

City of Cocoa

*65 Stone Street
Cocoa, FL 32922*



Meeting Agenda

Wednesday, November 1, 2023

6:00 PM

Cocoa City Council Chambers

Planning and Zoning / Local Planning Agency

I. CALL TO ORDER

ROLL CALL

PLEDGE OF ALLEGIANCE

II. APPROVAL OF AGENDA AND MINUTES:

AGENDA:

1. [23-641](#) Request Approval of the Agenda for the November 1, 2023 Planning & Zoning Regular Meeting on November 1, 2023, either as written or with amendments.

Attachments: [PZ Short Agenda November 1 2023.pdf](#)

MINUTES: None

III. OLD BUSINESS: None

IV. NEW BUSINESS:

1. [23-686](#) Consideration of a Large-Scale Site Plan for the construction of Allegra at Cocoa, a 13-building, 312-unit multi-family residential project located on +/- 53.18 acres of property at the northwest corner of Cox Rd. and US Hwy 524.

Attachments: [Allegra at Cocoa Location.pdf](#)
[Allegra at Cocoa FLU.pdf](#)
[Allegra at Cocoa Zoning.pdf](#)
[Allegra Cocoa Civil Plans.pdf](#)
[Allegra Cocoa Landscape Plans.pdf](#)
[Allegra Cocoa Stormwater Report.pdf](#)
[FPL - Consent Agreement.pdf](#)
[Allegra Comments Geosyntec 2023-10-16 signed.pdf](#)
[23-00200007 BCSB - Concurrency Allegra.pdf](#)
[Traffic Report SS.pdf](#)
[Environmental Report.pdf](#)
[Executed Allegra Development Agreement.pdf](#)
[PZ Legal Ad Allegra2.pdf](#)
[Legal Ad Confirmation.pdf](#)

V. TREE BOARD: None

VI. OTHER BUSINESS:

VII. NEXT MEETING DATE:

The next regularly scheduled meeting of the Planning & Zoning Board will be on Wednesday, December 6, 2023, 6:00 PM at the Cocoa City Hall, 65 Stone Street, Cocoa, Florida.

VIII. ADJOURNMENT

NOTICE TO THE PUBLIC:

This is a public meeting. All interested parties may attend in person. 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.

Additionally, interested persons may view or listen to the meeting electronically at the following internet sites:

(1) <https://tinyurl.com/s5e875r> or

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

However, the City is not responsible for technical difficulties that may occur while attempting to view or listen to the meeting on the internet.

Interested persons may submit their written comments or questions regarding the meeting prior to the meeting through Email at meetings@cocoafl.org, or via E-comments through the online agenda. Any electronic comments submitted will be made part of the meeting record. Written comments or questions not relevant to the Council meeting agenda will not be made part of the meeting record but will be maintained as public record.

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.

Although members of the public are entitled to be heard by the City Council on certain items on the meeting agenda pursuant to the City Council Rules of Procedure, members of the public are not entitled to an immediate response by either administrative staff members or Council; however, the City Council or administrative staff may provide a response at their discretion. When presenting before the City Council, all comments or questions should be directed to the Mayor or the chair of the meeting. Comments or questions should not be made directly to administrative staff without permission from the Mayor or chair.

Public debate by individual speakers from the audience on public hearing items shall be limited to three (3) minutes. Applicants or representatives of recognized groups with special interests in a matter 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 item 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. Matters may also be raised by the Council, City Manager or City Attorney under reports and acted upon by the City Council.

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



Legislation Text

File #: 23-641, Version: 1

**PLANNING & ZONING BOARD/LOCAL PLANNING AGENCY AGENDA
ITEM**

Memo Date: October 6, 2023
Agenda Date: November 1, 2023
Prepared By: Lori Chabot, Recording Secretary
Through: Stacey Hopper, Planner
Requested Action:
Request Approval of the Agenda for the November 1, 2023 Planning & Zoning Regular Meeting on November 1, 2023, either as written or with amendments.

BACKGROUND:

Board Members approve the Agenda at the beginning of the meeting.

BUDGETARY IMPACT:

None

PREVIOUS ACTION:

N/A

RECOMMENDED MOTION:

Request Approval of the Agenda for the November 1, 2023 Planning & Zoning Regular Meeting on November 1, 2023, either as written or with amendments.



CITY OF COCOA
Planning & Zoning Board /
Local Planning Agency
City Council Chambers

Cocoa City Hall
65 Stone Street
Cocoa, FL 32922

AGENDA
Regular Meeting
November 1, 2023
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 November 1, 2023
2. MINUTES: None

III. OLD BUSINESS: None

IV. NEW BUSINESS:

PZ-23-00200007 – Large-Scale Site Plan (Allegra at Cocoa)

- A. Consideration of a Large-Scale Site Plan consistent with Appendix A, Zoning, Article XIII, Section 1, and the RU-2-15 zoning district as provided in resolution 2023-008, owned by John Genoni Trust, to allow construction of a 312-unit residential apartment complex and associated infrastructure improvements and amenities to include clubhouse, community pool, gazebo and dog park on a ±53.18-acre portion of a site identified as Parcels 24-35-23-00-755, and 24-35-23-00-11 through the Brevard County Property Appraiser.

V. TREE BOARD: None

VI. OTHER BUSINESS:

Planning and Zoning Board Open Discussion

VII. NEXT MEETING DATE:

Wednesday, December 6th at 6:00 pm

VIII. ADJOURNMENT

General Notice Information:

Stay Connected: www.CocoaFL.org



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 BOA, 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 BOA or 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 BOA, PZ Board/LPA and City Council reserve the right to continue or postpone hearings to a date certain without re-advertising.

Public Participation 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>

Documents pertaining to the above may also be inspected at the Community Services Department, between 8:00 a.m. and 5:00 p.m., Monday through Friday, or by phoning (321) 433-8535.

Interested persons may submit their written comments or questions prior to the meeting through Email at meetings@cocoafl.org, or via E-comments through the online agenda at the link above. Any electronic comments submitted will be made part of the meeting record.

Viewing In Real Time. Interested persons are encouraged to view and listen to the hearings live by accessing the meetings at the following internet address:

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

However, the City is not responsible for technical difficulties that may occur while attempting to view or listen to the meeting on the internet.

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 the quasi-judicial hearing is highly encouraged to immediately contact Stacey Hopper or Lucilene Ribeiro, Planning and Zoning, at (321) 433-8451 or 8535 shopper@cocoafl.gov or lribeiro@cocoafl.org to make proper arrangements for presentation of witnesses and/or evidence. All witnesses should be identified and all evidentiary documents and exhibits that are intended to be distributed to the BOA, P&Z/LPA and City Council should be submitted to Ms. Hopper or Ribeiro via email or mail at least three (3) days prior to the hearing.



Legislation Text

File #: 23-686, Version: 1

**PLANNING & ZONING BOARD/LOCAL PLANNING AGENCY AGENDA
ITEM**

Memo Date: November 1, 2023
Agenda Date: November 1, 2023
Prepared By: Stephen Noto
Through: Stockton Whitten - City Manager
Requested Action:

Consideration of a Large-Scale Site Plan for the construction of Allegra at Cocoa, a 13-building, 312-unit multi-family residential project located on +/- 53.18 acres of property at the northwest corner of Cox Rd. and US Hwy 524.

BACKGROUND:

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Request:

- The applicant, Mr. Jeremy Mears, Artesia at Cocoa LLC, is requesting a Large-Scale Site Plan for the construction of Allegra at Cocoa, a 13-building, 312-unit multi-family residential project located on +/- 53.18 acres of property at the northwest corner of Cox Rd. and US Hwy 524. The project will have a mixture of one- and two-bedroom unit types, a clubhouse, and related amenities. The subject property has Brevard County Parcel ID numbers: 24-35-23-00-11
- 24-35-23-00-775

Future Land Use Designation:

Current: Medium Density Residential (MDR) and Commercial (COMM)

Zoning District:

Current: Single-Family Residential (RU-1-7) and General Commercial (C-G)

Existing Land Use:

Vacant Commercial Land

Council District:

District 3 - Councilmember Barringer

Legal Ad Date:

October 16, 2023

Overview of Surrounding Area:

	Future Land Use Designations	Zoning Districts	Land Uses
North	Brevard County: RES-1, Residential 1 DU/Acre	Brevard County: RR-1 (Rural Residential), AU (Agricultural Residential), GU, General Use	Retail Stores/Mixed-Use Commercial Property
South	Brevard County: RES-1, Residential 1 DU/Acre	Brevard County: RR-1 (Rural Residential), GU, General Use	Restaurant/ Professional Building
East	COMM (Commercial)	C-N (Neighborhood Commercial), C-G (General Commercial)	Professional Office Building/Vacant Commercial Land
West	Brevard County: RES-1, Residential 1 DU/Acre	Brevard County: AU (Agricultural Residential)	Office Building/Retail Stores/Mixed-Use Commercial Property

Background:

On January 10, 2023, the City Council approved Resolution 2023-008, acknowledging receipt of an application filed with the City for an Affordable Housing Land Use for a project located on the Subject Property. The Resolution also allowed for the development of an Affordable Housing Land Use project to occur on property zoned Commercial and Single-Family Residential.

As outlined in the Resolution, Section 166.04151, Florida Statutes, allows the governing body of a municipality to approve housing that is affordable, as defined in Florida Statute 420.0004, on any parcel that is zoned for commercial use, so long as at least 10 percent of the units included in the project are for housing that is affordable. The Statutes define “affordable” to mean that monthly rents or monthly mortgage payments, including taxes, insurance, and utilities do not exceed 30 percent of the amount which represents the percentage of the median adjusted gross annual income for households of “extremely-low-income-persons”, “low-income persons”, “moderate income persons”, or “very-low-income persons” as defined in the statute.

The Resolution was approved with the condition that the project does not exceed 312 multi-family units, and that the project meet the requirements of the RU-2-15 zoning district, and the “affordable” housing standards set forth in Section 166.04151, Florida Statutes. Resolution 2023-008 has been

attached to this staff report for reference.

Pre-Development Agreement and Restrictive Covenant

On July 25, 2023, the City Council approved a Pre-Development Agreement and Restrictive Covenant that the Developer sought for certain waivers from the City Code for the project. The Developer sought a waiver of the Tree Mitigation Contribution requirements of the City Code and a waiver to the minimum unit size requirement of the City Code, from 800 square feet per one-bedroom unit to 660 square feet per one-bedroom unit, for a maximum of 80 units.

In consideration of the waivers, the Developer is required to do the following:

- Convey to the City the entirety of Tax Parcel Number 24-35-23-00-775 and the portion of Tax Parcel Number 24-35-23-00-11 as depicted on "Exhibit B" to the Agreement, which is approximately 11.5 acres.
- Maintain the Project as an affordable housing project for a period of thirty (30) years, which means that, at minimum, ten percent (10%) of the occupied units in the Project will be affordable housing as provided and defined in Florida law. The Developer will be required to submit copies of tenant income verification and applicable leases to the City of Cocoa yearly to ensure compliance with this requirement.
- Reserve a minimum of three (3) one- or two-bedroom apartment units for City law enforcement officers or first responders to be rented at a 25% discounted rate, to be made available on a first come, first serve basis, at the time of initial leasing until there are no other apartments available in the Development. In addition, the Developer shall provide a lease preference above other tenant applicants to City law enforcement officers and firefighters, along with EMS/Paramedics and Brevard County school teachers teaching within the City limits, on a first come, first serve basis so long as it does not violate Federal Housing statutes.

An additional tree mitigation waiver was approved as part of the Agreement, and it is detailed further in the landscaping analysis portion of this staff report.

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 Development Review Committee, consisting of the Building Official, the Code Enforcement Manager, the Environmental Control Coordinators, the Fire Department Chief and/or Inspector, the Planning & Zoning Manager and/or staff, the Public Works Director, and the Utilities Director, have reviewed the site plan and determined that it generally meets the minimum requirements of all applicable City Code requirements. In addition, the site plan meets the requirements of the previously referenced Pre-Development Agreement and Restrictive Covenant.

Site Plan Data

The site is 53.88 acres overall with 13 acres of developed project area. The lot coverage is 20.66% (maximum 40%) and the total impervious ratio is 16.79% (maximum 65%). The project density is 6 units per acre (maximum 15).

Setbacks

Building Setbacks		
Location	Required	Provided
Front (SR 524 and Cox Rd.)	25'	30'
Rear (north)	20'	20'

Proposed Buildings

As shown on Sheet C-201 of the site plan submittal, the impervious area for the project is directed to the east of the site. This is due to an FPL Easement and wetlands located on the western side of the site. Of the thirteen (13) apartment buildings, five (5) are situated on the southeast side, while the remaining eight (8) are located on the northern side of the site. The clubhouse is also situated on the southeast side, along with three separate garage buildings. The clubhouse includes outdoor amenities, including a pool and fitness center. Five (5) other garage buildings are adjacent to the northern property line.

There are two different type of apartment buildings, however each will be 3-stories tall, at a height of 30'-3-1/2". The individual garage buildings will be 14' tall, and the clubhouse will be 17' tall.

Parking

The project is required to provide 526 standard parking spaces and 12 handicapped parking spaces. The site plan provides 562 standard parking spaces, 39 of which are provided for in detached garages, and 13 handicapped parking spaces.

Landscaping and Open Space

The northern property boundary will have a 20' landscape buffer, with bald cypress trees planted every 50 feet, for a total of 23 trees. There will also be a mixture of Japanese Blueberry and Holly Oakleaf trees adjacent to the detached garage buildings. The buffer adjacent to SR524 exceeds 600' in length, and requires a similar planting standard of one tree for every 50' linear foot. As such, 14 Southern Magnolias, a hedge row, and groundcover are proposed adjacent to the SR 524 ROW.

The Pre-Development Agreement provides for Tree Mitigation standards as follows:

Tree removal and land clearing shall be in accordance with the Site Plan, which shall at a minimum require the planting of 350 replacement trees totaling 993 inches on the Property, specifically 506 inches of large trees, 379 inches of medium or small tress, and 108 inches of palm trees. Developer and the City agree that the Developer's tree mitigation contribution for the remainder of the trees on the Property that are proposed for removal and will not be replaced, as would ordinarily be required by Appendix A, Zoning, Article XIII, Section 22 of the City Code and calculated in accordance with such

Section, (the **"Tree Mitigation Contribution"**) shall be waived by the City provided that the Developer satisfies the following conditions:

- (i) the Developer conveys the Conveyance Parcel, as defined in Section 5.0, below, to the City;

- (ii) the Developer maintains the Project as an affordable housing development as provided in Section 7.0 below for the requisite period of thirty (30) years;
- (iii) the Planning and Zoning Board approves the Site Plan within eighteen (18) months of the Effective Date of this Agreement; and
- (iv) the Developer obtains building permits for the Project and substantially commences vertical construction of the Project, which shall at minimum include building foundations, within two (2) years of the Effective Date of this Agreement.

If the Developer fails to obtain Site Plan approval from the City or fails to obtain building permits and substantially commence vertical construction of the Project within the aforesaid eighteen (18) months or two (2) years, respectively, or fails to satisfy any of the conditions of this Section, the City shall have the right to declare the Developer in default pursuant to Section 25 .0 of this Agreement. If the Developer does not cure the default within the cure period, the City shall have the right, but not obligation to, terminate this Agreement without penalty and/or immediately take any and all actions necessary to collect the entire Tree Mitigation Contribution to the extent the trees have been removed not to exceed \$945,000.00.

Additionally, to the extent that the City Code, Appendix A - Zoning, Article XIII, Section 22 Landscape Requirements, is amended prior to the end of the thirtieth year following the issuance of the certificate of occupancy such that the total amount of the Tree Mitigation Contribution would be reduced below \$945,000.00 under the amendment, the Developer may request, in writing, that the City Manager or his or her designee recalculate and decrease the Tree Mitigation Contribution. Recalculations authorized in this Section may be administratively granted without further approval of the City Council. Notwithstanding the foregoing, the City shall not issue refunds for any Tree Mitigation Contribution payments paid prior to the adoption of an amendment to the City Code.

The applicant is provided 407 trees in total (classified as large, medium & small, and palm trees) as shown on Sheet LD-01. A total of 1,473 inches are being planted. Both the total number of trees and inches exceed the minimum required by the Agreement.

As noted previously, the Applicant is conveying to the City +/- 11.5 acres of property as shown on Sheet C-201 of the Overall Site Plan. This area consists of multiple areas of wetlands, general open space, and a proposed detention pond. With the remaining 42.36 acres, the following usable common open spaces and recreation areas are provided:

- Conversation Area & Walking Path: 6.78 acres
- Open Space Area #2: 1.79 acres
- Dog Park: 0.24 acres
- Clubhouse & Pool: 0.92 acres
- Pavilion: 0.15 acres

These areas total 9.88 acres, which exceeds the 10% minimum of 4.24 acres required, less the conveyance parcel.

Infrastructure

Water will be provided via an existing 36" concrete pipe that exists in the SR 524 ROW. A 3" master

meter will be installed adjacent to the southeastern property line, parallel to SR524.

A private lift station is proposed adjacent to Building #1 on the northeast portion of the site. A connection will be made to an existing force main located within the SR 524 ROW. Private sewer lines will then run within the development to each individual apartment building, and the clubhouse.

Geosyntec Consultants (Geosyntec) completed their review of the project and coordinated with City staff based on concerns with the initial submittal and resubmittal. However, after the final review was completed, provided the following remaining comment, which is a non-issue:

- "It was noted that the comparison of the pre- and post-development condition 100 year / 24 hour model BFE indicated slightly higher post-development elevations at three locations outside of the proposed development (up to 0.04 feet). However, the pre- and post-development differences are considered de minimis for the purposes of floodplain management."

Environmental Study

An Environmental Impact report was prepared for the project. A variety of wetland habitats were observed; however, no protected species were found on site. As such, the project meets the Objectives and Policies in the Comprehensive Plan related to the protection of wildlife.

Compensating Storage

Comprehensive Plan Policy 6.1.3.6 states, "Except as provided in Future Land Use Element Policy 1.1.2.7 (H), flood control for new development will be accomplished through the limitation of fill in the 100-year floodplain when economically feasible. In cases where there is no practical alternative to fill in the 100-year floodplain, 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 this case, per the Applicant, the project site is the headwater for the floodplain it partially resides within. The project stormwater ponds have been modeled to attenuate the 100-year storms in addition to those required by the City and SJRWMD. Therefore, compensatory storage and potential impact on the floodplain is offset by the reduction in discharge and detention volume onsite.

Consistency with Comprehensive Plan Policies and Objectives

Comprehensive Plan, Policy 1.1.2.4: Medium Density Residential (MDR)

Medium density residential areas shall be regarded as areas of moderate density detached and attached housing. The following criteria shall be used for determining appropriate locations for medium density residential areas:

- A. Medium density residential areas shall have access to a minor collector street, and preferably, to a major collector street, or one of a higher functional classification.*

The subject property will be accessed from State Road 524. The City of Cocoa Comprehensive Plan Functional Roadway Classification Map identifies State Road 524 as an arterial road, which is a higher functional

classification than a collector road.

B. These areas should have convenient access to community services.

The proposed development is convenient to community services. Junny Rios Martinez Park is just over 1/2 mile to the northeast of the subject property. Cocoa Fire Station #3 is roughly 1.17 miles northeast of the subject property. The Cocoa Conversation Area is also located at the southeast corner of SR 524 and Cox Rd.

C. New developments approved in accordance with the comprehensive plan shall provide amenities to include open space and buffering as required in the City's Land Development Regulations.

The proposed site plan notes that there will be a landscape buffer along the site boundary with SR 524. Along SR 524, the short wall of Building #13 is 30' from the property line, Building #1 is 65', and the clubhouse is 100'. The northern property line has a 20' setback from the 1-story garage buildings, with each apartment building roughly 100' from the property line.

As provided in Section 5 of the Development Agreement, the entirety of Tax Parcel 24-35-23-00-775 and a portion of 24-35-23-00-11, which in sum total +/- 11.5 acres, will be Conveyed to the City for conservation. As mentioned above the project will provide amenities for residents including a clubhouse, pool, fitness center, and a dog park.

Comprehensive Plan, Policy 3.1.2.5:

The City shall continue its proactive code enforcement program to monitor the conditions of the City's housing stock, reduce the amount of substandard housing, discourage boarded-up buildings, increase the number of affordable units, and preserve available housing stock using city, county, state or federal funds as available and within the scope of funding capabilities.

Comprehensive Plan, Policy 3.1.6.1:

The City shall establish and maintain zoning classifications which allow for flexibility in land use design, density, housing types, and price levels to preserve affordable housing and residential neighborhoods, and allow for appropriate land use mixes for very low income, low income, and moderate income households, mobile homes, manufactured homes, group homes and foster care facilities, and households with special needs including rural and farm worker households.

Policy 3.2.4.10

The City will support programs and partnerships with the private and non-profit sectors to improve coordination among participants in housing production to preserve, improve, and produce affordable housing through means such as providing grants for land acquisition for production of affordable housing; waiving or subsidizing impact, hook-up, or permitting fees; providing technical assistance; streamlining the permitting and inspection process; providing landscaping or infrastructure improvements to support residential development and rehabilitation; providing density bonuses; or providing funding for capacity building.

Policy 3.3.1.4:

The City shall continue to provide incentives to developments with affordable housing and workforce housing units. These incentives could include, but are not limited to, increased densities; a streamlined permitting processes to prevent delays; flexible development regulations; and deferment, subsidy and/or waiver of building permit fees, impact fees and inspection fees.

Via the Developer's Agreement referenced in this staff report, the City utilized existing land use law construct to create a unique zoning instrument to allow for a mixed-income housing development to occur on land with mixed zoning and future land use categories. These strategies did not require the City to utilize any additional tax incentives to achieve the project goals.

Concurrency Management/Adequate Public Facilities

Wastewater

The Level of Service (LOS) for wastewater is 319 gallons per day per household, based on the 312 units, the projected demand on the wastewater system is 99,528 gallons per day.

The Sellers Plant is currently permitted to treat 4.0 mgd of wastewater. The maximum peak flow over the past three months was 3.83 mgd with typical daily average flows of 2.0 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.

The project as designed does meet the LOS requirements of the Comprehensive Plan.

Potable Water

The LOS for potable water is 122 gallons per capita per day (gpcd} per household. Based on the U.S. Census American Community Survey, 2017-20201, there are approximately 2.40 person per household. Thus, the average demand per household is estimated at 293 gpcd and based on the 312 proposed dwelling units the overall demand is 91,354 gpcd.

The Dyal Plant provides potable for the City of Cocoa service area and it is currently permitted to operate at 39.8 million gallons per day (mgd). The maximum average daily flow over the past twelve months is 24.61 mgd with typical average daily flows of 18.99mgd. 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 residential collection LOS shall be 2 times per week per household 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 SR524 is D.

Per the Transportation Study provided by the application, "the proposed multifamily residential development is anticipated to generate 2,075 daily trips, 119 AM peak hour trips (29 inbound/ 90 outbound), and 156 PM peak hour trips (98 inbound/ 58 outbound).

Roadway segment analyses performed for the existing (2022), background (2023), and buildout (2023) conditions conclude that all roadway segments within the study area operate at an acceptable level of service (LOS) in the Daily and PM peak hour conditions and have adequate capacity for the future buildout conditions. Operational analyses performed at study area intersections and driveways conclude that all study intersections operate at an acceptable LOS with v/c ratios less than one (1.0) during the existing (2022), background (2023), and buildout (2023) conditions. No deficiencies were identified as a result of project traffic impact at project buildout."

That said, the City has been tracking transportation LOS issues on SR 524 between I-95 and Industry Rd., and as a result, the City Council recently adopted Ordinance No 14-2023, which repealed the LOS standards of SR 524 as the City has no control over the schedule and construction of improvements on SR 524 due to its status as a State road. The City was able to do this as HB 7207, adopted in 2011, allowed local governments to render transportation concurrency optional. The City is going to continue to coordinate with developers, the State, and the Space Coast Transportation Planning Organization (SCTPO) to ensure that improvements occur to SR 524 in a timely manner given that the corridor continues to attract more development. In addition, the City will be earmarking the current and future impact fee funds towards the design and construction of improvements to SR 524, as well as seeking out assistance from the County and/or SCTPO for matching funds, and petition FDOT for matching funds as well.

Recreation

The Level of Service (LOS) for Recreation is 1.25 acres per 1,000 population.

Pursuant to the City of Cocoa Comprehensive Plan EAR (October 2010) Data and Analysis, there exists a surplus of 118.34 acres of parks, which was determined to be more than sufficient to meet the needs of the citizens through 2020. The City's current population is 19,559 which requires 24.45 acres of park and recreation facilities. The EAR identified the City as having 323.58 acres (including the 165.09 acres Cocoa Conservation Area) available for residents. Thus, the City has sufficient recreation/parks to support the project and maintain the adopted LOS.

Schools

A School Impact Analysis Capacity Determination was provided by the School Board of Brevard County. The following impact rates were utilized:

Multi-Family Homes 312			
Students Generated	Student Generation Rates	Calculated Students Generated	Rounded Number of Students Generated
Elementary	0.11	34.32	34
Middle	0.02	6.24	6
High	0.05	15.6	16
Total	0.18		56

The letter noted that Saturn Elementary School, and Cocoa Jr./Sr. High School are projected to have enough capacity for the total of projected and potential students from the Allegra at Cocoa development. The letter further noted that it was a non-binding review, and that a *Concurrency Determination* must be performed by the School District prior to a Final Development Order and the issuance of a Concurrency Evaluation Finding of Non-deficiency by the Local Government. This requirement is noted as a Condition of Approval.

BUDGETARY IMPACT:

N/A

PREVIOUS ACTION:

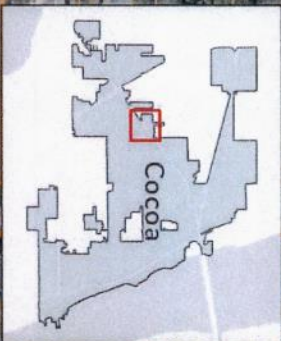
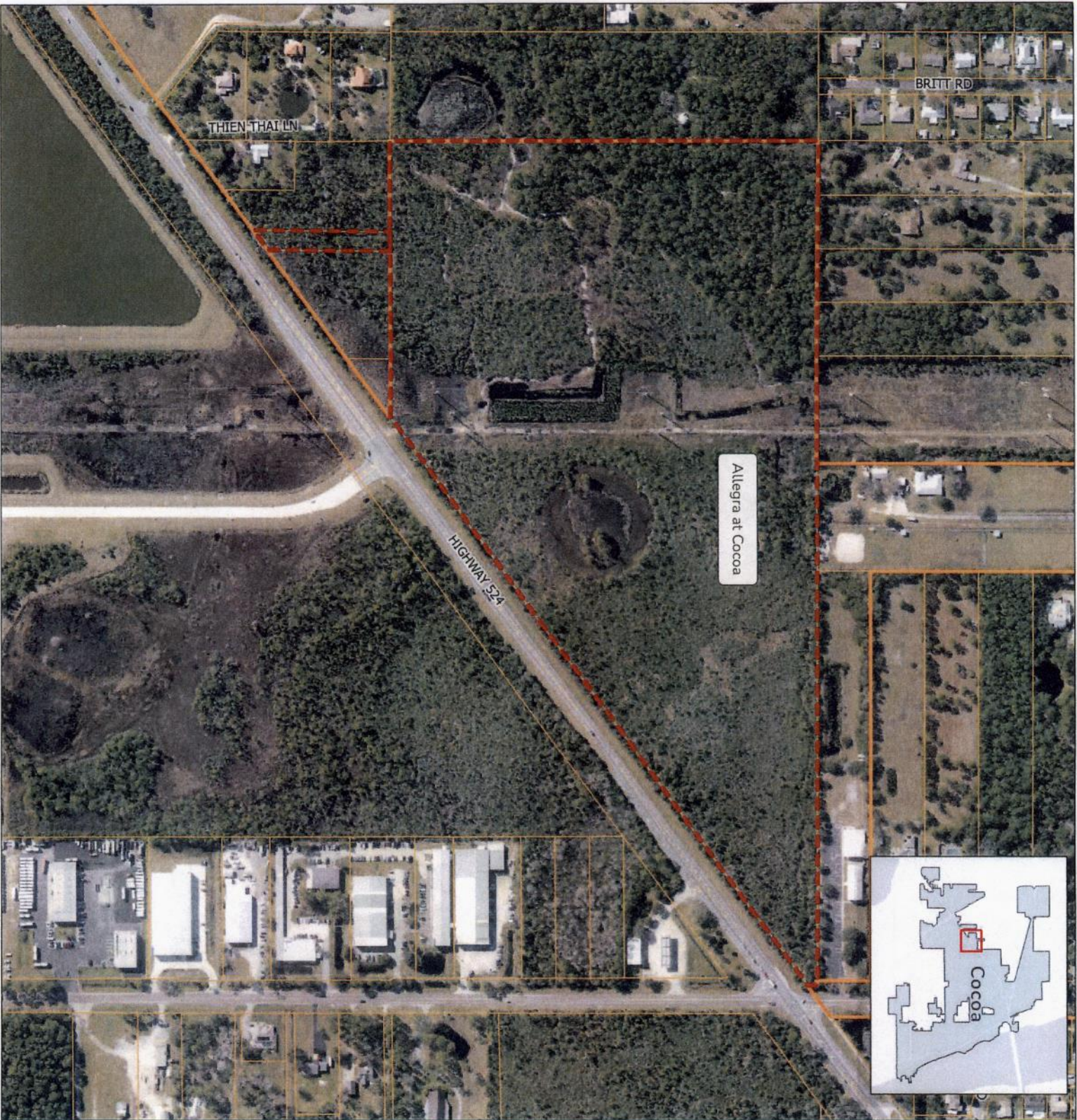
N/A

RECOMMENDED MOTION:

Staff recommends APPROVAL of the Large-Scale Site Plan for Allegra at Cocoa with the following conditions:

1. Per the School Impact Analysis Capacity Determination, CD-2023-38, a *Concurrency Determination* must be performed by the School District prior to a Final Development Order and the issuance of a Concurrency Evaluation Funding of Non-deficiency by the Local Government.
2. Prior to receiving any certificate of occupancy, the Developer shall meet its obligations to the City as outlined in the Pre-Development Agreement and Restrictive Covenant.
3. Site Plan approval shall be conditioned upon the sale of the subject property to Allegra at Cocoa, LLC, being completed and closing occurring within one year of the Effective Date of the Pre-Development Agreement and Restrictive Covenant, dated September 14, 2023, or as otherwise extended by the City Council.
4. Prior to the issuance of building permits, the Developer shall provide a satisfactory conservation easement that permits the Minimum Activities identified in the Pre-Development Agreement and Restrictive Covenant to take place on the portion of the

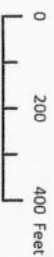
property to be conveyed to the City.



ALLEGRA AT COCOA LOCATION

October 19, 2023

-  Subject Parcels
-  Parcels
-  Cocoa City Boundary



P20231016-89001.0.1

BRITT RD

THIEN THAI LN

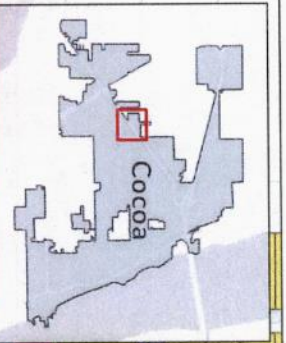
RU-1-7

Allegra at Cocoa

C-G

RR-1

HIGHWAY 524



M-1

M-1

RU-1-7



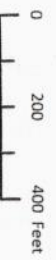
ALLEGRA AT COCOA ZONING

October 19, 2023

 Subject Parcels

Cocoa Zoning

-  RR-1 - Rural
-  RU-1-7 - Single-Family Residential
-  RU-2-15 - Multiple Family Dwelling
-  C-N - Neighborhood Commercial
-  C-G - General Commercial
-  UMD - Urban Mixed Use
-  M-1 - Light Industrial and Warehouse
-  Parcels
-  Cocoa City Boundary



P20231016-89001.0.2



ALLEGRA AT COCOA FUTURE LAND USE

October 19, 2023

 Subject Parcels

Future Land Use

Very Low Density
Residential

Low Density
Residential

Medium Density
Residential

Commercial

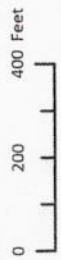
Industrial

Conservation

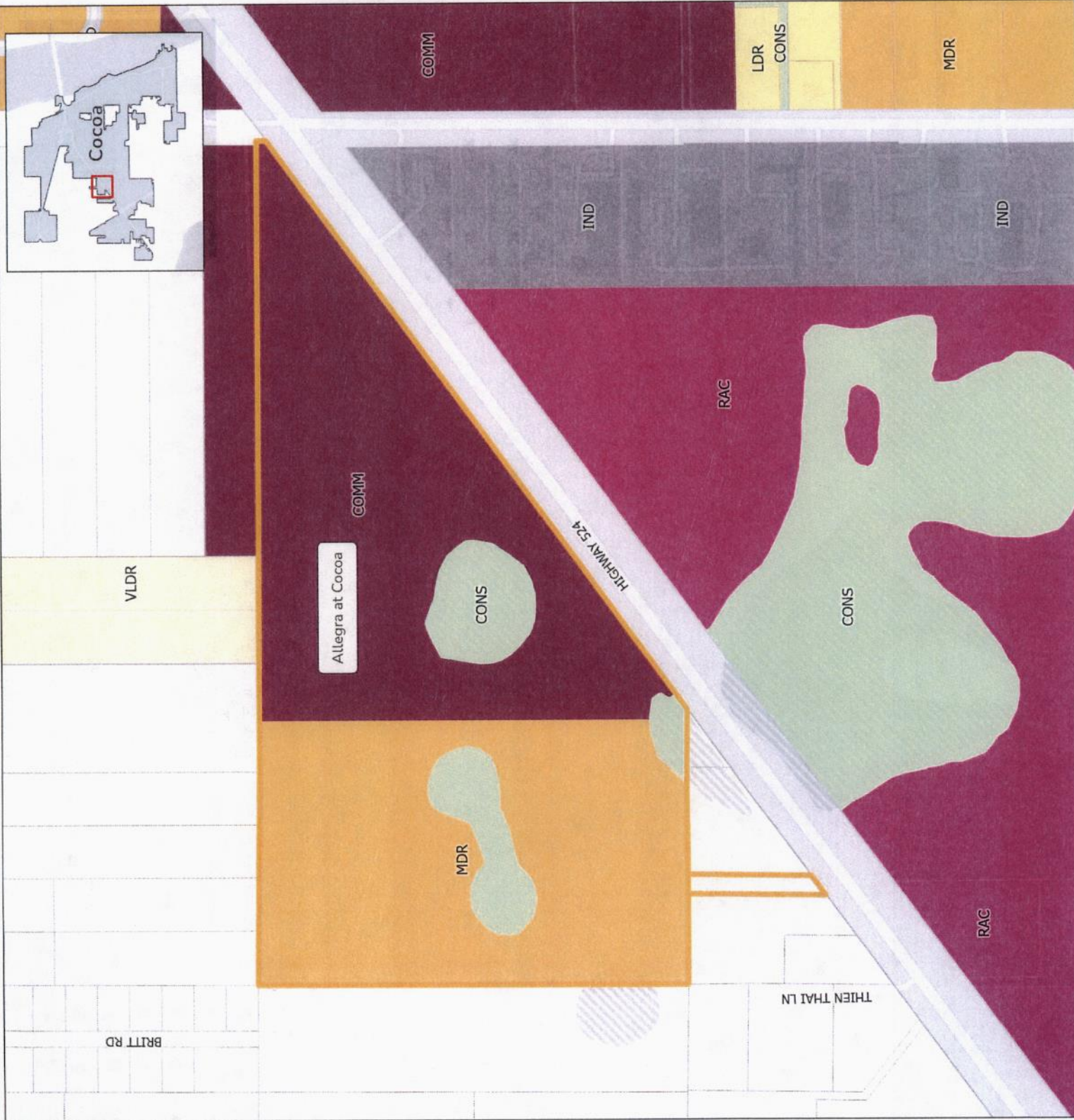
Regional Activity
Center

Parcels

Cocoa City
Boundary



P20231016-89001.0.3



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OWNER: **ALLEGRA**

DATE: **10/15/2021**
 DESIGNED BY: **LIBRA**
 DRAWN BY: **LIBRA**
 CHECKED BY: **LIBRA**
 PROJECT APPROVAL: **LIBRA**

ALLEGRA
at Cocoa
Cocoa, FL



PROJECT: **ALLEGRA**



JOB NO.: **21115**
 DESIGNED BY: **BD**
 DRAWN BY: **JD**
 CHECKED BY: **BD**
 PROJECT APPROVAL: **BD**

OVERALL
TREE REMOVAL
PLAN

TR-00

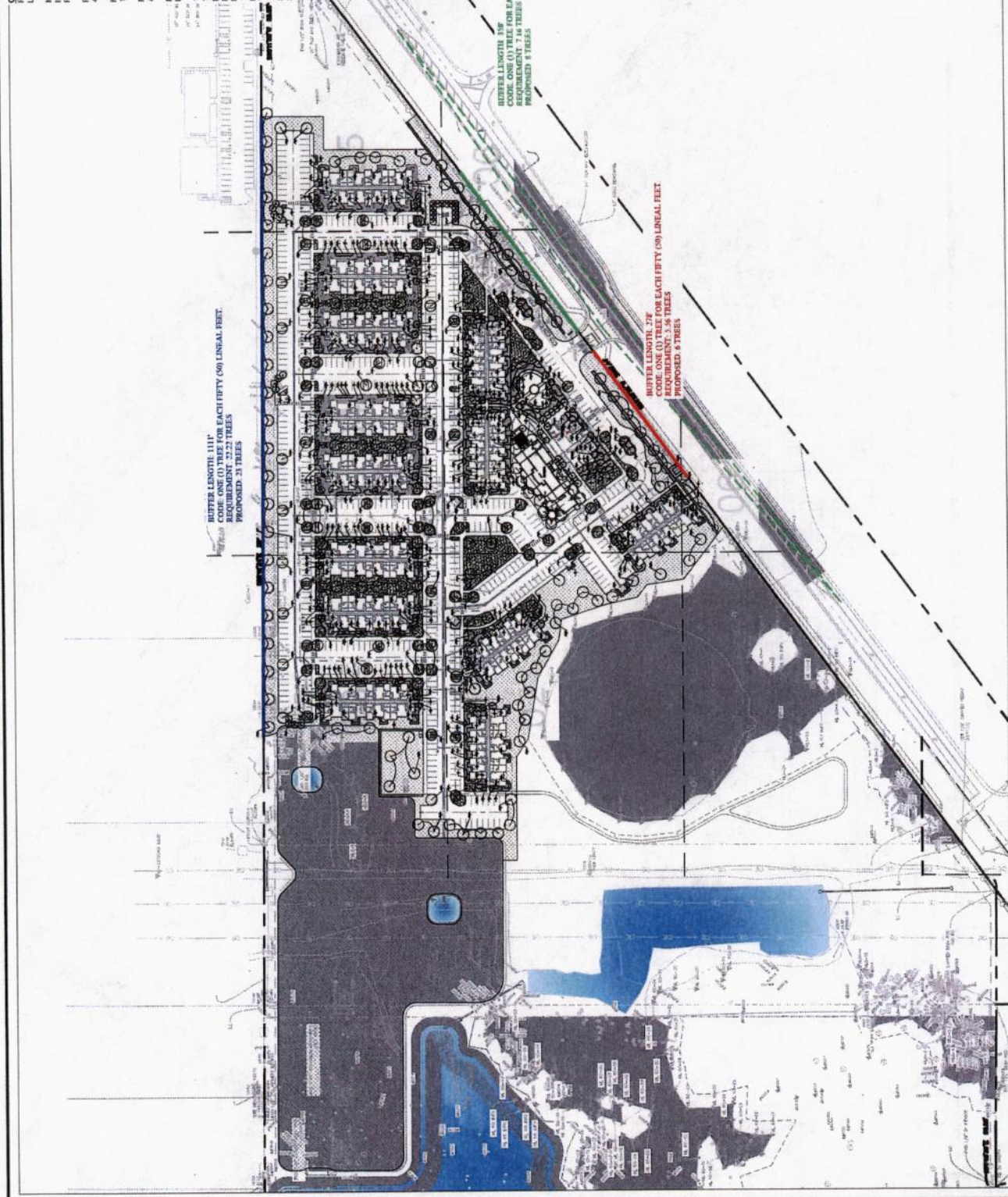


TREE REMOVAL CALCULATIONS
TREE INCHES REMOVED POND: 12,000"
TREE INCHES REMOVED APARTMENTS: 2,898"
TREE INCHES PRESERVE APARTMENTS: 799"
TREE INCHES REQUIRE MITIGATION: 14,199"
TREE INCHES PROPOSED: 1,473
TREE INCHES REQUIRED MITIGATION TOTAL: 12,646"
TREES PRESERVED IN UNDEVELOPED: 12 ACRES

**CITY LANDSCAPE REQUIREMENTS
REQUIRED INTERIOR PARKING AREA
LANDSCAPING:**

- MINIMUM REQUIREMENT 10 S.F.
- INTERIOR LANDSCAPE PER EACH PARKING SPACE: 430 SPACES
- REQUIRED INTERIOR LANDSCAPE: 4,300 S.F.
- PROPOSED INTERIOR LANDSCAPE: 13,244 S.F.
- REQUIRED SEPARATE LANDSCAPE AREAS WITH TREE: 88
- PROPOSED TREES IN SEPARATE LANDSCAPE AREAS WITH TREE: 88
- LANDSCAPE TREES NOT LESS THAN ONE (1) FOR EACH ONE HUNDRED (100) SQUARE FEET OR HUNDRED (100) SQUARE FEET OR MORE OF LANDSCAPED INTERIOR LANDSCAPE: 44
- PROPOSED TOTAL NUMBER OF TREES: 88

SOD WILL BE INSTALLED ON SLOPES TO STABILIZE SOIL



ISSUED	DATE
REVISED	DATE
REVISED	DATE
REVISED	DATE
REVISED	DATE

ALLEGRA
at Cocoa
Cocoa, FL



**OVERALL
TREE LANDSCAPE
PLAN**

LA-00

JOB NO: 21115
DESIGNED BY: BD
DRAWN BY: JD
CHECKED BY: BD
PROJECT APPROVAL: _____
TITLE

SCALE: IN FEET
0 10 20 30 40 50 60 70 80 90 100

**OVERALL
TREE LANDSCAPE
PLAN**

LA-00

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DATE: 02/14/13
DRAWN BY: J. BARNES
CHECKED BY: J. BARNES
PROJECT NO: 13-001

ALLEGRA
at Cocoa
Cocoa, FL



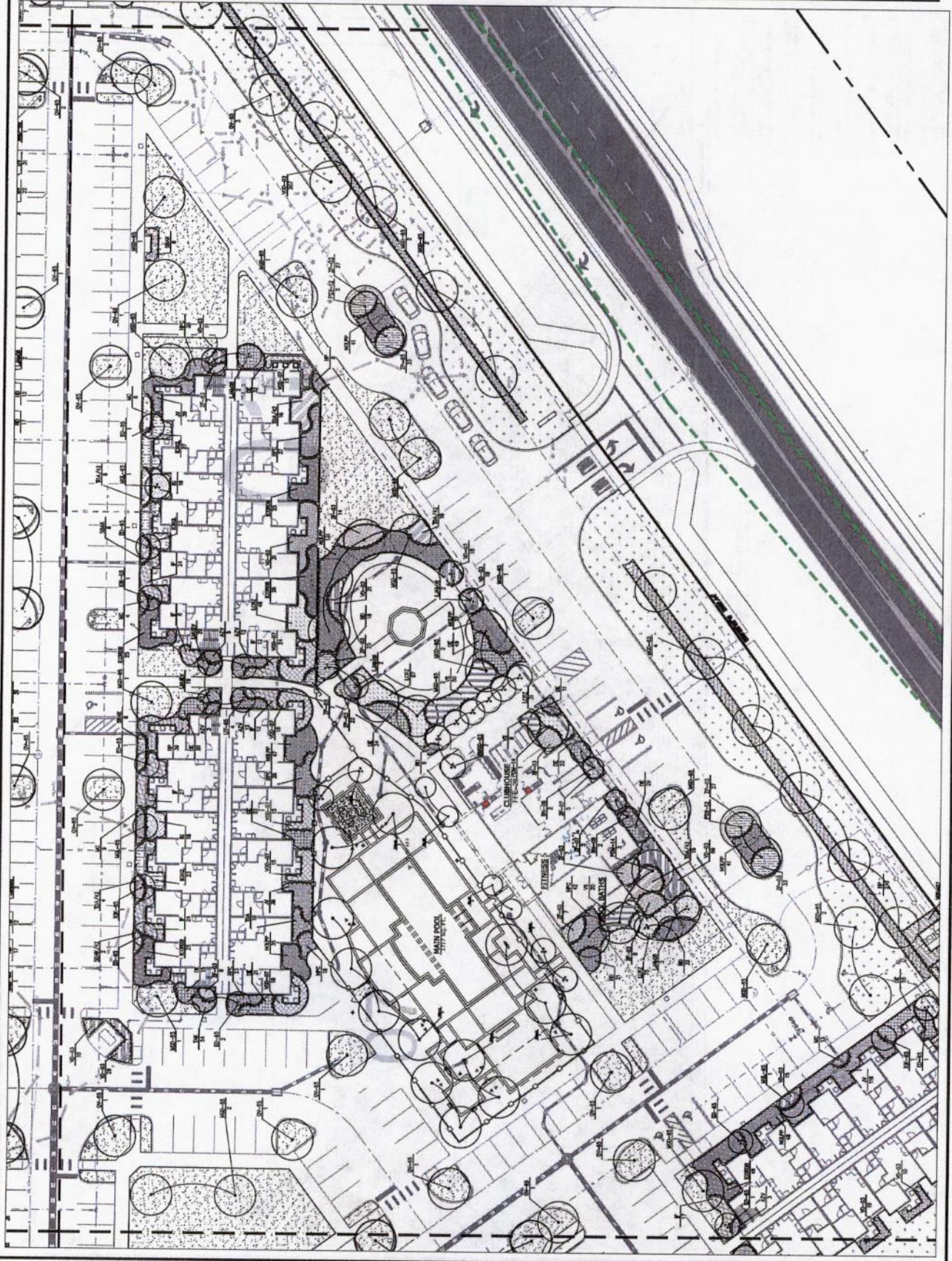
John F. Taylor, L.A.S. 13549



JOB NO.: 21115
DESIGNED BY: JB
DRAWN BY: JB
CHECKED BY: JB
PROJECT APPROVAL: JB
TITLE:

LANDSCAPE
PLAN

LA-01



LIBRA
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DATE: 08/20/23

DESIGNED BY: BRITTON F. DAVIS

DRAWN BY: BRITTON F. DAVIS

CHECKED BY: BRITTON F. DAVIS

PROJECT APPROVAL: BRITTON F. DAVIS

SCALE: 1" = 20'

DATE: 08/20/23

DESIGNED BY: BRITTON F. DAVIS

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CHECKED BY: BRITTON F. DAVIS

PROJECT APPROVAL: BRITTON F. DAVIS

SCALE: 1" = 20'

DATE: 08/20/23

ALLEGRA
4000 E. US Highway 1
Orlando, FL 32817



Britton F. Davis, Landscape Architect

No. 12000003, State of Florida

DATE: 08/20/23

DESIGNED BY: BRITTON F. DAVIS

DRAWN BY: BRITTON F. DAVIS

CHECKED BY: BRITTON F. DAVIS

PROJECT APPROVAL: BRITTON F. DAVIS

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DATE: 08/20/23

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PROJECT APPROVAL: BRITTON F. DAVIS

SCALE: 1" = 20'

DATE: 08/20/23

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DRAWN BY: BRITTON F. DAVIS

CHECKED BY: BRITTON F. DAVIS

PROJECT APPROVAL: BRITTON F. DAVIS

SCALE: 1" = 20'

DATE: 08/20/23

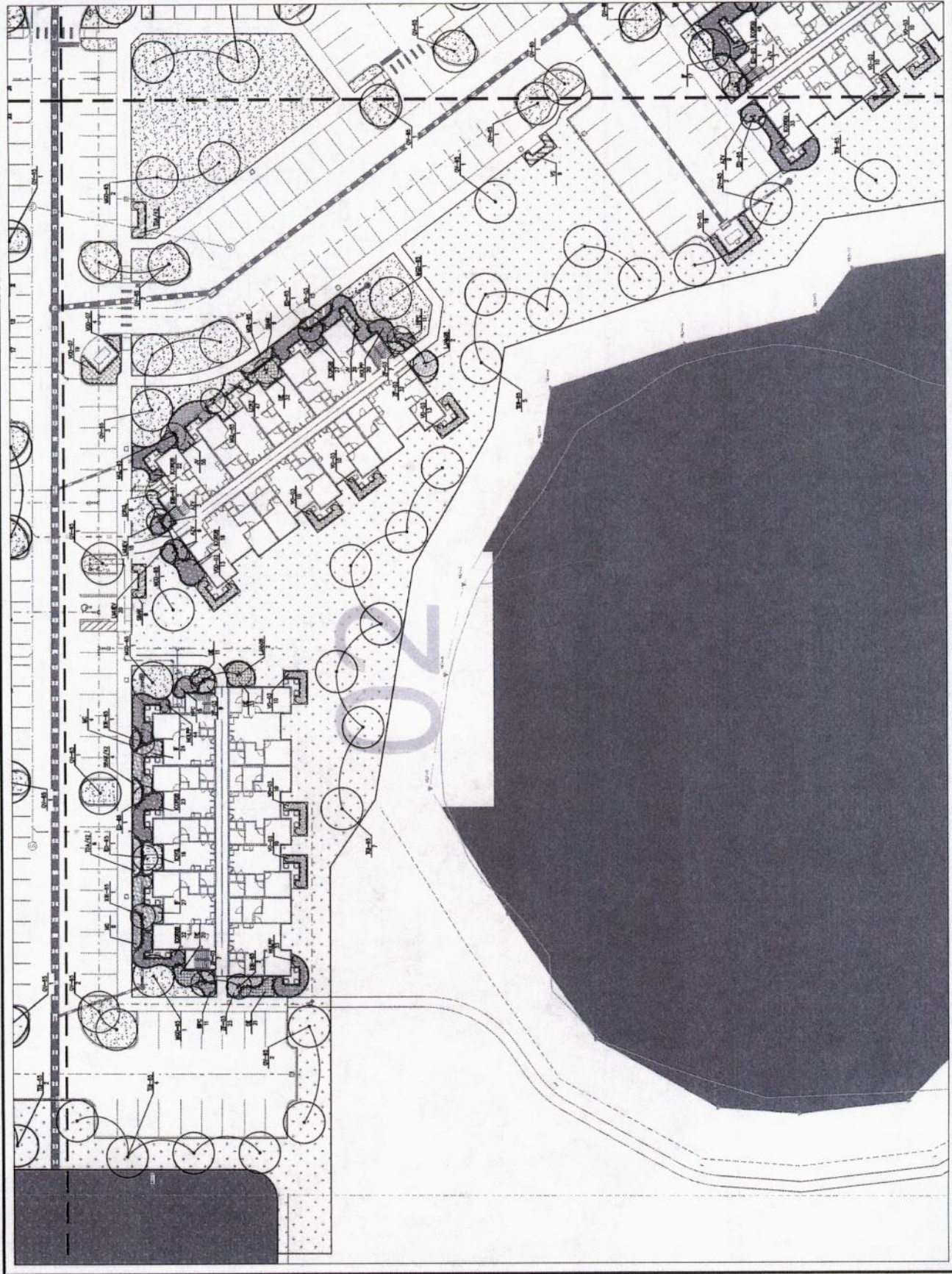
DESIGNED BY: BRITTON F. DAVIS

DRAWN BY: BRITTON F. DAVIS

CHECKED BY: BRITTON F. DAVIS

LANDSCAPE
PLAN

LA-02



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Project Name: ALLEGRA

DATE: 10/15/2010
DESIGNED BY: JLD
DRAWN BY: JLD
CHECKED BY: JLD
PROJECT APPROVAL: JLD

ALLEGRA
at
Cocoa, FL



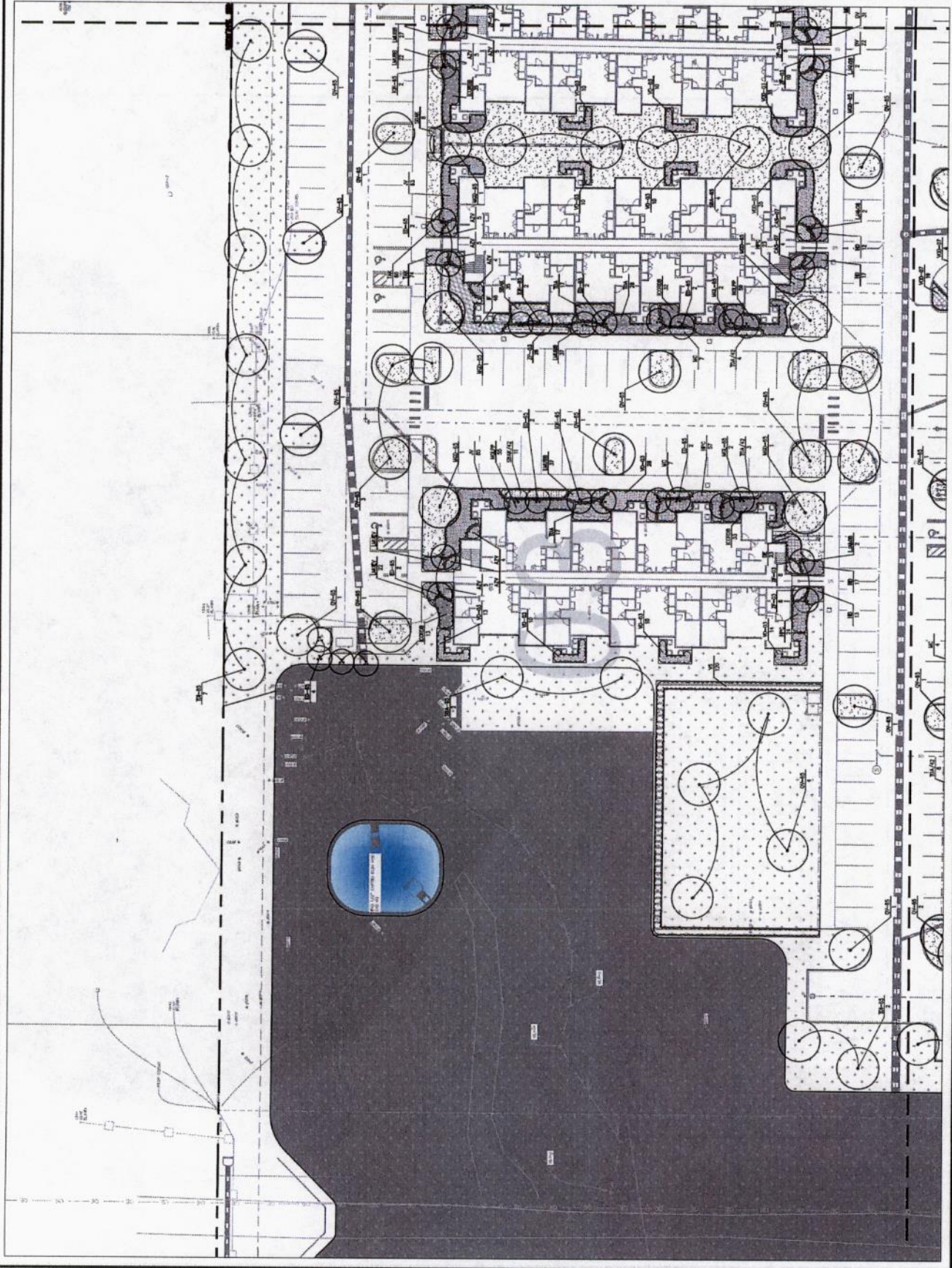
Blair F. Davis, LAL0000235

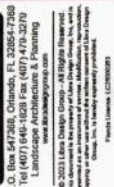


JOB NO.: 21115
DESIGNED BY: BD
DRAWN BY: JLD
CHECKED BY: BD
PROJECT APPROVAL: BD

LANDSCAPE
PLAN

LA-03





OWNER	DATE	FOR	ISSUED
	2013-02-21	CITY MANAGER	
	2013-03-21	MANAGER WEST MANAGER	
	2013-03-21	MANAGER WEST MANAGER	
	2013-03-21	CITY MANAGER	
	2013-03-21	CITY MANAGER	

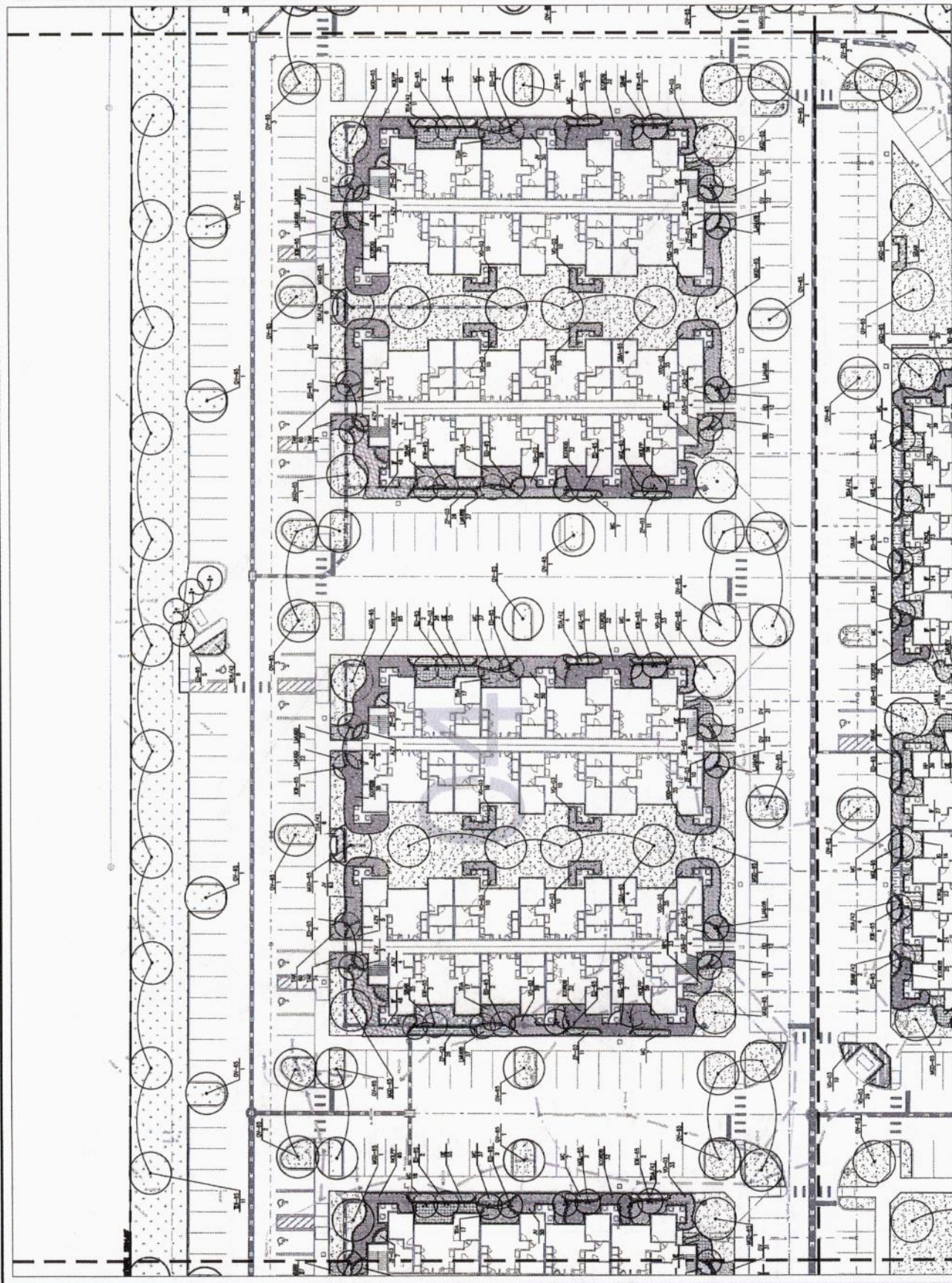
Brian F. Davis L.A. 0000035

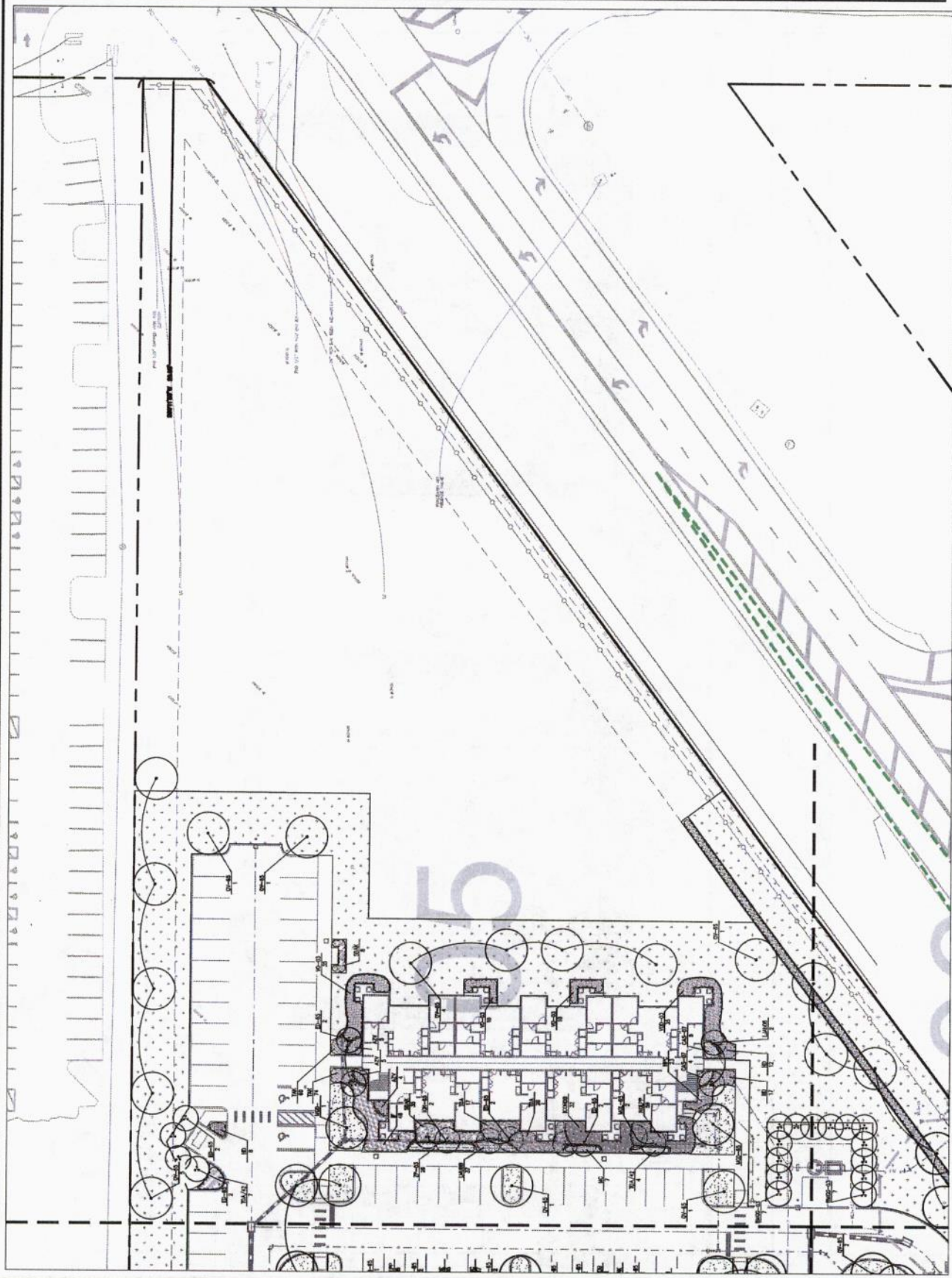


JOB NO.:	21115
DESIGNED BY:	BD
DRAWN BY:	JO
CHECKED BY:	BD
PROJECT APPROVAL:	
DATE:	

LANDSCAPE
PLAN

LA-04







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Project: LIBRA-00000000000000000000

Client: LIBRA-00000000000000000000

Design: LIBRA-00000000000000000000

Drawn: LIBRA-00000000000000000000

Check: LIBRA-00000000000000000000

Scale: LIBRA-00000000000000000000

Date: LIBRA-00000000000000000000

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ALLEGRA
at Cocoa
Cocoa, FL



State of Florida
Landscape Architecture

North



Scale in Feet

0 20 40

1" = 40'

1" = 80'

1" = 160'

1" = 320'

1" = 640'

1" = 1280'

1" = 2560'

1" = 5120'

1" = 10240'

1" = 20480'

1" = 40960'

1" = 81920'

1" = 163840'

1" = 327680'

1" = 655360'

1" = 1310720'

1" = 2621440'

1" = 5242880'

1" = 10485760'

1" = 20971520'

1" = 41943040'

1" = 83886080'

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1" = 2684354560'

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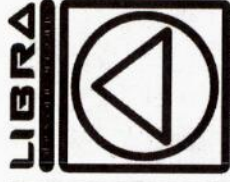
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1" = 21474836480'

1" = 42949672960'

LANDSCAPE
PLAN

LA-06



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Project Number: 1300000005

DATE: 07/11/13
BY: J.D.
CHECKED BY: J.D.
DESIGNED BY: J.D.
PROJECT APPROVAL: J.D.

ALLEGRA
at Corcoran
Cocoa, FL

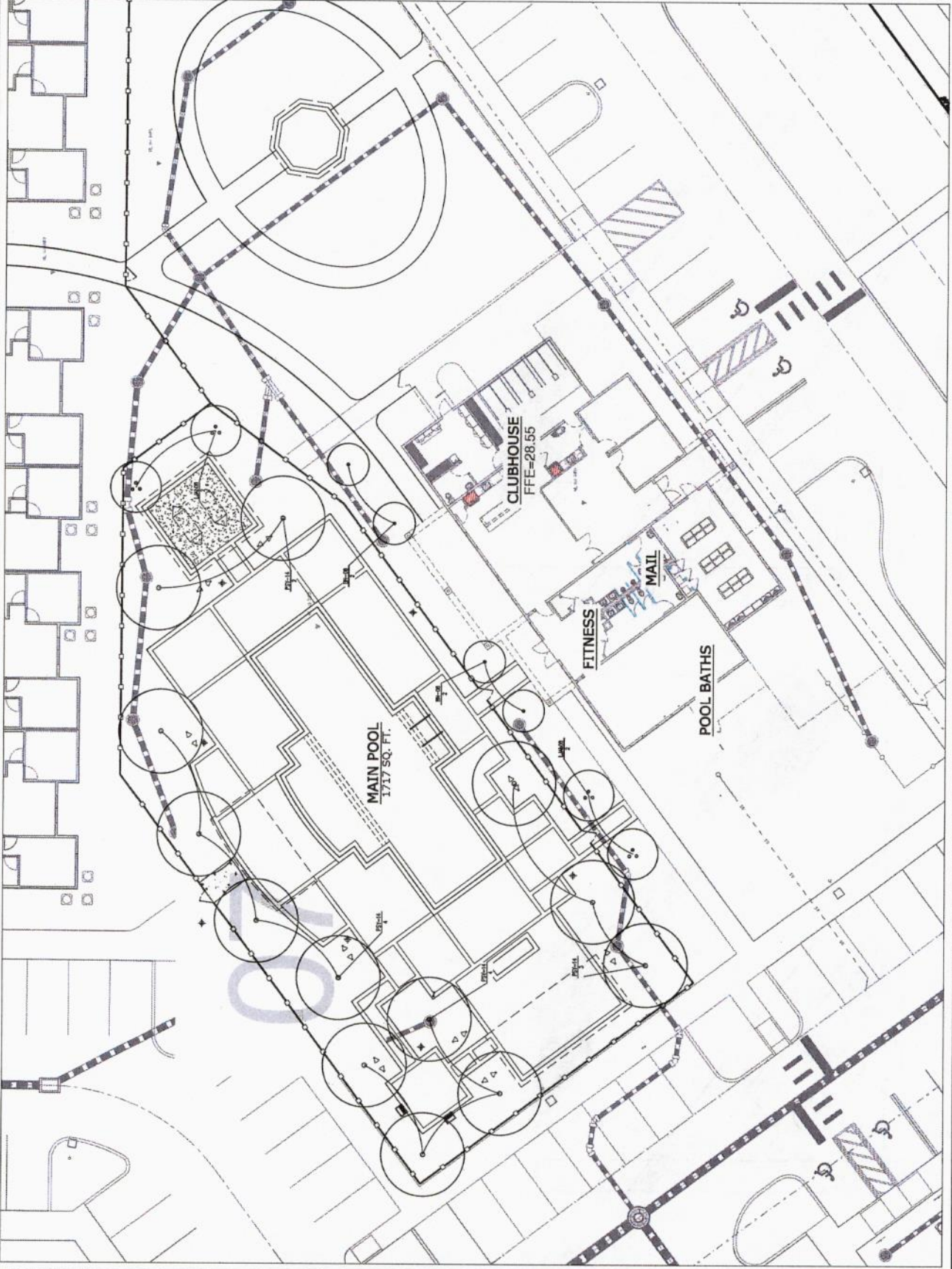


North
Scale in Feet
0 10 20 30 40 50 60 70 80 90 100

JOB NO.: 21115
DESIGNED BY: J.D.
DRAWN BY: J.D.
CHECKED BY: J.D.
PROJECT APPROVAL: J.D.

POOL
LANDSCAPE
PLAN

LA-07



LIBRA
ARCHITECTURE & PLANNING



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CONTRACT

DATE	FOR	ISSUED
01/11/23	LIBRA ARCHITECTURE & PLANNING	LIBRA ARCHITECTURE & PLANNING
01/11/23	LIBRA ARCHITECTURE & PLANNING	LIBRA ARCHITECTURE & PLANNING
01/11/23	LIBRA ARCHITECTURE & PLANNING	LIBRA ARCHITECTURE & PLANNING
01/11/23	LIBRA ARCHITECTURE & PLANNING	LIBRA ARCHITECTURE & PLANNING

ALLEGRA
ARCHITECTS
COLUMBIA, SC



David L. Anderson

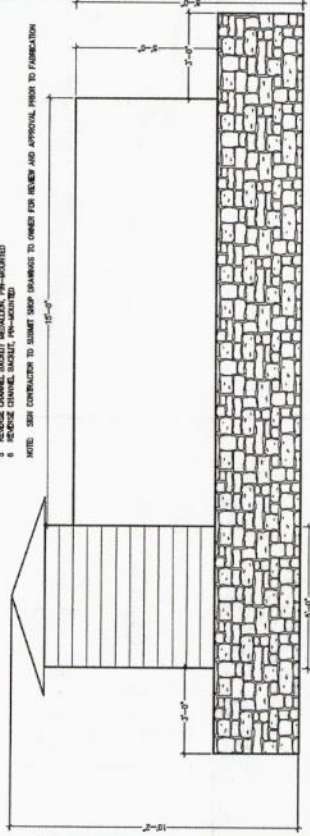
JOB NO.	21115
DESIGNED BY:	BFD
DRAWN BY:	JPD
CHECKED BY:	BFD
PROJECT APPROVAL:	
TITLE	

SIGN
DETAIL

HD-03

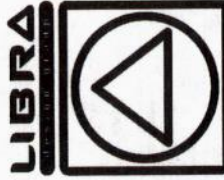
- KEY NOTES:**
1. SIGN STRUCTURE SHALL BE CAST-IN-PLACE CONCRETE.
 2. SIGN MOUNTED TO CONCRETE SHALL BE WELDED.
 3. REINFORCE CHANNEL BACKS WITH WELDED REINFORCING BARS.
 4. REINFORCE CHANNEL BACKS WITH WELDED REINFORCING BARS.
 5. REINFORCE CHANNEL BACKS WITH WELDED REINFORCING BARS.
 6. REINFORCE CHANNEL BACKS WITH WELDED REINFORCING BARS.

NOTE: SIGN CONTRACTOR TO SUBMIT SHOP DRAWINGS TO OWNER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.



1 SIGN
ELEVATION

SCALE: NONE



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Landscape Architecture & Planning
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OWNER

ISSUED
DATE
BY
REVISIONS
REASON FOR REVISION
DATE

ALLEGRA
at Cocoa
Cocoa, FL



Brian F. Davis LA0009525

NORTH

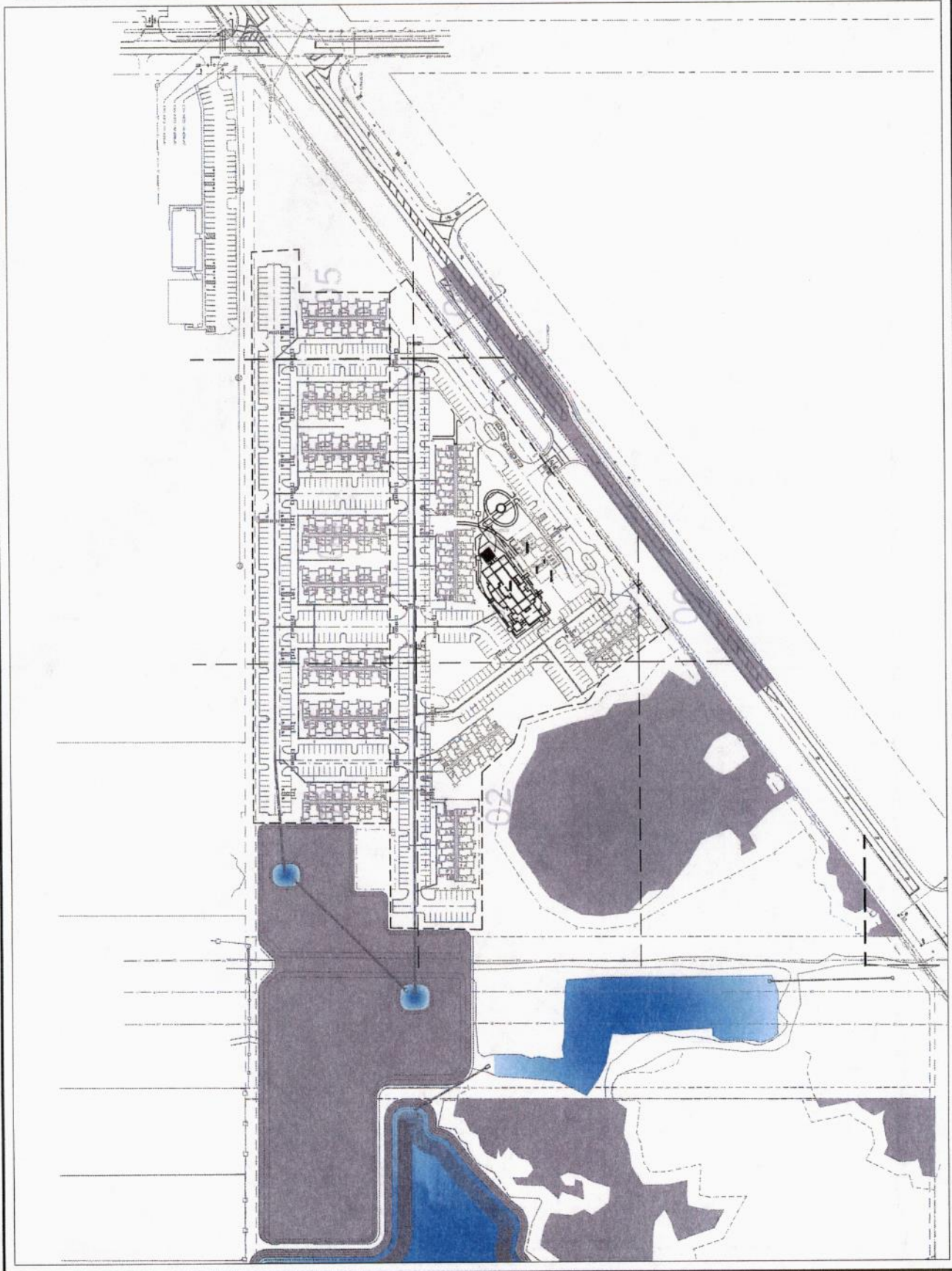


SCALE IN FEET

JOB NO.: 21115
DESIGNED BY: BD
DRAWN BY: JD
CHECKED BY: BD
PROJECT APPROVAL: _____
TITLE

OVERALL
IRRIGATION
PLAN

IR-00





OWNER

ISSUED	DATE	FOR
	02/14/28	CITY KIMBERLIN
	02/14/28	BLANCKENHART WHEELS
	02/14/28	CITY KIMBERLIN
	02/14/28	CITY KIMBERLIN

ALLEGRA
at Cocoa
Cocoa, FL



Brian F. Davis LA0000035

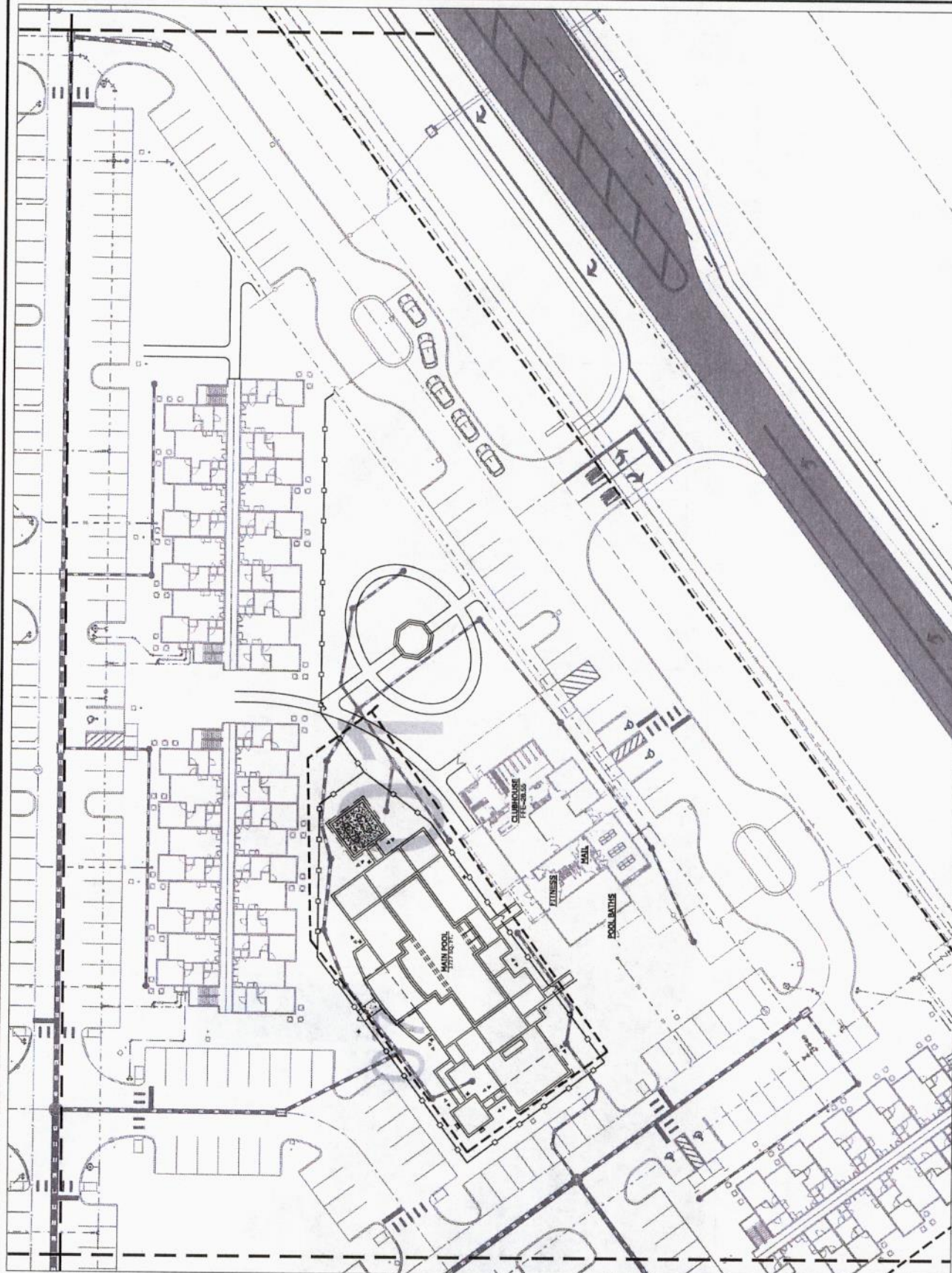


A vertical scale bar with markings at 0, 20, and 40 feet. The text "SCALE IN FEET" is written vertically along the right side of the scale.

JOB NO.:	21115
DESIGNED BY:	BD
DRAWN BY:	JD
CHECKED BY:	BD
PROJECT APPROVAL:	

IRRIGATION
PLAN

IR-01



LIBRA
ARCHITECTS



P.O. Box 140718, Coconut Creek, FL 33064-0718
Tel: (407) 948-1828 Fax: (407) 478-3279
www.libraarchitects.com

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Project Location: Coconut Creek

Comments:

ISSUED:

DATE:

DESIGNED BY:

DRAWN BY:

CHECKED BY:

PROJECT APPROVAL:

ALLEGRA
at Coconut
Creek, FL



Plan: L-000000000

NORTH



SCALE IN FEET

JOB NO.: 21115

DESIGNED BY: BD

DRAWN BY: JD

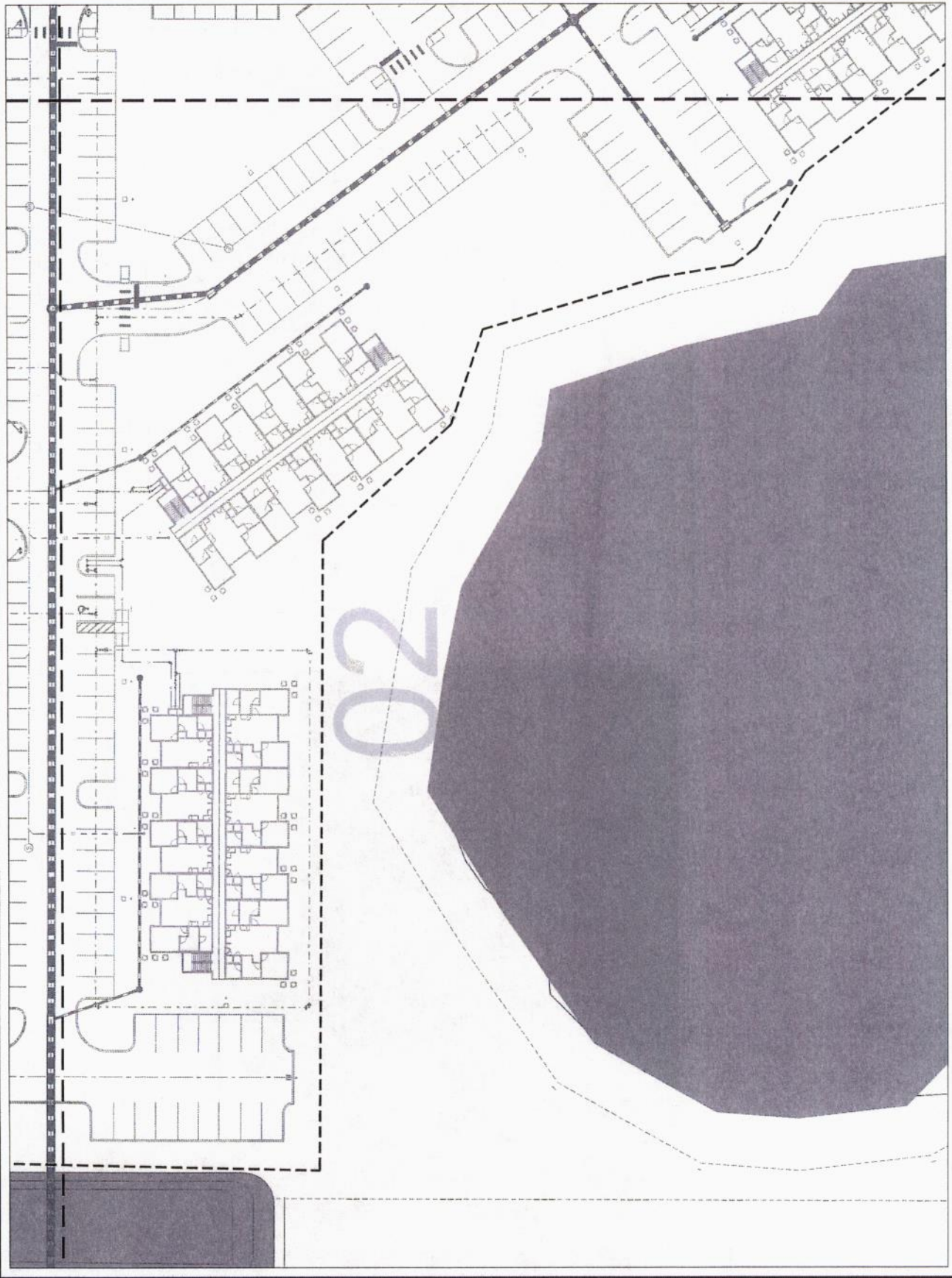
CHECKED BY: BD

PROJECT APPROVAL:

DATE:

IRRIGATION
PLAN

IR-02



LIBRA
LANDSCAPE ARCHITECTURE



P.O. Box 447088, Orlando, FL 32814-7088
Tel (407) 486-1828 Fax (407) 478-3278
www.libralandscape.com

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10001 Lake Nona Blvd., Suite 100, Orlando, FL 32826
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Check for local building codes and regulations.

LIBRA

DATE: 01/11/11
DRAWN BY: JLD
CHECKED BY: JLD
DESIGNED BY: JLD
PROJECT NO: 21115

ALLEGRA
at Courtyards
Orlando, FL



Brian F. Davis, License No. 120000025

North

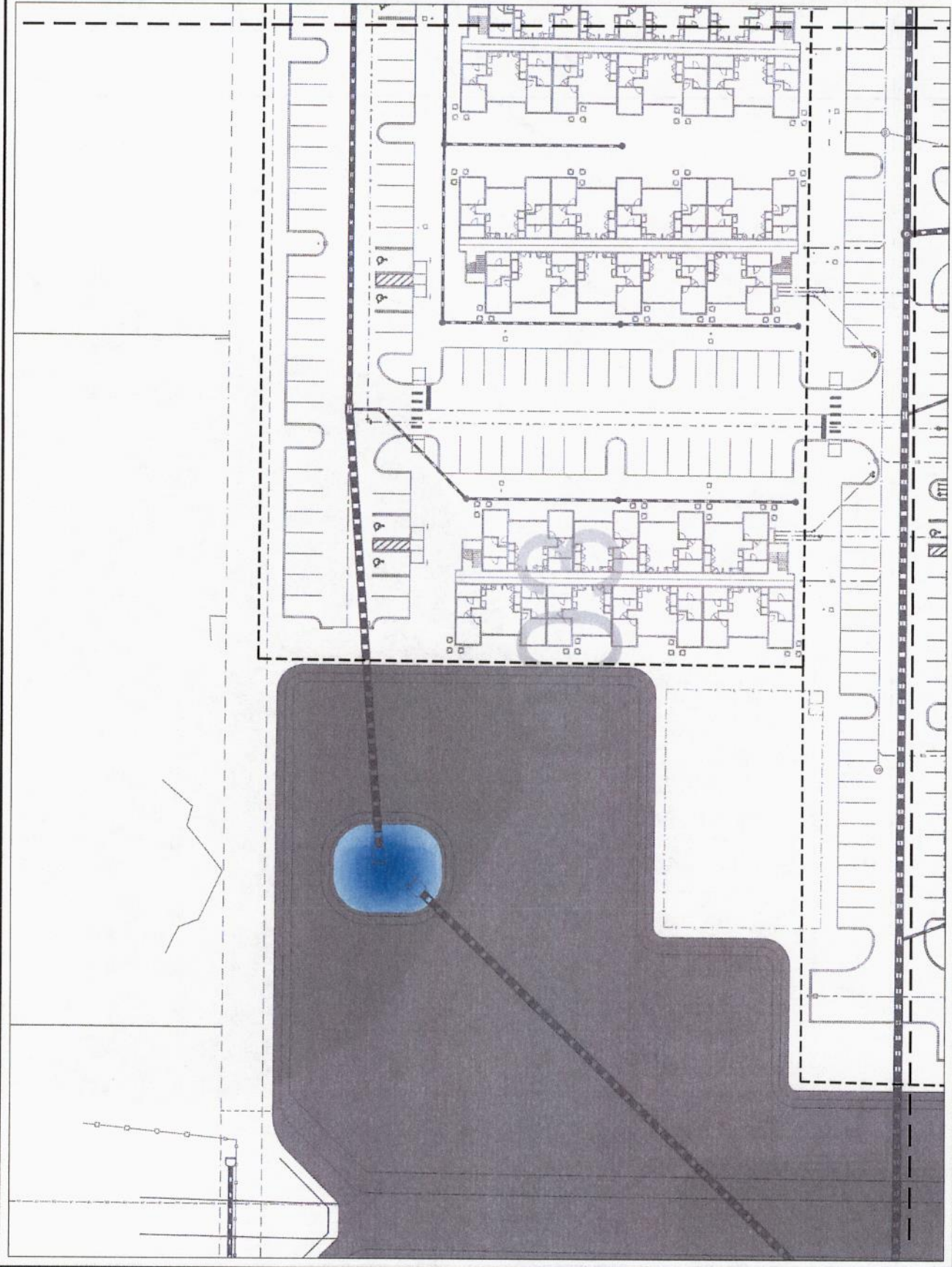


SCALE IN FEET
0 10 20 30

JOB NO.: 21115
DESIGNED BY: JLD
DRAWN BY: JLD
CHECKED BY: JLD
PROJECT APPROVAL: JLD
TITLE

IRRIGATION
PLAN

IR-03



LIBRA
ARCHITECTS



P.O. Box 947383, Orlando, FL 32894-7383
P: 407.455.1111
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Project: ALLEGRA

Owner: ALLEGRA

DATE: 08/15/23

DESIGNED BY: JLD

DRAWN BY: JLD

CHECKED BY: JLD

PROJECT APPROVAL: JLD

TIME

ALLEGRA
at Cocoa
Cocoa, FL



Brian F. Davis, L.A. 00009335

North

Scale: 1" = 40'

Scale: 1" = 40'

Scale: 1" = 40'

Scale: 1" = 40'

Scale: 1" = 40'

Scale: 1" = 40'

Scale: 1" = 40'

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Scale: 1" = 40'

Scale: 1" = 40'

Scale: 1" = 40'

Scale: 1" = 40'

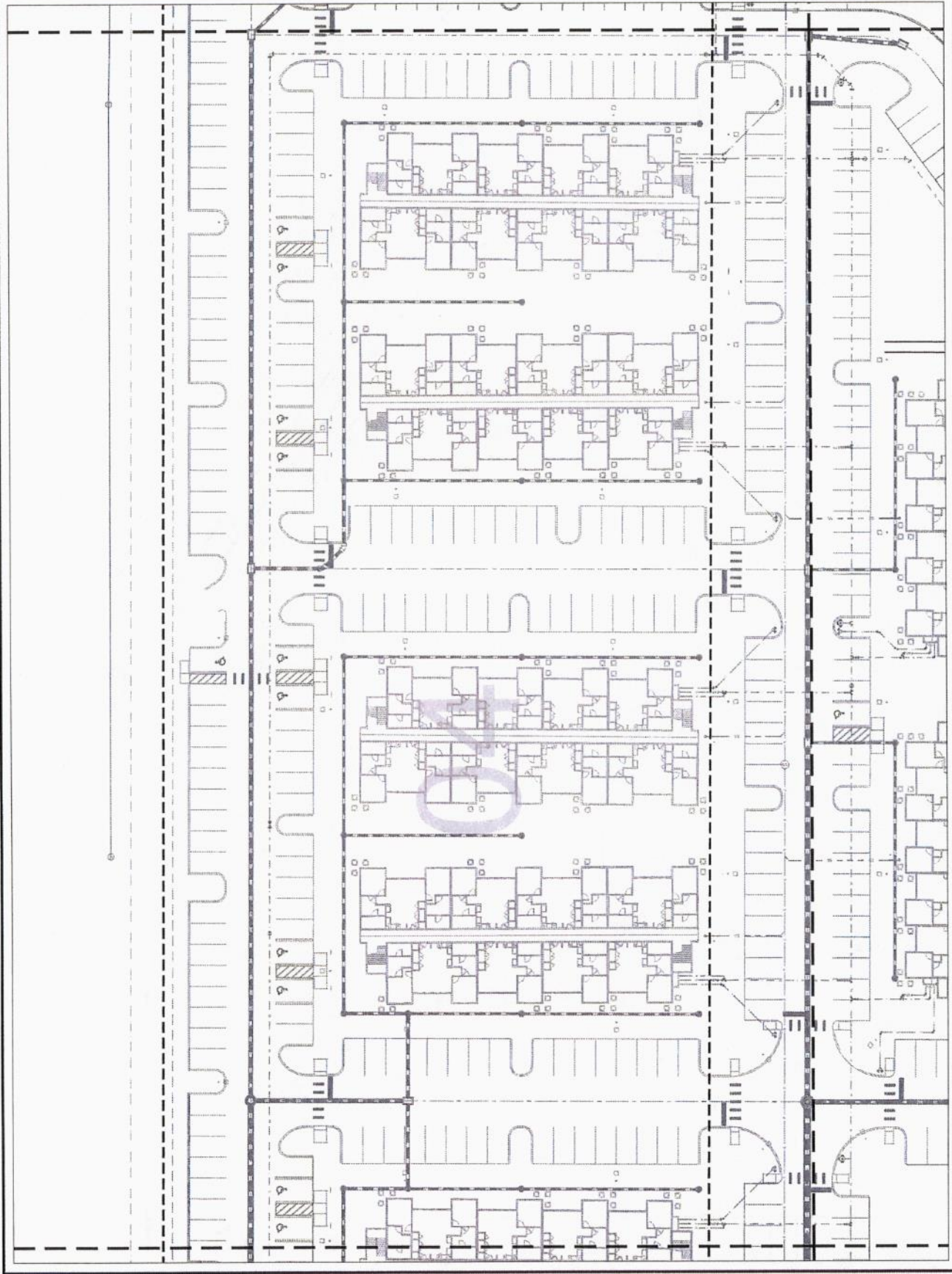
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Scale: 1" = 40'

Scale: 1" = 40'

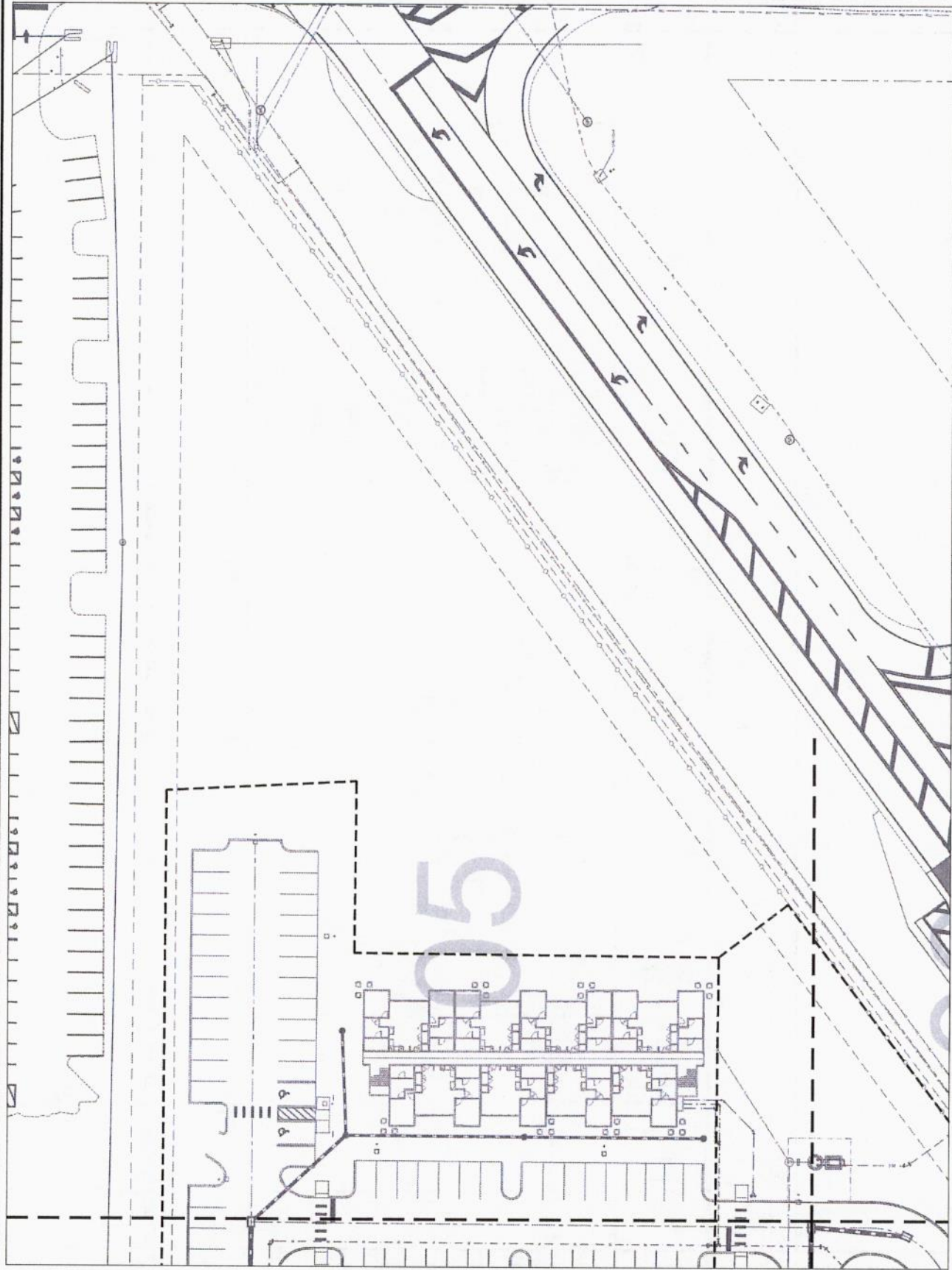
Scale: 1" = 40'

Scale: 1" = 40'



**IRRIGATION
PLAN**

IR-04



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Florida, Inc. is a limited liability corporation.

PROJECT: Palm Jumeirah, U.A.E.

DATE	FOR	REVISION
01/11/23	LIBRA	ISSUED FOR PERMIT
01/11/23	LIBRA	ISSUED FOR PERMIT
01/11/23	LIBRA	ISSUED FOR PERMIT

ALLEGRA
a division of
Coca-Cola



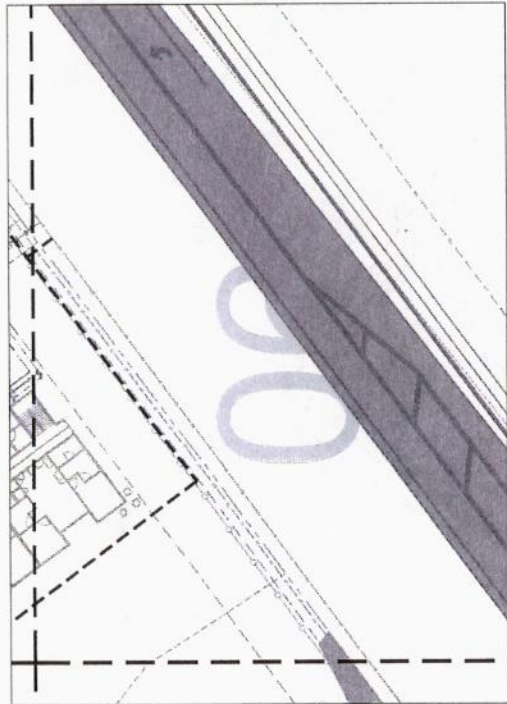
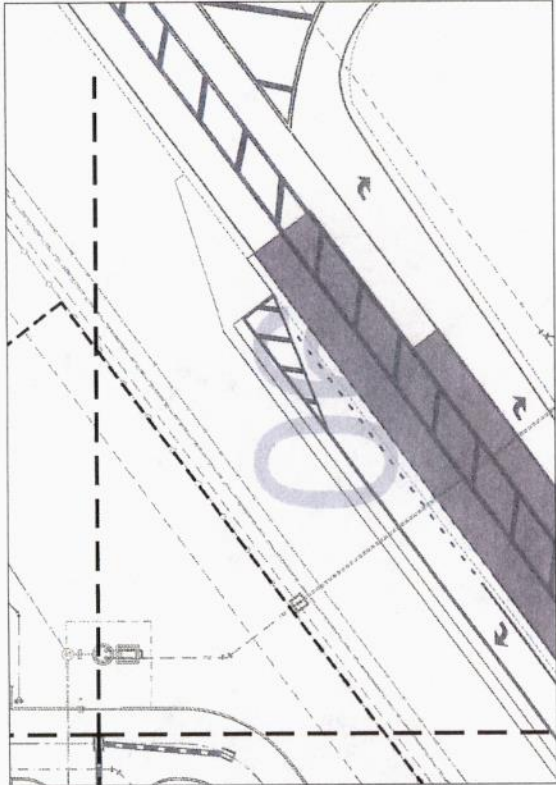
Brian F. Davis LAD0000035



JOB NO.:	21115
DESIGNED BY:	BD
DRAWN BY:	JD
CHECKED BY:	BD
PROJECT APPROVAL:	
TITLE	

IRRIGATION
PLAN

IR-06



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LANDSCAPE ARCHITECTURE & PLANNING



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10001 Lake Nona Blvd., Suite 100, Orlando, FL 32826
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10001 Lake Nona Blvd., Suite 100, Orlando, FL 32826
LIBRA LANDSCAPE ARCHITECTURE & PLANNING
10001 Lake Nona Blvd., Suite 100, Orlando, FL 32826

DATE: 10/1/11
DRAWN BY: JLD
CHECKED BY: JLD
DESIGNED BY: JLD
PROJECT APPROVAL: JLD
TOTAL: 10/1/11

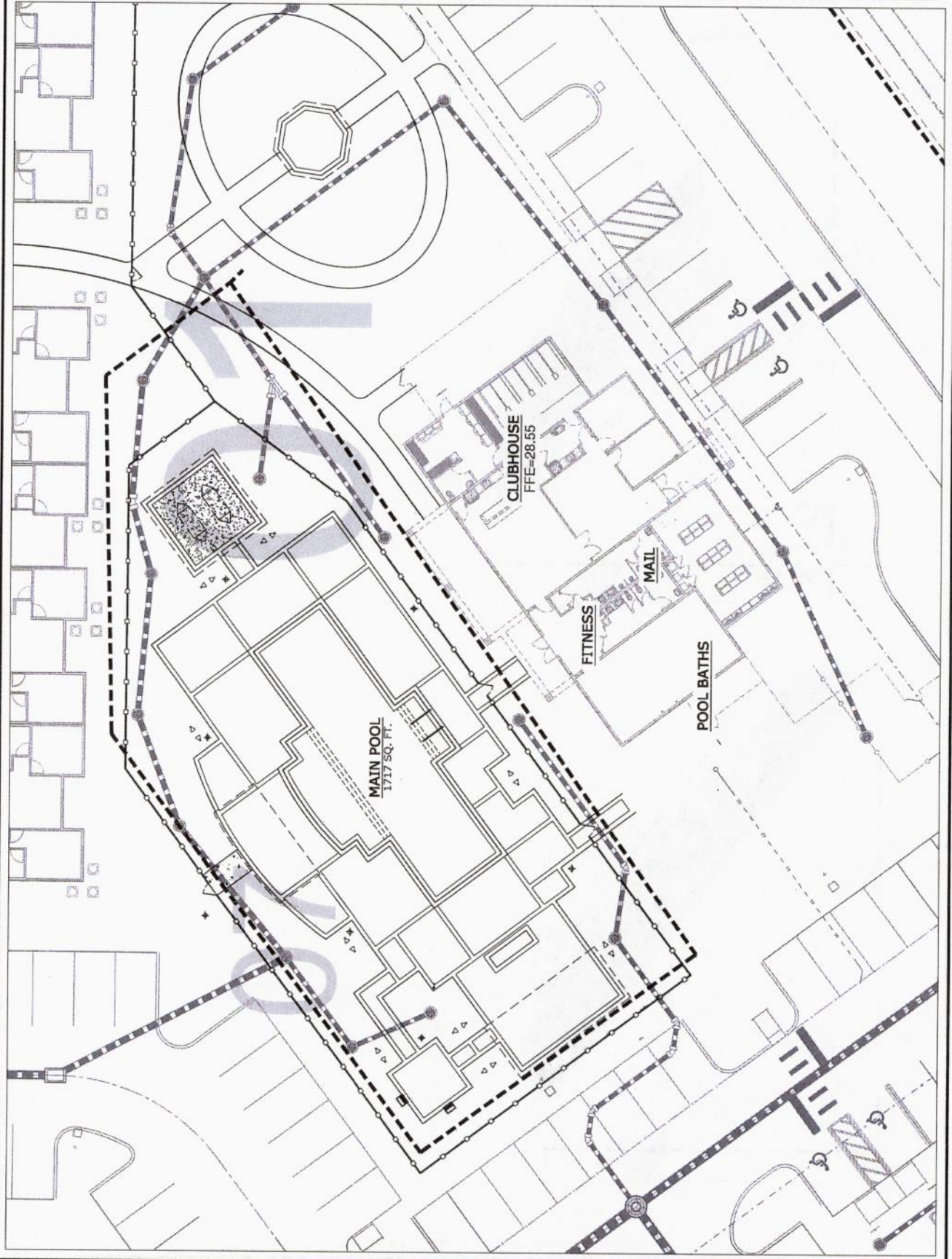
ALLEGRA
at Ocean
Cocoa, FL



JOHN F. JONES, L.A.S. 00000000
NORTH
SCALE IN FEET
0 20 40

JOB NO.: 21115
DESIGNED BY: BD
DRAWN BY: JLD
CHECKED BY: BD
PROJECT APPROVAL: BD
TOTAL: 10/1/11

POOL
IRRIGATION
PLAN
IR-07



PERMITTING SET

- [illegible]

- | | | |
|----------------------------------|---|--|
| COGGIN, P. 32082
181-703-8602 | CARLA T. EDEKSON
1071 PALM BAY ROAD NE
PALM BAY, FL 32905
321-757-6651 | TO EDEKSON
172 LEONARD
172 LEONARD AVENUE
MEADOWSVILLE, FL 32062
STATE BIRMINGHAM (205) 860- |
| COGGIN, P. 32082
181-703-8602 | MARTIN, DAN
1071 PALM BAY ROAD NE
PALM BAY, FL 32905
321-757-6651 | TO EDEKSON
172 LEONARD
172 LEONARD AVENUE
MEADOWSVILLE, FL 32062
STATE BIRMINGHAM (205) 860- |

- TELEPHONE
BELL SOUTH
712 FLORIDA AVENUE
MELBOURNE, FL 32932
STEVE BISHOPH (321) 865

- TELEPHONE
861.527.7111
712 FLORIDA AVENUE
MELBOURNE, FL 32932
STEVE BROTHMAN (321) 803



CITY OF BOCA RATON

ALLEGRA COCOA

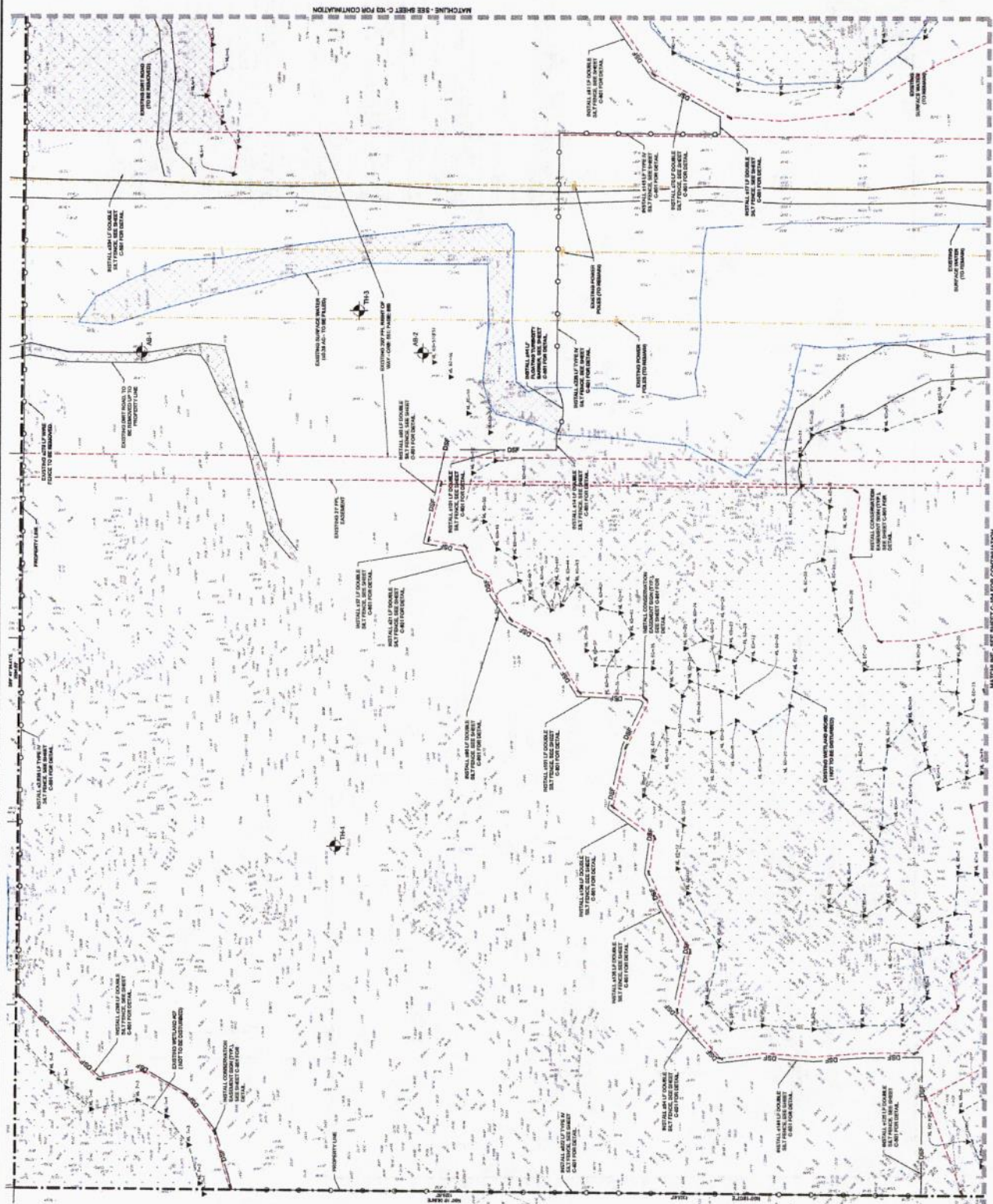
EXISTING SITE CONDITIONS
AND DEMOLITION PLAN
(SHEET 1 OF 4)



WBY
ENGINEERING, INC.

DESIGNED	DATE / DIM	07-25-2022
DRAWN	DATE	07-25-2022
CHECKED	DRAW	
DATE ISSUED	10/22/2023	

DATE	REVISIONS
06/26/2023	COMMENTS
06/20/2023	FOOT DRINKING COMMENTS
06/07/2023	FOOT DRINKING COMMENTS
05/17/2023	CITY OF COCOA WATER COMMENTS
05/12/2023	REMARK COMMENTS
05/08/2023	FOOT DRINKING COMMENTS
05/07/2023	FOOT COMMENTS
05/07/2023	ALL OF COCOA COMMENTS
05/01/2023	FOOT DRINKING COMMENTS



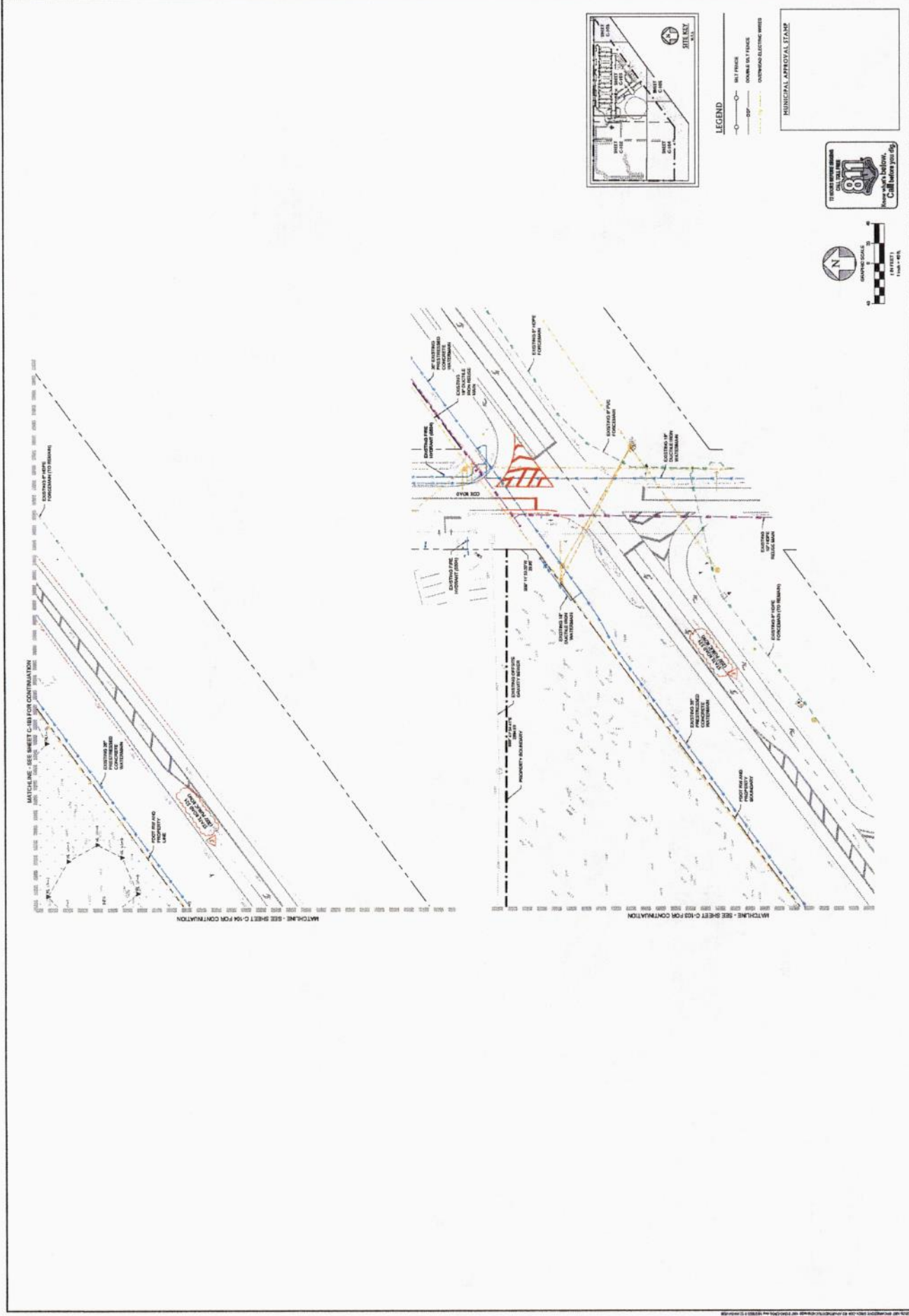


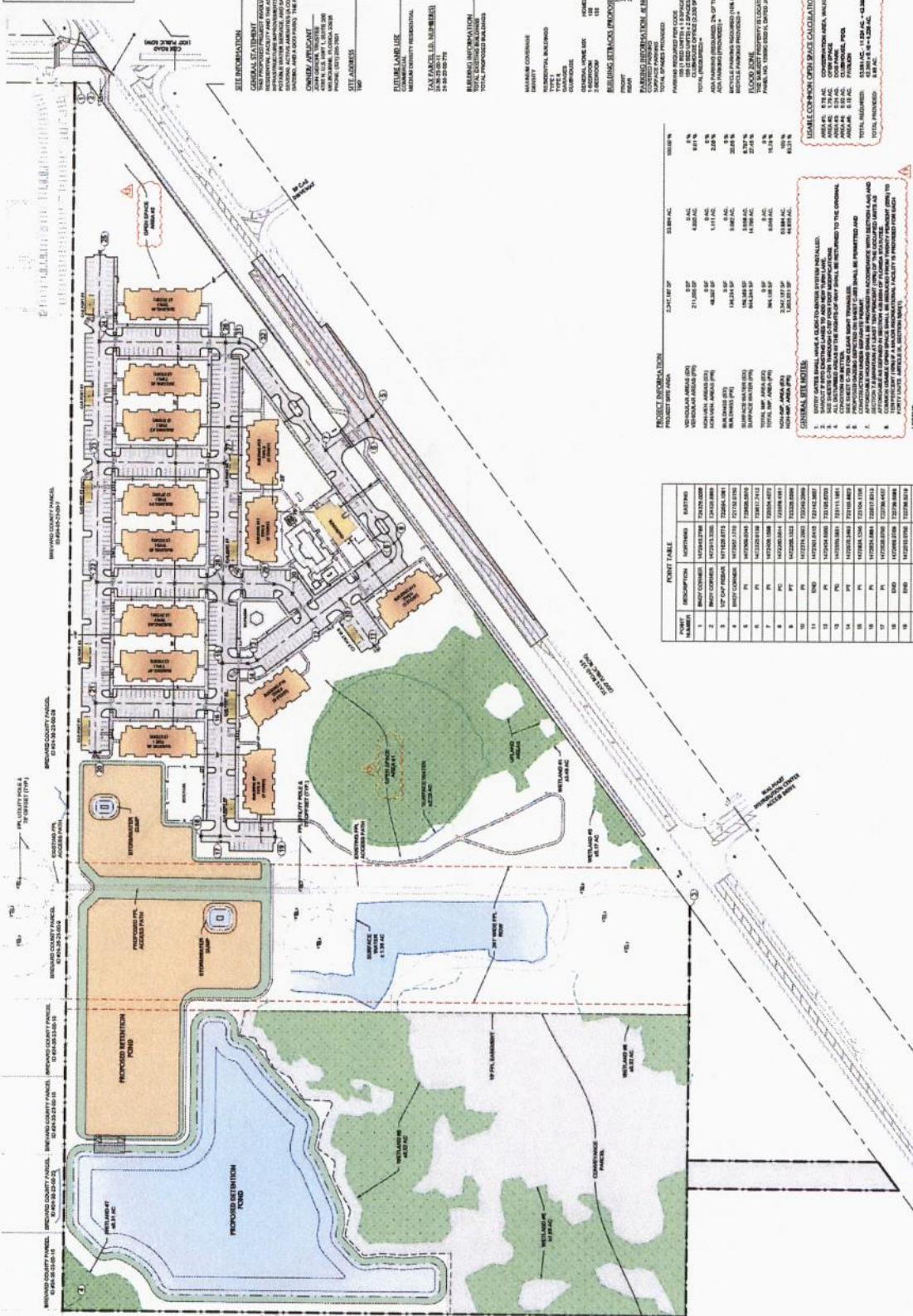
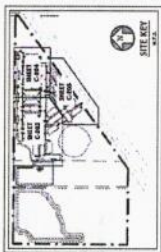
ALLEGRA COCOA

EXISTING SITE CONDITIONS
AND DEMOLITION PLAN
(SHEET 4 OF 4)



DATE	REVISIONS
08/15/2023	12. FOOT SURVEY COMMENTS
07/26/2023	11. CITY OF COCOA COMMENTS
07/26/2023	10. FOOT SURVEY COMMENTS
07/26/2023	9. CITY OF COCOA COMMENTS
07/26/2023	8. SURVEY COMMENTS
07/26/2023	7. CITY OF COCOA COMMENTS
07/26/2023	6. FOOT SURVEY COMMENTS
07/26/2023	5. FOOT SURVEY COMMENTS
07/26/2023	4. CITY OF COCOA COMMENTS
07/26/2023	3. FOOT SURVEY COMMENTS
07/26/2023	2. CITY OF COCOA COMMENTS
07/26/2023	1. FOOT SURVEY COMMENTS



[illegible][illegible]

USABLE CONCRETE OPEN SPACE CALCULATIONS:	
AREA #1:	CONSERVATION AREA, WALKSHED PATH
6.18 AC.	6.18 AC.
AREA #2:	CLUBHOUSE
0.24 AC.	0.24 AC.
AREA #3:	DOCK PARKING
0.32 AC.	0.32 AC.
AREA #4:	CLUBHOUSE, POOL
0.18 AC.	0.18 AC.
	PAVILION
	0.180 AC. 11.250 AC. = 0.360 AC.
	11.250 AC. 11.250 AC. = 0.360 AC.
TOTAL REQUIRED:	0.88 AC.
TOTAL PROVIDED:	0.88 AC.

MUNICIPAL APPROVAL STAMP

72 HOURS BEFORE DRIVING
CALL TOLL FREE
811
Know what's below.
Call before you dig.

LEGEND

- EXPLORED WETLANDS
- EXISTING PLANTATIONS
- EXISTING COASTAL WETLANDS

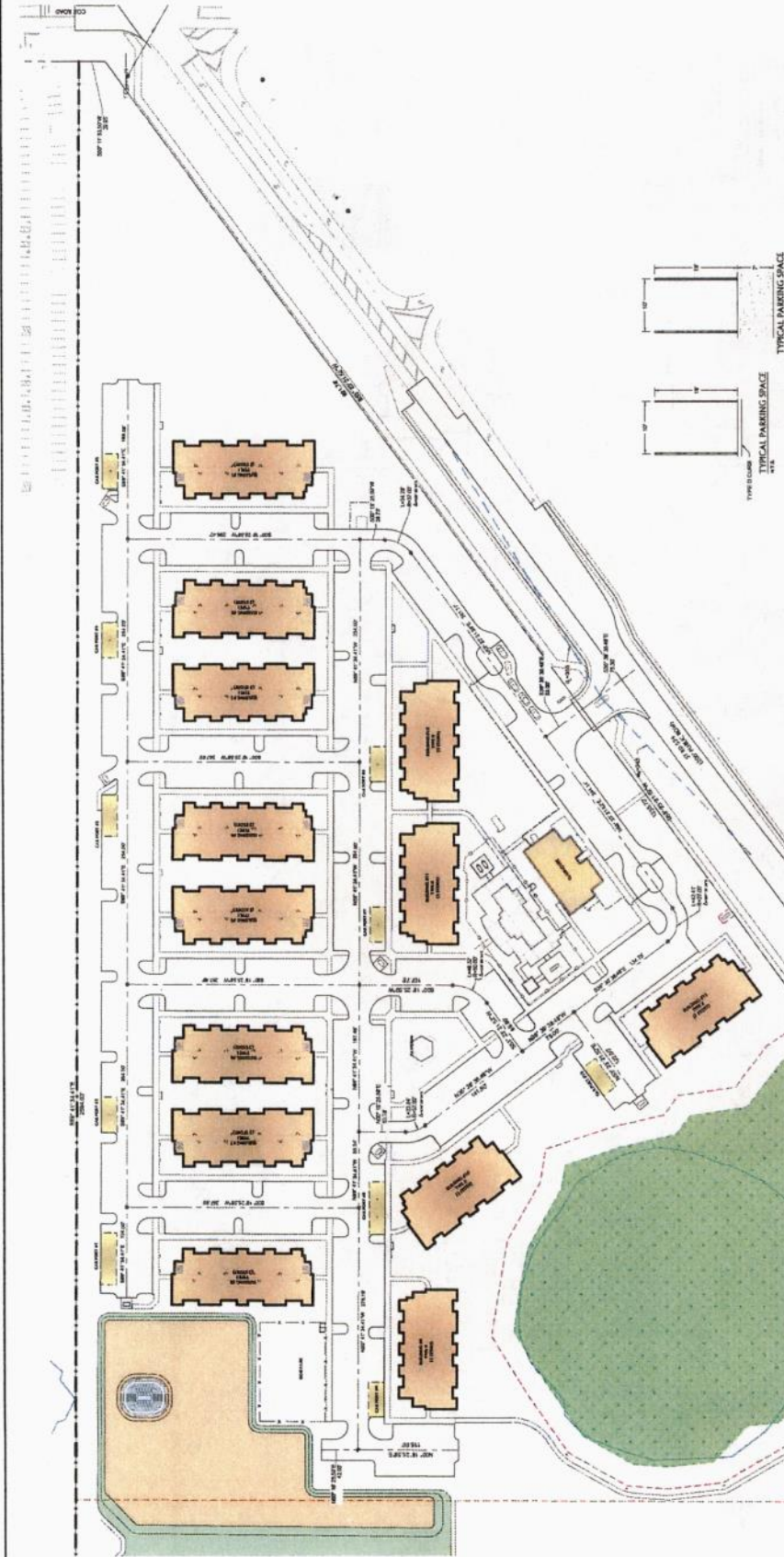


ALLEGRA COCOA

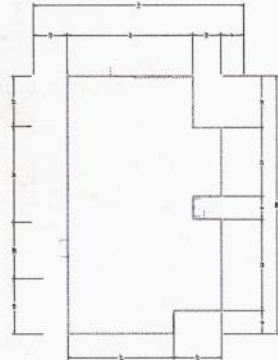
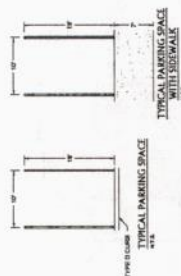
SITE AND BUILDING DETAILS



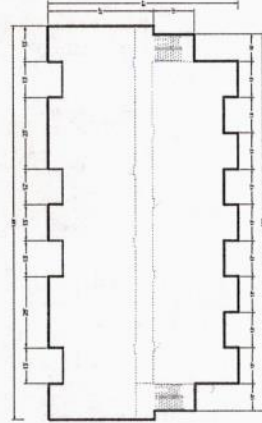
DATE	REVISIONS
05/05/2023	15 CITY OF COCOA COMMENTS
05/05/2023	14 CITY OF COCOA COMMENTS
05/05/2023	13 CITY OF COCOA COMMENTS
05/05/2023	12 CITY OF COCOA COMMENTS
05/05/2023	11 CITY OF COCOA COMMENTS
05/05/2023	10 CITY OF COCOA COMMENTS
05/05/2023	09 CITY OF COCOA COMMENTS
05/05/2023	08 CITY OF COCOA COMMENTS
05/05/2023	07 CITY OF COCOA COMMENTS
05/05/2023	06 CITY OF COCOA COMMENTS
05/05/2023	05 CITY OF COCOA COMMENTS
05/05/2023	04 CITY OF COCOA COMMENTS
05/05/2023	03 CITY OF COCOA COMMENTS
05/05/2023	02 CITY OF COCOA COMMENTS
05/05/2023	01 CITY OF COCOA COMMENTS



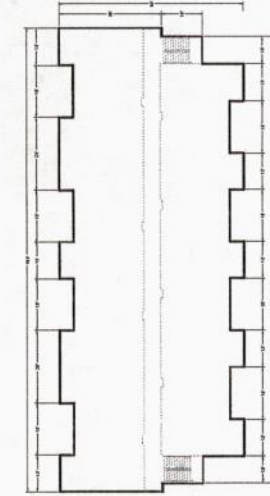
MUNICIPAL APPROVAL STAMP



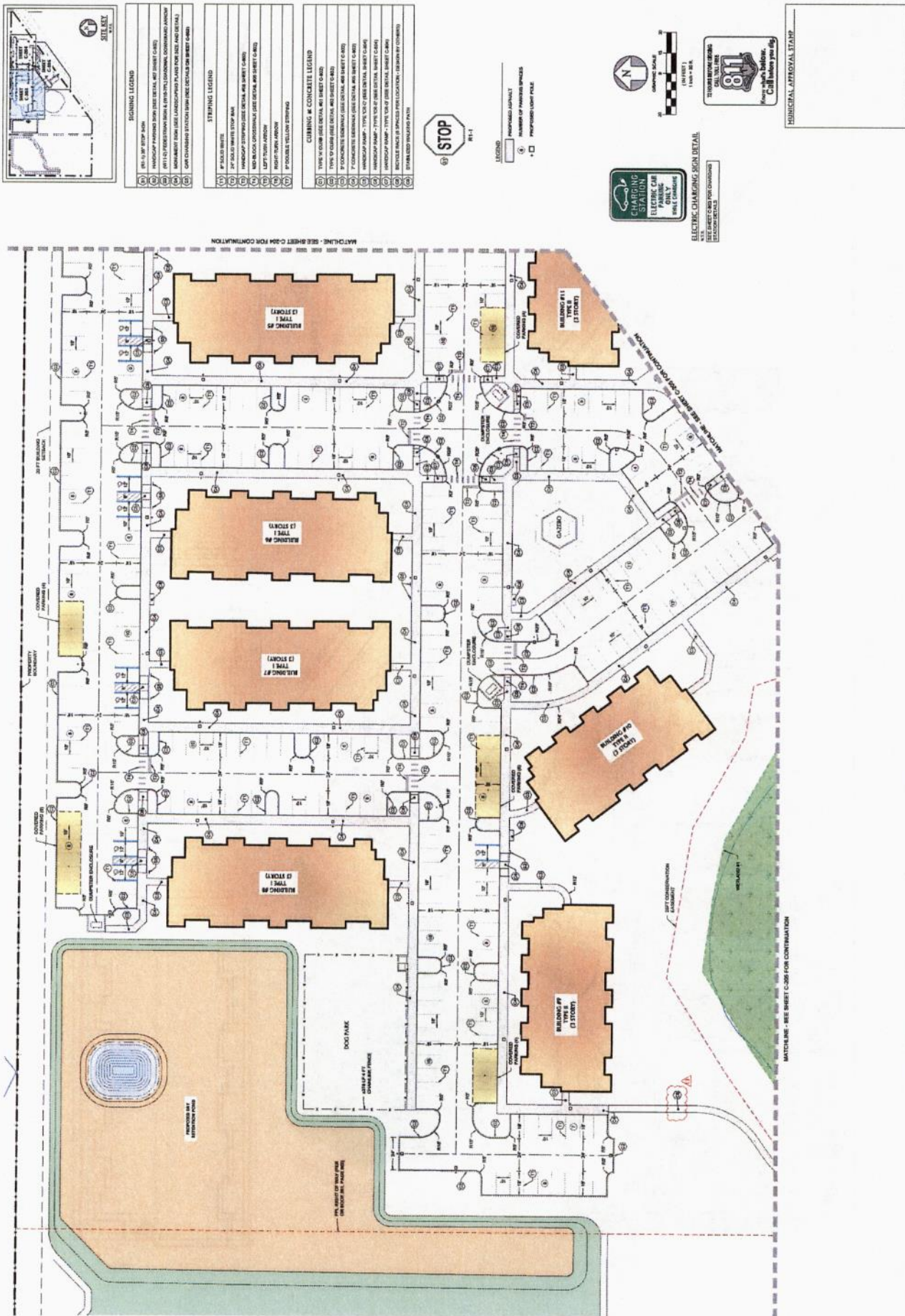
CLUBHOUSE (1 STORY) - 4,464 S.F. (1,270 OFFICE)



TYPE II BUILDING (3 STORIES) - 8,226 S.F.



