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PACSCON
Client Centric | Geo-Environmentally Focused

4517 George Road, Suite 220
Tampa, FL 33634

June 9, 2023

Ms. Jennifer Latimer
Sight Development, LLC
1925 East 6th Avenue
Tampa, FL 33605

Subject: Subsurface Exploration Report
Canvas Lois Townhomes
5000 S. Lois Avenue
Tampa, Florida
PACSCON Project No. 2023-1835

Dear Ms. Latimer:

PACSCON Geoenvironmental, Inc. (PACSCON) has completed the authorized subsurface exploration and geotechnical engineering evaluation for the above-referenced subject property.

The work was performed in general accordance with PACSCON Proposal Number 2023-1835 dated May 11, 2023, authorized through a Proposal Acceptance Form signed on May 15, 2023. This report briefly discusses our understanding of the project at the time of the subsurface exploration, describes the geotechnical consulting services provided by PACSCON and presents our findings, conclusions, and recommendations.

We appreciate your selection of PACSCON and for the opportunity to be of service on this project. Please contact us if you have any questions or if we may be of further assistance.

Sincerely,
PACSCON

Jianhua J Chen
2023.06.09
'00'04- 09:00:57

JIANHUA CHEN LICENSE No. 53459 STATE OF FLORIDA PROFESSIONAL ENGINEER

This item has been digitally signed and sealed by Jianhua Chen, Ph.D., P.E. on the date adjacent to the seal.

Printed copies of this document are not considered signed and sealed and the signature must be verified on any electronic copies.

J. Jay Chen, Ph.D., P.E.
CEO | Principal
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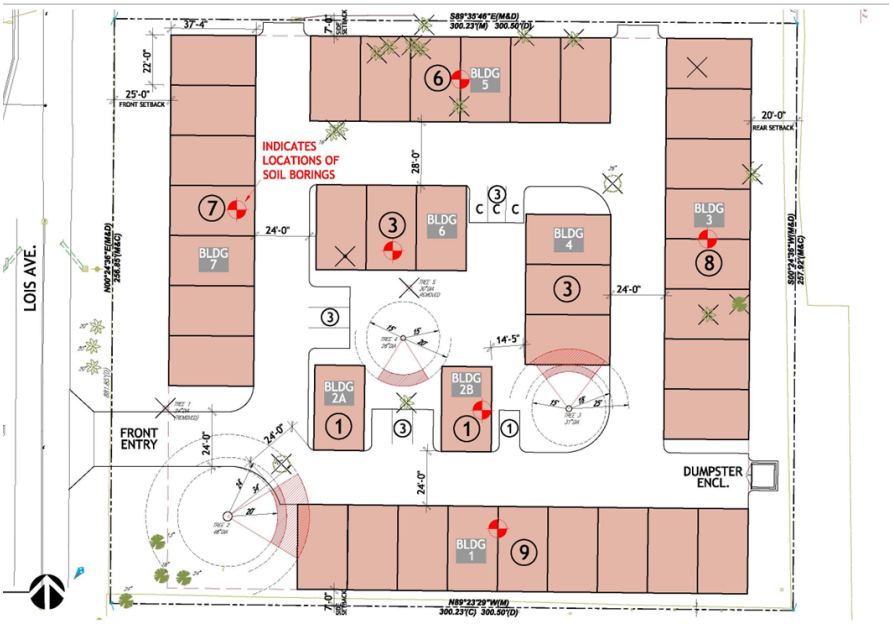
SUBSURFACE EXPLORATION REPORT

CANVAS LOIS TOWNHOMES
5000 S. LOIS AVENUE
TAMPA, FL



PREPARED FOR:

Sight Development, LLC
1925 East 6th Avenue
Tampa, FL 33605
Attn: Ms. Jennifer Latimer

PACSCON PROJECT NO.: 2023-1835

REPORT DATE: June 9, 2023

EXECUTIVE SUMMARY

The following information is provided as a summary of details contained in the attached subsurface exploration report. The report should be read in its entirety before it is implemented.

1. The project site is located at 5000 S. Lois Avenue in Tampa, FL. The site occupies an area of about 1.8 acres. At the time of our subsurface exploration, there were two one-story buildings and a small pavement area on site. The site was mostly open, covered by grass and scattered trees.

2. It is our understanding that the site will be developed into townhomes. We have been provided with architectural and civil site plans. According to the site plans, seven (7) buildings will be constructed at the site to provide 38 townhome units. Underground stormwater chambers will be installed in the surface parking area between the buildings.

3. A subsurface exploration program was conducted at the site in this study. Ten (10) soil test (SPT) borings were drilled at the site to depths of 15 to 40 feet below ground surface (bgs). The soil borings encountered mostly medium dense sand to about 35 feet (bgs), followed by predominantly stiff clay to the maximum boring termination depths of 40 feet (bgs).

4. Two (2) Double Ring Infiltrometer (DRI) tests were performed at the site. The vertical infiltration rates were measured to range from 0.4 to 1.1 inches per hour. In the two DRI test areas, ground water table was encountered at about 3 feet (bgs). The seasonal-high water table was estimated to be at about 1.5 feet.

5. The site should be cleared before construction. This will primarily include removal of the existing buildings, pavement, trees, and stripping of any topsoil, vegetation, organics, trash, and other unsuitable materials. We recommend a minimum stripping depth of 6 inches. The site should then be proof-rolled using a heavy roller. Extreme caution should be used when operating a vibratory roller within 75 feet of any existing structure.

6. Fill for the building and pavement areas should consist of clean sands (SP, SP-SM) and should be compacted to at least 95 percent of the Modified Proctor maximum dry density. In general, based upon the boring results, the near surface sands such as those encountered in the borings within the top 20 feet of the subsurface can be used as a structural fill, provided that the material is free of debris, clay, rock, roots, and organics.

7. After site preparations as recommended, including an intensive compaction program, the proposed buildings can be supported using conventional spread footings designed for a net allowable bearing pressure of 2,500 pounds per square feet.

8. We recommend a flexible pavement system for the construction of the paved parking areas and access roadways. For standard duty traffic, a flexible pavement section consisting of 1.5 inches of asphaltic concrete underlain by 6 inches of crushed concrete/limerock base over 12 inches of stabilized subgrade is recommended. For heavy-duty traffic, a flexible pavement section consisting of 2.0 inches of asphaltic concrete underlain by 8 inches of crushed concrete/limerock base over 12 inches of stabilized subgrade is recommended.

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1.0 PROJECT OVERVIEW

1.1 INTRODUCTION

In accordance with your request and authorization, PACSCON has completed a subsurface exploration and geotechnical engineering evaluation for the above referenced project. We explored the general subsurface conditions in order to evaluate their suitability for the support of the proposed construction and to obtain a measure of pertinent engineering properties of subsurface materials. Our work included soil test borings, laboratory testing, and engineering analyses. This report describes our exploration and tests, reports our findings, and summarizes our conclusions and preliminary recommendations.

1.2 SITE AND PROJECT DESCRIPTION

The project site is located at 5000 S. Lois Avenue in Tampa, FL. The site occupies an area of about 300 feet by 258 feet, or about 1.8 acres. At the time of our subsurface exploration, there were two one-story buildings and a small surface paved area on site. The site was mostly open, covered by grass and scattered trees.

It is our understanding that the site will be developed into townhomes. We have been provided with architectural and civil site plans. According to the site plans, seven (7) buildings will be constructed at the site to provide 38 townhome units. Underground stormwater chambers will be installed in the surface parking area between the buildings.

Structural details or load data were not provided to us at the time of this report. Based on our experience with similar projects, we have assumed the following structural loads for this project:

- Maximum column spread footing load = 7 kips
- Maximum wall strip footing load = 7.5 kips/foot

1.3 PURPOSE AND SCOPE OF SERVICES

The purpose of this study was to provide a geotechnical evaluation of the site considering the proposed development. We performed a subsurface exploration program at the site to collect subsurface data. The subsurface materials encountered were then evaluated with respect to the available project characteristics.

The following specific tasks were performed in this geotechnical investigation:

- Reviewed readily available published geologic and topographic information. This information was obtained from “Soil Survey of Hillsborough County, Florida" published by the United States Department of Agriculture (USDA) National Resources Conservation Service (NRCS).

- Executed a program of subsurface exploration consisting of subsurface sampling and field testing. A total of 10 soil test borings were drilled to depths of 15 to 40 feet (bgs). SPT's were performed and split-spoon soil samples were collected continuously in the first 10 feet of the test borings, and every five (5) feet thereafter.

- Performed two (2) DRI tests at the locations indicated by the Project Civil Engineer for the underground stormwater management system. The DRI tests were performed in general accordance with ASTM standards.

- Visually classified and stratified representative soil samples in the laboratory using the Unified Soil Classification System (USCS). Conducted a laboratory testing program to characterize materials encountered using representative samples recovered from the site. Identified soil conditions at each boring location and formed an opinion of the site soil stratigraphy.

- Prepared this geotechnical report by a professional geotechnical engineer registered in the State of Florida. The report includes the following -

    - Subsurface conditions encountered at the site.
    - Observed groundwater levels and estimated seasonal-high groundwater levels.
    - Results of the Double Ring Infiltrometer (DRI) tests.
    - Soil or rock data review/analysis as it relates to the proposed site development.
    - Geotechnical recommendations for site preparation, including fill placement.
    - Geotechnical recommendations for supporting the proposed buildings.
    - Pavement subgrade preparation and pavement section recommendations.
    - Recommended soil parameters for typical wall backfill materials including lateral earth pressure coefficient to assist in retaining wall design by others.

