City of Cocoa

65 Stone Street
Cocoa, FL 32922

Meeting Agenda

Wednesday, August 7, 2024

6:00 PM

Cocoa City Council Chambers

Planning and Zoning / Local Planning Agency

I. OPENING MATTERS

A. CALL TO ORDER

B. ROLL CALL

C. PLEDGE OF ALLEGIANCE

II. APPROVAL OF AGENDA AND MINUTES:

AGENDA:

24-445 Request approval of the Agenda for the Planning & Zoning Board Regular Meeting held on Wednesday, August 7th, 2024, either as written or with amendments

Attachments: PZ Short Agenda August 7 (005).pdf

MINUTES:

24-390 Request Board approval of the Minutes of the Planning & Zoning Special Meeting held on June 12, 2024, either as is or with amendments

Attachments: June 12 2024 Draft (003).pdf

III. OLD BUISNESS

NONE

IV. NEW BUSINESS

A. 24-426 Consideration of a Preliminary Planned Unit Development (PUD) consistent with Appendix A, Zoning, Article XI, Section 17, for a 61-lot single-family residential subdivision on +/- 57.23 acres of property located on the east side of N. Range Rd., north of Kathi-Kim St.

Attachments:
- Karali Subdivision Location.pdf
- Karali Subdivision Future Land Use.pdf
- Karali Subdivision Zoning.pdf
- RangeRoad_RevisedConstructionPlans.pdf
- PUD_PreliminaryApplication.pdf
- 22-00200011.DrainageReport.pdf
- 22-00200011.EnvironmentalReport.pdf
- 22-00200011.EnvironmentalSupportDocument.pdf
- 22-00200011.GeotechReport.pdf
- 22-00200011.HydraulicReport.pdf
- RangeRoad_TrafficStudy.pdf
- Affidavit.pdf

B. 24-428 Request to postpone Consideration of a Land Development Code Text Amendment Appendix A, Article XI, Section 12 of the Code of Ordinances of the City of Cocoa to add Major Recreational Equipment sales and/or rentals, subject to certain conditions, to the list of permitted uses of subsection (A)(12) in the C-G, Commercial-General, zoning district.

Attachments:
- FT-39966188.pdf

C. 24-429 Consideration of a Land Development Code Amendment to Appendix A, Article XI, Sections 4a and 22 of the Zoning Ordinance of the City of Cocoa 1) to allow for Neighborhood Commercial, Mixed-Use development, and public parking on certain, very limited properties within the Consent Decree area, also known as the Heart of Cocoa, consistent with the Substitute Consent Decree, and amending the list of permitted and special exception uses and 2) building types permitted for those certain properties authorized for Neighborhood Commercial and Mixed-Use development within the Heart of Cocoa subdistrict of the Cocoa Waterfront Overlay; 3) amending the bulk regulations for single-family, duplex, triplex, and fourplex development in the Consent Decree area; 4) amending the minimum yard setbacks in the Consent Decree area.

Attachments:
Ordinance 11-2024 Revising RU-2-10 Authorizing Mixed Use and Amending Se
Exhibit A Regulating Plan Map Final (2 pages).pdf
Exhibits B-D FINAL.pdf
Exhibit E - Consent Decree History.pdf
Consent Decree Future Land Use Map.pdf
Consent Decree Zoning Map.pdf
Houston Substitute Consent Decree
10415084 .pdf

D. 24-430 Consideration of a Zoning Text Amendment Appendix A, Article XI, Section 3, of the code of the City of Cocoa to create new minimum yard requirements applicable to properties located in both the RU-1-7 zoning district and the Diamond Square Community Redevelopment Area..End

Attachments:
Ordinance 12-2024.doc
Diamond Square Location Map.pdf
Diamond Square CRA with RU-1-7 Zoning.pdf
Affidavit.pdf

V. TREE BOARD

NONE

VI. OTHER BUISNESS

PLANNING AND ZONING BOARD OPEN DISCUSSION

VII. NEXT MEETING DATE:

The next regularly scheduled meeting of the Planning and Zoning Board will be on Wednesday, September 4 at 6:00 PM at the Cocoa City Hall, 65 Stone Street, Cocoa, Florida.

VII. 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: Monica Arsenault, City Clerk, 65 Stone Street, Cocoa, by telephone at (321) 433-8488 or via email at marsenault@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.

Legislation Details (With Text)

File #:	24-445	**Version:** 1	**Name:**		
Type:	Agenda		**Status:**	Agenda Ready	
File created:	8/2/2024		**In control:**	Planning and Zoning / Local Planning Agency	
On agenda:	8/7/2024		**Final action:**		
Title:	Request approval of the Agenda for the Planning & Zoning Board Regular Meeting held on Wednesday, August 7th, 2024, either as written or with amendments				
Sponsors:					
Indexes:					
Code sections:					
Attachments:	PZ Short Agenda August 7 (005).pdf				

Date	Ver.	Action By	Action	Result

PLANNING & ZONING BOARD/LOCAL PLANNING AGENCY AGENDA ITEM

Memo Date: August 2, 2024
Agenda Date: August 7, 2024
Prepared By: Abigail Bass, Assistant City Clerk
Through: Tammy Gemmati, Administrative Services Director
Requested Action:
Request approval of the Agenda for the Planning & Zoning Board Regular Meeting held on Wednesday, August 7th, 2024, either as written or with amendments

BACKGROUND:

N/A

BUDGETARY IMPACT:

N/A

PREVIOUS ACTION:

N/A

RECOMMENDED MOTION:

Request approval of the Agenda for the Planning & Zoning Board Regular Meeting held on Wednesday, August 7th, 2024, either as written or with amendments

Planning and Zoning
65 Stone Street • Cocoa, FL 32922
PHONE: (321) 433-8635
FAX: (321) 433-8685

AGENDA
Regular Meeting
August 7, 2024
6:00 p.m.

I. **OPENING MATTERS:**
A. CALL TO ORDER
B. ROLL CALL
C. PLEDGE OF ALLEGIANCE

II. **APPROVAL OF AGENDA AND MINUTES:**
AGENDA: Regular Meeting of August 7, 2024
MINUTES: Special Meeting of June 12, 2024

III. **OLD BUSINESS: None**

IV. **NEW BUSINESS:**

A. **PZ-22-0200011 – Preliminary PUD (Karali Associates, LLC – Tax Acct IDs 2415105, 2423194, 2423188)**

CONSIDERATION OF A PRELIMINARY PLANNED UNIT Development (PUD) consistent with Appendix A, Zoning, Article XI, Section 17, for a 61-lot single-family residential subdivision on +/- 57.23 acres of property located on the east side of N. Range Rd., North of Kathi-Kim St.

B. **ORDINANCE NO. 13-2024 - Zoning Text Amendment (C-G, 909 N Cocoa Blvd)**

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF COCOA, BREVARD COUNTY, FLORIDA, amending the zoning ordinance of the City of Cocoa to add major recreational equipment sales and rental to the list of permitted uses in the general commercial (CG) zoning district and establishing conditions for such use; providing for the repeal of prior inconsistent ordinances and resolutions, incorporation into the code, severability, and an effective date. **-Postpone to next meeting**

C. **ORDINANCE NO. 11-2024 – Zoning Text Amendment (RU-2-10) – Consent Decree**

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF COCOA, BREVARD COUNTY, FLORIDA; Amending Appendix A, Article XI, sections 4A and 22 of the zoning ordinance of the City of Cocoa to allow for Neighborhood Commercial, Mixed Use Development, and Public Parking on certain very limited properties within the Consent Decree Area, also known as the Heart of Cocoa, consistent with the substitute Consent Decree; amending the list of permitted and special exception uses

for the Consent Decree Area; amending the building types permitted for those certain properties authorized for neighborhood commercial and mixed use development within the Heart of Cocoa subdistrict of the Cocoa Waterfront Overlay district as more particularly depicted on exhibit "A" attached hereto; amending the bulk regulations for single-family, duplex, triplex, and fourplex development in the consent decree area; amending the minimum yard setbacks in the consent decree area; providing for the repeal of prior inconsistent ordinances and resolutions, incorporation into the code, severability, and an effective date.

D. **ORDINANCE NO. 12-2024 – Zoning Text Amendment (RU-1-7) Diamond Square)**

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF COCOA, BREVARD COUNTY, FLORIDA; Amending Appendix A, Article XI, Section 3, of the code of the City of Cocoa to create new minimum yard requirements applicable to properties located in both the RU-1-7 zoning district and the Diamond Square Community Redevelopment Area; providing for the repeal of prior inconsistent ordinances and resolutions, incorporation into the code, severability, and an effective date.

V. TREE BOARD:
None

VI. OTHER BUSINESS:
Planning and Zoning Board Open Discussion

VII. NEXT MEETING DATE:
Thursday, September 4 at 6:00 pm

VIII. ADJOURNMENT

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: Monica Arsenault, City Clerk, 65 Stone Street, Cocoa, by telephone at (321) 433-8488 or via email at marsenault@cocoafl.gov.

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 Lucilene Ribeiro, Senior Planner, at (321) 433-8510 or, 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. Selig via email or mail at least three (3) days prior to the hearing.

Legislation Details (With Text)

File #:	24-390	**Version:** 1	**Name:**		
Type:	Minutes		**Status:**	Agenda Ready	
File created:	7/5/2024		**In control:**	Planning and Zoning / Local Planning Agency	
On agenda:	8/7/2024		**Final action:**		
Title:	Request Board approval of the Minutes of the Planning & Zoning Special Meeting held on June 12, 2024, either as is or with amendments				
Sponsors:					
Indexes:					
Code sections:					
Attachments:	June 12 2024 Draft (003).pdf				

Date	Ver.	Action By	Action	Result

PLANNING & ZONING BOARD/LOCAL PLANNING AGENCY AGENDA ITEM

Memo Date: August 2, 2024
Agenda Date: August 7, 2024
Prepared By: Abigail Bass, Assistant City Clerk
Through: Tammy Gemmati, Administrative Services Director
Requested Action:
Request Board approval of the Minutes of the Planning & Zoning Special Meeting held on June 12, 2024, either as is or with amendments.

BACKGROUND:

N/A

BUDGETARY IMPACT:

N/A

PREVIOUS ACTION:

N/A

RECOMMENDED MOTION:

Request Board approval of the Minutes of the Planning & Zoning Special Meeting held on June 12, 2024, either as is or with amendments.

MINUTES
CITY OF COCOA
PLANNING & ZONING BOARD/ LOCAL PLANNING AGENCY
SPECIAL MEETING
JUNE 12, 2024

A Special meeting of the Planning & Zoning Board Local Planning Agency was held on June 12, 2024 at City Hall, 65 Stone Street, Cocoa, FL, as publicly noted.

I. CALL TO ORDER:

Chairperson Park called the meeting to order at 6:00 PM.

ROLL CALL:

Wesley Park	Chairperson
Todd Anderson	Vice Chairperson
Ron Chabot	Board Member
Aleck Greenwood	Board Member
Veronica Lopez	Board Member
Marcus Wheeler	Board Member
Merrybeth Burgess	Alternate Member
Katherine Stewart	Alternate Member
Kristin Eick	City Attorney

PRESENT:

Wesley Park	Chairperson
Todd Anderson	Vice Chairperson
Ron Chabot	Board Member
Aleck Greenwood	Board Member
Merrybeth Burgess	Alternate Member
Katherine Stewart	Alternate Member

ABSENT:

Marcus Wheeler	Board Member
Veronica Lopez-Valez	Board Member

STAFF PRESENT:

Lori Chabot, Recording Secretary; Abbey Bass, Assistant City Clerk; Luci Ribeiro City Planner; and Jennifer Webster, City Planner.

Chairperson Park led the assembly in the Pledge of Allegiance.

II. APPROVAL OF AGENDA AND MINUTES:

1. AGENDA: Meeting of June 12, 2024

* **MOTION BY BOARD MEMBER CHABOT; SECONDED BY BOARD MEMBER STEWART TO APPROVE THE JUNE 12, 2024 REGULAR MEETING AGENDA AS WRITTEN.**

AYES: PARK, ANDERSON, CHABOT, GREENWOOD, BURGESS, STEWART

MOTION PASSED UNANIMOUSLY (6-0)

2. MINUTES: Meeting of May 1, 2024.

* **MOTION BY BOARD MEMBER CHABOT; SECONDED BY BOARD MEMBER STEWART TO APPROVE THE MAY 1, 2024 REGULAR MEETING MINUTES AS WRITTEN.**

AYES: PARK, ANDERSON, CHABOT, GREENWOOD, BURGESS, STEWART

MOTION PASSED UNANIMOUSLY (6-0)

III. OLD BUSINESS:

None.

IV. NEW BUSINESS:

PZ-24-02000002 Ordinance 07-2024 | Parcel ID: 24-36-07-00-524

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF COCOA, BREVARD COUNTY, FLORIDA; amending Appendix A, article V and Article XI, section 19 of the zoning ordinance of the City of Cocoa to add truck parking facilities to the list of permitted uses in the M-2 zoning district; providing a definition of truck parking facilities; providing for the repeal of prior inconsistent ordinances and resolutions, incorporation into the code, severability, and an effective date.

Patrick Murry with RVI presented the item via presentation.[1]

Michael Pensa, the applicant, stated they hoped to develop vacant land. He gave a back story of his childhood and where his passion for his desired project came from. He stated that the Cocoa area is perfect for his desired use. They have five terminals currently in use in Florida such as a truck wash and above ground fuel tank. He said they have 30 drivers in Cocoa and hope to increase up to 40 by the end of the year.

[1] Exhibit A: M-2 Zoning District Zoning Text Amendment

Board member Greenwood asked if the changes being brought before the board were to make it more attractive or what was the reason. He asked about the five-hour time limit for vehicle repairs and if this would require vehicles that require more time to be moved elsewhere.

Attorney Eick explained that was exactly the reason to make sure it looked presentable and she explained what exactly the five-hour time frame meant and advised what was written in the request.

* **MOTION BY CHAIRPERSON PARK; SECONDED BY BOARD MEMBER GREENWOOD TO APPROVE THE PROPOSED LAND DEVELOPMENT CODE AMENDMENT TO APPENDIX A, ARTICLE XI, SECTION 19 OF THE ZONING ORDINANCE OF THE CITY OF COCOA TO ADD TRUCK PARKING FACILITIES TO THE LIST OF PERMITTED USES IN THE M-2 ZONING DISTRICT AND TO PROVIDE A DEFINITION OF TRUCK PARKING FACILITIES.**

AYES: PARK, ANDERSON, CHABOT, GREENWOOD, BURGESS, STEWART

MOTION PASSED UNANIMOUSLY (6-0)

V. TREE BOARD:

Board member Greenwood touched on the Rockledge tree coalition and the tree trimming he spoke on at the previous meeting and said after meeting with the city manager he was advised that he is able to pursue helping the coalition.

VI. OTHER BUSINESS:

Planning and Zoning Board Open Discussion.

VII. NEXT MEETING DATE:

The next scheduled meeting for the Planning and Zoning Board will be held on Thursday, July 11, 2024 at 6 pm in Cocoa City Hall, 65 Stone St, Cocoa, FL 32922.

VIII. ADJOURNMENT:

* **MOTION BY CHAIRPERSON PARK; SECONDED BY BOARD MEMBER GREENWOOD TO ADJOURN THE MEETING.**

AYES: PARK, ANDERSON, CHABOT, GREENWOOD, BURGESS, STEWART

MOTION PASSED UNANIMOUSLY (6-0)

MEETING ADJOURNED AT 6:16 PM.

_____
Wesley Park, Chairperson

Respectfully Submitted By:

_____
Abigail Bass, Assistant City Clerk

Legislation Details (With Text)

File #:	24-426	**Version:** 1	**Name:**		
Type:	Agenda		**Status:**	Agenda Ready	
File created:	7/26/2024		**In control:**	Planning and Zoning / Local Planning Agency	
On agenda:	8/7/2024		**Final action:**		
Title:	Consideration of a Preliminary Planned Unit Development (PUD) consistent with Appendix A, Zoning, Article XI, Section 17, for a 61-lot single-family residential subdivision on +/- 57.23 acres of property located on the east side of N. Range Rd., north of Kathi-Kim St.				
Sponsors:					
Indexes:					
Code sections:					
Attachments:	Karali Subdivision Location.pdf Karali Subdivision Future Land Use.pdf Karali Subdivision Zoning.pdf RangeRoad_RevisedConstructionPlans.pdf PUD_PreliminaryApplication.pdf 22-00200011.DrainageReport.pdf 22-00200011.EnvironmentalReport.pdf 22-00200011.EnvironmentalSupportDocument.pdf 22-00200011.GeotechReport.pdf 22-00200011.HydraulicReport.pdf RangeRoad_TrafficStudy.pdf Affidavit.pdf				

Date	Ver.	Action By	Action	Result

PLANNING & ZONING BOARD/LOCAL PLANNING AGENCY AGENDA ITEM

Memo Date: August 7, 2024
Agenda Date: August 7, 2024
Prepared By: Stephen Noto, AICP - Planning Consultant
Through: Stockton Whitten - City Manager

Requested Action:
Consideration of a Preliminary Planned Unit Development (PUD) consistent with Appendix A, Zoning, Article XI, Section 17, for a 61-lot single-family residential subdivision on +/- 57.23 acres of property located on the east side of N. Range Rd., north of Kathi-Kim St.

BACKGROUND:

The applicant, Mr. Greg Crawford, of Florida Engineering Group, Inc., on behalf of the property

owner, Mr. Srinivas Seela of Karali Associates, LLC., is requesting a Preliminary Planned Unit Development (PUD) approval for a +/- 57.23-acre single-family residential project located on the east side of N. Range Rd., north of Kathi Kim St., and adjacent to Hooper Rd. The Subject Property consists of the three parcel ID numbers 24-36-19-00-501, 24-36-30-00-252, and 24-36-30-00-258. The Subject Property currently has City of Cocoa zoning categories RU-1-7 (Single-Family Residential District) and RU-2-15 (Multiple Family Residential), and no zoning on a portion of the property. The Future Land Use (FLU) is LDR (Low Density Residential), which allows for a maximum of 7 dwelling units per acre.

In accordance with Appendix A, Zoning, Article XI, Section 17(J), the developer shall have one (1) year from the approval of the preliminary development plan for a planned unit development in which to file a final development plan application. PUD zoning shall not become effective until the City Council approves the final development plan.

Future Land Use Designation: Current: Low Density Residential

Zoning District: Current: RU-1-7 (Single-Family Residential District), RU-2-15 (Multiple-Family Dwelling District)/No zoning

Proposed: PUD (Planned Unit Development District)

Existing Land Use: Vacant residential land

Council District: District 4 - Councilmember Koss

Legal Ad Date: July 23, 2024

Overview of Surrounding Area:

	Future Land Use Designations	Zoning Districts	Land Uses
North	LDR, Low Density Residential	RU-1-7, Single-Family Residential District	Vacant residential land
South	RES 15, Residential 15 Units Per Acre (Brevard County)	RU-2-10, Medium Density Multi Family Residential (Brevard County)	Single-family Residence/Half-Duplex

East	LDR, Low Density Residential	RU-1-7, Single-Family Residential District	Vacant residential land/Municipally Owned Property/Single family residence
West	VLDR, Very Low Density Residential; LDR, Low Density Residential	RR-1, Rural Residential; RU-1-7, Single-Family Residential District	Vacant residential land/Religious/Single-Family Residence

Project Description:

The Subject Property is located on the east side of N. Range Rd., north of Kathi Kim St., and adjacent to Hooper Rd. The site is currently vacant and consists of +/- 28.73 acres of wetland. On the remaining +/- 28.50-acre upland area, the applicant is proposing a 61-lot, single-family detached subdivision with multiple open space tracts, and associated infrastructure. The project proposes two different lot types: 40-foot wide and 50-foot wide. Of the 61-lots, 31 lots are 40-foot wide, and 30 lots are 50-foot wide. Additional technical details about the project can be found in the Rezoning Analysis below.

I. Rezoning Analysis

The Planning & Zoning Division staff have addressed the criteria contained in Appendix A of the City of Cocoa, Article XI, Section 17(I)(2)(e) as follows:

1. *Degree of departure of proposed planned unit development from surrounding areas in terms of character and density.*

Staff Finding: An analysis of the surrounding area from the Subject Property shows that it is a mixture of VLDR (4 du/acre) and LDR (7 du/acre) Future Land Use (FLU) designations. The zoning is also mixed between RR-1, Rural Residential District (min. lot size 1 acre), and RU-1-7, Single-Family Residential District (min. lot size 7,500 sq. ft).

The proposed project consists of a 50/50 mix of 40' and 50' wide lots. The majority of the lots are 110' deep, which creates a mixture of 4,400 sq. ft. and 5,500 sq. ft. lots. This is smaller than the adjacent neighborhoods. Having said that, the FLU designation of LDR requires a density of 7 units per acre. Given the property size of +/- 57.23 acres, that would allow a gross density of 400 dwelling units. However, the project has been calculated utilizing a net density from the upland +/- 28.50 acres which allows for a maximum density of 200 units. The applicant is proposing a density of 2.14 net dwelling units per acre, or a maximum of 61 dwelling units. That overall net density is less dense than the maximum allowed by the VLDR that is across the street to the west and far less than the maximum density allowed in the subject property's LDR designation. In that regard, the applicant has created a project that would be more similar in nature to a project with VLDR FLU, even with smaller than typical lot sizes.

2. *Compatibility within the planned unit development and relationship with surrounding neighborhoods.*

Staff Finding: As noted in Section 1 above, an analysis of the surrounding area from the

subject property shows that it is a mixture of VLDR (4 du/acre) and LDR (7 du/acre) Future Land Use (FLU) designations. The zoning is also mixed between RR-1, Rural Residential District (min lot size 1 acre), and RU-1-7, Single-Family Residential District (min lot size 7,500 sq. ft).

The proposed project consists of a 50/50 mix of 40' and 50' wide lots. The majority of the lots are 110' deep, which creates a mixture of 4,400 sq. ft. and 5,500 sq. ft. lots. This is smaller than the adjacent neighborhoods. Having said that, the FLU designation of LDR requires a density of 7 units per acre. Given the property size of +/- 57.23 acres, that would allow a gross density of 400 dwelling units. However, the project has been calculated utilizing a net density from the usable +/- 28.50 acres. This allows for a maximum density of 200 units. The applicant is proposing a density of 2.14 dwelling units per acre, or a maximum of 61 dwelling units. That overall net density is less dense than the maximum allowed by the VLDR that is across the street. In that regard, the applicant has created a project that would be more similar in nature to a project with VLDR FLU, even with smaller than typical lot sizes.

The final product will be single-family detached structures that are one- and two-stories tall. The minimum square footage per zoning is 1,200 sq. ft., however the applicant has provided minimum building square footage details based on the proposed floor plans that would be built in the neighborhood. These floor plans range from sizes of 1,578 sq. ft. to 3,030 square feet. There are also architectural plans attached which show a variety of building types and finishes. The final building renderings provide for consistency and compatibility with the surrounding neighborhoods.

3. *Prevention of erosion and degrading of surrounding area.*

Staff Finding: Per the response from the applicant: "The site will protect against erosion via the Stormwater Pollution Prevention Plan that addresses the Florida Department of Environmental Protection's National Pollution Discharge Elimination System (NPDES) program during construction and via permanent vegetation of either sod or landscaping on all disturbed areas. The open space, stormwater management, and landscape areas will be maintained long term by a Homeowner's Association that will be responsible to keep the common areas in good condition."

4. *Provision for future public education and recreation facilities, transportation, water supply, sewage disposal, surface drainage, flood control and soil conservation as shown in the preliminary development plan.*

Staff Finding: Water and sewer services will be provided by the City of Cocoa Utilities via an existing water line along the west side of N. Range Rd. and an existing lift station located along the east side of N. Range Rd. Surface drainage, flood control, and soil conservation will be addressed with the proposed stormwater ponds that are designed to comply with the water quality and quantity requirements of the City and state, as well as compensating storage for any flood plain encroachment of the development.

There are two points of access proposed into the site from N. Range Rd. The southern access point, Street 'A', aligns with Hooper Rd.to the west. Approximately 700' to the north is the second access point, Street 'C'. No improvements to N. Range Rd. are proposed as the traffic

impact analysis (TIA) found that all impacted roadways were projected to operate adequately at buildout.

On-site, the project proposes multiple open space tracts which include walking paths, a fishing pier, benches, shade trees, and general open space areas.

5. *The nature, intent and compatibility of common space, including the proposed method for the maintenance and conservation of said common space.*

Staff Finding: The proposed recreation and open space tracts are located throughout the development and along the stormwater ponds, which will provide for recreation and walking paths. All of the recreation and open spaces areas will be in separate tracts that will be owned and maintained by the Homeowner's Association in perpetuity. The preserved wetland areas will also be owned by the Homeowner's Association with a conservation easement over dedicated to the St. Johns River Water Management District. The applicant has provided a "Common Space Description", which is attached to this staff report. This document provides additional details as to how each Open Space Tract will function.

6. *The feasibility and compatibility of the specified stages contained in the preliminary development plan to exist as an independent development.*

Staff Finding: The proposed development will be constructed in a single phase and will not require any connection or infrastructure support from the adjacent residential developments. The only connections made outside of the property will be to public water, sewer, stormwater, and transportation infrastructure along Range Road.

7. *The availability and adequacy of primary streets and thoroughfares to support traffic to be generated within the proposed planned unit development.*

Staff Finding: The internal roadways are local roadways that will have two (2) access points to N. Range Rd. A traffic impact analysis (TIA) was completed for a maximum 71 single-family dwelling units, which was the original development program for the project. No improvements to N. Range Rd. are proposed as the traffic impact analysis (TIA) found that all impacted roadways were projected to operate adequately at buildout. The TIA will be updated to reflect the new development program of 61 single-family dwelling units.

8. *The availability and adequacy of water and sewer service to support the proposed planned unit development.*

Staff Finding: The proposed project will connect to an existing 12-inch water line located along the west side of N. Range Rd. Sewer service will connect into an existing lift station located on the east side of N. Range Rd. that will pump the flow to the utility's wastewater treatment plant.

9. *The benefits within the proposed development and to the general public to justify the requested departure from standard land use requirements inherent to a planned unit development classification.*

Staff Finding: The proposed development respects the existing wetlands located on the

property by developing upland of the +/- 28.73 acres. The wetlands will remain and provide a buffer between this property and the properties to the east. In addition, the location of Street A has been adjusted to align with the existing Hooper Road to the west, however connection to Ivy Dr. to the east is not planned.

The lot design of the community is being supplemented with high quality building architecture with a variety of finishes and accents, and building square footages that are complimentary to the surrounding neighborhoods. The renderings for the buildings are provided as an attachment. When the project gets to Final PUD, those renderings will be made part of the Final Development Plan and will have to be complied with at construction.

Additionally, the lot setbacks are not being deviated from substantially. Under the RU-1-7, which covers the majority of the site, the setbacks are as follows:

Code Requirements		**Proposed Setbacks**	
Front Setback	Twenty-five (25')	Front Setback	Twenty (20')
Side interior lot setback	Eight (8')	Side interior lot setback	Five (5')
Side corner lot setback	Fifteen (15')	Side corner lot setba	Five (5')
Rear setback	Fifteen (15')	Rear setback	Twenty (20')

The project is also providing multiple active and passive open space areas that will benefit the residents of the community, as noted in the Common Space Description document.

10. *The conformity and compatibility of the planned unit development with any adopted development plan of the city.*

Staff Finding: The overall density for the project is 2.14 dwelling units per acre, which is less than the allowable density of 7 dwelling units per are allowed for a Low Density Residential (LDR) Future Land Use designation. This density calculation does not include the approximately 28.7 acres of wetland and wetland buffer area that will be retained on the property as undisturbed.

The immediate area is primarily designated as LDR. On the west side of N. Range Rd., is VLDR (Very Low Density Residential), which allows a maximum of 4 dwelling units per acre. There are a mixture of zoning districts and lots sizes in the immediate area as well.

The lot size mixture of 40' and 50' wide lots is more unique compared to other developments in the City. That is the purpose for requiring enhanced building architecture and open space amenities as opposed to other projects. The project is consistent the density characteristics of the N. Range Rd. corridor as noted in the FLU Map in the Comprehensive Plan.

11. *The conformity and compatibility of the proposed common space, primary residential and nonresidential uses within the proposed planned unit development.*

Staff Finding: This project is a single-family residential development that will not have any non -residential development uses included with it. The single-family component of the

development is consistent with the other developments in the areas and includes common open space areas within it to be used by the residences of the development.

Consistency with Comprehensive Plan Policies and Objectives

The proposed Preliminary PUD is consistent with the allowable uses under the "Low Density Residential" Future Land Use per the City of Cocoa Comprehensive Plan as noted in Figure FLU-1, and FLU Policy 1.1.2.3.

Concurrency Management/Adequate Public Facilities

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

Consistent with the requirements of Article IV (Concurrency Management System), Chapter 15 of the Code of the City of Cocoa, the applicant/developer will be required to submit a final application for concurrency review prior to issuance of any City of Cocoa permits. If capacity issues relating to any public facilities or services regulated by the City of Cocoa adopted Comprehensive Plan is identified, necessary and appropriate mitigation will be required to be addressed prior to construction. However, because the maximum density remains unchanged, no further impact to public facilities is anticipated.

BUDGETARY IMPACT:

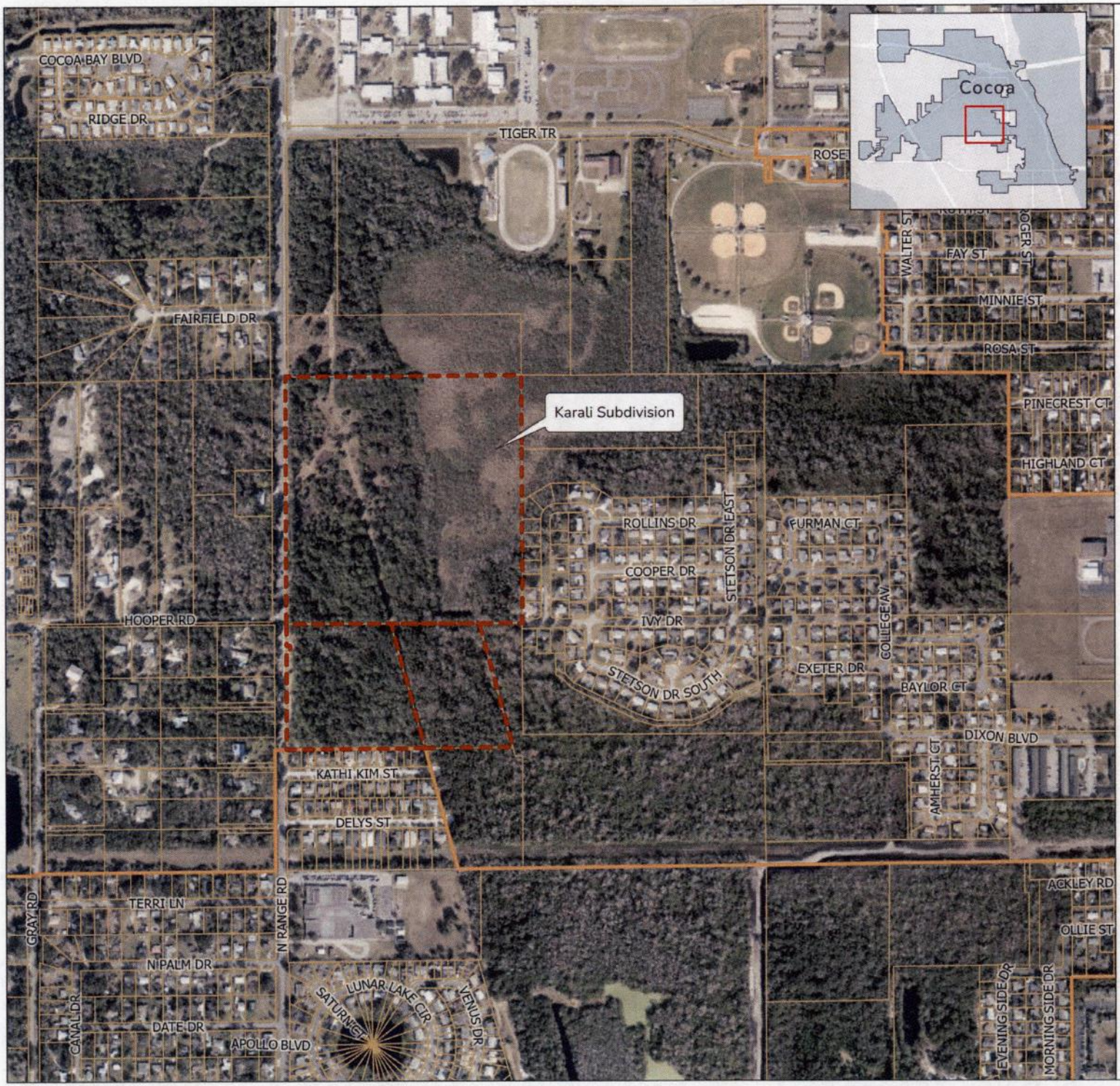
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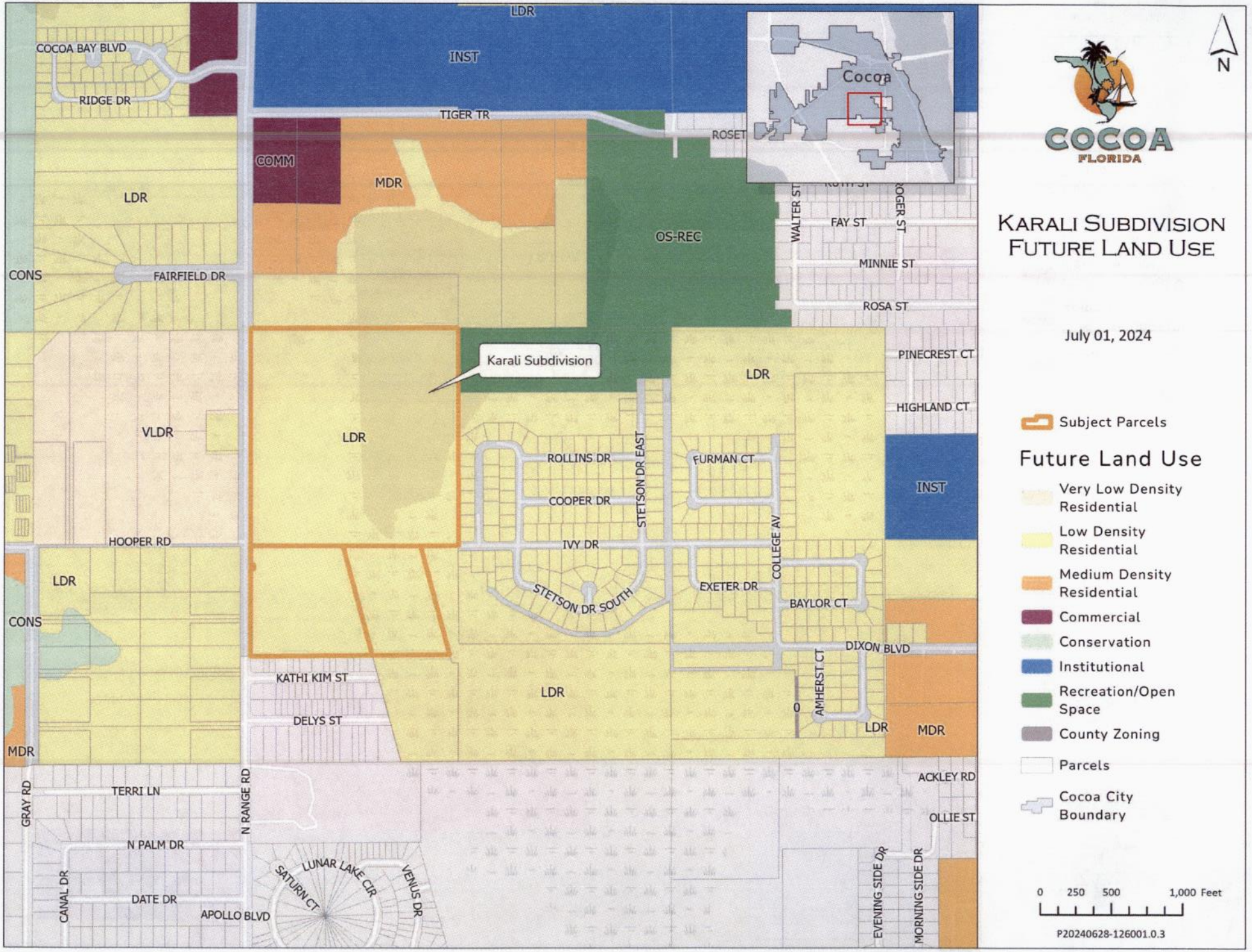
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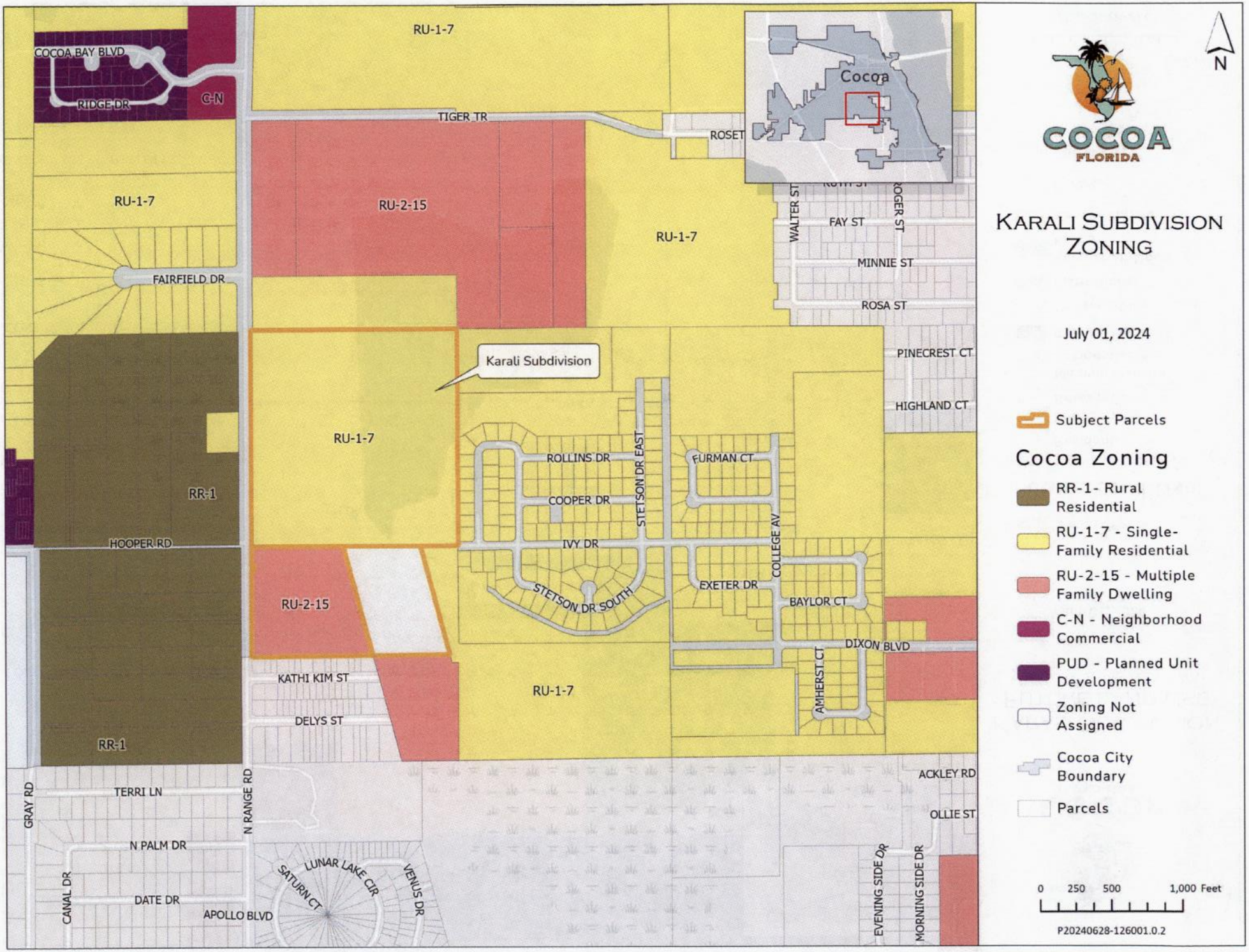
None

RECOMMENDED MOTION:

Staff recommends that the Planning & Zoning Board recommend APPROVAL to City Council of the Preliminary Planned Unit Development (PUD) consistent with Appendix A, Zoning, Article XI, Section 17, for three parcels totaling +/- 57.23 acres located on the east side of N. Range Rd. with parcel ID numbers 24-36-19-00-501, 24-36-30-00-252, and 24-36-30-00-258.


COCOA BAY BLVD
RIDGE DR
TIGER TR
ROSE
FAIRFIELD DR
Karali Subdivision
WALTER ST
ROGER ST
FAY ST
MINNIE ST
ROSA ST
PINECREST CT
HIGHLAND CT
ROLLINS DR
COOPER DR
IVY DR
STETSON DR SOUTH
STETSON DR EAST
FURMAN CT
COLLEGE AV
EXETER DR
BAYLOR CT
DIXON BLVD
AMHERST CT
HOOPER RD
KATHI KIM ST
DELYS ST
GRAY RD
TERRI LN
N RANGE RD
N PALM DR
CANAL DR
DATE DR
APOLLO BLVD
SATURN CT
LUNAR LAKE CIR
VENUS DR
ACKLEY RD
OLLIE ST
EVENING SIDE DR
MORNING SIDE DR
Cocoa
N
COCOA
FLORIDA
KARALI SUBDIVISION LOCATION
July 01, 2024
Cocoa City Boundary
Subject Parcels
Parcels
0 250 500 1,000 Feet
P20240628-126001.0.1


LDR
INST
COCOA BAY BLVD
RIDGE DR
TIGER TR
ROSET
COMM
MDR
LDR
OS-REC
WALTER ST
ROGER ST
FAY ST
MINNIE ST
ROSA ST
CONS
FAIRFIELD DR
Karali Subdivision
PINECREST CT
LDR
HIGHLAND CT
VLDR
LDR
ROLLINS DR
STETSON DR EAST
FURMAN CT
INST
COOPER DR
HOOPER RD
IVY DR
COLLEGE AV
LDR
CONS
STETSON DR SOUTH
EXETER DR
BAYLOR CT
DIXON BLVD
KATHI KIM ST
LDR
AMHERST CT
DELYS ST
LDR
MDR
MDR
ACKLEY RD
GRAY RD
TERRI LN
N RANGE RD
OLLIE ST
N PALM DR
LUNAR LAKE CIR
EVENING SIDE DR
MORNING SIDE DR
CANAL DR
SATURN CT
VENUS DR
DATE DR
APOLLO BLVD
Cocoa
N
COCOA
FLORIDA
KARALI SUBDIVISION
FUTURE LAND USE
July 01, 2024
Subject Parcels
Future Land Use
Very Low Density Residential
Low Density Residential
Medium Density Residential
Commercial
Conservation
Institutional
Recreation/Open Space
County Zoning
Parcels
Cocoa City Boundary
0 250 500 1,000 Feet
P20240628-126001.0.3


COCOA BAY BLVD
RIDGE DR
C-N
RU-1-7
TIGER TR
ROSET
RU-2-15
RU-1-7
RU-1-7
FAIRFIELD DR
Karali Subdivision
RU-1-7
RR-1
HOOPER RD
RU-2-15
RU-1-7
RR-1
KATHI KIM ST
DELYS ST
TERRI LN
GRAY RD
N RANGE RD
N PALM DR
CANAL DR
DATE DR
APOLLO BLVD
LUNAR LAKE CIR
SATURN CT
VENUS DR
ACKLEY RD
OLLIE ST
EVENING SIDE DR
MORNING SIDE DR
WALTER ST
FAY ST
ROGER ST
MINNIE ST
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PINECREST CT
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ROLLINS DR
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IVY DR
STETSON DR SOUTH
STETSON DR EAST
FURMAN CT
COLLEGE AV
EXETER DR
BAYLOR CT
DIXON BLVD
AMHERST CT
Cocoa
N
COCOA
FLORIDA
KARALI SUBDIVISION ZONING
July 01, 2024
Subject Parcels
Cocoa Zoning
RR-1- Rural Residential
RU-1-7 - Single-Family Residential
RU-2-15 - Multiple Family Dwelling
C-N - Neighborhood Commercial
PUD - Planned Unit Development
Zoning Not Assigned
Cocoa City Boundary
Parcels
0 250 500 1,000 Feet
P20240628-126001.0.2

RANGE ROAD PRELIMINARY PUD
CITY OF COCOA, FLORIDA

PARCEL I.D. No. 24-36-19-00-501, 24-36-30-00-258,
24-36-30-00-252

OWNER/ APPLICANT: KARALI ASSOCIATES, LLC
2642 FAWNLAKE TRAIL
ORLANDO, FL 32828
PHONE: 407-246-5407
EMAIL: SEELASRIVINAS@YAHOO.COM

GEOTECHNICAL: PROFESSIONAL SERVICES INDUSTRIES, INC.
1748 33RD STREET
ORLANDO FL 32839
PHONE: (407) 304-5560
EMAIL: ROBERT.TROMPKE@INTERTEK.COM

SURVEYOR: ALTAMAX SURVEYING
910 BELLE AVENUE, SUITE 1140
CASSELBERRY, FL 32708
PHONE: (407) 677-0200
EMAIL: JAMES@ALTAMAXSURVYEING.COM

ENVIRONMENTAL: ECOLOGICAL CONSULTING SOLUTIONS, INC.
235 HUNT CLUB BLVD., SUITE 202
LONGWOOD, FL 32779
PHONE: 407-869-9434
EMAIL: BGRIFFY@ECOLOGICALCS.COM

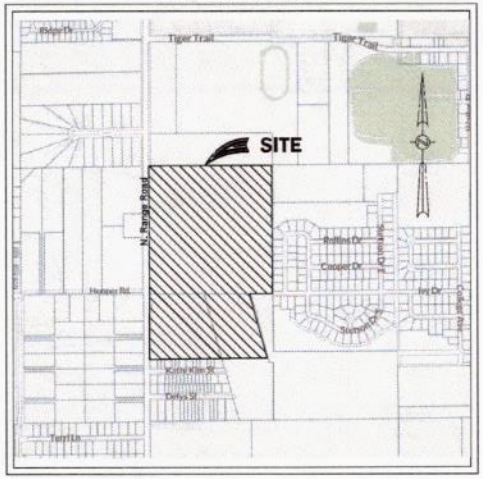
LANDSCAPE: FLORIDA ENGINEERING GROUP, INC.
5127 S. ORANGE AVENUE, SUITE 200
ORLANDO, FL 32809
PHONE: 407-895-0324
EMAIL: RABT@FEG-INC.US

PERMITTING AGENCIES
CITY OF COCOA: PSP; FINAL ENGINEERING
SJRWMD: ENVIRONMENTAL RESOURCE PERMIT
F.D.E.P.: NOI, WATER, SEWER

UTILITY COMPANIES

WATER:	CITY OF COCOA	321-433-8797
SEWER:	CITY OF COCOA	321-423-8797
ELECTRIC:	FLORIDA POWER AND LIGHT-BREVARD	386-586-6403
RECLAIMED:	CITY OF COCOA	321-423-8797
TELEPHONE:	AT&T / DISTRIBUTION	561-683-2729
FIBER:	CHARTER COMMUNICATIONS	321-338-1928
GAS:	FLORIDA GAS TRANSMISSION-MELBOURNE	470-838-7171
GAS:	FLORIDA CITY GAS	321-638-3419

SITE VICINITY MAP



SCALE: 1" = 600'

GENERAL STATEMENT:
THE PROPERTY IS CURRENTLY A VACANT WOODED LOT WITH APPROXIMATELY 25.57 ACRES OF IT BEING WETLAND AREAS. THE PROPOSED PROJECT WLL INCLUDE THE CONSTRUCTION OF 61 SINGLE FAMILY (40' AND 50' WIDE) RESIDENTIAL LOTS ALONG WITH ASSOCIATED STORMWATER, ROADWAY, AND UTILITY IMPROVEMENTS.

LEGAL DESCRIPTION:

PARCEL I:
THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4, SECTION 19, TOWNSHIP 24 SOUTH, RANGE 36 EAST, BREVARD COUNTY, FLORIDA, SUBJECT TO
(1) THE EASEMENT FOR THE RIGHT-OF-WAY OF RANGE ROAD OVER THE WEST 30 FEET OF SAID PARCEL (OFFICIAL RECORDS BOOK 462, PAGE 185); AND
(2) THE 30 FOOT EASEMENT OF FLORIDA GAS TRANSMISSION DESCRIBED IN OFFICIAL RECORDS BOOK 306, PAGE 682 OF SAID PUBLIC RECORDS.

PARCEL II:
THE NORTH 683.34 FEET OF THE NORTHWEST 1/4 OF THE NORTHWEST 1/4 OF SECTION 30, TOWNSHIP 24 SOUTH, RANGE 36 EAST, BREVARD COUNTY, FLORIDA, EXCEPT THE LAND IN DEED BOOK 66, PAGE 61, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA, DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHWEST CORNER OF SAID SECTION 30, TOWNSHIP 24 SOUTH, RANGE 36 EAST, THENCE SOUTH 00°54'01" WEST ALONG THE WEST LINE OF SAID SECTION 30 (SAID WEST LINE ALSO BEING THE CENTERLINE OF RANGE ROAD) A DISTANCE OF 683.34 FEET; THENCE SOUTH 89°40'59" EAST A DISTANCE OF 30 FEET TO A POINT ON THE EASTERLY RIGHT-OF-WAY LINE OF RANGE ROAD AND THE NORTHWEST CORNER OF THE SUBDIVISION OF SABAL LAKE ESTATES, UNIT ONE, PER PLAT RECORDED IN PLAT BOOK 30, PAGE 12 OF THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA; THENCE NORTH 89°48'18" EAST ALONG THE NORTH LINE OF SAID SUBDIVISION AND AN EXTENSION THEREOF, A DISTANCE OF 1280.19 FEET TO A POINT IN THE WESTERLY LINE OF THE PARCEL DESCRIBED IN DEED RECORDED IN DEED BOOK 69, PAGE 62 OF SAID PUBLIC RECORDS (WHICH POINT IS 49.81 FEET FROM THE SOUTHWEST CORNER OF SAID PARCEL); THENCE NORTH 15°09'27" WEST ALONG SAID WEST LINE 702.89 FEET TO THE NORTH LINE OF SAID SECTION 30; THENCE SOUTH 89°56'03" WEST ALONG SAID NORTH LINE OF SECTION 30, A DISTANCE OF 1078.01 FEET TO THE POINT OF BEGINNING, LESS AND EXCEPT LAND DESCRIBED IN WARRANTY DEED RECORDED IN OFFICIAL RECORDS BOOK 2525, PAGE 2797, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA
SUBJECT TO THE FOLLOWING:
(1) THE RIGHT-OF-WAY OF RANGE ROAD OVER THE WEST 33 FEET OF SAID PARCEL (OFFICIAL RECORDS BOOK 680, PAGE 901);
(2) THE 30 FOOT EASEMENT OF FLORIDA GAS TRANSMISSION DESCRIBED IN OFFICIAL RECORDS BOOK 306, PAGE 682 OF SAID PUBLIC RECORDS;
(3) THE RIGHTS OF SOUTHERN BELL TELEPHONE AND TELEGRAPH COMPANY OVER THE SOUTH 50 FEET OF THE NORTH 193 FEET OF THE EAST 50 FEET OF THE WEST 83 FEET OF SAID PARCEL;
(4) THE EASEMENT OF FLORIDA POWER & LIGHT COMPANY, DATED 9 JULY 1990, OVER THE SOUTH 5 FEET OF THE WEST 8 FEET OF THE NORTH 281 FEET OF SAID PARCEL;
(5) THE RIGHTS OF THE CITY OF COCOA TO THE SOUTH 25 FEET OF THE NORTH 549 FEET OF THE EAST 20 FEET OF THE WEST 53 FEET OF SAID SECTION 30 AND THE EASEMENT OVER THE EAST 15 FEET OF THE WEST 48 FEET OF SAID PARCEL FOR SEWER LIFT STATION AND SEWER LINES;
(6) THE GRANTOR (OALCO, INC., FOR ITSELF AND ITS SUCCESSORS AND ASSIGNS, HEREBY RESERVES AN EXCLUSIVE EASEMENT FOR THE CONSTRUCTION, MAINTENANCE AND USE OF DITCHES, SWALES AND OTHER WATER RETENTION, MOVEMENT AND CONTROL FACILITIES AND OTHER USES, OVER, UNDER AND ACROSS THE LANDS LYING WEST OF, ADJACENT TO, AND WITHIN 30 FEET OF THE WEST LINE OF THE PARCEL DESCRIBED IN DEED BOOK 69, PAGE 62 OF SAID PUBLIC RECORDS.TO BE RELATED TO THE EASEMENT IN OFFICIAL RECORDS BOOK 2823, PAGE 1986, OF SAID PUBLIC RECORDS.

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C-2	BOUNDARY AND TOPOGRAPHIC SURVEY
C-3	BOUNDARY AND TOPOGRAPHIC SURVEY
C-4	BOUNDARY AND TOPOGRAPHIC SURVEY
C-5	BOUNDARY AND TOPOGRAPHIC SURVEY
C-6	BOUNDARY AND TOPOGRAPHIC SURVEY
C-7	OVERALL SITE PLAN
C-8	COMMON SPACE PLAN
C-9	SITE GEOMETRY PLAN
C-10	SITE GEOMETRY PLAN (2)
A-1	ARCHITECTURAL ELEVATIONS
A-2	ARCHITECTURAL ELEVATIONS (2)

DATE	REVISIONS	BY	DRWN
7/15/24	REVISED PER CITY COMMENTS	JM	GRC
1/26/24	REVISED PER CITY COMMENTS	SFJ	GRC
10/03/23	REVISED PER FLORIDA GAS TRANSMISSION	SFJ	GRC
9/25/23	REVISED PER FLORIDA GAS TRANSMISSION	SFJ	GRC
4/20/23	REVISED PER CITY AND SJRWMD COMMENTS	JM	GRC

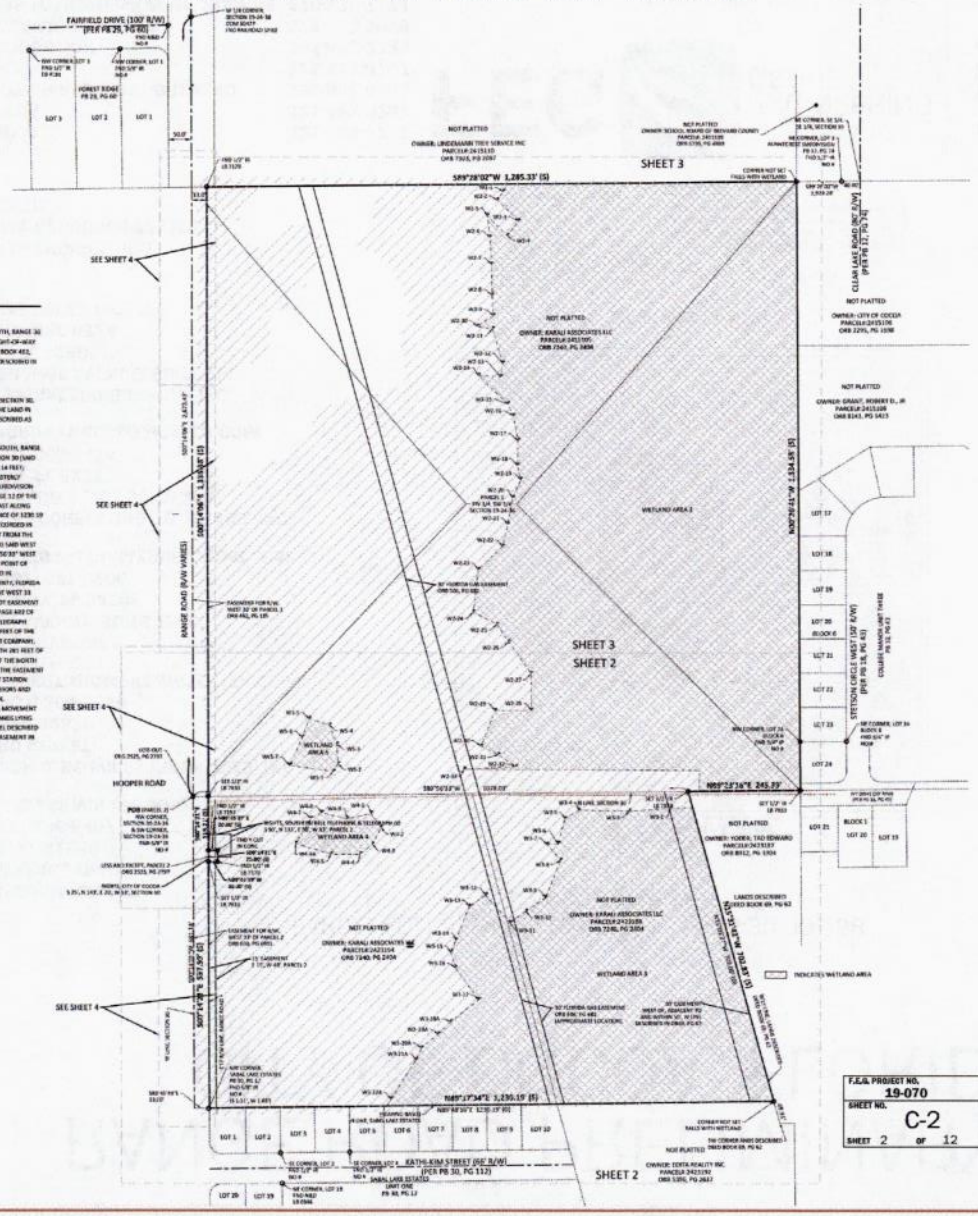
FEG FLORIDA ENGINEERING GROUP
Engineering the Future

5127 S. Orange Avenue,
Suite 200
Orlando, FL 32809
Phone: 407-895-0324
Fax: 407-895-0325
www.feg-inc.us

THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY GREGORY R. CRAWFORD, P.E. ON July 17, 2024 USING A DIGITAL SIGNATURE.
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.
FLORIDA ENGINEERING GROUP, INC. CERTIFICATE No. 00000536
No 91335
STATE OF FLORIDA
GREGORY R. CRAWFORD, P.E.
LICENSE No. 91335

19-070 Cover.dwg

BOUNDARY & TOPOGRAPHIC SURVEY



DESCRIPTION:

PARCEL A:
THE SOUTHWEST 1/4 OF THE SOUTHWEST 1/4, SECTION 19, TOWNSHIP 24 SOUTH, RANGE 36 EAST, BREVARD COUNTY, FLORIDA, SUBJECT TO (1) THE EASEMENT FOR THE RIGHT-OF-WAY OF RANGE ROAD OVER THE WEST 33 FEET OF SAID PARCEL (OFFICIAL RECORDS BOOK 453, PAGE 594); AND (2) 100 FOOT EASEMENT OF FLORIDA GAS TRANSMISSION DESCRIBED IN OFFICIAL RECORDS BOOK 506, PAGE 602 OF SAID PUBLIC RECORDS.

PARCEL B:
THE NORTH 681.24 FEET OF THE NORTHWEST 1/4 OF THE NORTHWEST 1/4 OF SECTION 30, TOWNSHIP 24 SOUTH, RANGE 36 EAST, BREVARD COUNTY, FLORIDA, EXCEPT THE LAND IN DEED BOOK 90, PAGE 62, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHWEST CORNER OF SAID SECTION 30, TOWNSHIP 24 SOUTH, RANGE 36 EAST; THENCE SOUTH 00°14'05" WEST ALONG THE WEST LINE OF SAID SECTION 30 (SAID WEST LINE ALSO BEING THE CENTERLINE OF RANGE ROAD) A DISTANCE OF 681.14 FEET; THENCE SOUTH 89°45'39" EAST A DISTANCE OF 33 FEET TO A POINT ON THE EASTERLY RIGHT-OF-WAY LINE OF RANGE ROAD AND THE NORTHWEST CORNER OF THE SUBDIVISION OF SABAL LAKE ESTATES, UNIT ONE, PER PLAT RECORDED IN PLAT BOOK 30, PAGE 12 OF THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA; THENCE NORTH 89°28'16" EAST ALONG THE NORTH LINE OF SAID SUBDIVISION AND AN EXTENSION THEREOF, A DISTANCE OF 1230.19 FEET TO A POINT IN THE WESTERLY LINE OF THE PARCEL DESCRIBED IN DEED RECORDED IN DEED BOOK 90, PAGE 62 OF SAID PUBLIC RECORDS (WHICH POINT IS 45.91 FEET FROM THE SOUTHWEST CORNER OF SAID PARCEL); THENCE NORTH 15°03'27" WEST ALONG SAID WEST LINE 702.08 FEET TO THE NORTH LINE OF SAID SECTION 30; THENCE SOUTH 89°50'35" WEST ALONG SAID NORTH LINE OF SECTION 30, A DISTANCE OF 1078.01 FEET TO THE POINT OF BEGINNING, LESS AND EXCEPT LAND DESCRIBED IN WARRANTY DEED RECORDED IN OFFICIAL RECORDS BOOK 2525, PAGE 2797, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA SUBJECT TO THE FOLLOWING: (1) THE RIGHT-OF-WAY OF RANGE ROAD OVER THE WEST 33 FEET OF SAID PARCEL (OFFICIAL RECORDS BOOK 690, PAGE 501); (2) THE 30-FOOT EASEMENT OF FLORIDA GAS TRANSMISSION DESCRIBED IN OFFICIAL RECORDS BOOK 506, PAGE 602 OF SAID PUBLIC RECORDS; (3) THE RIGHTS OF SOUTHERN BELL TELEPHONE AND TELEGRAPH COMPANY OVER THE SOUTH 30 FEET OF THE NORTH 133 FEET OF THE EAST 99 FEET OF THE WEST 83 FEET OF SAID PARCEL; (4) THE EASEMENT OF FLORIDA POWER & LIGHT COMPANY, DATED 9 JULY 1990, OVER THE SOUTH 5 FEET OF THE WEST 4 FEET OF THE NORTH 261 FEET OF SAID PARCEL; (5) THE RIGHTS OF THE CITY OF COCOA TO THE SOUTH 25 FEET OF THE NORTH 183 FEET OF THE EAST 20 FEET OF THE WEST 53 FEET OF SAID SECTION 30 AND THE EASEMENT OVER THE EAST 33 FEET OF THE WEST 48 FEET OF SAID PARCEL FOR SEWER LIFT STATION AND SEWER LINES; (6) THE GRANTOR, ISMAIEL, INC., FOR ITSELF AND ITS SUCCESSORS AND ASSIGNS, HEREBY RESERVES AN EXCLUSIVE EASEMENT FOR THE CONSTRUCTION, MAINTENANCE AND USE OF DITCHES, SWALES AND OTHER WATER RETENTION, MOVEMENT AND CONTROL FACILITIES AND OTHER USES, OVER, UNDER AND ACROSS THE LANDS LYING WEST OF, ADJACENT TO, AND WITHIN 50 FEET OF THE WEST LINE OF THE PARCEL DESCRIBED IN DEED BOOK 90, PAGE 62 OF SAID PUBLIC RECORDS. SO BE RELATED TO THE EASEMENT IN OFFICIAL RECORDS BOOK 2833, PAGE 4966, OF SAID PUBLIC RECORDS.

GENERAL SURVEY NOTES:

1. BEARING STRUCTURE IS BASED ON THE MONUMENTED NORTH LINE OF SABEL LAKE ESTATES; BEING: N89°48'16"E PER PLAT BOOK 30, PAGE 12, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA.

2. THIS SURVEY REFLECTS ONLY MATTERS OF RECORD AS PROVIDED BY THE CLIENT OR CLIENTS REPRESENTATIVE.

3. THIS SURVEY WAS MADE ON THE GROUND. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND EXISTING DRAWINGS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. ENGINEER AND CONTRACTOR SHALL VERIFY MEASUREMENTS OF CONNECTIONS TO EXISTING UTILITIES BEFORE ORDERING MATERIALS AND BEFORE COMMENCEMENT OF CONSTRUCTION. IF THERE IS A DISCREPANCY BETWEEN THE MEASUREMENTS SHOWN HEREON AND THE VERIFYING MEASUREMENTS, THIS SURVEYOR SHALL BE CONTACTED IMMEDIATELY TO FURTHER VERIFY THE DISCREPANCY.

4. THIS SITE LIES IN ZONE(S) X AND AE PER FLOOD INSURANCE RATE MAP NO. 12009C0320H & 03-17-2014, COMMUNITY NO. 120020, CITY OF COCOA, FLORIDA, EFFECTIVE 01-29-2021 & 03-17-2014, RESPECTIVELY.

5. ACCORDING TO FLORIDA STATUTES, CHAPTER 472.025, A LAND SURVEYOR SHALL NOT AFFIX HIS SEAL OR NAME TO ANY PLAN OR DRAWING WHICH DEPICTS WORK WHICH HE IS NOT LICENSED TO PERFORM OR WHICH IS BEYOND HIS PROFESSION OR SPECIALTY THEREIN. THEREFORE, WE ARE UNABLE TO CERTIFY AS TO MUNICIPAL ZONING COMPLIANCE, INTERPRETATION OF ZONING CODES OR THE DETERMINATION OF VIOLATIONS THEREOF.

6. THIS SURVEY MADE WITHOUT BENEFIT OF COMMITMENT FOR TITLE OR SEARCH OF PUBLIC RECORDS FOR EASEMENTS AND/OR ENCUMBRANCES THAT MAY AFFECT THIS SUBJECT PROPERTY.

7. ELEVATIONS ARE BASED ON BENCHMARK DESIGNATION E&AOS, BEING: 20.78 FEET, (NAVD 88), PUBLISHED BY BREVARD COUNTY, FLORIDA.

8. THE MAPPED FEATURES SHOWN HEREON ARE RELATIVE TO FLORIDA STATE PLANE COORDINATE SYSTEM (EAST ZONE, NAD(83)-(2011)-(EPOCH 2010.0000)), ESTABLISHED PER FDOT FPRN.

WETLAND AREA:

WETLAND AREA 1 (INTENTIONALLY DELETED)
WETLAND AREA 2 = 841,711 SQ. FT./19.3230 ACRES
WETLAND AREA 3 = 354,406 SQ. FT./8.1360 ACRES
WETLAND AREA 4 = 12,310 SQ. FT./0.2826 ACRES
WETLAND AREA 5 = 8,063 SQ. FT./0.1851 ACRES
WETLAND AREA TOTAL = 1,226,915 SQ. FT./28.2120 ACRES
UPLAND AREA = 1,278,004 SQ. FT./29.3380 ACRES

LAND AREA:

CONTAINS 2,493,080 SQUARE FEET OR 57.2352 ACRES MORE OR LESS.

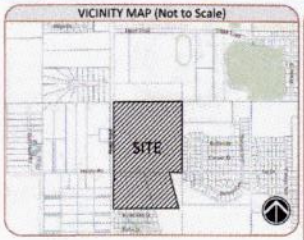
Certified to:

KARALI ASSOCIATES, LLC

This Survey is "Not Valid" without the original signature and seal of this Florida licensed Surveyor and Mapper, unless provided with electronic signature. The seal appearing on this document was authorized by the signing Professional Surveyor and Mapper on the Date of the electronic signature.

GRAPHIC SCALE
0 120 240
1 INCH = 120 FEET

VICINITY MAP (Not to Scale)



LEGEND

ADDRESS:
RANGE ROAD
COCOA, FL 32926

Job Information

JOB NO.	9041AB
CF NO.	BRV-19-24 36
FIELD DATE:	07-14-2021
SCALE:	VARIES
DRAWN BY:	PJT

Revisions

Date	Description	By
12-28-2021	Inverts	PT
1/31/2022	Wetland Table	JB
2/11/2022	Storm Info	PT
03/16/2023	ADDITIONAL UTILITY/TOPOGRAPHY	DDK
04/20/2023	REMOVE WETLAND 1	JB

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910 Belle Avenue, Suite 1100
Casselberry, FL 32708
Phone: 407-677-0200
Licensed Business No. 7833
www.altamaxsurveying.com

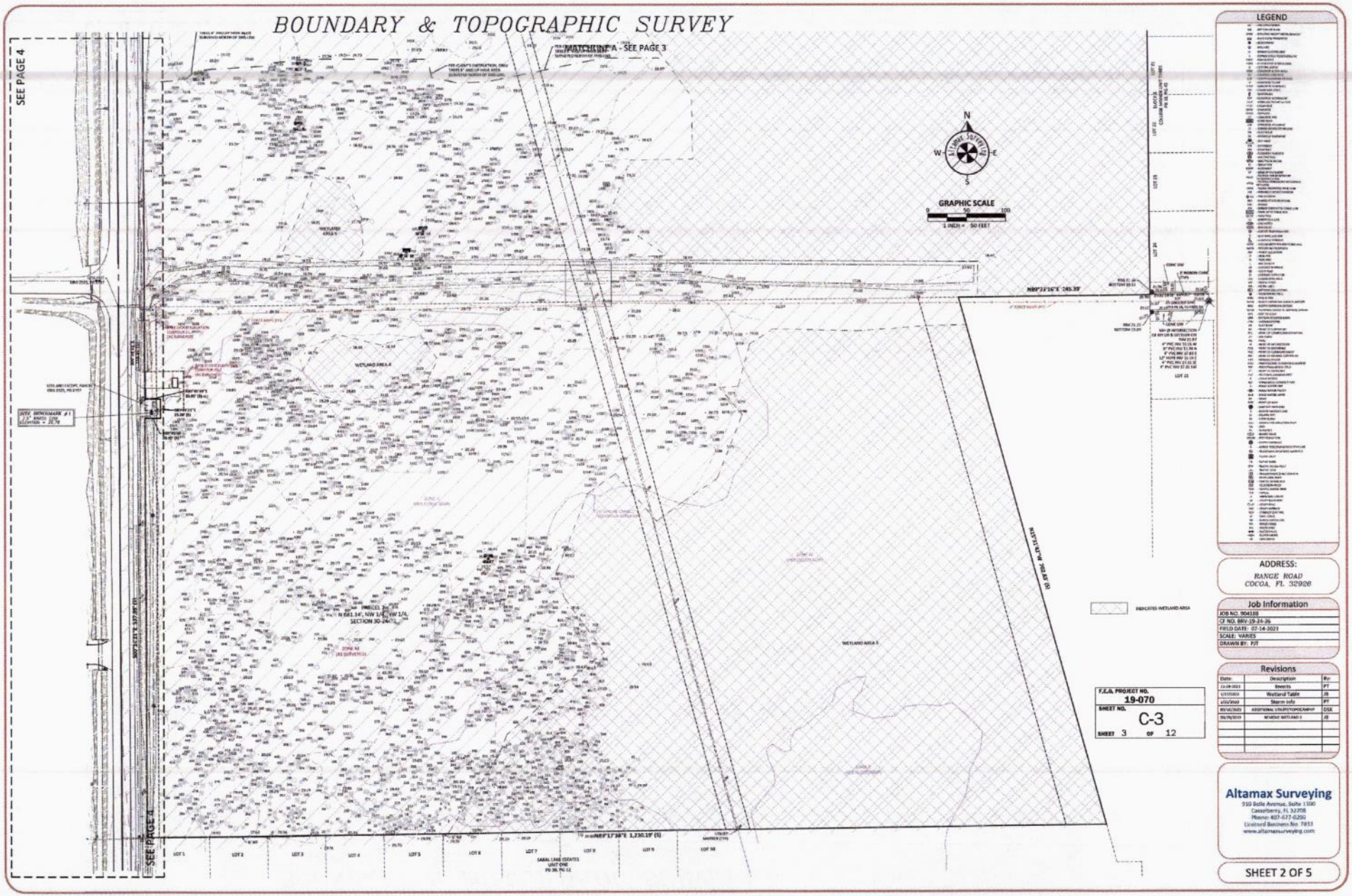
James D. Bray PSM 6507

SHEET 1 OF 5

F.E.A. PROJECT NO. 19-070
SHEET NO. C-2
SHEET 2 OF 12

19-070 Survey.dwg

BOUNDARY & TOPOGRAPHIC SURVEY



LEGEND

ADDRESS:
RANGE ROAD
COCOA, FL 32926

Job Information	
JOB NO.	904108
CF NO.	BRV-19-24-26
FIELD DATE:	07-14-2023
SCALE:	VARIES
DRAWN BY:	PJT

Revisions		
Date:	Description	By:
11-04-2021	Inverts	PT
1/17/2022	Wetland Table	JB
2/22/2022	Storm Info	PT
05/16/2023	ADDITIONAL UTILITY/TOPOGRAPHY	DSK
06/29/2023	REMOVE WETLAND 5	JB

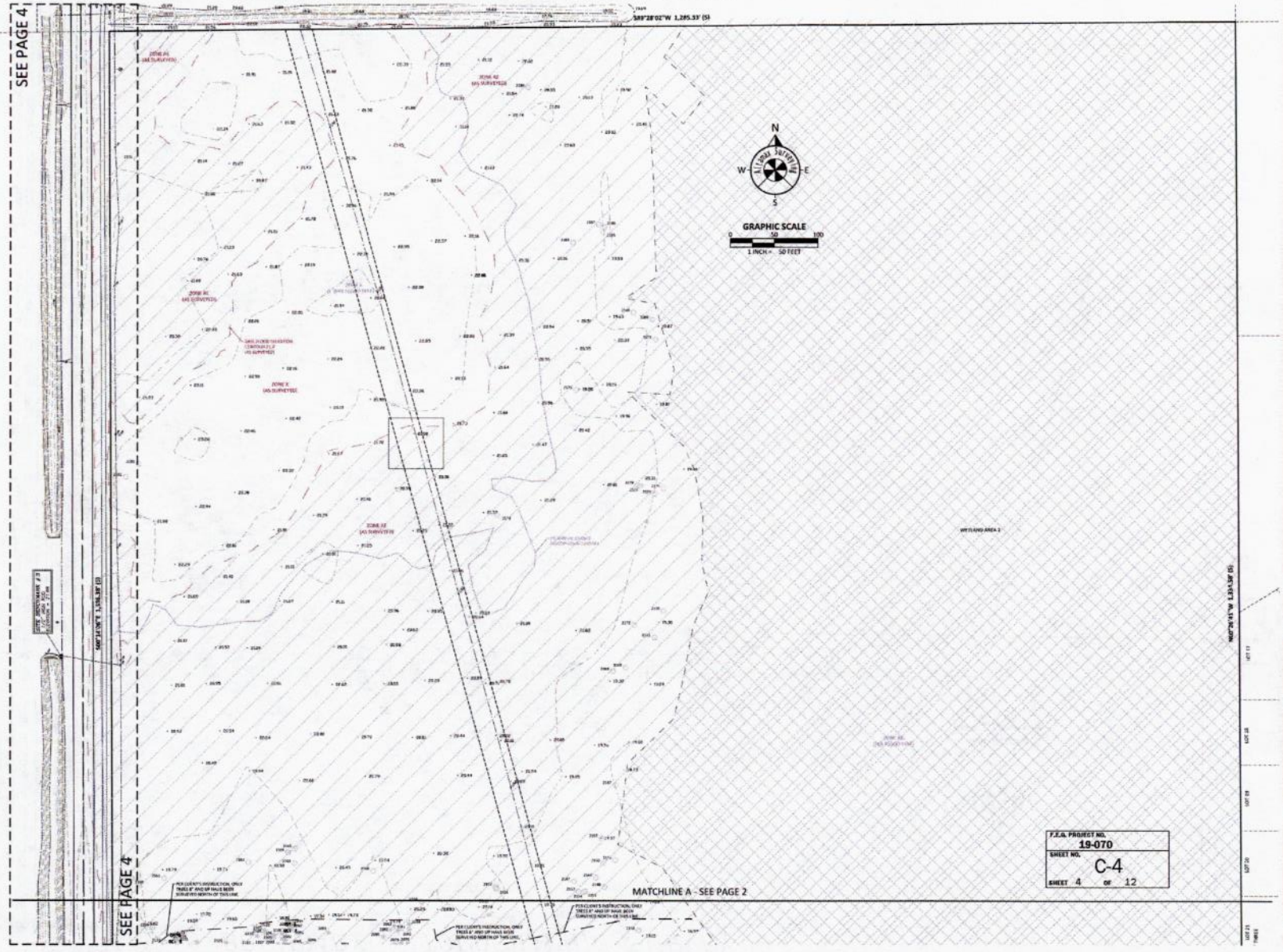
F.E.B. PROJECT NO.
19-070
SHEET NO.
C-3
SHEET 3 OF 12

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Phone: 407-677-0290
Licensed Business No. 7853
www.altamaxsurveying.com

SHEET 2 OF 5

19-070 Survey.dwg

BOUNDARY & TOPOGRAPHIC SURVEY



LEGEND

ADDRESS:
RANGE ROAD
COCOA, FL 32926

Job Information

JOB NO: 906330
CF NO, BRV-19-24-26
FIELD DATE: 07-24-2023
SCALE: VARIES
DRAWN BY: PJT

Revisions

Date:	Description	By:
12-09-2023	Sheets	PT
1/17/2024	Wetland Table	JB
2/21/2024	Storm Info	PT
05/15/2025	ADDITIONAL UTILITY TOPOGRAPHY	DSE
06/09/2025	REMOVE WETLAND 1	JB

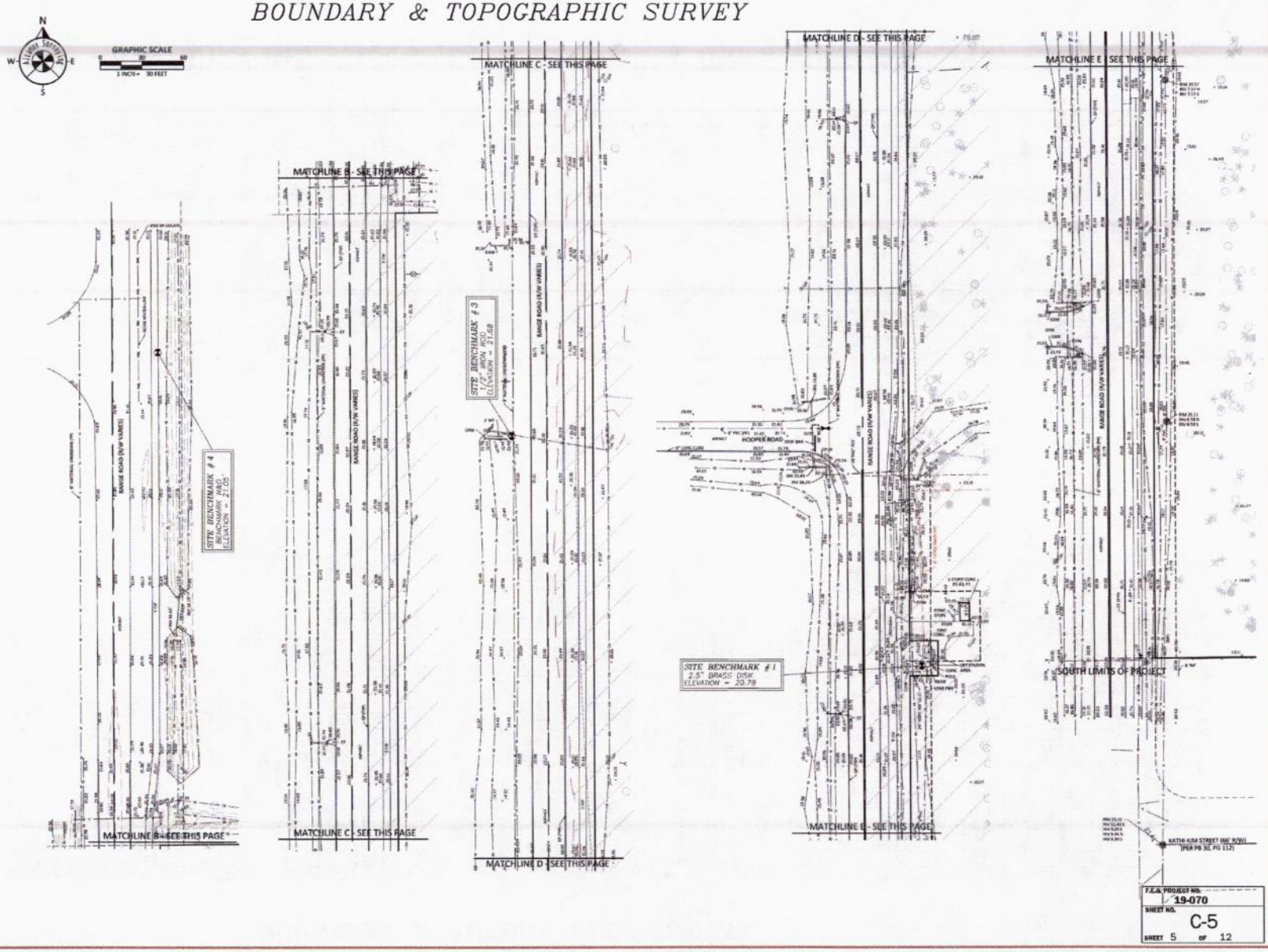
F.E.B. PROJECT NO.
19-070
SHEET NO.
C-4
SHEET 4 OF 12

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SHEET 3 OF 5

19-070 Survey.dwg

BOUNDARY & TOPOGRAPHIC SURVEY



LEGEND

ADDRESS:
RANGE ROAD
COCOA, FL 32926

Job Information

JOB NO. 904388	
CF NO. SRV-19-24-36	
FIELD DATE: 07-14-2021	
SCALE: VARIES	
DRAWN BY: PJT	

Revisions

Date:	Description	By:
12-10-2021	Inverts	PT
1/11/2022	Wetland Table	JR
1/31/2022	Storm Info	PT
03/14/2022	ADDITIONAL UTILITY INFORMATION	DGE
10/28/2022	REVISE WETLAND 1	JR

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F.E.S. PROJECT NO.
19-070

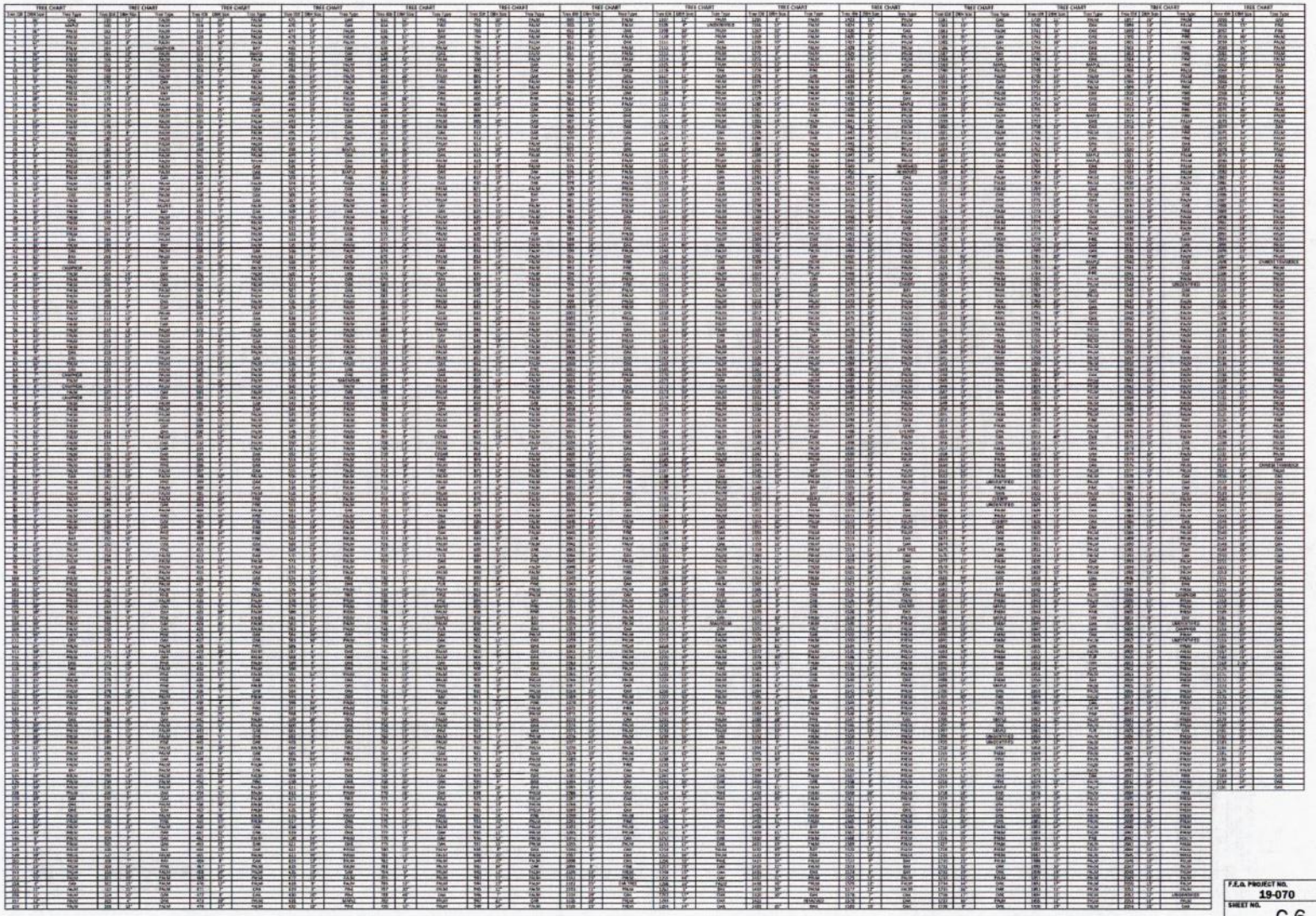
SHEET NO.
C-5

SHEET 5 OF 12

SHEET 4 OF 5

19-070 Survey.dwg

BOUNDARY & TOPOGRAPHIC SURVEY



LEGEND



ADDRESS:

RANGE ROAD
COCOA, FL 32926

Job Information

JOB NO. 804188
CT NO. SEC-19-24-36
FIELD DATE: 07-14-2021
SCALE: VARIES
DRAWN BY: PJT

Revisions

Date:	Description	By:
12-08-2021	Inserts	PT
1/11/2022	Wetland Table	JB
1/31/2022	Storm Info	PT
10/14/2022	ADDITIONAL UTILITY RECORDS	CDE
10/19/2023	REVISE SETTLER'S	JB

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www.altamaxsurveying.com

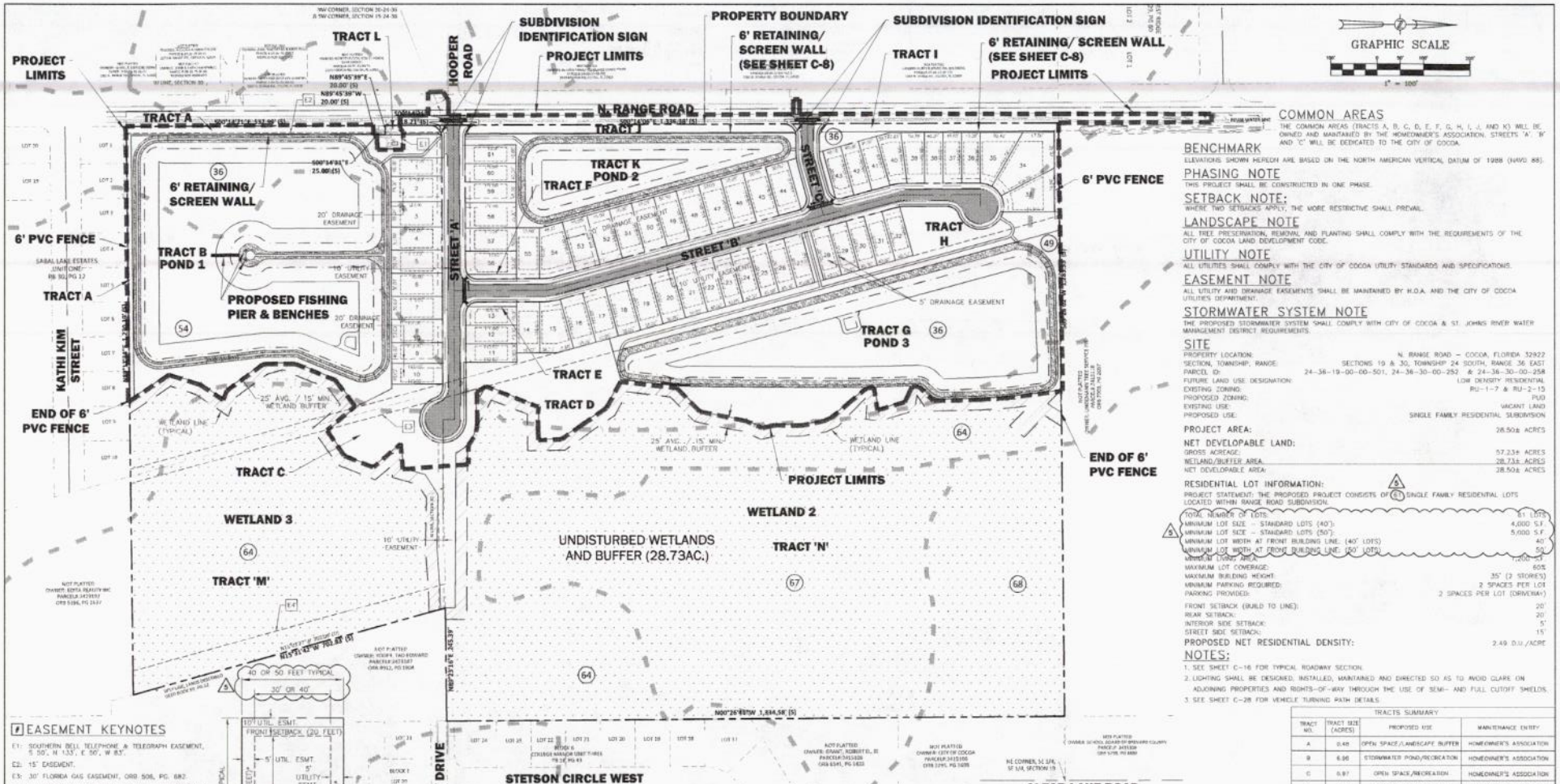
SHEET 5 OF 5

F.E.A. PROJECT NO.
19-070

SHEET NO.
C-6

SHEET 6 OF 12

19-070 Survey.dwg



COMMON AREAS

THE COMMON AREAS (TRACTS A, B, C, D, E, F, G, H, I, J, AND K) WILL BE OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION. STREETS 'A', 'B' AND 'C' WILL BE DEDICATED TO THE CITY OF COCOA.