TYPE I BUILDING (3 STORIES) - 9,419 S.F.



C-206



ALLEGRA COCOA

VEHICLE ROUTING PLAN

MBV
ENGINEERING INC.
Civil, Structural, Surveying & Environmental
1000 W. US Highway 1, Suite 100
Maitland, FL 32751
Phone: 407.881.1111
Fax: 407.881.1112
www.mbv-engineering.com

DATE	REVISIONS
08/11/2021	12 FOOT OVERSIGHT COMMENTS
07/27/2021	11 CITY OF COCOA COMMENTS
07/27/2021	10 FOOT OVERSIGHT COMMENTS
07/27/2021	9 FOOT OVERSIGHT COMMENTS
07/27/2021	8 FOOT OVERSIGHT COMMENTS
07/27/2021	7 CITY OF COCOA COMMENTS
07/27/2021	6 FOOT OVERSIGHT COMMENTS
07/27/2021	5 FOOT OVERSIGHT COMMENTS
07/27/2021	4 FOOT OVERSIGHT COMMENTS
07/27/2021	3 FOOT OVERSIGHT COMMENTS
07/27/2021	2 FOOT OVERSIGHT COMMENTS
07/27/2021	1 FOOT OVERSIGHT COMMENTS

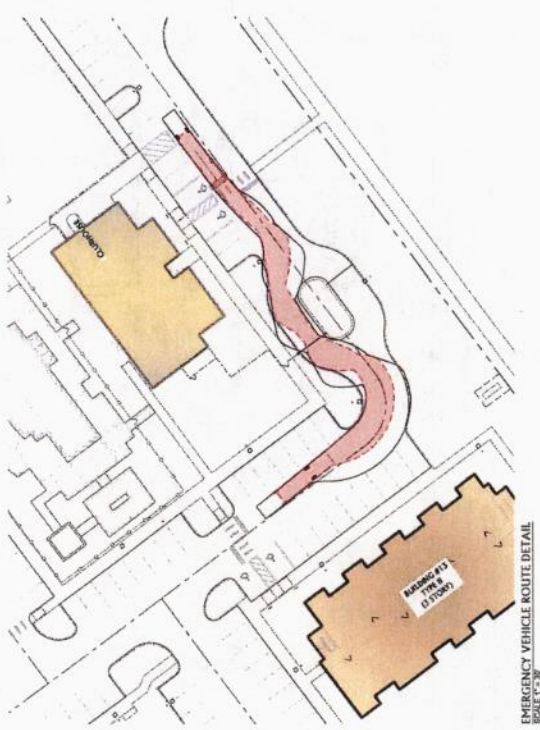
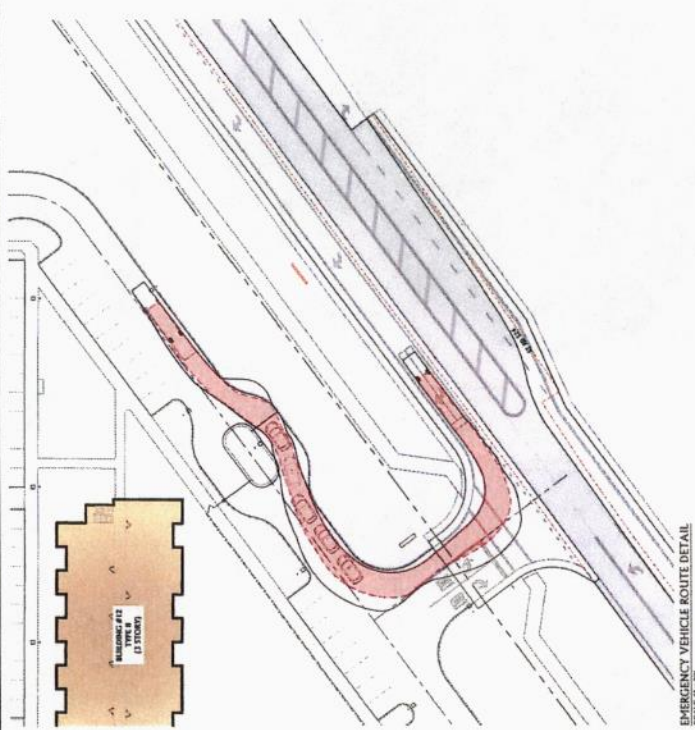
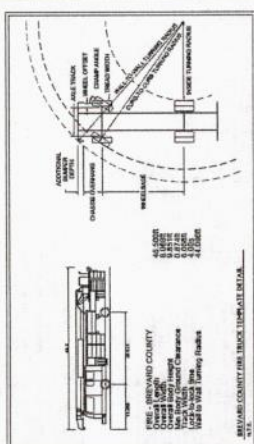
LEGEND

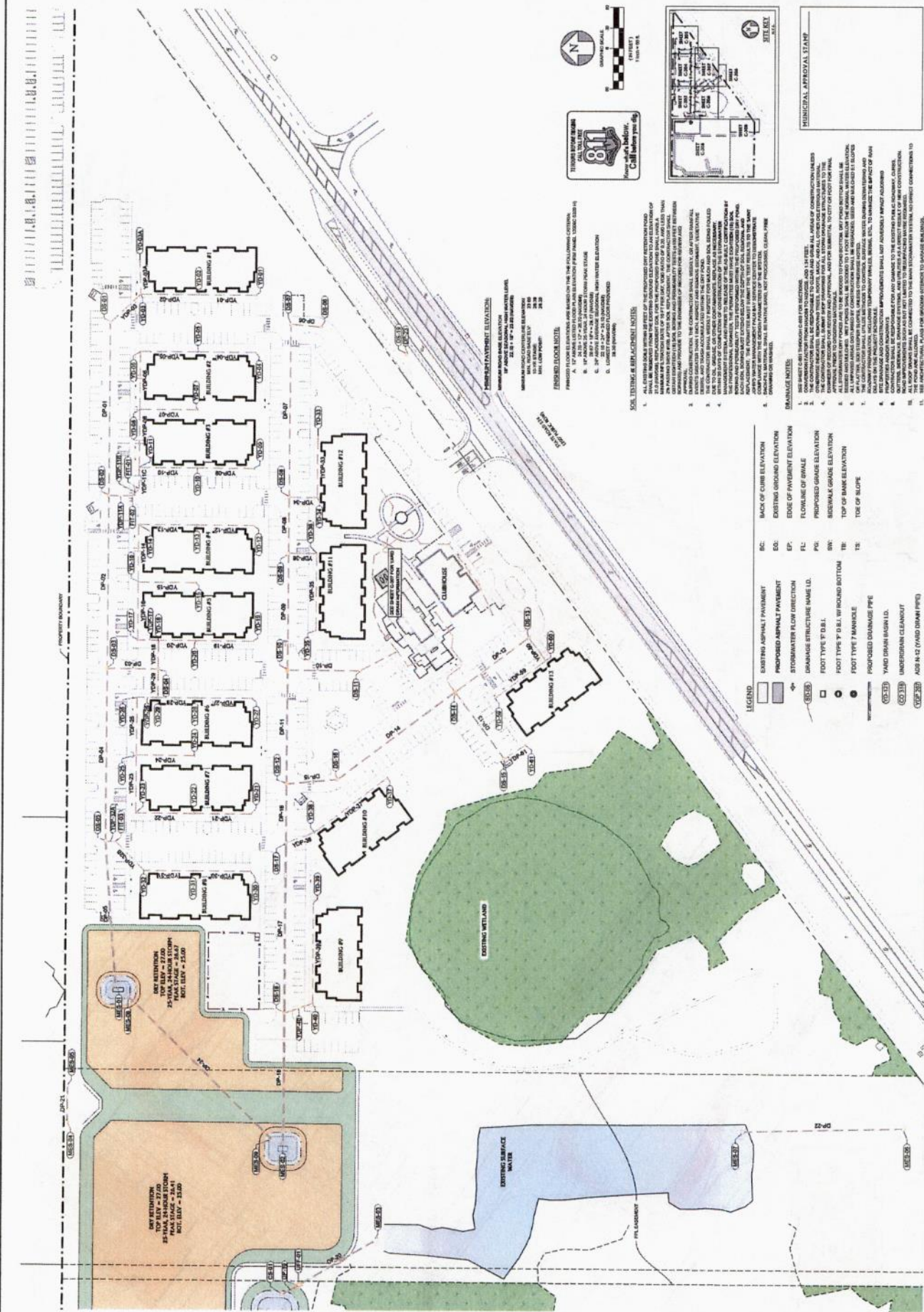
- VEHICLE BODY PATH
- VEHICLE TIRE PATH

MUNICIPAL APPROVAL STAMP

GRAPHIC SCALE
1" = 10' - 0"

811
CALL BEFORE YOU DIG
New, what's below, Call before you dig.





JENNIFER L. BARNETT, FR. 126

[illegible]

PROPOSED GRADE ELEVATION	FL2	PROPOSED GRADE ELEVATION
EXISTING GRADE ELEVATION	SPK	EXISTING GRADE ELEVATION
TOP OF BANK ELEVATION	TSB	TOP OF BANK ELEVATION
TOP OF SLOPE		TOP OF SLOPE
PROPOSED DRAINAGE PIPE		PROPOSED DRAINAGE PIPE
YARD GRADE INRM LID		YARD GRADE INRM LID
UNDERDRAIN CLEANSOUT		UNDERDRAIN CLEANSOUT
ASB 18" (ASB DRAIN PIPE)		ASB 18" (ASB DRAIN PIPE)

An aerial photograph showing a coastal area. A dashed line runs horizontally across the image. Below the line, there is a small rectangular feature labeled '12-05'. The area is mostly green, suggesting vegetation, with some darker patches.



MBV
ENGINEERING, INC.
MAKING COMPLEXITY SIMPLE & AFFORDABLE

MBV
ENGINEERING, INC.
1000 BOWLING GREEN AVE. S.W.
ALBUQUERQUE, NM 87102
505/263-1111 • FAX 505/263-1112
E-MAIL: MBV@MBV.ORG

DATE	REVISIONS	DATE ISSUED	REVISION
09-03-2023	COMMENTS	10/31/2023	REVISION
09-11-2023	7. COCKA WALTER COMMENTS	04/04	CHANGED
09-12-2023	8. STAFFORD COMMENTS	01-2-2023	DATE
09-12-2023	9. PORT DRAVARY COMMENTS	01-2-2023	DATE
09-16-2023	10. FRILL COMMENTS	01-2-2023	DATE
09-17-2023	11. CITY OF COCKA COMMENTS	01-2-2023	DATE
09-17-2023	12. CITY OF COCKA COMMENTS	01-2-2023	DATE
10-06-2023	13. CITY OF COCKA COMMENTS	01-2-2023	DATE

721 SQUARE BEFORE DEDUCTION
CALL TOLL FREE
811
Now what's below.



MATCHLINE - SEE SHEET C-301 FOR CONTINUATION

NAC

WATCHLINE - SEE SHEET C-308 FOR CONTINUATION

DRY RETENTION
TOP ELEV = 27.00
5-YEAR, 24-HOUR STORM

[illegible]

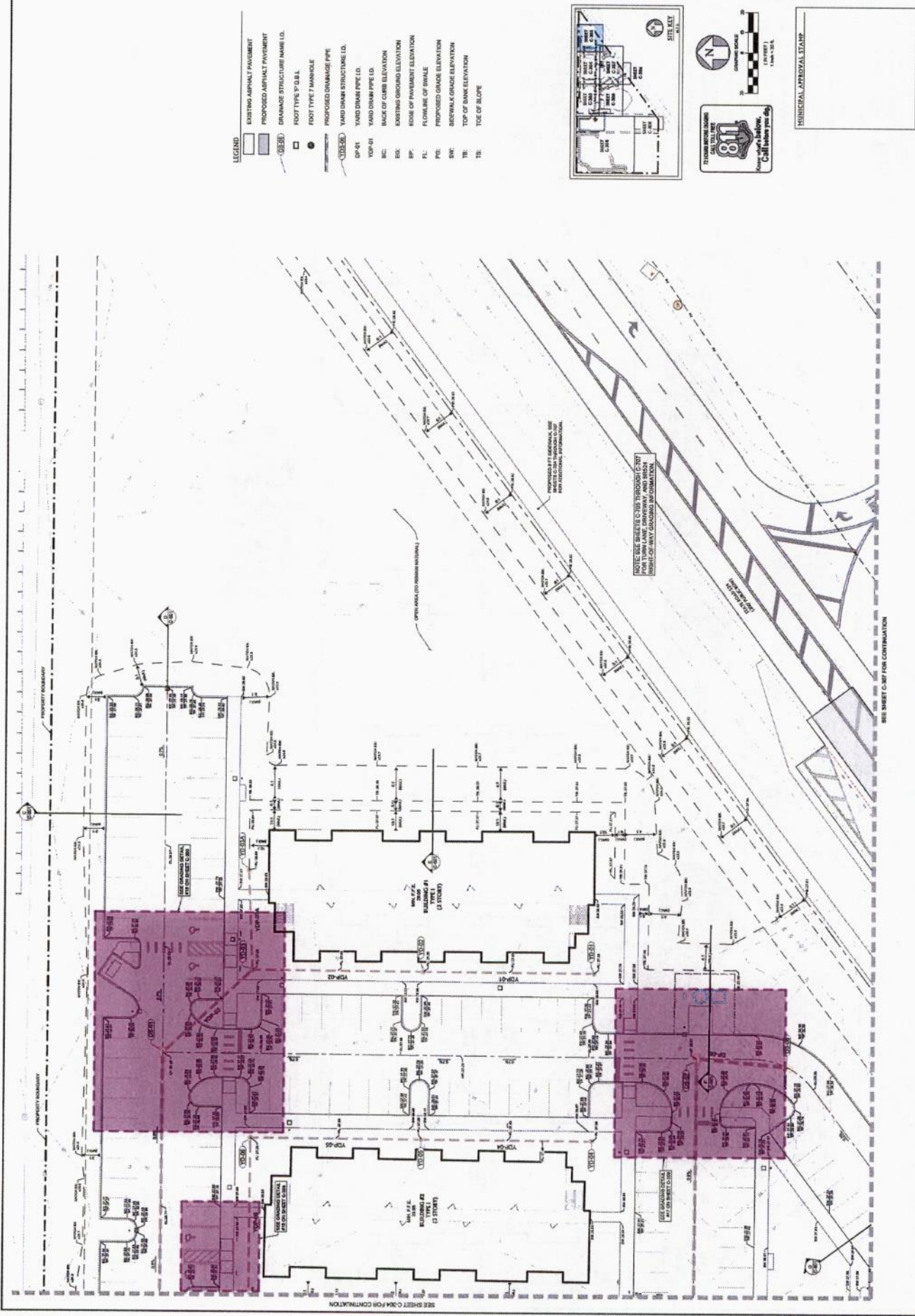


CITY OF COCOA
ALLEGRA COCOA
FLORIDA

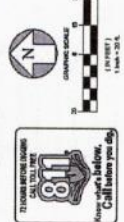
GRADING PLAN
(SHEET 3 OF 6)



DATE	REVISIONS
06/01/2023	1. CITY OF COCOA COMMENTS
06/15/2023	2. CITY OF COCOA COMMENTS
06/29/2023	3. CITY OF COCOA COMMENTS
07/13/2023	4. CITY OF COCOA COMMENTS
07/27/2023	5. CITY OF COCOA COMMENTS
08/10/2023	6. CITY OF COCOA COMMENTS
08/24/2023	7. CITY OF COCOA COMMENTS
09/07/2023	8. CITY OF COCOA COMMENTS
09/21/2023	9. CITY OF COCOA COMMENTS
10/05/2023	10. CITY OF COCOA COMMENTS
10/19/2023	11. CITY OF COCOA COMMENTS
11/02/2023	12. CITY OF COCOA COMMENTS
11/16/2023	13. CITY OF COCOA COMMENTS
11/30/2023	14. CITY OF COCOA COMMENTS
12/14/2023	15. CITY OF COCOA COMMENTS
12/28/2023	16. CITY OF COCOA COMMENTS
01/11/2024	17. CITY OF COCOA COMMENTS
01/25/2024	18. CITY OF COCOA COMMENTS
02/08/2024	19. CITY OF COCOA COMMENTS
02/22/2024	20. CITY OF COCOA COMMENTS
03/07/2024	21. CITY OF COCOA COMMENTS
03/21/2024	22. CITY OF COCOA COMMENTS
04/04/2024	23. CITY OF COCOA COMMENTS
04/18/2024	24. CITY OF COCOA COMMENTS
05/02/2024	25. CITY OF COCOA COMMENTS
05/16/2024	26. CITY OF COCOA COMMENTS
05/30/2024	27. CITY OF COCOA COMMENTS
06/13/2024	28. CITY OF COCOA COMMENTS
06/27/2024	29. CITY OF COCOA COMMENTS
07/11/2024	30. CITY OF COCOA COMMENTS
07/25/2024	31. CITY OF COCOA COMMENTS
08/08/2024	32. CITY OF COCOA COMMENTS
08/22/2024	33. CITY OF COCOA COMMENTS
09/05/2024	34. CITY OF COCOA COMMENTS
09/19/2024	35. CITY OF COCOA COMMENTS
10/03/2024	36. CITY OF COCOA COMMENTS
10/17/2024	37. CITY OF COCOA COMMENTS
10/31/2024	38. CITY OF COCOA COMMENTS
11/14/2024	39. CITY OF COCOA COMMENTS
11/28/2024	40. CITY OF COCOA COMMENTS
12/12/2024	41. CITY OF COCOA COMMENTS
12/26/2024	42. CITY OF COCOA COMMENTS
01/09/2025	43. CITY OF COCOA COMMENTS
01/23/2025	44. CITY OF COCOA COMMENTS
02/06/2025	45. CITY OF COCOA COMMENTS
02/20/2025	46. CITY OF COCOA COMMENTS
03/06/2025	47. CITY OF COCOA COMMENTS
03/20/2025	48. CITY OF COCOA COMMENTS
04/03/2025	49. CITY OF COCOA COMMENTS
04/17/2025	50. CITY OF COCOA COMMENTS
04/30/2025	51. CITY OF COCOA COMMENTS
05/14/2025	52. CITY OF COCOA COMMENTS
05/28/2025	53. CITY OF COCOA COMMENTS
06/11/2025	54. CITY OF COCOA COMMENTS
06/25/2025	55. CITY OF COCOA COMMENTS
07/09/2025	56. CITY OF COCOA COMMENTS
07/23/2025	57. CITY OF COCOA COMMENTS
08/06/2025	58. CITY OF COCOA COMMENTS
08/20/2025	59. CITY OF COCOA COMMENTS
09/03/2025	60. CITY OF COCOA COMMENTS
09/17/2025	61. CITY OF COCOA COMMENTS
09/30/2025	62. CITY OF COCOA COMMENTS
10/14/2025	63. CITY OF COCOA COMMENTS
10/28/2025	64. CITY OF COCOA COMMENTS
11/11/2025	65. CITY OF COCOA COMMENTS
11/25/2025	66. CITY OF COCOA COMMENTS
12/09/2025	67. CITY OF COCOA COMMENTS
12/23/2025	68. CITY OF COCOA COMMENTS
01/06/2026	69. CITY OF COCOA COMMENTS
01/20/2026	70. CITY OF COCOA COMMENTS
02/03/2026	71. CITY OF COCOA COMMENTS
02/17/2026	72. CITY OF COCOA COMMENTS
03/03/2026	73. CITY OF COCOA COMMENTS
03/17/2026	74. CITY OF COCOA COMMENTS
03/31/2026	75. CITY OF COCOA COMMENTS
04/14/2026	76. CITY OF COCOA COMMENTS
04/28/2026	77. CITY OF COCOA COMMENTS
05/12/2026	78. CITY OF COCOA COMMENTS
05/26/2026	79. CITY OF COCOA COMMENTS
06/09/2026	80. CITY OF COCOA COMMENTS
06/23/2026	81. CITY OF COCOA COMMENTS
07/07/2026	82. CITY OF COCOA COMMENTS
07/21/2026	83. CITY OF COCOA COMMENTS
08/04/2026	84. CITY OF COCOA COMMENTS
08/18/2026	85. CITY OF COCOA COMMENTS
08/31/2026	86. CITY OF COCOA COMMENTS
09/14/2026	87. CITY OF COCOA COMMENTS
09/28/2026	88. CITY OF COCOA COMMENTS
10/12/2026	89. CITY OF COCOA COMMENTS
10/26/2026	90. CITY OF COCOA COMMENTS
11/09/2026	91. CITY OF COCOA COMMENTS
11/23/2026	92. CITY OF COCOA COMMENTS
12/07/2026	93. CITY OF COCOA COMMENTS
12/21/2026	94. CITY OF COCOA COMMENTS
01/04/2027	95. CITY OF COCOA COMMENTS
01/18/2027	96. CITY OF COCOA COMMENTS
02/01/2027	97. CITY OF COCOA COMMENTS
02/15/2027	98. CITY OF COCOA COMMENTS
02/28/2027	99. CITY OF COCOA COMMENTS
03/14/2027	100. CITY OF COCOA COMMENTS



MUNICIPAL APPROVAL STAMP



SEE SHEET C-307 FOR CONTINUATION

SEE SHEET C-304 FOR CONTINUATION

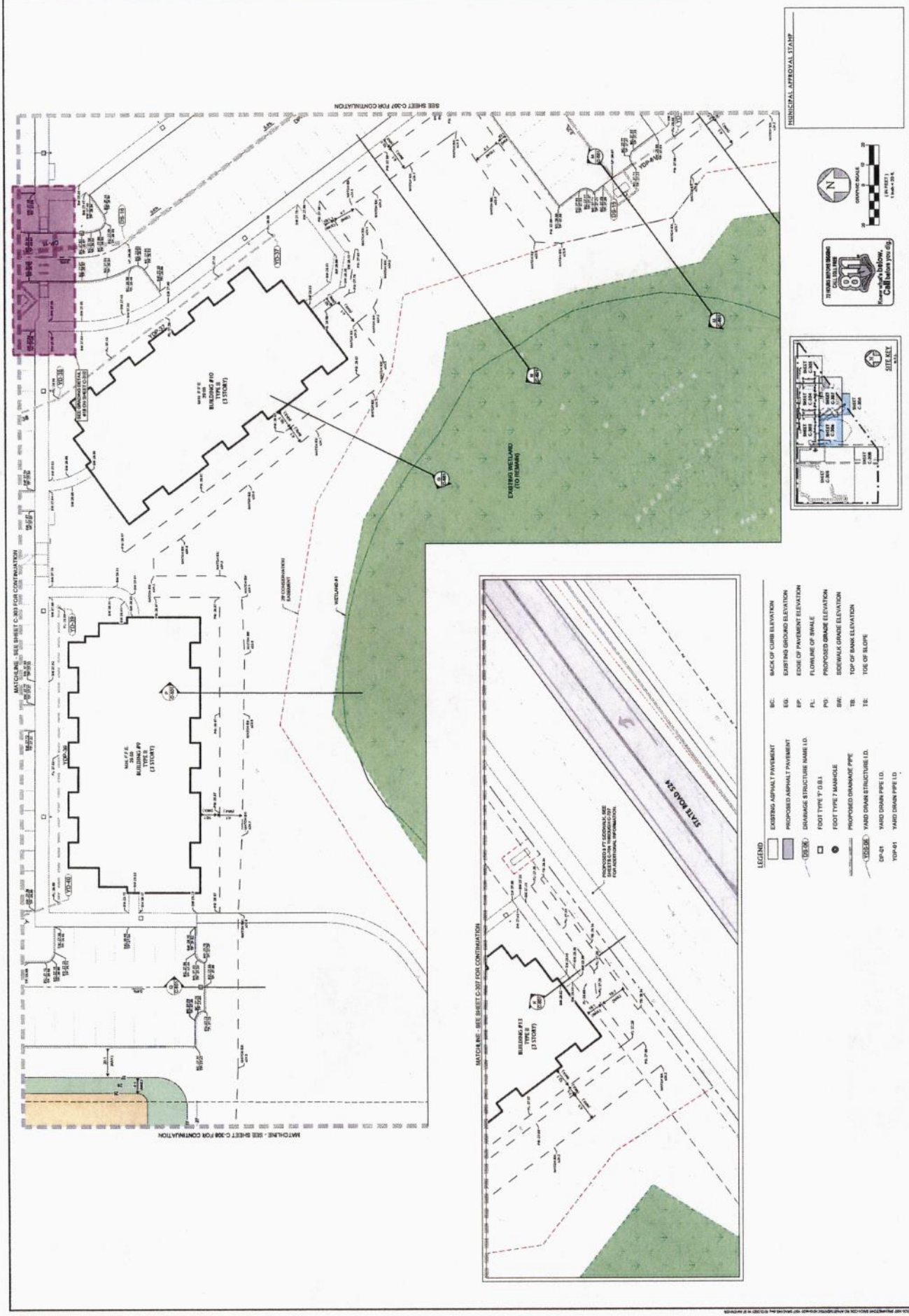
DATE	REVISIONS	JOB NO.	DATE ISSUED	CHECKED	DATE	DESIGNED	BY	DATE	BY
03/03/2023	1. CITY OF COCOA COMMENTS	23-027	03/03/2023	03/03/2023	03/03/2023	03/03/2023	03/03/2023	03/03/2023	03/03/2023
03/03/2023	2. CITY OF COCOA COMMENTS								
03/03/2023	3. CITY OF COCOA COMMENTS								
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03/03/2023	13. CITY OF COCOA COMMENTS								
03/03/2023	14. CITY OF COCOA COMMENTS								
03/03/2023	15. CITY OF COCOA COMMENTS								

MBY ENGINEERING, INC.
1800 W. US HWY 1, SUITE 100
MELBOURNE, FL 32901
TEL: 321.225.1111
WWW.MBYENGINEERING.COM

GRADING PLAN
(SHEET 4 OF 6)

ALLEGRA COCOA
FLORIDA
CITY OF COCOA

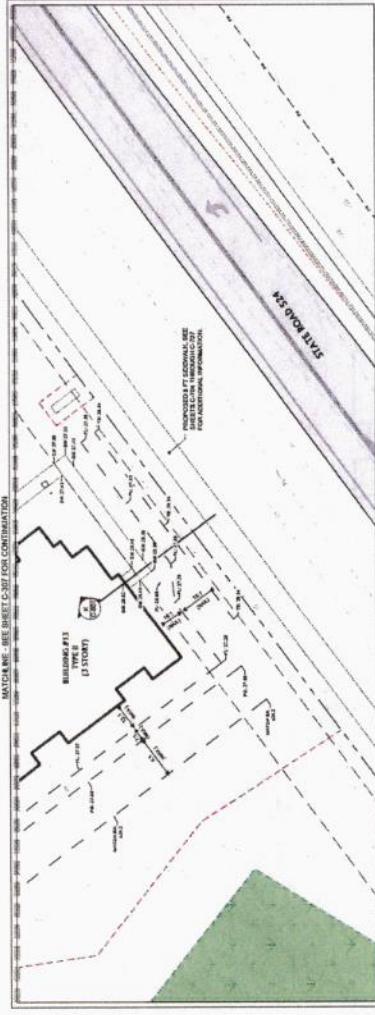
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SEAL OF THE PROFESSIONAL ENGINEER
J. A. B. B.
No. 12345
State of Florida

MUNICIPAL APPROVAL STAMP

SITE KEY



LEGEND	EXISTING ASPHALT PAVEMENT	PROPOSED ASPHALT PAVEMENT	EXISTING GROUND ELEVATION	PROPOSED GROUND ELEVATION	EDGE OF PAVEMENT ELEVATION	FLOWLINE OF SHALE	PROPOSED GRADE ELEVATION	SEWERAL GRADE ELEVATION	TOP OF BANK ELEVATION	TOP OF SLOPE
	EXISTING ASPHALT PAVEMENT	PROPOSED ASPHALT PAVEMENT	EXISTING GROUND ELEVATION	PROPOSED GROUND ELEVATION	EDGE OF PAVEMENT ELEVATION	FLOWLINE OF SHALE	PROPOSED GRADE ELEVATION	SEWERAL GRADE ELEVATION	TOP OF BANK ELEVATION	TOP OF SLOPE
	EXISTING ASPHALT PAVEMENT	PROPOSED ASPHALT PAVEMENT	EXISTING GROUND ELEVATION	PROPOSED GROUND ELEVATION	EDGE OF PAVEMENT ELEVATION	FLOWLINE OF SHALE	PROPOSED GRADE ELEVATION	SEWERAL GRADE ELEVATION	TOP OF BANK ELEVATION	TOP OF SLOPE
	EXISTING ASPHALT PAVEMENT	PROPOSED ASPHALT PAVEMENT	EXISTING GROUND ELEVATION	PROPOSED GROUND ELEVATION	EDGE OF PAVEMENT ELEVATION	FLOWLINE OF SHALE	PROPOSED GRADE ELEVATION	SEWERAL GRADE ELEVATION	TOP OF BANK ELEVATION	TOP OF SLOPE



1

ALLEGRA COCOA

FLORIDA

GRADING PLAN
(SHEET 5 OF 6)



MBV
ENGINEERING, INC.

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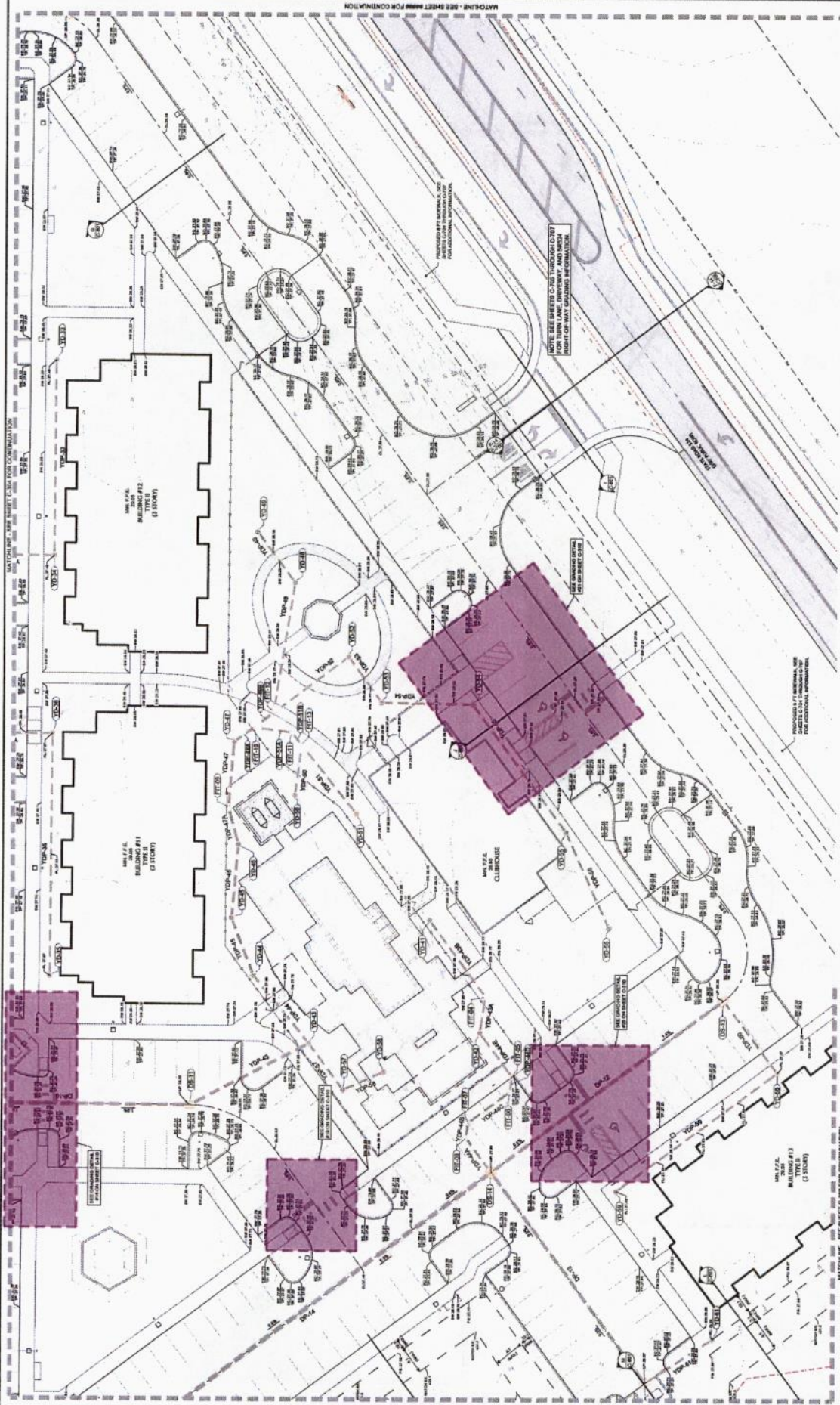
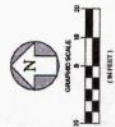
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BC:	BACK OF CURB ELEVATION
EG:	EXISTING GROUND ELEVATION
EP:	EDGE OF PAVEMENT ELEVATION
FL:	FLOWLINE OF INVALE
PG:	PROPOSED GRADE ELEVATION
SW:	SIDEWALK GRADE ELEVATION
TD:	TOP OF BANK ELEVATION
TS:	TOP OF SLOPE

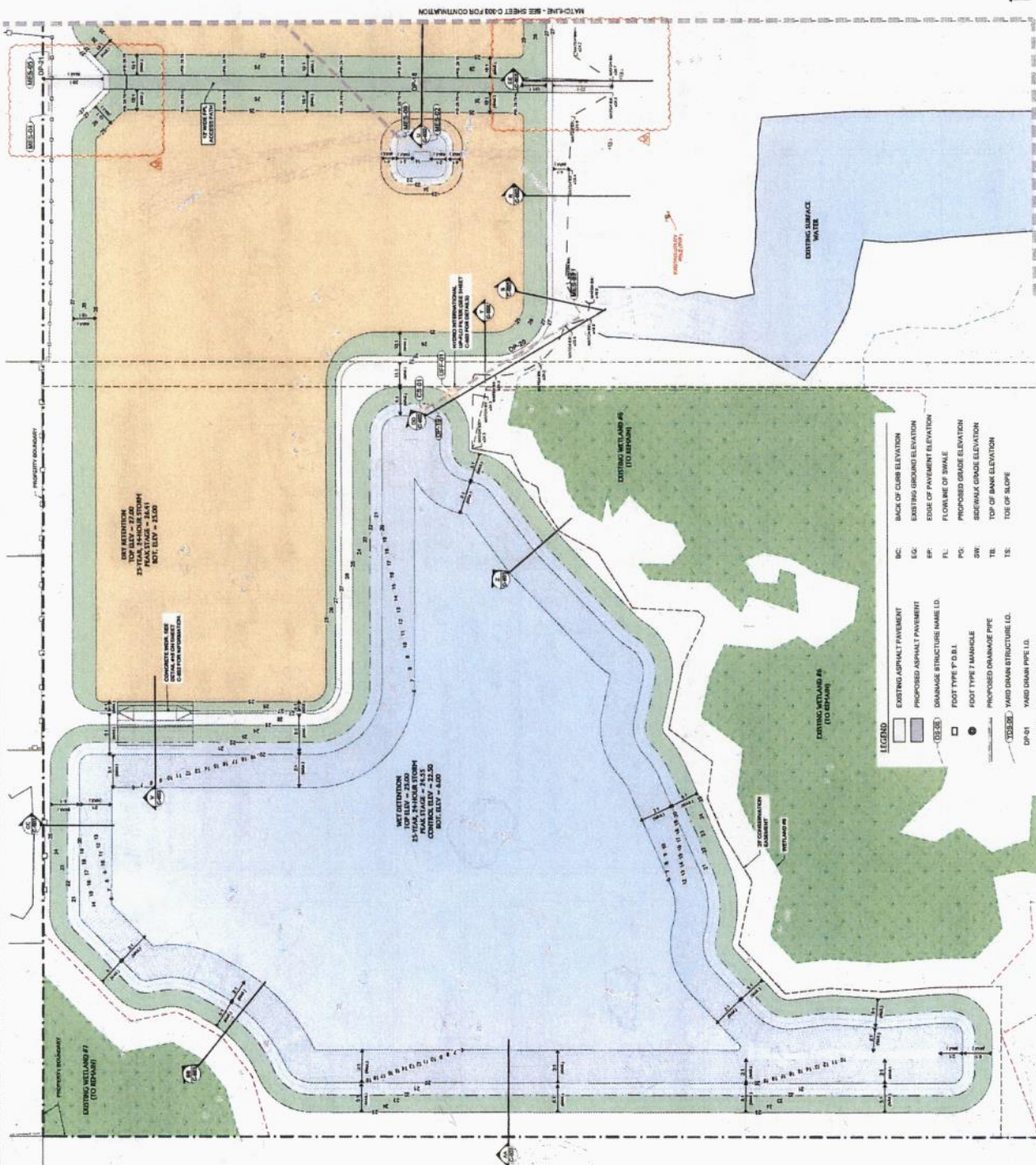
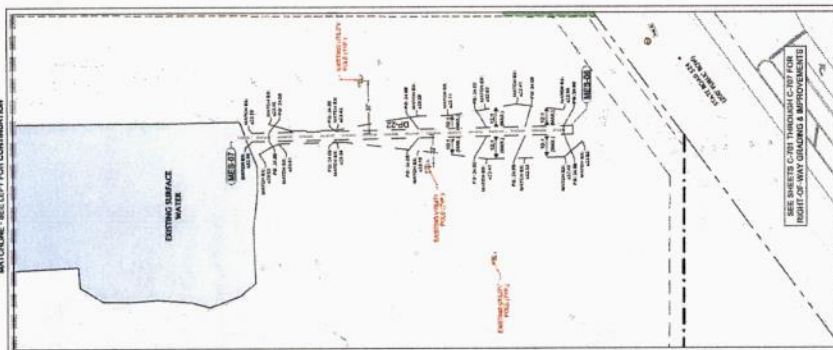
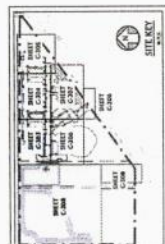
PROPOSED DRAINAGE PIPE
YARD DRAIN STRUCTURE I.D.
YD-01
YD-01
YD-01

	EXISTING ASPHALT PAVEMENT
	PROPOSED ASPHALT PAVEMENT
	DRAINAGE STRUCTURE NAME I.D.
	FOOT TYPE 7 D.B.I.
	FOOT TYPE 7 MANHOLE

MATCHLINE - SEE SHEET C-200 FOR CONTINUATION

WATCHLINE - SEE SHEET C-306 FOR CONTINUATION

MATCHLINE - SEE SHEET C-304 FOR CONTINUATION



C-309

SHEET 25-107



CITY OF COCOA
ALLEGRA COCOA

FLORIDA

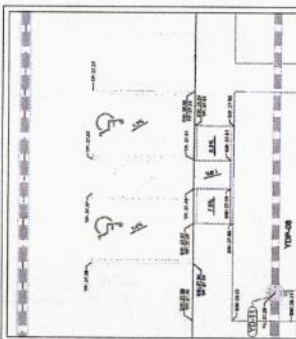
HANDICAP PARKING & ACCESSIBILITY GRADING
DETAILS (SHEET 1 OF 3)

City of Structural & Engineering
MBY ENGINEERING, INC.
1000 N. MILITARY BLVD., SUITE 100
MILITARY, FLORIDA 32909
TEL: (407) 273-1000
FAX: (407) 273-1001
WWW.MBYENGINEERING.COM

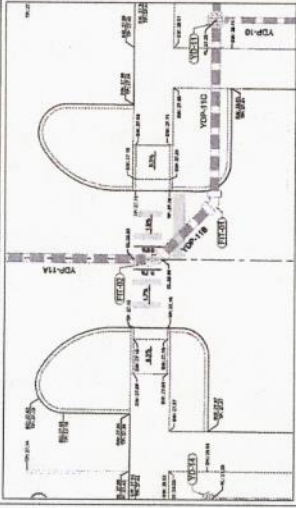
DATE	REVISIONS
05/09/2023	13 CITY OF COCOA COMMENTS
05/09/2023	12 CITY OF COCOA COMMENTS
05/09/2023	11 CITY OF COCOA COMMENTS
05/09/2023	10 CITY OF COCOA COMMENTS
05/09/2023	09 CITY OF COCOA COMMENTS
05/09/2023	08 CITY OF COCOA COMMENTS
05/09/2023	07 CITY OF COCOA COMMENTS
05/09/2023	06 CITY OF COCOA COMMENTS
05/09/2023	05 CITY OF COCOA COMMENTS
05/09/2023	04 CITY OF COCOA COMMENTS
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05/09/2023	02 CITY OF COCOA COMMENTS
05/09/2023	01 CITY OF COCOA COMMENTS



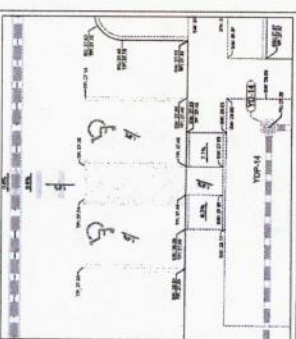
GRADING DETAIL #12 - HANDICAP SPACES
NORTH OF BUILDING #3
SCALE 1" = 10'



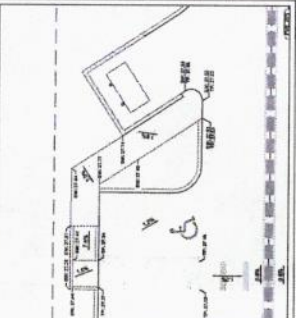
GRADING DETAIL #11 - CROSSWALK
NORTH OF BUILDINGS #3 AND #4
SCALE 1" = 10'



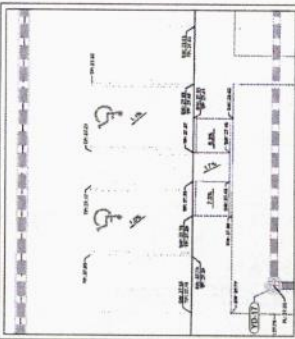
GRADING DETAIL #10 - HANDICAP SPACES
NORTH OF BUILDING #4
SCALE 1" = 10'



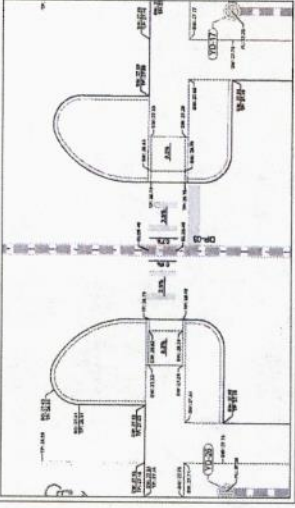
GRADING DETAIL #9 - HANDICAP SPACES
AT DUMPSTER NORTH OF BUILDING #4
SCALE 1" = 10'



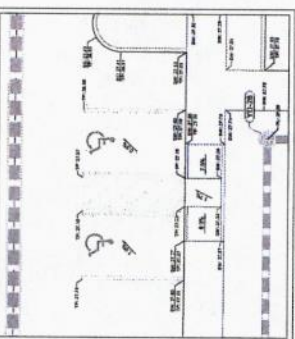
GRADING DETAIL #8 - HANDICAP SPACES
NORTH OF BUILDING #5
SCALE 1" = 10'



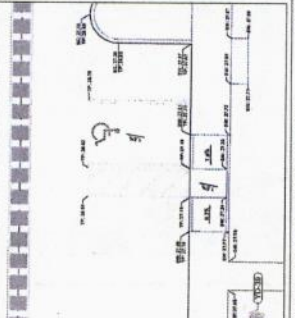
GRADING DETAIL #7 - CROSSWALK
NORTH OF BUILDINGS #5 AND #6
SCALE 1" = 10'



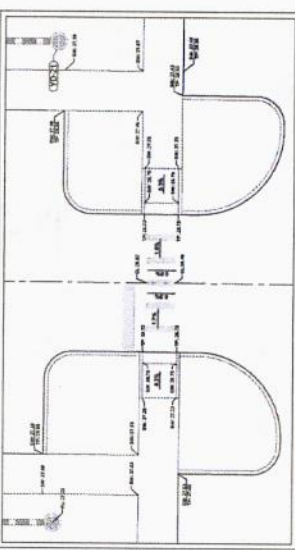
GRADING DETAIL #6 - HANDICAP SPACES
NORTH OF BUILDING #6
SCALE 1" = 10'



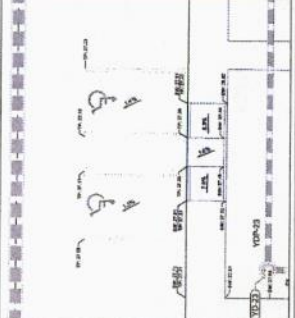
GRADING DETAIL #5 - HANDICAP SPACES
NORTH OF BUILDING #7
SCALE 1" = 10'



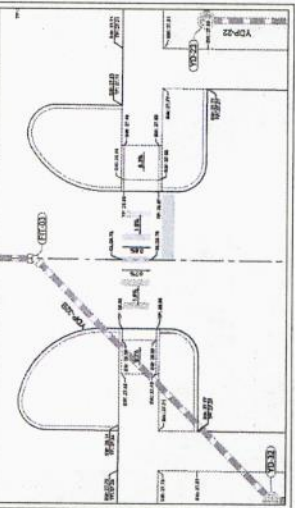
GRADING DETAIL #4 - CROSSWALK
SOUTH OF BUILDINGS #7 AND #8
SCALE 1" = 10'



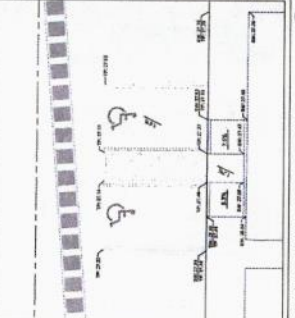
GRADING DETAIL #3 - HANDICAP SPACES
NORTH OF BUILDING #7
SCALE 1" = 10'



GRADING DETAIL #2 - CROSSWALK
NORTH OF BUILDINGS #7 AND #8
SCALE 1" = 10'



GRADING DETAIL #1 - HANDICAP SPACES
NORTH OF BUILDING #8
SCALE 1" = 10'





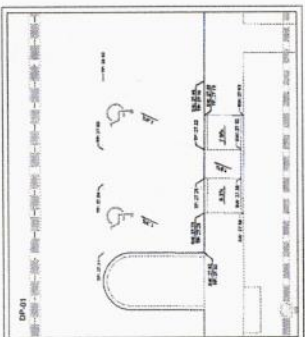
ALLEGRA COCOA

HANDICAP PARKING &
ACCESSIBILITY GRADING
DETAILS (SHEET 2 OF 3)

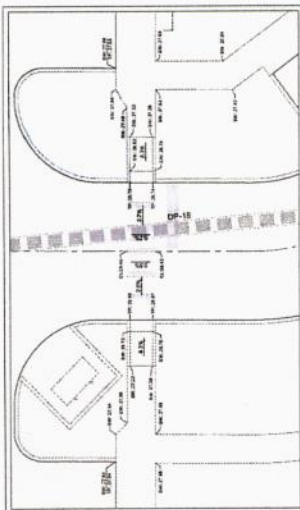


MBV
ENGINEERING, INC.
1000 N. WILSON AVENUE, SUITE 100
ANN ARBOR, MI 48106-1500
734/769-1000
FAX 734/769-1001
WWW.MBV-ENG.COM

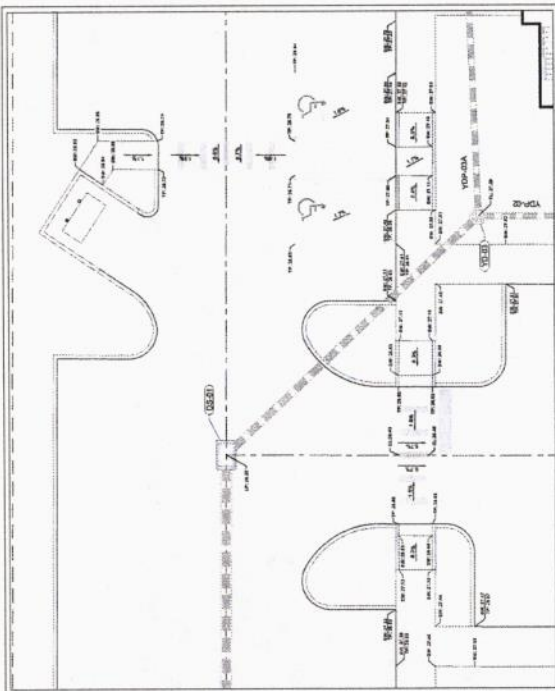
GRADING DETAIL #15 - HANDICAP SPACES
NORTH OF BUILDING #2
SCALE 1" = 10'



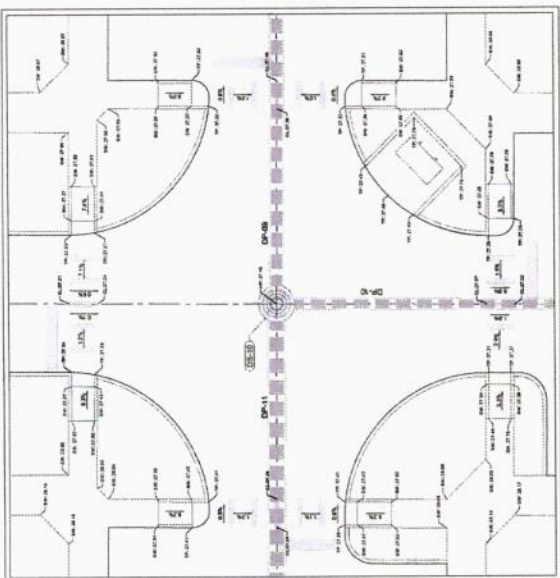
GRADING DETAIL #1B - CROSSWALK
NEAR BUILDING #10
SCALE 1" = 10'



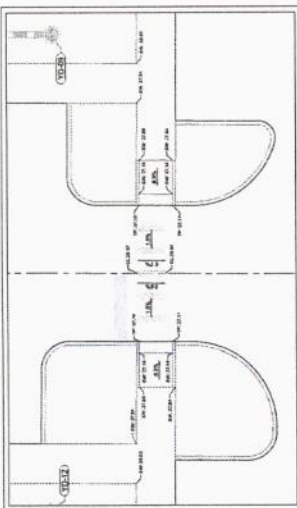
GRADING DETAIL #16 - INTERSECTION
NORTH OF BUILDINGS #1 AND #2
SCALE 1" = 10'



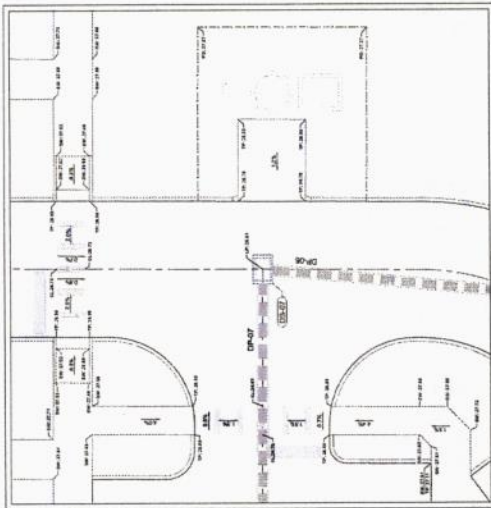
GRADING DETAIL #14 - INTERSECTION
SOUTH OF BUILDINGS #5 AND #6
SCALE 1" = 10'



GRADING DETAIL #13 - CROSSWALK
NORTH OF BUILDINGS #3 AND #4
SCALE 1" = 10'



GRADING DETAIL #17 - INTERSECTION
SOUTH OF BUILDINGS #1 AND #2
SCALE 1" = 10'



DATE	REVISIONS	
10/13/2022		DATE ISSUED
06/03/2022	7. COORD. WITH THE COMMENTS	RE-DESIGN
05/11/2022	8. STAFF COMMENTS	
06/13/2022	9. STAFF COMMENTS	DATE
07/16/2022	10. FINAL COMMENTS	DESIGN
07/27/2022	11. CLT OF COORD. COMMENTS	DATE
08/11/2022	12. STAFF COMMENTS	DESIGN / DATE
10/03/2022	13. CLT OF COORD. COMMENTS	RE-DESIGN



C-402

DATE _____ OBJECTIVE MARKS _____

DATE _____ OBJECTIVE MARKS _____

DATE _____ OBJECTIVE MARKS _____



ALLEGRA COCOA

UTILITY NOTES AND FIRE
HYDRANT COVERAGE PLAN

MBV
ENGINEERING, INC.
HOW ROBERT WILLIAMS & ASSOCIATES



MBV
ENGINEERING, INC.
HOW ROBERT WILLIAMS & ASSOCIATES



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ENGINEERING, INC.
HOW ROBERT WILLIAMS & ASSOCIATES



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ENGINEERING, INC.
HOW ROBERT WILLIAMS & ASSOCIATES



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ENGINEERING, INC.
HOW ROBERT WILLIAMS & ASSOCIATES



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ENGINEERING, INC.
HOW ROBERT WILLIAMS & ASSOCIATES

DATE	REVISIONS
04/26/2023	COMMENTS
04/26/2023	1. FOOT DRAINAGE COMMENTS
04/26/2023	2. FOOT DRAINAGE COMMENTS
04/26/2023	3. CITY OF DODGE WATER COMMENTS
04/26/2023	4. AERIAL COMMENTS
04/26/2023	5. FOOT DRAINAGE COMMENTS
04/26/2023	6. FUEL COMMENTS
04/26/2023	7. CITY OF DODGE COMMENTS
04/26/2023	8. FOOT DRAINAGE COMMENTS

UTILITY GENERAL NOTES:

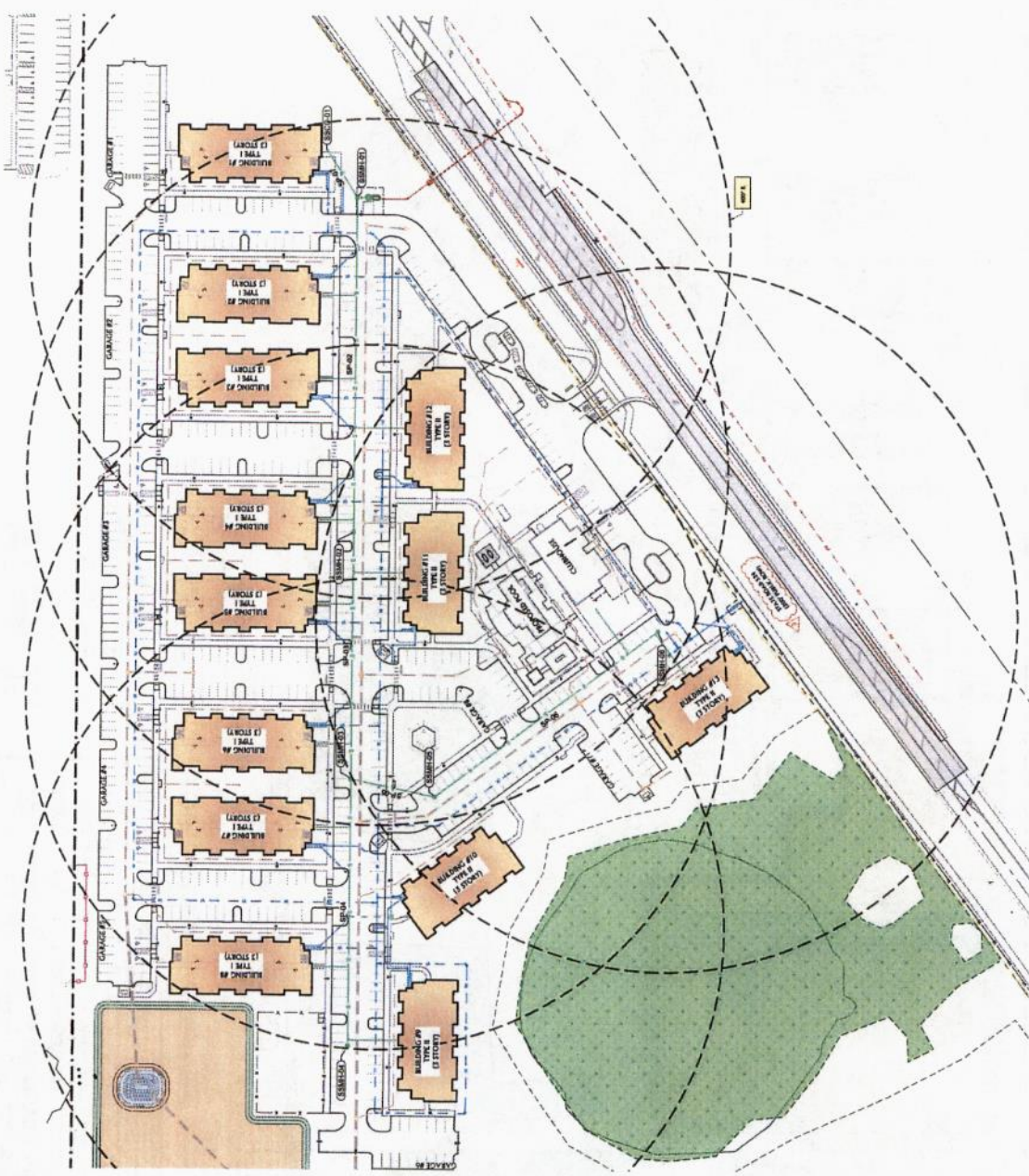
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FOR INSTALLATION ■ TESTING CONTINUED

1. **DESIGN AND CONSTRUCTION STANDARDS**—DESIGNERS SHALL PROVIDE A COMPLETE SET OF CONSTRUCTION DOCUMENTS, INCLUDING BUT NOT LIMITED TO, SPECIFICATIONS, DRAWINGS, AND SCHEDULES, THAT COMPLY WITH THE LATEST EDITIONS OF THE FOLLOWING STANDARDS:
 - a. **ASCE 7-10**—MINIMUM DESIGN LOADS AND OTHER CRITICAL LOADS
 - b. **ACI 318-11**—CONCRETE STRUCTURES
 - c. **IBC 2012**—INTERNATIONAL BUILDING CODE
 - d. **FM 4-45**—FIRE PROTECTION STANDARDS
2. **PERMITTING AND REGULATORY COMPLIANCE**—DESIGNERS SHALL OBTAIN ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES, INCLUDING BUT NOT LIMITED TO, THE CITY OF DALLAS, TEXAS, AND THE TEXAS DEPARTMENT OF TRANSPORTATION (TxDOT).
3. **COORDINATION AND COLLABORATION**—DESIGNERS SHALL MAINTAIN CLOSE COORDINATION AND COLLABORATION WITH THE ARCHITECT AND OTHER PROFESSIONAL CONSULTANTS INVOLVED IN THE PROJECT, INCLUDING BUT NOT LIMITED TO, STRUCTURAL ENGINEERS, ELECTRICAL ENGINEERS, MECHANICAL ENGINEERS, AND PLUMBING ENGINEERS.
4. **QUALITY CONTROL AND ASSURANCE**—DESIGNERS SHALL IMPLEMENT A RIGOROUS QUALITY CONTROL AND ASSURANCE PROGRAM THAT INCLUDES THE FOLLOWING:
 - a. **DESIGN CHECKS**—CONDUCT THOROUGH DESIGN CHECKS AT EACH MAJOR DESIGN MILESTONE TO IDENTIFY AND CORRECT ANY ERRORS OR OMISSIONS.
 - b. **REVISIONS**—RESPOND TO AND INCORPORATE ALL REVISIONS REQUESTED BY THE ARCHITECT OR OTHER STAKEHOLDERS IN A TIMELY MANNER.
 - c. **FINAL REVIEW**—CONDUCT A FINAL REVIEW OF ALL DESIGN DOCUMENTS BEFORE SUBMITTING THEM FOR PERMITTING AND CONSTRUCTION.
5. **COMMUNICATION AND REPORTING**—DESIGNERS SHALL MAINTAIN OPEN AND FREQUENT COMMUNICATION WITH THE ARCHITECT AND OTHER STAKEHOLDERS, AND PROVIDE REGULAR REPORTS ON THE PROGRESS OF THE DESIGN WORK.
6. **PROFESSIONAL LIABILITY**—DESIGNERS SHALL MAINTAIN ADEQUATE PROFESSIONAL LIABILITY INSURANCE COVERAGE THAT MEETS THE REQUIREMENTS OF THE STATE OF TEXAS.
7. **ADDITIONAL REQUIREMENTS**—DESIGNERS SHALL ALSO COMPLY WITH ANY OTHER REQUIREMENTS OR SPECIFICATIONS THAT MAY BE IMPOSED BY THE ARCHITECT OR OTHER STAKEHOLDERS DURING THE COURSE OF THE PROJECT.





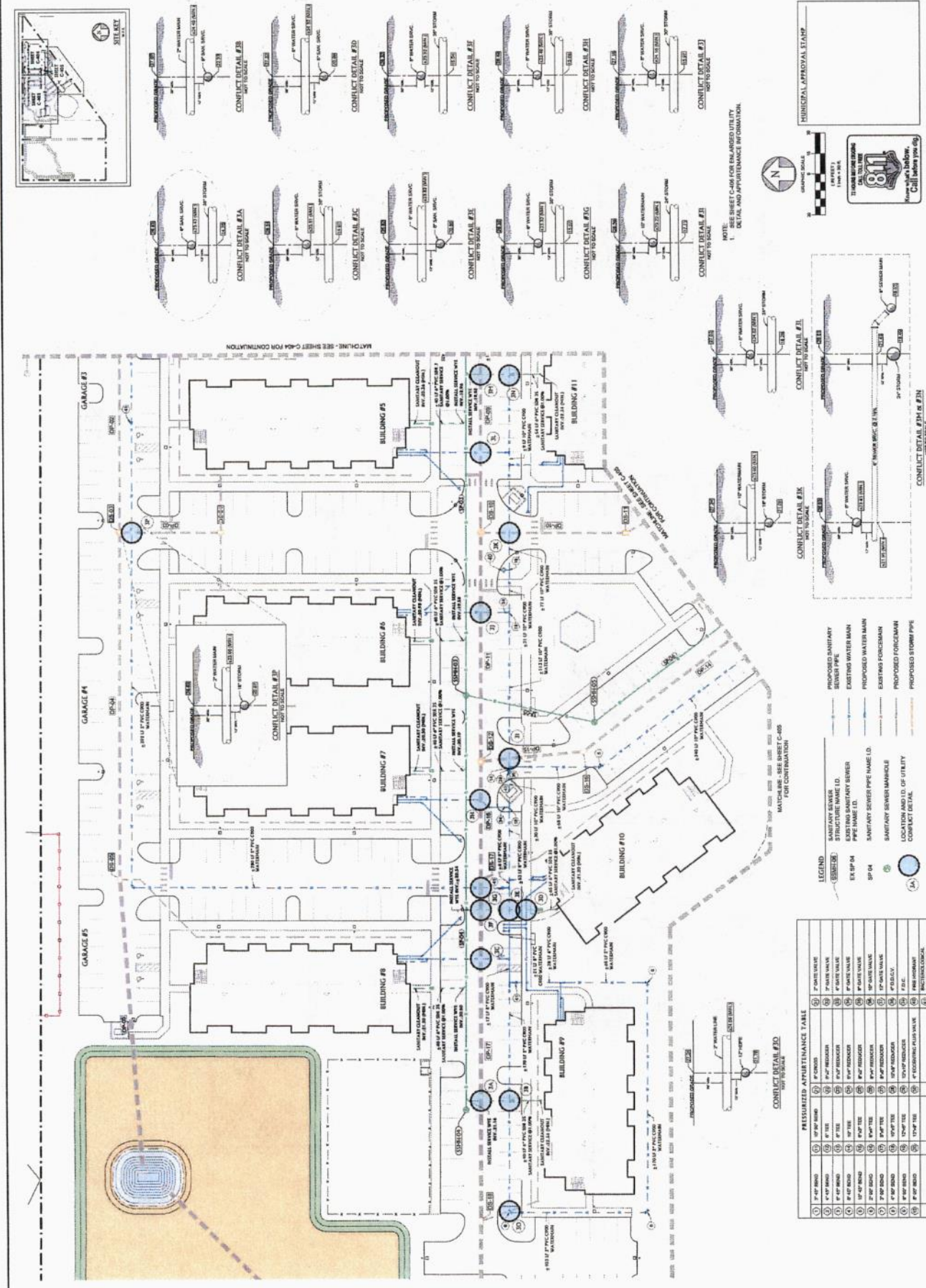
ALLEGRA COCOA

UTILITY PLAN (SHEET 1 OF 3)

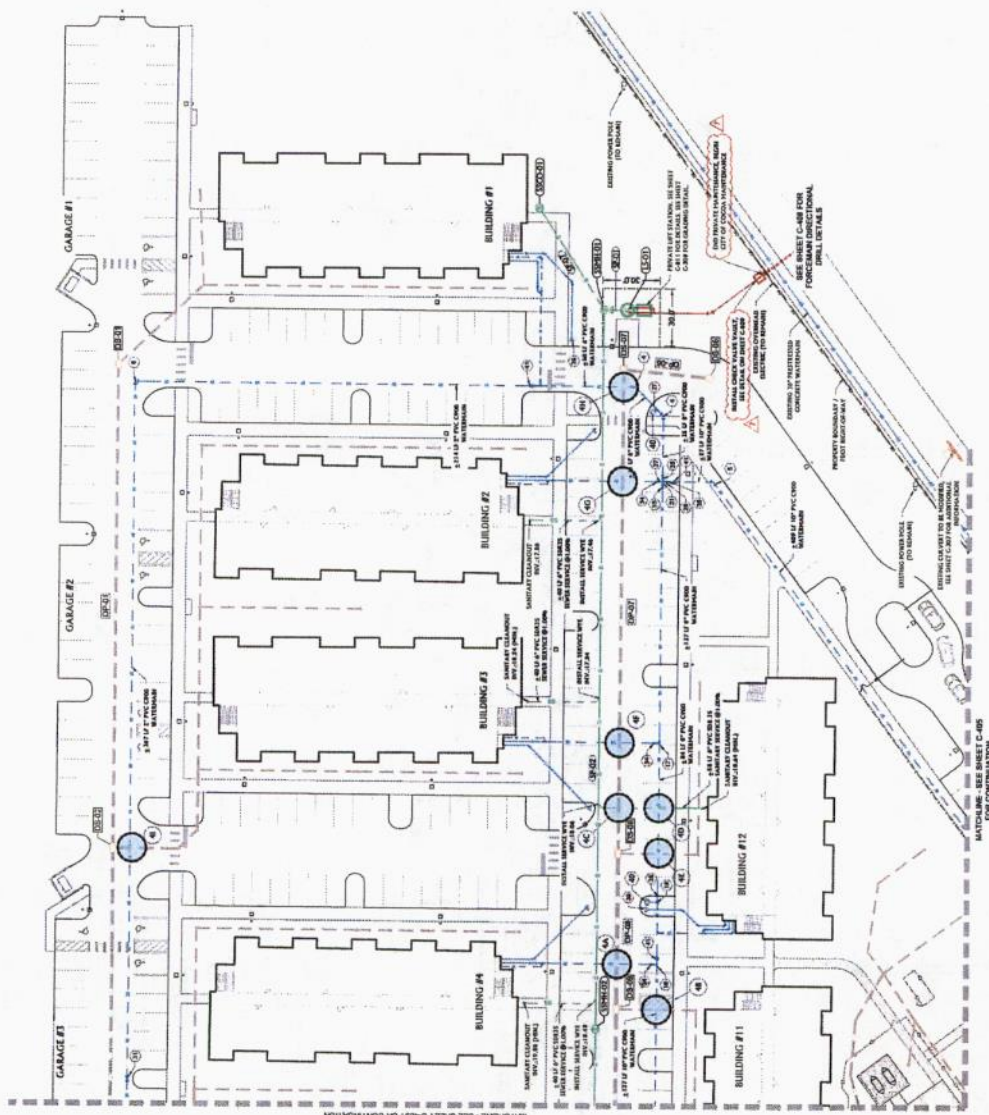
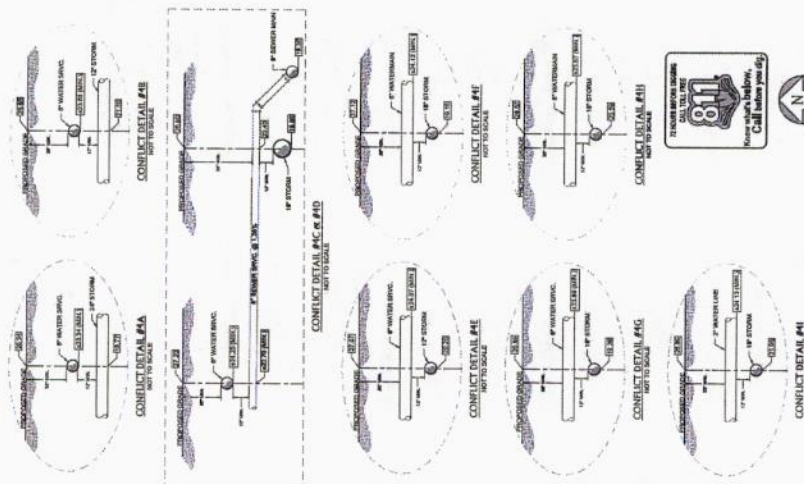


MBV
ENGINEERING, INC.
WITH ROYALTY VENTURES & ASSOCIATES
STRUCTURAL • GEOTECHNICAL • ENVIRONMENTAL
1505 W. GAYLARD BLVD. SUITE 10
MILWAUKEE, WISCONSIN 53233-4001
P: 414-223-0000
F: 414-223-0001
WWW.MBV-INC.COM
1111 W. WISCONSIN, 11TH FLOOR, MILWAUKEE, WI 53233-4000

DATE	REVISIONS	DATE ISSUED
01/02/2023	11. 07% OF POCCA COMMENTS	01/02/2023
01/02/2023	10. 07% COMMENTS	01/02/2023
01/02/2023	9. 07% COMMENTS	01/02/2023
01/02/2023	8. 07% COMMENTS	01/02/2023
01/02/2023	7. 07% COMMENTS	01/02/2023
01/02/2023	6. 07% COMMENTS	01/02/2023
01/02/2023	5. 07% COMMENTS	01/02/2023
01/02/2023	4. 07% COMMENTS	01/02/2023
01/02/2023	3. 07% COMMENTS	01/02/2023
01/02/2023	2. 07% COMMENTS	01/02/2023
01/02/2023	1. 07% COMMENTS	01/02/2023



RESUMED APPOINTANCE TABLE					
1	2 ND RND	3	4 TH RND	5	6 TH RND
7	8 TH RND	9	10 TH RND	11	12 TH RND
13	14 TH RND	15	16 TH RND	17	18 TH RND
19	20 TH RND	21	22 ND RND	23	24 TH RND
25	26 TH RND	27	28 TH RND	29	30 TH RND
31	32 ND RND	33	34 TH RND	35	36 TH RND
37	38 TH RND	39	40 TH RND	41	42 ND RND
43	44 TH RND	45	46 TH RND	47	48 TH RND
49	50 TH RND	51	52 ND RND	53	54 TH RND
55	56 TH RND	57	58 TH RND	59	60 TH RND
61	62 ND RND	63	64 TH RND	65	66 TH RND
67	68 TH RND	69	70 TH RND	71	72 ND RND
73	74 TH RND	75	76 TH RND	77	78 TH RND
79	80 TH RND	81	82 ND RND	83	84 TH RND
85	86 TH RND	87	88 TH RND	89	90 TH RND
91	92 ND RND	93	94 TH RND	95	96 TH RND
97	98 TH RND	99	100 TH RND	101	102 ND RND
103	104 TH RND	105	106 TH RND	107	108 TH RND
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127	128 TH RND	129	130 TH RND	131	132 ND RND
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139	140 TH RND	141	142 ND RND	143	144 TH RND
145	146 TH RND	147	148 TH RND	149	150 TH RND
151	152 ND RND	153	154 TH RND	155	156 TH RND
157	158 TH RND	159	160 TH RND	161	162 ND RND
163	164 TH RND	165	166 TH RND	167	168 TH RND
169	170 TH RND	171	172 ND RND	173	174 TH RND
175	176 TH RND	177	178 TH RND	179	180 TH RND
181	182 ND RND	183	184 TH RND	185	186 TH RND
187	188 TH RND	189	190 TH RND	191	192 ND RND
193	194 TH RND	195	196 TH RND	197	198 TH RND
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229	230 TH RND	231	232 ND RND	233	234 TH RND
235	236 TH RND	237	238 TH RND	239	240 TH RND
241	242 ND RND	243	244 TH RND	245	246 TH RND
247	248 TH RND	249	250 TH RND	251	252 ND RND
253	254 TH RND	255	256 TH RND	257	258 TH RND
259	260 TH RND	261	262 ND RND	263	264 TH RND
265	266 TH RND	267	268 TH RND	269	270 TH RND
271	272 ND RND	273	274 TH RND	275	276 TH RND
277	278 TH RND	279	280 TH RND	281	282 ND RND
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295	296 TH RND	297	298 TH RND	299	300 TH RND
301	302 ND RND	303	304 TH RND	305	306 TH RND
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535	536 TH RND	537	538 TH RND	539	540 TH RND
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547	548 TH RND	549	550 TH RND	551	552 ND RND
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559	560 TH RND	561	562 ND RND	563	564 TH RND
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571	572 ND RND	573	574 TH RND	575	576 TH RND
577	578 TH RND	579	580 TH RND	581	582 ND RND
583	584 TH RND	585	586 TH RND	587	588 TH RND
589	590 TH RND	591	592 ND RND	593	594 TH RND
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619	620 TH RND	621	622 ND RND	623	624 TH RND
625	626 TH RND	627	628 TH RND	629	630 TH RND
631	632 ND RND	633	634 TH RND	635	636 TH RND
637	638 TH RND	639	640 TH RND	641	642 ND RND
643	644 TH RND	645	646 TH RND	647	648 TH RND
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709	710 TH RND	711	712 ND RND	713	714 TH RND
715	716 TH RND	717	718 TH RND	719	720 TH RND
721	722 ND RND	723	724 TH RND	725	726 TH RND
727	728 TH RND	729	730 TH RND	731	732 ND RND
733	734 TH RND	735	736 TH RND	737	738 TH RND
739	740 TH RND	741	742 ND RND	743	744 TH RND
745	746 TH RND	747	748 TH RND	749	750 TH RND
751	752 ND RND	753	754 TH RND	755	756 TH RND
757	758 TH RND	759	760 TH RND	761	762 ND RND
763	764 TH RND	765	766 TH RND	767	768 TH RND
769	770 TH RND	771	772 ND RND	773	774 TH RND
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781	782 ND RND	783	784 TH RND	785	786 TH RND
787	788 TH RND	789	790 TH RND	791	792 ND RND
793	794 TH RND	795	796 TH RND	797	798 TH RND
799	799 TH RND	800	800 TH RND	801	801 TH RND
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821	821 TH RND	823	823 TH RND	825	825 TH RND
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923	923 TH RND	925	925 TH RND	927	927 TH RND
929	929 TH RND	931	931 TH RND	933	933 TH RND
935	935 TH RND	937	937 TH RND	939	939 TH RND
941	941 TH RND	943	943 TH RND	945	945

[illegible]

LEGEND

	SANITARY SEWER STRUCTURE NAME I.D.		PROPOSED SANITARY SEWER PIPE
	EXISTING		PROPOSED WATER PIPE
	SP 04		PROPOSED STORM PIPE
	SP 04		PROPOSED STORM PIPE
	SANITARY SEWER MANHOLE		LOCATION AND I.D. OF UTILITY CONFLICT DETAIL



CITY OF COCOA

ALEGRA COCOA

ENLARGED UTILITY DETAIL
(SHEET 01 OF 02)

MBV
ENGINEERING, INC.
CIVIL & STRUCTURAL • SURVEYING & DEVELOPMENTAL
ENGINEERING

DATE 07/23/2022

DESIGNED BY: J. L. BERT

CHECKED BY: J. L. BERT

DATE 07/23/2022

PROJECT NO. 25-107

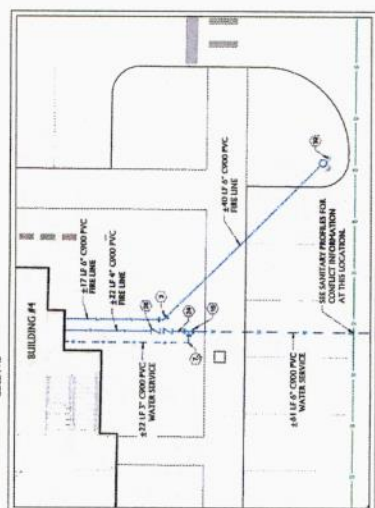
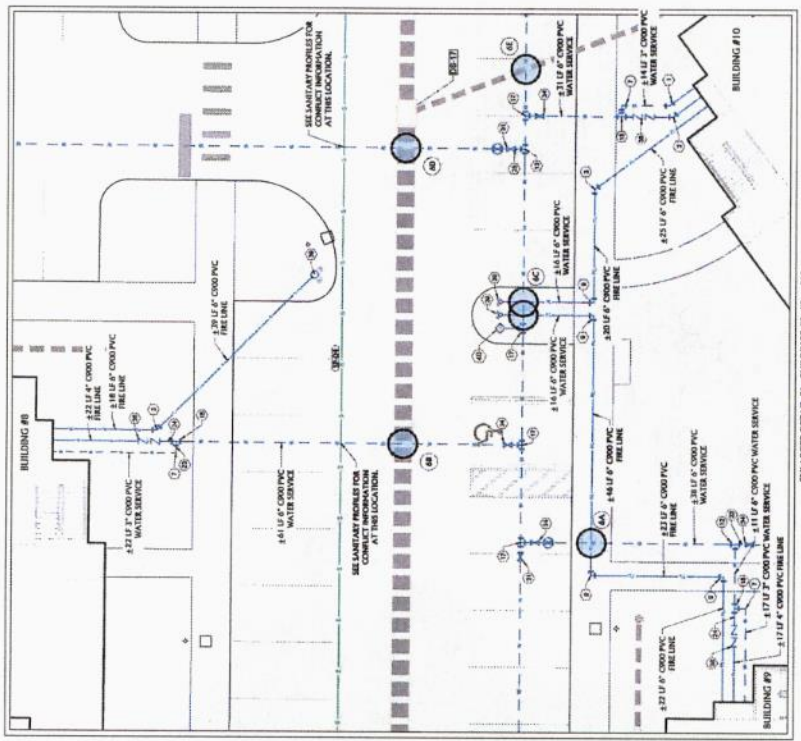
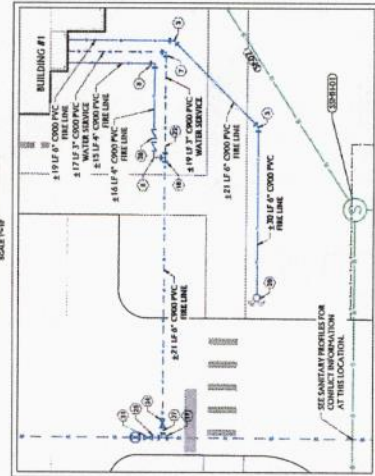
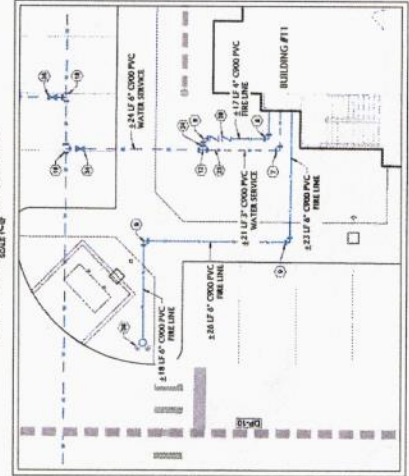
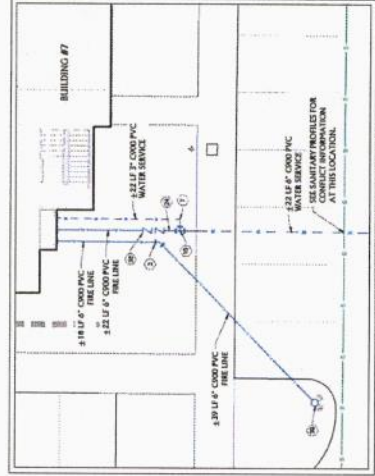
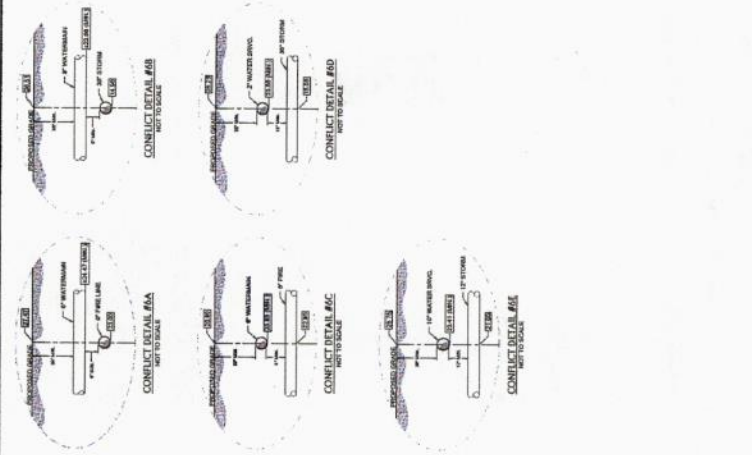
REVISIONS	DATE	DESCRIPTION
1. CITY OF COCOA COMMENTS	07/23/2022	1. CITY OF COCOA COMMENTS
2. CITY OF COCOA COMMENTS	07/23/2022	2. CITY OF COCOA COMMENTS
3. CITY OF COCOA COMMENTS	07/23/2022	3. CITY OF COCOA COMMENTS
4. CITY OF COCOA COMMENTS	07/23/2022	4. CITY OF COCOA COMMENTS
5. CITY OF COCOA COMMENTS	07/23/2022	5. CITY OF COCOA COMMENTS
6. CITY OF COCOA COMMENTS	07/23/2022	6. CITY OF COCOA COMMENTS
7. CITY OF COCOA COMMENTS	07/23/2022	7. CITY OF COCOA COMMENTS
8. CITY OF COCOA COMMENTS	07/23/2022	8. CITY OF COCOA COMMENTS
9. CITY OF COCOA COMMENTS	07/23/2022	9. CITY OF COCOA COMMENTS
10. CITY OF COCOA COMMENTS	07/23/2022	10. CITY OF COCOA COMMENTS
11. CITY OF COCOA COMMENTS	07/23/2022	11. CITY OF COCOA COMMENTS
12. CITY OF COCOA COMMENTS	07/23/2022	12. CITY OF COCOA COMMENTS

MUNICIPAL APPROVAL STAMP



PRESSURIZED AFFIDAVIT TABLE	
ITEM	DESCRIPTION
1	1" 10' 0" ROAD
2	1" 10' 0" ROAD
3	1" 10' 0" ROAD
4	1" 10' 0" ROAD
5	1" 10' 0" ROAD
6	1" 10' 0" ROAD
7	1" 10' 0" ROAD
8	1" 10' 0" ROAD
9	1" 10' 0" ROAD
10	1" 10' 0" ROAD
11	1" 10' 0" ROAD
12	1" 10' 0" ROAD
13	1" 10' 0" ROAD
14	1" 10' 0" ROAD
15	1" 10' 0" ROAD
16	1" 10' 0" ROAD
17	1" 10' 0" ROAD
18	1" 10' 0" ROAD
19	1" 10' 0" ROAD
20	1" 10' 0" ROAD
21	1" 10' 0" ROAD
22	1" 10' 0" ROAD
23	1" 10' 0" ROAD
24	1" 10' 0" ROAD
25	1" 10' 0" ROAD
26	1" 10' 0" ROAD
27	1" 10' 0" ROAD
28	1" 10' 0" ROAD
29	1" 10' 0" ROAD
30	1" 10' 0" ROAD
31	1" 10' 0" ROAD
32	1" 10' 0" ROAD
33	1" 10' 0" ROAD
34	1" 10' 0" ROAD
35	1" 10' 0" ROAD
36	1" 10' 0" ROAD
37	1" 10' 0" ROAD
38	1" 10' 0" ROAD
39	1" 10' 0" ROAD
40	1" 10' 0" ROAD
41	1" 10' 0" ROAD
42	1" 10' 0" ROAD
43	1" 10' 0" ROAD
44	1" 10' 0" ROAD
45	1" 10' 0" ROAD
46	1" 10' 0" ROAD
47	1" 10' 0" ROAD
48	1" 10' 0" ROAD
49	1" 10' 0" ROAD
50	1" 10' 0" ROAD
51	1" 10' 0" ROAD
52	1" 10' 0" ROAD
53	1" 10' 0" ROAD
54	1" 10' 0" ROAD
55	1" 10' 0" ROAD
56	1" 10' 0" ROAD
57	1" 10' 0" ROAD
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59	1" 10' 0" ROAD
60	1" 10' 0" ROAD
61	1" 10' 0" ROAD
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64	1" 10' 0" ROAD
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94	1" 10' 0" ROAD
95	1" 10' 0" ROAD
96	1" 10' 0" ROAD
97	1" 10' 0" ROAD
98	1" 10' 0" ROAD
99	1" 10' 0" ROAD
100	1" 10' 0" ROAD

LEGEND
PROPOSED SANITARY SEWER PIPE
PROPOSED WATER PIPE
PROPOSED STORM PIPE
LOCATION AND ID OF UTILITY
CONFLICT DETAIL



C-407



ALLEGRA COCOA

FLORIDA

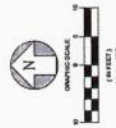
ENLARGED UTILITY DETAIL
(SHEET 02 OF 02)



City of Cocoa
1000 N. US Highway 1
Cocoa, FL 32922
Tel: 321-733-1111
Fax: 321-733-1112
Email: info@mbveng.com
Website: www.mbveng.com

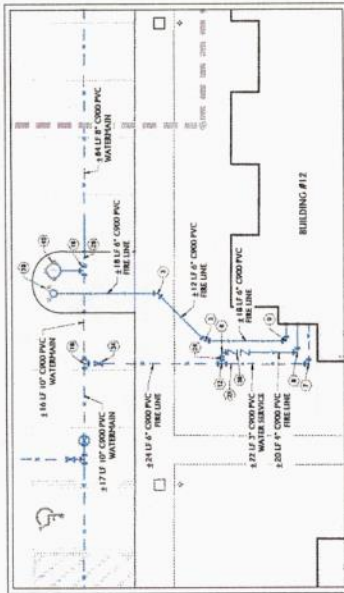
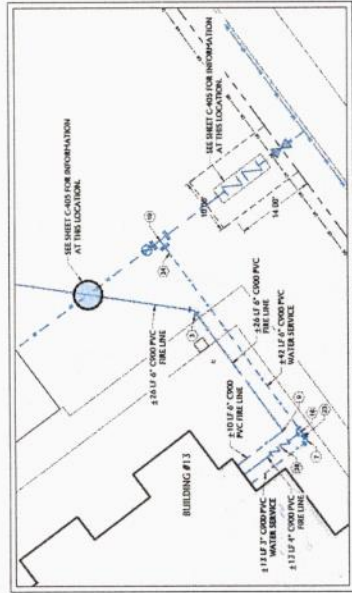
DATE	REVISIONS
08/11/2022	12. FOOT DRAINAGE COMMENTS
07/15/2022	11. CITY OF COCOA COMMENTS
07/15/2022	10. FINAL COMMENTS
07/15/2022	9. CITY OF COCOA COMMENTS
07/15/2022	8. REVISION COMMENTS
07/15/2022	7. CITY OF COCOA COMMENTS
07/15/2022	6. CITY OF COCOA COMMENTS
07/15/2022	5. CITY OF COCOA COMMENTS
07/15/2022	4. CITY OF COCOA COMMENTS
07/15/2022	3. CITY OF COCOA COMMENTS
07/15/2022	2. CITY OF COCOA COMMENTS
07/15/2022	1. CITY OF COCOA COMMENTS

MUNICIPAL APPROVAL STAMP



PRESENTED APPURTENANCE TABLE	
ITEM	DESCRIPTION
1	1" CPV W/NO
2	1" CPV W/NO
3	1" CPV W/NO
4	1" CPV W/NO
5	1" CPV W/NO
6	1" CPV W/NO
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8	1" CPV W/NO
9	1" CPV W/NO
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13	1" CPV W/NO
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15	1" CPV W/NO
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96	1" CPV W/NO
97	1" CPV W/NO
98	1" CPV W/NO
99	1" CPV W/NO
100	1" CPV W/NO

LEGEND
 PROPOSED SANITARY SEWER PIPE
 PROPOSED WATER PIPE
 PROPOSED STORM PIPE
 LOCATION AND ID. OF UTILITY
 CONFLICT DETAIL





CITY OF COCOA

ALLEGRA COCOA

FLORIDA

DIRECTIONAL DRILL
PLAN AND PROFILE



MBV
ENGINEERING, INC.
WOLFE HILLS, UTAH 84093-1000

PUMP-DEP	
FILM-THIN	

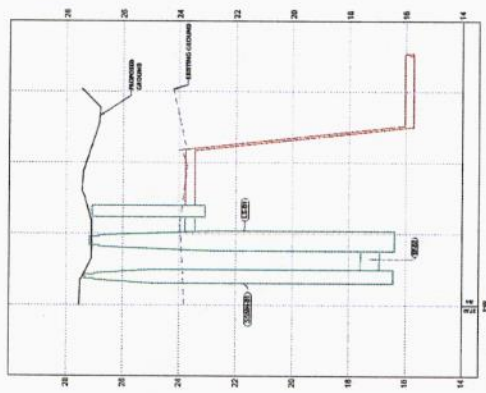
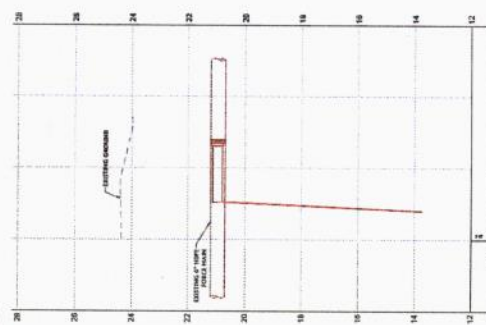
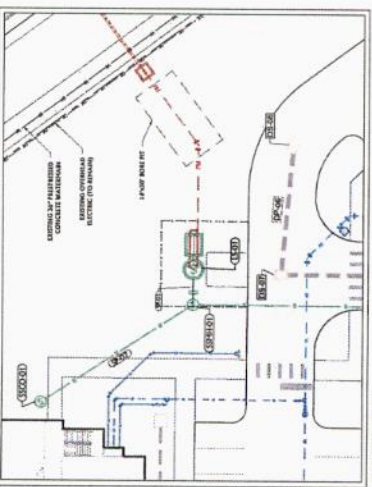
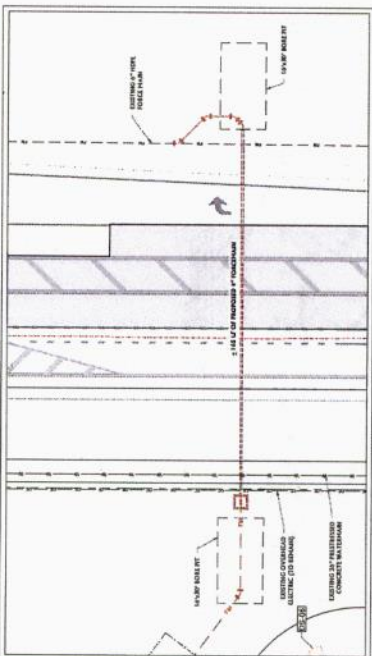
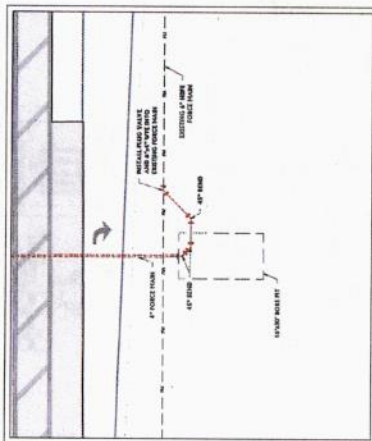
DATE ISSUED
CHECKED
DATE
OBTAIN
REMARKS
ON BOARD

600

2014/01/01
01/01/2014
01/01/2014
01/01/2014
01/01/2014

7	072
8	073
9	074
10	075
11	076
12	077
13	078

DATE	REVISIONS
05/03/2023	COMMENTS
09/11/2023	COOLIA WATER COMMENTS
09/12/2023	FORMED COMMENTS
07/10/2023	FOOT DRAINAGE COMMENTS
07/10/2023	FINAL COMMENTS
07/11/2023	CITY OF COCOA COMMENTS
07/11/2023	FOOT DRAINAGE COMMENTS
10/05/2023	CITY OF COCOA COMMENTS

[illegible][illegible]

Footprint

5. However, some people have suggested that the use of the word "disorder" might be stigmatizing. In fact, the word "disorder" is used in many contexts, such as in the medical field, and it is not inherently stigmatizing. The use of the word "disorder" in the title of the book is intended to convey the idea that the condition is a medical condition that requires treatment and support. The book also includes a section on the importance of seeking help and support, and it provides information on how to find resources and support groups. The book is written in a clear, accessible, and non-judgmental style, and it is intended to be a helpful resource for anyone who is struggling with a mental health condition.

Foot®

**NEW DATA ON
HEAVY METALS IN RAIN**

and Ward. The mean concentration was higher in samples that reported a higher frequency of rain events. The authors also found that the mean concentration of lead in rain was higher in samples that reported a higher frequency of rain events. The authors also found that the mean concentration of lead in rain was higher in samples that reported a higher frequency of rain events.

Appl. Environ. Microbiol. 61:1515-1521 (1995)



MUNICIPAL APPROVAL STAMP



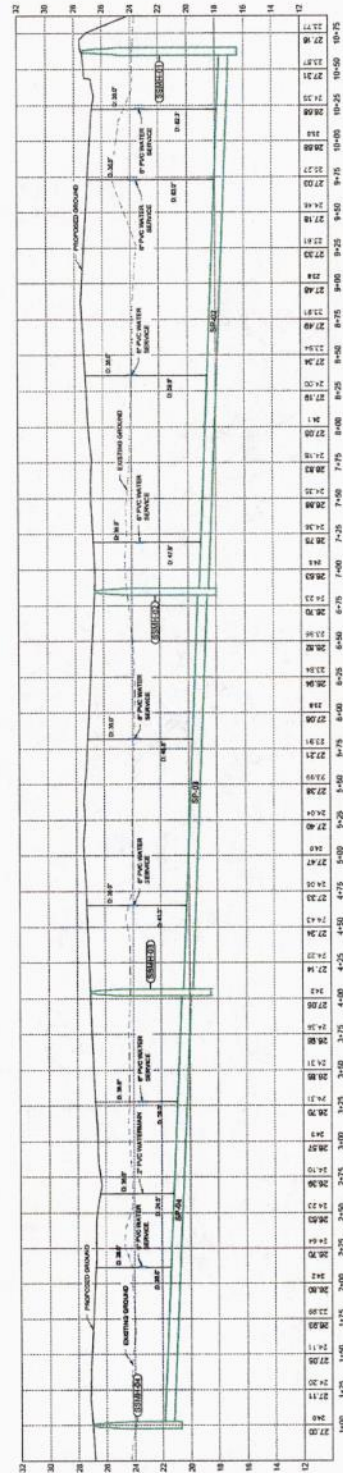
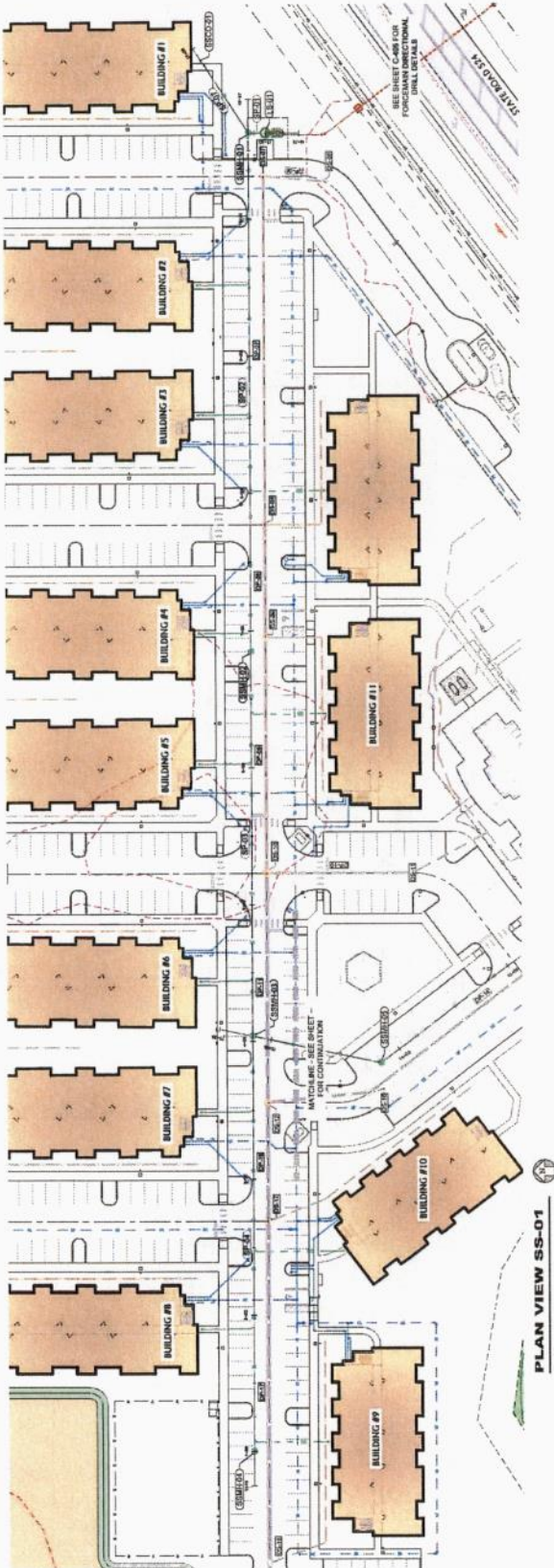
ALLEGRA COCOA

FLORIDA

SANITARY PROFILE
(SHEET 01 OF 02)



MBV
ENGINEERING, INC.

[illegible]

PROFILE VIEW S9-01

$$\begin{array}{l} H: T^* = 0.07 \\ V: T^* = 4 \end{array}$$



ALLEGRA COCOA

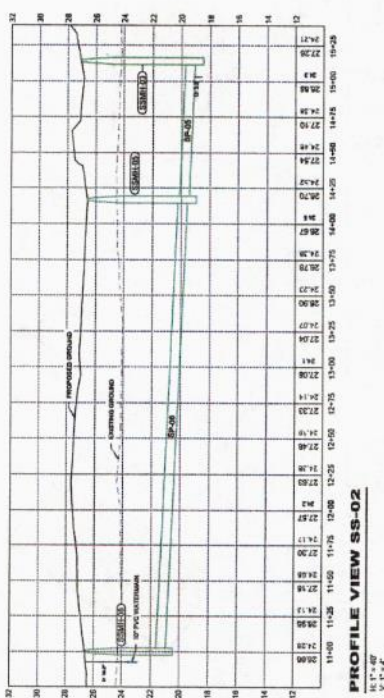
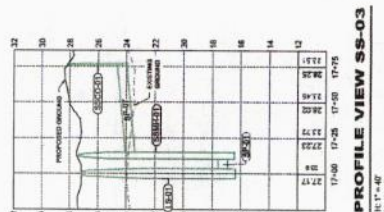
FLORIDA

SAINTARY PROFILE
(SHEET 02 OF 02)

MBV
ENGINEERING, INC.
CIVIL, STRUCTURAL, & MECHANICAL
DESIGN, CONSTRUCTION & MAINTENANCE
FOR MUNICIPALITIES & RESIDENTS

JOB NO. 20-1087
DESIGNED BY: DCM / DMB
DRAWN BY: A/R
DATE: 07-29-2022
CHECKED BY: DMB
DATE SUBMITTED: 10/20/2021

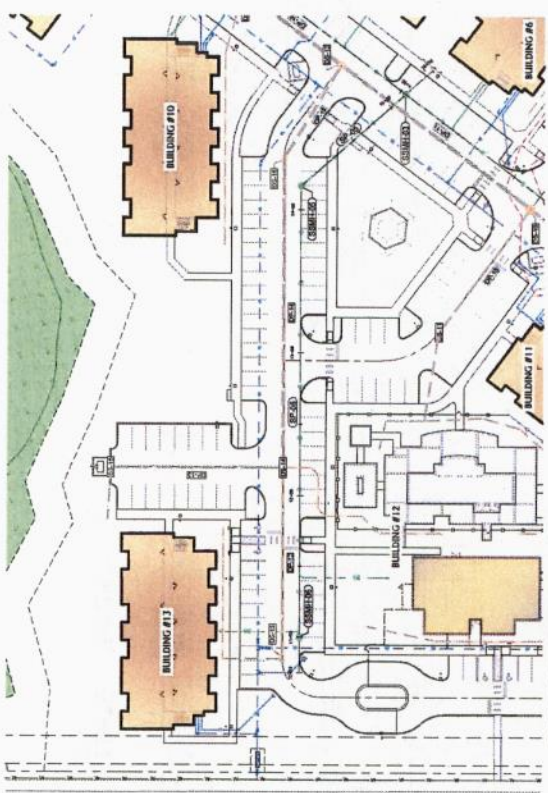
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2. CITY OF COCOA COMMENTS	08/11/2022
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4. CITY OF COCOA COMMENTS	08/11/2022
5. CITY OF COCOA COMMENTS	08/11/2022
6. CITY OF COCOA COMMENTS	08/11/2022
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10. CITY OF COCOA COMMENTS	08/11/2022
11. CITY OF COCOA COMMENTS	08/11/2022
12. CITY OF COCOA COMMENTS	08/11/2022



PLAN VIEW SS-03



PLAN VIEW SS-02



1010A

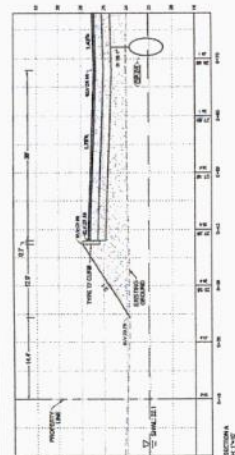
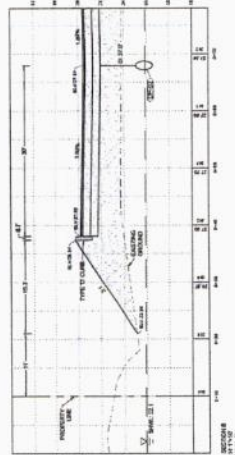
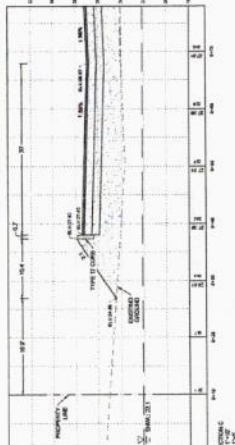
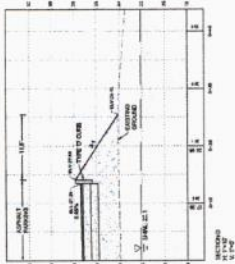
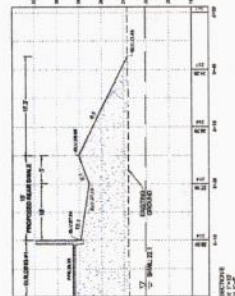
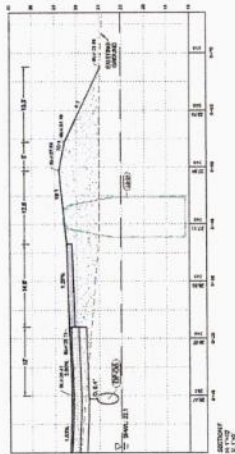
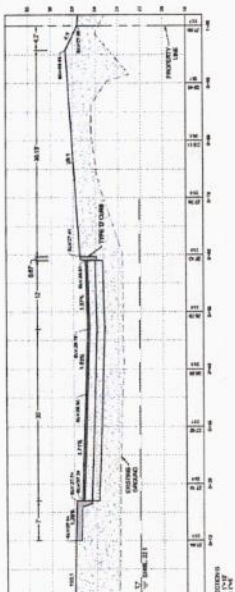
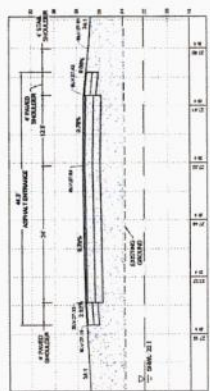
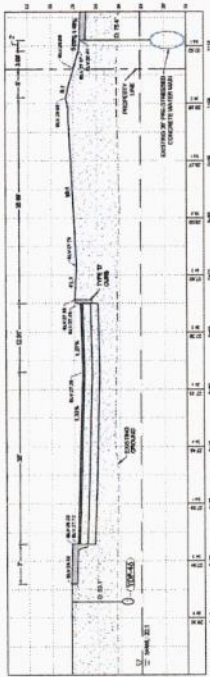
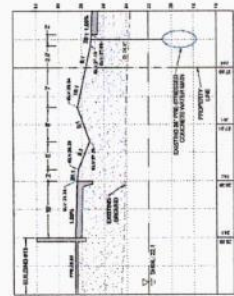
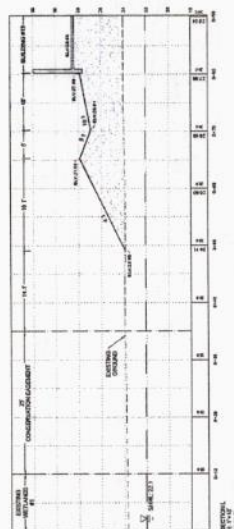
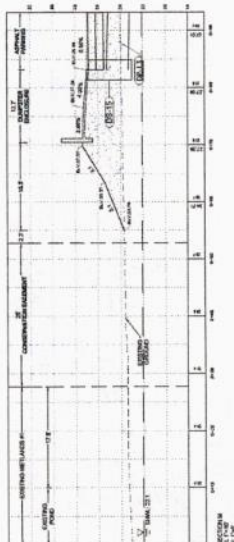
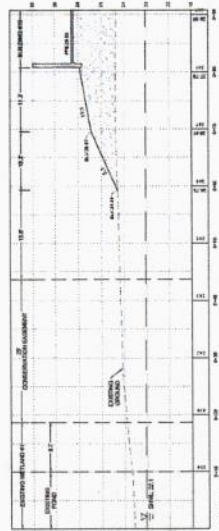
CROSS SECTIONS
(SHEET 1 OF 3)

MBV
ENGINEERING, INC.
MECHANICAL, ELECTRICAL & PLUMBING
CORP. • STRUCTURAL • ELEVATORS • ENVIRONMENTAL
1000 N. BAYVIEW BLVD. SUITE 100
ANN ARBOR, MI 48106-1500
P: 313-963-1810 F: 313-963-0811
WWW.MBV-ENGINEERING.COM
NO. 373-000-0000, 171-000-0000, 171-000-0000, 171-000-0000

DATE ISSUED
CHECKED
DATE
NAME
EXTENSION
NO.

REVISIONS	DATE	BY	DESCRIPTION
13	07/25/2022	DWB	13. CITY OF COCOA
12	07/25/2022	DWB	12. FOOT DRIVEWAY
11	07/25/2022	DWB	11. CITY OF COCOA
10	07/25/2022	DWB	10. FINAL COMMENTS
9	07/25/2022	DWB	9. FOOT DRIVEWAY
8	07/25/2022	DWB	8. SWAMP CORNER
7	07/25/2022	DWB	7. COCOA WATER CO.

DATE	
05/03/2023	ENTS
05/11/2023	
05/12/2023	ENTS
07/18/2023	
07/27/2023	ENTS
09/14/2023	ENTS
10/09/2023	ENTS



SECTION H REMOVED. SEE SECTION F-14 ON SHEET C-707
FOR PROPOSED DRIVEWAY CENTERLINE SECTION.

SHEET
25-1017



CITY OF COCOA

ALLEGRA COCOA

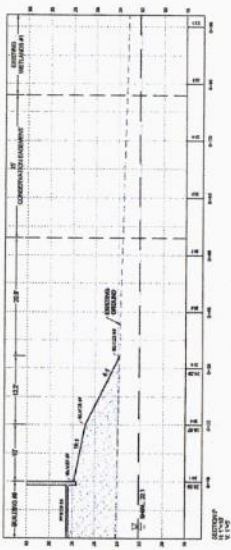
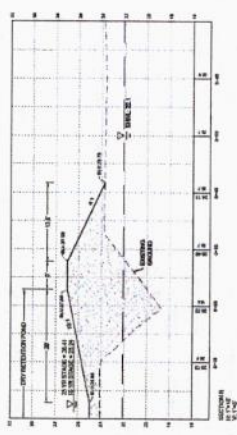
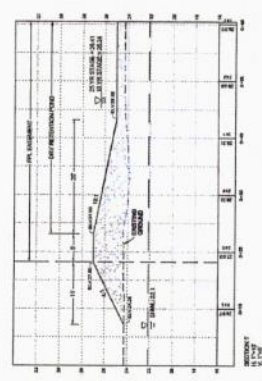
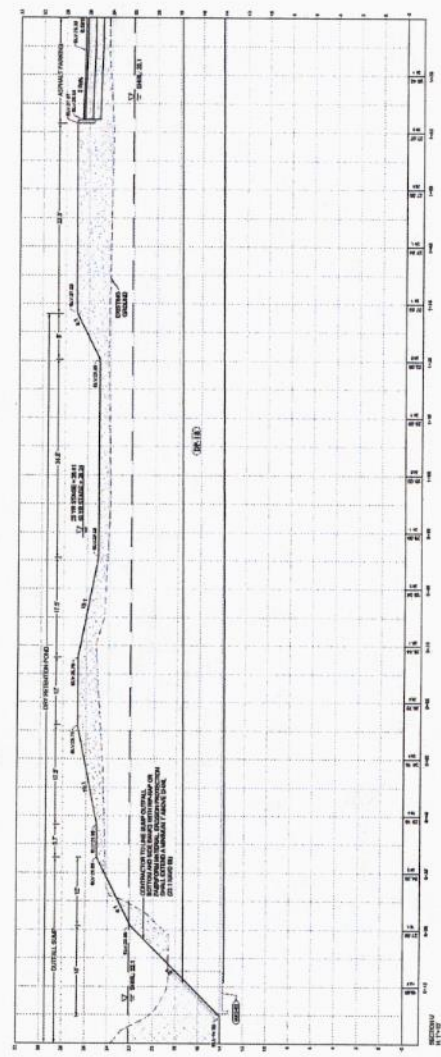
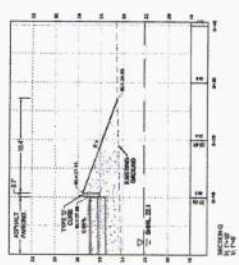
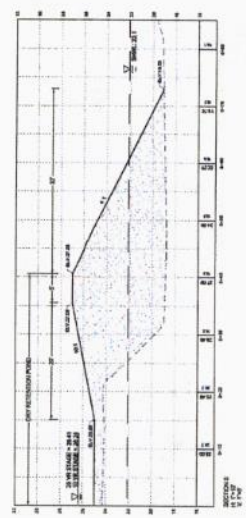
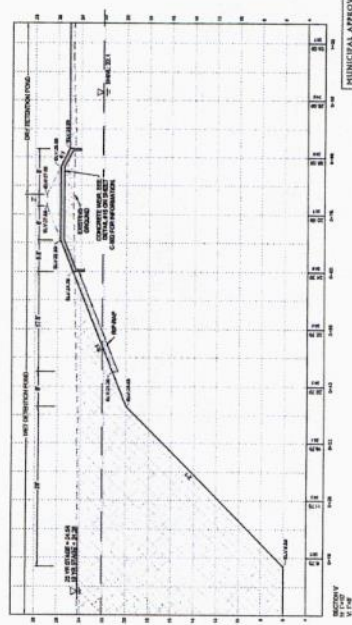
FLORIDA

CROSS SECTIONS
(SHEET 2 OF 3)



DATE ISSUED	07-25-2017
DESIGNED	DAVID DAVIS
CHECKED	DAVID DAVIS
DATE	07-25-2017
PROJECT	ALLEGRA COCOA
LOCATION	ALLEGRA COCOA
JOB NO.	25-1017

REVISIONS	DATE
1. CITY OF COCOA COMMENTS	08/15/2017
2. CITY OF COCOA COMMENTS	08/15/2017
3. CITY OF COCOA COMMENTS	08/15/2017
4. CITY OF COCOA COMMENTS	08/15/2017
5. CITY OF COCOA COMMENTS	08/15/2017
6. CITY OF COCOA COMMENTS	08/15/2017
7. CITY OF COCOA COMMENTS	08/15/2017
8. CITY OF COCOA COMMENTS	08/15/2017
9. CITY OF COCOA COMMENTS	08/15/2017
10. CITY OF COCOA COMMENTS	08/15/2017
11. CITY OF COCOA COMMENTS	08/15/2017
12. CITY OF COCOA COMMENTS	08/15/2017
13. CITY OF COCOA COMMENTS	08/15/2017





MUNICIPAL APPROVAL STAMP

ALLEGRA COCOA

ACKNOWLEDGMENTS

CROSS SECTIONS
(SHEET 3 OF 3)

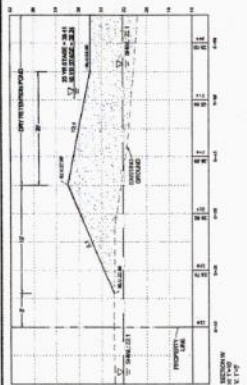
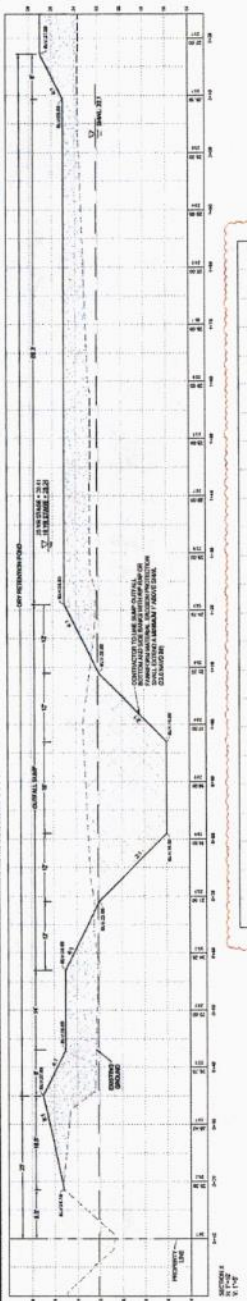
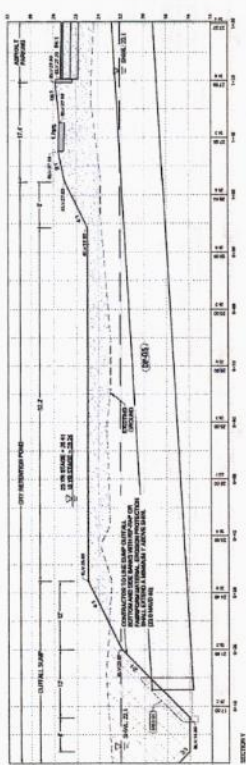
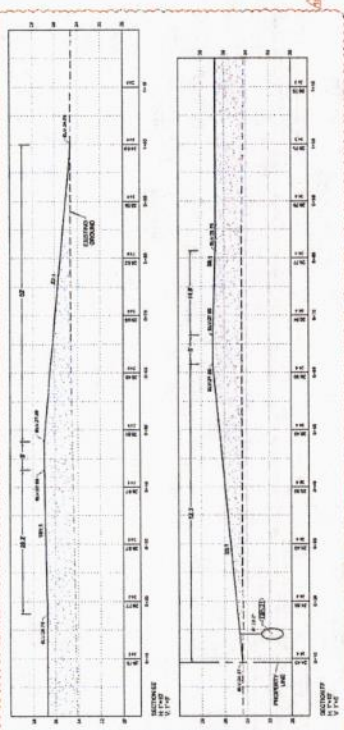
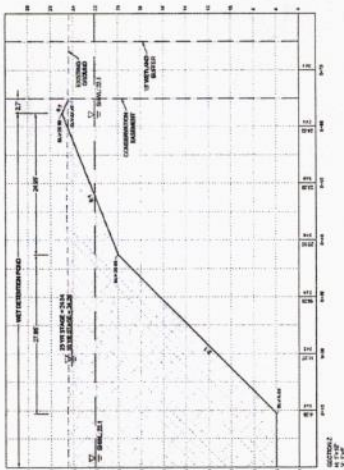
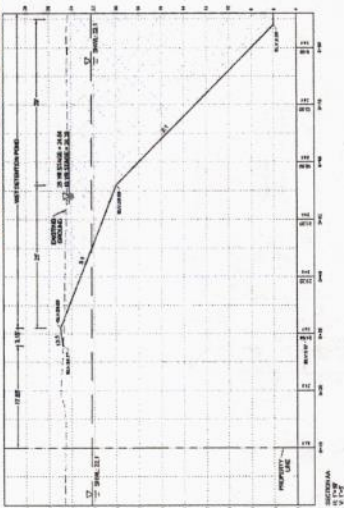
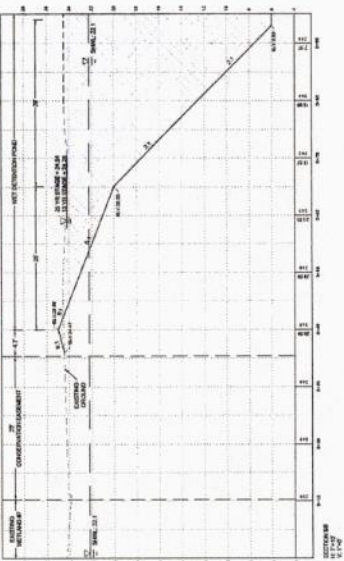
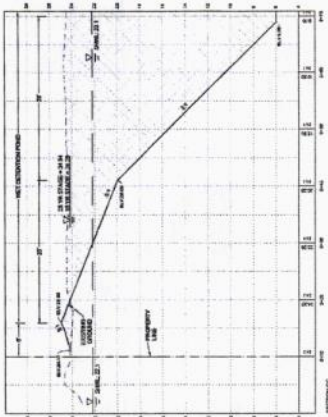
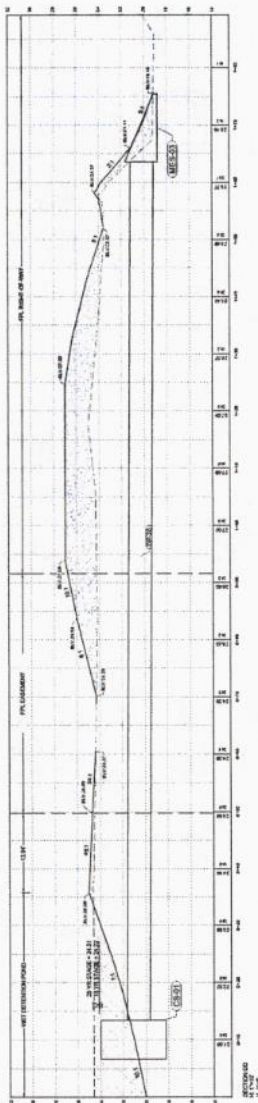


MBV
ENGINEERING, INC.
1200 N. 10TH STREET, SUITE 100
CHICAGO, IL 60642-1010
TEL: 312.321.1000 FAX: 312.321.1001
WWW.MBV-ENGINEERING.COM

DATE ISSUED	DATE	NAME	ADDRESS	CITY
10-10-1964	10-10-1964	10-10-1964	10-10-1964	10-10-1964

SNOIS

DATE
02/07/03
02/06/03
02/05/03
02/04/03
02/03/03
02/02/03
02/01/03



C-701

DATE: 10/20/2023

BY: J. P. WRIGHT

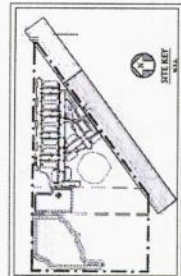


CITY OF COCOA
ALLEGRA COCOA

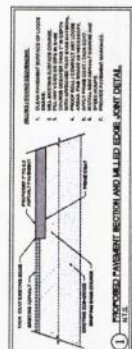
STATE ROAD 524
IMPROVEMENTS
(SHEET 1 OF 7)

MBY
ENGINEERING, INC.
10000 W. STATE ROAD 524, SUITE 100
COCOA, FLORIDA 32926
TEL: 321-739-1000
FAX: 321-739-1001
WWW.MBYENGINEERING.COM

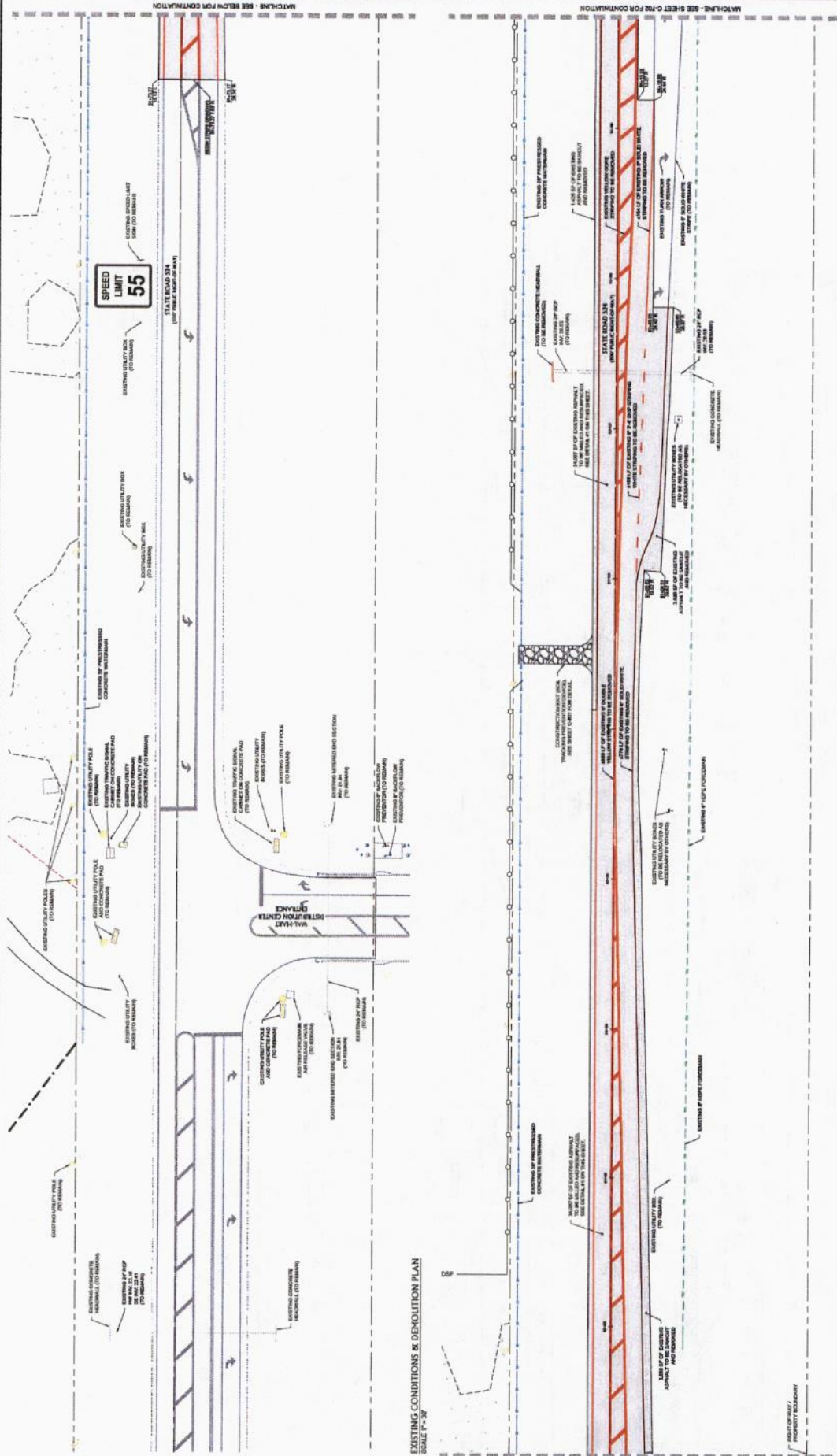
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10/20/2023	2. PRELIMINARY COMMENTS
10/20/2023	3. PRELIMINARY COMMENTS
10/20/2023	4. PRELIMINARY COMMENTS
10/20/2023	5. PRELIMINARY COMMENTS
10/20/2023	6. PRELIMINARY COMMENTS
10/20/2023	7. PRELIMINARY COMMENTS
10/20/2023	8. PRELIMINARY COMMENTS
10/20/2023	9. PRELIMINARY COMMENTS
10/20/2023	10. PRELIMINARY COMMENTS
10/20/2023	11. PRELIMINARY COMMENTS
10/20/2023	12. PRELIMINARY COMMENTS
10/20/2023	13. PRELIMINARY COMMENTS
10/20/2023	14. PRELIMINARY COMMENTS
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10/20/2023	16. PRELIMINARY COMMENTS
10/20/2023	17. PRELIMINARY COMMENTS
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10/20/2023	20. PRELIMINARY COMMENTS



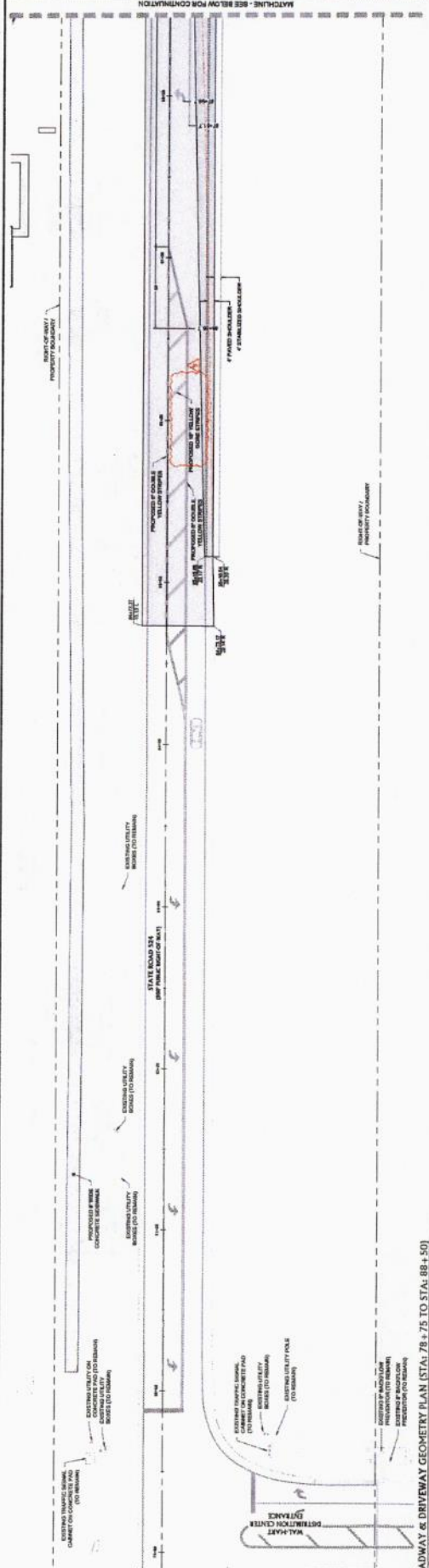
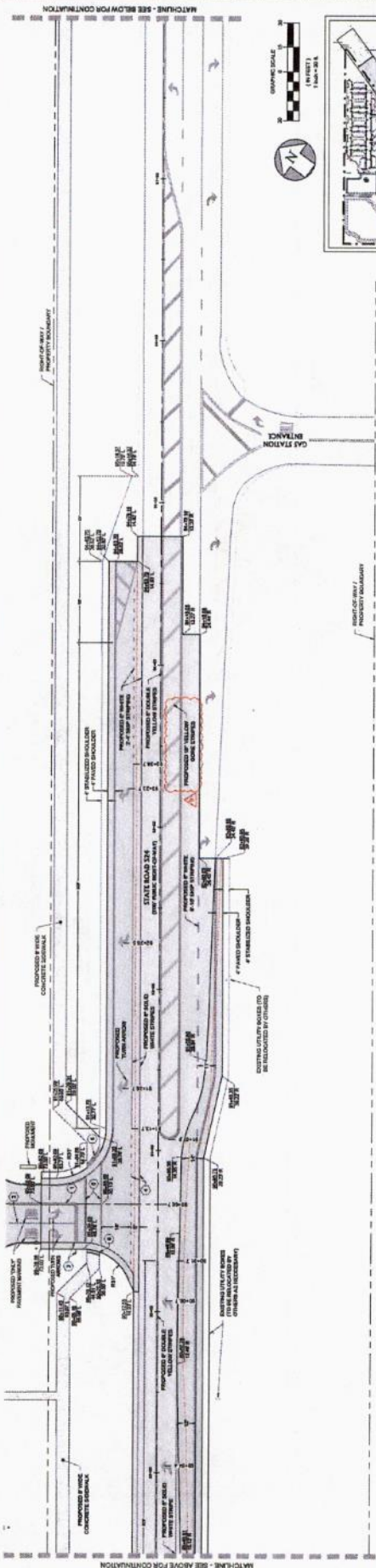
- LEGEND**
- SALTY BRIDGE
 - EXISTING IN / FENCE
 - PROPOSED ASPHALT PAVEMENT
 - PROPOSED ASPHALT RESURFACING
 - VEHICLE CLASH DUST TRAP
- NOTES**
- THE DATA WOULD BE BASED ON THE PRELIMINARY DESIGN OF THE PROJECT.
 - CONSTRUCTION OF THE PROJECT SHALL BE IN ACCORDANCE WITH THE CITY OF COCOA SPECIFICATIONS.
 - SEE SHEET C-701 FOR FURTHER DETAILS.



