



## **PRELIMINARY GEOTECHNICAL ENGINEERING SERVICES REPORT**

Velocity Project Number: 19-235

### **Project:**

Fort Myers Brewery  
22 Acres North of Daniels Parkway at Commerce Lakes Drive  
Fort Myers, Lee County, Florida  
Strap # 17-45-26-L2-U2626.3805

### **Client:**

Mr. Robert Whyte  
Fort Myers Brewing Company, LLC  
12811 Commerce Lakes Drive, Suite 28  
Fort Myers, FL 33912

Date: August 30, 2019  
Revised May 25, 2022

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**FIGURES**

Figure 1 Project Location Plan

Figure 2 Test Location Plan

**BORING LOGS**



Mr. Robert Whyte  
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August 30, 2019  
Revised May 25, 2022

**Subject: Geotechnical Engineering Services Report**  
**Fort Myers Brewery**  
22 Acres North of Daniels Parkway at Commerce Lakes Drive  
Fort Myers, Lee County, Florida  
Strap # 17-45-26-L2-U2626.3805  
Velocity Project Number: 19-235

Dear Mr. Whyte:

Velocity Engineering Services, LLC (Velocity) is pleased to submit this Geotechnical Engineering Services Report for the project referenced above. It has been our pleasure to work with you on this project.

## 1.0 INTRODUCTION

### 1.1 Project Description

Velocity understands that the proposed project will consist of the construction of two, single-story buildings with associated stormwater detention areas and a lake. Velocity previously performed a geotechnical exploration program at the subject site and provided a Preliminary Geotechnical Engineering Report, dated August 30, 2019. It is understood that the footprints of the lake and single-story buildings have shifted. Therefore, the client requested an additional two (2) test borings within the new footprint of the lake, and one (1) additional test boring within the footprint of the northern single-story building.

Velocity was provided with a Preliminary Site plan with proposed boring locations, dated April 15, 2019, by Waldrop Engineering and Environmental Resource Permit Plans, 1 page, dated March 11, 2022, by Waldrop Engineering with requested additional boring locations.

The client informed Velocity that the depth of the lake excavations will not extend beyond the depth of the limestone encountered in the test borings. No other plans or construction details were available to Velocity at the time of this report.

## 1.2 Purpose & Scope of Services

The purpose of this exploration program was to evaluate the subsurface soil and groundwater conditions relative to the foundation support of the proposed building structures and the excavation of the proposed lake. Velocity therefore performed the following scope of services:

- ✓ Obtaining the necessary vegetation and drilling permits, obtaining utility locates from Sunshine 811, and mobilizing a drill rig and crew to the site.
- ✓ Locating the test borings based on measured or estimated distances from existing structures and/or GPS coordinates.
- ✓ Performing three (3) SPT borings within/near the footprints of the proposed single-story buildings to depths of twenty (20) feet below the ground surface (BGS).
- ✓ Performing three (3) SPT borings to depths of fifteen (15) BGS:
  - One (1) SPT boring (B-1) was performed within the previous footprint of the proposed lake.
  - Two (2) SPT borings (B-4 and B-5) were performed within the new footprint of the proposed lake.
- ✓ Grouting the test borings in accordance with regulatory requirements.
- ✓ Visually classifying the soil samples recovered from the test borings.
- ✓ Performing one (1) Exfiltration Test (EX-1) to a depth of approximately 2.5 feet BGS in general accordance with the SFWMD Usual Open Hole Test procedure.
- ✓ Performing engineering analyses and preparing a Geotechnical Report for the project.

## 2.0 METHODOLOGY & FINDINGS

### 2.1 Site Features

The project site is part of a larger vacant commercial parcel (approximately 9 out of 22 acres). The site is currently covered in light to medium vegetation. The site is bordered by commercial buildings and preservation land to the north, Daniels Parkway to the south, conservation land and a vacant residential parcel to the east, and Commerce Lakes Drive to the west.

The approximate site location is depicted in Figure 1, Project Location Plan.

### 2.2 Field Exploration Program

The test borings were performed in general accordance with ASTM D1586 "*Standard Test Method for Standard Penetration Test (SPT) and Split Barrel Sampling of Soils*". This procedure uses a 140 pound hammer with a 30 inch drop to drive a 2 inch (outside) diameter hollow tube called a "split-spoon". The number of hammer blows required to drive the split-spoon 12 inches is called the "N Value" and is an indication of the relative density of the soil(s). The split-spoon also captures samples of the soil(s) so they can be retrieved. The approximate boring locations are depicted in Figure 2, Test Location Plan.



