ECS Florida, LLC

Subsurface Exploration and Geotechnical Engineering Report

Downtown Pompano Beach - City Hall

W Atlantic Blvd and N Dixie Hwy
Pompano Beach, Broward County, Florida 33064

ECS Project Number 85:1109

November 14, 2025

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Mr. Chris Andreoni
Keith Engineering
301 E Atlantic Blvd
Pompano Beach, Florida 33060

ECS Project No. 85:1109

Reference: Subsurface Exploration and Geotechnical Engineering Report
Downtown Pompano Beach - City Hall
W Atlantic Blvd and N Dixie Hwy
Pompano Beach, Broward County, Florida 33064

Dear Mr. Andreoni:

ECS Florida, LLC (ECS) has completed the subsurface exploration, laboratory testing, and geotechnical engineering analyses for the above-referenced project. Our services were performed in general accordance with our agreed-upon scope of work. This report presents our understanding of the geotechnical aspects of the project, the results of the field exploration conducted, and our geotechnical design and construction recommendations for the project.

It has been our pleasure to be of service to you during the design phase of this project. We would appreciate the opportunity to remain involved during the continuation of the design phase, and we would like to provide our services during construction phase operations as well to verify subsurface conditions estimated for this report. Should you have any questions concerning the information contained in this report, or if we can be of further assistance to you, please contact us.

Respectfully submitted,

ECS Florida, LLC

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EXECUTIVE SUMMARY

This executive summary is intended as a very brief overview of the primary geotechnical conditions that are expected to affect foundation design and earthwork construction.

- The proposed project is a new city hall development for the city of Pompano Beach, FL. The proposed development will consist of a 6-story parking garage building, a 4-story city hall building, and associated infrastructure. Based on our field observations and aerial images, the site is currently occupied by 1-story buildings in the north and south portions of the site.

- The geotechnical exploration performed for the planned development included 13 Standard Penetration Test (SPT) borings drilled to depths ranging from 20 to 60 feet below the existing ground surface (bgs). The subsurface profile at the boring locations generally consisted of Fine to Medium SAND (SP) to a depth of 20 feet, followed by a layer of SAND with SILT (SP-SM) to a depth of 40 feet underlain by LIMESTONE to maximum termination depths of the borings (60 feet below existing grade).

- Loading information was not provided at the time of this report. Based on our experience, ECS estimates the proposed 4-story building can have maximum column loads between 400 to 600 kips, and the 6-story building can have maximum column loads between 600 to 800 kips, depending on the type of construction.

- Due to the presence of loose sands at a depth of approximately 10 feet below the ground surface, and potentially in the range of influence of spread footings or mat foundations, we recommend ground improvement via vibratory techniques. The 4 and 6-story buildings can be supported on spread footings following ground improvement. Two main foundation alternatives are potentially viable:

    - **Vibro-compaction (sand columns) combined with shallow foundations** utilizing an allowable bearing pressure on the order of 6,000 pounds per square foot (psf), and
    - **Vibro-replacement (stone columns) combined with shallow foundations** utilizing an allowable bearing pressure on the order of 7,500 pounds per square foot (psf).

- We provide an alternative auger cast-in-place pile preliminary recommendation if vibration impacts to adjacent structures becomes an impediment to the use of vibratory techniques at the project site.

- Appurtenant and lightly loaded structures can be supported on shallow foundations using an allowable bearing pressure of 3,000 psf. Ground slabs can be designed as slab-on-grade systems.

Information gleaned from the executive summary should not be utilized in lieu of reading the entire geotechnical report.

1.0 INTRODUCTION

The purpose of this geotechnical exploration was to provide a geotechnical exploration and recommendations for a proposed new city hall development. ECS understands that the proposed development will involve the construction of a 6-story parking garage building, a 4-story city hall building, and associated infrastructure. The recommendations developed for this report are based on project information provided by Keith Engineering, which included a concept site plan.

Our services were provided in accordance with our Proposal No. 85:1117-GP, dated October 10, 2025, as authorized by Alex Lazowick with Kieth Engineering on October 14, 2025.

This report contains the procedures and results of our subsurface exploration and laboratory testing programs, a review of existing site conditions, engineering analyses, and recommendations for the design and construction of the project. All elevations reported are in feet and with reference to the North American Vertical Datum of 1988 (NAVD88) unless otherwise noted.

The report includes the following items.

- A brief review and description of our field and laboratory test procedures and the results of testing conducted,
- A review of area and site geologic conditions,
- A review of subsurface soil stratigraphy with pertinent available physical properties,
- Final copies of our soil exploration/test boring logs,
- Recommendations for site preparation,
- Recommendations for Engineered Fill placement,
- Recommended soil bearing pressures and foundation type,
- Recommendation for standard and heavy-duty pavement,
- Evaluation and recommendations relative to groundwater control, and
- Earthwork construction recommendations.

Our assessment was confined to the zone of soil likely to be stressed by the proposed construction. Our work did not address the potential for subsurface expression of deep geological conditions, such as sinkhole development related to karst activity. This evaluation requires a more extensive range of field services than those performed in this study. We will be pleased to conduct an exploration to evaluate the probable effect of the regional geology upon the proposed construction if you desire.

2.0 PROJECT INFORMATION

2.1 SITE INFORMATION

The site is located at the intersection of W Atlantic Blvd and N Dixie Hwy in Pompano Beach, Broward County, Florida, at the approximate location shown in the following figure.

Figure 2.1.1. Site Location

ECS reviewed aerial photographs of the subject property and immediate surrounding properties on Historic Aerials and Google Earth© Historical Imagery databases dating to 1957. Based on a review of aerial photographs dating back to 1957, the site appears to have been occupied by commercial and residential buildings running north to south within the subject site. Sometime between 1995 and 1999, a couple of buildings were removed in the south from the subject site, and by 2007, the north buildings were removed completely, with one building remaining in the southern area. No changes occurred onsite until sometime between 2022 and the present day, when a 1-story building was developed in the north area. Since then, the site has remained the same through the present day.

2.2 PROPOSED CONSTRUCTION

We understand that the project will involve the construction of a 6-story parking garage building, a 4-story city hall building, and associated infrastructure. Structural loading information was not available at the time this report was prepared; however, we have made assumptions based on similar projects and our experience.

The following information, included in Tables 2.2.1 and 2.2.2, summarizes our assumptions regarding the proposed structures.

Table 2.2.1 Design Values

SUBJECT	DESIGN INFORMATION / EXPECTATIONS
# of Stories	4-story above grade
Usage	City Hall/Government
Framing	We anticipate that the building will be principally cast-in-place concrete with minor reinforced masonry or steel frame.
Maximum Column Loads	400 to 600 kips
Lowest Finish Floor Elevation	Estimated at +/- 2 feet of Existing Grades

(1) If actual structural loads differ from these loads, ECS must be contacted immediately to revise building foundation recommendations and settlement calculations as needed.

Table 2.2.2 Design Values

SUBJECT	DESIGN INFORMATION / EXPECTATIONS
# of Stories	6-story above grade
Usage	Parking Garage
Framing	We anticipate that the building will be principally cast-in-place concrete with minor reinforced masonry or steel frame.
Maximum Column Loads	750 to 900 kips
Lowest Finish Floor Elevation	Estimated at +/- 2 feet of Existing Grades

(1) If actual structural loads differ from these loads, ECS must be contacted immediately to revise building foundation recommendations and settlement calculations as needed.

2.3 SOIL SURVEY MAPPING

Based on the Web Soil Survey for Broward County, Florida, as prepared by the U.S. Department of Agriculture Natural Resource Conservation Service (USDA-NRCS), the predominant soil types existing within the site area boundaries are described in the following table. The site area is illustrated superimposed on the USDA-NRCS Soil Survey Map in the following figure.

Web Soil Survey Data

Soil Type	Constituents	Drainage Class	Water Table
15 – Immokalee fine sand, 0 to 2 percent slopes	Fine sand	Poorly drained	About 6 to 18 inches
40 – Urban land, 0 to 2 percent slopes	Man-made fill	N/A	N/A

Soil mapping of the site vicinity, including soil types and numbers, is presented in the figure below, obtained from the USDA Web Soil site.

Site Soil Survey, Broward County, Florida

3.0 FIELD EXPLORATION AND LABORATORY TESTING

Our exploration procedures are explained in greater detail in Appendix B, including the insert titled Subsurface Exploration Procedures. Our scope of work included drilling thirteen (13) Standard Penetration Test (SPT) borings for the proposed development to depths ranging between 20 and 60 feet below ground surface (bgs) and three exfiltration tests.

Boring locations were identified in the field by ECS personnel using GPS techniques before mobilization of our drilling equipment, and their approximate locations are shown on the Boring Location Diagram in Appendix A. The approximate as-drilled boring locations are shown on the Boring Location Diagram in Appendix A. Ground surface elevations noted on our boring logs were interpolated from published topographic information and should be considered approximate. We recommend that a boring location survey be performed by a professional surveyor to extend the usefulness of the subsurface information gathered. SPT blow counts were conducted in the borings at regular intervals in general accordance with ASTM D 1586. Small representative samples were obtained during these tests and were used to classify the soils encountered. The standard penetration resistances are obtained to provide a general indication of soil density and correlate to shear strength parameters.

3.1 EXFILTRATION TESTING

Exfiltration testing was performed in accordance with procedures from the South Florida Water Management District (SFWMD) Usual Open Hole Test found in the SFWMD Environmental Resource Permit Information Manual Volume IV (September 2010 edition) at the location denoted as EXF-01 through EXF-03 on the attached Exfiltration Log found in Appendix B, which includes the hydraulic conductivity (K_{IV} value). The K_{IV}-values are summarized below.

Tests	K_{lv} –Value (cfs/ft2 –ft head)
EXF-01	5.60×10^{-4}
EXF-02	1.44×10^{-4}
EXF-03	1.83×10^{-3}

Note: Refer to the attached Usual Open Hole Test summary sheets for detailed information

3.2 SUBSURFACE CHARACTERIZATION

The following sections provide generalized characterizations of the soil strata. Please refer to the boring logs in Appendix B.

Proposed Generalized Stratigraphy

Approximate Depth (ft)	Elevation (1) (ft)	Stratum	Description	Ranges of SPT(2) N-values (bpf)
0 – 20 to 30	EL.+9.5 to EL.+4.5 – EL.-12.5 to EL.-20.5	I	Fine to Medium SAND (SP); generally medium dense; light brown to dark brown	1 – 32
20 to 30 – 35 to 45	EL.-12.5 to EL.-20.5 - EL.-27.5 to EL.-37.5	II	Fine to Medium SAND with SILT (SP-SM); generally medium dense; brown to light gray	8 – 41
35 to 45 – 40 to 60(3)	EL.-27.5 to EL.-37.5 - EL.-32.5 to EL.-55.5	III	LIMESTONE; light brown to light gray	9 – 50/2”

Notes:
(1) Elevation ranges are approximate.
(2) SPT refers to the Standard Penetration Test.
(3) Termination depths of borings.

All elevations reported are in feet and with reference to the North American Vertical Datum of 1988 (NAVD88) and are considered approximate. A graphical presentation of the subsurface conditions is shown on the Generalized Subsurface Profile Diagrams included in Appendix A.

3.3 GROUNDWATER OBSERVATIONS

Groundwater levels were measured in our boring logs in Appendix B. Groundwater depths measured at the time of drilling ranged from 0.75 feet to 6.5 feet below the ground surface. Variations in the long-term water table may occur because of changes in precipitation, evaporation, surface water runoff, construction activities, and other factors. Based upon our interpretation of the subsurface data, site condition, and Soil Survey, we estimate the normal seasonal high groundwater level is at an elevation of approximately El. +4.0 feet NAVD88.

Based on the Flood Insurance Rate Map (FIRM) Map Number 12011C0357J of Broward County, effective date July 31, 2024, indicates that the majority of the site is located within Flood Zone AH, which has a Base Flood Elevation (BFE) range of EL.+10.0 to EL.+12.0 feet.

3.4 LABORATORY TESTING

Each sample was visually classified based on texture and plasticity in accordance with ASTM D2488 Standard Practice for Description and Identification of Soils (Visual-Manual Procedures) including USCS classification symbols, and ASTM D2487 Standard Practice for Classification for Engineering Purposes (Unified Soil Classification System (USCS)). After classification, the samples were grouped in the major zones noted on the boring logs in Appendix B. The group symbols for each soil type are indicated in parentheses along with the soil descriptions. The stratification lines between strata on the logs are approximate; in situ, the transitions may be gradual.

The laboratory testing consisted of classification and index property tests performed on samples obtained during our field exploration operations. Laboratory tests performed included percent fines (ASTM D1140) and moisture content (ASTM D2216) tests. The test results are shown on the boring logs in Appendix B and are tabulated in Appendix C.

4.0 DESIGN RECOMMENDATIONS

4.1 BUILDING/STRUCTURE DESIGN

The buildings' height (4 and 6 stories) is at the typical local limit for spread footings in soil. Due to the presence of loose sands in the upper 10 feet and with the range of influence of shallow foundations we recommend ground improvement via vibratory techniques to improve the subgrade below spread footings. Vibro-compaction (sand columns) or Vibro-replacement (stone columns) with shallow foundations are recommended for support of the 4 and 6-story buildings. Vibratory techniques densify the soil column increasing the bearing capacity for shallow foundations and reducing settlement. Vibratory techniques have the disadvantage of inducing vibrations that can disturb neighboring sites. Due to this, we provide an alternative auger cast-in-place pile design. To confirm recommendations for an ACIP pile alternative, we would require a deeper boring to verify conditions below the tip of the pile.

4.1.1 Vibro-compaction (Sand Columns) or Vibro-Replacement (Stone Columns)

Ground improvement methods in the form of vibratory sand columns or stone columns are technically viable in combination with shallow foundations to support the project. Vibro-compaction/Vibro-replacement columns extending to depths on the order of 30 to 40 feet below the ground surface would be sufficient to result in tolerable settlements for the project (on the order of 1 inch). Sand columns would allow for an allowable bearing pressure of approximately 6,000 psf while stone columns would increase the allowable bearing pressure to approximately 7,500 psf.

Vibro-compaction/Vibro-replacement columns are installed using a soil vibrator that is introduced to the design depth. The soil vibrator can either be mounted to specially fabricated equipment, such as a Vibrocat, or free-hung from a lattice boom crawler crane. The vibration of loose granular soils will result in densification, and the resulting cavity is filled with either onsite sand (sand columns) or stone (stone columns) as the vibrator is withdrawn. Raising and lowering the vibrator in two-to three-foot increments provides densification effort to the sand/stone and surrounding granular soils. A dense column is formed against the surrounding soil. This process generates

vibrations that radiate from the stone column location and can affect neighboring structures. Due to this, stone columns have the potential to affect third-party structures if they are in proximity.

Stone columns are of a design-build nature and will need to be procured this way. Drawings and specifications should be prepared by the engineering consultants sufficient to adequately bid the work. The proposals prepared by any specialty foundation contractor should be provided to ECS so that we may review the proposed construction techniques to ensure compliance with the intention of our geotechnical recommendations.