BENCHMARK

ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

PHASING NOTE

THIS PROJECT SHALL BE CONSTRUCTED IN ONE PHASE.

SETBACK NOTE:

WHERE TWO SETBACKS APPLY, THE MORE RESTRICTIVE SHALL PREVAIL.

LANDSCAPE NOTE

ALL TREE PRESERVATION, REMOVAL AND PLANTING SHALL COMPLY WITH THE REQUIREMENTS OF THE CITY OF COCOA LAND DEVELOPMENT CODE.

UTILITY NOTE

ALL UTILITIES SHALL COMPLY WITH THE CITY OF COCOA UTILITY STANDARDS AND SPECIFICATIONS.

EASEMENT NOTE

ALL UTILITY AND DRAINAGE EASEMENTS SHALL BE MAINTAINED BY H.O.A. AND THE CITY OF COCOA UTILITIES DEPARTMENT.

STORMWATER SYSTEM NOTE

THE PROPOSED STORMWATER SYSTEM SHALL COMPLY WITH CITY OF COCOA & ST. JOHNS RIVER WATER MANAGEMENT DISTRICT REQUIREMENTS.

SITE

PROPERTY LOCATION:	N. RANGE ROAD – COCOA, FLORIDA 32922
SECTION, TOWNSHIP, RANGE:	SECTIONS 19 & 30, TOWNSHIP 24 SOUTH, RANGE 36 EAST
PARCEL ID:	24-36-19-00-00-501, 24-36-30-00-252 & 24-36-30-00-258
FUTURE LAND USE DESIGNATION:	LOW DENSITY RESIDENTIAL
EXISTING ZONING:	RU-1-7 & RU-2-15
PROPOSED ZONING:	PUD
EXISTING USE:	VACANT LAND
PROPOSED USE:	SINGLE FAMILY RESIDENTIAL SUBDIVISION
PROJECT AREA:	28.50± ACRES
NET DEVELOPABLE LAND:	
GROSS ACREAGE:	57.23± ACRES
WETLAND/BUFFER AREA:	28.73± ACRES
NET DEVELOPABLE AREA:	28.50± ACRES

RESIDENTIAL LOT INFORMATION:

PROJECT STATEMENT: THE PROPOSED PROJECT CONSISTS OF (5) SINGLE FAMILY RESIDENTIAL LOTS LOCATED WITHIN RANGE ROAD SUBDIVISION.

TOTAL NUMBER OF LOTS:	51 LOTS
MINIMUM LOT SIZE – STANDARD LOTS (40'):	4,000 S.F.
MINIMUM LOT SIZE – STANDARD LOTS (50'):	5,000 S.F.
MINIMUM LOT WIDTH AT FRONT BUILDING LINE: (40' LOTS)	40'
MINIMUM LOT WIDTH AT FRONT BUILDING LINE: (50' LOTS)	50'
MINIMUM LIVING AREA:	1,400 S.F.
MAXIMUM LOT COVERAGE:	60%
MAXIMUM BUILDING HEIGHT:	35' (2 STORIES)
MINIMUM PARKING REQUIRED:	2 SPACES PER LOT
PARKING PROVIDED:	2 SPACES PER LOT (DRIVEWAY)
FRONT SETBACK (BUILD TO LINE):	20'
REAR SETBACK:	20'
INTERIOR SIDE SETBACK:	5'
STREET SIDE SETBACK:	15'
PROPOSED NET RESIDENTIAL DENSITY:	2.49 D.U./ACRE

NOTES:

1. SEE SHEET C-16 FOR TYPICAL ROADWAY SECTION.
2. LIGHTING SHALL BE DESIGNED, INSTALLED, MAINTAINED AND DIRECTED SO AS TO AVOID GLARE ON ADJOINING PROPERTIES AND RIGHTS-OF-WAY THROUGH THE USE OF SEMI- AND FULL CUTOFF SHIELDS.
3. SEE SHEET C-28 FOR VEHICLE TURNING PATH DETAILS.

TRACTS SUMMARY

TRACT NO.	TRACT SIZE (ACRES)	PROPOSED USE	MAINTENANCE ENTITY
A	0.48	OPEN SPACE/LANDSCAPE BUFFER	HOMEOWNER'S ASSOCIATION
B	6.96	STORMWATER POND/RECREATION	HOMEOWNER'S ASSOCIATION
C	0.97	OPEN SPACE/RECREATION	HOMEOWNER'S ASSOCIATION
D	0.90	OPEN SPACE/RECREATION	HOMEOWNER'S ASSOCIATION
E	0.02	OPEN SPACE	HOMEOWNER'S ASSOCIATION
F	0.03	OPEN SPACE	HOMEOWNER'S ASSOCIATION
G	5.83	STORMWATER POND/RECREATION	HOMEOWNER'S ASSOCIATION
H	0.20	OPEN SPACE/RECREATION	HOMEOWNER'S ASSOCIATION
I	0.39	OPEN SPACE/LANDSCAPE BUFFER	HOMEOWNER'S ASSOCIATION
J	0.32	OPEN SPACE/LANDSCAPE BUFFER	HOMEOWNER'S ASSOCIATION
K	2.03	STORMWATER POND TRACT	HOMEOWNER'S ASSOCIATION
L	0.05	OPEN SPACE/LANDSCAPE BUFFER	HOMEOWNER'S ASSOCIATION
M	0.05	WETLAND/BUFFER	HOMEOWNER'S ASSOCIATION
N	0.05	WETLAND/BUFFER	HOMEOWNER'S ASSOCIATION
STREETS A, B, & C	2.59	ROADWAYS	CITY OF COCOA

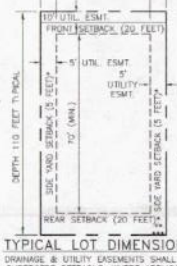
EASEMENT KEYNOTES

E1: SOUTHERN BELL TELEPHONE & TELEGRAPH EASEMENT, S 50', N 133', E 50', W 83'.
E2: 15' EASEMENT.
E3: 30' FLORIDA GAS EASEMENT, ORB 506, PG. 682.
E4: 50' EASEMENT WEST OF, ADJACENT TO AND WITHIN 50', WEST LINE DESCRIBED IN DEED BOOK 69, PG. 62.

LEGEND:

(36) MYAKKA SAND, 0–2% SLOPES, TYPE A/D
(49) POMELLO SAND, 0–5% SLOPES, TYPE A
(54) ST. JOHNS SAND, 0–2% SLOPES, TYPE B/D
(64) TERRA CEIA MUCK, FREQUENTLY FLOODED, TYPE A/D
(67) TOMOKA MUCK, FREQUENTLY PONDED, 0–1% SLOPES, TYPE A/D
(68) TOMOKA MUCK, DRAINED, FREQUENTLY PONDED, 0–1% SLOPES, TYPE A/D
SOIL LIMITS

TYPICAL LOT DIMENSIONS



* DRAINAGE & UTILITY EASEMENTS SHALL SUPERCEDE SETBACKS, WHERE APPLICABLE.
**REAR SETBACK 25' FOR LOTS (33 & 34) (5)
*** REAR SETBACK FOR POOLS AND POOL ENCLOSURES SHALL BE 5'.

ADT TRAFFIC DATA PER ITE

AVERAGE DAILY TRAFFIC
SINGLE FAMILY LOTS = 61 x 9.52 ADT/DU = 581 ADT

PEAK HOUR TRAFFIC
SINGLE FAMILY LOTS = 61 x 0.99 PHT/LOT = 60 PHT

STORMWATER STATEMENT:

THE EXISTING DRAINAGE FROM THE SITE GENERALLY FLOWS TO THE EAST INTO THE WETLANDS AND TO THE WEST INTO RANGE ROAD. AN EXISTING DITCH RUNS THROUGH THE MIDDLE OF THE PROPERTY THAT CONNECTS THE WETLAND TO THE EAST TO WITH THE DITCH IN RANGE ROAD RIGHT-OF-WAY TO ALLOW THE WETLAND OUTFALL TO THE WEST INTO RANGE ROAD AND THEN WEST UNDER RANGE ROAD TO HOOPER ROAD. THE PROPOSED DEVELOPMENT WILL MIMIC EXISTING CONDITIONS IN THAT THE RUNOFF WILL BE DIRECTED TO THE PONDS FOR WATER QUALITY TREATMENT PRIOR TO DISCHARGING INTO THE WETLANDS. THE WETLANDS WOULD THEN FLOW WEST TO RANGE ROAD VIA A PROPOSED 34"x53" PIPE THAT WILL REPLACE THE EXISTING DITCH.

SITE AREA CALCULATIONS (PROJECT AREA)

	EXISTING			PROPOSED		
BUILDING:	0.00 S.F.			149,100 S.F.		
PAVING/CURBS	0.00 S.F.			64,780 S.F.		
SIDEWALK	0.00 S.F.			51,693 S.F.		
IMPERVIOUS AREA	0.00 S.F.	0.0 AC	000.0 %	265,573 S.F.	6.10 AC	21.4 %
PERVIOUS AREA	1,241,460 S.F. ±	28.5 AC ±	100.0 %	975,887 S.F.	22.40 AC	78.6 %
TOTAL SITE AREA	1,241,460 S.F. ±	28.5 AC ±	100.0 %	1,241,460 S.F. ±	28.5 AC ±	100.0 %
(5) (51) LOTS @ 60% MAX. LOT COVERAGE						
MINIMUM COMMON SPACE REQUIRED				20 %	28.5 x 0.20 = 5.7 Ac.	
COMMON SPACE PROVIDED:						
TRACT B (100%)					6.96 Ac.	
TRACT G					1.69 Ac.	
TRACT H					0.20 Ac.	
TRACT K					0.60 Ac.	
TOTAL COMMON SPACE PROVIDED:					9.45 Ac.	

PLAN LEGEND

PROPERTY BOUNDARY
LOT/TRACT LINE
EASEMENT LINE
WETLAND LINE
ROAD CENTERLINE
PROJECT AREA LIMITS
WETLAND AREA
WETLAND BUFFER

DATE	REVISIONS	BY	DESIGN
7/15/24	6 REVISED PER CITY COMMENTS	JM	GRC
1/09/24	5 REVISED PER CITY COMMENTS	ST/JM	GRC
10/03/23	4 REVISED PER FLORIDA GAS TRANSMISSION	SMT	GRC
9/25/23	3 REVISED PER FLORIDA GAS TRANSMISSION	ST/JM	GRC
4/20/23	2 REVISED PER CITY AND SJRWMD COMMENTS	JM	GRC

RANGE ROAD PRELIMINARY PUD
CITY OF COCOA, FLORIDA

FEG FLORIDA ENGINEERING GROUP
Engineering the Future
5127 S. Orange Avenue, Suite 200
Orlando, FL 32809
Phone: 407-895-0324
Fax: 407-895-0325
www.feg-inc.us

OVERALL SITE PLAN

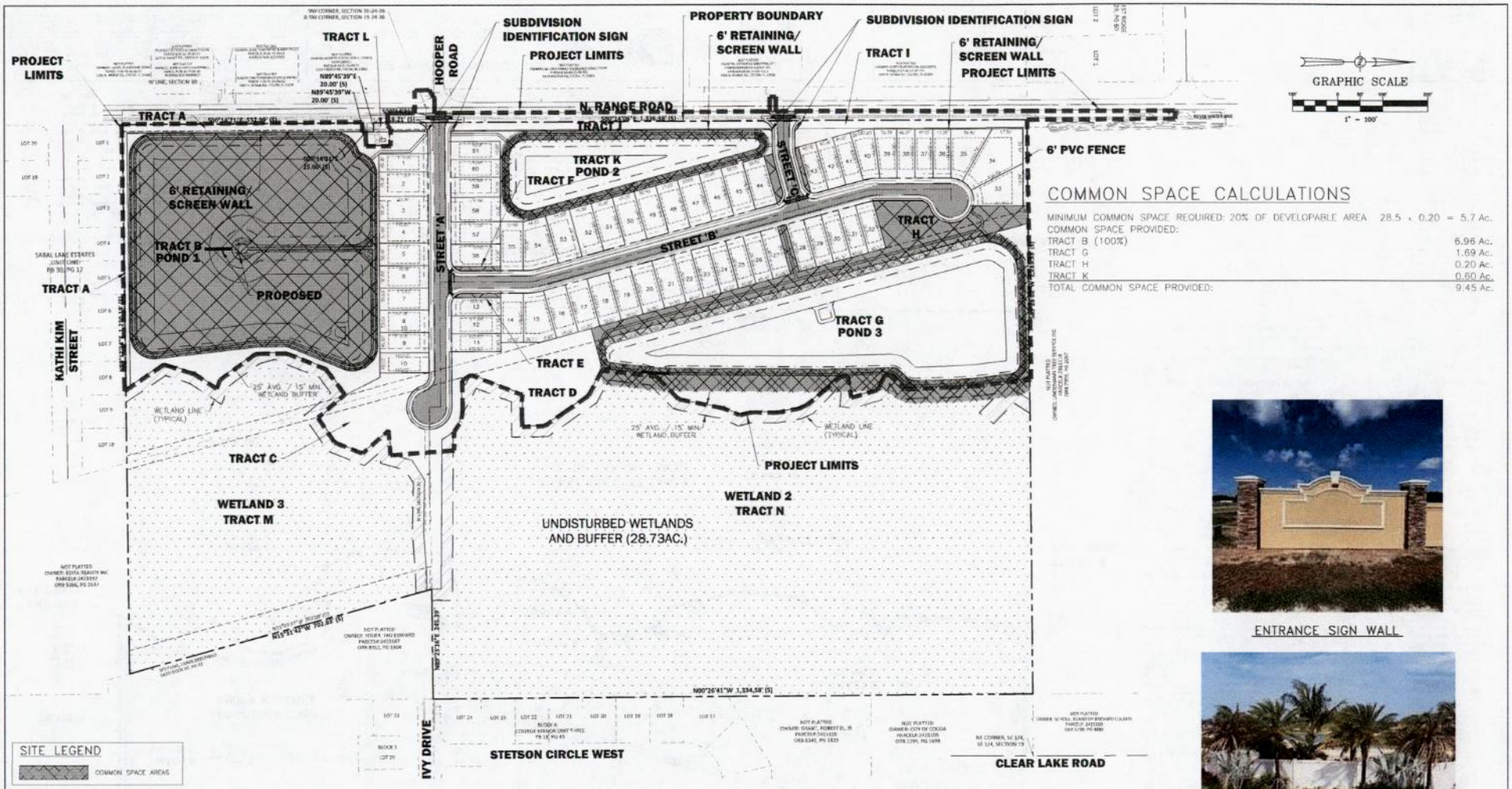
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
GRC	JWM	GRC	GRC

PROJECT NO. 19-070
SCALE 1"=100'
DATE MAY 25, 2022
SHEET NO. C-7
SHEET 7 OF 12

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GREGORY R. CRAWFORD, P.E. LICENSE NO. 51336

19-070 OverallSitePlan.dwg



COMMON SPACE CALCULATIONS

MINIMUM COMMON SPACE REQUIRED: 20% OF DEVELOPABLE AREA 28.5 x 0.20 = 5.7 Ac.

COMMON SPACE PROVIDED:

TRACT B (100%)	6.96 Ac.
TRACT G	1.69 Ac.
TRACT H	0.20 Ac.
TRACT K	0.60 Ac.
TOTAL COMMON SPACE PROVIDED:	9.45 Ac.

ENTRANCE SIGN WALL

SCREEN WALL

DATE	REVISIONS	BY	DESIGN
7/15/24	5 REVISED PER CITY COMMENTS	JM	GRC
1/09/24	4 REVISED PER CITY COMMENTS	ST/JM	GRC
10/03/23	3 REVISED PER FLORIDA GAS TRANSMISSION	SMT	GRC
9/25/23	2 REVISED PER FLORIDA GAS TRANSMISSION	ST/JM	GRC
4/20/23	1 REVISED PER CITY AND SJRWMD COMMENTS	JM	GRC

RANGE ROAD PRELIMINARY PUD

CITY OF COCOA, FLORIDA

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COMMON SPACE PLAN

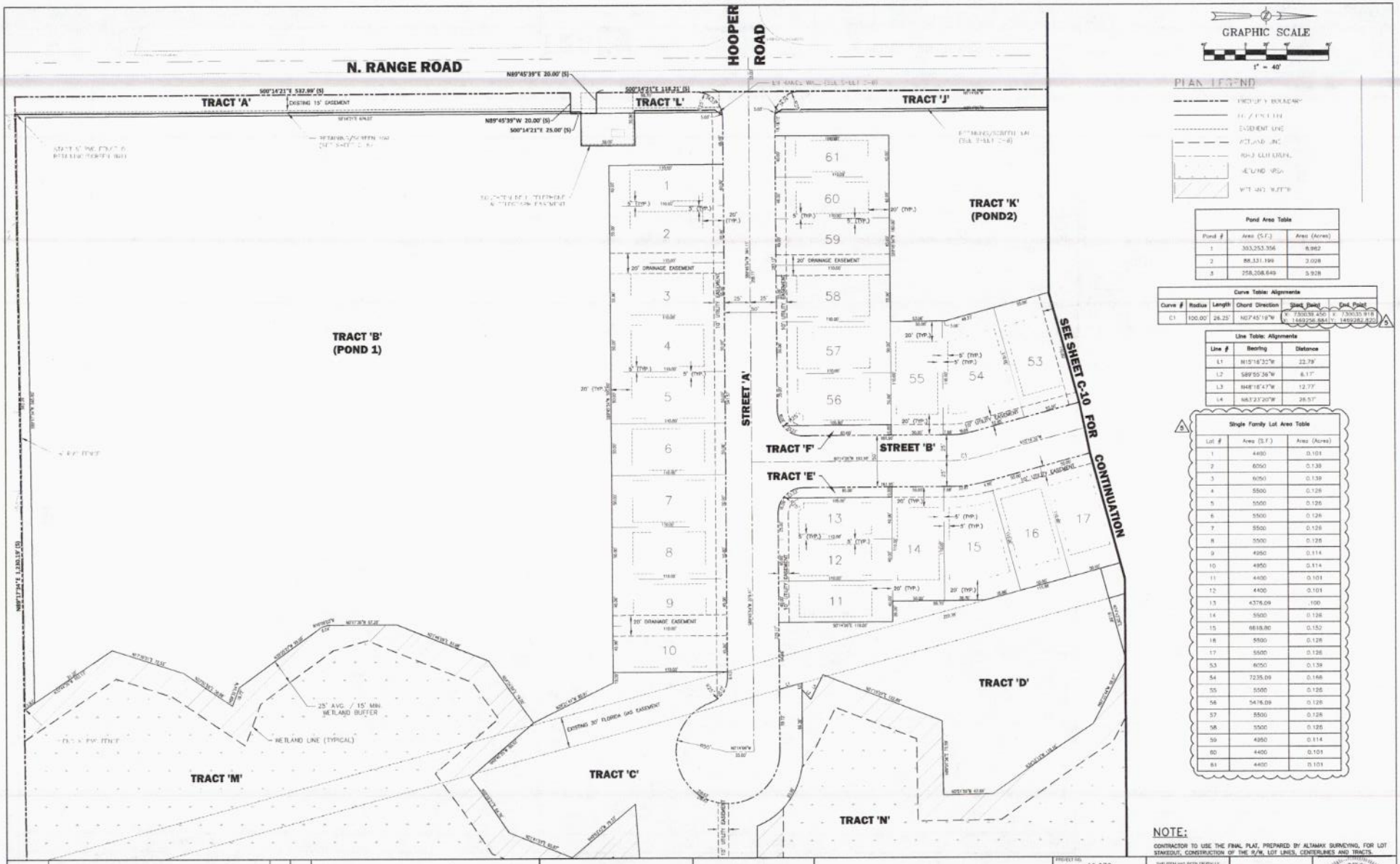
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
GRC	JWM	GRC	GRC

PROJECT NO. 19-070
SCALE 1"=100'
DATE MAY 25, 2022
SHEET NO. C-8
SHEET 8 OF 12

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LICENSE No. 51335
STATE OF FLORIDA
GREGORY R. CRAWFORD, P.E.
LICENSE NO. 51335

19-070 OverallSitePlan.dwg



Pond Area Table		
Pond #	Area (S.F.)	Area (Acres)
1	303,253.356	6.962
2	88,331.199	2.028
3	258,208.649	5.928

Curve Table: Alignments					
Curve #	Radius	Length	Chord Direction	Start Point	End Point
C1	100.00'	26.25'	N07°45'19"W	X: 730539.450' Y: 1469256.884'	X: 730535.918' Y: 1469282.620'

Line Table: Alignments		
Line #	Bearing	Distance
L1	N15°16'32"W	22.79'
L2	S89°55'36"W	6.17'
L3	N48°18'47"W	12.77'
L4	N63°23'20"W	26.57'

Single Family Lot Area Table		
Lot #	Area (S.F.)	Area (Acres)
1	4400	0.101
2	6050	0.139
3	6050	0.139
4	5500	0.126
5	5500	0.126
6	5500	0.126
7	5500	0.126
8	5500	0.126
9	4950	0.114
10	4950	0.114
11	4400	0.101
12	4400	0.101
13	4376.09	.100
14	5500	0.126
15	6618.80	0.152
16	5500	0.126
17	5500	0.126
53	6050	0.139
54	7235.09	0.166
55	5500	0.126
56	5476.09	0.126
57	5500	0.126
58	5500	0.126
59	4950	0.114
60	4400	0.101
61	4400	0.101

NOTE:

CONTRACTOR TO USE THE FINAL PLAT, PREPARED BY ALTAMAX SURVEYING, FOR LOT STAKEOUT, CONSTRUCTION OF THE R/W, LOT LINES, CENTERLINES AND TRACTS.

DATE	REVISIONS	BY	CHKD
7/15/24	4 REVISED PER CITY COMMENTS	JM	GRC
1/09/24	3 REVISED PER CITY COMMENTS	ST/JM	GRC
10/03/23	2 REVISED PER FLORIDA GAS TRANSMISSION	SMT	GRC
9/25/23	1 REVISED PER FLORIDA GAS TRANSMISSION	ST/JM	GRC
4/20/23	REVISED PER CITY AND SURWMD COMMENTS	JM	GRC

RANGE ROAD PRELIMINARY PUD

CITY OF COCOA, FLORIDA

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SITE GEOMETRY PLAN

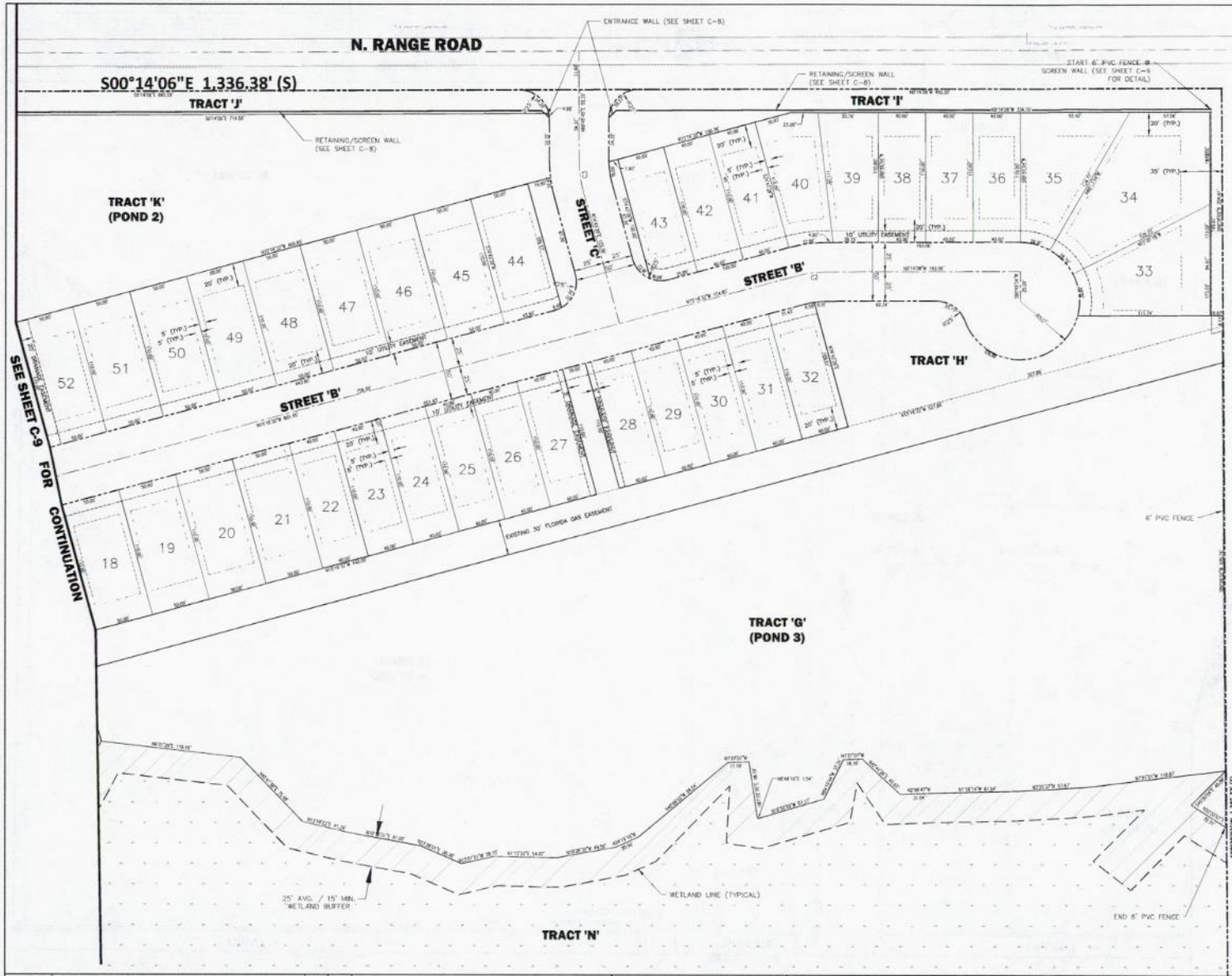
DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
GRC	JWM	GRC	GRC

PROJECT NO. 19-070
SCALE NOTED
DATE MAY 25, 2022
SHEET NO. C-9
SHEET 9 OF 12

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GREGORY R. CRAWFORD P.E. LICENSE NO. 81335 STATE OF FLORIDA

19-070 Plans.dwg



GRAPHIC SCALE

1" = 40'

PLAN LEGEND

- PROPERTY BOUNDARY
- LOT/TRACT LINE
- EASEMENT LINE
- WETLAND LINE
- ROAD CENTERLINE
- WETLAND AREA
- WETLAND BUFFER

Pond Area Table

Pond #	Area (S.F.)	Area (Acres)
1	203,253.356	5.962
2	88,331.199	2.028
3	258,268.649	5.928

Curve Table: Alignments

Curve #	Radius	Length	Chord Direction	Start Point	End Point
C2	100.00'	26.25'	N07°45'19"W	X: 729,636.865 Y: 1,492,912.398	X: 729,631.534 Y: 1,493,038.324
C3	100.00'	26.25'	N82°14'37"E	X: 729,736.315 Y: 1,492,925.960	X: 729,694.248 Y: 1,493,032.101

Single Family Lot Area Table

Lot #	Area (S.F.)	Area (Acres)	Lot #	Area (S.F.)	Area (Acres)
18	5500	0.126	38	4400	0.101
19	5500	0.126	39	4892.16	0.112
20	5505	0.126	40	5075.02	0.117
21	5500	0.126	41	4400	0.101
22	4400	0.101	42	4400	0.101
23	4400	0.101	43	4376.09	0.100
24	4400	0.101	44	5498.23	0.126
25	4400	0.101	45	5500	0.126
26	4400	0.101	46	5500	0.126
27	4400	0.101	47	5500	0.126
28	4400	0.101	48	5500	0.126
29	4400	0.101	49	5500	0.126
30	4400	0.101	50	5500	0.126
31	4400	0.101	51	5500	0.126
32	4398.80	0.101	52	5500	0.126
33	7400.58	0.170			
34	10,936.76	0.251			
35	6738.79	0.155			
36	4400	0.101			
37	4400	0.101			

NOTE:

CONTRACTOR TO USE THE FINAL PLAT, PREPARED BY ALTAMAY SURVEYING, FOR LOT STAKEOUT, CONSTRUCTION OF THE R/W, LOT LINES, CENTERLINES AND TRACTS.

DATE	REVISIONS	BY	CHECKED
7/15/24	5 REVISED PER CITY COMMENTS	JM	GRC
1/09/24	4 REVISED PER CITY COMMENTS	ST/JM	GRC
10/03/23	3 REVISED PER FLORIDA GAS TRANSMISSION	SMT	GRC
9/25/23	2 REVISED PER FLORIDA GAS TRANSMISSION	ST/JM	GRC
4/20/23	1 REVISED PER CITY AND SJRWMD COMMENTS	JM	GRC

RANGE ROAD PRELIMINARY PUD

CITY OF COCOA, FLORIDA

FEG FLORIDA ENGINEERING GROUP
Engineering the Future

5127 S. Orange Avenue, Suite 200
Orlando, FL 32809
Phone: 407-895-0324
Fax: 407-895-0325

www.feg-inc.us

SITE GEOMETRY PLAN

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
GRC	JWM	GRC	GRC

PROJECT NO. 19-070
SCALE NOTED
DATE MAY 25, 2022
SHEET NO. C-10
SHEET 10 OF 12

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY GREGORY R. CRAWFORD, 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.

GREGORY R. CRAWFORD, P.E. LICENSE NO. 61335

19-070 Plans.dwg

BEECH COLOR ELEVATIONS







FRASER COLOR ELEVATIONS







HAWTHORN COLOR ELEVATIONS







DATE	REVISIONS	BY	DESIGN
7/15/24	6 REVISED PER CITY COMMENTS	JM	GRC
1/09/24	5 REVISED PER CITY COMMENTS	ST/JM	GRC
10/03/23	4 REVISED PER FLORIDA GAS TRANSMISSION	SMT	GRC
9/25/23	3 REVISED PER FLORIDA GAS TRANSMISSION	ST/JM	GRC
4/20/23	2 REVISED PER CITY AND SJRWMD COMMENTS	JM	GRC

RANGE ROAD PRELIMINARY PUD

CITY OF COCOA, FLORIDA

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Engineering the Future

5127 S. Orange Avenue, Suite 200
Orlando, FL 32809
Phone: 407-895-0324
Fax: 407-895-0325

www.feg-inc.us

ARCHITECTURAL ELEVATIONS

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
GRC	JWM	GRC	GRC

PROJECT NO. 19-070
SCALE 1"=100'
DATE MAY 25, 2022
SHEET NO. A-1
SHEET 11 OF 12

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY GREGORY R. CRAWFORD, 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.

FLORIDA ENGINEERING GROUP, INC.
CERTIFICATE OF AUTHORIZATION NO. 27868
No 81335
STATE OF
GREGORY R. CRAWFORD, P.E.
LICENSE NO. 81335

19-070 ArchitecturalElevations.dwg

PALM COLOR ELEVATIONS

F936-PALM
ELEV. A



F936-PALM
ELEV. B



F936-PALM
ELEV. C



PINE COLOR ELEVATIONS

F937-PINE
ELEV. A



F937-PINE
ELEV. B



F937-PINE
ELEV. C



DATE	REVISIONS	BY	CHECKED
7/15/24	6 REVISED PER CITY COMMENTS	JM	GRC
1/09/24	5 REVISED PER CITY COMMENTS	ST/JM	GRC
10/03/23	4 REVISED PER FLORIDA GAS TRANSMISSION	SMT	GRC
9/25/23	3 REVISED PER FLORIDA GAS TRANSMISSION	ST/JM	GRC
4/20/23	2 REVISED PER CITY AND SJRWMD COMMENTS	JM	GRC

RANGE ROAD PRELIMINARY PUD

CITY OF COCOA, FLORIDA

FEG FLORIDA ENGINEERING GROUP
Engineering the Future

5127 S. Orange Avenue, Suite 200
Orlando, FL 32809
Phone: 407-895-0324
Fax: 407-895-0325

www.feg-inc.us

ARCHITECTURAL ELEVATIONS

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
GRC	JWM	GRC	GRC

PROJECT NO. 19-070
SCALE 1"=100'
DATE MAY 25, 2022
SHEET NO. A-2
SHEET 12 OF 12

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY GREGORY R. CRAWFORD, 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.

FLORIDA ENGINEERING GROUP, INC.
CERTIFICATE OF AUTHORIZATION
No. 5135
STATE OF FLORIDA
GREGORY R. CRAWFORD, P.E.
LICENSE NO. 61335

19-070 ArchitecturalElevations.dwg

Application # **PZ** - _____ - _____

PLANNED UNIT DEVELOPMENT
- PRELIMINARY APPLICATION -

Community Services Department
Planning and Zoning Division
65 Stone Street
Cocoa, Florida 32922

Phone: (321) 433-8535
Fax: (321) 433-8543
Web: http://www.cocoafl.org

Serving the Community

This form is divided into steps, which will help you prepare your application, provide supplemental items, and prepare for the Planning & Zoning Board and City Council hearings. A pre-application or a tentative development plan meeting with Staff is **required**.

Please TYPE or PRINT this application neatly.

For Office Use Only - Date Received

Stamp Only When Application is Fully Complete

1. **Preliminary PUD Project Name:** Range Road Subdivision

2. **Applicant Information:** ** NOTE: Applicant is the main contact, who must attend the meeting!*

Company (if applicable): Florida Engineering Group, Inc.

Name: Gregory R. Crawford, P.E., P.S.M., Senior Project Manager

Mailing Address: 5127 S. Orange Avenue, Suite 200

City: Orlando State: FL Zip Code: 32809

Phone #: 407-895-0324 Fax #: 407-895-0325

Mobile #: _____ E-mail: GCrawford@feg-inc.us

3. **Property Owner Information:** ** Check here if same as Applicant* → ☐

** If more than one owner, attach additional sheet with names and addresses.*

Company (if applicable): Karali Associates, LLC

Name: Srinivas Seela

Mailing Address: 2642 Fawnlake Trail

City: Orlando State: FL Zip Code: 32828

Phone #: 407-276-5407 Fax #: _____

Mobile #: _____ E-mail: seelasrinivas@yahoo.com

4. **Surveyor:**

Company (if applicable): ALTAMAX SURVEYING

Name: James Bray

Mailing Address: 910 Belle Avenue, Suite 1140

City: Casselberry State: FL Zip Code: 32708

Phone #: 407-677-0200 Fax #:

Mobile #: E-mail: James@Altamaxsureying.com

5. **Engineer:**

Company (if applicable): Florida Engineering Group, Inc.

Name: Gregory R. Crawford, P.E., P.S.M., Senior Project Manager

Mailing Address: 5127 S. Orange Avenue, Suite 200

City: Orlando State: FL Zip Code: 32809

Phone #: 407-895-0324 Fax #: 407-895-0325

Mobile #: E-mail: GCrawford@feg-inc.us

6. **Property Information:**

Street Address and Location: N. Ranger Road, Cocoa, FL 32926

Parcel ID: ** If more than two Parcel IDs, attach additional sheet with Parcel IDs.*

24-36-19-00-501□□.□-□□□□.□□

24-36-30-00-252

24-36-30-00-258□□.□-□□□□.□□

Tax Account Numbers: ** If more than two Tax Account #s, attach additional sheet with Tax Account #s.*

2415105 2423188 2423194

Land Area: square feet or 57.23 acres

Existing Use(s) on Property: Vacant Land

Proposed Use(s) on Property: Single Family Residential

Existing Zoning Category: RU-2-15, RU-1-7

Existing Future Land Use Category: Low Density Residential

7. **Please submit the following items in order complete the application:**

a. ☑ **Notarized application.**

b. ☐ **List of owners within 500 feet.** A "radius map package" from Brevard County containing a certified mailing list with mailing labels and a map of all property owners of record who reside within a 500-foot radius of the subject property is required for public notice. It is the applicant's responsibility to obtain these materials from the following for a nominal fee:

Brevard County Planning and Zoning, Attn: Graphics.
Brevard County Government Center, Building A
2725 Judge Fran Jamieson Way
Viera, FL 32940
Phone: (321) 633-2060 Fax: (321) 633-2152

c. ☑ **Petition.** Complete the Preliminary Planned Unit Development petition form. A sample "Petition" form is available from the City.

d. ☐ **Application fee.** Please make checks payable to the 'City of Cocoa' and submit payment **ONLY** to the Community Services Department. Public mail notice and legal advertising fees must also be paid a few weeks after application submittal. See Schedule of Fees, Charges and Expenses for applicable fees.

e. ☑ **Proof of ownership.** A copy of the most recent recorded warranty deed is required.

f. ☑ **Letter of authorization.** If the applicant is not the property owner, a notarized letter of authorization or agent affidavit is required, unless the applicant is the Attorney of the owner. Each property owner must complete a separate authorization form or other suitable documentation to allow the agent to act upon his/her behalf. A sample "Letter of Authorization" form is available from the City.

g. ☑ **Corporate documents.** If the applicant/owner is representing a company, articles of incorporation which show the applicant/owner is authorized to represent the company is required. A data record printout from the Florida Department of State, Division of Corporations website may also be provided (http://www.sunbiz.org/corpweb/inquiry/search.html).

h. ☐ **Legal description.** Submit a typed copy of the legal description.

i. ☑ **Certified topographic data map.** Submit a topographic data map drawn to a scale of two hundred (200) feet to one inch or larger by a registered surveyor and/or engineer showing, at a minimum, the following: The location of existing property lines both for private property and public property, streets, buildings, watercourses, transmission lines, sewers, bridges, culverts and drain pipes, water mains, any public utility easements, wooded areas, streams, lakes, marshes, and any physical conditions affecting the site.

j. ☐ **Preliminary development plan.** Submit 2 paper copies (folded to about 8-1/2 x 11") and 1 electronic copy of a plan drawn to scale along with the required exhibits. The preliminary development plan shall not be smaller than 11" x 17", and shall, at a minimum, include the items below (combine elements on several sheets where applicable):

1. ☐ Vicinity map indicating the relationship between the planned unit development and its surrounding area including adjacent streets and thoroughfares.
2. ☐ Proposed name or title of project, the name of the engineer, architect, and developer.
3. ☐ North arrow, scale (1" = 200' or larger) date and legal description of the proposed site.
4. ☐ Boundaries of tract shown with bearings, distances and closures and bulkhead lines. All existing easements, section lines, and all existing streets and physical features in and adjoining the project, and the existing zoning.
5. ☐ Names and locations of adjoining developments and subdivisions.
6. ☐ Proposed parks, school sites, or other public or private open space.
7. ☐ Vehicular and pedestrian circulation systems including off-street [parking] and loading areas, driveways and access points.

8. ☐ Site data including tabulation of the total number of gross acres in the project, the acreage to be devoted to each of the several types of primary residential and secondary nonresidential uses, and the total number of dwelling units. All potential uses must be clearly listed on the preliminary development plan.

9. ☐ Proposed common space by type, including the proposed improvements and any complementary structures and the tabulation of the per cent of the total area devoted to common space by type. Areas qualifying for common space shall be specifically designated on the site plan.

10. ☐ Delineation of specific areas designated as a proposed stage. Commercial and residential areas being clearly delineated as separate areas.

11. ☐ General statement indicating proposed means of drainage for the site to insure conformity with natural drainage within the vicinity area or with the drainage plan established within the vicinity area.

12. ☐ General location within site of each primary residential and nonresidential use, and the proposed amount of land to be devoted to individual ownership.

13. ☐ Schematic drawings of the elevation and architectural construction of the proposed structures.

14. ☐ The proposed method of dedication and administration of proposed common open space.

15. ☐ Title Opinion: A title opinion from an attorney or a property information report that is prepared within the preceding 90 days showing the status of the title to the site encompassed by the preliminary development plan and all liens, encumbrances and defects, if any.

16. ☐ Traffic Report: A traffic study and analysis, prepared by a duly qualified expert, regarding both the estimated impact of the proposed preliminary development plan on the neighborhood and surrounding properties and the established level of service on affected roads.

k. ☐ **Additional information (optional).** Submit any information that may be helpful in understanding the request. This may include photos, sketches, elevations, or letters from adjoining property owners.

l. ☐ **Resubmittals.** Resubmittals should be accompanied by a list of changes and a certified statement by the preparer that no other changes have been made to the drawings. Otherwise, delays may be experienced due to extra staff review time. Each resubmittal shall follow the same requirements.

8. **Application filing procedure.** This application, together with all required exhibits and attachments, shall be completed and filed with the Planning and Zoning Division.

Public hearings process information – please read this!

9. **Dates and locations of public hearings.** Preliminary Planned Unit Development applications require one hearing in front of the Planning & Zoning Board and one hearing in front of the City of Cocoa Council. All regularly scheduled Planning & Zoning Board hearings are held on the first Wednesday of each month at 6:00 pm in the Cocoa City Council Chambers located at 65 Stone Street, Cocoa, Florida unless otherwise notified. All regularly scheduled City of Cocoa Council meetings are held on the second and fourth Tuesday of each month at 6:00 pm in the Cocoa City Council Chambers located at 65 Stone Street, Cocoa, Florida unless otherwise notified.

10. **Board types.** With respect to this type of application, the Planning & Zoning Board is an advisory board to the City Council and therefore is only authorized to make recommendations. City Council is an authoritative body and is able to make binding decisions.

11. **Presence required at the public hearings.** The applicant or his/her representative must be present to answer any questions concerning the application. If there are extenuating circumstances why the applicant or his/her representative cannot attend, he or she must notify the City in writing prior to the public hearing.

12. **Preparing for the public hearings.** It is the applicant's responsibility to research and know all laws that may be applicable and may affect the outcome of any decision on the application request. The City assumes no responsibility or liability relating to the applicant's failure to research and know all applicable laws including, but not limited to state, federal, and city laws, codes, land development regulations, and the comprehensive plan.

13. **Exhibits at public hearings.** If photographs, documents, maps or other materials are provided to the Board/Council as evidence at the public hearing, the applicant must leave those instruments with the Recording Secretary. By law those instruments automatically become part of the public records and cannot be returned to the applicant.

14. **Witnesses at public hearings.** For the purposes of making a decision on the application, the Board/Council shall only consider testimony of qualified witnesses. A witness is determined by the Board/Council and is generally based on:
    a. The witness has personal knowledge of the fact in which the witness will testify; and/or
    b. In the case of testimony consisting of opinions or inferences, the testimony is qualified as the following:
        1. *Layman witness*: Testimony of a witness other than an expert witness is qualified only if:
            - The witness can readily, and with equal accuracy and adequacy, communicate what he or she perceived to the Board without testifying in the form of opinions or inferences.
            - The opinions and inferences do not require any special knowledge, skill experience or training.
        2. *Expert witness*. Testimony of an expert witness is qualified only if:
            - The subject matter is proper for expert testimony because scientific, technical, or other specialized skill will help the Board understand the evidence being presented, or helps establish a fact in issue.
            - The witness is adequately qualified to express an opinion on the matter.

15. **Planning & Zoning Board vs. City Council actions.** If the Planning & Zoning Board finds that the facts presented in the matter justify approval, it may recommend to approve the request, or a portion thereof, and it may specify any conditions deemed necessary to preserve the intent of the City of Cocoa Code. If the Board finds that the facts presented do not justify approval, it may recommend to deny the request and will specify the reasons for denial. A decision is usually made at the same meeting that the hearing is held. Regardless of the outcome, the application will be forwarded to the City Council for consideration where a final decision can be made.

In order to approve a Preliminary Planned Unit Development, the Planning & Zoning Board and City Council must consider and study the criteria listed below (as described in Appendix A, Article XI, Section 17 (I)(2)e. of the City of Cocoa Code) and include the findings of fact that serve as a basis for its recommendation. Please provide your consideration of the following criteria and any pertinent data and evidence that may be useful to the Planning & Zoning Board and City Council. Use extra sheets if necessary.

1. Degree of departure of proposed planned unit development from surrounding areas in terms of character and density.

The proposed development is located in the midst of a variety of lots that vary in size from 40 feet to 100 feet in width. The lots to the north and partially to the west are larger parcels of land. The lots to the east and south vary in size with single family residential lots. The properties located to the south of the property are in unincorporated Brevard County while the remaining lots to the north, east, and west are within the city limits of Cocoa. The proposed lots are 40 feet wide are similar to some of the properties to the south of the proposed development that have duplex units on lots that are 37.5 feet wide (Sabal Lake Estates and Space Coast Garden). The proposed lots for this property will be detached single family homes. Some of the lots located to the northeast of the property are 50 feet wide with detached single-family homes (Clear Lake Village) and the property located on the northwest corner of Range Road and Hooper Road (PZ-13-00800001) was previously approved by the City of Cocoa for 50-foot-wide lots.

2. Compatibility within the planned unit development and relationship with surrounding neighborhoods.

The proposed development will be compatible with the surrounding properties in that they will be detached single family homes like a majority of the adjacent properties and the proposed development will provide buffers from the adjacent property via landscape buffer areas as well as the existing wetlands located along the eastern portion of the property.

3. **Prevention of erosion and degrading of surrounding area.**

The site will protect against erosion via the Stormwater Pollution Prevention Plan that addresses the Florida Department of Environmental Protection's National Pollution Discharge Elimination System (NPDES) program during construction and via permanent vegetation of either sod or landscaping on all disturbed areas. The open space, stormwater management, and landscape areas will be maintained long term by a Homeowner's Association that will be responsible to keep the common areas in good condition.

4. **Provision for future public education and recreation facilities, transportation, water supply, sewage disposal, surface drainage, flood control and soil conservation as shown in the preliminary development plan.**

The project will not provide any public education on-site, but will need to address any concurrency issue for school. On-site, the project proposes a recreational tract as well as walking paths throughout the property and along the stormwater pond banks for dog walks and residences uses. The proposed development will have two (2) entrances to accommodate emergency access should one of the entrances become blocked; water and sewer services will be provided by the City of Cocoa Utilities via an existing water line along the west side of Range Road and an existing lift station located along the east side of Range Road; surface drainage, flood control, and soil conservation will be addressed with the proposed stormwater pond that are designed to comply with the water quality and quantity requirements of the City and state, as well as compensating storage for any flood plain encroachment of the development.

5. **The nature, intent and compatibility of common open space, including the proposed method for the maintenance and conservation of said common open space.**

The proposed recreation and open space tracts are located throughout the development and along the stormwater ponds that will provide for recreation and walking along the pathways provided. All of the recreation and open spaces areas will be in separate tracts that will be owned and maintained by the Homeowner's Association in perpetuity. The preserved wetland areas will also be owned by the Homeowner's Association with a conservation easement over it to St. Johns River Water Management District.

6. **The feasibility and compatibility of the specified stages contained in the preliminary development plan to exist as an independent development.**

The proposed development will be constructed in a single phase and will not require any connection or infrastructure support of the adjacent residential developments. The only connections made outside of the property will be for water, sewer, stormwater, and transportation along Range Road.

7. **The availability and adequacy of primary streets and thoroughfares to support traffic to be generated within the proposed planned unit development.**

The internal roadways are local roadways that will have two (2) access points to Range Road. The traffic will be minimal (approximately 676 average daily trips) and can access other parts of the City by either going north on Range Road to Michigan Avenue and then east on Michigan Avenue to State Road A1A or by going south on Range Road to either Lake Drive or State Road 520

8. **The availability and adequacy of water and sewer service to support the proposed planned unit development.**

As mentioned, the proposed project will connect to an existing 12-inch water line located along the west side of Range Road. Sewer service will connect into and existing lift station located on the east side of Range Road that will pump the flow to the utility's wastewater treatment plant.

9. **The benefits within the proposed development and to the general public to justify the requested departure from standard land use requirements inherent to a planned unit development classification.**

The proposed development will take into account the existing environmental wetlands located on the property to preserve a majority of them on-site. The overall project has been designed to minimize the impact to the large wetland system on the east side of the property such that it can remain and provide a buffer between this property and the property to the east. In addition, the location of Street A has been adjusted to align with the existing Hooper Road to the west to allow the future connection of it to the existing Ivy Drive roadway located in the development to the east of the property once the needed right-of-way is obtained from others.

10. **The conformity and compatibility of the planned unit development with any adopted development plan of the City of Cocoa.**

The smaller lots are consistent with other previous approvals in the general areas as previously noted. The development located west of the project was previously approved for 50-foot-wide lots as well as existing lots located in the development to the northeast of the property (Clear Lake Village). Although the project will include smaller lots, the overall density for the property is 2.49 dwelling units per acre, which is less than the allowable density of 6 dwelling units per are allowed for a Low Density Residential Future Land Use designation. This doesn't include the approximately 28.7 acres of wetland and wetland buffer area that will be retained on the property undisturbed.

11. **The conformity and compatibility of the proposed common open space, primary residential and secondary nonresidential uses within the proposed planned unit development.**

This project is a single-family residential development that will not have any non-residential development uses included with it. The single-family component of the development is consistent with the other developments in the areas and includes common open space areas within it to be used by the residences of the development.

16. Signatures and Notarization.

STATE OF Florida COUNTY OF Orange. I, SRINIVAS Seela being first duly sworn, depose and say that:

☑ I am the applicant, or if corporation, I am the officer of the corporation authorized to act on this request.

☐ I am the legal representative of the applicant of this application and a notarized Letter of Authorization form or agent affidavit accompanies this application giving written, unless the applicant is the Attorney representing the owner.

I hereby certify that I have read, completed and understand this application and applicable petition, and understand that if my application and all associated attachments are not complete and accurate in all respects, the application will not be scheduled for a public hearing. I further understand that this application must be complete and accurate prior to the advertising of a public hearing.

(APPLICANT SIGNATURE)

MARGARET A. Hughes
(Print, Type, or Stamp Commissioned Name of Notary Public)

Personally Known ☑ OR Produced Identification ☐

Type of I.D. Produced _____

MARGARET ANN HUGHES
Notary Public - State of Florida
Commission # HH 204504
My Comm. Expires Dec 8, 2025
Bonded through National Notary Assn.

Margaret A. Hughes
(NOTARY PUBLIC SIGNATURE)

STATE OF FLORIDA, COUNTY OF BREVARD

Sworn and subscribed to before me this 13th day of June, 2022

FOR OFFICE USE ONLY

Fee of $ _____ in cash ☐ or check ☐ (No. _____) payable to the "City of Cocoa".

Receipt Number: _____

Date: _____

Signature from Planning & Zoning Division:

_____

FEG FLORIDA ENGINEERING GROUP

5127 South Orange Avenue
Orlando, FL 32809

Phone: 407-895-0324



Surface Water Management System Report

Range Road Subdivision
N. Range Road
Cocoa, Florida 32926



Prepared for:
Karali Associates, LLC.
June 15, 2022
FEG 19-070

Gregory R. Crawford, PE #51335
Florida Engineering Group, Inc.
Certificate No. EB0006595

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I. Project Narrative

A. Project Location

The Range Road Subdivision project site is located on the east side of Range Road in the City of Cocoa, Brevard County, Florida. Specifically, the site is located in Sections 19 and 30, Township 24 South, Range 36 East. The proposed project includes Parcel ID numbers 24-36-19-00-501, 24-36-30-00-258, and 24-36-30-00-252. A Site Location Map is provided in **Appendix A** of this report.

B. Project Site Description

As mentioned, the proposed project is known as Range Road Subdivision which consist of approximately 57.23 acres. The existing conditions of the property are classified as undeveloped land with approximately 27.57 acres of wetlands.

The predominant soils on the project site are (36) Myakka sand, (49) Pomello sand, (54) St. Johns sand, (64) Terra Ceia muck, (67) Tomoka muck, (68) Tomoka muck. The NRCS Soil Survey for Brevard County, Florida classifies these soils as Hydrological Soil Group (HSG) Type A/D, B/D, and Type A.

Per FEMA FIRM Panel 12009C0320H (dated January 29, 2021) and Panel 12009C0425G (dated March 17, 2014), the site is located in Zone AE with a BFE of 21.70 (NAVD 88).

Copies of an aerial photography map, the USGS Quadrangle Map, the SCS Soil Survey Map, and the FEMA Flood Insurance Rate Map for the subject project site are included in **Appendix A** of this report.

C. Project Description

The proposed project consists of a 71-lot single-family residential development with its associated roadways, utility facilities, recreational areas, and stormwater system. The proposed stormwater system will consist of three (3) individual wet bottom ponds, which are interconnected, via a stormwater conveyance piping system, to operate as a single stormwater system. The lot areas will be a minimum of 4,000 square feet. As previously mentioned, the property contains approximately 27.57 acres of wetlands in five (5) separate wetland areas. A majority of the wetlands are located on the eastern portion of the property and there are three (3) isolated wetlands located in the middle of the property. The three (3) isolated wetlands will be impacted, as well as a small portion of the larger wetland to the east for the proposed improvements. The Pre- and Post-Development Basin Maps showing the proposed improvements are provided in **Appendix B** of this report. The basins are described as follows:

1. *Basin PRE*

The Pre basin comprises of 28.14 acres. This basin is mainly comprised of heavily wooded area and contains three (3) isolated wetland areas that will be impacted by the proposed improvements. The two (2) larger wetland areas located on the eastern portion of the property will undisturbed except for a small area that will be impacted for the grading of one (1) of the roadways. The buffer areas will have varying degrees of impact for compensating storage volume and to provide positive outfall for the ponds. Based on the existing topographic features, the basin generally drains easterly towards the larger wetland areas as well as to an existing swale that runs east and west through the middle of the property. The existing swale connects the easterly wetland areas to the existing roadway ditches located along the east side of Range Road. Based on the topography, the swale flows from east to west into the ditch along the east side of Range Road.

As previously mentioned, for the proposed conditions, the stormwater system will consist of three (3) individual wet bottom ponds, which are interconnected, via a stormwater conveyance piping system, to operate as a single stormwater system. These equalized stormwater ponds will provide water quality treatment and water quantity attenuation prior to discharging off-site. The site was divided into three (3) basins, each containing one (1) of the stormwater ponds.

2. *Basin POND-1*

Basin POND-1 comprises of 8.62 acres. The basin will collect the runoff from the south portion of the developed area and direct it to Pond 1 (Tract B) for water quality treatment and attenuation from the overall pond system prior to discharging off-site. POND-1 will include a two (2) outfall structures in it. The first is a broad-crested weir that is located along the eastern berm of the pond to allow the pond to discharge to the existing wetland area located on the east side of the property as it does in the existing conditions. The second outfall will be a control structure located on the southern portion of Pond 3 and will consist of a bleed-down orifice to control the water levels at elevation 18.75. The bleed-down control structure will flow west into the existing ditch along the east side of Range Road and flow north as it does in the existing conditions.

3. *Basin POND-2*

Basin POND-2 comprises of 6.00 acres. The basin will collect the runoff from the northwesterly portion of the developed area and direct it to POND 2 (Tract K) for water quality treatment and attenuation from the overall pond system. There are no outfall weirs or structures in POND-2.

4. *Basin POND-3*

Basin POND-3 comprises of 9.57 acres. The basin will collect the runoff from the northeasterly portion of the developed area and direct it to Pond 3 (Tract G) for water quality treatment and attenuation from the overall pond system prior to discharging off-site. POND-3 includes a broad-crested weir that is located along a portion of the eastern berm of the pond to allow the pond to

discharge to the existing wetland area located on the east side of the property as it does in the existing conditions.

Please see the stormwater calculations included in **Appendix B** of this report and the construction plans for more details.

All elevations listed in this report refer to NAVD 88, unless otherwise noted.

II. Pre-Development Stormwater Management Analysis

The proposed project site varies in elevation from approximately elevation 22 at the northern end of the property to approximately elevation 15 in the existing swale running through the middle of the property. The stormwater runoff generally sheet flows easterly across the property to the existing wetlands located along the eastern portion of the property, as well as flowing into an existing swale crossing east to west through the property. As previously mentioned, the existing swale generally is graded to flow from the east side of the property to the west and discharge into the existing roadside ditch along the east side of Range Road. The existing roadside ditch then flows south to an existing 38"x60" RCP that drains to the west under Range Road. No off-site flows drain to the project area.

The proposed development will be designed to attenuate the post-development peak discharge rate for the Mean Annual and 25-year/24-hour storm events. Please see **Table 1** for the pre-development peak discharge rates for the SJRWMD storm events. See **Appendix C** for the basin summary results.

Table 1: Pre-Development Peak Discharge Rates

PEAK DISCHARGE RATE (cfs)		
Mean Annual (FLMOD)	TW-PRE	28.13
25 year/24 hour (FLMOD)	TW-PRE	64.68

III. Post Development Stormwater Management Analysis

A. General Description and Regulatory Requirements

As mentioned, the surface water management system for the project will consist of three (3) wet detention stormwater ponds that are designed in accordance with the Water Quality and Quantity requirements of the City of Cocoa and SJRWMD requirements. Ponds 1, 2, and 3 are interconnected, via equalizing pipes, such that all of the ponds will act as one large pond for water quality treatment and attenuation prior to discharging to the on-site wetlands along the eastern portion of the property to mimic existing conditions.

The proposed wet detention ponds are designed to provide treatment and attenuation for the stormwater runoff from the proposed improvements for the Mean Annual and 25-year/24-hour storm events. Water Quality Treatment volume for the project is provided in the wet detention ponds to meet the requirements of the SJRWMD, as outlined in Chapter 40C-4, and pursuant to City of Cocoa requirements. As previously mentioned, the wet-detention ponds are interconnected with equalizing pipes that allow them to act as one (1) larger pond. Pond 1 will include a broad-crested weir as well as a drop structure for the bleed-down orifice that will control the water quality treatment, drawdown, and attenuation of the runoff and Pond 3 will include a broad-crested weir that will control the attenuation of the stormwater runoff from the development prior to discharging to the existing wetlands.

B. Environmental Issues

As previously mentioned, the proposed overall property contains wetlands that will mainly remain undisturbed during the construction of the proposed project. However, the three (3) isolated wetland areas located in the middle of the property will be impacted, as well as a small portion of the larger wetland on the east for roadway grading. A 25' average buffer is also being proposed to ensure the that the wetlands that are proposed to remain will be protected. Please see the Environmental Assessment Report prepared by Ecological Consulting Solutions for the proposed impacts and preservation analysis of the wetlands.

C. Pond Seasonal High Water & Initial Routing Elevations

A geotechnical analysis was prepared for this project by Professional Service Industries, Inc. Within the report, the Seasonal High Water Elevations (SHWT) were determined for the property to be at an Elevation between 19 and 20.50 feet across the site. The proposed wet detention ponds will have a designed Normal Control Elevation of 18.75.

D. Water Quality

Water Quality Treatment volume is provided for the post-development basins using the proposed wet

detention ponds pursuant to the requirements of the SJRWMD as outlined in Chapter 40C-4 and pursuant to the City of Cocoa requirements. This project ultimately discharges into St. Johns River, which is not considered to be an Outstanding Florida Water Body.

The following sections of this report provide detailed Water Quality and Quantity related design calculations and methodology. **Appendix B** of this report provides the Pre-Development allowable peak discharge rate calculations (as previously described), the Post-Development Basin Map, and the Post-Development stormwater calculations. The Basin map delineates the limits of the Post-Development basins and the Calculations, also included in **Appendix B,** provide a breakdown of the pervious cover and impervious cover for the post-development conditions; provide tabulations of curve numbers for each ground cover; provide weighted curve numbers, and times of concentrations for the post-development conditions; Water Quality Treatment Volume determinations; Drawdown analysis; and Permanent Pool Calculations. **Appendix D** of this report provides the output from AdICPR that was used to model the water quality drawdown analysis.

E. Tailwater

The proposed project will discharge to the on-site wetland located to the west of the property as it does in the existing conditions. Based on the existing elevations, the tailwater elevation of 18.50 was used for the 25-year/24-hour storm event.

F. Water Quantity

In general, the same drainage patterns will be maintained in the post-development condition as those in the pre-development condition. Specifically, discharge from the project will be from the proposed on-site wet detention ponds, which are designed to attenuate the post-development flow from the improvement areas prior to discharging westerly to the on-site wetland area.

AdICPR was used to create multiple models of the post-development conditions to show the resulting peak discharge rates and stages in the proposed stormwater system during the Mean Annual (FLMOD) and 25-year/ 24-hour (FLMOD) storm events. See **Appendix D** for the input data and results showing the routing results. Please see **Table** 2 for a summary of the post-development peak discharge rates and stages for the SJRWMD storm events.

Table 2: Post-Development Peak Discharge Rates

PEAK DISCHARGE RATE (cfs)		
Mean Annual (FLMOD)	PRE (cfs)	28.13
	POST (cfs)	16.40
	STAGE (ft.)	19.28
25 year/24 hour (FLMOD)	PRE (cfs)	64.68
	POST (cfs)	64.59
	STAGE (ft.)	19.63

G. Secondary Stormwater Analysis

The proposed project will utilize a closed conveyance system for the runoff from the proposed improvements to the stormwater ponds. Please see **Appendix E** for the results of the secondary stormwater system.

H. Flood Plain Analysis

As mentioned previously, according to the FEMA Flood Insurance Rate Map, this property lies within Zone AE, the 100-year flood plain (Flood Elevation 21.7). Please see **Appendix F** for the 100-year flood plain encroachment volume calculations, as well as the compensating storage volume calculations.

I. Administrative

1. *Ownership*

The site is currently owned by Karali Associates, LLC

2. *Operation and Maintenance*

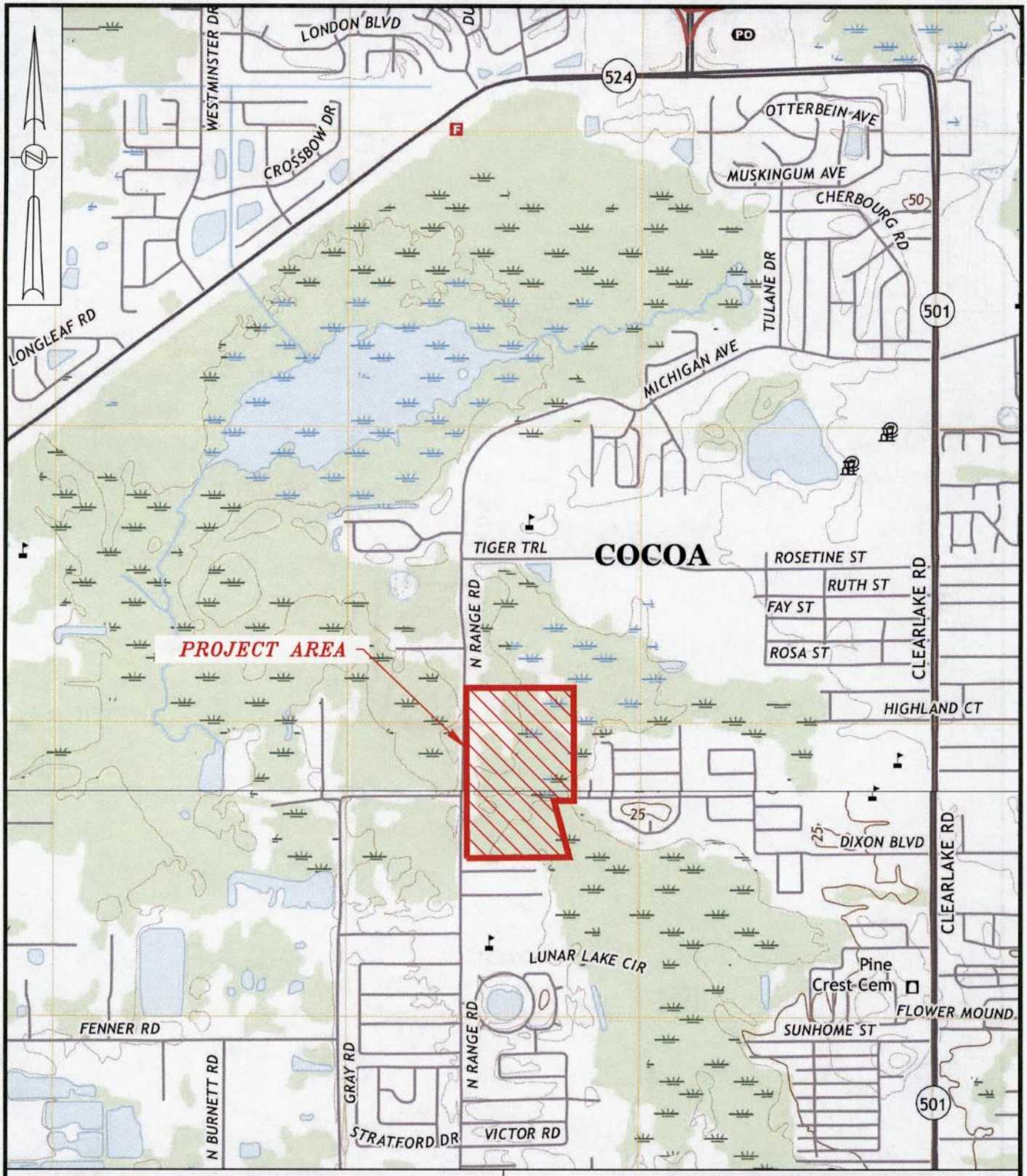
The Homeowners Association (HOA) will operate and maintain the stormwater management system.