As stated in the project description, the client also requested an exfiltration test to determine the hydraulic conductivity of the soils within the proposed stormwater detention area. Therefore, Velocity performed one (1) exfiltration test on August 12<sup>th</sup>, 2019 to a depth of approximately 2.5 feet below the ground surface in general accordance with the SFWMD Usual Open Hole Test procedure.

The approximate exfiltration testing location (EX-1) is depicted in Figure 2, Test Location Plan. The exfiltration test results are summarized in the table below.

**Exfiltration Test Results**

| Test Boring | Hydraulic Conductivity                                |            |
|-------------|-------------------------------------------------------|------------|
|             | K (ft <sup>3</sup> /sec/ft <sup>2</sup> - ft of head) | K' (in/hr) |
| EX-1        | 3.4E-04                                               | 1.21       |

K' was calculated by unit conversion from K and assumes 1 inch of head.

### 2.3 Laboratory Examination

The soil samples retrieved during the field exploration program were visually examined in general accordance with ASTM D2488 *“Standard Practice for Description and Identification of Soils (Visual-Manual Procedure)”*. Each soil sample was classified in general accordance with the Unified Soil Classification System (USCS), modified as necessary to describe typical southwest Florida soils. Additional laboratory testing was not included in our scope of services, nor was it deemed necessary at this time.

The soil samples will be retained at Velocity's office for 30 days from the date of this report. The samples will then be disposed of unless other arrangements, such as the client taking possession of them or Velocity retaining them beyond this date, have been agreed upon in writing.

### 2.4 Subsurface Soil Conditions

The subsurface soil conditions at the site generally consist of very loose to medium dense sand (SP), sand with silt (SP-SM), silty sand (SM), and weathered limestone (WLS) and hard limestone (LS) from the existing ground surface to the boring termination depths of approximately 15 to 20 feet BGS. Detailed records of each boring are attached to this report.

### 2.5 Groundwater

At the time of our field exploration program performed on August 12, 2019, the ground water depth was measured at approximately 0.1 feet to 0.2 feet below the existing ground surface in the test borings B-2 and B-3. It should be noted that test boring B-1 was performed in approximately 1 inch of standing water. At the time of our field exploration program performed on May 5, 2022, the ground water depth was measured at approximately 3.2 feet to 6.2 feet below the existing ground surface in the test borings B-3 through B-6. The ground water measurements were obtained prior to initiation of mud rotary drilling.

Fluctuation in groundwater depths should be anticipated due to seasonal changes, local rainfall, surface water runoff, and other site-specific considerations. Ponding of storm water should be anticipated after heavy rain events. These ground water depths and possible fluctuations should be considered when planning any excavations at the site. Dewatering may be required to facilitate the proposed construction.



### 3.0 EVALUATION & RECOMMENDATIONS

#### 3.1 Building Foundations

The evaluation of foundation options is generally governed by 2 primary considerations, bearing capacity and settlement. Bearing capacity is the soil's ability to support the foundation load without experiencing a plunging failure. The selected foundation must be able to provide adequate bearing capacity within an acceptable range of settlement.

Based on Velocity's knowledge of the subsurface soil conditions in the general location of the project site, Velocity recommends that consideration be given to performing a geophysical investigation within the footprint of the proposed structures once the site has been cleared and the site plan has been finalized. A geophysical investigation provides an evaluation of a much larger cross section of the site than test borings. Therefore, it can be used to identify if (and/or delineate where) any karst activity is occurring at the site. Ground penetrating radar (GPR) is likely the most cost-effective geophysical investigation method for this site, however other geophysical investigation methods can also be considered. Please note that additional test borings may be recommended following a geophysical investigation program in order to confirm the presence, and/or evaluate the severity, if any anomaly zones identified. Following the geophysical investigation, Velocity would re-evaluate and update the recommendations for foundation support of proposed building structures presented herein.

Based upon the project description, the preliminary investigation performed, and subsurface conditions detailed herein, Velocity recommends supporting the proposed structure on a shallow foundation system in accordance with Section 3.2 of this report. These recommendations are contingent upon site preparation being performed in accordance with the specifications presented in Section 3.4 of this report.

