City Commission Work Session

Agenda

July 7, 2021 @ 1:30 pm

City Hall Commission Chambers
401 S Park Avenue

welcome

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assistance & appeals

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"If a person decides to appeal any decision made by the Board with respect to any matter considered at this hearing, a record of the proceedings is needed to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based." (F.S. 286.0105).

please note

Times are projected and subject to change.

agenda	time

1. **Call to Order**
2. **Discussion Item(s)**
   a. Progress Point Park Sub-Committee Discussion — 2 hours
3. **Adjournment**

City Commission agenda item

item type Discussion Item(s)	meeting date July 7, 2021
prepared by Jason Seeley	approved by Michelle Neuner, Randy Knight
board approval Completed	
strategic objective	

subject

Progress Point Park Sub-Committee Discussion

motion / recommendation

background

A. Progress Point - "Natural Park & Orange Marketplace Group"
Presented by**:** Forest Gray Michael, Parks Master Planner and Landscape Architect, Michael Planning of Florida; Angelique Hennon G.I.S., and Peter Knowles Gottfried

B. ACi RFP draft review

The draft request for proposal (RFP) by ACi incorporates several elements of suggested improvements discussed during the course of Progress Point and Orange Avenue Overlay public meetings. The intent is to provide general guidance on the development of the property based on those conversations.

The document itself provides an outline for the subcommittee to continue its evaluation on the purpose of the property and how potential stakeholders could work together to invite partnership. As a working document by a third party, it is currently being reviewed by city staff to ensure compatibility with the city's procurement policy, timelines, and public record requirements. In conjunction with continued edits, a final product will include instruction by the subcommittee on language for inclusion, direction on level of partnership, and guidance on future use of the property.

C. Park Design Discussion
Land Design - Discuss scope and direction for design plans.

alternatives / other considerations

fiscal impact

ATTACHMENTS:
Progress Point Getechnical Report.pdf

ATTACHMENTS:
RFP-Progress Point ACi Draft.pdf

Geotechnical Engineering Report

Progress Point
Winter Park, Orange County, Florida
June 30, 2021
Terracon Project No. H1215155

Prepared for:
City of Winter Park
Winter Park, Florida

Prepared by:
Terracon Consultants, Inc.
Winter Park, Florida

June 30, 2021

City of Winter Park
500 N. Virginia Avenue
Winter Park, Florida 32789

Attn: Mr. Thomas Conner, PSM – City Surveyor
P: 407 599-3528
E: tconner@cityofwinterpark.org

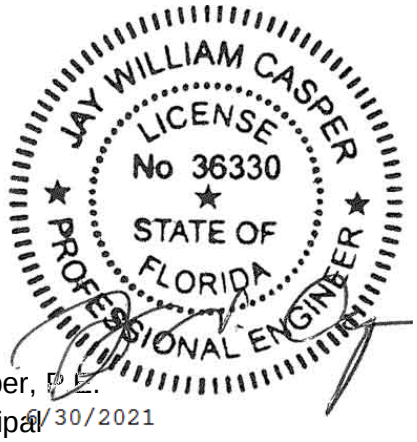
Re: Geotechnical Engineering Report
Progress Point
N Orange Avenue at S Denning Drive
Winter Park, Orange County, Florida
Terracon Project No. H1215155

Dear Mr. Conner:

We have completed the Geotechnical Engineering services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. PH1215155 dated April 30, 2017. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations and floor slabs, pavement grading and stormwater facilities for the proposed project.

We appreciate the opportunity to be of service to you on this project. If you have any questions concerning this report or if we may be of further service, please contact us.

Sincerely,
Terracon Consultants, Inc.



Lorimar G. Rosario Rivera
Senior Staff Engineer

Jay W. Casper, P.E.
Senior Principal
Florida PE # 36330

This item has been digitally signed and sealed by Jay W. Casper, P.E. on the date adjacent to the seal.
Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

REPORT TOPICS

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Note: This report was originally delivered in a web-based format. For more interactive features, please view your project online at client.terracon.com.

ATTACHMENTS

FIGURES
EXPLORATION AND TESTING PROCEDURES
SITE LOCATION AND EXPLORATION PLANS
EXPLORATION RESULTS
SUPPORTING INFORMATION

Note: Refer to each individual Attachment for a listing of contents.

Geotechnical Engineering Report

Progress Point
N Orange Avenue at S Denning Drive
Winter Park, Orange County, Florida

Terracon Project No. H1215155

June 30, 2021

INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services performed for the proposed development to be located at N Orange Avenue at S Denning Drive in Winter Park, Orange County, Florida. The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Site preparation and earthwork
- Lateral earth pressures
- Foundation design and construction
- Floor slab design and construction
- Pavement design and construction
- Stormwater management considerations

The geotechnical engineering Scope of Services for this project included the advancement of 20 Cone Penetration Test (CPT) Soundings and 4 Machine Auger Borings to depths ranging from approximately 20 to 75 feet below existing site grades.

Maps showing the site and boring locations are shown in the **Site Location** and **Exploration Plan** sections, respectively. The results of the laboratory testing performed on soil samples obtained from the site during the field exploration are included on the auger boring logs in the **Exploration Results** section.

SITE CONDITIONS

The following description of site conditions is derived from our site visit in association with the field exploration and our review of publicly available geologic and topographic maps.

Item	Description
Parcel Information	The project is located at N Orange Avenue at S Denning Drive in Winter Park, Orange County, Florida. The property is about 3 acres. Latitude/Longitude (approximate) 28.5878271, -81.3616881 See **Site Location**
Existing Improvements	Cleared with asphalt parking. It is our understanding that previous structures have been demolished.

Item	Description
Current Ground Cover	Sparse tree cover and asphalt
Existing Topography (from USGS Quad)	The site is relatively level with pre-existing conditions near elevation +95 feet.
Surface Water	The USGS topographic quadrangle maps "Orlando East, Florida" depicts the site as being situated between Lake Killarney (about 3,500 feet northwest of the site), Lake Virginia (about 3,000 feet east of the site) and Lake Sue (about 3,200 feet southeast of the site). The noted quadrangle map list water levels of elevation +83 feet for Lake Killarney, +66 feet for Lake Virginia and +73 feet for Lake Sue.

Geology

Orange County is underlain Upper Eocene limestone units of the Ocala Group. These sedimentary deposits are very fine or fine grained, are chalky and porous, and have a cream color. The surface of the limestone generally dips eastward from the outcrop area west of Orange County under an increasing thickness of younger materials. The surface is irregular because of the dissolution of the limestone. The Florida Geologic Survey Map Series No. 96 indicates the top of the limestone near elevation -25 feet in the project vicinity.

The sedimentary deposits that are immediately above the Upper Eocene limestone units are of the Hawthorn Group. The highly variable, diverse, lithologic character of the Hawthorn Group includes interbedded and interfingering sand, clayey sand, sandy clay, phosphatic sediment, dolomite, and limestone. The carbonate part generally occurs in the lower Hawthorn Group and contains highly variable amounts of sand, clay, and phosphorite or sand and clay. The top of the Hawthorn Group is mapped near elevation +50 feet in the project vicinity in Florida Geologic Survey Bulletin No. 59.

Unconsolidated sand blankets the county above the Hawthorn Group. This sand consists of medium to fine sand and silt and does not contain clay or shell fragments.

Soil Survey

The Soil Survey of Orange County, Florida as prepared by the United States Department of Agriculture (USDA), Soil Conservation Service (SCS; later renamed the Natural Resource Conservation Service - NRCS), dated August 1989, identifies the soil type at the subject site as Urban land, 0 to 2 percent slopes (50). A Soils Map is included with this ***GeoReport***, depicting the applicable Soil Survey map portion for the subject site.

50 – Urban land. This soil map unit has slopes of generally less than 2 percent, though some areas range in slope up to 5 percent. It is covered by shopping centers, parking lots, industrial

buildings, houses, streets, sidewalks, airports, and other urban structures. The natural soil profile has been altered or obscured, including by the overlying structures, to such a point that the natural soil profile may not be observed. Drainage systems have been established in most areas of this soil map unit, thereby affecting the natural drainage. Seasonal high groundwater table conditions have been altered by earthwork and/or development.

PROJECT DESCRIPTION

Our final understanding of the project conditions is as follows. Items highlighted are assumed and should be verified by the design team.

Item	Description[1]
Information Provided	Preliminary site plan and recommended boring locations were provided on April 28, 2021.
Project Description	It is our understanding three new multi-story buildings are proposed with a multi-story parking garage and underground stormwater management.
Proposed Structures	The two-story structures are proposed in the central portion of the site and the 4-story parking garage (1 subterranean level) is anticipated on the southern portion of the site.
Building Construction	Buildings: Wood frame or concrete block Slab-on-grade Parking Garage: Pre-cast concrete
Maximum Loads (provided by ACI)	■ Columns: 150 kips for buildings and 600 kips for parking garage ■ Walls: 5 to 6 klf for buildings and 24-14 klf for garage ■ Slabs: 150 pounds per square foot (psf)
Grading/Slopes	Office building finished floor elevation is expected to be at or near existing grade.
Free-Standing Retaining Walls	Retaining walls are anticipated for the subterranean portion of the parking garage.
Pavements	We assume both rigid (concrete) and flexible (asphalt) pavement sections are being considered.
Stormwater Management	Dry bottom vaults and exfiltration trenches are proposed on the northern portion of the site as well as under the parking garage.
Estimated Start of Construction	Winter 2021.

1. Assumptions have been highlighted in yellow.

GEOTECHNICAL CHARACTERIZATION

We have developed a general characterization of the subsurface conditions based upon our review of the subsurface exploration, laboratory data, geologic setting and our understanding of the project. This characterization, termed GeoModel, forms the basis of our geotechnical calculations and evaluation of site preparation and foundation options. Conditions encountered at each exploration point are indicated on the individual logs. The individual logs can be found in the **Exploration Results** section and the GeoModel can be found in the **Figures** section of this report.

As part of our analyses, we identified the following model layers within the subsurface profile. For a more detailed view of the model layer depths at each boring location, refer to the GeoModel.

Model Layer	Layer Name	General Description
1	**Sands**	Fine Sand to Fine Sand with Silt
2	**Silty Sands**	Silty Fine Sand
3	**Clayey Sands**	Clayey Sand to Clayey Silt
4	**Clays**	Silty Clay to Clay

The following table presents relative densities of cohesionless/granular soils (sands, silty sands and clayey sands)) and their corresponding ranges of tip resistances for CPT and SPT data.

Relative Density	Range of CPT Tip Resistance Values (tsf)	Range of SPT N-Values (blows/ft)
Very loose	< 20	<3
Loose	20 to 50	3-8
Medium dense	50 to 150	8-24
Dense	150 to 250	24-40
Very dense	> 250	>40

The following table presents consistencies of fine-grained/cohesive soils (sandy clay, silty clay or clay) and their corresponding ranges of tip resistances for CPT data.

Relative Density	Range of CPT Tip Resistance Values (tsf)	Range of SPT N-Values (blows/ft)
Very soft	< 5	<3
Soft to medium stiff	5 to 15	3-8
Stiff	15 to 30	8-24
Very stiff	30 to 60	24-40

Relative Density	Range of CPT Tip Resistance Values (tsf)	Range of SPT N-Values (blows/ft)
Hard	> 60	>40

Groundwater Conditions

Groundwater levels were estimated to be at 9 feet below the existing ground surface in the CPT soundings based on the hydrostatic pressure readings. Groundwater was measured at each auger boring location and ranged from 9 to 11.5 feet below the ground surface. Longer term monitoring in cased holes or piezometers would be required to better define groundwater conditions at the site. The water levels interpreted from the soundings and auger borings can be found on the individual logs in **Exploration Results**.

It should be recognized that fluctuations of the groundwater table will occur due to seasonal variations in the amount of rainfall, runoff and other factors not evident at the time the boring was performed. In addition, perched water can develop within higher permeability soils overlying less permeable soils. Therefore, groundwater levels during construction or at other times in the future may be higher or lower than the levels indicated on the boring logs.

We estimate that during the normal wet season (typically June through October) with rainfall and recharge at a maximum, groundwater levels will be approximately 6 feet below existing grade. Our estimates of the seasonal groundwater conditions are based on the USDA Soil Survey, the encountered soil types, antecedent weather conditions, and the interpreted water levels. The water levels observed in the soundings and auger borings can be found on the individual logs in **Exploration Results**, and are summarized below along with the estimated normal seasonal high groundwater table.

Sounding Number	Approximate depth to encountered water table (feet)	Approximate depth to estimated seasonal high groundwater table (feet)
CPT-1	9	6.0
CPT-2	9	6.0
CPT-3	9	6.0
CPT-4	9	6.0
CPT-5	9	6.0
CPT-6	9	6.0
CPT-7	9	6.0
CPT-8	9	6.0
CPT-9	9	6.0

CPT-10	9	6.0
CPT-12	9	6.0
CPT-13	9	6.0
CPT-14	9	6.0
CPT-15	9	6.0
CPT-16	9	6.0
CPT-17	9	6.0
CPT-18	9	6.0
CPT-19	9	6.0
CPT-20	9	6.0
AB-1	11.5	6.0
AB-2	9	6.0
AB-3	9	6.0
AB-4	11.5	6.0

1. Below the ground surface.

These seasonal water table estimates do not represent the temporary rise in water table that occurs immediately following a storm event, including adjacent to other stormwater management facilities. This is different from static groundwater levels in wet ponds and/or drainage canals which can affect the design water levels of new, nearby ponds. The seasonal high groundwater table may vary from normal when affected by extreme weather changes, localized or regional flooding, karst activity, future grading, drainage improvements, or other construction that may occur on or around the site following the date of this report.

GEOTECHNICAL OVERVIEW

Generally CPT soundings encountered fine sand to sand with silt to a depth of 5 feet followed by silty fine sand to 10 feet then encountered fine sand to silty fine sand to approximately 30 feet underlain by silty sand with layers of clay to the sounding termination depth of 75 feet. Machine auger borings generally encountered fine sand to fine sand with silt to a depth of 6 feet followed by fine sand with silt to silty fine sand to clayey fine sand to the boring termination depth of 20 feet. These materials are generally suitable for construction of the proposed foundations, floor slabs, pavements, and stormwater systems following site preparation according to the recommendations provided in the **Earthwork** section.

Seasonal high groundwater levels should be considered in the civil engineering design for site grading, utility construction, pavements, and stormwater management.

The **Shallow Foundations** section addresses support of the buildings bearing on loose to medium dense sand to sand with silt or engineered fill. The **Floor Slabs** section addresses slab-on-grade support of the building.

Terracon understands underground stormwater management will be included beneath the proposed parking garage as well as other areas on site. Anticipated design details have not been provided to Terracon (i.e. plan area/location, chamber bottom depth, cover requirements, etc.). Foundation layout should be planned in conjunction with placement of underground exfiltration chambers. Further, foundation construction should be considered in the design of the underground exfiltration system. Specifically, reduced permeability should be considered due to the anticipated densification of the upper soils. Also, where foundation elements are within the vicinity of the exfiltration chambers, reduced horizontal permeability should be considered due to the barrier created by the foundation elements. The anticipated exfiltration system should be located outside a 2H:1V slope (2 horizontal:1 vertical) extending outward from the structural foundations, or farther, to avoid undermining the foundations.

With subgrade prepared as noted in **Earthwork,** we recommend that pavement grades should be set to provide a minimum separation of 12 inches between the bottom of the base course and the seasonal high groundwater level. If concrete pavements are used, the concrete pavements should be supported on a minimum of 18 inches of free draining sand to minimize unstable pumping conditions.

The **General Comments** section provides an understanding of the report limitations.

EARTHWORK

Earthwork is anticipated to include the removal of existing asphalt pavements. The following sections provide recommendations for use in the preparation of specifications for the work. Recommendations include critical quality criteria, as necessary, to render the site in the state considered in our geotechnical engineering evaluation for foundations, floor slabs, and pavements.

The groundwater table could affect over-excavation effort in the parking garage area. A temporary dewatering system consisting of sumps with pumps could be necessary to achieve the recommended depth of over-excavation.

A permanent dewatering or subsurface drainage method and waterproofing should be provided for the below grade garage level to control groundwater conditions after construction. Water should be conveyed away from the bottom of the lower level garage foundation.

Site Preparation

Prior to placing fill, existing asphalt pavements should be removed. Complete stripping of the topsoil should be performed in the proposed buildings, garage, and parking/driveway areas.

The subgrade should be proofrolled with an adequately loaded vehicle such as a fully-loaded tandem-axle dump truck or heavy roller. The proofrolling should be performed under the direction of the Geotechnical Engineer. Areas excessively deflecting under the proofroll should be delineated and subsequently addressed by the Geotechnical Engineer. Excessively wet or dry material should either be removed, or moisture conditioned and recompacted.

Fill Material Types

Fill required to achieve design grade should be classified as structural fill and general fill. Structural fill is material used below or within 10 feet of structures, pavements or constructed slopes. General fill is material used to achieve grade outside of these areas. Earthen materials used for structural and general fill should meet the following material property requirements:

Soil Quality[1]	USCS Classification	Acceptable Location for Placement	Maximum Lift Thickness (in.)
Preferred [1]	SP (fines content < 5%)	All locations and elevations except utility cuts into higher fines content soils	12 [3]
	SP-SM (fines content between 5 and 12%) [2]	All locations and elevations other than beneath concrete pavements or where superior drainage is required (such as where they would affect stormwater management). Strict moisture control will be required during placement, particularly during the rainy season.	8 to 12 [3]
Limited	SM, SC (fines content >12%)	Limited to mass fill greater than 2 feet below final grade and utility cuts into similar soils. Strict moisture control will be required during placement.	6 to 8 [4]

1. Controlled, compacted fill should consist of approved materials that are free of organic matter and debris.
2. If fines contents are greater than 12 percent, special design and construction procedures may be necessary.
3. Loose thickness when heavy compaction equipment is used in vibratory mode. Lift thickness should be decreased if static compaction is being used, typically to no more than 8 inches, and the required compaction must still be achieved. Use 4 to 6 inches in loose thickness when hand-guided equipment (i.e. jumping jack or plate compactor) is required.
4. Static equipment should be used.

Fill Compaction Requirements

Structural and general fill should meet the following compaction requirements.

Item	Structural Fill
Minimum Compaction Requirements [1]	95 percent of the material's maximum modified Proctor dry density (ASTM D 1557).
Moisture Content [2]	Within ±2 percent of optimum moisture content as determined by the Modified Proctor test, at the time of placement and compaction.
Minimum Testing Frequency	One field density test per 5,000 square feet or fraction thereof per 1-foot lift in pavement areas; per 2,500 square feet in building areas.

1. We recommend that engineered fill be tested for moisture content and compaction during placement. Should the results of the in-place density tests indicate the specified moisture or compaction limits have not been met, the area represented by the test should be reworked and retested as required until the specified moisture and compaction requirements are achieved.
2. Specifically, moisture levels should be maintained low enough to allow for satisfactory compaction to be achieved without the cohesionless fill material pumping when proofrolled.

Utility Trench Backfill

All trench excavations should be made with sufficient working space to permit construction including backfill placement and compaction. All utility trenches that penetrate beneath the building should be backfilled with soils of similar fines content and permeability, as compared to those soils excavated, to avoid creating a preferred flow path through the trenches.

Grading and Drainage

All grades must provide effective drainage away from the buildings during and after construction Final surrounding grades should be sloped away from the structure on all sides to prevent ponding of water. Roof drains, scuppers, downspouts, or other appropriate methods that direct water a minimum of 10 feet beyond the footprint of the proposed structures are recommended. Site grades should be set considering the estimated seasonal high groundwater presented in **Geotechnical Characterization**.

Where paving or flatwork abuts the structure a maintenance program should be established to effectively seal and maintain joints and prevent surface water infiltration.

Earthwork Construction Considerations

After initial proofrolling and compaction, unstable subgrade conditions could develop during general construction operations, particularly if the soils are wetted and/or subjected to repetitive construction traffic. Upon completion of filling and grading, care should be taken to maintain the subgrade moisture content prior to construction of floor slabs and pavements. Construction traffic

over the completed subgrade should be avoided to the extent practical. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. If the subgrade should become desiccated, saturated, or disturbed, the affected material should be removed, or these materials should be scarified, moisture conditioned, and re-compacted prior to floor slab and pavement construction.

Trees or other vegetation whose root systems have the ability to excessively remove moisture or that may displace the foundations or flatwork should not be planted next to the structures (foundations, pavements, sidewalks, etc.).

As a minimum, all temporary excavations should be sloped or braced as required by Occupational Health and Safety Administration (OSHA) regulations to provide stability and safe working conditions. Temporary excavations will probably be required during grading operations. The grading contractor, by his contract, is usually responsible for designing and constructing stable, temporary excavations and should shore, slope or bench the sides of the excavations as required, to maintain stability of both the excavation sides and bottom. All excavations should comply with applicable local, state and federal safety regulations, including the current OSHA Excavation and Trench Safety Standards.

Construction site safety is the sole responsibility of the contractor who controls the means, methods, and sequencing of construction operations. Under no circumstances shall the information provided herein be interpreted to mean Terracon is assuming responsibility for construction site safety, or the contractor's activities; such responsibility shall neither be implied nor inferred.

Construction Observation and Testing

The earthwork efforts should be monitored under the direction of the Terracon Geotechnical Engineer. Monitoring should include documentation of adequate removal of vegetation and topsoil, proofrolling, and mitigation of areas delineated by the proofroll to require mitigation.

Each lift of compacted fill should be tested, evaluated, and reworked, as necessary, until approved by the Terracon Geotechnical Engineer prior to placement of additional lifts. Each lift of fill should be tested for density and water content at a frequency of at least one test for every 2,500 square feet of compacted fill in the building areas and 5,000 square feet in pavement areas. One density and water content test should be performed per lift of backfill for every 50 linear feet of compacted utility trench backfill.

In areas of foundation excavations, the bearing subgrade should be evaluated under the direction of the Terracon Geotechnical Engineer. If unanticipated conditions are encountered, the Terracon Geotechnical Engineer should prescribe mitigation options.

In addition to the documentation of the essential parameters necessary for construction, the continuation of the Terracon Geotechnical Engineer into the construction phase of the project provides the continuity to maintain the Geotechnical Engineer's evaluation of subsurface conditions, including assessing variations and associated design changes.

SHALLOW FOUNDATIONS

If the site has been prepared in accordance with the requirements noted in **Earthwork**, the following design parameters are applicable for shallow foundations of the proposed buildings and parking garage.

Design Parameters Buildings – Compressive Loads

Description	Column Footing	Wall Footing	Monolithic Slab Foundation [4]
Net allowable bearing pressure [1]	3,000 psf	3,000 psf	3,000 psf
Minimum width	30 inches	18 inches	12 inches
Minimum embedment below finished grade [2]	18 inches	18 inches	12 inches
Compaction requirements	95 percent of the materials maximum Modified Proctor (ASTM D1557) dry density for a depth of 12 inches below footing.		
Minimum Testing Frequency	One field density test per footing for a minimum depth of 1 foot below the footing subgrade.	One field density test per 50 linear feet for a minimum depth of 1 foot below the footing subgrade.	One field density test per 50 linear feet for a minimum depth of 1 foot below the footing subgrade.
Approximate total settlement [3]	<1 inch	<1 inch	<1 inch
Estimated differential settlement [3]	<¾ inch between columns	<¾ inch over 40 feet	<¾ inch over 40 feet

1. The recommended net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. Assumes any unsuitable fill or soft soils, if encountered, will be undercut and replaced with engineered fill.
2. For erosion protection and to reduce effects of seasonal moisture variations in subgrade soils.
3. The foundation settlement will depend upon the variations within the subsurface soil profile, the structural loading conditions, the embedment depth of the footings, the thickness of compacted fill, and the quality of the earthwork operations. The above settlement estimates have assumed that the maximum footing width is 7.25 feet for column footings and 1.5 feet for continuous footings.
4. Turned-down portion of slab. For slab requirements see **Floor Slabs**

It is our understanding that underground stormwater management will not be located within the vicinity of the buildings. If underground stormwater management is located within the vicinity of

buildings, the foundations for those buildings should be designed per the paragraph in the following report section to avoid negative interaction between the footing(s) and the underground stormwater management system.

Design Parameters Garage– Compressive Loads

Description	Column Footing	Wall Footing
Net allowable bearing pressure [1]	4,000 psf	4,000 psf
Minimum width	36 inches	24 inches
Minimum embedment below finished grade [2]	24 inches	24 inches
Compaction requirements	95 percent of the materials maximum Modified Proctor (ASTM D1557) dry density for a depth of 12 inches below footing.	
Minimum Testing Frequency	One field density test per footing for a minimum depth of 1 foot below the footing subgrade.	One field density test per 50 linear feet for a minimum depth of 1 foot below the footing subgrade.
Approximate total settlement [3]	<1 inch	<1 inch
Estimated differential settlement [3]	<¾ inch between columns	<¾ inch over 40 feet

1. The recommended net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. Assumes any unsuitable fill or soft soils, if encountered, will be undercut and replaced with engineered fill.
2. For erosion protection and to reduce effects of seasonal moisture variations in subgrade soils.
3. The foundation settlement will depend upon the variations within the subsurface soil profile, the structural loading conditions, the embedment depth of the footings, the thickness of compacted fill, and the quality of the earthwork operations. The above settlement estimates have assumed that the maximum footing width is 12.5 feet for column footings and 3.5 feet for continuous footings.

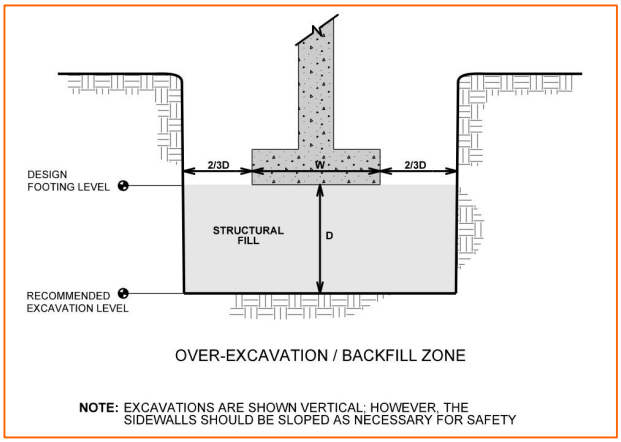
Garage footings should be located such that the anticipated exfiltration systems are located outside a 2:1 slope (horizontal:vertical) extending outward from the footing bottoms towards to avoid undermining the foundations as well as to avoid crushing the exfiltration system.

