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Anchor CEI
450 Magnolia Ave
Panama City, FL 32401
Attn: Ms. Elizabeth Moore, P.E.

December 12, 2024
File No: P24-547

Subject: Geotechnical Services for the Seawall Repairs at the Mexico Beach Boat Launch in Mexico Beach, Florida

Dear Ms. Moore:

As requested Southern Earth Sciences, Inc., has completed the geotechnical services for the proposed seawall repairs at the Mexico Beach Boat Launch site. Our services were performed in general accordance with our proposal XP24-3.15.24-1A, dated July 23, 2024. The existing boat launch and seawall were constructed around 2009/2010. We understand that there are portions of existing seawall (sheet pile system) that are allowing sand behind the wall to wash through, causing subsidence of the concrete sidewalk behind the wall. We understand the repairs may include adding a new wall in front of the existing wall in some segments. We understand the sidewalk behind the wall may be removed in sections and re-poured, however, injection grouting may be a less destructive alternative. This report presents the results of our field and laboratory testing and includes soil parameters for sheet pile design.

FIELD INVESTIGATE PROCEDURES:

Prior to our mobilization, underground utilities were located by contacting Sunshine State One Call of Florida. It should be noted, our test locations were performed behind the existing sidewalk, in accessible areas. Due to the slopes, utilities, existing parking and gravel areas, some of our test locations were offset roughly five feet behind the sidewalk. For our geotechnical investigation, four (4) cone penetrometer soundings were performed to depths ranging from 50 to 57 feet below 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 an accurate definition of the soil strength characteristics and the changes in stratification. The cone soundings were performed in general accordance with ASTM D5778.

To verify soil conditions encountered within the depth of our cone soundings, direct push borings were performed to depths ranging from 15 feet below the existing ground surface, at three of our cpt test locations. The direct push borings were performed with our Geoprobe 6625 and the DT22 soil sampling system. This is a closed-piston sampler, with an inner piston rod and outer drive casing, and is driven to the top of the sampling interval. The inner piston rod is removed and the sampler is driven to collect a soil sample. The soil samples are collected in a clear 5-foot PVC liner and are delivered back to our laboratory for soil classifications and laboratory testing.

Test locations were established in the field by using a hand held GPS; therefore, our test locations should be considered approximate. See the attached Figure for our approximate test locations.

LABORATORY TESTING PROCEDURES:

Laboratory investigative work consisted of physical examination of samples obtained during the soil test boring operation. Soil samples were visually classified in the laboratory in accordance with the Unified Soil Classification System. Evaluation of these samples, in conjunction with penetration resistances, have been used to estimate soil characteristics.

Natural Moisture: Five (5) samples were selected for determination of their natural moisture content. In the laboratory, each sample was weighed, dried, and its moisture content was calculated in general accordance with ASTM D2216. Organic Content Tests were also performed on three of these samples

The laboratory test results are shown on the boring logs at the depth of the tested sample. Abbreviations of laboratory data are shown below:

NM = Natural Moisture Content (%), ORG = Organic Content (%)

CONE SOUNDINGS:

CPT Log graphically indicates the cone tip resistance, friction ratio, equivalent N-value and interpreted soil type at each sounding location. Soil classifications and data were interpreted from methods recommended by Robertson and Campanella and/or the Swedish 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:

As noted above, we understand the boat launch was constructed in the range of 2009/2010. There is a vinyl sheet pile system used for the seawall surrounding the launch and marina area. Based upon the provided plans, the existing wall has aluminum tie backs, extending approximately 15 feet behind the wall supported by deadman anchors. We understand some portions of the seawall are allowing sand to wash through the sheets causing subsidence and cracking of the sidewalk behind the wall. We understand the existing elevations behind the sidewalk range from approximately +5 to +8 Feet on the northwest side and range from approximately +5 to +6 Feet on the southeast side. Based upon the provided plans, elevation of the top of the wall and sidewalk behind the wall are approximately +3.5 Ft, therefore, the elevations of our test locations appear to be approximately three feet above the top of the wall/sidewalk, however, this should be considered approximate. As noted above, our equipment could not gain access to the sidewalk, it is too large. Additionally, we did not want to perform our testing through the sidewalk and potentially damage the existing tie-back system. Our test locations were performed outside of the sidewalk in the grassed areas. Therefore, we anticipate the soil conditions encountered within the top five to eight (5-8) feet of our borings are not necessarily indicative of the soil conditions directly behind the seawall. The logs of our borings and cone soundings are attached. The elevation of our boring locations should be considered approximate.

The soils encountered within the depth of our cone soundings and direct push borings were primarily sands, however were erratic between test locations. Organic soils (peat/peaty snads) were found at location C-3 at the southeast corner of the site. At this location the organic soils are very soft and compressible with moisture levels in the range of 90%. Based upon available areas, this location appears to have been within the former wetland areas prior to the site construction. The soils encountered throughout the remaining test locations were primarily sands. The sands generally consist of loose to medium dense layers with denser layers at deeper depths. Again, we anticipate variances in the soil conditions immediately behind the wall since these sands are likely in a loose to very loose condition.