4.1.2 ACIP Pile Alternative (Preliminary Recommendations)

ACIP piles can be utilized as an alternative to support the buildings if ground improvement is not feasible. Based on the assumed loads we estimate that a 14-inch approximately 60-foot-long pile would likely be sufficient and provide an efficient foundation plan consisting of mostly two to three pile caps (2 to 3-pc's). To confirm recommendations for an ACIP pile alternative, we would require a deeper boring to verify conditions below the tip of the pile. The following table summarizes our recommendations for ACIP piles for the project.

Design Parameters	14-inch
Allowable Compressive Capacity	165 tons
Allowable Uplift Capacity	82 tons
Spring Constant	330 kips/in
Allowable Lateral Capacity[1] (Fixed Head Condition)	5.5 tons
Estimated Pile Length and Elevation	60 feet bgs
	Approx. EL -51.5 feet
Minimum Center to center-to-center spacing	3.5 feet
Minimum Grout Compressive Strength	7,500 lbs/in^2

Although ACIP piles would likely be the most expensive alternative, they can be installed with minimal vibrations if that becomes a determining factor. We can additionally evaluate alternative ACIP diameters if the structural design deems that a higher or lower capacity pile is more efficient for the foundation layout.

The project structural engineer should design the pile reinforcement and grout strength to resist all axial, bending, tensile and shear stresses in the pile. If the full recommended pile uplift capacity is not required, the pile uplift capacity may be reduced to minimize the quantity of steel reinforcement required for tension piles. Additional lateral load can be achieved by using battered piles installed at a 1 horizontal (H) to 6 vertical (V) batter. The anticipated settlement of the ACIP pile recommendations is estimated to be less than 1 inch total, with differential settlements of less than half an inch.

The estimated pile tip elevations presented are based on where the top of the Limestone stratum was encountered in the borings, and the required embedment presumes the Limestone will be

confirmed during pile installation activities. Deeper piles may be required if the bearing stratum is encountered deeper than anticipated or if weaker conditions are encountered during the drilling of the required embedment into the bearing stratum. Piles should not be installed shallower than the estimated pile lengths.

ACIP piling operations are highly dependent on the workmanship of the operator and, therefore, require strict, full-time quality control and inspection. For this reason, we strongly recommend that ECS provides inspection services during the ACIP pile installation. Full-time observation and inspection will allow us to evaluate if piles are being installed properly by the contractor, provide an accurate record of the installation, and provide an opportunity to correct anomalous or unforeseen conditions during pile installation.

Test Pile Program: A load-test program must be performed to verify the design criteria for the estimated capacities of the selected foundation elements well in advance of production foundation installation and to identify any constructability issues that should be evaluated and resolved before the start of production pile installation activities. For the building, conventional top-load testing could be used. At a minimum, we recommend that one compression load test. The applicable ASTM and building code requirements shall be followed for the performance of these load tests.

4.2 APPURTENANT LIGHTLY LOADED STRUCTURES

Appurtenant structures and other lightly loaded miscellaneous structures for the project can be supported on shallow foundations following proofrolling and compaction as outlined in Section 5. These structures would not require ground improvement. Recommendations for shallow foundations are summarized in the below table.

Summary of Building Shallow Foundation Design Parameters

Design Parameter	Column Footing	Wall Footing
Net Allowable Bearing Pressure (1)	3,000 psf	
Acceptable Bearing Soil Material	Engineered Fill	
Minimum Width	24 inches	18 inches
Minimum Footing Embedment Depth (below slab or finished grade)	24 inches	24 inches
Estimated Total Settlement (2)	Less than 1-inch	Less than 1-inch
Estimated Differential Settlement (3)	Less than 1/2 inch between columns	Less than 1/2 inch

Notes:

(1) Net allowable bearing pressure is the applied pressure in excess of the surrounding overburden soils above the base of the foundation.
(2) Based on one-story structures and lightly loaded appurtenant structures.
(3) Based on maximum column/wall loads and variability in borings. Differential settlement can be re-evaluated once the actual loads and foundation plans are more complete.

Potential Undercuts: If soft or unsuitable soils are observed at the footing bearing elevations, the unsuitable soils should be undercut and replaced with approved engineered fill or with lean

concrete (f'c ≥ 1,000 psi at 28 days) or No. 57 stone, as applicable, up to the original design bottom of footing elevation.

4.3 FLOOR SLABS

Provided subgrades and Engineered Fills are prepared as discussed herein, the proposed floor slabs can be constructed as Ground Supported Slabs (or Slab-On-Grade). Based on the estimated lowest finished floor elevation, it appears that the slabs will bear on compacted fill and/or natural sandy soils. However, there may be areas of loose or yielding soils that should be removed from below the structure foundation and the slab footprints, plus an extended horizontal distance of 5 feet, and replaced with compacted Engineered Fill in accordance with the recommendations included in this report.

The following graphic depicts our soil-supported slab recommendations:

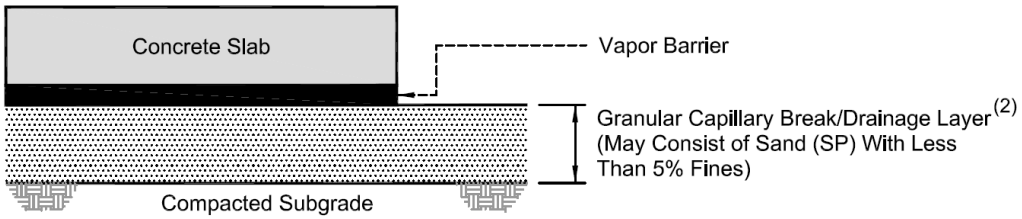


Figure 4.1.2.1

1. Drainage Layer Thickness: 4 inches
2. Drainage Layer Material: GRAVEL (GP, GW), SAND (SP, SW)

Soft or yielding soils may be encountered in some areas. Those soils should be removed and replaced with compacted Engineered Fill in accordance with the recommendations included in this report.

Vapor Barrier: Before the placement of concrete, a vapor barrier may be placed on top of the granular drainage layer to provide additional protection against moisture penetration through the floor slab. When a vapor barrier is used, special attention should be given to surface curing of the slab to reduce the potential for uneven drying, curling and/or cracking of the slab. Depending on the proposed flooring material types, the structural engineer and/or the architect may choose to eliminate the vapor barrier.

Slab Isolation: Soil-supported slabs should be isolated from the foundations and foundation-supported elements of the structure so that differential movement between the foundations and slab will not induce excessive shear and bending stresses in the floor slab. Where the structural configuration prevents the use of a free-floating slab such as in a drop-down footing/monolithic slab configuration, the slab should be designed with suitable reinforcement and load transfer devices to preclude overstressing of the slab.

4.4 SITE DESIGN CONSIDERATIONS

4.4.1 Pavements

Subgrade Characteristics: Based on the results of our soil test borings, it appears that the soils that will be exposed as pavement subgrade will consist mainly of structural fill material and/or sandy soils. The pavement design assumes subgrades consist of suitable materials evaluated by ECS and placed and compacted to at least 98 percent of the maximum dry density as determined by the Modified Proctor test (ASTM D1557).

Pavement Considerations: Pavement subgrades should be prepared in accordance with the recommendations in Section 5.2 Structural Fill. We are providing recommendations for both standard duty and heavy-duty flexible and rigid pavement sections. For the design and construction of exterior pavements, the subgrade should be prepared in strict accordance with the recommendations in the geotechnical report. An important consideration with the design and construction of pavements is surface and subsurface drainage. Where standing water develops, softening of the subgrade and other problems related to the premature deterioration of the pavement can be expected.

Pavement recommendations are based upon local experience with similar pavement conditions, Florida Department of Transportation (FDOT), and AASHTO Guide for Design of Pavement Structures.

A minimum separation of 18 inches should be maintained between the pavement aggregate base (limerock) or base course in asphalt pavement areas and the seasonal high groundwater levels. In most cases, this separation is available. Recommended pavement sections are described below in Table 4.2.1.

Table 4.2.1: Pavement Structures Sections

	Flexible (Hot Mix Asphalt)		Rigid (Concrete)	
Component	**Standard**	**Heavy**	**Standard**	**Heavy**
Surface Course	1.5 inches	2.0 inches	5 inches	6 inches
Base Course (Limerock)	6 inches	8 inches	-	-
Stabilized Subgrade	12 inches	12 inches	12 inches	12 inches

Hot Mix Asphalt Surface Course (flexible): Prime and tack coats should be applied during the construction of the pavement sections in accordance with Florida Department of Transportation (FDOT) Standard Specifications for Road and Bridge Construction (current edition). Before applying any bituminous material, all loose dust, dirt, and other foreign material which might prevent proper bond with the existing surface should be removed. Care should be taken in cleaning the outer edges, to ensure that the prime or tack coat will adhere. Prior to applying prime coat, the moisture content of the base should be checked to make sure that it does not exceed the optimum moisture. The hot mix asphalt concrete pavement should consist of a Superpave mix Type SP as per FDOT Standard Specifications for Road and Bridge Construction (current edition), Section 334 Superpave Asphalt Concrete. Recycled Asphalt Pavement (RAP) and other recycled materials may be used as indicated in Section 334, previously mentioned. If this is to be a LEED certified project, credits may be awarded for using such materials.

Base Course: Typically, the most prevalent flexible or rigid pavement base material in South Florida is limerock. Limerock is readily available from FDOT approved mines in South Florida. As an alternative base course, crushed concrete could be used. Limerock should have a minimum LBR value of 100 and should be mined from an FDOT approved source. Limerock should be placed in maximum six-inch lifts and compacted to 98 percent of the Modified Proctor (ASTM D1557) maximum dry density. Limerock pavement base shall be in accordance with Section 911 and 200 of the FDOT Specifications for Road and Bridge Construction (Current Edition).

Stabilized Subgrade: Stabilized subgrade soil material should have a minimum Limerock Bearing Ratio (LBR) value of 40, as specified by FDOT requirements for Type B or Type C Stabilized Subgrade. All stabilized subgrade materials should be compacted to 98 percent of the Modified Proctor (ASTM D1557) maximum dry density. Furthermore, the stabilized subgrade may be onsite soils, imported material, or a blend of on-site soils and imported materials. If a blend is proposed, we recommend that the contractor perform a mix design to find the optimum mix proportions. It should be noted that a minimum of 97 percent of the stabilized material should pass a 3½ inch sieve.

Concrete surface course (rigid): Our recommendation for heavy-duty Portland cement concrete (pcc) pavement section is using unreinforced Portland cement concrete surface course (Type 1) providing a minimum 28-day compressive strength of 4,000 pounds per square inch (psi). This section would be placed atop a layer of fine (SP). Appropriate steel reinforcing and jointing should also be incorporated into the design of all PCC. In addition, the concrete should provide a minimum 28-day flexural strength (modulus of rupture) of 600 psi, based on the third point loading of concrete beam samples.
Rigid pavement notes recommendations:

- The surface of the subgrade soils should be free of all soft, unstable, or unsatisfactory soil and smooth and uniform. Any disturbances or wheel rutting corrected prior to placement of concrete.
- The subgrade soils should be moistened not more than 24 hours prior to placement of concrete but there should be no standing water present during concrete placement.
- Concrete pavement thickness should be uniform throughout, with the exception to thickened edges (curbs or footings).
- The bottom of the pavement base course should be separated from the estimated typical wet season groundwater level by at least one foot.
- Maximum Control Joint Spacing should be 12 feet by 12 feet
- Minimum Sawcut depth should be at least 1/4 of concrete thickness
- Isolation joints are recommended at the interface between concrete pavement and fixed objects such as drainage inlets, light poles, etc.
- Control joints should be sawed as soon as the concrete can withstand traffic and concrete surface and aggregate raveling can be prevented.

It is recommended that dowels be used for all construction joints for new pavements, the interface between new pavement and existing pavements, and interface at existing curb and gutter. It is

recommended that 3/4-inch diameter smooth dowels 18 inches long spaced 12 inches on center be used. The full length of the dowels should be lightly oiled.

5.0 SITE CONSTRUCTION RECOMMENDATIONS

5.1 Subgrade Preparation

5.1.1 Previous Site Development

When reviewing our recommendations, please note that there are existing structures and pavements on this site and that previous grading activities have likely occurred on this site. Our experience with previously graded sites indicates that unexpected conditions can exist that were not encountered by the soil test borings. Unexpected conditions could include areas of soft or loose fill, debris-laden fill, and other obstructions or conditions. There is a possibility that existing underground utilities may be present and should be removed or abandoned in place. It should be noted that if existing or former underground utilities are abandoned and not removed or grouted fully, soil may migrate into open voids (e.g., open pipes from utilities), causing subsidence of the overlaying construction. These conditions should be addressed by on-site engineering evaluation by ECS during construction. In addition, existing utility lines, if located within proposed construction areas, may cause the new construction to behave unexpectedly due to the variable support conditions caused by old backfill. Furthermore, old backfill along utility lines may also provide inadequate support due to poor compaction. The poor support conditions may result in settlement or distress of the overlying new construction. Based on our experience, existing utility backfill is rarely suitable for the support of new foundations. In slab areas, the load support characteristics of the backfill along utility lines typically can be assessed with careful proofrolling and subgrade evaluation during construction. Some undercutting and/or bridging of these backfill areas should be anticipated if utilities are present.

5.1.2 Demolition

Site demolition should include the removal of existing buildings, asphalt, concrete curb and gutter, underground utilities and pipes from the proposed construction areas. Any underground utilities that may exist within the proposed building areas should be relocated, and any within proposed pavement areas should be evaluated by the design team and relocated or filled with grout, if necessary. The excavated concrete can be recycled and reused as engineered fill, so long as it is free of any miscellaneous debris such as reinforcing steel. Excavations or cavities resulting from demolition should be backfilled with compacted structural backfill.

5.1.3 Stripping and Grubbing

The subgrade preparation should consist of stripping all vegetation, rootmat, topsoil, existing fill, existing pavements and aggregate base, and any soft or unsuitable materials. ECS should be retained to verify that topsoil and unsuitable surficial materials have been removed prior to the placement of Engineered Fill or the construction of structures.

5.1.4 Proofrolling

The exposed cleared subgrade should be thoroughly proofrolled with construction equipment having a minimum axle load of 20 tons [e.g. fully loaded tandem-axle dump truck]. Proofrolling should be traversed in two perpendicular directions with overlapping passes of the vehicle under the observation of an ECS technician. This procedure is intended to assist in identifying any localized yielding materials.

Where proofrolling identifies areas that are unstable or "pumping" subgrade those areas should be repaired prior to the placement of any subsequent Engineered Fill or other construction materials. Methods of stabilization include undercutting or moisture conditioning. The situation should be discussed with ECS to determine the appropriate procedure. Test pits may be excavated to explore the shallow subsurface materials to help in determining the cause of the observed unstable materials, and to assist in the evaluation of appropriate remedial actions to stabilize the subgrade.