The scope of this exploration did not include an evaluation of potential deep soil problems, such as sinkholes. A sinkhole evaluation may be performed at your request and with authorization. To perform such an evaluation, it is expected that Ground Penetrating Radar (GPR) in conjunction with deep soil test borings drilled into limestone formation will be required.

Additionally, the scope of our services did not include any environmental assessment or investigation for the presence or absence of hazardous or toxic materials in the soil, ground water, or surface water within or beyond the site studied. Any statements in the report regarding odors, staining of soils, or other unusual conditions observed are strictly for the information of our client.

2.0 EXPLORATION PROCEDURES

To explore subsurface conditions at the site, 10 soil test borings and two (2) DRI tests were performed at the site. The locations of the borings and DRI tests are shown on Figure 1 – Field Exploration Plan on Site Plan and Figure 2 – Field Exploration Plan on Aerial Map.

Our field exploration was conducted between May 23 and 24, 2023. The boring locations were staked out in the field using a hand-held GPS device. The boring locations illustrated on the Field Exploration Plan should be considered accurate only to the degree implied by the method used. It is important to note that ground surface elevations at the boring locations were neither furnished nor determined.

2.1 SOIL TEST BORINGS

The Standard Penetration Test (SPT) borings were performed using the guidelines of ASTM International (ASTM) Designation D-1586, "Penetration Test and Split-Barrel Sampling of Soils." A mud rotary drilling process was used to advance the borings. At regular intervals, the drilling tools were removed and soil samples were obtained with a standard 1.4-inch I.D., 2.0-inch O.D., split-tube sampler. The sampler was first seated six inches and then driven an additional foot with blows of a 140-pound hammer falling 30 inches. The number of hammer blows required to drive the sampler the final foot is designated the "Penetration Resistance." The penetration resistance, when properly interpreted, is an index to the soil strength and density. Representative portions of the soil samples, obtained from the sampler, were placed in glass jars and transported to our laboratory for further evaluation and laboratory testing. SPT tests and Split-spoon soil samples were collected continuously in the first 10 feet of the test borings, and every five (5) feet thereafter.

It should be noted that an automatic hammer was used to perform SPT tests.

2.2 DOUBLE RING INFILTROMETER (DRI) TEST

Two (2) DRI tests were performed at the site. The tests were performed in general accordance with the American Society of Testing and Materials (ASTM) test designation D-3385. The test area was hand-excavated to remove vegetation, roots, or other surface materials. The test instrument consists of two inter-connected steel rings. The diameters of the inner and outer rings are 12 and 24 inches, respectively. The test area was excavated to about 12 inches below ground surface. The double-ring was then driven into ground with a penetration of about 8 inches. Water levels inside the inner-ring and annular space between the inner and outer rings were maintained at constant level (approximately 14 inches above the bottom of the ring) by adding water to the inner ring and annular space. Water quantities added to the inner ring and the annular space between the inner and outer rings was recorded at specified time intervals.

2.3 LABORATORY TESTING

The recovered soil samples were transported to our Tampa soils laboratory from the project site. Each soil sample was then examined by a Geotechnical Engineer using the Unified Soil Classification System (USCS) as specified in ASTM Test Designations D-2487 and D-2488.

It should be noted that all soil samples will be properly disposed of 30 days following the submittal of this PACSCON subsurface exploration report unless you request otherwise.

2.3.1 Soil Classification

Soil classification provides a general guide to the engineering properties of various soil types and enable the engineer to apply past experience to current problems. In our explorations, samples obtained during drilling operations are observed in our laboratory and visually classified by an engineer. The soils are classified according to consistency (based on number of blows from standard penetration tests), color and texture. These classification descriptions are included on our "Test Boring Records." The classification system discussed above is primarily qualitative; laboratory testing is generally performed for detailed soil classification. Using the test results, the soils were classified using the USCS. This classification system and the in-place physical soil properties provide an index for estimating the soil's behavior. The soil classification and physical properties obtained are presented in this report.

3.0 EXPLORATION RESULTS

3.1 CURRENT SITE CONDITIONS

The site is bounded to the east by a warehouse facility, to the south by Ultra Pure, a bottled water supplier, to the west by South Lois Avenue followed by a WalMart, and to the north by a commercial establishment.

The site was generally flat. No significant depression or standing water was observed at the site at the time of our field exploration. No obvious cracks or other sign of structural distress were noted on the existing buildings or paved parking area.

3.2 COUNTY SOIL SURVEY

The "Soil Survey of Hillsborough County, Florida", published by the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS), was reviewed for general near-surface soil information within the general vicinity of the subject project. The site is covered with one (1) primary soil-mapping unit – Urbane land. No detailed characteristics are available.

3.3 SUBSURFACE CONDITIONS

A total of 10 soil test borings were drilled in this study to depths of 15 to 40 feet (bgs). The subsurface conditions encountered at the boring locations are described on the Test Boring Records in Appendix A of this report.

These records represent our interpretation of the subsurface conditions based on the field logs and visual observations of samples by an engineer. The lines designating the interface between various strata on the Test Boring Records represent the approximate interface locations and elevation. The actual transition between strata may be gradual. Groundwater levels shown on the Boring Records represent the conditions only at the time of our exploration. Soil and rock conditions may vary between boring locations.

Boring B1 was drilled in the pavement area and encountered 2 inches of asphaltic concrete. The other 9 borings were drilled in grass-surface areas. In grass-surfaced areas the borings encountered a topsoil with thickness on the order of 4 inches.

Underneath the above-described surficial layer, materials encountered in the borings are generally arranged in a 4-layer configuration. Each major soil unit is briefly described below.

Soil Unit 1 – Loose Sand: Five of the ten soil test borings encountered a layer of loose sands, extending to an average depth of 2 feet. The USCS designations of material in this stratum were SP (clean sand), occasionally SP-SM (slightly silty fine sand) and SM (silty fine sand). Average SPT N values recorded in this unit in the borings were between 4 and 6 blows per foot (bpf), averaging

about 5 bpf, indicating that materials in this unit were predominantly at an in-situ density of "loose".

Soil Unit 2 – Medium Dense Sand: Beneath Soil Unit 1, the soil test borings encountered a layer of medium dense sand with thickness ranging from 25 to 40 feet, averaging about 33 feet. Average SPT N values measured in this unit in the borings ranged between 8 and 13 bpf, averaging 11 bpf, indicating that materials in this unit were predominantly at an in-situ density of "medium dense". The USCS designations of material in this stratum were predominantly SP (clean sand), occasionally SP-SM (slightly silty fine sand), and SM (silty fine sand).

Soil Unit 3 – Stiff Clay: Underneath Soil Unit 2, the borings encountered a layer of stiff clay. This unit had a thickness of about 5 feet. Average SPT N values measured in this unit ranged from 5 to 12, averaging 7 bpf, indicating that the material had an in-situ consistency of "firm" to "stiff", predominantly "stiff".

Subsurface data obtained from the borings within the top 40 feet of the subsurface are summarized in the following table.

Boring	Soil Unit 1 - Loose Sand			Soil Unit 2 - Medium Dense Sand			Soil Unit 3 - Firm to Stiff Clay			Depth to Water Table
	Thickness (feet)	N Value (bpf)	Average N (bpf)	Thickness (feet)	N Value (bpf)	Average N (bpf)	Thickness (feet)	N Value (bpf)	Average N (bpf)	(feet-bgs)
B1	0	-	-	30	8-16	13	5	5	5	4.0
B2	2	5	5	33	7-16	11	5	7	7	3.4
B3	2	5	5	33	8-18	13	5	12	12	3.0
B4	10	4-6	5	25	6-19	13	5	6	6	3.0
B5	0	-	-	40	8-19	13	-	-	-	3.0
B6	0	-	-	35	7-14	10	5	7	7	3.3
B7	0	-	-	-	8-14	11	-	-	-	3.2
B8	2	4	4	-	6-10	8	-	-	-	3.1
B9	4	4-7	6	-	9-12	10	-	-	-	3.2
B10	0	-	-	-	8-14	12	-	-	-	3.5
Min	0	4-5	4	25	6-9	8	5	5	5	3.0
Max	10	5-7	6	40	10-19	13	5	12	12	4.0
Average	2	-	5	33	-	11	5	7	7	3.3

3.4 GROUNDWATER OBSERVATIONS

At the time of our exploration, depths to groundwater table were measured in the borings at depths between 3 and 4 feet (bgs), averaging about 3.3 feet (bgs).

Furthermore, fluctuations in groundwater level at this site should be anticipated throughout the year due to a variety of factors, the most important of which is recharge from rainfall. The seasonal high-water table is estimated to be at about 1½ feet (bgs).

3.5 INFILTRATION TEST RESULTS

Two (2) DRI tests were performed in the proposed drainage system area. The results of the DRI tests are summarized in the following table:

Test	Depth to Water Table	Estimated Seasonal-high Water Table	Infiltration Rate
	(feet-bgs)	(feet-bgs)	(inch/hour)
DRI-1	3.0	1.5	1.1
DRI-2	3.0	1.5	0.4

For each DRI test, an auger boring was performed using a hand auger in the vicinity of the test location.

Detailed results of the tests are attached in Appendix B. It should be realized that the DRI test results reflect vertical infiltration rate of the surficial aquifer materials.

4.0 CONCLUSIONS AND RECOMMENDATIONS

4.1 GENERAL

The following design recommendations have been developed based on the previously described project characteristics and subsurface conditions encountered during this exploration. The test boring data were evaluated utilizing correlations between the measured standard penetration test resistances and the engineering performance characteristics of similar subsurface conditions.