Appendix A – Exhibits



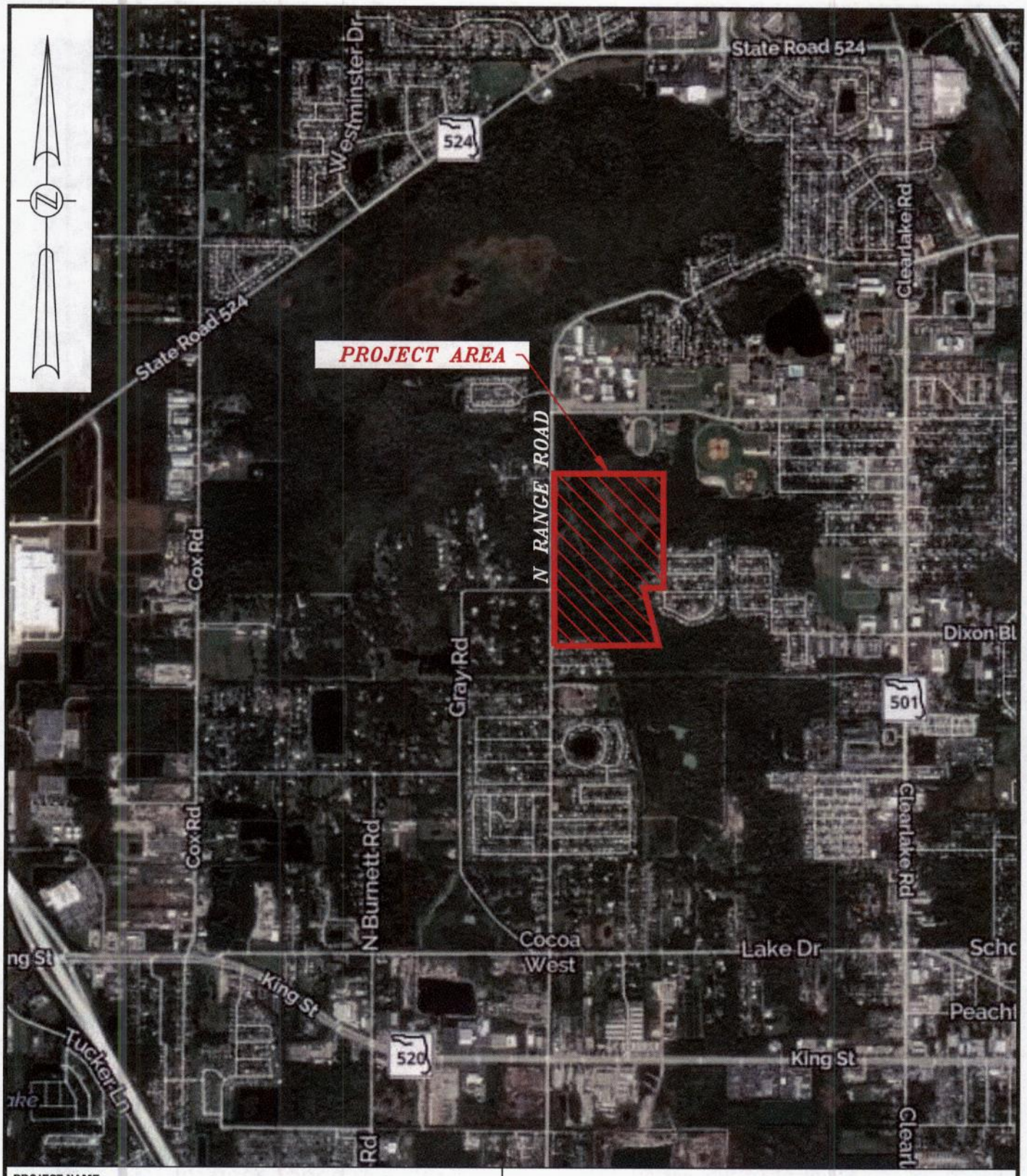
PROJECT NAME: RANGE ROAD SUBDIVISION	SITE LOCATION MAP
CLIENT: KARALI ASSOCIATES, LLC	
S, T, R: S 30 T 24S R 36E	F.E.G. PROJECT NO.: 19-070
DATE: APRIL 01, 2022	SCALE: 1" = 200'

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Engineering the Future
5127 S. Orange Avenue, Suite 200
Orlando, FL 32809
Phone: 407-895-0324
Fax: 407-895-0325
www.feg-inc.us



PROJECT NAME: RANGE ROAD SUBDIVISION	U.S.G.S QUADRANGLE MAP
CLIENT: KARALI ASSOCIATES, LLC	
S, T, R: S 30 T 24S R 36E	F.E.G. PROJECT NO.: 19-070
DATE: APRIL 01, 2022	SCALE: 1" = 1500"

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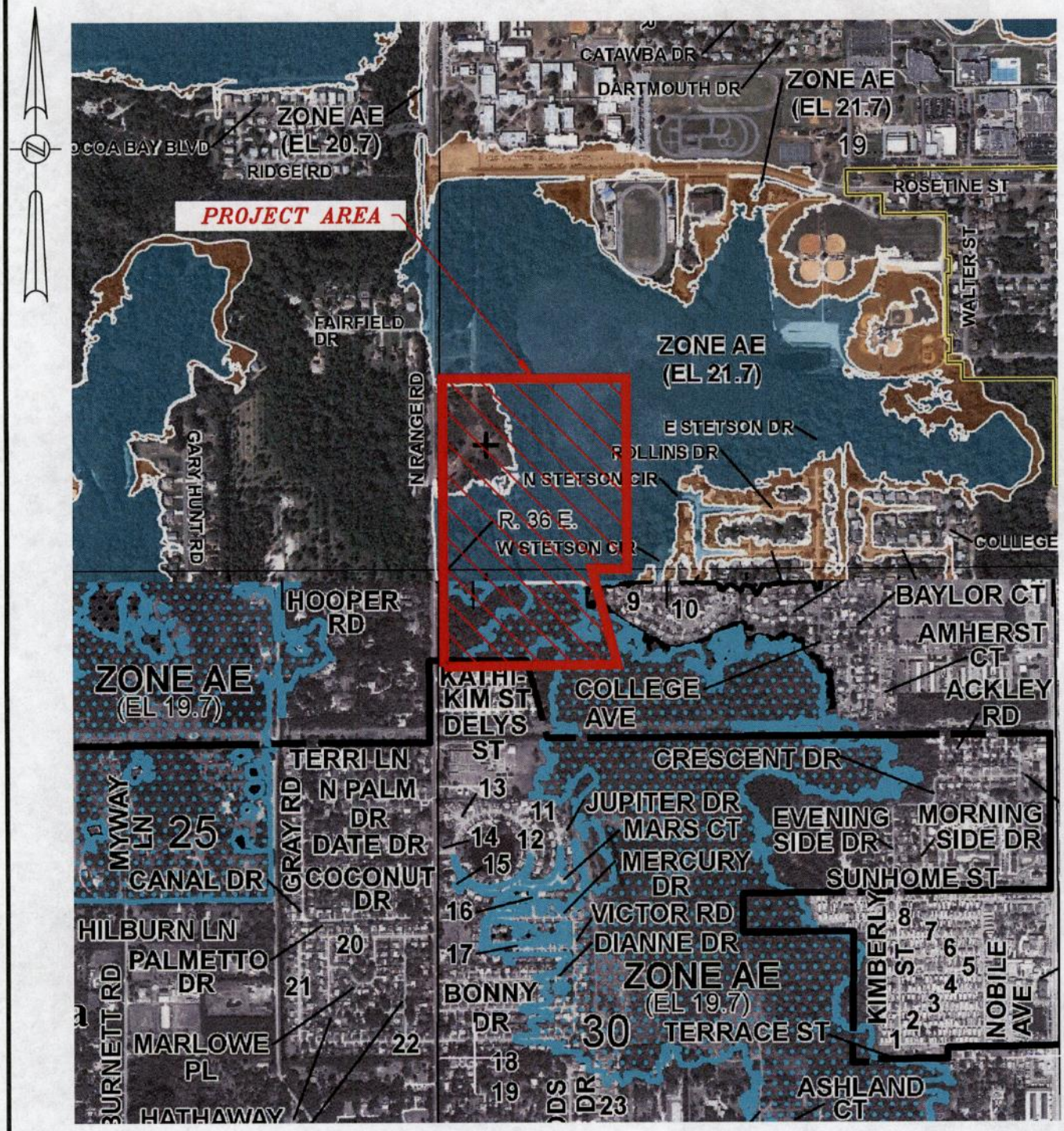
PROJECT NAME:	RANGE ROAD SUBDIVISION
CLIENT:	KARALI ASSOCIATES, LLC
S, T, R: S 30 T 24S R 36E	F.E.G. PROJECT NO.: 19-070
DATE: APRIL 01, 2022	SCALE: 1" = 500'

2022 AERIAL PHOTOGRAPHY MAP

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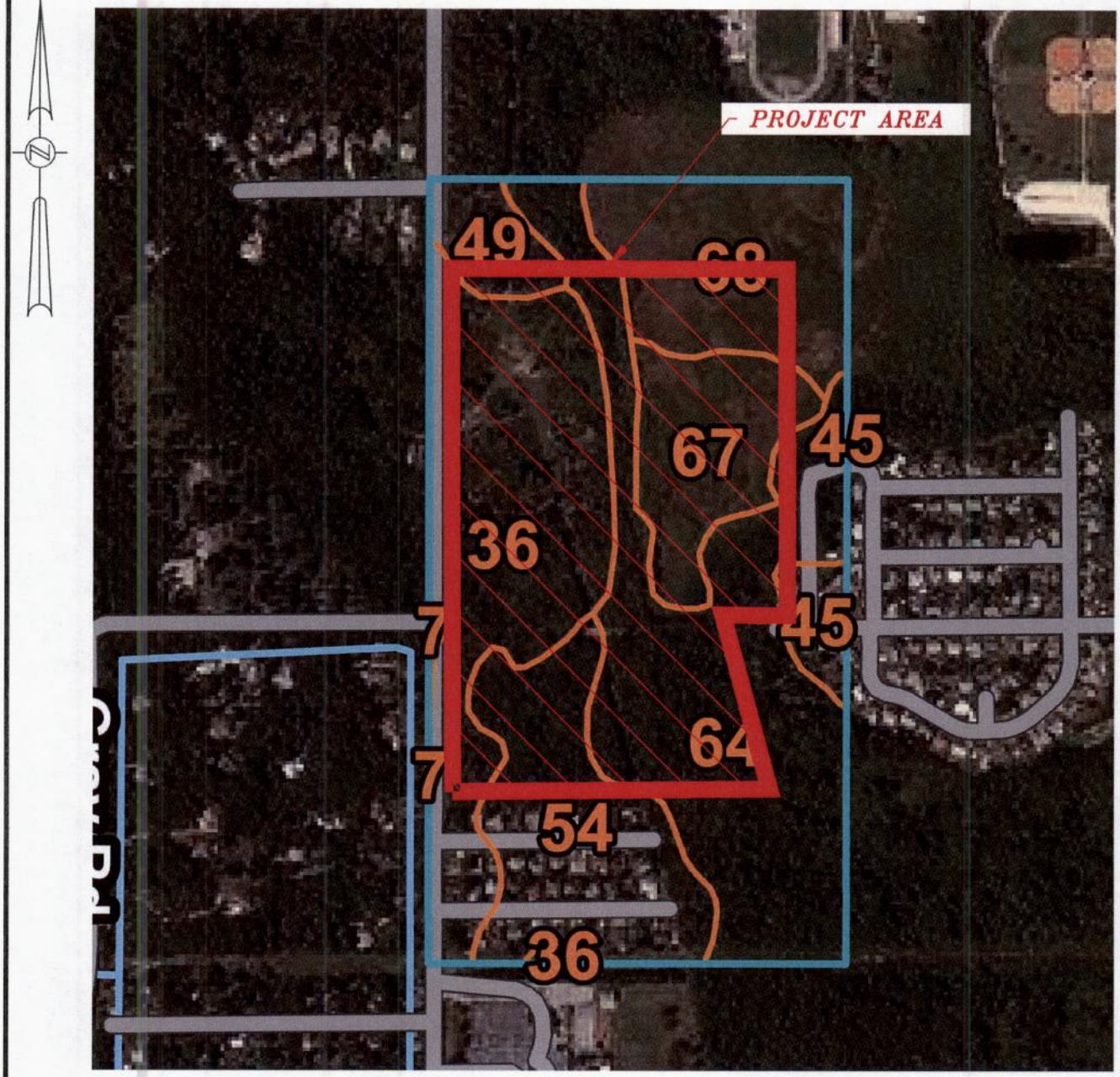
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PROJECT NAME: RANGE ROAD SUBDIVISION	**FEMA F.I.R.M MAP PANEL # 12009C0320H (01/29/2021) & 12009C045G (03/17/2014)**
CLIENT: KARALI ASSOCIATES, LLC	
S, T, R: S 30 T 24S R 36E / F.E.G. PROJECT NO.: 19-070	
DATE: APRIL 01, 2022 / SCALE: 1" = 1500'	

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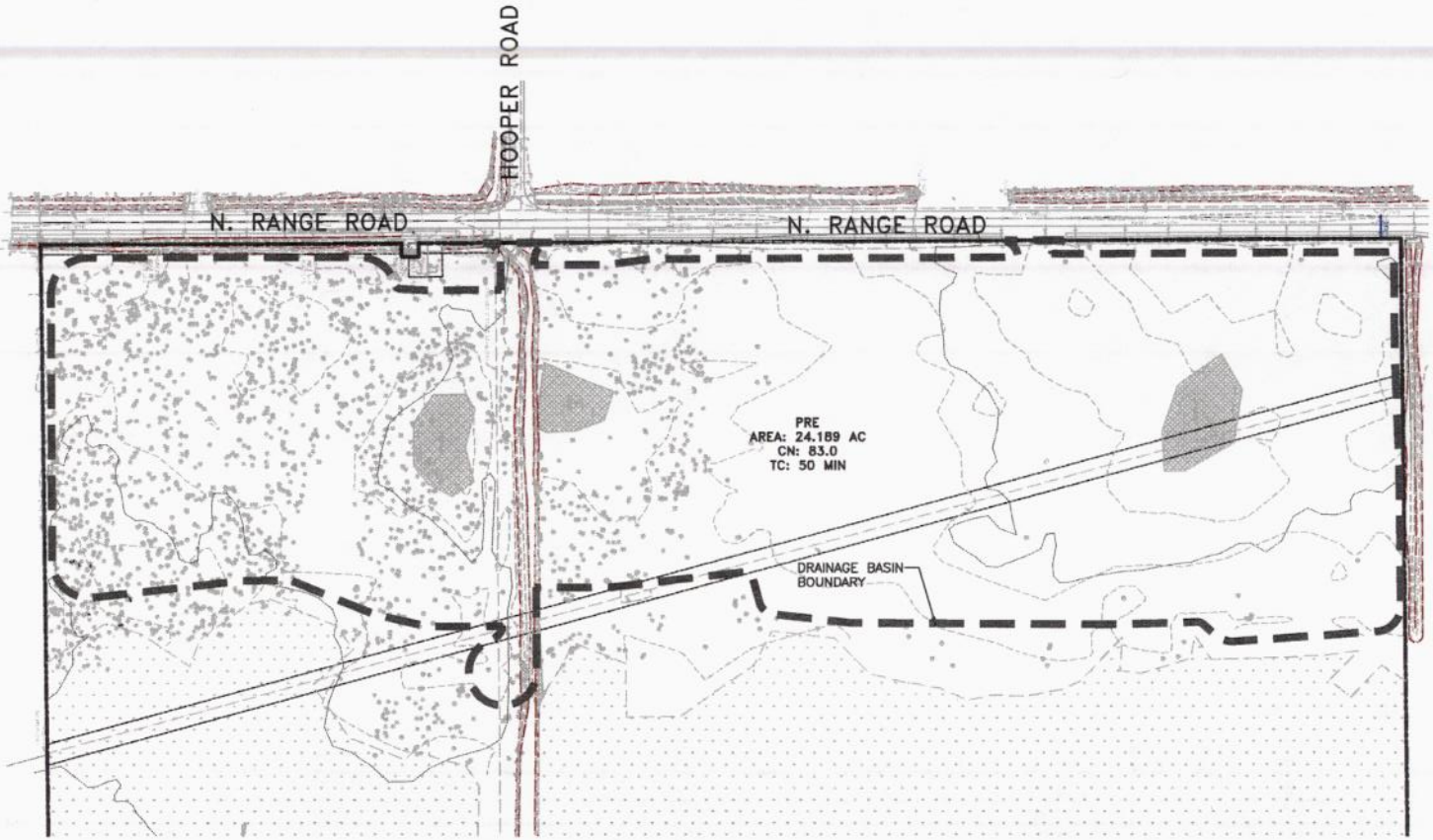


ON–SITE SOILS & LEGEND

36 – MYAKKA SAND, 0 TO 2 PERCENT SLOPES
49 – POMELLO SAND, 0 TO 5 PERCENT SLOPES
54 – ST. JOHNS SAND, 0 TO 2 PERCENT SLOPES
64 – TERRA CEIA MUCK, FREQUENTLY FLOODED

PROJECT NAME: RANGE ROAD SUBDIVISION		SOILS MAP
CLIENT: KARALI ASSOCIATES, LLC		FEG FLORIDA ENGINEERING GROUP Engineering the Future
S, T, R: S 30 T 24S R 36E	F.E.G. PROJECT NO.: 19-070	5127 S. Orange Avenue, Suite 200 Orlando, FL 32809 Phone: 407-895-0324 Fax: 407-895-0325 www.feg-inc.us
DATE: APRIL 01, 2022	SCALE: 1" = 600'	

Appendix B – Pre- & Post-Development Basin Maps & Calculations



GRAPHIC SCALE

1" = 100'

DATE	REVISIONS	BY	CHKD

CONSTRUCTION PLANS
RANGE ROAD SUBDIVISION
CITY OF COCOA, FLORIDA

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PRE DEVELOPMENT BASIN

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
CPN	CPN	GRC	GRC

PROJECT NO. 19-070
SCALE 1"=100'
DATE APRIL 01, 2022
SHEET NO. PRE-1
SHEET 1 OF 1

19-070 Plans.dwg

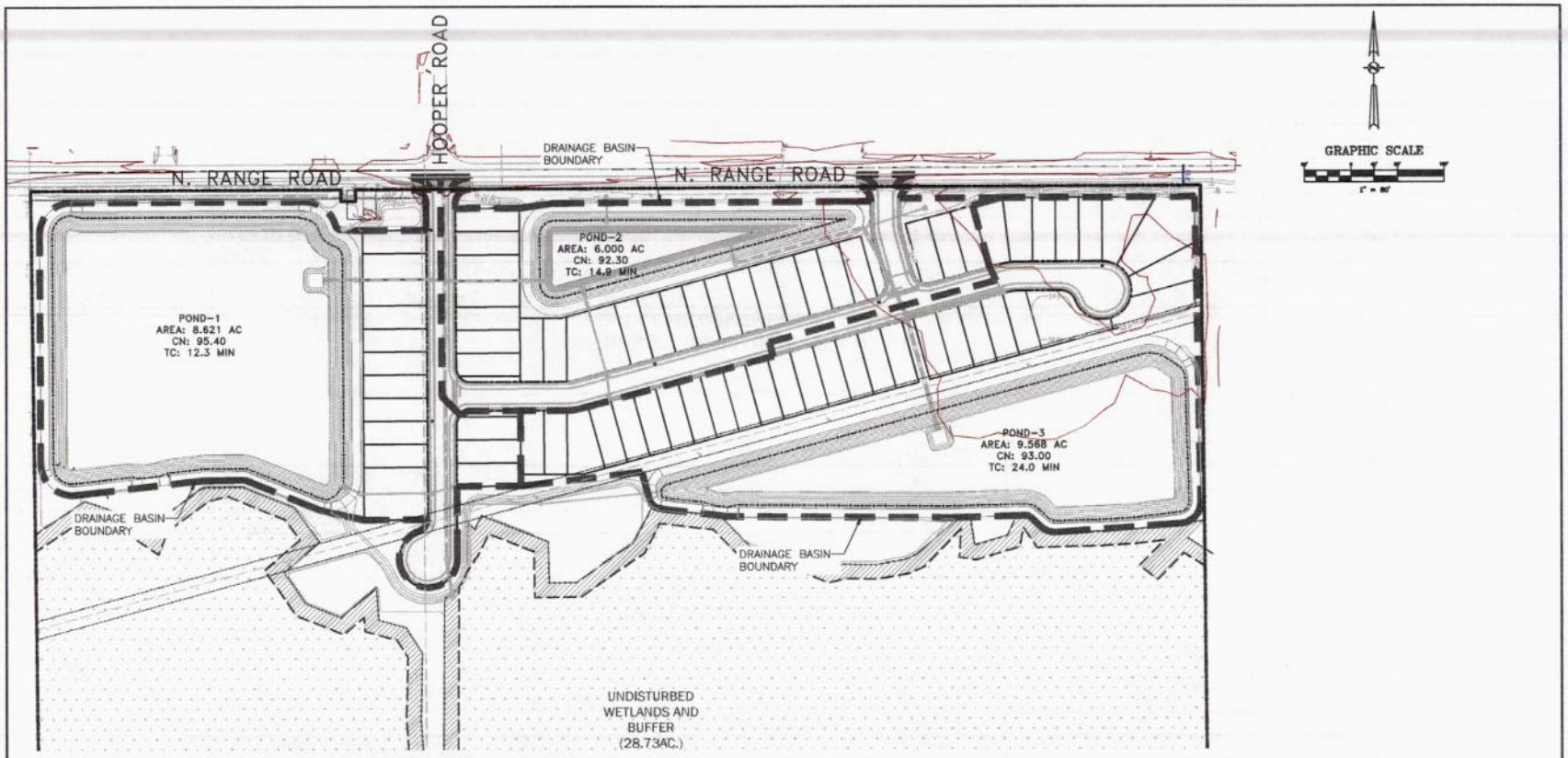
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5127 S. Orange Avenue, Suite 200
Orlando, Florida 32809
(407) 895-0324 Fax (407) 895-0325

COMP. BY: GRC
CHECKED BY: GRC
DATE: 05/21/22
SHT No.
JOB No. 19-070

PROJECT: Range Road Subdivision

PRE
RUNOFF CURVE NUMBER (CN)
PRE-DEVELOPMENT CONDITIONS

HYDROLOGIC SOIL GROUP	LAND USE DESCRIPTION - INCLUDE PRACTICE AND CONDITION		CN	% OR AREA (ACRES)	CN * A PRODUCT
	Impervious Area		98.0	0.00	0.00
	Woods (Poor) (Type D)		83.0	24.19	2007.69
		24.189	TOTALS	24.19	2007.69
			IMP.AREA	0.00	
				CN (WEIGHTED)	83.0



DATE	REVISIONS	BY	CHKD

CONSTRUCTION PLANS
RANGE ROAD SUBDIVISION
CITY OF COCOA, FLORIDA

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POST DEVELOPMENT BASIN

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
CPN	CPN	GRC	GRC

PROJECT NO. 19-070
SCALE 1"=100'
DATE APRIL 01, 2022
SHEET NO. POST-1
SHEET 1 OF 1

19-070 Plans.dwg

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SHT No.
JOB No. 19-070

PROJECT: Range Road Subdivision

POND 1
RUNOFF CURVE NUMBER (CN)
POST-DEVELOPMENT CONDITIONS

HYDROLOGIC SOIL GROUP	LAND USE DESCRIPTION - INCLUDE PRACTICE AND CONDITION	CN	% OR AREA (ACRES)	CN * A PRODUCT
	Impervious Area	98.0	1.78	174.39
	Pond (at NCL)	100.0	5.02	501.65
	Open Space (Good) (Type D)	80.0	1.82	145.99
8.621	TOTALS		8.62	822.03
	IMP.AREA		1.78	
			CN (WEIGHTED)	95.4

POND 2
RUNOFF CURVE NUMBER (CN)
POST-DEVELOPMENT CONDITIONS

HYDROLOGIC SOIL GROUP	LAND USE DESCRIPTION - INCLUDE PRACTICE AND CONDITION	CN	% OR AREA (ACRES)	CN * A PRODUCT
	Impervious Area	98.0	3.12	305.95
	Pond (at NCL)	100.0	0.85	84.98
	Open Space (Good) (Type D)	80.0	2.03	162.38
6.002	TOTALS		6.00	553.32
	IMP.AREA		3.12	
			CN (WEIGHTED)	92.2

POND 3
RUNOFF CURVE NUMBER (CN)
POST-DEVELOPMENT CONDITIONS

HYDROLOGIC SOIL GROUP	LAND USE DESCRIPTION - INCLUDE PRACTICE AND CONDITION	CN	% OR AREA (ACRES)	CN * A PRODUCT
	Impervious Area	98.0	3.22	315.48
	Pond (at NCL)	100.0	3.29	328.64
	Open Space (Good) (Type D)	80.0	3.06	245.01
9.568	TOTALS		9.57	889.13
	IMP.AREA		3.22	
			CN (WEIGHTED)	92.9

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SHT No.
JOB No. 19-070

PROJECT: Range Road Subdivision

Q=CA*(2gH)^.5
C=0.6

NUMBER OF ORIFICES: 3
DIAMETER OF EACH ORIFICE: 4.00 INCHES
EQUIVILENT DIAMETER ORIFICE: 6.93 INCHES

ORIFICE RELEASES TOTAL P.A.V. IN 90.85 HRS

DIA.= 6.93 IN.
P.A.V.= 2.700 (AC-FT)

ORIFICE RELEASES 50% OF P.A.V. IN 27.62 HRS

EL (FT)	H (FT)	AREA (AC)	FLOW (CFS)	AVG. FLOW (CFS)	AVG. AREA (AC)	INC. DEPTH (FT)	INC. VOL. (AC-FT)	TOTAL VOL. (AC-FT)	INC. TIME (HR)	TOTAL TIME (HR)
18.55	0.30	9.313	0.690							
				0.660	9.300	0.05	0.465	0.465	8.52	8.52
18.50	0.25	9.286	0.630							
				0.597	9.273	0.05	0.464	0.929	9.40	17.93
18.45	0.20	9.260	0.563							
				0.526	9.246	0.05	0.462	1.391	10.64	28.57
18.40	0.15	9.233	0.488							
				0.443	9.220	0.05	0.461	1.852	12.59	41.15
18.35	0.10	9.206	0.398							
				0.340	9.193	0.05	0.460	2.312	16.35	57.51
18.30	0.05	9.179	0.282							
				0.141	9.166	0.05	0.458	2.770	39.37	96.87
18.25		9.153								

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CHK'D BY:	GRC
DATE:	05/21/22
JOB #	19-070

PROJECT: Range Road Subdivision

ST JOHNS RIVER WATER MANAGEMENT DISTRICT

STAGE-STORAGE CALCULATION
POST DEVELOPMENT

POND 1

	STAGE ELEVATION (NAVD)	AREA (SF)	INC. VOLUME (CF)	CUM. VOLUME (CF)	CUM. VOLUME (AC-FT)
	10.00	180,888	751,560	1,621,528	37.225
	11.00	184,350	765,612	1,438,906	33.033
	12.00	187,839	779,769	1,252,813	28.761
PPV	13.00	191,353	801,304	1,068,676	24.533
	14.00	194,892	196,674	869,968	19.972
	15.00	198,456	200,250	673,295	15.457
	16.00	202,045	205,672	473,044	10.860
	17.00	209,299	212,976	267,372	6.138
	18.00	216,653	54,396	54,396	1.249
NCL	18.25	218,517	0	0	0.000
	20.00	237,280	398,823	398,823	9.156
	21.00	243,388	240,334	639,157	14.673
	22.00	249,537	246,462	885,619	20.331

POND 2

	STAGE ELEVATION (NAVD)	AREA (SF)	INC. VOLUME (CF)	CUM. VOLUME (CF)	CUM. VOLUME (AC-FT)
	10.00	16,217	17,031	239,103	5.489
	11.00	17,844	18,695	222,072	5.098
	12.00	19,546	20,433	203,377	4.669
PPV	13.00	21,321	22,246	182,944	4.200
	14.00	23,171	24,133	160,698	3.689
	15.00	25,095	26,094	136,565	3.135
	16.00	27,093	29,203	110,471	2.536
	17.00	31,313	33,571	33,571	0.771
	18.00	35,829	9,106	81,268	1.866
NCL	18.25	37,019	0	0	0.000
	20.00	45,452	72,162	72,162	1.657
	21.00	50,417	47,934	120,096	2.757
	22.00	55,483	52,950	173,046	3.973

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CHK'D BY: GRC
DATE: 05/21/22
JOB # 19-070

PROJECT: Range Road Subdivision

ST JOHNS RIVER WATER MANAGEMENT DISTRICT

STAGE-STORAGE CALCULATION
POST DEVELOPMENT

POND 3

	STAGE ELEVATION (NAVD)	AREA (SF)	INC. VOLUME (CF)	CUM. VOLUME (CF)	CUM. VOLUME (AC-FT)
	13.00	112,584	114,577	782,412	17.962
PPV	14.00	116,571	118,579	667,834	15.331
	15.00	120,587	122,615	549,255	12.609
	16.00	124,642	128,719	426,641	9.794
	17.00	132,796	136,929	136,929	3.143
	18.00	141,063	35,527	297,922	6.839
NCL	18.25	143,156	0	0	0.000
	20.00	156,724	262,395	262,395	6.024
	21.00	161,523	159,123	421,518	9.677
	22.00	166,322	163,922	585,441	13.440

COMBINED PONDS

	STAGE ELEVATION (NAVD)	AREA (SF)	INC. VOLUME (CF)	CUM. VOLUME (CF)	CUM. VOLUME (AC-FT)
	10.00	197,105	199,650	2,256,761	51.808
	11.00	202,194	204,790	2,057,112	47.225
	12.00	207,385	258,537	1,852,322	42.523
	13.00	309,689	322,161	1,593,785	36.588
	14.00	334,634	339,386	1,271,624	29.192
	15.00	344,138	348,959	932,238	21.401
	16.00	353,780	363,594	583,279	13.390
	17.00	373,407	383,476	383,476	8.803
	18.00	393,545	99,030	219,685	5.043
NCL	18.25	398,692	0	0	0.00
W.Q.	18.55	405,680	120,656	120,656	2.77
	20.00	439,456	733,379	733,379	16.84
	21.00	455,327	447,391	1,180,771	27.11
	22.00	471,342	463,334	1,644,105	37.74

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CHECKED BY: GRC
DATE: 05/21/22
SHT No.
JOB No. 19-070

PROJECT: Range Road Subdivision

WATER QUALITY TREATMENT VOLUME DETERMINATION (POND)

WET DETENTION POND

BASIN AREA (Total - Onsite & Offsite)= 24.19 Ac.

Proposed Total (Non-Pond) Impervious Area = 8.12 Ac.

TREATMENT VOLUME REQUIRED

Method A
FOR FIRST 1.0 INCH OF RUNOFF OVER TOTAL SITE AREA:
REQUIRED WATER QUALITY VOLUME = **2.02 Ac.-Ft.** **(Method A)**

Method B
IMPERVIOUS (NON-POND) AREA 8.12 Ac

2.5" X IMPERVIOUS (NON-POND) AREA + 0.5" X BASIN AREA
REQUIRED WATER QUALITY VOLUME = **2.70 Ac.-Ft.** **(Method B)**

REQUIRED WATER QUALITY VOLUME	**2.70 Ac-Ft**
TOTAL REQUIRED WATER QUALITY VOLUME	**2.70 Ac-Ft**

TOTAL WATER QUALITY VOLUME PROVIDED: 2.77 **Ac-Ft** **at** **18.55**

PERMANENT POOL CALCULATIONS:

PPV = (((DA)*(C)*(WS RAINFALL)*(RESIDENCE TIME))/(WET SEASON)*(12))

DA = DRAINAGE AREA 24.19 Ac.
C = RUNOFF COEFFIENT **0.70**
C= [((0.9)*(Impervious+NCL Area(Acres)) + (0.2)*(Pervious Area(Acres))]/TotalArea(Acres)
WS RAINFALL = WET SEASON RAINFALL (FIGURE 29-1) 32.0 inches
RESIDENCE TIME = 14 DAYS (MIN) 14.0 Days

REQUIRED PERMANENT POOL VOLUME:	**4.131 Ac-Ft**
50% EXTRA (NO LITTORAL ZONE):	***2.065*** **Ac-Ft**
TOTAL REQUIRE PERMANENT POOL VOLUME:	**6.196 Ac-Ft**
50% EXTRA (DISCHARGE TO OFW):	***3.098*** **Ac-Ft**
TOTAL REQUIRE PERMANENT POOL VOLUME:	**9.295 Ac-Ft**

PROVIDED PERMANENT POOL VOLUME: 42.714 **Ac-Ft**

MEAN DEPTH CALCULATIONS

Mean Depth = PPV(p) / A(p)

PPV(p) = Permanent Pool Volume Provided 42.714 Ac-Ft
A(p) = Area at NCL **9.15** Acres

REQUIRED MEAN DEPTH	**2 FT < MD < 8 FT**	
MD PROVIDED	**4.667**	**FT**

Appendix C – Pre-Development ICPR Routings

Range Road Subdivision
May 20, 2022
Project Number: 19-070
Post-Development Routing Results

Name:	PRE	PRE
Group:	BASE	BASE
Simulation:	25-24	Mean-24
Node:	TW-PRE	TW-PRE
Type:	SB	SB
Spec Time Inc(min):	5.00	5.00
Comp Time Inc(min):	5.00	5.00
Rain File:	Flmod	Flmod
Rain Amount(in):	9.500	5.000
Duration(hrs):	24.00	24.00
Status:	Onsite	Onsite
TC(min):	50.00	50.00
Time Shift(hrs):	0.00	0.00
Area(ac):	24.189	24.189
Curve Num:	83.000	83.000
DCIA(%):	0.000	0.000
Time Max(hrs):	12.17	12.17
Flow Max(cfs):	64.82	28.19
Runoff Volume(in):	7.419	3.174
Runoff Volume(ft3):	651415	278705

Florida Engineering Group, Inc.
5127 S. Orange Avenue, Suite 200
Orlando, Florida 32809



PROJECT NAME: RANGE ROAD SUBDIVISION		**PRE-NODAL DIAGRAM**
CLIENT: KARALI ASSOCIATES, LLC		FEG FLORIDA ENGINEERING GROUP Engineering the Future
S, T, R: S 30 T 24S R 36E	F.E.G. PROJECT NO.: 19-070	5127 S. Orange Avenue, Suite 200 Orlando, FL 32809 Phone: 407-895-0324 Fax: 407-895-0325 www.feg-inc.us
DATE: JUNE 15, 2022	SCALE: NONE	

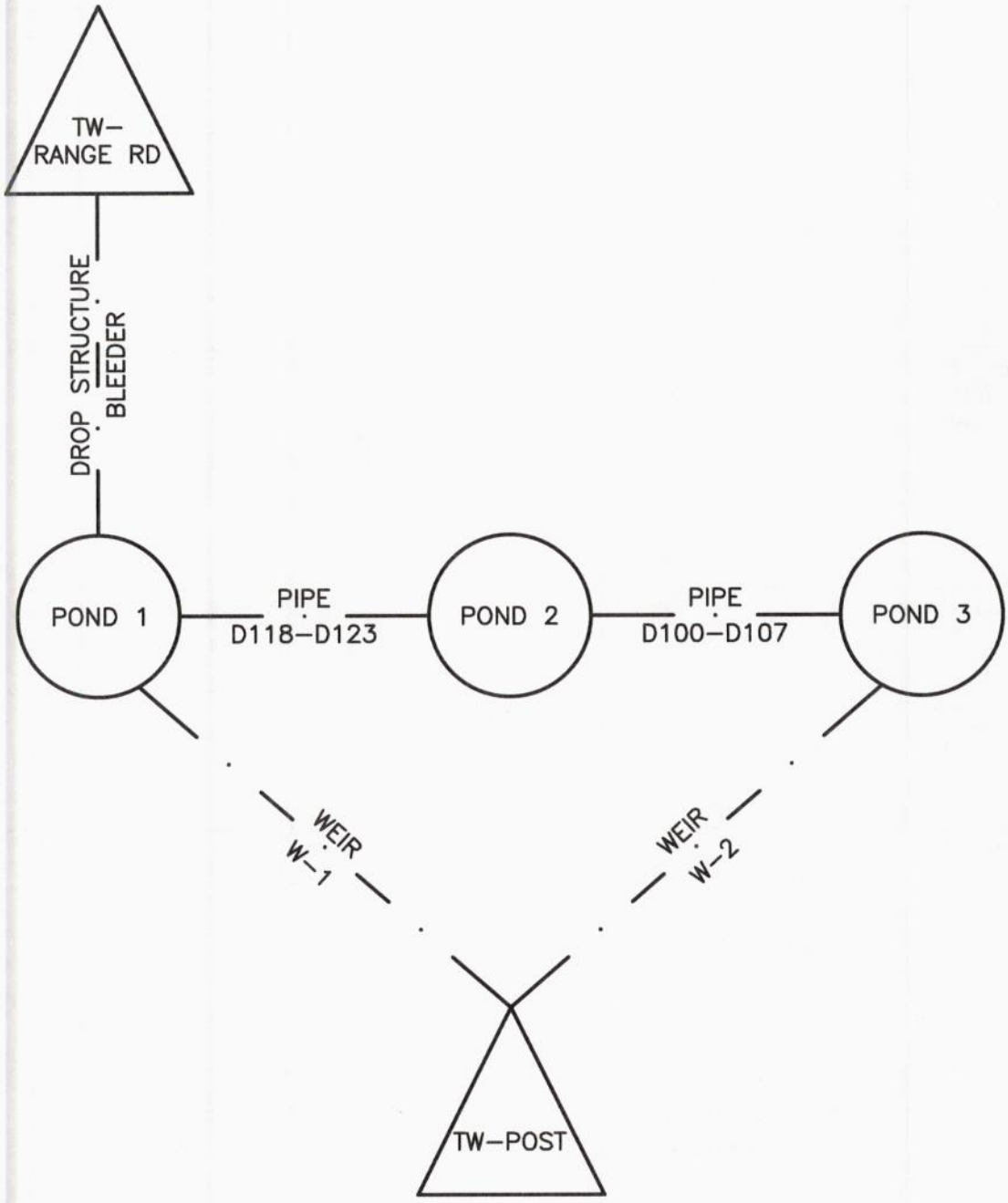
Appendix D – Post-Development ICPR Routings

Name:	POND-1	POND-2	POND-3	POND-1	POND-2
Group:	BASE	BASE	BASE	BASE	BASE
Simulation:	25-24	25-24	25-24	Mean-24	Mean-24
Node:	POND 1	POND 2	POND 3	POND 1	POND 2
Type:	SB	SB	SB	SB	SB
Spec Time Inc(min):	5.00	5.00	5.00	5.00	5.00
Comp Time Inc(min):	5.00	5.00	5.00	5.00	5.00
Rain File:	Flmod	Flmod	Flmod	Flmod	Flmod
Rain Amount(in):	9.500	9.500	9.500	5.000	5.000
Duration(hrs):	24.00	24.00	24.00	24.00	24.00
Status:	Onsite	Onsite	Onsite	Onsite	Onsite
TC(min):	12.30	14.90	24.00	12.30	14.90
Time Shift(hrs):	0.00	0.00	0.00	0.00	0.00
Area(ac):	8.621	6.000	9.568	8.621	6.000
Curve Num:	95.500	92.300	93.000	95.500	92.300
DCIA(%):	0.000	0.000	0.000	0.000	0.000
Time Max(hrs):	11.92	11.92	12.00	11.92	11.92
Flow Max(cfs):	49.34	31.51	42.09	25.42	15.69
Runoff Volume(in):	8.957	8.567	8.653	4.476	4.122
Runoff Volume(ft3):	280304	186597	300530	140068	89771

Name:	POND-3
Group:	BASE
Simulation:	Mean-24
Node:	POND 3
Type:	SB
Spec Time Inc(min):	5.00
Comp Time Inc(min):	5.00
Rain File:	Flmod
Rain Amount(in):	5.000
Duration(hrs):	24.00
Status:	Onsite
TC(min):	24.00
Time Shift(hrs):	0.00
Area(ac):	9.568
Curve Num:	93.000
DCIA(%):	0.000
Time Max(hrs):	12.00
Flow Max(cfs):	21.14
Runoff Volume(in):	4.198
Runoff Volume(ft3):	145801

Range Road Subdivision
May 20, 2022
Project Number: 19-070
Post-Development Routing Results

Name:	POND-1	POND-2	POND-3
Group:	BASE	BASE	BASE
Simulation:	100-24	100-24	100-24
Node:	POND 1	POND 2	POND 3
Type:	SB	SB	SB
Spec Time Inc(min):	5.00	5.00	5.00
Comp Time Inc(min):	5.00	5.00	5.00
Rain File:	Flmod	Flmod	Flmod
Rain Amount(in):	10.500	10.500	10.500
Duration(hrs):	24.00	24.00	24.00
Status:	Onsite	Onsite	Onsite
TC(min):	12.30	14.90	24.00
Time Shift(hrs):	0.00	0.00	0.00
Area(ac):	8.621	6.000	9.568
Curve Num:	95.500	92.300	93.000
DCIA(%):	0.000	0.000	0.000
Time Max(hrs):	11.92	11.92	12.00
Flow Max(cfs):	54.62	34.99	46.70
Runoff Volume(in):	9.955	9.561	9.648
Runoff Volume(ft3):	311533	208244	335086



PROJECT NAME: RANGE ROAD SUBDIVISION		POST-NODAL DIAGRAM
CLIENT: KARALI ASSOCIATES, LLC		
S, T, R: S 30 T 24S R 36E	F.E.G. PROJECT NO.: 19-070	
DATE: JUNE 15, 2022	SCALE: NONE	

FEG FLORIDA ENGINEERING GROUP
Engineering the Future
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www.feg-inc.us

==========
==== Basins ====
==========

Name: POND-1 Node: POND 1 Status: Onsite
Group: BASE Type: Santa Barbara CN

Rainfall File: Flmod
Rainfall Amount(in): 0.000
Area(ac): 8.621
Curve Number: 95.50
DCIA(%): 0.00
Storm Duration(hrs): 0.00
Time of Conc(min): 12.30
Time Shift(hrs): 0.00
Time Increment(min): 5.00
Max Allowable Q(cfs): 999999.000

Name: POND-2 Node: POND 2 Status: Onsite
Group: BASE Type: Santa Barbara CN

Rainfall File: Flmod
Rainfall Amount(in): 0.000
Area(ac): 6.000
Curve Number: 92.30
DCIA(%): 0.00
Storm Duration(hrs): 0.00
Time of Conc(min): 14.90
Time Shift(hrs): 0.00
Time Increment(min): 5.00
Max Allowable Q(cfs): 999999.000

Name: POND-3 Node: POND 3 Status: Onsite
Group: BASE Type: Santa Barbara CN

Rainfall File: Flmod
Rainfall Amount(in): 0.000
Area(ac): 9.568
Curve Number: 93.00
DCIA(%): 0.00
Storm Duration(hrs): 0.00
Time of Conc(min): 24.00
Time Shift(hrs): 0.00
Time Increment(min): 5.00
Max Allowable Q(cfs): 999999.000

Name: PRE Node: TW-PRE Status: Onsite
Group: BASE Type: Santa Barbara CN

Rainfall File: Flmod
Rainfall Amount(in): 0.000
Area(ac): 24.189
Curve Number: 83.00
DCIA(%): 0.00
Storm Duration(hrs): 0.00
Time of Conc(min): 50.00
Time Shift(hrs): 0.00
Time Increment(min): 5.00
Max Allowable Q(cfs): 999999.000

==========
==== Nodes ====
==========

Name: POND 1 Base Flow(cfs): 0.000 Init Stage(ft): 18.250
Group: BASE Warn Stage(ft): 22.000
Type: Stage/Area

Stage(ft)	Area(ac)
10.000	4.1526
16.000	4.6383
18.500	5.0592
22.000	5.7286

Name: POND 2 Base Flow(cfs): 0.000 Init Stage(ft): 18.250

Group: BASE Warn Stage(ft): 22.000
Type: Stage/Area

Stage(ft)	Area(ac)
10.000	0.3732
16.000	0.6220
18.500	0.8771
22.000	1.2737

Name: POND 3 Base Flow(cfs): 0.000 Init Stage(ft): 18.250
Group: BASE Warn Stage(ft): 22.000
Type: Stage/Area

Stage(ft)	Area(ac)
13.000	2.5846
16.000	2.8614
18.500	3.3344
22.000	3.8182

Name: TW-POST Base Flow(cfs): 0.000 Init Stage(ft): 18.000
Group: BASE Warn Stage(ft): 22.000
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	18.000
12.00	18.250
24.00	18.200
60.00	18.200
72.00	18.100

Name: TW-PRE Base Flow(cfs): 0.000 Init Stage(ft): 18.500
Group: BASE Warn Stage(ft): 18.500
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	18.500
12.00	18.500
24.00	18.500
60.00	18.500
72.00	18.500

Name: TW-RANGERD Base Flow(cfs): 0.000 Init Stage(ft): 18.000
Group: BASE Warn Stage(ft): 18.250
Type: Time/Stage

Time(hrs)	Stage(ft)
0.00	18.000
12.00	18.250
24.00	18.000

==== Pipes ====

```
================================================================================

        Name: D100-D107          From Node: POND 2            Length(ft): 536.00
       Group: BASE                 To Node: POND 3                 Count: 1
                                                        Friction Equation: Automatic
              UPSTREAM       DOWNSTREAM                Solution Algorithm: Most Restrictive
    Geometry: Circular       Circular                         Flow: Both
    Span(in): 60.00          60.00                   Entrance Loss Coef: 0.00
    Rise(in): 60.00          60.00                       Exit Loss Coef: 1.00
  Invert(ft): 12.180         12.400                      Bend Loss Coef: 0.00
 Manning's N: 0.013000       0.013000                 Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000          0.000                     Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000          0.000                   Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


--------------------------------------------------------------------------------------------------------
        Name: D118-D123          From Node: POND 1            Length(ft): 562.00
       Group: BASE                 To Node: POND 2                 Count: 1
                                                        Friction Equation: Automatic
              UPSTREAM       DOWNSTREAM                Solution Algorithm: Automatic
    Geometry: Circular       Circular                         Flow: Both
    Span(in): 60.00          60.00                   Entrance Loss Coef: 0.00
    Rise(in): 60.00          60.00                       Exit Loss Coef: 1.00
  Invert(ft): 11.080         10.890                      Bend Loss Coef: 0.00
 Manning's N: 0.013000       0.013000                 Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000          0.000                     Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000          0.000                   Stabilizer Option: None


Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall


================================================================================
==== Drop Structures ===========================================================
================================================================================

        Name: BLEEDER            From Node: POND 1            Length(ft): 45.00
       Group: BASE                 To Node: TW-RANGERD             Count: 1

              UPSTREAM       DOWNSTREAM                Friction Equation: Automatic
    Geometry: Circular       Circular                 Solution Algorithm: Automatic
    Span(in): 15.00          15.00                            Flow: Both
    Rise(in): 15.00          15.00                   Entrance Loss Coef: 0.500
  Invert(ft): 17.500         17.250                      Exit Loss Coef: 1.000
 Manning's N: 0.013000       0.013000                 Outlet Ctrl Spec: Use dc or tw
Top Clip(in): 0.000          0.000                     Inlet Ctrl Spec: Use dc
Bot Clip(in): 0.000          0.000                       Solution Incs: 10

Upstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall

Downstream FHWA Inlet Edge Description:
Circular Concrete: Square edge w/ headwall
```

*** Weir 1 of 1 for Drop Structure BLEEDER ***

TABLE

Count:	3	Bottom Clip(in):	0.000
Type:	Horizontal	Top Clip(in):	0.000
Flow:	Both	Weir Disc Coef:	3.130
Geometry:	Circular	Orifice Disc Coef:	0.600
Span(in):	4.00	Invert(ft):	18.250
Rise(in):	4.00	Control Elev(ft):	18.250

Weirs

Name:	W-1	From Node:	POND 1
Group:	BASE	To Node:	TW-POST
Flow:	Both	Count:	1
Type:	Vertical: Mavis	Geometry:	Trapezoidal
Bottom Width(ft):	30.00		
Left Side Slope(h/v):	20.00		
Right Side Slope(h/v):	20.00		
Invert(ft):	18.550		
Control Elevation(ft):	18.550		
Struct Opening Dim(ft):	9999.00		
	TABLE		
Bottom Clip(ft):	0.000		
Top Clip(ft):	0.000		
Weir Discharge Coef:	2.600		
Orifice Discharge Coef:	0.600		

Name:	W-2	From Node:	POND 3
Group:	BASE	To Node:	TW-POST
Flow:	Both	Count:	1
Type:	Vertical: Mavis	Geometry:	Trapezoidal
Bottom Width(ft):	24.00		
Left Side Slope(h/v):	20.00		
Right Side Slope(h/v):	20.00		
Invert(ft):	18.550		
Control Elevation(ft):	18.550		
Struct Opening Dim(ft):	9999.00		
	TABLE		
Bottom Clip(ft):	0.000		
Top Clip(ft):	0.000		
Weir Discharge Coef:	2.600		
Orifice Discharge Coef:	0.600		

Hydrology Simulations

Name:	10-24
Filename:	P:\2019\19-070_RangeRoad\ENGINEERING\DRAINAGE\ICPR\10-24.R32
Override Defaults:	Yes
Storm Duration(hrs):	24.00
Rainfall File:	Flmod
Rainfall Amount(in):	8.00

Time(hrs)	Print Inc(min)
30.000	5.00

```
         Name: 100-24
     Filename: P:\2019\19-070_RangeRoad\ENGINEERING\DRAINAGE\ICPR\100-24.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Flmod
    Rainfall Amount(in): 10.50

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

-------------------------------------------------------------------------------------------------------
         Name: 25-24
     Filename: P:\2019\19-070_RANGEROAD\ENGINEERING\DRAINAGE\ICPR\25-24.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Flmod
    Rainfall Amount(in): 9.50

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

-------------------------------------------------------------------------------------------------------
         Name: Mean-24
     Filename: P:\2019\19-070_RANGEROAD\ENGINEERING\DRAINAGE\ICPR\Mean-24.R32

      Override Defaults: Yes
    Storm Duration(hrs): 24.00
          Rainfall File: Flmod
    Rainfall Amount(in): 5.00

Time(hrs)       Print Inc(min)
--------------- ---------------
30.000          5.00

===============================================================================================
==== Routing Simulations ======================================================================
===============================================================================================

         Name: 10-24              Hydrology Sim: 10-24
     Filename: P:\2019\19-070_RangeRoad\ENGINEERING\DRAINAGE\ICPR\10-24.I32

      Execute: Yes         Restart: No           Patch: No
  Alternative: No

       Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
   Time Step Optimizer: 10.000
       Start Time(hrs): 0.000                    End Time(hrs): 24.00
    Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
       Boundary Stages:                          Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
999.000         15.000

Group           Run
--------------- -----
BASE            Yes


-------------------------------------------------------------------------------------------------------
         Name: 100-24             Hydrology Sim: 100-24
     Filename: P:\2019\19-070_RangeRoad\ENGINEERING\DRAINAGE\ICPR\100-24.I32

      Execute: Yes         Restart: No           Patch: No
  Alternative: No
```

```
        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 24.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages: 100YR                   Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
999.000         15.000

Group           Run
--------------- -----
BASE            Yes


-------------------------------------------------------------------------------------------------------
         Name: 25-24               Hydrology Sim: 25-24
     Filename: P:\2019\19-070_RANGEROAD\ENGINEERING\DRAINAGE\ICPR\25-24.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 24.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
999.000         15.000

Group           Run
--------------- -----
BASE            Yes


-------------------------------------------------------------------------------------------------------
         Name: Mean-24             Hydrology Sim: Mean-24
     Filename: P:\2019\19-070_RANGEROAD\ENGINEERING\DRAINAGE\ICPR\Mean-24.I32

      Execute: Yes         Restart: No            Patch: No
  Alternative: No

        Max Delta Z(ft): 1.00                    Delta Z Factor: 0.00500
    Time Step Optimizer: 10.000
        Start Time(hrs): 0.000                    End Time(hrs): 24.00
     Min Calc Time(sec): 0.5000               Max Calc Time(sec): 60.0000
        Boundary Stages:                         Boundary Flows:


Time(hrs)       Print Inc(min)
--------------- ---------------
999.000         15.000

Group           Run
--------------- -----
BASE            Yes


===============================================================================
==== Boundary Conditions ======================================================
===============================================================================

      Name: 100YR                Node: TW-POST              Type: Stage
```

Time(hrs)	Stage(ft)
0.000	16.900
12.000	21.700
24.000	21.700

Range Road Subdivision
May 20, 2022
Project Number: 19-070
Post-Development Routing Results

Name	Simulation	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Inflow cfs	Max Outflow cfs
POND 1	25-24	19.04	22.00	0.0046	224944	49.33	21.20
POND 1	Mean-24	18.76	22.00	0.0047	222642	25.35	4.50
POND 2	25-24	19.07	22.00	0.0050	41136	17.06	7.72
POND 2	Mean-24	18.77	22.00	0.0050	39674	8.08	6.85
POND 3	25-24	19.07	22.00	0.0049	148717	49.37	30.95
POND 3	Mean-24	18.77	22.00	0.0050	146922	22.56	7.22
TW-POST	25-24	18.25	22.00	0.0003	0	64.54	0.00
TW-POST	Mean-24	18.25	22.00	0.0003	0	15.76	0.00
TW-RANGERD	25-24	18.25	18.25	0.0003	0	1.09	0.00
TW-RANGERD	Mean-24	18.25	18.25	0.0003	0	0.89	0.00

Florida Engineering Group, Inc.
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Range Road Subdivision
May 20, 2022
Project Number: 19-070
Post-Development Routing Results

Name	Simulation	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Inflow cfs	Max Outflow cfs
POND 1	100-24	21.72	22.00	0.0049	247264	54.61	46.63
POND 2	100-24	21.75	22.00	0.0049	54379	21.25	15.57
POND 3	100-24	21.72	22.00	0.0050	164701	60.73	60.13
TW-POST	100-24	21.70	22.00	-1.1000	0	120.12	0.00

Appendix E – Secondary Stormwater Calculations

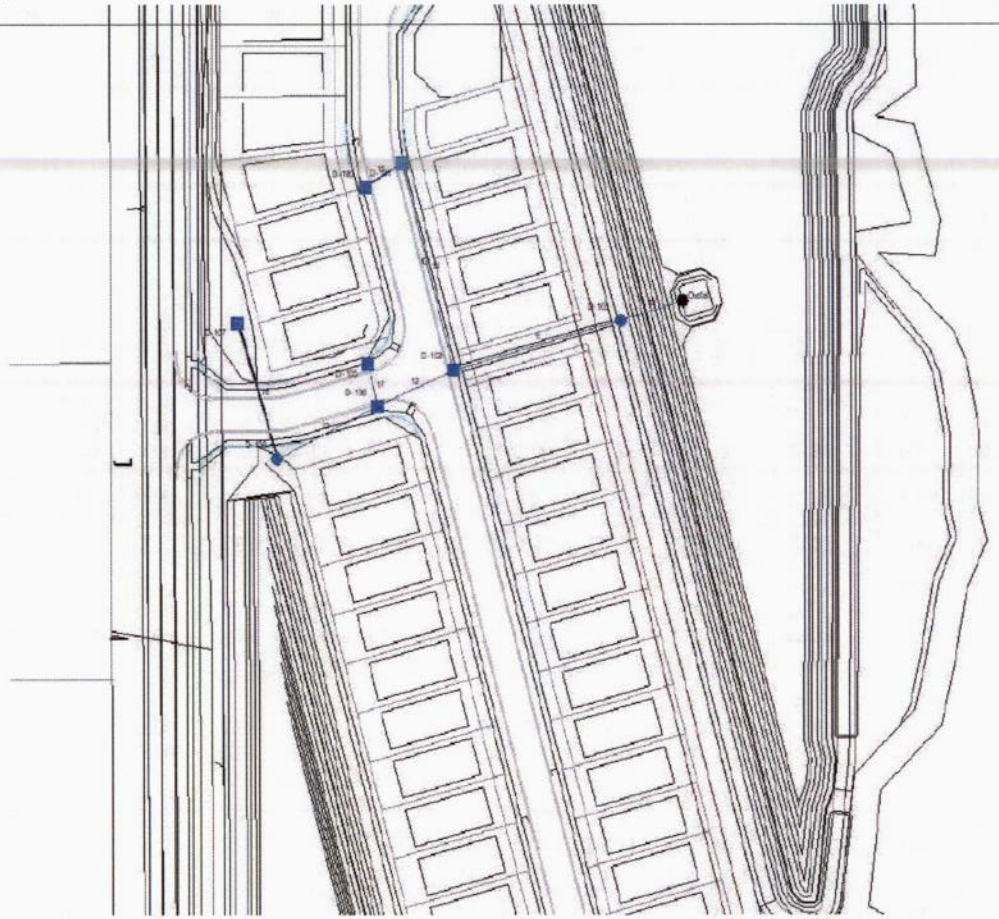
Sub-basin Drainage Area Calculations

Range Road Subdivision

FEG Project Number: 19-070

STRUCTURE	TOTAL (ac)	IMP (ac)	PER (ac)	C
D-100	1.093	0.534	0.559	0.54
D-101	0.152	0.106	0.046	0.69
D-102	0.418	0.186	0.232	0.51
D-103	0.001	0	0.001	0.20
D-105	0.321	0.203	0.118	0.64
D-106	0.372	0.215	0.157	0.60
D-107	0.332	0.1	0.232	0.41
D-108	0.001	0	0.001	0.20
D-109	0.001	0	0.001	0.20
D-111	1.033	0.59	0.443	0.60
D-112	0.547	0.37	0.177	0.67
D-113	0.001	0	0.001	0.20
D-115	0.399	0.241	0.158	0.62
D-116	0.385	0.258	0.127	0.67
D-117	0.001	0	0.001	0.20
D-120	0.001	0	0.001	0.20
D-121	0.325	0.173	0.152	0.57
D-122	0.294	0.15	0.144	0.56
D-123	0.001	0	0.001	0.20

Hydraflow Plan View



Project File: 2022-05-20_19-070_TEST.stm	No. Lines: 17	05-21-2022

FL-DOT Report

Line No	To Line	Type of struc	n - value	Len	Drainage Area C1 = 0.2 C2 = 0.5 C3 = 0.9			Time of conc	Time of flow in sect	Inten (I)	Total CA	Add Q / Total flow	Inlet elev	Elev of HGL / Elev of Crown / Elev of Invert			Rise Span	HGL Pipe	Actual Full Flow		Date: 05-21-2022 / Frequency: 10 yrs / Proj: 2022-05-20_19-070_TE
					Increment (ac)	Sub-total (ac)	Sum CA					Q		Up	Down	Fall	Size	Slope	Vel	Cap	
				(ft)				(min)	(min)	(in/hr)		(cfs)	(ft)	(ft)	(ft)	(ft)	(in)	(%)	(ft/s)	(cfs)	Line description
17	12	Curb	0.013	35.0	0.00	0.00	0.00	10.00	0.49	7.05	0.21	0.00	22.88	19.59	19.57	0.02	15	0.05	1.19	1.45	
					0.00	0.00	0.00					1.45		19.65	19.57		15	0.23	2.52	3.09	
					0.00	0.00	0.00							18.40	18.32	0.08	Cir				
---	---																				
16	13	DrGrt	0.013	113.0	0.00	0.00	0.00	10.00	2.41	7.05	0.14	0.00	22.50	19.01	18.98	0.02	15	0.02	0.78	0.96	
					0.00	0.00	0.00					0.96		18.35	17.75		15	0.53	3.83	4.71	
					0.00	0.00	0.00							17.10	16.50	0.60	Cir				
---	---																				
15	14	Curb	0.013	38.0	0.00	0.00	0.00	10.00	0.27	7.05	0.59	0.00	23.71	19.51	19.45	0.06	18	0.16	2.36	4.16	
					0.00	0.00	0.00					4.16		18.52	18.45		18	0.18	2.55	4.51	
					0.00	0.00	0.00							17.02	16.95	0.07	Cir				
14	11	Curb	0.013	170.0	0.00	0.00	0.00	10.27	1.03	7.01	0.70	0.00	23.74	19.35	18.98	0.37	18	0.22	2.76	4.87	
					0.00	0.00	0.00					4.87		18.35	17.87		18	0.28	3.16	5.58	
					0.00	0.00	0.00							16.85	16.37	0.48	Cir				
---	---																				
13	12	MH	0.013	96.0	0.00	0.00	0.00	12.41	33.25	6.68	0.14	0.00	22.50	18.98	18.98	0.00	60	0.00	0.05	0.91	
					0.00	0.00	0.00					0.91		17.30	17.36		60	-0.06	0.00	0.00	
					0.00	0.00	0.00							12.30	12.36	-0.06	Cir				
12	11	Curb	0.013	72.0	0.00	0.00	0.00	45.65	6.11	3.84	0.56	0.00	22.88	18.98	18.98	0.00	60	0.00	0.11	2.17	
					0.00	0.00	0.00					2.17		17.46	17.50		60	-0.06	0.00	0.00	
					0.00	0.00	0.00							12.46	12.50	-0.04	Cir				
11	10	Curb	0.013	150.0	0.00	0.00	0.00	51.76	4.93	3.57	1.47	0.00	23.26	18.98	18.98	0.00	60	0.00	0.27	5.25	
					0.00	0.00	0.00					5.25		17.50	17.41		60	0.06	3.25	63.80	
					0.00	0.00	0.00							12.50	12.41	0.09	Cir				
10	End	MH	0.013	56.0	0.00	0.00	0.00	56.69	1.88	3.37	1.47	0.00	22.00	18.98	18.98	0.00	60	0.00	0.25	4.97	
					0.00	0.00	0.00					4.97		15.02	15.00		60	0.04	2.51	49.22	
					0.00	0.00	0.00							10.02	10.00	0.02	Cir				
---	---																				
9	8	Curb	0.013	35.0	0.00	0.00	0.00	10.00	0.24	7.05	0.62	0.00	22.95	19.92	19.87	0.05	18	0.15	2.50	4.37	
					0.00	0.00	0.00					4.37		20.00	19.87		18	0.37	3.62	6.40	
					0.00	0.00	0.00							18.50	18.37	0.13	Cir				

NOTES: Intensity = 281.36 / (Inlet time + 31.90) ^ 0.99 (in/hr) ; Time of flow in section is based on full flow.

Project File: 2022-05-20_19-070_TEST.stm

FL-DOT Report

Line No	To Line	Type of struc	n - value	Len	Drainage Area C1 = 0.2 C2 = 0.5 C3 = 0.9			Time of conc	Time of flow in sect	Inten (I)	Total CA	Add Q / Total flow	Inlet elev	Elev of HGL / Elev of Crown / Elev of Invert			Rise Span	HGL Pipe	Actual Full Flow		Date: 05-21-2022 / Frequency: 10 yrs / Proj: 2022-05-20_19-070_TE
				(ft)	Increment (ac)	Sub-total (ac)	Sum CA	(min)	(min)	(in/hr)		Q (cfs)	(ft)	Up (ft)	Down (ft)	Fall (ft)	Size (in)	Slope (%)	Vel (ft/s)	Cap (cfs)	Line description
8	7	Grate	0.013	130.0	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	10.24	0.98	7.02	0.99	0.00 6.92	22.95	19.17 17.67 15.67	19.05 18.97 16.97	0.12 -1.30	24 24 Cir	0.09 -1.00	2.20 0.00	6.92 0.00	
7	End	MH	0.013	29.0	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	11.22	0.22	6.86	0.99	0.00 6.77	22.00	19.01 18.87 16.87	18.98 18.57 16.57	0.03 0.30	24 24 Cir	0.09 1.03	2.15 7.32	6.77 23.00	
---	---																				
6	5	Curb	0.013	37.0	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	10.00	0.42	7.05	0.25	0.00 1.75	23.60	21.73 21.73 20.73	21.72 21.65 20.65	0.01 0.08	12 18 Elip	0.04 0.22	1.48 2.38	1.75 2.81	
5	4	Curb	0.013	123.0	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	10.42	1.02	6.99	0.51	0.00 3.53	23.59	21.60 21.77 20.27	21.48 21.48 19.98	0.12 0.29	18 18 Cir	0.10 0.24	2.06 2.89	3.53 5.10	
4	End	MH	0.013	36.0	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	11.44	0.30	6.82	0.51	0.00 3.45	23.00	19.04 19.58 18.08	18.98 19.50 18.00	0.06 0.08	18 18 Cir	0.18 0.22	2.85 2.80	3.45 4.95	
---	---																				
3	2	Curb	0.013	35.0	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	10.00	5.61	7.05	0.19	0.00 1.31	23.43	18.98 15.06 11.06	18.98 15.04 11.04	0.00 0.02	48 48 Cir	0.00 0.06	0.10 2.73	1.31 34.34	
2	1	Curb	0.013	130.0	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	15.61	11.09	6.23	0.35	0.00 2.18	23.43	18.98 15.04 11.04	18.98 14.98 10.98	0.00 0.06	48 48 Cir	0.00 0.05	0.17 2.46	2.18 30.86	
1	End	MH	0.013	56.0	0.00 0.00 0.00	0.00 0.00 0.00	0.00 0.00 0.00	26.70	4.87	5.07	0.35	0.00 1.77	22.00	18.98 14.03 10.03	18.98 14.00 10.00	0.00 0.03	48 48 Cir	0.00 0.05	0.14 2.65	1.77 33.25	

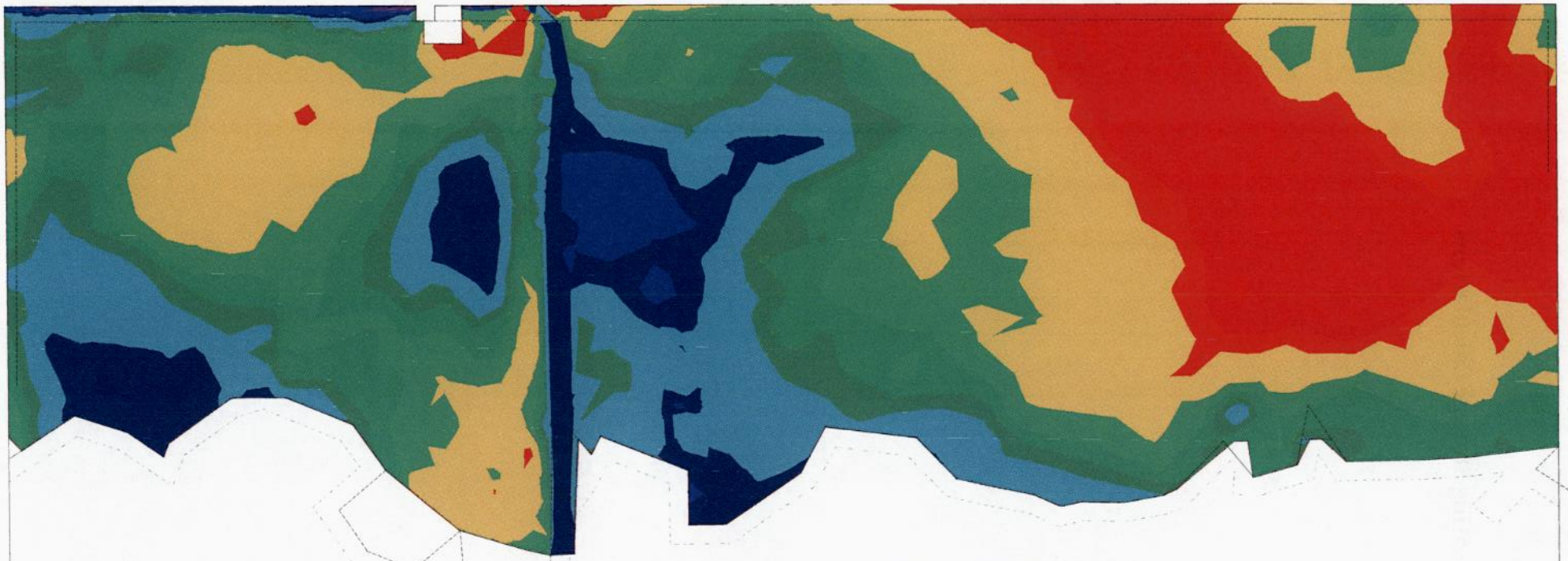
NOTES: Intensity = 281.36 / (Inlet time + 31.90) ^ 0.99 (in/hr) ; Time of flow in section is based on full flow.

Project File: 2022-05-20_19-070_TEST.stm

Range Road Subdivision
May 20, 2022
Project Number: 19-070
Post-Development Routing Results

Name	Simulation	Max Stage ft	Warning Stage ft	Max Delta Stage ft	Max Surf Area ft2	Max Inflow cfs	Max Outflow cfs
POND 1	10-24	18.96	22.00	0.0046	224298	41.38	18.99
POND 2	10-24	18.98	22.00	0.0050	40704	13.98	6.85
POND 3	10-24	18.98	22.00	0.0049	148198	40.17	22.51

Appendix F – Flood Plain Compensating Storage Calculations



Elevations Table				
Number	Minimum Elevation	Maximum Elevation	Area	Color
1	-1.56	0.00	155799.61	
2	0.00	1.00	329008.17	
3	1.00	2.00	447562.68	
4	2.00	3.00	254341.20	
5	3.00	4.00	24173.03	
6	4.00	4.70	610.77	

Cut/Fill Report

Generated: 2022-02-23 16:39:16

By user: johnm

Drawing: P:\2019\19-070_RangeRoad\DRAWINGS\CONCEPT\XREF\P:\2019\19-070_RangeRoad\DRAWINGS\CONCEPT\XREF\CompensationStorageOption3.dwg

Volume Summary

Name	Type	Cut Factor	Fill Factor	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Existing to 21.7	full	1.000	1.000	1211495.47	2327.42	58211.47	55884.05<Fill>

Totals

	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Total	1211495.47	2327.42	58211.47	55884.05<Fill>

* Value adjusted by cut or fill factor other than 1.0



Elevations Table				
Number	Minimum Elevation	Maximum Elevation	Area	Color
1	-2.44	0.00	706991.46	
2	0.00	1.50	167839.31	

Cut/Fill Report

Generated: 2022-02-23 16:31:04

By user: johnm

Drawing: P:\2019\19-070_RangeRoad\DRAWINGS\CONCEPT\XREF\P:\2019\19-070_RangeRoad\DRAWINGS\CONCEPT\XREF\CompensationStorageOption3.dwg

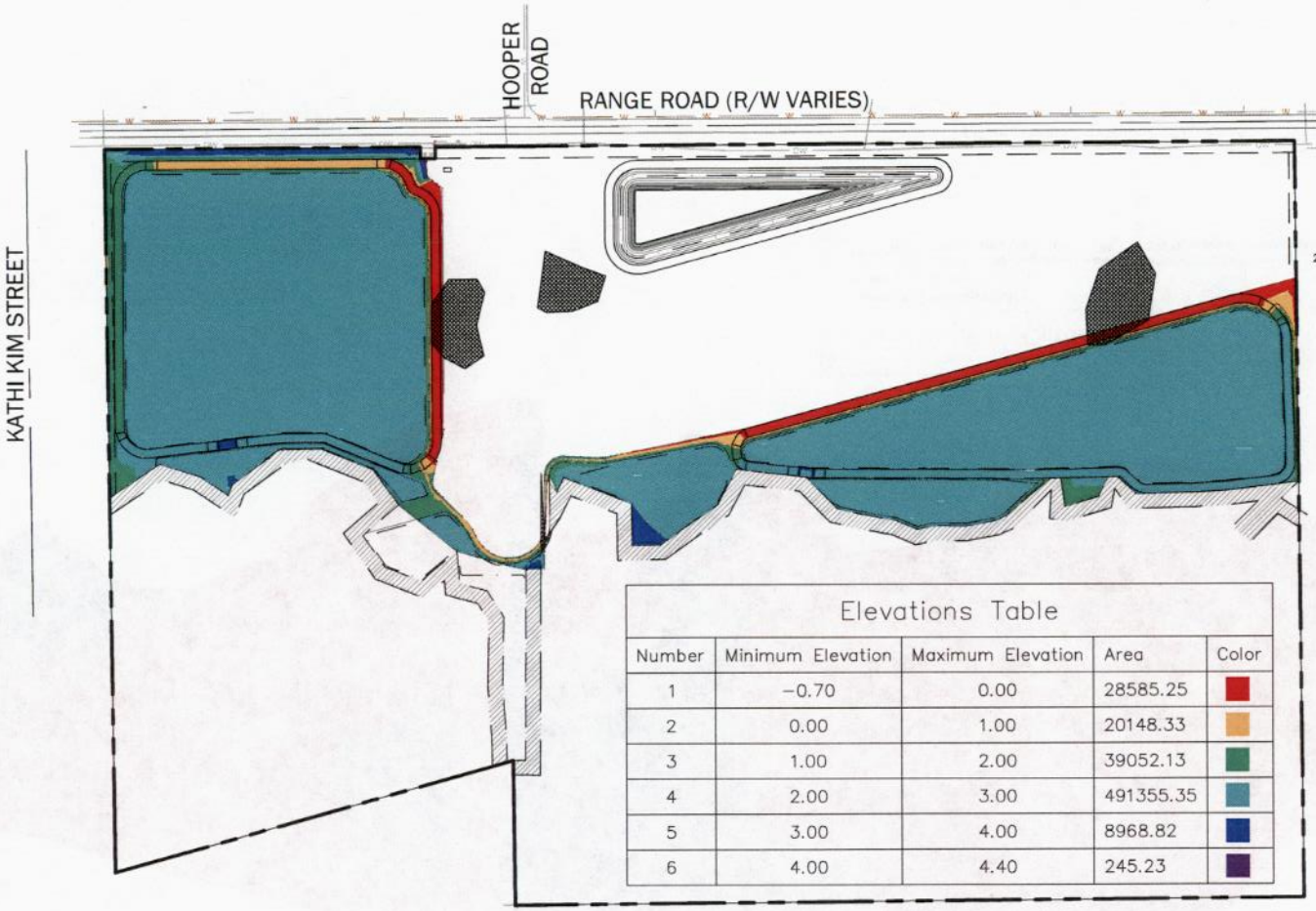
Volume Summary

Name	Type	Cut Factor	Fill Factor	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
EXISTING TO SHWT	full	1.000	1.000	874830.77	21237.92	2346.70	18891.23<Cut>

Totals

	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Total	874830.77	21237.92	2346.70	18891.23<Cut>

* Value adjusted by cut or fill factor other than 1.0



GRAPHIC SCALE

200 0 100 200 400

1" = 200'

Elevations Table

Number	Minimum Elevation	Maximum Elevation	Area	Color
1	−0.70	0.00	28585.25	
2	0.00	1.00	20148.33	
3	1.00	2.00	39052.13	
4	2.00	3.00	491355.35	
5	3.00	4.00	8968.82	
6	4.00	4.40	245.23	

Cut/Fill Report

Generated: 2022-03-17 17:44:59
By user: johnn
Drawing: P:\2019\19-070_RangeRoad\DRAWINGS\CONCEPT\XREF\P-2019\19-070_RangeRoad\DRAWINGS\CONCEPT\XREF\CompensationStorageOption5.dwg

Volume Summary

Name	Type	Cut Factor	Fill Factor	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
NWL - 21.7	fill	1.000	1.000	588835.64	331.19	51617.06	51285.86<Fill>

Totals

	2d Area (Sq. Ft.)	Cut (Cu. Yd.)	Fill (Cu. Yd.)	Net (Cu. Yd.)
Total	588835.64	331.19	51617.06	51285.86<Fill>

* Value adjusted by cut or fill factor other than 1.0

DATE	REVISIONS	BY	CHECKED

RANGE ROAD SUBDIVISION
CITY OF COCOA, FLORIDA

FEG FLORIDA ENGINEERING GROUP
Engineering the Future

5127 S. Orange Avenue, Suite 200
Orlando, FL 32809
Phone: 407-895-0324
Fax: 407-895-0325
www.feg-inc.us

FLOOD PLAIN COMPENSATING STORAGE

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
CPN	JWM	GRC	GRC

PROJECT NO. 19-070
SCALE 1" = 200'
DATE JUNE, 2022
SHEET NO.
SHEET OF

THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED BY GREGORY R. CRAWFORD, P.E. ON June 17, 2022 USING A DIGITAL SIGNATURE.
PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

FLORIDA CERTIFICATE OF AUTHORIZATION No. 31335
GREGORY R. CRAWFORD, P.E.
No 51335
STATE OF FLORIDA
LICENSE NO. 51335

Ecological Consulting Solutions, Inc.

June 11, 2021

Karali Associates, LLC
2642 Fawnlake Trail
Orlando, Florida 32828

RE: Range Road Subdivision
Brevard County, Cocoa, Florida
Listed Species Report
ECS Project No. 875.01.20

To whom it may concern:

On March 24th, 2021, ECS biologists conducted a listed species survey of the proposed project site located immediately east of N Range Road, west of E Stetson Circle, and north of Kathi Kim Street in Cocoa, Florida. More specifically the project site is located in Section 19 & 30, Township 24 South, and Range 36 East in Brevard County, Florida (Figure 1).

The subject property consists of mostly forested habitat. There is a dirt roadway through the center of the property. Two large wetland systems are present within the property boundary as well as a man-made ditch and three additional small wetlands.

A survey of the property boundaries was conducted to assess the potential occurrence of flora and fauna listed as threatened or endangered by the United States Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FWC), and the Florida Department of Agriculture (FDA). Tables 1 and 2 provide a listing of the species known to occur within Brevard County and their expected occurrence of the project site. The findings and conclusions of the survey are reported in this letter.

The survey was conducted by Ecological Consulting Solutions Inc (ECS) for the purpose of evaluating the site for the presence or absence of wetland habitat and protected flora and fauna or their habitat. The survey was conducted by means of pedestrian transects in the early morning to assure the potential of observing listed fauna as recommended by the FWC and the USFWS.

Longwood Office
235 Hunt Club Blvd., Suite 202
Longwood, FL 32779
Phone: (407) 869-9434
Fax: (407) 869-9436

Tampa Office
419 W. Platt St., Suite 103
Tampa, FL 33606
Phone: (813) 254-5959

The following resources were used for supporting information during the site assessment and letter preparation:

- Color aerial photographs (1" = 300), 2020, Google Earth, Volusia County, Florida.
- United States Geological Survey (USGS) 7.5-minute quadrangle map, Volusia County, Florida, (ArcGIS).
- National Wetlands Inventory Mapping, U.S. Fish and Wildlife Service.
- Official Lists of Endangered and Potentially Endangered Fauna and Flora in Florida (USFWS and FWC).

Pedestrian and vehicular surveys of the proposed project site were conducted in order to qualitatively document the existing vegetation and to assess the present land use patterns according to *the Florida Land Use, Cover and Forms Classification System, Department of Transportation* (FLUCFCS; DOT 1999). Six (06) land-use types were determined for the project site (Figure 2). A brief description of each FLUCFCS community is provided below.

420 – Upland Hardwood Forests

Located in the western portion of the project site this is the only upland habitat located on site. This habitat has a dense canopy cover, species observed consist of slash pine (*Pinus elliottii*), laurel oak (*Quercus laurifolia*), live oak (*Quercus laurifolia*), cabbage palms (*Sabal palmetto*), loblolly bay (*Gordonia lasianthus*), and camphor tree (*Cinnamomum camphora*). The shrub layer species include Brazilian pepper (*Schinus terebinthifolia*), American beauty berry (*Callicarpa americana*), and American elm (*Ulmus americana*). Groundcover species observed were greenbriar (*Smilax rotundifolia*), blackberry (*Rubus fruticosa*), bracken fern (*Pteridium aquilinum*), saw palmetto (*Serenoa repens*), broomsedge (*Andropogon virginicus*), and some cogon grass (*Imperata cylindrica*).

513 – Ditch

Found through the center of the property is a man-made ditch that runs offsite in both directions. Vegetation observed within the ditch and along the edge consists of Brazilian pepper, wax myrtle (*Myerica cerifera*), primrose willow (*Ludwigia peruviana*), soft rush (*Juncus effuses*), and arrowhead (*Sagittaria lancifolia*).

617 – Mixed Wetland Hardwoods

Found in two places in the southern portion of the property this habitat type is heavily forested. Vegetation observed includes Brazilian pepper, beak rush (*Rhynchospora crinipes*), soft rush, wax myrtle, water hyssop (*Bacopa monnieri*), gall berry (*Ilex glabra*), red maple (*Acer rubrum*), swamp fern (*Blechnum serrulatum*), royal fern (*Osmunda regalis*), American elm, poison ivy (*Toxicodendron radicans*), cabbage palm, laurel oak, and cinnamon fern (*Osmunda cinnamomea*).

619 – Exotic Wetland Hardwoods

Adjacent to the onsite ditch this habitat is densely vegetated with Brazilian pepper. Other species observed include swamp fern, cinnamon fern, cabbage palm, and sugar berry.

641 – Freshwater Marshes

The largest wetland habitat type found onsite, is located in the north eastern portion of the property. This habitat is densely vegetated, species observed include giant leather fern (*Acrostichum danaeifolium*), cattails (*Typha spp.*), sawgrass (*Cladium jamaicense*), marsh pennywort (*Hydrocotyle umbellate*), primrose willow, Carolina willow (*Salix carolinianna*), Brazilian pepper, cabbage palm, sugar berry (*Celtis laevigata*), poison ivy, live oak, water oak (*Quercus nigra*), and wax myrtle.

643 – Wet Prairie

Located in the north west portion of the property is an isolated wetland defined by a low-lying area within the uplands. Vegetation found within this habitat consists of soft rush, blackberry, gall berry, little blue maiden cane (*Amphicarpum muehlenbergianum*), St. john wort (*Hypericum perforatum*), marsh pennywort, and primrose willow.

Listed Species Survey

A survey was conducted using pedestrian transects throughout the site to assess the occurrence, or potential for occurrence, of flora and fauna listed as threatened, endangered, or as species of special concern (SSC) by the Florida Fish and Wildlife Conservation Commission (FWC), United States Fish and Wildlife Service (USFWS), and Florida Department of Agriculture (FDA).

ECS biologists searched the USFWS database at http://endangered.fws.gov for the presence of critical habitats within the proposed project site. There are no critical habitats within the project boundaries.

On January 11, 2017, the FWC State listing status changes, originally proposed back in 2010, became official after the approval of Florida's Imperiled Species Management Plan by FWC Commissioners.

• 15 species were removed from Florida's Endangered and Threatened Species List: Eastern chipmunk, Florida mouse, brown pelican, limpkin, snowy egret, white ibis, peninsula ribbon snake (Lower Keys population), red rat snake Lower Keys population), striped mud turtle (Lower Keys population), Suwannee cooter, gopher frog, Pine Barrens tree frog, Lake Eustis pupfish, mangrove rivulus, and Florida tree snail.

• 23 species changed from State-designated Species of Special Concern to State-designated Threatened species: Sherman's short-tailed shrew, Sanibel rice rat, little blue heron, tricolored heron, reddish egret, roseate spoonbill, American oystercatcher, black skimmer, Florida burrowing owl, Marian's marsh wren, Worthington's Marsh wren, Scott's seaside sparrow, Wakulla seaside sparrow, Barbour's map turtle, Florida Keys mole skink, Florida pine snake, Georgia blind salamander, Florida bog frog, bluenose shiner, saltmarsh top minnow, Southern tessellated darter, Santa Fe crayfish, and Black Creek crayfish.

• 14 species keep their State-designated Threatened status: Everglades mink, Big Cypress fox squirrel, Florida sandhill crane, snowy plover, least tern, white-crowned pigeon, Southeastern American kestrel, Florida brown snake (Lower Keys population), Key ringneck snake, short-tailed snake, rim rock crowned snake, Key silverside, blackmouth shiner, and crystal darter.

• Five species listed as State-designated Species of Special Concern: (list species): Homosassa shrew, Sherman's fox squirrel, osprey (Monroe County population), alligator snapping turtle, and harlequin darter.

On December 23, 2018, the State listing status changes that were proposed in 2011 as part of the newly implemented imperiled species management system became official after the approval of Florida's Imperiled Species Management Plan by FWC Commissioners.

• Four species were removed from Florida's Endangered and Threatened Species List as State Species of Special Concern: Harlequin darter, Osprey (Monroe County population), Homosassa shrew, and Sherman's fox squirrel.

• The Alligator snapping turtle was taxonomically reclassified into three subspecies. The Suwannee alligator snapping turtle was listed as a State-designated Threatened species. • Two species were listed as Federally-designated Threatened species: Giant manta ray and Nassau grouper. • Four species had changes in their scientific names: Short tailed snake, Bluetail mole skink, Florida Keys mole skink, and sand skink.

Birds

Approximately 35 species (and sub-species) of birds found in Florida are protected by the FWC and/or the USFWS. Overall, about fifteen (15) are expected to occur in central Florida.

Approximately 35 species (and sub-species) of birds found in Florida are protected by the FWC and/or the USFWS. For Brevard County, the USFWS federally lists five (5) bird species. Only about fifteen (15) are expected to occur in central Florida. No listed birds were observed at this site (Table 1).

Red-cockaded woodpeckers (*Picoides borealis*) are listed as endangered (USFWS) and endangered (FWC). No red-cockaded woodpeckers were observed and the upland habitat type is not suitable.

There was no open pine flatwood habitat with old-growth pines that characterize RCW nesting and foraging habitat.

Listed wading birds such as limpkin (*Aramus guarauna),* little blue heron (*Egretta caerulea),* tricolored heron (*Egretta tricolor),* white ibis (*Eudocimus albus)* and wood stork *(Mycteria americana)* were not observed. The onsite ditch and wetlands do provide wading bird habitat. Wading birds likely use the interior of the marsh habitat due to the dense vegetation throughout the remainder of the site.

Florida Scrub-Jay

Brevard County contains the Florida scrub-jay (*Aphelocoma coerulescens)* which is listed as threatened by the USFWS.

A 1993 statewide census documented about 4,000 breeding pairs of Florida scrub-jays remaining in Florida, including 374 pairs in mainland Brevard County. In addition, an estimated 850 breeding pairs of scrub-jays are on the Federal lands of Kennedy Space Center, Merritt Island National Wildlife Refuge, and Cape Canaveral Air Force Station. Brevard County's 1993 Florida scrub-jay population was the highest of any county in the state.

The onsite habitat is not suitable for the presence of the Florida scrub jay as there is no scrub habitat available. As previously discussed, the upland habitats are densely vegetated with pine and oak dominated canopy cover.

The survey methodology per the prescribed guidelines established by the USFWS which were adapted from the "*Ecology and development-related habitat requirements of the Florida scrub-jay, Florida Game and Freshwater Fish Commission, Nongame Wildlife Program Technical Report No. 8"* were reviewed prior to the site visits. No Florida scrub jays were seen or vocalizations heard.

Bald Eagle

Bald eagles (*Haliaeetus leucocephalus*) or their nests were observed on the site. Bald eagles are protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The USFWS has established a 660 foot protection zone around a bald eagle nest.

ECS searched the Audubon's Eagle Watch website to determine if any documented bald eagle nests are within 660 feet of the site. There are no FWC verified nest located on or adjacent to the project site. For current nesting data, ECS also checked with Audubon Eagle Watch which collects bald eagle nesting data for the FWC, no nests were documented on site or nearby.

No other listed raptors such as Southeastern American kestrels (*Falco sparverius paulus*) or Arctic peregrine falcons (*Falco peregrinus tundrius*) were observed on or around the site. There is no foraging habitat for kestrels. No birds were observed on or offsite at the time of the survey.

Florida sandhill cranes (*Grus canadensis pratensis*), a Threatened Species, were not observed within the project boundaries.

Amphibians and Reptiles

About thirty (30) species of Florida's amphibians and reptiles are protected. For Brevard County, the USFWS federally lists eight (8) reptile species. Five ae species of sea turtles which are not of concern for this property. No listed reptile or amphibian species were observed within the project boundaries.

Gopher Tortoise

Surveys were conducted throughout the property for gopher tortoises (*Gopherus polyphemus)*, a species listed by the FWC as a Threatened species. No gopher tortoises or their burrows were observed. The property is densely forested with a dense shrub layer. The onsite habitats are considered poor for the gopher tortoise.

Several commensal species associated with gopher tortoise burrows, including the gopher frog (*Rana capito)* and eastern indigo snake (*Drymarchon corais couperi)* also receive protection, but were not observed.

Eastern Indigo Snake

Concerning the eastern indigo snake, ECS conducted survey transects to identify potential aboveground and underground refugia, which eastern indigo snakes may inhabit. Underground refugia includes active or inactive gopher tortoise burrows, mammal burrows, hollows at the base of trees and other similar formations. Above ground refugia includes thick shrub formations, stumps, the base of thick palmetto, ground litter, brush piles, trash piles, and abandoned structures, and crevices of rock-lined ditch walls and other similar refugia.

Surveys for eastern indigo snakes are recommended by the USFWS during the time of October 01st through April 30th. There were little suitable refugia for the eastern indigo snake onsite. No eastern indigo snakes were observed.

The USFWS has established new programmatic effect determination key (Key) as part of the eastern indigo snake management. The Key allows the USFWS to require mitigation for eastern indigo snake habitat if 25 or more acres of suitable habitat will be impacted for development.

The USFWS has established a fund that a developer can pay into for mitigation.

A developer can pay up front and then no surveys for the eastern indigo snakes are required. The survey is a minimum 5-day survey. To save time and monies associated with the surveys, the developer can pay a fee and expedite the permitting process.

To determine if the site has eastern indigo snake habitat will be up to the USFWS reviewer assigned to the project.

The Key only applies if a project has Army Corps of Engineers jurisdictional wetlands. It was designed to speed up the permitting process for indigo snakes when there are Army Corps of Engineers jurisdictional wetlands onsite. The idea is a developer pays into the fund and gets a permit quickly.

If a project site does not have Army Corps of Engineers jurisdictional wetlands, then the programmatic key cannot be used. Under this circumstance, formal consultation with the USFWS would have to be conducted which can take up to 6 months to obtain a permit to impact eastern indigo snake habitat.

The USFWS requires the developer to notify the local field office via email at least **30 days prior** to any clearing/land alteration activities.

The notification has to include an eastern indigo snake protection/education plan. This notification can occur via email with the protection/education plan attached.