5.1.5 Site Temporary Dewatering

We anticipate localized dewatering may be feasible using sump pumps for footings and utilities to a depth of approximately 2 feet below groundwater level. However, should deeper dewatering or water conditions beyond the capability of sump pumping be needed, the contractor should submit a Dewatering Plan in accordance with project specifications. Regardless of any requirement for dewatering, we recommend that the groundwater control measures, where necessary, remain in place until compaction of the existing subgrade soils is completed and until backfilling has reached a height of 2 feet above the groundwater level at the time of construction. The site should be graded to direct surface water runoff from the construction area.

Note that discharge of produced groundwater to surface waters of the state from dewatering operations or other site activities is regulated and would require temporary dewatering permits from Broward County and the State of Florida Department of Environmental Protection (FDEP). This permit is termed a Generic Permit for the Discharge of Produced Groundwater from Any Non-Contaminated Site Activity. If discharge of produced groundwater is anticipated, we recommend sampling and testing of the groundwater early in the site design phase to prevent project delays during construction. ECS can provide the sampling, testing, and professional consulting required to evaluate compliance with the regulations.

5.1.6 Compaction

Subgrade Compaction: Upon completion of subgrade documentation, the exposed subgrade within the ten-foot expanded building limit should be moisture conditioned to within +/- two percent of the soil's optimum moisture content and be compacted with suitable equipment (minimum ten-ton roller) to a depth of ten inches. Subgrade compaction within the expanded building and pavement limits should be to a dry density of at least 98 percent of the Modified Proctor maximum dry density (ASTM D1557). Beyond these areas, compaction of at least 95 percent should be achieved. ECS should be called on to document that proper subgrade compaction has been achieved.

Subgrade Compaction Control: The expanded limits of the proposed construction areas should be well defined, including the limits for buildings, fills, and slopes, etc. Field density testing of subgrades will be performed at frequencies in Table 5.1.6.1

Table 5.1.6.1 Frequency of Subgrade Compaction Testing

Location	Frequency of Tests
Expanded Building Limits	One test per 2,000 sq. ft.
Pavement Areas	One test per 5,000 sq. ft.
Utility Trenches	One test per 200 linear ft.
All Other Non-Critical Areas	One test per 5,000 sq. ft.

Subgrade Stabilization: In some areas, particularly low-lying, wet areas of the site, undercutting of excessively soft materials may be considered inefficient. In such areas, the use of a reinforcing geotextile or geogrid might be employed, under the advisement of ECS. Suitable stabilization materials may include medium-duty woven geotextile fabrics or geogrids. The suitability and employment of reinforcing or stabilization products should be determined in the field by ECS personnel, in accordance with project specifications.

5.2 ENGINEERED FILL

Prior to placement of Engineered Fill, representative bulk samples (about 50 pounds) of on-site and/or off-site borrow should be submitted to ECS for laboratory testing, which will typically include Atterberg limits, natural moisture content, grain-size distribution, and moisture-density relationships (i.e., Proctors) for compaction. Import materials should be tested prior to being hauled to the site to determine if they meet project specifications. Alternatively, Proctor data from other accredited laboratories can be submitted if the test results are within the last 90 days.

Satisfactory Engineered Fill Materials: Materials satisfactory for use as Engineered Fill should consist of inorganic soils certified environmentally clean with the following engineering properties and compaction requirements.

ENGINEERED FILL INDEX PROPERTIES	
Subject	**Property**
Building and Pavement Areas	LL < 40, PI<6
Max. Particle Size	4 inches
Fines Content	Max. 12 % < #200 sieve
Max. organic content	5% by dry weight

ENGINEERED FILL COMPACTION REQUIREMENTS	
Subject	**Requirement**
Compaction Standard	Modified Proctor, ASTM D1557
Required Compaction	98% of Max. Dry Density
Moisture Content	-2 to +3 % points of the soil's optimum value

ENGINEERED FILL COMPACTION REQUIREMENTS	
Subject	**Requirement**
Loose Thickness	12 inches prior to compaction

Fill Placement: Fill materials should not be placed on excessively wet soils. Excessively wet soils or aggregates should be scarified, aerated, and moisture conditioned.

At the end of each workday, all fill areas should be graded to facilitate drainage of any precipitation, and the surface should be sealed by use of a smooth-drum roller to limit infiltration of surface water. During placement and compaction of new fill at the beginning of each workday, the Contractor may need to scarify existing subgrades to a depth on the order of four inches so that a weak plane will not be formed between the new fill and the existing subgrade soils.

Drying and compaction of wet soils is typically difficult during the rainy season. Accordingly, earthwork should be performed during the drier times of the year, if practical. Proper drainage should be maintained during the earthwork phases of construction to prevent ponding of water which tends to degrade subgrade soils.

Engineered Fill material should be placed in horizontal lifts in confined areas such as utility trenches, portable compaction equipment and thin lifts of three inches to four inches may be required to achieve specified degrees of compaction.

We recommend that the grading contractor have equipment on site during earthwork for both drying and wetting fill soils. We do not anticipate significant problems in controlling moisture within the fill during dry weather, but moisture control may be difficult during extended periods of rain.

5.3 FOUNDATIONS AND FLOOR SLABS

Protection of Foundation Excavations: Exposure to the environment may weaken the soils at the footing bearing level if the foundation excavations remain open for too long a time. Therefore, foundation concrete should be placed the same day that excavations are made. If the bearing soils are softened by surface water intrusion or exposure, the softened soils must be removed from the foundation excavation bottom immediately prior to placement of concrete.

Footing Subgrade Observations: After over-excavation of any deleterious organic soils, most of the soils at the foundation bearing elevation are anticipated to be suitable for support of the proposed structure. It is important to have ECS observe the foundation subgrade prior to placing foundation concrete; to confirm the bearing soils are what was anticipated.

Slab Subgrade Verification: Prior to placement of a drainage layer, the subgrade should be prepared in accordance with the recommendations found in Section 5.1.4 Proofrolling.

5.4 UTILITY INSTALLATIONS

Utility Subgrades: The soils encountered in our exploration are expected to be generally suitable for support of utility pipes. The pipe subgrades should be observed and probed for stability by ECS.

Any loose or unsuitable materials encountered should be removed and replaced with suitable compacted Engineered Fill, or pipe stone bedding material.

Utility Backfilling: The granular bedding material should be at least 4 inches thick, but not less than that specified by the civil engineer's project drawings and specifications. We recommend that the bedding materials be placed up to the springline of the pipe. Fill placed for support of the utilities, as well as backfill over the utilities, should satisfy the requirements for Section 5.1 Subgrade Preparation and Section 5.2 Engineered Fill.

Temporary Dewatering: Groundwater may be encountered during utility excavations. It is expected that removal of perched water, which seeps into excavations, could be accomplished by pumping from sumps excavated in the trench bottom and which are backfilled with FDOT Size No. 57 Stone or open graded bedding material. Should water conditions beyond the capability of sump pumping be encountered, the contractor should submit a Dewatering Plan in accordance with project specifications.

Excavation Safety: All excavations and slopes should be constructed and maintained in accordance with OSHA excavation safety standards. The contractor is solely responsible for designing, constructing, and maintaining stable temporary excavations and slopes. The contractor's responsible person, as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, slope inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations. ECS is providing this information solely as a service to our client. ECS is not assuming responsibility for construction site safety or the contractor's activities; such responsibility is not being implied and should not be inferred.

6.0 CLOSING

ECS has prepared this report to guide the geotechnical-related design and construction aspects of the project. We performed these services in accordance with the standard of care expected of professionals in the industry performing similar services on projects of like size and complexity at this time in the region. No other representation expressed or implied, and no warranty or guarantee is included or intended in this report.

The description of the proposed project is based on information provided to ECS by Keith Engineering. If any of this information is inaccurate or changes, either because of our interpretation of the documents provided or site or design changes that may occur later, ECS should be contacted so we can review our recommendations and provide additional or alternate recommendations that reflect the proposed construction.

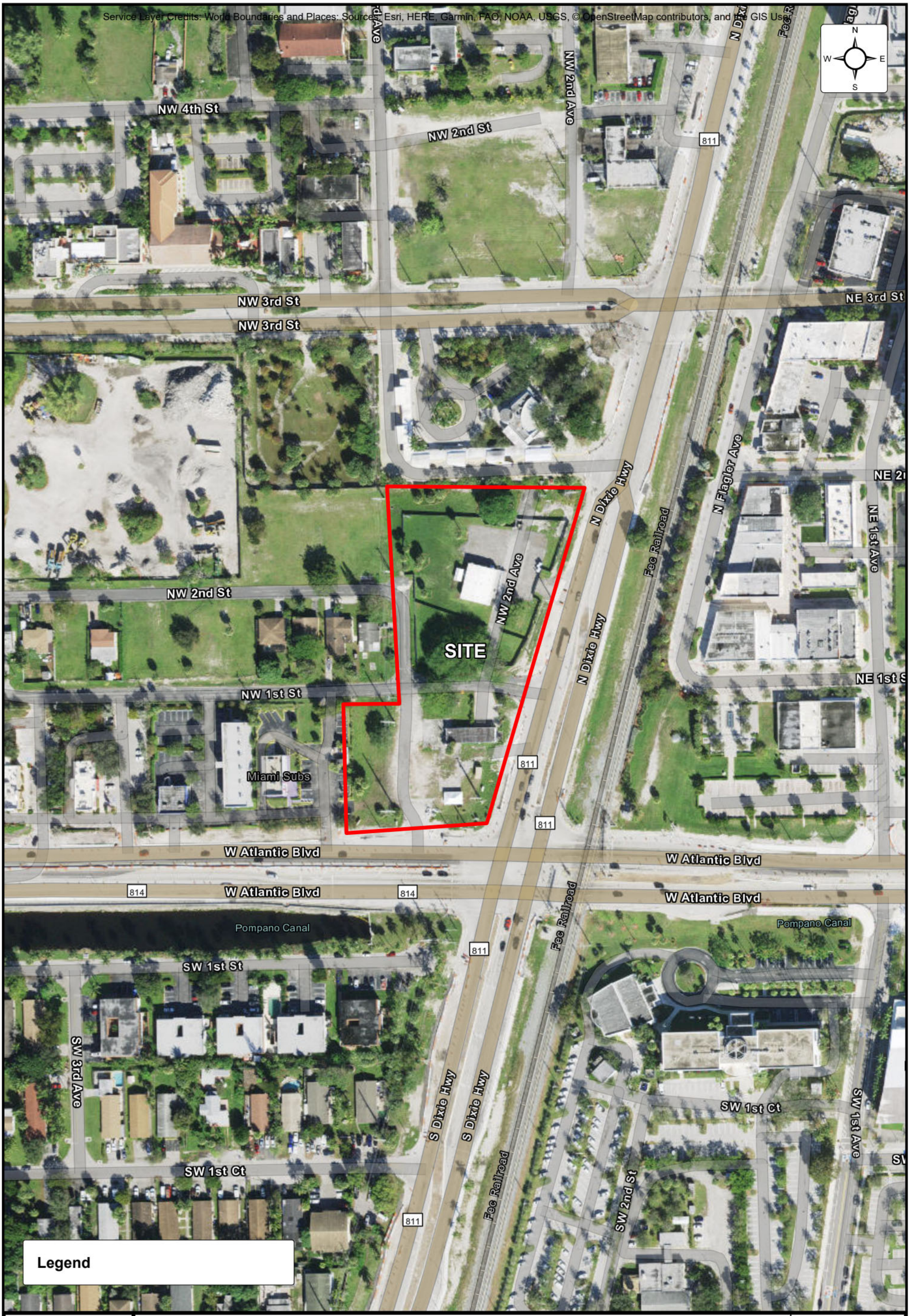
We recommend that ECS review the project plans and specifications so we can confirm that those plans/specifications are in accordance with the recommendations of this geotechnical report.

Field observations and quality assurance testing during earthwork and foundation installation are an extension of, and integral to, the geotechnical design. We recommend that ECS be retained to apply our expertise throughout the geotechnical phases of construction, and to provide consultation and recommendation should issues arise.

ECS is not responsible for the conclusions, opinions, or recommendations of others based on the data in this report.

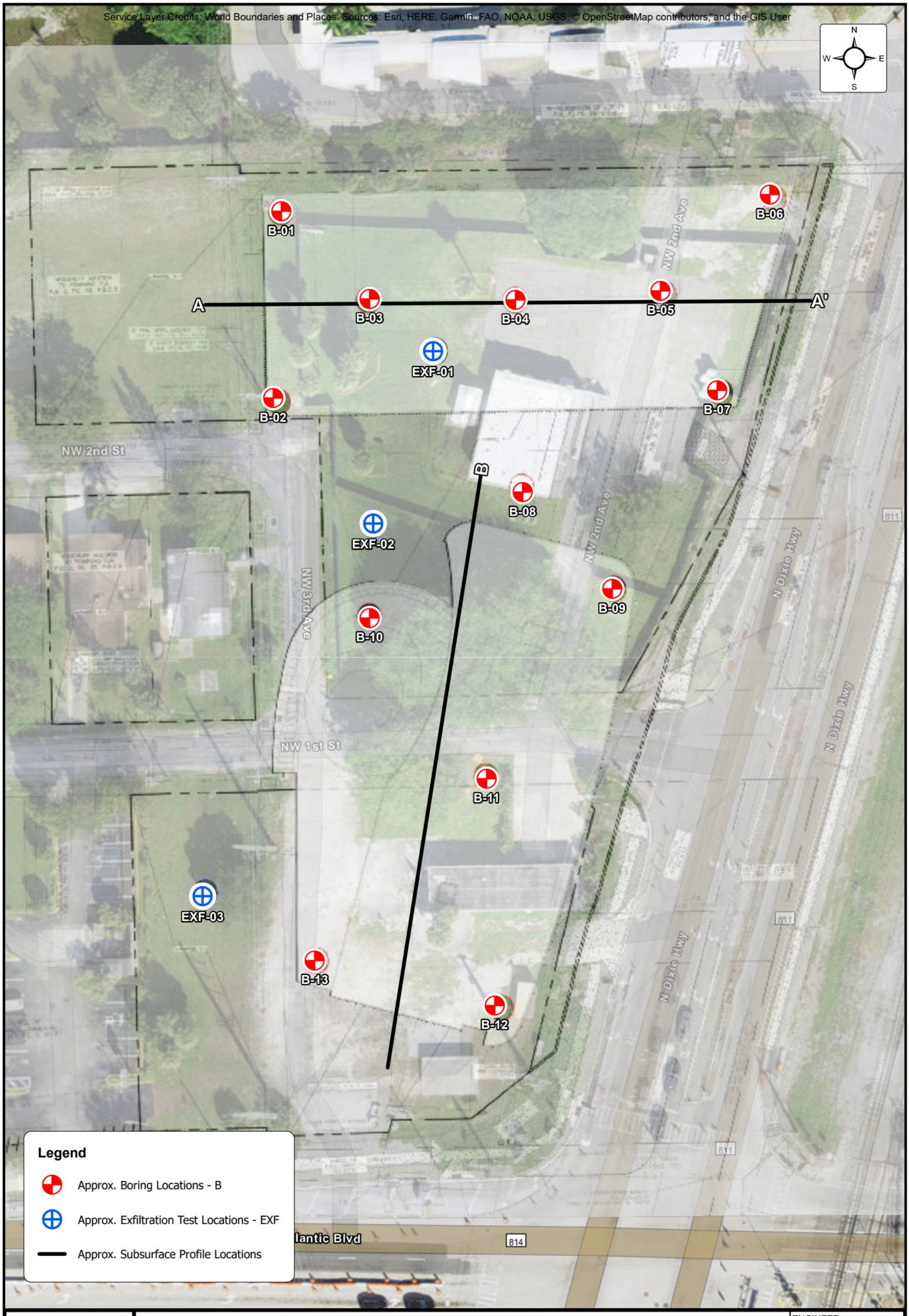
APPENDIX A – Diagrams

Site Location Diagram
Boring Location Diagram
Generalized Subsurface Profile A-A’ and B-B’
Flood Map