Subsurface conditions in unexplored locations or at other times may vary from those encountered at specific boring locations. If such variations are noted during construction, we request the opportunity to review the changes and amend our recommendations, if necessary.

4.2 BUILDING FOUNDATIONS

After site preparations as recommended, including an intensive compaction program, the building can be supported using conventional spread footings designed for a net allowable bearing pressure of 2,500 pounds per square foot.

Continuous foundations should be at least 18 inches wide and isolated column foundations should have a minimum width of 24 inches; all foundations should bear at least 12 inches below adjacent finish grades.

All footings should be constructed in a "dry" fashion, that is, it is recommended that the groundwater levels be maintained at least one (1) foot below the footing bottoms. It is important that the structural elements be centered on the footings such that loads are transferred evenly unless the footings are adequately proportioned for eccentric loads.

Settlement of individual footings designed in accordance with the recommendations outlined above is expected to be on the order of one (1) inch with differential settlements per 30 feet of wall footing expected to be on the order of 0.5 inches. Differential settlements across spread footings are expected to be approximately ½ of the total settlements. Approximately half of the settlements are estimated to occur during construction and the remaining half to occur post construction.

These settlement estimates are based on structural load data assumed in this report and our engineering experience with these soils. Total and differential settlements of these magnitudes are usually considered tolerable for the anticipated construction; the tolerance of the proposed structure to the predicted total and differential settlements should be confirmed by the Structural Engineer.

Footing excavations should be level and free of debris, ponded water, mud, and loose, or water-softened soils. Concrete should be placed as soon as is practical after the footing is excavated

and the subgrade evaluated. Foundation concrete should not be placed on saturated soil. If a footing excavation remains open overnight, or if rain or snow is imminent, a 3 to 4-inch thick "mud mat" of lean concrete should be placed in the bottom of the footing to protect the bearing soils until reinforcing steel and concrete can be placed.

The estimated settlements and our foundation recommendations are based on structural loads assumed in this report. If our assumed structural loads are incorrect, please let us know and we will re-evaluate our recommendations.

4.3 FLOOR SLAB DESIGN

The slab on grade may be designed based on a subgrade modulus (K) of 100 pci for the analysis of concrete slab thickness, provided that 4-inch-thick layer of compacted crushed stone is placed beneath the floor slab, which in turn is supported on structural fill compacted to density no less than 98% of Maximum Modified Proctor Dry Density. The design should include joint preparation in accordance with ACI recommended practices.

It is recommended that the floor slab bearing soils be covered by a lapped polyethylene sheeting of at least 6-mil thickness to reduce the potential for floor dampness which can affect the performance of glued tile and carpet, if any are used.

This membrane should consist of a 6-mil single layer of non-corroding, non-deteriorating polyethylene sheeting material placed to minimize seams and to cover all the soil below the building floor slab. This membrane should be cut in a “cross shape” to allow for pipes or other penetrations and the membrane should extend to within ½ inch of all such pipes or penetrations. All seams of the membrane should be lapped at least 12 inches. Punctures or tears in the membrane should be repaired with the same or comparable material and sealed in a waterproof manner.

The performance of concrete floor slabs is also affected by the concrete mix that is used. A relatively high water-cement ratio of the concrete can cause aesthetic disruptions, such as unsightly slab “curling” and shrinkage cracking. Also, an additional waiting period may be required prior to installing moisture-sensitive floor covering because of the moisture loss from the concrete floor slab. To reduce slab “curling” it is suggested that the vapor barrier be covered with a 2-inch-thick layer of “clean” sand or approved suitable granular material.

4.4 BELOW GRADE WALLS

Earth retaining structures may need to be constructed at the site. These retaining walls should be designed to resist pressures exerted by the adjacent soils. For walls that are not restrained during backfilling, and are free to rotate at the top, active earth pressures should be considered in their design. Walls that are restrained should be designed using at-rest pressures. Recommended soil parameters for the “clean” granular soils are presented below:

Earth Pressure Type	Earth Pressure Coefficient	Equivalent Fluid Pressure (pcf)	
		Above Water Table	Below Water Table
Active (K_a)	0.33	35	80
At-Rest (K_o)	0.50	53	89
Passive (K_p)	3.00	150*	TBD**
Coefficient of Sliding Friction	0.35***		

Notes:

* Wall movements required to develop full passive earth pressures are significantly greater than movements necessary for active earth pressure. Consequently, this passive earth pressure value has been reduced by at least 50% for wall design.

** Passive earth pressure for submerged walls shall be determined on a case-by-case basis.

*** The coefficient of sliding friction should be used as the ultimate coefficient of friction between the footing and the underlying soil.

Adequate drainage should be provided behind the walls to prevent the build-up of excess hydrostatic pressures. This can be achieved by installing drains, using geotextiles, or backfilling with free-draining sand, in association with adequate weep holes.

In order to reduce the loads being applied to the underground foundation walls and to promote positive water drainage, it is recommended that a granular backfill be placed directly behind the walls and extended laterally a minimum distance equal to the wall height. These granular soils should be relatively clean, free-draining granular materials containing less than five percent passing the No. 200 sieve (0.074 mm). These granular soils are locally available within the general project vicinity. Positive drainage of these backfill soils should also be provided by means such as "sock" enclosed perforated pipe toe drains.

Wall rotation may be reduced by tying the wall directly into the floor slab. It is also important to note that wall damage due to excessive compaction or vibration should be avoided by utilizing hand-operated mechanical tampers; heavy compaction equipment should not be allowed within 10 feet of the walls. The compaction behind these walls should be 98 percent of the Modified Proctor maximum dry density (ASTM D-1557).

4.5 STORMWATER DRAINAGE SYSTEM DESIGN PARAMETERS

Based on boring and testing results obtained from the site, the following aquifer parameters are recommended for the use in the design of the stormwater drainage system.

Parameters	Area of DRI Tests
Ground Water Table (Feet below the existing ground surface)	3
Seasonal High-Water Table (Feet below the existing ground surface)	1.5
Unsaturated Vertical Infiltration Rate (inches/hour)	0.75
Fillable Porosity	25%

The values in the above table reflect the average of two DRI tests performed at the site in the proposed stormwater management system area. No extra factor of safety (a factor of safety of 1) was applied in the above recommended infiltration rate. The designer should decide on an appropriate factor of safety to be applied to the recommended infiltration rate.

4.6 EARTHWORK OPERATIONS

4.6.1 Subgrade Preparation

Underground Utilities: Prior to construction, the location of any existing underground utility lines within the construction area should be established. Provision should then be made to relocate interfering utility lines from the construction area to appropriate locations. In this regard, it should be noted that if underground pipes are not properly removed or plugged, they may serve as conduits for subsurface erosion, which subsequently may result in excessive settlements.

Site Clearing: The site should be cleared before construction. This will primarily include removal of existing building structures, pavement and stripping of existing vegetation, root systems, and topsoil. If encountered, trash and other unsuitable materials should also be removed from the construction area. It is recommended a minimum stripping depth of 6 inches. The stripping within the proposed construction area should be extended at least 5 feet, where possible, beyond the planned construction limits. Any roots with diameters greater than one (1) inch should be removed.

Proof-rolling: After stripping to the desired grade and prior to fill placement, the exposed subgrade should then be proof-rolled using a fully loaded double-axle dump truck, or a heavy (10 - 15 tons) vibratory roller. Any soft, yielding soils detected during the proof-rolling operations should be excavated and replaced with approved structural fill compacted in 12-inch lifts to 98% Modified Proctor maximum dry density.

Sufficient passes should be made during the proof-rolling operations to produce minimum dry densities of 98 percent of the Modified Proctor (ASTM D-1557) maximum dry density, tested at one (1) foot below the compacted surface. The proof-rolled areas should receive no less than 8 overlapping passes, half of them in each of two perpendicular directions.

Loose sandy soils were encountered at the site. The contractor shall be prepared to have very large vibratory rollers as well as water trucks for performing an intensive compaction program at the site. It may be necessary to adjust moisture contents of the soils and thus water trucks will be necessary.

If a vibratory roller is used, extreme caution should be used when operating the vibratory compactor near existing structures (within 75 feet) to avoid the transmission of vibration that could cause settlement damage, cracking or disturbance of occupants. The contractor shall be responsible for any damages.

4.6.2 Fill Placement

All fills shall consist of clean, granular, inorganic sandy soils with less than 12 percent passing the US No. 200 sieve. Structural fill shall be placed in lifts not exceeding 12 inches in loose thickness and be compacted to at least 98 percent of the maximum dry density as determined by the Modified Proctor Test Method (ASTM D-1557).

Fill placed in non-structural areas (e.g., grassed areas) should be compacted to at least 90 percent of the maximum dry density according to ASTM D-1557, to avoid significant subsidence.

The upper one foot of soils supporting slabs-on-grade and pavements should also be compacted to a minimum of 98 percent of the maximum dry density obtained in accordance with the ASTM Specification D-1557, Modified Proctor Method discussed above.

Compliance tests should be performed at a rate of one (1) test per 2,500 square feet per foot of improvement (depth) in the building area and one (1) test per 5,000 square feet in paved areas.

If any problems are encountered during the earthwork operations, or if site conditions deviate from those encountered during our subsurface exploration, the Geotechnical Engineer should be consulted.

4.6.3 Groundwater Control

Groundwater levels should be determined immediately prior to excavations and construction. Shallow groundwater should be kept at least one foot below the lowest working area to facilitate proper material placement and compaction. Depending upon groundwater levels at the time of construction, some form of dewatering may be required to achieve the required compaction and to prevent seepage from entering the bottom and/or sides of the excavations. Groundwater can

normally be controlled in shallow excavations with a pump-and sump system or a system of well points.