As long as the signatory of the e-mail certifies compliance with the protection/education plan (including use of the USFWS informational poster and brochure), no further written confirmation or "approval" from the USFWS is needed and the applicant may move forward with the project.

Mammals

Thirty-three (33) mammals are currently protected in Florida. For Brevard County, the USFWS federally lists two (2) mammal species.

ECS searched for the presence of Southern fox squirrels (*Sciurus niger niger*) and the Florida mouse (*Podomys floridanus)* and their possible den or nest sites. The absence of gopher tortoise burrows decreases the likelihood for the Florida mouse.

No mammal species were observed.

Listed Plants

There were no protected plant species found on the project site (Table 2).

Currently, there are no technical reports available by the state or federal agencies mentioned in this letter report for the survey of the nearly 400 protected plant species. None of the agencies require relocation or mitigation for protected plant species.

The Department of Agriculture and Consumer Services (DACS) designates and regulates plants listed as "endangered", "commercially exploited" and "threatened".

There is no statutory prohibition against a landowner from harvesting an endangered or threatened plant from his property. However, it is unlawful for an individual to harvest an endangered or threatened species from the private land of another or any public land without first obtaining written permission of that landowner and a permit from DACS. Additionally, harvesting three or more commercially exploited plants from the private land of another or any public land will also require a DACS permit.

Wetlands

There are five wetlands and one surface water within the boundaries of the project site.

St. Johns River Water Management District

The St. Johns River Water Management District (SJRWMD) regulates any proposed development including alterations to wetlands and surface waters. Any proposed development of the site will require a review of the wetland delineation and a submittal of an Environmental Resource Permit (ERP) application to the SJRWMD.

If the onsite wetland is larger than 0.5 acres in size, then mitigation will be required for any proposed wetland impacts. The SJRWMD operates on 30 day timeframes.

Florida Department of Environmental Protection

The Florida Department of Environmental Protection (DEP) now has federal authority over this project and not the U.S. Army Corps of Engineers (ACOE). According to DEP, if no wetland impacts are proposed, then a federal permit will not be necessary.

There is no separate permit application for the DEP. All of the water management districts now have a joint permit application form. The permit application is to be submitted to SJRWMD, who will then provide a copy to the local office of the DEP. Both agencies will attempt to conduct wetland reviews at the same time. Currently DEP is taking longer than the SJRWMD to review flagged wetland lines and is averaging around three months to get a site visit scheduled.

As part of the wetland review process, wetland and upland data forms must be submitted to DEP for review. DEP will also require an alternative site analysis should wetland impacts be proposed. The alternative site analysis must demonstrate why the proposed property was chosen to develop and that other properties with less wetlands were not available. DEP also requires the applicant to provide self-addressed envelopes, with postage, for every adjacent property owner. The envelopes are necessary so that DEP can send out public notice as part of the permit process. DEP will also require mitigation for any proposed wetland impacts.

DEP is typically taking 150 to 240 days to complete the permitting process.

Summary

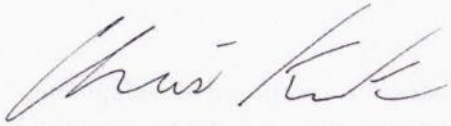
In summary, no listed species were observed within the project site.

Prior to any land clearing or construction activities, the USFWS must be provided with an eastern indigo snake protection/education plan. The USFWS must approve the protection/education plan prior to construction. There were no other environmental concerns observed for this project.

Ecological Consulting Solutions Inc. appreciates the opportunity to provide you with our services. Should you have any questions or require additional information, please do not hesitate to contact me.

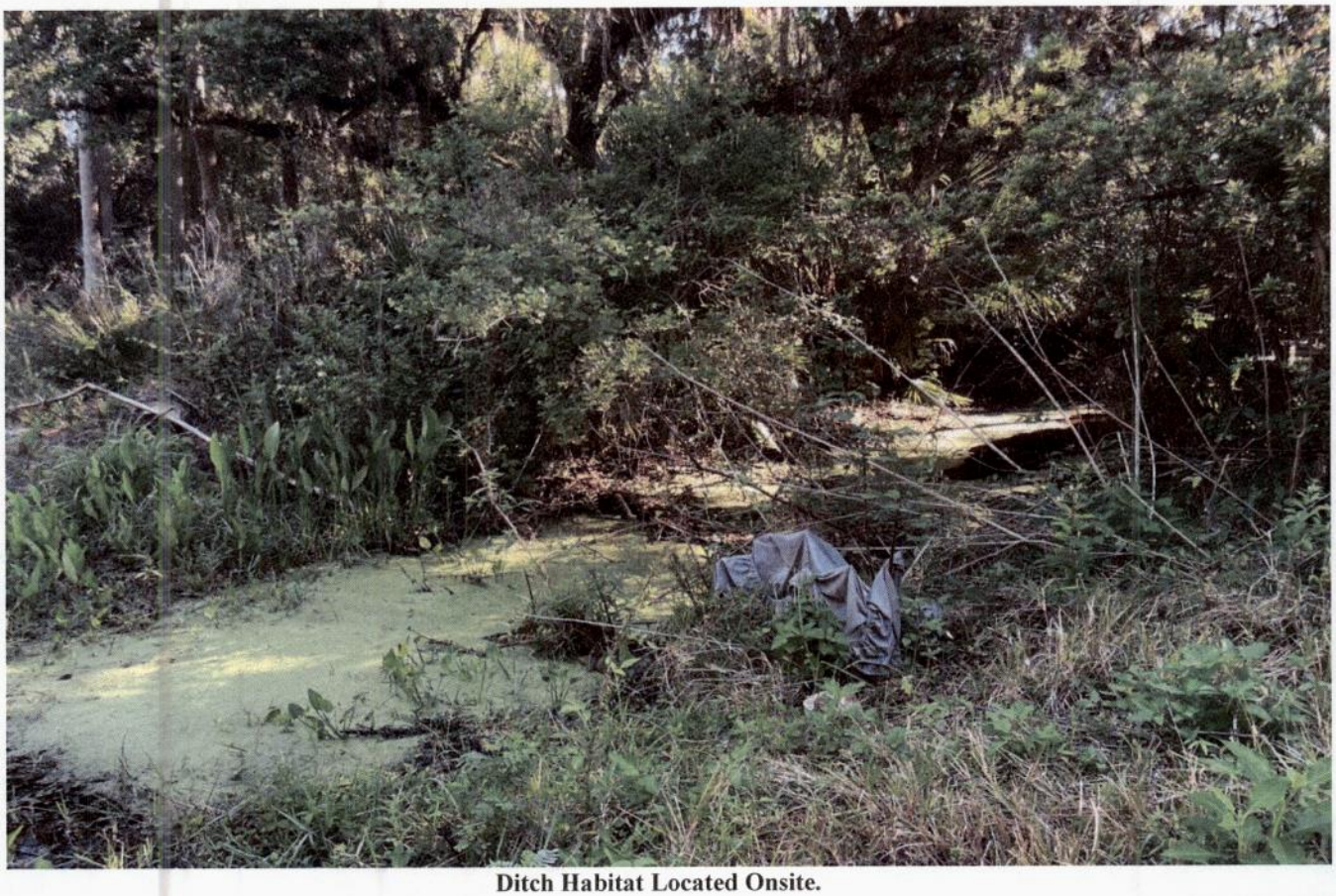
Sincerely,

ECOLOGICAL CONSULTING SOLUTIONS INC



Chris Krack

PHOTOGRAPH OF THE SUBJECT PROPERTY



Ditch Habitat Located Onsite.



Wetland Habitat Located Onsite.

FIGURES



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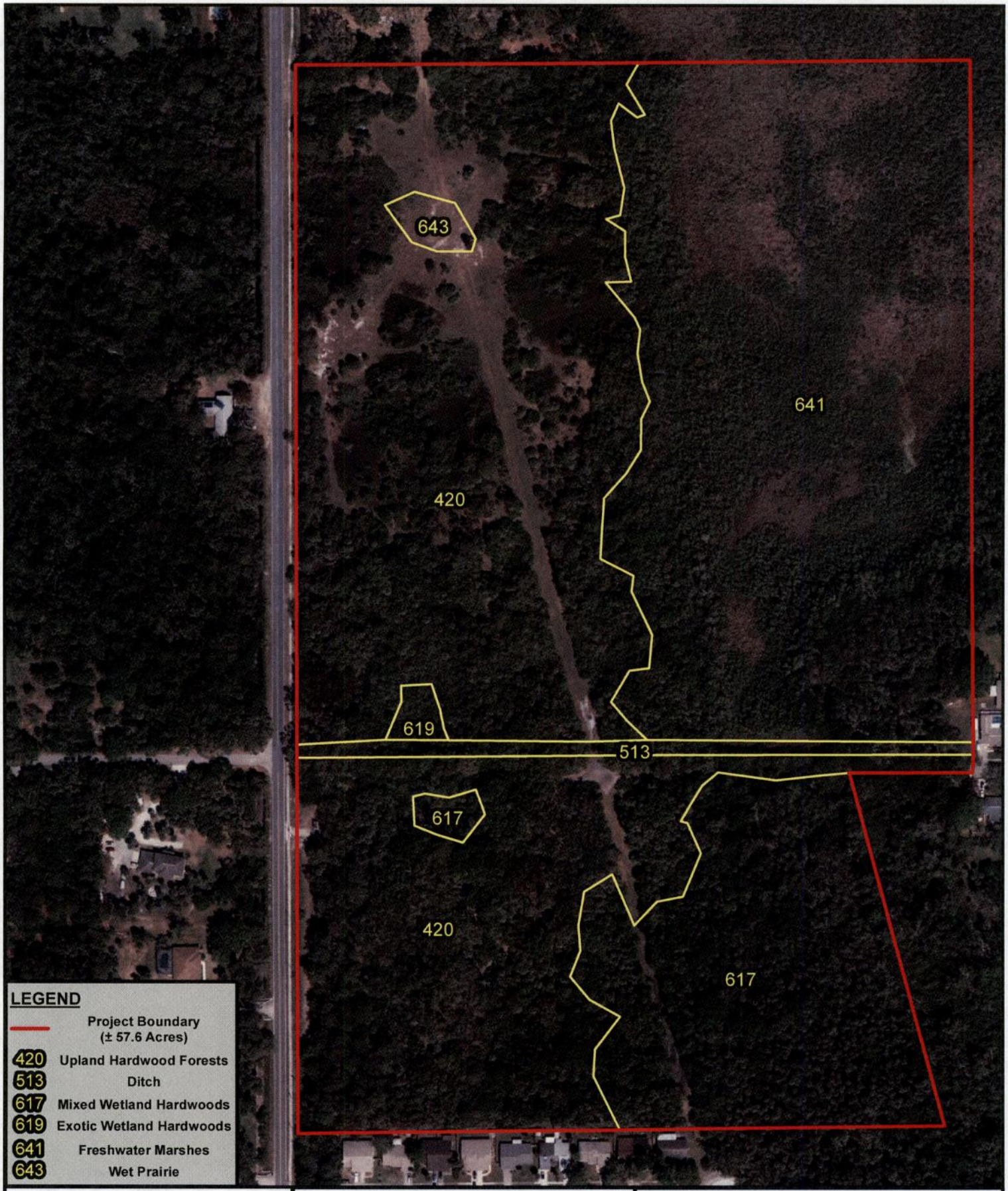
RANGE ROAD
BREVARD COUNTY, FLORIDA
LOCATION MAP

PROJECT #: 875.01.20 DATE: 03/23/21 FIGURE #: 1

0 1,000 2,000 4,000 6,000 8,000 Feet

N

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Longwood, Florida 32779
Office: (407) 869-9434 Fax: (407) 869-9436
CKrack@ecsfl.cc



LEGEND

	Project Boundary (± 57.6 Acres)
420	Upland Hardwood Forests
513	Ditch
617	Mixed Wetland Hardwoods
619	Exotic Wetland Hardwoods
641	Freshwater Marshes
643	Wet Prairie

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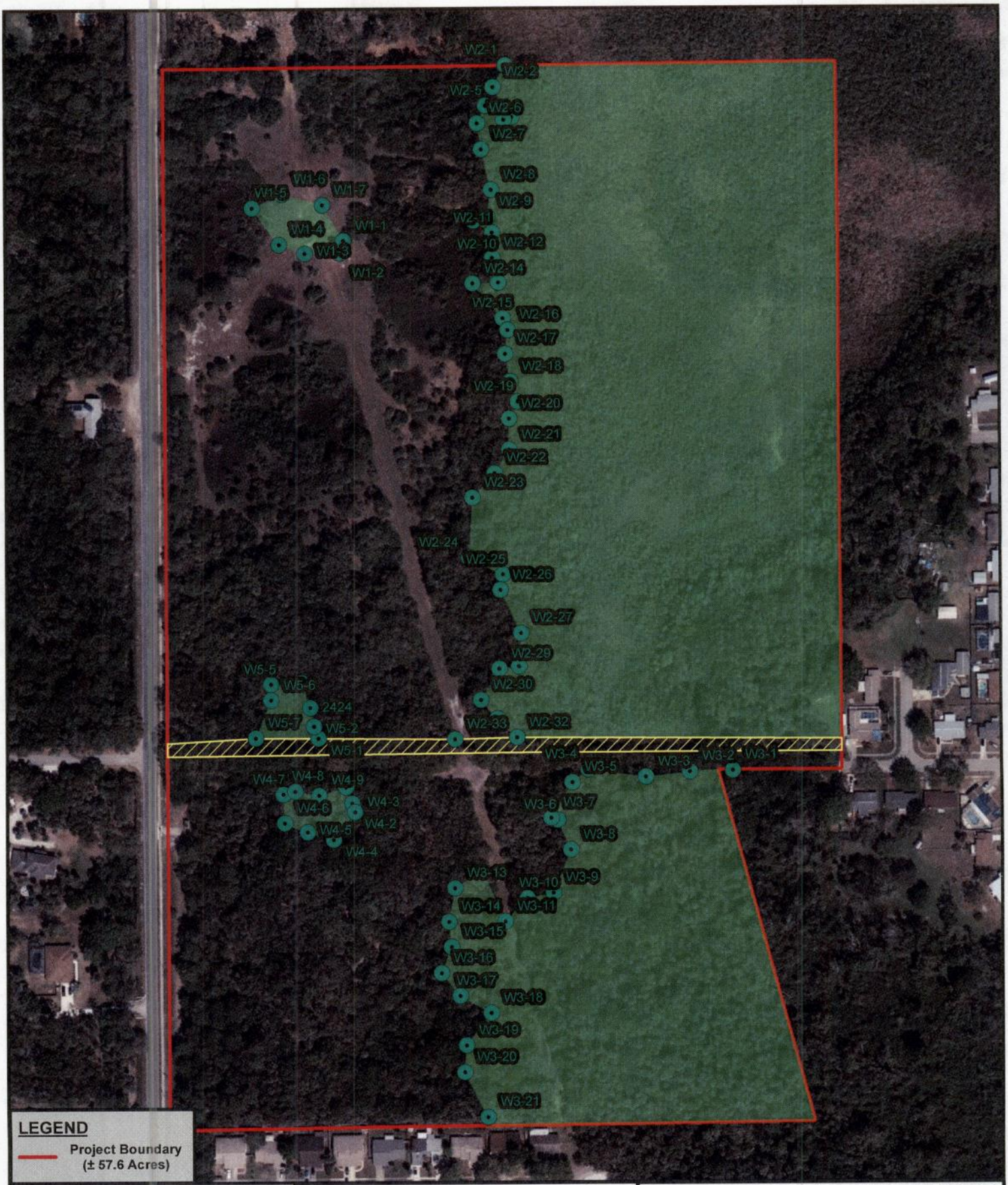
RANGE ROAD
BREVARD COUNTY, FLORIDA
FLUCFCS MAP

PROJECT #: 875.01.20 DATE: 03/23/21 FIGURE #: 2

0 100 200 400 600 Feet

N

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RANGE ROAD
BREVARD COUNTY, FLORIDA
WETLAND MAP

PROJECT #: 875.01.20 DATE: 03/23/21 FIGURE #: 3

0 100 200 400 600 Feet

N

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IPaC: Federally-listed Species in Florida
Related Sites of Interest

Key North Florida Species

Bald Eagle
Florida Manatee
Eastern Indigo Snake
Florida Scrub-Jay
Sand Skinks
Sea Turtles
Whooping Crane
Wood Stork

Federally Listed Species in Brevard County, Florida

This information is provided as a guide to project planning, and is not a substitute for site-specific surveys. Such surveys may be needed to assess species' presence or absence, as well as the extent of project effects on listed species and/or designated critical habitat.

The following table lists those federally-listed species known to be present in the county.
Code Key: E = Endangered, T = Threatened, CH = Critical Habitat Designated, C=Candidate Note 1

Category	Species Common Name	Species Scientific Name	Code
Mammals	West Indian (Florida) Manatee	*Trichechus manatus latirostris*	E/CH
	Southeastern Beach Mouse	*Peromyscus polionotus nineiventris*	T
Birds	Audubon's Crested Caracara	*Polyborus plancus audubinii*	T
	Florida Scrub-jay	*Aphelocoma coeruluscens*	T
	Piping Plover	*Charadrius melodus*	T
	Wood Stork	*Mycteria americana*	T
	Red-cockaded Woodpecker	*Picoides borealis*	E
Fish	None		
Reptiles	Atlantic Salt Marsh Snake	*Nerodia clarkii (=fasciata)taeniata*	T
	Eastern Indigo Snake	*Dymarchon corais couperi*	T
	Green Sea Turtle	*Chelonia mydas*	E
	Hawksbill Sea Turtle	*Eremochelys imbricata*	E
	Leatherback Sea Turtle	*Dermochelys coriacea*	E
	Kemp's ridley Sea Turtle	*Lepidochelys kempii*	E
	Loggerhead Sea Turtle	*Caretta caretta*	T
	Gopher Tortoise	*Gopherus polyphemus*	C
Amphibians	None		
Mollusks	None		
Crustaceans	None		
Plants	Carter's Mustard	*Warea carteri*	E

▶ Home ▶ Species: North Florida County ▶ Species: South Florida County ▶ Species: Panhandle County

For a list of State species by county use the Florida Natural Areas Inventory's Tracking Lists at http://www.fnai.org/trackinglist.cfm

For State listed species details, please go to http://myfwc.com/imperiledspecies//

Note 1. Candidate species receive no statutory protection under the ESA. The FWS encourages cooperative conservation efforts for these species because they are, by definition, species that may warrant future protection under the ESA.

NOTE: Bald eagles were removed from the endangered species list in June 2007 because their populations recovered sufficiently. However, the protections under the Bald and Golden Eagle Act (Eagle Act) continue to apply. Please see the eagle information on our Landowner Tools page or our national website at http://www.fws.gov/migratorybirds/baldeagle.htm for information regarding new permit requirements under the Eagle Act.

RANGE ROAD
BREVARD COUNTY, FLORIDA

ENVIRONMENTAL SUPPORT DOCUMENT

Prepared For:

St. Johns River Water Management District
Palm Bay Office
525 Community College Parkway, S.E.
Palm Bay, Florida 32909

Prepared By:



410 North Street
#130
Longwood, FL 32750

May 2022

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APPENDICES

Appendix A: Conservation Area Wetland Tables:

Table 1: Project Wetland (WL) and Other Surface Water (SW) Summary

Table 2: Project On-Site Mitigation Summary

Table 3: Project Off-Site Mitigation Summary

Appendix B: Part I - Qualitative Description of Assessment / Part II – Quantification of Assessment Areas

Appendix C: Proposed Site Plan

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT

ENVIRONMENTAL SUPPORT DOCUMENT

RANGE ROAD SUBDIVISION
BREVARD COUNTY, FLORIDA

1.0 INTRODUCTION

The ±57.23-acre Range Road property is located immediately east of N Range Road, west of E Stetson Circle, and north of Kathi Kim Street in Cocoa, Florida. More specifically the project site is located in Section 19 & 30, Township 24 South, and Range 36 East in Brevard County, Florida (Figure 1).

The subject property consists of mostly forested habitat. There is a dirt roadway through the center of the property. Two large wetland systems are present within the property boundary as well as a man-made ditch and three additional small wetlands.

The purpose of this application is to obtain a permit for wetland impacts associated with a residential development and stormwater management system consisting of three stormwater ponds.

This application is based on the attached site plan (Appendix C). The total project area is 57.23 acres, with wetlands totaling 27.5694 acres and a surface water totaling 0.76 acres. Five wetlands are present onsite and are located throughout the property with the largest systems on the eastern half of the property. There is an onsite ditch that runs through the middle of the project site.

Proposed wetland impacts total 0.7646 acres and consists of four impact areas. Three of the impact areas are to isolated wetlands less than 0.5 acres. Approximately 0.48 acres of surface waters will also be impacted however the water flow will remain through underground piping. As compensation for the remaining impact, the applicant proposes to purchase mitigation bank credits. Figure 6 depicts the proposed wetland impacts.

This project site is within the Southern St. Johns River hydrologic basin.

The project site was reviewed to determine the geological features of the landscape (e.g., soils and topography), to identify the remaining vegetative communities that occur within the project boundary, and to determine the occurrence of threatened and endangered flora and fauna within the parcel. The findings and conclusions of these studies are presented within this document.

2.0 SITE CHARACTERISTICS

2.1 TOPOGRAPHY

According to the U.S.G.S. 7.5 Minute Topographic Map, the project site elevations between 15 and 20 feet above sea level (Figure 2). Elevations are fairly uniform with elevations decreasing towards the onsite wetlands and drainage ditch.

2.2 SOILS

Soil composition information for the subject site was obtained from the *Soils Survey of Brevard County, Florida*, United States Department of Agriculture; Soil Conservation Service (Figure 3). Seven (07) soil types lie within the subject site of which, four (04) soil type (Basinger sand, St. Johns sand, Terra Ceia muck, Tomoka muck) are considered hydric.

2.3 VEGETATIVE COMMUNITY ANALYSIS

Pedestrian surveys of the project site were conducted in order to qualitatively document the existing vegetation and to assess the present land use patterns according to the *Florida Land Use, Cover and Forms Classification System, Department of Transportation* (FLUCFCS; DOT 1999). Six (06) land-use types were determined for the project site. A brief description of each FLUCFCS community is provided below (Figure 4).

420 – Upland Hardwood Forests

Located in the western portion of the project site this is the only upland habitat located on site. This habitat has a dense canopy cover, species observed consist of slash pine (*Pinus elliottii*), laurel oak (*Quercus laurifolia*), live oak (*Quercus laurifolia*), cabbage palms (*Sabal palmetto*), loblolly bay (*Gordonia lasianthus*), and camphor tree (*Cinnamomum camphora*). The shrub layer species include Brazilian pepper *(Schinus terebinthifolia*), American beauty berry (Callicarpa americana), and American elm (*Ulmus americana*). Groundcover species observed were greenbriar (*Smilax rotundifolia*), blackberry (*Rubus fruticosa*), bracken fern (*Pteridium aquilinum*), saw palmetto (*Serenoa repens*), broomsedge (*Andropogon virginicus*), and some cogon grass (*Imperata cylindrica*).

513 – Ditch

Found through the center of the property is a man-made ditch that runs offsite in both directions. Vegetation observed within the ditch and along the edge consists of Brazilian pepper, wax myrtle (*Myerica cerifera*), primrose willow (*Ludwigia peruviana),* soft rush (*Juncus effuses*), and arrowhead *(Sagittaria lancifolia*).

617 – Mixed Wetland Hardwoods

Found in two places in the southern portion of the property this habitat type is heavily forested. Vegetation observed includes Brazilian pepper, beak rush (*Rhynchospora crinipes*), soft rush, wax myrtle, water hyssop (*Bacopa monnieri*), gall berry (*Ilex glabra*), red maple (*Acer rubrum*), swamp fern (*Blechnum serrulatum*), royal fern (*Osmunda regalis*), American elm, poison ivy (*Toxicodendron radicans*), cabbage palm, laurel oak, and cinnamon fern (*Osmunda cinnamomea*).

619 – Exotic Wetland Hardwoods

Adjacent to the onsite ditch this habitat is densely vegetated with Brazilian pepper. Other species observed include swamp fern, cinnamon fern, cabbage palm, and sugar berry.

641 – Freshwater Marshes

The largest wetland habitat type found onsite, is located in the northeastern portion of the property. This habitat is densely vegetated, species observed include giant leather fern (*Acrostichum danaeifolium*), cattails (*Typha spp.*), sawgrass (*Cladium jamaicense*), marsh pennywort (*Hydrocotyle umbellate*), primrose willow, Carolina willow (*Salix carolinianna*), Brazilian pepper, cabbage palm, sugar berry (*Celtis laevigata*), poison ivy, live oak, water oak (*Quercus nigra*), and wax myrtle.

643 – Wet Prairie

Located in the northwest portion of the property is an isolated wetland defined by a low-lying area within the uplands. Vegetation found within this habitat consists of soft rush, blackberry, gall berry, little blue maiden cane (*Amphicarpum muehlenbergianum*), St. john wort (*Hypericum perforatum*), marsh pennywort, and primrose willow.

3.0 THREATENED AND ENDANGERED SPECIES

3.1 METHODOLOGY

Pedestrian and vehicular transects were conducted throughout 100% of the site to assess the occurrence, or potential for occurrence, of flora and fauna listed as threatened, endangered, or as species of special concern by the Florida Fish and Wildlife Conservation Commission (FWC) and the U. S. Fish and Wildlife Services (USFWS). Various resources were employed to assist with the survey. These resources included ArcGIS aerial maps; Florida Natural Areas Inventory and Official Lists of Endangered and Potentially Endangered Fauna and Flora in Florida (FWC).

3.2 Fauna

Approximately 35 species (and sub-species) of birds found in Florida are protected by the FWC and/or the USFWS. For Brevard County, the USFWS federally lists five (5) bird species. No listed birds were observed at this site (Table 1).

Red-cockaded woodpeckers (*Picoides borealis*) are listed as endangered (USFWS) and endangered (FWC). No red-cockaded woodpeckers were observed, and the upland habitat type is not suitable.

There was no open pine flatwood habitat with old-growth pines that characterize RCW nesting and foraging habitat.

Listed wading birds such as limpkin (*Aramus guarauna*), little blue heron (*Egretta caerulea*), tricolored heron (*Egretta tricolor*), white ibis (*Eudocimus albus*) and wood stork (*Mycteria americana*) were not observed. The onsite ditch and wetlands do provide wading bird habitat. Wading birds likely use the interior of the marsh habitat due to the dense vegetation throughout the remainder of the site.

Brevard County contains the Florida scrub-jay (*Aphelocoma coerulescens*) which is listed as threatened by the USFWS.

A 1993 statewide census documented about 4,000 breeding pairs of Florida scrub-jays remaining in Florida, including 374 pairs in mainland Brevard County. In addition, an estimated 850 breeding pairs of scrub-jays are on the Federal lands of Kennedy Space Center, Merritt Island National Wildlife Refuge, and Cape Canaveral Air Force Station. Brevard County's 1993 Florida scrub-jay population was the highest of any county in the state.

The onsite habitat is not suitable for the presence of the Florida scrub jay as there is no scrub habitat available. As previously discussed, the upland habitats are densely vegetated with pine and oak dominated canopy cover and a dense understory of Brazilian pepper.

The survey methodology per the prescribed guidelines established by the USFWS which were adapted from the "Ecology and development-related habitat requirements of the Florida scrub-jay, Florida Game and Freshwater Fish Commission, Nongame Wildlife Program Technical Report No. 8" were reviewed prior to the site visits. No Florida scrub jays were observed, or vocalizations heard.

Bald eagles (*Haliaeetus leucocephalus*) or their nests were observed on the site. Bald eagles are protected under the Bald and Golden Eagle Protection Act and the Migratory Bird Treaty Act. The USFWS has established a 660-foot protection zone around a bald eagle nest.

ECS searched the Audubon's Eagle Watch website to determine if any documented bald eagle nests are within 660 feet of the site. There are no FWC verified nest located on or adjacent to the project site. For current nesting data, ECS also checked with Audubon Eagle Watch which collects bald eagle nesting data for the FWC, no nests were documented on site or nearby.

No other listed raptors such as Southeastern American kestrels (*Falco sparverius paulus*) or Arctic peregrine falcons (*Falco peregrinus tundrius*) were observed on or around the site. There is no foraging habitat for kestrels. No birds were observed on or offsite at the time of the survey.

Florida sandhill cranes (*Grus canadensis pratensis*), a Threatened Species, were not observed within the project boundaries.

About thirty (30) species of Florida's amphibians and reptiles are protected. For Brevard County, the USFWS federally lists eight (8) reptile species. Five ae species of sea turtles which are not of concern for this property. No listed reptile or amphibian species were observed within the project boundaries.

Surveys were conducted throughout the property for gopher tortoises (Gopherus polyphemus), a species listed by the FWC as a Threatened species. No gopher tortoises or their burrows were observed. The property is densely forested with a dense shrub layer. The onsite habitats are considered poor for the gopher tortoise.

Several commensal species associated with gopher tortoise burrows, including the gopher frog (*Lithobates capito*) and eastern indigo snake (*Drymarchon corais couperi*) also receive protection, but were not observed.

Thirty-three (33) mammals are currently protected in Florida. For Brevard County, the USFWS federally lists two (2) mammal species.

ECS searched for the presence of Southern fox squirrels (*Sciurus niger niger*) and the Florida mouse (*Podomys floridanus*) and their possible den or nest sites. The absence of gopher tortoise burrows decreases the likelihood for the Florida mouse.

No mammal species were observed.

3.3 Flora

There were no protected plant species found on the project site (Table 2).

Currently, there are no technical reports available by the state or federal agencies mentioned in this letter report for the survey of the nearly 400 protected plant species. None of the agencies require relocation or mitigation for protected plant species.

The Department of Agriculture and Consumer Services (DACS) designates and regulates plants listed as "endangered", "commercially exploited" and "threatened".

There is no statutory prohibition against a landowner from harvesting an endangered or threatened plant from his property. However, it is unlawful for an individual to harvest an endangered or threatened species from the private land of another or any public land without first obtaining written permission of that landowner and a permit from DACS. Additionally, harvesting three or more commercially exploited plants from the private land of another or any public land will also require a DACS permit.

3.4 REGULATORY REVIEW

U. S. Fish and Wildlife Service

The U.S. Fish and Wildlife Service (USFWS) is the federal agency responsible for protecting the nation's fish and wildlife resources through implementation of the Endangered Species Act of 1973, as amended ("ESA"), 16 U.S.G. 1531-1543. The USFWS has responsibility for terrestrial and freshwater species. In Florida, 104 species are federally listed as threatened and endangered.

Florida Fish and Wildlife Conservation Commission

Article IV, Section 9 of the Florida Constitution authorizes the Florida Fish and Wildlife Conservation Commission (FWC) to "exercise the regulatory and executive powers in the state with regard to the wild animal life and freshwater aquatic life..." The FWC regulates the taking of individuals listed as endangered, threatened, or of special concern and their nests. The FWC also provides technical assistance to other agencies that have regulatory authority over activities, which may affect fish and wildlife and their habitat. The regulatory role of the FWC is currently restricted to protecting animals, not their habitats. However, current FWC policies allow for habitat protection as compensation for the "taking" of individuals of the species. The FWC Office of Environmental Services (OES) provides technical assistance to other agencies that regulate development activities. These agencies include the Department of Community Affairs, the Department of Environmental Protection, the U.S. Army Corps of Engineers, water management districts, regional planning councils and local governments. Currently, the FWC lists 106 species of animals.

Florida Department of Agriculture and Consumer Services

In Section 581.185, F. S., the Florida Legislature delegated to the Department of Agriculture and Consumer Services (FDA) authority to designate and regulate plants listed as "endangered," "commercially exploited" and "threatened." There is no statutory prohibition against a landowner from harvesting an endangered or threatened plant from its own property. It is unlawful for an individual to harvest

from the private land of another or any public land without first obtaining written permission of the landowner and a permit from FDA. Harvesting three or more commercially exploited plants will also require an FDA permit.

4.0 WETLAND ANALYSIS

A total of five wetlands are present onsite as well as a single surface water. The onsite wetlands consist of three different types of wetland freshwater marsh, mixed wetland hardwoods, and exotic wetland hardwoods. There is a large ditch system present through the center of the project site. The onsite wetlands all contained standing water in the center of the wetlands. The hydroperiod of the isolated fluctuates with rainfall and frequently are dry during the winter months. The larger wetland (Wetland 2 and Wetland 3) contains standing water year-round. There are varying amounts of nuisance and exotic species present.

Wetland No. 1 (0.3177 acres), located in the northwestern portion of the property, is of moderate quality and typical of the wetlands found in inner Brevard County. It contained little standing water, with herbaceous hydric soil dependent vegetation. Hydric soils were observed. This wetland is isolated.

Wetland No. 2 (19.323 acres), located along the eastern boundary of the project site, consists of a large portion of a larger wetland that extends offsite to the north and east. This wetland is of moderate quality. Native wetland vegetation was present throughout. Standing water was present.

Wetland No. 3 (7.495 acres), located on the northeastern boundary of the project site, is of moderate quality and typical of the wetlands found in inner Brevard County. It contained standing water, with dense canopy cover of wetland hardwoods. Hydric soils were observed.

Wetland No. 4 (0.2486 acres), located in the southeastern portion of the property, is of low quality and typical of the wetlands found in inner Brevard County. It contained little standing water, with minimal wetland vegetation, this area is a low-lying area where water will pool. Hydric soils were observed. This wetland is isolated.

Wetland No. 5 (0.1851 acres), located in the center portion of the property, is of low quality and typical of the wetlands found in inner Brevard County. It contained little standing water, and densely vegetated with Brazilian pepper. Hydric soils were observed. This wetland is isolated.

Surface water (0.76 acres) is a man-made drainage ditch that runs east / west through the center of the property, between Wetland 2 and Wetland 3. An access trail is present on the south side of the ditch.

All of the wetlands appear to be naturally occurring wetlands, typical of this area.

4.1 IMPACT AVOIDANCE AND MINIMIZATION ANALYSIS

Avoidance and minimization (reduction of wetland impacts) to the onsite wetlands has been achieved by the design of site plan. The largest wetlands (Wetland No. 2 and Wetland No. 3) comprise the entire east half of the property. As a result, the applicant has shifted the proposed development to the west half of the property. Proposed wetland impacts have been limited to the isolated wetlands onsite and a small sliver of Wetland 2. Additionally, the isolated wetlands are the poorest quality wetland habitats located on site. The applicant has avoided the higher quality wetland habitats.

Due to the location of the onsite wetlands, impacts are unavoidable. Proposed wetland impacts to Wetland No. 1 (interior isolated wetland) are necessary for lot development and stormwater pond construction. Due to the limited amount of uplands onsite this impact is unavoidable.

A small impact area is proposed to the southern perimeter of Wetland No. 2. The applicant considered alternative designs to shift interior roads to avoid wetland impacts, however there is no opportunity since there is limited upland habitat on site, and road safety standards and setbacks requirements must be met per City requirements. The proposed cul-de-sac was minimized to avoid additional impacts. The impact is due to providing safe side slopes for the interior "Street A" and will only impact 437 s.f.

The impacts to Wetland No. 4 are necessary for five residential lots as well as stormwater. Since the entry to the project site is limited, these impacts are necessary for lot development.

The impacts to Wetland No. 5 are necessary for four residential lots as well as roadway offsets. Since the entry to the project site is limited, these impacts are necessary for lot development.

Development of the subdivision is proposed in the upland portion of the property. Interior roads and stormwater ponds (a total of three) have all been designed to avoid the highest quality onsite wetland habitats. Approximately 26.8048 acres of onsite wetlands will be preserved. There are four wetland impacts proposed.

The remaining onsite wetland habitat and corresponding upland buffers will continue to provide habitat for wildlife species.

The proposed impact to wildlife and fish is considered minimal. The applicant does propose mitigation that provides regional ecological value.

4.1.1 Wetland Impacts

The wetland impacts associated with the proposed development are shown in Figure 6. Approximately 0.7646 acres of impacts are proposed.

Wetland Impact Area 1 – 0.3177 acres (13,839 sf.)
Wetland Impact Area 2 – 0.0132 acres (437 sf.)
Wetland Impact Area 3 – 0.2486 acres (10,825 sf.)
Wetland Impact Area 4 – 0.1851 acres (8,063 sf.)
Surface Water Impact - 0.4800 acres (32,954 sf.)

Wetland Impact Area 1 is to the entirety of Wetland No. 1. This impact is necessary for construction of a dry retention as well as three lots and a roadway. The impact area has poor hydrology. Vegetation species consisting of soft rush, blackberry, little blue maiden cane, St. john's wort, and primrose willow.

Wetland Impact Area 2 is located on the south side of Wetland No. 2. This impact is necessary for grading (side slopes) construction associated with a cull de sac (Street A). The impact area has moderate hydrology. Vegetation species consisting of Brazilian pepper, cabbage palm, sugar berry, Carolina willow, and marsh pennywort.

Wetland Impact Area 3 is the entirety of Wetland No. 4. This impact is necessary for construction of a stormwater pond and five lots. Vegetation species consisting of cabbage palm, laurel oak, American elm, cinnamon fern, and royal fern.

Wetland Impact Area 4 is to the entirety of Wetland No. 5. This impact is necessary for construction of a stormwater pond as well as three lots. This wetland contains a dense Brazilian pepper, cinnamon fern, and cabbage palm.

The surface water impact is necessary to pipe the water underground. This impact is for the construction of Street A. The water flow will be maintained so there will be no offsite impacts to upstream habitats.

Mitigation is proposed for the 0.0132 acres of wetland impacts (Wetland Impact Area 2). These impacts will be compensated for by credits from a mitigation bank. The remaining impacts (Wetland Impact Area 1,3, & 4) are to isolated wetlands under 0.5 acres, so no mitigation is proposed. Mitigation is not proposed for the surface water impact as it is man-made and the purpose of the ditch, water conveyance, will be maintained via underground piping.

4.2 SECONDARY AND CUMULATIVE IMPACTS

The criteria within Sections 4.2.7 and 4.2.8 of the SFWMD Applicants Handbook could be reviewed to provide reasonable assurances that any proposed wetland impacts would not result in adverse secondary or cumulative impacts to the water resources associated with this project.

Secondary impacts were assessed for Wetland Impact Area 2. Secondary impacts were not assessed for Wetland Impact Area 1, 3, & 4 since the entirety of these wetlands are proposed for impacts. Secondary impacts were not assessed for the surface water. Therefore, secondary impacts were assessed for 0.0132 acres of wetland impacts. The distance of the impact areas and a depth of 100 feet was used to determine the limits of secondary impacts and is discussed under Section 5.3.

Secondary impact items are addressed below according to their corresponding 12.2.7, A.H., subsection.

(a). The applicant proposed to preserve an upland buffer around the remaining onsite wetland perimeters to preclude secondary impacts as allowed by Section 12.2.7 (a), A.H.

(b). No on-site uplands could be considered to provide significant habitat for listed species.

(c). No historical and archaeological resources are known or likely to occur on the site; and

(d). This permit application and subsequent Environmental Resource Permit addresses all impacts within the project.

No listed species were identified within or adjacent to the project area. Impacts to the upland-nesting habitat of listed species that are aquatic, or wetland dependent are not expected to occur.

The proposed mitigation offsets the project's adverse impacts, and it is in the same drainage basin; therefore, the project complies with 12.2.8, ERP A.H.

5.0 UNIFORM MITIGATION ASSESSMENT METHOD

Per subsection 373.414(18), F.S., a uniform mitigation assessment method (UMAM) was employed to determine the amount of mitigation needed to offset adverse impacts to wetlands and other surface waters and\or to award and deduct mitigation bank credits.

The standardized procedures for assessing the functions provided by wetlands and other surface waters, the amount that those functions are reduced by a proposed impact and the amount of mitigation necessary to offset wetland and surface water loss, were adhered to as outlined in Chapter 62-345.

A qualitative description, per Section 62-345.00.400, F.A.C. (referred to as Part I) and quantification of assessment areas, per Sections 62-345.500 and .600, F.A.C. (referred to as Part II) was conducted for the onsite wetland. Reasonable scientific judgment was used when applying this method.

5.1 Part I – Qualitative Description of Impact Area

The information provided on the data sheets (Appendix B) has been previously discussed in this document. Please refer to the vegetative descriptions under Section 2.3 "Vegetative Community Analysis" and Section 3.3 "Listed Species Survey Results" for detailed information as summarized on the data sheet.

5.2 Part II – Quantification of Impact Assessment Area

One (01) assessment area was analyzed to determine the degree to which the assessment area provides the functions identified in Part I and the amount of function lost or gained by the project for the impacted jurisdictional onsite wetlands. The areas chosen represent wetland vegetation, soils and hydrology of the onsite wetland and upland buffer and include existing sub-canopy and groundcover vegetative species. The assessment area represents current conditions of the existing onsite wetland and upland buffer. Three categories of indicators of wetland function were scored to the extent that they affect the ecological value of the assessment areas. These indicators include: 1) location and landscape support, 2) water environment and 3) community structure.

Wetland Assessment Area 2 is the 0.0132 acres of impact to the perimeter of the on-site wetland (Wetland No. 2). The current condition of the impact area was assessed and a delta of 0.7 was determined. Multiplying the delta (0.7) with the impact acreage (0.0132) yielded a functional loss (FL) of 0.009. Please see the data sheet for the individual information determined for the three indicators of wetland function (Appendix B).

The functional loss for the proposed wetland impacts is 0.009.

5.3 Secondary Impacts

Secondary impacts were assessed for Wetland No. 2. Since the entirety of Wetland No. 1, 4, & 5 will be impacted and is isolated, no secondary impacts were assessed.

More specifically, secondary impacts were assessed along the boundary of the direct wetland impact area. A depth of 100 feet was assessed for secondary impacts or 0.332 acres.

The current condition of the secondary impact area (Wetland No.2) was assessed and a score of 0.7 was determined. A score of 0.63 was determined for the without condition. The difference is a delta of 0.07. Multiplying the delta (0.07) with the impact secondary acreage (0.332) yielded a functional loss (FL) of 0.02. Please see the data sheet for the individual information determined for the three indicators of wetland function (Appendix B).

The combined functional loss for the direct and secondary impacts is 0.029.

6.0 PROPOSED MITIGATION

The loss of wetland function due to the proposed impacts can be sufficiently mitigated with the purchase of mitigation credits. The proposed mitigation plan will more than compensate for the loss of the aforementioned wetland areas. The onsite wetlands are not proposed as mitigation.

Approximately 0.03 freshwater forested mitigation bank credits will be purchased from the Farmton Mitigation Bank.

7.0 SUMMARY

As previously discussed, approximately 1.24 acres of wetland impacts are proposed. Mitigation is proposed for 0.0132 acres of proposed wetland impacts, and 0.332 acres of proposed secondary impacts. A total functional loss of 0.029 was determined for the direct impacts and secondary impacts to onsite wetlands.

Mitigation will be provided through the purchase of 0.03 credits from Farmton Mitigation Bank. Once District staff has approved the credit amount, a reservation letter will be obtained from the mitigation bank and provide to District staff.

FIGURES



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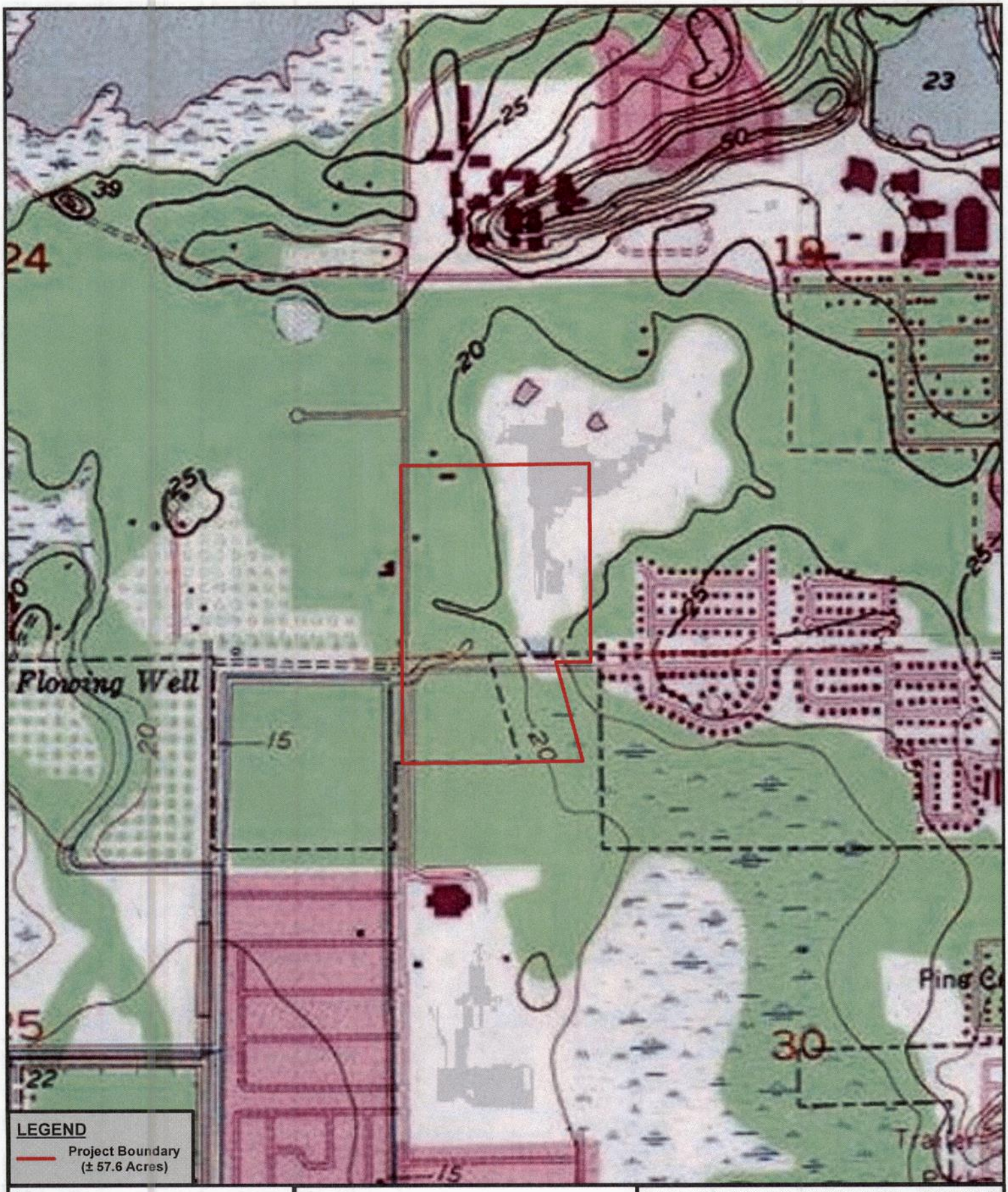
RANGE ROAD
BREVARD COUNTY, FLORIDA
LOCATION MAP

PROJECT #: 875.01.20 DATE: 03/23/21 FIGURE #: 1

0 1,000 2,000 4,000 6,000 8,000 Feet

N

235 N. Hunt Club Blvd. Suite 202
Longwood, Florida 32779
Office: (407) 869-9434 Fax: (407) 869-9436
CKrack@ecsfl.cc



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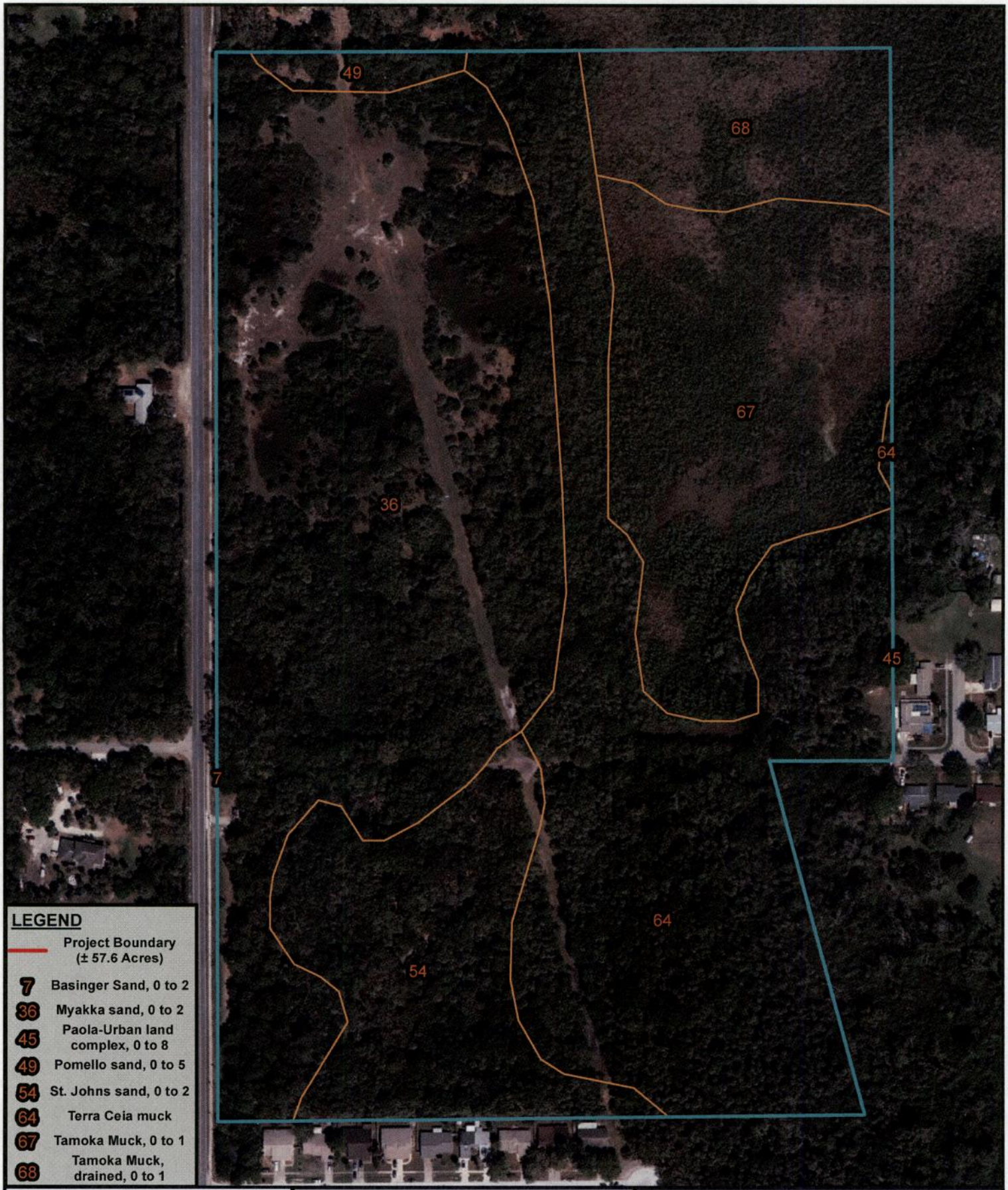
RANGE ROAD
BREVARD COUNTY, FLORIDA
TOPO MAP

PROJECT #: 875.01.20 DATE: 03/23/21 FIGURE #:2

0 1,000 2,000 Feet

N

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Longwood, Florida 32779
Office: (407) 869-9434 Fax: (407) 869-9436
CKrack@ecsfl.cc



LEGEND

- Project Boundary (± 57.6 Acres)
- 7 Basinger Sand, 0 to 2
- 36 Myakka sand, 0 to 2
- 45 Paola-Urban land complex, 0 to 8
- 49 Pomello sand, 0 to 5
- 54 St. Johns sand, 0 to 2
- 64 Terra Ceia muck
- 67 Tamoka Muck, 0 to 1
- 68 Tamoka Muck, drained, 0 to 1

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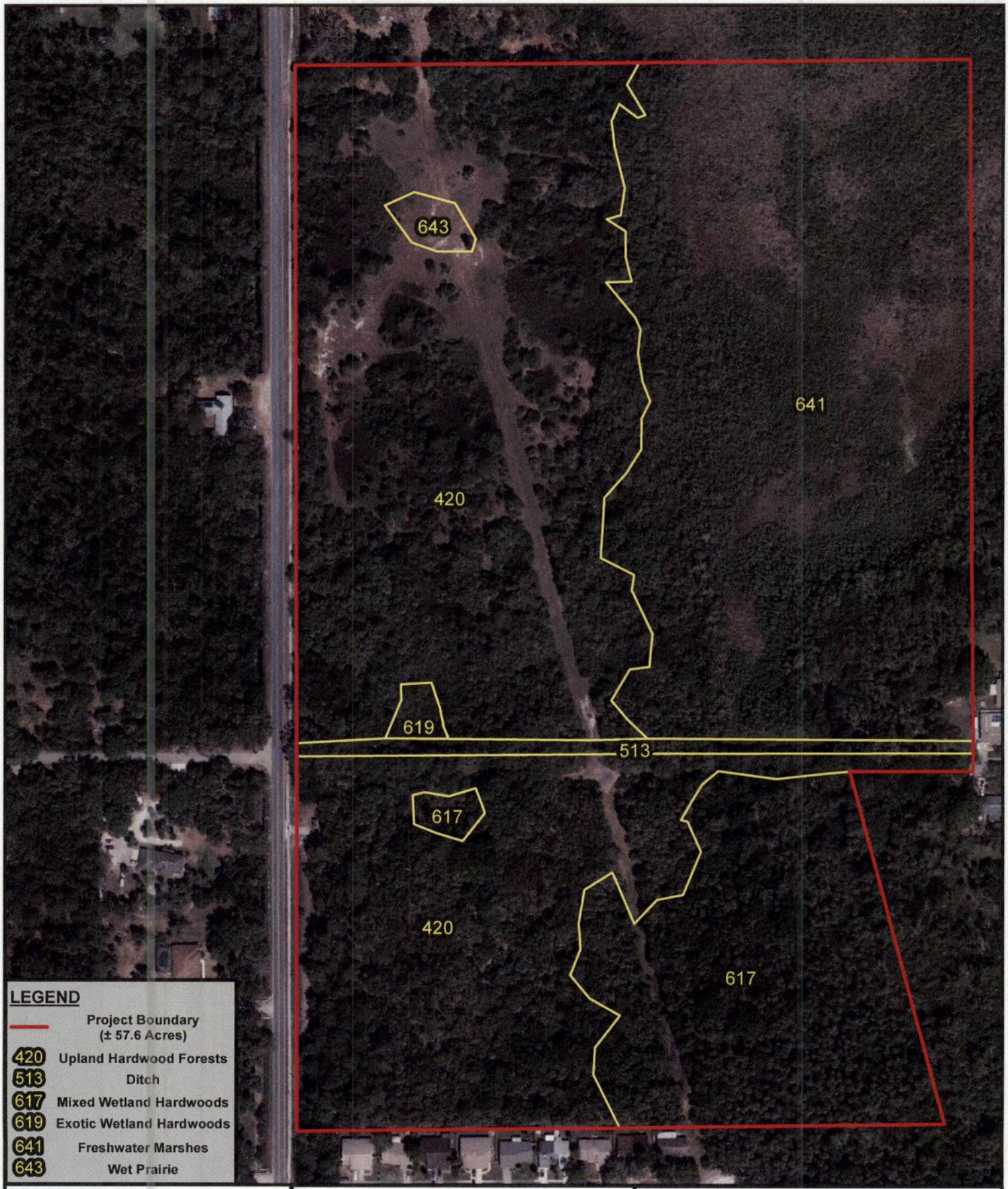
RANGE ROAD
BREVARD COUNTY, FLORIDA
NRCS SOILS MAP

PROJECT #: 875.01.20 DATE: 03/23/21 FIGURE #:3

0 100 200 400 600 Feet

N

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Longwood, Florida 32779
Office: (407) 869-9434 Fax: (407) 869-9436
CKrack@ecsfl.cc



LEGEND

	Project Boundary (± 57.6 Acres)
420	Upland Hardwood Forests
513	Ditch
617	Mixed Wetland Hardwoods
619	Exotic Wetland Hardwoods
641	Freshwater Marshes
643	Wet Prairie

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Ecological Consulting Solutions, Inc.

RANGE ROAD
BREVARD COUNTY, FLORIDA
FLUCFCS MAP

PROJECT #: 875.01.20 DATE: 03/23/21 FIGURE #:4

0 100 200 400 600 Feet

N

235 N. Hunt Club Blvd. Suite 202
Longwood, Florida 32779
Office: (407) 869-9434 Fax: (407) 869-9436
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LEGEND

Project Boundary (± 57.6 Acres)

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Ecological Consulting Solutions, Inc.

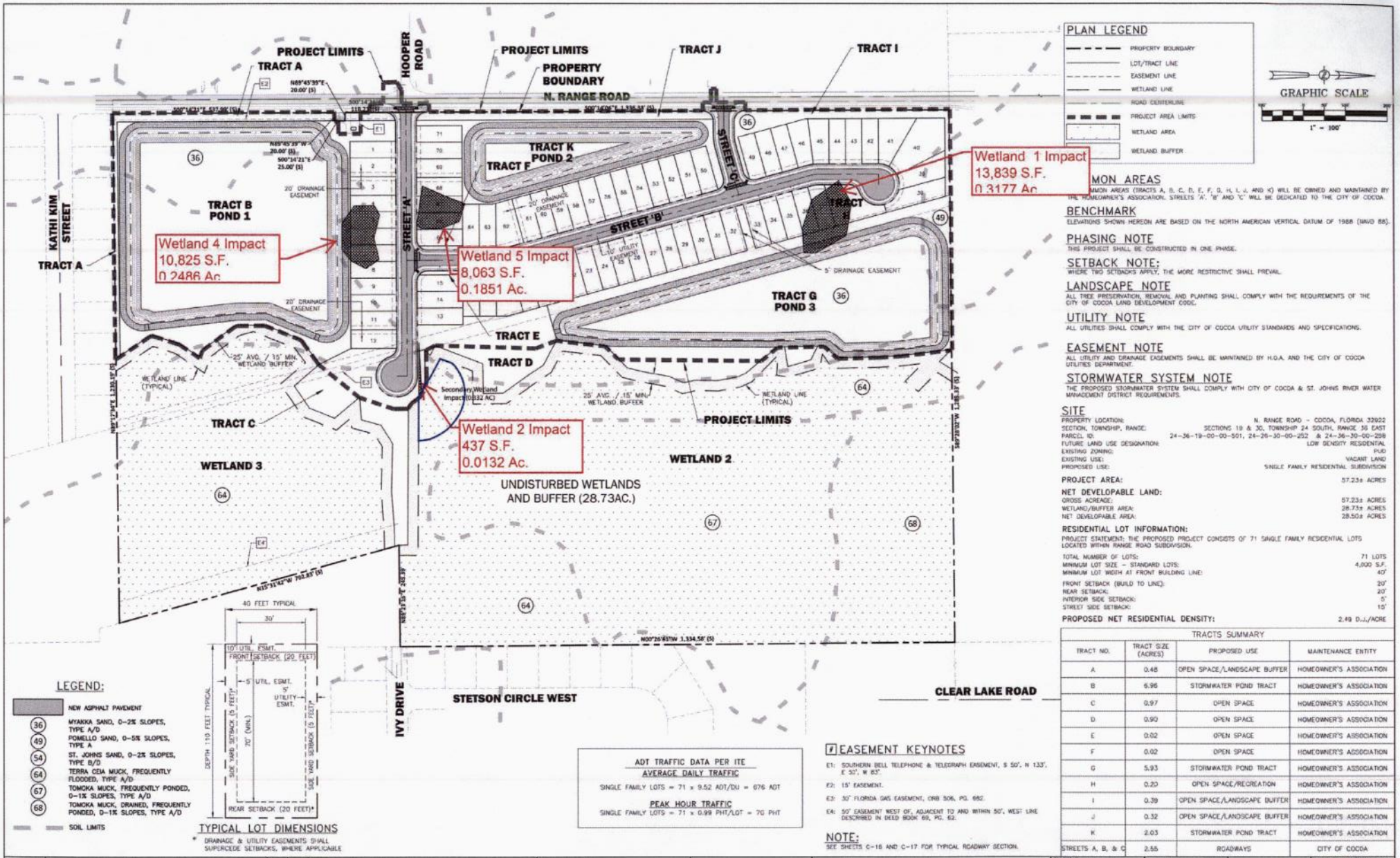
RANGE ROAD
BREVARD COUNTY, FLORIDA
WETLAND MAP

PROJECT #: 875.01.20 DATE: 03/23/21 FIGURE #:5

0 100 200 400 600 Feet

N

235 N. Hunt Club Blvd. Suite 202
Longwood, Florida 32779
Office: (407) 869-9434 Fax: (407) 869-9436
CKrack@ecsfl.cc



PLAN LEGEND

- PROPERTY BOUNDARY
- LOT/TRACT LINE
- EASEMENT LINE
- WETLAND LINE
- ROAD CENTERLINE
- PROJECT AREA LIMITS
- WETLAND AREA
- WETLAND BUFFER

GRAPHIC SCALE
1" = 100'

COMMON AREAS

COMMON AREAS (TRACTS A, B, C, D, E, F, G, H, I, J, AND K) WILL BE OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION. STREETS 'A', 'B' AND 'C' WILL BE DEDICATED TO THE CITY OF COCOA.

BENCHMARK

ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

PHASING NOTE

THIS PROJECT SHALL BE CONSTRUCTED IN ONE PHASE.

SETBACK NOTE:

WHERE TWO SETBACKS APPLY, THE MORE RESTRICTIVE SHALL PREVAIL.

LANDSCAPE NOTE

ALL TREE PRESERVATION, REMOVAL AND PLANTING SHALL COMPLY WITH THE REQUIREMENTS OF THE CITY OF COCOA LAND DEVELOPMENT CODE.

UTILITY NOTE

ALL UTILITIES SHALL COMPLY WITH THE CITY OF COCOA UTILITY STANDARDS AND SPECIFICATIONS.

EASEMENT NOTE

ALL UTILITY AND DRAINAGE EASEMENTS SHALL BE MAINTAINED BY H.O.A. AND THE CITY OF COCOA UTILITIES DEPARTMENT.

STORMWATER SYSTEM NOTE

THE PROPOSED STORMWATER SYSTEM SHALL COMPLY WITH CITY OF COCOA & ST. JOHNS RIVER WATER MANAGEMENT DISTRICT REQUIREMENTS.

SITE

PROPERTY LOCATION:	N. RANGE ROAD - COCOA, FLORIDA 32922
SECTION, TOWNSHIP, RANGE:	SECTIONS 19 & 30, TOWNSHIP 24 SOUTH, RANGE 36 EAST
PARCEL ID:	24-36-19-00-00-501, 24-36-30-00-252 & 24-36-30-00-298
FUTURE LAND USE DESIGNATION:	LOW DENSITY RESIDENTIAL
EXISTING ZONING:	PUD
EXISTING USE:	VACANT LAND
PROPOSED USE:	SINGLE FAMILY RESIDENTIAL SUBDIVISION
PROJECT AREA:	57.23± ACRES
NET DEVELOPABLE LAND:	
GROSS ACREAGE:	57.23± ACRES
WETLAND/BUFFER AREA:	28.73± ACRES
NET DEVELOPABLE AREA:	28.50± ACRES

RESIDENTIAL LOT INFORMATION:

PROJECT STATEMENT: THE PROPOSED PROJECT CONSISTS OF 71 SINGLE FAMILY RESIDENTIAL LOTS LOCATED WITHIN RANGE ROAD SUBDIVISION.

TOTAL NUMBER OF LOTS:	71 LOTS
MINIMUM LOT SIZE - STANDARD LOTS:	4,000 S.F.
MINIMUM LOT WIDTH AT FRONT BUILDING LINE:	40'
FRONT SETBACK (BUILD TO LINE):	20'
REAR SETBACK:	20'
INTERIOR SIDE SETBACK:	5'
STREET SIDE SETBACK:	15'
PROPOSED NET RESIDENTIAL DENSITY:	2.49 D.U./ACRE

TRACTS SUMMARY

TRACT NO.	TRACT SIZE (ACRES)	PROPOSED USE	MAINTENANCE ENTITY
A	0.48	OPEN SPACE/LANDSCAPE BUFFER	HOMEOWNER'S ASSOCIATION
B	6.96	STORMWATER POND TRACT	HOMEOWNER'S ASSOCIATION
C	0.97	OPEN SPACE	HOMEOWNER'S ASSOCIATION
D	0.90	OPEN SPACE	HOMEOWNER'S ASSOCIATION
E	0.02	OPEN SPACE	HOMEOWNER'S ASSOCIATION
F	0.02	OPEN SPACE	HOMEOWNER'S ASSOCIATION
G	5.93	STORMWATER POND TRACT	HOMEOWNER'S ASSOCIATION
H	0.20	OPEN SPACE/RECREATION	HOMEOWNER'S ASSOCIATION
I	0.39	OPEN SPACE/LANDSCAPE BUFFER	HOMEOWNER'S ASSOCIATION
J	0.32	OPEN SPACE/LANDSCAPE BUFFER	HOMEOWNER'S ASSOCIATION
K	2.03	STORMWATER POND TRACT	HOMEOWNER'S ASSOCIATION
STREETS A, B, & C	2.55	ROADWAYS	CITY OF COCOA

LEGEND:

- NEW ASPHALT PAVEMENT
- (36) MYAKKA SAND, 0-2% SLOPES, TYPE A/D
- (49) POMELLO SAND, 0-5% SLOPES, TYPE A
- (54) ST. JOHNS SAND, 0-2% SLOPES, TYPE B/D
- (64) TERRA CEIA MUCK, FREQUENTLY FLOODED, TYPE A/D
- (67) TOMOKA MUCK, FREQUENTLY PONDED, 0-1% SLOPES, TYPE A/D
- (68) TOMOKA MUCK, DRAINED, FREQUENTLY PONDED, 0-1% SLOPES, TYPE A/D
- SOIL LIMITS

TYPICAL LOT DIMENSIONS

* DRAINAGE & UTILITY EASEMENTS SHALL SUPERCEDE SETBACKS, WHERE APPLICABLE

ADT TRAFFIC DATA PER ITE

AVERAGE DAILY TRAFFIC

SINGLE FAMILY LOTS = 71 x 9.52 ADT/DU = 676 ADT

PEAK HOUR TRAFFIC

SINGLE FAMILY LOTS = 71 x 0.99 PHT/LOT = 70 PHT

EASEMENT KEYNOTES

E1: SOUTHERN BELL TELEPHONE & TELEGRAPH EASEMENT, S 50', N 133', E 50', W 83'.

E2: 15' EASEMENT.

E3: 30' FLORIDA GAS EASEMENT, ORB 506, PG. 682.

E4: 50' EASEMENT WEST OF, ADJACENT TO AND WITHIN 50', WEST LINE DESCRIBED IN DEED BOOK 69, PG. 62.

NOTE:

SEE SHEETS C-16 AND C-17 FOR TYPICAL ROADWAY SECTION.

DATE	REVISIONS	BY	CHECKED

CONSTRUCTION PLANS
RANGE ROAD SUBDIVISION
CITY OF COCOA, FLORIDA

FEG FLORIDA ENGINEERING GROUP
Engineering the Future
5127 S. Orange Avenue, Suite 200
Orlando, FL 32809
Phone: 407-895-0324
Fax: 407-895-0325
www.feg-inc.us

OVERALL SITE PLAN

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
CPN	CPN	GRC	GRC

PROJECT NO. 19-070
SCALE 1"=100'
DATE FEBRUARY XX, 2022
SHEET NO. C-11
SHEET 11 OF 33

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY GREGORY R. CRAWFORD, 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.

FLORIDA ENGINEERING GROUP, INC. CERTIFICATE OF AUTHORIZATION NUMBER 28 LICENSED BUSINESS
GREGORY R. CRAWFORD, P.E. LICENSE NO. 51135

19-070 OverallSitePlan.dwg

APPENDIX A

Appendix B

Table 1: PROJECT WETLAND (WL) AND OTHER SURFACE WATER (SW) SUMMARY

WL & SW ID	WL & SW TYPE (FLUCFCS)	WL & SW SIZE (acres)	WL& SW NOT IMPACTED	TEMPORARY WL & SW IMPACTS			PERMANENT WL & SW IMPACTS			MITIGATION ID
				WL & SW TYPE	IMPACT SIZE	IMPACT CODE	WL & SW TYPE (FLUCFCS)	IMPACT SIZE	IMPACT CODE	
Wetland 1	643	0.3177	0.00				643	0.3177	F	NA
Wetland 2	641	19.323	19.3098				641	0.0132	F	Credits
Wetland 3	617	7.495	7.495							
Wetland 4	619	0.2486	0.00				619	0.2486	F	NA
Wetland 5	617	0.1851	0.00				617	0.1851	F	NA
Ditch	513	0.76	0.28				513	0.48	O	N/A
PROJECT TOTALS:		28.3294	27.0848					1.2446		

Comments:
CODES (multiple entries per cell not allowed):
Wetland Type: from an established wetland classification system (see Section E, 111b.)
Impact Type: D=Dredge; F=Fill; H=change hydrology; S=shading; C=clearing; O=other

Reviewer:__ _____

Table 2: PROJECT ON-SITE MITIGATION SUMMARY

MITIGATION ID	CREATION		RESTORATION		ENHANCEMENT		WETLAND PRESERVE		UPLAND PRESERVE		OTHER	
	AREA	TARGET TYPE	AREA	TARGET TYPE	AREA	TARGET TYPE	AREA	TYPE	AREA	TYPE	AREA	TYPE
None Proposed												
PROJECT TOTALS												

CODES (multiple entries per cell not allowed):
Target Type or Type=target or existing habitat type from an established wetland classification system or land use classification for non-wetland mitigation

Reviewer:_____

Table 3: PROJECT OFF-SITE MITIGATION SUMMARY

MITIGATION ID	CREATION		RESTORATION		ENHANCEMENT		WETLAND PRESERVE		UPLAND PRESERVE		OTHER	
	AREA	TARGET TYPE	AREA	TARGET TYPE	AREA	TARGET TYPE	AREA	TYPE	AREA	TYPE	AREA	TYPE
Farmton Mitigation Bank											0.03	credits
PROJECT TOTALS											0.03	

CODES (multiple entries per cell not allowed):
Target Type or Type=target or existing habitat type from an established wetland classification system or land use classification for non-wetland mitigation

Reviewer:_____

APPENDIX B

PART I – Qualitative Description
(See Section 62-345.400, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Range Road		Wetland 2

FLUCCs code	Further classification (optional)	Impact or Mitigation Site?	Assessment Area Size
FLUCFCS 641		Impact	0.0132 acres

Basin/Watershed Name/Number	Affected Waterbody (Class)	Special Classification (i.e.OFW, AP, other local/state/federal designation of importance)
Southern St. Johns River	Class III	

Geographic relationship to and hydrologic connection with wetlands, other surface water, uplands

The ±57.6-acre Ridgehaven Property is located immediately east of N Range Road, west of E Stetson Circle, and north of Kathi Kim Street in Cocoa, Florida. More specifically the project site is located in Section 19 & 30, Township 24 South, and Range 36 East in Brevard County, Florida (Figure 1). The subject property consists of mostly forested habitat. There is a dirt roadway through the center of the property. Two large wetland systems are present within the property boundary as well as a man-made ditch and three additional small wetlands.

Assessment area description

The assessment area consists of a small impact located on the south side of Wetland No. 2 (freshwater marsh). This impact is necessary for grading (side slopes) construction associated with a cull de sac (Street A). The impact area has moderate hydrology. Vegetation species consisting of Brazilian pepper, cabbage palm, sugar berry, Carolina willow, and marsh pennywort.

Significant nearby features	Uniqueness (considering the relative rarity in relation to the regional landscape.)
Indian River is located off site to the east.	This impact area (wetland habitat) not unique or rare in relation to the regional landscape.

Functions	Mitigation for previous permit/other historic use
Provides wildlife habitat for local species, water quality from runoff	none

Anticipated Wildlife Utilization Based on Literature Review (List of species that are representative of the assessment area and reasonably expected to be found)	Anticipated Utilization by Listed Species (List species, their legal classification (E, T, SSC), type of use, and intensity of use of the assessment area)
amphibians, reptiles, songbirds, wadingbirds	none found in Brevard County

Observed Evidence of Wildlife Utilization (List species directly observed, or other signs such as tracks, droppings, casings, nests, etc.):

none

Additional relevant factors:

Assessment conducted by:	Assessment date(s):
Chris krack	12-April-2022

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Range Road		Wetland 2
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Wetland Impact - 0.0132 acres	Chris Krack	12-April 22

Scoring Guidance	Optimal (10)	Moderate(7)	Minimal (4)	Not Present (0)
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

.500(6)(a) Location and Landscape Support	w/o pres or current: **7**	with: 0
Support for wildlife species outside of Assessment Area is moderate. Provides some benefits, adverse impacts from upland land uses outside of Assessment Area, natural connection to offsite wetlands, uplands provides some habitat for protection, uplands to be developed.		
.500(6)(b)Water Environment (n/a for uplands)	w/o pres or current: **7**	with: 0
Standing water is not present in the AA (wetland fringe), standing water is present in the wetland interior, uplands have some disturbance (trails, some historic clearing), alteration to points of discharge - man-made drainage ditch present on teh south side of this wetland, some evidence of flow rates, no evidence of fire, nuisance and exotic species in small numbers, no wading birds observed in Assessment Area, some native desirable wetland plant species. Light penetration is to sufficient for herbaceous and shrubby species.		
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	w/o pres or current: **7**	with: 0
Canopy cover lacking, some shrub cover, some desirable wetland species, some nuisance and exotic species. Adjacent uplands developed on SE side, ditch adjacent to south side, forested uplands present on west side, reduction of regeneration/recruitment, age, size and distribution, no snags present, topo features show this as a low lying area within the project site, no evident land management practices.		

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres: 0.7	with: 0

Delta = [with-current]
0.7

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

If mitigation
Time lag (t-factor) =
Risk factor =

For impact assessment areas
FL = delta x acres = **0.7** X 0.0132=**0.009**

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

PART II – Quantification of Assessment Area (impact or mitigation)
(See Sections 62-345.500 and .600, F.A.C.)

Site/Project Name	Application Number	Assessment Area Name or Number
Range Road		Wetland 2
Impact or Mitigation	**Assessment conducted by:**	**Assessment date:**
Wetland Impact - 0.332 acres	Chris Krack	12-April 22

Scoring Guidance	**Optimal (10)**	**Moderate(7)**	**Minimal (4)**	**Not Present (0)**
The scoring of each indicator is based on what would be suitable for the type of wetland or surface water assessed	Condition is optimal and fully supports wetland/surface water functions	Condition is less than optimal, but sufficient to maintain most wetland/surface waterfunctions	Minimal level of support of wetland/surface water functions	Condition is insufficient to provide wetland/surface water functions

		w/o pres or current	with
.500(6)(a) Location and Landscape Support	Support for wildlife species outside of Assessment Area is moderate. Provides some benefits, adverse impacts from upland land uses outside of Assessment Area, natural connection to offsite wetlands, uplands provides some habitat for protection, uplands to be developed.	**7**	6
.500(6)(b)Water Environment (n/a for uplands)	Standing water is not present in the AA (wetland fringe), standing water is present in the wetland interior, uplands have some disturbance (trails, some historic clearing), alteration to points of discharge - man-made drainage ditch present on teh south side of this wetland, some evidence of flow rates, no evidence of fire, nuisance and exotic species in small numbers, no wading birds observed in Assessment Area, some native desirable wetland plant species. Light penetration is to sufficient for herbaceous and shrubby species. With: permitted master stormwater management system will ensure no negative impacts to the water quality.	**7**	7
.500(6)(c)Community structure 1. Vegetation and/or 2. Benthic Community	Canopy cover lacking, some shrub cover, some desirable wetland species, some nuisance and exotic species. Adjacent uplands developed on SE side, ditch adjacent to south side, forested uplands present on west side, reduction of regeneration/recruitment, age, size and distribution, no snags present, topo features show this as a low lying area within the project site, no evident land management practices. With: remaining wetlands will not be impacted, appropriate upland buffers will remain.	**7**	6

Score = sum of above scores/30 (if uplands, divide by 20)	current or w/o pres	with
	0.7	0.63

If preservation as mitigation,
Preservation adjustment factor =
Adjusted mitigation delta =

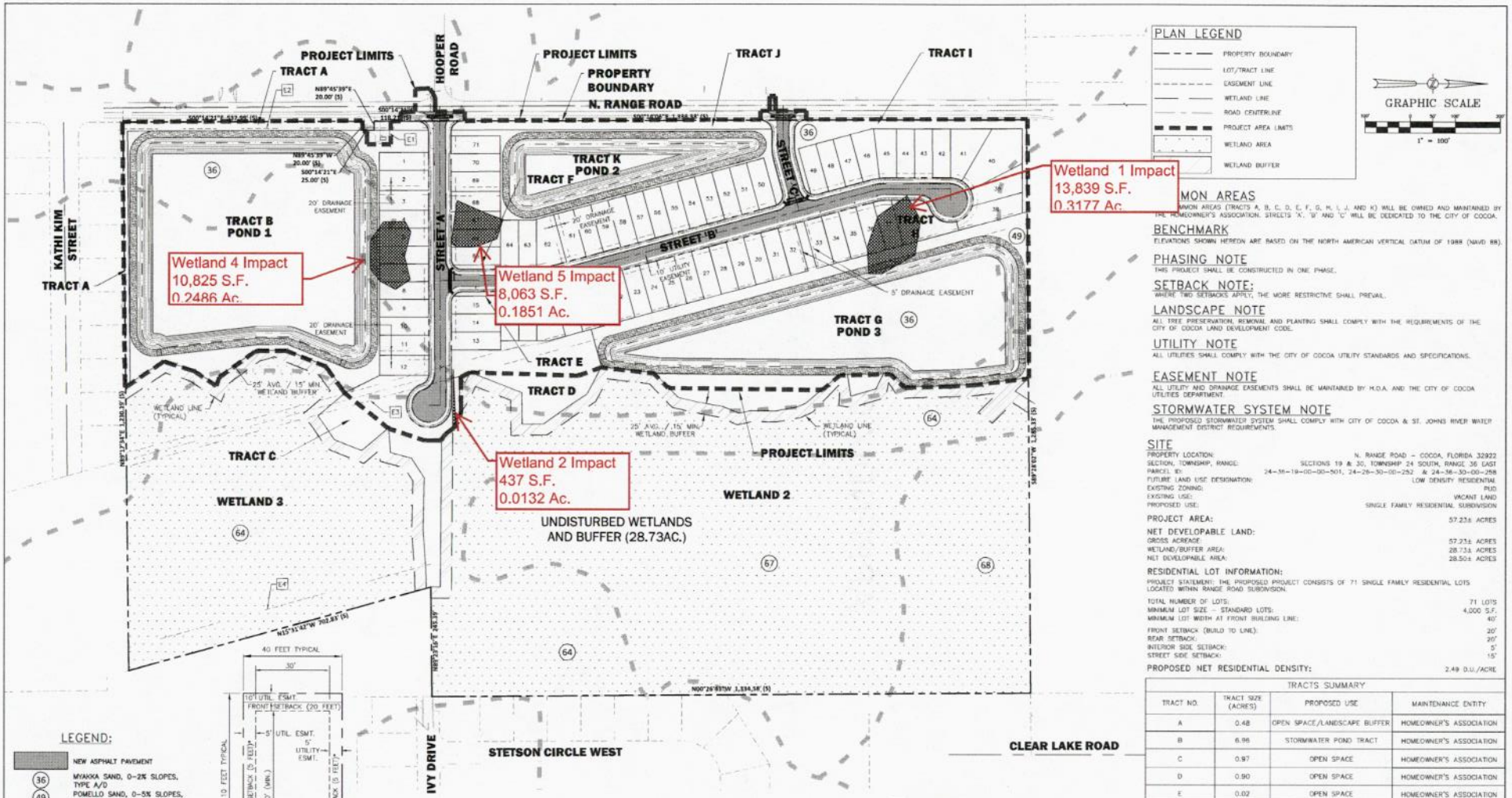
For impact assessment areas
FL = delta x acres = **0.07** X 0.332=**0.02**

Delta = [with-current]
0.07

If mitigation
Time lag (t-factor) =
Risk factor =

For mitigation assessment areas
RFG = delta/(t-factor x risk) =

APPENDIX C



PLAN LEGEND

- PROPERTY BOUNDARY
- LOT/TRACT LINE
- EASEMENT LINE
- WETLAND LINE
- ROAD CENTERLINE
- PROJECT AREA LIMITS
- WETLAND AREA
- WETLAND BUFFER

GRAPHIC SCALE

1" = 100'

COMMON AREAS

COMMON AREAS (TRACTS A, B, C, D, E, F, G, H, I, J, AND K) WILL BE OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION. STREETS 'A', 'B' AND 'C' WILL BE DEDICATED TO THE CITY OF COCOA.

BENCHMARK

ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

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SETBACK NOTE:

WHERE TWO SETBACKS APPLY, THE MORE RESTRICTIVE SHALL PREVAIL.

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ALL UTILITIES SHALL COMPLY WITH THE CITY OF COCOA UTILITY STANDARDS AND SPECIFICATIONS.

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STORMWATER SYSTEM NOTE

THE PROPOSED STORMWATER SYSTEM SHALL COMPLY WITH CITY OF COCOA & ST. JOHNS RIVER WATER MANAGEMENT DISTRICT REQUIREMENTS.

SITE

PROPERTY LOCATION:	N. RANGE ROAD – COCOA, FLORIDA 32922
SECTION, TOWNSHIP, RANGE:	SECTIONS 19 & 30, TOWNSHIP 24 SOUTH, RANGE 36 EAST
PARCEL ID:	24-36-19-00-00-501, 24-26-30-00-252 & 24-36-30-00-258
FUTURE LAND USE DESIGNATION:	LOW DENSITY RESIDENTIAL
EXISTING ZONING:	PUD
EXISTING USE:	VACANT LAND
PROPOSED USE:	SINGLE FAMILY RESIDENTIAL SUBDIVISION
PROJECT AREA:	57.23± ACRES
NET DEVELOPABLE LAND:	
GROSS ACREAGE:	57.23± ACRES
WETLAND/BUFFER AREA:	28.73± ACRES
NET DEVELOPABLE AREA:	28.50± ACRES

RESIDENTIAL LOT INFORMATION:

PROJECT STATEMENT: THE PROPOSED PROJECT CONSISTS OF 71 SINGLE FAMILY RESIDENTIAL LOTS LOCATED WITHIN RANGE ROAD SUBDIVISION.