SITE LOCATION DIAGRAM
Downtown Pompano Beach - City Hall
W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida
Keith Engineering

ENGINEER	GL5
SCALE	1" = 150'
PROJECT NO.	85:1109
SHEET	1
DATE	11/4/2025



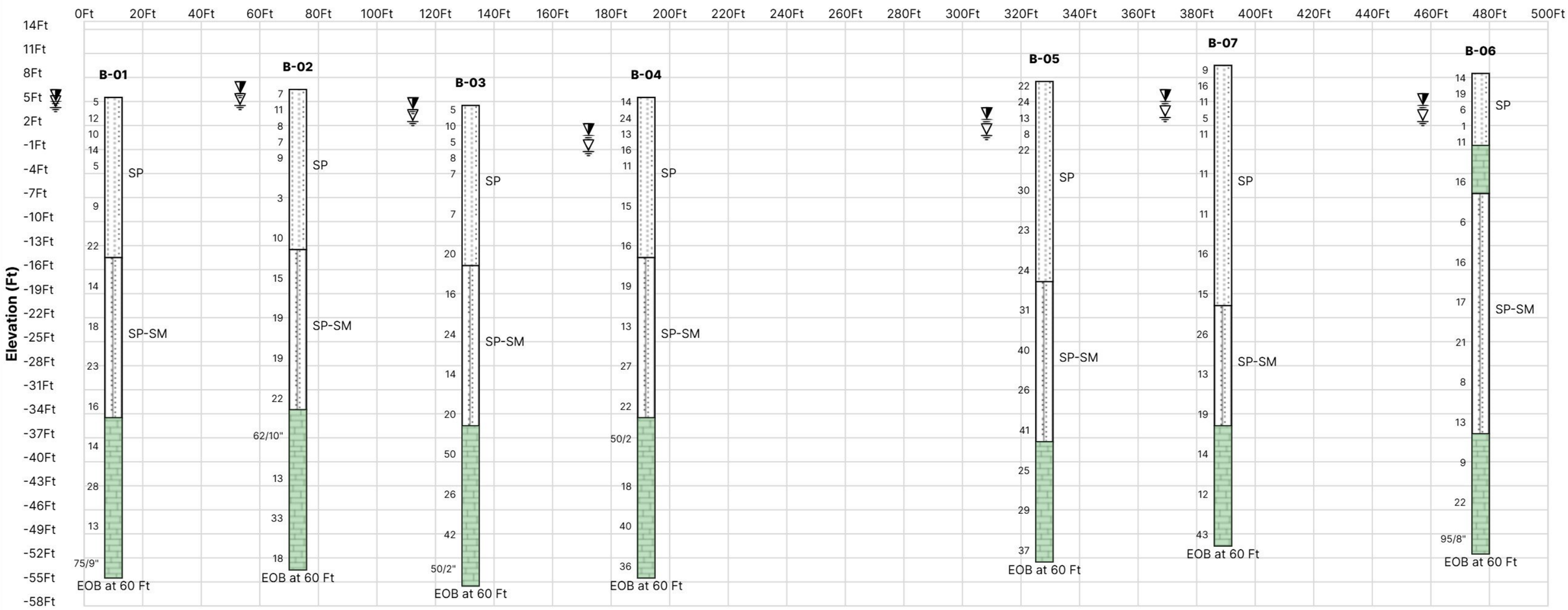
BORING LOCATION DIAGRAM
Downtown Pompano Beach - City Hall

W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida

Keith Engineering

ENGINEER	GL5
SCALE	1" = 50'
PROJECT NO.	85:1109
SHEET	1
DATE	11/4/2025

Generalized Subsurface Profile A-A;

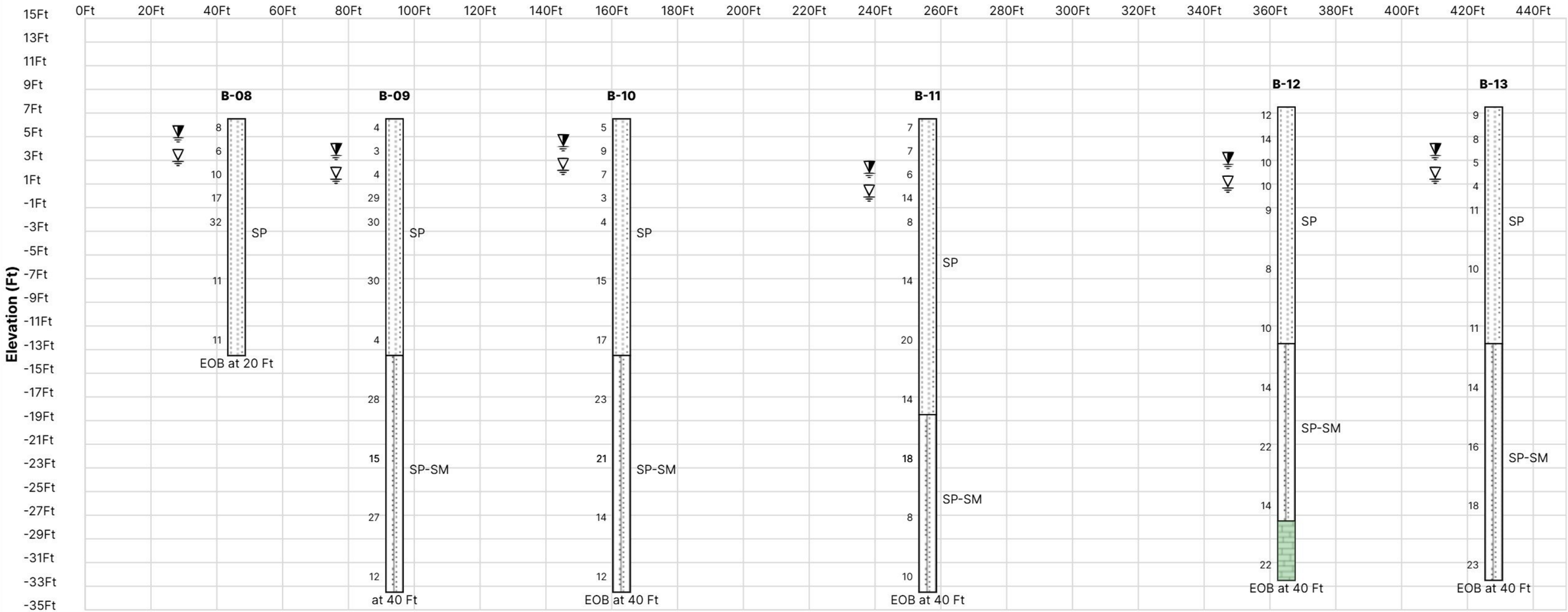


CLIENT:	Keith Engineering	PROJECT:	Downtown Pompano Beach - City Hall
DRAWN DATE:	Nov 04, 2025	PROJECT NO.:	85:1109
CHECKED DATE:	Nov 04, 2025	SCALE:	AS SHOWN

Notes:
1-EOB: END OF BORING AR: AUGER REFUSALSR: SAMPLER REFUSAL
2-SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL INFORMATION.
3-STANDARD PENETRATION TEST RESISTANCE (LEFT OF BORING) IN BLOWS PER FOOT (ASTM D1586).
4- TOPOGRAPHIC INFORMATION IS BASED ON PUBLICLY AVAILABLE DATA (GOOGLE OR CESIUM).THE TOPOGRAPHIC LINE SHOWN BETWEEN BORINGS IS FOR VISUAL REFERENCE ONLY.PLEASE REFER TO THE REFERENCE NOTES FOR BORING LOGS FOR SYMBOLOGY MEANING AND ADDITIONAL

Plastic Limit Water Content Liquid Limit X—●—△	WL (First Encountered)		Fill
[FINES CONTENT %]	WL (Completion)		Possible Fill
BOTTOM OF CASING	WL (Estimated Seasonal High Water)		Probable Fill
LOSS OF CIRCULATION	WL (Stabilized)		WR/Rock
CALIBRATED PENETROMETER			

Generalized Subsurface Profile B-B'



CLIENT:	Keith Engineering	PROJECT:	Downtown Pompano Beach - City Hall
DRAWN DATE:	Nov 06, 2025	PROJECT NO.:	85:1109
CHECKED DATE:	Nov 06, 2025	SCALE:	AS SHOWN

Notes:
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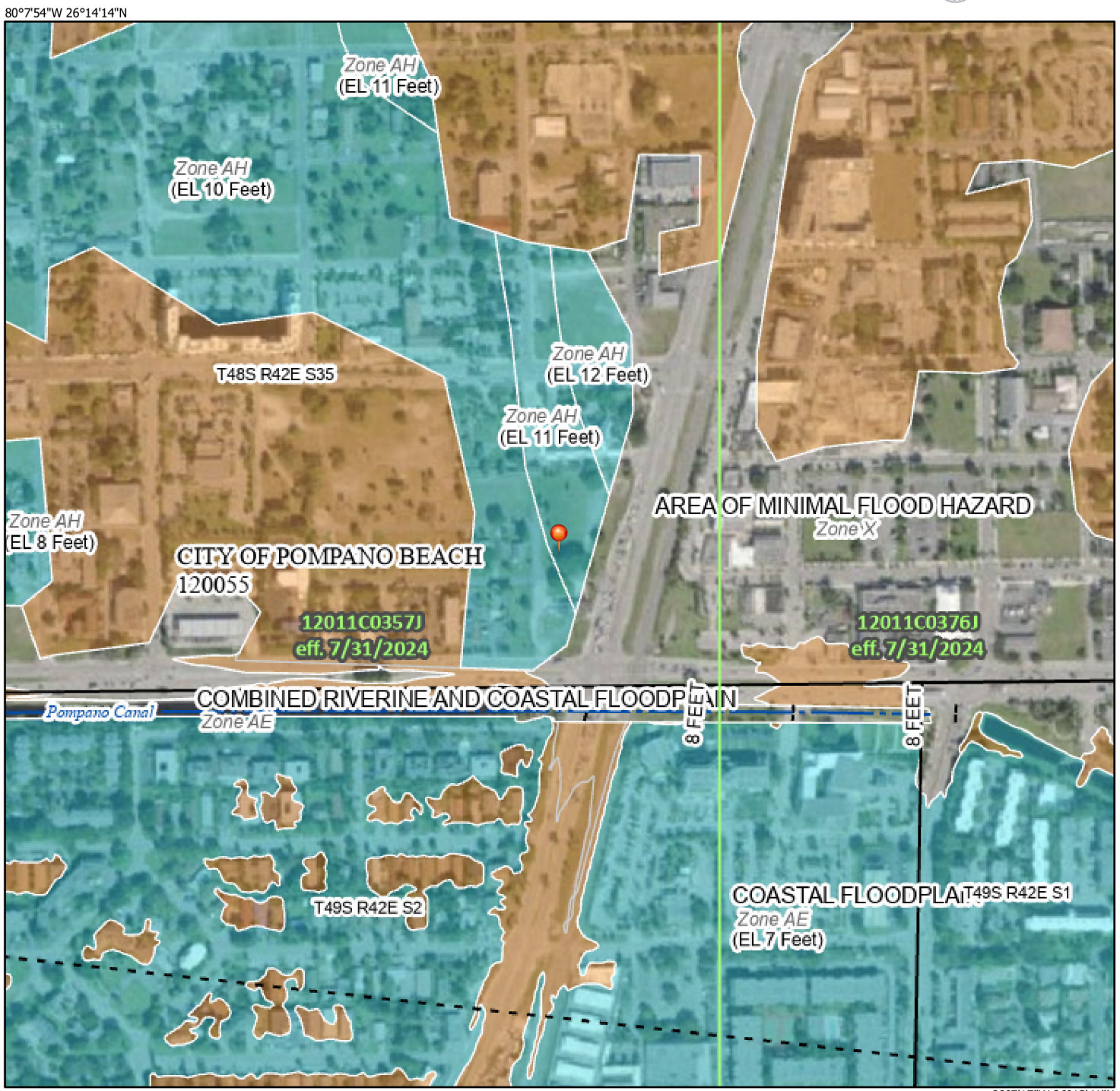
2-SEE INDIVIDUAL BORING LOG AND GEOTECHNICAL INFORMATION.
3-STANDARD PENETRATION TEST RESISTANCE (LEFT OF BORING) IN BLOWS PER FOOT (ASTM D1586).
4- TOPOGRAPHIC INFORMATION IS BASED ON PUBLICLY AVAILABLE DATA (GOOGLE OR CESIUM).THE TOPOGRAPHIC LINE SHOWN BETWEEN BORINGS IS FOR VISUAL REFERENCE ONLY.PLEASE REFER TO THE REFERENCE NOTES FOR BORING LOGS FOR SYMBOLOGY MEANING AND ADDITIONAL

Plastic Limit Water Content Liquid Limit X——●——△		WL (First Encountered)	Fill
[FINES CONTENT %]		WL (Completion)	Possible Fill
BOTTOM OF CASING		WL (Estimated Seasonal High Water)	Probable Fill
100% LOSS OF CIRCULATION		WL (Stabilized)	WR/Rock
CALIBRATED PENETROMETER			

National Flood Hazard Layer FIRMette

FEMA



Basemap Imagery Source: USGS National Map 2023

Legend

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR FIRM PANEL LAYOUT

- **SPECIAL FLOOD HAZARD AREAS**
  - Without Base Flood Elevation (BFE) *Zone A, V, A99*
  - With BFE or Depth *Zone AE, AO, AH, VE, AR*
  - Regulatory Floodway
- **OTHER AREAS OF FLOOD HAZARD**
  - 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
  - Future Conditions 1% Annual Chance Flood Hazard *Zone X*
  - Area with Reduced Flood Risk due to Levee. See Notes. *Zone X*
  - Area with Flood Risk due to Levee *Zone D*
- **OTHER AREAS**
  - NO SCREEN — Area of Minimal Flood Hazard *Zone X*
  - Effective LOMRs
  - Area of Undetermined Flood Hazard *Zone D*
- **GENERAL STRUCTURES**
  - Channel, Culvert, or Storm Sewer
  - Levee, Dike, or Floodwall
- **OTHER FEATURES**
  - 20.2 — Cross Sections with 1% Annual Chance
  - 17.5 — Water Surface Elevation
  - Coastal Transect
  - 513 — Base Flood Elevation Line (BFE)
  - Limit of Study
  - Jurisdiction Boundary
  - Coastal Transect Baseline
  - Profile Baseline
  - Hydrographic Feature
- **MAP PANELS**
  - Digital Data Available
  - No Digital Data Available
  - Unmapped

N

The pin displayed on the map is an approximate point selected by the user and does not represent an authoritative property location.

