

IMPORTANT

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Geotechnical & Environmental
Consultants

Lynn Haven United Methodist Church
4501 Transmitter Road
Panama City, FL 32404

July 9, 2008
File No.: P-08-0355

Attention: Mr. Angel Diaz

Subject: Preliminary Geotechnical Services for the Proposed Community Life Center at Lynn Haven United Methodist Church in Lynn Haven, Florida

Dear Mr. Diaz:

Southern Earth Sciences, Inc., has completed the preliminary geotechnical services for the proposed Community Life Center at Lynn Haven United Methodist Church in Lynn Haven, Florida. The report presents the results of our field and laboratory testing and includes preliminary recommendations with regard to the design and construction of the foundations. It should be noted that this report is for preliminary site evaluation only and is not intended for final foundation design.

FIELD INVESTIGATIVE PROCEDURES:

Prior to our field testing, our sounding locations were marked and underground utilities were located. Test locations were established in the field by using a 100-foot tape and estimating right angles with reference to existing landmarks; therefore, our test locations should be considered approximate. See the attached Figure for our approximate test locations.

On June 27, 2008, personnel with our firm traveled to the project site and completed the field testing for the above referenced project. For our preliminary geotechnical investigation, three (3) cone soundings were performed to a depth of approximately 25 feet below the existing ground surface. The cone penetrometer is track mounted and rather than sampling and testing at five foot intervals, as normally done with a standard penetration borings, the cone penetrometer is an electronic device that provides continuous evaluation of the soils bearing capacity through point and frictional resistances. The cone penetrometer is hydraulically pushed into the soil with point and frictional resistances obtained continuously on a computer printout. This testing equipment provides a more accurate definition of the soil strength characteristics and the changes in stratification. Cone soundings were performed in general accordance with ASTM D5778.

CONE SOUNDINGS:

CPT Log sheets are attached, graphically showing the cone tip resistance, friction ratio, equivalent N-value and interpreted soil type at each sounding location. Soil

required. Undercutting will also have to extend at least five (5) feet beyond the building perimeter and the walls of the excavated area should be sloped for stability. It should also be noted dewatering may also be required to lower the groundwater level to at least the bottom of the excavated area. Due to the close proximity of the existing structure, a vibratory roller is not recommended for compaction.

With removal of the unsuitable soils and/or densification of the very loose soils, it appears that the proposed building may be supported on a conventionally designed shallow foundation system. We anticipate footings would have an allowable soil contact pressure ranging from 1500 to 2000 pounds per square foot for a maximum column load of 200 and 150 kips, respectively. However, this will highly depend upon structural and civil information. For preliminary foundation evaluation, we have also assumed the building area was undercut to a depth of five (5) feet below the existing ground surface.

We recommend, of course, that additional borings or soundings be performed to provide final foundation recommendations.

GENERAL COMMENTS:


This investigation has been performed as a preliminary site evaluation only. **It is not intended for final foundation design.** Additional test borings and engineering evaluation will be required for final foundation design.

While the cone soundings performed for this project are representative of subsurface soil conditions at their respective locations and for their respective vertical reaches, local variations of the subsurface materials are anticipated and may be encountered. The logs and related information are based on the driller's logs and visual examination of selected samples in the laboratory. Delineation between soil types shown on the boring logs is approximate, and soil descriptions represent our interpretation of subsurface conditions at the designated boring location on the particular date drilled.

We appreciate the opportunity to be of service to you on this project. Should additional information be required please advise.

Yours Very Truly,

SOUTHERN EARTH SCIENCE, INC.



Brian W. Bloomfield, P.E. 7/8/08
Eng. Reg. No. 65580
State of Florida

classifications and data were interpreted from methods recommended by Robertson and Campanella and/or the Sweidh Geotechnical Institute Information Publication No. 15E. Correlations between Cone Resistance values and Standard Penetration Testing "N" values were performed according to the methods developed by Robertson, Campanella and Wightman.