#### 3.2 Shallow Foundation Systems (Preliminary)

An allowable soil bearing pressure of 2,500 psf may be used for shallow spread footing foundation design. Isolated column footings should have a minimum dimension of 24 inches and should bear at a depth of at least 24 inches below the lowest adjacent grade. Continuous wall footings should have a minimum width of 18 inches and should bear at a depth of at least 18 inches below the lowest adjacent grade. Settlement is projected to be less than 1 inch total and 1/2 inch differential.

#### 3.3 Ground Floor Slab(s) (Preliminary)

Ground floor slabs may be designed as traditionally reinforced concrete slabs-on-grade using a modulus of subgrade reaction ("K") of 150 pci. The ground floor slabs-on-grade should be structurally separated from all foundations, walls, and columns unless a monolithic "thickened edge" slab foundation is utilized. If a monolithic "thickened edge" slab is utilized, it should be properly reinforced to resist the bending moments that will occur due to the loading differences between the thickened foundation elements and the remainder of the slab.

A moisture vapor barrier should be placed beneath the ground floor slab-on-grade to minimize vapor intrusion in accordance with the Florida Building Code. Care should be taken to ensure that all seams, penetrations, and punctures in the barrier are properly sealed prior to the slab being poured.



### 3.4 Site Preparation

The building pad should be stripped and cleared of all organic material, roots, topsoil, and any other deleterious materials to a distance of at least 5 feet beyond the building limits. The stripped surface should be proof rolled and tested for compaction prior to any structural fill being placed. Structural fill may then be placed in lifts of not more than 12 inches and each lift should be compacted and tested prior to placement of the next lift.

Velocity recommends the following compaction requirements for this project. The specified compaction percentages are based upon the maximum dry density as determined by a "modified proctor test" in accordance with ASTM D1557 *"Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2,700 kN-m/m<sup>3</sup>))"*.

- ✓ Proof Roll.....95%
- ✓ Structural Fill .....95%
- ✓ Bottom of Footings .....95%

All density testing should be performed in accordance with ASTM D6938 *"Standard Test Method for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth)"*. Tests should be performed to a depth of 12 inches below the surface being tested, or the thickness of the soil layer if thinner than 12 inches, unless specified otherwise. Any areas not in compliance with the compaction requirements should be reworked and retested prior to placement of the next lift of fill. The following testing frequencies are recommended:

- ✓ Building Pad Proof Roll & Fill ..... 1 test per 2,500 sq.ft. (minimum 4) per lift
- ✓ Isolated Column Footings ..... 1 test per footing
- ✓ Continuous Wall Footings ..... 1 test per each 50 lineal feet
- ✓ Paved Areas..... 1 test per 5,000 sq.ft. (minimum 4) per lift

All structural fill material placed should be well graded and conform to the following requirements:

- ✓ Fines Content per ASTM D1140..... 12% maximum
- ✓ Organic Content per ASTM D2974..... 5% maximum
- ✓ Plasticity per ASTM D4318..... Non Plastic
- ✓ Maximum Particle Size..... 2 inches

Using vibratory compaction equipment at the site may disturb nearby structures. We recommend that vibration levels reaching any nearby structures be monitored during any operations utilizing vibratory equipment.



### 3.5 Below Grade Excavations

Test borings B-4 and B-5 were performed within the new footprint of the proposed lake. Excavation of the sand (SP) and sand with silt (SP-SM) to depths of approximately 8.5 to 9.5 feet BGS can generally be accomplished using normal heavy earthwork equipment.

The layer of hard limestone (LS) encountered below depths of approximately 8.5 to 9.5 feet BGS will likely be difficult to excavate and could require rock hammering or blasting. As mentioned in Section 1.1, the client informed Velocity that the depth of the lake excavations will not extend beyond the top of the limestone layer, and will therefore not impact any aquifer confining layers.

It should be noted that the test results indicate the subsurface soil conditions at the boring locations only and the possibility that hard limestone may exist at shallower depths or in other locations cannot be ruled out. Contractors performing excavations should not rely solely on Velocity's report in preparing their bids for this project. Contractor(s) must perform their own testing at the site to confirm that their equipment is capable of completing the work and that the subsurface conditions are consistent with those presented in Velocity's boring logs.

Groundwater control may be necessary for the successful completion of excavations. A well point system is the most effective method of groundwater control. If a well point system is not feasible, pumps may be used to control groundwater. In the case that groundwater cannot be adequately controlled, soil backfill should not be placed into standing water. Instead, #57 stone should be placed in the bottom of the excavation to create a stable base and achieve a dry, stable elevation prior to the placement of any soil fill.

