City of Cocoa

65 Stone Street
Cocoa, FL 32922

Meeting Agenda

Wednesday, January 6, 2021

6:00 PM

Cocoa City Council Chambers

Planning and Zoning / Local Planning Agency

I. CALL TO ORDER

ROLL CALL

INVOCATION

PLEDGE OF ALLEGIANCE

II. APPROVAL OF AGENDA AND MINUTES:

AGENDA:

21-59 Approve the agenda for the regular meeting of January 6, 2021

Attachments: PZ Short Agenda 1-6-21.docx

MINUTES:

III: OLD BUSINESS:

IV: NEW BUSINESS:

21-54 Consideration of a Large-Scale Site Plan consistent with Appendix A, Zoning, Article XIII, Section 1, to construct a warehouse/distribution center totaling approximately 202,044 square feet on 185 acres.

Attachments:
Attachment A PROJECT SUNSHINE.pdf
Attachment B legal ad proof_2020-12-28.pdf
Attachment C DMO8 Delivery Station TIA_2020.10.01.pdf
Attachment D H1205186 DM08 Cocoa-12-29-2020.pdf
Attachment E Project Sunshine - Natural Resource Assessment.pdf
Attachment F Project Sunshine Development Agreement Draft 12.23.pdf
Attachment G TECHNICAL MEMORANDUM_Floodplain Compensation_Final.p

V. OTHER BUSINESS:

VI. NEXT MEETING DATE:

The next regularly scheduled meeting of the Cocoa Redevelopment Agency will be on Tuesday at 5:00 PM at the Cocoa City Hall, 65 Stone Street, Cocoa, Florida.

VII. ADJOURNMENT

NOTICE TO THE PUBLIC:

Due to the COVID-19 Emergency and the closing of City Hall to the public to limit public gatherings in accordance with Federal and State directives, the City of Cocoa will be utilizing Communications Media Technology (CMT) for upcoming City Council meetings pursuant to the Governor's Executive Order Number 20-69 and Florida Statutes, Section 120.54(5)(b)(2), specifically one or more members of the City Council may attend and participate by speakerphone. Interested persons are encouraged to view and listen to the meeting by accessing the meeting at the following internet addresses:

(1) https://tinyurl.com/s5e875r or
(2) https://cocoa.legistar.com/DepartmentDetail.aspx?ID=26365&GUID=FF9D3369-D354-4FAB-800A-57D0AEE30153&Mode=MainBody

In addition, interested persons may submit their written comments or questions regarding the meeting prior to and during the meeting through Email, via the following email address: meetings@cocoafl.org. For more information about this CMT meeting or to provide information to be considered at this meeting, contact the City Clerk at the contact information stated above.

Pursuant to Section 286.0105, Florida Statutes, the City hereby advises the public that: if a person decides to appeal any decision made by the City Council with respect to any matter considered at its meeting or hearing, that person will need a record of the proceedings and for such purpose, affected persons may need to assure that a verbatim record of the proceedings is made, and such record shall include the testimony and evidence upon which the appeal is to be based. This notice does not constitute consent by the City for the introduction or admission into evidence of otherwise inadmissible or irrelevant evidence, nor does it authorize challenges or appeals otherwise not allowed by law.

City Code Section 2-54 requires that an affirmative vote of a majority of a quorum present shall be necessary to enact an ordinance or adopt any resolution; except that two-thirds of the membership of the Council is required to enact an emergency ordinance. All ordinances require two readings, entitled first reading and second reading and public hearing, prior to adoption.

Members of the public speaking on public hearing items, though entitled to be heard by the City Council, are not entitled to an immediate response by either administrative staff members or Council once the public hearing is closed; however, Council discussion may or may not include a response. No question by the public should be addressed directly by the Administrative staff.

Public debate by individual speakers from the audience on public hearing items shall be limited to three (3) minutes. Representatives of recognized groups shall be limited to ten (10) minutes; and total debate on a single issue shall be limited to thirty (30) minutes. Only one presentation per person per issue shall be allowed.

A Council member may add an item to the agenda during the meeting only at the time the agenda is approved. If the item requires action by the Council, then it may be added to the agenda by an affirmative vote of the Council, and written documentation must be submitted at the time the item is added to the agenda.

This agenda is posted on the Municipal Bulletin Board and at the Central Brevard Library and Reference Center in Cocoa for public review.

A Council member may add an item to the agenda during the meeting only at the time the agenda is approved If the item requires action by the Council then it may be added to the agenda by an affirmative vote of the Council and written documentation must be submitted at the time the item is added to the agenda.

This agenda is posted on the Municipal Bulletin Board and at the Central Brevard Library and Reference Center in Cocoa for public review.

This is a public meeting. All interested parties may attend. The facility wherein this public meeting will be held is accessible to the physically handicapped. In accordance with the Americans With Disabilities Act, persons needing assistance to participate in any of these proceedings should contact the City Clerk of the City of Cocoa, listed below, at least 48 hours prior to the meeting: Carie Shealy, City Clerk, 65 Stone Street, Cocoa, by telephone at (321) 433-8484 or via email at cshealy@cocoafl.org.

Legislation Details (With Text)

File #:	21-59	**Version:**	1	**Name:**	
Type:	Agenda			**Status:**	Agenda Ready
File created:	12/29/2020			**In control:**	Planning and Zoning / Local Planning Agency
On agenda:	1/6/2021			**Final action:**	
Title:	Approve the agenda for the regular meeting of January 6, 2021				
Sponsors:					
Indexes:					
Code sections:					
Attachments:	PZ Short Agenda 1-6-21.pdf				

Date	Ver.	Action By	Action	Result

PLANNING & ZONING BOARD/LOCAL PLANNING AGENCY AGENDA ITEM

Memo Date: December 29, 2020
Agenda Date: January 6, 2021
Prepared By: Alix Bernard, Senior Planner
Through: Nancy A Bunt, Community Services Director
Requested Action:
Approve the agenda for the regular meeting of January 6, 2021

BACKGROUND:

BUDGETARY IMPACT:

PREVIOUS ACTION:

RECOMMENDED MOTION:

Approve the agenda for the regular meeting of January 6, 2021

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Community Services
Planning and Zoning Division
65 Stone Street, Cocoa, FL 32922
Phone: (321) 433-8535 Fax: (321) 321-433-8543

AGENDA
General Meeting
January 6, 2021
6:00 p.m.

I. OPENING MATTERS:
1. CALL TO ORDER
2. ROLL CALL
3. PLEDGE OF ALLEGIANCE

II. APPROVAL OF AGENDA AND MINUTES:
1. AGENDA: Meeting of January 6, 2021

III. OLD BUSINESS: None

IV. NEW BUSINESS:
A. PZ-20-00200011 – Large-Scale Site Plan – Project Sunshine
Consideration of a Large-Scale Site Plan consistent with Appendix A, Zoning, Article XIII, Section 1, to construct a warehouse/distribution center totaling approximately 202,044 square feet on 185 acres.

V. OTHER BUSINESS:
A. Board Discussion

VI. NEXT MEETING DATE:

Wednesday, January 20, 2021

VII. ADJOURNMENT

Public Participation and Special COVID-19 Information:

Members of the public may view the meeting agenda, ordinances, project applications, supporting documents, and staff reports on the City's website at the following link prior to attending or commenting:

- City of Cocoa meeting calendar at https://cocoa.legistar.com/Calendar.aspx

These documents and information pertaining to the above may also be inspected at the Community Services Department, between 9:00 a.m. and 5:00 p.m., Monday through Friday, or by phoning (321) 433-8535.

Members of the public have several options to participate in the public hearings.

(1) In-person attendance. Due to the COVID-19 Emergency and the need to maintain social distancing, meetings in the City Hall Council Chambers are limited to fifty (50) members in the audience at any one time. Members of the public may utilize the contact information provided below to contact the City Clerk and determine if restrictions on physical attendance at the City Council Chambers have been lifted prior to the date of the public hearings.

(2) Commenting in advance of the meeting. Interested persons are encouraged to provide written comments in advance of the hearings by emailing meetings@cocoafl.org or mailing to the following address:

City of Cocoa
Attn: Dodie Selig, Planning and Zoning Manager
65 Stone Street
Cocoa, FL 32922

Mailed comments must be received prior to 4:00 p.m. on the date of the hearing to be read into the record.

(3) Viewing and Commenting In Real Time. Interested persons are encouraged to view and listen to the hearings live by accessing the meetings at the following internet addresses:

- City of Cocoa meeting calendar at https://cocoa.legistar.com/Calendar.aspx

Interested persons may submit their written comments or questions during the hearings by email at: meetings@cocoafl.org. Interested persons who wish to provide public input during the meeting will also be able to do so by accessing the e-comment link for this meeting using the Legistar calendar link above.

Special Information for Quasi-Judicial Hearings:

Any person that (1) can demonstrate that they may suffer special damages different in kind and degree from that of the general public at large; and (2) wishes to present factual or expert witnesses and/or evidence at a quasi-judicial hearing is highly encouraged to immediately contact Dodie Selig, Planning and Zoning Manager, at (321) 433-8510 or dselig@cocoafl.org, to make proper arrangements for presentation of witnesses and/or evidence. All witnesses must be identified and all evidentiary documents and exhibits that are intended to be distributed to the P&Z/LPA and City Council must be submitted to Ms. Selig via email or mail prior to the hearing.

General Notice Information:

This is a public meeting. Interested parties are hereby advised that they may appear at said meeting and be heard. The facility wherein this public meeting will be held is accessible to the physically handicapped. In accordance with the Americans With Disabilities Act, persons needing assistance to participate in any of these proceedings should contact the City Clerk of the City of Cocoa, listed below, at least 48 hours prior to the meeting: Carie Shealy, City Clerk, 65 Stone Street, Cocoa, by telephone at (321) 433-8484 or via email at cshealy@cocoafl.org.

Pursuant to Section 286.0105, Florida Statutes, the City hereby advises the public that if a person decides to appeal any decision made by the P&Z Board/LPA or City Council with respect to any matter considered at its meeting or hearing, that person will need a record of the proceedings and for such purpose, affected persons may need to assure that a verbatim record of the proceedings is made, and such record shall include the testimony and evidence upon which the appeal is to be based. This notice does not constitute consent by the City for the introduction or admission into evidence of otherwise inadmissible or irrelevant evidence, nor does it authorize challenges or appeals otherwise not allowed by law.

The PZ Board/LPA meeting may include the attendance of one (1) or more members of the Cocoa City Council who may or may not participate in the Board discussions held at this public hearing. The Local Planning Agency and City Council reserve the right to continue or postpone hearings to a date certain without re-advertising.

Legislation Details (With Text)

File #:	21-54	**Version:**	1	**Name:**	
Type:	Agenda			**Status:**	Agenda Ready
File created:	12/28/2020			**In control:**	Planning and Zoning / Local Planning Agency
On agenda:	1/6/2021			**Final action:**	
Title:	Consideration of a Large-Scale Site Plan consistent with Appendix A, Zoning, Article XIII, Section 1, to construct a warehouse/distribution center totaling approximately 202,044 square feet on 185 acres.				
Sponsors:					
Indexes:					
Code sections:					
Attachments:	Attachment A PROJECT SUNSHINE.pdf Attachment B legal ad proof_2020-12-28.pdf Attachment C DMO8 Delivery Station TIA_2020.10.01.pdf Attachment D H1205186 DM08 Cocoa-12-29-2020.pdf Attachment E Project Sunshine - Natural Resource Assessment.pdf Attachment F Project Sunshine Development Agreement Draft 12.23.pdf Attachment G TECHNICAL MEMORANDUM_Floodplain Compensation_Final.pdf				

Date	Ver.	Action By	Action	Result

PLANNING & ZONING BOARD/LOCAL PLANNING AGENCY AGENDA ITEM

Memo Date: December 28, 2020
Agenda Date: January 6, 2021
Prepared By: Alix Bernard, Senior Planner
Through: Nancy A. Bunt, Community Services Director
Requested Action:

Consideration of a Large-Scale Site Plan consistent with Appendix A, Zoning, Article XIII, Section 1, to construct a warehouse/distribution center totaling approximately 202,044 square feet on 185 acres.

BACKGROUND:

Project Name:	Project Sunshine
Project No:	PZ-20-00200011
Applicant:	Jason Lewis, PE Kimley-Horn and Associates, Inc. 116 S. Kentucky Ave Lakeland, FL 33801
Property Owner:	Dale Morris 4756 Merlot Dr Rockledge, FL 32955

Project Location:	The subject property is comprised of one (1) parcel located at 3655 Grissom Parkway just south of Mesa Ridge Dr. The property is identified by the Brevard County Property Appraiser's Office as Parcel ID number: 24-35-12-00-1.

Project Sunshine is an economic development project subject to the confidentiality provisions of section 288.075, Florida Statutes. It is anticipated that Project Sunshine will be an important economic catalyst to the City and Brevard County. Specifically, the applicant is proposing to construct a 202,044 square foot distribution center on approximately 75.9 acres with the overall acreage of the site being 185 acres. (Exhibit A -site plan). The distribution center building is proposed to be one-story, approximately 44 feet in height.

The proposed development will be accessed by three new entrances off of Grissom Pkwy, just south of Mesa Ridge Drive. These access points will require a Brevard County Right of Way permit as Grissom Road is a County Road. The applicant is currently working on securing this permit from the County. A Transportation Impact Study was conducted for the development potential for the entire property.

Based on the natural resource assessment report submitted by the applicant, it should be noted that there are active gopher tortoise sites and other species present on the property in the area to be developed. The applicant will need to secure a permit from the Florida Fish and Wildlife Conservation Commission prior to any construction activities commencing. The proposed development will be keeping 109 acres in a natural state or 59% of the entire site.

Future Land Use Designation: Industrial

Zoning District: M-2 Manufacturing and Industrial

Existing Land Use: Vacant Land

Council District: District 3 - Councilmember Rip Dyal

Overview of Surrounding Area:

	Future Land Use Designations	Zoning Districts	Land Uses
North	Industrial	M-2 Manufacturing an Industrial	Industrial Park and Vacant Land
South	Industrial	M-2 Manufacturing an Industrial	Industrial and Vacant Land and pond
East	Industrial	M-2 Manufacturing an Industrial	Pond and Vacant Land
West	Brevard County Residential 1 - 2.5	Brevard County GU (General Use) and AU (Agricultural Residenti	Single-Family Residential (County) and Industrial Park (City)

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I. Site Plan Analysis

"Consistent with Appendix A, Article XIII, Section 1(D), "All site plans shall be required to meet all current applicable code requirements."

Consistency with Code of the City of Cocoa

The Community Services Department's Planning and Zoning Division and Building Division, Public Works Department, Utilities Department, Code Enforcement Department, and Fire Department have reviewed this site plan application and determined that it generally meets the minimum requirements of all applicable City Code requirements, except where waivers have been provided through the proposed Development Agreement included as an exhibit hereto. There are some outstanding permits that are required by other governmental agencies prior to construction commencing, these conditions are outlined in detail in Section III Recommendation, at the end of this staff report.

The site is 185 acres overall with 75.9 acres of developed project area. The lot coverage is 5% (maximum 40%) and the total impervious ratio is 26% (maximum 65%).

Building setbacks	Required:	Provided:
Front (west)	25 feet	300 feet
Side (south)	0 feet	800 feet
Side (north)	0 feet	560 feet
Rear (east)	15 feet	1800 feet

The required parking spaces for a warehouse facility is one space per 1,200 sq.ft. of gross floor area (169 spaces), plus one space for every two employees on the largest working shift (it is estimated that there will be 225 employees on various shifts. (estimated at half of the 328 employee spaces provided equals 164 spaces), plus one space for each company vehicle (1132 spaces). Therefore, the project would require a total of 1,465 parking spaces. The site plan notes there would be a total of 1,469 parking spaces: 328 employee spaces; 9 accessible spaces; 1132 van spaces. Based on the spaces provided they could grow to 328 employees and still meet the parking requirements.

A condition of approval for this site plan shall be the approval and execution of a Development Agreement, which waives (1) the minimum parking space dimension in Appendix A, Zoning, Article XII for employee and visitor parking spaces (excluding any required handicapped spaces, which shall comply with applicable law); (2) the tree replacement/arbor mitigation contribution requirements in Appendix A, Zoning, Article XIII, Section 22; (3) and any other requirements as determined by the City Council.

Consistency with the Comprehensive Plan

Land Use

Policy 1.1.2.10 Industrial (IND). *Industrial areas shall be regarded as appropriate for activities associated with industrial development, which can include materials processing, materials assembly, product manufacturing, and storage of finished products. Uses can include manufacturing facilities, warehouse distribution centers and truck terminals. The following criteria shall be used for determining appropriate locations for industrial land use designations on the future land use map.*

The property currently has a future land use map designation of Industrial and is zoned M-2. The use of a 202,044 square-foot distribution facility is consistent with the appropriate activities listed in this policy for Industrial property and is located on Grissom Parkway, which is a two-lane roadway. Extensive landscaping and planned parking to accommodate company vehicles and employees has been provided.

GOAL 1.3: The City of Cocoa shall enhance the quality of life and prosperity of its citizens through the retention and creation of a wide range of profitable business opportunities and jobs.

The applicant is seeking to develop a 202,044 ± square-foot distribution building and related facilities which would result in a substantial capital investment in building construction and machinery and equipment, and the creation of numerous

local job opportunities. The project will create a new business within the City of Cocoa and be a significant economic catalyst to Brevard County including, but not limited to, enhancing the local government tax base.

Conservation

GOAL 12.1: Conserve, protect and appropriately manage the natural resources and environmentally sensitive areas of the City of Cocoa to ensure the highest environmental quality possible.

Staff has required as a condition of approval that a wildlife management plan be submitted to satisfy these policies which will minimize adverse impacts to the threatened species on the property, including scrub jay, gopher tortoise and wood stork. The City will coordinate with the Florida Fish and Wildlife Conservation Commission to ensure any recommendations will be incorporated into the plan.

Policy 12.1.6.15: Wetlands and wetland functions shall be protected and conserved by restricting direct and indirect development impacts.

Wetland buffers of an average of 25 feet are provided for those wetlands that are not proposed to be impacted and mitigated as required.

Concurrency Management/Adequate Public Facilities

Section 15-22, Code of the City of Cocoa, provides for a concurrency management system to ensure public facilities and services needed to support development are available concurrent with the impacts of such development and that development orders and development permits are not issued in a manner that will not result in a reduction in the levels of service below the adopted level of service standards adopted by the City for public facilities and services, as contained in the City's adopted Comprehensive Plan.

Wastewater

The Level of Service (LOS) for wastewater is 0.02 gallons per sq.ft. per day. Based on the 202,044 sq.ft. proposed use, the projected demand on the wastewater system is 4,041 gallons per day.

The Sellers Plant is currently permitted to treat 4.5 mgd of wastewater per day, and is currently operating at 2.08 mgd. The maximum peak flow over the past twelve months was 4.56 mgd. Thus, there is sufficient capacity for Wastewater.

Stormwater Management

The Level of Service (LOS) for Stormwater Management is as follows:

Design Storm Event	25-year frequency/24-hour duration event
On-site Stormwater Management:	Retention of the first one inch of rainfall for areas of more than one acre.
Stormwater Quantity:	Post development Stormwater runoff flow rates, quantities, peaks, and velocities shall be equal to or less than levels that existed prior to development.
Stormwater Quality:	No significant degradation of water quality in receiving water bodies.

A St Johns River Water Management District Permit will be provided by the applicant for this project. The City's Public Works Department has reviewed the application to ensure that the City's LOS for stormwater management is satisfied.

Potable Water

The Dyal Plant provides potable for the City of Cocoa service area and it is currently permitted to operate at 48 million gallons per day (mgd). The maximum average daily flow over the past twelve months is 26.17 mgd. Thus, there is sufficient capacity for Potable Water.

Solid Waste

The Level of Service (LOS) for the City of Cocoa is 1.2 tons of solid waste disposal per capita per year, and non-residential collection LOS shall be 2 to 6 times per week per week as needed with green waste and recyclables once per week. The City contracts with Waste Management for the provision of solid waste, and the projected solid waste generated will be collected consistent with the adopted level of service standards.

Roadways (Transportation)

The minimum LOS for Grissom Parkway is E.

The Space Coast TPO Traffic Counts Report for 2019 indicates that for the Industry Road to Canaveral Groves Blvd. segment of Grissom Parkway, the average annual daily traffic trips is 10,640 and it is classified as an Urban Minor Arterial.

Using data provided by the applicant, the proposed use would generate an additional 2,196 daily trips.

Based on the Current Maximum Acceptable Volume (15,600) established by the Space Coast TPO, adding the anticipated 2,196 daily trips to the roadway volume stated above will not cause the level of service on the roadway to drop below the established minimum LOS. Therefore, there is sufficient capacity on Grissom Parkway to support this project.

Recreation

The project will not add any residential units; therefore, no recreation capacity is required.

Schools

The project will not add any residential units; therefore, no school capacity is required.

BUDGETARY IMPACT:

N/A

PREVIOUS ACTION:

N/A

RECOMMENDED MOTION:

Staff recommends APPROVAL of a Large-Scale Site Plan consistent with Appendix A, Zoning, Article XIII, Section 1, to construct a warehouse/distribution center totaling approximately 202,044 square feet on 185 acres with the following conditions:

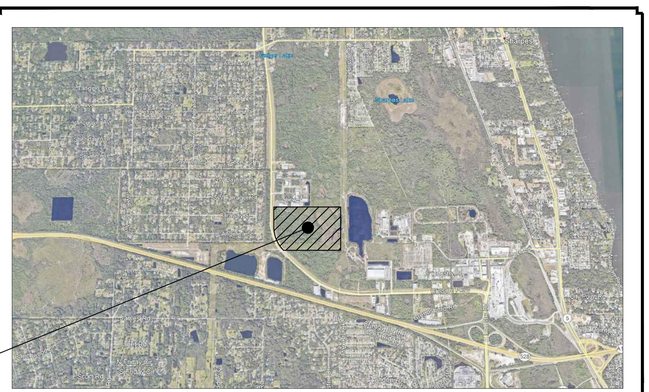
1. The Applicant shall be required to demonstrate to city staff's satisfaction that City of Cocoa Comprehensive Plan Policy 6.1.3.6 is observed and met, which requires that compensatory storage shall be provided through excavation of a volume equivalent to the loss of storage within the 100-year floodplain resulting from the placement of fill in adjacent upland areas (above the 100-year floodplain) where such compensatory storage can be accomplished in an environmentally sound and economically feasible manner. In the event that city staff concludes that compensatory storage can be accomplished in an environmentally sound and economically feasible manner on the property, the Applicant shall be required to amend the site plan to provide compensatory storage on the site prior to commencement of construction, which may require further approval of the Planning and Zoning Board through a major site plan amendment or of the Community Development Director through a minor site plan amendment, as applicable.
2. The Applicant shall be required to demonstrate to city staff's satisfaction that the City of Cocoa Comprehensive Plan Policy 12.1.5.4 is observed and met, which requires that development approval in areas which have been identified as providing habitat of a size and character that is suitable for long term protection of a viable population of one or more listed species (including threatened species scrub jay, gopher tortoise and wood stork) shall be contingent upon the formulation of a management plan which would to the greatest extent possible eliminate adverse effects to any listed species which occur or are discovered on the development site. Further, city staff shall follow Policy 12.1.5.5, which provides that the City shall consult with the FGFWFC and/or the FDEP in the review of listed species management plans prepared by private developers, and shall implement the recommendations of those agencies in the issuance of development orders. Accordingly, the Applicant shall be required to prepare a threatened species management plan and comply with any recommendations of the City and appropriate wildlife protection agencies incorporated in the plan prior to commencement of construction. Should the site plan need to be altered to comply with the threatened species wildlife management plan, the Applicant shall be required to seek further approval of the Planning and Zoning Board through a major site plan amendment or of the Community Development Director through a minor site plan amendment, as applicable.
3. The Applicant shall be required to obtain all other applicable state and federal permits necessary for the development prior to commencement of the development, which shall include, but not be limited to, a Brevard County Right-of-Way Permit, a permit from the Florida Fish and Wildlife Conservation Commission, and the St. John's River Water Management District permit. Issuance of a development permit by the City does not create any right on the part of an applicant to obtain a permit from a state or federal agency and does not create any liability on the part of the City for issuance of the permit if the applicant fails to obtain requisite approvals or fulfill the obligations imposed by a state or federal agency or undertakes actions that result in a violation of state or federal law.
4. Approval of the site plan shall be dependent upon City Council approval and execution of the related Development Agreement and subject to all terms and conditions contained therein.



LARGE SCALE SITE PLAN CONSTRUCTION PLANS FOR PROJECT SUNSHINE

3655 GRISSOM PKWY. COCOA FL, 32926

PARCEL ID: 24-35-12-00-1



VICINITY MAP

N.T.S.

SECTION: 24

TOWNSHIP: 35

RANGE: 12

PROJECT TEAM:

DEVELOPER:
SEEFRIED PROPERTIES
3333 RIVERWOOD PKWY, SUITE 200
ATLANTA, GA 30339
TEL: (678) 904-1917
paulseefried@seefriedproperties.com

SURVEYOR:
DC JOHNSON & ASSOCIATES
ORLANDO, FL 32810
1191 S. CURLEY STREET
SAN ANTONIO, FL 33576
TEL: (352) 588-2768

CIVIL ENGINEER:
KIMLEY-HORN AND ASSOCIATES, INC
116 SOUTH KENTUCKY AVENUE
LAKELAND, FL 33801
TEL: (863) 701-8702
jason.lewis@kimley-horn.com

LANDSCAPE ARCHITECT:
KIMLEY- HORN AND ASSOCIATES, INC
1777 MAIN STREET, SUITE 200
SARASOTA, FL 34236
TEL: (941) 379-7600
chris.cianfaglione@kimley-horn.com

Sheet List Table

C100	COVER SHEET
C200	GENERAL NOTES
C300	AERIAL SITE PLAN
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C401	DEMOLITION AND EROSION CONTROL DETAILS
C402	WETLAND IMPACTS
C500	MASTER SITE PLAN
C501	SITE HORIZONTAL CONTROL PLAN
C502	SITE HORIZONTAL CONTROL PLAN
C503	SITE HORIZONTAL CONTROL PLAN
C504	SITE HORIZONTAL CONTROL PLAN
C505	SITE HORIZONTAL CONTROL PLAN
C506	AUTOTURN ANALYSIS
C600	MASTER PAVING, GRADING, AND DRAINAGE PLAN
C601	PAVING, GRADING, AND DRAINAGE PLAN
C602	PAVING, GRADING, AND DRAINAGE PLAN
C603	PAVING, GRADING, AND DRAINAGE PLAN
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TM-150	TREE MITIGATION SPECIFICATIONS
L-100	OVERALL LANDSCAPE PLAN
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L-151	LANDSCAPE DETAILS
IR-100	OVERALL SCHEMATIC IRRIGATION PLAN
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IR-103	SCHEMATIC IRRIGATION PLAN
IR-104	SCHEMATIC IRRIGATION PLAN
IR-150	SCHEMATIC IRRIGATION SPECIFICATIONS
IR-151	SCHEMATIC IRRIGATION DETAILS

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No.	REVISIONS	DATE	BY

Kimley»Horn
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116 SOUTH KENTUCKY AVENUE, LAKELAND, FL 33801
PHONE: 863-701-8702
WWW.KIMLEY-HORN.COM CA 00000696

Jason A. Lewis, P.E.
FL License #62572

KHA PROJECT 046265017
DATE OCT 2020
SCALE AS SHOWN
DESIGNED BY ---
DRAWN BY ---
CHECKED BY ---

COVER SHEET

PROJECT SUNSHINE
PREPARED FOR
SEEFRIED PROPERTIES
CITY OF COCOA FLORIDA

SHEET NUMBER
C100

Plotted By:Reum, Briona Sheet Set:DWG8 COCOA Layout:C100 COVER SHEET December 02, 2020 08:38:41pm K:\Jax_civil\046265017 — dwg8 cocoa\CADD\CONSTRUCTION\C100 COVER SHEET.dwg
This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

GENERAL CONSTRUCTION NOTES

1. THE CONTRACTOR AND SUBCONTRACTORS SHALL OBTAIN A COPY OF THE FLORIDA DEPARTMENT OF TRANSPORTATION "STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION" (LATEST EDITION) AND BECOME FAMILIAR WITH THE CONTENTS PRIOR TO COMMENCING WORK.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FURNISHING ALL MATERIAL AND LABOR TO CONSTRUCT THE FACILITY AS SHOWN AND DESCRIBED IN THE CONSTRUCTION DOCUMENTS IN ACCORDANCE WITH THE APPROPRIATE APPROVING AUTHORITIES, SPECIFICATIONS AND REQUIREMENTS. CONTRACTOR SHALL CLEAR AND GRUB ALL AREAS UNLESS OTHERWISE INDICATED, REMOVING TREES, STUMPS, ROOTS, MUCK, EXISTING PAVEMENT AND ALL OTHER DELETERIOUS MATERIAL.

3. EXISTING UTILITIES SHOWN ARE LOCATED ACCORDING TO THE INFORMATION AVAILABLE TO THE ENGINEER AT THE TIME OF THE TOPOGRAPHIC SURVEY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR THE ENGINEER. GUARANTEE IS NOT MADE THAT ALL EXISTING UNDERGROUND UTILITIES ARE SHOWN OR THAT THE LOCATION OF THOSE SHOWN ARE ENTIRELY ACCURATE. FINDING THE ACTUAL LOCATION OF ANY EXISTING UTILITIES IS THE CONTRACTOR'S RESPONSIBILITY AND SHALL BE DONE BEFORE HE COMMENCES ANY WORK IN THE VICINITY. FURTHERMORE, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES DUE TO THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES. THE OWNER OR ENGINEER WILL ASSUME NO LIABILITY FOR ANY DAMAGES SUSTAINED OR COST INCURRED BECAUSE OF THE OPERATIONS IN THE VICINITY OF EXISTING UTILITIES OR STRUCTURES, NOR FOR TEMPORARY BRACING AND SHORING OF SAME. IF IT IS NECESSARY TO SHORE, BRACE, SWING OR RELOCATE A UTILITY, THE UTILITY COMPANY OR DEPARTMENT AFFECTED SHALL BE CONTACTED AND THEIR PERMISSION OBTAINED REGARDING THE METHOD TO USE FOR SUCH WORK.

4. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONTACT THE VARIOUS UTILITY COMPANIES WHICH MAY HAVE BURIED OR AERIAL UTILITIES WITHIN OR NEAR THE CONSTRUCTION AREA BEFORE COMMENCING WORK. THE CONTRACTOR SHALL PROVIDE 48 HOURS MINIMUM NOTICE TO ALL UTILITY COMPANIES PRIOR TO BEGINNING CONSTRUCTION. A LIST OF THE UTILITY COMPANIES WHICH THE CONTRACTOR MUST CALL BEFORE COMMENCING WORK IS PROVIDED ON THE COVER SHEET OF THESE CONSTRUCTION PLANS. THIS LIST SERVES AS A GUIDE ONLY AND IS NOT INTENDED TO LIMIT THE UTILITY COMPANIES WHICH THE CONTRACTOR MAY WISH TO NOTIFY.

5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL REQUIRED CONSTRUCTION PERMITS AND BONDS IF REQUIRED PRIOR TO CONSTRUCTION.

6. THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE AT ALL TIMES ONE COPY OF THE CONSTRUCTION DOCUMENTS INCLUDING PLANS, SPECIFICATIONS, AND SPECIAL CONDITIONS AND COPIES OF ANY REQUIRED CONSTRUCTION PERMITS.

7. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE IMMEDIATELY BROUGHT TO THE ATTENTION OF THE OWNER AND ENGINEER BEFORE COMMENCING WORK. NO FIELD CHANGES OR DEVIATIONS FROM DESIGN ARE TO BE MADE WITHOUT PRIOR APPROVAL OF THE OWNER AND NOTIFICATION TO THE ENGINEER.

8. ALL COPIES OF COMPACTION, CONCRETE AND OTHER REQUIRED TEST RESULTS ARE TO BE SENT TO THE OWNER AND DESIGN ENGINEER OF RECORD DIRECTLY FROM THE TESTING AGENCY.

9. THE CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING TO THE ENGINEER A CERTIFIED RECORD SURVEY SIGNED AND SEALED BY A PROFESSIONAL LAND SURVEYOR REGISTERED IN THE STATE OF FLORIDA DEPICTING THE ACTUAL FIELD LOCATION OF ALL CONSTRUCTED IMPROVEMENTS THAT ARE REQUIRED BY THE JURISDICTIONAL AGENCIES FOR THE CERTIFICATION PROCESS. ALL SURVEY COSTS WILL BE THE CONTRACTORS RESPONSIBILITY.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DOCUMENTING AND MAINTAINING AS-BUILT INFORMATION WHICH SHALL BE RECORDED AS CONSTRUCTION PROGRESSES OR AT THE COMPLETION OF APPROPRIATE CONSTRUCTION INTERVALS AND SHALL BE RESPONSIBLE FOR PROVIDING AS-BUILT DRAWINGS TO THE OWNER FOR THE PURPOSE OF CERTIFICATION TO JURISDICTIONAL AGENCIES AS REQUIRED. ALL AS-BUILT DATA SHALL BE COLLECTED BY A STATE OF FLORIDA PROFESSIONAL LAND SURVEYOR WHOSE SERVICES ARE ENGAGED BY THE CONTRACTOR.

11. ANY WELLS DISCOVERED ON SITE THAT WILL HAVE NO USE MUST BE PLUGGED BY A LICENSED WELL DRILLING CONTRACTOR IN A MANNER APPROVED BY ALL JURISDICTIONAL AGENCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY WELL ABANDONMENT PERMITS REQUIRED.

12. ANY WELL DISCOVERED DURING EARTH MOVING OR EXCAVATION SHALL BE REPORTED TO THE APPROPRIATE JURISDICTIONAL AGENCIES WITHIN 24 HOURS AFTER DISCOVERY IS MADE.

13. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THAT THE PROPOSED IMPROVEMENTS SHOWN ON THE PLANS DO NOT CONFLICT WITH ANY KNOWN EXISTING OR OTHER PROPOSED IMPROVEMENTS. IF ANY CONFLICTS ARE DISCOVERED, THE CONTRACTOR SHALL NOTIFY THE OWNER PRIOR TO INSTALLATION OF ANY PORTION OF THE SITE WORK THAT WOULD BE AFFECTED. FAILURE TO NOTIFY OWNER OF AN IDENTIFIABLE CONFLICT PRIOR TO PROCEEDING WITH INSTALLATION RELIEVES OWNER OF ANY OBLIGATION TO PAY FOR A RELATED CHANGE ORDER.

14. CONTRACTOR TO FIELD VERIFY LOCATION AND DEPTH OF ALL UTILITIES WITHIN THE PROJECT AREA.

15. FOR WORK WITHIN FDOT RIGHT-OF-WAY, THE CONTRACTOR SHALL PROVIDE A TEMPORARY TRAFFIC CONTROL PLAN PREPARED UNDER THE DIRECTION OF, AND SIGNED AND SEALED BY, A LICENSED FLORIDA PROFESSIONAL ENGINEER WHO IS EXPERIENCED IN PREPARING TRAFFIC CONTROL PLANS AND WHO IS CERTIFIED PER FDOT PROCEDURE, TOPIC NO. 625-010-010. FOR WORK WITHIN FDOT RIGHT-OF-WAY, THE FDOT REQUIRES DOCUMENTATION FOR SUCCESSFUL COMPLETION OF AN APPROVED WORK ZONE TRAFFIC CONTROL TRAINING COURSE FOR THE AGENCY, UTILITY, OR CONTRACTOR EMPLOYEE(S) DESIGNING, INSTALLING, AND/OR MAINTAINING THE APPROVED MAINTENANCE OF TRAFFIC PLAN IN ACCORDANCE WITH DEPARTMENT PROCEDURE, TOPIC NO. 625-010-010. ALL TEMPORARY TRAFFIC CONTROL DEVICES FOR THE FOLLOWING FACILITIES SHALL BE DESIGNED AND INSTALLED TO MEET THE EXISTING POSTED SPEEDS AS STATED FOR ALL TRAFFIC CONTROL PHASES: US 441/US 17-92 (ORANGE BLOSSOM TRAIL) - 35 MPH

MAINTENANCE

ALL MEASURES STATED ON THE EROSION AND SEDIMENT CONTROL PLAN, AND IN THE STORM WATER POLLUTION PREVENTION PLAN, SHALL BE MAINTAINED IN FULLY FUNCTIONAL CONDITION UNTIL NO LONGER REQUIRED FOR A COMPLETED PHASE OF WORK OR FINAL STABILIZATION OF THE SITE. ALL EROSION AND SEDIMENTATION CONTROL MEASURES SHALL BE CHECKED BY A QUALIFIED PERSON AT LEAST ONCE EVERY SEVEN CALENDAR DAYS AND WITHIN 24 HOURS OF THE END OF A 0.5" RAINFALL EVENT, AND CLEANED AND REPAIRED IN ACCORDANCE WITH THE FOLLOWING:

1. INLET PROTECTION DEVICES AND BARRIERS SHALL BE REPAIRED OR REPLACED IF THEY SHOW SIGNS OF UNDERMINING, OR DETERIORATION.

2. ALL SEEDED AREAS SHALL BE CHECKED REGULARLY TO SEE THAT A GOOD STAND IS MAINTAINED. AREAS SHOULD BE FERTILIZED, WATERED AND RESEEDED AS NEEDED. FOR MAINTENANCE REQUIREMENTS REFER TO SECTION 981 OF THE STANDARD SPECIFICATIONS.

3. SILT FENCES SHALL BE REPAIRED TO THEIR ORIGINAL CONDITIONS IF DAMAGED. SEDIMENT SHALL BE REMOVED FROM THE SILT FENCES WHEN IT REACHES ONE-HALF THE HEIGHT OF THE SILT FENCE.

4. THE CONSTRUCTION ENTRANCES SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOW OF MUD ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE CONSTRUCTION ENTRANCES AS CONDITIONS DEMAND.

5. THE TEMPORARY PARKING AND STORAGE AREA SHALL BE KEPT IN GOOD CONDITION (SUITABLE FOR PARKING AND STORAGE). THIS MAY REQUIRE PERIODIC TOP DRESSING OF THE TEMPORARY PARKING AS CONDITIONS DEMAND.

6. OUTLET STRUCTURES IN THE SEDIMENTATION BASINS SHALL BE MAINTAINED IN OPERATIONAL CONDITIONS AT ALL TIMES. SEDIMENT SHALL BE REMOVED FROM SEDIMENT BASINS OR TRAPS WHEN THE DESIGN CAPACITY HAS BEEN REDUCED BY 55 CUBIC YARDS / ACRE.

7. ALL MAINTENANCE OPERATIONS SHALL BE DONE IN A TIMELY MANNER BUT IN NO CASE LATER THAN 2 CALENDAR DAYS FOLLOWING THE INSPECTION.

EROSION CONTROL NOTES

1. THE STORM WATER POLLUTION PREVENTION PLAN ("SWPPP") IS COMPRISED OF THIS EROSION CONTROL PLAN, THE STANDARD DETAILS, THE PLAN NARRATIVE, ATTACHMENTS INCLUDED IN SPECIFICATIONS OF THE SWPPP, PLUS THE PERMIT AND ALL SUBSEQUENT REPORTS AND RELATED DOCUMENTS.

2. ALL CONTRACTORS AND SUBCONTRACTORS INVOLVED WITH STORM WATER POLLUTION PREVENTION SHALL OBTAIN A COPY OF THE STORM WATER POLLUTION PREVENTION PLAN AND THE STATE OF FLORIDA NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM GENERAL PERMIT (NPDES PERMIT) AND BECOME FAMILIAR WITH THEIR CONTENTS.

3. THE CONTRACTOR SHALL IMPLEMENT BEST MANAGEMENT PRACTICES AS REQUIRED BY THE SWPPP. ADDITIONAL BEST MANAGEMENT PRACTICES SHALL BE IMPLEMENTED AS DICTATED BY CONDITIONS AT NO ADDITIONAL COST TO THE OWNER THROUGHOUT ALL PHASES OF CONSTRUCTION.

4. BEST MANAGEMENT PRACTICES (BMP'S) AND CONTROLS SHALL CONFORM TO FEDERAL, STATE, OR LOCAL REQUIREMENTS OR MANUAL OF PRACTICE, AS APPLICABLE. THE CONTRACTOR SHALL IMPLEMENT ADDITIONAL CONTROLS AS DIRECTED BY THE PERMITTING AGENCY OR OWNER.

5. EROSION CONTROL PLAN MUST CLEARLY DELINEATE ALL STATE WATERS. PERMITS FOR ANY CONSTRUCTION ACTIVITY IMPACTING STATE WATERS OR REGULATED WETLANDS MUST BE MAINTAINED ON SITE AT ALL TIMES.

6. THE CONTRACTOR SHALL MINIMIZE CLEARING TO THE MAXIMUM EXTENT PRACTICAL OR AS REQUIRED BY THE GENERAL PERMIT.

7. CONTRACTOR SHALL DENOTE ON PLAN THE TEMPORARY PARKING AND STORAGE AREA WHICH SHALL ALSO BE USED AS THE EQUIPMENT MAINTENANCE AND CLEANING AREA, EMPLOYEE PARKING AREA, AND AREA FOR LOCATING PORTABLE FACILITIES, OFFICE TRAILERS, AND TOILET FACILITIES.

8. ALL WASH WATER (CONCRETE TRUCKS, VEHICLE CLEANING, EQUIPMENT CLEANING, ETC.) SHALL BE DETAINED AND PROPERLY TREATED OR DISPOSED.

9. SUFFICIENT OIL AND GREASE ABSORBING MATERIALS AND FLOTATION BOOMS SHALL BE MAINTAINED ON SITE OR READILY AVAILABLE TO CONTAIN AND CLEAN-UP FUEL OR CHEMICAL SPILLS AND LEAKS.

10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL ON SITE. THE USE OF MOTOR OILS AND OTHER PETROLEUM BASED OR TOXIC LIQUIDS FOR DUST SUPPRESSION OPERATIONS IS PROHIBITED.

11. RUBBISH, TRASH, GARBAGE, LITTER, OR OTHER SUCH MATERIALS SHALL BE DEPOSITED INTO SEALED CONTAINERS. MATERIALS SHALL BE PREVENTED FROM LEAVING THE PREMISES THROUGH THE ACTION OF WIND OR STORM WATER DISCHARGE INTO DRAINAGE DITCHES OR WATERS OF THE STATE.

12. ALL STORM WATER POLLUTION PREVENTION MEASURES PRESENTED ON THE PLAN, SHALL BE INITIATED AS SOON AS PRACTICABLE.
13. STABILIZATION PRACTICES SHOULD BE INITIATED AS SOON AS PRACTICAL, BUT IN NO CASE MORE THAN 7 DAYS WHERE CONSTRUCTION HAS TEMPORARILY OR PERMANENTLY CEASED.

14. DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS PERMANENTLY STOPPED SHALL BE PERMANENTLY SEEDED. THESE AREAS SHALL BE SEEDED NO LATER THAN 7 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY OCCURRED IN THESE AREAS. REFER TO SECTION 981 OF THE STANDARD SPECIFICATIONS FOR SEEDING AND MAINTENANCE REQUIREMENTS.

15. IF THE ACTION OF VEHICLES TRAVELING OVER THE GRAVEL CONSTRUCTION ENTRANCES IS NOT SUFFICIENT TO REMOVE THE MAJORITY OF DIRT OR MUD, THEN THE TIRES MUST BE WASHED BEFORE THE VEHICLES ENTER A PUBLIC ROAD. IF WASHING IS USED, PROVISIONS MUST BE MADE TO INTERCEPT THE WASH WATER AND TRAP THE SEDIMENT BEFORE IT IS CARRIED OFF THE SITE.

16. ALL MATERIALS SPILLED, DROPPED, WASHED, OR TRACKED FROM VEHICLES ONTO ROADWAYS OR INTO STORM DRAINS MUST BE REMOVED AS SOON AS POSSIBLE.

17. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING SEDIMENT IN THE DETENTION POND AND ANY SEDIMENT THAT MAY HAVE COLLECTED IN THE STORM SEWER DRAINAGE SYSTEMS IN CONJUNCTION WITH THE STABILIZATION OF THE SITE.

18. ON-SITE & OFF SITE SOIL STOCKPILE AND BORROW AREAS SHALL BE PROTECTED FROM EROSION AND SEDIMENTATION THROUGH IMPLEMENTATION OF BEST MANAGEMENT PRACTICES. STOCKPILE AND BORROW AREA LOCATIONS SHALL BE NOTED ON THE EROSION CONTROL PLAN AND PERMITTED IN ACCORDANCE WITH GENERAL PERMIT REQUIREMENTS.

19. SLOPES SHALL BE LEFT IN A ROUGHENED CONDITION DURING THE GRADING PHASE TO REDUCE RUNOFF VELOCITIES AND EROSION.

20. DUE TO GRADE CHANGES DURING THE DEVELOPMENT OF THE PROJECT, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ADJUSTING THE EROSION CONTROL MEASURES (SILT FENCES, ETC.) TO PREVENT EROSION.

21. ALL CONSTRUCTION SHALL BE STABILIZED AT THE END OF EACH WORKING DAY, THIS INCLUDES BACK FILLING OF TRENCHES FOR UTILITY CONSTRUCTION AND PLACEMENT OF GRAVEL OR BITUMINOUS PAVING FOR ROAD CONSTRUCTION.

22. SEDIMENTATION CONTROLS/BMPS SHALL PREVENT STORMWATER RUNOFF WITH TURBIDITY GREATER THAN 29 NTUS FROM LEAVING THE CONSTRUCTION SITE.

23. INSPECTIONS BY THE CONTRACTOR TO DETERMINE THE EFFECTIVENESS OF EROSION/SEDIMENT CONTROL EFFORTS SHALL BE CONDUCTED DAILY AND WITHIN 24 HOURS AFTER EACH 0.50 INCH OR GREATER RAINFALL EVENT. ANY NECESSARY REMEDIES SHALL BE PERFORMED IMMEDIATELY.

24. ALL EXCESS FILL TO BE HAULED OFF-SITE.

25. DEWATERING ACTIVITIES SHALL NOT RESULT IN ANY DISCHARGE OF WATER WITH TURBIDITY GREATER THAN 29 NTUS FROM THE SITE. IF ANALYTICAL RESULTS FROM GROUNDWATER SAMPLES DETERMINE THAT SITE IS CONTAMINATED, A CITY WASTEWATER INDUSTRIAL WASTE PRE-TREATMENT GROUNDWATER PERMIT MUST BE OBTAINED FOR PROPER DISPOSAL INTO CITY SANITARY SYSTEM.

26. CONTRACTOR TO PROVIDE EROSION CONTROL REPORTS TO THE CITY OF COCOA STORMWATER ENGINEER WEEKLY AND AFTER EACH 0.5" RAIN EVENT.

DEMOLITION NOTES

1. ALL MATERIAL REMOVED FROM THIS SITE BY THE CONTRACTOR SHALL BE DISPOSED OF BY THE CONTRACTOR IN A LEGAL MANNER.

2. REFER TO THE TOPOGRAPHIC SURVEY FOR ADDITIONAL DETAILS OF EXISTING STRUCTURES, ETC., LOCATED WITHIN THE PROJECT SITE. UNLESS OTHERWISE NOTED, ALL EXISTING BUILDINGS, STRUCTURES, SLABS, CONCRETE, ASPHALT, DEBRIS PILES, SIGNS, AND ALL APPURTENANCES ARE TO BE REMOVED FROM THE SITE BY THE CONTRACTOR AND PROPERLY DISPOSED OF IN A LEGAL MANNER AS PART OF THIS CONTRACT. SOME ITEMS TO BE REMOVED MAY NOT BE DEPICTED ON THE TOPOGRAPHIC SURVEY. IT IS THE CONTRACTOR'S RESPONSIBILITY TO VISIT THE SITE AND DETERMINE THE FULL EXTENT OF ITEMS TO BE REMOVED. IF ANY ITEMS ARE IN QUESTION, THE CONTRACTOR SHALL CONTACT THE OWNER PRIOR TO REMOVAL OF SAID ITEMS.

3. ALL TREES NOT SPECIFICALLY SHOWN TO BE PRESERVED OR RELOCATED SHALL BE REMOVED AS A PART OF THIS CONTRACT. TREE PROTECTION FENCING SHALL BE INSTALLED PRIOR TO ANY DEMOLITION.

PAVING, GRADING AND DRAINAGE NOTES

1. ALL PAVING, CONSTRUCTION, MATERIALS, AND WORKMANSHIP WITHIN COUNTY'S RIGHT-OF-WAY SHALL BE IN ACCORDANCE WITH LOCAL OR COUNTY SPECIFICATIONS AND STANDARDS (LATEST EDITION) OR FDOT SPECIFICATIONS AND STANDARDS (LATEST EDITION) IF NOT COVERED BY LOCAL OR COUNTY REGULATIONS. WHICHEVER IS MOST RESTRICTIVE OF THE TWO.

2. ALL UNPAVED AREAS IN EXISTING RIGHTS-OF-WAY DISTURBED BY CONSTRUCTION SHALL BE REGRADED AND SODDED.

3. TRAFFIC CONTROL ON ALL FDOT, LOCAL AND COUNTY RIGHTS-OF-WAY SHALL MEET THE REQUIREMENTS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (U.S. DOT/FHA) AND THE REQUIREMENTS OF THE STATE AND ANY LOCAL AGENCY HAVING JURISDICTION. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.

4. THE CONTRACTOR SHALL GRADE THE SITE TO THE ELEVATIONS INDICATED AND SHALL REGRADE WASHOUTS WHERE THEY OCCUR AFTER EVERY RAINFALL UNTIL A GRASS STAND IS WELL ESTABLISHED OR ADEQUATE STABILIZATION OCCURS.

5. ALL OPEN AREAS WITHIN THE PROJECT SITE SHALL BE SODDED UNLESS INDICATED OTHERWISE ON THE LANDSCAPE PLAN.

6. ALL AREAS INDICATED AS PAVEMENT SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE TYPICAL PAVEMENT SECTIONS AS INDICATED ON THE DRAWINGS.

7. WHERE EXISTING PAVEMENT IS INDICATED TO BE REMOVED AND REPLACED, THE CONTRACTOR SHALL SAW CUT A MINIMUM 2" DEEP FOR A SMOOTH AND STRAIGHT JOINT AND REPLACE THE PAVEMENT WITH THE SAME TYPE AND DEPTH OF MATERIAL AS EXISTING OR AS INDICATED.

8. WHERE NEW PAVEMENT MEETS THE EXISTING PAVEMENT, THE CONTRACTOR SHALL SAW CUT THE EXISTING PAVEMENT A MINIMUM 2" DEEP FOR A SMOOTH AND STRAIGHT JOINT AND MATCH THE EXISTING PAVEMENT ELEVATION WITH THE PROPOSED PAVEMENT UNLESS OTHERWISE INDICATED.

9. THE CONTRACTOR SHALL INSTALL FILTER FABRIC OVER ALL DRAINAGE STRUCTURES FOR THE DURATION OF CONSTRUCTION AND UNTIL ACCEPTANCE OF THE PROJECT BY THE OWNER. ALL DRAINAGE STRUCTURES SHALL BE CLEANED OF DEBRIS AS REQUIRED DURING AND AT THE END OF CONSTRUCTION TO PROVIDE POSITIVE DRAINAGE FLOWS.

10. IF DEWATERING IS REQUIRED, THE CONTRACTOR SHALL OBTAIN ANY APPLICABLE REQUIRED PERMITS. THE CONTRACTOR IS TO COORDINATE WITH THE OWNER AND THE DESIGN ENGINEER PRIOR TO ANY EXCAVATION.

11. STRIP TOPSOIL AND ORGANIC MATTER FROM ALL AREAS OF THE SITE AS REQUIRED. IN SOME CASES TOPSOIL MAY BE STOCKPILED ON SITE FOR PLACEMENT WITHIN LANDSCAPED AREAS BUT ONLY AS DIRECTED BY THE OWNER.

12. FIELD DENSITY TESTS SHALL BE TAKEN AT INTERVALS IN ACCORDANCE WITH THE LOCAL JURISDICTIONAL AGENCY OR TO FDOT STANDARDS. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.

13. ALL SLOPES AND AREAS DISTURBED BY CONSTRUCTION SHALL BE GRADED AS PER PLANS. THE AREAS SHALL THEN BE SODDED OR SEEDED AS SPECIFIED IN THE PLANS, FERTILIZED, MULCHED, WATERED AND MAINTAINED UNTIL HARDY GRASS GROWTH IS ESTABLISHED IN ALL AREAS. ANY AREAS DISTURBED FOR ANY REASON PRIOR TO FINAL ACCEPTANCE OF THE JOB SHALL BE CORRECTED BY THE CONTRACTOR AT NO ADDITIONAL COST TO THE OWNER. ALL EARTHEN AREAS WILL BE SODDED OR SEEDED AND MULCHED AS SHOWN ON THE LANDSCAPING PLAN.

14. ALL CUT OR FILL SLOPES SHALL BE 4 (HORIZONTAL) :1 (VERTICAL) OR FLATTER UNLESS OTHERWISE SHOWN.

15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONTROL OF DUST AND DIRT RISING AND SCATTERING IN THE AIR DURING CONSTRUCTION AND SHALL PROVIDE WATER SPRINKLING OR OTHER SUITABLE METHODS OF CONTROL. THE CONTRACTOR SHALL COMPLY WITH ALL GOVERNING REGULATIONS PERTAINING TO ENVIRONMENTAL PROTECTION.

16. THE CONTRACTOR SHALL TAKE ALL REQUIRED MEASURES TO CONTROL TURBIDITY, INCLUDING BUT NOT LIMITED TO THE INSTALLATION OF TURBIDITY BARRIERS AT ALL LOCATIONS WHERE THE POSSIBILITY OF TRANSFERRING SUSPENDED SOLIDS INTO THE RECEIVING WATER BODY EXISTS DUE TO THE PROPOSED WORK. TURBIDITY BARRIERS MUST BE MAINTAINED IN EFFECTIVE CONDITION AT ALL LOCATIONS UNTIL CONSTRUCTION IS COMPLETED AND DISTURBED SOIL AREAS ARE STABILIZED. THEREAFTER, THE CONTRACTOR MUST REMOVE THE BARRIERS. AT NO TIME SHALL THERE BE ANY OFF-SITE DISCHARGE WHICH VIOLATES THE WATER QUALITY STANDARDS IN CHAPTER 17-302, FLORIDA ADMINISTRATIVE CODE.

17. SOD, WHERE CALLED FOR, MUST BE INSTALLED AND MAINTAINED ON EXPOSED SLOPES WITHIN 48 HOURS OF COMPLETING FINAL GRADING, AND AT ANY OTHER TIME AS NECESSARY, TO PREVENT EROSION, SEDIMENTATION OR TURBID DISCHARGES.

18. THE CONTRACTOR MUST REVIEW AND MAINTAIN A COPY OF THE ENVIRONMENTAL RESOURCE PERMIT COMPLETE WITH ALL CONDITIONS, ATTACHMENTS, EXHIBITS, AND PERMIT MODIFICATIONS IN GOOD CONDITION AT THE CONSTRUCTION SITE. THE COMPLETE PERMIT MUST BE AVAILABLE FOR REVIEW UPON REQUEST BY WATER MANAGEMENT DISTRICT REPRESENTATIVES.

19. THE CONTRACTOR SHALL ENSURE THAT ISLAND PLANTING AREAS AND OTHER PLANTING AREAS ARE NOT COMPACTED AND DO NOT CONTAIN ROAD BASE MATERIALS. THE CONTRACTOR SHALL ALSO EXCAVATE AND REMOVE ALL UNDESIRABLE MATERIAL FROM ALL AREAS ON THE SITE TO BE PLANTED AND PROPERLY DISPOSED OF IN A LEGAL MANNER.

20. THE CONTRACTOR SHALL INSTALL ALL UNDERGROUND STORM WATER PIPING PER MANUFACTURER'S RECOMMENDATIONS.

21. LAKE/POND EXCAVATION NOTE: NO EXCAVATION SHALL EXTEND BELOW THE PERMITTED DESIGN DEPTHS/ELEVATIONS SHOWN ON THE DRAWINGS, UNLESS ADDITIONAL TESTING SUPPORTS OTHERWISE; AND NO SEMI-CONFINING UNIT CLAYEY SOIL MATERIAL AND/OR NO LINESTONE MATERIALS SHALL BE EXCAVATED, REGARDLESS IF THESE MATERIALS ARE ENCOUNTERED WITHIN THE PERMITTED EXCAVATION DEPTHS/ELEVATIONS. IF ANY LOWER SEMI-CONFINING UNIT CLAYEY SOIL MATERIALS OR LIMESTONE MATERIALS ARE ENCOUNTERED ABOVE THE PERMITTED DEPTHS/ELEVATIONS, THEN EXCAVATION OPERATIONS SHALL CEASE IN THE GENERAL AREA. EPC MUST BE CONTACTED PRIOR TO ANY EXCAVATION OF CLAYS. IN THE ABSENCE OF ANY CONFINING OR SEMI-CONFINING UNIT CLAYEY SOILS, A MINIMUM OF FIVE FEET OF UNDISTURBED SOILS MUST REMAIN ABOVE THE UNDERLYING LIMESTONE.

SAFETY

1. ALL SUBSURFACE CONSTRUCTION SHALL COMPLY WITH THE "TRENCH SAFETY ACT". THE CONTRACTOR SHALL INSURE THAT THE METHOD OF TRENCH PROTECTION AND CONSTRUCTION IS IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY AND ENFORCE ALL APPLICABLE SAFETY REGULATIONS. THE ABOVE INFORMATION HAS BEEN PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY AND DOES NOT IMPLY THAT THE OWNER OR ENGINEER WILL INSPECT AND/OR ENFORCE SAFETY REGULATIONS.

2. DURING THE CONSTRUCTION AND/OR MAINTENANCE OF THIS PROJECT, ALL SAFETY REGULATIONS ARE TO BE ENFORCED. THE CONTRACTOR OR HIS REPRESENTATIVE SHALL BE RESPONSIBLE FOR THE CONTROL AND SAFETY OF THE TRAVELING PUBLIC AND THE SAFETY OF HIS/HER PERSONNEL. LABOR SAFETY REGULATIONS SHALL CONFORM TO THE PROVISIONS SET FORTH BY OSHA IN THE FEDERAL REGISTER OF THE DEPARTMENT OF TRANSPORTATION. THE MINIMUM STANDARDS AS SET FORTH IN THE CURRENT EDITION OF "THE STATE OF FLORIDA, MANUAL ON TRAFFIC CONTROL AND SAFE PRACTICES FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS" SHALL BE FOLLOWED IN THE DESIGN, APPLICATION, INSTALLATION, MAINTENANCE AND REMOVAL OF ALL TRAFFIC CONTROL DEVICES, WARNING DEVICES AND BARRIERS NECESSARY TO PROTECT THE PUBLIC AND CONSTRUCTION PERSONNEL FROM HAZARDS WITHIN THE PROJECT LIMITS. CONTRACTOR SHALL PROVIDE FOR THE SAFETY AND CONTROL OF LOCAL TRAFFIC DURING CONSTRUCTION. ADDITIONAL INFORMATION MAY BE REQUIRED IF LANE CLOSURE DURATIONS ARE LONGER THAN DAYTIME OPERATIONS.

WATER AND SEWER UTILITY NOTES

1. THE CONTRACTOR SHALL CONSTRUCT GRAVITY SEWER LATERALS, SEWER FORCE MAINS, MANHOLES, GRAVITY SEWER LINES, AND DOMESTIC WATER AND FIRE PROTECTION SYSTEM AS SHOWN ON THESE PLANS. THE CONTRACTOR SHALL FURNISH ALL NECESSARY MATERIALS, EQUIPMENT, MACHINERY, TOOLS, MEANS OF TRANSPORTATION AND LABOR NECESSARY TO COMPLETE THE WORK IN FULL AND COMPLETE ACCORDANCE WITH THE SHOWN, DESCRIBED AND REASONABLY INTENDED REQUIREMENTS OF THE CONTRACT DOCUMENTS AND JURISDICTIONAL AGENCY REQUIREMENTS. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.

2. ALL EXISTING UNDERGROUND UTILITY LOCATIONS SHOWN ARE APPROXIMATE THE CONTRACTOR SHALL COMPLY WITH ALL REQUIREMENTS FOR UTILITY LOCATION AND COORDINATION IN ACCORDANCE WITH THE NOTES CONTAINED IN THE GENERAL CONSTRUCTION SECTION OF THIS SHEET.

3. THE CONTRACTOR SHALL RESTORE ALL DISTURBED VEGETATION IN KIND, UNLESS SHOWN OTHERWISE.

4. DEFLECTION OF PIPE JOINTS AND CURVATURE OF PIPE SHALL NOT EXCEED THE MANUFACTURER'S SPECIFICATIONS. SECURELY CLOSE ALL OPEN ENDS OF PIPE AND FITTINGS WITH A WATERTIGHT PLUG WHEN WORK IS NOT IN PROGRESS. THE INTERIOR OF ALL PIPES SHALL BE CLEAN AND JOINT SURFACES WIPED CLEAN AND DRY AFTER THE PIPE HAS BEEN LOWERED INTO THE TRENCH. VALVES SHALL BE PLUMB AND LOCATED ACCORDING TO THE PLANS.

5. ALL PHASES OF INSTALLATION, INCLUDING UNLOADING, TRENCHING, LAYING, AND BACK FILLING, SHALL BE DONE IN A FIRST CLASS WORKMANLIKE MANNER. ALL PIPE AND FITTINGS SHALL BE CAREFULLY STORED FOLLOWING MANUFACTURER'S RECOMMENDATIONS. CARE SHALL BE TAKEN TO AVOID DAMAGE TO THE COATING OR LINING IN ANY D.I. PIPE FITTINGS. ANY PIPE OR FITTING WHICH IS DAMAGED OR WHICH HAS FLAWS OR IMPERFECTIONS WHICH, IN THE OPINION OF THE ENGINEER OR OWNER, RENDERS IT UNFIT FOR USE, SHALL NOT BE USED. ANY PIPE NOT SATISFACTORY FOR USE SHALL BE CLEARLY MARKED AND IMMEDIATELY REMOVED FROM THE JOB SITE, AND SHALL BE REPLACED AT THE CONTRACTOR'S EXPENSE.

6. WATER FOR FIRE FIGHTING SHALL BE AVAILABLE FOR USE PRIOR TO COMBUSTIBLES BEING BROUGHT ON SITE.

7. ALL UTILITY AND STORM DRAIN TRENCHES LOCATED UNDER AREAS TO RECEIVE PAVING SHALL BE COMPLETELY BACK FILLED IN ACCORDANCE WITH THE GOVERNING JURISDICTIONAL AGENCY'S SPECIFICATIONS. IN THE EVENT THAT THE CONTRACT DOCUMENTS AND THE JURISDICTIONAL AGENCY REQUIREMENTS ARE NOT IN AGREEMENT, THE MOST STRINGENT SHALL GOVERN.

8. UNDERGROUND LINES SHALL BE SURVEYED BY A PROFESSIONAL LAND SURVEYOR BEFORE BACK FILLING.

9. CONTRACTOR SHALL PERFORM, AT HIS OWN EXPENSE, ANY AND ALL TESTS REQUIRED BY THE SPECIFICATIONS AND/OR ANY AGENCY HAVING JURISDICTION. THESE TESTS MAY INCLUDE, BUT MAY NOT BE LIMITED TO, INFILTRATION AND EXFILTRATION, TELEVISION INSPECTION AND A MANDREL TEST ON GRAVITY SEWER. A COPY OF THE TEST RESULTS SHALL BE PROVIDED TO THE UTILITY PROVIDER, OWNER AND JURISDICTIONAL AGENCY AS REQUIRED.

10. ALL POTABLE WATER FACILITIES FROM THE BACKFLOW PREVENTER DOWNSTREAM AND ALL WASTEWATER FACILITIES ON PRIVATE PROPERTY SHALL BE PRIVATELY OWNED AND MAINTAINED. ALL POTABLE WATER FACILITIES FROM THE TIE INTO EXISTING TO THE BACKFLOW PREVENTER AND ALL WASTEWATER FACILITIES WITHIN PUBLIC RIGHT-OF-WAY SHALL BE COUNTY OWNED AND MAINTAINED.

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811. Know what's below. Call before you dig.

SUNSHINE STATE ONE CALL OF FLORIDA, INC.

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Kimley»Horn
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Jason A. Lewis, P.E.
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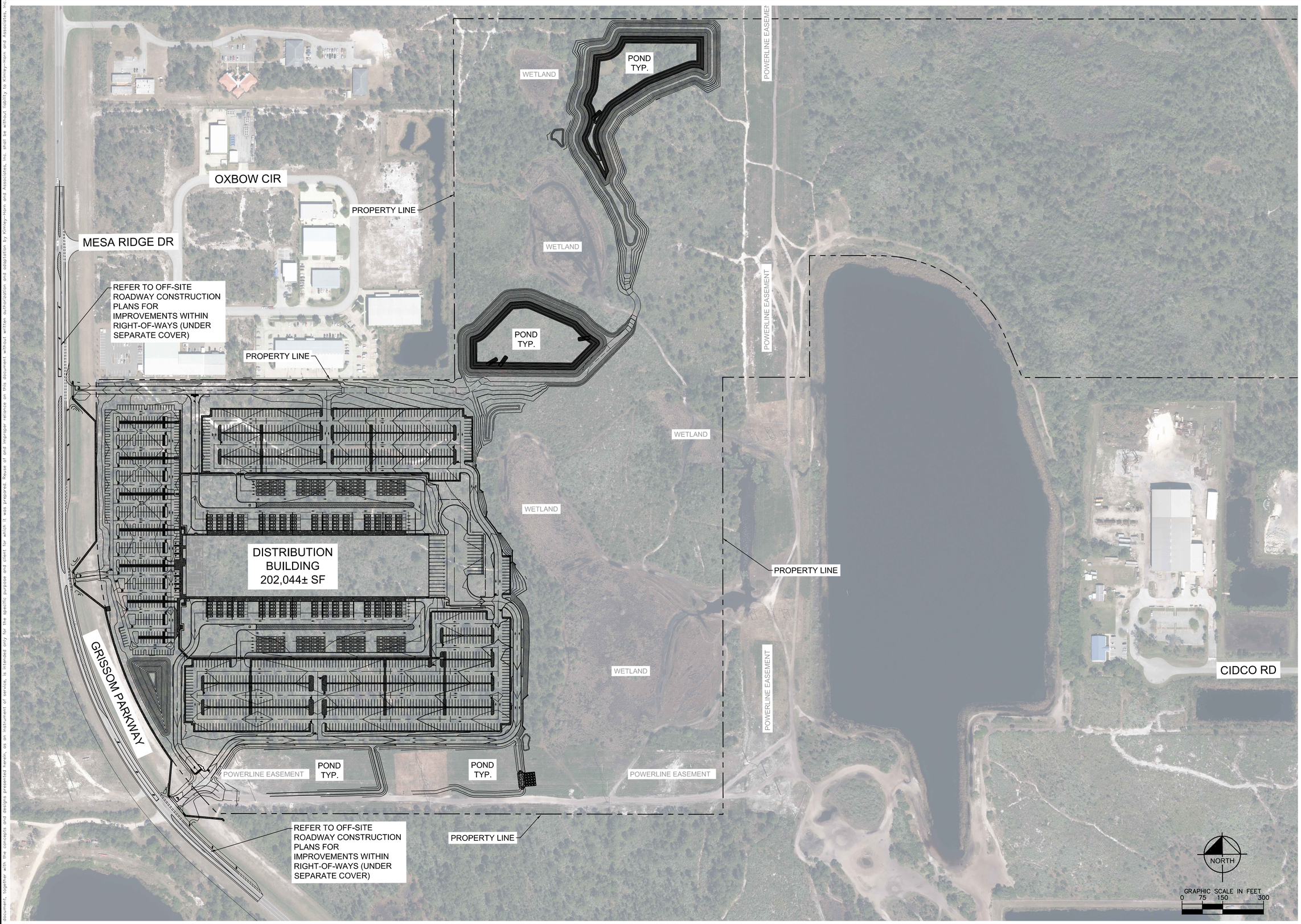
KHA PROJECT 046265017
DATE OCT 2020
SCALE AS SHOWN
DESIGNED BY ___
DRAWN BY ___
CHECKED BY ___

GENERAL NOTES

PROJECT SUNSHINE
PREPARED FOR
SEEFRIED PROPERTIES
CITY OF COCOA FLORIDA

SHEET NUMBER
C200

Plotted By:Reum, Briana Sheet Set:DMO8 COCOA Layout:C200 GENERAL NOTES December 02, 2020 08:38:51pm K:\lak_civil\046265017 - dmo8 cocoa\CADD\CONSTR\C200 GENERAL NOTES.dwg
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Plotted By:Reum, Briona Sheet Set:DWG\COCOA Layout:C300 AERIAL SITE PLAN December 02, 2020 08:39:27pm K:\Vak_civil\046265017 — dms8 cocoa\CADD\CONSTR\C300 AERIAL SITE PLAN.dwg

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AERIAL SITE PLAN

PROJECT SUNSHINE
PREPARED FOR
SEEFRIED PROPERTIES
CITY OF COCOA FLORIDA

SHEET NUMBER
C300

DEMOLITION NOTES:

1. ALL AREAS WITHIN THE LIMITS OF DEMOLITION SHALL BE CLEARED AND GRUBBED.
2. ALL DEMOLITION SHALL BE WITHIN THE LIMITS OF DEMOLITION UNLESS OTHERWISE NOTED.
3. CONDUCT SITE DEMOLITION OPERATIONS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS OR OTHER OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM AUTHORITIES HAVING JURISDICTION.
4. PROVIDE PROTECTION NECESSARY TO PREVENT DAMAGE TO EXISTING IMPROVEMENTS INDICATED ON PLAN.
5. RESTORE DAMAGED IMPROVEMENTS TO THEIR ORIGINAL CONDITION, AS ACCEPTABLE TO PARTIES HAVING JURISDICTION.
6. REMOVE WASTE MATERIALS AND UNSUITABLE AND EXCESS TOPSOIL FROM PROPERTY AND DISPOSE OF OFF SITE IN A LEGAL MANNER.
7. LOCATE EXISTING ABOVE GROUND AND UNDERGROUND UTILITIES IN AREAS OF WORK IF UTILITIES ARE TO REMAIN IN PLACE, PROVIDE ADEQUATE MEANS OF SUPPORT AND PROTECTION DURING DEMOLITION OPERATION.
8. SHOULD UNCHARTED, OR INCORRECTLY CHARTED, PIPING OR OTHER UTILITIES BE ENCOUNTERED DURING DEMOLITION, CONSULT PROJECT ENGINEER AND UTILITY OWNER FOR IMMEDIATE ACTION.
9. DEMOLISH AND COMPLETELY REMOVE FROM SITE, MATERIAL INDICATED ON PLAN OR NOTES.
10. THE USE OF EXPLOSIVES IS NOT PERMITTED.
11. PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT UNDERMINING, WASHOUT AND OTHER HAZARDS CREATED BY THE DEMOLITION OPERATION.
12. CONTRACTOR IS TO PROVIDE APPROVED EROSION CONTROL/SEDIMENTATION BARRIERS TO PREVENT SILTATION OF ADJACENT PROPERTY, STREETS, STORM SEWERS AND WATERWAYS. IN ADDITION, CONTRACTOR SHALL PLACE STRAW, MULCH OR OTHER SUITABLE MATERIAL AS NEEDED ON THE GROUND IN AREAS WHERE CONSTRUCTION RELATED TRAFFIC IS TO ENTER AND EXIT THE SITE.
13. ALL DISTURBED AREAS OUTSIDE THE LIMITS OF DEMOLITION SHALL BE RE-LANDSCAPED AND IRRIGATION SYSTEMS REPAIRED TO PREVIOUS WORKING CONDITIONS.
14. ALL UTILITIES LOCATED WITHIN THE LIMITS OF DEMOLITION SHALL BE REMOVED TO THE LIMITS OF DEMOLITION AND/OR R/W AND CAPPED IF UNUSED (WHERE APPLICABLE) UNLESS OTHERWISE NOTED.
15. ALL EXISTING CURBING AND ASPHALT PAVEMENT WITHIN THE LIMITS OF DEMOLITION SHALL BE SAW CUT AND REMOVED UNLESS OTHERWISE NOTED
17. CONTRACTOR IS TO OBTAIN PROPER PERMITS PRIOR TO DEMOLITION OF EXISTING STRUCTURES
18. CONTRACTOR TO INSTALL SAFETY FENCE AND PROPERLY SIGN/MARK AROUND WORK AND STAGING AREA TO PREVENT PEDESTRIAN TRAFFIC FROM ENTERING.
19. CONTRACTOR SHALL PROVIDE ADEQUATE MAINTENANCE OF TRAFFIC AROUND WORK AND STAGING AREA.
20. CONTRACTOR SHALL USE CAUTION WHEN WORKING AROUND, REMOVING, AND/OR RELOCATING EXISTING UTILITIES AND COORDINATE WITH UTILITY PROVIDER AS NEEDED.
21. CONTRACTOR TO COORDINATE WITH OWNER ON LOCATION OF CONSTRUCTION ENTRANCE.
22. CONTRACTOR SHALL REMOVE ALL INVASIVE PLANT MATERIALS LOCATED ONSITE PER CITY OF COCOA REQUIREMENTS.
23. IF APPLICABLE, EXISTING SEPTIC TANK(S), DOSING TANK(S), AND DRAINFIELD(S) TO BE PROPERLY REMOVED AND LEGALLY DISPOSED OF BY A LICENSED SEPTIC SYSTEM CONTRACTOR.

LEGEND:

- SILT FENCE/LIMITS OF DEMOLITION (L.O.D.)
- DEMOLITION/CLEARING AND GRUBBING AREA. PAVEMENT TO BE SAW CUT AS NECESSARY FOR REMOVAL. ALL UNDERGROUND UTILITIES AND STORM PIPE WITHIN THE LIMITS SHALL BE REMOVED UNLESS OTHERWISE NOTED.
- INLET PROTECTION

GRAPHIC SCALE IN FEET
0 75 150 300

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DEMOLITION AND EROSION CONTROL PLAN

PROJECT SUNSHINE
PREPARED FOR
SEEFRIED PROPERTIES
FLORIDA
CITY OF COCOA

SHEET NUMBER
C400

Printed By:Reamy Brinna Sheet Set:DWG COCOA Layout:C400 DEMOLITION AND EROSION CONTROL PLAN December 02, 2020 08:39:37pm K:\Ipk_scn\046265017 - cocoa\CAD\CONSTR\C400 DEMOLITION AND EROSION CONTROL PLAN.dwg
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CLEARING AND SITE PREPARATION NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROPER INSTALLATION OF THE EROSION CONTROL DEVICES, AS SHOWN ON THE CONSTRUCTION PLANS, PRIOR TO ANY SITE CLEARING AND/OR DEMOLITION. REFER TO THE "EROSION CONTROL NOTES" SECTION CONTAINED HEREIN FOR ADDITIONAL REQUIREMENTS.

2. PRIOR TO ANY SITE CLEARING, ALL TREES SHOWN TO REMAIN, AS INDICATED ON THE CONSTRUCTION PLANS, SHALL BE PROTECTED IN ACCORDANCE WITH LOCAL TREE ORDINANCES AND DETAILS CONTAINED IN THESE PLANS. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO MAINTAIN THESE TREES IN GOOD CONDITION. NO TREE(S) SHOWN TO REMAIN SHALL BE REMOVED WITHOUT WRITTEN APPROVAL FROM THE OWNER AND THE LOCAL AGENCY HAVING JURISDICTION OVER THESE ACTIVITIES.

3. THE CONTRACTOR SHALL CLEAR AND GRUB ONLY THOSE PORTIONS OF THE SITE NECESSARY FOR CONSTRUCTION. ALL DISTURBED AREAS MUST BE SEEDED, MULCHED, SODDED OR PLANTED WITH OTHER APPROVED LANDSCAPE MATERIAL IMMEDIATELY FOLLOWING CONSTRUCTION.

4. THE TOP 4" TO 6" OF GROUND REMOVED DURING CLEARING AND GRUBBING ACTIVITIES SHALL BE STOCKPILED, TO BE USED FOR LANDSCAPING PURPOSES, UNLESS OTHERWISE DIRECTED BY THE OWNER. REMAINING EARTHWORK THAT RESULTS FROM CLEARING AND GRUBBING OR SITE EXCAVATION IS TO BE UTILIZED ON-SITE, PROVIDED THE MATERIAL IS DEEMED SUITABLE BY THE OWNER'S SOILS TESTING COMPANY. EXCESS MATERIAL IS TO EITHER BE STOCKPILED ON-SITE, AS DIRECTED BY THE OWNER OR OWNER'S ENGINEER, OR REMOVED FROM THE SITE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ANY PERMITS THAT ARE NECESSARY FOR REMOVING ANY EXCESS MATERIAL FROM THE SITE.

5. ALL EXISTING DEBRIS (ABOVE OR BELOW GROUND), CONSTRUCTION DEBRIS AND OTHER WASTE MATERIAL SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR, IN ACCORDANCE WITH APPLICABLE REGULATORY AGENCY REQUIREMENTS.

6. THE CONTRACTOR IS TO PREPARE THE SITE IN ACCORDANCE WITH THE SOILS REPORT, COPIES OF WHICH ARE AVAILABLE THROUGH THE OWNER OR SOILS TESTING COMPANY DIRECTLY.

7. CONTRACTOR TO BE RESPONSIBLE FOR INSTALLATION OF TEMPORARY CONSTRUCTION FENCE AROUND ENTIRE PERIMETER OF PROPERTY. TYPE OF FENCE TO BE SUBMITTED BY CONTRACTOR TO ENGINEER FOR APPROVAL.

8. THE CONTRACTOR SHALL REMOVE ALL VEGETATION, SURPLUS SOIL, DEMOLITION RUBBLE, AND OTHER UNDESIRABLE MATERIALS. SUCH MATERIALS SHALL BE PROMPTLY HAULED FROM THE SITE AND DISPOSED OF IN ACCORDANCE WITH GOVERNING LAWS AND CODES.

EROSION AND SILTATION CONTROL:

1. GENERAL: ALL EROSION AND SILTATION CONTROL METHODS SHALL BE IMPLEMENTED PRIOR TO THE START OF CONSTRUCTION. DURING CONSTRUCTION, CLEARED AREAS SHALL BE COVERED BY MULCHES SUCH AS STRAW, HAY AND FILTER FABRIC. ALL STORM SEWER INLETS IN THE VICINITY OF THE PROJECT SHALL BE PROTECTED BY SEDIMENT TRAPS OR SYNTHETIC HAY BALES. THESE SHALL BE MAINTAINED AND MODIFIED DURING THE CONSTRUCTION PROCESS TO MINIMIZE DOWNSTREAM SILTATION. WHEN CONSTRUCTION IS COMPLETED, DETENTION AREAS WILL BE RESHAPED, CLEANED OF SILT, MUD AND DEBRIS, AND RE-SODDED TO PROPERLY DETAIN THE INTENDED STORM QUANTITIES.

2. PROTECTION AND STABILIZATION OF ON-SITE SOIL STOCKPILES: FILL MATERIAL STOCKPILES SHALL BE PROTECTED AT ALL TIMES BY ON-SITE DRAINAGE CONTROLS THAT PREVENT EROSION OF THE STOCKPILED MATERIAL. CONTROL OF DUST FROM SUCH STOCKPILES MAY BE REQUIRED, DEPENDING UPON THEIR LOCATION AND THE EXPECTED LENGTH OF TIME THE STOCKPILES WILL BE PRESENT. IN NO CASE SHALL ANY UNSTOCKPILED MATERIAL REMAIN MORE THAN THIRTY (30) CALENDAR DAYS AFTER SUBSTANTIAL PROJECT COMPLETION.

3. PROTECTION OF EXISTING STORM SEWER SYSTEMS: DURING CONSTRUCTION, ALL STORM SEWER INLETS IN THE VICINITY OF THE PROJECT SHALL BE PROTECTED BY SEDIMENT TRAPS SUCH AS SECURED SYNTHETIC HAY BALES, SOD, STONE, ETC., WHICH SHALL BE MAINTAINED AND MODIFIED AS REQUIRED BY CONSTRUCTION PROGRESS, AND WHICH MUST BE APPROVED BY THE ENGINEER BEFORE INSTALLATION.

4. SEDIMENT BASINS AND SEDIMENT TRAPPING MEASURES: PERIMETER BERMS, SEDIMENT BARRIERS, VEGETATIVE BUFFERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT AND/OR PREVENT THE TRANSPORT OF SEDIMENT ONTO ADJACENT PROPERTIES, OR INTO EXISTING BODIES OF WATER, MUST BE INSTALLED, CONSTRUCTED OR, IN THE CASE OF VEGETATIVE BUFFERS, PROTECTED FROM DISTURBANCE, AS A FIRST STEP IN THE LAND ALTERATION PROCESS. SUCH SYSTEMS SHALL BE FULLY OPERATIVE BEFORE ANY OTHER DISTURBANCE OF THE SITE BEGINS. EARTHEN STRUCTURES INCLUDING BUT NOT LIMITED TO BERMS, EARTH FILTERS, DAMS OR DIKES SHALL BE STABILIZED AND PROTECTED FROM DRAINAGE DAMAGE OR EROSION WITHIN ONE WEEK OF INSTALLATION.

5. SWALES, DITCHES AND CHANNELS: CHANNELS LEADING FROM THE SITE SHALL BE SODDED WITH ARGENTINE BAHIA WITHIN THREE (3) DAYS OF EXCAVATION.

6. UNDERGROUND UTILITY CONSTRUCTION: UNDERGROUND UTILITY LINES AND OTHER STRUCTURES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE FOLLOWING STANDARDS:
   A. NO MORE THAN 500 LINEAR FEET OF TRENCH SHALL BE OPEN AT ANY ONE TIME;
   B. EXCAVATED MATERIAL SHALL BE CAST TO THE UPHILL SIDE OF TRENCHES AS LONG AS SAFETY AND SPACE CONSIDERATION ALLOW. TRENCH MATERIAL SHALL NOT BE CAST INTO, (OR ONTO THE SLOPE OF) ANY STREAM, CHANNEL, ROAD, DITCH OR WATERWAY.

7. ALL EROSION AND SILTATION CONTROL DEVICES: SHALL BE REGULARLY INSPECTED AND MAINTAINED, (ESPECIALLY AFTER EACH RAINFALL) AND WILL BE CLEANED OUT AND/OR REPAIRED AS REQUIRED.

8. DISTURBED AREAS AND AREAS USED FOR STORAGE OF MATERIALS THAT ARE EXPOSED TO RAIN SHALL BE INSPECTED FOR EVIDENCE OF, OR THE POTENTIAL FOR, POLLUTANTS ENTERING THE STORMWATER SYSTEM.

9. APPLICATION RATES AND METHODS FOR USE OF FERTILIZERS AND PESTICIDES AT THE CONSTRUCTION SITE SHALL CONFORM WITH ALL LOCAL AND STATE ORDINANCES. NUTRIENTS SHALL BE APPLIED ONLY AT RATES NECESSARY TO ESTABLISH AND MAINTAIN VEGETATION SUCH THAT DISCHARGES WILL NOT CAUSE OR CONTRIBUTE TO VIOLATIONS OF STATE SURFACE OR GROUNDWATER QUALITY STANDARDS.

10. OFF-SITE VEHICLE TRACKING OF SEDIMENTS AND THE GENERATION OF DUST SHALL BE MINIMIZED BY CONTRACTOR.

SECTION 1 GENERAL EROSION CONTROL:

1. GENERAL EROSION CONTROL BEST MANAGEMENT PRACTICES SHALL BE EMPLOYED TO MINIMIZE SOIL EROSION AND POTENTIAL POND SLOPE FAILURES. WHILE THE VARIOUS TECHNIQUES REQUIRED WILL BE SITE AND PLAN SPECIFIC, THEY SHOULD BE EMPLOYED AS SOON AS POSSIBLE DURING CONSTRUCTION ACTIVITIES.