EXISTING CONDITIONS & DEMOLITION PLAN
SCALE 1" = 20'



EXISTING CONDITIONS & DEMOLITION PLAN
SCALE 1" = 20'



NOTES

SIGNING & STRAPPING LEGEND	
1	PROPOSED FEMALE YELLOW STRIPES BUREAU PRESIDENT MANAGER TO BE PLACED AT BOTH ENDS AND MIDPOINT OF STRIPES AS SHOWN IN SHEET C-80 FOR F&M DETAILS
2	PROPOSED 3/4 WHITE STOP BAND AND STOP SIGN (SH 1, 10)
3	PROPOSED 1/4 SOLID WHITE STRIPES
4	PROPOSED 3/4 WHITE STRIPES
5	PROPOSED 1/4 WHITE STRIPES 2-4' GAP STRIPING
6	PROPOSED 1/4 WHITE STRIPES 2-4' GAP STRIPING

PROPOSED ADJUST FAVORABLE (SEE FOOT PAYMENT DETAIL ON SHEET C-10)	☐
PROPOSED ADJUST BILLING & REBATE/ACRD (SEE SHEET C-21 FOR DETAILS)	☐
PROPOSED FOOT CLOSING/OTHER ADJUSTMENT	☐

C-704



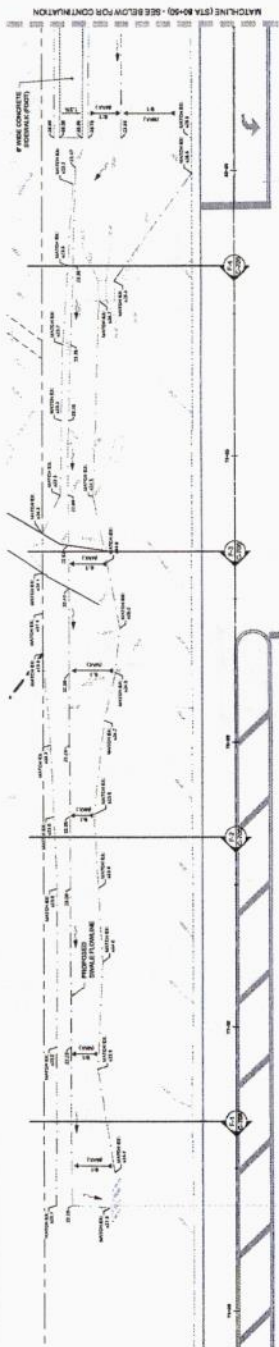
ALLEGRA COCOA

STATE ROAD 524
IMPROVEMENTS
(SHEET 4 OF 7)

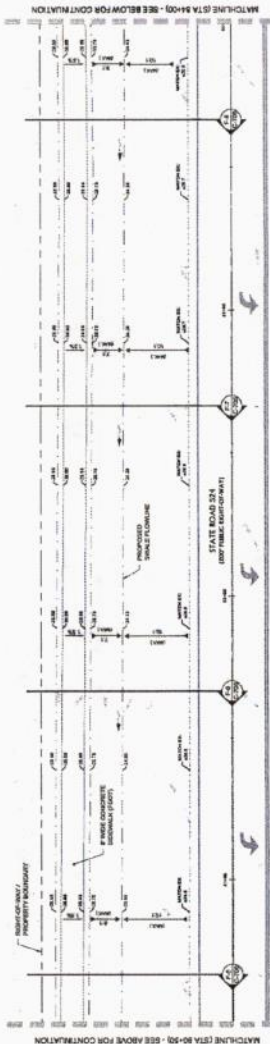


MBV
ENGINEERING, INC.

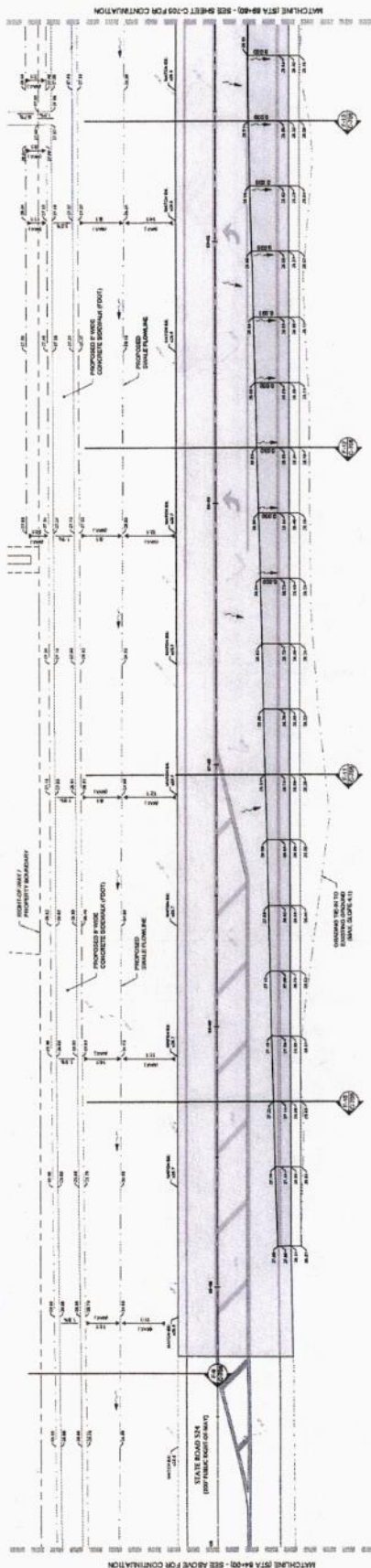
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03/10/2019	CHANGED	DATE
02/10/2019	CHANGED	DATE
01/10/2019	CHANGED	DATE
30/09/2019	CHANGED	DATE
29/09/2019	CHANGED	DATE
28/09/2019	CHANGED	DATE
27/09/2019	CH	



ROADWAY GRADING & DRAINAGE PLAN (STA: 76+00 TO STA: 80+50)



ROADWAY GRADING & DRAINAGE PLAN (STA: 80+50 TO STA: 84+00)



ROADWAY GRADING & DRAINAGE PLAN (STA: 84+00 TO STA: 89+80)

HEEL CUSHION
FOOT CUSHION
FOOT CUSHION
FOOT CUSHION
FOOT CUSHION

FOOT PROSTHESIS DESIGN
ANALYSIS



LEGEND

	EXISTING ASPHALT PAVEMENT	PROPOSED ASPHALT PAVEMENT	PROPOSED MILLING & RESURFACING	WATER FLOW DIRECTION
BC:	BACK OF CURB ELEVATION			
EG:	EXISTING GROUND ELEVATION			
EP:	EDGE OF PAVEMENT ELEVATION			
FL:	FLOWLINE OF SWALE			
PGL:	PROPOSED GRADE ELEVATION			
SWE:	SIDEWALK GRADE ELEVATION			
TOTAL:	TOTAL OF ROW IS A TOTAL			

votes

- THE STATE ROAD 534 SPEED LIMIT AT THE PROJECT SITE IS 55 MPH. CLOUTIER IS STATIONED ALONG STATION 130+00 SET AT CENTRAL INTERSECTION OF STATE ROAD NO. 534 AND COOK ROAD.



MUNICIPAL APPROVAL STAMP

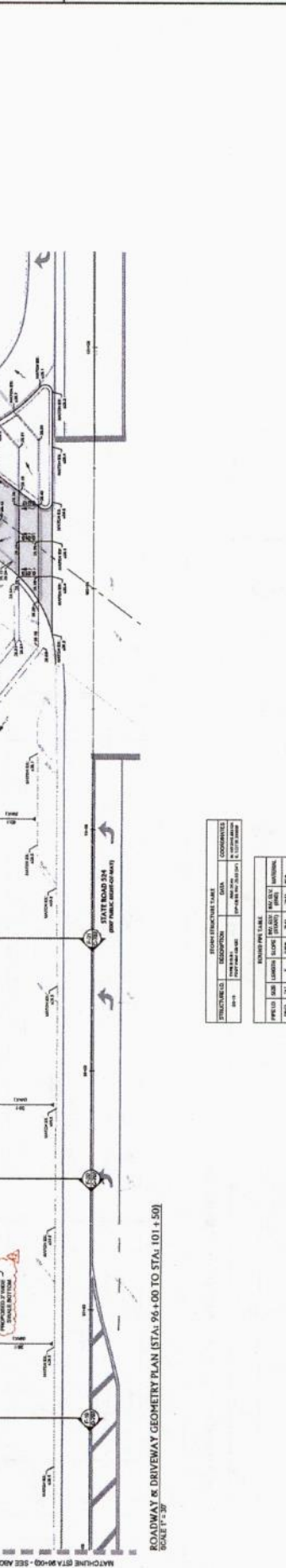
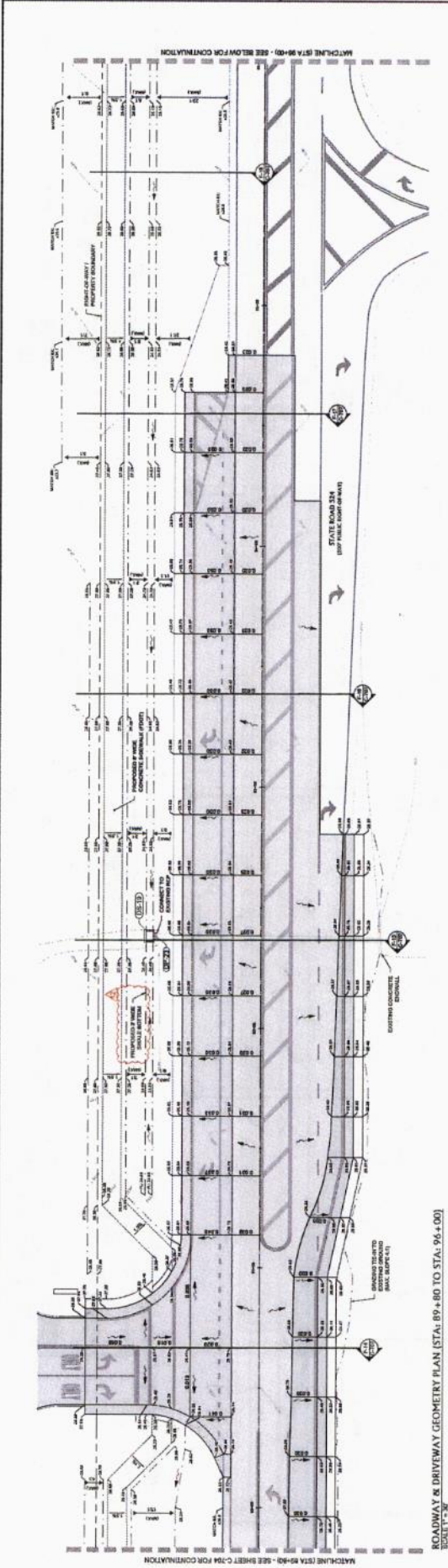
DATE	REVISIONS	DATE	DESCRIPTION
04/05/2023	12. FOOT DRIVEWAY COMMENTS	07-23-2023	07-23-2023
04/05/2023	11. CITY OF COCOA COMMENTS	07-23-2023	07-23-2023
04/05/2023	10. CITY OF COCOA COMMENTS	07-23-2023	07-23-2023
04/05/2023	9. CITY OF COCOA COMMENTS	07-23-2023	07-23-2023
04/05/2023	8. CITY OF COCOA COMMENTS	07-23-2023	07-23-2023
04/05/2023	7. CITY OF COCOA COMMENTS	07-23-2023	07-23-2023
04/05/2023	6. CITY OF COCOA COMMENTS	07-23-2023	07-23-2023
04/05/2023	5. CITY OF COCOA COMMENTS	07-23-2023	07-23-2023
04/05/2023	4. CITY OF COCOA COMMENTS	07-23-2023	07-23-2023
04/05/2023	3. CITY OF COCOA COMMENTS	07-23-2023	07-23-2023
04/05/2023	2. CITY OF COCOA COMMENTS	07-23-2023	07-23-2023
04/05/2023	1. CITY OF COCOA COMMENTS	07-23-2023	07-23-2023

STATE ROAD 524
IMPROVEMENTS
(SHEET 6 OF 7)

ALLEGRA COCOA
CITY OF COCOA
FLORIDA

C-705
CIVIL ENGINEER
DAVID W. JACKSON
No. 12456
State of Florida

PERMITTING SET



NOTES

- THE EXISTING ROADWAY SPEED LIMIT IS 35 MPH. THE PROPOSED SPEED LIMIT IS 35 MPH.
- ALL DIMENSIONS ARE IN FEET AND INCHES.
- ALL DIMENSIONS ARE TO CENTERLINE UNLESS OTHERWISE INDICATED.

LEGEND

SYMBOL	DESCRIPTION
[Line Style]	EXISTING ASPHALT PAVEMENT
[Line Style]	PROPOSED ASPHALT PAVEMENT
[Line Style]	PROPOSED MILLING & RECONSTRUCTION
[Line Style]	STORMWATER FLOW DIRECTION
[Line Style]	BACK OF CURB ELEVATION
[Line Style]	EXISTING GROUND ELEVATION
[Line Style]	EDGE OF PAVEMENT ELEVATION
[Line Style]	FLOWLINE OF DRAIN
[Line Style]	PROPOSED GRADE ELEVATION
[Line Style]	SEWERAGE GRADE ELEVATION
[Line Style]	TOP OF BANK ELEVATION

STREET DATA

STREET NAME	STREET TYPE	STREET WIDTH	STREET DEPTH
STATE ROAD 524	STATE ROAD	60.00	12.00

PROJECT DATA

PROJECT NAME	PROJECT NO.	PROJECT DATE
STATE ROAD 524 IMPROVEMENTS	123456	07/23/2023



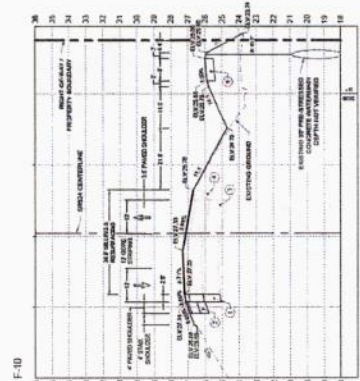
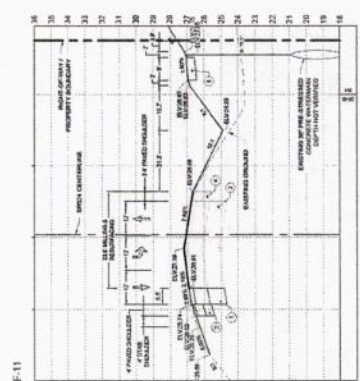
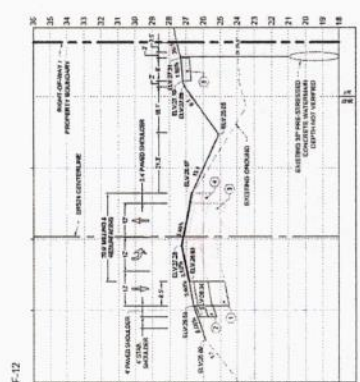
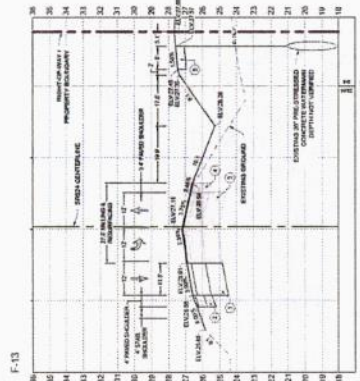
ALLEGRA COCOA

STATE ROAD 524
IMPROVEMENTS
(SHEET 6 OF 7)

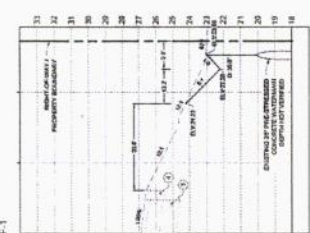
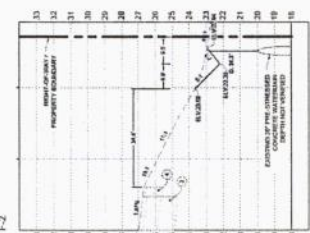
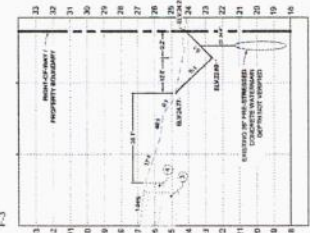
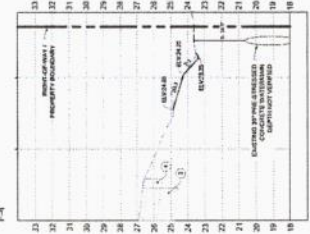
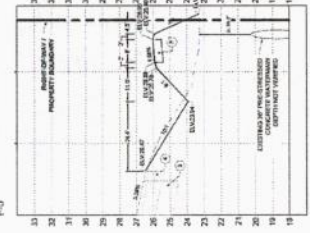
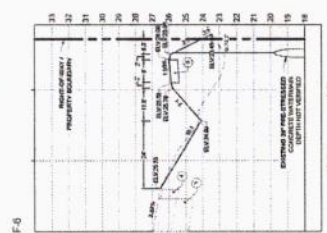
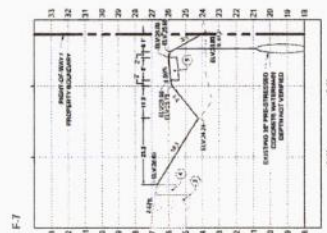
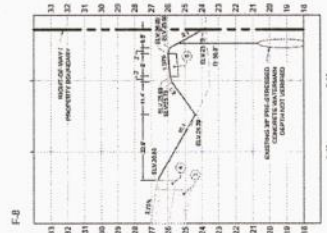
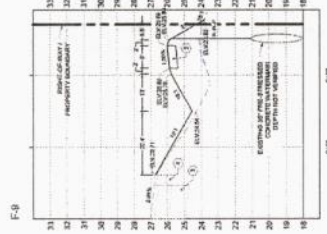


DATE	REVISIONS
04/05/2013	1. POST DESIGN COMMENTS
04/05/2013	2. POST DESIGN COMMENTS
04/05/2013	3. POST DESIGN COMMENTS
04/05/2013	4. POST DESIGN COMMENTS
04/05/2013	5. POST DESIGN COMMENTS
04/05/2013	6. POST DESIGN COMMENTS
04/05/2013	7. POST DESIGN COMMENTS
04/05/2013	8. POST DESIGN COMMENTS
04/05/2013	9. POST DESIGN COMMENTS
04/05/2013	10. POST DESIGN COMMENTS
04/05/2013	11. POST DESIGN COMMENTS
04/05/2013	12. POST DESIGN COMMENTS

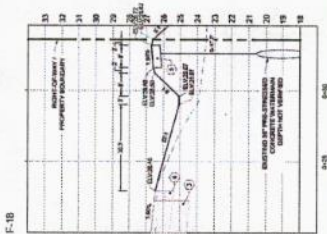
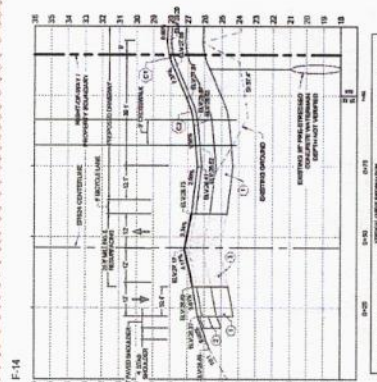
MUNICIPAL APPROVAL STAMP



SECTION LEGEND
1. PROPOSED TRAIL, LANE, AND SIDEWALK
2. PROPOSED TRAIL, LANE, AND SIDEWALK
3. PROPOSED TRAIL, LANE, AND SIDEWALK
4. PROPOSED TRAIL, LANE, AND SIDEWALK
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34. PROPOSED TRAIL, LANE, AND SIDEWALK
35. PROPOSED TRAIL, LANE, AND SIDEWALK



SECTIONS LEGEND	
①	PROPOSED TRAVEL LANE PAVENTMENT SPECIFICATIONS PROPOSED CROWN, 10:1, 14:1, 20:1, 25:1, 30:1, 40:1, 50:1, 60:1, 80:1, 100:1 BASE COURSE COMPOSITION, 10:1, 14:1, 20:1, 25:1, 30:1, 40:1, 50:1, 60:1, 80:1, 100:1 BASES COMPOSITION, 10:1, 14:1, 20:1, 25:1, 30:1, 40:1, 50:1, 60:1, 80:1, 100:1 SUBGRADE COMPOSITION, 10:1, 14:1, 20:1, 25:1, 30:1, 40:1, 50:1, 60:1, 80:1, 100:1 CEMENT TREATMENT TO BE SUBMITTED TO THE DISTRICT DEPARTMENT BEFORE IMPLEMENTATION SUBGRADE TREATMENT TO BE SUBMITTED TO THE DISTRICT DEPARTMENT BEFORE IMPLEMENTATION SPECIFICATIONS, SECTION 107
②	PROPOSED TRAVEL LANE PAVENTMENT SPECIFICATIONS STRUCTURAL DRAINAGE TYPE OF 4:1, 6:1, 8:1, 10:1, 12:1, 15:1, 20:1, 25:1, 30:1, 40:1, 50:1, 60:1, 80:1, 100:1 STRUCTURAL DRAINAGE TYPE OF 4:1, 6:1, 8:1, 10:1, 12:1, 15:1, 20:1, 25:1, 30:1, 40:1, 50:1, 60:1, 80:1, 100:1 SUBGRADE TREATMENT TO BE SUBMITTED TO THE DISTRICT DEPARTMENT BEFORE IMPLEMENTATION SUBGRADE TREATMENT TO BE SUBMITTED TO THE DISTRICT DEPARTMENT BEFORE IMPLEMENTATION SPECIFICATIONS, SECTION 107
③	EXISTING 10' ON PAVENTMENT SECTION EXISTING 10' ON PAVENTMENT SECTION PROPOSED 10' ON PAVENTMENT SECTION PROPOSED 10' ON PAVENTMENT SECTION



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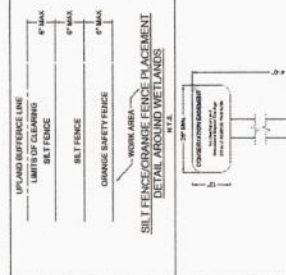
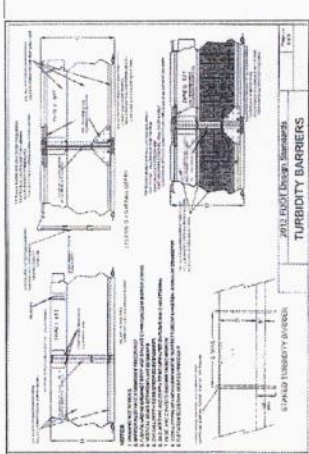
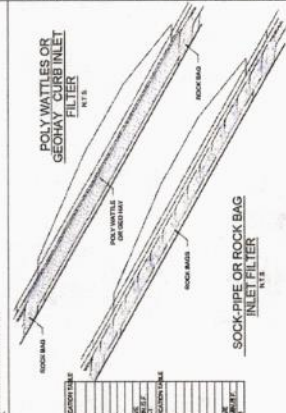
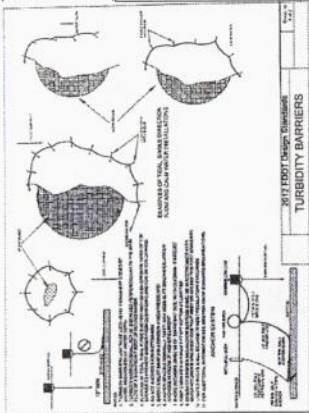
EROSION AND SEDIMENTATION CONTROL NOTES

CONSTRUCTION ACTIVITIES CAN RESULT IN THE GENERATION OF SIGNIFICANT AMOUNTS OF POLLUTANTS WHICH MAY REACH SURFACE OR GROUND WATERS. ONE OF THE PRIMARY POLLUTANTS OF SURFACE WATERS IS SEDIMENT DUE TO EROSION. EXCESSIVE QUANTITIES OF SEDIMENT WHICH REACH WATER BODIES OF FLOOD PLAINS HAVE BEEN SHOWN TO ADVERSELY AFFECT THEIR PHYSICAL, BIOLOGICAL AND CHEMICAL PROPERTIES. TRANSPORTED SEDIMENT CAN OBSTRUCT STREAM CHANNELS, REDUCE INITIAL SC CAPACITY OF WATER BODIES OF FLOOD PLAINS, REDUCE THE DESIGN CAPACITY OF CULVERTS AND OTHER STRUCTURES, AND ELIMINATE BENTHIC INVERTEBRATES AND FISH LIVING HABITATS. EXCESSIVE SEDIMENTATION OF WATER BODIES AND FLOOD PLAINS CAN REDUCE LIGHT PENETRATION AND THEREFORE, REDUCE PRIMARY PRODUCTIVITY.

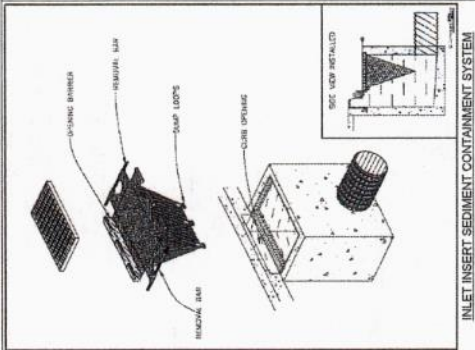
MINIMUM STANDARDS

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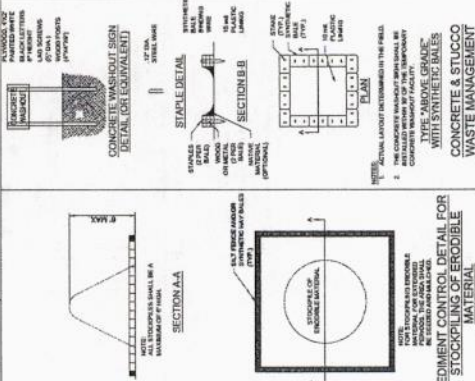
TURBIDITY BARRIER APPLICATIONS



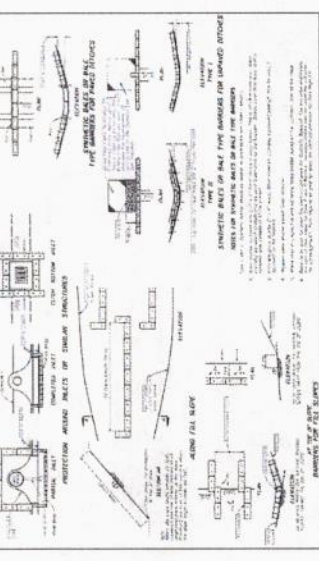
BUILT FENCE INLET PROTECTION



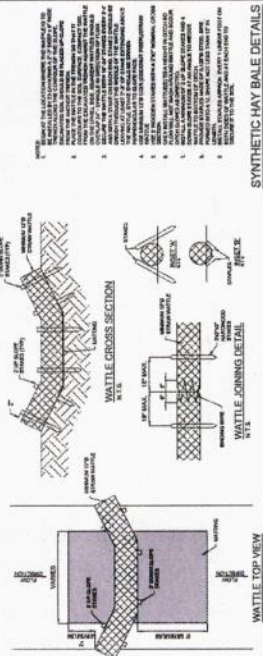
CONSERVATION EASEMENT SIGN



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SOIL TRACKING PREVENTION DEVICE DETAIL





ALLEGRA COCOA

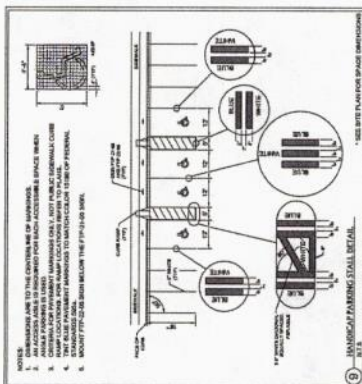
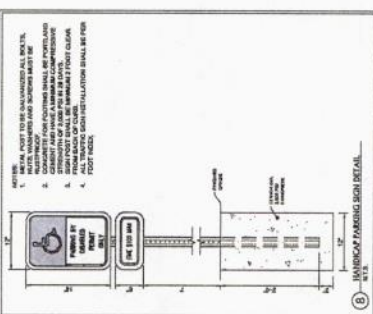
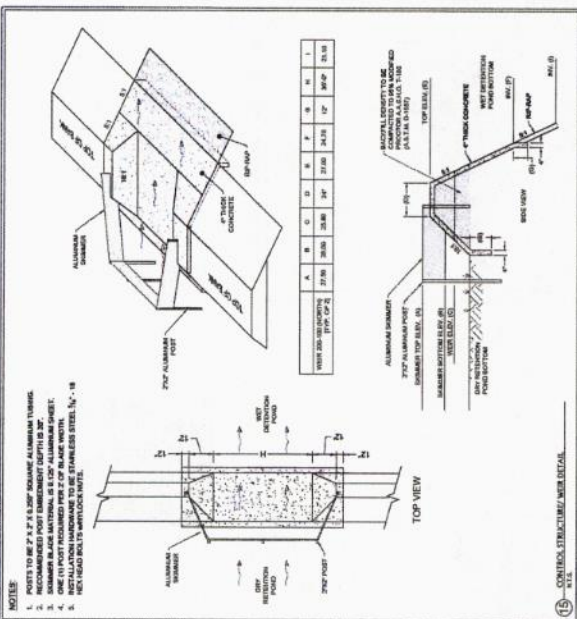
FLORIDA

GENERAL SITE DETAILS
(SHEET 01 OF 02)

City of Structural, Supervising & Engineering
ENGINEERING, INC.
1000 N. W. 10th Ave., Suite 100
Fort Lauderdale, FL 33304
Phone: (954) 551-1234
Fax: (954) 551-1235
Email: info@mbv.com

DATE	10/10/2022
DESIGNED	20/10/22
DRAWN	20/10/22
CHECKED	07/23/2022
DATE	07/23/2022
APPROVED	07/23/2022
REVISIONS	
1. CITY OF COCOA COMMENTS	
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APPROVAL STAMP



C-804



CITY OF COCOA

ALLEGRA COCOA

FLORIDA

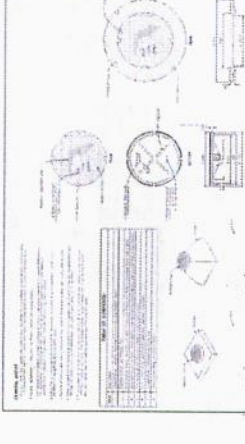
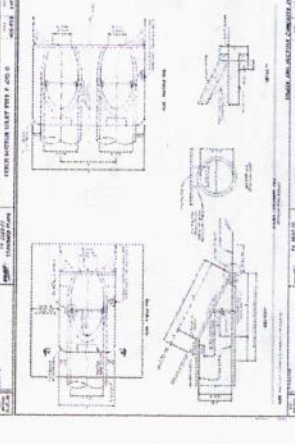
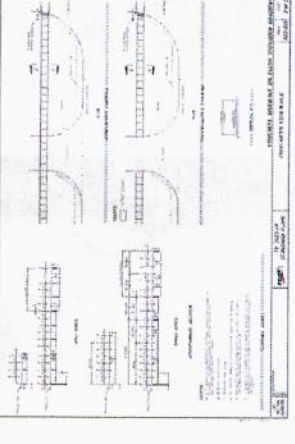
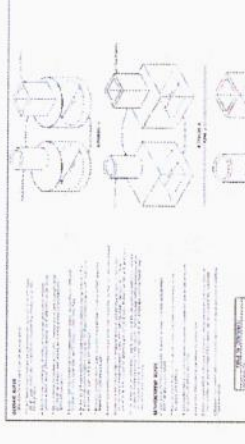
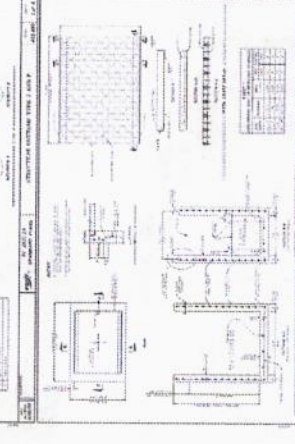
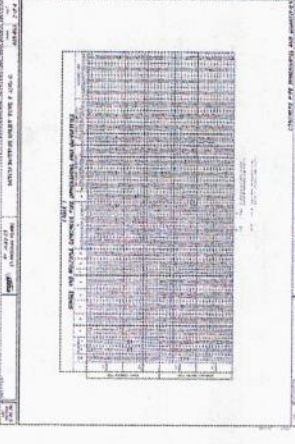
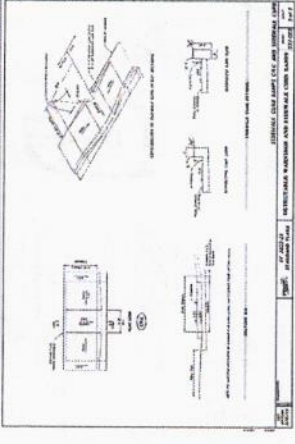
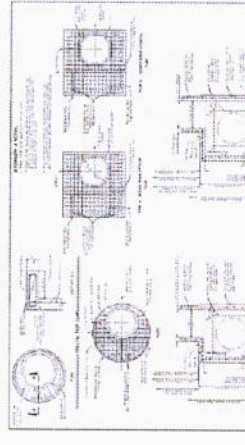
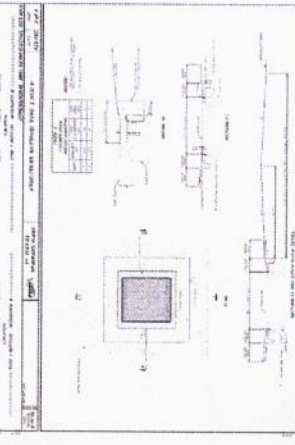
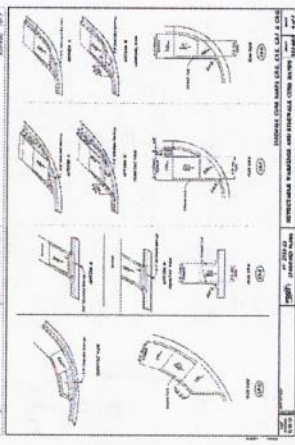
PDOT DETAILS (SHEET 1 OF 2)



DATE DESIGNED: 07-20-2022
CHECKED: DMB
DATE: 07-20-2022
DESIGNED: DMB / DMB
JOB NO.: 20-1007

REVISIONS	DATE
13 CITY OF COCOA COMMENTS	08/15/2023
12 PDOT COMMENTS	08/15/2023
11 CITY OF COCOA COMMENTS	08/15/2023
10 PDOT COMMENTS	08/15/2023
9 PDOT COMMENTS	08/15/2023
8 PDOT COMMENTS	08/15/2023
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6 PDOT COMMENTS	08/15/2023
5 PDOT COMMENTS	08/15/2023
4 PDOT COMMENTS	08/15/2023
3 PDOT COMMENTS	08/15/2023
2 PDOT COMMENTS	08/15/2023
1 PDOT COMMENTS	08/15/2023

APPROVAL STAMP



C-805



CITY OF COCOA

ALLEGRA COCOA

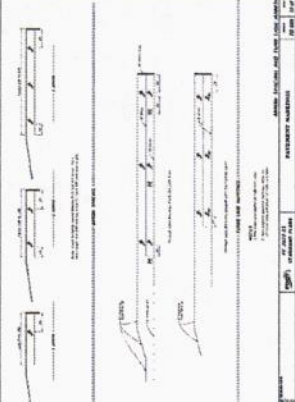
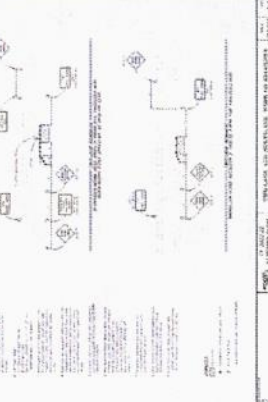
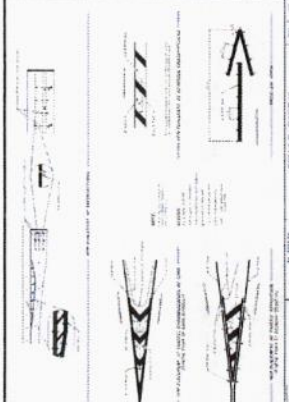
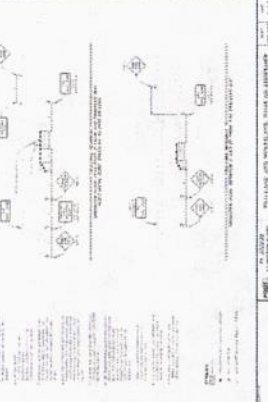
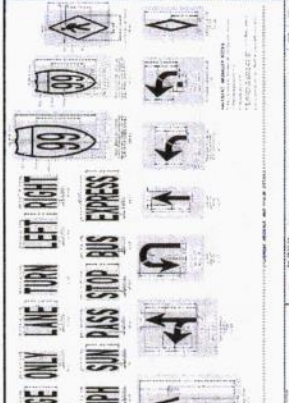
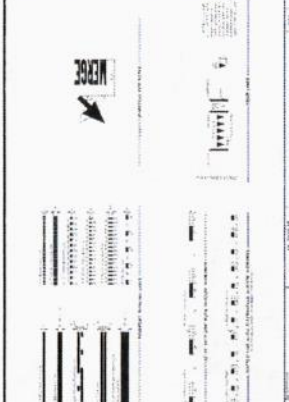
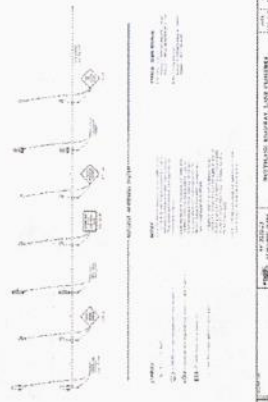
FLORIDA

FDOT DETAILS (SHEET 2 OF 2)



DATE	REVISIONS
10/09/2020	13 CITY OF COCOA COMMENTS
08/11/2020	12 FDOT DRIVING COMMENTS
07/19/2020	11 CITY OF COCOA COMMENTS
07/19/2020	10 FDOT DRIVING COMMENTS
06/19/2020	9 FDOT DRIVING COMMENTS
06/11/2020	8 FDOT DRIVING COMMENTS
05/27/2020	7 COCOA WALSH COMMENTS
05/27/2020	6 FDOT DRIVING COMMENTS
05/27/2020	5 FDOT DRIVING COMMENTS
05/27/2020	4 FDOT DRIVING COMMENTS
05/27/2020	3 FDOT DRIVING COMMENTS
05/27/2020	2 FDOT DRIVING COMMENTS
05/27/2020	1 FDOT DRIVING COMMENTS

APPROVAL STAMP



C-806

30-1087



CITY OF COCOA

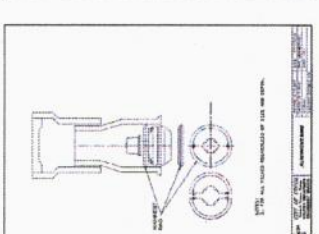
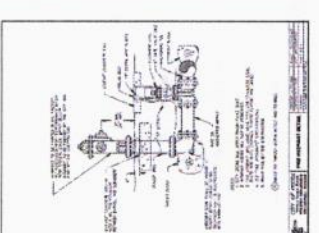
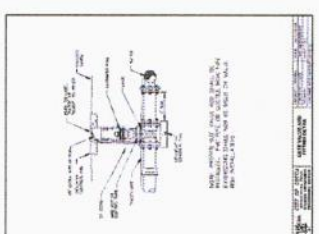
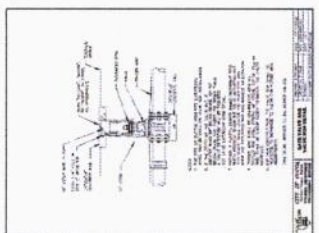
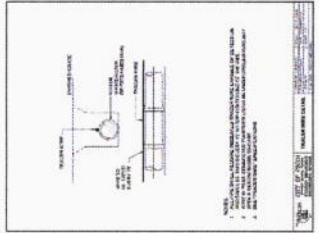
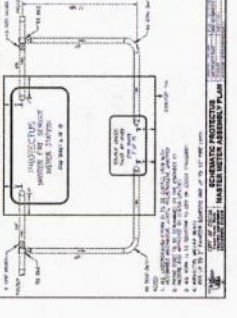
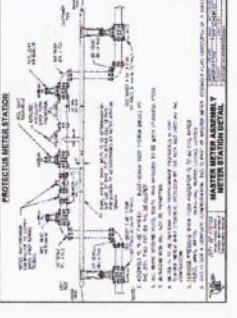
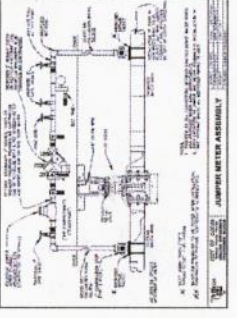
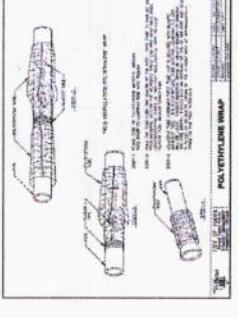
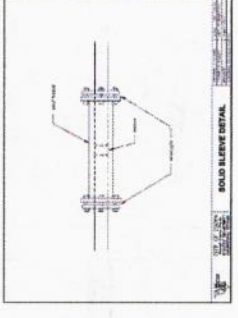
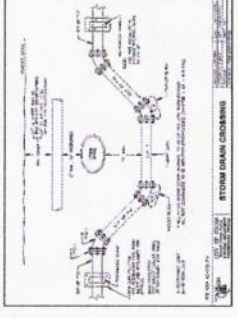
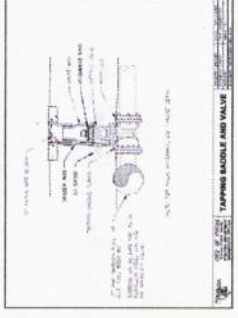
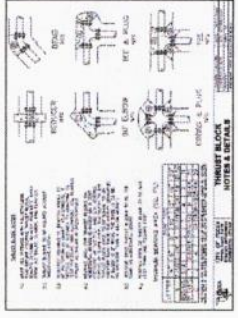
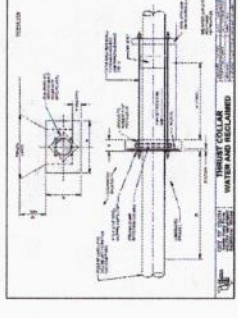
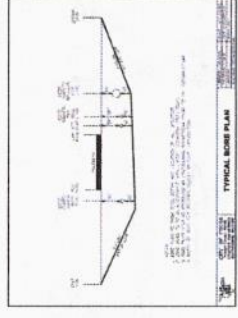
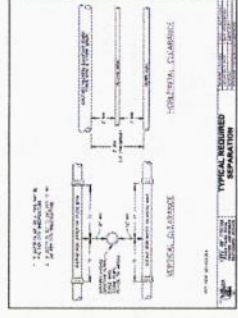
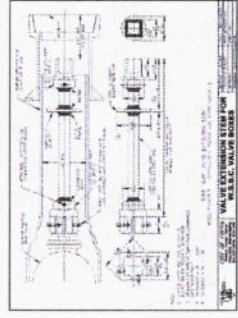
ALLEGRA COCOA

CITY OF COCOA WATER
DETAILS

CHIEF ENGINEER
MBV ENGINEERING, INC.
10000 W. STATE ROAD 1
SUITE 100
FORT MYERS, FL 33907
TEL: 888-888-8888
FAX: 888-888-8888
WWW.MBVENGINEERING.COM

DATE	REVISIONS
10/05/2023	1. CITY OF COCOA COMMENTS
07/24/2023	2. COCOA WATER COMMENTS
07/14/2023	3. SUPPLEMENTAL COMMENTS
07/14/2023	4. CITY OF COCOA COMMENTS
07/14/2023	5. CITY OF COCOA COMMENTS
07/14/2023	6. CITY OF COCOA COMMENTS
07/14/2023	7. CITY OF COCOA COMMENTS
07/14/2023	8. CITY OF COCOA COMMENTS
07/14/2023	9. CITY OF COCOA COMMENTS
07/14/2023	10. CITY OF COCOA COMMENTS
07/14/2023	11. CITY OF COCOA COMMENTS
07/14/2023	12. CITY OF COCOA COMMENTS
07/14/2023	13. CITY OF COCOA COMMENTS
07/14/2023	14. CITY OF COCOA COMMENTS
07/14/2023	15. CITY OF COCOA COMMENTS
07/14/2023	16. CITY OF COCOA COMMENTS
07/14/2023	17. CITY OF COCOA COMMENTS
07/14/2023	18. CITY OF COCOA COMMENTS
07/14/2023	19. CITY OF COCOA COMMENTS
07/14/2023	20. CITY OF COCOA COMMENTS

APPROVAL STAMP



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608-C



CITY OF COCOA

ALLEGRA COCOA

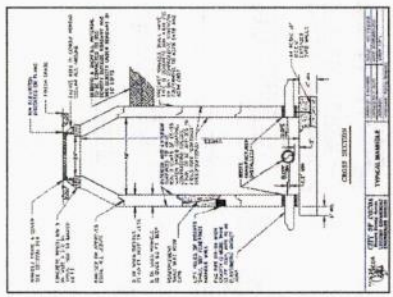
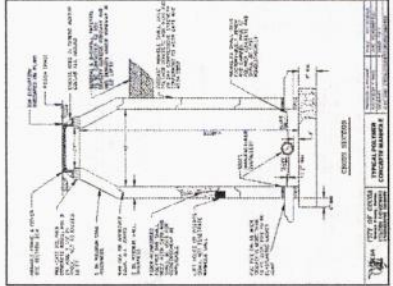
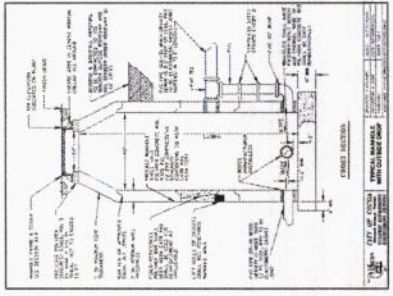
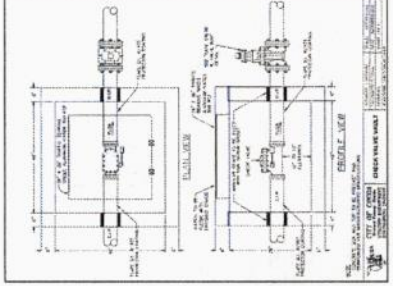
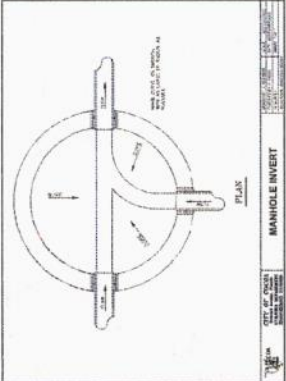
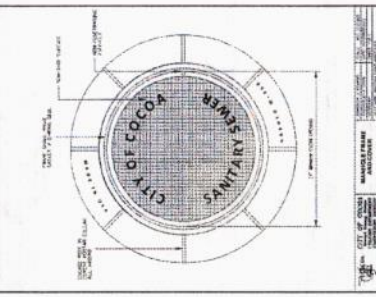
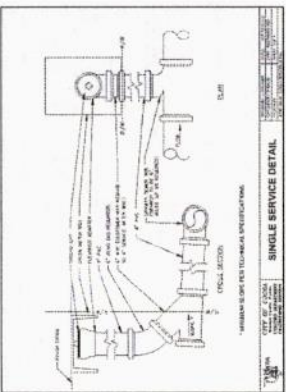
FLORIDA

CITY OF COCOA SANITARY
SEWER DETAILS



DATE	20-0007
REVISIONS	
13 CITY OF COCOA COMMENTS	10/05/2023
12 CITY OF COCOA COMMENTS	08/11/2023
11 CITY OF COCOA COMMENTS	07/27/2023
10 CITY OF COCOA COMMENTS	07/19/2023
9 POST CONTRACT COMMENTS	07/19/2023
8 POST CONTRACT COMMENTS	06/15/2023
7 COCOA WWTW COMMENTS	05/03/2023
6 COCOA WWTW COMMENTS	04/11/2023
5 COCOA WWTW COMMENTS	03/11/2023
4 COCOA WWTW COMMENTS	02/11/2023
3 COCOA WWTW COMMENTS	01/11/2023
2 COCOA WWTW COMMENTS	12/11/2022
1 COCOA WWTW COMMENTS	11/11/2022

APPROVAL STAMP



REVISIONS	
13 CITY OF COCOA COMMENTS	10/05/2023
12 CITY OF COCOA COMMENTS	08/11/2023
11 CITY OF COCOA COMMENTS	07/27/2023
10 CITY OF COCOA COMMENTS	07/19/2023
9 POST CONTRACT COMMENTS	07/19/2023
8 POST CONTRACT COMMENTS	06/15/2023
7 COCOA WWTW COMMENTS	05/03/2023
6 COCOA WWTW COMMENTS	04/11/2023
5 COCOA WWTW COMMENTS	03/11/2023
4 COCOA WWTW COMMENTS	02/11/2023
3 COCOA WWTW COMMENTS	01/11/2023
2 COCOA WWTW COMMENTS	12/11/2022
1 COCOA WWTW COMMENTS	11/11/2022

Structure No.: B81X2 - B81X3
Section, Township, Range: 23-24S-35E
Easement No.: :000400910
Parcel ID: 24-5-23-00-11,24-35-23-00-775
(Maintained by County Appraiser)

RIGHT-OF-WAY CONSENT AGREEMENT

FLORIDA POWER & LIGHT COMPANY, a Florida corporation, whose mailing address is P.O. Box 14000, Juno Beach, Florida 33408-0420, Attn: Corporate Real Estate Department, hereinafter referred to as "Company", hereby consents to Artesia at Cocoa LLC whose mailing address is 6517 Mapleridge Street Houston TX 77081 hereafter referred to as "Licensee", using an area within Company's right-of-way granted by that certain agreement recorded in Official Records Book 561, at Page 860, Public Records of Brevard County, Florida. The said area within the Company's right-of-way, hereinafter referred to as "Lands", is more particularly described on Exhibit "A" attached hereto. The use of Lands by Licensee shall be solely for the purpose of permission to fill an existing ditch on our property and replace it with a dry pond within the easement area as shown on the plans and specifications submitted by Licensee, attached hereto as Exhibit "B".

In consideration for Company's consent and for the other mutual covenants set forth below, and for Ten Dollars and No Cents (\$10.00) and other good and valuable consideration, the receipt and adequacy of which is hereby acknowledged, the parties hereto agree as follows:

1. Licensee agrees to obtain all necessary rights from the owners of the Lands in the event Licensee does not own said Lands; to obtain any and all applicable federal, state, and local permits required in connection with Licensee's use of the Lands; and at all times, to comply with all requirements of all federal, state, and local laws, ordinances, rules and regulations applicable or pertaining to the use of the Lands by Licensee pursuant to this Agreement.

2. Licensee understands and agrees that the use of the Lands pursuant to this Agreement is subordinate to the rights and interest of Company in and to the Lands and agrees to notify its employees, agents, and contractors accordingly. Company specifically reserves the right to maintain its facilities located on the Lands; to make improvements; add additional facilities; maintain, construct or alter roads; maintain any facilities, devices, or improvements on the Lands which aid in or are necessary to Company's business or operations; and the right to enter upon the Lands at all times for such purposes. Licensee understands that in the exercise of such rights and interest, Company from time-to-time may require Licensee, to relocate, alter, or remove its facilities and equipment, including parking spaces and areas, and other improvements made by Licensee pursuant to this Agreement which interfere with or prevent Company, in its opinion, from properly and safely constructing, improving, and maintaining its facilities. Licensee agrees to relocate, alter, or remove said facilities, equipment, parking spaces and areas, and other improvements within thirty (30) days of receiving notice from Company to do so. Such relocation, alteration, or removal will be made at the sole cost and expense of Licensee and at no cost and expense to Company; provided however, should Licensee, for any reason, fail to make such relocation, alteration, or removal, Company retains the right to enter upon the Lands and make said relocation, alteration, or removal of Licensee's facilities, equipment, parking spaces and areas, and other improvements and Licensee hereby agrees to reimburse Company for all of its costs and expense incurred in connection therewith upon demand.

3. Licensee agrees that it will not use the Lands in any manner which, in the opinion of Company, may tend to interfere with Company's use of the Lands or may tend to cause a hazardous condition to exist. Licensee agrees that no hazardous substance, as the term is defined in Section 101 (14) of the Comprehensive Environmental Response Compensation and Liability Act ("CERCLA") (42 USC Section 9601 [14]), petroleum products, liquids or flammables shall be placed on, under, transported across or stored on the Lands,

which restricts, impairs, interferes with, or hinders the use of the Lands by Company or the exercise by Company of any of its rights thereto. Licensee agrees further that in the event it should create a hazardous condition, then upon notification by Company, Licensee shall, within seventy-two (72) hours, at its sole cost and expense, correct such condition or situation; provided however that the Company retains the right to enter upon the Lands and correct any such condition or situation at any time and, by its execution hereof, Licensee hereby agrees to indemnify and hold harmless Company from all loss, damage or injury resulting from Licensee's failure to comply with the provisions of this Agreement.

4. Licensee hereby agrees and covenants to prohibit its agents, employees, and contractors from using any tools, equipment, or machinery on the Lands capable of extending greater than fourteen (14) feet above existing grade and further agrees that no dynamite or other explosives shall be used within the Lands and that no alteration of the existing terrain, including the use of the Lands by Licensee as provided herein, shall be made which will result in preventing Company access to its facilities located within said Lands. Unless otherwise provided herein, Licensee agrees to maintain a one hundred and fifty (150) foot wide area, clear of any activities, with a lineal measurement of seventy five (75) feet on each side of the centerline of Company's existing and planned facilities.

5. Licensee understands and agrees that the planting of trees, shrubs, and other foliage capable of exceeding fourteen (14) feet in height at full maturity is not permitted within Company's Lands.

6. Outdoor lighting installed or to be installed upon the Lands by Licensee are not to exceed a height of fourteen (14) feet above existing grade and all poles or standards supporting light fixtures are to be of a non-metallic material.

7. Sprinkler systems installed or to be installed by Licensee upon the Lands are to be constructed of a non-metallic material and sprinkler heads are to be set so the spray height does not exceed fourteen (14) feet above existing grade and does not make contact with any Company's facilities. Aboveground systems shall not be installed within or across Company patrol or finger roads and underground systems crossing said patrol and finger roads are to be buried at a minimum depth of one (1) foot below existing road grade.

8. Licensee agrees to warn its employees, agents, contractors and invitees of the fact that the electrical facilities and appurtenances installed or to be installed by Company within the Lands are of high voltage electricity and agrees to use all safety and precautionary measures when working under or near Company's facilities. Licensee hereby acknowledges the receipt and required execution of Form 360 "Exhibit C" prior to the commencement of construction within the Lands.

9. Licensee agrees, at all times, to maintain and keep the Lands clean and free of debris. Except as provided herein, Licensee further understands and agrees that certain uses of the Lands are specifically prohibited; such uses include but are not limited to recreational purposes, hunting and camping, and Licensee agrees to notify its employees, agents, contractors, and invitees accordingly.

10. The use of the Lands by Licensee shall be at the sole risk and expense of Licensee, and Company is specifically relieved of any responsibility for damage or loss to Licensee or other persons resulting from Company's use of the Lands for its purposes.

11. Notwithstanding any provision contained herein, Licensee agrees to reimburse Company for all cost and expense for any damage to Company's facilities resulting from Licensee's use of the Lands and agrees that if, in the opinion of Company, it becomes necessary as a result of Licensee's use of the Lands for Company to relocate, rearrange or change any of its facilities, to promptly reimburse Company for all cost and expense involved with such relocation, rearrangement or change.

12. Licensee agrees it will exercise its privileges hereunder at its own sole risk and agrees to indemnify and save harmless Company, its parent, subsidiaries, affiliates, and their respective officers, directors, agents and employees (hereinafter referred to as FPL Entities), from all liability, loss, cost, and expense, including attorneys' fees, which may be sustained by FPL Entities to any person, natural or artificial, by reason of the death of or injury to any person or damage to any property whether or not due to or caused by the negligence of FPL Entities, arising out of or in connection with the herein described purposes by Licensee, its contractors, agents, or employees; and Licensee agrees to defend at its sole cost and expense and at no cost and expense to FPL Entities any and all suits or action instituted against FPL Entities, for the imposition of such liability, loss, cost and expense.

13. Licensee shall, during the period of this Agreement, maintain at its sole expense a liability policy with minimum limits of \$3,000,000 for bodily injury or death of person(s) and \$3,000,000 for property damage arising out of a single occurrence. Said policy shall be endorsed to insure against obligations assumed by Licensee in the indemnity (Paragraph 12). A certificate of insurance shall be furnished to Company evidencing that said policy of insurance is in force and will not be cancelled or materially changed so as to affect the interests of FPL Entities until ten (10) days written notice has been furnished to Company. Upon request, copies of policies will be furnished to Company. Licensee understands and agrees that the use of the Lands for the purposes described herein is expressly contingent upon acceptance and compliance with the provisions contained herein.

14. This Agreement will become effective upon execution by Company and Licensee and will remain in full force and effect until completion of Licensee's use of the Lands pursuant to this Agreement, unless earlier terminated upon ninety (90) days written notice by Company to Licensee, or at the option of Company, immediately upon Licensee failing to comply with or to abide by any or all of the provisions contained herein.

15. The use granted herein as shown on Exhibit "B" shall be under construction by Licensee within one (1) year of the effective date of this Agreement and the construction shall be diligently pursued to completion. Licensee shall give Company ten (10) days prior written notice of its commencement of construction. "Under construction" is the continuous physical activity of placing the foundation or continuation of construction above the foundation of any structure or improvement permitted hereunder. Under construction does not include application for or obtaining a building permit, a site plan approval or zoning approval from the appropriate local government agency having jurisdiction over the activity, purchasing construction materials, placing such construction materials on the site, clearing or grading the site (if permitted) in anticipation of construction, site surveying, landscaping work or reactivating construction after substantially all construction activity has remained stopped for a period of two (2) months or more. Licensee acknowledges that failure to have the use under construction within the one (1) year time period will result in immediate termination of this Agreement in accordance with Paragraph 14 herein for failing to comply with the provisions contained herein unless Licensor grants a written extension for a mutually agreed upon time. Any request for an extension of time shall be submitted in writing by Licensee no later than thirty (30) days prior to the expiration of the one (1) year period for the project to be under construction.

16. The term "Licensee" shall be construed as embracing such number and gender as the character of the party or parties require(s) and the obligations contained herein shall be absolute and primary and shall be complete and binding as to each, including its successors and assigns, upon this Agreement being executed by Licensee and subject to no conditions precedent or otherwise.

17. Should any provision of this Agreement be determined by a court of competent jurisdiction to be illegal or in conflict with any applicable law, the validity of the remaining provisions shall not be impaired. In the event of any litigation arising out of enforcement of this Consent Agreement, the prevailing party in such litigation shall be entitled to recovery of all costs, including reasonable attorneys' fees.

18. Licensee may assign its rights and obligations under this Agreement to a solvent party upon prior written consent of the company, which consent shall not be unreasonably withheld.

19. Licensee agrees that any review or approval by Company of the plans and/or specifications submitted by Licensee attached hereto as Exhibit "B", the approval of the identity of any contractors, subcontractors and materialmen, or the delivery by Company of any construction specifications to Licensee, is solely for the purpose of processing this Consent, and without any representation or warranty whatsoever to Licensee with respect to the adequacy, correctness or efficiency thereof or otherwise and it is understood that such Company's approval does not absolve Licensee of any liability hereunder. Further, Licensee, in connection with the construction, maintenance and/or removal of improvements depicted on Exhibit "B" to the Agreement, agrees to observe and fully comply with all construction, operation and maintenance standards, as well as all applicable laws, rules and regulations of the United States, the State of Florida, and all agencies and political subdivisions thereof, including without limitation, the National Electric Safety Code and the Occupational Safety & Health Administration regulations, standards, rules, registers, directives or interpretations.

20. This Agreement includes and is subject to the provisions described on the attached Addendum.
20.23. The parties have executed this Agreement this 13th day of October.

Witnesses:

Signature: [Signature]
Print Name: SHANEENE TERRY CLARK

FLORIDA POWER & LIGHT COMPANY
By: [Signature]
Its: Corporate Legal Dept's Manager
Print Name: Tamara Newton

Signature: [Signature]
Print Name: Sheryl Polemeni

Witnesses:

Signature: [Signature]
Print Name: DUSTIE BLAUNT

LICENSEE:
By: [Signature]
Its: Manager
Print Name: Jeremy Means

Signature: [Signature]
Print Name: MIA MEARS

(Corporate Seal)

Legal Description:

That part of the South $\frac{1}{2}$ of the Northeast $\frac{1}{4}$ of Section 23, Township 24 South, Range 35 East, lying Northerly of the Northerly right-of-way line of State Road 524, Brevard County, Florida.

Property Appraiser's Parcel I.D. # 24-5-23-00-11

AND;

The East 60 feet of the following described property:

A parcel of land being that portion of the West $\frac{1}{4}$ of the Northwest $\frac{1}{4}$ of the Southeast $\frac{1}{4}$ of Section 23, Township 24 South, Range 35 East, Brevard County, Florida, lying North of the Northerly right of way of State Road no. 524.

Property Appraiser's Parcel I.D. # 24-35-23-00-775



ALLEGRA COCOA

MSA000A

FPL ACCESS EXHIBIT

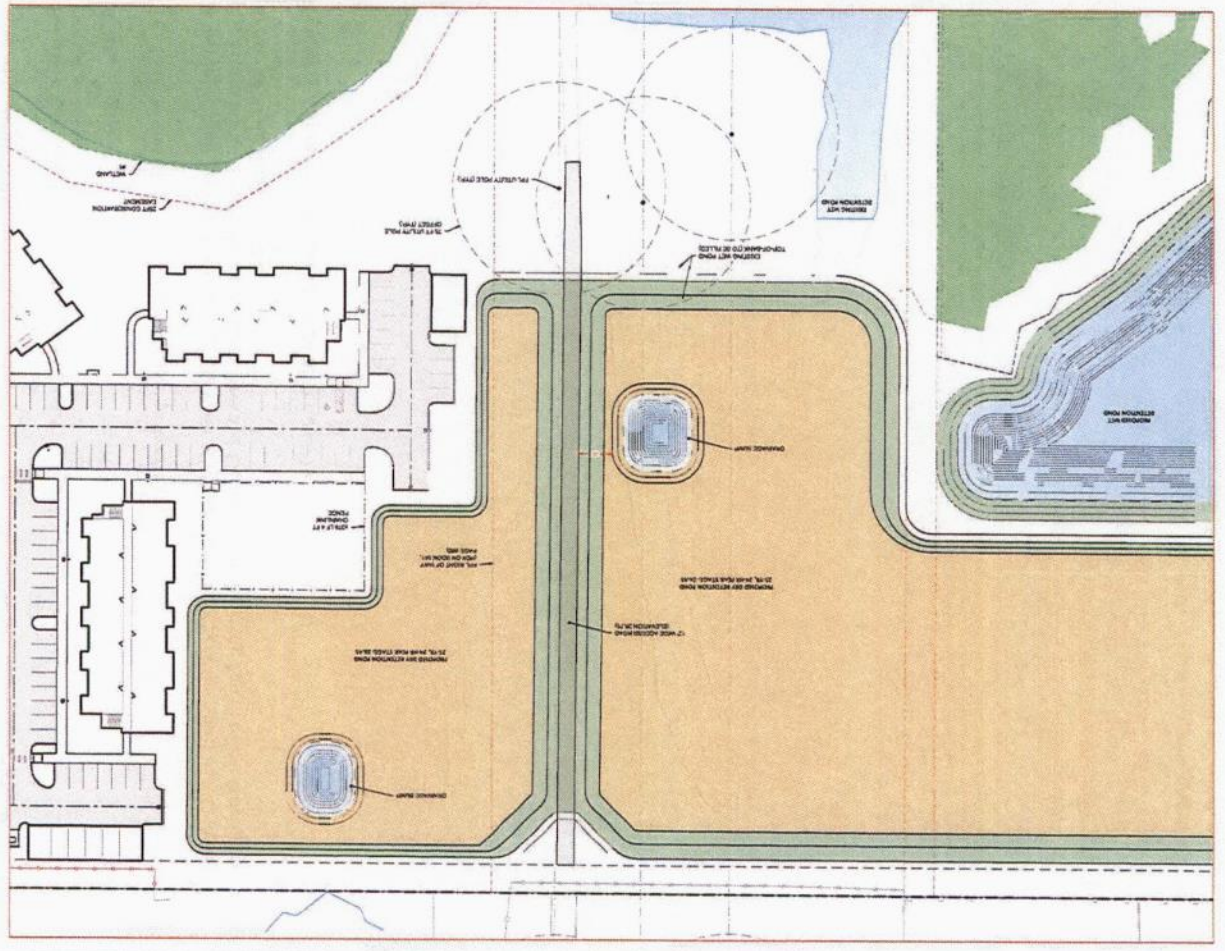
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EXHIBIT "C"



NOTIFICATION OF FPL FACILITIES

Customer/Agency: Artesia at Cocoa LLC
Developer/Contractor Name: Artesia at Cocoa LLC
Location of Project: SR 524 and Cox Road
FPL Representative: Tention Newton
Developer/Contractor Representative: Jeremy Means

Date of Meeting/Contact: _____
Project Number/Name: Alligra Apartments at Cocoa
City: Cocoa, FL
Phone: 386-854-2221
FPL Work Request #/Work Order #: _____

FPL calls your attention to the fact that there may be energized, high voltage electric lines, both overhead and underground, located in the area of this project. It is imperative that you visually survey the area and that you also take the necessary steps to identify all overhead and underground facilities prior to commencing construction to determine whether the construction of any proposed improvements will bring any person, tool, machinery, equipment or object closer to FPL's power lines than the OSHA-prescribed limits. If it will, you must either re-design your project to allow it to be built safely given the pre-existing power line location, or make arrangements with FPL to either deenergize and ground our facilities, or relocate them, possibly at your expense. You must do this before allowing any construction near the power lines. It is impossible for FPL to know or predict whether or not the contractors or subcontractors, and their employees, will operate or use cranes, digging apparatus or other mobile equipment, or handle materials or tools, in dangerous proximity to such power lines during the course of construction, and, if so, when and where. Therefore, it becomes necessary for any contractor or subcontractor, or their employees, to operate or handle cranes, digging apparatus, draglines, mobile equipment, or any other equipment, tools or materials in such a manner that they might come closer to underground or overhead power lines than is permitted by local, state or federal regulations, you and any such contractor or subcontractor must notify FPL in writing of such planned operation prior to the commencement thereof and make all necessary arrangements with FPL in order to carry out the work in a safe manner. Any work in the vicinity of the electric lines should be suspended until these arrangements are finalized and implemented.

The National Electrical Safety Code ("NESC") prescribes minimum clearances that must be maintained. If you build your structure so that those clearances cannot be maintained, you may be required to compensate FPL for the relocation of our facilities to comply with those clearances. As such, you should contact FPL prior to commencing construction near pre-existing underground or overhead power lines to make sure that your proposed improvement does not impinge upon the NESC clearances.

It is your responsibility and the responsibility of your contractors and subcontractors on this project to diligently fulfill the following obligations:

1. Make absolutely certain that all persons responsible for operating or handling cranes, digging apparatus, draglines, mobile equipment or any equipment, tool, or material capable of contacting a power line, are in compliance with all applicable state and federal regulations, including but not limited to U.S. Department of Labor OSHA Regulations, while performing their work.
2. Make sure that all cranes, digging apparatus, draglines, mobile equipment, and all other equipment or materials capable of contacting a power line have attached to them any warning signs required by U.S. Department of Labor OSHA Regulations.
3. Post and maintain proper warning signs and advise all employees, new and old alike, of their obligation to keep themselves, their tools, materials and equipment away from power lines per the following OSHA minimum approach distances (refer to OSHA regulations for restrictions):

Power Line Voltages	Personnel and Equipment (29 CFR 1910.333 and 1926.600)	Cranes and Derricks (29 CFR 1926.1407, 1409)	Travel under or near Power Lines (on construction sites, no load) (29 CFR 1926.600 - Equipment) (1926.1411 - Cranes and Derricks)
0 - 750 volts	10 Feet	10 Feet	4 Feet
751 - 50,000 volts	10 Feet	10 Feet	6 Feet
69,000 volts	11 Feet	15 Feet	10 Feet
115,000 volts	13 Feet	15 Feet	10 Feet
138,000 volts	13 Feet	16 Feet	10 Feet
230,000 volts	16 Feet	20 Feet	10 Feet
500,000 volts	25 Feet	25 Feet	16 Feet

*When uncertain of the voltage, maintain a distance of 20 feet for voltages up to 350,000 volts and 50 feet for voltages greater than 350,000 volts. For personnel approaching insulated secondary conductors less than 750 volts, avoid contact (maintain 10 feet to bare energized conductors less than 750 volts). For qualified personnel and insulated aerial lift equipment meeting requirements of 29 CFR 1910.333, distances may be reduced to those shown in 29 CFR 1910.333 Table S-5.

4. All excavators are required to contact the Sunshine State One Call of Florida, phone number 1-800-432-4770 or 811 a minimum of two working days (excluding weekends) in advance of commencement of excavation to ensure facilities are located accurately.
5. Conduct all locations and excavations in accordance with the Florida Statute 556 of the Underground Facilities Damage Prevention & Safety Act and all local city and county ordinances that may apply.
6. When an excavation is to take place within a clearance zone, an excavator shall use increased caution to protect underground facilities. The protection requires hand digging, pot holing, soft digging, vacuum methods, or similar procedures to identify underground facilities.

A copy of this notification must be provided by you to each contractor and subcontractor on this project, to be shared with their supervision and employees prior to commencing work on this project.

Email: _____
Means by which this notification was provided to customer and/or contractor

Address

FPL Representative Signature

Date

Customer/Developer/Contractor Representative Signature

Date

10/9/23

16 October 2023

Ms. Charlene Neuterman
Community Services Director
City of Cocoa, FL
65 Stone Street
Cocoa, FL 32922

**Subject: Floodplain Management Review of Allegra of Cocoa
City of Cocoa, FL**

Dear Ms. Neuterman,

Geosyntec Consultants (Geosyntec) has completed our review of the Allegra of Cocoa documents concerning compliance with the City of Cocoa's (City) Flood Damage Prevention Code (Sec. 6-300 to Sec. 6-380) and Comprehensive Plan.

The following documents, provided by the City of Cocoa, were reviewed:

- Civil Infrastructure Site Plans for Allegra of Cocoa, MBV Engineering, Inc., drawn July 25, 2023, issued August 15, 2023
- Stormwater Calculations for Allegra of Cocoa, MBV Engineering, Inc., February 2023, revised August 2023
- Landscape Plans for Allegra of Cocoa, Libra Design Group, submitted February 2, 2023, resubmitted August 29, 2023
- Comments Response Letter, MBV Engineering, Inc., August 30, 2023

Based on review of the Federal Emergency Management Agency's (FEMA) effective Flood Insurance Rate Map (FIRM), Map Number 12009C0320H, revised January 29, 2021, most of the site is within "Zone X – Area of Minimal Flood Hazard". The western portion of the site is within "Zone A – Without Base Flood Elevation (BFE) Special Flood Hazard Area".

Comments regarding the proposed development's compliance with the City's Flood Damage Prevention Code and Comprehensive Plan are provided below.

1. Please obtain applicable permits per Sec. 6-329 of the City's code before commencement of the development. It is understood based on review of the "Comments Response Letter", that the applicant has submitted applications for the necessary permits.
2. Per Sec. 6-330 (1) please show delineation of flood hazard areas on the construction documents.
3. Per Sec. 6-331(1) "include base flood elevation data prepared in accordance with currently accepted engineering practices." The Stormwater Calculations provided do not include the pre-development 100 year / 24 hour storm event results. Please include 100 year / 24 hour pre-development model results to establish pre-development base flood elevation data. Also,

provide a comparison of the pre- and post-development condition 100 year / 24 hour base flood elevations.

CLOSING

To provide reasonable assurance of compliance with City code, we recommend that the City requires satisfactory responses from the applicant to these comments prior to City approval of the proposed project. Please note that review of responses to the comments may precipitate additional comments from the reviewer.

Geosyntec appreciates the opportunity to provide consulting services to City of Cocoa. Please do not hesitate to contact us with any questions or comments related to the above comments.

Respectfully submitted,

Geosyntec Consultants, Inc.



Tom Amstadt, PE, CFM
Principal Engineer
tamstadt@geosyntec.com
321-249-9361



Mark Ellard, PE, CFM, D.WRE, ENV SP
Senior Principal
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Thomas D Amstadt, State of Florida,
Professional Engineer, License No. 69032

This item has been digitally signed and
sealed by Thomas D Amstadt on the date
indicated here.

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

**Thomas D
Amstadt, PE
2023.10.17
09:48:29
-04'00'**

School Board of Brevard County

2700 Judge Fran Jamieson Way • Viera, FL 32940-6699

Dr. Mark J. Rendell, Ed.D., Superintendent



October 23, 2023

City of Cocoa
Planning & Zoning Department
65 Stone Street
Cocoa, Florida 32922

**RE: Proposed Allegra at Cocoa Development
School Impact Analysis – Capacity Determination CD-2023-28**

City of Cocoa Planning Team,

We received a completed *School Facility Planning & Concurrency Application* for the referenced development. The subject property is Tax Account number 2407074 (Parcel ID number: 24-35-23-00-11 containing a total of approximately 53.18 acres in the City of Cocoa, Florida. The proposed development includes 312 multi-family homes. The School Impact Analysis of this proposed development has been undertaken and the following information is provided for your use.

The calculations used to analyze the prospective student impact are consistent with the methodology outlined in Section 13.2 and Amended Appendix "A"-School District Student Generation Multiplier (approved April 11, 2022) of the *Interlocal Agreement for Public School Facility Planning & School Concurrency (ILA-2014)*. The following capacity analysis is performed using capacities/projected students as shown in years 2023-24 to 2027-28 of the *Brevard County Public Schools Financially Feasible Plan for School Years 2022-23 to 2027-28* which is attached for reference.

Multi-Family Homes		312	
Students Generated	Student Generation Rates	Calculated Students Generated	Rounded Number of Students Generated
Elementary	0.11	34.32	34
Middle	0.02	6.24	6
High	0.05	15.6	16
Total	0.18		56

Planning & Project Management
Facilities Services
Phone: (321) 633-1000 x11418 • FAX: (321) 633-4646



An Equal Opportunity Employer

**FISH Capacity (including relocatable classrooms) from the
Financially Feasible Plan (FFP) Data and Analysis for School Years 2023-24 to 2027-28**

School	2023-24	2024-25	2025-26	2026-27	2027-28
Saturn	998	998	998	998	998
Cocoa	2,097	2,097	2,097	2,097	2,097
Cocoa	2,097	2,097	2,097	2,097	2,097

Projected Student Membership

School	2023-24	2024-25	2025-26	2026-27	2027-28
Saturn	649	677	821	794	786
Cocoa	1,536	1,555	1,525	1,518	1,470
Cocoa	1,536	1,555	1,525	1,518	1,470

Students Generated by Newly Issued SCADL Reservations Since FFP

School	2023-24	2024-25	2025-26	2026-27	2027-28
Saturn	-	-	-	-	-
Cocoa	-	-	-	-	-
Cocoa	-	-	-	-	-

**Cumulative Students Generated by
Proposed Development**

School	2023-24	2024-25	2025-26	2026-27	2027-28
Saturn	-	17	34	34	34
Cocoa	-	3	6	6	6
Cocoa	-	8	16	16	16

**Total Projected Student Membership (includes
Cumulative Impact of Proposed Development)**

School	2023-24	2024-25	2025-26	2026-27	2027-28
Saturn	649	694	855	828	820
Cocoa	1,536	1,558	1,531	1,524	1,476
Cocoa	1,536	1,563	1,541	1,534	1,486

**Projected Available Capacity =
FISH Capacity - Total Projected Student Membership**

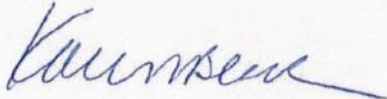
School	2023-24	2024-25	2025-26	2026-27	2027-28
Saturn	349	304	143	170	178
Cocoa	561	539	566	573	621
Cocoa	561	534	556	563	611

At this time, Saturn Elementary School, and Cocoa Jr./Sr. High School are projected to have enough capacity for the total of projected and potential students from the Allegra at Cocoa development.

This is a **non-binding** review; a *Concurrency Determination* must be performed by the School District prior to a Final Development Order and the issuance of a Concurrency Evaluation Finding of Nondeficiency by the Local Government.

We appreciate the opportunity to review this proposed project. Please let us know if you require additional information.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Karen M. Black', with a stylized, flowing script.

Karen M. Black, AICP
Manager – Facilities Planning & Intergovernmental Coordination
Planning & Project Management, Facilities Services

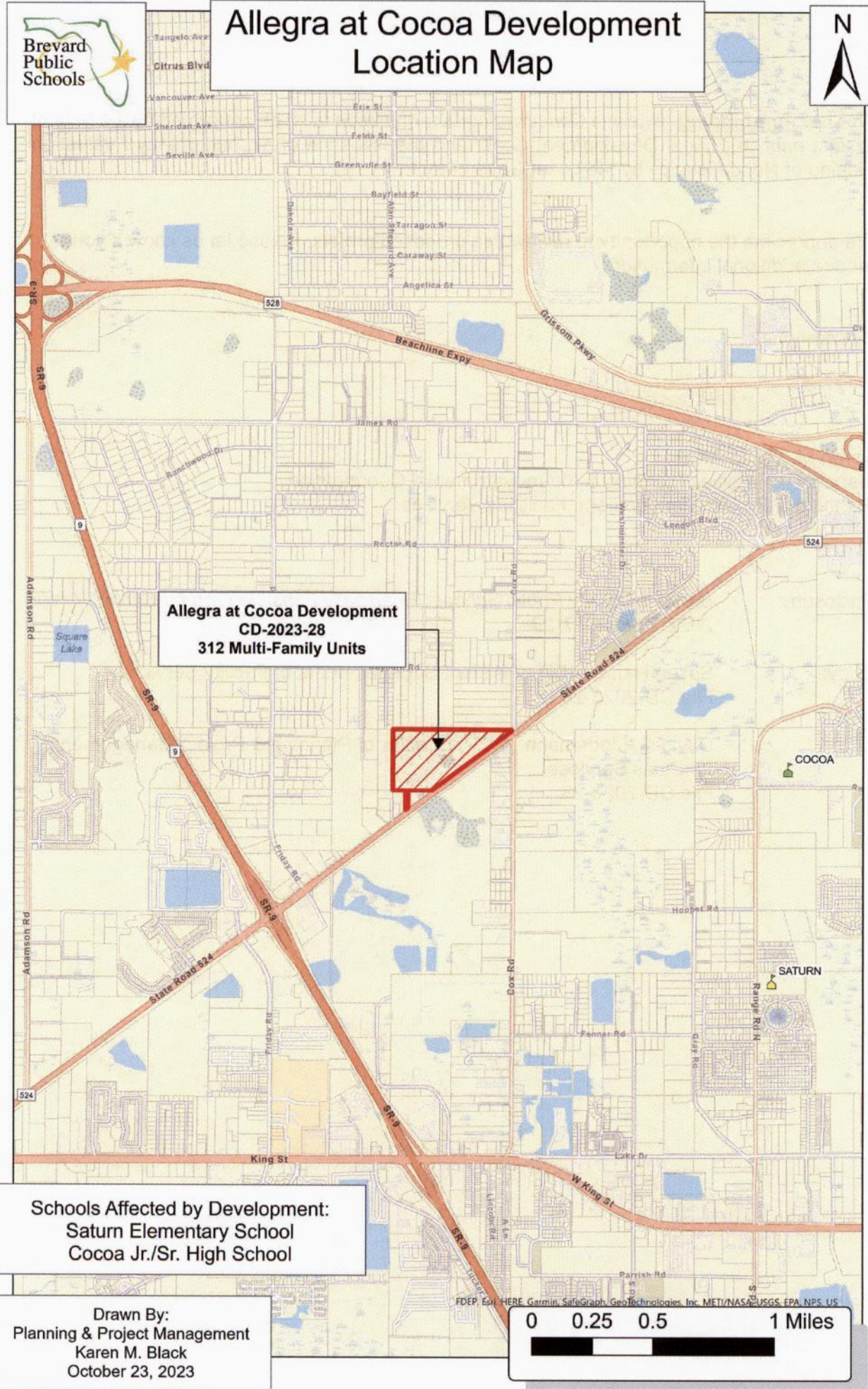
Enclosure: *Brevard County Public Schools Financially Feasible Plan for School Years
2022-23 to 2027-28*

Copy: Susan Hann, AICP, Assistant Superintendent of Facility Services
File CD-2023-28

David G. Lindemann, AICP, Director of Planning & Project Management,
Facilities Services
File CD-2023-28



Allegra at Cocoa Development Location Map



Brevard County Public Schools
Financially Feasible Plan To Maintain Utilization Rates Lower than the 100% Level of Service
Data and Analysis for School Years 2022-23 to 2027-28



Summary				2022-23	2023-24	2024-25	2025-26	2026-27	2027-28
Highest Utilization Elementary Schools:				93%	90%	100%	99%	99%	100%
Highest Utilization Middle Schools:				88%	88%	94%	92%	91%	100%
Highest Utilization Jr / Sr High Schools:				83%	83%	81%	76%	77%	76%
Highest Utilization High Schools:				107%	99%	97%	96%	100%	100%

School	Type	Grades	Utilization Factor	School Year 2022-23			School Year 2023-24			School Year 2024-25			School Year 2025-26			School Year 2026-27			School Year 2027-28		
				FISH Capacity	10/14/22 Membership	Total Capacity Utilization	Future FISH Capacity	Student Projection	Total Capacity Utilization	Future FISH Capacity	Student Projection	Total Capacity Utilization	Future FISH Capacity	Student Projection	Total Capacity Utilization	Future FISH Capacity	Student Projection	Total Capacity Utilization	Future FISH Capacity	Student Projection	Total Capacity Utilization
Elementary School Concurrency Service Areas																					
Allen	Elementary	PK-K	100%	751	598	80%	751	598	80%	751	635	85%	751	704	94%	751	720	96%	773	766	98%
Andersen	Elementary	K-6	100%	884	568	64%	884	568	64%	884	549	62%	884	537	61%	884	530	60%	884	501	57%
Apollo	Elementary	K-6	100%	902	731	81%	902	731	81%	902	749	83%	902	753	83%	902	736	82%	902	718	80%
Atlantis	Elementary	PK-6	100%	739	620	84%	739	620	84%	739	608	82%	739	596	81%	739	585	79%	739	572	77%
Audubon	Elementary	PK-6	100%	761	450	59%	761	450	59%	761	435	57%	761	422	55%	761	419	55%	761	426	56%
Cambridge	Elementary	PK-6	100%	787	495	63%	787	495	63%	787	511	65%	787	510	65%	787	510	65%	787	524	67%
Cape View	Elementary	PK-6	100%	570	305	54%	570	288	51%	570	309	54%	570	314	55%	570	315	55%	570	329	58%
Carroll	Elementary	K-6	100%	751	626	83%	751	633	84%	751	643	86%	751	623	83%	751	619	82%	751	628	84%
Challenger 7	Elementary	PK-6	100%	573	503	88%	573	503	88%	573	474	83%	573	462	81%	573	433	76%	573	413	72%
Columbia	Elementary	PK-6	100%	751	506	67%	751	512	68%	751	531	71%	751	522	70%	751	538	72%	751	538	72%
Covina	Elementary	K-6	100%	711	560	79%	711	560	79%	711	565	79%	711	602	85%	711	590	83%	711	585	82%
Crest	Elementary	PK-6	100%	1,114	626	56%	1,114	660	59%	1,114	668	60%	1,114	667	60%	1,114	667	60%	1,114	658	59%
Croton	Elementary	PK-6	100%	795	488	61%	795	488	61%	795	514	65%	795	528	66%	795	542	68%	795	542	68%
Discovery	Elementary	PK-6	100%	980	643	66%	980	664	68%	980	675	69%	980	671	68%	980	720	73%	980	761	78%
Endeavour	Elementary	PK-6	100%	968	719	74%	968	750	77%	968	717	74%	968	707	73%	968	674	70%	968	671	69%
Enterprise	Elementary	K-6	100%	729	597	82%	729	597	82%	729	578	79%	729	552	76%	729	538	74%	729	529	73%
Faiglen	Elementary	PK-6	100%	789	617	78%	789	617	78%	789	617	78%	789	632	80%	789	635	80%	789	625	79%
Gentry	Elementary	K-6	100%	711	458	65%	711	477	67%	711	465	65%	711	458	65%	711	455	64%	711	457	64%
GoView	Elementary	PK-6	100%	777	441	57%	777	441	57%	777	460	59%	777	481	62%	777	489	63%	777	503	65%
Harbor City	Elementary	PK-6	100%	629	403	64%	629	405	64%	629	457	73%	629	474	75%	629	494	79%	629	509	81%
Holland	Elementary	PK-6	100%	605	432	71%	605	450	74%	605	451	75%	605	444	73%	605	442	73%	605	431	71%
Imperial Estates	Elementary	K-6	100%	729	659	90%	729	684	94%	729	712	98%	729	724	99%	729	742	102%	729	779	108%
Indiantonic	Elementary	K-6	100%	798	686	86%	798	686	86%	798	685	86%	798	671	84%	798	676	85%	798	651	82%
Jupiter	Elementary	PK-6	100%	930	729	78%	930	735	79%	930	801	86%	930	882	95%	930	940	101%	1,040	1,030	99%
Lockmar	Elementary	PK-6	100%	892	585	66%	892	585	66%	892	569	64%	892	552	62%	892	558	63%	892	559	63%
Longleaf	Elementary	PK-6	100%	790	631	80%	790	637	81%	790	613	78%	790	590	75%	790	563	71%	790	528	67%
Marsalis	Elementary	K-6	100%	998	899	90%	998	910	91%	998	899	90%	998	845	85%	998	888	89%	998	881	88%
McAuliffe	Elementary	PK-6	100%	838	621	74%	838	621	74%	838	580	69%	838	568	68%	838	553	66%	838	528	63%
Meadowlane Intermediate	Elementary	3-6	100%	1,114	825	74%	1,114	825	74%	1,114	779	70%	1,114	773	69%	1,114	805	72%	1,114	843	76%
Meadowlane Primary	Elementary	K-6	100%	824	651	79%	824	666	81%	824	660	80%	824	630	76%	824	618	75%	824	613	74%
Mila	Elementary	PK-6	100%	707	435	62%	707	435	62%	707	439	62%	707	396	56%	707	383	54%	707	362	51%
Mims	Elementary	PK-6	100%	725	464	64%	725	464	64%	725	481	66%	725	512	71%	725	525	72%	725	513	71%
Oak Park	Elementary	PK-6	100%	968	505	52%	968	505	52%	968	471	49%	968	475	49%	968	475	49%	968	447	46%
Ocean Breeze	Elementary	PK-6	100%	654	554	85%	654	554	85%	654	542	83%	654	533	81%	654	534	82%	654	531	81%
Palm Bay Elem	Elementary	PK-6	100%	983	586	60%	983	613	62%	983	610	62%	983	627	64%	983	630	64%	983	636	65%
Pinewood	Elementary	PK-6	100%	569	521	92%	591	521	88%	591	541	92%	613	572	93%	613	598	98%	613	600	98%
Port Malabar	Elementary	PK-6	100%	852	640	75%	852	680	80%	852	683	80%	852	746	88%	852	760	89%	852	795	93%
Quint	Elementary	PK-6	100%	932	693	74%	932	693	74%	932	684	73%	932	681	73%	932	685	73%	932	697	75%
Riviera	Elementary	PK-6	100%	777	699	90%	777	714	92%	777	718	92%	799	780	98%	843	827	103%	867	866	100%
Roosevelt	Elementary	K-6	100%	599	288	48%	599	296	50%	599	269	45%	599	259	43%	599	239	40%	599	220	37%
Sabal	Elementary	PK-6	100%	785	500	64%	785	500	64%	785	503	64%	785	516	66%	785	534	68%	785	535	68%
Salton	Elementary	PK-6	100%	998	649	65%	998	649	65%	998	677	68%	998	621	62%	998	794	80%	998	786	79%
Sea Park	Elementary	PK-6	100%	461	337	73%	461	337	73%	461	327	71%	461	321	70%	461	326	71%	461	329	71%
Shenwood	Elementary	PK-6	100%	609	459	75%	609	459	75%	609	458	75%	609	459	75%	609	450	74%	609	441	72%
Sunrise	Elementary	PK-6	100%	913	759	83%	913	767	84%	913	836	92%	935	908	97%	1,023	1,004	98%	1,067	1,067	100%
Sunrise	Elementary	K-6	100%	755	600	79%	755	602	80%	755	561	74%	755	541	72%	755	516	68%	755	480	64%
Surfside	Elementary	K-6	100%	541	442	82%	541	442	82%	541	425	79%	541	418	77%	541	417	77%	541	407	75%
Tropical	Elementary	K-6	100%	910	669	74%	910	669	74%	910	614	67%	910	600	66%	910	572	63%	910	545	60%
Turner	Elementary	PK-6	100%	874	555	64%	874	564	65%	874	569	67%	874	647	74%	874	675	77%	874	691	79%
University Park	Elementary	PK-6	100%	811	487	60%	811	487	60%	811	545	67%	811	592	73%	811	642	79%	811	658	81%
Viera Elem	Elementary	K-6	100%	1,030	895	87%	1,030	717	70%	1,030	759	74%	1,030	857	83%	1,030	926	90%	1,074	1,061	99%
Westside	Elementary	K-6	100%	857	799	93%	857	846	99%	923	922	100%	989	974	98%	1,033	988	96%	1,099	1,100	100%
Williams	Elementary	PK-6	100%	715	451	63%	715	450	63%	715	443	62%	715	414	58%	715	411	57%	715	415	58%
Elementary Totals				42,215	39,468		42,237	39,776		42,303	39,996		42,436	31,649		42,677	31,905		43,007	32,280	

				School Year 2022-23			School Year 2023-24			School Year 2024-25			School Year 2025-26			School Year 2026-27			School Year 2027-28		
School	Type	Grades	Utilization Factor	FISH Capacity	10/14/22 Membership	Total Capacity Utilization	Future FISH Capacity	Student Projection	Total Capacity Utilization	Future FISH Capacity	Student Projection	Total Capacity Utilization	Future FISH Capacity	Student Projection	Total Capacity Utilization	Future FISH Capacity	Student Projection	Total Capacity Utilization	Future FISH Capacity	Student Projection	Total Capacity Utilization
Middle School Concurrency Service Areas																					
Central	Middle	7-8	90%	1,514	1,129	75%	1,514	1,129	75%	1,514	1,158	76%	1,514	1,228	81%	1,514	1,289	85%	1,514	1,377	91%
DeLauris	Middle	7-8	90%	960	842	88%	960	844	88%	960	902	94%	960	820	85%	960	789	82%	960	826	86%
Hoover	Middle	7-8	90%	680	505	74%	680	505	74%	680	534	79%	680	574	84%	680	577	85%	680	588	86%
Jackson	Middle	7-8	90%	680	550	81%	680	550	81%	680	545	80%	680	538	82%	680	555	84%	680	588	86%
Jefferson	Middle	7-8	90%	873	608	70%	873	608	70%	873	600	69%	873	609	70%	873	563	64%	873	548	63%
Johnson	Middle	7-8	90%	1,064	610	57%	1,064	610	57%	1,064	650	61%	1,064	698	66%	1,064	753	71%	1,064	825	78%
Kennedy	Middle	7-8	90%	869	671	77%	869	671	77%	869	687	79%	869	670	77%	869	669	77%	869	677	78%
Madison	Middle	7-8	90%	781	446	57%	781	453	58%	781	484	62%	781	452	58%	781	478	61%	781	593	76%
McNair	Middle	7-8	90%	616	369	60%	616	369	60%	616	346	56%	616	354	57%	616	337	55%	616	347	56%
Southwest	Middle	7-8	90%	1,230	920	75%	1,230	920	75%	1,230	1,024	83%	1,230	1,127	92%	1,289	1,174	91%	1,289	1,285	100%
Stone	Middle	7-8	90%	1,076	658	62%	1,076	708	66%	1,076	799	74%	1,076	823	76%	1,076	890	83%	1,076	977	91%
Middle Totals				10,323	7,314		10,323	7,367		10,323	7,729		10,323	7,893		10,382	8,072		10,382	8,651	
Junior / Senior High School Concurrency Service Areas																					
Cocoa	Jr / Sr High	PK, 7-12	90%	2,097	1,545	74%	2,097	1,536	73%	2,097	1,555	74%	2,097	1,525	73%	2,097	1,518	72%	2,097	1,470	70%
Cocoa Beach	Jr / Sr High	7-12	90%	1,445	983	68%	1,445	1,000	69%	1,445	1,000	69%	1,445	941	65%	1,445	928	64%	1,445	867	60%
Space Coast	Jr / Sr High	7-12	90%	1,852	1,534	83%	1,852	1,534	83%	1,852	1,505	81%	1,852	1,450	78%	1,852	1,428	77%	1,852	1,402	76%
Jr / Sr High Totals				5,394	4,062		5,394	4,076		5,394	4,060		5,394	3,916		5,394	3,874		5,394	3,739	
Senior High School Concurrency Service Areas																					
Astronaut	High	9-12	95%	1,451	1,109	76%	1,451	1,109	76%	1,451	1,123	77%	1,451	1,129	78%	1,451	1,164	80%	1,451	1,158	80%
Bayside	High	9-12	95%	2,263	1,851	82%	2,263	1,885	83%	2,263	2,023	89%	2,263	2,099	93%	2,263	2,175	96%	2,263	2,371	105%
Eau Gallie	High	PK, 9-12	95%	2,221	1,582	71%	2,221	1,582	71%	2,221	1,597	72%	2,221	1,625	73%	2,221	1,631	73%	2,221	1,693	76%
Heritage	High	9-12	95%	2,314	2,033	88%	2,314	2,055	89%	2,314	2,065	89%	2,314	2,057	89%	2,314	2,099	91%	2,314	2,171	94%
Melbourne	High	9-12	95%	2,370	2,245	95%	2,370	2,245	95%	2,370	2,248	95%	2,370	2,248	95%	2,370	2,284	96%	2,370	2,345	99%
Merritt Island	High	PK, 9-12	95%	1,962	1,546	79%	1,962	1,546	79%	1,962	1,512	77%	1,962	1,457	74%	1,962	1,437	73%	1,962	1,454	74%
Palm Bay	High	PK, 9-12	95%	2,657	1,483	56%	2,657	1,495	56%	2,657	1,581	60%	2,657	1,683	63%	2,657	1,704	64%	2,657	1,700	64%
Rockledge	High	9-12	95%	1,836	1,559	85%	1,836	1,559	85%	1,836	1,640	89%	1,836	1,699	93%	1,836	1,693	92%	1,836	1,620	88%
Satellite	High	PK, 9-12	95%	1,527	1,518	99%	1,551	1,536	99%	1,551	1,433	92%	1,551	1,413	91%	1,551	1,359	88%	1,551	1,296	84%
Titusville	High	9-12	95%	1,813	1,313	72%	1,813	1,313	72%	1,813	1,335	74%	1,813	1,351	75%	1,813	1,316	73%	1,813	1,322	73%
Viera	High	PK, 9-12	95%	2,141	2,289	107%	2,141	2,319	109%	2,141	2,391	111%	2,141	2,417	113%	2,141	2,579	120%	2,141	2,660	124%
High Totals				22,555	18,628		22,912	18,664		22,912	18,845		22,912	19,178		23,007	19,441		23,221	19,793	
Schools of Choice (Not Concurrency Service Areas)																					
Freedom 7	Elementary	K-6	100%	475	483	102%	475	414	87%	475	414	87%	475	414	87%	475	414	87%	475	414	87%
Stevenson	Elementary	K-6	100%	569	506	89%	569	508	89%	569	508	89%	569	508	89%	569	508	89%	569	508	89%
South Lake	Elementary	K-6	100%	461	434	94%	461	453	98%	461	471	102%	461	489	106%	461	507	110%	461	529	115%
West Melbourne	Elementary	K-6	100%	618	549	89%	618	552	89%	618	570	92%	618	588	95%	618	606	98%	618	624	101%
Edgewater	Jr / Sr High	7-12	90%	1,077	938	87%	1,077	950	88%	1,077	950	88%	1,077	950	88%	1,077	950	88%	1,077	950	88%
West Shore	Jr / Sr High	7-12	90%	1,264	930	74%	1,264	950	75%	1,264	950	75%	1,264	950	75%	1,264	950	75%	1,264	950	75%
Schools of Choice				4,484	3,760		4,660	3,827		4,636	3,863		4,636	3,899		4,636	3,935		4,636	3,975	
Brevard Totals				84,971	64,132		85,626	64,706		85,768	65,693		85,900	66,435		86,296	67,227		86,840	68,418	

- Notes**
- FISH Capacity is the sum of the factored permanent capacity and the factored relocatable capacity. Permanent and relocatable capacities for 2022-23 are reported from the FISH database as of October 14, 2022.
 - Student Membership is reported from the Fall Final Membership Count (10/14/2022).
 - Davis Demographics SchoolSite Enrollment Forecasting Extension for ArcGIS estimates future student populations by analyzing the following data:
 - Development Projections from Brevard County Local Government Jurisdictions
 - Brevard County School Concurrency Student Generation Multipliers (SGM)
 - Fall Membership student addresses and corresponding concurrency service areas
 - Student Mobility Rates / Cohort Survival Rates
 - Brevard County Birth rates by zip code
 - Davis Demographics estimates are then adjusted using the following factors:
 - PK (Pre-Kindergarten) and AH (daycare for students with infants) enrollment number are assumed to be constant
 - Current From/To attendance patterns are assumed to remain constant
 - Nonwooded student addresses are assumed to continue in their attendance schools
 - Charter School Growth
 - In order to maintain utilization rates lower than the 100% Level of Service, Permanent Capacity and Relocatable Classrooms are assumed to add future student stations as necessary.
 - If student projections are accurate, the school board could add additional classroom capacity, implement attendance boundary changes, or add relocatable classrooms. A south area elementary school is planned for the future growth, but the exact timing hasn't been established.
 - Primary relocatable classrooms are used for the next 5 years, the following changes would be needed to accommodate projected growth. These schools are being analyzed for the best options to accommodate additional students.
 - For school year 2023-24, no additional capacity is needed.
 - For school year 2024-25, a total of 3 intermediate classrooms are projected for Westside Elementary School.
 - For school year 2025-26, a total of 6 intermediate classrooms are projected for Pinewood (1), Riviera (1), Sunrise (1) and Westside (3) Elementary Schools.
 - For school year 2026-27, a total of 14 intermediate classrooms are projected for Imperial Estates (1), Jupiter (2), Riviera (2), Sunrise (4), Westside (2) Elementary Schools, and Southwest Middle School (3). 4 High School relocatable classrooms are proposed for Viera High School.
 - For school year 2027-28, a total of 15 intermediate classrooms are projected for Roy Allen (1), Imperial Estates (2), Jupiter (3), Riviera (2), Viera Ei (2), Sunrise (2), and Westside (3) Elementary Schools. 9 High School relocatable classrooms are proposed for Bayside (5) and Viera (4) High.
 - A classroom addition is planned for construction at South Lake Elementary School for 2023-24. The factored capacity is adjusted for the proposed 350 student stations.
 - A classroom addition is planned for construction at West Melbourne School for 2024-25. The factored capacity is adjusted for the proposed 176 student stations.
 - A capacity addition is planned for construction at Pinewood Elementary and Satellite High Schools for school year 2024-25 forward.

Cox Road/SR 524 Multifamily

Traffic Impact Analysis

City of Cocoa, FL

December 2022

Kimley»Horn



TRAFFIC IMPACT ANALYSIS

Cox Road/SR 524 Multifamily

City of Cocoa, FL

Prepared for:

The Brownstone Group

Prepared by:

Kimley-Horn and Associates, Inc.

December 2022



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Date: 2022.12.23 14:55:02 -05'00'

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PE #91501

Table of Contents

1.0	INTRODUCTION.....	1
1.1	Study Area	1
2.0	EXISTING CONDITIONS ANALYSIS – YEAR 2022	3
2.1	Existing Traffic Counts.....	3
2.2	Existing Roadway Conditions.....	3
2.3	Existing Intersection Conditions	3
3.0	BACKGROUND CONDITIONS ANALYSIS – YEAR 2023	7
3.1	Background Traffic	7
3.2	Background Intersection Analysis	7
4.0	PROJECT TRAFFIC.....	9
4.1	Trip Generation.....	9
4.2	Trip Distribution	10
4.3	Trip Assignment.....	10
5.0	BUILDOUT CONDITIONS ANALYSIS – YEAR 2023.....	13
5.1	Buildout Traffic	13
5.2	Buildout Intersection Analysis	13
6.0	FUTURE ROADWAY SEGMENT ANALYSIS	17
7.0	TURN LANE ANALYSIS.....	19
8.0	CONCLUSION.....	20

Figures

Figure 1: Project Location Map & Study Area Intersections	2
Figure 2: Project Trip Distribution.....	11
Figure 3: Project Trip Assignment	12
Figure 4: AM Buildout (2023) Volumes.....	14
Figure 5: PM Buildout (2023) Volumes.....	15

Tables

Table 1: Existing (2022) Roadway Segment Analysis	5
Table 2: Existing Intersection Conditions (AM Peak Hour)	6
Table 3: Existing Intersection Conditions (PM Peak Hour)	6
Table 4: Background Intersection Conditions (AM Peak Hour).....	8
Table 5: Background Intersection Conditions (PM Peak Hour).....	8
Table 6: Trip Generation Summary.....	9
Table 7: Buildout Intersection Conditions (AM Peak Hour).....	16
Table 8: Buildout Intersection Conditions (PM Peak Hour).....	16
Table 9: Future Background (2023) Roadway Segment Analysis.....	18
Table 10: Future Buildout (2023) Roadway Segment Analysis.....	18
Table 11: Proposed Turn Lane Storage Summary.....	19

Appendices

Appendix A: Site Plan

Appendix B: Study Area Determination

Appendix C: Turning Movement Counts

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

Appendix E: Turning Movement Volume Worksheets

Appendix F: Space Coast TPO Traffic Counts: 2011-2020 Report

Appendix G: Growth Rate

Appendix H: Signal Timings

Appendix I: Synchro Outputs

Appendix J: Trip Generation Estimates

Appendix K: CFRPM v7 Model Plot

Appendix L: NCHRP Report 457 Output

1.0 INTRODUCTION

Kimley-Horn has been retained by The Brownstone Group to analyze and document the traffic impacts associated with the proposed Cox Road/SR 524 Multifamily residential development in the City of Cocoa, Florida. The proposed multifamily residential development is located west of Cox Road and north of SR 524 in the City of Cocoa, Florida. The property is currently vacant. The proposed development will consist of approximately 312 multifamily units and site access will be provided via one (1) full access driveway along SR 524. Project driveway and site layout are shown in the conceptual site plan provided in **Appendix A**.

1.1 STUDY AREA

The study area, as shown in **Figure 1**, includes the adjacent roadway segment of SR 524 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 includes the proposed project driveways and the following roadway segment and intersections:

Study Roadway Segments

- SR 524 from I-95 to Cox Road
- SR 524 from Cox Road to Industry Road

Study Intersections

- SR 524 & Cox Road
- SR 524 & Project Driveway

The study area determination table is included within **Appendix B**.

Figure 1: Project Location Map & Study Area Intersections



2.0 EXISTING CONDITIONS ANALYSIS – YEAR 2022

2.1 EXISTING TRAFFIC COUNTS

AM peak period (7:00 AM to 9:00 AM) and PM peak period (4:00 PM to 6:00 PM) turning movement counts (TMC) were collected at the study intersection on Wednesday, January 12, 2022, and are included in **Appendix C**. The TMCs 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.

2.2 EXISTING ROADWAY CONDITIONS

A roadway segment analysis was performed for existing conditions for Daily and PM peak hour. 2021 Average Annual Daily Traffic (AADT) was obtained from Space Coast Transportation Planning Organization (TPO) Traffic Counts: 2012-2021 Report published in June 2022, which is provided in **Appendix F**. Using historic AADT volumes (2012 - 2021) from the Space Coast TPO Traffic Counts report, a weighted annual growth rate of 1.8% was calculated for the study area as provided in **Appendix G**. To provide a conservative analysis, a 2.0% growth rate was applied to 2021 AADT volumes to develop existing 2022 AADT volumes. Existing 2022 PM peak hour directional traffic volumes were calculated by utilizing turning movement counts collected on January 12, 2022. As shown in **Table 1**, the study roadway segment on SR 524 currently operates within the adopted level of service (LOS).

2.3 EXISTING INTERSECTION CONDITIONS

Intersection operational analysis was performed for the year 2022 existing conditions in the AM peak hour and PM peak hour using procedures outlined in the *Highway Capacity Manual 6th Edition* with Synchro (v11) software. Signal timings for the study intersection was provided by Brevard County and are included in **Appendix H**. Intersection LOS and maximum volume-to-capacity (v/c) ratios for existing conditions are provided in **Table 2** and **Table 3**. **Appendix I** provides Synchro outputs.

As shown in **Tables 2 and 3**, the study area intersection operates at an acceptable LOS and v/c ratio less than one (1.0) during the existing AM peak hour and PM peak hour conditions.

Table 1: Existing (2022) Roadway Segment Analysis

Roadway From To			Roadway Attributes ¹				Daily MSV ²	Daily - Existing (2022)			PHPD MSV ⁴	PM Peak Hour - Existing (2022)			
			Functional Classification	Area Type	Adopted LOS	Number of Lanes		2022 AADT ³	V/C Ratio	LOS		Volumes ⁵		V/C Ratio	LOS
												NB / EB	SB / WB		
SR 524															
I-95 Cox Road			Minor Arterial	U	D	2	18,590	13,566	0.73	C	880	418	521	0.59	C
Cox Road Industry Road			Minor Arterial	U	D	2	19,470	14,923	0.77	C	880	578	631	0.72	C

Notes:

1. Roadway attributes were obtained from the latest Space Coast Transportation Planning Organization (TPO) Traffic Counts: 2012 -2021 Report and FDOT Urban Area Boundary & Federal Functional Classification Map for Brevard County.
2. Maximum daily service capacity was taken from the latest references listed in Note 1.
3. A 1.8% historical growth rate was calculated based upon Historical AADT information within the latest Space Coast TPO Traffic Counts: 2012 -2021 Report. Therefore, a growth rate of 2.0% was applied to 2021 AADT volumes to calculate 2022 AADT volumes and provide a conservative analysis.
4. Peak hour peak directional service capacity was taken from the 2020 FDOT Quality/LOS Handbook.
5. Existing (2022) PHPD volumes are taken from turning movement counts performed in January 2022.

Table 2: Existing Intersection Conditions (AM Peak Hour)

2022 Existing Conditions				
Intersection	Control Type	AM Peak Hour		
		LOS	Delay (s)	Max V/C Ratio
Cox Rd & SR 524	Signalized	B	13.6	0.67

Table 3: Existing Intersection Conditions (PM Peak Hour)

2022 Existing Conditions				
Intersection	Control Type	PM Peak Hour		
		LOS	Delay (s)	Max V/C Ratio
Cox Rd & SR 524	Signalized	B	17.0	0.79

3.0 BACKGROUND CONDITIONS ANALYSIS – YEAR 2023

3.1 BACKGROUND TRAFFIC

Traffic conditions were evaluated for the year 2023 background conditions, without the impact of project trips on the roadway network. Background volumes at study intersections were calculated by applying an annual growth rate of 2.0% to seasonally adjusted existing traffic counts as provided in **Appendix G**. **Appendix E** provides adjusted turning movement volume worksheets for all study intersections.

3.2 BACKGROUND INTERSECTION ANALYSIS

Intersection operational analysis was performed for the year 2023 during background conditions in the AM and PM peak hours using procedures outlined in the *Highway Capacity Manual 6th Edition* with Synchro (v11) software. Intersection level of service (LOS) and maximum volume-to-capacity (v/c) ratios for the background conditions are provided in **Tables 4 and 5**. **Appendix I** includes Synchro outputs.

As shown in **Tables 4 and 5**, the study intersections are expected to operate at an acceptable LOS and v/c ratio less than one (1.0) in background AM peak hour and PM peak hour conditions.

Table 4: Background Intersection Conditions (AM Peak Hour)

2023 Background Conditions				
Intersection ²	Control Type	AM Peak Hour		
		LOS	Delay (s)	Max V/C Ratio
Cox Rd & SR 524	Signalized	B	14.0	0.72

Table 5: Background Intersection Conditions (PM Peak Hour)

2023 Background Conditions				
Intersection ²	Control Type	PM Peak Hour		
		LOS	Delay (s)	Max V/C Ratio
Cox Rd & SR 524	Signalized	B	17.7	0.80

4.0 PROJECT TRAFFIC

4.1 TRIP GENERATION

Trip generation for the proposed development was calculated per procedures published in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual, 11th Edition*. Land Use Code (LUC) 220 [Multifamily Housing (Low-Rise)] was used to estimate trip generation for the proposed multifamily residential development as provided in **Appendix J**.

As shown in **Table 6**, the proposed development is expected to generate 2,075 daily trips, 119 AM peak hour trips (29 inbound/ 90 outbound), and 156 PM peak hour trips (98 inbound/ 58 outbound).

Table 6: Trip Generation Summary

Daily	Land Use	ITE LUC	Size	Units	ITE Trip Rate ¹	Daily Trip Generation				
						Total	In ¹		Out ¹	
	Multifamily Housing (Low-Rise)	220	312	DU	6.65	2,075	50%	1,037	50%	1,038
	Total Generated Trips					2,075	1,037		1,038	
AM Peak	Land Use	ITE LUC	Size	Units	ITE Trip Rate ¹	AM Peak Hour Trip Generation				
						Total	In ¹		Out ¹	
	Multifamily Housing (Low-Rise)	220	312	DU	0.38	119	24%	29	76%	90
	Total Generated Trips					119	29		90	
PM Peak	Land Use	ITE LUC	Size	Units	ITE Trip Rate ¹	PM Peak Hour Trip Generation				
						Total	In ¹		Out ¹	
	Multifamily Housing (Low-Rise)	220	312	DU	0.50	156	63%	98	37%	58
	Total Generated Trips					156	98		58	

4.2 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 v7) 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. **Appendix K** 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. The trip distribution, shown in **Figure 2**, was used to assign external project traffic to the study area intersections and driveways.

4.3 TRIP ASSIGNMENT

Project trips were assigned to the study area based on project trip distribution percentages. **Figure 3** shows the anticipated AM peak hour and PM peak hour project movements at study area intersections generated by the proposed multifamily development.

Figure 2: Project Trip Distribution



Figure 3: Project Trip Assignment



5.0 BUILDOUT CONDITIONS ANALYSIS – YEAR 2023

5.1 BUILDOUT TRAFFIC

Future traffic conditions were evaluated for the buildout year of 2023. Buildout volumes were developed by adding anticipated project trips to background volumes. **Appendix E** provides the adjusted turning movement volume worksheets for all study intersections. Turning movement volumes for buildout total traffic at the study intersections are shown in **Figures 4 and 5**.

5.2 BUILDOUT INTERSECTION ANALYSIS

Intersection operational analysis was performed for the year 2023 buildout conditions in the AM peak hour and PM peak hour using procedures outlined in the *Highway Capacity Manual 6th Edition* with Synchro (v11) software. Intersection level of service (LOS) and maximum volume-to-capacity (v/c) ratios for the buildout conditions are provided in **Table 7 and Table 8**. **Appendix I** provides Synchro outputs.

As shown in **Table 7 and Table 8**, all study area intersections are expected to operate at an acceptable LOS and v/c ratio less than one (1.0) in buildout AM peak hour and PM peak hour conditions. No deficiencies were identified as a result of project traffic impact.

Figure 4: AM Buildout (2023) Volumes

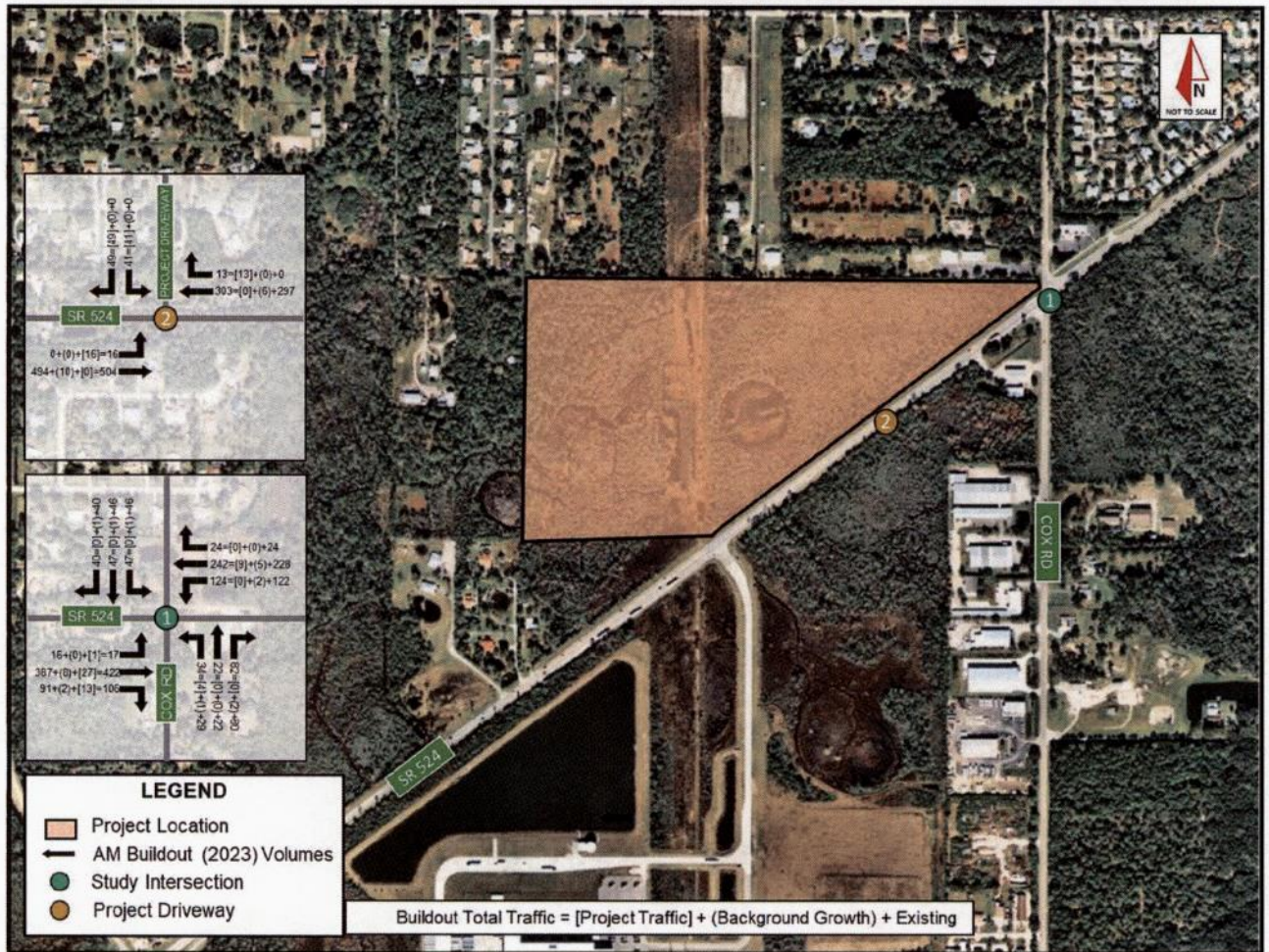


Figure 5: PM Buildout (2023) Volumes

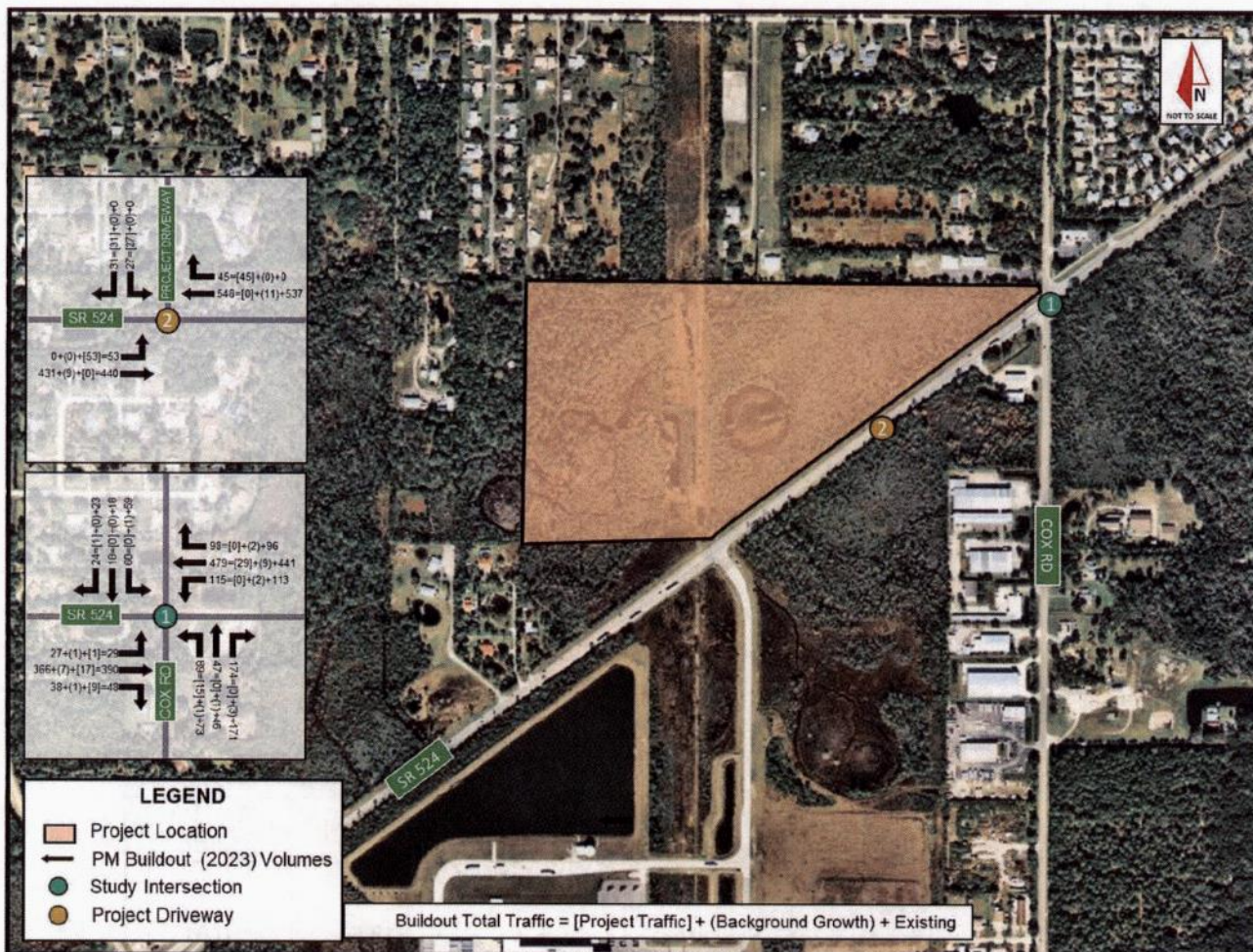


Table 7: Buildout Intersection Conditions (AM Peak Hour)

2023 Buildout Conditions				
Intersection	Control Type	AM Peak Hour		
		LOS	Delay (s)	Max V/C Ratio
Cox Rd & SR 524	Signalized	B	14.7	0.77
SR 524 & Project Driveway	Unsignalized (TWSC)	C	15.7	0.23

Notes:

1. Intersection LOS and delay at unsignalized intersections are reported for the most critical stop-controlled approach only.

Table 8: Buildout Intersection Conditions (PM Peak Hour)

2023 Buildout Conditions				
Intersection	Control Type	PM Peak Hour		
		LOS	Delay (s)	Max V/C Ratio
Cox Rd & SR 524	Signalized	B	18.6	0.81
SR 524 & Project Driveway	Unsignalized (TWSC)	C	21.9	0.23

Notes:

1. Intersection LOS and delay at unsignalized intersections are reported for the most critical stop-controlled approach only.

6.0 FUTURE ROADWAY SEGMENT ANALYSIS

A Daily and PM peak hour roadway segment analysis was performed for future background and buildout conditions (Year 2023). Background volumes were developed by applying a 2.0% annual growth rate to existing 2022 volumes as provided in **Appendix G**. Buildout volumes were developed by adding project trips to background volumes. As shown in **Tables 9 and 10**, the study roadway segment is anticipated to 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 9: Future Background (2023) Roadway Segment Analysis

Roadway FromTo			Daily MSV ¹	Daily Existing Volumes	Applied Growth Rate ²	Daily - Future Background (2023)			PHPD MSV ¹	Existing Peak Season Traffic Volumes		Applied Growth Rate ²	PM Peak Hour - Future Background (2023)					
						Volumes ³	V/C Ratio	LOS		NB / EB	SB / WB		Volumes ³		V/C Ratios		LOS	
													NB / EB	SB / WB	NB / EB	SB / WB	NB / EB	SB / WB
SR 524	I-95	Cox Road	18,590	13,566	2.00%	13,837	0.73	C	880	418	521	2.00%	426	531	0.48	0.60	C	C
	Cox Road	Industry Road	19,470	14,923	2.00%	15,221	0.77	C	880	578	631	2.00%	590	644	0.67	0.73	C	C

Notes:

1. Roadway service capacities were based on Space Coast TPO Traffic Counts: 2012-2021 Report and the 2020 FDOT Quality/LOS Handbook.

2. A 1.8% historical growth rate was calculated based upon Historical ADT information within the latest Space Coast TPO Traffic Counts: 2012-2021 Report. Therefore, a growth rate of 2.0% was applied to 2021 ADT volumes to calculate 2022 ADT volumes and provide a conservative analysis.

3. Future non-project traffic volumes are the summation of the existing peak season volumes and background growth.

Table 10: Future Buildout (2023) Roadway Segment Analysis

Roadway FromTo		Daily MSV ¹	Daily Future Background Volumes	Daily Project Traffic		Daily - Future Buildout (2023)			PHPD MSV ¹	Future Background Peak Season Traffic Volumes		PM Peak Hour Project Traffic			PM Peak Hour - Future Buildout (2023)						
				% Assign ²	Volume	Volumes ³	V/C Ratio	LOS		NB / EB	SB / WB	% Assign ⁴	NB / EB	SB / WB	Volumes ³		V/C Ratios		LOS		
															NB / EB	SB / WB	NB / EB	SB / WB	NB / EB	SB / WB	NB / EB
SR 524	I-95	Cox Road	18,590	13,837	54.0%	1,121	14,958	0.80	C	880	426	531	54.0%	31	53	457	584	0.52	0.66	C	C
	Cox Road	Industry Road	19,470	15,221	30.0%	623	15,844	0.81	C	880	590	644	30.0%	17	29	607	673	0.69	0.76	C	C

Notes:

1. Roadway service capacities were based on Space Coast TPO Traffic Counts: 2012-2021 Report and the 2020 FDOT Quality/LOS Handbook.

3. Percent assignment is the maximum trip distribution across the roadway segment.

4. Future buildout traffic volumes are the summation of future non-project traffic and PM peak hour project traffic.

7.0 TURN LANE ANALYSIS

Driveway and ingress turn lane criteria provided in FDOT's Access Management Guidebook (November 2019) and *National Cooperative of Highway Research Programs* (NCHRP) Report 457 was reviewed against future conditions to determine ingress turn lane requirements at the proposed full access driveway on SR 524.

Guidance within the FDOT Access Management Guidebook (November 2019) was utilized to determine if exclusive ingress westbound right-turn lane is warranted at the proposed full access driveway on SR 524. FDOT Access Management Guidebook recommends an exclusive ingress right-turn lane be provided at driveways where the right-turning movement is between 35 and 55 vehicles per hour for a roadway with a posted speed greater than 45 mph. Based on ingress turn volumes experienced at the proposed full access driveway on SR 524 during the AM and PM peak hours, an ingress westbound right-turn lane is warranted.

The need for an exclusive ingress eastbound left-turn lane at the proposed full access driveway was evaluated using the methodology established by the NCHRP Report 457. 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. NCHRP Report 457 indicates that a dedicated ingress eastbound left turn lane at the proposed full access driveway on SR 524 is warranted based upon PM peak hour driveway volumes. NCHRP Report 457 output is provided within **Appendix L**.

The proposed storage lengths for the ingress eastbound left-turn lane and westbound right-turn lane at the proposed full access driveway on SR 524 is summarized in **Table 11**.

Table 11: Proposed Turn Lane Storage Summary

Intersection/Turn Lane	Posted Speed	Required Deceleration (Ft) ¹	Synchro 95th Percentile Queue Length (Ft) ²	Proposed Turn Lane Length (Ft)
SR 524 & Proposed Full Access Driveway				
Eastbound Left-Turn Lane	55	350	25	375
Westbound Left-Turn Lane	55	350	0	350

Notes:

1. Based on the 2022 FDOT Design Manual, Exhibit 212-1.
2. Based on the 95th percentile queue reported in Synchro 11.
3. Proposed storage lengths were determined based on the required deceleration length and 95th percentile queue length. Synchro 11 does not provide the 50th percentile queue length for two-way stop-controlled intersections.

8.0 CONCLUSION

This traffic impact analysis was performed to assess the transportation impacts of the proposed Cox Rd/SR 524 Multifamily residential development located in the City of Cocoa, Florida. The development, proposed for buildout in 2023, will consist of $\pm$ 312 multifamily units. Access to the site will be provided via one (1) full-access driveway on SR 524.

The proposed multifamily residential development is anticipated to generate 2,075 daily trips, 119 AM peak hour trips (29 inbound/ 90 outbound), and 156 PM peak hour trips (98 inbound/ 58 outbound).

Roadway segment analyses performed for the existing (2022), background (2023), and buildout (2023) conditions conclude that all roadway segments within the study area operate at an acceptable level of service (LOS) in the Daily and PM peak hour conditions and have adequate capacity for the future buildout conditions. Operational analyses performed at study area intersections and driveways conclude that all study intersections operate at an acceptable LOS with v/c ratios less than one (1.0) during the existing (2022), background (2023), and buildout (2023) conditions. 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 FDOT's Access Management Guidebook (November 2019) and NCHRP Report 457 thresholds. Based on the anticipated future buildout (2023) volumes at the project driveways, an ingress turn lanes (eastbound left and westbound right) are warranted at the proposed full access driveway on SR 524.