The soil types and stratigraphy shown on the CPT Log sheets are based upon material parameters measured and evaluated as the cone is advanced. The CPT Log sheets were developed for general information only.

SITE AND SOIL CONDITIONS:

The proposed building will be constructed west of the existing church which is typically cleared with grass. Based upon observations made in the field, the relief across the proposed building area is less than two feet.

The soils typically ranged from very loose to medium dense throughout the depth of our cone soundings. Based upon these results, it appears that the soils within the top five feet of the cone soundings may be sands with layers of organic soils. On the date of our field testing (June 27, 2008), the groundwater level was measured at the depths shown on the attached logs, which ranged from approximately 6.1 to 5.8 feet below the existing ground surface. Fluctuations in the water table will occur due to seasonal precipitation/evapotranspiration differences; therefore, groundwater levels should be verified prior to foundation construction.

STRUCTURAL INFORMATION:

It is our understanding the proposed Community Life Center will be constructed approximately 40 feet west of the existing church and will be a two-story steel framed structure with a total area of approximately 45,000 square feet. At this time we have not been provided with civil or structural information. Therefore, this report is for preliminary site evaluation only and is **not** intended for final foundation design.

PRELIMINARY FOUNDATION RECOMMENDATIONS:

Our preliminary evaluation of foundation conditions has been based on structural information presented in this report and subsurface data obtained during our investigation. In evaluating cone soundings, we have used correlations that were previously made between penetration resistances and foundation stabilities observed in soil conditions similar to those encountered at your site.

Based upon the results of our cone soundings, very loose soils were typically encountered to a depth of approximately 5 feet below the existing ground surface. It appears these soils may consist of sands and/or organic soils. To support the proposed building on shallow foundations, it appears undercutting of the proposed building may be

SCALE: 1"=100'