2. CLEARED SITE DEVELOPMENT AREAS NOT CONTINUALLY USED FOR CONSTRUCTION ACTIVITIES SHALL BE COVERED WITH HAY AND/OR OVERSEEDED AND SUFFICIENTLY WATERED TO STABILIZE THE TEMPORARY GROUNDCOVER.

3. BANKS OF RETENTION/DETENTION PONDS SHALL NOT BE CONSTRUCTED STEEPER THAN 4H:1V FROM TOP OF BANK TO TWO FEET BELOW THE CONTROL ELEVATION.

4. A 1-FOOT WIDE STRIP OF SOD SHALL BE PLACED ALONG ALL CURBING AND AROUND ALL INLETS. SOD SHALL BE PLACED BEFORE SILT BARRIERS ARE REMOVED.

5. THE CONTRACTOR WILL STABLIZE BY SEED AND MULCH, SOD, OR OTHER APPROVED MATERIALS ANY DISTURBED AREAS WITHIN ONE WEEK FOLLOWING COMPLETION OF THE UTILITY SYSTEMS AND PAVEMENT AREAS. CONTRACTOR SHALL MAINTAIN SUCH AREAS UNTIL FINAL ACCEPTANCE BY THE OWNER. THE CONTRACTOR IS TO COORDINATE WITH THE OWNER REGARDING THE TYPE OF MATERIAL, LANDSCAPING AND IRRIGATION REQUIREMENTS.

SECTION 2 PROTECTION OF SURFACE WATER QUALITY DURING AND AFTER CONSTRUCTION:

1. SURFACE WATER QUALITY SHALL BE MAINTAINED BY EMPLOYING THE FOLLOWING BEST MANAGEMENT PRACTICES IN THE CONSTRUCTION PLANNING AND CONSTRUCTION OF ALL IMPROVEMENTS.

2. WHERE PRACTICAL, STORMWATER SHALL BE CONVEYED BY SWALES.

3. EROSION CONTROL MEASURES SHALL BE EMPLOYED TO MINIMIZE TURBIDITY OF SURFACE WATERS LOCATED DOWNSTREAM OF ANY CONSTRUCTION ACTIVITY. WHILE THE VARIOUS MEASURES REQUIRED WILL BE SITE SPECIFIC, THEY SHALL BE EMPLOYED AS NEEDED IN ACCORDANCE WITH THE FOLLOWING:
   A. IN GENERAL, EROSION SHALL BE CONTROLLED AT THE FURTHEST PRACTICAL UPSTREAM LOCATION.
   B. STORMWATER INLETS SHALL BE PROTECTED DURING CONSTRUCTION AS SHOWN IN FDOT INDEX 102. PROTECTION MEASURES SHALL BE EMPLOYED AS SOON AS PRACTICAL DURING THE VARIOUS STAGES OF INLET CONSTRUCTION. SILT BARRIERS SHALL REMAIN IN PLACE UNTIL SODDING AROUND INLETS IS COMPLETE.

4. HEAVY CONSTRUCTION EQUIPMENT PARKING AND MAINTENANCE AREAS SHALL BE DESIGNED TO PREVENT OIL, GREASE, AND LUBRICANTS FROM ENTERING SITE DRAINAGE FEATURES INCLUDING STORMWATER COLLECTION AND TREATMENT SYSTEMS. CONTRACTORS SHALL PROVIDE BROAD DIKES, HAY BALES OR SILT SCREENS AROUND, AND SEDIMENTSUMPS WITHIN SUCH AREAS TO CONTAIN SPILLS OF OIL, GREASE OR LUBRICANTS. CONTRACTORS SHALL HAVE AVAILABLE, AND SHALL USE ABSORBENT FILTER PADS TO CLEAN UP SPILLS AS SOON AS POSSIBLE AFTER OCCURRENCE.

5. SILT BARRIERS: ANY SILT WHICH ACCUMULATES BEHIND THE BARRIERS AND ANY FILL USED TO ANCHOR THE BARRIERS SHALL BE REMOVED PROMPTLY AFTER THE END OF THE MAINTENANCE PERIOD SPECIFIED FOR THE BARRIERS.

6. PREVENT EROSION FROM SHEET FLOW ACROSS BARE GROUND FROM ENTERING A LAKE OR SWALE BY INSTALLING A TEMPORARY SEDIMENT SUM AS REQUIRED. THE TEMPORARY SEDIMENT SUMP SHALL REMAIN IN PLACE UNTIL VEGETATION IS ESTABLISHED ON THE GROUND DRAINING TO THE SUMP.

SECTION 3 CONTROL OF WIND EROSION:

1. WIND EROSION SHALL BE CONTROLLED BY EMPLOYING THE FOLLOWING METHODS AS NECESSARY AND APPROPRIATE:
   A. BARE EARTH AREAS SHALL BE WATERED DURING CONSTRUCTION AS NECESSARY TO MINIMIZE THE TRANSPORT OF FUGITIVE DUST. IT MAY BE NECESSARY TO LIMIT CONSTRUCTION VEHICLE SPEED IF BARE EARTH HAS NOT BEEN EFFECTIVELY WATERED. IN NO CASE SHALL FUGITIVE DUST BE ALLOWED TO LEAVE THE SITE UNDER CONSTRUCTION.
   B. AS SOON AS PRACTICAL AFTER COMPLETION OF CONSTRUCTION BARE EARTH AREAS SHALL BE VEGETATED.
   C. ANY TIME DURING AND AFTER SITE CONSTRUCTION THAT WATERING AND/OR VEGETATION ARE NOT EFFECTIVE IN CONTROLLING WIND EROSION AND/OR THE TRANSPORT OF FUGITIVE DUST, OTHER METHODS AS ARE NECESSARY FOR SUCH CONTROL SHALL BE EMPLOYED. THESE METHODS MAY INCLUDE ERECTION OF DUST CONTROL FENCES. DUST CONTROL FENCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH FDOT INDEX 102, EXCEPT THE MINIMUM HEIGHT SHALL BE 4 FEET.

DEMOLITION NOTES (IF NECESSARY):

1. CONTRACTOR SHALL SUBMIT DEMOLITION SCHEDULE TO OWNER PRIOR TO PROCEEDING WITH DEMOLITION ACTIVITIES.
2. EXTENT OF SITE CLEARING IS SHOWN ON DRAWINGS.
3. SITE DEMOLITION WORK INCLUDES, BUT IS NOT LIMITED TO:
   A. ROADWAY
   B. DRAINAGE AREA
   C. SITE UTILITIES
   D. LANDSCAPING
4. CONDUCT SITE DEMOLITION OPERATIONS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS OR OTHER OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM AUTHORITIES HAVING JURISDICTION.
5. PROVIDE PROTECTION NECESSARY TO PREVENT DAMAGE TO EXISTING IMPROVEMENTS INDICATED ON PLAN "EXISTING TO REMAIN."
6. RESTORE DAMAGED IMPROVEMENTS TO THEIR ORIGINAL CONDITION, AS ACCEPTABLE TO PARTIES HAVING JURISDICTION.
7. REMOVE WASTE MATERIALS AND UNSUITABLE AND EXCESS TOPSOIL FROM PROPERTY AND DISPOSE OF OFF SITE IN A LEGAL MANNER.
8. LOCATE EXISTING ABOVE-GROUND AND UNDERGROUND UTILITIES IN AREAS OF WORK. IF UTILITIES ARE TO REMAIN IN PLACE, PROVIDE ADEQUATE MEANS OF SUPPORT AND PROTECTION DURING DEMOLITION OPERATION.
9. SHOULD UNCHARTED, OR INCORRECTLY CHARTED, PIPING OR OTHER UTILITIES BE ENCOUNTERED DURING DEMOLITION, CONSULT PROJECT ENGINEER AND UTILITY OWNER FOR IMMEDIATE ACTION.
10. DEMOLISH AND COMPLETELY REMOVE FROM SITE MATERIAL INDICATED ON PLAN OR NOTES "TO BE REMOVED."
11. PROTECT: STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, OTHER FACILITIES FROM DAMAGE CAUSED BY: SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT, OTHER HAZARDS CREATED BY THE DEMOLITION OPERATION.
12. FOR SELECTIVE CLEARING REFER TO LANDSCAPE PLAN.
13. CONTRACTOR SHALL RESTORE ALL DISTURBED AREAS TO EXISTING CONDITIONS OR BETTER. FURTHERMORE, CONTRACTOR SHALL PROVIDE TO THE ENGINEER A PHOTOGRAPH OF PRE-CONSTRUCTION CONDITIONS AND POST-CONSTRUCTION CONDITIONS AS NOTED ON PLANS.
14. CONTRACTOR SHALL MAINTAIN STORMWATER MANAGEMENT SYSTEM TO INSURE NO DAMAGE TO ADJACENT PROPERTIES OCCURS DURING 100-YEAR STORM EVENTS.

DEWATERING NOTES (IF NECESSARY):

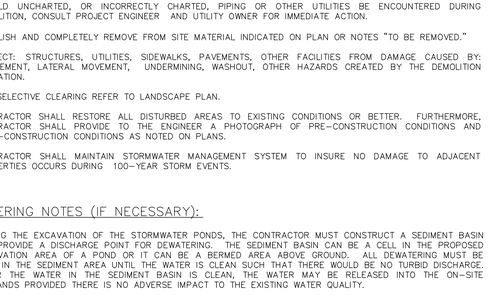
1. DURING THE EXCAVATION OF THE STORMWATER PONDS, THE CONTRACTOR MUST CONSTRUCT A SEDIMENT BASIN TO PROVIDE A DISCHARGE POINT FOR DEWATERING. THE SEDIMENT BASIN CAN BE A CELL IN THE PROPOSED EXCAVATION AREA OF A POND OR IT CAN BE A BERMED AREA ABOVE GROUND. ALL DEWATERING MUST BE HELD IN THE SEDIMENT AREA UNTIL THE WATER IS CLEAN SUCH THAT THERE WOULD BE NO TURBID DISCHARGE. AFTER THE WATER IN THE SEDIMENT BASIN IS CLEAN, THE WATER MAY BE RELEASED INTO THE ON-SITE WETLANDS PROVIDED THERE IS NO ADVERSE IMPACT TO THE EXISTING WATER QUALITY.
2. UNDER NO CIRCUMSTANCES WILL THE DISCHARGE FROM THE DEWATERING BE DIRECTLY INTO ON-SITE WETLANDS.
3. DURING EXCAVATION THE CONTRACTOR SHALL NOT PENETRATE THE EXISTING CLAY LAYER IF PRESENT. IF THE CONTRACTOR ENCOUNTERS THE CLAY LAYER, HE/SHE IS TO PLACE A MINIMUM OF 2 FEET OF SANDY MATERIAL OVER THE CLAY AND TERMINATE THE DEPTH OF THE EXCAVATION.
4. IF CONTRACTOR ENCOUNTERS SILTY/CLAY SAND, WHICH CAUSE THE WATER TO BECOME TURBID, HE/SHE SHALL TREAT THE SEDIMENT BASIN WITH A CHEMICAL ADDITIVE SUCH AS ALUM IN ORDER TO PROMOTE THE COAGULATION AND SETTLEMENT OF THE PARTICLES FOR THE WATER TO BECOME LESS TURBID. IF TURBID WATER IS ENCOUNTERED DURING EXCAVATION OF THE PONDS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY TO DETERMINE THE COURSE OFACTION THAT IS APPROPRIATE TO ELIMINATE THE TURBITY AND ALLOW DISCHARGE THAT MEETS AFTER QUALITY STANDARDS.
5. THE CONTRACTOR SHALL SEQUENCE THE EXCAVATION OF THE STORMWATER PONDS SUCH THAT A SEDIMENT BASIN WILL BE AVAILABLE AT ALL TIMES. THE SEDIMENT BASIN CAN BE RELOCATED AS NECESSARY TO ENSURE THE WATER WITHIN THE SEDIMENT BASIN BECOMES NON-TURBID AND ACCEPTABLE FOR DISCHARGE OFF-SITE.

BEST MANAGEMENT PRACTICES:

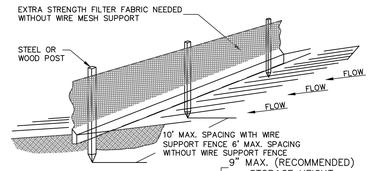
THIS PLAN HAS BEEN PREPARED TO ENSURE COMPLIANCE WITH APPROPRIATE CONDITIONS OF LOCAL, STATE, AND FEDERAL REGULATIONS. THE PLAN ADDRESSES THE FOLLOWING AREAS:

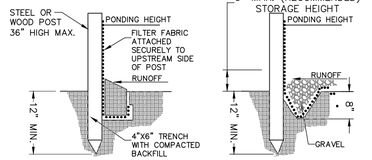
1. GENERAL EROSION CONTROL.
2. PROTECTION OF SURFACE WATER QUALITY DURING AND AFTER CONSTRUCTION.
3. CONTROL OF WIND EROSION.

THE VARIOUS TECHNIQUES OR ACTIONS IDENTIFIED UNDER EACH SECTION INDICATE THE APPROPRIATE SITUATION WHEN THE TECHNIQUES SHOULD BE EMPLOYED. IT SHOULD BE NOTED THAT THE MEASURES IDENTIFIED ON THIS PLAN ARE ONLY SUGGESTED BMP(S). THE CONTRACTOR SHALL PROVIDE POLLUTION PREVENTION AND EROSION CONTROL MEASURES AS SPECIFIED IN FDOT EROSION AND SEDIMENT CONTROL MANUAL AND AS NECESSARY FOR EACH SPECIFIC APPLICATION.



BARRIER FOR UNPAVED DITCHES

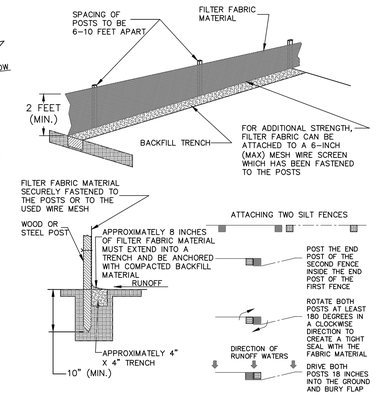




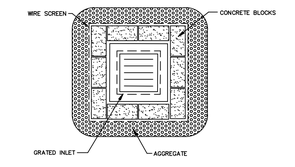
NOTE:

1. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY.
2. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.
3. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.

SILT FENCE DETAIL

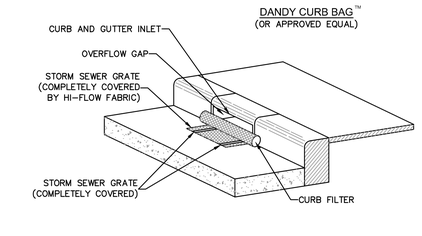


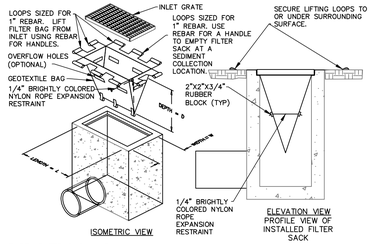
SILT FENCE INSTALLATION DETAIL

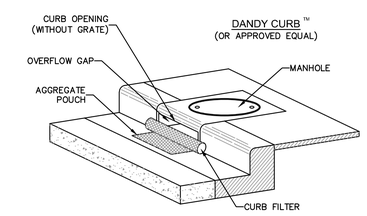


1. PLACE CONCRETE BLOCKS IN A SINGLE ROW AROUND PERIMETER OF INLET ON THEIR SIDES, WITH ENDS OF ADJACENT BLOCKS ABUTTING.
2. HEIGHT OF BARRIER VARIES. USE STACKS OF 4-INCH, 8-INCH, OR 12" BLOCKS. MIN. HEIGHT OF BARRIER 12" AND MAX. HEIGHT OF 24"
3. PLACE HARDWARE CLOTH/WIRE MESH W/ MAX. 1/2" OPENINGS OVER VERTICAL FACE OF CONCRETE BLOCKS.
4. THE AGGREGATE SHALL BE ANY NON-ERODIBLE MATERIAL SUCH AS LOOSE ROCK, BROKEN CONCRETE THAT WILL SLOW THE FLOW OF THE WATER AND ALLOW IT TO FILTER THROUGH AND OVER THE MATERIAL BEFORE ENTERING THE INLET.

BLOCK AND AGGREGATE INLET SEDIMENT DEVICE







CURB INLET SEDIMENT CONTROL

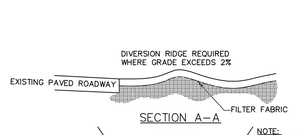
N.T.S

1. EMPTY FILTER SACK WHEN BRIGHTLY COLORED EXPANSION RESTRAINT CAN NO LONGER BE SEEN.
2. GEOTEXTILE WILL BE A WOVEN POLYPROPYLENE FABRIC THAT MEETS OR EXCEEDS REQUIREMENTS IN THE SPECIFICATIONS TABLE.
3. AN OIL ADSORBENT PAD OR PILLOW CAN BE PURCHASED WHEN OIL SPILLS ARE A CONCERN.
4. INSPECT PER REGULATORY REQUIREMENTS.
5. THE WIDTH, "W", OF THE FILTER SACK WILL MATCH THE INSIDE WIDTH OF THE GRATED INLET BOX.
6. THE DEPTH, "D", OF THE FILTER SACK WILL BE BETWEEN 18 INCHES AND 36 INCHES.
7. THE LENGTH, "L", OF THE FILTER SACK WILL MATCH THE INSIDE LENGTH OF THE GRATED INLET BOX.

LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	120 LBS
MULLEN BURST	ASTM D-3786	800 PSI
TRAPEZOID TEAR	ASTM D-4533	120 LBS
UV RESISTANCE	ASTM D-4355	80 %
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	0.55 SEC $^{-1}$
MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS
GRAB TENSILE ELONGATION	ASTM D-4632	20 %
PUNCTURE	ASTM D-4833	135 LBS
MULLEN BURST	ASTM D-3786	420 PSI
TRAPEZOID TEAR	ASTM D-4533	45 LBS
UV RESISTANCE	ASTM D-4355	90 %
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL/MIN/SQ FT
PERMITTIVITY	ASTM D-4491	1.5 SEC $^{-1}$

FILTER SACKS (GRATED INLETS)

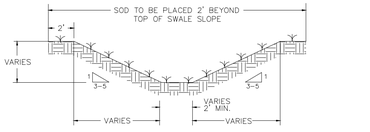
DO NOT USE ON ROADWAYS WHERE PONDING MAY CAUSE TRAFFIC HAZARDS.



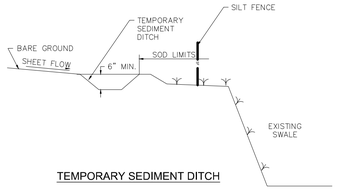
NOTES:

1. THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION THAT WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE TOP DRESSING, REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.
2. WHEN NECESSARY, WHEELS SHALL BE CLEANED PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.
3. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

TEMPORARY GRAVEL CONSTRUCTION ENTRANCE



TYPICAL SWALE SECTION



TEMPORARY SEDIMENT DITCH

ENGINEER
KIMLEY-HORN AND ASSOCIATES, INC.

JASON A. LEWIS, P.E. 62572
116 S KENTUCKY AVENUE
LAKELAND, FL 33801

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PHONE: 863-701-8702
WWW.KIMLEY-HORN.COM CA 00000696

Jason A. Lewis, P.E.
FL License #62572

KHA PROJECT 046265017
DATE OCT 2020
SCALE AS SHOWN
DESIGNED BY ---
DRAWN BY ---
CHECKED BY ---

DEMOLITION AND EROSION CONTROL DETAILS

PROJECT SUNSHINE

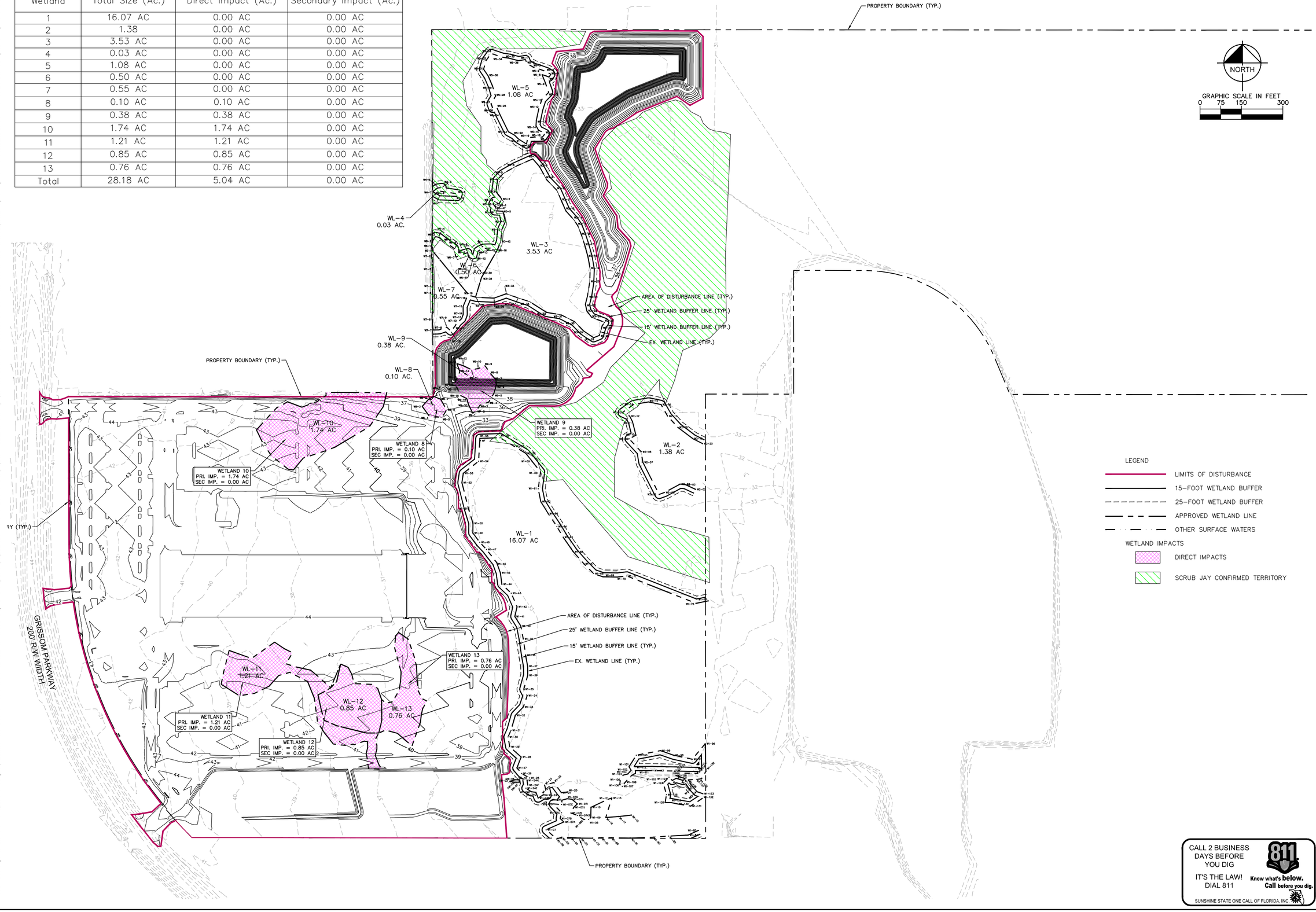
PREPARED FOR
SEEFRIED PROPERTIES

CITY OF COCOA FLORIDA

SHEET NUMBER
C401

Plotted By:Reum, Briana Sheet Set:DWG\COCOA Layout:C401 DEMOLITION AND EROSION CONTROL DETAILS December 02, 2020 08:39:41pm K:\Ve_civil\046265017 - 2nd\8 sscox\CADD\CONSTR\C400 DEMOLITION AND EROSION CONTROL PLAN.dwg
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WETLAND IMPACT TABLE			
Wetland	Total Size (Ac.)	Direct Impact (Ac.)	Secondary Impact (Ac.)
1	16.07 AC	0.00 AC	0.00 AC
2	1.38	0.00 AC	0.00 AC
3	3.53 AC	0.00 AC	0.00 AC
4	0.03 AC	0.00 AC	0.00 AC
5	1.08 AC	0.00 AC	0.00 AC
6	0.50 AC	0.00 AC	0.00 AC
7	0.55 AC	0.00 AC	0.00 AC
8	0.10 AC	0.10 AC	0.00 AC
9	0.38 AC	0.38 AC	0.00 AC
10	1.74 AC	1.74 AC	0.00 AC
11	1.21 AC	1.21 AC	0.00 AC
12	0.85 AC	0.85 AC	0.00 AC
13	0.76 AC	0.76 AC	0.00 AC
Total	28.18 AC	5.04 AC	0.00 AC



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LICENSED PROFESSIONAL
Jason A. Lewis, P.E.
FL License #62572

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DATE OCT 2020
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DESIGNED BY JAL
DRAWN BY MW
CHECKED BY JAL

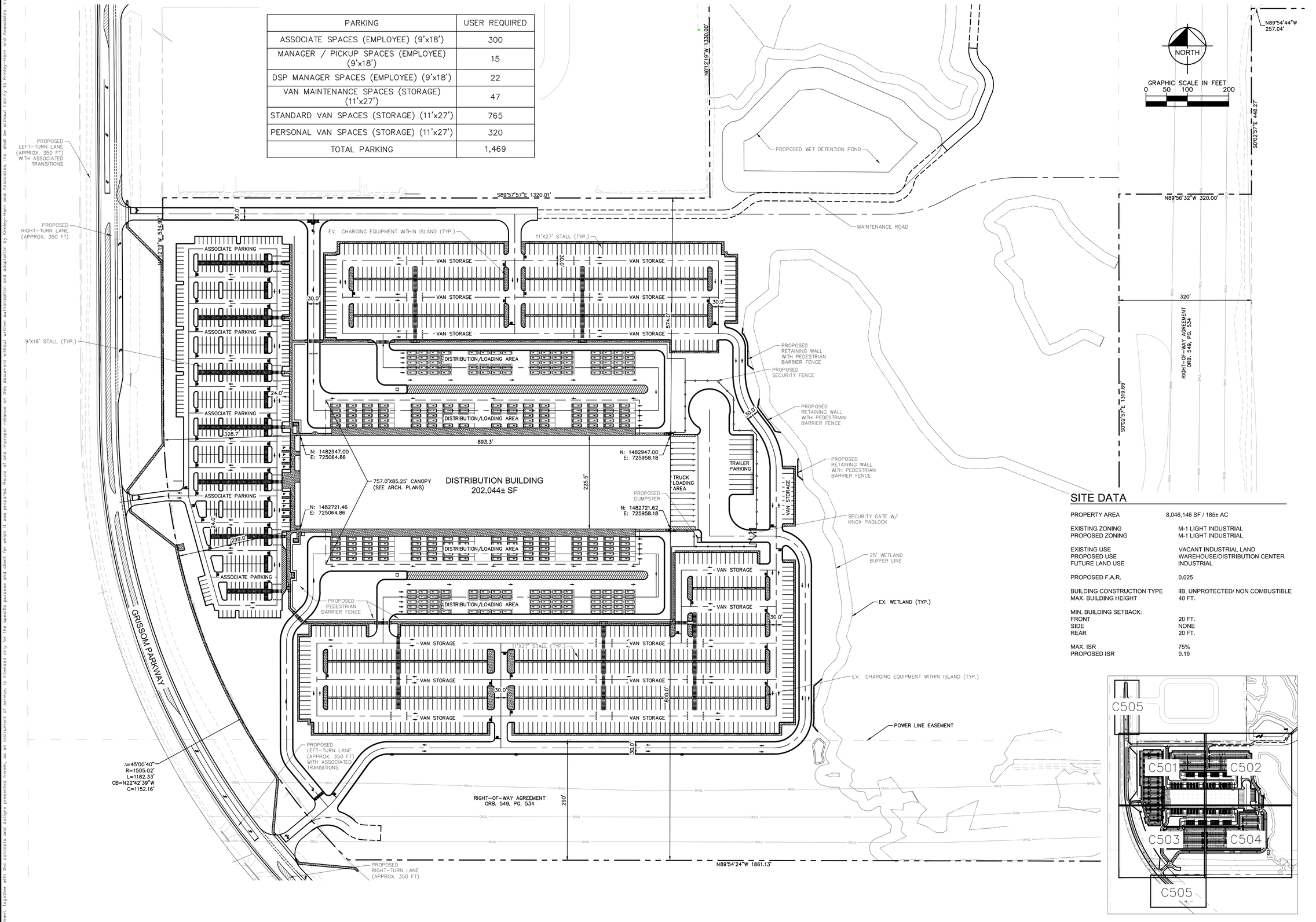
WETLAND IMPACTS

PROJECT SUNSHINE
PREPARED FOR
SEEFRIED PROPERTIES
CITY OF COCOA FLORIDA

SHEET NUMBER
C402

Plotted By:Reum, Briono Sheet Set:DM08 COCOA Layout:C402 WETLAND IMPACTS December 02, 2020 08:39:52pm K:\Ok_civil\046265017 - dm08 cocoa\CADD\CONSTR\C402 WETLAND IMPACTS MAP.dwg
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PARKING	USER REQUIRED
ASSOCIATE SPACES (EMPLOYEE) (9'x18')	300
MANAGER / PICKUP SPACES (EMPLOYEE) (9'x18')	15
DSP MANAGER SPACES (EMPLOYEE) (9'x18')	22
VAN MAINTENANCE SPACES (STORAGE) (11'x27')	47
STANDARD VAN SPACES (STORAGE) (11'x27')	765
PERSONAL VAN SPACES (STORAGE) (11'x27')	320
TOTAL PARKING	1,469



SITE DATA

PROPERTY AREA	8,046,146 SF / 185± AC
EXISTING ZONING	M-1 LIGHT INDUSTRIAL
PROPOSED ZONING	M-1 LIGHT INDUSTRIAL
EXISTING USE	VACANT INDUSTRIAL LAND
PROPOSED USE	WAREHOUSE/DISTRIBUTION CENTER
FUTURE LAND USE	INDUSTRIAL
PROPOSED F.A.R.	0.025
BUILDING CONSTRUCTION TYPE	IIB, UNPROTECTED/ NON COMBUSTIBLE
MAX. BUILDING HEIGHT	40 FT.
MIN. BUILDING SETBACK:	
FRONT	20 FT.
SIDE	NONE
REAR	20 FT.
MAX. ISR	75%
PROPOSED ISR	0.19

KEY MAP
SCALE: 1"=500'

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MASTER SITE PLAN

PROJECT SUNSHINE

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SEEFRIED PROPERTIES

CITY OF COCOA FLORIDA

SHEET NUMBER
C500

Plotted By: Reum, Briana Sheet Set: DMS COCOA Layout: C500 MASTER SITE PLAN December 02, 2020 08:40:35am K:\Vde_civil\046265017 - dms8 cocoa\CAD\CONSTR\C500 MASTER SITE PLAN.dwg
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Plotted By:Raun, Briona Sheet Set:DWOB COCOA Layout:C501 SITE HORIZONTAL CONTROL PLAN.dwg December 02, 2020 08:40:53pm K:\Vab_civil\046265017 - dmsB cocoa\CAD\CONSTR\C501 SITE HORIZONTAL CONTROL PLAN.dwg
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MATCHLINE - SEE SHEET C505

MATCHLINE - SEE SHEET C503

MATCHLINE - SEE SHEET C502

NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

SITE PLAN NOTES:

1. CONTRACTOR'S REGISTERED LAND SURVEYOR SHALL REPLACE SURVEY MONUMENTS OR BENCHMARKS, WHICH HAVE TO BE DISTURBED BY THIS WORK, UPON COMPLETION OF WORK.
2. HANDICAP PARKING SPACES SHALL BE MARKED BY THE INTERNATIONAL HANDICAP SYMBOL AND EACH SPACE SHALL BE PROVIDED WITH A SIGN STATING "PARKING BY DISABLED PERMIT ONLY". ALL HANDICAP ACCESS POINTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH APPLICABLE HANDICAP CODES.
3. ALL CONSTRUCTION SHALL CONFORM TO THE SPECIFICATIONS AND STANDARDS OF THE CITY OF COCOA AND BREVARD COUNTY.
4. PRIOR TO STARTING CONSTRUCTION, THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION OF ANY ITEM SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED ALL PLANS AND ANY OTHER DOCUMENTATION FROM ALL OF THE PERMITTING AND ANY OTHER REGULATORY AUTHORITIES.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS AND/OR EASEMENTS BEFORE BEGINNING CONSTRUCTION.
6. ALL PARKING LOT DIMENSIONS ARE TO THE FACE OF THE CURB AND/OR CENTER OF STRIPING (EXCEPT WHERE SHOWN).
7. ALL BUILDING DIMENSIONS ARE TO THE FACE OF THE BUILDING.
8. PARKING STALLS TO BE MARKED WITH WHITE PAINT.
9. LIGHTING TO BE NON-GLARE AND AVOID SPILLAGE INTO ADJACENT PROPERTY.
10. MAINTENANCE OF TRAFFIC (MOT) SET UP MUST BE SUPERVISED BY A CERTIFIED PERSON. MOT SHALL BE PER FDOT STANDARD PLANS #102-600, #102-613, AND #102-616.
11. AS-BUILT PLANS ARE REQUIRED FROM CONTRACTOR AT TIME OF COMPLETION.
12. REMOVAL OF EXISTING CURB AND SIDEWALK TO THE NEAREST JOINT.
13. FOR ALL SIDEWALKS THE MAXIMUM CROSS SLOPE IS 2.0% AND THE MAXIMUM LONGITUDINAL SLOPE IS 5.0%.
14. ALL CURB RAMPS SHALL BE PER FDOT STANDARD PLANS 522-002 AND PER FLORIDA BUILDING CODE SECTION 11-4.7. TRUNCATED DOMES SHALL BE INSTALLED ON ALL CURB RAMPS.
15. UNLESS OTHERWISE NOTED ALL THE SIGNING AND PAVEMENT MARKINGS SHALL BE PROVIDED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), FDOT DESIGN STANDARDS, AND THE CITY OF COCOA STANDARDS.
16. ALL BEARINGS SHOWN HEREON ARE ASSUMED BASED ON STATE PLANE FLORIDA EAST (NAD83) COORDINATES.
17. GATES ARE FOR SECURITY PURPOSE AND WILL REMAIN OPEN DURING OPERATIONAL BUSINESS HOURS.
18. RIBBON CURB SHALL BE PROVIDED BETWEEN PERVIOUS PAVEMENT AND ASPHALT PAVEMENT.
19. ALL PROPOSED PAVEMENT MARKINGS WITHIN RIGHT-OF-WAY TO BE THERMOPLASTIC PER SECTION 711 OF THE LATEST EDITION OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

LEGEND:

- PROPERTY LINE/RIGHT OF WAY LINE
- PROPOSED FENCE
- (1) CURB RAMP PER FDOT 522-002 (CR-X)
- (2) TYPE 'D' CURB PER FDOT INDEX 300
- (3) 8' CROSSWALK
- (4) 2' WHITE STOP BAR & R1-1 SIGN
- (5) HANDICAP SIGN. SEE DETAIL THIS SHEET.
- (6) 8' CROSSWALK W/ PEDESTRIAN CROSSING "YIELD" SIGN (R1-5L)
- (7) RIGHT TURN ONLY SIGN (R3-5R)
- (8) DO NOT ENTER SIGN (R5-1)
- (9) TYPE 'F' CURB PER FDOT INDEX 300
- (10) 5' SIDEWALK
- (11) SPEED BUMP (SEE ARCH PLANS)
- (12) 4' WIDE CONCRETE PAD FOR EV READINESS
- (13) 12" RIBBON CURB
- (14) CONCRETE ELECTRIC VEHICLE CHARGING EQUIPMENT
- (XX) PARKING COUNT – ASSOCIATE
- (XX) PARKING COUNT – PERSONAL VEHICLE/VAN
- (XX) PARKING COUNT – VAN PARKING
- XX PARKING COUNT – TRAILER TRUCK

SIGN LEGEND

R1-1 STOP SIGN; R1-5bL STOP SIGN; HANDICAP PARKING SIGN; R3-5R RIGHT TURN ONLY SIGN; R5-1 DO NOT ENTER SIGN

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Jason A. Lewis, P.E.
FL License #62572

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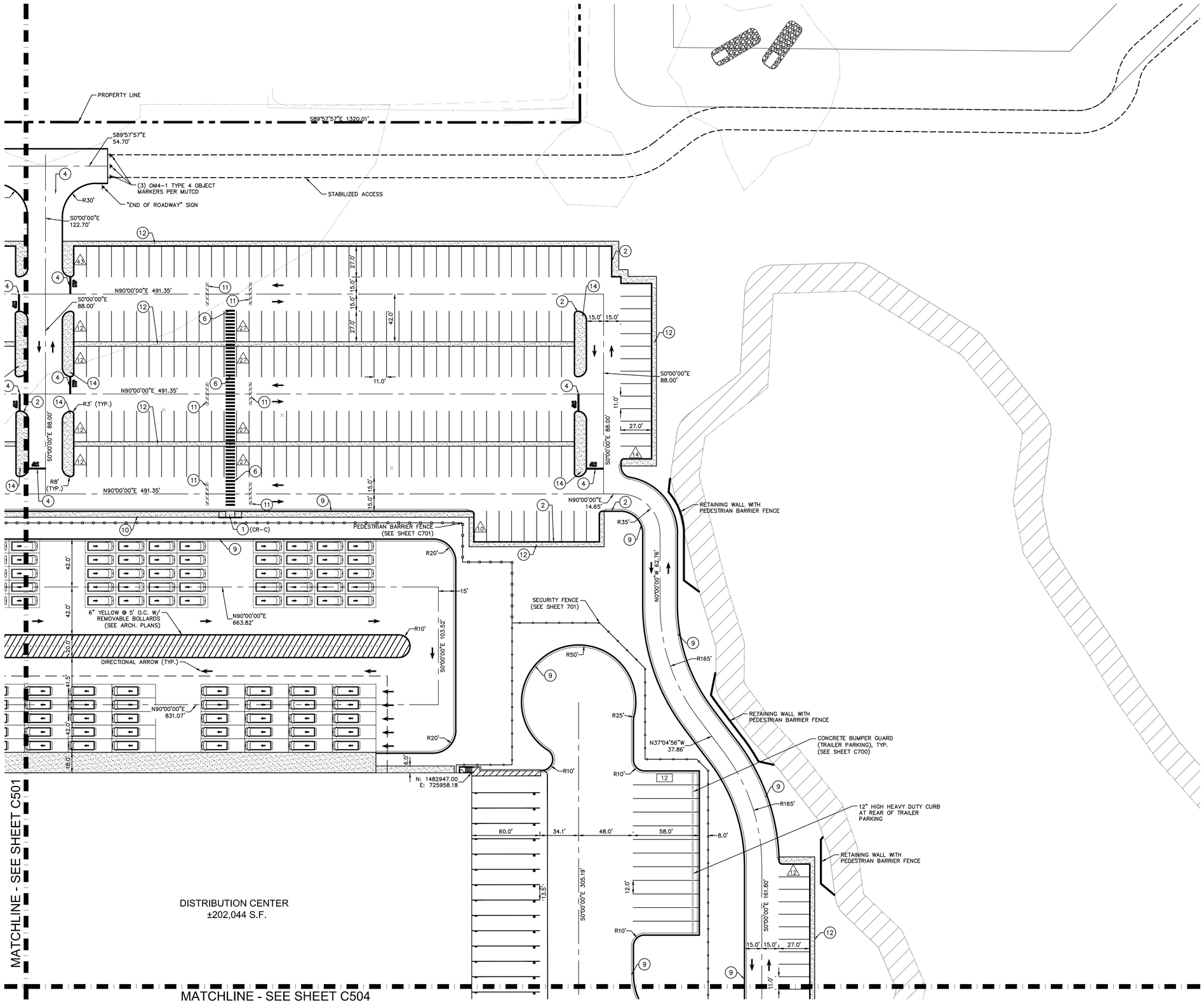
SITE HORIZONTAL CONTROL PLAN

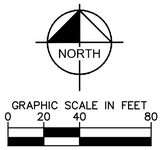
PROJECT SUNSHINE

PREPARED FOR
SEEFRIED PROPERTIES

CITY OF COCOA FLORIDA

SHEET NUMBER
C501





GRAPHIC SCALE IN FEET
0 20 40 80

SITE PLAN NOTES:

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12. REMOVAL OF EXISTING CURB AND SIDEWALK TO THE NEAREST JOINT.
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14. ALL CURB RAMPS SHALL BE PER FDOT STANDARD PLANS 522-002 AND PER FLORIDA BUILDING CODE SECTION 11-4.7. TRUNCATED DOMES SHALL BE INSTALLED ON ALL CURB RAMPS.
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- PROPOSED FENCE
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- (4) 2' WHITE STOP BAR & R1-1 SIGN
- (5) HANDICAP SIGN. SEE DETAIL THIS SHEET.
- (6) 8' CROSSWALK W/ PEDESTRIAN CROSSING "YIELD" SIGN (R1-5L)
- (7) RIGHT TURN ONLY SIGN (R3-5R)
- (8) DO NOT ENTER SIGN (R5-1)
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- (11) SPEED BUMP (SEE ARCH PLANS)
- (12) 4' WIDE CONCRETE PAD FOR EV READINESS
- (13) 12" RIBBON CURB
- (14) CONCRETE ELECTRIC VEHICLE CHARGING EQUIPMENT
- ◇ XX — PARKING COUNT – ASSOCIATE
- (XX) — PARKING COUNT – PERSONAL VEHICLE/VAN
- △ XX — PARKING COUNT – VAN PARKING
- XX — PARKING COUNT – TRAILER TRUCK

SIGN LEGEND



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DRAWN BY ____
CHECKED BY ____

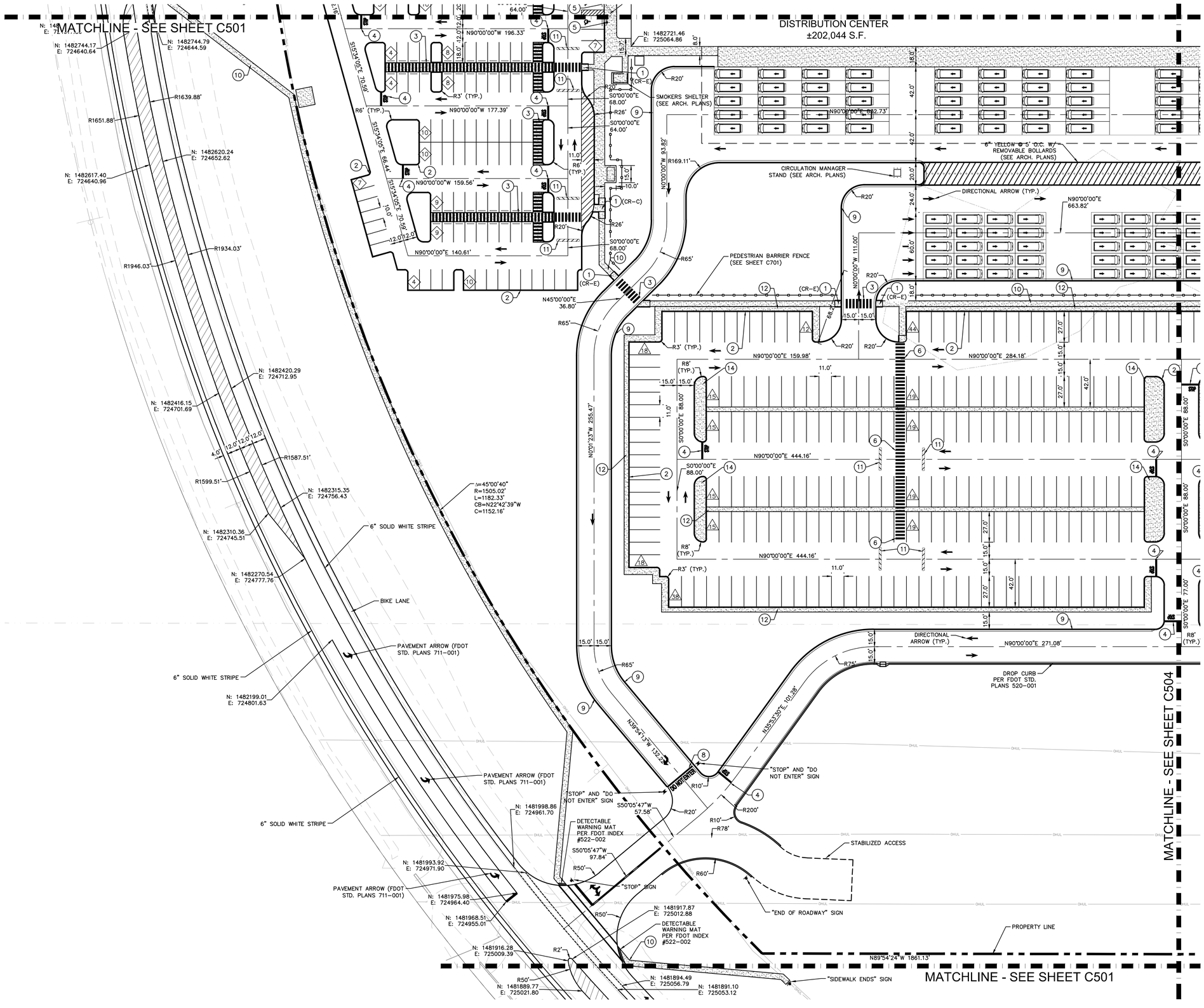
SITE HORIZONTAL CONTROL PLAN

PROJECT SUNSHINE
PREPARED FOR
SEEFRIED PROPERTIES
CITY OF COCOA FLORIDA

SHEET NUMBER
C502

Plotted By:Raum, Briona Sheet Set:DMC8 COCOA Layout:C502 SITE HORIZONTAL CONTROL PLAN December 02, 2020 08:41:02pm K:\Vde_civil\046265017 - dmc8 cocoa\CAD\CONSTR\C502 SITE HORIZONTAL CONTROL PLAN.dwg
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Plotted By:Reum, Briona Sheet Set:DMOB COCOA Layout:C503 SITE HORIZONTAL CONTROL PLAN December 02, 2020 08:41:10pm K:\tas-civil\046265017 - dmoB cocoa\CADD\CONSTRUCTION\C503 SITE HORIZONTAL CONTROL PLAN.dwg
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NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

SITE PLAN NOTES:

1. CONTRACTOR'S REGISTERED LAND SURVEYOR SHALL REPLACE SURVEY MONUMENTS OR BENCHMARKS, WHICH HAVE TO BE DISTURBED BY THIS WORK, UPON COMPLETION OF WORK.
2. HANDICAP PARKING SPACES SHALL BE MARKED BY THE INTERNATIONAL HANDICAP SYMBOL AND EACH SPACE SHALL BE PROVIDED WITH A SIGN STATING "PARKING BY DISABLED PERMIT ONLY". ALL HANDICAP ACCESS POINTS SHALL BE CONSTRUCTED IN ACCORDANCE WITH APPLICABLE HANDICAP CODES.
3. ALL CONSTRUCTION SHALL CONFORM TO THE SPECIFICATIONS AND STANDARDS OF THE CITY OF COCOA AND BREVARD COUNTY.
4. PRIOR TO STARTING CONSTRUCTION, THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION OR FABRICATION OF ANY ITEM SHALL BEGIN UNTIL THE CONTRACTOR HAS RECEIVED ALL PLANS AND ANY OTHER DOCUMENTATION FROM ALL OF THE PERMITTING AND ANY OTHER REGULATORY AUTHORITIES.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL SETBACKS AND/OR EASEMENTS BEFORE BEGINNING CONSTRUCTION.
6. ALL PARKING LOT DIMENSIONS ARE TO THE FACE OF THE CURB AND/OR CENTER OF STRIPING (EXCEPT WHERE SHOWN).
7. ALL BUILDING DIMENSIONS ARE TO THE FACE OF THE BUILDING.
8. PARKING STALLS TO BE MARKED WITH WHITE PAINT.
9. LIGHTING TO BE NON-GLARE AND AVOID SPILLAGE INTO ADJACENT PROPERTY.
10. MAINTENANCE OF TRAFFIC (MOT) SET UP MUST BE SUPERVISED BY A CERTIFIED PERSON. MOT SHALL BE PER FDOT STANDARD PLANS #102-600, #102-613, AND #102-616.
11. AS-BUILT PLANS ARE REQUIRED FROM CONTRACTOR AT TIME OF COMPLETION.
12. REMOVAL OF EXISTING CURB AND SIDEWALK TO THE NEAREST JOINT.
13. FOR ALL SIDEWALKS THE MAXIMUM CROSS SLOPE IS 2.0% AND THE MAXIMUM LONGITUDINAL SLOPE IS 5.0%.
14. ALL CURB RAMPS SHALL BE PER FDOT STANDARD PLANS 522-002 AND PER FLORIDA BUILDING CODE SECTION 11-4.7. TRUNCATED DOMES SHALL BE INSTALLED ON ALL CURB RAMPS.
15. UNLESS OTHERWISE NOTED ALL THE SIGNING AND PAVEMENT MARKINGS SHALL BE PROVIDED IN ACCORDANCE WITH THE LATEST EDITIONS OF THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), FDOT DESIGN STANDARDS, AND THE CITY OF COCOA STANDARDS.
16. ALL BEARINGS SHOWN HEREON ARE ASSUMED BASED ON STATE PLANE FLORIDA EAST (NAD83) COORDINATES.
17. GATES ARE FOR SECURITY PURPOSE AND WILL REMAIN OPEN DURING OPERATIONAL BUSINESS HOURS.
18. RIBBON CURB SHALL BE PROVIDED BETWEEN PERVIOUS PAVEMENT AND ASPHALT PAVEMENT.
19. ALL PROPOSED PAVEMENT MARKINGS WITHIN RIGHT-OF-WAY TO BE THERMOPLASTIC PER SECTION 711 OF THE LATEST EDITION OF THE FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION.

LEGEND:

- PROPERTY LINE/RIGHT OF WAY LINE
- PROPOSED FENCE
- (1) CURB RAMP PER FDOT 522-002 (CR-X)
- (2) TYPE 'D' CURB PER FDOT INDEX 300
- (3) 8' CROSSWALK
- (4) 2' WHITE STOP BAR & R1-1 SIGN
- (5) HANDICAP SIGN. SEE DETAIL THIS SHEET.
- (6) 8' CROSSWALK W/ PEDESTRIAN CROSSING "YIELD" SIGN (R1-5L)
- (7) RIGHT TURN ONLY SIGN (R3-5R)
- (8) DO NOT ENTER SIGN (R5-1)
- (9) TYPE 'F' CURB PER FDOT INDEX 300
- (10) 5' SIDEWALK
- (11) SPEED BUMP (SEE ARCH PLANS)
- (12) 4' WIDE CONCRETE PAD FOR EV READINESS
- (13) 12" RIBBON CURB
- (14) CONCRETE ELECTRIC VEHICLE CHARGING EQUIPMENT
- XX PARKING COUNT – ASSOCIATE
- XX PARKING COUNT – PERSONAL VEHICLE/VAN
- XX PARKING COUNT – VAN PARKING
- XX PARKING COUNT – TRAILER TRUCK

SIGN LEGEND

R1-1 STOP SIGN
R1-5bL STOP SIGN
HANDICAP PARKING SIGN
R3-5R RIGHT TURN ONLY SIGN
R5-1 DO NOT ENTER SIGN

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No.	REVISIONS	DATE	BY

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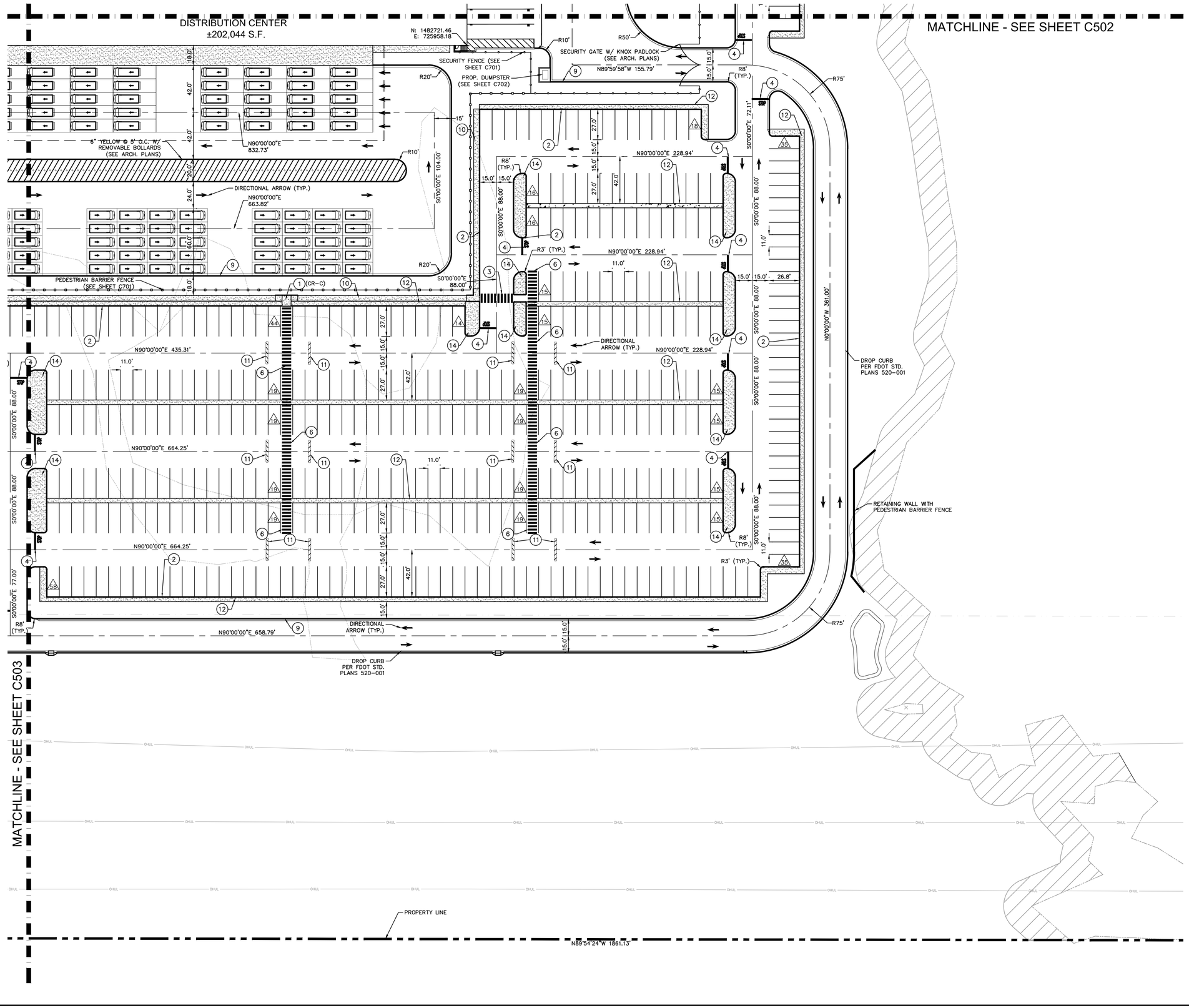
Jason A. Lewis, P.E.
FL License #62572

KHA PROJECT 046265017
DATE OCT 2020
SCALE AS SHOWN
DESIGNED BY ---
DRAWN BY ---
CHECKED BY ---

SITE HORIZONTAL CONTROL PLAN

PROJECT SUNSHINE
PREPARED FOR
SEEFRIED PROPERTIES
CITY OF COCOA FLORIDA

SHEET NUMBER
C503



SITE PLAN NOTES:

1. CONTRACTOR'S REGISTERED LAND SURVEYOR SHALL REPLACE SURVEY MONUMENTS OR BENCHMARKS, WHICH HAVE TO BE DISTURBED BY THIS WORK, UPON COMPLETION OF WORK.
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R1-5bL STOP SIGN

HANDICAP PARKING SIGN

R3-5R RIGHT TURN ONLY SIGN

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SUNSHINE STATE ONE CALL OF FLORIDA, INC.

NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

No.	REVISIONS	DATE	BY

Kimley»Horn

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Jason A. Lewis, P.E.
FL License #62572

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DATE OCT 2020
SCALE AS SHOWN
DESIGNED BY ---
DRAWN BY ---
CHECKED BY ---

SITE HORIZONTAL CONTROL PLAN

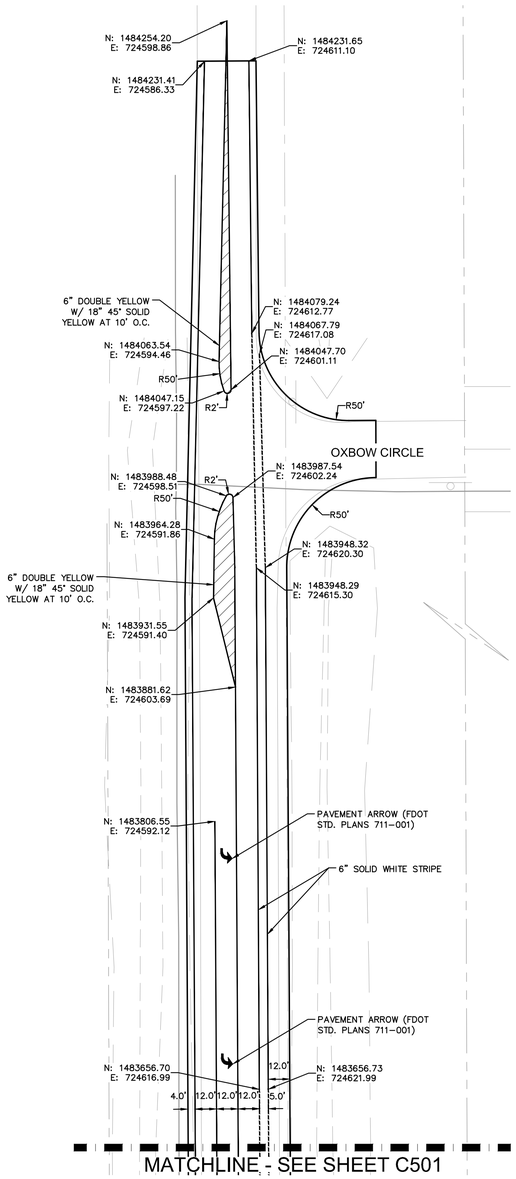
PROJECT SUNSHINE

PREPARED FOR
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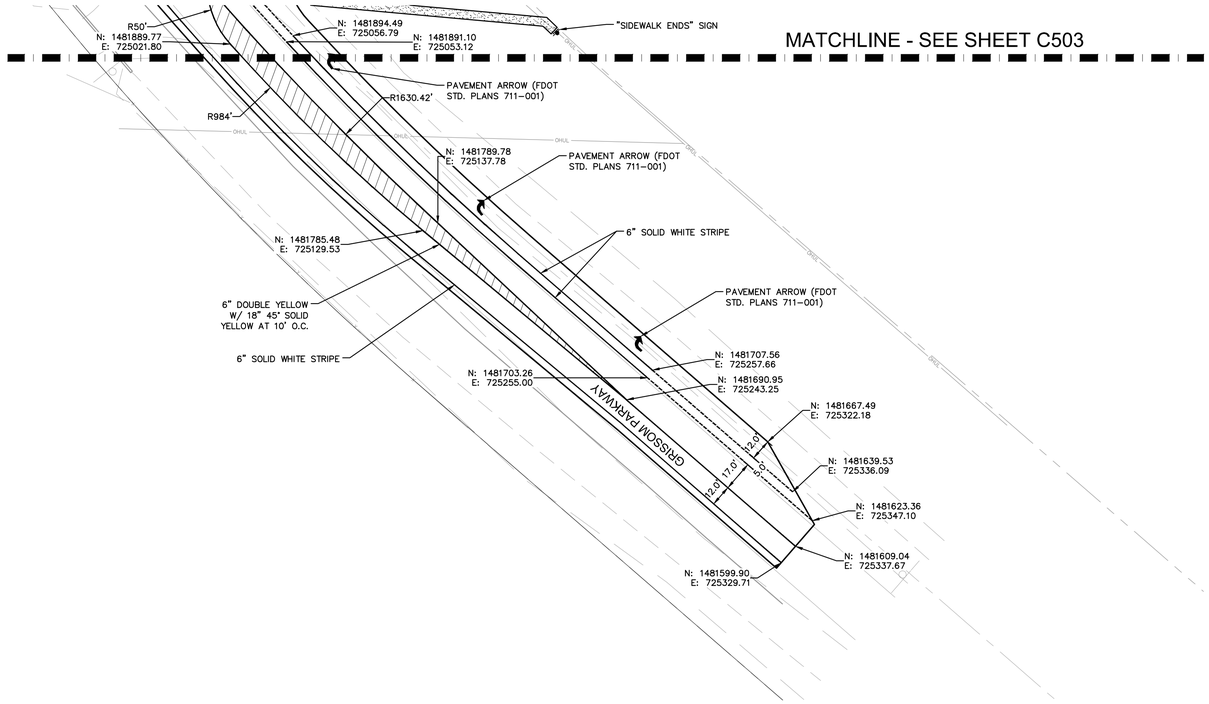
CITY OF COCOA FLORIDA

SHEET NUMBER
C504

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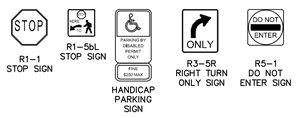
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XX	PARKING COUNT - ASSOCIATE
XX	PARKING COUNT - PERSONAL VEHICLE/VAN
XX	PARKING COUNT - VAN PARKING
XX	PARKING COUNT - TRAILER TRUCK

SIGN LEGEND



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811 Know what's below. Call before you dig.

SUNSHINE STATE ONE CALL OF FLORIDA, INC.

No.	REVISIONS	DATE	BY

Kimley»Horn
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116 SOUTH KENTUCKY AVENUE, LAKELAND, FL 33801
PHONE: 863-701-8702
WWW.KIMLEY-HORN.COM CA 00000696

Jason A. Lewis, P.E.
FL License #62572

KHA PROJECT 046265017
DATE OCT 2020
SCALE AS SHOWN
DESIGNED BY JAL
DRAWN BY MW
CHECKED BY JAL

SITE HORIZONTAL CONTROL PLAN

PROJECT SUNSHINE

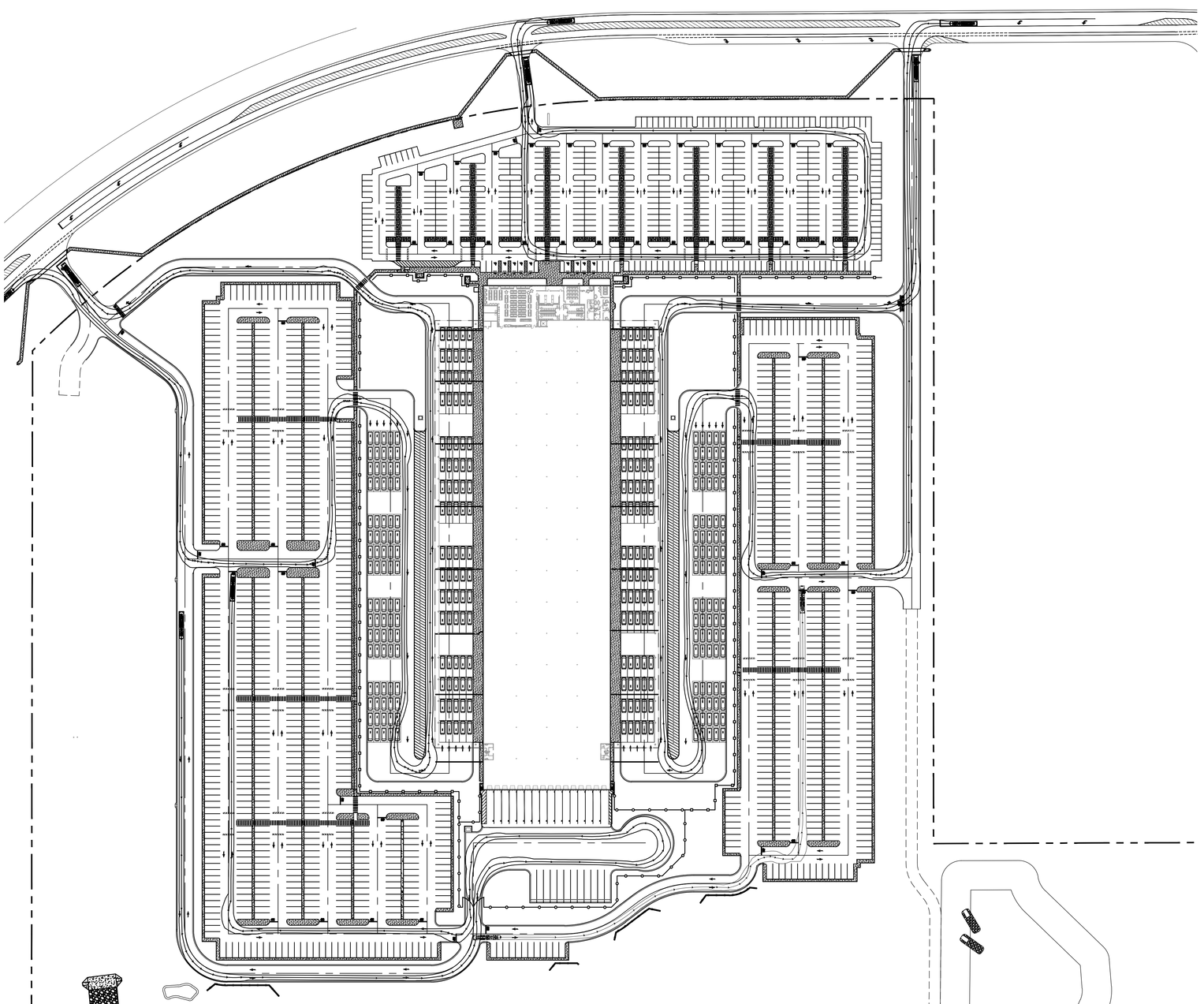
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SEEFRIED PROPERTIES

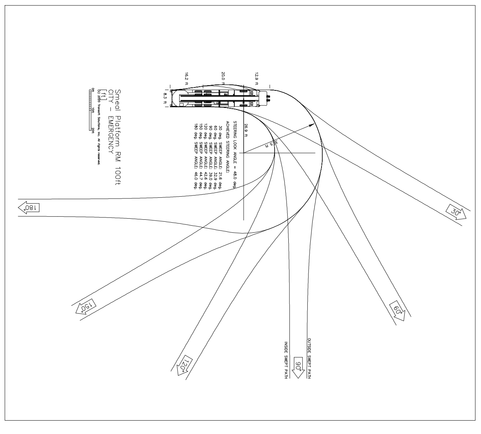
CITY OF COCOA FLORIDA

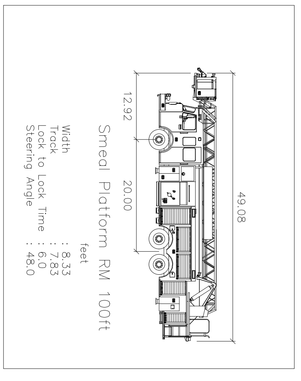
SHEET NUMBER
C505

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SHEET NUMBER C506

PROJECT SUNSHINE

PREPARED FOR

SEEFRIED PROPERTIES

CITY OF COCOA FLORIDA

AUTOTURN ANALYSIS

KHA PROJECT	046265017
DATE	OCT 2020
SCALE	AS SHOWN
DESIGNED BY	JAL
DRAWN BY	MW
CHECKED BY	JAL

Jason A. Lopez, P.E.
FL License #62372

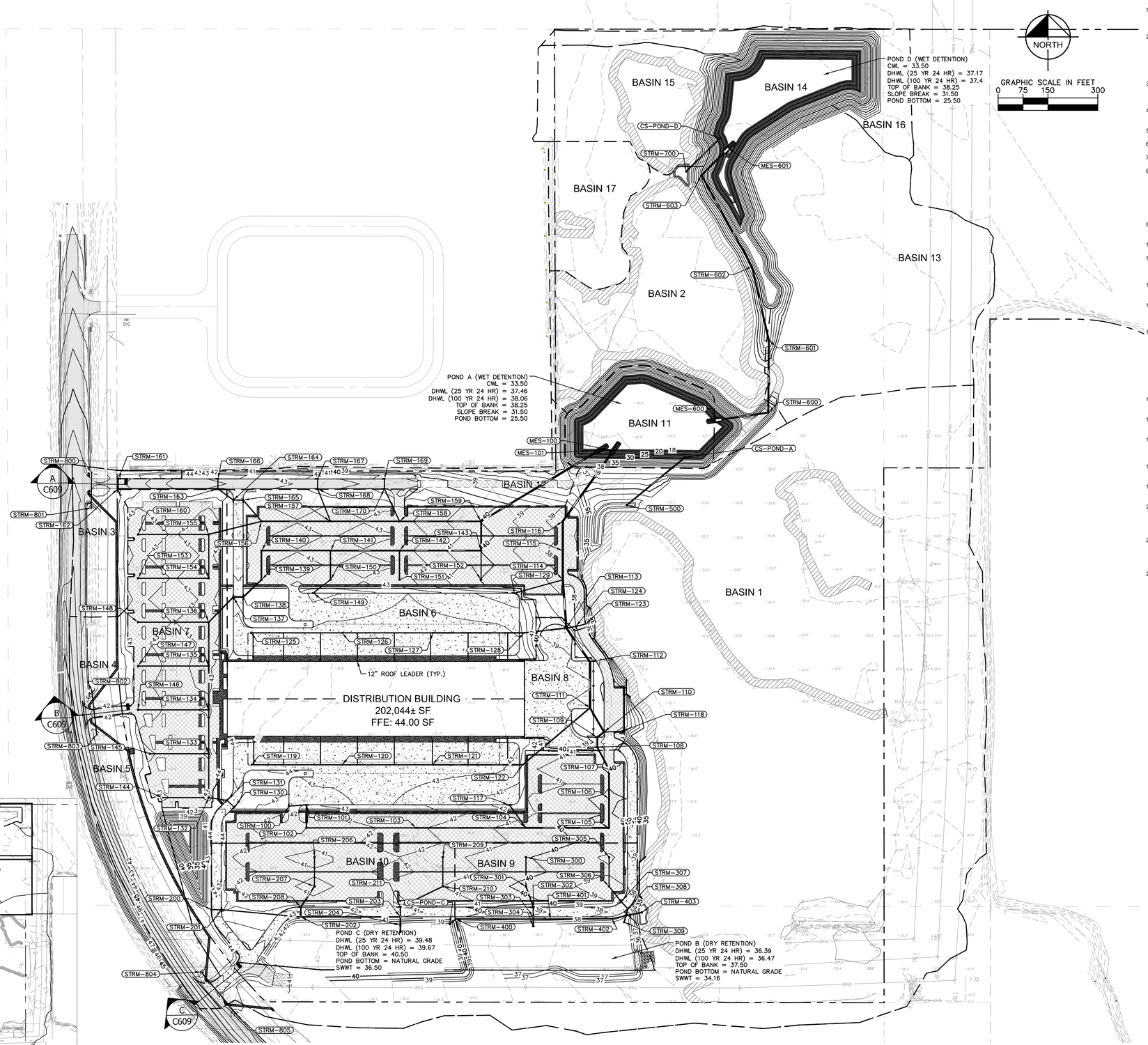
Kimley»Horn

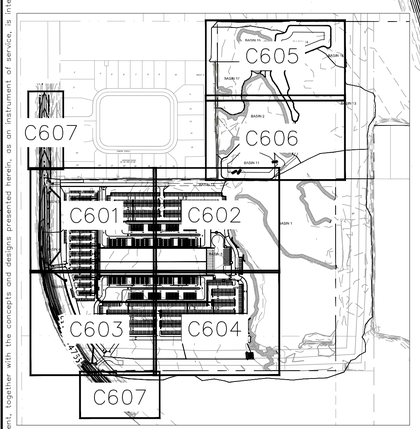
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PHONE: 863-701-8702
WWW.KIMLEY-HORN.COM CA 00000696

No.	REVISIONS	DATE	BY

Plotted By:Reum, Brianp Sheet Set:DM08 COCOA Layout:C600 MASTER PAVING GRADING AND DRAINAGE PLAN December 02, 2020 08:43:30pm K:\Orl\ civil\046265017 – dmn8 cocoa\CADD\CONSTR\C600 MASTER PAVING GRADING AND DRAINAGE PLAN.dwg
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KEY MAP
SCALE: 1"=600'

NOTES:

1. CONTRACTOR SHALL INSTALL TURBIDITY BARRIERS PRIOR TO COMMENCEMENT OF CONSTRUCTION. CONTRACTOR IS RESPONSIBLE FOR THE MAINTENANCE AND INSPECTION OF SAID TURBIDITY BARRIERS TO ENSURE THEIR PROPER FUNCTION.
2. THE DETENTION/RETENTION PONDS SHALL BE THE FIRST ITEM CONSTRUCTED BEFORE THE BALANCE OF THE SITE IS CLEARED AND BEFORE ANY OF THE PROPOSED CONSTRUCTION BEGINS. SIDE SLOPES FOR THE DETENTION/RETENTION PONDS AND THE AREA ALONG THE BACK SIDE OF THE RETENTION/DETENTION AREA INCLUDING THE CONVEYANCE SWALES SHOULD BE IMMEDIATELY SODDED UPON COMPLETION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL LANDSCAPE BUFFERS AND RETENTION AND DETENTION FACILITIES UNTIL THE WORK HAS BEEN ACCEPTED BY THE OWNER. ALL DISTURBED AREAS SHALL BE RETURNED TO THEIR ORIGINAL CONDITION.
4. AS-BUILTS SHALL BE PREPARED, SIGNED, SEALED AND DATED BY A REGISTERED LAND SURVEYOR AND SUBMITTED TO THE ENGINEER OF RECORD.
5. AS-BUILTS SHALL INDICATE ANY DEPARTURES FROM THE APPROVED PLANS DURING CONSTRUCTION.
6. THE HIGHEST GROUNDWATER WITHIN THE ROADWAY SHALL BE AT LEAST 12" BELOW THE CONCRETE BASE.
7. GOVERNING SPECIFICATIONS: STATE OF FLORIDA, DEPARTMENT OF TRANSPORTATION DESIGN STANDARD SPECIFICATIONS, LATEST EDITION.
8. CONSTRUCTION DETAILS SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF F.D.O.T. "DESIGN STANDARDS FOR DESIGN, CONSTRUCTION, MAINTENANCE, AND UTILITY OPERATIONS ON THE STATE HIGHWAY SYSTEM" IS REFERRED TO FOR THE STRUCTURAL DESIGN OF DRAINAGE STRUCTURES SPECIFIED IN THESE PLANS, AS REFERENCED BY STANDARD INDEX. ALL SPECIALTY DRAINAGE STRUCTURES REQUIRE SEPARATE STRUCTURAL DESIGN, WHICH IS NOT INCLUDED IN THESE PLANS.
9. CONTRACTOR SHALL RESTORE DAMAGED IMPROVEMENTS TO THEIR ORIGINAL CONDITION, AS ACCEPTABLE TO PARTIES HAVING JURISDICTION.
10. CONTRACTOR SHALL TRIM, TACK AND MATCH EXISTING PAVEMENT AT LOCATIONS WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT.
11. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL PRECAST AND MANUFACTURED ITEMS TO THE OWNER'S ENGINEER FOR APPROVAL. FAILURE TO OBTAIN APPROVAL BEFORE INSTALLATION MAY RESULT IN REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
12. THE CONTRACTOR IS TO USE CAUTION WHEN WORKING IN OR AROUND AREAS OF OVERHEAD TRANSMISSION LINES OR UNDERGROUND UTILITIES.
13. CONTRACTOR SHALL PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT AND OTHER HAZARDS CREATED BY THE DEMOLITION OPERATION.
14. THE CONTRACTOR SHALL NOT EXCAVATE, REMOVE, OR OTHERWISE DISTURB ANY MATERIAL, STRUCTURE, OR PART OF A STRUCTURE WHICH IS LOCATED OUTSIDE THE LINES, GRADES, OR GRADING SECTIONS ESTABLISHED FOR THIS PROJECT, EXCEPT WHERE SUCH EXCAVATION OR REMOVAL IS PROVIDED FOR IN THE CONTRACT, PLANS, OR SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES, ABOVE OR BELOW GROUND, THAT MAY OCCUR AS A RESULT OF THE WORK PERFORMED, BY THE CONTRACTOR OR SUB-CONTRACTORS, AS CALLED FOR IN THESE CONTRACT DOCUMENTS.
15. THE CONTRACTOR SHALL CALL (811) SUNSHINE STATE ONE CALL OF FLORIDA, FOR FIELD LOCATIONS 2 BUSINESS DAYS BEFORE DIGGING NEAR UNDERGROUND UTILITIES.
16. PRIOR TO COMMENCEMENT OF ANY EXCAVATION, THE CONTRACTOR SHALL COMPLY W/ F.A. STATUTE 553.851 FOR THE PROTECTION OF UNDERGROUND GAS PIPELINES.
17. THE ROADWAYS AND DRAINAGE SYSTEMS WITHIN THIS PROJECT WILL BE PRIVATELY OWNED AND MAINTAINED BY THE PERMITEE AND WILL BE RESPONSIBLE FOR OPERATING AND MAINTAINING THE STORM SEWER SYSTEM IN PERPETUITY.
18. IF MUCK OR ANY OTHER UNSUITABLE MATERIAL IS ENCOUNTERED IN THE TRENCH BED OF THE DRAINAGE PIPES THE MATERIAL MUST BE REMOVED AND BACKFILLED TO A DEPTH (MIN. 2' FEET).
19. CONTRACTOR SHALL REMOVE WASTE MATERIALS AND UNSUITABLE AND EXCESS TOPSOIL FROM PROPERTY AND DISPOSE OF OFF-SITE IN A LEGAL MANNER.
20. DURING CONSTRUCTION, NO DIRECT DISCHARGE OF WATER TO DOWNSTREAM RECEIVING WATERS WILL BE ALLOWED. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING WATER QUALITY AND SHALL ROUTE DISCHARGE WATER IN SUCH A MANNER AS TO ADEQUATELY REMOVE SILT PRIOR TO RUNOFF FROM THE SITE.
21. IF DETERMINED NECESSARY, DEWATERING DURING EXCAVATING/BACKFILLING OPERATIONS MAY BE ACCOMPLISHED BY DITCHING AND THE USE OF SUMP PUMPS AND/OR OTHER METHODS (WELL POINTS), AS NECESSARY. CONTRACTOR TO OBTAIN ALL REQUIRED PERMITS FOR DEWATERING ACTIVITIES THAT MAY BE REQUIRED.
22. THE PERMITTEE WILL BE RESPONSIBLE FOR THE FOLLOWING STORMWATER MANAGEMENT SYSTEM MAINTENANCE AND INSPECTIONS:
    - MOW THE GRASS ABOUT 2-3 TIMES PER MONTH
    - REMOVE TRASH FROM THE SYSTEM ABOUT ONCE EVERY 2-3 MONTHS
    - ENSURE THE SYSTEM IS INSPECTED WITH A FOCUS ON: THE POND FUNCTIONING AS PERMITTED; POND VEGETATION CONDITIONS AND CHANGE;POND EROSION, SETTLEMENT, CRACKING, AND STABILITY; EVIDENCE OF ENCROACHMENT AND MISUSE OF THE POND; CONDITION OF THE STRUCTURES. REPAIRS SHALL BE MADE TO THE STORMWATER MANAGEMENT SYSTEM IF THE SYSTEM IS NOT FUNCTIONING AS PERMITTED OR ANY OF THE PRECEDING ITEMS NEED ADDRESSING.
    - TO ENSURE THE POND FUNCTIONS PROPERLY, SEDIMENT SHALL BE REMOVED IF IT BUILDS UP MORE THAN 6" WITHIN THE POND.

VERTICAL DATUM
ELEVATIONS SHOWN HEREON ARE BASED ON BREVARD COUNTY SURVEYING AND MAPPING DEPARTMENT VERTICAL DATUM, BENCHMARK NUMBER CC025 NORTH AMERICAN VERTICAL DATUM 1988 (NAVD 88), ELEVATION BEING 43.467'.
FLOOD ZONE
THE ABOVE DESCRIBED PROPERTY IS WITHIN BOTH ZONE "A" AND ZONE "X" BASED ON THE FEDERAL EMERGENCY MANAGEMENT AGENCY, FLOOD INSURANCE RATE MAP (FIRM), MAP NUMBER 120909C0320G, MAP REVISED MARCH 17, 2014.

