
SPT-24	28.236560°	-82.667069°
SPT-25	28.236377°	-82.666799°
SPT-26	28.236875°	-82.666816°

Note:
All Locations & Measurements are Approximate

Sheet: 1 of 2	Project: Hunters Ridge Multi-Family Townhomes	Title: GPS Locations	BTL Engineering Services, Inc.
Date: 11/6/2015	Pasco Co ID 11-26-16-0020-03300-0000 Pasco County, FL	Job Number: 5253-15-1934	5802 N. Occident Street P.O. Box 15718 Tampa, Florida 33684
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GPS Locations

For

Hunters Ridge

Boring Number	Latitude	Longitude
RB-1	28.237085°	-82.667055°
RB-2	28.236653°	-82.666623°
RB-3	28.236650°	-82.667159°
RB-4	28.236067°	-82.666395°
RB-5	28.235428°	-82.665887°

Note:
All Locations & Measurements are Approximate

Sheet: 2 of 2	Project: Hunters Ridge Multi-Family Townhomes	Title: GPS Locations	BTL Engineering Services, Inc.
Date: 11/6/2015	Pasco Co ID 11-26-16-0020-03300-0000	Job Number: 5253-15-1934	5802 N. Occident Street P.O. Box 15718 Tampa, Florida 33684
Drawn SW Checked MH	Pasco County, FL	Scale: Not to Scale	(813) 884-0755-Hillsborough (727) 733-9347-Pinellas
	Client: Regency Design & Engineering, Inc		(727) 846-1703-Pasco / (813) 886-5377-Fax

APPENDIX C

Logs of SPT Borings

BTL Engineering Services, Inc.
P.O. Box 15718, Tampa, FL 33684
5802 N. Occident St.,Tampa, FL 33614
Phone: (813) 884-0755
Fax: (813) 886-5377

Borehole Log: SPT-1

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows)	Remarks
0		Ground Surface	0.0	GW @ 3'				
0–4		Loose Grayish Brown Fine SAND (SP)	-4.5		1	1-3-4-5	7	
					2	4-4-3-3	7	
4–7		Loose to Medium Dense Very Dark Gray Fine SAND (SP)	-7.0		3	2-4-6-8	10	
					4	5-11-9-10	20	
7–13		Medium Dense Yellowish Brown Fine SAND (SP)	-13.5		5	5-13-8-7	21	
13–20		Loose to Medium Dense Very Pale Brown Fine SAND (SP)	-20.0		6	2-3-3	6	
					7	6-8-8	16	
20		End of Borehole						

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary	Driller: JT - A&S	Hole size: 3"
Drill Rig: TMG	Date: 11/3/2015	Datum: Ground Surface
Drill Rod: AWJ	Location: See Location Plan	Sheet: 1 of 1

BTL Engineering Services, Inc.
P.O. Box 15718, Tampa, FL 33684
5802 N. Occident St.,Tampa, FL 33614
Phone: (813) 884-0755
Fax: (813) 886-5377

Borehole Log: SPT-2

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows)	Remarks
0		Ground Surface	0.0	GW @ 3'				
1		Loose Dark Grayish Brown Fine SAND (SP)	-1.0		1	1-3-3-3	6	
2		Loose Dark Gray Fine SAND (SP)			2	2-2-4-8	6	
3			-3.5					
4		Loose to Medium Dense Yellowish Brown Fine SAND (SP)			3	5-9-16-14	25	
5								
6					4	3-6-7-5	13	
7			-7.5					
8		Medium Dense Very Pale Brown Fine SAND (SP)			5	6-5-6-5	11	
9								
10								
11								
12								
13								
14					6	4-5-6	11	
15								
16								
17								
18			-18.5					
19		Medium Dense White Fine SAND (SP)			7	6-7-10	17	
20			-20.0					
21		End of Borehole						
22								

N-Value (Blows) scale: 5 15 25 35 45

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary
Drill Rig: TMG
Drill Rod: AWJ

Driller: JT - A&S
Date: 11/3/2015
Location: See Location Plan

Hole size: 3"
Datum: Ground Surface
Sheet: 1 of 1

BTL Engineering Services, Inc.
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Phone: (813) 884-0755
Fax: (813) 886-5377

Borehole Log: SPT-3

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows)	Remarks
0		Ground Surface	0.0					
0–2		Loose Dark Gray Fine SAND with trace of roots (SP)	-2.5	GW @ 2.5'	1	1-2-3-1	5	
2–5		Loose to Medium Dense Gray Fine SAND (SP)	-5.5		2	3-3-3-5	6	
					3	4-6-7-5	13	
6–7		Loose to Medium Dense Very Dark Gray Fine SAND (SP)	-7.0		4	3-4-6-5	10	
7–13		Loose Very Pale Brown Fine SAND (SP)	-13.5		5	4-2-3-2	5	
13–25		Loose to Medium Dense Very Pale Brown Silty SAND (SM)	-25.0		6	5-7-6	13	
					7	7-8-7	15	
					8	5-5-5	10	
25		End of Borehole						

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary
Drill Rig: TMG
Drill Rod: AWJ

Driller: JT - A&S
Date: 11/3/2015
Location: See Location Plan

Hole size: 3"
Datum: Ground Surface
Sheet: 1 of 1

BTL Engineering Services, Inc.
P.O. Box 15718, Tampa, FL 33684
5802 N. Occident St.,Tampa, FL 33614
Phone: (813) 884-0755
Fax: (813) 886-5377

Borehole Log: SPT-4

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows)	Remarks
0		Ground Surface	0.0	GW @ 3.5'				
1		Loose Very Dark Gray Fine SAND (SP)	-1.5		1	2-4-5-5	9	
2		Loose to Medium Dense Gray Fine SAND (SP)			2	4-8-9-17	17	
3					3	8-14-13-10	27	
5			-5.5					
6		Medium Dense Very Pale Brown Fine SAND (SP)			4	3-8-10-13	18	
7			-7.5					
8		Medium Dense Brown Fine SAND (SP)	-8.5		5	4-6-5-6	11	
9		Medium Dense Yellowish Brown Fine SAND (SP)						
13			-13.5					
14		Medium Dense Very Pale Brown Fine SAND (SP)			6	3-6-8	14	
19					7	6-8-10	18	
20			-20.0					
20		End of Borehole						

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary
Drill Rig: TMG
Drill Rod: AWJ

Driller: JT - A&S
Date: 11/3/2015
Location: See Location Plan

Hole size: 3"
Datum: Ground Surface
Sheet: 1 of 1

BTL Engineering Services, Inc.
P.O. Box 15718, Tampa, FL 33684
5802 N. Occident St.,Tampa, FL 33614
Phone: (813) 884-0755
Fax: (813) 886-5377

Borehole Log: SPT-5

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows)	Remarks
0		Ground Surface	0.0	GW @ 3.5'				
0–2		Loose Dark Gray Fine SAND (SP)	-2.0		1	2-3-3-2	6	
2–4		Very Loose to Medium Dense Very Dark Gray Fine SAND (SP)	-4.5		2	2-2-2-3	4	
4–13		Medium Dense Yellowish Brown Fine SAND (SP)	-13.5		3	5-8-7-10	15	
					4	4-8-8-7	16	
					5	6-9-10-12	19	
13–24		Loose Very Pale Brown Fine SAND (SP)	-24.0		6	3-3-3	6	
					7	5-5-5	10	
24–25		Loose Bluish Gray Clayey SAND (SC)	-25.0		8	5-4-4	8	
25		End of Borehole						

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary	Driller: JT - A&S	Hole size: 3"
Drill Rig: TMG	Date: 11/3/2015	Datum: Ground Surface
Drill Rod: AWJ	Location: See Location Plan	Sheet: 1 of 1

BTL Engineering Services, Inc.
P.O. Box 15718, Tampa, FL 33684
5802 N. Occident St.,Tampa, FL 33614
Phone: (813) 884-0755
Fax: (813) 886-5377

Borehole Log: SPT-6

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows) 5 15 25 35 45	Remarks
0		Ground Surface	0.0	GW @ 4'				
1		Loose Dark Gray Fine SAND (SP)			1	3-5-4-6	9	
2			-2.0					
3		Medium Dense Brown Fine SAND (SP)			2	2-5-9-12	14	
4								
5			-5.0		3	8-11-8-6	19	
6		Loose to Medium Dense Pale Brown Fine SAND (SP)			4	5-7-8-11	15	
7								
8					5	3-4-3-4	7	
9								
10								
11								
12								
13								
14			-14.0		6	5-6-6	12	
15		Medium Dense White Fine SAND (SP)						
16								
17								
18			-18.5					
19		Medium Dense Very Pale Brown Fine SAND (SP)			7	6-7-8	15	
20			-20.0					
21		End of Borehole						
22								