Soils exposed in the bases of all satisfactory foundation excavations should be protected against any detrimental change in conditions, such as physical disturbance or rainwater. Surface runoff water should be drained away from the excavations and not be allowed to pond. If possible, all footing concrete should be placed the same day that the excavations are made. If this is not possible, the footing excavations should be adequately protected in the interim.

At the time of this subsurface exploration, groundwater table was measured at depths on the order of 3 feet (bgs). It is our estimate that the seasonal high groundwater table at about 1½ feet (bgs). It is likely that dewatering measures will be needed for the project during construction. We expect a pump-and-sump system to be sufficient for controlling groundwater at the site, if necessary.

4.6.4 Temporary Side-Slopes

All open-cut excavation areas should be properly dewatered, if required, for a period of at least 24 hours prior to the initiation of excavation operations. Following the proper dewatering operations, if required, side slopes for temporary excavations may stand near 1½ horizontal to one (1) vertical (1½H:1V) for short dry periods of time to a maximum excavation depth of six feet. Where restrictions do not permit slopes to be constructed as recommended above, the excavation should be shored and braced in accordance with current OSHA requirements. Furthermore, open-cut excavations up to a maximum depth of ten (10) feet should be sloped to 2H: 1V or flatter slopes or be braced using an approved bracing plan. Excavated materials should not be stockpiled at the top of any slope within a horizontal distance equal to the excavation depth.

4.6.5 Foundation Excavation and Final Compaction

It is considered essential that all foundation excavations be observed by a geotechnical engineer or an approved representative to ensure that footings are placed on suitable load bearing materials. If unsuitable materials are encountered in the footing excavations, the materials should be removed, and the footings placed at lower elevations. This backfilling may be done with a very lean concrete or with a well-compacted, suitable fill such as “clean” sand, gravel, or crushed FDOT No. 57 or FDOT No. 67 stones.

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 dug during the rainy season or if rain is anticipated. 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. If the excavation must remain open overnight, or if rainfall becomes imminent while the bearing soils are exposed, we recommend that a 1- to 3-inch thick "mud-mat" of "lean" concrete be placed

on the bearing soils before the placement of reinforcing steel.

The bottom of the foundation excavations should be compacted to densify soils loosened during or after the excavation process and washed or sloughed into the excavation prior to the placement of forms. A heavy-duty vibratory rammer should be used for this final compaction, immediately prior to the placement of reinforcing steel, with previously described minimum dry density requirements to be maintained below the foundation level.

After foundation forms are removed, backfill around foundations should be placed in lifts six inches or less in thickness, with each lift individually compacted with a plate tamper. The backfill should be compacted to a dry density of at least 98% of the modified Proctor (ASTM D-1557) maximum dry density.

4.6.6 Additional Recommendations

All erosion and sedimentation shall be controlled in accordance with sound engineering practice and current state and local requirements. In a dry and undisturbed state, the upper one foot of most of the soil at the site will provide good subgrade support for fill placement and construction operations. However, when wet, these soils will degrade quickly with disturbance from contractor operations. Therefore, good site drainage should be maintained during earthwork operations, which will help maintain the integrity of the soil. The surface of the site should be kept properly graded to enhance drainage of the surface water away from the proposed structural areas during the construction phase. We recommend that an attempt be made to enhance the natural drainage without interrupting its pattern.

Care must be exercised prior to, during, and after construction to prevent erosion effects or undermining of foundations. The integrity of the raised building "pad" must hence be maintained for a distance of at least five feet beyond the foundation edges, with gutters disposing of rainfall runoff beyond the pad limits.

Foundation concrete should not be cast over a foundation surface containing topsoil or organic soils, trash of any kind, surface made muddy by rainfall runoff, or groundwater rise, or loose soil caused by excavation or other construction work. Reinforcing steel should also be clean at the time of concrete casting. If such conditions develop during construction, the reinforcing steel must be lifted out and the foundation surface reconditioned and approved by the Foundation Engineer.

4.6.7 Quality Control

To verify the contractor's compliance with the above recommendations, it is recommended that PACSCON be requested to inspect earthwork operation to verify that foundation bearing conditions are consistent with our expectations.

4.7 BORROW AND ON-SITE SOIL SUITABILITY

Fine sand (SP), fine sand with silt (SP-SM) and fine sand with clay (SP-SC) are suitable for the use as structural and pavement fill materials. Depending on the natural moisture content of the sands, some time it may be necessary to adjust the moisture contents to within a desirable range to obtain compaction. It should be noted that soils with higher fines content may be more sensitive to moisture changes and may require more handling.

Clayey fine sand (SC) and silty fine sand (SM) are more difficult to use as fill because they are more moisture sensitive. These soils may be utilized under the building and pavement areas with a minimum of 3 feet of fine sand (SP) topping over the silty/clayey soil.

All materials to be used for backfilling or compacted structural fill should be evaluated and, if necessary, tested prior to placement to determine if they are suitable for the intended uses.

In general, based upon the boring results, majority of the near surface sands such as those encountered in the borings within top 10 feet of the subsurface can be used as a structural fill as well as general subgrade fill and backfill, provided that the fill material is free of rubble, clay, rock, roots, and organics.

Any off-site materials used as fill should be approved by the geotechnical engineer prior to acquisition. Suitable structural fill materials should generally consist of fine to medium sand with less than 12 percent passing the No. 200 sieve, and be free of rubble, organics, clay, debris, and other unsuitable material.

4.8 PAVEMENT CONSIDERATIONS

Both flexible and rigid pavement sections are suitable for the site. We recommend using a flexible pavement system (asphaltic concrete) for the construction of the paved parking areas and access roadways. We recommend using rigid pavement in dumpster and service court areas or other areas where truck traffic will be accelerating, decelerating, and turning.

Our pavement section recommendations are presented in this section. It should be realized that the pavement recommendations presented below are considered minimum for the site, soil, and limited traffic conditions expected. The final pavement thickness design should be determined by the project Civil Engineer using information obtained from the subsurface exploration program and an analysis of anticipated traffic conditions.

4.8.1 Flexible Pavement

Traffic loadings were not provided to us. The following recommended heavy duty and light duty pavement sections have been developed for this project based on our understanding of the existing subsurface conditions, review of Florida Department of Transportation (FDOT) specifications, and our experience with similar projects in the general area of the site.

Standard-Duty Pavements: Asphalt pavement section consisting of at least 1½ inches of asphalt (FDOT SuperPave – friction course SP 9.5 and/or structural course SP 12.5), 6 inches of Limerock/Crushed Concrete Base Course with a minimum LBR value of 100, underlain by 12 inches of a Stabilized Subgrade with a minimum LBR value of 40, placed in general accordance with this report and FDOT requirements.

Heavy-Duty Pavements: Asphalt pavement section consisting of at least 2 inches of asphalt (FDOT SuperPave – 1 inch of friction course SP 9.5 over 1 inch of structural course SP 12.5), 8 inches of Limerock/Crushed Concrete Base Course with a minimum LBR value of 100, underlain by 12 inches of a Stabilized Subgrade with a minimum LBR value of 40, placed in general accordance with this report and FDOT requirements.

STANDARD DUTY PAVEMENT SECION	
Asphaltic surface course (such as a 9.5 mm and 12.5 mm SuperPave approved FDOT mixes)	1½ inches
Limerock/Crushed Concrete Base Course (from an FDOT approved source, min. LBR of 100)	6 inches
Stabilized Subgrade (minimum LBR of 40)	12 inches
HEAVY DUTY PAVEMENT SECION	
Asphaltic surface course (such as a 9.5 mm and 12.5 mm SuperPave approved FDOT mixes)	2 inches
Limerock/Crushed Concrete Base Course (from an FDOT approved source, min. LBR of 100)	8 inches
Stabilized Subgrade (minimum LBR of 40)	12 inches

A qualified soil engineering technician under the direction of a registered professional geotechnical engineer should observe placement and compaction of the pavement materials and perform density tests to confirm that the materials have been placed in accordance with our recommendations.

4.8.2 Rigid Pavement

Our recommendations for Standard-Duty and Heavy-Duty rigid pavement sections are as follows:

Rigid Pavement Heavy-Duty Section

- 6 inches Portland cement concrete surface course
- 12 inches compacted subgrade

Rigid Pavement Standard-Duty Section

- 5 inches Portland cement concrete surface course
- 12 inches compacted subgrade

STANDARD DUTY RIGID PAVEMENT SECION (AUTO PARKING/DRIVE)		
Minimum Pavement Thickness	Maximum Control Joint Spacing	Recommended Saw-Cut Depth
5 Inches	10 feet x 10 feet	1¼ Inches
HEAVY DUTY RIGID PAVEMENT SECION (TRUCK PARKING/DRIVE)		
Minimum Pavement Thickness	Maximum Control Joint Spacing	Recommended Saw-Cut Depth
6 Inches	12 feet x 12 feet	1½ Inches

All concrete joints should conform to applicable FDOT specifications. We recommend that a non-woven geo-textile (about 3 feet wide) be placed beneath the construction joints to prevent upward "pumping" movement of soil fines through the joints.

We recommend using concrete with a minimum compressive strength of 4000 psi and a minimum 28-day flexural strength (modulus of rupture) of at least 600 pounds per square inch, based on 3rd point loading of concrete beam test samples. Layout of the saw-cut control joints should form square panels, and the depth of saw-cut joint should be ¼ of the concrete slab thickness. The joints should be sawed within six hours of concrete placement or as soon as the concrete has developed sufficient strength to support workers and equipment. We recommend using a subgrade modulus (k) of 150 pci.