LEGEND
- HEAVY-DUTY PAVEMENT
- STANDARD-DUTY PAVEMENT
- HEAVY DUTY CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- GRAVEL ROADWAY

No.	REVISIONS	DATE	BY

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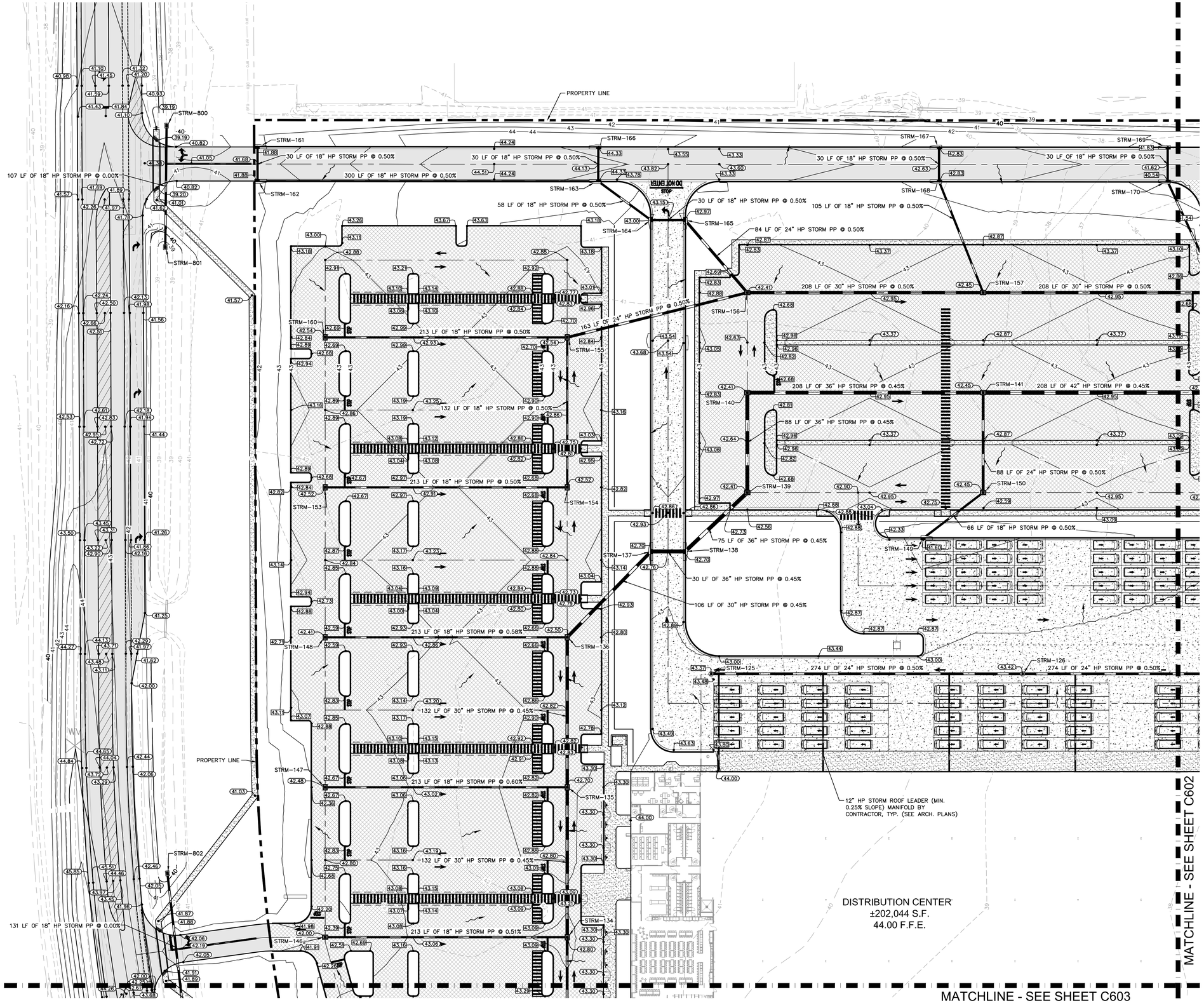
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DATE OCT 2020
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MASTER PAVING, GRADING, AND DRAINAGE PLAN

PROJECT SUNSHINE
PREPARED FOR
SEEFRIED PROPERTIES
CITY OF COCOA FLORIDA

SHEET NUMBER
C600



NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

LEGEND

- HEAVY-DUTY PAVEMENT
- STANDARD-DUTY PAVEMENT
- HEAVY DUTY CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- GRAVEL ROADWAY
- 105.65 FINISHED GRADE AT EDGE OF PAVEMENT WITH ADJACENT CURB
- 105.71 FINISHED GRADE

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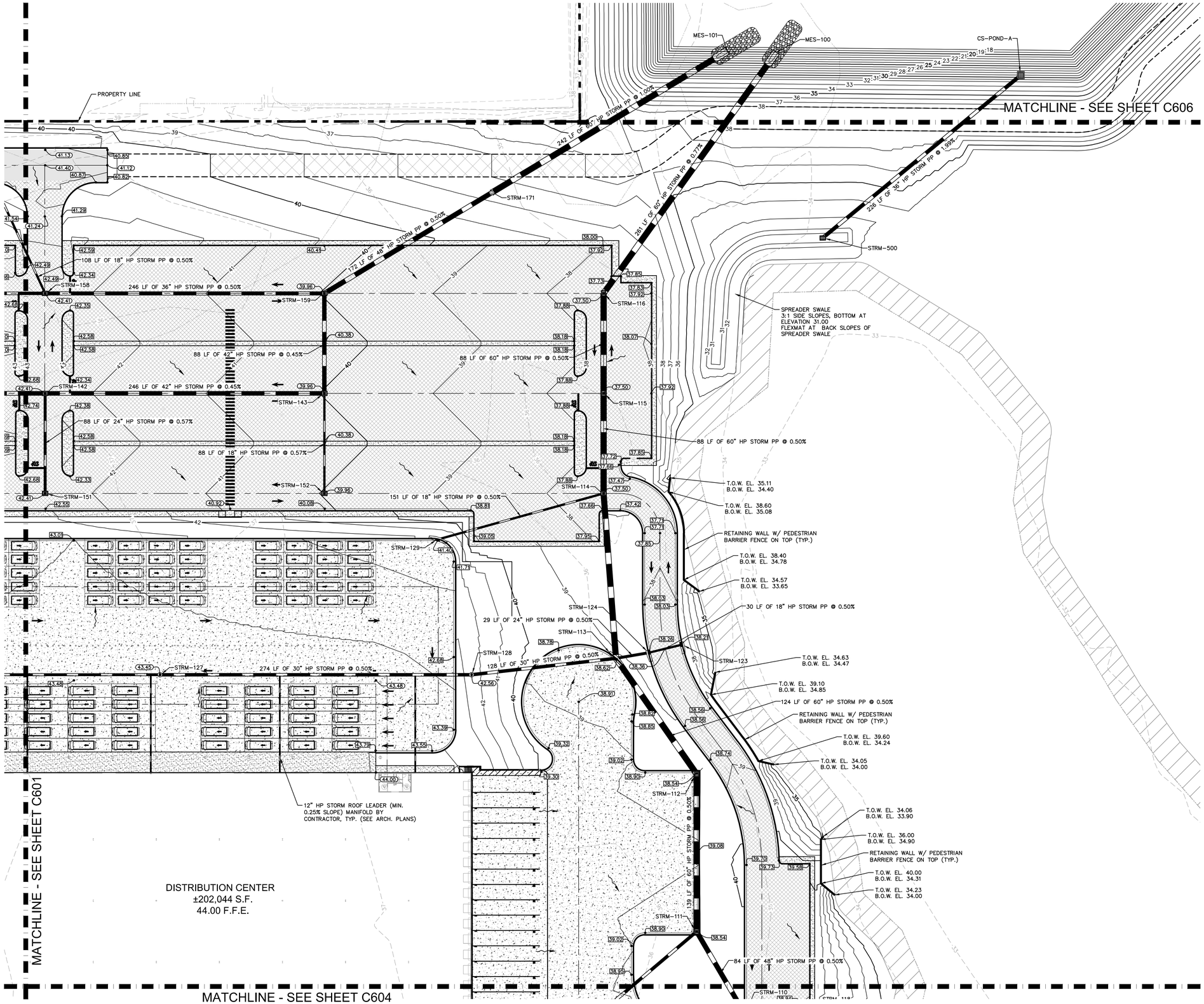
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PAVING, GRADING, AND DRAINAGE PLAN

PROJECT SUNSHINE
PREPARED FOR
SEEFRIED PROPERTIES
CITY OF COCOA FLORIDA

SHEET NUMBER
C601

Plotted By: Ryan Briano Sheet Set: DM08 COCOA Layout: C601 PAVING, GRADING AND DRAINAGE PLAN December 02, 2020 08:44:12pm K:\Orl_civil\046265017 - dm08 cocoa\CADD\CONSTR\C601 PAVING, GRADING AND DRAINAGE PLAN.dwg
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PAVING, GRADING, AND DRAINAGE PLAN

PROJECT SUNSHINE
PREPARED FOR
SEEFRIED PROPERTIES
CITY OF COCOA FLORIDA

SHEET NUMBER
C602

Plotted By: Rivera, Briana Sheet Set: DM08 COCOA Layout: C602 PAVING, GRADING AND DRAINAGE PLAN December 02, 2020 08:44:34pm K:\Orl_civil\046265017 - dm08_cocoa\CADD\CONSTR\C601 PAVING, GRADING, AND DRAINAGE PLAN.dwg
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plotted By:Reum, Briana Sheet Set:DMC8 COCOA Layout:C603 PAVING, GRADING AND DRAINAGE PLAN December 02, 2020 08:44:56am K:\Vdc_civil\046265017 - dmc8 cocoa\CADD\CONSTR\C601 PAVING, GRADING, AND DRAINAGE PLAN.dwg
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MATCHLINE - SEE SHEET C602

DISTRIBUTION CENTER
±202,044 S.F.

12" ROOF LEADER (TYP.)

132 LF OF 24" HP STORM PP @ 0.45%

177 LF OF 18" HP STORM PP @ 0.50%

132 LF OF 24" HP STORM PP @ 0.45%

141 LF OF 18" HP STORM PP @ 0.50%

272 LF OF 24" HP STORM PP @ 0.50%

272 LF OF 24" HP STORM

55 LF OF 18" HP STORM PP @ 0.66%

53 LF OF 18" HP STORM PP @ 0.50%

30 LF OF 18" HP STORM PP @ 0.45%

69 LF OF 24" HP STORM PP @ 0.43%

330 LF OF 30" HP STORM PP @ 0.50%

88 LF OF 18" HP STORM PP @ 0.25%

74 LF OF 30" HP STORM PP @ 0.25%

240 LF OF 18" HP STORM PP @ 0.50%

30 LF OF 18" HP STORM PP @ 0.50%

30 LF OF 30" HP STORM PP @ 0.25%

299 LF OF 30" HP STORM PP @ 0.50%

165 LF OF 18" HP STORM PP @ 0.00%

STRM-803 STRM-145 STRM-133 STRM-119 STRM-120 STRM-131 STRM-132 STRM-144 STRM-101 STRM-100 STRM-130 STRM-102 STRM-206 STRM-207 STRM-208 STRM-201 STRM-200 STRM-202 STRM-804 STRM-805

RWV

AR

POND C (DRY RETENTION)
DHWL (25 YR 24 HR) = 39.48
DHWL (100 YR 24 HR) = 39.67
TOP OF BANK = 40.50
POND BOTTOM = NATURAL GRADE
SWWT = 36.50

RIGHT-OF-WAY AGREEMENT
ORB. 549, PG. 534

290'

PROPERTY LINE

MATCHLINE - SEE SHEET C604

NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

LEGEND

- HEAVY-DUTY PAVEMENT
- STANDARD-DUTY PAVEMENT
- HEAVY DUTY CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- GRAVEL ROADWAY
- 105.65 FINISHED GRADE AT EDGE OF PAVEMENT WITH ADJACENT CURB
- 105.71 FINISHED GRADE

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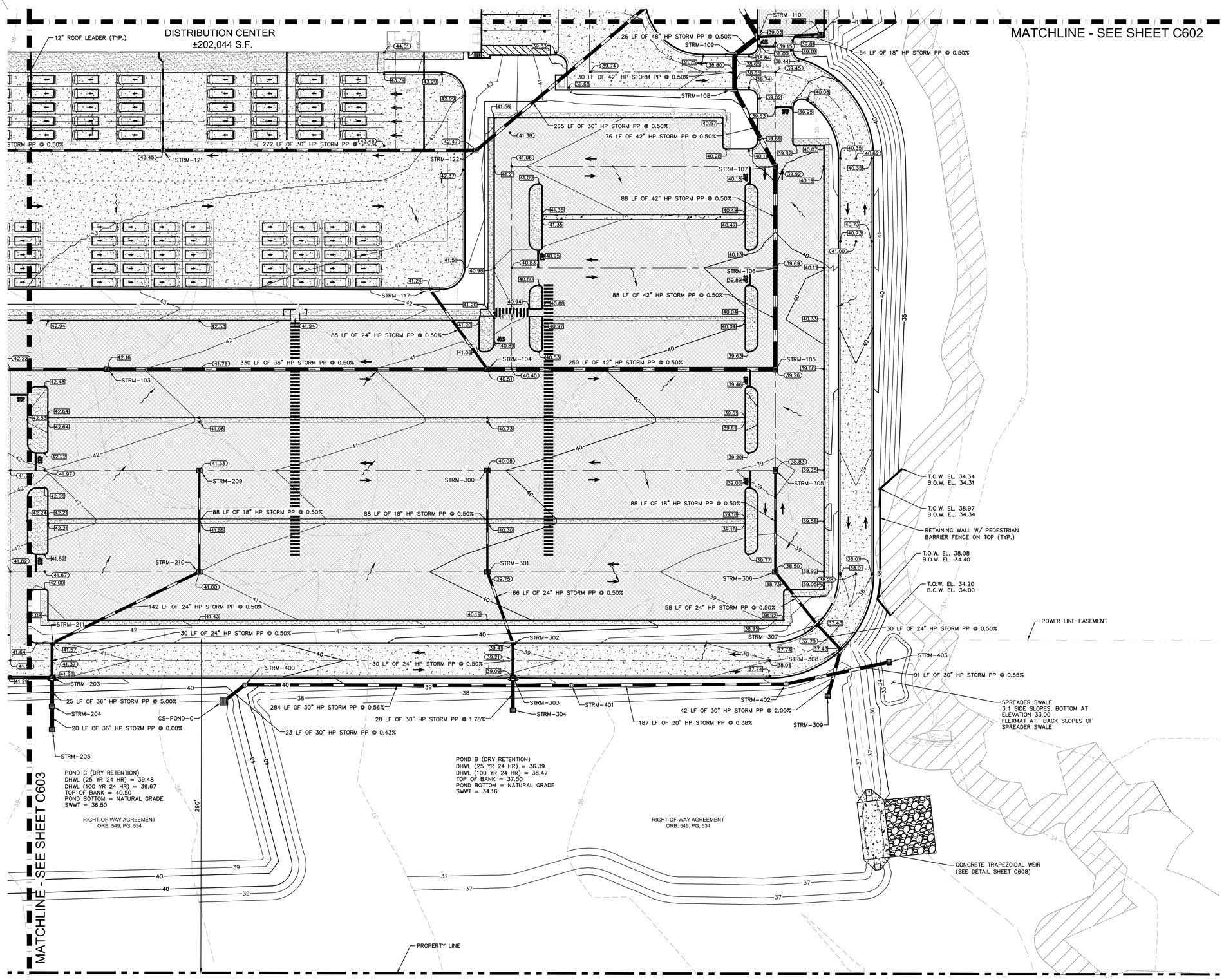
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DRAWN BY ---
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PAVING, GRADING, AND DRAINAGE PLAN

PROJECT SUNSHINE
PREPARED FOR
SEEFRIED PROPERTIES

CITY OF COCOA FLORIDA

SHEET NUMBER
C603



Plotted By: Reyna, Briana Sheet Set: DM08 COCOA Layout: C604 PAVING, GRADING, AND DRAINAGE PLAN December 02, 2020 08:45:20pm K:\Vol_civil\046265017 - dm08_cocoa\CADD\CONSTR\C601_PAVING, GRADING, AND DRAINAGE PLAN.dwg
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PAVING, GRADING, AND DRAINAGE PLAN

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SHEET NUMBER
C604

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NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

POND D (WET DETENTION)
CWL = 33.50
DHWL (25 YR 24 HR) = 37.17
DHWL (100 YR 24 HR) = 37.4
TOP OF BANK = 38.25
SLOPE BREAK = 31.50
POND BOTTOM = 25.50

CS-POND-D

MES-601

143 LF OF 36" HP STORM PP @ 3.16%

115 LF OF 48" HP STORM PP @ 0.00%

SPREADER SWALE
3:1 SIDE SLOPES, BOTTOM AT ELEVATION 31.00
FLEXMAT AT BACK SLOPES OF SPREADER SWALE

STRM-700

STRM-603

315 LF OF 48" HP STORM PP @ 0.00%

MATCHLINE - SEE SHEET C606

LEGEND

- HEAVY-DUTY PAVEMENT
- STANDARD-DUTY PAVEMENT
- HEAVY DUTY CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- GRAVEL ROADWAY
- 105.65 FINISHED GRADE AT EDGE OF PAVEMENT WITH ADJACENT CURB
- 105.71 FINISHED GRADE

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PAVING, GRADING, AND DRAINAGE PLAN

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SHEET NUMBER
C605

MATCHLINE - SEE SHEET C605

NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

STRM-602

227 LF OF 48" HP STORM PP @ 0.00%

STRM-601

218 LF OF 48" HP STORM PP @ 0.00%

6" FLAT CONCRETE MAINTENANCE ROAD @ ELEVATION 33.5'

STRM-600

161 LF OF 48" HP STORM PP @ 0.00%

MES-600

POND A (WET DETENTION)
CWL = 33.50
DHWL (25 YR 24 HR) = 37.46
DHWL (100 YR 24 HR) = 38.06
TOP OF BANK = 38.25
SLOPE BREAK = 31.50
POND BOTTOM = 25.50

MES-101

MES-100

CS-POND-A

42 LF OF 60" HP STORM PP @ 1.00%

MATCHLINE - SEE SHEET C604

LEGEND

- HEAVY-DUTY PAVEMENT
- STANDARD-DUTY PAVEMENT
- HEAVY DUTY CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- GRAVEL ROADWAY
- 105.65 FINISHED GRADE AT EDGE OF PAVEMENT WITH ADJACENT CURB
- 105.71 FINISHED GRADE

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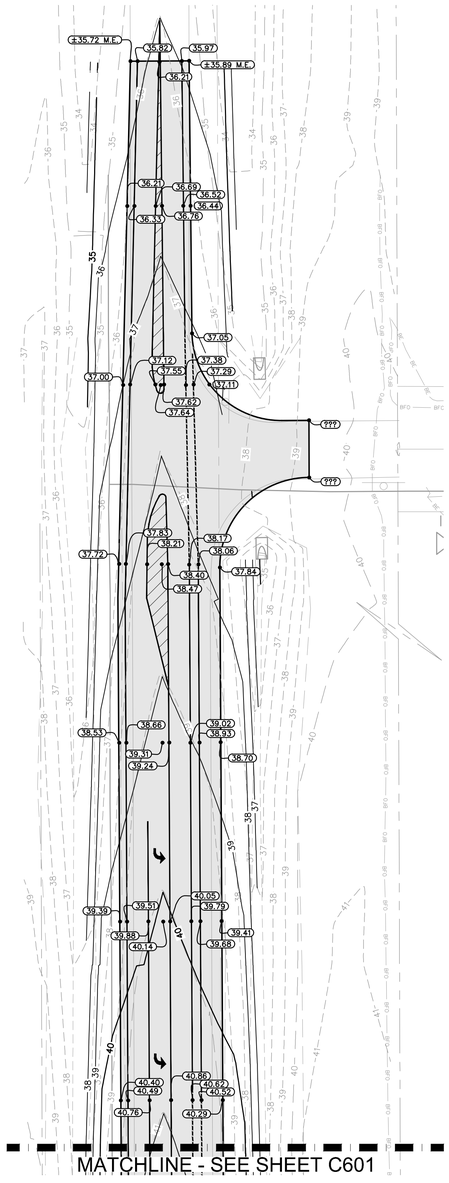
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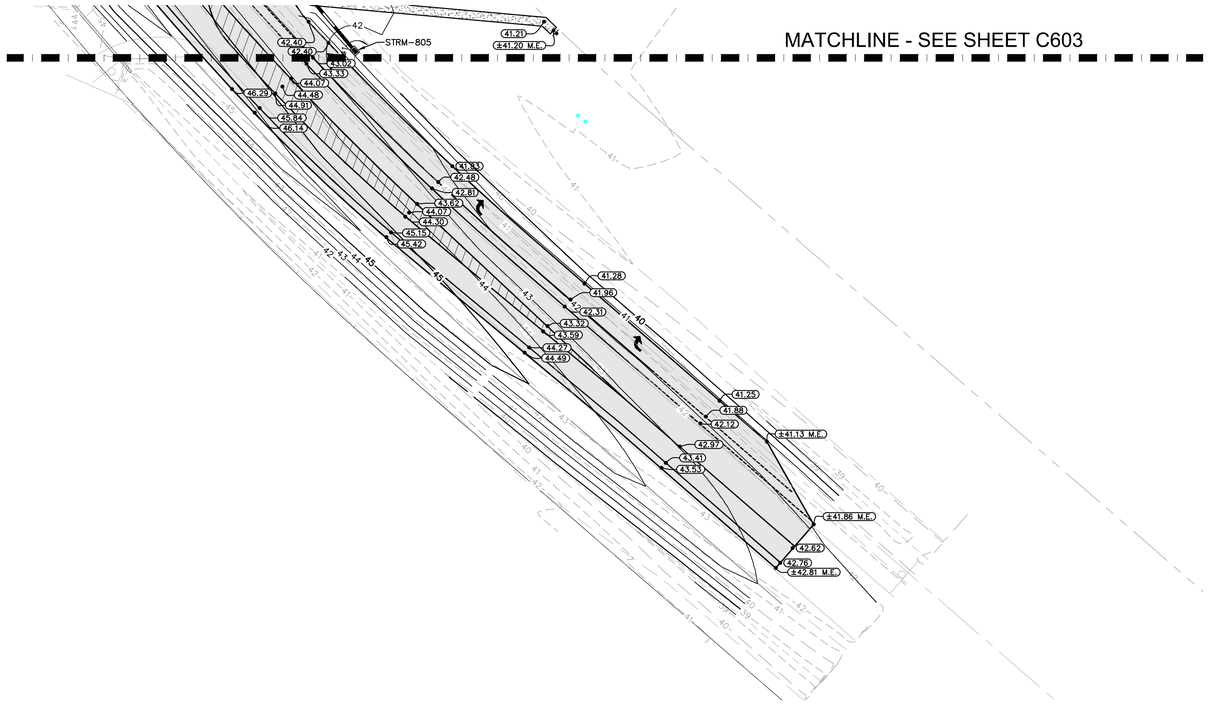
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PROJECT SUNSHINE
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CITY OF COCOA FLORIDA

SHEET NUMBER
C606

Plotted By:Reum, Briona Sheet Set:DWG\COCOA Layout:C606 PAVING, GRADING AND DRAINAGE PLAN December 02, 2020 08:46:02pm K:\Ide_civil\046265017 - Omni\8 cocoa\CADD\CONSTR\C601 PAVING, GRADING, AND DRAINAGE PLAN.dwg
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NORTH

GRAPHIC SCALE IN FEET
0 20 40 80

LEGEND

- HEAVY-DUTY PAVEMENT
- STANDARD-DUTY PAVEMENT
- HEAVY DUTY CONCRETE PAVEMENT
- CONCRETE SIDEWALK
- GRAVEL ROADWAY
- 105.65 FINISHED GRADE AT EDGE OF PAVEMENT WITH ADJACENT CURB
- 105.71 FINISHED GRADE

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CITY OF COCOA FLORIDA

SHEET NUMBER
C607

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STRUCTURE TABLE	
STRUCTURE NAME:	DETAILS:
CS-POND-A N:1483560.51 E:726441.49	CONTROL STRUCTURE (SEE DETAIL SHEET C608) RIM: 37.00 INV OUT: 32.50 SW
CS-POND-C N:1482157.67 E:725734.74	CONTROL STRUCTURE (SEE DETAIL SHEET C609) RIM: 40.00 INV OUT: 33.70 NE
CS-POND-D N:1484521.26 E:726547.33	CONTROL STRUCTURE (SEE DETAIL SHEET C609) RIM: 37.50 INV OUT: 32.50 SW
STRM-100 N:1482511.48 E:725250.12	TYPE P-5(R) INLET FDOT STD. PLAN 425-010, 425-021 RIM: 42.27 INV OUT: 37.76 E
STRM-101 N:1482515.00 E:725302.62	TYPE P-5(L) INLET FDOT STD. PLAN 425-010, 425-021 RIM: 42.28 INV IN: 37.50 W INV OUT: 36.68 S
STRM-102 N:1482446.00 E:725303.19	TYPE F INLET W/ P-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 41.08 INV IN: 36.38 N INV OUT: 35.82 E
STRM-103 N:1482446.00 E:725633.37	TYPE F INLET W/ P-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 42.16 INV IN: 34.17 W INV OUT: 34.17 E
STRM-104 N:1482446.00 E:725963.55	TYPE F INLET W/ J-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 40.51 INV IN: 36.58 NW INV IN: 32.52 W INV OUT: 32.52 E
STRM-105 N:1482446.00 E:726213.55	TYPE F INLET W/ J-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 39.26 INV IN: 31.27 W INV OUT: 31.27 N
STRM-106 N:1482534.00 E:726213.55	TYPE F INLET W/ J-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 39.69 INV IN: 30.83 S INV OUT: 30.83 N
STRM-107 N:1482622.00 E:726213.55	TYPE F INLET W/ J-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 39.92 INV IN: 30.39 S INV OUT: 30.39 NW
STRM-108 N:1482689.00 E:726178.17	TYPE P-5(R) INLET FDOT STD. PLAN 425-010, 425-021 RIM: 38.65 INV IN: 30.01 SE INV OUT: 30.01 N
STRM-109 N:1482719.00 E:726178.17	TYPE P-5(L) INLET FDOT STD. PLAN 425-010, 425-021 RIM: 38.65 INV IN: 29.86 S INV OUT: 29.86 NE
STRM-110 N:1482734.46 E:726198.55	TYPE J-5(R) INLET FDOT STD. PLAN 425-010, 425-021 RIM: 39.03 INV IN: 34.23 E INV IN: 29.73 SW INV OUT: 29.73 NW
STRM-111 N:1482807.05 E:726156.20	TYPE F INLET W/ J-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 38.54 INV IN: 29.31 SE INV IN: 33.53 SW INV OUT: 29.31 N
STRM-112 N:1482945.70 E:726156.20	TYPE F INLET W/ J-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 38.54 INV IN: 28.62 S INV OUT: 28.62 NW
STRM-113 N:1483047.43 E:726085.20	TYPE J-6 INLET FDOT STD. PLAN 425-010, 425-021 RIM: 38.62 INV IN: 28.00 SE INV IN: 34.10 E INV IN: 33.28 W INV OUT: 28.00 N
STRM-114 N:1483192.54 E:726074.34	TYPE F INLET W/ J-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 37.50 INV IN: 27.27 S INV IN: 32.00 W INV OUT: 27.27 N

STRUCTURE TABLE	
STRUCTURE NAME:	DETAILS:
STRM-115 N:1483280.54 E:726074.34	TYPE F INLET W/ J-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 37.50 INV IN: 26.83 S INV OUT: 26.83 N
STRM-116 N:1483368.54 E:726074.34	TYPE F INLET W/ J-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 37.50 INV IN: 26.39 S INV OUT: 22.00 NE
STRM-117 N:1482515.00 E:725913.99	TYPE P-6 INLET FDOT STD. PLAN 425-010, 425-021 RIM: 41.24 INV OUT: 37.00 SE
STRM-118 N:1482736.65 E:726252.89	TYPE D INLET FDOT STD. PLAN 425-053 RIM: 38.94 INV OUT: 34.50 W
STRM-119 N:1482636.00 E:725137.95	TYPE P-7T MANHOLE FDOT STD. PLAN 425-001, 425-010 RIM: 43.43 INV OUT: 39.18 E
STRM-120 N:1482636.00 E:725409.95	TYPE P-7T MANHOLE FDOT STD. PLAN 425-001, 425-010 RIM: 43.46 INV IN: 37.82 W INV OUT: 37.82 E
STRM-121 N:1482636.00 E:725681.95	TYPE P-7T MANHOLE FDOT STD. PLAN 425-001, 425-010 RIM: 43.45 INV IN: 36.46 W INV OUT: 36.46 E
STRM-122 N:1482636.00 E:725953.98	TYPE P-8T MANHOLE FDOT STD. PLAN 425-001, 425-010 RIM: 42.47 INV IN: 35.10 W INV OUT: 34.85 NE
STRM-123 N:1483059.45 E:726143.21	TYPE P-5(R) INLET FDOT STD. PLAN 425-010, 425-021 RIM: 38.21 INV OUT: 34.39 W
STRM-124 N:1483052.38 E:726114.05	TYPE P-5(L) INLET FDOT STD. PLAN 425-010, 425-021 RIM: 38.26 INV IN: 34.24 E INV OUT: 34.24 W
STRM-125 N:1483033.00 E:725135.83	TYPE P-7T MANHOLE FDOT STD. PLAN 425-001, 425-010 RIM: 43.37 INV OUT: 39.12 E
STRM-126 N:1483033.00 E:725409.95	TYPE P-7T MANHOLE FDOT STD. PLAN 425-001, 425-010 RIM: 43.42 INV IN: 37.75 W INV OUT: 37.75 E
STRM-127 N:1483033.00 E:725684.07	TYPE P-7T MANHOLE FDOT STD. PLAN 425-001, 425-010 RIM: 43.45 INV IN: 36.38 W INV OUT: 36.38 E
STRM-128 N:1483033.00 E:725958.18	TYPE P-8T MANHOLE FDOT STD. PLAN 425-001, 425-010 RIM: 42.56 INV IN: 35.01 W INV OUT: 33.90 E
STRM-129 N:1483152.04 E:725928.40	TYPE P-6 INLET FDOT STD. PLAN 425-010, 425-021 RIM: 41.40 INV OUT: 32.76 E
STRM-130 N:1482508.56 E:725085.69	TYPE P-6 INLET FDOT STD. PLAN 425-010, 425-021 RIM: 42.62 INV OUT: 39.00 NW
STRM-131 N:1482528.97 E:725063.83	TYPE P-6 INLET FDOT STD. PLAN 425-010, 425-021 RIM: 42.63 INV IN: 38.87 SE INV OUT: 38.87 W
STRM-132 N:1482537.18 E:725009.06	TYPE D INLET W/ P-BOTTOM FDOT STD. PLAN 425-010, 425-052 RIM: 42.90 INV IN: 38.50 W INV IN: 38.50 E INV OUT: 38.50 N

STRUCTURE TABLE	
STRUCTURE NAME:	DETAILS:
STRM-133 N:1482669.18 E:725009.06	TYPE D INLET W/ P-BOTTOM FDOT STD. PLAN 425-010, 425-052 RIM: 42.92 INV IN: 37.91 W INV IN: 37.91 S INV OUT: 37.91 N
STRM-134 N:1482801.18 E:725009.06	TYPE D INLET W/ P-BOTTOM FDOT STD. PLAN 425-010, 425-052 RIM: 42.80 INV IN: 37.31 W INV IN: 37.31 S INV OUT: 37.31 N
STRM-135 N:1482933.18 E:725009.06	TYPE D INLET W/ P-BOTTOM FDOT STD. PLAN 425-010, 425-052 RIM: 42.70 INV IN: 36.72 W INV IN: 36.72 S INV OUT: 36.72 N
STRM-136 N:1483065.18 E:725009.06	TYPE D INLET W/ P-BOTTOM FDOT STD. PLAN 425-010, 425-052 RIM: 42.50 INV IN: 36.13 W INV IN: 36.13 S INV OUT: 36.13 NE
STRM-137 N:1483140.72 E:725082.87	TYPE P-6 INLET FDOT STD. PLAN 425-010, 425-021 RIM: 42.70 INV IN: 35.65 SW INV OUT: 35.65 E
STRM-138 N:1483140.72 E:725112.87	TYPE P-6 INLET FDOT STD. PLAN 425-010, 425-021 RIM: 42.70 INV IN: 35.52 W INV OUT: 35.52 NE
STRM-139 N:1483192.54 E:725167.61	TYPE F INLET W/ P-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 42.41 INV IN: 35.18 SW INV OUT: 35.18 N
STRM-140 N:1483280.54 E:725167.61	TYPE F INLET W/ P-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 42.41 INV IN: 34.78 S INV OUT: 34.78 E
STRM-141 N:1483280.54 E:725375.23	TYPE F INLET W/ P-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 42.45 INV IN: 33.85 W INV IN: 36.84 S INV OUT: 33.85 E
STRM-142 N:1483280.54 E:725582.98	TYPE F INLET W/ J-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 42.41 INV IN: 32.91 W INV IN: 38.00 S INV OUT: 32.91 E
STRM-143 N:1483280.54 E:725828.66	TYPE F INLET W/ J-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 39.96 INV IN: 31.81 W INV IN: 35.00 S INV OUT: 31.81 N
STRM-144 N:1482537.18 E:724868.44	TYPE D INLET FDOT STD. PLAN 425-052 RIM: 42.90 INV OUT: 39.21 E
STRM-145 N:1482669.18 E:724831.67	TYPE D INLET FDOT STD. PLAN 425-052 RIM: 42.92 INV OUT: 38.80 E
STRM-146 N:1482801.18 E:724796.04	TYPE D INLET FDOT STD. PLAN 425-052 RIM: 42.00 INV OUT: 38.41 E
STRM-147 N:1482933.18 E:724796.04	TYPE D INLET FDOT STD. PLAN 425-052 RIM: 42.48 INV OUT: 38.00 E
STRM-148 N:1483065.18 E:724796.04	TYPE D INLET FDOT STD. PLAN 425-052 RIM: 42.41 INV OUT: 37.35 E
STRM-149 N:1483152.54 E:725322.72	TYPE P-5(R) INLET FDOT STD. PLAN 425-010, 425-021 RIM: 41.57 INV OUT: 37.61 NE
STRM-150 N:1483192.54 E:725375.23	TYPE F INLET W/ P-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 42.45 INV IN: 37.28 SW INV OUT: 37.28 N

STRUCTURE TABLE	
STRUCTURE NAME:	DETAILS:
STRM-151 N:1483192.54 E:725582.98	TYPE F INLET FDOT STD. PLAN 425-053 RIM: 42.41 INV OUT: 38.50 N
STRM-152 N:1483192.54 E:725828.66	TYPE F INLET FDOT STD. PLAN 425-053 RIM: 39.96 INV OUT: 35.50 N
STRM-153 N:1483197.18 E:724796.04	TYPE D INLET FDOT STD. PLAN 425-052 RIM: 42.52 INV OUT: 38.82 E
STRM-154 N:1483197.18 E:725009.06	TYPE D INLET FDOT STD. PLAN 425-052 RIM: 42.52 INV IN: 37.75 W INV OUT: 37.75 N
STRM-155 N:1483329.18 E:725009.06	TYPE D INLET W/ P-BOTTOM FDOT STD. PLAN 425-010, 425-052 RIM: 42.54 INV IN: 37.10 W INV IN: 37.09 S INV OUT: 37.09 E
STRM-156 N:1483368.54 E:725167.61	TYPE F INLET W/ J-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 42.41 INV IN: 34.72 NW INV IN: 36.28 W INV OUT: 34.72 E
STRM-157 N:1483368.54 E:725375.23	TYPE F INLET W/ J-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 42.45 INV IN: 33.68 W INV IN: 37.62 N INV OUT: 33.68 E
STRM-158 N:1483368.54 E:725582.98	TYPE F INLET W/ J-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 42.41 INV IN: 32.64 W INV IN: 36.71 NW INV OUT: 32.64 E
STRM-159 N:1483368.54 E:725828.66	TYPE F INLET W/ P-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 39.96 INV IN: 31.41 W INV IN: 31.41 S INV OUT: 31.41 NE
STRM-160 N:1483329.18 E:724796.04	TYPE D INLET FDOT STD. PLAN 425-052 RIM: 42.54 INV OUT: 38.16 E
STRM-161 N:1483496.74 E:724736.45	TYPE P-5(R) INLET FDOT STD. PLAN 425-010, 425-021 RIM: 41.88 INV OUT: 37.22 S
STRM-162 N:1483466.74 E:724736.43	TYPE P-5(L) INLET FDOT STD. PLAN 425-010, 425-021 RIM: 41.88 INV IN: 37.07 N INV OUT: 37.07 E
STRM-163 N:1483466.56 E:725036.43	TYPE P-5(R) INLET FDOT STD. PLAN 425-010, 425-021 RIM: 44.33 INV IN: 39.85 N INV IN: 35.57 W INV OUT: 35.57 SE
STRM-164 N:1483432.38 E:725082.87	TYPE P-5(L) INLET FDOT STD. PLAN 425-010, 425-021 RIM: 43.00 INV IN: 35.29 NW INV OUT: 35.29 E
STRM-165 N:1483432.33 E:725112.87	TYPE P-5(R) INLET FDOT STD. PLAN 425-010, 425-021 RIM: 42.97 INV IN: 35.14 W INV OUT: 35.14 SE
STRM-166 N:1483496.56 E:725036.45	TYPE P-5(L) INLET FDOT STD. PLAN 425-010, 425-021 RIM: 44.33 INV OUT: 40.00 S
STRM-167 N:1483496.38 E:725336.45	TYPE P-5(L) INLET FDOT STD. PLAN 425-010, 425-021 RIM: 42.83 INV OUT: 38.30 S
STRM-168 N:1483466.38 E:725336.43	TYPE P-5(R) INLET FDOT STD. PLAN 425-010, 425-021 RIM: 42.83 INV IN: 38.15 N INV OUT: 38.15 S

STRUCTURE TABLE	
STRUCTURE NAME:	DETAILS:
STRM-169 N:1483496.26 E:725537.69	TYPE P-5(L) INLET FDOT STD. PLAN 425-010, 425-021 RIM: 41.83 INV OUT: 37.40 S
STRM-170 N:1483466.26 E:725537.68	TYPE P-5(R) INLET FDOT STD. PLAN 425-010, 425-021 RIM: 40.54 INV IN: 37.25 N INV OUT: 37.25 SE
STRM-171 N:1483457.19 E:725976.00	STORM MANHOLE RIM: 37.84 INV IN: 30.55 SW INV OUT: 20.42 NE
STRM-200 N:1482199.77 E:725017.21	TYPE P-6 INLET FDOT STD. PLAN 425-010, 425-021 RIM: 42.57 INV OUT: 37.20 E
STRM-201 N:1482199.78 E:725047.20	TYPE P-6 INLET FDOT STD. PLAN 425-010, 425-021 RIM: 42.54 INV IN: 37.05 W INV OUT: 37.05 E
STRM-202 N:1482178.00 E:725286.22	TYPE 'V' INLET RIM: 42.82 INV IN: 35.84 N INV IN: 35.85 W INV OUT: 35.85 E
STRM-203 N:1482178.00 E:725585.64	TYPE 'V' INLET RIM: 41.20 INV IN: 34.35 W INV IN: 35.89 N INV OUT: 30.84 S
STRM-204 N:1482153.15 E:725585.70	TYPE H INLET (3-GRATE) FDOT STD. PLAN 425-010/052 SUMPED BUBBLE-UP (SEE DETAIL SHEET C608) RIM: 32.30 INV IN: 29.60 N INV OUT: 29.60 S
STRM-205 N:1482133.15 E:725585.70	TYPE H INLET (3-GRATE) FDOT STD. PLAN 425-010/052 SUMPED BUBBLE-UP (SEE DETAIL SHEET C608) RIM: 32.80 INV IN: 29.60 N
STRM-206 N:1482358.00 E:725327.24	TYPE F INLET FDOT STD. PLAN 425-053 RIM: 40.76 INV OUT: 36.33 S
STRM-207 N:1482270.00 E:725327.24	TYPE F INLET W/ P-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 40.71 INV IN: 36.11 N INV OUT: 36.11 SW
STRM-208 N:1482208.00 E:725286.22	TYPE P-5(L) INLET FDOT STD. PLAN 425-010, 425-021 RIM: 43.18 INV IN: 35.92 NE INV OUT: 35.92 S
STRM-209 N:1482358.00 E:725713.55	TYPE F INLET FDOT STD. PLAN 425-053 RIM: 41.33 INV OUT: 37.69 S
STRM-210 N:1482270.00 E:725713.55	TYPE F INLET W/ P-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 41.00 INV IN: 37.25 N INV OUT: 36.75 SW
STRM-211 N:1482208.00 E:725585.64	TYPE P-5(L) INLET FDOT STD. PLAN 425-010, 425-021 RIM: 41.57 INV IN: 36.04 NE INV OUT: 36.04 S
STRM-300 N:1482358.00 E:725963.55	TYPE F INLET FDOT STD. PLAN 425-053 RIM: 40.08 INV OUT: 36.43 S
STRM-301 N:1482270.00 E:725963.55	TYPE F INLET W/ P-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 39.75 INV IN: 35.99 N INV OUT: 34.32 S
STRM-302 N:1482208.00 E:725985.73	TYPE P-5(L) INLET FDOT STD. PLAN 425-010, 425-021 RIM: 39.41 INV IN: 33.99 N INV OUT: 33.41 S

STRUCTURE TABLE	
STRUCTURE NAME:	DETAILS:
STRM-303 N:1482178.00 E:725985.73	TYPE 'V' INLET RIM: 39.04 INV IN: 33.26 N INV OUT: 28.50 S
STRM-304 N:1482149.83 E:725985.73	TYPE H INLET (3-GRATE) FDOT STD. PLAN 425-010/052 SUMPED BUBBLE-UP (SEE DETAIL SHEET C608) RIM: 36.60 INV IN: 28.00 N
STRM-305 N:1482358.00 E:726213.55	TYPE F INLET FDOT STD. PLAN 425-053 RIM: 38.83 INV OUT: 35.54 S
STRM-306 N:1482270.00 E:726213.55	TYPE F INLET W/ P-BOTTOM FDOT STD. PLAN 425-010, 425-053 RIM: 38.50 INV IN: 35.10 N INV OUT: 33.28 SE
STRM-307 N:1482224.38 E:726249.75	TYPE P-6 INLET FDOT STD. PLAN 425-010, 425-021 RIM: 36.66 INV IN: 32.99 NW INV OUT: 32.99 SE
STRM-308 N:1482202.57 E:726270.35	TYPE P-6 INLET FDOT STD. PLAN 425-010, 425-021 RIM: 37.90 INV IN: 32.84 NW INV OUT: 27.34 S
STRM-309 N:1482162.04 E:726259.19	TYPE H INLET (3-GRATE) FDOT STD. PLAN 425-010/052 SUMPED BUBBLE-UP (SEE DETAIL SHEET C608) RIM: 36.00 INV IN: 26.50 N
STRM-400 N:1482171.83 E:725752.91	TYPE J-8T MANHOLE FDOT STD. PLAN 425-001, 425-010 RIM: 40.48 INV IN: 33.60 SW INV OUT: 33.60 E
STRM-401 N:1482171.40 E:726036.49	TYPE J-8T MANHOLE FDOT STD. PLAN 425-001, 425-010 RIM: 38.58 INV IN: 32.00 W INV OUT: 32.00 E
STRM-402 N:1482172.68 E:726223.14	TYPE J-8T MANHOLE FDOT STD. PLAN 425-001, 425-010 RIM: 37.60 INV IN: 31.30 W INV OUT: 31.30 E
STRM-403 N:1482191.55 E:726312.32	TYPE H INLET (3-GRATE) FDOT STD. PLAN 425-010/052 SUMPED BUBBLE-UP (SEE DETAIL SHEET C608) RIM: 33.50 INV IN: 30.80 W
STRM-500 N:1483417.33 E:726267.15	TYPE H INLET (3-GRATE) FDOT STD. PLAN 425-010/052 SUMPED BUBBLE-UP (SEE DETAIL SHEET C608) RIM: 32.00 INV IN: 28.00 NE
STRM-600 N:1483695.86 E:726692.79	TYPE J-8T MANHOLE FDOT STD. PLAN 425-001, 425-010 RIM: 38.00 INV IN: 20.00 W INV OUT: 20.00 N
STRM-601 N:1483913.49 E:726694.36	TYPE J-8T MANHOLE FDOT STD. PLAN 425-001, 425-010 RIM: 38.00 INV IN: 20.00 S INV OUT: 20.00 N
STRM-602 N:1484134.69 E:726643.76	TYPE J-8T MANHOLE FDOT STD. PLAN 425-001, 425-010 RIM: 38.22 INV IN: 20.00 S INV OUT: 20.00 NW
STRM-603 N:1484410.05 E:726491.72	TYPE J-8T MANHOLE FDOT STD. PLAN 425-001, 425-010 RIM: 38.22 INV IN: 20.00 SE INV OUT: 20.00 NE
STRM-700 N:1484421.32 E:726445.69	TYPE H INLET (3-GRATE) FDOT STD. PLAN 425-010/052 SUMPED BUBBLE-UP (SEE DETAIL SHEET C608) RIM: 32.00 INV IN: 28.00 NE
STRM-800 N:1483515.52 E:724656.40	TYPE C INLET W/ WEEP HOLE FDOT STD. PLAN 425-001, 425-052 RIM: 38.80 INV OUT: 35.75 S

STRUCTURE TABLE	
STRUCTURE NAME:	DETAILS:
STRM-801 N:1483408.62 E:724655.23	TYPE C INLET W/ WEEP HOLE FDOT STD. PLAN 425-001, 425-052 RIM: 38.80 INV IN: 35.75 N
STRM-802 N:1482857.43 E:724657.17	TYPE C INLET W/ WEEP HOLE FDOT STD. PLAN 425-001, 425-052 RIM: 39.87 INV OUT: 36.75 S
STRM-803 N:1482726.97 E:724672.11	TYPE C INLET W/ WEEP HOLE FDOT STD. PLAN 425-001, 425-052 RIM: 39.87 INV IN: 36.75 N
STRM-804 N:1482012.72 E:724985.69	TYPE C INLET W/ WEEP HOLE FDOT STD. PLAN 425-001, 425-052 RIM: 40.80 INV OUT: 36.75 SE
STRM-805 N:1481885.98 E:725091.81	TYPE C INLET W/ WEEP HOLE FDOT STD. PLAN 425-001, 425-052 RIM: 40.80 INV IN: 36.75 NW

NOTE: RIM OF ALL TYPE 5 AND 6 INLETS ARE LOCATED AT EDGE OF PAVEMENT.

MES TABLE	
STRUCTURE NAME:	DETAILS:
MES-100 N:1483580.66 E:726226.24	MITERED END SECTION FDOT STD. PLAN 430-021 INV IN: 20.00 SW
MES-101 N:1483581.78 E:726183.06	MITERED END SECTION FDOT STD. PLAN 430-021 INV IN: 18.00 SW
MES-600 N:1483672.35 E:726533.85	MITERED END SECTION FDOT STD. PLAN 430-021 INV OUT: 20.00 E
MES-601 N:1484491.29 E:726572.89	MITERED END SECTION FDOT STD. PLAN 430-021 INV IN: 20.00 SW

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811 Know what's below. Call before you dig.
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BY	DATE	No.	REVISIONS

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PHONE: 863-701-8702
WWW.KIMLEY-HORN.COM CA 00000696

LICENSED PROFESSIONAL
Jason A. Lewis, P.E.
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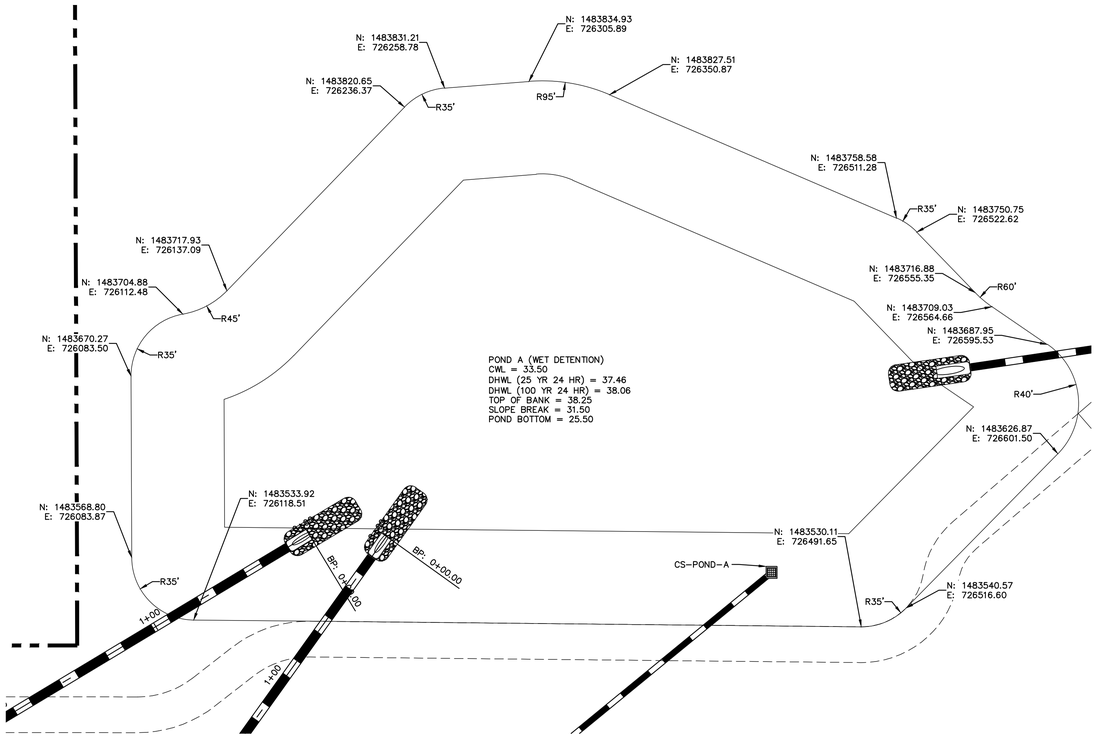
KHA PROJECT 046265017
DATE OCT 2020
SCALE AS SHOWN
DESIGNED BY ---
DRAWN BY ---
CHECKED BY ---

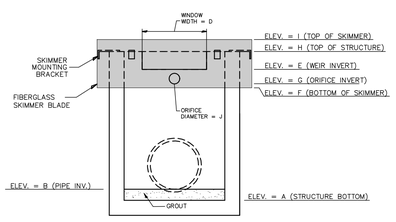
DRAINAGE STRUCTURE TABLES

PROJECT SUNSHINE
PREPARED FOR
SEEFRIED PROPERTIES
CITY OF COCOA FLORIDA

SHEET NUMBER
C608

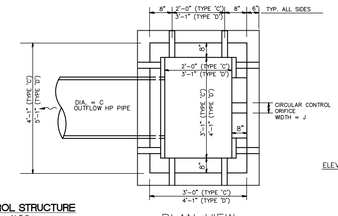
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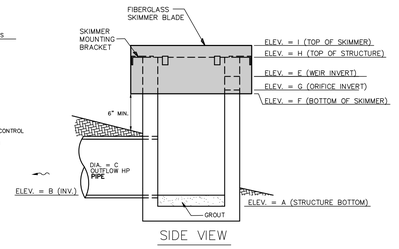
FRONT VIEW

CONTROL STRUCTURE #200B-1, #200B-2, WCA-U-1



PLAN VIEW

CONTROL STRUCTURE
N.T.S.
INLET WITH WINDOW AND V-NOTCH WEIR



SIDE VIEW

NOTE:
1. CONTRACTOR IS TO GRADE AROUND CONTROL STRUCTURE TO ALLOW FOR 6" MINIMUM BETWEEN BOTTOM OF SKIMMER AND SLOPE OR BOTTOM OF POND ON THE NORTH, SOUTH AND EAST SIDE.

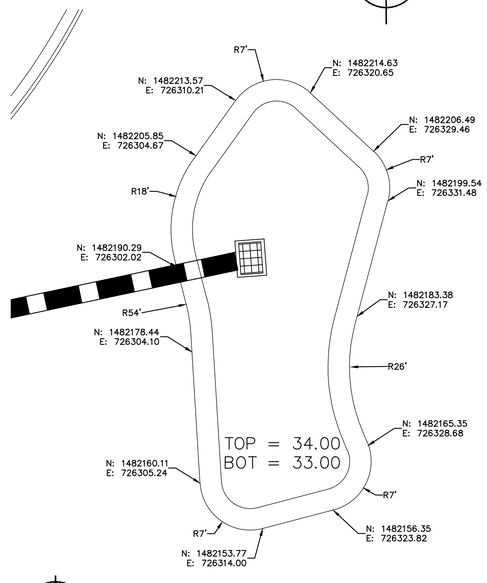
2. A CONCRETE PAD SHALL BE INSTALLED UNDER THE SKIMMER WHERE SEPARATION BETWEEN THE SKIMMER AND POND BOTTOM/BERM IS LESS THAN 12". THE CONCRETE PAD SHALL EXTEND FROM THE CONTROL STRUCTURE TO 12" BEYOND THE SKIMMER.

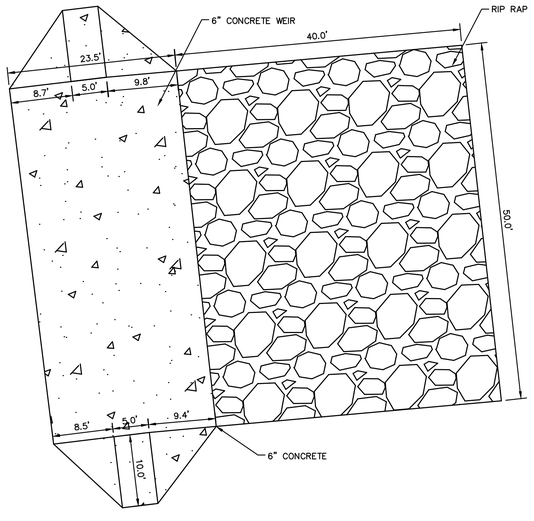
CS-POND-A
(PONDA)

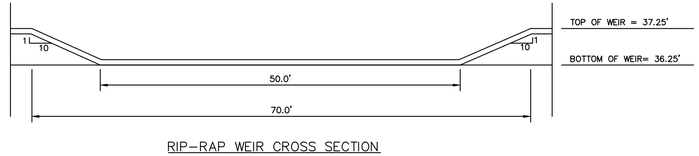
A =	31.80 FT
B =	32.50 FT
C =	36.00 IN
D =	24.00 IN
E =	36.50 FT
F =	33.00 FT
G =	33.50 FT
H =	37.00 FT
I =	37.50 FT
J =	6.00 IN

STRUCTURE TYPE
TYPE 'H' INLET

(RECTANGULAR WINDOW WITH CIRCULAR ORIFICE)







RIP-RAP WEIR CROSS SECTION
N.T.S.

BUBBLE UP INFORMATION (TYPICAL)		
TYPE OF STRUCURE	"J" WINDOW	"K" WINDOW
TYPE H INLET	3'-0"	6'-7"

NOTE: RIM OF ALL TYPE 5 AND 6 INLETS ARE LOCATED AT EDGE OF PAVEMENT

SECTION A-A
SUMPED BUBBLE DETAIL

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No.	REVISIONS	DATE	BY

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Jason A. Lewis, P.E.
FL License #62572

KHA PROJECT 046265017
DATE OCT 2020
SCALE AS SHOWN
DESIGNED BY JAL
DRAWN BY MW
CHECKED BY JAL

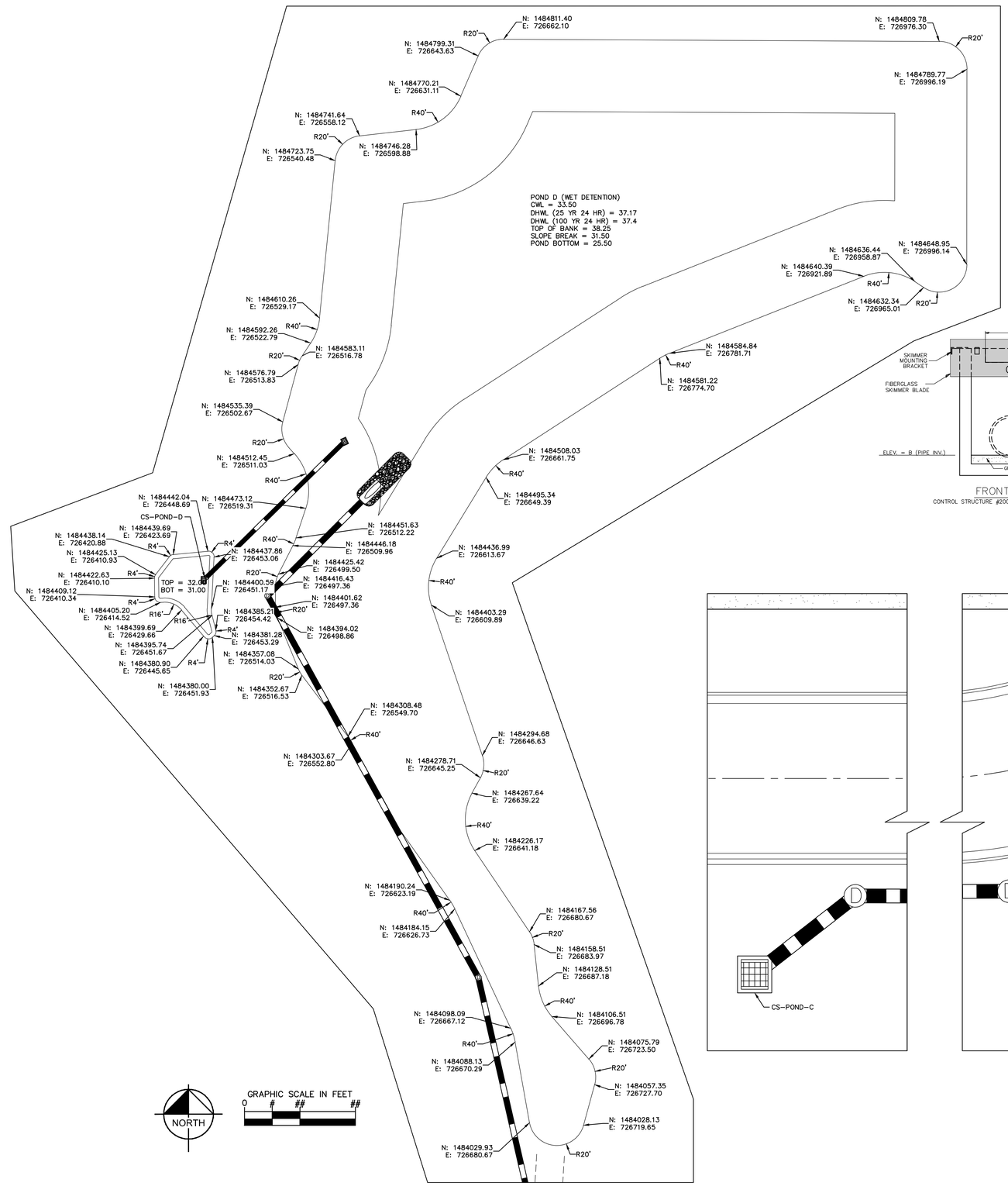
POND GEOMETRY AND DETAILS

PROJECT SUNSHINE
PREPARED FOR
SEEFRIED PROPERTIES
CITY OF COCOA FLORIDA

SHEET NUMBER
C609

Plotted By:Reum, Briana Sheet Set:DWG\COCOA Layout:C6.08 POND GEOMETRY AND DETAILS December 02, 2020 08:48:14pm K:\Ldv_scv\046265017 - dms8 cocoa\CADD\CONSTR\C6PB POND GEOMETRY AND DETAILS.dwg
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Plotted By:Reum, Briana Sheet Set:DWG COCOA Layout:C610 December 02, 2020 08:49:05pm K:\Jax_civil\046265017 — dwg\ COCOA\CONSTR\C610 POND GEOMETRY AND DETAILS.dwg
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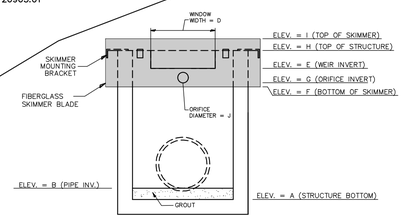


CS-POND-D (POND D)

A =	31.80 FT
B =	32.50 FT
C =	36.00 IN
D =	12.0 INCH
E =	37.00 FT
F =	33.00 FT
G =	33.50 FT
H =	37.50 FT
I =	38.00 FT
J =	6 X 6 IN
STRUCTURE TYPE	TYPE 'A' INLET (WINDOW WITH RECTANGULAR ORIFICE)

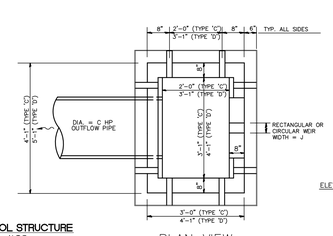
CS-POND-C (POND C)

A =	33.00 FT
B =	33.70 FT
C =	30.00 IN
D =	12.00 IN
E =	38.50 IN
F =	38.00 FT
G =	N/A
H =	39.00 FT
I =	39.50 FT
J =	N/A
STRUCTURE TYPE	TYPE 'A' INLET (WINDOW WITH NO CONTROL ORIFICE)



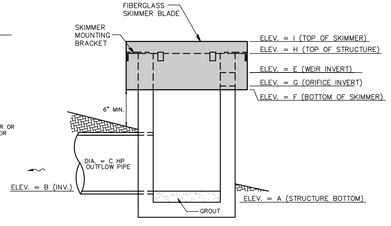
FRONT VIEW

CONTROL STRUCTURE #200B-1, #200B-2, WCA-U-1



PLAN VIEW

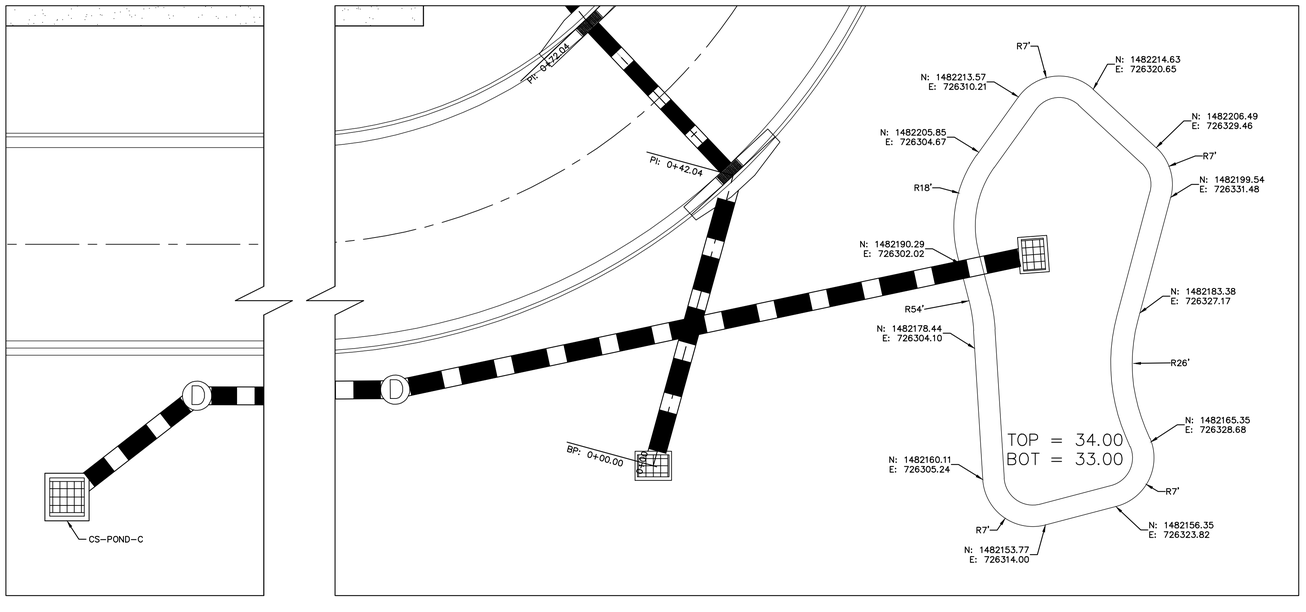
CONTROL STRUCTURE
N.T.S.
INLET WITH WINDOW AND V-NOTCH WEIR



SIDE VIEW

NOTE:
1. CONTRACTOR IS TO GRADE AROUND CONTROL STRUCTURE TO ALLOW FOR 6" MINIMUM BETWEEN BOTTOM OF SKIMMER AND SLOPE OR BOTTOM OF POND ON THE NORTH, SOUTH AND EAST SIDE.

2. A CONCRETE PAD SHALL BE INSTALLED UNDER THE SKIMMER WHERE SEPARATION BETWEEN THE SKIMMER AND POND BOTTOM/BERM IS LESS THAN 12". THE CONCRETE PAD SHALL EXTEND FROM THE CONTROL STRUCTURE TO 12" BEYOND THE SKIMMER.



NORTH

GRAPHIC SCALE IN FEET
0 # ## ##

CALL 2 BUSINESS DAYS BEFORE YOU DIG
IT'S THE LAW! DIAL 811
Know what's below. Call before you dig.
SUNSHINE STATE ONE CALL OF FLORIDA, INC.

No.	REVISIONS	DATE	BY

Kimley»Horn
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116 SOUTH KENTUCKY AVENUE, LAKELAND, FL 33801
PHONE: 863-701-8702
WWW.KIMLEY-HORN.COM CA 00000696

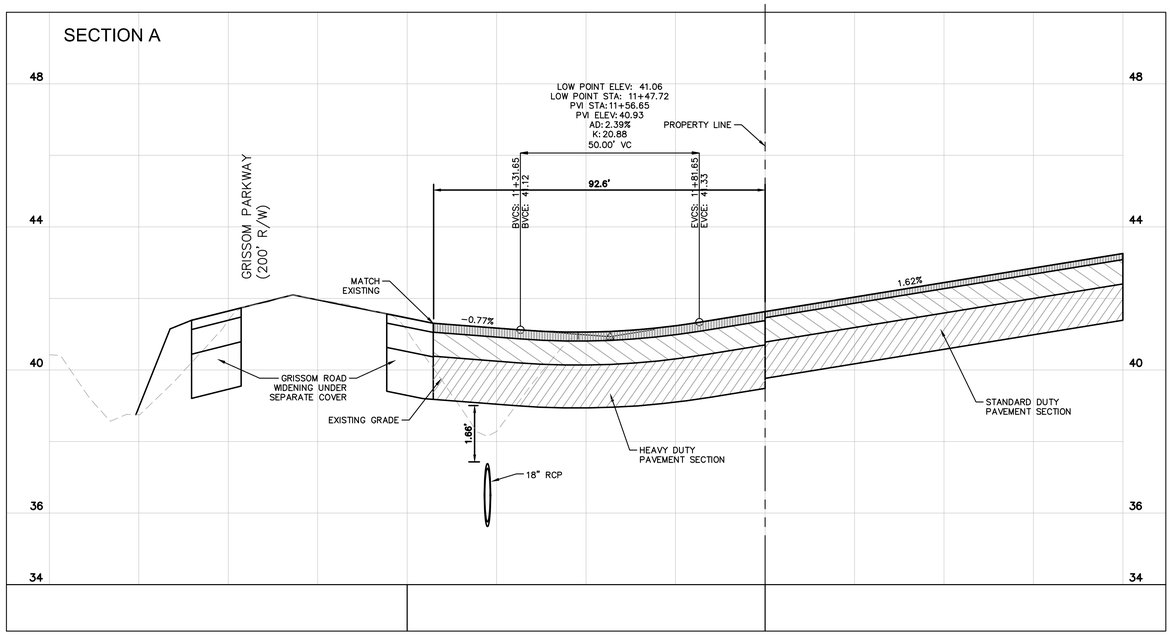
Jason A. Lewis, P.E.
FL License #62572

KHA PROJECT 046265017
DATE OCT 2020
SCALE AS SHOWN
DESIGNED BY JAL
DRAWN BY MW
CHECKED BY JAL

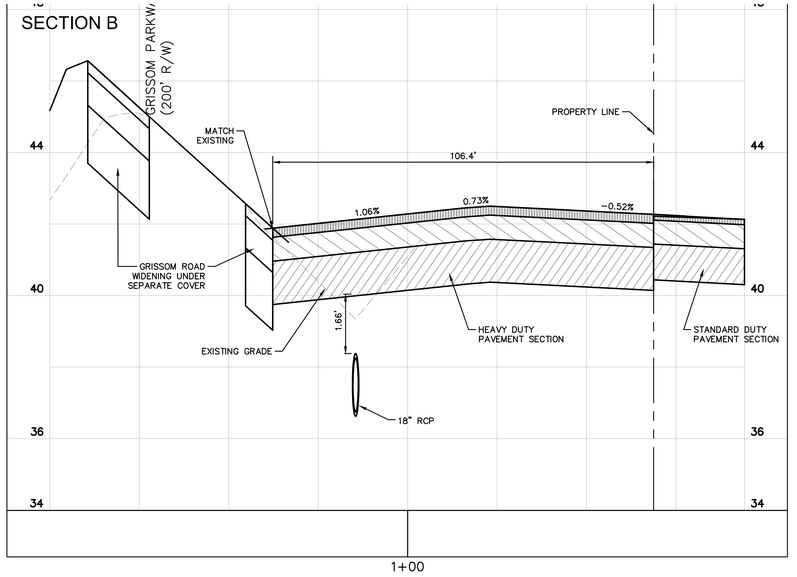
POND GEOMETRY AND DETAILS

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CITY OF COCOA FLORIDA

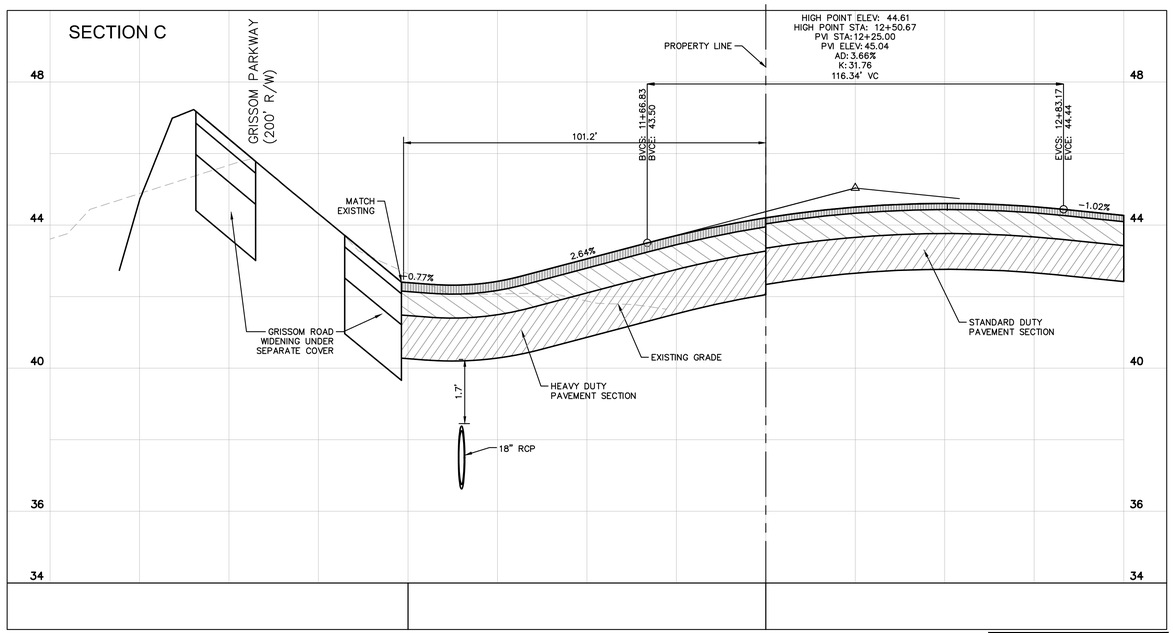
SHEET NUMBER
C610



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SCALE: HORIZ.: 0 20 VERT.: 0 2



SCALE: HORIZ.: 0 20 VERT.: 0 2

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No.	REVISIONS	DATE	BY

Kimley»Horn

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116 SOUTH KENTUCKY AVENUE, LAKELAND, FL 33801
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Jason A. Lewis, P.E.
FL License #62572

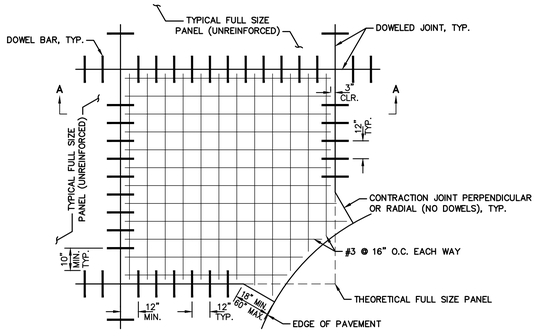
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DATE OCT 2020
SCALE AS SHOWN
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DRAWN BY ---
CHECKED BY ---

TYPICAL SECTIONS

PROJECT SUNSHINE
PREPARED FOR
SEEFRIED PROPERTIES
CITY OF COCOA FLORIDA

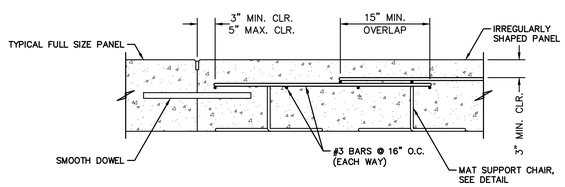
SHEET NUMBER
C611

Plotted By:Reum, Briona Sheet Set:DWG8 COCOA Layout:C606 TYPICAL SECTIONS December 02, 2020 08:50:07pm K:\Ola_civil\046265017 - dms8 cocoa\CAD\CONSTR\C606 TYPICAL SECTIONS.dwg
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PANEL REINFORCEMENT

NOT TO SCALE

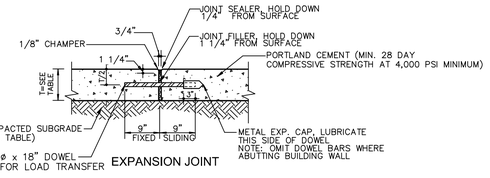


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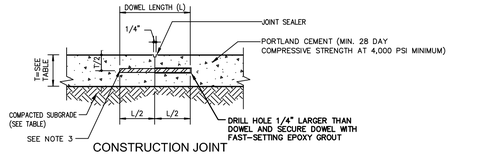
1. IRREGULARLY SHAPED PANELS SHALL BE REINFORCED AS SHOWN ON THE PLANS.
2. REINFORCEMENT MAT SHALL NOT EXTEND ACROSS JOINTS.
3. OVERLAP BARS A MINIMUM OF FIFTEEN-INCHES (15").
4. ENDS AND OVERLAPS SHALL BE WIRE TIED.

SECTION A-A

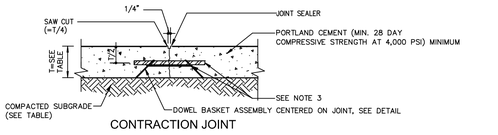
NOT TO SCALE



EXPANSION JOINT



CONSTRUCTION JOINT



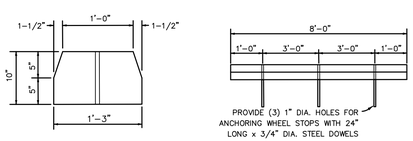
CONTRACTION JOINT

CONCRETE PAVING DETAILS

NOT TO SCALE

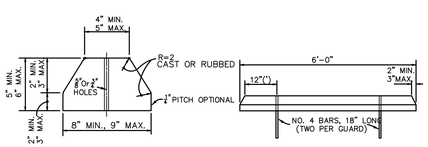
NOTE:

1. ALL EXTERIOR CONCRETE PAVEMENT SHALL HAVE A COMPRESSIVE STRENGTH OF 4,000 PSI AND SURFACE SHALL HAVE A BROOM FINISH.
2. CONCRETE JOINTS FOR CONSTRUCTION OF CONTRACTION JOINTS SHALL BE ON A 15' MAXIMUM GRID AND CENTERED BETWEEN THE DOCK DOORS.
3. ALL JOINTS SHALL BE DOWELED AND SEALED IN ACCORDANCE WITH ACI 330.2R-17. DOWEL BASKETS SHALL BE USED FOR DOWEL SUPPORT IN ACCORDANCE WITH ACI 330.2R-17. REFER TO TABLE 2 FOR DOWEL SIZE AND SPACING
4. FIVE-INCH (5") THICK CONCRETE SIDEWALKS SHALL BE PROVIDED (3,000 PSI).
5. CONTRACTOR SHALL PROVIDE A JOINT LAYOUT AND DETAILS DIAGRAM TO KIMLEY-HORN IN ACCORDANCE WITH ACI 330.2R-17 AND ACI 330R-08 FOR REVIEW PRIOR TO CONCRETE INSTALLATION.
6. CONTRACTOR TO REFER TO ACI 330R-08 FOR COORDINATION OF PAVEMENT JOINT LAYOUT AND DRAINAGE STRUCTURES. CONTRACTOR TO REFER TO APPENDIX C OF ACI 330R-08 FOR PAVEMENT JOINTING AND DESIGN FEATURE DETAILS.
7. IRREGULAR SHAPED SLAB PANELS MAY REQUIRE REINFORCEMENT.



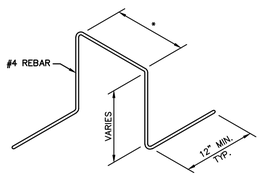
CONCRETE BUMPER GUARD (TRAILER PARKING)

NOT TO SCALE



CONCRETE BUMPER GUARD (AUTO PARKING)

NOT TO SCALE



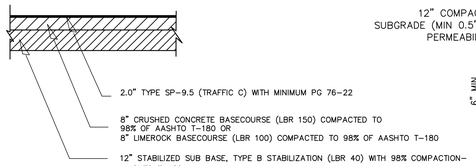
NOTES:

1. CHAIR SHALL BE FIRMLY ANCHORED TO GRADE.
2. THE NUMBER OF CHAIRS USED SHALL BE SUFFICIENT TO FULLY SUPPORT REINFORCEMENT MAT AT THE PROPER HEIGHT DURING PLACEMENT OF CONCRETE.

* LENGTH REQUIRED TO FULLY SUPPORT REINFORCEMENT MAT.

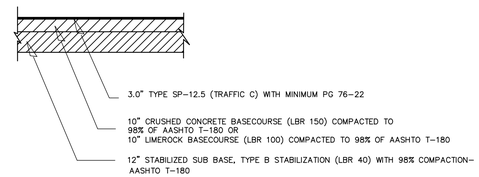
MAT SUPPORT CHAIR

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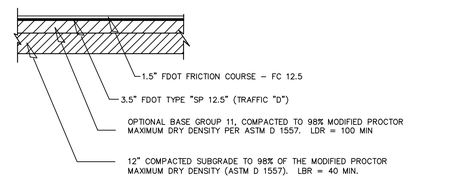
STANDARD DUTY PAVEMENT SECTION

N.T.S.



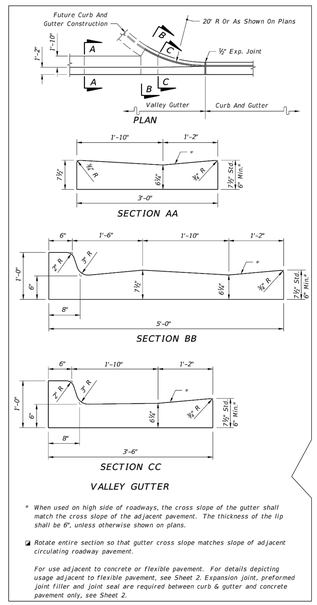
HEAVY DUTY PAVEMENT SECTION

N.T.S.



GRISSOM ROAD PAVEMENT SECTION

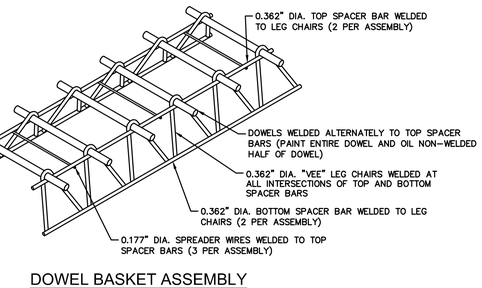
N.T.S.



* When used on high side of roadways, the cross slope of the gutter shall match the cross slope of the adjacent pavement. The thickness of the lip shall be 6", unless otherwise shown on plans.

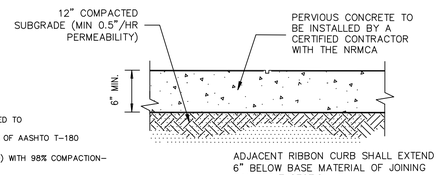
◪ Rotate entire section so that gutter cross slope matches slope of adjacent circulating roadway pavement.

For use adjacent to concrete or flexible pavement. For details depicting usage adjacent to flexible pavement, see Sheet 2. Expansion joint, preformed joint filler and joint seal are required between curb & gutter and concrete pavement only, see Sheet 2.



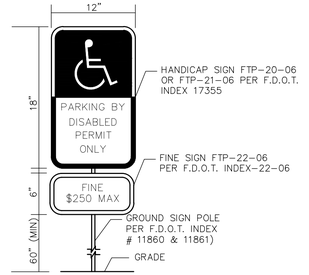
DOWEL BASKET ASSEMBLY

NOT TO SCALE



PERVIOUS CONCRETE PAVEMENT DETAIL

NOT TO SCALE

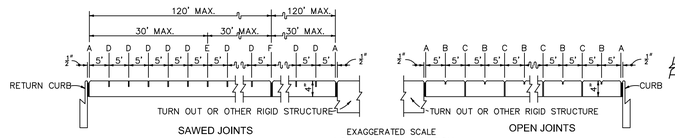


NOTES:

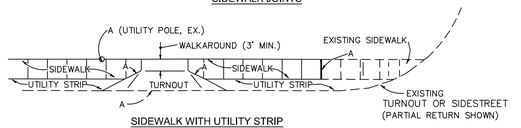
1. ALL LETTERS ARE 1" SERIES "C" PER MUTCD OR AS SPECIFIED IN FDOT INDEX 17355.
2. TOP PORTION OF SIGN SHALL HAVE REFLECTORIZED (ENGINEERING GRADE) BLUE BACKGROUND WITH WHITE REFLECTORIZED LEGEND AND BORDER.
3. BOTTOM PORTION OF SIGN SHALL HAVE A REFLECTORIZED (ENGINEERING GRADE) WHITE BACKGROUND WITH BLACK OPAQUE LEGEND AND BORDER.
4. FINE NOTIFICATION SIGN SHALL HAVE A REFLECTORIZED (ENGINEERING GRADE) WHITE BACKGROUND WITH BLACK OPAQUE LEGEND AND BORDER.
5. ONE (1) SIGN REQUIRED FOR EACH PARKING SPACE.
6. INSTALLATION HEIGHT OF SIGN SHALL BE IN ACCORDANCE WITH F.S. 553.5041 (6)

HANDICAP SIGN DETAIL

NOT TO SCALE



SIDEWALK JOINTS



SIDEWALK WITH UTILITY STRIP

JOINT LEGEND

- 1" EXPANSION JOINTS (PREFORMED JOINT FILLER)
- 1" DUMMY JOINTS, TOOLED
- 1" FORMED OPEN JOINTS
- 1" SAW CUT JOINTS, 1½" DEEP (96 HOUR) MAX. 5' CENTERS
- 1" SAW CUT JOINTS, 1½" DEEP (12 HOUR) MAX. 30' CENTERS
- 1" EXPANSION JOINT WHEN RUN OF SIDEWALK EXCEEDS 120'
- COLD JOINT WITH BOND BREAKER, TOOLED

FOOTNOTES:

* 1/8" OPEN JOINTS PLACED AT EQUAL (20' MAX.) INTERVALS FOR DRIVEWAYS OVER 20' WIDE. JOINTS IN CURB AND GUTTER TO MATCH JOINTS IN DRIVEWAYS.

◊ DRIVEWAYS (6" CONCRETE) SHALL BE OF A UNIFORM WIDTH (W) AS SHOWN ON SHT. P-1.

GENERAL NOTES

SIDEWALKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FDOT STANDARD SPECIFICATION NO. 522 EXCEPT FOR CURB CUT RAMP RUNS WHICH SHALL BE FINISHED IN ACCORDANCE WITH INDEX NO. 304.

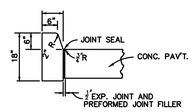
BOND BREAKER MATERIAL CAN BE ANY IMPERMEABLE COATED OR SHEET MEMBRANE OR PREFORMED MATERIAL HAVING A THICKNESS OF NOT LESS THAN 6 MILS NOR MORE THAN 1/2".

CONCRETE SIDEWALK DETAIL

NOT TO SCALE

RIGID PAVEMENT SPECIFICATIONS TABLE 1	
MATERIAL	MIN. THICKNESS (INCHES)
PORTLAND CEMENT (CONCRETE 28 DAY COMP. STRENGTH 4,000 PSI MINIMUM)	10*
A-3 SUBGRADE COMPACTED TO 98% OF THE ASTM D-1557 MAX DRY DENSITY	18

*ALTERNATE: 8" THICKNESS WITH REINFORCEMENT (TO BE APPROVED BY ENGINEER OF RECORD AND DEVELOPER)

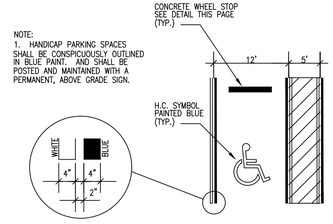


TYPE D

NOT TO SCALE

DOWEL SIZE AND SPACING AT JOINTS TABLE 2		
PAVEMENT DEPTH	DOWEL DIMENSIONS CONTRACTION JOINT	DOWEL SPACING
5 to <6 INCHES	NOT RECOMENDED	N/A
6 to <8 INCHES	1" ø x 16"	12" o/c
8 to <10 INCHES	(C) 1-1/4" ø x 19" ROUND DOWEL (T) 1/2" ø x 24" DEFORMED TIE-BAR	12" o/c
10 to 12 INCHES	(C) 1-1/2" ø x 22" ROUND DOWEL (T) 1/2" ø x 24" DEFORMED TIE-BAR	12" o/c

* DOWEL SIZE AND SPACING PER TABLE 4.6.2.1 AND TABLE 4.6.3 OF ACI 330.2R-17

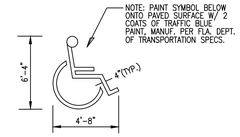


NOTE:

1. HANDICAP PARKING SPACES SHALL BE CONSPICUOUSLY OUTLINED IN BLUE PAINT, AND SHALL BE POSTED AND MAINTAINED WITH A PERMANENT, ABOVE GRADE SIGN.

TYPICAL HANDICAPPED STRIPING

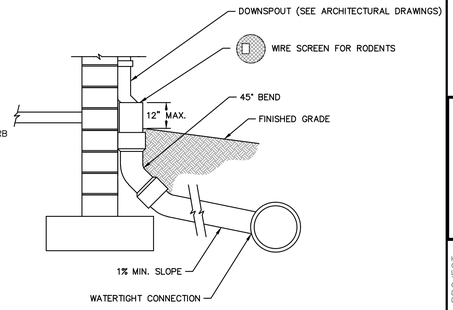
NOT TO SCALE



TYPICAL SYMBOL FOR HANDICAP PKG.