On the date of our field testing (September 17 and 18, 2024), the groundwater level was measured at the depth shown on the attached logs which ranged from approximately 3.3 to 4.5 feet below the existing ground surface. Fluctuations in the water table depths will occur due to seasonal precipitation/evapotranspiration differences and any wetland, neighboring drainage, and tidal influences. Therefore, we recommend groundwater depths be verified prior to foundation construction.

PRELIMINARY SEAWALL INFORMATION

As noted above, we understand portions of the wall will be reconstructed, in front of the existing wall. Below we have included soil parameters for the design of the wall, however, as mentioned above, we anticipate a variance in the soil conditions to a depth of approximately 5 feet below the top of the wall, since the existing soils have subsided and/or washed through the wall. Additionally, the space between the existing wall and the new wall will need to be filled. We do not recommend an impermeable material, however, flowable fill may be the only material that can be used to place between this space, depending upon how close the new wall is to the existing wall. If flowable fill is used, we also recommend utilizing a drainage system to collect/convey water from behind the wall, to reduce hydrostatic forces.

SOIL PARAMETERS FOR SHEET PILE WALL DESIGN:

Our evaluation has been based on information presented in this report and subsurface data obtained during our investigation. In evaluating the borings and soundings, we have used correlations which 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 field testing and laboratory classifications, we have estimated the soil parameters at the four test locations for sheet pile wall design to be performed by others. The estimated soil parameters are summarized in the following tables. Table I refers to test location C-1, Table II refers to test location C-2, and Table III refers to C-3, and Table IV refers to C-4.

TABLE I: Test Location C-1**

Depth:	USCS Classification	Friction Angle (°)	Cohesion (lbs/ft ²)	Unit Weight (lbs/ft ³)
0 – 3 ft.	SP-SM	28	0	90
3 – 15 ft.	SP-SM, SP	29	0	50
15 – 20 ft.	SP, SP-SM	34	0	54
20 – 26 ft.	SP-SM	30	0	50
26 – 28 ft.	SC, SM	28	0	45
28 – 33 ft.	SP-SC, SP-SM	31	0	51
33 – 40 ft.	SC, SM	28	0	48
40 – 45 ft.	SP-SC	32	0	53
45 – 50 ft.	SC	30	0	49
50 – 52 ft.	SP	36	0	56

Estimated ground elevation at location C-1, approximately +6 Ft

TABLE II: Test Location C-2**

Depth:	USCS Classification	Friction Angle (°)	Cohesion (lbs/ft ²)	Unit Weight (lbs/ft ³)
0 – 2 ft.	SP-SM	28	0	95
2 – 5 ft.	SP-SM	30	0	50
5 – 12 ft.	SP-SC, SP-SM	27	0	47
12 – 14 ft.	SP, SP-SM	30	0	50
14 – 20 ft.	SP-SC, SC	27	0	47
20 – 27 ft.	SP, SP-SM	30	0	51
27 – 35 ft.	SC, SP-SC	28	0	48
35 – 42 ft.	SP-SC	31	0	51
42 – 45 ft.	SP-SC	30	0	50
45 – 50 ft.	SP	36	0	57

Estimated ground elevation at location C-2, approximately +7 Ft

TABLE III: Test Location C-3**

Depth:	USCS Classification	Friction Angle (°)	Cohesion (lbs/ft ²)	Unit Weight (lbs/ft ³)
0 – 2 ft.	SP-SM	28	0	94
2 – 15 ft.	PT	23	0	40
15 – 33 ft.	SP-SM, SP	33	0	54
33 – 39 ft.	SC, SP-SC	28	0	48
39 – 45 ft.	SP, SP-SM	35	0	56
45 – 52 ft.	SP-SC, SC	30	0	50
52 – 56 ft.	SP-SM	32	0	52

Estimated ground elevation at location C-3, approximately +5 Ft

TABLE IV: Test Location C-4**

Depth:	USCS Classification	Friction Angle (°)	Cohesion (lbs/ft ²)	Unit Weight (lbs/ft ³)
0 – 3 ft.	SP-SM	27	0	95
3 – 13 ft.	SP, SP-SM	30	0	50
13 – 21 ft.	SP, SP-SC	27	0	46
21 – 27 ft.	SP, SP-SC	31	0	52
27 – 35 ft.	SC, SP-SC	27	0	46
35 – 42 ft.	SC, SP-SC	29	0	49
42 – 50 ft.	SP	35	0	56
50 – 55 ft.	SC	25	0	44

Estimated ground elevation at location C-4, approximately +6 Ft

**Our test locations were performed behind the existing sidewalk. We anticipate variances in the soil conditions to a depth of approximately five feet below the top of the existing wall. We anticipate loose to very loose sands beneath the sidewalk.