For further details on concrete pavement construction, please reference the "Guide to Jointing on Non-Reinforced Concrete Pavements" published by the Florida Concrete and Products Associates, Inc., and "Building Quality Concrete Parking Areas", published by the Portland Cement Association.

Please note that the recommended pavement section is based on assumed post-construction traffic loading. If the pavement is to be constructed and utilized by construction traffic, the above pavement section will likely prove insufficient for heavy truck traffic, such as concrete trucks or tractor-trailers used for construction delivery. Unexpected distress, reduced pavement life and /or pre-mature failure of the pavement section could result if subjected to heavy construction traffic and the owner should be made aware of this risk. If the assumed traffic loading stated herein is not correct, PACSCON should review actual pavement loading conditions to determine if revisions to these recommendations are warranted.

4.8.3 Base

Based on the results of our test borings, the subsurface conditions encountered are well suited for limerock or crushed concrete base.

In general, a minimum separation of at least 24 inches between the bottom of an FDOT crushed limerock base course and the seasonal high groundwater table needs to be maintained. This separation can be reduced to 12 inches if an FDOT graded aggregate base (GAB) or crushed concrete base is utilized in lieu of limerock.

We recommend a minimum compaction of 98 percent of the maximum dry density for the Limerock/Concrete Base Course as determined by the Modified Proctor compaction test (ASTM D 1557, Method D).

The base materials should conform to applicable sections of the State of Florida Department of Transportation Standard Specifications for Road and Bridge Construction.

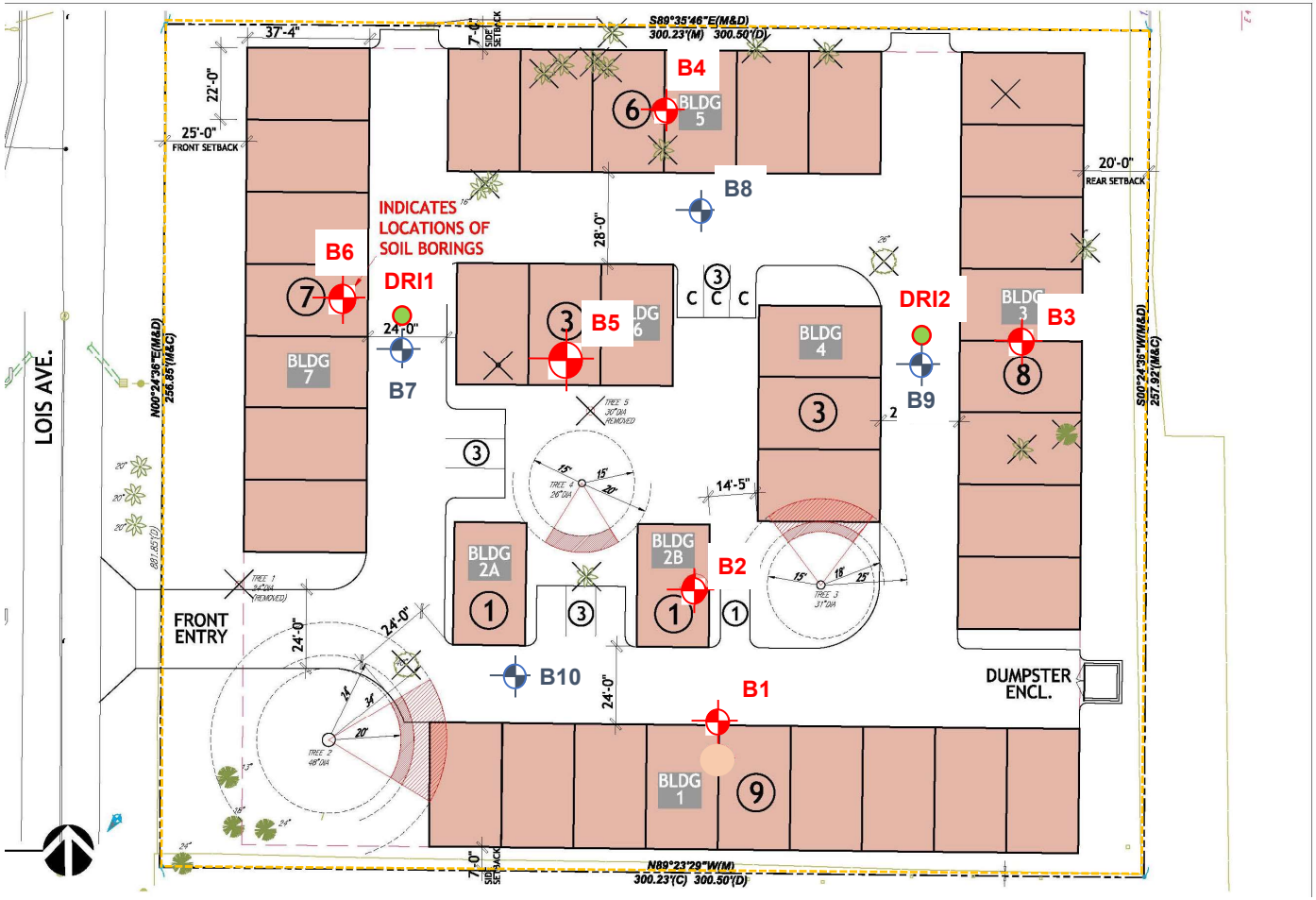
4.8.4 Stabilized Subgrade

In areas to receive flexible pavement, the upper 12 inches of subgrade soil material should be stabilized to a minimum Limerock Bearing Ratio (LBR) of 40 percent, 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 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.

In areas to receive rigid pavement, no subgrade stabilization is necessary, and only compacted subgrade (top 12 inches) is required.

FIGURES AND MAPS

FIGURE 1 – Field Exploration Plan on Site Plan
FIGURE 2 – Field Exploration Plan on Aerial Map



B1 – B6: SPT Borings to 40' Deep

B7 – B10: SPT Borings to 15' Deep

DRI1 – DRI2: Double Ring Infiltrometer (DRI) Test

Source: Site Plan Provided by Client

Scale: As Shown	**Figure 1: Field Exploration Plan on Site Plan**
Date Drawn: 6/6/2023	Canvas Lois Townhomes
	5000 S. Lois Avenue
Checked By: JC	Tampa, Florida
	PACSCON Project No. 2023-1835

PACSCON
Client Centric | Geo-Environmentally Focused

B1 – B6: SPT Borings to 40' Deep

B7 – B10: SPT Borings to 15' Deep

DRI1 – DRI2: Double Ring Infiltrometer (DRI) Test

Scale: As Shown **Date Drawn:** 6/6/2023 **Checked By:** JC	PACSCON Client Centric | Geo-Environmentally Focused	**Figure 2: Field Exploration Plan on Aerial Map** Canvas Lois Townhomes 5000 S. Lois Avenue Tampa, Florida PACSCON Project No. 2023-1835

APPENDIX A

TEST BORING RECORDS

- KEY TO SYMBOLS AND CLASSIFICATIONS
- TEST BORING RECORDS

KEY TO CLASSIFICATION

TERMS AND DESCRIPTIONS

Soil Description	Range of Proportion
Trace	0-5%
Little	5-12%
Some	12-30%
And	30-50%

Relative Density of Cohesionless Soils	SPT N-value
Very loose	0 to 4
Loose	4 to 10
Medium Dense	10 to 30
Dense	30 to 50
Very Dense	Over 50

Consistency of Cohesive Soils	Undrained Shear Strength (psf)	SPT N-Value
Very soft	Less than 250	Less than 2
Soft	250 to 500	2-4
Firm	500 to 1,000	4-8
Stiff	1,000 to 2,000	8-15
Very stiff	2,000 to 4,000	15-30
Hard	Over 4,000	Over 30

SAMPLE TYPES

HA	Auger Sample
SS	Split Spoon
DS	Denison Sample
PS	Pitcher Sample
RC	Rock Core
TO	Thin-walled, Open
TP	Thin-walled, Piston
WS	Wash Sample

SOIL TESTS

Moisture Content	M
Atterberg Limits	A
Grain Size	G
Unconfined Compression	U
Direct Shear	DS
Organic	O
pH	PH
Permeability	P
Consolidation	C
Swell	SW
Soluble Chloride	SC
Soluble Sulfate	SS
Compaction	Com

PENETRATION RESISTANCE

Standard Penetration Resistance (ASTM D1586) "N" = the number of blows required to drive a 2 inch OD split spoon sampler one foot using a 140 lb. hammer falling 30 inches.