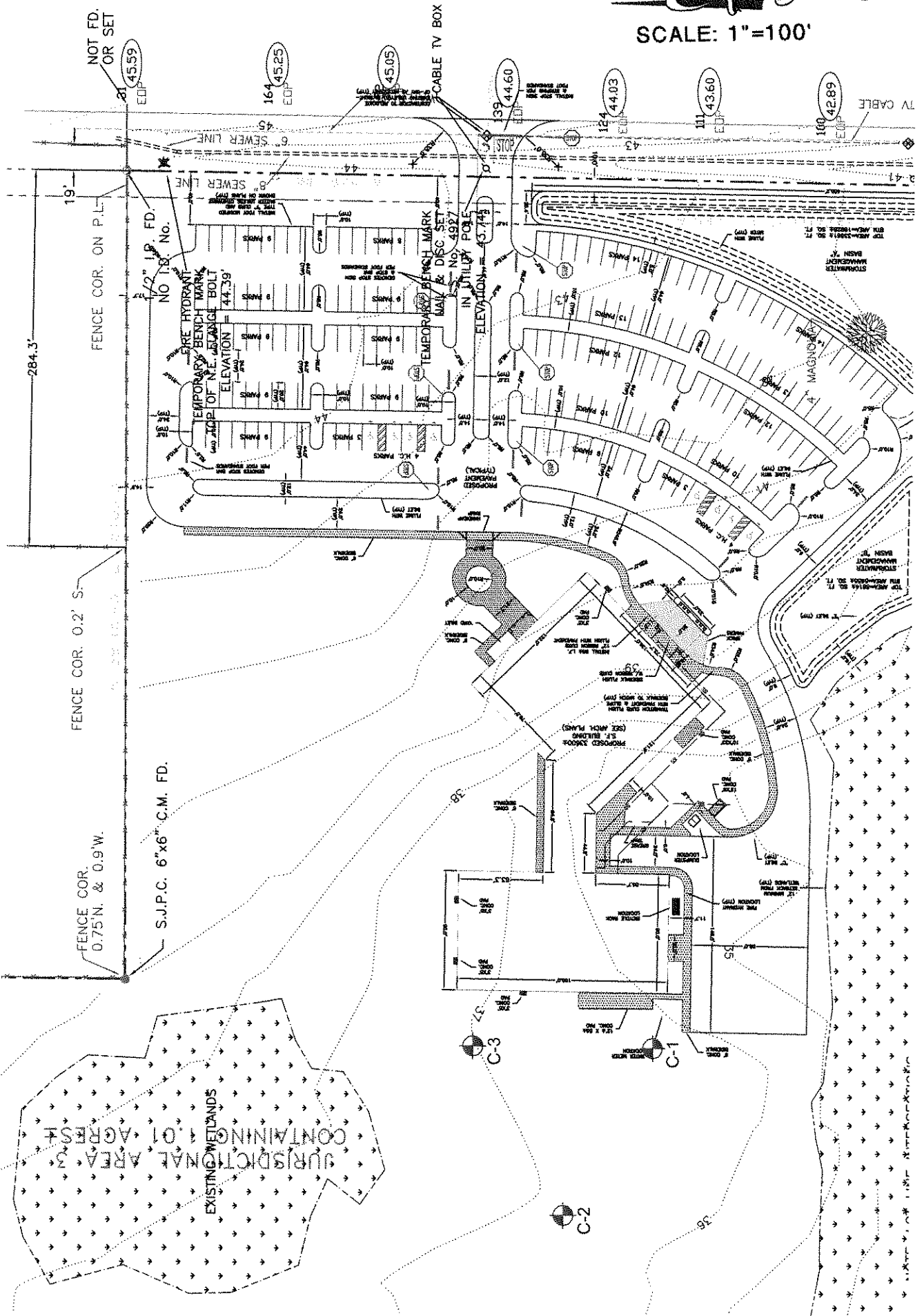