TOTAL NUMBER OF LOTS:	71 LOTS
MINIMUM LOT SIZE – STANDARD LOTS:	4,000 S.F.
MINIMUM LOT WIDTH AT FRONT BUILDING LINE:	40'
FRONT SETBACK (BUILD TO LINE):	20'
REAR SETBACK:	20'
INTERIOR SIDE SETBACK:	5'
STREET SIDE SETBACK:	15'
PROPOSED NET RESIDENTIAL DENSITY:	2.49 D.U./ACRE

TRACTS SUMMARY

TRACT NO.	TRACT SIZE (ACRES)	PROPOSED USE	MAINTENANCE ENTITY
A	0.48	OPEN SPACE/LANDSCAPE BUFFER	HOMEOWNER'S ASSOCIATION
B	6.96	STORMWATER POND TRACT	HOMEOWNER'S ASSOCIATION
C	0.97	OPEN SPACE	HOMEOWNER'S ASSOCIATION
D	0.90	OPEN SPACE	HOMEOWNER'S ASSOCIATION
E	0.02	OPEN SPACE	HOMEOWNER'S ASSOCIATION
F	0.02	OPEN SPACE	HOMEOWNER'S ASSOCIATION
G	5.93	STORMWATER POND TRACT	HOMEOWNER'S ASSOCIATION
H	0.20	OPEN SPACE/RECREATION	HOMEOWNER'S ASSOCIATION
I	0.39	OPEN SPACE/LANDSCAPE BUFFER	HOMEOWNER'S ASSOCIATION
J	0.32	OPEN SPACE/LANDSCAPE BUFFER	HOMEOWNER'S ASSOCIATION
K	2.03	STORMWATER POND TRACT	HOMEOWNER'S ASSOCIATION
STREETS A, B, & C	2.55	ROADWAYS	CITY OF COCOA

LEGEND:

- NEW ASPHALT PAVEMENT
- (36) MYAKKA SAND, 0–2% SLOPES, TYPE A/D
- (49) POMELLO SAND, 0–5% SLOPES, TYPE A
- (54) ST. JOHNS SAND, 0–2% SLOPES, TYPE B/D
- (64) TERRA CEIA MUCK, FREQUENTLY FLOODED, TYPE A/D
- (67) TOMOKA MUCK, FREQUENTLY PONDED, 0–1% SLOPES, TYPE A/D
- (68) TOMOKA MUCK, DRAINED, FREQUENTLY PONDED, 0–1% SLOPES, TYPE A/D
- SOIL LIMITS

TYPICAL LOT DIMENSIONS

* DRAINAGE & UTILITY EASEMENTS SHALL SUPERCEDE SETBACKS, WHERE APPLICABLE

ADT TRAFFIC DATA PER ITE

AVERAGE DAILY TRAFFIC

SINGLE FAMILY LOTS = 71 x 9.52 ADT/DU = 676 ADT

PEAK HOUR TRAFFIC

SINGLE FAMILY LOTS = 71 x 0.99 PHT/LOT = 70 PHT

EASEMENT KEYNOTES

E1: SOUTHERN BELL TELEPHONE & TELEGRAPH EASEMENT, S 50', N 133', E 50', W 83'.

E2: 15' EASEMENT.

E3: 30' FLORIDA GAS EASEMENT, ORB 506, PG. 682.

E4: 50' EASEMENT WEST OF, ADJACENT TO AND WITHIN 50', WEST LINE DESCRIBED IN DEED BOOK 69, PG. 62.

NOTE:

SEE SHEETS C-16 AND C-17 FOR TYPICAL ROADWAY SECTION.

DATE	REVISIONS	BY	DESC

CONSTRUCTION PLANS
RANGE ROAD SUBDIVISION
CITY OF COCOA, FLORIDA

FEG FLORIDA ENGINEERING GROUP
Engineering the Future
5127 S. Orange Avenue, Suite 200
Orlando, FL 32809
Phone: 407-895-0324
Fax: 407-895-0325
www.feg-inc.us

OVERALL SITE PLAN

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
CPN	CPN	GRC	GRC

PROJECT NO. 19-070
SCALE 1"=100'
DATE FEBRUARY XX, 2022
SHEET NO. C-11
SHEET 11 OF 33

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY GREGORY R. CRAWFORD, 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.

FLORIDA ENGINEERING GROUP, INC. CERTIFICATE OF AUTHORIZATION NUMBER 29396
STATE OF FLORIDA
GREGORY R. CRAWFORD, P.E.
LICENSE NO. 51335

19-070 OverallSitePlan.dwg

intertek psi

Report
Geotechnical Engineering Services
Eagle Cove Subdivision
North Range Road
Cocoa, Florida
PSI Project No. 07572635

Project Number: 07572635
August 20, 2021

Professional Service Industries, Inc.
1748 33rd Street, Orlando, FL 32839
Phone: (407) 304-5560
Fax: (407) 304-5561

Dr. Srinivas Seela & Dr. Hari Sheela
Karali Associates, LLC
2642 Fawnlake Trail
Orlando, Florida 32828

RE: Report
Geotechnical Engineering Services
Eagle Cove Subdivision
North Range Road
Cocoa, Florida

Dear Mr. Crawford:

In general accordance with PSI Proposal 0757-330324 and your authorization, **Professional Service Industries, Inc. (PSI), an Intertek company**, has provided geotechnical engineering services in connection with the referenced project. This report provides an overview of the field work and laboratory testing carried out by us on the project, plus it provides geotechnical engineering recommendations related to site preparation, stormwater considerations, retaining wall design and pavement considerations.

PROJECT CONSIDERATIONS

The site under consideration herein is an undeveloped tract of land located on the east side of North Range Road, in Cocoa, Florida. More specifically, the property is bordered by wetlands to the east, residential homes that front onto Kathi Kim Street to the south, North Range Road to the west, and undeveloped vacant land, plus further wetlands to the north. The overall site encompasses approximately 57.2 ± acres and comprises mostly uplands that are densely wooded in the south with moderate tree cover and some open areas in the north. The eastern limits of the property consist of contiguous wetlands. A few smaller isolated wetland areas are also present in the upland portions of the site. An existing maintained underground gas utility easement crosses the property diagonally from the southeast to the northwest. An existing wet well/lift station is also present on the west edge of the site off North Range Road.

Based on the information provided to us, we understand the project is a new residential development comprising 56± residential lots and two storm water management ponds. Included with the construction will be civil infrastructure, retaining walls (primarily at select areas along the edges of the uplands with the easterly wetlands) and borrow fill from the pond areas that will be placed in low-lying portions of the site to raise site grades. The conceptual plan for the proposed development layout is included on **Sheet 1**.

The foregoing information has been used for the purpose of preparing this report. Adjustments to the evaluations and recommendations may be necessary if the planned development differs from the noted project information.

REVIEW OF PUBLISHED DATA

USGS Topographic Map

The topographic survey maps published by the USGS entitled "Lake Poinsett, Florida" and "Sharpes, Florida" were reviewed for ground surface features in the area of the proposed development. Based on this review, the natural ground surface elevation is on the order of +20 feet NGVD29. A review of the site-specific topographic information provided to PSI indicates current ground surface elevations at the site generally range from approximately +19 to +22 feet NAVD88 (approximately +20 to +23 feet NGVD29).

The survey also indicates a shallow east-west ditch that is some 2 to 3 feet deep generally crossing the site on an alignment from Hooper Road in the west to Ivy Drive in the east. It appears the material excavated from the east-west ditch were placed in areas adjacent to the ditch. Additionally, two areas appeared to have been excavated north and south of the east-west ditch, where elevations are lower than the adjacent prevailing grades. A series of existing roadside drainage ditches are present along the west side of North Range Road with these features shown to have bottom elevations in the range +15 to +17 feet NAVD88. The elevation of North Range Road where depicted on the survey plan is generally indicated to be at +22 feet NAVD88.

SCS Soil Survey

The "Soil Survey of Brevard County, Florida," published by the USDA SCS, was reviewed for general near-surface soil information within the general project vicinity. This information indicates that there are four soil groups within the vicinity of the proposed project. The general information provided by the SCS for the mapped soil units is summarized in the following table.

Soil Series	Depth (inches)	Unified Classification	USDA Seasonal High Groundwater Table
			Depth (feet)
36 – Myakka sand, 0 to 2 percent slopes	0 to 80	SP-SM	0.5 to 1.5
49 – Pomello sand, 0 to 5 percent slopes	0 to 80	SP, SP-SM, SM	1.5 to 3.5
54 – St. Johns sand, 0 to 2 percent slopes	0 to 60	SP-SM	0 to 0.5
64 – Terra Ceia muck, frequently flooded	0 to 70	PT	+2.0 to 0

The site is primarily mapped as Soil Series 36, with Soil Series 54 being mapped in a transitional zone from uplands to wetlands in the southeastern portion of the site. Soil Series 49 is mapped in a small zone in the very northern edge of the site (in a few of the proposed residential lots), The easterly wetlands are mapped as Soil Series 64 and encroach slightly into the planned development area in a few select zones.

FIELD EXPLORATION

General

To evaluate subsoil conditions in the proposed development area, we drilled/sampled a series of four Standard Penetration Test (SPT) borings and twenty auger borings across the site. The SPT borings were drilled near planned retaining wall areas and advanced to depths of 20 feet below the existing ground surface. In the SPT borings, the upper 4 feet were augered by hand to confirm utility clearance. Below 4 feet, SPT samples were recovered virtually continuously to 10 feet with the sampling frequency thereafter being at 5-foot centers to boring termination. The auger borings comprised 5 explorations drilled in in the planned stormwater pond areas to depths of 20 feet below existing grade, plus 15 borings to depths of 5 to 7 feet below the existing ground surface in the planned roadways of the development. In the auger borings, soil samples were collected at regular intervals and or at each change in stratum.

The approximate locations of the borings are presented on **Sheet 1**. The SPT and auger borings were performed in general accordance with the procedures of ASTM D-1586 and ASTM D-1452, respectively. The soil types encountered at the specific boring locations are presented in the form of soil profiles on **Sheets 2** through **4**, along with a legend describing the encountered soils in USCS format, laboratory testing results and the measured groundwater levels. The SPT borings were performed using an automatic hammer to advance the sample spoon.

The stratification presented is based on visual observation of the recovered soil samples, laboratory testing and interpretation of field logs by a geotechnical engineer. It should be noted that variations in the subsurface conditions are expected and may be encountered between and away from PSI's borings. Also, whereas the individual boring logs indicate distinct strata breaks, the actual transition between the soil layers may be more gradual than shown on the soil profiles.

In addition to the borings, PSI completed a series of muck probes in select wetland areas along the eastern edge of the site where organic soils were mapped by the Soil Survey to potentially encroach into the proposed development footprint. The location and results of the muck probes are presented on **Sheet 5**. For the most part, the muck probes disclosed little to no muck with only a few probes indicating muck/organic soils on the order of 1 foot thick. However, it should be noted that other areas not explored may contain deeper deposits of organic soils. More detailed discussions related to the muck probing are presented in a later section of this report.

Soil Conditions

Based on the borings completed for the project, subsurface conditions are reasonably consistent across the site. Subsoils in the depth interval drilled (5 to 20 feet below the existing ground surface) generally comprise a varying sequence of fine sands that grade from being relatively clean to slightly silty in composition (i.e. SP and SP-SM materials). Intermixed in the upper soils are trace amounts of roots/organic debris associated with the vegetation that covers most of the site.

Recorded SPT blow counts indicate the sands for the most part to be in a loose to medium dense condition, with a few discontinuous zones of very loose or dense materials. In general, the looser sands are present in the upper 13.5 feet followed by the denser sands that persist to boring termination.

Groundwater Conditions

At the time of our field work, groundwater was encountered in the borings at depths in the range 1.3 to 3 feet below the existing ground surface. It should be noted that the measured groundwater levels may not have been fully stabilized before needing to backfill the boreholes.

The estimated normal seasonal high groundwater levels presented herein are based on the observed soil stratigraphy, conditions observed in the borings, groundwater levels and USDA Soil Survey information. In this regard, we estimate the normal seasonal high groundwater table (SHWT) to occur within 0.5 to 1.5 feet (0 to 18 inches) of the natural ground surface across most of the site, with levels being above the ground surface in the low-lying areas and the wetlands of the site. The noted depths generally correspond to elevations in the range +19 to +20.5 feet NAVD88 across the site. A groundwater contour map of the estimated seasonal high groundwater table is presented on **Figure 1**.

In general, the normal seasonal high groundwater level is not intended to define a limit or ensure that future seasonal fluctuations in groundwater levels will not exceed the estimated levels. Groundwater conditions will vary with environmental changes and seasonal conditions, such as the frequency and magnitude of rainfall patterns, as well as man-made influences, such as swales, drainage ponds, underdrains and areas of covered soil (buildings, paved parking lots, sidewalks, etc.).

A detailed description of the individual borings is shown on the soil profiles on **Sheets 2** through **4**.

Muck Probes

Muck probing was completed in the two planned retaining wall areas in the northeast and southeast where wetlands/areas mapped as potentially having surficial organic soils encroach into the development area. The purpose of the muck probes was to assess the relative depth/thickness and lateral extent of surficial organic soils (if any) in these areas. The muck probes were carried out by manually advancing a one-half inch diameter rod into the ground and measuring the depth to practical refusal to manual penetration of the rod. This refusal depth is taken as the thickness of the surface organic soils. The approximate locations and results of the muck probes are shown on **Sheet 5**.

For the most part, PSI's muck probes did not indicate any appreciable amount (i.e. less than one-half foot) of very soft/loose surficial organic soils with the probe rod typically meeting practical refusal/sands very near the ground surface. An exception to the foregoing was at two probe locations furthest east into the wetland where the thickness of muck ranged from 0.7 to 1.2 feet.

It should be noted that manual penetration of the probe can be stopped by roots, sand lenses, or other obstructions that could result in the underestimation of the thickness of organic soils. Muck probe data should only be used for general characterization of soil conditions. Muck probe data should not be used for determining soil removal quantities. Based on experience, we expect the existing wetlands and other low-lying areas/water bodies that are to be reclaimed/infilled will contain some organic soils and or bottom silts/sediment (typically at least a few inches thick) that will need to be removed prior to infilling. This work should be carried out in the dry to allow confirmation all unsuitable soils/sediment is removed and to facilitate compaction of the stripped grade and backfill.

Laboratory Testing

Selected soil samples were tested to determine percent fines passing the U.S. Standard No. 200 sieve. Additionally, two relatively undisturbed Shelby tube samples collected from the stormwater pond areas were subject to falling-head permeability tests. These tests were carried out following appropriate ASTM procedures. The results of the tests are included with the soil profiles on **Sheets 2** and **4** adjacent to the depth increment of the test specimen.

SITE SUITABILITY

Based on the results of PSI's borings, it is our opinion that the subsoil and groundwater conditions are generally suitable for the proposed residential development from geotechnical engineering perspective. Provided the subgrade is properly prepared, shallow spread foundations can be used for support of the retaining walls. Such foundations can be designed for a net allowable bearing pressure of 2,500 pounds per square foot (psf).

Provided adequate separation is maintained between the normal seasonal high groundwater table and the bottom of pavement base, pavements can be constructed using conventional asphalt sections.

Based on the encountered soil and groundwater conditions at the site, it appears the site is suitable for the design of wet bottom ponds, similar to other nearby existing ponds.

More detailed recommendations regarding site preparation, pavements, stormwater and retaining wall considerations for the project are provided in the following sections of this report.

SITE PREPARATION CONSIDERATIONS

General

The following recommendations have been developed on the basis of the previously described project characteristics and subsurface conditions encountered. If there is any change in the project criteria, including the location or orientation of the planned development, a review must be made by PSI to determine if additional fieldwork and/or any modifications to our recommendations will be required.

Once final design plans and specifications are available, a general review by PSI is strongly recommended as a means to check that the evaluations made in preparation of this report are correct and that earthwork recommendations are properly interpreted and implemented.

Site Clearing/Stripping

At the outset of construction, clearing and grubbing including removal of any organic-laden topsoil that remains on the site should be completed. This normally includes removing the surface vegetation/trees, stripping topsoil, grubbing major root systems, and removing any miscellaneous debris, organic soils and/or deleterious materials. At a minimum, it is recommended that the clearing/stripping operations extend at least ten feet beyond the proposed development perimeter. Material generated during stripping operations should be disposed of off-site in a proper manner as directed by the Owner. Initial site clearing and preparation work should be carried out under the observation of a representative of PSI's Geotechnical Engineer.

Fill Placement and Subgrade Preparation

Following the clearing/stripping operations, the exposed subgrade should be evaluated as directed by PSI's Geotechnical Engineer or his representative to confirm that all unsuitable materials have been removed. The development areas should then be proof rolled to provide a stable/unyielding subgrade prior to placing fill. Proof rolling should consist of compaction with a large diameter, vibratory drum roller. The roller should be capable of imparting a maximum dynamic drum force of at least 36,000 pounds. Proof rolling should consist of a minimum of ten overlapping coverages of the roller in a criss-cross pattern with a maximum travel speed of 2 feet per second. The limits of proof rolling should encompass the development areas, plus a horizontal distance of 10 feet beyond the outside edges of the same where practical.

Compaction can be completed in the vibratory or static mode in order to meet the minimum density requirements stated below. Based on past experience, we recommend compaction equipment be operated in the static mode within 75 feet of existing structures to reduce vibrations that could cause structural distress or disturb building occupants. Careful observations should be made during proof rolling to help identify any areas of soft/yielding soils that may indicate the presence of unsuitable soils that require over-excavation and replacement filling.

It is recommended that the subgrade, to a minimum depth of one foot below stripped grade, be compacted to at least 95 percent of the material's modified Proctor (ASTM D-1557) maximum dry density within the building and pavement areas. Following satisfactory completion of initial compaction of the stripped subgrade, the proposed development area may be brought up to finished grades as required.

Engineered Fill

Any fill for the project should consist of clean fine sand with less than 10 percent by dry weight passing the U.S. Standard No. 200 sieve and be free of rubble, organics, clay, debris and other deleterious material. Fill should be tested and approved prior to import and placement. Each lift should have a loose thickness not exceeding 12 inches. Density tests should be performed to confirm the required compaction is being achieved prior to placing the next lift.

Prior to beginning compaction, soil moisture conditioning may be required. Soil moisture contents should be controlled in order to facilitate proper compaction. A moisture content within two percentage points of the material's optimum indicated by the modified Proctor test (ASTM D-1557) is recommended prior to compaction of the natural ground and fill. All engineered fill should be compacted to at least 95 percent of the material's modified Proctor (ASTM D-1557) maximum dry density.

On-Site Soil Suitability

Materials to be used for backfill or compacted fill for construction should be evaluated and, if necessary, tested by PSI prior to placement to determine if they are suitable for the intended use. In general, based on the boring and laboratory testing results, the relatively clean on-site sandy soils (Strata 1, 2, 3 and 5) appear to be suitable for use as engineered fill, provided the material is free of debris, rubble, clay, roots and organics.

For the most part, the soils in Stratum 4 grade slightly silty (SP-SM materials) but occasionally the sands locally contain a higher amount of silt fines whereby the soil may grade as silty fine sand (SM materials). Silty sands (if encountered) potentially could be difficult to moisture condition and compact, especially during the wet season.

Due to the lower permeability characteristics of siltier materials, such soils should not be used within 24 inches of pavement base materials. If it is desired to use the siltier sands as fill, they should be thoroughly blended with other, more suitable materials (clean sands) in such a way that the content of fines of the hybrid material is less than 10 percent passing the No. 200 sieve. Samples of the soil to be used as fill should be taken during excavation as necessary to verify that the soils meet this requirement.

OTHER CONSIDERATIONS

Pavement Support

Recommendations for a medium-duty pavement section for the interior residential roadways are included in the following. Provided that pavements are designed to provide at least 18 inches of clearance between the bottom of the base material and the estimated normal season high groundwater table, the basecourse for asphalt sections can comprise limerock or crushed concrete. Recommendations for a medium-duty pavement section are included in the following.

Medium-Duty (Interior Roads)

2.0 inches	Type SP Asphaltic Concrete (min. PG 67-22)
8.0 inches	Limerock (LBR = 100) or crushed concrete (LBR = 150) basecourse
12.0 inches	Stabilized subgrade (LBR = 40)

The recommended pavement section is based on past experience with similar projects and the encountered subsurface conditions at the site. All pavement materials and construction should meet the more stringent of the Florida Department of Transportation (FDOT) and local city/county requirements. The noted pavement sections should be considered recommended minimums based on anticipated traffic loadings and our past experience.

Stormwater Management

We understand stormwater management for the site will be handled by two stormwater ponds to be excavated/constructed in the west-central and northeast portions of the site. Based on the prevailing subsoil and groundwater conditions, the site appears suitable for wet-bottom ponds. We expect the excavations for stormwater facilities will for the most part generate granular (sandy) materials suitable for use as fill on the project.

To evaluate shallow soil permeability characteristics in the noted pond areas, PSI collected two relatively undisturbed Shelby tube samples from select pond borings for laboratory permeability testing. The results of these tests are included with the corresponding pond boring profiles on **Sheet 4** with a summary of the same being provided in the following table.

Boring / Sample Depth (feet)	Percent Fines Passing the No. 200 Sieve	Coefficient of Vertical Permeability, Kv (feet/day)
PB-1 / 0.5	1.7	30*
PB-5 / 1.0	1.3	26*

*Permeability rates based on raw laboratory test results and does not include a factor of safety.

The following parameters are recommended for design of the stormwater facilities based on the corresponding boring results, permeability testing results and groundwater conditions.

East Pond (Borings PB-1 and PB-2)

Estimated Normal Seasonal High Groundwater Table	+20.0 feet NAVD88
Estimated Average Wet Season High Groundwater Table	+19.0 feet NAVD88
Base of Aquifer	+0 feet NAVD88
Coefficient of Horizontal Permeability, Kh	+45 feet/day

West Pond (Borings PB-3, PB-4 and PB-5)

Estimated Normal Seasonal High Groundwater Table	+19.5 feet NAVD88
Estimated Average Wet Season High Groundwater Table	+18.5 feet NAVD88
Base of Aquifer	+0 feet NAVD88
Coefficient of Horizontal Permeability, Kh	+39 feet/day

The recovery of a given stormwater system is dependent on the soil permeability as well as the groundwater table, system bottom elevation, system geometry, confining layer and water level in the system. We recommend a commercially available computer program such as PONDS or MODRET be used by an engineer experienced in groundwater modeling to evaluate the proposed stormwater system. The system should be designed and constructed in accordance with Water Management District requirements. We recommend an appropriate safety factor be applied to the stormwater model.

Retaining Walls

Based on the information provided, we understand several retaining walls may be constructed as part of the project including along portions of the eastern limits of the site where development approaches the wetland buffer, and in the west near the existing wet well/lift station. No detailed information of the wall designs are available at this time; however, we anticipate the walls will comprise a geogrid/geosynthetic reinforced modular block-type retaining wall (i.e. Keystone Wall or similar designed by others) or a cast in place concrete wall that is relatively low in height.

Shallow foundations for walls (if any) should bear on properly placed and compacted cohesionless (sand) fills or on compacted native sands. All footings should be embedded so that the bottom of the foundation is a minimum of 18 inches below adjacent finished grades on all sides. Wall foundations should be a minimum of 24 inches wide. A net allowable bearing pressure of 2,500 psf can be used for design of the shallow foundations.

The retaining walls should be designed to resist pressures exerted by the adjacent soils and hydrostatic head. If the walls are not restrained during backfilling but are free to rotate at the top, active earth pressure should be used in design. If the walls will be restrained, they should be designed assuming at-rest pressures.

Recommended soil parameters for the near-surface granular soils encountered at the site and clean sand backfill are presented on the following page.

Total Unit Weight, γ_T	=	120 lb/ft^3
Angle of Internal Friction, ϕ	=	30°
Coeff. of Sliding Friction	=	0.40
Active Soil Pressure coeff., K_a	=	0.33
At-rest Soil Pressure coeff., K_o	=	0.50
Passive Soil Pressure coeff., K_p	=	3.00

The recommended parameters assume that adequate drainage is provided behind the walls to prevent the buildup of excess hydrostatic pressures. The design should incorporate hydrostatic effects and any surcharge loads that may be placed behind the walls. In order to avoid wall damage due to excessive compaction, hand operated mechanical tampers should be used to densify backfill soils; heavy compaction equipment should not be allowed within five feet of walls. The soils behind the walls should be compacted to approximately 95 percent of the material's modified Proctor (ASTM D-1557) maximum dry density.

As noted earlier, it is our assumption that the actual design of the retaining walls will be by others using the parameters provided herein. In the event that there are any questions on the parameters, please do not hesitate to contact us.

Dewatering

Dewatering is anticipated to be required for most excavations. Excavations that are only a few feet below the water table can likely be dewatered with a sump system. Deeper excavations will most likely require well-pointing or horizontal sock drains to achieve adequate drawdown. In either case, the dewatering system should be designed and operated to lower the groundwater table to a depth at least 2 feet below the bottom of surfaces to be compacted in any given area. The design and discharge of the dewatering system should be in accordance with Water Management District regulatory criteria.

Utility Excavations

All utility excavations should be made in accordance with recommendations outlined by the Occupational Safety and Health Administration Document *Construction Standards for Excavations (29CFR Part 1926.650-.652 Subpart P)*. Shoring should be designed in accordance with OSHA 2226, taking into consideration loads resulting from equipment, existing construction and/or fill stockpiles.

Difficulty may also arise during construction when trying to compact materials containing higher percentages of fines. If such soils become unstable during compaction operations due to moisture related conditions, we recommend those soils be undercut at least 12 inches below pipe inverts and drainage structures and the resultant excavation be infilled with compacted clean fine sand with less than 10 percent by dry weight passing the No. 200 sieve and gravel bedding of Florida Department of Transportation (FDOT) crushed stone (No. 57 stone). Utility bedding material should be an equal mixture of No. 57 stone and clean sand. Gravel/sand backfill should be compacted such that it is firm and unyielding. Unsuitable soils should be removed for the full width of the trench and to the depth required to reach suitable foundation material.

Excavations

In Federal Register, Volume 54, No. 209 (October 1989) the United States Department of Labor, Occupational Safety and Health Administration (OSHA) amended its "Construction Standards for Excavations, 29 CFR, part 1926, Subpart P". This document was issued to insure better the safety of workmen entering trenches or excavations. It is mandated by this federal regulation that excavations, whether they be utility trenches, general construction excavations or footing excavations, be constructed in accordance with the new OSHA guidelines. It is our understanding that these regulations are being strictly enforced and if they are not closely followed the Owner and the contractor could be liable for substantial penalties.

The contractor is solely responsible for designing and constructing stable, temporary excavations and should shore, slope, or bench the sides of the excavations as required to maintain the stability of both the excavation sides and bottom. The contractor's "responsible person," as defined in 29 CFR Part 1926, should evaluate the soil exposed in the excavations as part of the contractor's safety procedures. In no case should slope height, inclination, or excavation depth, including utility trench excavation depth, exceed those specified in local, state, and federal safety regulations.

PSI is providing this information solely as a service to our client. PSI does not assume responsibility for construction site safety or the contractor's or other parties' compliance with local, state, and federal safety or other regulations.

LIMITATIONS

Our professional services have been performed, our findings obtained, and our recommendations prepared in accordance with generally accepted geotechnical engineering principles and practices. This company is not responsible for the conclusions, opinions or recommendations made by others based on these data.

The scope of our exploration was intended to evaluate generally soil and groundwater conditions within the proposed development area and does address possible deep geologic conditions such as sinkholes. The analysis and recommendations submitted in this report are based upon the data obtained from the soil borings performed at the locations indicated. If any subsoil variations become evident during the course of this project, a re-evaluation of the recommendations contained in this report will be necessary after we have had an opportunity to observe the characteristics of the conditions encountered. The applicability of the report should also be reviewed in the event significant changes occur in the design, nature or location of the proposed development.

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

CLOSURE

PSI appreciates the opportunity to provide our services to Karali Associates and FEG on this project and we trust the information presented herein is sufficient for your needs at this time. If you have any questions regarding the contents of this report, or if we may be of further service, please contact the undersigned.

Sincerely,

PROFESSIONAL SERVICE INDUSTRIES, INC.
Certificate of Authorization No. 3684

Max S. McGahan, P.E.
Project Engineer
Florida License No. 86580

Robert A. Trompke, P.E.
Florida Geotechnical Practice Leader
Florida License No. 55456

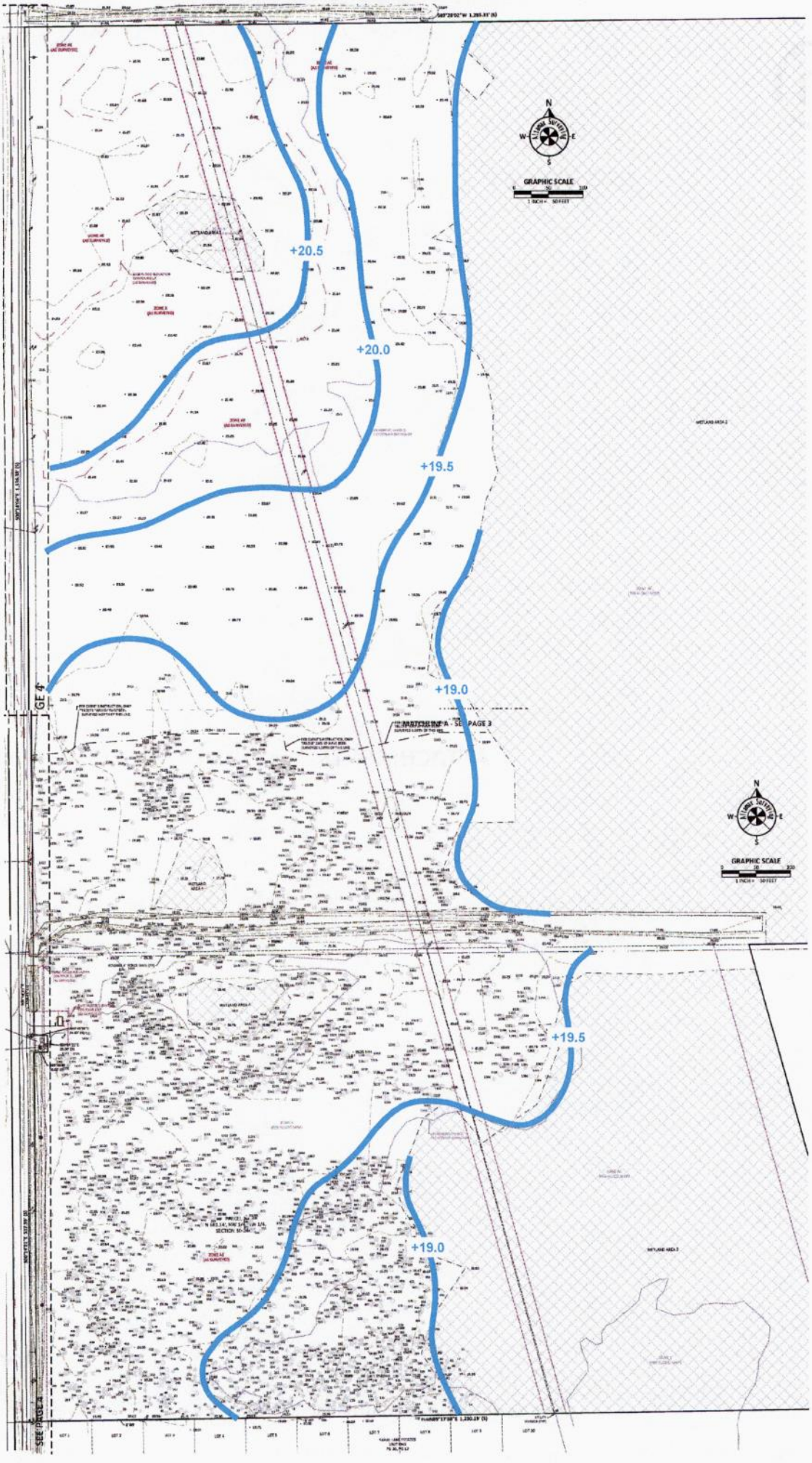
07572635 (Eagle Cove Subdivision, N. Range Rd, Cocoa)

Attachments:

- Figure 1 – Groundwater Contour Map
- Sheet 1 – Boring Location Plan
- Sheets 2 through 4 – Boring Profiles
- Sheet 5 – Muck Probes Results

ATTACHMENTS

BOUNDARY & TOPOGRAPHIC SURVEY





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SCALE	NOTED
DATE CREATED	7-30-21

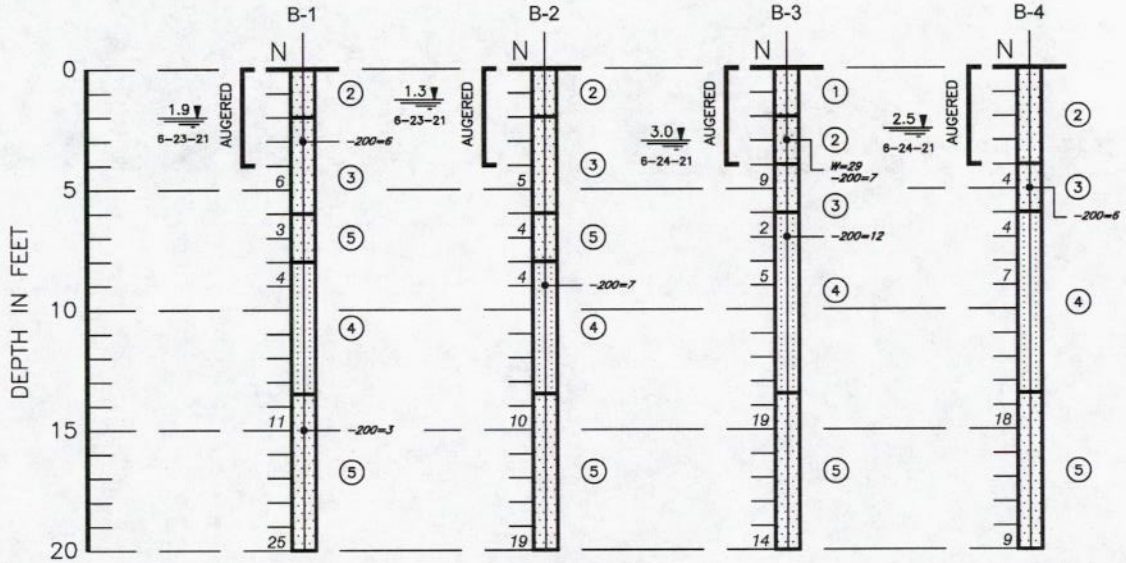
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GEOTECHNICAL ENGINEERING SERVICES

EAGLE COVE SUBDIVISION
NORTH RANGE ROAD
OCALA, FLORIDA

SHEET	1
DRAWN	DJW
CHECKED	MM

0 100 200 Feet
1 inch = 200 feet



SOIL PROFILES

SCALE: 1"=5'

LEGEND

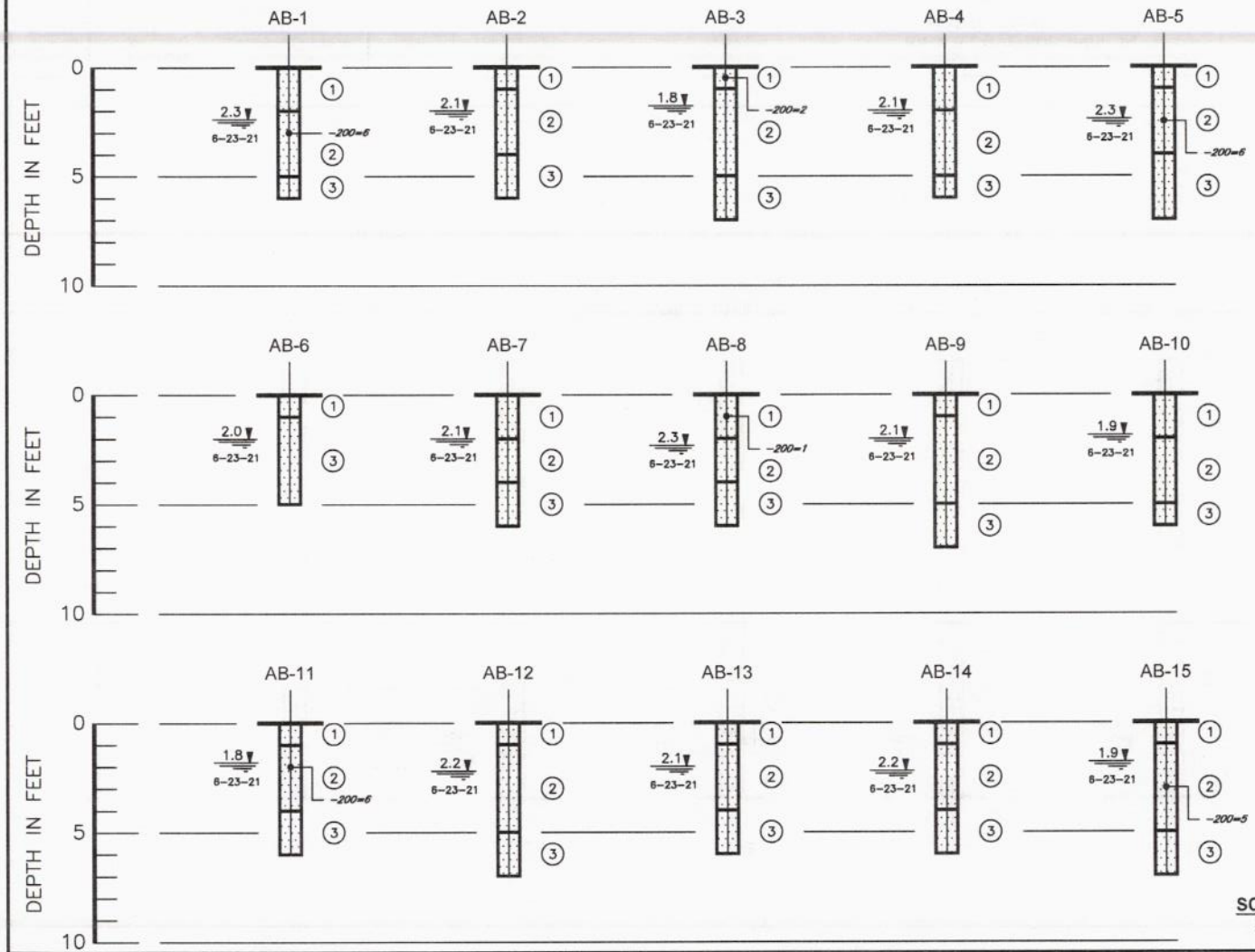
①	*GRAY FINE SAND TO SLIGHTLY SILTY FINE SAND, TRACE ROOTS, (SP), (SP-SM)*
②	*DARK BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, OCCASIONAL TRACE ROOTS, (SP), (SP-SM)*
③	*GRAY-BROWN TO BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, OCCASIONAL TRACE CEMENTED SANDS, (SP), (SP-SM)*
④	*LIGHT GRAY-BROWN TO LIGHT BROWN SLIGHTLY SILTY FINE SAND, (SP-SM)*
⑤	*LIGHT GRAY TO GRAY-BROWN FINE SAND TO SLIGHTLY SILTY FINE SAND, (SP), (SP-SM)*
(SP)	*UNIFIED SOIL CLASSIFICATION GROUP SYMBOL*
N	*STANDARD PENETRATION RESISTANCE IN BLOWS PER FOOT USING AN AUTOMATIC HAMMER*
1.9 ▼ 6-23-21	*DEPTH TO GROUNDWATER LEVEL IN FEET WITH DATE OF READING*
W	*NATURAL MOISTURE CONTENT IN PERCENT*
-200	*FINES PASSING #200 SIEVE IN PERCENT*

PROJECT NO: 07572635
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DATE CREATED: 7-30-21

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COCOA, FLORIDA

SHEET: 2
DRAWN: DJW
CHECKED: MM



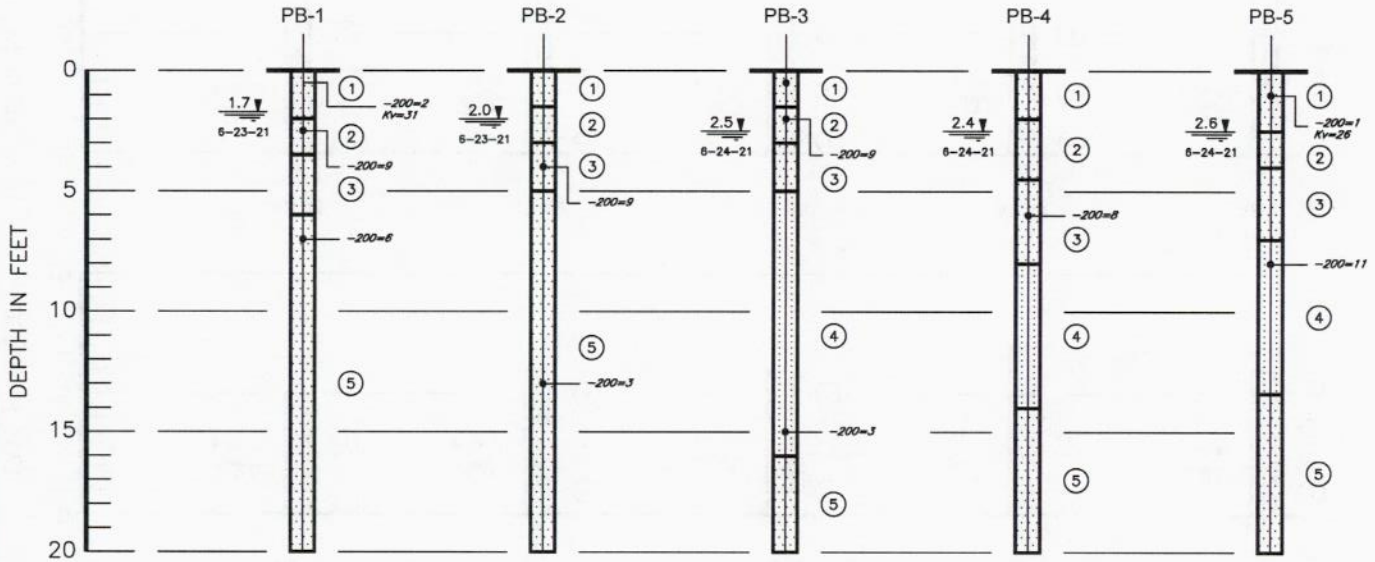
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W	NATURAL MOISTURE CONTENT IN PERCENT
-200	FINES PASSING #200 SIEVE IN PERCENT

SOIL PROFILES

SCALE: 1"=5'

PROJECT NO.: 07572635	intertek psi	1748 33rd Street Orlando, FL 32839 (407)304-5560 (407)304-5561 fax	GEOTECHNICAL ENGINEERING SERVICES **EAGLE COVE SUBDIVISION** **NORTH RANGE ROAD** COCOA, FLORIDA	SHEET: 3
SCALE: NOTED				DRAWN: DJW
DATE CREATED: 7-30-21				CHECKED: MM



SOIL PROFILES

SCALE: 1"=5'

LEGEND

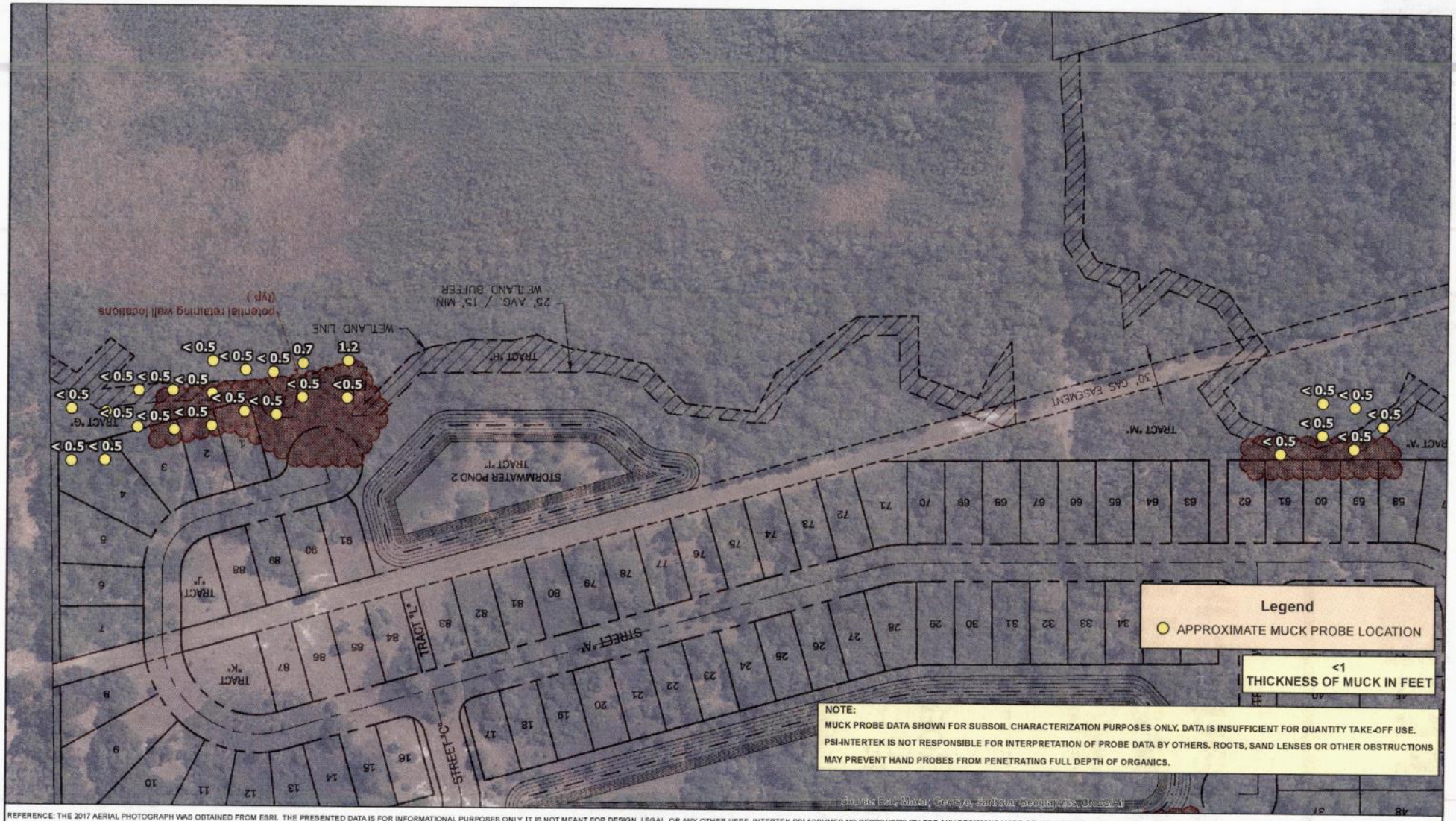
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W	*NATURAL MOISTURE CONTENT IN PERCENT*
-200	*FINES PASSING #200 SIEVE IN PERCENT*

PROJECT NO.: 07572635
SCALE: NOTED
DATE CREATED: 7-30-21

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GEOTECHNICAL ENGINEERING SERVICES
EAGLE COVE SUBDIVISION
NORTH RANGE ROAD
COCOA, FLORIDA

SHEET: 4
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PROJECT NO. 07572635 SCALE: NOTED DATE CREATED 8-20-21	intertek psi 1748 33rd Street Orlando, FL 32839 (407)304-5560 (407)304-5561 fax	GEOTECHNICAL ENGINEERING SERVICES **EAGLE COVE SUBDIVISION** **NORTH RANGE ROAD** COCOA, FLORIDA	SHEET 5 DRAWN DJW CHECKED MM	0 60 120 Feet 1 inch = 120 feet

FEG FLORIDA ENGINEERING GROUP

5127 South Orange Avenue
Orlando, FL 32809

Phone: 407-895-0324

Engineering the Future

Hydraulic Modeling for Potable Water and Irrigation System Report

Range Road Subdivision
N. Range Road
Cocoa, Florida 32926

GREGORY RAY CRAWFORD ★ LICENSE ★ No 51335 ★ STATE OF FLORIDA ★ PROFESSIONAL ENGINEER ★

Prepared for:
Karali Associates, LLC.
June 15, 2022
FEG 19-070

Gregory R. Crawford, PE #51335
Florida Engineering Group, Inc.
Certificate No. EB0006595

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I. Project Description

The Range Road Subdivision project site is located south of the intersection Hooper Road and Range Road in the City of Cocoa, Brevard County, Florida. Specifically, the site is located in Sections 19 and 30, Township 24 South, Range 36 East. The proposed project includes Parcel ID numbers 24-36-19-00-501, 24-36-30-00-258, and 24-36-30-00-252. A Site Location Map is provided in **Appendix A** of this report.

The proposed project consists of 71 single-family residential units with its associated roadways, utility facilities, recreational areas, and stormwater system. The utility facilities will consist of potable water, irrigation distribution system, and sanitary sewer.

The proposed potable water distribution system will connect to an existing 12-inch water line on Range Road; this connection supplies an available assumed residual pressure of 50 psi. The proposed system will have two points of connection. The first point of connection will be located to the south at the intersection of Hopper Road and Range Road. The second point of connection will be located to the north, roughly about 740 feet north of the Hopper Road and Range Road intersection. The system will then loop through the development having a blow-off valve at the cul-de-sac for Street A on southeast end of the subdivision and a blow-off valve at the cul-de-sac for Street B on the north end of the subdivision. The fire flow system will be served off the potable water main with a 6-inch pipe into the fire hydrant assembly. Five (5) fire hydrants are proposed around the development.

The proposed irrigation distribution system will consist of two points of connection; each connection supplies an assumed residual pressure of 50 psi. The first point of connection will be located to the south at the intersection of Hopper Road and Range Road. The second point of connection will be located at northeast entrance of the proposed property, roughly about 790 feet north of the Hopper Road and Range Road intersection. The system will then loop through the development having a blow-off valve at the cul-de-sac for Street A on southeast end of the subdivision and a blow-off valve at the cul-de-sac for Street B on the north end of the subdivision.

II. Hydraulic Modeling for Potable Water and Fire Flow Analysis

A. Potable Water Demand Design Flows

Based on City of Cocoa Utilities Handbook, Section 3.3.3 Impact Fees, the calculated water flow demand is:

Table II-1 - Water Demand Calculations

	ERC/Unit	Number of Units	GPD/Unit	Average Daily Flow (GPD)	Maximum Daily Flow (2xADF)		Peak Daily Flow (4xADF)	
					GPD	GPM	GPD	GPM
Single-Family Residence	1.00 ERC	71	265	18,815	37,630	26.13	75,260	52.26

B. Fire Water Demand Design Flows

Using ISO Standards, the Needed Fire Flow for a single-family dwelling unit is 1,250 GPM. This Needed Fire Flow will be assigned to each of the proposed fire hydrants in order to confirm that the minimum required pressure (20 PSI) is maintained in the system and to check pipe velocities. Fire hydrants will be spaced throughout the subdivision with a maximum separation of 500 feet. The ISO worksheet is provided in **Appendix B**.

C. Potable Water and Fire Flow Modeling

The following analysis represents the water modeling for The Range Road Subdivision. The WaterCad software was used to analyze the proposed water system to ensure that the required flows and pressures are available to provide fire protection and the peak demand for proposed development.

As required by the City of Cocoa Utilities Handbook, the project will be modeled using factors of Maximum = 2.0 and Peak = 4.0 (see Table II-I above for demand calculations). Based on the flows listed in Table II-I above, the follow scenarios will be modeled for the proposed development.

- Total Project Peak Daily Flow Demand, excluding Fire Flow
- Total Project Maximum Daily Flow Demand with Fire Flow

1. Existing Municipal Distribution

The residual pressure of the existing municipal water distribution system was assumed to have a residual pressure of 50 psi. The existing system was model and the point of connection are represented as reservoirs R-1 and R-2. The ground elevation at the P.O.C. was used, along with 3.5 feet of cover and the assumed pressure, to calculate the hydraulic grade line at each reservoir.

2. Physical Characteristics

Hazen-Williams Coefficient: A Hazen Williams Coefficient of 120 was used for all PVC pipes.

Head Loss: Head losses were calculated using the Hazen Williams formula from the WaterCad software.

$$H_f = \frac{10.45 * L * Q^{1.85}}{(C^{1.85} * D^{4.8655})}$$

Where,
H_f = Head Loss through a pipe
L = Length of Pipe
Q = Flow
C = 120 for PVC
D = Diameter of pipe

Minor Loss: Minor losses due to valves, backflow preventers, etc. are calculated using the method of loss coefficient:

$$H_f = K * \frac{V^2}{2g}$$

Minor losses due to bends & tees were determined through the use of a resistance coefficient, which was applied to the velocity head of the flow to find the friction loss in the bend or tee. This allows the analysis model to adjust the head loss in a bend or tee as the flow rate changes. Minor loss coefficients for bends, tees, and pipe size were taken from Ingersoll Rand's Cameron Hydraulic Data 17th Edition. The minor loss coefficients are summarized below.

Table II-2 - Minor Loss Coefficients Bend, Valves and Tees

	6" Nominal Diameter	8" – 10" Nominal Diameter
90° Elbow	0.45	0.42
90° Long Radius Elbow	0.24	0.22
Gate valve	0.12	0.11
Tee, Through Flow	0.3	0.28
Tee, Branch Flow	0.9	0.84

Table II-3 - Minor Loss Coefficients Due to Change in Pipe Size

From/To	4"	6"	8"
4"	N/A	0.31	0.56
6"	0.28	N/A	0.19
8"	0.38	0.22	N/A

3. Potable Water and Fire Flow Hydraulic Analysis Summary

Scenario 1: examines the system under peak hour potable demand with no fire flow demand.

Potable Demand: 46.32 GPM Fire Hydrant Demand: 0.00 GPM

Scenario 2: examines the system under maximum daily potable demand along with the required fire flow demand.

Potable Demand: 26.13 GPM Fire Hydrant Demand: 1,250 GPM

See **Appendix C** for results of the hydraulic analysis for the peak hour flow with no fire flow (Scenario 1) and **Appendix D** for the results of the hydraulic analysis for the maximum daily flow with the required fire flow from each fire hydrant separately (Scenario 2). As can be seen, all of the demand sources maintain the required minimum operating pressure of 40 psi under peak daily flow conditions and a minimum pressure of 20 psi under fire flow conditions.

III. Hydraulic Modeling for Potable Water and Fire Flow Analysis

A. Reuse Water Demand Design Flows

Reclaimed water demand was calculated using the standard irrigation design for peak hour flow per zone; the zones where divided into 71 single-family residence units and one recreational area. The maximum daily demand was calculated based on 1.25 inches of irrigation during 7 days. The maximum day irrigation demand rate was estimated as follows:

$$\frac{1.25\ in}{1\ week} * \frac{1\ week}{7\ days} * \frac{1\ day}{24\ hours} * \frac{1\ hour}{60\ minutes} * \frac{1\ ft}{12\ in} * 24.19 acres * \frac{43560\ SF}{1\ acre} =$$

$$10.89 \frac{ft^3}{minute} * \frac{7.48\ gallons}{1\ ft^3} = 81.45\ GPM$$

However, for pipe sizing purpose, the peak hour demand flow was used to ensure the required minimum pressure was met throughout the development under the peak demand conditions. Peak hour demand was estimated at a maximum 8 GPM per zone, per lot, knowing only 1 zone per lot operates at one time. The minimum required pressure for an irrigation system is 30 psi. Table III-1 below summarize the demand results

Table III-1 - Demand Summary

Demand Source	Demand Flow Rate
Zones	72 zones
Peak Hour Reclaimed Water Demand per zone	8 GPM
Peak Hour Reclaimed Demand per Development	**576 GPM**

The demand for the five (5) junctions is based on 8 GPM per lot.

B. Reclaimed Water Flow Modeling

The following analysis represents the water modeling for The Range Road Subdivision. The WaterCad software was used to analyze the proposed reclaimed water system to ensure that the required flows and pressures are available to provide irrigation services around the proposed development.

1. Existing Municipal Distribution

The residual pressure of the existing municipal water distribution system was assumed to have a dynamic pressure of 40 psi. The existing system was modeled and the point of connection are represented as reservoirs R-1 and R-2. The ground elevation at the P.O.C. was used, along with a 3 feet of cover and the assumed pressure, to calculate the hydraulic grade line at each reservoir.

2. Reclaimed Water Hydraulic Analysis Summary

The WaterCad model analyzed the system under peak hour reclaimed demand of 576 GPM.

Table III-2 - Summary of Results

Demand Source	Demand (GPM)	Pressure (psi)
CU-1	85.00	36
CU-2	60.00	36
CU-3	125.00	36
CU-4	90.00	35

Table III-2 above shows the operating pressure for the on-site demand sources. All of the demand sources maintain the required minimum operating pressure of 30 psi under peak hour demand conditions. See **Appendix D** for complete water and fire analysis results.

Appendix A – Location Map



PROJECT NAME:	RANGE ROAD SUBDIVISION	SITE LOCATION MAP
CLIENT:	KARALI ASSOCIATES, LLC	
S, T, R: S 30 T 24S R 36E	F.E.G. PROJECT NO.: 19-070	
DATE: APRIL 01, 2022	SCALE: 1" = 200'	

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Appendix B – ISO Worksheet

*

FIRE FLOW WORKSHEET I.S.O. METHOD

Date: _____ Calculated by: Gregory Crawford, Florida Engr. Group, Inc.

Osceola County Project # _____ - _____ Owner: Karali Associates, LLC

Project Address: Range Road Subdivision

Construction Type: V Number of stories: 1 Occupancy Type: Single Family Residential

Step 1 Take Ai which is 100% sq. ft. of 1st floor plus the following percentage of the total area of the other floors, and find its square root:

1st Floor 2,800 Sq. Ft. @ 100%

BUILDINGS CLASSIFIED AS CONSTRUCTION CLASSES 1-4: 50% OF ALL OTHER FLOORS
BUILDINGS CLASSIFIED AS CONSTRUCTION CLASSES 5 OR 6: IF ALL VERTICAL OPENINGS ARE PROTECTED, 25% OF THE AREA NOT EXCEEDING THE TWO LARGEST FLOORS.
IF ONE OR MORE VERTICAL OPENINGS IN THE BUILDING ARE UNPROTECTED 50% OF THE AREA OF NOT EXCEEDING 8 OTHER FLOORS

Total _____ Sq. Ft. for fire flow = Ai
(Find square root of "Total Sq. Ft. for Fire Flow)

2,800 first = 2,800 Sq. Ft. = 52.9 Ai

TAKE SQUARE ROOT OF Ai AND MULTIPLY BY "F" (COEFFICENT FOR CONSTRUCTION TYPE)

STEP 2

F = Coefficient Related to the class of construction		SBC Type
F = 1.5 for Construction Class 1	(Wood Frame)	VI
F = 1.0 for Construction Class 2	(Joisted Masonry)	V
F = 0.8 for Construction Class 3	(Non-Combustible) &	IV
Construction Class 4	(Masonry Non-Combustible)	III
F = 0.6 for Construction Class 5	(Modified Fire Resistive) &	II
Construction Class 6	(Fire Resistive)	I

Sq. Rt. 52.9 **X F** 1.0 **=** 52.9

STEP 3 **MULTIPLY RESULT OF STEP 2 BY 18**

52.9 **X 18 =** 952.2 **GPM** (round off to nearest GPM in table on Step 4 below)

STEP 4 **ROUND OFF TO THE NEAREST 250 GPM (ROUND UP OR DOWN)**

500 TO 625 = 500 GPM	**626 TO 875 = 750 GPM**	**876 TO 1125 = 1000 GPM**
1126 TO 1375 = 1250 GPM	**1376 TO 1625 = 1500 GPM**	**1626 TO 1875 = 1750 GPM**
1876 TO 2125 = 2000 GPM	**2126 TO 2375 = 2250 GPM**	**2376 TO 2625 = 2500 GPM**
2626 TO 2875 = 2750 GPM	**2876 TO 3125 = 3000 GPM**	**3126 TO 3375 = 3250 GPM**

ROUNDED OFF TO THE NEAREST 250 GPM = 1,000 **GPM Sub Total**

STEP 5 **MULTIPLY RESULT OF ROUNDED OFF GPM (X) FROM ABOVE BY THE OI (OCCUPANT FACTOR)**

		OCC. FACTOR
C-1	(NON-COMBUSTIBLE) CLAY, BLOCK STORAGE, ETC.	0.75
C-2	(LIMITED COMBUSTIBLE) APARTMENTS, OFFICE, CHURCH, ETC.	0.85
C-3	(COMBUSTIBLE) MERCANTILE, RESTAURANTS, ETC.	1.00
C-4	(FREE BURNING) MIXED STORAGE, COMBUSTIBLE & FLAMABLE	1.15
C-5	(RAPID BURNING) EXPLOSIVES, VAPORS, ETC.	1.25

ROUNDED GPM 1,000 **X OI** 0.75 = 750 **GPM Sub Total**

County Project # _____ - _____ Date: January 27, 2022

Rounded off GPM Sub Total from step 4 1,000 **b = (GPM)**

I.S.O. Sprinkler Reduction % Varies with Building Hazard.

Automatic Sprinklers: _____ Subtract _____% Times b = _____ GPM

Subtotal N/A GPM

Building exposures: **Distance** **Exposure**

1. Front 70' including street Add 10 %
2. Left 10' Add 25 %
3. Rear 25' Add 20 %
4. Right 10' Add 25 %

Total Use highest per ISO Standards

Use 25% % X b = + 250

Total 1,250 GPM

Final Fire Flow Required 1,250 **GPM**

The percentage for any one side generally should not exceed the following limits for the separations shown:

Separation	Percentage
0 – 10 feet	25%
11 – 30 feet	20%
31 – 60 feet	15%
61 – 100 feet	10%
101 – 150 feet	5%

Dwellings – For groupings of 1 – family and small 2 – family dwellings not exceeding 2 stories in height, the following short method may be used. (*For other residential buildings, the regular method should be used.*)

Exposure distances	Suggested required fire flow
Over 100 feet	500 GPM
31 to 100 feet	750 – 1000 GPM
11 to 30 feet	1000 – 1500 GPM
10 feet or less	1500 – 2000 GPM

Appendix C – Potable Water and Fire Flow Analysis Results

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
FH-1	20.52	1,255	130.39	48
FH-2	20.74	5	131.04	48
FH-3	20.09	5	132.07	48
FH-4	20.19	5	133.10	49
FH-5	21.10	5	133.18	48
J-2	20.80	0	131.04	48
J-6	19.79	0	133.18	49

FlexTable: Pipe Table

Label	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Length (ft)	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Pressure Loss (psi)
P-1	R-1	FH-1	8.0	PVC	120.0	121	2.790	948	6.05	1.7
P-3	FH-1	J-2	8.0	PVC	120.0	265	0.280	-307	1.96	0.3
P-4	J-2	FH-2	8.0	PVC	120.0	65	0.280	5	0.03	0.0
P-6	J-2	FH-3	8.0	PVC	120.0	393	1.060	-312	1.99	0.4
P-8	FH-3	FH-4	8.0	PVC	120.0	400	0.280	-318	2.03	0.4
P-10	FH-4	J-6	8.0	PVC	120.0	23	0.280	-323	2.06	0.0
P-11	J-6	FH-5	8.0	PVC	120.0	372	0.500	5	0.03	0.0
P-13	J-6	R-2	8.0	PVC	120.0	240	2.570	-328	2.09	0.4

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
FH-1	20.52	5	131.52	48
FH-2	20.74	1,255	125.43	45
FH-3	20.09	5	129.98	48
FH-4	20.19	5	132.13	48
FH-5	21.10	5	132.30	48
J-2	20.80	0	127.80	46
J-6	19.79	0	132.30	49

FlexTable: Pipe Table

Label	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Length (ft)	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Pressure Loss (psi)
P-1	R-1	FH-1	8.0	PVC	120.0	121	2.790	793	5.06	1.2
P-3	FH-1	J-2	8.0	PVC	120.0	265	0.280	788	5.03	1.6
P-4	J-2	FH-2	8.0	PVC	120.0	65	0.280	1,255	8.01	1.0
P-6	J-2	FH-3	8.0	PVC	120.0	393	1.060	-467	2.98	0.9
P-8	FH-3	FH-4	8.0	PVC	120.0	400	0.280	-473	3.02	0.9
P-10	FH-4	J-6	8.0	PVC	120.0	23	0.280	-478	3.05	0.1
P-11	J-6	FH-5	8.0	PVC	120.0	372	0.500	5	0.03	0.0
P-13	J-6	R-2	8.0	PVC	120.0	240	2.570	-483	3.08	0.7

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
FH-1	20.52	5	132.59	48
FH-2	20.74	5	130.27	47
FH-3	20.09	1,255	126.74	46
FH-4	20.19	5	130.63	48
FH-5	21.10	5	130.93	48
J-2	20.80	0	130.27	47
J-6	19.79	0	130.93	48

FlexTable: Pipe Table

Label	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Length (ft)	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Pressure Loss (psi)
P-1	R-1	FH-1	8.0	PVC	120.0	121	2.790	616	3.93	0.7
P-3	FH-1	J-2	8.0	PVC	120.0	265	0.280	610	3.90	1.0
P-4	J-2	FH-2	8.0	PVC	120.0	65	0.280	5	0.03	0.0
P-6	J-2	FH-3	8.0	PVC	120.0	393	1.060	605	3.86	1.5
P-8	FH-3	FH-4	8.0	PVC	120.0	400	0.280	-650	4.15	1.7
P-10	FH-4	J-6	8.0	PVC	120.0	23	0.280	-655	4.18	0.1
P-11	J-6	FH-5	8.0	PVC	120.0	372	0.500	5	0.03	0.0
P-13	J-6	R-2	8.0	PVC	120.0	240	2.570	-661	4.22	1.3

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
FH-1	20.52	5	133.42	49
FH-2	20.74	5	132.21	48
FH-3	20.09	5	130.40	48
FH-4	20.19	1,255	128.68	47
FH-5	21.10	5	129.14	47
J-2	20.80	0	132.21	48
J-6	19.79	0	129.14	47

FlexTable: Pipe Table

Label	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Length (ft)	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Pressure Loss (psi)
P-1	R-1	FH-1	8.0	PVC	120.0	121	2.790	434	2.77	0.4
P-3	FH-1	J-2	8.0	PVC	120.0	265	0.280	429	2.74	0.5
P-4	J-2	FH-2	8.0	PVC	120.0	65	0.280	5	0.03	0.0
P-6	J-2	FH-3	8.0	PVC	120.0	393	1.060	424	2.71	0.8
P-8	FH-3	FH-4	8.0	PVC	120.0	400	0.280	419	2.67	0.7
P-10	FH-4	J-6	8.0	PVC	120.0	23	0.280	-837	5.34	0.2
P-11	J-6	FH-5	8.0	PVC	120.0	372	0.500	5	0.03	0.0
P-13	J-6	R-2	8.0	PVC	120.0	240	2.570	-842	5.37	2.1

FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
FH-1	20.52	5	133.48	49
FH-2	20.74	5	132.36	48
FH-3	20.09	5	130.67	48
FH-4	20.19	5	129.08	47
FH-5	21.10	1,255	116.45	41
J-2	20.80	0	132.36	48
J-6	19.79	0	128.96	47

FlexTable: Pipe Table

Label	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Length (ft)	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Pressure Loss (psi)
P-1	R-1	FH-1	8.0	PVC	120.0	121	2.790	418	2.67	0.4
P-3	FH-1	J-2	8.0	PVC	120.0	265	0.280	413	2.63	0.5
P-4	J-2	FH-2	8.0	PVC	120.0	65	0.280	5	0.03	0.0
P-6	J-2	FH-3	8.0	PVC	120.0	393	1.060	407	2.60	0.7
P-8	FH-3	FH-4	8.0	PVC	120.0	400	0.280	402	2.57	0.7
P-10	FH-4	J-6	8.0	PVC	120.0	23	0.280	397	2.53	0.0
P-11	J-6	FH-5	8.0	PVC	120.0	372	0.500	1,255	8.01	5.4
P-13	J-6	R-2	8.0	PVC	120.0	240	2.570	-858	5.48	2.2

Hydraulic Model Inventory: WaterCAD.wtg

Title	
Engineer	
Company	
Date	1/26/2022
Notes	

Scenario Summary

ID	67
Label	Scenario - 2 - MDF + Fire Flow
Notes	
Active Topology	<I> Base Active Topology
Physical	Fire
Demand	Fire
Initial Settings	<I> Base Initial Settings
Operational	<I> Base Operational
Age	<I> Base Age
Constituent	<I> Base Constituent
Trace	<I> Base Trace
Fire Flow	<I> Base Fire Flow
Energy Cost	<I> Base Energy Cost
Transient	<I> Base Transient
Pressure Dependent Demand	<I> Base Pressure Dependent Demand
Failure History	<I> Base Failure History
SCADA	<I> Base SCADA
User Data Extensions	<I> Base User Data Extensions
Steady State/EPS Solver Calculation Options	<I> Base Calculation Options
Transient Solver Calculation Options	<I> Base Calculation Options

Network Inventory

Pipes	8	Pump Stations	0
Laterals	0	Variable Speed Pump Batteries	0
Junctions	7	PRV's	0
Hydrants	0	PSV's	0
Tanks	0	PBV's	0
Reservoirs	2	FCV's	0
Customer Meters	0	TCV's	0
Taps	0	GPV's	0
SCADA Elements	0	Isolation Valves	0
Pumps	0	Spot Elevations	0

Transient Network Inventory

Turbines	0	Rupture Disks	0
Periodic Head-Flows	0	Discharges to Atmosphere	0
Air Valves	0	Orifices Between Pipes	0
Hydropneumatic Tanks	0	Valves With Linear Area Change	0
Surge Valves	0	Surge Tanks	0
Check Valves	0		

Pressure Pipes Inventory

8.0 (in)	1,879 ft	All Diameters	1,879 ft

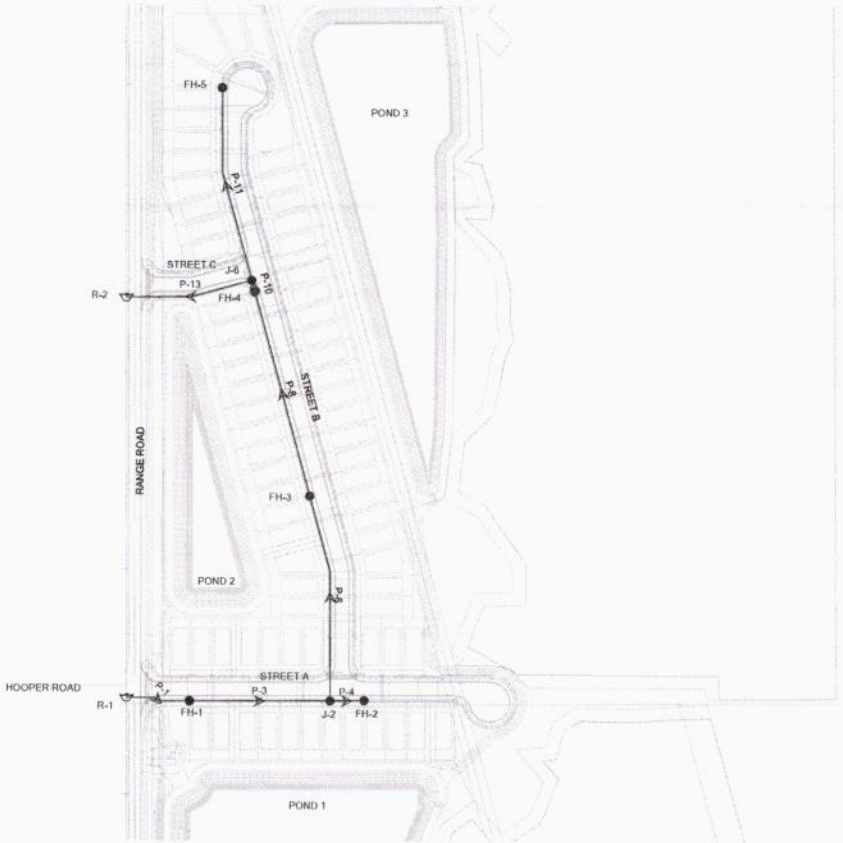
FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
FH-1	20.52	10	134.24	49
FH-2	20.74	10	134.17	49
FH-3	20.09	10	134.09	49
FH-4	20.19	10	134.03	49
FH-5	21.10	10	134.02	49
J-2	20.80	0	134.18	49
J-6	19.79	0	134.02	49

FlexTable: Pipe Table

Label	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Length (ft)	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Pressure Loss (psi)
P-1	R-1	FH-1	8.0	PVC	120.0	121	2.790	102	0.65	0.0
P-3	FH-1	J-2	8.0	PVC	120.0	265	0.280	92	0.59	0.0
P-4	J-2	FH-2	8.0	PVC	120.0	65	0.280	10	0.07	0.0
P-6	J-2	FH-3	8.0	PVC	120.0	393	1.060	81	0.52	0.0
P-8	FH-3	FH-4	8.0	PVC	120.0	400	0.280	71	0.45	0.0
P-10	FH-4	J-6	8.0	PVC	120.0	23	0.280	60	0.39	0.0
P-11	J-6	FH-5	8.0	PVC	120.0	372	0.500	10	0.07	0.0
P-13	J-6	R-2	8.0	PVC	120.0	240	2.570	50	0.32	0.0

Scenario: Scenario - 1 - PDF



FlexTable: Reservoir Table

Label	Elevation (ft)	Zone	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	134.30	<None>	418	134.30
R-2	134.00	<None>	858	134.00

Appendix D – Reclaimed Water Analysis Results

Junction Demand Control Center

Scenario Summary

ID	1
Label	Reclaimed Water
Notes	
Demand	Base Demand

ID	Label	Demand (Base) (gpm)	Pattern (Demand)	Zone
31	J-1	120.00	Fixed	<None>
37	J-2	56.00	Fixed	<None>
47	J-5	256.00	Fixed	<None>
33	J-3	8.00	Fixed	<None>
39	J-4	128.00	Fixed	<None>

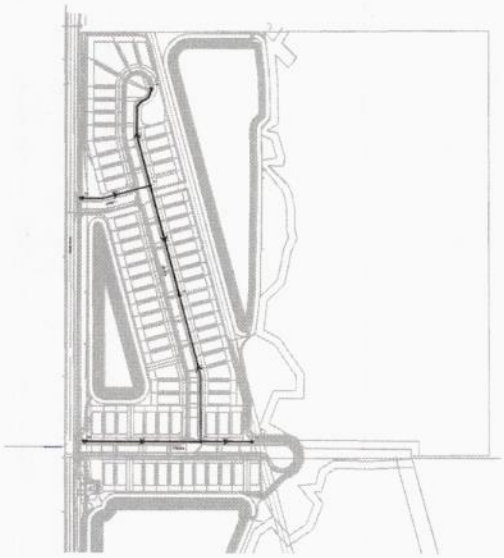
FlexTable: Junction Table

Label	Elevation (ft)	Demand (gpm)	Hydraulic Grade (ft)	Pressure (psi)
J-1	21.07	120	90.53	30
J-2	20.96	56	90.03	30
J-3	20.65	8	94.57	32
J-4	21.61	128	89.80	30
J-5	20.83	256	86.69	28

FlexTable: Pipe Table

Label	Start Node	Stop Node	Diameter (in)	Material	Hazen-Williams C	Length (ft)	Minor Loss Coefficient (Local)	Flow (gpm)	Velocity (ft/s)	Pressure Loss (psi)
P-1	R-1	J-1	4.0	PVC	120.0	367	2.860	271	6.92	9.7
P-2	J-1	J-2	4.0	PVC	120.0	161	0.610	56	1.43	0.2
P-3	J-1	J-5	4.0	PVC	120.0	469	1.290	95	2.43	1.7
P-4	J-5	J-3	4.0	PVC	120.0	358	1.290	-161	4.11	3.4
P-5	J-3	J-4	4.0	PVC	120.0	330	1.420	128	3.27	2.1
P-6	J-3	R-2	4.0	PVC	120.0	222	3.130	-297	7.58	7.5

Scenario: Reclaimed Water



FlexTable: Reservoir Table

Label	Elevation (ft)	Zone	Flow (Out net) (gpm)	Hydraulic Grade (ft)
R-1	112.90	<None>	271	112.90
R-2	111.90	<None>	297	111.90

RANGE ROAD PROJECT

Project № 23119
November 2023

TRAFFIC IMPACT ANALYSIS
CITY OF COCOA
FLORIDA

Prepared by:

Traffic & Mobility Consultants
3101 Maguire Boulevard, Suite 265
Orlando, Florida 32803
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(407) 531-5332

Prepared for:

Karali Associates LLC
2642 Fawnlake Trail
Orlando, Florida 32828

EXECUTIVE SUMMARY

Project Information

Name:	Range Road Project
Location:	North of SR 520 and east of Hooper Road
Description:	71 Single Family Detached Dwelling Units (DUs)

Findings

Trip Generation:	736 Daily Trips / 55 AM Peak Hour Trips / 72 PM Peak Hour Trips
Access Plan:	Two (2) full access driveways on Range Road
Roadway Capacity:	All roadway segments are projected to continue to operate adequately at project buildout.
Intersection Capacity:	All intersections are projected to operate adequately at project buildout.
Access Review:	Deceleration lanes are not warranted on Range Road at project access driveways.

PROFESSIONAL ENGINEERING CERTIFICATION

I hereby certify that I am a Professional Engineer properly registered in the State of Florida practicing with Traffic & Mobility Consultants LLC, a corporation authorized to operate as an engineering business, CA-30024, by the State of Florida Department of Professional Regulation, Board of Professional Engineers, and that I have prepared or approved the evaluations, findings, opinions, conclusions, or technical advice attached hereto for:

PROJECT: Range Road Project

LOCATION: City of Cocoa, Florida

CLIENT: Karali Associates LLC

I hereby acknowledge that the procedures and references used to develop the results contained in these computations are standard to the professional practice of Transportation Engineering as applied through professional judgment and experience.

THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY

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.

TRAFFIC & MOBILITY CONSULTANTS LLC
3101 MAGUIRE BOULEVARD, SUITE 265
ORLANDO, FLORIDA 32803
CERTIFICATE OF AUTHORIZATION CA-30024
AYMAN H. AS-SAIDI, P.E. NO 56849

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1.0 INTRODUCTION

This Tier 2 Traffic Impact Analysis (TIA) was conducted to assess the impact of the proposed Range Road Project development in the City of Cocoa, Brevard County, Florida. The project will include 71 Single Family Detached Dwelling Units (DUs). The site is located east of Range Road, approximately 1.33 miles north of SR 520, and east of Hooper Road, in the City of Cocoa, Florida. **Figure 1** depicts the site location and the surrounding transportation network. A preliminary development site plan is provided in **Appendix A**.

Access to the site is proposed via two (2) full access driveways on Range Road. The development is projected to be completed by the year 2026.

The analysis was prepared in accordance with the approved methodology submitted to the City of Cocoa and reviewed by the City's reviewer. A copy of the approved methodology is included in **Appendix B**.

Data used in the analysis consisted of site plan/development information provided by the project engineers, AM and PM peak hour intersection traffic counts obtained by Traffic & Mobility Consultants LLC (TMC), and roadway capacities obtained from the *Space Coast Transportation Planning Organization (SCTPO) Traffic Counts 2013-2022* and *Florida Department of Transportation (FDOT) 2023 Multimodal Quality/Level of Service (Q/LOS) Handbook.*

1.1 Study Area

The project study area was established based on the standard requirements of the *City of Cocoa TIA Guidelines*. In accordance with the *City of Cocoa TIA Guidelines*, the impacted roadways and intersections/signalized systems that must be studied in TIA shall include:

- The major roadway segment(s) to which the site has direct connections, or to which the site has the most direct access via local/non-major streets.
- All roadways of the project where the project's peak hour trips consume three percent (3%) or more of a roadway's two-way peak hour generalized service volume based on the adopted LOS and committed number of lanes.
- Major intersections and signalized systems that are part of the impacted threshold roadways.



TMC
Traffic & Mobility Consultants

Site Location Map
Range Road Project
23119

Figure
1

- The intersection(s) and signalized systems of the major roadways with the non-major roads that provide access for 50 or more peak-hour development trips to or from the site (two-way total) to the major road network.

The project study area roadway significance is provided in **Table 1** as determined in the approved methodology.

Table 1
Study Area Significance

Road Name	Median Type	Area Type	# LNS	LOS Std	Pk Hr 2-Way Capacity	Trip Distr	Project Trips	% of Cap
Range Rd								
Lake Dr to Hooper Road/Street A	Undivided	Urban	2	E	1,620	50%	36	2.2%
Hooper Road/Street A to Rosetine St	Undivided	Urban	2	E	1,620	40%	29	1.8%

2022 Space Coast Transportation Planning Organization Traffic Counts
Capacities are taken from 2023 FDOT Q/LOS Tables

Based on the information presented in **Table 1**, the study roadway segments are as follows:

- Range Road
  - Lake Drive to Hooper Road/ Street A
  - Hooper Road/ Street A to Rosetine Street

The study intersections are as follows:

- Range Road and Hooper Road/ Street A (Unsignalized)
- Range Road and Street C (Proposed)

2.0 EXISTING CONDITIONS ANALYSIS

Existing conditions were analyzed to establish a baseline for the traffic conditions prevailing in the vicinity of the proposed development. The analysis included a review of existing roadway segment capacity and analysis of the intersection operations at the study intersections.