Foundation Construction Considerations

As noted in **Earthwork**, the footing excavations should be evaluated under the direction of the Geotechnical Engineer. The base of all foundation excavations should be free of water and loose soil prior to placing concrete. Concrete should be placed soon after excavating and compaction/verification of subgrade density to reduce bearing soil disturbance. Care should be taken to prevent wetting or drying of the bearing materials during construction. Excessively wet or dry material or any loose/disturbed material in the bottom of the footing excavations should be removed/reconditioned before foundation concrete is placed.

If unsuitable bearing soils are encountered at the base of the planned footing excavation, the excavation should be extended deeper to soils which can be suitably compacted, and the footings could bear directly on these soils at the lower level, or on up to 12 inches of crushed stone or crushed concrete backfill placed in the excavations and compacted to a firm and unyielding condition.

Over-excavation for structural fill placement below footings should be conducted as shown below. The over-excavation should be backfilled up to the footing base elevation, with engineered fill placed, as recommended in the **Earthwork** section.



FLOOR SLABS

Design parameters for floor slabs assume the requirements for **Earthwork** have been followed. Specific attention should be given to positive drainage away from the structure and positive drainage of the free-draining base beneath the floor slab.

Floor Slab Design Parameters

Item	Description
Floor Slab Support [1]	Minimum 6 inches of free-draining (less than 5% passing the U.S. No. 200 sieve) granular material compacted to at least 95% of ASTM D 1557 [2]
Estimated Modulus of Subgrade Reaction [2]	100 pounds per square inch per inch (psi/in) for point loads

1. Floor slabs should be structurally independent of building footings or walls to reduce the possibility of floor slab cracking caused by differential movements between the slab and foundation unless part of a monolithic or post-tensioned slab.
2. Modulus of subgrade reaction is an estimated value based upon our experience with the subgrade condition, the requirements noted in **Earthwork**, and the floor slab support as noted in this table. It is

Item	Description
	provided for point loads. This value is valid for a 1 square foot plate. If additional load considerations are required, please contact Terracon.

The use of a vapor retarder should be considered beneath concrete slabs on grade covered with wood, tile, carpet, or other moisture sensitive or impervious coverings, or when the slab will support equipment sensitive to moisture. When conditions warrant the use of a vapor retarder, the slab designer should refer to ACI 302 and/or ACI 360 for procedures and cautions regarding the use and placement of a vapor retarder.

Saw-cut construction joints should be placed in the slab to help control the location and extent of cracking. For additional recommendations refer to the ACI Design Manual. Joints or cracks should be sealed with a water-proof, non-extruding compressible compound specifically recommended for heavy duty concrete pavement and wet environments.

Where floor slabs are tied to perimeter walls or turn-down slabs to meet structural or other construction objectives, our experience indicates differential movement between the walls and slabs will likely be observed in adjacent slab expansion joints or floor slab cracks beyond the length of the structural dowels. The Structural Engineer should account for potential differential settlement through use of sufficient construction joints, appropriate reinforcing or other means.

Floor Slab Construction Considerations

Finished subgrade, within and for at least 10 feet beyond the floor slab, should be protected from traffic, rutting, or other disturbance and maintained in a relatively moist condition until floor slabs are constructed. If the subgrade should become damaged or desiccated prior to construction of floor slabs, the affected material should be removed, and structural fill should be added to replace the resulting excavation. Final conditioning of the finished subgrade should be performed immediately prior to placement of the floor slab support course.

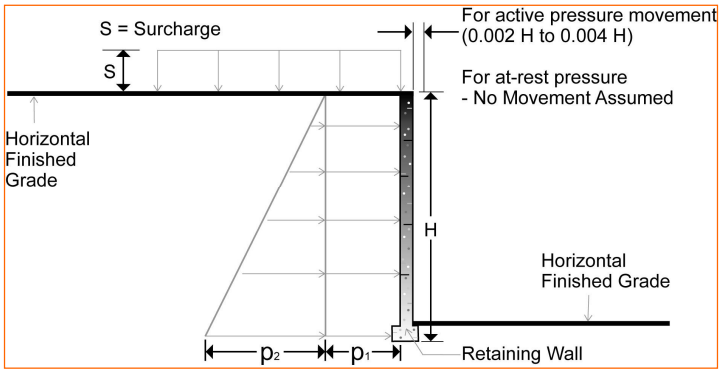
The Geotechnical Engineer should approve the condition of the floor slab subgrades immediately prior to placement of the floor slab support course, reinforcing steel, and concrete. Attention should be paid to high traffic areas that were rutted and disturbed earlier, and to areas where backfilled trenches are located.

LATERAL EARTH PRESSURES

Design Parameters

Structures with unbalanced backfill levels on opposite sides should be designed for earth pressures at least equal to values indicated in the following table. Earth pressures will be influenced by structural design of the walls, conditions of wall restraint, methods of construction

and/or compaction and the strength of the materials being restrained. Two wall restraint conditions are shown in the diagram below. Active earth pressure is commonly used for design of free-standing cantilever retaining walls and assumes minor wall movement. The "at-rest" condition assumes no wall movement and is commonly used for basement walls, loading dock walls, or other walls restrained at the top. The recommended design lateral earth pressures do not include a factor of safety and do not provide for possible hydrostatic pressure on the walls (unless stated).



Lateral Earth Pressure Design Parameters				
Earth Pressure Condition [1]	**Coefficient for Backfill Type** [2]	**Surcharge Pressure p_1 (psf)** [3, 4, 5]	**Effective Fluid Pressures (psf)** [2, 4, 5]	
			Unsaturated [6]	**Submerged** [6]
Active (Ka)	Granular - 0.33	(0.33)S	(35)H	(77)H
At-Rest (Ko)	Granular - 0.50	(0.50)S	(53)H	(84)H
Passive (Kp)	Granular – 3.0	---	(315)H	(190)H

1. For active earth pressure, wall must rotate about base, with top lateral movements 0.002 H to 0.004 H, where H is wall height. For passive earth pressure, wall must move horizontally to mobilize resistance.
2. Uniform, horizontal backfill, compacted to at least 95% of the ASTM D 1557 maximum dry density, rendering a maximum unit weight of 105 pcf.
3. Uniform surcharge, where S is surcharge pressure.
4. Loading from heavy compaction equipment is not included.
5. No safety factor is included in these values.
6. To achieve "Unsaturated" conditions, follow guidelines in **Subsurface Drainage for Below-Grade Walls** below. "Submerged" conditions are recommended when drainage behind walls is not incorporated into the design.

Backfill placed against structures should consist of granular soils. For the granular values to be valid, the granular backfill must extend out and up from the base of the wall at an angle of at least 45 and 60 degrees from vertical for the active and passive cases, respectively.

Subsurface Drainage for Below-Grade Walls

A perforated rigid plastic drain line installed behind the base of walls and extending below adjacent grade is recommended to prevent hydrostatic loading on the walls from infiltrating water. The invert of a drain line around a below-grade building area or exterior retaining wall should be placed near foundation bearing level. The drain line should be sloped to provide positive gravity drainage to daylight or to a sump pit and pump. The drain line should be surrounded by clean, free-draining granular material having less than 5% passing the No. 200 sieve, such as No. 57 aggregate.

As an alternative to free-draining granular fill, a pre-fabricated drainage structure may be used. A pre-fabricated drainage structure is a plastic drainage core or mesh which is covered with filter fabric to prevent soil intrusion and is fastened to the wall prior to placing backfill.

PAVEMENTS

General Pavement Comments

Soil and groundwater conditions appear suitable for conventional pavement sections meeting minimum local requirements. Recommendations for construction of typical pavement section materials are presented below. These pavement construction considerations also assume that the site has been prepared as recommended in the **Earthwork** section.

Subgrade Preparation

Site grading is typically accomplished relatively early in the construction phase. Fills are placed and compacted in a uniform manner. However, as construction proceeds, excavations are made into these areas, rainfall and surface water saturates some areas, heavy traffic from concrete trucks and other delivery vehicles disturbs the subgrade and many surface irregularities are filled in with loose soils to temporarily improve ride comfort. As a result, the pavement subgrades, initially prepared early in the project, should be carefully evaluated as the time for pavement construction approaches.

We recommend the moisture content and density of the top 12 inches of the subgrade be evaluated and the pavement subgrades be proofrolled and tested within two days prior to commencement of actual paving operations. Compaction tests should be performed at a frequency of 1 test per 5,000 square feet or fraction thereof. Areas not in compliance with the required ranges of moisture or density should be moisture conditioned and recompacted. Particular attention should be paid to high traffic areas that were rutted and disturbed earlier and to areas where backfilled trenches are located. Areas where unsuitable conditions are found should be repaired by removing and replacing the materials with properly compacted fills.

After proofrolling and repairing deep subgrade deficiencies, the entire subgrade should be scarified and prepared as recommended in the **Earthwork** section this ***GeoReport*** to provide a uniform subgrade for pavement construction. Areas that appear severely desiccated following site stripping may require further undercutting and moisture conditioning. If a significant precipitation event occurs after the evaluation or if the surface becomes disturbed, the subgrade should be reviewed by qualified personnel immediately prior to paving. The subgrade should be in its finished form at the time of the final review.

Design Considerations

Pavement thickness can be determined using AASHTO, Asphalt Institute, PCA, and/or other methods if specific wheel loads, axle configurations, frequencies, and desired pavement life are provided. Terracon can provide thickness recommendations for pavements subjected to loads other than personal vehicle and occasional delivery and trash removal truck traffic if this information is provided. However, absent that data, the following recommendations are based on local municipal standards.

Estimates of Minimum Pavement Section Thickness

The following table provides typical options for AC and PCC Sections. They should be reviewed if specific design traffic parameters become available:

Typical Pavement Section (inches)						
Traffic Area	**Alternative**	**Asphalt Concrete Surface Course**	**Limerock, Soil-Cement or Crushed Concrete Base Course**	**Stabilized Subbase Course**[2,3,4]	**Portland Cement Concrete**	**Free Draining Subgrade**
Car Parking	PCC	--	--		6.0	18.0
	AC	1.5	8.0	12.0	--	--
Truck Parking, driveways (Heavy Duty[5])	PCC	--	--		7.0	18.0
	AC	2.5	10.0	12.0	--	--
Trash Container Pad [1]	PCC	--	--		7.0	18.0

1. The trash container pad should be large enough to support the container and the tipping axle of the collection truck.
2. Often referred to as Stabilized Subgrade.
3. Use coarse granular materials such as recycled crushed concrete, shell, or gravel when seasonal high groundwater is within 4 feet of the profile grade. Stabilization with clayey admixtures is acceptable with deeper seasonal high groundwater.
4. Some municipalities do not require stabilized subbase beneath soil-cement base.

Typical Pavement Section (inches)						
Traffic Area	**Alternative**	**Asphalt Concrete Surface Course**	**Limerock, Soil-Cement or Crushed Concrete Base Course**	**Stabilized Subbase Course**[2,3,4]	**Portland Cement Concrete**	**Free Draining Subgrade**

5. Per Orange County Subdivision Regulations and Road Specifications, Commercial / Industrial asphalt pavement with ADT of greater than 1,500 vpd.

Asphalt Concrete Design Considerations

The following items are applicable to asphalt concrete pavement sections.

- Terracon recommends a minimum separation of 12 inches for this purpose between the bottom of the base course and the seasonal high groundwater table.
- Natural or fill subgrade soils to a depth of 18 inches below the base should be clean, free draining sands with a fines content passing a No. 200 sieve of 5 percent or less.
- Stabilized subgrade soils (also identified as stabilized subbase) should be stabilized to a minimum Limerock Bearing Ratio (LBR; Florida Method of Test Designation FM 5-515) value of 40 if they do not already meet this criterion or modified/replaced with new compacted fill that meets the minimum LBR value. Although LBR testing has not been performed, our experience with similar soils indicates that the near surficial sands encountered in the soil borings are unlikely to meet this requirement.
- The stabilized subgrade course should be compacted to at least 98 percent of the Modified Proctor maximum dry density (AASHTO T-180 or ASTM D-1557). Any underlying, newly-placed subgrade fill need only be compacted to a minimum of 95 percent of the Modified Proctor maximum dry density. Compaction tests should be performed at a frequency of 1 test per 10,000 square feet or fraction thereof.
- Limerock base courses from an approved FDOT source should have a minimum LBR value of 100 and be compacted to a minimum of 98 percent of the maximum dry density as determined by the Modified Proctor test. Limerock should be placed in uniform lifts not to exceed 6 inches loose thickness. Recycled limerock is not a suitable substitute for virgin limerock for base courses but may be used as a granular stabilizing admixture.
- Soil cement base courses typically experience shrinkage cracking due to hydration curing of the cement. This shrinkage cracking typically propagates through the overlying asphalt course and reflects in the pavement surface. This reflective cracking is not necessarily indicative of a pavement structural failure, though it is sometimes considered to be aesthetically undesirable.
- Soil cement bases should have 7-day design strength of 300 psi. Soil cement base should be compacted to a minimum of 98 percent of the material's maximum dry density as determined by the Standard Proctor Test for Soil Cement (AASHTO T-134). Higher design strengths may result in increased cracking.

- Crushed (recycled) concrete base materials should meet the current FDOT specification 911.
- Asphalt should be compacted to a minimum of 95 percent of the design mix density. Asphalt surface courses should be Type SP, Type S, or other suitable mix design according to FDOT and local requirements.
- To verify thicknesses, after placement and compaction of the pavement courses, core the wearing surface to evaluate material thickness and composition at a minimum frequency of 5,000 square feet or two locations per day's production.
- Underdrains or strip drains should be considered along all landscaped areas in, or adjacent to pavements to reduce moisture migration to subgrade soils.
- All curbing should be full depth. Use of extruded curb sections which lie on top of asphalt surface courses can allow migration of water between the surface and base courses, leading to rippling and pavement deterioration.

Portland Cement Concrete Design Considerations

The following items are applicable to rigid concrete pavement sections.

- At least 18 inches of free-draining material (less and 5% passing the No. 200 sieve) should be included directly beneath rigid concrete pavement. Limerock should not be considered free draining for this purpose.
- The PCC should be a minimum of 4,000 psi at 28 days. PCC pavements are recommended for trash container pads and in any other areas subjected to heavy wheel loads and/or turning traffic.
- The upper 1 foot of rigid pavement subgrade soils should be compacted to at least 98 percent of the Modified Proctor maximum dry density (AASHTO T-180 or ASTM D-1557). Compaction tests should be performed at a frequency of 1 test per 10,000 square feet or fraction thereof.
- Rigid PCC pavements will perform better than ACC in areas where short-radii turning, and braking are expected (i.e. entrance/exit aprons) due to better resistance to rutting and shoving. In addition, PCC pavement will perform better in areas subject to large or sustained loads. An adequate number of longitudinal and transverse construction joints should be placed in the rigid pavement in accordance with ACI and/or AASHTO requirements. Expansion (isolation) joints must be full depth and should only be used to isolate fixed objects abutting or within the paved area.
- Adequate separation should be provided between the bottom of the concrete and the seasonal high groundwater table. Terracon recommends that in no case should less than 1 foot of separation be provided. Based on the encountered conditions and anticipated development, we anticipate this requirement can be readily met.

- Sawcut patterns should generally be square or rectangular but nearly square and extend to a depth equal to a quarter of the slab thickness or as recommended by ACI.

Pavement Drainage

Pavements should be sloped to provide rapid drainage of surface water. Water allowed to pond on or adjacent to the pavements could saturate the subgrade and contribute to premature pavement deterioration. In addition, the pavement subgrade should be graded to provide positive drainage within the granular base section. The subgrade and the pavement surface should have a minimum ¼ inch per foot slope to promote drainage. Appropriate sub-drainage or connection to a suitable daylight outlet should be provided to remove water from the base layer.

Pavement Maintenance

The pavement sections represent minimum recommended thicknesses and, as such, periodic maintenance should be anticipated. Therefore, preventive maintenance should be planned and provided for through an on-going pavement management program. Maintenance activities are intended to slow the rate of pavement deterioration and to preserve the pavement investment. Maintenance consists of both localized maintenance (e.g. crack and joint sealing and patching) and global maintenance (e.g. surface sealing). Preventive maintenance is usually the priority when implementing a pavement maintenance program. Additional engineering observation is recommended to determine the type and extent of a cost-effective program. Even with periodic maintenance, some movements and related cracking may still occur, and repairs may be required.

Pavement performance is affected by its surroundings. In addition to providing preventive maintenance, the civil engineer should consider the following recommendations in the design and layout of pavements:

- Install below pavement drainage systems surrounding areas anticipated for frequent wetting.
- Install joint sealant and seal cracks immediately.
- Seal all landscaped areas in or adjacent to pavements to reduce moisture migration to subgrade soils.

STORMWATER MANAGEMENT

Design of the stormwater management system has not been completed yet, though we understand an underground exfiltration system and/or underground vaults are planned underneath the proposed pavement and beneath the parking garage. Also, the bottom of the chambers, equivalent to the bottom of a dry retention pond, generally need to be at least 1 foot and sometimes as much as 3 feet above the seasonal high groundwater table to recover within the time required by SJRWMD. Based on our estimate of the seasonal high groundwater table

and the anticipated grading, enough head space appears to be available for the anticipated exfiltration system. Actual dimensions will also depend upon design installation requirements provided by the exfiltration system manufacturer. The anticipated exfiltration system should be located outside a 2H:1V slope (2 horizontal:1 vertical) extending outward from the structural foundations, or father, to avoid undermining the foundations.

Because exfiltration chambers are not open to visual observation and easy maintenance, clean-out rows or clean-out ports should be included in the design such that any sediments that collect in the exfiltration system could be flushed out as needed. Over compaction of chamber subgrade soils can diminish their permeability. Though this effect may be lesser in sands, we still recommend compacting soils beneath and around the proposed exfiltration system to no greater than 95 percent of the standard Proctor maximum dry density (ASTM D-698 or AASHTO T-99). Based on the anticipated depth of excavation and encountered soil type, installation of an underground exfiltration system will result in a deep and wide excavation. Exfiltration system design should consider the location of adjacent structures so that the structures are not undermined during excavation for the exfiltration system or maintenance/replacement. Further, although the excavation will likely be wide, OSHA regulations for working in excavations should still be followed.

The samples of anticipated underground exfiltration system subgrade soils (Boring Location AB-1, 4 to 6 feet, AB-2, 4 to 6 feet, AB-3, 4 to 6 feet and 10 to 13.5 feet, AB-4, 4 to 6 feet below existing grade) had a measured permeability rates ranging from 25 and 42 feet/day. We consider these permeability rates to represent a horizontal permeability rate. We generally do not recommend design of stormwater management systems based on horizontal permeability rates greater than 40 feet per day. Restriction in horizontal flow due to surrounding structural foundation elements should be considered in stormwater management design and recovery analysis (see PONDS software technical memorandum "How To Modify The Horizontal Hydraulic Conductivity Value To Model The Effect Of A Partially Penetrating Or Completely Penetrating Retaining Wall (or Clay Core) Around A Retention Pond" (January 28, 2009- revised)), even outside the previously noted 2H:1V slope.

It has been our experience that SJRWMD requires use of an appropriate factor of safety, generally reducing measured permeability rates by a factor of safety of 2 for design of underground stormwater management systems.

For clean sands as encountered at this site, vertical and horizontal permeabilities are similar. As the fines content of the soil increases (silt and/or clay), the ratio of the horizontal to vertical permeability rate generally increases. Also, similar practical limits apply to horizontal permeability rates as apply to vertical permeability rates.

A confining layer of clayey sand was encountered at the site at a depth of approximately between 6 to 9 feet below the ground surface. Therefore, we conservatively recommend that you consider the depth of 6 feet as the confining layer for the purpose exfiltration system design. Based upon

our visual review of the sands, and our local project experience, we recommend that you consider the surficial aquifer (the site sands) to have a fillable porosity (η) of 30 percent. The table below summarizes our recommended stormwater management system design parameters.

Auger Borings No.	DESIGN PARAMETERS				
	Estimated Confining Layer Depth, B	Estimated Seasonal High Groundwater Table Depth, WT	Unsaturated Vertical Infiltration Rate, k_V	Horizontal Saturated Hydraulic Conductivity, k_H	Fillable Porosity, η
AB-1	7.0 feet	6.0 feet	21 feet/day	40 feet/day	30 percent
AB-2	6.0 feet	6.0 feet	22 feet/day	40 feet/day	
AB-3	6.0 feet	6.0 feet	16 feet/day	32 feet/day	
AB-3	6.0 feet	6.0 feet	13 feet/day	25 feet/day	
AB-4	9.0 feet	6.0 feet	19 feet/day	37 feet/day	

GENERAL COMMENTS

Our analysis and opinions are based upon our understanding of the project, the geotechnical conditions in the area, and the data obtained from our site exploration. Natural variations will occur between exploration point locations or due to the modifying effects of construction or weather. The nature and extent of such variations may not become evident until during or after construction. Terracon should be retained as the Geotechnical Engineer, where noted in this report, to provide observation and testing services during pertinent construction phases. If variations appear, we can provide further evaluation and supplemental recommendations. If variations are noted in the absence of our observation and testing services on-site, we should be immediately notified so that we can provide evaluation and supplemental recommendations.

Our Scope of Services does not include either specifically or by implication any environmental or biological (e.g., mold, fungi, bacteria) assessment of the site or identification or prevention of pollutants, hazardous materials or conditions. If the owner is concerned about the potential for such contamination or pollution, other studies should be undertaken.

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with

no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering requirements/design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing. Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

FIGURES

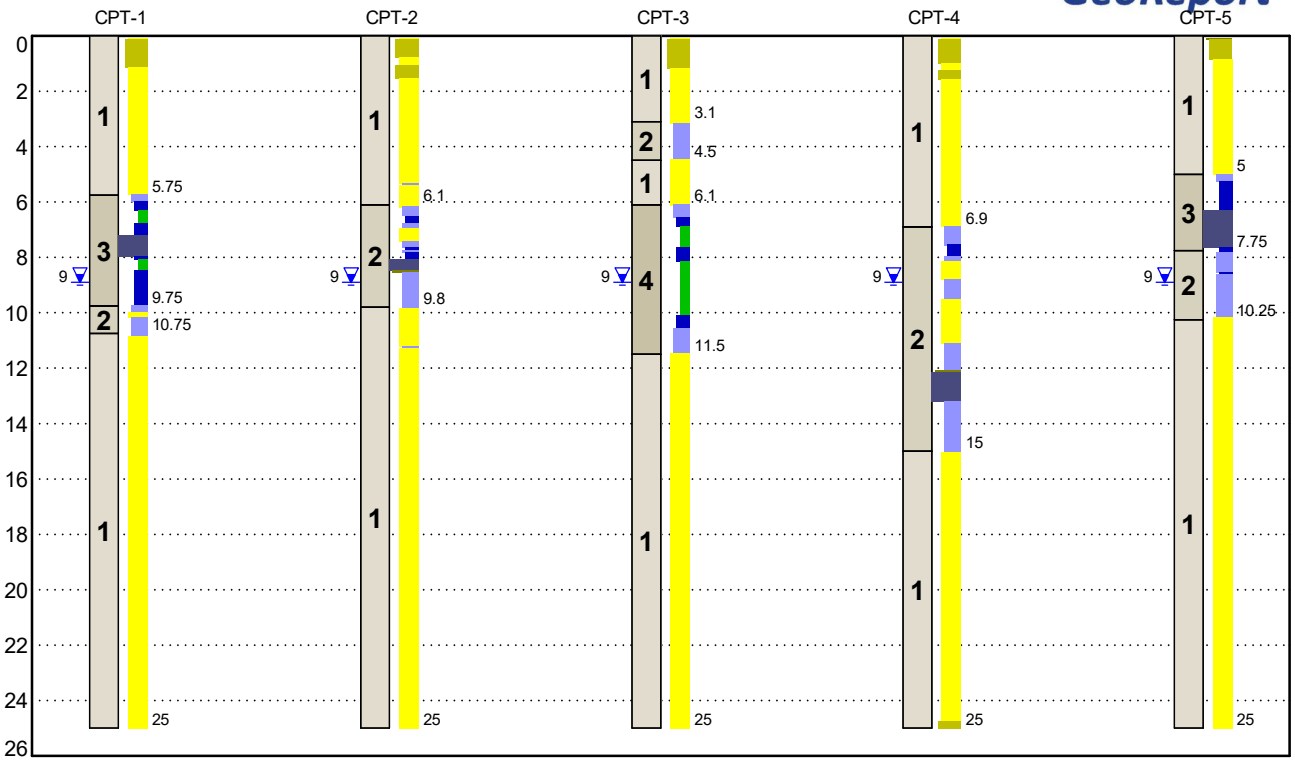
Contents:

GeoModel for Cone Soundings (4 pages)
GeoModel for Machine Auger Borings (1 pages)

GEOMODEL

Progress Point ■ Winter Park, FL
Terracon Project No. H1215155

Terracon GeoReport



This is not a cross section. This is intended to display the Geotechnical Model only. See individual logs for more detailed conditions.

Model Layer	Layer Name	General Description
1	**Sands**	Fine Sand to Fine Sand with Silt
2	**Silty Sand**	Silty Fine Sand
3	**Clayey Sands**	Clayey Sand to Clayey Silt
4	**Clays**	Silty Clay to Clay

LEGEND

Soil Behavior Type (SBT)

- **1 Sensitive, fine grained**
- **2 Organic soils - clay**
- **3 Clay - silty clay to clay**
- **4 Silt mixtures - clayey silt to silty clay**
- **5 Sand mixtures - silty sand to sandy silt**
- **6 Sands - clean sand to silty sand**
- **7 Gravelly sand to dense sand**
- **8 Very stiff sand to clayey sand**
- **9 Very stiff fine grained**

▽ CPT Water Depth
▽ First Water Observation

Groundwater levels are temporal. The levels shown are representative of the date and time of our exploration. Significant changes are possible over time. Water levels shown are as measured during and/or after drilling. In some cases, boring advancement methods mask the presence/absence of groundwater. See individual logs for details.

NOTES:
Layering shown on this figure has been developed by the geotechnical engineer for purposes of modeling the subsurface conditions as required for the subsequent geotechnical engineering for this project. Numbers adjacent to soil column indicate depth below ground surface.

