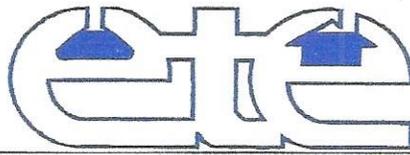


TOWN OF SOUTHWEST RANCHES, FLORIDA
Southwest 54th Place and Southwest 195th Terrace Drainage Improvements

IFB No. 17-005

ADDENDUM 1

1. Geotechnical Report (Please see attached pages 2-11).
2. Corrected typographical error on page 59 of IFB document. The Final Completion Date is **thirty-five (35) days** from the issuance of the Notice to Proceed.



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AUGUST 13, 2017

**REPORT OF GEOTECHNICAL EXPLORATION &
ENGINEERING ANALYSIS - RECOMMENDATION**

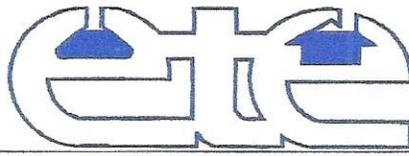
FOR

COMMUNITY SERVICES

TOWN OF SW RANCHES

PROPOSED FUTURE DRAINAGE

**SW 54th PLACE & SW 195th TERRACE
SW RANCHES, FLORIDA
BROWARD COUNTY, FLORIDA**



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August 13, 2017

REPORT OF ENGINEERING STATEMENT for: Community Services - Town of SW Ranches

PROJECT : SUBSOIL INVESTIGATION for: Proposed Future Drainage Project

**LOCATION: SW 54th Place - East of SW 195th Terrace
SW Ranches, Florida
Broward County, Florida**

To Whom it May Concern;

As per your request we have completed the subsurface investigation at the above referenced project location. Two, (2) standard penetration test borings were performed at the above referenced site on August 09, 2017.

The test boring locations were determined by our client, and are indicated on the test boring report logs, and attached preliminary paving and drainage plan. A review of our boring logs indicate that beneath the surface the upper levels of subsoils are comprised of loose-medium dense organic silts, organic silty sands, and organic silty clays with some limestone fragments to +/-2.5 feet below grade. Below these upper layers our borings disclosed multifarious strata of limestone fragments, and organic silty sands with some limestone mixtures in a loose to a medium dense compaction condition to +/-2.0-6.0 feet below the land surface. Underlying these suitable and deleterious substratum we discovered layers of limestone fragments with some/little calcareous silty sands which varied from a medium dense to a dense state of relative consolidation which extended to -7.0 feet below the existing surface grade elevation. These dense unweathered limestone formation terminated our subsurface exploration at seven feet, maximum penetration due to refusal conditions.

As part of the geotechnical exploration for this project we reviewed the Soil Survey Map for Eastern Broward County, Florida. These maps revealed that at the time the survey was conducted, the soils in this area were described as Da, Dania Muck. This series is a nearly level, very poorly drained organic soil underlain by limestone at a depth of 14 to 20 inches. It is in broad flats along the eastern edge of the Everglades. Also included within this area in mapping are small areas of Lauderhill Muck and Plantation Muck, Also included are some soils that have solution holes in the limestone that extend to a depth of more than 50 inches.



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Page #2. Lab #7171318
SW 54th Place
SW Ranches, Florida

The boring location was determined by our client, and drill supervisor at the time of our investigation. The natural ground water table was discovered to exist to an elevation of +/-2'4" below the existing natural ground surface at the time of our boring. Fluctuation in the observed groundwater levels should be expected due to rainfall variations, seasonal climatic changes, construction activity and other on-site specific factors.

SUBSURFACE SOIL PROFILE AND PROPERTIES

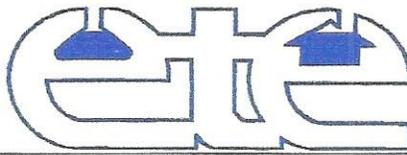
To assist in the drainage improvements for the proposed project, field modifications and/or renovations we have provided a general soil profile listed below.