APPENDIX A

Site Plan

APPENDIX B

Study Area Determination

APPENDIX C

Turning Movement Counts

APPENDIX D

FDOT's Florida Traffic Online (FTO) Data

APPENDIX E

Turning Movement Volume Worksheets

APPENDIX F
Space Coast TPO Traffic Report

APPENDIX G

Growth Rate

APPENDIX H

Signal Timings

APPENDIX I

Synchro Outputs

APPENDIX J

Trip Generation Estimates

APPENDIX K

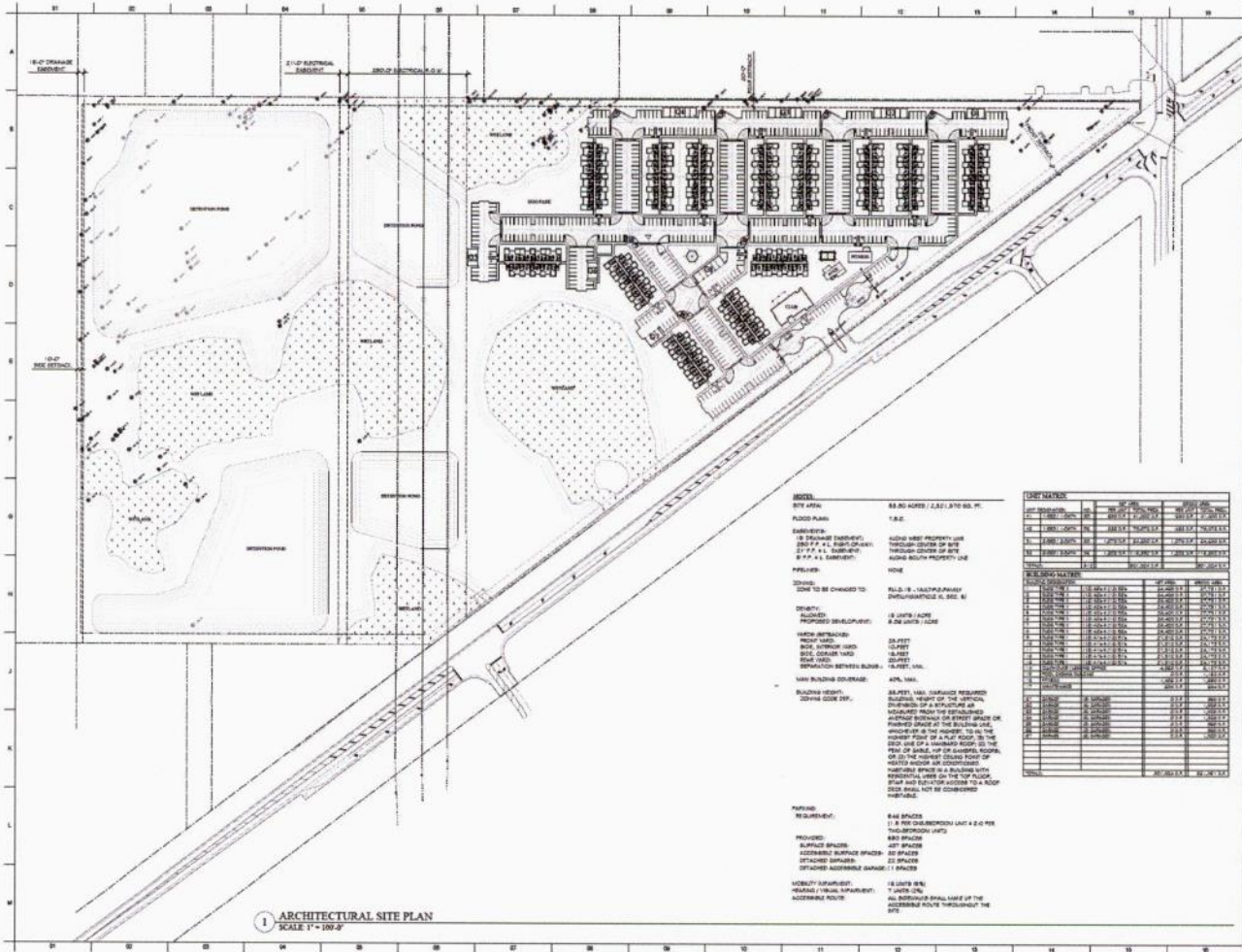
CFRPM v7 Model Plot

APPENDIX L
NCHRP Report 457
Output

APPENDIX A

Site Plan

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APPENDIX B

Study Area Determination

Exhibit 1 - Study Area Determination

Roadway FromTo			Roadway Attributes ¹				Daily Capacity Volume ¹	2021 Daily AADT Volume	Daily Project Traffic			Intersection Analysis Required? ⁴
			Functional Classification	Area Type	Adopted LOS	Number of Lanes			% Assign ²	Daily Project Trips	Max % Impact ³	
Cox Road	SR 520	SR 524	Urban Major Collector	U	D	2	17,700	4,780	15%	311	1.76%	No
	SR 524	James Rd	Urban Major Collector	U	D	2	17,700	2,580	1%	21	0.12%	No
	Orange County Line	SR 524	Urban Principal Arterial-Other	U	D	4	40,300	15,530	11%	228	0.57%	No
	SR 524	Friday Road	Urban Principal Arterial-Other	U	D	4	41,790	15,090	1%	21	0.05%	No
	Friday Rd	I-95	Urban Principal Arterial-Other	U	D	4	41,790	21,190	1%	21	0.05%	No
SR 520	I-95	Burnett Rd	Urban Principal Arterial-Other	U	D	4	41,790	22,320	18%	374	0.89%	No
	Burnett Rd	Range Rd	Urban Principal Arterial-Other	U	D	4	41,790	22,550	16%	332	0.79%	No
	SR 520	I-95	Urban Minor Arterial	U	D	2	24,200	6,597	14%	291	1.20%	No
	I-95	Cox Rd	Urban Minor Arterial	U	D	2	18,590	11,020	54%	1,121	6.03%	Yes
	Cox Rd	Industry Rd	Urban Minor Arterial	U	D	2	19,470	12,530	30%	623	3.20%	Yes
I-95	Fiske Blvd	SR 520	Urban Principal Arterial-Interstate	U	D	6	111,800	89,978	10%	208	0.19%	No
	SR 520	SR 524	Urban Principal Arterial-Interstate	U	D	6	111,800	51,000	17%	353	0.32%	No
	SR 524	SR 528	Urban Principal Arterial-Interstate	U	D	6	111,800	68,000	6%	125	0.11%	No
Lake Drive	Cox Rd	Range Rd	Urban Major Collector	U	D	2	17,700	3,300	1%	21	0.12%	No
	Range Rd	Clearlake Rd	Urban Major Collector	U	E	2	15,600	4,100	0%	0	0.00%	No
Clearlake Road	SR 520	Lake Dr	Urban Minor Arterial	U	D	4	39,800	12,320	1%	21	0.05%	No
	Lake Dr	Dixon Blvd	Urban Minor Arterial	U	D	4	39,800	16,460	6%	125	0.31%	No

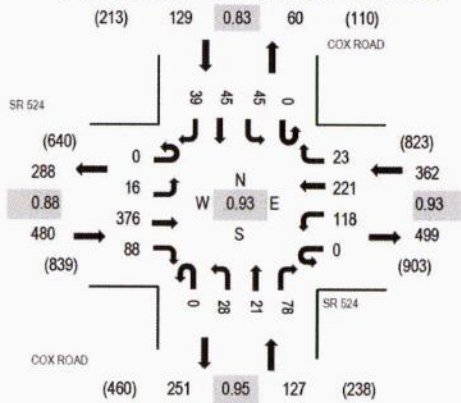
Notes:

1. Data obtained from the Space Coast Transportation Planning Organization (TPO) Traffic Counts: 2012 - 2021 Report.
2. Percent project traffic assignment was calculated as the maximum across the segment.
3. Percent impact was calculated based upon daily project trips divided by the daily maximum roadway service capacity.
4. The minimum threshold for significance was at least 3% impact of the daily project trips

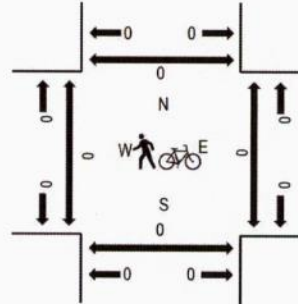
APPENDIX C

Turning Movement Counts

Peak Hour - Motorized Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

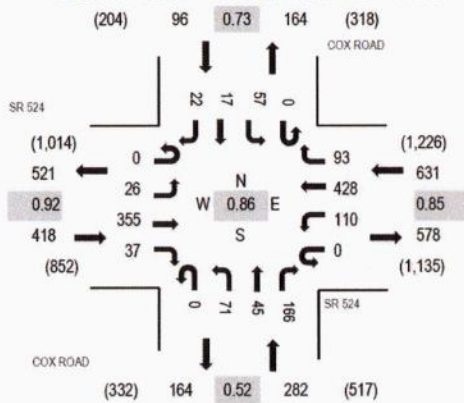
Traffic Counts - Motorized Vehicles

Interval Start Time	SR 524 Eastbound				SR 524 Westbound				COX ROAD Northbound				COX ROAD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
7:00 AM	0	2	66	15	0	26	74	6	0	3	2	11	0	9	9	9	232	1,082	0	0	0	0
7:15 AM	0	2	82	19	0	35	77	2	0	6	1	22	0	6	7	4	263	1,085	0	0	0	0
7:30 AM	0	5	104	28	0	36	62	5	0	4	4	7	0	14	11	14	294	1,098	0	0	0	0
7:45 AM	0	5	88	35	0	52	42	6	0	7	7	19	0	11	10	11	293	1,054	0	0	0	0
8:00 AM	0	1	86	12	0	17	45	7	0	7	4	28	0	5	13	10	235	1,031	0	0	0	0
8:15 AM	0	5	98	13	0	13	72	5	0	10	6	24	0	15	11	4	276		0	0	0	0
8:30 AM	0	5	77	6	0	29	67	7	0	7	5	28	0	8	8	3	250		0	0	0	0
8:45 AM	0	3	73	9	0	38	91	9	0	4	6	16	0	6	8	7	270		0	0	0	0

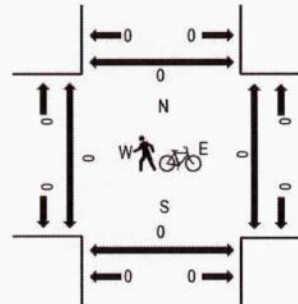
Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	29	2	0	0	4	0	0	1	0	2	0	0	0	0	38
Lights	0	16	316	84	0	110	203	23	0	25	20	68	0	45	43	39	992
Mediums	0	0	31	2	0	8	14	0	0	2	1	8	0	0	2	0	68
Total	0	16	376	88	0	118	221	23	0	28	21	78	0	45	45	39	1,098

Peak Hour - Motorized Vehicles



Peak Hour - Pedestrians/Bicycles in Crosswalk



Note: Total study counts contained in parentheses.

Traffic Counts - Motorized Vehicles

Interval Start Time	SR 524 Eastbound				SR 524 Westbound				COX ROAD Northbound				COX ROAD Southbound				Total	Rolling Hour	Pedestrian Crossings			
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right			West	East	South	North
4:00 PM	0	7	67	10	0	32	118	21	0	37	15	83	0	18	3	2	413	1,427	0	0	0	0
4:15 PM	0	6	88	10	0	30	131	24	0	13	10	28	0	10	4	4	358	1,396	0	0	0	0
4:30 PM	0	6	94	6	0	23	101	22	0	11	10	27	0	19	4	9	332	1,381	0	0	0	0
4:45 PM	0	7	106	11	0	25	78	26	0	10	10	28	0	10	6	7	324	1,393	0	0	0	0
5:00 PM	0	8	86	11	0	30	117	19	0	34	7	52	0	5	7	6	382	1,372	0	0	0	0
5:15 PM	0	12	90	6	0	30	107	22	0	9	6	31	0	17	5	8	343		0	0	0	0
5:30 PM	0	10	107	9	0	25	91	15	0	6	14	30	0	18	7	12	344		0	0	0	0
5:45 PM	0	9	76	10	0	21	94	24	0	6	8	32	0	13	7	3	303		0	0	0	0

Peak Rolling Hour Flow Rates

Vehicle Type	Eastbound				Westbound				Northbound				Southbound				Total
	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	U-Turn	Left	Thru	Right	
Articulated Trucks	0	0	8	1	0	1	2	2	0	0	0	0	0	0	0	0	14
Lights	0	26	316	31	0	103	420	91	0	70	44	162	0	57	16	22	1,358
Mediums	0	0	31	5	0	6	6	0	0	1	1	4	0	0	1	0	55
Total	0	26	355	37	0	110	428	93	0	71	45	166	0	57	17	22	1,427

APPENDIX D

FDOT's Florida Traffic Online (FTO) Data

2021 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
 CATEGORY: 7000 BREVARD COUNTYWIDE

WEEK	DATES	SF	MOCF: 0.95 PSCF
1	01/01/2021 - 01/02/2021	1.02	1.07
2	01/03/2021 - 01/09/2021	1.02	1.07
3	01/10/2021 - 01/16/2021	1.03	1.08
4	01/17/2021 - 01/23/2021	1.02	1.07
5	01/24/2021 - 01/30/2021	1.00	1.05
6	01/31/2021 - 02/06/2021	0.99	1.04
7	02/07/2021 - 02/13/2021	0.98	1.03
* 8	02/14/2021 - 02/20/2021	0.97	1.02
* 9	02/21/2021 - 02/27/2021	0.95	1.00
*10	02/28/2021 - 03/06/2021	0.94	0.99
*11	03/07/2021 - 03/13/2021	0.93	0.98
*12	03/14/2021 - 03/20/2021	0.91	0.96
*13	03/21/2021 - 03/27/2021	0.92	0.97
*14	03/28/2021 - 04/03/2021	0.94	0.99
*15	04/04/2021 - 04/10/2021	0.95	1.00
*16	04/11/2021 - 04/17/2021	0.96	1.01
*17	04/18/2021 - 04/24/2021	0.96	1.01
*18	04/25/2021 - 05/01/2021	0.97	1.02
*19	05/02/2021 - 05/08/2021	0.98	1.03
*20	05/09/2021 - 05/15/2021	0.98	1.03
21	05/16/2021 - 05/22/2021	0.99	1.04
22	05/23/2021 - 05/29/2021	1.00	1.05
23	05/30/2021 - 06/05/2021	1.00	1.05
24	06/06/2021 - 06/12/2021	1.01	1.06
25	06/13/2021 - 06/19/2021	1.01	1.06
26	06/20/2021 - 06/26/2021	1.02	1.07
27	06/27/2021 - 07/03/2021	1.03	1.08
28	07/04/2021 - 07/10/2021	1.04	1.09
29	07/11/2021 - 07/17/2021	1.04	1.09
30	07/18/2021 - 07/24/2021	1.05	1.11
31	07/25/2021 - 07/31/2021	1.06	1.12
32	08/01/2021 - 08/07/2021	1.06	1.12
33	08/08/2021 - 08/14/2021	1.07	1.13
34	08/15/2021 - 08/21/2021	1.07	1.13
35	08/22/2021 - 08/28/2021	1.07	1.13
36	08/29/2021 - 09/04/2021	1.06	1.12
37	09/05/2021 - 09/11/2021	1.05	1.11
38	09/12/2021 - 09/18/2021	1.04	1.09
39	09/19/2021 - 09/25/2021	1.04	1.09
40	09/26/2021 - 10/02/2021	1.03	1.08
41	10/03/2021 - 10/09/2021	1.03	1.08
42	10/10/2021 - 10/16/2021	1.02	1.07
43	10/17/2021 - 10/23/2021	1.03	1.08
44	10/24/2021 - 10/30/2021	1.03	1.08
45	10/31/2021 - 11/06/2021	1.03	1.08
46	11/07/2021 - 11/13/2021	1.03	1.08
47	11/14/2021 - 11/20/2021	1.03	1.08
48	11/21/2021 - 11/27/2021	1.03	1.08
49	11/28/2021 - 12/04/2021	1.03	1.08
50	12/05/2021 - 12/11/2021	1.02	1.07
51	12/12/2021 - 12/18/2021	1.02	1.07
52	12/19/2021 - 12/25/2021	1.02	1.07
53	12/26/2021 - 12/31/2021	1.03	1.08

* PEAK SEASON

08-MAR-2022 12:36:27

830UPD

5_7000_PKSEASON.TXT

APPENDIX E

Turning Movement Volume Worksheets

INTERSECTION VOLUME DEVELOPMENT

Cox Rd @ SR 524

AM Peak Hour

Case	Cox Rd Northbound			Cox Rd Southbound			SR 524 Eastbound			SR 524 Westbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
1/12/22 Observed Volumes	28	21	78	45	45	39	16	376	88	118	221	23
Seasonal Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2022 Peak Season Volumes	29	22	80	46	46	40	16	387	91	122	228	24
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
2023 Peak Season Volumes	30	22	82	47	47	41	16	395	93	124	233	24
Project Assignment	15.0%	0.0%	0.0%	0.0%	0.0%	1.0%	1.0%	30.0%	15.0%	0.0%	30.0%	0.0%
	IN	--	--	--	--	IN	OUT	OUT	OUT	--	IN	--
Project Traffic (Net New Trips)	4	0	0	0	0	0	1	27	13	0	9	0
Total Build-Out Volumes	34	22	82	47	47	41	17	422	106	124	242	24

Raw-To-Peak Season Factor: 1.03
 Applied Growth Rate: 2.00%
 Existing Year: 2022
 Build-Out Year: 2023
 Growth Factor: 1.02

INTERSECTION VOLUME DEVELOPMENT
Project Driveway @ SR 524
AM Peak Hour

Case	Northbound			Project Driveway Southbound			SR 524 Eastbound			SR 524 Westbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
1/12/22 Observed Volumes	0	0	0	0	0	0	0	480	0	0	288	0
Seasonal Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2022 Peak Season Volumes	0	0	0	0	0	0	0	494	0	0	297	0
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
2023 Peak Season Volumes	0	0	0	0	0	0	0	504	0	0	303	0
Project Assignment	0.0%	0.0%	0.0%	46.0%	0.0%	54.0%	54.0%	0.0%	0.0%	0.0%	0.0%	46.0%
	--	--	--	OUT	--	OUT	IN	--	--	--	--	IN
Project Traffic (Net New Trips)	0	0	0	41	0	49	16	0	0	0	0	13
Total Build-Out Volumes	0	0	0	41	0	49	16	504	0	0	303	13

Raw-To-Peak Season Factor: 1.03
Applied Growth Rate: 2.00%
Existing Year: 2022
Build-Out Year: 2023
Growth Factor: 1.02

INTERSECTION VOLUME DEVELOPMENT

Cox Rd @ SR 524

PM Peak Hour

Case	Cox Rd Northbound			Cox Rd Southbound			SR 524 Eastbound			SR 524 Westbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
1/12/22 Observed Volumes	71	45	166	57	17	22	26	355	37	110	428	93
Seasonal Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2022 Peak Season Volumes	73	46	171	59	18	23	27	366	38	113	441	96
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
2023 Peak Season Volumes	74	47	174	60	18	23	28	373	39	115	450	98
Project Assignment	15.0%	0.0%	0.0%	0.0%	0.0%	1.0%	1.0%	30.0%	15.0%	0.0%	30.0%	0.0%
	IN	--	--	--	--	IN	OUT	OUT	OUT	--	IN	--
Project Traffic (Net New Trips)	15	0	0	0	0	1	1	17	9	0	29	0
Total Build-Out Volumes	89	47	174	60	18	24	29	390	48	115	479	98

Raw-To-Peak Season Factor: 1.03
Applied Growth Rate: 2.00%
Existing Year: 2022
Build-Out Year: 2023
Growth Factor: 1.02

INTERSECTION VOLUME DEVELOPMENT
Project Driveway @ SR 524
PM Peak Hour

Case	Northbound			Project Driveway Southbound			SR 524 Eastbound			SR 524 Westbound		
	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right
1/12/22 Observed Volumes	0	0	0	0	0	0	0	418	0	0	521	0
Seasonal Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2022 Peak Season Volumes	0	0	0	0	0	0	0	431	0	0	537	0
Growth Factor	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02	1.02
2023 Peak Season Volumes	0	0	0	0	0	0	0	440	0	0	548	0
Project Assignment	0.0%	0.0%	0.0%	46.0%	0.0%	54.0%	54.0%	0.0%	0.0%	0.0%	0.0%	46.0%
	--	--	--	OUT	--	OUT	IN	--	--	--	--	IN
Project Traffic (Net New Trips)	0	0	0	27	0	31	53	0	0	0	0	45
Total Build-Out Volumes	0	0	0	27	0	31	53	440	0	0	548	45

Raw-To-Peak Season Factor: 1.03
Applied Growth Rate: 2.00%
Existing Year: 2022
Build-Out Year: 2023
Growth Factor: 1.02

APPENDIX F
Space Coast TPO Traffic Report

SPACE COAST TRANSPORTATION PLANNING ORGANIZATION TRAFFIC COUNTS: 2012 - 2021

ID	ROAD	SEGMENT (Sections)	2012 AADT	2013 AADT	2014 AADT	2015 AADT	2016 AADT	2017 AADT	2018 AADT	2019 AADT	2020 AADT	2021 AADT	Current MAV	Last Count Taken	Functional Classification
AREA: CENTRAL															
528	MURRELL	WICKHAM-BARNES	17,275	16,630	16,070	17,400	16,978	16,463	17,170	17,098	16,426	15,483			
529	MURRELL	Wickham-Spyglass	17,810	17,800	17,120	18,180	17,710	16,970	17,330	19,070	15,830	14,200	33,600	1/12/2021	Urban Minor Arterial
529	MURRELL	Spyglass-Viera	16,970	16,840	16,230	16,810	17,230	16,910	17,230	18,040	15,370	16,050	30,600	1/12/2021	Urban Minor Arterial
57	MURRELL	Viera-Club House Drive	16,210	16,830	16,310	18,310	17,430	16,510	17,680	18,060	18,090	16,590	30,600	1/13/2021	Urban Minor Arterial
582	PEACHTREE	Club House Drive-Barnes Lake Dr-Fiske	16,110	15,050	14,620	16,320	15,540	15,080	16,140	16,820	15,820	15,090	30,600	3/3/2021	Urban Major Collector
	PINEHURST/HOLIDAY SPRINGS	WICKHAM-VIERA BLVD	4,500	4,543	4,458	4,808	4,928	5,088	5,200	5,265	5,718	4,928			
17	PINEHURST	Wickham-Spyglass Hill	5,670	6,400	6,270	6,810	7,100	7,320	7,340	7,480	7,250	6,660	15,600	1/12/2021	Urban Minor Collector
530	PINEHURST	Spyglass-Hill-Fargo	5,130	5,140	5,040	5,340	5,350	5,430	5,810	5,560	6,170	5,130	15,600	1/12/2021	Urban Minor Collector
16	PINEHURST	Fargo-Holiday Springs	3,040	3,000	2,950	3,100	3,340	3,380	3,560	3,750	4,460	3,650	15,600	1/12/2021	Urban Minor Collector
94	PINEHURST	PINEHURST-VIERA BLVD.	3,520	3,540	3,570	3,800	3,920	4,220	4,300	4,280	4,900	4,270	15,600	1/12/2021	Urban Minor Collector
506	PLUCKEBAUM RANGE	Clearlake-Fiske SR 520-MICHIGAN	6,540	5,970	6,240	7,030	6,490	6,560	7,570	7,270	6,620	6,530	15,600	1/20/2021	Urban Major Collector
531	RANGE	SR 520-Lake	5,150	4,330	5,140	4,760	5,000	4,740	5,970	4,300	5,960	4,470			
532	RANGE	Lake Michigan	NC	4,330	NC	4,760	NC	4,740	NC	4,300	NC	4,470	15,600	1/20/2021	Urban Major Collector
74	ROSETINE	RANGE-CLEARLAKE	5,150	NC	5,140	NC	5,860	NC	5,970	NC	5,960	NC	15,600	2/13/2020	Urban Major Collector
14	SPYGLASS HILL	MURRELL-PINEHURST	2,680	NC	2,730	NC	NC	2,920	NC	3,140	2,760		15,600	1/20/2021	Urban Minor Collector
	SR 520	ORANGE CO.-I-95	3,980	3,860	3,780	3,960	4,240	4,720	4,840	4,780	4,410	3,930	15,600	1/12/2021	Urban Minor Collector
534	SR 520	ORANGE CO.-SR 524	14,740	15,000	15,167	17,220	16,670	16,637	16,567	17,160	17,767	17,270			
1	SR 520	SR 524-Friday	13,480	13,140	12,760	15,550	15,170	15,750	12,240	16,010	16,680	15,530	40,300	1/20/2021	Rural Principal Arterial-Other
84	SR 520	Friday-I-95	13,290	14,050	13,990	15,720	14,880	14,320	16,610	14,650	14,700	15,090	41,790	1/20/2021	Urban Principal Arterial-Other
	SR 520	I-95-CLEARLAKE	17,450	18,090	18,750	19,990	19,990	19,840	20,850	20,620	19,920	21,190	41,790	2/18/2021	Urban Principal Arterial-Other
2	SR 520	I-95-Burnett	16,850	20,367	20,583	23,857	22,600	21,240	20,573	23,173	21,163	22,727			
3	SR 520	Burnett-Range	19,610	20,200	21,440	24,190	22,190	21,780	21,740	21,850	24,200	23,230	41,790	1/20/2021	Urban Principal Arterial-Other
14	SR 520	Range-Clearlake	20,350	19,980	19,680	24,180	22,970	21,940	20,040	21,280	19,840	22,550	41,790	1/20/2021	Urban Principal Arterial-Other
	SR 520	CLEARLAKE-FISKE	19,290	20,920	20,630	23,200	22,440	20,900	19,940	26,590	19,540	22,400	41,790	1/20/2021	Urban Principal Arterial-Other
4	SR 520	Clearlake-Lake	20,045	20,815	21,385	24,880	24,575	22,915	22,735	22,115	21,730	23,150			
5	SR 520	Lake-Fiske	18,380	19,190	19,560	22,860	22,670	20,200	20,800	20,400	21,720	21,550	30,800	1/20/2021	Urban Principal Arterial-Other
	SR 520	FISKE-US 1	21,710	22,470	23,210	26,900	26,280	25,630	24,670	23,830	21,740	24,750	30,800	1/20/2021	Urban Principal Arterial-Other
6	SR 520	Fiske-Blake	23,390	23,775	25,160	28,120	28,250	26,600	25,495	25,275	23,310	26,595			
7	SR 520	Blake-US 1	23,380	23,820	25,090	28,270	28,430	26,540	25,550	25,280	NC	26,680	41,790	1/20/2021	Urban Principal Arterial-Other
	SR 520 (Eastbound)	US 1-CAUSEWAY (EB)	NC	23,730	25,230	27,970	28,070	26,660	25,440	25,270	23,310	26,510	41,790	1/20/2021	Urban Principal Arterial-Other
8	SR 520	US 1-Forrest	19,215	19,638	19,620	21,463	16,600	20,718	20,855	21,135	19,205	22,220			
9	SR 520	Forrest-Brevard	14,530	15,570	17,060	18,210	13,820	16,750	17,250	16,830	15,400	NC	19,440	1/30/2020	Urban Principal Arterial-Other
10	SR 520	Brevard-Delannoy	20,280	21,020	19,560	21,850	19,620	22,460	20,630	22,250	20,930	21,800	19,440	1/20/2021	Urban Principal Arterial-Other
11	SR 520	Delanoy-Riverview	20,280	20,960	19,450	22,880	22,010	21,670	22,280	22,500	19,990	NC	19,440	1/23/2020	Urban Principal Arterial-Other
	SR 520 (Westbound)	CAUSEWAY-US 1 (WB)	21,770	21,860	19,950	22,940	18,950	21,960	22,960	22,960	20,680	22,640	10,440	1/20/2021	Urban Principal Arterial-Other
12	SR 520	Causeway-Delanoy	20,225	20,770	20,643	21,703	20,696	21,220	20,920	21,915	19,063	17,797			
13	SR 520	Delanoy-Brevard	21,860	22,160	21,250	23,700	23,050	21,130	22,990	22,780	20,340	22,650	19,440	1/20/2021	Urban Principal Arterial-Other
15	SR 520	Brevard-Forrest	23,150	23,970	23,100	23,460	21,900	24,260	22,980	24,250	21,420	NC	10,440	1/23/2020	Urban Principal Arterial-Other
87	SR 524	Forrest-US 1	21,080	21,220	21,560	22,400	18,690	21,810	20,860	21,610	19,840	22,080	19,440	1/20/2021	Urban Principal Arterial-Other
96	SR 524	SR 520-I-95	14,730	15,730	16,660	17,250	16,750	17,650	17,050	19,020	14,770	NC	10,440	1/30/2020	Urban Principal Arterial-Other
	SR 524	I-95-INDUSTRY RD	4,400	4,670	4,530	5,690	5,300	5,890	7,200	6,870	6,600	8,460	24,200	1/20/2021	Urban Minor Arterial
73	SR 524	I-95-Cox	10,705	11,220	10,880	12,765	12,605	11,710	13,860	12,540	11,775	13,965			
78	SR 524	Cox-Industry Rd	9,610	9,780	9,670	11,440	11,170	10,460	12,890	11,700	11,020	13,300	18,590	1/20/2021	Urban Minor Arterial
91	SR 528	ORANGE CO.-I-95	11,960	12,060	12,090	14,060	14,040	12,960	15,030	13,380	12,530	14,930	19,470	1/20/2021	Urban Minor Arterial
90	SR 528	ORANGE CO.-SR 407	26,205	27,835	28,320	34,205	31,740	33,780	40,640	37,805	43,810	33,090			
	SR 528	SR 407-I-95	28,950	30,820	30,220	37,830	35,120	37,330	40,640	42,560	49,690	36,880	43,000	1/26/2021	Rural Principal Arterial - Freeways & Expressways
	SR 528	I-95-US 1	23,460	24,850	26,420	30,580	28,360	30,230	NC	33,050	37,630	29,300	43,000	1/26/2021	Rural Principal Arterial - Freeways & Expressways
93	SR 528	I-95-INDUSTRY RD	24,945	25,960	25,315	30,165	27,775	28,340	31,000	32,730	37,960	28,765			
92	SR 528	INDUSTRY RD-US 1	20,720	21,000	23,050	23,030	22,810	23,290	29,350	28,880	33,780	24,750	74,400	1/20/2021	Urban Principal Arterial - Freeways & Expressways
25	STADIUM PKWY	WICKHAM-JAMESON	29,170	30,720	27,580	37,300	32,740	33,390	32,650	36,580	42,140	32,780	74,400	1/20/2021	Urban Principal Arterial - Freeways & Expressways
			5,910	6,550	6,800	7,810	8,480	9,150	10,460	11,240	10,620	10,380	17,700	1/13/2021	Urban Minor Arterial

*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

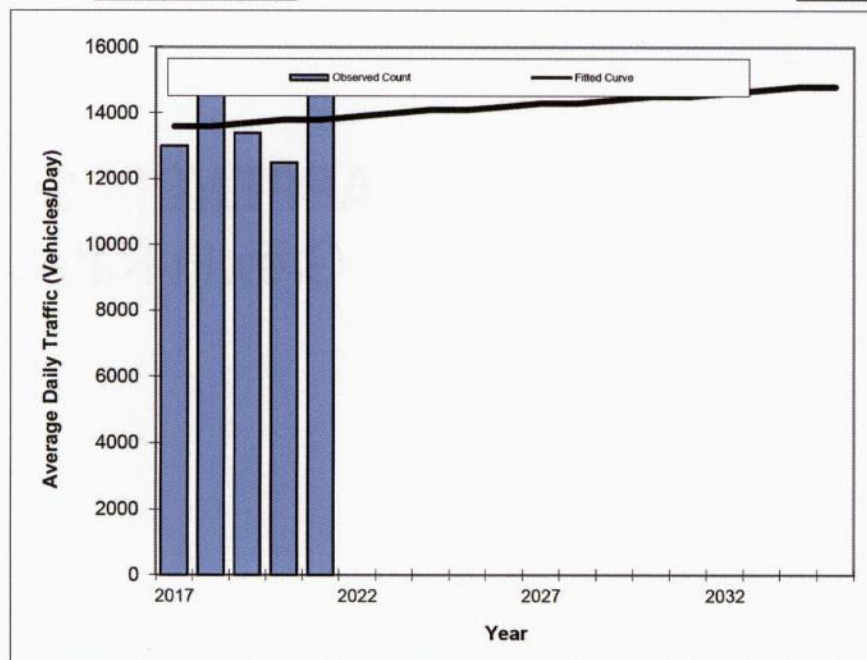
APPENDIX G

Growth Rate

Traffic Trends - V2.0 **SR 524 -- Cox Road to Industry Road**

PIN#	0
Location	1

County:	Brevard (70)
Station #:	76
Highway:	SR 524



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2017	13000	13600
2018	15000	13600
2019	13400	13700
2020	12500	13800
2021	14600	13800
2022 Opening Year Trend		
2022	N/A	13900
2023 Mid-Year Trend		
2023	N/A	14000
2024 Design Year Trend		
2024	N/A	14100
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	70
Trend R-squared:	1.08%
Trend Annual Historic Growth Rate:	0.37%
Trend Growth Rate (2021 to Design Year):	0.72%
Printed:	27-Jul-22
Straight Line Growth Option	

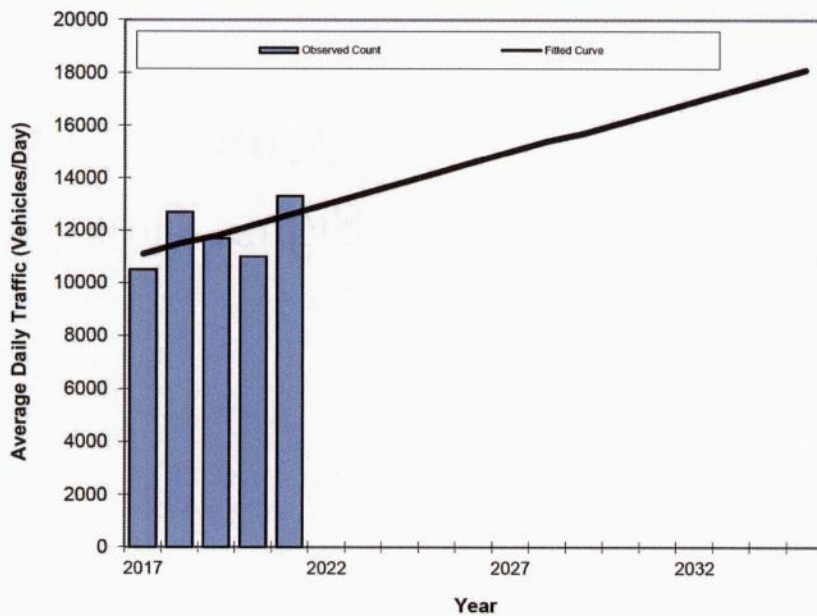
*Axle-Adjusted

Traffic Trends - V2.0

SR 524 -- I-95 to Cox Road

PIN#	0
Location	1

County:	Brevard (70)
Station #:	73
Highway:	SR 524



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2017	10500	11100
2018	12700	11500
2019	11700	11800
2020	11000	12200
2021	13300	12600
2022 Opening Year Trend		
2022	N/A	13000
2023 Mid-Year Trend		
2023	N/A	13400
2024 Design Year Trend		
2024	N/A	13800
TRANPLAN Forecasts/Trends		

** Annual Trend Increase:	390
Trend R-squared:	28.21%
Trend Annual Historic Growth Rate:	3.38%
Trend Growth Rate (2021 to Design Year):	3.17%
Printed:	27-Jul-22
Straight Line Growth Option	

*Axle-Adjusted

APPENDIX H

Signal Timings

Station : 185 - SR 524 & Cox Rd (Permanent File)

Phase [1.1.1]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clearance	0	0	0	20	0	0	0	0	0	0	0	0	0	0	0	0
Min Green	0	15	0	6	5	15	0	6	0	0	0	0	0	0	0	0
Passage	0	3.5	0	3.5	3.5	3.5	0	3.5	0	0	0	0	0	0	0	0
Max1	0	50	0	25	15	50	0	25	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Yellow	4	5.5	4	4.4	5.5	5.5	0	4.8	0	0	0	0	0	0	0	0
Red	2	2.5	2	2	2.4	2	2	2	0	0	0	0	0	0	0	0
Red Revert	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Added Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max Initial	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time Before Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Before Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time To Reduce	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Reduce By	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max Limit	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dynamic Max Step	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Auto Exit		ON				ON										
Rest In Walk																

Phase Option [1.1.2]

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Enable		ON		ON	ON	ON		ON								
Auto Entry				ON				ON								
Non Act1																
Non Act2																
Lock Call		ON				ON										
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry		ON		ON		ON		ON								
Sim Gap Enable		ON				ON										
Guar Passage																
Cond Service																
Add Init Calc																

Alternate Phase Program 1, Calls and Redirection [1.1.6.3]

Entry	Call Phases	From	To	From	To	From	To	From	To	Assigned Ph
1	0 0 0 0 0	0	0	0	0	0	0	0	0	0
2	0 0 0 0 0	0	0	0	0	0	0	0	0	0
3	0 0 0 0 0	0	0	0	0	0	0	0	0	0
4	0 0 0 0 0	0	0	0	0	0	0	0	0	0
5	0 0 0 0 0	0	0	0	0	0	0	0	0	0
6	0 0 0 0 0	0	0	0	0	0	0	0	0	0
7	0 0 0 0 0	0	0	0	0	0	0	0	0	0
8	0 0 0 0 0	0	0	0	0	0	0	0	0	0

Alternate Phase Program 2, Calls and Redirection [1.1.6.3]

Entry	Call Phases	From	To	From	To	From	To	From	To	Assigned Ph
1	0 0 0 0 0	0	0	0	0	0	0	0	0	0
2	0 0 0 0 0	0	0	0	0	0	0	0	0	0
3	0 0 0 0 0	0	0	0	0	0	0	0	0	0
4	0 0 0 0 0	0	0	0	0	0	0	0	0	0
5	0 0 0 0 0	0	0	0	0	0	0	0	0	0
6	0 0 0 0 0	0	0	0	0	0	0	0	0	0
7	0 0 0 0 0	0	0	0	0	0	0	0	0	0
8	0 0 0 0 0	0	0	0	0	0	0	0	0	0

Alternate Phase Program 1, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0

Alternate Phase Program 2, Interval Times [1.1.6.1]

Phase	Walk	Ped Clear	Min Green	Passage	Max1	Max2	Yellow	Red Clear	Assign Ph	Bike Clear
1	0	0	0	0	0	0	0	0	0	0
2	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0
6	0	0	0	0	0	0	0	0	0	0
7	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0

Prepared By

Date Implemented

Reviewed By

Traffic Engineer

Station : 185 - SR 524 & Cox Rd (Permanent File)

Unit Parameters [1.2.1]

StartUp Flash	Auto Ped Clear	Backup Time	Red Revert	Console Timeout	Tone Disable	Feature Profile	Phase Mode	Diamond Mode	SDLC Retry Time	TS2 Det Faults	Cycle Fault Action	Max Cycle Time	Max Seek Track Time	Max Seek Dwell Time	Enable Run	Local Flash Start	Start Red Time	Disable Init Ped	Yellow 3 Second Disable	Omit Yellow Enable	Free Ring Sequence
	OFF			30	OFF		STD8	4PH		OFF	ALARM				ON	OFF		OFF	OFF	OFF	

Channel/SDLC, Permissive [1.3.7]

SDLC Device	Term/Fac								Detector								MMU	Diag
BIU#	1	2	3	4	5	6	7	8	1	2	3	4	5	6	7	8		
Present	ON	ON							ON								ON	
Peer to Peer																		

Ring Sequence [1.2.4]

Ring	P1	P2	P3	P4	P5	P6	P7	P8
Ring 1	1	2	3	4				
Ring 2	5	6	7	8				
Ring 3								
Ring 4								

3/24/2022 3:12:42 PM

Preemption Times+[3.4]/Overlaps+[3.5]/Options+[3.6]

[illegible]

TB Coor, Advanced Scheduler [4.3]

TB Coor, Day Plan [4.4]

Day Plan Table 6	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour	32		255	28	18	16		204		23	2			1	52	4
Minute	34		1	85	4	32		1	128	7	18		221		23	2
Action		221		48	33				51	4	32	34	255	28	7	18

Brevard County

Timing Sheet

3/24/2022 3:12:42 PM

Station : 185 - SR 524 & Cox Rd (Permanent File)

Day Plan Table 7	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour	32		1												54	4
Minute															8	37
Action		204													23	8

Day Plan Table 8	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour	33	136	255	28	23	8		17		70	9			255	65	2
Minute			1	55	4	33	34	14		22	7			47	3	21
Action		119		8	37				36	1	23			31	34	16

Day Plan Table 9	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour	24	16	255	28	34	16		204		57	35	18		8	34	4
Minute	2		1	65	2	24		1		24	16				57	35
Action		253		3	21				34	4	25			88	24	16

Day Plan Table 10	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour	25	34	14	192	24	16				54	34	162			2	4
Minute			24	38	4	25			88	20	4		221	1	54	34
Action		17		57	35	18		8		4	32		255	24	20	4

Day Plan Table 11	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour	32		1		20	5		221		35	21				51	4
Minute			16	3	6	32		255	28	20	5		204		83	41
Action		204		35	21	34		1	4	6	32		1		22	7

Day Plan Table 12	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Hour	32		255	28	22	7		17		88	23				17	7
Minute	18			51	4	32	34	14		18	16		204		88	23
Action		253		83	41				1	7	32		1	28	18	16

3/24/2022 3:12:42 PM

TB Coor, Action Table [4.5]

Action	Pattern	Aux 1	Aux 2	Aux 3	Special 1	Special 2	Special 3	Special 4	Special 5	Special 6	Special 7	Special 8
1	1											
2	2											
3	3											
4	4											
5	5											
6	6											
7	7											
8	8											
9	9											
10	10											
11	11											
12	12											
13	13											
14	14											
15	15											
16	16											
17	17											
18	18											
19	19											
20	20											
21	21											
22	22											
23	23											
24	24											
25	255											
26	1											
27	2											
28	3											
29	4											
30	5											
31	6											
32	7											
33	8											
34	9											
35	10											
36	11											
37	12											
38	13											
39	14											
40	15											
41	16											
42	17											
43	18											
44	19											
45	20											
46	21											
47	22											
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64												
99												
100	254											

APPENDIX I

Synchro Outputs

Lanes, Volumes, Timings
1: Cox Rd & SR 524

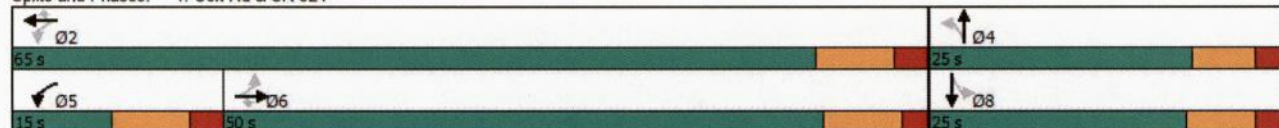
2022 Existing Conditions
Timing Plan: AM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	376	88	118	221	23	28	21	78	45	45	39
Future Volume (vph)	16	376	88	118	221	23	28	21	78	45	45	39
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	17	404	95	127	238	25	30	23	84	48	48	42
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	404	95	127	238	25	0	137	0	0	138	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6		5	2			4			8	
Permitted Phases	6		6	2		2	4			8		
Detector Phase	6	6	6	5	2	2	4	4		8	8	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	4.0	15.0	15.0	6.0	6.0		6.0	6.0	
Minimum Split (s)	23.5	23.5	23.5	11.9	24.0	24.0	22.4	22.4		22.8	22.8	
Total Split (s)	50.0	50.0	50.0	15.0	65.0	65.0	25.0	25.0		25.0	25.0	
Total Split (%)	55.6%	55.6%	55.6%	16.7%	72.2%	72.2%	27.8%	27.8%		27.8%	27.8%	
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	4.4	4.4		4.8	4.8	
All-Red Time (s)	2.0	2.0	2.0	2.4	2.5	2.5	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	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	7.9	8.0	8.0		6.4			6.8	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Recall Mode	Min	Min	Min	None	Min	Min	None	None		None	None	
v/c Ratio	0.03	0.47	0.12	0.24	0.19	0.02		0.37			0.44	
Control Delay	14.2	18.5	1.5	7.4	6.9	1.1		14.5			24.7	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay	14.2	18.5	1.5	7.4	6.9	1.1		14.5			24.7	
Queue Length 50th (ft)	4	119	0	18	35	0		17			36	
Queue Length 95th (ft)	17	223	13	45	79	5		66			95	
Internal Link Dist (ft)		1202			2496			1833			1483	
Turn Bay Length (ft)	250		475	250		450						
Base Capacity (vph)	868	1421	1241	545	1744	1485		644			600	
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	0.02	0.28	0.08	0.23	0.14	0.02		0.21			0.23	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 54.5
Natural Cycle: 60
Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Cox Rd & SR 524



HCM 6th Signalized Intersection Summary
1: Cox Rd & SR 524

2022 Existing Conditions
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	376	88	118	221	23	28	21	78	45	45	39
Future Volume (veh/h)	16	376	88	118	221	23	28	21	78	45	45	39
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	17	404	0	127	238	0	30	23	84	48	48	42
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	519	599		410	1047		127	48	128	163	88	65
Arrive On Green	0.32	0.32	0.00	0.07	0.56	0.00	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1142	1870	1585	1781	1870	1585	265	384	1029	479	707	519
Grp Volume(v), veh/h	17	404	0	127	238	0	137	0	0	138	0	0
Grp Sat Flow(s), veh/h/ln	1142	1870	1585	1781	1870	1585	1678	0	0	1706	0	0
Q Serve(g_s), s	0.5	8.8	0.0	2.0	3.0	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	8.8	0.0	2.0	3.0	0.0	3.5	0.0	0.0	3.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.22		0.61	0.35		0.30
Lane Grp Cap(c), veh/h	519	599		410	1047		303	0	0	316	0	0
V/C Ratio(X)	0.03	0.67		0.31	0.23		0.45	0.00	0.00	0.44	0.00	0.00
Avail Cap(c_a), veh/h	1190	1696		554	2275		726	0	0	723	0	0
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	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.0	13.8	0.0	9.5	5.2	0.0	19.5	0.0	0.0	19.4	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.3	0.0	0.4	0.1	0.0	1.1	0.0	0.0	1.0	0.0	0.0
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	0.1	2.7	0.0	0.5	0.5	0.0	1.3	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.0	15.1	0.0	9.9	5.3	0.0	20.6	0.0	0.0	20.4	0.0	0.0
LnGrp LOS	B	B		A	A		C	A	A	C	A	A
Approach Vol, veh/h	421			365			137			138		
Approach Delay, s/veh	15.0			6.9			20.6			20.4		
Approach LOS	B			A			C			C		
Timer - Assigned Phs	2			4			5			6		
Phs Duration (G+Y+Rc), s	34.2			12.6			11.2			23.0		
Change Period (Y+Rc), s	8.0			* 6.8			7.9			* 8		
Max Green Setting (Gmax), s	57.0			* 19			7.1			* 43		
Max Q Clear Time (g_c+I1), s	5.0			5.5			4.0			10.8		
Green Ext Time (p_c), s	1.2			0.5			0.1			2.2		

Intersection Summary

HCM 6th Ctrl Delay	13.6
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
1: Cox Rd & SR 524

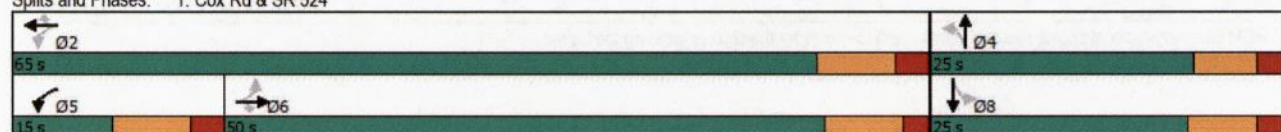
2022 Existing Conditions
Timing Plan: PM Peak Hour

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	26	355	37	110	428	93	71	45	166	57	17	22
Future Volume (vph)	26	355	37	110	428	93	71	45	166	57	17	22
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	30	413	43	128	498	108	83	52	193	66	20	26
Shared Lane Traffic (%)												
Lane Group Flow (vph)	30	413	43	128	498	108	0	328	0	0	112	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6		5	2			4			8	
Permitted Phases	6		6	2		2	4			8		
Detector Phase	6	6	6	5	2	2	4	4		8	8	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	4.0	15.0	15.0	6.0	6.0		6.0	6.0	
Minimum Split (s)	23.5	23.5	23.5	11.9	24.0	24.0	22.4	22.4		22.8	22.8	
Total Split (s)	50.0	50.0	50.0	15.0	65.0	65.0	25.0	25.0		25.0	25.0	
Total Split (%)	55.6%	55.6%	55.6%	16.7%	72.2%	72.2%	27.8%	27.8%		27.8%	27.8%	
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	4.4	4.4		4.8	4.8	
All-Red Time (s)	2.0	2.0	2.0	2.4	2.5	2.5	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	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	7.9	8.0	8.0		6.4			6.8	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Recall Mode	Min	Min	Min	None	Min	Min	None	None		None	None	
v/c Ratio	0.10	0.67	0.07	0.32	0.54	0.13		0.73			0.40	
Control Delay	17.3	25.9	0.2	10.4	12.9	2.2		30.0			24.9	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay	17.3	25.9	0.2	10.4	12.9	2.2		30.0			24.9	
Queue Length 50th (ft)	9	153	0	26	128	0		93			32	
Queue Length 95th (ft)	25	226	0	47	185	17		#221			82	
Internal Link Dist (ft)		1202			2496			1833			1483	
Turn Bay Length (ft)	250		475	250		450						
Base Capacity (vph)	623	1295	1143	402	1609	1382		512			326	
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	0.05	0.32	0.04	0.32	0.31	0.08		0.64			0.34	

Intersection Summary

Cycle Length: 90
Actuated Cycle Length: 63.5
Natural Cycle: 60
Control Type: Actuated-Uncoordinated
95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

Splits and Phases: 1: Cox Rd & SR 524



HCM 6th Signalized Intersection Summary
1: Cox Rd & SR 524

2022 Existing Conditions
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	355	37	110	428	93	71	45	166	57	17	22
Future Volume (veh/h)	26	355	37	110	428	93	71	45	166	57	17	22
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	30	413	0	128	498	0	83	52	193	66	20	26
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	380	525		332	923		156	85	230	253	80	70
Arrive On Green	0.28	0.28	0.00	0.07	0.49	0.00	0.24	0.24	0.24	0.24	0.24	0.24
Sat Flow, veh/h	900	1870	1585	1781	1870	1585	313	347	943	620	327	287
Grp Volume(v), veh/h	30	413	0	128	498	0	328	0	0	112	0	0
Grp Sat Flow(s), veh/h/ln	900	1870	1585	1781	1870	1585	1603	0	0	1234	0	0
Q Serve(g_s), s	1.4	11.5	0.0	2.7	10.4	0.0	7.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.4	11.5	0.0	2.7	10.4	0.0	10.9	0.0	0.0	3.8	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.25		0.59	0.59		0.23
Lane Grp Cap(c), veh/h	380	525		332	923		471	0	0	403	0	0
V/C Ratio(X)	0.08	0.79		0.39	0.54		0.70	0.00	0.00	0.28	0.00	0.00
Avail Cap(c_a), veh/h	806	1409		427	1890		605	0	0	506	0	0
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	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.1	18.7	0.0	13.2	9.9	0.0	20.1	0.0	0.0	17.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	2.6	0.0	0.7	0.5	0.0	2.4	0.0	0.0	0.4	0.0	0.0
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	4.2	0.0	0.8	2.8	0.0	3.8	0.0	0.0	1.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	15.2	21.4	0.0	13.9	10.3	0.0	22.5	0.0	0.0	17.7	0.0	0.0
LnGrp LOS	B	C		B	B		C	A	A	B	A	A
Approach Vol, veh/h	443		A	626		A	328			112		
Approach Delay, s/veh	20.9			11.1			22.5			17.7		
Approach LOS	C			B			C			B		
Timer - Assigned Phs	2			4		5	6		8			
Phs Duration (G+Y+Rc), s	35.8			20.6		12.0	23.8		20.6			
Change Period (Y+Rc), s	8.0			* 6.8		7.9	* 8		6.8			
Max Green Setting (Gmax), s	57.0			* 19		7.1	* 43		18.2			
Max Q Clear Time (g_c+I1), s	12.4			12.9		4.7	13.5		5.8			
Green Ext Time (p_c), s	2.9			0.9		0.1	2.4		0.4			

Intersection Summary

HCM 6th Ctrl Delay 17.0
HCM 6th LOS B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
1: Cox Rd & SR 524

2023 Background Conditions

Timing Plan: AM Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	16	395	93	124	233	24	30	22	82	47	47	41
Future Volume (vph)	16	395	93	124	233	24	30	22	82	47	47	41
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	17	425	100	133	251	26	32	24	88	51	51	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	17	425	100	133	251	26	0	144	0	0	146	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6		5	2			4			8	
Permitted Phases	6		6	2		2	4			8		
Detector Phase	6	6	6	5	2	2	4	4		8	8	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	4.0	15.0	15.0	6.0	6.0		6.0	6.0	
Minimum Split (s)	23.5	23.5	23.5	11.9	24.0	24.0	22.4	22.4		22.8	22.8	
Total Split (s)	50.0	50.0	50.0	15.0	65.0	65.0	25.0	25.0		25.0	25.0	
Total Split (%)	55.6%	55.6%	55.6%	16.7%	72.2%	72.2%	27.8%	27.8%		27.8%	27.8%	
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	4.4	4.4		4.8	4.8	
All-Red Time (s)	2.0	2.0	2.0	2.4	2.5	2.5	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	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	7.9	8.0	8.0		6.4			6.8	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Recall Mode	Min	Min	Min	None	Min	Min	None	None		None	None	
v/c Ratio	0.03	0.48	0.12	0.25	0.20	0.02		0.38			0.44	
Control Delay	14.2	18.9	1.7	7.7	7.1	1.2		15.5			25.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay	14.2	18.9	1.7	7.7	7.1	1.2		15.5			25.4	
Queue Length 50th (ft)	4	129	0	19	39	0		20			39	
Queue Length 95th (ft)	17	241	14	48	87	5		73			103	
Internal Link Dist (ft)		1202			2496			1833			1483	
Turn Bay Length (ft)	250		475	250		450						
Base Capacity (vph)	838	1391	1218	531	1712	1458		649			602	
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	0.02	0.31	0.08	0.25	0.15	0.02		0.22			0.24	

Intersection Summary

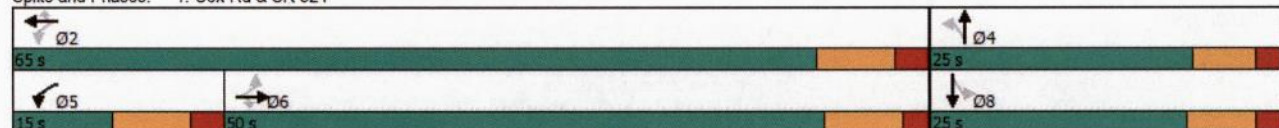
Cycle Length: 90

Actuated Cycle Length: 55.7

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Cox Rd & SR 524



HCM 6th Signalized Intersection Summary
1: Cox Rd & SR 524

2023 Background Conditions
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	16	395	93	124	233	24	30	22	82	47	47	41
Future Volume (veh/h)	16	395	93	124	233	24	30	22	82	47	47	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	17	425	0	133	251	0	32	24	88	51	51	44
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	511	594		397	1045		128	49	132	165	91	66
Arrive On Green	0.32	0.32	0.00	0.07	0.56	0.00	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1129	1870	1585	1781	1870	1585	270	384	1028	484	710	515
Grp Volume(v), veh/h	17	425	0	133	251	0	144	0	0	146	0	0
Grp Sat Flow(s), veh/h/ln	1129	1870	1585	1781	1870	1585	1682	0	0	1708	0	0
Q Serve(g_s), s	0.5	9.5	0.0	2.2	3.2	0.0	0.1	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	9.5	0.0	2.2	3.2	0.0	3.6	0.0	0.0	3.6	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.22		0.61	0.35		0.30
Lane Grp Cap(c), veh/h	511	594		397	1045		309	0	0	322	0	0
V/C Ratio(X)	0.03	0.72		0.34	0.24		0.47	0.00	0.00	0.45	0.00	0.00
Avail Cap(c_a), veh/h	1168	1682		532	2256		720	0	0	717	0	0
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	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.2	14.2	0.0	9.8	5.3	0.0	19.6	0.0	0.0	19.5	0.0	0.0
Incr Delay (d2), s/veh	0.0	1.6	0.0	0.5	0.1	0.0	1.1	0.0	0.0	1.0	0.0	0.0
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	0.1	3.0	0.0	0.5	0.6	0.0	1.4	0.0	0.0	1.3	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	11.2	15.9	0.0	10.3	5.4	0.0	20.7	0.0	0.0	20.5	0.0	0.0
LnGrp LOS	B	B		B	A		C	A	A	C	A	A
Approach Vol, veh/h	442		A	384		A	144			146		
Approach Delay, s/veh	15.7			7.1			20.7			20.5		
Approach LOS	B			A			C			C		
Timer - Assigned Phs	2			4		5	6		8			
Phs Duration (G+Y+Rc), s	34.4			12.9		11.4	23.0		12.9			
Change Period (Y+Rc), s	8.0			* 6.8		7.9	* 8		6.8			
Max Green Setting (Gmax), s	57.0			* 19		7.1	* 43		18.2			
Max Q Clear Time (g_c+I1), s	5.2			5.6		4.2	11.5		5.6			
Green Ext Time (p_c), s	1.3			0.5		0.1	2.3		0.5			

Intersection Summary

HCM 6th Ctrl Delay	14.0
HCM 6th LOS	B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
1: Cox Rd & SR 524

2023 Background Conditions

Timing Plan: PM Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	28	373	39	115	450	98	74	47	174	60	18	23
Future Volume (vph)	28	373	39	115	450	98	74	47	174	60	18	23
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	33	434	45	134	523	114	86	55	202	70	21	27
Shared Lane Traffic (%)												
Lane Group Flow (vph)	33	434	45	134	523	114	0	343	0	0	118	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6		5	2			4			8	
Permitted Phases	6		6	2		2	4			8		
Detector Phase	6	6	6	5	2	2	4	4		8	8	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	4.0	15.0	15.0	6.0	6.0		6.0	6.0	
Minimum Split (s)	23.5	23.5	23.5	11.9	24.0	24.0	22.4	22.4		22.8	22.8	
Total Split (s)	50.0	50.0	50.0	15.0	65.0	65.0	25.0	25.0		25.0	25.0	
Total Split (%)	55.6%	55.6%	55.6%	16.7%	72.2%	72.2%	27.8%	27.8%		27.8%	27.8%	
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	4.4	4.4		4.8	4.8	
All-Red Time (s)	2.0	2.0	2.0	2.4	2.5	2.5	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	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	7.9	8.0	8.0		6.4			6.8	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Recall Mode	Min	Min	Min	None	Min	Min	None	None		None	None	
v/c Ratio	0.11	0.70	0.07	0.35	0.57	0.14		0.74			0.42	
Control Delay	17.2	26.9	0.2	10.9	13.6	2.2		31.2			26.0	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay	17.2	26.9	0.2	10.9	13.6	2.2		31.2			26.0	
Queue Length 50th (ft)	10	163	0	27	136	0		102			35	
Queue Length 95th (ft)	26	239	0	48	197	17		#245			88	
Internal Link Dist (ft)		1202			2496			1833			1483	
Turn Bay Length (ft)	250		475	250		450						
Base Capacity (vph)	594	1265	1121	381	1578	1358		497			308	
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	0.06	0.34	0.04	0.35	0.33	0.08		0.69			0.38	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 65.3

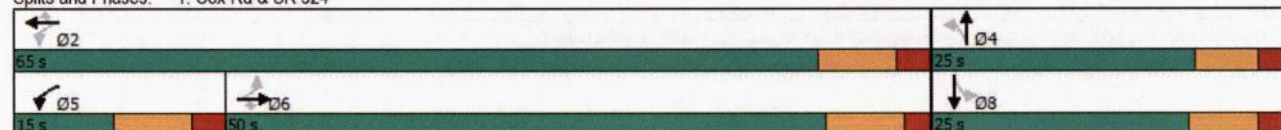
Natural Cycle: 60

Control Type: Actuated-Uncoordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Cox Rd & SR 524



HCM 6th Signalized Intersection Summary
1: Cox Rd & SR 524

2023 Background Conditions
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	28	373	39	115	450	98	74	47	174	60	18	23
Future Volume (veh/h)	28	373	39	115	450	98	74	47	174	60	18	23
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	33	434	0	134	523	0	86	55	202	70	21	27
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	378	544		328	934		155	86	236	247	77	67
Arrive On Green	0.29	0.29	0.00	0.07	0.50	0.00	0.25	0.25	0.25	0.25	0.25	0.25
Sat Flow, veh/h	879	1870	1585	1781	1870	1585	316	347	950	602	310	271
Grp Volume(v), veh/h	33	434	0	134	523	0	343	0	0	118	0	0
Grp Sat Flow(s), veh/h/ln	879	1870	1585	1781	1870	1585	1613	0	0	1182	0	0
Q Serve(g_s), s	1.6	12.6	0.0	2.9	11.4	0.0	7.4	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	1.6	12.6	0.0	2.9	11.4	0.0	11.8	0.0	0.0	4.4	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.25		0.59	0.59		0.23
Lane Grp Cap(c), veh/h	378	544		328	934		478	0	0	392	0	0
V/C Ratio(X)	0.09	0.80		0.41	0.56		0.72	0.00	0.00	0.30	0.00	0.00
Avail Cap(c_a), veh/h	757	1351		410	1812		583	0	0	470	0	0
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	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	15.4	19.3	0.0	13.6	10.2	0.0	20.9	0.0	0.0	18.0	0.0	0.0
Incr Delay (d2), s/veh	0.1	2.7	0.0	0.8	0.5	0.0	3.3	0.0	0.0	0.4	0.0	0.0
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	0.3	4.7	0.0	0.9	3.2	0.0	4.3	0.0	0.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	15.5	22.0	0.0	14.4	10.8	0.0	24.2	0.0	0.0	18.5	0.0	0.0
LnGrp LOS	B	C		B	B		C	A	A	B	A	A
Approach Vol, veh/h	467			A			657			A		
Approach Delay, s/veh	21.5						11.5			24.2		
Approach LOS	C						B			C		
Timer - Assigned Phs	2			4			5			6		
Phs Duration (G+Y+Rc), s	37.4			21.4			12.3			25.1		
Change Period (Y+Rc), s	8.0			* 6.8			7.9			* 8		
Max Green Setting (Gmax), s	57.0			* 19			7.1			* 43		
Max Q Clear Time (g_c+I1), s	13.4			13.8			4.9			14.6		
Green Ext Time (p_c), s	3.0			0.8			0.1			2.5		

Intersection Summary

HCM 6th Ctrl Delay 17.7
HCM 6th LOS B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
1: Cox Rd & SR 524

2023 Buildout Conditions
Timing Plan: AM Peak Hour

	↖	→	↘	↙	←	↖	↙	↑	↗	↘	↓	↙
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations	↖	↑	↘	↖	↑	↘		↕			↕	
Traffic Volume (vph)	17	422	106	124	242	24	34	22	82	47	47	41
Future Volume (vph)	17	422	106	124	242	24	34	22	82	47	47	41
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	18	454	114	133	260	26	37	24	88	51	51	44
Shared Lane Traffic (%)												
Lane Group Flow (vph)	18	454	114	133	260	26	0	149	0	0	146	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6		5	2			4			8	
Permitted Phases	6		6	2		2	4			8		
Detector Phase	6	6	6	5	2	2	4	4		8	8	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	15.0	6.0	6.0		6.0	6.0	
Minimum Split (s)	23.5	23.5	23.5	12.9	24.0	24.0	22.8	22.8		22.8	22.8	
Total Split (s)	50.0	50.0	50.0	15.0	65.0	65.0	25.0	25.0		25.0	25.0	
Total Split (%)	55.6%	55.6%	55.6%	16.7%	72.2%	72.2%	27.8%	27.8%		27.8%	27.8%	
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	4.4	4.4		4.8	4.8	
All-Red Time (s)	2.0	2.0	2.0	2.4	2.5	2.5	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	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	7.9	8.0	8.0		6.4			6.8	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Recall Mode	Min	Min	Min	None	Min	Min	None	None		None	None	
v/c Ratio	0.03	0.51	0.14	0.26	0.21	0.02		0.40			0.45	
Control Delay	14.1	19.0	2.3	7.7	7.0	1.1		17.4			26.1	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay	14.1	19.0	2.3	7.7	7.0	1.1		17.4			26.1	
Queue Length 50th (ft)	4	141	0	19	41	0		24			40	
Queue Length 95th (ft)	18	263	20	49	91	5		81			106	
Internal Link Dist (ft)		1202			2496			1833			1483	
Turn Bay Length (ft)	250		475	250		450						
Base Capacity (vph)	818	1366	1199	516	1686	1437		636			594	
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	0.02	0.33	0.10	0.26	0.15	0.02		0.23			0.25	

Intersection Summary

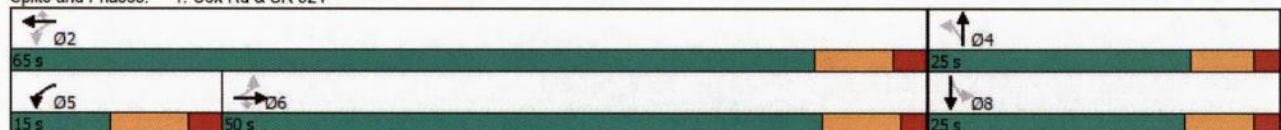
Cycle Length: 90

Actuated Cycle Length: 57

Natural Cycle: 60

Control Type: Actuated-Uncoordinated

Splits and Phases: 1: Cox Rd & SR 524



HCM 6th Signalized Intersection Summary
1: Cox Rd & SR 524

2023 Buildout Conditions
Timing Plan: AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	17	422	106	124	242	24	34	22	82	47	47	41
Future Volume (veh/h)	17	422	106	124	242	24	34	22	82	47	47	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	18	454	0	133	260	0	37	24	88	51	51	44
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	500	587		390	1054		133	49	129	163	93	67
Arrive On Green	0.31	0.31	0.00	0.09	0.56	0.00	0.13	0.13	0.13	0.13	0.13	0.13
Sat Flow, veh/h	1119	1870	1585	1781	1870	1585	308	379	991	479	716	516
Grp Volume(v), veh/h	18	454	0	133	260	0	149	0	0	146	0	0
Grp Sat Flow(s), veh/h/ln	1119	1870	1585	1781	1870	1585	1678	0	0	1711	0	0
Q Serve(g_s), s	0.5	10.6	0.0	2.2	3.4	0.0	0.2	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.5	10.6	0.0	2.2	3.4	0.0	3.9	0.0	0.0	3.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.25		0.59	0.35		0.30
Lane Grp Cap(c), veh/h	500	587		390	1054		312	0	0	324	0	0
V/C Ratio(X)	0.04	0.77		0.34	0.25		0.48	0.00	0.00	0.45	0.00	0.00
Avail Cap(c_a), veh/h	1133	1644		498	2205		703	0	0	702	0	0
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	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	11.6	15.0	0.0	10.1	5.4	0.0	20.0	0.0	0.0	19.9	0.0	0.0
Incr Delay (d2), s/veh	0.0	2.2	0.0	0.5	0.1	0.0	1.1	0.0	0.0	1.0	0.0	0.0
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	0.1	3.5	0.0	0.6	0.6	0.0	1.5	0.0	0.0	1.4	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	11.6	17.2	0.0	10.6	5.5	0.0	21.1	0.0	0.0	20.9	0.0	0.0
LnGrp LOS	B	B		B	A		C	A	A	C	A	A
Approach Vol, veh/h	472			A			393			A		
Approach Delay, s/veh	17.0						7.2			21.1		
Approach LOS	B						A			C		
Timer - Assigned Phs	2			4			5			6		
Phs Duration (G+Y+Rc), s	35.2			13.1			12.1			23.2		
Change Period (Y+Rc), s	8.0			* 6.8			7.9			* 8		
Max Green Setting (Gmax), s	57.0			* 19			7.1			* 43		
Max Q Clear Time (g_c+I1), s	5.4			5.9			4.2			12.6		
Green Ext Time (p_c), s	1.3			0.6			0.1			2.5		

Intersection Summary

HCM 6th Ctrl Delay 14.7
HCM 6th LOS B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
2: SR 524 & Project Driveway

2023 Buildout Conditions
Timing Plan: AM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	16	504	303	13	41	49
Future Volume (vph)	16	504	303	13	41	49
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	17	548	329	14	45	53
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	565	343	0	98	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Control Type: Unsignalized						

Intersection						
Int Delay, s/veh	1.6					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	16	504	303	13	41	49
Future Vol, veh/h	16	504	303	13	41	49
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
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	17	548	329	14	45	53
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	343	0	-	0	918	336
Stage 1	-	-	-	-	336	-
Stage 2	-	-	-	-	582	-
Critical Hdwy	4.12	-	-	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	2.218	-	-	-	3.518	3.318
Pot Cap-1 Maneuver	1216	-	-	-	302	706
Stage 1	-	-	-	-	724	-
Stage 2	-	-	-	-	559	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	1216	-	-	-	296	706
Mov Cap-2 Maneuver	-	-	-	-	296	-
Stage 1	-	-	-	-	710	-
Stage 2	-	-	-	-	559	-
Approach	EB	WB		SB		
HCM Control Delay, s	0.2	0		15.7		
HCM LOS				C		
Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1	
Capacity (veh/h)	1216	-	-	-	433	
HCM Lane V/C Ratio	0.014	-	-	-	0.226	
HCM Control Delay (s)	8	0	-	-	15.7	
HCM Lane LOS	A	A	-	-	C	
HCM 95th %tile Q(veh)	0	-	-	-	0.9	

Lanes, Volumes, Timings
1: Cox Rd & SR 524

2023 Buildout Conditions
Timing Plan: PM Peak Hour

	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	29	390	48	115	479	98	89	47	174	60	18	24
Future Volume (vph)	29	390	48	115	479	98	89	47	174	60	18	24
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Adj. Flow (vph)	34	453	56	134	557	114	103	55	202	70	21	28
Shared Lane Traffic (%)												
Lane Group Flow (vph)	34	453	56	134	557	114	0	360	0	0	119	0
Turn Type	Perm	NA	Perm	pm+pt	NA	Perm	Perm	NA		Perm	NA	
Protected Phases		6		5	2			4			8	
Permitted Phases	6		6	2		2	4			8		
Detector Phase	6	6	6	5	2	2	4	4		8	8	
Switch Phase												
Minimum Initial (s)	15.0	15.0	15.0	5.0	15.0	15.0	6.0	6.0		6.0	6.0	
Minimum Split (s)	22.5	22.5	22.5	12.9	23.0	23.0	20.0	20.0		20.0	20.0	
Total Split (s)	50.0	50.0	50.0	15.0	65.0	65.0	25.0	25.0		25.0	25.0	
Total Split (%)	55.6%	55.6%	55.6%	16.7%	72.2%	72.2%	27.8%	27.8%		27.8%	27.8%	
Yellow Time (s)	5.5	5.5	5.5	5.5	5.5	5.5	4.4	4.4		4.8	4.8	
All-Red Time (s)	2.0	2.0	2.0	2.4	2.5	2.5	2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	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	7.9	8.0	8.0		6.4			6.8	
Lead/Lag	Lag	Lag	Lag	Lead								
Lead-Lag Optimize?	Yes	Yes	Yes	Yes								
Recall Mode	Min	Min	Min	None	Min	Min	None	None		None	None	
v/c Ratio	0.12	0.73	0.09	0.38	0.60	0.14		0.77			0.40	
Control Delay	17.0	27.8	0.3	11.2	14.5	2.1		34.6			26.4	
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0		0.0			0.0	
Total Delay	17.0	27.8	0.3	11.2	14.5	2.1		34.6			26.4	
Queue Length 50th (ft)	10	173	0	27	149	0		117			36	
Queue Length 95th (ft)	27	249	0	48	212	17		#285			92	
Internal Link Dist (ft)		1202			2496			1833			1483	
Turn Bay Length (ft)	250		475	250		450						
Base Capacity (vph)	552	1212	1079	361	1556	1341		468			296	
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	0.06	0.37	0.05	0.37	0.36	0.09		0.77			0.40	

Intersection Summary

Cycle Length: 90

Actuated Cycle Length: 67.3

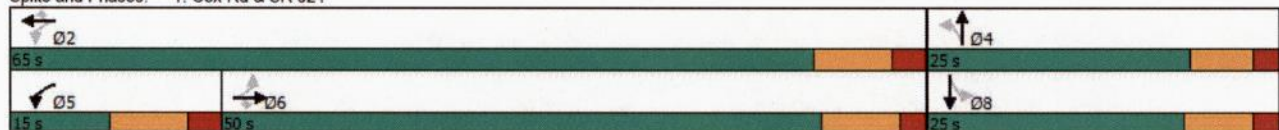
Natural Cycle: 60

Control Type: Actuated-Uncoordinated

95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Splits and Phases: 1: Cox Rd & SR 524



HCM 6th Signalized Intersection Summary
1: Cox Rd & SR 524

2023 Buildout Conditions
Timing Plan: PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	29	390	48	115	479	98	89	47	174	60	18	24
Future Volume (veh/h)	29	390	48	115	479	98	89	47	174	60	18	24
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	34	453	0	134	557	0	103	55	202	70	21	28
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	366	560		320	939		173	84	231	245	77	70
Arrive On Green	0.30	0.30	0.00	0.07	0.50	0.00	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	852	1870	1585	1781	1870	1585	380	327	904	591	300	274
Grp Volume(v), veh/h	34	453	0	134	557	0	360	0	0	119	0	0
Grp Sat Flow(s), veh/h/ln	852	1870	1585	1781	1870	1585	1611	0	0	1165	0	0
Q Serve(g_s), s	1.8	13.7	0.0	3.0	12.9	0.0	8.3	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	2.3	13.7	0.0	3.0	12.9	0.0	13.0	0.0	0.0	4.7	0.0	0.0
Prop In Lane	1.00		1.00	1.00		1.00	0.29		0.56	0.59		0.24
Lane Grp Cap(c), veh/h	366	560		320	939		488	0	0	392	0	0
V/C Ratio(X)	0.09	0.81		0.42	0.59		0.74	0.00	0.00	0.30	0.00	0.00
Avail Cap(c_a), veh/h	702	1299		395	1742		562	0	0	445	0	0
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(f)	1.00	1.00	0.00	1.00	1.00	0.00	1.00	0.00	0.00	1.00	0.00	0.00
Uniform Delay (d), s/veh	16.0	19.8	0.0	14.0	10.8	0.0	21.6	0.0	0.0	18.4	0.0	0.0
Incr Delay (d2), s/veh	0.1	2.8	0.0	0.9	0.6	0.0	4.4	0.0	0.0	0.4	0.0	0.0
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	0.3	5.2	0.0	1.0	3.7	0.0	4.9	0.0	0.0	1.2	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d), s/veh	16.1	22.7	0.0	14.9	11.4	0.0	25.9	0.0	0.0	18.9	0.0	0.0
LnGrp LOS	B	C		B	B		C	A	A	B	A	A
Approach Vol, veh/h	487		A	691		A	360			119		
Approach Delay, s/veh	22.2			12.1			25.9			18.9		
Approach LOS	C			B			C			B		
Timer - Assigned Phs	2			4		5	6		8			
Phs Duration (G+Y+Rc), s	38.7			22.5		12.4	26.3		22.5			
Change Period (Y+Rc), s	8.0			* 6.8		7.9	* 8		6.8			
Max Green Setting (Gmax), s	57.0			* 19		7.1	* 43		18.2			
Max Q Clear Time (g_c+I1), s	14.9			15.0		5.0	15.7		6.7			
Green Ext Time (p_c), s	3.3			0.7		0.1	2.6		0.4			

Intersection Summary

HCM 6th Ctrl Delay 18.6
HCM 6th LOS B

Notes

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.
Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

Lanes, Volumes, Timings
2: SR 524 & Project Driveway

2023 Buildout Conditions
Timing Plan: PM Peak Hour

						
Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	53	440	548	45	27	31
Future Volume (vph)	53	440	548	45	27	31
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	58	478	596	49	29	34
Shared Lane Traffic (%)						
Lane Group Flow (vph)	0	536	645	0	63	0
Sign Control		Free	Free		Stop	
Intersection Summary						
Control Type: Unsignalized						

Intersection						
Int Delay, s/veh	1.5					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	53	440	548	45	27	31
Future Vol, veh/h	53	440	548	45	27	31
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
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	58	478	596	49	29	34

Major/Minor	Major1	Major2	Minor2
Conflicting Flow All	645	0	0
Stage 1	-	-	-
Stage 2	-	-	-
Critical Hdwy	4.12	-	-
Critical Hdwy Stg 1	-	-	-
Critical Hdwy Stg 2	-	-	-
Follow-up Hdwy	2.218	-	-
Pot Cap-1 Maneuver	940	-	-
Stage 1	-	-	-
Stage 2	-	-	-
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	940	-	-
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	-
Stage 2	-	-	-

Approach	EB	WB	SB
HCM Control Delay, s	1	0	21.9
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	940	-	-	-	275
HCM Lane V/C Ratio	0.061	-	-	-	0.229
HCM Control Delay (s)	9.1	0	-	-	21.9
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0.2	-	-	-	0.9

APPENDIX J

Trip Generation Estimates

Land Use: 220

Multifamily Housing (Low-Rise)

Description

Low-rise multifamily housing includes apartments, townhouses, and condominiums located within the same building with at least three other dwelling units and that have two or three floors (levels). Various configurations fit this description, including walkup apartment, mansion apartment, and stacked townhouse.

- A walkup apartment typically is two or three floors in height with dwelling units that are accessed by a single or multiple entrances with stairways and hallways.
- A mansion apartment is a single structure that contains several apartments within what appears to be a single-family dwelling unit.
- A fourplex is a single two-story structure with two matching dwelling units on the ground and second floors. Access to the individual units is typically internal to the structure and provided through a central entry and stairway.
- A stacked townhouse is designed to match the external appearance of a townhouse. But, unlike a townhouse dwelling unit that only shares walls with an adjoining unit, the stacked townhouse units share both floors and walls. Access to the individual units is typically internal to the structure and provided through a central entry and stairway.

Multifamily housing (mid-rise) (Land Use 221), multifamily housing (high-rise) (Land Use 222), affordable housing (Land Use 223), and off-campus student apartment (low-rise) (Land Use 225) are related land uses.

Land Use Subcategory

Data are presented for two subcategories for this land use: (1) not close to rail transit and (2) close to rail transit. A site is considered close to rail transit if the walking distance between the residential site entrance and the closest rail transit station entrance is $\frac{1}{2}$ mile or less.

Additional Data

For the three sites for which both the number of residents and the number of occupied dwelling units were available, there were an average of 2.72 residents per occupied dwelling unit.

For the two sites for which the numbers of both total dwelling units and occupied dwelling units were available, an average of 96.2 percent of the total dwelling units were occupied.

The technical appendices provide supporting information on time-of-day distributions for this land use. The appendices can be accessed through either the ITETripGen web app or the trip

generation resource page on the ITE website (<https://www.ite.org/technical-resources/topics/trip-and-parking-generation/>).

For the three sites for which data were provided for both occupied dwelling units and residents, there was an average of 2.72 residents per occupied dwelling unit.

It is expected that the number of bedrooms and number of residents are likely correlated to the trips generated by a residential site. To assist in future analysis, trip generation studies of all multifamily housing should attempt to obtain information on occupancy rate and on the mix of residential unit sizes (i.e., number of units by number of bedrooms at the site complex).

The sites were surveyed in the 1980s, the 1990s, the 2000s, the 2010s, and the 2020s in British Columbia (CAN), California, Delaware, Florida, Georgia, Illinois, Indiana, Maine, Maryland, Massachusetts, Minnesota, New Jersey, Ontario (CAN), Oregon, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Utah, and Washington.

Source Numbers

188, 204, 237, 300, 305, 306, 320, 321, 357, 390, 412, 525, 530, 579, 583, 638, 864, 866, 896, 901, 903, 904, 936, 939, 944, 946, 947, 948, 963, 964, 966, 967, 1012, 1013, 1014, 1036, 1047, 1056, 1071, 1076

Multifamily Housing (Low-Rise) Not Close to Rail Transit (220)

Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban

Number of Studies: 22

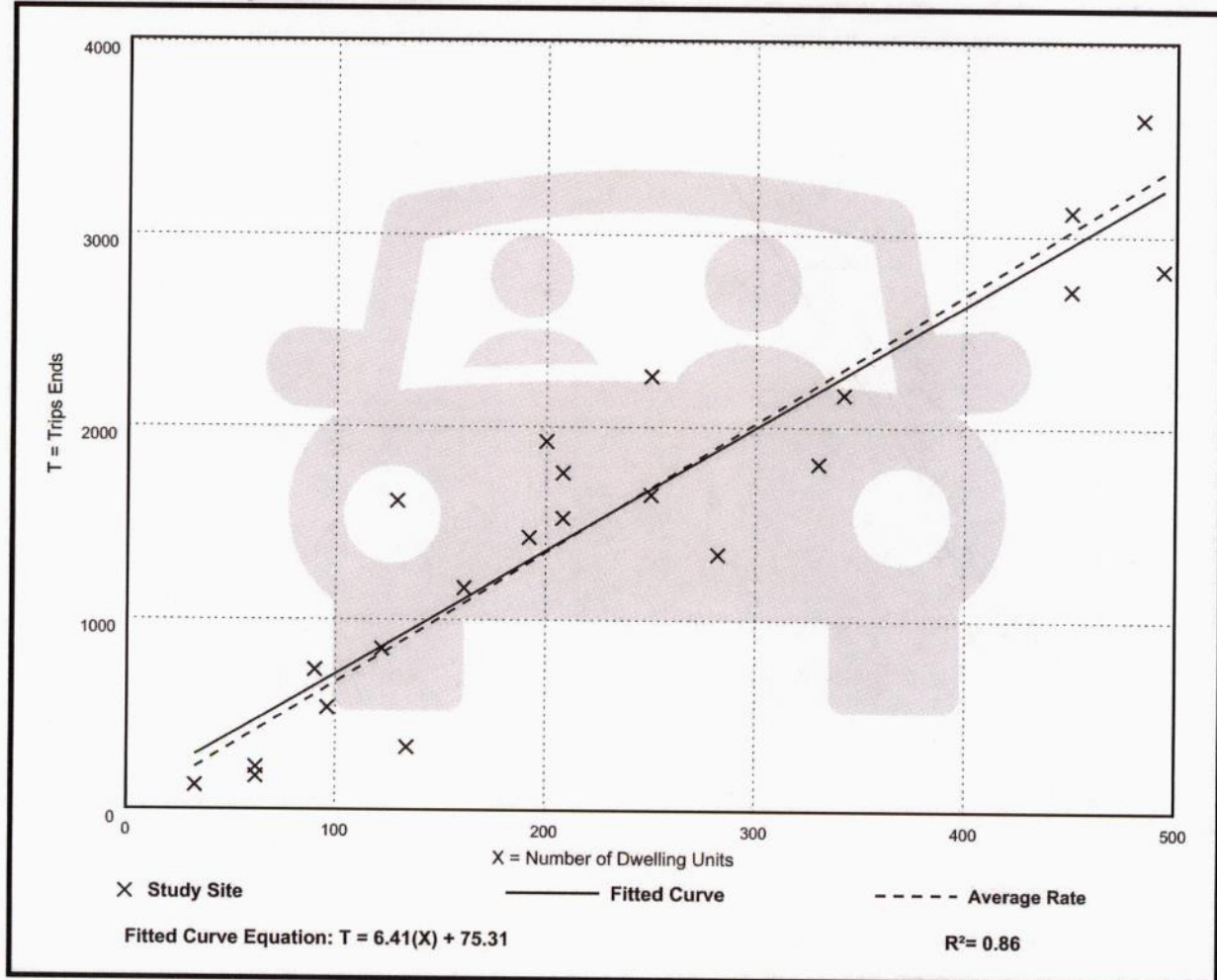
Avg. Num. of Dwelling Units: 229

Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
6.74	2.46 - 12.50	1.79

Data Plot and Equation



Multifamily Housing (Low-Rise) Not Close to Rail Transit (220)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 7 and 9 a.m.

Setting/Location: General Urban/Suburban

Number of Studies: 49

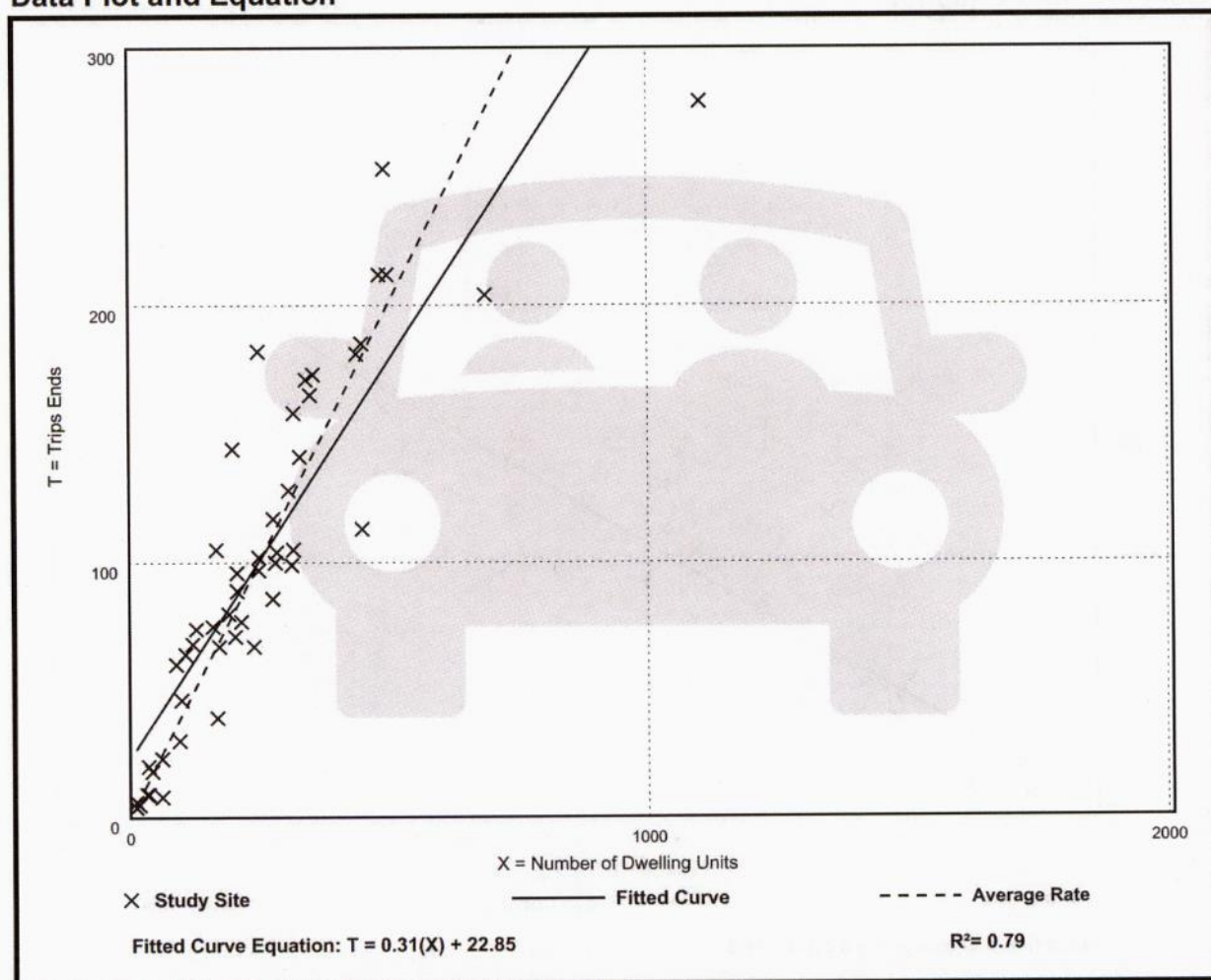
Avg. Num. of Dwelling Units: 249

Directional Distribution: 24% entering, 76% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.40	0.13 - 0.73	0.12

Data Plot and Equation



Multifamily Housing (Low-Rise) Not Close to Rail Transit (220)

Vehicle Trip Ends vs: Dwelling Units

On a: Weekday,

Peak Hour of Adjacent Street Traffic,

One Hour Between 4 and 6 p.m.

Setting/Location: General Urban/Suburban

Number of Studies: 59

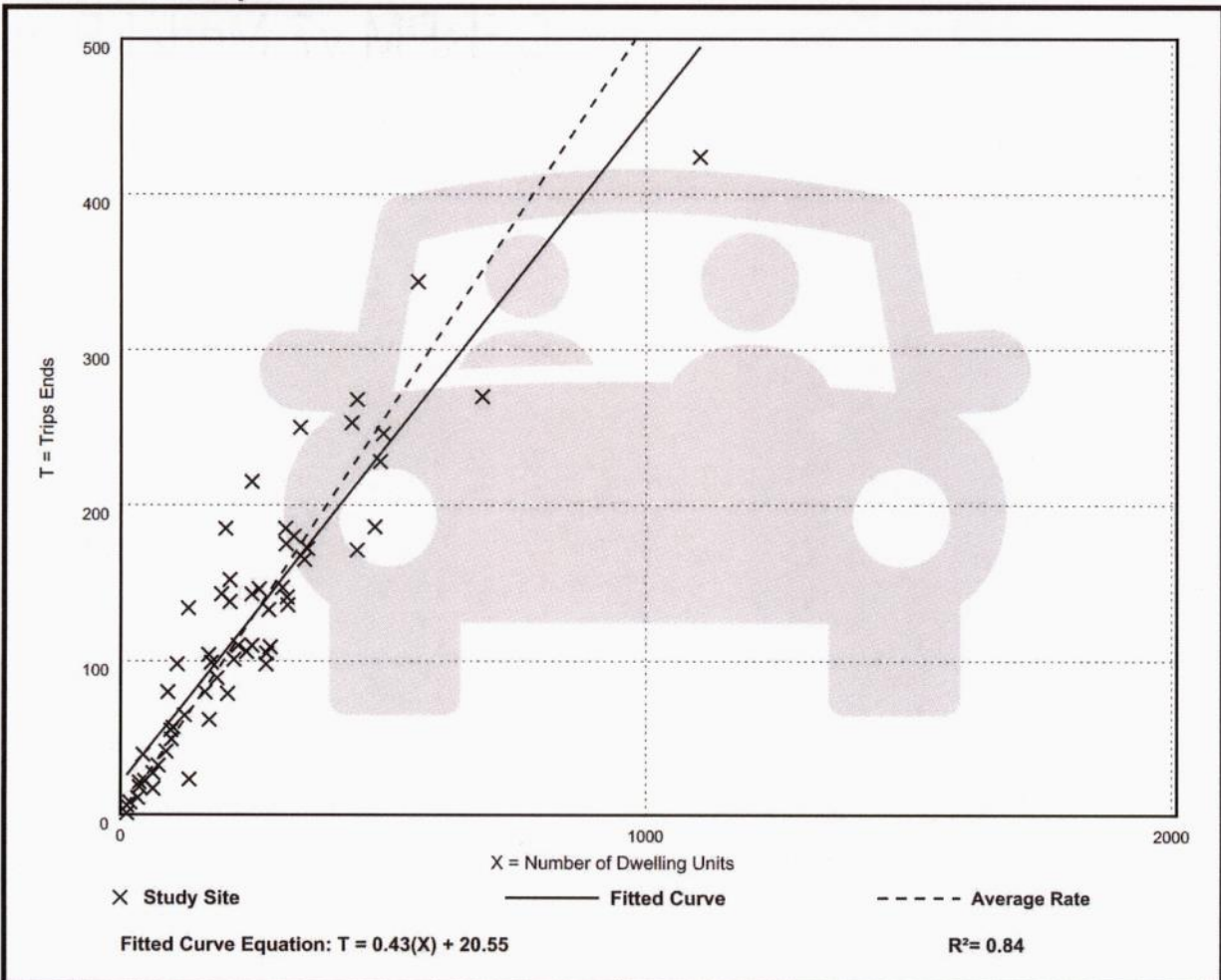
Avg. Num. of Dwelling Units: 241

Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.51	0.08 - 1.04	0.15

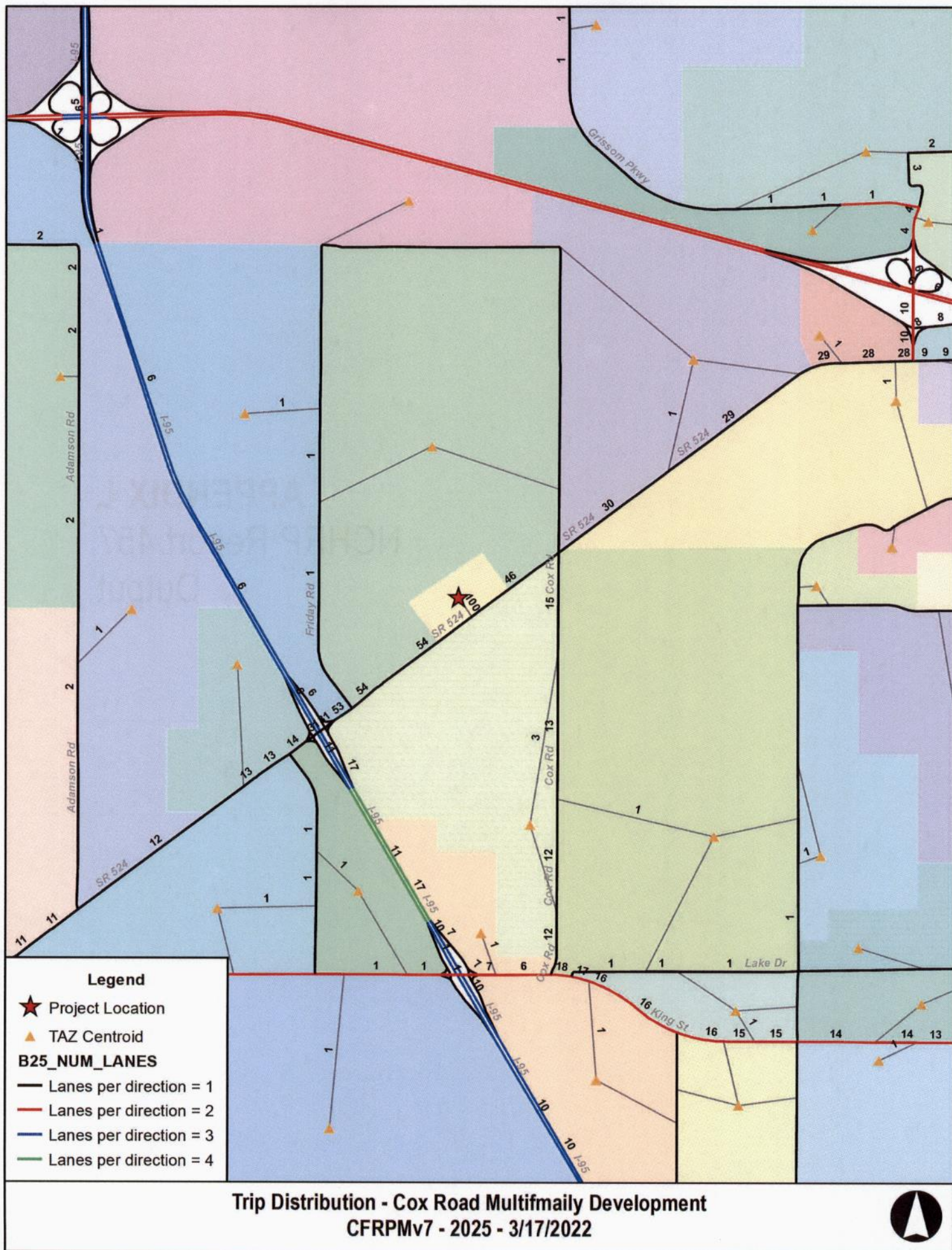
Data Plot and Equation



APPENDIX K

CFRPM v7 Model Plot





APPENDIX L
NCHRP Report 457
Output

SR 524 & Proposed Full Access Connection - AM Peak Hour

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

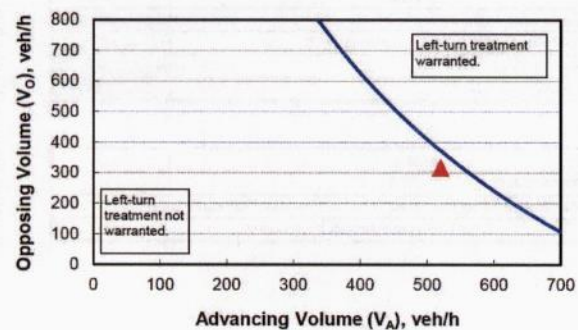
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	55
Percent of left-turns in advancing volume (V_A), %:	3%
Advancing volume (V_A), veh/h:	520
Opposing volume (V_O), veh/h:	316

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	553
Guidance for determining the need for a major-road left-turn bay:	
Left-turn treatment NOT 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

SR 524 & Proposed Full Access Connection - PM Peak Hour

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

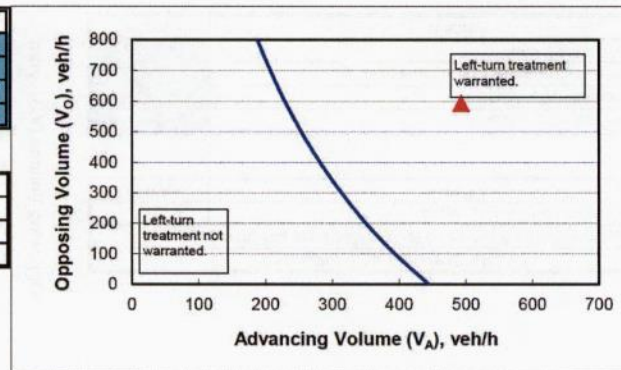
2-lane roadway (English)

INPUT

Variable	Value
85 th percentile speed, mph:	55
Percent of left-turns in advancing volume (V_A), %:	11%
Advancing volume (V_A), veh/h:	493
Opposing volume (V_O), veh/h:	593

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	231
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



Environmental Impact Report

For:

Cox Road & 524 Multi-Family Development



Prepared for:

Mr. Jeremy Mears
The Brownstone Group
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Houston, TX 77081



02/15/2022

Timothy E. Maslin, C.E.S. / C.E.C.
Certification #77283

FEC Job #22-109

Table of Contents

1.0 Executive Summary

2.0 Environmental Impact Report

- 2.1 Objective**
- 2.2 Introduction**
- 2.3 Materials and Methods**
- 2.4 Soils**
- 2.5 Hydrology**
- 2.6 Flora**
- 2.7 Fauna**
- 2.8 Wetlands**
- 2.9 Summary and Discussion**
- 2.10 Conclusion and Recommendations**
- 2.11 Qualifications of Individual Preparing Report**

3.0 Appendix

- 3.1 Location Map**
- 3.2 Soils Map**
- 3.3 Topographic Map**
- 3.4 Flood Map**
- 3.5 Land Use Land Cover Map**
- 3.6 Scrub Jay Map**
- 3.7 National Wetland Inventory Map**
- 3.8 LIDAR Map**
- 3.9 Wetland Determination Map**
- 3.10 Historic Aerials**
- 3.11 Site Photos**

1.0 Executive Summary

The proposed **Cox Road & 524 Multifamily** Development:

- is approximately 53.18 acres in Brevard County, Florida.
- is two undeveloped parcels along SR 524, and is proposed for land development improvements.
- contains mostly poorly drained sandy soils.
- is approximately at an elevation of 25 ft
- is in Flood Zone A and was significantly flooded during the inspection.
- contains 7.81 acres of Pine Flatwoods which supports some palms and pines
- contains 28.95 acres of Shrub and Brushland habitat
- contains 5.75 acres of Freshwater Marsh habitat
- contains 2.58 acres of Wet Prairie habitat
- contains 2.74 acres of hydric pine flatwoods
- contains 0.43 acres of forested wetlands
- contains 0.62 acres of mixed shrub wetlands
- contains 0.96 acres of other surface waters
- contains 3.00 acres of electrical power lines
- does not support protected species.
- does contain multiple jurisdictional wetlands.
- improvements to the parcel unless properly permitted, may cause adverse environmental impacts to native habitats, trees, and wetlands.
- is recommended for micro-site planning to avoid and minimize wetland impacts and conserve trees in native upland buffer areas.

Environmental Impact Report

1.1 Objective

In February of 2022 Environmental Specialists from *Florida Environmental Consulting Inc.* performed an environmental impact study of the **Cox Road & 524 Multifamily Development** property. The objective of this study was to assess and report on the baseline environmental condition of the subject site as well as to discuss how developing this site may impact the environment.

1.2 Introduction

The subject property is parcel IDs 24-35-23-00-11 and 24-35-23-00-775 in section 23 of township 24, range 35 of Brevard County, Florida. More specifically, on the North side of SR524, directly east of Cox Rd. It is comprised of approximately 53.18 acres of vacant land, at 28°23'01.9"N 80°47'35.1"W and is currently proposed for land development improvements. Please see the maps and other reference materials in the appendix of this report.

1.3 Materials and Methods

The site assessment included preliminary research of the site and surrounding area to determine what type of ecological community to expect as well as what types of individual flora and fauna may be found on site. This preliminary research included Geographic Information Systems (GIS) Mapping, aerial interpretation, Florida Department of Environmental Protection (FDEP) Environmental Resource Analysis and assessing the potential for species and habitats listed by the County, St Johns Water Management District (SJWMD), Florida Natural Areas Inventory (FNAI), Florida Fish and Wildlife Conservation Commission (FWC), and the U.S. Fish and Wildlife Service (FWS).

The site assessment also included traversing and observing communities adjacent to and within the site. During the site assessment community types, vegetation, wildlife, and other pertinent observations were noted.

1.4 Soils

According to the U.S. Department of Agriculture Natural Resources Conservation Service (NRCS) the property contains 4 major soil types more specifically described as:

Soil 2, *Anclote sand, frequently ponded, 0 to 1 percent slopes*, characterized as very poorly drained sand with a water table typically about 0 inches below the surface with frequent ponding.

Soil 6, *Basinger sand, depressional*, characterized as very poorly drained sand with a water table typically about 0 inches below the surface with frequent ponding.

Soil 30, *Malabar sand*, 0 to 2 percent slopes, characterized as poorly drained sand with a water table typically about 3 to 18 inches below the surface with no typical frequency of ponding or flooding.

Soil 36, *Myakka sand*, 0 to 2 percent slopes, characterized as poorly drained sand with a water table typically about 6 to 18 inches below the surface with no typical frequency of ponding or flooding.

Soils 2, 6, and 30 are known to sometimes support wetland function. Please see the soils map in the appendix of this report for the general location of these soils.

1.5 Hydrology

This project is mostly in hydrologic basin 20, the *Southern St. Johns River*, but a portion of the property is also in hydrological basin 18 *St Johns River Canaveral marshes to Wekiva*, and the United States Geological Survey (USGS) Topographic Map in the Appendix shows the area as generally flat with stormwater runoff accumulating in onsite wetlands as well as in roadside swales, that border the property. Using the North American Vertical Datum of 1983 (NAD83) the natural ground grade is approximately elevation 25 and according to the Flood Hazard Map in the Appendix, this area is in a 100-year flood plain without a base flood elevation determined and as such is considered Flood Zone A. However, as a reference a nearby property was determined to be in the AE-25.1 Flood Zone.

1.6 Flora

As noted in the introduction the parcel is approximately 53.18 acres of vacant land, more specifically designated as 7.81 acres of Pine Flatwoods LULC 4110, 28.95 acres of Shrub and brushland LULC 3200, 2.58 acres of wet prairies LULC 6430, 5.75 acres of freshwater marshes LULC 6410, 0.43 acres of wetland forested mixed LULC 6300, 2.74 acres of hydric pine flatwoods, 0.96 acres of other surface waters LULC 6700, 3.00 acres of electrical power transmission lines LULC 8320, and 0.62 acres of mixed scrub-shrub wetland LULC 6460. Please see the Aerial LULCS Map and Site Photos in the Appendix.

The flora of the Pine Flatwoods habitat included a mixed canopy dominated by slash pine (*Pinus elliottii*) with some cabbage palm (*Sabal palmetto*), and some exotic melaleuca (*Melaleuca quinquenervia*). The understory species included dominant saw palmetto (*Serenoa repens*), also some wax myrtles (*Morella cerifera*), gallberry (*Ilex glabra*), and rusty staggerbush (*Lyonia spp.*). The groundcover of the site consisted of muscadine grape (*Vitis rotundifolia*), as well as miscellaneous grasses and forbes.

Next, the flora of the Shrub and brushland included dominant saw palmetto, with sparse slash pines and cabbage palms, gallberry, and rusty staggerbush, with some other miscellaneous grasses and forbes.

Additionally, the flora of the mixed scrub-shrub wetland included some cabbage palms, red maples (*Acer rubrum*), and slash pines, Brazilian pepper (*Schinus terebinthifolia*), melaleuca, and wax myrtles, as well as other miscellaneous grasses and forbes.

Further, the flora of the wet prairies included some holly, cabbage palms, slash pines, and rusty staggerbush, as well as some miscellaneous grasses and forbes.

Also, the flora of the freshwater marshes included some red maples, slash pines and cabbage palms, with dahoon holly (*Ilex cassine*), primrose willow (*Ludwigia peruviana*), soft rush (*Juncus effusus*), cattails (*Typha domingensis*), yellow pondlilies (*Nuphar advena*), lanceleaf arrowhead (*Sagittaria lancifolia*), swamp fern (*Acrostichum aureum*), as well as some miscellaneous grasses and forbes.

Then, the flora of the wetland forested mixed included a canopy of cabbage palms, with some slash pine, holly, red maples, wax myrtle, and primrose willow, as well as some miscellaneous grasses and forbes.

And finally, the flora of the hydric pine flatwoods included a canopy of slash pine, with some holly, swamp fern, as well as some miscellaneous grasses and forbes.

No species of flora was observed on site listed by the County, Florida Natural Areas Inventory, Florida Fish and Wildlife Conservation Commission, or U.S. Fish and Wildlife Service, as Endangered, Threatened, or a Species of Special Concern.

1.7 Fauna

The species directly observed or evidenced on site were a bald eagle (*Haliaeetus leucocephalus*), vultures (*Coragyps atraus*), wild boar (*Sus scrofa*), squirrels (*Sciurus carolinensis*), raccoons (*Procyon lotor*), black racers (*Coluber constrictor*), southern chorus frogs (*Pseudacris nigrita*), brown anoles (*Anolis sagrei*), ants (*Formicidae spp.*), spiders (*Arachnida spp.*), dragon flies (*Odonata spp.*), and bees (*Apidae spp.*).

Additionally, the one bald eagle was seen flying overhead but there are no known nesting sites in the vicinity of the property. Further, there were no gopher tortoise (*Gopherus Polyphemus*) burrows nor individuals observed, and no scrub jay territories were found nearby.

No additional evidence or suspicion of use was formulated of other listed species of fauna according to the county, Florida Natural Areas Inventory, Florida Fish and Wildlife Conservation Commission, and the U.S. Fish and Wildlife Service lists of Endangered, Threatened, and Species of Special Concern.

1.8 Wetlands

Based on aerial interpolation and in conjunction with the soils survey publication describing the site soils as potentially hydric, wetlands were suspected. As such, 12.12 acres of various

wetland habitats were found on site via the presence of wetland vegetation, hydric soils, and hydrologic indicators. These are comprised of 8 distinct wetlands which include 2.58 acres of wet prairies, 2.74 acres of hydric pine flatwoods, 0.62 acres of mixed scrub-shrub wetland, 0.43 acres of wetland forested mixed, and 5.75 acres of freshwater marshes.

Additionally, there is a pond on the property that was excavated partially in historic wetlands and partially in uplands. The sections of this shown to be in historic uplands would now be considered 'other surface waters' totaling 0.96 acres. Conversely, those areas dug in historic wetlands may still carry the original wetland designation for permitting and mitigation purposes. Please see the LULC Map in the Appendix of this report.

1.9 Summary and Discussion

In summary, the proposed Cox Road & 524 Multifamily is 53.18-acres of vacant land along SR 524 proposed for land development improvements in Brevard County, Florida. The property contains mostly poorly drained sandy soils at an elevation of 25 ft and is in flood zone A, with roadside and adjacent stormwater management facilities.

The parcel also contains various upland and wetland habitats including; Pine Flatwoods, Shrub and Brushlands, Freshwater Marsh, Wet Prairie, hydric pine flatwoods, forested wetlands, shrub wetlands, other surface waters, and an electrical power line right of way. But it does not directly support protected species.

For discussion, the western half of the property was largely flooded during the inspection and seems to experience this level of flooding with some degree of regularity looking back at recent historic aerals. Regardless, the flooded portion of the site is in Flood Zone A and may require significant fill during development.

Additionally, as mentioned above, the site contains multiple wetlands over ½ acre each that may be impacted during development, and therefor would require micro-site planning to avoid and minimize wetland impacts as best practical. Any unavoidable impacts will in turn require mitigation. Mitigation credits may be available for purchase within Basin 20, the *Southern St. Johns River Basin*, or Basin 18 *St Johns River Canaveral marshes to Wekiva*, at one of several mitigation banks and could be utilized during the site planning and permitting process to offset unavoidable impacts to such wetlands. Onsite mitigation may also be required as a first choice ahead of purchasing offsite mitigation credits. This may be accomplished through wetland enhancement or creation and preservation, where exotic vegetation can be removed, appropriate wetland vegetation planted and/or a conservation easement recorded, and the wetland maintained through a Wetland Mitigation, Monitoring, and Management Plan to supersede at least some of the impacts proposed. A formal wetland delineation and functional assessment (UMAM) will be required during the permitting process.

Finally, as stated above the property does contain some pines and palms, and though these trees may be cleared with a permit, it is recommended that micro-site-planning be looked into in an effort to save trees as best possible. For this effort, conserving trees in native

upland buffer areas adjacent to wetlands as well as perimeter landscape areas may be practical.

1.10 Conclusion and Recommendations

In conclusion, permitting and development or other improvements to the proposed **Cox Road & 524 Multifamily Development** may cause adverse environmental impacts to native uplands, wetlands, and trees. The project is recommended for micro-site planning to avoid and minimize wetland impacts and conserve trees in native upland buffer areas as best practical.

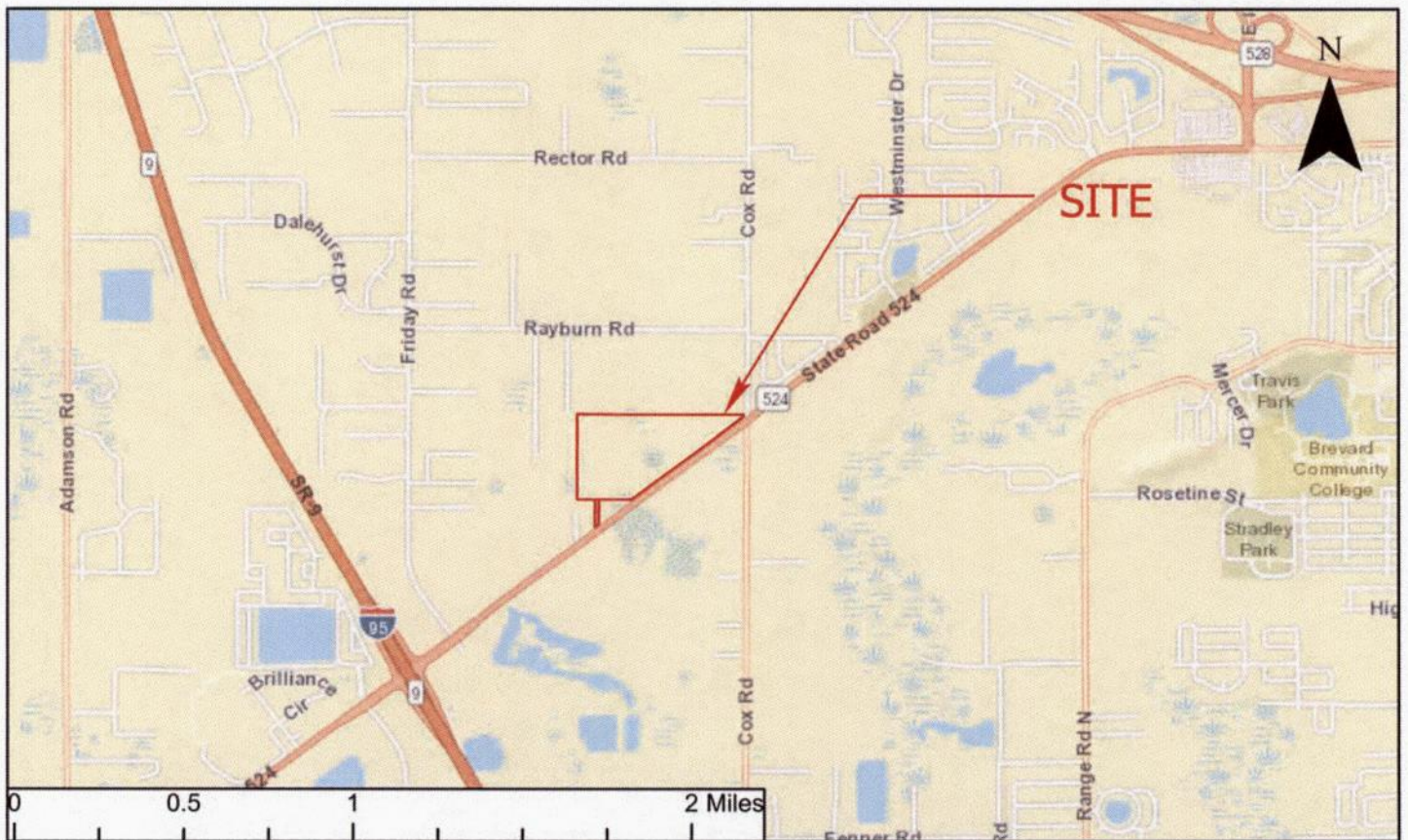
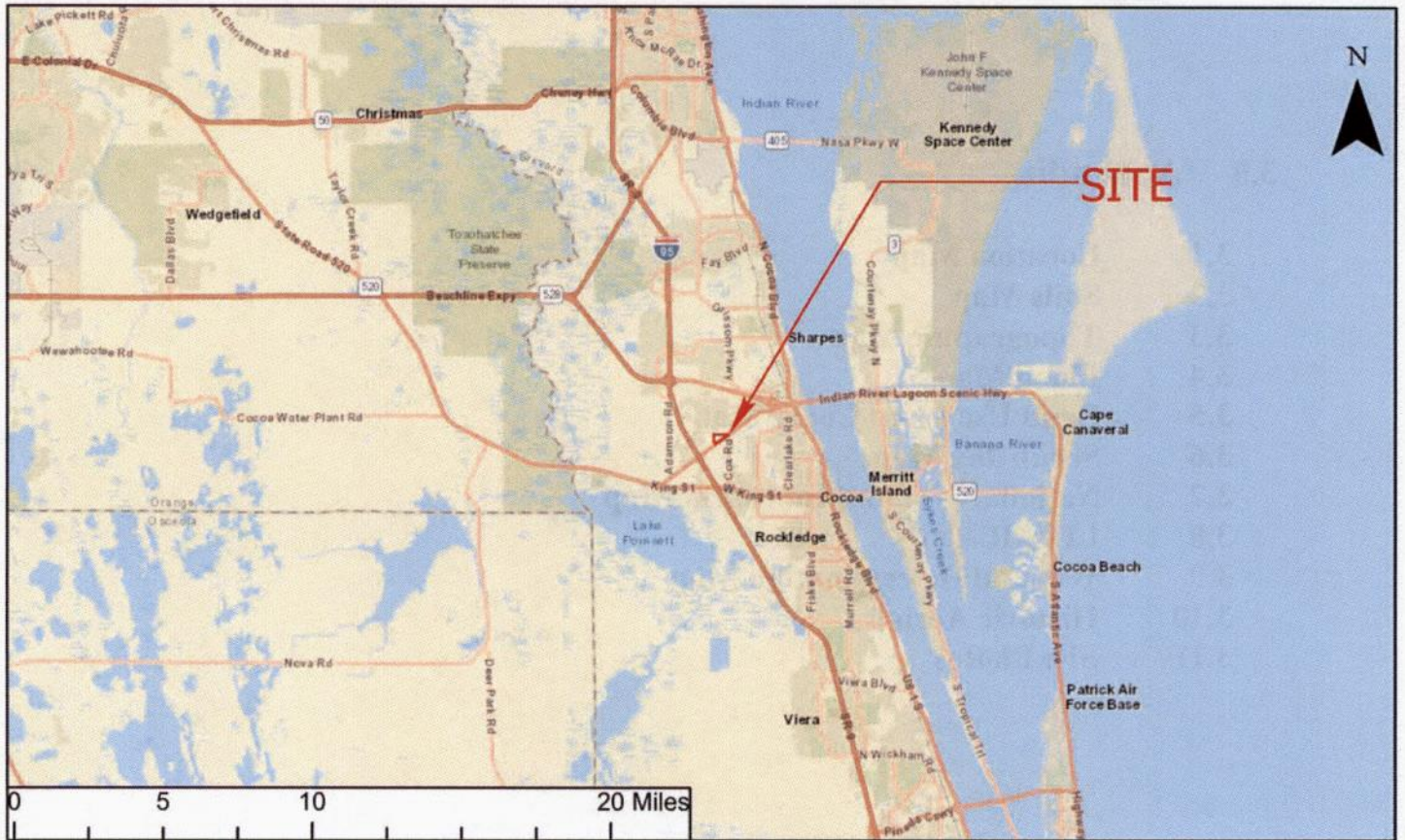
Please contact Florida Environmental Consulting, Inc. with any questions or comments regarding this report or for any additional specific consulting.

1.11 Qualifications of Individual Preparing Report

Florida Environmental Consulting is a Florida registered environmental consulting firm, the person who prepared this report is the president of the company, and his signature and seal on the cover of this document demonstrate that he is in responsible charge of the information provided. He is a Certified Environmental Consultant and Environmental Specialist. Additionally, he has a Bachelor of Science in Environmental Science from the University of Florida with a minor in Natural Resource Management, along with 22 years of experience. Finally, he is a member of the National Association of Environmental Professionals, and the Environmental Assessment Association where a code of ethics and personal commitment to quality work is upheld.

3.0 Appendix

- 3.1 Location Map**
- 3.2 Soils Map**
- 3.3 Topographic Map**
- 3.4 Flood Map**
- 3.5 Land Use Land Cover Map**
- 3.6 Scrub Jay Map**
- 3.7 National Wetland Inventory Map**
- 3.8 LIDAR Map**
- 3.9 Wetland Determination Map**
- 3.10 Historic Aerials**
- 3.11 Site Photos**



LOCATION

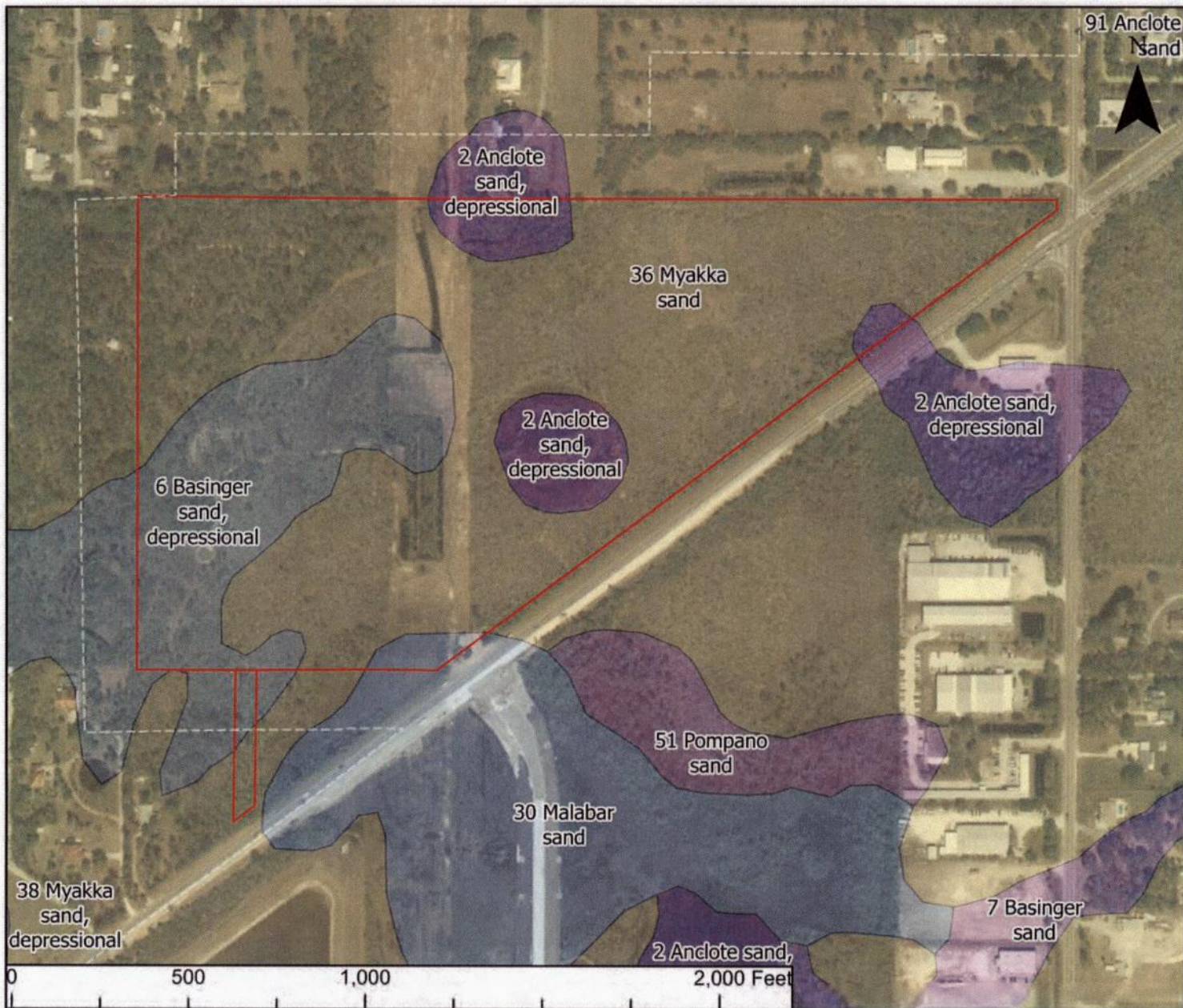
COX ROAD MULTI-FAMILY

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Consulting Inc.