### 3.6 Use of Excavated Material

Structural fill material should generally conform to the following requirements:

- ✓ Fines Content per ASTM D1140..... 12% maximum
- ✓ Organic Content per ASTM D2974..... 5% maximum
- ✓ Plasticity per ASTM D4318..... Non Plastic
- ✓ Maximum Particle Size..... 2 inches

Sand (SP) and sand with silt (SP-SM) are generally suitable for use as structural fill. Strict moisture control may be required when silt contents are in excess of 5%.

Limestone (LS) is not generally suitable for use as structural fill in its "as excavated" condition as the rock sizes typically exceed 2 inches. It can however be processed by crushing and blending with sand (SP) to create structural fill or road base.



## 4.0 LIMITATIONS

### 4.1 Unanticipated Conditions

Velocity cannot be responsible for any unanticipated conditions that may be discovered on the site that were not encountered in our test borings. However, should any such unanticipated conditions be discovered, Velocity should be notified of them immediately in writing so that we may observe them and review their impact upon our recommendations presented herein.

If any of the project details stated herein are modified or changed, Velocity must be notified in writing so that we may review the applicability of our recommendations.

### 4.2 Boring Logs & Figures

The soil and groundwater conditions shown in the boring logs and reported herein reflect the conditions at the specific boring locations at the time of our exploration only. Conditions will vary across the site and will also vary with time. Soil layer transitions depicted on the boring logs should be considered approximate and variations in depth should be anticipated. The boring locations indicated were not surveyed and should be considered approximate.

### 4.3 Reliance

This report has been prepared for the exclusive use of the client, the project owner, and the design team for the indicated project only. No other parties are entitled to rely upon this report. Contractors should not rely upon this report for preparation of their bids and should perform their own investigations to confirm any details that may impact their bids. This report should not be relied upon to plan any other project at this site, or the same project at any other site.

### 4.4 Standard of Care

These geotechnical engineering services have been conducted in a manner consistent with the level of care and skill ordinarily exercised by members of the profession currently practicing under similar conditions in the location where the Work was performed. No other warranty, expressed or implied, is made including, without limitation, any warranty of fitness for a particular purpose other than those expressly stated herein.

### 4.5 Reproduction

No portion of this report should be reproduced or used unless the entire report is reproduced in full.

### 4.6 Out of Scope Considerations

The depths of the test borings performed herein were limited to the depths to which the anticipated foundation loads are likely to influence. Evaluation of potential hazards at deeper depths, such as karst (sinkhole) activity, is beyond the scope of this investigation.

The following items are considered out of scope considerations and have not been evaluated by Velocity: examination or testing of the soil samples recovered for chemical contamination or other environmental hazards; determination or evaluation of the seasonal high water table; and constructability review.



## 5.0 CLOSING & CERTIFICATION

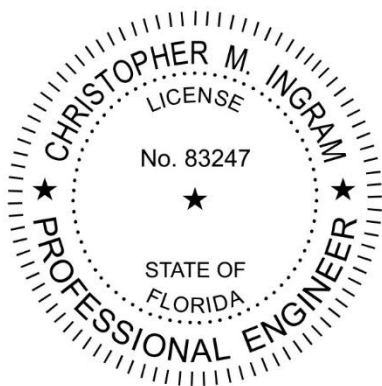
We appreciate the opportunity to be of service to you on this project. Please do not hesitate to contact us if you have any questions or if we may further assist you.