GEOMODEL

Progress Point ■ Winter Park, FL
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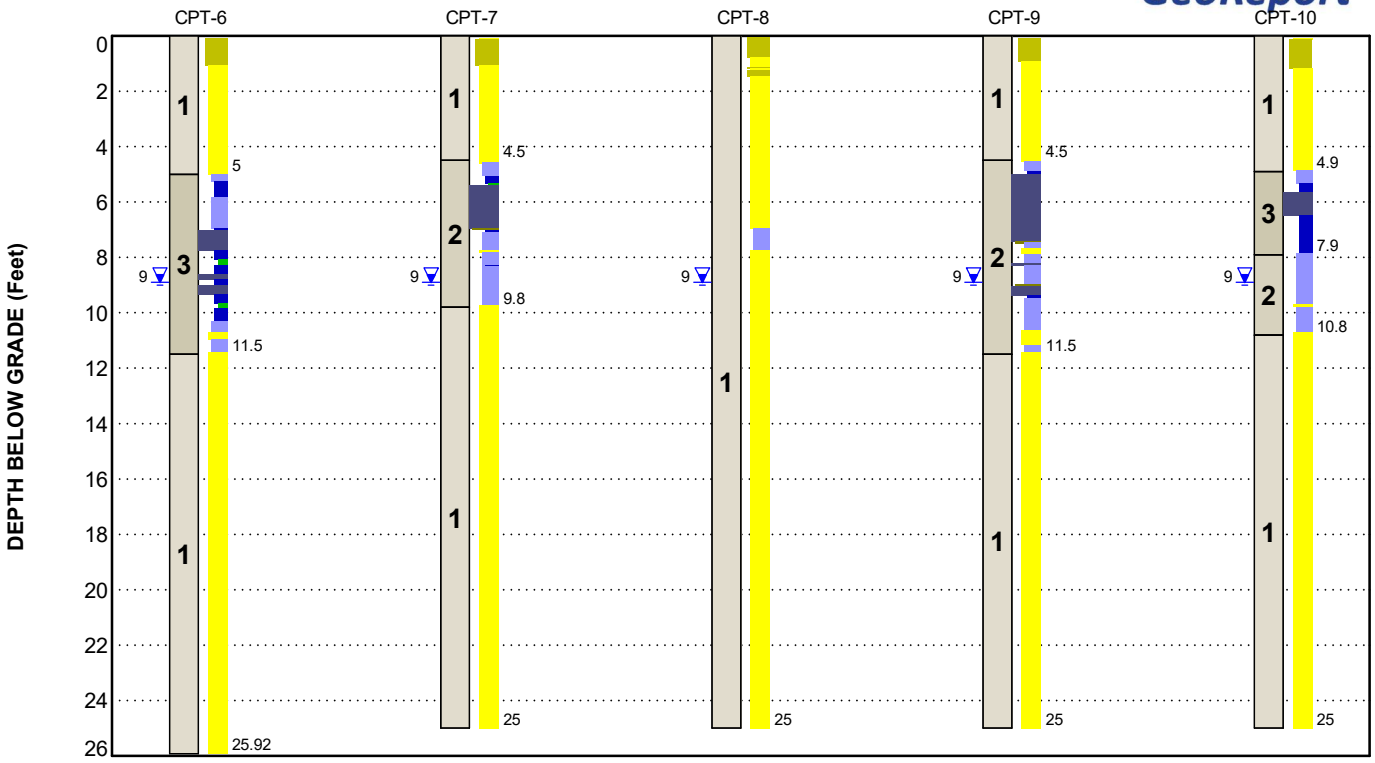

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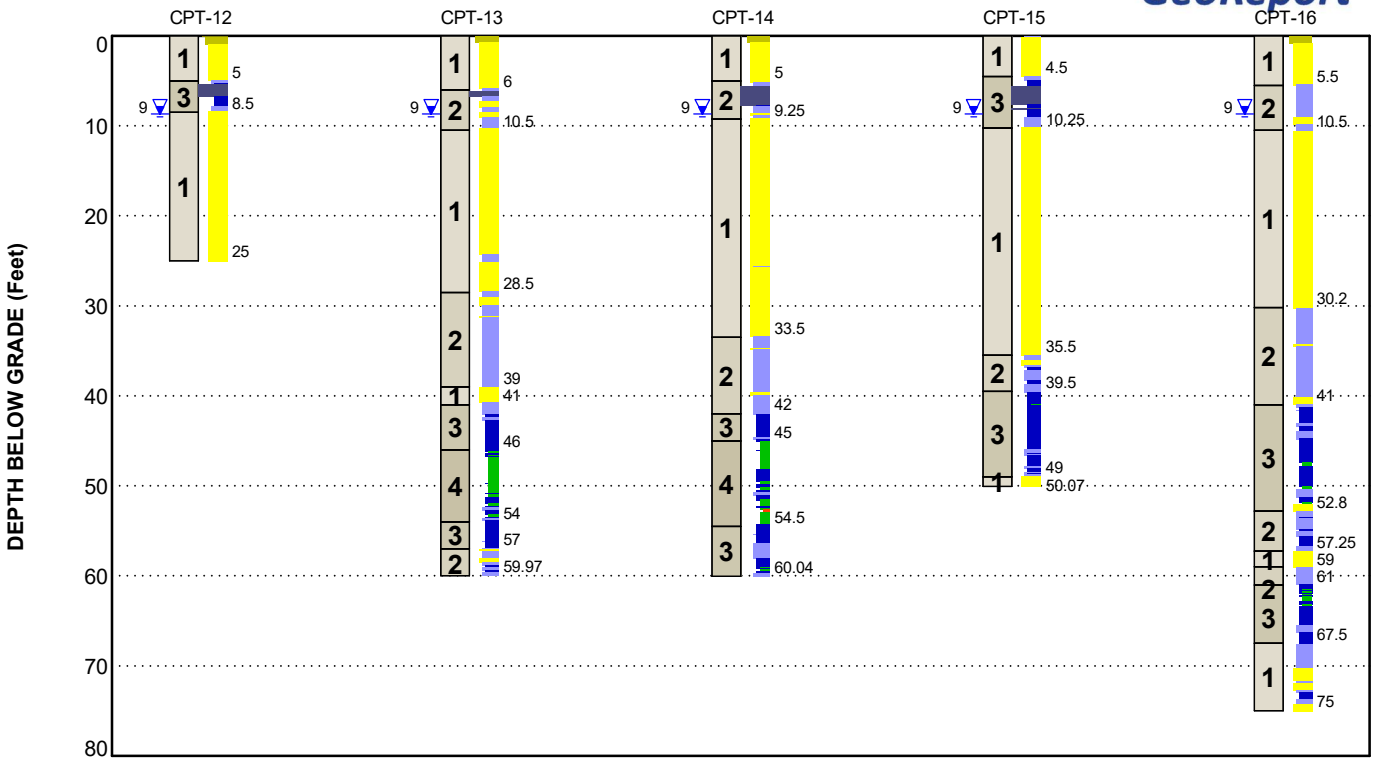

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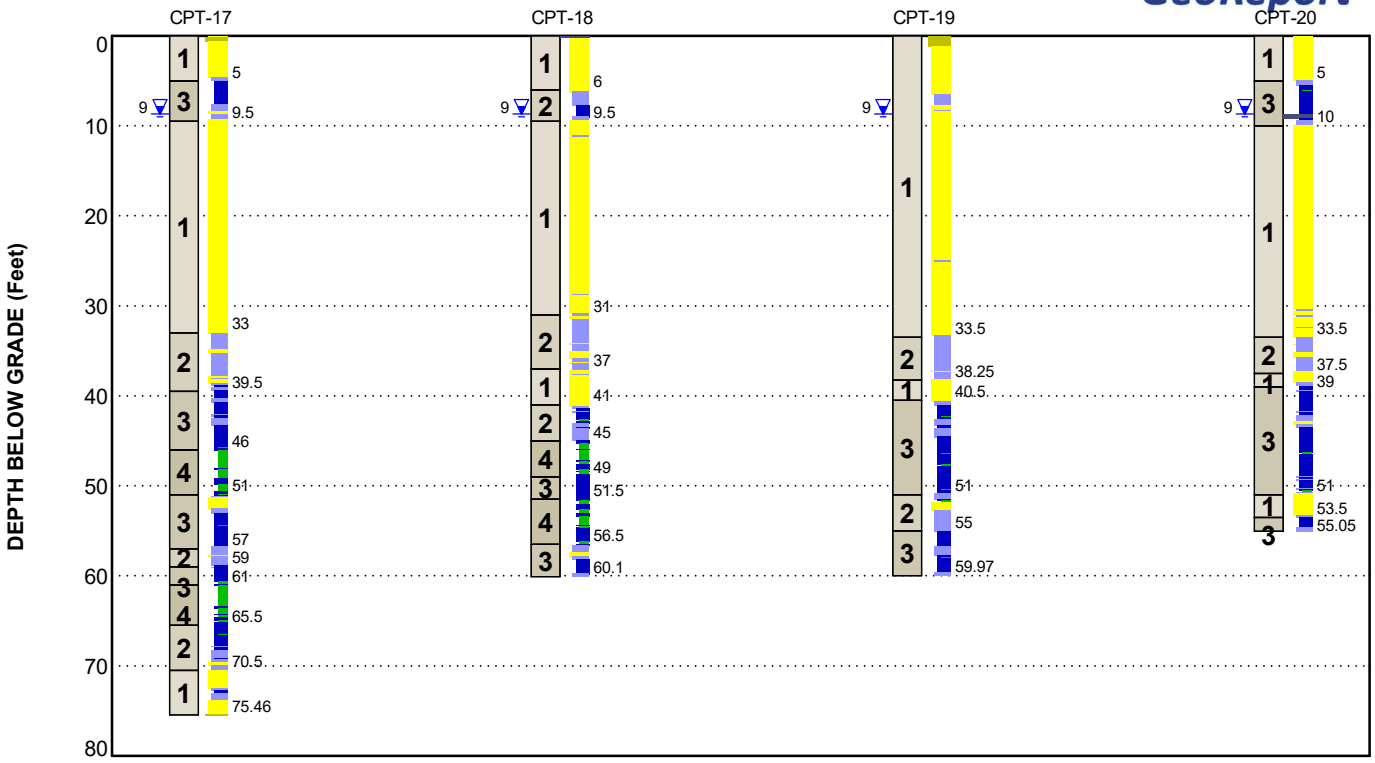

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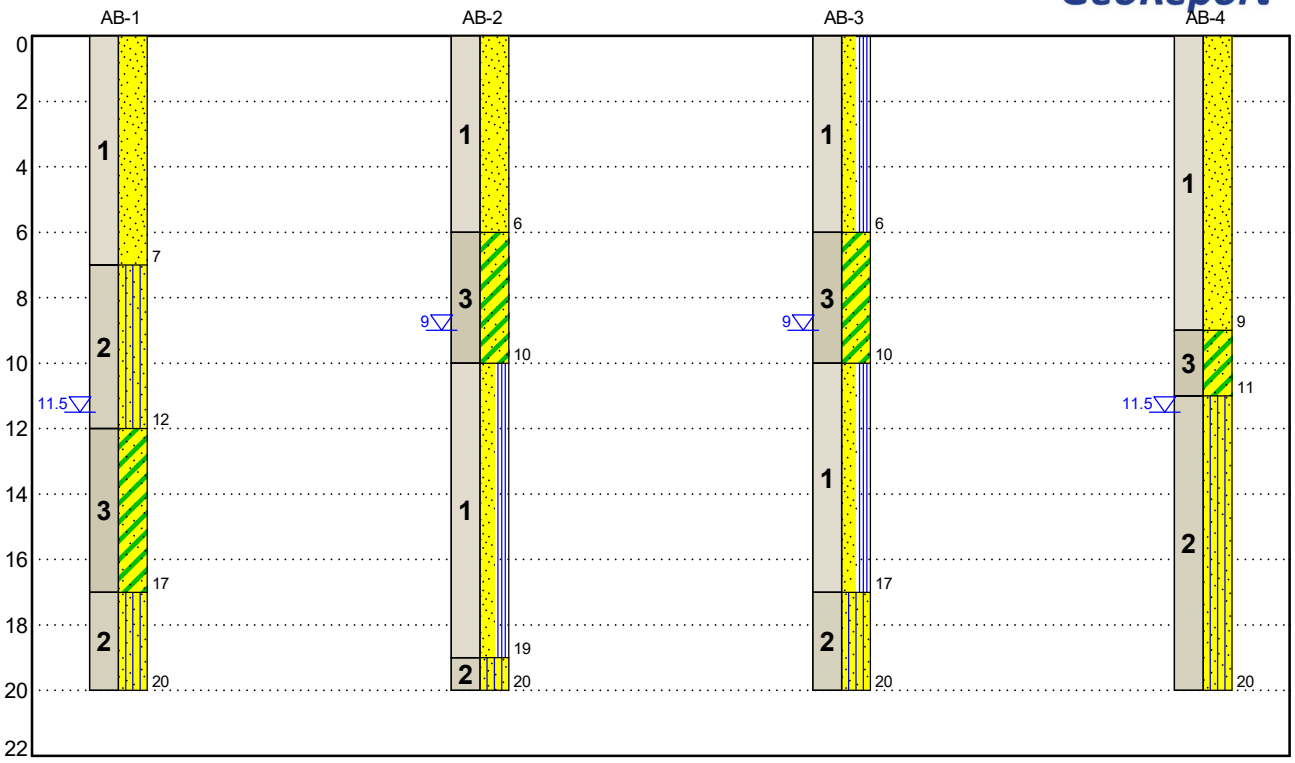

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LEGEND

- Poorly-graded Sand
- Poorly-graded Sand with Silt
- Silty Sand
- Clayey Sand

▽ First Water Observation

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ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

Field Exploration

Number of Borings	Boring Depth (feet) [1]	Location
11	25	Planned two-story buildings
8	60-75	Planned parking garage
4	20	Planned stormwater areas

1. Below ground surface.

Sounding, Boring Layout and Elevations: We used handheld GPS equipment to locate borings with an estimated horizontal accuracy of +/-20 feet. Field measurements from existing site features were used.

Subsurface Exploration Procedures: Our investigation was mostly performed with Cone Penetration Test (CPT). The (CPT) or piezocone hydraulically pushes an instrumented cone through the soil while nearly continuous readings are recorded to a portable computer. The cone is equipped with electronic load cells to measure tip resistance and sleeve resistance and a pressure transducer to measure the generated ambient pore pressure. The face of the cone has an apex angle of 60° and an area of 10 cm2. Digital data representing the tip resistance, friction resistance, pore water pressure, and probe inclination angle is recorded about every 2 centimeters while advancing through the ground at a rate between 1½ and 2½ centimeters per second. These measurements are correlated to various soil properties used for geotechnical design. No soil samples are gathered through this subsurface investigation technique.

CPT testing is conducted in general accordance with ASTM D5778 "Standard Test Method for Performing Electronic Friction Cone and Piezocone Penetration Testing of Soils."

Upon completion, the data collected were downloaded and processed by the project engineer. Soundings were advanced to depths varying from about 25 feet to 75 feet. The piezocone process does not retrieve soil samples; therefore, no laboratory testing has been performed. The sounding logs and correlative parameters are included in the Exploration Results section of this GeoReport.

We also advanced soil auger borings with a truck-mounted drill rig using rotary wash techniques as necessary depending on soil conditions. Five samples were obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. We obtained representative samples primarily by the split-barrel sampling procedure. In the split-barrel sampling procedure, a standard, 2-inch O.D., split-barrel sampling spoon is driven into the boring with a 140-pound automatic SPT (Standard Penetration Test) hammer falling 30 inches. Soil Test Borings utilizing auger sampling were

conducted as necessary for potential stormwater management system locations to provide soil samples for laboratory permeability and classification testing.

The sampling depths, penetration distances, and other sampling information was recorded on the field boring logs. The samples were placed in appropriate containers and taken to our soil laboratory for testing and classification by a Geotechnical Engineer. In addition, we observed and record groundwater levels during drilling and sampling. Our exploration team prepared field boring logs as part of the drilling operations. These field logs included visual classifications of the materials encountered during drilling and our interpretation of the subsurface conditions between samples. Final boring logs were prepared from the field logs. The final boring logs represent the Geotechnical Engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

Laboratory Testing

The project engineer reviewed the field data and assigned laboratory tests to understand the engineering properties of the various soil strata, as necessary, for this project. Procedural standards noted below are for reference to methodology in general. In some cases, variations to methods were applied because of local practice or professional judgment. Standards noted below include reference to other, related standards. Such references are not necessarily applicable to describe the specific test performed.

- ASTM D2216 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil by Mass
- ASTM D4318 Standard Test Methods for Liquid Limit, Plastic Limit, and Plasticity Index of Soils
- ASTM D1140-17 Standard Test Method for Amount of Material in Soils Finer than No. 200 (75-µm) Sieve
- ASTM D2434 Standard Test Method for Permeability of Granular Soils (Constant Head)

The laboratory testing program often included examination of soil samples by an engineer. Based on the material’s texture and plasticity, we described and classified the soil samples in accordance with the Unified Soil Classification System.

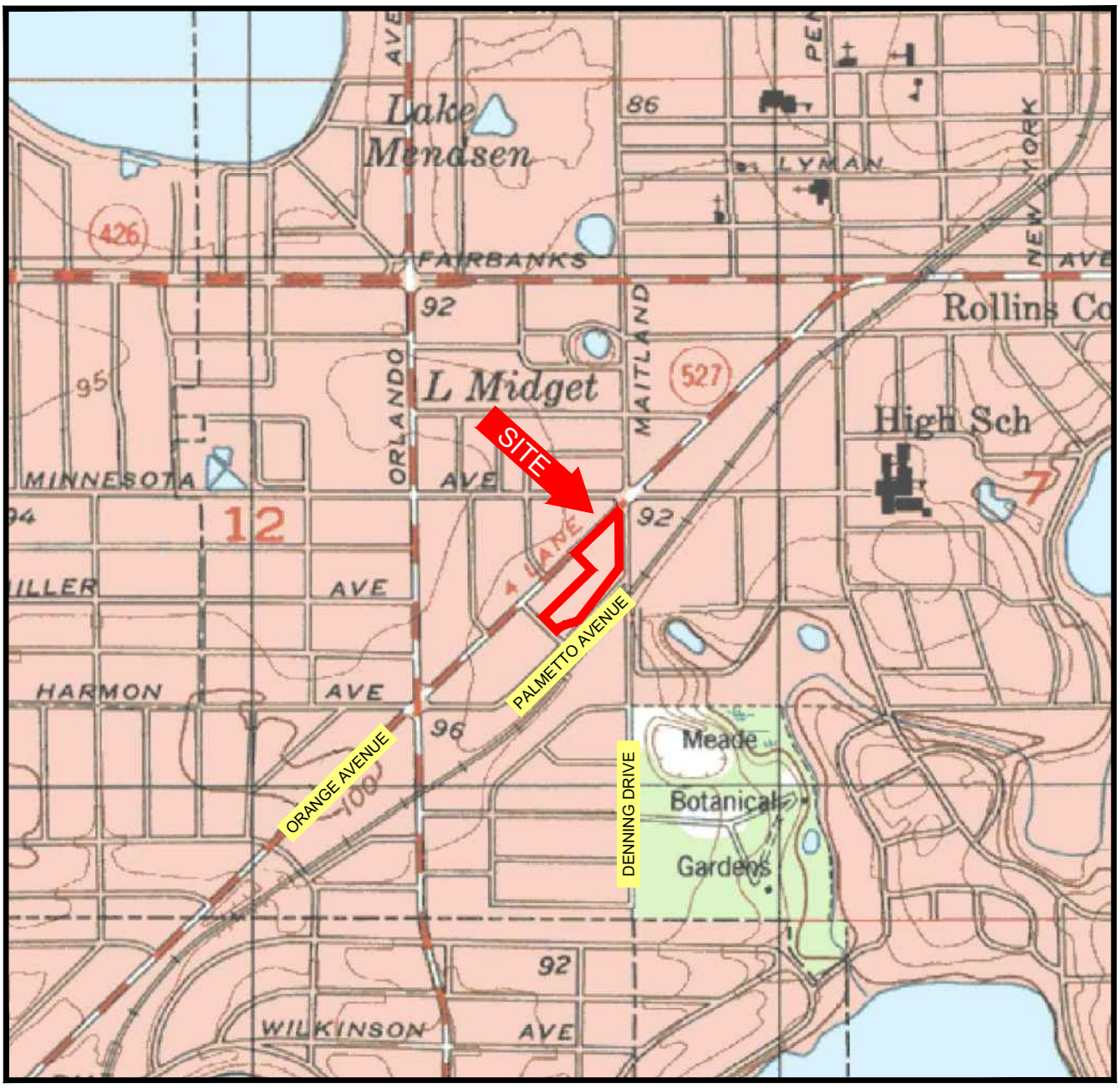
SITE LOCATION AND EXPLORATION PLANS

Contents:

Topographic Vicinity Map
Soils Map
Location Plan

Note: All attachments are one page unless noted above.

UNITED STATES – DEPARTMENT OF THE INTERIOR – GEOLOGICAL SURVEY



SCALE 1"=1000'

FEET

500 0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000

ORLANDO EAST, FLORIDA
ISSUED: 1994
7.5 MINUTE SERIES (QUADRANGLE)

N

N:\Projects\2021\H1215155\PROJECT DOCUMENTS (Reports-Letters-Drafts to Clients)\Cad\H1215155 Quad Map.dwg

Project Mngr:	LR
Drawn By:	AS
Checked By:	LR
Approved By:	JWC

Project No.	H1215155
Scale:	AS SHOWN
File No.	H1215155
Date:	5-27-21

Terracon
Consulting Engineers and Scientists
1675 LEE ROAD WINTER PARK, FLORIDA 32789
PH. (407) 740-6110 FAX. (407) 740-6112

TOPOGRAPHIC VICINITY MAP

GEOTECHNICAL ENGINEERING REPORT
PROGRESS POINT
1211 PALMETTO AVENUE
WINTER PARK, ORANGE COUNTY, FLORIDA

EXHIBIT

SCALE 1"=1000'

FEET

500 0 500 1000 1500 2000 2500 3000 3500 4000 4500 5000

U.S.D.A. SOIL SURVEY FOR ORANGE COUNTY, FLORIDA

N

SOIL LEGEND

50 URBAN LAND, 0 TO 2 PERCENT SLOPES

Project Mngr:	LR
Drawn By:	AS
Checked By:	LR
Approved By:	JWC
Project No.	H1215155
Scale:	AS SHOWN
File No.	H1215155
Date:	5-27-21

Terracon
Consulting Engineers and Scientists
1675 LEE ROAD WINTER PARK, FLORIDA 32789
PH. (407) 740-6110 FAX. (407) 740-6112

SOILS MAP

GEOTECHNICAL ENGINEERING REPORT
PROGRESS POINT
1211 PALMETTO AVENUE
WINTER PARK, ORANGE COUNTY, FLORIDA

EXHIBIT

N:\Projects\2021\H1215155\PROJECT DOCUMENTS (Reports-Letters-Drafts to Clients)\Cad\H1215155 Soil Map.dwg

N

APPROXIMATE SCALE IN FEET

0 40 80

CPT-1
CPT-2
CPT-3
CPT-4
CPT-5
CPT-6
CPT-7
CPT-8
CPT-9
CPT-10
CPT-12
CPT-13
CPT-14
CPT-15
CPT-16
CPT-17
CPT-18
CPT-19
CPT-20
AB-1
AB-2
AB-3
AB-4

ORANGE AVENUE
PALMETTO AVENUE
CYPRESS AVENUE

SITE A
TOTAL LAND AREA
3.44 ACRES

GROUND LEVEL 5,700 BGSF
MEZZANINE LEVEL 3,000 BGSF
MEZZANINE LEVEL 1,900 BGSF
GROUND LEVEL 8,700 BGSF
GROUND LEVEL 5,700 BGSF

LEGEND

APPROXIMATE LOCATION OF CONE PENETRATION TEST

APPROXIMATE LOCATION OF AUGER BORING

Project Mngr:	LR
Drawn By:	AS
Checked By:	LR
Approved By:	JWC

Project No.	H1215155
Scale:	AS SHOWN
File No.	H1215155
Date:	6-2-21

Terracon
Consulting Engineers and Scientists
1675 LEE ROAD WINTER PARK, FLORIDA 32789
PH. (407) 740-8110 FAX. (407) 740-8112

LOCATION PLAN

GEOTECHNICAL ENGINEERING REPORT
PROGRESS POINT

1211 PALMETTO AVENUE
WINTER PARK, ORANGE COUNTY, FLORIDA

EXHIBIT

EXPLORATION RESULTS

Contents:

Cone Sounding Logs (CPT-1 through CPT-20) (19 pages)
Auger Boring Logs (AB-1 through AB-4) (4 pages)

Note: All attachments are one page unless noted above.