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary	Driller: JT - A&S	Hole size: 3"
Drill Rig: TMG	Date: 11/3/2015	Datum: Ground Surface
Drill Rod: AWJ	Location: See Location Plan	Sheet: 1 of 1

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P.O. Box 15718, Tampa, FL 33684
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Phone: (813) 884-0755
Fax: (813) 886-5377

Borehole Log: SPT-7

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows) 5 15 25 35 45	Remarks
0		Ground Surface	0.0	GW @ 3.0'				
0–4		Loose to Medium Dense Very Dark Gray Fine SAND (SP)			1	2-2-5-7	7	
					2	4-4-5-6	9	
			-4.5		3	5-9-9-8	18	
5–13		Medium Dense Yellowish Brown Fine SAND (SP)			4	6-7-7-6	14	
					5	5-5-7-7	12	
			-13.5		6	5-7-6	13	
14–19		Loose to Medium Dense White Fine SAND (SP)			7	3-3-5	8	
			-20.0					
20		End of Borehole						

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary
Drill Rig: TMG
Drill Rod: AWJ

Driller: JT - A&S
Date: 11/3/2015
Location: See Location Plan

Hole size: 3"
Datum: Ground Surface
Sheet: 1 of 1

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P.O. Box 15718, Tampa, FL 33684
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Phone: (813) 884-0755
Fax: (813) 886-5377

Borehole Log: SPT-8

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows) 5 15 25 35 45	Remarks
0		Ground Surface	0.0	GW @ 3'				
0–3		Loose to Medium Dense Dark Gray Fine SAND (SP)	-3.0		1	3-3-5-7	8	
					2	5-11-14-16	25	
3–8		Medium Dense Very Dark Gray Fine SAND with trace of roots (SP)	-8.0		3	11-12-14-18	26	
					4	7-10-10-8	20	
8–13.5		Loose Brownish Yellow Fine SAND (SP)	-13.5		5	9-3-6-6	9	
13.5–20		Medium Dense White Fine SAND (SP)	-20.0		6	8-10-10	20	
					7	8-9-11	20	
20		End of Borehole						

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary	Driller: JT - A&S	Hole size: 3"
Drill Rig: TMG	Date: 11/3/2015	Datum: Ground Surface
Drill Rod: AWJ	Location: See Location Plan	Sheet: 1 of 1

BTL Engineering Services, Inc.
P.O. Box 15718, Tampa, FL 33684
5802 N. Occident St.,Tampa, FL 33614
Phone: (813) 884-0755
Fax: (813) 886-5377

Borehole Log: SPT-9

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows)	Remarks
0		Ground Surface	0.0	GW @ 3.5'				
0–5		Loose to Dense Very Dark Gray Fine SAND (SP)	-5.0		1	2-2-6-6	8	
					2	5-7-13-21	20	
					3	11-15-18-22	33	
5–13		Medium Dense to Dense Brown Fine SAND (SP)	-13.5		4	5-6-9-8	15	
					5	8-7-7-7	14	
13–20		Medium Dense Very Pale Brown Fine SAND (SP)	-20.0		6	5-6-8	14	
					7	6-8-8	16	
20		End of Borehole						

N-Value (Blows) scale: 5 15 25 35 45

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary
Drill Rig: TMG
Drill Rod: AWJ

Driller: JT - A&S
Date: 10/30/2015
Location: See Location Plan

Hole size: 3"
Datum: Ground Surface
Sheet: 1 of 1

BTL Engineering Services, Inc.
P.O. Box 15718, Tampa, FL 33684
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Phone: (813) 884-0755
Fax: (813) 886-5377

Borehole Log: SPT-10

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows)	Remarks
0		Ground Surface	0.0	GW @ 3.5'				
0–2		Medium Dense Dark Gray Fine SAND (SP)	-2.5		1	2-4-7-8	11	
2–4		Medium Dense Gray Fine SAND (SP)	-4.0		2	6-10-15-18	25	
4–6		Medium Dense Brown Fine SAND with trace of roots (SP)	-6.5		3	13-14-14-17	28	
6–7		Medium Dense Yellowish Brown Fine SAND (SP)	-7.0		4	4-6-7-4	13	
7–14		Very Pale Brown Fine SAND (SP)	-14.0		5	4-3-4-4	7	
14–20		Medium Dense White Fine SAND (SP)	-20.0		6	7-9-9	18	
20		End of Borehole			7	10-12-15	27	

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary	Driller: JT - A&S	Hole size: 3"
Drill Rig: TMG	Date: 11/3/2015	Datum: Ground Surface
Drill Rod: AWJ	Location: See Location Plan	Sheet: 1 of 1

BTL Engineering Services, Inc.
P.O. Box 15718, Tampa, FL 33684
5802 N. Occident St.,Tampa, FL 33614
Phone: (813) 884-0755
Fax: (813) 886-5377

Borehole Log: SPT-11

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows) 5 15 25 35 45	Remarks
0		Ground Surface	0.0					
0–2		Loose to Medium Dense Dark Gray Fine SAND (SP)	-2.5	GW @ 4.0'	1	2-3-4-6	7	
2–4		Medium Dense Very Dark Gray Fine SAND (SP)	-4.0		2	4-8-9-13	17	
4–7		Medium Dense Brown Fine SAND (SP)	-7.0		3	7-10-10-11	20	
7–13		Loose to Medium Dense Very Pale Brown Fine SAND (SP)	-13.5		4	7-6-8-8	14	
					5	2-3-3-3	6	
13–20		Medium Dense White Fine SAND (SP)	-20.0		6	8-6-7	13	
					7	7-6-7	13	
20		End of Borehole						

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary
Drill Rig: TMG
Drill Rod: AWJ

Driller: JT - A&S
Date: 11/5/2015
Location: See Location Plan

Hole size: 3"
Datum: Ground Surface
Sheet: 1 of 1

BTL Engineering Services, Inc.
P.O. Box 15718, Tampa, FL 33684
5802 N. Occident St.,Tampa, FL 33614
Phone: (813) 884-0755
Fax: (813) 886-5377

Borehole Log: SPT-12

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows) 5 15 25 35 45	Remarks
0		Ground Surface	0.0	GW @ 3.5'				
0–4		Loose to Medium Dense Very Dark Gray Fine SAND (SP)			1	1-2-3-3	5	
					2	4-3-3-4	6	
4			-4.5					
5–13		Loose to Medium Dense Brown Fine SAND (SP)			3	2-4-8-11	12	
					4	3-6-8-6	14	
					5	6-4-5-5	9	
13			-13.5					
14–19		Medium Dense Pale Brown Fine SAND (SP)			6	6-11-12	23	
					7	8-9-11	20	
20			-20.0					
20		End of Borehole						

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary	Driller: JT - A&S	Hole size: 3"
Drill Rig: TMG	Date: 10/30/2015	Datum: Ground Surface
Drill Rod: AWJ	Location: See Location Plan	Sheet: 1 of 1

BTL Engineering Services, Inc.
P.O. Box 15718, Tampa, FL 33684
5802 N. Occident St.,Tampa, FL 33614
Phone: (813) 884-0755
Fax: (813) 886-5377

Borehole Log: SPT-13

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows)	Remarks
0		Ground Surface	0.0					
0–1		Very Loose Very Dark Gray Fine SAND (SP)	-1.5	GW @ 3'	1	1-1-3-2	4	
1–5		Very Loose to Medium Dense Light Gray Fine SAND (SP)	-5.5		2	4-8-7-8	15	
					3	5-7-4-9	11	
5–8		Medium Dense Yellowish Brown Fine SAND with trace of roots (SP)	-8.0		4	5-8-10-11	18	
8–13.5		Very Loose Grayish Brown Fine SAND (SP)	-13.5		5	3-1-3-3	4	
13.5–20		Medium Dense Light Gray Fine SAND (SP)	-20.0		6	6-7-8	15	
					7	9-9-10	19	
20		End of Borehole						

N-Value (Blows) scale: 5 15 25 35 45

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary
Drill Rig: TMG
Drill Rod: AWJ

Driller: JT - A&S
Date: 10/30/2015
Location: See Location Plan

Hole size: 3"
Datum: Ground Surface
Sheet: 1 of 1

BTL Engineering Services, Inc.
P.O. Box 15718, Tampa, FL 33684
5802 N. Occident St.,Tampa, FL 33614
Phone: (813) 884-0755
Fax: (813) 886-5377