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 11/3/2025 at 5:42 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date. Map images for unmapped and unmodernized areas cannot be used for regulatory purposes.

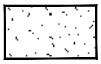
APPENDIX B – Field Operations

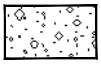
Reference Notes for Boring Logs
Subsurface Exploration Procedure: Standard Penetration Testing (SPT)
Boring Logs
Exfiltration Test Results

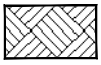
REFERENCE NOTES FOR BORING LOGS

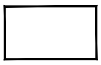
MATERIAL[1,2]

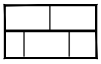

ASPHALT


CONCRETE


GRAVEL

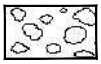

TOPSOIL

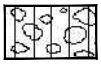

VOID


BRICK

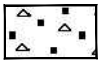

AGGREGATE BASE COURSE

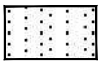

GW **WELL-GRADED GRAVEL**
gravel-sand mixtures, little or no fines

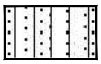

GP **POORLY-GRADED GRAVEL**
gravel-sand mixtures, little or no fines


GM **SILTY GRAVEL**
gravel-sand-silt mixtures

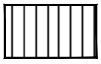

GC **CLAYEY GRAVEL**
gravel-sand-clay mixtures

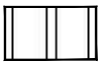

SW **WELL-GRADED SAND**
gravelly sand, little or no fines

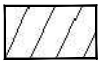

SP **POORLY-GRADED SAND**
gravelly sand, little or no fines


SM **SILTY SAND**
sand-silt mixtures

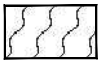

SC **CLAYEY SAND**
sand-clay mixtures

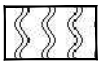

ML **SILT**
non-plastic to medium plasticity

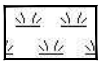

MH **ELASTIC SILT**
high plasticity


CL **LEAN CLAY**
low to medium plasticity


CH **FAT CLAY**
high plasticity


OL **ORGANIC SILT or CLAY**
non-plastic to low plasticity


OH **ORGANIC SILT or CLAY**
high plasticity


PT **PEAT**
highly organic soils

DRILLING SAMPLING SYMBOLS & ABBREVIATIONS

SS	Split Spoon Sampler	PM	Pressuremeter Test
ST	Shelby Tube Sampler	RD	Rock Bit Drilling
WS	Wash Sample	RC	Rock Core, NX, BX, AX
BS	Bulk Sample of Cuttings	REC	Rock Sample Recovery %
PA	Power Auger (no sample)	RQD	Rock Quality Designation %
HSA	Hollow Stem Auger		

PARTICLE SIZE IDENTIFICATION

DESIGNATION		PARTICLE SIZES
Boulders		12 inches (300 mm) or larger
Cobbles		3 inches to 12 inches (75 mm to 300 mm)
Gravel:	Coarse	¾ inch to 3 inches (19 mm to 75 mm)
	Fine	4.75 mm to 19 mm (No. 4 sieve to ¾ inch)
Sand:	Coarse	2.00 mm to 4.75 mm (No. 10 to No. 4 sieve)
	Medium	0.425 mm to 2.00 mm (No. 40 to No. 10 sieve)
	Fine	0.074 mm to 0.425 mm (No. 200 to No. 40 sieve)
Silt & Clay ("Fines")		<0.074 mm (smaller than a No. 200 sieve)

COHESIVE SILTS & CLAYS

UNCONFINED COMPRESSIVE STRENGTH, Q_P[4]	SPT[5] (BPF)	CONSISTENCY[7] (COHESIVE)
<0.25	<2	Very Soft
0.25 - <0.50	2 - 4	Soft
0.50 - <1.00	5 - 8	Firm
1.00 - <2.00	9 - 15	Stiff
2.00 - <4.00	16 - 30	Very Stiff
4.00 - 8.00	31 - 50	Hard
>8.00	>50	Very Hard

GRAVELS, SANDS & NON-COHESIVE SILTS

SPT[5]	DENSITY
<5	Very Loose
5 - 10	Loose
11 - 30	Medium Dense
31 - 50	Dense
>50	Very Dense

RELATIVE AMOUNT[7]	COARSE GRAINED (%)[8]	FINE GRAINED (%)[8]
Trace	≤5	≤5
With	10 - 20	10 - 25
Adjective *(ex: "Silty")*	25 - 45	30 - 45

WATER LEVELS[6]

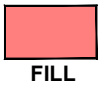

WL (First Encountered)


WL (Completion)


WL (Seasonal High Water)


WL (Stabilized)

FILL AND ROCK


FILL


POSSIBLE FILL


PROBABLE FILL


ROCK

[1]Classifications and symbols per ASTM D 2488-17 (Visual-Manual Procedure) unless noted otherwise.

[2]To be consistent with general practice, "POORLY GRADED" has been removed from GP, GP-GM, GP-GC, SP, SP-SM, SP-SC soil types on the boring logs.

[3]Non-ASTM designations are included in soil descriptions and symbols along with ASTM symbol [Ex: (SM-FILL)].

[4]Typically estimated via pocket penetrometer or Torvane shear test and expressed in tons per square foot (tsf).

[5]Standard Penetration Test (SPT) refers to the number of hammer blows (blow count) of a 140 lb. hammer falling 30 inches on a 2 inch OD split spoon sampler required to drive the sampler 12 inches (ASTM D 1586). "N-value" is another term for "blow count" and is expressed in blows per foot (bpf). SPT correlations per 7.4.2 Method B and need to be corrected if using an auto hammer.

[6]The water levels are those levels actually measured in the borehole at the times indicated by the symbol. The measurements are relatively reliable when augering, without adding fluids, in granular soils. In clay and cohesive silts, the determination of water levels may require several days for the water level to stabilize. In such cases, additional methods of measurement are generally employed.

[7]Minor deviation from ASTM D 2488-17 Note 14.

[8]Percentages are estimated to the nearest 5% per ASTM D 2488-17.

SUBSURFACE EXPLORATION PROCEDURE: STANDARD PENETRATION TESTING (SPT) ASTM D 1586 Split-Barrel Sampling

Standard Penetration Testing, or **SPT**, is the most frequently used subsurface exploration test performed worldwide. This test provides samples for identification purposes, as well as a measure of penetration resistance, or N-value. The N-Value, or blow counts, when corrected and correlated, can approximate engineering properties of soils used for geotechnical design and engineering purposes.

SPT Procedure:

- Involves driving a hollow tube (split-spoon) into the ground by dropping a 140-lb hammer a height of 30-inches at desired depth
- Recording the number of hammer blows required to drive split-spoon a distance of 18-24 inches (in 3 or 4 Increments of 6 inches each)

- Auger is advanced* and an additional SPT is performed
- One SPT typically performed for every two to five feet. An approximate 1.5 inch diameter soil sample is recovered.

**Drilling Methods May Vary*— The predominant drilling methods used for SPT are open hole fluid rotary drilling and hollow-stem auger drilling.

CLIENT: **Keith Engineering**	PROJECT NO.: **85:1109**	BORING NO.: **B-01**	SHEET: **1 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.2332366**	LONGITUDE: **-80.12676919**	STRUCTURE:	SURFACE ELEVATION: **5.5**	BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	Rec % / RQD % / SPT / TCP / ModCal	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
	S-1	SS	24	17	(SP) POORLY GRADED SAND - fine to medium sand, light brown - light gray, moist to wet, loose to medium dense.		5		2-2-3-6 (5)						
	S-2	SS	24	18					6-6-6-6 (12)						
5	S-3	SS	24	17			0		5-5-5-6 (10)						
	S-4	SS	24	16					7-7-7-7 (14)						
	S-5	SS	24	14					3-3-2-3 (5)						
10							-5								
	S-6	SS	24	15					4-4-5-6 (9)						
15							-10								
	S-7	SS	24	16					8-10-12-9 (22)						
20					(SP-SM) POORLY GRADED SAND WITH SILT - fine to medium sand, light gray - light brown, wet, medium dense.		-15								
	S-8	SS	24	14					6-6-8-9 (14)						
25							-20								
	S-9	SS	24	13					8-8-10-11 (18)						

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered):	0.75 FT	BORING STARTED:	10/27/2025	CAVE IN DEPTH:	Not Observed
WL (Completion):		BORING COMPLETED:	10/27/2025	HAMMER TYPE:	Automatic
WL (Seasonal High Water):	0 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-60')	

GEOTECHNICAL BOREHOLE LOG

CLIENT: **Keith Engineering**	PROJECT NO.: **85:1109**	BORING NO.: **B-01**	SHEET: **2 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.2332366**	LONGITUDE: **-80.12676919**	STRUCTURE:	SURFACE ELEVATION: **5.5**	BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	Rec % / RQD % / SPT / TCP / ModCal	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
					(SP-SM) POORLY GRADED SAND WITH SILT - fine to medium sand, light gray - light brown, wet, medium dense. (continued)		-25								
35	S-10	SS	24	12			-30		7-10-13-11 (23)	23					
	S-11	SS	24	15					3-6-10-10 (16)	16					
40					LIMESTONE, Brown - Light Gray.		-35								
45	S-12	SS	24	13			-40		6-7-7-15 (14)	14					
	S-13	SS	24	16			-45		9-11-17-19 (28)	28					
50	S-14	SS	24	15					5-5-8-13 (13)	13					
55	S-15	SS	15	11			-50		17-25-50/3" (75/9")	75/9"					
					END OF BORING AT 60 Ft										

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered):	0.75 FT	BORING STARTED:	10/27/2025	CAVE IN DEPTH:	Not Observed
WL (Completion):		BORING COMPLETED:	10/27/2025	HAMMER TYPE:	Automatic
WL (Seasonal High Water):	0 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-60')	

GEOTECHNICAL BOREHOLE LOG

CLIENT: **Keith Engineering**	PROJECT NO.: **85:1109**	BORING NO.: **B-02**	SHEET: **1 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23295109**	LONGITUDE: **-80.12678528**	STRUCTURE:	SURFACE ELEVATION: **6.5**	BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	Rec % / RQD % / SPT / TCP / ModCal	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
	S-1	SS	24	10	(SP) POORLY GRADED SAND - fine to medium sand, light brown - light gray, moist to wet, very loose to medium dense.		5		10-4-3-4 (7)	7					
	S-2	SS	24	16					5-5-6-6 (11)	11					
5	S-3	SS	24	17					3-4-4-4 (8)	8					
	S-4	SS	24	16			0		4-3-4-4 (7)	7					
	S-5	SS	24	15					3-4-5-6 (9)	9					
10							-5								
	S-6	SS	24	14					1-1-2-2 (3)	3					
15							-10								
	S-7	SS	24	14					3-4-6-7 (10)	10					
20					(SP-SM) POORLY GRADED SAND WITH SILT - fine to medium sand, light gray - light brown, wet, medium dense.		-15								
	S-8	SS	24	15					6-8-7-8 (15)	15			22.7		6.5
25							-20								
	S-9	SS	24	14					9-9-10-12 (19)	19					

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered):	1.5 FT	BORING STARTED:	10/27/2025	CAVE IN DEPTH:	Not Observed
WL (Completion):		BORING COMPLETED:	10/27/2025	HAMMER TYPE:	Automatic
WL (Seasonal High Water):	0 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-60')	

GEOTECHNICAL BOREHOLE LOG

CLIENT:	PROJECT NO.:	BORING NO.:	SHEET:
Keith Engineering	**85:1109**	**B-02**	**2 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23295109**	LONGITUDE: **-80.12678528**	STRUCTURE:	SURFACE ELEVATION: **6.5**
			BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	Rec % / RQD % / SPT / TCP / ModCal	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
					(SP-SM) POORLY GRADED SAND WITH SILT - fine to medium sand, light gray - light brown, wet, medium dense. (continued)		-25								
35	S-10	SS	24	14					6-9-10-11 (19)	19					
							-30								
	S-11	SS	24	13					8-11-11-12 (22)	22					
40					LIMESTONE, Brown - Light Gray.		-35								
	S-12	SS	16	16					11-12-50/4" (62/10")	62/10"					
45							-40								
	S-13	SS	24	15					7-6-7-10 (13)	13					
50							-45								
	S-14	SS	24	14					8-13-20-18 (33)	33					
55							-50								
	S-16	SS	24	10	END OF BORING AT 60 Ft				6-9-9-11 (18)	18					

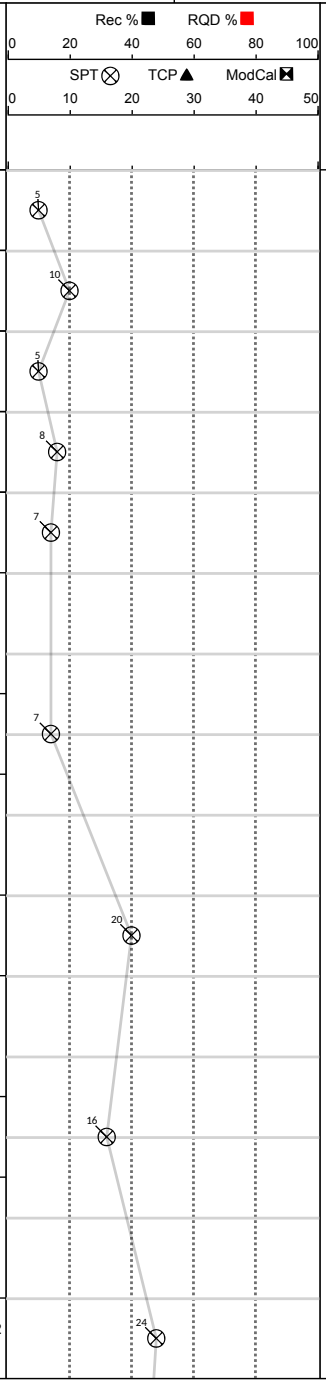
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered):	1.5 FT	BORING STARTED:	10/27/2025	CAVE IN DEPTH:	Not Observed
WL (Completion):		BORING COMPLETED:	10/27/2025	HAMMER TYPE:	Automatic
WL (Seasonal High Water):	0 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-60')	