CPT LOG NO. CPT-1

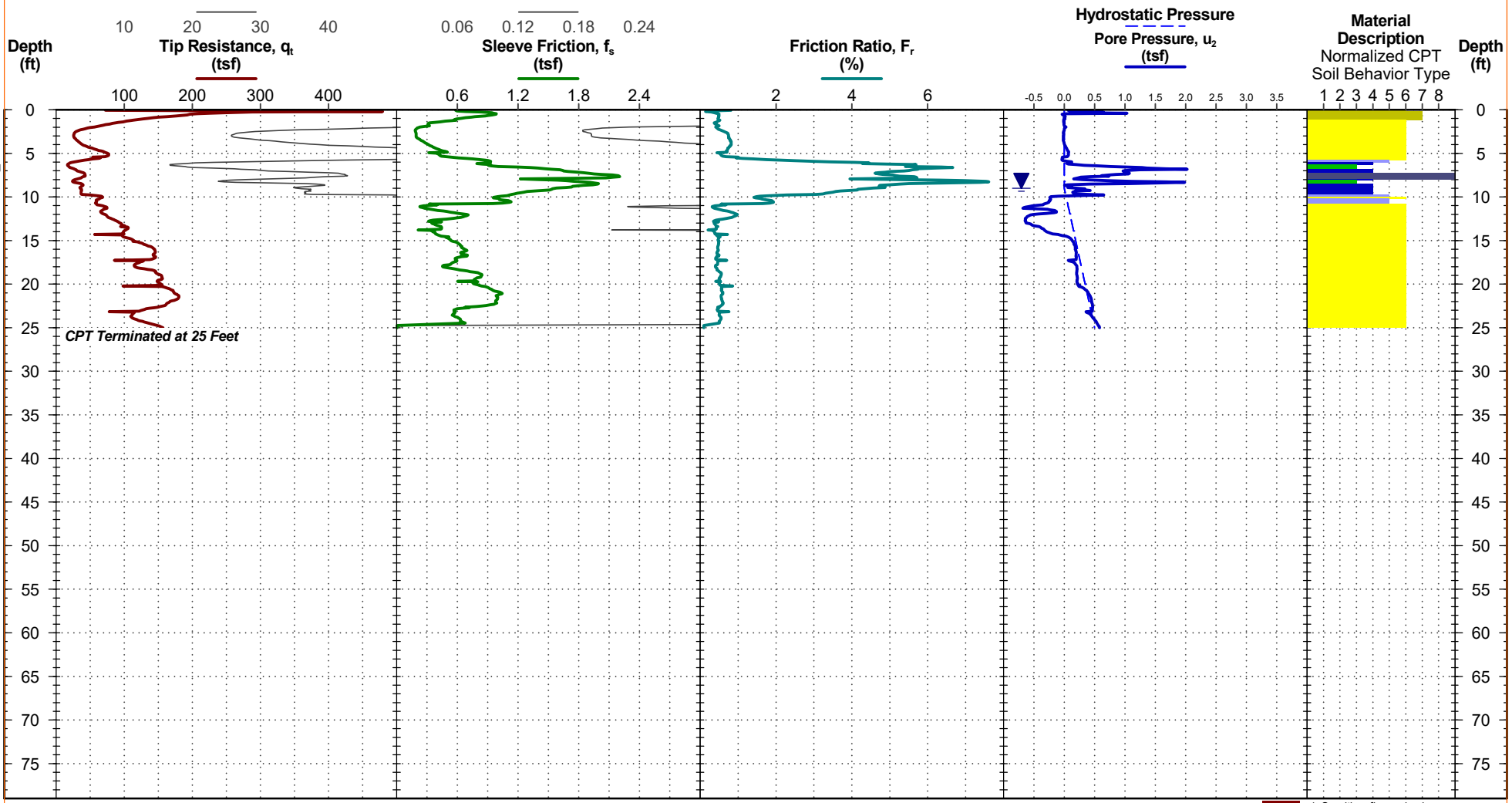
PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

TEST LOCATION: See Exploration Plan

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

Latitude: 28.58836788°
Longitude: -81.36184375°



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

WATER LEVEL OBSERVATION

9 ft measured water depth
(used in normalizations and correlations; See Supporting Information)

Probe no. DDG1469 with net area ratio of .8
U2 pore pressure transducer location
Manufactured by Vertek; calibrated 3/5/2019
Tip and sleeve areas of 15 cm^2 and 225 cm^2
Ring friction reducer with O.D. of 2.0 in

Terracon
1675 Lee Rd
Winter Park, FL

CPT Started: 6/4/2021
CPT Completed: 6/4/2021
Rig:
Operator: TYLER EVANS
Project No.: H1215155

CPT LOG NO. CPT-2

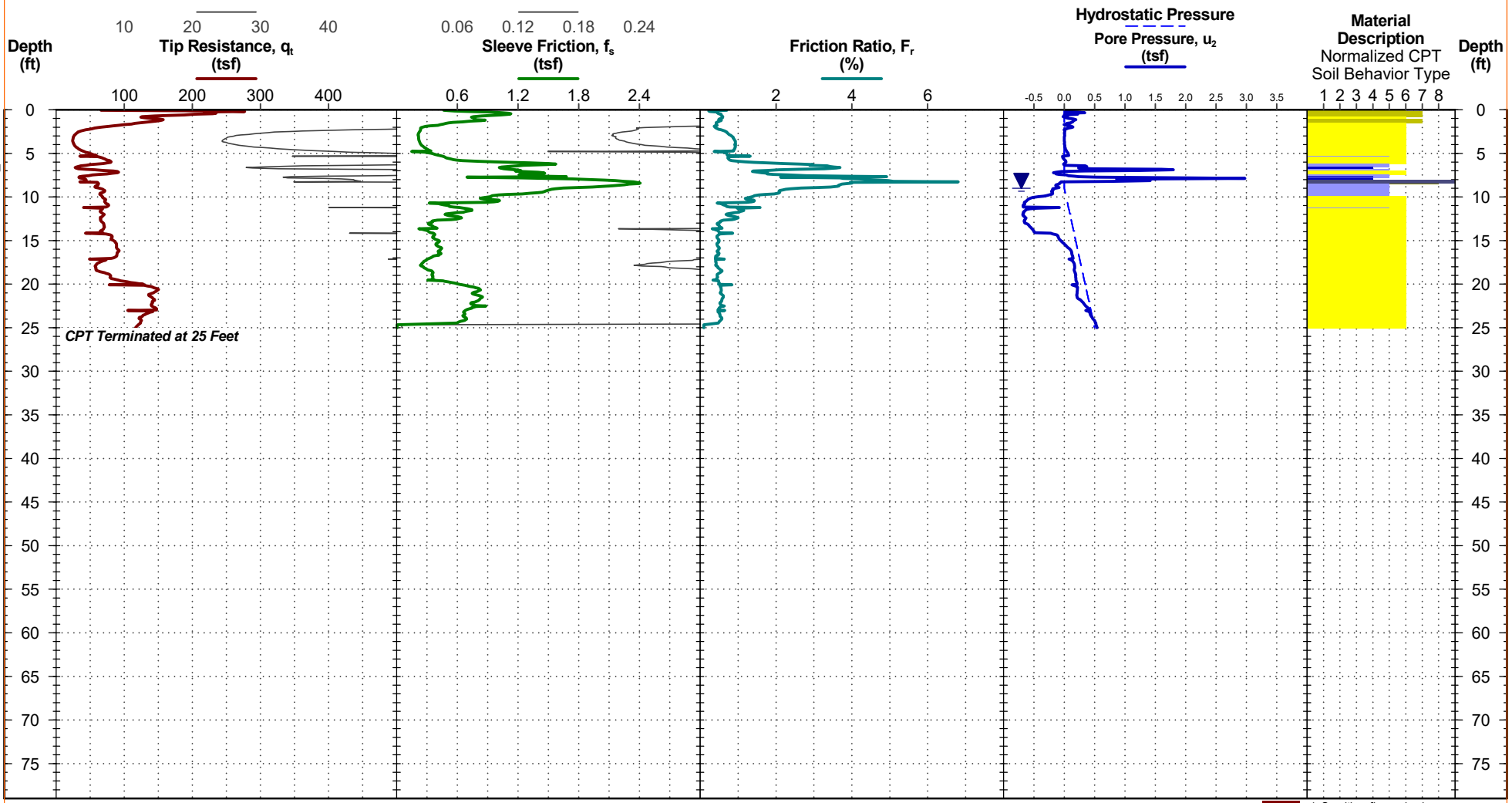
PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

TEST LOCATION: See Exploration Plan

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

Latitude: 28.58844504°
Longitude: -81.3617403°



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
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8 Very stiff sand to clayey sand
9 Very stiff fine grained

WATER LEVEL OBSERVATION

▼ 9 ft measured water depth
(used in normalizations and correlations; See Supporting Information)

Probe no. DDG1469 with net area ratio of .8
U2 pore pressure transducer location
Manufactured by Vertek; calibrated 3/5/2019
Tip and sleeve areas of 15 cm^2 and 225 cm^2
Ring friction reducer with O.D. of 2.0 in

Terracon
1675 Lee Rd
Winter Park, FL

CPT Started: 6/4/2021
CPT Completed: 6/4/2021
Rig:
Operator: TYLER EVANS
Project No.: H1215155

CPT LOG NO. CPT-3

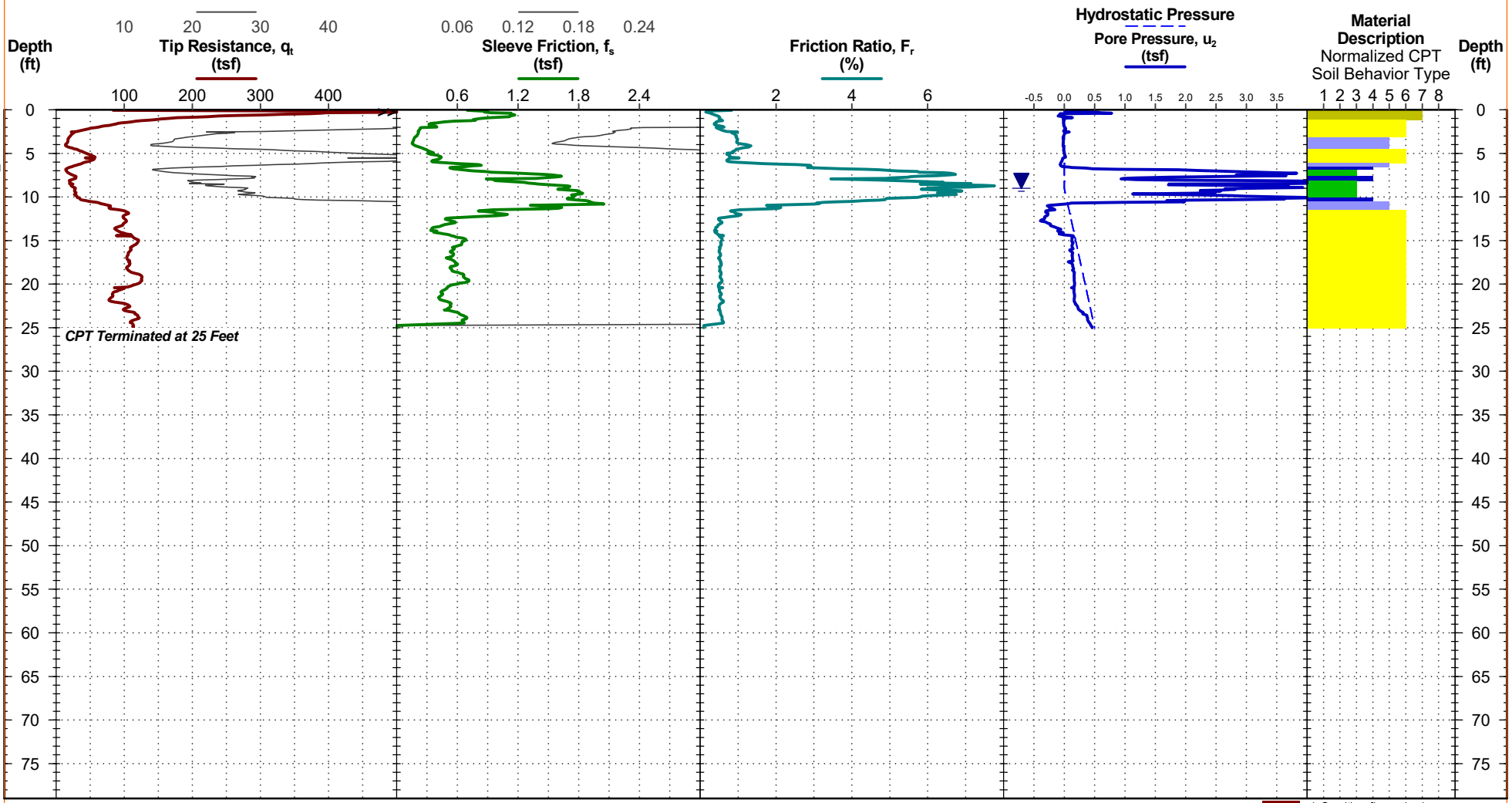
PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

TEST LOCATION: See Exploration Plan

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

Latitude: 28.58821551°
Longitude: -81.36169804°



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
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8 Very stiff sand to clayey sand
9 Very stiff fine grained

WATER LEVEL OBSERVATION

▼ 9 ft measured water depth
(used in normalizations and correlations; See Supporting Information)

Probe no. DDG1469 with net area ratio of .8
U2 pore pressure transducer location
Manufactured by Vertek; calibrated 3/5/2019
Tip and sleeve areas of 15 cm^2 and 225 cm^2
Ring friction reducer with O.D. of 2.0 in

Terracon
1675 Lee Rd
Winter Park, FL

CPT Started: 6/4/2021
CPT Completed: 6/4/2021
Rig:
Operator: TYLER EVANS
Project No.: H1215155

CPT LOG NO. CPT-4

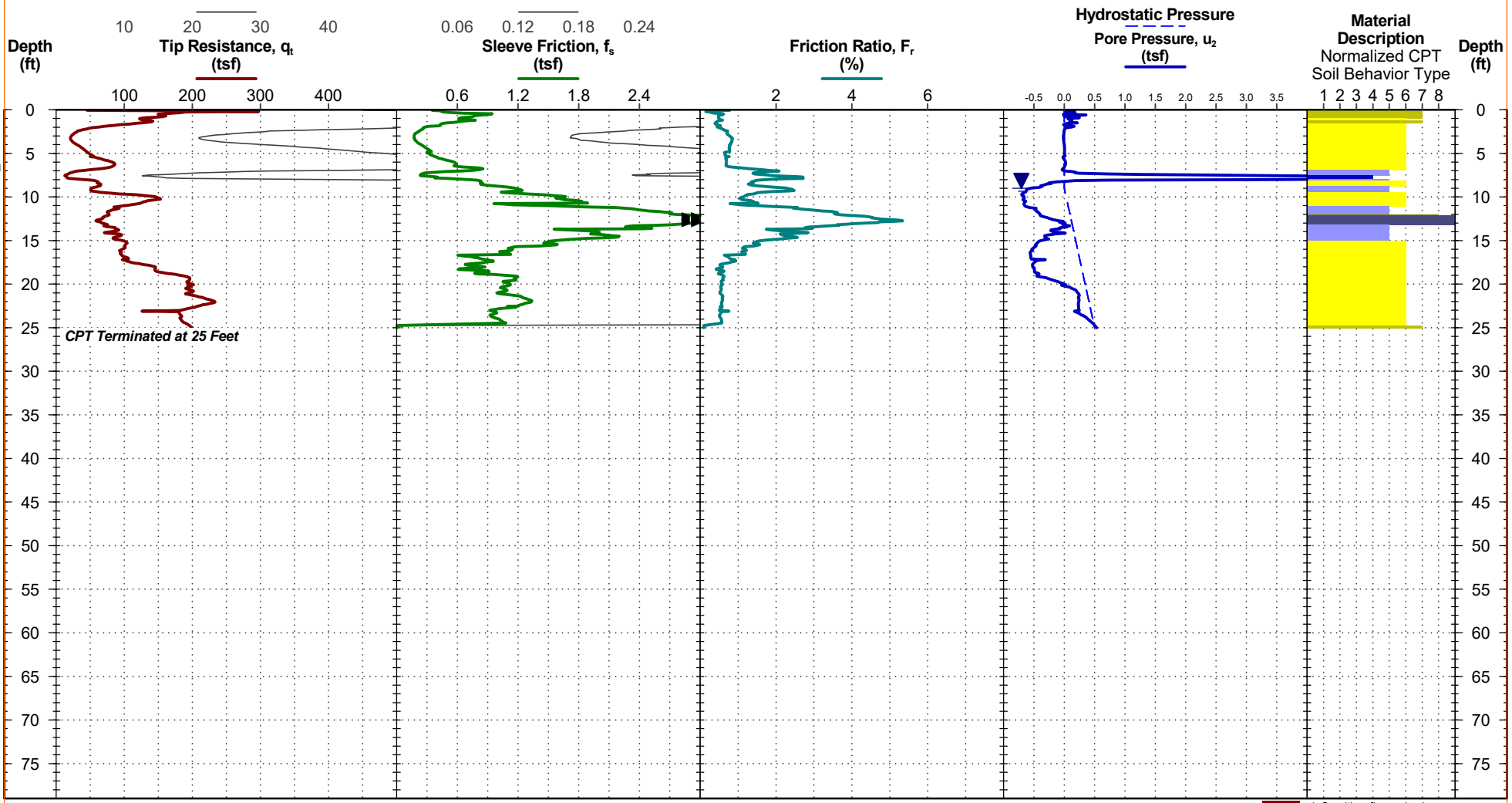
PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

TEST LOCATION: See Exploration Plan

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

Latitude: 28.58832002°
Longitude: -81.36158903°



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
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8 Very stiff sand to clayey sand
9 Very stiff fine grained

WATER LEVEL OBSERVATION

▼ 9 ft measured water depth
(used in normalizations and correlations; See Supporting Information)

Probe no. DDG1469 with net area ratio of .8
U2 pore pressure transducer location
Manufactured by Vertek; calibrated 3/5/2019
Tip and sleeve areas of 15 cm^2 and 225 cm^2
Ring friction reducer with O.D. of 2.0 in

Terracon
1675 Lee Rd
Winter Park, FL

CPT Started: 6/4/2021
CPT Completed: 6/4/2021
Rig:
Operator: TYLER EVANS
Project No.: H1215155

CPT LOG NO. CPT-5

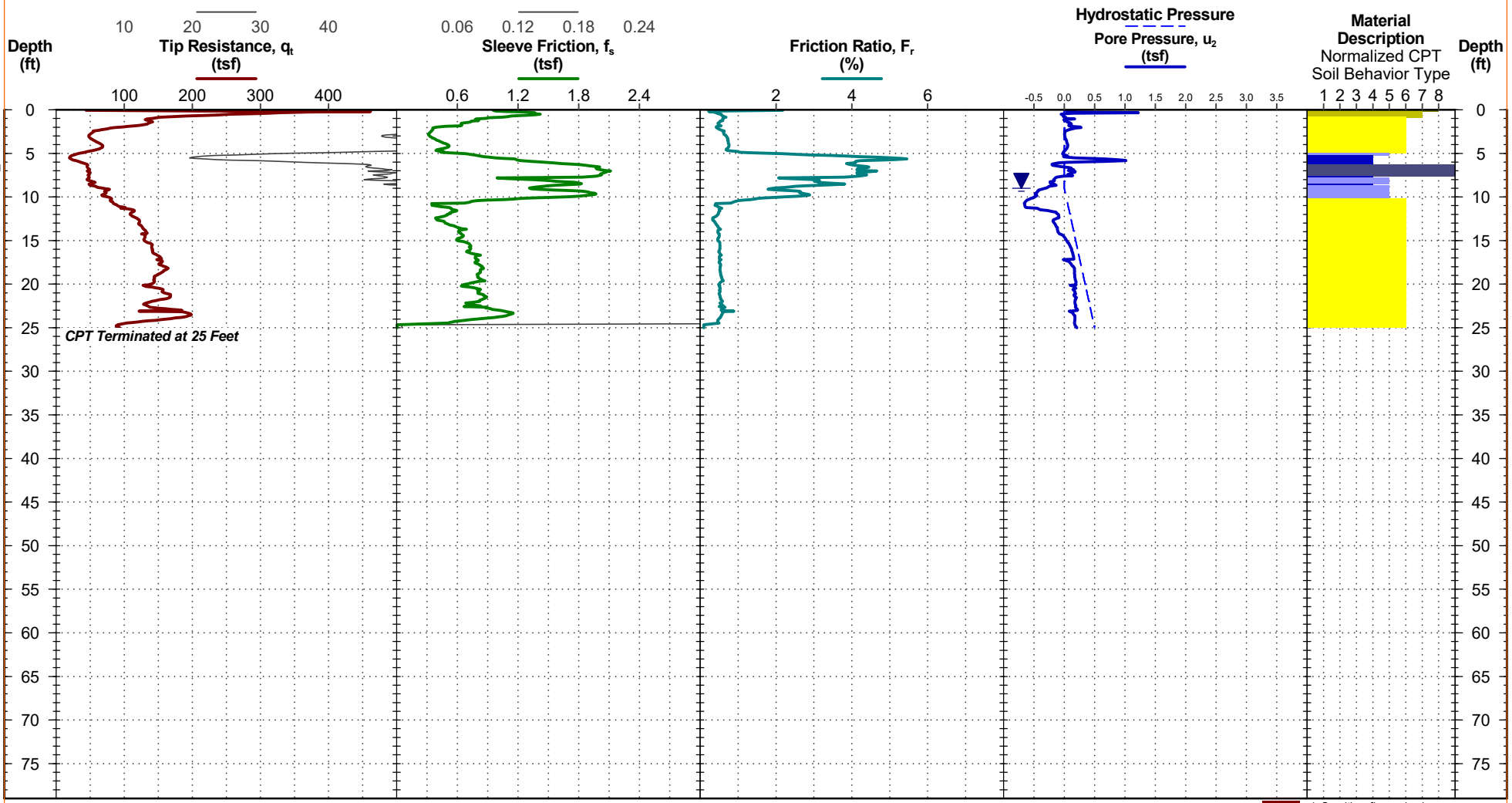
PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

TEST LOCATION: See Exploration Plan

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

Latitude: 28.58792347°
Longitude: -81.36170026°



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
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8 Very stiff sand to clayey sand
9 Very stiff fine grained

WATER LEVEL OBSERVATION

▼ 9 ft measured water depth
(used in normalizations and correlations; See Supporting Information)

Probe no. DDG1469 with net area ratio of .8
U2 pore pressure transducer location
Manufactured by Vertek; calibrated 3/5/2019
Tip and sleeve areas of 15 cm^2 and 225 cm^2
Ring friction reducer with O.D. of 2.0 in

Terracon
1675 Lee Rd
Winter Park, FL

CPT Started: 6/3/2021
CPT Completed: 6/3/2021
Rig:
Operator: TYLER EVANS
Project No.: H1215155

CPT LOG NO. CPT-6

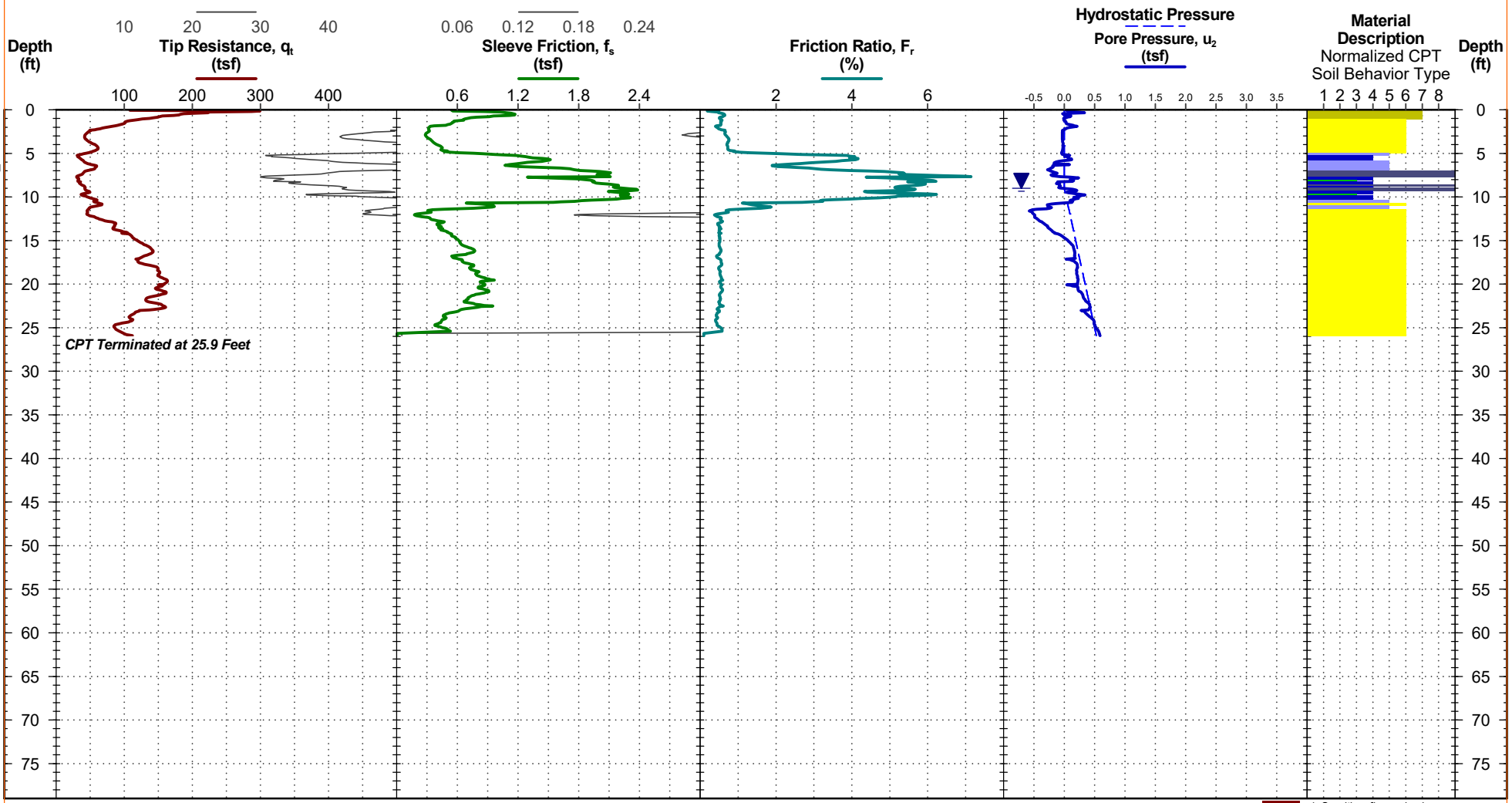
PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

TEST LOCATION: See Exploration Plan

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

Latitude: 28.58803189°
Longitude: -81.36158569°



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
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8 Very stiff sand to clayey sand
9 Very stiff fine grained

WATER LEVEL OBSERVATION

▼ 9 ft measured water depth
(used in normalizations and correlations; See Supporting Information)

Probe no. DDG1469 with net area ratio of .8
U2 pore pressure transducer location
Manufactured by Vertek; calibrated 3/5/2019
Tip and sleeve areas of 15 cm^2 and 225 cm^2
Ring friction reducer with O.D. of 2.0 in

Terracon
1675 Lee Rd
Winter Park, FL

CPT Started: 6/3/2021
CPT Completed: 6/3/2021
Rig:
Operator: TYLER EVANS
Project No.: H1215155

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. CPT REPORT H1215155 PROGRESS POINT.GPJ TERRACON_DATATEMPLATE.GDT 6/7/21