Borehole Log: SPT-14

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows)	Remarks
0		Ground Surface	0.0					
0–4		Loose to Medium Dense Very Dark Gray Fine SAND (SP)		GW @ 4.5'	1	1-3-5-5	8	
					2	4-9-8-7	17	
4			-4.5		3	5-8-11-9	19	
4–25		Very Loose to Medium Dense Pale Brown Fine SAND (SP)			4	3-6-7-9	13	
					5	2-2-2-2	4	
					6	1-2-4	6	
					7	6-9-12	21	
					8	8-10-8	18	
25			-25.0					
		End of Borehole						

N-Value (Blows) scale: 5 15 25 35 45

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary
Drill Rig: TMG
Drill Rod: AWJ

Driller: JT - A&S
Date: 10/30/2015
Location: See Location Plan

Hole size: 3"
Datum: Ground Surface
Sheet: 1 of 1

BTL Engineering Services, Inc.
P.O. Box 15718, Tampa, FL 33684
5802 N. Occident St.,Tampa, FL 33614
Phone: (813) 884-0755
Fax: (813) 886-5377

Borehole Log: SPT-15

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows)	Remarks
0		Ground Surface	0.0					
0–2		Medium Dense Dark Gray Fine SAND (SP)	-2.0	GW @ 4.5'	1	2-3-9-10	12	
2–4		Medium Dense to Dense Very Dark Gray Fine SAND (SP)	-4.5		2	10-9-19-23	28	
4–14		Medium Dense Dark Yellowish Brown Fine SAND (SP)	-14.5		3	18-25-24-29	49	
					4	6-10-10-10	20	
					5	8-7-7-6	14	
					6	9-12-13	25	
14–20		Medium Dense Very Pale Brown Fine SAND (SP)	-20.0		7	11-15-15	30	
20		End of Borehole						

N-Value scale: 5 15 25 35 45

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary	Driller: JT - A&S	Hole size: 3"
Drill Rig: TMG	Date: 10/30/2015	Datum: Ground Surface
Drill Rod: AWJ	Location: See Location Plan	Sheet: 1 of 1

BTL Engineering Services, Inc.
P.O. Box 15718, Tampa, FL 33684
5802 N. Occident St.,Tampa, FL 33614
Phone: (813) 884-0755
Fax: (813) 886-5377

Borehole Log: SPT-16

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows)	Remarks
0		Ground Surface	0.0	GW @ 4.5'				
1		Loose Dark Gray Fine SAND (SP)	-1.5		1	2-2-3-3	5	
2		Loose to Medium Dense Gray Fine SAND (SP)			2	3-5-4-8	9	
3					3	6-8-9-13	17	
4					4	6-7-9-9	16	
5		Medium Dense Brown Fine SAND (SP)	-5.0		5	5-6-7-7	13	
6								
7								
8								
9								
10								
11								
12								
13			-13.5		6	4-6-9	15	
14		Stiff Greenish Gray CLAY (CL)						
15								
16								
17								
18								
19					7	4-6-8	14	
20								
21								
22			-22.0					
23		Hard LIMESTONE (LS)						
24					8	50/3"	>50	
25			-25.0					
26		End of Borehole						
27								

N-Value (Blows) scale: 5 15 25 35 45

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary
Drill Rig: TMG
Drill Rod: AWJ

Driller: JT - A&S
Date: 10/30/2015
Location: See Location Plan

Hole size: 3"
Datum: Ground Surface
Sheet: 1 of 1

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Phone: (813) 884-0755
Fax: (813) 886-5377

Borehole Log: SPT-17

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows) 5 15 25 35 45	Remarks
0		Ground Surface	0.0					
0–1.5		Loose Very Dark Gray Fine SAND (SP)	-1.5	GW @ 3.5'	1	1-2-3-4	5	
1.5–3.3		Loose Very Dark Brown Fine SAND with trace of roots (SP)	-3.3		2	3-3-5-8	8	
3.3–8.5		Loose to Medium Dense Pale Brown Fine SAND (SP)	-8.5		3	5-6-9-8	15	
					4	4-4-3-2	7	
8.5–12.5		Medium Dense Gray Clayey SAND (SC)	-12.5		5	4-7-7-7	14	
12.5–20.0		Stiff Greenish Gray CLAY (CL)	-20.0		6	4-4-6	10	
					7	5-5-7	12	
20		End of Borehole						

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary
Drill Rig: TMG
Drill Rod: AWJ

Driller: JT - A&S
Date: 10/30/2015
Location: See Location Plan

Hole size: 3"
Datum: Ground Surface
Sheet: 1 of 1

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Fax: (813) 886-5377

Borehole Log: SPT-18

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows) 5 15 25 35 45	Remarks
0		Ground Surface	0.0	GW @ 4.0'				
1		Loose Dark Gray Fine SAND (SP)	-1.0		1	2-3-4-4	7	
2		Loose to Medium Dense Light Gray Fine SAND (SP)			2	4-8-11-9	19	
3			-3.5					
4		Medium Dense Yellowish Brown Fine SAND (SP)			3	7-6-9-9	15	
5								
6			-6.5		4	2-4-5-4	9	
7		Loose Pale Brown Fine SAND (SP)						
8					5	4-4-4-5	8	
9								
10								
11								
12								
13			-13.5					
14		Medium Dense White Fine SAND (SP)			6	8-8-9	17	
15								
16								
17								
18			-18.5					
19		Stiff Gray Clay (CL)			7	4-4-8	12	
20								
21								
22								
23								
24					8	4-4-7	11	
25			-25.0					
26		End of Borehole						
27								

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary
Drill Rig: TMG
Drill Rod: AWJ

Driller: JT - A&S
Date: 10/30/2015
Location: See Location Plan

Hole size: 3"
Datum: Ground Surface
Sheet: 1 of 1

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Borehole Log: SPT-19

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows) 5 15 25 35 45	Remarks
0		Ground Surface	0.0					
0		Loose Gray Fine SAND (SP)			1	2-2-3-3	5	
1			-1.5					
2		Loose to Medium Dense Very Pale Brown Fine SAND (SP)		GW @ 5.5'	2	3-3-8-8	11	
3								
4					3	5-7-7-8	14	
5								
6					4	3-4-5-8	9	
7								
8					5	3-3-4-3	7	
9								
10								
11								
12								
13								
14					6	6-8-9	17	
15								
16								
17								
18			-18.5					
19		Medium Dense Brown Fine SAND (SP)			7	6-10-11	21	
20			-20.0					
20		End of Borehole						
21								
22								

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary	Driller: JT - A&S	Hole size: 3"
Drill Rig: TMG	Date: 11/3/2015	Datum: Ground Surface
Drill Rod: AWJ	Location: See Location Plan	Sheet: 1 of 1

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Borehole Log: SPT-20

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows)	Remarks
0		Ground Surface	0.0	GW @ 5.5'				
1		Medium Dense Very Dark Gray Fine SAND (SP)	-1.5		1	3-5-6-6	11	
2		Medium Dense Gray Brown Fine SAND (SP)	-4.5		2	5-5-7-11	12	
5		Loose to Medium Dense Pale Brown Fine SAND (SP)	-13.5		3	7-7-6-8	13	
7					4	5-6-7-9	13	
9					5	2-3-2-2	5	
14		Medium Dense White Fine SAND (SP)	-20.0		6	4-5-8	13	
19					7	7-10-11	21	
20		End of Borehole						

N-Value (Blows) scale: 5 15 25 35 45

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary
Drill Rig: TMG
Drill Rod: AWJ

Driller: JT - A&S
Date: 11/3/2015
Location: See Location Plan

Hole size: 3"
Datum: Ground Surface
Sheet: 1 of 1

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Fax: (813) 886-5377

Borehole Log: SPT-21

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows)	Remarks
0		Ground Surface	0.0	GW @ 4.5'				
0		Loose Grayish Brown Fine SAND (SP)			1	2-4-8-9	12	
1			-1.5					
2		Loose to Medium Dense Pale Brown Fine SAND (SP)			2	6-7-9-10	16	
3					3	6-7-9-9	16	
4					4	4-5-5-6	10	
5					5	5-5-5-6	10	
6								
7								
8								
9								
10								
11								
12								
13								
14					6	4-5-6	11	
15								
16								
17								
18			-18.5					
19		Medium Dense Brown Fine SAND (SP)			7	4-7-11	18	
20			-20.0					
20		End of Borehole						
21								
22								

N-Value (Blows) scale: 5 15 25 35 45

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary
Drill Rig: TMG
Drill Rod: AWJ