Sincerely,

**Velocity Engineering Services, LLC**

12821 Commerce Lakes Drive, Suite 7  
Fort Myers, FL 33913  
FBPE CA# 30362

Christopher M. Ingram, P.E.  
Vice President



This item has been digitally signed and sealed by

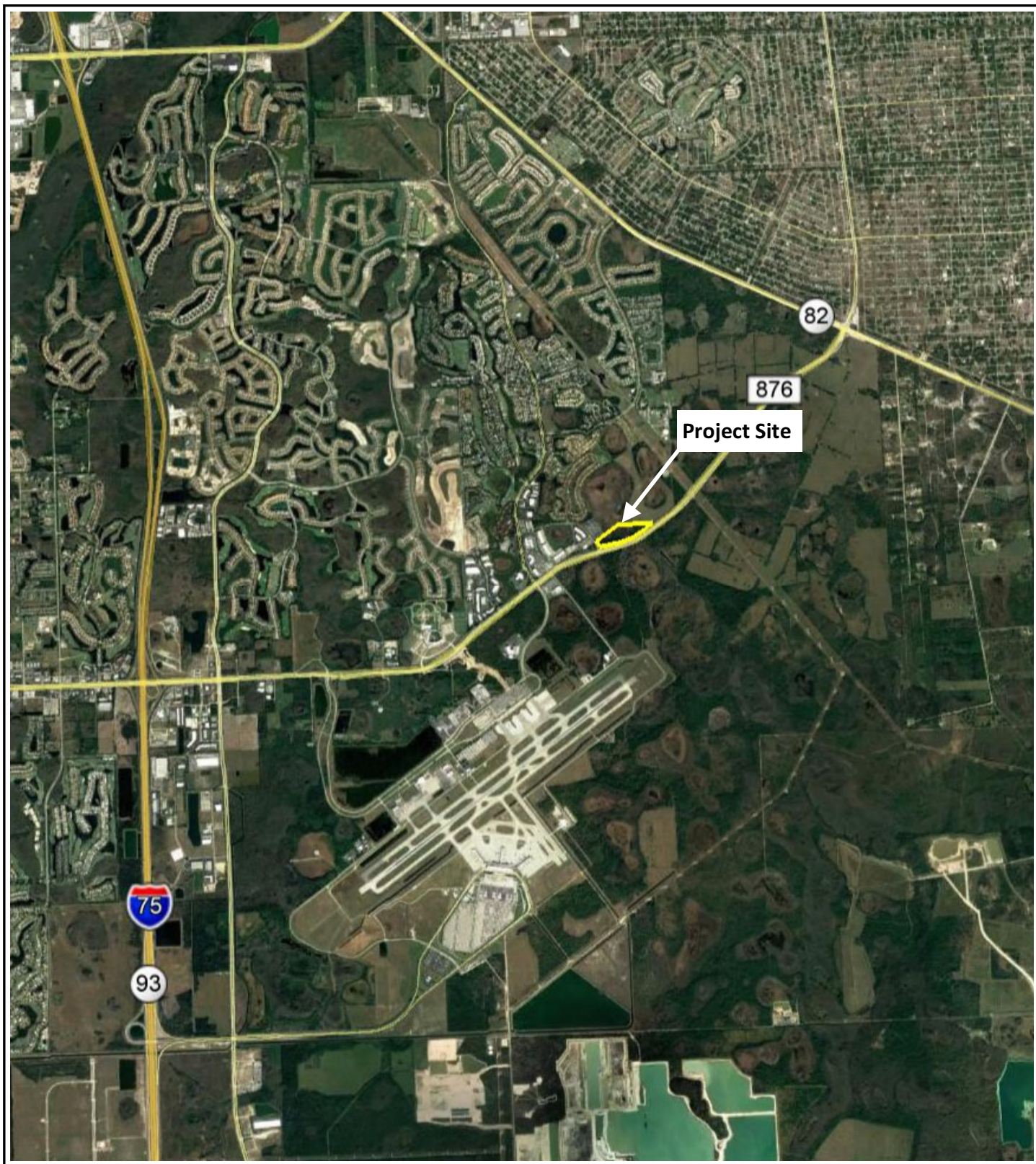
Digitally signed by  
Christopher Ingram  
Date: 2022.05.26  
07:38:29 -04'00'

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.

A handwritten signature in black ink, appearing to read "Brandon Dowler".