2.1 Roadway Segment Capacity

Existing roadway conditions were analyzed by comparing the existing traffic volumes within the study area and the adopted level of service (LOS) standards for the roadway segments. Existing annual average daily traffic (AADT) volumes were obtained from the *2022 Space Coast Transportation Planning Organization (SCTPO) Database*. *2023 FDOT Florida Traffic Online (FTO) website* provides peak hour (K=0.09) factor to calculate the two-way peak hour traffic. Annual growth rates (AGRs) were calculated from the Range Road historical AADTs to obtain the buildout year two-way peak hour volumes on Range Road, which will be used to calculate the projected background traffic volume in this study. The service volumes and capacities were obtained from the *2022 Space Coast Transportation Planning Organization (SCTPO) Database* and *2023 FDOT Multimodal Quality/Level of Service Handbook*. Excerpts from the 2022 *Space Coast Transportation Planning Organization (SCTPO) Database, 2023 Florida Traffic Online (FTO) website*, and *2023 FDOT Multimodal Quality/Level of Service Handbook* are included in **Appendix C**. **Table 2** summarizes the roadway segment capacity analysis.

Table 2
Existing Roadway Segment Capacity Analysis

Road Name	Median Type	Area Type	# LNS	LOS Std	Pk Hr 2-Way Capacity	2022 Existing AADT	K-Factor	Pk Hr 2-Way	LOS	V/C
Range Rd										
Lake Dr to Hooper Road/Street A	Undivided	Urban	2	D	1,620	5,970	0.09	537	C	0.33
Hooper Road/Street A to Rosetine St	Undivided	Urban	2	D	1,620	5,970	0.09	537	C	0.33

2022 Space Coast Transportation Planning Organization Traffic Counts
Capacities are taken from 2023 FDOT Q/LOS Tables
K-factor is taken from FTO Website

The analysis indicates that all study roadway segments currently operate adequately within their LOS standards.

2.2 Intersection Capacity

The intersection capacity analysis was performed for the AM and PM peak hour periods at the study intersections. The capacity analysis was performed using *Synchro* and the methods of the *Highway Capacity Manual (HCM)*. Turning movement counts were collected at the study intersections on November 14, 2023. Existing turning movement counts were collected during the off-peak season; therefore, a seasonal adjustment factor of 1.06 was applied. The AM and PM peak hour counts are presented in **Figure 2**. The turning movement counts and the *2022 Peak Season Factor Category Report* are included in **Appendix D**. The summary results of the intersection capacity analysis, summarized in **Table 3,** reveal that the intersection of Range Road and Hooper Road is currently operating at adequate LOS. Detailed *HCM* analysis worksheets are included in **Appendix E**.

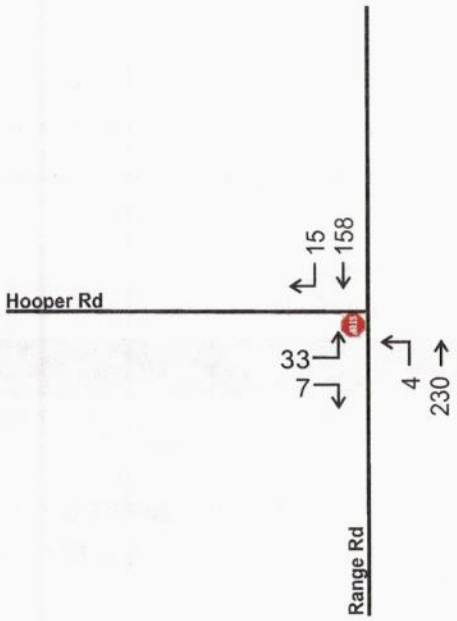
Table 3
Existing Intersection Capacity Analysis

Intersection	Traffic Control	Time Period	EB Delay	EB LOS	WB Delay	WB LOS	NB Delay	NB LOS	SB Delay	SB LOS
Range Rd & Hooper Road/Street A	TWSC	AM	12.1	B	--	--	7.7	A	--	--
		PM	10.3	B	--	--	7.7	A	--	--

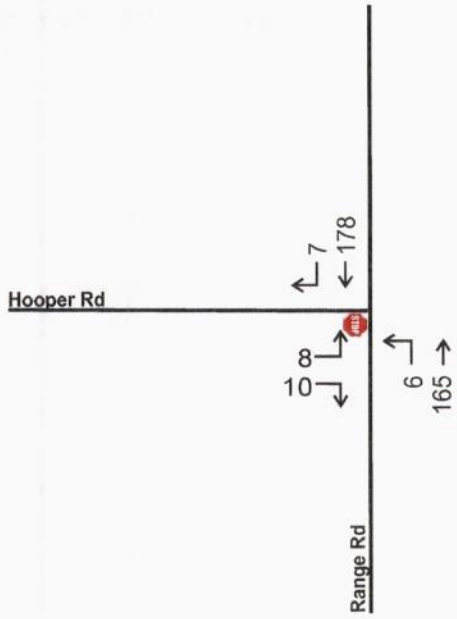
Delays expressed in sec/veh

N
Not to Scale

AM Peak



PM Peak



TMC
Traffic & Mobility Consultants

Existing Peak Hour Intersection Volumes
Range Road Project
23119

Figure
2

3.0 PROJECT TRAFFIC

3.1 Trip Generation

The traffic generation of the proposed development was calculated using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 11th Edition*. The trip generation for the project is summarized in **Table 4** and the ITE sheets are provided in **Appendix F**.

Table 4
Trip Generation Calculations

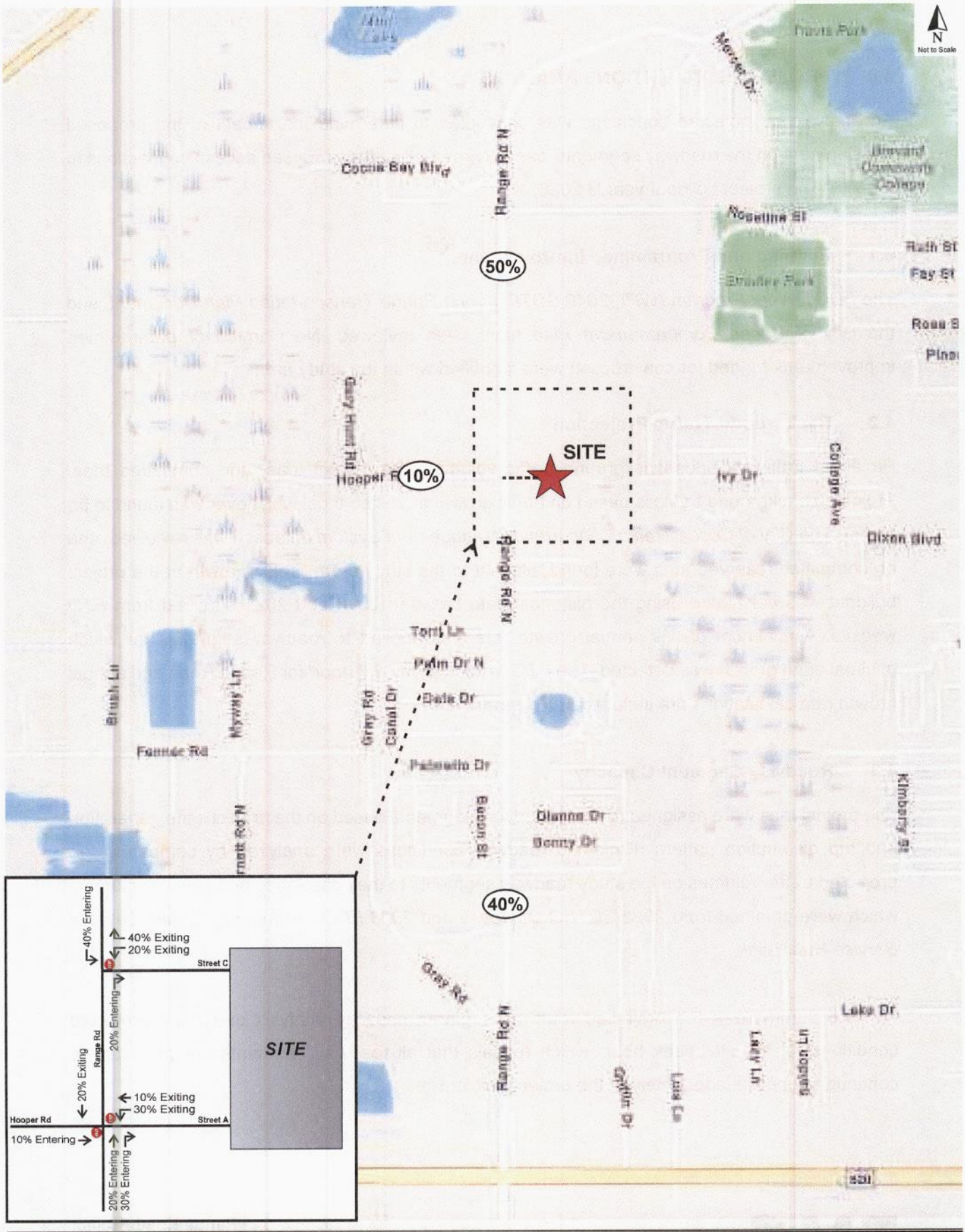
ITE			Daily		AM Peak Hour				PM Peak Hour			
Code	Land Use	Size	Rate	Trips	Rate	Total	Enter	Exit	Rate	Total	Enter	Exit
210	Single Family Residential	71 DU	10.37	736	0.77	55	14	41	1.01	72	45	27

Trip Generation analysis based on ITE Trip Generation Manual, 11th Edition.

The proposed development at project buildout is projected to generate 736 daily trips; of which 55 trips occur during the AM peak hour, and 72 trips occur during the PM peak hour.

3.2 Trip Distribution/Assignment

A trip distribution pattern was estimated using the existing roadway network traffic volumes from *2022 Space Coast Transportation Planning Organization (SCTPO) Database*. The location of the development with respect to the study area attractions and activity centers were also used to estimate the distribution to reflect prevailing travel patterns in the vicinity of the site and the surrounding transportation network. *2022 SCTPO Database* is provided in **Appendix C**, and the trip distribution is shown in **Figure 3.**



Project Trip Distribution
Range Road Project
23119

Figure 3

4.0 PROJECTED CONDITIONS ANALYSIS

An analysis of projected conditions was conducted to determine the impact of the proposed development on the roadway segments' capacity, as well as the proposed access connections to the site. The project buildout year is 2026.

4.1 Planned and Programmed Improvements

The *FDOT Work Program (WP)*, *2040 SCTPO Long Range Transportation Plan Document,* and the *City of Cocoa Comprehensive Plan* have been reviewed. No planned or programmed improvements funded for construction were identified within the study area.

4.2 Background Traffic Projection

Projected traffic includes background traffic volumes, the project trips, and committed trips. Projected background traffic is based on traffic growth or vested trips, whichever was found to be higher. The *City of Cocoa Traffic Concurrency Management System* database was reviewed, and no committed/reserved trips were found relevant to the study area. Traffic growth at the project buildout was calculated using the historical data between 2018 and 2022 obtained from *FTO website.* A minimum of 2% annual growth rate was applied to roadway segments for which minimal or no growth was detected. The *FTO Historical AADT Report* for Range Road and annual growth rate calculations are included in **Appendix G**.

4.3 Roadway Segment Capacity

The project trips were assigned to study roadway segments based on the project's trip generation and trip distribution pattern. Projected roadway conditions were analyzed by comparing the projected traffic volumes on the study roadway segments to their capacities and service volumes, which were obtained from *2022 SCTPO Database* and *2023 FDOT Multimodal Quality/Level of Service Handbook*.

Table 5 summarizes the projected roadway segment capacity analysis under the projected conditions for the PM peak hour, which reveals that all roadway segments are projected to continue to operate adequately at the project buildout.

Table 5
Projected Roadway Segment Capacity Analysis

Road Name	# LNS	LOS Std	Pk Hr 2-Way Capacity	Growth Rate	Existing Pk Hr 2-Way	2026 Background Volume	LOS	V/C	Trip Distr	Trips	2026 Buildout Volume	LOS	V/C
Range Rd													
Lake Dr to Access Rd	2	D	1,620	2%	537	580	C	0.36	50%	36	616	C	0.38
Access Rd to Rosetine St	2	D	1,620	2%	537	580	C	0.33	40%	29	609	C	0.38

2022 Space Coast Transportation Planning Organization Traffic Counts
Capacities are taken from 2023 FDOT Q/LOS Tables
K-factor is taken from FTO Website

4.4 Intersection Capacity

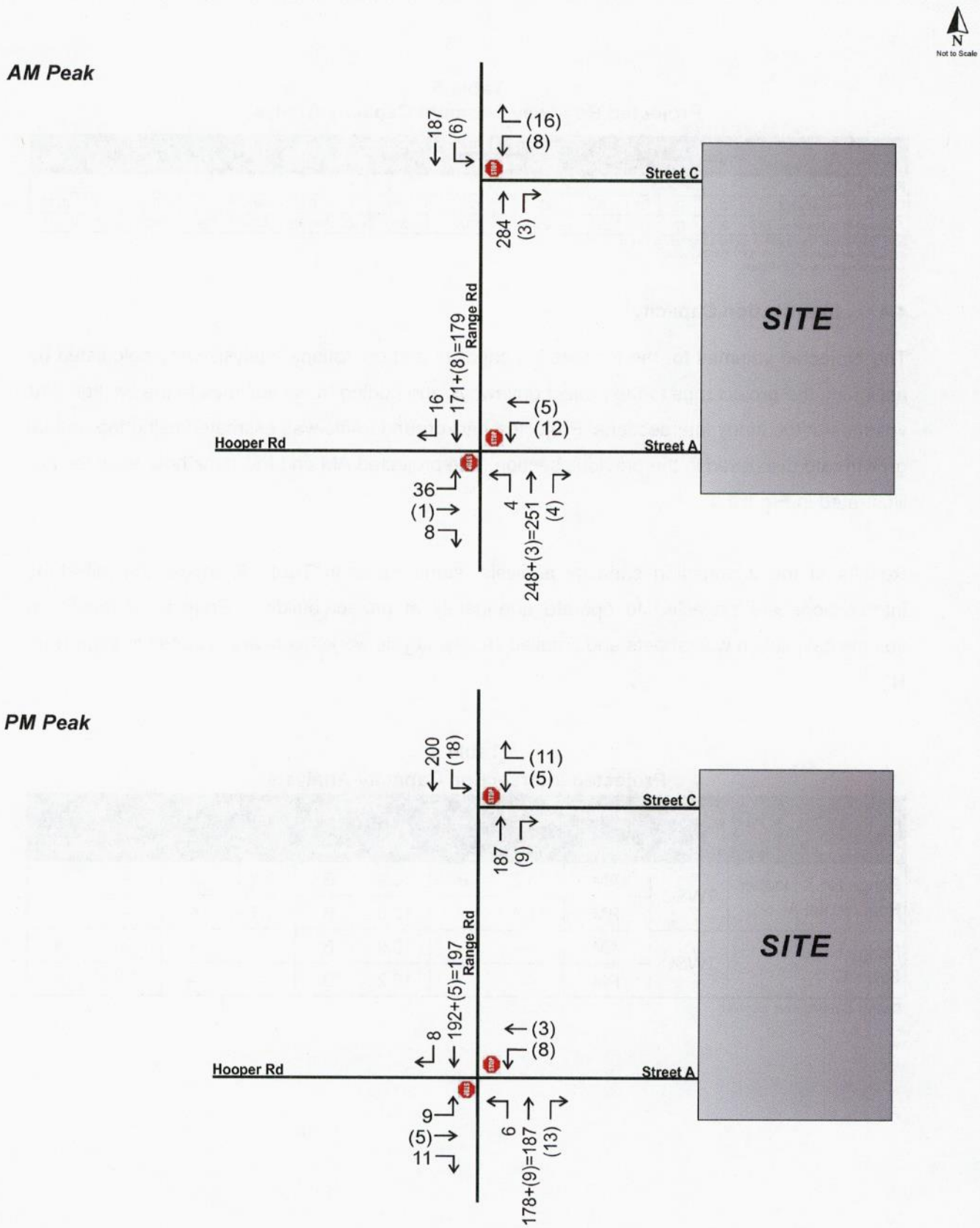
The projected volumes for the intersection capacity and operations analysis were calculated by assigning the project trips to the project driveways and adding those volumes to the background volumes at the study intersections. Projected background traffic was estimated using the annual growth rate discussed in the previous section. The projected AM and PM peak hour volumes are illustrated in **Figure 4**.

Results of the intersection capacity analysis, summarized in **Table 6**, reveal that all study intersections are projected to operate adequately at project buildout. Projected intersection volume calculation worksheets and detailed *HCM* analysis worksheets are included in **Appendix H**.

Table 6
Projected Intersection Capacity Analysis

Intersection	Traffic Control	Time Period	EB Delay	EB LOS	WB Delay	WB LOS	NB Delay	NB LOS	SB Delay	SB LOS
Range Rd & Hooper Road/Street A	TWSC	AM	13.8	B	13.9	B	7.7	A	--	--
		PM	11.4	B	12.8	B	7.7	A	--	--
Range Road & Street C	TWSC	AM	--	--	10.9	B	--	--	7.9	A
		PM	--	--	10.2	B	--	--	7.7	A

Delays expressed in sec/veh



Legend:
Background + (Project) = Total

Projected Peak Hour Intersection Volumes
Range Road Project
23119

Figure 4

5.0 ACCESS REVIEW

The development will be accessed via two (2) full access driveways on Range Road; one (1) is at Hooper Road, and one (1) is north of Hooper Road. Range Road is a 2-lane undivided roadway with a posted speed of 35 MPH adjacent to the site. Hooper Road is a 2-lane undivided roadway with a posted speed of 25 mph adjacent to the site.

The access analysis was performed for buildout conditions of the development in order to determine the need for deceleration turn lanes at the project access driveways. The left and right turn deceleration turn warrants were conducted for the proposed project access driveway based on the *NCHRP Report 457* Methodology.

5.1 Turn Lane Review

Right Turn Deceleration Lane at Street A Project Driveway on Range Road

The results of the right turn warrant analysis show that a right turn deceleration lane is not warranted at Range Road. The right turn lane warrant analysis sheet is included in **Appendix I**.

Left Turn Deceleration Lane at Street C Project Driveway on Range Road

The results of the left turn warrant analysis show that a left turn deceleration lane is not warranted at Range Road. The left turn lane warrant analysis sheet is included in **Appendix I**.

6.0 STUDY CONCLUSIONS

This traffic analysis was conducted to assess the impact of the proposed development of Range Road Project in the City of Cocoa, Brevard County, Florida. The project will include 71 Single Family Detached Dwelling Units (DUs). Project is projected to be completed by year 2026. The analysis included a determination of project trip generation, a review of existing and projected roadway and intersection capacity, and access review.

The results of the traffic analysis are summarized as follows:

- The proposed development is projected to generate 736 daily trips; of which 55 trips occur during the AM peak hour, and 72 trips occur during the PM peak hour at project buildout.

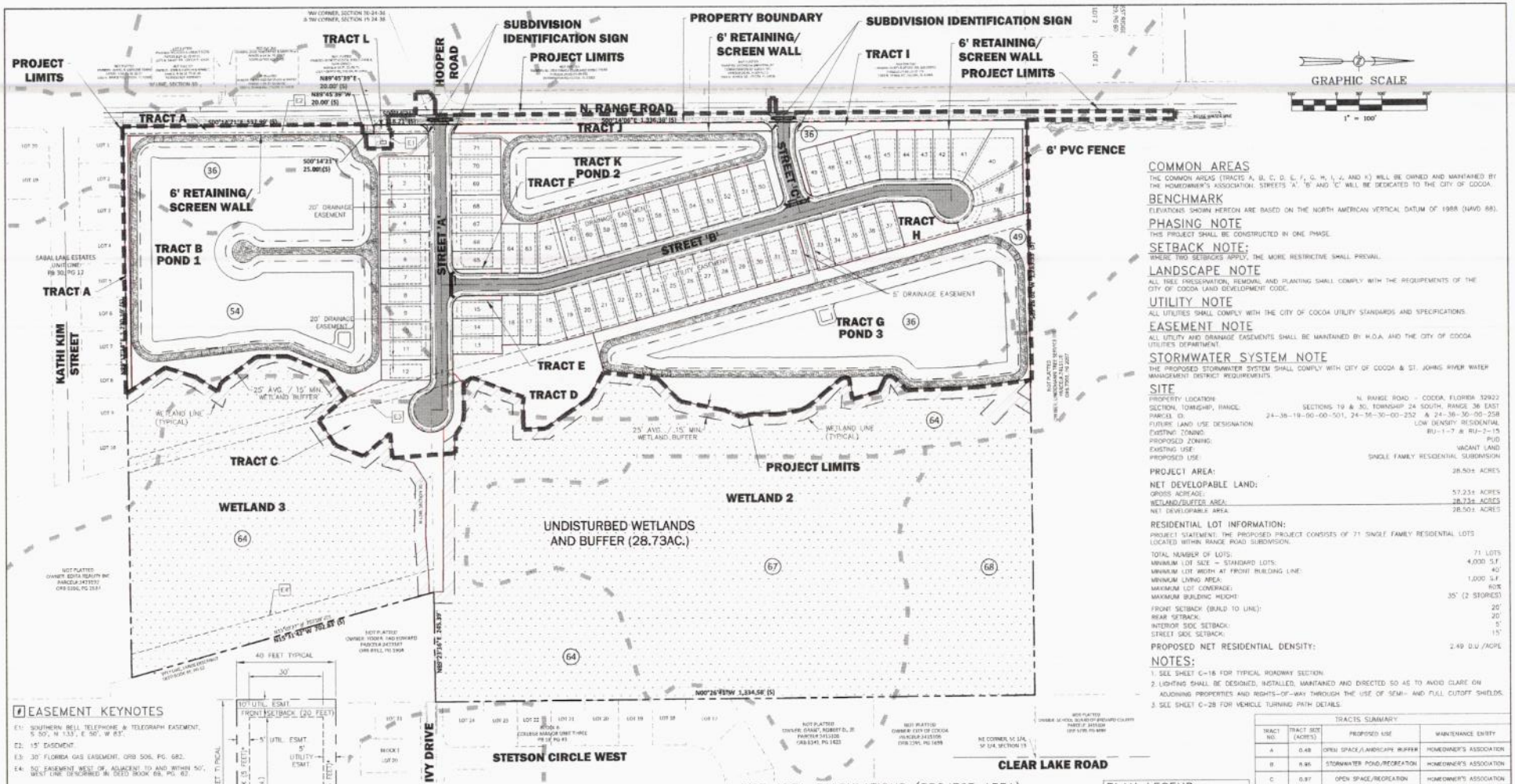
- All roadway segments are projected to continue to operate adequately at project buildout.

- All the study intersections and project access driveways are projected to operate adequately at project buildout.

- The results of right and left turn warrant analyses show that deceleration lanes are not warranted on Range Road at the project access driveways.

APPENDICES

Appendix A
Preliminary Development Plan



COMMON AREAS

THE COMMON AREAS (TRACTS A, B, C, D, E, F, G, H, I, J, AND K) WILL BE OWNED AND MAINTAINED BY THE HOMEOWNER'S ASSOCIATION. STREETS 'A', 'B' AND 'C' WILL BE DEDICATED TO THE CITY OF COCOA.

BENCHMARK

ELEVATIONS SHOWN HEREON ARE BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD 88).

PHASING NOTE

THIS PROJECT SHALL BE CONSTRUCTED IN ONE PHASE.

SETBACK NOTE:

WHERE TWO SETBACKS APPLY, THE MORE RESTRICTIVE SHALL PREVAIL.

LANDSCAPE NOTE

ALL TREE PRESERVATION, REMOVAL AND PLANTING SHALL COMPLY WITH THE REQUIREMENTS OF THE CITY OF COCOA LAND DEVELOPMENT CODE.

UTILITY NOTE

ALL UTILITIES SHALL COMPLY WITH THE CITY OF COCOA UTILITY STANDARDS AND SPECIFICATIONS.

EASEMENT NOTE

ALL UTILITY AND DRAINAGE EASEMENTS SHALL BE MAINTAINED BY H.O.A. AND THE CITY OF COCOA UTILITIES DEPARTMENT.

STORMWATER SYSTEM NOTE

THE PROPOSED STORMWATER SYSTEM SHALL COMPLY WITH CITY OF COCOA & ST. JOHNS RIVER WATER MANAGEMENT DISTRICT REQUIREMENTS.

SITE

PROPERTY LOCATION:	N. RANGE ROAD - COCOA, FLORIDA 32922
SECTION, TOWNSHIP, RANGE:	SECTIONS 19 & 30, TOWNSHIP 24 SOUTH, RANGE 36 EAST
PARCEL ID:	24-36-19-00-00-501, 24-36-30-00-252 & 24-36-30-00-258
FUTURE LAND USE DESIGNATION:	LOW DENSITY RESIDENTIAL
EXISTING ZONING:	RU-1-7 & RU-2-15
PROPOSED ZONING:	PUD
EXISTING USE:	VACANT LAND
PROPOSED USE:	SINGLE FAMILY RESIDENTIAL SUBDIVISION
PROJECT AREA:	28.50± ACRES
NET DEVELOPABLE LAND:	
GROSS ACREAGE:	57.23± ACRES
WETLAND/BUFFER AREA:	28.73± ACRES
NET DEVELOPABLE AREA:	28.50± ACRES

RESIDENTIAL LOT INFORMATION:

PROJECT STATEMENT: THE PROPOSED PROJECT CONSISTS OF 71 SINGLE FAMILY RESIDENTIAL LOTS LOCATED WITHIN RANGE ROAD SUBDIVISION.

TOTAL NUMBER OF LOTS:	71 LOTS
MINIMUM LOT SIZE – STANDARD LOTS:	4,000 S.F.
MINIMUM LOT WIDTH AT FRONT BUILDING LINE:	40'
MINIMUM LIVING AREA:	1,000 S.F.
MAXIMUM LOT COVERAGE:	60%
MAXIMUM BUILDING HEIGHT:	35' (2 STORIES)
FRONT SETBACK (BUILD TO LINE):	20'
REAR SETBACK:	20'
INTERIOR SIDE SETBACK:	5'
STREET SIDE SETBACK:	15'
PROPOSED NET RESIDENTIAL DENSITY:	2.49 D.U./ACRE

NOTES:

1. SEE SHEET C-16 FOR TYPICAL ROADWAY SECTION.
2. LIGHTING SHALL BE DESIGNED, INSTALLED, MAINTAINED AND DIRECTED SO AS TO AVOID GLARE ON ADJOINING PROPERTIES AND RIGHTS-OF-WAY THROUGH THE USE OF SEMI- AND FULL CUTOFF SHIELDS.
3. SEE SHEET C-28 FOR VEHICLE TURNING PATH DETAILS.

EASEMENT KEYNOTES

E1: SOUTHERN BELL TELEPHONE & TELEGRAPH EASEMENT, S 50', N 133', E 50', W 83'.
E2: 15' EASEMENT.
E3: 30' FLORIDA GAS EASEMENT, ORB 506, PG. 682.
E4: 50' EASEMENT WEST OF, ADJACENT TO AND WITHIN 50', WEST LINE DESCRIBED IN DEED BOOK 68, PG. 62.

LEGEND:

- (36) MYAKKA SAND, 0-2% SLOPES, TYPE A/D
- (49) POMELLO SAND, 0-5% SLOPES, TYPE A
- (54) ST. JOHNS SAND, 0-2% SLOPES, TYPE B/D
- (64) TERRA CEIA MUCK, FREQUENTLY FLOODED, TYPE A/D
- (67) TOMOKA MUCK, FREQUENTLY PONDED, 0-1% SLOPES, TYPE A/D
- (68) TOMOKA MUCK, DRAINED, FREQUENTLY PONDED, 0-1% SLOPES, TYPE A/D
- SOIL LIMITS

TYPICAL LOT DIMENSIONS

* DRAINAGE & UTILITY EASEMENTS SHALL SUPERCEDE SETBACKS, WHERE APPLICABLE

ADT TRAFFIC DATA PER ITE	
AVERAGE DAILY TRAFFIC	
SINGLE FAMILY LOTS = 71 x 9.52 ADT/DU =	676 ADT
PEAK HOUR TRAFFIC	
SINGLE FAMILY LOTS = 71 x 0.99 PHT/LOT =	70 PHT

STORMWATER STATEMENT:

THE EXISTING DRAINAGE FROM THE SITE GENERALLY FLOWS TO THE EAST INTO THE WETLANDS AND TO THE WEST INTO RANGE ROAD. AN EXISTING DITCH RUNS THROUGH THE MIDDLE OF THE PROPERTY THAT CONNECTS THE WETLAND TO THE EAST TO WITH THE DITCH IN RANGE ROAD RIGHT-OF-WAY TO ALLOW THE WETLAND OUTFALL TO THE WEST INTO RANGE ROAD AND THEN WEST UNDER RANGE ROAD TO HOOPER ROAD. THE PROPOSED DEVELOPMENT WILL MIMIC EXISTING CONDITIONS IN THAT THE RUNOFF WILL BE DIRECTED TO THE PONDS FOR WATER QUALITY TREATMENT PRIOR TO DISCHARGING INTO THE WETLANDS. THE WETLANDS WOULD THEN FLOW WEST TO RANGE ROAD VIA A PROPOSED 34"x53" PIPE THAT WILL REPLACE THE EXISTING DITCH.

SITE AREA CALCULATIONS (PROJECT AREA)

	EXISTING			PROPOSED		
BUILDING	0.00 S.F.			85,877 S.F.*		
PAVING/CURBS	0.00 S.F.			64,780 S.F.		
SIDEWALK	0.00 S.F.			51,693 S.F.		
IMPERVIOUS AREA	0.00 S.F.	0.0 AC.	000.0 %	202,350 S.F.	4.65 AC.	16.3 %
PERVIOUS AREA	1,241,460 S.F.±	28.5 AC.±	100.0 %	1,039,110 S.F.	23.85 AC.	83.7 %
TOTAL SITE AREA	1,241,460 S.F.±	28.5 AC.±	100.0 %	1,241,460 S.F.	28.5 AC.±	100.0 %

* 71 LOTS @ 60% MAX. LOT COVERAGE

MINIMUM COMMON SPACE REQUIRED: 20 % 28.5 x 0.20 = 5.7 Ac.

COMMON SPACE PROVIDED:

TRACT B	1.47 Ac.
TRACT C	0.97 Ac.
TRACT D	0.90 Ac.
TRACT G	1.59 Ac.
TRACT H	0.20 Ac.
TRACT K	0.50 Ac.
TOTAL COMMON SPACE PROVIDED:	5.83 Ac.

PLAN LEGEND

- PROPERTY BOUNDARY
- LOT/TRACT LINE
- EASEMENT LINE
- WETLAND LINE
- ROAD CENTERLINE
- PROJECT AREA LIMITS
- WETLAND AREA
- WETLAND BUFFER

TRACTS SUMMARY

TRACT NO.	TRACT SIZE (ACRES)	PROPOSED USE	MAINTENANCE ENTITY
A	0.48	OPEN SPACE/LANDSCAPE BUFFER	HOMEOWNER'S ASSOCIATION
B	8.96	STORMWATER POND/RECREATION	HOMEOWNER'S ASSOCIATION
C	0.97	OPEN SPACE/RECREATION	HOMEOWNER'S ASSOCIATION
D	0.90	OPEN SPACE/RECREATION	HOMEOWNER'S ASSOCIATION
E	0.02	OPEN SPACE	HOMEOWNER'S ASSOCIATION
F	0.02	OPEN SPACE	HOMEOWNER'S ASSOCIATION
G	5.93	STORMWATER POND/RECREATION	HOMEOWNER'S ASSOCIATION
H	0.20	OPEN SPACE/RECREATION	HOMEOWNER'S ASSOCIATION
I	0.39	OPEN SPACE/LANDSCAPE BUFFER	HOMEOWNER'S ASSOCIATION
J	0.32	OPEN SPACE/LANDSCAPE BUFFER	HOMEOWNER'S ASSOCIATION
K	2.03	STORMWATER POND TRACT	HOMEOWNER'S ASSOCIATION
L	0.05	OPEN SPACE/LANDSCAPE BUFFER	HOMEOWNER'S ASSOCIATION
STREETS A, B & C	3.55	ROADWAYS	CITY OF COCOA

DATE	REVISIONS	BY	CHECKED
10/03/23	3 REVISED PER FLORIDA GAS TRANSMISSION	SMT	GRC
9/25/23	2 REVISED PER FLORIDA GAS TRANSMISSION	ST/JM	GRC
4/20/23	1 REVISED PER CITY AND SJRWMD COMMENTS	JM	GRC

RANGE ROAD PRELIMINARY PUD - LARGE SCALE SITE PLAN
CITY OF COCOA, FLORIDA

FEG FLORIDA ENGINEERING GROUP
Engineering the Future
5127 S. Orange Avenue, Suite 200
Orlando, FL 32809
Phone: 407-895-0324
Fax: 407-895-0325
www.feg-inc.us

OVERALL SITE PLAN

DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY
CPN	CPN	GRC	GRC

PROJECT NO. 19-070
SCALE 1"=100'
DATE MAY 25, 2022
SHEET NO. C-11
SHEET 11 OF 36

FLORIDA ENGINEERING GROUP, INC. CERTIFICATE OF AUTHORIZATION NO. 30007
STATE OF FLORIDA
GREGORY R. CRAWFORD, P.E. LICENSE NO. 81335

19-070 OverallSitePlan.dwg

Appendix B
Study Methodology

Batuhan Anlitan

From: Batuhan Anlitan
Sent: Wednesday, November 8, 2023 10:00 AM
To: Abigail Morgan
Cc: 23119 RANGE ROAD PROJECT; Ayman As-Saidi; Stephen Noto; Lucilene Ribeiro
Subject: TIA Methodology v1.1
Attachments: 11 OVERALL SITE PLAN.pdf; Figure 1.pdf; Table 1 - 2.pdf; Figure 2.pdf; 23119 Range Road Project Response to Methodology Comments 110823.pdf

Good Morning Abigail,

Please find below the updated Methodology Letter v1.1 for the Range Road Project, with the attached Response to Methodology Comments Letter.

Results of Methodology v1.1 as follows:

- The ±57.23-acre site is proposed to be a residential development consisting of 71 Single Family Detached Dwelling Units (DUs). (Please see attached Overall Site Plan)
- The site located east of Range Road, approximately 1.33 miles north of SR 520, and east of Hooper Road in the City of Cocoa, Brevard County, Florida. (Please see Figure 1)
- The proposed development at project buildout is projected to generate 736 new external daily trips; of which 55 external trips occur during the AM peak hour, and 72 external trips occur during the PM peak hour (Table 1: Trip Generation Calculations).
- The study significance test within the 0.5-mile radius of the project site summarizes that Range Road segment (from Lake Dr to Rosetine St), is projected to consume less than 5% of roadway's current Maximum Allowable Volume (Table 2: Study Area Significance Analysis)
- Adjusted trip distribution is shown in Figure 2; 10% of the projected traffic is assigned to Hooper Road, 50% assigned to North of Range Road, and 40% assigned to South of Range Road.

Please review this Methodology v1.1 and let us know your feedback as soon as possible.

Sincerely,

Batuhan Anlitan, MSCE
Transportation/Traffic Engineer

TMC
Traffic & Mobility Consultants

Traffic & Mobility Consultants LLC
3101 Maguire Boulevard, Suite 265
Orlando, Florida 32803
Office: (407) 531-5332 x204
Fax: (407) 531-5331
ba@trafficmobility.com

From: Abigail Morgan <amorgan@cocoafl.gov>
Sent: Thursday, October 12, 2023 8:37 AM

To: Batuhan Anlitan <ba@trafficmobility.com>
Cc: 23119 RANGE ROAD PROJECT <23119@trafficmobility.com>; Ayman As-Saidi <aha@trafficmobility.com>; Stephen Noto <snoto@rviplanning.com>; Lucilene Ribeiro <lribeiro@cocoafl.gov>
Subject: RE: Determination of TIA Requirements for Range Road Residential Development Project

Good morning Batuhan,

Please find the comments from our traffic reviewer. The build year and assignment of traffic on Hooper Road was brought up.

Thank you.
Abby

Abigail Morgan, P.E.
Interim Public Works Director/City Engineer
City of Cocoa

From: Batuhan Anlitan <ba@trafficmobility.com>
Sent: Wednesday, October 11, 2023 8:38 AM
To: Abigail Morgan <amorgan@cocoafl.gov>
Cc: 23119 RANGE ROAD PROJECT <23119@trafficmobility.com>; Ayman As-Saidi <aha@trafficmobility.com>
Subject: RE: Determination of TIA Requirements for Range Road Residential Development Project

Good Morning Abigail,

I hope this email finds you in good health. I am writing to follow up on the review of the methodology for Range Road Project Development. We would greatly appreciate any comments or questions you may have regarding this matter.

Thank you for your time and attention.

Best regards,

Batuhan Anlitan, MSCE
Transportation/Traffic Engineer

TMC
Traffic & Mobility Consultants

Traffic & Mobility Consultants LLC
3101 Maguire Boulevard, Suite 265
Orlando, Florida 32803
Office: (407) 531-5332 x204
Fax: (407) 531-5331
ba@trafficmobility.com

From: Abigail Morgan <amorgan@cocoafl.gov>
Sent: Tuesday, September 26, 2023 10:54 AM
To: Batuhan Anlitan <ba@trafficmobility.com>
Cc: Ayman As-Saidi <aha@trafficmobility.com
Subject: RE: Determination of TIA Requirements for Range Road Residential Development Project

Good morning Batuhan.

Please note that the City of Cocoa's procedures include a three tiered process. A Tier 1 study is for 0-25 peak hour trips, a Tier 2 study is for 26-100 Peak hour trips, and a Tier 3 study is for 100+ Peak hour trips. Based on the information provided, your project requires a Tier 2 TIA study.

Your methodology email is received and will be reviewed.

Thank you.
Abby

Abigail Morgan, P.E.
Interim Public Works Director/City Engineer
City of Cocoa

From: Batuhan Anlitan <ba@trafficmobility.com>
Sent: Monday, September 25, 2023 2:03 PM
To: Abigail Morgan <amorgan@cocoafl.gov>
Cc: Ayman As-Saidi <aha@trafficmobility.com>; 23050@trafficmobility.com
Subject: FW: Determination of TIA Requirements for Range Road Residential Development Project

EXTERNAL MESSAGE - USE CAUTION WITH LINKS AND ATTACHMENTS!

Good Afternoon Abigail,

I am a Traffic Engineer from Traffic & Mobility Consultants LLC, and I am working on a residential development project in the City of Cocoa, Brevard County, Florida. The project is a residential development that consists of 71 single-family homes. According to the Institute of Transportation Engineers (ITE), the project is expected to generate less than 100 peak hour trips, and less than 1,000 daily trips.

I understand that the Brevard County TIA guidelines require a Traffic Impact Analysis (TIA) for any development that generates more than 100 peak hour trips, or more than 1,000 daily trips. However, TIA guidelines also divided TIA Analysis into two categories as Small Project (less than 100 peak hour trips), and Large Project (100 or more peak hour trips), and this raises some uncertainty about the applicability of the TIA requirement for our project.

Please consider this as a Methodology, as it consists of the following information regarding the initial analysis of the project, and please review and let us know if we need to perform the TIA Analysis.

Initial analysis results of the project as follows:

- The ±57.23-acre site is proposed to be a residential development consisting of 71 Single Family Detached Dwelling Units (DUs). (Please see attached Overall Site Plan)
- The site located east of Range Road, approximately 1.33 miles north of SR 520 in the City of Cocoa, Brevard County, Florida. (Please see Figure 1)
- The proposed development at project buildout is projected to generate 736 new external daily trips; of which 55 external trips occur during the AM peak hour, and 72 external trips occur during the PM peak hour.
- Since the only road segment within the 0.5-mile radius of the project site is Range Road (from Lake Dr to Resotine Dr), 100% of the project trip is assigned to Range Road and proposed development projected to consume less than 5% of roadway's current Maximum Acceptable Volume. (Please see attached Tables)

Based on the information provided above, we believe that the proposed development will have a negligible impact on the surrounding traffic network and will not require a full-scale TIA. However, we would like to request your confirmation on whether we need to perform a TIA Analysis and/or Methodology Report or not. Please review this methodology and let us know your feedback as soon as possible.

Thank you for your cooperation and attention. We look forward to hearing from you soon.

Sincerely,

Batuhan Anlitan, MSCE
Transportation/Traffic Engineer

TMC
Traffic & Mobility Consultants

Traffic & Mobility Consultants LLC
3101 Maguire Boulevard, Suite 265
Orlando, Florida 32803
Office: (407) 531-5332 x204
Fax: (407) 531-5331
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PLEASE NOTE: Florida has a very broad public records law. Most written communications (including contents of emails and email addresses) to or from City of Cocoa officials and employees regarding public business are public records available to the public and media upon request. Your written and e-mail communications may be subject to public disclosure. If you do not want your written and email communications released in response to a public records request, do not send written or email communications to City of Cocoa officials and employees. Instead, contact this office by phone.
PLEASE NOTE: Florida has a very broad public records law. Most written communications (including contents of emails and email addresses) to or from City of Cocoa officials and employees regarding public business are public records available to the public and media upon request. Your written and e-mail communications may be subject to public disclosure. If you do not want your written and email communications released in response to a public records request, do not send written or email communications to City of Cocoa officials and employees. Instead, contact this office by phone.

Appendix C

2022 SCTPO Database & 2023 Florida Traffic Online (FTO) & FDOT Q/LOS Generalized Table

SPACE COAST TRANSPORTATION PLANNING ORGANIZATION TRAFFIC COUNTS: 2013 - 2022

ID	ROAD	FROM	TO	2013 AADT	2014 AADT	2015 AADT	2016 AADT	2017 AADT	2018 AADT	2019 AADT	2020 AADT	2021 AADT	2022 AADT	Current MAV	Last Count Taken	Functional Classification
AREA: CENTRAL																
	MURRELL RD.	BARNES BLVD.	BARTON BLVD.										11,615			
60	MURRELL RD.	BARNES BLVD.	EYSTER BLVD.										18,630	41,790	01/13/22-01/14/22	Urban Minor Arterial
58	MURRELL RD.	EYSTER BLVD.	BARTON BLVD.										4,600	34,020	01/11/22-01/12/22	Urban Major Collector
502	PEACHTREE ST.	LAKE DR.	FISKE BLVD.	3,010	2,910	NC	NC	NC	3,380	4,330	NC	4,460	4,470	15,600	03/01/22-03/02/22	Urban Major Collector
	PINEHURST AVE./HOLIDAY SPRINGS RD.	WICKHAM RD.	HOLIDAY SPRINGS RD.	4,543	4,458	4,808	4,926	5,088	5,260	5,265	5,718	4,925	4,880			
17	PINEHURST AVE.	WICKHAM RD.	SPYGLASS HILL DR.	6,490	6,270	6,810	7,100	7,320	7,340	7,480	7,250	6,650	6,640	15,600	01/11/22-01/12/22	Urban Minor Collector
530	PINEHURST AVE.	SPYGLASS HILL DR.	FARGO DR.	5,140	5,040	5,340	5,350	5,430	5,810	5,550	6,170	5,130	5,010	15,600	01/11/22-01/12/22	Urban Minor Collector
16	PINEHURST AVE.	FARGO DR.	HOLIDAY SPRINGS RD.	3,000	2,950	3,190	3,340	3,380	3,590	3,750	4,460	3,650	3,740	15,600	01/11/22-01/12/22	Urban Minor Collector
94	HOLIDAY SPRINGS RD.	PINEHURST AVE.	VIERA BLVD.	3,540	3,570	3,890	3,920	4,220	4,300	4,280	4,990	4,270	4,130	15,600	01/11/22-01/12/22	Urban Minor Collector
568	PLUCKEBAUM RD.	CLEARLAKE RD.	FISKE BLVD. (SR 519)	5,970	6,240	7,030	6,490	6,560	7,570	7,270	6,820	6,530	5,900	15,600	01/31/22-02/01/22	Urban Major Collector
	RANGE RD.	SR 520	ROSETINE ST.	4,330	5,140	4,760	5,860	4,740	5,970	4,360	5,990	4,470	5,970			
531	RANGE RD.	SR 520	LAKE DR.	4,330	NC	4,760	NC	4,740	NC	4,360	NC	4,470	NC	15,600	01/19/21-01/20/21	Urban Major Collector
532	RANGE RD.	LAKE DR.	ROSETINE ST.	NC	5,140	NC	5,860	NC	5,970	NC	5,990	NC	5,970	15,600	01/19/22-01/20/22	Urban Major Collector
74	ROSETINE ST.	RANGE RD.	CLEARLAKE RD.	NC	2,730	NC	NC	NC	2,920	NC	3,140	2,760	2,920	15,600	01/19/22-01/20/22	Urban Minor Collector
18	SPYGLASS HILL RD.	MURRELL RD.	PINEHURST AVE.	3,880	3,780	3,960	4,240	4,720	4,640	4,780	4,410	3,940	4,220	15,600	01/11/22-01/12/22	Urban Minor Collector
	SR 520	ORANGE CO	I-95	15,090	15,167	17,220	16,670	16,637	16,567	17,160	17,767	17,273	16,097			
534	SR 520	ORANGE CO	SR 524	13,140	12,760	15,950	15,170	15,750	12,240	16,010	18,680	15,530	14,590	40,300	03/10/22-03/11/22	Rural Principal Arterial Other
1	SR 520	SR 524	FRIDAY RD.	14,050	13,990	15,720	14,880	14,320	16,610	14,650	14,700	15,100	12,460	41,790	02/03/22-02/04/22	Urban Principal Arterial-Other
84	SR 520	FRIDAY RD.	I-95	18,080	18,750	19,990	19,960	19,840	20,850	20,820	19,920	21,190	21,240	41,790	03/09/22-03/10/22	Urban Principal Arterial-Other
	SR 520	I-95	CLEARLAKE RD. (SR 501)	20,367	20,583	23,857	22,600	21,240	20,573	23,173	21,193	22,727	21,840			
2	SR 520	I-95	BURNETT RD.	20,200	21,440	24,190	22,190	21,780	21,740	21,650	24,200	23,230	21,640	41,790	02/03/22-02/04/22	Urban Principal Arterial-Other
3	SR 520	BURNETT RD.	RANGE RD.	19,980	19,680	24,180	22,970	21,040	20,040	21,280	19,840	22,550	21,530	41,790	02/03/22-02/04/22	Urban Principal Arterial-Other
14	SR 520	RANGE RD.	CLEARLAKE RD. (SR 501)	20,920	20,630	23,200	22,640	20,900	19,940	26,590	19,540	22,400	22,350	41,790	02/03/22-02/04/22	Urban Principal Arterial-Other
	SR 520	CLEARLAKE RD. (SR 501)	FISKE BLVD. (SR 519)	20,815	21,385	24,880	24,575	22,915	22,735	22,115	21,730	23,145	21,260			
4	SR 520	CLEARLAKE RD. (SR 501)	LAKE DR.	19,160	19,560	22,860	22,870	20,200	20,800	20,400	21,720	21,550	19,310	39,800	02/03/22-02/04/22	Urban Principal Arterial-Other
5	SR 520	LAKE DR.	FISKE BLVD. (SR 519)	22,470	23,210	26,900	26,280	25,630	24,670	23,830	21,740	24,740	23,210	39,800	02/03/22-02/04/22	Urban Principal Arterial-Other
	SR 520	FISKE BLVD. (SR 519)	US 1	23,775	25,160	28,120	28,250	26,600	25,495	25,275	23,310	26,600	24,575			
6	SR 520	FISKE BLVD. (SR 519)	BLAKE AVE.	23,820	25,090	28,270	28,430	26,540	25,550	25,280	NC	26,680	25,010	41,790	02/03/22-02/04/22	Urban Principal Arterial-Other
7	SR 520	BLAKE AVE.	US 1	23,730	25,230	27,970	28,070	26,660	25,440	25,270	23,310	26,520	24,140	41,790	02/03/22-02/04/22	Urban Principal Arterial-Other
	SR 520 (EB)	US 1	RIVEREDGE BLVD.	19,838	19,020	21,483	18,600	20,718	20,855	21,135	19,265	22,220	19,625			
8	SR 520 (EB)	US 1	FORREST AVE.	15,570	17,090	18,210	13,820	16,750	17,250	16,830	15,460	NC	16,470	19,440	03/09/22-03/10/22	Urban Principal Arterial-Other
9	SR 520 (EB)	FORREST AVE.	BREVARD AVE.	21,020	19,560	21,850	19,620	22,460	20,930	22,250	20,930	21,800	20,140	19,440	02/03/22-02/04/22	Urban Principal Arterial-Other
10	SR 520 (EB)	BREVARD AVE.	DELANNOY AVE.	20,900	19,450	22,930	22,010	21,670	22,280	22,500	19,990	NC	21,080	19,440	03/09/22-03/10/22	Urban Principal Arterial-Other
11	SR 520 (EB)	DELANNOY AVE.	RIVEREDGE BLVD.	21,860	19,980	22,940	18,950	21,990	22,960	22,960	20,680	22,640	20,810	19,440	02/03/22-02/04/22	Urban Principal Arterial-Other
	SR 520 (WB)	CAUSEWAY	US 1	20,770	20,643	21,703	20,098	21,220	20,920	21,915	19,093	17,797	21,705			
12	SR 520 (WB)	CAUSEWAY	DELANNOY AVE.	22,160	21,250	23,700	23,050	21,130	22,990	22,780	20,340	22,850	20,800	19,440	02/03/22-02/04/22	Urban Principal Arterial-Other
13	SR 520 (WB)	DELANNOY AVE.	BREVARD AVE.	23,970	23,100	23,460	21,900	24,290	22,980	24,250	21,420	NC	22,610	19,440	03/09/22-03/10/22	Urban Principal Arterial-Other
15	SR 520 (WB)	BREVARD AVE.	FORREST AVE.	21,220	21,560	22,400	18,690	21,810	20,660	21,610	19,840	22,080	NC	19,440	01/19/21-01/20/21	Urban Principal Arterial-Other
87	SR 520 (WB)	FORREST AVE.	US 1	15,730	16,660	17,250	16,750	17,650	17,050	19,020	14,770	NC	NC	19,440	01/29/20-01/30/20	Urban Principal Arterial-Other
68	SR 524	SR 520	I-95	4,670	4,530	5,690	5,300	5,890	7,200	6,870	6,600	8,460	6,280	24,200	03/10/22-03/11/22	Urban Minor Arterial
	SR 524	I-95	INDUSTRY RD.	11,220	10,880	12,765	12,605	11,710	13,860	12,540	11,775	13,965	13,625			
73	SR 524	I-95	COX RD.	9,780	9,670	11,440	11,170	10,460	12,690	11,700	11,020	13,300	12,870	18,590	02/02/22-02/03/22	Urban Minor Arterial
76	SR 524	COX RD.	INDUSTRY RD.	12,660	12,090	14,090	14,040	12,960	15,030	13,380	12,530	14,630	14,380	19,470	01/24/22-01/25/22	Urban Minor Arterial
	SR 528	ORANGE CO	I-95	27,835	28,320	34,205	31,740	33,780	40,640	37,805	43,810	33,090	27,865			
91	SR 528	ORANGE CO	SR 407	30,820	30,220	37,830	35,120	37,330	40,640	42,560	49,690	36,880	31,390	43,000	02/02/22-02/03/22	Rural Principal Arterial - Freeways & Expressways
90	SR 528	SR 407	I-95	24,850	26,420	30,580	28,360	30,230	NC	33,050	37,930	29,300	24,340	43,000	02/17/22-02/18/22	Rural Principal Arterial - Freeways & Expressways
	SR 528	I-95	US 1	25,860	25,315	30,165	27,775	28,340	31,000	32,730	37,960	28,765	27,060			
93	SR 528	I-95	INDUSTRY RD.	21,000	23,050	23,030	22,810	23,290	29,350	28,880	33,780	24,750	22,810	74,400	02/02/22-02/03/22	Urban Principal Arterial - Freeways & Expressways
92	SR 528	INDUSTRY RD.	US 1	30,720	27,580	37,300	32,740	33,390	32,650	36,580	42,140	32,780	31,310	74,400	01/27/22-01/28/22	Urban Principal Arterial - Freeways & Expressways
25	STADIUM PKWY.	WICKHAM RD.	JUDGE F JAMIESON WY.	6,550	6,890	7,810	8,480	9,150	10,460	11,240	10,620	10,380	11,180	17,700	01/11/22-01/12/22	Urban Minor Arterial
	STADIUM PKWY.	JUDGE F JAMIESON WY	I-95/FISKE BLVD.	16,515	16,965	17,707	18,173	19,337	20,273	20,780	18,447	15,570	14,613			
26	STADIUM PKWY.	JUDGE F JAMIESON WY	VIERA BLVD.	18,270	18,910	19,950	20,890	22,170	22,920	23,650	24,190	18,970	16,590	39,800	01/11/22-01/12/22	Urban Minor Arterial
535	STADIUM PKWY.	VIERA BLVD.	ROSEMOUNT DR.	14,760	15,020	15,980	16,120	17,160	17,870	18,460	15,370	13,700	13,780	39,800	01/11/22-01/12/22	Urban Minor Arterial
606	STADIUM PKWY.	ROSEMOUNT DR.	I-95/FISKE BLVD.			17,190	17,510	18,680	20,030	20,230	15,780	14,020	13,470	39,800	01/11/22-01/12/22	Urban Minor Arterial
607	TAVISTOCK DR.	JUDGE F JAMIESON WY.	VIERA BLVD.			3,300	3,680	3,720	3,780	3,620	3,310	2,990	3,070	15,600	01/11/22-01/12/22	Urban Local
608	TAVISTOCK DR.	VIERA BLVD.	STADIUM PKWY.			2,890	2,680	2,650	3,160	2,290	2,250	2,180	2,130	15,600	01/11/22-01/12/22	Urban Local
	US 1	PINEDA CSWY. (SR 404)	BARNES BLVD.	29,530	31,853	32,577	32,887	30,737	32,013	31,497	32,037	29,953	28,490			
89	US 1	PINEDA CSWY. (SR 404)	SUNTREE BLVD.	33,100	37,580	37,310	38,750	34,340	38,730	37,540	38,150	35,090	31,640	41,790	03/09/22-03/10/22	Urban Principal Arterial-Other
567	US 1	SUNTREE BLVD.	VIERA BLVD.	28,770	31,550	32,650	31,520	30,670	31,070	29,740	31,800	28,090	25,340	41,790	03/09/22-03/10/22	Urban Principal Arterial-Other
30	US 1	VIERA BLVD.	BARNES BLVD.	26,720	26,430	27,770	27,790	27,200	26,240	27,210	26,160	26,680	NC	41,790	01/12/21-01/13/21	Urban Principal Arterial-Other
70	US 1	BARNES BLVD.	EYSTER BLVD.	26,150	25,690	25,980	26,300	25,060	26,090	26,340	25,880	26,480	30,560	41,790	01/27/22-01/28/22	Urban Principal Arterial-Other
	US 1	EYSTER BLVD.	ROSA JONES DR.	34,977	35,303	36,267	35,187	34,170	37,277	35,953	35,180	36,280	35,815			
34	US 1	EYSTER BLVD.	BARTON BLVD.	33,220	32,820	34,440	33,650	32,520	31,160	34,410	32,080	33,300	NC	62,900	01/19/21-01/20/21	Urban Principal Arterial-Other
33	US 1	BARTON BLVD.	FLORIDA AVE.	38,070	40,180	40,480	39,840	36,860	42,630	38,100	38,490	39,550	37,430	62,900	01/27/22-01/28/22	Urban Principal Arterial-Other
88	US 1	FLORIDA AVE.	ROSA JONES DR.	33,640	32,910	33,880	32,010	33,130	38,040	35,350	34,970	35,990	34,200	62,900	01/27/22-01/28/22	Urban Principal Arterial-Other

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

FLORIDA DEPARTMENT OF TRANSPORTATION
2022 ANNUAL AVERAGE DAILY TRAFFIC REPORT - REPORT TYPE: ALL

COUNTY: 70 BREVARD

SITE	SITE TYPE	DESCRIPTION	DIRECTION 1		DIRECTION 2		AADT TWO-WAY	"K" FCTR	"D" FCTR	"T" FCTR
7034		LAMPLIGHTER DRIVE, PACE DRIVE TO EMERSON DRIVE (	N	700	S	700	1400 C	9.0	53.9F	4.4A
7035		PEACHTREE STREET, CLEARLAKE ROAD/SR-501 TO FORRE	E	2800	W	3100	5900 C	9.0	53.9F	4.1A
7036		STACK BLVD., PALM BAY ROAD TO EBER ROAD (HPMS)	N	1900	S	1700	3600 C	9.0	53.9F	3.9A
7037		FRIDAY ROAD, SR-520 TO SR-524 (HPMS)	N	1000	S	950	1950 C	9.0	53.9F	5.5A
7038		HIBISCUS BLVD, 1250 FT E OF DAIRY RD (HPMS)	E	7700	W	8400	16100 C	9.0	53.9F	3.1A
7039		SINGLETON AVE/WESTWOOD DR., SR-406/GARDEN ST TO	E	4400	W	4100	8500 C	9.0	53.9F	4.2A
7040		SARNO ROAD, 0.70 MI E OF SR 518 (I-95 TO A1A) (H	E	7500	W	6800	14300 C	9.0	53.9F	4.1A
7041		MALABAR ROAD, 0.1 MI E OF ELDRON BLVD. (HPMS)	E	11000E	W	12000E	23000 S	9.0	53.9F	16.4P
7042		FISKE BLVD. 0.25 N OF SR-520 TO DIXON BLVD (HPMS	N	3300	S	3300	6600 C	9.0	53.9F	4.0P
7043		BANANA RIVER DR/PINETREE DR., 0.25 MI W OF SR-A1	E	1500E	W	1800E	3300 S	9.0	53.9F	13.1P
7044		GEORGE KING BLVD, 850 FT W OF N ATLANTIC BLVD (H	W	3900	E	2600	6500 C	9.0	53.9F	16.7A
7045		DIXON BLVD., 0.20 MI W OF CLEARLAKE RD/SR-501 TO	E	4700	W	4800	9500 C	9.0	53.9F	5.9A
7046		RANGE ROAD, 0.18 MI N OF SR-520 (HPMS)	N	2500	S	2200	4700 C	9.0	53.9F	8.0A
7047		HOLDER RD, 0.2 MI N OF PARRISH ROAD (HPMS)	N	1200E	S	1100E	2300 S	9.0	53.9F	1.8P
7048		PARRISH ROAD, 0.29 MI E OF I-95 (HPMS)	E	300E	W	400E	700 S	9.0	53.9F	1.7P
7049		PARK AVENUE, 0.86 MI S OF SOUTH STREET (HPMS)	N	4400E	S	3500E	7900 S	9.0	53.9F	4.2P

SITE TYPE : BLANK= PORTABLE; T= TELEMETERED
"K" FACTOR : DEPARTMENT ADOPTED STANDARD K FACTOR BEGINING WITH COUNT YEAR 2011
AADT FLAGS : C= COMPUTED; E= MANUAL EST; F= FIRST YEAR EST; S= SECOND YEAR EST; T= THIRD YEAR EST; R= FOURTH YEAR EST; V= FIFTH YEAR EST; 6= SIXTH YEAR EST; X= UNKNOWN
"D/T" FLAGS : A= ACTUAL; F= FACTOR CATG; D= DIST FUNCL; P= PRIOR YEAR; S= STATEWIDE DEFAULT; W= ONE-WAY ROAD; X= CROSS REF

C3R

Motor Vehicle Highway Generalized Service Volume Tables



(C3R-Suburban Residential)

Adjusted Capacity

Peak Hour Directional

	B	C	D	E
1 Lane	*	776	888	**
2 Lane	*	1,360	1,480	**
3 Lane	*	2,096	2,184	**

Peak Hour Two-Way

	B	C	D	E
2 Lane	*	1,408	1,616	**
4 Lane	*	2,472	2,688	**
6 Lane	*	3,808	3,968	**

AADT

	B	C	D	E
2 Lane	*	15,680	17,920	**
4 Lane	*	27,440	29,840	**
6 Lane	*	42,320	44,080	**

Round results to the nearest tens (i.e. 1,754 should be rounded to 1,750)

Base Capacity

Peak Hour Directional

	B	C	D	E
1 Lane	*	970	1,110	**
2 Lane	*	1,700	1,850	**
3 Lane	*	2,620	2,730	**

Peak Hour Two-Way

	B	C	D	E
2 Lane	*	1,760	2,020	**
4 Lane	*	3,090	3,360	**
6 Lane	*	4,760	4,960	**

AADT

	B	C	D	E
2 Lane	*	19,600	22,400	**
4 Lane	*	34,300	37,300	**
6 Lane	*	52,900	55,100	**

Source: 2023 FDOT MQ/LOS Handbook

Apply Adjustment Factors

One-way Facility: PHDS Multiply by 1.2 ; AADT: Multiply by 0.6	☐
2 Lane Divided Roadway **with** Exclusive Left Turn Adjustment: Multiply by 1.05	☐
2 Lane Undivided Roadway **with No** Exclusive Left Turn Lane(s): Multiply by 0.80	☑
Exclusive Right Turn Lane(s): Multiply by 1.05	☐
Multilane Undivided Roadway **with** Exclusive Left Turn: Multiply by 0.95	☐
Multilane Undivided Roadway **with No** Exclusive Left Turn Lane(s): Multiply by 0.75	☐
Non-State Signalized Roadway	☐

This table does not constitute a standard and should be used only for general planning applications. The table should not be used for corridor or intersection design, where more refined techniques exist.

*Cannot be achieved using table input value defaults.

**Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached.

Source: 2023 FDOT MQ/LOS Handbook, Appendix B: Florida's Generalized Service Volume Tables

PHDS: Peak Hour Directional Service

2023 Multimodal Quality/ Level Of Service Handbook, January 2023

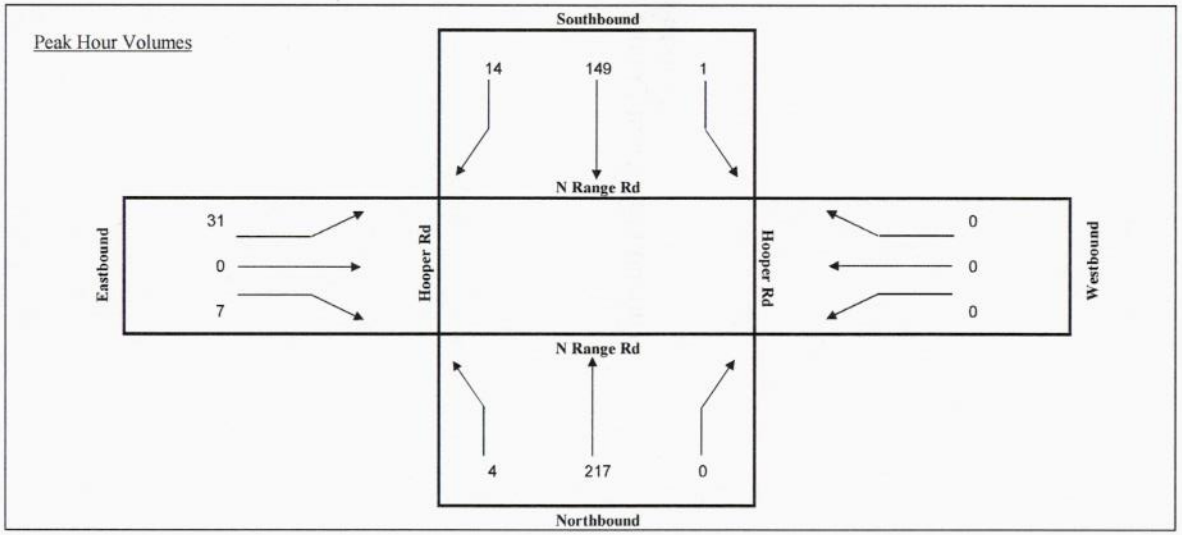
Appendix D
Turning Movement Counts & Seasonal Factor Data

TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): N Range Rd
Intersection (E/W): Hooper Rd
Date: 11/14/2023

			N Range Rd			N Range Rd			Hooper Rd			Hooper Rd			
			NB			SB			EB			WB			
	Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
	7:00 AM	7:15 AM	0	18	0	0	17	2	2	0	1	0	0	0	40
	7:15 AM	7:30 AM	1	35	0	0	24	4	9	0	2	0	0	0	75
	7:30 AM	7:45 AM	6	56	0	0	32	6	9	0	5	0	0	0	114
	7:45 AM	8:00 AM	2	58	0	0	26	4	5	0	1	0	0	0	96
	8:00 AM	8:15 AM	1	38	0	0	30	1	6	0	3	0	0	0	79
	8:15 AM	8:30 AM	1	55	0	1	41	4	11	0	1	0	0	0	114
	8:30 AM	8:45 AM	0	66	0	0	52	5	9	0	2	0	0	0	134
	8:45 AM	9:00 AM	0	28	0	0	37	4	3	0	0	0	0	0	72
Total for:	7:00 AM	8:00 AM	9	167	0	0	99	16	25	0	9	0	0	0	325
Total for:	8:00 AM	9:00 AM	2	187	0	1	160	14	29	0	6	0	0	0	399
Tota Peak Hour:	7:45 AM	8:45 AM	4	217	0	1	149	14	31	0	7	0	0	0	423
Overall PHF:	0.79														

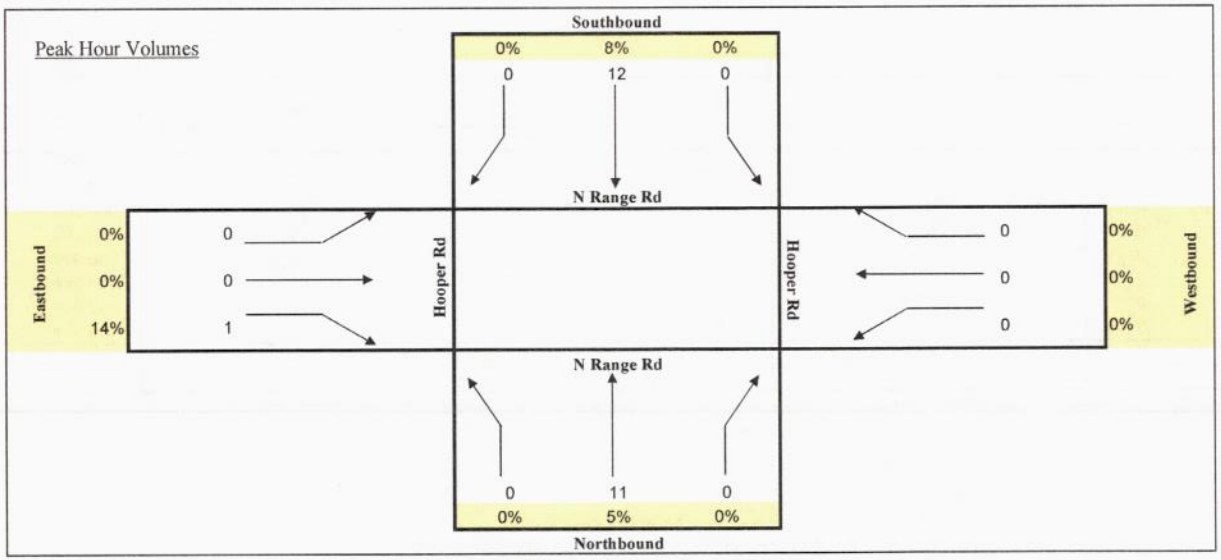


TURNING MOVEMENT COUNT ANALYSIS

TRUCKS

Intersection (N/S): N Range Rd
Intersection (E/W): Hooper Rd
Date: 11/14/2023

		N Range Rd			N Range Rd			Hooper Rd			Hooper Rd			
		NB			SB			EB			WB			
Start	End	R	T	L	R	T	L	R	T	L	R	T	L	TOTAL
7:00 AM	7:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	2
7:15 AM	7:30 AM	0	3	0	0	2	0	0	0	0	0	0	0	5
7:30 AM	7:45 AM	0	4	0	0	0	0	0	0	1	0	0	0	5
7:45 AM	8:00 AM	0	4	0	0	1	0	0	0	1	0	0	0	6
8:00 AM	8:15 AM	0	2	0	0	0	0	0	0	0	0	0	0	2
8:15 AM	8:30 AM	0	2	0	0	8	0	0	0	0	0	0	0	10
8:30 AM	8:45 AM	0	3	0	0	3	0	0	0	0	0	0	0	6
8:45 AM	9:00 AM	0	3	0	0	3	0	0	0	0	0	0	0	6
Total for:	7:00 AM	8:00 AM	0	13	0	0	3	0	0	0	2	0	0	0	18
Total for:	8:00 AM	9:00 AM	0	10	0	0	14	0	0	0	0	0	0	0	24
Tota Peak Hour:	7:45 AM	8:45 AM	0	11	0	0	12	0	0	0	1	0	0	0	24
Overall PHF:	0.60														



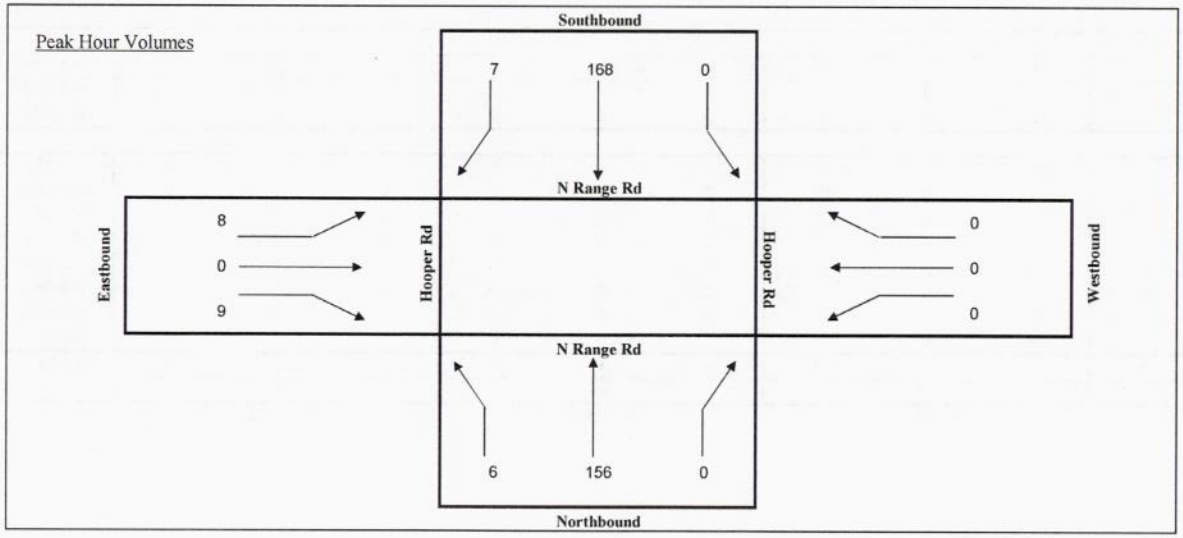
TURNING MOVEMENT COUNT ANALYSIS

AUTOS & TRUCKS

Intersection (N/S): N Range Rd
Intersection (E/W): Hooper Rd
Date: 11/14/2023

			N Range Rd			N Range Rd			Hooper Rd			Hooper Rd			
			NB			SB			EB			WB			
	Start	End	L	T	R	L	T	R	L	T	R	L	T	R	TOTAL
	4:00 PM	4:15 PM	3	48	0	0	44	3	3	0	4	0	0	0	105
	4:15 PM	4:30 PM	1	33	0	0	41	2	2	0	3	0	0	0	82
	4:30 PM	4:45 PM	2	39	0	0	42	1	0	0	0	0	0	0	84
	4:45 PM	5:00 PM	0	36	0	0	41	1	3	0	2	0	0	0	83
	5:00 PM	5:15 PM	1	35	0	0	32	5	6	0	1	0	0	0	80
	5:15 PM	5:30 PM	1	37	0	0	39	4	4	0	0	0	0	0	85
	5:30 PM	5:45 PM	2	43	0	0	33	5	5	0	0	0	0	0	88
	5:45 PM	6:00 PM	3	49	0	0	28	5	6	0	0	0	0	0	91
Total for:	4:00 PM	5:00 PM	6	156	0	0	168	7	8	0	9	0	0	0	354
Total for:	5:00 PM	6:00 PM	7	164	0	0	132	19	21	0	1	0	0	0	344
Tota Peak Hour:	4:00 PM	5:00 PM	6	156	0	0	168	7	8	0	9	0	0	0	354
Overall PHF:	0.84														

Peak Hour Volumes

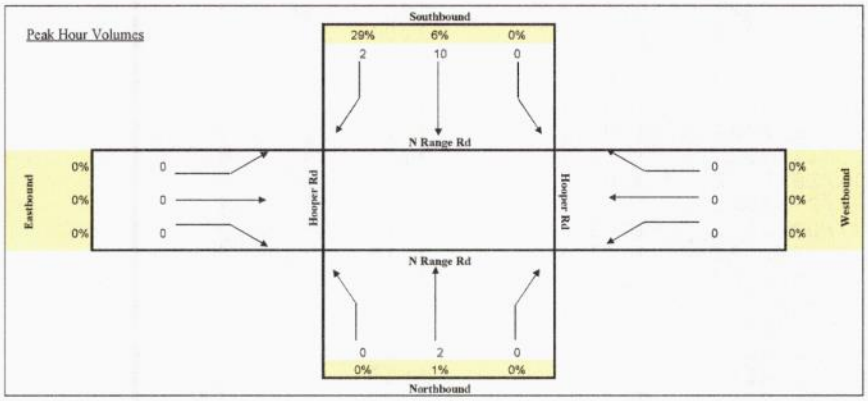


TURNING MOVEMENT COUNT ANALYSIS

TRUCKS

Intersection (N/S): N Range Rd
Intersection (E/W): Hooper Rd
Date: 11/14/2023

		N Range Rd			N Range Rd			Hooper Rd			Hooper Rd			
		NB			SB			EB			WB			
Start	End	R	T	L	R	T	L	R	T	L	R	T	L	TOTAL
4:00 PM	4:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	4:30 PM	0	0	0	0	2	2	0	0	0	0	0	0	4
4:30 PM	4:45 PM	0	2	0	0	2	0	0	0	0	0	0	0	4
4:45 PM	5:00 PM	0	0	0	0	4	0	0	0	0	0	0	0	4
5:00 PM	5:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
5:15 PM	5:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	5:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:45 PM	6:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
Total for:	4:00 PM	5:00 PM	0	3	0	0	8	2	0	0	0	0	0	0	13
Total for:	5:00 PM	6:00 PM	0	2	0	0	4	0	0	0	0	0	0	0	6
Tota Peak Hour:	4:15 PM	5:15 PM	0	2	0	0	10	2	0	0	0	0	0	0	14
Overall PHF:	0.88														



2022 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL

CATEGORY: 7000 BREVARD COUNTYWIDE

MOCF: 0.93

WEEK	DATES	SF	PSCF
1	01/01/2022 - 01/01/2022	1.03	1.11
2	01/02/2022 - 01/08/2022	1.02	1.10
3	01/09/2022 - 01/15/2022	1.01	1.09
4	01/16/2022 - 01/22/2022	0.99	1.06
5	01/23/2022 - 01/29/2022	0.98	1.05
* 6	01/30/2022 - 02/05/2022	0.96	1.03
* 7	02/06/2022 - 02/12/2022	0.94	1.01
* 8	02/13/2022 - 02/19/2022	0.92	0.99
* 9	02/20/2022 - 02/26/2022	0.92	0.99
*10	02/27/2022 - 03/05/2022	0.91	0.98
*11	03/06/2022 - 03/12/2022	0.91	0.98
*12	03/13/2022 - 03/19/2022	0.90	0.97
*13	03/20/2022 - 03/26/2022	0.91	0.98
*14	03/27/2022 - 04/02/2022	0.92	0.99
*15	04/03/2022 - 04/09/2022	0.93	1.00
*16	04/10/2022 - 04/16/2022	0.94	1.01
*17	04/17/2022 - 04/23/2022	0.95	1.02
*18	04/24/2022 - 04/30/2022	0.96	1.03
19	05/01/2022 - 05/07/2022	0.97	1.04
20	05/08/2022 - 05/14/2022	0.98	1.05
21	05/15/2022 - 05/21/2022	0.99	1.06
22	05/22/2022 - 05/28/2022	1.00	1.08
23	05/29/2022 - 06/04/2022	1.02	1.10
24	06/05/2022 - 06/11/2022	1.04	1.12
25	06/12/2022 - 06/18/2022	1.05	1.13
26	06/19/2022 - 06/25/2022	1.05	1.13
27	06/26/2022 - 07/02/2022	1.05	1.13
28	07/03/2022 - 07/09/2022	1.05	1.13
29	07/10/2022 - 07/16/2022	1.05	1.13
30	07/17/2022 - 07/23/2022	1.04	1.12
31	07/24/2022 - 07/30/2022	1.04	1.12
32	07/31/2022 - 08/06/2022	1.04	1.12
33	08/07/2022 - 08/13/2022	1.04	1.12
34	08/14/2022 - 08/20/2022	1.04	1.12
35	08/21/2022 - 08/27/2022	1.05	1.13
36	08/28/2022 - 09/03/2022	1.06	1.14
37	09/04/2022 - 09/10/2022	1.07	1.15
38	09/11/2022 - 09/17/2022	1.08	1.16
39	09/18/2022 - 09/24/2022	1.06	1.14
40	09/25/2022 - 10/01/2022	1.04	1.12
41	10/02/2022 - 10/08/2022	1.02	1.10
42	10/09/2022 - 10/15/2022	1.00	1.08
43	10/16/2022 - 10/22/2022	1.02	1.10
44	10/23/2022 - 10/29/2022	1.03	1.11
45	10/30/2022 - 11/05/2022	1.04	1.12
46	11/06/2022 - 11/12/2022	1.05	1.13
47	11/13/2022 - 11/19/2022	1.06	1.14
48	11/20/2022 - 11/26/2022	1.05	1.13
49	11/27/2022 - 12/03/2022	1.05	1.13
50	12/04/2022 - 12/10/2022	1.04	1.12
51	12/11/2022 - 12/17/2022	1.03	1.11
52	12/18/2022 - 12/24/2022	1.02	1.10
53	12/25/2022 - 12/31/2022	1.01	1.09

* PEAK SEASON

Appendix E
HCM Analysis Worksheets - Existing Conditions

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	33	7	4	230	158	15
Future Vol, veh/h	33	7	4	230	158	15
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	79	79	79	79	79	79
Heavy Vehicles, %	0	14	0	5	8	0
Mvmt Flow	42	9	5	291	200	19

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	511	210	219	0	-	0
Stage 1	210	-	-	-	-	-
Stage 2	301	-	-	-	-	-
Critical Hdwy	6.4	6.34	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.426	2.2	-	-	-
Pot Cap-1 Maneuver	526	801	1362	-	-	-
Stage 1	830	-	-	-	-	-
Stage 2	755	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	524	801	1362	-	-	-
Mov Cap-2 Maneuver	524	-	-	-	-	-
Stage 1	827	-	-	-	-	-
Stage 2	755	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	12.1	0.1	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1362	-	558	-	-
HCM Lane V/C Ratio	0.004	-	0.091	-	-
HCM Control Delay (s)	7.7	0	12.1	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.3	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	EBL	EBR	NBL	NBT	SBT	SBR
Lane Configurations						
Traffic Vol, veh/h	8	10	6	165	178	7
Future Vol, veh/h	8	10	6	165	178	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	0	0	0	1	6	29
Mvmt Flow	10	12	7	196	212	8

Major/Minor	Minor2		Major1		Major2	
Conflicting Flow All	426	216	220	0	-	0
Stage 1	216	-	-	-	-	-
Stage 2	210	-	-	-	-	-
Critical Hdwy	6.4	6.2	4.1	-	-	-
Critical Hdwy Stg 1	5.4	-	-	-	-	-
Critical Hdwy Stg 2	5.4	-	-	-	-	-
Follow-up Hdwy	3.5	3.3	2.2	-	-	-
Pot Cap-1 Maneuver	589	829	1361	-	-	-
Stage 1	825	-	-	-	-	-
Stage 2	830	-	-	-	-	-
Platoon blocked, %				-	-	-
Mov Cap-1 Maneuver	585	829	1361	-	-	-
Mov Cap-2 Maneuver	585	-	-	-	-	-
Stage 1	820	-	-	-	-	-
Stage 2	830	-	-	-	-	-

Approach	EB	NB	SB
HCM Control Delay, s	10.3	0.3	0
HCM LOS	B		

Minor Lane/Major Mvmt	NBL	NBT	EBLn1	SBT	SBR
Capacity (veh/h)	1361	-	699	-	-
HCM Lane V/C Ratio	0.005	-	0.031	-	-
HCM Control Delay (s)	7.7	0	10.3	-	-
HCM Lane LOS	A	A	B	-	-
HCM 95th %tile Q(veh)	0	-	0.1	-	-

Appendix F
ITE Trip Generation Sheets

Single-Family Detached Housing
(210)