NOT TO SCALE

1. TOP PORTION OF FTP 25 & 26 SHALL HAVE A REFLECTIVE SYMBOL AND BORDER.
2. BOTTOM PORTION SHALL HAVE A REFLECTIVE WHITE BACKGROUND WITH BLACK OPAQUE LEGEND AND BORDER.
3. FTP 25 & 26 MAY BE FABRICATED ON ONE PANEL OR TWO.
4. FTP 25 MAY BE SUBSTITUTED FOR THE FTP 26 IN AREAS WHERE SPACE IS LIMITED.
5. SIGNS ARE TO BE MOUNTED AT STANDARD HEIGHT. (7' FROM PAVEMENT TO BOTTOM OF SIGN).



NOTES:

1. PIPE MUST BE SCHEDULE 40 PVC.
2. THE DOWNSPOUT COLLECTOR DRAIN SHALL BE INSTALLED BEFORE THE DOWNSPOUTS ARE INSTALLED ON THE BUILDING. SITEWORK CONTRACTOR SHALL BE RESPONSIBLE FOR ALL WORK TO AND INCLUDING THE RODENT SCREEN. BUILDING CONTRACTOR SHALL BE RESPONSIBLE FOR THE CONNECTION AT THE POINT OF THE RODENT SCREEN.

DOWNSPOUT COLLECTOR DETAIL

NOT TO SCALE

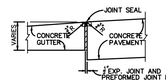


*NOTE: WHEN USED ON HIGH SIDE OF ROADWAYS, THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT THE THICKNESS OF THE LIP SHALL BE 6", UNLESS OTHERWISE SHOWN ON PLANS.

TYPE F CURB

NOT TO SCALE

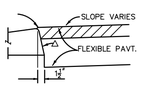
SURFACE ON LOW SIDE OF PAVEMENT TO BE ½" ABOVE LIP OF GUTTER EXCEPT FC-2 TO BE ⅝" ABOVE LIP. SURFACE ON HIGH SIDE TO BE FLUSH WITH GUTTER.



APPLIES TO BOTH HIGH AND LOW SIDES OF PAVEMENT, LOW SIDE SHOWN.

EXPANSION JOINT BETWEEN GUTTER AND CONCRETE PAVEMENT

NOT TO SCALE



APPLIES TO BOTH HIGH AND LOW SIDES OF PAVEMENT, LOW SIDE SHOWN.

CURB AND GUTTER AND TYPE A CURB ADJACENT TO FLEXIBLE PAVEMENT

NOT TO SCALE

Plotted By:Reum, Briona Sheet Set:DWG\COCOA Layout:C700 CONSTRUCTION DETAILS December 02, 2020 08:50:17pm K:\Ode_civil\046265017 - dmsB cocoa\CADD\CONSTR\C700 CONSTRUCTION DETAILS.dwg
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No.	REVISIONS	DATE	BY

Kimley»Horn
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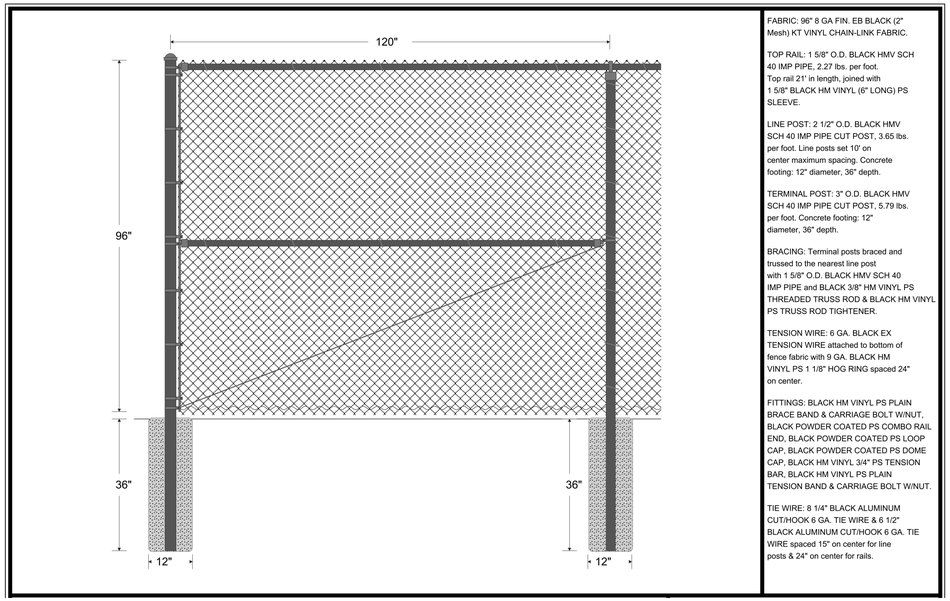
Jason A. Lewis, P.E.
FL License #62572

KHA PROJECT 046265017
DATE OCT 2020
SCALE AS SHOWN
DESIGNED BY ---
DRAWN BY ---
CHECKED BY ---

CONSTRUCTION DETAILS

PROJECT SUNSHINE
PREPARED FOR
SEEFRIED PROPERTIES
CITY OF COCOA FLORIDA

SHEET NUMBER
C700



FABRIC: 96" 8 GA FIN. EB BLACK (2" Mesh) KT VINYL CHAIN-LINK FABRIC.

TOP RAIL: 1 5/8" O.D. BLACK HMV SCH 40 IMP PIPE, 2.27 lbs. per foot. Top rail 21' in length, joined with 1 5/8" BLACK HM VINYL (6" LONG) PS SLEEVE.

LINE POST: 2 1/2" O.D. BLACK HMV SCH 40 IMP PIPE CUT POST, 3.65 lbs. per foot. Line posts set 10' on center maximum spacing. Concrete footing: 12" diameter, 36" depth.

TERMINAL POST: 3" O.D. BLACK HMV SCH 40 IMP PIPE CUT POST, 5.79 lbs. per foot. Concrete footing: 12" diameter, 36" depth.

BRACING: Terminal posts braced and trussed to the nearest line post with 1 5/8" O.D. BLACK HMV SCH 40 IMP PIPE and BLACK 3/8" HM VINYL PS THREADED TRUSS ROD & BLACK HM VINYL PS TRUSS ROD TIGHTENER.

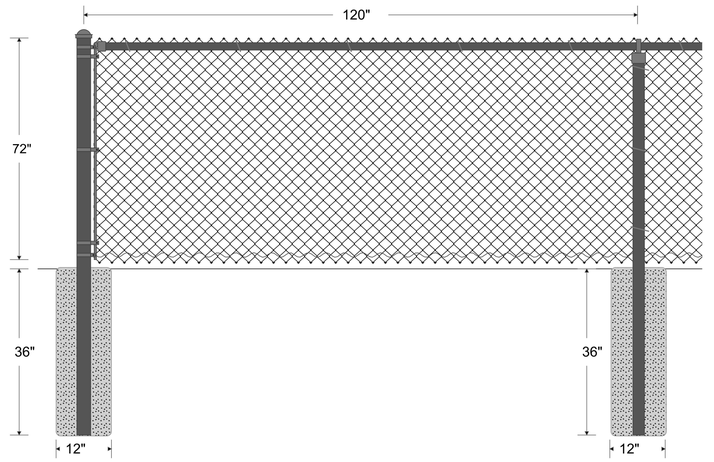
TENSION WIRE: 6 GA. BLACK EX TENSION WIRE attached to bottom of fence fabric with 9 GA. BLACK HM VINYL PS 1 1/8" HOG RING spaced 24" on center.

FITTINGS: BLACK HM VINYL PS PLAIN BRACE BAND & CARRIAGE BOLT W/NUT, BLACK POWDER COATED PS COMBO RAIL END, BLACK POWDER COATED PS LOOP CAP, BLACK POWDER COATED PS DOME CAP, BLACK HM VINYL 3/4" PS TENSION BAR, BLACK HM VINYL PS PLAIN TENSION BAND & CARRIAGE BOLT W/NUT.

TIE WIRE: 8 1/4" BLACK ALUMINUM CUT/HOOK 6 GA. TIE WIRE & 6 1/2" BLACK ALUMINUM CUT/HOOK 6 GA. TIE WIRE spaced 15" on center for line posts & 24" on center for rails.

SECURITY FENCE (8' HIGH)

NOT TO SCALE



FABRIC: 72" 6 GA FIN. EB BLACK (2" Mesh) KK VINYL CHAIN-LINK FABRIC.

TOP RAIL: 1 5/8" O.D. BLACK PC LG-40 PIPE, 1.84 lbs. per foot. Top rail 21' in length, joined with 1 5/8" BLACK HM VINYL (6" LONG) PS SLEEVE.

LINE POST: 2 1/2" O.D. BLACK PC LG-40 PIPE CUT POST, 3.12 lbs. per foot. Line posts set 10' on center maximum spacing. Concrete footing: 12" diameter, 36" depth.

TERMINAL POST: 3" O.D. BLACK PC LG-40 PIPE CUT POST, 4.64 lbs. per foot. Concrete footing: 12" diameter, 36" depth.

TENSION WIRE: 6 GA. BLACK EX TENSION WIRE attached to bottom of fence fabric with 9 GA. BLACK HM VINYL PS 1 1/8" HOG RING spaced 24" on center.

FITTINGS: BLACK HM VINYL PS PLAIN BRACE BAND & CARRIAGE BOLT W/NUT, BLACK POWDER COATED PS COMBO RAIL END, BLACK POWDER COATED PS LOOP CAP, BLACK POWDER COATED PS DOME CAP, BLACK HM VINYL 3/4" PS TENSION BAR, BLACK HM VINYL PS PLAIN TENSION BAND & CARRIAGE BOLT W/NUT.

TIE WIRE: 8 1/4" BLACK ALUMINUM CUT/HOOK 6 GA. TIE WIRE & 6 1/2" BLACK ALUMINUM CUT/HOOK 6 GA. TIE WIRE spaced 15" on center for line posts & 24" on center for rails.

POST FOOTING: HAND MIXED 60 LB BAGS CONCRETE.

PEDESTRIAN BARRIER FENCE (6' HIGH)

NOT TO SCALE

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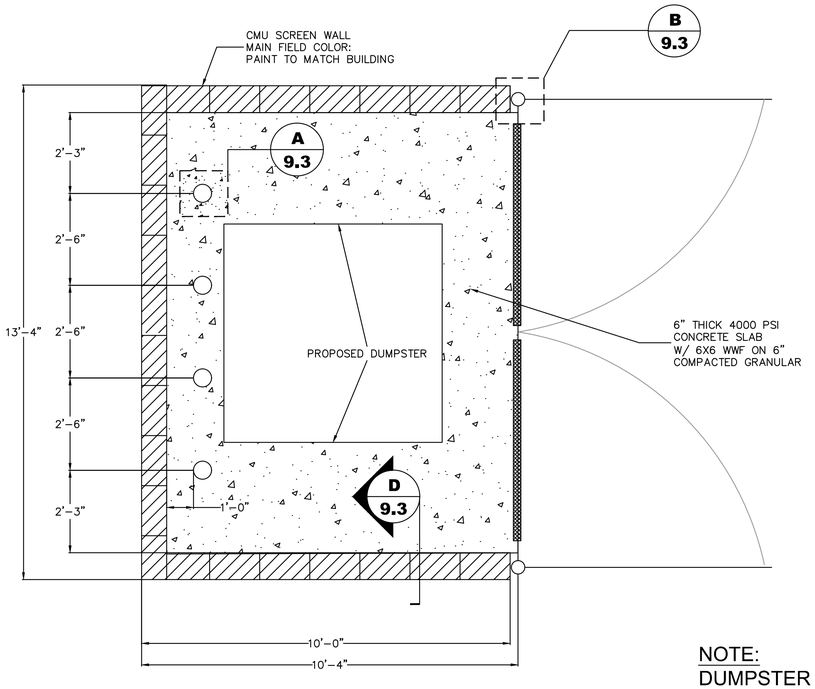
KHA PROJECT	046265017
DATE	OCT 2020
SCALE	AS SHOWN
DESIGNED BY	JAL
DRAWN BY	MW
CHECKED BY	JAL

PROJECT SUNSHINE
PREPARED FOR
SEEFRIED PROPERTIES
CITY OF COCOA FLORIDA

CONSTRUCTION DETAILS

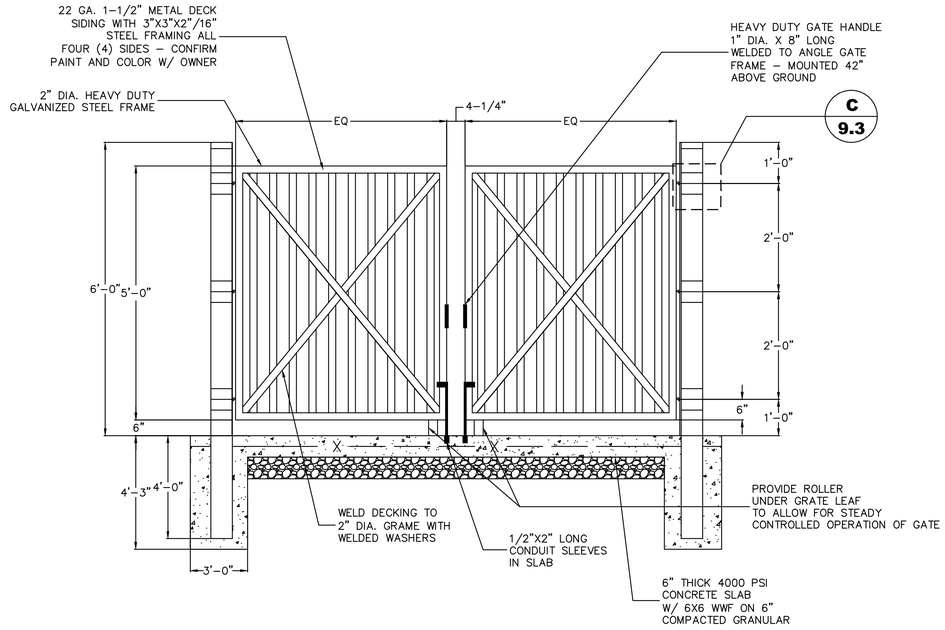
SHEET NUMBER
C701

Plotted By:Reum, Briona Sheet Set:DMO8 COCOA Layout:C701 CONSTRUCTION DETAILS December 02, 2020 08:50:25pm K:\Vak_civil\046265017 — dmo8 cocoa\CADD\CONSTR\C700 CONSTRUCTION DETAILS.dwg
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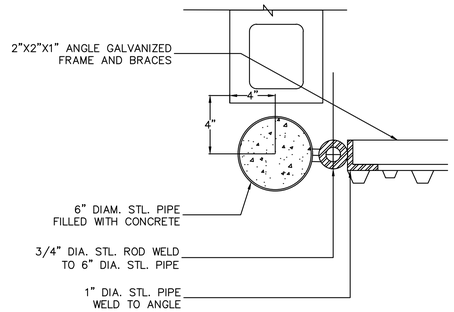


ENLARGED PLAN TRASH ENCLOSURE
N.T.S.

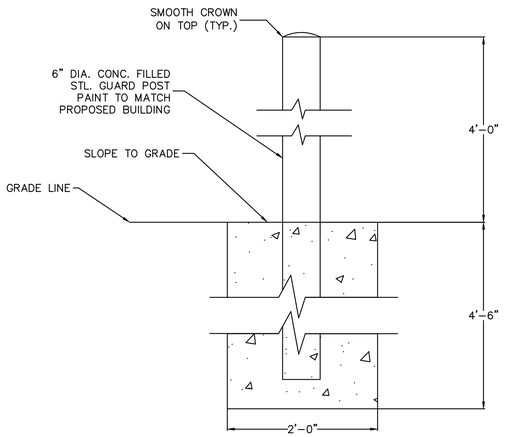
NOTE:
DUMPSTER ENCLOSURE AREA SHOULD BE SAME COLOR SCHEME AS BUILDING PER LAKE COUNTY LDR 9.10.02(B)



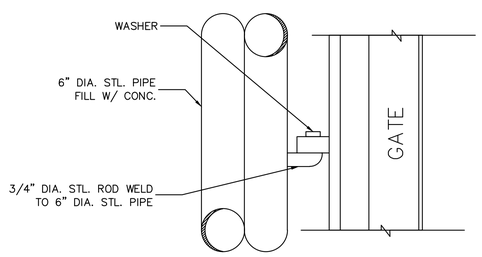
TRASH ENCLOSURE GATE ELEVATION
N.T.S.



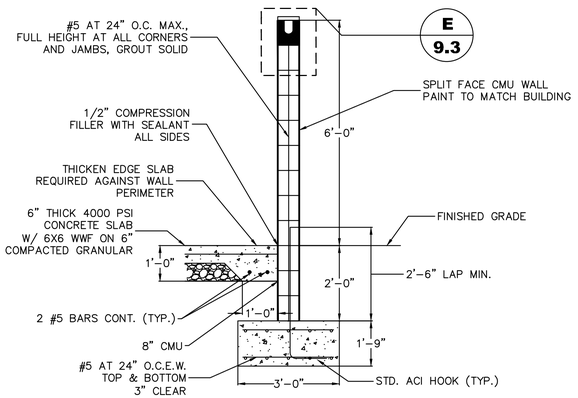
DETAIL "B"
GATE PIPE
N.T.S.



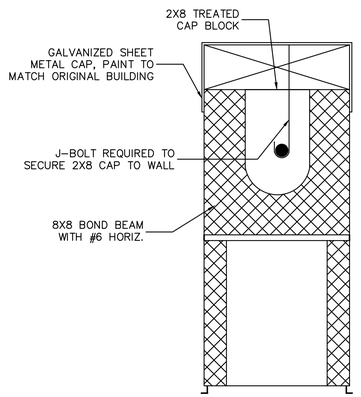
DETAIL "A"
6" BOLLARD
N.T.S.



DETAIL"C"
HINGE
N.T.S.



SECTION "D"
TRASH ENCLOSURE WALL
N.T.S.



DETAIL "E"
MASONRY CAP
N.T.S.

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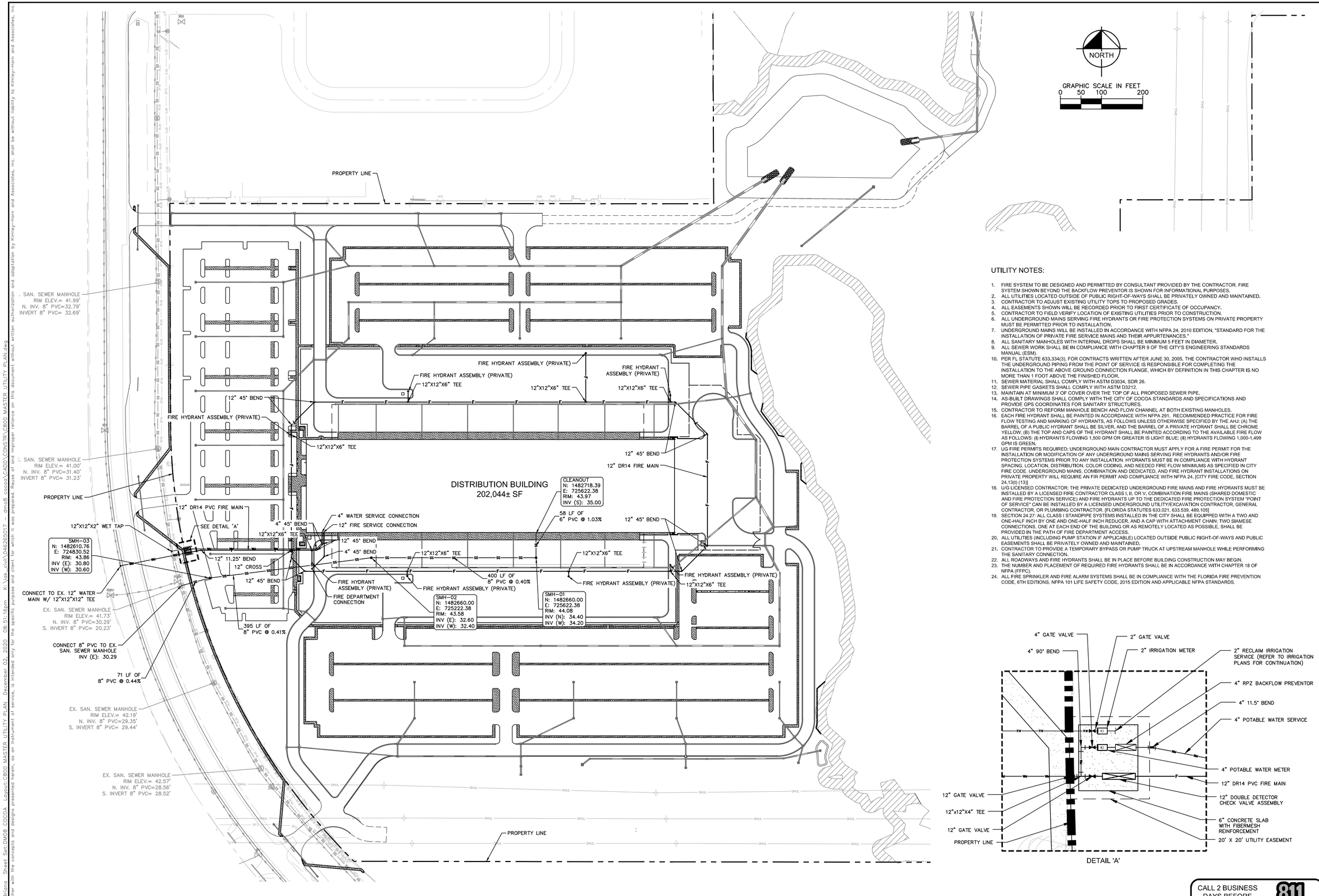
KHA PROJECT 046265017
DATE OCT 2020
SCALE AS SHOWN
DESIGNED BY JAL
DRAWN BY MW
CHECKED BY JAL

CONSTRUCTION DETAILS

PROJECT SUNSHINE
PREPARED FOR
SEEFRIED PROPERTIES
CITY OF COCOA FLORIDA

SHEET NUMBER
C702

Plotted By:Reum, Briana Sheet Set:DMO8 COCOA Layout:CONSTRUCTION DETAILS December 02, 2020 08:50:28pm K:\Ldk_civil\046265017 — dms8 cocoa\CADD\CONSTR\C700 CONSTRUCTION DETAILS.dwg
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UTILITY NOTES:

1. FIRE SYSTEM TO BE DESIGNED AND PERMITTED BY CONSULTANT PROVIDED BY THE CONTRACTOR. FIRE SYSTEM SHOWN BEYOND THE BACKFLOW PREVENTOR IS SHOWN FOR INFORMATIONAL PURPOSES.
2. ALL UTILITIES LOCATED OUTSIDE OF PUBLIC RIGHT-OF-WAYS SHALL BE PRIVATELY OWNED AND MAINTAINED.
3. CONTRACTOR TO ADJUST EXISTING UTILITY TOPS TO PROPOSED GRADES.
4. ALL EASEMENTS SHOWN WILL BE RECORDED PRIOR TO FIRST CERTIFICATE OF OCCUPANCY.
5. CONTRACTOR TO FIELD VERIFY LOCATION OF EXISTING UTILITIES PRIOR TO CONSTRUCTION.
6. ALL UNDERGROUND MAINS SERVING FIRE HYDRANTS OR FIRE PROTECTION SYSTEMS ON PRIVATE PROPERTY MUST BE PERMITTED PRIOR TO INSTALLATION.
7. UNDERGROUND MAINS WILL BE INSTALLED IN ACCORDANCE WITH NFPA 24, 2010 EDITION, "STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES."
8. ALL SANITARY MANHOLES WITH INTERNAL DROPS SHALL BE MINIMUM 5 FEET IN DIAMETER.
9. ALL SEWER WORK SHALL BE IN COMPLIANCE WITH CHAPTER 9 OF THE CITY'S ENGINEERING STANDARDS MANUAL (ESM).
10. PER FL STATUTE 633.334(3), FOR CONTRACTS WRITTEN AFTER JUNE 30, 2005, THE CONTRACTOR WHO INSTALLS THE UNDERGROUND PIPING FROM THE POINT OF SERVICE IS RESPONSIBLE FOR COMPLETING THE INSTALLATION TO THE ABOVE GROUND CONNECTION FLANGE, WHICH BY DEFINITION IN THIS CHAPTER IS NO MORE THAN 1 FOOT ABOVE THE FINISHED FLOOR.
11. SEWER MATERIAL SHALL COMPLY WITH ASTM D3034, SDR 26.
12. SEWER PIPE GASKETS SHALL COMPLY WITH ASTM D3212.
13. MAINTAIN AT MINIMUM 3' OF COVER OVER THE TOP OF ALL PROPOSED SEWER PIPE.
14. AS-BUILT DRAWINGS SHALL COMPLY WITH THE CITY OF COCOA STANDARDS AND SPECIFICATIONS AND PROVIDE GPS COORDINATES FOR SANITARY STRUCTURES.
15. CONTRACTOR TO REFORM MANHOLE BENCH AND FLOW CHANNEL AT BOTH EXISTING MANHOLES.
16. EACH FIRE HYDRANT SHALL BE PAINTED IN ACCORDANCE WITH NFPA 291, RECOMMENDED PRACTICE FOR FIRE FLOW TESTING AND MARKING OF HYDRANTS, AS FOLLOWS UNLESS OTHERWISE SPECIFIED BY THE AHJ: (A) THE BARREL OF A PUBLIC HYDRANT SHALL BE SILVER, AND THE BARREL OF A PRIVATE HYDRANT SHALL BE CHROME YELLOW; (B) THE TOP AND CAPS OF THE HYDRANT SHALL BE PAINTED ACCORDING TO THE AVAILABLE FIRE FLOW AS FOLLOWS: (I) HYDRANTS FLOWING 1,500 GPM OR GREATER IS LIGHT BLUE; (II) HYDRANTS FLOWING 1,000-1,499 GPM IS GREEN.
17. UG FIRE PERMITS REQUIRED; UNDERGROUND MAIN CONTRACTOR MUST APPLY FOR A FIRE PERMIT FOR THE INSTALLATION OR MODIFICATION OF ANY UNDERGROUND MAINS SERVING FIRE HYDRANTS AND/OR FIRE PROTECTION SYSTEMS PRIOR TO ANY INSTALLATION. HYDRANTS MUST BE IN COMPLIANCE WITH HYDRANT SPACING, LOCATION, DISTRIBUTION, COLOR CODING, AND NEEDED FIRE FLOW MINIMUMS AS SPECIFIED IN CITY FIRE CODE. UNDERGROUND MAINS, COMBINATION AND DEDICATED, AND FIRE HYDRANT INSTALLATIONS ON PRIVATE PROPERTY WILL REQUIRE AN FIR PERMIT AND COMPLIANCE WITH NFPA 24, [CITY FIRE CODE, SECTION 24.13(I) (13)]
18. U/G LICENSED CONTRACTOR: THE PRIVATE DEDICATED UNDERGROUND FIRE MAINS AND FIRE HYDRANTS MUST BE INSTALLED BY A LICENSED FIRE CONTRACTOR CLASS I, II, OR V, COMBINATION FIRE MAINS (SHARED DOMESTIC AND FIRE PROTECTION SERVICE) AND FIRE HYDRANTS UP TO THE DEDICATED FIRE PROTECTION SYSTEM "POINT OF SERVICE" CAN BE INSTALLED BY A LICENSED UNDERGROUND UTILITY/EXCAVATION CONTRACTOR, GENERAL CONTRACTOR, OR PLUMBING CONTRACTOR. [FLORIDA STATUTES 633.021, 633.539, 489.105]
19. SECTION 24.27: ALL CLASS I STANDPIPE SYSTEMS INSTALLED IN THE CITY SHALL BE EQUIPPED WITH A TWO AND ONE-HALF INCH BY ONE AND ONE-HALF INCH REDUCER, AND A CAP WITH ATTACHMENT CHAIN; TWO SIAMESE CONNECTIONS, ONE AT EACH END OF THE BUILDING OR AS REMOTELY LOCATED AS POSSIBLE, SHALL BE PROVIDED IN THE PATH OF FIRE DEPARTMENT ACCESS.
20. ALL UTILITIES (INCLUDING PUMP STATION IF APPLICABLE) LOCATED OUTSIDE PUBLIC RIGHT-OF-WAYS AND PUBLIC EASEMENTS SHALL BE PRIVATELY OWNED AND MAINTAINED.
21. CONTRACTOR TO PROVIDE A TEMPORARY BYPASS OR PUMP TRUCK AT UPSTREAM MANHOLE WHILE PERFORMING THE SANITARY CONNECTION.
22. ALL ROADWAYS AND FIRE HYDRANTS SHALL BE IN PLACE BEFORE BUILDING CONSTRUCTION MAY BEGIN.
23. THE NUMBER AND PLACEMENT OF REQUIRED FIRE HYDRANTS SHALL BE IN ACCORDANCE WITH CHAPTER 18 OF NFPA (FFPC).
24. ALL FIRE SPRINKLER AND FIRE ALARM SYSTEMS SHALL BE IN COMPLIANCE WITH THE FLORIDA FIRE PREVENTION CODE, 6TH EDITIONS, NFPA 101 LIFE SAFETY CODE, 2015 EDITION AND APPLICABLE NFPA STANDARDS.

DETAIL 'A'

CALL 2 BUSINESS DAYS BEFORE YOU DIG
IT'S THE LAW! DIAL 811
Know what's below. Call before you dig.
SUNSHINE STATE ONE CALL OF FLORIDA, INC.

No.	REVISIONS	DATE	BY

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Jason A. Lewis, P.E.
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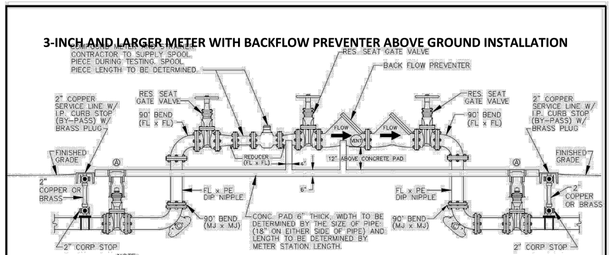
MASTER UTILITY PLAN

PROJECT SUNSHINE
PREPARED FOR
SEEFRIED PROPERTIES
CITY OF COCOA FLORIDA

SHEET NUMBER
C800

Plotted By:Reum, Briona Sheet Set:DWG\8 COCOA Layout:C800 MASTER UTILITY PLAN December 02, 2020 08:51:16pm K:\tal_civil\046265017 - dmsB cocoa\CAD\CONSTR\C800 MASTER UTILITY PLAN.dwg
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3-INCH AND LARGER METER WITH BACKFLOW PREVENTER ABOVE GROUND INSTALLATION



NOTE:

1. ASSEMBLY IS TO BE PAINTED RUST-O-THANE NO. 9407-1854 (BLUE).
2. ALL ABOVE GROUND BOLTS AND NUTS TO BE #304 STAINLESS STEEL.
3. ALTHREAD ROD WILL NOT BE PERMITTED.
4. 12" MIN. CLEARANCE FROM THE VENT ON THE BACKFLOW PREVENTER TO THE CONCRETE PAD.
5. 45° BENDS MAY BE USED WHEN PRIOR APPROVED BY ENGINEER.
6. ALL FITTINGS ARE RESTRAINED.
7. IN LIEU OF CONCRETE SUPPORTS, ADJUSTABLE STAINLESS STEEL SUPPORTS ALLOWED.
8. 2" COPPER SERVICE LINE TO BE INSTALLED ON BRASS SADDLE OR WELDED BOSS. 2" BRASS MAY BE USED IN LIEU OF COPPER.

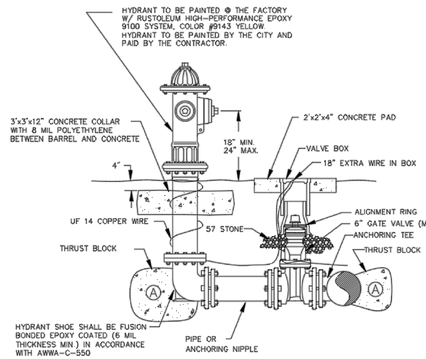
Ⓐ REFER TO GATE VALVE & VALVE BOX DETAIL.
Ⓒ REFER TO THRUST BLOCK NOTES & DETAILS.

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

3 INCH AND LARGER METER WITH BACKFLOW PREVENTER ABOVE GROUND INSTALLATION

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: 3 IN AND LARGER METER WITH BACKFLOW rev	

FIRE HYDRANT DETAIL



NOTES:

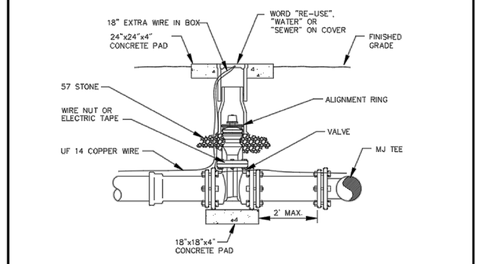
1. CITY CREWS WILL APPLY FINISH PAINT COAT.
2. HYDRANT RISERS WILL NOT BE PERMITTED.
3. FIRE HYDRANT WILL HAVE 18-8 TYPE 304 STAINLESS STEEL BOLTS AND NUTS (BONNET, TRAFFIC FLANGE AND SHOE).
4. SEE "FIRE HYDRANTS" SPECIFICATIONS.
5. PAINT PAID BY THE CONTRACTOR.

Ⓐ REFER TO THRUST BLOCK NOTES AND DETAILS.

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

FIRE HYDRANT DETAIL

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: FIRE HYDRANT DETAIL	

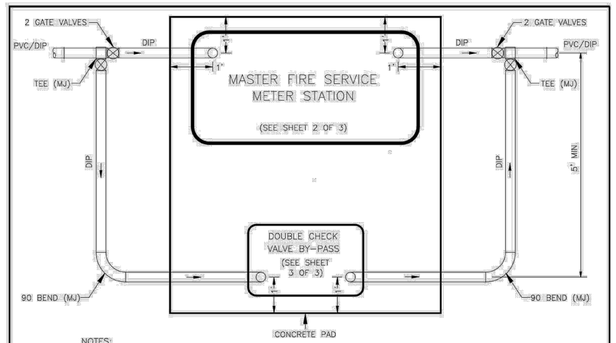


NOTE: PROPER SIZE VALVE BOX SHALL BE INSTALLED. PVC PIPE OR DUCTILE IRON PIPE EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

GATE VALVE AND FITTING DETAIL

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: GATE VALVE & FITTING DETAIL	



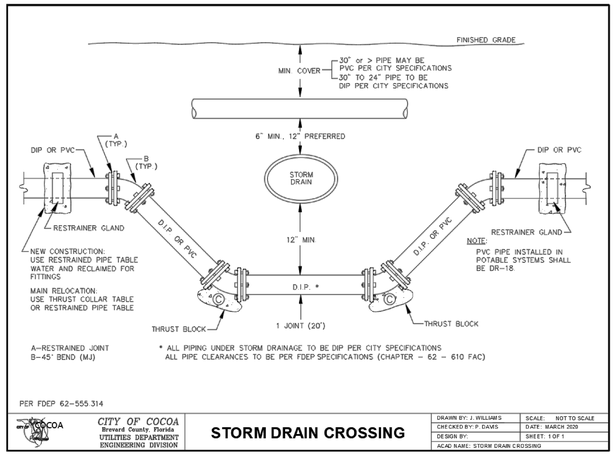
NOTES:

1. ALL UNDERGROUND PIPING IS TO BE DUCTILE IRON WITH RESTRAINED MECHANICAL JOINTS, POLYETHYLENE WRAPPED.
2. PIPING SIZES TO BE DETERMINED BY THE ENGINEER OF RECORD AND APPROVED BY COCOA UTILITIES.
3. ALL WORK IS TO CONFORM TO CITY OF COCOA STANDARDS.

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

MASTER METER ASSEMBLY PLAN

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 3
ACAD NAME: MASTERMETERASSEMBLY1	



A-RESTRAINED JOINT
B-45° BEND (MJ)

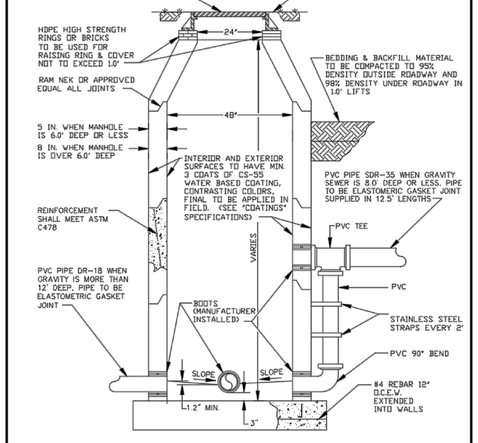
* ALL PIPING UNDER STORM DRAINAGE TO BE DIP PER CITY SPECIFICATIONS
ALL PIPE CLEARANCES TO BE PER FDEP SPECIFICATIONS (CHAPTER – 62 – 610 FAC)

PER FDEP 62-555.314

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

STORM DRAIN CROSSING

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: STORM DRAIN CROSSING	

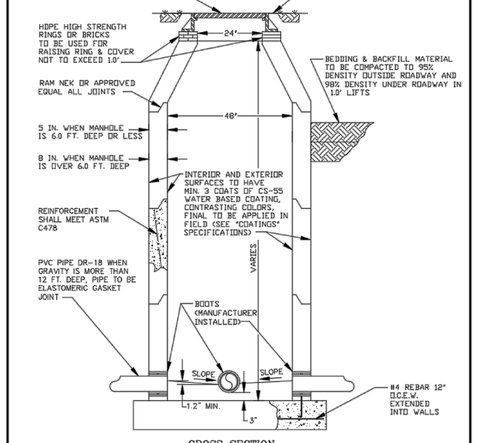


CROSS SECTION

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

TYPICAL MANHOLE WITH OUTSIDE DROP

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: TYPICAL MANHOLE WITH OUTSIDE DROP	



CROSS SECTION

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

TYPICAL MANHOLE

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: TYPICAL MANHOLE	

RESTRAINED PIPE TABLE
WATER AND RECLAIMED WATER MAINS

TYPE	MINIMUM LENGTH (FT) TO BE RESTRAINED ON EACH SIDE OF FITTING(S) PIPE SIZE							
	4"	6"	8"	10"	12"	16"	20"	24"
90°BEND	21	29	38	45	53	66	79	91
45°BEND	9	12	16	19	22	45	33	38
22-1/2°BEND	5	6	8	9	11	14	16	19
11-1/4°BEND	3	3	4	5	6	7	8	9
PLUG, BRANCH OF TEE, VALVE	58	82	107	128	151	193	234	273

NOTES:

1. FITTINGS SHALL BE RESTRAINED JOINTS.
2. INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO OR GREATER THAN SHOWN IN THE TABLE.
3. WHERE TWO OR MORE FITTINGS ARE TOGETHER, USE FITTING WHICH YIELDS GREATEST LENGTH OF RESTRAINED PIPE.
4. ALL LINE VALVES AND THROUGH RUN OF TEES SHALL BE RESTRAINED.
5. LENGTHS SHOWN IN THE TABLE HAVE BEEN CALCULATED IN ACCORDANCE WITH THE PROCEDURE OUTLINED IN "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" AS PUBLISHED BY DIPRA, WITH THE FOLLOWING ASSUMPTIONS:

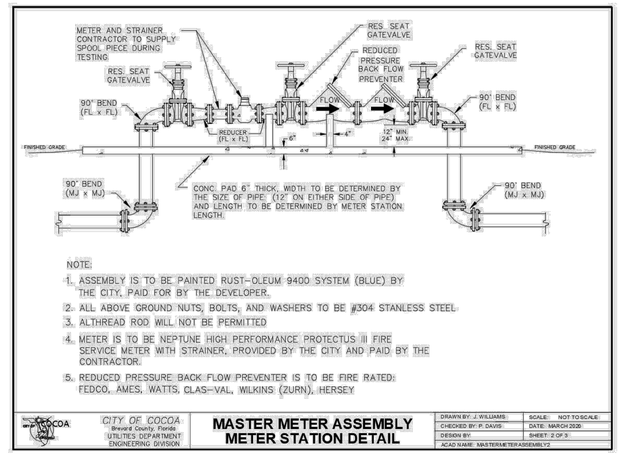
   WORKING PRESSURE: 150 PSI
   SOIL DESIGNATION: SM (SAND SILT)
   LAYING CONDITIONS: 3

6. TABLE IS FOR PVC AND WRAPPED DUCTILE IRON.

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

RESTRAINED PIPE TABLE WATER & RECLAIMED WATER MAINS

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 1 OF 1
ACAD NAME: RESTRAINED PIPE TABLE WATER AND RECLAIMED	



NOTE:

1. ASSEMBLY IS TO BE PAINTED RUST-OLEUM 9400 SYSTEM (BLUE) BY THE CITY, PAID FOR BY THE DEVELOPER.
2. ALL ABOVE GROUND NUTS, BOLTS, AND WASHERS TO BE #304 STAINLESS STEEL.
3. ALTHREAD ROD WILL NOT BE PERMITTED
4. METER IS TO BE NEPTUNE HIGH PERFORMANCE PROTECTUS II FIRE SERVICE METER WITH STRAINER, PROVIDED BY THE CITY AND PAID BY THE CONTRACTOR.
5. REDUCED PRESSURE BACK FLOW PREVENTER IS TO BE FIRE RATED: FEDCO, AMES, WATTS, CLAS-VAL, WILKINS (ZURN), HERSEY.

CITY OF COCOA, Brevard County, Florida, UTILITIES DEPARTMENT, ENGINEERING DIVISION

MASTER METER ASSEMBLY METER STATION DETAIL

DRAWN BY: J. WILLIAMS	SCALE: NOT TO SCALE
CHECKED BY: P. DAVIS	DATE: MARCH 2020
DESIGN BY:	SHEET: 2 OF 3
ACAD NAME: MASTERMETERASSEMBLY2	

CALL 2 BUSINESS DAYS BEFORE YOU DIG
IT'S THE LAW! DIAL 811
811 Know what's below. Call before you dig.
SUNSHINE STATE ONE CALL OF FLORIDA, INC.

No.	REVISIONS	DATE	BY

Kimley»Horn
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116 SOUTH KENTUCKY AVENUE, LAKELAND, FL 33801
PHONE: 863-701-8702
WWW.KIMLEY-HORN.COM CA 00000696

Jason A. Lewis, P.E.
FL License #62572

KHA PROJECT 046265017
DATE OCT 2020
SCALE AS SHOWN
DESIGNED BY JAL
DRAWN BY MW
CHECKED BY JAL

UTILITY DETAILS

PROJECT SUNSHINE
PREPARED FOR
SEEFRIED PROPERTIES
CITY OF COCOA FLORIDA

SHEET NUMBER
C801

Plotted By:Reum, Briona Sheet Set:DWG\8 COCOA Layout:C801 UTILITY DETAILS December 02, 2020 08:51:29pm K:\lak_civil\046265017 – dwg\8 cocoa\CADD\CONSTR\C803 UTILITY DETAILS.dwg
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PHOTOMETRIC GENERAL NOTES:

1. ALL WORK SHALL BE DONE IN STRICT ACCORDANCE WITH ALL REQUIREMENTS OF ANY LOCAL APPLICABLE CODES OR ORDINANCES, PUBLIC UTILITY COMPANY REGULATIONS, STATE CODE, AND NATIONAL ELECTRICAL CODE WITH INTERIM AMENDMENTS THERETO.

2. ALL MATERIALS SHALL CONFORM TO THE LATEST ISSUE OF ALL APPLICABLE STANDARDS AS ESTABLISHED BY EEI, NEMA, ASTM, IPCEA, NATIONAL BOARD OF FIRE UNDERWRITERS & UNDERWRITERS LABORATORIES INC.

3. THE CONTRACTOR SHALL TEST THE LIGHTING AFTER INSTALLATION WITH THE DEVELOPER/OWNER, AND PROVIDE TO DEVELOPER/OWNER WARRANTY AND MAINTENANCE INFORMATION. THE CONTRACTOR SHALL MAKE ADJUSTMENTS AND/OR MODIFICATIONS AS REQUIRED BY THE DEVELOPER/OWNER TO OBTAIN EVEN LIGHT DISTRIBUTION.

4. CONTRACTOR SHALL LEAVE ENTIRE ELECTRICAL SYSTEM INSTALLED BY THE CONTRACTOR IN PROPER WORKING CONDITION AND REPLACE WITHOUT ADDITIONAL CHARGE ALL WORK OR MATERIALS WHICH MAY DEVELOP DEFECTS WITHIN A PERIOD OF ONE (1) YEAR FROM DATE OF FINAL ACCEPTANCE BY THE ENGINEER.

5. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL PRODUCTS, BASES AND CONDUITS TO SITE ENGINEER FOR REVIEW AND APPROVAL PRIOR TO DELIVERY OF MATERIAL TO SITE. ALLOW A MINIMUM OF 14 WORKING DAYS FOR REVIEW. IF ALTERNATIVE LIGHTING IS PROPOSED SUBMIT A PHOTOMETRIC FOOT-CANDLE LAYOUT ALONG WITH ANNUAL MAINTENANCE REQUIREMENTS AND ANTICIPATED COSTS.

6. LIGHTS ARE DESIGNED TO PROVIDE EVEN LEVELS OF ILLUMINATION AND AVOID GLARE ONTO NEIGHBORING PROPERTIES. FINAL DESIGN MAY VARY PENDING MANUFACTURER'S RECOMMENDATIONS.

7. ALL LIGHTING CONTROLS, PANELS, CIRCUIT BREAKERS ETC. ARE TO BE PROVIDED UNDER A SEPARATE CONTRACT BY BUILDING CONTRACTOR. CAREFUL COORDINATION IS REQUIRED BETWEEN SITE CONTRACTOR AND BUILDING CONTRACTOR TO PROVIDE A COMPLETE INSTALLATION FOR SITE LIGHTING.
8. THE CONTRACTOR WILL PROVIDE AND INSTALL ALL MATERIAL NECESSARY TO COMPLETE THE SITE LIGHTING SYSTEM INCLUDING BUT NOT LIMITED TO CONDUIT, BASES, ANCHOR BOLTS, POLES SITE LIGHTS AND LAMPS. THE CONTRACTOR WILL COORDINATE WIRING AND POWERING OF LIGHTS WITH OWNER, ARCHITECT, AND BUILDING CONTRACTOR IF DIFFERENT FROM THE SITE CONTRACTOR.

9. ALL LIGHTS TO BE AS LISTED IN SCHEDULE OR APPROVED EQUIVALENT. LIGHTS SHALL BE MOUNTED ON SQUARE STRAIGHT STEEL POLES ATOP CONCRETE BASES THAT ARE SET 2' (CLEAR) BEHIND CURBS. ILLUMINATION ANALYSIS MODELED USING LIGHTING FIXTURES LISTED IN SCHEDULE.

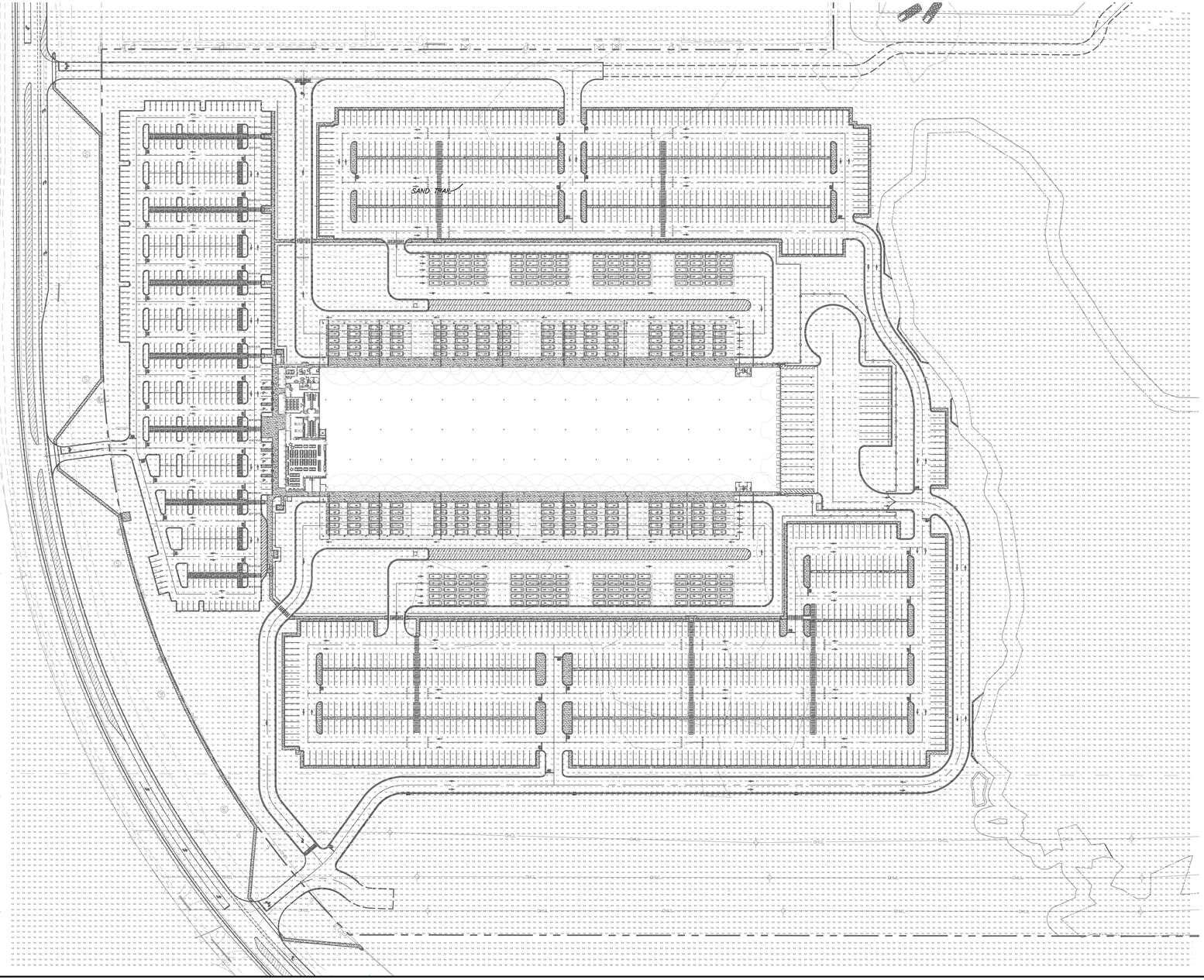
10. LIGHT POLES, AND BRACKETS TO BE AS SHOWN ON DETAILS OR APPROVED EQUIVALENT.

11. WIRE AND CABLE SHALL BE COPPER AND CONFORM TO THE FOLLOWING NEC TYPE THHN/THWN SOLID FOR NO. 12 AND NO. 10. NEC TYPE THHN/THWN STRANDED FOR NO. 8 AND LARGER. RIGID STEEL CONDUIT SHALL BE GALVANIZED. FITTINGS SHALL BE CAST FERROUS MATERIAL WITH A CADMIUM OR ZINC PLATED FINISH.

12. ALL EQUIPMENT SHALL BE GROUNDED AND BONDED IN ACCORDANCE TO NEC.

13. COORDINATE EXACT LUMINAIRE COUNT WITH LIGHTING PLAN.

14. LIGHTING SHALL BE DESIGNED, INSTALLED, MAINTAINED AND DIRECTED SO AS TO AVOID GLARE ON ADJOINING PROPERTIES AND RIGHTS-OF-WAY THROUGH USE OF SEMI AND FULL CUTOFF SHIELDS.



SITE LIGHTING LUMINAIRE SCHEDULE

Symbol	Label	QTY	Manufacturer	Catalog Number	Description	Lamp	Lumens per Lamp	LLF	Wattage
□ ∘	AA-1	55	LITHONIA LIGHTING	DSX1 LED P9 40K TSW RPA DDBXD - 480V	DSX1 LED P9 FORWARD OPTIC, 4000K, TYPE 5 MEDIUM DISTRIBUTION, ROUND POLE MOUNTING, DARK BRONZE FINISH, MOUNTING HEIGHT 28 FT. AFG. POLE; RSS 25 4 5B, ROUND STRAIGHT STEEL POLE, DARK BRONZE FINISH	LED (1)	28445	0.9	241
□ ∘	BB-1	11	LITHONIA LIGHTING	DSX1 LED P9 40K TFTM RPA DDBXD - 480V	DSX1 LED P9 FORWARD OPTIC, 4000K, FORWARD THROW MEDIUM DISTRIBUTION, ROUND POLE MOUNTING, DARK BRONZE FINISH, MOUNTING HEIGHT 28 FT. AFG. POLE; RSS 25 4 5B, ROUND STRAIGHT STEEL POLE, DARK BRONZE FINISH	LED (1)	27578	0.9	241
□ ∘	CC-1	20	LITHONIA LIGHTING	DSX1 LED P6 40K TFTM RPA DDBXD - 480V	DSX1 LED P6 FORWARD OPTIC, 4000K, FORWARD THROW MEDIUM DISTRIBUTION, ROUND POLE MOUNTING, DARK BRONZE FINISH, MOUNTING HEIGHT 28 FT. AFG. POLE; RSS 25 4 5B, ROUND STRAIGHT STEEL POLE, DARK BRONZE FINISH	LED (1)	19037	0.9	163
□ ∘	DD-1 HS	11	LITHONIA LIGHTING	DSX1 LED P6 40K T4M HS RPA DDBXD - 480V	DSX1 LED P6 FORWARD OPTIC, 4000K, TYPE 4 MEDIUM DISTRIBUTION, HOUSE SIDE SHIELD, ROUND POLE MOUNTING, DARK BRONZE FINISH, MOUNTING HEIGHT 28 FT. AFG. POLE; RSS 25 4 5B, ROUND STRAIGHT STEEL POLE, DARK BRONZE FINISH	LED (1)	14462	0.9	163
□ ∘	EE-1	15	LITHONIA LIGHTING	DSX1 LED P4 40K T2M RPA DDBXD - 480V	DSX1 LED P4 FORWARD OPTIC, 4000K, TYPE 2 MEDIUM DISTRIBUTION, ROUND POLE MOUNTING, DARK BRONZE FINISH, MOUNTING HEIGHT 28 FT. AFG. POLE; RSS 25 4 5B, ROUND STRAIGHT STEEL POLE, DARK BRONZE FINISH	LED (1)	14457	0.9	125
□ ∘	EE-1 HS	9	LITHONIA LIGHTING	DSX1 LED P4 40K T2M HS RPA DDBXD - 480V	DSX1 LED P4 FORWARD OPTIC, 4000K, TYPE 2 MEDIUM DISTRIBUTION, HOUSE SIDE SHIELD, ROUND POLE MOUNTING, DARK BRONZE FINISH, MOUNTING HEIGHT 28 FT. AFG. POLE; RSS 25 4 5B, ROUND STRAIGHT STEEL POLE, DARK BRONZE FINISH	LED (1)	11846	0.9	125
□ ∘ □	FF-1	10	LITHONIA LIGHTING	DSX1 LED P2 40K T3M RPA DDBXD - 480V	DSX1 LED P2 FORWARD OPTIC, 4000K, TYPE 3 MEDIUM DISTRIBUTION, DOUBLE HEAD 180°, ROUND POLE MOUNTING, DARK BRONZE FINISH, MOUNTING HEIGHT 28 FT. AFG. POLE; RSS 25 4 5B, ROUND STRAIGHT STEEL POLE, DARK BRONZE FINISH	LED (2)	8641	0.9	140
⊙	GG-1	2	LITHONIA LIGHTING	MRP LED 42C 530 40K SR4 DDBXD - 480V	MRP POST TOP LED, 4000K, TYPE 4 DISTRIBUTION, 4" OD ROUND POLE MOUNTING, DARK BRONZE FINISH, MOUNTING HEIGHT 14 FT. AFG. POLE; RSS 14 4B - T35, ROUND STRAIGHT STEEL POLE, DARK BRONZE FINISH	LED (1)	6536	0.9	75
⌂ □	WW-1	11	LITHONIA LIGHTING	DSX1 LED P6 40K TFTM WBA DDBXD - 480V	DSX1 LED P6 FORWARD OPTIC, 4000K, FORWARD THROW MEDIUM DISTRIBUTION, WALL BRACKET (WALL MOUNT), DARK BRONZE FINISH, MOUNTING HEIGHT 28 FT. AFF.	LED (1)	19037	0.9	163

LIGHTING FIXTURE NOTES:

1. BIDS SHALL BE BASED ON THE LIGHTING FIXTURE SCHEDULE AND SPECIFICATIONS. REFER TO THE ELECTRICAL SPECIFICATIONS FOR ADDITIONAL INFORMATION.
2. ALL FIXTURES SHALL BE UL LISTED.
3. ALL NECESSARY MOUNTING HARDWARE, BRACKETS ETC., SHALL BE FURNISHED AND INSTALLED.
4. SUBSTITUTIONS WON'T BE REVIEWED/ ACCEPTED WITHOUT PHOTOMETRIC CALCULATIONS PLAN.
5. REFER TO BUILDING LIGHTING FIXTURE SCHEDULE FOR TYPE 'D2', TYPE 'F1' AND TYPE 'EM' LUMINAIRE INFORMATION.

STATISTICS

DESCRIPTION	SYMBOL	AVG	MAX	MIN	MAX/MIN	AVG/MIN
ZONE 1 - ASSOCATE ENTRY	□	8.2 fc	9.6 fc	6.9 fc	1.4:1	1.2:1
ZONE 1 - HUB ENTRY	□	4.4 fc	4.4 fc	4.4 fc	1.0:1	1.0:1
ZONE 1 - PEDESTRIAN PATHWAY	□	2.4 fc	10.8 fc	0.9 fc	12.0:1	2.7:1
ZONE 2 - ASSOCATE PARKING	+	2.1 fc	7.5 fc	1.0 fc	7.5:1	2.1:1
ZONE 3 - VAN PARKING #1	+	1.9 fc	3.5 fc	0.9 fc	3.9:1	2.1:1
ZONE 3 - VAN PARKING #2	+	2.1 fc	3.7 fc	1.0 fc	3.7:1	2.1:1
ZONE 4 - VAN STAGING #1	+	2.8 fc	9.7 fc	1.0 fc	9.7:1	2.8:1
ZONE 4 - VAN STAGING #2	+	2.8 fc	9.6 fc	0.9 fc	10.7:1	3.1:1
ZONE 5 - VAN LOADING CANOPY #1	+	11.7 fc	13.5 fc	3.6 fc	3.8:1	3.3:1
ZONE 5 - VAN LOADING CANOPY #2	+	11.7 fc	13.4 fc	5.0 fc	2.7:1	2.3:1
ZONE 6 - LOADING DOCK	+	2.1 fc	3.3 fc	0.9 fc	3.7:1	2.3:1
ZONE 6 - TRAILER PARKING	+	1.2 fc	2.5 fc	0.3 fc	8.3:1	4.0:1
ZONE 7 - ACCESS DRIVE #1	◇	1.4 fc	2.8 fc	0.2 fc	14.0:1	7.0:1
ZONE 7 - ACCESS DRIVE #2	◇	1.6 fc	2.9 fc	0.2 fc	14.5:1	8.0:1
ZONE 7 - ACCESS DRIVE #3	◇	1.3 fc	2.4 fc	0.2 fc	12.0:1	6.5:1
ZONE 8 - LANDSCAPE SPILL	×	0.2 fc	7.8 fc	0.0 fc	N/A	N/A
ZONE 9 - SPILL	×	0.0 fc	1.9 fc	0.0 fc	N/A	N/A

NORTH

GRAPHIC SCALE IN FEET
0 50 100 200

No.	REVISIONS	DATE	BY

Kimley»Horn
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116 SOUTH KENTUCKY AVENUE, LAKELAND, FL 33801
PHONE: 863-701-8702
WWW.KIMLEY-HORN.COM CA 00000696

Jason A. Lewis, P.E.
FL License #62572

KHA PROJECT 046265017
DATE OCT 2020
SCALE AS SHOWN
DESIGNED BY JAL
DRAWN BY MW
CHECKED BY JAL

PHOTOMETRIC PLAN

PROJECT SUNSHINE
PREPARED FOR
SEEFRIED PROPERTIES
CITY OF COCOA FLORIDA

SHEET NUMBER
P100

Plotted By:Reum, Briana Sheet Set:DWG\ COCOA Layout:C500 MASTER SITE PLAN December 02, 2020 09:31:20pm K:\Jax-civil\046265017 - dwg\ cocoa\CADD\CONSTR\P100 PHOTOMETRIC PLAN.dwg
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Ad No.: 0004521574
Pymt Method Invoice
Net Amt: $377.55

Run Times: 1

No. of Affidavits: 1

Run Dates: 12/28/20

Text of Ad:

AD#4521574, 12/28/2020
CITY OF COCOA
NOTICE OF PUBLIC HEARING
NOTICE IS HEREBY GIVEN THAT THE PLANNING & ZONING BOARD/LOCAL PLANNING AGENCY PROPOSE TO CONSIDER THE FOLLOWING:

A.APPROVAL OF A LARGE-SCALE SITE PLAN (Project Sunshine) consistent with Appendix A Zoning, Article XIII, Section 1, of the City Code. The property owner desires to develop the existing vacant site as a distribution facility. The subject property is located on the east side of Grissom Parkway at 3655 Grissom Parkway, and contains +/- 185.59 acres. The property is identified by Parcel #: 24-35-12-00-1.

PLANNING & ZONING BOARD/ LOCAL PLANNING AGENCY PUBLIC HEARING WILL BE HELD ON January 6, 2021 AT 6:00 P.M. OR SOON THEREAFTER IN THE COCOA CITY HALL COUNCIL CHAMBERS LOCATED AT 65 STONE STREET, COCOA, FL

Public Participation and Special COVID-19 Information:
Members of the public may view the meeting agenda, ordinances, project applications, supporting documents, and staff reports on the City's website at the following link prior to attending or commenting:
•City of Cocoa meeting calendar at https://cocoa.legistar.com/Calendar.aspx
These documents and information pertaining to the above may also be inspected at the Community Services Department, between 9:00 a.m. and 5:00 p.m., Monday through Friday, or by phoning (321) 433-8535.

Members of the public have several options to participate in the public hearings.
(1)In-person attendance. Due to the COVID-19 Emergency and the need to maintain social distancing, meetings in the City Hall Council Chambers are limited to fifty (50) members in the audience at any one time. Members of the public may utilize the contact information provided below to contact the City Clerk and determine if restrictions on physical attendance at the City Council Chambers have been lifted prior to the date of the public hearings.
(2)Commenting in advance of the meeting. Interested persons are encouraged to provide written comments in advance of the hearings by emailing meeting@cocoafl.org or mailing to the following address:
City of Cocoa
Attn: Dodie Selig, Planning and Zoning Manager
65 Stone Street
Cocoa, FL 32922
Mailed comments must be received prior to 4:00 p.m. on the date of the hearing to be read into the record.
(3)Viewing and Commenting In Real Time. Interested persons are encouraged to view and listen to the hearings live by accessing the meetings at the following internet addresses:
•City of Cocoa meeting calendar at https://cocoa.legistar.com/Calendar.aspx
Interested persons may submit their written comments or questions during the hearings by email at: meeting@cocoafl.org. Interested persons who wish to provide public input during the meeting will also be able to do so by accessing the e-comment link for this meeting using the Legistar calendar link above.

Special Information for Quasi-Judicial Hearings:
Any person that (1) can demonstrate that they may suffer special damages different in kind and degree from that of the general public at large; and (2) wishes to present factual or expert wit

wishes to present factual or expert witnesses and/or evidence at a quasi-judicial hearing is highly encouraged to immediately contact Dodie Selig, Planning and Zoning Manager, at (321) 433-8535 or dselig@cocoafl.org, to make proper arrangements for presentation of witnesses and/or evidence. All witnesses must be identified and all evidentiary documents and exhibits that are intended to be distributed to the P&Z/LPA and City Council must be submitted to Ms. Selig via email or mail prior to the hearing.

General Notice Information:
This is a public meeting. Interested parties are hereby advised that they may appear at said meeting and be heard. The facility wherein this public meeting will be held is accessible to the physically handicapped. In accordance with the Americans With Disabilities Act, persons needing assistance to participate in any of these proceedings should contact the City Clerk of the City of Cocoa, listed below, at least 48 hours prior to the meeting: Carie Shealy, City Clerk, 65 Stone Street, Cocoa, by telephone at (321) 433-8484 or via email at cshealy@cocoafl.org.

Pursuant to Section 286.0105, Florida Statutes, the City hereby advises the public that if a person decides to appeal any decision made by the P&Z Board/LPA or City Council with respect to any matter considered at its meeting or hearing, that person will need a record of the proceedings and for such purpose, affected persons may need to assure that a verbatim record of the proceedings is made, and such record shall include the testimony and evidence upon which the appeal is to be based. This notice does not constitute consent by the City for the introduction or admission into evidence of otherwise inadmissible or irrelevant evidence, nor does it authorize challenges or appeals otherwise not allowed by law.

The PZ Board/LPA meeting may include the attendance of one (1) or more members of the Cocoa City Council who may or may not participate in the Board discussions held at this public hearing. The Local Planning Agency and City Council reserve the right to continue or postpone hearings to a date certain without re-advertising.

DMO8 Delivery Station

Traffic Impact Analysis

October 2020

Kimley»Horn

Kimley»Horn

TRAFFIC IMPACT ANALYSIS

DMO8 Delivery Station

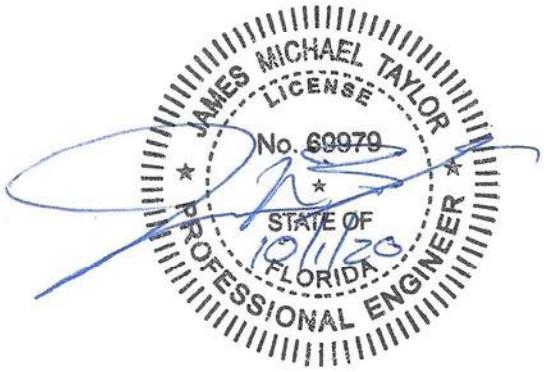
City of Cocoa, FL

Prepared for:

Seefried Properties, Inc.

Prepared by:

Kimley-Horn and Associates, Inc.



James M. Taylor, P.E.

PE #69979

October 2020

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Appendix B: Methodology Agreement

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Appendix D: FDOT's Florida Traffic Online (FTO) Data

Appendix E: Turning Movement Volume Worksheets

Appendix F: Space Coast TPO Traffic Report

Appendix G: Synchro Output

Appendix H: Trip Generation Estimates

Appendix I: CFRPMv6 Model Plot

Appendix J: NCHRP Report 457 Ingress Turn Lane Thresholds

1.0 INTRODUCTION

Kimley-Horn has been retained by Seefried Properties, Inc. to analyze and document the traffic impacts associated with the development of the DMO8 Delivery Station in the City of Cocoa, Florida.

The proposed DMO8 Delivery Station is located on a ±78.84-acre parcel on the east side of Grissom Parkway adjacent to Grissom Ridge. The project property is currently vacant. The proposed development will consist of a ±201,475 square foot delivery station/warehouse building, ±1,555 parking spaces, and vehicle staging and loading spaces.

The site will be accessed by site employees, delivery drivers, flex fleet, and heavy trucks. Heavy trucks will access the site throughout the day. Access to the site will be provided via three (3) driveways. For ease of review, project driveways have been numbered in **Figure 1** as follows:

- **Driveway 1:** Full-access driveway located on the south side of the development on Grissom Parkway for access to the delivery drivers' personal vehicle parking lot/loaded van parking lot. Delivery van drivers will enter to park their personal vehicles and depart with loaded vans through this driveway. Flex fleet will also access via this driveway. This driveway will be the main access for heavy trucks.
- **Driveway 2:** Full-access driveway located on the west side of the development on Grissom parkway for access to employees and main offices.
- **Driveway 3:** Similar to driveway 1, full-access driveway located on the north side of the development on Grissom Parkway for access to the delivery drivers' personal vehicle parking lot/loaded van parking lot. Delivery van drivers will enter to park their personal vehicles and depart with loaded vans through this driveway. Flex fleet will also access via this driveway.

Project driveways and site layout are shown in the site plan provided in **Appendix A.**

1.1 STUDY AREA

A methodology for the analysis was submitted to the County in mid-August. The traffic study methodology is included in **Appendix B**. The study area, as shown in **Figure 1**, includes the adjacent facility (Grissom Parkway) and all other roadway segments and associated major intersections where project trips are anticipated to exceed 3% of the maximum service volume. The study area will include the proposed driveways and the intersection of Grissom Parkway and Industry Road.

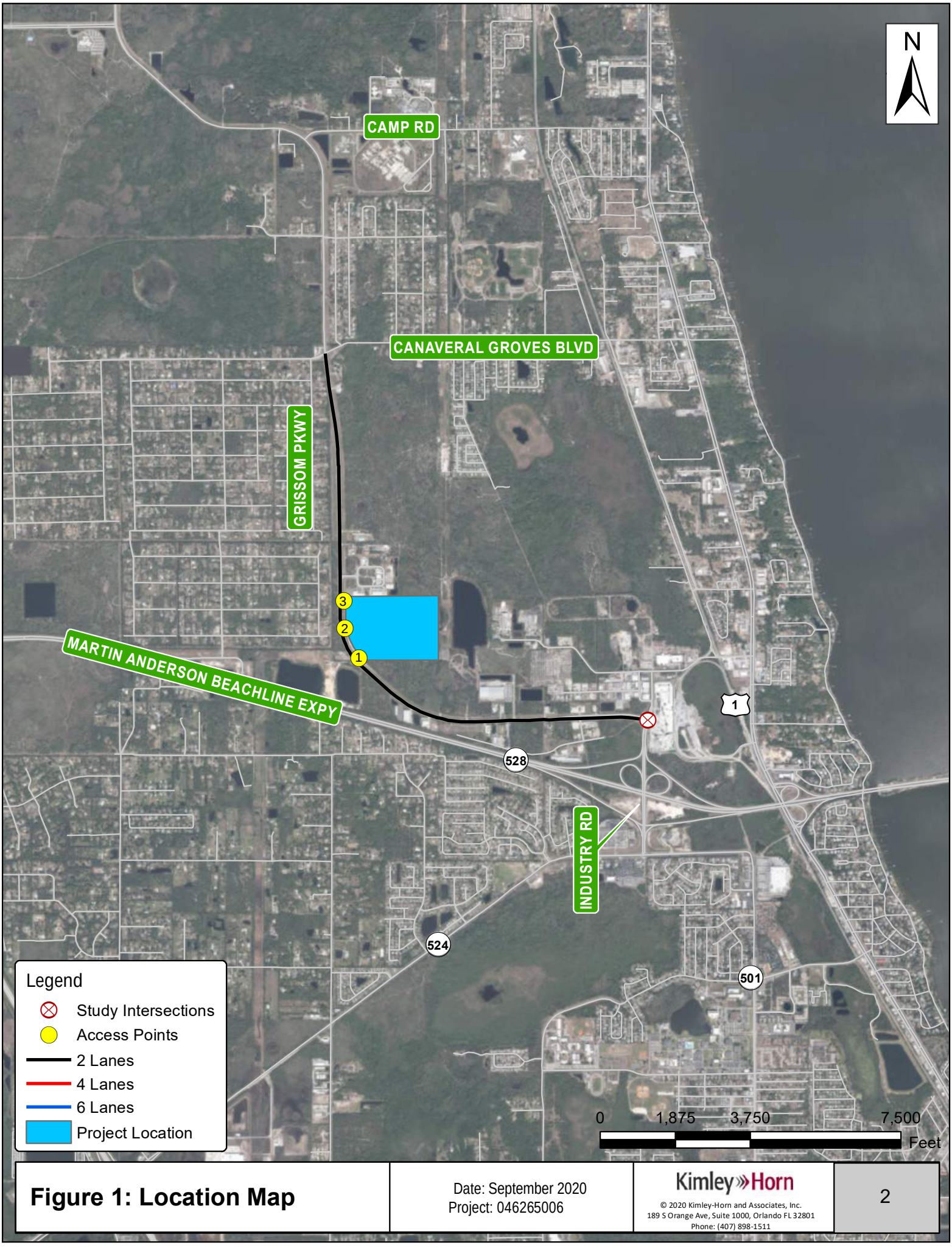


Figure 1: Location Map

Date: September 2020
Project: 046265006

Kimley»Horn

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189 S Orange Ave, Suite 1000, Orlando FL 32801
Phone: (407) 898-1511

2.0 EXISTING CONDITIONS ANALYSIS – YEAR 2020

2.1 EXISTING TRAFFIC COUNTS

Turning movement counts (TMC), collected at the study intersection on Thursday, February 6, 2020, were provided by County Staff and are included in **Appendix C**. The counts were adjusted using the seasonal factor (SF) from FDOT's Florida Traffic Online (FTO) publication. **Appendix D** includes SF data. **Appendix E** contains the adjusted turning movement volume worksheets for all intersections**. Figure 2** illustrates turning movement volumes for existing conditions at the study intersections.

2.2 EXISTING ROADWAY CONDITIONS

A roadway segment analysis was performed for existing conditions for the Daily and PM peak hour. 2019 Average Annual Daily Traffic (AADT) was obtained from Space Coast TPO Traffic Counts Report. A two percent (2%) annual growth rate was applied to AADTs to develop existing 2020 volumes. Existing PM peak hour directional traffic volumes were generated using intersection turning movement counts (TMC). Roadway data was obtained from the Space Coast Transportation Planning Organization (TPO) Traffic Report, which is provided in **Appendix F**. As shown in **Table 1,** all segments are currently operating acceptably within adopted service volumes.

2.3 EXISTING INTERSECTION CONDITIONS

Intersection operational analysis was performed for the year 2020 existing conditions in the PM peak hour using procedures outlined in the *Highway Capacity Manual 6th Edition* with Synchro (v10) software. Intersection level of service (LOS) and maximum volume-to-capacity (v/c) ratios for existing conditions are provided in **Tables 2**. **Appendix G** provides Synchro outputs.

As shown in the table below, the study area intersection operates at an acceptable LOS and v/c ratio less than one (1.0) during the existing PM peak hour condition.

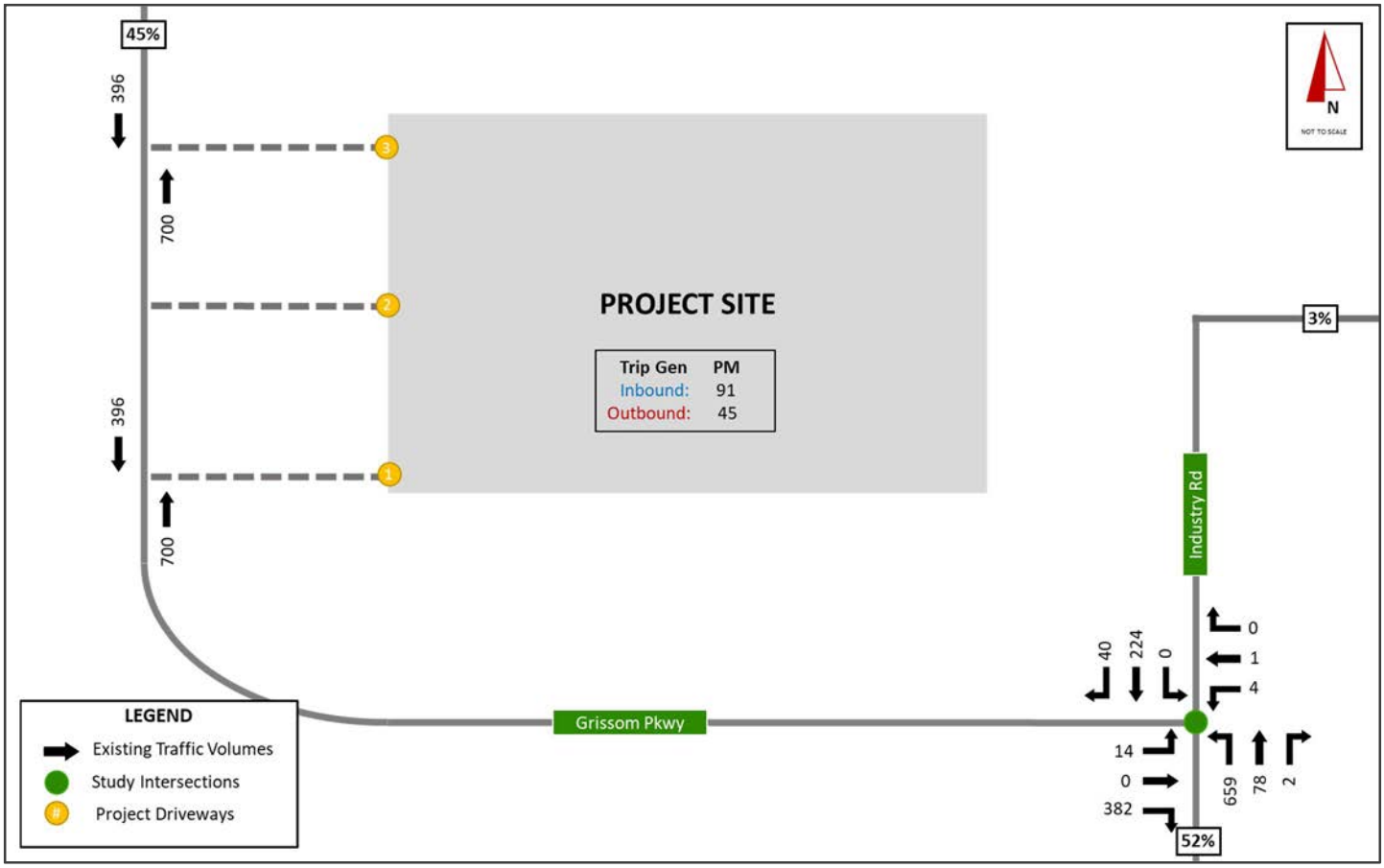


Figure 2: Existing Turning Movement Counts

Table 1: Existing Roadway Segment Analysis

Roadway	Form	To	Roadway Attributes [1]				Daily - Existing (2020)				PM Peak Hour - Existing (2020)			
			Functional Classification	Area Type	Adopted LOS	Number of Lanes	Existing ADT [2]	Daily MSV[1]	Max V/C Ratio	LOS	PHPD[3]	PHPD MSV	Max V/C Ratio	LOS
Grissom Pkwy	Industry Rd	Canaveral Groves	Urban Minor Arterial	U	E	2	10,848	15,600	0.68	D	700	800	0.88	D

Notes:

1. Data obtained from the Space Coast TPO Traffic Counts Report

2. A 2% annual growth rate was applied to the 2019 ADT from the Space Coast TPO Traffic Count Report to develop existing 2020 volumes

3. Peak Hour Peak Direction (PHPD) volume was obtain from the turning movement counts.

Table 2: Existing Intersection Conditions (PM Peak Hour)

Existing Condition - 2020					
Intersection	**Control Type**	**Approach**	**PM Peak**		
			Level of Service (overall delay)	**Max V/C Movement**	**Max V/C Ratio**
Industry Rd & Grissom Pkwy	Signalized	EB	C	EBL	0.08
		WB	C	WBL/T/R	0.03
		NB	B	NBL	0.79
		SB	B	SBT	0.45
		Overall	**B (17.8 s)**	**NBL**	**0.79**

3.0 DEVELOPMENT TRAFFIC

The proposed ±201,475 square foot delivery station/warehouse building has a buildout year 2021. Operational data from the end-user was referenced to develop new external trips to be generated by the site at buildout. FDOT's districtwide travel demand model was used to assign trips throughout the study area.

3.1 TRIP GENERATION

The 10th Edition of the Institute of Transportation Engineers' (ITE) *Trip Generation Manual* was reviewed for available Land Use Codes (LUC) that may coincide with the proposed use at the DMO8 Delivery Station site. LUCs that were examined to compare include:

- LUC 130, Industrial Park
- LUC 140, Manufacturing
- LUC 150, Warehousing
- LUC 154, High-Cube Transload & Short-Term Storage
- LUC 155, High-Cube Fulfillment

None of the ITE LUCs reviewed were shown to account for the quantity and other specifics of traffic expected at the site based on the operator's description of anticipated operations. Therefore, trip generation estimates from operation data provided by the end-user was utilized.

Based on end-user data, the delivery station is anticipated to operate with the following trip purposes:

1. *Autos* (722 daily trips each direction)
    - *Site Employees* – Major employee shifts for the site (to receive and sort deliveries) occur outside of the traditional AM and PM peak hours. Cycle One employees work from approximately 2:00 AM – 12:30 PM. Cycle Two employees and additional staging crews work from approximately 6:00 AM – 2:30 PM. Cycle Three employees work from approximately 1:30 PM – 10:00 PM. Same day (SD) delivery shift employees work from 2:00 PM – 6:00 PM. Route to Station (RTS) delivery shift employees work from 12:00 PM to 10:30 PM. They access via Driveway 2.
    - *Flex Fleet* – Personal vehicles from flex fleet employees arrive during the PM peak hour to pick-up and deliver priority items. These flex deliveries have shorter routes (less than 4-hours) and do not return to the facility. They access via Driveway 1 and 3.
    - *Delivery Van Drivers* – Delivery van drivers, arrive in their personal vehicles between 9:00 AM to 11:00 AM. They access via Driveway 1 and 3.
2. *Trucks* (32 daily trips each direction) – Large semi-truck traffic from regional distribution centers generally occurs evenly throughout the day. The trucks access the site via Driveway 1.
3. *Delivery Vans* (344 daily trips each direction) – Vans depart in waves and primarily avoid peak hour impacts. Upon return, van drivers then park vans and depart in personal vehicles. Delivery vans access the site via Driveway 1 and 3.

As shown in **Table 3**, the proposed delivery station is anticipated to generate a total of 2,196 daily trips, 3 AM peak hour trips (1 inbound and 2 outbound), and 136 PM peak hour trips (91 inbound and 45 outbound). **Appendix H** provides the trip generation estimates table.

Table 3: Trip Generation Summary

Land Use	Daily Trips					AM Peak Hour Trips					PM Peak Hour Trips				
	Total	In		Out		Total	In		Out		Total	In		Out	
Autos (Associates/Employees, Delivery Van Drivers, and Flex Fleet)	1,444	*50%*	722	*50%*	722	0	-	0	-	0	135	*100%*	90	*0%*	45
Trucks	64	*50%*	32	*50%*	32	3	*33%*	1	*67%*	2	1	*100%*	1	*0%*	0
Delivery Vans	688	*50%*	344	*50%*	344	0	-	0	-	0	0	-	0	-	0
Total	**2,196**	**1,098**		**1,098**		**3**	**1**		**2**		**136**	**91**		**45**	

3.2 TRIP DISTRIBUTION

Projected traffic demand of project trips on study roadways was derived with the use of the latest adopted regional travel demand model. Land use data for the project was entered into a new traffic analysis zone (TAZ) within the Central Florida Regional Planning Model (CFRPM v6) model set and situated within the existing roadway network to represent project access appropriately. The model was used to assign trips for all trip purposes between allocated origin and destination pairs using project buildout year model data. Trip distribution for the project was extracted from the completed model assignment and reviewed for logic. Since Driveway #2 provides access to site employees and major shifts occur outside the traditional AM and PM peak hour, no employees are anticipated to access the site via driveway #2 during the peak hours. **Appendix I** provides the resulting model plot showing the percent of daily project trips.

Daily model project distribution was referenced to manually assign project distribution at study area intersections and driveways in general accordance with model output. **Figure 3** shows the project distribution generated by the Delivery Station activities (accessing Driveways 1 and 3).