Additional Comments:

We understand the sidewalk may be removed and reconstructed or grout injections will be used to re-level the sidewalk. If the sidewalk is reconstructed, we recommend backfill soils are placed and compacted in these areas. Prior to the placement of backfill, the existing soils should be compacted. The backfill should be suitable sands with less than 12% fines, containing no organics or deleterious materials. The backfill sands should be placed in one-foot lifts until finished grade is achieved, verified with compaction tests. Only hand operated equipment should be used to compact the existing soils. The backfill soils behind the retaining wall shall be as indicated above compacted to a density of 95% of the Modified Proctor (ASTM D-1557) maximum dry density throughout its full depth. We also recommend installing a continuous wall drain and/or weep holes to relieve hydrostatic pressure.

If the existing sidewalk remains in place and grout injections are used to re-level the sidewalk, this should be done by a contractor that has experience along the gulf coast, preferably with experience in marine projects. Non-corrosive materials should be used. Cracks in the existing slabs should be filled to prevent water from saturating the soils beneath the concrete. We will be happy to consult with the contractor if there are additional design alternatives.

CONSTRUCTION TESTING SERVICES:

The effectiveness of the foundation will depend significantly on the proper preparation of the soils, as indicated previously. Therefore, we recommend the owner employ Southern Earth Sciences, Inc., as the testing laboratory to perform construction testing services. If we are not employed to provide construction testing services, Southern Earth Sciences, Inc., cannot accept any responsibility for any conditions, which deviate from those described in this geotechnical report. Southern Earth Sciences, Inc., should be invited to the pre-construction conference to discuss the project with all interested parties so that the project may be completed expeditiously and to the intent of our geotechnical report. We would be pleased to review the plans and specifications as they relate to the soil preparation and provide a fee proposal for construction testing.

GENERAL COMMENTS:

Professional judgments on design criteria are presented in this letter. These are based partly on our evaluations of technical information provided, partly on our understanding of the characteristics of the project being planned, and partly on our general experience with subsurface conditions in the area. We do not guarantee performance of the project in any respect, only that our judgments meet the standard of care of our profession.

This information is exclusively for the use and benefit of the addressee(s) identified on the first page of this report and is not for the use or benefit of, nor may it be relied upon by any other person or entity. The contents of this letter may not be quoted in whole or in part or distributed to any person or entity other than the addressee(s) hereof without, in each case, the advance written consent of the undersigned.

This report has been prepared in order to aid in the evaluation of this property and to assist the architects and engineers in the design of the project. It is intended for use with regard to the specific project discussed herein, and any substantial changes in the locations, loads, or reported grades shall be brought to our attention immediately so that we may determine how such changes may effect our conclusions and recommendations. We would appreciate the opportunity to review the plans and specifications for foundations to verify that our conclusions and recommendations are interpreted correctly. Our report does not address environmental issues which may be associated with the subject property.

While the soundings and borings 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 boring 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.

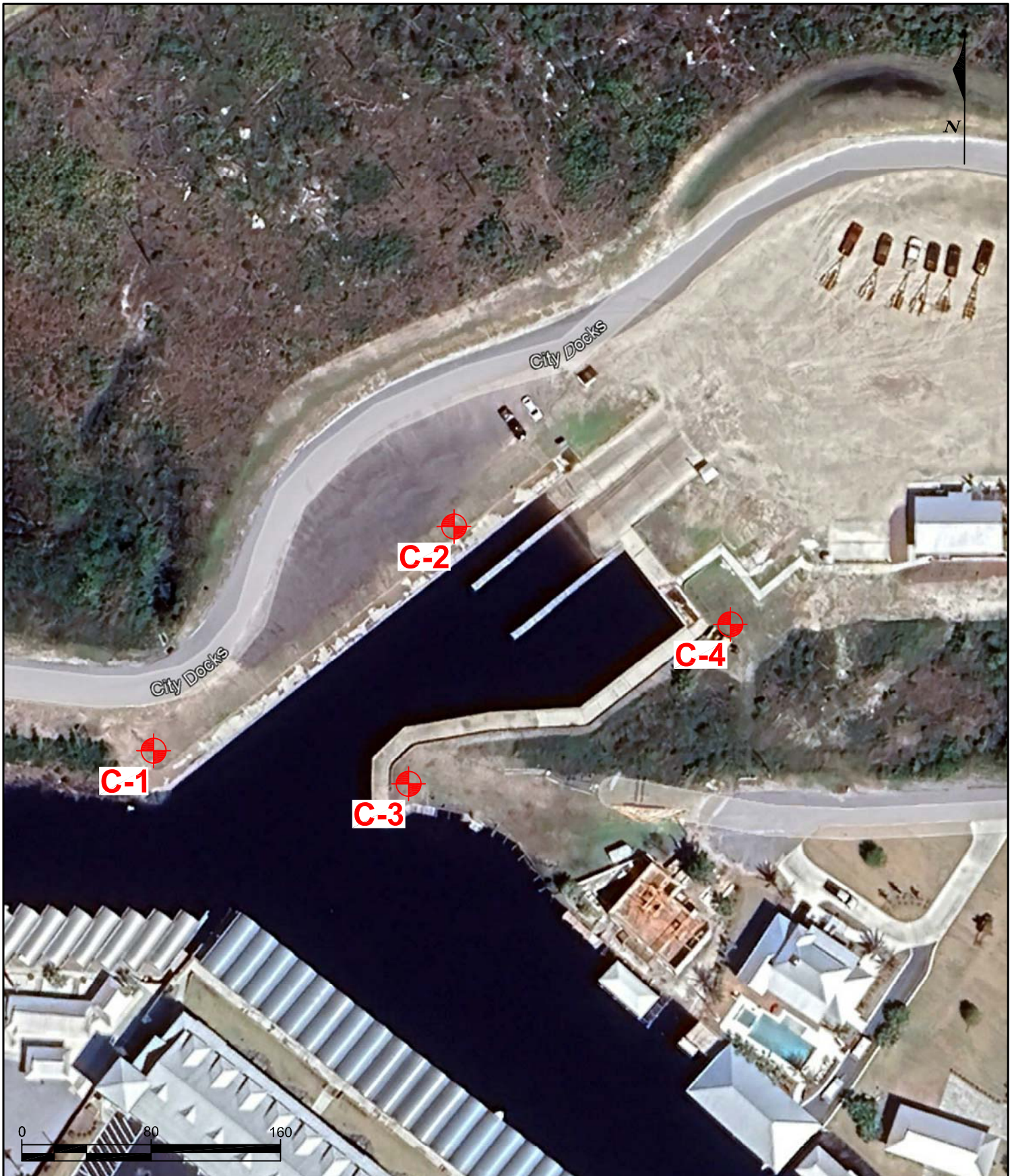
We appreciate the opportunity to assist you. If you have any questions or if we may be of further assistance, please call at your convenience.