Driller: JT - A&S
Date: 11/3/2015
Location: See Location Plan

Hole size: 3"
Datum: Ground Surface
Sheet: 1 of 1

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Borehole Log: SPT-22

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows) 5 15 25 35 45	Remarks
0		Ground Surface	0.0	GW @ 5.5'				
1		Medium Dense Gray Fine SAND (SP)			1	1-5-6-6	11	
2			-2.5					
3		Medium Dense Dark Gray Fine SAND (SP)			2	6-6-7-5	13	
4			-4.0					
5		Loose to Medium Dense Brown Fine SAND (SP)			3	7-9-11-9	20	
6			-6.5					
7		Loose Pale Brown Fine SAND (SP)			4	3-3-7-6	10	
8								
9					5	5-4-3-4	7	
10								
11								
12								
13								
14					6	3-3-4	7	
15								
16								
17								
18			-18.5					
19		Medium Dense White Fine SAND (SP)			7	7-7-7	14	
20								
21								
22								
23			-23.5					
24		Medium Dense Grayish Brown Fine SAND (SP)	-25.0			9-11-14	25	
25		End of Borehole						
26								
27								

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary
Drill Rig: TMG
Drill Rod: AWJ

Driller: JT - A&S
Date: 11/3/2015
Location: See Location Plan

Hole size: 3"
Datum: Ground Surface
Sheet: 1 of 1

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Fax: (813) 886-5377

Borehole Log: SPT-23

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows) 5 15 25 35 45	Remarks
0		Ground Surface	0.0					
0–3		Loose to Medium Dense Very Dark Gray Fine SAND (SP)	-3.0	GW @ 4.5'	1	2-7-9-6	16	
					2	4-2-3-4	5	
3–23.5		Loose to Medium Dense Very Pale Brown Fine SAND (SP)	-23.5		3	4-6-7-8	13	
					4	3-5-6-9	11	
					5	3-2-4-4	6	
					6	4-7-7	14	
					7	6-7-5	12	
23.5–25		Medium Dense Brown Fine SAND (SP)	-25.0		8	7-9-6	15	
25		End of Borehole						

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary
Drill Rig: TMG
Drill Rod: AWJ

Driller: JT - A&S
Date: 11/5/2015
Location: See Location Plan

Hole size: 3"
Datum: Ground Surface
Sheet: 1 of 1

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Fax: (813) 886-5377

Borehole Log: SPT-24

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows) 5 15 25 35 45	Remarks
0		Ground Surface	0.0	GW @ 5.0'				
1		Medium Dense Dark Gray Fine SAND (SP)	-1.5		1	2-5-6-8	11	
2		Medium Dense Brown Fine SAND (SP)	-4.0		2	6-6-8-10	14	
3								
4		Loose to Medium Dense Very Pale Brown Fine SAND (SP)			3	7-8-11-13	19	
5								
6					4	7-9-8-8	17	
7								
8					5	2-3-3-3	6	
9								
10								
11								
12								
13								
14					6	5-7-7	14	
15								
16								
17								
18			-18.5					
19		Medium Dense Dark Yellowish Brown Fine SAND (SP)			7	7-9-10	19	
20								
21								
22								
23								
24					8	8-10-15	25	
25			-25.0					
26		End of Borehole						
27								

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary
Drill Rig: TMG
Drill Rod: AWJ

Driller: JT - A&S
Date: 11/5/2015
Location: See Location Plan

Hole size: 3"
Datum: Ground Surface
Sheet: 1 of 1

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Fax: (813) 886-5377

Borehole Log: SPT-25

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows)	Remarks
0		Ground Surface	0.0	GW @ 5.0'				
1		Medium Dense Very Dark Gray Fine SAND (SP)	-1.5		1	2-4-8-8	12	
2		Medium Dense Dark Gray Fine SAND (SP)			2	6-9-14-14	23	
3								
4					3	10-11-12-13	23	
5								
6					4	5-7-10-12	17	
7		Loose to Medium Dense Very Pale Brown Fine SAND (SP)	-7.0		5	5-4-4-5	8	
8								
9								
10								
11								
12								
13								
14					6	2-2-4	6	
15								
16								
17								
18								
19					7	9-12-14	26	
20		End of Borehole	-20.0					
21								
22								

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary
Drill Rig: TMG
Drill Rod: AWJ

Driller: JT - A&S
Date: 11/5/2015
Location: See Location Plan

Hole size: 3"
Datum: Ground Surface
Sheet: 1 of 1

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Borehole Log: SPT-26

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows) 5 15 25 35 45	Remarks
0		Ground Surface	0.0					
0–3		Loose Dark Gray Fine SAND (SP)	-3.0	GW @ 3.5'	1	3-3-4-5	7	
					2	4-4-5-9	9	
3–4		Loose to Medium Dense Very Dark Gray Fine SAND (SP)	-4.5					
4–9		Loose to Medium Dense Brown Fine SAND (SP)	-9.5		3	8-10-21-21	31	
					4	5-8-5-5	13	
					5	6-3-4-3	7	
9–13		Loose Pale Brown Fine SAND with trace of silt (SP)	-13.5					
13–18		Loose Pale Brown Silty SAND (SM)	-18.5		6	4-4-5	9	
18–25		Soft to Firm Greenish Gray CLAY (CL)	-25.0		7	5-3-3	6	
					8	1-1-3	4	
25		End of Borehole						

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary	Driller: JT - A&S	Hole size: 3"
Drill Rig: TMG	Date: 11/3/2015	Datum: Ground Surface
Drill Rod: AWJ	Location: See Location Plan	Sheet: 1 of 1

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Phone: (813) 884-0755
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Borehole Log: RB-1

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows) 5 15 25 35 45	Remarks
0		Ground Surface	0.0					
		Medium Dense Dark Grayish Brown Fine SAND (SP)			1	3-5-6-7	11	ESHWT @ 1.5'
2			-2.0					
		Medium Dense Very Dark Gray Fine SAND (SP)		GW @ 3'	2	6-7-7-11	14	
4			-4.5					
		Medium Dense Brown Fine SAND (SP)			3	6-5-8-9	13	
6			-6.0					
		End of Borehole						
8								

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary	Driller: JT - A&S	Hole size: 3"
Drill Rig: TMG	Date: 11/3/2015	Datum: Ground Surface
Drill Rod: AWJ	Location: See Location Plan	Sheet: 1 of 1

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Phone: (813) 884-0755
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Borehole Log: RB-2

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows) 5 15 25 35 45	Remarks
0		Ground Surface	0.0					
		Loose to Dense Gray Fine SAND (SP)		GW @ 3.5'	1	3-3-4-7	7	
2					2	7-7-8-10	15	ESHWT @ 2'
4								
5			-5.0		3	12-15-19-18	34	
		Dense Very Pale Brown Fine SAND (SP)						
6			-6.0					
		End of Borehole						
7								
8								

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary	Driller: JT - A&S	Hole size: 3"
Drill Rig: TMG	Date: 11/3/2015	Datum: Ground Surface
Drill Rod: AWJ	Location: See Location Plan	Sheet: 1 of 1

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P.O. Box 15718, Tampa, FL 33684
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Phone: (813) 884-0755
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Borehole Log: RB-3

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Description	Stratum	Sample	Blow	Remarks
0	Ground Surface	0.0			
	Loose to Medium Dense Dark Gray Fine SAND (SP)		1	2-2-5-6	
2			2	3-6-5-4	ESHWT @ 2.5'
3		-3.5			
	Loose to Medium Dense Brown Fine SAND (SP)				
4			3	4-4-3-6	
5		-5.0			
	Loose Brownish Yellow Fine SAND with trace of roots (SP)				
6		-6.0			
	End of Borehole				
7					
8					

Water Table: GW @ 4'

N-Value (Blows) 5 15 25 35 45

7 11 7

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary
Drill Rig: TMG
Drill Rod: AWJ

Driller: JT - A&S
Date: 11/3/2015
Location: See Location Plan

Hole size: 3"
Datum: Ground Surface
Sheet: 1 of 1

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Phone: (813) 884-0755
Fax: (813) 886-5377

Borehole Log: RB-4

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows) 5 15 25 35 45	Remarks
0		Ground Surface	0.0					
		Loose to Medium Dense Dark Gray Fine SAND (SP)			1	1-2-6-8	8	
2					2	5-8-7-11	15	ESHWT @ 3'
3			-3.5					
		Medium Dense to Dense Very Dark Gray Fine SAND (SP)		GW @ 5.0'	3	6-12-22-14	34	
5			-5.3					
		Dense Pale Brown Fine SAND (SP)						
6			-6.0					
		End of Borehole						
7								
8								

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary
Drill Rig: TMG
Drill Rod: AWJ