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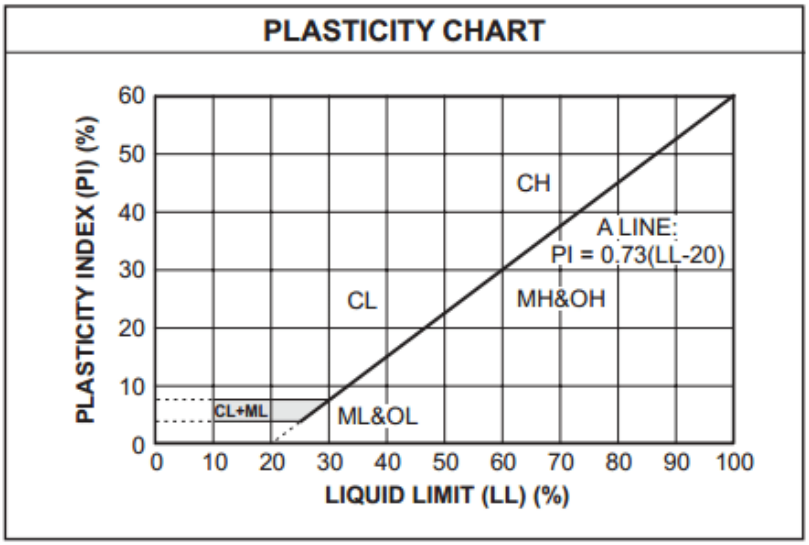
SOIL CLASSIFICATION CHART

COARSE GRAINED SOILS	**GRAVELS**	Clean Gravel less than 5% fines	GW	Well graded gravel
			GP	Poorly graded gravel
		Gravel with more than 12% fines	GM	Silty gravel
			GC	Clayey gravel
	SANDS	Clean Sand less than 5% fines	SW	Well graded sand
			SP	Poorly graded sand
		Sand with more than 12% fines	SM	Silty sand
			SC	Clayey sand
FINE GRAINED SOILS	**SILTS AND CLAYS** Liquid Limit less than 50	Inorganic	CL	Lean clay
			ML	Silt
		Organic	OL	Organic clay and silt
	SILTS AND CLAYS Liquid Limit 50 or more	Inorganic	CH	Fat clay
			MH	Elastic silt
		Organic	OH	Organic clay and silt
HIGHLY ORGANIC SOILS		Organic matter, dark color, organic odor	PT	Peat

PARTICLE SIZE IDENTIFICATION

GRAVELS	Boulders	Above 12 inches
	Cobbles	3 to 12 inches
	Coarse gravel	¾ to 3 inches
	Fine gravel	No. 4 sieve to ¾ inches
SANDS	Coarse sand	No. 10 to No. 4 sieve
	Medium sand	No. 40 to No. 10 sieve
	Fine sand	No. 200 to No. 40 sieve
SILTS AND CLAYS		Passing No. 200 sieve



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Project No: 2023-1835

Project: Canvas Lois Townhomes

Location: 5000 S. Lois Avenue, Tampa, FL

Client Name: Sight Development, LLC

Borehole: B1

SUBSURFACE PROFILE				SAMPLE DATA					
Depth (ft)	Symbol	Description	Elev. (ft)	Number	Type	Water Table	blows/ft	SPT N Value blow/ft 10 20 30	Remarks
0		Ground Surface							
0		2" Asphaltic Concrete							
1		Medium dense, dark brown silty fine SAND with limerock (SM)		1			16		
2									
3				2			13		
4		Medium dense, dark brown fine SAND (SP)				4 ft			
5		Medium dense, brown fine SAND (SP)		3			12		
6		Medium dense, light brown fine SAND (SP)							
7				4			13		
8									
9				5			16		
10									
11									
12									
13									
14				6			8		
15									
16									
17									
18									
19				7			13		
20									
21									
22									
23									
24				8			12		
25									

PACSCON
4517 George Road, Ste 220
Tampa, Florida 33634

Drill Date: 5/23/2023
Drill Method: Mud Rotary
Drilling Rig: B53
Drilling Company: FGD

Driller: Eloidys
Hammer Weight: 140 lb
Hammer Drop: 30 in (auto)
Sheet: 1 of 2

Project No: 2023-1835

Project: Canvas Lois Townhomes

Location: 5000 S. Lois Avenue, Tampa, FL

Client Name: Sight Development, LLC

Borehole: B1

SUBSURFACE PROFILE				SAMPLE DATA					
Depth (ft)	Symbol	Description	Elev. (ft)	Number	Type	Water Table	blows/ft	SPT N Value blow/ft 10 20 30	Remarks
26									
27									
28									
29				9			10		
30		Firm, dark gray sandy CLAY (CL)							
31									
32									
33									
34				10			5		
35		Medium dense, dark gray clayey SAND with shell and limestone fragments (SC)							
36									
37									
38									
39				11			16		
40		End of Borehole							
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									

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4517 George Road, Ste 220
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Drill Date: 5/23/2023
Drill Method: Mud Rotary
Drilling Rig: B53
Drilling Company: FGD

Driller: Eloidys
Hammer Weight: 140 lb
Hammer Drop: 30 in (auto)
Sheet: 2 of 2

Project No: 2023-1835

Project: Canvas Lois Townhomes

Location: 5000 S. Lois Avenue, Tampa, FL

Client Name: Sight Development, LLC

Borehole: B2

SUBSURFACE PROFILE				SAMPLE DATA					Remarks
Depth (ft)	Symbol	Description	Elev. (ft)	Number	Type	Water Table	blows/ft	SPT N Value blow/ft 10 20 30	
0		Ground Surface							
0		4" Topsoil							
1		Loose, brown fine SAND (SP)		1			5		
2									
3		Medium dense, dark brown silty fine SAND (SM)		2		3.4 ft	9		
4									
5		Medium dense, brown fine SAND (SP)		3			11		
6									
7		Medium dense, light brown fine SAND (SP)		4			8		
8									
9				5			11		
10									
11									
12									
13									
14				6			10		
15									
16									
17									
18									
19				7			12		
20									
21									
22									
23									
24				8			13		
25									

PACSCON
4517 George Road, Ste 220
Tampa, Florida 33634

Drill Date: 5/23/2023
Drill Method: Mud Rotary
Drilling Rig: B53
Drilling Company: FGD

Driller: Eloidys
Hammer Weight: 140 lb
Hammer Drop: 30 in (auto)
Sheet: 1 of 2

Project No: 2023-1835

Project: Canvas Lois Townhomes

Location: 5000 S. Lois Avenue, Tampa, FL

Client Name: Sight Development, LLC

Borehole: B2

SUBSURFACE PROFILE				SAMPLE DATA					
Depth (ft)	Symbol	Description	Elev. (ft)	Number	Type	Water Table	blows/ft	SPT N Value blow/ft 10 20 30	Remarks
26									
27									
28									
29				9			16		
30		Loose, light brown fine SAND (SP)							
31									
32									
33									
34				10			7		
35		Stiff, dark gry sandy CLAY (CL)							
36									
37									
38									
39				11			7		
40		End of Borehole							
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									

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Drill Date: 5/23/2023
Drill Method: Mud Rotary
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Drilling Company: FGD

Driller: Eloidys
Hammer Weight: 140 lb
Hammer Drop: 30 in (auto)
Sheet: 2 of 2

Project No: 2023-1835

Project: Canvas Lois Townhomes

Location: 5000 S. Lois Avenue, Tampa, FL

Client Name: Sight Development, LLC

Borehole: B3

SUBSURFACE PROFILE				SAMPLE DATA					
Depth (ft)	Symbol	Description	Elev. (ft)	Number	Type	Water Table	blows/ft	SPT N Value blow/ft (10, 20, 30)	Remarks
0		Ground Surface							
0		4" Topsoil							
1		Loose, dark brown slightly silty fine SAND (SP-SM)		1			5		
2		Medium dense, brown fine SAND (SP)		2		▼ 3 ft	8		
3									
4				3			10		
5									
6				4			12		
7									
8		Medium dense, light brown to brown fine SAND (SP)		5			16		
9									
10									
11									
12									
13									
14				6			13		
15									
16									
17									
18									
19				7			14		
20									
21									
22									
23									
24				8			18		
25									

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Drill Date: 5/23/2023
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Drilling Company: FGD

Driller: Eloidys
Hammer Weight: 140 lb
Hammer Drop: 30 in (auto)
Sheet: 1 of 2

Project No: 2023-1835

Project: Canvas Lois Townhomes

Location: 5000 S. Lois Avenue, Tampa, FL

Client Name: Sight Development, LLC

Borehole: B3

SUBSURFACE PROFILE				SAMPLE DATA					
Depth (ft)	Symbol	Description	Elev. (ft)	Number	Type	Water Table	blows/ft	SPT N Value blow/ft 10 20 30	Remarks
26–34		Medium dense, brown silty to slightly silty fine SAND (SP-SM)		9			14		
				10			15		
35–40		Stiff, dark gry sandy CLAY (CL)		11			12		
		End of Borehole							

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Drill Date: 5/23/2023
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Drilling Company: FGD

Driller: Eloidys
Hammer Weight: 140 lb
Hammer Drop: 30 in (auto)
Sheet: 2 of 2

Project No: 2023-1835

Project: Canvas Lois Townhomes

Location: 5000 S. Lois Avenue, Tampa, FL

Client Name: Sight Development, LLC

Borehole: B4

SUBSURFACE PROFILE				SAMPLE DATA					Remarks
Depth (ft)	Symbol	Description	Elev. (ft)	Number	Type	Water Table	blows/ft	SPT N Value blow/ft 10 20 30	
0		Ground Surface							
0		4" Topsoil							
1		Loose, dark brown silty fine SAND (SM)		1			4	•	
2						▼ 3 ft			
3				2			5	•	
4		Loose, brown fine SAND (SP)							
5				3			5	•	
6									
7				4			5	•	
8									
9				5			6	•	
10		Medium dense, brown silty fine SAND (SM)							
11									
12									
13									
14				6			12	•	
15									
16									
17									
18									
19				7			15	•	
20		Medium dense, light brown to brown fine SAND (SP)							
21									
22									
23									
24				8			15	•	
25									

PACSCON
4517 George Road, Ste 220
Tampa, Florida 33634

Drill Date: 5/23/2023
Drill Method: Mud Rotary
Drilling Rig: B53
Drilling Company: FGD