Sincerely,

SOUTHERN EARTH SCIENCES, INC.



Logan A. Fowler, P.E.
Eng. Reg. No. 82343
State of Florida



SESI FILE NO:
P24-547

Mexico Beach Boat Launch
Seawall Repair
Mexico Beach, FL



DRAWN BY: HL

CHECKED BY: LF

DATE: 11/27/24

SCALE: 1:80

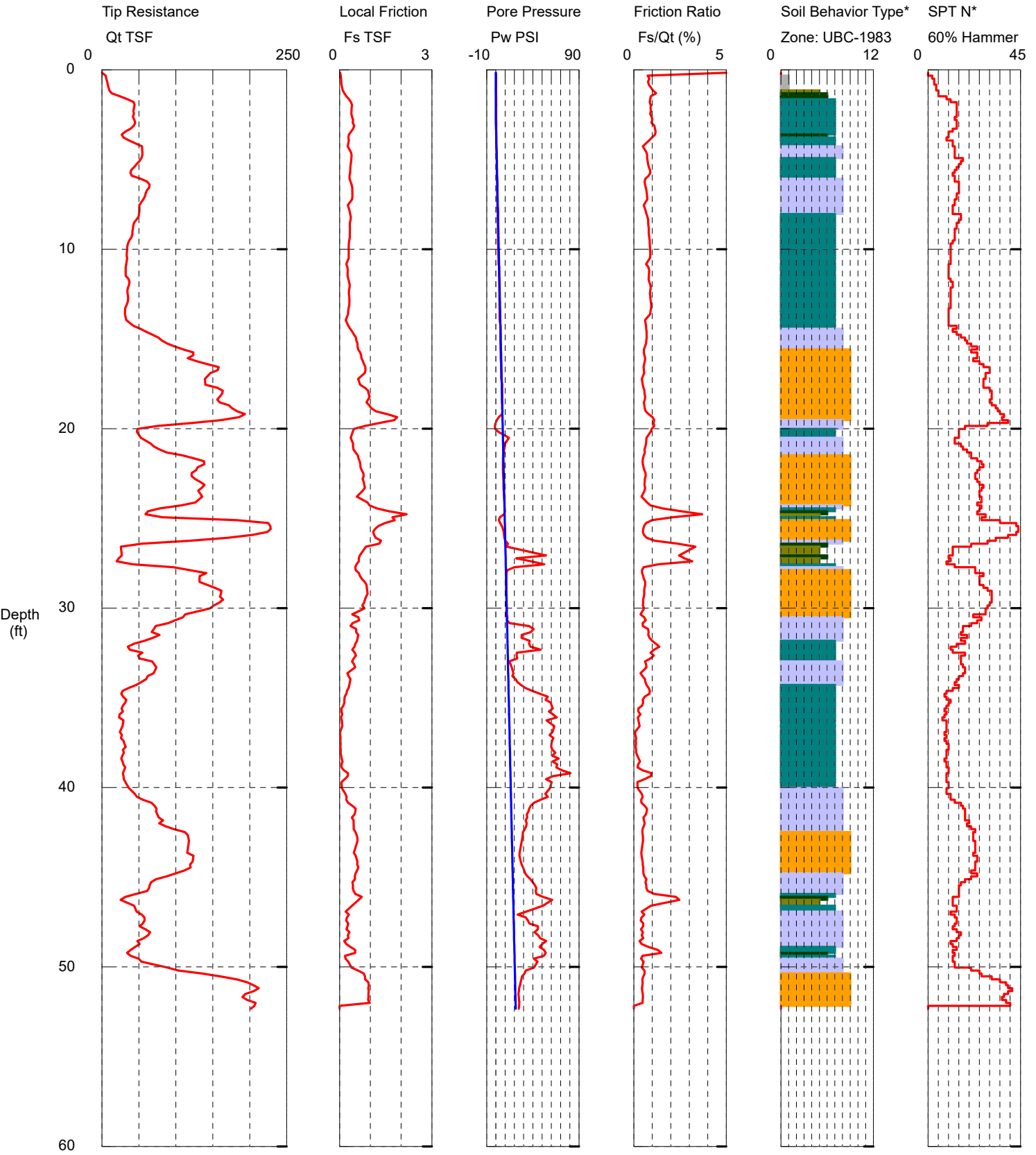
FIGURE I

APPROXIMATE TEST
LOCATIONS

Southern Earth Sciences inc.

Operator: Pat Conroy
 Sounding: C-1
 Cone Used: DDG1702
 Groundwater: 4.5 feet

CPT Date/Time: 9/18/2024 11:15:15 AM
 Location: Mexico Beach Boat Launch Seawall Repair
 Job Number: P24-547