Driller: JT - A&S
Date: 11/3/2015
Location: See Location Plan

Hole size: 3"
Datum: Ground Surface
Sheet: 1 of 1

BTL Engineering Services, Inc.
P.O. Box 15718, Tampa, FL 33684
5802 N. Occident St.,Tampa, FL 33614
Phone: (813) 884-0755
Fax: (813) 886-5377

Borehole Log: RB-5

Project No: 5253-15-1934
Project: Hunters Ridge Multi-Family Townhomes
Address: Pasco Co ID 11-26-16-0020-03300-0000
Client: Regency Design & Engineering, Inc

Depth	Symbol	Description	Stratum	Water Table	Sample	Blow	N-Value (Blows) 5 15 25 35 45	Remarks
0		Ground Surface	0.0					
		Loose to Medium Dense Dark Gray Fine SAND (SP)			1	2-3-5-7	8	
2					2	4-8-13-15	21	ESHWT @ 2.5'
4				GW @ 4.5'	3	12-14-13-15	27	
			-4.5					
		Loose to Medium Dense Pale Brown Fine SAND with trace of roots (SP)						
6			-6.0					
		End of Borehole						
8								

NOTE:

GW - Ground Water Table
NE - Not Established
NF - Not Found
DD-Destructively Drilled

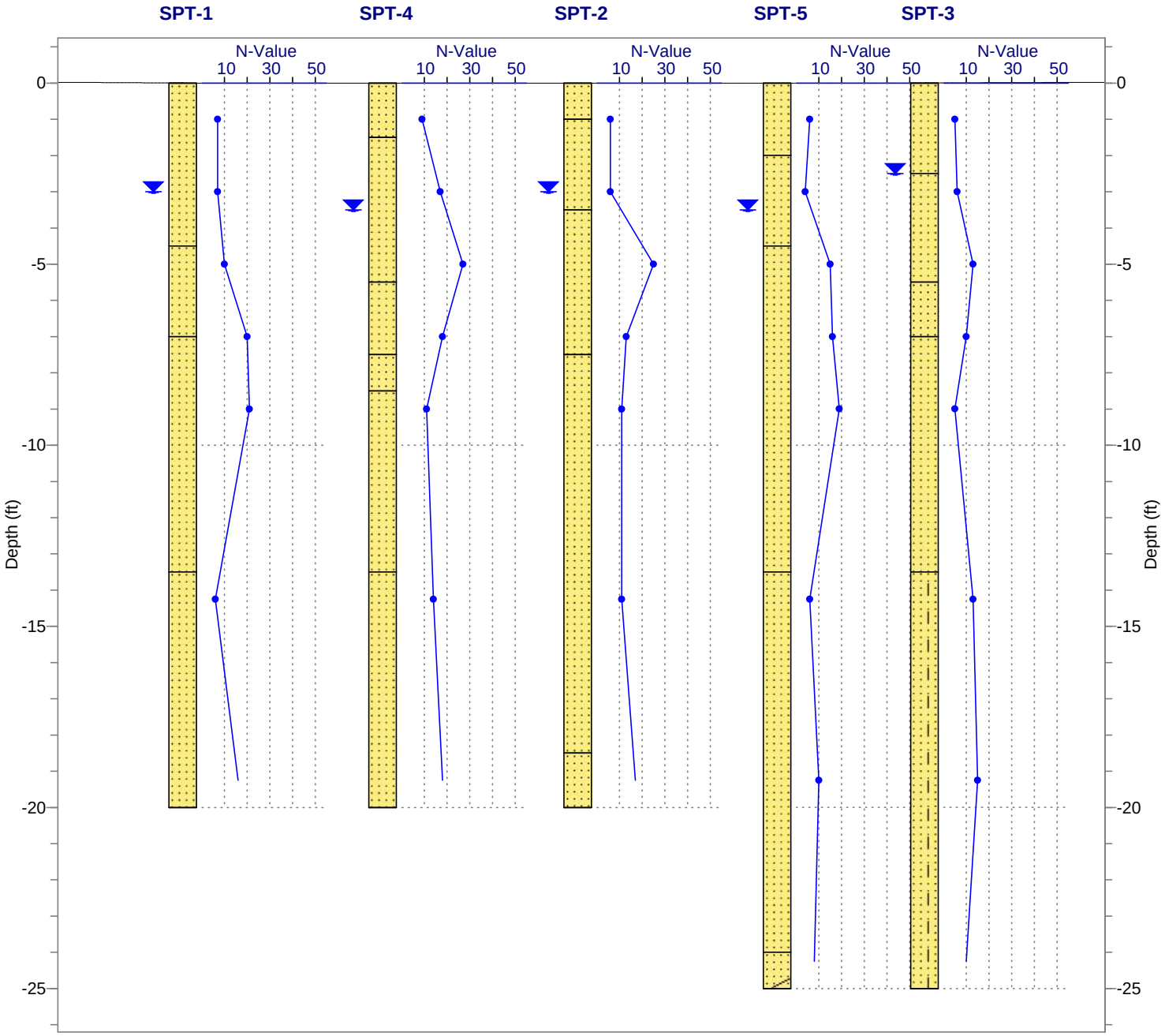
N - Value equals sum of second and third blow count increments

Drill Method: Mud Rotary	Driller: JT - A&S	Hole size: 3"
Drill Rig: TMG	Date: 11/3/2015	Datum: Ground Surface
Drill Rod: AWJ	Location: See Location Plan	Sheet: 1 of 1

APPENDIX D

Subsurface Soil Profile

Subsurface Soil Profile



Legend:

- Fine SAND
- Clayey SAND
- Silty SAND

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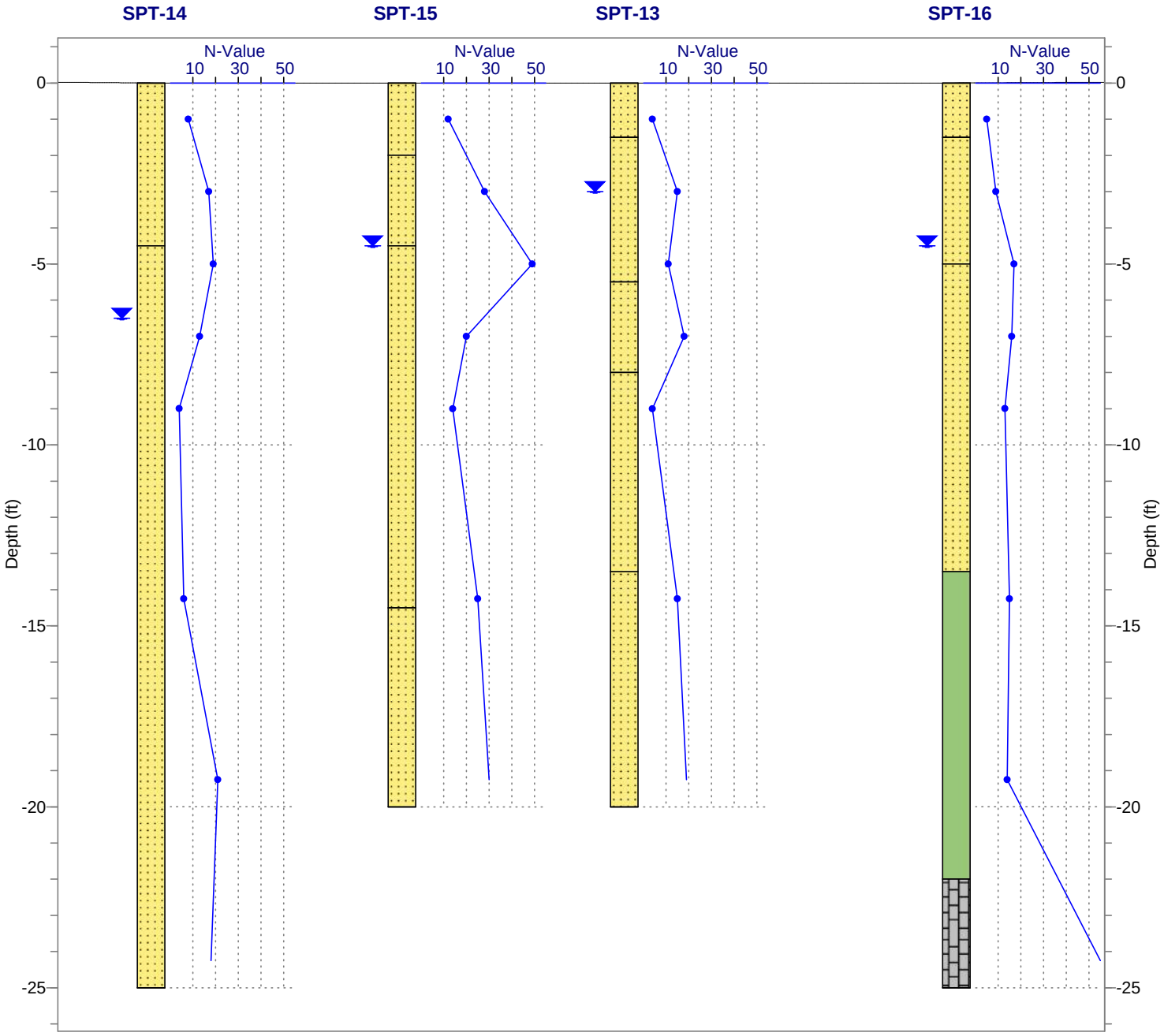
Project: Hunters Ridge Multi-Family Townhomes
Project Location: Pasco Co ID: 11-26-16-0020-03300-0000
Project Number: 5253-15-1934
Client: Regency Design & Engineering, Inc.