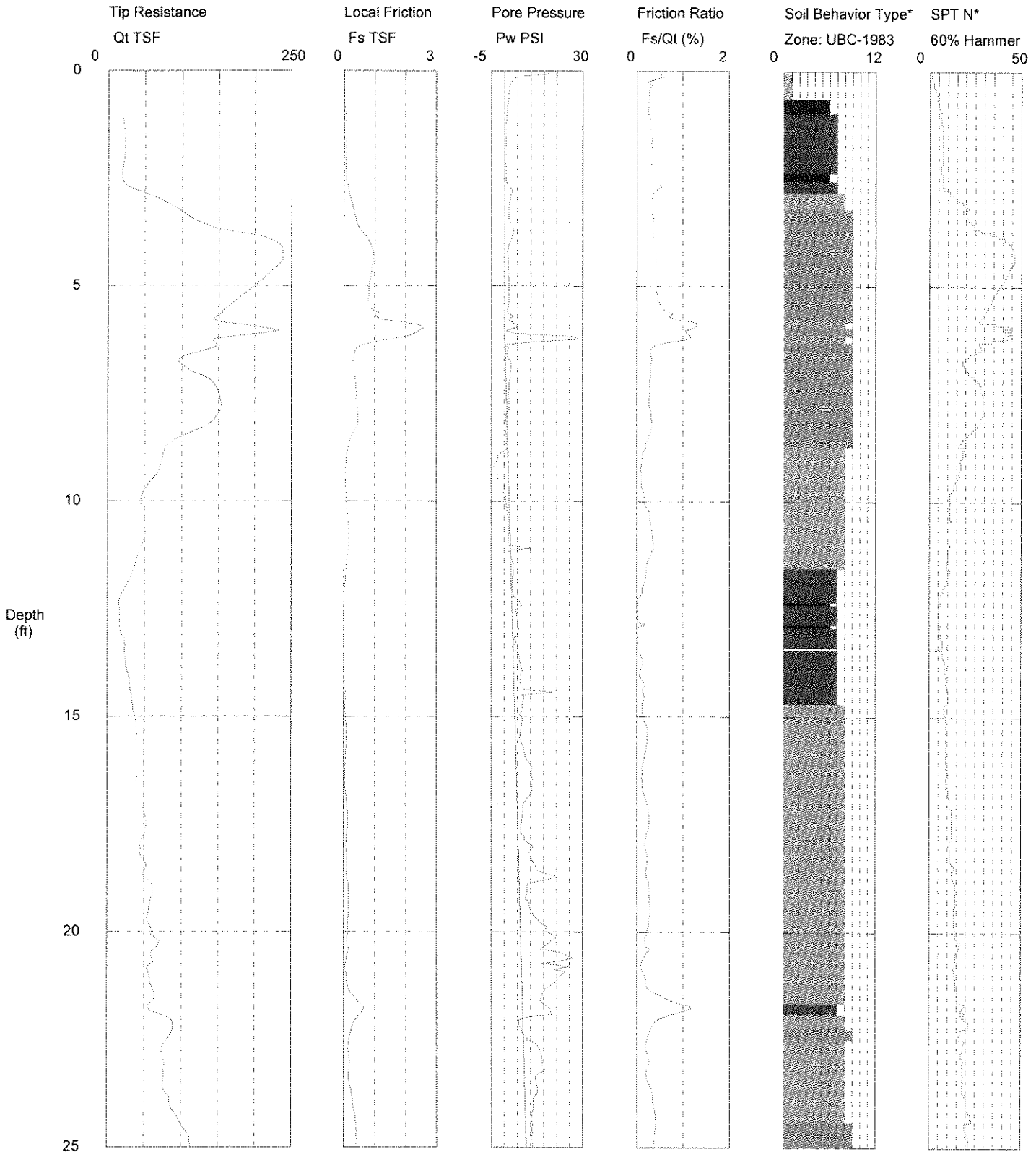