1031 20th Street, Vero Beach, Florida 32980
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Legend

Subject Parcels

Soil Type

- Anclote sand
- Anclote sand, depressional 3.91 ACRES
- Basinger sand
- Basinger sand, depressional 10.82 ACRES
- Malabar sand 0.54 ACRES
- Myakka sand
- Myakka sand, depressional 37.91 ACRES
- Pompano sand

SOILS

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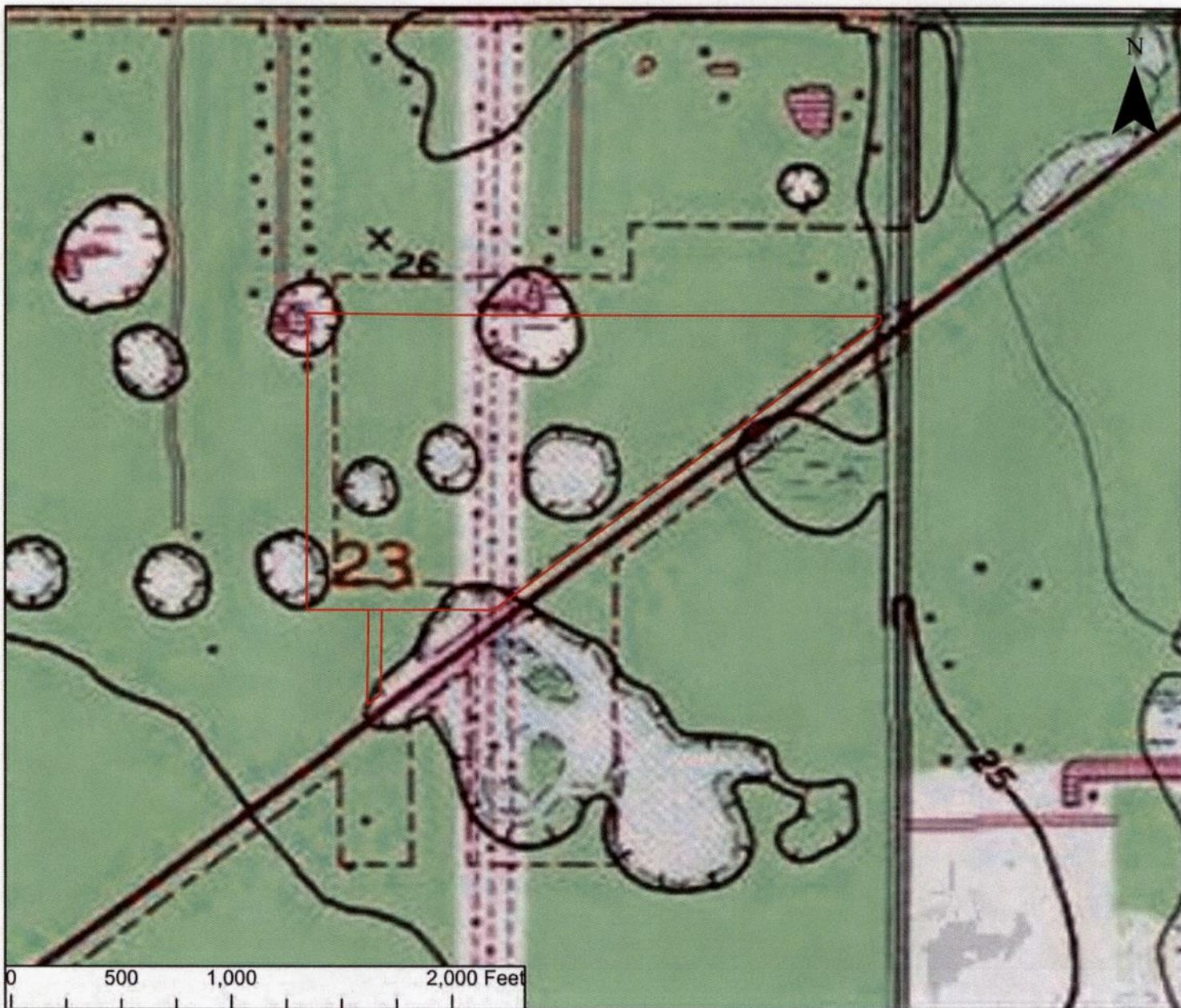
1805 SW 82nd Street, Suite 200, Fort Lauderdale, FL 33309
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SOILS: FEC-22-109

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Subject Parcels

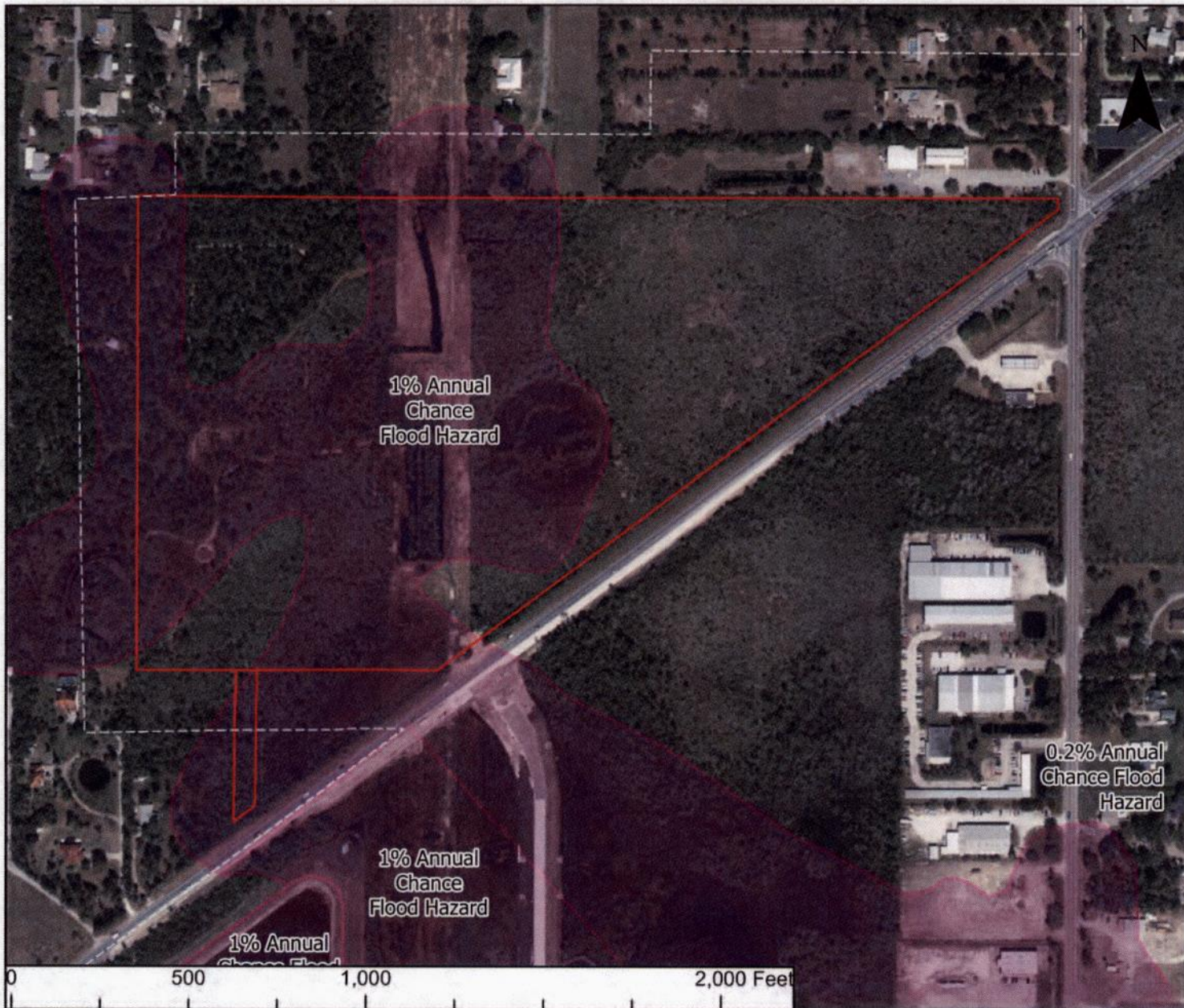
TOPO

COX ROAD MULTI-FAMILY

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Subject Parcels

USA Flood Hazard

0.2% Annual Chance Flood Hazard

1% Annual Chance Flood Hazard

FLOOD HAZARD

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Subject parcels

Statewide Land Use Land Cover Field adjusted 2-2-2022

1100: Low Density, <2 dwelling units/acre, 1100: Low Density, <2 dwelling units/acre
 1200: Medium Density, 2>5 dwelling units/acre, 1200: Medium Density, 2>5 dwelling units/acre
 1400: Commercial and Services, 1400: Commercial and Services
 1700: Institutional, 1700: Institutional
 1900: Open Land (Urban), 1900: Open Land (Urban)
 3200: Shrub and Brushland, 3200: Shrub and Brushland 28.95 Acres
 4110: Pine Flatwoods, 4110: Pine Flatwoods 7.81 Acres
 6170: Mixed Wetland Hardwoods, 6170: Mixed Wetland Hardwoods 0.62 Acres
 6250: Hydric Pine Flatwoods, 6250: Hydric Pine Flatwoods 2.74 Acres
 6300: Wetland Forested Mixed, 6300: Wetland Forested Mixed 0.43 Acres
 6410: Freshwater Marshes, 6410: Freshwater Marshes 5.75 Acres
 6430: Wet Prairies, 6430: Wet Prairies 2.58 Acres
 6460: Mixed Scrub-shrub Wetland, 6460: Mixed Scrub-shrub Wetland 0.62 Acres
 6700: Other Surface Water 0.96 Acres
 8320: Electrical Power Transmission Lines, 8320: Electrical Power Transmission Lines 3.00 Acres

LULC

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- Subject Parcels
- Scrub Jay Territory

SCRUB JAY

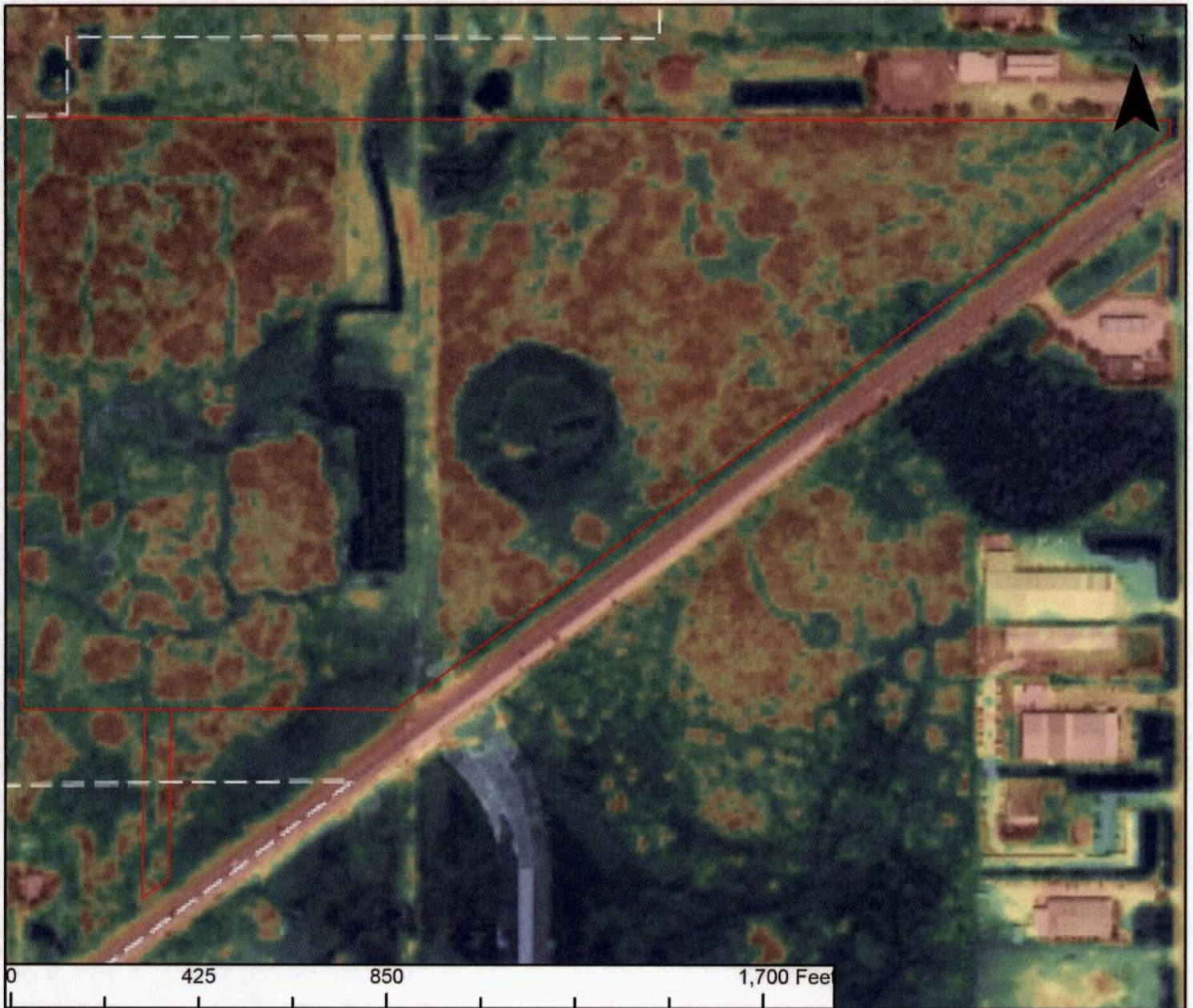
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Subject Parcels



Legend

- Subject Parcels
- Wetland Line

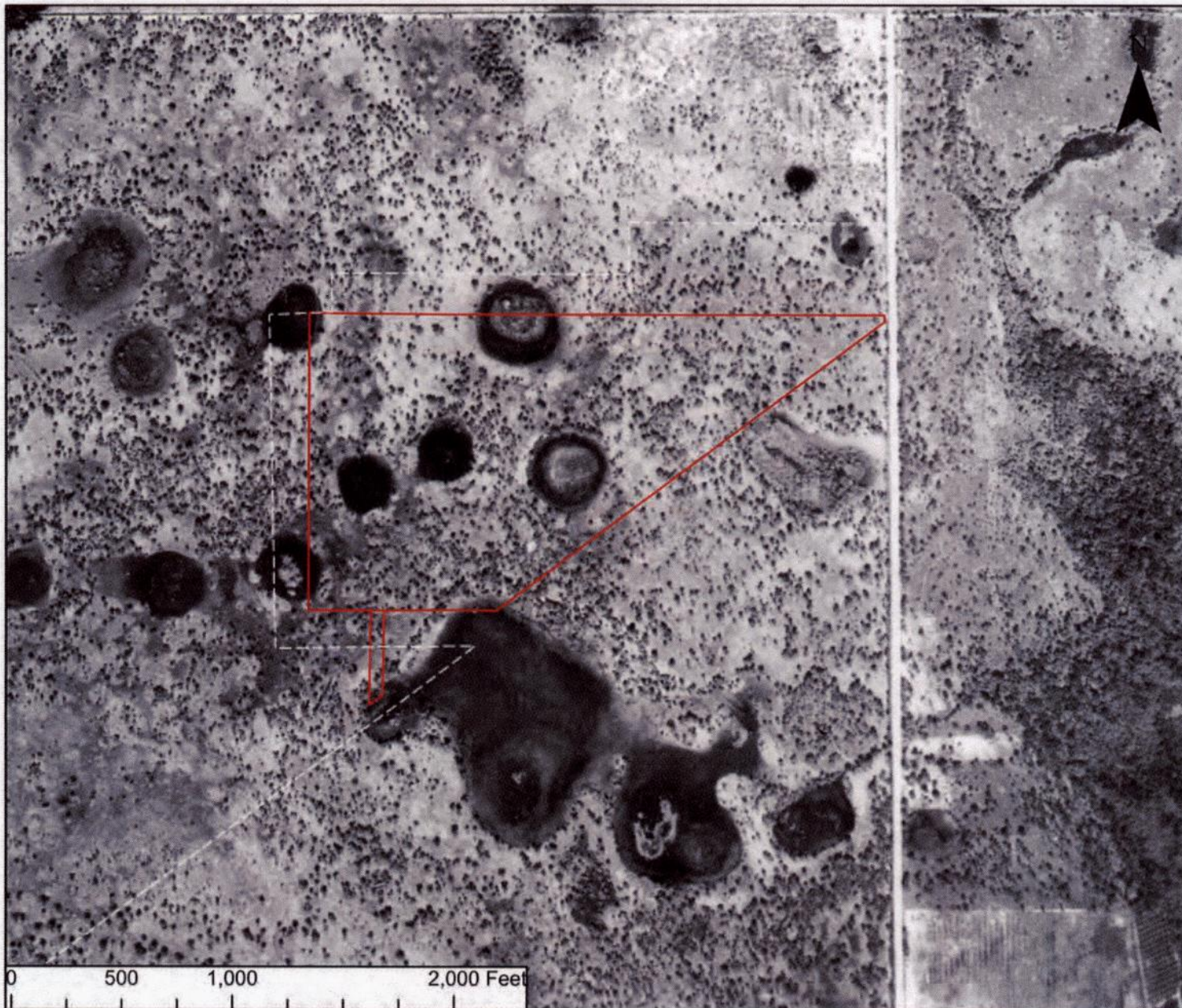
PRELIMINARY FIELD
WETLAND DETERMINATION

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Subject Parcels

1958 AERIAL

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Subject Parcels

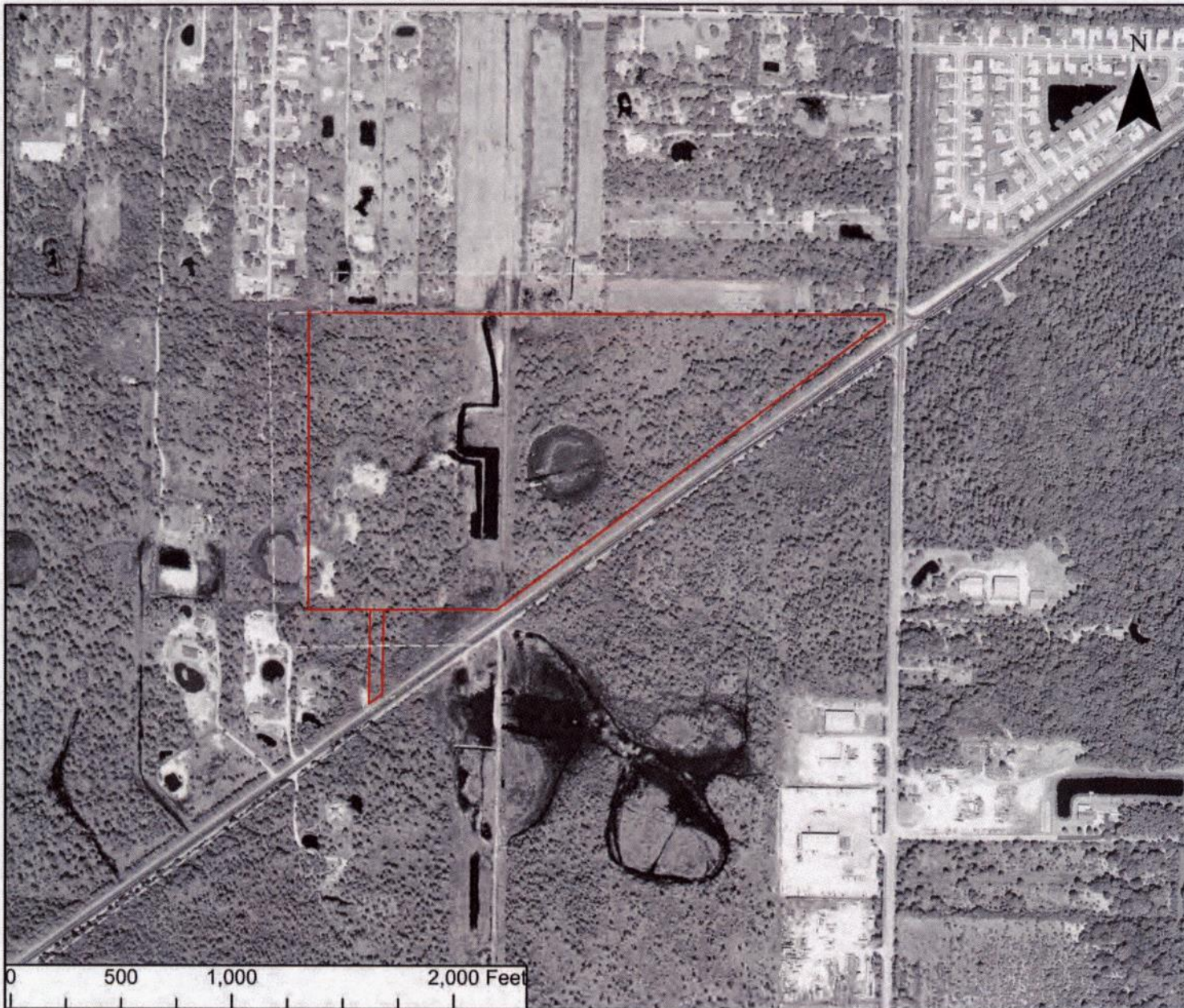
1979 AERIAL

COX ROAD MULTI-FAMILY

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Subject Parcels

1993 AERIAL

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Subject Parcels

2006 AERIAL

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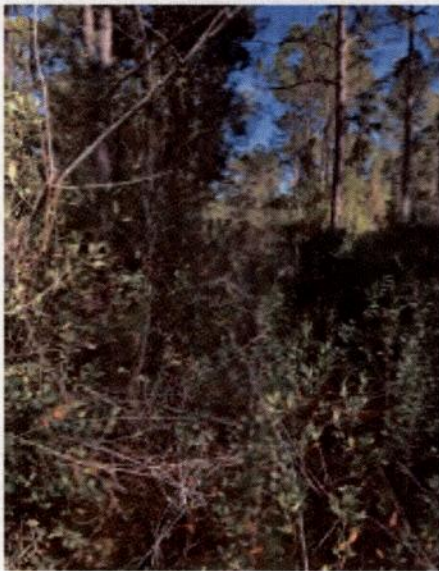
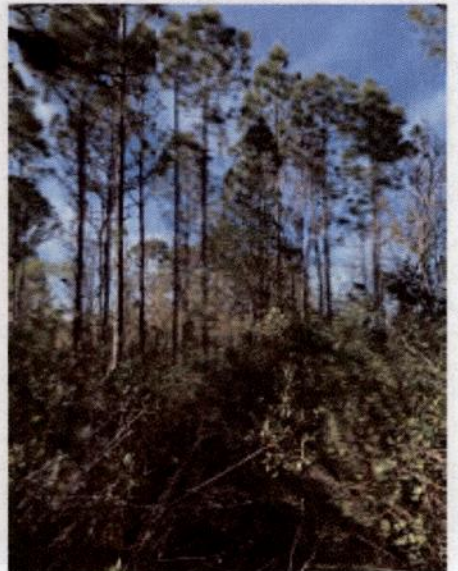
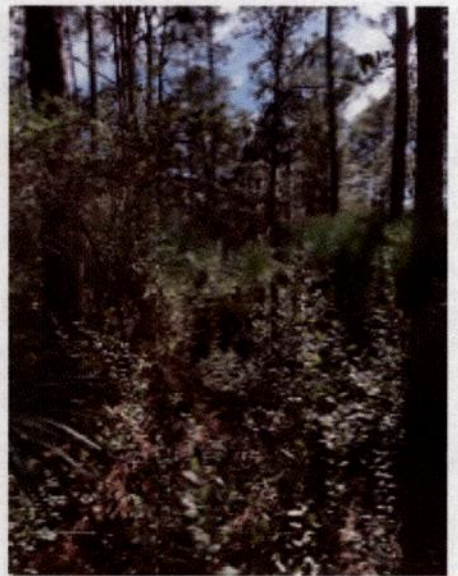
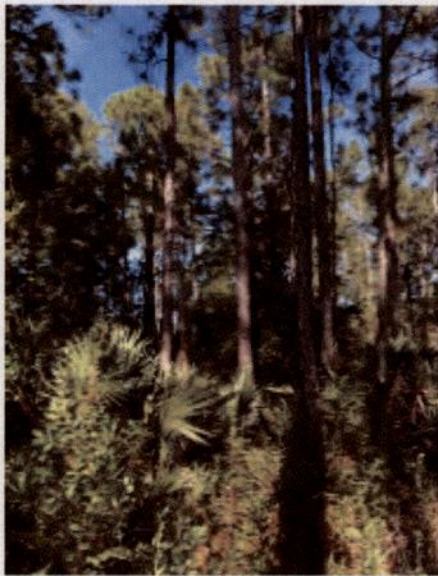
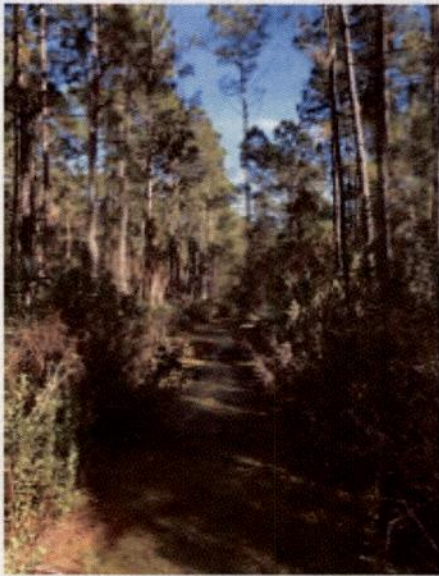
2021 AERIAL

COX ROAD MULTI-FAMILY

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PICS: PINE FLATWOODS

COX ROAD - 524 MULTIFAM

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PICS: SHRUB AND BRUSHLAND

COX ROAD - 524 MULTIFAM

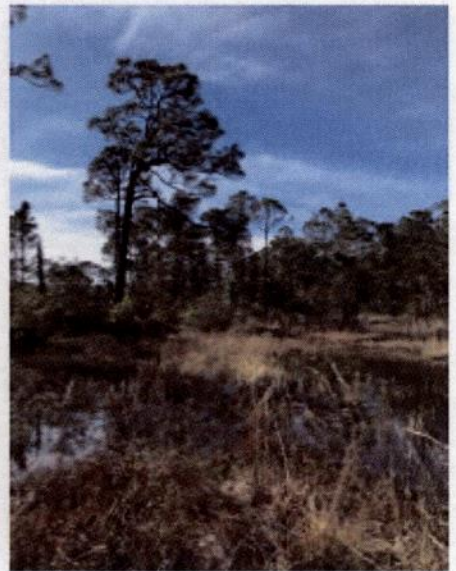
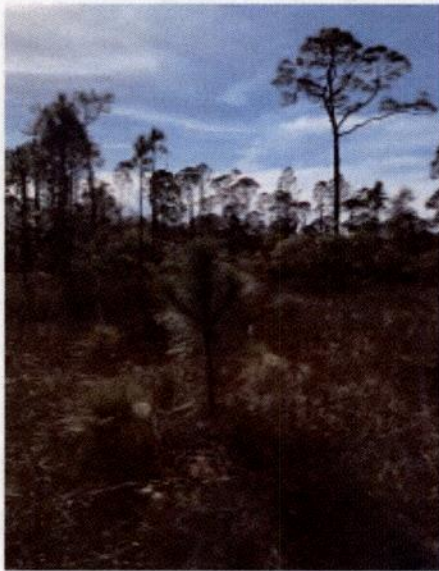
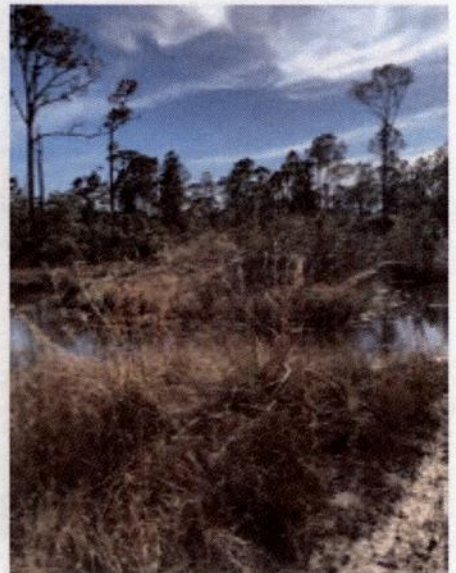
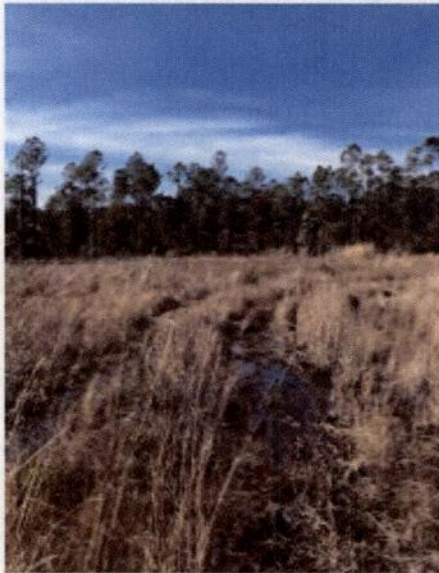
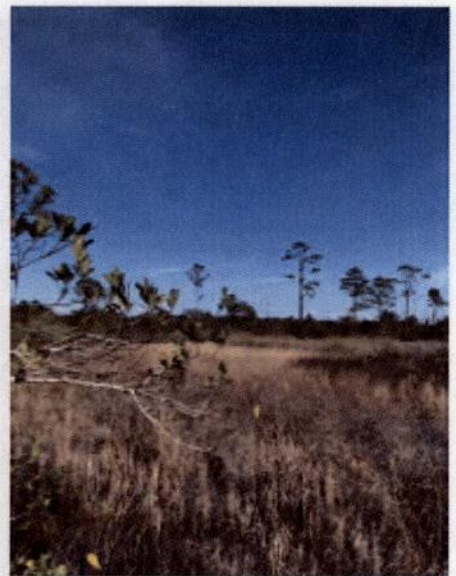
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PICS: FRESHWATER MARSHES

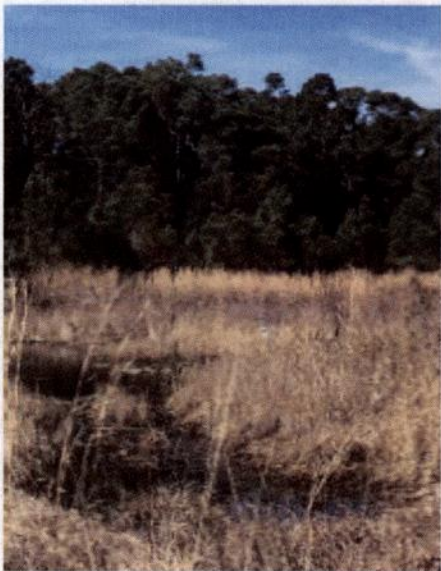
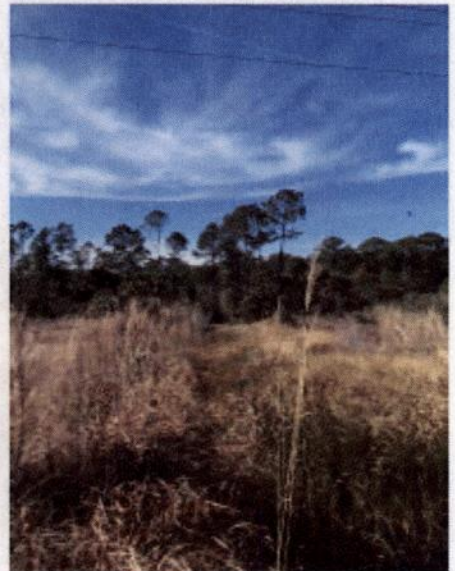
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PICS: WET PRAIRIES

COX ROAD - 524 MULTIFAM

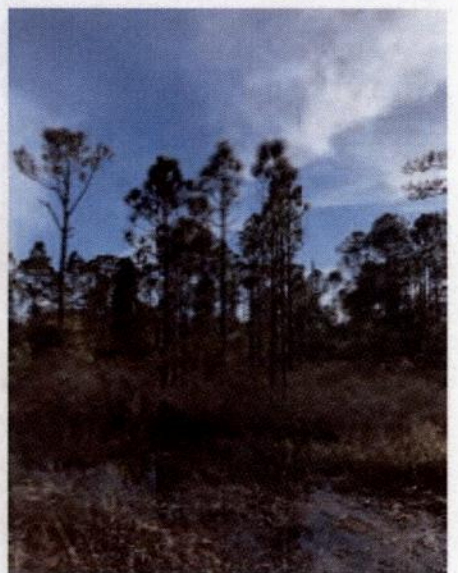
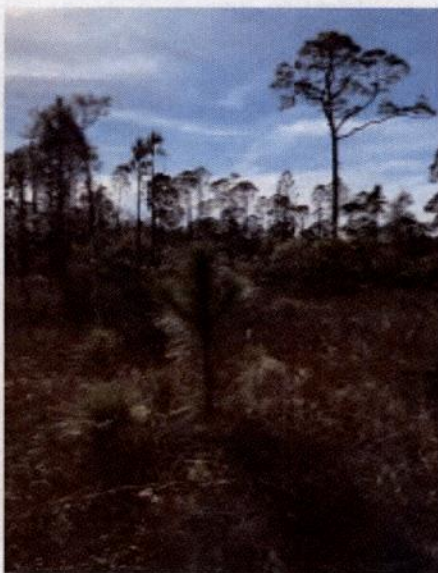
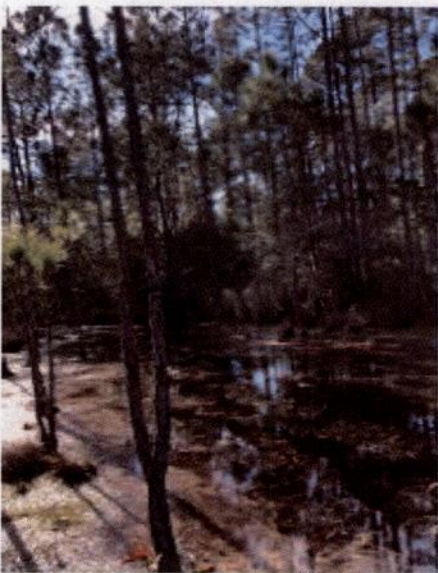
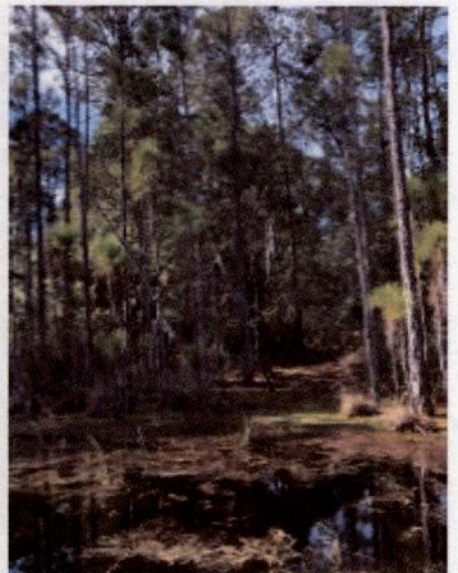
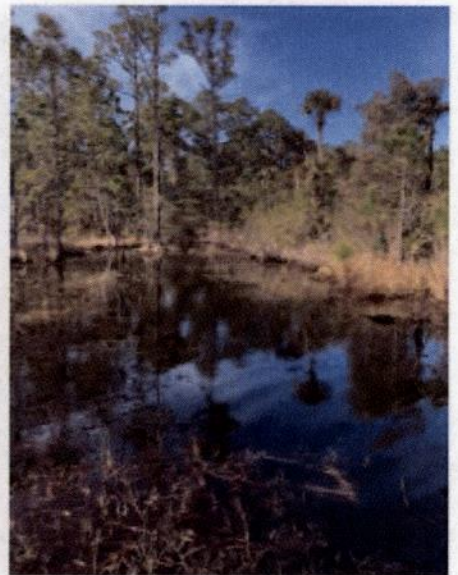
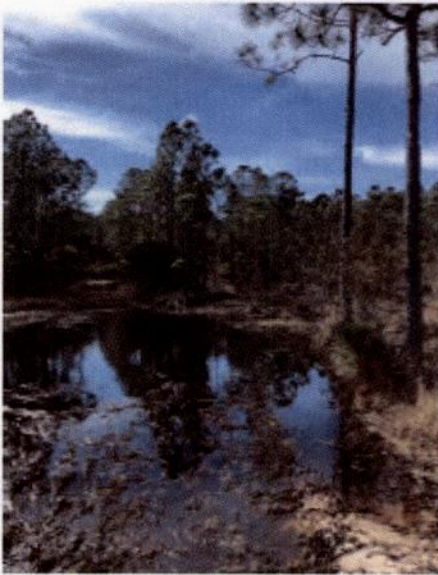
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PICS: HYDRIC PINE
FLATWOODS

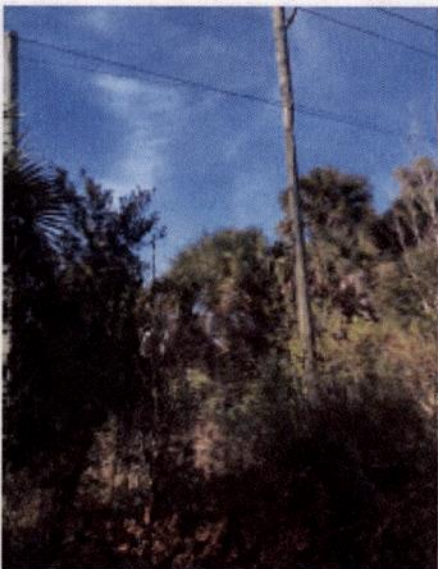
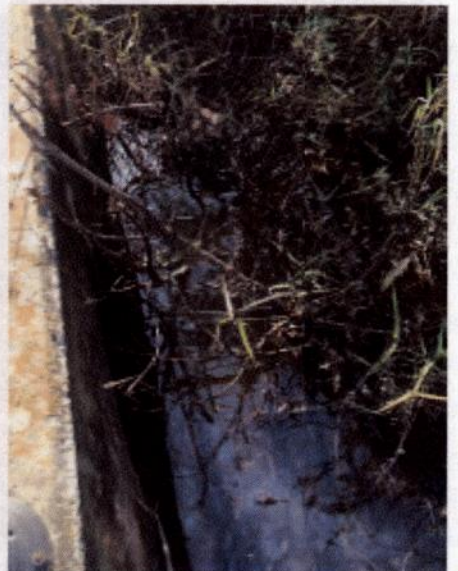
COX ROAD - 524 MULTIFAM

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PICS: WETLAND FORESTED
MIXED

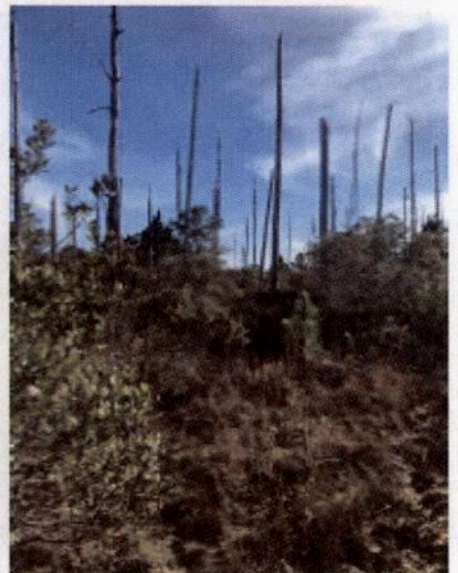
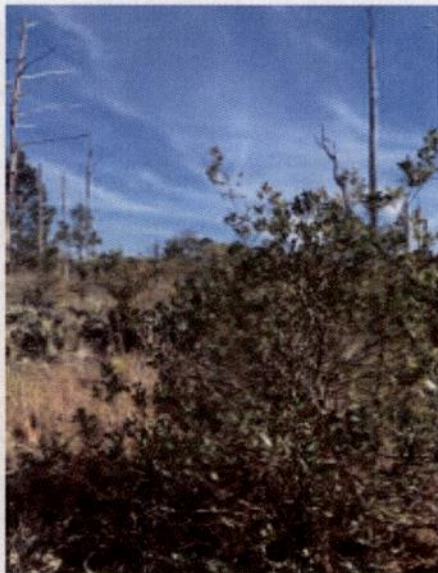
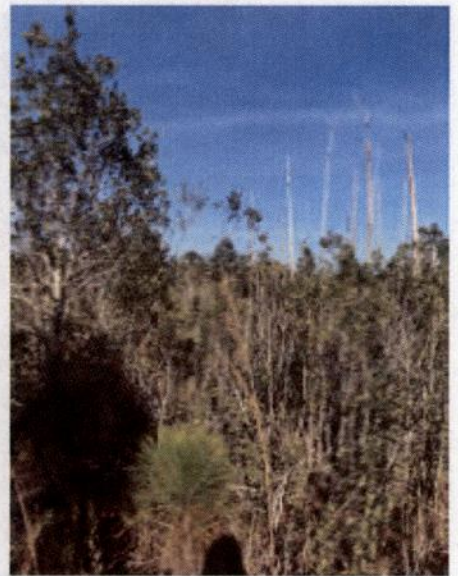
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PICS: MIXED SCRUB SHRUB
WETLAND

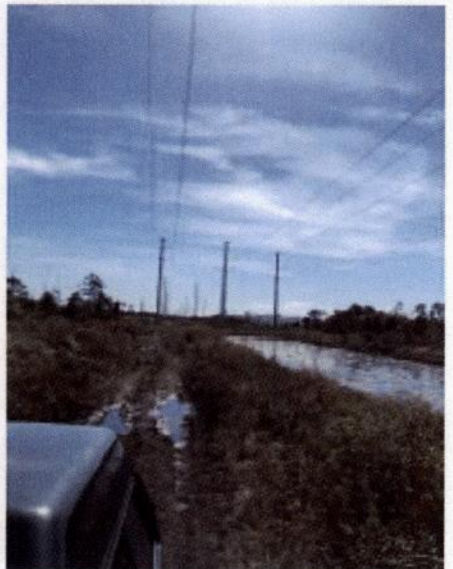
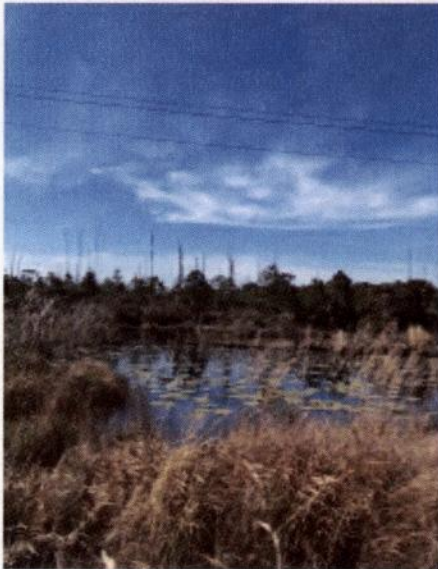
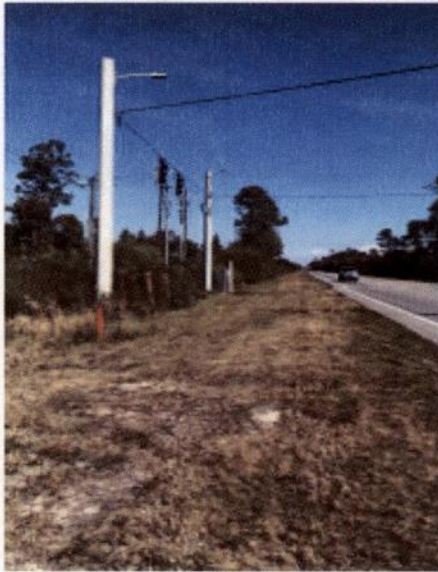
COX ROAD - 524 MULTIFAM

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PICS: POWER LINES AND
OTHER SURFACE WATERS

COX ROAD - 524 MULTIFAM

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**PRE-DEVELOPMENT AGREEMENT AND RESTRICTIVE COVENANT
ALLEGRA AT COCOA**

THIS PRE-DEVELOPMENT AGREEMENT AND RESTRICTIVE COVENANT ("Agreement") is made and entered into this _____ day of _____, 2023, ("Effective Date") by and between the **CITY OF COCOA, FLORIDA**, a Florida municipal corporation, located at 65 Stone Street, Cocoa, Florida 32922 ("City"), and **ALLEGRA AT COCOA, LLC**, a limited liability corporation of the State of Florida, with an address of 6517 Mapleridge Street, Houston, TX 77081 ("Developer").

RECITALS:

WHEREAS, Developer is the contract purchaser to approximately 53.3 acres, more or less, of real property with Tax Parcel Identification Numbers 24-35-23-00-11 and 24-35-23-00-775, more particularly described herein in Exhibit "A" (collectively the "Property"); and

WHEREAS, Developer and the City acknowledge that the portion of the Property associated with Tax Parcel ID 24-35-23-00-775 is located in unincorporated Brevard County (hereinafter, the "**County Jurisdiction Property**") and that the portion of the Property associated with Tax Parcel Identification Number 24-35-23-00-11 is located within the jurisdictional limits of the City of Cocoa (hereinafter, the "**City Jurisdiction Property**"); and

WHEREAS, Developer is seeking to develop a 312 unit multifamily housing development and related facilities (the "**Project**") which will result in the creation of local job opportunities and affordable housing for the citizens of the City of Cocoa; and

WHEREAS, pursuant to its Florida Municipal Home Rule Powers and the City of Cocoa Code of Ordinances ("City Code"), Section 15-21, the City Council may approve Development Agreements which waive certain provisions of the City's land development regulations when in the public interest and consistent with the Comprehensive Plan, provided the Developer demonstrates a bona fide need for the variance or waiver and agrees to provide significant enhancements to the Property in exchange for the variance or waiver; and

WHEREAS, pursuant to its Florida Municipal Home Rule Powers and City Code Section 15-21, on January 10, 2023, the City Council of the City of Cocoa considered and approved via Resolution 2023-008 the Developer's request for authorization to proceed with the Project in accordance with Florida Statute Sections 166.04151(6) and 420.0004 on the Property with subject conditions, and to permit multifamily residential as an allowable land use on the Property despite its current Commercial future land use designation and General Commercial zoning; and

WHEREAS, the City Council finds and declares that this Development 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 safe, affordable and attainable housing.

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 by Developer. The Parties agree and understand that a condition precedent to this Agreement is acquisition of the Property by the Developer and the recording of the sale in the Public Records of Brevard County, Florida. The Parties agree that this term is a condition precedent to the entering of this Agreement by the Parties and that this Agreement will automatically terminate if the Property is not transferred to the Developer within one year of execution by the Parties. As such, Developer shall keep the City fully apprised of the status of said closing and shall faithfully and expeditiously complete the closing within one year of the Effective Date of this Agreement. Upon the Effective Date of this Agreement, the Developer shall provide the City Manager and City Attorney a complete copy of a current title commitment (with copies of all supporting documents) for closing on the Property so the Parties can determine whether the title commitment, including the items listed on Schedule B II Exceptions, causes any material impediment to the City's acquisition of the Conveyance Parcel, as defined in Section 5.0, below. The City in its reasonable and sole discretion may declare any such impediment as a default, and Developer shall be afforded an opportunity to cure said default under Section 25.0 of this Agreement. If the Developer fails to cure said default, the City Manager, in his sole discretion and by written notice, shall have the right to terminate this Agreement. To the extent that any mortgage or lien is revealed in the title commitment, such mortgagee or lienor shall be required to execute a joinder and subordination agreement. To the extent that an executed joinder and subordination agreement in a form satisfactory to the City Attorney is not received within thirty (30) days of the City's receipt of the title commitment, this Agreement shall automatically terminate.

4.0 Project Description and Permitted Waivers. Developer shall, at its expense, cause a multifamily rental development not to exceed 312 units and related facilities to be designed, permitted, and constructed on the City Jurisdiction Property in accordance with a Site Plan to be submitted for approval to the City's Planning & Zoning Board. The Parties acknowledge that, at the time of this Agreement's approval and execution, a Site Plan has not yet been approved by the City's Planning and Zoning Board.

In furtherance of the processing the Site Plan, the City Council hereby agrees to the following waivers notwithstanding any other conflicting City Code provision:

A. Tree removal and land clearing shall be in accordance with the Site Plan, which shall at a minimum require the planting of 350 replacement trees totaling 993 inches on the Property, specifically 506 inches of large trees, 379 inches of medium or small trees, and 108 inches of palm trees. Developer and the City agree that the Developer's tree mitigation contribution for the remainder of the trees on the Property that are proposed for removal and will not be replaced, as would ordinarily be required by Appendix A, Zoning, Article XIII, Section 22 of the City Code and calculated in accordance with such Section, (the "**Tree Mitigation Contribution**") shall be waived by the City provided that the Developer satisfies the following conditions:

(i) the Developer conveys the Conveyance Parcel, as defined in Section 5.0, below, to the City;

(ii) the Developer maintains the Project as an affordable housing development as provided in Section 7.0 below for the requisite period of thirty (30) years;

(iii) the Planning and Zoning Board approves the Site Plan within eighteen (18) months of the Effective Date of this Agreement; and

(iv) the Developer obtains building permits for the Project and substantially commences vertical construction of the Project, which shall at minimum include building foundations, within two (2) years of the Effective Date of this Agreement.

If the Developer fails to obtain Site Plan approval from the City or fails to obtain building permits and substantially commence vertical construction of the Project within the aforesaid eighteen (18) months or two (2) years, respectively, or fails to satisfy any of the conditions of this Section, the City shall have the right to declare the Developer in default pursuant to Section 25.0 of this Agreement. If the Developer does not cure the default within the cure period, the City shall have the right, but not obligation to, terminate this Agreement without penalty and/or immediately take any and all actions necessary to collect the entire Tree Mitigation Contribution to the extent the trees have been removed not to exceed \$945,000.00.

B. City agrees to allow a waiver to the minimum unit size requirement of the City Code, from 800 square feet per one-bedroom unit to 660 square feet per one-bedroom unit, for a maximum of 80 units.

5.0 Project Enhancements: Conveyance of Property. In accordance with Section 15-21 of the City Code and in consideration of the waiver granted in Section 4.0 above, the Developer agrees to incorporate the following development enhancements into the final site plan and affect conveyance of a portion of the Property as follows:

The Developer shall convey, free of charge and free and clear of all liens and mortgages, and other encumbrances that are not reasonably deemed by the City to be permitted exceptions that will interfere with the City's intended purpose and use for the land, a portion of its Property as further described herein. The property to be conveyed by the Developer to the City shall consist of:

- i. The entirety of Tax Parcel Number 24-35-23-00-775 and the portion of Tax Parcel Number 24-35-23-00-11 as depicted on "Exhibit B", the "Conveyance Parcel".
- ii. It is anticipated that the total conveyance shall consist of approximately 11.5+/- acres of upland and wetlands.

The Developer shall initiate the conveyance to the City within thirty (30) days following commencement of land clearing on the Property for purposes of construction. The Developer shall inform the Building Official and City Attorney of the date of commencement of land clearing on the Property for purposes of this Section. In order to initiate the conveyance, the Developer shall provide the City with a written notice requesting the City to accept conveyance of the property ("Written Notice"). The Written Notice must be accompanied by a survey and legal description, prepared by a duly registered and professional surveyor, of the new parcel that will be conveyed to the City, consisting of property identified in this subsection and consistent with Exhibit C. The City shall have twenty (20) days to review the survey and notify the Developer of its acceptance or objection to the proposed legal description of the property to be conveyed.

The Developer shall obtain at the Developer's expense within fifteen (15) days from the City's acceptance of the survey and legal description, a commitment for an Owner's Title Insurance Policy (ALTA FORM B-1970) from a title insurance company ("Title Company") reasonably acceptable to the City, agreeing to insure title to the property in an amount equal to the estimated assessed value of the property to be conveyed, and subject to: no exceptions other than those matters herein permitted; those which will be discharged prior to or at Closing; and the standard printed exceptions and exclusions from coverage customarily contained in an Owner's Policy from the Title Company. The Developer shall provide the City

a copy of the title commitment upon receipt of same. The City shall have twenty (20) days to examine the commitment and tender any objections thereto. At closing, Title Company shall provide the City standard "GAP" coverage in the custom as established by title insurance practices in Florida. Subsequent to closing, Title Company, at the Developer's expense, shall provide an owner's title policy showing title up to and including the recording of the deed delivered at closing, said policy showing the continuation of good and marketable title in the Developer to the moment of recording the warranty deed and subject only to the Permitted Exceptions and any matters created at closing. If the title commitment discloses unpermitted exceptions or matters that render the title non-marketable or unacceptable to the City for its intended purposes and proposed land uses, the Developer, at its option, shall have forty-five (45) days from the date of receiving written notice of defects from the City within which to have the exceptions removed from the commitment or the defects cured to the reasonable satisfaction of the City. In such event, the time of closing shall be thirty (30) days after delivery of the commitment or the time expressly specified in this Agreement, whichever is later. If the Developer fails to have the commitment exceptions removed or the defects cured within the specified time, the City may terminate this Agreement and demand full payment of the Tree Mitigation Contribution, not to exceed \$945,000.00, or the City may elect, upon notice to the Developer within ten (10) days after the expiration of the forty-five (45) day curative period, to take title as it then is notwithstanding such exceptions or title defects. Notwithstanding anything herein contained to the contrary, the Developer shall exercise reasonable diligence in the curing of any defects in title, including the payment and discharge of any liens or encumbrances affecting the title status of the property. The Developer shall pay for the cost of recording any necessary curative instruments, the title insurance commitment, and the Owner's policy if issued, and recording of the deed. Each party shall pay their respective attorney's fees.

The Developer has indicated to the City its intent to grant a conservation easement over portions of the Conveyance Property that consist of wetlands in favor of St. John's River Water Management District prior to the conveyance to the City. The Developer acknowledges and agrees that the City intends to use the Conveyance Property for purposes of stormwater management projects and possible creation of recreational amenities. Accordingly, the City will find any conservation easement granted over the Conveyance Property to be unacceptable for the City's intended purposes unless the conservation easement expressly permits the following minimum activities:

- Right to construct trails and boardwalks;
- Right to mechanically maintain vegetation within the limits of the trails/boardwalks;
- Right to construct wayfinding and educational signage;
- Right to place benches;
- Right to use equipment to occasionally grade and compact the trail surface to maintain stabilized dirt suitable for bicycle and pedestrian activity;
- Right to remove exotic invasive species; and
- Right to construct stormwater infrastructure and retain flood waters, including stormwater retention and detention ponds and related facilities.

The Developer shall have sixty (60) days from the Effective Date of this Agreement to either (1) negotiate a satisfactory conservation easement, permitting the above bulleted activities ("Minimum Activities"); or (2) seek a modification of its St. John's River Water Management District permit to remove the conservation easement(s) as a required form of wetland mitigation. Should the Developer fail to achieve either of these requirements within sixty (60) days of the Effective Date of this Agreement, the City shall be entitled to terminate this Agreement and/or refuse to issue or suspend any active building permits for the Project. The City Manager may grant, in his sole discretion, up to a sixty (60) day extension to negotiate the conservation easement or seek a modification the St. John's River Water Management District permit if Developer continues to negotiate with St. John's River Water Management District in good faith. Under no circumstances shall the City issue certificates of occupancy until the property conveyances required by this Section have been completed.

Notwithstanding anything to the contrary in this Section, the Developer agrees that Developer shall be solely responsible for satisfying all wetland mitigation requirements imposed by St. John's River Water Management District as a result of Developer's proposed impacts to wetlands for its own Project, specifically including any additional wetland mitigation requirements related to the Developer's Project that St. John's River Water Management District deems necessary. The City agrees that it shall be responsible for any wetland mitigation costs required for the City's performance of activities on the Conveyance Property, less the additional costs associated with wetland mitigation required for the Developer's St. John's River Water Management District permit.

The City agrees that should the Developer abandon the Project after final site plan approval and conveyance of the above-described property, but prior to completion of construction and issuance of certificates of occupancy, the Developer's successors or assigns shall be permitted to apply the acreage of the above-described property if already conveyed to the City for purposes of calculating density, floor area ratio, and maximum impervious surface or lot coverage, provided that, absent a written modification to this Agreement approved by the City Council, such calculations shall not be increased beyond that proposed in the final site plan and as provided in this Agreement for purposes of future development.

All utilities constructed on the Property including, but not limited to, electric, water, sewer, cable, phone, fiber optics, natural gas and other similar kinds of utilities to service the Property shall be constructed underground unless otherwise necessary to be above ground and approved by the City.

Further, maintenance of the Project as an affordable housing project for the requisite period as provided in Section 7.0 below shall be considered an enhancement that will benefit the public interest.

6.0 Developer Obligations. In accordance with Section 15-21 of the City Code and in consideration of the waiver granted in Section 4.0 above, the Developer agrees to incorporate the following in the Development:

A. The Developer shall reserve a minimum of three (3) one or two bedroom apartment units for City law enforcement officers or first responders to be rented at a 25% discounted rate, to be made available on a first come, first serve basis, at the time of initial leasing until there are no other apartments available in the Development. In addition, the Developer shall provide a lease preference above other tenant applicants to City law enforcement officers and firefighters, along with EMS/Paramedics and Brevard County school teachers teaching within the City limits, on a first come, first serve basis so long as it does not violate Federal Housing statutes.

B. The Developer will provide that at least ten percent of the units included in the Project are for housing that is affordable per the provisions of Florida Statute Section 166.04151 as provided in Section 7.0.

7.0 Restrictive Covenant. In accordance with Resolution 2023-008 and pursuant to Section 166.04151, Florida Statutes, the Developer shall maintain at least ten percent (10%) of the occupied units in the Project for affordable housing as provided and defined in such statute, for a period of at least thirty (30) years following the date of the issuance of a certificate of occupancy for the Project. For this period of time, at least ten percent (10%) of the units shall be "affordable" as defined in Section 420.0004, Florida Statutes (the "Affordable Units."). On or before the anniversary date of the issuance of the certificate of occupancy each year, the Developer shall provide to the City copies of leases for the Affordable Units and the Florida Housing Finance Corporation Tenant Income Certification forms for the tenants which demonstrate that at least ten percent (10%) of the occupied units serve "moderate income persons", which

shall mean one or more natural persons or family, the total annual adjusted gross household income of which is less than 120% of the area family median income (AFMI) for households within Brevard County, Florida metropolitan statistical area, as defined and updated annually for each unit type (i.e., one-bedroom and two-bedroom) by the U.S. Department of Housing and Urban Development. City staff will review the leases and income verification forms and verify that the income of tenants in all Affordable Units falls within the applicable income limits and that the units have been leased such that the total monthly charges for rent and utilities for all Affordable Units do not exceed the amount equal to thirty percent (30%) of the HUD-defined monthly AFMI for each unit type. For purposes of meeting the minimum 10% affordability requirement, any unit type may be designated as an Affordable Unit and the designated units may change on each anniversary, provided that at least 50% of the Affordable Units shall be two-bedroom units. The City shall observe applicable Public Records Act exemptions. Should the Developer lease an Affordable Unit to a public officer or employee with an exempt home address, telephone number, or other personal information under Florida's Public Records Act, the Developer shall include the following information in the lease: "You have leased a unit that is considered an "affordable" unit under Florida law. A copy of this lease will be distributed to the City of Cocoa and other applicable government agencies. Under Florida law, a public agency that is the custodian of personal information specified in s. 119.071(4)(d)2., F.S., which may include home addresses, telephone numbers, and other personal identifying information, but is not the employer of the officer or employee, may maintain the exempt status of that information only if the officer or employee or the employing agency of the designated employee submits a written request for maintenance of the exemption to the custodial agency. Section 119.071(4)(d)3., F.S. The request must be notarized and state under oath the statutory basis for the individual's exemption request and confirm the individual's status as a party eligible for exempt status. Section 119.071(4)(d)3., F.S."

The Developer agrees that the commitment to maintain the required percentage of Affordable Units for a period of at least thirty (30) years allowed the City to adopt Resolution 2023-008 in accordance with Florida law. Because the City Jurisdiction Property otherwise has a Commercial future land use and General Commercial zoning, multi-family residential development would not have been permitted on such City Jurisdiction Property but for the application of and the Developer's utilization of Section 166.04151, Florida Statutes. Accordingly, should the Developer violate this Restrictive Covenant to maintain at least ten percent (10%) of the units as Affordable Units in accordance with the statute, the City shall have the right, but not obligation, to declare the Project to be a nonconforming use which shall be subject to the applicable provisions of the City Code regarding nonconforming uses and structures and to demand payment of the Tree Mitigation Contribution not to exceed \$945,000.00. Further, the failure to timely comply with any mandatory condition of this Agreement shall constitute a violation of the Zoning Ordinances of the City of Cocoa and shall be subject to code enforcement action before the City's Code Enforcement Board.

8.0 Recalculation of Tree Mitigation Contribution. To the extent that the City Code, Appendix A - Zoning, Article XIII, Section 22 Landscape Requirements, is amended prior to the end of the thirtieth year following the issuance of the certificate of occupancy such that the total amount of the Tree Mitigation Contribution would be reduced below \$945,000.00 under the amendment, the Developer may request, in writing, that the City Manager or his or her designee recalculate and decrease the Tree Mitigation Contribution. Recalculations authorized in this Section may be administratively granted without further approval of the City Council. Notwithstanding the foregoing, the City shall not issue refunds for any Tree Mitigation Contribution payments paid prior to the adoption of an amendment to the City Code.

9.0 Land Clearing Performance. The Parties agree that if Developer clears the Property of trees, and later fails to substantially commence the vertical construction of the Project within a period

of two (2) years of the Effective Date of this Agreement, Developer shall pay the City the Tree Mitigation Contribution (or as otherwise adjusted in accordance with the terms of this Agreement), and Developer shall comply with the seeding and/or mulching requirements to prevent erosion and sedimentation on the Property as set forth in Appendix A Zoning, Article XIII, Sec. 22(E)(5) of the City Code.

10.0 Representations of the Parties. The Parties 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 Parties, 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. This Agreement shall not be recorded until Developer is the fee simple owner of the Property.

11.0 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.

12.0 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 in the event of a federal court actions, in the Middle District of Florida, in Orlando, Florida.

13.0 Amendments. This Agreement shall not be modified or amended except by written agreement duly executed by all parties hereto (or their successors or assigns) and approved by the City Council.

14.0 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.

15.0 Severability. If any provision of this Agreement shall be held 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.

16.0 Effective Date. This Agreement shall become effective upon approval by the City Council and execution of this Agreement by all Parties hereto and completion of any conditions contained herein required prior to execution, but specifically not including the purchase and closing of the Property.

17.0 Recordation. Upon full execution by the Parties and the closing of any real estate transactions contemplated herein which are required to be completed prior to recordation, this Agreement shall be recorded in the Public Records of Brevard County, Florida by the City.

18.0 Relationship of the Parties. The relationship of the Parties to this Agreement is contractual and Developer is an independent contractor or an agent of the City. Nothing herein shall be deemed to create a joint venture or principal-agent relationship between the Parties, and none of the Parties is authorized to, nor shall any Party act toward third persons or the public in any manner, which would

indicate any such relationship with the other.

19.0 **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.

20.0 **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.

21.0 **Interpretation.** The Parties hereby agree and acknowledge that they have all 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.

22.0 **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.

23.0 **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.

24.0 **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 any Party 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 issuance of 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 beyond the expiration of all applicable notice and cure periods hereunder.

25.0 **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, 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 sixty (60) day opportunity in which to cure the default to the reasonable satisfaction of the non-defaulting party prior to filing said action; provided, however, that if the nature of the default is such that it cannot reasonably be cured within sixty (60) days, then the cure period shall be deemed extended so long as the defaulting Party commences the cure thereof within such period and thereafter diligently pursues such cure to completion.

26.0 **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 penalty, if Developer fails to receive a building permit and commence vertical construction of the Project, which shall at minimum include building foundation(s), within two (2) years 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, that in either of these circumstances, the City shall first deliver written notice and an opportunity to cure to the Developer as set forth in Section 25.0. 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.

27.0 **Indemnification and Hold Harmless.** As between the City and Developer, 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; provided, however, that the foregoing indemnification obligation shall not include matters resulting from the acts or omissions of the City, nor the gross negligence or willful misconduct of the City. This indemnification shall survive the termination of this Agreement.

28.0 **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 acts of God, acts of government authority (other than the City's own acts, if the City is claiming the benefit of this Section 28.0), acts of public enemy or war, riots, civil disturbances, power failure, shortages of labor or materials, pandemics, quarantines and "stay-at-home" orders not including COVID-19 (other than the City's own acts, if the City is claiming the benefit of this Section 28.0), injunction or other court proceedings beyond the control of such party, or severe adverse weather conditions ("Force Majeure 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 Force Majeure 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. The City Manager shall have the authority to grant an extended Time Period. An extension of any Time Period for reasons of a Force Majeure Event shall be requested solely as provided in this Section. Developer hereby waives and relinquishes the right to notify the City of the intent to exercise the tolling and extension of any permit related to the Project, including Time Periods under this Agreement, development orders, and building permits, available under Section 252.363, Florida Statutes, as the result of a declaration of a state of emergency issued by the Governor for a natural emergency.

29.0 **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:

Jeremy Mears
Allegra at Cocoa, LLC
6517 Mapleridge St.
Houston, TX 77081

Copy To:

Kimberly Bonder Rezanka
Lacey Lyons Rezanka
1290 U.S. Highway 1, Suite 103
Rockledge, FL 32955

Any 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.

30.0 Assignment. Prior to completing the construction of the Project and reaching final build-out of the Project (as evidenced by issuance of a certificate of occupancy for the Project), Developer shall not assign this Agreement without the prior written consent of the City, and same shall not to be unreasonably withheld. Any such assignment shall also require the written approval of the City by amendment to this Agreement, but which shall not require a public hearing and shall not be unreasonably withheld. Notwithstanding the foregoing, Developer shall be entitled to assign its rights and obligations under this Agreement, at any time and without the prior written consent of the City, to (a) a parent, subsidiary, or affiliated entity in which Developer or its affiliates are members or interest holders without City consent, or (b) any tenant of the Project pursuant to a lease entered into with the Developer, provided that the City is given notice of such assignment in accordance with Section 29.0 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. Upon any such assignment, Developer shall be automatically released from all of its obligations and liabilities under this Agreement.

31.0 Compliance with Laws: Planning & Zoning Board Site Plan Conditions. As between the City and Developer, 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. As between the City and Developer, Developer shall also be responsible for complying with all conditions of Site Plan approval imposed by the Planning & Zoning Board which are not contrary to the Resolution by City Council authorizing this Development Agreement.

32.0 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.

33.0 WAIVER OF JURY TRIAL. TO THE EXTENT PERMITTED BY LAW, THE PARTIES WAIVE ANY RIGHT TO TRIAL BY JURY OR TO HAVE A JURY PARTICIPATE IN RESOLVING ANY DISPUTE, WHETHER SOUNDING IN CONTRACT, TORT, OR OTHERWISE, BETWEEN THE PARTIES ARISING OUT OF THIS AGREEMENT.

34.0 Anti-Corruption. In entering into this Agreement, the City has not violated, and in implementing this Agreement, the City shall not violate, or knowingly permit anyone to violate, any applicable laws or regulations pertaining to anti-corruption or bribery.

35.0 Estoppel Certificates. Upon request, the Parties, and their respective successors and/or assigns, shall, upon not less than fifteen (15) days' written notice from the requesting party, execute and deliver to the requesting party (or any existing or prospective lender or purchaser of the requesting party) a certificate stating, in good faith: (a) that either this Agreement is unmodified and in full force and effect or is modified (and stating the modification); and (b) whether or not, to the best

of its knowledge, the other party is in default in any respect under this Agreement and if in default, specifying such default.

Signed, sealed, and delivered in the presence of the following witnesses:

Lois Chabot

Signature of Witness

Lois Chabot

Printed Name of Witness

Colleen S. O'Donnell

Signature of Witness

Colleen S. O'Donnell

Printed Name of Witness

CITY OF COCOA, A FLORIDA MUNICIPAL CORPORATION

Michael C. Blake

Michael C. Blake, Mayor

Date: 9/14/23

ATTEST:

APPROVED AS TO FORM

By: [Signature]
Anthony A. Garganese, City Attorney



By: [Signature] for
Carrie Shealy, City Clerk

State of Florida
County of Brevard

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization, this 14 day of September 2023 by Michael C. Blake, the Mayor of the City of Cocoa, on behalf of the City, who ☐ is personally known or ☐ has produced a driver's license as identification.

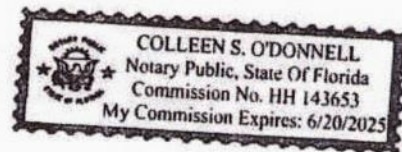
[Seal]

Colleen S. O'Donnell

Notary Public

Print Name: Colleen S. O'Donnell

My Commission Expires: 06/20/2025



Charlene Harris
Signature of Witness
Charlene Harris
Printed Name of Witness
Dustin Blount
Signature of Witness
Dustin Blount
Printed Name of Witness

DEVELOPER:
ALLEGRA AT COCOA, LLC

[Signature]
JEREMY MEANS, as Member
Date: 9/11/23

State of LOUISIANA
County of OUACHITA

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this 11 day of September, 2023 by Jeremy Means as Member, of **ALLEGRA AT COCOA, LLC** who ☒ is personally known or ☐ has produced a driver's license as identification.

[Seal]



[Signature]
Notary Public
Print Name: ROBERT E. HARRIS JR.
My Commission Expires: at Death

EXHIBIT "A" – Legal Description

Parcel Identification Numbers 24-35-23-00-11 (LOCATED NORTH OF HWY 524 WEST OF COX ROAD WITHIN JURISDICTIONAL LIMITS OF THE CITY OF COCOA, FLORIDA) and Parcel Identification Number and 24-35-23-00-775 (LOCATED WITHIN THE JURISDICTIONAL LIMITS OF BREVARD COUNTY, FLORIDA).

EXHIBIT "B" – Conveyed Property

LEGAL DESCRIPTION

PARK PARCEL:

THAT PART OF THE EAST 1/2 OF SECTION 23, TOWNSHIP 24 SOUTH, RANGE 35 EAST, BREVARD COUNTY, FLORIDA DESCRIBED AS FOLLOWS:

BEGIN AT THE SOUTHWEST CORNER OF THE NORTHEAST 1/4 OF SAID SECTION 23; THENCE N 00° 18' 07" E, ON THE WEST LINE OF SAID NORTHEAST 1/4, 501.40 FEET; THENCE S 89° 41' 53" E, 129.30 FEET; THENCE N 00° 47' 28" W, 56.65 FEET; THENCE N 04° 25' 12" W, 45.00 FEET; THENCE N 04° 00' 57" E, 45.78 FEET; THENCE N 06° 41' 40" W, 39.08 FEET; THENCE N 47° 06' 12" E, 57.74 FEET; THENCE S 78° 13' 47" E, 55.21 FEET; THENCE N 59° 18' 40" E, 47.80 FEET; THENCE N 66° 31' 33" E, 32.85 FEET; THENCE S 82° 12' 08" E, 31.72 FEET; THENCE N 36° 44' 38" E, 46.38 FEET; THENCE S 77° 26' 24" E, 55.08 FEET; THENCE S 64° 15' 45" E, 41.14 FEET; THENCE S 75° 23' 43" E, 4.39 FEET; THENCE N 42° 15' 48" E, 7.65 FEET; THENCE N 02° 52' 38" E, 56.12 FEET; THENCE N 57° 48' 39" E, 55.72 FEET; THENCE N 28° 48' 54" E, 37.66 FEET; THENCE N 56° 38' 58" E, 29.87 FEET; THENCE N 79° 16' 48" E, 12.92 FEET; THENCE N 27° 33' 08" E, 14.32 FEET; THENCE N 64° 39' 17" E, 22.89 FEET; THENCE N 10° 17' 59" E, 33.56 FEET; THENCE S 77° 00' 08" E, 54.00 FEET; THENCE S 00° 18' 04" W, 944.34 FEET TO THE SOUTH LINE OF SAID NORTHEAST 1/4; THENCE N 89° 40' 39" W, ON SAID SOUTH LINE, 309.23 FEET TO THE NORTHEAST CORNER OF THE WEST 1/4 OF THE NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF SAID SECTION 23; THENCE S 00° 16' 55" W, ON THE EAST LINE OF SAID WEST 1/4, 404.42 FEET TO THE NORTHERLY RIGHT-OF-WAY LINE OF STATE ROAD 524; THENCE S 53° 23' 22" W, ON SAID NORTHERLY RIGHT-OF-WAY LINE, 75.02 FEET; THENCE LEAVING SAID NORTHERLY RIGHT-OF-WAY LINE, N 00° 16' 55" E, 449.50 FEET TO THE SOUTH LINE OF SAID NORTHEAST 1/4; THENCE N 89° 40' 39" W, ON SAID SOUTH LINE, 270.82 FEET TO THE POINT OF BEGINNING, CONTAINING 11.49 ACRES OF LAND MORE OR LESS AND SUBJECT TO ANY EASEMENTS OR RESTRICTIONS OF RECORD.

SHEET 1 OF 2
SEE SHEET 2 FOR SKETCH



SURVEYING • MAPPING
GEOSPATIAL SERVICES
www.allen-company.com
16 EAST PLANT STREET
WINTER GARDEN, FLORIDA 34787
(407) 894-3355 / (407) 894-3358

SURVEYOR'S NOTES:

1. THIS IS NOT A BOUNDARY SURVEY.
2. THIS SKETCH OF DESCRIPTION IS NOT VALID WITHOUT THE SIGNATURE AND ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.
3. BEARINGS AND DISTANCES SHOWN HEREON ARE BASED ON THE FLORIDA STATE PLANE COORDINATE SYSTEM (FLORIDA EAST ZONE-NAD83 2011)
4. DELINEATION OF THE LANDS SHOWN HEREON ARE AS PER THE CLIENT'S INSTRUCTIONS.

JOB NO. 20220118

DATE: 01/27/2023

SCALE: N/A

CALCULATED BY: N/A

DRAWN BY: JAR

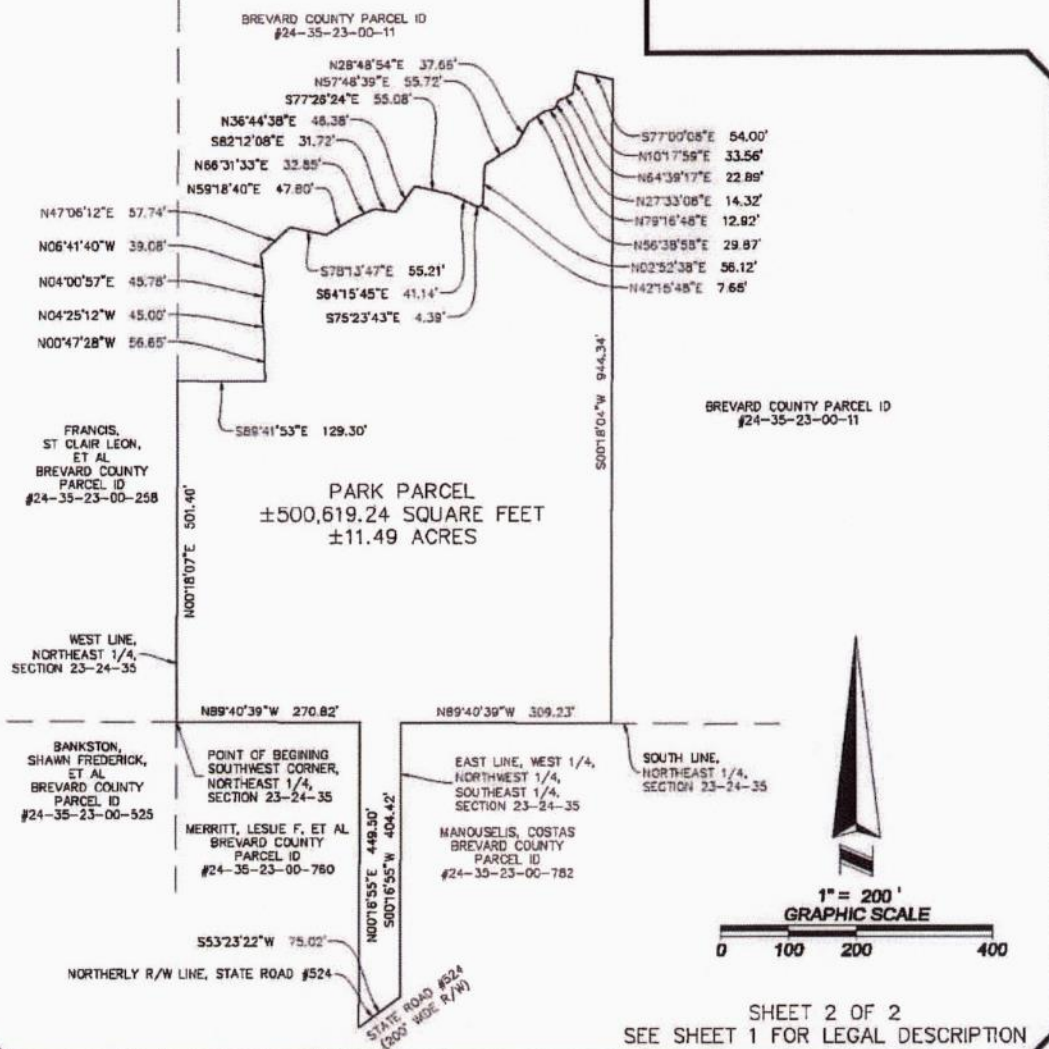
CHECKED BY: JAS

FOR THE LICENSED BUSINESS #6723 BY:

Digitally signed
by: James A
Shabluk
DN: CN = James
A Shabluk C =
US O = Florida
Date: 2023.01.27
13:48:01 -05'00'

JAMES A. SHABLUK, P.S.M. #7027

SKETCH OF DESCRIPTION



SYMBOL AND ABBREVIATION LEGEND:

N NORTH
E EAST
S SOUTH
W WEST
R/W RIGHT-OF-WAY

JOB NO. 20220118

DATE: 01/27/2023

SCALE: 1" = 200'

CALCULATED BY: N/A

DRAWN BY: JAR

CHECKED BY: JAS

FOR THE LICENSED BUSINESS #6723 BY:

Digitally signed
by: James A
Shabluk
DN: CN = James
A Shabluk C =
US O = Florida
Date: 2023.01.27
13:49:05 -05'00'

JAMES A. SHABLUK, P.S.M. #7027

CITY OF COCOA

NOTICE OF PUBLIC HEARING

**NOTICE IS HEREBY GIVEN THAT
THE PLANNING & ZONING BOARD
PROPOSES TO CONSIDER THE FOLLOWING:**

A. PZ-23-00200007 – Large-Scale Site Plan (Allegra at Cocoa)

Consideration of a Large-Scale Site Plan consistent with Appendix A, Zoning, Article XIII, Section 1, and the RU-2-15 zoning district as provided in resolution 2023-008, owned by John Genoni Trust, to allow construction of a 312-unit residential apartment complex and associated infrastructure improvements and amenities to include clubhouse, community pool, gazebo and dog park on a ±53.18-acre portion of a site identified as Parcels 24-35-23-00-755, and 24-35-23-00-11 through the Brevard County Property Appraiser.

**THE PLANNING & ZONING BOARD
WILL CONSIDER THIS ITEM ON:
November 1st, 2023**

**THE HEARING WILL BE AT 6:00 P.M. OR SOON THEREAFTER IN THE
COCOA CITY HALL COUNCIL CHAMBERS LOCATED AT
65 STONE STREET, COCOA, FL**

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 BOA, 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 BOA or 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 BOA, PZ Board/LPA and City Council reserve the right to continue or postpone hearings to a date certain without re-advertising.

Public Participation 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>

Documents pertaining to the above may also be inspected at the Community Services Department between 8:00 a.m. and 5:00 p.m., Monday through Friday, or by phoning (321) 433-8451.

Interested persons may submit their written comments or questions prior to the meeting through Email at meetings@cocoafl.org, or via E-comments through the online agenda at the link above. Any electronic comments submitted will be made part of the meeting record.

Viewing in Real Time. Interested persons are encouraged to view and listen to the hearings live by accessing the meetings at the following internet address:

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

However, the City is not responsible for technical difficulties that may occur while attempting to view or listen to the meeting on the internet.



Order Confirmation
Not an Invoice

Account Number:	1127247
Customer Name:	City Of Cocoa - Te
Customer Address:	City Of Cocoa - Te 65 Stone ST Accounting Division Cocoa FL 32922-7982
Contact Name:	CITY OF COCOA (TE)
Contact Phone:	
Contact Email:	
PO Number:	

Date:	10/13/2023
Order Number:	9401238
Prepayment Amount:	\$ 0.00

Column Count:	1.0000
Line Count:	125.0000
Height in Inches:	0.0000

Print

Product	#Insertions	Start - End	Category
BRE Brevard Florida Today	1	10/16/2023 - 10/16/2023	Public Notices
BRE floridatoday.com	1	10/16/2023 - 10/16/2023	Public Notices

Order Confirmation Amount	\$260.75
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Ad Preview

APR0128 1010703

CITY OF COCOA
NOTICE OF PUBLIC HEARING

NOTICE IS HEREBY GIVEN
THAT

THE PLANNING & ZONING
BOARD

PROPOSES TO CONSIDER THE
FOLLOWING:

**PZ-2000000 - Large-Scale
Site Plan, Alameda at Canal**

Development of a Large-Scale Site
Plan consistent with Appendix A,
Zoning Article

11.11, Section 1, and the R-12.1
zoning district as provided in
Ordinance 2004-08, passed by the
General Trust, to allow construction
of a 30-unit residential development,
including and associated
infrastructure improvements, and
committees to include clubhouse,
community pool, soccer and tennis
courts on a 2.51-acre portion of a
site identified as Parcels 30-25-23-00-
703, and 30-25-23-00-11 through the
Brevard County.

Property Address:
THE PLANNING & ZONING
BOARD

WILL CONSIDER THIS ITEM ON:
November 14, 2011

THE HEARING WILL BE AT 4:00
P.M. OR SOON THEREAFTER IN

THE
COCOA CITY HALL COUNCIL
CHAMBERS LOCATED AT

41 STONE STREET, COCOA, FL
General Notice Information:

This is a public hearing. Interested
parties are hereby advised that they
may appear at said meeting and be
heard. The facility wherein this
public hearing will be held is
accessible to the
physically handicapped. In
accordance with the Americans
with Disabilities Act, persons
needing assistance in accessing
any of these proceedings should
contact the City Clerk, City of
Cocoa, listed below, at least 48 hours
prior to the meeting. For more
information, contact the City Clerk,
City of Cocoa, at Stone Street, Cocoa,
FL 32922 or (321) 434-4444 or via
email at clerk@cityofcocoa.org.

Pursuant to Section 218.05, Florida
Statutes, the City hereby advises the
public that if a person desires to
appeal any decision made by the
BDA, PZ Board, 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 ensure 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 BDA or PZ Board/PZA meeting
may include the attendance of one
(1) or more members of the
City Council who may or may not
participate in the Board discussions
held at the public hearing.

The BDA, PZ Board/PZA and City
Council reserve the right to continue
or postpone hearings if a close
person without re-advertising.

Public Participation 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
<http://www.cityofcocoa.com/calendar>.

Documents pertaining to the above
may also be inspected at the
Community Services Department
between 8:00 a.m. and
5:00 p.m., Monday through Friday,
or following (321) 434-
8401. Interested persons may submit
their written comments in question
prior to the meeting through Email
at planning@cityofcocoa.org or via 6,
comments through the online
agenda of the item above.
Any electronic comments submitted
will be made part of the meeting
record.

Viewing in Real Time: Interested
persons are encouraged to view and
listen to the hearing live by
accessing the meetings at the
following Internet address:
City of Cocoa meeting calendar at
<http://www.cityofcocoa.com/calendar>.

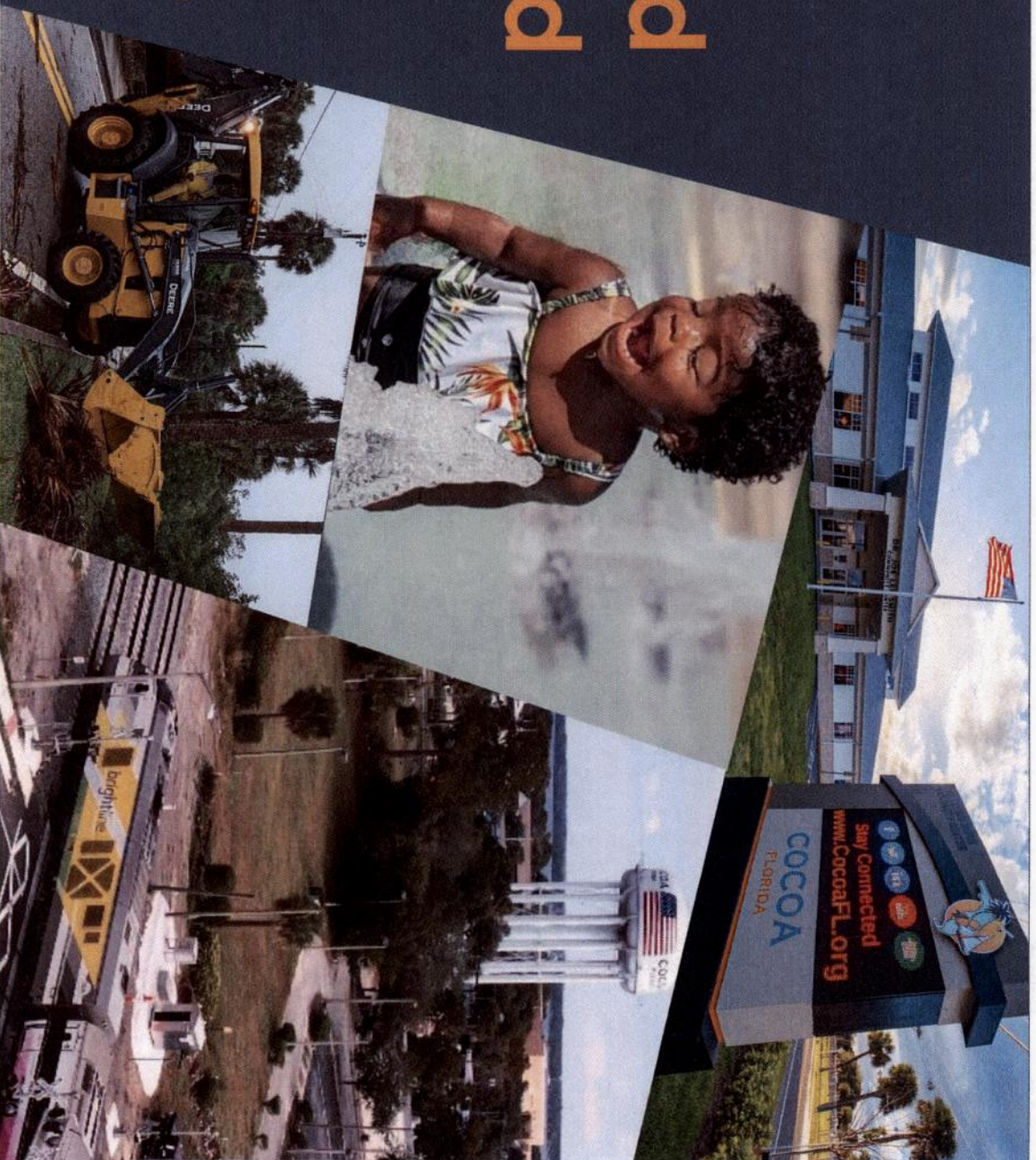
and
However, the City is not responsible
for technical difficulties that may
occur while attempting to view or
listen to the meeting on the internet.



COCOA
FLORIDA

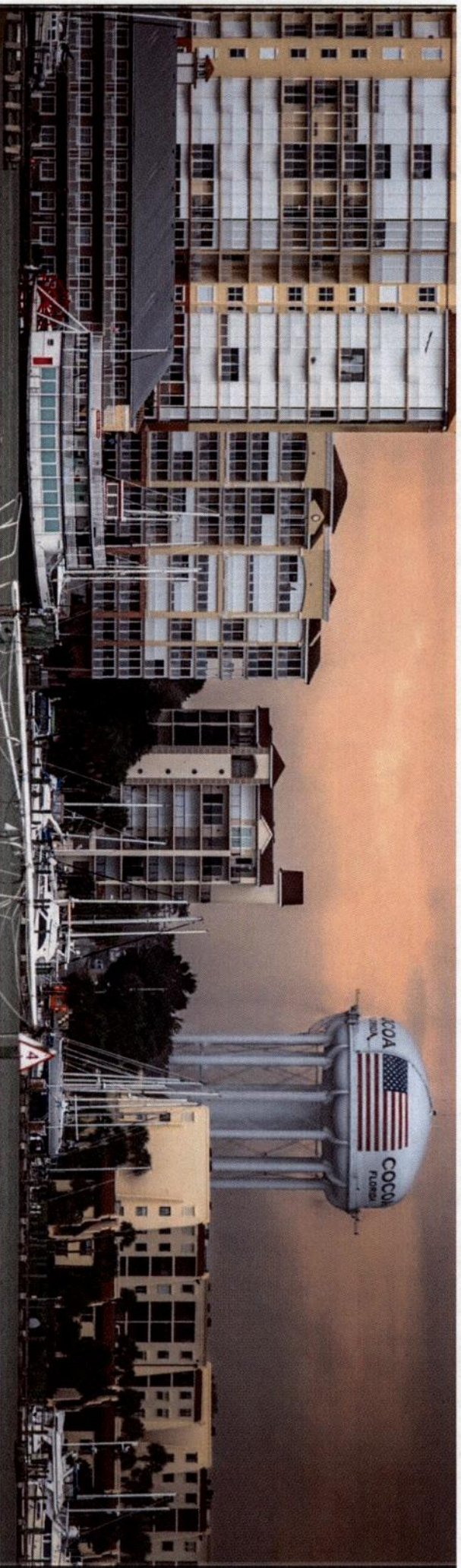
Planning and Zoning Board Meeting

November 1, 2023



ALLEGRA AT COCOA

Large-Scale Site Plan



Allegra at Cocoa Location Map

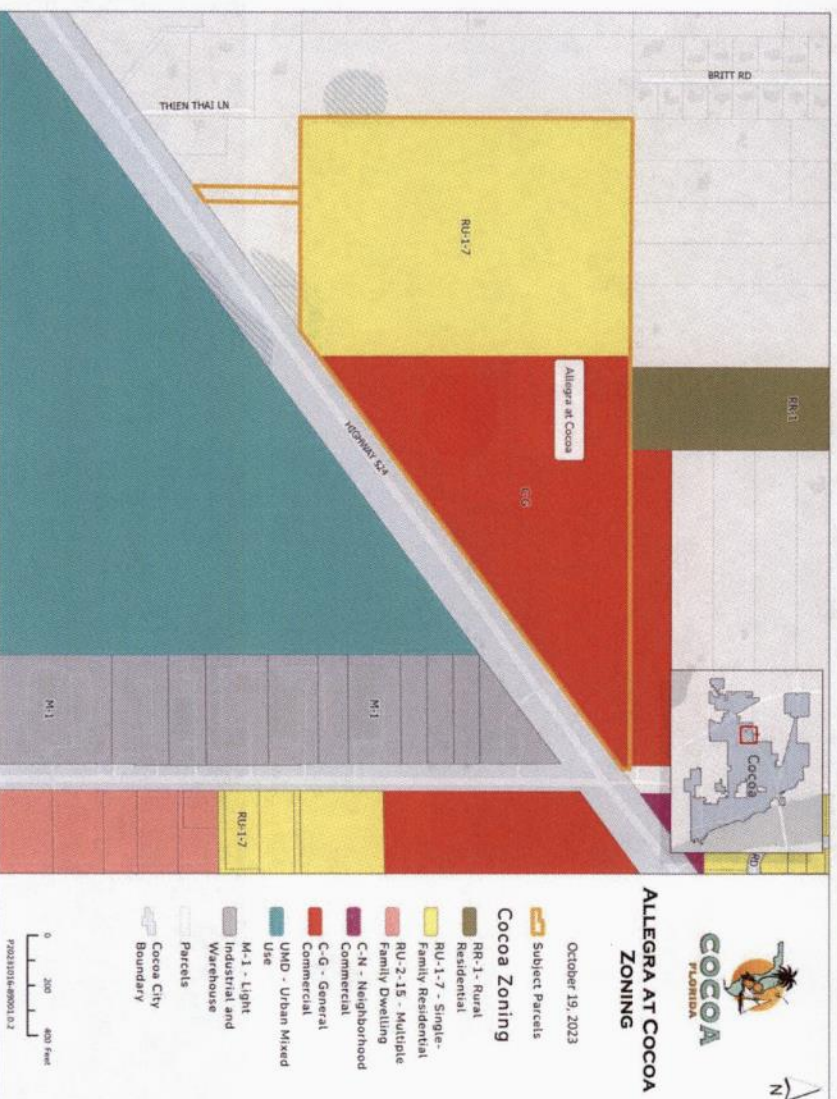


- The +/-53.18-acre Subject Property is located at the NW corner of Cox Rd. and U.S. HWY 524.
- The Subject Property is currently vacant and has Brevard County Parcel ID Numbers 24-35-23-00-11 and 24-35-23-00-775.

COCOA
FLORIDA



Allegra at Cocoa Zoning Map



- The zoning of the Subject Property is RU-1-7, Single-Family Residential, and C-G, General Commercial.

COCOA
FLORIDA



Allegra at Cocoa

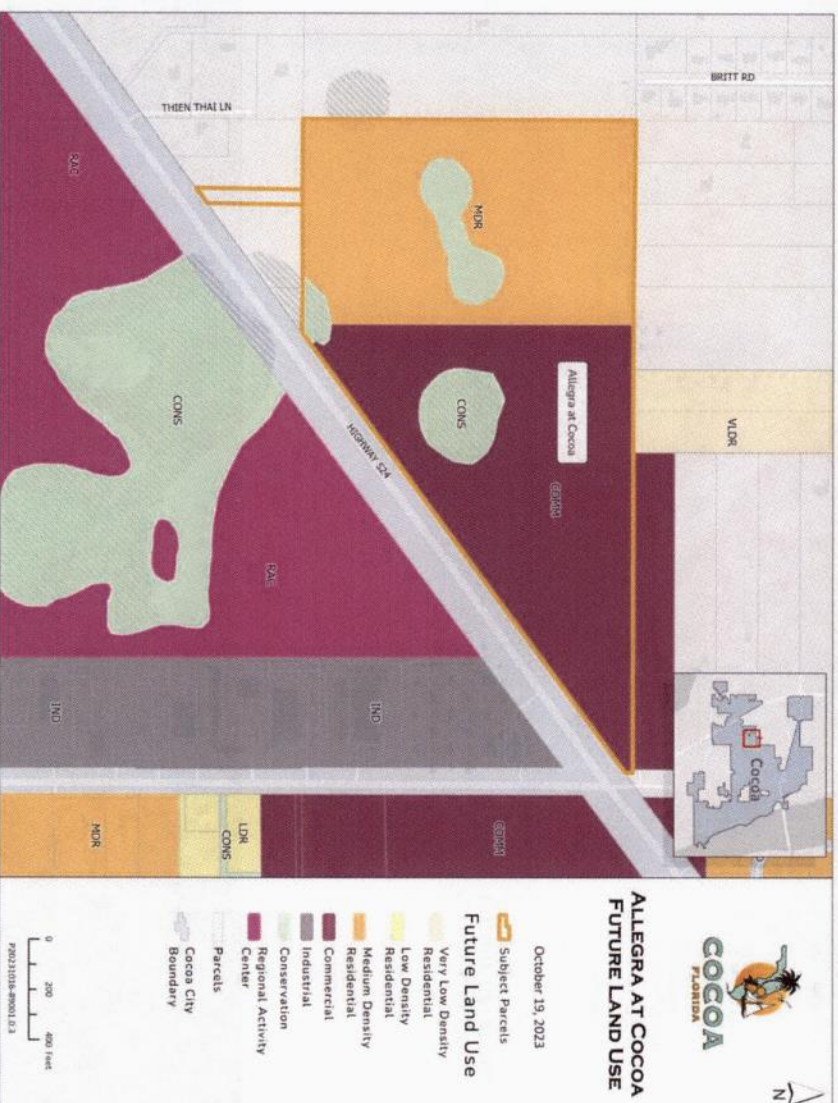
Future Land Use Map

COCOA

FLORIDA



Allegra at Cocoa Site Plan



- The Future Land Use designation of the subject property is MDR, Medium Density Residential, and COM, Commercial.

COCOA
FLORIDA

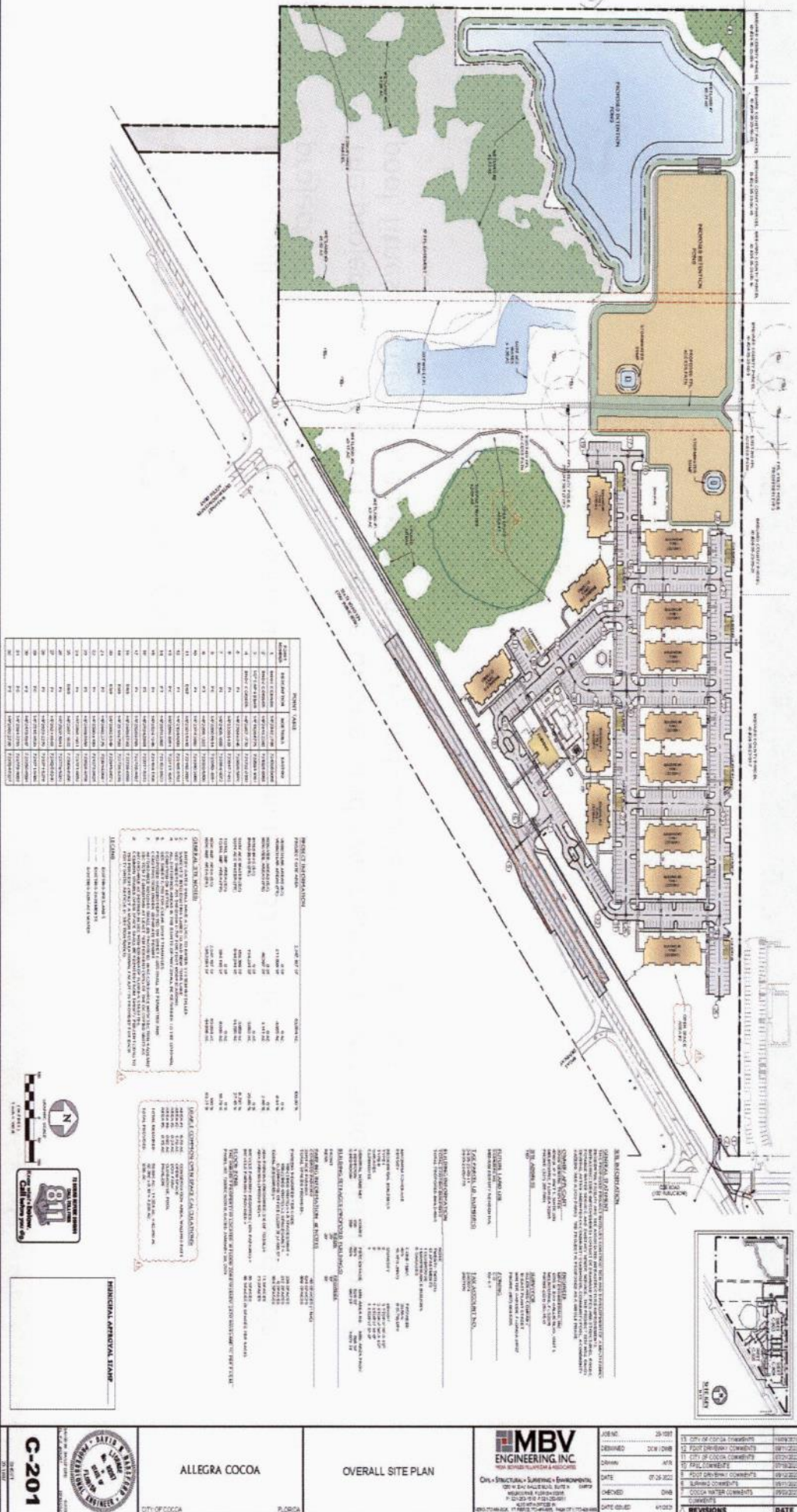




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Allegra at Coccoa

- The applicant requests to construct a 13-building, 312-unit multi-family residential project.
- The project will consist of a mixture of one- and two-bedroom unit types, clubhouse & pool, fitness center, dog park, open space, and associated infrastructure.





Serving our community with P.R.I.D.E!

Allegra at Cocoa

- On January 10, 2023, the City Council approved Resolution 2023-008, acknowledging receipt of an application filed with the City for an Affordable Housing Land Use for a project located on the Subject Property. The Resolution also allowed for the development of an Affordable Housing Land Use project to occur on property zoned Commercial and Single-Family Residential.
- Section 166.04151, Florida Statutes, allows the governing body of a municipality to approve housing that is affordable, as defined in Florida Statute 420.0004, on any parcel that is zoned for commercial use, so long as at least 10 percent of the units included in the project are for housing that is affordable. The Statutes define "affordable" to mean that monthly rents or monthly mortgage payments, including taxes, insurance, and utilities do not exceed 30 percent of the amount which represents the percentage of the median adjusted gross annual income for households of "extremely-low-income-persons", "low-income persons", "moderate income persons", or "very-low-income persons" as defined in the statute.
- The Resolution was approved with the condition that the project does not exceed 312 multi-family units, and that the project meet the requirements of the RU-2-15 zoning district, and the "affordable" housing standards set forth in Section 166.04151, Florida Statutes.



Allegra at Cocoa

- On July 25, 2023, the City Council approved a Pre-Development Agreement and Restrictive Covenant that the Developer sought for certain waivers from the City Code for the project. The Developer sought a waiver of the Tree Mitigation Contribution requirements of the City Code and a waiver to the minimum unit size requirement of the City Code, from 800 square feet per one-bedroom unit to 660 square feet per one-bedroom unit, for a maximum of 80 units.
- The waiver was approved with the following requirements:
 - Convey to the City the entirety of Tax Parcel Number 24-35-23-00-775 and the portion of Tax Parcel Number 24-35-23-00-11 as depicted on "Exhibit B" to the Agreement, which is approximately 11.5 acres.
 - Maintain the Project as an affordable housing project for a period of thirty (30) years, which means that, at minimum, ten percent (10%) of the occupied units in the Project will be affordable housing as provided and defined in Florida law. The Developer will be required to submit copies of tenant income verification and applicable leases to the City of Cocoa yearly to ensure compliance with this requirement.
 - Reserve a minimum of three (3) one- or two-bedroom apartment units for City law enforcement officers or first responders to be rented at a 25% discounted rate, to be made available on a first come, first serve basis, at the time of initial leasing until there are no other apartments available in the Development. In addition, the Developer shall provide a lease preference above other tenant applicants to City law enforcement officers and firefighters, along with EMS/Paramedics and Brevard County school teachers teaching within the City limits, on a first come, first serve basis so long as it does not violate Federal Housing statutes.
- A tree mitigation waiver was also approved and will be detailed upon discussion of proposing landscaping for the project.



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Allegra at Cocoa

- The site is 53.88 acres overall with 13 acres of developed project area. The lot coverage is 20.66% (maximum 40%) and the total impervious ratio is 16.79% (maximum 65%). The project density is 6 units per acre (maximum 15).
- The project is required to provide 526 standard parking spaces and 12 handicapped parking spaces. The site plan provides 562 standard parking spaces, 39 of which are provided for in detached garages, and 13 handicapped parking spaces.



Serving our community with P.R.I.D.E!

Allegra at Cocoa

- There are two different type of apartment buildings, however each will be 3-stories tall, at a height of 30'-3-1/2". The individual garage buildings will be 14' tall, and the clubhouse will be 17' tall.
- Building setbacks are provided as follows:

Building Setbacks		
Location	Required	Provided
Front (SR 524 and Cox Rd.)	25'	30'
Rear (north)	20'	20'



Serving our community with P.R.I.D.E!

Allegra at Coccoa

- The northern property boundary will have a 20' landscape buffer, with bald cypress trees planted every 50 feet, for a total of 23 trees.
- The buffer adjacent to SR524 exceeds 600' in length, and will provide 14 Southern Magnolias, a hedge row, and groundcover.
- The Pre-Development Agreement allowed for a specific tree removal and mitigation plan. As a result, 350 replacement trees (993 inches) will be provided; 506 being 'large' and 379 being 'medium or small', and 108 inches of palm trees.
- The applicant has provided 407 trees in total (classified as large, medium & small, and palm trees) as shown on Sheet LD-01. A total of 1,473 inches are being planted. Both the total number of trees and inches exceed the minimum required by the Agreement.



Allegra at Coccoa

- Additional mitigation was waived if the following parameters were met:
 - (i) the Developer conveys the Conveyance Parcel, as defined in Section 5.0, below, to the City;
 - (ii) the Developer maintains the Project as an affordable housing development as provided in Section 7.0 below for the requisite period of thirty (30) years;
 - (iii) the Planning and Zoning Board approves the Site Plan within eighteen (18) months of the Effective Date of this Agreement; and
 - (iv) the Developer obtains building permits for the Project and substantially commences vertical construction of the Project, which shall at minimum include building foundations, within two (2) years of the Effective Date of this Agreement.
- If the Developer fails to obtain Site Plan approval from the City or fails to obtain building permits and substantially commence vertical construction of the Project within the aforesaid eighteen (18) months or two (2) years, respectively, or fails to satisfy any of the conditions of this Section, the City shall have the right to declare the Developer in default pursuant to Section 25.0 of this Agreement. If the Developer does not cure the default within the cure period, the City shall have the right, but not obligation to, terminate this Agreement without penalty and/or immediately take any and all actions necessary to collect the entire Tree Mitigation Contribution to the extent the trees have been removed not to exceed \$945,000.00.



Serving our community with P.R.I.D.E!

Allegra at Cocoa

- The applicant is conveying +/- 11.5 acres of property as noted on Sheet C-201 of the site plan.
- A total of 9.98 acres of useable open space and recreation area are being provided, which meets the code minimum.
- Water will be provided via an existing 36" concrete pipe that exists in the SR 524 ROW. A 3" master meter will be installed adjacent to the southeastern property line, parallel to SR524.
- A private lift station is proposed adjacent to Building #1 on the northeast portion of the site.
- An Environmental Impact report was prepared for the project. A variety of wetland habitats were observed; however no protected species were found on site. As such, the project meets the Objectives and Policies in the Comprehensive Plan related to the protection of wildlife.



Serving our community with P.R.I.D.E!

Allegra at Cocoa

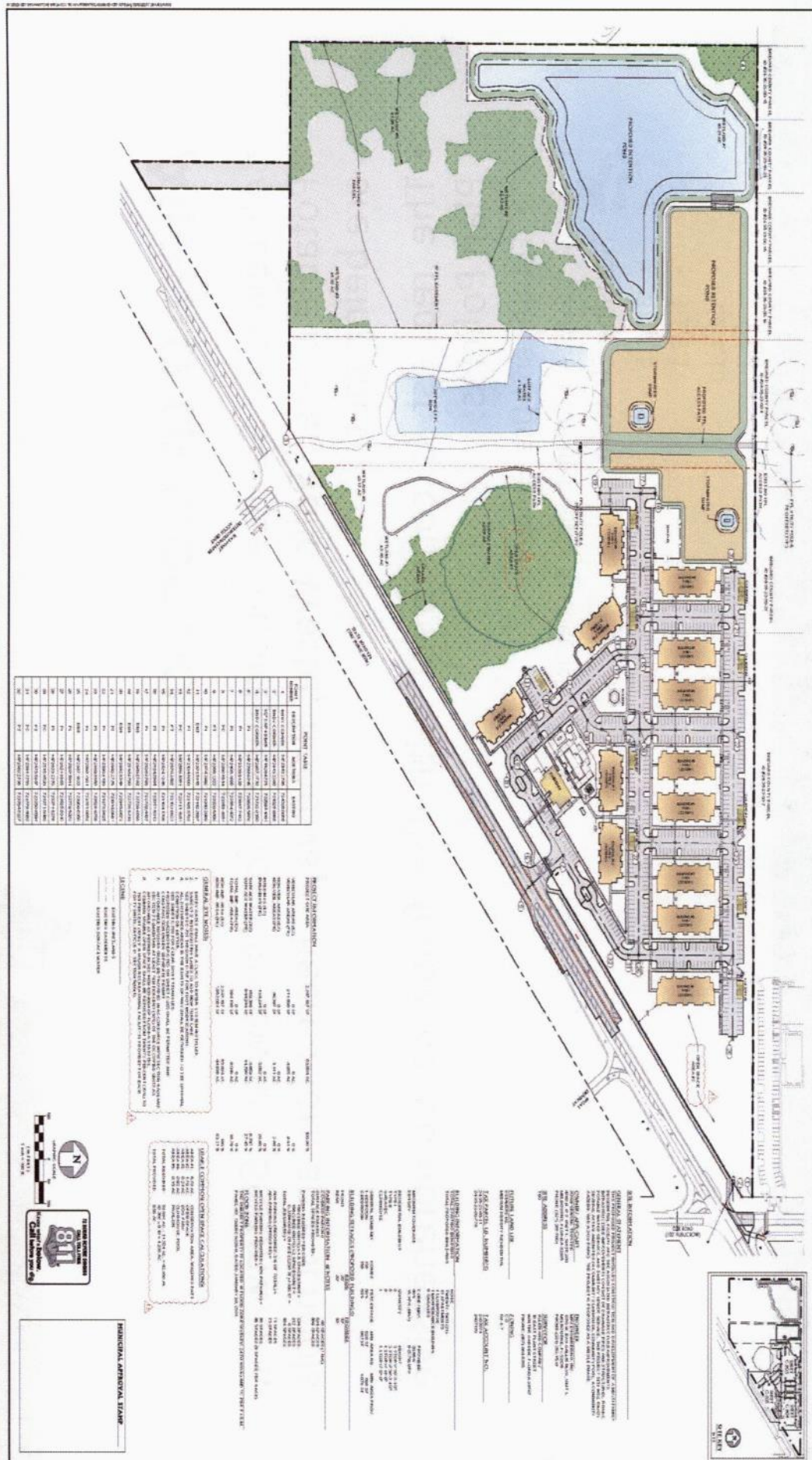
- Comprehensive Plan Policy 6.1.3.6 states, "Except as provided in Future Land Use Element Policy 1.1.2.7 (H), flood control for new development will be accomplished through the limitation of fill in the 100-year floodplain when economically feasible. In cases where there is no practical alternative to fill in the 100-year floodplain, 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." A total of 9.98 acres of useable open space and recreation area are being provided, which meets the code minimum.
- The project site is the headwater for the floodplain it partially resides within. The project stormwater ponds have been modeled to attenuate the 100-year storms in addition to those required by the City and SJRWMD. Therefore, compensatory storage and potential impact on the floodplain is offset by the reduction in discharge and detention volume onsite.



Serving our community with P.R.I.D.E!

Allegra at Cocoa

- All Levels of Service requirements for Wastewater, Stormwater, Potable Water, Solid Waste, Roadways, Recreation, and Schools are being met.
- The request is consistent with the following Comprehensive Plan Policies:
 - Future Land Use Element
 - 1.1.2.4, Medium Density Residential
 - Housing Element
 - 3.1.2.5
 - 3.1.6.1
 - 3.2.4.10
 - 3.3.1.4



C-201		ALLEGRA COCOA	OVERALL SITE PLAN	MBV ENGINEERING INC. FOR REUSE PLANTER & ASSOCIATES Civil • Structural • Surveying • Environmental 2000 N. W. 10th Ave., Suite 100 Fort Lauderdale, FL 33304 Phone: (954) 571-1111 Fax: (954) 571-1112 www.mbv-engineering.com	JOB NO. 26-1001	10 CITY OF COCOA, COCONUTS 08/20/2011	REVISIONS	DATE
					DESIGNED DOK DWAH	11 EAST PALMVIEW COCONUTS 08/20/2011		
				CHECKED MBV	12 CITY OF COCOA, COCONUTS 07/20/2011			
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					74 EAST PALMVIEW COCONUTS 07/20/2011			
					75 EAST PALMVIEW COCONUTS 07/20/2011			
					76 EAST PALMVIEW COCONUTS 07/20/2011			
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					81 EAST PALMVIEW COCONUTS 07/20/2011			
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					86 EAST PALMVIEW COCONUTS 07/20/2011			
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					89 EAST PALMVIEW COCONUTS 07/20/2011			
					90 EAST PALMVIEW COCONUTS 07/20/2011			
					91 EAST PALMVIEW COCONUTS 07/20/2011			
					92 EAST PALMVIEW COCONUTS 07/20/2011			
					93 EAST PALMVIEW COCONUTS 07/20/2011			
					94 EAST PALMVIEW COCONUTS 07/20/2011			
					95 EAST PALMVIEW COCONUTS 07/20/2011			
					96 EAST PALMVIEW COCONUTS 07/20/2011			
					97 EAST PALMVIEW COCONUTS 07/20/2011			
					98 EAST PALMVIEW COCONUTS 07/20/2011			
					99 EAST PALMVIEW COCONUTS 07/20/2011			
					100 EAST PALMVIEW COCONUTS 07/20/2011			

Allegra at Cocoa

Staff Recommendation

COCOA
FLORIDA



Staff recommends APPROVAL of the Large-Scale Site Plan for Allegra at Cocoa with the following conditions:

- 1) Per the School Impact Analysis Capacity Determination, CD-2023-38, a *Concurrency Determination* must be performed by the School District prior to a Final Development Order and the issuance of a Concurrency Evaluation Funding of Nondeficiency by the Local Government.
- 2) Prior to receiving any certificate of occupancy, the Developer shall meet it's obligations to the City as outlined in the Pre-Development Agreement and Restrictive Covenant.
- 3) Site Plan approval shall be conditioned upon the sale of the subject property to Allegra at Cocoa, LLC, being completed and closing occurring within one year of the Effective Date of the Pre-Development Agreement and Restrictive Covenant, dated September 14, 2023, or as otherwise extended by the City Council.
- 4) Prior to the issuance of building permits, the Developer shall provide a satisfactory conservation easement that permits the Minimum Activities identified in the Pre-Development Agreement and Restrictive Covenant to take place on the portion of the property to be conveyed to the City.

STORMWATER CALCULATIONS

FOR

ALLEGRA OF COCOA

COCOA, FLORIDA

FEBRUARY 2023

REVISED: APRIL 2023

REVISED: AUGUST 2023

REVISED: SEPTEMBER 2023

PREPARED BY:



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1250 W. Eau Gallie Blvd., Unit H
Melbourne, FL 32935

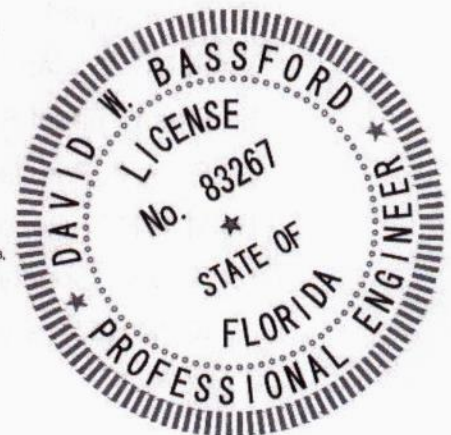
Phone: (321) 253-1510 Fax: (321) 253-0911
www.mbveng.com

This item has been digitally signed and sealed by
David W. Bassford, 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.

CERTIFICATE OF AUTHORIZATION NUMBER: 3728

ENGINEERS PROJECT #: 20-1087



David W Bassford, P.E.

FL PE #83267

TABLE OF CONTENTS

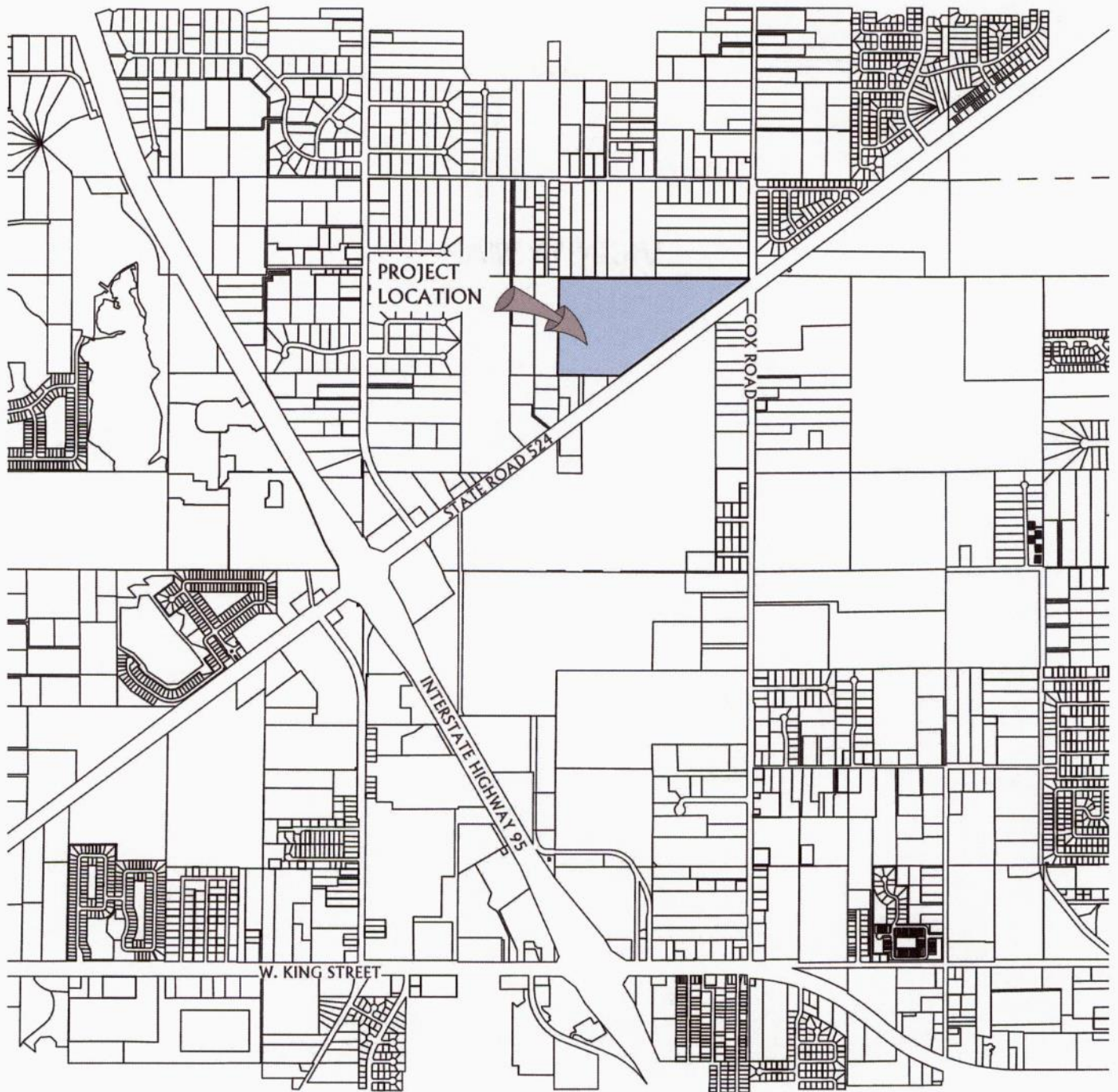
1. VICINITY MAP
2. LOCATION MAP
3. SOILS MAP
4. INTRODUCTION & BACKGROUND
5. EXISTING CONDITIONS
 - 5.1. Pre-Development Basin Map
 - 5.2. Pre-Development Basin Data (Time of concentration, CN, Storage)
 - 5.3. Pre-Development Basin Data (FLUCCS Codes)
 - 5.4. Soil Boring Data
6. POST DEVELOPMENT CONDITIONS
 - 6.1. Post-Development Basin Map
 - 6.2. Post-Development Basin Data
7. REQUIRED STORAGE
 - 7.0. Required Storage
 - 7.1. Stage-Storage Relationships
 - 7.2. Rectangular Orifice Sizing & Drawdown Calculations
 - 7.3. BMP Trains Site Data & Required Removal Efficiency
8. STAGE & DISCHARGE SUMMARY SHEET

APPENDICES

- A. ICPR Printouts – Input Data
- B. ICPR Printouts – Node Report (Results)
- C. ICPR Printouts – Link Report (Results)
- D. Soils Report
- E. FLUCCS Map
- F. Mean Annual Rainfall Map
- G. F.I.R.M. Panels
- H. MODRET Recovery Report – Dry Pond
- I. Brevard County Model “West Cocoa Watershed Evaluation” Excerpts
- J. ICPR Recovery Report – Wet Pond

1.0

VICINITY MAP



SCALE 1" = 2000'

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MOIA BOWLES VILLAMIZAR & ASSOCIATES

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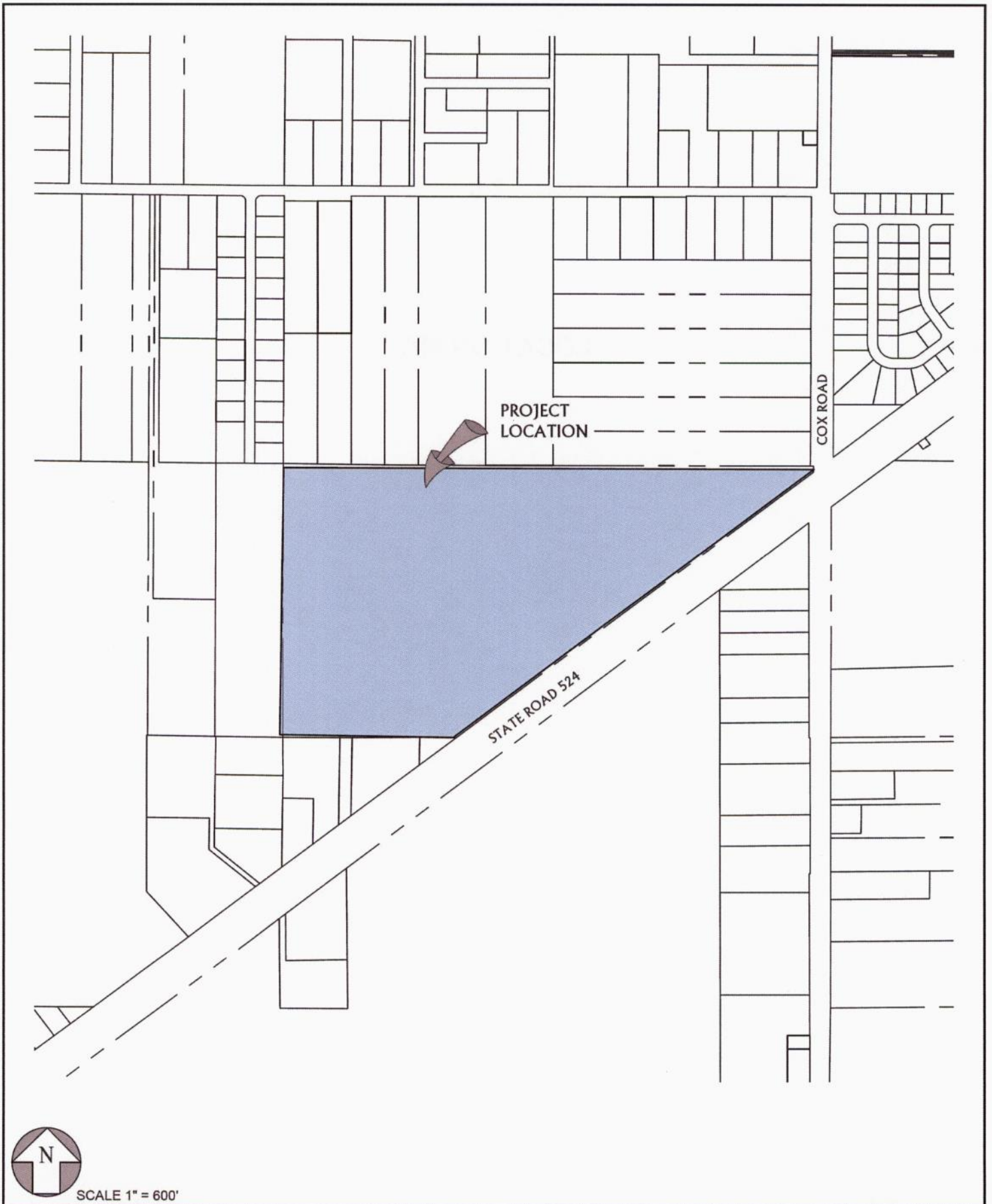
BROWNSTONE APARTMENTS

VICINITY MAP

JOB NO.	20-1087
DESIGNED	DWB
DRAWN	KLB
CHECKED	DWB
DATE	8.24.2022

2.0

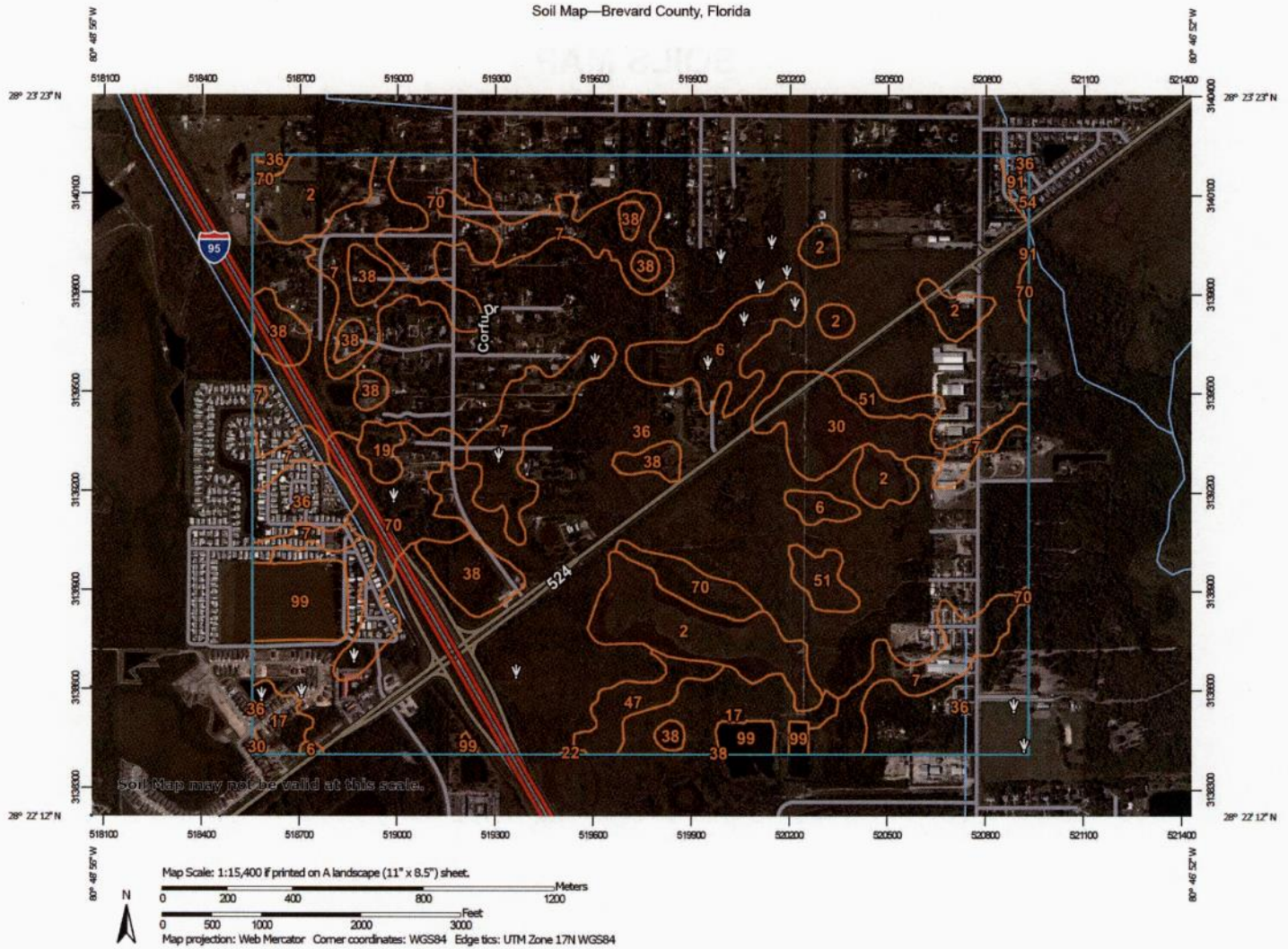
LOCATION MAP



3.0

SOILS MAP

Soil Map—Brevard County, Florida



Natural Resources
Conservation Service

Web Soil Survey
National Cooperative Soil Survey

8/24/2022
Page 1 of 3

Soil Map—Brevard County, Florida

MAP LEGEND

Area of Interest (AOI)		Spoil Area
Area of Interest (AOI)		Stony Spot
Soils		Very Stony Spot
Soil Map Unit Polygons		Wet Spot
Soil Map Unit Lines		Other
Soil Map Unit Points		Special Line Features
Special Point Features		Water Features
Blowout		Streams and Canals
Borrow Pit		Transportation
Clay Spot		Rails
Closed Depression		Interstate Highways
Gravel Pit		US Routes
Gravelly Spot		Major Roads
Landfill		Local Roads
Lava Flow		Background
Marsh or swamp		Aerial Photography
Mine or Quarry		
Miscellaneous Water		
Perennial Water		
Rock Outcrop		
Saline Spot		
Sandy Spot		
Severely Eroded Spot		
Sinkhole		
Slide or Slip		
Sodic Spot		

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Brevard County, Florida
Survey Area Data: Version 21, Aug 25, 2021

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Mar 28, 2015—May 18, 2015

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
2	Anclote sand, frequently ponded, 0 to 1 percent slopes	66.3	6.2%
6	Basinger sand, depressional	26.2	2.5%
7	Basinger sand, 0 to 2 percent slopes	104.9	9.8%
17	EauGallie sand, 0 to 2 percent slopes	28.9	2.7%
19	Riviera sand, 0 to 2 percent slopes	4.6	0.4%
22	Floridana sand, frequently ponded, 0 to 2 percent slopes	0.2	0.0%
30	Malabar sand, 0 to 2 percent slopes	24.2	2.3%
36	Myakka sand, 0 to 2 percent slopes	663.8	62.1%
38	Myakka sand, depressional	36.4	3.4%
47	Pineda sand, 0 to 2 percent slopes	11.3	1.1%
51	Pompano sand, 0 to 2 percent slopes	12.3	1.2%
54	St. Johns sand, 0 to 2 percent slopes	0.0	0.0%
70	Valkaria sand	64.2	6.0%
91	Anclote sand	2.2	0.2%
99	Water	23.4	2.2%
Totals for Area of Interest		1,069.3	100.0%

4.0

INTRODUCTION & BACKGROUND

4.0 INTRODUCTION & BACKGROUND

Project Location

The proposed site is approximately 53.88 acres and is generally located on the north side of State Road 524, between Cox Road and Friday Road, and approximately 1 mile north-east of Interstate 95. The project site is comprised of two lots within the City of Coca. A large portion of the site is occupied by wetlands and will limit the size of the proposed residential development and stormwater management system to approximately 27 acres. The property is currently zoned as "Single Family Residential" (RU-1-7) and "General Commercial" (C-G). The future land use is "Medium Density Residential" and "Commercial." The existing topography generally slopes toward the existing roadside drainage systems located within the SR 524 right-of-way.

Project Overview

The project site will be developed into a multi-family residential facility. The site is currently undeveloped and contains several large wetlands and surface water areas. The project site is located within the Brevard County Pluckebaum drainage basin, which has an ultimate outfall connection through the Pluckebaum Road ditch to Lake Poinsett to the west of Interstate 95. The site has a historical positive connection to the existing drainage systems located within the SR 524 right-of-way. Runoff from the site stages within the wetlands and depressional areas where it fills and excess flows into the swales along the north side of the SR 524 right-of-way. Runoff within the swales is then conveyed by several culvert pipes to the south side of the SR 524 right-of-way and eventually into the existing Cox Road ditch on the west side of the road. The Cox Road conveyance system connects to the Pluckebaum Road ditch to the south, which passes under Interstate 95 and connects directly to Lake Poinsett to the west.

The project site will utilize a dry and wet pond as well as a nutrient removal filtration system with control structures for treatment and attenuation. BMPTRAINS will be utilized to calculate pre- and post-development nutrient loading conditions to provide justification for compliance with nutrient removal criteria accounting for the existing depressional areas. The project site will also be evaluated for the SJRWMD mean annual, 10 and 25-year 24-hour storm events to meet discharge criteria. An additional analysis has been evaluated for the FDOT matrix of storms.

The stormwater modeling for this project is based upon the Brevard County basin study, "West Cocoa Watershed Evaluation", prepared April 2014 (See Appendix I for excerpts). A portion of the Brevard County ICPR model was exported for analysis of the existing and proposed stormwater conditions. The extracted portion of the model includes the basins, nodes, and links for the project site and surrounding areas (SR 524 and Cox Road) within the Pluckebaum Drainage Basin. All basin characteristics, node data, and link data were maintained in modeling of the existing condition unless contradictions with the surveyed topographical and geological information were determined. All Brevard County model basin designations and boundaries have been kept in the pre-development condition with the exception of basin "COX-430W". Surveyed topographical information shows a significant on-site berm that separates a portion of the basin. This portion has been removed from "COX-430W" and identified as a new basin, "COX-431".

Nomenclature used to identify specific aspects of the model as identified by MBV Engineering, Inc. includes:

- Basins – used to describe hydrologic parameters (ex. B001)
- Nodes – representing junctions that are a discrete location in the drainage system where conservation of mass or continuity is maintained (ex. N001)
- Pipes – for connecting nodes (ex. P-001-002)
- Drop Structures (ex. DS-001-002)

The Brevard County Basin boundaries and characteristics are utilized for comparison purposes of determining a “negative” impact. For the purposes of this analysis, each culvert was designed and receives a specified volumetric rate in the analysis performed by the County. The discharge rate in the post-development scenario will be limited to those rates at each location to provide justification of sufficient design. Hydrologic input data was determined using the United States Department of Agriculture Soil Conservation Service Technical Release 55 for Urban Hydrology for Small Watersheds. This includes runoff curve numbers and time of concentrations which can be found in Section 5 for the pre-development condition and section 6 for the post-development condition.

Design storm events are the mean annual with 24-hour rainfall of 4.9 inches, 10-year 24-hour with rainfall of 7.9 inches, and the 25-year 24-hour with rainfall of 9.5 inches. The site is primarily composed of Candler Fine Sand, classified by NRCS as hydrologic soil group “A” (see Section 3). The existing site is generally well drained due to the existing swales and surrounding improvements.

5.0

EXISTING CONDITIONS



ALLEGRA OF COCOA
PRE-DEVELOPMENT BASIN MAP



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P.O. BOX 10000, TAMPA, FL 33610

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5.2 Pre-Development Basin Data (Time of concentration, CN, Storage)

Basin SR524-310

Total Impervious =	1.543 ac. =	5.2%
Total Pervious =	28.322 ac. =	94.8%
Basin Total =	29.865 ac. =	100.0%

Onsite Area =	14.936 ac. =	50.0%
Offsite Area =	14.929 ac. =	50.0%

• Time of Concentration (SR524-310)

Note: The time of concentration shall be utilized from the County Basin Study (118 minutes).

• Curve Number

Pervious CN	79	12.478 Ac.	(Basinger Sand, Woods - Fair Cover, Type D Soil)
	79	1.556 Ac.	(Malabar Sand, Woods - Fair Cover, Type D Soil)
	79	13.944 Ac.	(Myakka Sand, Woods - Fair Cover, Type D Soil)
Water CN	100	0.344 Ac.	
Impervious CN	98	1.543 Ac.	
Composite CN	80.2		

Stage-Storage Relationship

Stage (ft)	Area (s.f.)	Area (ac)	Incremental Volume (c.f.)	Incremental Volume (ac-ft)	Cumulative Volume (c.f.)	Cumulative Volume (ac-ft)
E.S.H.W. = 22.50	14,994	0.344	0	0.000	0	0.000
23.00	62,256	1.429	19,313	0.443	19,313	0.443
23.50	113,281	2.601	43,884	1.007	63,197	1.451
23.70	125,670	2.885	23,895	0.549	87,092	1.999
24.00	132,422	3.040	38,714	0.889	125,806	2.888
25.00	994,910	22.840	563,666	12.940	689,472	15.828

Basin SR524-400E

Total Impervious =	1.322 ac. =	9.8%
Total Pervious =	12.162 ac. =	90.2%
Basin Total =	13.485 ac. =	100.0%
Onsite Area =	11.263 ac. =	83.5%
Offsite Area =	2.221 ac. =	16.5%

• Time of Concentration (SR524-400E)

Note: The time of concentration shall be utilized from the County Basin Study (50 minutes).

• Curve Number

Pervious CN	79 (Myakka and Anclote Sands, Woods - Fair Cover, Type D Soil))
Impervious CN	98
Composite CN	80.9

Stage-Storage Relationship

Stage (ft)	Area (s.f.)	Area (ac)	Incremental Volume (c.f.)	Incremental Volume (ac-ft)	Cumulative Volume (c.f.)	Cumulative Volume (ac-ft)
E.S.H.W. = 22.50	1,014	0.023	0	0.000	0	0.000
23.00	1,356	0.031	592	0.014	592	0.014
23.50	13,726	0.315	3,770	0.087	4,363	0.100
23.70	60,239	1.383	7,396	0.170	11,759	0.270
24.00	213,376	4.898	41,042	0.942	52,801	1.212
25.00	650,680	14.938	432,028	9.918	484,830	11.130

Basin SR524-400S

Total Impervious =	1.163 ac. =	12.1%
Surface Waters =	1.506 ac. =	15.7%
Total Pervious =	6.905 ac. =	72.1%
Basin Total =	9.574 ac. =	100.0%
Onsite Area =	8.121 ac. =	84.8%
Offsite Area =	1.454 ac. =	15.2%

• Time of Concentration (SR524-400)

Note: The time of concentration shall be utilized from the County Basin Study (50 minutes).

• Curve Number

Pervious CN	79 (Myakka and Anclote Sands, Woods - Fair Cover, Type D Soil))
Water CN	100
Impervious CN	98
Composite CN	84.6

Stage-Storage Relationship

Stage (ft)	Area (s.f.)	Area (ac)	Incremental Volume (c.f.)	Incremental Volume (ac-ft)	Cumulative Volume (c.f.)	Cumulative Volume (ac-ft)
E.S.H.W. = 22.50	65,616	1.506	0	0.000	0	0.000
23.00	91,970	2.111	39,397	0.904	39,397	0.904
23.50	129,597	2.975	55,392	1.272	94,788	2.176
23.70	134,259	3.082	26,386	0.606	121,174	2.782
24.00	173,804	3.990	46,210	1.061	167,383	3.843
25.00	238,447	5.474	206,126	4.732	373,509	8.575

Basin COX-430W

Total Impervious =	0.000 ac. =	0.0%
Total Pervious =	101.541 ac. =	100.0%
Basin Total =	101.541 ac. =	100.0%
Onsite Area =	4.713 ac. =	4.6%
Offsite Area =	96.828 ac. =	95.4%

Note: A portion of basin COX-430W, as identified within the County Basin Study, has been separated and labeled as COX-431 for the modeling of on-site surface waters not included in the County Basin Study.

• Time of Concentration (COX-430W)

Note: The time of concentration shall be utilized from the County Basin Study (73 minutes).

• Curve Number

Note: The curve number shall be utilized from the County Basin Study (85).

Stage-Storage Relationship

Stage (ft)	Area (s.f.)	Area (ac)	Incremental Volume (c.f.)	Incremental Volume (ac-ft)	Cumulative Volume (c.f.)	Cumulative Volume (ac-ft)
E.S.H.W. = 22.50	12,740	0.292	0	0.000	0	0.000
23.00	152,962	3.512	41,426	0.951	41,426	0.951
24.00	632,773	14.526	392,868	9.019	434,293	9.970
25.00	3,944,947	90.564	2,288,860	52.545	2,723,153	62.515

Basin COX-431

(Previously included in the County Basin Study as part of Basin COX-430W)

Total Impervious =	0.000 ac. =	0.0%
Total Pervious =	19.587 ac. =	100.0%
Basin Total =	19.587 ac. =	100.0%

Onsite Area =	13.803 ac. =	70.5%
Offsite Area =	5.784 ac. =	29.5%

• Time of Concentration (COX-431)

Note: The time of concentration shall be utilized from the County Basin Study (73 minutes).

• Curve Number

Pervious CN	79	2.618 Ac.	(Basinger Sand, Woods - Fair Cover, Type D Soil)
	79	0.156 Ac.	(Malabar Sand, Woods - Fair Cover, Type D Soil)
	79	16.091 Ac.	(Myakka Sand, Woods - Fair Cover, Type D Soil)
Water CN	100	0.722 Ac.	
Impervious CN	98	0.000 Ac.	
Composite CN	79.8		

Stage-Storage Relationship

Stage (ft)	Area (s.f.)	Area (ac)	Incremental Volume (c.f.)	Incremental Volume (ac-ft)	Cumulative Volume (c.f.)	Cumulative Volume (ac-ft)
E.S.H.W. = 22.50	31,465	0.722	0	0.000	0	0.000
23.00	85,999	1.974	29,366	0.674	29,366	0.674
23.50	110,525	2.537	49,131	1.128	78,497	1.802
23.70	112,781	2.589	22,331	0.513	100,828	2.315
24.00	135,743	3.116	37,279	0.856	138,106	3.170
25.00	773,190	17.750	454,467	10.433	592,573	13.604

Basin FRI-690E

Onsite Area = 1.011 ac. = 100.0%

• Curve Number

Note: The curve number shall be utilized from the County Basin Study (83).

• Time of Concentration (FRI-690E)

Sheet Flow	n	L	P2	s	Tt	
Route 1	0.4	216	5.1	0.0091	0.72	
Total (Tc)					0.72	Hrs.
					43	Mins.