Drawn By: SW	**Checked By:** MH
Figure No: 1 of 7	**Date:** 11/10/2015

Subsurface Soil Profile



Legend:

- Fine SAND
- CLAY
- LIMESTONE

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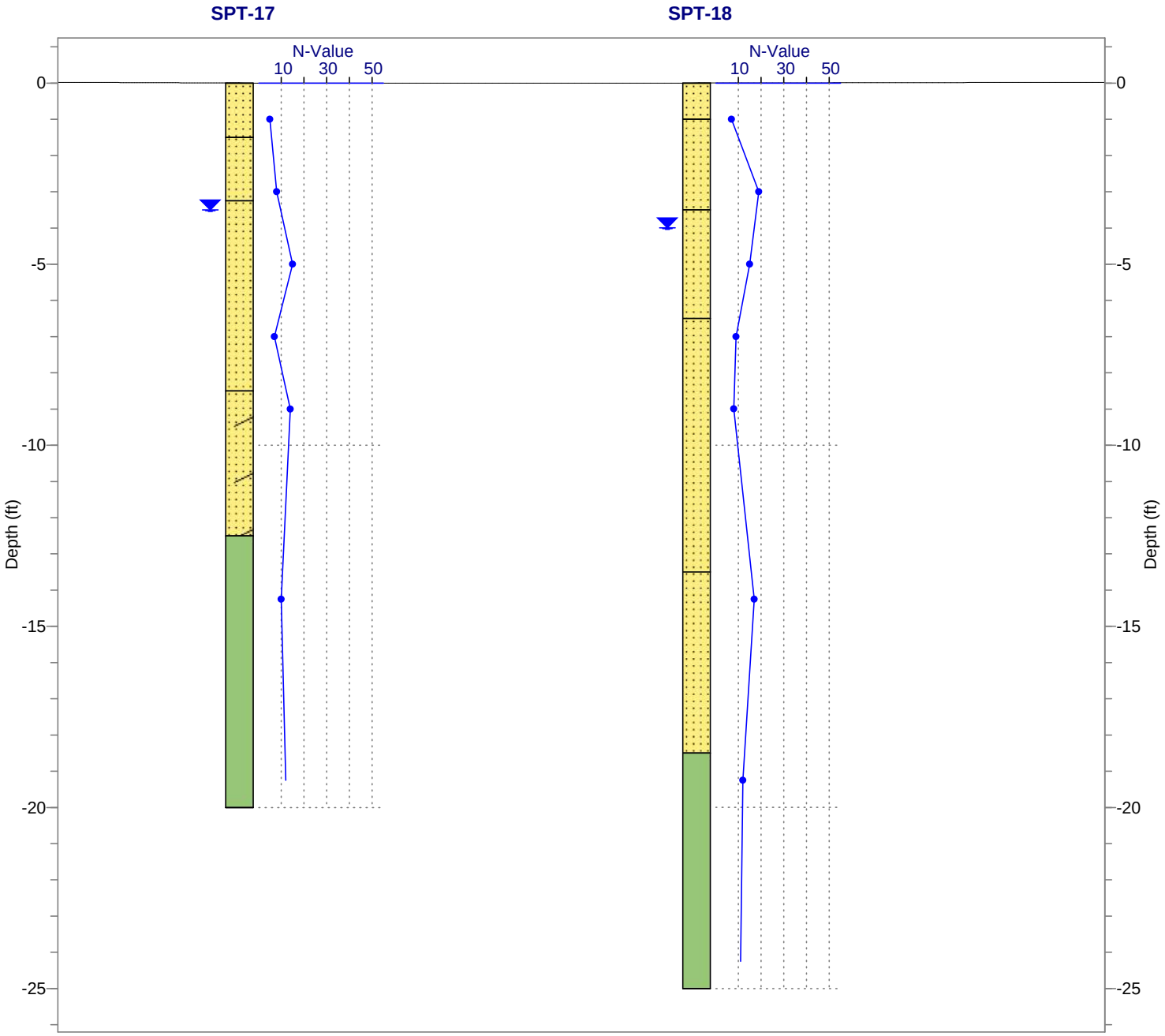
Client: Regency Design & Engineering, Inc.

Drawn By: SW	**Checked By:** MH
Figure No: 2 of 7	**Date:** 11/10/2015

Subsurface Soil Profile



Legend:

Fine SAND

Clayey SAND

CLAY

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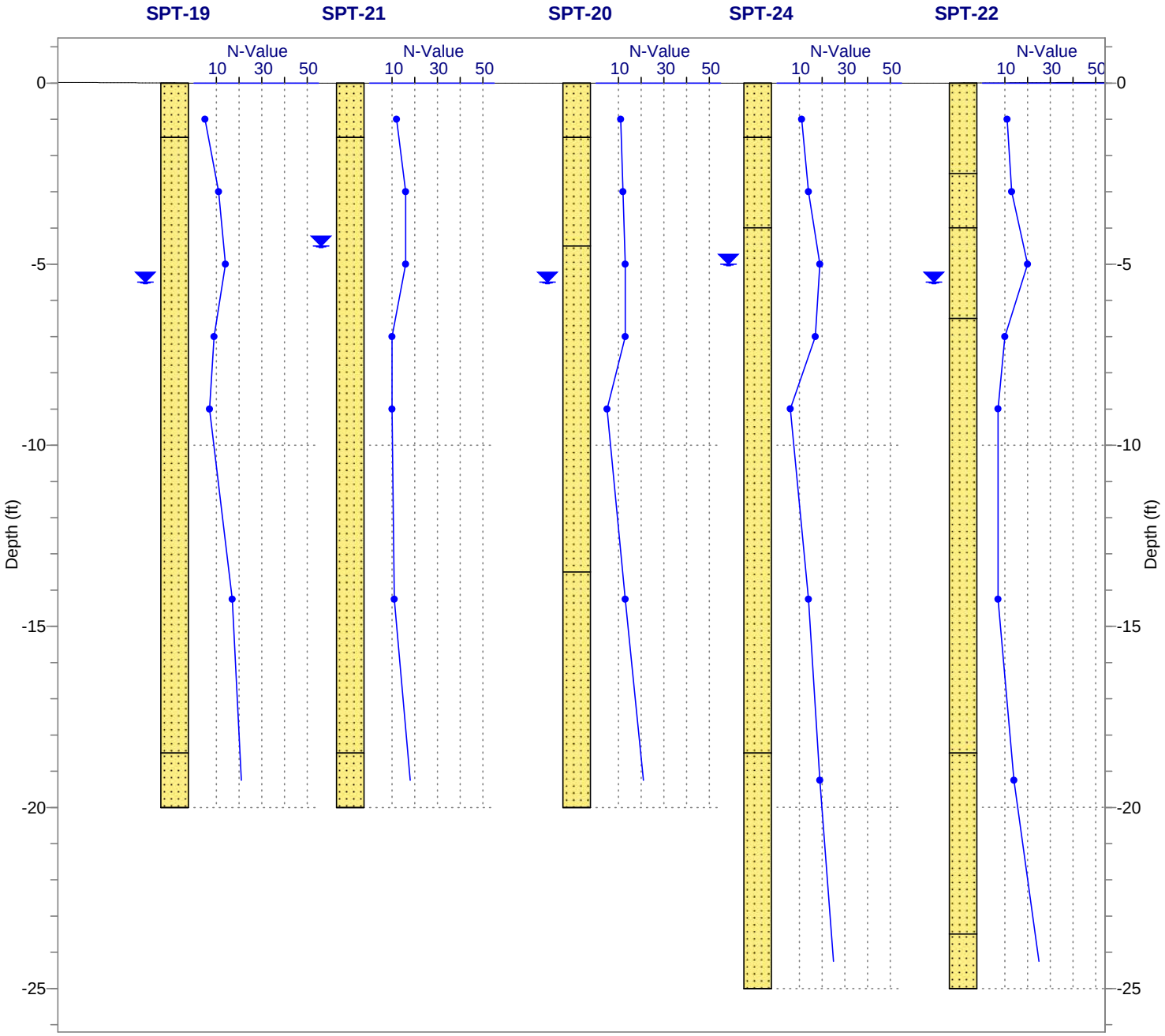
Drawn By: SW	**Checked By:** MH
Figure No: 3 of 7	**Date:** 11/10/2015