GEOTECHNICAL BOREHOLE LOG

CLIENT: **Keith Engineering**	PROJECT NO.: **85:1109**	BORING NO.: **B-03**	SHEET: **1 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23310186**	LONGITUDE: **-80.12662078**	STRUCTURE:	SURFACE ELEVATION: **4.5**	BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
	S-1	SS	24	19	(SP) POORLY GRADED SAND - fine to medium sand, light brown - light gray, moist to wet, loose to medium dense.		0		3-2-3-4 (5)					
	S-2	SS	24	20					5-5-5-5 (10)					
5	S-3	SS	24	17					1-1-4-5 (5)					
	S-4	SS	24	18					4-4-4-5 (8)					
	S-5	SS	24	18					3-3-4-3 (7)					
10							-5							
	S-6	SS	24	16					3-3-4-6 (7)					
15							-10							
	S-7	SS	24	17					8-8-12-14 (20)					
20					(SP-SM) POORLY GRADED SAND WITH SILT - fine to medium sand, light gray - light brown, wet, medium dense.		-15							
	S-8	SS	24	16					7-8-8-10 (16)					
25							-20							
	S-9	SS	24	15			-25		11-13-11-12 (24)					



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered):	1.5 FT	BORING STARTED:	10/28/2025	CAVE IN DEPTH:	Not Observed
WL (Completion):		BORING COMPLETED:	10/28/2025	HAMMER TYPE:	Automatic
WL (Seasonal High Water):	0 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-60')	

GEOTECHNICAL BOREHOLE LOG

CLIENT:	PROJECT NO.:	BORING NO.:	SHEET:
Keith Engineering	**85:1109**	**B-03**	**2 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23310186**	LONGITUDE: **-80.12662078**	STRUCTURE:	SURFACE ELEVATION: **4.5**
			BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	Rec % / RQD % / SPT / TCP / ModCal	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
					(SP-SM) POORLY GRADED SAND WITH SILT - fine to medium sand, light gray - light brown, wet, medium dense. (continued)										
	S-10	SS	24	14			-30		4-5-9-12 (14)						
35															
	S-11	SS	24	14			-35		10-9-11-12 (20)						
40					LIMESTONE, Brown - Light Gray.										
	S-12	SS	24	18			-40		27-25-25-10 (50)						
45															
	S-13	SS	24	12			-45		10-13-13-9 (26)						
50															
	S-14	SS	24	15			-50		11-17-25-36 (42)						
55															
	S-15	SS	8	6			-55		19-50/2" (50/2")						
					END OF BORING AT 60 Ft										

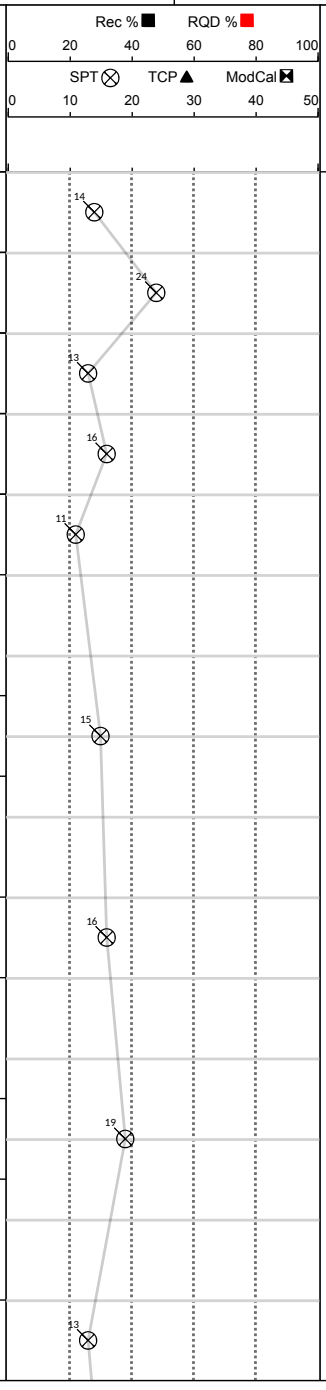
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered):	1.5 FT	BORING STARTED:	10/28/2025	CAVE IN DEPTH:	Not Observed
WL (Completion):		BORING COMPLETED:	10/28/2025	HAMMER TYPE:	Automatic
WL (Seasonal High Water):	0 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-60')	

GEOTECHNICAL BOREHOLE LOG

CLIENT: **Keith Engineering**	PROJECT NO.: **85:1109**	BORING NO.: **B-04**	SHEET: **1 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23309866**	LONGITUDE: **-80.12637401**	STRUCTURE:	SURFACE ELEVATION: **5.5**	BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
	S-1	SS	24	18	(SP) POORLY GRADED SAND - fine to medium sand, dark brown - brown, moist to wet, medium dense.		5		15-7-7-9 (14)					
	S-2	SS	24	16					10-12-12-6 (24)					
5	S-3	SS	24	18			0		4-6-7-9 (13)					
	S-4	SS	24	16					5-6-10-8 (16)					
	S-5	SS	24	18					6-5-6-6 (11)					
10							-5							
	S-6	SS	24	12					3-6-9-9 (15)			26.2		1.4
15							-10							
	S-7	SS	24	8					4-7-9-9 (16)					
20					(SP-SM) POORLY GRADED SAND WITH SILT - fine to medium sand, light brown - light gray, wet, medium dense.		-15							
	S-8	SS	24	10					6-8-11-13 (19)					
25							-20							
	S-9	SS	24	14					6-6-7-12 (13)					



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered):	6.25 FT	BORING STARTED:	10/22/2025	CAVE IN DEPTH:	Not Observed
WL (Completion):		BORING COMPLETED:	10/22/2025	HAMMER TYPE:	Automatic
WL (Seasonal High Water):	4.25 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-60')	

GEOTECHNICAL BOREHOLE LOG

CLIENT:	PROJECT NO.:	BORING NO.:	SHEET:
Keith Engineering	**85:1109**	**B-04**	**2 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23309866**	LONGITUDE: **-80.12637401**	STRUCTURE:	SURFACE ELEVATION: **5.5**
			BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	ELEVATION (FT)	BLOWS/6" (TCP/MC/SPT N-VALUE)	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
35	S-10	SS	24	12	(SP-SM) POORLY GRADED SAND WITH SILT - fine to medium sand, light brown - light gray, wet, medium dense. (continued)	-25	8-11-16-15 (27)					
	S-11	SS	24	12		-30	7-10-12-12 (22)					
40	S-12	SS	2	2	LIMESTONE, Light Gray.	-35	50/2" (50/2)					
45	S-13	SS	24	12		-40	10-12-6-9 (18)					
50	S-14	SS	24	15		-45	12-16-24-13 (40)					
55	S-15	SS	24	10	END OF BORING AT 60 Ft	-50	18-20-16-18 (36)					

Rec % ■ RQD % ■
0 20 40 60 80 100
SPT ⊗ TCP ▲ ModCal ⊠
0 10 20 30 40 50

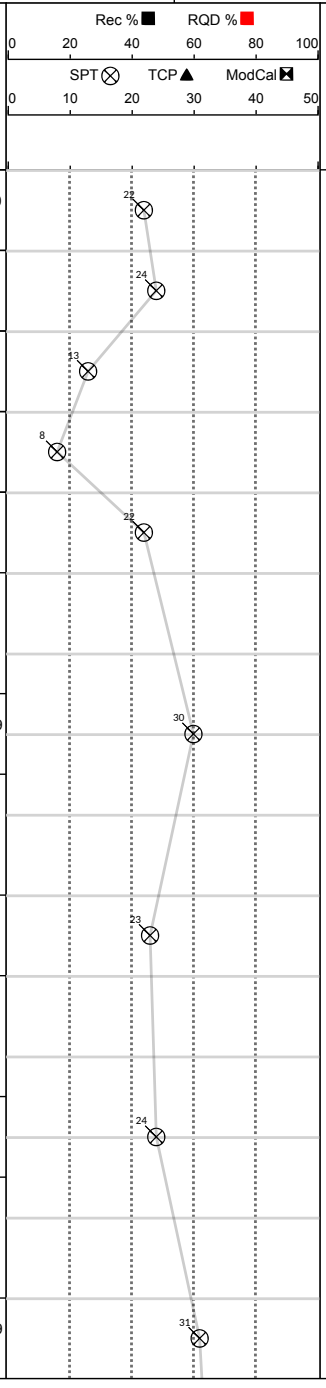
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered):	**6.25 FT**	**BORING STARTED:**	**10/22/2025**	**CAVE IN DEPTH:**	**Not Observed**
WL (Completion):		**BORING COMPLETED:**	**10/22/2025**	**HAMMER TYPE:**	**Automatic**
WL (Seasonal High Water):	**4.25 FT**	**EQUIPMENT:**	**LOGGED BY:**	**DRILLING METHOD:**	
WL (Stabilized):		**Truck**	**FLL**	**Fluid Rotary (0'-60')**	

GEOTECHNICAL BOREHOLE LOG

CLIENT: **Keith Engineering**	PROJECT NO.: **85:1109**	BORING NO.: **B-05**	SHEET: **1 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23311109**	LONGITUDE: **-80.1261277**	STRUCTURE:	SURFACE ELEVATION: **7.5**	BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
	S-1	SS	24	18	(SP) POORLY GRADED SAND - fine to medium sand, light gray - dark brown, moist to wet, loose to medium dense.		5		12-11-11-10 (22)					
	S-2	SS	24	16					12-12-12-11 (24)					
5	S-3	SS	24	14				▽	12-7-6-7 (13)			13.6		1.3
	S-4	SS	24	14			0	▽	3-3-5-8 (8)					
	S-5	SS	24	18					22-13-9-11 (22)					
10							-5							
	S-6	SS	24	12					10-13-17-19 (30)					
15							-10							
	S-7	SS	24	12					8-10-13-17 (23)					
20							-15							
	S-8	SS	0						9-10-14-17 (24)					
	S-9	SS	24	12										
25					(SP-SM) POORLY GRADED SAND WITH SILT - fine to medium sand, light gray - light brown, wet, medium dense to dense.		-20							
	S-10	SS	24	14					13-15-16-19 (31)					



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

▽ WL (First Encountered):	6.25 FT	BORING STARTED:	10/22/2025	CAVE IN DEPTH:	Not Observed
▼ WL (Completion):		BORING COMPLETED:	10/22/2025	HAMMER TYPE:	Automatic
▼ WL (Seasonal High Water):	4.25 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
▽ WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-60')	

GEOTECHNICAL BOREHOLE LOG

CLIENT: **Keith Engineering**	PROJECT NO.: **85:1109**	BORING NO.: **B-05**	SHEET: **2 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23311109**	LONGITUDE: **-80.1261277**	STRUCTURE:	SURFACE ELEVATION: **7.5** BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	Rec % / RQD % / SPT / TCP / ModCal	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
					(SP-SM) POORLY GRADED SAND WITH SILT - fine to medium sand, light gray - light brown, wet, medium dense to dense. (continued)		-25								
35	S-11	SS	24	16					13-17-23-39 (40)	40					
	S-12	SS	24	16			-30		11-11-15-17 (26)	26					
40	S-13	SS	24	16			-35		18-22-19-17 (41)	41					
45					LIMESTONE, Light Brown.		-40								
	S-14	SS	24	8					46-14-11-17 (25)	25					
50	S-15	SS	24	10			-45		37-17-12-16 (29)	29					
55	S-16	SS	24	20	END OF BORING AT 60 Ft		-50		17-23-14-31 (37)	37					

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered):	6.25 FT	BORING STARTED:	10/22/2025	CAVE IN DEPTH:	Not Observed
WL (Completion):		BORING COMPLETED:	10/22/2025	HAMMER TYPE:	Automatic
WL (Seasonal High Water):	4.25 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-60')	

GEOTECHNICAL BOREHOLE LOG

CLIENT: **Keith Engineering**	PROJECT NO.: **85:1109**	BORING NO.: **B-06**	SHEET: **1 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23325705**	LONGITUDE: **-80.12594173**	STRUCTURE:	SURFACE ELEVATION: **8.5**	BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	Rec % / RQD % / SPT / TCP / ModCal	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
	S-1	SS	24	18	(SP) POORLY GRADED SAND - fine to medium sand, light brown - dark brown, moist to wet, very loose to medium dense.		5		9-7-7-9 (14)	14					
	S-2	SS	24	17					9-12-7-6 (19)	19					
5	S-3	SS	24	18					3-4-2-1 (6)	6					
	S-4	SS	18	19					2-1-WoH-1 (1)	1					
	S-5	SS	24	10			0		1-3-8-8 (11)	11					
10					LIMESTONE, Brown.										
	S-6	SS	24	18			-5		4-9-7-7 (16)	16					
15					(SP-SM) POORLY GRADED SAND WITH SILT - fine to medium sand, brown - light gray, wet, loose to medium dense.										
	S-7	SS	24	18			-10		2-3-3-5 (6)	6					
20															
	S-8	SS	24				-15		7-7-9-10 (16)	16					
25															
	S-9	SS	24	15			-20		7-8-9-10 (17)	17					

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered):	5.5 FT	BORING STARTED:	10/28/2025	CAVE IN DEPTH:	Not Observed
WL (Completion):		BORING COMPLETED:	10/28/2025	HAMMER TYPE:	Automatic
WL (Seasonal High Water):	3.5 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-60')	

GEOTECHNICAL BOREHOLE LOG

CLIENT: **Keith Engineering**	PROJECT NO.: **85:1109**	BORING NO.: **B-06**	SHEET: **2 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23325705**	LONGITUDE: **-80.12594173**	STRUCTURE:	SURFACE ELEVATION: **8.5**	BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	Rec % / RQD % / SPT / TCP / ModCal	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
					(SP-SM) POORLY GRADED SAND WITH SILT - fine to medium sand, brown - light gray, wet, loose to medium dense. (continued)										
35	S-10	SS	24	14			-25		10-10-11-11 (21)						
	S-11	SS	24	15			-30		3-5-3-4 (8)						
40	S-12	SS	24	15			-35		6-6-7-6 (13)						
45	S-13	SS	24	13	LIMESTONE, Light Gray.		-40		5-6-3-5 (9)						
50	S-14	SS	24	12			-45		10-14-8-9 (22)						
55	S-15	SS	14		END OF BORING AT 60 Ft		-50		37-45-50/2" (95/8")						

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered):	5.5 FT	BORING STARTED:	10/28/2025	CAVE IN DEPTH:	Not Observed
WL (Completion):		BORING COMPLETED:	10/28/2025	HAMMER TYPE:	Automatic
WL (Seasonal High Water):	3.5 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-60')	

GEOTECHNICAL BOREHOLE LOG

CLIENT: **Keith Engineering**	PROJECT NO.: **85:1109**	BORING NO.: **B-07**	SHEET: **1 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23295871**	LONGITUDE: **-80.12603293**	STRUCTURE:	SURFACE ELEVATION: **9.5**	BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	Rec % / RQD % / SPT / TCP / ModCal	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
	S-1	SS	24	20	(SP) POORLY GRADED SAND - fine to medium sand, light brown - light gray, moist to wet, loose to medium dense.		5		3-3-6-5 (9)						
	S-2	SS	24	14					6-8-8-9 (16)						
5	S-3	SS	24	15			0		5-6-5-4 (11)						
	S-4	SS	24	10					2-2-3-3 (5)						
	S-5	SS	24	12			-5		5-6-5-5 (11)						
10															
	S-6	SS	24	16			-10		4-5-6-6 (11)						
15															
	S-7	SS	24	16			-15		4-6-5-7 (11)						
20															
	S-8	SS	24	15			-20		5-8-8-10 (16)						
25															
	S-9	SS	24	17					9-7-8-5 (15)						