FUTURE DRAINAGE FOR SW 55 STREET & SW 185 WAY - TOWN OF SW RANCHES

| General Soil Description | Depth of Strata | Average N | Approximate Relative Density | Nq | Phi |
|--|------------------------|------------------|-------------------------------------|-----------|------------|
| Organic silts, Organic silty clay and limestone | 0-2.0 feet | 17 | Medium Dense Dr=.35 | 36 | 34 |
| Limestone fragments, and Organic silty sands with limestone | 2.0-6.0 feet | 23 | Medium Dense Dr=.35 | 36 | 34 |
| Limestone Fragments some/little calcareous silty sands | 6.0-7.0 feet | 20 | Medium Dense Dr=.35 | 36 | 34 |

Note: Test boring #1 - Refusal @ 6.0 feet, #2 - Refusal @ 7.0'
Bottom of Boring @ 7.0' Feet - (Nq after Terzaghi)

The standard penetration test borings were performed in accordance with Chapter 18 of the 2014 Florida Building Code, current edition, ASTM D-1586, AASHTO, and the U.S. Department of Housing and Urban Development standard specifications.



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Page #3. Lab #7171318
SW 54th Place
SW Ranches, Florida

CONSTRUCTION PLAN & SPECIFICATIONS REVIEW

It is recommended that this office be provided the opportunity to make a general review of the foundation and earthwork plans and specifications prepared from the recommendations presented in this report.

Our report has been written in a guideline recommendation format and is not appropriate for use as a specification-type format. It is recommended that this report not be made a part of the contract documents, however, it should be made available to prospective contractors for information purposes.

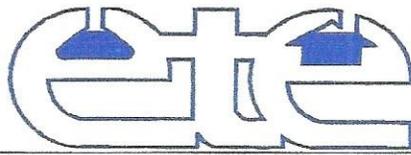
CONSTRUCTION RELATED SERVICES

We recommend the owner retain Eastcoast Testing & Engineering, Inc. to perform construction materials testing and observations on this site. Field tests and observations include foundation and pavement subgrades by performing quality assurance testing on the placement of compacted structural fills, and pavement courses. We can also provide concrete testing, pavement section testing, structural steel testing, general construction observation services, and Special Inspection services.

LIMITATIONS

Our geotechnical exploration study has been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering conclusions and practices. EastCoast Testing & Engineering, Inc., (ETE) is not responsible for any independent conclusions, opinions or recommendations made by others based on the data contained in this report.

This report does not reflect any variations which may occur away from the soil borings. The discovery of any subsurface conditions which deviates from the data obtained during this geotechnical investigation should be reported to us for further analysis and evaluation.



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Page #4. Lab #7171318
SW 54th Place
SW Ranches, Florida

This testing program is only representative of the area tested. Shall unusual or varying conditions be encountered during construction, further engineering services will be required.

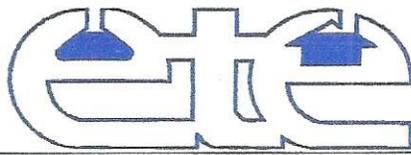
The Standard Penetration Test ASTM D-1586

The Standard Penetration Test is the most commonly employed tool utilized to identify in-situ subsurface soil conditions. The "N" values obtained from the boring provide an accurate estimation of internal soil characteristics such as relative density, internal shear strength, angle of internal friction, and the approximate range of the soil's unit weight. These "N" values represent the resistance of a 2 inch diameter split spoon sampler driven by a 140 pound hammer free falling 30 inches. Each drive of the 24 inch long split spoon is divided into four six inch increments. The second and third increments are totaled to produce the "N" value found on your report.

The Standard Penetration Test also allows for the recovery of soil samples which are returned to our laboratory and visually examined and classified. The SPT samples are available for laboratory testing if requested. Samples are generally held for 90 days unless otherwise directed by the client.

An approximate ground water table is obtained from the borehole upon completion of the drilling procedures. This water table is useful in the general evaluation of particular soil conditions, and may give the contractor some insight into what can be anticipated during construction. It should be noted that the ground water level will fluctuate seasonally. This level may also be affected by local draw-downs, soil conditions, and the watersheds contribution to the underlying aquifer. It should not be construed to be a measure of the soils permeability, or of the de-watering characteristics of the site.