Subsurface Soil Profile



Legend:

Fine SAND

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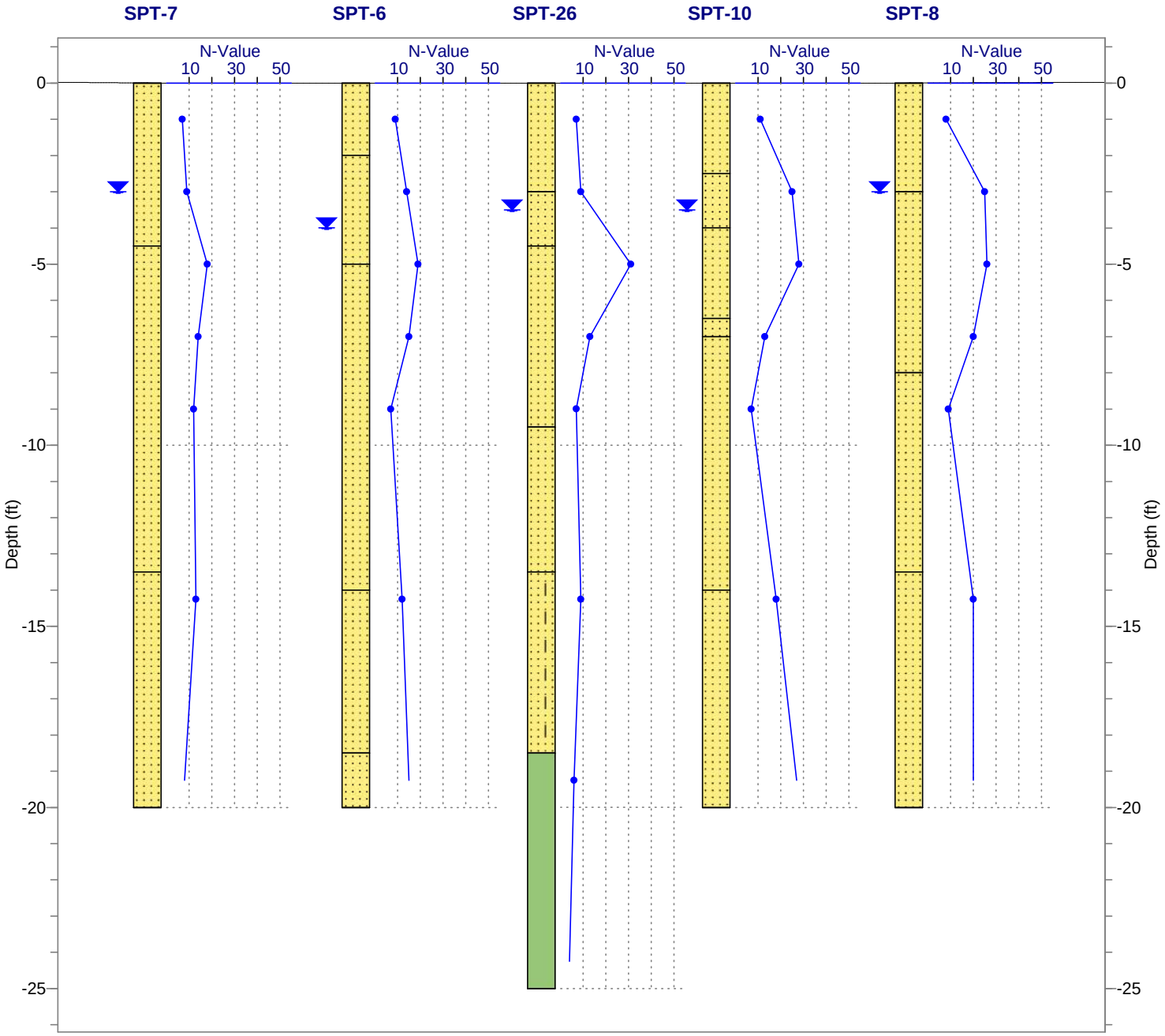
Client: Regency Design & Engineering, Inc.

Drawn By: SW	**Checked By:** MH
Figure No: 4 of 7	**Date:** 11/10/2015

Subsurface Soil Profile



Legend:

Fine SAND

Silty SAND

CLAY

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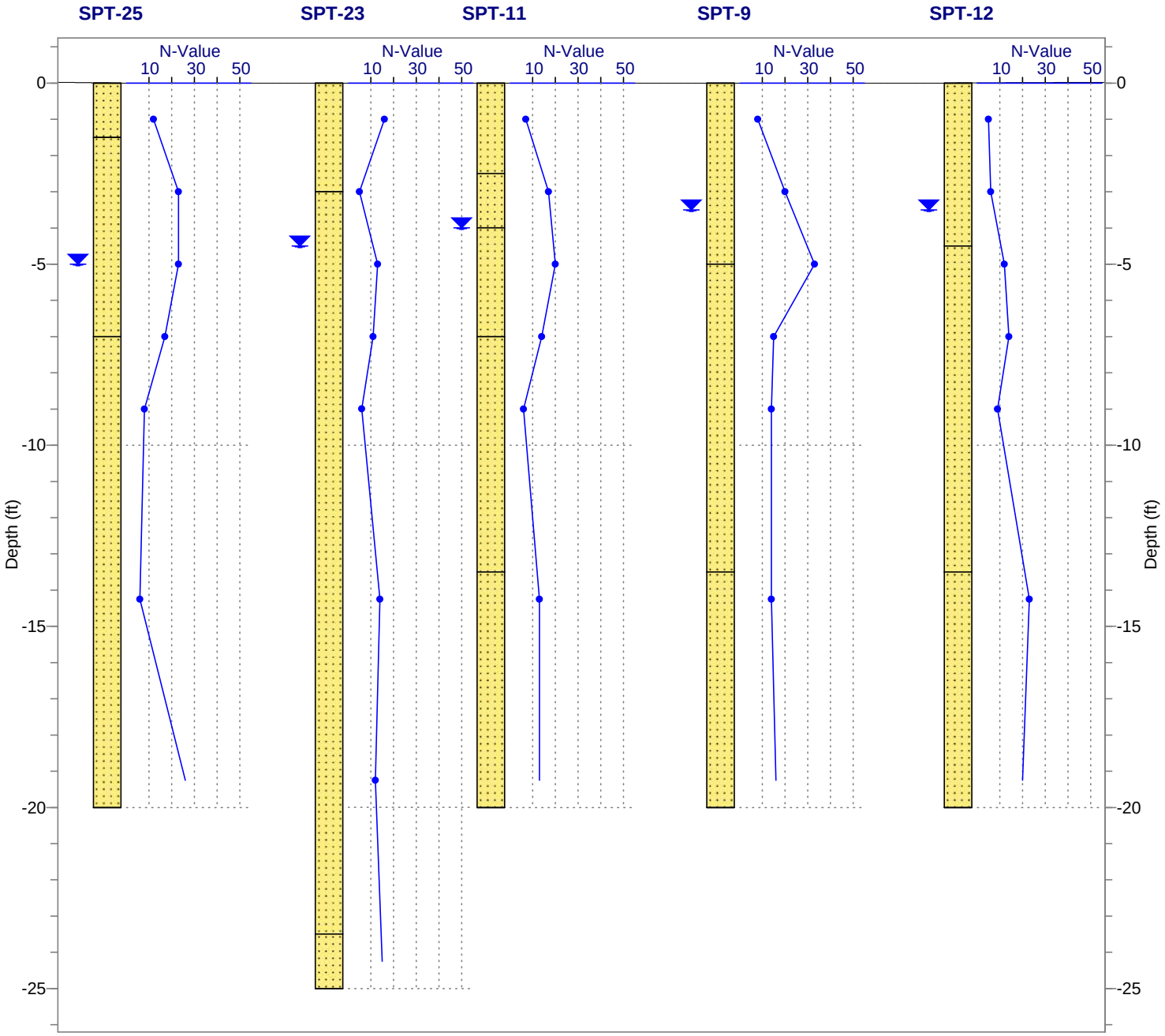
Drawn By: SW	**Checked By:** MH
Figure No: 5 of 7	**Date:** 11/10/2015