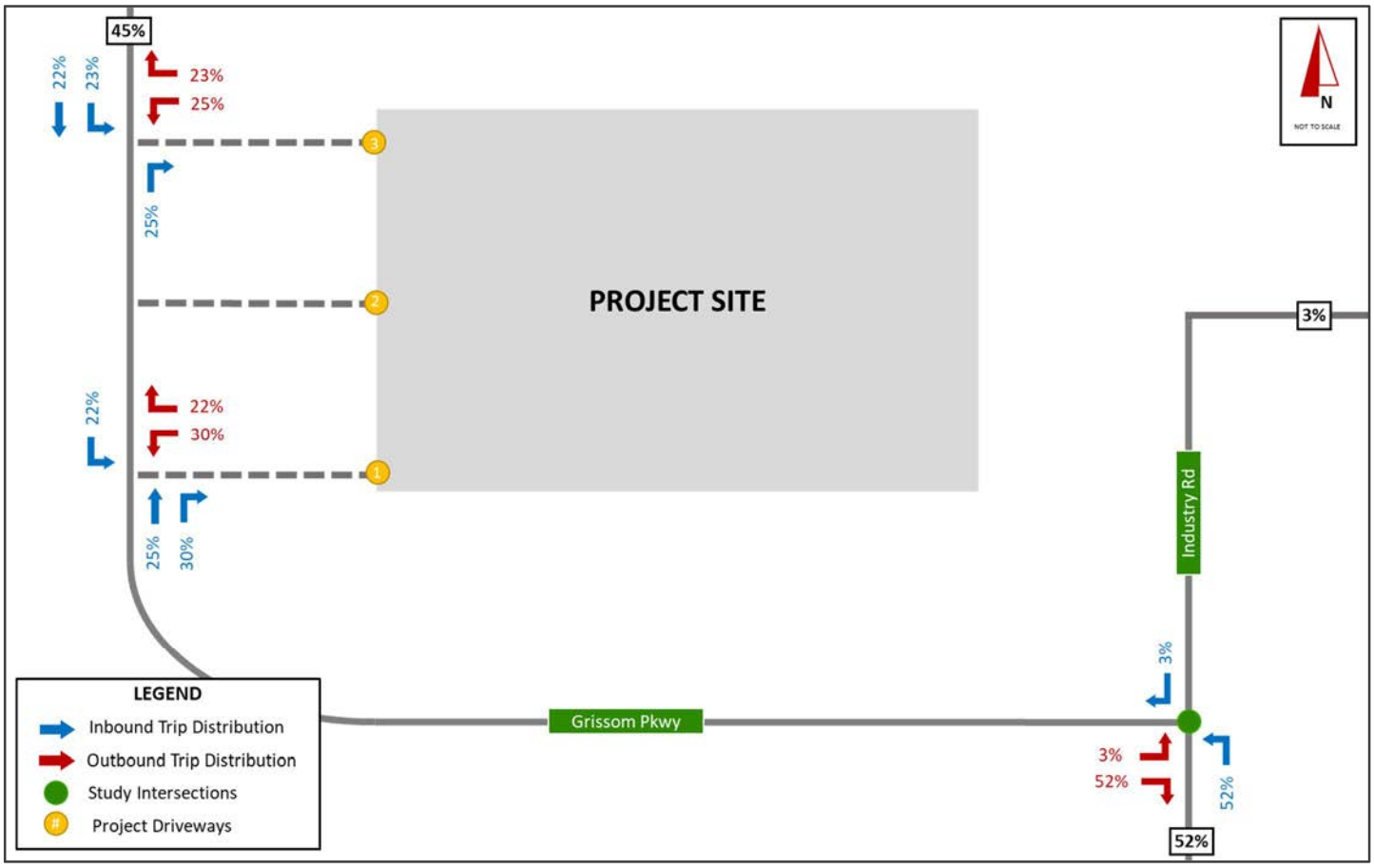


Figure 3: Project Trip Distribution

3.3 TRIP ASSIGNMENT

Project trips were assigned onto study area roadways and intersection based on project trip distribution percentages. **Figure 4** shows the anticipated PM peak hour project movements at study area intersections generated by the Delivery Station activities (accessing Driveways 1 and 3).

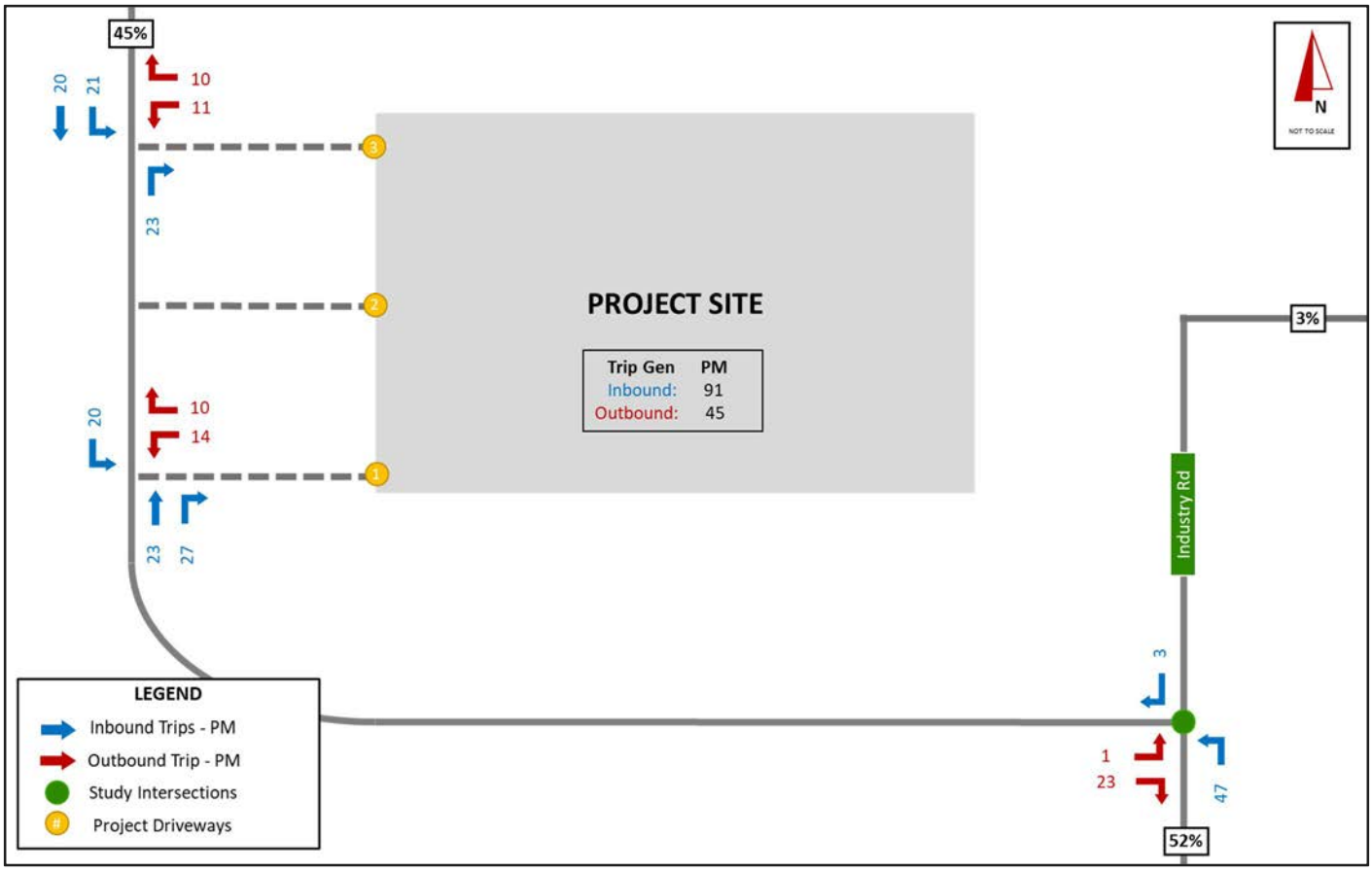


Figure 4: PM Peak Hour Project Trip Assignment

4.0 BACKGROUND CONDITIONS ANALYSIS – YEAR 2021

4.1 BACKGROUND TRAFFIC

Traffic conditions were evaluated for the year 2021 background conditions, without the impact of project trips on the roadway network. Background volumes on study intersections were derived by applying a two percent (2%) annual growth rate to the seasonally adjusted existing traffic counts**. Appendix E** provides adjusted turning movement volume worksheets for all intersections**. Figure 5** illustrates turning movement volumes for background conditions, project trips, and buildout volumes at the study intersections.

4.2 BACKGROUND INTERSECTION ANALYSIS

Intersection operational analysis was performed for the year 2021 background conditions in the PM peak hours using procedures outlined in the *Highway Capacity Manual 6th Edition* with Synchro (v10) software. Intersection level of service (LOS) and maximum volume-to-capacity (v/c) ratios for the background conditions are provided in **Table 4**. **Appendix G** includes synchro outputs.

As shown in the table below, the study intersection operates at an acceptable LOS and v/c ratio less than one (1.0) in background PM peak hour conditions.

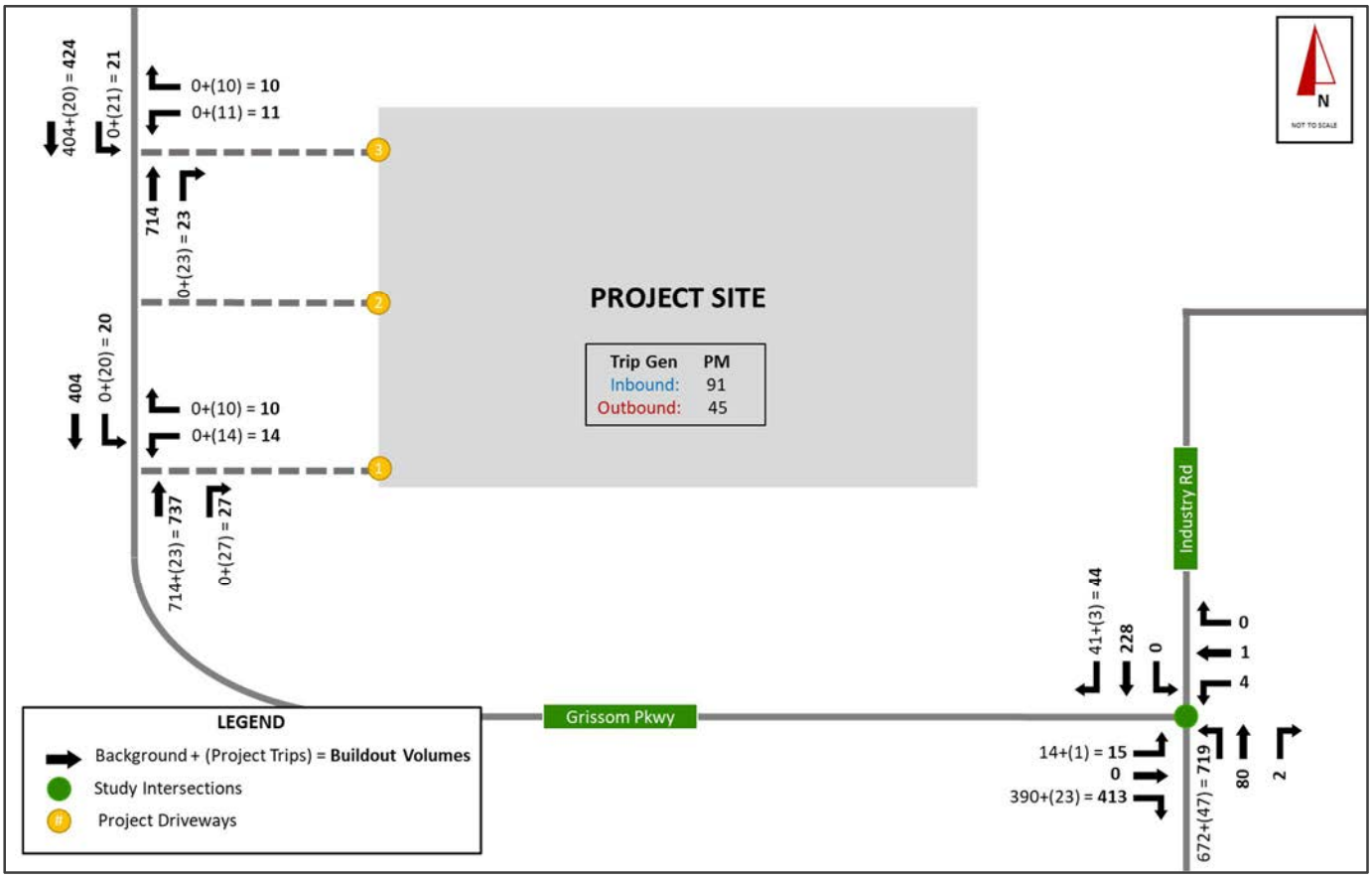


Figure 5: Future Background and Buildout Volumes

Table 4: Background Intersection Conditions (PM Peak Hour)

Background Condition - 2021					
Intersection	**Control Type**	**Approach**	**PM Peak**		
			Level of Service (*overall delay*)	**Max V/C Movement**	**Max V/C Ratio**
Industry Rd & Grissom Pkwy	Signalized	EB	C	EBL	0.08
		WB	C	WBL/T/R	0.03
		NB	B	NBL	0.80
		SB	B	SBT	0.46
		Overall	**B (18.0 s)**	**NBL**	**0.80**

5.0 BUILDOUT CONDITIONS ANALYSIS – YEAR 2021

5.1 BUILDOUT TRAFFIC

Future traffic conditions were evaluated for the buildout year 2021. Buildout volumes were developed by adding anticipated project trips to background volumes. **Appendix E** provides the adjusted turning movement volume worksheets for all intersections. Turning movement volumes for buildout conditions at the study intersections are shown in **Figure 5**.

5.2 BUILDOUT INTERSECTION ANALYSIS

Intersection operational analysis was performed for the year 2021 buildout conditions in the PM peak hour using procedures outlined in the *Highway Capacity Manual 6th Edition* with Synchro (v10) software. Intersection level of service (LOS) and maximum volume-to-capacity (v/c) ratios for the buildout conditions are provided in **Tables 5**. **Appendix G** provides Synchro outputs.

As shown in the table, all study area intersections operate at an acceptable LOS and v/c ratio less than one (1.0) in buildout PM peak hour conditions. No deficiencies were identified as a result of project traffic impact.

Table 5: Buildout Intersection Conditions (PM Peak Hour)

Buildout Condition - 2021					
			PM Peak		
Intersection	**Control Type**	**Approach**	**Level of Service (*overall delay*)**	**Max V/C Movement**	**Max V/C Ratio**
Industry Rd & Grissom Pkwy	Signalized	EB	C	EBL	0.08
		WB	C	WBL/T/R	0.03
		NB	B	NBL	0.82
		SB	B	SBT	0.47
		Overall	**B (18.9 s)**	**NBL**	**0.82**
Grissom Pkwy & Driveway #1	TWSC	EB	-	-	-
		WB	C	WBL	0.12
		NB (L)	-	-	-
		SB (L)	A	SBL	0.03
		Overall	**-**	**WBL**	**0.12**
Grissom Pkwy & Driveway #3	TWSC	EB	-	-	-
		WB	C	WBL	0.10
		NB (L)	-	-	-
		SB (L)	A	SBL	0.03
		Overall	**-**	**WBL**	**0.10**

5.3 BUILDOUT INGRESS TURN LANE ANALYSIS

The need for exclusive ingress right- and left-turn lanes at the proposed site access points was evaluated using the methodology established by the *National Cooperative of Highway Research Programs* (NCHRP) Report 457. The NCHRP 457 compares the major street speed approach volume, opposing volume, and left-turning volume to determine whether a dedicated left-turn lane is warranted on the major street approach. The need for a major right-turn lane on the major approach is determined by comparing the right turning volumes with the approach volume.

As shown in **Appendix J**, all points fall above the threshold curve for both the left- and right-turn lane thresholds. Therefore, ingress right-turn lane and left-turn lanes are required at Driveway 1 and 3 during project buildout.

6.0 FUTURE ROADWAY SEGMENT ANALYSIS

A Daily and PM peak hour roadway segment analysis was performed for future background and buildout conditions (year 2021). Background volumes were developed by applying a two percent (2%) annual growth rate to existing volumes. Buildout volumes were developed by adding background volume and project trips. As shown in **Tables 6 and 7,** all roadway segments operate at acceptable levels of service below adopted service volumes in the Daily and PM peak hour future conditions. No new roadway deficiencies were identified as a result of project traffic impact.

Table 6: Future Roadway Segment Analysis (Daily)

Roadway	Form	To	Daily - Background (2021)						Daily - Buildout (2021)					
			Existing AADT	Growth Rate[2]	Bckg. AADT	Daily MSV[1]	Max V/C Ratio	LOS	IN = 1,098		OUT= 1,098		Max V/C Ratio	LOS
									% Assign[3]	Project Trips	Buildout AADT	Daily MSV		
Grissom Pkwy														
	Industry Rd	Canaveral Groves	10,848	2.0%	11,065	15,600	0.71	D	53%	1,164	12,229	15,600	0.78	D

Notes:

1. Data obtained from the Space Coast TPO Traffic Counts Report

2. A 2% annual growth rate was applied to the 2019 ADT from the Space Coast TPO Traffic Count Report to develop existing 2020 volumes

3. Percent project traffic assignment was calculated as the maximum across the segment

Table 7: Future Roadway Segment Analysis (PM)

Roadway	Form	To	PM Peak Hour - Background (2021)									PM peak Hour - Buildout (2021)					
			PHPD MSV	Existing Volumes[1]		Existing PHPD	Growth Rate[2]	Peak Direction	Bckg. PHPD	Max V/C Ratios	LOS	PHPD MSV	IN= 91		OUT= 45		LOS
				SB / EB	NB / WB								% Assign[3]	Project Trips	Buildout PHPD	Max V/C Ratio	
Grissom Pkwy																	
	Industry Rd	Canaveral Groves	800	396	700	700	2.0%	W	714	0.89	D	800	53%	48	762	0.95	E

Notes:

1. Existing volumes were determine form turning movement counts

2. A 2% annual growth rate was applied to the 2019 ADT from the Space Coast TPO Traffic Count Report to develop existing 2020 volumes

3. Percent project traffic assignment was calculated as the maximum across the segment

7.0 CONCLUSION

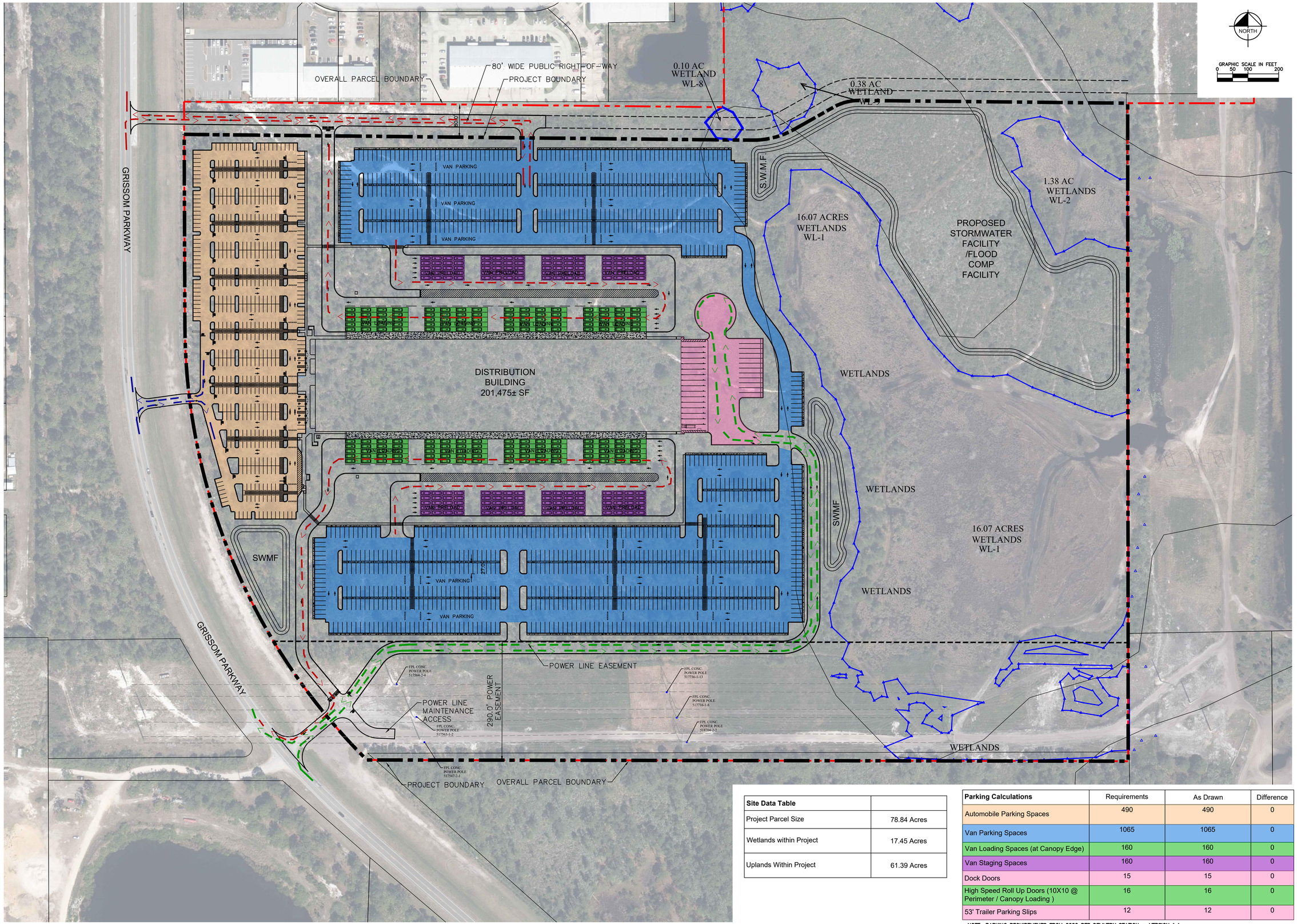
This traffic impact analysis was performed to assess the transportation impacts of the proposed DMO8 Delivery Station located in the City of Cocoa, Florida. The development, proposed for buildout in 2021, will consist of a ±201,475 square foot delivery station/warehouse building, ±1,555 parking spaces, and vehicle staging and loading spaces.

The site will be accessed by site employees, delivery drivers, flex fleet, and heavy trucks. Heavy trucks will access the site throughout the day. Access to the site will be provided via three (3) driveways on Grissom Parkway, as shown in the site plan provided in **Appendix A**. The project is expected a total of 2,196 daily trips, 3 AM peak hour trips (1 inbound and 2 outbound) and 136 PM peak hour trips (91 inbound and 45 outbound) based on a trip generation estimate developed from operational data provided by the end-user.

Roadway segment analyses performed for the existing, background, and buildout conditions conclude that all roadway segments within the study operate at an acceptable level of service (LOS) in the Daily and PM peak hour and have adequate capacity for the future buildout conditions. Operational analyses performed at study area intersection and driveways concludes that all intersections operate at an acceptable LOS with v/c ratios less than one (1.0). No deficiencies were identified as a result of project traffic impact at project buildout.

The need for exclusive ingress right- and left-turn lanes at the proposed site access points was evaluated per the NCHRP Report 457 thresholds. Based on the projected volumes at the driveways, ingress left-turn and right-turn lanes are required at Driveway 1 and 3 by project buildout.

APPENDIX A
Site Plan



Site Data Table	
Project Parcel Size	78.84 Acres
Wetlands within Project	17.45 Acres
Uplands Within Project	61.39 Acres

Parking Calculations	Requirements	As Drawn	Difference
Automobile Parking Spaces	490	490	0
Van Parking Spaces	1065	1065	0
Van Loading Spaces (at Canopy Edge)	160	160	0
Van Staging Spaces	160	160	0
Dock Doors	15	15	0
High Speed Roll Up Doors (10X10 @ Perimeter / Canopy Loading)	16	16	0
53' Trailer Parking Slips	12	12	0

NOTE: PARKING REQUIREMENTS FROM 2020 BTS DELIVERY STATION – VERSION 1.4

This document, together with the concepts and designs presented herein, as an instrument of service, is intended only for the specific purpose and client for which it was prepared. Reuse of and improper reliance on this document without written authorization and adaptation by Kimley-Horn and Associates, Inc. shall be without liability to Kimley-Horn and Associates, Inc.

No.	REVISIONS	DATE	BY

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JASON A. LEWIS, P.E.
FLORIDA LICENSE NUMBER
62572
DATE:

KHA PROJECT	
DATE	APRIL 2020
SCALE	AS SHOWN
DESIGNED BY	JAL
DRAWN BY	MDW
CHECKED BY	JAL

CONCEPTUAL SITE PLAN

COCOA BEACH LAST MILE - DM08

PREPARED FOR
SEEFRIED PROPERTIES

SHEET NUMBER
C100

APPENDIX B
Methodology Agreement

Kimley»Horn

MEMORANDUM

To: Bryant Smith, PE
Public Works Director, City of Cocoa

From: James M. Taylor, P.E.
Kimley-Horn and Associates, Inc.

Date: August 19, 2020

Subject: DMO8 Delivery Station Traffic Study Methodology
City of Cocoa, FL

Purpose

The following memorandum is a Traffic Impact Analysis (TIA) methodology for a proposed last-mile facility delivery station in the City of Cocoa, Florida. The forthcoming TIA will generally conform to the methodology herein and the policies and guidelines of the Space Coast Transportation Planning Organization (SCTPO), Brevard County and the City of Cocoa.

Project Description

The proposed last-mile facility delivery station is located on the east side of Grissom Parkway adjacent to Grissom Ridge. The project property is currently vacant. The proposed development will consist of a ±201,475 square foot delivery station/warehouse building, ±1,555 parking spaces, and vehicle staging and loading spaces.

Access to the site will be provided via three (3) full access driveway driveways along Grissom Parkway, as shown in **Figure 1.** The site plan is provided in **Attachment A.**

Study Area

The study area, as shown in **Figure 1**, will include the adjacent facility (Grissom Parkway) and all other roadway segments and associated major intersections where project trips are anticipated to exceed 3% of the maximum service volume. The study area will include the proposed driveways and the following segment and intersection:

Study Roadway Segment

- Grissom Parkway – from Industry Road to Canaveral Groves

Offsite Study Intersection

- Grissom Parkway & Industry Road

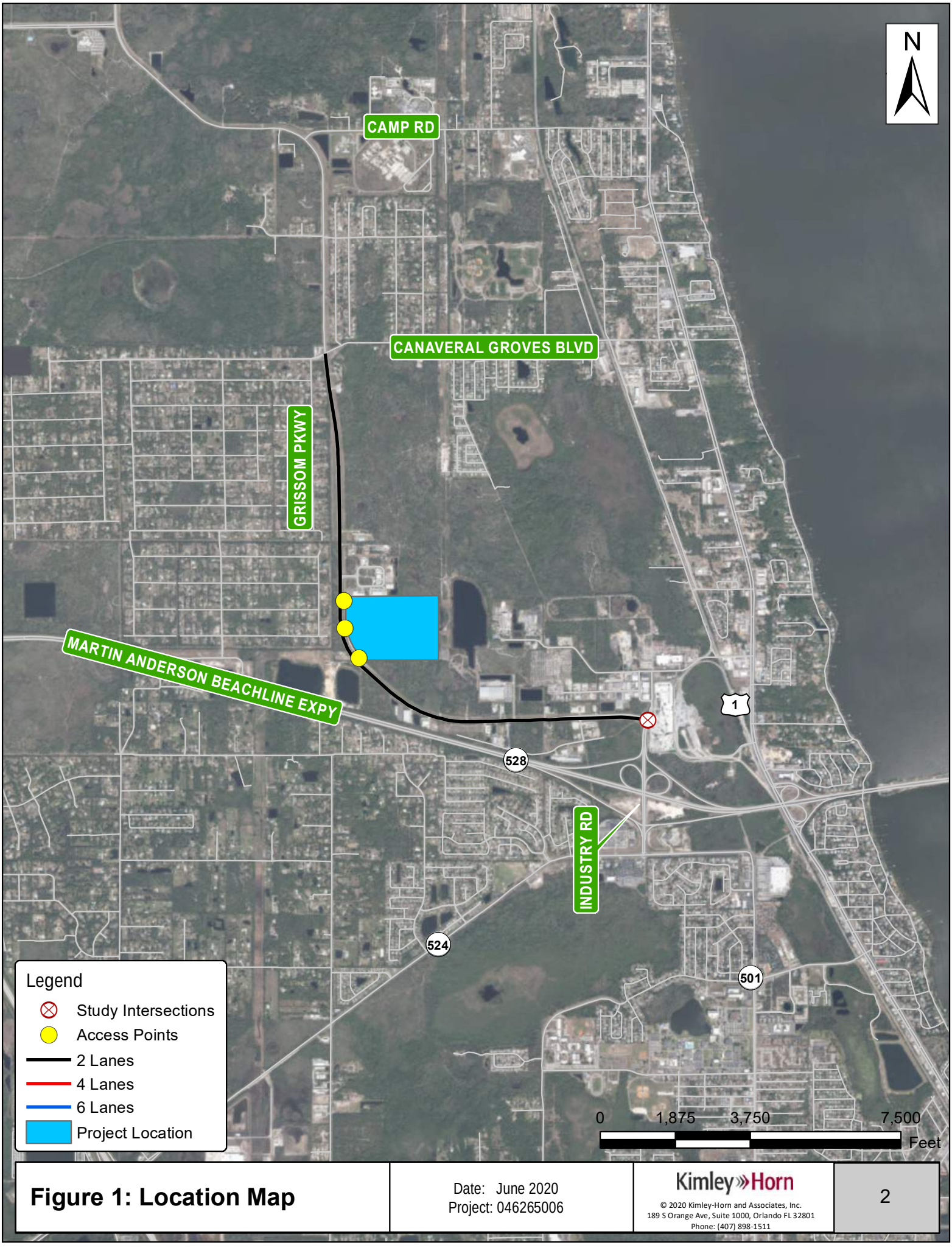


Figure 1: Location Map

Date: June 2020
Project: 046265006

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Table 1: Study Determination Area

Roadway	Form	To	Roadway Attributes [1]				Two-Way Maximum Service Volume [1]	PM Peak Hour Project Traffic				Max % Impact [3]	Segment Impact? [4]
								IN = 91		OUT = 45			
			Functional Classification	Area Type	Adopted LOS	Number of Lanes		% Assign [2]	Peak Hour Direction	NB /EB	SB / WB		
Canaveral Groves													
	Lee Rd	*Grissom Pkwy*	Urban Major Collector	U	E	2	1,330	6%	S	4	4	0.60%	No
	Grissom Pkwy	*US 1*	Urban Major Collector	U	E	2	1,330	8%	S	5	6	0.83%	No
Grissom Pkwy													
	Industry Rd	*Canaveral Groves*	Urban Minor Arterial	U	E	2	1,330	55%	N	41	34	5.64%	Yes
	Canaveral Groves	*Camp Rd*	Urban Minor Arterial	U	D	2	1,600	31%	S	19	23	2.63%	No
	Camp Rd	*Port St. John Pkwy*	Urban Minor Arterial	U	D	2	1,600	31%	S	19	23	2.63%	No
	Port St. John Pkwy	*Bridge*	Urban Minor Arterial	U	D	2	1,600	12%	S	7	9	1.00%	No
Port St. John Pkwy													
	I-95	*Grissom Pkwy*	Urban Minor Arterial	U	D	4	3,580	19%	E	14	12	0.73%	No
Industry (SR 524)													
	SR 524	*Grissom Pkwy*	Urban Minor Arterial	U	D	4	3,759	52%	N	39	32	1.89%	No
	Grissom	*Cidco*	Urban Local	U	E	4	1,330	3%	N	2	2	0.30%	No
Clearlake (SR 501)													
	N. Walmart Entrance	*SR 524*	Urban Minor Arterial	U	D	4	3,759	10%	N	7	7	0.37%	No
SR 524													
	Cox Rd	*Industry Rd*	Urban Minor Arterial	U	D	2	1,680	13%	N	10	8	1.07%	No
SR 528													
	I-95	*Industry Rd*	Urban Principla Arterials	U	D	4	7,070	4%	E	3	2	0.07%	No
	Industry Rd	*US 1*	Urban Principla Arterials	U	D	4	7,070	25%	W	15	19	0.48%	No
US 1													
	SR 528	*Canaveral Groves*	Urban Principla Arterials	U	D	4	3,759	3%	S	2	2	0.11%	No
	Michigan	*SR 528*	Urban Principla Arterials	U	D	6	5,389	10%	N	7	5	0.22%	No

Notes:

1. Data obtained from the Space Coast Transportation Planning Organization (TPO) Traffic Counts Report

2. Percent project traffic assignment was calculated as the maximum across the segment

3. Percent impact was calculated as the PM peak hour two-way project traffic divided by the two-way maximum service volume

4. The minimum threshold for significance was at least 3% impact of the two-way peak hour trips

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Trip Generation

The Institute of Transportation Engineers' (ITE) *Trip Generation Manual* provides similar land uses to the last mile facility delivery station. Land Use Codes (LUCs) that may coincide with the proposed development were:

- LUC 130 – Industrial Park
- LUC 140 – Manufacturing
- LUC 150 – Warehousing
- LUC 154 – High-Cube Transload & Short-Term Storage
- LUC 155 – High-Cube Fulfillment

However, due to the unique behavior and characteristic of the last mile facility, trip generation estimates were developed from operation data provided from the end-user for similar-sized delivery station. As shown in **Table 2,** the proposed last-mile facility is expected to generate 3 trips during the AM peak hour (1 inbound and 2 outbound) and 136 trips during the PM peak hour (91 inbound and 45 outbound). **Attachment B** provides the trip generation estimates table.

Table 2: Trip Generation

Land Use	Daily Trips					AM Peak Hour Trips					PM Peak Hour Trips				
	Total	In		Out		Total	In		Out		Total	In		Out	
Site Employee/Truck	640	*50%*	320	*50%*	320	3	*33%*	1	*67%*	2	1	*100%*	1	*0%*	0
Other Activities	1,556	*50%*	778	*50%*	778	0	*0%*	0	*0%*	0	135	*67%*	90	*33%*	45
Total	**2,196**	**1,098**		**1,098**		**3**	**1**		**2**		**136**	**91**		**45**	

Trip Distribution and Trip Assignment

Projected traffic demand of project trips on study roadways was derived with the use of the latest adopted regional travel demand model. Land use data for the project was entered into a new traffic analysis zone (TAZ) within the Central Florida Regional Planning Model (CFRPM v6) model set and situated within the existing roadway network to appropriately represent project access.

The select zone model distribution for the project was reviewed for logic and modified using engineering judgment to represent delivery trucks travel patterns and routes from and to the last mile facility. The proposed trip distribution, shown in **Figure 2**, will be used to assign external project traffic to the study area intersection and driveways. Model output plot showing the percent of daily trip distribution is provided in **Attachment C**.

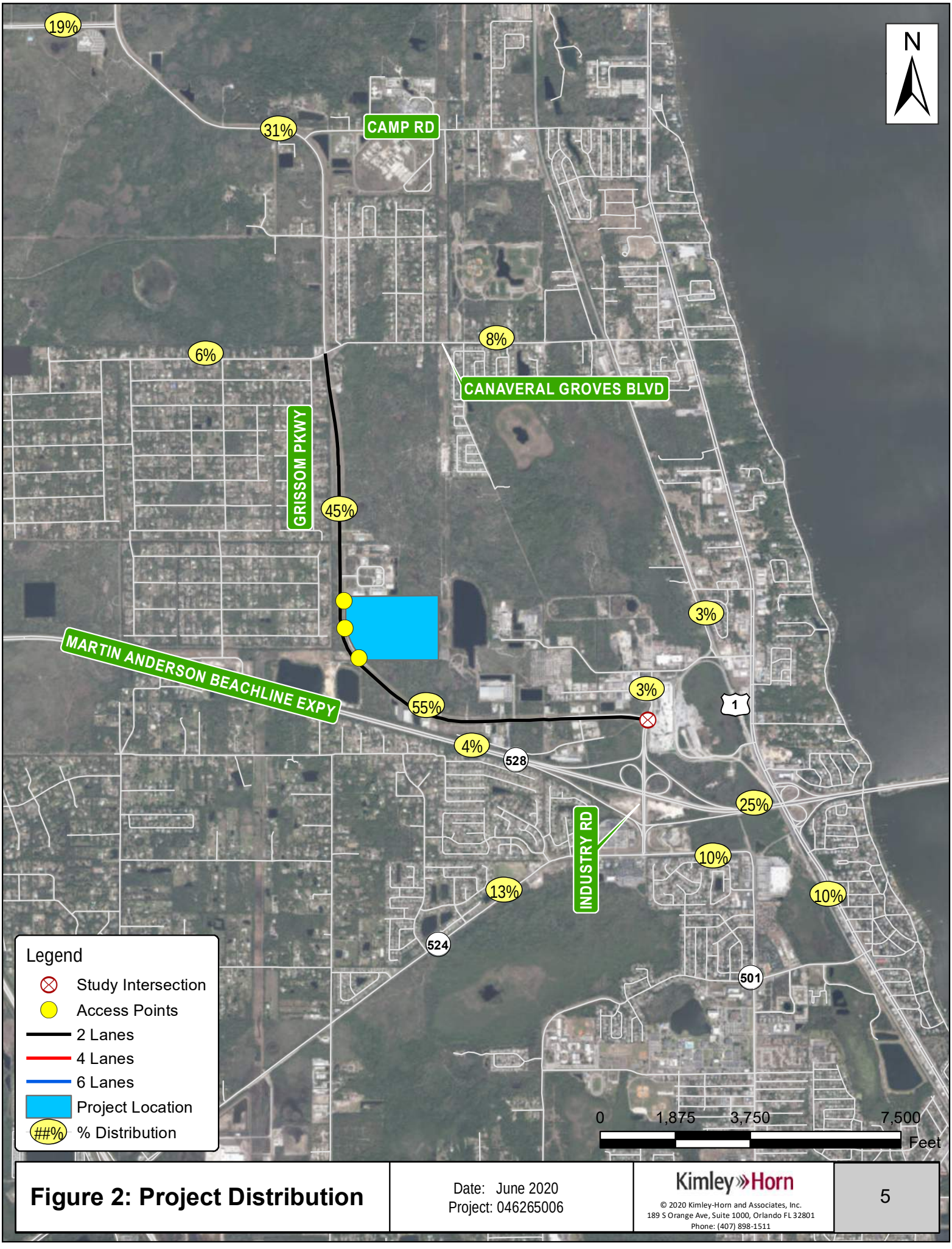


Figure 2: Project Distribution

Date: June 2020
Project: 046265006

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Background Conditions (Operational Analysis)

Available pre-COVID pandemic traffic counts will be used and adjusted to existing conditions (year 2020) using a reasonable annual growth rate and applying FDOT's seasonal factor. In the case of lack of data, PM (4:00 PM-6:00 PM) peak hour turning movement counts (TMC) data will be collected for the study area intersections and adjusted to pre-COVID conditions using an adjustment factor based on existing AADT and available pre-COVID volumes. The data will be grown no less than (2%) per year to develop Year 2021 background traffic. Intersection capacity analyses will be performed for background (2021) conditions using the operational analysis procedures outlined in the Highway Capacity Manual 6th Edition. Specifically, Synchro (v10) software will be used to evaluate background operational conditions at study area intersection and driveways by reporting volume to capacity (v/c) ratios, delay, and queue length demands.

Buildout Conditions (Operational Analysis)

Project trips will be assigned to the roadway network in accordance with the project trip distribution. Buildout traffic volumes will be determined by combining background (2021) volumes with project traffic volumes.

Intersection capacity analyses will be performed at the study area intersection and project driveways for the Buildout PM Peak Hour using the operational analysis procedures outlined in the Highway Capacity Manual 6th Edition. Specifically, Synchro (v10) software will be used to evaluate buildout operational conditions at the study area intersection and project driveways by reporting v/c ratios, delay, and queue length demands. If necessary, mitigating measures for any operational deficiencies identified due to project traffic impact will be recommended in the TIA.

Segment Analysis

A roadway segment analysis for Daily and PM peak hour will be performed for the study segments identified in **Table 1**. Analysis will be performed for existing, background, and buildout conditions. Roadway data from the Space Coast TPO Traffic Counts Report and FDOT Quality Level of Service Tables will be used in the analysis.

Turn Lane Analysis

The need for turn lanes at the proposed driveways will be assessed using FDOT and/or NCHRP guidance. Findings and recommendations will be documented in the forthcoming TIA.

APPENDIX C
Turning Movement Counts

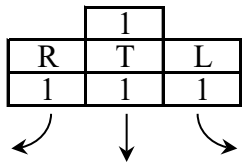
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

SUMMARY OF VEHICLE MOVEMENTS

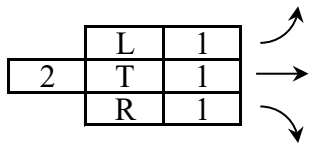
Location:	Grissom Parkway @ Industry Road		
North/ South Street:	Industry Road		
East/ West Street:	Grissom Parkway/Construction Entrance	**City:**	Cocoa
Observer(s):	Miovision	**County:**	Brevard
Weather:	Good	**Date:**	February 6, 2020
Road Condition:	Good		

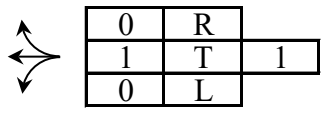
Remarks: _____

SB Street Name: Industry Road



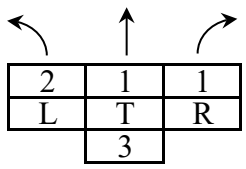






EB Street Name:
Grissom Parkway

WB Street Name:
Construction Entrance



NB Street Name: Industry Road

Time	Northbound					Southbound					Total	Eastbound					Westbound					Total
Begin/End	**L**	**T**	**R**	**U**	**Total**	**L**	**T**	**R**	**U**	**Total**	**N/S**	**L**	**T**	**R**	**U**	**Total**	**L**	**T**	**R**	**U**	**Total**	**E/W**
7-8	244	109	60	13	**426**	2	170	11	1	**184**	**610**	21	0	596	2	**619**	52	0	1	0	**53**	**672**
8-9	226	124	49	7	**406**	2	116	14	0	**132**	**538**	27	2	633	1	**663**	60	1	0	0	**61**	**724**
12-1	351	149	47	11	**558**	7	195	28	0	**230**	**788**	16	1	308	1	**326**	46	3	2	0	**51**	**377**
1-2	338	147	52	13	**550**	1	165	11	0	**177**	**727**	14	1	346	1	**362**	51	0	1	0	**52**	**414**
3-4	487	128	16	0	**631**	2	223	29	0	**254**	**885**	16	0	364	0	**380**	33	0	1	0	**34**	**414**
4-5	609	149	1	9	**768**	1	247	32	0	**280**	**1048**	17	0	350	0	**367**	5	2	4	0	**11**	**378**
5-6	641	72	2	16	**731**	0	213	36	0	**249**	**980**	10	0	389	0	**399**	4	0	0	0	**4**	**403**
6-7	358	43	0	1	**402**	0	94	13	0	**107**	**509**	6	0	244	0	**250**	1	0	0	0	**1**	**251**
Total	**3254**	**921**	**227**	**70**	**4472**	**15**	**1423**	**174**	**1**	**1613**	**6085**	**127**	**4**	**3230**	**5**	**3366**	**252**	**6**	**9**	**0**	**267**	**3633**

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

PEDESTRIAN VOLUME SHEET

Location: Grissom Parkway @ Industry Road
North/ South Street: Industry Road
East/ West Street: Grissom Parkway/Construction Entrance
City: Cocoa
Observer(s): Miovision
County: Brevard
Weather: Good
Date: February 6, 2020

Remarks: _____

SB Street Name: Industry Road

7-8	8-9	12-1	1-2	3-4	4-5	5-6	6-7	Total
0	0	0	0	0	0	0	0	**0**
0	0	0	0	0	0	0	0	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

N

7-8	0	0	**0**
8-9	0	0	**0**
12-1	0	0	**0**
1-2	0	0	**0**
3-4	0	0	**0**
4-5	0	0	**0**
5-6	0	0	**0**
6-7	0	0	**0**
Total	**0**	**0**	**0**

EB Street Name:
Grissom Parkway

WB Street Name:
Construction Entrance

7-8	0	0	**0**
8-9	2	2	**4**
12-1	0	0	**0**
1-2	0	0	**0**
3-4	0	0	**0**
4-5	0	0	**0**
5-6	1	1	**2**
6-7	0	0	**0**
Total	**3**	**3**	**6**

7-8	8-9	12-1	1-2	3-4	4-5	5-6	6-7	Total
0	0	0	0	0	0	0	0	**0**
0	0	0	0	0	0	0	0	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NB Street Name: Industry Road

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION

BICYCLE VOLUME SHEET

Location: Grissom Parkway @ Industry Road
North/ South Street: Industry Road
East/ West Street: Grissom Parkway/Construction Entrance
Observer(s): Miovision
Weather: Good

City: Cocoa
County: Brevard
Date: February 6, 2020

Remarks: _____

SB Street Name: Industry Road

7-8	8-9	12-1	1-2	3-4	4-5	5-6	6-7	Total
0	0	0	0	0	0	0	0	**0**
0	0	0	0	0	0	0	0	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

N

7-8	0	0	**0**
8-9	0	0	**0**
12-1	0	0	**0**
1-2	0	0	**0**
3-4	0	0	**0**
4-5	0	0	**0**
5-6	0	0	**0**
6-7	0	0	**0**
Total	**0**	**0**	**0**

EB Street Name:
Grissom Parkway

WB Street Name:
Construction Entrance

7-8	0	0	**0**
8-9	0	0	**0**
12-1	0	0	**0**
1-2	0	0	**0**
3-4	0	0	**0**
4-5	1	0	**1**
4-5	0	0	**0**
6-7	0	0	**0**
Total	**1**	**0**	**1**

7-8	8-9	12-1	1-2	3-4	4-5	5-6	6-7	Total
0	0	0	0	0	0	0	0	**0**
0	0	0	0	0	0	0	0	**0**
0	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

NB Street Name: Industry Road

Metric Engineering Inc.

525 Technology Park
Suite 153
Lake Mary, FL 32746

Location:
Grissom Parkway @ Industry Road

File Name : Grissom Pkwy @ Industry Rd
Site Code : 00000000
Start Date : 2/6/2020
Page No : 1

Groups Printed- Autos - Trucks

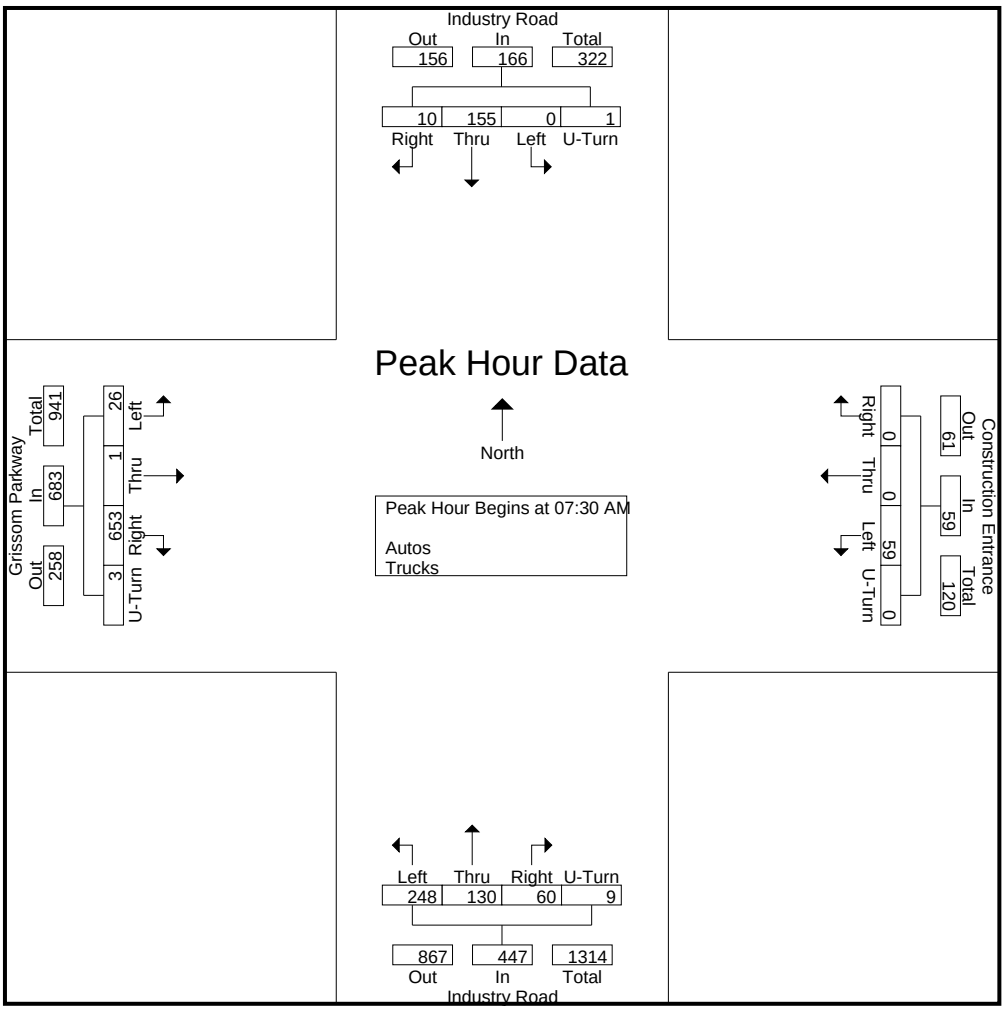
	Industry Road Southbound					Construction Entrance Westbound					Industry Road Northbound					Grissom Parkway Eastbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
07:00 AM	1	27	7	0	35	14	0	0	0	14	46	24	14	6	90	4	0	124	0	128	267
07:15 AM	1	49	2	0	52	9	0	1	0	10	64	20	15	3	102	7	0	142	0	149	313
07:30 AM	0	42	1	0	43	11	0	0	0	11	59	19	12	4	94	6	0	176	1	183	331
07:45 AM	0	52	1	1	54	18	0	0	0	18	75	46	19	0	140	4	0	154	1	159	371
Total	2	170	11	1	184	52	0	1	0	53	244	109	60	13	426	21	0	596	2	619	1282
08:00 AM	0	32	4	0	36	14	0	0	0	14	56	33	15	3	107	6	0	163	0	169	326
08:15 AM	0	29	4	0	33	16	0	0	0	16	58	32	14	2	106	10	1	160	1	172	327
08:30 AM	1	37	1	0	39	17	1	0	0	18	58	29	11	0	98	6	0	159	0	165	320
08:45 AM	1	18	5	0	24	13	0	0	0	13	54	30	9	2	95	5	1	151	0	157	289
Total	2	116	14	0	132	60	1	0	0	61	226	124	49	7	406	27	2	633	1	663	1262
12:00 PM	2	68	10	0	80	11	1	1	0	13	78	39	17	3	137	2	0	69	0	71	301
12:15 PM	3	50	5	0	58	19	0	0	0	19	97	33	17	2	149	6	1	74	0	81	307
12:30 PM	0	42	3	0	45	10	0	1	0	11	80	39	8	4	131	5	0	78	0	83	270
12:45 PM	2	35	10	0	47	6	2	0	0	8	96	38	5	2	141	3	0	87	1	91	287
Total	7	195	28	0	230	46	3	2	0	51	351	149	47	11	558	16	1	308	1	326	1165
01:00 PM	1	33	1	0	35	13	0	0	0	13	79	34	19	2	134	4	0	74	1	79	261
01:15 PM	0	51	3	0	54	13	0	0	0	13	67	37	18	2	124	6	1	97	0	104	295
01:30 PM	0	40	4	0	44	11	0	1	0	12	99	40	5	3	147	3	0	89	0	92	295
01:45 PM	0	41	3	0	44	14	0	0	0	14	93	36	10	6	145	1	0	86	0	87	290
Total	1	165	11	0	177	51	0	1	0	52	338	147	52	13	550	14	1	346	1	362	1141
03:00 PM	1	50	6	0	57	17	0	0	0	17	94	33	1	0	128	4	0	91	0	95	297
03:15 PM	1	43	8	0	52	6	0	0	0	6	104	35	3	0	142	3	0	99	0	102	302
03:30 PM	0	63	9	0	72	5	0	1	0	6	130	22	5	0	157	5	0	91	0	96	331
03:45 PM	0	67	6	0	73	5	0	0	0	5	159	38	7	0	204	4	0	83	0	87	369
Total	2	223	29	0	254	33	0	1	0	34	487	128	16	0	631	16	0	364	0	380	1299
04:00 PM	1	68	8	0	77	1	0	1	0	2	132	40	0	0	172	4	0	92	0	96	347
04:15 PM	0	60	4	0	64	2	1	1	0	4	156	39	0	4	199	3	0	84	0	87	354
04:30 PM	0	66	10	0	76	2	0	2	0	4	150	36	1	1	188	5	0	73	0	78	346
04:45 PM	0	53	10	0	63	0	1	0	0	1	171	34	0	4	209	5	0	101	0	106	379
Total	1	247	32	0	280	5	2	4	0	11	609	149	1	9	768	17	0	350	0	367	1426
05:00 PM	0	78	12	0	90	2	0	0	0	2	167	21	0	6	194	6	0	98	0	104	390
05:15 PM	0	65	13	0	78	2	0	0	0	2	188	14	1	1	204	3	0	111	0	114	398
05:30 PM	0	47	9	0	56	0	0	0	0	0	167	16	1	7	191	1	0	105	0	106	353
05:45 PM	0	23	2	0	25	0	0	0	0	0	119	21	0	2	142	0	0	75	0	75	242
Total	0	213	36	0	249	4	0	0	0	4	641	72	2	16	731	10	0	389	0	399	1383
06:00 PM	0	27	6	0	33	0	0	0	0	0	106	9	0	0	115	3	0	73	0	76	224
06:15 PM	0	24	2	0	26	0	0	0	0	0	93	13	0	0	106	0	0	56	0	56	188
06:30 PM	0	24	4	0	28	1	0	0	0	1	87	11	0	0	98	1	0	67	0	68	195
06:45 PM	0	19	1	0	20	0	0	0	0	0	72	10	0	1	83	2	0	48	0	50	153
Total	0	94	13	0	107	1	0	0	0	1	358	43	0	1	402	6	0	244	0	250	760
Grand Total	15	1423	174	1	1613	252	6	9	0	267	3254	921	227	70	4472	127	4	3230	5	3366	9718
Apprch %	0.9	88.2	10.8	0.1		94.4	2.2	3.4	0		72.8	20.6	5.1	1.6		3.8	0.1	96	0.1		
Total %	0.2	14.6	1.8	0	16.6	2.6	0.1	0.1	0	2.7	33.5	9.5	2.3	0.7	46	1.3	0	33.2	0.1	34.6	
Autos	9	1145									3035	669	18	65	3787	100	0	2960	5	3065	8204
% Autos	60	80.5	89.7	100	81.3	11.5	66.7	88.9	0	15.4	93.3	72.6	7.9	92.9	84.7	78.7	0	91.6	100	91.1	84.4
Trucks	6	278	18	0	302	223	2	1	0	226	219	252	209	5	685	27	4	270	0	301	1514
% Trucks	40	19.5	10.3	0	18.7	88.5	33.3	11.1	0	84.6	6.7	27.4	92.1	7.1	15.3	21.3	100	8.4	0	8.9	15.6

Metric Engineering Inc.

525 Technology Park
Suite 153
Lake Mary, FL 32746

File Name : Grissom Pkwy @ Industry Rd
Site Code : 00000000
Start Date : 2/6/2020
Page No : 2

	Industry Road Southbound					Construction Entrance Westbound					Industry Road Northbound					Grissom Parkway Eastbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:30 AM																					
07:30 AM	0	42	1	0	43	11	0	0	0	11	59	19	12	4	94	6	0	176	1	183	331
07:45 AM	0	52	1	1	54	18	0	0	0	18	75	46	19	0	140	4	0	154	1	159	371
08:00 AM	0	32	4	0	36	14	0	0	0	14	56	33	15	3	107	6	0	163	0	169	326
08:15 AM	0	29	4	0	33	16	0	0	0	16	58	32	14	2	106	10	1	160	1	172	327
Total Volume	0	155	10	1	166	59	0	0	0	59	248	130	60	9	447	26	1	653	3	683	1355
% App. Total	0	93.4	6	0.6		100	0	0	0		55.5	29.1	13.4	2		3.8	0.1	95.6	0.4		
PHF	.000	.745	.625	.250	.769	.819	.000	.000	.000	.819	.827	.707	.789	.563	.798	.650	.250	.928	.750	.933	.913

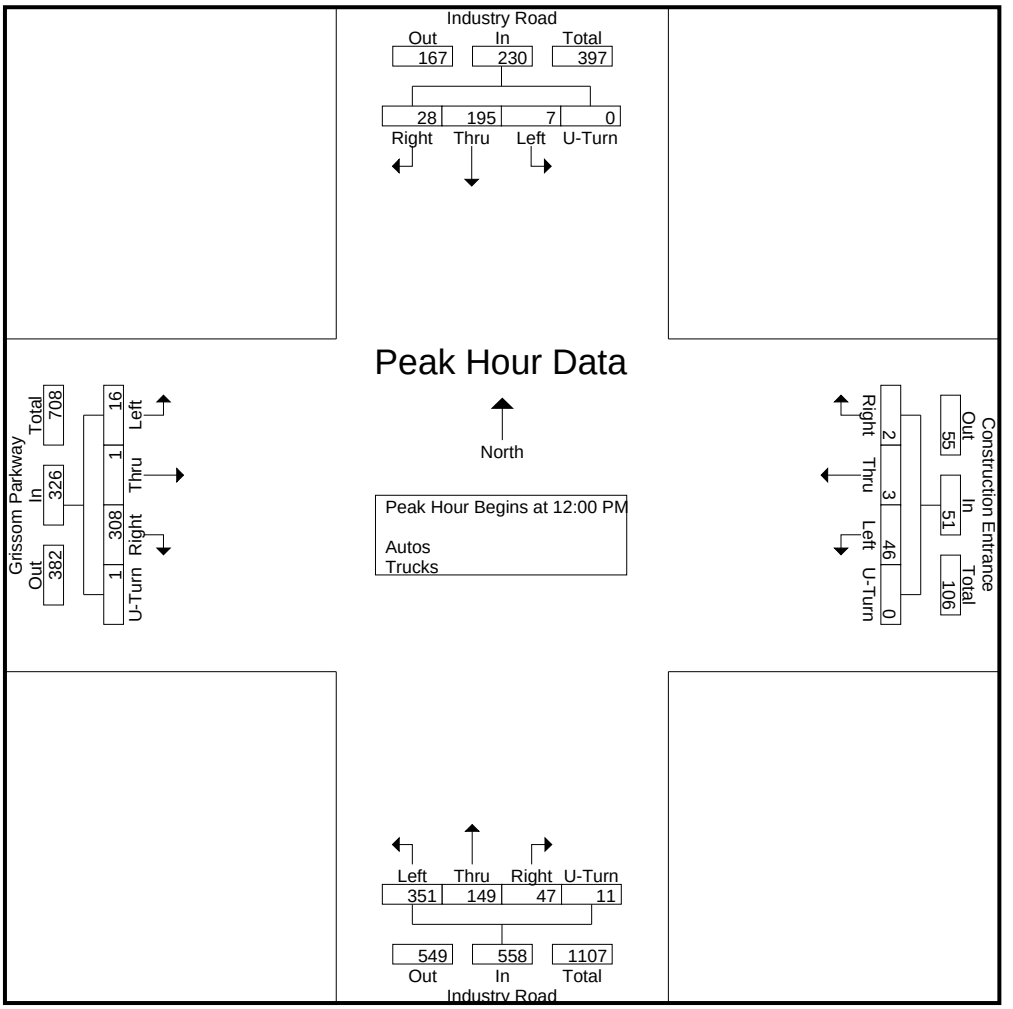


Metric Engineering Inc.

525 Technology Park
Suite 153
Lake Mary, FL 32746

File Name : Grissom Pkwy @ Industry Rd
Site Code : 00000000
Start Date : 2/6/2020
Page No : 3

	Industry Road Southbound					Construction Entrance Westbound					Industry Road Northbound					Grissom Parkway Eastbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 01:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 12:00 PM																					
12:00 PM	2	68	10	0	80	11	1	1	0	13	78	39	17	3	137	2	0	69	0	71	301
12:15 PM	3	50	5	0	58	19	0	0	0	19	97	33	17	2	149	6	1	74	0	81	307
12:30 PM	0	42	3	0	45	10	0	1	0	11	80	39	8	4	131	5	0	78	0	83	270
12:45 PM	2	35	10	0	47	6	2	0	0	8	96	38	5	2	141	3	0	87	1	91	287
Total Volume	7	195	28	0	230	46	3	2	0	51	351	149	47	11	558	16	1	308	1	326	1165
% App. Total	3	84.8	12.2	0		90.2	5.9	3.9	0		62.9	26.7	8.4	2		4.9	0.3	94.5	0.3		
PHF	.583	.717	.700	.000	.719	.605	.375	.500	.000	.671	.905	.955	.691	.688	.936	.667	.250	.885	.250	.896	.949

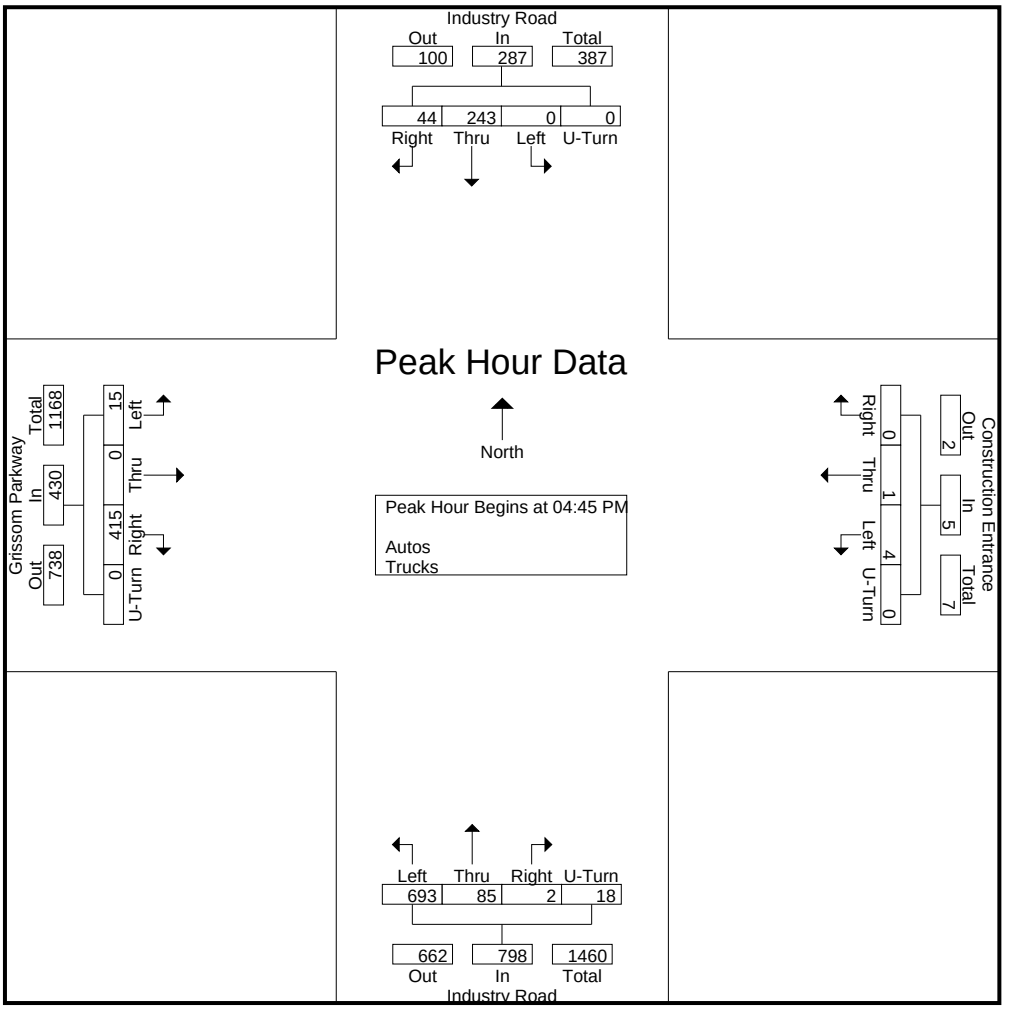


Metric Engineering Inc.

525 Technology Park
Suite 153
Lake Mary, FL 32746

File Name : Grissom Pkwy @ Industry Rd
Site Code : 00000000
Start Date : 2/6/2020
Page No : 4

	Industry Road Southbound					Construction Entrance Westbound					Industry Road Northbound					Grissom Parkway Eastbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
Peak Hour Analysis From 03:00 PM to 06:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	53	10	0	63	0	1	0	0	1	171	34	0	4	209	5	0	101	0	106	379
05:00 PM	0	78	12	0	90	2	0	0	0	2	167	21	0	6	194	6	0	98	0	104	390
05:15 PM	0	65	13	0	78	2	0	0	0	2	188	14	1	1	204	3	0	111	0	114	398
05:30 PM	0	47	9	0	56	0	0	0	0	0	167	16	1	7	191	1	0	105	0	106	353
Total Volume	0	243	44	0	287	4	1	0	0	5	693	85	2	18	798	15	0	415	0	430	1520
% App. Total	0	84.7	15.3	0		80	20	0	0		86.8	10.7	0.3	2.3		3.5	0	96.5	0		
PHF	.000	.779	.846	.000	.797	.500	.250	.000	.000	.625	.922	.625	.500	.643	.955	.625	.000	.935	.000	.943	.955



Metric Engineering Inc.

525 Technology Park
Suite 153
Lake Mary, FL 32746

Location:
Grissom Parkway @ Industry Road

File Name : Grissom Pkwy @ Industry Rd
Site Code : 00000000
Start Date : 2/6/2020
Page No : 1

Groups Printed- Trucks

	Industry Road Southbound					Construction Entrance Westbound					Industry Road Northbound					Grissom Parkway Eastbound					
Start Time	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Left	Thru	Right	U-Turn	App. Total	Int. Total
07:00 AM	0	12	2	0	14	14	0	0	0	14	7	7	12	0	26	0	0	9	0	9	63
07:15 AM	1	19	0	0	20	9	0	0	0	9	5	6	13	1	25	1	0	8	0	9	63
07:30 AM	0	8	0	0	8	11	0	0	0	11	4	0	10	0	14	0	0	12	0	12	45
07:45 AM	0	14	0	0	14	16	0	0	0	16	3	12	18	0	33	0	0	7	0	7	70
Total	1	53	2	0	56	50	0	0	0	50	19	25	53	1	98	1	0	36	0	37	241
08:00 AM	0	12	0	0	12	14	0	0	0	14	2	12	15	1	30	1	0	15	0	16	72
08:15 AM	0	8	0	0	8	16	0	0	0	16	6	5	14	0	25	1	1	27	0	29	78
08:30 AM	1	18	0	0	19	17	1	0	0	18	5	14	11	0	30	1	0	39	0	40	107
08:45 AM	0	7	2	0	9	12	0	0	0	12	3	8	8	0	19	3	1	34	0	38	78
Total	1	45	2	0	48	59	1	0	0	60	16	39	48	1	104	6	2	115	0	123	335
12:00 PM	0	11	0	0	11	10	0	0	0	10	8	15	16	0	39	0	0	5	0	5	65
12:15 PM	2	10	0	0	12	19	0	0	0	19	5	6	16	0	27	2	1	5	0	8	66
12:30 PM	0	6	1	0	7	8	0	0	0	8	8	12	7	1	28	3	0	4	0	7	50
12:45 PM	2	7	7	0	16	6	1	0	0	7	9	6	5	0	20	0	0	4	0	4	47
Total	4	34	8	0	46	43	1	0	0	44	30	39	44	1	114	5	1	18	0	24	228
01:00 PM	0	12	0	0	12	12	0	0	0	12	6	9	19	2	36	0	0	13	0	13	73
01:15 PM	0	15	0	0	15	12	0	0	0	12	3	19	16	0	38	0	1	6	0	7	72
01:30 PM	0	11	1	0	12	11	0	0	0	11	6	12	4	0	22	0	0	5	0	5	50
01:45 PM	0	10	0	0	10	11	0	0	0	11	9	12	10	0	31	1	0	10	0	11	63
Total	0	48	1	0	49	46	0	0	0	46	24	52	49	2	127	1	1	34	0	36	258
03:00 PM	0	11	0	0	11	11	0	0	0	11	10	13	0	0	23	2	0	6	0	8	53
03:15 PM	0	6	1	0	7	4	0	0	0	4	5	9	3	0	17	2	0	7	0	9	37
03:30 PM	0	12	0	0	12	3	0	0	0	3	9	9	5	0	23	2	0	11	0	13	51
03:45 PM	0	9	1	0	10	4	0	0	0	4	9	16	5	0	30	2	0	4	0	6	50
Total	0	38	2	0	40	22	0	0	0	22	33	47	13	0	93	8	0	28	0	36	191
04:00 PM	0	13	0	0	13	1	0	1	0	2	10	10	0	0	20	2	0	4	0	6	41
04:15 PM	0	8	0	0	8	0	0	0	0	0	14	9	0	0	23	2	0	5	0	7	38
04:30 PM	0	9	0	0	9	0	0	0	0	0	16	12	0	0	28	0	0	6	0	6	43
04:45 PM	0	4	1	0	5	0	0	0	0	0	16	7	0	0	23	0	0	5	0	5	33
Total	0	34	1	0	35	1	0	1	0	2	56	38	0	0	94	4	0	20	0	24	155
05:00 PM	0	9	0	0	9	0	0	0	0	0	8	5	0	0	13	1	0	4	0	5	27
05:15 PM	0	7	0	0	7	1	0	0	0	1	9	3	1	0	13	0	0	5	0	5	26
05:30 PM	0	2	2	0	4	0	0	0	0	0	8	0	1	0	9	0	0	3	0	3	16
05:45 PM	0	1	0	0	1	0	0	0	0	0	2	3	0	0	5	0	0	1	0	1	7
Total	0	19	2	0	21	1	0	0	0	1	27	11	2	0	40	1	0	13	0	14	76
06:00 PM	0	4	0	0	4	0	0	0	0	0	8	1	0	0	9	1	0	0	0	1	14
06:15 PM	0	0	0	0	0	0	0	0	0	0	3	0	0	0	3	0	0	2	0	2	5
06:30 PM	0	2	0	0	2	1	0	0	0	1	3	0	0	0	3	0	0	3	0	3	9
06:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	2
Total	0	7	0	0	7	1	0	0	0	1	14	1	0	0	15	1	0	6	0	7	30
Grand Total	6	278	18	0	302	223	2	1	0	226	219	252	209	5	685	27	4	270	0	301	1514
Apprch %	2	92.1	6	0		98.7	0.9	0.4	0		32	36.8	30.5	0.7		9	1.3	89.7	0		
Total %	0.4	18.4	1.2	0	19.9	14.7	0.1	0.1	0	14.9	14.5	16.6	13.8	0.3	45.2	1.8	0.3	17.8	0	19.9	

APPENDIX D
FDOT's Florida Traffic Online (FTO) Data

2019 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 7000 BREVARD COUNTYWIDE

MOCF: 0.91

WEEK	DATES	SF	PSCF
1	01/01/2019 - 01/05/2019	1.03	1.13
2	01/06/2019 - 01/12/2019	1.00	1.10
3	01/13/2019 - 01/19/2019	0.97	1.07
4	01/20/2019 - 01/26/2019	0.96	1.05
* 5	01/27/2019 - 02/02/2019	0.94	1.03
* 6	02/03/2019 - 02/09/2019	0.92	1.01
* 7	02/10/2019 - 02/16/2019	0.90	0.99
* 8	02/17/2019 - 02/23/2019	0.90	0.99
* 9	02/24/2019 - 03/02/2019	0.89	0.98
*10	03/03/2019 - 03/09/2019	0.88	0.97
*11	03/10/2019 - 03/16/2019	0.88	0.97
*12	03/17/2019 - 03/23/2019	0.89	0.98
*13	03/24/2019 - 03/30/2019	0.90	0.99
*14	03/31/2019 - 04/06/2019	0.91	1.00
*15	04/07/2019 - 04/13/2019	0.92	1.01
*16	04/14/2019 - 04/20/2019	0.93	1.02
*17	04/21/2019 - 04/27/2019	0.94	1.03
18	04/28/2019 - 05/04/2019	0.96	1.05
19	05/05/2019 - 05/11/2019	0.98	1.08
20	05/12/2019 - 05/18/2019	0.99	1.09
21	05/19/2019 - 05/25/2019	1.01	1.11
22	05/26/2019 - 06/01/2019	1.02	1.12
23	06/02/2019 - 06/08/2019	1.03	1.13
24	06/09/2019 - 06/15/2019	1.05	1.15
25	06/16/2019 - 06/22/2019	1.05	1.15
26	06/23/2019 - 06/29/2019	1.05	1.15
27	06/30/2019 - 07/06/2019	1.05	1.15
28	07/07/2019 - 07/13/2019	1.05	1.15
29	07/14/2019 - 07/20/2019	1.06	1.16
30	07/21/2019 - 07/27/2019	1.06	1.16
31	07/28/2019 - 08/03/2019	1.07	1.18
32	08/04/2019 - 08/10/2019	1.08	1.19
33	08/11/2019 - 08/17/2019	1.08	1.19
34	08/18/2019 - 08/24/2019	1.10	1.21
35	08/25/2019 - 08/31/2019	1.11	1.22
36	09/01/2019 - 09/07/2019	1.12	1.23
37	09/08/2019 - 09/14/2019	1.13	1.24
38	09/15/2019 - 09/21/2019	1.14	1.25
39	09/22/2019 - 09/28/2019	1.12	1.23
40	09/29/2019 - 10/05/2019	1.10	1.21
41	10/06/2019 - 10/12/2019	1.07	1.18
42	10/13/2019 - 10/19/2019	1.05	1.15
43	10/20/2019 - 10/26/2019	1.05	1.15
44	10/27/2019 - 11/02/2019	1.04	1.14
45	11/03/2019 - 11/09/2019	1.04	1.14
46	11/10/2019 - 11/16/2019	1.03	1.13
47	11/17/2019 - 11/23/2019	1.03	1.13
48	11/24/2019 - 11/30/2019	1.03	1.13
49	12/01/2019 - 12/07/2019	1.03	1.13
50	12/08/2019 - 12/14/2019	1.03	1.13
51	12/15/2019 - 12/21/2019	1.03	1.13
52	12/22/2019 - 12/28/2019	1.00	1.10
53	12/29/2019 - 12/31/2019	0.97	1.07

* PEAK SEASON

APPENDIX E
Turning Movement Volume Worksheets

INTERSECTION VOLUME SHEET

Industry Road & **Grissom Parkway / Construction Entrance**

Weekday PM Peak Hour 4:45 PM - 5:45 PM	Industry Road						Grissom Pkwy			Construction Entrance		
	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
TMC (2020)	716	85	2	0	243	44	15	0	415	4	1	0
Seasonal Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicle	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Peak Hour Factor		0.92			0.92			0.92			0.92	
Existing Volume (2020)	659	78	2	0	224	40	14	0	382	4	1	0
Growth Factor	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Numbers of Years	1	1	1	1	1	1	1	1	1	1	1	1
Background (2021)	672	80	2	0	228	41	14	0	390	4	1	0
Project Assignment	52%					3%	3%		52%			
Direction	**IN**	N/A	N/A	N/A	N/A	**IN**	**OUT**	N/A	**OUT**	N/A	N/A	N/A
Project Trips	47	0	0	0	0	3	1	0	23	0	0	0
Project Buildout	**719**	**80**	**2**	**0**	**228**	**44**	**15**	**0**	**413**	**4**	**1**	**0**

INTERSECTION VOLUME SHEET

Grissom Parkway & **Driveway #1**

Weekday PM Peak Hour 4:45 PM - 5:45 PM	Grissom Parkway						-			Driveway #1		
	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volumes		761			430							
Seasonal Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicle	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Peak Hour Factor		0.92			0.92			0.92			0.92	
Existing Volume (2020)	0	700	0	0	396	0	0	0	0	0	0	0
Growth Factor	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Numbers of Years	1	1	1	1	1	1	1	1	1	1	1	1
Background (2021)	0	714	0	0	404	0	0	0	0	0	0	0
Project Assignment		25%	30%	22%						30%		22%
Direction	N/A	**IN**	**IN**	**IN**	N/A	N/A	N/A	N/A	N/A	**OUT**	N/A	**OUT**
Project Trips	0	23	27	20	0	0	0	0	0	14	0	10
Project Buildout	**0**	**737**	**27**	**20**	**404**	**0**	**0**	**0**	**0**	**14**	**0**	**10**

INTERSECTION VOLUME SHEET

Grissom Parkway & **Driveway #3**

Weekday PM Peak Hour 4:45 PM - 5:45 PM	Grissom Parkway						-			Driveway #3		
	Northbound			Southbound			Eastbound			Westbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volumes		761			430							
Seasonal Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Heavy Vehicle	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%	2%
Peak Hour Factor		0.92			0.92			0.92			0.92	
Existing Volume (2020)	0	700	0	0	396	0	0	0	0	0	0	0
Growth Factor	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
Numbers of Years	1	1	1	1	1	1	1	1	1	1	1	1
Background (2021)	0	714	0	0	404	0	0	0	0	0	0	0
Project Assignment			25%	23%	22%					25%		23%
Direction	N/A	N/A	**IN**	**IN**	**IN**	N/A	N/A	N/A	N/A	**OUT**	N/A	**OUT**
Project Trips	0	0	23	21	20	0	0	0	0	11	0	10
Project Buildout	**0**	**714**	**23**	**21**	**424**	**0**	**0**	**0**	**0**	**11**	**0**	**10**

APPENDIX F
Space Coast TPO Traffic Report

SPACE COAST TRANSPORTATION PLANNING ORGANIZATION TRAFFIC COUNTS

Historical Counts from 2010 - 2019

2725 Judge Fran Jamieson Way
Melbourne, FL 32940
P: 321-690-6890
F: 321-690-6827
chelsea.forgenie@brevardfl.gov

June 15, 2020

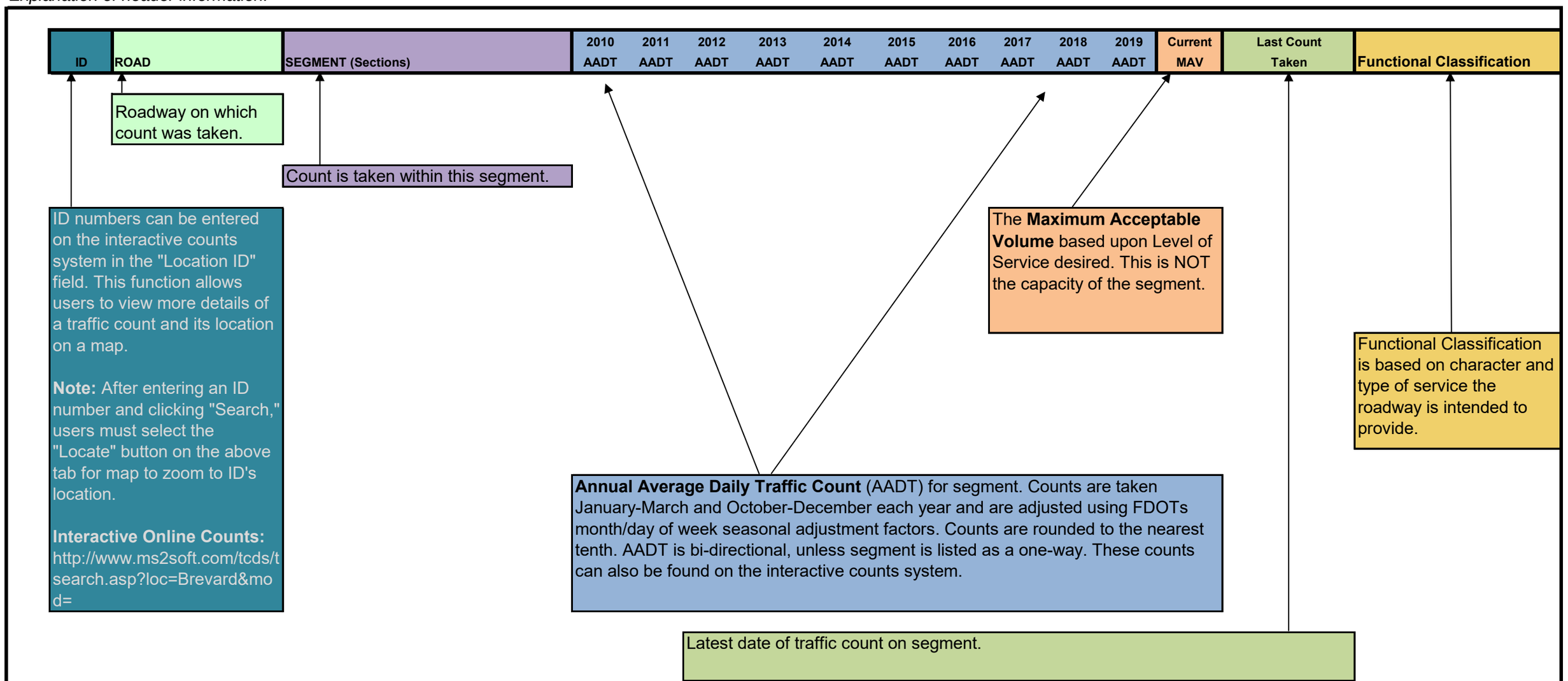
View Traffic Counts on Interactive Map: https://brevard.ms2soft.com/tcds/tsearch.asp?loc=Brevard&mod=

SPACE COAST TRANSPORTATION PLANNING ORGANIZATION TRAFFIC COUNTS

Questions? Please contact TPO staff at 321-690-6890

The Space Coast Transportation Planning Organization (SCTPO) annually collects traffic counts that are used for a variety of transportation monitoring programs, local government concurrency management systems, the Florida Department of Transportation, private citizens and local businesses. The SCTPO's consultant collects forty-eight (48) hour directional traffic counts by fifteen (15) minute intervals at specified locations. All counts are taken during the weekday period from 12:01 AM, Monday, through 12:00 noon Friday.

Explanation of header information:



*AADTs: Counts are calculated based on FDOT seasonal factors. It should also be noted that a reduced seasonal adjustment is applied on lower level roads (local and collectors) that experience less seasonal fluctuation in traffic.