CPT LOG NO. CPT-7

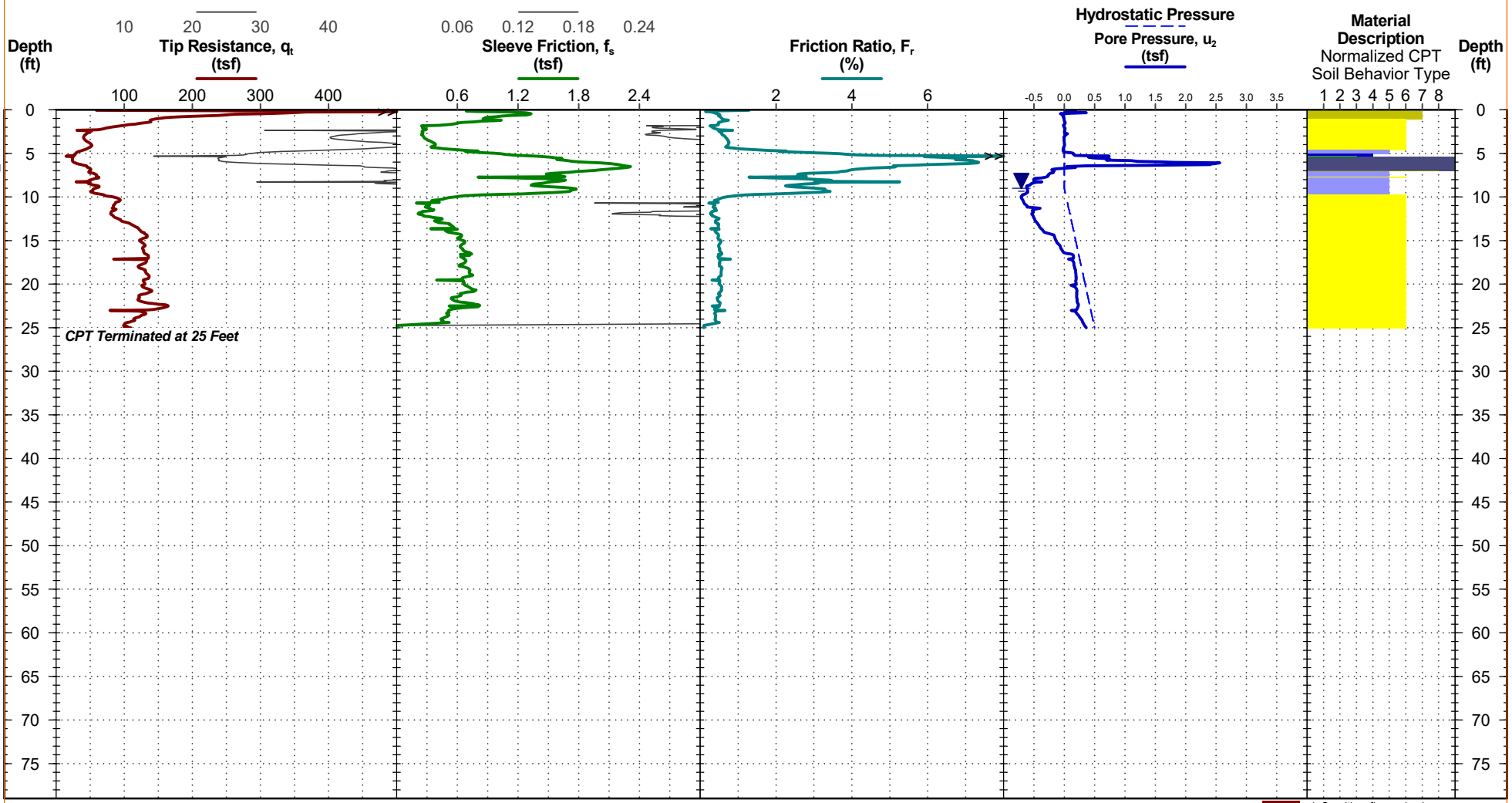
PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

TEST LOCATION: See Exploration Plan

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

Latitude: 28.58805435°
Longitude: -81.36151673°



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
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8 Very stiff sand to clayey sand
9 Very stiff fine grained

WATER LEVEL OBSERVATION

▼ 9 ft measured water depth
(used in normalizations and correlations; See Supporting Information)

Probe no. DDG1469 with net area ratio of .8
U2 pore pressure transducer location
Manufactured by Vertek; calibrated 3/5/2019
Tip and sleeve areas of 15 cm^2 and 225 cm^2
Ring friction reducer with O.D. of 2.0 in

Terracon
1675 Lee Rd
Winter Park, FL

CPT Started: 6/3/2021
CPT Completed: 6/3/2021
Rig:
Operator: TYLER EVANS
Project No.: H1215155

CPT LOG NO. CPT-8

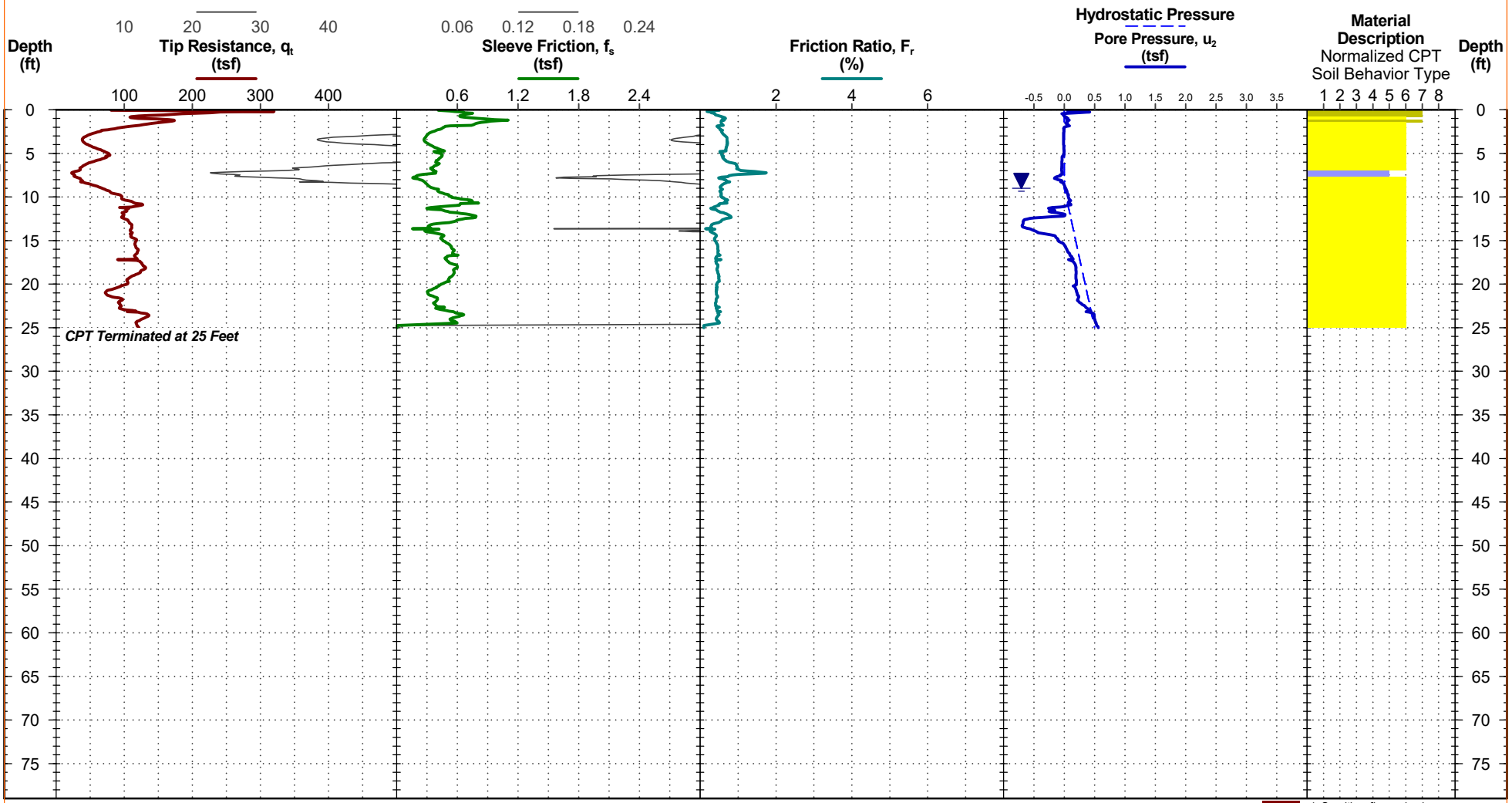
PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

TEST LOCATION: See Exploration Plan

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

Latitude: 28.58815691°
Longitude: -81.36139771°



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
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WATER LEVEL OBSERVATION

▼ 9 ft measured water depth
(used in normalizations and correlations; See Supporting Information)

Probe no. DDG1469 with net area ratio of .8
U2 pore pressure transducer location
Manufactured by Vertek; calibrated 3/5/2019
Tip and sleeve areas of 15 cm^2 and 225 cm^2
Ring friction reducer with O.D. of 2.0 in

Terracon
1675 Lee Rd
Winter Park, FL

CPT Started: 6/4/2021
CPT Completed: 6/4/2021
Rig:
Operator: TYLER EVANS
Project No.: H1215155

CPT LOG NO. CPT-9

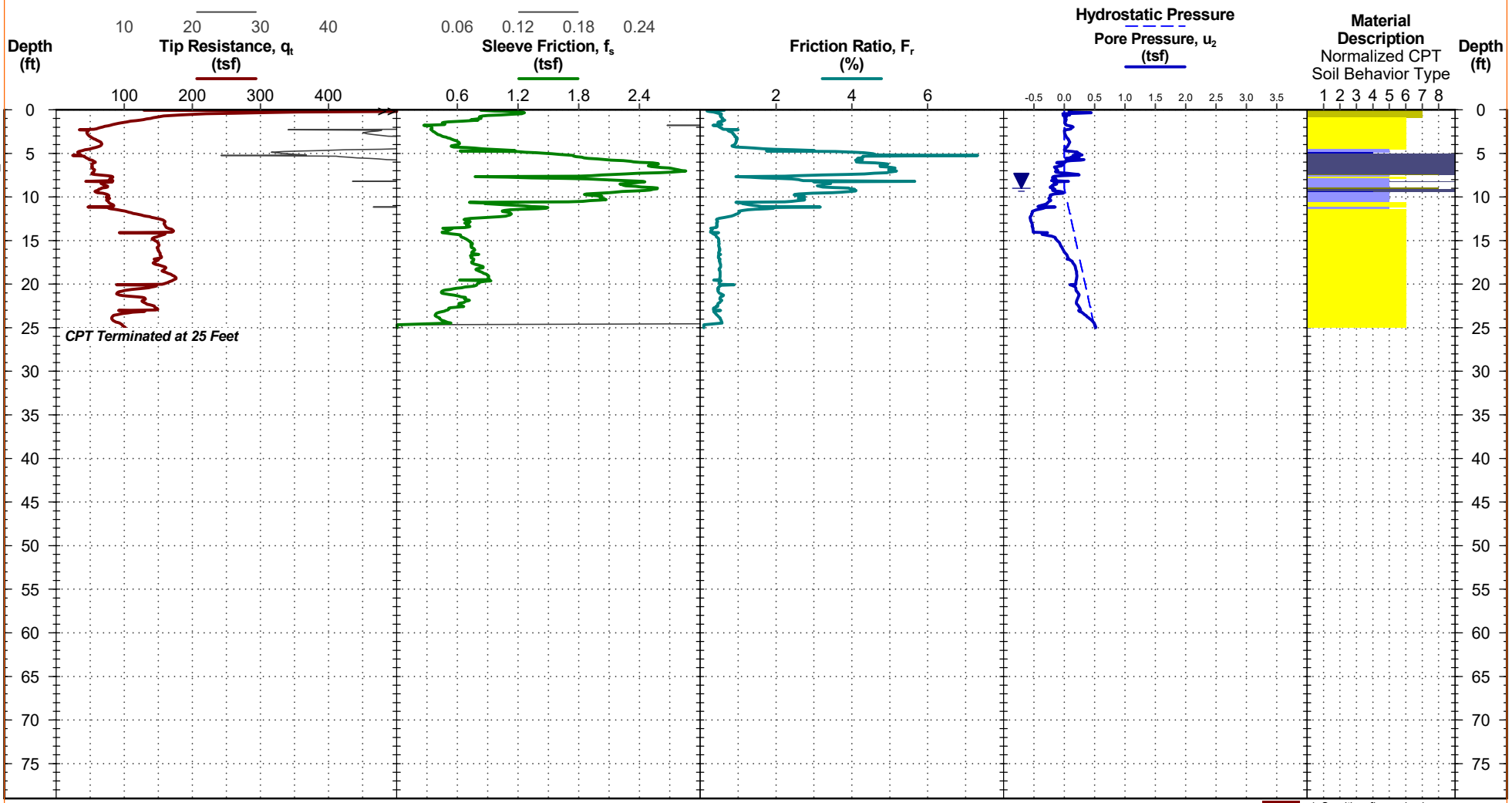
PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

TEST LOCATION: See Exploration Plan

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

Latitude: 28.58789515°
Longitude: -81.36142218°



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
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8 Very stiff sand to clayey sand
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WATER LEVEL OBSERVATION

9 ft measured water depth
(used in normalizations and correlations; See Supporting Information)

Probe no. DDG1469 with net area ratio of .8
U2 pore pressure transducer location
Manufactured by Vertek; calibrated 3/5/2019
Tip and sleeve areas of 15 cm^2 and 225 cm^2
Ring friction reducer with O.D. of 2.0 in

Terracon
1675 Lee Rd
Winter Park, FL

CPT Started: 6/3/2021
CPT Completed: 6/3/2021
Rig:
Operator: TYLER EVANS
Project No.: H1215155

CPT LOG NO. CPT-10

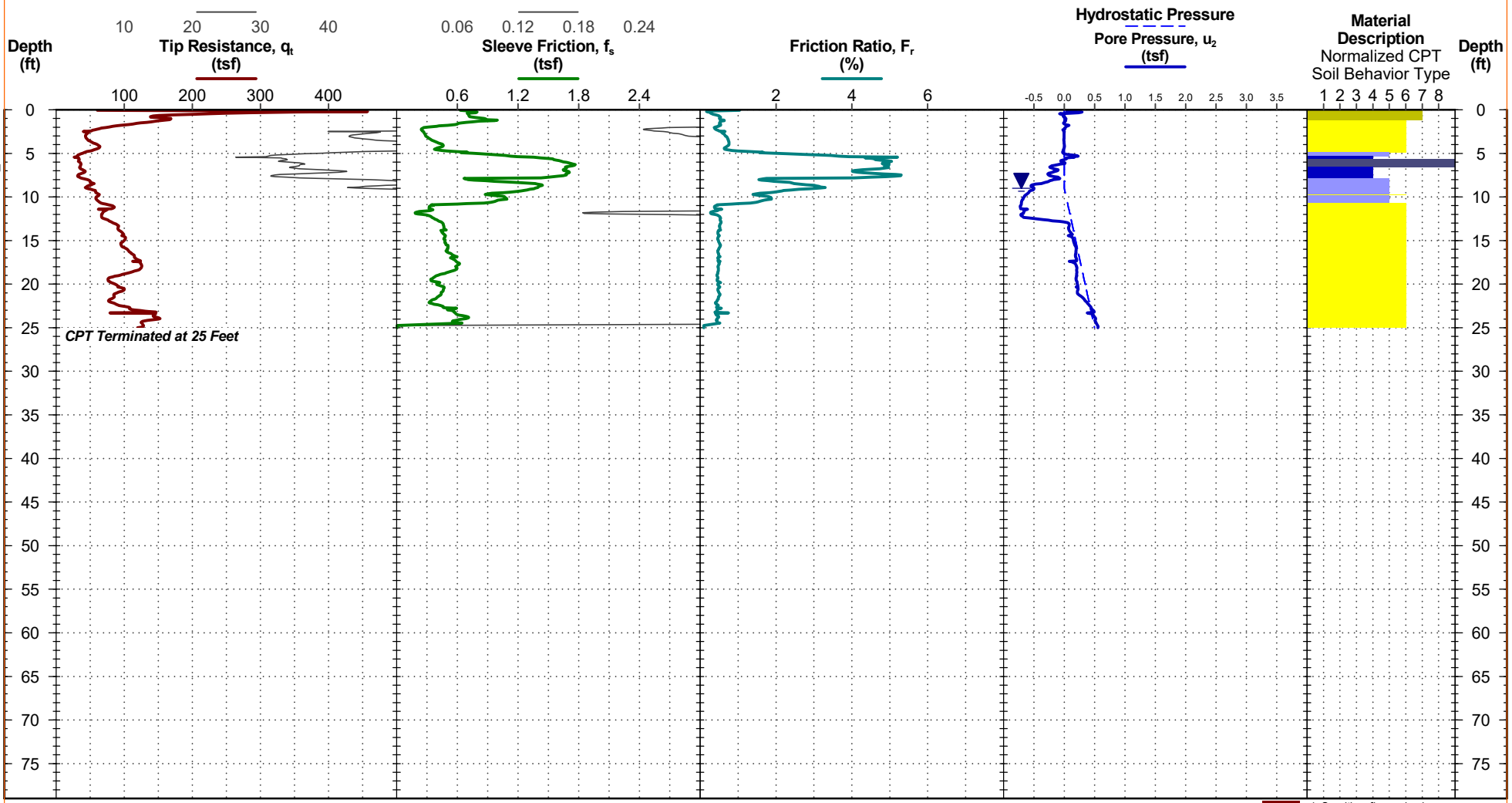
PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

TEST LOCATION: See Exploration Plan

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

Latitude: 28.58807487°
Longitude: -81.3612976°



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

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WATER LEVEL OBSERVATION

▼ 9 ft measured water depth
(used in normalizations and correlations; See Supporting Information)

Probe no. DDG1469 with net area ratio of .8
U2 pore pressure transducer location
Manufactured by Vertek; calibrated 3/5/2019
Tip and sleeve areas of 15 cm^2 and 225 cm^2
Ring friction reducer with O.D. of 2.0 in

Terracon
1675 Lee Rd
Winter Park, FL

CPT Started: 6/4/2021
CPT Completed: 6/4/2021
Rig:
Operator: TYLER EVANS
Project No.: H1215155

CPT LOG NO. CPT-12

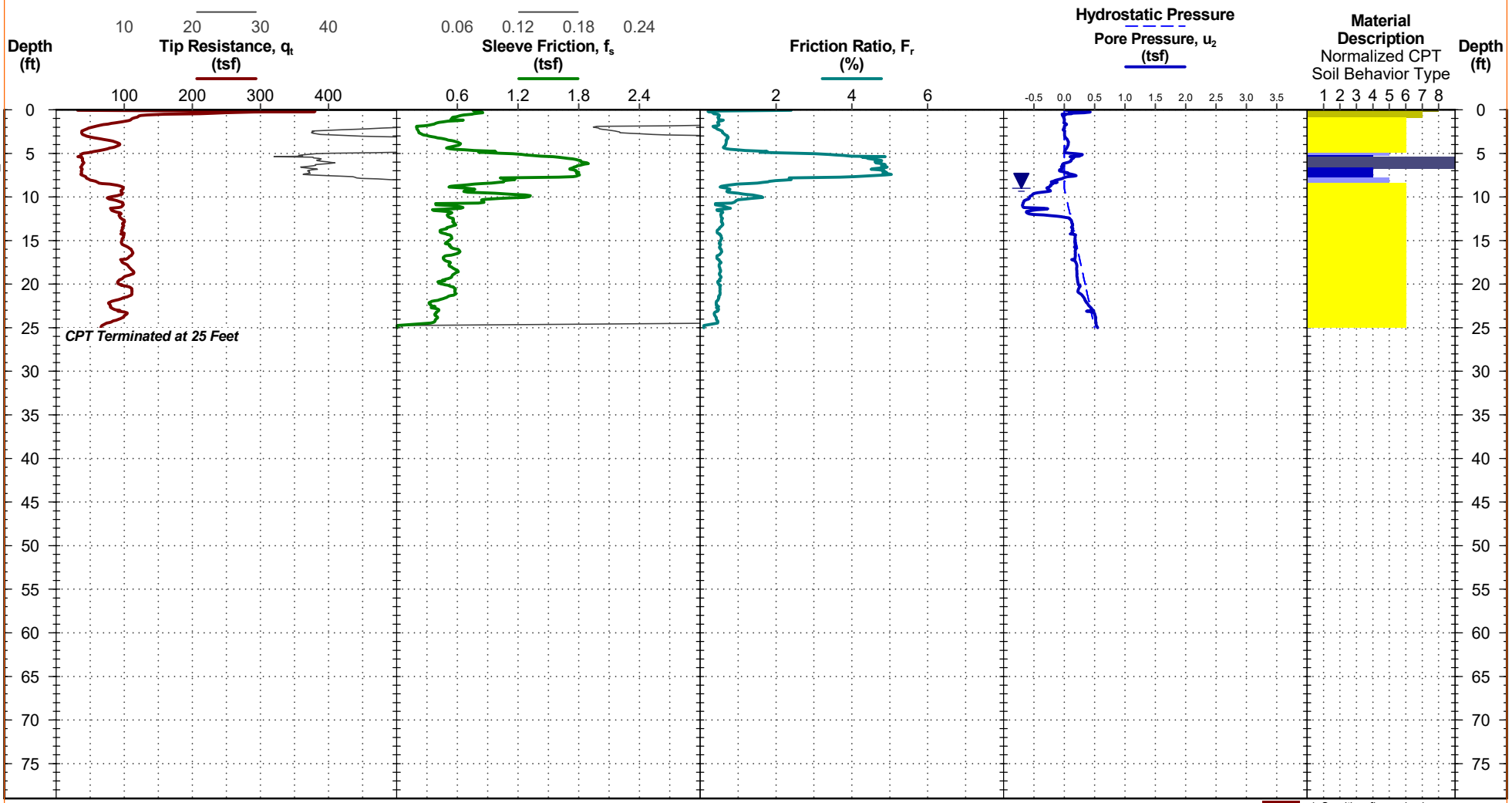
PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

TEST LOCATION: See Exploration Plan

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

Latitude: 28.58812482°
Longitude: -81.36115809°



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

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WATER LEVEL OBSERVATION

▼ 9 ft measured water depth
(used in normalizations and correlations; See Supporting Information)

Probe no. DDG1469 with net area ratio of .8
U2 pore pressure transducer location
Manufactured by Vertek; calibrated 3/5/2019
Tip and sleeve areas of 15 cm^2 and 225 cm^2
Ring friction reducer with O.D. of 2.0 in

Terracon
1675 Lee Rd
Winter Park, FL

CPT Started: 6/4/2021
CPT Completed: 6/4/2021
Rig:
Operator: TYLER EVANS
Project No.: H1215155

CPT LOG NO. CPT-13

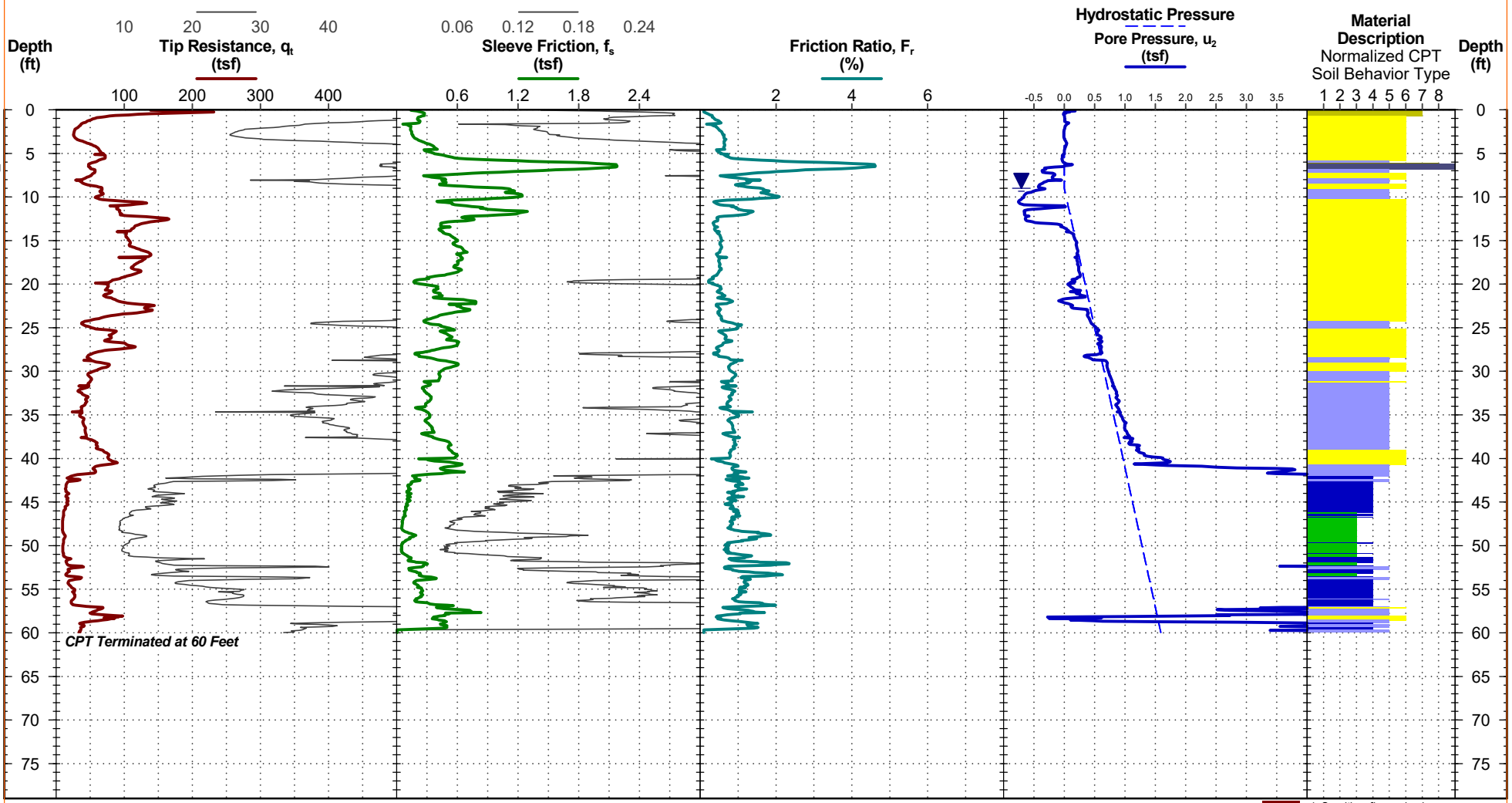
PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

TEST LOCATION: See Exploration Plan

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

Latitude: 28.58733549°
Longitude: -81.36242439°



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
2 Organic soils - clay
3 Clay - silty clay to clay
4 Silt mixtures - clayey silt to silty clay
5 Sand mixtures - silty sand to sandy silt
6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

WATER LEVEL OBSERVATION

▼ 9 ft measured water depth
(used in normalizations and correlations; See Supporting Information)