5.3 Pre-Development Basin Data (FLUCCS Codes)

Basin SR524-310

Total Impervious =	1.543 ac. =	5.2%
Total Pervious =	28.322 ac. =	94.8%
Basin Total =	29.865 ac. =	100.0%

Onsite Area =	14.936 ac. =	50.0%
Offsite Area =	14.929 ac. =	50.0%

• **FLUCCS Codes (Onsite Only)**

			TN	TP
4110	10.081 Ac.	Pine Flatwoods (Wet Flatwoods)	1.090	0.043
6410	3.271 Ac.	Freshwater Marshes (Wetland)	1.213	0.021
6430	0.861 Ac.	Wet Praries (Wetland)	1.213	0.021
8320	0.723 Ac.	Electrical Power Transmission (Open)	1.155	0.027
14.936 Ac.			1.127	0.036

Basin SR524-400

(Combined Basins SR524-400E and SR524-S)

Total Impervious =	2.485 ac. =	10.8%
Surface Waters =	1.506 ac. =	6.5%
Total Pervious =	19.067 ac. =	82.7%
Basin Total =	23.059 ac. =	100.0%

Onsite Area =	19.384 ac. =	84.1%
Offsite Area =	3.675 ac. =	15.9%

• **FLUCCS Codes (Onsite Only)**

			TN	TP
4110	16.109 Ac.	Pine Flatwoods (Wet Flatwoods)	1.090	0.043
6410	2.463 Ac.	Freshwater Marshes (Wetland)	1.213	0.021
6430	0.730 Ac.	Wet Praries (Wetland)	1.213	0.021
8320	0.082 Ac.	Electrical Power Transmission (Open)	1.155	0.027
19.384 Ac.			1.111	0.039

Basin COX-430W

Total Impervious =	0.000 ac. =	0.0%
Total Pervious =	101.541 ac. =	100.0%
Basin Total =	101.541 ac. =	100.0%

Onsite Area =	4.713 ac. =	4.6%
Offsite Area =	96.828 ac. =	95.4%

• FLUCCS Codes (Onsite Only)

			TN	TP
1100	0.158 Ac.	Low Density Residential	1.645	0.27
3100	0.046 Ac.	Herbaceous Dry Prarie	2.025	0.184
4110	3.858 Ac.	Pine Flatwoods (Wet Flatwoods)	1.090	0.043
6410	0.604 Ac.	Freshwater Marshes (Wetland)	1.213	0.021
6460	0.047 Ac.	Freshwater Marshes (Wetland)	1.213	0.021
4.713 Ac.			1.135	0.049

Basin COX-431

Total Impervious =	0.000 ac. =	0.0%
Total Pervious =	19.587 ac. =	100.0%
Basin Total =	19.587 ac. =	100.0%

Onsite Area =	13.803 ac. =	70.5%
Offsite Area =	5.784 ac. =	29.5%

• FLUCCS Codes (Onsite Only)

4110	6.775 Ac.	Pine Flatwoods (Wet Flatwoods)	1.090	0.043
6410	3.278 Ac.	Freshwater Marshes (Wetland)	1.213	0.021
6460	1.378 Ac.	Mixed Scrub Wetland (Wetland)	1.213	0.021
8320	2.372 Ac.	Electrical Power Transmission (Open)	1.155	0.027
13.803 Ac.			1.143	0.033

Basin FRI-690E

Onsite Area = 1.011 ac. = 100.0%

• FLUCCS Codes (Onsite Only)

			TN	TP
6410	0.277 Ac.	Freshwater Marshes (Wetland)	1.213	0.021
6460	0.734 Ac.	Mixed Scrub Wetland (Wetland)	1.213	0.021
1.011 Ac.			1.213	0.021

BMPTrains Loading (See Section 7.3 for Complete Report)

Pre-Development Nutrient Discharge (from BMPTRAINS)

	TN	TP
Project Total	24.81 kg/yr	0.49 kg/yr

Post-Development Nutrient Discharge (from BMPTRAINS)

	TN	TP
Project Total	11.62 kg/yr	0.43 kg/yr

Pre-Post Difference = 13.19 kg/yr 0.06 kg/yr

5.4 Soil Boring Data (Site Plans)

	Aprx. EL @ Boring	Encountered Water Depth	Water Table Elevation	Seasonal High Water Depth	Seasonal High Water Elevation
TH-1	24.2	3.0 ft.	21.2	1.0 ft.	22.2
TH-2	23.8	3.0 ft.	20.8	1.0 ft.	21.8
TH-3	24.2	2.5 ft.	21.7	1.0 ft.	22.7
TH-4	23.7	2.7 ft.	21.0	1.0 ft.	22.0
TH-5	23.7	2.7 ft.	21.0	1.0 ft.	22.0
TH-6	24.4	3.0 ft.	21.4	1.0 ft.	22.4
TH-7	23.9	3.0 ft.	20.9	1.0 ft.	21.9
TH-8	24.4	3.5 ft.	20.9	1.0 ft.	21.9
EWL =			21.1	SHWL =	22.1

SHWL = 22.1 NAVD
 Base Thickness = 8.0 in.
 Separation from Geotech Report = 18.0 in.
 Bottom of Road Base = 23.6 NAVD
 Asphalt Thickness = 1.5 in.
 Minimum Centerline Road Elevation = 27.00 NAVD

 Pond Control Elevation = 22.50 NAVD
 Top of Bank = 25.00 NAVD

Building Finished Floor Determination

25.7	12" above Flood Elevation
26.1	BoB + Base + Asphalt + 3.0% Parking + 6" sidewalk @1.5% + 15 ft @1.5% = 2.53 ft
26.2	12" + 25Yr Stage
28.3	18" + Lowest Road Crown (SR 524)
26.3	18" + Lowest Road Crown (Cox Road)

6.0

POST-DEVELOPMENT CONDITIONS

6.0 POST-DEVELOPMENT CONDITIONS

The proposed site utilizes a combination of a dry pond, wet pond, and nutrient removal filtration system for treatment and attenuation of the required storm events. Stormwater is generally conveyed from the proposed apartment buildings, clubhouse, parking area, and interior green spaces to the proposed dry pond. The dry pond is connected via concrete weir to the proposed wet pond located on the west side of the property. A control structure located within the wet pond will limit the post-development discharge rate and direct outfall into the adjacent wetland to the south for wetland hydration. Stage-storage information for both ponds is presented in Section 7.1.

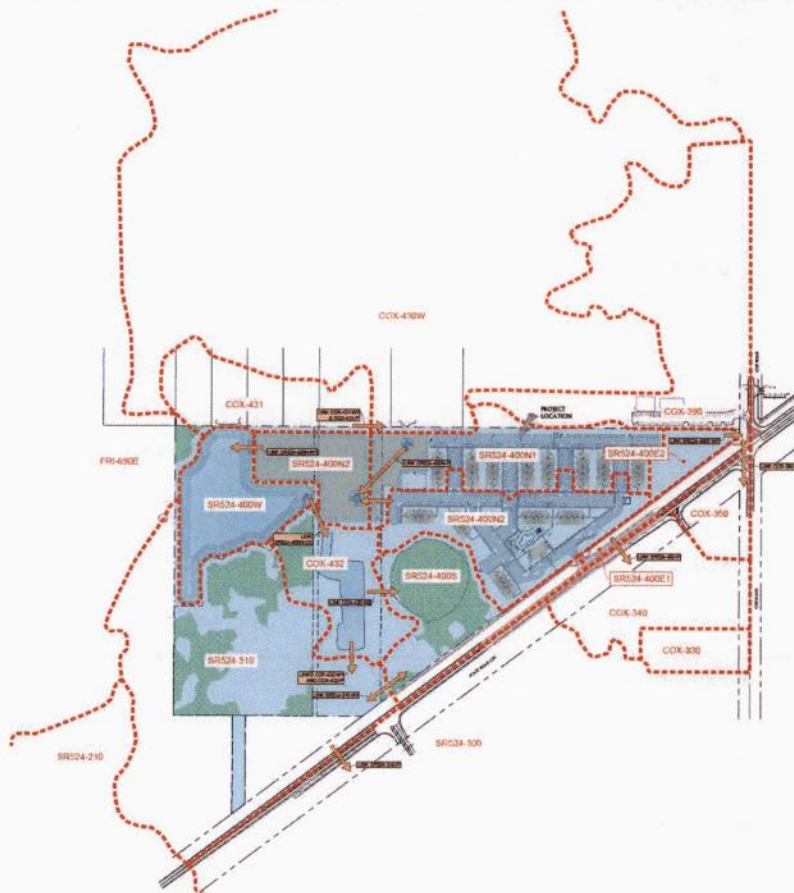
The post-development scenario utilizes nine watershed basins for the purposes of modeling the on-site conditions and evaluating the discharge rate criteria. The peak discharge rate from the proposed wet pond shall be limited such that the pre-development flow rates within the existing culvert pipes under SR 524 (ICPR links "SR524-310-P" and "SR524-400-P") in the County Basin model are not exceeded in the post-development condition. The limited post-development flow rate through the existing culvert pipes will provide justification for no adverse impacts to the adjacent and existing facilities. See Section 8.0 for the pre- and post-development discharge rate summary.

Basins "SR524-400N", "SR524-400E", and "SR524-400W" encompass all portions of the project site that will feature proposed developments and stormwater management improvements (See Section 6.1). Basins "COX-432", "SR524-400S", "SR524-310", and "FRI-690E" contain the existing wetlands and surface waters located within the project site that will remain undisturbed, allowing these features to continue performing as they have historically. The effectiveness of the pond and discharge structure will be evaluated in ICPR4. Stormwater water quality treatment volume and discharge rates are based on the most-stringent criteria between the Saint John's River Water Management District, the City of Cocoa, and the Florida Department of Transportation. See Sections 7.1 for the minimum required water quality treatment, and Section 7.3 for the nutrient removal efficiencies as evaluated using BMPTRAINS. Based on the FLUCCS codes obtained from the Brevard County GIS (Appendix E) for land use, the pre-development condition average annual mass loading is calculated and used for determination of removal efficiency and net improvement. For the post-development characteristics, all areas are input and analyzed to determine an area-weighted average annual mass loading for the final comparison of net improvement. The results are summarized in Section 8.0 of this report and fully reported in Appendix A through C.

The boundary conditions for the proposed site during the pre / post-development scenarios were established by the Brevard County watershed analysis model. In addition to the previously mentioned on-site basins, the majority of the "Pluckebaum Drainage Basin" model network (including basins, nodes, and links) were included in the project ICPR model. The on-site basin "FRI-690E" is part of the "James Drainage Basin". However, no modifications or adjustments to the basin/node characteristics are proposed with the exception of a reduction in area. Therefore, no additional network elements of the "James Drainage Basin" were included for pre- vs. post-development analysis.

The Brevard County model indicates runoff from basin "COX-430W" currently flows to the north-east before entering the Cox Road conveyance system. As stated in the project

background and introduction (Section 4.0), Brevard County model basin "COX-430W" has been separated into two basins ("COX-430W" and "COX-431"). Analysis of the surveyed topographical and LiDAR information shows a small berm or temporary dirt access road is located between these two basins. In the post-development condition, a small culvert pipe will be placed near the north property boundary to connect basins "COX-431" and "COX-430W". This will maintain the historical flow path, allowing runoff within the original basin "COX-430W" boundary to continue to reach the Cox Road conveyance system without obstruction.



ALEGRIA OF COCOA
POST-DEVELOPMENT BASIN MAP



MBV
ENGINEERING, INC.
P.O. BOX 10000 VERO BEACH, FL 34986

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6.2 Post Development Basin Data

Project site is located within the Lake Wilson Outlet Canal (Tosohatchee Unit) of the Upper St. Johns which is unclassified in terms of an impaired waterbody.

Basin SR524-310

Buildings	0.000 Ac. =	0.0%
Non-Vehicular	0.000 Ac. =	0.0%
Vehicular	1.543 Ac. =	93.3%
Total Impervious =	1.543 Ac. =	93.3%
Total Pervious =	25.749 Ac. =	1557.6%
Wet Pond=	0.344 Ac. =	20.8%
Onsite Area =	12.707 ac. =	46.0%
Offsite Area =	14.929 ac. =	54.0%
Basin Total =	27.636 Ac. =	100.0%

• Curve Number

Pervious CN	79.0 (Basinger, Malabar, Myakka Woods - Fair Cover, Type D Soil)
	Note: undeveloped area uses pre-development CN.
Impervious CN	98
Surface Waters CN	100
Composite CN	80.3

Basin SR524-400N1

Buildings	1.734 Ac. =	19.6%	
Non-Vehicular	0.358 Ac. =	4.0%	
Vehicular	1.981 Ac. =	22.4%	D.C.I.A. = 46.0%
Total Impervious =	4.073 Ac. =	46.0%	
Total Pervious =	4.789 Ac. =	54.0%	
Onsite Area =	8.291 ac. =	93.6%	
Offsite Area =	0.571 ac. =	6.4%	
Basin Total =	8.862 Ac. =	100.0%	

Note: Contributing area is less preserved wetlands and buffer areas for use in modeling wet pond in ICPR.

• Curve Number

Pervious CN	80 (Basinger, Malabar, Myakka Sand)
	(Open Space - Good Cover, Type D Soil)
Impervious CN	98
Composite CN	88.3

Basin SR524-400N2

Buildings	1.214 Ac. =	9.6%		
Non-Vehicular	0.686 Ac. =	5.4%		
Vehicular	2.917 Ac. =	23.0%	D.C.I.A. =	38.1%
Total Impervious =	4.817 Ac. =	38.1%		
Total Pervious =	7.840 Ac. =	61.9%		
Onsite Area =	12.657 ac. =	100.0%		
Offsite Area =	0.000 ac. =	0.0%		
Basin Total =	12.657 Ac. =	100.0%		

Note: Contributing area is less preserved wetlands and buffer areas for use in modeling wet pond in ICPR.

• Curve Number

Pervious CN	80 (Basinger, Malabar, Myakka Sand) (Open Space - Good Cover, Type D Soil)
Impervious CN	98
Composite CN	86.9

Basin SR524-400E1

Buildings	0.000 Ac. =	0.0%
Non-Vehicular	0.169 Ac. =	10.2%
Vehicular	0.623 Ac. =	37.7%
Total Impervious =	0.792 Ac. =	47.9%
Surface Waters =	0.000 Ac. =	0.0%
Total Pervious =	0.861 Ac. =	52.1%
Onsite Area =	0.000 ac. =	0.0%
Offsite Area =	1.653 ac. =	100.0%
Basin Total =	1.653 Ac. =	100.0%

• Curve Number

Pervious CN	80.0 (Myakka, Anclote; Open Space - Good Cond.; Type D Soil)
Impervious CN	98
Surface Waters CN	100
Composite CN	88.6

• Time of Concentration

$$T_1 = 0.007(nL)^{0.8} / (P_2)^{0.5} s^{0.4}$$

Where:

Slope (ft/ft) =
L = Length of Flow (ft) =
n = Manning's roughness coeff. =
P₂ = 2-yr, 24-hr rainfall (in) =

Sheet Flow

AB

0.0127
55
0.24
5.1

$$t_1 = \underline{8.4 \text{ min.}}$$

$$T_2 = [L] / [3600 \cdot V]$$

Where:

Slope (ft/ft) =
L = Length of Flow (ft) =
V = Velocity (ft/s) (Fig 3-1) =

Shallow Concentrated Flow

BC

0.0123
695
1.8

$$t_2 = \underline{6.5 \text{ min.}}$$

$$T_c = t_1 + t_2 = 14.9 \text{ min.}$$

Use T_c = 14.9 min.

Basin SR524-400E2

Buildings	0.000 Ac. =	0.0%
Non-Vehicular	0.000 Ac. =	0.0%
Vehicular	0.000 Ac. =	0.0%
Total Impervious =	0.000 Ac. =	0.0%
Surface Waters =	0.000 Ac. =	0.0%
Total Pervious =	1.568 Ac. =	94.8%
Onsite Area =	1.568 ac. =	100.0%
Offsite Area =	0.000 ac. =	0.0%
Basin Total =	1.568 Ac. =	100.0%

• Curve Number

Pervious CN	79.0 (Myakka, Anclote; Woods - Fair Cover; Type D Soil)
Impervious CN	98
Surface Waters CN	100
Composite CN	79.0

Basin SR524-400S

Buildings	0.000 Ac. =	0.0%
Non-Vehicular	0.190 Ac. =	11.5%
Vehicular	0.227 Ac. =	13.7%
Total Impervious =	0.417 Ac. =	25.2%
Surface Waters =	1.506 Ac. =	91.1%
Total Pervious =	5.004 Ac. =	302.7%
Onsite Area =	5.474 ac. =	79.0%
Offsite Area =	1.454 ac. =	21.0%
Basin Total =	6.927 Ac. =	100.0%

• Curve Number

Pervious CN	80.0 (Myakka, Anclote; Woods - Fair Cover; Type D Soil)
Impervious CN	98
Surface Waters CN	100
Composite CN	85.4

Basin SR524-400W

Buildings	0.000 Ac. =	0.0%		
Non-Vehicular	0.000 Ac. =	0.0%		
Vehicular	0.000 Ac. =	0.0%	D.C.I.A. =	0.0%
Total Impervious =	0.000 Ac. =	0.0%		
Wet Pond =	4.940 Ac. =	83.1%		
Total Pervious =	1.008 Ac. =	16.9%		
Onsite Area =	5.947 ac. =	100.0%		
Offsite Area =	0.000 ac. =	0.0%		
Basin Total =	5.947 Ac. =	100.0%		

Note: Contributing area is less preserved wetlands and buffer areas for use in modeling wet pond in ICPR.

• Curve Number

Pervious CN	80 (Basinger, Malabar, Myakka Sand) (Open Space - Good Cover, Type D Soil)
Impervious CN	98
Surface Waters CN	100
Composite CN	96.6

Basin COX-430W

Onsite Area =	0.275 ac. =	0.3%
Offsite Area =	96.829 ac. =	99.7%
Basin Total =	97.104 Ac. =	100.0%

• Curve Number

Note: Curve number shall be utilized from County Basin Study (85)

Basin COX-431

Buildings	0.000 Ac. =	0.0%
Non-Vehicular	0.000 Ac. =	0.0%
Vehicular	0.000 Ac. =	0.0%
Total Impervious =	0.000 Ac. =	0.0%
Total Pervious =	5.921 Ac. =	97.2%
Surface Waters=	0.172 Ac. =	2.8%
Onsite Area =	0.362 ac. =	5.9%
Offsite Area =	5.731 ac. =	94.1%
Basin Total =	6.093 Ac. =	100.0%

• Curve Number

Pervious CN	79.0 (Basinger, Malabar, Myakka Woods - Fair Cover, Type D Soil)
Impervious CN	98
Surface Waters CN	100
Composite CN	79.6

Basin COX-432

Buildings	0.000 Ac. =	0.0%
Non-Vehicular	0.000 Ac. =	0.0%
Vehicular	0.000 Ac. =	0.0%
Total Impervious =	0.000 Ac. =	0.0%
Total Pervious =	4.649 Ac. =	77.3%
Surface Waters	1.364 Ac. =	22.7%
Onsite Area =	6.014 ac. =	100.0%
Offsite Area =	0.000 ac. =	0.0%
Basin Total =	6.014 Ac. =	100.0%

• Curve Number

Pervious CN	79.0 (Basinger, Malabar, Myakka Woods - Fair Cover, Type D Soil)
	Note: undeveloped area uses pre-development CN.
Impervious CN	98
Surface Waters CN	100
Composite CN	83.8

Basin FRI-690E

Onsite Area = 0.508 ac.

• Curve Number

Note: Curve number shall be utilized from County Basin Study (83)

• Time of Concentration (FRI-690E)

Sheet Flow	n	L	P2	s	Tt	
Route 1	0.4	108	5.1	0.0103	0.39	
Total (Tc)					0.39	Hrs.
					24	Mins.

7.0

REQUIRED STORAGE

7.0 Required Storage

Wet Detention Treatment Criteria :

	On-Site
Total Contributing Onsite Area (ac) =	14.24
Total Impervious Area (ac) =	4.07
1.0" over Total Site Acreage	
1.187	Ac.Ft.
2.5" over Impervious Acreage	
0.849	Ac.Ft.
Additional 50% for Class I, II, III, or OFW =	1.780
Governing Wet Treatment Volume :	1.780

7.1 Stage-Storage Relationships

Stage-Storage Relationships (Dry Retention)

Stage (ft)	Area (s.f.)	Area (ac)	Incremental Volume (c.f.)	Incremental Volume (ac-ft)	Cumulative Volume (c.f.)	Cumulative Volume (ac-ft)
N.W.L. = 25.00	182,142	4.181	0	0.000	0	0.000
26.00	203,697	4.676	192,920	4.429	192,920	4.429
Pond Top = 27.00	229,040	5.258	216,369	4.967	409,288	9.396

Set Weir @ 25.80	Actual Treatment Volume =	3.543	ac.ft.
	Area @ Treatment Volume =	223,445	s.f.

Stage-Storage Relationships (Wet Detention)

Stage (ft)	Area (s.f.)	Area (ac)	Incremental Volume (c.f.)	Incremental Volume (ac-ft)	Cumulative Volume (c.f.)	Cumulative Volume (ac-ft)
SHWL = 22.10	215,167	4.940	0	0.000	0	0.000
23.00	225,810	5.184	198,440	4.556	198,440	4.556
24.00	238,202	5.468	232,006	5.326	430,446	9.882
Pond Top = 25.00	250,751	5.756	244,477	5.612	674,922	15.494

Set C.E. @ 22.50	Volume at Control Elev. =	2.025	ac.ft.
Set Weir @ 23.20	Actual Treatment Volume* =	3.596	ac.ft.
	Area @ Treatment Volume =	223,568	s.f.

*("Actual Treatment Volume" is the storage volume between the weir elevation and the control elevation.)

Permanent Pool Volume (Total)

Stage (ft)	Area (s.f.)	Area (ac)	Incremental Volume (c.f.)	Incremental Volume (ac-ft)	Cumulative Volume (c.f.)	Cumulative Volume (ac-ft)
SHWL = 22.10	215,167	4.940	0	0.000	0	0.000
22.00	213,955	4.912	21,456	0.493	21,456	0.493
20.00	190,060	4.363	404,015	9.275	425,471	9.767
Anoxic Depth = 14.00	162,217	3.724	1,056,831	24.262	1,482,302	34.029
Pond Bottom = 6.00	128,015	2.939	1,160,928	26.651	2,643,230	60.680

PPV (ac-ft) =	34.029	ac.ft.
---------------	--------	--------

Permanent Pool Volume Calculations

Contributing Area (CA)	14.239 acres
length of wet season (WS)	153 days
wet season rainfall depth (R)	31 inches
minimum residence time (RT)*	21 days
runoff coefficient (C)	0.60 (SJRWMD ERP Manual Table C1.1, 0-2% Slopes, MFR)
PPV = (CA*C*R*RT)/(WS*12)	
Wet Season PPV	3.029 ac-ft
Additional 50% for Class I, II, III, or OFW	4.544 ac-ft
BMP Trains PPV	2.366 ac-ft
Required PPV	4.544 ac-ft
PPV Provided :	34.029 ac-ft
Mean Depth = PPV/Ap =	6.89 ft

7.2 Rectangular Orifice Sizing & Drawdown Calculations

Rqd. Treatment Vol. to Draw Down :	3.596 ac-ft
Rqd. Treatment Vol. to Draw Down :	156645.5 ft ³
Rqd. Min. Time to Drawdown 1/2 T.V. :	24 hours
Rqd. Max. Time to Drawdown 1/2 T.V. :	30 hours
Elevation of Orifice Invert :	22.50 NAVD88
Rectangular Orifice Height:	6.00 inches
Rectangular Orifice Width:	8.00 inches
Centroid of Orifice:	22.75 NAVD88
Elevation of 1/2 Treatment Volume :	22.85 NAVD88
Elevation of Treatment Volume :	23.20 NAVD88

Average head of the orifice, $h = \frac{(h_1 + h_2)}{2}$

h_1 = Elevation of WQT Volume - Orifice Inv.
0.450 ft

h_2 = Elevation of 1/2 WQT volume - Orifice Inv.
0.100 ft

h = 0.275 ft

A = 0.333 ft²

Flow thru orifice, $Q = CA\sqrt{2gh}$
 Q_1 = 0.842 cfs

where

C , orifice coeff = 0.6

g = 32.2 ft/sec²

Time to discharge 1/2 WQT volume
 $t = \frac{1/2 \text{ WQT volume}}{Q \times CF}$

where

CF = 3600 sec/hr

t = 25.85 hours

7.3 BMPTRAINS Site Data & Required Removal Efficiency

	<u>Total Nitrogen Discharge</u>	<u>Total Phosphorus Discharge</u>
Pre-Development:	24.81 kg/yr	0.492 kg/yr
Post-Development:	12.05 kg/yr	0.484 kg/yr

PRE-DEVELOPMENT:

Complete Report (not including cost) Ver 4.3.5

Project: Allegra of Cocoa - Pre
Date: 2/28/2023 9:07:49 AM

Site and Catchment Information

Analysis: BMP Analysis

Catchment Name	SR524-310	SR524-400	COX-431	COX-430W	FRI-690E
Rainfall Zone	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2
Annual Mean Rainfall	52.00	52.00	52.00	52.00	52.00

Pre-Condition Landuse Information

Landuse

Area (acres)	0.00	0.00	0.00	0.00	0.00
Rational Coefficient (0-1)	0.00	0.00	0.00	0.00	0.00
Non DCIA Curve Number	29.90	29.90	29.90	29.90	29.90
DCIA Percent (0-100)	0.00	0.00	0.00	0.00	0.00
Nitrogen EMC (mg/l)	0.000	0.000	0.000	0.000	0.000
Phosphorus EMC (mg/l)	0.000	0.000	0.000	0.000	0.000
Runoff Volume (ac-ft/yr)	0.000	0.000	0.000	0.000	0.000
Groundwater N (kg/yr)	0.000	0.000	0.000	0.000	0.000
Groundwater P (kg/yr)	0.000	0.000	0.000	0.000	0.000
Nitrogen Loading (kg/yr)	0.000	0.000	0.000	0.000	0.000
Phosphorus Loading (kg/yr)	0.000	0.000	0.000	0.000	0.000

Post-Condition Landuse Information

Landuse	User Defined Values	User Defined Values	User Defined Values	User Defined Values	User Defined Values
Area (acres)	14.94	19.38	13.80	4.71	1.01
Rational Coefficient (0-1)	0.11	0.13	0.11	0.16	0.14
Non DCIA Curve Number	80.20	82.40	79.80	85.00	83.00
DCIA Percent (0-100)	0.00	0.00	0.00	0.00	0.00
Wet Pond Area (ac)	0.34	1.51	0.72	0.29	0.00
Nitrogen EMC (mg/l)	1.127	1.111	1.143	1.135	1.213
Phosphorus EMC (mg/l)	0.036	0.039	0.033	0.049	0.021
Runoff Volume (ac-ft/yr)	7.147	10.417	6.219	3.065	0.614
Groundwater N (kg/yr)	0.000	0.000	0.000	0.000	0.000
Groundwater P (kg/yr)	0.000	0.000	0.000	0.000	0.000
Nitrogen Loading (kg/yr)	9.931	14.270	8.764	4.289	0.919
Phosphorus Loading (kg/yr)	0.317	0.501	0.253	0.185	0.016

Catchment Number: 1 Name: SR524-310**Project:** Allegra of Cocoa - Pre**Date:** 2/28/2023**Wet Detention Design**

Permanent Pool Volume (ac-ft) 0.170

Permanent Pool Volume (ac-ft) for 31 days residence 0.607

Annual Residence Time (days) 9

Littoral Zone Efficiency Credit

Wetland Efficiency Credit

Watershed Characteristics

Catchment Area (acres) 14.94

Contributing Area (acres) 14.600

Non-DCIA Curve Number 80.20

DCIA Percent 0.00

Rainfall Zone Florida Zone 2

Rainfall (in) 52.00

Surface Water Discharge

Required TN Treatment Efficiency (%)

Provided TN Treatment Efficiency (%) 29

Required TP Treatment Efficiency (%)

Provided TP Treatment Efficiency (%) 55

Media Mix Information

Type of Media Mix Not Specified

Media N Reduction (%)

Media P Reduction (%)

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr) 0.000

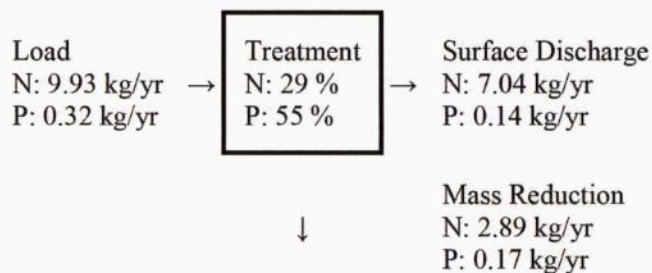
TN Mass Load (kg/yr) 0.000

TN Concentration (mg/L) 0.000

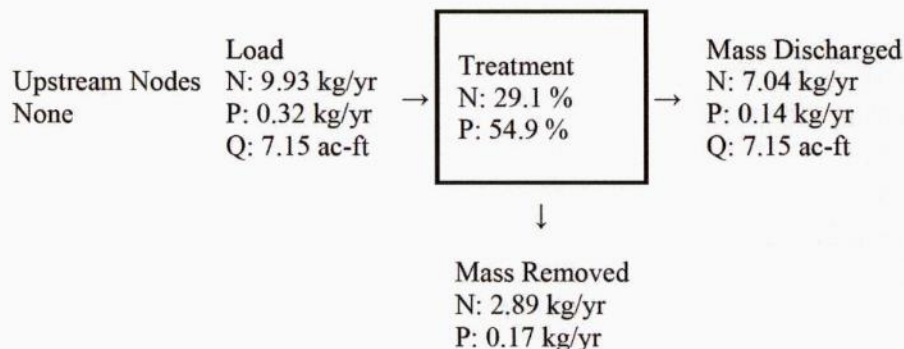
TP Mass Load (kg/yr) 0.000

TP Concentration (mg/L) 0.000

Load Diagram for Wet Detention (stand-alone)



Load Diagram for Wet Detention (As Used In Routing)



Catchment Number: 2 Name: SR524-400

Project: Allegra of Cocoa - Pre

Date: 2/28/2023

Wet Detention Design

Permanent Pool Volume (ac-ft)	0.885
Permanent Pool Volume (ac-ft) for 31 days residence	0.885
Annual Residence Time (days)	31
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	19.38
Contributing Area (acres)	17.870
Non-DCIA Curve Number	82.40
DCIA Percent	0.00
Rainfall Zone	Florida Zone 2
Rainfall (in)	52.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	
Provided TN Treatment Efficiency (%)	38
Required TP Treatment Efficiency (%)	
Provided TP Treatment Efficiency (%)	65

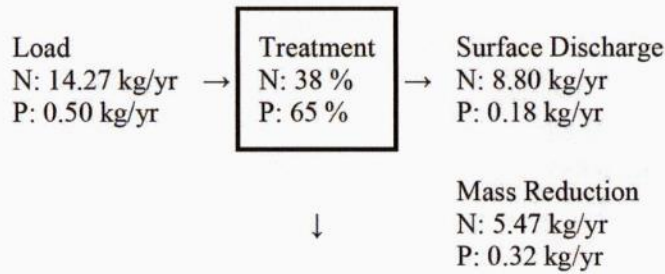
Media Mix Information

Type of Media Mix	Not Specified
Media N Reduction (%)	
Media P Reduction (%)	

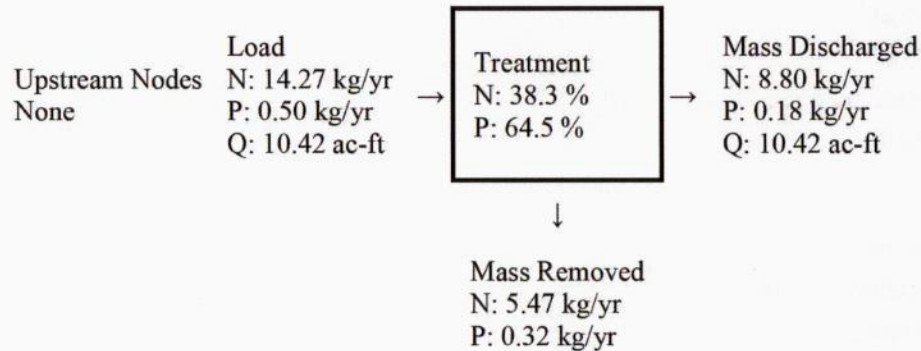
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr)	0.000
TN Mass Load (kg/yr)	0.000
TN Concentration (mg/L)	0.000
TP Mass Load (kg/yr)	0.000
TP Concentration (mg/L)	0.000

Load Diagram for Wet Detention (stand-alone)



Load Diagram for Wet Detention (As Used In Routing)



Catchment Number: 3 Name: COX-431

Project: Allegra of Cocoa - Pre

Date: 2/28/2023

Wet Detention Design

Permanent Pool Volume (ac-ft)	0.528
Permanent Pool Volume (ac-ft) for 31 days residence	0.528
Annual Residence Time (days)	31
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	13.80
Contributing Area (acres)	13.080
Non-DCIA Curve Number	79.80
DCIA Percent	0.00
Rainfall Zone	Florida Zone 2
Rainfall (in)	52.00

Surface Water Discharge

Required TN Treatment Efficiency (%)
Provided TN Treatment Efficiency (%) 38
Required TP Treatment Efficiency (%)
Provided TP Treatment Efficiency (%) 65

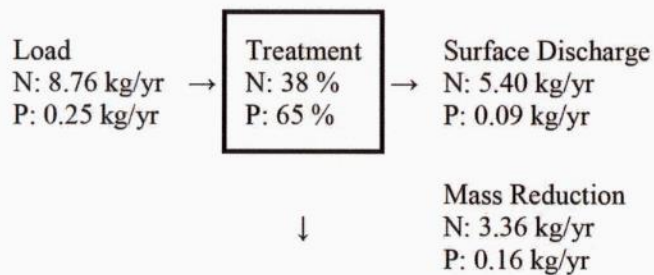
Media Mix Information

Type of Media Mix Not Specified
Media N Reduction (%)
Media P Reduction (%)

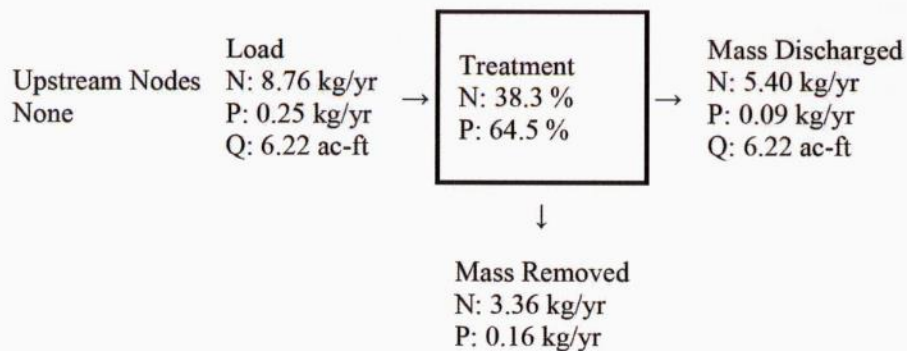
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr) 0.000
TN Mass Load (kg/yr) 0.000
TN Concentration (mg/L) 0.000
TP Mass Load (kg/yr) 0.000
TP Concentration (mg/L) 0.000

Load Diagram for Wet Detention (stand-alone)



Load Diagram for Wet Detention (As Used In Routing)



Catchment Number: 4 Name: COX-430W

Project: Allegra of Cocoa - Pre

Date: 2/28/2023

Wet Detention Design

Permanent Pool Volume (ac-ft) 0.260

Permanent Pool Volume (ac-ft) for 31 days residence 0.260

Annual Residence Time (days) 31

Littoral Zone Efficiency Credit

Wetland Efficiency Credit

Watershed Characteristics

Catchment Area (acres) 4.71

Contributing Area (acres) 4.420

Non-DCIA Curve Number 85.00

DCIA Percent 0.00

Rainfall Zone Florida Zone 2

Rainfall (in) 52.00

Surface Water Discharge

Required TN Treatment Efficiency (%)

Provided TN Treatment Efficiency (%) 38

Required TP Treatment Efficiency (%)

Provided TP Treatment Efficiency (%) 65

Media Mix Information

Type of Media Mix Not Specified

Media N Reduction (%)

Media P Reduction (%)

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr) 0.000

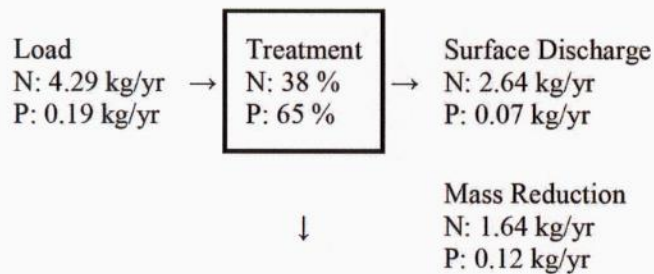
TN Mass Load (kg/yr) 0.000

TN Concentration (mg/L) 0.000

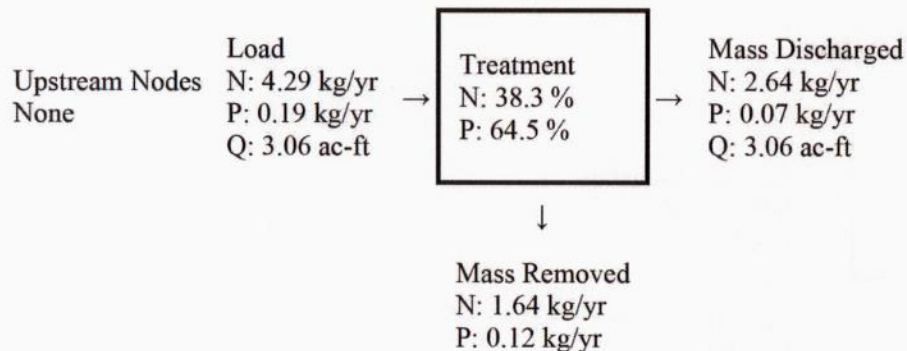
TP Mass Load (kg/yr) 0.000

TP Concentration (mg/L) 0.000

Load Diagram for Wet Detention (stand-alone)



Load Diagram for Wet Detention (As Used In Routing)



Catchment Number: 5 Name: FRI-690E

Project: Allegra of Cocoa - Pre

Date: 2/28/2023

None Design

Watershed Characteristics

Catchment Area (acres)	1.01
Contributing Area (acres)	1.010
Non-DCIA Curve Number	83.00
DCIA Percent	0.00
Rainfall Zone	Florida Zone 2
Rainfall (in)	52.00

Surface Water Discharge

Required TN Treatment Efficiency (%)	
Provided TN Treatment Efficiency (%)	
Required TP Treatment Efficiency (%)	
Provided TP Treatment Efficiency (%)	

Media Mix Information

Type of Media Mix Not Specified

Media N Reduction (%) 0.000

Media P Reduction (%) 0.000

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr) 0.000

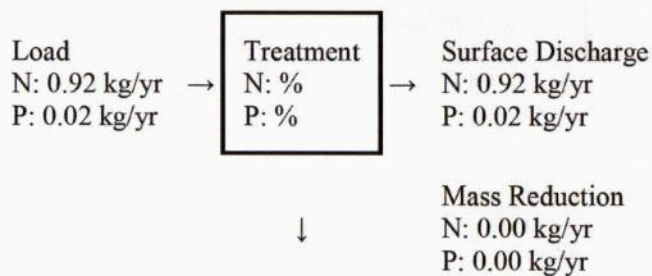
TN Mass Load (kg/yr) 0.000

TN Concentration (mg/L) 0.000

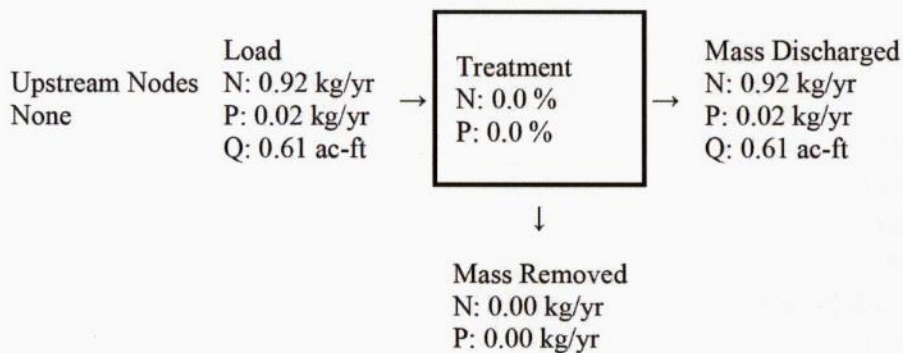
TP Mass Load (kg/yr) 0.000

TP Concentration (mg/L) 0.000

Load Diagram for None (stand-alone)



Load Diagram for None (As Used In Routing)



Summary Treatment Report Version: 4.3.5

Project: Allegra of Cocoa - Pre

Analysis Type: BMP Analysis

BMP Types:

Catchment 1 - (SR524-310) Wet

Detention

Catchment 2 - (SR524-400) Wet

Detention

Catchment 3 - (COX-431) Wet

Detention

Catchment 4 - (COX-430W) Wet

Detention

Catchment 5 - (FRI-690E) None

Based on % removal values to the nearest percent

Date:2/28/2023

Routing Summary

Catchment 1 Routed to Outlet

Catchment 2 Routed to Outlet

Catchment 3 Routed to Outlet

Catchment 4 Routed to Outlet

Catchment 5 Routed to Outlet

Summary Report

Nitrogen

Surface Water Discharge

Total N post load 38.17 kg/yr

Percent N load reduction 35 %

Provided N discharge load 24.81 kg/yr 54.71 lb/yr

Provided N load removed 13.36 kg/yr 29.46 lb/yr

Phosphorus

Surface Water Discharge

Total P post load 1.272 kg/yr

Percent P load reduction 61 %

Provided P discharge load .492 kg/yr 1.09 lb/yr

Provided P load removed .78 kg/yr 1.72 lb/yr

COX-432	FRI-690E	COX-430W	SR524-400E
Florida Zone 2	Florida Zone 2	Florida Zone 2	Florida Zone 2

52.00	52.00	52.00	52.00
-------	-------	-------	-------

0.00 0.00 0.00 0.00

0.00	0.00	0.00	0.00
------	------	------	------

29.90	29.90	29.90	29.90
-------	-------	-------	-------

0.00	0.00	0.00	0.00
------	------	------	------

0.000	0.000	0.000	0.000
-------	-------	-------	-------

0.000	0.000	0.000	0.000
-------	-------	-------	-------

0.000	0.000	0.000	0.000
-------	-------	-------	-------

0.000	0.000	0.000	0.000
-------	-------	-------	-------

0.000	0.000	0.000	0.000
-------	-------	-------	-------

0.000	0.000	0.000	0.000
-------	-------	-------	-------

0.000	0.000	0.000	0.000
-------	-------	-------	-------

User	User	User	User
Defined	Defined	Defined	Defined
Values	Values	Values	Values

Area (acres)	12.71	26.81	5.47	0.31	6.01	0.51	0.28	1.57
Rational Coefficient (0-1)	0.10	0.38	0.10	0.10	0.10	0.11	0.16	0.10
Non DCIA Curve Number	79.00	85.80	79.00	79.00	79.00	80.00	85.00	79.00
DCIA Percent (0-100)	0.00	33.25	0.00	0.00	0.00	0.00	0.00	0.00
Wet Pond Area (ac)	0.34	5.24	1.51	0.00	1.36	0.00	0.00	0.00
Nitrogen EMC (mg/l)	1.127	2.320	1.111	1.143	1.135	1.213	1.111	1.111
Phosphorus EMC (mg/l)	0.036	0.520	0.039	0.033	0.049	0.021	0.039	0.039
Runoff Volume (ac-ft/yr)	5.607	35.940	1.795	0.141	2.108	0.245	0.194	0.712
Groundwater N (kg/yr)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Groundwater P (kg/yr)	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Nitrogen Loading (kg/yr)	7.791	102.807	2.459	0.198	2.950	0.367	0.266	0.975
Phosphorus Loading (kg/yr)	0.249	23.043	0.086	0.006	0.127	0.006	0.009	0.034

Catchment Number: 1 Name: SR524-310

Project: Allegra of Cocoa - Post

Date: 4/13/2023

Wet Detention Design

Permanent Pool Volume (ac-ft)	0.170
Permanent Pool Volume (ac-ft) for 31 days residence	0.476
Annual Residence Time (days)	11
Littoral Zone Efficiency Credit	
Wetland Efficiency Credit	

Watershed Characteristics

Catchment Area (acres)	12.71
Contributing Area (acres)	12.370
Non-DCIA Curve Number	79.00
DCIA Percent	0.00
Rainfall Zone	Florida Zone 2
Rainfall (in)	52.00

Surface Water Discharge

Required TN Treatment Efficiency (%)
Provided TN Treatment Efficiency (%) 31
Required TP Treatment Efficiency (%)
Provided TP Treatment Efficiency (%) 57

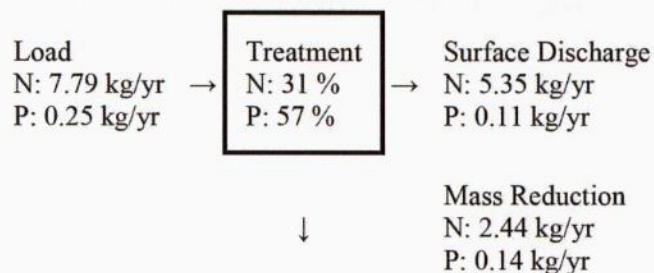
Media Mix Information

Type of Media Mix Not Specified
Media N Reduction (%)
Media P Reduction (%)

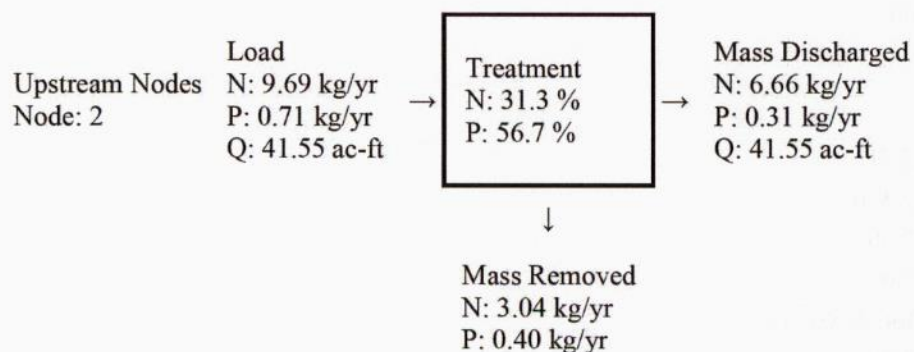
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr) 0.000
TN Mass Load (kg/yr) 0.000
TN Concentration (mg/L) 0.000
TP Mass Load (kg/yr) 0.000
TP Concentration (mg/L) 0.000

Load Diagram for Wet Detention (stand-alone)



Load Diagram for Wet Detention (As Used In Routing)



Catchment Number: 2 Name: SR524-400N_400W

Project: Allegra of Cocoa - Post

Date: 4/13/2023

Multiple BMP in Series Design Parameters

BMP in Series Number: 1

BMP Type: Retention

Retention Depth (in) 1.940

Retention Volume (ac-ft) 3.487

BMP in Series Number: 2

BMP Type: Wet Detention

Permanent Pool Volume (ac-ft) 3.052

Permanent Pool Volume (ac-ft) for 31 days residence 3.052

Annual Residence Time (days) 31

Littoral Zone Efficiency Credit

Wetland Efficiency Credit

BMP in Series Number: 3

BMP Type: User Defined BMP

Contributing Catchment Area (acres) 21.570

Provided Nitrogen Treatment Efficiency (%) 70

Provided Phosphorus Treatment Efficiency (%) 50

BMP in Series Number: 4

BMP Type: None

Watershed Characteristics

Catchment Area (acres) 26.81

Contributing Area (acres) 21.570

Non-DCIA Curve Number 85.80

DCIA Percent 33.25

Rainfall Zone Florida Zone 2

Rainfall (in) 52.00

Surface Water Discharge

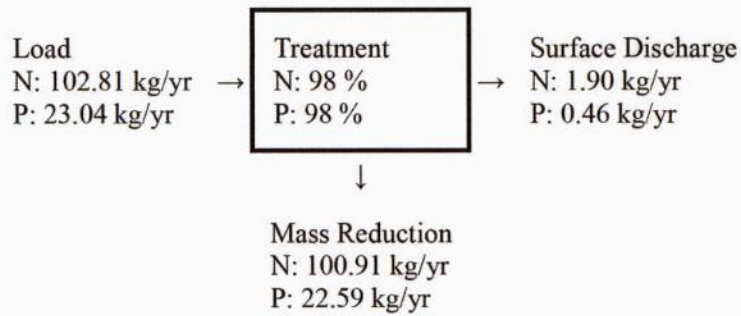
Required TN Treatment Efficiency (%)

Provided TN Treatment Efficiency (%) 98

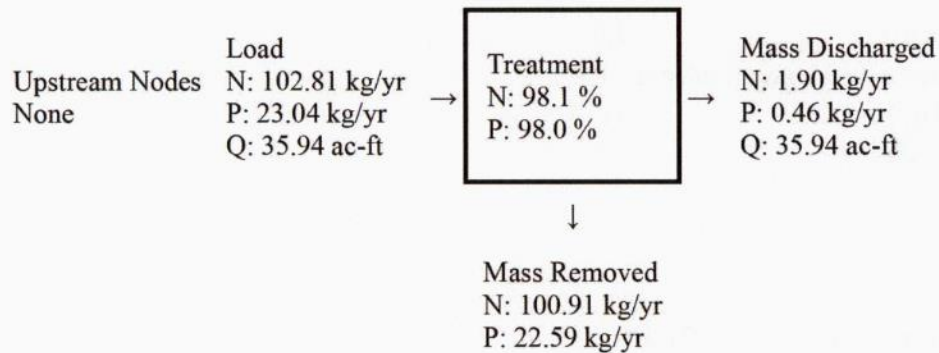
Required TP Treatment Efficiency (%)

Provided TP Treatment Efficiency (%) 98

Load for Multiple BMP in Series



Load Diagram for Multiple BMP (As Used In Routing)



Catchment Number: 3 Name: SR524-400S

Project: Allegra of Cocoa - Post

Date: 4/13/2023

Wet Detention Design

Permanent Pool Volume (ac-ft) 0.152

Permanent Pool Volume (ac-ft) for 31 days residence 0.152

Annual Residence Time (days) 31

Littoral Zone Efficiency Credit

Wetland Efficiency Credit

Watershed Characteristics

Catchment Area (acres) 5.47

Contributing Area (acres) 3.960

Non-DCIA Curve Number 79.00

DCIA Percent 0.00

Rainfall Zone Florida Zone 2

Rainfall (in) 52.00

Surface Water Discharge

Required TN Treatment Efficiency (%)
Provided TN Treatment Efficiency (%) 38
Required TP Treatment Efficiency (%)
Provided TP Treatment Efficiency (%) 65

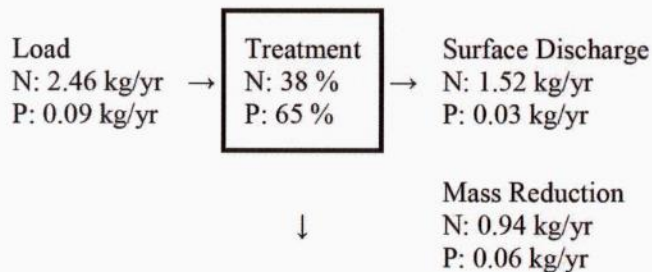
Media Mix Information

Type of Media Mix Not Specified
Media N Reduction (%)
Media P Reduction (%)

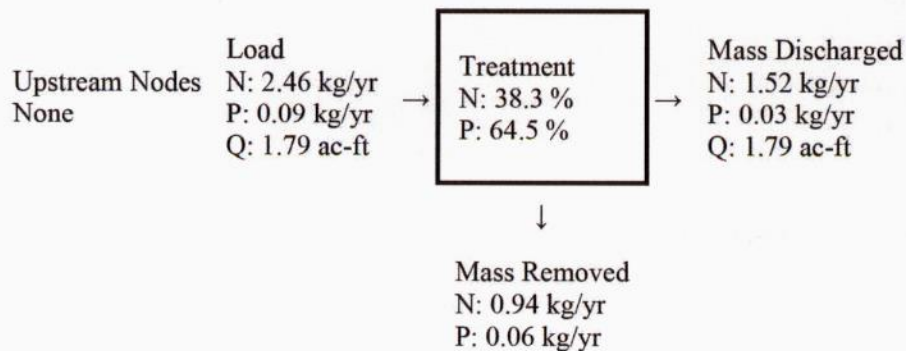
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr) 0.000
TN Mass Load (kg/yr) 0.000
TN Concentration (mg/L) 0.000
TP Mass Load (kg/yr) 0.000
TP Concentration (mg/L) 0.000

Load Diagram for Wet Detention (stand-alone)



Load Diagram for Wet Detention (As Used In Routing)



Catchment Number: 4 Name: COX-431

Project: Allegra of Cocoa - Post

Date: 4/13/2023

Wet Detention Design

Permanent Pool Volume (ac-ft) 0.012

Permanent Pool Volume (ac-ft) for 31 days residence 0.012

Annual Residence Time (days) 31

Littoral Zone Efficiency Credit

Wetland Efficiency Credit

Watershed Characteristics

Catchment Area (acres) 0.31

Contributing Area (acres) 0.310

Non-DCIA Curve Number 79.00

DCIA Percent 0.00

Rainfall Zone Florida Zone 2

Rainfall (in) 52.00

Surface Water Discharge

Required TN Treatment Efficiency (%)

Provided TN Treatment Efficiency (%) 38

Required TP Treatment Efficiency (%)

Provided TP Treatment Efficiency (%) 65

Media Mix Information

Type of Media Mix Not Specified

Media N Reduction (%)

Media P Reduction (%)

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr) 0.000

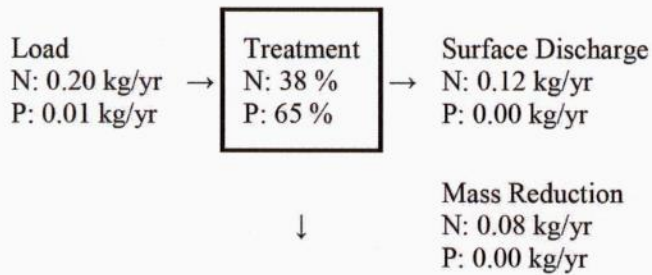
TN Mass Load (kg/yr) 0.000

TN Concentration (mg/L) 0.000

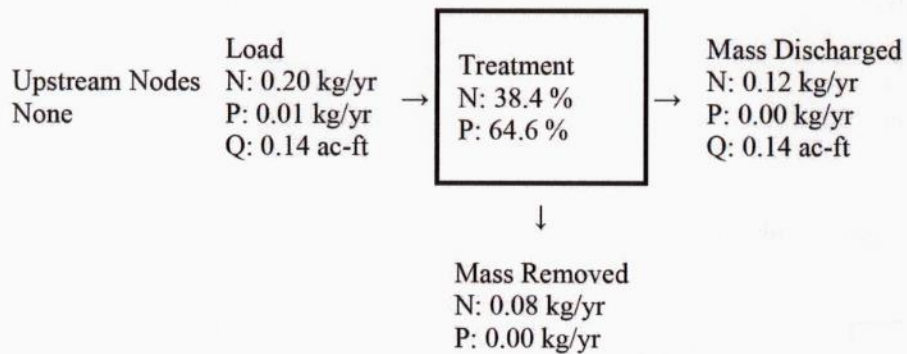
TP Mass Load (kg/yr) 0.000

TP Concentration (mg/L) 0.000

Load Diagram for Wet Detention (stand-alone)



Load Diagram for Wet Detention (As Used In Routing)



Catchment Number: 5 Name: COX-432

Project: Allegra of Cocoa - Post

Date: 4/13/2023

Wet Detention Design

Permanent Pool Volume (ac-ft) 0.183
 Permanent Pool Volume (ac-ft) for 31 days residence 0.179
 Annual Residence Time (days) 32
 Littoral Zone Efficiency Credit
 Wetland Efficiency Credit

Watershed Characteristics

Catchment Area (acres) 6.01
 Contributing Area (acres) 4.650
 Non-DCIA Curve Number 79.00
 DCIA Percent 0.00
 Rainfall Zone Florida Zone 2
 Rainfall (in) 52.00

Surface Water Discharge

Required TN Treatment Efficiency (%)
 Provided TN Treatment Efficiency (%) 38

Required TP Treatment Efficiency (%)
Provided TP Treatment Efficiency (%) 65

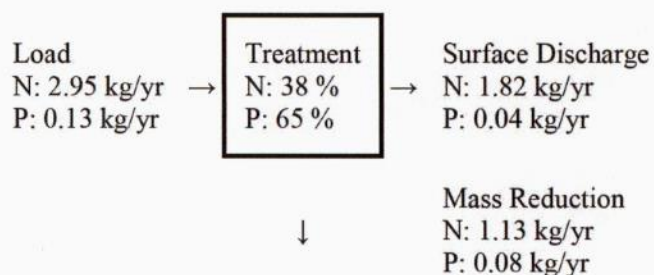
Media Mix Information

Type of Media Mix Not Specified
Media N Reduction (%)
Media P Reduction (%)

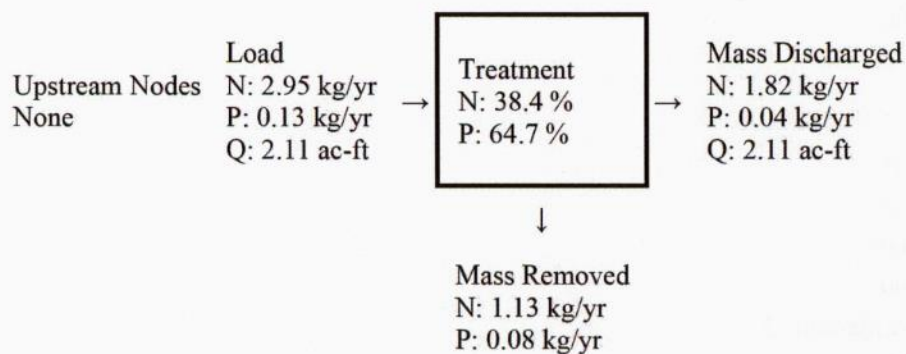
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr) 0.000
TN Mass Load (kg/yr) 0.000
TN Concentration (mg/L) 0.000
TP Mass Load (kg/yr) 0.000
TP Concentration (mg/L) 0.000

Load Diagram for Wet Detention (stand-alone)



Load Diagram for Wet Detention (As Used In Routing)



Catchment Number: 6 Name: FRI-690E

Project: Allegra of Cocoa - Post
Date: 4/13/2023

None Design

Watershed Characteristics

Catchment Area (acres) 0.51
Contributing Area (acres) 0.510
Non-DCIA Curve Number 80.00
DCIA Percent 0.00
Rainfall Zone Florida Zone 2
Rainfall (in) 52.00

Surface Water Discharge

Required TN Treatment Efficiency (%)
Provided TN Treatment Efficiency (%)
Required TP Treatment Efficiency (%)
Provided TP Treatment Efficiency (%)

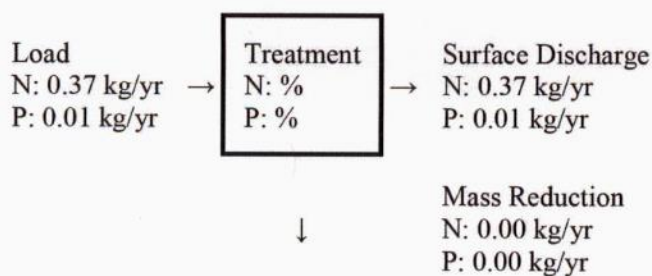
Media Mix Information

Type of Media Mix Not Specified
Media N Reduction (%) 0.000
Media P Reduction (%) 0.000

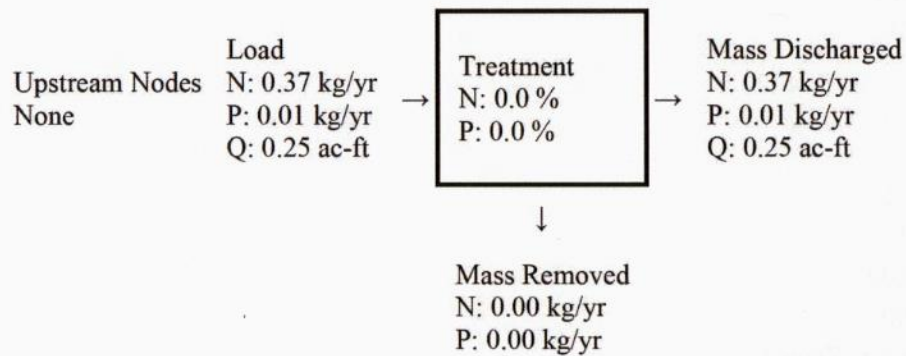
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr) 0.000
TN Mass Load (kg/yr) 0.000
TN Concentration (mg/L) 0.000
TP Mass Load (kg/yr) 0.000
TP Concentration (mg/L) 0.000

Load Diagram for None (stand-alone)



Load Diagram for None (As Used In Routing)



Catchment Number: 7 Name: COX-430W

Project: Allegra of Cocoa - Post

Date: 4/13/2023

Wet Detention Design

Permanent Pool Volume (ac-ft) 0.016
 Permanent Pool Volume (ac-ft) for 31 days residence 0.016
 Annual Residence Time (days) 30
 Littoral Zone Efficiency Credit
 Wetland Efficiency Credit

Watershed Characteristics

Catchment Area (acres) 0.28
 Contributing Area (acres) 0.280
 Non-DCIA Curve Number 85.00
 DCIA Percent 0.00
 Rainfall Zone Florida Zone 2
 Rainfall (in) 52.00

Surface Water Discharge

Required TN Treatment Efficiency (%)
 Provided TN Treatment Efficiency (%) 38
 Required TP Treatment Efficiency (%)
 Provided TP Treatment Efficiency (%) 64

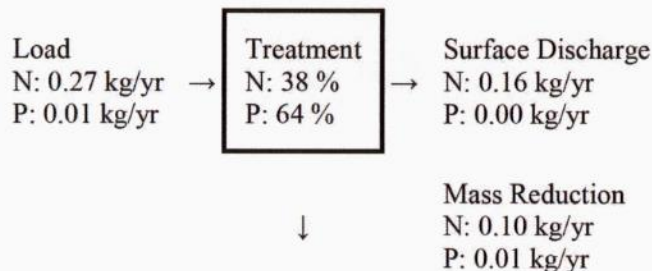
Media Mix Information

Type of Media Mix Not Specified
 Media N Reduction (%)
 Media P Reduction (%)

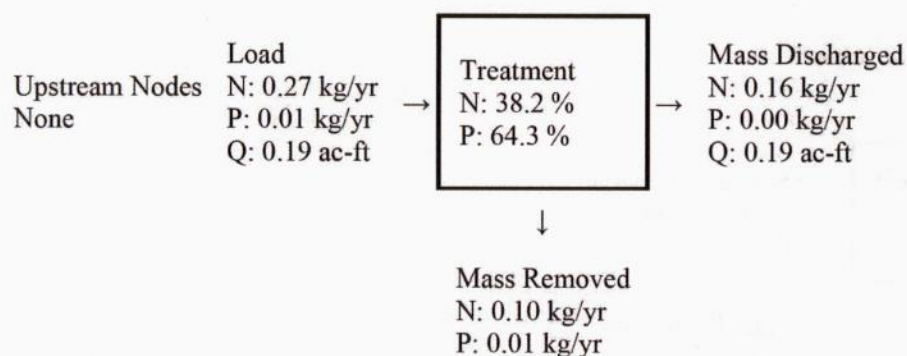
Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr) 0.000
TN Mass Load (kg/yr) 0.000
TN Concentration (mg/L) 0.000
TP Mass Load (kg/yr) 0.000
TP Concentration (mg/L) 0.000

Load Diagram for Wet Detention (stand-alone)



Load Diagram for Wet Detention (As Used In Routing)



Catchment Number: 8 Name: SR524-400E

Project: Allegra of Cocoa - Post
Date: 4/13/2023

None Design

Watershed Characteristics

Catchment Area (acres) 1.57
Contributing Area (acres) 1.570
Non-DCIA Curve Number 79.00
DCIA Percent 0.00
Rainfall Zone Florida Zone 2

Rainfall (in) 52.00

Surface Water Discharge

Required TN Treatment Efficiency (%)

Provided TN Treatment Efficiency (%)

Required TP Treatment Efficiency (%)

Provided TP Treatment Efficiency (%)

Media Mix Information

Type of Media Mix Not Specified

Media N Reduction (%) 0.000

Media P Reduction (%) 0.000

Groundwater Discharge (Stand-Alone)

Treatment Rate (MG/yr) 0.000

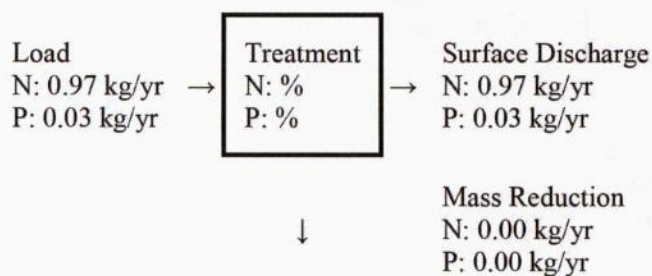
TN Mass Load (kg/yr) 0.000

TN Concentration (mg/L) 0.000

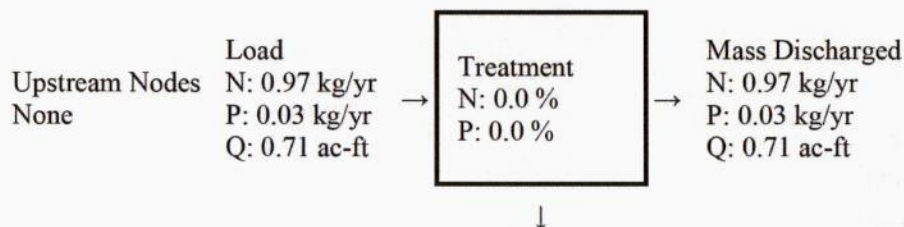
TP Mass Load (kg/yr) 0.000

TP Concentration (mg/L) 0.000

Load Diagram for None (stand-alone)



Load Diagram for None (As Used In Routing)



Mass Removed
N: 0.00 kg/yr
P: 0.00 kg/yr

Summary Treatment Report Version: 4.3.5

Project: Allegra of Cocoa - Post

Analysis Type: BMP Analysis

BMP Types:

Catchment 1 - (SR524-310) Wet
Detention
Catchment 2 - (SR524-400N_400W)
Multiple BMP
Catchment 3 - (SR524-400S) Wet
Detention
Catchment 4 - (COX-431) Wet
Detention
Catchment 5 - (COX-432) Wet
Detention
Catchment 6 - (FRI-690E) None
Catchment 7 - (COX-430W) Wet
Detention

Date:4/13/2023

Routing Summary

Catchment 1 Routed to Outlet
Catchment 2 Routed to Catchment 1
Catchment 3 Routed to Outlet
Catchment 4 Routed to Outlet
Catchment 5 Routed to Outlet
Catchment 6 Routed to Outlet
Catchment 7 Routed to Outlet
Catchment 8 Routed to Outlet

Catchment 8 - (SR524-400E) None
Based on % removal values to the nearest
percent

Summary Report

Nitrogen

Surface Water Discharge

Total N post load	117.81 kg/yr	
Percent N load reduction	90 %	
Provided N discharge load	11.62 kg/yr	25.61 lb/yr
Provided N load removed	106.2 kg/yr	234.16 lb/yr

Phosphorus

Surface Water Discharge

Total P post load	23.561 kg/yr	
Percent P load reduction	98 %	
Provided P discharge load	.428 kg/yr	.94 lb/yr
Provided P load removed	23.134 kg/yr	51.01 lb/yr

8.0

STAGE & DISCHARGE SUMMARY SHEET

8.0 Summary Sheet

Peak Discharge

Link/Basin ID	Peak Discharge Rate (cfs)			
	SR524-310-P		SR524-400-P	
	Pre-Development	Post-Development	Pre-Development	Post-Development
Mean Annual	6.72	4.15	10.73	3.44
10 Year	10.15	7.93	19.77	5.68
25 Year	10.63	9.23	23.60	6.97

Link/Basin ID	Peak Discharge Rate (cfs)	
	FRI-690E	
	Pre-Development	Post-Development
Mean Annual	1.06	0.74
10 Year	1.88	1.30
25 Year	2.36	1.63

Post Development

	Peak Stage (ft.)		
	SR524-400N1	SR524-400N2	SR524-400W
Mean Annual	25.94	25.94	23.66
10 Year	26.38	26.26	24.27
25 Year	26.67	26.41	24.55
Pond Top	27.00	27.00	25.00

APPENDIX A

ICPR PRINTOUTS INPUT DATA

Simulation: _10-24

Scenario: POST
 Run Date/Time: 2/28/2023 7:22:49 AM
 Program Version: ICPR4 4.07.00

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	120.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		60.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder: ICPR3

Unit Hydrograph
Folder: ICPR3

Lookup Tables

Boundary Stage Set: 10-24
 Extern Hydrograph Set: LAK-200
 Curve Number Set:

Green-Ampt Set:
 Vertical Layers Set:
 Impervious Set:

Tolerances & Options

Time Marching: SAOR
 Max Iterations: 6
 Over-Relax Weight: 0.5 dec
 Fact:
 dZ Tolerance: 0.0010 ft
 Max dZ: 1.0000 ft
 Link Optimizer Tol: 0.0001 ft
 Edge Length Option: Automatic

IA Recovery Time: 24.0000 hr

Smp/Man Basin Rain Global
Opt:

Rainfall Name: Flmod
 Rainfall Amount: 7.50 in
 Storm Duration: 24.0000 hr

Dflt Damping (1D): 0.0050 ft
 Min Node Srf Area 113 ft2
 (1D):
 Energy Switch (1D): Energy

Comment: W Cocoa March 2013 modified LAK-270-D drop structure by adding new 12.25 x 18 orifice to model.
 Base Flow 2.2 cfs added to LAK-200 for artesian flow as measured 5/15/2014.

Standard 24 hr storm

Simulation: _25-24

Scenario: POST
 Run Date/Time: 2/28/2023 7:24:07 AM
 Program Version: ICPR4 4.07.00

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	120.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		60.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder: ICPR3
 Unit Hydrograph Folder: ICPR3

Lookup Tables

Boundary Stage Set: 25-24
 Extern Hydrograph Set: LAK-200
 Curve Number Set:
 Green-Ampt Set:

Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching: SAOR	IA Recovery Time: 24.0000 hr
Max Iterations: 6	
Over-Relax Weight 0.5 dec	
Fact:	
dZ Tolerance: 0.0010 ft	Smp/Man Basin Rain Global
	Opt:
Max dZ: 1.0000 ft	Rainfall Name: Flmod
Link Optimizer Tol: 0.0001 ft	Rainfall Amount: 9.00 in
	Storm Duration: 24.0000 hr
Edge Length Option: Automatic	
	Dflt Damping (1D): 0.0050 ft
	Min Node Srf Area 113 ft ²
	(1D):
	Energy Switch (1D): Energy

Comment: W Cocoa March 2013 modified LAK-270-D drop structure by adding new 12.25 x 18 orifice to model.
Base Flow 2.2 cfs added to LAK-200 for artesian flow as measured 5/15/2014.

Standard 24 hr storm

Simulation: _MA-24

Scenario: POST
Run Date/Time: 2/28/2023 7:24:46 AM
Program Version: ICPR4 4.07.00

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	120.0000

	Hydrology [sec]	Surface Hydraulics [sec]
Min Calculation Time:	60.0000	0.1000
Max Calculation Time:		60.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	5.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder: ICPR3

Unit Hydrograph Folder:
ICPR3

Lookup Tables

Boundary Stage Set: 10-24
Extern Hydrograph Set: LAK-200
Curve Number Set:Green-Ampt Set:
Vertical Layers Set:
Impervious Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight: 0.5 dec
Fact:
dZ Tolerance: 0.0010 ftMax dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft

Edge Length Option: Automatic

IA Recovery Time: 24.0000 hr

Smp/Man Basin Rain Global
Opt:Rainfall Name: Flmod
Rainfall Amount: 4.92 in
Storm Duration: 24.0000 hrDflt Damping (1D): 0.0050 ft
Min Node Srf Area 113 ft2
(1D):
Energy Switch (1D): Energy

Comment: W Cocoa March 2013 modified LAK-270-D drop structure by adding new 12.25 x 18 orifice to model.
Base Flow 2.2 cfs added to LAK-200 for artesian flow as measured 5/15/2014.

Standard 24 hr storm

Simple Basin: COX-200

Scenario: PRE
 Node: COX-200
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 79.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 40.8800 ac
 Curve Number: 76.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-200	10-24	38.73	13.0000	7.50	4.71	40.8800	76.0	0.00	0.00
COX-200	25-24	50.16	12.9833	9.00	6.08	40.8800	76.0	0.00	0.00
COX-200	MA-24	19.88	13.0667	4.92	2.47	40.8800	76.0	0.00	0.00

Simple Basin: COX-210

Scenario: PRE
 Node: COX-210
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 38.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: Uh323
 Peaking Factor: 323.0
 Area: 8.3800 ac
 Curve Number: 87.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-210	10-24	21.21	12.3333	7.50	5.98	8.3800	87.0	0.00	0.00
COX-210	25-24	26.19	12.3333	9.00	7.44	8.3800	87.0	0.00	0.00
COX-210	MA-24	12.62	12.3500	4.92	3.50	8.3800	87.0	0.00	0.00

Simple Basin: COX-240

Scenario: PRE
 Node: COX-240
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 47.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 10.8100 ac
 Curve Number: 84.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-240	10-24	17.78	12.5333	7.50	5.62	10.8100	84.0	0.00	0.00
COX-240	25-24	22.22	12.5333	9.00	7.06	10.8100	84.0	0.00	0.00
COX-240	MA-24	10.18	12.5500	4.92	3.20	10.8100	84.0	0.00	0.00

Simple Basin: COX-250

Scenario: PRE

Node: COX-250
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 41.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: Uh323
 Peaking Factor: 323.0
 Area: 13.3800 ac
 Curve Number: 95.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-250	10-24	35.74	12.3667	7.50	6.92	13.3800	95.0	0.00	0.00
COX-250	25-24	43.14	12.3667	9.00	8.42	13.3800	95.0	0.00	0.00
COX-250	MA-24	22.93	12.3667	4.92	4.35	13.3800	95.0	0.00	0.00

Simple Basin: COX-270

Scenario: PRE
 Node: COX-270
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 62.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: Uh323
 Peaking Factor: 323.0
 Area: 7.9500 ac
 Curve Number: 95.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-270	10-24	16.73	12.6167	7.50	6.92	7.9500	95.0	0.00	0.00
COX-270	25-24	20.19	12.6167	9.00	8.42	7.9500	95.0	0.00	0.00
COX-270	MA-24	10.72	12.6167	4.92	4.35	7.9500	95.0	0.00	0.00

Simple Basin: COX-280

Scenario: PRE
 Node: COX-280
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 42.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: Uh323
 Peaking Factor: 323.0
 Area: 8.2200 ac
 Curve Number: 95.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-280	10-24	21.67	12.3833	7.50	6.92	8.2200	95.0	0.00	0.00
COX-280	25-24	26.15	12.3833	9.00	8.42	8.2200	95.0	0.00	0.00
COX-280	MA-24	13.90	12.3833	4.92	4.35	8.2200	95.0	0.00	0.00

Simple Basin: COX-300

Scenario: PRE
 Node: COX-300
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 35.0000 min
 Max Allowable Q: 999999.00 cfs

Time Shift: 0.0000 hr
 Unit Hydrograph: Uh323
 Peaking Factor: 323.0
 Area: 4.3300 ac
 Curve Number: 95.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-300	10-24	12.58	12.3000	7.50	6.92	4.3300	95.0	0.00	0.00
COX-300	25-24	15.19	12.3000	9.00	8.42	4.3300	95.0	0.00	0.00
COX-300	MA-24	8.08	12.3000	4.92	4.35	4.3300	95.0	0.00	0.00

Simple Basin: COX-320

Scenario: PRE
 Node: COX-320
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 58.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: Uh323
 Peaking Factor: 323.0
 Area: 6.5700 ac
 Curve Number: 89.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow	Total Rainfall	Total Runoff [in]	Area [ac]	Equivalent Curve	% Imperv	% DCIA
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Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-320	10-24	13.45	12.5833	7.50	6.21	6.5700	89.0	0.00	0.00
COX-320	25-24	16.50	12.5833	9.00	7.69	6.5700	89.0	0.00	0.00
COX-320	MA-24	8.16	12.6000	4.92	3.70	6.5700	89.0	0.00	0.00

Simple Basin: COX-330

Scenario: PRE
 Node: COX-330
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 38.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: Uh323
 Peaking Factor: 323.0
 Area: 2.4200 ac
 Curve Number: 94.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-330	10-24	6.68	12.3333	7.50	6.80	2.4200	94.0	0.00	0.00
COX-330	25-24	8.08	12.3333	9.00	8.30	2.4200	94.0	0.00	0.00
COX-330	MA-24	4.25	12.3333	4.92	4.24	2.4200	94.0	0.00	0.00

Simple Basin: COX-340

Scenario: PRE
 Node: COX-340
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 67.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr

Unit Hydrograph: GAMMA
Peaking Factor: 200.0
Area: 8.3300 ac
Curve Number: 90.0
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-340	10-24	11.78	12.7667	7.50	6.32	8.3300	90.0	0.00	0.00
COX-340	25-24	14.43	12.7500	9.00	7.79	8.3300	90.0	0.00	0.00
COX-340	MA-24	7.19	12.7833	4.92	3.80	8.3300	90.0	0.00	0.00

Simple Basin: COX-350

Scenario: PRE
Node: COX-350
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 40.0000 min
Max Allowable Q: 999999.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: Uh256
Peaking Factor: 256.0
Area: 2.9400 ac
Curve Number: 92.0
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-350	10-24	6.55	12.4000	7.50	6.55	2.9400	92.0	0.00	0.00
COX-350	25-24	7.97	12.4000	9.00	8.03	2.9400	92.0	0.00	0.00
COX-350	MA-24	4.09	12.4167	4.92	4.01	2.9400	92.0	0.00	0.00

Simple Basin: COX-390

Scenario: PRE
 Node: COX-390
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 47.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: Uh256
 Peaking Factor: 256.0
 Area: 24.0800 ac
 Curve Number: 84.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-390	10-24	43.24	12.5000	7.50	5.61	24.0800	84.0	0.00	0.00
COX-390	25-24	54.03	12.5000	9.00	7.06	24.0800	84.0	0.00	0.00
COX-390	MA-24	24.75	12.5167	4.92	3.20	24.0800	84.0	0.00	0.00

Simple Basin: COX-430W

Scenario: PRE
 Node: COX-430W
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 73.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr

Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 101.5410 ac
 Curve Number: 85.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-430 W	10-24	124.23	12.8500	7.50	5.73	101.5410	85.0	0.00	0.00
COX-430 W	25-24	154.95	12.8500	9.00	7.18	101.5410	85.0	0.00	0.00
COX-430 W	MA-24	71.64	12.8833	4.92	3.29	101.5410	85.0	0.00	0.00

Simple Basin: COX-431

Scenario: PRE
 Node: COX-431
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 73.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 19.5870 ac
 Curve Number: 79.8
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-431	10-24	21.55	12.8833	7.50	5.14	19.5870	79.8	0.00	0.00
COX-431	25-24	27.44	12.8667	9.00	6.55	19.5870	79.8	0.00	0.00
COX-431	MA-24	11.66	12.9333	4.92	2.81	19.5870	79.8	0.00	0.00

Simple Basin: COX-450

Scenario: PRE
 Node: COX-450
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 39.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 10.3300 ac
 Curve Number: 84.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-450	10-24	19.24	12.4333	7.50	5.62	10.3300	84.0	0.00	0.00
COX-450	25-24	24.02	12.4333	9.00	7.06	10.3300	84.0	0.00	0.00
COX-450	MA-24	11.03	12.4500	4.92	3.20	10.3300	84.0	0.00	0.00

Simple Basin: FRI-690E

Scenario: PRE
 Node:
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 43.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr

Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 1.0110 ac
 Curve Number: 83.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
FRI-690E	10-24	1.88	12.4500	7.50	5.50	1.0110	83.0	0.00	0.00
FRI-690E	25-24	2.36	12.4500	9.00	6.93	1.0110	83.0	0.00	0.00
FRI-690E	MA-24	1.06	12.4667	4.92	3.10	1.0110	83.0	0.00	0.00

Simple Basin: SR524-200

Scenario: PRE
 Node: SR524-200
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 157.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 173.1300 ac
 Curve Number: 83.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
SR524-200	10-24	114.03	14.0667	7.50	5.50	173.1300	83.0	0.00	0.00
SR524-200	25-24	143.78	14.0333	9.00	6.94	173.1300	83.0	0.00	0.00
SR524-200	MA-24	63.79	14.1667	4.92	3.10	173.1300	83.0	0.00	0.00

Simple Basin: SR524-210

Scenario: PRE
 Node: SR524-210
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 105.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 31.8400 ac
 Curve Number: 81.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
SR524-210	10-24	27.35	13.3333	7.50	5.27	31.8400	81.0	0.00	0.00
SR524-210	25-24	34.70	13.3000	9.00	6.69	31.8400	81.0	0.00	0.00
SR524-210	MA-24	14.97	13.4000	4.92	2.92	31.8400	81.0	0.00	0.00

Simple Basin: SR524-300

Scenario: PRE

Node: SR524-300
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 88.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 86.0800 ac
 Curve Number: 84.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
SR524-300	10-24	89.97	13.0667	7.50	5.62	86.0800	84.0	0.00	0.00
SR524-300	25-24	112.73	13.0500	9.00	7.06	86.0800	84.0	0.00	0.00
SR524-300	MA-24	51.17	13.1000	4.92	3.20	86.0800	84.0	0.00	0.00

Simple Basin: SR524-310

Scenario: PRE
 Node: SR524-310
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 118.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 29.8650 ac
 Curve Number: 80.2
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
SR524-310	10-24	23.06	13.5333	7.50	5.18	29.8650	80.2	0.00	0.00
SR524-310	25-24	29.36	13.5000	9.00	6.59	29.8650	80.2	0.00	0.00
SR524-310	MA-24	12.49	13.6167	4.92	2.84	29.8650	80.2	0.00	0.00

Simple Basin: SR524-400E

Scenario: PRE
 Node: SR524-400E
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 50.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 13.4850 ac
 Curve Number: 80.9
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
SR524-400E	10-24	19.99	12.5833	7.50	5.26	13.4850	80.9	0.00	0.00
SR524-400E	25-24	25.29	12.5667	9.00	6.68	13.4850	80.9	0.00	0.00
SR524-400E	MA-24	11.01	12.6000	4.92	2.91	13.4850	80.9	0.00	0.00

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
0E									

Simple Basin: SR524-400S

Scenario: PRE
 Node: SR524-400S
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 50.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 9.5740 ac
 Curve Number: 84.6
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
SR524-40 OS	10-24	15.25	12.5667	7.50	5.69	9.5740	84.6	0.00	0.00
SR524-40 OS	25-24	19.02	12.5500	9.00	7.13	9.5740	84.6	0.00	0.00
SR524-40 OS	MA-24	8.79	12.5833	4.92	3.26	9.5740	84.6	0.00	0.00

Simple Basin: SR524-500

Scenario: PRE
 Node: SR524-500
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 45.0000 min
 Max Allowable Q: 999999.00 cfs

Time Shift: 0.0000 hr
 Unit Hydrograph: Uh323
 Peaking Factor: 323.0
 Area: 27.3300 ac
 Curve Number: 87.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
SR524-500	10-24	63.02	12.4333	7.50	5.98	27.3300	87.0	0.00	0.00
SR524-500	25-24	77.80	12.4333	9.00	7.44	27.3300	87.0	0.00	0.00
SR524-500	MA-24	37.45	12.4333	4.92	3.50	27.3300	87.0	0.00	0.00

Simple Basin: SR524-530

Scenario: PRE
 Node: SR524-530
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 40.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 42.9300 ac
 Curve Number: 84.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [PRE]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
SR524-530	10-24	78.62	12.4500	7.50	5.62	42.9300	84.0	0.00	0.00
SR524-530	25-24	98.18	12.4500	9.00	7.06	42.9300	84.0	0.00	0.00
SR524-530	MA-24	45.10	12.4833	4.92	3.20	42.9300	84.0	0.00	0.00

Node: COX-190

Scenario: PRE
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 18.03 ft
Warning Stage: 24.00 ft
Boundary Stage: COX-190

Comment:

Node: COX-200

Scenario: PRE
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 18.35 ft
Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
18.35	0.0100	436
20.00	0.0200	871
22.00	1.1700	50965
23.00	2.7700	120661
24.00	6.7600	294466

Comment:

Node: COX-210

Scenario: PRE
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 18.57 ft
Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
18.57	0.0100	436
20.00	0.0600	2614
22.00	0.1600	6970
23.00	0.6000	26136
24.00	3.1500	137214

Comment:

Node: COX-220

Scenario: PRE
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 19.11 ft
Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.11	0.0100	436
24.00	0.1000	4356

Comment:

Node: COX-230

Scenario: PRE
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 18.88 ft
Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
18.88	0.0100	436
23.00	0.0800	3485
24.00	0.1000	4356

Comment:

Node: COX-240

Scenario: PRE
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 18.63 ft
Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
18.63	0.0100	436
23.00	0.0600	2614
24.00	7.9800	347609

Comment:

Node: COX-250

Scenario: PRE
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.21 ft
 Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.21	0.0100	436
21.00	0.0400	1742
22.00	0.1900	8276
23.00	0.9900	43124
24.00	7.0600	307534

Comment:

Node: COX-260

Scenario: PRE
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.62 ft
 Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.62	0.0100	436
21.00	0.0200	871
23.00	0.0900	3920
24.00	0.1500	6534

Comment:

Node: COX-270

Scenario: PRE
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.44 ft
 Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.44	0.0100	436
22.00	0.0600	2614
23.00	0.1200	5227
24.00	0.2900	12632
25.00	4.8300	210395

Comment:

Node: COX-280

Scenario: PRE

Type: Stage/Area

Base Flow: 0.00 cfs

Initial Stage: 19.12 ft

Warning Stage: 24.40 ft

Stage [ft]	Area [ac]	Area [ft2]
19.12	0.0100	436
21.00	0.0500	2178
23.00	0.1600	6970
24.00	0.1800	7841
25.00	1.4100	61420

Comment:

Node: COX-290

Scenario: PRE

Type: Stage/Area

Base Flow: 0.00 cfs

Initial Stage: 19.72 ft

Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.72	0.0100	436
22.00	0.0500	2178
23.00	0.0900	3920
24.00	0.2400	10454
25.00	1.4000	60984

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE SURVEYED DATA.

Node: COX-300

Scenario: PRE

Type: Stage/Area

Base Flow: 0.00 cfs

Initial Stage: 19.08 ft

Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.08	0.0100	436
23.00	0.1100	4792
24.00	0.2200	9583
25.00	3.4400	149846

Comment:

Node: COX-310

Scenario: PRE
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.62 ft
 Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.62	0.0100	436
22.00	0.3800	16553
23.00	0.7400	32234
24.00	1.3300	57935
25.00	3.1200	135907

Comment:

Node: COX-320

Scenario: PRE
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.72 ft
 Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.72	0.0100	436
22.00	0.0400	1742
24.00	0.0800	3485
25.00	0.6300	27443

Comment:

Node: COX-330

Scenario: PRE
 Type: Stage/Area

Base Flow: 0.00 cfs
 Initial Stage: 19.34 ft
 Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.34	0.0100	436
21.00	0.0200	871
23.00	0.0700	3049
24.00	0.4900	21344
25.00	2.0100	87556

Comment:

Node: COX-340

Scenario: PRE
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 20.12 ft
 Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
20.12	0.0100	436
21.00	0.0600	2614
22.00	2.4300	105851
23.00	3.9100	170320
24.00	5.3500	233046
25.00	6.9000	300564

Comment:

Node: COX-350

Scenario: PRE
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.52 ft
 Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.52	0.0100	436
22.00	0.0400	1742
24.00	0.3200	13939
25.00	0.9200	40075

Comment:

Node: COX-360

Scenario: PRE
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.54 ft
 Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.54	0.0100	436
24.00	0.0100	436
25.00	0.0500	2178

Comment:

Node: COX-370

Scenario: PRE
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 17.97 ft
 Warning Stage: 23.00 ft

Stage [ft]	Area [ac]	Area [ft2]
17.97	0.0100	436
23.00	0.1100	4792
24.00	0.3300	14375

Comment:

Node: COX-380

Scenario: PRE
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 18.07 ft
 Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
18.07	0.0100	436
21.00	0.0500	2178
22.00	0.1000	4356
23.00	0.9800	42689
24.00	2.1000	91476

Comment:

Node: COX-390

Scenario: PRE
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 18.50 ft
 Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
18.50	0.0100	436
21.00	0.0400	1742
22.00	0.1700	7405
23.00	3.0000	130680
24.00	7.9400	345866

Comment:

Node: COX-400

Scenario: PRE
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.81 ft
 Warning Stage: 23.50 ft

Stage [ft]	Area [ac]	Area [ft2]
19.81	0.0100	436
22.00	0.0500	2178
23.50	0.1000	4356

Comment:

Node: COX-410

Scenario: PRE
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.15 ft
 Warning Stage: 23.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.15	0.0100	436
21.00	0.0300	1307
22.00	0.0900	3920
23.00	0.9900	43124
24.00	2.3300	101495

Comment:

Node: COX-420

Scenario: PRE
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.18 ft
 Warning Stage: 23.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.18	0.0100	436
23.00	0.1600	6970
24.00	0.4000	17424

Comment:

Node: COX-430

Scenario: PRE
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.94 ft
 Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.94	0.0100	436
24.00	0.1000	4356

Comment:

Node: COX-430W

Scenario: PRE
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 22.50 ft
 Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
20.00	0.0001	4
22.50	0.2920	12720
23.00	3.5120	152983
24.00	14.5260	632753
25.00	90.5640	3944968

Comment:

Node: COX-431

Scenario: PRE
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 22.50 ft
Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
22.50	0.7220	31450
23.00	1.9740	85987
23.50	2.5370	110512
23.70	2.5890	112777
24.00	3.1160	135733
25.00	17.7500	773190

Comment:

Node: COX-440

Scenario: PRE
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 19.99 ft
Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.99	0.0100	436
24.00	0.1000	4356

Comment:

Node: COX-450

Scenario: PRE
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 20.07 ft
Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
20.07	0.0100	436

Stage [ft]	Area [ac]	Area [ft2]
22.00	0.0700	3049
23.00	4.9600	216058
24.00	8.5000	370260

Comment:

Node: COX-460

Scenario: PRE
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 20.05 ft
Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
20.05	0.0100	436
24.00	0.1000	4356

Comment:

Node: COX-700W

Scenario: PRE
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 20.36 ft
Warning Stage: 24.00 ft
Boundary Stage: COX-700W

Comment:

Node: COX-710E

Scenario: PRE
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 20.69 ft
Warning Stage: 24.00 ft
Boundary Stage: COX-710E

Comment: DITCH BOTTOM INLET LOCATED JUST SOUTH OF 2075 COX ROAD.

Node: FRI-100E

Scenario: PRE
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 20.66 ft
Warning Stage: 24.00 ft
Boundary Stage: FRI-100E

Comment:

Node: MUD-200

Scenario: PRE
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 16.07 ft
Warning Stage: 19.00 ft
Boundary Stage: MUD-200

Comment:

Node: RAY-100

Scenario: PRE
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 20.00 ft
Warning Stage: 25.00 ft
Boundary Stage: RAY-100

Comment:

Node: SR524-200

Scenario: PRE
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 20.14 ft
Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
20.14	0.1000	4356

Stage [ft]	Area [ac]	Area [ft2]
22.00	6.9700	303613
23.00	8.1400	354578
24.00	98.0500	4271058

Comment:

Node: SR524-210

Scenario: PRE
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 20.64 ft
 Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
20.64	0.1000	4356
24.00	8.4000	365904
25.00	28.4600	1239718

Comment:

Node: SR524-300

Scenario: PRE
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 22.12 ft
 Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
22.12	0.1000	4356
23.00	8.6100	375052
24.00	38.0500	1657458
25.00	73.7300	3211679

Comment:

Node: SR524-310

Scenario: PRE
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 22.50 ft
 Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
22.50	0.3440	14985
23.00	1.4290	62247
23.50	2.6010	113300
23.70	2.8850	125671
24.00	3.0400	132422
25.00	22.8400	994910

Comment:

Node: SR524-400E

Scenario: PRE
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 20.67 ft
 Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
20.53	0.0001	4
22.50	0.0230	1002
23.00	0.0310	1350
23.50	0.3150	13721
23.70	1.3830	60243
24.00	4.8980	213357
25.00	14.9380	650699

Comment:

Node: SR524-400S

Scenario: PRE
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 22.50 ft
 Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
22.50	1.5060	65601
23.00	2.1110	91955
23.50	2.9750	129591
23.70	3.0820	134252
24.00	3.9900	173804
25.00	5.4740	238447

Comment:

Node: SR524-500

Scenario: PRE
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 16.88 ft
Warning Stage: 23.00 ft

Stage [ft]	Area [ac]	Area [ft2]
16.88	0.0100	436
20.00	0.6700	29185
22.00	1.1800	51401
23.00	2.5600	111514

Comment:

Node: SR524-510

Scenario: PRE
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 16.98 ft
Warning Stage: 23.00 ft

Stage [ft]	Area [ac]	Area [ft2]
16.98	0.0100	436
23.00	0.1000	4356

Comment:

Node: SR524-520

Scenario: PRE
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 16.96 ft
Warning Stage: 23.00 ft

Stage [ft]	Area [ac]	Area [ft2]
16.96	0.0100	436
23.00	0.1000	4356

Comment:

Node: SR524-530

Scenario: PRE
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 19.56 ft
Warning Stage: 23.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.56	0.0100	436
20.00	0.0400	1742
21.00	0.1500	6534
22.00	0.6800	29621
23.00	10.9100	475240
24.00	30.5200	1329451

Comment:

Node: SR524-605

Scenario: PRE
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 15.98 ft
Warning Stage: 23.00 ft
Boundary Stage: SR524-605

Comment:

Pipe Link: COX-200-P		Upstream	Downstream
Scenario:	PRE	Invert: 18.35 ft	Invert: 18.03 ft
From Node:	COX-200	Manning's N: 0.0120	Manning's N: 0.0120
To Node:	COX-190	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 3.50 ft	Max Depth: 3.50 ft
Flow Direction:	Both	Bottom Clip	
Damping:	0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length:	80.00 ft	Op Table:	Op Table:
FHWA Code:	1	Ref Node:	Ref Node:
Entr Loss Coef:	0.50	Manning's N: 0.0120	Manning's N: 0.0120
Exit Loss Coef:	0.00	Top Clip	
Bend Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location:	0.00 dec	Op Table:	Op Table:
Energy Switch:	Energy	Ref Node:	Ref Node:
		Manning's N: 0.0120	Manning's N: 0.0120
Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 49			

Weir Link: COX-200-W	
Scenario:	PRE
From Node:	COX-200
To Node:	COX-190
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Rectangular
Invert:	24.10 ft
Control Elevation:	24.10 ft
Max Depth:	83.25 ft
Max Width:	20.00 ft
Fillet:	0.00 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	
Comment: OVERTOPPING ENTRANCE ROAD. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.	

Pipe Link: COX-210-P		Upstream	Downstream
Scenario:	PRE	Invert: 18.57 ft	Invert: 18.45 ft
From Node:	COX-210	Manning's N: 0.0240	Manning's N: 0.0240
To Node:	COX-200	Geometry: Arch Structural Plate	Geometry: Arch Structural Plate
Link Count:	1	Max Depth: 3.50 ft	Max Depth: 3.50 ft
Flow Direction:	Both	Max Width: 4.67 ft	Max Width: 4.67 ft
Damping:	0.0000 ft	Bottom Clip	
Length:	60.00 ft	Default: 0.00 ft	Default: 0.00 ft
FHWA Code:	36	Op Table:	Op Table:
Entr Loss Coef:	0.50	Ref Node:	Ref Node:
Exit Loss Coef:	0.00	Manning's N: 0.0240	Manning's N: 0.0240

Bend Loss Coef: 0.00	Top Clip	
Bend Location: 0.00 dec	Default: 0.00 ft	Default: 0.00 ft
Energy Switch: Energy	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 51

Weir Link: COX-210-W

Scenario: PRE	Bottom Clip
From Node: COX-210	Default: 0.00 ft
To Node: COX-200	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 23.50 ft	Discharge Coefficients
Control Elevation: 23.50 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment: OVERTOPPING ENTRANCE ROAD. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Channel Link: COX-220-C

	Upstream	Downstream
Scenario: PRE	Invert: 19.11 ft	Invert: 18.57 ft
From Node: COX-220	Manning's N: 0.0000	Manning's N: 0.0000
To Node: COX-210	Geometry: Irregular	Geometry: Irregular
Link Count: 1	Cross Section: COX-220	Cross Section: COX-220
Flow Direction: Both		
Damping: 0.0000 ft		
Length: 610.00 ft		
Contraction Coef: 0.00		
Expansion Coef: 0.00		
Entr Loss Coef: 0.00		
Exit Loss Coef: 0.00		
Bend Loss Coef: 0.00		
Bend Location: 0.00 dec		
Energy Switch: Energy		

Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 52
X-SEC AT C-187

Weir Link: COX-220-W

Scenario: PRE
 From Node: COX-220
 To Node: COX-210
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Weir Type: Broad Crested Vertical
 Geometry Type: Rectangular
 Invert: 23.50 ft
 Control Elevation: 23.50 ft
 Max Depth: 83.25 ft
 Max Width: 100.00 ft
 Fillet: 0.00 ft

Bottom Clip

Default: 0.00 ft
 Op Table:
 Ref Node:

Top Clip

Default: 0.00 ft
 Op Table:
 Ref Node:

Discharge Coefficients

Weir Default: 2.800
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment: OVERTOPPING CANAL BANK. INVERT ELEVATION ESTIMATED BASED ON THE 1-FT LIDAR TOPOGRAPHY.

Pipe Link: COX-230-P

Upstream

Downstream

Scenario: PRE
 From Node: COX-230
 To Node: COX-220
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Length: 60.00 ft
 FHWA Code: 1
 Entr Loss Coef: 0.50
 Exit Loss Coef: 0.00
 Bend Loss Coef: 0.00
 Bend Location: 0.00 dec
 Energy Switch: Energy

Invert: 18.88 ft
 Manning's N: 0.0240

Invert: 19.11 ft
 Manning's N: 0.0240

Geometry: Circular

Geometry: Circular

Max Depth: 3.50 ft

Max Depth: 3.50 ft

Bottom Clip

Default: 0.00 ft

Default: 0.00 ft

Op Table:

Op Table:

Ref Node:

Ref Node:

Manning's N: 0.0240

Manning's N: 0.0240

Top Clip

Default: 0.00 ft

Default: 0.00 ft

Op Table:

Op Table:

Ref Node:

Ref Node:

Manning's N: 0.0240

Manning's N: 0.0240

Comment: COMBINED TWO DRIVEWAY CROSSINGS INTO A SINGLE PIPE (ADDED PIPE LENGTHS)

HUMANE SOCIETY CENTRAL AND SOUTH ENTRANCE DRIVEWAY CULVERTS

BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 53

(UPSTREAM - NORTH END, LOCATION ID 0463ES0007)

(DOWNSTREAM - SOUTH END, LOCATION ID 0463ES0006)

Weir Link: COX-230-W

Scenario: PRE
 From Node: COX-230
 To Node: COX-220
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft

Bottom Clip

Default: 0.00 ft
 Op Table:
 Ref Node:

Top Clip

Default: 0.00 ft

Weir Type: Broad Crested Vertical
 Geometry Type: Rectangular
 Invert: 24.00 ft
 Control Elevation: 24.00 ft
 Max Depth: 83.25 ft
 Max Width: 20.00 ft
 Fillet: 0.00 ft

Op Table:
 Ref Node:
 Discharge Coefficients
 Weir Default: 2.800
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment: OVERTOPPING ENTRANCE ROAD. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-240-P

	Upstream	Downstream
Scenario: PRE	Invert: 19.25 ft	Invert: 19.58 ft
From Node: COX-240	Manning's N: 0.0120	Manning's N: 0.0120
To Node: COX-230	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 40.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0120	Manning's N: 0.0120
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0120	Manning's N: 0.0120

Comment: HUMANE SOCIETY NORTH ENTRANCE DRIVEWAY CULVERT
 BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 53

Weir Link: COX-240-W

Scenario: PRE	Bottom Clip
From Node: COX-240	Default: 0.00 ft
To Node: COX-230	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 24.60 ft	Discharge Coefficients
Control Elevation: 24.60 ft	Weir Default: 3.200
Max Depth: 83.25 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-250-P			Upstream	Downstream
Scenario:	PRE	Invert:	19.22 ft	Invert: 18.63 ft
From Node:	COX-250	Manning's N:	0.0120	Manning's N: 0.0120
To Node:	COX-240	Geometry:	Circular	Geometry: Circular
Link Count:	1	Max Depth:	4.00 ft	Max Depth: 4.00 ft
Flow Direction:	Both	Bottom Clip		
Damping:	0.0000 ft	Default:	0.00 ft	Default: 0.00 ft
Length:	144.00 ft	Op Table:		Op Table:
FHWA Code:	1	Ref Node:		Ref Node:
Entr Loss Coef:	0.50	Manning's N:	0.0120	Manning's N: 0.0120
Exit Loss Coef:	0.00	Top Clip		
Bend Loss Coef:	0.00	Default:	0.00 ft	Default: 0.00 ft
Bend Location:	0.00 dec	Op Table:		Op Table:
Energy Switch:	Energy	Ref Node:		Ref Node:
		Manning's N:	0.0120	Manning's N: 0.0120
Comment: COMBINED TWO DRIVEWAY CROSSINGS INTO A SINGLE PIPE (ADDED PIPE LENGTHS) BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 57 (UPSTREAM - NORTH END, LOCATION ID 3CES382) BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 69 (DOWNSTREAM - SOUTH END, LOCATION ID 0463ES0002)				

Weir Link: COX-250-W			Bottom Clip
Scenario:	PRE	Default:	0.00 ft
From Node:	COX-250	Op Table:	
To Node:	COX-240	Ref Node:	
Link Count:	1	Top Clip	
Flow Direction:	Both	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:	
Weir Type:	Broad Crested Vertical	Ref Node:	
Geometry Type:	Rectangular	Discharge Coefficients	
Invert:	24.40 ft	Weir Default:	2.800
Control Elevation:	24.40 ft	Weir Table:	
Max Depth:	83.25 ft	Orifice Default:	0.600
Max Width:	20.00 ft	Orifice Table:	
Fillet:	0.00 ft		
Comment: OVERTOPPING ENTRANCE ROAD. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.			

Pipe Link: COX-260-P			Upstream	Downstream
Scenario:	PRE	Invert:	19.62 ft	Invert: 19.21 ft
From Node:	COX-260	Manning's N:	0.0240	Manning's N: 0.0240
To Node:	COX-250	Geometry:	Circular	Geometry: Circular
Link Count:	1	Max Depth:	3.00 ft	Max Depth: 3.00 ft
Flow Direction:	Both	Bottom Clip		
Damping:	0.0000 ft	Default:	0.00 ft	Default: 0.00 ft
Length:	47.00 ft	Op Table:		Op Table:

FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0240	Manning's N: 0.0240
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 60

Weir Link: COX-260-W

Scenario: PRE	Bottom Clip
From Node: COX-260	Default: 0.00 ft
To Node: COX-250	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 23.50 ft	Discharge Coefficients
Control Elevation: 23.50 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment: OVERTOPPING PINE TREE PLACE. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-270-P

	Upstream	Downstream
Scenario: PRE	Invert: 19.44 ft	Invert: 19.79 ft
From Node: COX-270	Manning's N: 0.0240	Manning's N: 0.0240
To Node: COX-260	Geometry: Arch	Geometry: Arch
Link Count: 1	Max Depth: 2.25 ft	Max Depth: 2.25 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 48.00 ft	Op Table:	Op Table:
FHWA Code: 36	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0240	Manning's N: 0.0240
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240

Comment: CROSSING PINE CONE PLACE
BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 61

Weir Link: COX-270-W

Scenario:	PRE	Bottom Clip
From Node:	COX-270	Default: 0.00 ft
To Node:	COX-260	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	24.50 ft	Discharge Coefficients
Control Elevation:	24.50 ft	Weir Default: 2.800
Max Depth:	83.25 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment: OVERTOPPING PINE CONE PLACE. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-280-P

	Upstream	Downstream
Scenario:	PRE	PRE
From Node:	COX-280	COX-270
To Node:	COX-270	COX-280
Link Count:	1	1
Flow Direction:	Both	Both
Damping:	0.0000 ft	0.0000 ft
Length:	56.00 ft	56.00 ft
FHWA Code:	36	36
Entr Loss Coef:	0.50	0.50
Exit Loss Coef:	0.00	0.00
Bend Loss Coef:	0.00	0.00
Bend Location:	0.00 dec	0.00 dec
Energy Switch:	Energy	Energy
	Invert: 19.12 ft	Invert: 19.46 ft
	Manning's N: 0.0240	Manning's N: 0.0240
	Geometry: Arch	Geometry: Arch
	Max Depth: 2.25 ft	Max Depth: 2.25 ft
	Bottom Clip	Bottom Clip
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240
	Top Clip	Top Clip
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 63

Weir Link: COX-280-W

Scenario:	PRE	Bottom Clip
From Node:	COX-280	Default: 0.00 ft
To Node:	COX-270	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	24.40 ft	Discharge Coefficients
Control Elevation:	24.40 ft	Weir Default: 2.800

Max Depth: 83.25 ft
 Max Width: 20.00 ft
 Fillet: 0.00 ft

Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment: OVERTOPPING PINE CONE PLACE. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-290-P

	Upstream	Downstream
Scenario: PRE	Invert: 19.72 ft	Invert: 19.60 ft
From Node: COX-290	Manning's N: 0.0120	Manning's N: 0.0120
To Node: COX-280	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 96.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0120	Manning's N: 0.0120
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0120	Manning's N: 0.0120

Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 65A

Weir Link: COX-290-W

Scenario: PRE	Bottom Clip
From Node: COX-290	Default: 0.00 ft
To Node: COX-280	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 25.00 ft	Discharge Coefficients
Control Elevation: 25.00 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment:

Pipe Link: COX-300-P

	Upstream	Downstream
Scenario: PRE	Invert: 19.33 ft	Invert: 19.75 ft
From Node: COX-300	Manning's N: 0.0240	Manning's N: 0.0240

To Node: COX-290	Geometry: Arch	
Link Count: 1	Max Depth: 2.25 ft	Max Depth: 2.25 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 96.00 ft	Op Table:	Op Table:
FHWA Code: 36	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0240	Manning's N: 0.0240
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240
Comment: COMBINED TWO DRIVEWAY CROSSINGS INTO A SINGLE PIPE (ADDED PIPE LENGTHS)		
BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 68 (UPSTREAM - NORTH END, LOCATION ID 0460ES0060)		
BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 65B (DOWNSTREAM - SOUTH END, LOCATION ID 0460ES0063)		

Weir Link: COX-300-W		
Scenario: PRE	Bottom Clip	
From Node: COX-300	Default: 0.00 ft	
To Node: COX-290	Op Table:	
Link Count: 1	Ref Node:	
Flow Direction: Both	Top Clip	
Damping: 0.0000 ft	Default: 0.00 ft	
Weir Type: Broad Crested Vertical	Op Table:	
Geometry Type: Rectangular	Ref Node:	
Invert: 24.80 ft	Discharge Coefficients	
Control Elevation: 24.80 ft	Weir Default: 2.800	
Max Depth: 83.25 ft	Weir Table:	
Max Width: 20.00 ft	Orifice Default: 0.600	
Fillet: 0.00 ft	Orifice Table:	
Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.		

Pipe Link: COX-310-P		
Scenario: PRE	Upstream	Downstream
From Node: COX-310	Invert: 19.62 ft	Invert: 19.08 ft
To Node: COX-300	Manning's N: 0.0120	Manning's N: 0.0120
Link Count: 1	Geometry: Circular	Geometry: Circular
Flow Direction: Both	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Damping: 0.0000 ft	Bottom Clip	
Length: 88.00 ft	Default: 0.00 ft	Default: 0.00 ft
FHWA Code: 1	Op Table:	Op Table:
Entr Loss Coef: 0.50	Ref Node:	Ref Node:
Exit Loss Coef: 0.00	Manning's N: 0.0120	Manning's N: 0.0120
	Top Clip	

Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0120	Manning's N: 0.0120

Comment: COMBINED TWO DRIVEWAY CROSSINGS INTO A SINGLE PIPE (ADDED PIPE LENGTHS)
 BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 70 (UPSTREAM - NORTH END, LOCATION ID 0460ES0056)
 BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 69 (DOWNSTREAM - SOUTH END, LOCATION ID 0460ES0059)

Weir Link: COX-310-W

Scenario: PRE	Bottom Clip
From Node: COX-310	Default: 0.00 ft
To Node: COX-300	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 25.10 ft	Discharge Coefficients
Control Elevation: 25.10 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-320-P

	Upstream	Downstream
Scenario: PRE	Invert: 20.10 ft	Invert: 19.93 ft
From Node: COX-320	Manning's N: 0.0240	Manning's N: 0.0240
To Node: COX-310	Geometry: Arch	Geometry: Arch
Link Count: 1	Max Depth: 2.25 ft	Max Depth: 2.25 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 66.00 ft	Op Table:	Op Table:
FHWA Code: 36	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0240	Manning's N: 0.0240
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 71

Weir Link: COX-320-W

Scenario:	PRE	Bottom Clip
From Node:	COX-320	Default: 0.00 ft
To Node:	COX-310	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	25.10 ft	Discharge Coefficients
Control Elevation:	25.10 ft	Weir Default: 2.800
Max Depth:	83.25 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-330-P

	Upstream	Downstream
Scenario:	PRE	PRE
From Node:	COX-330	COX-320
To Node:	COX-320	COX-330
Link Count:	1	1
Flow Direction:	Both	Both
Damping:	0.0000 ft	0.0000 ft
Length:	66.00 ft	66.00 ft
FHWA Code:	30	30
Entr Loss Coef:	0.50	0.50
Exit Loss Coef:	0.00	0.00
Bend Loss Coef:	0.00	0.00
Bend Location:	0.00 dec	0.00 dec
Energy Switch:	Energy	Energy
	Invert: 19.34 ft	Invert: 19.72 ft
	Manning's N: 0.0120	Manning's N: 0.0120
	Geometry: Horizontal Ellipse	Geometry: Horizontal Ellipse
	Max Depth: 3.17 ft	Max Depth: 3.17 ft
	Bottom Clip	Bottom Clip
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0120	Manning's N: 0.0120
	Top Clip	Top Clip
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0120	Manning's N: 0.0120

Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 72

Weir Link: COX-330-W

Scenario:	PRE	Bottom Clip
From Node:	COX-330	Default: 0.00 ft
To Node:	COX-320	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	24.80 ft	Discharge Coefficients
Control Elevation:	24.80 ft	Weir Default: 2.800

Max Depth: 83.25 ft
 Max Width: 20.00 ft
 Fillet: 0.00 ft

Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Channel Link: COX-340-C		Upstream	Downstream
Scenario:	PRE	Invert: 20.12 ft	Invert: 19.34 ft
From Node:	COX-340	Manning's N: 0.0000	Manning's N: 0.0000
To Node:	COX-330	Geometry: Irregular	Geometry: Irregular
Link Count:	1	Cross Section: COX-340	Cross Section: COX-340
Flow Direction:	Both		
Damping:	0.0000 ft		
Length:	430.00 ft		
Contraction Coef:	0.00		
Expansion Coef:	0.00		
Entr Loss Coef:	0.00		
Exit Loss Coef:	0.00		
Bend Loss Coef:	0.00		
Bend Location:	0.00 dec		
Energy Switch:	Energy		

Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 67
 X-SEC 10' NORTH OF R-498 BETWEEN 1485-1505 COX ROAD

Weir Link: COX-340-W		Bottom Clip
Scenario:	PRE	Default: 0.00 ft
From Node:	COX-340	Op Table:
To Node:	MUD-200	Ref Node:
Link Count:	1	
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	24.50 ft	Discharge Coefficients
Control Elevation:	24.50 ft	Weir Default: 2.800
Max Depth:	83.25 ft	Weir Table:
Max Width:	200.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment: OVERTOPPING SUB-BASIN BOUNDARY. INVERT ELEVATION WAS ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.

Pipe Link: COX-350-P		Upstream	Downstream
Scenario:	PRE	Invert: 19.66 ft	Invert: 20.12 ft

From Node: COX-350	Manning's N: 0.0120	Manning's N: 0.0120
To Node: COX-340	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 264.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0120	Manning's N: 0.0120
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0120	Manning's N: 0.0120
Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGES 73-74		

Weir Link: COX-350-W1		
Scenario: PRE	Bottom Clip	
From Node: COX-350	Default: 0.00 ft	
To Node: COX-340	Op Table:	
Link Count: 1	Ref Node:	
Flow Direction: Both	Top Clip	
Damping: 0.0000 ft	Default: 0.00 ft	
Weir Type: Broad Crested Vertical	Op Table:	
Geometry Type: Rectangular	Ref Node:	
Invert: 25.20 ft	Discharge Coefficients	
Control Elevation: 25.20 ft	Weir Default: 2.800	
Max Depth: 83.25 ft	Weir Table:	
Max Width: 20.00 ft	Orifice Default: 0.600	
Fillet: 0.00 ft	Orifice Table:	
Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.		

Weir Link: COX-350-W2		
Scenario: PRE	Bottom Clip	
From Node: COX-350	Default: 0.00 ft	
To Node: MUD-200	Op Table:	
Link Count: 1	Ref Node:	
Flow Direction: Both	Top Clip	
Damping: 0.0000 ft	Default: 0.00 ft	
Weir Type: Broad Crested Vertical	Op Table:	
Geometry Type: Rectangular	Ref Node:	
Invert: 25.00 ft	Discharge Coefficients	
Control Elevation: 25.00 ft	Weir Default: 2.800	
Max Depth: 83.25 ft	Weir Table:	
Max Width: 200.00 ft	Orifice Default: 0.600	

Fillet: 0.00 ft

Orifice Table:

Comment: OVERTOPPING SUB-BASIN BOUNDARY. INVERT ELEVATION WAS ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.

Pipe Link: COX-360-P	Upstream	Downstream
Scenario: PRE	Invert: 19.76 ft	Invert: 19.52 ft
From Node: COX-360	Manning's N: 0.0130	Manning's N: 0.0130
To Node: COX-350	Geometry: Horizontal Ellipse	Geometry: Horizontal Ellipse
Link Count: 1	Max Depth: 1.83 ft	Max Depth: 1.83 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 216.00 ft	Op Table:	Op Table:
FHWA Code: 30	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0130	Manning's N: 0.0130
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0130	Manning's N: 0.0130

Comment: CROSSING STATE ROAD 524
BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 74

Weir Link: COX-360-W	
Scenario:	PRE
From Node:	COX-360
To Node:	COX-350
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Rectangular
Invert:	26.50 ft
Control Elevation:	26.50 ft
Max Depth:	83.25 ft
Max Width:	100.00 ft
Fillet:	0.00 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment: OVERTOPPING SR524. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-370-P	Upstream	Downstream
Scenario: PRE	Invert: 18.57 ft	Invert: 19.54 ft
From Node: COX-370	Manning's N: 0.0240	Manning's N: 0.0240
To Node: COX-360	Geometry: Circular	Geometry: Circular

Link Count: 1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 60.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0240	Manning's N: 0.0240
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240
Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 3 CROSSING DRIVEWAY AT 1720 COX ROAD		

Weir Link: COX-370-W		
Scenario: PRE	Bottom Clip	
From Node: COX-370	Default: 0.00 ft	
To Node: COX-360	Op Table:	
Link Count: 1	Ref Node:	
Flow Direction: Both	Top Clip	
Damping: 0.0000 ft	Default: 0.00 ft	
Weir Type: Broad Crested Vertical	Op Table:	
Geometry Type: Rectangular	Ref Node:	
Invert: 25.00 ft	Discharge Coefficients	
Control Elevation: 25.00 ft	Weir Default: 2.800	
Max Depth: 83.25 ft	Weir Table:	
Max Width: 20.00 ft	Orifice Default: 0.600	
Fillet: 0.00 ft	Orifice Table:	
Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.		

Pipe Link: COX-380-P		
	Upstream	Downstream
Scenario: PRE	Invert: 18.07 ft	Invert: 17.97 ft
From Node: COX-380	Manning's N: 0.0130	Manning's N: 0.0130
To Node: COX-370	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 25.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0130	Manning's N: 0.0130
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:

Manning's N: 0.0130

Manning's N: 0.0130

Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 3

Weir Link: COX-380-W

Scenario: PRE	Bottom Clip
From Node: COX-380	Default: 0.00 ft
To Node: COX-370	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 24.70 ft	Discharge Coefficients
Control Elevation: 24.70 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-390-P

	Upstream	Downstream
Scenario: PRE	Invert: 18.50 ft	Invert: 18.55 ft
From Node: COX-390	Manning's N: 0.0240	Manning's N: 0.0240
To Node: COX-380	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 25.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0240	Manning's N: 0.0240
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 5
DRIVEWAY CROSSING AT 1760 COX ROAD

Weir Link: COX-390-W

Scenario: PRE	Bottom Clip
From Node: COX-390	Default: 0.00 ft
To Node: COX-380	Op Table:
Link Count: 1	Ref Node:

Flow Direction:	Both	
Damping:	0.0000 ft	Top Clip
Weir Type:	Broad Crested Vertical	Default: 0.00 ft
Geometry Type:	Rectangular	Op Table:
Invert:	24.00 ft	Ref Node:
Control Elevation:	24.00 ft	Discharge Coefficients
Max Depth:	83.25 ft	Weir Default: 2.800
Max Width:	20.00 ft	Weir Table:
Fillet:	0.00 ft	Orifice Default: 0.600
		Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-400-P	Upstream	Downstream
Scenario: PRE	Invert: 19.89 ft	Invert: 19.69 ft
From Node: COX-400	Manning's N: 0.0240	Manning's N: 0.0240
To Node: COX-390	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 2.50 ft	Max Depth: 2.50 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 20.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0240	Manning's N: 0.0240
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 5

Weir Link: COX-400-W1	Bottom Clip
Scenario: PRE	Default: 0.00 ft
From Node: COX-400	Op Table:
To Node: COX-390	Ref Node:
Link Count: 1	Top Clip
Flow Direction: Both	Default: 0.00 ft
Damping: 0.0000 ft	Op Table:
Weir Type: Broad Crested Vertical	Ref Node:
Geometry Type: Rectangular	Discharge Coefficients
Invert: 24.50 ft	Weir Default: 2.800
Control Elevation: 24.50 ft	Weir Table:
Max Depth: 83.25 ft	Orifice Default: 0.600
Max Width: 20.00 ft	Orifice Table:
Fillet: 0.00 ft	

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Weir Link: COX-400-W2

Scenario:	PRE	Bottom Clip
From Node:	COX-400	Default: 0.00 ft
To Node:	SR524-510	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	23.50 ft	Discharge Coefficients
Control Elevation:	23.50 ft	Weir Default: 2.800
Max Depth:	83.25 ft	Weir Table:
Max Width:	100.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment: OVERTOPPING COX ROAD. INVERT ELEVATION WAS ESTIMATED BASED ON THE 1-FT LIDAR TOPOGRAPHY.

Pipe Link: COX-410-P

	Upstream	Downstream
Scenario:	PRE	
From Node:	COX-410	
To Node:	COX-400	
Link Count:	1	
Flow Direction:	Both	
Damping:	0.0000 ft	
Length:	20.00 ft	
FHWA Code:	1	
Entr Loss Coef:	0.50	
Exit Loss Coef:	0.00	
Bend Loss Coef:	0.00	
Bend Location:	0.00 dec	
Energy Switch:	Energy	
	Invert: 19.90 ft	Invert: 19.81 ft
	Manning's N: 0.0240	Manning's N: 0.0240
	Geometry: Circular	Geometry: Circular
	Max Depth: 2.50 ft	Max Depth: 2.50 ft
	Bottom Clip	
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240
	Top Clip	
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 6

Weir Link: COX-410-W

Scenario:	PRE	Bottom Clip
From Node:	COX-410	Default: 0.00 ft
To Node:	COX-400	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	24.10 ft	Discharge Coefficients
Control Elevation:	24.10 ft	Weir Default: 2.800

Max Depth: 83.25 ft
 Max Width: 20.00 ft
 Fillet: 0.00 ft

Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-420-P

Scenario: PRE
 From Node: COX-420
 To Node: COX-410
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Length: 20.00 ft
 FHWA Code: 1
 Entr Loss Coef: 0.50
 Exit Loss Coef: 0.00
 Bend Loss Coef: 0.00
 Bend Location: 0.00 dec
 Energy Switch: Energy

Upstream

Invert: 19.18 ft
 Manning's N: 0.0240
 Geometry: Circular
 Max Depth: 1.50 ft
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Manning's N: 0.0240

Downstream

Invert: 19.15 ft
 Manning's N: 0.0240
 Geometry: Circular
 Max Depth: 1.50 ft
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Manning's N: 0.0240

Bottom Clip

Default: 0.00 ft
 Op Table:
 Ref Node:
 Manning's N: 0.0240

Top Clip

Default: 0.00 ft
 Op Table:
 Ref Node:
 Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 6

Weir Link: COX-420-W

Scenario: PRE
 From Node: COX-420
 To Node: COX-410
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Weir Type: Broad Crested Vertical
 Geometry Type: Rectangular
 Invert: 23.40 ft
 Control Elevation: 23.40 ft
 Max Depth: 83.25 ft
 Max Width: 20.00 ft
 Fillet: 0.00 ft

Bottom Clip

Default: 0.00 ft
 Op Table:
 Ref Node:

Top Clip

Default: 0.00 ft
 Op Table:
 Ref Node:

Discharge Coefficients

Weir Default: 2.800
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-430-P

Scenario: PRE
 From Node: COX-430

Upstream

Invert: 20.12 ft
 Manning's N: 0.0130

Downstream

Invert: 19.96 ft
 Manning's N: 0.0130

To Node: COX-420	Geometry: Horizontal Ellipse	Geometry: Horizontal Ellipse
Link Count: 1	Max Depth: 1.58 ft	Max Depth: 1.58 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 40.00 ft	Op Table:	Op Table:
FHWA Code: 30	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0130	Manning's N: 0.0130
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0130	Manning's N: 0.0130
Comment: CROSSING RAYBURN ROAD		
BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 13		

Weir Link: COX-430-W		
Scenario: PRE	Bottom Clip	
From Node: COX-430	Default: 0.00 ft	
To Node: COX-420	Op Table:	
Link Count: 1	Ref Node:	
Flow Direction: Both	Top Clip	
Damping: 0.0000 ft	Default: 0.00 ft	
Weir Type: Broad Crested Vertical	Op Table:	
Geometry Type: Rectangular	Ref Node:	
Invert: 23.50 ft	Discharge Coefficients	
Control Elevation: 23.50 ft	Weir Default: 2.800	
Max Depth: 83.25 ft	Weir Table:	
Max Width: 20.00 ft	Orifice Default: 0.600	
Fillet: 0.00 ft	Orifice Table:	
Comment: OVERTOPPING RAYBURN ROAD. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.		

Pipe Link: COX-430E-P		
	Upstream	Downstream
Scenario: PRE	Invert: 19.98 ft	Invert: 19.56 ft
From Node: COX-430	Manning's N: 0.0130	Manning's N: 0.0130
To Node: SR524-530	Geometry: Horizontal Ellipse	Geometry: Horizontal Ellipse
Link Count: 1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 74.00 ft	Op Table:	Op Table:
FHWA Code: 30	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0130	Manning's N: 0.0130
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:

Energy Switch: Energy

Ref Node:

Ref Node:

Manning's N: 0.0130

Manning's N: 0.0130

Comment: CROSSING COX ROAD

BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 13

Weir Link: COX-430E-W

Scenario: PRE
 From Node: COX-430
 To Node: SR524-530
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Weir Type: Broad Crested Vertical
 Geometry Type: Rectangular
 Invert: 24.50 ft
 Control Elevation: 24.50 ft
 Max Depth: 83.25 ft
 Max Width: 100.00 ft
 Fillet: 0.00 ft

Bottom Clip

Default: 0.00 ft

Op Table:

Ref Node:

Top Clip

Default: 0.00 ft

Op Table:

Ref Node:

Discharge Coefficients

Weir Default: 2.800

Weir Table:

Orifice Default: 0.600

Orifice Table:

Comment: OVERTOPPING COX ROAD. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-430W-P

Scenario: PRE
 From Node: COX-430W
 To Node: COX-430
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Length: 10.00 ft
 FHWA Code: 30
 Entr Loss Coef: 0.50
 Exit Loss Coef: 0.00
 Bend Loss Coef: 0.00
 Bend Location: 0.00 dec
 Energy Switch: Energy

Upstream

Invert: 20.01 ft
 Manning's N: 0.0130
 Geometry: Horizontal Ellipse
 Max Depth: 2.00 ft
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Manning's N: 0.0130
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Manning's N: 0.0130

Downstream

Invert: 20.09 ft
 Manning's N: 0.0130
 Geometry: Horizontal Ellipse
 Max Depth: 2.00 ft
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Manning's N: 0.0130
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Manning's N: 0.0130

Bottom Clip

Top Clip

Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 13

Weir Link: COX-430W-W

Scenario: PRE
 From Node: COX-430W
 To Node: COX-420

Bottom Clip

Default: 0.00 ft

Op Table:

Link Count:	1	
Flow Direction:	Both	Ref Node:
Damping:	0.0000 ft	Top Clip
Weir Type:	Broad Crested Vertical	Default: 0.00 ft
Geometry Type:	Rectangular	Op Table:
Invert:	23.30 ft	Ref Node:
Control Elevation:	23.30 ft	Discharge Coefficients
Max Depth:	83.25 ft	Weir Default: 2.800
Max Width:	20.00 ft	Weir Table:
Fillet:	0.00 ft	Orifice Default: 0.600
		Orifice Table:

Comment: OVERTOPPING RAYBURN ROAD. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Weir Link: COX-431-W1

Scenario:	PRE	Bottom Clip
From Node:	COX-431	Default: 0.00 ft
To Node:	COX-430W	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Irregular	Ref Node:
Invert:	24.43 ft	Discharge Coefficients
Control Elevation:	24.43 ft	Weir Default: 2.800
Cross Section:	X-COX-431-430W	Weir Table:
		Orifice Default: 0.600
		Orifice Table:

Comment:

Weir Link: COX-431-W2

Scenario:	PRE	Bottom Clip
From Node:	COX-431	Default: 0.00 ft
To Node:	SR524-400S	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Irregular	Ref Node:
Invert:	24.21 ft	Discharge Coefficients
Control Elevation:	24.21 ft	Weir Default: 2.800
Cross Section:	X-COX-431-SR524-400S	Weir Table:
		Orifice Default: 0.600
		Orifice Table:

Comment:

Weir Link: COX-431-W3

Scenario: PRE	Bottom Clip
From Node: COX-431	Default: 0.00 ft
To Node: SR524-310	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Irregular	Ref Node:
Invert: 23.68 ft	Discharge Coefficients
Control Elevation: 23.68 ft	Weir Default: 2.800
Cross Section: X-COX-431-SR524-310	Weir Table:
	Orifice Default: 0.600
	Orifice Table:

Comment:

Pipe Link: COX-440-P

	Upstream	Downstream
Scenario: PRE	Invert: 19.99 ft	Invert: 19.94 ft
From Node: COX-440	Manning's N: 0.0240	Manning's N: 0.0240
To Node: COX-430	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 32.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0240	Manning's N: 0.0240
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 13
DRIVEWAY CROSSING AT 4110 RAYBURN ROAD

Weir Link: COX-440-W

Scenario: PRE	Bottom Clip
From Node: COX-440	Default: 0.00 ft
To Node: COX-430	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 23.50 ft	Discharge Coefficients

Control Elevation: 23.50 ft
 Max Depth: 83.25 ft
 Max Width: 20.00 ft
 Fillet: 0.00 ft

Weir Default: 2.800
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-450-P

	Upstream	Downstream
Scenario: PRE	Invert: 20.40 ft	Invert: 20.29 ft
From Node: COX-450	Manning's N: 0.0240	Manning's N: 0.0240
To Node: COX-440	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 20.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0240	Manning's N: 0.0240
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 16

Weir Link: COX-450-W

Scenario: PRE	Bottom Clip
From Node: COX-450	Default: 0.00 ft
To Node: COX-440	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 24.00 ft	Discharge Coefficients
Control Elevation: 24.00 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-460-P

	Upstream	Downstream
Scenario: PRE	Invert: 20.05 ft	Invert: 20.07 ft

From Node: COX-460	Manning's N: 0.0240	Manning's N: 0.0240
To Node: COX-450	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 24.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0240	Manning's N: 0.0240
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240
Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 17		

Weir Link: COX-460-W		
Scenario: PRE	Bottom Clip	
From Node: COX-460	Default: 0.00 ft	
To Node: COX-450	Op Table:	
Link Count: 1	Ref Node:	
Flow Direction: Both	Top Clip	
Damping: 0.0000 ft	Default: 0.00 ft	
Weir Type: Broad Crested Vertical	Op Table:	
Geometry Type: Rectangular	Ref Node:	
Invert: 23.50 ft	Discharge Coefficients	
Control Elevation: 23.50 ft	Weir Default: 2.800	
Max Depth: 83.25 ft	Weir Table:	
Max Width: 20.00 ft	Orifice Default: 0.600	
Fillet: 0.00 ft	Orifice Table:	
Comment: OVERTOPPING DITCH BANK. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.		