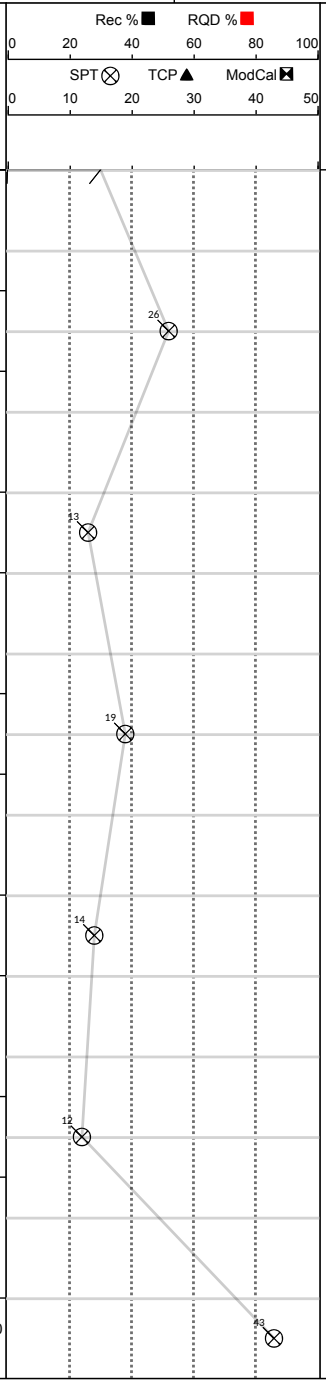
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered):	6 FT	BORING STARTED:	10/27/2025	CAVE IN DEPTH:	Not Observed
WL (Completion):		BORING COMPLETED:	10/27/2025	HAMMER TYPE:	Automatic
WL (Seasonal High Water):	4 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-60')	

GEOTECHNICAL BOREHOLE LOG

CLIENT:	PROJECT NO.:	BORING NO.:	SHEET:
Keith Engineering	**85:1109**	**B-07**	**2 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23295871**	LONGITUDE: **-80.12603293**	STRUCTURE:	SURFACE ELEVATION: **9.5**
			BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
					(SP-SM) POORLY GRADED SAND WITH SILT - fine to medium sand, light brown - light gray, wet, medium dense.									
35	S-10	SS	24	14			-25		9-13-13-16 (26)			26.7		7.3
	S-11	SS	24	12			-30		9-8-5-10 (13)					
40	S-12	SS	24	16			-35		8-10-9-10 (19)					
45					LIMESTONE, Light Gray.									
	S-13	SS	24	14			-40		6-7-7-9 (14)					
50	S-14	SS	24	15			-45		4-6-6-9 (12)					
55	S-15	SS	24	12	END OF BORING AT 60 Ft		-50		16-29-14-20 (43)					



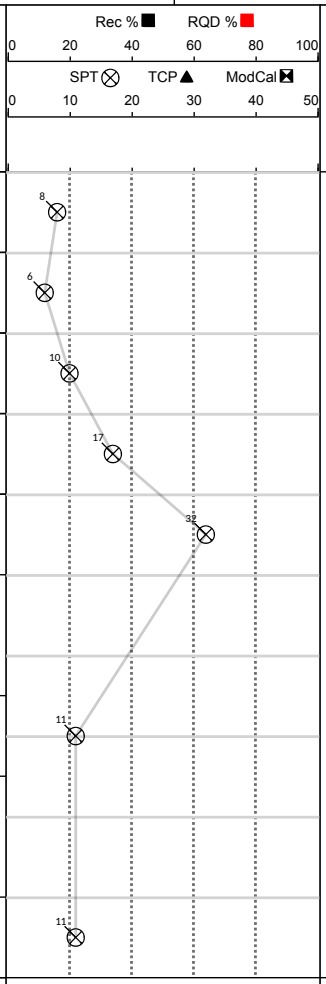
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered):	**6 FT**	**BORING STARTED:**	**10/27/2025**	**CAVE IN DEPTH:**	**Not Observed**
WL (Completion):		**BORING COMPLETED:**	**10/27/2025**	**HAMMER TYPE:**	**Automatic**
WL (Seasonal High Water):	**4 FT**	**EQUIPMENT:**	**LOGGED BY:**	**DRILLING METHOD:**	
WL (Stabilized):		**Truck**	**FLL**	**Fluid Rotary (0'-60')**	

GEOTECHNICAL BOREHOLE LOG

CLIENT: **Keith Engineering**	PROJECT NO.: **85:1109**	BORING NO.: **B-08**	SHEET: **1 OF 1**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23280473**	LONGITUDE: **-80.12636373**	STRUCTURE:	SURFACE ELEVATION: **6.5**	BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
	S-1	SS	24	20	(SP) POORLY GRADED SAND - fine to medium sand, brown - dark brown, moist to wet, loose to dense.		5		1-3-5-4 (8)					
	S-2	SS	24	14					2-3-3-5 (6)					
5	S-3	SS	24	15					5-6-4-7 (10)					
	S-4	SS	24	10			0		6-8-9-12 (17)					
	S-5	SS	24	12					7-17-15-22 (32)					
10							-5							
	S-6	SS	24	16					3-5-6-6 (11)					
15							-10							
	S-22	SS	24	18					4-7-4-6 (11)					
					END OF BORING AT 20 Ft									
	S-8	SS	24	15										
	S-9	SS	24	17										



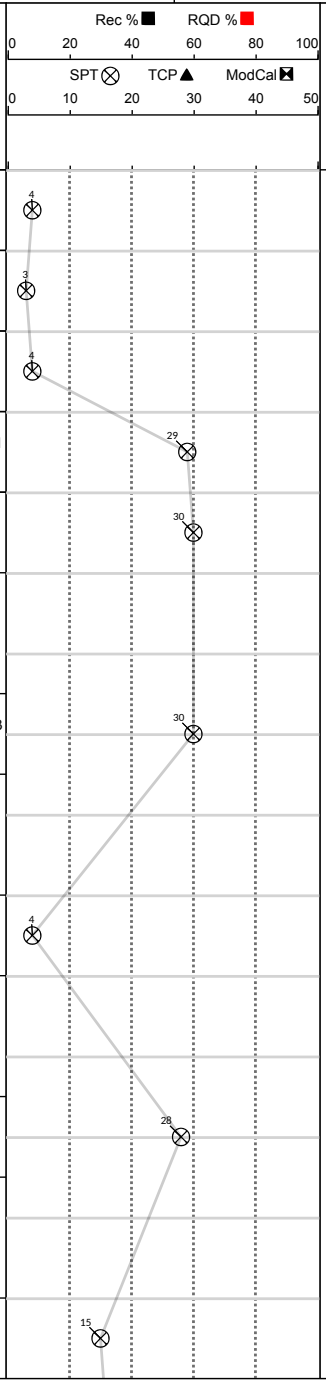
THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered):	3.25 FT	BORING STARTED:	10/29/2025	CAVE IN DEPTH:	Not Observed
WL (Completion):		BORING COMPLETED:	10/29/2025	HAMMER TYPE:	Automatic
WL (Seasonal High Water):	1.25 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-20')	

GEOTECHNICAL BOREHOLE LOG

CLIENT: **Keith Engineering**	PROJECT NO.: **85:1109**	BORING NO.: **B-09**	SHEET: **1 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23265604**	LONGITUDE: **-80.12621319**	STRUCTURE:	SURFACE ELEVATION: **6.5**	BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
	S-1	SS	24	18	(SP) POORLY GRADED SAND - fine to medium sand, brown - dark brown, moist to wet, very loose to medium dense.		5		2-2-2-3 (4)					
	S-2	SS	24	19				▽	3-2-1-2 (3)					
5	S-3	SS	24	17				▽	2-2-2-6 (4)					
	S-4	SS	24	20			0		13-14-15-21 (29)			21.6		2.9
	S-5	SS	24	20					7-14-16-16 (30)					
10							-5							
	S-6	SS	24	19					16-17-13-13 (30)					
15							-10							
	S-7	SS	24	19					4-2-2-4 (4)					
20					(SP-SM) POORLY GRADED SAND WITH SILT - brown - light gray, wet, medium dense.		-15							
	S-8	SS	24	17					9-13-15-18 (28)					
25							-20							
	S-9	SS	24	18					7-6-9-13 (15)					



THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

▽ WL (First Encountered):	4.75 FT	BORING STARTED:	10/29/2025	CAVE IN DEPTH:	Not Observed
▼ WL (Completion):		BORING COMPLETED:	10/29/2025	HAMMER TYPE:	Automatic
▼ WL (Seasonal High Water):	2.75 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
▽ WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-40')	

GEOTECHNICAL BOREHOLE LOG

CLIENT: **Keith Engineering**	PROJECT NO.: **85:1109**	BORING NO.: **B-09**	SHEET: **2 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23265604**	LONGITUDE: **-80.12621319**	STRUCTURE:	SURFACE ELEVATION: **6.5**	BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	Rec % / RQD % / SPT / TCP / ModCal	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
					(SP-SM) POORLY GRADED SAND WITH SILT - brown - light gray, wet, medium dense. (continued)		-25								
35	S-10	SS	24	16					10-12-15-17 (27)						
	S-11	SS	24	15			-30		4-6-6-8 (12)						
					Terminate AT 40 Ft										

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered):	4.75 FT	BORING STARTED:	10/29/2025	CAVE IN DEPTH:	Not Observed
WL (Completion):		BORING COMPLETED:	10/29/2025	HAMMER TYPE:	Automatic
WL (Seasonal High Water):	2.75 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-40')	

GEOTECHNICAL BOREHOLE LOG

CLIENT: **Keith Engineering**	PROJECT NO.: **85:1109**	BORING NO.: **B-10**	SHEET: **1 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23261434**	LONGITUDE: **-80.12662446**	STRUCTURE:	SURFACE ELEVATION: **6.5**

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	Rec % / RQD % / SPT / TCP / ModCal	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
	S-1	SS	24	18	(SP) POORLY GRADED SAND - fine to medium sand, brown - dark brown, moist to wet, loose to medium dense.		5		4-2-3-4 (5)						
	S-2	SS	24	17					4-5-4-5 (9)						
5	S-3	SS	24	14			0		4-4-3-3 (7)						
	S-4	SS	18	10					2-2-1-WoH (3)						
	S-5	SS	24	16					2-2-2-3 (4)						
10							-5								
	S-6	SS	24	15					9-8-7-9 (15)						
15							-10								
	S-7	SS	24	19					6-7-10-11 (17)						
20					(SP-SM) POORLY GRADED SAND WITH SILT - fine to medium sand, brown - light brown, wet, medium dense.		-15								
	S-8	SS	24	17					8-11-12-13 (23)						
25							-20								
	S-9	SS	24	16					8-10-11-14 (21)						

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered):	4 FT	BORING STARTED:	10/23/2025	CAVE IN DEPTH:	Not Observed
WL (Completion):		BORING COMPLETED:	10/23/2025	HAMMER TYPE:	Automatic
WL (Seasonal High Water):	2 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-40')	

GEOTECHNICAL BOREHOLE LOG

CLIENT: **Keith Engineering**	PROJECT NO.: **85:1109**	BORING NO.: **B-10**	SHEET: **2 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23261434**	LONGITUDE: **-80.12662446**	STRUCTURE:	SURFACE ELEVATION: **6.5**	BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	Rec % / RQD % / SPT / TCP / ModCal	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
					(SP-SM) POORLY GRADED SAND WITH SILT - fine to medium sand, brown - light brown, wet, medium dense. (continued)		-25								
35	S-10	SS	24	16					6-9-5-6 (14)						
							-30								
	S-11	SS	24	15					8-7-5-4 (12)						
					END OF BORING AT 40 Ft										

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered):	4 FT	BORING STARTED:	10/23/2025	CAVE IN DEPTH:	Not Observed
WL (Completion):		BORING COMPLETED:	10/23/2025	HAMMER TYPE:	Automatic
WL (Seasonal High Water):	2 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-40')	

GEOTECHNICAL BOREHOLE LOG

CLIENT: **Keith Engineering**	PROJECT NO.: **85:1109**	BORING NO.: **B-11**	SHEET: **1 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23236733**	LONGITUDE: **-80.12642777**	STRUCTURE:	SURFACE ELEVATION: **6.5**	BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	Rec % / RQD % / SPT / TCP / ModCal	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
	S-1	SS	24	16	(SP) POORLY GRADED SAND - fine to medium sand, brown - light brown, moist to wet, loose to medium dense.		5		3-4-3-4 (7)						
	S-2	SS	24	14					5-3-4-3 (7)						
5	S-3	SS	24	15				▽	3-3-3-6 (6)						
	S-4	SS	24	13			0	▽	5-6-8-8 (14)						
	S-5	SS	24	15					5-3-5-5 (8)						
10							-5								
	S-6	SS	24	16					5-6-8-9 (14)						
15							-10								
	S-7	SS	24	15					9-9-11-13 (20)						
20							-15								
	S-8	SS	24	13					6-7-7-10 (14)						
25					(SP-SM) POORLY GRADED SAND WITH SILT - fine to medium sand, light brown - light gray, wet, loose to medium dense.		-20								
	S-9	SS	24	15					8-8-10-11 (18)						

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

▽ WL (First Encountered):	6.25 FT	BORING STARTED:	10/23/2025	CAVE IN DEPTH:	Not Observed
▼ WL (Completion):		BORING COMPLETED:	10/23/2025	HAMMER TYPE:	Automatic
▼ WL (Seasonal High Water):	4.25 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
▽ WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-40')	

GEOTECHNICAL BOREHOLE LOG

CLIENT: **Keith Engineering**	PROJECT NO.: **85:1109**	BORING NO.: **B-11**	SHEET: **2 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23236733**	LONGITUDE: **-80.12642777**	STRUCTURE:	SURFACE ELEVATION: **6.5**	BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	Rec % / RQD % / SPT / TCP / ModCal	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
					(SP-SM) POORLY GRADED SAND WITH SILT - fine to medium sand, light brown - light gray, wet, loose to medium dense. (continued)		-25								
35	S-10	SS	24	14					3-4-4-3 (8)						
							-30								
	S-11	SS	24	15					3-5-5-6 (10)						
					END OF BORING AT 40 Ft										

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered):	6.25 FT	BORING STARTED:	10/23/2025	CAVE IN DEPTH:	Not Observed
WL (Completion):		BORING COMPLETED:	10/23/2025	HAMMER TYPE:	Automatic
WL (Seasonal High Water):	4.25 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-40')	