Probe no. DDG1469 with net area ratio of .8
U2 pore pressure transducer location
Manufactured by Vertek; calibrated 3/5/2019
Tip and sleeve areas of 15 cm^2 and 225 cm^2
Ring friction reducer with O.D. of 2.0 in

Terracon
1675 Lee Rd
Winter Park, FL

CPT Started: 6/7/2021
CPT Completed: 6/7/2021
Rig:
Operator: TYLER EVANS
Project No.: H1215155

CPT LOG NO. CPT-14

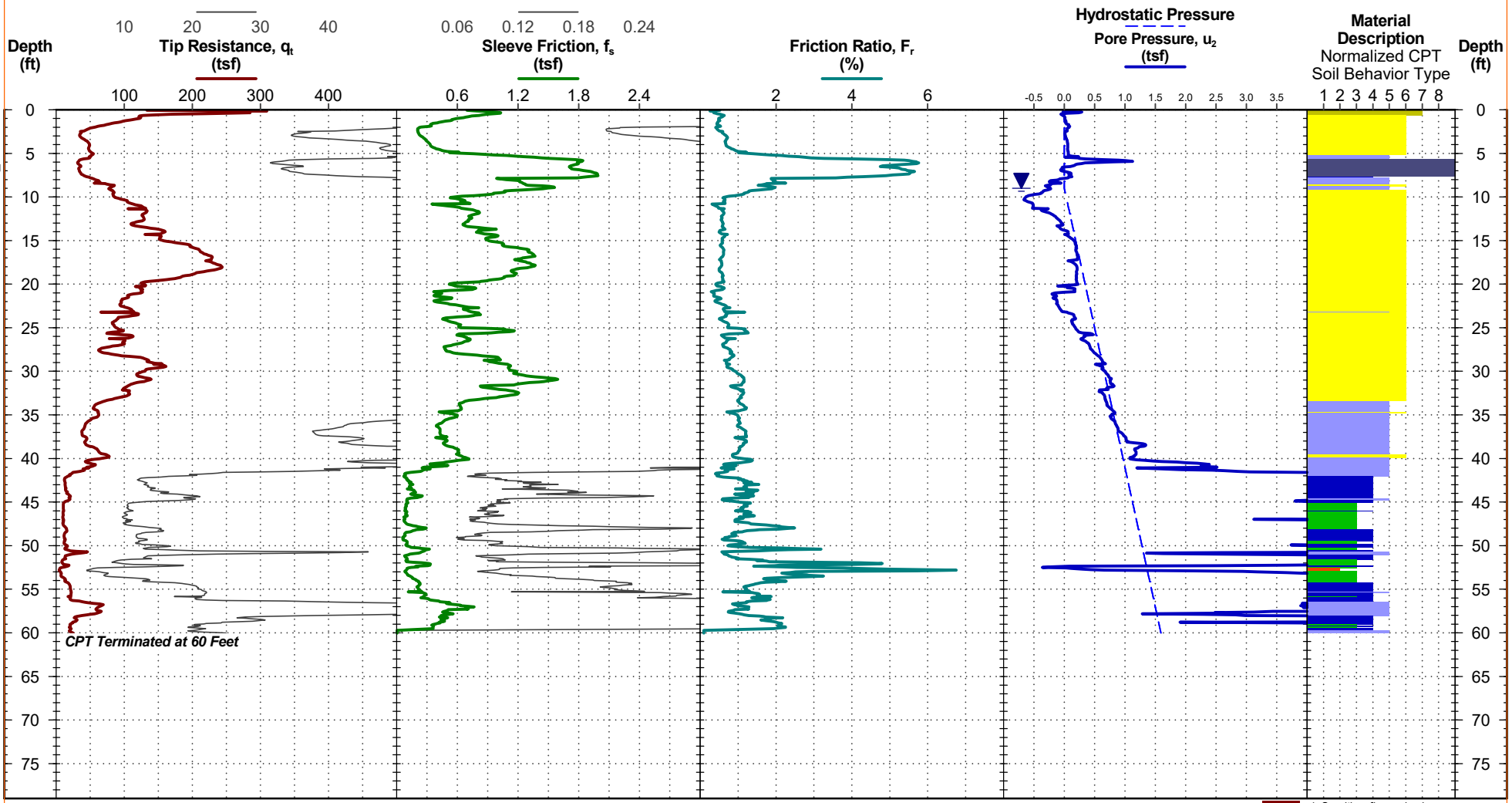
PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

TEST LOCATION: See Exploration Plan

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

Latitude: 28.58754451°
Longitude: -81.36213518°



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

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6 Sands - clean sand to silty sand
7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

WATER LEVEL OBSERVATION

▼ 9 ft measured water depth
(used in normalizations and correlations; See Supporting Information)

Probe no. DDG1469 with net area ratio of .8
U2 pore pressure transducer location
Manufactured by Vertek; calibrated 3/5/2019
Tip and sleeve areas of 15 cm^2 and 225 cm^2
Ring friction reducer with O.D. of 2.0 in

Terracon
1675 Lee Rd
Winter Park, FL

CPT Started: 6/7/2021
CPT Completed: 6/7/2021
Rig:
Operator: TYLER EVANS
Project No.: H1215155

CPT LOG NO. CPT-15

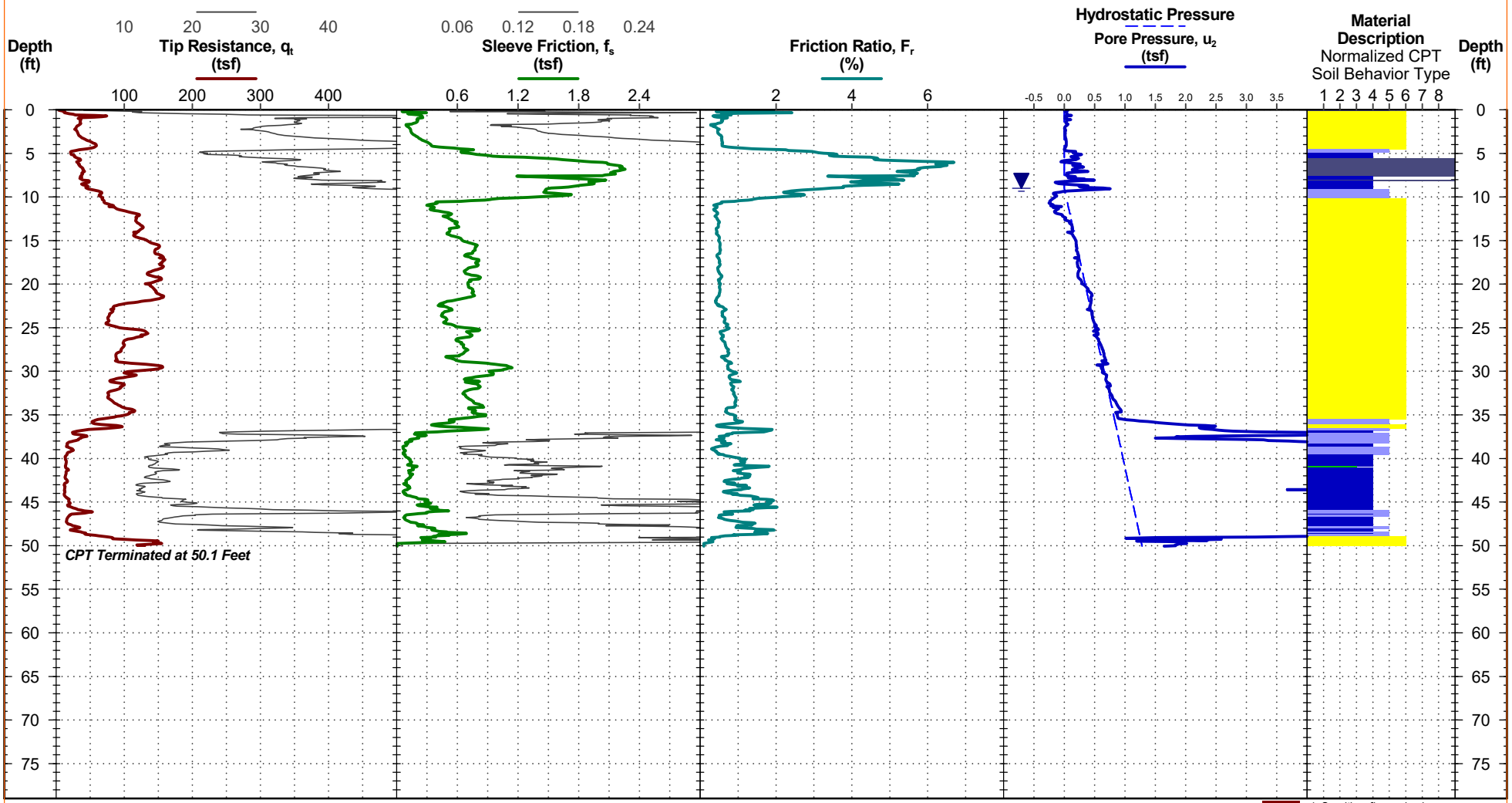
PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

TEST LOCATION: See Exploration Plan

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

Latitude: 28.58780041°
Longitude: -81.36178813°



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

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7 Gravelly sand to dense sand
8 Very stiff sand to clayey sand
9 Very stiff fine grained

WATER LEVEL OBSERVATION

9 ft measured water depth
(used in normalizations and correlations; See Supporting Information)

Probe no. DDG1469 with net area ratio of .8
U2 pore pressure transducer location
Manufactured by Vertek; calibrated 3/5/2019
Tip and sleeve areas of 15 cm^2 and 225 cm^2
Ring friction reducer with O.D. of 2.0 in

Terracon
1675 Lee Rd
Winter Park, FL

CPT Started: 6/3/2021
CPT Completed: 6/3/2021
Rig:
Operator: TYLER EVANS
Project No.: H1215155

CPT LOG NO. CPT-16

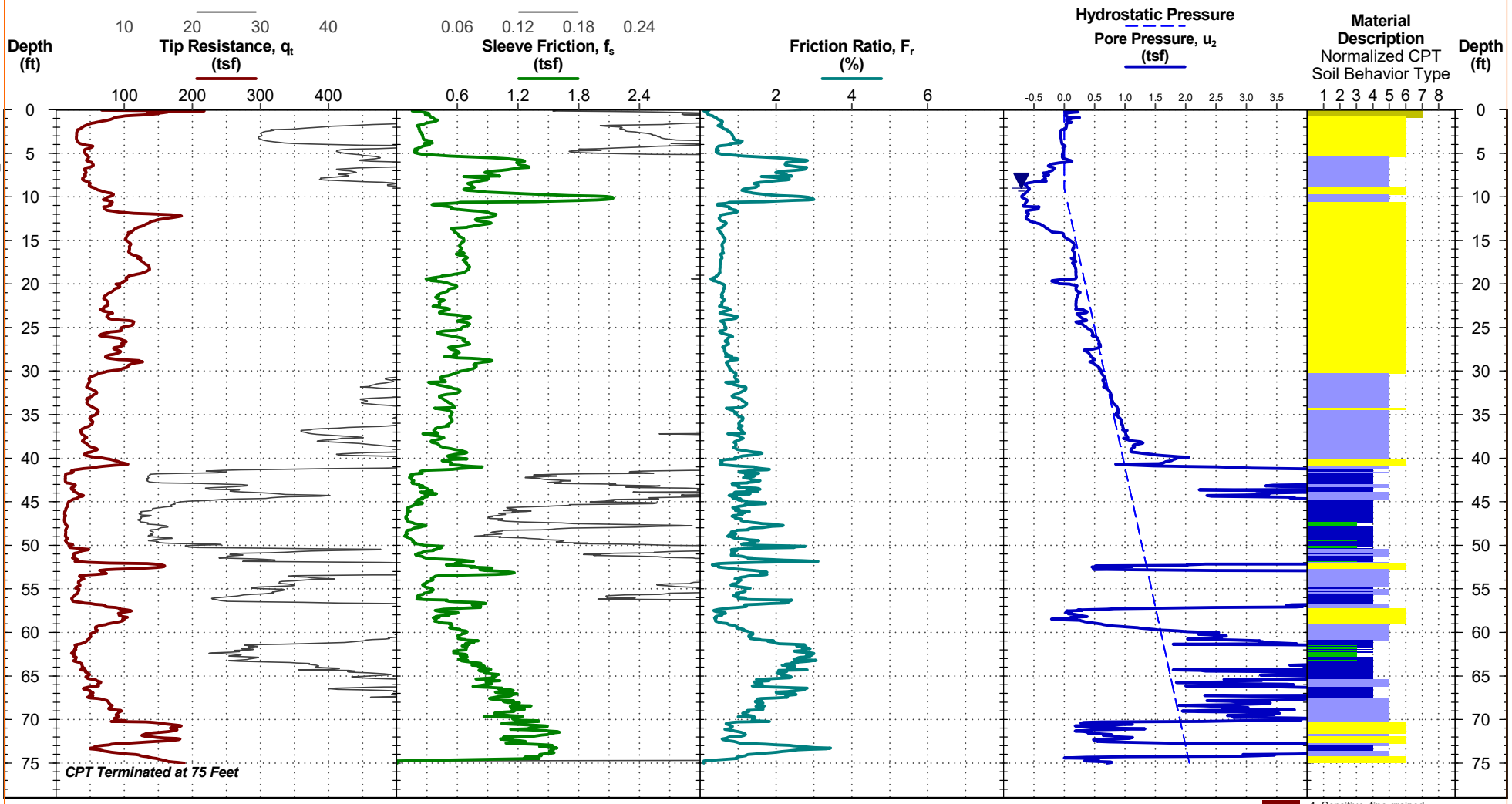
PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

TEST LOCATION: See Exploration Plan

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

Latitude: 28.58730716°
Longitude: -81.36219747°



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
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6 Sands - clean sand to silty sand
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8 Very stiff sand to clayey sand
9 Very stiff fine grained

WATER LEVEL OBSERVATION

▼ 9 ft measured water depth
(used in normalizations and correlations; See Supporting Information)

Probe no. DDG1469 with net area ratio of .8
U2 pore pressure transducer location
Manufactured by Vertek; calibrated 3/5/2019
Tip and sleeve areas of 15 cm^2 and 225 cm^2
Ring friction reducer with O.D. of 2.0 in

Terracon
1675 Lee Rd
Winter Park, FL

CPT Started: 6/3/2021
CPT Completed: 6/3/2021
Rig:
Operator: TYLER EVANS
Project No.: H1215155

CPT LOG NO. CPT-17

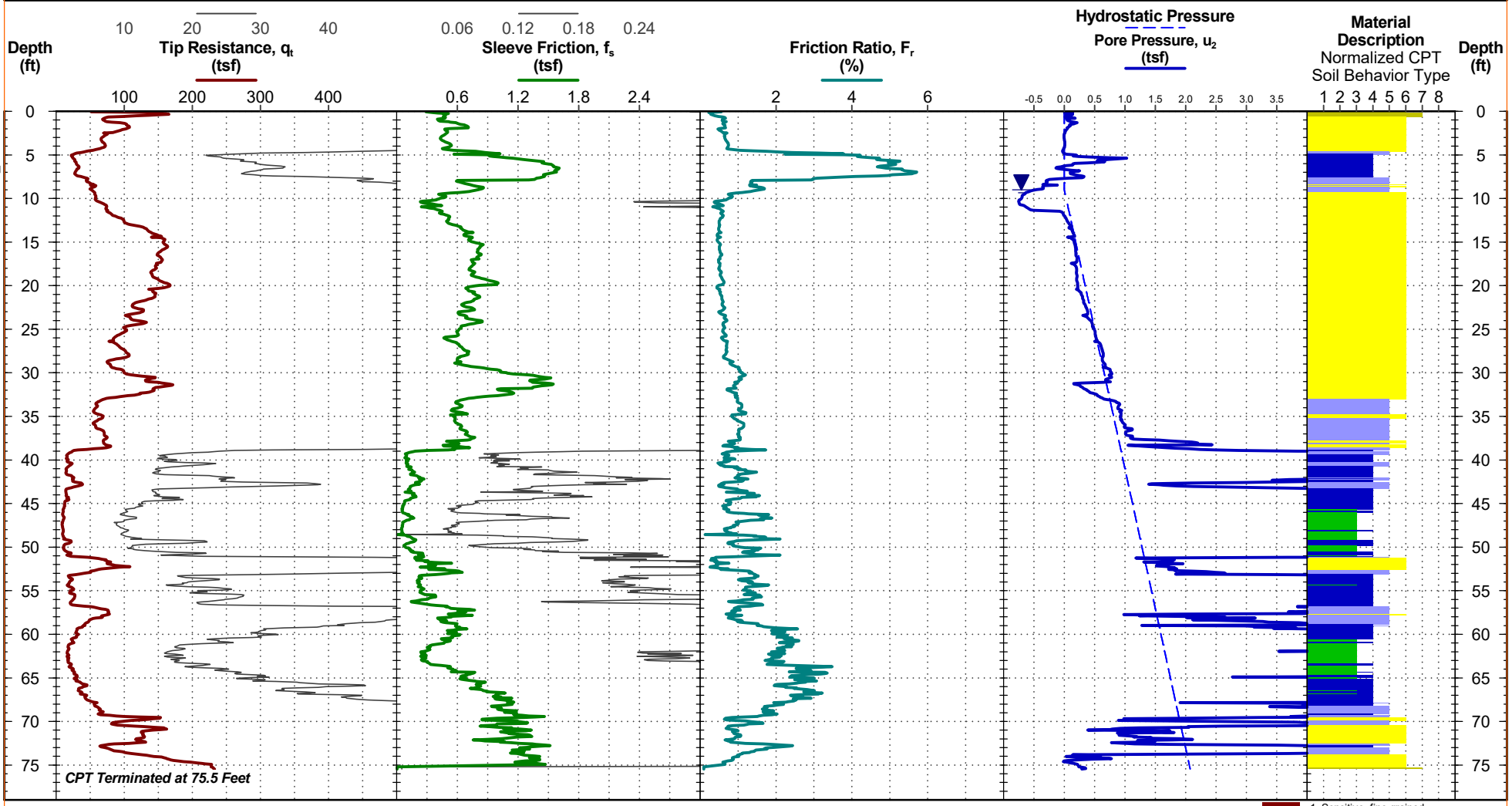
PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

TEST LOCATION: See Exploration Plan

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

Latitude: 28.58761288°
Longitude: -81.36177256°



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
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8 Very stiff sand to clayey sand
9 Very stiff fine grained

WATER LEVEL OBSERVATION

▼ 9 ft measured water depth
(used in normalizations and correlations; See Supporting Information)

Probe no. DDG1469 with net area ratio of .8
U2 pore pressure transducer location
Manufactured by Vertek; calibrated 3/5/2019
Tip and sleeve areas of 15 cm^2 and 225 cm^2
Ring friction reducer with O.D. of 2.0 in

Terracon
1675 Lee Rd
Winter Park, FL

CPT Started: 6/7/2021
CPT Completed: 6/7/2021
Rig:
Operator: TYLER EVANS
Project No.: H1215155

CPT LOG NO. CPT-18

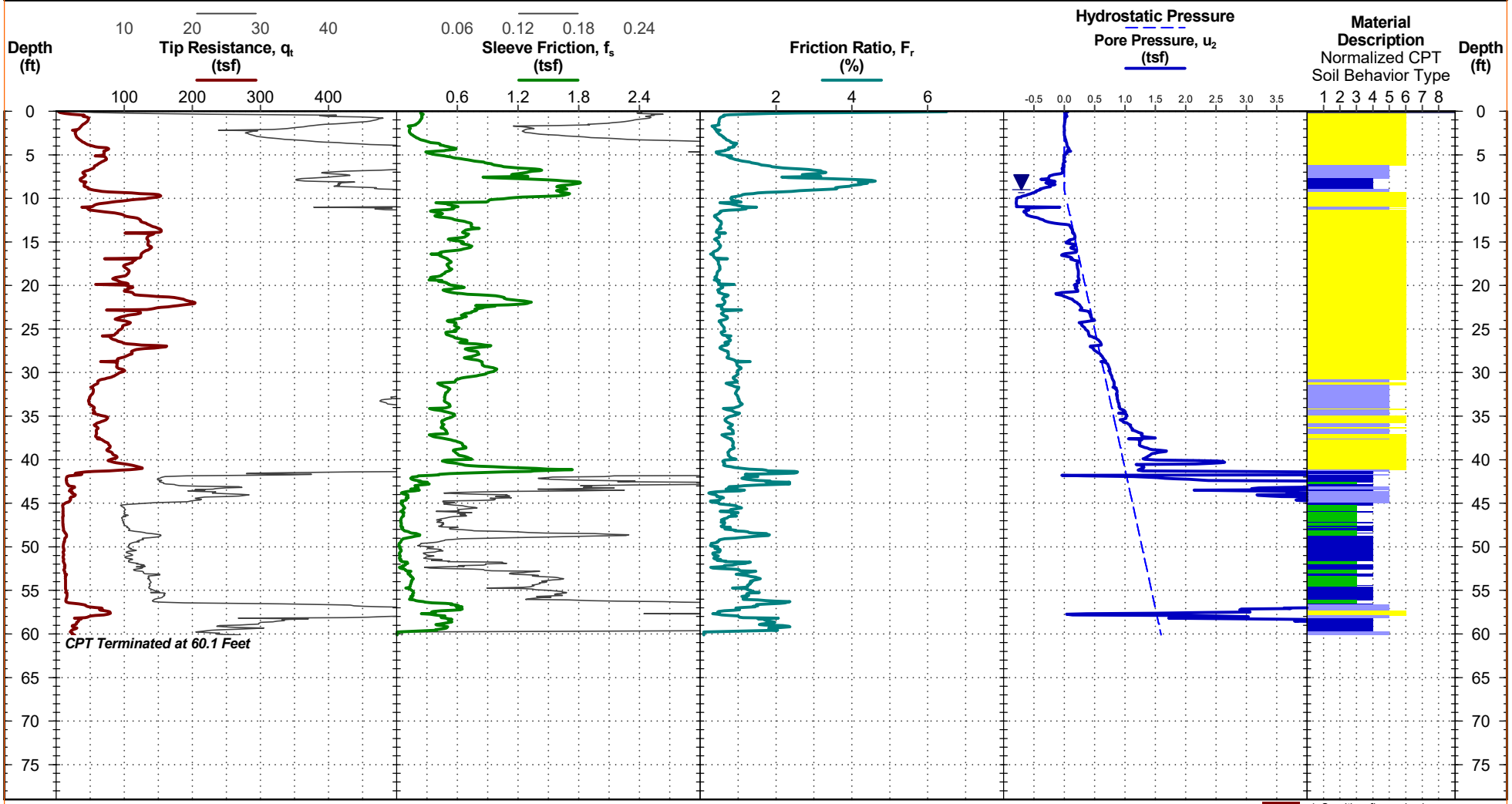
PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

TEST LOCATION: See Exploration Plan

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

Latitude: 28.58710791°
Longitude: -81.36219858°



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

1 Sensitive, fine grained
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9 Very stiff fine grained

WATER LEVEL OBSERVATION

▼ 9 ft measured water depth
(used in normalizations and correlations; See Supporting Information)

Probe no. DDG1469 with net area ratio of .8
U2 pore pressure transducer location
Manufactured by Vertek; calibrated 3/5/2019
Tip and sleeve areas of 15 cm^2 and 225 cm^2
Ring friction reducer with O.D. of 2.0 in

Terracon
1675 Lee Rd
Winter Park, FL

CPT Started: 6/7/2021
CPT Completed: 6/7/2021
Rig:
Operator: TYLER EVANS
Project No.: H1215155

CPT LOG NO. CPT-19

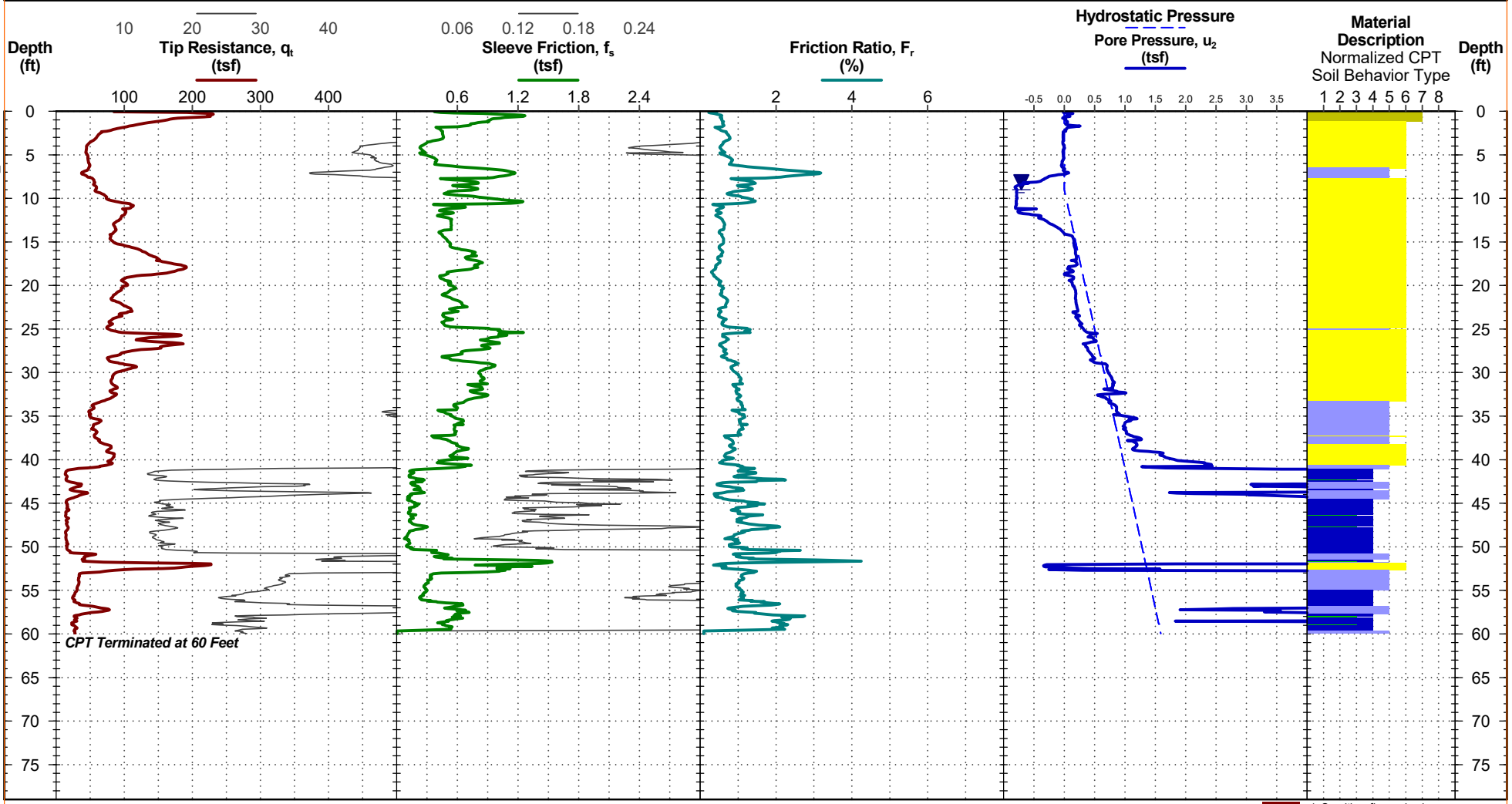
PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