SPACE COAST TRANSPORTATION PLANNING ORGANIZATION TRAFFIC COUNTS: 2010 - 2019

ID	ROAD	SEGMENT (Sections)	2010 AADT	2011 AADT	2012 AADT	2013 AADT	2014 AADT	2015 AADT	2016 AADT	2017 AADT	2018 AADT	2019 AADT	Current MAV	Last Count Taken	Functional Classification
AREA: NORTH															
206	BARNA	SR 405-SR 50	5,470	5,200	4,770	4,770	4,930	5,160	5,540	5,920	NC	6,400	15,600	12/4/2019	Urban Major Collector
521	CAMP	GRISSOM-US 1	2,800	2,650	2,450	2,290	2,370	2,150	2,670	2,730	2,690	2,430	15,600	11/5/2019	Urban Major Collector
	CANAVERAL GROVES	PINE-US 1	7,310	4,640	7,020	4,365	6,760	4,360	7,290	4,620	7,680	5,260			
522	CITRUS	PINE-LEE	NC	3,710	NC	3,550	NC	3,380	NC	3,830	NC	4,500	15,600	10/30/2019	Urban Major Collector
212	CANAVERAL GROVES	LEE-GRISSOM	7,310	NC	7,020	NC	6,760	NC	7,290	NC	7,680	NC	15,600	11/6/2018	Urban Major Collector
213	CANAVERAL GROVES	GRISSOM-US 1	NC	5,570	NC	5,180	NC	5,340	NC	5,410	NC	6,020	15,600	12/4/2019	Urban Major Collector
	CARPENTER	FOX LAKE-SR 46	4,637	4,687	4,377	4,483	4,390	4,455	4,557	4,437	4,630	4,560			
188	CARPENTER	FOX LAKE-GARDEN	3,740	3,800	3,450	3,560	3,540	3,520	3,480	3,690	3,830	3,560	15,600	11/13/2019	Urban Major Collector
184	CARPENTER	GARDEN-DAIRY	5,220	5,230	4,890	4,970	4,960	5,390	5,390	5,410	5,400	5,450	15,600	11/6/2019	Urban Major Collector
183	CARPENTER	DAIRY-SR 46	4,950	5,030	4,790	4,920	4,670	NC	4,800	4,210	4,660	4,670	15,600	11/6/2019	Urban Major Collector
	DAIRY	CARPENTER-US 1	5,925	5,900	5,850	5,660	5,795	5,475	7,760	6,060	6,130	5,940			
185	DAIRY	CARPENTER-HOLDER	NC	5,300	NC	5,100	NC	4,820	NC	5,030	NC	5,270	15,600	11/5/2019	Urban Major Collector
523	DAIRY	HOLDER-SINGLETON	6,280	NC	6,180	NC	6,070	NC	7,760	NC	6,330	NC	15,600	11/7/2018	Urban Major Collector
186	DAIRY	SINGLETON-OLD DIXIE	NC	6,500	NC	6,220	NC	6,130	NC	6,930	NC	6,610	15,600	11/6/2019	Urban Major Collector
187	DAIRY	OLD DIXIE-US 1	5,570	NC	5,520	NC	5,520	NC	NC	6,220	5,930	NC	15,600	11/27/2018	Urban Major Collector
596	DEERING PARKWAY	I-95-US 1					1,870	1,720	2,090	2,470	2,530	2,720	14,200	11/6/2019	Rural Major Collector
	FAY	GOLFVIEW-GRISSOM	6,543	6,400	8,065	5,800	7,805	5,825	8,765	6,275	7,760	6,200			
549	FAY	GOLFVIEW-HOMESTEAD	2,660	2,740	NC	2,680	NC	2,880	NC	3,160	NC	3,120	15,600	11/5/2019	Urban Major Collector
207	FAY	HOMESTEAD-DEER	7,250	6,990	6,780	NC	6,460	NC	6,640	NC	6,740	NC	15,600	11/27/2018	Urban Major Collector
229	FAY	DEER-GRISSOM	9,720	9,470	9,350	8,920	9,150	8,770	10,890	9,390	8,780	9,280	15,600	11/5/2019	Urban Major Collector
	FAY	GRISSOM-US 1	14,555	14,965	13,975	13,730	13,670	13,590	14,465	14,280	14,380	14,325			
208	FAY	GRISSOM-AREQUIPPA	12,830	NC	12,380	NC	12,830	13,400	13,590	NC	13,090	NC	33,800	11/27/2018	Urban Major Collector
209	FAY	AREQUIPPA-CAROLE	NC	13,410	NC	12,230	NC	12,350	NC	12,860	NC	12,900	33,800	11/5/2019	Urban Major Collector
210	FAY	CAROLE-US 1	16,280	16,520	15,570	15,230	14,510	15,020	15,340	15,700	15,670	15,750	33,800	11/5/2019	Urban Major Collector
235	FOX LAKE	CARPENTER-SOUTH	4,250	NC	3,870	NC	NC	3,920	NC	NC	4,130	NC	17,700	11/27/2018	Urban Major Collector
	GRISSOM	INDUSTRY-PORT ST. JOHN PARKWAY	10,053	10,633	9,930	9,753	10,223	10,213	10,033	10,357	10,077	10,197			
197	GRISSOM	INDUSTRY-CANAVERAL GRVS	11,060	11,820	10,870	10,680	11,540	11,720	11,300	11,160	10,800	10,640	15,600	12/4/2019	Urban Minor Arterial
196	GRISSOM	CANAVERAL GRVS-CAMP	8,940	9,320	8,980	8,960	9,010	9,490	8,660	9,360	9,140	9,470	17,700	11/5/2019	Urban Minor Arterial
195	GRISSOM	CAMP-PORT ST. JOHN PARKWAY	10,160	10,760	9,940	9,620	10,120	9,430	10,140	10,550	10,290	10,480	17,700	11/5/2019	Urban Minor Arterial
	GRISSOM	PORT ST. JOHN PARKWAY-KINGS HWY	11,863	12,123	11,687	11,573	12,220	11,170	14,117	11,890	12,660	12,607			
194	GRISSOM	PORT ST. JOHN PARKWAY-BRIDGE	12,890	13,680	12,670	12,720	13,840	NC	14,940	13,920	14,150	14,550	17,700	11/5/2019	Urban Minor Arterial
193	GRISSOM	BRIDGE-FAY	11,290	11,750	11,380	12,130	12,390	12,740	13,700	12,070	12,670	12,990	17,700	11/5/2019	Urban Minor Arterial
192	GRISSOM	FAY-CURTIS	NC	10,940	NC	9,870	NC	9,600	NC	9,680	NC	10,280	15,600	11/5/2019	Urban Minor Arterial
191	GRISSOM	CURTIS-KINGS HIGHWAY	11,410	NC	11,010	NC	10,430	NC	13,710	NC	11,160	NC	15,600	11/27/2018	Urban Minor Arterial
	GRISSOM	KINGS HIGHWAY-SR 405	9,690	9,655	8,980	8,970	9,310	9,320	8,660	10,080	9,160	10,440			
190	GRISSOM	KINGS HIGHWAY-SHEPARD	10,010	9,890	NC	8,970	NC	9,320	NC	10,080	NC	10,440	30,400	11/5/2019	Rural Minor Arterial
189	GRISSOM	SHEPARD-SR 405	9,370	9,420	8,980	NC	9,310	NC	8,620	NC	9,160	NC	39,800	11/6/2018	Urban Minor Arterial
524	GOLFVIEW	PORT ST. JOHN PKWY-FAY	4,640	NC	4,610	NC	4,830	NC	NC	5,570	5,680	NC	15,600	11/6/2018	Urban Major Collector
526	HOLDER	DAIRY-SR 46	NC	2,720	NC	2,670	NC	NC	NC	2,840	NC	2,730	17,700	11/6/2019	Urban Major Collector
	HOPKINS	SR 50-GRACE			9,670	7,640	8,390	6,770	8,995	7,765	8,995	7,715			
583	HOPKINS	SR 50-KNOX MCRAE				6,970	7,130	NC	7,190	NC	7,420	NC	15,600	11/13/2018	Urban Minor Arterial
584	HOPKINS	KNOX MCREA-COUNTRY CLUB DR				9,640	NC	9,090	NC	10,710	NC	10,380	15,600	11/6/2019	Urban Minor Arterial
577	HOPKINS	COUNTRY CLUB DR-HARRISON			9,670	9,400	9,650	NC	10,800	NC	10,570	NC	15,600	11/13/2018	Urban Minor Arterial
586	HOPKINS	HARRISON-GRACE				4,550	NC	4,450	NC	4,820	NC	5,050	15,600	11/6/2019	Urban Minor Arterial
198	INDUSTRY	SR 524-GRISSOM	15,940	16,170	15,900	16,040	18,530	18,030	18,430	17,560	18,700	20,700	41,790	10/30/2019	Urban Minor Arterial
594	INDUSTRY	GRISSOM-CIDCO RD					4,360	NC	4,700	4,590	4,840	4,570	15,600	10/30/2019	Urban Local
245	KINGS HWY	GRISSOM-US 1	NC	4,710	NC	4,300	NC	4,060	NC	5,060	NC	5,200	15,600	11/5/2019	Urban Major Collector
223	NASA CSWY	US 1-SPACE COMMERCE WAY	13,870	12,060	11,200	10,520	11,110	10,170	12,070	12,260	13,400	14,380	30,400	11/5/2019	Rural Principal Arterial Other

**Note: 2016 AADT's Beaches area were counted twice in 2016 and the AADT listed is the average of the two counts.*
NC=Not Counted; UC=Under Construction

Segments Functional Classification, Maximum Acceptable Volume (MAV) and Level of Service (LOS)

ID	Road	From	To	Functional Classification	Existing Volume 2019 or Most Recent	Existing MAV	Existing Vol/MAV
North							
206	BARNA	SR 405	SR 50	Urban Major Collector	6,396	15,600	0.41
521	CAMP	GRISSOM	US 1	Urban Major Collector	2,431	15,600	0.16
522	CITRUS	PINE	LEE	Urban Major Collector	4,501	15,600	0.29
212	CANAVERAL GROVES	LEE	GRISSOM	Urban Major Collector	7,678	15,600	0.49
213	CANAVERAL GROVES	GRISSOM	US 1	Urban Major Collector	6,017	15,600	0.39
188	CARPENTER	FOX LAKE	GARDEN	Urban Major Collector	3,562	15,600	0.23
184	CARPENTER	GARDEN	DAIRY	Urban Major Collector	5,450	15,600	0.35
183	CARPENTER	DAIRY	SR 46	Urban Major Collector	4,667	15,600	0.30
185	DAIRY	CARPENTER	HOLDER	Urban Major Collector	5,266	15,600	0.34
523	DAIRY	HOLDER	SINGLETON	Urban Major Collector	6,330	15,600	0.41
186	DAIRY	SINGELTON	OLD DIXIE	Urban Major Collector	6,607	15,600	0.42
187	DAIRY	OLD DIXIE	US 1	Urban Major Collector	5,931	15,600	0.38
596	DEERING PARKWAY	I-95	US 1	Rural Major Collector	2,723	14,200	0.19
549	FAY	GOLFVIEW	HOMESTEAD	Urban Major Collector	3,123	15,600	0.20
207	FAY	HOMESTEAD	DEER	Urban Major Collector	6,743	15,600	0.43
229	FAY	DEER	GRISSOM	Urban Major Collector	9,280	15,600	0.59
208	FAY	GRISSOM	AREQUIPPA	Urban Major Collector	13,094	33,800	0.39
209	FAY	AREQUIPPA	CAROLE	Urban Major Collector	12,904	33,800	0.38
210	FAY	CAROLE	US 1	Urban Major Collector	15,748	33,800	0.47
235	FOX LAKE	CARPENTER	SOUTH	Urban Major Collector	4,126	17,700	0.23
197	GRISSOM	INDUSTRY	CANAVERAL GRVS	Urban Minor Arterial	10,635	15,600	0.68
196	GRISSOM	CANAVERAL GRVS	CAMP	Urban Minor Arterial	9,465	17,700	0.53
195	GRISSOM	CAMP	PORT ST. JOHN PKWY	Urban Minor Arterial	10,478	17,700	0.59
194	GRISSOM	PORT ST. JOHN PKWY	BRIDGE	Urban Minor Arterial	14,552	17,700	0.82
193	GRISSOM	BRIDGE	FAY	Urban Minor Arterial	12,991	17,700	0.73
192	GRISSOM	FAY	CURTIS	Urban Minor Arterial	10,281	15,600	0.66
191	GRISSOM	CURTIS	KINGS HWY	Urban Minor Arterial	11,161	15,600	0.72
190	GRISSOM	KINGS HWY	SHEPARD	Rural Minor Arterial	10,443	30,400	0.34
189	GRISSOM	SHEPARD	SR 405	Urban Minor Arterial	9,158	39,800	0.23
524	GOLFVIEW	PORT ST. JOHN PKWY	FAY	Urban Major Collector	5,680	15,600	0.36
526	HOLDER	DAIRY	SR 46	Urban Major Collector	2,731	17,700	0.15
583	HOPKINS	SR 50	KNOX MCREA	Urban Minor Arterial	7,415	15,600	0.48
584	HOPKINS	KNOX MCREA	COUNTRY CLUB DRIVE	Urban Minor Arterial	10,379	15,600	0.67
577	HOPKINS	COUNTRY CLUB DRIVE	HARRISON ST.	Urban Minor Arterial	10,572	15,600	0.68
586	HOPKINS	HARRISON ST.	GRACE	Urban Minor Arterial	5,047	15,600	0.32
198	INDUSTRY (SR 524)	SR 524	GRISSOM	Urban Minor Arterial	20,695	41,790	0.50
594	INDUSTRY	GRISSOM	CIDCO RD	Urban Local	4,572	15,600	0.29
245	KINGS HWY	GRISSOM	US 1	Urban Major Collector	5,200	15,600	0.33
223	NASA CSWY	US 1	SPACE COMMERCE WAY	Rural Principal Arterial Other	14,382	30,400	0.47
239	OLD DIXIE	GARDEN	DAIRY	Urban Major Collector	1,350	15,600	0.09
240	OLD DIXIE	DAIRY	PARRISH	Urban Major Collector	816	15,600	0.05
242	PARRISH	HOLDER	SINGLETON	Urban Major Collector	835	15,600	0.05

*Acceptable LOS is Level of Service based on FDOT Generalized Tables and is for planning purposes only. Local governments may adopt their own LOS and one should contact the jurisdiction that maintains the segment.

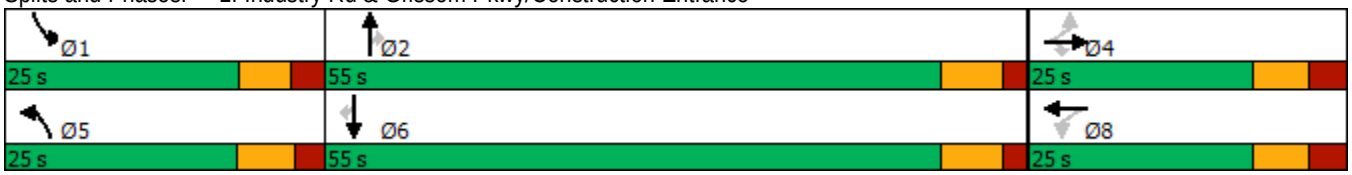
APPENDIX G
Synchro Outputs

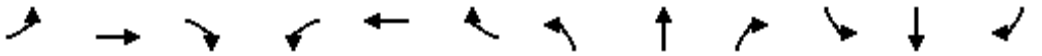
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	0	382	4	1	0	659	78	2	0	224	40
Future Volume (vph)	14	0	382	4	1	0	659	78	2	0	224	40
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	0		350	260		260
Storage Lanes	1		1	0		0	2		1	1		1
Taper Length (ft)	150			25			25			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			0.850
Flt Protected	0.950				0.962		0.950					
Satd. Flow (prot)	1770	1863	1583	0	1792	0	3433	1863	1583	1863	1863	1583
Flt Permitted	0.754				0.769		0.950					
Satd. Flow (perm)	1405	1863	1583	0	1432	0	3433	1863	1583	1863	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			700						117			117
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1748			756			1188			1153	
Travel Time (s)		23.8			10.3			18.0			17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	0	415	4	1	0	716	85	2	0	243	43
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	0	415	0	5	0	716	85	2	0	243	43
Turn Type	Perm		Perm	Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8					2			6
Detector Phase	4	4	4	8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	15.5	15.5	15.5	15.5	15.5		11.8	21.9	21.9	11.7	21.9	21.9
Total Split (s)	25.0	25.0	25.0	25.0	25.0		25.0	55.0	55.0	25.0	55.0	55.0
Total Split (%)	23.8%	23.8%	23.8%	23.8%	23.8%		23.8%	52.4%	52.4%	23.8%	52.4%	52.4%
Maximum Green (s)	17.5	17.5	17.5	17.5	17.5		18.2	48.1	48.1	18.3	48.1	48.1
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3		4.5	4.8	4.8	4.0	4.8	4.8
All-Red Time (s)	3.2	3.2	3.2	3.2	3.2		2.3	2.1	2.1	2.7	2.1	2.1
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.5	7.5		7.5		6.8	6.9	6.9	6.7	6.9	6.9
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.5	3.5	3.5	3.5	3.5		3.0	3.5	3.5	2.5	3.5	3.5
Recall Mode	None	None	None	None	None		Min	Min	Min	None	None	None
Act Effct Green (s)	8.0		8.0		8.0		18.2	40.7	40.7		15.7	15.7
Actuated g/C Ratio	0.13		0.13		0.13		0.29	0.65	0.65		0.25	0.25
v/c Ratio	0.08		0.51		0.03		0.72	0.07	0.00		0.53	0.09
Control Delay	26.2		2.3		25.2		25.4	4.3	0.0		25.2	0.4
Queue Delay	0.0		0.0		0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	26.2		2.3		25.2		25.4	4.3	0.0		25.2	0.4
LOS	C		A		C		C	A	A		C	A
Approach Delay		3.1			25.2			23.1			21.5	
Approach LOS		A			C			C			C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	5		0		2		123	10	0		80	0
Queue Length 95th (ft)	21		0		11		190	22	0		142	0
Internal Link Dist (ft)		1668			676			1108			1073	
Turn Bay Length (ft)	150								350			260
Base Capacity (vph)	390		944		397		991	1421	1235		1421	1235
Starvation Cap Reductn	0		0		0		0	0	0		0	0
Spillback Cap Reductn	0		0		0		0	0	0		0	0
Storage Cap Reductn	0		0		0		0	0	0		0	0
Reduced v/c Ratio	0.04		0.44		0.01		0.72	0.06	0.00		0.17	0.03

Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 63.1			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.72			
Intersection Signal Delay: 17.2		Intersection LOS: B	
Intersection Capacity Utilization 61.1%		ICU Level of Service B	
Analysis Period (min) 15			

Splits and Phases: 1: Industry Rd & Grissom Pkwy/Construction Entrance





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	0	382	4	1	0	659	78	2	0	224	40
Future Volume (veh/h)	14	0	382	4	1	0	659	78	2	0	224	40
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	0	0	4	1	0	716	85	2	0	243	43
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	72		172	12	0	904	1276	1082	3	541	458
Arrive On Green	0.04	0.00	0.00	0.04	0.04	0.00	0.26	0.68	0.68	0.00	0.29	0.29
Sat Flow, veh/h	1416	1870	1585	1192	298	0	3456	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	15	0	0	5	0	0	716	85	2	0	243	43
Grp Sat Flow(s),veh/h/ln	1416	1870	1585	1490	0	0	1728	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.3	0.0	0.0	0.2	0.0	0.0	10.0	0.8	0.0	0.0	5.5	1.0
Cycle Q Clear(g_c), s	0.5	0.0	0.0	0.2	0.0	0.0	10.0	0.8	0.0	0.0	5.5	1.0
Prop In Lane	1.00		1.00	0.80		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	195	72		183	0	0	904	1276	1082	3	541	458
V/C Ratio(X)	0.08	0.00		0.03	0.00	0.00	0.79	0.07	0.00	0.00	0.45	0.09
Avail Cap(c_a), veh/h	621	634		630	0	0	1218	1743	1477	631	1743	1477
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	24.1	0.0	0.0	23.9	0.0	0.0	17.8	2.7	2.6	0.0	15.0	13.4
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.1	0.0	0.0	2.6	0.0	0.0	0.0	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	0.3	0.0	0.0	0.1	0.0	0.0	6.3	0.2	0.0	0.0	3.5	0.5
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.3	0.0	0.0	24.0	0.0	0.0	20.4	2.8	2.6	0.0	15.7	13.5
LnGrp LOS	C	A		C	A	A	C	A	A	A	B	B
Approach Vol, veh/h		15	A		5			803			286	
Approach Delay, s/veh		24.3			24.0			18.5			15.4	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	42.1		9.5	20.3	21.8		9.5				
Change Period (Y+Rc), s	* 6.7	6.9		* 7.5	* 6.8	6.9		* 7.5				
Max Green Setting (Gmax), s	* 18	48.1		* 18	* 18	48.1		* 18				
Max Q Clear Time (g_c+I1), s	0.0	2.8		2.5	12.0	7.5		2.2				
Green Ext Time (p_c), s	0.0	0.5		0.0	1.5	1.8		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	17.8
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

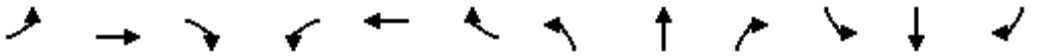
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	14	0	390	4	1	0	672	80	2	0	228	41
Future Volume (vph)	14	0	390	4	1	0	672	80	2	0	228	41
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	0		350	260		260
Storage Lanes	1		1	0		0	2		1	1		1
Taper Length (ft)	150			25			25			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			0.850
Flt Protected	0.950				0.962		0.950					
Satd. Flow (prot)	1770	1863	1583	0	1792	0	3433	1863	1583	1863	1863	1583
Flt Permitted	0.754				0.769		0.950					
Satd. Flow (perm)	1405	1863	1583	0	1432	0	3433	1863	1583	1863	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			694						117			117
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1748			756			1188			1153	
Travel Time (s)		23.8			10.3			18.0			17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	15	0	424	4	1	0	730	87	2	0	248	45
Shared Lane Traffic (%)												
Lane Group Flow (vph)	15	0	424	0	5	0	730	87	2	0	248	45
Turn Type	Perm		Perm	Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8					2			6
Detector Phase	4	4	4	8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	15.5	15.5	15.5	15.5	15.5		11.8	21.9	21.9	11.7	21.9	21.9
Total Split (s)	25.0	25.0	25.0	25.0	25.0		25.0	55.0	55.0	25.0	55.0	55.0
Total Split (%)	23.8%	23.8%	23.8%	23.8%	23.8%		23.8%	52.4%	52.4%	23.8%	52.4%	52.4%
Maximum Green (s)	17.5	17.5	17.5	17.5	17.5		18.2	48.1	48.1	18.3	48.1	48.1
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3		4.5	4.8	4.8	4.0	4.8	4.8
All-Red Time (s)	3.2	3.2	3.2	3.2	3.2		2.3	2.1	2.1	2.7	2.1	2.1
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.5	7.5		7.5		6.8	6.9	6.9	6.7	6.9	6.9
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.5	3.5	3.5	3.5	3.5		3.0	3.5	3.5	2.5	3.5	3.5
Recall Mode	None	None	None	None	None		Min	Min	Min	None	None	None
Act Effct Green (s)	8.0		8.0		8.0		18.2	40.8	40.8		15.7	15.7
Actuated g/C Ratio	0.13		0.13		0.13		0.29	0.65	0.65		0.25	0.25
v/c Ratio	0.08		0.53		0.03		0.74	0.07	0.00		0.54	0.09
Control Delay	26.3		2.5		25.4		26.1	4.3	0.0		25.3	0.4
Queue Delay	0.0		0.0		0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	26.3		2.5		25.4		26.1	4.3	0.0		25.3	0.4
LOS	C		A		C		C	A	A		C	A
Approach Delay		3.3			25.4			23.7			21.5	
Approach LOS		A			C			C			C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	5		0		2		126	10	0		82	0
Queue Length 95th (ft)	21		0		11		#197	23	0		145	0
Internal Link Dist (ft)		1668			676			1108			1073	
Turn Bay Length (ft)	150								350			260
Base Capacity (vph)	389		940		396		989	1419	1234		1419	1234
Starvation Cap Reductn	0		0		0		0	0	0		0	0
Spillback Cap Reductn	0		0		0		0	0	0		0	0
Storage Cap Reductn	0		0		0		0	0	0		0	0
Reduced v/c Ratio	0.04		0.45		0.01		0.74	0.06	0.00		0.17	0.04

Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 63.2			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.74			
Intersection Signal Delay: 17.5		Intersection LOS: B	
Intersection Capacity Utilization 61.6%		ICU Level of Service B	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Industry Rd & Grissom Pkwy/Construction Entrance





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	14	0	390	4	1	0	672	80	2	0	228	41
Future Volume (veh/h)	14	0	390	4	1	0	672	80	2	0	228	41
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	15	0	0	4	1	0	730	87	2	0	248	45
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	195	72		171	12	0	916	1279	1084	3	538	456
Arrive On Green	0.04	0.00	0.00	0.04	0.04	0.00	0.26	0.68	0.68	0.00	0.29	0.29
Sat Flow, veh/h	1416	1870	1585	1192	298	0	3456	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	15	0	0	5	0	0	730	87	2	0	248	45
Grp Sat Flow(s),veh/h/ln	1416	1870	1585	1490	0	0	1728	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.3	0.0	0.0	0.2	0.0	0.0	10.2	0.8	0.0	0.0	5.6	1.1
Cycle Q Clear(g_c), s	0.5	0.0	0.0	0.2	0.0	0.0	10.2	0.8	0.0	0.0	5.6	1.1
Prop In Lane	1.00		1.00	0.80		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	195	72		182	0	0	916	1279	1084	3	538	456
V/C Ratio(X)	0.08	0.00		0.03	0.00	0.00	0.80	0.07	0.00	0.00	0.46	0.10
Avail Cap(c_a), veh/h	618	631		627	0	0	1212	1734	1469	628	1734	1469
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	24.2	0.0	0.0	24.1	0.0	0.0	17.8	2.7	2.6	0.0	15.2	13.5
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.1	0.0	0.0	2.8	0.0	0.0	0.0	0.7	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	0.1	0.0	0.0	3.6	0.1	0.0	0.0	2.0	0.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.4	0.0	0.0	24.1	0.0	0.0	20.6	2.7	2.6	0.0	15.9	13.7
LnGrp LOS	C	A		C	A	A	C	A	A	A	B	B
Approach Vol, veh/h		15	A		5			819			293	
Approach Delay, s/veh		24.4			24.1			18.7			15.6	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	42.4		9.5	20.5	21.8		9.5				
Change Period (Y+Rc), s	* 6.7	6.9		* 7.5	* 6.8	6.9		* 7.5				
Max Green Setting (Gmax), s	* 18	48.1		* 18	* 18	48.1		* 18				
Max Q Clear Time (g_c+I1), s	0.0	2.8		2.5	12.2	7.6		2.2				
Green Ext Time (p_c), s	0.0	0.5		0.0	1.5	1.9		0.0				

Intersection Summary	
HCM 6th Ctrl Delay	18.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

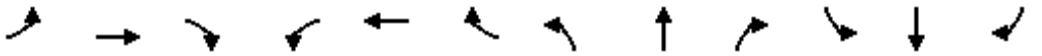
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	15	0	413	4	1	0	719	80	2	0	228	44
Future Volume (vph)	15	0	413	4	1	0	719	80	2	0	228	44
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	0		0	0		350	260		260
Storage Lanes	1		1	0		0	2		1	1		1
Taper Length (ft)	150			25			25			100		
Lane Util. Factor	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Frt			0.850						0.850			0.850
Flt Protected	0.950				0.962		0.950					
Satd. Flow (prot)	1770	1863	1583	0	1792	0	3433	1863	1583	1863	1863	1583
Flt Permitted	0.754				0.769		0.950					
Satd. Flow (perm)	1405	1863	1583	0	1432	0	3433	1863	1583	1863	1863	1583
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)			694						117			117
Link Speed (mph)		50			50			45			45	
Link Distance (ft)		1748			756			1188			1153	
Travel Time (s)		23.8			10.3			18.0			17.5	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	16	0	449	4	1	0	782	87	2	0	248	48
Shared Lane Traffic (%)												
Lane Group Flow (vph)	16	0	449	0	5	0	782	87	2	0	248	48
Turn Type	Perm		Perm	Perm	NA		Prot	NA	Perm	Prot	NA	Perm
Protected Phases		4			8		5	2		1	6	
Permitted Phases	4		4	8					2			6
Detector Phase	4	4	4	8	8		5	2	2	1	6	6
Switch Phase												
Minimum Initial (s)	8.0	8.0	8.0	8.0	8.0		5.0	15.0	15.0	5.0	15.0	15.0
Minimum Split (s)	15.5	15.5	15.5	15.5	15.5		11.8	21.9	21.9	11.7	21.9	21.9
Total Split (s)	25.0	25.0	25.0	25.0	25.0		25.0	55.0	55.0	25.0	55.0	55.0
Total Split (%)	23.8%	23.8%	23.8%	23.8%	23.8%		23.8%	52.4%	52.4%	23.8%	52.4%	52.4%
Maximum Green (s)	17.5	17.5	17.5	17.5	17.5		18.2	48.1	48.1	18.3	48.1	48.1
Yellow Time (s)	4.3	4.3	4.3	4.3	4.3		4.5	4.8	4.8	4.0	4.8	4.8
All-Red Time (s)	3.2	3.2	3.2	3.2	3.2		2.3	2.1	2.1	2.7	2.1	2.1
Lost Time Adjust (s)	0.0	0.0	0.0		0.0		0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	7.5	7.5	7.5		7.5		6.8	6.9	6.9	6.7	6.9	6.9
Lead/Lag							Lead	Lag	Lag	Lead	Lag	Lag
Lead-Lag Optimize?							Yes	Yes	Yes	Yes	Yes	Yes
Vehicle Extension (s)	3.5	3.5	3.5	3.5	3.5		3.0	3.5	3.5	2.5	3.5	3.5
Recall Mode	None	None	None	None	None		Min	Min	Min	None	None	None
Act Effct Green (s)	8.2		8.2		8.2		18.2	40.8	40.8		15.8	15.8
Actuated g/C Ratio	0.13		0.13		0.13		0.29	0.64	0.64		0.25	0.25
v/c Ratio	0.09		0.56		0.03		0.79	0.07	0.00		0.54	0.10
Control Delay	26.2		2.7		25.2		28.8	4.5	0.0		25.5	0.4
Queue Delay	0.0		0.0		0.0		0.0	0.0	0.0		0.0	0.0
Total Delay	26.2		2.7		25.2		28.8	4.5	0.0		25.5	0.4
LOS	C		A		C		C	A	A		C	A
Approach Delay		3.6			25.2			26.3			21.5	
Approach LOS		A			C			C			C	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Queue Length 50th (ft)	5		0		2		138	10	0		82	0
Queue Length 95th (ft)	22		0		11		#244	24	0		148	0
Internal Link Dist (ft)		1668			676			1108			1073	
Turn Bay Length (ft)	150								350			260
Base Capacity (vph)	388		939		395		986	1414	1229		1414	1229
Starvation Cap Reductn	0		0		0		0	0	0		0	0
Spillback Cap Reductn	0		0		0		0	0	0		0	0
Storage Cap Reductn	0		0		0		0	0	0		0	0
Reduced v/c Ratio	0.04		0.48		0.01		0.79	0.06	0.00		0.18	0.04

Intersection Summary			
Area Type:	Other		
Cycle Length: 105			
Actuated Cycle Length: 63.4			
Natural Cycle: 60			
Control Type: Actuated-Uncoordinated			
Maximum v/c Ratio: 0.79			
Intersection Signal Delay: 19.0		Intersection LOS: B	
Intersection Capacity Utilization 63.0%		ICU Level of Service B	
Analysis Period (min) 15			
# 95th percentile volume exceeds capacity, queue may be longer.			
Queue shown is maximum after two cycles.			

Splits and Phases: 1: Industry Rd & Grissom Pkwy/Construction Entrance





Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	15	0	413	4	1	0	719	80	2	0	228	44
Future Volume (veh/h)	15	0	413	4	1	0	719	80	2	0	228	44
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870	1870
Adj Flow Rate, veh/h	16	0	0	4	1	0	782	87	2	0	248	48
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	194	75		170	12	0	957	1286	1090	3	528	448
Arrive On Green	0.04	0.00	0.00	0.04	0.04	0.00	0.28	0.69	0.69	0.00	0.28	0.28
Sat Flow, veh/h	1416	1870	1585	1192	298	0	3456	1870	1585	1781	1870	1585
Grp Volume(v), veh/h	16	0	0	5	0	0	782	87	2	0	248	48
Grp Sat Flow(s),veh/h/ln	1416	1870	1585	1490	0	0	1728	1870	1585	1781	1870	1585
Q Serve(g_s), s	0.4	0.0	0.0	0.2	0.0	0.0	11.2	0.8	0.0	0.0	5.8	1.2
Cycle Q Clear(g_c), s	0.5	0.0	0.0	0.2	0.0	0.0	11.2	0.8	0.0	0.0	5.8	1.2
Prop In Lane	1.00		1.00	0.80		0.00	1.00		1.00	1.00		1.00
Lane Grp Cap(c), veh/h	194	75		182	0	0	957	1286	1090	3	528	448
V/C Ratio(X)	0.08	0.00		0.03	0.00	0.00	0.82	0.07	0.00	0.00	0.47	0.11
Avail Cap(c_a), veh/h	605	618		615	0	0	1188	1700	1440	616	1700	1440
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00	1.00
Uniform Delay (d), s/veh	24.6	0.0	0.0	24.5	0.0	0.0	17.9	2.7	2.6	0.0	15.7	14.1
Incr Delay (d2), s/veh	0.2	0.0	0.0	0.1	0.0	0.0	3.7	0.0	0.0	0.0	0.8	0.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	0.1	0.0	0.0	4.1	0.1	0.0	0.0	2.1	0.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	24.8	0.0	0.0	24.5	0.0	0.0	21.6	2.7	2.6	0.0	16.5	14.2
LnGrp LOS	C	A		C	A	A	C	A	A	A	B	B
Approach Vol, veh/h		16	A		5			871			296	
Approach Delay, s/veh		24.8			24.5			19.7			16.1	
Approach LOS		C			C			B			B	

Timer - Assigned Phs	1	2		4	5	6		8				
Phs Duration (G+Y+Rc), s	0.0	43.3		9.6	21.5	21.8		9.6				
Change Period (Y+Rc), s	* 6.7	6.9		* 7.5	* 6.8	6.9		* 7.5				
Max Green Setting (Gmax), s	* 18	48.1		* 18	* 18	48.1		* 18				
Max Q Clear Time (g_c+I1), s	0.0	2.8		2.5	13.2	7.8		2.2				
Green Ext Time (p_c), s	0.0	0.5		0.0	1.5	1.9		0.0				

Intersection Summary		
HCM 6th Ctrl Delay		18.9
HCM 6th LOS		B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	14	10	737	27	20	404
Future Vol, veh/h	14	10	737	27	20	404
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	15	11	801	29	22	439

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1299	816	0	0	830	0
Stage 1	816	-	-	-	-	-
Stage 2	483	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	178	377	-	-	802	-
Stage 1	435	-	-	-	-	-
Stage 2	620	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	172	377	-	-	802	-
Mov Cap-2 Maneuver	172	-	-	-	-	-
Stage 1	435	-	-	-	-	-
Stage 2	598	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23.4	0	0.5
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	222	802	-
HCM Lane V/C Ratio	-	-	0.118	0.027	-
HCM Control Delay (s)	-	-	23.4	9.6	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.4	0.1	-

Intersection	
Int Delay, s/veh	0.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	10	714	23	21	424
Future Vol, veh/h	11	10	714	23	21	424
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	12	11	776	25	23	461

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1296	789	0	0	801	0
Stage 1	789	-	-	-	-	-
Stage 2	507	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	179	391	-	-	822	-
Stage 1	448	-	-	-	-	-
Stage 2	605	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	172	391	-	-	822	-
Mov Cap-2 Maneuver	172	-	-	-	-	-
Stage 1	448	-	-	-	-	-
Stage 2	582	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	22	0	0.4
HCM LOS	C		

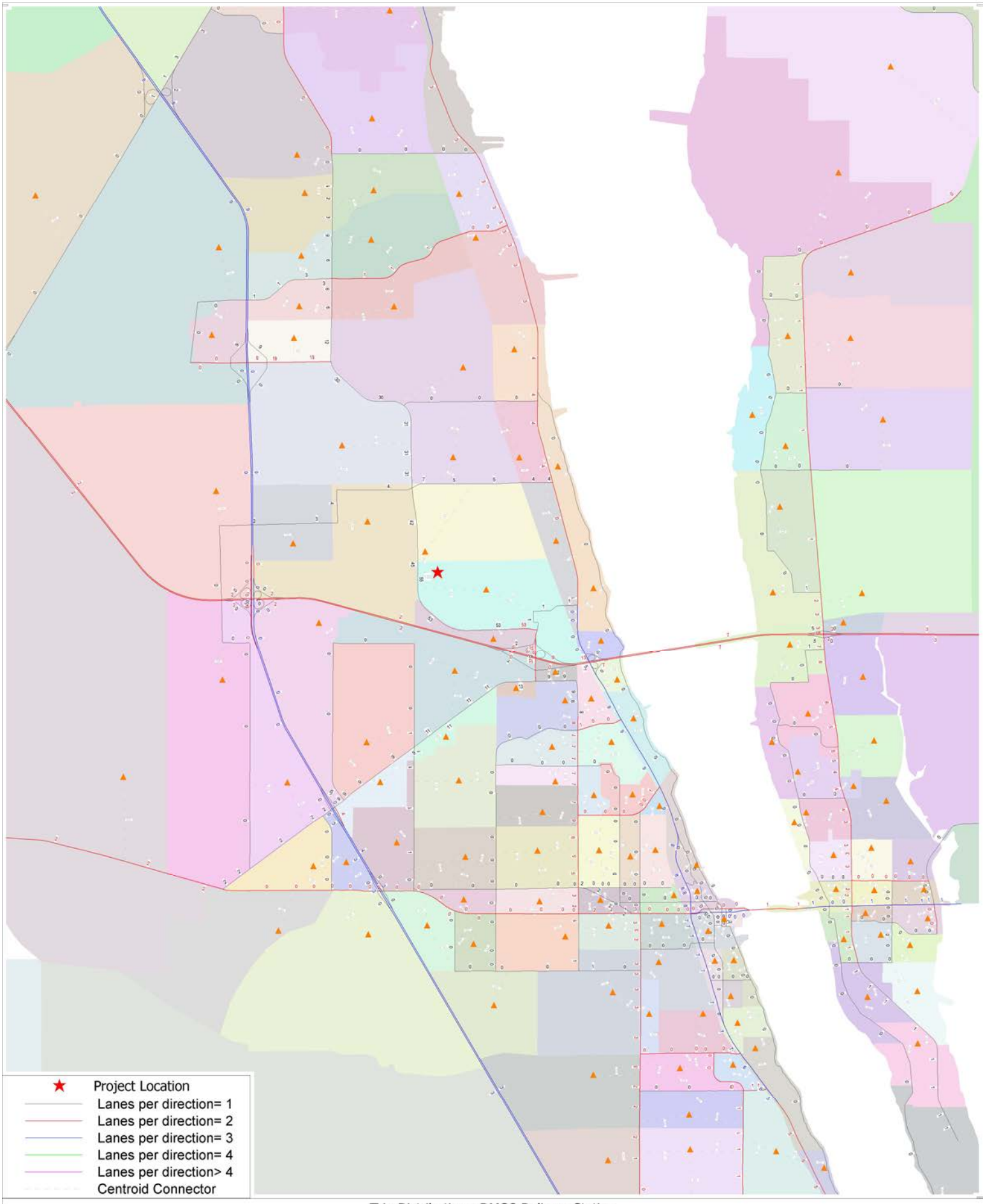
Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	235	822	-
HCM Lane V/C Ratio	-	-	0.097	0.028	-
HCM Control Delay (s)	-	-	22	9.5	0
HCM Lane LOS	-	-	C	A	A
HCM 95th %tile Q(veh)	-	-	0.3	0.1	-

APPENDIX H
Trip Generation Estimates

DMO8 in City of Cocoa, FL - 2W6F DS

	Autos			Trucks			Vans			Total		
Time	In	Out	Total	In	Out	Total	In	Out	Total	In	Out	Total
00:00	0	0	0	2	2	4	0	0	0	2	2	4
01:00	148	0	148	2	2	4	0	0	0	150	2	152
02:00	0	0	0	2	2	4	0	0	0	2	2	4
03:00	0	0	0	1	2	3	0	0	0	1	2	3
04:00	0	0	0	2	1	3	0	0	0	2	1	3
05:00	47	0	47	2	2	4	0	0	0	49	2	51
06:00	0	0	0	2	2	4	0	0	0	2	2	4
07:00	0	0	0	1	1	2	0	0	0	1	1	2
07:30	0	0	0	0	1	1	0	0	0	0	1	1
08:00	0	0	0	0	0	0	0	0	0	0	0	0
08:30	0	0	0	1	0	1	0	0	0	1	0	1
09:00	266	0	266	2	2	4	0	0	0	268	2	270
10:00	78	0	78	0	1	1	0	344	344	78	345	423
11:00	8	0	8	1	1	2	0	0	0	9	1	10
12:00	0	148	148	0	0	0	0	0	0	0	148	148
13:00	85	0	85	0	0	0	0	0	0	85	0	85
14:00	0	47	47	0	0	0	0	0	0	0	47	47
15:00	0	0	0	0	0	0	0	0	0	0	0	0
16:00	90	0	90	0	0	0	0	0	0	90	0	90
16:30	0	45	45	1	0	1	0	0	0	1	45	46
17:00	0	45	45	1	1	2	0	0	0	1	46	47
17:30	0	0	0	0	1	1	0	0	0	0	1	1
18:00	0	38	38	2	1	3	0	0	0	2	39	41
19:00	0	120	120	2	2	4	206	0	206	208	122	330
20:00	0	218	218	2	2	4	138	0	138	140	220	360
21:00	0	6	6	2	2	4	0	0	0	2	8	10
22:00	0	55	55	2	2	4	0	0	0	2	57	59
23:00	0	0	0	2	2	4	0	0	0	2	2	4
Total	722	722	1,444	32	32	64	344	344	688	1,098	1,098	2,196

APPENDIX I
CFRPMv6 Model Plot



Trip Distribution - DMO8 Delivery Station
CFRPMv6 - 2020
C:\FSUTMS\D5\CFRPMV61_Daily\Base\CF_2020\DMO8Cocoa_20\Output\HWYLOAD_C20.NET 8/13/2020

cube

(Licensed to Kimley Horn and Associates Inc)

APPENDIX J
NCHRP Report 457
Ingress Turn Lane Thresholds

Driveway 1

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

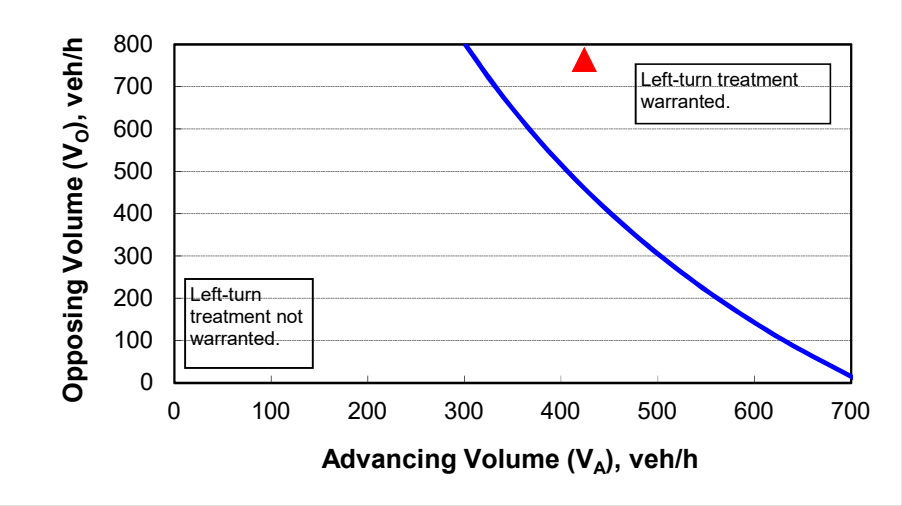
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	50
Percent of left-turns in advancing volume (V_A), %:	5%
Advancing volume (V_A), veh/h:	424
Opposing volume (V_O), veh/h:	764

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	312
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Driveway 1

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

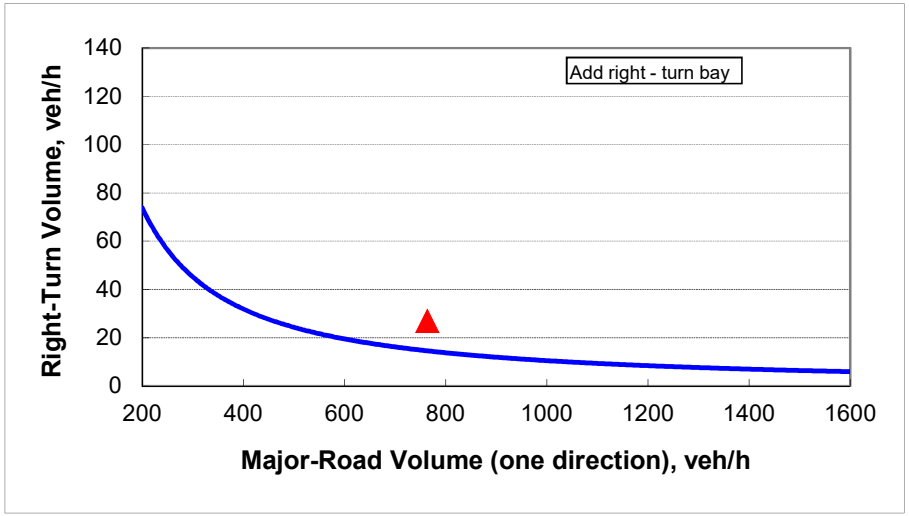
INPUT

Roadway geometry:	2-lane roadw ay

Variable	Value
Major-road speed, mph:	50
Major-road volume (one direction), veh/h:	764
Right-turn volume, veh/h:	27

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	15
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Add right-turn bay.	



Driveway 3

Figure 2 - 5. Guideline for determining the need for a major-road left-turn bay at a two-way stop-controlled intersection.

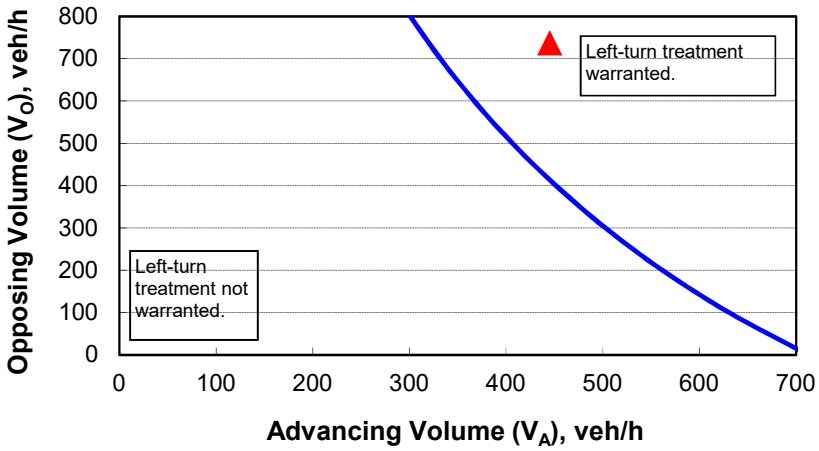
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	50
Percent of left-turns in advancing volume (V_A), %:	5%
Advancing volume (V_A), veh/h:	445
Opposing volume (V_O), veh/h:	737

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	320
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment warranted.	



CALIBRATION CONSTANTS

Variable	Value
Average time for making left-turn, s:	3.0
Critical headway, s:	5.0
Average time for left-turn vehicle to clear the advancing lane, s:	1.9

Driveway 3

Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

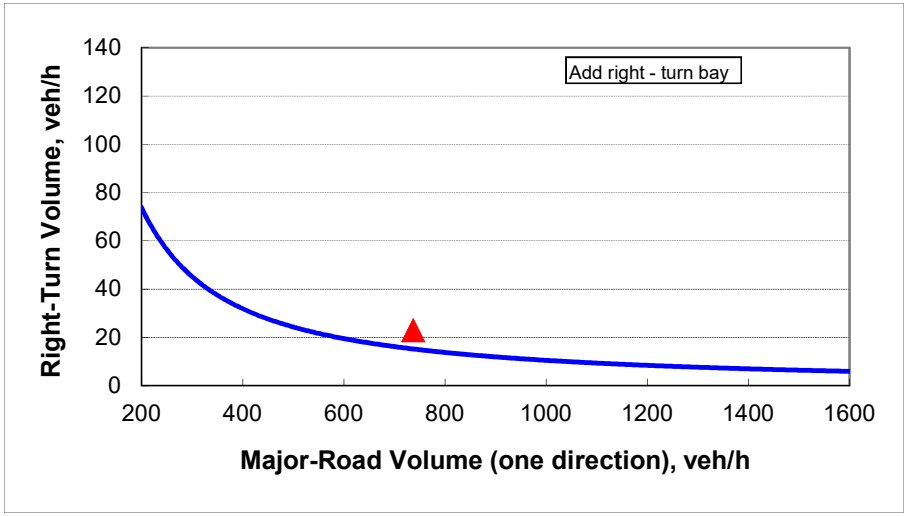
INPUT

Roadway geometry:	2-lane roadway

Variable	Value
Major-road speed, mph:	50
Major-road volume (one direction), veh/h:	737
Right-turn volume, veh/h:	23

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	15
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Add right-turn bay.	



Geotechnical Engineering Report

DM08 Cocoa
Cocoa, Brevard County, Florida
November 4, 2020
Terracon Project No. H1205186.3

Prepared for:
Seefried Industrial Properties, Inc.
Atlanta, Georgia

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

November 4, 2020

Seefried Industrial Properties, Inc.
3333 Riverwood Parkway SE, Suite 200
Atlanta, Georgia 30339

Attn: Mr. Clay Thompson – Development Manager
P: (404) 904 2583
E: cthompson@seefriedproperties.com

Re: Geotechnical Engineering Report
DM08 Cocoa
S Grissom Parkway at Oxbow Circle
Cocoa, Brevard County, Florida
Terracon Project No. H1205186.3

Dear Mr. Thompson:

We have completed the Geotechnical Engineering services for the above referenced project. This study was performed in general accordance with Terracon Proposal No. PH1205186 dated June 12, 2020 along with additional services requested in October 2020 at additional pond locations. This report presents the findings of the subsurface exploration and provides geotechnical recommendations concerning earthwork and the design and construction of foundations and floor slabs, pavement grading and stormwater facilities for the proposed project.

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

Sincerely,
Terracon Consultants, Inc.
Certificate of Authorization No. 8330

Bruce H. Woloshin, P.E.
Principal

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

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

REPORT TOPICS

INTRODUCTION 1
SITE CONDITIONS 1
PROJECT DESCRIPTION 4
GEOTECHNICAL CHARACTERIZATION 5
GEOTECHNICAL OVERVIEW 11
EARTHWORK 11
SHALLOW FOUNDATIONS 14
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FLOOR SLABS 17
LATERAL EARTH PRESSURES 19
PAVEMENTS 20
STORMWATER MANAGEMENT 25
GENERAL COMMENTS 26
FIGURES 28

Note: This report was originally delivered in a web-based format. **Orange Bold** text in the report indicates a referenced section heading. The PDF version also includes hyperlinks which direct the reader to that section and clicking on the ***GeoReport*** logo will bring you back to this page. For more interactive features, please view your project online at client.terracon.com.

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES
PHOTOGRAPHY LOG
SITE LOCATION AND EXPLORATION PLANS
EXPLORATION RESULTS
SUPPORTING INFORMATION

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

REPORT SUMMARY

Topic [1]	Overview Statement [2,3]
Project Description	201,475 square feet structure Max. Column loads: 250 kips, Max. Wall loads: 6 kips per lineal foot Up to 8 feet of fill to achieve final grade Little excavation other than foundation construction High volume truck traffic and car traffic is expected in select areas.
Geotechnical Characterization	Soils generally consist of sand with varying amount of silt. Groundwater encountered from 2 feet above existing grade to depths of 3 feet below existing grade. Seasonal high groundwater conditions should be considered at or above existing grade.
Earthwork	Several feet of fill are anticipated. Engineered fill with less than 5 percent passing the No. 200 sieve should be used whenever possible.
Shallow Foundations	Shallow foundations will be sufficient Allowable bearing pressure = 3,000 psf Expected settlements: < 1-inch total, < ½-inch differential Detect and remove zones of fill as noted in **Earthwork**.
Pavements	With subgrade prepared as noted in **Earthwork**. ■ Pavement grades should be set to provide a minimum separation of 12 inches between the bottom of the base course and the seasonal high groundwater level. ■ Concrete pavements should be supported on a minimum of 18 inches of free draining sand to minimize unstable pumping conditions.
Stormwater	A large wet pond is planned in the northeast corner of the project and dry ponds are planned on the east and west sides of the south parking lot.
General Comments	This section contains important information about the limitations of this geotechnical engineering report.

1. If the reader is reviewing this report as a pdf, the topics above can be used to access the appropriate section of the report by simply clicking on the topic itself.
2. This summary is for convenience only. It should be used in conjunction with the entire report for design purposes.
3. Assumptions have been highlighted in yellow.

Geotechnical Engineering Report

DM08 Cocoa
S Grissom Parkway at Oxbow Circle
Cocoa, Brevard County, Florida

Terracon Project No. H1205186.3

November 4, 2020

INTRODUCTION

This report presents the results of our subsurface exploration and geotechnical engineering services performed for the proposed DMO8 Warehouse to be located at S Grissom Parkway at Oxbow Circle in Cocoa, Brevard County, Florida. The purpose of these services is to provide information and geotechnical engineering recommendations relative to:

- Subsurface soil conditions
- Groundwater conditions
- Site preparation and earthwork
- Excavation considerations
- Dewatering considerations
- Foundation design and construction
- Floor slab design and construction
- Lateral earth pressures
- Pavement grading and subgrade preparation
- Stormwater pond considerations

The geotechnical engineering Scope of Services for this project included the advancement of 92 test borings to depths ranging from approximately 10 to 30 feet below existing site grades.

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

SITE CONDITIONS

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

Item	Description
Parcel Information	The project is located at S Grissom Parkway at Oxbow Circle in Cocoa, Brevard County, Florida. Approximately 73 acres Latitude/Longitude (approximate): 28.4126953, -80.7840367 See **Site Location**

Item	Description
Existing Improvements	Unimproved
Current Ground Cover	The site was heavily wooded and required substantial clearing to access our boring locations.
Existing Topography (from USGS Quad)	The site appears to be relatively flat but gently sloping east toward the Indian River.
Surface Water	The USGS topographic quadrangle map "Sharpes, Florida depicts the site as being situated between a wetland on the east edge of the property (elevation 35), a wetland about 4800 feet east of the property (elevation 30, Geiger Lake about 1 mile north of the site (elevation 22) and a wetland about 4,500 feet southwest of the property (elevation 25).

Geology

In Brevard County, the Ocala Limestone consists of white to very light orange, medium grained, poorly to rarely moderately indurated, interbedded packstone and wackestone with occasional grainstone and mudstone. The top of the Ocala Limestone marks the top of the Floridan aquifer system in Brevard County (Miller, 1986). Porosity and permeability are generally high throughout the formation since most primary pore space remains open and well connected. Porosity is both intergranular and moldic, with intergranular as the dominant form. The limestone in the site vicinity is below elevation -100 feet.

General Potential for Sinkhole Development

Sinkhole development occurs in Florida and varies geographically from areas with almost no potential or a very low potential to areas with a high potential where sinkholes occur frequently. The subject property is mapped in Area II on the United States Geological Survey map entitled "Sinkhole Type, Development, and Distribution in Florida". The cover (over limestone bedrock) in Area II is between 30 to 200 feet thick and is predominantly sandy. Sinkholes are few, shallow, and of small diameter and develop gradually in Area II. The risk of sinkhole occurrence at most sites is small even in areas known to have a higher than average risk of sinkhole occurrence. Brevard County, Florida is considered to have a very low risk of sinkhole activity.

A review of Florida Geologic Survey's on-line Subsidence Incident Reports (SIRs) database reveals the closest reported (alleged) sinkhole was about 3 ½ miles northwest of the subject site. It should be noted that the number of sinkholes is based on information reported to the FGS and does not necessarily reflect the number of sinkholes confirmed by public or private industry.

During our limited evaluation, we did not encounter traditional signs associated with potential sinkhole development such as abnormal downward pore water pressure gradients, obvious

raveled zones, surface depressions, etc. However, this evaluation was not planned to specifically address sinkhole potential.

If the sinkhole potential of the site is to be evaluated in detail, additional site-specific data must be obtained. This might include using geophysical methods such as Electrical Resistivity tests and additional geotechnical tests such as Cone Penetrometer Test (CPT) soundings, dilatometer (DMT) soundings, and/or more/deeper Standard Penetration Test borings. Interpretation of the test data should be done by a professional geologist/engineer familiar with the use of these tests under local conditions. However, it should be noted that even if indicators of sinkhole activity are found, it is impossible to predict if, when or precisely where a sinkhole may occur. If requested, Terracon can assist in assessing the sinkhole potential of the location of the proposed construction.

Soil Survey

The Soil Survey of Brevard County, Florida as prepared by the United States Department of Agriculture (USDA), Soil Conservation Service (SCS; later renamed the Natural Resource Conservation Service - NRCS) identifies the predevelopment soil types at the subject site as Anclote sand, 0 to 1 percent slopes (2), Basinger sand, 0 to 2 percent slopes (7), Immokalee sand, 0 to 2 percent slopes (28), Myakka sand, depressional (37), and St. Lucie fine sand, 0 to 5 percent slopes (56). A predevelopment Soils Map is included with this ***GeoReport***, depicting the applicable Soil Survey map portion for the subject site.

2 – Anclote sand. This soil type is nearly level and very poorly drained. It is typically found in marshy depressions in the flatwoods, in broad areas on flood plains, and in poorly defined drainageways. In its natural state, during years of normal rainfall, this soil type has a seasonal high groundwater table fluctuating between the surface and a depth of 10 inches (0.8 feet) for more than 6 months. In dry seasons the water table deeper, but it is seldom deeper 40 inches. This soil type is occasionally flooded for two to seven days following heavy rains. This soil type is predominantly sandy throughout the defined profile of 72 inches (6.0 feet).

7 – Basinger sand. This soil type is nearly level and poorly drained. It is typically found in sloughs of poorly defined drainageways and depressions in the flatwoods. This soil type is occasionally flooded for two to seven days following heavy rains. In its natural state, during years of normal rainfall, this soil type has a seasonal high groundwater table within 10 inches (0.8 feet) of the surface for 2 to 6 months, receding to a depth of more than 40 inches (3.3 feet) during the dry season.

28 – Immokalee sand. This soil type is nearly level and poorly drained. It is typically found in broad areas in the flatwoods, on low ridges between sloughs, and in low, narrow areas between sand ridges and lakes and ponds. During years of normal precipitation, this soil type has a seasonal high groundwater table within 10 inches (0.8 feet) of the surface for 1 to 2 months, receding to a depth of between 10 and 40 inches (0.8 and 3.3 feet) for more than 6 months. This

soil type is flooded for 2 to 7 days every 1 to 5 years. This soil type is predominantly sandy between the surface and a depth of 33 inches (2.8 feet) and also from a depth of 65 inches (5.4 feet) to the maximum defined depth of 80 inches (6.7 feet). Between these depths, this soil type is typically composed of sand with silt to silty sand (USCS classification SP-SM to SM).

38 – Myakka sand, depressional/ponded. This soil type is nearly level and poorly drained. It is typically found in shallow depressions in the flatwoods. In its natural state, during years of normal rainfall, this soil type is flooded for 6 to 12 months. This soil type is flooded for up to a week every 1 to 5 years. This soil type is predominantly sandy throughout the defined depth of 63 inches (5.3 feet).

56 – St. Lucie fine sand, 0 to 5 percent slopes. This soil type is nearly level to gently sloping and excessively drained. It is typically found on high dunelike ridges and isolated knolls. During years of normal precipitation, the water table is below a depth of 10 feet (120 inches). This soil type is predominantly sand throughout the defined profile of 80 inches (6.7 feet).

We also collected photographs at the time of our field exploration program. Representative photos are provided in our **Photography Log**.

PROJECT DESCRIPTION

Our initial understanding of the project was provided in our proposal and was discussed during project planning. A period of collaboration has transpired since the project was initiated, and our final understanding of the project conditions is as follows:

Our original exploration plan included auger borings in the parking and pond areas and CPT soundings in the proposed building area. Due to the high groundwater and soft ground conditions we were unable to mobilize our CPT equipment and investigated the subsurface conditions with SPT borings. Additionally, Borings P-4, P-21 and P-51 were omitted because those locations were under water at the time of our investigation.

The current stormwater management design included adding two borings (Pond-18 and Pond-19) in the south end of the site within the FPL Right-of-way and three borings northeast of the original property (Pond-20, Pond-21, and Pond-22)

Item	Description[1]
Information Provided	We were provided with a civil site plan showing the proposed building, pavements and stormwater labeled Cocoa Beach Last Mile -DM08 (Sheet C100) prepared by Kimley-Horn Lakeland dated April 2020.
Proposed Structure	The project includes a single-story distribution warehouse with a footprint of 201,475 square feet. The building will be slab-on-grade (non-basement).

Item	Description[1]
Building Construction	Tilt up concrete and steel frame Slab-on-grade
Maximum Loads (assumed)	■ Columns: 250 kips ■ Walls: 6 kips per linear foot (klf) ■ Slabs: 250 pounds per square foot (psf)
Grading/Slopes	Up to 8 feet of fill will be required to develop final grade around the building. Final slope angles of as steep as 3H:1V (Horizontal: Vertical) are expected.
Free-Standing Retaining Walls	Retaining walls are not expected to be constructed as part of site development to achieve final grades.
Pavements	We assume both rigid (concrete) and flexible (asphalt) pavement sections are being considered.
Stormwater Management	Stormwater facilities (wet ponds) are located in the northeast, south, and eastern portions of the site.

1. Assumptions have been highlighted in yellow.

GEOTECHNICAL CHARACTERIZATION

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

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

Model Layer	Layer Name	General Description
1	**Loose sand**	Loose to medium dense sand to sand with silt (SP, SP-SM)
2	**Dense sand**	Medium dense to dense sand to sand with silt, (SP, SP-SM)
3	**Silty sand**	Medium dense sand with silt to silty sand (SP-SM, SM)

The following table presents relative densities of cohesionless/granular soils from SPT data.

Relative Density	Range of SPT N-Values (blows/ft)
Very loose	<3
Loose	3-8

Relative Density	Range of SPT N-Values (blows/ft)
Medium dense	8-24
Dense	24-40
Very dense	>40

Groundwater Conditions

Groundwater levels were observed to vary between 2 feet above and 3 feet below existing grade. Longer term monitoring in cased holes or piezometers would be required to better define groundwater conditions at the site. The water levels observed in the borings can be found on the boring logs in **Exploration Results**, and are summarized in the following table.

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

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

Building Boring Number	Approximate depth to encountered water table (feet)	Approximate depth to estimated seasonal high groundwater table (feet)[1,2]
SPT-1	1.5	1.5
SPT-2	0.7	0.7
SPT-3	0.5	0.5
SPT-4	0.5	0.5
SPT-5	0.2	0.2
SPT-6	0.5	0.5
SPT-7	0.5	0.5
SPT-8	0.1	0.1
SPT-9	0.1	0.1
SPT-10	0.5	0.5

1. At ground surface.
2. Seasonal high groundwater levels may be higher than the predicted surface when several feet of fill is added to the site. Current predictions above the existing ground would be influenced by surface water hydraulics and existing grading. One foot of standing water fills 3 feet of pore space within compacted soil.

Pavement Boring Number	Approximate depth to encountered water table (feet)	Approximate depth to estimated seasonal high groundwater table (feet) [1,2]
P-1	0.2	0.2
P-2	1.0	1.0
P-3	2.5	2.5
P-4	2’ Under water	+2
P-5	1.0	1.0
P-6	1.0	1.0
P-7	0.7	0.7
P-8	1.0	1.0
P-9	0.5	0.5
P-10	0.5	0.5
P-11	1.0	1.0
P-12	3.0	3.0
P-13	0.3	0.3
P-14	1.5	1.5

Pavement Boring Number	Approximate depth to encountered water table (feet)	Approximate depth to estimated seasonal high groundwater table (feet) [1,2]
P-15	2.0	2.0
P-16	0.0	0.0
P-17	+0.1	+0.1
P-18	+0.3	+0.3
P-19	1.0	1.0
P-20	0.5	0.5
P-21	2’ Under water	+2
P-22	+0.2	+0.2
P-23	0.5	0.5
P-24	0.5	0.5
P-25	0.3	0.3
P-26	1.0	1.0
P-27	+0.3	+0.3
P-28	0.5	0.5
P-29	0.8	0.8
P-30	0.5	0.5
P-31	0.5	0.5
P-32	0.3	0.3
P-33	0.3	0.3
P-34	+0.1	+0.1
P-35	0.3	0.3
P-36	0.1	0.1
P-37	0.3	0.3
P-38	0.1	0.1
P-39	0.3	0.3
P-40	0.3	0.3
P-41	+0.2	+0.2
P-42	0.7	0.7
P-43	1.0	1.0
P-44	0.3	0.3
P-45	0.5	0.5
P-46	0.3	0.3

Pavement Boring Number	Approximate depth to encountered water table (feet)	Approximate depth to estimated seasonal high groundwater table (feet) [1,2]
P-47	+0.2	+0.2
P-48	0.7	0.7
P-49	0.3	0.3
P-50	0.8	0.8
P-51	1’ Under water	+1
P-52	0.2	0.2
P-53	0.1	0.1
P-54	1.5	1.5
P-55	0.9	0.9
P-56	0.7	0.7
P-57	0.3	0.3
P-58	0.5	0.5
P-59	0.8	0.8
P-60	2.0	2.0

1. At ground surface.
2. Seasonal high groundwater levels may be higher than the predicted surface when several feet of fill is added to the site. Current predictions above the existing ground would be influenced by surface water hydraulics and existing grading. One foot of standing water fills 3 feet of pore space within compacted soil.

Pond Boring Number	Approximate depth to encountered water table (feet)	Approximate depth to estimated seasonal high groundwater table (feet) [1,2]
Pond-1	0.5	0.5
Pond-2	0.3	0.3
Pond-3	0.3	0.3
Pond-4	0.3	0.3
Pond-5	0.5	0.5
Pond-6	0.3	0.3
Pond-7	0.1	0.1
Pond-8	1.5	1.5
Pond-9	0.3	0.3
Pond-10	0.3	0.3
Pond-11	0.8	0.8
Pond-12	0.1	0.1
Pond-13	0.2	0.2
Pond-14	0.2	0.2
Pond-15	1.5	1.5
Pond-16	1.0	1.0
Pond-17	1.0	1.0
Pond-18	0.1	0.1
Pond-19	0.5	0.5
Pond-20	0.1	0.1
Pond-21	0.5	0.5
Pond-22	1.0	1.0

1. At ground surface.
2. Seasonal high groundwater levels may be higher than the predicted surface when several feet of fill is added to the site. Current predictions above the existing ground would be influenced by surface water hydraulics and existing grading.

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

GEOTECHNICAL OVERVIEW

Borings encountered native sand and limited silty sand at depth. These materials are generally suitable for construction of the proposed foundations, floor slabs, pavements, and stormwater systems following site preparation according to the recommendations provided in the **Earthwork** section.

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

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

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

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

EARTHWORK

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

Site Preparation

Prior to placing fill, existing vegetation and root mat should be removed. Complete stripping of the topsoil should be performed in the proposed building and parking/driveway areas.

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

pumps. Depending on the efficiency of temporary drainage measures, periods of work delays should be anticipated after heavy rains.

Fill Material Types

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

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

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

Fill Compaction Requirements

Structural and general fill should meet the following compaction requirements.

Item	Structural Fill
Minimum Compaction Requirements [1]	95 percent of the material's maximum modified Proctor dry density (ASTM D 1557).
Moisture Content [2]	Within ±2 percent of optimum moisture content as determined by the Modified Proctor test, at the time of placement and compaction.

Minimum Testing Frequency	One field density test per 5,000 square feet or fraction thereof per 1-foot lift in pavement areas; per 2,500 square feet in building areas.

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

Utility Trench Backfill

All trench excavations should be made with sufficient working space to permit construction including backfill placement and compaction. Utility trenches are a common source of water infiltration and migration. All utility trenches that penetrate beneath the building should be backfilled with native soils to avoid creating a preferred flow path through the trenches.

Grading and Drainage

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

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

Earthwork Construction Considerations

After initial proofrolling and compaction, unstable subgrade conditions could develop during general construction operations, particularly if the soils are wetted and/or subjected to repetitive construction traffic. Upon completion of filling and grading, care should be taken to maintain the subgrade moisture content prior to construction of floor slabs and pavements. Construction traffic over the completed subgrade should be avoided to the extent practical. The site should also be graded to prevent ponding of surface water on the prepared subgrades or in excavations. If the subgrade should become desiccated, saturated, or disturbed, the affected material should be removed, or these materials should be scarified, moisture conditioned, and re-compacted prior to floor slab and pavement construction.

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

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

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

Construction Observation and Testing

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

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

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

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

SHALLOW FOUNDATIONS

If the site has been prepared in accordance with the requirements noted in **Earthwork**, the following design parameters are applicable for shallow foundations.

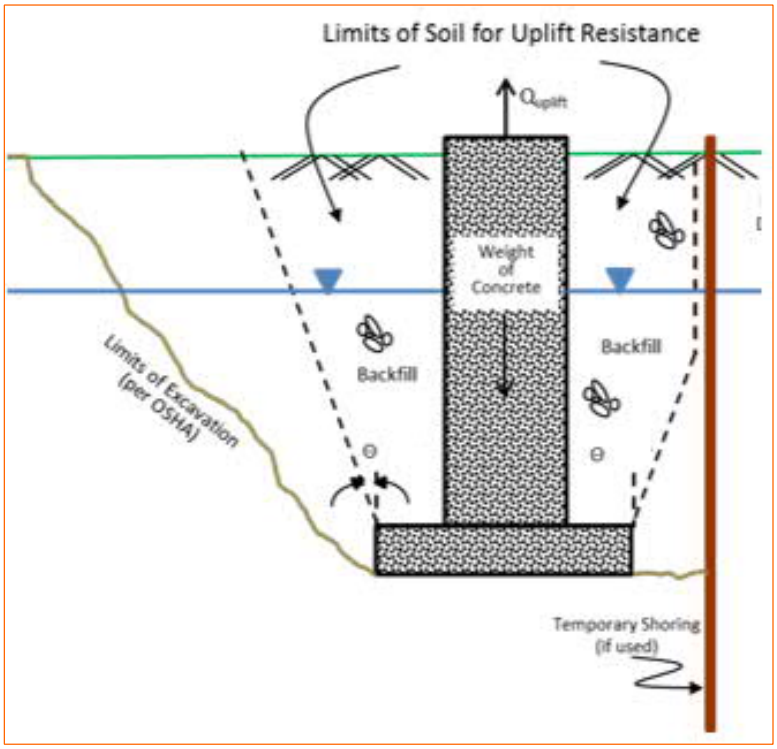
Design Parameters – Compressive Loads

Description	Column Footing	Wall Footing
Net allowable bearing pressure [1]	3,000 psf	3,000 psf
Minimum width	30 inches	24 inches
Minimum embedment below finished grade [2]	18 inches	18 inches
Compaction requirements	95 percent of the materials maximum Modified Proctor (ASTM D1557) dry density for a depth of 12 inches below footing.	
Minimum Testing Frequency	One field density test per footing for a minimum depth of 1 foot below the footing subgrade.	One field density test per 50 linear feet for a minimum depth of 1 foot below the footing subgrade.
Approximate total settlement [3]	<1 inch	<1 inch
Estimated differential settlement [3]	<¾ inch between columns	<¾ inch over 40 feet

1. The recommended net allowable bearing pressure is the pressure in excess of the minimum surrounding overburden pressure at the footing base elevation. Assumes any unsuitable fill or soft soils, if encountered, will be undercut and replaced with engineered fill.
2. For erosion protection and to reduce effects of seasonal moisture variations in subgrade soils.
3. The foundation settlement will depend upon the variations within the subsurface soil profile, the structural loading conditions, the embedment depth of the footings, the thickness of compacted fill, and the quality of the earthwork operations. The above settlement estimates have assumed that the footing width is 10 feet for column footings and 2 feet for continuous footings.

Design Parameters - Uplift Loads

Uplift resistance of spread footings can be developed from the effective weight of the footing and the overlying soils. As illustrated on the subsequent figure, the effective weight of the soil prism defined by diagonal planes extending up from the top of the perimeter of the foundation to the ground surface at an angle, θ, of 20 degrees from the vertical can be included in uplift resistance. The maximum allowable uplift capacity should be taken as a sum of the effective weight of soil plus the dead weight of the foundation, divided by an appropriate factor of safety. A maximum total unit weight of 100 pcf should be used for the backfill. This unit weight should be reduced to 40 pcf for portions of the backfill or natural soils below the groundwater elevation.

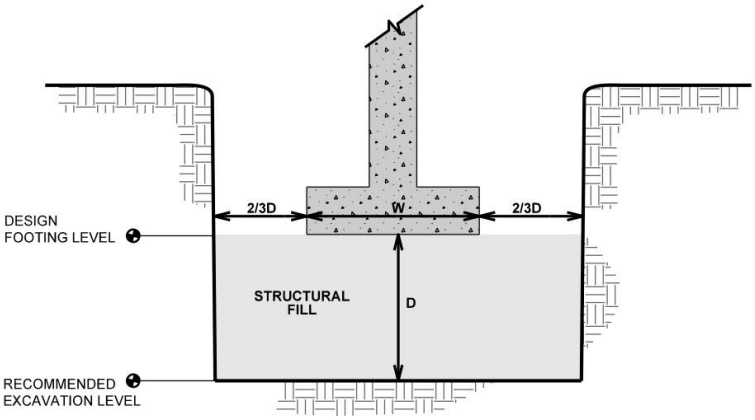


Foundation Construction Considerations

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

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

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



OVER-EXCAVATION / BACKFILL ZONE

NOTE: EXCAVATIONS ARE SHOWN VERTICAL; HOWEVER, THE SIDEWALLS SHOULD BE SLOPED AS NECESSARY FOR SAFETY

SEISMIC CONSIDERATIONS

Chapter 1, Part 101.2 of the 2017 Florida Building Code (effective July 2017) states: "Code requirements that address snow loads and earthquake protection are pervasive; they are left in place but shall not be utilized or enforced because Florida has no snow load or earthquake threat.". Therefore, this report does not further address seismic considerations.

Seismic considerations will seldom control the structural design of buildings in Central Florida (as compared to wind loading conditions). If seismic considerations control the structural design, we can provide a proposal to perform additional services to measure shear wave velocity such as MASW (multichannel analysis of surface waves), ReMi testing (refraction microtremor), or seismic cone penetrometer (SCPT) testing to see if the site classification improves.

FLOOR SLABS

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

Floor Slab Design Parameters

Item	Description
Floor Slab Support [1]	Minimum 6 inches of free-draining (less than 5% passing the U.S. No. 200 sieve) granular material compacted to at least 95% of ASTM D 1557 [2, 3]

Item	Description
Estimated Modulus of Subgrade Reaction [2]	100 pounds per square inch per inch (psi/in) for point loads

1. Floor slabs should be structurally independent of building footings or walls to reduce the possibility of floor slab cracking caused by differential movements between the slab and foundation unless part of a monolithic or post-tensioned slab.
2. Modulus of subgrade reaction is an estimated value based upon our experience with the subgrade condition, the requirements noted in **Earthwork**, and the floor slab support as noted in this table. It is provided for point loads. This value is valid for a 1 square foot plate. If additional load considerations are required, please contact Terracon.
3. Free-draining granular material should have less than 5% fines (material passing the No. 200 sieve).

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

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

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

Floor Slab Construction Considerations

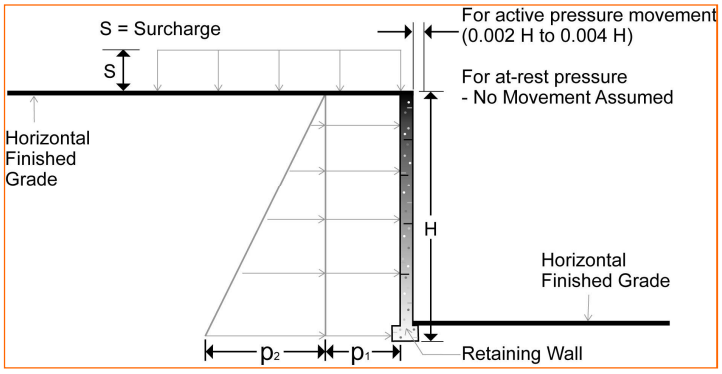
Finished subgrade, within and for at least 10 feet beyond the floor slab, should be protected from traffic, rutting, or other disturbance and maintained in a relatively moist condition until floor slabs are constructed. If the subgrade should become damaged or desiccated prior to construction of floor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

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

LATERAL EARTH PRESSURES

Design Parameters

Structures with unbalanced backfill levels on opposite sides should be designed for earth pressures at least equal to values indicated in the following table. Earth pressures will be influenced by structural design of the walls, conditions of wall restraint, methods of construction and/or compaction and the strength of the materials being restrained. Two wall restraint conditions are shown in the diagram below. Active earth pressure is commonly used for design of free-standing cantilever retaining walls and assumes minor wall movement. The “at-rest” condition assumes no wall movement and is commonly used for basement walls, loading dock walls, or other walls restrained at the top. The recommended design lateral earth pressures do not include a factor of safety and do not provide for possible hydrostatic pressure on the walls (unless stated).



Lateral Earth Pressure Design Parameters				
Earth Pressure Condition [1]	Coefficient for Backfill Type [2]	Surcharge Pressure [3, 4, 5] p_1 (psf)	Effective Fluid Pressures (psf) [2, 4, 5]	
			Unsaturated [6]	Submerged [6]
Active (Ka)	Granular - 0.30	(0.30)S	(34)H	(80)H
At-Rest (Ko)	Granular - 0.47	(0.47)S	(52)H	(85)H
Passive (Kp)	Granular - 3.25	---	(360)H	(215)H

1. For active earth pressure, wall must rotate about base, with top lateral movements 0.002 H to 0.004 H, where H is wall height. For passive earth pressure, wall must move horizontally to mobilize resistance.
2. Uniform, horizontal backfill, compacted to at least 95% of the ASTM D 1557 maximum dry density, rendering a maximum unit weight of 110 pcf.
3. Uniform surcharge, where S is surcharge pressure.
4. Loading from heavy compaction equipment is not included.
5. No safety factor is included in these values.

6. To achieve "Unsaturated" conditions, follow guidelines in **Subsurface Drainage for Below-Grade Walls** below. "Submerged" conditions are recommended when drainage behind walls is not incorporated into the design.

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

Subsurface Drainage for Below-Grade Walls

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

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

PAVEMENTS

General Pavement Comments

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

Subgrade Preparation

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

We recommend the moisture content and density of the top 12 inches of the subgrade be evaluated and the pavement subgrades be proofrolled and tested within two days prior to commencement of

actual paving operations. Compaction tests should be performed at a frequency of 1 test per 5,000 square feet or fraction thereof. Areas not in compliance with the required ranges of moisture or density should be moisture conditioned and recompacted. Particular attention should be paid to high traffic areas that were rutted and disturbed earlier and to areas where backfilled trenches are located. Areas where unsuitable conditions are found should be repaired by removing and replacing the materials with properly compacted fills.

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

Design Considerations

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

Estimates of Minimum Pavement Section Thickness

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

Typical Pavement Section (inches)						
Traffic Area	**Alternative**	**Asphalt Concrete Surface Course**	**Limerock, Soil-Cement or Crushed Concrete Base Course**	**Stabilized Subbase Course**[2,3,4]	**Portland Cement Concrete**	**Free Draining Subgrade**
Car Parking	PCC	--	--		5.0	18.0
	AC	1.5	6.0	12.0	--	--
Truck and Drive Areas	PCC	--	--		7.0	18.0
	AC	2.5[5]	8.0	12.0	--	--
Trash Container Pad [1]	PCC	--	--		6.0	18.0

1. The trash container pad should be large enough to support the container and the tipping axle of the collection truck.
2. Often referred to as Stabilized Subgrade.
3. Use coarse granular materials such as recycled crushed concrete, shell, or gravel when seasonal high groundwater is within 4 feet of the profile grade. Stabilization with clayey admixtures is acceptable with deeper seasonal high groundwater.
4. Some municipalities do not require stabilized subbase beneath soil-cement base.
5. Truck stopping, turning areas, along with locations where trailer landing gear are located are subject to asphalt pavement distress. Thicker and stronger mix designs should be considered.

Asphalt Concrete Design Considerations

The following items are applicable to asphalt concrete pavement sections.

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

- Crushed (recycled) concrete base should meet the current FDOT specification 911 for recycled materials.
- Asphalt should be compacted to a minimum of 95 percent of the design mix density. Asphalt surface courses should be Type SP, Type S, or other suitable mix design according to FDOT and local requirements.
- To verify thicknesses, after placement and compaction of the pavement courses, core the wearing surface to evaluate material thickness and composition at a minimum frequency of 5,000 square feet or two locations per day's production.
- Underdrains or strip drains should be considered along all landscaped areas in, or adjacent to pavements to reduce moisture migration to subgrade soils. Underdrains will also be required below pavement if the separation between the bottom of the base course and the seasonal high groundwater table is less than 1 foot.

All curbing should be full depth. Use of extruded curb sections which lie on top of asphalt surface courses can allow migration of water between the surface and base courses, leading to rippling and pavement deterioration.

Portland Cement Concrete Design Considerations

The following items are applicable to rigid concrete pavement sections.

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

- Sawcut patterns should generally be square or rectangular but nearly square and extend to a depth equal to a quarter of the slab thickness or as recommended by ACI. If the bottom of the concrete pavement is separated from the seasonal high groundwater table by at least 1 foot, filter fabric will not be necessary beneath the construction joints.

Pavement Drainage

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

Pavement Maintenance

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

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

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

Pavement Core Data

Two pavement cores (Core-1 and Core-2) were taken within the existing pavement on Grissom Parkway. The following are the results of those cores:

Core Number	Asphalt Thickness (in.)	Limerock Base Thickness (in.)
Core-1	3	2.5
Core-2	9	9.5

STORMWATER MANAGEMENT

Design of the stormwater management system has not been completed yet, though we understand two dry retention systems are planned, one on each side of the southern parking area and one northeast of the proposed building. Dry retention ponds generally need to be at least 1 foot and sometimes as much as 3 feet (or more for large ponds) above the seasonal high groundwater table to recover within the time required by SJRWMD.

Two permeability samples were evaluated in the east dry pond area (Borings Pond-12 and Pond-14) and one permeability sample was evaluated on the west dry pond area (Boring Pond-16). No testing has been performed on the northeast pond area. The soils are similar to those encountered in the east dry pond areas.

We consider this permeability rate to be indicative of a saturated vertical permeability. Experience and published references have indicated that unsaturated vertical permeability as used in some locally available groundwater models is typically 2/3 the saturated value. Experience with the observed soil types has shown that horizontal permeability may be on the order of 1.5 to 2 times the saturated vertical permeability in undisturbed materials. Also, it has been our experience that SJRWMD requires use of an appropriate factor of safety, generally reducing measured permeability rates or recovery time by a factor of safety of 2 for design of artificial recovery systems such as exfiltration trenches or underdrains, although this does not presently apply to ponds recovering by infiltration. We have not applied a factor of safety to any of the recommended values.

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

No confining layer was encountered at the site, within the explored depths. Therefore, we conservatively recommend that you consider the maximum explored depth of 15 feet as the confining layer for the purpose stormwater system design. Based upon our visual review of the sands, and our local project experience, we recommend that you consider the surficial aquifer (the site sands) to have a fillable porosity (η) of 30 percent. The table below summarizes our recommended stormwater management system design parameters.

Parameter	East Dry Pond Area Borings Locations Pond-12, Pond-13, Pond-14, and Pond-22	West Dry Pond Area Borings Locations Pond-16 and Pond-17
Estimated Confining Layer Depth, B	15 feet	15 feet [1]

Parameter	East Dry Pond Area Borings Locations Pond-12, Pond-13, Pond-14, and Pond-22	West Dry Pond Area Borings Locations Pond-16 and Pond-17
Estimated Seasonal High Groundwater Table Depth, WT	0.2 feet (Pond-12, -13, -14) 1.0 foot (Pond-22)	1 foot
Unsaturated Vertical Infiltration Rate, k_V	6 feet/day	13 feet/day
Horizontal Saturated Hydraulic Conductivity, k_H	8 feet/day	20 feet/day
Fillable Porosity, η	30 percent	30 percent

GENERAL COMMENTS

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

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

Our services and any correspondence or collaboration through this system are intended for the sole benefit and exclusive use of our client for specific application to the project discussed and are accomplished in accordance with generally accepted geotechnical engineering practices with no third-party beneficiaries intended. Any third-party access to services or correspondence is solely for information purposes to support the services provided by Terracon to our client. Reliance upon the services and any work product is limited to our client and is not intended for third parties. Any use or reliance of the provided information by third parties is done solely at their own risk. No warranties, either express or implied, are intended or made.

Site characteristics as provided are for design purposes and not to estimate excavation cost. Any use of our report in that regard is done at the sole risk of the excavating cost estimator as there

may be variations on the site that are not apparent in the data that could significantly impact excavation cost. Any parties charged with estimating excavation costs should seek their own site characterization for specific purposes to obtain the specific level of detail necessary for costing. Site safety, and cost estimating including, excavation support, and dewatering requirements/design are the responsibility of others. If changes in the nature, design, or location of the project are planned, our conclusions and recommendations shall not be considered valid unless we review the changes and either verify or modify our conclusions in writing.