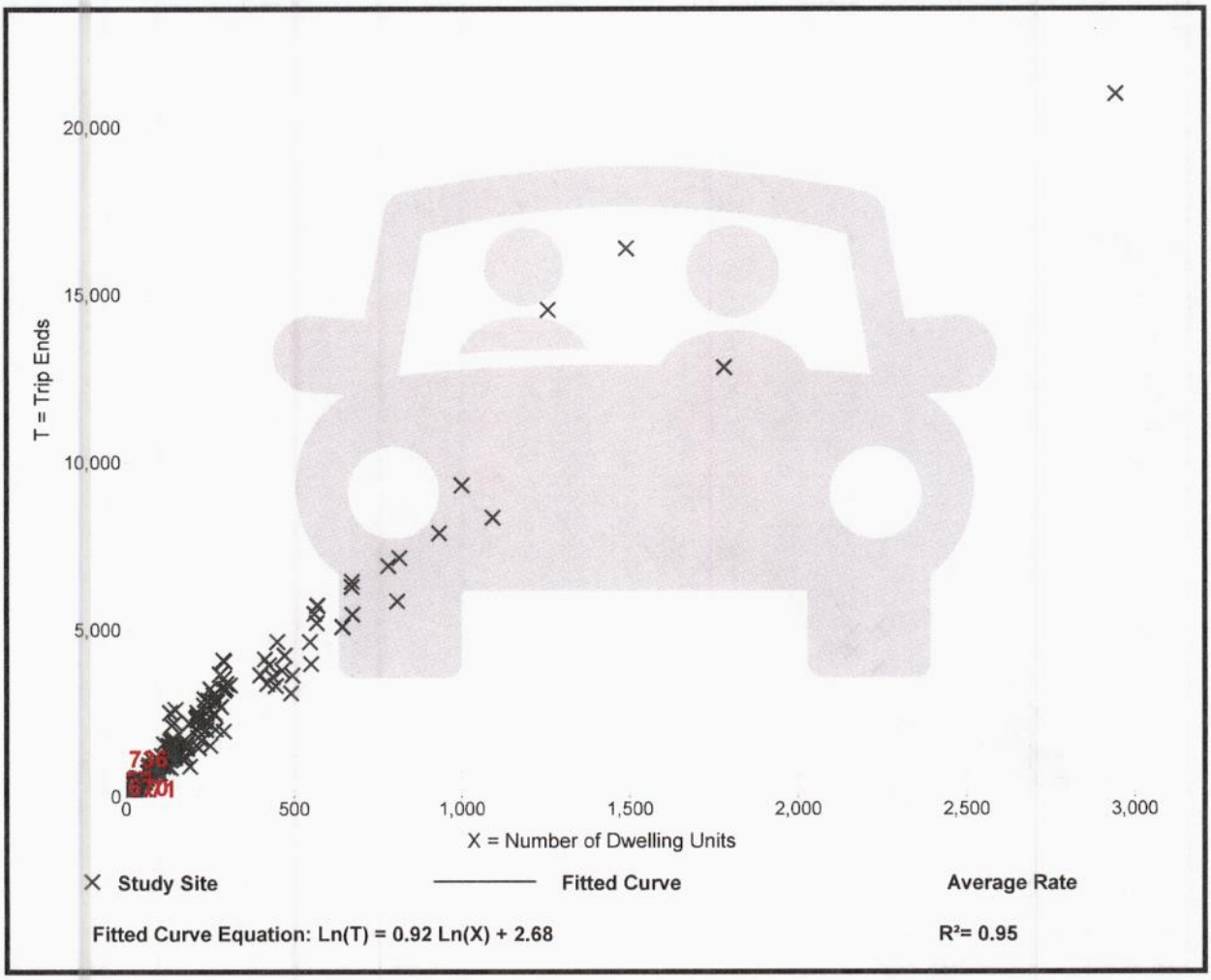
Vehicle Trip Ends vs: **Dwelling Units**
On a: **Weekday**

Setting/Location: **General Urban/Suburban**
Number of Studies: 174
Avg. Num. of Dwelling Units: 246
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
9.43	4.45 - 22.61	2.13

Data Plot and Equation



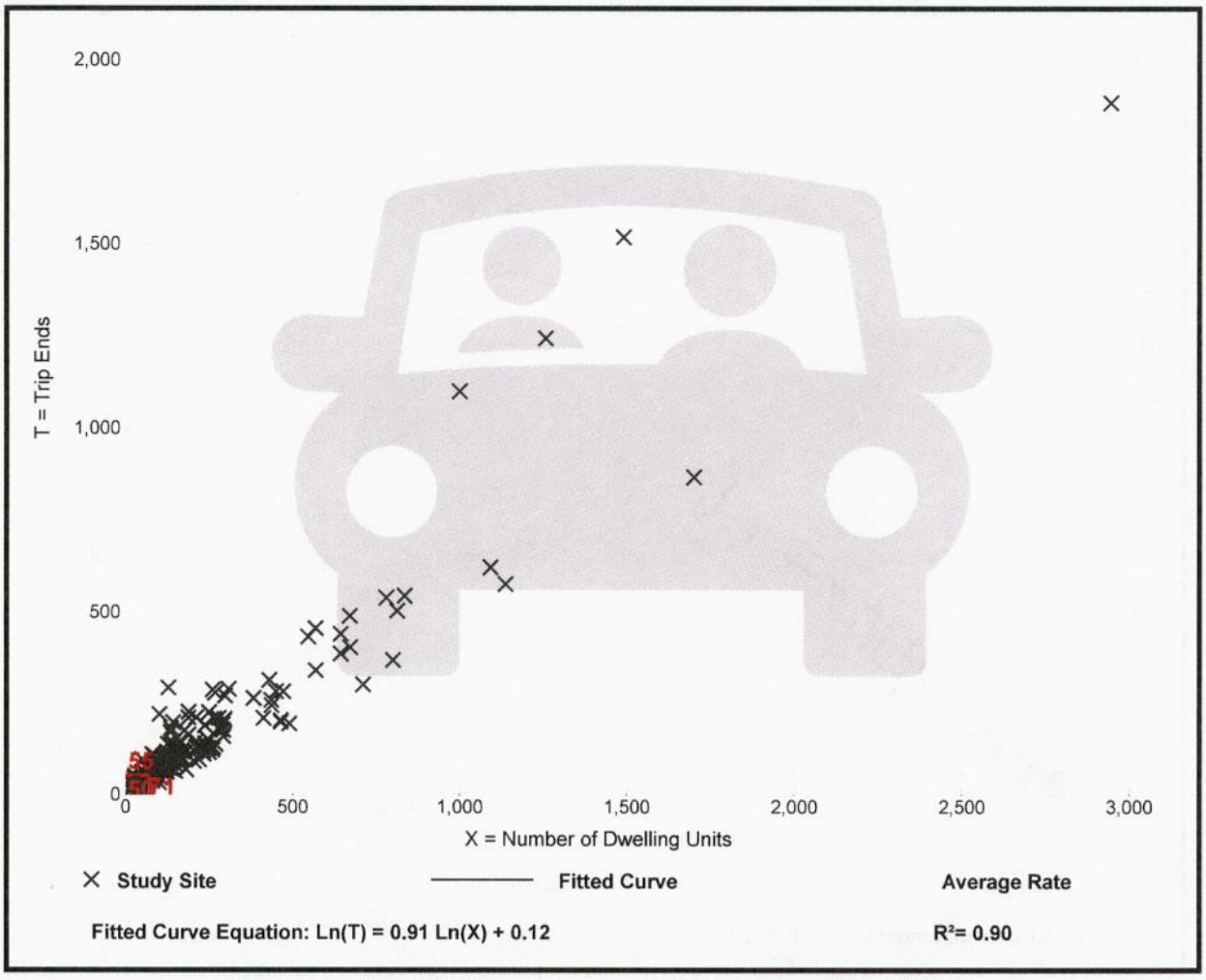
Single-Family Detached Housing
(210)

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: 192
Avg. Num. of Dwelling Units: 226
Directional Distribution: 25% entering, 75% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.70	0.27 - 2.27	0.24

Data Plot and Equation



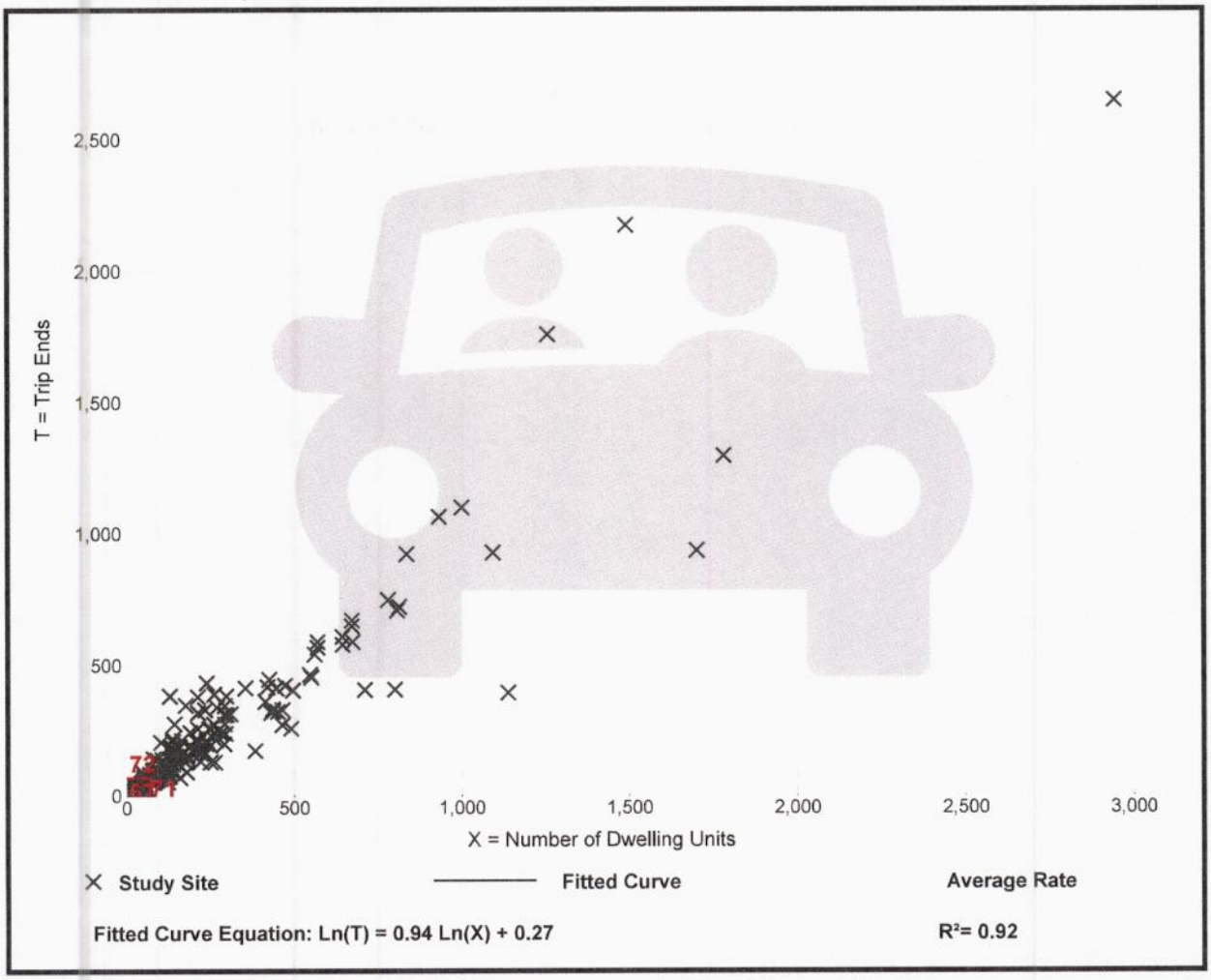
Single-Family Detached Housing
(210)

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: 208
Avg. Num. of Dwelling Units: 248
Directional Distribution: 63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.94	0.35 - 2.98	0.31

Data Plot and Equation



Appendix G
FTO Historical AADT & Growth Rate Calculations

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2022 HISTORICAL AADT REPORT

COUNTY: 70 - BREVARD

SITE: 7046 - RANGE ROAD, 0.18 MI N OF SR-520 (HPMS)

YEAR	AADT	DIRECTION 1		DIRECTION 2		*K FACTOR	D FACTOR	T FACTOR
2022	4700 C	N	2500	S	2200	9.00	53.90	8.00
2021	4800 S	N	2400	S	2400	9.00	54.30	9.90
2020	4800 F	N	2400	S	2400	9.00	55.00	9.90
2019	5000 C	N	2500	S	2500	9.00	54.70	9.90
2018	4500 S	N	2200	S	2300	9.00	54.10	1.50
2017	4300 F	N	2100	S	2200	9.00	54.30	1.50
2016	4100 C	N	2000	S	2100	9.00	53.40	1.50
2015	4300 T					9.00	53.80	6.20
2014	4200 S	N	2200	S	2000	9.00	53.80	4.30
2013	4200 F	N	2200	S	2000	9.00	54.20	4.30
2012	4200 C	N	2200	S	2000	9.00	53.60	4.30
2011	4200 C	N	2100	S	2100	9.00	54.30	3.70
2010	4300 S	N	1900	S	2400	10.91	56.02	3.60
2009	4300 F	N	1900	S	2400	11.80	61.02	3.30
2008	4500 C	N	2000	S	2500	11.37	57.79	3.20

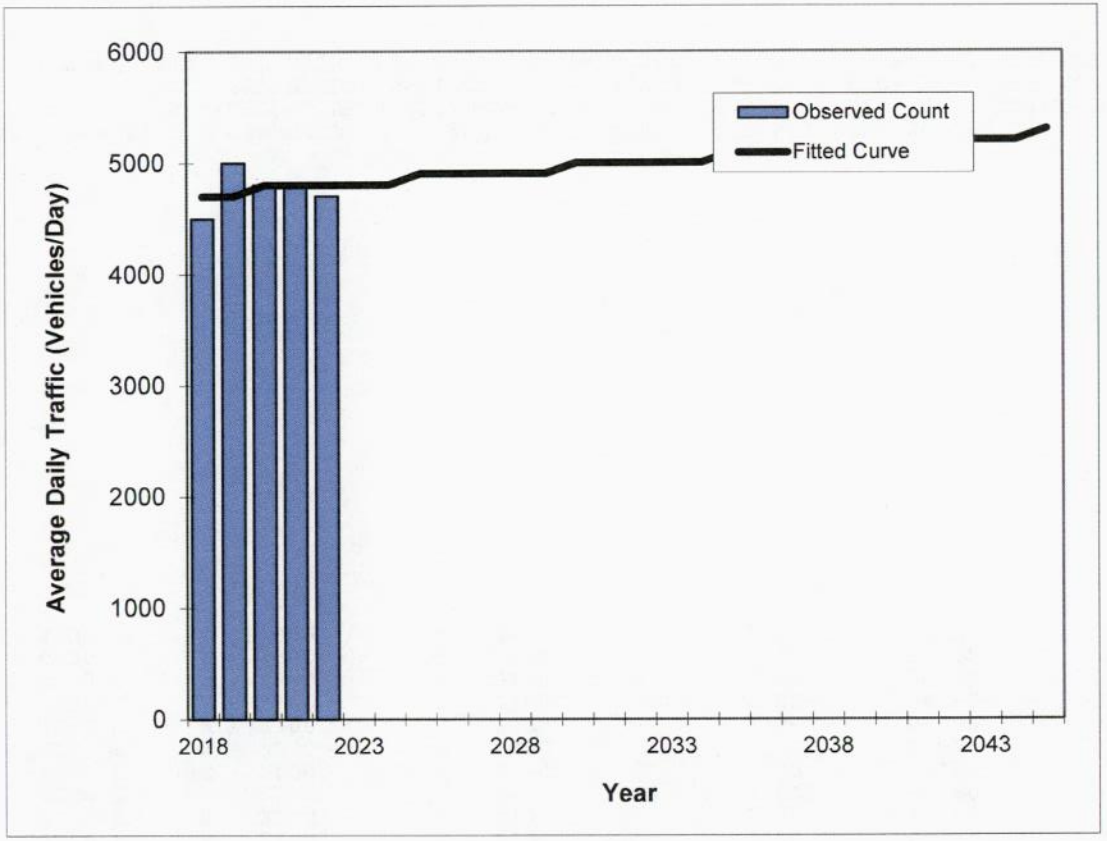
AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN
*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

Traffic Trends - V2.0

RANGE RD --

PIN#	0
Location	1

County:	Brevard (70)
Station #:	7046
Highway:	RANGE RD



Year	Traffic (ADT/AADT) Count*	Trend**
2018	4500	4700
2019	5000	4700
2020	4800	4800
2021	4800	4800
2022	4700	4800
2026 Opening Year Trend		
2026	N/A	4900
2035 Mid-Year Trend		
2035	N/A	5100
2045 Design Year Trend		
2045	N/A	5300
TRANPLAN Forecasts/Trends		

*Axle-Adjusted

** Annual Trend Increase:	20
Trend R-squared:	3.03%
Trend Annual Historic Growth Rate:	0.53%
Trend Growth Rate (2022 to Design Year):	0.45%
Printed:	17-Nov-23

Straight Line Growth Option

Appendix H

HCM Worksheets - Projected Conditions & Intersection Volume Projections

Intersection												
Int Delay, s/veh	1.7											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	36	1	8	12	5	0	4	251	4	0	179	16
Future Vol, veh/h	36	1	8	12	5	0	4	251	4	0	179	16
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	92	79	92	92	92	79	79	92	92	79	79
Heavy Vehicles, %	0	2	14	2	2	2	0	5	2	2	8	0
Mvmt Flow	46	1	10	13	5	0	5	318	4	0	227	20

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	570	569	237	573	577	320	247	0	0	322	0	0
Stage 1	237	237	-	330	330	-	-	-	-	-	-	-
Stage 2	333	332	-	243	247	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.34	7.12	6.52	6.22	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.426	3.518	4.018	3.318	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	435	432	773	430	427	721	1331	-	-	1238	-	-
Stage 1	771	709	-	683	646	-	-	-	-	-	-	-
Stage 2	685	644	-	761	702	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	429	430	773	422	425	721	1331	-	-	1238	-	-
Mov Cap-2 Maneuver	429	430	-	422	425	-	-	-	-	-	-	-
Stage 1	767	709	-	680	643	-	-	-	-	-	-	-
Stage 2	676	641	-	750	702	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.8	13.9	0.1	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1331	-	-	466	423	1238	-	-
HCM Lane V/C Ratio	0.004	-	-	0.122	0.044	-	-	-
HCM Control Delay (s)	7.7	0	-	13.8	13.9	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.1	0	-	-

Intersection	
Int Delay, s/veh	1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	9	5	11	8	3	0	6	187	13	0	197	8
Future Vol, veh/h	9	5	11	8	3	0	6	187	13	0	197	8
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	92	84	92	92	92	84	84	92	92	84	84
Heavy Vehicles, %	0	2	0	2	2	2	0	1	2	2	6	29
Mvmt Flow	11	5	13	9	3	0	7	223	14	0	235	10

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	486	491	240	493	489	230	245	0	0	237	0	0
Stage 1	240	240	-	244	244	-	-	-	-	-	-	-
Stage 2	246	251	-	249	245	-	-	-	-	-	-	-
Critical Hdwy	7.1	6.52	6.2	7.12	6.52	6.22	4.1	-	-	4.12	-	-
Critical Hdwy Stg 1	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.1	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.5	4.018	3.3	3.518	4.018	3.318	2.2	-	-	2.218	-	-
Pot Cap-1 Maneuver	495	478	804	486	480	809	1333	-	-	1330	-	-
Stage 1	768	707	-	760	704	-	-	-	-	-	-	-
Stage 2	762	699	-	755	703	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	490	475	804	472	477	809	1333	-	-	1330	-	-
Mov Cap-2 Maneuver	490	475	-	472	477	-	-	-	-	-	-	-
Stage 1	763	707	-	755	700	-	-	-	-	-	-	-
Stage 2	754	695	-	737	703	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	11.4	12.8	0.2	0
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1333	-	-	590	473	1330	-	-
HCM Lane V/C Ratio	0.005	-	-	0.05	0.025	-	-	-
HCM Control Delay (s)	7.7	0	-	11.4	12.8	0	-	-
HCM Lane LOS	A	A	-	B	B	A	-	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0.1	0	-	-

Intersection	
Int Delay, s/veh	0.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	8	16	284	3	6	187
Future Vol, veh/h	8	16	284	3	6	187
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	9	17	309	3	7	203

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	528	311	0	0	312	0
Stage 1	311	-	-	-	-	-
Stage 2	217	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	511	729	-	-	1248	-
Stage 1	743	-	-	-	-	-
Stage 2	819	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	508	729	-	-	1248	-
Mov Cap-2 Maneuver	508	-	-	-	-	-
Stage 1	743	-	-	-	-	-
Stage 2	814	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.9	0	0.2
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	637	1248	-
HCM Lane V/C Ratio	-	-	0.041	0.005	-
HCM Control Delay (s)	-	-	10.9	7.9	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	11	187	9	18	200
Future Vol, veh/h	5	11	187	9	18	200
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	12	203	10	20	217

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	465	208	0	0	213	0
Stage 1	208	-	-	-	-	-
Stage 2	257	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	556	832	-	-	1357	-
Stage 1	827	-	-	-	-	-
Stage 2	786	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	547	832	-	-	1357	-
Mov Cap-2 Maneuver	547	-	-	-	-	-
Stage 1	827	-	-	-	-	-
Stage 2	773	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	10.2	0	0.6
HCM LOS	B		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	716	1357	-
HCM Lane V/C Ratio	-	-	0.024	0.014	-
HCM Control Delay (s)	-	-	10.2	7.7	0
HCM Lane LOS	-	-	B	A	A
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Project No. 23119 Range Road

Intersection Volumes

Period	Tgen	Enter	Exit	SF	AGR	Legend
AM Peak		14	41	1.06	2.00%	Backg'd + (Project) = Total

Intersection= Range Road & Hooper Road/Street A — 1

Approach	Mvmt	Raw	SF	Adjusted	GR	Adj Bg'd	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L	31	1.06	33	2%	36			0	36	36
	T	0	1.06	0	2%	0	10%		1	1	(1)
	R	7	1.06	7	2%	8			0	8	8
WB	L	0	1.06	0	2%	0		30%	12	12	(12)
	T	0	1.06	0	2%	0		10%	5	5	(5)
	R	0	1.06	0	2%	0			0	0	
NB	L	4	1.06	4	2%	4			0	4	4
	T	217	1.06	230	2%	248	20%		3	251	248 + (3) = 251
	R	0	1.06	0	2%	0	30%		4	4	(4)
SB	L	0	1.06	0	2%	0			0	0	
	T	149	1.06	158	2%	171		20%	8	179	171 + (8) = 179
	R	14	1.06	15	2%	16			0	16	16

Intersection= Range Road & Street C — 2

Approach	Mvmt	Raw	SF	Adjusted	GR	Adj Bg'd	%Proj Ent	%Proj Ext	Project	Total	Formula
EB	L					0			0	0	
	T					0			0	0	
	R					0			0	0	
WB	L					0		20%	8	8	(8)
	T					0			0	0	
	R					0		40%	16	16	(16)
NB	L					0			0	0	
	T					284			0	284	284
	R					0	20%		3	3	(3)
SB	L					0	40%		6	6	(6)
	T					187			0	187	187
	R					0			0	0	

Project No. 23119 Range Road

Intersection Volumes

Period	Tgen	Enter	Exit	SF	AGR	Legend
PM Peak		45	27	1.06	2.00%	Backg'd + (Project) = Total

Intersection=		Range Road & Hooper Road/Street A									1
Approach	Mvmt	Raw	SF	Adjusted	GR	Adj Bg'd	%Proj Ent	%Proj Ext	Project	Total	Formula
	L	8	1.06	8	2%	9			0	9	9
EB	T	0	1.06	0	2%	0	10%		5	5	(5)
	R	9	1.06	10	2%	11			0	11	11
	L	0	1.06	0	2%	0		30%	8	8	(8)
WB	T	0	1.06	0	2%	0		10%	3	3	(3)
	R	0	1.06	0	2%	0			0	0	
	L	6	1.06	6	2%	6			0	6	6
NB	T	156	1.06	165	2%	178	20%		9	187	178 + (9) = 187
	R	0	1.06	0	2%	0	30%		13	13	(13)
	L	0	1.06	0	2%	0			0	0	
SB	T	168	1.06	178	2%	192		20%	5	197	192 + (5) = 197
	R	7	1.06	7	2%	8			0	8	8

Intersection=		Range Road & Street C									2
Approach	Mvmt	Raw	SF	Adjusted	GR	Adj Bg'd	%Proj Ent	%Proj Ext	Project	Total	Formula
	L					0			0	0	
EB	T					0			0	0	
	R					0			0	0	
	L					0		20%	5	5	(5)
WB	T					0			0	0	
	R					0		40%	11	11	(11)
	L					0			0	0	
NB	T					187			0	187	187
	R					0	20%		9	9	(9)
	L					0	40%		18	18	(18)
SB	T					200			0	200	200
	R					0			0	0	

Appendix I
NCHRP Report 457 - Turn Lane Warrants

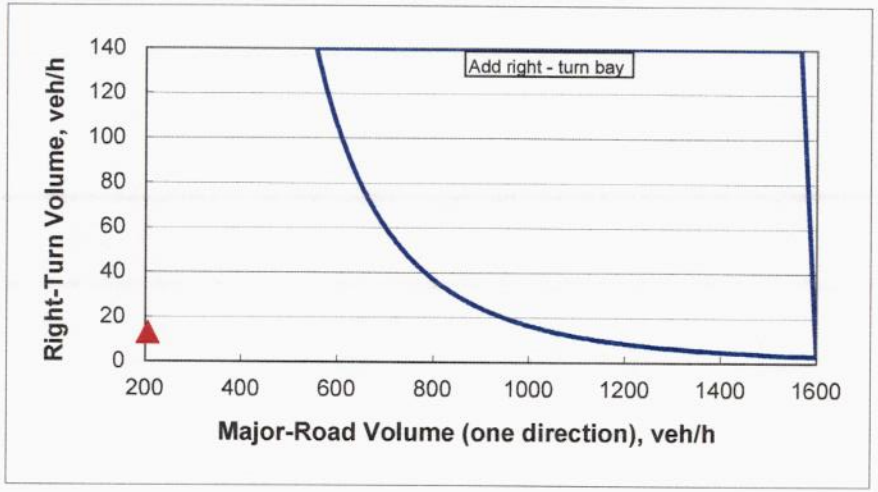
Figure 2 - 6. Guideline for determining the need for a major-road right-turn bay at a two-way stop-controlled intersection.

INPUT

Roadway geometry:	2-lane roadway
Variable	Value
Major-road speed, mph:	35
Major-road volume (one direction), veh/h:	206
Right-turn volume, veh/h:	13

OUTPUT

Variable	Value
Limiting right-turn volume, veh/h:	5166
Guidance for determining the need for a major-road right-turn bay for a 2-lane roadway:	
Do NOT add right-turn bay.	



Source: National Cooperative Highway Research Program (NCHRP) Report 457- Evaluating Intersection Improvements: An Engineering Study Guide

23119 Range Road Project
Left Turn Lane Warrant for
Range Road at Street C Access Driveway

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

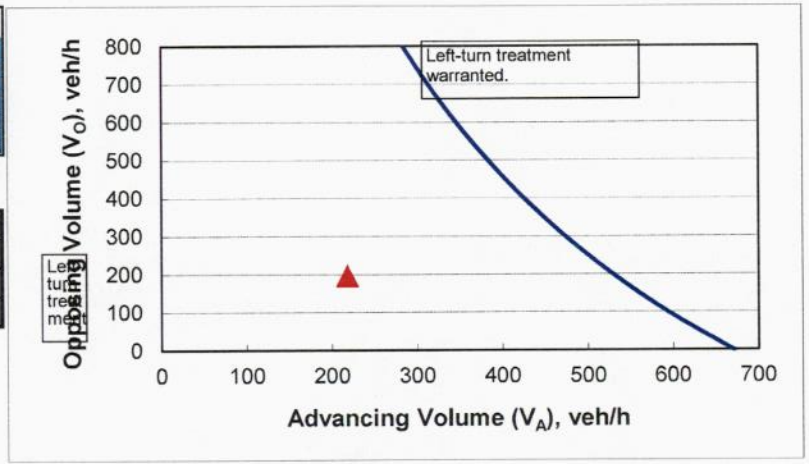
2-lane roadway (English)

INPUT

Variable	Value
85th percentile speed, mph:	35
Percent of left-turns in advancing volume (V_A), %:	8%
Advancing volume (V_A), veh/h:	218
Opposing volume (V_O), veh/h:	196

OUTPUT

Variable	Value
Limiting advancing volume (V_A), veh/h:	532
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

Source: National Cooperative Highway Research Program (NCHRP) Report 457- Evaluating Intersection Improvements: An Engineering Study Guide

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PO Box 631244 Cincinnati, OH 45263-1244

AFFIDAVIT OF PUBLICATION

Monica Arsenault
Attn: Accounting Division
City Of Cocoa (Te)
65 Stone St
Cocoa FL 32922-7982

STATE OF WISCONSIN, COUNTY OF BROWN

Before the undersigned authority personally appeared, who on oath says that he or she is the Legal Advertising Representative of the Florida Today, a daily newspaper published in Brevard County, Florida; that the attached copy of advertisement, being a Legal Ad in the matter of Public Notices, was published on the publicly accessible website of Brevard County, Florida, or in a newspaper by print in the issues of, on:

07/23/2024

Affiant further says that the website or newspaper complies with all legal requirements for publication in chapter 50, Florida Statutes.
Subscribed and sworn to before me, by the legal clerk, who is personally known to me, on 07/23/2024

Legal Clerk

Notary, State of WI, County of Brown

2.1428

My commission expires

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KEEGAN MORAN
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State of Wisconsin

Ad#10399696; 7/23/2024

CITY OF COCOA
NOTICE OF PUBLIC HEARING
NOTICE IS HEREBY GIVEN
THAT
THE PLANNING & ZONING BOARD/LOCAL PLANNING AGENCY PROPOSE TO CONSIDER THE FOLLOWING:

ORDINANCE NO. 17-2024 – Zoning Text Amendment (RU-1-7 Diamond Square)

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF COCOA, BREVARD COUNTY, FLORIDA; Amending Appendix A, Article XI, Section 3, of the code of the City of Cocoa to create new minimum yard requirements applicable to properties located in both the RU-1-7 zoning district and the Diamond Square Community Redevelopment Area; providing for the repeal of prior inconsistent ordinances and resolutions, incorporation into the code, severability, and an effective date.

PZ-22-020001 – Preliminary PUD (Korail Associates, LLC – Tax Acct IDs 2415105, 2423194, 2423188)

Consideration of a Preliminary Planned Unit Development (PUD) consistent with Appendix A, Zoning, Article XI, Section 17, for a 61-lot single-family residential subdivision on +/- 57.23 acres of property located on the east side of N. Range Rd., North of Kathi-Kim St.

PLANNING & ZONING BOARD/ LOCAL PLANNING AGENCY PUBLIC HEARING WILL BE HELD ON:
August 7, 2024
CITY COUNCIL PUBLIC HEARING WILL BE HELD ON:
August 13, 2024
ALL HEARINGS WILL TAKE PLACE 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: Monica Arsenault, City Clerk, 65 Stone Street, Cocoa, by telephone at (321) 433-8488 or via email at marsenault@cocoafl.gov.

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 Lucilene Ribeiro, Planner, at (321) 433-8535 or lribeiro@cocoafl.gov, 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. Ribeiro via email or mail at least three (3) days prior to the hearing.

Legislation Details (With Text)

File #:	24-428	**Version:** 1	**Name:**		
Type:	Agenda		**Status:**	Agenda Ready	
File created:	7/26/2024		**In control:**	Planning and Zoning / Local Planning Agency	
On agenda:	8/7/2024		**Final action:**		
Title:	Request to postpone Consideration of a Land Development Code Text Amendment Appendix A, Article XI, Section 12 of the Code of Ordinances of the City of Cocoa to add Major Recreational Equipment sales and/or rentals, subject to certain conditions, to the list of permitted uses of subsection (A)(12) in the C-G, Commercial-General, zoning district.				
Sponsors:					
Indexes:					
Code sections:					
Attachments:	FT-39966188.pdf				

Date	Ver.	Action By	Action	Result

PLANNING & ZONING BOARD/LOCAL PLANNING AGENCY AGENDA ITEM

Memo Date: July 24, 2024
Agenda Date: August 7, 2024
Prepared By: Patrick Murray - Planning Consultant
Through: Stockton Whitten - City Manager

Requested Action:
Request to postpone Consideration of a Land Development Code Text Amendment Appendix A, Article XI, Section 12 of the Code of Ordinances of the City of Cocoa to add Major Recreational Equipment sales and/or rentals, subject to certain conditions, to the list of permitted uses of subsection (A)(12) in the C-G, Commercial-General, zoning district.

BACKGROUND:

This item is not ready for consideration. Staff requests that Planning and Zoning postpone the consideration of a Land Development Code Text Amendment Appendix A, Article XI, Section 12 of the Code of Ordinances of the City of Cocoa until the September 4, 2024 Planning and Zoning Board meeting to preserve advertisement.

BUDGETARY IMPACT:

N/A

PREVIOUS ACTION:

N/A

RECOMMENDED MOTION:

Request to Postpone Consideration of the proposed Land Development Code Amendment to Appendix A, Article XI, Section 12 of the Zoning Ordinance of the City of Cocoa to add major recreational equipment sales and/or rentals to the list of permitted uses in the C-G zoning district and to provide design standards for major recreational equipment sales and/or rentals in the C-G zoning district.

CITY OF COCOA
NOTICE OF PUBLIC HEARING, ZONING TEXT AMENDMENT,

NOTICE IS HEREBY GIVEN THAT

THE PLANNING & ZONING BOARD/LOCAL PLANNING AGENCY AND THE COCOA CITY COUNCIL PROPOSE TO CONSIDER THE FOLLOWING:

ORDINANCE NO. 13-2024 Zoning Text Amendment (C-G, 909 N Cocoa Blvd)

An ordinance of the City Council of the City of Cocoa, Brevard County, Florida; amending the zoning ordinance of the City of Cocoa to add major recreational equipment sales and rental to the list of permitted uses in the general commercial (CG) zoning district and establishing conditions for such use; providing for the repeal of prior inconsistent ordinances and resolutions, incorporation into the code, severability, and an effective date.

PLANNING & ZONING BOARD/ LOCAL PLANNING AGENCY PUBLIC HEARING WILL BE HELD FOR THIS ITEM ON:

August 13, 2024

ALL HEARINGS WILL TAKE PLACE 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: Monica Arsenault, Assistant City Clerk, 65 Stone Street, Cocoa, by telephone at (321) 433-8488 or via email at marsenault@cocoafl.gov.

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FT-39966188

Legislation Details (With Text)

File #:	24-429	**Version:** 1	**Name:**		
Type:	Agenda		**Status:**	Agenda Ready	
File created:	7/26/2024		**In control:**	Planning and Zoning / Local Planning Agency	
On agenda:	8/7/2024		**Final action:**		
Title:	Consideration of a Land Development Code Amendment to Appendix A, Article XI, Sections 4a and 22 of the Zoning Ordinance of the City of Cocoa 1) to allow for Neighborhood Commercial, Mixed-Use development, and public parking on certain, very limited properties within the Consent Decree area, also known as the Heart of Cocoa, consistent with the Substitute Consent Decree, and amending the list of permitted and special exception uses and 2) building types permitted for those certain properties authorized for Neighborhood Commercial and Mixed-Use development within the Heart of Cocoa subdistrict of the Cocoa Waterfront Overlay; 3) amending the bulk regulations for single-family, duplex, triplex, and fourplex development in the Consent Decree area; 4) amending the minimum yard setbacks in the Consent Decree area.			
Sponsors:					
Indexes:					
Code sections:					
Attachments:	Ordinance 11-2024 Revising RU-2-10 Authorizing Mixed Use and Amending Setbacks and Lot Size.pd Exhibit A Regulating Plan Map Final (2 pages).pdf Exhibits B-D FINAL.pdf Exhibit E - Consent Decree History.pdf Consent Decree Future Land Use Map.pdf Consent Decree Zoning Map.pdf Houston Substitute Consent Decree 10415084 .pdf				

Date	Ver.	Action By	Action	Result

PLANNING & ZONING BOARD/LOCAL PLANNING AGENCY AGENDA ITEM

Memo Date: July 26, 2024
Agenda Date: August 7, 2024
Prepared By: Luci Ribeiro and Jennifer Webster, Planners, City of Cocoa
Through: Stockton Whitten - City Manager
Requested Action:
Consideration of a Land Development Code Amendment to Appendix A, Article XI, Sections 4a and 22 of the Zoning Ordinance of the City of Cocoa 1) to allow for Neighborhood Commercial, Mixed-Use development, and public parking on certain, very limited properties within the Consent Decree area, also known as the Heart of Cocoa, consistent with the Substitute Consent Decree, and amending the list of permitted and special exception uses and 2) building types permitted for those certain properties authorized for Neighborhood Commercial and Mixed-Use development within the Heart of Cocoa subdistrict of the Cocoa Waterfront Overlay; 3) amending the bulk regulations for single-family, duplex, triplex, and fourplex development in the Consent Decree area; 4) amending the

minimum yard setbacks in the Consent Decree area.

BACKGROUND:

This is a City initiated LDC amendment to Appendix A, Article XI, Sections 4A and 22 the City of Cocoa's zoning regulations, specifically targeting the RU-2-10 district which is the Heart of Cocoa sub-district of the Cocoa Waterfront Overlay District, also known as the "Consent Decree Area". (For the purposes of this report, the terms "Heart of Cocoa", "Consent Decree Area or CDA" and the "RU-2-10 District" shall be synonymous).

The Consent Decree Area is generally bounded by several major roadways: Florida Avenue on the east, SR 520 on the north; US 1 on the west; and Rosa L. Jones Blvd. on the south. The parcels specifically designated for commercial and mixed-use developments are located primarily near the perimeter of the CDA, adjacent to existing neighborhood commercial corridors in Cocoa Village.

The Heart of Cocoa Consent Decree of 1990 is an agreement that was adopted in the federal district court case in a settlement negotiation between Beatrice Houston and the City of Cocoa which addresses legal obligations and agreements between both parties regarding the preservation of the neighborhood's historic cultural heritage. The Consent Decree aimed to balance community development goals with the protection of residents' rights and interests, particularly those of low-income and minority populations. It provides a legal framework for sustainable growth and equitable housing practices within the City of Cocoa's designated areas.

The 1990 Consent Decree was replaced by a Substitute Consent Decree in 2009 which legally binds the City of Cocoa to specific zoning and development regulations. Southern Legal Counsel, located in Gainesville Florida, monitors the City's enforcement of and compliance with the Substitute Consent Decree and has received notice of the proposed amendments.

The Substitute Consent Decree requires that the City (1) maintain the Consent Decree Area's low-density residential character; (2) continue to encourage the voluntary replacement of Wholesale Commercial uses, as defined and enumerated in the City Code, Appendix A, Zoning, Article XI, Section 15, with low-density residential uses or less intensive neighborhood commercial uses such as mixed-use developments where residential serves as the primary use, while preserving rights to existing uses as provided by law; and (3) continue to encourage the production and development of affordable homes in the CDA by the private sector through zoning incentives for the CDA including, but not limited to, any incentives that are currently in place. (For more history on the Heart of Cocoa / Consent Decree Area, please see Exhibit "E".)

The RU-2-10 Zoning District is unique to the Consent Decree Area and currently allows for single-family and multi-family development. This amendment is intended to add uses for limited neighborhood commercial and mixed-use developments within the CDA on specifically designated parcels as described in the revised Regulating Plan of the Waterfront Overlay District (Exhibit "A") consistent with the Substitute Consent Decree. The Regulating Plan guides the location and intensity of development on these specific parcels and establishes design and construction requirements, such as setback distances, lot coverage, building types on the commercial and mixed-use lots, and parking provisions on designated City-owned lots to mitigate potential issues stemming from an increase in commercial activities.

The proposed ordinance allows for these limited commercial activities and public parking only on specified properties, ensuring that the Substitute Consent Decree requirements are observed while facilitating compatible economic development and maintaining neighborhood character and quality of life in the Heart of Cocoa.

SUMMARY OF CODE REVISIONS:

1. **Zoning and Land Use**

The RU-2-10 Low Density Single-Family and Multiple Family District rules are currently designed for an area with a mix of low-density multi-family housing, single-family homes. Staff proposes to add to this district neighborhood commercial development for designated properties. The properties that are proposed to be designated on the Regulating Plan for either single-story neighborhood commercial or mixed-use small/medium buildings with neighborhood commercial uses permitted on the ground floor were selected in accordance with Section I, Zoning, Subsection 3(2) and Section II, CRA's Redevelopment Plan, Subsection 7 of the Substitute Consent Decree. Section I, Zoning, Subsection 3(2) provides that the City continue to encourage the voluntary replacement of Wholesale Commercial uses, as defined and enumerated in the City Code, Appendix A, Zoning, Article XI, Section 15, with low-density residential uses or less intensive neighborhood commercial uses such as mixed-use developments where residential serves as the primary use. Staff conducted a review of the properties that were utilized for commercial purposes at the time of the Substitute Consent Decree's approval and determined whether those properties were still used for commercial purposes that are encouraged for replacement. Such properties were designated with a SC/CM or SC/CS on the Regulating Plan. In addition, Section II, CRA's Redevelopment Plan, Subsection 7 of the Substitute Consent Decree provides that the City and Redevelopment Agency may enhance the residential character of, and neighborhood amenities within, the CDA by supporting appropriate neighborhood commercial uses on CDA lots as provided in Section I.(3)(2) and on CDA lots located along the outermost perimeter of the CDA and adjacent to Florida Avenue, US Highway 1, SR 520, or Rosa L. Jones Drive. Thus, the majority of the properties designated on the Regulating Plan with a SC/CM or SC/CS building type were selected because of their location along the perimeter of the CDA in accordance with the Substitute Consent Decree.

On those lots designated in Appendix A, Zoning, Article XI, Section 22, Regulating Plan, the following neighborhood commercial uses shall be permitted either in a single-story commercial building or on the ground floor in a mixed-use building in which residential is the primary use:

(a) Professional services/office.

(b) Gym and Fitness Facilities, less than 7500 square feet.

(c) Personal service establishments, beauty, barber, laundry, dry cleaning, tailor shops and similar uses.

(d) Restaurants.

(e) Retail stores (except automotive) with no outside storage.

(f) Medical and dental clinics.

(g) Animal clinics.

Additionally, electronic communication/transmission facilities and exchanges will no longer be a permitted use in the RU-2-10 district, and has been removed from the list of uses.

The uses table - ART XI, Sec. 22 (F) Uses - was also updated to include the above uses as permissible in the Heart of Cocoa.

In addition, the proposed ordinance designates certain City-owned properties within the Consent Decree Area for public parking. This aims to mitigate potential parking issues stemming from increased commercial and mixed-use development activities. (Regulating Plan, Exhibit "A").

2. Bulk Regulations

The table reference under Section E - Bulk Regulations for minimum lot area and minimum lot depth has been updated to align with the maximum density generally allowed by the Low-Density Future Land Use category in the City's Comprehensive Plan, which is 7 du/ac. Also, a provision recognizing the existing density bonus available in the Low Density Residential FLU policies was added, as noted in the table. (The maximum lot coverage of 40% and Maximum Height of 35' remain unchanged.)

Minimum Lot Area *	Minimum Lot Width	Minimum Lot Depth	Maximum Lot Coverage	Maximum Height
	Single Family			
5,000 sq. ft.	50 ft.	100 ft.	40%	35 ft.
	Duplex			
12,500 sq. ft.	50 ft.	No min.	40%	35 ft.
	Triplex			
18,670 sq. ft.	50 ft.	No min.	40%	35 ft.
	Fourplex			
25,000 sq. ft.	100 ft.	No min.	40%	35 ft.

* Minimum Lot Area may be reduced if a density bonus is approved in accordance with the Comprehensive Plan, Policy 1.1.2.3 (LDR). Minimum Lot Area in this Table is calculated based on a 7-dwelling unit per acre density maximum.				

3. Yard Requirements

Minimum yard setbacks have been relaxed to encourage development on substandard, non-conforming lots, reflecting a balance between development incentives and neighborhood preservation. The minimum yard setbacks for residential development shall be as follows:

For Single-Family Dwellings And Multi-Family Dwellings.

Front setback - Reduced from twenty-five (25) feet to twenty (20) feet.

Side interior lot setback - Reduced from eight (8) feet to five (5) feet.

Side corner lot setback - Reduced from Fifteen (15) feet to ten (10) feet.

Rear setback - Reduced Fifteen (15) feet to Ten (10) feet.

For those lots designated in Appendix A, Zoning, Article XI, Section 22, Regulating Plan, for single-story commercial (SC) and mixed-use-small (CS) or mixed-use-medium (CM) development, the setbacks shall be as follows:

For Single-Story Commercial And Mixed-Use Buildings.

Street Setback - As provided in the Regulating Plan.

Side interior lot setback - Five (5) feet.

Side corner lot setback - Ten (10) feet.

Rear setback - Ten (10) feet.

4. Building Types

Specific building types are currently permitted by the Subdistrict when any new and/or redevelopment occurs on any parcel within the Cocoa Waterfront Zoning Overlay. The building typologies are consistent with the size, scale and character desired within each sub-district.

In the neighborhood commercial uses, the building types permitted are Commercial/Mixed-Use - Small (CS), Commercial/Mixed-Use - Medium (CM), and Single-Story Commercial (SC) buildings (Exhibits "B", "C", and "D"). These amendments ensure that new developments adhere to desired size, scale, and architectural standards suitable for the Consent Decree Area. In particular, the height of these building types is limited to three (3) stories in the

Consent Decree Area to ensure compatibility and maintaining the low density residential character of the neighborhood.

The above new code provisions comply with the Substitute Consent Decree and pave the way for future development projects to adhere to updated zoning regulations and development standards, promoting sustainable growth and community enhancement.

ANALYSIS

I. Zoning Code

Pursuant to Appendix A, Zoning, Article XXI, Amendment, Section 1(G)(2), the planning board shall consider and study:

a. *The need and justification for the change.*

Staff Finding: As the Substitute Consent Decree mandates the encouragement of the voluntary replacement of Wholesale Commercial (C-W) uses, as defined and enumerated in the City Code, Appendix A, Zoning, Article XI, Section 15, with low density residential uses or less intensive neighborhood commercial uses, such as mixed-use developments where residential serves as the primary use, this proposed amendment provides a mechanism for this transition of C-W uses to less intense, more neighborhood-compatible commercial uses.

Given the recent increase in development along Florida Avenue adjacent to the Consent Decree Area and the likely increased neighborhood commercial and mixed-use development within the CDA as a result of this ordinance, staff recommends designating certain City-owned properties within the CDA for public parking uses in order to support such neighborhood commercial uses.

The transition from C-W uses to less intense neighborhood commercial uses (on designated lots) will provide opportunities for small businesses that may directly support the needs of Heart of Cocoa residents. The parking provision will improve traffic flow and pedestrian safety. Introducing commercial uses closer to residential neighborhoods helps reduce the number and length of automobile trips by encouraging pedestrian and bike travel. This initiative supports the City's infrastructure goals by enhancing accessibility and walkability within the CDA.

b. *The relationship of the proposed amendment to the purposes and objectives of the comprehensive planning program and to the comprehensive plan, with appropriate consideration as to whether the proposed change will further the purposes of this zoning code and other codes, regulations, and actions designed to implement the comprehensive plan.*

Staff Finding: The proposed amendment expands the permitted uses in the RU-2-10 district to include neighborhood commercial activities and mixed-use developments. This aligns with the Comprehensive Plan's goals of promoting diverse land use patterns that support residential growth while accommodating compatible commercial activities in designated areas.

The proposed amendment is anticipated to assist in attaining the following cited goals and objectives of the City of Cocoa Comprehensive Plan:

I FUTURE LAND USE ELEMENT

GOAL 1.1 Create and maintain a broad range of land use activities that maximize the City's potential as a growth center while protecting the public health, safety, welfare, and appearance through the thoughtful planned use and development of the land and public facilities.

Objective 1.1.1: Future Land Use Categories Established. The city hereby establishes land use categories and a Future Land Use Map (FLUM) that provide for compatible and coordinated land uses, allowing for the protection of natural and historic resources as well as maximizing economic development opportunities

Policy 1.1.2.3: Low Density Residential (LDR). Low-density residential areas are neighborhoods of single family detached housing, limited multiple family attached housing and limited clustered single family attached housing. Institutional, open space and recreational uses are also allowed in this category. The following criteria shall be used for determining appropriate locations for low density residential areas.

A. Low-density residential areas shall be buffered from the nuisance effects of higher intensity uses and major traffic corridors.

B. Low density residential developments should be located in areas where more intensive development would be unwarranted due to environmental constraints, incompatible with surrounding land uses, or where criteria set forth in Paragraph c, below, cannot be met.

C. The City may permit increased densities up to 12 units per acre as part of planned residential development or planned redevelopment activities based on the following criteria:

1. Redevelopment through rehabilitation and improvement of substandard or deteriorating housing.

2. For planned redevelopment activities, preservation and improvement of neighborhoods containing affordable single family and multiple family housing, especially where neighborhoods contain vacant lots or abandoned commercial uses.

3. Use of a variety of building and site designs, housing types and efficient construction techniques that lower construction cost.

4. Provide for more efficient use of land and protection of the existing neighborhoods, natural

systems, and historic resources.

Objective 1.1.4: Redevelopment. The City shall encourage redevelopment of areas that are exhibiting evidence of decline (i.e., disproportionate number of vacant, dilapidated and/or substandard structures) through redevelopment programs and through maintaining land development regulations that contain standards and procedures to encourage redevelopment where desirable.

Policy 1.1.4.1: The City shall continue to promote vitality and redevelopment of the three community redevelopment areas established pursuant to Chapter 163, F.S.: Cocoa (Downtown) Redevelopment Area, Diamond Square Redevelopment Area and U.S. 1 Corridor Redevelopment Area.

Policy 1.1.4.5: The City shall protect and buffer residential areas in the Cocoa (Downtown) Redevelopment Area from uses of high density or intensity.

Policy 1.1.4.8: The City shall continue to monitor and, as appropriate, conduct parking studies to examine the demand and availability of parking in the Cocoa (Downtown) Redevelopment Area.

Objective 1.1.5: Neighborhood Protection. The City shall ensure that additional growth and development will be respectful of established neighborhoods that define much of the City's character.

Policy 1.1.5.2: The City shall consider developing neighborhood plans, as needed, to either strengthen preservation of established neighborhoods or encourage redevelopment of transitional neighborhoods.

Policy 1.1.5.3: The City's land development regulations shall maintain appropriate standards and nuisance regulations to limit the impact of more intense development on established residential zones.

Objective 1.1.9: Sustainability/Energy Efficiency. The City shall aim at achieving a sustainable/energy efficient environment by minimizing the emission of greenhouse gases and reducing the vehicle miles traveled.

Policy 1.1.9.2: The City shall promote walking, bicycle riding and use of public transit by requiring compact design, shared facilities between adjacent or nearby uses, and providing for interconnected walkways, bicycle ways and parking, and bus stops as part of development approvals, where applicable.

Objective 1.1.10: Plan Implementation. The City shall maintain, amend and develop land development regulations that guide future growth and development, discourage the proliferation of urban sprawl and implement the goals, objectives and policies of the Comprehensive Plan.

III TRANSPORTATION ELEMENT

GOAL 1.2: The City of Cocoa shall place a strong emphasis on requiring quality integrated mixed-use development to improve the appearance of the City, increase property values and achieve a higher quality of life for its businesses, residents and visitors.

Objective 1.2.1: Smart Growth Principles. New development in the City shall incorporate "Smart Growth" principles that will lead to compact development standards as opposed to conventional development standards that encourage urban sprawl.

Policy 1.2.1.1: The City should encourage public-private partnership to develop mixed-use projects at key-locations in the Central Business District, and entice others to do the same.

Policy 1.2.1.2: Development in the Mixed-Use land use category shall provide pedestrian-friendly street design (examples: buildings close to street; providing porches, windows and doors oriented to the street; treelined streets; hidden parking lots; garages in rear; narrow, slow-speed streets).

III HOUSING ELEMENT

Objective 3.7.5: Community Revitalization. The City shall continue to support the revitalization of its Florida Enterprise Zone, its designated Florida Brownfield Area, the Diamond Square Redevelopment Area and the Heart of Cocoa Area concentrating on issues such as crime, economic development, and affordable housing.

Policy 3.7.5.1: The City shall support reasonable efforts to make these areas economically diversified neighborhoods with housing, shopping, public transportation, health services, schools, and employment opportunities for all.

Policy 3.7.5.6: The City shall promote design standards that encourage image improvement opportunities in the neighborhood.

The proposed changes will not negatively impact existing neighborhood and will further the objectives of the Substitute Consent Decree by supporting development for low-density single-family and multi-family housing, and low-intensity neighborhood commercial use.

.

BUDGETARY IMPACT:

N/A

PREVIOUS ACTION:

Enter text here

RECOMMENDED MOTION:

Staff recommends that the Planning & Zoning Board recommend **APPROVAL** to City Council regarding the proposed Land Development Code Amendment to Appendix A, Article XI, Sections 4a and 22 of the zoning ordinance of the City of Cocoa to allow for neighborhood commercial, mixed use development, and public parking on certain very limited properties within the Consent Decree Area, also known as the Heart of Cocoa, consistent with the Substitute Consent Decree, and amending the

list of permitted and special exception uses and the building types permitted for those certain properties authorized for neighborhood commercial and mixed-use development within the Heart of Cocoa subdistrict of the Cocoa Waterfront Overlay.

ORDINANCE NO. 11-2024

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF COCOA, BREVARD COUNTY, FLORIDA; AMENDING APPENDIX A, ARTICLE XI, SECTIONS 4A AND 22 OF THE ZONING ORDINANCE OF THE CITY OF COCOA TO ALLOW FOR NEIGHBORHOOD COMMERCIAL, MIXED USE DEVELOPMENT, AND PUBLIC PARKING ON CERTAIN VERY LIMITED PROPERTIES WITHIN THE CONSENT DECREE AREA, ALSO KNOWN AS THE HEART OF COCOA, CONSISTENT WITH THE SUBSTITUTE CONSENT DECREE; AMENDING THE LIST OF PERMITTED AND SPECIAL EXCEPTION USES FOR THE CONSENT DECREE AREA; AMENDING THE BUILDING TYPES PERMITTED FOR THOSE CERTAIN PROPERTIES AUTHORIZED FOR NEIGHBORHOOD COMMERCIAL AND MIXED USE DEVELOPMENT WITHIN THE HEART OF COCOA SUBDISTRICT OF THE COCOA WATERFRONT OVERLAY DISTRICT AS MORE PARTICULARLY DEPICTED ON EXHIBIT "A" ATTACHED HERETO; AMENDING THE BULK REGULATIONS FOR SINGLE-FAMILY, DUPLEX, TRIPLEX, AND FOURPLEX DEVELOPMENT IN THE CONSENT DECREE AREA; AMENDING THE MINIMUM YARD SETBACKS IN THE CONSENT DECREE AREA; PROVIDING FOR THE REPEAL OF PRIOR INCONSISTENT ORDINANCES AND RESOLUTIONS, INCORPORATION INTO THE CODE, SEVERABILITY, AND AN EFFECTIVE DATE.

WHEREAS, the City is granted the authority, under § 2(b), Art. VIII of the State Constitution, to exercise any power for municipal purposes, except when expressly prohibited by law; and

WHEREAS, the City of Cocoa is subject to the Substitute Consent Decree, approved by the United States District Court, Middle District of Florida, in *Houston, et. al. v. City of Cocoa, et. al.*, Case No: 6:89-CV-00082-PCF, which requires that the City maintain that certain area of the City referred to as the Consent Decree Area or the "Heart of Cocoa" as low density residential in character; and

WHEREAS, the low density residential zoning district RU-2-10, is a zoning designation only utilized by the City in the Consent Decree Area for the sole purpose of complying with the Substitute Consent Decree and implementing the requirements of the Substitute Consent Decree; and

WHEREAS, the Substitute Consent Decree requires that the City shall maintain zoning regulations that apply to the Consent Decree Area which are intended to (1) maintain the Consent Decree Area's low density residential character; (2) continue to encourage the voluntary replacement of Wholesale Commercial uses, as defined and enumerated in the City Code, Appendix A, Zoning, Article XI, Section 15, with low density residential uses or less intensive

neighborhood commercial uses such as mixed use developments where residential serves as the primary use, while preserving rights to existing uses as provided by law; and (3) continue to encourage the production and development of affordable homes in the Consent Decree Area by the private sector through zoning incentives for the Consent Decree Area including, but not limited to, any incentives that are currently in place; and

WHEREAS, the Substitute Consent Decree provides that the City and the Cocoa Community Redevelopment Agency may enhance the residential character of, and neighborhood amenities within, the Consent Decree Area by supporting appropriate neighborhood commercial uses on Consent Decree Area lots currently utilized for Wholesale Commercial uses that are encouraged to be replaced and on lots located along the outermost perimeter of the Consent Decree Area and adjacent to Florida Avenue, US Highway 1, SR 520, or Rosa L. Jones Drive; and

WHEREAS, the City Council desires to amend the RU-2-10 zoning district and the Cocoa Waterfront Overlay District, Heart of Cocoa Subdistrict, to implement the provisions of the Substitute Consent Decree encouraging neighborhood commercial and mixed use development with neighborhood commercial and multi-family residential uses on those certain lots designated on the Regulating Plan attached hereto as "Exhibit A"; and

WHEREAS, given the recent increase in development along Florida Avenue adjacent to the Consent Decree Area and the likely increased neighborhood commercial and mixed-use development within the Consent Decree Area as a result of this ordinance, the City Council further desires to designate certain selected properties within the Consent Decree Area owned by the City of Cocoa for public parking uses in order to support such neighborhood commercial uses; and

WHEREAS, this Ordinance also amends the Zoning Ordinance of the City to effectuate the goal of encouraging neighborhood commercial and mixed use development on certain lots within the Consent Decree Area, consistent with the Substitute Consent Decree, by amending the list of permitted and special exception uses within the RU-2-10 District to include and specify certain neighborhood commercial uses that will be allowed and allow for certain mixed-use and single-story commercial building types to be constructed on such properties; and

WHEREAS, the City desires to further modify the setbacks within the Consent Decree Area to relax the requirements and encourage development on substandard lots within the Area and to clarify minimum lot sizes required for certain types of development to ensure consistency with the Low Density Residential Future Land Use requirements in the City's Comprehensive Plan; and

WHEREAS, the City Council of the City of Cocoa, Florida, hereby finds this Ordinance to be in the best interests of the public health, safety, and welfare of the citizens of Cocoa.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF COCOA HEREBY ORDAINS, AS FOLLOWS:

Section 1. **Recitals.** The foregoing recitals are hereby fully incorporated herein by this reference as legislative findings of the City Council of the City of Cocoa.

Section 2. **Code Amendment.** The City of Cocoa Code of Ordinances Appendix A, Article Article XI, Sections 4A and 22, are hereby amended as follows (underlined type indicates additions and ~~strikeout~~ type indicates deletions, while asterisks (* * *) indicate a deletion from the Ordinance of text existing in Appendix A, Article XI. It is intended that the text in Appendix A, Article XI denoted by the asterisks and set forth in this Ordinance shall remain unchanged from the language existing prior to the adoption of this Ordinance):

* * *

APPENDIX A – ZONING

* * *

ARTICLE XI. – SCHEDULE OF DISTRICT REGULATIONS

* * *

Sec. 4A. District and intent—RU-2-10, Low Density Single-Family and Multiple-Family District.

The provisions of this district are intended to apply to an area of mixed, low density multifamily, ~~and~~ single-family residential, and neighborhood commercial development in close proximity to major collector and arterial streets and, after the effective date of Ord. 02-2021 [April 13, 2021], shall be specifically limited to the real property subject to the Substitute Consent Decree as ordered on January 28, 2009.

(A) PRINCIPAL USES AND STRUCTURES.

(1) Multifamily dwellings of not more than four (4) units per building.

(2) Single-family dwellings.

(3) Multifamily dwellings of more than four (4) units, provided such use was in existence as of the date of adoption of this ordinance.

(4) That specific use of land and structures legally existing as of March 8, 1988, provided such use was a permitted use in the CW district as of March 8, 1988, and certain other CW and CC permitted uses as follows:

(a) Any lot of record containing such a specific CW use legally existing as of March 8, 1988, may be converted to (1) warehousing or wholesaling in a completely enclosed structure as provided by article XI, section 15(A) (2), or (2) service or repair establishments limited to dry cleaning and laundry plants, business services, printing plants, welding shops, and light

assembly/manufacturing as provided by article XI, section 15(A) (3) and (10); and

(b) Any lot of record containing such a specific CW use legally existing as of March 8, 1988, and any such lot of record subsequently converted to an alternative CW use as provided in subsection (a) may be converted to any use permitted in the CC district under article XI, section 18(a) (1)—(12) as of the date of adoption of this ordinance;

Provided that, once such specific CW use legally existing as of March 8, 1988, has been converted to a CC use pursuant to subsection (b) hereof, or has been converted to a residential use permitted in the RU-2-10 district, or has been abandoned as defined for a nonconforming use in article X, section 7, such lot of record may not return or be converted to such specific CW use or to any alternative CW use provided in subsection (a) hereof. Once any specific CW use legally existing as of March 8, 1988, or any CC use permitted pursuant to subsection (b) hereof has been converted to any residential use permitted in the RU-2-10 district, or has been abandoned as defined for a nonconforming use in article X, section 7, such lot of record may not return or be converted to any CC use permitted by subsection (b) of this section. The owner of a principal use set forth in this section shall have the right to continue such principal use on a lot of record until and unless such use is so converted or abandoned.

(5) That specific use of land and structures legally existing as of the date sixty (60) days following the date of the adoption of this ordinance provided such use was a permitted use in the CC district as of the date of the adoption of this ordinance, and certain other CC permitted uses as follows: any lot of record containing such specific CC use or any lot of record containing a specific CC use legally existing as of the date of the adoption of this ordinance may be converted to any other use permitted in the CC district under article XI, section 18(a)(1)—(12) as of the date of the adoption of this ordinance, provided that, once any such CC use has been converted to any residential use permitted in the RU-2-10 district, or has been abandoned as defined for a nonconforming use in article X, section 7, such lot of record may not return or be converted to any CC use. The owner of a principal use set forth in this section shall have the right to continue such principal use on a lot of record until and unless such use is so converted or abandoned.

(6) On those lots designated in Appendix A, Zoning, Article XI, Section 22, Regulating Plan, the following neighborhood commercial uses shall be permitted either in a single-story commercial building or on the ground floor in a mixed-use building in which residential is the primary use:

(a) Professional services/office.

(b) Gym and Fitness Facilities, less than 7500 square feet.

(c) Personal service establishments, beauty, barber, laundry, dry cleaning, tailor shops and similar uses.

(d) Restaurants.

(e) Retail stores (except automotive) with no outside storage.

(f) Medical and dental clinics.

(g) Animal clinics.

(7) Public parking shall be permitted on those municipally-owned lots designated in Appendix A, Zoning, Article XI, Section 22, Regulating Plan.

(B) ACCESSORY USES AND STRUCTURES.

(1) Customary accessory uses clearly incidental and subordinate to the principal use and in keeping with the intent and purpose of the district.

(2) Television dish receivers and antennae as regulated by article XIII, section 21, Television dish receivers and antennae.

(C) SPECIAL EXCEPTIONS.

(1) Public parks and playgrounds.

(2) Noncommercial cultural centers, social service centers, museums, galleries, community centers.

(3) Private clubs and lodges.

(4) Reserved.

(5) Sewer lift stations.

(6) Churches, rectories, parish houses, temples, synagogues and associated buildings, including educational and recreational facilities.

(7) Security mobile home located upon public property.

~~(8) Electronic communication/transmission facilities and exchanges.~~

(8) Child care centers and daycare facilities.

(D) PROHIBITED USES AND STRUCTURES.

(1) All uses not specifically or provisionally permitted herein.

(E) BULK REGULATIONS.

Minimum Lot Area *	Minimum Lot Width	Minimum Lot Depth	Maximum Lot Coverage	Maximum Height
	Single Family ~~or Duplex~~			
5,000 sq. ft.	50 ft.	100 ft.	40%	35 ft.
	Duplex			
12,500 sq. ft.	50 ft.	No min.	40%	35 ft.
	Triplex			

~~7,500 sq. ft.~~ 18,670 sq. ft.	50 ft.	~~100 ft.~~ No min.	40%	35 ft.
	Fourplex			
~~10,000 sq. ft.~~ 25,000 sq. ft.	100 ft.	~~100 ft.~~ No min.	40%	35 ft.
* Minimum Lot Area may be reduced if a density bonus is approved in accordance with the Comprehensive Plan, Policy 1.1.2.3 (LDR). Minimum Lot Area in this Table is calculated based on a 7 dwelling unit per acre density maximum.				

(F) MINIMUM LIVING AREA.

Single family—One thousand (1,000) square feet.

Duplex—Seven hundred fifty (750) square feet each unit.

Triplex—Seven hundred fifty (750) square feet each unit.

Fourplex—Seven hundred fifty (750) square feet each unit.

(G) MINIMUM YARD REQUIREMENTS FOR SINGLE-FAMILY DWELLINGS AND MULTI-FAMILY DWELLINGS.

Front setback—~~Twenty-five (25) feet.~~ Twenty (20) feet.

Side interior lot setback—~~Eight (8) feet.~~ Five (5) feet.

Side corner lot setback—~~Fifteen (15) feet.~~ Ten (10) feet.

Rear setback—~~Fifteen (15) feet~~ Ten (10) feet.

(H) MINIMUM YARD REQUIREMENTS FOR SINGLE-STORY COMMERCIAL AND MIXED-USE BUILDINGS.

For those lots designated in Appendix A, Zoning, Article XI, Section 22, Regulating Plan, for single-story commercial and mixed-use-small or mixed-use-medium development, the setbacks shall be as follows:

Street Setback – As provided in the Regulating Plan.

Side interior lot setback – Five (5) feet.

Side corner lot setback – ~~Fifteen (15) feet.~~ Ten (10) feet.

Rear setback – ~~Fifteen (15) feet~~ Ten (10) feet.

* * *

Sec. 22. – Cocoa Waterfront Overlay District.

* * *

(F) *Uses*. The following table identifies, by zoning district and overlay sub district what uses are permitted (P), not permitted (blank) and/or requires a special exception (SE).

"Key: SE-Special Exception, Blank Cell-Not Permitted, P-Permitted, RP- as identified on the regulating plan"	Heart of Cocoa	* * * [Remainder of Table unchanged]
	RU-2-10	
* * *		
Office		
Professional Service/office	RP [2]	
* * *		
Community/Services Uses		
Child care centers, day nurseries, kindergartens	SE	
Clinic, Animal	RP [2]	
* * *		
Medical & Dental Clinics & Labs	RP [2]	

* * *		
Commercial		
* * *		
Gym and Fitness facilities less than 7500 square feet	RP [2]	
* * *		
Parking, public or private	RP [3]	
Personal Service Establishments, beauty, barber, laundry, dry cleaning, tailor	RP [2]	
* * *		
Restaurants	RP [2]	
Retail Stores (Except Automotive)	RP [2]	
* * *		

[1] Parking uses shall be located either in a garage conforming to the requirements of subsection (L) or, except for municipal lots, in a surface lot shared with a commercial, institutional, or civic building in accordance with the on-site location requirements of subsection (I). Parcels solely occupied by a surface parking lot use existing upon the effective date of this Ordinance (August 14, 2019) and as further identified as Parcel Number 24-36-33-39-8-7 (unassigned address) and 24-36-33-77-*-1 (4 Church Street), shall be exempt from this requirement until such time as a parking garage or commercial, institutional or civic building is constructed on the parcel. Parking uses located on property with a commercial, institutional, or civic building shall not reduce the number of required parking spaces associated with the use of the building.

[2] Only in single-story commercial buildings and on the ground floor in mixed use buildings where residential is the primary use.

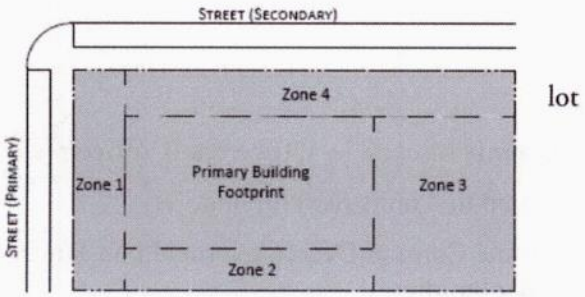
[3] Public parking on municipally-owned lots only.

* * *

(I) *Building Types.* Building types are permitted by Sub-district when any new and/or redevelopment occurs on any parcel within the Cocoa Waterfront Zoning Overlay. The building typologies are consistent with the size, scale and character desired within each sub-district.

The following categories are included in the table provided for each building type. Each standard is labeled by a letter (A, example) which directly relates to the table provided on each building type. The categories are described as follows:

1. *Lot requirements:* Provisions for minimum and maximums; lot depth, lot size and the permitted lot coverage;
2. *Building envelope:* Provisions for the minimum and maximum setbacks permitted by front, side, and rear yards for Urban and Suburban development. There is a minimum and maximum setback for each lot type. The maximum and minimum frontage refers to the proportion of the lot width along which the primary building façade must be within the minimum and maximum front setback; and
3. *Accessory Structure Envelope:* Provides the setbacks and maximum building footprints permitted for accessory structures. In no case shall an accessory structure exceed the height of the primary structure on the parcel.
4. *Building height:* Provisions for permitted heights in stories (st). The maximum height for first floor residential development shall be fourteen (14) feet and twenty (20) feet for non-residential. The maximum height for second story and higher shall not exceed twelve (12) feet. Each building lot typology provides the range of height appropriate for the building type. Height shall be measured from finished floor.
5. *Parking provisions:* The amount of parking shall be determined by Article XII, Off street parking, of the Land Development Regulations. Parking provisions provide zones where parking is permitted. The parking zone refers to any uncovered parking area located on the parcel in accordance to Appendix A, Article 12. Driveways are permitted in any zone provided the frontage requirements have been met as required by building type. The diagram illustrates a Primary and Secondary street. Primary streets are streets that are addressed to the parcel of land. Secondary streets may or may not have access to the parcel. Zones are defined and illustrated by the lot area between the principal building frontage and:



Zone 1: The right-of-way of any primary street.

Zone 2: Any common interior lot line.

Zone 3: Any rear lot line.

Zone 4: The right-of-way of any secondary street.

6. *Private frontages,* refers to the area that is attached or integrated into the primary building. The building types are either required or preferred. If there are multiple frontages provided in the table, the applicant may choose what private frontage to provide per building. The private frontage area may count towards the calculation of the frontage build out requirement under the "Building Envelope" category.

Design Districts and Building Types Table

Design District	* * *	Commercial/Mixed Use Small (CS)	Commercial/Mixed Use-Medium (CM)	* * *	Single Story Commercial (SC)	* * *
Cocoa Village (CV)		P	P		RP	
Heart of Cocoa (HC)		~~(2)~~ RP (2)	RP(2)		RP(2)	
King/Willard Corridor (KW)		P	P		P	
Uptown Neighborhood (UN)						
South of the Village (SV)		RP				
South End (SE)		P	P		RP	
Waterfront (WF)		P	P		RP	
North of Village (NV)		P	P		RP	

RP, permitted only where indicated on Regulating plan.

P, Permitted in the Design District.

Blank Cell, is not permitted.

* Commercial/Mixed Use is a mix of uses, ie. Office/retail, office/residential.

(1) Townhomes are permitted up to 4 units per building.

(2) Consistent with the Substitute Consent Decree as ordered on January 28, 2009 with no more than four multi-family units per building.

(3) Development of Commercial/Mixed Use-Large building types in this design district shall require a development agreement approved by the City Council after consideration of the following factors: economic and social benefits to the City and Community Redevelopment Agency, aesthetic quality and character, architectural design, physical and visual scale, compatibility with the special and distinctive character of the Cocoa Village and respective subdistrict, and other similar relevant factors.

Section 2. Regulating Plan Amendment. Appendix A, Zoning, is hereby amended to delete the Regulating Plan set forth in Article XI, Section 22(G), City Code, and replace it with the Regulating Plan attached hereto as **Exhibit "A"** and fully incorporated herein by this reference.

Section 3. Building Type Amendment. Appendix A, Zoning, is hereby amended to delete the Building Type requirements for Commercial/Mixed-Use – Small (CS), Commercial/Mixed-Use Medium (CM), and Single Story Commercial (SC) Buildings as set forth in Article XI, Section 22(I), City Code, and replace both with the Building Type requirement sheets attached hereto as **Exhibit "B," Exhibit "C," and Exhibit "D."**

Section 4. Repeal of Prior Inconsistent Ordinances and Resolutions. All prior inconsistent ordinances and resolutions adopted by the City Council, or parts of other ordinances and resolutions in conflict herewith, are hereby repealed to the extent of the conflict.

Section 5. Incorporation into Code. This Ordinance shall be incorporated into the City Code of the City of Cocoa and any section or paragraph, number or letter, and any heading may be changed or modified as necessary to effectuate the foregoing. Grammatical, typographical, and like errors may be corrected and additions, alterations, and omissions not affecting the construction or meaning of this Ordinance and the City Code may be freely made.

Section 6. Severability. If any section, subsection, sentence, clause, phrase, word, or provision of this Ordinance is for any reason held invalid or unconstitutional by any court of competent jurisdiction, whether for substantive, procedural, or any other reason, such portion shall be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining portions of this Ordinance.

Section 7. Effective Date. This Ordinance shall become effective immediately upon adoption by the City Council of the City of Cocoa, Florida.

ADOPTED by the City Council of the City of Cocoa, Florida, in a regular meeting assembled on the _____ day of _____, 2024.

_____
MICHAEL C. BLAKE
Mayor

ATTEST:

_____
MONICA ARSENAULT
City Clerk

Legal Ad Published: _____
First Reading: _____
Legal Ad Published: _____
Second Reading: _____

EXHIBIT A

REGULATING PLAN

EXHIBIT B
Commercial/Mixed-Use Small (CS) Building Type

EXHIBIT C
Commercial/Mixed-Use Medium (CM) Building Type

EXHIBIT D
Single Story Commercial (SC) Building Type

EXHIBIT "A"

Proposed Update to Regulating Plan

City of Cocoa - Waterfront Overlay District

Cocoa, FL

Allowable Building Type

Subdistrict	Rowhouse (RH)	Townhouse (TH)	Courtyard Apartment (CA)	Corner/Mixed Use (CM)	Corner/Mixed Use (CM)	Neighborhood Commercial (NC)	Large Format Commercial (LC)	Institutional (IN)	Civic (CV)	Parking (PA)
Cocoa Village (CV)			●	●	●			●	○	
Heart of Cocoa (HC)										
King/Willard Corridor (KW)										
Uptown Neighborhood (UN)										
South of the Village (SV)										
South End (SE)										
Waterfront (WF)										
North of Village (NV)										

(See following page for expanded view of Allowable Building Type Table)

○ Allowed only where indicated on Regulating Plan

● Allowed Throughout Design District

* New development within the Comm/MXD use district may be developed as either commercial or mixed use

(1) Townhomes allowed up to four per building.

(2) Consistent with the Substitute Consent Decree as ordered on January 28, 2009 with no more than 4 multi-family units per building.

(3) Development of Commercial/Mixed Use-Large building types in this design district shall require a development agreement approved subject to the discretion of the City Council after consideration of the following factors: economic and social benefits to the City and Community Redevelopment Agency, aesthetic quality and character, architectural design, physical and visual scale, compatibility with the special and distinctive character of Cocoa Village and respective subdistricts and other similar relevant factors.

Waterfront Overlay Sub-Districts:

- Cocoa Village (CV)
- Heart of Cocoa (HC)
- King/Willard Corridor (KW)
- Uptown Neighborhood (UN)
- South of the Village (SV)
- South End (SE)
- Waterfront (WF)
- North of Village (NV)
- Consent Decree Area

CS — Additional building type allowed for this parcel only

Required minimum and maximum street setback (in feet)

Break in street setback dimension

Right of way line (beginning point of street setback measurement)

Internal Lot Line

Allowable Building Type															
Sub-district	Homestead HO	Estate ES	House HS	Cottage CO	Townhouse TH	Apartment Building AB	Courtyard Apartment CA	Comm/Mixed *Small CS	Comm/Mixed "Med CM	Comm/Mixed *Large CL	Single-Story Commercial SC	Large Format Commercial LF	Institutional IT	Civic CI	Parking PA
Cocoa Village (CV)				o	o	•	•	•	•	o(3)	o		•	o	
Heart of Cocoa (HC)		•	•	•	•(1)			o(2)	o(2)		o(2)		•		o
King/Willard Corridor (KW)			o		o	o	o	•	•		•		•		
Uptown Neighborhood (UN)		•	•	•	•								•	o	
South of the Village (SV)	•	•	•	•	•	o	o	o					•		
South End (SE)				•	•	•	•	•	•	o(3)	o		•		
Waterfront (WF)						•	•	•	•	•	o		•	o	
North of Village (NV)					•	•	•	•	•		o	o	•		

o Allowed only where indicated on Regulating Plan

• Allowed throughout Design District

* New development within the Comm/MXD use district may be developed as either commercial or mixed use.

(1) Townhomes allowed up to four per building.

(2) Consistent with the Substitute Consent Decree as ordered on January 28, 2009 with no more than 4 multi-family units per building.

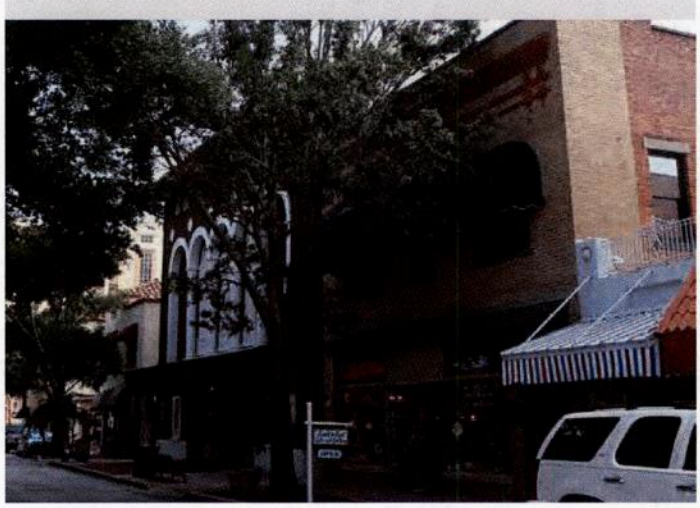
(3) Development of Commercial/Mixed Use-Large building types in this design district shall require a development agreement approved subject to the discretion of the City Council after consideration of the following factors: economic and social benefits to the City and Community Redevelopment Agency, aesthetic quality and character, architectural design, physical and visual scale, compatibility with the special and distinctive character of Cocoa Village and respective subdistrict and other similar relevant factors.

CS COMMERCIAL/ MIXED-USE - SMALL

A building lot located and designed to accommodate a multi story building with commercial, office and/or multiple dwellings in any story that is designed for smaller lot sizes.

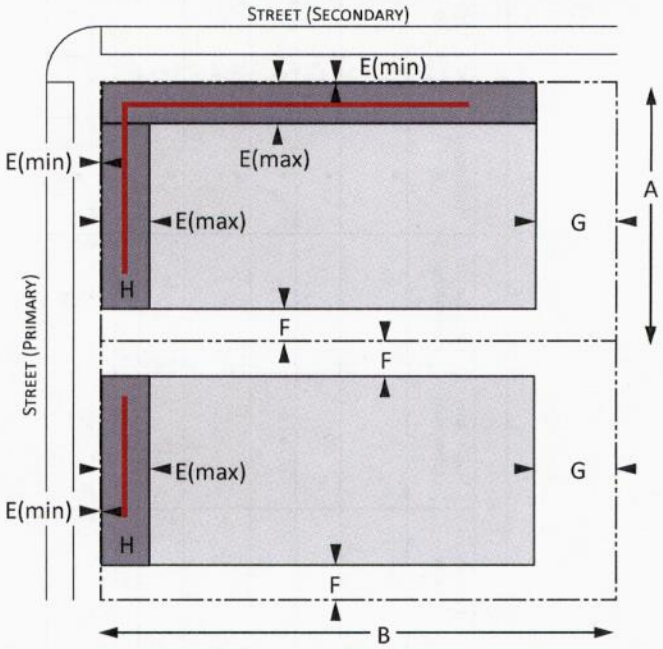
LOT REQUIREMENTS [as established in Sec. 21.(I).1]	MIN	MAX
A - Lot Width (ft)	15[1]	60[1]
B - Lot Depth (ft)	80[1]	120[1]
C - Lot Size (sf)	1,800[1]	7,200[1]
D - Lot Coverage (%)	--	90
BUILDING ENVELOPE [as established in Sec. 21.(I).2]	**MIN**	**MAX**
E - Street Setback (ft)	Refer to Regulating Plan for setback.	
F - Side Setback (ft)	0[2]	6
G - Rear Setback (ft)	5[2]	--
H - Frontage Buildout (%)	80	100
ACC STR ENVELOPE [as established in Sec. 21.(I).3]	**MIN**	**MAX**
I - Street Setback (ft)	30	
J - Side Setback (ft)	10	--
K - Rear Setback (ft)	10	--
L - Building Footprint (sf)	--	800
BUILDING HEIGHT [as established in Sec. 21.(I).4]	**MIN**	**MAX**
M - Principal Building (st)	2	4[3]
N - Accessory Structure(s) (ft)	--	30
PARKING PROVISIONS [as established in Sec. 21.(I).5]		
Location	Zone 2 and 3	
PRIVATE FRONTAGES [as established in Sec. 21.(I).6 & (J)]	**Required:**	
	C	

(1) Lot width, depth, and size may vary in Heart of Cocoa.
(2) Except in Heart of Cocoa, RU-2-10 shall control.
(3) 3 stories maximum in Heart of Cocoa.