Brandon Dowler  
Project Engineer





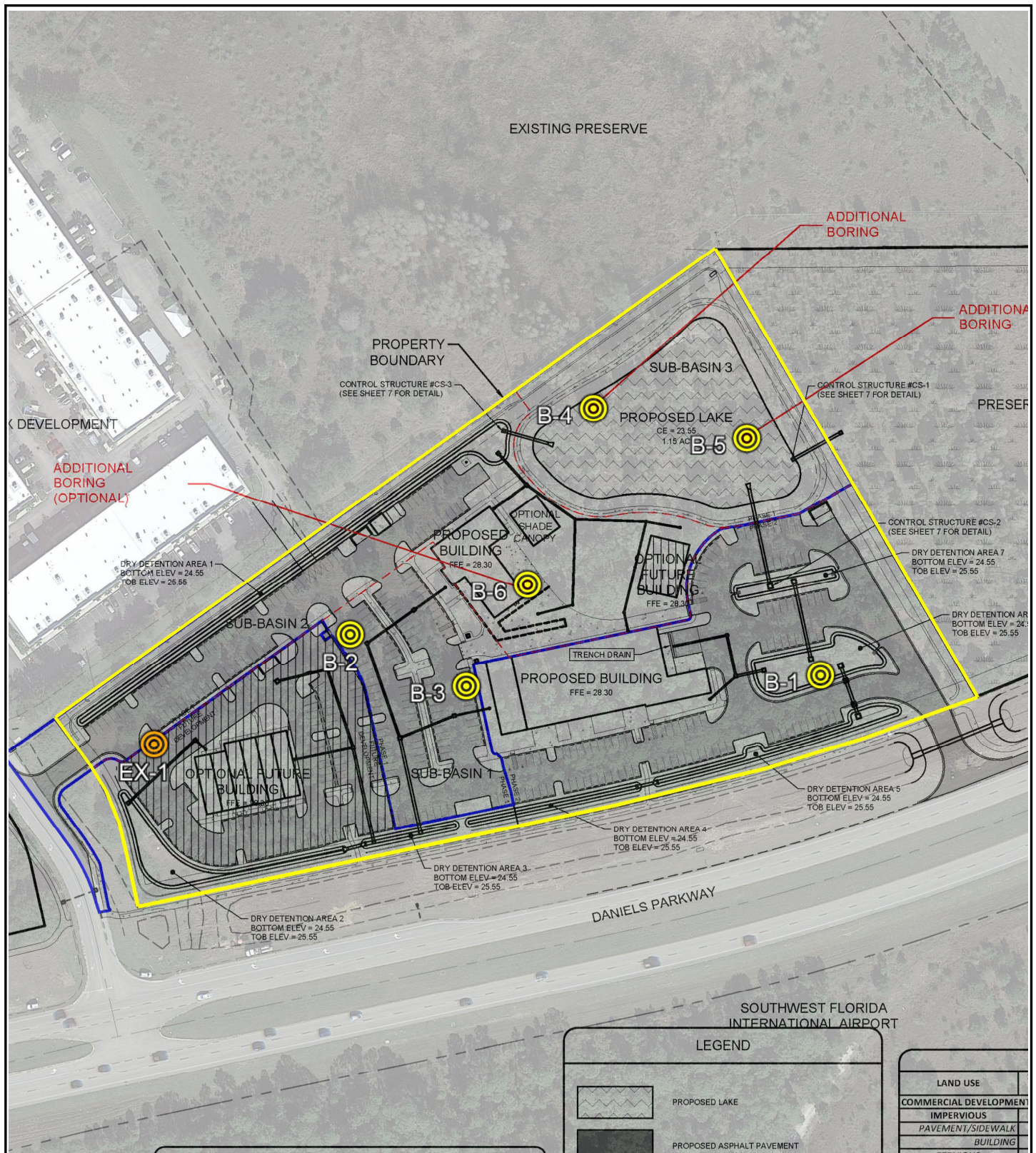
## FIGURE 1 — PROJECT LOCATION PLAN

Fort Myers Brewery

22 Acres North of Daniels Parkway at Commerce Lakes Drive

Fort Myers, Lee County, Florida

Velocity Project Number: 19-235



# FIGURE 2 — TEST LOCATION PLAN

Fort Myers Brewery

22 Acres North of Daniels Parkway at Commerce Lakes Drive

Fort Myers, Lee County, Florida

Velocity Project Number: 19-235





## KEY TO BORING LOGS

| Major Division                                                          |                                           |                | Group Symbols                                                                                                      | Typical Names                                                   |
|-------------------------------------------------------------------------|-------------------------------------------|----------------|--------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------|
| COARSE-GRAINED SOILS<br>(50% of the material retained on No. 200 sieve) | Gravels<br>(>50% retained on No. 4 sieve) | Clean Gravel   | GW                                                                                                                 | Well-graded gravels, gravel-sand mixtures, little or no fines   |
|                                                                         |                                           |                | GP                                                                                                                 | Poorly-graded gravels, gravel-sand mixtures, little or no fines |
|                                                                         |                                           | Gravel w/Fines | GM                                                                                                                 | Silty gravels, gravel-sand-silt mixtures                        |
|                                                                         |                                           |                | GC                                                                                                                 | Clayey gravels, gravel-sand-silt mixtures                       |
|                                                                         | Sands<br>( $<50\%$ passes No. 4 sieve)    | Clean Sands    | SW                                                                                                                 | Well-graded sands, gravelly sands, little or no fines           |
|                                                                         |                                           |                | SP                                                                                                                 | Poorly-graded sands, gravelly sands, little or no fines         |
|                                                                         |                                           | Sand w/ Fines  | SM                                                                                                                 | Silty sands, sand-silt mixtures                                 |
|                                                                         |                                           |                | SC                                                                                                                 | Clayey sands, sand clay mixtures                                |
| FINE-GRAINED SOILS<br>( $>50\%$ of the material passes No. 200 sieve)   | Silts and Clays<br>(Liquid limit $< 60$ ) | ML             | Inorganic silts and very fine sands, rock flour, silty or clayey fine sands or clayey silts with slight plasticity |                                                                 |
|                                                                         |                                           | CL             | Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays                  |                                                                 |