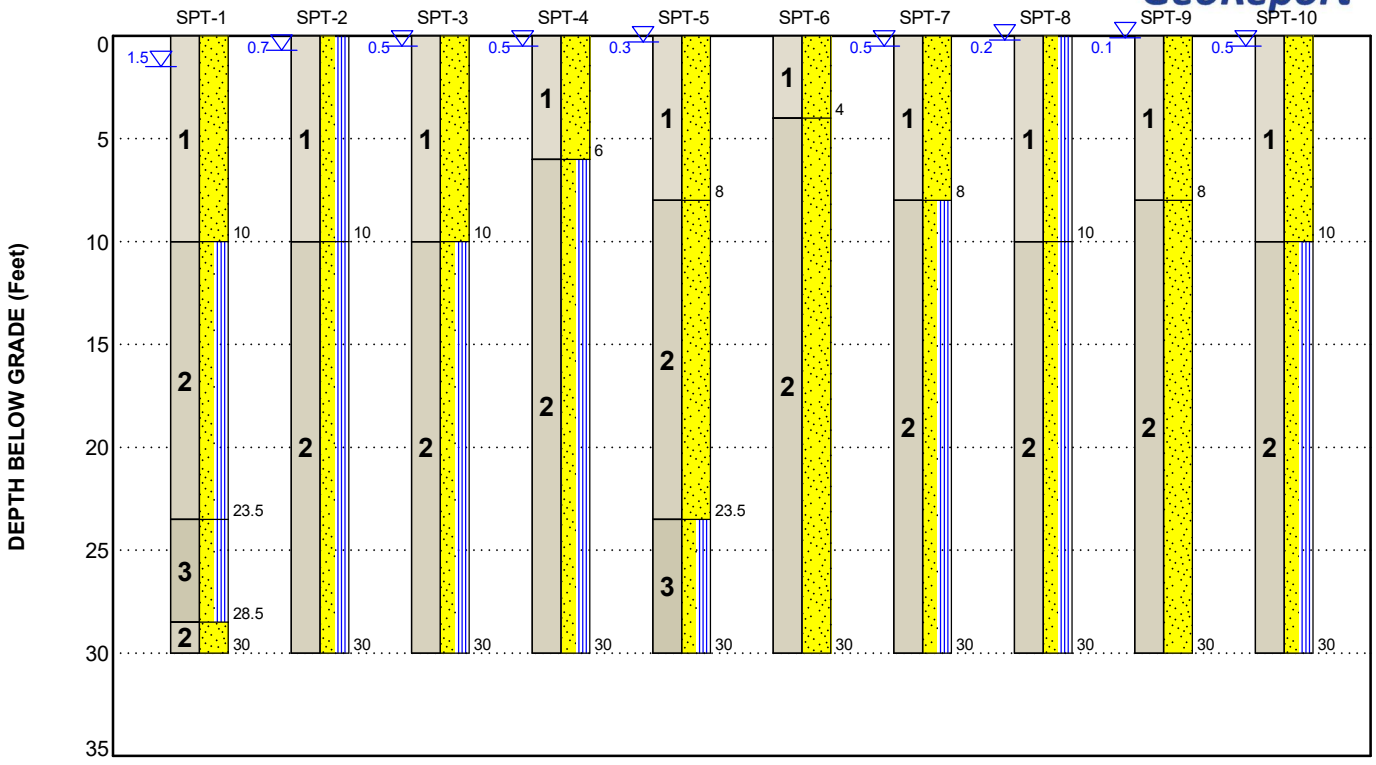
FIGURES

Contents:

GeoModel

GEOMODEL

DM08 Cocoa ■ Cocoa, FL
Terracon Project No. H1205186



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

Model Layer	Layer Name	General Description
1	**Loose sand**	Loose to medium dense sand, (SP)
2	**Dense sand**	Medium dense to dense sand, (SP)
3	**Silty sand**	Medium dense sand (SM)

LEGEND

Poorly-graded Sand

Poorly-graded Sand with Silt

First Water Observation

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

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

ATTACHMENTS

EXPLORATION AND TESTING PROCEDURES

Field Exploration

Number of Borings	Planned Boring Depth (feet) [1]	Planned Location
10	30	Planned building area
57	10	Planned parking/driveway area
22	15	Planned stormwater retention area

1. Below ground surface.

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

Subsurface Exploration Procedures: We advanced soil borings with an ATV-mounted drill rig using rotary wash techniques as necessary depending on soil conditions. Five samples were obtained in the upper 10 feet of each boring and at intervals of 5 feet thereafter. We obtained representative samples primarily by the split-barrel sampling procedure. In the split-barrel sampling procedure, a standard, 2-inch O.D., split-barrel sampling spoon is driven into the boring with a 140-pound automatic SPT (Standard Penetration Test) hammer falling 30 inches. We recorded the number of blows required to advance the sampling spoon the last 12 inches of an 18-inch sampling interval as the standard penetration resistance value, N.

The samples were placed in appropriate containers, taken to our soil laboratory for testing, and classified by a Geotechnical Engineer. In addition, we observed and record groundwater levels during drilling and sampling.

The auger boring procedure consisted of manually turning a 3-inch diameter, 6-inch long sampler into the soil until it was full. The sampler was then retrieved and the soils in the sampler were visually examined and classified. The procedure was repeated until the desired termination depth was achieved or shallow groundwater levels caused collapse of the borehole. Samples of representative strata were obtained for further visual examination and classification in our laboratory.

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

Geotechnical Engineer's interpretation of the field logs and include modifications based on observations and tests of the samples in our laboratory.

Laboratory Testing

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

- ASTM D2216 Standard Test Methods for Laboratory Determination of Water (Moisture) Content of Soil by Mass
- ASTM D1140 Standard Test Method for Amount of Material in Soils Finer than No. 200 (75-µm) Sieve
- ASTM D2974 Standard Test Methods for Moisture, Ash, and Organic Matter of Peat and Other Organic Soils
- ASTM D2434 Standard Test Method for Permeability of Granular Soils (Constant Head)

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

PHOTOGRAPHY LOG





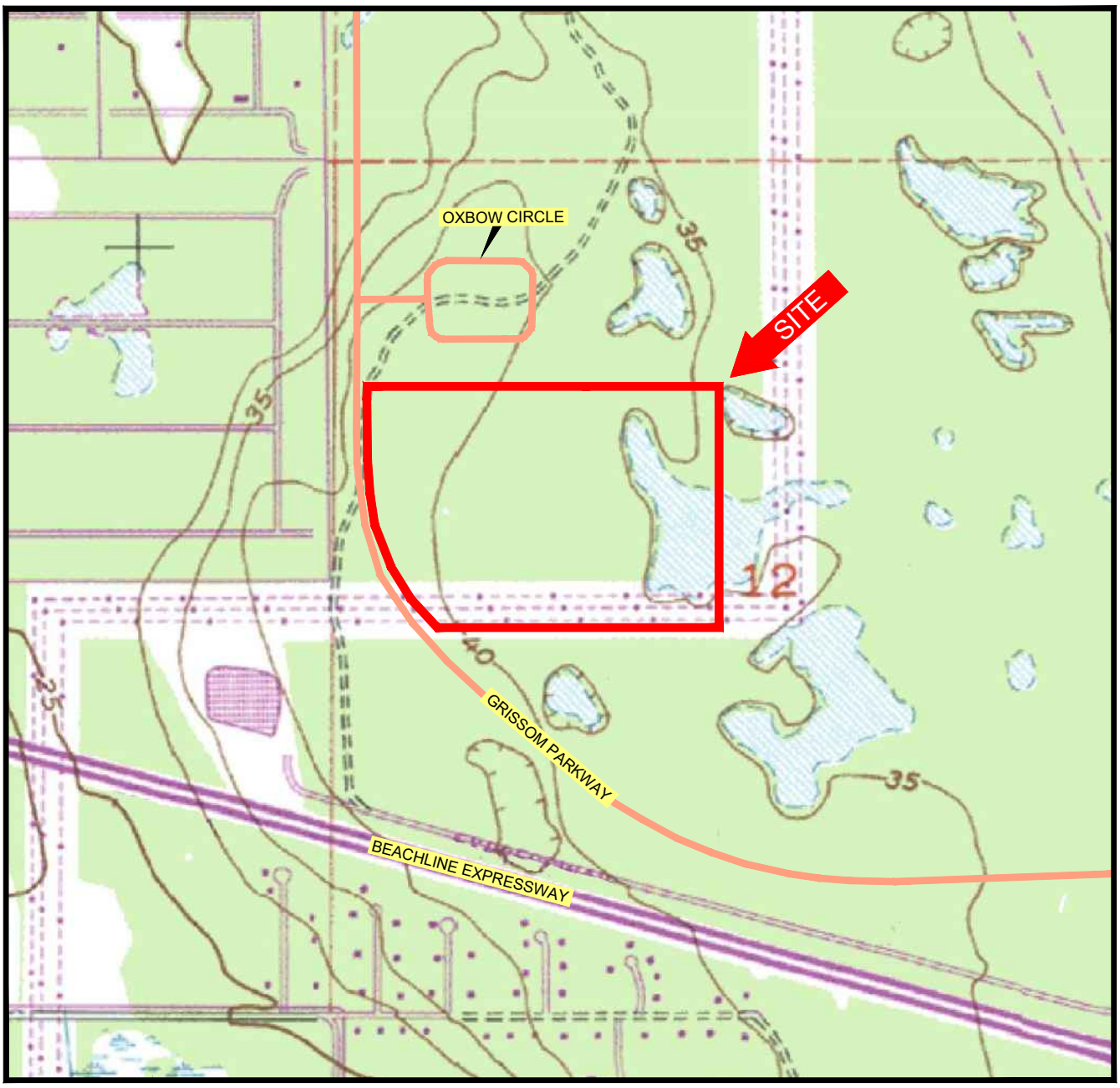
SITE LOCATION AND EXPLORATION PLANS

Contents:

Topographic Vicinity Map
Soils Map
Location Plan

Note: All attachments are one page unless noted above.

UNITED STATES – DEPARTMENT OF THE INTERIOR – GEOLOGICAL SURVEY



SCALE 1"=1000'

FEET

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

SHARPES, FLORIDA
ISSUED: 1988
7.5 MINUTE SERIES (QUADRANGLE)

N

N:\Projects\2020\H1205186\PROJECT DOCUMENTS (Reports-Letters-Drafts to Clients)\Cad\H1205186 Quad Map.dwg

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

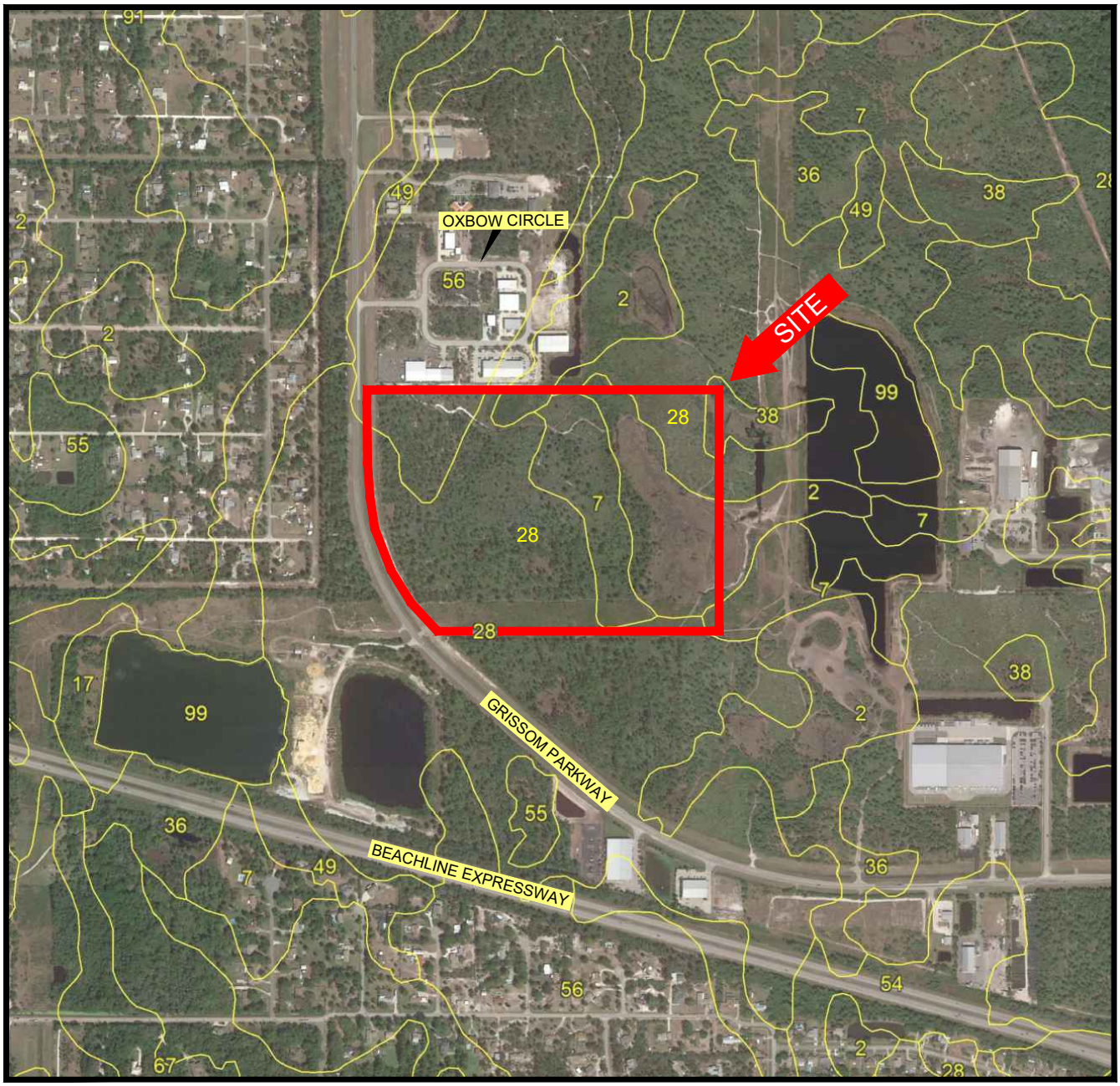
Project No.	H1205186
Scale:	AS SHOWN
File No.	H1205186-1
Date:	7-21-20

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

TOPOGRAPHIC VICINITY MAP

GEOTECHNICAL ENGINEERING REPORT
DM08 COCOA
GRISSOM PARKWAY NEAR OXBOW CIRCLE
COCOA, BREVARD COUNTY, FLORIDA

EXHIBIT



SCALE 1"=1000'

FEET

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

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

N

SOIL LEGEND

2	ANCLOTE SAND, FREQUENTLY PONDED, 0 TO 1 PERCENT SLOPES
7	BASINGER SAND, 0 TO 2 PERCENT SLOPES
28	IMMOKALEE SAND, 0 TO 2 PERCENT SLOPES
38	MYAKKA SAND, DEPRESSIONAL
56	ST LUCIE FINE SAND, 0 TO 5 PERCENT SLOPES

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

Project No.	H1205186
Scale:	AS SHOWN
File No.	H1205186-1
Date:	7-21-20

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

SOILS MAP

GEOTECHNICAL ENGINEERING REPORT
COCOA BEACH LAST MILE - DM08

GRISSOM PARKWAY NEAR OXBOW CIRCLE
COCOA, BREVARD COUNTY, FLORIDA

EXHIBIT

OXBOW CIRCLE

GRISSOM PARKWAY

P-1 P-2 P-3 P-4 P-5 P-15 P-16 P-17 P-18 P-19 P-20 P-21 P-22 P-23 P-6 P-7 P-8 P-24 P-25 P-26 P-27 P-28 P-29 P-9 P-10 P-30 P-31 P-32 P-33 P-34 P-35 P-36 P-11 P-12 P-37 P-13 P-38 P-39 P-40 P-41 P-42 P-14 P-43 P-44 P-45 P-46 P-47 P-48 P-49 P-50 P-51 P-52 P-53 P-54 P-55 P-56 P-57 P-58 P-59 P-60

SPT-1 SPT-2 SPT-3 SPT-4 SPT-5 SPT-6 SPT-7 SPT-8 SPT-9 SPT-10

POND-1 POND-2 POND-3 POND-4 POND-5 POND-6 POND-7 POND-8 POND-9 POND-10 POND-11 POND-12 POND-13 POND-14 POND-15 POND-16 POND-17

N

APPROXIMATE SCALE IN FEET

0 100 200

LEGEND

APPROXIMATE LOCATION OF STANDARD PENETRATION TEST BORING

APPROXIMATE LOCATION OF AUGER BORING

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

Project No.	H1205186
Scale:	AS SHOWN
File No.	H1205186
Date:	9-1-20

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

LOCATION PLAN

GEOTECHNICAL ENGINEERING REPORT
COCOA BEACH LAST MILE - DM08

GRISSOM PARKWAY NEAR OXBOW CIRCLE
COCOA, BREVARD COUNTY, FLORIDA

EXHIBIT

Sep01, 2020 - 10:59am N:\Projects\2020\H1205186\PROJECT DOCUMENTS (Reports-Letters-Drafts to Clients)\Cad\H1205186 Loc Plan.dwg

EXPLORATION RESULTS

Contents:

Boring Logs (SPT-1 through SPT-10)
Boring Logs (Pond-1 through Pond-22)
Boring Logs (P-1 through P-60) except P-4, P-21, and P-51

Note: All attachments are one page unless noted above.

BORING LOG NO. SPT-1

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4130° Longitude: -80.7856°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
1		**SAND (SP)**, fine grained, light gray to brown, loose to medium dense	5	▽		2-2-2-2 N=4			
						2-2-3-4 N=5			
						5-6-6-7 N=12			
						5-6-7-8 N=13			
						4-5-6-8 N=11			
		10.0	10						
2		**SAND WITH SILT (SP-SM)**, fine grained, dark brown							
						6-9-10 N=19			
			15						

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

Hammer Type: Automatic

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 1.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-11-2020 | Boring Completed: 08-11-2020

Drill Rig: D-50 | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. SPT-1

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4130° Longitude: -80.7856°

MODEL LAYER	GRAPHIC LOG	DEPTH		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
2			**SAND WITH SILT (SP-SM)**, fine grained, dark brown *(continued)*							
							4-5-7 N=12			
				20						
		23.5								
3			**SAND WITH SILT (SP-SM)**, trace organic with trace hardpan, fine grained, dark gray, medium dense				7-13-9 N=22		20.5	11
				25						
		28.5								
2			**SAND (SP)**, fine grained, brown, medium dense				6-9-10 N=19			
		30.0		30						
			Boring Terminated at 30 Feet							

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

Hammer Type: Automatic

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Water Initially Encountered at 1.5'

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-11-2020 | Boring Completed: 08-11-2020

Drill Rig: D-50 | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. SPT-2

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4130° Longitude: -80.7850°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
1		**SAND WITH SILT (SP-SM)**, trace root, fine grained, gray to brown, loose to medium dense	5	▽		2-3-4-4 N=7			
						4-5-6-7 N=11			
						6-7-7-8 N=14			
						5-6-7-7 N=13			
		10.0				6-7-7-8 N=14		25.2	7
2		**SAND WITH SILT (SP-SM)**, fine grained, dark gray to dark brown, medium dense	10						
						10-12-16 N=28			
			15						

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

Hammer Type: Automatic

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.7'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-12-2020 | Boring Completed: 08-12-2020

Drill Rig: D-50 | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. SPT-2

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4130° Longitude: -80.7850°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
2		**SAND WITH SILT (SP-SM)**, fine grained, dark gray to dark brown, medium dense *(continued)*	20			9-12-13 N=25			
			25			10-10-11 N=21			
			30			9-10-12 N=22			
		30.0 ***Boring Terminated at 30 Feet***							

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

Hammer Type: Automatic

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Water Initially Encountered at 0.7'

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-12-2020 | Boring Completed: 08-12-2020

Drill Rig: D-50 | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. SPT-3

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4130° Longitude: -80.7843°

DEPTH

MODEL LAYER	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
1			▽		3-3-3-4 N=6			
					4-5-6-6 N=11			
		5			5-6-7-7 N=13			
					4-5-6-7 N=11			
					2-3-3-4 N=6			
		10						
2					9-9-10 N=19			
		15						

SAND (SP), trace root, fine grained, dark brown to gray, loose to medium dense

10.0

SAND WITH SILT (SP-SM), fine grained, dark brown to brown, medium dense

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

Hammer Type: Automatic

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-12-2020 | Boring Completed: 08-12-2020

Drill Rig: D-50 | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. SPT-3

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4130° Longitude: -80.7843°

MODEL LAYER	GRAPHIC LOG	DEPTH		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
2			**SAND WITH SILT (SP-SM)**, fine grained, dark brown to brown, medium dense *(continued)*	20			6-8-9 N=17			
				25			5-7-10 N=17			
		30.0		30			7-9-12 N=21			
			Boring Terminated at 30 Feet							

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

Hammer Type: Automatic

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-12-2020 | Boring Completed: 08-12-2020

Drill Rig: D-50 | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. SPT-4

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4130° Longitude: -80.7836°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
1		**SAND (SP)**, trace root, fine grained, gray to dark brown, loose to medium dense		▽		2-2-2-3 N=4			
						2-3-4-6 N=7			
			5			4-5-6-6 N=11			
		6.0							
2		**SAND WITH SILT (SP-SM)**, fine grained, dark brown to brown, medium dense to dense				13-18-13-13 N=31		25.9	9
						3-4-5-6 N=9			
			10						
						13-20-27 N=47			
			15						

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

Hammer Type: Automatic

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-13-2020 | Boring Completed: 08-13-2020

Drill Rig: D-50 | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. SPT-4

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4130° Longitude: -80.7836°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
2		**SAND WITH SILT (SP-SM)**, fine grained, dark brown to brown, medium dense to dense *(continued)*	20			10-9-8 N=17			
			25			4-7-9 N=16			
			30			5-9-11 N=20			
		30.0 ***Boring Terminated at 30 Feet***							

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

Hammer Type: Automatic

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Water Initially Encountered at 0.5'

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-13-2020 | Boring Completed: 08-13-2020

Drill Rig: D-50 | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. SPT-5

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4130° Longitude: -80.7829°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
1		**SAND (SP)**, trace root, fine grained, gray to brown, loose to medium dense		▽		2-2-2-2 N=4			
						2-3-4-6 N=7			
			5			4-6-6-7 N=12		24.3	1
						5-6-7-9 N=13			
2		8.0 **SAND (SP)**, fine grained, dark brown, medium dense				5-8-10-11 N=18			
			10						
						5-6-7 N=13			
			15						

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

Hammer Type: Automatic

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.3'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-12-2020 | Boring Completed: 08-12-2020

Drill Rig: D-50 | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. SPT-5

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4130° Longitude: -80.7829°

DEPTH

MODEL LAYER	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
2								
					6-9-11 N=20			
		20						
		25			5-8-10 N=18			
3								
					7-11-15 N=26			
		30						

SAND (SP), fine grained, dark brown, medium dense *(continued)*

23.5

SAND WITH SILT (SP-SM), trace organics, fine grained, dark brown to brown, medium dense

30.0

Boring Terminated at 30 Feet

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

Hammer Type: Automatic

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Water Initially Encountered at 0.3'

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-12-2020 | Boring Completed: 08-12-2020

Drill Rig: D-50 | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. SPT-6

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4124° Longitude: -80.7856°

MODEL LAYER	GRAPHIC LOG	DEPTH		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
1			**SAND (SP)**, fine grained, gray, loose				2-2-2-2 N=4			
							2-2-3-4 N=5			
		4.0								
2			**SAND (SP)**, fine grained, dark gray, medium dense to dense	5			6-9-10-9 N=19			
							6-7-9-10 N=16			
							7-7-9-11 N=16			
				10						
							6-8-9 N=17			
				15						

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

Hammer Type: Automatic

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-10-2020 | Boring Completed: 08-10-2020

Drill Rig: D-50 | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. SPT-6

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4124° Longitude: -80.7856°

DEPTH

MODEL LAYER	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
2		20			10-13-14 N=27			
		25			9-15-21 N=36			
		30			6-8-10 N=18			

SAND (SP), fine grained, dark gray, medium dense to dense *(continued)*

trace organic

30.0

Boring Terminated at 30 Feet

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

Hammer Type: Automatic

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-10-2020 | Boring Completed: 08-10-2020

Drill Rig: D-50 | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. SPT-7

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4124° Longitude: -80.7850°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
1		**SAND (SP)**, trace root and organic, fine grained, dark brown to gray, medium dense		▽		6-7-7-8 N=14			
						9-10-12-13 N=22			
			5			4-4-5-5 N=9			
						4-4-5-6 N=9			
		8.0							
2		**SAND WITH SILT (SP-SM)**, fine grained, brown to dark brown, medium dense to dense				6-8-11-12 N=19			
			10						
						5-7-10 N=17			
			15						

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

Hammer Type: Automatic

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-10-2020 | Boring Completed: 08-10-2020

Drill Rig: D-50 | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. SPT-7

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4124° Longitude: -80.7850° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
2		**SAND WITH SILT (SP-SM)**, fine grained, brown to dark brown, medium dense to dense *(continued)*							
						6-8-11 N=19			
			20						
		trace organic with trace hardpan							
						18-26-22 N=48		17.2	8
			25						
						4-6-9 N=15			
		30.0	30						
		Boring Terminated at 30 Feet							

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

Hammer Type: Automatic

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Water Initially Encountered at 0.5'

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-10-2020 | Boring Completed: 08-10-2020

Drill Rig: D-50 | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. SPT-8

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4124° Longitude: -80.7843°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
1		**SAND WITH SILT (SP-SM)**, trace root, fine grained, dark brown to dark gray, loose to medium dense				2-3-4-4 N=7			
						4-7-8-10 N=15		26.0	7
			5			5-6-6-5 N=12			
						4-5-5-6 N=10			
						3-4-8-8 N=12			
		10.0	10						
2		**SAND WITH SILT (SP-SM)**, fine grained, gray to brown, medium dense to dense							
						11-15-18 N=33			
			15						

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

Hammer Type: Automatic

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Water Initially Encountered at 0.2'

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-11-2020 | Boring Completed: 08-11-2020

Drill Rig: D-50 | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. SPT-8

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4124° Longitude: -80.7843°

MODEL LAYER	GRAPHIC LOG	DEPTH		WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
2			**SAND WITH SILT (SP-SM)**, fine grained, gray to brown, medium dense to dense *(continued)*						
						9-10-21 N=31			
		20							
						7-10-12 N=22			
		25							
						6-9-13 N=22			
		30							
		30.0	***Boring Terminated at 30 Feet***						

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

Hammer Type: Automatic

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Water Initially Encountered at 0.2'

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-11-2020 | Boring Completed: 08-11-2020

Drill Rig: D-50 | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. SPT-9

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4124° Longitude: -80.7836°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
1		**SAND (SP)**, fine grained, dark brown to brown, loose to medium dense		▽		2-2-4-5 N=6			
						6-7-7-7 N=14			
			5			7-9-10-11 N=19			
						6-8-8-9 N=16			
		8.0							
2		**SAND (SP)**, fine grained, dark brown to light gray, medium dense to dense				7-10-12-12 N=22		24.1	2
			10						
						15-21-29 N=50			
			15						

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

Hammer Type: Automatic

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.1'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-10-2020 | Boring Completed: 08-10-2020

Drill Rig: D-50 | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. SPT-9

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4124° Longitude: -80.7836° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
2		**SAND (SP)**, fine grained, dark brown to light gray, medium dense to dense *(continued)*	20			14-16-26 N=42			
			25			6-8-11 N=19			
			30			6-9-11 N=20			
		30.0 ***Boring Terminated at 30 Feet***							

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

Hammer Type: Automatic

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.1'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-10-2020 | Boring Completed: 08-10-2020

Drill Rig: D-50 | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. SPT-10

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4124° Longitude: -80.7829°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
1		**SAND (SP)**, trace root, fine grained, gray to brown, loose to medium dense		▽		2-2-2-2 N=4			
						2-2-2-3 N=4			
			5			4-4-5-5 N=9			
						3-6-6-6 N=12			
						3-5-7-7 N=12			
		10.0	10						
2		**SAND WITH SILT (SP-SM)**, fine grained, dark brown to light brown, medium dense to dense							
						7-12-17 N=29			
			15						

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

Hammer Type: Automatic

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-10-2020 | Boring Completed: 08-10-2020

Drill Rig: D-50 | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. SPT-10

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4124° Longitude: -80.7829° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
2		**SAND WITH SILT (SP-SM)**, fine grained, dark brown to light brown, medium dense to dense *(continued)*	20			8-9-16 N=25			
			25			13-15-16 N=31		22.9	8
			30			8-9-11 N=20			
		30.0 ***Boring Terminated at 30 Feet***							

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

Hammer Type: Automatic

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-10-2020 | Boring Completed: 08-10-2020

Drill Rig: D-50 | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-1

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4145° Longitude: -80.7865°

MODEL LAYER	GRAPHIC LOG	DEPTH		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		0.0	**SAND (SP)**, fine grained, light gray							
		1.0	**SAND (SP)**, fine grained, gray brown		▽				21.3	1
		3.0	**SAND (SP)**, fine grained, brown	5						
		8.0	**SAND (SP)**, fine grained, reddish brown							
		10.0	***Boring Terminated at 10 Feet***	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 2.0'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-18-2020 | Boring Completed: 08-18-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-2

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4145° Longitude: -80.7856° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root, fine grained, gray		▽					
		3.0							
		SAND (SP), fine grained, brown	5						
		7.5							
		SAND (SP), fine grained, dark brown							
		10.0	10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 1.0'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020 | Boring Completed: 08-14-2020

Drill Rig: | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-3

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4145° Longitude: -80.7847°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, gray	5	▽					
		8.0 **SAND (SP)**, fine grained, brown							
		10.0 ***Boring Terminated at 10 Feet***	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 2.0'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020	Boring Completed: 08-14-2020
Drill Rig:	Driller: Tyler
Project No.: H1205186	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-5

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4143° Longitude: -80.7861°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root, fine grained, gray		▽					
		3.5							
		SAND (SP), fine grained, gray	5					23.4	3
		10.0	10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 1.0'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-13-2020 | Boring Completed: 08-13-2020

Drill Rig: | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-6

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4139° Longitude: -80.7865°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), with root, fine grained, gray		▽					
		1.5 **SAND (SP)**, fine grained, gray	5						
		7.0 **SAND (SP)**, fine grained, brown							
		10.0 ***Boring Terminated at 10 Feet***	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 1.0'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-18-2020 | Boring Completed: 08-18-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-7

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4139° Longitude: -80.7858° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root, fine grained, gray		▽					
		3.5							
		SAND (SP), fine grained, brown	5						
		7.0							
		SAND (SP), fine grained, dark brown							
		10.0	10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.7'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-13-2020 | Boring Completed: 08-13-2020

Drill Rig: | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-8

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4136° Longitude: -80.7861° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root, fine grained, dark gray		▽				29.0	2
		3.0 **SAND (SP)**, fine grained, gray	5						
		10.0 ***Boring Terminated at 10 Feet***	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 1.0'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-13-2020 | Boring Completed: 08-13-2020

Drill Rig: | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-9

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4133° Longitude: -80.7865°

MODEL LAYER	GRAPHIC LOG	DEPTH		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
			SAND (SP), with root, fine grained, gray		▽					
		1.0								
			SAND (SP), fine grained, brown	5					24.2	2
		6.0								
			SAND (SP), fine grained, gray							
		10.0		10						
			Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-18-2020 | Boring Completed: 08-18-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-10

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4133° Longitude: -80.7858°

MODEL LAYER	GRAPHIC LOG	DEPTH		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
			SAND (SP), with root, fine grained, dark gray							
		2.0								
			SAND (SP), fine grained, brown	5						
		7.0								
			SAND (SP), fine grained, gray							
		10.0		10						
			Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started:	Boring Completed:
Drill Rig:	Driller:
Project No.: H1205186	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-11

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4127° Longitude: -80.7861°

MODEL LAYER	GRAPHIC LOG	DEPTH		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
			SAND (SP), with root, fine grained, gray		▽					
		1.5								
			SAND (SP), fine grained, gray							
		4.0								
			SAND (SP), fine grained, brown	5					23.9	2
		10.0		10						
			Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 1.0'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-18-2020 | Boring Completed: 08-18-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-12

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4124° Longitude: -80.7864° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, brown		▽					
		5.0	5						
		SAND (SP), with organic, fine grained, dark brown							
		8.0							
		SAND (SP), fine grained, brown							
		10.0	10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 3.0'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-10-2020 | Boring Completed: 08-10-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-13

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4121° Longitude: -80.7858°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), with root and organic, fine grained, dark gray		▽					
		2.0 **SAND (SP)**, fine grained, brown	5						
		6.0 **SAND (SP)**, with organic, fine grained, dark brown							
		8.0 **SAND (SP)**, with wood, fine grained, brown							
		10.0 ***Boring Terminated at 10 Feet***	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.3'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-10-2020	Boring Completed: 08-10-2020
Drill Rig:	Driller: Robbie
Project No.: H1205186	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-14

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4120° Longitude: -80.7863° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, gray		▽					
		3.5 **SAND (SP)**, fine grained, grayish brown	5						
		6.0 **SAND (SP)**, fine grained, brown							
		8.5 **SAND (SP)**, fine grained, dark brown							
		10.0 ***Boring Terminated at 10 Feet***	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 1.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-10-2020	Boring Completed: 08-10-2020
Drill Rig:	Driller: Robbie
Project No.: H1205186	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-15

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4143° Longitude: -80.7850° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, gray		▽					
		3.0 **SAND (SP)**, fine grained, brown to gray	5						
		8.0 **SAND (SP)**, fine grained, brown						23.7	4
		10.0 ***Boring Terminated at 10 Feet***	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 2.0'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020 | Boring Completed: 08-14-2020

Drill Rig: | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-16

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4143° Longitude: -80.7844°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root, fine grained, dark gray						34.9	4
		2.0 **SAND (SP)**, fine grained, gray	5						
		7.0 **SAND (SP)**, fine grained, red brown to gray							
		10.0 ***Boring Terminated at 10 Feet***	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Water Initially Encountered at 0.0'

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020 | Boring Completed: 08-14-2020

Drill Rig: | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-17

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4143° Longitude: -80.7837°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root and organic, fine grained, dark brown							
		2.0							
		SAND (SP), fine grained, gray	5					26.8	3
		10.0	10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Water Initially Encountered at -0.1'

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-17-2020 | Boring Completed: 08-17-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-18

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4143° Longitude: -80.7830°

MODEL LAYER	GRAPHIC LOG	DEPTH		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		0.0	**SAND (SP)**, with root and organic, fine grained, dark gray							
		1.0	**SAND (SP)**, fine grained, gray							
		6.0	**SAND (SP)**, fine grained, brown	5						
		7.0	**SAND (SP)**, fine grained, reddish brown							
		10.0	***Boring Terminated at 10 Feet***	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at -0.3'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020 | Boring Completed: 08-14-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-19

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4140° Longitude: -80.7854°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root, fine grained, gray							
		4.0							
		SAND (SP), fine grained, gray brown	5						
		6.0							
		SAND (SP), fine grained, dark gray							
		10.0	10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-13-2020 | Boring Completed: 08-13-2020

Drill Rig: | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-20

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4140° Longitude: -80.7847° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root, fine grained, gray		▽					
		2.0							
		SAND (SP), fine grained, gray						25.0	1
			5						
		10.0	10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020 | Boring Completed: 08-14-2020

Drill Rig: | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-22

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4139° Longitude: -80.7833° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root, fine grained, gray							
		2.0							
		SAND (SP), fine grained, gray	5						
		10.0	10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at -0.2'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-17-2020 | Boring Completed: 08-17-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-23

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4139° Longitude: -80.7827° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), with root, fine grained, dark gray 1.0		▽					
		SAND (SP), fine grained, light gray 4.5							
		SAND (SP), trace root, fine grained, gray 9.5	5						
		SAND (SP), fine grained, gray 10.0							
		Boring Terminated at 10 Feet	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-13-2020 | Boring Completed: 08-13-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-24

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4136° Longitude: -80.7855° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, dark gray							
		3.5 **SAND (SP)**, fine grained, brown	5						
		8.0 **SAND (SP)**, fine grained, dark brown						24.9	2
		10.0 ***Boring Terminated at 10 Feet***	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-13-2020 | Boring Completed: 08-13-2020

Drill Rig: | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-25

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4136° Longitude: -80.7850°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root, fine grained, gray							
		2.5							
		SAND (SP), fine grained, gray	5						
		8.0							
		SAND (SP), trace root, fine grained, brown							
		10.0	10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Water Initially Encountered at 0.3'

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020 | Boring Completed: 08-14-2020

Drill Rig: | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-26

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4136° Longitude: -80.7843°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root, fine grained, gray		▽					
		3.0							
		SAND WITH SILT (SP), fine grained, gray						35.1	8
		6.0	5						
		SAND (SP), fine grained, brown							
		10.0							
		Boring Terminated at 10 Feet	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 1.0'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020 | Boring Completed: 08-14-2020

Drill Rig: | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-27

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4137° Longitude: -80.7836° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root and organic, fine grained, dark gray							
		2.0 **SAND (SP)**, fine grained, dark brown							
		4.0 **SAND (SP)**, fine grained, brown	5						
		10.0 ***Boring Terminated at 10 Feet***	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Water Initially Encountered at -0.3'

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-17-2020 | Boring Completed: 08-17-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-28

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4136° Longitude: -80.7830° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), with root, fine grained, dark gray 1.0		▽					
		SAND (SP), fine grained, gray 3.5							
		SAND (SP), fine grained, gray brown 10.0	5 10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-13-2020 | Boring Completed: 08-13-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-29

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4136° Longitude: -80.7824°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, gray		▽					
		1.0							
		SAND (SP), fine grained, brown						23.8	2
			5						
		10.0	10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.8'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-13-2020 | Boring Completed: 08-13-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-30

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4133° Longitude: -80.7853° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, grayish brown		▽					
		3.5 **SAND (SP)**, fine grained, brown	5						
		8.0 **SAND (SP)**, fine grained, dark brown							
		10.0 ***Boring Terminated at 10 Feet***	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-13-2020 | Boring Completed: 08-13-2020

Drill Rig: | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-31

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4133° Longitude: -80.7846° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root, fine grained, gray		▽					
		3.0							
		SAND (SP), fine grained, gray	5						
		10.0	10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020 | Boring Completed: 08-14-2020

Drill Rig: | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-32

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4133° Longitude: -80.7839°

DEPTH		MODEL LAYER / GRAPHIC LOG	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
0.5	**SAND (SP)**, trace root and organic, fine grained, dark brown		▽					
1.0	**SILTY SAND (SM)**, fine grained, brown							
	SAND WITH SILT (SP-SM), trace root, fine grained, brown						34.1	12
8.0								
	SAND (SP), fine grained, gray brown							
10.0								
	Boring Terminated at 10 Feet							

5

10

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.3'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-17-2020 | Boring Completed: 08-17-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-33

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4133° Longitude: -80.7833° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root and organic, fine grained, dark brown 1.0		▽					
		SAND (SP), fine grained, gray 3.5							
		SAND (SP), fine grained, brown 10.0	5 10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.3'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-17-2020 | Boring Completed: 08-17-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-34

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4133° Longitude: -80.7827° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root, fine grained, dark gray 1.0							
		SAND (SP), fine grained, brown 10.0	5 10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Water Initially Encountered at -0.1'

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020 | Boring Completed: 08-14-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-35

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4131° Longitude: -80.7823°

DEPTH	MODEL LAYER / GRAPHIC LOG		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root, fine grained, dark gray		▽				26.6	3
1.5		**SAND (SP)**, fine grained, gray							
4.5		**SAND (SP)**, fine grained, brown	5						
8.0		**SAND WITH SILT (SP-SM)**, fine grained, dark brown						22.3	9
10.0		***Boring Terminated at 10 Feet***	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.3'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020 | Boring Completed: 08-14-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-36

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4127° Longitude: -80.7826°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), with root, fine grained, gray		▽					
		1.0							
		SAND (SP), trace root, fine grained, brown							
			5						
		6.5							
		SILTY SAND (SM), fine grained, brown						18.5	16
		10.0							
		Boring Terminated at 10 Feet	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.2'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020 | Boring Completed: 08-14-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-37

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4125° Longitude: -80.7821°

MODEL LAYER	GRAPHIC LOG	DEPTH		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
			SAND (SP), trace root and organic, fine grained, dark brown		▽					
		1.5								
			SAND (SP), fine grained, brown						29.2	3
		4.0								
			SAND (SP), fine grained, gray	5						
		10.0		10						
			Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.3'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-10-2020 | Boring Completed: 08-10-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-38

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4121° Longitude: -80.7853° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, gray							
		5.0 **SAND (SP)**, fine grained, brown	5						
		7.5 **SILTY SAND (SM)**, trace organic, fine grained, dark gray							
		10.0 ***Boring Terminated at 10 Feet***	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.1'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-10-2020 | Boring Completed: 08-10-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-39

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4121° Longitude: -80.7846° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), with leaves and root, fine grained, gray							
		1.5							
		SAND (SP), fine grained, brown							
		5.0	5						
		SAND (SP), fine grained, gray							
		10.0	10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-11-2020 | Boring Completed: 08-11-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-40

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4121° Longitude: -80.7838°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root, fine grained, dark gray							
		3.5							
		SAND WITH SILT (SP-SM), fine grained, brown	5					22.8	8
		10.0	10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Water Initially Encountered at 0.3'

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-11-2020 | Boring Completed: 08-11-2020

Drill Rig: | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-41

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4121° Longitude: -80.7831°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, dark gray							
		1.0							
		SAND (SP), fine grained, gray						23.3	3
		6.5	5						
		SAND (SP), fine grained, brown							
		10.0	10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at -0.2'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-11-2020 | Boring Completed: 08-11-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-42

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4122° Longitude: -80.7824°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), with root, fine grained, dark brown		▽					
		1.5							
		SAND (SP), fine grained, gray	5					20.8	4
		10.0	10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.7'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-11-2020 | Boring Completed: 08-11-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-43

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4118° Longitude: -80.7855° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root, fine grained, gray 1.0		▽					
		SAND (SP), fine grained, brown 9.0	5					24.4	2
		SAND (SP), fine grained, gray 10.0	10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 1.0'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-11-2020 | Boring Completed: 08-11-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-44

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4118° Longitude: -80.7849° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND WITH SILT (SP-SM), trace organic, fine grained, dark brown							
		6.5	5					32.8	10
		SAND (SP), fine grained, gray							
		9.0							
		SAND (SP), fine grained, dark gray							
		10.0	10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-11-2020 | Boring Completed: 08-11-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-45

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4118° Longitude: -80.7842°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), with root, fine grained, dark gray							
		2.0							
		SAND (SP), trace organic, fine grained, dark brown							
		4.0							
		SILTY SAND (SM), fine grained, brown						22.8	17
			5						
		10.0							
		Boring Terminated at 10 Feet	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-11-2020 | Boring Completed: 08-11-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-46

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4118° Longitude: -80.7834° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root, fine grained, dark gray		▽					
		4.0 **SAND WITH SILT (SP-SM)**, with hardpan, fine grained, brown	5						
		6.0 **SAND WITH SILT (SP-SM)**, trace organic, fine grained, dark brown						21.2	9
		10.0 ***Boring Terminated at 10 Feet***	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.3'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-11-2020 | Boring Completed: 08-11-2020

Drill Rig: | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-47

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4118° Longitude: -80.7828°

MODEL LAYER	GRAPHIC LOG	DEPTH		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
			SAND (SP), fine grained, dark brown							
		1.0								
			SAND (SP), fine grained, gray							
		3.0								
			SAND WITH SILT (SP-SM), fine grained, dark gray						25.2	7
				5						
		7.0								
			SAND (SP), fine grained, gray							
		10.0								
			Boring Terminated at 10 Feet	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Water Initially Encountered at -0.2'

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-11-2020 | Boring Completed: 08-11-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-48

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4118° Longitude: -80.7820°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root, fine grained, dark brown		▽					
		3.0							
		SILTY SAND (SM), fine grained						24.0	12
		6.0	5						
		SILTY SAND (SM), fine grained, brown							
		10.0	10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.7'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-11-2020 | Boring Completed: 08-11-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-49

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4115° Longitude: -80.7852°

MODEL LAYER	GRAPHIC LOG	DEPTH		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
			SAND (SP), trace root, fine grained, dark gray							
		1.5								
			SAND (SP), fine grained, light gray	5						
		9.0								
			SAND (SP), fine grained, dark gray							
		10.0		10						
			Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-11-2020 | Boring Completed: 08-11-2020

Drill Rig: | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-50

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4115° Longitude: -80.7846°

DEPTH	MODEL LAYER	GRAPHIC LOG	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND WITH SILT (SP-SM), fine grained, dark brown	▽					
							28.9	8
5.5		**SAND (SP)**, fine grained, gray						
10.0		***Boring Terminated at 10 Feet***						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.8'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-11-2020 | Boring Completed: 08-11-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-52

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4115° Longitude: -80.7831°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, gray		▽					
		3.0							
		SILTY SAND (SM), with organic, fine grained, dark brown						26.1	18
		6.0	5						
		SAND (SP), fine grained, brown							
		10.0	10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.3'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-12-2020 | Boring Completed: 08-12-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-53

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4115° Longitude: -80.7824°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, gray							
		3.0							
		SAND (SP), fine grained, dark brown						22.9	5
		7.0	5						
		SAND (SP), fine grained, gray brown							
		10.0	10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-12-2020 | Boring Completed: 08-12-2020

Drill Rig: | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-54

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4112° Longitude: -80.7855°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, gray							
		1.0							
		SAND (SP), fine grained, brown		▽				22.1	1
			5						
		6.0							
		SAND (SP), fine grained, dark gray							
		8.0							
			10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 1.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-11-2020 | Boring Completed: 08-11-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-55

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4111° Longitude: -80.7849°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), with root, fine grained, dark brown		▽					
		2.0 **SAND (SP)**, fine grained, brown	5						
		8.0 **SAND WITH SILT (SP-SM)**, fine grained, dark brown						20.7	9
		10.0 ***Boring Terminated at 10 Feet***	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.8'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-11-2020 | Boring Completed: 08-11-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-56

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4111° Longitude: -80.7842°

DEPTH	MODEL LAYER	GRAPHIC LOG	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root, fine grained, dark gray						
1.5								
		SAND (SP), fine grained, brown						
6.0								
		SAND (SP), fine grained, gray					21.8	4
10.0								
		Boring Terminated at 10 Feet						

5

10

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-10-2020 | Boring Completed: 08-10-2020

Drill Rig: | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-57

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4111° Longitude: -80.7834°

MODEL LAYER	GRAPHIC LOG	DEPTH		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
			SAND (SP), with organic, fine grained, dark brown							
		1.0								
			SAND (SP), fine grained, gray							
		2.5								
			SAND WITH SILT (SP-SM), trace organic, fine grained, dark gray						26.2	10
				5						
		6.0								
			SAND (SP), fine grained, gray							
		8.0								
			SAND (SP), trace organic, fine grained, dark gray							
		10.0		10						
			Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-10-2020 | Boring Completed: 08-10-2020

Drill Rig: | Driller: Tyler

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-58

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4111° Longitude: -80.7827° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, gray 1.0		▽					
		SAND (SP), trace organic, fine grained, dark gray 2.0							
		SAND (SP), fine grained, gray 10.0	5						
		Boring Terminated at 10 Feet	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-10-2020 | Boring Completed: 08-10-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-59

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4111° Longitude: -80.7820° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), with root, fine grained, dark gray 1.0		▽					
		SAND (SP), fine grained, gray 10.0	5 10						
		Boring Terminated at 10 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.8'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-10-2020 | Boring Completed: 08-10-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. P-60

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4109° Longitude: -80.7853°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, gray	5	▽					
		7.0 **SAND (SP)**, fine grained, dark gray							
		10.0 ***Boring Terminated at 10 Feet***	10						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 2.0'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-10-2020	Boring Completed: 08-10-2020
Drill Rig:	Driller: Robbie
Project No.: H1205186	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-1

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4142° Longitude: -80.7823° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), with root, fine grained, gray		▽					
		1.0							
		SAND (SP), fine grained, gray	5						
			10						
		15.0	15						
		Boring Terminated at 15 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020 | Boring Completed: 08-14-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-2

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4143° Longitude: -80.7816° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), with root, fine grained, dark gray		▽					
		3.5 **SAND (SP)**, fine grained, brown	5						
		8.5 **SAND (SP)**, fine grained, gray	10						
		15.0 ***Boring Terminated at 15 Feet***	15						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.3'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020 | Boring Completed: 08-14-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-3

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4144° Longitude: -80.7808° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), with root, fine grained, dark brown 1.0		▽					
		SAND (SP), fine grained, brown 5.0	5						
		SAND (SP), trace root, fine grained, gray 10.0	10						
		SAND (SP), fine grained, gray 12.5							
		SAND (SP), fine grained, brown 15.0	15						
		Boring Terminated at 15 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.3'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020 | Boring Completed: 08-14-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-4

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4141° Longitude: -80.7809°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), with root and organic, fine grained, dark brown							
		1.5 **SAND (SP)**, fine grained, brown	5						
			10						
		12.5 **SAND (SP)**, fine grained, dark brown							
		15.0 ***Boring Terminated at 15 Feet***	15						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Water Initially Encountered at 0.3'

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020 | Boring Completed: 08-14-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-5

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4137° Longitude: -80.7813°

MODEL LAYER	GRAPHIC LOG	DEPTH		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
			SAND (SP), trace root and organic, fine grained, gray		▽					
		1.5								
			SAND (SP), (HARDPAN) with organic sand, fine grained, gray							
		3.0								
			SAND (SP), fine grained, brown	5						
		6.5								
			SAND (SP), fine grained, dark brown							
		9.0								
			SAND (SP), fine grained, brown	10						
		15.0								
			Boring Terminated at 15 Feet	15						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-17-2020 | Boring Completed: 08-17-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-6

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4137° Longitude: -80.7804° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), with organic, fine grained, dark brown		▽					
		1.5 **SAND (SP)**, fine grained, dark brown							
		4.5 **SAND (SP)**, fine grained, brown	5						
			10						
		15.0 ***Boring Terminated at 15 Feet***	15						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.3'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020	Boring Completed: 08-14-2020
Drill Rig:	Driller: Robbie
Project No.: H1205186	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-7

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4135° Longitude: -80.7808° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), trace root, fine grained, gray 1.0		▽					
		SAND (SP), trace root, fine grained, brown 2.5							
		3.0 **SAND (SP)**, fine grained, brown							
		SAND (SP), fine grained, gray	5						
		11.0 **SAND (SP)**, fine grained, dark gray	10						
		15.0 ***Boring Terminated at 15 Feet***	15						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.2'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020 | Boring Completed: 08-14-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-8

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4135° Longitude: -80.7799°

DEPTH	
0	**SAND (SP)**, with root, fine grained, gray
1.5	**SAND (SP)**, fine grained, brown
6.5	**SAND (SP)**, fine grained, gray
14.5	**SAND (SP)**, fine grained, reddish brown
15.0	***Boring Terminated at 15 Feet***

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 1.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020 | Boring Completed: 08-14-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-9

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4132° Longitude: -80.7802°

MODEL LAYER	GRAPHIC LOG	DEPTH		DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
			SAND (SP), fine grained, gray brown							
		1.0	**SAND (SP)**, fine grained, brown							
		3.5	**SAND (SP)**, fine grained, gray	5						
		10.0	**SILTY SAND (SM)**, fine grained, dark brown	10						
		12.5	**SAND (SP)**, fine grained, dark brown							
		15.0	***Boring Terminated at 15 Feet***	15						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Water Initially Encountered at 0.3'

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020 | Boring Completed: 08-14-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-10

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4130° Longitude: -80.7808°

MODEL LAYER	GRAPHIC LOG	DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, dark gray							
		2.5							
		SAND (SP), fine grained, gray							
		3.5							
		SAND (SP), fine grained, brown	5						
			10						
		15.0	15						
		Boring Terminated at 15 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Water Initially Encountered at 0.3'

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-17-2020 | Boring Completed: 08-17-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-11

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4128° Longitude: -80.7798° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, dark brown		▽					
		2.0							
		SAND (SP), fine grained, reddish brown	5						
			10						
		15.0	15						
		Boring Terminated at 15 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.8'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-17-2020 | Boring Completed: 08-17-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-12

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4126° Longitude: -80.7819°

DEPTH	MODEL LAYER	GRAPHIC LOG	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
0								
							23.7	2
1.5								
			▽			11		
5								
8.5								
10								
15.0								
15								

SAND (SP), trace root and organic, fine grained, dark brown

SAND (SP), fine grained, brown

SAND (SP), fine grained, gray

Boring Terminated at 15 Feet

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 2.0'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020 | Boring Completed: 08-14-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-13

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4121° Longitude: -80.7818°

DEPTH	MODEL LAYER	GRAPHIC LOG	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), with root, fine grained, dark brown							
1.0									
		SAND (SP), trace root, fine grained, gray							
4.5									
		SAND (SP), fine grained, dark brown	5						
			10						
			15						
15.0		***Boring Terminated at 15 Feet***							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Water Initially Encountered at 0.2'

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020 | Boring Completed: 08-14-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-14

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

LOCATION See Exploration Plan

Latitude: 28.4116° Longitude: -80.7818°

DEPTH	MODEL LAYER / GRAPHIC LOG		PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, dark brown			
1.0		**SAND WITH SILT (SP-SM)**, fine grained, brown	5	21.9	9
7.5		**SAND (SP)**, trace organic, fine grained, dark brown			
8.5		**SAND (SP)**, fine grained, dark brown			
15.0		***Boring Terminated at 15 Feet***			

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

Water Initially Encountered at 0.2'

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-14-2020 | Boring Completed: 08-14-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-15

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4117° Longitude: -80.7861° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, gray							
		5.5 **SAND (SP)**, fine grained, dark gray	5						
		7.5 **SAND (SP)**, fine grained, dark brown	10						
		15.0 ***Boring Terminated at 15 Feet***	15						

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 1.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-10-2020	Boring Completed: 08-10-2020
Drill Rig:	Driller: Robbie
Project No.: H1205186	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-16

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4116° Longitude: -80.7859° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, gray		▽				18.4	1
			5				20		
			10						
		15.0	15						
		Boring Terminated at 15 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 1.0'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-10-2020 | Boring Completed: 08-10-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-17

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4113° Longitude: -80.7859° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, gray		▽					
		with root	5						
			10						
		15.0	15						
		Boring Terminated at 15 Feet							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 1.0'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 08-10-2020 | Boring Completed: 08-10-2020

Drill Rig: | Driller: Robbie

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-18

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4107° Longitude: -80.7837° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, brown to gray brown	5 10 15	▽					
		15.0 ***Boring Terminated at 15 Feet***							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.1'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 10-23-2020 | Boring Completed: 10-23-2020

Drill Rig: | Driller: Drew

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-19

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4107° Longitude: -80.7821° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, dark brown to brown	5 10 15	▽					
		15.0 ***Boring Terminated at 15 Feet***							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 10-23-2020 | Boring Completed: 10-23-2020

Drill Rig: | Driller: Drew

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-20

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4150° Longitude: -80.7818° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, dark brown to brown	5 10 15	▽					
		15.0 ***Boring Terminated at 15 Feet***							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.1'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 10-23-2020 | Boring Completed: 10-23-2020

Drill Rig: | Driller: Drew

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-21

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4174° Longitude: -80.7807° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, dark brown to brown	5 10 15	▽					
		15.0 ***Boring Terminated at 15 Feet***							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 0.5'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 10-23-2020 | Boring Completed: 10-23-2020

Drill Rig: | Driller: Drew

Project No.: H1205186

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

BORING LOG NO. POND-22

PROJECT: DM08 Cocoa

CLIENT: Seefried Industrial Properties, Inc.
Atlanta, GA

SITE: Grissom Parkway
Cocoa, FL

MODEL LAYER	GRAPHIC LOG	LOCATION See Exploration Plan Latitude: 28.4158° Longitude: -80.7804° DEPTH	DEPTH (Ft.)	WATER LEVEL OBSERVATIONS	SAMPLE TYPE	FIELD TEST RESULTS	PERMEABILITY (FT/DAY)	WATER CONTENT (%)	PERCENT FINES
		SAND (SP), fine grained, dark brown to brown	5 10 15	▽					
		15.0 ***Boring Terminated at 15 Feet***							

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

Advancement Method:

Abandonment Method:

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

See Supporting Information for explanation of symbols and abbreviations.

Notes:

WATER LEVEL OBSERVATIONS

▽ *Water Initially Encountered at 1.0'*

Terracon
1675 Lee Rd
Winter Park, FL

Boring Started: 10-23-2020	Boring Completed: 10-23-2020
Drill Rig:	Driller: Drew
Project No.: H1205186	

THIS BORING LOG IS NOT VALID IF SEPARATED FROM ORIGINAL REPORT. GEO SMART LOG-NO WELL H1205186 DM08 COCOA.GPJ TERRACON_DATATEMPLATE.GDT 12/29/20

SUPPORTING INFORMATION

Contents:

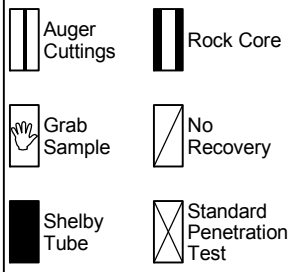
General Notes
Unified Soil Classification System

Note: All attachments are one page unless noted above.

GENERAL NOTES

DESCRIPTION OF SYMBOLS AND ABBREVIATIONS

SAMPLING



WATER LEVEL



Water Initially Encountered

Water Level After a Specified Period of Time

Water Level After a Specified Period of Time

Water levels indicated on the soil boring logs are the levels measured in the borehole at the times indicated. Groundwater level variations will occur over time. In low permeability soils, accurate determination of groundwater levels is not possible with short term water level observations.

FIELD TESTS

(HP)	Hand Penetrometer
(T)	Torvane
(DCP)	Dynamic Cone Penetrometer
(PID)	Photo-Ionization Detector
(OVA)	Organic Vapor Analyzer

DESCRIPTIVE SOIL CLASSIFICATION

Soil classification is based on the Unified Soil Classification System. Coarse Grained Soils have more than 50% of their dry weight retained on a #200 sieve; their principal descriptors are: boulders, cobbles, gravel or sand. Fine Grained Soils have less than 50% of their dry weight retained on a #200 sieve; they are principally described as clays if they are plastic, and silts if they are slightly plastic or non-plastic. Major constituents may be added as modifiers and minor constituents may be added according to the relative proportions based on grain size. In addition to gradation, coarse-grained soils are defined on the basis of their in-place relative density and fine-grained soils on the basis of their consistency.

LOCATION AND ELEVATION NOTES

Unless otherwise noted, Latitude and Longitude are approximately determined using a hand-held GPS device. The accuracy of such devices is variable. Surface elevation data annotated with +/- indicates that no actual topographical survey was conducted to confirm the surface elevation. Instead, the surface elevation was approximately determined from topographic maps of the area.

STRENGTH TERMS

RELATIVE DENSITY OF COARSE-GRAINED SOILS (More than 50% retained on No. 200 sieve.) Density determined by Standard Penetration Resistance		CONSISTENCY OF FINE-GRAINED SOILS (50% or more passing the No. 200 sieve.) Consistency determined by laboratory shear strength testing, field visual-manual procedures or standard penetration resistance		
Descriptive Term (Density)	**Automatic Hammer SPT N-Value (Blows/Ft.)**	**Descriptive Term (Consistency)**	**Unconfined Compressive Strength Qu, (psf)**	**Automatic Hammer SPT N-Value (Blows/Ft.)**
Very Loose	< 3	Very Soft	less than 500	< 1
Loose	3 - 8	Soft	500 to 1,000	1 - 3
Medium Dense	8 - 24	Medium Stiff	1,000 to 2,000	3 - 6
Dense	24 - 40	Stiff	2,000 to 4,000	6 - 12
Very Dense	> 40	Very Stiff	4,000 to 8,000	12 - 24
		Hard	> 8,000	> 24

RELATIVE PROPORTIONS OF SAND AND GRAVEL

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 15
With	15 - 29
Modifier	> 30

GRAIN SIZE TERMINOLOGY

Major Component of Sample	Particle Size
Boulders	Over 12 in. (300 mm)
Cobbles	12 in. to 3 in. (300mm to 75mm)
Gravel	3 in. to #4 sieve (75mm to 4.75 mm)
Sand	#4 to #200 sieve (4.75mm to 0.075mm
Silt or Clay	Passing #200 sieve (0.075mm)

RELATIVE PROPORTIONS OF FINES

Descriptive Term(s) of other constituents	Percent of Dry Weight
Trace	< 5
With	5 - 12
Modifier	> 12

PLASTICITY DESCRIPTION

Term	Plasticity Index
Non-plastic	0
Low	1 - 10
Medium	11 - 30
High	> 30

Terracon

UNIFIED SOIL CLASSIFICATION SYSTEM

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

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

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

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

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

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

[F] If soil contains ≥ 15% sand, add "with sand" to group name.

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

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

[I] If soil contains ≥ 15% gravel, add "with gravel" to group name.

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

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

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

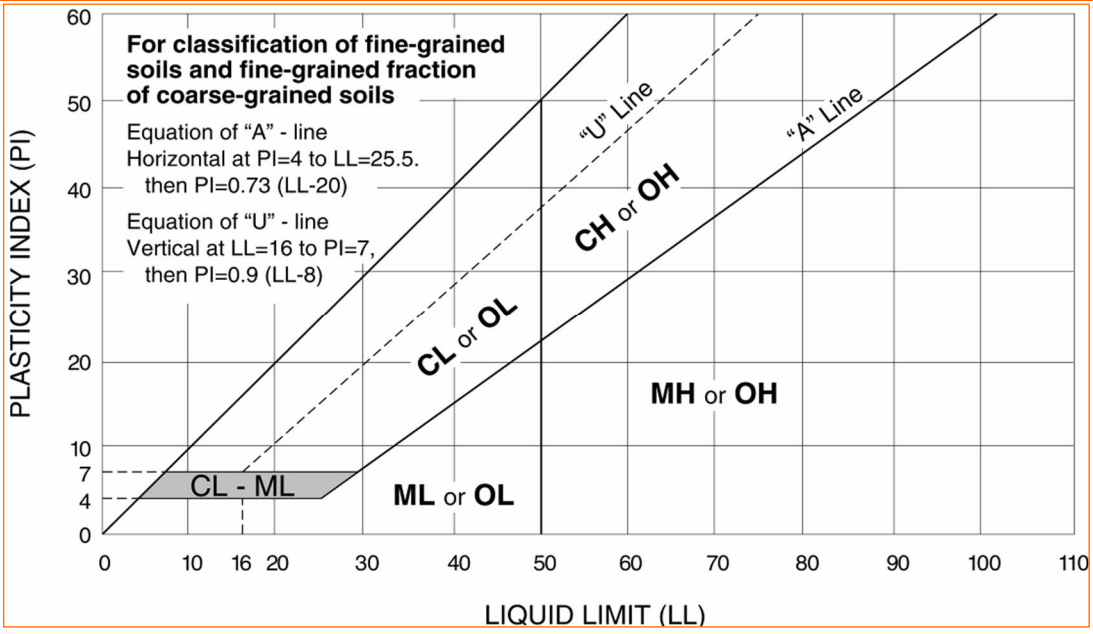
[M] If soil contains ≥ 30% plus No. 200, predominantly gravel, add "gravelly" to group name.

[N] PI ≥ 4 and plots on or above "A" line.

[O] PI < 4 or plots below "A" line.

[P] PI plots on or above "A" line.

[Q] PI plots below "A" line.



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					Group Symbol	Group Name [B]
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		Organic:	Liquid limit - oven dried	< 0.75	OL	Organic clay [K, L, M, N]
			Liquid limit - not dried			Organic silt [K, L, M, O]
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			PI plots below "A" line		MH	Elastic Silt [K, L, M]
		Organic:	Liquid limit - oven dried	< 0.75	OH	Organic clay [K, L, M, P]
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Highly organic soils:	Primarily organic matter, dark in color, and organic odor				PT	Peat

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

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

[F] If soil contains ≥ 15% sand, add "with sand" to group name.

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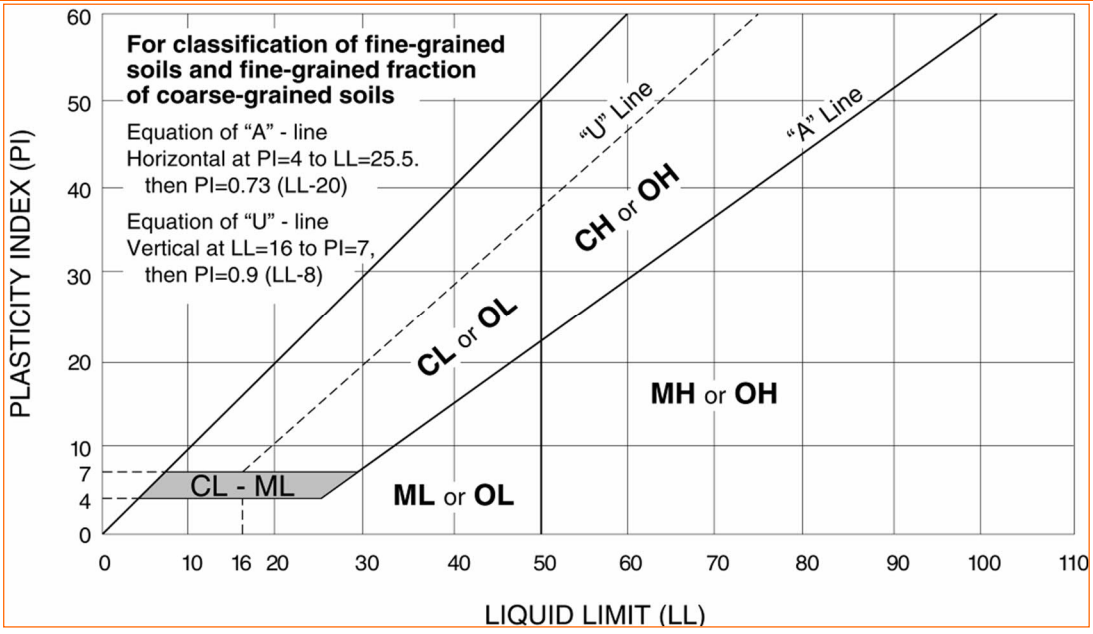
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NATURAL RESOURCE ASSESSMENT

PROJECT SUNSHINE

Cocoa, Brevard County, Florida

November 2020

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

Environmental Resource Permit Application

Kimley»Horn

04265017

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116 S Kentucky Ave

Lakeland, Florida 3

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APPENDIX B STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE

1.0 INTRODUCTION

The following technical memorandum summarizes a review of readily available documentation and the results of field reconnaissance conducted at the Project Sunshine proposed development site. The purpose of this Natural Resource Assessment is to characterize the existing conditions of the properties relative to threatened and endangered species and their habitat, ecological communities, land cover and vegetation, wetlands, and soils, hydrology, archaeological and historical resources, and floodplains.

The scope of this assessment included review of readily available information from public databases as described in ***Section 2.0 Methodology*** and field reconnaissance to evaluate the environmental conditions of the site and future permit requirements if development or modifications to the project site were to proceed.

The proposed project area comprises an 81.12 ± acres portion of parcel ID number 24-35-12-00-1 and located south of West Eau Gallie Boulevard in Section 12 of Township 24 south and Range 35 east, in Cocoa, Brevard County, Florida. A location map is attached as ***Figure 1***. A portion of the U.S. Geological Service (USGS) 7.5-Minute Providence, Florida quadrangle map depicting the location of the proposed project area is attached as ***Figure 2.*** Approximate elevation on-site ranges from 25 to 80 feet.



View of scrub flatwoods within the project area



PROJECT LOCATION MAP

DMO-6 COCOA, BREVARD COUNTY, FLORIDA

November 2020

KHA Project 046265017

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FIG 1



USGS QUADRANGLE MAP

DMO-6 COCOA, BREVARD COUNTY, FLORIDA

November 2020

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FIG 2

2.0 METHODOLOGY

The methodology for this assessment included a review of the following resources:

- Florida Natural Areas Inventory (FNAI) Biodiversity Matrix (*http://www.fnai.org/biointro.cfm*)
- Various Geographic Information System (GIS) data layers from the U.S. Fish and Wildlife Service (USFWS), U.S. Geological Survey (USGS), Florida Fish and Wildlife Conservation Commission (FWC) [*(http://legacy.myfwc.com/bba/data/default.asp*) and (*https://public.myfwc.com/FWRI/EagleNests/nestlocator.aspx*)]
- USFWS IPaC data (*https://ecos.fws.gov/ipac/*)
- U.S. Department of Agriculture (USDA) / Natural Resources Conservation Service (NRCS) Soil Survey of Brevard County, Florida (*http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx*)
- USFWS National Wetlands Inventory (NWI) Maps *(http://www.fws.gov/wetlands/Data/mapper.html)*
- St. Johns River Water Management District Interactive GIS Map
- Florida Department of Environmental Protection (FDEP) MapDirect GIS
- Brevard County Land Development Code
- Chapter 62-340, Florida Administrative Code (FAC) and the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual

Field reconnaissance was first conduction on July 23, 2020 and is ongoing as of the date of this report.

3.0 EXISTING CONDITIONS

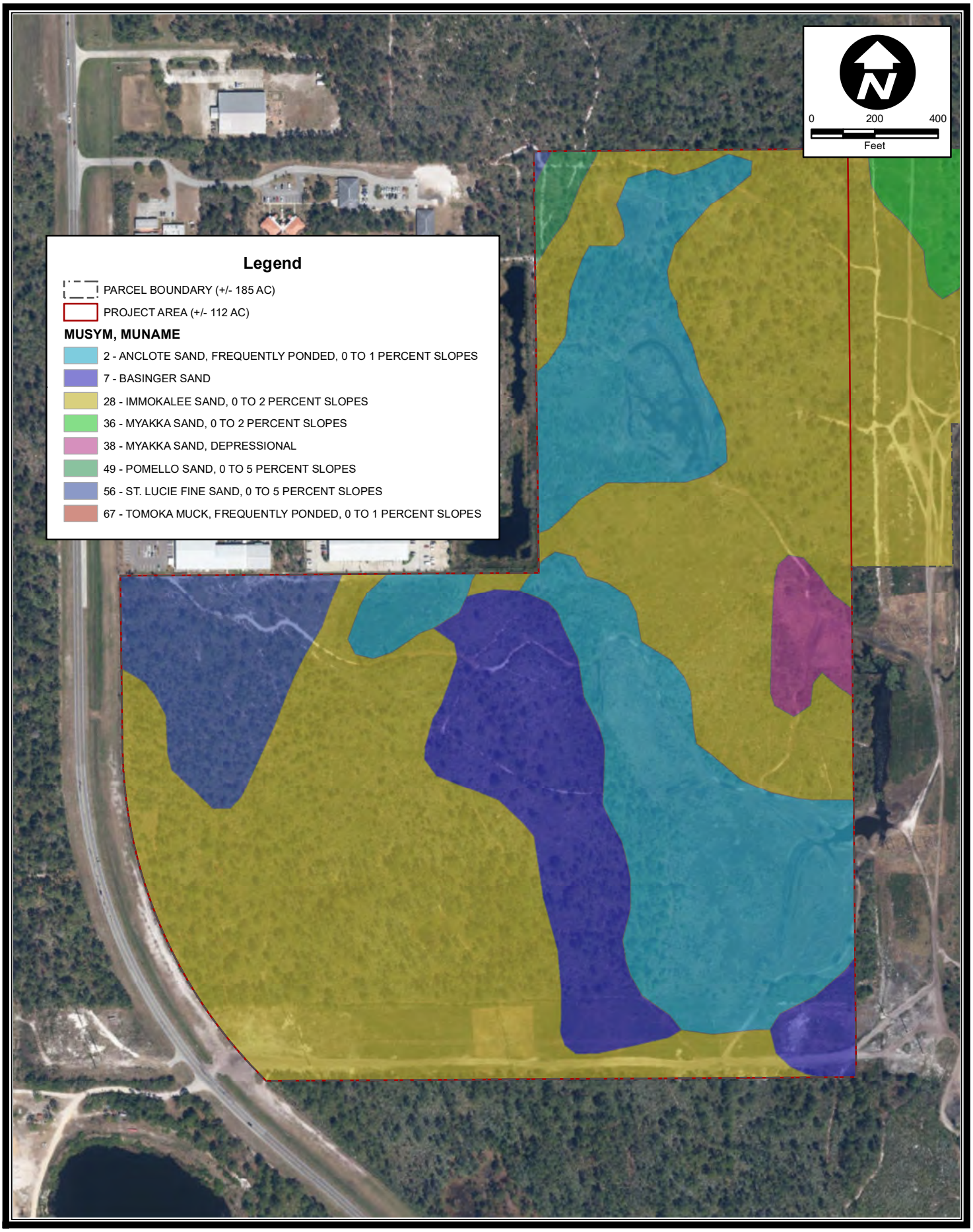
3.1 SOILS

The USDA / NRCS *Soil Survey of Brevard County, Florida,* maps the following soil on the property: (2) Anclote sand, frequently ponded, 0 to 1 percent slopes, (7) Basinger sand, 0 to 2 percent slopes, (28) Immokalee sand, 0 to 2 percent slopes, (38) Myakka sand, depressional, and (56) St. Lucie fine sand, 0 to 5 percent slopes. The majority of soil mapped on site is (28) Immokalee sand, 0 to 2 percent slopes. A copy of the digital USDA/NRCS soils data is attached as ***Figure 3*** and details regarding each soil are listed in ***Table 1***.

Table 1 – NRCS Soils Identified Within the Subject Property

Soil ID Number[1]	Soil Name	Occurrence	Characteristics	Drainage Class	Groundwater Depth	Hydric, Hydric Inclusions, or Non-hydric[2]
2	Anclote sand, frequently ponded, 0 to 1 percent slopes	Depressions on marine terraces	Very low water capacity, high to very high permeability	Very poorly drained	About 0 inches	Hydric
7	Basinger sand, 0 to 2 percent slopes	Flats on marine terraces, drainageways on marine terraces	Low water capacity, high to very high permeability	Poorly drained	About 3 to 18 inches	Hydric
28	Immokalee sand, 0 to 2 percent slopes	Flatwoods on marine terraces	Very low water capacity, moderately high to high permeability	Poorly drained	About 6 to 18 inches	Non-hydric
38	Myakka sand, depressional	Depressions on marine terraces	Low water capacity, moderately high to high permeability	Very poorly drained	About 0 inches	Hydric
56	St. Lucie fine sand, 0 to 5 percent slopes	Ridges on marine terraces, dunes on marine terraces, knolls on marine terraces	Low capacity, very high permeability	Excessively drained	More than 80 inches	Non-hydric

1: Reference: Soil Survey of Brevard County - https://www.nrcs.usda.gov/Internet/FSE_MANUSCRIPTS/florida/FL009/0/Brevard.pdf
2: Reference: Hydric Soils of Florida Handbook, 4th Edition, March 2007



USDA/NRCS SOILS MAP

DMO-6 COCOA, BREVARD COUNTY, FLORIDA

November 2020

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FIG 3

3.2 LAND COVER AND NATURAL COMMUNITIES

Vegetative communities on the proposed project area were identified through pedestrian transects and aerial photograph interpretation. Vegetative communities were classified using the *Florida Land Use, Cover, and Forms Classification System* (FLUCFCS, Florida Department of Transportation, 1999). A FLUCFCS map of the study area is attached as ***Figure 4.*** A description of the upland land cover included below characterizes dominant vegetation observed along random pedestrian transects and does not represent an all-inclusive vegetative inventory. The acreage provided for each land cover is approximate, based on aerial mapping.

The presence of wetlands was evaluated based on the Florida unified wetland delineation methodologies in accordance with Chapter 62-340, Florida Administrative Code (FAC) and the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual. These methods consider prevalence of wetland vegetation, hydric soil indicators, and wetland hydrology. Surface waters include both natural and manmade bodies of water, such as streams, lakes, ponds, canals, and ditches. Based on an assessment of the vegetative communities, hydrologic conditions, and soils observed during on-site reconnaissance, it was determined that five (5) wetland community types exist within the study area totaling approximately 28 acres .

FLUCFCS 4110 – PINE FLATWOODS (64.96 ACRES)



Most of the project consists of the pine flatwoods class. This community is dominated by slash pine, though longleaf pine is occasionally observed. The understory consists of a dense saw palmetto with scattered cabbage palm, gallberry, winged sumac, rusty lyonia, fetterbush, wax myrtle, tar flower, and a wide variety of other native herb and grass species. Groundcover consists of wiregrass, broomsedges, bracken fern, runner oak, and dwarf live oak.

FLUCFCS 4110 – SAND PINE (10.77 ACRES)



A community of sand pine is located along the northwestern and western property line. This community is dominated by a canopy of sand pine intermixed with slash pine. The understory and groundcover support scrub oaks, saw palmetto, tarflower, gallberry, rusty lyonia, wiregrass, bracken fern, and runner oak.

FLUFCS 6110 – BAY SWAMP (1.74 ACRES)

The isolated bay swamp community is dominated by loblolly bay, swamp bay, sweet bay, fetterbush, Virginia chain fern, saw palmetto, wax myrtle, and dense catbrier.

FLUCFCS 6250 – HYDRIC PINE FLATWOODS (1.97 ACRES)

Hydric pine flatwoods are buffered between the upland pine flatwoods and herbaceous wetland communities within the project site. This community is structurally alike to the upland pine flatwoods, however lower topographical areas allow for an extended hydroperiod resulting in hydric soil and an increase of obligate and facultative wet vegetation. Canopy cover is often less dense in comparison to the upland pine flatwoods and typically limited to only pond pine with occasional bay species.



FLUCFCS 6300 – WETLAND FORESTED MIX (1.05 ACRES)

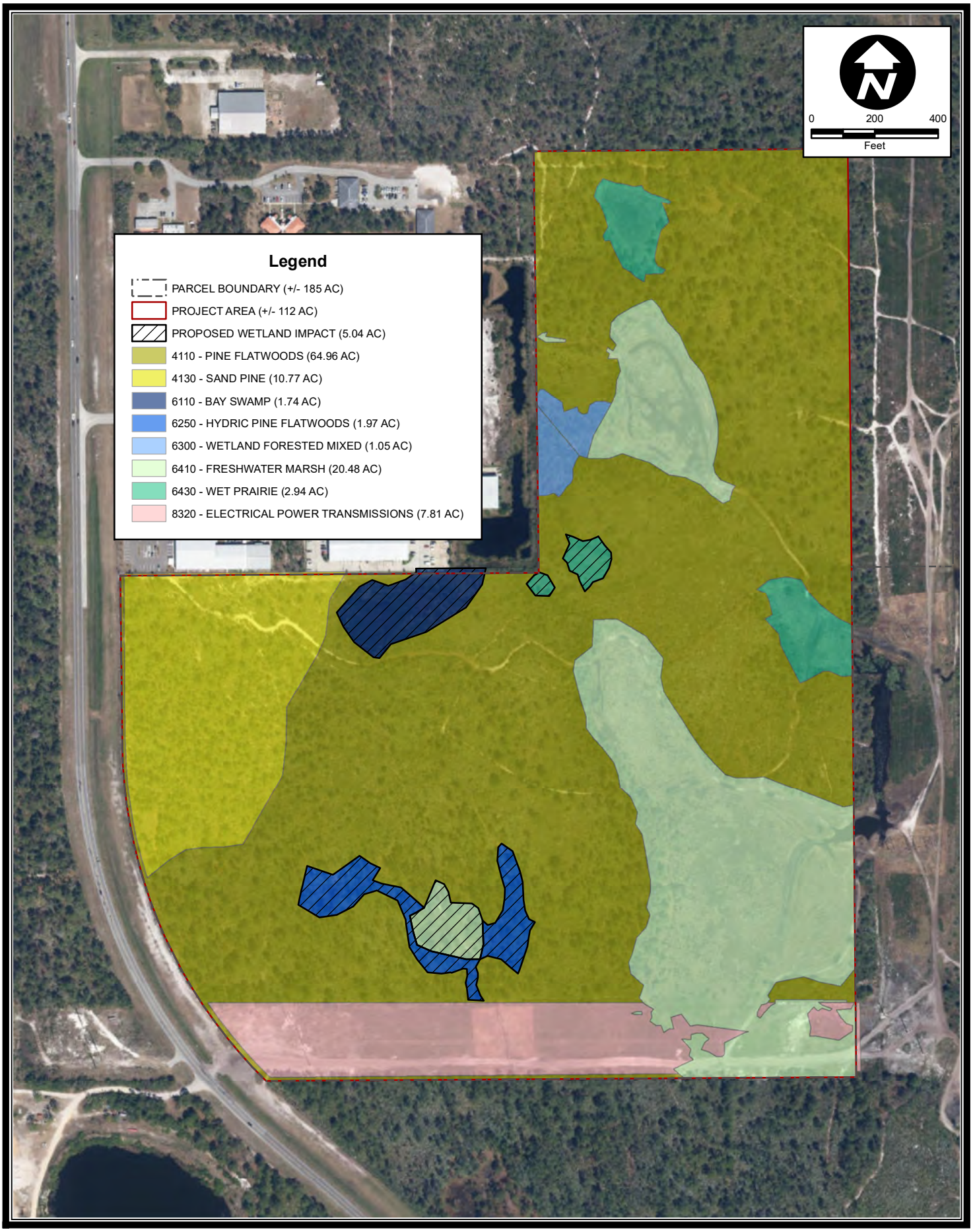


Forested wetlands with neither hardwoods nor conifers at a 66 percent crown canopy cover are designated as wetland forested mix communities. The project site contains one wetland forested mix system broken into two mitigation assessment areas due to variability in midstory composition and herbaceous groundcover species. This forested system provides a moderate percent canopy cover of loblolly bay, swamp bay, sweet bay, dahoon holly, slash pine, and occasional pond pine. Midstory cover is variable, but generally consists of sapling canopy species, Carolina willow, wax myrtle, buttonbush, fetterbush, and Peruvian primrosewillow. Groundcover, when present, consists of soft rush, cattails, water hyssop, smartweed, beakrush, Cuban bulrush, and torpedograss. The edges of this system contain catbrier and muscadine.

FLUCFCS 6410 – FRESHWATER MARSH (20.48 ACRES)



Two (2) freshwater marshes located within the project area; both within the northeastern portion of the parcel. A large wetland system is located adjacent to the the eastern boundary of the project site. A small, approximately 2.5 acres, portion of this larger wetland system is located within the northeastern corner of the project site. The other freshwater marsh is isolated within the interior of the project site and surrounded by hydric pine flatwoods. This wetland appears to be ephemeral in nature, meaning water is only present in the spring and early summer and periodically dry up in late summer and early fall. Both wetlands contain varying emergent wetland vegetation, including yellow eyed grass, soft rush, smartweed, and a diversity of sedges.



LAND USE AND LAND COVER MAP

DMO-6 COCOA, BREVARD COUNTY, FLORIDA

November 2020

KHA Project 046265017

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FIG 4

FLUCFCS 6430 – WET PRAIRIES (2.94 ACRES)



This classification is composed predominately of grassy vegetation on hydric soils and is usually distinguished from marshes by having less water and shorter herbaceous groundcover. Vegetation included maidencane, cordgrass, spikerushes, smartweed, yellow-eyed grass, Virginia chain fern swamplilly, cinnamon fern, redroot, pipewort, lemon bacopa, and a large diversity of other native grass and sedge species.

FLUCFCS 8320 – ELECTRICAL POWER TRANSMISSION LINES (7.81 ACRES)



This land use classification is utilized by Florida Power and Light (FPL) and houses the main portion of the proposed project. This area is periodically maintained and mowed, houses several dirt pathways, and is dominated by saw palmetto, gallberry, silkgrass, scrub species, and broomsedge.