GEOTECHNICAL BOREHOLE LOG

CLIENT: **Keith Engineering**	PROJECT NO.: **85:1109**	BORING NO.: **B-12**	SHEET: **1 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23202087**	LONGITUDE: **-80.12641704**	STRUCTURE:	SURFACE ELEVATION: **7.5**	BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
	S-1	SS	24	14	(SP) POORLY GRADED SAND - fine to medium sand, brown - light brown, moist to wet, loose to medium dense.		5		10-6-6-7 (12)					
	S-2	SS	24	16					7-6-8-7 (14)					
5	S-3	SS	24	15				▽	4-5-5-6 (10)					
	S-4	SS	24	14			0	▽	5-5-5-5 (10)					
	S-5	SS	24	15					3-5-4-6 (9)			22.5		1.2
10							-5							
	S-6	SS	24	18					4-4-4-5 (8)					
15							-10							
	S-7	SS	24	16					3-4-6-8 (10)					
20					(SP-SM) POORLY GRADED SAND WITH SILT - fine to medium sand, light brown - light gray, wet, medium dense.		-15							
	S-8	SS	24	16					6-7-7-8 (14)					
25							-20							
	S-9	SS	24	15					9-11-11-6 (22)					

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

▽ WL (First Encountered):	6.5 FT	BORING STARTED:	10/23/2025	CAVE IN DEPTH:	Not Observed
▼ WL (Completion):		BORING COMPLETED:	10/23/2025	HAMMER TYPE:	Automatic
▼ WL (Seasonal High Water):	4.5 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
▽ WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-40')	

GEOTECHNICAL BOREHOLE LOG

CLIENT: **Keith Engineering**	PROJECT NO.: **85:1109**	BORING NO.: **B-12**	SHEET: **2 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23202087**	LONGITUDE: **-80.12641704**	STRUCTURE:	SURFACE ELEVATION: **7.5**	BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	Rec % / RQD % / SPT / TCP / ModCal	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
					(SP-SM) POORLY GRADED SAND WITH SILT - fine to medium sand, light brown - light gray, wet, medium dense. (continued)		-25								
	S-10	SS	24	15					8-6-8-4 (14)						
35					LIMESTONE, Light Gray.										
	S-11	SS	24	15			-30		9-11-11-6 (22)						
					END OF BORING AT 40 Ft										

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered):	6.5 FT	BORING STARTED:	10/23/2025	CAVE IN DEPTH:	Not Observed
WL (Completion):		BORING COMPLETED:	10/23/2025	HAMMER TYPE:	Automatic
WL (Seasonal High Water):	4.5 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-40')	

GEOTECHNICAL BOREHOLE LOG

CLIENT: **Keith Engineering**	PROJECT NO.: **85:1109**	BORING NO.: **B-13**	SHEET: **1 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23209144**	LONGITUDE: **-80.12672102**	STRUCTURE:	SURFACE ELEVATION: **7.5**	BOTTOM OF CASING

DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	Rec % / RQD % / SPT / TCP / ModCal	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
	S-1	SS	24	16	(SP) POORLY GRADED SAND - fine to medium sand, light brown - light gray, moist to wet, loose to medium dense.		5		2-5-4-5 (9)						
	S-2	SS	24	14					6-4-4-3 (8)						
5	S-3	SS	24	15					2-2-3-3 (5)						
	S-4	SS	24	15			0		3-3-1-1 (4)						
	S-5	SS	24	18					9-6-5-6 (11)						
10							-5								
	S-6	SS	24	16					4-4-6-4 (10)						
15							-10								
	S-7	SS	24	17					3-5-6-9 (11)						
20					(SP-SM) POORLY GRADED SAND WITH SILT - fine to medium sand, light brown - light gray, wet, medium dense.		-15								
	S-8	SS	24	16					5-6-8-10 (14)						
25							-20								
	S-9	SS	24	15					6-8-8-9 (16)						

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered):	5.75 FT	BORING STARTED:	10/23/2025	CAVE IN DEPTH:	Not Observed
WL (Completion):		BORING COMPLETED:	10/23/2025	HAMMER TYPE:	Automatic
WL (Seasonal High Water):	3.75 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-40')	

GEOTECHNICAL BOREHOLE LOG

CLIENT: **Keith Engineering**	PROJECT NO.: **85:1109**	BORING NO.: **B-13**	SHEET: **2 OF 2**
PROJECT NAME: **Downtown Pompano Beach - City Hall**	DRILLER/CONTRACTOR: **Dancor Group, INC.**		
SITE LOCATION: **W Atlantic Blvd and N Dixie Hwy, Pompano Beach, Florida, 33064**			LOSS OF CIRCULATION
LATITUDE: **26.23209144**	LONGITUDE: **-80.12672102**	STRUCTURE:	SURFACE ELEVATION: **7.5**	BOTTOM OF CASING

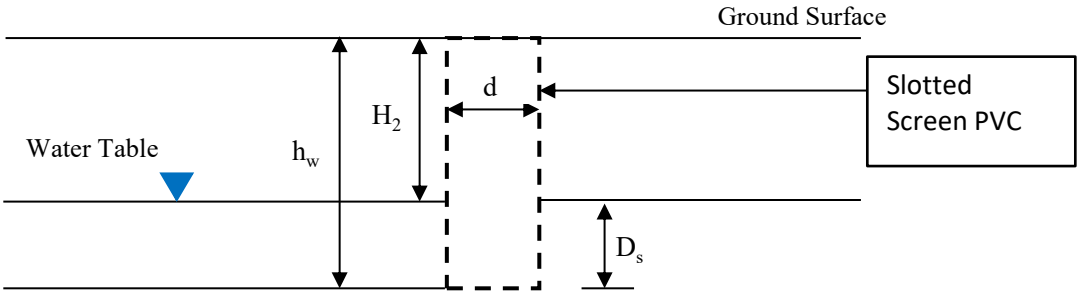
DEPTH (FT)	SAMPLE NUMBER	SAMPLE TYPE	SAMPLE DISTANCE	SAMPLE RECOVERY (IN)	DESCRIPTION OF MATERIAL	STRATIGRAPHY	ELEVATION (FT)	WATER LEVELS	BLOWS/6" (TCP/MC/SPT N-VALUE)	Rec % / RQD % / SPT / TCP / ModCal	LIQUID LIMIT	PLASTICITY INDEX	MOISTUE CONTENT (%)	QP (TSF)	FINES CONTENT
					(SP-SM) POORLY GRADED SAND WITH SILT - fine to medium sand, light brown - light gray, wet, medium dense. (continued)		-25								
35	S-10	SS	24	17					8-8-10-9 (18)	18					
	S-11	SS	24	15			-30		8-12-11-9 (23)	23					
					END OF BORING AT 40 Ft										

THE STRATIFICATION LINES REPRESENT THE APPROXIMATE BOUNDARY LINES BETWEEN SOIL TYPES. IN-SITU THE TRANSITION MAY BE GRADUAL

WL (First Encountered):	5.75 FT	BORING STARTED:	10/23/2025	CAVE IN DEPTH:	Not Observed
WL (Completion):		BORING COMPLETED:	10/23/2025	HAMMER TYPE:	Automatic
WL (Seasonal High Water):	3.75 FT	EQUIPMENT:	LOGGED BY:	DRILLING METHOD:	
WL (Stabilized):		Truck	FLL	Fluid Rotary (0'-40')	

GEOTECHNICAL BOREHOLE LOG

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
" USUAL OPEN - HOLE TEST "



$$K_{IV} = 4Q/[\pi d(2H_2^2 + 4H_2Ds + H_2d)]$$

5.60E-04 CFS/FT^2-FT HEAD

Q =	Average Flow Rate =	0.008466	CFS
d =	Diameter of Test Hole =	0.50	feet
H_2 =	Head on Water Table =	1.0	feet
h_w =	Total Hole Depth =	10.0	feet
D_s =	Saturated Hole Depth =	9.0	feet

TEST LOCATION :	EXF-01	
DEPTH TO WATER TABLE :	1 ft	Below Existing Grade
DEPTH OF TEST HOLE :	10 ft	Below Existing Grade
AVERAGE FLOW RATE:	3.8 GPM	

SOIL PROFILE :

0.0' - 15.0' FINE TO MEDIUM SAND (SP)

NOTES: The soil profile is determined by drilled cuttings & should not be relied upon as an accurate record of soil type or for transition zones.

USUAL OPEN HOLE TEST SUMMARY	Test Date	Project No.	Test No.	Tested By	Checked by:
	10/30/25	1109	EXF-01	PE	FLL

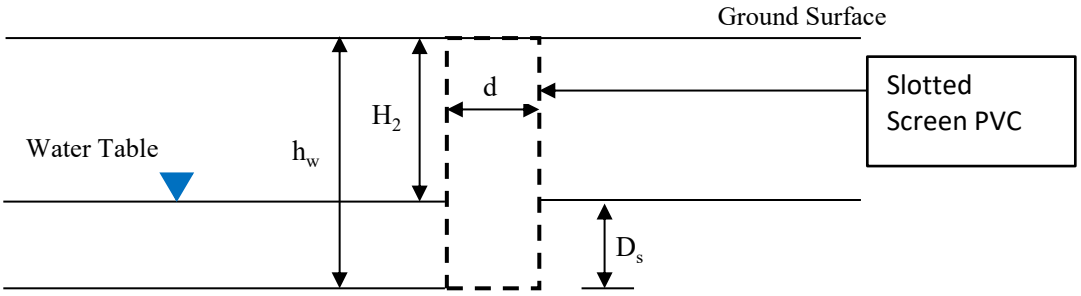
Job No.: 85:1109

Downtown Pompano Beach - City Hall

W Atlantic Blvd and N Dixie Hwy

Pompano Beach, Florida 33064

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
" USUAL OPEN - HOLE TEST "



$$K_{IV} = 4Q/[\pi d(2H_2^2 + 4H_2Ds + H_2d)]$$

1.44E-04 CFS/FT^2-FT HEAD

Q =	Average Flow Rate =	0.003654	CFS
d =	Diameter of Test Hole =	0.50	feet
H_2 =	Head on Water Table =	1.7	feet
h_w =	Total Hole Depth =	10.0	feet
D_s =	Saturated Hole Depth =	8.3	feet

TEST LOCATION :	EXF-02	
DEPTH TO WATER TABLE :	1.75 ft	Below Existing Grade
DEPTH OF TEST HOLE :	10 ft	Below Existing Grade
AVERAGE FLOW RATE:	1.6 GPM	

SOIL PROFILE :

0.0' - 15.0' FINE TO MEDIUM SAND (SP)

NOTES: The soil profile is determined by drilled cuttings & should not be relied upon as an accurate record of soil type or for transition zones.

USUAL OPEN HOLE TEST SUMMARY	Test Date	Project No.	Test No.	Tested By	Checked by:
	10/30/25	1109	EXF-02	PE	FLL

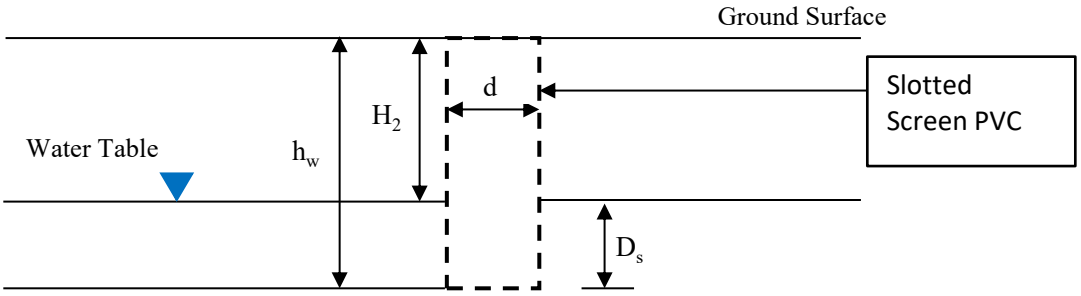
Job No.: 85:1109

Downtown Pompano Beach - City Hall

W Atlantic Blvd and N Dixie Hwy

Pompano Beach, Florida 33064

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
" USUAL OPEN - HOLE TEST "



$$K_{IV} = 4Q/[\pi d(2H_2^2 + 4H_2Ds + H_2d)]$$

1.83E-04 CFS/FT^2-FT HEAD

Q =	Average Flow Rate =	0.005236	CFS
d =	Diameter of Test Hole =	0.50	feet
H_2 =	Head on Water Table =	2.0	feet
h_w =	Total Hole Depth =	10.0	feet
D_s =	Saturated Hole Depth =	8.0	feet

TEST LOCATION :	EXF-03	
DEPTH TO WATER TABLE :	2 ft	Below Existing Grade
DEPTH OF TEST HOLE :	10 ft	Below Existing Grade
AVERAGE FLOW RATE:	2.4 GPM	

SOIL PROFILE :

0.0' - 15.0' FINE TO MEDIUM SAND (SP)

NOTES: The soil profile is determined by drilled cuttings & should not be relied upon as an accurate record of soil type or for transition zones.

USUAL OPEN HOLE TEST SUMMARY	Test Date	Project No.	Test No.	Tested By	Checked by:
	10/30/25	1109	EXF-03	PE	FLL

Job No.: 85:1109

Downtown Pompano Beach - City Hall

W Atlantic Blvd and N Dixie Hwy

Pompano Beach, Florida 33064

APPENDIX C – Laboratory Summary

Laboratory Data Summary

Laboratory Testing Summary

Sample Location	Sample Number	Depth (feet)	^MC (%)	Soil Type	Atterberg Limits			**Percent Passing No. 200 Sieve	Moisture - Density		@ LBR (%)	#Organic Content (%)
					LL	PL	PI		<Maximum Density (pcf)	<Optimum Moisture (%)		
B-02	S-8	23-25	22.7	SP-SM				6.5				
B-04	S-6	13-15	26.2	SP				1.4				
B-05	S-3	4-6	13.6	SP				1.3				
B-07	S-10	33-35	26.7	SP-SM				7.3				
B-09	S-4	6-8	21.6	SP				2.9				
B-12	S-5	8-10	22.5	SP				1.2				

Notes: See test reports for test method, ^ASTM D2216-19, *ASTM D2488, **ASTM D1140-17, @FM 5-515, #ASTM D2974-20e1 < See test report for D4718 corrected values

Definitions: MC: Moisture Content, Soil Type: USCS (Unified Soil Classification System), LL: Liquid Limit, PL: Plastic Limit, PI: Plasticity Index, CBR: California Bearing Ratio, OC: Organic Content

Project: Downtown Pompano Beach - City Hall
Client: Keith Engineering

Project No.: 85:1109
Date Reported: 11/4/2025

Office / Lab	Address	Office Number / Fax
ECS Florida LLC - West Palm Beach	2000 Avenue "P" Suite 3 West Palm Beach, FL 33404	(561)840-3667 (561)840-3668

Tested by	Checked by	Approved by	Date Received
DHansen	DHansen	DHansen	10/31/2025