|                                                                         |                                           | OL             | Organic silts and organic silty clays of low plasticity                                                            |                                                                 |
|                                                                         | Silts and Clays<br>(Liquid limit $> 60$ ) | MH             | Inorganic silts micaceous or distomaceous fine sandy or silty soils, organic silts                                 |                                                                 |
|                                                                         |                                           | CH             | Inorganic clays of high plasticity, fat clays                                                                      |                                                                 |
|                                                                         |                                           | OH             | Organic clays of medium to high plasticity, organic silts                                                          |                                                                 |
| Highly Organic Soils                                                    |                                           |                | PT                                                                                                                 | Peat and other highly organic soils                             |
| Limestones                                                              |                                           |                | LS                                                                                                                 | Limestone layer                                                 |
|                                                                         |                                           |                | WLS                                                                                                                | Weathered and/or deteriorated limestone                         |

### DENSITY of SANDS, GRAVELS, and WEATHERED LIMESTONE

| <u>N Value</u> | <u>Density</u> |
|----------------|----------------|
| 0-4            | Very Loose     |
| 5-10           | Loose          |
| 11-30          | Medium Dense   |
| 31-50          | Dense          |
| 50+            | Very Dense     |

### CONSISTENCY of SILTS & CLAYS

| <u>N Value</u> | <u>Density</u> |
|----------------|----------------|
| 0-2            | Very Soft      |
| 3-4            | Soft           |
| 5-8            | Firm           |
| 9-15           | Stiff          |
| 16-30          | Very Stiff     |
| 30+            | Hard           |

### HARDNESS OF LIMESTONE

| <u>N Value</u> | <u>Density</u> |
|----------------|----------------|
| 50-99          | Soft           |
| 100+           | Hard           |

### PROPORTIONS

| <u>Content</u>                           | <u>Description</u> |
|------------------------------------------|--------------------|
| 0-10%                                    | With a Trace       |
| 10-25%                                   | With Some          |
| 25-50%                                   | With               |
| *Recovery is 100% unless noted otherwise |                    |

### ABBREVIATIONS

|                   |                                     |
|-------------------|-------------------------------------|
| <b>WT</b>         | Water table at time of boring       |
| <b>HA</b>         | Boring advanced using Hand Auger    |
| <b>~</b>          | Approximated N value due to refusal |
| <b>Moisture</b>   | Moisture Content per ASTM D2216     |
| <b>-200</b>       | % passing #200 sieve per ASTM D1140 |
| <b>Organics</b>   | Organic Content per ASTM D2974      |
| <b>LL, PL, PI</b> | Atterberg Limits per ASTM D4318     |



**NOTES:** Installed 7 feet of borehole casing

[illegible]