Although the standard penetration test is one of the most reliable methods used to identify soil characteristics and types, it may only represent a small fraction of the materials actually deposited at the site. As is common industry practice, we have assumed a uniformity of profile between borings to provide a subsoil profile for engineering purposes. This profile is strictly based on the data obtained from the borings, and if unusual or varying conditions are found we should be notified immediately.



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Page #5. Lab #7171318
SW 54th Place
SW Ranches, Florida

A test is expressly representative of the immediate location tested, and the reliability of the conclusions are a direct result of the quantity of tests performed. Any variation in location may reveal similarly some changes in the depth, thickness, texture, and conditions of the stratum encountered.

Unless specifically stated otherwise, and specifically directed and prearranged by the client, all elevations are taken with respect to the existing ground surface at the time of testing. Boring locations are usually obtained in the field by pacing off distances and approximating right angles to landmarks and property corners. More precise locations may be obtained from on site surveys and placement of the boring locations by a Land Surveyor, Registered in the State of Florida. These services are provided at additional costs and are beyond the scope of this report.

The data presented herein was obtained for the specific purposes stated in this report, and should not be misconstrued to apply to any other circumstance, project, or ancillary use unless so specified and addressed by the engineer of record.

Thank you for using EASTCOAST TESTING AND ENGINEERING for your geotechnical needs. Should you need further assistance with this or any other project, please contact this office.

Respectfully Submitted;
EASTCOAST TESTING & ENGINEERING, INC.
Certification of Authorization #3425


8/13/2017
Mohammed A. Hai, P.E.
Senior Geotechnical Engineer
Florida Registration No. 59345


Craig Smith, President

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TEST BORING REPORT

LABORATORY NUMBER: 7171318-A BORING NUMBER: 1
 CLIENT: COMMUNITY SERVICES - TOWN of SOUTHWEST RANCHES CUSTOMER #: -
 PROJECT: SUBSOIL INVESTIGATION - PROPOSED DRAINAGE CREW CHIEF: H.E.
 PROJECT ADDRESS: SW 54th PLACE - EAST OF SW 195 TERRACE - SOUTHWEST RANCHES, FL. DRILLER: A.M.
 BORING LOCATION: WEST LOCATION - TEST #1 - AS MARKED PLAN DRILL RIG #: H.H.
 GROUND WATER: 2'4" DATE: 08/09/17 ELEV: N/F CASING: 3"

SURVEY NOT GIVEN UNLESS NOTED LOCATIONS: APPROX UNLESS STAKED EQUIPMENT USED: **HAND HAMMER**

| DEPTH FEET | SAMPLE NUMBER | BORING NUMBER: <u>1</u> | PAGE NUMBER: <u>01/01</u> | DEPTH | N VALUES | SPT | |
|------------|---------------|--|---------------------------|----------|----------|--------------|------|
| | | | | | | BLOWS PER 6" | |
| 1 | 1 | DARK GRAY ORGANIC SILTY SAND WITH LIMEROCK & SOME ROOT, [OL] | | 0.0"-6" | | 22 | 14 |
| 2 | 2 | VERY DARK BROWN ORGANIC SILTY CLAY WITH ROOT, "PLASTIC" [OL] | | 0.5-2.0' | 6 | 10 | 19 |
| 3 | 3 | WHITE LIMESTONE LITTLE CALCAREOUS SILTY SAND, [GP] | | 2.0-6.0' | | 65 | 44 |
| 4 | | BOTTOM OF BORING @ 6.0 FEET, (REFUSAL) | | | 18 | 30 | 30 |
| 5 | | | | | | 82 | 55 |
| 6 | | | | | 33 | 75 | 100+ |
| | | | | | | | |

MODIFIED STANDARD PENETRATION TEST BORING: BLOWS PER FOOT ON 2" O.D. SAMPLER WITH A 35 LB. HAMMER FALLING 30"