TEST LOCATION: See Exploration Plan

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

Latitude: 28.58732767°
Longitude: -81.36189381°



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

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8 Very stiff sand to clayey sand
9 Very stiff fine grained

WATER LEVEL OBSERVATION

▼ 9 ft measured water depth
(used in normalizations and correlations; See Supporting Information)

Probe no. DDG1469 with net area ratio of .8
U2 pore pressure transducer location
Manufactured by Vertek; calibrated 3/5/2019
Tip and sleeve areas of 15 cm^2 and 225 cm^2
Ring friction reducer with O.D. of 2.0 in

Terracon
1675 Lee Rd
Winter Park, FL

CPT Started: 6/7/2021
CPT Completed: 6/7/2021
Rig:
Operator: TYLER EVANS
Project No.: H1215155

CPT LOG NO. CPT-20

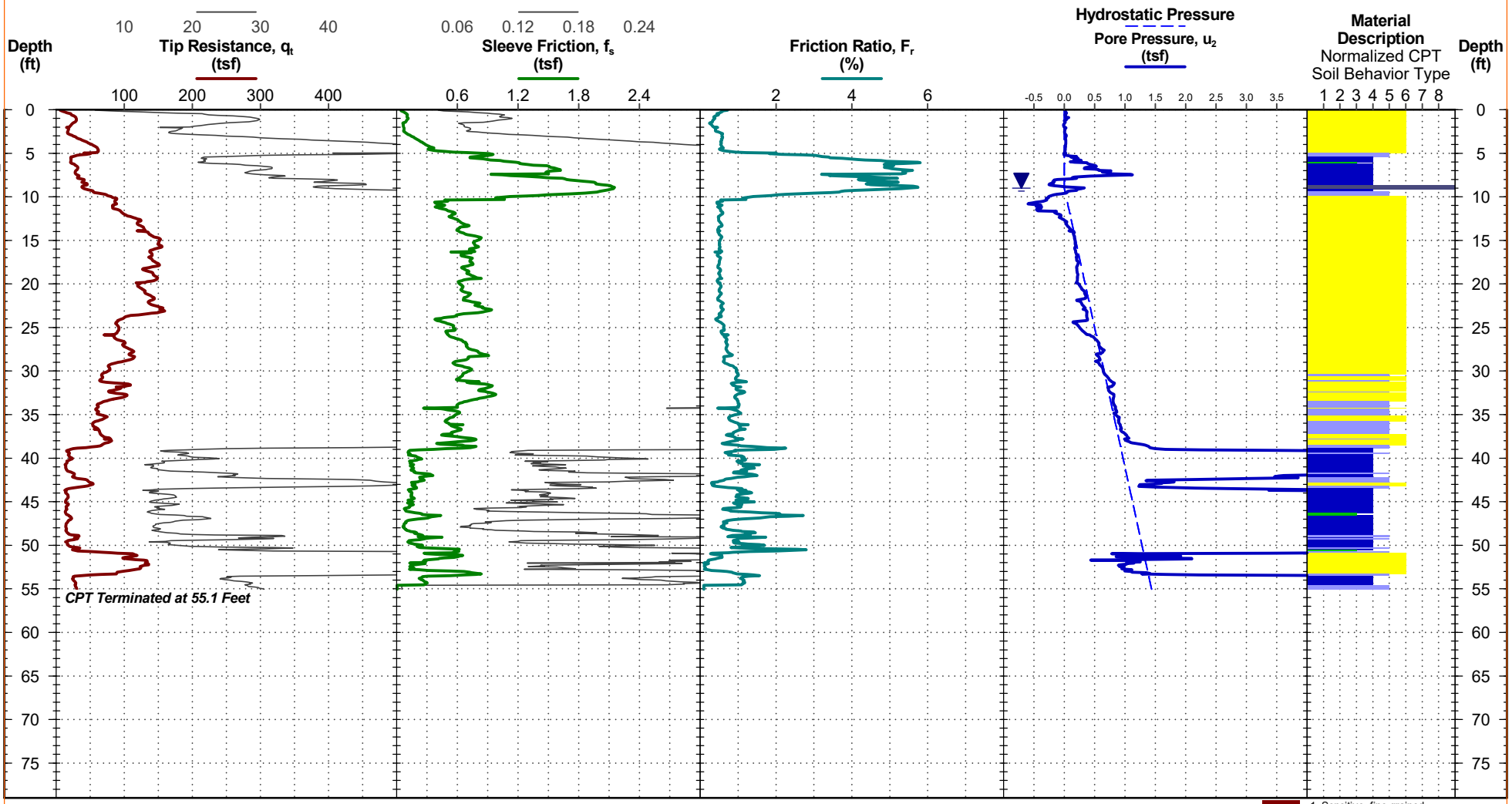
PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

TEST LOCATION: See Exploration Plan

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

Latitude: 28.5876844°
Longitude: -81.36164003°



See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

CPT sensor calibration reports available upon request.

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8 Very stiff sand to clayey sand
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WATER LEVEL OBSERVATION

▼ 9 ft measured water depth
(used in normalizations and correlations; See Supporting Information)

Probe no. DDG1469 with net area ratio of .8
U2 pore pressure transducer location
Manufactured by Vertek; calibrated 3/5/2019
Tip and sleeve areas of 15 cm^2 and 225 cm^2
Ring friction reducer with O.D. of 2.0 in

Terracon
1675 Lee Rd
Winter Park, FL

CPT Started: 6/3/2021
CPT Completed: 6/3/2021
Rig:
Operator: TYLER EVANS
Project No.: H1215155

BORING LOG NO. AB-1

PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

LOCATION See Exploration Plan

Latitude: 28.5885° Longitude: -81.3613°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (ft/day)	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		**FINE SAND (SP)**, grayish brown to brown								
		7.0	5				42	3.1		3
2		**SILTY SAND (SM)**, orangish brown								
		12.0	10	▽						
3		**CLAYEY SAND (SC)**, grayish brown								
		17.0	15							
2		**SILTY SAND (SM)**, grayish brown								
		20.0	20							
		Boring Terminated at 20 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Wash Rotary

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Elevations not obtained

Notes:

WATER LEVEL OBSERVATIONS

▽ *Groundwater initially observed at a depth of 11.5 feet.*

1675 Lee Rd
Winter Park, FL

Boring Started: 06-08-2021 | Boring Completed: 06-08-2021

Drill Rig: Geoprobe | Driller: TYLER EVANS

Project No.: H1215155

BORING LOG NO. AB-2

PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

LOCATION See Exploration Plan

Latitude: 28.5876° Longitude: -81.3620°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (ft/day)	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		**FINE SAND (SP)**, gray to brown								
		6.0	5				44	3.3		4
3		**CLAYEY SAND (SC)**, orangish brown								
		10.0	10							
1		**SAND WITH SILT (SP-SM)**, light gray						21.5		7
		19.0	15							
2		**SILTY SAND (SM)**, light gray								
		20.0	20							
		Boring Terminated at 20 Feet								

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Wash Rotary

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Elevations not obtained

Notes:

WATER LEVEL OBSERVATIONS

Groundwater initially observed at a depth of 9 feet.

1675 Lee Rd
Winter Park, FL

Boring Started: 06-08-2021 | Boring Completed: 06-08-2021

Drill Rig: Geoprobe | Driller: TYLER EVANS

Project No.: H1215155

BORING LOG NO. AB-3

PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

LOCATION See Exploration Plan

Latitude: 28.5875° Longitude: -81.3618°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (ft/day)	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		**SAND WITH SILT (SP-SM)**, with limerock base, orangish brown to dark gray	5				32	4.6		5
3		6.0 **CLAYEY SAND (SC)**, with some clay, orangish brown						15.9	22-15-7	26
1		10.0 **SAND WITH SILT (SP-SM)**, gray	10				25	21.5		6
2		17.0 **SILTY SAND (SM)**, gray	15							
		20.0 ***Boring Terminated at 20 Feet***	20							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Wash Rotary

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Elevations not obtained

Notes:

WATER LEVEL OBSERVATIONS

Groundwater initially observed at a depth of 9 feet.

1675 Lee Rd
Winter Park, FL

Boring Started: 06-08-2021 | Boring Completed: 06-08-2021

Drill Rig: Geoprobe | Driller: TYLER EVANS

Project No.: H1215155

BORING LOG NO. AB-4

PROJECT: Progress Point

CLIENT: City of Winter Park
Winter Park, FL

SITE: North Orange Avenue at South Denning Drive
Winter Park, FL

LOCATION See Exploration Plan

Latitude: 28.5887° Longitude: -81.3612°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (ft/day)	WATER CONTENT (%)	ATTERBERG LIMITS LL-PL-PI	PERCENT FINES
1		**FINE SAND (SP)**, light brown to brown	5				37	1.0		3
3		9.0 **CLAYEY SAND (SC)**, orangish brown	10							
2		11.0 **SILTY SAND (SM)**, gray	15	▽				17.2		22
		20.0 ***Boring Terminated at 20 Feet***	20							

Stratification lines are approximate. In-situ, the transition may be gradual.

Hammer Type: Automatic

Advancement Method:
Wash Rotary

Abandonment Method:
Boring backfilled with auger cuttings upon completion.

See Exploration and Testing Procedures for a description of field and laboratory procedures used and additional data (If any).

See Supporting Information for explanation of symbols and abbreviations.

Elevations not obtained

Notes:

WATER LEVEL OBSERVATIONS

▽ *Groundwater initially observed at a depth of 11.5 feet.*

1675 Lee Rd
Winter Park, FL

Boring Started: 06-08-2021 | Boring Completed: 06-08-2021

Drill Rig: Geoprobe | Driller: TYLER EVANS

Project No.: H1215155

SUPPORTING INFORMATION

Contents:

CPT General Notes
Unified Soil Classification System

Note: All attachments are one page unless noted above.

CPT GENERAL NOTES

DESCRIPTION OF MEASUREMENTS AND CALIBRATIONS

To be reported per ASTM D5778:

Uncorrected Tip Resistance, q_c
Measured force acting on the cone divided by the cone's projected area

Corrected Tip Resistance, q_t
Cone resistance corrected for porewater and net area ratio effects
$q_t = q_c + U2(1 - a)$

Where a is the net area ratio, a lab calibration of the cone typically between 0.70 and 0.85

Pore Pressure, U1/U2
Pore pressure generated during penetration
U1 - sensor on the face of the cone
U2 - sensor on the shoulder (more common)

Sleeve Friction, fs
Frictional force acting on the sleeve divided by its surface area

Normalized Friction Ratio, FR
The ratio as a percentage of fs to q_t, accounting for overburden pressure

To be reported per ASTM D7400, if collected:

Shear Wave Velocity, Vs
Measured in a Seismic CPT and provides direct measure of soil stiffness

DESCRIPTION OF GEOTECHNICAL CORRELATIONS

Normalized Tip Resistance, Q_t
$Q_t = (q_t - \sigma_{v0})/\sigma'_{v0}$

Over Consolidation Ratio, OCR
$OCR\ (1) = 0.25(Q_t)^{1.25}$
$OCR\ (2) = 0.33(Q_t)$

Undrained Shear Strength, Su
$Su = Q_t \times \sigma'_{v0}/N_{kt}$
N_{kt} is a geographical factor (shown on Su plot)

Sensitivy, St
$St = (q_t - \sigma_{v0}/N_{kt}) \times (1/fs)$

Effective Friction Angle, ϕ'
$\phi'\ (1) = \tan^{-1}(0.373[\log(q_t/\sigma'_{v0}) + 0.29])$
$\phi'\ (2) = 17.6 + 11[\log(Q_t)]$

Unit Weight
$UW = (0.27[\log(FR)]+0.36[\log(q_t/atm)]+1.236) \times UW_{water}$
σ_{v0} is taken as the incremental sum of the unit weights

Small Strain Shear Modulus, G_0
$G_0\ (1) = \rho Vs^2$
$G_0\ (2) = 0.015 \times 10^{(0.55Ic + 1.68)}(q_t - \sigma_{v0})$

Soil Behavior Type Index, Ic
$Ic = [(3.47 - \log(Q_t))^2 + (\log(FR) + 1.22)^2]^{0.5}$

SPT N_{60}
$N_{60} = (q_t/atm) / 10^{(1.1268 - 0.2817Ic)}$

Elastic Modulus, Es (assumes $q/q_{ultimate} \sim 0.3$, i.e. FS = 3)
$Es\ (1) = 2.6\Psi G_0$ where $\Psi = 0.56 - 0.33\log Q_{t,clean\ sand}$
$Es\ (2) = G_0$
$Es\ (3) = 0.015 \times 10^{(0.55Ic + 1.68)}(q_t - \sigma_{v0})$
$Es\ (4) = 2.5q_t$

Constrained Modulus, M
$M = \alpha_M(q_t - \sigma_{v0})$
For Ic > 2.2 (fine-grained soils)
$\alpha_M = Q_t$ with maximum of 14
For Ic < 2.2 (coarse-grained soils)
$\alpha_M = 0.0188 \times 10^{(0.55Ic + 1.68)}$

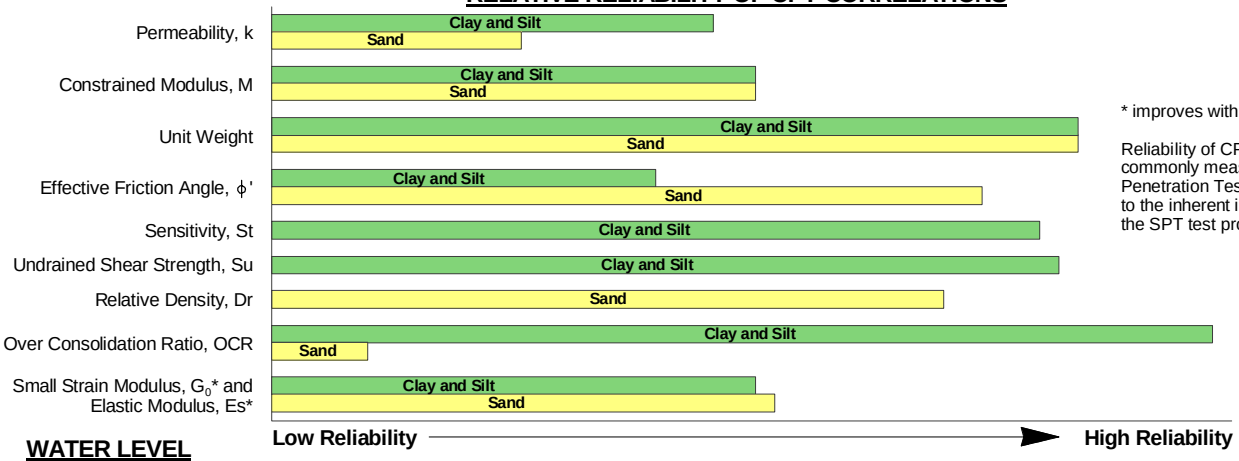
Hydraulic Conductivity, k
For $1.0 < Ic < 3.27$ $k = 10^{(0.952 - 3.04Ic)}$
For $3.27 < Ic < 4.0$ $k = 10^{(-4.52 - 1.37Ic)}$

Relative Density, Dr
$Dr = (Q_t / 350)^{0.5} \times 100$

REPORTED PARAMETERS

CPT logs as provided, at a minimum, report the data as required by ASTM D5778 and ASTM D7400 (if applicable). This minimum data include tip resistance, sleeve resistance, and porewater pressure. Other correlated parameters may also be provided. These other correlated parameters are interpretations of the measured data based upon published and reliable references, but they do not necessarily represent the actual values that would be derived from direct testing to determine the various parameters. The following chart illustrates estimates of reliability associated with correlated parameters based upon the literature referenced below.

RELATIVE RELIABILITY OF CPT CORRELATIONS



* improves with seismic Vs measurements

Reliability of CPT-predicted N_{60} values as commonly measured by the Standard Penetration Test (SPT) is not provided due to the inherent inaccuracy associated with the SPT test procedure.

WATER LEVEL

The groundwater level at the CPT location is used to normalize the measurements for vertical overburden pressures and as a result influences the normalized soil behavior type classification and correlated soil parameters. The water level may either be "measured" or "estimated:"

Measured - Depth to water directly measured in the field

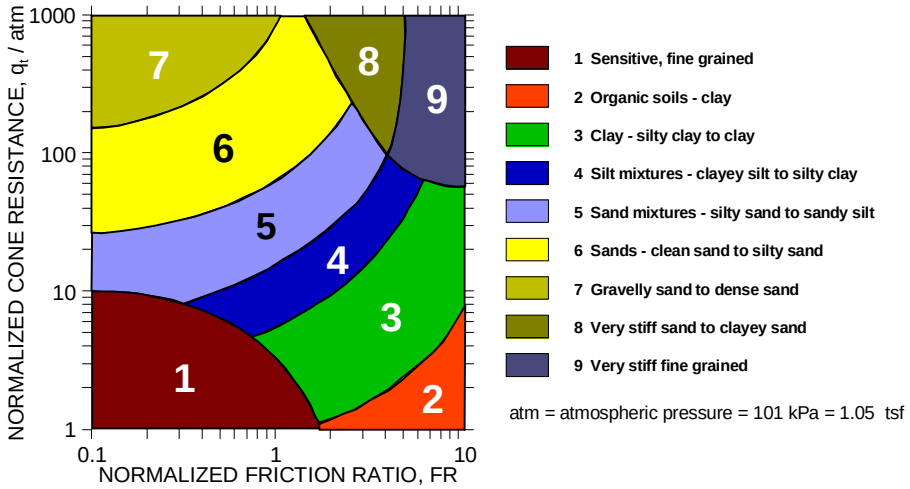
Estimated - Depth to water interpolated by the practitioner using pore pressure measurements in coarse grained soils and known site conditions

While groundwater levels displayed as "measured" more accurately represent site conditions at the time of testing than those "estimated," in either case the groundwater should be further defined prior to construction as groundwater level variations will occur over time.

CONE PENETRATION SOIL BEHAVIOR TYPE

The estimated stratigraphic profiles included in the CPT logs are based on relationships between corrected tip resistance (q_t), friction resistance (fs), and porewater pressure (U2). The normalized friction ratio (FR) is used to classify the soil behavior type.

Typically, silts and clays have high FR values and generate large excess penetration porewater pressures; sands have lower FRs and do not generate excess penetration porewater pressures. Negative pore pressure measurements are indicative of fissured fine-grained material. The adjacent graph (Robertson et al.) presents the soil behavior type correlation used for the logs. This normalized SBT chart, generally considered the most reliable, does not use pore pressure to determine SBT due to its lack of repeatability in onshore CPTs.



atm = atmospheric pressure = 101 kPa = 1.05 tsf

REFERENCES

Kulhawy, F.H., Mayne, P.W., (1997). "Manual on Estimating Soil Properties for Foundation Design," Electric Power Research Institute, Palo Alto, CA.

Mayne, P.W., (2013). "Geotechnical Site Exploration in the Year 2013," Georgia Institue of Technology, Atlanta, GA.

Robertson, P.K., Cabal, K.L. (2012). "Guide to Cone Penetration Testing for Geotechnical Engineering," Signal Hill, CA.

Schmertmann, J.H., (1970). "Static Cone to Compute Static Settlement over Sand," *Journal of the Soil Mechanics and Foundations Division*, 96(SM3), 1011-1043.

Terracon

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests [A]					Soil Classification	
					Group Symbol	Group Name [B]
Coarse-Grained Soils: More than 50% retained on No. 200 sieve	**Gravels:** More than 50% of coarse fraction retained on No. 4 sieve	**Clean Gravels:** Less than 5% fines [C]	Cu ³ 4 and 1 £ Cc £ 3 [E]		GW	Well-graded gravel [F]
			Cu < 4 and/or [Cc<1 or Cc>3.0] [E]		GP	Poorly graded gravel [F]
		Gravels with Fines: More than 12% fines [C]	Fines classify as ML or MH		GM	Silty gravel [F, G, H]
			Fines classify as CL or CH		GC	Clayey gravel [F, G, H]
	Sands: 50% or more of coarse fraction passes No. 4 sieve	**Clean Sands:** Less than 5% fines [D]	Cu ³ 6 and 1 £ Cc £ 3 [E]		SW	Well-graded sand [I]
			Cu < 6 and/or [Cc<1 or Cc>3.0] [E]		SP	Poorly graded sand [I]
		Sands with Fines: More than 12% fines [D]	Fines classify as ML or MH		SM	Silty sand [G, H, I]
			Fines classify as CL or CH		SC	Clayey sand [G, H, I]
Fine-Grained Soils: 50% or more passes the No. 200 sieve	**Silts and Clays:** Liquid limit less than 50	**Inorganic:**	PI > 7 and plots on or above “A”		CL	Lean clay [K, L, M]
			PI < 4 or plots below “A” line [J]		ML	Silt [K, L, M]
		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay [K, L, M, N]
			Liquid limit - not dried			Organic silt [K, L, M, O]
	Silts and Clays: Liquid limit 50 or more	**Inorganic:**	PI plots on or above “A” line		CH	Fat clay [K, L, M]
			PI plots below “A” line		MH	Elastic Silt [K, L, M]
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay [K, L, M, P]
			Liquid limit - not dried			Organic silt [K, L, M, Q]
Highly organic soils:	Primarily organic matter, dark in color, and organic odor				PT	Peat

[A] Based on the material passing the 3-inch (75-mm) sieve.

[B] If field sample contained cobbles or boulders, or both, add “with cobbles or boulders, or both” to group name.

[C] Gravels with 5 to 12% fines require dual symbols: GW-GM well-graded gravel with silt, GW-GC well-graded gravel with clay, GP-GM poorly graded gravel with silt, GP-GC poorly graded gravel with clay.

[D] Sands with 5 to 12% fines require dual symbols: SW-SM well-graded sand with silt, SW-SC well-graded sand with clay, SP-SM poorly graded sand with silt, SP-SC poorly graded sand with clay.

[E] $Cu = D_{60}/D_{10}$ $\quad Cc = \dfrac{(D_{30})^2}{D_{10} \times D_{60}}$

[F] If soil contains ³ 15% sand, add “with sand” to group name.

[G] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.

[H] If fines are organic, add “with organic fines” to group name.

[I] If soil contains ³ 15% gravel, add “with gravel” to group name.

[J] If Atterberg limits plot in shaded area, soil is a CL-ML, silty clay.

[K] If soil contains 15 to 29% plus No. 200, add “with sand” or “with gravel,” whichever is predominant.

[L] If soil contains ³ 30% plus No. 200 predominantly sand, add “sandy” to group name.

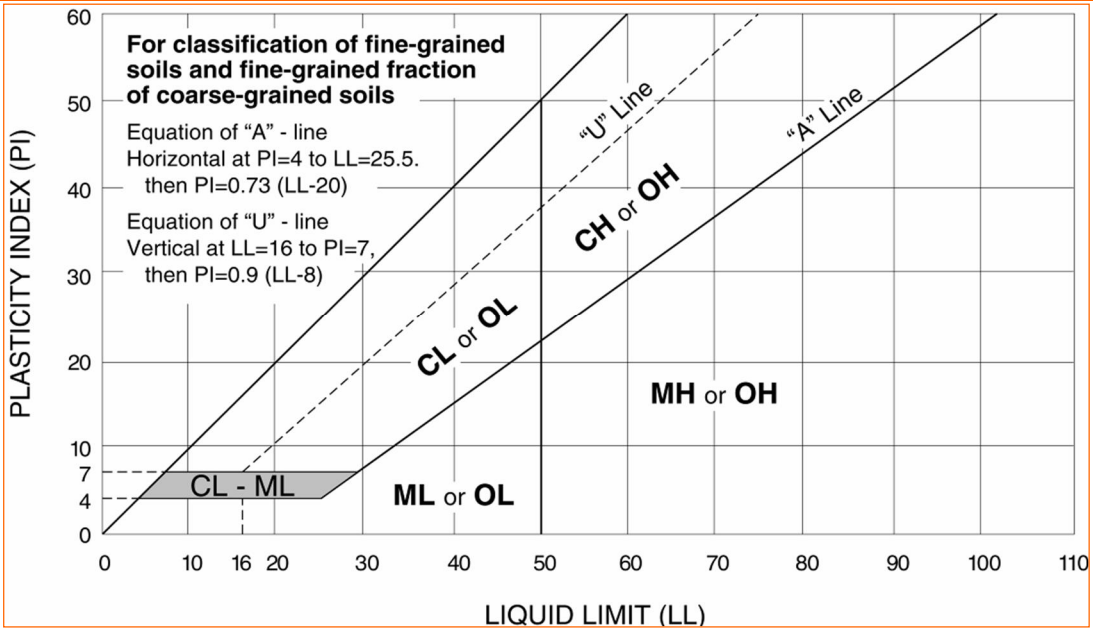
[M] If soil contains ³ 30% plus No. 200, predominantly gravel, add “gravelly” to group name.

[N] PI ³ 4 and plots on or above “A” line.

[O] PI < 4 or plots below “A” line.

[P] PI plots on or above “A” line.

[Q] PI plots below “A” line.



RFP DRAFT
Redevelopment of City Owned Land
(A.k.a. Progress Point)

Aerial of City land looking north.

Aerial of City Owned Land looking north.

I. Summary of Development Opportunity

The City of Winter Park, Florida (the "City") is seeking Requests For Proposals ("RFP") from qualified respondents to partner with the City to transform a ±3.54 acre city-owned property known as Progress Point into a new, world-class ±1.5 acre park ("Park") that is activated by village-scale mixed-use buildings ("Buildings") and a regional parking garage ("Parking"). The Park, Buildings and Parking are the anticipated elements that will constitute the "Project".