 Elevation: Unknown



Maximum Depth = 52.33 feet

Depth Increment = 0.164 feet

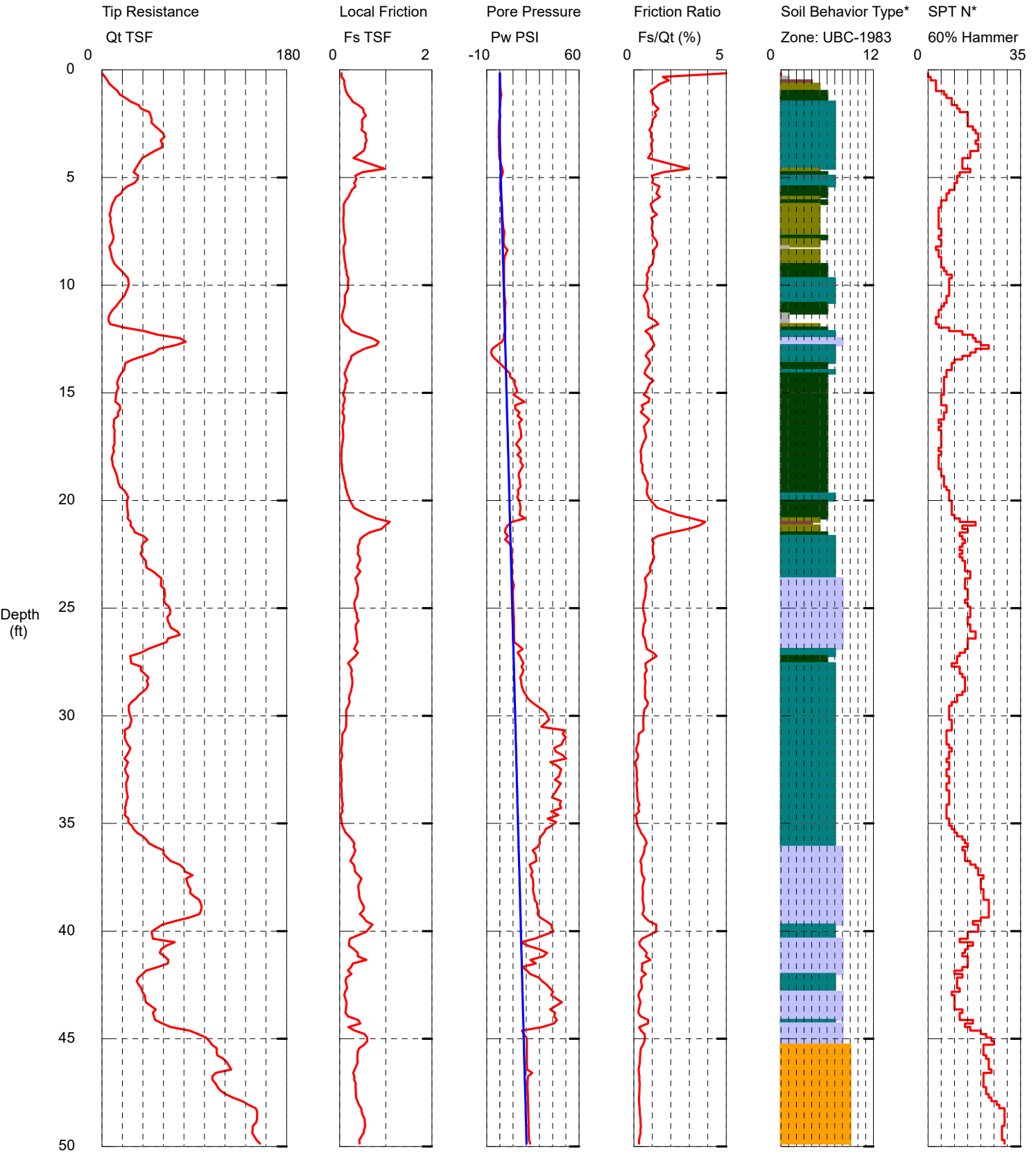
- | | | | |
|--------------------------|-----------------------------|----------------------------|--------------------------------|
| 1 sensitive fine grained | 4 silty clay to clay | 7 silty sand to sandy silt | 10 gravelly sand to sand |
| 2 organic material | 5 clayey silt to silty clay | 8 sand 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: Pat Conroy
 Sounding: C-2
 Cone Used: DDG1702
 Groundwater: 3.3 feet