SOIL INVESTIGATION & SAMPLING BY AUGER BORINGS: A.S.T.M. D 1452/STANDARD PENETRATION TEST: ASTM D1586. THE SAMPLES COLLECTED CONSTITUTE A MINUTE PERCENTAGE OF THE SUBSOILS AT THE SITE. AS A MUTUAL PROTECTION THE SOILS WILL BE STORED IN OUR LABORATORY FACILITIES FOR A MAXIMUM OF THREE (3) MONTHS. THE OWNER, ARCHITECT AND/OR ENGINEER ARE ENCOURAGED TO VISUALLY INSPECT SAMPLES PRIOR TO PURCHASE OF PROPERTY AND DESIGN OF THE STRUCTURE.

RESPECTFULLY SUBMITTED,
EASTCOAST TESTING & ENGINEERING, INC.,
 CERTIFICATE OF AUTHORIZATION #3425

M. A. H. A. I. 8/13/2017
MOHAMMED A. HAI, P.E.
 SENIOR GEOTECHNICAL ENGINEER
 FLORIDA REGISTRATION No. 59345

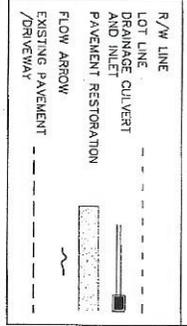
Craig Smith
CRAIG SMITH, PRESIDENT

THE INTENT OF THIS REPORT IS NOT FOR ENVIRONMENTAL PURPOSES UNLESS SPECIFIED. AUTHORIZATION FOR PUBLICATION OF STATEMENTS, CONCLUSIONS, CERTIFICATIONS OR EXTRACTS REGARDING THIS OR ANY OTHER TEST REPORT BY THIS FIRM, (ETE) IS STRICTLY PROHIBITED UNLESS WRITTEN AUTHORIZATION IS PROVIDED AND APPROVED BY EASTCOAST TESTING & ENGINEERING, INC.

THRESHOLD/SPECIAL INSPECTIONS, BORINGS, DENSITY, CONCRETE, ASPHALT, ETC, A "GEOTECHNICAL TESTING LAB"

Justin Ross

LEGEND:



RES. # 5341 SW. 195 TER.

RES. # 5340 SW. 195 TER.