FIGURE I

SOUTHERN EARTH SCIENCES, INC.

Operator: W.A.WATKINS
 Sounding: C-1
 Cone Used: DSG1034
 Groundwater Level: 5.8 feet

CPT Date/Time: 6/27/2008 11:01:35 AM
 Location: United Methodist Church, Lynn Haven, FL
 Job Number: P-08-0355
 Location: N30° 13' 45.1", W085° 36' 33.9"



Maximum Depth = 25.26 feet

Depth Increment = 0.066 feet

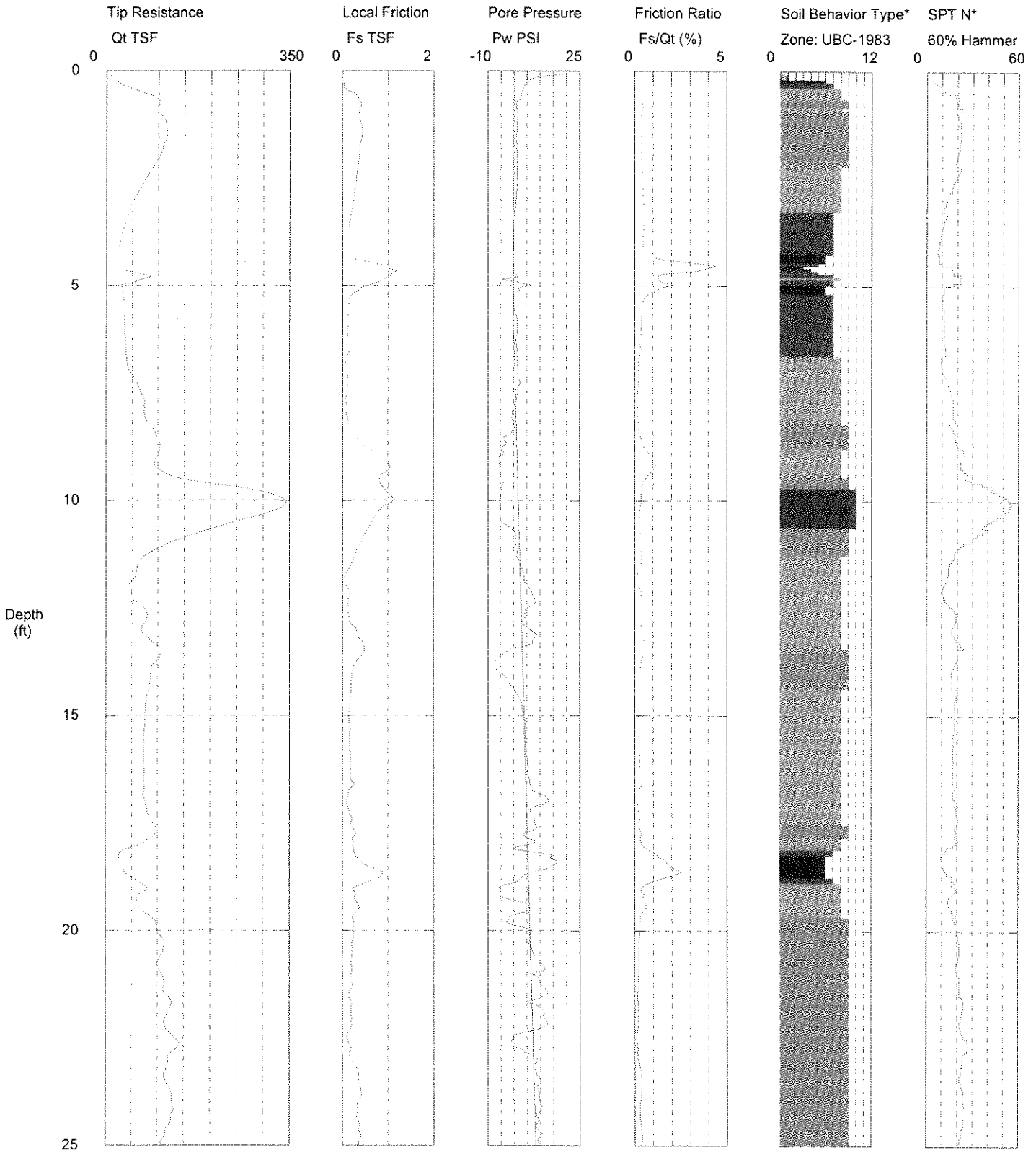
- | | | | |
|--------------------------|-----------------------------|----------------------------|--------------------------------|
| 1 sensitive fine grained | 4 silty clay to clay | 7 silty sand to sandy silt | 10 gravelly sand to sand |
| 2 organic material | 5 clayey silt to silty clay | 8 sand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

*Soil behavior type and SPT based on data from UBC-1983

SOUTHERN EARTH SCIENCES, INC.

Operator: W.A.WATKINS
 Sounding: C-2
 Cone Used: DSG1034
 Groundwater Level: 6.1 feet

CPT Date/Time: 6/27/2008 11:19:52 AM
 Location: United Methodist Church, Lynn Haven, FL
 Job Number: P-08-0355
 Location: N30° 13' 45.5", W085° 36' 35.6"