CPT Date/Time: 9/18/2024 10:28:46 AM
 Location: Mexico Beach Boat Launch Seawall Repair
 Job Number: P24-547
 Elevation: Unknown



Maximum Depth = 50.52 feet

Depth Increment = 0.164 feet

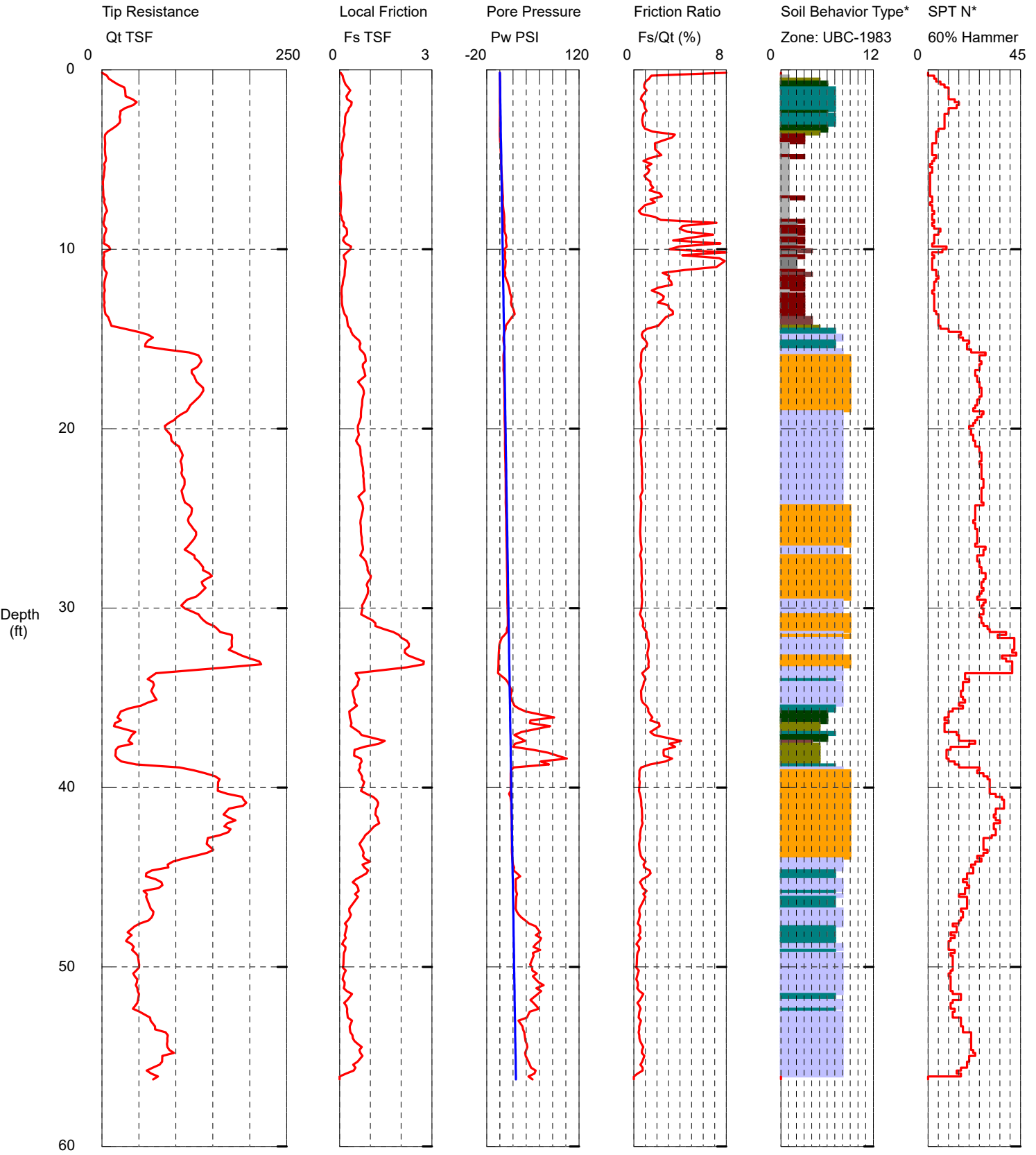
- | | | | |
|--------------------------|-----------------------------|----------------------------|--------------------------------|
| 1 sensitive fine grained | 4 silty clay to clay | 7 silty sand to sandy silt | 10 gravelly sand to sand |
| 2 organic material | 5 clayey silt to silty clay | 8 sand 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: Pat Conroy
 Sounding: C-3
 Cone Used: DDG1702
 Groundwater: 4.0 feet