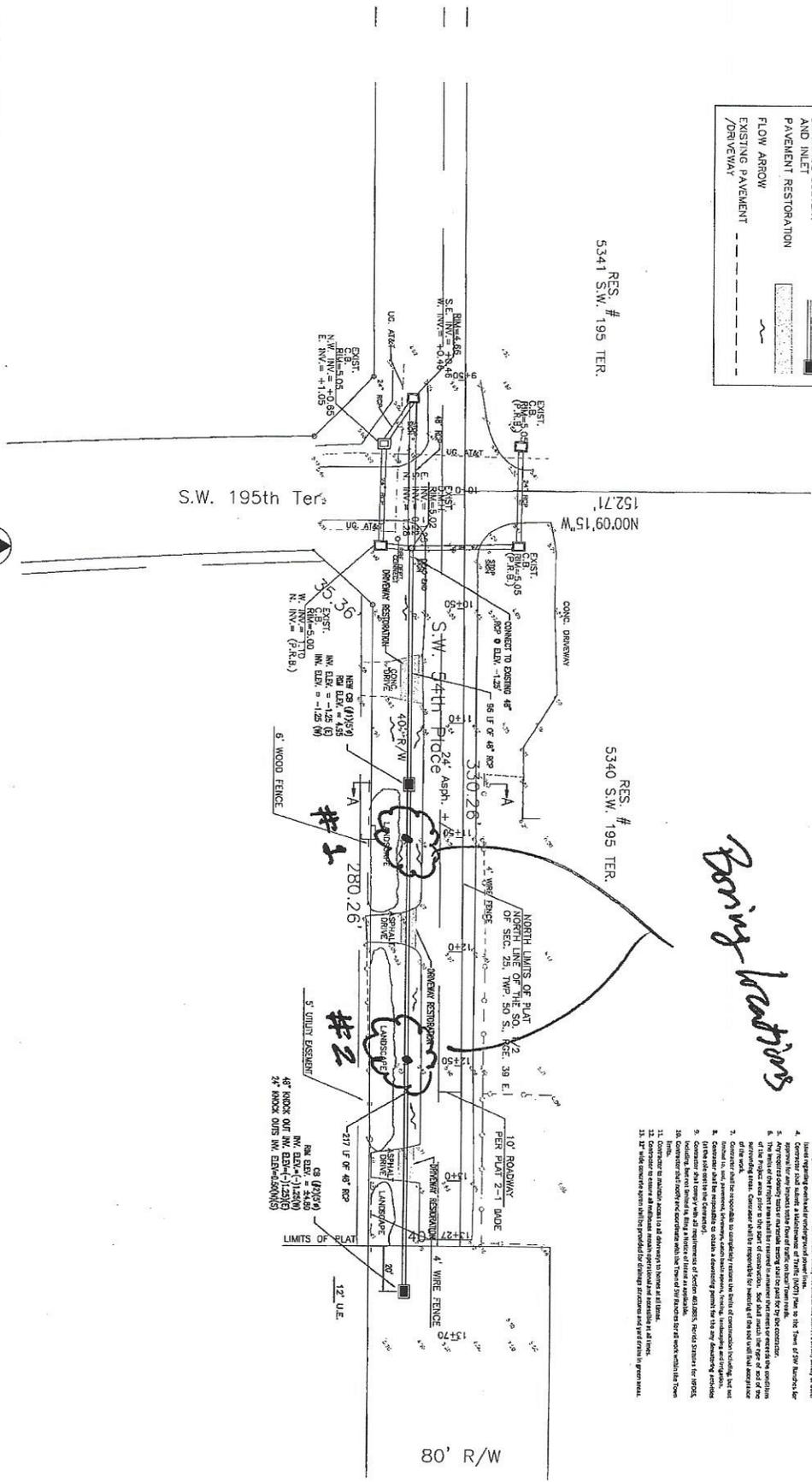
Spring locations

PAVING AND DRAINAGE PLAN

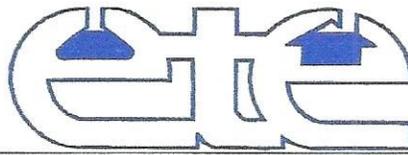


SCALE 1"=20'-0"

| | | | | |
|---|------------|--------|-------|----------|
| NO. | DATE | BY | CHKD. | AS NOTED |
| 1 | 11-20-2017 | K.K.H. | | |
| SOU'T BROWARD COUNTY DISTRICT 638' SW 76TH AVE 500' F -51' R.V.C.-H.S. F. - 33331 | | | | |
| PAVING AND DRAINAGE PLAN S.W. 54th PL. & S.W. 195th TER. | | | | |
| DRAWN BY: K.K.H. PROJECT NO: 500' F -51' R.V.C.-H.S. F. - 33331 SHEET NO: 1 OF 5 | | | | |



- NOTES:**
1. All dimensions shown on this plan are based on the National Geographic Vertical Datum of 1988 (NGVD 83). The datum for the horizontal control is the North American Datum of 1983 (NAD 83).
 2. The contractor shall verify the location, depth, and condition of all existing underground utility lines before construction. The contractor shall be responsible for any damage to existing utility lines.
 3. The contractor shall maintain existing utility lines working under and around existing structures or underground conduits, conduits, and conduits with 1% on any utility or other lines.
 4. The contractor shall maintain a minimum of 10 feet clearance from any existing utility lines.
 5. The contractor shall maintain a minimum of 10 feet clearance from any existing utility lines.
 6. The contractor shall maintain a minimum of 10 feet clearance from any existing utility lines.
 7. The contractor shall be responsible to completely restore the finish of construction including, but not limited to, grading, paving, and drainage.
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COMMUNITY SERVICES

TOWN OF SW RANCHES
SUBSURFACE EXPLORATION
5340 SW 195 TERRACE
SW RANCHES, FLORIDA

SITE LOCATION MAP

Legend

 5340 SW 195th Terrace