Driller: Eloidys
Hammer Weight: 140 lb
Hammer Drop: 30 in (auto)
Sheet: 1 of 2

Project No: 2023-1835

Project: Canvas Lois Townhomes

Location: 5000 S. Lois Avenue, Tampa, FL

Client Name: Sight Development, LLC

Borehole: B4

SUBSURFACE PROFILE				SAMPLE DATA					
Depth (ft)	Symbol	Description	Elev. (ft)	Number	Type	Water Table	blows/ft	SPT N Value blow/ft 10 20 30	Remarks
26									
27									
28									
29				9			19		
30		Loose, dark brown clayey SAND (SC)							
31									
32									
33									
34				10			6		
35		Stiff, dark gry sandy CLAY (CL)							
36									
37									
38									
39				11			6		
40		End of Borehole							
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									

PACSCON
4517 George Road, Ste 220
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Drill Date: 5/23/2023
Drill Method: Mud Rotary
Drilling Rig: B53
Drilling Company: FGD

Driller: Eloidys
Hammer Weight: 140 lb
Hammer Drop: 30 in (auto)
Sheet: 2 of 2

Project No: 2023-1835

Project: Canvas Lois Townhomes

Location: 5000 S. Lois Avenue, Tampa, FL

Client Name: Sight Development, LLC

Borehole: B5

SUBSURFACE PROFILE				SAMPLE DATA					
Depth (ft)	Symbol	Description	Elev. (ft)	Number	Type	Water Table	blows/ft	SPT N Value blow/ft (10, 20, 30)	Remarks
0		Ground Surface							
0		4" Topsoil							
1		Medium dense, dark brown to black silty fine SAND (SM)		1			10		
2									
3				2		▼ 3 ft	16		
4		Medium dense, brown fine SAND (SP)							
5				3			18		
6									
7				4			14		
8									
9				5			8		
10									
11									
12									
13									
14				6			8		
15									
16									
17									
18									
19				7			12		
20									
21									
22									
23									
24				8			19		
25									

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Tampa, Florida 33634

Drill Date: 5/24/2023
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Drilling Company: FGD

Driller: Eloidys
Hammer Weight: 140 lb
Hammer Drop: 30 in (auto)
Sheet: 1 of 2

Project No: 2023-1835

Project: Canvas Lois Townhomes

Location: 5000 S. Lois Avenue, Tampa, FL

Client Name: Sight Development, LLC

Borehole: B5

SUBSURFACE PROFILE				SAMPLE DATA					
Depth (ft)	Symbol	Description	Elev. (ft)	Number	Type	Water Table	blows/ft	SPT N Value blow/ft 10 20 30	Remarks
26–34		Medium dense, dark brown silty fine SAND (SM)		9			14	•	
				10			14	•	
35–39		Medium dense, brown fine SAND (SP)		11			8	•	
40		End of Borehole							

PACSCON
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Tampa, Florida 33634

Drill Date: 5/24/2023
Drill Method: Mud Rotary
Drilling Rig: B53
Drilling Company: FGD

Driller: Eloidys
Hammer Weight: 140 lb
Hammer Drop: 30 in (auto)
Sheet: 2 of 2

Project No: 2023-1835

Project: Canvas Lois Townhomes

Location: 5000 S. Lois Avenue, Tampa, FL

Client Name: Sight Development, LLC

Borehole: B6

SUBSURFACE PROFILE				SAMPLE DATA					
Depth (ft)	Symbol	Description	Elev. (ft)	Number	Type	Water Table	blows/ft	SPT N Value blow/ft (10, 20, 30)	Remarks
0		Ground Surface							
0		4" Topsoil							
1		Medium dense, black silty fine SAND (SM)		1			8		
2		Medium dense, brown fine SAND (SP)		2		▼ 3.3 ft	10		
3									
4				3			13		
5									
6				4			8		
7									
8				5			7		
9									
10									
11									
12									
13									
14				6			10		
15		Medium dense, brown silty fine SAND (SM)							
16									
17									
18									
19				7			12		
20									
21									
22									
23									
24				8			14		
25									

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Drill Date: 5/24/2023
Drill Method: Mud Rotary
Drilling Rig: B53
Drilling Company: FGD

Driller: Eloidys
Hammer Weight: 140 lb
Hammer Drop: 30 in (auto)
Sheet: 1 of 2

Project No: 2023-1835

Project: Canvas Lois Townhomes

Location: 5000 S. Lois Avenue, Tampa, FL

Client Name: Sight Development, LLC

Borehole: B6

SUBSURFACE PROFILE				SAMPLE DATA					
Depth (ft)	Symbol	Description	Elev. (ft)	Number	Type	Water Table	blows/ft	SPT N Value blow/ft 10 20 30	Remarks
26									
27									
28									
29				9			9	•	
30									
31									
32									
33									
34				10			9	•	
35		Stiff, dark gray sandy CLAY (CL)							
36									
37									
38									
39				11			7	•	
40		End of Borehole							
41									
42									
43									
44									
45									
46									
47									
48									
49									
50									

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Drill Date: 5/24/2023
Drill Method: Mud Rotary
Drilling Rig: B53
Drilling Company: FGD

Driller: Eloidys
Hammer Weight: 140 lb
Hammer Drop: 30 in (auto)
Sheet: 2 of 2

Project No: 2023-1835

Project: Canvas Lois Townhomes

Location: 5000 S. Lois Avenue, Tampa, FL

Client Name: Sight Development, LLC

Borehole: B7

SUBSURFACE PROFILE				SAMPLE DATA					
Depth (ft)	Symbol	Description	Elev. (ft)	Number	Type	Water Table	blows/ft	SPT N Value blow/ft (10, 20, 30)	Remarks
0		Ground Surface							
0		4" Topsoil							
1		Medium dense, dark brown silty fine SAND (SM)		1			8		
2		Medium dense, dark brown fine SAND (SP)		2		3.2 ft	11		
3									
4				3			14		
5									
6				4			8		
7									
8		Medium dense, brown fine SAND (SP)		5			11		
9									
10									
11									
12									
13									
14				6			12		
15		End of Borehole							
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

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Drill Date: 5/24/2023
Drill Method: Mud Rotary
Drilling Rig: B53
Drilling Company: FGD

Driller: Eloidys
Hammer Weight: 140 lb
Hammer Drop: 30 in (auto)
Sheet: 1 of 1

Project No: 2023-1835

Project: Canvas Lois Townhomes

Location: 5000 S. Lois Avenue, Tampa, FL

Client Name: Sight Development, LLC

Borehole: B8

SUBSURFACE PROFILE				SAMPLE DATA					Remarks
Depth (ft)	Symbol	Description	Elev. (ft)	Number	Type	Water Table	blows/ft	SPT N Value blow/ft 10 20 30	
0		Ground Surface							
0		4" Topsoil							
1		Loose to medium dense, dark brown silty fine SAND (SM)		1			4		
2						3.1 ft			
3				2			9		
4		Loose to medium dense, brown fine SAND (SP)							
5				3			8		
6									
7				4			6		
8									
9				5			10		
10									
11									
12									
13									
14				6			9		
15		End of Borehole							
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

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Drill Date: 5/24/2023
Drill Method: Mud Rotary
Drilling Rig: B53
Drilling Company: FGD

Driller: Eloidys
Hammer Weight: 140 lb
Hammer Drop: 30 in (auto)
Sheet: 1 of 1

Project No: 2023-1835

Project: Canvas Lois Townhomes

Location: 5000 S. Lois Avenue, Tampa, FL

Client Name: Sight Development, LLC

Borehole: B9

SUBSURFACE PROFILE				SAMPLE DATA					
Depth (ft)	Symbol	Description	Elev. (ft)	Number	Type	Water Table	blows/ft	SPT N Value blow/ft 10 20 30	Remarks
0		Ground Surface							
0		4" Topsoil							
1		Loose, dark brown silty fine SAND (SM)		1			4		
2									
3		Loose, brown fine SAND (SP)		2		3.2 ft	7		
4		Medium dense, brown fine SAND (SP)		3			9		
5									
6				4			10		
7									
8				5			11		
9									
10									
11									
12									
13									
14				6			12		
15		End of Borehole							
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

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Drill Date: 5/24/2023
Drill Method: Mud Rotary
Drilling Rig: B53
Drilling Company: FGD

Driller: Eloidys
Hammer Weight: 140 lb
Hammer Drop: 30 in (auto)
Sheet: 1 of 1

Project No: 2023-1835

Project: Canvas Lois Townhomes

Location: 5000 S. Lois Avenue, Tampa, FL

Client Name: Sight Development, LLC

Borehole: B10

SUBSURFACE PROFILE				SAMPLE DATA					Remarks
Depth (ft)	Symbol	Description	Elev. (ft)	Number	Type	Water Table	blows/ft	SPT N Value blow/ft (10, 20, 30)	
0		Ground Surface							
0		4" Topsoil							
1		Medium dense, dark brown silty fine SAND with limerock (SM)		1			18		
2									
3				2			14		
4		Medium dense, dark brown fine SAND (SP)							
5		Medium dense, brown fine SAND (SP)		3			13		
6									
7				4			8		
8									
9				5			8		
10									
11									
12									
13									
14				6			12		
15		End of Borehole							
16									
17									
18									
19									
20									
21									
22									
23									
24									
25									

Water Table: ▼ 3.5 ft

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Drill Date: 5/24/2023
Drill Method: Mud Rotary
Drilling Rig: B53
Drilling Company: FGD