CPT Date/Time: 9/17/2024 2:10:57 PM
 Location: Mexico Beach Boat Launch Seawall Repair
 Job Number: P24-547
 Elevation: Unknown



Maximum Depth = 56.27 feet

Depth Increment = 0.164 feet

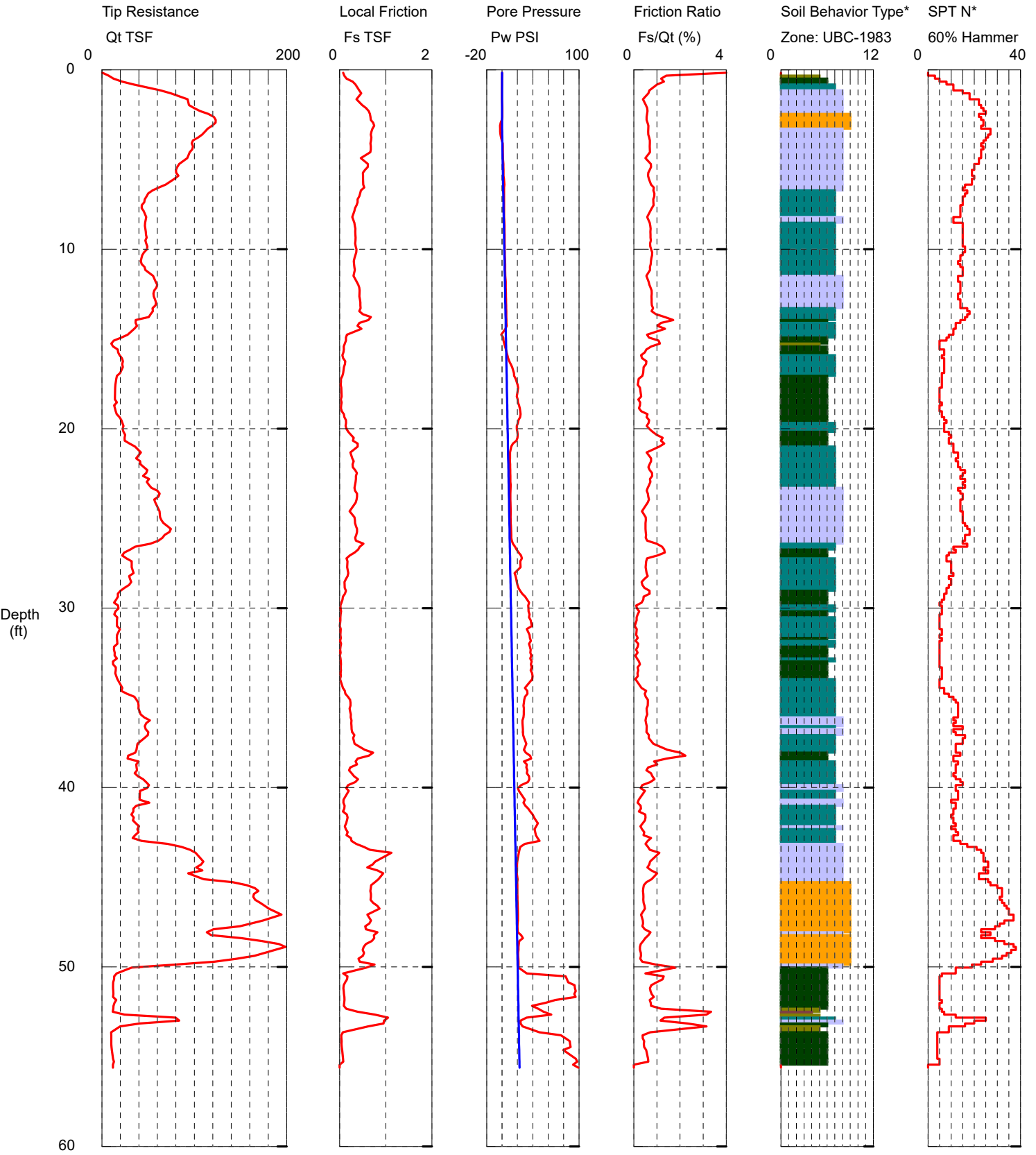
- | | | | |
|--------------------------|-----------------------------|----------------------------|--------------------------------|
| 1 sensitive fine grained | 4 silty clay to clay | 7 silty sand to sandy silt | 10 gravelly sand to sand |
| 2 organic material | 5 clayey silt to silty clay | 8 sand 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: Pat Conroy
 Sounding: C-4
 Cone Used: DDG1702
 Groundwater: 4.5 feet