**PROJECT:** Fort Myers Brewery

**PROJECT No.: 19-235**

**DATE: 8/12/19**

**GROUNDWATER: 2.0 in**

**NOTES:** Installed 7 feet of borehole casing

| Depth (ft) | Soil Type | Soil Description | Notes |
|------------|-----------|------------------|-------|
| 0          | WT        |                  |       |
| 2          |           |                  |       |
| 3          |           |                  |       |
| 5          |           |                  |       |
| 6          |           |                  |       |
| 8          |           |                  |       |
| 6          |           |                  |       |
| 4          |           |                  |       |
| 3          |           |                  |       |
| 4          |           |                  |       |
| 7          |           |                  |       |
| 2          |           |                  |       |
| 4          |           |                  |       |
| 7          |           |                  |       |
| 7          |           |                  |       |
| 5          |           |                  |       |
| 4          |           |                  |       |
| 11         |           |                  |       |
| 23         |           |                  |       |
| 21         |           |                  |       |
| 13         |           |                  |       |
| 50/3"      |           |                  |       |
| 63+        |           |                  |       |
| 10         |           |                  |       |
| 3          |           |                  |       |
| 5          |           |                  |       |
| 7          |           |                  |       |
| 12         |           |                  |       |
| 3          |           |                  |       |
| 3          |           |                  |       |
| 4          |           |                  |       |
| 7          |           |                  |       |
| 20         |           |                  |       |
| 25         |           |                  |       |
| 30         |           |                  |       |

**NOTES:**

30

**NOTES:**

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**BORING LOG NUMBER: B-6**

PROJECT: Fort Myers Brewery

PROJECT No.: 19-235

DATE: 5/22/22

GROUNDWATER: 6.2 ft

NOTES:

| DEPTH<br>(FEET)<br>&<br>Water<br>Table | SAMPLE | BLOWS / 6" | "N" VALUE<br>BLOWS / FT. | SYMBOL | SOIL DESCRIPTION                 | NOTES                                            |
|----------------------------------------|--------|------------|--------------------------|--------|----------------------------------|--------------------------------------------------|
| 0                                      |        | 2          |                          |        |                                  |                                                  |
|                                        |        | 6          |                          |        |                                  |                                                  |
|                                        |        | 7          | 13                       |        | <b>SAND (SP)</b><br>Medium dense | Brown with a trace of root                       |
|                                        |        | 5          |                          |        |                                  |                                                  |
|                                        |        | 4          |                          |        |                                  |                                                  |
|                                        |        | 4          | 10                       |        | <b>SAND WITH SILT (SP-SM)</b>    | Brown                                            |
|                                        |        | 6          |                          |        |                                  |                                                  |
|                                        |        | 5          |                          |        | <b>Loose</b>                     | Light brown                                      |
| 5                                      |        | 5          | 10                       |        |                                  |                                                  |
|                                        |        | 6          |                          |        |                                  |                                                  |
| WT                                     |        | 7          |                          |        | <b>SAND (SP)</b><br>Medium dense | Gray with a trace of limestone                   |
|                                        |        | 4          | 12                       |        |                                  |                                                  |
|                                        |        | 8          |                          |        |                                  |                                                  |
|                                        |        | 8          |                          |        |                                  |                                                  |
|                                        |        | 50/1"      | 50+                      |        |                                  | No recovery<br>Hard drilling from 8 to 13.5 feet |
| 10                                     |        |            |                          |        | <b>LIMESTONE (LS)</b>            |                                                  |
|                                        |        |            |                          |        | <b>Hard</b>                      |                                                  |
|                                        |        |            |                          |        |                                  |                                                  |
|                                        |        |            |                          |        |                                  |                                                  |
|                                        |        |            |                          |        |                                  |                                                  |
|                                        |        | 50/1"      | 50+                      |        |                                  | No recovery                                      |
| 15                                     |        |            |                          |        |                                  |                                                  |
|                                        |        |            |                          |        | <b>WEATHERED LIMESTONE (WLS)</b> |                                                  |
|                                        |        |            |                          |        | <b>Very loose</b>                |                                                  |
|                                        |        |            |                          |        |                                  |                                                  |
|                                        |        |            |                          |        |                                  |                                                  |
|                                        |        |            |                          |        |                                  |                                                  |
|                                        |        | 1          |                          |        |                                  |                                                  |
|                                        |        | 0          | 1                        |        |                                  | Tan with some silt                               |
| 20                                     |        | 1          |                          |        |                                  | Boring terminated at 20 feet                     |
|                                        |        |            |                          |        |                                  |                                                  |
|                                        |        |            |                          |        |                                  |                                                  |
|                                        |        |            |                          |        |                                  |                                                  |
|                                        |        |            |                          |        |                                  |                                                  |
| 25                                     |        |            |                          |        |                                  |                                                  |
|                                        |        |            |                          |        |                                  |                                                  |
|                                        |        |            |                          |        |                                  |                                                  |
|                                        |        |            |                          |        |                                  |                                                  |
|                                        |        |            |                          |        |                                  |                                                  |
| 30                                     |        |            |                          |        |                                  |                                                  |