Maximum Depth = 25.33 feet

Depth Increment = 0.066 feet

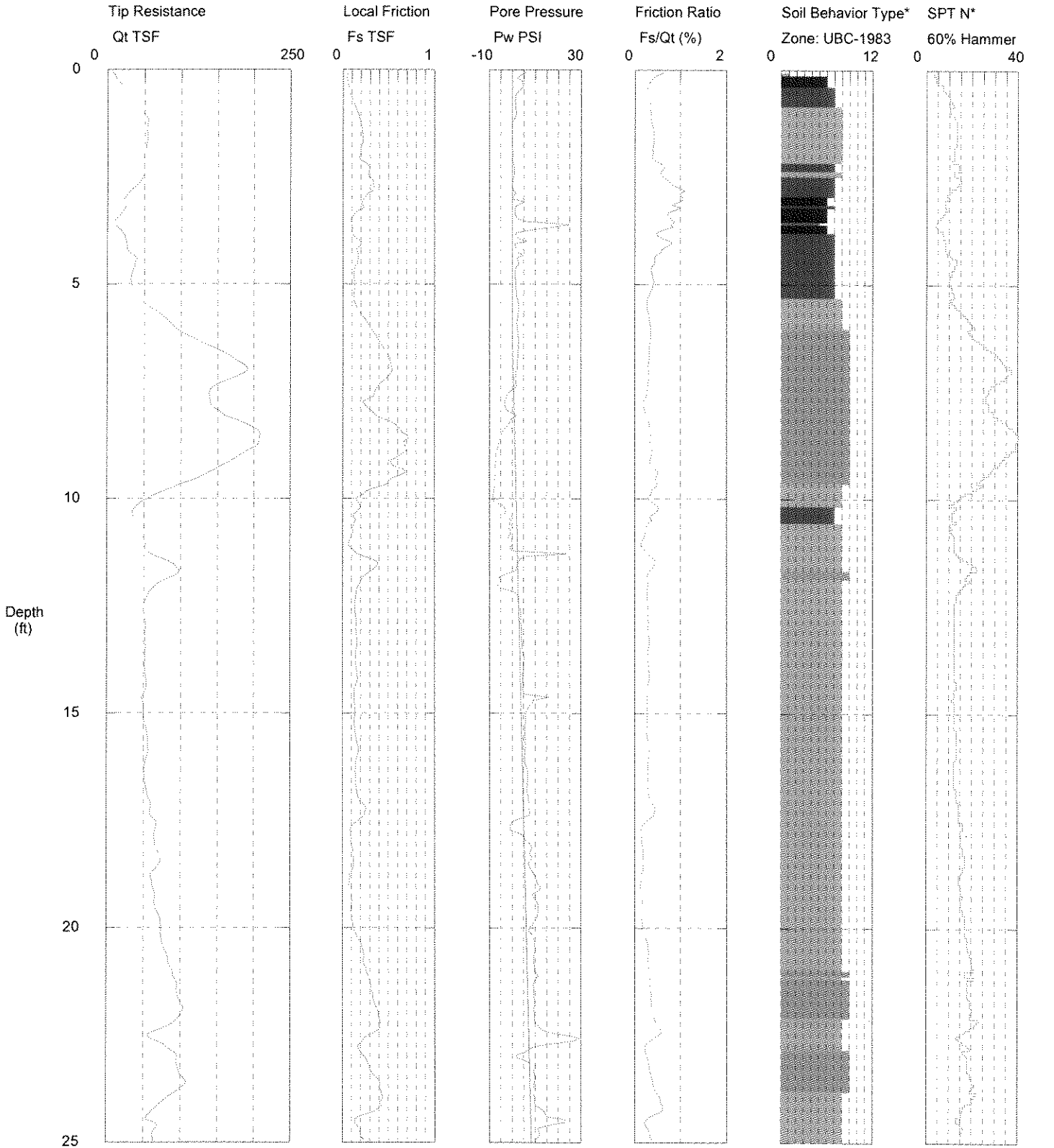
- | | | | |
|--------------------------|-----------------------------|----------------------------|--------------------------------|
| 1 sensitive fine grained | 4 silty clay to clay | 7 silty sand to sandy silt | 10 gravelly sand to sand |
| 2 organic material | 5 clayey silt to silty clay | 8 sand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

*Soil behavior type and SPT based on data from UBC-1983

SOUTHERN EARTH SCIENCES, INC.

Operator: W.A.WATKINS
 Sounding: C-3
 Cone Used: DSG1034
 Groundwater Level: 6.1 feet

CPT Date/Time: 6/27/2008 10:40:13 AM
 Location: United Methodist Church, Lynn Haven, FL
 Job Number: P-08-0355
 Location: N30° 13' 46.3", W085° 36' 34.1"



Maximum Depth = 25.26 feet

Depth Increment = 0.066 feet

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

*Soil behavior type and SPT based on data from UBC-1983