CPT Date/Time: 9/17/2024 1:21:31 PM
 Location: Mexico Beach Boat Launch Seawall Repair
 Job Number: P24-547
 Elevation: Unknown



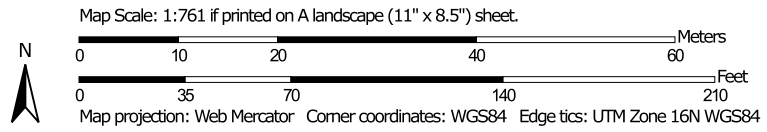
Maximum Depth = 55.61 feet

Depth Increment = 0.164 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


Soil Map—Bay County, Florida
(Mexico Beach Boat Launch Repair)



Soil Map—Bay County, Florida
(Mexico Beach Boat Launch Repair)

MAP LEGEND

Area of Interest (AOI)

 Area of Interest (AOI)

Soils

 Soil Map Unit Polygons

 Soil Map Unit Lines

 Soil Map Unit Points

Special Point Features



Blowout



Borrow Pit



Clay Spot



Closed Depression



Gravel Pit



Gravelly Spot



Landfill



Lava Flow



Marsh or swamp



Mine or Quarry



Miscellaneous Water



Perennial Water



Rock Outcrop



Saline Spot



Sandy Spot



Severely Eroded Spot



Sinkhole



Slide or Slip



Sodic Spot



Spoil Area



Stony Spot



Very Stony Spot



Wet Spot



Other



Special Line Features

Water Features



Streams and Canals

Transportation



Rails



Interstate Highways



US Routes



Major Roads



Local Roads

Background



Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:20,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL:

Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Bay County, Florida

Survey Area Data: Version 24, Aug 22, 2024

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 2, 2020—Dec 8, 2020

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
13	Leon sand, 0 to 2 percent slopes	0.8	58.1%
29	Rutlege sand, 0 to 2 percent slopes	0.5	41.9%
99	Water	0.0	0.0%
Totals for Area of Interest		1.3	100.0%

Important Information About Your Geotechnical Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

The following information is provided to help you manage your risks.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical engineering study conducted for a civil engineer may not fulfill the needs of a construction contractor or even another civil engineer. Because each geotechnical engineering study is unique, each geotechnical engineering report is unique, prepared *solely* for the client. No one except you should rely on your geotechnical engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you — should apply the report for any purpose or project except the one originally contemplated.*

Read the Full Report

Serious problems have occurred because those relying on a geotechnical engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

A Geotechnical Engineering Report Is Based on A Unique Set of Project-Specific Factors

Geotechnical engineers consider a number of unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical engineering report that was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light industrial plant to a refrigerated warehouse,

- elevation, configuration, location, orientation, or weight of the proposed structure,
- composition of the design team, or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical engineering report is based on conditions that existed at the time the study was performed. *Do not rely on a geotechnical engineering report* whose adequacy may have been affected by: the passage of time; by man-made events, such as construction on or adjacent to the site; or by natural events, such as floods, earthquakes, or groundwater fluctuations. *Always* contact the geotechnical engineer before applying the report to determine if it is still reliable. A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ—sometimes significantly—from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are *Not* Final

Do not overrely on the construction recommendations included in your report. *Those recommendations are not final*, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations only by observing actual

subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's recommendations if that engineer does not perform construction observation.*

A Geotechnical Engineering Report Is Subject to Misinterpretation

Other design team members' misinterpretation of geotechnical engineering reports has resulted in costly problems. Lower that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Contractors can also misinterpret a geotechnical engineering report. Reduce that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Contractors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make contractors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give contractors the complete geotechnical engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise contractors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure contractors have sufficient time* to perform additional study. Only then might you be in a position to give contractors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and contractors do not recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that

have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations" many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Geoenvironmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform a *geoenvironmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical engineering report does not usually relate any geoenvironmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own geoenvironmental information, ask your geotechnical consultant for risk management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, a number of mold prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely on Your ASFE-Member Geotechnical Engineer for Additional Assistance

Membership in ASFE/The Best People on Earth exposes geotechnical engineers to a wide array of risk management techniques that can be of genuine benefit for everyone involved with a construction project. Confer with your ASFE-member geotechnical engineer for more information.



8811 Colesville Road/Suite G106, Silver Spring, MD 20910
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