3.3 WILDLIFE UTILIZATION

Wildlife utilization within the project site included raccoons, wild hogs, red winged blackbird, leopard frogs, little grass frog, nineteen (19) gopher tortoise burrows, four (4) gopher tortoises, three (3) wood storks, and a family group of seven (7) scrub jays.

3.4 THREATENED AND ENDANGERED SPECIES

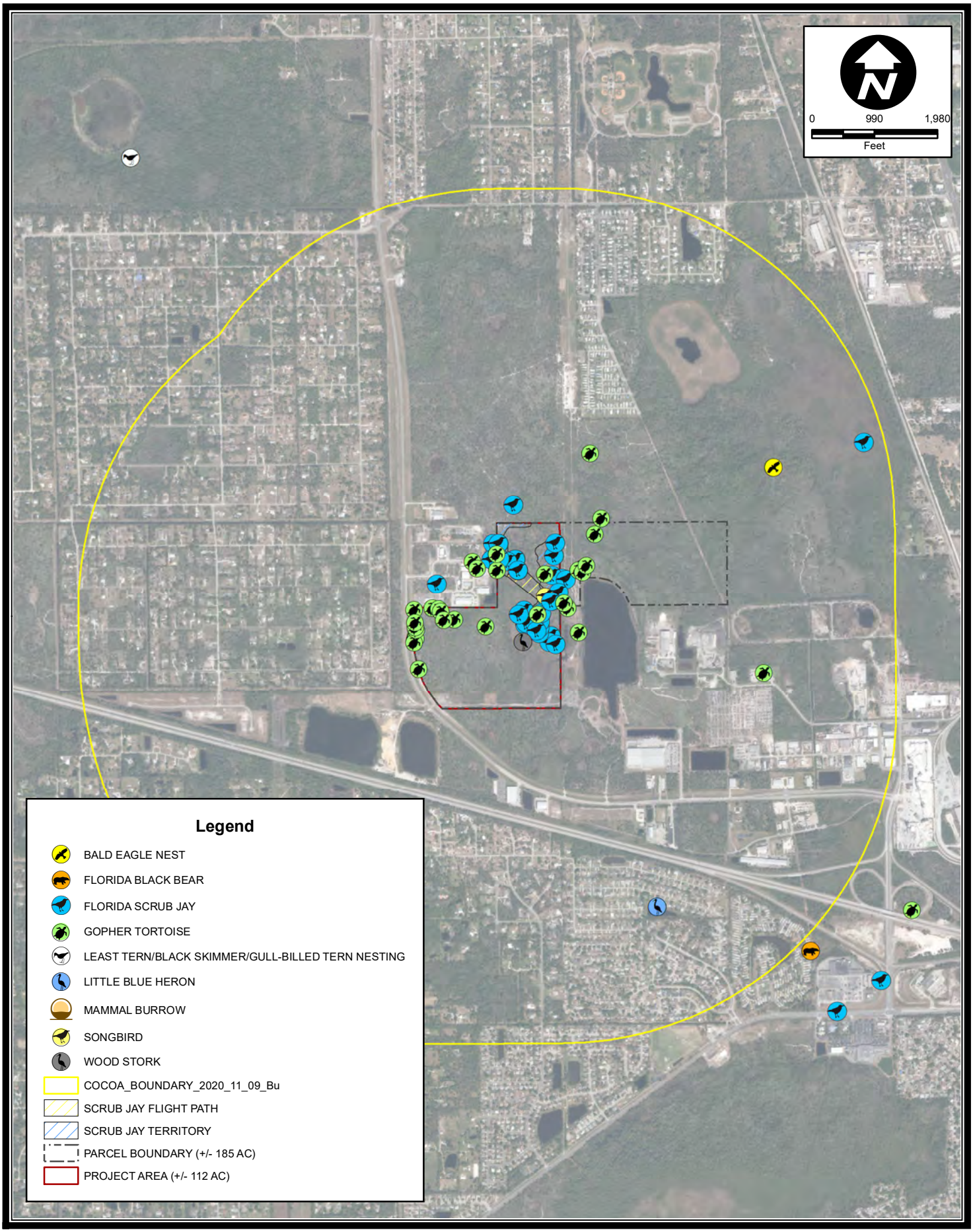
Based on field reconnaissance and database reviews, a listing of the state and federally listed species potentially occurring within the immediate vicinity of the project site has been compiled. ***Table 2*** lists species that may occur and their likelihood of occurrence. Likelihood of occurrence is based on actual observation of the species, signs of the species (burrows, tracks, scat, etc.),

observance of suitable habitat, or documented occurrences of the species within various databases. A copy of the map depicting observed species on-site is attached as ***Figure 5***.

Table 2 - Potential Listed Species Occurrence

	Common Name	Scientific Name	Status	Documented (<1 mile)	Habitat Present	Regulatory Action Required	Data Source
Bird	**Wood Stork**	***Mycteria americana***	**FT**	**Yes**	**Yes**	**Yes**	**IPaC, FNAI**
	Bald Eagle	*Haliaeetus leucocephalus*	NL	Yes	Yes	Unlikely	FNAI
	Florida Burrowing Owl	*Athene cunicularia floridana*	ST	No	No	No	FNAI
	Florida Sandhill Crane	***Grus canadensis pratensi***	**ST**	**Yes**	**Yes**	**Yes**	**FNAI**
	Audubon's Crested Caracara	*Polyborus plancus audubonii*	FT	No	No	No	IPaC
	Eastern Black Rail	*Laterallus jamaicensis ssp. Jamaicensis*	PT	No	No	No	IPaC
	Florida Scrub-Jay	***Aphelocoma coerulescens***	**FT**	**No**	**No**	**No**	**IPaC, FNAI**
	Everglade Snail Kite	*Rostrhamus sociabilis plumbeus*	FE	No	**Yes**	Unlikely	IPaC
Reptiles	**Gopher Tortoise**	***Gopherus polyphemus***	**ST**	**Yes**	**Yes**	**Yes**	**IPaC, FNAI**
	Eastern Indigo Snake	***Drymarchon couperi***	**FT**	**No**	**Yes**	**Yes**	**IPaC, FNAI**
	Green Sea Turtle	*Chelonia mydas*	FT	No	No	No	IPaC
	Hawksbill Sea Turtle	*Eretmochelys imbricata*	FE	No	No	No	IPaC
	Leatherback Sea Turtle	*Dermochelys coriacea*	FE	No	No	No	IPaC
	Loggerhead Sea Turtle	*Caretta caretta*	FT	No	No	No	IPaC
Mammals	Southeastern Beach Mouse	*Peromyscus polionotus niveiventris*	FT	No	No	No	IPaC

Legend:
FE - Federally Endangered
FT - Federally Threatened
ST - State Threatened
FT(S/A) – Threatened due to Similarity of Appearance
SE - State Endangered
NL - Not Listed, but have other regulatory protections
PT- Proposed Threatened
Note: Coordination is not required with FWC for federally listed species



WILDLIFE OBSERVATION MAP (A)

DMO-6 COCOA, BREVARD COUNTY, FLORIDA

November 2020

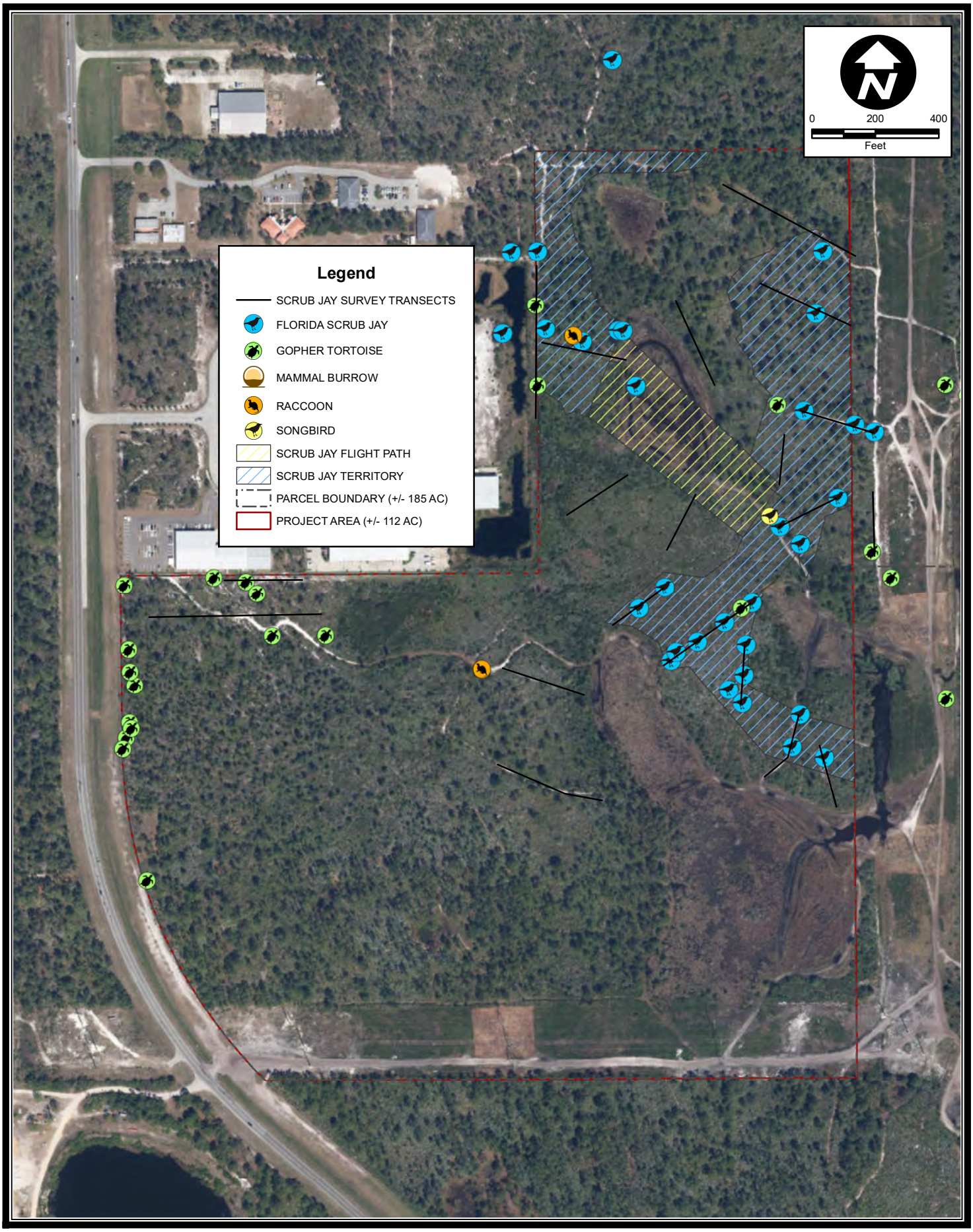
KHA Project 046265017

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FIG 5A



WILDLIFE OBSERVATION MAP

DMO-6 COCOA, BREVARD COUNTY, FLORIDA

November 2020

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FIG 5B

Based on the database review and field reconnaissance, the following species could occur on-site or require additional evaluation, survey, or permitting:

WOOD STORK

The wood stork is opportunistic and utilizes various habitat types including freshwater marshes, swamps, lagoons, ponds, tidal creeks, flooded pastures, and ditches. Water that is relatively calm, uncluttered by dense aquatic vegetation, and with a permanent or seasonal water depth between two and 15 inches is considered suitable foraging habitat for this species.

The project site falls within the Core Foraging Area (CFA) of two (2) wood stork colonies (Brevard County Maintenance Shop and HWY 524/520) and several individuals were observed during field reconnaissance. Should impacts to suitable foraging habitat exceed 0.5 acre, a Wood Stork Foraging Habitat Assessment Procedure may be required as part of consultation with the USFWS or USACE.

BALD EAGLE

Bald eagles and their nests are protected by the U.S. Bald Eagle and Golden Eagle Protection Act. One (1) bald eagle nest was located approximately 1.5 miles away from the project site. The USFWS typically requires a 660-foot protection buffer surrounding bald eagle nests during the nesting season, between October 15 and March 1. No bald eagle nests were documented within 660-feet of the project area or within publicly accessible databases, however preferred nesting habitat (i.e. mature pines adjacent to water features) is present within the project area. A formal survey of the project area is recommended to ensure no bald eagle nests will be impacted as part of any development activities.

FLORIDA SANDHILL CRANE

The Florida sandhill crane inhabits prairies, freshwater marshes, and pasture lands. This species is known to forage within agricultural areas such as feed lots and crop fields, golf courses and other open lawns. Sandhill cranes are extremely susceptible to disturbance and may abandon nests if disturbances occur within 400 feet. occurring No individuals were observed foraging during site reconnaissance, however nesting habitat is present within the freshwater marshes located within the project site. A nest survey within 30 days of initiation of development activities is recommended.

EVERGLADE SNAIL KITE

The Everglade snail kite is a mid-sized raptor that feeds almost exclusively on apple snails. Foraging and nesting habitat habitat includes sparsely vegetated lake shores or marshes where access to snails is available. Although the snail kite nests throughout the year, the peak nesting season occurs between the month of February and July. No snail kites were observed within the project area or a 1-mile radius of the project area during site reconnaissance and no sightings are listed within publicly accessible databases. Marginal habitat exists within the project site, however certain criteria has been identified by the USFWS to judge the adequacy of the habitat for snail kites. The project area meets some of the habitat criteria, however, fails to be located within proximity of other wading bird colonies. No further action is required.

GOPHER TORTOISE

The gopher tortoise is listed as threatened by the FWC and is considered a candidate species within the state of Florida with the USFWS. The gopher tortoise is a burrowing tortoise that inhabits upland habitats such as pine flatwoods, xeric oak hammocks, and open sandy pastures but often can be found in disturbed areas too.

Nineteen (19) occupied gopher tortoise burrows and four (4) gopher tortoises were observed within the proposed project area. A complete gopher tortoise survey of the project area and a relocation permit will be required within upland areas of the project area to ensure tortoises will not be adversely affected by the proposed development.

EASTERN INDIGO SNAKE

The eastern indigo snake is listed as threatened by the USFWS due to a decline in population caused by loss of habitat. The eastern indigo snake occurs in a range of habitats, including pine flatwoods, scrubby flatwoods, high pine, dry prairie, tropical hardwood hammocks, edges of freshwater marshes, agricultural fields, coastal dunes, and human-altered habitats. The snake requires large tracts of land to survive and often winters in burrows of gopher tortoises, armadillos, cotton rats, and land crabs (in coastal areas) and forages in hydric habitats.

No individuals were observed during field reconnaissance; however, potential habitat for the eastern indigo snake exists on-site. The implementation of the USFWS *Standard Protection Measures for the Eastern Indigo Snake* (***Appendix B***) during construction will be required to minimize possible impacts to the eastern indigo snake if development of the site is planned. A voluntary Incidental Take Permit (ITP) through the USFWS may also be applied for, which will free up the requirement to implement the Standard Protection Measures for the Eastern Indigo Snake and will also prevent potential future fines if an eastern indigo snake mortality were documented on-site during future construction activities.

LISTED PLANT SPECIES

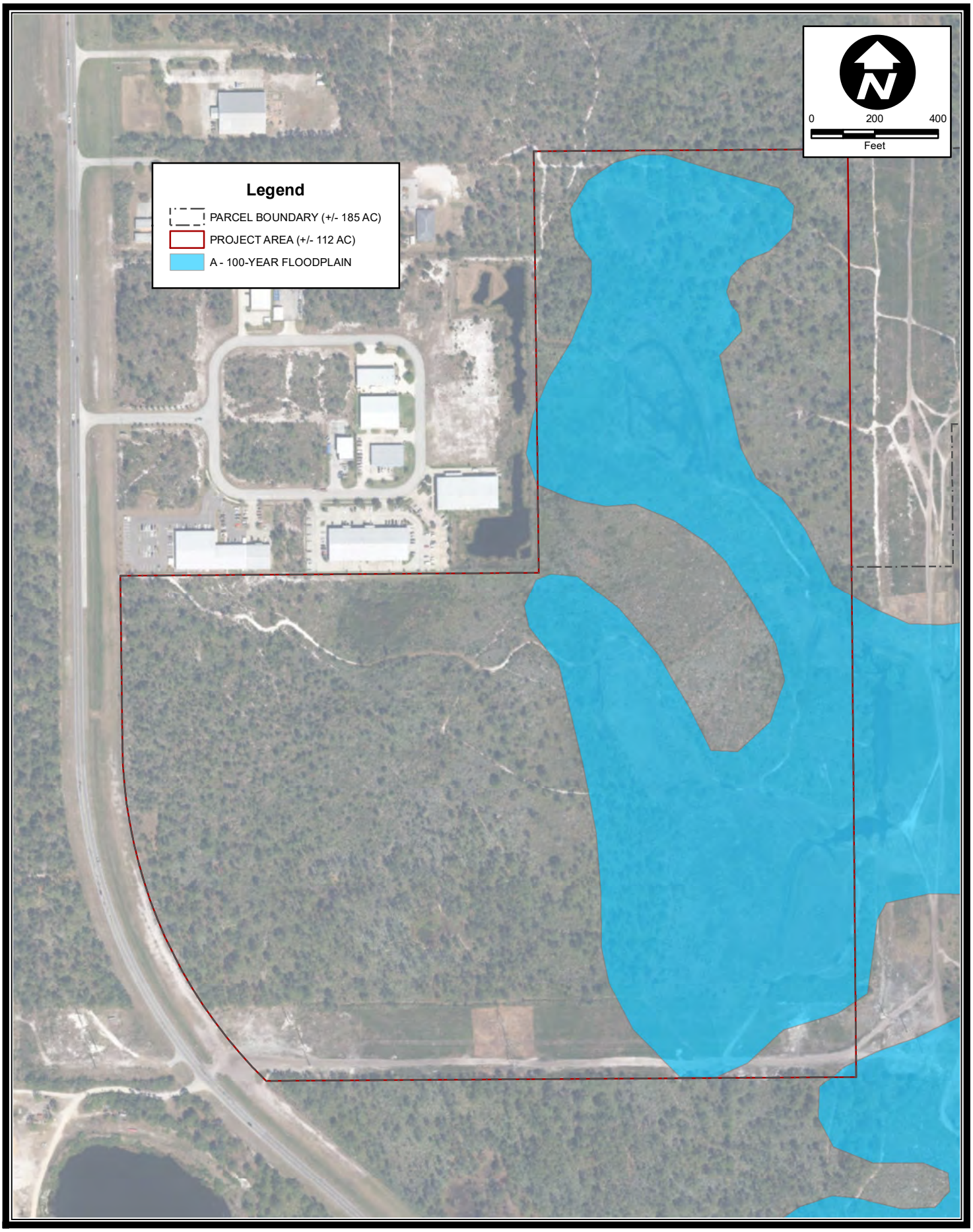
The Florida Department of Agriculture and Consumer Service's *Notes on Florida's Threatened and Endangered Plants* and Richard Wunderlin's *Guide to Vascular Plants of Florida* were consulted to assess habitat requirements for listed plant species. Although 12 state and/or federal-listed plants were noted by FNAI as possibly occurring in this area, none were observed during field reconnaissance. No further action is required regarding listed plant species.

3.5 HISTORIC AND ARCHAEOLOGICAL RESOURCES

Kimley-Horn requested an inquiry from the Department of State, State Historic Preservation Officer (SHPO) Division of Historical Resources Florida Master Site File (FMSF) regarding the presence of known historical or archaeological findings on, or within the immediate vicinity, of proposed project area to determine if additional studies will be required. SHPO has not documented any historically significant resources within the project area and no further action is required at this time.

3.6 FLOODPLAIN

The Federal Emergency Management Agency (FEMA) indicates that 65 ± acres of the project site fall within Flood Zone A and considered "high risk" for flood hazard. A separate stormwater assessment will be required as part of SJRWMD's Environmental Resource Permit (ERP) application. Flood zone definition and spatial coverage is depicted in ***Figure 6***.



FEMA FLOODPLAIN MAP

DMO-6 COCOA, BREVARD COUNTY, FLORIDA

November 2020

KHA Project 046265017

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FIG 6

4.0 REGULATORY REQUIREMENTS

4.3 LOCAL ENVIRONMENTAL ORDINANCES

Per the City of Cocoa development ordinances, clearing and grading of natural resources, such as forests and wetlands, shall not be permitted, except when in compliance with all other chapters of the development code. Clearing techniques that retain natural vegetation and drainage patterns must be approved by city engineer. Additionally, clearing, except that necessary to establish sediment control devices, may not begin until all sediment control devices have been installed and stabilized.

4.2 STATE REGULATORY REQUIREMENTS

ENVIRONMENTAL RESOURCE PERMIT (ERP)

An ERP will be required from the SJRWMD for the development of the stormwater - management system if development to the site project is proposed. A pre-application meeting was conducted in July 2020. Formal approval of the wetlands and other surface waters is currently pending a site inspection by SJRWMD as of the time of this report date.

LISTED SPECIES PERMITTING

The following state listed species surveys and permits are recommended and/or required if modification or development to the project site is proposed:

Florida Sandhill Crane Nest Survey – Due to potential sandhill crane habitat within the project area and documented sightings adjacent to the project area, a Florida sandhill crane nest survey is recommended prior to any habitat modification activities, in both upland and wetland communities. Surveys are not required, but if conducted in accordance with approved survey methodology and the species is not detected, no further FWC review or coordination is required.

If impacts to suitable sandhill crane habitat occur within the nesting season (February to April), a nest survey should be conducted within 30 days prior to initiation of development activities. If active nests or flightless young are observed, coordination with FWC should occur to discuss avoidance, minimization, and/or mitigation options. If

no active nests or flightless young are observed, or if development activities occur outside of the nesting season (March to January), then no further coordination is required.

Gopher Tortoise Survey – Due to potential gopher tortoise habitat within the project area, documented sightings adjacent to the project area, and one (1) potentially occupied burrow observed during site reconnaissance, a gopher tortoise population survey must be conducted prior to any soil or vegetation impacts associated with development activities. A minimum 15% survey of the project area may be conducted at any time to helps *estimate* the number of tortoises required for relocation and the final number of relocated tortoises. It is recommended that this partial survey be conducted prior to the submittal of an ERP permit, as the FWC now reviews all ERP applications for listed species evaluation. This survey may also be used to submit a relocation permit to the FWC, however a 100% survey is required no more than 90 days prior to any site development activities within areas proposed for development.

Gopher Tortoise Relocation Permit - This FWC Gopher Tortoise Relocation permit authorizes gopher tortoises to be relocated by a permitted FWC Gopher Tortoise Authorized Agent off the development property to a protected recipient site area. The FWC has up to 90 days to review the permit application, however approvals typically occur within 45 days from date of application. The permit is valid for one (1) year and options for six (6) month extensions are available. The following documents are required as part of the permit application or submitted to FWC prior to relocation:

Permit Application Checklist

- ☐ Recipient Site Reservation Letter
- ☐ Landowner Authorization Letter (If Applicable)
- ☐ Proposed Site Plan
- ☐ Gopher Tortoise Burrow Survey (Minimum 15% of project area)
  - *Note: A 100% Gopher Tortoise Burrow Survey must be conducted within 90 days prior to relocation activities. Results of the 100% survey must be submitted to the FWC Permitting Portal a minimum of 72 hours before (excluding weekends and holidays) commencing gopher tortoise capture and relocation activities.*
- ☐ Proof of Local Government Approval (LGA) of Proposed Development
  - *Note: FWC Gopher Tortoise Relocation Permit may be issued prior to final LGA. However, the capture and relocation of gopher tortoises may not occur until final LGA is submitted to the FWC Permitting Portal.*

4.3 FEDERAL REGULATORY REQUIREMENTS

SECTION 404 DREDGE AND FILL PERMITTING

The Environmental Protection Agency and the Department of the Army's Navigable Waters Protection Rule (NWPR): Definition of "Waters of the United States" became effective on June 22, 2020 in 49 states and all US territories. Wetlands within the project area are not permanently hydrologically connected to navigable waters and are therefore not federally jurisdictional.

FEDERALLY LISTED SPECIES

The following federally listed species surveys and permits are recommended and/or required if modification or development to the project site is proposed:

Eastern Indigo Snake Protection Measures – Due to proposed impacts occurring over 25 acres of potential habitat, the *USFWS Eastern Indigo Snake Programmatic Effect Determination Key* (2013) determined that the proposed project "may affect" eastern indigo snakes. If the Key results in a "may affect" determination, then consultation with the USFWS may be concluded informally or formally depending on project effects to the species.

Based on a review of publicly available databases, no eastern indigo snakes were documented on, or within the vicinity of, the project area. However, verified locations of the eastern indigo snake are rarely available to the public to reduce poaching or other potential take of the species. Consultation with the USFWS will assist in determining if the excavation of tortoise burrows prior to construction and implementation of Eastern Indigo Snake Standard Protection Measures (***Appendix B***) during construction activities will be sufficient to offset potential take of the species. If the USFWS believes the project site has a high likelihood of eastern indigo snakes inhabiting the project site, an Incidental Take Permit may be required.

Wood Stork Habitat Assessment- If impacts to Wood Stork Suitable Foraging Habitat (SFH) are greater than 0.5 acres, the *USFWS Effect Determination Key for the Wood Stork in Central and North Peninsular Florida* indicates that the proposed project area "May Affect" the species. A Wood Stork Foraging Habitat Assessment will be required

only if proposed impacts are greater than 0.5 acres. If SFH is documented within the project area, mitigation through enhancement, restoration, or creation of appropriate habitat may be required. This mitigation can also be achieved through the purchase of wetland mitigation bank credits.

Crested Caracara Nest Survey – The USFWS presumes that potential habitat within the Consultation Area is occupied and site development activities may affect the caracara. A nest survey conducted between January and April is recommended to confirm the presence or absence of the species if construction activities are proposed during the nesting season.

5.0 SUMMARY AND RECOMMENDATIONS

- An ERP will be required if any stormwater improvements or wetland impacts are proposed as part of modifications to the project site.
- Listed species surveys recommended and/or required for the gopher tortoise, Florida scrub jay, Florida sandhill crane, and wood stork
- Listed species permitting may be required for the gopher tortoise, Florida scrub jay, Florida sandhill crane, wood stork, , and/or eastern indigo snake
- A Section 404 Dredge and Fill Permit is not anticipated for any proposed impacts to the wetland areas. A pre-application meeting prior to permit submittal is recommended.

APPENDIX A

FNAI BIODIVERSITY MATRIX & USFWS IPAC

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

NOT FOR CONSULTATION

Location

Brevard County, Florida



Local office

North Florida Ecological Services Field Office

(904) 731-3336
(904) 731-3045

7915 Baymeadows Way, Suite 200
Jacksonville, FL 32256-7517

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population, even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] and their critical habitats are managed by the Ecological Services Program of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries[2]).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact NOAA Fisheries for species under their jurisdiction.

NOT FOR CONSULTATION

1. Species listed under the Endangered Species Act are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the listing status page for more information.
2. NOAA Fisheries, also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS

Southeastern Beach Mouse Peromyscus polionotus niveiventris — Threatened
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/3951

Birds

NAME	STATUS

Audubon's Crested Caracara Polyborus plancus audubonii — Threatened
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/8250

Eastern Black Rail Laterallus jamaicensis ssp. jamaicensis — Proposed Threatened
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/10477

Everglade Snail Kite Rostrhamus sociabilis plumbeus — Endangered
There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/7713

Florida Scrub-jay Aphelocoma coerulescens — Threatened
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6174

Wood Stork Mycteria americana — Threatened
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/8477

Reptiles

NAME	STATUS

Eastern Indigo Snake Drymarchon corais couperi — Threatened
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/646

Gopher Tortoise Gopherus polyphemus — Candidate
No critical habitat has been designated for this species.
https://ecos.fws.gov/ecp/species/6994

Green Sea Turtle Chelonia mydas — Threatened
There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/6199

NOT FOR CONSULTATION

Hawksbill Sea Turtle Eretmochelys imbricata — Endangered
There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/3656

Leatherback Sea Turtle Dermochelys coriacea — Endangered
There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/1493

Loggerhead Sea Turtle Caretta caretta — Threatened
There is **final** critical habitat for this species. Your location is outside the critical habitat.
https://ecos.fws.gov/ecp/species/1110

Flowering Plants

NAME	STATUS
Carter's Mustard Warea carteri No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/5583	Endangered
Lewton's Polygala Polygala lewtonii No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/6688	Endangered

NOT FOR CONSULTATION

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

THERE ARE NO CRITICAL HABITATS AT THIS LOCATION.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

Additional information can be found using the following links:

- Birds of Conservation Concern http://www.fws.gov/birds/management/managed-species/birds-of-conservation-concern.php
- Measures for avoiding and minimizing impacts to birds http://www.fws.gov/birds/management/project-assessment-tools-and-guidance/conservation-measures.php
- Nationwide conservation measures for birds http://www.fws.gov/migratorybirds/pdf/management/nationwidestandardconservationmeasures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NOT FOR CONSULTATION

NAME	BREEDING SEASON (IF A BREEDING SEASON IS INDICATED FOR A BIRD ON YOUR LIST, THE BIRD MAY BREED IN YOUR PROJECT AREA SOMETIME WITHIN THE TIMEFRAME SPECIFIED, WHICH IS A VERY LIBERAL ESTIMATE OF THE DATES INSIDE WHICH THE BIRD BREEDS ACROSS ITS ENTIRE RANGE. "BREEDS ELSEWHERE" INDICATES THAT THE BIRD DOES NOT LIKELY BREED IN YOUR PROJECT AREA.)
American Kestrel Falco sparverius paulus This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 1 to Aug 31

Bald Eagle Haliaeetus leucocephalus — Breeds Sep 1 to Jul 31
This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.
https://ecos.fws.gov/ecp/species/1626

Black Skimmer Rynchops niger — Breeds May 20 to Sep 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/5234

Clapper Rail Rallus crepitans — Breeds Apr 10 to Oct 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Common Ground-dove Columbina passerina exigua — Breeds Feb 1 to Dec 31
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Dunlin Calidris alpina arcticola — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

King Rail Rallus elegans — Breeds May 1 to Sep 5
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/8936

Least Tern Sterna antillarum — Breeds Apr 20 to Sep 10
This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA

Lesser Yellowlegs Tringa flavipes — Breeds elsewhere
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/9679

Prairie Warbler Dendroica discolor — Breeds May 1 to Jul 31
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Reddish Egret Egretta rufescens — Breeds Mar 1 to Sep 15
This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.
https://ecos.fws.gov/ecp/species/7617

NOT FOR CONSULTATION

Ruddy Turnstone Arenaria interpres morinella This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds elsewhere
Short-billed Dowitcher Limnodromus griseus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9480	Breeds elsewhere
Swallow-tailed Kite Elanoides forficatus This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/8938	Breeds Mar 10 to Jun 30
Willet Tringa semipalmata This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Apr 20 to Aug 5

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read and understand the FAQ "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is 0.25/0.25 = 1; at week 20 it is 0.05/0.25 = 0.2.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

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To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (▪)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

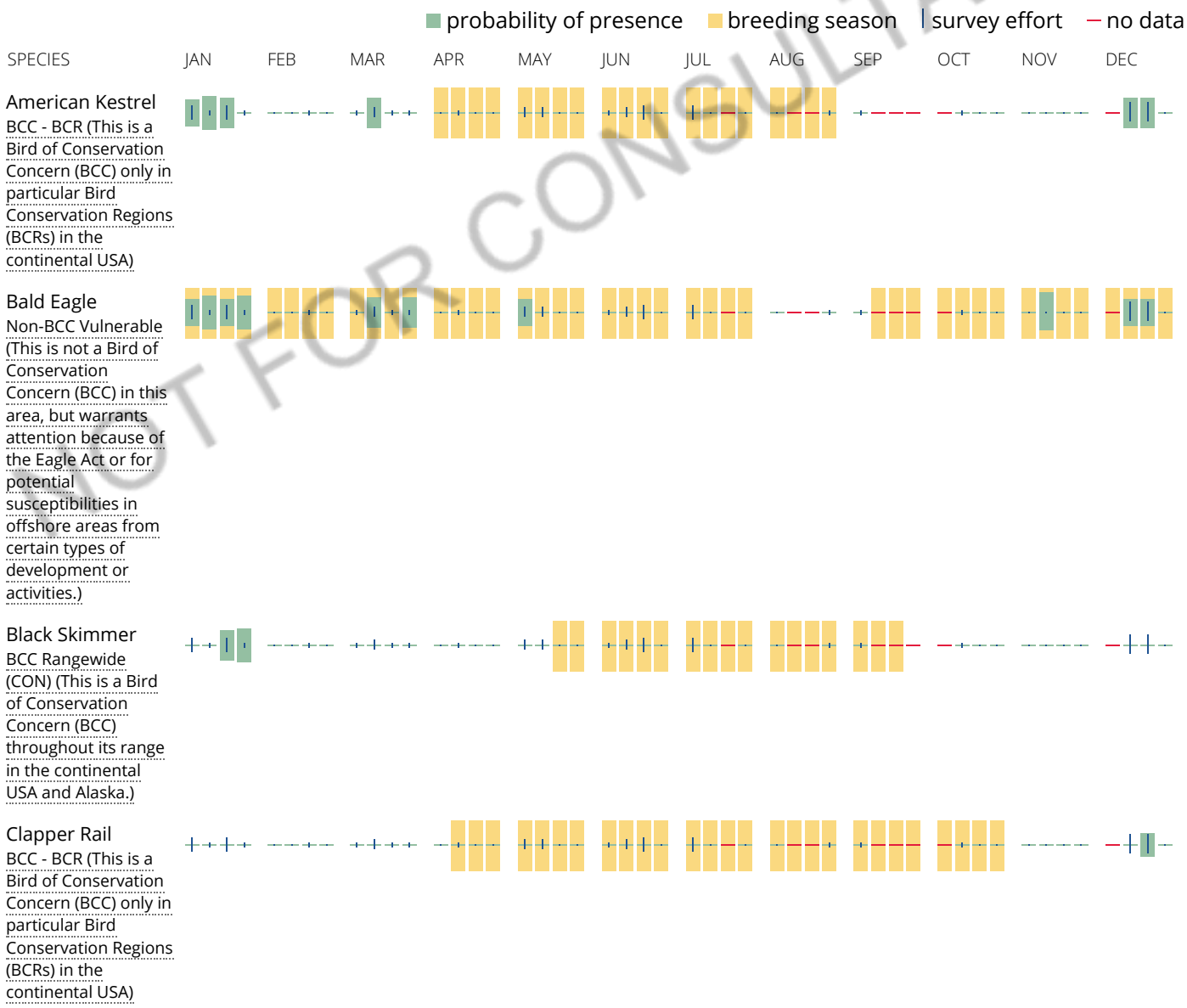
Survey Effort (|)
Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

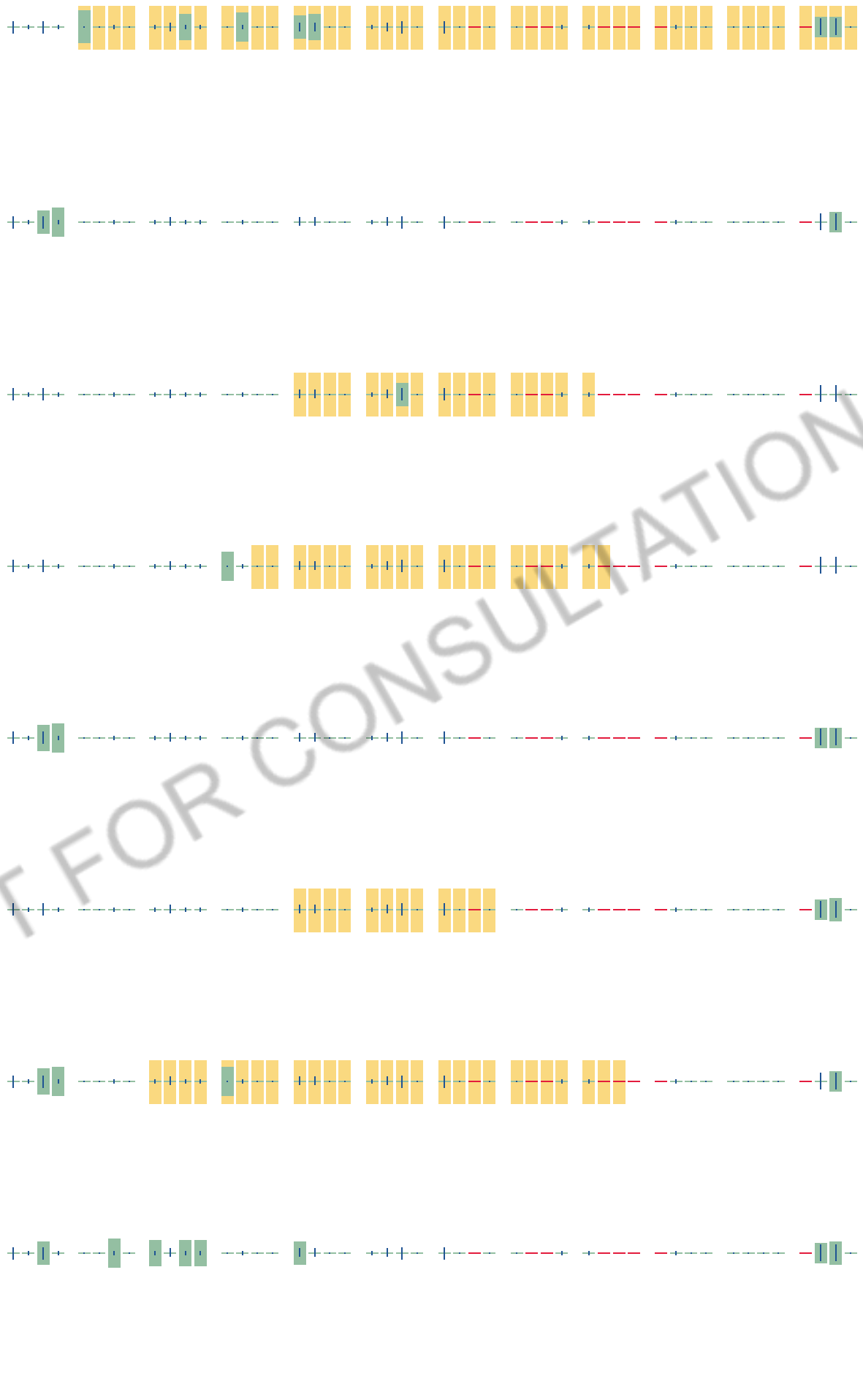
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe
Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

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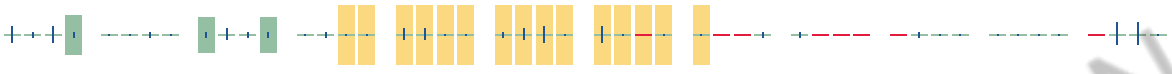
Short-billed Dowitcher
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Swallow-tailed Kite
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



Willet
BCC Rangewide (CON) (This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.)



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Tell me more about conservation measures I can implement to avoid or minimize impacts to migratory birds.

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding in your project area, view the Probability of Presence Summary. Additional measures and/or permits may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the migratory birds potentially occurring in my specified location?

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

The migratory bird list generated for your project is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, please visit the AKN Phenology Tool.

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the Avian Knowledge Network (AKN). This data is derived from a growing collection of survey, banding, and citizen science datasets .

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, migrating or present year-round in my project area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating or year-round), you may refer to the following resources: The Cornell Lab of Ornithology All About Birds Bird Guide, or (if you are unsuccessful in locating the bird of interest there), the Cornell Lab of Ornithology Neotropical Birds guide. If a bird on your migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are Birds of Conservation Concern (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the Eagle Act requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to try to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the Northeast Ocean Data Portal. The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf project webpage.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

Proper Interpretation and Use of Your Migratory Bird Report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated, and see options for identifying what other birds may be in your project area, please see the FAQ “What does IPaC use to generate the migratory birds potentially occurring in my specified location”. Please be aware this report provides the “probability of presence” of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please also look

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carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the National Wildlife Refuge system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

THERE ARE NO REFUGE LANDS AT THIS LOCATION.

Fish hatcheries

THERE ARE NO FISH HATCHERIES AT THIS LOCATION.

Wetlands in the National Wetlands Inventory

Impacts to NWI wetlands and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local U.S. Army Corps of Engineers District.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

FRESHWATER EMERGENT WETLAND

- PEM1F
- PEM1C

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A full description for each wetland code can be found at the National Wetlands Inventory website

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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1018 Thomasville Road
Suite 200-C
Tallahassee, FL 32303
850-224-8207
850-681-9364 fax
www.fnai.org

Florida Natural Areas Inventory

Biodiversity Matrix Query Results

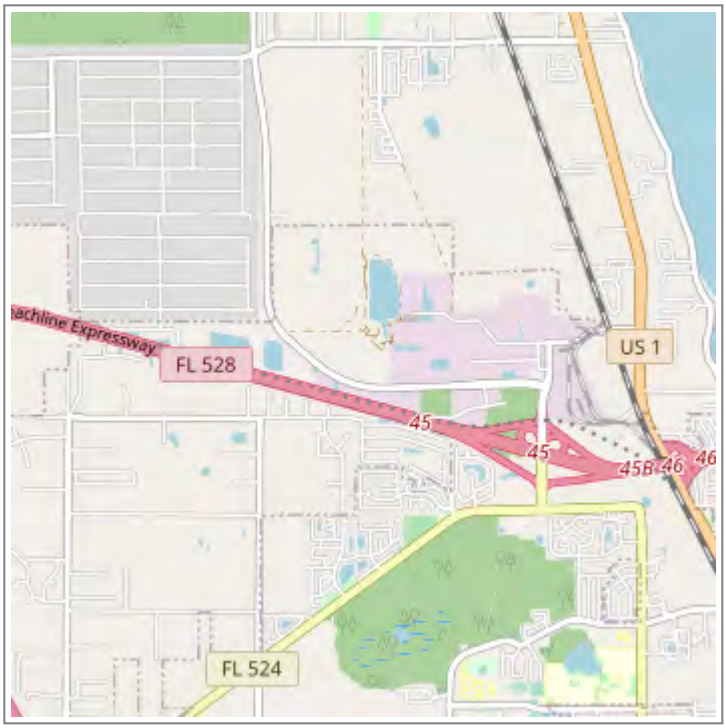
UNOFFICIAL REPORT

Created 8/7/2020

(Contact the FNAI Data Services Coordinator at 850.224.8207 or kbrinegar@fnai.fsu.edu for information on an official Standard Data Report)

NOTE: The Biodiversity Matrix includes only rare species and natural communities tracked by FNAI.

Report for 1 Matrix Unit: 59072



Descriptions

DOCUMENTED - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit.

DOCUMENTED-HISTORIC - There is a documented occurrence in the FNAI database of the species or community within this Matrix Unit; however the occurrence has not been observed/reported within the last twenty years.

LIKELY - The species or community is *known* to occur in this vicinity, and is considered likely within this Matrix Unit because:

1. documented occurrence overlaps this and adjacent Matrix Units, but the documentation isn't precise enough to indicate which of those Units the species or community is actually located in; *or*
2. there is a documented occurrence in the vicinity and there is suitable habitat for that species or community within this Matrix Unit.

POTENTIAL - This Matrix Unit lies within the known or predicted range of the species or community based on expert knowledge and environmental variables such as climate, soils, topography, and landcover.

Matrix Unit ID: 59072

0 **Documented** Elements Found

0 **Documented-Historic** Elements Found

4 **Likely** Elements Found

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Aphelocoma coerulescens Florida Scrub-Jay	G2	S2	LT	FT
Mesic flatwoods	G4	S4	N	N
Mycteria americana Wood Stork	G4	S2	LT	FT
Scrub	G2	S2	N	N

Matrix Unit ID: 59072

23 **Potential** Elements for Matrix Unit 59072

Scientific and Common Names	Global Rank	State Rank	Federal Status	State Listing
Athene cunicularia floridana Florida Burrowing Owl	G4T3	S3	N	SSC
Calamovilfa curtissii Curtiss' Sandgrass	G3	S3	N	T
Calopogon multiflorus Many-flowered Grass-pink	G2G3	S2S3	N	T
Centrosema arenicola Sand Butterfly Pea	G2Q	S2	N	E
Chamaesyce cumulicola Sand-dune Spurge	G2	S2	N	E
Conradina grandiflora Large-flowered Rosemary	G3	S3	N	T
Deeringothamnus pulchellus Beautiful Pawpaw	G1	S1	LE	E
Dicerandra thinicola Titusville Balm	G1Q	S1	N	E
Drymarchon couperi Eastern Indigo Snake	G3	S3	LT	FT
Gopherus polyphemus Gopher Tortoise	G3	S3	C	ST
Grus canadensis pratensis Florida Sandhill Crane	G5T2T3	S2S3	N	ST
Lechea cernua Nodding Pinweed	G3	S3	N	T
Lechea divaricata Pine Pinweed	G2	S2	N	E
Linum carteri var. smallii Small's Flax	G2T2	S2	N	E
Lithobates capito Gopher Frog	G3	S3	N	SSC
Mustela frenata peninsulae Florida Long-tailed Weasel	G5T3	S3	N	N
Nemastylis floridana Celestial Lily	G2	S2	N	E
Nolina atopocarpa Florida Beargrass	G3	S3	N	T
Panicum abscissum Cutthroat Grass	G3	S3	N	E
Peucaea aestivalis Bachman's Sparrow	G3	S3	N	N
Podomys floridanus Florida Mouse	G3	S3	N	SSC
Sceloporus woodi Florida Scrub Lizard	G2G3	S2S3	N	N
Warea carteri Carter's Warea	G3	S3	LE	E

Disclaimer

The data maintained by the Florida Natural Areas Inventory represent the single most comprehensive source of information available on the locations of rare species and other significant ecological resources statewide. However, the data are not always based on comprehensive or site-specific field surveys. Therefore, this information should not be regarded as a final statement on the biological resources of the site being considered, nor should it be substituted for on-site surveys. FNAI shall not be held liable for the accuracy and completeness of these data, or opinions or conclusions drawn from these data. FNAI is not inviting reliance on these data. Inventory data are designed for the purposes of conservation planning and scientific research and are not intended for use as the primary criteria for regulatory decisions.

Unofficial Report

These results are considered unofficial. FNAI offers a Standard Data Request option for those needing certifiable data.

APPENDIX B

STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE

STANDARD PROTECTION MEASURES FOR THE EASTERN INDIGO SNAKE
U.S. Fish and Wildlife Service
August 12, 2013

The eastern indigo snake protection/education plan (Plan) below has been developed by the U.S. Fish and Wildlife Service (USFWS) in Florida for use by applicants and their construction personnel. At least **30 days prior** to any clearing/land alteration activities, the applicant shall notify the appropriate USFWS Field Office via e-mail that the Plan will be implemented as described below (North Florida Field Office: jaxregs@fws.gov; South Florida Field Office: verobeach@fws.gov; Panama City Field Office: panamacity@fws.gov). As long as the signatory of the e-mail certifies compliance with the below Plan (including use of the attached poster and brochure), no further written confirmation or "approval" from the USFWS is needed and the applicant may move forward with the project.

If the applicant decides to use an eastern indigo snake protection/education plan other than the approved Plan below, written confirmation or "approval" from the USFWS that the plan is adequate must be obtained. At least 30 days prior to any clearing/land alteration activities, the applicant shall submit their unique plan for review and approval. The USFWS will respond via e-mail, typically within 30 days of receiving the plan, either concurring that the plan is adequate or requesting additional information. A concurrence e-mail from the appropriate USFWS Field Office will fulfill approval requirements.

The Plan materials should consist of: 1) a combination of posters and pamphlets (see **Poster Information** section below); and 2) verbal educational instructions to construction personnel by supervisory or management personnel before any clearing/land alteration activities are initiated (see **Pre-Construction Activities** and **During Construction Activities** sections below).

POSTER INFORMATION

Posters with the following information shall be placed at strategic locations on the construction site and along any proposed access roads (a final poster for Plan compliance, to be printed on 11" x 17" or larger paper and laminated, is attached):

DESCRIPTION: The eastern indigo snake is one of the largest non-venomous snakes in North America, with individuals often reaching up to 8 feet in length. They derive their name from the glossy, blue-black color of their scales above and uniformly slate blue below. Frequently, they have orange to coral reddish coloration in the throat area, yet some specimens have been reported to only have cream coloration on the throat. These snakes are not typically aggressive and will attempt to crawl away when disturbed. Though indigo snakes rarely bite, they should NOT be handled.

SIMILAR SNAKES: The black racer is the only other solid black snake resembling the eastern indigo snake. However, black racers have a white or cream chin, thinner bodies, and WILL BITE if handled.

LIFE HISTORY: The eastern indigo snake occurs in a wide variety of terrestrial habitat types throughout Florida. Although they have a preference for uplands, they also utilize some wetlands

and agricultural areas. Eastern indigo snakes will often seek shelter inside gopher tortoise burrows and other below- and above-ground refugia, such as other animal burrows, stumps, roots, and debris piles. Females may lay from 4 - 12 white eggs as early as April through June, with young hatching in late July through October.

PROTECTION UNDER FEDERAL AND STATE LAW: The eastern indigo snake is classified as a Threatened species by both the USFWS and the Florida Fish and Wildlife Conservation Commission. "Taking" of eastern indigo snakes is prohibited by the Endangered Species Act without a permit. "Take" is defined by the USFWS as an attempt to kill, harm, harass, pursue, hunt, shoot, wound, trap, capture, collect, or engage in any such conduct. Penalties include a maximum fine of $25,000 for civil violations and up to $50,000 and/or imprisonment for criminal offenses, if convicted.

Only individuals currently authorized through an issued Incidental Take Statement in association with a USFWS Biological Opinion, or by a Section 10(a)(1)(A) permit issued by the USFWS, to handle an eastern indigo snake are allowed to do so.

IF YOU SEE A <u>LIVE</u> EASTERN INDIGO SNAKE ON THE SITE:

- Cease clearing activities and allow the live eastern indigo snake sufficient time to move away from the site without interference;
- Personnel must NOT attempt to touch or handle snake due to protected status.
- Take photographs of the snake, if possible, for identification and documentation purposes.
- Immediately notify supervisor or the applicant's designated agent, **and** the appropriate USFWS office, with the location information and condition of the snake.
- If the snake is located in a vicinity where continuation of the clearing or construction activities will cause harm to the snake, the activities must halt until such time that a representative of the USFWS returns the call (within one day) with further guidance as to when activities may resume.

IF YOU SEE A <u>DEAD</u> EASTERN INDIGO SNAKE ON THE SITE:

- Cease clearing activities and immediately notify supervisor or the applicant's designated agent, **and** the appropriate USFWS office, with the location information and condition of the snake.
- Take photographs of the snake, if possible, for identification and documentation purposes.
- Thoroughly soak the dead snake in water and then freeze the specimen. The appropriate wildlife agency will retrieve the dead snake.

Telephone numbers of USFWS Florida Field Offices to be contacted if a live or dead eastern indigo snake is encountered:

North Florida Field Office – (904) 731-3336
Panama City Field Office – (850) 769-0552
South Florida Field Office – (772) 562-3909

PRE-CONSTRUCTION ACTIVITIES

1. The applicant or designated agent will post educational posters in the construction office and throughout the construction site, including any access roads. The posters must be clearly visible to all construction staff. A sample poster is attached.

2. Prior to the onset of construction activities, the applicant/designated agent will conduct a meeting with all construction staff (annually for multi-year projects) to discuss identification of the snake, its protected status, what to do if a snake is observed within the project area, and applicable penalties that may be imposed if state and/or federal regulations are violated. An educational brochure including color photographs of the snake will be given to each staff member in attendance and additional copies will be provided to the construction superintendent to make available in the onsite construction office (a final brochure for Plan compliance, to be printed double-sided on 8.5" x 11" paper and then properly folded, is attached). Photos of eastern indigo snakes may be accessed on USFWS and/or FWC websites.

3. Construction staff will be informed that in the event that an eastern indigo snake (live or dead) is observed on the project site during construction activities, all such activities are to cease until the established procedures are implemented according to the Plan, which includes notification of the appropriate USFWS Field Office. The contact information for the USFWS is provided on the referenced posters and brochures.

DURING CONSTRUCTION ACTIVITIES

1. During initial site clearing activities, an onsite observer may be utilized to determine whether habitat conditions suggest a reasonable probability of an eastern indigo snake sighting (example: discovery of snake sheds, tracks, lots of refugia and cavities present in the area of clearing activities, and presence of gopher tortoises and burrows).

2. If an eastern indigo snake is discovered during gopher tortoise relocation activities (i.e. burrow excavation), the USFWS shall be contacted within one business day to obtain further guidance which may result in further project consultation.

3. Periodically during construction activities, the applicant's designated agent should visit the project area to observe the condition of the posters and Plan materials, and replace them as needed. Construction personnel should be reminded of the instructions (above) as to what is expected if any eastern indigo snakes are seen.

POST CONSTRUCTION ACTIVITIES

Whether or not eastern indigo snakes are observed during construction activities, a monitoring report should be submitted to the appropriate USFWS Field Office within 60 days of project completion. The report can be sent electronically to the appropriate USFWS e-mail address listed on page one of this Plan.



ATTENTION:

THREATENED EASTERN INDIGO SNAKES MAY BE PRESENT ON THIS SITE!!!

IF YOU SEE A LIVE EASTERN INDIGO SNAKE ON THE SITE:

- Cease clearing activities and allow the eastern indigo snake sufficient time to move away from the site without interference.
- Personnel must NOT attempt to touch or handle snake due to protected status.
- Take photographs of the snake, if possible, for identification and documentation purposes.
- Immediately notify supervisor or the applicant's designated agent, **and** the appropriate U.S. Fish and Wildlife Service (USFWS) office, with the location information and condition of the snake.
- If the snake is located in a vicinity where continuation of the clearing or construction activities will cause harm to the snake, the activities must halt until such time that a representative of the USFWS returns the call (within one day) with further guidance as to when activities may resume.

IF YOU SEE A DEAD EASTERN INDIGO SNAKE ON THE SITE:

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- Take photographs of the snake, if possible, for identification and documentation purposes.
- Thoroughly soak the dead snake in water and then freeze the specimen. The appropriate wildlife agency will retrieve the dead snake.

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North Florida Field Office – (904) 731-3336
Panama City Field Office – (850) 769-0552
South Florida Field Office – (772) 562-3909

Killing, harming, or harassing indigo snakes is strictly prohibited and punishable under State and Federal Law.

DESCRIPTION: The eastern indigo snake is one of the largest non-venomous snakes in North America, with individuals often reaching up to 8 feet in length. They derive their name from the glossy, blue-black color of their scales above and uniformly slate blue below. Frequently, they have orange to coral reddish coloration in the throat area, yet some specimens have been reported to only have cream coloration on the throat. These snakes are not typically aggressive and will attempt to crawl away when disturbed. Though indigo snakes rarely bite, they should NOT be handled.

SIMILAR SNAKES: The black racer is the only other solid black snake resembling the eastern indigo snake. However, black racers have a white or cream chin, thinner bodies, and WILL BITE if handled.

LIFE HISTORY: The eastern indigo snake occurs in a wide variety of terrestrial habitat types throughout Florida. Although they have a preference for uplands, they also utilize some wetlands and agricultural areas. Eastern indigo snakes will often seek shelter inside gopher tortoise burrows and other below- and above-ground refugia, such as other animal burrows, stumps, roots, and debris piles. Females may lay from 4 - 12 white eggs as early as April through June, with young hatching in late July through October.

PROTECTION: The eastern indigo snake is classified as a Threatened species by both the USFWS and the Florida Fish and Wildlife Conservation Commission. "Taking" of eastern indigo snakes is prohibited by the Endangered Species Act without a permit. "Take" is defined by the USFWS as an attempt to kill, harm, harass, pursue, hunt, shoot, wound, trap, capture, collect, or engage in any such conduct. Penalties include a maximum fine of $25,000 for civil violations and up to $50,000 and/or imprisonment for criminal offenses, if convicted.

Only individuals currently authorized through an issued Incidental Take Statement in association with a USFWS Biological Opinion, or by a Section 10(a)(1)(A) permit issued by the USFWS, to handle an eastern indigo snake are allowed to do so.

August 12, 2013

IF YOU SEE A LIVE EASTERN INDIGO SNAKE ON THE SITE:

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- Take photographs of the snake, if possible, for identification and documentation purposes.
- Immediately notify supervisor or the applicant's designated agent, **and** the appropriate U.S. Fish and Wildlife Service (USFWS) office, with the location information and condition of the snake.
- If the snake is located in a vicinity where continuation of the clearing or construction activities will cause harm to the snake, the activities must halt until such time that a representative of the USFWS returns the call (within one day) with further guidance as to when activities may resume.

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Panama City ES Office – (850) 769-0552
South Florida ES Office – (772) 562-3909

DESCRIPTION: The eastern indigo snake is one of the largest non-venomous snakes in North America, with individuals often reaching up to 8 feet in length. They derive their name from the glossy, blue-black color of their scales above and uniformly slate blue below. Frequently, they have orange to coral reddish coloration in the throat area, yet some specimens have been reported to only have cream coloration on the throat. These snakes are not typically aggressive and will attempt to crawl away when disturbed. Though indigo snakes rarely bite, they should NOT be handled.

SIMILAR SNAKES: The black racer is the only other solid black snake resembling the eastern indigo snake. However, black racers have a white or cream chin, thinner bodies, and WILL BITE if handled.

LIFE HISTORY: The eastern indigo snake occurs in a wide variety of terrestrial habitat types throughout Florida. Although they have a preference for uplands, they also utilize some wetlands and agricultural areas. Eastern indigo snakes will often seek shelter inside gopher tortoise burrows and other below- and above-ground refugia, such as other animal burrows, stumps, roots, and debris piles. Females may lay from 4 - 12 white eggs as early as April through June, with young hatching in late July through October.

Killing, harming, or harassing indigo snakes is strictly prohibited and punishable under State and Federal Law.

Only individuals currently authorized through an issued Incidental Take Statement in association with a USFWS Biological Opinion, or by a Section 10(a)(1)(A) permit issued by the USFWS, to handle an eastern indigo snake are allowed to do so.

LEGAL STATUS: The eastern indigo snake is classified as a Threatened species by both the USFWS and the Florida Fish and Wildlife Conservation Commission. "Taking" of eastern indigo snakes is prohibited by the Endangered Species Act without a permit. "Take" is defined by the USFWS as an attempt to kill, harm, harass, pursue, hunt, shoot, wound, trap, capture, collect, or engage in any such conduct. Penalties include a maximum fine of $25,000 for civil violations and up to $50,000 and/or imprisonment for criminal offenses, if convicted.

August 12, 2013

ATTENTION:

THREATENED EASTERN INDIGO SNAKES MAY BE PRESENT ON THIS SITE!!!



Please read the following information provided by the U.S. Fish and Wildlife Service to become familiar with standard protection measures for the eastern indigo snake.

DEVELOPMENT AGREEMENT

THIS DEVELOPMENT AGREEMENT ("**Agreement**") is made and entered into this ____ day of _____, 2021, ("**Effective Date**") by and between the **CITY OF COCOA, FLORIDA,** a Florida municipal corporation, located at 65 Stone Street, Cocoa, Florida 32922 ("**City**"), and **PROJECT SUNSHINE,** a _____ authorized to do business in the State of Florida, located at _____ ("**Developer**").

RECITALS:

WHEREAS, Developer has entered into a contract to purchase approximately 185.59 acres, more or less, of real property located at Grissom Parkway, Cocoa, Florida 32926, with Tax Parcel IDs 24-35-12-00-1, and more particularly described herein in "Exhibit A" (the "Property"); and

WHEREAS, Developer is seeking to develop a 202,044 ± square-foot distribution building and related facilities (the "Project") which would result in a substantial capital investment in building construction and machinery and equipment, and the creation of numerous local job opportunities; and

WHEREAS, the Project will create a new business within the City of Cocoa and be a significant economic catalyst to Brevard County including, but not limited to, enhancing the local government tax base; and

WHEREAS, on January 6, 2021, the City's Planning & Zoning Board considered and approved the Developer's Site Plan application subject to conditions, including a condition that the City Council approve a development agreement waiving certain provisions of the City's land development regulations pursuant to Section 15-21 of the City Code (the "Site Plan"); and

WHEREAS, the City Council, having reviewed the decision of the Planning & Zoning Board and being duly advised by City Staff that the Project is otherwise in compliance with all other provisions of the City Code and Comprehensive Plan, desires to approve this Agreement waiving certain City Code provisions described herein for purposes of authorizing the Site Plan for the Project, subject to such other conditions imposed by the Planning & Zoning Board and applicable law; and

WHEREAS, the City Council finds and declares that this Agreement serves a public purpose and serves the public health, safety and welfare of the citizens and visitors of Cocoa, which includes promotion of high quality growth and economic development, job growth, and the future expansion of the City's tax base.

NOW THEREFORE, in consideration of the mutual promises and covenants herein, and other good and valuable consideration, which the parties agree has been exchanged and received, the parties agree as follows:

1.0 Recitals. The foregoing recitals are true and correct and are hereby incorporated herein by this reference.

2.0 Authority. This Agreement is entered into pursuant to the Florida Municipal Home Rule Powers Act and Section 15-21 of the City Code which expressly authorizes the City Council to waive applicable land development regulations of the City by development agreement.

3.0 Condition Precedent – Acquisition of Property by Developer. Developer represents and warrants to the City that they have entered into a binding written contract to purchase the Property ("Purchase Agreement") and that Developer intends to expeditiously pursue the completion of the closing on the Property upon the Effective Date of this Agreement. Based on this representation and warranty to the City, Developer further represents and warrants to the City that it is empowered to negotiate and enter into this Agreement. However, the acquisition of fee title to the Property by the Developer shall be a condition precedent to the City issuing any site work permits, including building permits or clearing and grading permits. As such, Developer shall keep the City fully apprised of the status of said closing and shall faithfully and expeditiously complete the closing within ninety (90) days of the Effective Date of this Agreement ('Closing Date"). If Developer fails to complete the closing by the Closing Date, the City Manager shall have the right, in his sole discretion and by written notice, to either extend the Closing Date for a reasonable time period not to exceed six (6) months or as otherwise authorized by the City Council to allow Developer to complete the closing, or terminate this Agreement.

4.0 Project Description and Permitted Waivers. Developer shall, at its expense, design, permit, and construct a 202,044 ± square-foot distribution building and related facilities in accordance with the Site Plan (including tree removal and land clearing) and conditions approved by the Planning & Zoning Board on January 6, 2021. In furtherance of the Site Plan approval, the City Council hereby agrees to the following waivers notwithstanding any other conflicting City Code provision:

A. Off-street employee and visitor parking spaces on the Property shall be a minimum rectangular dimension measuring nine (9) feet by eighteen (18) feet excluding any required handicapped spaces which shall comply with law.

B. Tree removal and land clearing shall be in accordance with the Site Plan. Replacement trees shall satisfy the minimum size standards (diameter at breast height) as required by the City Code, Appendix A- Zoning, Article XIII, Section 22. No other tree mitigation contribution or replacement shall be required.

C. [?]

5.0 Representations of the Parties. The City and Developer hereby each represent and warrant to the other that it has the power and authority to execute, deliver and perform the terms and provisions of this Agreement and has taken all necessary action to authorize the execution, delivery and performance of this Agreement. This Agreement will, when duly executed and delivered by the City and Developer, constitute a legal, valid and binding obligation enforceable against the parties hereto. Upon acquisition of the Property by the Developer and the recording of this Agreement in the Public Records of Brevard County, Florida, the Agreement shall be a binding obligation upon the Property in accordance with the terms and conditions of this Agreement. Developer represents that it has voluntarily and willfully executed

this Agreement for purposes of binding himself and the Property to the terms and conditions set forth in this Agreement.

6.0 Successors and Assigns. This Agreement shall automatically be binding upon and shall inure to the benefit of the City and Developer and their respective successors and assigns. The terms and conditions of this Agreement similarly shall be binding upon the Property and shall run with title to the same upon being duly recorded against the Property by the City.

7.0 Applicable Law; Venue. This Agreement shall be governed by and construed in accordance with the laws of the State of Florida. The venue of any litigation arising out of this Agreement shall be in Brevard County, Florida or, for federal court actions, in Orlando, Florida.

8.0 Amendments. This Agreement shall not be modified or amended except by written agreement duly executed by both parties hereto (or their successors or assigns) and approved by the City Council.

9.0 Entire Agreement; Exhibits. This Agreement and all attached exhibits hereto supersede any other agreement, oral or written, regarding the Property and contain the entire agreement between the City and Developer as to the subject matter hereof. The Exhibits attached hereto and referenced herein are hereby fully incorporated herein by this reference.

10.0 Severability. If any provision of this Agreement shall beheld to be invalid or unenforceable to any extent by a court of competent jurisdiction, the same shall not affect in any respect the validity or enforceability of the remainder of this Agreement.

11.0 Effective Date. This Agreement shall become effective upon approval by the City Council and execution of this Agreement by both parties hereto.

12.0 Recordation. Upon full execution by the Parties and the closing required by Section 3.0, this Agreement shall be recorded in the Public Records of Brevard County, Florida by the City.

13.0 Relationship of the Parties. The relationship of the parties to this Agreement is contractual and Developer is an independent contractor and not an agent of the City. Nothing herein shall be deemed to create a joint venture or principal-agent relationship between the parties, and neither party is authorized to, nor shall either party act toward third persons or the public in any manner, which would indicate any such relationship with the other.

14.0 Sovereign Immunity. Notwithstanding any other provision set forth in this Agreement, nothing contained in this Agreement shall be construed as a waiver of the City's right to sovereign immunity under section 768.28, Florida Statutes, or other limitations imposed on the City's potential liability under state or federal law. As such, the City shall not be liable under this Agreement for punitive damages or interest for the period before judgment. Further, the City shall not be liable for any claim or judgment, or portion thereof, to any one person for more than two hundred thousand dollars ($200,000.00), or any claim or judgment, or portion thereof, which, when totaled with all other claims or judgments paid by the State or its agencies

and subdivisions arising out of the same incident or occurrence, exceeds the sum of three hundred thousand dollars ($300,000.00).

15.0 **City's Police Power**. Developer agrees and acknowledges that the City hereby reserves all police powers granted to the City by law. In no way shall this Agreement be construed as the City bargaining away or surrendering its police powers.

16.0 **Interpretation**. The parties hereby agree and acknowledge that they have both participated equally in the drafting of this Agreement and no party shall be favored or disfavored regarding the interpretation to this Agreement in the event of a dispute between the parties.

17.0 **Third-Party Rights**. This Agreement is not a third-party beneficiary contract and shall not in any way whatsoever create any rights on behalf of any third party.

18.0 **Specific Performance**. Strict compliance shall be required with each and every provision of this Agreement. The parties agree that failure to perform the obligations provided by this Agreement shall result in irreparable damage and that specific performance of these obligations may be obtained by a suit in equity.

19.0 **Attorney's Fees**. In connection with any arbitration or litigation arising out of this Agreement, each party shall be responsible for their own attorney's fees and costs.

20.0 **Development Permits**. Nothing herein shall limit the City's authority to grant or deny any development permit applications or requests subsequent to the effective date of this Agreement. The failure of this Agreement to address any particular City, County, State and/or Federal permit, condition, term or restriction shall not relieve Developer or the City of the necessity of complying with the law governing said permitting requirement, condition, term or restriction. Without imposing any limitation on the City's police powers, the City reserves the right to withhold, suspend or terminate any and all certificates of occupancy for any building, trailer, structure or unit if Developer is in breach of any term and condition of this Agreement.

21.0 **Default.** Failure by either party to perform each and every one of its obligations hereunder shall constitute a default, entitling the non-defaulting party to pursue whatever remedies are available to it under Florida law or equity including, without limitation, an action for specific performance and/or injunctive relief and termination of this Agreement. Prior to any party filing any action as a result of a default under this Agreement, the non-defaulting party shall first provide the defaulting party with written notice of said default. Upon receipt of said notice, the defaulting party shall be provided a thirty (30) day opportunity in which to cure the default to the reasonable satisfaction of the non-defaulting party prior to filing said action.

22.0 **Termination.** In addition to those circumstances allowing termination as already provided herein, the City shall have the unconditional right, but not obligation, to terminate this Agreement, without notice or penalty, if Developer fails to receive building permits and substantially commence vertical construction of the Project, which shall at minimum include building foundations, within two (2) year of the Effective Date of this Agreement. In addition, the City shall have the right, but not obligation, to terminate the Agreement if Developer permanently abandons construction of the Project, provided, however, the City shall first deliver

written notice and an opportunity to cure to the defaulting party as set forth in Section 21.0 above. If the City terminates this Agreement, the City shall record a notice of termination against the Property in the public records of Brevard County, Florida. This Agreement may otherwise be terminated by mutual written agreement of the Parties.

23.0 Indemnification and Hold Harmless. Developer shall be solely responsible for designing, permitting, constructing, operating and maintaining this Project. As such, Developer hereby agrees to indemnify, release, and hold harmless the City and its elected officials, employees and attorneys from and against all claims, losses, damages, personal injuries (including, but not limited to, death), or liability (including reasonable attorney's fees and costs through all appellate proceedings), directly or indirectly arising from, out of, or caused by Developer and Developer's contractor's and subcontractor's performance of design, permit and construction activities in furtherance of constructing the Project under this Agreement and the operation and maintenance of the Project thereafter. This indemnification shall survive the termination of this Agreement.

24.0 Force Majeure. The parties agree that in the event that the failure by either party to accomplish any action required hereunder within a specified time period ("Time Period") constitutes a default under the terms of this Agreement and, if any such failure is due to any unforeseeable or unpredictable event or condition beyond the control of such party, including, but not limited to, acts of God, acts of government authority (other than the City's own acts), acts of public enemy or war, riots, civil disturbances, power failure, shortages of labor or materials, injunction or other court proceedings beyond the control of such party, or severe adverse weather conditions ("Uncontrollable Event"), then, notwithstanding any provision of this Agreement to the contrary, that failure shall not constitute a default under this Agreement and any Time Period proscribed hereunder shall be extended by the amount of time that such party was unable to perform solely due to the Uncontrollable Event. The extended time period shall be agreed to in writing by the parties and said agreement shall not be unreasonably withheld by either party.

25.0 Notice. Whenever either party desires to give notice to the other, notice shall be sent by hand delivery or certified mail, return receipt requested, and shall be sent to:

For the City:
Stockton Whitten
City Manager
City of Cocoa
65 Stone Street
Cocoa, FL 32922

For Developer:

[Insert Contact Information]

Either party may freely modify their respective contact person and address contained in this Paragraph by providing written notice of the modification to the other party. Any Notice given

as provided herein shall be deemed received as follows: if delivered by personal service, on the date so delivered; and if mailed, on the third business day after mailing.

26.0 Assignment. Prior to completing the construction of the Project and reaching final build-out of the Project, Developer shall not assign this Agreement without the prior written consent of the City. Such assignment shall also require the written approval of the City by amendment to this Agreement, which shall not require a public hearing and shall not be unreasonably withheld. However, Developer shall be entitled to assign its rights and obligations under this Agreement to a parent, subsidiary, or affiliated entity in which Developer or its members are members or interest holders without City consent, provided that the City is given notice of such assignment in accordance with Section 28.0 herein. Any assignment authorized by this subparagraph shall require the assignee to be a formal signatory to this Agreement and fully assume all of Developer's obligations, commitments, representations, and warranties under this Agreement. In any assignment, the rights and obligations contained herein shall be binding on successors in interest to the Property, and the terms and conditions of this Agreement shall bind and inure to the benefit of the parties hereto and any respective successors and assigns.

27.0 Compliance with Laws; Planning & Zoning Board Site Plan Conditions. Developer shall be responsible for complying with all applicable laws, ordinances, rules, regulations, and lawful orders of any public authority regarding the construction, location and continued operation of its business within the City of Cocoa. Developer shall also be responsible for complying with all conditions of Site Plan approval imposed by the Planning & Zoning Board.

28.0 Waiver. No failure to insist on the prompt performance by Developer of its obligations under this Agreement shall be construed as a waiver by the City of its rights to demand performance. Further, any waiver by the City of any breach or violation of Developer's obligations under this Agreement shall not be construed as a continuing waiver or consent to any subsequent breach or violation or impede the City's ability to enforce the terms of this Agreement.

IN WITNESS WHEREOF, the parties have hereunto set their hands and seal on the date first above written.

CITY OF COCOA

By: _____
Stockton Whitten, City Manager

Date: _____

Approved by the City Council on January __, 2021.

DRAFT

ATTEST:

By: _____
Carie Shealy, City Clerk, MMC

APPROVED AS TO FORM AND LEGALITY
For the use and reliance of the City of Cocoa, Florida only.

CITY SEAL

Date: _____
By: _____
Anthony A. Garganese, City Attorney for the City of Cocoa, Florida

Signed, sealed and delivered in the presence of the following witnesses:

PROJECT SUNSHINE

_____
Print name and title: _____

_____
Signature of Witness

Date: _____

_____
Printed Name of Witness

_____
Signature of Witness

_____
Printed Name of Witness

STATE OF _____
COUNTY OF _____

The foregoing instrument was acknowledged before me, by means of ☐ physical presence or ☐ online notarization, this _____ day of _____, 2021, by_____, the _____of_____**,** a_____. She/He is personally known to me or produced _____ _____ as identification.

(NOTARY SEAL)

_____
(Notary Public Signature)

_____
(Print Name)
Notary Public, State of _____
Commission No.: _____
My Commission Expires: _____

DRAFT

EXHIBIT A

Legal Description of Property

DRAFT

Kimley»Horn

TECHNICAL MEMORANDUM

To: Bryant Smith III, P.E., CFM

From: Jason A. Lewis, P.E.

Kimley-Horn and Associates, Inc.

Date: 02 December 2020

Subject: Project Sunshine – Floodplain Compensation Feasibility

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Kimley-Horn and Associates, Inc. evaluated the potential environmental, ecological, and financial impacts of providing floodplain compensation for Project Sunshine. In evaluating the existing hydrogeology, ecology, and wetland system of the project boundary, Kimley-Horn designed a project site and stormwater management system that limits potential wetland impact and mitigates potential impact to Florida Scrub Jay habitat. Given the high seasonal high water table, existing wetland system, and scrub jay habitat, floodplain compensation cannot be provided in the traditional “cup-for-cup” method.

During the initial design phase, underground storage was considered for stormwater treatment. However due to the seasonal high groundwater table, this method utilized specialized underground storage chambers that would only provide adequate treatment at a prohibitive cost. Not only did this system have an estimated cost, $3 million, it would require extensive operation and maintenance for the end user.

In leu of encroaching on wetlands and scrub jay habitat, Kimley-Horn designed the stormwater conveyance system to store, treat, and discharge stormwater from the 25-Year/24-HR and 100-Year/24-HR storm events at rates less than or equal to existing runoff patterns. In addition, this stormwater conveyance system is designed to hydrate the surrounding wetland and maintain their hydrographs without impacting staging during storm events.

PROJECT SUMMARY

This proposed project is for the construction of a single story 202,044 sq. ft. single story warehouse distribution center along with the associated parking, utility, stormwater infrastructure. The proposed stormwater management system consists of two (2) wet detention ponds and two (2) dry retention ponds. Conveyance to the stormwater management system is performed via a series of inlets and underground pipes. The site is located on the east side of Grissom Parkway, Cocoa, FL. The site is location within Section 12, Township 24 South, Range 35 East. The subject project area is approximately 101.2 acres.

The subject property is approximately 184.71 acres of undeveloped upland/woodlands and several interconnected wetlands. The pre-development basins account for about 137.35 acres. A significant portion of the property within the property boundary but not proposed to be improved and therefore is not included within the project area.

The property's eastern boundary is an existing detention pond/borrow pit that is approximately 36.6 acres. This pond is the outfall location for the southerly part of the wetland system located within the boundaries of the project area. The wetland system within the project boundary is approximately 28 acres. This wetland system has an average seasonal high water line of 33.5 FT NAVD88.

FINACIAL FEASIBLITY

During the initial design phase, underground storage was evaluated as a potential system for stormwater storage and treatment. Due to the size of the proposed project, seasonal high groundwater level, and lack of land suitable for ponds Contech ® was considered as a potential solution for stormwater treatment. In evaluating the total impervious area, more than 52,000 LF (9.85 miles) of 36" pipe would have been necessary to provide adequate storage and treatment prior to discharging into the existing pond. This system would potentially provide storage for +/-367,566 CF (8.4 AC-FT). This system would have an estimated cost of $3 million initially and continue to cost the client through the years for operation and maintenance. The current wet detention system that is proposed provides 10.51 AC-FT of storage and is more sustainable long term.

SEASONAL HIGH WATER LEVEL

The seasonal high groundwater levels were estimated by Terracon Consultants, Inc. and are included as part of their Geotechnical Report for the project. The seasonal high water level was observed to be at base ground elevation and correspond to the observed high water line around the wetlands (33.5 FT NAVD 88).

Table 1: Groundwater Table Calculation

Pond Name	Average BGE*	Boring No.	Depth to SHWT/CWL**	Estimated SHWT
Pond A (wet)	33.50’	Pond-1, Pond-2	0	33.50’
Pond B (dry)	34.20’	P-58, P-59	0	34.20’’
Pond C (dry)	36.50’	P-56, P-57	0	36.50’
Pond D (wet)	33.50’	Pond-1, Pond-2	0	33.50’

**BGE = Base Ground Elevation (NAVD88)*
***Based on Geotechnical Report by Terracon Consultants, Inc.*

FEMA FLOODPLAIN

Per FEMA FIRM panel 12009C0320G effective March 17, 2014, the project is located partly within FEMA Flood Zone A (See ***Exhibit C*** of Drainage Report). The project will cause minor impacts to this existing flood zone. Consequently, this flood zone area has been modeled in ICPR in both the pre-development and post-development condition to determine if any adverse impacts have been created from the proposed improvements. Specifically, Wetlands A, B, and 5 represent the FEMA Flood Zone A area of the project site (See ***Exhibit C*** of Drainage Report). The model shows these area have peak stages in the post-development condition equal to or less than the peak stage in the pre-development condition for the 100Y 24H storm event, and therefore no adverse impact has been caused by the proposed improvements (See ***Tables 3*** of Drainage Report). This decrease in flood stage is because a significant portion of the existing floodplain basin is now being attenuated within the proposed ponds.

WETLAND IMPACTS

Within the property boundary there is +/- 28.2 AC of wetlands on site. The proposed project will cause some minor wetland impacts, <+/- 5.0 AC. Consequently, these wetland impacts will be accommodated via a wetland mitigation bank. The proposed design does not impact more than 23.5 AC of wetlands and utilizes the proposed stormwater treatment system to not only treat stormwater, but also maintains the hydro-periods of the wetlands. The existing wetland hydrographs have been modeled in ICPR for both the pre-development and post-development condition to analyze and illustrate that no negative impacts are occurring the nearby wetlands. Refer to ***Appendix 1*** of the Drainage Report for Wetland Hydrographs. Refer to ***Section C*** of the Environmental Resource Application and associated documentation for additional details.

SCRUBJAY HABITAT

Within the property boundary there is+/- 16.8 AC of confirmed Florida Scrub Jay (*Aphelocoma coerulescens*) habitat. In addition, there is a potential of +/- 20.6 AC of potential habitat. This habitat is primarily in the undeveloped area of the project boundary that is only utilized for stormwater treatment (See ***Sheet C403*** of design plans). The scrub jay habitat also encompasses the FEMA Flood Zone A area and areas that could potentially be used for floodplain compensation (See ***Figure 1***). In order to not impact confirmed scrub jay habitats, the proposed wet and dry detention ponds are not located in confirmed territory. These stormwater ponds are designed to not overtop during the 100-year storm event and to not discharge into the surrounding wetlands at a faster rate than in the pre-development condition (please see attached Drainage Report).

Legend

PROJECT SITE

SCRUB JAY HABITAT

CONFIRMED TERRITORY

POTENTIAL TERRITORY

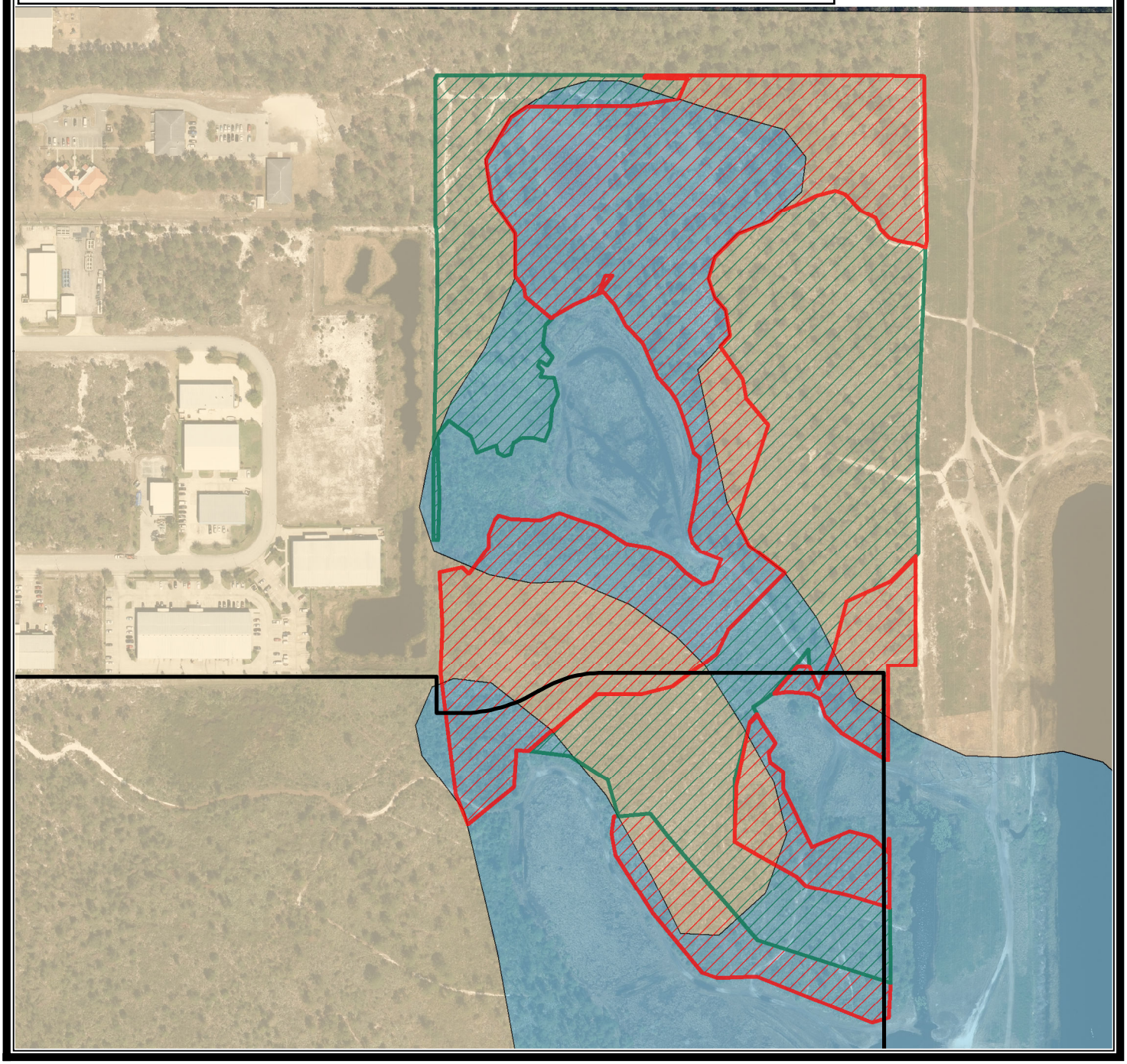
A (Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas; no depths or base flood elevations are shown within these zones.)

X (Area of moderate flood hazard, usually the area between the limits of the 100 year and 500 year floods. B Zones are also used to designate base floodplains of lesser hazards, such as areas protected by levees from 100 year flood, or shallow flooding areas.

N

0 160 320

Feet



SCRUB JAY HABITAT & FEMA BOUNDARY

PROJECT SUNSHINE

DECEMBER 2020

CITY OF COCOA

© 2019 Kimley-Horn and Associates, Inc.

116 South Kentucky Avenue, Lakeland, FL 33801
Phone: 863 701 8702
www.kimley-horn.com CA 00000696

Kimley»Horn