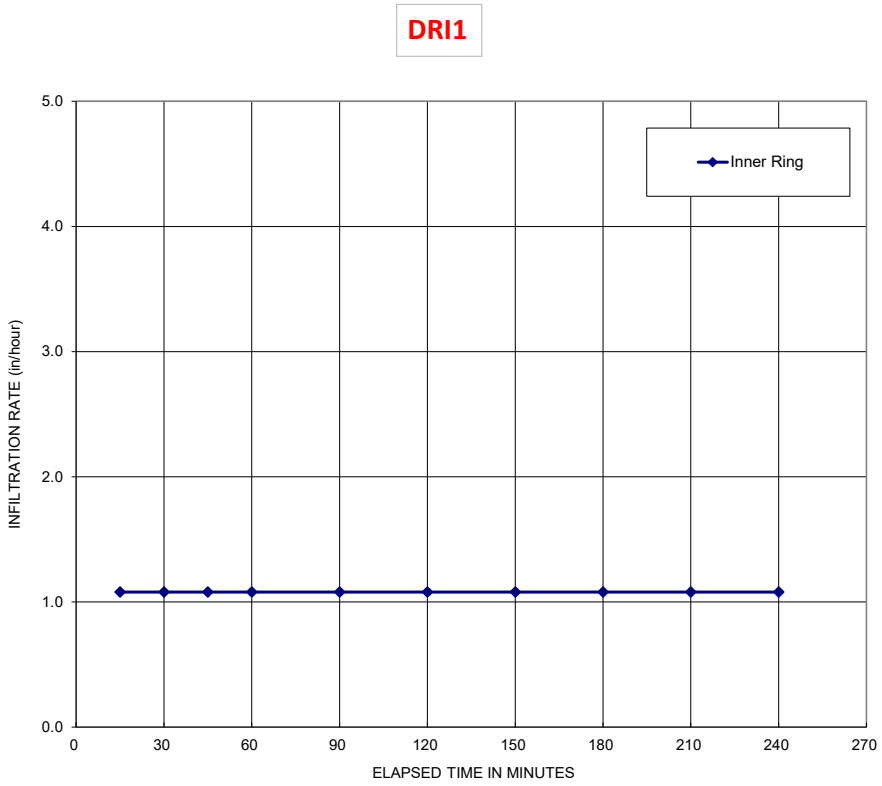
Driller: Eloidys
Hammer Weight: 140 lb
Hammer Drop: 30 in (auto)
Sheet: 1 of 1

APPENDIX B

DOUBLE RING INFILTROMETER (DRI) TEST RESULTS

DOUBLE-RING INFILTROMETER TEST RESULTS

Elapsed Time (min)	Incremental Water Quantity		Infiltration Rate	
	Inner Ring (ml)	Outer Ring (ml)	Inner Ring (in/hr)	Outer Ring (in/hr)
15	500	2000	1.1	1.4
30	500	2000	1.1	1.4
45	500	2000	1.1	1.4
60	500	2000	1.1	1.4
90	1000	4000	1.1	1.4
120	1000	4000	1.1	1.4
150	1000	4000	1.1	1.4
180	1000	4000	1.1	1.4
210	1000	4000	1.1	1.4
240	1000	4000	1.1	1.4



SOIL PROFILE

DEPTH (ft)	SOIL DESCRIPTION
0 - 2'	Gray fine SAND
2 - 4'	Brown fine SAND

Boring Terminated at 4' feet

Groundwater encountered at 3 feet (bgs)

Seasonal-high water table estimated at 1.5' (bgs).

TEST DEPTH: 2 feet (bgs)

TEST HEAD: 14"

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Tampa, FL 33634

PROJECT: Canvas Lois Townhomes

CLIENT: Sight Development, LLC

PROJECT NO.: 2023-1835

TECHNICIAN: FGD CHECKED BY: JC

LOCATION: DRI1 on the Field Exploration Plan

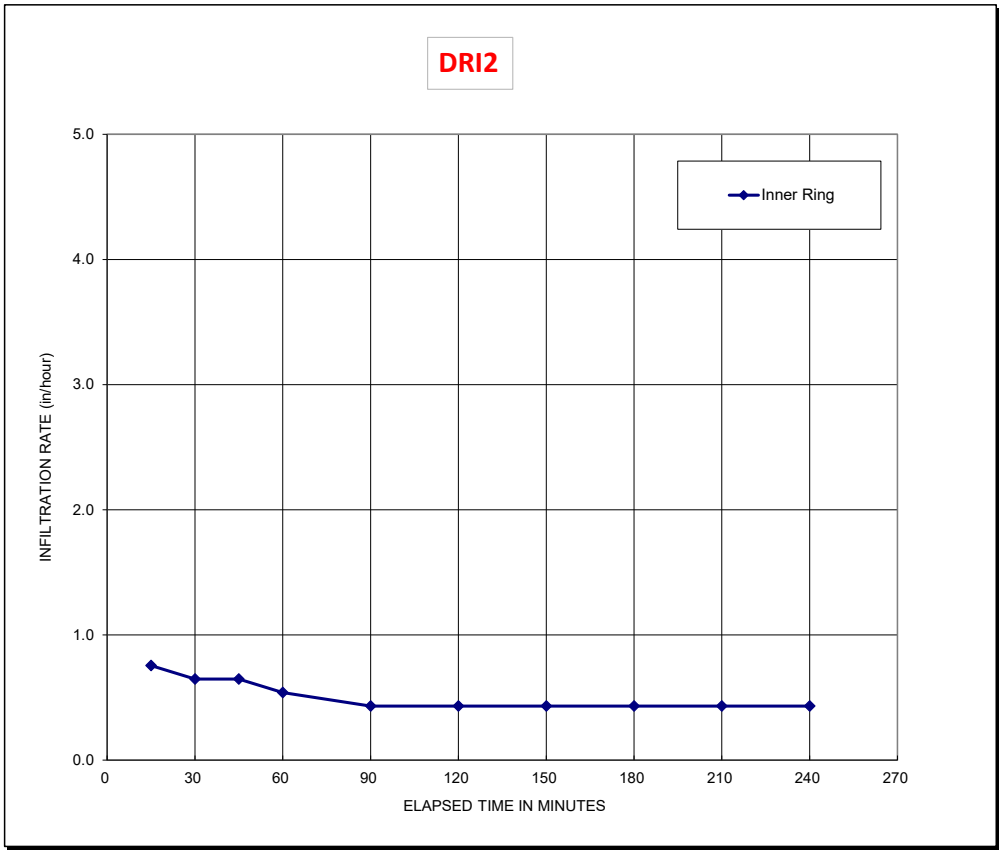
DATE PERFORMED: 5/24/2023

WATER TEMPERATURE / pH: N/A

INFILTRATION RATE: **1.1 inches/hour**

DOUBLE-RING INFILTROMETER TEST RESULTS

Elapsed Time (min)	Incremental Water Quantity		Infiltration Rate	
	Inner Ring (ml)	Outer Ring (ml)	Inner Ring (in/hr)	Outer Ring (in/hr)
15	350	1000	0.8	0.7
30	300	1000	0.6	0.7
45	300	1000	0.6	0.7
60	250	1000	0.5	0.7
90	400	2000	0.4	0.7
120	400	2000	0.4	0.7
150	400	2000	0.4	0.7
180	400	2000	0.4	0.7
210	400	2000	0.4	0.7
240	400	2000	0.4	0.7



SOIL PROFILE

DEPTH (ft)	SOIL DESCRIPTION
0 - 2'	Dark brown silty fine SAND
2 - 4'	Brown fine SAND

Boring Terminated at 4' feet

Groundwater encountered at 3 feet (bgs)

Seasonal-high water table estimated at 1.5' (bgs).

TEST DEPTH: 2 feet (bgs)

TEST HEAD: 14"

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PROJECT: Canvas Lois Townhomes

CLIENT: Sight Development, LLC

PROJECT NO.: 2023-1835

TECHNICIAN: FGD CHECKED BY: JC

LOCATION: DRI2 on the Field Exploration Plan

DATE PERFORMED: 5/24/2023

WATER TEMPERATURE / pH: N/A

INFILTRATION RATE: **0.4 inches/hour**

APPENDIX C

QUALIFICATION OF RECOMMENDATIONS

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QUALIFICATIONS OF RECOMMENDATIONS

The findings, conclusions and recommendations presented in this report represent our professional opinions concerning subsurface conditions at the site. The opinions presented are relative to the dates of our site work and should not be relied on to represent conditions at later dates or at locations not explored. The opinions included herein are based on information provided to us, the data obtained at specific locations during the study and our past experience. If additional information becomes available that might impact our geotechnical opinions, it will be necessary for PACSCON to review the information, reassess the potential concerns, and re-evaluate our conclusions and recommendations.

Regardless of the thoroughness of a geotechnical exploration, there is the possibility that conditions between borings will differ from those encountered at specific boring locations, that conditions are not as anticipated by the designers and/or the contractors, or that either natural events or the construction process have altered the subsurface conditions. These variations are an inherent risk associated with subsurface conditions in this region and the approximate methods used to obtain the data. These variations may not be apparent until construction.

The professional opinions presented in this geotechnical report are not final. Field observations and foundation installation monitoring by the geotechnical engineer, as well as soil density testing and other quality assurance functions associated with site earthwork and foundation construction, are an extension of this report. Therefore, PACSCON should be retained by the owner to observe all earthwork and foundation construction to document that the conditions anticipated in this study actually exist, and to finalize or amend our conclusions and recommendations. PACSCON is not responsible or liable for the conclusions and recommendations presented in this report if PACSCON does not perform these observation and testing services.

This report is intended for the sole use of **Sight Development, LLC** only. The scope of work performed during this study was developed for purposes specifically intended by **Sight Development, LLC** and may not satisfy other users' requirements. Use of this report or the findings, conclusions or recommendations by others will be at the sole risk of the user. PACSCON is not responsible or liable for the interpretation by others of the data in this report, nor their conclusions, recommendations or opinions.

Our professional services have been performed, our findings obtained, our conclusions derived and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices in the State of Florida. This warranty is in lieu of all other statements or warranties, either expressed or implied.