Pipe Link: COX-700WS-P		
	Upstream	Downstream
Scenario: PRE	Invert: 20.36 ft	Invert: 20.51 ft
From Node: COX-700W	Manning's N: 0.0240	Manning's N: 0.0240
To Node: COX-460	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 20.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0240	Manning's N: 0.0240
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:

Energy Switch: Energy

Ref Node:

Ref Node:

Manning's N: 0.0240

Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 18

Weir Link: COX-700WS-W1

Scenario: PRE	Bottom Clip
From Node: COX-700W	Default: 0.00 ft
To Node: COX-460	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 24.20 ft	Discharge Coefficients
Control Elevation: 24.20 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Weir Link: COX-700WS-W2

Scenario: PRE	Bottom Clip
From Node: COX-700W	Default: 0.00 ft
To Node: COX-460	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 23.50 ft	Discharge Coefficients
Control Elevation: 23.50 ft	Weir Default: 3.200
Max Depth: 83.25 ft	Weir Table:
Max Width: 300.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment: OVERTOPPING SUB-BASIN BOUNDARY. INVERT ELEVATION WAS ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.

Weir Link: COX-710E-W2

Scenario: PRE	Bottom Clip
From Node: COX-710E	Default: 0.00 ft
To Node: SR524-530	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip

Damping:	0.0000 ft	
Weir Type:	Broad Crested Vertical	Default: 0.00 ft
Geometry Type:	Rectangular	Op Table:
Invert:	24.00 ft	Ref Node:
Control Elevation:	24.00 ft	Discharge Coefficients
Max Depth:	83.25 ft	Weir Default: 2.800
Max Width:	100.00 ft	Weir Table:
Fillet:	0.00 ft	Orifice Default: 0.600
		Orifice Table:

Comment: SUB-BASIN INTERCONNECT. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.

Weir Link: FRI-100E-W2

Scenario:	PRE	Bottom Clip
From Node:	FRI-100E	Default: 0.00 ft
To Node:	SR524-200	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	25.50 ft	Discharge Coefficients
Control Elevation:	25.50 ft	Weir Default: 2.800
Max Depth:	83.25 ft	Weir Table:
Max Width:	100.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment: OVERTOPPING SR 524. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.

Channel Link: RAY-100E-C

	Upstream	Downstream
Scenario:	PRE	Invert: 20.00 ft
From Node:	RAY-100	Manning's N: 0.0000
To Node:	COX-430W	Manning's N: 0.0000
Link Count:	1	Geometry: Irregular
Flow Direction:	Both	Geometry: Irregular
Damping:	0.0000 ft	Cross Section: RAY-100
Length:	2760.00 ft	
Contraction Coef:	0.00	
Expansion Coef:	0.00	
Entr Loss Coef:	0.00	
Exit Loss Coef:	0.00	
Bend Loss Coef:	0.00	
Bend Location:	0.00 dec	
Energy Switch:	Energy	

Comment: BREVARD COUNTY SURVEY AREA No. 4B, FIELD BOOK 552, PAGES 55 AND 57
X-SEC #2, LOCATED ACROSS 42 LF EAST OF THE CENTERLINE OF FRIDAY ROAD AND

14 LF NORTH OF RAYBURN ROAD

DOWNSTEAM INVERT WAS OBTAINED FROM SURVEY 4A, FIELD BOOK No. 546, PAGE 13, CANAL BOTTOM 4' WEST OF STRUCTURE 4AES422

NO UPSTREAM SPOT ELEVATIONS AVAILABLE. ASSUMED UPSTREAM INVERT TO BE THE SAME AS DOWNSTEAM. DITCH WAS MODELED TO HYDRAULIC INTERCONNECT NODES RAY-100 TO COX-430W. THERE ARE NUMEROUS DRIVEWAY CULVERTS THAT WERE NOT MODELED.

Weir Link: SR524-200-W

Scenario:	PRE	Bottom Clip
From Node:	SR524-200	Default: 0.00 ft
To Node:	COX-220	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	23.50 ft	Discharge Coefficients
Control Elevation:	23.50 ft	Weir Default: 2.800
Max Depth:	83.25 ft	Weir Table:
Max Width:	100.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment: OVERTOPPING WEIR. DIMENSIONS AND INVERT ELEVATION WAS ESTIMATED USING THE 1-FT LIDAR TOPO.

Pipe Link: SR524-210-P

	Upstream	Downstream
Scenario:	PRE	PRE
From Node:	SR524-210	SR524-200
To Node:	SR524-200	SR524-210
Link Count:	2	2
Flow Direction:	Both	Both
Damping:	0.0000 ft	0.0000 ft
Length:	68.00 ft	68.00 ft
FHWA Code:	1	1
Entr Loss Coef:	0.50	0.50
Exit Loss Coef:	0.00	0.00
Bend Loss Coef:	0.00	0.00
Bend Location:	0.00 dec	0.00 dec
Energy Switch:	Energy	Energy
	Invert: 20.64 ft	Invert: 20.14 ft
	Manning's N: 0.0130	Manning's N: 0.0130
	Geometry: Circular	Geometry: Circular
	Max Depth: 2.00 ft	Max Depth: 2.00 ft
	Bottom Clip	Bottom Clip
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0130	Manning's N: 0.0130
	Top Clip	Top Clip
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0130	Manning's N: 0.0130

Comment: PIPE DATA OBTAINED FROM FDOT PLANS 70070-3501-03-41, DATED 1971

Weir Link: SR524-210-W

Scenario:	PRE	Bottom Clip
-----------	-----	-------------

From Node:	SR524-210	
To Node:	SR524-200	Default: 0.00 ft
Link Count:	1	Op Table:
Flow Direction:	Both	Ref Node:
Damping:	0.0000 ft	Top Clip
Weir Type:	Broad Crested Vertical	Default: 0.00 ft
Geometry Type:	Rectangular	Op Table:
Invert:	25.50 ft	Ref Node:
Control Elevation:	25.50 ft	Discharge Coefficients
Max Depth:	83.25 ft	Weir Default: 2.800
Max Width:	100.00 ft	Weir Table:
Fillet:	0.00 ft	Orifice Default: 0.600
		Orifice Table:

Comment: OVERTOPPING SR524. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.

Weir Link: SR524-300-W1

Scenario:	PRE	Bottom Clip
From Node:	SR524-300	Default: 0.00 ft
To Node:	COX-300	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	24.00 ft	Discharge Coefficients
Control Elevation:	24.00 ft	Weir Default: 2.800
Max Depth:	83.25 ft	Weir Table:
Max Width:	200.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment: OVERTOPPING SUB-BASIN BOUNDARY. INVERT ELEVATION WAS ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.

Weir Link: SR524-300-W2

Scenario:	PRE	Bottom Clip
From Node:	SR524-300	Default: 0.00 ft
To Node:	COX-290	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	23.50 ft	Discharge Coefficients
Control Elevation:	23.50 ft	Weir Default: 2.800
Max Depth:	83.25 ft	Weir Table:
Max Width:	100.00 ft	Orifice Default: 0.600

Fillet: 0.00 ft

Orifice Table:

Comment: OVERTOPPING WEIR. DIMENSIONS AND INVERT ELEVATION WAS ESTIMATED USING THE 1-FT LIDAR TOPO.

Pipe Link: SR524-310-P

	Upstream	Downstream
Scenario: PRE	Invert: 22.22 ft	Invert: 22.12 ft
From Node: SR524-310	Manning's N: 0.0130	Manning's N: 0.0130
To Node: SR524-300	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 59.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0130	Manning's N: 0.0130
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0130	Manning's N: 0.0130

Comment: PIPE DATA OBTAINED FROM FDOT PLANS 70070-3501-03-41, DATED 1971

Weir Link: SR524-310-W

Scenario: PRE	Bottom Clip
From Node: SR524-310	Default: 0.00 ft
To Node: SR524-300	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 26.50 ft	Discharge Coefficients
Control Elevation: 26.50 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 100.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment: OVERTOPPING SR524. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.

Weir Link: SR524-310-W1

Scenario: PRE	Bottom Clip
From Node: SR524-310	Default: 0.00 ft
To Node: SR524-400S	Op Table:
Link Count: 1	Ref Node:

Flow Direction: Both
 Damping: 0.0000 ft
 Weir Type: Broad Crested Vertical
 Geometry Type: Irregular
 Invert: 23.45 ft
 Control Elevation: 23.45 ft
 Cross Section: X-SR524-310-400S

Top Clip
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Discharge Coefficients
 Weir Default: 2.800
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment:

Pipe Link: SR524-400-P

Scenario: PRE
 From Node: SR524-400E
 To Node: COX-340
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Length: 73.00 ft
 FHWA Code: 1
 Entr Loss Coef: 0.50
 Exit Loss Coef: 0.00
 Bend Loss Coef: 0.00
 Bend Location: 0.00 dec
 Energy Switch: Energy

Upstream	Downstream
Invert: 20.67 ft	Invert: 20.44 ft
Manning's N: 0.0130	Manning's N: 0.0130
Geometry: Circular	Geometry: Circular
Max Depth: 2.50 ft	Max Depth: 2.50 ft
Bottom Clip	
Default: 0.00 ft	Default: 0.00 ft
Op Table:	Op Table:
Ref Node:	Ref Node:
Manning's N: 0.0130	Manning's N: 0.0130
Top Clip	
Default: 0.00 ft	Default: 0.00 ft
Op Table:	Op Table:
Ref Node:	Ref Node:
Manning's N: 0.0130	Manning's N: 0.0130

Comment: PIPE DATA OBTAINED FROM FDOT PLANS 70070-3501-03-41, DATED 1971

Weir Link: SR524-400-W

Scenario: PRE
 From Node: SR524-400E
 To Node: COX-340
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Weir Type: Broad Crested Vertical
 Geometry Type: Rectangular
 Invert: 26.50 ft
 Control Elevation: 26.50 ft
 Max Depth: 83.25 ft
 Max Width: 100.00 ft
 Fillet: 0.00 ft

Bottom Clip
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Top Clip
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Discharge Coefficients
 Weir Default: 2.800
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment: OVERTOPPING SR524. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.

Weir Link: SR524-400S-W1

Scenario:	PRE	Bottom Clip
From Node:	SR524-400S	Default: 0.00 ft
To Node:	SR524-400E	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Irregular	Ref Node:
Invert:	23.51 ft	Discharge Coefficients
Control Elevation:	23.51 ft	Weir Default: 2.800
Cross Section:	X-SR524-400S-400E	Weir Table:
		Orifice Default: 0.600
		Orifice Table:

Comment:

Pipe Link: SR524-500-P

	Upstream	Downstream
Scenario:	PRE	
From Node:	SR524-500	
To Node:	MUD-200	
Link Count:	2	
Flow Direction:	Both	
Damping:	0.0000 ft	
Length:	108.00 ft	
FHWA Code:	1	
Entr Loss Coef:	0.50	
Exit Loss Coef:	0.00	
Bend Loss Coef:	0.00	
Bend Location:	0.00 dec	
Energy Switch:	Energy	
	Invert: 18.27 ft	Invert: 17.70 ft
	Manning's N: 0.0120	Manning's N: 0.0120
	Geometry: Circular	Geometry: Circular
	Max Depth: 3.50 ft	Max Depth: 3.50 ft
	Bottom Clip	
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0120	Manning's N: 0.0120
	Top Clip	
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0120	Manning's N: 0.0120

Comment: PIPE DATA OBTAINED FROM FDOT PLANS (PROJECT NO. 70070-3529) FOR STATE ROAD 524
PREPARED BY HBA, DATED JULY 1991. REFER TO SHEET NOS. 14 AND 17 FOR STRUCTURE S-5

Weir Link: SR524-500-W

Scenario:	PRE	Bottom Clip
From Node:	SR524-500	Default: 0.00 ft
To Node:	MUD-200	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	24.50 ft	Discharge Coefficients

Control Elevation: 24.50 ft
 Max Depth: 83.25 ft
 Max Width: 100.00 ft
 Fillet: 0.00 ft

Weir Default: 2.800
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment: OVERTOPPING SR524. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.

Channel Link: SR524-510-C	Upstream	Downstream
Scenario: PRE	Invert: 16.98 ft	Invert: 16.98 ft
From Node: SR524-510	Manning's N: 0.0000	Manning's N: 0.0000
To Node: SR524-500	Geometry: Irregular	Geometry: Irregular
Link Count: 1	Cross Section: SR524-510	Cross Section: SR524-510
Flow Direction: Both		
Damping: 0.0000 ft		
Length: 1210.00 ft		
Contraction Coef: 0.00		
Expansion Coef: 0.00		
Entr Loss Coef: 0.00		
Exit Loss Coef: 0.00		
Bend Loss Coef: 0.00		
Bend Location: 0.00 dec		
Energy Switch: Energy		

Comment: SAME X-SEC AS SR524-530 WITH DIFFERENT MANNING'S N ALONG THE LEFT SIDE OF THE CANAL
 DOWNSTREAM INVERT ELEVATION WAS ASSUMED TO HAVE THE SAME ELEVATION AS THE UPSTREAM (NO SURVEY DATA)

Pipe Link: SR524-520-P1	Upstream	Downstream
Scenario: PRE	Invert: 16.96 ft	Invert: 16.98 ft
From Node: SR524-520	Manning's N: 0.0120	Manning's N: 0.0120
To Node: SR524-510	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 64.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0120	Manning's N: 0.0120
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0120	Manning's N: 0.0120

Comment: CROSSING PINYON DRIVE (EAST PIPE)
 BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 10

Pipe Link: SR524-520-P2		
	Upstream	Downstream
Scenario: PRE	Invert: 17.08 ft	Invert: 17.10 ft
From Node: SR524-520	Manning's N: 0.0120	Manning's N: 0.0120
To Node: SR524-510	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 64.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0120	Manning's N: 0.0120
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0120	Manning's N: 0.0120
Comment: CROSSING PINYON (WEST PIPE)		
BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 10		

Weir Link: SR524-520-W	
Scenario: PRE	Bottom Clip
From Node: SR524-520	Default: 0.00 ft
To Node: SR524-510	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 24.10 ft	Discharge Coefficients
Control Elevation: 24.10 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:
Comment: OVERTOPPING PINYON ROAD. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.	

Channel Link: SR524-530-C		
	Upstream	Downstream
Scenario: PRE	Invert: 19.56 ft	Invert: 16.96 ft
From Node: SR524-530	Manning's N: 0.0000	Manning's N: 0.0000
To Node: SR524-520	Geometry: Irregular	Geometry: Irregular
Link Count: 1	Cross Section: SR524-530	Cross Section: SR524-530
Flow Direction: Both		
Damping: 0.0000 ft		
Length: 154.00 ft		
Contraction Coef: 0.60		
Expansion Coef: 0.80		

Entr Loss Coef: 0.00
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Bend Location: 0.00 dec
Energy Switch: Energy

Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGES 11-12
X-SEC #3

Weir Link: SR524-605-W2

Scenario: PRE	Bottom Clip
From Node: SR524-605	Default: 0.00 ft
To Node: SR524-530	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 24.50 ft	Discharge Coefficients
Control Elevation: 24.50 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 60.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment: OVERTOPPING SUB-BASIN BOUNDARY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.

Simple Basin: COX-200

Scenario: POST
 Node: COX-200
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 79.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 40.8800 ac
 Curve Number: 76.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-200	_10-24	38.73	13.0000	7.50	4.71	40.8800	76.0	0.00	0.00
COX-200	_25-24	50.16	12.9833	9.00	6.08	40.8800	76.0	0.00	0.00
COX-200	_MA-24	19.88	13.0667	4.92	2.47	40.8800	76.0	0.00	0.00

Simple Basin: COX-210

Scenario: POST
 Node: COX-210
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 38.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: Uh323
 Peaking Factor: 323.0
 Area: 8.3800 ac
 Curve Number: 87.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-210	_10-24	21.21	12.3333	7.50	5.98	8.3800	87.0	0.00	0.00
COX-210	_25-24	26.19	12.3333	9.00	7.44	8.3800	87.0	0.00	0.00
COX-210	_MA-24	12.62	12.3500	4.92	3.50	8.3800	87.0	0.00	0.00

Simple Basin: COX-240

Scenario: POST
 Node: COX-240
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 47.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 10.8100 ac
 Curve Number: 84.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-240	_10-24	17.78	12.5333	7.50	5.62	10.8100	84.0	0.00	0.00
COX-240	_25-24	22.22	12.5333	9.00	7.06	10.8100	84.0	0.00	0.00
COX-240	_MA-24	10.18	12.5500	4.92	3.20	10.8100	84.0	0.00	0.00

Simple Basin: COX-250

Scenario: POST

Node: COX-250
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 41.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: Uh323
 Peaking Factor: 323.0
 Area: 13.3800 ac
 Curve Number: 95.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-250	_10-24	35.74	12.3667	7.50	6.92	13.3800	95.0	0.00	0.00
COX-250	_25-24	43.14	12.3667	9.00	8.42	13.3800	95.0	0.00	0.00
COX-250	_MA-24	22.93	12.3667	4.92	4.35	13.3800	95.0	0.00	0.00

Simple Basin: COX-270

Scenario: POST
 Node: COX-270
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 62.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: Uh323
 Peaking Factor: 323.0
 Area: 7.9500 ac
 Curve Number: 95.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-270	_10-24	16.73	12.6167	7.50	6.92	7.9500	95.0	0.00	0.00
COX-270	_25-24	20.19	12.6167	9.00	8.42	7.9500	95.0	0.00	0.00
COX-270	_MA-24	10.72	12.6167	4.92	4.35	7.9500	95.0	0.00	0.00

Simple Basin: COX-280

Scenario: POST
 Node: COX-280
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 42.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: Uh323
 Peaking Factor: 323.0
 Area: 8.2200 ac
 Curve Number: 95.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-280	_10-24	21.67	12.3833	7.50	6.92	8.2200	95.0	0.00	0.00
COX-280	_25-24	26.15	12.3833	9.00	8.42	8.2200	95.0	0.00	0.00
COX-280	_MA-24	13.90	12.3833	4.92	4.35	8.2200	95.0	0.00	0.00

Simple Basin: COX-300

Scenario: POST
 Node: COX-300
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 35.0000 min
 Max Allowable Q: 999999.00 cfs

Time Shift: 0.0000 hr
 Unit Hydrograph: Uh323
 Peaking Factor: 323.0
 Area: 4.3300 ac
 Curve Number: 95.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-300	_10-24	12.58	12.3000	7.50	6.92	4.3300	95.0	0.00	0.00
COX-300	_25-24	15.19	12.3000	9.00	8.42	4.3300	95.0	0.00	0.00
COX-300	_MA-24	8.08	12.3000	4.92	4.35	4.3300	95.0	0.00	0.00

Simple Basin: COX-320

Scenario: POST
 Node: COX-320
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 58.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: Uh323
 Peaking Factor: 323.0
 Area: 6.5700 ac
 Curve Number: 89.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow	Total Rainfall	Total Runoff [in]	Area [ac]	Equivalent Curve	% Imperv	% DCIA
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Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-320	_10-24	13.45	12.5833	7.50	6.21	6.5700	89.0	0.00	0.00
COX-320	_25-24	16.50	12.5833	9.00	7.69	6.5700	89.0	0.00	0.00
COX-320	_MA-24	8.16	12.6000	4.92	3.70	6.5700	89.0	0.00	0.00

Simple Basin: COX-330

Scenario: POST
 Node: COX-330
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 38.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: Uh323
 Peaking Factor: 323.0
 Area: 2.4200 ac
 Curve Number: 94.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-330	_10-24	6.68	12.3333	7.50	6.80	2.4200	94.0	0.00	0.00
COX-330	_25-24	8.08	12.3333	9.00	8.30	2.4200	94.0	0.00	0.00
COX-330	_MA-24	4.25	12.3333	4.92	4.24	2.4200	94.0	0.00	0.00

Simple Basin: COX-340

Scenario: POST
 Node: COX-340
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 67.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr

Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 8.3300 ac
 Curve Number: 90.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-340	_10-24	11.78	12.7667	7.50	6.32	8.3300	90.0	0.00	0.00
COX-340	_25-24	14.43	12.7500	9.00	7.79	8.3300	90.0	0.00	0.00
COX-340	_MA-24	7.19	12.7833	4.92	3.80	8.3300	90.0	0.00	0.00

Simple Basin: COX-350

Scenario: POST
 Node: COX-350
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 40.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: Uh256
 Peaking Factor: 256.0
 Area: 2.9400 ac
 Curve Number: 92.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-350	_10-24	6.55	12.4000	7.50	6.55	2.9400	92.0	0.00	0.00
COX-350	_25-24	7.97	12.4000	9.00	8.03	2.9400	92.0	0.00	0.00
COX-350	_MA-24	4.09	12.4167	4.92	4.01	2.9400	92.0	0.00	0.00

Simple Basin: COX-390

Scenario: POST
 Node: COX-390
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 47.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: Uh256
 Peaking Factor: 256.0
 Area: 24.0800 ac
 Curve Number: 84.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-390	_10-24	43.24	12.5000	7.50	5.61	24.0800	84.0	0.00	0.00
COX-390	_25-24	54.03	12.5000	9.00	7.06	24.0800	84.0	0.00	0.00
COX-390	_MA-24	24.75	12.5167	4.92	3.20	24.0800	84.0	0.00	0.00

Simple Basin: COX-430W

Scenario: POST
 Node: COX-430W
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 73.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr

Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 97.1040 ac
 Curve Number: 85.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-430 W	_10-24	118.81	12.8500	7.50	5.73	97.1040	85.0	0.00	0.00
COX-430 W	_25-24	148.17	12.8500	9.00	7.18	97.1040	85.0	0.00	0.00
COX-430 W	_MA-24	68.51	12.8833	4.92	3.29	97.1040	85.0	0.00	0.00

Simple Basin: COX-431

Scenario: POST
 Node: COX-431
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 73.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 6.0930 ac
 Curve Number: 79.6
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-431	_10-24	6.67	12.8833	7.50	5.11	6.0930	79.6	0.00	0.00
COX-431	_25-24	8.50	12.8667	9.00	6.52	6.0930	79.6	0.00	0.00
COX-431	_MA-24	3.60	12.9333	4.92	2.79	6.0930	79.6	0.00	0.00

Simple Basin: COX-432

Scenario: POST
 Node: COX-432
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 73.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 6.0140 ac
 Curve Number: 83.8
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-432	_10-24	7.19	12.8667	7.50	5.59	6.0140	83.8	0.00	0.00
COX-432	_25-24	9.01	12.8500	9.00	7.04	6.0140	83.8	0.00	0.00
COX-432	_MA-24	4.09	12.9000	4.92	3.18	6.0140	83.8	0.00	0.00

Simple Basin: COX-450

Scenario: POST
 Node: COX-450
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 39.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr

Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 10.3300 ac
 Curve Number: 84.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
COX-450	_10-24	19.24	12.4333	7.50	5.62	10.3300	84.0	0.00	0.00
COX-450	_25-24	24.02	12.4333	9.00	7.06	10.3300	84.0	0.00	0.00
COX-450	_MA-24	11.03	12.4500	4.92	3.20	10.3300	84.0	0.00	0.00

Simple Basin: FRI-690E

Scenario: POST
 Node:
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 24.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH256
 Peaking Factor: 256.0
 Area: 0.5080 ac
 Curve Number: 83.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
FRI-690E	_10-24	1.30	12.2000	7.50	5.50	0.5080	83.0	0.00	0.00
FRI-690E	_25-24	1.63	12.2000	9.00	6.93	0.5080	83.0	0.00	0.00
FRI-690E	_MA-24	0.74	12.2167	4.92	3.10	0.5080	83.0	0.00	0.00

Simple Basin: SR524-200

Scenario: POST
 Node: SR524-200
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 157.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 173.1300 ac
 Curve Number: 83.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
SR524-200	_10-24	114.03	14.0667	7.50	5.50	173.1300	83.0	0.00	0.00
SR524-200	_25-24	143.78	14.0333	9.00	6.94	173.1300	83.0	0.00	0.00
SR524-200	_MA-24	63.79	14.1667	4.92	3.10	173.1300	83.0	0.00	0.00

Simple Basin: SR524-210

Scenario: POST
 Node: SR524-210
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number

Time of Concentration: 105.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 31.8400 ac
 Curve Number: 81.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
SR524-210	_10-24	27.35	13.3333	7.50	5.27	31.8400	81.0	0.00	0.00
SR524-210	_25-24	34.70	13.3000	9.00	6.69	31.8400	81.0	0.00	0.00
SR524-210	_MA-24	14.97	13.4000	4.92	2.92	31.8400	81.0	0.00	0.00

Simple Basin: SR524-300

Scenario: POST
 Node: SR524-300
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 88.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 86.0800 ac
 Curve Number: 84.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
SR524-300	_10-24	89.97	13.0667	7.50	5.62	86.0800	84.0	0.00	0.00
SR524-300	_25-24	112.73	13.0500	9.00	7.06	86.0800	84.0	0.00	0.00
SR524-300	_MA-24	51.17	13.1000	4.92	3.20	86.0800	84.0	0.00	0.00

Simple Basin: SR524-310

Scenario: POST
 Node: SR524-310
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 118.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 29.8650 ac
 Curve Number: 80.2
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
SR524-310	_10-24	23.06	13.5333	7.50	5.18	29.8650	80.2	0.00	0.00
SR524-310	_25-24	29.36	13.5000	9.00	6.59	29.8650	80.2	0.00	0.00
SR524-310	_MA-24	12.49	13.6167	4.92	2.84	29.8650	80.2	0.00	0.00

Simple Basin: SR524-400E1

Scenario: POST
 Node: SR524-400E1
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 14.9000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 1.6530 ac
 Curve Number: 88.6
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
SR524-400E1	_10-24	5.68	12.0833	7.50	6.15	1.6530	88.6	0.00	0.00
SR524-400E1	_25-24	6.97	12.0833	9.00	7.62	1.6530	88.6	0.00	0.00
SR524-400E1	_MA-24	3.44	12.0833	4.92	3.66	1.6530	88.6	0.00	0.00

Simple Basin: SR524-400E2

Scenario: POST
 Node: SR524-400E2
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 50.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 1.5680 ac
 Curve Number: 79.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00

Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
SR524-40 OE2	_10-24	2.23	12.5833	7.50	5.05	1.5680	79.0	0.00	0.00
SR524-40 OE2	_25-24	2.84	12.5667	9.00	6.45	1.5680	79.0	0.00	0.00
SR524-40 OE2	_MA-24	1.20	12.6167	4.92	2.73	1.5680	79.0	0.00	0.00

Simple Basin: SR524-400N1

Scenario: POST
 Node: SR524-400N1
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 10.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH484
 Peaking Factor: 484.0
 Area: 8.8620 ac
 Curve Number: 88.3
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
SR524-40 ON1	_10-24	45.33	12.0167	7.50	6.13	8.8620	88.3	0.00	0.00
SR524-40 ON1	_25-24	55.47	12.0167	9.00	7.60	8.8620	88.3	0.00	0.00

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
SR524-400N1	_MA-24	27.72	12.0167	4.92	3.63	8.8620	88.3	0.00	0.00

Simple Basin: SR524-400N2

Scenario: POST
 Node: SR524-400N2
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 10.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH484
 Peaking Factor: 484.0
 Area: 12.6570 ac
 Curve Number: 86.9
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
SR524-400N2	_10-24	63.64	12.0167	7.50	5.97	12.6570	86.9	0.00	0.00
SR524-400N2	_25-24	78.18	12.0167	9.00	7.43	12.6570	86.9	0.00	0.00
SR524-400N2	_MA-24	38.38	12.0167	4.92	3.49	12.6570	86.9	0.00	0.00

Simple Basin: SR524-400S

Scenario: POST
 Node: SR524-400S
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 50.0000 min

Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 6.9270 ac
 Curve Number: 85.4
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
SR524-40 OS	_10-24	11.20	12.5667	7.50	5.78	6.9270	85.4	0.00	0.00
SR524-40 OS	_25-24	13.92	12.5500	9.00	7.23	6.9270	85.4	0.00	0.00
SR524-40 OS	_MA-24	6.51	12.5833	4.92	3.33	6.9270	85.4	0.00	0.00

Simple Basin: SR524-400W

Scenario: POST
 Node: SR524-400W
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 10.0000 min
 Max Allowable Q: 0.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: UH484
 Peaking Factor: 484.0
 Area: 5.9470 ac
 Curve Number: 96.7
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
SR524-40 OW	_10-24	32.57	12.0167	7.50	7.12	5.9470	96.7	0.00	0.00
SR524-40 OW	_25-24	39.16	12.0167	9.00	8.62	5.9470	96.7	0.00	0.00
SR524-40 OW	_MA-24	21.19	12.0167	4.92	4.54	5.9470	96.7	0.00	0.00

Simple Basin: SR524-500

Scenario: POST
 Node: SR524-500
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 45.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: Uh323
 Peaking Factor: 323.0
 Area: 27.3300 ac
 Curve Number: 87.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
SR524-500	_10-24	63.02	12.4333	7.50	5.98	27.3300	87.0	0.00	0.00
SR524-500	_25-24	77.80	12.4333	9.00	7.44	27.3300	87.0	0.00	0.00
SR524-500	_MA-24	37.45	12.4333	4.92	3.50	27.3300	87.0	0.00	0.00

Simple Basin: SR524-530

Scenario: POST
 Node: SR524-530
 Hydrograph Method: NRCS Unit Hydrograph
 Infiltration Method: Curve Number
 Time of Concentration: 40.0000 min
 Max Allowable Q: 999999.00 cfs
 Time Shift: 0.0000 hr
 Unit Hydrograph: GAMMA
 Peaking Factor: 200.0
 Area: 42.9300 ac
 Curve Number: 84.0
 % Impervious: 0.00
 % DCIA: 0.00
 % Direct: 0.00
 Rainfall Name:

Comment:

Simple Basin Runoff Summary [POST]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max Flow [hrs]	Total Rainfall [in]	Total Runoff [in]	Area [ac]	Equivalent Curve Number	% Imperv	% DCIA
SR524-530	_10-24	78.62	12.4500	7.50	5.62	42.9300	84.0	0.00	0.00
SR524-530	_25-24	98.18	12.4500	9.00	7.06	42.9300	84.0	0.00	0.00
SR524-530	_MA-24	45.10	12.4833	4.92	3.20	42.9300	84.0	0.00	0.00

Node: COX-190

Scenario: POST
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 18.03 ft
Warning Stage: 24.00 ft
Boundary Stage: COX-190

Comment:

Node: COX-200

Scenario: POST
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 18.35 ft
Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
18.35	0.0100	436
20.00	0.0200	871
22.00	1.1700	50965
23.00	2.7700	120661
24.00	6.7600	294466

Comment:

Node: COX-210

Scenario: POST
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 18.57 ft
Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
18.57	0.0100	436
20.00	0.0600	2614
22.00	0.1600	6970
23.00	0.6000	26136
24.00	3.1500	137214

Comment:

Node: COX-220

Scenario: POST
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 19.11 ft
Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.11	0.0100	436
24.00	0.1000	4356

Comment:

Node: COX-230

Scenario: POST
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 18.88 ft
Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
18.88	0.0100	436
23.00	0.0800	3485
24.00	0.1000	4356

Comment:

Node: COX-240

Scenario: POST
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 18.63 ft
Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
18.63	0.0100	436
23.00	0.0600	2614
24.00	7.9800	347609

Comment:

Node: COX-250

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.21 ft
 Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.21	0.0100	436
21.00	0.0400	1742
22.00	0.1900	8276
23.00	0.9900	43124
24.00	7.0600	307534

Comment:

Node: COX-260

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.62 ft
 Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.62	0.0100	436
21.00	0.0200	871
23.00	0.0900	3920
24.00	0.1500	6534

Comment:

Node: COX-270

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.44 ft
 Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.44	0.0100	436
22.00	0.0600	2614
23.00	0.1200	5227
24.00	0.2900	12632
25.00	4.8300	210395

Comment:

Node: COX-280

Scenario: POST
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 19.12 ft
Warning Stage: 24.40 ft

Stage [ft]	Area [ac]	Area [ft2]
19.12	0.0100	436
21.00	0.0500	2178
23.00	0.1600	6970
24.00	0.1800	7841
25.00	1.4100	61420

Comment:

Node: COX-290

Scenario: POST
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 19.72 ft
Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.72	0.0100	436
22.00	0.0500	2178
23.00	0.0900	3920
24.00	0.2400	10454
25.00	1.4000	60984

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE SURVEYED DATA.

Node: COX-300

Scenario: POST
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 19.08 ft
Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.08	0.0100	436
23.00	0.1100	4792
24.00	0.2200	9583
25.00	3.4400	149846

Comment:

Node: COX-310

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.62 ft
 Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.62	0.0100	436
22.00	0.3800	16553
23.00	0.7400	32234
24.00	1.3300	57935
25.00	3.1200	135907

Comment:

Node: COX-320

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.72 ft
 Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.72	0.0100	436
22.00	0.0400	1742
24.00	0.0800	3485
25.00	0.6300	27443

Comment:

Node: COX-330

Scenario: POST
 Type: Stage/Area

Base Flow: 0.00 cfs
 Initial Stage: 19.34 ft
 Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.34	0.0100	436
21.00	0.0200	871
23.00	0.0700	3049
24.00	0.4900	21344
25.00	2.0100	87556

Comment:

Node: COX-340

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 20.12 ft
 Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
20.12	0.0100	436
21.00	0.0600	2614
22.00	2.4300	105851
23.00	3.9100	170320
24.00	5.3500	233046
25.00	6.9000	300564

Comment:

Node: COX-350

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.52 ft
 Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.52	0.0100	436
22.00	0.0400	1742
24.00	0.3200	13939
25.00	0.9200	40075

Comment:

Node: COX-360

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.54 ft
 Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.54	0.0100	436
24.00	0.0100	436
25.00	0.0500	2178

Comment:

Node: COX-370

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 17.97 ft
 Warning Stage: 23.00 ft

Stage [ft]	Area [ac]	Area [ft2]
17.97	0.0100	436
23.00	0.1100	4792
24.00	0.3300	14375

Comment:

Node: COX-380

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 18.07 ft
 Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
18.07	0.0100	436
21.00	0.0500	2178
22.00	0.1000	4356
23.00	0.9800	42689
24.00	2.1000	91476

Comment:

Node: COX-390

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 18.50 ft
 Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
18.50	0.0100	436
21.00	0.0400	1742
22.00	0.1700	7405
23.00	3.0000	130680
24.00	7.9400	345866

Comment:

Node: COX-400

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.81 ft
 Warning Stage: 23.50 ft

Stage [ft]	Area [ac]	Area [ft2]
19.81	0.0100	436
22.00	0.0500	2178
23.50	0.1000	4356

Comment:

Node: COX-410

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.15 ft
 Warning Stage: 23.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.15	0.0100	436
21.00	0.0300	1307
22.00	0.0900	3920
23.00	0.9900	43124
24.00	2.3300	101495

Comment:

Node: COX-420

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.18 ft
 Warning Stage: 23.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.18	0.0100	436
23.00	0.1600	6970
24.00	0.4000	17424

Comment:

Node: COX-430

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.94 ft
 Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.94	0.0100	436
24.00	0.1000	4356

Comment:

Node: COX-430W

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 22.50 ft
 Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
20.00	0.0001	4
22.50	0.2920	12720
23.00	3.5120	152983
24.00	14.5260	632753
25.00	90.5640	3944968

Comment:

Node: COX-431

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 22.50 ft
 Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
22.50	0.1720	7492
23.00	0.2770	12066
23.50	0.4530	19733
24.00	0.8890	38725
24.50	2.2540	98184
25.00	4.2570	185435

Comment:

Node: COX-432

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 22.10 ft
 Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
22.10	0.2180	9496
23.00	1.3220	57586
23.50	1.7520	76317
24.00	4.4910	195628
24.50	5.9950	261142
25.00	6.1170	266457

Comment:

Node: COX-440

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.99 ft

Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.99	0.0100	436
24.00	0.1000	4356

Comment:

Node: COX-450

Scenario: POST
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 20.07 ft
Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
20.07	0.0100	436
22.00	0.0700	3049
23.00	4.9600	216058
24.00	8.5000	370260

Comment:

Node: COX-460

Scenario: POST
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 20.05 ft
Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
20.05	0.0100	436
24.00	0.1000	4356

Comment:

Node: COX-700W

Scenario: POST
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 20.36 ft
Warning Stage: 24.00 ft

Boundary Stage: COX-700W

Comment:

Node: COX-710E

Scenario: POST
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 20.69 ft
Warning Stage: 24.00 ft
Boundary Stage: COX-710E

Comment: DITCH BOTTOM INLET LOCATED JUST SOUTH OF 2075 COX ROAD.

Node: FRI-100E

Scenario: POST
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 20.66 ft
Warning Stage: 24.00 ft
Boundary Stage: FRI-100E

Comment:

Node: MUD-200

Scenario: POST
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 16.07 ft
Warning Stage: 19.00 ft
Boundary Stage: MUD-200

Comment:

Node: RAY-100

Scenario: POST
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 20.00 ft
Warning Stage: 25.00 ft
Boundary Stage: RAY-100

Comment:

Node: SR524-200

Scenario: POST
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 20.14 ft
Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
20.14	0.1000	4356
22.00	6.9700	303613
23.00	8.1400	354578
24.00	98.0500	4271058

Comment:

Node: SR524-210

Scenario: POST
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 20.64 ft
Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
20.64	0.1000	4356
24.00	8.4000	365904
25.00	28.4600	1239718

Comment:

Node: SR524-300

Scenario: POST
Type: Stage/Area

Base Flow: 0.00 cfs
 Initial Stage: 22.12 ft
 Warning Stage: 24.00 ft

Stage [ft]	Area [ac]	Area [ft2]
22.12	0.1000	4356
23.00	8.6100	375052
24.00	38.0500	1657458
25.00	73.7300	3211679

Comment:

Node: SR524-310

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 22.10 ft
 Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
20.50	0.0000	0
22.50	0.3440	14985
23.00	1.4290	62247
23.50	2.6010	113300
23.70	2.8850	125671
24.00	3.0400	132422
25.00	22.8400	994910

Comment:

Node: SR524-400E1

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 24.44 ft
 Warning Stage: 26.00 ft

Stage [ft]	Area [ac]	Area [ft2]
24.44	0.0000	0
25.00	0.0420	1830
26.00	0.4060	17685

Comment:

Node: SR524-400E2

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 23.00 ft
 Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
23.00	0.0000	0
24.00	1.2130	52838
25.00	1.4490	63118

Comment:

Node: SR524-400N1

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 25.00 ft
 Warning Stage: 27.00 ft

Stage [ft]	Area [ac]	Area [ft2]
25.00	1.1650	50747
26.00	1.3370	58240
27.00	1.5500	67518

Comment:

Node: SR524-400N2

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 25.00 ft
 Warning Stage: 27.00 ft

Stage [ft]	Area [ac]	Area [ft2]
25.00	3.0160	131377
26.00	3.3390	145447
27.00	3.7080	161520

Comment:

Node: SR524-400S

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 22.10 ft
 Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
22.10	1.5060	65601
23.00	2.1110	91955
23.50	2.9750	129591
23.70	3.0820	134252
24.00	3.9900	173804
25.00	5.4740	238447

Comment:

Node: SR524-400W

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 22.50 ft
 Warning Stage: 25.00 ft

Stage [ft]	Area [ac]	Area [ft2]
22.10	4.9400	215186
23.00	5.1840	225815
24.00	5.4680	238186
25.00	5.7560	250731

Comment:

Node: SR524-500

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 16.88 ft
 Warning Stage: 23.00 ft

Stage [ft]	Area [ac]	Area [ft2]
16.88	0.0100	436
20.00	0.6700	29185
22.00	1.1800	51401
23.00	2.5600	111514

Comment:

Node: SR524-510

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 16.98 ft
 Warning Stage: 23.00 ft

Stage [ft]	Area [ac]	Area [ft2]
16.98	0.0100	436
23.00	0.1000	4356

Comment:

Node: SR524-520

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 16.96 ft
 Warning Stage: 23.00 ft

Stage [ft]	Area [ac]	Area [ft2]
16.96	0.0100	436
23.00	0.1000	4356

Comment:

Node: SR524-530

Scenario: POST
 Type: Stage/Area
 Base Flow: 0.00 cfs
 Initial Stage: 19.56 ft
 Warning Stage: 23.00 ft

Stage [ft]	Area [ac]	Area [ft2]
19.56	0.0100	436
20.00	0.0400	1742
21.00	0.1500	6534
22.00	0.6800	29621
23.00	10.9100	475240

Stage [ft]	Area [ac]	Area [ft2]
24.00	30.5200	1329451

Comment:

Node: SR524-605

Scenario: POST
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 15.98 ft
Warning Stage: 23.00 ft
Boundary Stage: SR524-605

Comment:

Pipe Link: COX-200-P		Upstream	Downstream
Scenario:	POST	Invert: 18.35 ft	Invert: 18.03 ft
From Node:	COX-200	Manning's N: 0.0120	Manning's N: 0.0120
To Node:	COX-190	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 3.50 ft	Max Depth: 3.50 ft
Flow Direction:	Both	Bottom Clip	
Damping:	0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length:	80.00 ft	Op Table:	Op Table:
FHWA Code:	1	Ref Node:	Ref Node:
Entr Loss Coef:	0.50	Manning's N: 0.0120	Manning's N: 0.0120
Exit Loss Coef:	0.00	Top Clip	
Bend Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location:	0.00 dec	Op Table:	Op Table:
Energy Switch:	Energy	Ref Node:	Ref Node:
		Manning's N: 0.0120	Manning's N: 0.0120
Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 49			

Weir Link: COX-200-W	
Scenario:	POST
From Node:	COX-200
To Node:	COX-190
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Rectangular
Invert:	24.10 ft
Control Elevation:	24.10 ft
Max Depth:	83.25 ft
Max Width:	20.00 ft
Fillet:	0.00 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	
Comment: OVERTOPPING ENTRANCE ROAD. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.	

Pipe Link: COX-210-P		Upstream	Downstream
Scenario:	POST	Invert: 18.57 ft	Invert: 18.45 ft
From Node:	COX-210	Manning's N: 0.0240	Manning's N: 0.0240
To Node:	COX-200	Geometry: Arch Structural Plate	Geometry: Arch Structural Plate
Link Count:	1	Max Depth: 3.50 ft	Max Depth: 3.50 ft
Flow Direction:	Both	Max Width: 4.67 ft	Max Width: 4.67 ft
Damping:	0.0000 ft	Bottom Clip	
Length:	60.00 ft	Default: 0.00 ft	Default: 0.00 ft
FHWA Code:	36	Op Table:	Op Table:
Entr Loss Coef:	0.50	Ref Node:	Ref Node:
Exit Loss Coef:	0.00	Manning's N: 0.0240	Manning's N: 0.0240

Bend Loss Coef: 0.00	Top Clip	
Bend Location: 0.00 dec	Default: 0.00 ft	Default: 0.00 ft
Energy Switch: Energy	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 51

Weir Link: COX-210-W

Scenario: POST	Bottom Clip
From Node: COX-210	Default: 0.00 ft
To Node: COX-200	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 23.50 ft	Discharge Coefficients
Control Elevation: 23.50 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment: OVERTOPPING ENTRANCE ROAD. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Channel Link: COX-220-C

	Upstream	Downstream
Scenario: POST	Invert: 19.11 ft	Invert: 18.57 ft
From Node: COX-220	Manning's N: 0.0000	Manning's N: 0.0000
To Node: COX-210	Geometry: Irregular	Geometry: Irregular
Link Count: 1	Cross Section: COX-220	Cross Section: COX-220
Flow Direction: Both		
Damping: 0.0000 ft		
Length: 610.00 ft		
Contraction Coef: 0.00		
Expansion Coef: 0.00		
Entr Loss Coef: 0.00		
Exit Loss Coef: 0.00		
Bend Loss Coef: 0.00		
Bend Location: 0.00 dec		
Energy Switch: Energy		

Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 52
X-SEC AT C-187

Weir Link: COX-220-W

Scenario: POST
 From Node: COX-220
 To Node: COX-210
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Weir Type: Broad Crested Vertical
 Geometry Type: Rectangular
 Invert: 23.50 ft
 Control Elevation: 23.50 ft
 Max Depth: 83.25 ft
 Max Width: 100.00 ft
 Fillet: 0.00 ft

Bottom Clip

Default: 0.00 ft

Op Table:

Ref Node:

Top Clip

Default: 0.00 ft

Op Table:

Ref Node:

Discharge Coefficients

Weir Default: 2.800

Weir Table:

Orifice Default: 0.600

Orifice Table:

Comment: OVERTOPPING CANAL BANK. INVERT ELEVATION ESTIMATED BASED ON THE 1-FT LIDAR TOPOGRAPHY.

Pipe Link: COX-230-P

Upstream

Downstream

Scenario: POST
 From Node: COX-230
 To Node: COX-220
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Length: 60.00 ft
 FHWA Code: 1
 Entr Loss Coef: 0.50
 Exit Loss Coef: 0.00
 Bend Loss Coef: 0.00
 Bend Location: 0.00 dec
 Energy Switch: Energy

Invert: 18.88 ft

Manning's N: 0.0240

Geometry: Circular

Max Depth: 3.50 ft

Default: 0.00 ft

Op Table:

Ref Node:

Manning's N: 0.0240

Default: 0.00 ft

Op Table:

Ref Node:

Manning's N: 0.0240

Invert: 19.11 ft

Manning's N: 0.0240

Geometry: Circular

Max Depth: 3.50 ft

Default: 0.00 ft

Op Table:

Ref Node:

Manning's N: 0.0240

Default: 0.00 ft

Op Table:

Ref Node:

Manning's N: 0.0240

Comment: COMBINED TWO DRIVEWAY CROSSINGS INTO A SINGLE PIPE (ADDED PIPE LENGTHS)

HUMANE SOCIETY CENTRAL AND SOUTH ENTRANCE DRIVEWAY CULVERTS

BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 53

(UPSTREAM - NORTH END, LOCATION ID 0463ES0007)

(DOWNSTREAM - SOUTH END, LOCATION ID 0463ES0006)

Weir Link: COX-230-W

Scenario: POST
 From Node: COX-230
 To Node: COX-220
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft

Bottom Clip

Default: 0.00 ft

Op Table:

Ref Node:

Top Clip

Default: 0.00 ft

Weir Type: Broad Crested Vertical
 Geometry Type: Rectangular
 Invert: 24.00 ft
 Control Elevation: 24.00 ft
 Max Depth: 83.25 ft
 Max Width: 20.00 ft
 Fillet: 0.00 ft

Op Table:
 Ref Node:
 Discharge Coefficients
 Weir Default: 2.800
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment: OVERTOPPING ENTRANCE ROAD. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-240-P

Scenario: POST
 From Node: COX-240
 To Node: COX-230
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Length: 40.00 ft
 FHWA Code: 1
 Entr Loss Coef: 0.50
 Exit Loss Coef: 0.00
 Bend Loss Coef: 0.00
 Bend Location: 0.00 dec
 Energy Switch: Energy

Upstream
 Invert: 19.25 ft
 Manning's N: 0.0120
 Geometry: Circular
 Max Depth: 3.00 ft
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Manning's N: 0.0120
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Manning's N: 0.0120

Downstream
 Invert: 19.58 ft
 Manning's N: 0.0120
 Geometry: Circular
 Max Depth: 3.00 ft
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Manning's N: 0.0120
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Manning's N: 0.0120

Comment: HUMANE SOCIETY NORTH ENTRANCE DRIVEWAY CULVERT
 BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 53

Weir Link: COX-240-W

Scenario: POST
 From Node: COX-240
 To Node: COX-230
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Weir Type: Broad Crested Vertical
 Geometry Type: Rectangular
 Invert: 24.60 ft
 Control Elevation: 24.60 ft
 Max Depth: 83.25 ft
 Max Width: 20.00 ft
 Fillet: 0.00 ft

Bottom Clip
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Top Clip
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Discharge Coefficients
 Weir Default: 3.200
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-250-P		Upstream	Downstream
Scenario:	POST	Invert: 19.22 ft	Invert: 18.63 ft
From Node:	COX-250	Manning's N: 0.0120	Manning's N: 0.0120
To Node:	COX-240	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 4.00 ft	Max Depth: 4.00 ft
Flow Direction:	Both	Bottom Clip	
Damping:	0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length:	144.00 ft	Op Table:	Op Table:
FHWA Code:	1	Ref Node:	Ref Node:
Entr Loss Coef:	0.50	Manning's N: 0.0120	Manning's N: 0.0120
Exit Loss Coef:	0.00	Top Clip	
Bend Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location:	0.00 dec	Op Table:	Op Table:
Energy Switch:	Energy	Ref Node:	Ref Node:
		Manning's N: 0.0120	Manning's N: 0.0120
Comment: COMBINED TWO DRIVEWAY CROSSINGS INTO A SINGLE PIPE (ADDED PIPE LENGTHS) BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 57 (UPSTREAM - NORTH END, LOCATION ID 3CES382) BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 69 (DOWNSTREAM - SOUTH END, LOCATION ID 0463ES0002)			

Weir Link: COX-250-W	
Scenario:	POST
From Node:	COX-250
To Node:	COX-240
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Rectangular
Invert:	24.40 ft
Control Elevation:	24.40 ft
Max Depth:	83.25 ft
Max Width:	20.00 ft
Fillet:	0.00 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	
Comment: OVERTOPPING ENTRANCE ROAD. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.	

Pipe Link: COX-260-P		Upstream	Downstream
Scenario:	POST	Invert: 19.62 ft	Invert: 19.21 ft
From Node:	COX-260	Manning's N: 0.0240	Manning's N: 0.0240
To Node:	COX-250	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Flow Direction:	Both	Bottom Clip	
Damping:	0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length:	47.00 ft	Op Table:	Op Table:

FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0240	Manning's N: 0.0240
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 60

Weir Link: COX-260-W

Scenario: POST	Bottom Clip
From Node: COX-260	Default: 0.00 ft
To Node: COX-250	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 23.50 ft	Discharge Coefficients
Control Elevation: 23.50 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment: OVERTOPPING PINE TREE PLACE. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-270-P

	Upstream	Downstream
Scenario: POST	Invert: 19.44 ft	Invert: 19.79 ft
From Node: COX-270	Manning's N: 0.0240	Manning's N: 0.0240
To Node: COX-260	Geometry: Arch	Geometry: Arch
Link Count: 1	Max Depth: 2.25 ft	Max Depth: 2.25 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 48.00 ft	Op Table:	Op Table:
FHWA Code: 36	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0240	Manning's N: 0.0240
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240

Comment: CROSSING PINE CONE PLACE
BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 61

Weir Link: COX-270-W

Scenario:	POST	Bottom Clip
From Node:	COX-270	Default: 0.00 ft
To Node:	COX-260	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	24.50 ft	Discharge Coefficients
Control Elevation:	24.50 ft	Weir Default: 2.800
Max Depth:	83.25 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment: OVERTOPPING PINE CONE PLACE. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-280-P

	Upstream	Downstream
Scenario:	POST	
From Node:	COX-280	
To Node:	COX-270	
Link Count:	1	
Flow Direction:	Both	
Damping:	0.0000 ft	
Length:	56.00 ft	
FHWA Code:	36	
Entr Loss Coef:	0.50	
Exit Loss Coef:	0.00	
Bend Loss Coef:	0.00	
Bend Location:	0.00 dec	
Energy Switch:	Energy	
	Invert: 19.12 ft	Invert: 19.46 ft
	Manning's N: 0.0240	Manning's N: 0.0240
	Geometry: Arch	Geometry: Arch
	Max Depth: 2.25 ft	Max Depth: 2.25 ft
	Bottom Clip	
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240
	Top Clip	
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 63

Weir Link: COX-280-W

Scenario:	POST	Bottom Clip
From Node:	COX-280	Default: 0.00 ft
To Node:	COX-270	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	24.40 ft	Discharge Coefficients
Control Elevation:	24.40 ft	Weir Default: 2.800

Max Depth: 83.25 ft
 Max Width: 20.00 ft
 Fillet: 0.00 ft

Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment: OVERTOPPING PINE CONE PLACE. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-290-P	Upstream	Downstream
Scenario: POST	Invert: 19.72 ft	Invert: 19.60 ft
From Node: COX-290	Manning's N: 0.0120	Manning's N: 0.0120
To Node: COX-280	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 96.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0120	Manning's N: 0.0120
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0120	Manning's N: 0.0120

Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 65A

Weir Link: COX-290-W	
Scenario: POST	Bottom Clip
From Node: COX-290	Default: 0.00 ft
To Node: COX-280	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 25.00 ft	Discharge Coefficients
Control Elevation: 25.00 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment:

Pipe Link: COX-300-P	Upstream	Downstream
Scenario: POST	Invert: 19.33 ft	Invert: 19.75 ft
From Node: COX-300	Manning's N: 0.0240	Manning's N: 0.0240

To Node: COX-290
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Length: 96.00 ft
 FHWA Code: 36
 Entr Loss Coef: 0.50
 Exit Loss Coef: 0.00
 Bend Loss Coef: 0.00
 Bend Location: 0.00 dec
 Energy Switch: Energy

Geometry: Arch		Geometry: Arch	
Max Depth:	2.25 ft	Max Depth:	2.25 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0240	Manning's N:	0.0240
Top Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0240	Manning's N:	0.0240

Comment: COMBINED TWO DRIVEWAY CROSSINGS INTO A SINGLE PIPE (ADDED PIPE LENGTHS)
 BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 68 (UPSTREAM - NORTH END, LOCATION ID 0460ES0060)
 BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 65B (DOWNSTREAM - SOUTH END, LOCATION ID 0460ES0063)

Weir Link: COX-300-W

Scenario: POST
 From Node: COX-300
 To Node: COX-290
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Weir Type: Broad Crested Vertical
 Geometry Type: Rectangular
 Invert: 24.80 ft
 Control Elevation: 24.80 ft
 Max Depth: 83.25 ft
 Max Width: 20.00 ft
 Fillet: 0.00 ft

Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-310-P

Scenario: POST
 From Node: COX-310
 To Node: COX-300
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Length: 88.00 ft
 FHWA Code: 1
 Entr Loss Coef: 0.50
 Exit Loss Coef: 0.00

Upstream		Downstream	
Invert:	19.62 ft	Invert:	19.08 ft
Manning's N:	0.0120	Manning's N:	0.0120
Geometry: Circular		Geometry: Circular	
Max Depth:	3.00 ft	Max Depth:	3.00 ft
Bottom Clip			
Default:	0.00 ft	Default:	0.00 ft
Op Table:		Op Table:	
Ref Node:		Ref Node:	
Manning's N:	0.0120	Manning's N:	0.0120
Top Clip			

Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0120	Manning's N: 0.0120

Comment: COMBINED TWO DRIVEWAY CROSSINGS INTO A SINGLE PIPE (ADDED PIPE LENGTHS)
 BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 70 (UPSTREAM - NORTH END, LOCATION ID 0460ES0056)
 BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 69 (DOWNSTREAM - SOUTH END, LOCATION ID 0460ES0059)

Weir Link: COX-310-W

Scenario: POST	Bottom Clip
From Node: COX-310	Default: 0.00 ft
To Node: COX-300	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 25.10 ft	Discharge Coefficients
Control Elevation: 25.10 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-320-P

	Upstream	Downstream
Scenario: POST	Invert: 20.10 ft	Invert: 19.93 ft
From Node: COX-320	Manning's N: 0.0240	Manning's N: 0.0240
To Node: COX-310	Geometry: Arch	Geometry: Arch
Link Count: 1	Max Depth: 2.25 ft	Max Depth: 2.25 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 66.00 ft	Op Table:	Op Table:
FHWA Code: 36	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0240	Manning's N: 0.0240
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 71

Weir Link: COX-320-W

Scenario:	POST	Bottom Clip
From Node:	COX-320	Default: 0.00 ft
To Node:	COX-310	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	25.10 ft	Discharge Coefficients
Control Elevation:	25.10 ft	Weir Default: 2.800
Max Depth:	83.25 ft	Weir Table:
Max Width:	20.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-330-P

	Upstream	Downstream
Scenario:	POST	
From Node:	COX-330	
To Node:	COX-320	
Link Count:	1	
Flow Direction:	Both	
Damping:	0.0000 ft	
Length:	66.00 ft	
FHWA Code:	30	
Entr Loss Coef:	0.50	
Exit Loss Coef:	0.00	
Bend Loss Coef:	0.00	
Bend Location:	0.00 dec	
Energy Switch:	Energy	
	Invert: 19.34 ft	Invert: 19.72 ft
	Manning's N: 0.0120	Manning's N: 0.0120
	Geometry: Horizontal Ellipse	Geometry: Horizontal Ellipse
	Max Depth: 3.17 ft	Max Depth: 3.17 ft
	Bottom Clip	
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0120	Manning's N: 0.0120
	Top Clip	
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0120	Manning's N: 0.0120

Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 72

Weir Link: COX-330-W

Scenario:	POST	Bottom Clip
From Node:	COX-330	Default: 0.00 ft
To Node:	COX-320	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	24.80 ft	Discharge Coefficients
Control Elevation:	24.80 ft	Weir Default: 2.800

Max Depth: 83.25 ft
 Max Width: 20.00 ft
 Fillet: 0.00 ft

Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Channel Link: COX-340-C	Upstream	Downstream
Scenario: POST	Invert: 20.12 ft	Invert: 19.34 ft
From Node: COX-340	Manning's N: 0.0000	Manning's N: 0.0000
To Node: COX-330	Geometry: Irregular	Geometry: Irregular
Link Count: 1	Cross Section: COX-340	Cross Section: COX-340
Flow Direction: Both		
Damping: 0.0000 ft		
Length: 430.00 ft		
Contraction Coef: 0.00		
Expansion Coef: 0.00		
Entr Loss Coef: 0.00		
Exit Loss Coef: 0.00		
Bend Loss Coef: 0.00		
Bend Location: 0.00 dec		
Energy Switch: Energy		

Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 67
 X-SEC 10' NORTH OF R-498 BETWEEN 1485-1505 COX ROAD

Weir Link: COX-340-W	Bottom Clip
Scenario: POST	Default: 0.00 ft
From Node: COX-340	Op Table:
To Node: MUD-200	Ref Node:
Link Count: 1	
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 24.50 ft	Discharge Coefficients
Control Elevation: 24.50 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 200.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment: OVERTOPPING SUB-BASIN BOUNDARY. INVERT ELEVATION WAS ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.

Pipe Link: COX-350-P	Upstream	Downstream
Scenario: POST	Invert: 19.66 ft	Invert: 20.12 ft

From Node: COX-350	Manning's N: 0.0120	Manning's N: 0.0120
To Node: COX-340	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 264.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0120	Manning's N: 0.0120
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0120	Manning's N: 0.0120

Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGES 73-74

Weir Link: COX-350-W1

Scenario: POST	Bottom Clip
From Node: COX-350	Default: 0.00 ft
To Node: COX-340	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 25.20 ft	Discharge Coefficients
Control Elevation: 25.20 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Weir Link: COX-350-W2

Scenario: POST	Bottom Clip
From Node: COX-350	Default: 0.00 ft
To Node: MUD-200	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 25.00 ft	Discharge Coefficients
Control Elevation: 25.00 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 200.00 ft	Orifice Default: 0.600

Fillet: 0.00 ft

Orifice Table:

Comment: OVERTOPPING SUB-BASIN BOUNDARY. INVERT ELEVATION WAS ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.

Pipe Link: COX-360-P

	Upstream	Downstream
Scenario: POST	Invert: 19.76 ft	Invert: 19.52 ft
From Node: COX-360	Manning's N: 0.0130	Manning's N: 0.0130
To Node: COX-350	Geometry: Horizontal Ellipse	Geometry: Horizontal Ellipse
Link Count: 1	Max Depth: 1.83 ft	Max Depth: 1.83 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 216.00 ft	Op Table:	Op Table:
FHWA Code: 30	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0130	Manning's N: 0.0130
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0130	Manning's N: 0.0130

Comment: CROSSING STATE ROAD 524

BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 74

Weir Link: COX-360-W

Scenario: POST	Bottom Clip
From Node: COX-360	Default: 0.00 ft
To Node: COX-350	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 26.50 ft	Discharge Coefficients
Control Elevation: 26.50 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 100.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment: OVERTOPPING SR524. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-370-P

	Upstream	Downstream
Scenario: POST	Invert: 18.57 ft	Invert: 19.54 ft
From Node: COX-370	Manning's N: 0.0240	Manning's N: 0.0240
To Node: COX-360	Geometry: Circular	Geometry: Circular

Link Count: 1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 60.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0240	Manning's N: 0.0240
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240
Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 3 CROSSING DRIVEWAY AT 1720 COX ROAD		

Weir Link: COX-370-W		
Scenario: POST	Bottom Clip	
From Node: COX-370	Default: 0.00 ft	
To Node: COX-360	Op Table:	
Link Count: 1	Ref Node:	
Flow Direction: Both	Top Clip	
Damping: 0.0000 ft	Default: 0.00 ft	
Weir Type: Broad Crested Vertical	Op Table:	
Geometry Type: Rectangular	Ref Node:	
Invert: 25.00 ft	Discharge Coefficients	
Control Elevation: 25.00 ft	Weir Default: 2.800	
Max Depth: 83.25 ft	Weir Table:	
Max Width: 20.00 ft	Orifice Default: 0.600	
Fillet: 0.00 ft	Orifice Table:	
Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.		

Pipe Link: COX-380-P		
	Upstream	Downstream
Scenario: POST	Invert: 18.07 ft	Invert: 17.97 ft
From Node: COX-380	Manning's N: 0.0130	Manning's N: 0.0130
To Node: COX-370	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 25.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0130	Manning's N: 0.0130
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:

Manning's N: 0.0130

Manning's N: 0.0130

Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 3

Weir Link: COX-380-W

Scenario: POST	Bottom Clip
From Node: COX-380	Default: 0.00 ft
To Node: COX-370	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 24.70 ft	Discharge Coefficients
Control Elevation: 24.70 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-390-P

	Upstream	Downstream
Scenario: POST	Invert: 18.50 ft	Invert: 18.55 ft
From Node: COX-390	Manning's N: 0.0240	Manning's N: 0.0240
To Node: COX-380	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 25.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0240	Manning's N: 0.0240
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 5
DRIVEWAY CROSSING AT 1760 COX ROAD

Weir Link: COX-390-W

Scenario: POST	Bottom Clip
From Node: COX-390	Default: 0.00 ft
To Node: COX-380	Op Table:
Link Count: 1	Ref Node:

Flow Direction: Both
 Damping: 0.0000 ft
 Weir Type: Broad Crested Vertical
 Geometry Type: Rectangular
 Invert: 24.00 ft
 Control Elevation: 24.00 ft
 Max Depth: 83.25 ft
 Max Width: 20.00 ft
 Fillet: 0.00 ft

Top Clip
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Discharge Coefficients
 Weir Default: 2.800
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-400-P

Scenario: POST
 From Node: COX-400
 To Node: COX-390
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Length: 20.00 ft
 FHWA Code: 1
 Entr Loss Coef: 0.50
 Exit Loss Coef: 0.00
 Bend Loss Coef: 0.00
 Bend Location: 0.00 dec
 Energy Switch: Energy

Upstream	Downstream
Invert: 19.89 ft	Invert: 19.69 ft
Manning's N: 0.0240	Manning's N: 0.0240
Geometry: Circular	Geometry: Circular
Max Depth: 2.50 ft	Max Depth: 2.50 ft
Bottom Clip	
Default: 0.00 ft	Default: 0.00 ft
Op Table:	Op Table:
Ref Node:	Ref Node:
Manning's N: 0.0240	Manning's N: 0.0240
Top Clip	
Default: 0.00 ft	Default: 0.00 ft
Op Table:	Op Table:
Ref Node:	Ref Node:
Manning's N: 0.0240	Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 5

Weir Link: COX-400-W1

Scenario: POST
 From Node: COX-400
 To Node: COX-390
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Weir Type: Broad Crested Vertical
 Geometry Type: Rectangular
 Invert: 24.50 ft
 Control Elevation: 24.50 ft
 Max Depth: 83.25 ft
 Max Width: 20.00 ft
 Fillet: 0.00 ft

Bottom Clip
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Top Clip
 Default: 0.00 ft
 Op Table:
 Ref Node:
 Discharge Coefficients
 Weir Default: 2.800
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Weir Link: COX-400-W2

Scenario:	POST	Bottom Clip
From Node:	COX-400	Default: 0.00 ft
To Node:	SR524-510	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	23.50 ft	Discharge Coefficients
Control Elevation:	23.50 ft	Weir Default: 2.800
Max Depth:	83.25 ft	Weir Table:
Max Width:	100.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment: OVERTOPPING COX ROAD. INVERT ELEVATION WAS ESTIMATED BASED ON THE 1-FT LIDAR TOPOGRAPHY.

Pipe Link: COX-410-P

	Upstream	Downstream
Scenario:	POST	POST
From Node:	COX-410	COX-410
To Node:	COX-400	COX-400
Link Count:	1	1
Flow Direction:	Both	Both
Damping:	0.0000 ft	0.0000 ft
Length:	20.00 ft	20.00 ft
FHWA Code:	1	1
Entr Loss Coef:	0.50	0.50
Exit Loss Coef:	0.00	0.00
Bend Loss Coef:	0.00	0.00
Bend Location:	0.00 dec	0.00 dec
Energy Switch:	Energy	Energy
	Invert: 19.90 ft	Invert: 19.81 ft
	Manning's N: 0.0240	Manning's N: 0.0240
	Geometry: Circular	Geometry: Circular
	Max Depth: 2.50 ft	Max Depth: 2.50 ft
	Bottom Clip	Bottom Clip
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240
	Top Clip	Top Clip
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 6

Weir Link: COX-410-W

Scenario:	POST	Bottom Clip
From Node:	COX-410	Default: 0.00 ft
To Node:	COX-400	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	24.10 ft	Discharge Coefficients
Control Elevation:	24.10 ft	Weir Default: 2.800

Max Depth: 83.25 ft
 Max Width: 20.00 ft
 Fillet: 0.00 ft

Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-420-P

Scenario: POST
 From Node: COX-420
 To Node: COX-410
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Length: 20.00 ft
 FHWA Code: 1
 Entr Loss Coef: 0.50
 Exit Loss Coef: 0.00
 Bend Loss Coef: 0.00
 Bend Location: 0.00 dec
 Energy Switch: Energy

Upstream
 Invert: 19.18 ft
 Manning's N: 0.0240

Downstream
 Invert: 19.15 ft
 Manning's N: 0.0240

Geometry: Circular

Geometry: Circular

Max Depth: 1.50 ft

Max Depth: 1.50 ft

Bottom Clip

Default: 0.00 ft

Default: 0.00 ft

Op Table:

Op Table:

Ref Node:

Ref Node:

Manning's N: 0.0240

Manning's N: 0.0240

Top Clip

Default: 0.00 ft

Default: 0.00 ft

Op Table:

Op Table:

Ref Node:

Ref Node:

Manning's N: 0.0240

Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 6

Weir Link: COX-420-W

Scenario: POST
 From Node: COX-420
 To Node: COX-410
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Weir Type: Broad Crested Vertical
 Geometry Type: Rectangular
 Invert: 23.40 ft
 Control Elevation: 23.40 ft
 Max Depth: 83.25 ft
 Max Width: 20.00 ft
 Fillet: 0.00 ft

Bottom Clip

Default: 0.00 ft

Op Table:

Ref Node:

Top Clip

Default: 0.00 ft

Op Table:

Ref Node:

Discharge Coefficients

Weir Default: 2.800

Weir Table:

Orifice Default: 0.600

Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-430-P

Scenario: POST
 From Node: COX-430

Upstream
 Invert: 20.12 ft
 Manning's N: 0.0130

Downstream
 Invert: 19.96 ft
 Manning's N: 0.0130

To Node: COX-420	Geometry: Horizontal Ellipse	Geometry: Horizontal Ellipse
Link Count: 1	Max Depth: 1.58 ft	Max Depth: 1.58 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 40.00 ft	Op Table:	Op Table:
FHWA Code: 30	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0130	Manning's N: 0.0130
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0130	Manning's N: 0.0130
Comment: CROSSING RAYBURN ROAD		
BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 13		

Weir Link: COX-430-W		
Scenario: POST	Bottom Clip	
From Node: COX-430	Default: 0.00 ft	
To Node: COX-420	Op Table:	
Link Count: 1	Ref Node:	
Flow Direction: Both	Top Clip	
Damping: 0.0000 ft	Default: 0.00 ft	
Weir Type: Broad Crested Vertical	Op Table:	
Geometry Type: Rectangular	Ref Node:	
Invert: 23.50 ft	Discharge Coefficients	
Control Elevation: 23.50 ft	Weir Default: 2.800	
Max Depth: 83.25 ft	Weir Table:	
Max Width: 20.00 ft	Orifice Default: 0.600	
Fillet: 0.00 ft	Orifice Table:	
Comment: OVERTOPPING RAYBURN ROAD. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.		

Pipe Link: COX-430E-P	Upstream	Downstream
Scenario: POST	Invert: 19.98 ft	Invert: 19.56 ft
From Node: COX-430	Manning's N: 0.0130	Manning's N: 0.0130
To Node: SR524-530	Geometry: Horizontal Ellipse	Geometry: Horizontal Ellipse
Link Count: 1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 74.00 ft	Op Table:	Op Table:
FHWA Code: 30	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0130	Manning's N: 0.0130
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:

Energy Switch: Energy

Ref Node:

Ref Node:

Manning's N: 0.0130

Manning's N: 0.0130

Comment: CROSSING COX ROAD

BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 13

Weir Link: COX-430E-W

Scenario: POST	Bottom Clip
From Node: COX-430	Default: 0.00 ft
To Node: SR524-530	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 24.50 ft	Discharge Coefficients
Control Elevation: 24.50 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 100.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment: OVERTOPPING COX ROAD. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-430W-P

	Upstream	Downstream
Scenario: POST	Invert: 20.01 ft	Invert: 20.09 ft
From Node: COX-430W	Manning's N: 0.0130	Manning's N: 0.0130
To Node: COX-430	Geometry: Horizontal Ellipse	Geometry: Horizontal Ellipse
Link Count: 1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 10.00 ft	Op Table:	Op Table:
FHWA Code: 30	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0130	Manning's N: 0.0130
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0130	Manning's N: 0.0130

Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 13

Weir Link: COX-430W-W

Scenario: POST	Bottom Clip
From Node: COX-430W	Default: 0.00 ft
To Node: COX-420	Op Table:

Link Count:	1		
Flow Direction:	Both	Ref Node:	
Damping:	0.0000 ft	Top Clip	
Weir Type:	Broad Crested Vertical	Default:	0.00 ft
Geometry Type:	Rectangular	Op Table:	
Invert:	23.30 ft	Ref Node:	
Control Elevation:	23.30 ft	Discharge Coefficients	
Max Depth:	83.25 ft	Weir Default:	2.800
Max Width:	20.00 ft	Weir Table:	
Fillet:	0.00 ft	Orifice Default:	0.600
		Orifice Table:	

Comment: OVERTOPPING RAYBURN ROAD. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-431-P

	Upstream	Downstream
Scenario:	POST	Invert: 21.00 ft
From Node:	COX-431	Manning's N: 0.0120
To Node:	COX-430W	Manning's N: 0.0120
	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 1.50 ft
Flow Direction:	Both	Bottom Clip
Damping:	0.0000 ft	Default: 0.00 ft
Length:	53.40 ft	Op Table:
FHWA Code:	0	Ref Node:
Entr Loss Coef:	0.70	Manning's N: 0.0000
Exit Loss Coef:	1.00	Top Clip
Bend Loss Coef:	0.00	Default: 0.00 ft
Bend Location:	0.00 dec	Op Table:
Energy Switch:	Energy	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Weir Link: COX-431-W1

Scenario:	POST	Bottom Clip	
From Node:	COX-431	Default: 0.00 ft	
To Node:	COX-430W	Op Table:	
Link Count:	1	Ref Node:	
Flow Direction:	Both	Top Clip	
Damping:	0.0000 ft	Default: 0.00 ft	
Weir Type:	Broad Crested Vertical	Op Table:	
Geometry Type:	Irregular	Ref Node:	
Invert:	24.43 ft	Discharge Coefficients	
Control Elevation:	24.43 ft	Weir Default:	2.800
Cross Section:	X-COX-431-430W	Weir Table:	
		Orifice Default:	0.600
		Orifice Table:	

Comment:

Pipe Link: COX-432-P

	Upstream	Downstream
Scenario: POST	Invert: 20.75 ft	Invert: 20.75 ft
From Node: COX-432	Manning's N: 0.0120	Manning's N: 0.0120
To Node: SR524-310	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 236.04 ft	Op Table:	Op Table:
FHWA Code: 0	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0000	Manning's N: 0.0000
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0000	Manning's N: 0.0000

Comment:

Weir Link: COX-432-W1

Scenario: POST	Bottom Clip
From Node: COX-432	Default: 0.00 ft
To Node: SR524-310	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Irregular	Ref Node:
Invert: 23.68 ft	Discharge Coefficients
Control Elevation: 23.68 ft	Weir Default: 2.800
Cross Section: X-COX-431-SR524-310	Weir Table:
	Orifice Default: 0.600
	Orifice Table:

Comment:

Weir Link: COX-432-W2

Scenario: POST	Bottom Clip
From Node: COX-432	Default: 0.00 ft
To Node: SR524-400S	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft

Weir Type: Broad Crested Vertical
 Geometry Type: Irregular
 Invert: 24.21 ft
 Control Elevation: 24.21 ft
 Cross Section: X-COX-431-SR524-400S

Op Table:
 Ref Node:
 Discharge Coefficients
 Weir Default: 2.800
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment:

Pipe Link: COX-440-P

	Upstream	Downstream
Scenario: POST	Invert: 19.99 ft	Invert: 19.94 ft
From Node: COX-440	Manning's N: 0.0240	Manning's N: 0.0240
To Node: COX-430	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 32.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0240	Manning's N: 0.0240
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 13
 DRIVEWAY CROSSING AT 4110 RAYBURN ROAD

Weir Link: COX-440-W

Scenario: POST	Bottom Clip
From Node: COX-440	Default: 0.00 ft
To Node: COX-430	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 23.50 ft	Discharge Coefficients
Control Elevation: 23.50 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Pipe Link: COX-450-P		Upstream	Downstream
Scenario:	POST	Invert: 20.40 ft	Invert: 20.29 ft
From Node:	COX-450	Manning's N: 0.0240	Manning's N: 0.0240
To Node:	COX-440	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 1.50 ft	Max Depth: 1.50 ft
Flow Direction:	Both	Bottom Clip	
Damping:	0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length:	20.00 ft	Op Table:	Op Table:
FHWA Code:	1	Ref Node:	Ref Node:
Entr Loss Coef:	0.50	Manning's N: 0.0240	Manning's N: 0.0240
Exit Loss Coef:	0.00	Top Clip	
Bend Loss Coef:	0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location:	0.00 dec	Op Table:	Op Table:
Energy Switch:	Energy	Ref Node:	Ref Node:
		Manning's N: 0.0240	Manning's N: 0.0240
Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 16			

Weir Link: COX-450-W	
Scenario:	POST
From Node:	COX-450
To Node:	COX-440
Link Count:	1
Flow Direction:	Both
Damping:	0.0000 ft
Weir Type:	Broad Crested Vertical
Geometry Type:	Rectangular
Invert:	24.00 ft
Control Elevation:	24.00 ft
Max Depth:	83.25 ft
Max Width:	20.00 ft
Fillet:	0.00 ft
Bottom Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Top Clip	
Default:	0.00 ft
Op Table:	
Ref Node:	
Discharge Coefficients	
Weir Default:	2.800
Weir Table:	
Orifice Default:	0.600
Orifice Table:	
Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.	

Pipe Link: COX-460-P		Upstream	Downstream
Scenario:	POST	Invert: 20.05 ft	Invert: 20.07 ft
From Node:	COX-460	Manning's N: 0.0240	Manning's N: 0.0240
To Node:	COX-450	Geometry: Circular	Geometry: Circular
Link Count:	1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction:	Both	Bottom Clip	
Damping:	0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length:	24.00 ft	Op Table:	Op Table:
FHWA Code:	1	Ref Node:	Ref Node:
Entr Loss Coef:	0.50	Manning's N: 0.0240	Manning's N: 0.0240
Exit Loss Coef:	0.00	Top Clip	

Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 17

Weir Link: COX-460-W

Scenario: POST	Bottom Clip
From Node: COX-460	Default: 0.00 ft
To Node: COX-450	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 23.50 ft	Discharge Coefficients
Control Elevation: 23.50 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 20.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment: OVERTOPPING DITCH BANK. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.

Pipe Link: COX-700WS-P

	Upstream	Downstream
Scenario: POST	Invert: 20.36 ft	Invert: 20.51 ft
From Node: COX-700W	Manning's N: 0.0240	Manning's N: 0.0240
To Node: COX-460	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 20.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0240	Manning's N: 0.0240
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0240	Manning's N: 0.0240

Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 18

Weir Link: COX-700WS-W1

Scenario: POST	Bottom Clip
From Node: COX-700W	Default: 0.00 ft

To Node: COX-460
Link Count: 1
Flow Direction: Both
Damping: 0.0000 ft
Weir Type: Broad Crested Vertical
Geometry Type: Rectangular
Invert: 24.20 ft
Control Elevation: 24.20 ft
Max Depth: 83.25 ft
Max Width: 20.00 ft
Fillet: 0.00 ft

Op Table:
Ref Node:
Top Clip
Default: 0.00 ft
Op Table:
Ref Node:
Discharge Coefficients
Weir Default: 2.800
Weir Table:
Orifice Default: 0.600
Orifice Table:

Comment: OVERTOPPING DRIVEWAY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Weir Link: COX-700WS-W2

Scenario: POST
From Node: COX-700W
To Node: COX-460
Link Count: 1
Flow Direction: Both
Damping: 0.0000 ft
Weir Type: Broad Crested Vertical
Geometry Type: Rectangular
Invert: 23.50 ft
Control Elevation: 23.50 ft
Max Depth: 83.25 ft
Max Width: 300.00 ft
Fillet: 0.00 ft

Bottom Clip
Default: 0.00 ft
Op Table:
Ref Node:
Top Clip
Default: 0.00 ft
Op Table:
Ref Node:
Discharge Coefficients
Weir Default: 3.200
Weir Table:
Orifice Default: 0.600
Orifice Table:

Comment: OVERTOPPING SUB-BASIN BOUNDARY. INVERT ELEVATION WAS ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.

Weir Link: COX-710E-W2

Scenario: POST
From Node: COX-710E
To Node: SR524-530
Link Count: 1
Flow Direction: Both
Damping: 0.0000 ft
Weir Type: Broad Crested Vertical
Geometry Type: Rectangular
Invert: 24.00 ft
Control Elevation: 24.00 ft
Max Depth: 83.25 ft
Max Width: 100.00 ft
Fillet: 0.00 ft

Bottom Clip
Default: 0.00 ft
Op Table:
Ref Node:
Top Clip
Default: 0.00 ft
Op Table:
Ref Node:
Discharge Coefficients
Weir Default: 2.800
Weir Table:
Orifice Default: 0.600
Orifice Table:

Comment: SUB-BASIN INTERCONNECT. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.

Weir Link: FRI-100E-W2

Scenario: POST	Bottom Clip
From Node: FRI-100E	Default: 0.00 ft
To Node: SR524-200	Op Table:
Link Count: 1	Ref Node:
Flow Direction: Both	Top Clip
Damping: 0.0000 ft	Default: 0.00 ft
Weir Type: Broad Crested Vertical	Op Table:
Geometry Type: Rectangular	Ref Node:
Invert: 25.50 ft	Discharge Coefficients
Control Elevation: 25.50 ft	Weir Default: 2.800
Max Depth: 83.25 ft	Weir Table:
Max Width: 100.00 ft	Orifice Default: 0.600
Fillet: 0.00 ft	Orifice Table:

Comment: OVERTOPPING SR 524. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.

Channel Link: RAY-100E-C

	Upstream	Downstream
Scenario: POST	Invert: 20.00 ft	Invert: 20.00 ft
From Node: RAY-100	Manning's N: 0.0000	Manning's N: 0.0000
To Node: COX-430W	Geometry: Irregular	Geometry: Irregular
Link Count: 1	Cross Section: RAY-100	Cross Section: RAY-100
Flow Direction: Both		
Damping: 0.0000 ft		
Length: 2760.00 ft		
Contraction Coef: 0.00		
Expansion Coef: 0.00		
Entr Loss Coef: 0.00		
Exit Loss Coef: 0.00		
Bend Loss Coef: 0.00		
Bend Location: 0.00 dec		
Energy Switch: Energy		

Comment: BREVARD COUNTY SURVEY AREA No. 4B, FIELD BOOK 552, PAGES 55 AND 57
X-SEC #2, LOCATED ACROSS 42 LF EAST OF THE CENTERLINE OF FRIDAY ROAD AND
14 LF NORTH OF RAYBURN ROAD
DOWNSTREAM INVERT WAS OBTAINED FROM SURVEY 4A, FIELD BOOK No. 546, PAGE 13, CANAL BOTTOM 4' WEST OF
STRUCTURE 4AES422
NO UPSTREAM SPOT ELEVATIONS AVAILABLE. ASSUMED UPSTREAM INVERT TO BE THE SAME AS DOWNSTREAM.
DITCH WAS MODELED TO HYDRAULIC INTERCONNECT NODES RAY-100 TO COX-430W. THERE ARE NUMEROUS DRIVEWAY
CULVERTS THAT WERE NOT MODELED.

Weir Link: SR524-200-W

Scenario:	POST	Bottom Clip
From Node:	SR524-200	Default: 0.00 ft
To Node:	COX-220	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	23.50 ft	Discharge Coefficients
Control Elevation:	23.50 ft	Weir Default: 2.800
Max Depth:	83.25 ft	Weir Table:
Max Width:	100.00 ft	Orifice Default: 0.600
Fillet:	0.00 ft	Orifice Table:

Comment: OVERTOPPING WEIR. DIMENSIONS AND INVERT ELEVATION WAS ESTIMATED USING THE 1-FT LIDAR TOPO.

Pipe Link: SR524-210-P

	Upstream	Downstream
Scenario:	POST	Invert: 20.64 ft
From Node:	SR524-210	Invert: 20.14 ft
To Node:	SR524-200	Manning's N: 0.0130
Link Count:	2	Manning's N: 0.0130
Flow Direction:	Both	Geometry: Circular
Damping:	0.0000 ft	Max Depth: 2.00 ft
Length:	68.00 ft	Max Depth: 2.00 ft
FHWA Code:	1	Bottom Clip
Entr Loss Coef:	0.50	Default: 0.00 ft
Exit Loss Coef:	0.00	Op Table:
Bend Loss Coef:	0.00	Ref Node:
Bend Location:	0.00 dec	Manning's N: 0.0130
Energy Switch:	Energy	Top Clip
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0130	Manning's N: 0.0130
	Default: 0.00 ft	Default: 0.00 ft
	Op Table:	Op Table:
	Ref Node:	Ref Node:
	Manning's N: 0.0130	Manning's N: 0.0130

Comment: PIPE DATA OBTAINED FROM FDOT PLANS 70070-3501-03-41, DATED 1971

Weir Link: SR524-210-W

Scenario:	POST	Bottom Clip
From Node:	SR524-210	Default: 0.00 ft
To Node:	SR524-200	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Rectangular	Ref Node:
Invert:	25.50 ft	Discharge Coefficients
Control Elevation:	25.50 ft	Weir Default: 2.800

Max Depth: 83.25 ft
 Max Width: 100.00 ft
 Fillet: 0.00 ft

Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment: OVERTOPPING SR524. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.

Weir Link: SR524-300-W1

Scenario: POST
 From Node: SR524-300
 To Node: COX-300
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Weir Type: Broad Crested Vertical
 Geometry Type: Rectangular
 Invert: 24.00 ft
 Control Elevation: 24.00 ft
 Max Depth: 83.25 ft
 Max Width: 200.00 ft
 Fillet: 0.00 ft

Bottom Clip

Default: 0.00 ft
 Op Table:
 Ref Node:

Top Clip

Default: 0.00 ft
 Op Table:
 Ref Node:

Discharge Coefficients

Weir Default: 2.800
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment: OVERTOPPING SUB-BASIN BOUNDARY. INVERT ELEVATION WAS ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.

Weir Link: SR524-300-W2

Scenario: POST
 From Node: SR524-300
 To Node: COX-290
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Weir Type: Broad Crested Vertical
 Geometry Type: Rectangular
 Invert: 23.50 ft
 Control Elevation: 23.50 ft
 Max Depth: 83.25 ft
 Max Width: 100.00 ft
 Fillet: 0.00 ft

Bottom Clip

Default: 0.00 ft
 Op Table:
 Ref Node:

Top Clip

Default: 0.00 ft
 Op Table:
 Ref Node:

Discharge Coefficients

Weir Default: 2.800
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment: OVERTOPPING WEIR. DIMENSIONS AND INVERT ELEVATION WAS ESTIMATED USING THE 1-FT LIDAR TOPO.

Pipe Link: SR524-310-P

Scenario: POST
 From Node: SR524-310
 To Node: SR524-300

Upstream
 Invert: 22.22 ft
 Manning's N: 0.0130
 Geometry: Circular

Downstream
 Invert: 22.12 ft
 Manning's N: 0.0130
 Geometry: Circular

Link Count: 1	Max Depth: 2.00 ft	Max Depth: 2.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 59.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0130	Manning's N: 0.0130
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0130	Manning's N: 0.0130
Comment: PIPE DATA OBTAINED FROM FDOT PLANS 70070-3501-03-41, DATED 1971		

Weir Link: SR524-310-W		
Scenario: POST	Bottom Clip	
From Node: SR524-310	Default: 0.00 ft	
To Node: SR524-300	Op Table:	
Link Count: 1	Ref Node:	
Flow Direction: Both	Top Clip	
Damping: 0.0000 ft	Default: 0.00 ft	
Weir Type: Broad Crested Vertical	Op Table:	
Geometry Type: Rectangular	Ref Node:	
Invert: 26.50 ft	Discharge Coefficients	
Control Elevation: 26.50 ft	Weir Default: 2.800	
Max Depth: 83.25 ft	Weir Table:	
Max Width: 100.00 ft	Orifice Default: 0.600	
Fillet: 0.00 ft	Orifice Table:	
Comment: OVERTOPPING SR524. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.		

Weir Link: SR524-310-W1		
Scenario: POST	Bottom Clip	
From Node: SR524-310	Default: 0.00 ft	
To Node: SR524-400S	Op Table:	
Link Count: 1	Ref Node:	
Flow Direction: Both	Top Clip	
Damping: 0.0000 ft	Default: 0.00 ft	
Weir Type: Broad Crested Vertical	Op Table:	
Geometry Type: Irregular	Ref Node:	
Invert: 23.45 ft	Discharge Coefficients	
Control Elevation: 23.45 ft	Weir Default: 2.800	
Cross Section: X-SR524-310-400S	Weir Table:	
	Orifice Default: 0.600	
	Orifice Table:	
Comment:		

Drop Structure Link: SR524-400-P		
Scenario: POST	Upstream Pipe Invert: 20.67 ft	Downstream Pipe Invert: 20.44 ft
From Node: SR524-400E1	Manning's N: 0.0130	Manning's N: 0.0130
To Node: COX-340	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 2.50 ft	Max Depth: 2.50 ft
Flow Direction: Both	Bottom Clip	
Solution: Combine	Default: 0.00 ft	Default: 0.00 ft
Increments: 0	Op Table:	Op Table:
Pipe Count: 1	Ref Node:	Ref Node:
Damping: 0.0000 ft	Manning's N: 0.0000	Manning's N: 0.0000
Length: 75.00 ft	Top Clip	
FHWA Code: 1	Default: 0.00 ft	Default: 0.00 ft
Entr Loss Coef: 0.50	Op Table:	Op Table:
Exit Loss Coef: 0.00	Ref Node:	Ref Node:
Bend Loss Coef: 0.00	Manning's N: 0.0000	Manning's N: 0.0000
Bend Location: 0.00 dec		
Energy Switch: Energy		

Pipe Comment: PIPE DATA OBTAINED FROM FDOT PLANS 70070-3501-03-41, DATED 1971

Weir Component		
Weir: 1	Bottom Clip	
Weir Count: 1	Default: 0.00 ft	
Weir Flow Direction: Both	Op Table:	
Damping: 0.0000 ft	Ref Node:	
Weir Type: Horizontal	Top Clip	
Geometry Type: Rectangular	Default: 0.00 ft	
Invert: 24.44 ft	Op Table:	
Control Elevation: 24.44 ft	Ref Node:	
Max Depth: 4.08 ft	Discharge Coefficients	
Max Width: 3.08 ft	Weir Default: 3.200	
Fillet: 0.00 ft	Weir Table:	
	Orifice Default: 0.600	
	Orifice Table:	

Weir Comment:

Drop Structure Comment:

Weir Link: SR524-400-W		
Scenario: POST	Bottom Clip	
From Node: SR524-400E1	Default: 0.00 ft	
To Node: COX-340	Op Table:	
Link Count: 1	Ref Node:	
Flow Direction: Both	Top Clip	
Damping: 0.0000 ft	Default: 0.00 ft	
Weir Type: Broad Crested Vertical	Op Table:	
Geometry Type: Rectangular	Ref Node:	
Invert: 26.50 ft	Discharge Coefficients	

Control Elevation: 26.50 ft
 Max Depth: 83.25 ft
 Max Width: 100.00 ft
 Fillet: 0.00 ft

Weir Default: 2.800
 Weir Table:
 Orifice Default: 0.600
 Orifice Table:

Comment: OVERTOPPING SR524. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.

Weir Link: SR524-400E-W1

Scenario: POST
 From Node: SR524-400E2
 To Node: COX-360
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Weir Type: Broad Crested Vertical
 Geometry Type: Trapezoidal
 Invert: 23.60 ft
 Control Elevation: 23.60 ft
 Max Depth: 999.00 ft
 Extrapolation Method: Normal Projection
 Bottom Width: 0.50 ft
 Left Slope: 24.000 (h:v)
 Right Slope: 13.500 (h:v)

Bottom Clip

Default: 0.00 ft

Op Table:

Ref Node:

Top Clip

Default: 0.00 ft

Op Table:

Ref Node:

Discharge Coefficients

Weir Default: 2.800

Weir Table:

Orifice Default: 0.600

Orifice Table:

Comment:

Pipe Link: SR524-400N-P

Scenario: POST
 From Node: SR524-400N1
 To Node: SR524-400N2
 Link Count: 1
 Flow Direction: Both
 Damping: 0.0000 ft
 Length: 298.00 ft
 FHWA Code: 0
 Entr Loss Coef: 0.00
 Exit Loss Coef: 0.00
 Bend Loss Coef: 0.00
 Bend Location: 0.00 dec
 Energy Switch: Energy

Upstream

Invert: 18.50 ft
 Manning's N: 0.0120

Geometry: Circular

Max Depth: 3.00 ft

Bottom Clip

Default: 0.00 ft

Op Table:

Ref Node:

Manning's N: 0.0000

Top Clip

Default: 0.00 ft

Op Table:

Ref Node:

Manning's N: 0.0000

Downstream

Invert: 18.50 ft

Manning's N: 0.0120

Geometry: Circular

Max Depth: 3.00 ft

Default: 0.00 ft

Op Table:

Ref Node:

Manning's N: 0.0000

Default: 0.00 ft

Op Table:

Ref Node:

Manning's N: 0.0000

Comment:

Weir Link: SR524-400N-W1

Scenario:	POST	Bottom Clip
From Node:	SR524-400N2	Default: 0.00 ft
To Node:	SR524-400W	Op Table:
Link Count:	1	Ref Node:
Flow Direction:	Both	Top Clip
Damping:	0.0000 ft	Default: 0.00 ft
Weir Type:	Broad Crested Vertical	Op Table:
Geometry Type:	Trapezoidal	Ref Node:
Invert:	25.80 ft	Discharge Coefficients
Control Elevation:	25.80 ft	Weir Default: 2.800
Max Depth:	999.00 ft	Weir Table:
Extrapolation Method:	Normal Projection	Orifice Default: 0.600
Bottom Width:	35.00 ft	Orifice Table:
Left Slope:	10.000 (h:v)	
Right Slope:	10.000 (h:v)	

Comment: PROPOSED CONCRETE WEIR CONNECTING DRY POND TO WET POND

Drop Structure Link: SR524-400W-DS

	Upstream Pipe	Downstream Pipe
Scenario:	POST	Invert: 20.77 ft
From Node:	SR524-400W	Invert: 19.10 ft
To Node:	COX-432	Manning's N: 0.0120
Link Count:	1	Manning's N: 0.0120
Flow Direction:	Both	Geometry: Circular
Solution:	Combine	Geometry: Circular
Increments:	0	Max Depth: 2.00 ft
Pipe Count:	1	Max Depth: 2.00 ft
Damping:	0.0000 ft	Bottom Clip
Length:	169.27 ft	Default: 0.00 ft
FHWA Code:	0	Default: 0.00 ft
Entr Loss Coef:	0.50	Op Table:
Exit Loss Coef:	1.00	Op Table:
Bend Loss Coef:	0.00	Ref Node:
Bend Location:	0.00 dec	Ref Node:
Energy Switch:	Energy	Manning's N: 0.0000
		Manning's N: 0.0000
		Top Clip
		Default: 0.00 ft
		Default: 0.00 ft
		Op Table:
		Op Table:
		Ref Node:
		Ref Node:
		Manning's N: 0.0000
		Manning's N: 0.0000

Pipe Comment:

Weir Component

Weir:	1	Bottom Clip
Weir Count:	1	Default: 0.00 ft
Weir Flow Direction:	Both	Op Table:
Damping:	0.0000 ft	Ref Node:
Weir Type:	Horizontal	Top Clip
Geometry Type:	Rectangular	Default: 0.00 ft
Invert:	24.30 ft	Op Table:
Control Elevation:	24.30 ft	Ref Node:
Max Depth:	4.50 ft	Discharge Coefficients

Max Width: 3.00 ft
Fillet: 0.00 ft

Weir Default: 3.200
Weir Table:
Orifice Default: 0.600
Orifice Table:

Weir Comment:

Weir Component

Weir: 2
Weir Count: 1
Weir Flow Direction: Both
Damping: 0.0000 ft
Weir Type: Sharp Crested Vertical
Geometry Type: Rectangular
Invert: 23.20 ft
Control Elevation: 23.20 ft
Max Depth: 0.93 ft
Max Width: 2.00 ft
Fillet: 0.00 ft

Bottom Clip

Default: 0.00 ft
Op Table:
Ref Node:

Top Clip

Default: 0.00 ft
Op Table:
Ref Node:

Discharge Coefficients

Weir Default: 3.200
Weir Table:
Orifice Default: 0.600
Orifice Table:

Weir Comment:

Weir Component

Weir: 3
Weir Count: 1
Weir Flow Direction: Both
Damping: 0.0000 ft
Weir Type: Sharp Crested Vertical
Geometry Type: Rectangular
Invert: 22.50 ft
Control Elevation: 22.50 ft
Max Depth: 0.50 ft
Max Width: 0.67 ft
Fillet: 0.00 ft

Bottom Clip

Default: 0.00 ft
Op Table:
Ref Node:

Top Clip

Default: 0.00 ft
Op Table:
Ref Node:

Discharge Coefficients

Weir Default: 3.200
Weir Table:
Orifice Default: 0.600
Orifice Table:

Weir Comment:

Drop Structure Comment: FDOT TYPE "E" D.B.I.
CONTROL STRUCTURE "CS-01"

Pipe Link: SR524-500-P

Scenario: POST
From Node: SR524-500
To Node: MUD-200
Link Count: 2

Upstream

Invert: 18.27 ft
Manning's N: 0.0120
Geometry: Circular
Max Depth: 3.50 ft

Downstream

Invert: 17.70 ft
Manning's N: 0.0120
Geometry: Circular
Max Depth: 3.50 ft

Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 108.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0120	Manning's N: 0.0120
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0120	Manning's N: 0.0120
Comment: PIPE DATA OBTAINED FROM FDOT PLANS (PROJECT NO. 70070-3529) FOR STATE ROAD 524 PREPARED BY HBA, DATED JULY 1991. REFER TO SHEET NOS. 14 AND 17 FOR STRUCTURE S-5		

Weir Link: SR524-500-W		
Scenario: POST	Bottom Clip	
From Node: SR524-500	Default: 0.00 ft	
To Node: MUD-200	Op Table:	
Link Count: 1	Ref Node:	
Flow Direction: Both	Top Clip	
Damping: 0.0000 ft	Default: 0.00 ft	
Weir Type: Broad Crested Vertical	Op Table:	
Geometry Type: Rectangular	Ref Node:	
Invert: 24.50 ft	Discharge Coefficients	
Control Elevation: 24.50 ft	Weir Default: 2.800	
Max Depth: 83.25 ft	Weir Table:	
Max Width: 100.00 ft	Orifice Default: 0.600	
Fillet: 0.00 ft	Orifice Table:	
Comment: OVERTOPPING SR524. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.		

Channel Link: SR524-510-C		
Scenario: POST	Upstream	Downstream
From Node: SR524-510	Invert: 16.98 ft	Invert: 16.98 ft
To Node: SR524-500	Manning's N: 0.0000	Manning's N: 0.0000
Link Count: 1	Geometry: Irregular	Geometry: Irregular
Flow Direction: Both	Cross Section: SR524-510	Cross Section: SR524-510
Damping: 0.0000 ft		
Length: 1210.00 ft		
Contraction Coef: 0.00		
Expansion Coef: 0.00		
Entr Loss Coef: 0.00		
Exit Loss Coef: 0.00		
Bend Loss Coef: 0.00		
Bend Location: 0.00 dec		
Energy Switch: Energy		

Comment: SAME X-SEC AS SR524-530 WITH DIFFERENT MANNING'S N ALONG THE LEFT SIDE OF THE CANAL
DOWNSTREAM INVERT ELEVATION WAS ASSUMED TO HAVE THE SAME ELEVATION AS THE UPSTREAM (NO SURVEY DATA)

Pipe Link: SR524-520-P1	Upstream	Downstream
Scenario: POST	Invert: 16.96 ft	Invert: 16.98 ft
From Node: SR524-520	Manning's N: 0.0120	Manning's N: 0.0120
To Node: SR524-510	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 64.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0120	Manning's N: 0.0120
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0120	Manning's N: 0.0120

Comment: CROSSING PINYON DRIVE (EAST PIPE)
BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 10

Pipe Link: SR524-520-P2	Upstream	Downstream
Scenario: POST	Invert: 17.08 ft	Invert: 17.10 ft
From Node: SR524-520	Manning's N: 0.0120	Manning's N: 0.0120
To Node: SR524-510	Geometry: Circular	Geometry: Circular
Link Count: 1	Max Depth: 3.00 ft	Max Depth: 3.00 ft
Flow Direction: Both	Bottom Clip	
Damping: 0.0000 ft	Default: 0.00 ft	Default: 0.00 ft
Length: 64.00 ft	Op Table:	Op Table:
FHWA Code: 1	Ref Node:	Ref Node:
Entr Loss Coef: 0.50	Manning's N: 0.0120	Manning's N: 0.0120
Exit Loss Coef: 0.00	Top Clip	
Bend Loss Coef: 0.00	Default: 0.00 ft	Default: 0.00 ft
Bend Location: 0.00 dec	Op Table:	Op Table:
Energy Switch: Energy	Ref Node:	Ref Node:
	Manning's N: 0.0120	Manning's N: 0.0120

Comment: CROSSING PINYON (WEST PIPE)
BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGE 10

Weir Link: SR524-520-W	Bottom Clip
Scenario: POST	Default: 0.00 ft
From Node: SR524-520	

To Node: SR524-510
Link Count: 1
Flow Direction: Both
Damping: 0.0000 ft
Weir Type: Broad Crested Vertical
Geometry Type: Rectangular
Invert: 24.10 ft
Control Elevation: 24.10 ft
Max Depth: 83.25 ft
Max Width: 20.00 ft
Fillet: 0.00 ft

Op Table:
Ref Node:
Top Clip
Default: 0.00 ft
Op Table:
Ref Node:
Discharge Coefficients
Weir Default: 2.800
Weir Table:
Orifice Default: 0.600
Orifice Table:

Comment: OVERTOPPING PINYON ROAD. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY AND SURVEYED DATA.

Channel Link: SR524-530-C

Scenario: POST
From Node: SR524-530
To Node: SR524-520
Link Count: 1
Flow Direction: Both
Damping: 0.0000 ft
Length: 154.00 ft
Contraction Coef: 0.60
Expansion Coef: 0.80
Entr Loss Coef: 0.00
Exit Loss Coef: 0.00
Bend Loss Coef: 0.00
Bend Location: 0.00 dec
Energy Switch: Energy

Upstream
Invert: 19.56 ft
Manning's N: 0.0000
Geometry: Irregular
Cross Section: SR524-530

Downstream
Invert: 16.96 ft
Manning's N: 0.0000
Geometry: Irregular
Cross Section: SR524-530

Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGES 11-12
X-SEC #3

Weir Link: SR524-605-W2

Scenario: POST
From Node: SR524-605
To Node: SR524-530
Link Count: 1
Flow Direction: Both
Damping: 0.0000 ft
Weir Type: Broad Crested Vertical
Geometry Type: Rectangular
Invert: 24.50 ft
Control Elevation: 24.50 ft
Max Depth: 83.25 ft

Bottom Clip
Default: 0.00 ft
Op Table:
Ref Node:
Top Clip
Default: 0.00 ft
Op Table:
Ref Node:
Discharge Coefficients
Weir Default: 2.800
Weir Table:

Max Width: 60.00 ft

Fillet: 0.00 ft

Orifice Default: 0.600

Orifice Table:

Comment: OVERTOPPING SUB-BASIN BOUNDARY. INVERT ESTIMATED BASED ON THE 1-FT TOPOGRAPHY.

Channel Cross Section: COX-220

Scenario: POST

Lid: No

Conveyance Method: ICPRv3

Bottom Point Table

Order	Station [ft]	Elevation [ft]	Manning's N
0	0.00	24.16	0.0400
1	14.00	23.10	0.0400
2	21.00	19.10	0.0400
3	28.00	18.50	0.0400
4	32.00	21.10	0.0400

Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 52
X-SEC AT C-187

Channel Cross Section: COX-340

Scenario: POST

Lid: No

Conveyance Method: ICPRv3

Bottom Point Table

Order	Station [ft]	Elevation [ft]	Manning's N
0	0.00	25.00	0.0400
1	14.00	23.80	0.0400
2	22.00	20.00	0.0400
3	31.00	20.00	0.0400
4	40.00	24.90	0.0600
5	50.00	25.10	0.0600

Comment: BREVARD COUNTY SURVEY AREA No. 3C, FIELD BOOK 544, PAGE 67
X-SEC 10' NORTH OF R-498 BETWEEN 1485-1505 COX ROAD

Channel Cross Section: RAY-100

Scenario: POST

Lid: No

Conveyance Method: ICPRv3

Bottom Point Table

Order	Station [ft]	Elevation [ft]	Manning's N
0	0.00	25.10	0.0800
1	10.00	25.10	0.0800
2	16.00	18.80	0.0800
3	24.00	18.90	0.0300

Order	Station [ft]	Elevation [ft]	Manning's N
4	30.00	23.80	0.0300
5	32.00	24.10	0.0300

Comment: BREVARD COUNTY SURVEY AREA No. 4B, FIELD BOOK 552, PAGES 55 AND 57
X-SEC #2, LOCATED ACROSS 42 LF EAST OF THE CENTERLINE OF FRIDAY ROAD AND
14 LF NORTH OF RAYBURN ROAD

Channel Cross Section: SR524-510

Scenario: POST

Lid: No

Conveyance Method: ICPRv3

Bottom Point Table

Order	Station [ft]	Elevation [ft]	Manning's N
0	0.00	24.20	0.0800
1	6.00	23.00	0.0800
2	31.00	18.20	0.0800
3	46.00	18.60	0.0400
4	58.00	23.40	0.0400
5	68.00	23.90	0.0400

Comment: SAME X-SEC AS SR524-530 WITH DIFFERENT MANNING'S N ALONG THE LEFT SIDE OF THE CANAL

Channel Cross Section: SR524-530

Scenario: POST

Lid: No

Conveyance Method: ICPRv3

Bottom Point Table

Order	Station [ft]	Elevation [ft]	Manning's N
0	0.00	24.20	0.0400
1	6.00	23.00	0.0400
2	31.00	18.20	0.0400
3	46.00	18.60	0.0400
4	58.00	23.40	0.0400
5	68.00	23.90	0.0400

Comment: BREVARD COUNTY SURVEY AREA No. 4A, FIELD BOOK 546, PAGES 11-12
X-SEC #3

Weir Cross Section: X-COX-431-430W

Scenario: POST

Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	25.00
1	179.00	24.50
2	335.00	24.43
3	416.00	27.00

Comment:

Weir Cross Section: X-COX-431-SR524-310

Scenario: POST

Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	24.31
1	29.00	23.68
2	68.00	24.27
3	112.00	23.90
4	218.00	24.43

Comment: CROSS SECTION BETWEEN BASINS COX-431 AND SR524-310

Weir Cross Section: X-COX-431-SR524-400S

Scenario: POST

Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	11.00	24.54
1	26.30	24.21
2	203.90	24.21
3	251.60	24.82

Comment: CROSS SECTION BETWEEN BASINS COX-431 AND SR524-400S

Weir Cross Section: X-SR524-310-400S

Scenario: POST

Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	24.21
1	25.80	23.63
2	163.40	24.22
3	208.50	23.45
4	239.60	26.49

Comment: CROSS SECTION BETWEEN BASINS SR524-310 AND SR524-400S

Weir Cross Section: X-SR524-400S-400E

Scenario: POST

Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	24.44
1	19.20	24.37
2	45.80	23.51
3	74.80	26.59

Comment: CROSS SECTION BETWEEN BASINS SR524-400S AND SR524-400E

APPENDIX B

ICPR PRINTOUTS NODE REPORT (RESULTS)

Node Max Conditions [PRE]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
COX-190	10-24	24.00	18.03	0.0000	68.87	0.00	0
COX-200	10-24	24.00	22.73	0.0010	80.58	68.87	101722
COX-210	10-24	24.00	23.17	0.0010	63.06	62.80	49997
COX-220	10-24	24.00	23.32	0.0010	62.24	62.18	9141
COX-230	10-24	24.00	23.41	0.0010	37.78	36.29	3846
COX-240	10-24	24.00	23.50	0.0010	44.70	37.78	173853
COX-250	10-24	24.00	23.53	0.0010	47.09	27.19	184489
COX-260	10-24	24.00	23.64	0.0010	25.47	25.52	5605
COX-270	10-24	25.00	23.86	0.0010	25.38	25.47	11610
COX-280	10-24	24.40	24.09	0.0010	25.30	25.38	12463
COX-290	10-24	25.00	24.17	0.0010	26.89	25.30	19230
COX-300	10-24	24.00	24.18	0.0010	25.55	23.45	34674
COX-310	10-24	24.00	24.18	0.0010	23.45	11.67	72056
COX-320	10-24	25.00	24.18	0.0010	24.80	23.95	7928
COX-330	10-24	24.00	24.18	0.0010	29.84	27.18	41194
COX-340	10-24	24.00	24.19	0.0010	59.61	14.50	252044
COX-350	10-24	25.00	24.16	0.0010	7.93	8.13	18098
COX-360	10-24	25.00	24.06	0.0010	8.13	8.13	799
COX-370	10-24	23.00	23.87	0.0010	8.13	8.25	13091
COX-380	10-24	24.00	23.69	0.0010	8.65	8.96	76272
COX-390	10-24	24.00	23.61	0.0010	43.24	16.63	262169
COX-400	10-24	23.50	23.53	0.0010	12.34	12.39	4357
COX-410	10-24	23.00	23.47	0.0010	12.39	13.00	70735
COX-420	10-24	23.00	23.21	0.0010	13.00	13.05	9118
COX-430	10-24	24.00	23.12	0.0062	39.46	39.54	3507
COX-430W	10-24	25.00	23.47	0.0010	124.23	95.37	412354
COX-431	10-24	25.00	24.23	0.0007	21.55	15.08	280794
COX-440	10-24	24.00	23.02	0.0010	5.93	5.85	3396
COX-450	10-24	24.00	22.73	0.0010	22.97	11.77	157629
COX-460	10-24	24.00	22.40	0.0010	11.75	11.75	2795
COX-700W	10-24	24.00	20.36	0.0000	11.75	0.00	0
COX-710E	10-24	24.00	20.69	0.0000	0.00	0.00	0
FRI-100E	10-24	24.00	20.66	0.0000	0.00	0.00	0
MUD-200	10-24	19.00	16.07	0.0000	109.73	0.00	0
RAY-100	10-24	25.00	20.00	0.0000	60.42	0.00	0
SR524-200	10-24	24.00	23.80	0.0010	114.03	45.68	3482171
SR524-210	10-24	24.00	23.81	0.0010	47.96	5.41	345755
SR524-300	10-24	24.00	24.18	0.0004	100.91	24.96	1937790
SR524-310	10-24	25.00	24.23	0.0005	37.24	29.33	326580
SR524-400E	10-24	25.00	24.21	0.0010	19.99	19.77	305381
SR524-400S	10-24	25.00	24.22	0.0009	29.23	12.70	188210
SR524-500	10-24	23.00	21.93	0.0010	129.53	109.73	82490
SR524-510	10-24	23.00	21.99	0.0010	84.06	80.09	35433
SR524-520	10-24	23.00	22.40	0.0010	88.32	84.06	8046
SR524-530	10-24	23.00	22.43	0.0010	105.75	88.32	222323
SR524-605	10-24	23.00	15.98	0.0000	0.00	0.00	0
COX-190	25-24	24.00	18.03	0.0000	77.92	0.00	0
COX-200	25-24	24.00	23.30	0.0010	91.78	77.92	172586

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
COX-210	25-24	24.00	23.82	0.0010	74.86	71.82	125191
COX-220	25-24	24.00	23.86	0.0010	72.95	73.81	10833
COX-230	25-24	24.00	23.93	0.0010	37.97	35.97	4294
COX-240	25-24	24.00	23.99	0.0010	51.40	37.97	345381
COX-250	25-24	24.00	24.02	0.0010	58.67	32.11	307541
COX-260	25-24	24.00	24.05	0.0010	27.25	27.29	6537
COX-270	25-24	25.00	24.21	0.0010	27.17	27.25	53957
COX-280	25-24	24.40	24.37	0.0010	27.08	27.17	27603
COX-290	25-24	25.00	24.43	0.0010	28.21	27.08	32168
COX-300	25-24	24.00	24.43	0.0010	28.73	25.97	70322
COX-310	25-24	24.00	24.43	0.0010	25.97	11.69	91728
COX-320	25-24	25.00	24.43	0.0010	27.59	26.63	13891
COX-330	25-24	24.00	24.43	0.0010	34.00	31.02	59184
COX-340	25-24	24.00	24.43	0.0010	69.07	14.76	269381
COX-350	25-24	25.00	24.40	0.0010	8.74	8.91	24323
COX-360	25-24	25.00	24.26	0.0010	8.91	8.92	903
COX-370	25-24	23.00	24.03	0.0010	8.92	9.02	14376
COX-380	25-24	24.00	23.84	0.0010	10.51	9.60	83771
COX-390	25-24	24.00	23.77	0.0010	54.03	18.32	296564
COX-400	25-24	23.50	23.62	0.0010	15.50	15.53	4357
COX-410	25-24	23.00	23.62	0.0010	12.75	13.21	79318
COX-420	25-24	23.00	23.62	0.0010	15.24	14.92	13476
COX-430	25-24	24.00	23.45	0.0062	41.47	41.72	3828
COX-430W	25-24	25.00	23.72	0.0010	154.95	113.48	536135
COX-431	25-24	25.00	24.46	0.0007	27.44	20.66	429786
COX-440	25-24	24.00	23.31	0.0010	7.00	6.91	3681
COX-450	25-24	24.00	22.90	0.0010	28.34	13.59	195159
COX-460	25-24	24.00	22.51	0.0010	12.78	12.78	2904
COX-700W	25-24	24.00	20.36	0.0000	12.78	0.00	0
COX-710E	25-24	24.00	20.69	0.0000	0.00	0.00	0
FRI-100E	25-24	24.00	20.66	0.0000	0.00	0.00	0
MUD-200	25-24	19.00	16.07	0.0000	120.11	0.00	0
RAY-100	25-24	25.00	20.00	0.0000	70.62	0.00	0
SR524-200	25-24	24.00	23.91	0.0010	148.20	62.86	3907422
SR524-210	25-24	24.00	23.93	0.0010	56.02	9.77	358631
SR524-300	25-24	24.00	24.43	0.0007	134.98	26.23	2332802
SR524-310	25-24	25.00	24.46	0.0007	50.01	34.47	529508
SR524-400E	25-24	25.00	24.45	0.0010	27.77	23.60	411607
SR524-400S	25-24	25.00	24.46	0.0010	39.90	15.76	203481
SR524-500	25-24	23.00	22.18	0.0010	142.49	120.11	95483
SR524-510	25-24	23.00	22.24	0.0009	91.53	92.95	37178
SR524-520	25-24	23.00	22.69	0.0010	95.94	90.14	8579
SR524-530	25-24	23.00	22.71	0.0010	123.27	95.94	349239
SR524-605	25-24	23.00	15.98	0.0000	0.00	0.00	0
COX-190	MA-24	24.00	18.03	0.0000	52.61	0.00	0
COX-200	MA-24	24.00	21.90	0.0010	57.21	52.61	48555
COX-210	MA-24	24.00	22.05	0.0010	41.29	37.90	12776
COX-220	MA-24	24.00	22.17	0.0010	32.54	31.16	7672
COX-230	MA-24	24.00	22.44	0.0010	33.10	32.54	3074
COX-240	MA-24	24.00	22.66	0.0010	33.52	33.10	2476
COX-250	MA-24	24.00	22.71	0.0010	30.17	23.94	33300
COX-260	MA-24	24.00	22.77	0.0010	22.57	22.60	3565

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
COX-270	MA-24	25.00	22.88	0.0010	22.54	22.57	4924
COX-280	MA-24	24.40	23.01	0.0010	21.76	21.77	6983
COX-290	MA-24	25.00	23.16	0.0010	21.57	21.02	4946
COX-300	MA-24	24.00	23.16	0.0010	17.98	16.58	5554
COX-310	MA-24	24.00	23.16	0.0009	16.58	9.47	36287
COX-320	MA-24	25.00	23.16	0.0010	17.62	16.97	2758
COX-330	MA-24	24.00	23.16	0.0010	20.78	18.72	10956
COX-340	MA-24	24.00	23.16	0.0010	41.16	10.09	184812
COX-350	MA-24	25.00	23.14	0.0010	6.53	5.79	8728
COX-360	MA-24	25.00	23.09	0.0010	5.74	5.76	799
COX-370	MA-24	23.00	23.04	0.0010	5.76	6.04	5164
COX-380	MA-24	24.00	23.01	0.0010	6.45	6.49	43278
COX-390	MA-24	24.00	23.00	0.0010	24.75	14.26	130531
COX-400	MA-24	23.50	22.95	0.0010	9.97	10.04	3555
COX-410	MA-24	23.00	22.90	0.0010	10.04	10.68	39140
COX-420	MA-24	23.00	22.56	0.0010	10.68	10.80	6214
COX-430	MA-24	24.00	22.52	0.0062	31.74	31.71	2929
COX-430W	MA-24	25.00	22.78	0.0009	71.64	64.89	124786
COX-431	MA-24	25.00	23.92	0.0006	11.66	3.55	129847
COX-440	MA-24	24.00	22.47	0.0010	5.69	3.99	2865
COX-450	MA-24	24.00	22.34	0.0010	13.43	9.55	76184
COX-460	MA-24	24.00	22.13	0.0009	9.40	9.40	2539
COX-700W	MA-24	24.00	20.36	0.0000	9.40	0.00	0
COX-710E	MA-24	24.00	20.69	0.0000	0.00	0.00	0
FRI-100E	MA-24	24.00	20.66	0.0000	0.00	0.00	0
MUD-200	MA-24	19.00	16.07	0.0000	78.22	0.00	0
RAY-100	MA-24	25.00	20.00	0.0000	37.54	0.00	0
SR524-200	MA-24	24.00	23.61	0.0010	63.79	16.44	2735499
SR524-210	MA-24	24.00	23.61	0.0009	28.13	1.12	323967
SR524-300	MA-24	24.00	23.68	0.0005	54.26	20.58	1241300
SR524-310	MA-24	25.00	23.78	0.0005	12.49	11.14	127566
SR524-400E	MA-24	25.00	23.16	0.0010	11.01	10.73	5379
SR524-400S	MA-24	25.00	23.78	0.0006	8.79	1.66	144691
SR524-500	MA-24	23.00	21.16	0.0010	86.94	78.22	70809
SR524-510	MA-24	23.00	21.23	0.0010	62.33	58.91	31440
SR524-520	MA-24	23.00	21.48	0.0010	64.27	62.33	6758
SR524-530	MA-24	23.00	21.56	0.0010	68.61	64.27	21997
SR524-605	MA-24	23.00	15.98	0.0000	0.00	0.00	0

Node Max Conditions [POST]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
COX-190	_10-24	24.00	18.03	0.0000	68.80	0.00	0
COX-200	_10-24	24.00	22.72	0.0010	80.53	68.80	101436
COX-210	_10-24	24.00	23.13	-0.0010	62.51	62.29	46071
COX-220	_10-24	24.00	23.28	0.0010	61.69	61.63	9096
COX-230	_10-24	24.00	23.37	0.0010	37.70	36.22	3811
COX-240	_10-24	24.00	23.45	0.0010	44.39	37.70	157104
COX-250	_10-24	24.00	23.48	-0.0010	46.52	26.89	170565
COX-260	_10-24	24.00	23.60	0.0010	24.67	24.74	5480
COX-270	_10-24	25.00	23.79	-0.0010	24.56	24.67	11062
COX-280	_10-24	24.40	23.98	0.0010	24.42	24.56	7831
COX-290	_10-24	25.00	24.06	0.0010	27.19	27.33	13429
COX-300	_10-24	24.00	24.06	-0.0010	26.30	24.34	18271
COX-310	_10-24	24.00	24.06	0.0009	24.34	13.88	62417
COX-320	_10-24	25.00	24.05	-0.0010	27.15	26.46	4610
COX-330	_10-24	24.00	24.04	-0.0010	32.14	29.95	31377
COX-340	_10-24	24.00	24.04	-0.0010	49.57	13.49	241824
COX-350	_10-24	25.00	24.02	0.0010	7.86	7.78	14447
COX-360	_10-24	25.00	23.94	0.0010	7.85	7.86	799
COX-370	_10-24	23.00	23.78	0.0010	7.86	7.97	12226
COX-380	_10-24	24.00	23.64	0.0010	8.36	8.66	73742
COX-390	_10-24	24.00	23.58	0.0010	43.24	17.79	255356
COX-400	_10-24	23.50	23.51	0.0010	12.13	12.18	4357
COX-410	_10-24	23.00	23.46	0.0010	12.18	12.85	69827
COX-420	_10-24	23.00	23.18	0.0010	12.85	12.91	8855
COX-430	_10-24	24.00	23.10	0.0062	39.26	39.32	3492
COX-430W	_10-24	25.00	23.45	-0.0010	122.19	94.80	406964
COX-431	_10-24	25.00	23.73	-0.0015	6.67	4.98	28427
COX-432	_10-24	25.00	24.18	0.0005	10.00	4.22	219787
COX-440	_10-24	24.00	23.00	0.0010	5.83	5.76	3384
COX-450	_10-24	24.00	22.72	-0.0010	22.88	11.73	156835
COX-460	_10-24	24.00	22.39	-0.0010	11.73	11.73	2792
COX-700W	_10-24	24.00	20.36	0.0000	11.73	0.00	0
COX-710E	_10-24	24.00	20.69	0.0000	0.00	0.00	0
FRI-100E	_10-24	24.00	20.66	0.0000	0.00	0.00	0
MUD-200	_10-24	19.00	16.07	0.0000	109.66	0.00	0
RAY-100	_10-24	25.00	20.00	0.0000	60.01	0.00	0
SR524-200	_10-24	24.00	23.80	0.0010	114.03	45.68	3482149
SR524-210	_10-24	24.00	23.81	0.0010	47.96	5.41	345754
SR524-300	_10-24	24.00	24.07	0.0004	97.30	27.19	1760308
SR524-310	_10-24	25.00	24.18	0.0005	23.06	19.96	288894
SR524-400E1	_10-24	26.00	24.69	0.0004	5.68	5.68	812
SR524-400E2	_10-24	25.00	23.94	0.0002	2.23	0.74	49594
SR524-400N1	_10-24	27.00	26.38	0.0009	45.33	15.03	61811
SR524-400N2	_10-24	27.00	26.26	0.0008	76.22	33.48	149593
SR524-400S	_10-24	25.00	24.18	0.0010	20.65	2.14	185629

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
SR524-400W	_10-24	25.00	24.27	0.0005	46.97	2.50	241555
SR524-500	_10-24	23.00	21.93	0.0010	129.48	109.66	82465
SR524-510	_10-24	23.00	21.99	-0.0010	84.01	79.94	35424
SR524-520	_10-24	23.00	22.39	0.0010	88.26	84.01	8039
SR524-530	_10-24	23.00	22.42	-0.0010	105.65	88.26	220931
SR524-605	_10-24	23.00	15.98	0.0000	0.00	0.00	0
COX-190	_25-24	24.00	18.03	0.0000	77.81	0.00	0
COX-200	_25-24	24.00	23.29	0.0010	91.74	77.81	171291
COX-210	_25-24	24.00	23.82	-0.0010	74.11	71.67	124588
COX-220	_25-24	24.00	23.85	0.0010	72.90	72.62	10803
COX-230	_25-24	24.00	23.91	0.0010	37.91	35.90	4282
COX-240	_25-24	24.00	23.97	-0.0010	51.19	37.91	337753
COX-250	_25-24	24.00	24.00	-0.0010	58.20	31.37	306836
COX-260	_25-24	24.00	24.02	0.0010	26.71	26.75	6537
COX-270	_25-24	25.00	24.16	-0.0010	26.62	26.71	43944
COX-280	_25-24	24.40	24.29	0.0010	26.52	26.62	23607
COX-290	_25-24	25.00	24.35	0.0010	29.77	29.91	27933
COX-300	_25-24	24.00	24.35	-0.0010	29.53	27.01	58411
COX-310	_25-24	24.00	24.34	-0.0009	27.01	13.91	84481
COX-320	_25-24	25.00	24.32	-0.0010	30.42	29.62	11174
COX-330	_25-24	24.00	24.32	-0.0010	36.80	34.36	50652
COX-340	_25-24	24.00	24.31	-0.0010	56.16	13.65	261089
COX-350	_25-24	25.00	24.28	0.0010	8.22	8.40	21376
COX-360	_25-24	25.00	24.17	-0.0010	8.76	8.72	799
COX-370	_25-24	23.00	23.96	0.0010	8.72	8.84	13963
COX-380	_25-24	24.00	23.80	-0.0010	9.93	9.44	81642
COX-390	_25-24	24.00	23.75	-0.0010	54.03	19.20	291281
COX-400	_25-24	23.50	23.61	0.0010	14.63	14.66	4357
COX-410	_25-24	23.00	23.61	0.0010	12.60	13.11	78685
COX-420	_25-24	23.00	23.61	0.0010	14.54	14.20	13351
COX-430	_25-24	24.00	23.43	0.0062	41.65	41.88	3811
COX-430W	_25-24	25.00	23.71	-0.0010	152.02	112.33	529420
COX-431	_25-24	25.00	24.05	-0.0015	8.50	5.81	45227
COX-432	_25-24	25.00	24.48	0.0009	14.22	4.82	258838
COX-440	_25-24	24.00	23.30	0.0010	6.90	6.82	3668
COX-450	_25-24	24.00	22.90	-0.0010	28.25	13.10	194330
COX-460	_25-24	24.00	22.51	-0.0010	12.76	12.76	2901
COX-700W	_25-24	24.00	20.36	0.0000	12.76	0.00	0
COX-710E	_25-24	24.00	20.69	0.0000	0.00	0.00	0
FRI-100E	_25-24	24.00	20.66	0.0000	0.00	0.00	0
MUD-200	_25-24	19.00	16.07	0.0000	120.04	0.00	0
RAY-100	_25-24	25.00	20.00	0.0000	70.04	0.00	0
SR524-200	_25-24	24.00	23.90	0.0010	148.21	63.92	3896481
SR524-210	_25-24	24.00	23.93	0.0010	56.02	9.77	358485
SR524-300	_25-24	24.00	24.35	0.0006	130.80	29.95	2202803
SR524-310	_25-24	25.00	24.48	0.0009	32.30	28.52	546493

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
SR524-400E1	_25-24	26.00	24.72	0.0004	6.97	6.97	931
SR524-400E2	_25-24	25.00	24.17	0.0004	2.84	1.25	54589
SR524-400N1	_25-24	27.00	26.67	0.0010	55.47	21.33	64421
SR524-400N2	_25-24	27.00	26.41	0.0008	94.83	52.61	151980
SR524-400S	_25-24	25.00	24.48	0.0010	32.96	2.39	204925
SR524-400W	_25-24	25.00	24.55	0.0006	75.10	3.63	245033
SR524-500	_25-24	23.00	22.18	0.0010	142.47	120.04	95365
SR524-510	_25-24	23.00	22.23	-0.0010	90.56	92.15	37152
SR524-520	_25-24	23.00	22.68	0.0010	95.89	90.11	8575
SR524-530	_25-24	23.00	22.71	0.0010	123.02	95.89	347667
SR524-605	_25-24	23.00	15.98	0.0000	0.00	0.00	0
COX-190	_MA-24	24.00	18.03	0.0000	52.25	0.00	0
COX-200	_MA-24	24.00	21.88	0.0010	57.01	52.25	48120
COX-210	_MA-24	24.00	22.03	0.0010	41.10	37.71	12303
COX-220	_MA-24	24.00	22.15	0.0010	32.32	30.94	7645
COX-230	_MA-24	24.00	22.41	0.0010	32.88	32.32	3056
COX-240	_MA-24	24.00	22.64	0.0010	33.29	32.88	2476
COX-250	_MA-24	24.00	22.69	-0.0010	29.83	23.20	32346
COX-260	_MA-24	24.00	22.73	0.0010	20.68	20.71	3506
COX-270	_MA-24	25.00	22.78	-0.0010	20.63	20.68	4660
COX-280	_MA-24	24.40	22.81	0.0010	19.71	19.76	6523
COX-290	_MA-24	25.00	22.89	0.0010	19.31	18.89	3727
COX-300	_MA-24	24.00	22.89	-0.0010	18.44	17.15	4674
COX-310	_MA-24	24.00	22.89	0.0008	17.15	10.94	30515
COX-320	_MA-24	25.00	22.90	-0.0010	19.08	18.53	2530
COX-330	_MA-24	24.00	22.90	0.0010	22.22	20.45	7729
COX-340	_MA-24	24.00	22.90	0.0010	35.34	7.46	168590
COX-350	_MA-24	25.00	22.91	0.0010	7.06	6.40	7282
COX-360	_MA-24	25.00	22.91	0.0010	4.96	4.98	799
COX-370	_MA-24	23.00	22.91	0.0010	4.98	5.18	4711
COX-380	_MA-24	24.00	22.91	0.0010	6.78	5.48	39109
COX-390	_MA-24	24.00	22.91	0.0010	24.75	14.49	119279
COX-400	_MA-24	23.50	22.87	0.0010	9.28	9.36	3442
COX-410	_MA-24	23.00	22.83	0.0010	9.36	10.06	36584
COX-420	_MA-24	23.00	22.55	0.0010	10.06	10.21	6193
COX-430	_MA-24	24.00	22.51	0.0062	31.57	31.55	2922
COX-430W	_MA-24	25.00	22.78	-0.0010	70.84	64.73	122925
COX-431	_MA-24	25.00	22.90	-0.0010	3.60	3.45	11168
COX-432	_MA-24	25.00	23.64	0.0005	6.42	2.30	108830
COX-440	_MA-24	24.00	22.47	0.0010	5.69	3.97	2858
COX-450	_MA-24	24.00	22.34	-0.0010	13.39	9.54	75530
COX-460	_MA-24	24.00	22.13	0.0009	9.39	9.38	2537
COX-700W	_MA-24	24.00	20.36	0.0000	9.38	0.00	0
COX-710E	_MA-24	24.00	20.69	0.0000	0.00	0.00	0
FRI-100E	_MA-24	24.00	20.66	0.0000	0.00	0.00	0
MUD-200	_MA-24	19.00	16.07	0.0000	78.14	0.00	0

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
RAY-100	_MA-24	25.00	20.00	0.0000	37.35	0.00	0
SR524-200	_MA-24	24.00	23.61	0.0010	63.79	16.44	2735464
SR524-210	_MA-24	24.00	23.61	0.0009	28.13	1.12	323969
SR524-300	_MA-24	24.00	23.66	0.0005	52.75	17.73	1220069
SR524-310	_MA-24	25.00	23.68	0.0006	12.49	7.58	124455
SR524-400E1	_MA-24	26.00	24.62	0.0003	3.44	3.44	582
SR524-400E2	_MA-24	25.00	23.68	0.0002	1.20	0.11	36151
SR524-400N1	_MA-24	27.00	25.94	0.0006	27.72	8.28	57811
SR524-400N2	_MA-24	27.00	25.94	0.0006	46.44	5.18	144583
SR524-400S	_MA-24	25.00	23.57	0.0004	6.51	0.21	131303
SR524-400W	_MA-24	25.00	23.66	0.0003	21.19	0.89	234021
SR524-500	_MA-24	23.00	21.16	0.0010	86.90	78.14	70778
SR524-510	_MA-24	23.00	21.23	0.0010	62.26	58.82	31429
SR524-520	_MA-24	23.00	21.48	0.0010	64.26	62.26	6755
SR524-530	_MA-24	23.00	21.55	-0.0010	68.59	64.26	21935
SR524-605	_MA-24	23.00	15.98	0.0000	0.00	0.00	0

APPENDIX C

ICPR PRINTOUTS LINK REPORT (RESULTS)