Proposals and qualifications submitted to the City shall describe their ability to incorporate the City's Redevelopment Guidelines and Action Plan ("Guidelines"). The City Guidelines for the site are a part of a large-scale Overly District known as the Orange Avenue Overlay (OAO). The specific guidelines for the development of this site, (referenced as Subarea "C" in the OAO) are available on the City website at https://cityofwinterpark.org/departments/planning-transportation/. The Guidelines are a key part of the City's intent to work with a private and/or non-profit development partner to develop, own, finance, construct and operate the Buildings and Garage portion of the Project and to explore ways to assist the City with the realization of the Project. Currently, the City has drafted the Guidelines, including the Park's schematic design, pad-ready Buildings development area, Parking area, design guidelines, preliminary soil borings and groundwater testing, civil engineering construction documents for realigning a portion of Palmetto Avenue, and a rough order of magnitude of cost for the public elements of the Project. The realignment of Palmetto Avenue will enlarge the current area of contiguous land for the new Park, Buildings and Parking. The proposed Parking element of the Project will provide an adequate supply of public and private parking. This is crucial to this area's future success as a vibrant destination for the Park, Buildings and surrounding mix of commercial businesses, including commercial, health, wellness, office and residents. The Parking constructed will be required to provide excess parking spaces that must be available to lease to small businesses in the surrounding area.

The transformation of this City-owned land and proposed redevelopment will dramatically transform and increase the asset value of this strategic gateway site with a new activated cornerstone property on Progress Point. A key aspect of the City's evaluation for a potential partner will include its response to the following aspects:

- The fair market financial value the respondent will pay the City for the rights to develop the Buildings and how that value is allocated to the land for Buildings and Parking as described in the Guidelines;
- The respondent's understanding and approach to incorporate the City's Guidelines;
- The respondent's ability to pay for and finance the Buildings and Parking portion of the land under a ground lease versus a land sale;
- The respondents design and proposed uses of the Buildings, with emphasis on how the architecture and uses create a shared synergy with the Park area.

The City is seeking to select a qualified Development Team to design the defined portion of the site and work closely with the City through the Request for Proposal process described herein. In addition to the Park, Buildings and Parking, the City's Guidelines further describe the City's plans for a new network of trails and greenways to form a network of greater connectivity and mobility for this site with other City parks and destinations. As described by Professor Bruce Stephenson of Rollins College, this Project anchors the opportunity to create a city-wide "Emerald Necklace" of new public pathways/greenways to other parks including Mead Botanical Garden, Martin Luther King, Jr. Park, and Central Park.

The City has spent considerable time with the community, surrounding businesses and residents to define the Park, Buildings and Parking in terms of size, location and boundaries to guide and enhance the redevelopment opportunities under this RFP process through:

City and Community Support. Based on the guidance and directives from the City Commission and City Administration that defined the size, location and boundaries of the Park, Buildings and Parking, an extensive community process was created to integrate redevelopment with Winter Park's unique brand and attributes with an in-depth community survey and live charrette (more than 750 participants); discussions with surrounding businesses and residents; historic research of similar type parks; market data; and private/non-profit investment interest. This was applied by the City to create the "Redevelopment Guidelines and Action Plan" ("Guidelines"). Collectively, this input advanced the early vision framework that was further researched and refined to create a set of Guidelines to transform this gateway into a world-class Park and public destination.

The City has a proven track record in supporting redevelopment by partnering with private developers and businesses. This is evident in the numerous City funding grants and incentives supporting redevelopment projects throughout the City over many years including the public-private-partnership that designed and built the Winter Park Chamber of Commerce building; local, state and federal funding for the SunRail/Amtrak Station; and the public-private parking garage in partnership with the Genius Foundation's mixed-use building located on Park Avenue at the northern end of downtown Central Park.

Flexibility. The City supports flexible adaptation of public-private partnership developments that can enhance value to the City. The City will consider proposals including ideas that can increase and maximize the private/non-profit sectors approach to integrate City costs for this Project that benefit the Buildings component including realignment of Palmetto Avenue, Parking Garage and Park. In responses to this Request for Proposals (RFP), respondents are required to address specific details outlined within this document, including but not limited to a specific program proposal, a detailed financial plan, and a detailed management structure for construction and property management of the Buildings component and potential other elements of the Project. The City intends to select one or more teams to enter negotiations to reach a development agreement, with a preferred development partner being selected as soon as possible.

II. Orange Avenue Corridor Poised for Transformation

Project Goals

As part of the City's vision for the Orange Avenue Corridor, Progress Point was identified as a major opportunity to strengthen the vibrancy of this important gateway and surrounding businesses and residents. The successful redevelopment of this site represents an important point of connection between the Orange Avenue Corridor and the rest of Winter Park.

The City has expressed five major project goals for the redevelopment of this City-owned land as listed below.

1. **Nurtures Winter Park's placemaking brand of integrating nature and village-scale development that is vibrant, innovative, and rooted in the assets of its local residents and businesses.** The City expects this redevelopment will respect and grow the quality of the City's unique attributes and special features of Winter Park while remaining relevant to today's social gathering places like Foxtail Coffee Co. and Shady Park in Winter Park, Plant Street Market/Brewery in Winter Garden, East End Market in Orlando, and Boxi Park in Lake Nona.

2. **Supports activation of the new Park.** The City's Guidelines are anchored by a world-class park, which will draw people not just because of the park but do so out of impulse to experience a complementary mix of small scale transparent building spaces with new pathways that extend the park experience with a series of broad and open entrances to food, drinks, galleries, fitness, wellness, and studios for creative workspaces. The Park, Buildings, Parking, trails and greenways will offer the area a new rendezvous destination

increasing Winter Park's inside-outside socially purposed public spaces to benefit adjacent properties and to ensure the park fosters a cohesive social environment that is reflective of Winter Park's community history and identity.

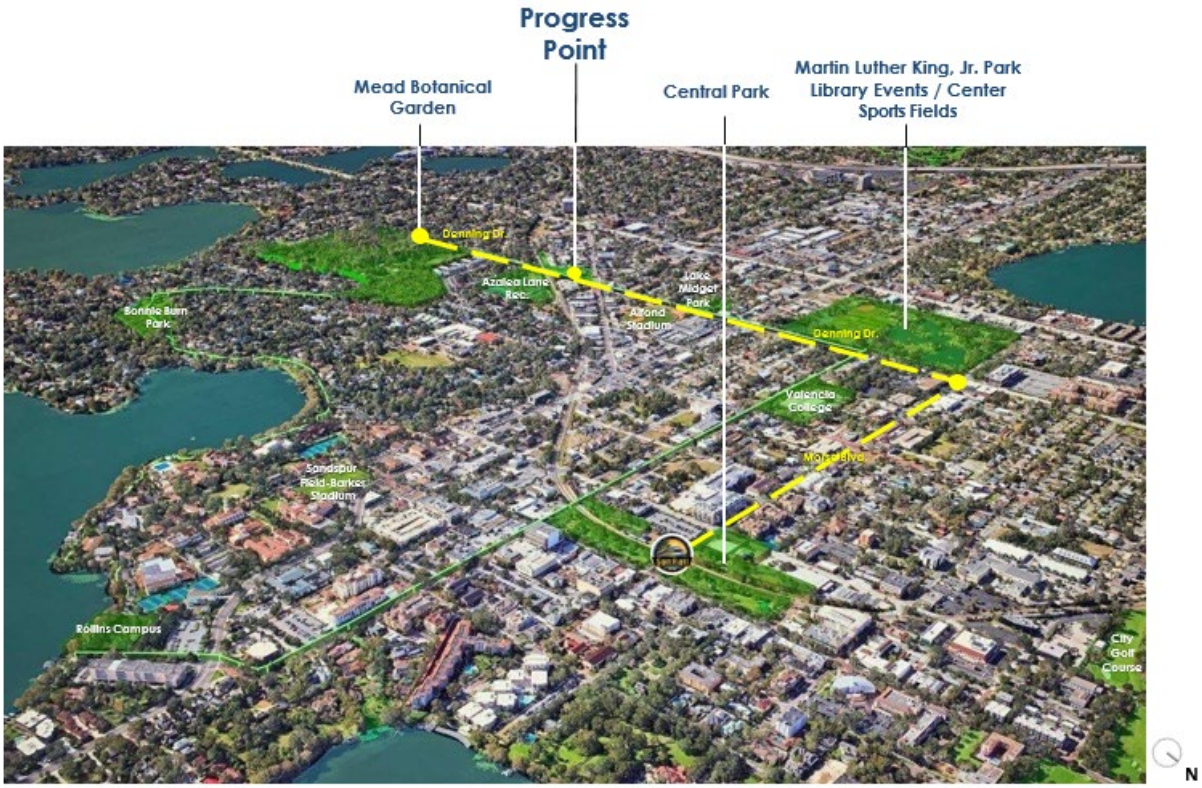
3. **Improving connections between the Park and surrounding businesses, residents and visitors.** Project will include the City's plan for new mobility improvements including trails, greenways, and public crossings to enhance the pedestrian experience for businesses, residents and visitors. This knitting together of community encourages civic places that are accessible, locally organized, inclusive, and support network building that accelerates gentrification of the area.

4. **Setting a precedent for future Downtown development.** Progress Point is about transformational placemaking, and the City expects that redevelopment of neighboring properties will follow and be instrumental in the creation of a cohesive vision for a more vibrant Orange Avenue Corridor.

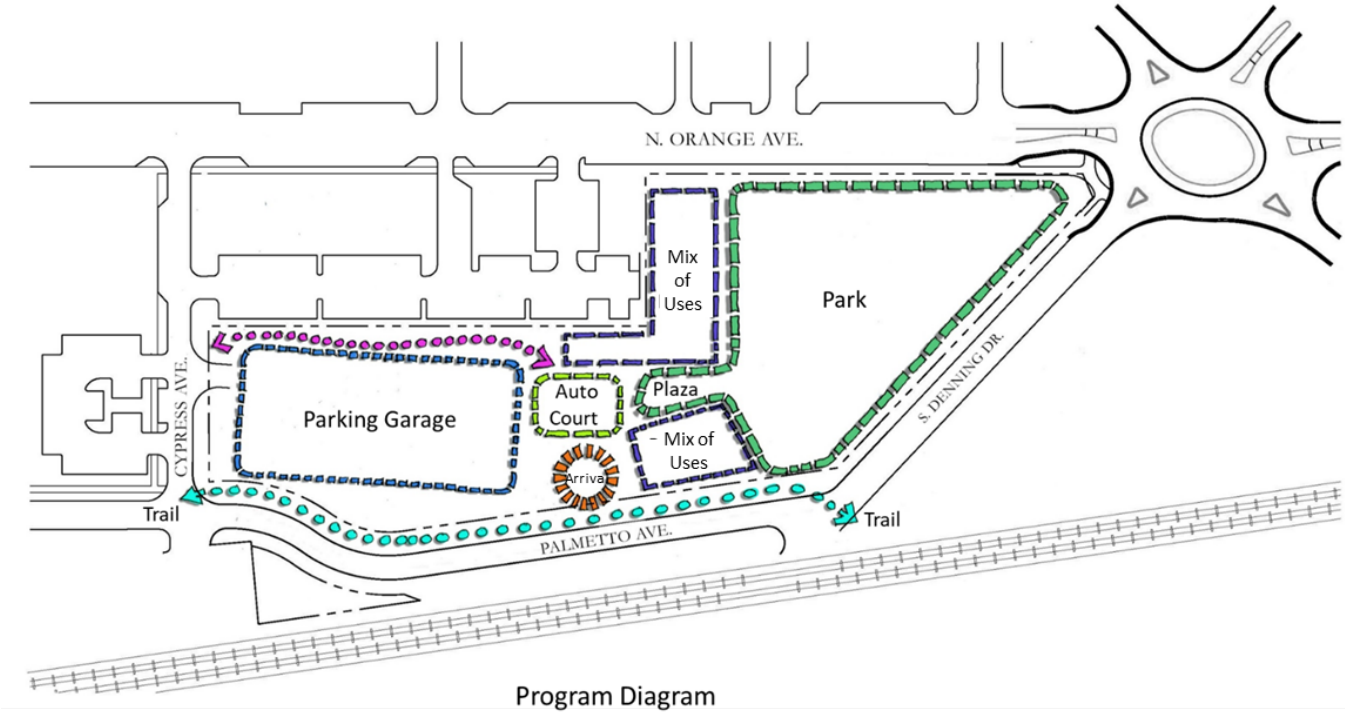
5. **Generating a financial return for the City**. It is the City's desire to retain ownership of the land in perpetuity. The City expects to generate revenues from the disposition and redevelopment of the property, including both revenues from leasing of the parcels and new tax revenues from the Buildings and surrounding gentrification of the surrounding area.

Vision Framework
Commission Work Sessions

Connecting Our Parks & Greenways

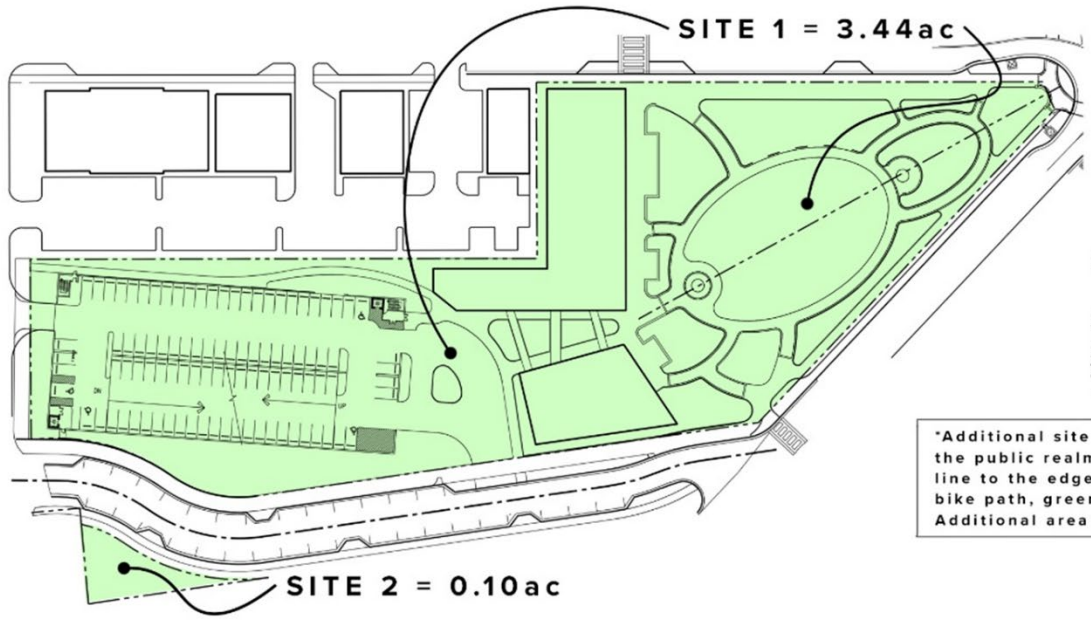


VISION FRAMEWORK DIAGRAM



Program Diagram

DEVELOPMENT ALLOCATION METRICS



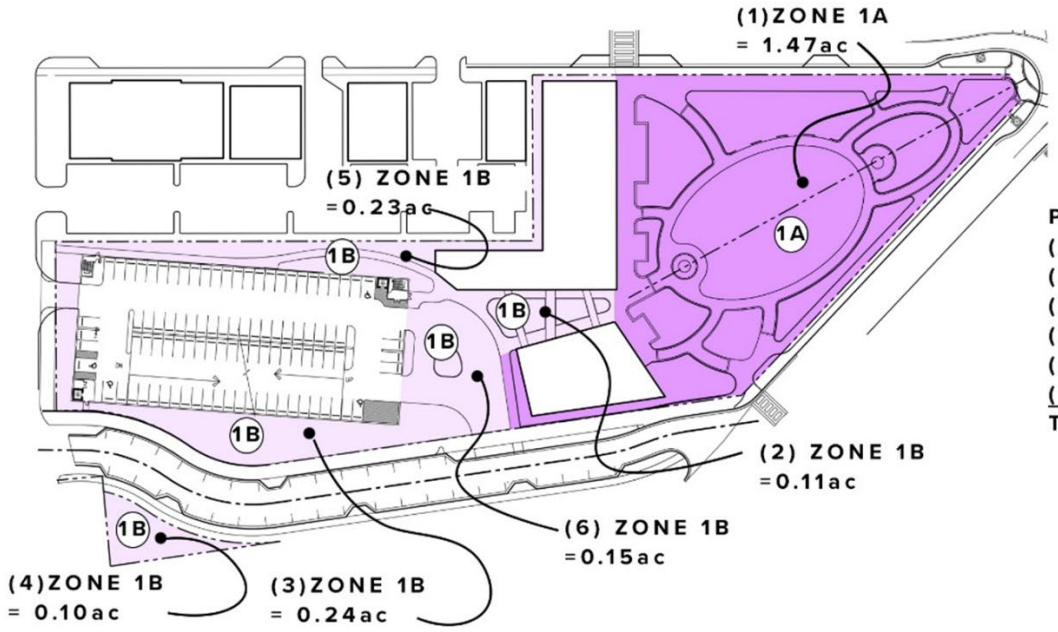
SITE AREA*

SITE 1 = 3.44ac
SITE 2 =0.10ac
Total = 3.54ac

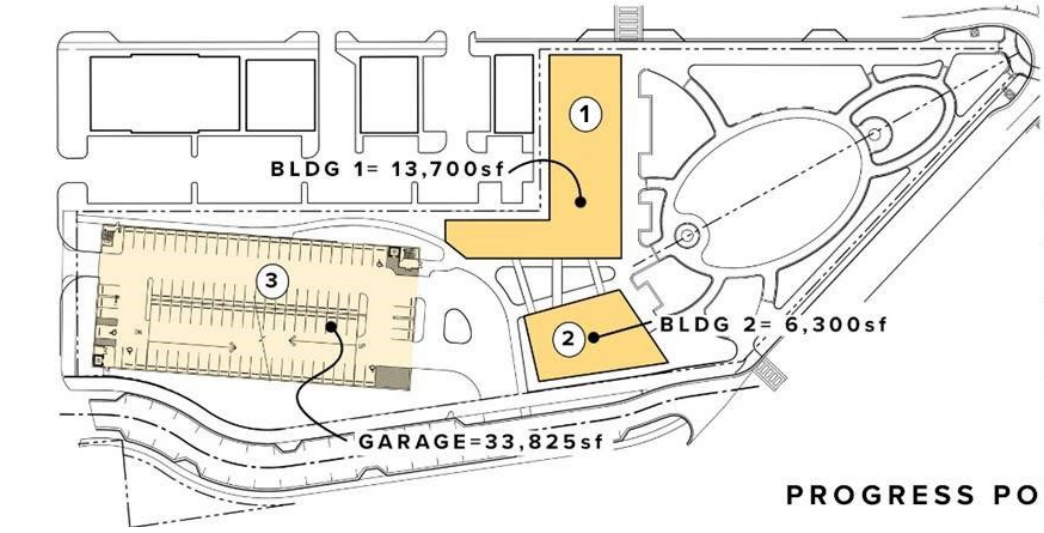
*Additional site area includes the public realm from the property line to the edge of street. (streetscape, bike path, green space,sidewalks)
Additional area = 0.59ac

DEVELOPMENT ALLOCATION METRICS

Park Areas



PARK AREA
(1)ZONE 1A=1.47ac
(2)ZONE 1B=0.11ac
(3)ZONE 1B=0.24ac
(4)ZONE 1B=0.10ac
(5)ZONE 1B=0.23ac
(6)ZONE 1B=0.15ac
TOTAL =2.30ac



GROUND FLOOR BUILDING AREA
bldg 1 = 13,700sf
bldg 2 = 6,300sf
First Floor = 20,000sf

Garage = 33,825sf/fl

PROGRESS POINT 05.24.2021

III. Regulatory Framework

ZONING CONTEXT

The property has a future land use plan designation of the City's newly adopted Orange Avenue Overlay District. High-quality urban design and architecture is required per the City's Guidelines for Progress Point. The allowable FAR as per the City Guidelines. The maximum height as defined to the top of the roof structure is 30 feet. Most other uses have no minimum parking requirements. Refer to the City's Guidelines for additional details.

Respondents should propose development concepts that harmonize with existing and proposed adjacencies, encourage activation and public connections to the park, and create proper context with the business district and its buildings.

IV. RFP Design & Proposal Criteria

The Criteria established herein will be used to create the Final RFP Document sent out by the City of Winter Park Procurement Division, which meets all established City requirements, submittal format and all other City of Winter Park and State of Florida standards for proper solicitation, formatting, requirements for submittal and criteria for the proper review of RFP submittals.

Cover Letter. Responding teams should prepare a cover letter stating their interest in theopportunity, summarizing the suitability of the assembled team and the materials presented to support the RFP response. This letter should also identify the primary contact person for the respondent organization.

Team Introduction and Experience. Respondents should include a description of the development team, the firms' experience and qualifications, and relevant personnel experience and qualifications. The following aspects should be included:

a. *Development Team*. Description of the key firm(s) comprising the team, including architects, engineers, and other relevant consultant teams, and the role of each in the project. In this section, respondent teams should include: a description of each key organization, its mission, a chart summarizing the overall team structure, and key firm management. For teams led by a joint venture, include the structure, percentage of ownership held by each lead, and the intended role (e.g., co-developer, limited partner, general partner).

b. *Operators*. For all uses proposed, respondents should provide detailed information on prospective operating partners, including letters of intent or interest to demonstrate feasibility.

c. *Firm Experience and Qualifications*. Respondents should include examples of projects that demonstrate the team's experience with the proposed development program (mixed-use, food halls, micro-restaurants, retail, cultural, shared work space, health and wellness) and, if applicable, experience in development partnerships with public and non-profit sector partners. For all projects submitted as examples of relevant previous experience, respondents should provide:

   i. Project location.
   ii. Project size and program description.
   iii. The respondent member's role in the project.
   iv. Project completion date or expected completion date.
   v. Public sector involvement, if any.
   vi. Total project cost and financing structure, if available.

vii. A representative image or images of the project.

d. *Personnel Experience and Qualifications***.** Respondents should demonstrate that their teamsinclude personnel with the experience and expertise necessary to deliver a high-quality mixed-use development. Teams should include resumes for identified key personnel withinthe proposed team, including qualifications (within the current firm or in previous roles).

Development Plan. Teams should include a description of their vision for redeveloping the site or sites. Respondents should include a development narrative, a vertical development concept, and their approach to a successful public/private partnership if appropriate.

a. *Development Narrative***.** Respondents should provide a narrative accompanied by renderings, illustrations, or simple diagrams to articulate the development approach. The inclusion of these visual representations is required. This section should cover at least the following aspects:

i. An overall vision for the site that articulates the vision and preliminary concept, proposed program, design and massing approach, ground floor uses and site integration with the adjacent Park, site and surrounding urban fabric including Orange Avenue and South Denning Avenue and Parking Garage.

ii. An approach incorporating good urban design that enhances the attractiveness of surrounding built environment; and

iii. Proposed development timeline The overall timeline should include, but not be limited to, the following key project milestones:

1. Projected Project start date;
2. Due diligence and pre-development activities;
3. Construction timeline; and
4. Estimated Date of Completion and Occupancy.

Vertical Development Program & Design Approach. Respondents should include a detailed proposed vertical development program and design approach for the privately owned Buildings. This section should include:

i. A description of how the proposed program fits into the adjacent context and overall development vision.

ii. A narrative description of the character of the space including how ground floor and second floor uses accomplish the City Guidelines and desire for active retail/food/galleries/shops/shared work studio uses, and total square footage. If prospective tenants or operators have been identified, letters of intent or interest may be included to demonstrate feasibility.

iii. For any other uses, a narrative description of the type and integration/location of the user in relation to the remainder of the site, and total square footage. As previously noted, if prospective operating partners have been identified, letters of intent or interest may be included to demonstrate feasibility.

iv. For any privately-owned or funded public spaces, a narrative description of how these spaces enhance and connect to the surrounding context, the size, and location.

Approach to Public Partners. Teams should include their approach to working with public stakeholders, including:

i. Approach to working with the City, including strategy to help the City manage its portions

of implementing the Project.

ii. If applicable, approach to drafting a Pre-Development Agreement with the City to be used as a preliminary basis for the future operating agreement and eventual lease document.

Financial Plan. Teams should provide information on their financial plan. This section should include evaluation of financial feasibility, all assumptions, a description of how they have effectively secured and leveraged significant funding streams from public and private sources, and their experience in assembling financing packages for mixed-use developments. The following aspects should be included:

e. *Pro Forma*. Teams must provide a pro forma cash flow for the Buildings for a period lasting through the first ground rent reset or the first 10 years, whichever term is longer, including at a minimum:

   i. *Program and Income Assumptions* such as operating revenues and expenses, development costs, and exit assumptions.

   ii. *Source Assumptions* such as sources of equity, debt, and subsidies.

   iii. *Use Assumptions* including all hard and soft costs.

   iv. *Preliminary Construction and Permanent Financing Assumptions.*

   v. *Project Schedule and Timing Assumptions* including expected start date,stabilization, and key intermediate milestones.

f. *Equity and Debt Sources*. Teams should include descriptions of equity and debt sources for financing this project. This should include each investor's equity commitment to the project (including letters of commitment), and satisfactory evidence of respondent's ability to secure project debt (including tentative letters of commitment from prospective lenders).

g. *Construction Costs*. To the extent available, teams should include a general description of all estimated construction costs, including hard and soft costs,

h. *Tenant and Leasing Approach*. Teams should include their approach to tenanting and leasing the building.

Financial Offer. Teams should include a description of their financial offer, including intent to propose a ground lease. This section should include the respondent's proposalfor ownership strategy in either a fee simple disposition or ground lease, and where applicable, fairmarket valuation, land valuation, conversion rate, and desired schedule. Teams should also state their intention to retain a long-term ownership position in the project or sell the developed project to a third party.

i. *Property Valuation*. In their proposal, respondents are expected to factor how they approached the fair market value. Respondents must provide an explanation in their proposal describing what value they intend to pay in the form of a ground lease for the Buildings land only. For comparison reasons only, also provide a value if land were sold for the Buildings portion only.

j. *Ownership & Fees.* The City will support a flexible payment schedule for lease. The City is responsible for funding all streetscape improvements and will consider, not guarantee reimbursement of impact fees.

Appendix 1: Park Schematic Concept Plan