Subsurface Soil Profile



Legend:

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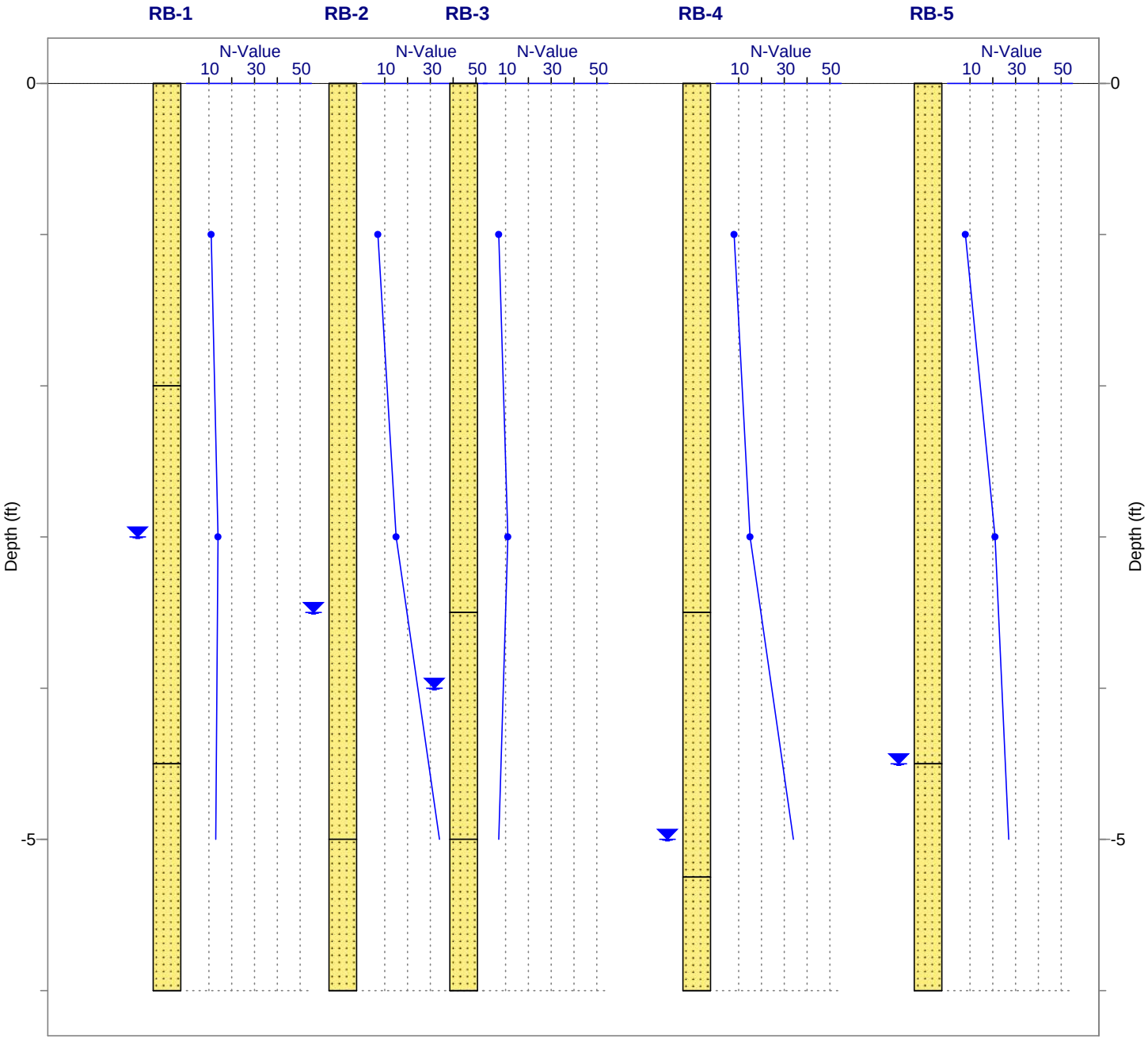
Drawn By: SW	**Checked By:** MH
Figure No: 6 of 7	**Date:** 10/10/2015

Subsurface Soil Profile



Legend:

Fine SAND

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Client: Regency Design & Engineering, Inc.

Drawn By: SW	**Checked By:** MH
Figure No: 7 of 7	**Date:** 11/10/2015

APPENDIX E

Important Information About Your Geotechnical Report and Limitations and Reproductions

IMPORTANT INFORMATION
ABOUT YOUR
GEOTECHNICAL ENGINEERING REPORT

A GEOTECHNICAL ENGINEERING REPORT IS BASED ON A UNIQUE SET OF PROJECT-SPECIFIC FACTORS

A geotechnical engineering report is passed on a subsurface plan designed to incorporate a unique set of project-specific factors. These typically include: the general nature of the structure involved, its size and its orientation; physical concomitants such as access roads, parking lots, and underground utilities and the level of additional risk which the client assumed by the virtue of limitations imposed upon the exploratory system. To help costly problems, consult the geotechnical engineer to determine how any factors which change subsequent to the date of this report may affect his recommendations.

Unless your consulting geotechnical engineer indicates otherwise, your *geotechnical report should be not used*:

- When the nature of the proposed structure is changed, for example, if an office building will be erected instead of a parking garage, or if a refrigerated warehouse will be built instead of an unrefrigerated one;
- When the size or configuration of the proposed structure is altered;
- When the location or orientation of the proposed structure is modified;
- When there is a change of ownership, or
- For application to adjacent site.

A geotechnical engineer cannot accept responsibility for problems which may develop if he is not consulted after factors considered in his report's development have changed.

MOST GEOTECHNICAL "FINDINGS" ARE PROFESSIONAL ESTIMATES

Site exploration identifies actual subsurface conditions only at those points where samples are taken, when they are taken. Data derived through sampling and subsequent laboratory testing are extrapolated by the geotechnical engineer who then renders an opinion about overall subsurface conditions, their likely reaction to proposed construction activity, and appropriate foundation design. Even under optimal circumstances actual conditions may differ from those opined to exist, because no geotechnical engineer, no matter how qualified, and no subsurface exploration program, now matter how comprehensive, can reveal what is hidden by earth, rock, and time. For example, the actual interface between materials may be far more gradual or abrupt that the report indicates, and actual conditions in areas not sampled may differ from predictions. *Nothing can be done to prevent the unanticipated, but steps can be taken to help minimize their impact.* For this reason, *most experienced owners retain their geotechnical consultant through the construction state*, to identify variance, conduct additional tests which may be needed, and to recommend solutions to problems encountered on site.

SUBSURFACE CONDITIONS CAN CHANGE

Subsurface conditions may be modified by constantly-changing natural forces. Because a geotechnical engineering report is based on conditions which exist at the time of subsurface exploration, *construction decisions should not be based on the geotechnical engineering report which may be affected by time.* Speak with the geotechnical consultant to learn if additional tests are advisable before construction starts.

Construction operations at or adjacent to the site and natural events such as floods, earthquakes or groundwater fluctuations may also affect subsurface conditions and, thus the continuing adequacy of a geotechnical report. The geotechnical engineer should be kept appraised for any such events, and should be consulted to determine if additional tests are necessary.

A GEOTECHNICAL ENGINEERING REPORT IS SUBJECT TO MISINTERPRETATION

Costly problems can occur when other design professionals develop their plans based on misinterpretations of a geotechnical engineering report. To help avoid these problems, the geotechnical engineer should be retained to work with other appropriate design professionals to explain relevant geotechnical findings and to review their adequacy.

LIMITATIONS

- This investigation and analysis covers only the soil zones and deposits associated with the subsurface investigation. It is not intended to include deep soil or rock strata where cavities or caverns may exist. Furthermore, this study does not deal with or accept responsibility of the possibility of sinkhole development. Deep structural borings, geophysical investigation, or resistivity surveys must be conducted in order to evaluate the structural conditions and stability of soil and rock formations and is beyond the scope of this investigation.

- The preliminary findings in this report are based on analysis of the soils from each of the indicated borings with an interpolation of soil conditions and assumption of reasonable variation in the soil uniformity and properties between boring locations.

- Should any condition at variance with our report or different than those shown by borings be encountered during future explorations, we should be notified immediately so that supplemental data can be provided at minimal cost to our client.

- It is the responsibility of the client to see that these findings are brought to the attention of those concerned.

REPRODUCTIONS

- The reproduction of this report, or any part hereof, in plans or other engineering documents supplied to persons other than the client should bear the language indicating that the information contained therein is for general information only and not for reconstruction or bidding purposes and that the client and *BTL Engineering Services, Inc.*, are not liable to such other person for and representation made therein.