Link Min/Max Conditions [PRE]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
COX-200-P	10-24	68.87	0.00	0.03	7.16	7.79	7.47
COX-200-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-210-P	10-24	62.80	0.00	0.03	4.89	4.89	4.89
COX-210-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-220-C	10-24	62.18	0.00	0.07	1.41	1.90	1.36
COX-220-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-230-P	10-24	36.29	0.00	0.16	3.77	4.08	3.86
COX-230-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-240-P	10-24	37.78	0.00	-0.03	5.34	5.34	5.34
COX-240-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-250-P	10-24	27.19	0.00	0.91	2.55	2.19	2.37
COX-250-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-260-P	10-24	25.52	0.00	0.02	3.63	3.61	3.61
COX-260-W	10-24	3.04	0.00	-0.01	1.06	1.06	1.06
COX-270-P	10-24	25.47	0.00	-0.03	3.97	3.97	3.97
COX-270-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-280-P	10-24	25.38	-0.54	0.41	3.96	3.96	3.96
COX-280-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-290-P	10-24	25.30	-16.49	-0.20	3.58	3.58	3.58
COX-290-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-300-P	10-24	12.04	-14.17	1.51	-2.21	-2.21	-2.21
COX-300-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-310-P	10-24	11.67	-23.45	-1.88	-3.32	-3.32	-3.32
COX-310-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-320-P	10-24	9.35	-11.38	-1.15	-1.78	-1.78	-1.78
COX-320-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-330-P	10-24	9.57	-23.95	-5.40	-1.89	-1.89	-1.89
COX-330-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-340-C	10-24	8.73	-27.18	-2.39	-0.52	-0.79	-0.65
COX-340-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-350-P	10-24	5.35	-7.93	0.15	-1.12	1.82	-1.12
COX-350-W1	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-350-W2	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-360-P	10-24	1.96	-8.13	0.86	-1.91	2.04	-1.91
COX-360-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-370-P	10-24	2.12	-8.13	-0.64	-2.59	-2.59	-2.59
COX-370-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-380-P	10-24	3.49	-8.25	0.45	-4.67	-4.67	-4.67
COX-380-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-390-P	10-24	7.21	-8.96	-0.68	-2.85	3.95	3.06
COX-390-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-400-P	10-24	3.70	-12.34	-0.10	-2.51	3.31	2.90
COX-400-W1	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-400-W2	10-24	1.42	0.00	0.00	0.00	0.00	0.00
COX-410-P	10-24	3.81	-12.39	-0.09	-2.52	3.45	2.84
COX-410-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-420-P	10-24	4.06	-13.00	-0.30	-7.35	-7.35	-7.35
COX-420-W	10-24	0.00	-1.10	0.00	0.00	0.00	0.00
COX-430-P	10-24	7.19	-13.05	-0.03	-4.12	-5.57	-4.78
COX-430-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-430E-P	10-24	33.90	0.00	-0.04	6.70	6.70	6.70

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
COX-430E-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-430W-P	10-24	31.75	-3.77	-1.54	6.28	6.28	6.28
COX-430W-W	10-24	3.79	0.00	-0.01	1.14	1.14	1.14
COX-431-W1	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-431-W2	10-24	0.70	0.00	0.00	0.00	0.00	0.00
COX-431-W3	10-24	15.08	0.00	-0.05	1.20	1.20	1.20
COX-440-P	10-24	2.63	-5.93	0.20	-2.54	-4.52	-3.52
COX-440-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-450-P	10-24	2.58	-5.85	-0.06	-3.31	-3.67	-3.31
COX-450-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-460-P	10-24	0.05	-11.75	0.02	-3.74	-3.74	-3.74
COX-460-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-700WS-P	10-24	0.00	-11.75	0.01	-3.83	-5.33	-4.58
COX-700WS-W1	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-700WS-W2	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-710E-W2	10-24	0.00	0.00	0.00	0.00	0.00	0.00
FRI-100E-W2	10-24	0.00	0.00	0.00	0.00	0.00	0.00
RAY-100E-C	10-24	0.00	-60.42	0.04	-1.51	-5.70	-3.61
SR524-200-W	10-24	45.68	0.00	0.04	1.53	1.53	1.53
SR524-210-P	10-24	5.41	-20.92	0.11	-3.33	-3.33	-3.33
SR524-210-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-300-W1	10-24	2.13	-0.11	0.07	0.20	0.20	0.20
SR524-300-W2	10-24	24.96	-4.61	1.93	1.21	1.21	1.21
SR524-310-P	10-24	10.15	0.00	-0.02	3.35	3.51	3.43
SR524-310-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-310-W1	10-24	20.65	-1.04	-0.09	1.24	1.24	1.24
SR524-400-P	10-24	19.77	0.00	-0.03	4.18	4.45	4.25
SR524-400-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-400S-W1	10-24	12.70	-0.37	0.03	1.70	1.70	1.70
SR524-500-P	10-24	109.73	0.00	0.06	5.70	8.00	6.23
SR524-500-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-510-C	10-24	80.09	0.00	0.11	0.53	2.24	1.30
SR524-520-P1	10-24	42.03	0.00	-0.93	5.95	5.95	5.95
SR524-520-P2	10-24	42.03	0.00	-0.85	5.95	5.95	5.95
SR524-520-W	10-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-530-C	10-24	88.32	0.00	5.36	3.27	2.56	2.40
SR524-605-W2	10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-200-P	25-24	77.92	0.00	-0.03	8.10	8.47	8.28
COX-200-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-210-P	25-24	66.50	0.00	0.06	5.18	5.18	5.18
COX-210-W	25-24	10.29	0.00	-0.03	1.59	1.59	1.59

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
COX-220-C	25-24	60.79	0.00	-2.69	1.41	1.93	1.37
COX-220-W	25-24	38.15	0.00	-4.32	1.29	1.29	1.29
COX-230-P	25-24	35.97	0.00	0.61	3.74	4.00	3.82
COX-230-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-240-P	25-24	37.97	0.00	0.11	5.37	5.37	5.37
COX-240-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-250-P	25-24	32.11	0.00	-0.77	2.68	2.56	2.57
COX-250-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-260-P	25-24	27.29	0.00	0.03	3.86	3.86	3.86
COX-260-W	25-24	8.51	0.00	-0.01	1.38	1.38	1.38
COX-270-P	25-24	27.25	0.00	0.02	4.25	4.25	4.25
COX-270-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-280-P	25-24	27.17	-3.23	0.40	4.24	4.24	4.24
COX-280-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-290-P	25-24	27.08	-23.42	-0.22	3.83	3.83	3.83
COX-290-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-300-P	25-24	12.07	-14.26	1.55	-2.23	-2.23	-2.23
COX-300-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-310-P	25-24	11.69	-25.97	-1.92	-3.67	-3.67	-3.67
COX-310-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-320-P	25-24	9.31	-11.15	-1.36	-1.74	-1.74	-1.74
COX-320-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-330-P	25-24	9.71	-26.63	-5.31	-2.10	-2.10	-2.10
COX-330-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-340-C	25-24	8.71	-31.02	2.54	-0.54	-0.80	-0.67
COX-340-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-350-P	25-24	4.08	-8.74	-0.15	-1.24	1.82	-1.24
COX-350-W1	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-350-W2	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-360-P	25-24	1.71	-8.91	-0.93	-2.10	-2.10	-2.10
COX-360-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-370-P	25-24	1.80	-8.92	-0.66	-2.84	-2.84	-2.84
COX-370-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-380-P	25-24	2.83	-9.02	0.35	-5.11	-5.11	-5.11
COX-380-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-390-P	25-24	7.47	-9.60	-0.63	-3.06	3.95	3.06
COX-390-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-400-P	25-24	3.70	-15.50	0.10	-3.16	3.31	-3.16
COX-400-W1	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-400-W2	25-24	11.78	0.00	0.04	0.97	0.97	0.97
COX-410-P	25-24	3.81	-12.75	-0.12	-2.60	3.45	2.84
COX-410-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-420-P	25-24	4.06	-13.21	-0.30	-7.48	-7.48	-7.48
COX-420-W	25-24	2.07	-4.39	-0.03	-1.19	-1.19	-1.19
COX-430-P	25-24	7.19	-13.27	-0.03	-4.19	-5.65	-4.89
COX-430-W	25-24	0.00	-2.39	-0.01	0.00	0.00	0.00
COX-430E-P	25-24	35.82	0.00	-0.04	7.08	7.08	7.08
COX-430E-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-430W-P	25-24	32.52	-3.99	-1.21	6.43	6.43	6.43
COX-430W-W	25-24	15.24	0.00	-0.04	1.81	1.81	1.81
COX-431-W1	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-431-W2	25-24	5.30	0.00	0.05	0.49	0.49	0.49

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
COX-431-W3	25-24	20.66	0.00	-0.08	1.25	1.25	1.25
COX-440-P	25-24	3.88	-7.00	0.21	-2.54	-4.52	-3.52
COX-440-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-450-P	25-24	3.55	-6.91	-0.07	-3.91	-3.91	-3.91
COX-450-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-460-P	25-24	0.05	-12.78	0.02	-4.07	-4.07	-4.07
COX-460-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-700WS-P	25-24	0.00	-12.78	0.01	-4.07	-5.59	-4.83
COX-700WS-W1	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-700WS-W2	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-710E-W2	25-24	0.00	0.00	0.00	0.00	0.00	0.00
FRI-100E-W2	25-24	0.00	0.00	0.00	0.00	0.00	0.00
RAY-100E-C	25-24	0.00	-70.62	0.04	-1.61	-5.96	-3.78
SR524-200-W	25-24	62.86	0.00	2.81	1.69	1.69	1.69
SR524-210-P	25-24	9.77	-21.42	0.15	-3.41	-3.41	-3.41
SR524-210-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-300-W1	25-24	2.01	-1.78	-0.21	0.16	0.16	0.16
SR524-300-W2	25-24	26.23	-14.74	2.02	1.22	1.22	1.22
SR524-310-P	25-24	10.63	0.00	-0.01	3.45	3.62	3.54
SR524-310-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-310-W1	25-24	25.43	-1.07	-0.08	1.29	1.29	1.29
SR524-400-P	25-24	23.60	0.00	-0.03	4.81	4.86	4.83
SR524-400-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-400S-W1	25-24	15.76	-1.10	0.07	1.74	1.74	1.74
SR524-500-P	25-24	120.11	0.00	0.06	6.24	8.00	6.69
SR524-500-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-510-C	25-24	92.95	0.00	0.14	0.55	2.24	1.30
SR524-520-P1	25-24	45.07	0.00	-0.95	6.38	6.38	6.38
SR524-520-P2	25-24	45.07	0.00	-0.87	6.38	6.38	6.38
SR524-520-W	25-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-530-C	25-24	95.94	0.00	5.32	3.24	2.56	2.40
SR524-605-W2	25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-200-P	MA-24	52.61	0.00	0.03	5.47	6.80	6.14
COX-200-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-210-P	MA-24	37.90	0.00	0.03	3.13	3.19	3.16
COX-210-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-220-C	MA-24	31.16	0.00	-0.02	1.34	1.83	1.31
COX-220-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-230-P	MA-24	32.54	0.00	-0.19	3.41	4.07	3.71
COX-230-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-240-P	MA-24	33.10	0.00	-0.06	4.68	5.18	4.84

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
COX-240-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-250-P	MA-24	23.94	0.00	1.67	2.54	2.13	2.34
COX-250-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-260-P	MA-24	22.60	0.00	-0.05	3.43	3.28	3.36
COX-260-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-270-P	MA-24	22.57	0.00	0.03	3.52	3.52	3.52
COX-270-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-280-P	MA-24	21.77	-0.28	0.37	3.40	3.40	3.40
COX-280-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-290-P	MA-24	21.02	-11.59	-0.14	2.97	2.97	2.97
COX-290-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-300-P	MA-24	9.20	-10.63	1.25	-1.66	-1.66	-1.66
COX-300-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-310-P	MA-24	8.19	-16.58	-1.79	-2.35	-2.59	-2.45
COX-310-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-320-P	MA-24	8.24	-9.47	-1.20	-1.48	-1.50	-1.49
COX-320-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-330-P	MA-24	8.49	-16.97	6.05	-1.58	-1.40	-1.49
COX-330-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-340-C	MA-24	7.16	-18.72	-3.75	-0.45	-0.74	-0.59
COX-340-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-350-P	MA-24	5.79	-5.46	0.15	-1.11	1.82	1.17
COX-350-W1	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-350-W2	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-360-P	MA-24	2.51	-5.74	-0.74	1.41	2.04	1.56
COX-360-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-370-P	MA-24	2.67	-5.76	0.55	-1.84	2.38	-1.84
COX-370-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-380-P	MA-24	4.29	-6.04	0.66	-3.42	-3.42	-3.42
COX-380-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-390-P	MA-24	6.45	-6.49	-1.01	2.18	3.95	3.06
COX-390-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-400-P	MA-24	3.70	-9.97	-0.09	2.49	3.31	2.90
COX-400-W1	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-400-W2	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-410-P	MA-24	3.81	-10.04	-0.08	2.36	3.45	2.84
COX-410-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-420-P	MA-24	4.06	-10.68	-0.16	-6.05	-6.05	-6.05
COX-420-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-430-P	MA-24	7.19	-10.80	-0.02	-3.41	-4.58	-3.73
COX-430-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-430E-P	MA-24	27.83	0.00	-0.03	5.50	5.89	5.67
COX-430E-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-430W-P	MA-24	27.65	-1.24	0.17	5.46	5.81	5.58
COX-430W-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-431-W1	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-431-W2	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-431-W3	MA-24	3.55	0.00	0.01	1.05	1.05	1.05
COX-440-P	MA-24	1.50	-5.69	-0.03	-2.54	-4.52	-3.52
COX-440-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-450-P	MA-24	2.49	-3.99	-0.03	-2.26	-3.67	-2.78
COX-450-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
COX-460-P	MA-24	0.05	-9.40	0.02	-2.99	-3.11	-2.99
COX-460-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-700WS-P	MA-24	0.00	-9.40	0.01	-3.44	-4.88	-4.16
COX-700WS-W1	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-700WS-W2	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-710E-W2	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
FRI-100E-W2	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
RAY-100E-C	MA-24	0.00	-37.54	0.03	-1.25	-4.97	-3.11
SR524-200-W	MA-24	9.93	0.00	0.01	0.92	0.92	0.92
SR524-210-P	MA-24	1.12	-16.44	-0.06	-2.62	-2.62	-2.62
SR524-210-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-300-W1	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-300-W2	MA-24	20.58	0.00	0.03	1.17	1.17	1.17
SR524-310-P	MA-24	6.72	0.00	-0.01	2.56	2.57	2.56
SR524-310-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-310-W1	MA-24	5.19	-0.63	-0.02	1.02	1.02	1.02
SR524-400-P	MA-24	10.73	0.00	1.49	3.33	3.48	3.32
SR524-400-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-400S-W1	MA-24	1.66	0.00	0.00	1.14	1.14	1.14
SR524-500-P	MA-24	78.22	0.00	0.06	4.60	8.00	6.21
SR524-500-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-510-C	MA-24	58.91	-0.03	-0.05	0.47	2.24	1.30
SR524-520-P1	MA-24	31.16	0.00	-0.85	4.41	4.41	4.41
SR524-520-P2	MA-24	31.16	0.00	-0.78	4.41	4.41	4.41
SR524-520-W	MA-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-530-C	MA-24	64.27	0.00	7.02	3.69	2.56	2.40
SR524-605-W2	MA-24	0.00	0.00	0.00	0.00	0.00	0.00

Link Min/Max Conditions [POST]

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
COX-200-P	_10-24	68.80	0.00	0.03	7.15	7.79	7.46
COX-200-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-210-P	_10-24	62.29	0.00	0.03	4.85	4.85	4.85
COX-210-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-220-C	_10-24	61.63	0.00	0.04	1.41	1.90	1.36
COX-220-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-230-P	_10-24	36.22	0.00	0.12	3.76	4.07	3.86
COX-230-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-240-P	_10-24	37.70	0.00	-0.03	5.33	5.33	5.33
COX-240-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-250-P	_10-24	26.89	-0.01	0.92	2.45	2.14	2.28
COX-250-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-260-P	_10-24	24.74	0.00	0.02	3.51	3.50	3.50
COX-260-W	_10-24	1.65	0.00	0.01	0.86	0.86	0.86
COX-270-P	_10-24	24.67	0.00	-0.02	3.85	3.85	3.85
COX-270-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-280-P	_10-24	24.56	-0.94	0.37	3.83	3.83	3.83
COX-280-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-290-P	_10-24	24.42	-17.17	-0.25	3.46	3.46	3.46
COX-290-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-300-P	_10-24	9.90	-15.05	0.28	-2.35	-2.35	-2.35
COX-300-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-310-P	_10-24	9.57	-24.34	-0.42	-3.44	-3.44	-3.44
COX-310-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-320-P	_10-24	7.56	-13.88	-1.09	-2.16	-2.16	-2.16
COX-320-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-330-P	_10-24	8.86	-26.46	-5.97	-2.11	-2.09	-2.10
COX-330-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-340-C	_10-24	7.98	-29.95	-3.15	-0.60	-0.93	-0.76
COX-340-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-350-P	_10-24	6.65	-7.58	0.09	-1.07	1.82	1.22
COX-350-W1	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-350-W2	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-360-P	_10-24	2.48	-7.78	-0.99	-1.83	2.04	-1.83
COX-360-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-370-P	_10-24	2.63	-7.86	0.58	-2.50	-2.50	-2.50
COX-370-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-380-P	_10-24	4.02	-7.97	0.67	-4.51	-4.51	-4.51
COX-380-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-390-P	_10-24	8.36	-8.66	1.00	-2.76	3.96	3.07
COX-390-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-400-P	_10-24	3.71	-12.13	0.11	2.49	3.31	2.90
COX-400-W1	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-400-W2	_10-24	0.45	0.00	0.00	0.00	0.00	0.00
COX-410-P	_10-24	3.82	-12.18	-0.08	-2.48	3.45	2.84

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
COX-410-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-420-P	_10-24	4.07	-12.85	0.22	-7.27	-7.27	-7.27
COX-420-W	_10-24	0.00	-0.77	0.00	0.00	0.00	0.00
COX-430-P	_10-24	7.19	-12.91	0.02	-4.07	-5.53	-4.72
COX-430-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-430E-P	_10-24	33.76	0.00	-0.04	6.67	6.67	6.67
COX-430E-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-430W-P	_10-24	31.66	-3.66	-1.54	6.26	6.26	6.26
COX-430W-W	_10-24	3.42	0.00	0.01	1.10	1.10	1.10
COX-431-P	_10-24	4.98	0.00	-0.02	2.82	2.82	2.82
COX-431-W1	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-432-P	_10-24	2.42	-2.23	-0.02	1.37	1.37	1.37
COX-432-W1	_10-24	3.57	-3.43	-0.05	0.98	0.98	0.98
COX-432-W2	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-440-P	_10-24	2.36	-5.83	-0.17	-2.54	-4.52	-3.52
COX-440-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-450-P	_10-24	2.61	-5.76	-0.05	-3.26	-3.67	-3.26
COX-450-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-460-P	_10-24	0.05	-11.73	0.02	-3.73	-3.73	-3.73
COX-460-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-700WS-P	_10-24	0.00	-11.73	0.01	-3.82	-5.32	-4.57
COX-700WS-W1	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-700WS-W2	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-710E-W2	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
FRI-100E-W2	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
RAY-100E-C	_10-24	0.00	-60.01	0.04	-1.51	-5.69	-3.60
SR524-200-W	_10-24	45.68	0.00	0.04	1.53	1.53	1.53
SR524-210-P	_10-24	5.41	-20.92	0.11	-3.33	-3.33	-3.33
SR524-210-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-300-W1	_10-24	4.78	0.00	0.08	0.47	0.47	0.47
SR524-300-W2	_10-24	27.19	-2.07	0.06	1.25	1.25	1.25
SR524-310-P	_10-24	7.93	-0.46	0.07	2.80	2.86	2.83
SR524-310-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-310-W1	_10-24	17.30	-2.14	-0.08	1.22	1.22	1.22
SR524-400-P - Pipe	_10-24	5.68	0.00	0.01	0.00	0.00	0.00
SR524-400-P - Weir: 1	_10-24	5.68	0.00	0.01	1.60	1.60	1.60
SR524-400-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
SR524-400E-W1	_10-24	0.74	-0.34	-0.37	0.99	0.99	0.99
SR524-400N-P	_10-24	15.03	0.00	0.04	2.13	2.13	2.13
SR524-400N-W1	_10-24	33.48	0.00	0.04	1.85	1.85	1.85
SR524-400W-DS - Pipe	_10-24	2.50	-0.35	-0.31	0.00	0.00	0.00
SR524-400W-DS - Weir: 1	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-400W-DS - Weir: 2	_10-24	2.12	-0.19	-0.67	1.14	1.14	1.14
SR524-400W-DS - Weir: 3	_10-24	0.44	-0.35	-0.11	-1.41	-1.41	-1.41
SR524-500-P	_10-24	109.66	0.00	0.06	5.70	8.00	6.23
SR524-500-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-510-C	_10-24	79.94	0.00	0.17	0.53	2.24	1.31
SR524-520-P 1	_10-24	42.01	0.00	-0.95	5.94	5.94	5.94
SR524-520-P 2	_10-24	42.01	0.00	-0.87	5.94	5.94	5.94
SR524-520-W	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-530-C	_10-24	88.26	0.00	5.37	3.27	2.56	2.40
SR524-605-W 2	_10-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-200-P	_25-24	77.81	0.00	0.03	8.09	8.46	8.27
COX-200-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-210-P	_25-24	66.39	0.00	0.06	5.17	5.17	5.17
COX-210-W	_25-24	10.04	0.00	-0.01	1.58	1.58	1.58
COX-220-C	_25-24	60.73	0.00	0.17	1.40	1.93	1.36
COX-220-W	_25-24	36.08	0.00	-0.06	1.29	1.29	1.29
COX-230-P	_25-24	35.90	0.00	0.11	3.73	3.99	3.81
COX-230-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-240-P	_25-24	37.91	0.00	0.03	5.36	5.36	5.36
COX-240-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-250-P	_25-24	31.37	0.00	0.86	2.65	2.50	2.51
COX-250-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-260-P	_25-24	26.75	0.00	0.03	3.78	3.78	3.78
COX-260-W	_25-24	7.76	0.00	-0.02	1.34	1.34	1.34
COX-270-P	_25-24	26.71	0.00	0.02	4.17	4.17	4.17
COX-270-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-280-P	_25-24	26.62	-3.64	-0.45	4.15	4.15	4.15
COX-280-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-290-P	_25-24	26.52	-23.51	-0.33	3.75	3.75	3.75
COX-290-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-300-P	_25-24	9.59	-15.25	0.36	-2.38	-2.38	-2.38

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
COX-300-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-310-P	_25-24	9.25	-27.01	-0.36	-3.82	-3.82	-3.82
COX-310-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-320-P	_25-24	7.22	-13.91	-1.33	-2.17	-2.17	-2.17
COX-320-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-330-P	_25-24	8.61	-29.62	5.55	-2.34	-2.34	-2.34
COX-330-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-340-C	_25-24	7.63	-34.36	5.00	-0.63	-0.94	-0.78
COX-340-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-350-P	_25-24	5.90	-8.22	0.14	-1.16	1.82	-1.16
COX-350-W1	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-350-W2	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-360-P	_25-24	2.31	-8.40	-1.00	-1.98	2.04	-1.98
COX-360-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-370-P	_25-24	2.41	-8.72	0.61	-2.78	-2.78	-2.78
COX-370-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-380-P	_25-24	3.33	-8.84	0.66	-5.00	-5.00	-5.00
COX-380-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-390-P	_25-24	8.58	-9.44	1.06	-3.00	3.96	3.07
COX-390-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-400-P	_25-24	3.71	-14.63	0.11	-2.98	3.31	-2.98
COX-400-W1	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-400-W2	_25-24	10.40	0.00	0.02	0.93	0.93	0.93
COX-410-P	_25-24	3.82	-12.60	-0.14	-2.57	3.45	2.84
COX-410-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-420-P	_25-24	4.07	-13.11	0.23	-7.42	-7.42	-7.42
COX-420-W	_25-24	1.76	-4.20	-0.02	-1.18	-1.18	-1.18
COX-430-P	_25-24	7.19	-13.18	-0.02	-4.16	-5.63	-4.86
COX-430-W	_25-24	0.00	-2.05	0.01	0.00	0.00	0.00
COX-430E-P	_25-24	35.89	0.00	-0.04	7.09	7.09	7.09
COX-430E-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-430W-P	_25-24	32.17	-3.93	-1.29	6.36	6.36	6.36
COX-430W-W	_25-24	14.54	0.00	-0.03	1.78	1.78	1.78
COX-431-P	_25-24	5.81	0.00	-0.02	3.29	3.29	3.29
COX-431-W1	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-432-P	_25-24	2.46	-2.12	-0.05	1.39	1.39	1.39
COX-432-W1	_25-24	4.14	-4.26	-0.17	1.00	1.00	1.00
COX-432-W2	_25-24	1.10	0.00	0.00	0.04	0.04	0.04
COX-440-P	_25-24	3.64	-6.90	0.15	-2.54	-4.52	-3.52
COX-440-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-450-P	_25-24	3.29	-6.82	-0.08	-3.86	-3.86	-3.86
COX-450-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-460-P	_25-24	0.05	-12.76	0.02	-4.06	-4.06	-4.06
COX-460-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-700WS-P	_25-24	0.00	-12.76	0.01	-4.06	-5.58	-4.82

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
COX-700WS-W1	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-700WS-W2	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-710E-W2	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
FRI-100E-W2	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
RAY-100E-C	_25-24	0.00	-70.04	0.04	-1.60	-5.94	-3.77
SR524-200-W	_25-24	63.92	0.00	0.07	1.71	1.71	1.71
SR524-210-P	_25-24	9.77	-21.42	0.20	-3.41	-3.41	-3.41
SR524-210-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-300-W1	_25-24	6.87	0.00	0.08	0.59	0.59	0.59
SR524-300-W2	_25-24	29.77	-11.87	-0.05	1.28	1.28	1.28
SR524-310-P	_25-24	9.23	-0.46	0.04	3.07	3.19	3.13
SR524-310-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-310-W1	_25-24	25.96	-2.39	-0.18	1.32	1.32	1.32
SR524-400-P - Pipe	_25-24	6.97	0.00	0.01	0.00	0.00	0.00
SR524-400-P - Weir: 1	_25-24	6.97	0.00	0.01	1.71	1.71	1.71
SR524-400-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-400E-W1	_25-24	1.25	-0.97	-0.57	1.10	1.10	1.10
SR524-400N-P	_25-24	21.33	0.00	0.03	3.02	3.02	3.02
SR524-400N-W1	_25-24	52.61	0.00	0.05	2.11	2.11	2.11
SR524-400W-DS - Pipe	_25-24	3.63	-0.61	-0.31	0.00	0.00	0.00
SR524-400W-DS - Weir: 1	_25-24	1.78	0.00	-0.01	0.79	0.79	0.79
SR524-400W-DS - Weir: 2	_25-24	3.02	0.00	-0.67	1.65	1.65	1.65
SR524-400W-DS - Weir: 3	_25-24	0.64	-0.61	0.04	1.91	1.91	1.91
SR524-500-P	_25-24	120.04	0.00	0.06	6.24	8.00	6.69
SR524-500-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-510-C	_25-24	92.15	0.00	0.17	0.55	2.24	1.31
SR524-520-P1	_25-24	45.05	0.00	-0.84	6.37	6.37	6.37
SR524-520-P2	_25-24	45.05	0.00	-0.77	6.37	6.37	6.37
SR524-520-W	_25-24	0.00	0.00	0.00	0.00	0.00	0.00

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
SR524-530-C	_25-24	95.89	0.00	5.35	3.24	2.56	2.40
SR524-605-W 2	_25-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-200-P	_MA-24	52.25	0.00	0.03	5.43	6.76	6.09
COX-200-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-210-P	_MA-24	37.71	0.00	0.03	3.12	3.18	3.15
COX-210-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-220-C	_MA-24	30.94	0.00	-0.03	1.30	1.83	1.28
COX-220-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-230-P	_MA-24	32.32	0.00	0.18	3.40	4.07	3.70
COX-230-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-240-P	_MA-24	32.88	0.00	0.06	4.65	5.18	4.82
COX-240-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-250-P	_MA-24	23.20	0.00	1.59	2.45	2.03	2.24
COX-250-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-260-P	_MA-24	20.71	0.00	0.07	3.28	3.08	3.18
COX-260-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-270-P	_MA-24	20.68	0.00	0.03	3.23	3.23	3.23
COX-270-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-280-P	_MA-24	19.76	-0.89	-0.42	3.08	3.08	3.08
COX-280-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-290-P	_MA-24	18.89	-12.08	0.19	2.67	2.67	2.67
COX-290-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-300-P	_MA-24	8.99	-11.23	1.10	-1.75	-1.75	-1.75
COX-300-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-310-P	_MA-24	8.04	-17.15	-1.90	-2.43	-2.70	-2.55
COX-310-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-320-P	_MA-24	7.93	-10.94	-1.16	-1.71	-1.73	-1.72
COX-320-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-330-P	_MA-24	8.42	-18.53	6.03	-1.75	-1.54	-1.64
COX-330-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-340-C	_MA-24	6.45	-20.45	-3.63	-0.50	-0.83	-0.67
COX-340-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-350-P	_MA-24	6.40	-4.52	-0.17	1.12	1.82	1.31
COX-350-W1	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-350-W2	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-360-P	_MA-24	2.99	-4.86	-0.86	1.42	2.04	1.56
COX-360-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-370-P	_MA-24	3.13	-4.98	0.62	-1.59	2.38	-1.59
COX-370-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-380-P	_MA-24	4.64	-5.18	-0.69	-2.93	3.18	-2.93
COX-380-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-390-P	_MA-24	6.78	-5.48	1.04	2.18	3.96	3.07
COX-390-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-400-P	_MA-24	3.71	-9.28	-0.08	2.49	3.31	2.90
COX-400-W1	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
COX-400-W2	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-410-P	_MA-24	3.82	-9.36	0.04	2.36	3.45	2.84
COX-410-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-420-P	_MA-24	4.07	-10.06	0.13	-5.70	-5.70	-5.70
COX-420-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-430-P	_MA-24	7.19	-10.21	-0.02	-3.22	4.48	3.69
COX-430-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-430E-P	_MA-24	27.72	0.00	-0.03	5.48	5.88	5.66
COX-430E-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-430W-P	_MA-24	27.60	-0.43	-0.03	5.46	5.81	5.58
COX-430W-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-431-P	_MA-24	3.45	0.00	-0.02	1.95	3.42	2.50
COX-431-W1	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-432-P	_MA-24	1.24	-2.41	0.05	-1.37	-1.37	-1.37
COX-432-W1	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-432-W2	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-440-P	_MA-24	1.53	-5.69	-0.03	-2.54	-4.52	-3.52
COX-440-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-450-P	_MA-24	2.53	-3.97	-0.04	-2.24	-3.67	-2.78
COX-450-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-460-P	_MA-24	0.05	-9.39	0.02	-2.99	-3.11	-2.99
COX-460-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-700WS-P	_MA-24	0.00	-9.38	0.01	-3.44	-4.87	-4.16
COX-700WS-W1	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-700WS-W2	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
COX-710E-W2	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
FRI-100E-W2	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
RAY-100E-C	_MA-24	0.00	-37.35	0.03	-1.25	-4.96	-3.11
SR524-200-W	_MA-24	9.93	0.00	0.01	0.92	0.92	0.92
SR524-210-P	_MA-24	1.12	-16.44	0.05	-2.62	-2.62	-2.62
SR524-210-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-300-W1	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-300-W2	_MA-24	17.73	0.00	0.03	1.12	1.12	1.12
SR524-310-P	_MA-24	4.15	-0.47	-0.02	1.82	-2.09	1.79
SR524-310-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-310-W1	_MA-24	1.89	-0.21	0.00	0.94	0.94	0.94
SR524-400-P - Pipe	_MA-24	3.44	0.00	0.01	0.00	0.00	0.00
SR524-400-P	_MA-24	3.44	0.00	0.01	1.35	1.35	1.35

Link Name	Sim Name	Max Flow [cfs]	Min Flow [cfs]	Min/Max Delta Flow [cfs]	Max Us Velocity [fps]	Max Ds Velocity [fps]	Max Avg Velocity [fps]
- Weir: 1							
SR524-400-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-400E-W1	_MA-24	0.11	0.00	0.00	0.65	0.65	0.65
SR524-400N-P	_MA-24	8.28	0.00	-0.04	1.17	1.17	1.17
SR524-400N-W1	_MA-24	5.18	0.00	0.01	1.03	1.03	1.03
SR524-400W-DS - Pipe	_MA-24	0.89	-2.30	0.01	0.00	0.00	0.00
SR524-400W-DS - Weir: 1	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-400W-DS - Weir: 2	_MA-24	0.61	-1.42	0.01	-1.90	-1.90	-1.90
SR524-400W-DS - Weir: 3	_MA-24	0.28	-0.99	0.00	-2.96	-2.96	-2.96
SR524-500-P	_MA-24	78.14	0.00	0.06	4.60	8.00	6.21
SR524-500-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-510-C	_MA-24	58.82	-0.03	0.05	0.47	2.24	1.31
SR524-520-P 1	_MA-24	31.13	0.00	-0.85	4.40	4.40	4.40
SR524-520-P 2	_MA-24	31.13	0.00	-0.78	4.40	4.40	4.40
SR524-520-W	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00
SR524-530-C	_MA-24	64.26	0.00	7.09	3.71	2.56	2.40
SR524-605-W 2	_MA-24	0.00	0.00	0.00	0.00	0.00	0.00

APPENDIX D

SOILS REPORT

**Preliminary Subsurface Soil Exploration
Proposed Apartments Site
Cox Road & State Road 524
Cocoa, Florida**



Ardaman & Associates, Inc.

CORPORATE HEADQUARTERS

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Louisiana: Baton Rouge, Monroe, New Orleans, Shreveport

MEMBERS:

ASTM International
American Concrete Institute
Geoprosessional Business Association
Society of American Military Engineers
American Council of Engineering Companies



Ardaman & Associates, Inc.

Geotechnical, Environmental and
Materials Consultants

June 30, 2022
File No. 22-23-5238

The Brownstone Group
1000 Louisville Avenue
Monroe, Louisiana 71201

Attention: Mr. Jeremy Mears

Subject: Preliminary Subsurface Soil Exploration
Proposed Apartments Site
Cox Road and State Road 524
Cocoa, Florida

Dear Mr. Mears:

As requested, we have completed a preliminary subsurface soil exploration for the subject project. The purposes of performing this exploration were to obtain soil stratigraphy and groundwater level data at the site and to provide a general discussion of how the encountered subsurface conditions may impact development of the site. In addition, we have estimated the normal seasonal high groundwater level at the boring locations. This report documents our findings and presents our engineering recommendations.

SITE LOCATION AND SITE DESCRIPTION

The site for the proposed development is located directly east of the intersection of Cox Road and State Road 524 in Cocoa, Florida (Section 23, Township 24 South, Range 35 East). The general site location is shown superimposed on the Sharpes, Florida USGS quadrangle map presented on Figure 1.

The project site is currently undeveloped and wooded and vegetated with brush. No structures currently exist on the project site. Paths were mowed on the site to provide drill rig access to the boring locations.

REVIEW OF SOIL SURVEY MAPS

Based on the 1974 Soil Survey for Brevard County, Florida, as prepared by the U.S. Department of Agriculture Soil Conservation Service, the project site is located in areas mapped as the "Myakka sand", "Anclote sand", and "Basinger sand" soil series. A description of these soil types, as obtained from the Soil Survey, is provided below.

Myakka sand (Mk):

"Myakka sand" is a nearly level, poorly drained sandy soil in broad areas in the flatwoods and in areas between sand ridges and sloughs and ponds. A representative profile of the soil consists of 22 inches of dark gray to gray sand followed by 13 inches of dark brown, weakly cemented sand. Below that is gray sand to a depth of 63 inches. In most years, the water table is within a depth of 10 inches for 1 to 4 months and between 10 and 40 inches for more than 6 months. In dry seasons it is below a depth of 40 inches. The soil is flooded for 2 to 7 days in 1 to 5 years.

1300 N. Cocoa Boulevard, Cocoa, FL 32922 Phone (321) 632-2503 FAX (321) 636-4657

Louisiana: Baton Rouge, Monroe, New Orleans, Shreveport

Florida: Bartow, Cocoa, Fort Myers, Miami, Orlando, Port St. Lucie, Sarasota, Tallahassee, Tampa, West Palm Beach

Anclote sand (An):

"Anclote sand" is a nearly level, very poorly drained sandy soil in broad areas in marshy depressions in the flatwoods, in brood areas on flood plains, and in poorly defined drainageways. A representative profile consists of sand to a depth of 72 inches. In most years, the water table is within a depth of 10 inches for more than 6 months. In dry seasons it is deeper, but seldom below a depth of 40 inches. The soil is occasionally flooded 2 to 7 days following heavy rains.

Basinger sand (Ba):

"Basinger sand" is a nearly level, poorly drained sandy soil in sloughs and poorly defined drainageways and depressions in the flatwoods. A representative soil profile for Basinger sand consists of sand to a depth of 80 inches. It is occasionally flooded for 2 to 7 days following heavy rains. In most years, the water table is within a depth of 10 inches for 2 to 6 months and between 10 and 40 inches for 6 months or more. In dry seasons it is below a depth of 40 inches for short periods.

FIELD EXPLORATION PROGRAM

SPT Borings

The field exploration program included performing eight Standard Penetration Test (SPT) borings (TH-1 through TH-8) at semi-random locations within the project site. The SPT borings were advanced to depths of 10.5 and 25 feet below the ground surface using the methodology outlined in ASTM D-1586. A summary of this field procedure is included in Appendix I. Split-spoon soil samples recovered during performance of the borings were visually classified in the field and representative portions of the samples were transported to our laboratory in sealed sample jars.

The groundwater level at each of the boring locations was measured during drilling. Upon completion, the borings were backfilled with soil cuttings.

Test Locations

The approximate locations of the borings are schematically illustrated on a site plan shown on Figure 2. These locations were determined in the field by estimating distances from existing site features and should be considered accurate only to the degree implied by the method of measurement used.

LABORATORY PROGRAM

Representative soil samples obtained during our field sampling operation were packaged and transferred to our laboratory for further visual examination and classification. The soil samples were visually classified in general accordance with the Unified Soil Classification System (ASTM D-2488). The resulting soil descriptions are shown on the soil boring profiles presented in Appendix II.

In addition, we conducted four percent fines analyses (ASTM D1140), three organic content tests (ASTM D2974-87), and four natural moisture content tests (ASTM D2216) on selected soil samples obtained from the borings. The results of these tests are presented adjacent to the sample depth on the boring profiles in Appendix II.

GENERAL SUBSURFACE CONDITIONS

General Soil Profile

The results of the field exploration and laboratory programs are graphically summarized on the soil boring profiles presented in Appendix II. The stratification of the boring profiles represents our interpretation of the field boring logs and the results of laboratory examinations of the recovered samples. The stratification lines represent the approximate boundary between soil types. The actual transitions may be more gradual than implied.

The soils encountered in the SPT borings consisted primarily of very loose to medium dense fine sand (Unified Soil Classification SP), fine sand with silt (SP-SM), silty fine sand (SM), and clayey fine sand (SC) to the termination depth of the deepest borings, 25 feet below ground surface. Organic muck (OH,PT) was encountered in Borings TH-3 and TH-5 at approximately 3 to 4.5 feet below existing ground surface. Soft Clay was encountered in Boring TH-1 at a depth of 22.5 feet to the termination depth of the boring, 25 feet below existing ground surface. These soil profiles are outlined in general terms only. Please refer to Appendix II for soil profile details.

Groundwater Level

The groundwater level was measured in the boreholes on the day drilled. As shown in Appendix II, groundwater was encountered at depths that ranged from approximately 1.5 to 3.5 feet below the existing ground surface on the date indicated. Fluctuations in groundwater levels should be anticipated throughout the year primarily due to seasonal variations in rainfall and other factors that may vary from the time the borings were conducted.

NORMAL SEASONAL HIGH GROUNDWATER LEVEL

The normal seasonal high groundwater level each year is the level in the August-September period at the end of the rainy season during a year of normal (average) rainfall. The water table elevations associated with a higher than normal rainfall and in the extreme case, flood, would be higher to much higher than the normal seasonal high groundwater level. The normal high water levels would more approximate the normal seasonal high groundwater levels.

The seasonal high groundwater level is affected by a number of factors. The drainage characteristics of the soils, the land surface elevation, relief points such as drainage ditches, lakes, rivers, swamp areas, etc., and distance to relief points are some of the more important factors influencing the seasonal high groundwater level.

In addition to evaluating the conditions above, we have reviewed annual precipitation data available from the Melbourne Office of the National Weather Service. Based on this data, the annual rainfall to date in Brevard County is approximately 13.6 inches, which is approximately 2.3 inches above normal for this time of year.

Based on our interpretation of the site conditions using our boring logs, we estimate the normal seasonal high groundwater level at the boring locations to be approximately 1 foot above the groundwater levels measured at the time of our field exploration.

PRELIMINARY ENGINEERING DISCUSSION

The results of our preliminary exploration indicate that, with proper site preparation (i.e. stripping, grubbing, filling, compacting, etc.), the existing soils encountered in the borings, with the exception of the organic muck encountered in Borings TH-3 and TH-5 at approximately 3 to 4.5 feet below existing ground surface, appear suitable for supporting one- and two-story, relatively lightly loaded buildings on shallow foundations and for the support of typical passenger vehicle pavements. Additional exploration should be performed once the building and pavement locations are finalized. Also, deeper borings may be necessary to evaluate multi-story buildings and/or one-story buildings with large foundation loads. Additional borings are recommended to explore the extent of the organic muck on the project site.

The results of our preliminary exploration indicate that organic muck (OH, Pt), was encountered within Borings TH-3 through TH-5 at depths ranging from approximately 3 to 4.5 feet below existing ground surface. The deleterious organic muck within any roadway and/or structural "footprint" areas plus a minimum horizontal margin equivalent to the depth of muck (but not less than 5 feet) beyond these areas should be removed and replaced with compacted structural fill. Dewatering should be performed during the Demucking operation to allow verification of the muck removal and to aid in compaction of the fill material.

The fine sand (SP) and fine sand with silt (SP-SM) soils should be suitable to serve as fill soils. Soils obtained from below the water table will require time to dry sufficiently. In addition, the encountered fine sand (SP) and fine sand with silt (SP-SM) are generally considered to be relatively permeable. The encountered silty fine sand (SM), clayey fine sand (SC), and clay (CL,CH) soils are less permeable and should be considered aquitards for pond drawdown analysis.

CLOSURE

The analyses and conclusions submitted herein are based on the data obtained from the soil borings presented on Figure 2 and in Appendix II. This report does not reflect any variations which may occur adjacent to or between the borings. The nature and extent of the variations between the borings may not become evident until during additional exploration. If variations then appear evident, it will be necessary to re-evaluate the recommendations presented in this report after performing on-site observations and noting the characteristics of the variations. This study does not include an evaluation of the environmental (ecological or hazardous/toxic material related) condition of the site and subsurface.

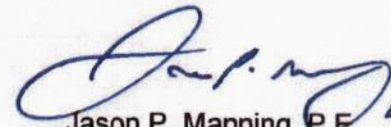
This report has been prepared for the exclusive use of The Brownstone Group in accordance with generally accepted geotechnical engineering practices. In the event any changes occur in the design, nature, or location of the proposed facility, we should review the applicability of conclusions and recommendations in this report.

We are pleased to be of assistance to you on this phase of the project. When we may be of further service to you or should you have any questions, please contact us.

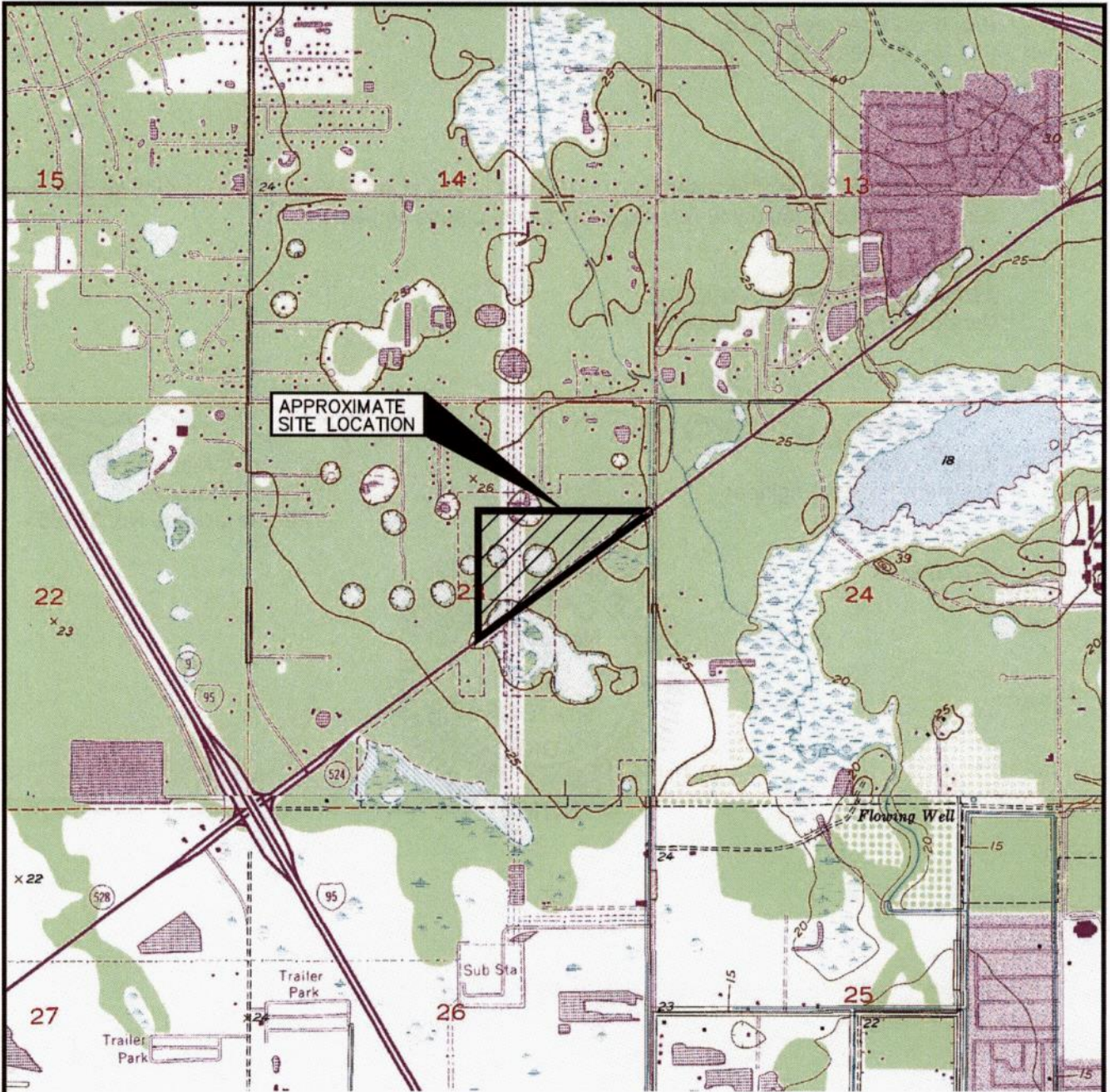
Very truly yours,
ARDAMAN & ASSOCIATES, INC.
Certificate of Authorization No. 5950


Janie C. Ross
Assistant Project Engineer

JCR/JPM/dk

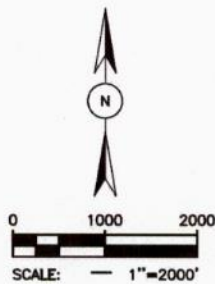
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Jason P. Manning, P.E.
Branch Manager
Florida License No. 53265





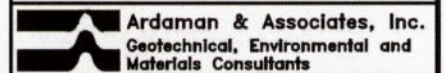
SECTION 23
TOWNSHIP 24 SOUTH
RANGE 35 EAST

OBTAINED FROM U.S.G.S. QUAD MAP: SHARPES, FLORIDA



QUADRANGLE LOCATION

SITE LOCATION MAP

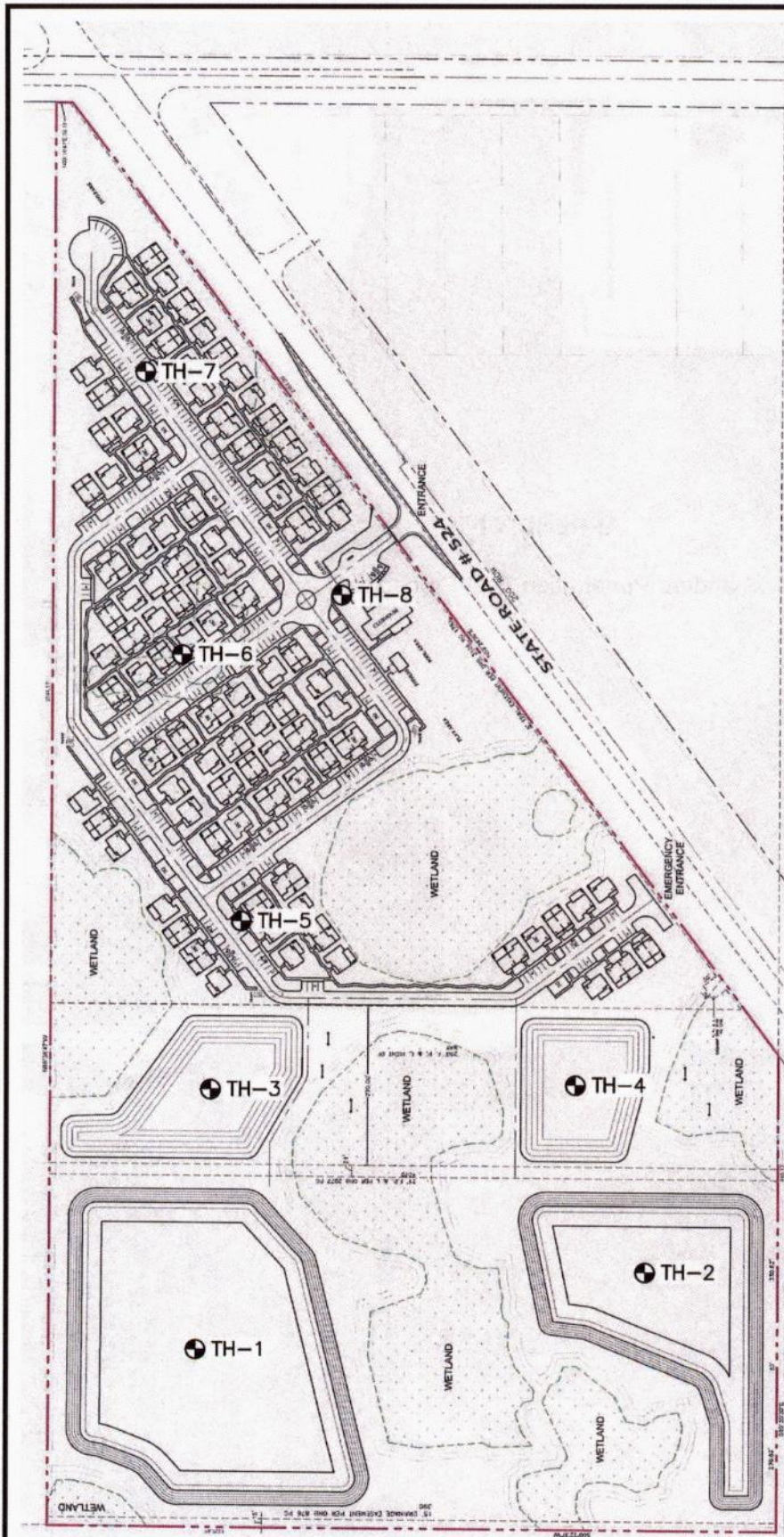


Ardaman & Associates, Inc.
Geotechnical, Environmental and
Materials Consultants

PRELIMINARY SUBSURFACE SOIL EXPLORATION
DUE DILIGENCE EVALUATION PHASE
PROPOSED APARTMENTS SITE
COCOA, FLORIDA

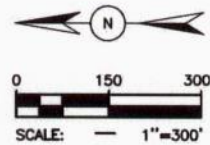
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LEGEND

⊕ TH STANDARD PENETRATION
TEST (SPT) BORING LOCATION



BORING LOCATION PLAN

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Materials Consultants

PRELIMINARY SUBSURFACE SOIL EXPLORATION
DUE DILIGENCE EVALUATION PHASE
PROPOSED APARTMENTS SITE
COCOA, FLORIDA

DRAWN BY: TAT	CHECKED BY:	DATE: 4/28/22
FILE NO. 22-5238	APPROVED BY:	FIGURE: 2

APPENDIX I

Standard Penetration Test Procedure

STANDARD PENETRATION TEST

The standard penetration test is a widely accepted test method of *in situ* testing of foundation soils (ASTM D 1586). A 2-foot long, 2-inch O.D. split-barrel sampler attached to the end of a string of drilling rods is driven 18 inches into the ground by successive blows of a 140-pound hammer freely dropping 30 inches. The number of blows needed for each 6 inches of penetration is recorded. The sum of the blows required for penetration of the second and third 6-inch increments of penetration constitutes the test result or N-value. After the test, the sampler is extracted from the ground and opened to allow visual examination and classification of the retained soil sample. The N-value has been empirically correlated with various soil properties allowing a conservative estimate of the behavior of soils under load.

The tests are usually performed at 5-foot intervals. However, more frequent or continuous testing is done by our firm through depths where a more accurate definition of the soils is required. The test holes are advanced to the test elevations by rotary drilling with a cutting bit, using circulating fluid to remove the cuttings and hold the fine grains in suspension. The circulating fluid, which is a bentonitic drilling mud, is also used to keep the hole open below the water table by maintaining an excess hydrostatic pressure inside the hole. In some soil deposits, particularly highly pervious ones, NX-size flush-coupled casing must be driven to just above the testing depth to keep the hole open and/or prevent the loss of circulating fluid.

Representative split-spoon samples from the soils at every 5 feet of drilled depth and from every different stratum are brought to our laboratory in air-tight jars for further evaluation and testing, if necessary. Samples not used in testing are stored for 30 days prior to being discarded. After completion of a test boring, the hole is kept open until a steady state groundwater level is recorded. The hole is then sealed, if necessary, and backfilled.

APPENDIX II

Soil Boring Profiles

LEGEND

SOIL DESCRIPTIONS

- | | |
|---|-------------------------------|
|  | ① FINE SAND (SP) |
|  | ② FINE SAND WITH SILT (SP-SM) |
|  | ③ SILTY FINE SAND (SM) |
|  | ④ CLAYEY FINE SAND (SC) |
|  | ⑤ CLAY (CL,CH) |
|  | ⑥ ORGANIC MUCK (OH,Pt) |

COLORS

- | | |
|-----|---------------------------------|
| (A) | LIGHT BROWN TO BROWN |
| (B) | LIGHT GRAY TO GRAY |
| (C) | DARK GRAY OR DARK BROWN |
| (D) | YELLOWISH BROWN OR ORANGE-BROWN |

TH STANDARD PENETRATION TEST (SPT) BORING

-200 PERCENT PASSING NO. 200 SIEVE SIZE (PERCENT FINES)(ASTM D-1140)

OC ORGANIC CONTENT IN PERCENT (ASTM D-2974)

NM NATURAL MOISTURE CONTENT IN PERCENT (ASTM D-2216)

N STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT

 GROUNDWATER LEVEL MEASURED ON DATE DRILLED

SP,SP-SM
SM,SC,CH

UNIFIED SOIL CLASSIFICATION SYSTEM

ENGINEERING CLASSIFICATION

I COHESIONLESS SOILS

DESCRIPTION	BLOW COUNT "N"
VERY LOOSE	0 TO 4
LOOSE	4 TO 10
MEDIUM DENSE	10 TO 30
DENSE	30 TO 50
VERY DENSE	>50

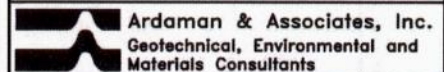
II COHESIVE SOILS

DESCRIPTION	UNCONFINED COMPRESSIVE STRENGTH, QU, TSF	BLOW COUNT "N"
VERY SOFT	<1/4	0 TO 2
SOFT	1/4 TO 1/2	2 TO 4
MEDIUM STIFF	1/2 TO 1	4 TO 8
STIFF	1 TO 2	8 TO 15
VERY STIFF	2 TO 4	15 TO 30
HARD	>4	>30

WHILE THE BORINGS ARE REPRESENTATIVE OF SUBSURFACE CONDITIONS AT THEIR RESPECTIVE LOCATIONS AND FOR THEIR RESPECTIVE VERTICAL REACHES, LOCAL VARIATIONS CHARACTERISTIC OF THE SUBSURFACE MATERIALS OF THE REGION ARE ANTICIPATED AND MAY BE ENCOUNTERED. THE BORING LOGS AND RELATED INFORMATION ARE BASED ON THE DRILLER'S LOGS AND VISUAL EXAMINATION OF SELECTED SAMPLES IN THE LABORATORY. THE DELINEATION BETWEEN SOIL TYPES SHOWN ON THE LOGS IS APPROXIMATE AND THE DESCRIPTION REPRESENTS OUR INTERPRETATION OF SUBSURFACE CONDITIONS AT THE DESIGNATED BORING LOCATIONS ON THE PARTICULAR DATE DRILLED.

GROUNDWATER ELEVATIONS SHOWN ON THE BORING LOGS REPRESENT GROUNDWATER SURFACES ENCOUNTERED ON THE DATES SHOWN. FLUCTUATIONS IN WATER TABLE LEVELS SHOULD BE ANTICIPATED THROUGHOUT THE YEAR. ABSENCE OF WATER SURFACE DATA ON CERTAIN BORINGS IMPLIES THAT NO GROUNDWATER DATA IS AVAILABLE, BUT DOES NOT NECESSARILY MEAN THAT GROUNDWATER WILL NOT BE ENCOUNTERED AT THESE LOCATIONS OR WITHIN THE VERTICAL REACHES OF THESE BORINGS IN THE FUTURE.

SOIL PROFILES LEGEND



PRELIMINARY SUBSURFACE SOIL EXPLORATION
DUE DILIGENCE EVALUATION PHASE
PROPOSED APARTMENTS SITE
COCOA, FLORIDA

DRAWN BY: TAT	CHECKED BY:	DATE: 4/28/22
FILE NO. 22-5238	APPROVED BY:	FIGURE:

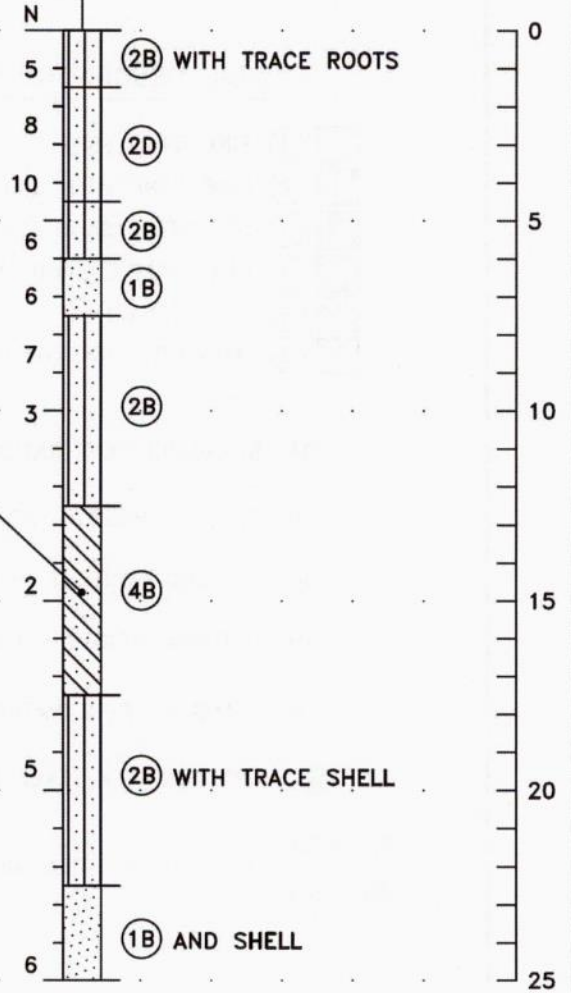
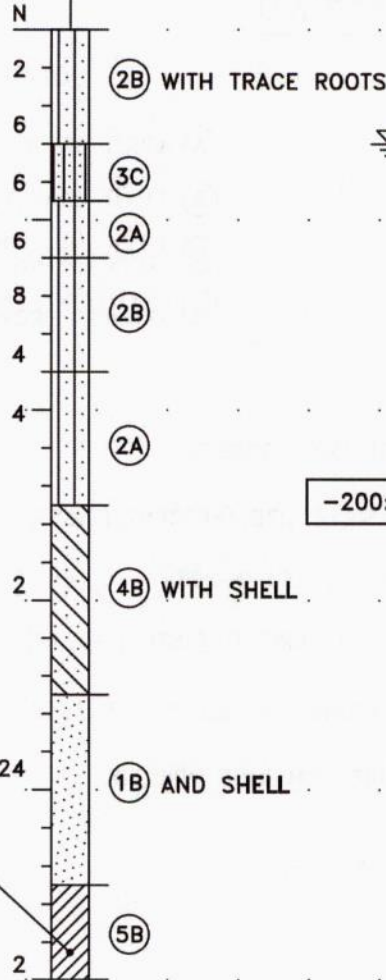
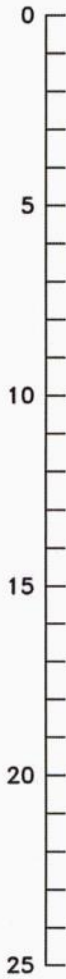
DATE DRILLED:

5/19/22
TH-1

5/19/22
TH-2

FEET

DEPTH



SOIL BORING PROFILES



Ardaman & Associates, Inc.
Geotechnical, Environmental and
Materials Consultants

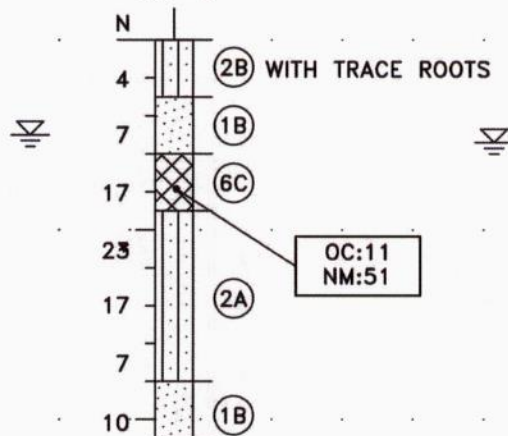
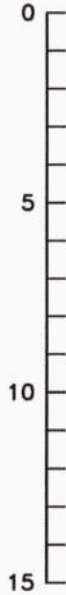
PRELIMINARY SUBSURFACE SOIL EXPLORATION
DUE DILIGENCE EVALUATION PHASE
PROPOSED APARTMENTS SITE
COCOA, FLORIDA

DRAWN BY: TAT	CHECKED BY:	DATE: 4/28/22
FILE NO. 22-5238	APPROVED BY:	FIGURE:

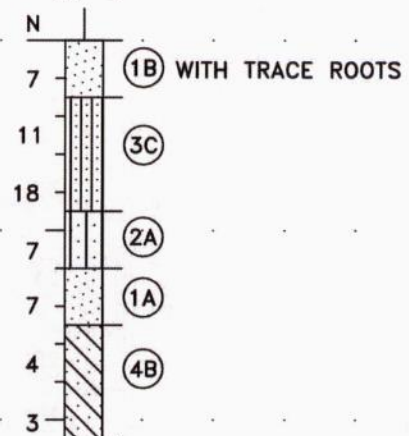
DATE DRILLED:

5/19/22
TH-3

DEPTH
FEET



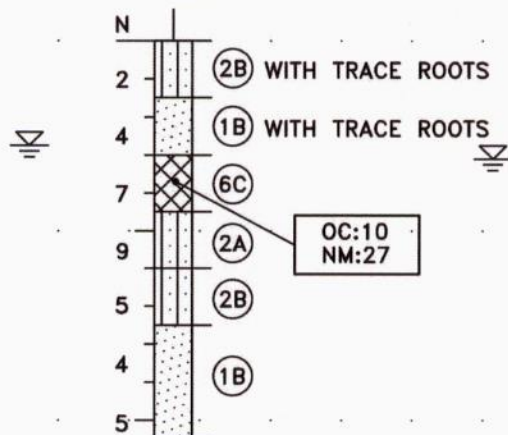
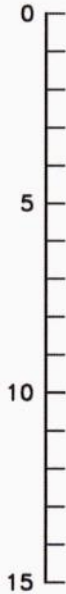
5/19/24
TH-4



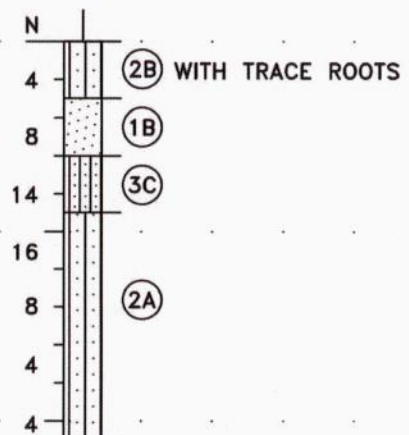
DATE DRILLED:

5/19/22
TH-5

DEPTH
FEET



5/19/22
TH-6



C:\CAD working files\22-0000 CAD FOLDER\22-5238\22523801.dwg 6/23/2022 5:58:34 PM tom.taylor

SOIL BORING PROFILES



Ardaman & Associates, Inc.
Geotechnical, Environmental and
Materials Consultants

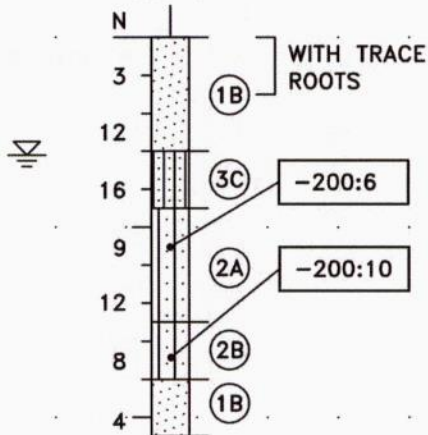
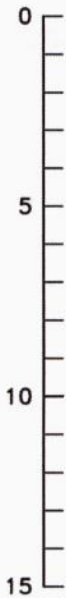
PRELIMINARY SUBSURFACE SOIL EXPLORATION
DUE DILIGENCE EVALUATION PHASE
PROPOSED APARTMENTS SITE
COCOA, FLORIDA

DRAWN BY: TAT	CHECKED BY:	DATE: 4/28/22
FILE NO. 22-5238	APPROVED BY:	FIGURE:

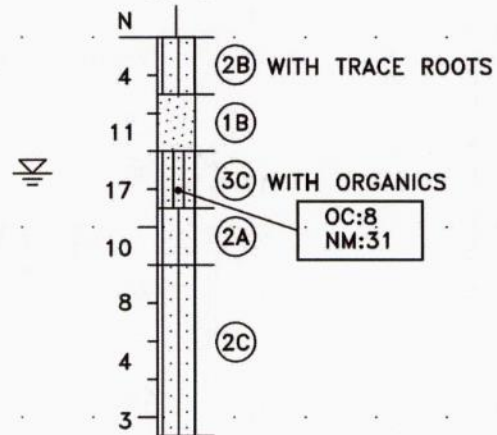
DATE DRILLED:

5/19/22
TH-7

DEPTH
FEET



5/19/22
TH-8



SOIL BORING PROFILES



Ardaman & Associates, Inc.
Geotechnical, Environmental and
Materials Consultants

PRELIMINARY SUBSURFACE SOIL EXPLORATION
DUE DILIGENCE EVALUATION PHASE
PROPOSED APARTMENTS SITE
COCOA, FLORIDA

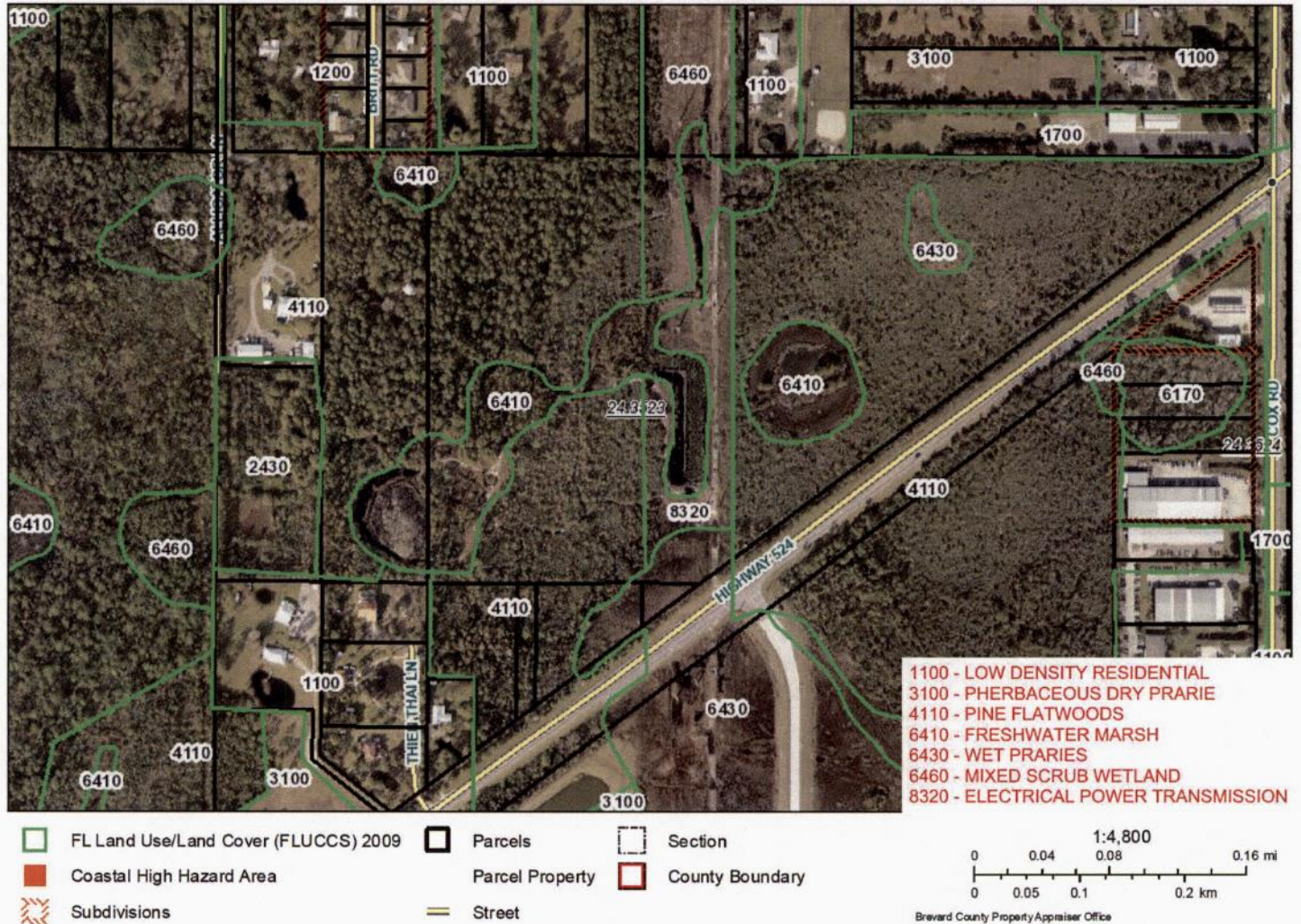
DRAWN BY: TAT	CHECKED BY:	DATE: 4/28/22
FILE NO. 22-5238	APPROVED BY:	FIGURE:

APPENDIX E

FLUCCS MAP



ArcGIS Web Map



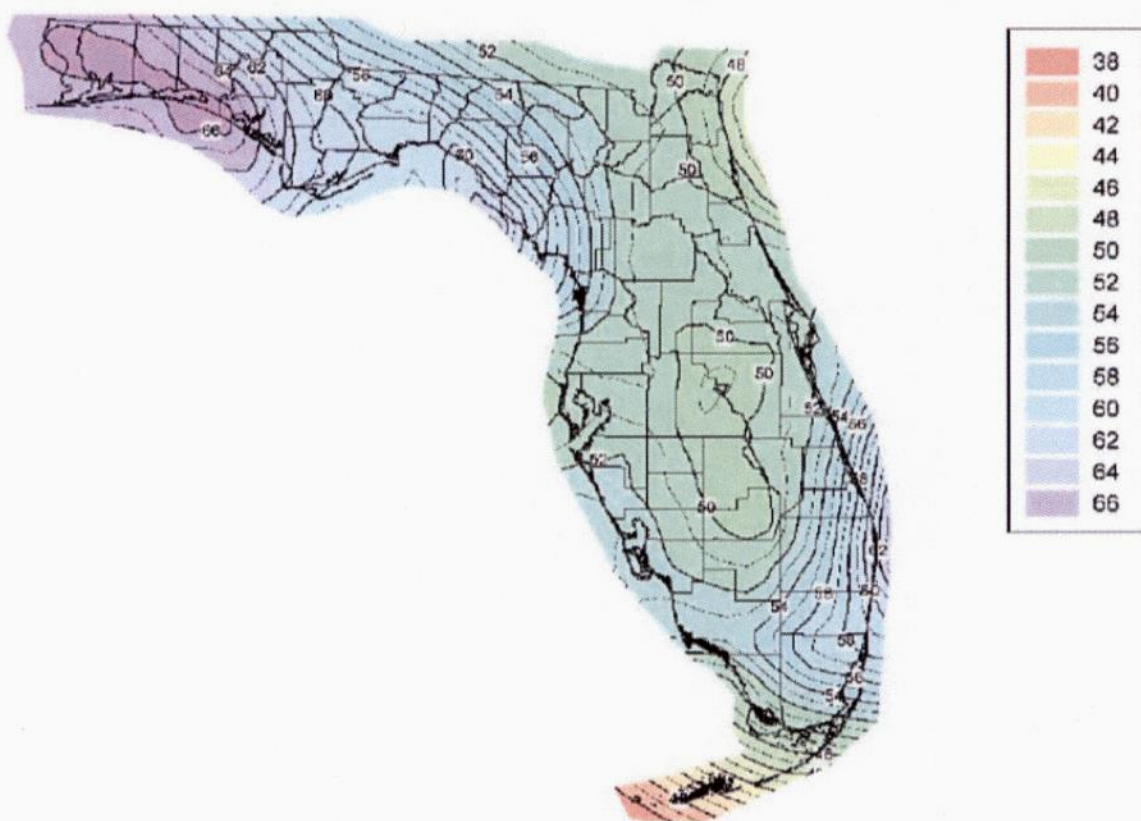
8/24/2022, 10:21:01 AM

Web AppBuilder for ArcGIS
Natural Resources Management Department, 2020

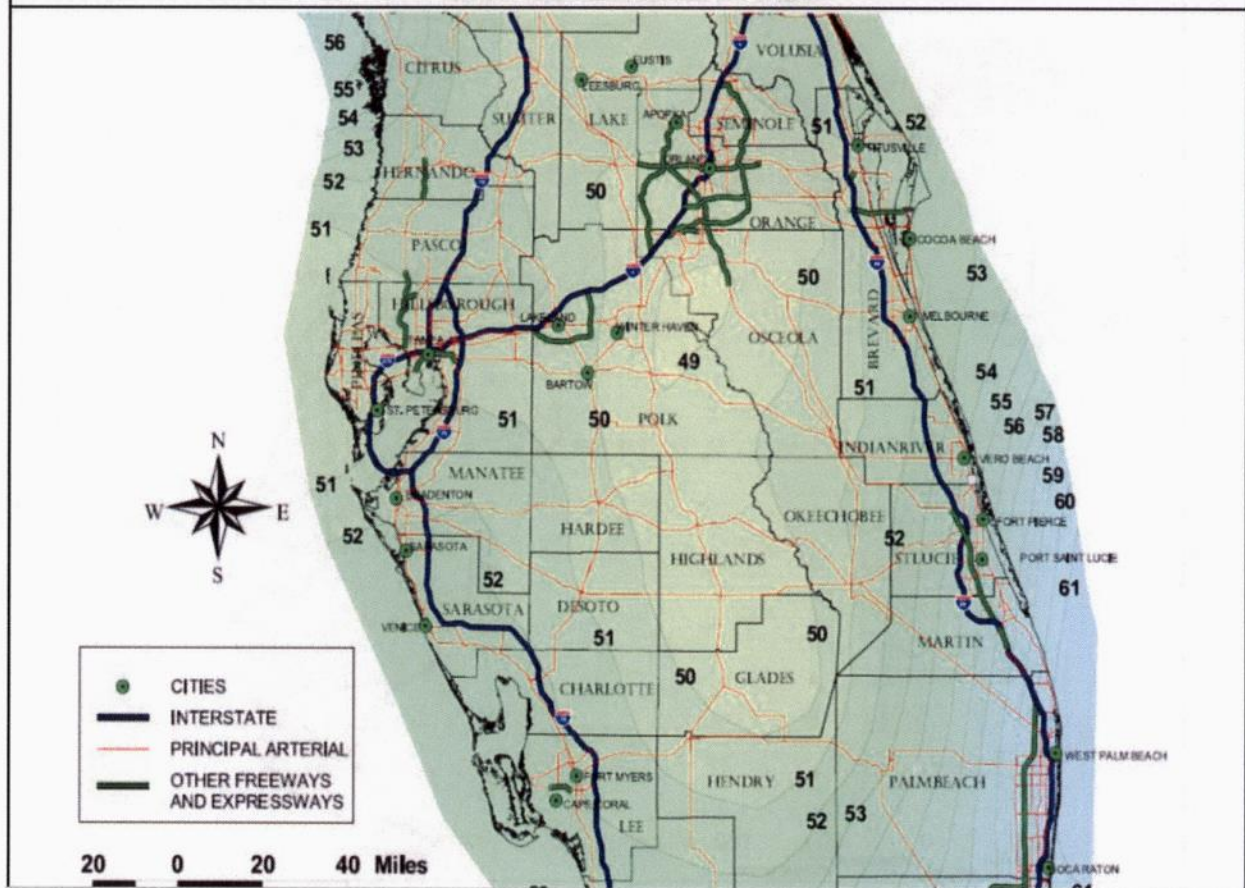
APPENDIX F

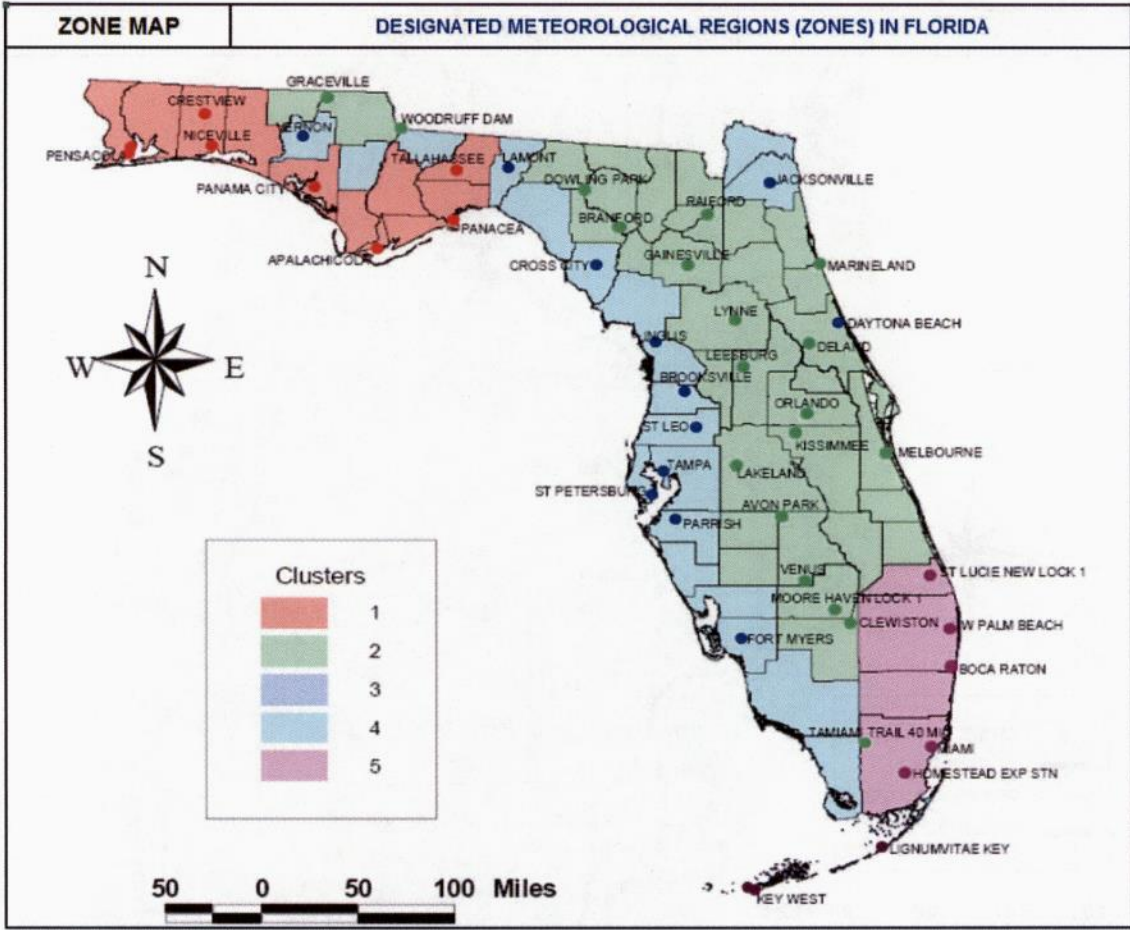
MEAN ANNUAL RAINFALL MAP

MEAN ANNUAL RAINFALL MAP



MEAN ANNUAL RAINFALL MAP





APPENDIX G

F.I.R.M. PANELS

National Flood Hazard Layer FIRMette



80°47'52"W 28°23'30"N



0 250 500 1,000 1,500 2,000 Feet 1:6,000

Basemap: USGS National Map: Orthomagery: Data refreshed October, 2020

Legend

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

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

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

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

The flood hazard information is derived directly from the authoritative NFHL web services provided by FEMA. This map was exported on 8/2/2022 at 4:59 PM and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time.

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

APPENDIX H

MODRET RECOVERY REPORT (DRY POND)

MODRET

SUMMARY OF UNSATURATED & SATURATED INPUT PARAMETERS

PROJECT NAME : ALEGRA COCOA
POLLUTION VOLUME RUNOFF DATA USED
UNSATURATED ANALYSIS INCLUDED

Pond Bottom Area	179,491.00 ft ²
Pond Volume between Bottom & DHWL	152,623.00 ft ³
Pond Length to Width Ratio (L/W)	2.00
Elevation of Effective Aquifer Base	13.70 ft
Elevation of Seasonal High Groundwater Table	22.10 ft
Elevation of Starting Water Level	25.00 ft
Elevation of Pond Bottom	25.00 ft
Design High Water Level Elevation	25.80 ft
Avg. Effective Storage Coefficient of Soil for Unsaturated Analysis	0.20
Unsaturated Vertical Hydraulic Conductivity	16.00 ft/d
Factor of Safety	2.00
Saturated Horizontal Hydraulic Conductivity	16.00 ft/d
Avg. Effective Storage Coefficient of Soil for Saturated Analysis	0.12
Avg. Effective Storage Coefficient of Pond/Exfiltration Trench	1.00

Hydraulic Control Features:

Groundwater Control Features - Y/N

	Top	Bottom	Left	Right
Distance to Edge of Pond	Y 42.00	N 0.00	Y 56.00	N 0.00
Elevation of Water Level	22.10	0.00	22.10	0.00

Impervious Barrier - Y/N

	Top	Bottom	Left	Right
Elevation of Barrier Bottom	N 0.00	N 0.00	N 0.00	N 0.00

MODRET

TIME - RUNOFF INPUT DATA

PROJECT NAME: ALEGRA COCOA

STRESS PERIOD NUMBER	INCREMENT OF TIME (hrs)	VOLUME OF RUNOFF (ft ³)
Unsat	1.74	104,104.77
1	1.00	48,518.23
2	1.78	0.00
3	1.78	0.00
4	1.78	0.00
5	1.78	0.00
6	1.78	0.00
7	1.78	0.00
8	1.78	0.00
9	1.78	0.00
10	1.78	0.00
11	1.78	0.00
12	1.78	0.00
13	1.78	0.00
14	1.78	0.00
15	1.78	0.00
16	1.78	0.00
17	1.78	0.00
18	1.78	0.00
19	1.78	0.00
20	1.78	0.00
21	1.78	0.00
22	1.78	0.00
23	1.78	0.00
24	1.78	0.00
25	1.78	0.00
26	1.78	0.00
27	1.78	0.00
28	1.78	0.00
29	1.78	0.00
30	1.78	0.00

Analysis Date: 4/13/2023

MODRET

SUMMARY OF RESULTS

PROJECT NAME : ALEGRA COCOA

CUMULATIVE TIME (hrs)	WATER ELEVATION (feet)	INSTANTANEOUS INFILTRATION RATE (cfs)	AVERAGE INFILTRATION RATE (cfs)	CUMULATIVE OVERFLOW (ft ³)
00.00 - 0.00	22.100	0.000 *		
			0.00000	
0.00	22.100	16.99548		
			10.72829	
2.74	25.245	4.46110		0.00
			0.39910	
4.52	25.232	0.37007		0.00
			0.34105	
6.29	25.221	0.32056		0.00
			0.30007	
8.07	25.210	0.28578		0.00
			0.27149	
9.84	25.201	0.26065		0.00
			0.24981	
11.62	25.193	0.24247		0.00
			0.23512	
13.40	25.185	0.22926		0.00
			0.22340	
15.17	25.178	0.21893		0.00
			0.21446	
16.95	25.170	0.21082		0.00
			0.20718	
18.72	25.163	0.20408		0.00
			0.20097	
20.50	25.157	0.19890		0.00
			0.19682	
22.27	25.150	0.19460		0.00
			0.19238	
24.05	25.144	0.19053		0.00

MODRET

SUMMARY OF RESULTS

PROJECT NAME : ALEGRA COCOA

CUMULATIVE TIME (hrs)	WATER ELEVATION (feet)	INSTANTANEOUS INFILTRATION RATE (cfs)	AVERAGE INFILTRATION RATE (cfs)	CUMULATIVE OVERFLOW (ft ³)
			0.18868	
25.83	25.137	0.18731		0.00
			0.18595	
27.60	25.131	0.18472		0.00
			0.18350	
29.38	25.125	0.18196		0.00
			0.18043	
31.15	25.119	0.17943		0.00
			0.17843	
32.93	25.113	0.17767		0.00
			0.17690	
34.71	25.107	0.17539		0.00
			0.17388	
36.48	25.101	0.17328		0.00
			0.17269	
38.26	25.095	0.17177		0.00
			0.17086	
40.03	25.090	0.17007		0.00
			0.16927	
41.81	25.084	0.16830		0.00
			0.16734	
43.59	25.078	0.16677		0.00
			0.16620	
45.36	25.073	0.16526		0.00
			0.16432	
47.14	25.067	0.16401		0.00
			0.16369	
48.91	25.062	0.16255		0.00

MODRET

SUMMARY OF RESULTS

PROJECT NAME : ALEGRA COCOA

CUMULATIVE TIME (hrs)	WATER ELEVATION (feet)	INSTANTANEOUS INFILTRATION RATE (cfs)	AVERAGE INFILTRATION RATE (cfs)	CUMULATIVE OVERFLOW (ft ³)
			0.16142	
50.69	25.056	0.16127		0.00
			0.16113	
52.47	25.051	0.16005		0.00
			0.15897	
54.24	25.046	0.15857		0.00
			0.15817	
56.02	25.040	0.15766		0.00
			0.15715	
57.79	25.035	0.15646		0.00
			0.15578	
59.57	25.030	0.15538		0.00
			0.15498	
61.34	25.025	0.15422		0.00
			0.15345	
63.12	25.020	0.15279		0.00
			0.15214	
64.90	25.015	0.15194		0.00
			0.15174	
66.67	25.009	0.15117		0.00
			0.15060	
68.45	25.004	0.15009		0.00
			0.14958	
70.00	25.000	0.14887		0.00
			0.14815	
72.00	24.994			0.00

Maximum Water Elevation: 25.245 feet @ 2.74 hours

Recovery @ 69.999 hours

* Time increment when there is no runoff

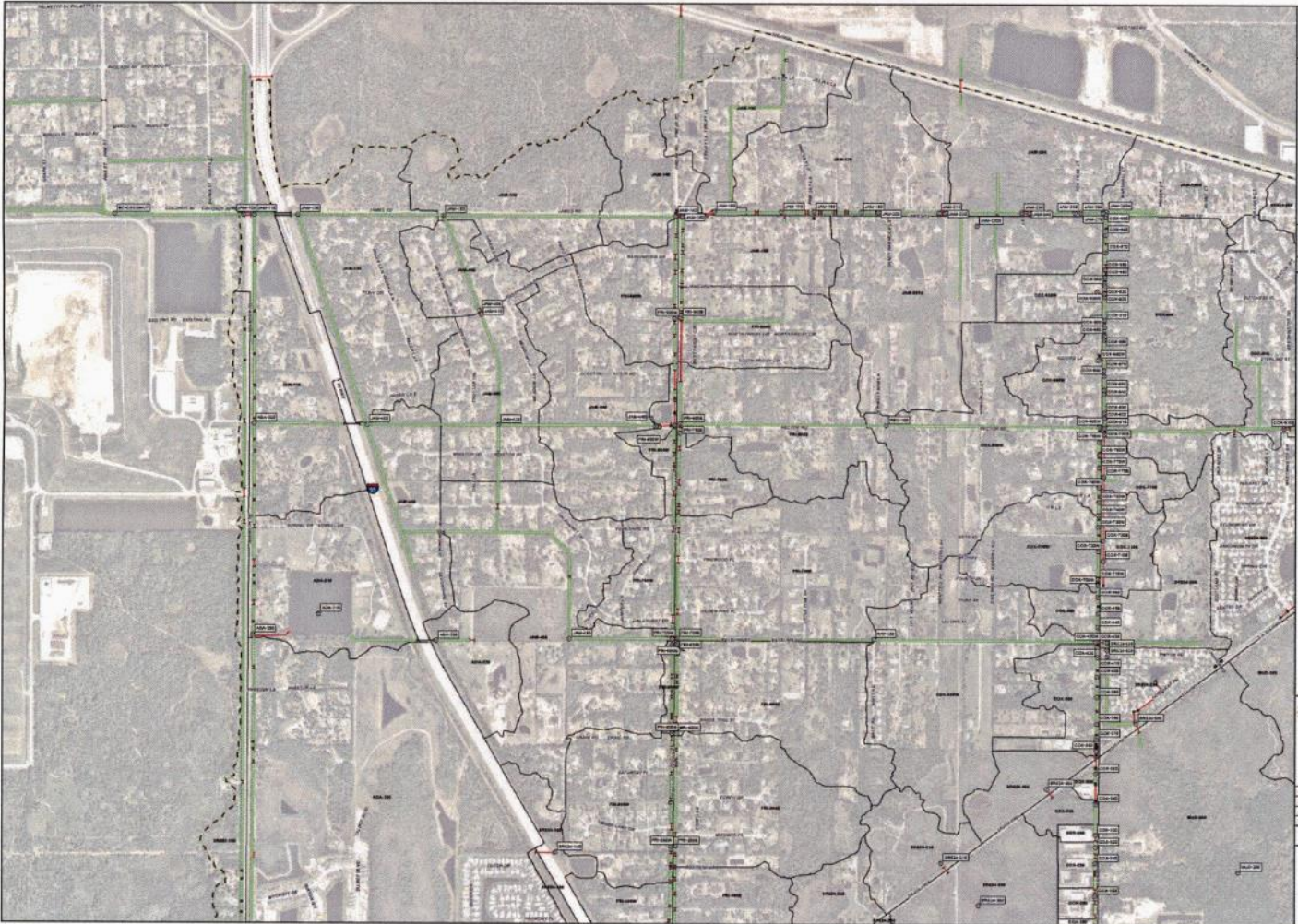
Maximum Infiltration Rate: 4.859 ft/day

Analysis Date: 4/13/2023

APPENDIX I

BREVARD COUNTY MODEL

“WEST COCOA WATERSHED EVALUATION” EXCERPTS



SCALE 1" = 500'

DESCRIPTION

NO.	DESCRIPTION
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Pegasus
Pegasus Engineering, LLC
301 West 10th Ave, Suite 300
Winter Springs, FL 32789
Phone: 407.677.1234
Fax: 407.677.1235
Email: info@pegasusee.com

ICPR NODE MAPS
WEST COCOA WATERSHED EVALUATION

JOB NO. BWC-001
DRAWN BY: JLB
APPROVED BY: JLB
DATE: APRIL 2014

SHEET 15 OF 20

NOTE: ALL PEGASUS PLANS SHALL BE
BINDER AND SEALED

DESIGNED BY: JLB
DATE: 4/15/14

APPENDIX J

ICPR RECOVERY REPORT (WET POND)

Sim	Node Name	Relative Time [hrs]	Stage [ft]
REC-14D	SR524-400W	0.0000	23.20
REC-14D	SR524-400W	1.0004	23.18
REC-14D	SR524-400W	2.0007	23.17
REC-14D	SR524-400W	3.0025	23.15
REC-14D	SR524-400W	4.0082	23.13
REC-14D	SR524-400W	5.0082	23.12
REC-14D	SR524-400W	6.0067	23.10
REC-14D	SR524-400W	7.0067	23.09
REC-14D	SR524-400W	8.0067	23.07
REC-14D	SR524-400W	9.0067	23.06
REC-14D	SR524-400W	10.0067	23.05
REC-14D	SR524-400W	11.0067	23.03
REC-14D	SR524-400W	12.0067	23.02
REC-14D	SR524-400W	13.0067	23.01
REC-14D	SR524-400W	14.0067	23.00
REC-14D	SR524-400W	15.0067	22.98
REC-14D	SR524-400W	16.0067	22.97
REC-14D	SR524-400W	17.0067	22.96
REC-14D	SR524-400W	18.0067	22.95
REC-14D	SR524-400W	19.0067	22.94
REC-14D	SR524-400W	20.0067	22.93
REC-14D	SR524-400W	21.0067	22.92
REC-14D	SR524-400W	22.0067	22.91
REC-14D	SR524-400W	23.0067	22.90
REC-14D	SR524-400W	24.0067	22.89
REC-14D	SR524-400W	25.0067	22.89
REC-14D	SR524-400W	26.0067	22.88
REC-14D	SR524-400W	27.0067	22.87
REC-14D	SR524-400W	28.0067	22.86
REC-14D	SR524-400W	29.0067	22.85
REC-14D	SR524-400W	30.0067	22.85
REC-14D	SR524-400W	31.0067	22.84
REC-14D	SR524-400W	32.0067	22.83
REC-14D	SR524-400W	33.0067	22.83
REC-14D	SR524-400W	34.0067	22.82
REC-14D	SR524-400W	35.0067	22.81
REC-14D	SR524-400W	36.0067	22.81
REC-14D	SR524-400W	37.0067	22.80
REC-14D	SR524-400W	38.0067	22.80
REC-14D	SR524-400W	39.0067	22.79
REC-14D	SR524-400W	40.0067	22.79
REC-14D	SR524-400W	41.0067	22.78
REC-14D	SR524-400W	42.0067	22.78
REC-14D	SR524-400W	43.0067	22.77
REC-14D	SR524-400W	44.0067	22.77
REC-14D	SR524-400W	45.0067	22.76
REC-14D	SR524-400W	46.0067	22.76

Sim	Node Name	Relative Time [hrs]	Stage [ft]
REC-14D	SR524-400W	47.0067	22.75
REC-14D	SR524-400W	48.0067	22.75
REC-14D	SR524-400W	49.0067	22.74
REC-14D	SR524-400W	50.0067	22.74
REC-14D	SR524-400W	51.0067	22.74
REC-14D	SR524-400W	52.0067	22.73
REC-14D	SR524-400W	53.0067	22.73
REC-14D	SR524-400W	54.0067	22.72
REC-14D	SR524-400W	55.0067	22.72
REC-14D	SR524-400W	56.0067	22.72
REC-14D	SR524-400W	57.0067	22.71
REC-14D	SR524-400W	58.0067	22.71
REC-14D	SR524-400W	59.0067	22.71
REC-14D	SR524-400W	60.0067	22.70
REC-14D	SR524-400W	61.0067	22.70
REC-14D	SR524-400W	62.0067	22.70
REC-14D	SR524-400W	63.0067	22.69
REC-14D	SR524-400W	64.0067	22.69
REC-14D	SR524-400W	65.0067	22.69
REC-14D	SR524-400W	66.0067	22.69
REC-14D	SR524-400W	67.0067	22.68
REC-14D	SR524-400W	68.0067	22.68
REC-14D	SR524-400W	69.0067	22.68
REC-14D	SR524-400W	70.0067	22.68
REC-14D	SR524-400W	71.0067	22.67
REC-14D	SR524-400W	72.0067	22.67
REC-14D	SR524-400W	73.0067	22.67
REC-14D	SR524-400W	74.0067	22.67
REC-14D	SR524-400W	75.0067	22.66
REC-14D	SR524-400W	76.0067	22.66
REC-14D	SR524-400W	77.0067	22.66
REC-14D	SR524-400W	78.0067	22.66
REC-14D	SR524-400W	79.0067	22.65
REC-14D	SR524-400W	80.0067	22.65
REC-14D	SR524-400W	81.0067	22.65
REC-14D	SR524-400W	82.0067	22.65
REC-14D	SR524-400W	83.0067	22.65
REC-14D	SR524-400W	84.0067	22.64
REC-14D	SR524-400W	85.0067	22.64
REC-14D	SR524-400W	86.0067	22.64
REC-14D	SR524-400W	87.0067	22.64
REC-14D	SR524-400W	88.0067	22.64
REC-14D	SR524-400W	89.0067	22.64
REC-14D	SR524-400W	90.0067	22.63
REC-14D	SR524-400W	91.0067	22.63
REC-14D	SR524-400W	92.0067	22.63
REC-14D	SR524-400W	93.0067	22.63

Sim	Node Name	Relative Time [hrs]	Stage [ft]
REC-14D	SR524-400W	94.0067	22.63
REC-14D	SR524-400W	95.0067	22.63
REC-14D	SR524-400W	96.0067	22.62
REC-14D	SR524-400W	97.0067	22.62
REC-14D	SR524-400W	98.0067	22.62
REC-14D	SR524-400W	99.0067	22.62
REC-14D	SR524-400W	100.0067	22.62
REC-14D	SR524-400W	101.0067	22.62
REC-14D	SR524-400W	102.0067	22.62
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REC-14D	SR524-400W	187.0067	22.55

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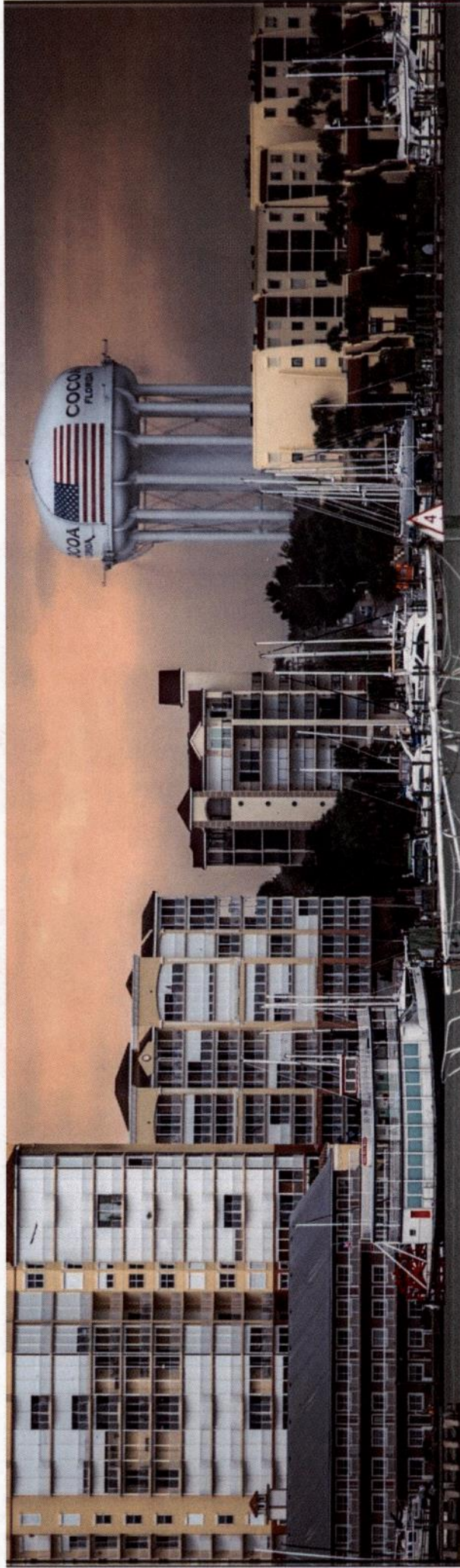
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REC-14D	SR524-400W	328.0067	22.52

Sim	Node Name	Relative Time [hrs]	Stage [ft]
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ALLEGRA AT COCOA

Large-Scale Site Plan

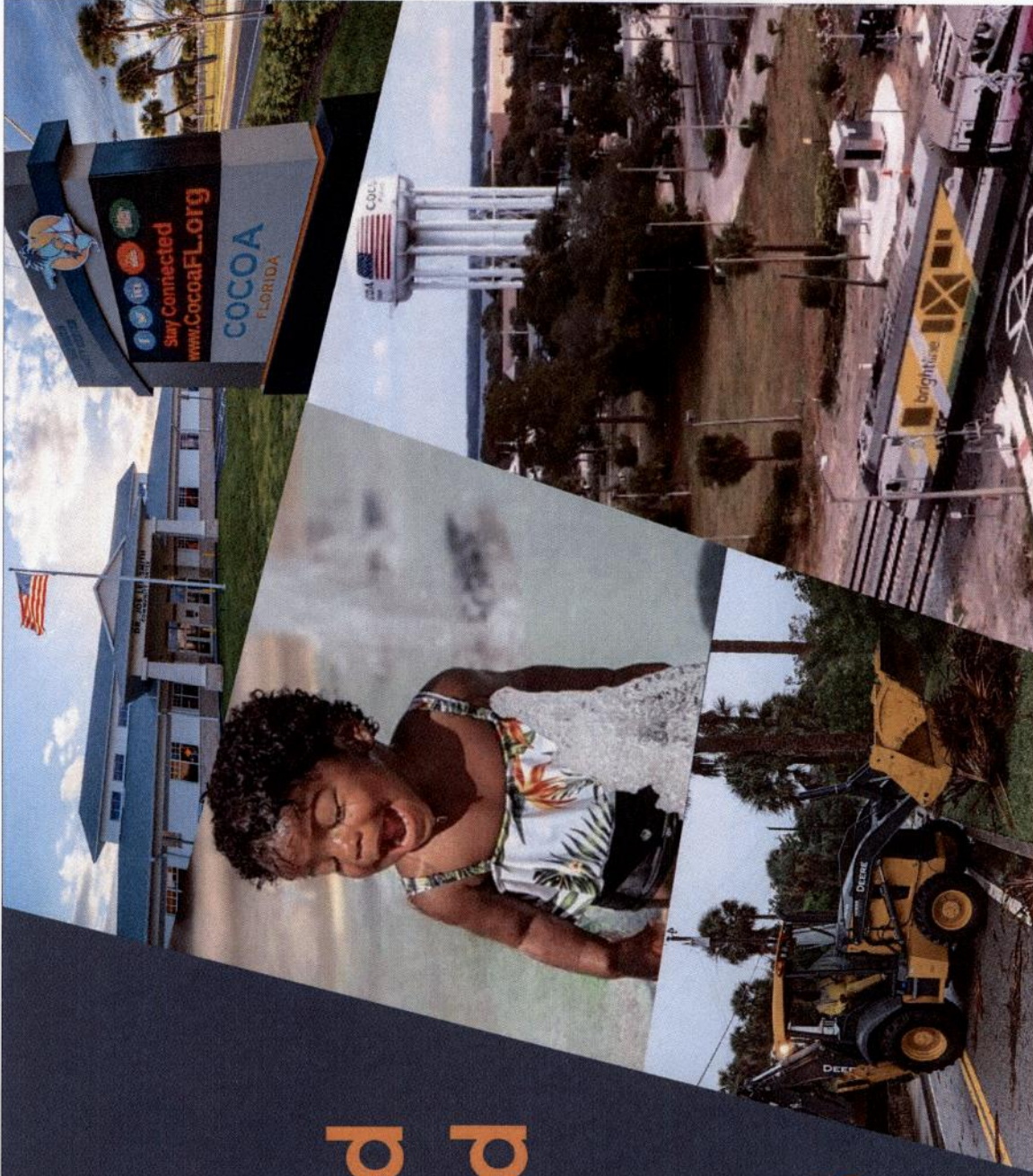




COCOA
FLORIDA

Planning and Zoning Board Meeting

November 1, 2023

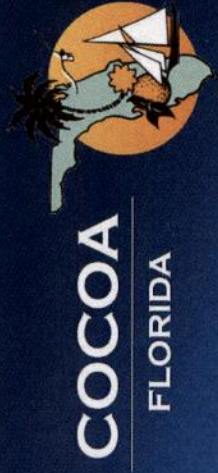


Allegra at Cocoa Location Map

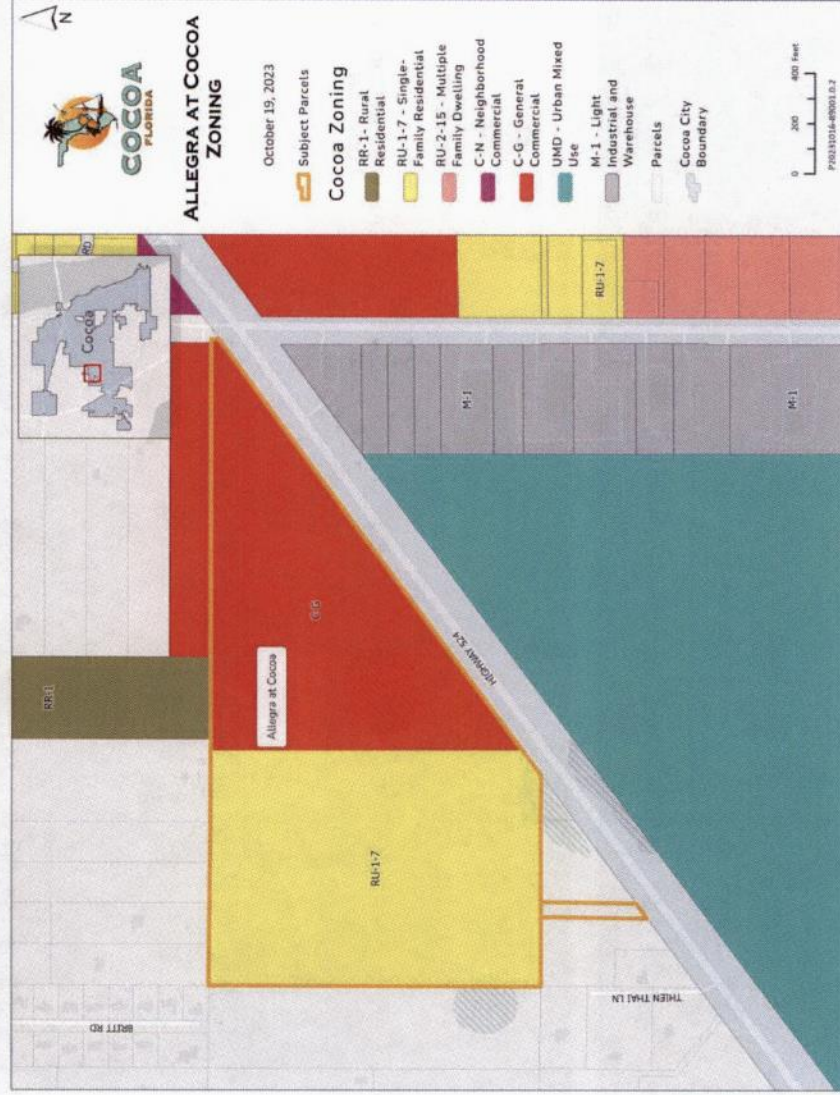


- The +/-53.18-acre Subject Property is located at the NW corner of Cox Rd. and U.S. HWY 524.
- The Subject Property is currently vacant and has Brevard County Parcel ID Numbers 24-35-23-00-11 and 24-35-23-00-775.

Allegra at Cocoa Zoning Map



COCOA
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- The zoning of the Subject Property is RU-1-7, Single-Family Residential, and C-G, General Commercial.

Allegra at Cocoa Future Land Use Map



- The Future Land Use designation of the subject property is MDR, Medium Density Residential, and COM, Commercial.

Allegra at Cocoa Site Plan



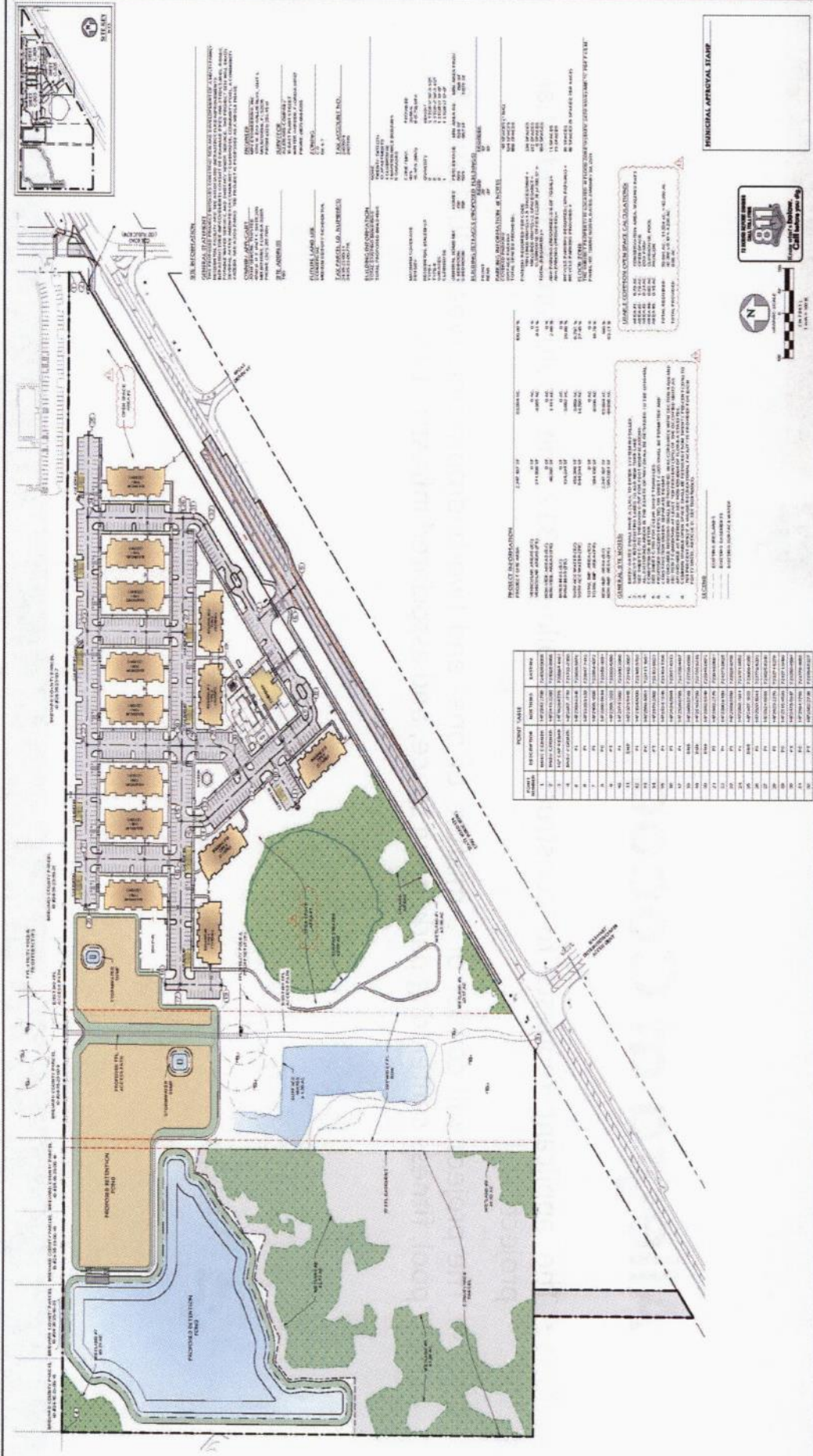
- The Future Land Use designation of the subject property is MDR, Medium Density Residential, and COM, Commercial.



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Allegra at Cocod

- The applicant requests to construct a 13-building, 312-unit multi-family residential project.
- The project will consist of a mixture of one- and two-bedroom unit types, clubhouse & pool, fitness center, dog park, open space, and associated infrastructure.

[illegible]



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Allegra at Cocod

- On January 10, 2023, the City Council approved Resolution 2023-008, acknowledging receipt of an application filed with the City for an Affordable Housing Land Use for a project located on the Subject Property. The Resolution also allowed for the development of an Affordable Housing Land Use project to occur on property zoned Commercial and Single-Family Residential.
- Section 166.04151, Florida Statutes, allows the governing body of a municipality to approve housing that is affordable, as defined in Florida Statute 420.0004, on any parcel that is zoned for commercial use, so long as at least 10 percent of the units included in the project are for housing that is affordable. The Statutes define "affordable" to mean that monthly rents or monthly mortgage payments, including taxes, insurance, and utilities do not exceed 30 percent of the amount which represents the percentage of the median adjusted gross annual income for households of "extremely-low-income-persons", "low-income persons", "moderate income persons", or "very-low-income persons" as defined in the statute.
- The Resolution was approved with the condition that the project does not exceed 312 multi-family units, and that the project meet the requirements of the RU-2-15 zoning district, and the "affordable" housing standards set forth in Section 166.04151, Florida Statutes.



Allegra at Cocoa

- On July 25, 2023, the City Council approved a Pre-Development Agreement and Restrictive Covenant that the Developer sought for certain waivers from the City Code for the project. The Developer sought a waiver of the Tree Mitigation Contribution requirements of the City Code and a waiver to the minimum unit size requirement of the City Code, from 800 square feet per one-bedroom unit to 660 square feet per one-bedroom unit, for a maximum of 80 units.
- The waiver was approved with the following requirements:
 - Convey to the City the entirety of Tax Parcel Number 24-35-23-00-775 and the portion of Tax Parcel Number 24-35-23-00-11 as depicted on "Exhibit B" to the Agreement, which is approximately 11.5 acres.
 - Maintain the Project as an affordable housing project for a period of thirty (30) years, which means that, at minimum, ten percent (10%) of the occupied units in the Project will be affordable housing as provided and defined in Florida law. The Developer will be required to submit copies of tenant income verification and applicable leases to the City of Cocoa yearly to ensure compliance with this requirement.
 - Reserve a minimum of three (3) one- or two-bedroom apartment units for City law enforcement officers or first responders to be rented at a 25% discounted rate, to be made available on a first come, first serve basis, at the time of initial leasing until there are no other apartments available in the Development. In addition, the Developer shall provide a lease preference above other tenant applicants to City law enforcement officers and firefighters, along with EMS/Paramedics and Brevard County school teachers teaching within the City limits, on a first come, first serve basis so long as it does not violate Federal Housing statutes.
- A tree mitigation waiver was also approved and will be detailed upon discussion of proposing landscaping for the project.



Allegra at Cocod

- The site is 53.88 acres overall with 13 acres of developed project area. The lot coverage is 20.66% (maximum 40%) and the total impervious ratio is 16.79% (maximum 65%). The project density is 6 units per acre (maximum 15).
- The project is required to provide 526 standard parking spaces and 12 handicapped parking spaces. The site plan provides 562 standard parking spaces, 39 of which are provided for in detached garages, and 13 handicapped parking spaces.



Allegra at Cocoa

- There are two different type of apartment buildings, however each will be 3-stories tall, at a height of 30'-3-1/2". The individual garage buildings will be 14' tall, and the clubhouse will be 17' tall.
- Building setbacks are provided as follows:

Building Setbacks		
Location	Required	Provided
Front (SR 524 and Cox Rd.)	25'	30'
Rear (north)	20'	20'



Allegra at Cocod

- The northern property boundary will have a 20' landscape buffer, with bald cypress trees planted every 50 feet, for a total of 23 trees.
- The buffer adjacent to SR524 exceeds 600' in length, and will provide 14 Southern Magnolias, a hedge row, and groundcover.
- The Pre-Development Agreement allowed for a specific tree removal and mitigation plan. As a result, 350 replacement trees (993 inches) will be provided; 506 being 'large' and 379 being 'medium or small', and 108 inches of palm trees.
- The applicant has provided 407 trees in total (classified as large, medium & small, and palm trees) as shown on Sheet LD-01. A total of 1,473 inches are being planted. Both the total number of trees and inches exceed the minimum required by the Agreement.



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Allegra at Cocoa

- Additional mitigation was waived if the following parameters were met:
 - (i) the Developer conveys the Conveyance Parcel, as defined in Section 5.0, below, to the City;
 - (ii) the Developer maintains the Project as an affordable housing development as provided in Section 7.0 below for the requisite period of thirty (30) years;
 - (iii) the Planning and Zoning Board approves the Site Plan within eighteen (18) months of the Effective Date of this Agreement; and
 - (iv) the Developer obtains building permits for the Project and substantially commences vertical construction of the Project, which shall at minimum include building foundations, within two (2) years of the Effective Date of this Agreement.
- If the Developer fails to obtain Site Plan approval from the City or fails to obtain building permits and substantially commence vertical construction of the Project within the aforesaid eighteen (18) months or two (2) years, respectively, or fails to satisfy any of the conditions of this Section, the City shall have the right to declare the Developer in default pursuant to Section 25.0 of this Agreement. If the Developer does not cure the default within the cure period, the City shall have the right, but not obligation to, terminate this Agreement without penalty and/or immediately take any and all actions necessary to collect the entire Tree Mitigation Contribution to the extent the trees have been removed not to exceed \$945,000.00.



Allegra at Cocod

- The applicant is conveying +/- 11.5 acres of property as noted on Sheet C-201 of the site plan.
- A total of 9.98 acres of useable open space and recreation area are being provided, which meets the code minimum.
- Water will be provided via an existing 36" concrete pipe that exists in the SR 524 ROW. A 3" master meter will be installed adjacent to the southeastern property line, parallel to SR524.
- A private lift station is proposed adjacent to Building #1 on the northeast portion of the site.
- An Environmental Impact report was prepared for the project. A variety of wetland habitats were observed; however no protected species were found on site. As such, the project meets the Objectives and Policies in the Comprehensive Plan related to the protection of wildlife.



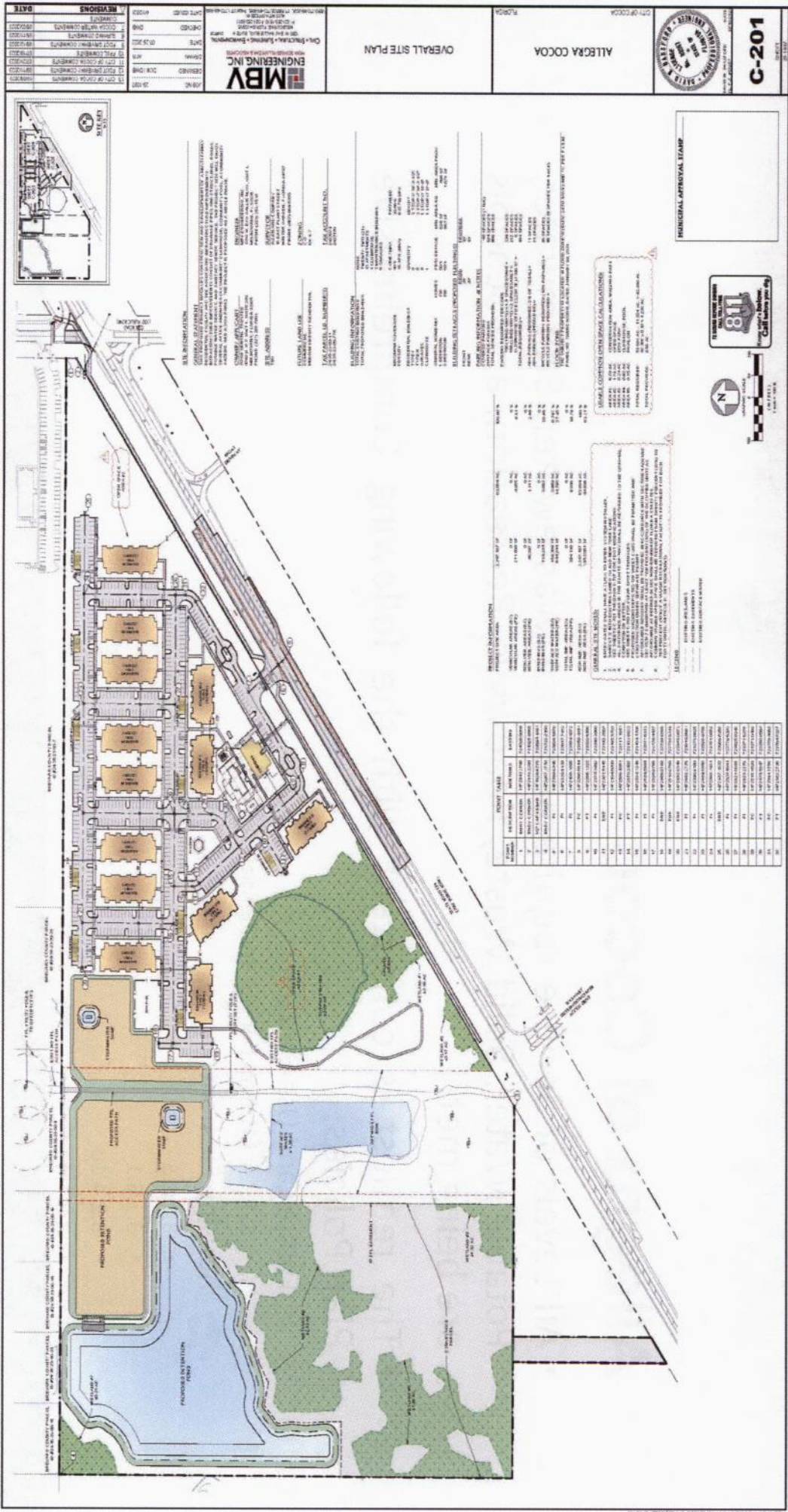
Allegra at Cocoa

- Comprehensive Plan Policy 6.1.3.6 states, "Except as provided in Future Land Use Element Policy 1.1.2.7 (H), flood control for new development will be accomplished through the limitation of fill in the 100-year floodplain when economically feasible. In cases where there is no practical alternative to fill in the 100-year floodplain, 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." A total of 9.98 acres of useable open space and recreation area are being provided, which meets the code minimum.
- The project site is the headwater for the floodplain it partially resides within. The project stormwater ponds have been modeled to attenuate the 100-year storms in addition to those required by the City and SJRWMD. Therefore, compensatory storage and potential impact on the floodplain is offset by the reduction in discharge and detention volume onsite.



Allegra at Cocod

- All Levels of Service requirements for Wastewater, Stormwater, Potable Water, Solid Waste, Roadways, Recreation, and Schools are being met.
- The request is consistent with the following Comprehensive Plan Policies:
 - Future Land Use Element
 - 1.1.2.4, Medium Density Residential
 - Housing Element
 - 3.1.2.5
 - 3.1.6.1
 - 3.2.4.10
 - 3.3.1.4



DATE	12/15/2011
REVISIONS	1.00
1.00	12/15/2011
2.00	12/15/2011
3.00	12/15/2011
4.00	12/15/2011
5.00	12/15/2011
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97.00	12/15/2011
98.00	12/15/2011
99.00	12/15/2011
100.00	12/15/2011

MBV ENGINEERING INC.
 10000 W. 10TH AVE. SUITE 100
 DENVER, CO 80231
 (303) 751-1000
 www.mbv-engineering.com

ALLEGRA COCOA
 OVERALL SITE PLAN

CITY OF COCOA

PROJECT INFORMATION

PROJECT NAME: ALLEGRA COCOA
 PROJECT LOCATION: 10000 W. 10TH AVE., SUITE 100, DENVER, CO 80231
 PROJECT OWNER: MBV ENGINEERING INC.
 PROJECT MANAGER: [Name]
 PROJECT ENGINEER: [Name]
 PROJECT DATE: 12/15/2011

GENERAL NOTES

1. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF COCOA ZONING ORDINANCE AND THE CITY OF COCOA SUBDIVISION MAP ACT.

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NO.	DESCRIPTION	AMOUNT	UNIT	TOTAL
1	CONCRETE	1000	YD	1000
2	CEMENT	1000	YD	1000
3	IRON	1000	YD	1000
4	STEEL	1000	YD	1000
5	BRICK	1000	YD	1000
6	GLASS	1000	YD	1000
7	PAINT	1000	YD	1000
8	LANDSCAPING	1000	YD	1000
9	ROADS	1000	YD	1000
10	UTILITIES	1000	YD	1000
11	WATER	1000	YD	1000
12	SEWER	1000	YD	1000
13	ELECTRIC	1000	YD	1000
14	TELEPHONE	1000	YD	1000
15	CABLE	1000	YD	1000
16	INTERNET	1000	YD	1000
17	SECURITY	1000	YD	1000
18	SAFETY	1000	YD	1000
19	HEALTH	1000	YD	1000
20	WELLNESS	1000	YD	1000
21	ENVIRONMENT	1000	YD	1000
22	CLIMATE	1000	YD	1000
23	AIR	1000	YD	1000
24	WATER	1000	YD	1000
25	SOIL	1000	YD	1000
26	ROCK	1000	YD	1000
27	GLASS	1000	YD	1000
28	PAINT	1000	YD	1000
29	LANDSCAPING	1000	YD	1000
30	ROADS	1000	YD	1000
31	UTILITIES	1000	YD	1000
32	WATER	1000	YD	1000
33	SEWER	1000	YD	1000
34	ELECTRIC	1000	YD	1000
35	TELEPHONE	1000	YD	1000
36	CABLE	1000	YD	1000
37	INTERNET	1000	YD	1000
38	SECURITY	1000	YD	1000
39	SAFETY	1000	YD	1000
40	HEALTH	1000	YD	1000
41	WELLNESS	1000	YD	1000
42	ENVIRONMENT	1000	YD	1000
43	CLIMATE	1000	YD	1000
44	AIR	1000	YD	1000
45	WATER	1000	YD	1000
46	SOIL	1000	YD	1000
47	ROCK	1000	YD	1000
48	GLASS	1000	YD	1000
49	PAINT	1000	YD	1000
50	LANDSCAPING	1000	YD	1000
51	ROADS	1000	YD	1000
52	UTILITIES	1000	YD	1000
53	WATER	1000	YD	1000
54	SEWER	1000	YD	1000
55	ELECTRIC	1000	YD	1000
56	TELEPHONE	1000	YD	1000
57	CABLE	1000	YD	1000
58	INTERNET	1000	YD	1000
59	SECURITY	1000	YD	1000
60	SAFETY	1000	YD	1000
61	HEALTH	1000	YD	1000
62	WELLNESS	1000	YD	1000
63	ENVIRONMENT	1000	YD	1000
64	CLIMATE	1000	YD	1000
65	AIR	1000	YD	1000
66	WATER	1000	YD	1000
67	SOIL	1000	YD	1000
68	ROCK	1000	YD	1000
69	GLASS	1000	YD	1000
70	PAINT	1000	YD	1000
71	LANDSCAPING	1000	YD	1000
72	ROADS	1000	YD	1000
73	UTILITIES	1000	YD	1000
74	WATER	1000	YD	1000
75	SEWER	1000	YD	1000
76	ELECTRIC	1000	YD	1000
77	TELEPHONE	1000	YD	1000
78	CABLE	1000	YD	1000
79	INTERNET	1000	YD	1000
80	SECURITY	1000	YD	1000
81	SAFETY	1000	YD	1000
82	HEALTH	1000	YD	1000
83	WELLNESS	1000	YD	1000
84	ENVIRONMENT	1000	YD	1000
85	CLIMATE	1000	YD	1000
86	AIR	1000	YD	1000
87	WATER	1000	YD	1000
88	SOIL	1000	YD	1000
89	ROCK	1000	YD	1000
90	GLASS	1000	YD	1000
91	PAINT	1000	YD	1000
92	LANDSCAPING	1000	YD	1000
93	ROADS	1000	YD	1000
94	UTILITIES	1000	YD	1000
95	WATER	1000	YD	1000
96	SEWER	1000	YD	1000
97	ELECTRIC	1000	YD	1000
98	TELEPHONE	1000	YD	1000
99	CABLE	1000	YD	1000
100	INTERNET	1000	YD	1000

LEGEND

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10. ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF COCOA SUBDIVISION MAP ACT.

PROPOSED AND EXISTING	
PROPOSED 1/2000	
1	CONCRETE
2	CEMENT
3	IRON
4	STEEL
5	BRICK
6	GLASS
7	PAINT
8	LANDSCAPING
9	ROADS
10	UTILITIES
11	WATER
12	SEWER
13	ELECTRIC
14	TELEPHONE
15	CABLE
16	INTERNET
17	SECURITY
18	SAFETY
19	HEALTH
20	WELLNESS
21	ENVIRONMENT
22	CLIMATE
23	AIR
24	WATER
25	SOIL
26	ROCK
27	GLASS
28	PAINT
29	LANDSCAPING
30	ROADS
31	UTILITIES
32	WATER
33	SEWER
34	ELECTRIC
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36	CABLE
37	INTERNET
38	SECURITY
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46	SOIL
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58	INTERNET
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62	WELLNESS
63	ENVIRONMENT
64	CLIMATE
65	AIR
66	WATER
67	SOIL
68	ROCK
69	GLASS
70	PAINT
71	LANDSCAPING
72	ROADS
73	UTILITIES
74	WATER
75	SEWER
76	ELECTRIC
77	

DATE: 1/1/2000
BY: [Signature]
TITLE: [Title]

Allegra at Cocoa

Staff Recommendation



Staff recommends APPROVAL of the Large-Scale Site Plan for Allegra at Cocoa with the following conditions:

- 1) Per the School Impact Analysis Capacity Determination, CD-2023-38, a *Concurrency Determination* must be performed by the School District prior to a Final Development Order and the issuance of a Concurrency Evaluation Funding of Nondeficiency by the Local Government.
- 2) Prior to receiving any certificate of occupancy, the Developer shall meet its obligations to the City as outlined in the Pre-Development Agreement and Restrictive Covenant.
- 3) Site Plan approval shall be conditioned upon the sale of the subject property to Allegra at Cocoa, LLC, being completed and closing occurring within one year of the Effective Date of the Pre-Development Agreement and Restrictive Covenant, dated September 14, 2023, or as otherwise extended by the City Council.
- 4) Prior to the issuance of building permits, the Developer shall provide a satisfactory conservation easement that permits the Minimum Activities identified in the Pre-Development Agreement and Restrictive Covenant to take place on the portion of the property to be conveyed to the City.