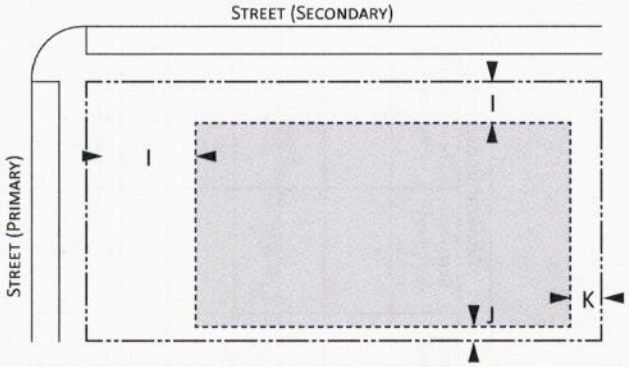


EXAMPLE

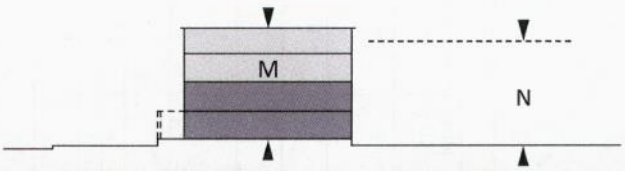
LOT REQUIREMENTS AND BUILDING ENVELOPE



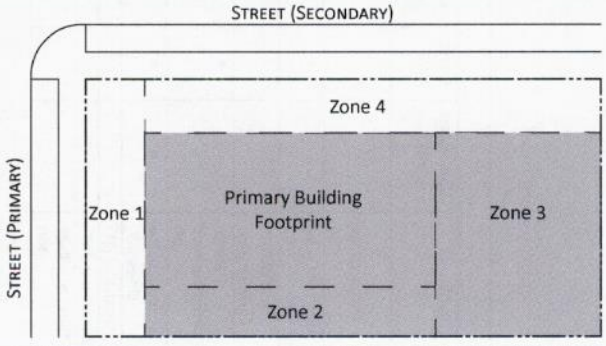
ACCESSORY STRUCTURE ENVELOPE



BUILDING HEIGHT



PARKING LOCATION



CM COMMERCIAL/ MIXED-USE - MEDIUM

A building lot located and designed to accommodate a multi story building with commercial, office and/or multiple dwellings in any story that is designed for average lot sizes.

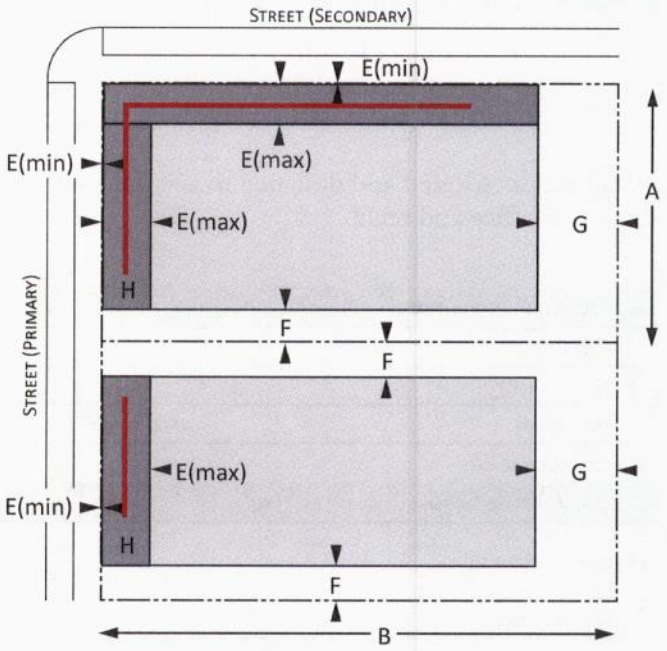
LOT REQUIREMENTS [as established in Sec. 21.(I).1]	MIN	MAX
A - Lot Width (ft)	60[1]	120[1]
B - Lot Depth (ft)	--	500
C - Lot Size (sf)	--	60,000
D - Lot Coverage (%)	--	90
BUILDING ENVELOPE [as established in Sec. 21.(I).2]	**MIN**	**MAX**
E - Street Setback (ft)	Refer to Regulating Plan for setback.	
F - Side Setback (ft)	0[2]	--
G - Rear Setback (ft)	10[2]	--
H - Frontage Buildout (%)	90	100
ACC STR ENVELOPE [as established in Sec. 21.(I).3]	**MIN**	**MAX**
I - Street Setback (ft)	30	
J - Side Setback (ft)	10	--
K - Rear Setback (ft)	10	--
L - Building Footprint (sf)	--	800
BUILDING HEIGHT [as established in Sec. 21.(I).4]	**MIN**	**MAX**
M - Principal Building (st)	2	5[3]
N - Accessory Structure(s) (ft)	--	30
PARKING PROVISIONS [as established in Sec. 21.(I).5]		
Location	Zone 2 and 3	
PRIVATE FRONTAGES [as established in Sec. 21.(I).6 & (J)]	**Required:**	
	C	

(1) Lot width may vary in Heart of Cocoa.
(2) Except in Heart of Cocoa, RU-2-10 shall control.
(3) 3 stories maximum in Heart of Cocoa.

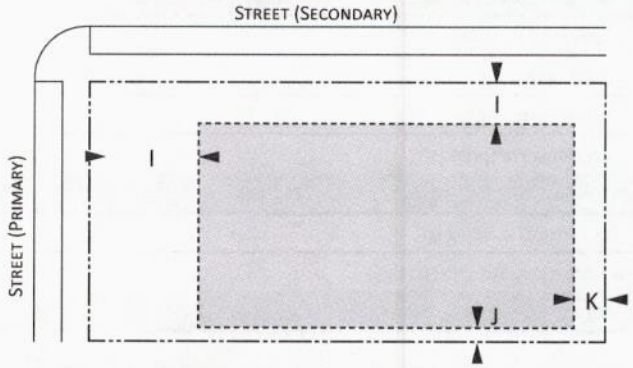


EXAMPLE

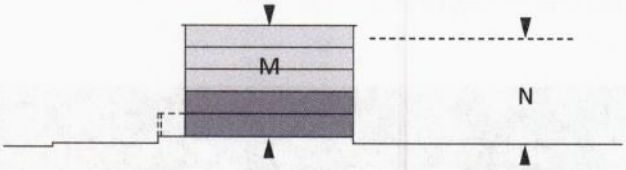
LOT REQUIREMENTS AND BUILDING ENVELOPE



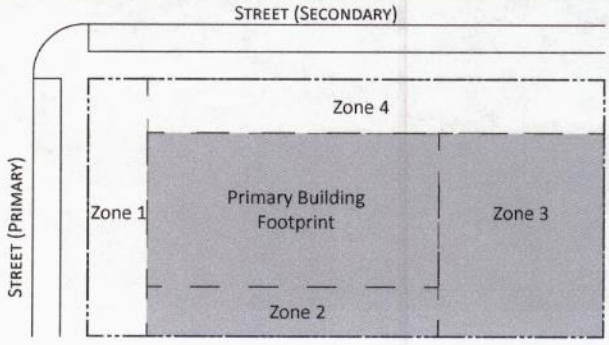
ACCESSORY STRUCTURE ENVELOPE



BUILDING HEIGHT



PARKING LOCATION

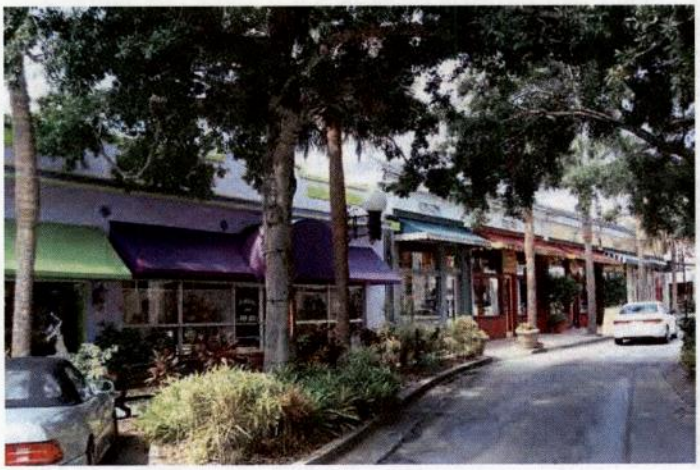


SC SINGLE STORY COMMERCIAL BUILDING

A building lot located and designed to accommodate single use office and retail.

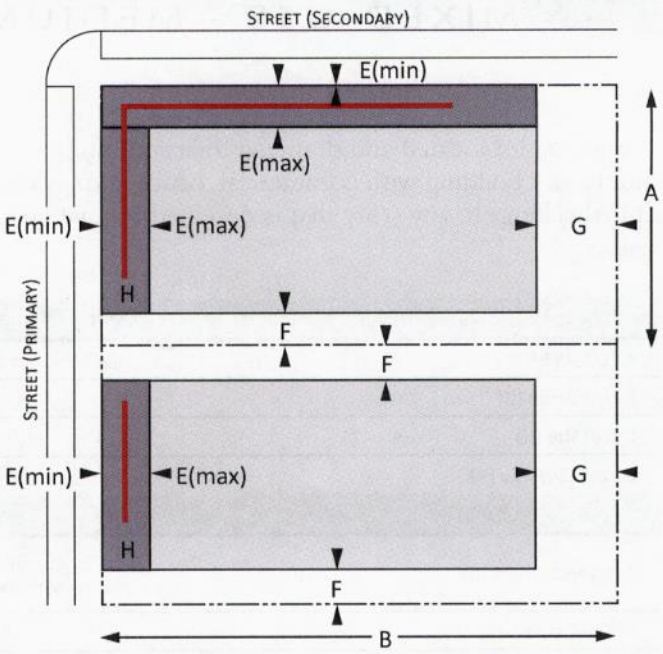
LOT REQUIREMENTS [as established in Sec. 21.(I).1]	MIN	MAX
A - Lot Width (ft)	50[1]	300[1]
B - Lot Depth (ft)	100[1]	400[1]
C - Lot Size (sf)	~~7500~~ 5,000[1]	90,000[1]
D - Lot Coverage (%)	--	60
BUILDING ENVELOPE [as established in Sec. 21.(I).2]	**MIN**	**MAX**
E - Street Setback (ft)	Refer to Regulating Plan for setback.	
F - Side Setback (ft)	0[2]	--
G - Rear Setback (ft)	15[2]	--
H - Frontage Buildout (%)	50	100
ACC STR ENVELOPE [as established in Sec. 21.(I).3]	**MIN**	**MAX**
I - Street Setback (ft)	30	
J - Side Setback (ft)	10	--
K - Rear Setback (ft)	10	--
L - Building Footprint (sf)	--	800
BUILDING HEIGHT [as established in Sec. 21.(I).4]	**MIN**	**MAX**
M - Principal Building (st)	1	1
N - Accessory Structure(s) (ft)	--	30
PARKING PROVISIONS [as established in Sec. 21.(I).5]		
Location	Zone 2,3, and 4	
PRIVATE FRONTAGES [as established in Sec. 21.(I).6 & (J)]	**Required:**	
	C	

(1) Lot width, depth and size may vary in Heart of Cocoa.
(2) Except in Heart of Cocoa, RU-2-10 shall control.

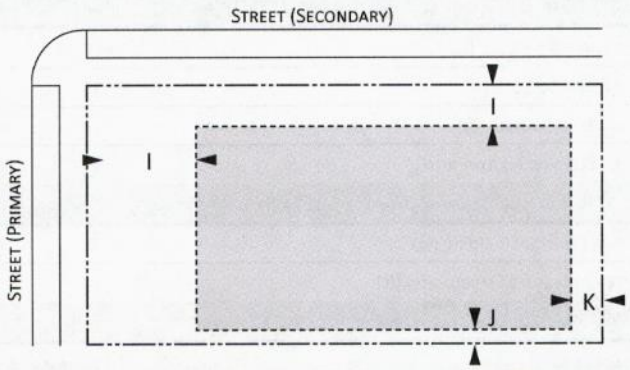


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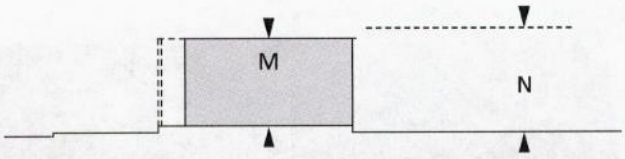
LOT REQUIREMENTS AND BUILDING ENVELOPE



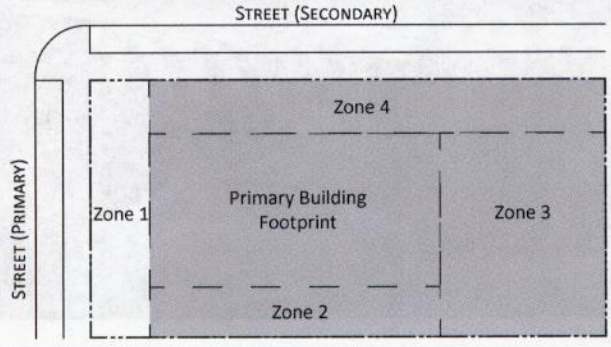
ACCESSORY STRUCTURE ENVELOPE



BUILDING HEIGHT



PARKING LOCATION



CITY COUNCIL AGENDA ITEM

Memo Date: March 20, 2018
Agenda Date: March 27, 2018
Prepared By: Anthony A Garganese, City Attorney and Karen D. Hamilton, Community Services Director
Through: John A. Titkanich, Jr. AICP, ICMA-CM, City Manager
Requested Action:
Informational Item – Update on Heart of Cocoa Substitute Consent Decree

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BACKGROUND:

First, this Agenda Item is not intended to be an all-inclusive account of history of the Heart of Cocoa and the matters leading up to the adoption of consent decree related to the Heart of Cocoa neighborhood. It is also not intended to be an all-inclusive account of all actions taken by the City related to comply with the applicable 1990 consent decree, as substituted by the substitute consent decree in 2009. Rather per the direction of the City Council, this Agenda Item is intended to provide a summary of the history of the Heart of Cocoa neighborhood and the consent decree matter for purposes of educating the current members of the City Council, City staff, and interested members of the public who did not experience, first hand, the events leading up to the adoption of the consent decree and the substitute consent decree, including the early implementation thereof. Hopefully, the importance of the Heart of Cocoa to the city of Cocoa is captured herein and the relevance of the Substitute Consent Decree will be better understood.

History and Significance of the Heart of Cocoa Neighborhood

In addition to the Voting Rights Consent Decree, which was reviewed by the City Council two meetings ago, the City is also subject to another federal consent decree that only applies to a specific geographical area within the City known today as the "Heart of Cocoa" neighborhood ("HCN") (also commonly referred to in the past as the "Consent Decree Area or Core Area".) Although the two consent decrees serve two totally different purposes, both consent decrees share a common thread involving the challenges faced by the black community in Cocoa. The Heart of Cocoa consent decree was adopted in the federal district court case, Beatrice Houston, et. al. v. City of Cocoa, Civil Action 6:89-CV-00082-PCF.

The HCN is located immediately west of the historic Cocoa Village and although the boundaries are irregular, the boundaries are generally between several major roadways: east of Florida Avenue, South of SR 520; west of US 1; and north of Rosa L. Jones Blvd (formerly Poinsett Drive). A map of the HCN is attached to this Agenda Item. The HCN has been subject to a federal consent decree since 1990. The original voluminous consent decree (approx. 150 pages including exhibits) was replaced by a substantially streamlined Substitute Consent Decree on January 28, 2009 (6 ½ pages). As noted above, the Substitute Consent Decree only applies to the HCN. A copy of the Substitute Consent Decree is attached to this Agenda Item.

To truly understand the relevance and historical and legal significance of the map and the Substitute Consent Decree, a person must know a little bit about the history of Cocoa, particularly the black community in the HCN. Cocoa has a tremendous history going back to the initial settlement days in the late 1880s and incorporation as a city in 1895. During this time period, the Cocoa Village area was born and began to establish itself. During this time period, a sizeable black community also began to settle into a small area, and establish homes, on the west side of Florida Avenue and the railroad tracks that once ran in the vicinity of the existing location of Florida Avenue (commonly referred to as the old Flagler Railroad line). Moreover, over the years several black-owned businesses were known to be located and operating within the HCN including Evelyn's Beauty Shop, Rosa Marie's Coffee Shop, D.R. B.C. Scurry's Office, and J.C. Ager's Grocery. Further, two historic churches were established in the HCN: Mt. Moriah A.M.E. Church and Greater St. Paul's Baptist Church. These businesses and churches served the local residents residing in the HCN.

In essence, by the 1980s, the HCN had established itself as an historic African-American neighborhood. According to reported statistics, there were 536 people living in 276 homes by1980 and virtually all the residents were African-American. See Koons, Fair Housing and Community Empowerment: Where the Roof Meets Redemption, 4 Geo. J. on Fighting Poverty 75 (Fall, 1996). Severe poverty marked the HCN: 76% of the residents earned less than $5,000 per year; rents were nearly half ($130 per month) of what was expected for minimally expected rent for a standard unit; two out 5 households did not own an automobile; only 22% of the residents owned their own home and 78% rented; and half of the residents were purported to be elderly. Id.

But, by the same time period, heavier wholesale commercial uses were also established in the HCN and dotted the landscape between homes. These heavier commercial uses were neither owned by nor serving the residents and included auto body shops, storage yards and a central facility for a major utility company. Id. Some of these businesses still exist in the HCN today.

As time passed, the HCN suffered significant decay and dilapidated structures had to be demolished. As a result, a significant number of vacant lots were created and exist today. From past experience, the City has noticed that many of the vacant lots have title challenges existing in the chain of title because properties were not properly conveyed over the years.

The Redevelopment Agency and Community Redevelopment Plan.

In the early 1980s, the city of Cocoa was one of the first municipalities to create a redevelopment agency in the State of Florida. A large redevelopment area was established and currently exists today. The area includes the HCN. Significantly, the first Redevelopment Plan was adopted during this time period, and the details contained in this Plan were, in retrospect, the root cause of the consent decree being imposed on the HCN.

Particularly, the Plan identified numerous subareas within the redevelopment area and a specific project was planned for each subarea with the goal of encouraging economic

redevelopment within each subarea for purposes of ameliorating slum and blight within the redevelopment area. The projects were ambitious and included a 99 slip marina, a restaurant complex, riverfront condominiums, Willard Street Office Complex, Historic Preservation District, Cocoa Village theme extension, Downtown Parking expansion, Florida Avenue widening, among other projects. The HCN, which was referred to as the "Core" redevelopment area at the time, was identified as Project 12. Generally, Project 12 called for the development of townhouses, shopping centers, professional offices and park space within the HCN. But, perhaps incredibly by today's standards, Project 12 explicitly called for the removal of all of the existing homes in the HCN and the displacement of the residents through a very detailed relocation benefits program that was incorporated into the Plan in order to make way for the redevelopment of the Core area. Project 12 was expected to displace approximately 300 households including the home owned by one of the plaintiffs in the case, Beatrice Houston.

As with the creation of most redevelopment agencies, Cocoa's downtown redevelopment agency was slow to get moving. To kick start the Agency's redevelopment efforts several years after creation in 1988, the City proceeded with the adoption of a comprehensive amendment to its comprehensive plan and rezoning ordinances. See Cocoa Ordinance 7-88. Relevant to the HCN, the zoning map and code would be amended to Core Commercial and RU-2-25, which would allow more refined commercial uses and high density residential to presumably support higher end shops, professional offices, condominiums and townhouses called for under Project 12 within the Redevelopment Plan. Most of the existing residential and higher intense commercial uses would become nonconforming. To say the least, this ordinance became highly contentious and opposition to the Ordinance and Project 12 grew not only among the residents who feared losing their homes, but among the commercial businesses in the HCN who feared they could be prevented from expanding or rebuilding their businesses because they were being made nonconforming uses under the new zoning ordinance.

The sentiment at the time of City officials and opponents is generally reflected in a special newspaper article published in the Orlando Sentinel on February 21, 1988 which was entitled "Cocoa: Neighborhood Must Go Old Timers Reluctant to Lose Way of Life." A copy of the Article is attached to this Agenda Item. First, from the City's perspective, some officials felt that crime was tearing the neighborhood apart citing, for example, the old Silver Dollar Bar which was located on Hughlett Street and vagrants. It was reported that City Councilwoman Betty Woehle said, "We're looking to Cocoa's future. Without question, that area is more suited to what we have in mind." City Councilman Noah "Sonny" Butt, Jr. was quoted as saying, "The city should buy and tear down the neighborhood a block at a time until developers are willing to come in." Community Improvement Director Rochelle Lawandales described her vision of the neighborhood as follows: "I see a One Harbor Place, the 1900 Building. I see the Hilton at Rialto Place. ... If we have one holdout property owner and something like a Hilton wants to come in ... you're darn tootin' we'd do everything to get that property." The Redevelopment Coordinator, Merrill Ladika, echoed that statement, reasoning, "If we're going to have a development come in, you can't have Mrs. Smith in her little shack on the corner. ... She's going to have to go somewhere else too." In Ms. Ladika's assessment, "It's not like they're leaving the good old days. The good old days are long gone

for those people." The former staff member credited with authoring the Redevelopment Plan, Doug Robertson, offered this summary: "The core area, in pragmatic, cold dollars and cents, should be very valuable."

Opposition to the zoning change and the Plan came from two different factions at odds with one another in the HCN and with different perspectives: the intense commercial business owners and the residents. The business owner's perspective can be summarized by Chuck Billias of Billias Brothers Body Shop, who was quoted as saying, "I'm concerned about this, very upset. I've been in business here for 15 years. I spent a lot of money ... to expand my business. ... If my business burns down, I couldn't rebuild it. ... this thing might just end up in court." However, from the standpoint of the residents, a general theme was. "I own this house," said resident Omega Austin. "My daddy built this house and that makes it special. ... We had so many Christmases in this house, big feasts with all the grandchildren. There's so many memories, I'm talking about fifty years." In her mind, the neighborhood still had significant value. She replied, "Everybody still looks out for each other. If you miss somebody a couple of days, you go check on them. You walk across the street and say, "Are you all right, Miss Rosa? Is there anything I can do for you?" Regarding his impression of the relocation benefits, resident Glanville Bethel proclaimed, "It would make no sense to take $40,000 or $50,000 if it's not enough to go buy another house. Because then you have to rent, and when you're out of money you're out on the streets." Landlord Willie Davis' view point was the zoning change and Plan were designed to "root the people out of the area in a small and slick way. That's what it's all about. They want this entire area, from U.S. 1 to the beach, lily white."

The Lawsuits and Legal Challenges to City's Redevelopment Plan – In General.

The City Council faced mounting criticism and opposition to the zoning changes and Plan especially by black residents in the HCN. The residents retained local legal counsel, Central Florida Legal Services, who in turn obtained assistance from the NAACP Legal Defense & Educational Fund, and a New York City law firm specializing in land use law. In sum, residents argued that the zoning changes and Plan had a disproportionate adverse impact on black residents and mounted a multi-prong legal attack against the City and CRA challenging the zoning change and Plan. In very general terms, they filed: (1) objections to HUD; (2) a petition challenging the City's Comprehensive Plan Amendments; and (3) a twelve count complaint in Federal Court. For the limited purpose of this Agenda Item, it would suffice to say that many of the challenges, except for the Comprehensive Plan challenge related to whether the amendments were in compliance with the State's Growth Management Act, were based on several allegations and legal theories, and proffered evidence by the plaintiffs, that the City's past practices constituted race-based discrimination under Federal law including the adoption of the zoning changes by the City and Plan by the CRA and City.

As string of legal events later occurred. The challenge to the Comprehensive Plan amendments were affirmed by the Administration Commission (Governor and Cabinet) and the amendments were found to be not in compliance with the Growth Management Act. HUD advised the City that its CDBG funds were in jeopardy. In addition, the City's motion to dismiss the federal lawsuit was denied by the Federal District Court. Ultimately, the plaintiffs,

City and HUD engaged in settlement negotiations and a settlement was reached after the November 1989 City Council election when a more pro-neighborhood City Council apparently took office. The original Consent Decree soon followed.

The Original Consent Decree

The original Consent Decree included a variety of provisions intended to preserve and enhance the HCN including three extensive implementing ordinances: (1) rezoning the HCN to low density residential; (2) a housing rehabilitation program; and (3) amendments to the comprehensive plan including a low density future land use map amendment for the HCN. The City and CRA also agreed to appropriate $675,000 over five years for single family housing rehabilitation in the HCN. Additionally, the Consent Decree provided provisions related to: a permanent injunction against involuntary displacement of African-Americans from the HCN; special notice to residents of private-and City-initiated rezonings; affirmative action in non-displacing rental rehabilitation; a new construction in-fill homeownership program for low-income families to be administered by a community development corporation; a historic preservation plan (including the designation of the Richard E. Stone Historic District); assistance with a neighborhood community center; certain compensatory damages for the named plaintiffs in the case; and reservation of attorneys' fees and jurisdiction by the Federal District Court for enforcement if necessary. As for the owners of the intense commercial business owners, a compromise was reached and protections were adopted to permit the existing businesses to continue to operate within the HCN until abandoned or converted to other allowable commercial uses until the converted uses were abandoned. Some existing commercial property owners unsuccessfully attempted to prevent the adoption of the Consent Decree.

The City has taken various actions to implement and comply with the original Consent Decree over the years. Examples of the actions that it has taken include, but are not limited to:

Zoning
Required the City to change the zoning in the Cocoa CRA area and revise the applicable code and maps to preserve the "low-density residential character," maintain and expand conversion right of existing commercial businesses and induce affordable housing.

City Action
The City rezoned the consent decree area to RU-2-10 and revised the relevant zoning codes and maps and directed. The City has not initiated any rezoning of the HCN. The RU-2-10 designation has remained on the HCN since its adoption.

Neighborhood Improvement Plan
The intent was created to improve the quality of homes and residential character of the area by detailing and implementing programs to: rehab single-family housing, improve rental housing, and promote affordable house construction.

City Action

A Heart of Cocoa Neighborhood Revitalization Plan was developed. The City used over $400,000 in various funding sources (CDBG, HOME, SHIP, and CRA) to rehabilitate, replace, and construct new homes. The City and CRA also invested over $1 million dollars to stabilize the consent decree area including the monies required to be appropriated by the Consent Decree. A combination of CRA, SHIP, and CDBG funds were used for emergency home repair, housing rehabilitation, relocation expenses, replacement and new construction. Several infrastructure projects were completed including the installation of water /reclaimed water mains, conduits for street lights, crosswalk improvements, street repaving, and streetscapes. The City continues to look for opportunities to address affordable housing needs in the HCN.

Historic Preservation Plan
This plan contains specific activities required to preserve and memorialize historically significant structures.

City Action
The City designated the Richard E. Stone Historic District as directed by the Consent Decree. In addition, the City identified and mapped historic resources located in the decree area.

Consistency Clause
Required specific revisions to the City's Comprehensive Plan to: define and maintain low-density residential land use, identify and preserve historic resources, and include housing and neighborhood improvement goals.

City Action
The City adopted Ordnance 15-90 to revise the comprehensive plan consistent with the requirements of the Consent Decree. As noted below, many of these comprehensive plan policies protecting the HCN and other residential areas substantively exist in the current City Comprehensive Plan.

Future Assurances
The major substance of the further assurance clause was that the City agreed not to take any action or to initiate any rezoning of the HCN that has the purpose or effect of involuntarily displacing current or future members of the plaintiff's class. Further, the City agreed to provide the plaintiffs with certain notice related to other zoning requests. Additionally, the City agreed to enforce the zoning code applicable to the existing CW commercial uses within the HCN.

City Action
As noted above, the City has not initiated any rezonings in the HCN. Further, City staff is not aware of any zoning applications being initiated by any of the property owners in the HCN. The City has, in the past, discouraged certain property owners from filing rezoning applications to attempt to initiate new commercial uses within the HCN because of the terms and conditions of the Consent Decree. Over the years, the City has also taken code enforcement actions against property owners that attempt to commercially use their property in violation of the RU 2-10 zoning provisions, and to preserve the HCN. Further, in 2001 the

City retained consultants, Moore Enterprises Worldwide, LLC and Blackmon Roberts Group, Inc. to conduct a study of the HCN. The Consultants held numerous public meetings, conducted surveys of residents and community stakeholders, and prepared and presented to the City Council a Neighborhood Revitalization Plan, dated September 28, 2001, for the HCN.

The Substitute Consent Decree

As the years passed, Congress enacted restrictions to the Legal Services Corporation Act that resulted in Central Florida Legal Services withdrawing as counsel for the plaintiffs. Soon thereafter, Southern Legal Counsel, from Gainesville Florida, appeared on the scene, and engaged in vigorously monitoring the City's enforcement of the original Consent Decree. As referenced above, the original Consent Decree was very voluminous and contained numerous provisions which were incorporated into the City's zoning code and comprehensive plan. It also served as a permanent injunction against the City relative to enforcement of its terms and conditions. City staff and City Council realized through experience that many of its provisions became obsolete or were very cumbersome and subjective to enforce. Communications by the City and Southern Legal Counsel were fairly regular in the mid to late 2000s. Towards the apparent end of their legal representation, Southern Legal Counsel served, but did not file, a proposed motion to find the City in contempt related to the enforcement of the Consent Decree. They also sought reimbursement of attorney's fees and costs for monitoring the Consent Decree on behalf of the plaintiffs' class. This action taken by Southern Legal Counsel resulted in the City and Southern Legal Counsel engaging in serious negotiations to amend the Consent Decree and to condense it down to its fundamental spirit and essence: to wit; maintaining the low density residential character of the HCN. The parties ultimately agreed on the City's payment of attorney's fees and costs, the motion for contempt was withdrawn, and the Substitute Consent Decree was prepared by the Parties and approved by the Federal District Court on January 28, 2009. The Substitute Consent Decree entirely replaced the original Consent Decree and the original Consent Decree, with its voluminous implementing ordinances and terms, is no longer in effect. A copy of the Substitute Consent Decree is attached to this Agenda Item.

The Substitute Consent Decree is only 6 ½ pages long and contains five short articles as follows:

1. ***Zoning.*** The City will maintain the low density residential character of the HCN; encourage voluntary replacement of existing wholesale commercial uses with low density residential uses or low intensive neighborhood commercial uses such as mixed use developments, while preserving existing uses as provided by law. Further, the City will encourage production and development of affordable houses by the private sector in the HCN.

2. ***CRA's Redevelopment Plan***. The City and CRA will generally support a variety of housing initiatives in the HCN. For example, through the CRA's Redevelopment Plan, the

CRA and City shall continue to support applications for Section 8 housing certificates, vouchers, and other rental housing programs. The City will support programs for improving rental housing, infill housing, new construction of affordable housing to low and low to moderate income persons in the HCN. The City will make affirmative efforts to promote the use of rental assistance in conjunction with rental rehabilitation units to members of the plaintiffs' class who are low income renters and to take other appropriate measures. The City and CRA shall continue to support the development of new single family residences in the HCN for low and low to moderate income families and to support. The City and the CRA may also enhance the residential character of, an neighborhood amenities within, the HCN by supporting appropriate neighborhood commercial uses within the HCN and along the outermost perimeter of the HCN and adjacent to Florida Avenue, US Highway 1, or Rosa L. Jones Drive.

3. ***Consistency Clause***. The City will maintain provisions within its Comprehensive Plan that denote and protect the HCN's low density residential land use; recognize and preserve historic resources with the HCN, and reflect the goals of housing and neighborhood improvement for the HCN. However, unlike the original Consent Decree which contained voluminous and cumbersome enabling provisions, the Substitute Consent Decree provides the City with the flexibility to enact, and amend provisions as necessary to serve the aforesaid guiding principles.

4. ***Future Assurances***. The City and CRA agree not to initiate a rezoning in the HCN or take any action in the HCN which has the purpose or effect of involuntarily displacing current or future members of the Plaintiff class. Special notice requirements must be met for any rezonings, or modifications to zoning and comprehensive plan regulations or the CRA plan that are applicable to the HCN. Further, the City must give due weight to preserving the low density residential and historical character of the HCN in acting on rezoning request. The City will continue to enforce the provisions of the RU-2-10 zoning code and all ordinances applicable to CW uses which were existing as of March 8, 1988. The City shall also take such other action as the City deems necessary to remove or correct conditions that pose public safety hazards to HCN residents or that substantially undermine the quality of the residential environment.

5. ***Miscellaneous***. The Court retains jurisdiction to enforce the Substitute Consent Decree. The Plaintiff's counsel shall not be entitled to monitoring fees and expenses after February 10, 2005, which was the cut-off date for the previous reimbursement made by the City and CRA. However, should the Plaintiffs successfully seek enforcement of the Substitute Consent Decree, or defend a motion to modify and/or terminate the Substitute Consent Decree, the Plaintiff's counsel is not barred from seeking prevailing arty attorney's fees and costs against the City and CRA.

Since it was approved, the City has taken various additional actions to implement and comply with the Substitute Consent Decree over the years. Examples of the actions that it has taken include, but are not limited to:

1. The Heart of Cocoa is a Sub-district of the Cocoa Redevelopment Agency's Waterfront Overlay District. Consistent with the Substitute Consent Decree, the zoning is RU2-10 which allows for low-density single and multi-family residential. Allowable building types include single-family, mixed use, and neighborhood supported commercial.

2. On July 15, 2016 at a Ministerial Alliance Meeting city leadership presented on three topics, one of which was regarding the Substitute Consent Decree. At the conclusion of the presentation, members of the public were able to participate in a question and answer session. Community Services staff works closely with property owners and developers to ensure proposed development applications are consistent with current zoning and future land use in the HCN. Projects that seek to expand existing or cerate high intensity commercial uses are denied and staff encourages revision of unsuccessful plans to consider allowable uses. Code enforcement staff conducts routine sweeps of the consent decree area. The Planning and Zoning division created a parking schematic for a used car lot on US1, to address a code violation. The economic development team identifies appropriate alternate sites for voluntary relocation of non-confirming uses.

3. CRA's Redevelopment Plan requires the City and the CRA to support applications, programs, and diverse types of developments resulting in the rehab, infill, and construction of housing that is affordable to low and low to moderate income groups. The support of appropriate neighborhood uses is sought adjacent to and along the perimeter of the HCN as required by the Substitute Consent Decree.

4. Through the City's Housing program two structures were demolished at 232 Orange Street; one new house was constructed; and two replacement homes were built.

5. The CRA invested $1.25 million for the US 1 Widening and Beautification Project. This important infrastructure project was completed in 2016 and included decorative street lights, texturized median treatments and landscaping to intersection medians at Forrest Avenue, Dixon Boulevard, and State Road 528 interchange. While outside the HCN, the road widening and beautification efforts have resulted in development interest east and west of, and along the Project corridors.

6. The City and CRA were partners on the Florida Avenue Complete Streets project. This $3.4 million infrastructure project was completed in 2017 and resulted in new sidewalks, shared bike/car lanes and light to improve mobility for all users. This project has spurred redevelopment interest on both sides of Florida Avenue including two new neighborhood commercial establishments Time Out Sports Bar Plus and Cryderman's Barbeque opened in 2017.

7. The CRA is in the proceeding with developing a site at 6 Forrest Avenue into a gateway entry feature and pocket park to create an enhanced entryway into Downtown Cocoa near the HCN. The resulting Department of Environmental Protection Voluntary Cleanup Tax Credits can be used to incentivize complementary development projects.

8. A Community Meeting Room within the HCN was once an aspiration under the original Consent Decree, but grant funding referenced in the Consent Decree was not obtained to construct it. Notwithstanding, the City has taken the initiative to plan for the construction of a new community meeting room at 217 Factory Street. This new facility will serve community residents and groups. The meeting room site was acquired by the City on January 30, 2015. The City contracted with RZK Architects to design the building in 2015. The City original went to bid on the construction portion in 2016, but unfortunately was required to rebid the project when the proposals received were much higher than the budgeted amount. The project went to rebid on August 17, 2017. City Council later authorized the City Manager to execute contract documents with C&D Construction at its October 24, 2017 meeting. The site is being prepped for construction and the building should be completed in the late summer of 2018 absent unexpected delays.

9. The City expended approximately $850,000 to acquire the former Oaks Mobile Home Park at the corner of Florida Avenue and Rosa L. Jones Blvd, and pursuant to a study has identified multi-family residential development, with a small neighborhood commercial use, as the highest best use for the property. The City has also issued a Request for Proposals in January 2018 to redevelop the former Oaks Mobile Home Park. The site is comprised of one main parcel and a smaller companion parcel totaling just under 5 acres of vacant land immediately suitable for development. Although this future project is just outside the HCN boundaries on the south side of Rosa L. Jones Boulevard, this residential project, if it comes to fruition, is expected to serve as a catalyst for additional residential development in and around the HCN.

10. The consistency clause in the Substitute Consent Decree requires the City's Comprehensive Plan to contain goals, objectives, and policies that protect the HCN's neighborhood characteristics. The following goals, objectives and policies of the Future Land Use and Housing Elements of the City's Comprehensive Plan are applicable, in relevant part, to assist in maintaining and supporting the low-density and historic character of the consent decree area:

I FUTURE LAND USE ELEMENT

Goal 1.1 Create and maintain a broad range of land use activities that maximize the City's potential as a growth center while protecting the public health, safety, welfare, and appearance through the thoughtful planned use and development of the land and public facilities.

Objective 1.1.1 Future Land Use Categories Established. The city hereby establishes land use categories and a Future Land Use Map (FLUM) that provide for compatible and coordinated land uses, allowing for the protection of natural and historic resources as well as maximizing economic development opportunities

Policy 1.1.2.3: Low Density Residential (LDR). Low-density residential areas are neighborhoods of single family detached housing, limited multiple family attached housing and limited clustered single family attached housing. Institutional, open space and

recreational uses are also allowed in this category. The following criteria shall be used for determining appropriate locations for low density residential areas.

A. Low-density residential areas shall be buffered from the nuisance effects of higher intensity uses and major traffic corridors.

B. Low density residential developments should be located in areas where more intensive development would be unwarranted due to environmental constraints, incompatible with surrounding land uses, or where criteria set forth in Paragraph c, below, cannot be met.

C. The City may permit increased densities up to 12 units per acre as part of planned residential development or planned redevelopment activities based on the following criteria:

1. Redevelopment through rehabilitation and improvement of substandard or deteriorating housing.
2. For planned redevelopment activities, preservation and improvement of neighborhoods containing affordable single family and multiple family housing, especially where neighborhoods contain vacant lots or abandoned commercial uses.
3. Use of a variety of building and site designs, housing types and efficient construction techniques that lower construction cost.
4. Provide for more efficient use of land and protection of the existing neighborhoods, natural systems, and historic resources.

Policy 1.1.2.8: Neighborhood Commercial. Neighborhood commercial areas are intended to be low-impact in nature and serve the needs of the immediate residential area. The following criteria shall be used for determining appropriate locations for neighborhood commercial land use designations on the future land use map.

A. Neighborhood commercial areas may be allowed closer to the residential neighborhoods.

B. The City anticipates that by 2020, the overall mix of uses in the Neighborhood Commercial Land Use category throughout the City will be a minimum of 85% commercial/office, public/institutional and recreational and a maximum of 15% residential.

Objective 1.1.4: Redevelopment. The City shall encourage redevelopment of areas that are exhibiting evidence of decline (i.e., disproportionate number of vacant, dilapidated and/or substandard structures) through redevelopment programs and through maintaining land development regulations that contain standards and procedures to encourage redevelopment where desirable.

Policy 1.1.4.5: The City shall protect and buffer residential areas in the Cocoa (Downtown) Redevelopment Area from uses of high density or intensity.

Objective 1.1.5: Neighborhood Protection. The City shall ensure that additional growth and development will be respectful of established neighborhoods that define much of the City's character.

Policy 1.1.5.2: The City shall consider developing neighborhood plans, as needed, to either strengthen preservation of established neighborhoods or encourage redevelopment of transitional neighborhoods.

Policy 1.1.5.3: The City's land development regulations shall maintain appropriate standards and nuisance regulations to limit the impact of more intense development on established residential zones.

Objective 1.1.6: Historic and Archeological Resources. All development activities undertaken in the City will be consistent with and supportive of the plan's goals, objectives, and policies for protecting historic and archeological resources.

Policy 1.1.6.1: The City shall undertake the necessary steps to identify its historical and archeological resources and create a local register of historic places. The local register will list all the properties within the City that have been designated as an individual historic resource or historic
districts.

Policy 1.1.6.2: The City shall consider creating design regulations to protect the locally designated historic sites and districts.

Policy 1.1.6.3: By 2012, the City shall consider a historic preservation ordinance to protect significant historic, cultural and archaeological resources.

Policy 1.1.6.4: Nominations may, with the owner's consent, be made to the National Historic Registers based upon the periodic review of properties.

Policy 1.1.6.5: The City shall facilitate the education of the public regarding the significance and historic values associated with the City's architectural, historical, geological, and archaeological resources, and the costs associated with the loss of such resources.

Policy 1.1.6.6: The City shall give consideration to the establishment of an historic zoning district.

Objective 1.3.2: Maintain Infrastructure. The City shall maintain adequate infrastructure for encouraging economic activities in the industrial and commercial sectors.

Policy 1.3.2.1: To the extent financially feasible, the City shall continue providing adequate supporting infrastructure (i.e. paved streets, sanitary sewer, drainage, potable water, etc.) in strategic locations throughout the City to appropriately entice economic development.

Policy 1.1.6.7: The City shall establish a program for public, private, or public and private purchase, within funding capabilities, of development rights to preserve properties identified as historically significant at local or national levels.

Policy 1.1.6.8: The City shall adopt land development regulations that include a requirement for development plans in any areas of the City to identify potential historic resources, to mitigate adverse impacts of development on potentially significant historic resources and to minimize any adverse impacts of development on sites or structures identified as historically significant, except when demolition is required because neither rehabilitation nor relocation is practical.

Policy 1.1.6.9: The City shall look for funding, including grants, to update and expand the 1991 "Historic Buildings of Cocoa" survey.

Policy 1.1.6.10: The location and density of new residential development shall be compatible with historic and natural resources.

III HOUSING ELEMENT

GOAL 3.1: The City shall encourage and promote the provision of decent, safe, and sanitary housing to meet the needs of the present and future population of the City.

Objective 3.1.2: Elimination of Substandard Housing. The City shall seek ways to eliminate substandard housing conditions and seek ways to improve the structural and aesthetic value of existing homes.

Policy 3.1.2.1: The City shall periodically review and update established housing policies to guide in the conservation, rehabilitation, and demolition program techniques and strategies.

Policy 3.1.2.2: The City of Cocoa will endeavor to eliminate slum and blight throughout the City.

Policy 3.1.2.3: The City shall identify existing housing units that need structural and aesthetic improvements and those that are beyond repair and rehabilitation should be demolished.

Policy 3.1.2.4: The City shall continue to enforce the Florida Building Code and the City of Cocoa's Property Maintenance Standards and Rental Regulations to ensure the construction and maintenance of sound and safe housing and, to encourage the correction of housing code violations, and to set the standards for quality housing within the City. Low income owner-occupants will continue to be referred to available housing assistance programs.

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.

Objective 3.1.7: Housing Programs. The City shall develop housing programs to improve the structural and aesthetic value of existing homes and the creation of new homes to meet the current and anticipated future residents of the City.

Policy 3.1.7.1: The City shall strengthen public education measures through affirmative outreach efforts to low income households to ensure that the persons or neighborhoods eligible for assistance are aware of its availability as well as the procedures for obtaining such assistance. Public workshops shall be held in areas where the needs are demonstrated.

Policy 3.1.7.2: The City will continue to seek and apply for funding programs to assist in housing rehabilitation, demolition, and preservation for qualified applicants. Housing ownership opportunities for low income households will continue to be provided through federal and state housing programs.

Policy 3.1.7.3: The City shall survey all homeowners receiving housing rehabilitation assistance after receiving assistance to evaluate the quality of the work and to determine homeowner satisfaction with the program.

Policy 3.1.7.4: The City of Cocoa shall promote personal investment in the community and homeownership by encouraging residents, especially those participating in housing assistance programs, to become involved in community service organizations, projects, and City Boards.

GOAL 3.2: In order to encourage the preservation of the existing housing stock and minimize the relocation of residents and the demolition of housing, the city shall ensure the availability and maintenance of supporting infrastructure and avoid the concentration of affordable housing units only in specific areas of the city.

Objective 3.2.1: Housing Stock and Neighborhoods. The City shall encourage the stabilization of neighborhoods by extending the useful life of the existing housing stock through the enforcement of City codes that preserve neighborhood quality and maintain community facilities.

Policy 3.2.1.2: The City shall encourage the stabilization of neighborhoods by maintaining the quality of existing neighborhoods, by upgrading the supporting infrastructure and facilities, including paved public road access; storm water management facilities and flood protection; wastewater disposal facilities; potable water facilities; solid waste collection service; electric utility service; and by protecting natural and historic resources.

Objective 3.2.2: Historically Significant Housing. Housing designated as historically significant by virtue of architecture, social significance, or ethnic heritage will continue to be identified and continue to be preserved and protected, and if possible, maintained for residential uses.

Policy 3.2.2.1: Applications will be submitted by the City to the Florida Division of Historical Resources for the housing units which have been and maybe designated as individual

structures or as part of a locally significant historic district to be included on the Florida Master Site File.

Policy 3.2.2.2: The City shall pursue available grants and alternative funding, where appropriate, to expand the local knowledge and awareness of existing historic and archaeological sites and structures.

Policy 3.2.2.3: The City shall assist owners of designated historically significant housing to apply for and utilize state and federal assistance programs.

Goal 3.7: The City shall promote opportunities for the creation of housing and infill development within the city.

Objective 3.7.3: Land Development Regulations. To the greatest extent possible, the City's land development regulations shall not contribute to increased housing costs.

Policy 3.7.3.1: The City shall conduct periodic reviews of existing land development regulations and consider before adoption, policies, procedures, ordinances, regulations, or plan provisions that may have an impact on the cost of housing.

11. The City has not initiated any rezonings in the HCN and continues to enforce the RU 2-10 zoning provisions. If a rezoning application is submitted in the future, the City will properly notify property owners and residents within 500 feet of a property that is considered for rezoning by a third party, and appropriately notice changes to the zoning regulations/comprehensive plan/redevelopment plan applicable to the area covered by the Substitute Consent Decree

Conclusion.

The HCN has tremendous historical significance to the City of Cocoa especially to the African-American community. As explained above, since the original Consent Decree was approved by the Federal District Court, the City has made a substantial financial investment in the HCN and has adopted policies and programs in furtherance of the Consent Decree. In addition, the City hired a local consultant to conduct a study of the HCN and to recommend suggestions to improve the HCN through public and private investment. The City has also taken enforcement action against property owners and tenants when such actions are warranted to preserve the residential and historical character of the HCN. However, for whatever reason, private investment in the HCN has not been significant within the HCN. But, new private and public investment projects have recently materialized on property adjacent to and near the HCN. City staff hopes that this investment will be catalyst for future private investment within the HCN. The City intends to continue to abide by the provisions of the Substitute Consent Decree and desires to continue to maintain the residential and historical character of the HCN.

STRATEGIC PLAN CONNECTION:

This agenda item is consistent with the Community Development component of the Strategic Plan.

BUDGETARY IMPACT:

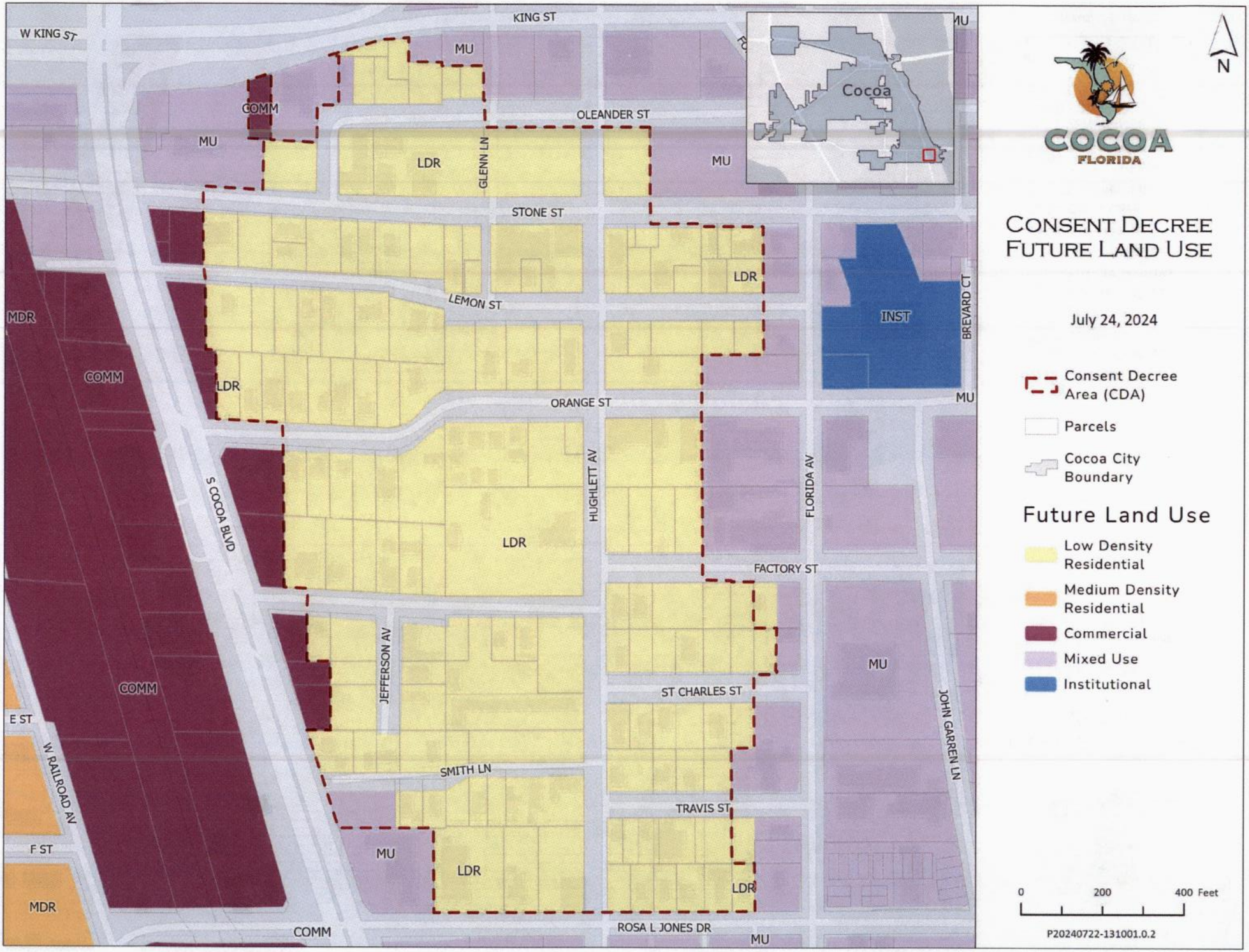
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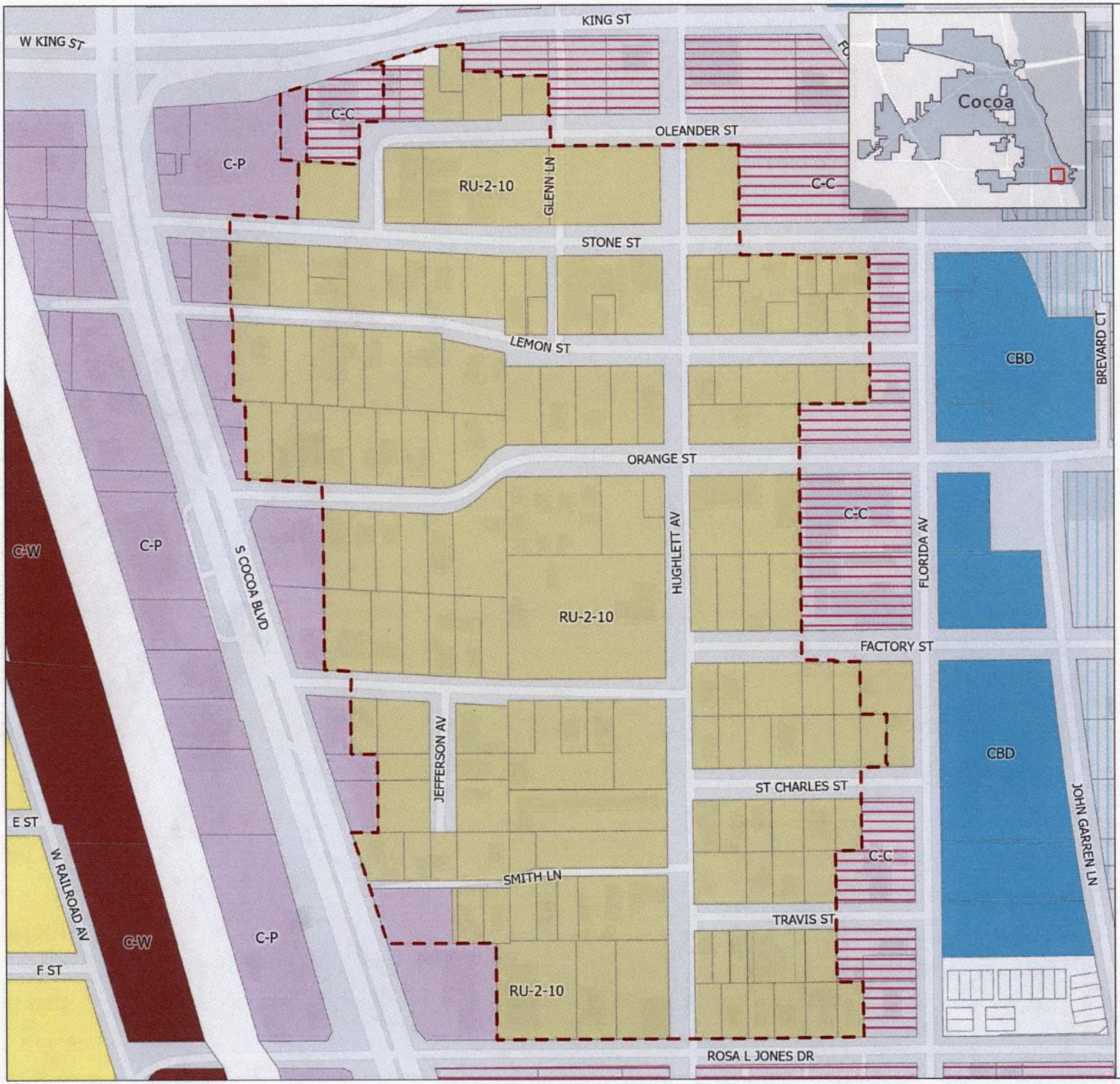
PREVIOUS ACTION:

The City Council requested a brief update on the Heart of Cocoa Substitute Consent Decree at its February 13, 2018 Council meeting.

RECOMMENDED MOTION:

Information Item – Update on the Heart of Cocoa Substitute Consent Decree


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COCOA
FLORIDA
CONSENT DECREE
FUTURE LAND USE
July 24, 2024
Consent Decree Area (CDA)
Parcels
Cocoa City Boundary
Future Land Use
Low Density Residential
Medium Density Residential
Commercial
Mixed Use
Institutional
0
200
400 Feet
P20240722-131001.0.2



Consent Decree Zoning

July 24, 2024

- Consent Decree Area (CDA)
- Parcels
- Cocoa City Boundary

Cocoa Zoning

- RU-1-7 - Single-Family Residential
- RU-2-10 - Low Density Single & Multiple Family Residential
- CBD - Central Business
- CBD-CVO - Central Business Cocoa Village Overlay
- C-P - Commercial Parkway
- C-C - Core Commercial
- C-W - Wholesale Commercial
- Zoning Not Assigned

0 200 400 Feet

P20240722-131001.0.1

IN THE UNITED DISTRICT COURT
FOR THE MIDDLE DISTRICT OF FLORIDA
ORLANDO DIVISION

BEATRICE HOUSTON, et.al.

Plaintiffs,

vs. CIVIL ACTION 6:89-CV-00082-PCF

THE CITY OF COCOA, et.al.

Defendants.
_____/

SUBSTITUTE CONSENT DECREE

WHEREAS, the Plaintiff Class and the Defendants, City of Cocoa and City Redevelopment Agency (Defendants), agree that the Consent Decree entered by the parties in July 1990 (Dkt. #55) no longer meets the needs of the parties and should be modified; and

WHEREAS, the parties agree that a substitute consent decree should be entered; and

WHEREAS, the parties have negotiated in good faith to resolve their outstanding differences; and

WHEREAS, the parties wish to maintain the residential character of the consent decree area;

WHEREAS, the parties have reached agreement on the payment of attorneys' fees and costs to Plaintiffs' Counsel, Southern Legal Counsel, Inc.;

NOW THEREFORE, it is agreed:

1. The Consent Decree entered on July 25, 1990 (Dkt. # 55) is no longer in effect and this Substitute Consent Decree shall take its place.

2. The area of the City of Cocoa ("Consent Decree Area" or "CDA") is the same as described in the original consent decree as modified by the parties joint stipulation filed July 14, 1988 (Dkt. #179), correcting one section of the CDA's boundaries. This motion was granted on July 17, 1988 (Dkt. # 179-1).

I. ZONING

3. The City shall maintain zoning regulations that apply to the Consent Decree Area that are intended to:

(1) maintain the CDA's low density residential character;

(2) continue to encourage the voluntary replacement of Wholesale Commercial uses, as defined and enumerated in the City Code, Appendix A-Zoning, Article XI, Section 15, with low density residential uses or less intensive neighborhood commercial uses such as mixed use developments where residential serves as the primary use, while preserving rights to existing uses as provided by law; and,

(3) continue to encourage the production and development of affordable homes in the CDA by the private sector through zoning incentives for

the CDA including, but not limited to, any incentives that are currently in place.

II. CRA'S REDEVELOPMENT PLAN

4. The City and the Redevelopment Agency, through the Redevelopment Agency's Redevelopment Plan, shall continue to support programs for improvement of rental housing, and continue to support the program for infill housing and new construction of affordable housing to low and low to moderate income persons in the CDA. To that end, the City and the Redevelopment Agency shall continue to support affirmative measures to support rehabilitation of rental units and owner occupied houses for members of the Plaintiff Class. The City and the Redevelopment Agency shall continue to investigate and, where appropriate, apply for funds from federal, state, and local agencies for improvement of rental housing and owner occupied houses and provision of rental assistance to low and low to moderate income tenants.

5. The City shall continue to support applications for Section Eight certificates, vouchers, and other forms of rental assistance for low income renters. The City shall make affirmative efforts to promote the use of such rental assistance in conjunction with rental rehabilitation of units to ensure the continued affordability of rehabilitated units to members of the Plaintiff class who are low income renters and to take such other measures as are appropriate to prevent displacement of members of the Plaintiff class who are low income renters from rehabilitated units.

6. The City and the Redevelopment Agency shall continue to support the development of new single family residences on vacant lots in the CDA for low and low to moderate income families and to support the rehabilitation of the unoccupied and occupied single family houses in poor condition in the CDA to the extent rehabilitation is physically and financially practicable. The City shall continue its program of the housing bonus program whereby construction or rehabilitation of a qualifying affordable housing unit is required in the CDA. The City and the Redevelopment Agency shall also continue to support non-profit community development corporations which wish to construct new single family homes within the CDA on vacant lots.

7. The City and the Redevelopment Agency may enhance the residential character of, and neighborhood amenities within, the CDA by supporting appropriate neighborhood commercial uses on CDA lots as provided in section I.3(2) above and on CDA lots located along the outermost perimeter of the CDA and adjacent to Florida Avenue, US Highway 1, SR 520, or Rosa L. Jones Drive.

III. CONSISTENCY CLAUSE

8. The City shall maintain provisions with the City's Comprehensive Plan with the intent to:

(1) denote and protect the CDA's low density residential land

use;

(2) recognize and preserve the historic resources in the CDA; and

(3) reflect the goals of housing and neighborhood improvement for the CDA as set forth in this Substitute Consent Decree.

IV. FUTURE ASSURANCES

9. Defendants agree not to initiate a rezoning of the CDA or take any action in the CDA which has the purpose or effect of involuntarily displacing current or future members of the Plaintiff class. In the event of a rezoning initiated by the request of a property owner, the City agrees to give due weight to preserving the low density residential and historic character of the CDA in acting on the rezoning request.

10. In rezonings initiated by property owners, the City agrees to provide individual mailed notice to all property owners and residents in the CDA living within 500 feet of property considered for rezoning, together with all other notice required under applicable laws. In any city-initiated rezoning involving any property in the CDA, the City shall provide individual mailed notice to all residents and property owners of the CDA which notice shall refer to and explain the terms of the Consent Decree, together with all other notice required under law. Notice to property owners shall be taken from tax records maintained by the City.

Notice to residents may be addressed to "Occupant" at the address of each unit located in the CDA.

11. The City agrees to enforce the current provisions of the RU-2-10 zoning code and all ordinances applicable to CW uses which were existing as of March 8, 1988, requiring the removal or regulation of junk yards or unenclosed storage areas in the CDA . However, nothing herein shall be construed to prohibit the City from re-codifying or renumbering those provisions elsewhere in the Code or adopting more stringent zoning amortization provisions related to said CW uses in the future. The City shall also take such other action as the City deems necessary to remove or correct conditions that pose public safety hazards to CDA residents or that substantially undermine the quality of the residential environment.

12. If the City or Redevelopment Agency should consider modifying the terms of the City's zoning regulations or comprehensive plan or the Redevelopment Agency's Redevelopment Plan applicable to the CDA, the City or the Redevelopment Agency shall provide mailed notice and a copy of the proposed modification to Southern Legal Counsel, counsel for the Plaintiffs, at least thirty (30) days prior to the date of initial and final consideration of the proposed modification and provide notice of its intentions in conformity with Florida law.

V. MISCELLANEOUS

13. The Court shall retain jurisdiction for the enforcement of this Substitute Consent Decree.

14. Plaintiff's counsel shall not be entitled to any monitoring fees and expenses, including but not limited to attorney's fees, or other fees and expenses after February 10, 2005. However, should Plaintiffs seek enforcement of this decree or defend a motion to modify and/or terminate this decree, they shall not be barred from seeking prevailing party fees and expenses in accordance with applicable law.

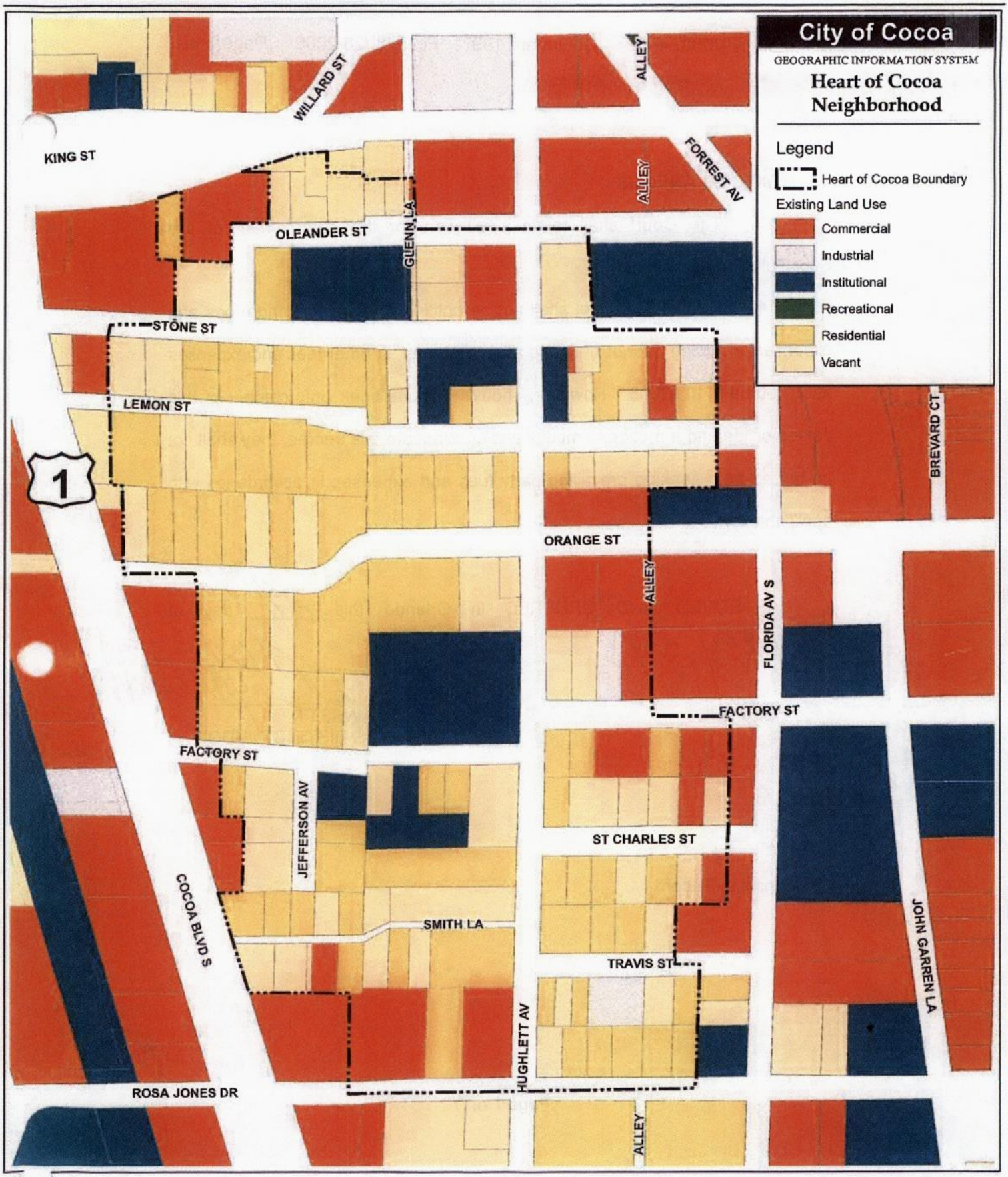
APPROVED AND ORDERED in Orlando this 28th day of January, 2009.

Patricia C. Fawsett

PATRICIA C. FAWSETT
UNITED STATES DISTRICT JUDGE

Copies to:

All Counsel of Record



Disclaimer:

Abutting parcels/lots under same ownership may be shown as one (1) parcel. This map was compiled from record documents of the Brevard County Property Appraiser's Office and Geographic Information Services, and does not reflect an actual survey. The City of Cocoa does not assume responsibilities for errors or omissions.

N W E S

0 125 250 500 Feet

0 0.025 0.05 Miles

City of Cocoa
603 Brevard Avenue
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Accounting Division
City Of Cocoa - Te
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Cocoa FL 32922-7982

STATE OF WISCONSIN, COUNTY OF BROWN

Before the undersigned authority personally appeared, who on oath says that he or she is the Legal Advertising Representative of the Florida Today, a daily newspaper published in Brevard County, Florida; that the attached copy of advertisement, being a Legal Ad in the matter of Public Notices, was published on the publicly accessible website of Brevard County, Florida, or in a newspaper by print in the issues of, on:

07/29/2024

Affiant further says that the website or newspaper complies with all legal requirements for publication in chapter 50, Florida Statutes.
Subscribed and sworn to before me, by the legal clerk, who is personally known to me, on 07/29/2024

Legal Clerk

Notary, State of WI, County of Brown

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NANCY HEYRMAN
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State of Wisconsin

CITY OF COCOA
NOTICE OF PUBLIC HEARING,

NOTICE IS HEREBY GIVEN THAT

THE PLANNING & ZONING BOARD/LOCAL PLANNING AGENCY PROPOSE TO CONSIDER THE FOLLOWING:

ORDINANCE NO. 11-2024 – Zoning Text Amendment (RU-2-10)

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF COCOA, BREVARD COUNTY, FLORIDA; AMENDING APPENDIX A, ARTICLE XI, SECTIONS 4A AND 22 OF THE ZONING ORDINANCE OF THE CITY OF COCOA TO ALLOW FOR NEIGHBORHOOD COMMERCIAL, MIXED USE DEVELOPMENT, AND PUBLIC PARKING ON CERTAIN VERY LIMITED PROPERTIES WITHIN THE CONSENT DECREE AREA, ALSO KNOWN AS THE HEART OF COCOA, CONSISTENT WITH THE SUBSTITUTE CONSENT DECREE; AMENDING THE LIST OF PERMITTED AND SPECIAL EXCEPTION USES FOR THE CONSENT DECREE AREA; AMENDING THE BUILDING TYPES PERMITTED FOR THOSE CERTAIN PROPERTIES AUTHORIZED FOR NEIGHBORHOOD COMMERCIAL AND MIXED USE DEVELOPMENT WITHIN THE HEART OF COCOA SUBDISTRICT OF THE COCOA WATERFRONT OVERLAY DISTRICT AS MORE PARTICULARLY DEPICTED ON EXHIBIT "A" ATTACHED HERETO; AMENDING THE BULK REGULATIONS FOR SINGLE-FAMILY, DUPLEX, TRIPLEX, AND FOURPLEX DEVELOPMENT IN THE CONSENT DECREE AREA; AMENDING THE MINIMUM YARD SETBACKS IN THE CONSENT DECREE AREA; PROVIDING FOR THE REPEAL OF PRIOR INCONSISTENT ORDINANCES AND RESOLUTIONS, INCORPORATION INTO THE CODE, SEVERABILITY, AND AN EFFECTIVE DATE.

PLANNING & ZONING BOARD/ LOCAL PLANNING AGENCY PUBLIC HEARING WILL BE HELD FOR THIS ITEM ON:

August 7, 2024

ALL HEARINGS WILL TAKE PLACE 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: Monica Arsenault, City Clerk, 65 Stone Street, Cocoa, by telephone at (321) 433-8488 or via email at marsenault@cocoafl.gov.

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.

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FT-39936448

Legislation Details (With Text)

File #:	24-430	**Version:** 1	**Name:**		
Type:	Agenda		**Status:**	Agenda Ready	
File created:	7/26/2024		**In control:**	Planning and Zoning / Local Planning Agency	
On agenda:	8/7/2024		**Final action:**		
Title:	Consideration of a Zoning Text Amendment Appendix A, Article XI, Section 3, of the code of the City of Cocoa to create new minimum yard requirements applicable to properties located in both the RU-1-7 zoning district and the Diamond Square Community Redevelopment Area..End				
Sponsors:					
Indexes:					
Code sections:					
Attachments:	Ordinance 12-2024.pdf Diamond Square Location Map.pdf Diamond Square CRA with RU-1-7 Zoning.pdf Affidavit.pdf				

Date	Ver.	Action By	Action	Result

PLANNING & ZONING BOARD/LOCAL PLANNING AGENCY AGENDA ITEM

Memo Date: July 26, 2024
Agenda Date: August 7, 2024
Prepared By: Lucilene Ribeiro - City Planner
Through: Stockton Whitten - City Manager
Requested Action:
Consideration of a Zoning Text Amendment Appendix A, Article XI, Section 3, of the code of the City of Cocoa to create new minimum yard requirements applicable to properties located in both the RU-1 -7 zoning district and the Diamond Square Community Redevelopment Area

BACKGROUND:

On August 19, 1997, the Brevard County Board of County Commissioners passed Resolution No. 97-161, granting the City Council of Cocoa the authority to create and manage the Census Tract 626 Community Redevelopment Agency. Census Tract 626 was known for having high levels of poverty, unemployment, crime, and low income, making it one of the most disadvantaged areas in Florida.

Following this decision, the Cocoa City Council adopted Resolution No. 98-19 on March 24, 1998. This resolution identified Census Tract 626 as a troubled area in need of redevelopment, aligning with Florida's Community Redevelopment Act of 1969. It emphasized that revitalizing the area was crucial for the well-being of Cocoa's residents. To address this, the City Council established the Diamond Square Community Redevelopment Agency and formalized its structure, powers, and operations through Ordinance 13-98. This ordinance was reviewed and approved by the City's Local

Planning Agency as consistent with Cocoa's Comprehensive Plan.

The Diamond Square area is characterized by a mix of residential homes, commercial businesses, and light industrial uses. Recognizing the Diamond Square CRA's limited resources, the City of Cocoa has invested millions to enhance streets and drainage, purchase land for affordable housing, and build a new community center.

To further support development, the City has proposed to relax yard requirements for single-family homes within the Diamond Square CRA. The proposed ordinance addresses the issues faced by nonconforming lots that have difficulty meeting the setback requirements of the RU-1-7 Zoning District. These properties often face challenges due to their irregular shapes and substandard sizes, making compliance difficult. By creating new, less restrictive setback requirements for this specific area, the new ordinance aims to facilitate development and improve land use efficiency within the redevelopment area. Appendix A, Article X, Section 3 provides, in pertinent part, as follows regarding development on nonconforming lots of record:

> In any district in which single-family dwellings are permitted, notwithstanding limitations imposed by other provisions of this ordinance, a single-family dwelling and customary accessory buildings may be erected on any single lot which is of record at the effective date of adoption or amendment of this ordinance. *This provision shall apply only where yard dimensions* and requirements other than area, width, and/or depth *conform in all other respects with the land development regulations for the applicable zoning district.* Such lot shall be in separate ownership and not of continuous frontage with other lots in the same ownership.

Thus, although nonconforming lots of record may be developed with a single-family home, the setbacks must still be observed. The proposed new, relaxed yard requirements for the Diamond Square area are outlined as follows:

> Front setback - Reduced from Twenty-Five (25) to Twenty (20) feet.
>
> Side interior lot setback - Reduced Eight (8) from to Five (5) feet.
>
> Side corner lot setback - Reduced Fifteen 15 from to Ten (10) feet.
>
> Rear setback- Reduced from Fifteen (15) to Ten (10) feet.

Staff finds these changes are in the best public interest, encouraging appropriate development in a historically challenged area like the Diamond Square CRA.

I. Staff Analysis

Pursuant to Appendix A, Zoning, Article XXI, Amendment, Section 1(G)(2), the planning board shall consider and study:

a. *The need and justification for the change.*

b. *The relationship of the proposed amendment to the purposes and objective of the comprehensive planning programs and to the comprehensive plan, with appropriate*

consideration as to whether the proposed changes will further the purposes of [the] zoning code and other codes, regulations, and actions designed to implement the comprehensive plan.

Many existing subdivisions in the Diamond Square CRA, including College Park, Virginia Park, and sections of Pine Grove Park, often do not meet standard lot width dimensions, making compliance with RU-1-7 setbacks difficult. This can slow development and building renovation efforts for property owners within the CRA.

According to "Goal 2: Increase Partnerships with Housing Developers" in the City of Cocoa Diamond Square Redevelopment Plan, fostering stronger collaborations with housing developers is crucial for revitalizing the area. The proposed ordinance supports this goal by relaxing existing zoning regulations, making the area more attractive to developers, and facilitating the growth of new housing projects, enhancing overall partnership opportunities in the Diamond Square Redevelopment Area.

The proposed zoning text amendment is anticipated to assist in attaining the following cited goals and objectives and appears to be consistent with the following cited policies of the Comprehensive Plan.

GOAL 1.1: Create and maintain a broad range of land use activities that maximize the City's potential as a growth center while protecting the public health, safety, welfare, and appearance through the thoughtful planned use and development of the land and public facilities.

Future Land Use Element, Policy 1.1.2.3: Low Density Residential (LDR). Low-density residential areas are neighborhoods of single family detached housing, limited multiple family attached housing and limited clustered single family attached housing. . .**Objective 1.1.4: Redevelopment**. The City shall encourage redevelopment of areas that are exhibiting evidence of decline (i.e., disproportionate number of vacant, dilapidated and/or substandard structures) through redevelopment programs and through maintaining land development regulations that contain standards and procedures to encourage redevelopment where desirable.

Policy 1.1.4.1: The City shall continue to promote vitality and redevelopment of the three community redevelopment areas established pursuant to Chapter 163, F.S.: Cocoa (Downtown) Redevelopment Area, Diamond Square Redevelopment Area and U.S. 1 Corridor Redevelopment Area.

Policy 1.1.4.10: The City will encourage infill development and redevelopment in blighted areas or areas in transition, and encourage new housing development in appropriate areas where community services exist or are programmed to occur.

Objective 1.1.10: Plan Implementation. The City shall maintain, amend and develop land development regulations that guide future growth and development, discourage the proliferation of urban sprawl and implement the goals, objectives and policies of this comprehensive plan.

Housing Element, Objective 3.7.5: Community Revitalization. The City shall continue to support the revitalization of its Florida Enterprise Zone, its designated Florida Brownfield Area, the Diamond Square Redevelopment Area and the Heart of Cocoa Area concentrating on issues such as crime, economic development, and affordable housing.

Policy 3.7.5.2: The City shall encourage new construction of single-family homes for moderate- and upper-income households.

Policy 3.7.5.3: The City shall encourage neighborhood revitalization, affordable housing, and homeownership in these areas by implementing programs and regulations that promote a wide variety of housing types, sizes, and prices.

The proposed changes will not negatively impact existing neighborhoods and will help development community for further single-family housing development and construction, there will be no negative impacts on the City's level of service standards regarding these changes.

Staff concluded that the standards for RU 1-7 Single-Family Residential in Diamond Square need to be revised to better position the City and the Development Community for future single-family housing developments. If approved, the proposed amendment creates a more appropriate and logical land use pattern. Additionally, it is expected to enhance property values, increase potential tax revenue, and provide other benefits to the local economy.

BUDGETARY IMPACT:

N/A

PREVIOUS ACTION:

City Council approved on September 12, 2023 Ordinance 07-2023 amending figure FLU-1 set forth in the Future Land Use element to provide the RU-1-7 Zoning District as an allowable Zoning District in the Medium Density Residential Future Land use category

RECOMMENDED MOTION:

Staff recommends that the Planning and Zoning Board recommend approval of Ordinance 12-2024 as presented.

ORDINANCE NO. 12-2024

AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF COCOA, BREVARD COUNTY, FLORIDA, AMENDING APPENDIX A, ARTICLE XI, SECTION 3, OF THE CODE OF THE CITY OF COCOA TO CREATE NEW MINIMUM YARD REQUIREMENTS APPLICABLE TO PROPERTIES LOCATED IN BOTH THE RU-1-7 ZONING DISTRICT AND THE DIAMOND SQUARE COMMUNITY REDEVELOPMENT AREA; PROVIDING FOR THE REPEAL OF PRIOR INCONSISTENT ORDINANCES AND RESOLUTIONS, INCORPORATION INTO THE CODE, SEVERABILITY, AND AN EFFECTIVE DATE.

WHEREAS, the City of Cocoa is granted the authority, under Section 2(b), Article VIII, of the State Constitution, to exercise any power for municipal purposes, except when expressly prohibited by law; and

WHEREAS, The City of Cocoa Code of Ordinances Appendix A, *Zoning,* Article XI, *Schedule of District Regulations,* Section 3, *District and Intent - RU-1-7, Single Family Residential District,* sets fo1th standards applicable to properties located within the area of the City designated for single-family residential development; and

WHEREAS, Section 3(F) sets fo1th the minimum yard requirements, also known as setbacks, in the RU-1-7 District; and

WHEREAS, except where a variance or waiver has been approved by the City, most structures located on property in the RU-1-7 District are required to comply with the lot setback or minimum yard requirements set forth in Section 3(F), including lots which are nonconforming or substandard; and

WHEREAS, Chapter 8, *Community Development,* Article III, *Diamond Square Community Redevelopment Agency,* creates the Diamond Square Community Redevelopment Agency, and Section 8-54 sets forth the jurisdictional boundaries of the Diamond Square Community Redevelopment Agency; and

WHEREAS, many properties located within the boundaries of the Diamond Square Community Redevelopment Agency are zoned RU-1-7 and are nonconforming, substandard lots either because they do not conform to the minimum lot width of 75 feet, the minimum lot depth of 100 feet or the minimum lot area of 7,500 square feet; and

WHEREAS, due to the nonconforming, substandard shape and size of many properties located in the Diamond Square Community Redevelopment Agency, it can be difficult for property owners of such lots to abide by the setback requirements of the RU-1-7 zoning district; and

WHEREAS, in order to facilitate development of nonconforming, substandard lots within the Diamond Square Community Redevelopment Agency, the City Council desires to create new,

less restrictive, setback requirements for those properties which are both zoned for the RU-1-7 District and located within the jurisdictional boundaries of the Diamond Square Community Redevelopment Agency; and

WHEREAS, the City Council of the City of Cocoa, Florida, hereby finds this Ordinance to be in the best interests of the public health, safety, and welfare of the citizens of the City of Cocoa.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF COCOA HEREBY ORDAINS, AS FOLLOWS:

Section 1. **Recitals.** The foregoing recitals are hereby fully incorporated herein by this reference as legislative findings of the City Council of the City of Cocoa.

Section 2. **Text Amendment.** The City of Cocoa Code of Ordinances, Appendix A, is hereby amended as follows: (underlined type indicates additions and strikeout type indicates deletions, while asterisks (* * *) indicate a deletion from the Ordinance of text existing in Appendix A. It is intended that the text in Appendix A denoted by the asterisks and set fmih in this Ordinance shall remain unchanged from the language existing prior to the adoption of this Ordinance):

* * *

APPENDIX A- ZONING

* * *

ARTICLE XI. - SCHEDULE OF DISTRICT REGULATIONS

* * *

Sec. 3. - District and intent - RU-1-7, Single-Family Residential District.

* * *

(F) MINIMUM YARD REQUIREMENTS.

(1) The following minimum yard requirements shall be applicable to properties located in the RU-1-7 use district, except those properties located within the jurisdictional boundaries of the Diamond Square Community Redevelopment Agency.

Front setback- Twenty-five (25) feet.

Side interior lot setback - Eight (8) feet.

Side corner lot setback - Fifteen (15) feet.

Rear setback - Fifteen (15) feet.

(2) The following minimum yard requirements shall be applicable to properties located in the RU-1-7 use district which are also located within the jurisdictional boundaries of the Diamond Square Community Redevelopment Agency.

Front setback - Twenty (20) feet.

Side interior lot setback - Five (5) feet.

Side corner lot setback - Ten (10) feet.

Rear setback- Ten (10) feet.

* * *

Section 3. Incorporation into Code. This Ordinance shall be incorporated into the City Code of the City of Cocoa and any section or paragraph, number or letter, and any heading may be changed or modified as necessary to effectuate the foregoing. Grammatical, typographical, and like errors may be c01Tected and additions, alterations, and omissions not affecting the construction or meaning of this Ordinance and the City Code may be freely made.

Section 4. Repeal of Prior Inconsistent Ordinances and Resolutions. All prior inconsistent Ordinances and Resolutions adopted by the City Council, or parts of prior Ordinances and Resolutions in conflict herewith, are hereby repealed to the extent of the conflict.

Section 5. Severability. If any section, subsection, sentence, clause, phrase, word, or provision of this ordinance is for any reason held invalid or unconstitutional by any court of competent jurisdiction, whether for substantive, procedural, or any other reason, such po1tion shall be deemed a separate, distinct, and independent provision, and such holding shall not affect the validity of the remaining p01tions of this Ordinance.

Section 6. Effective Date. This Ordinance shall become effective immediately upon adoption by the City Council of the City of Cocoa, Florida.

[Signature page to follow]

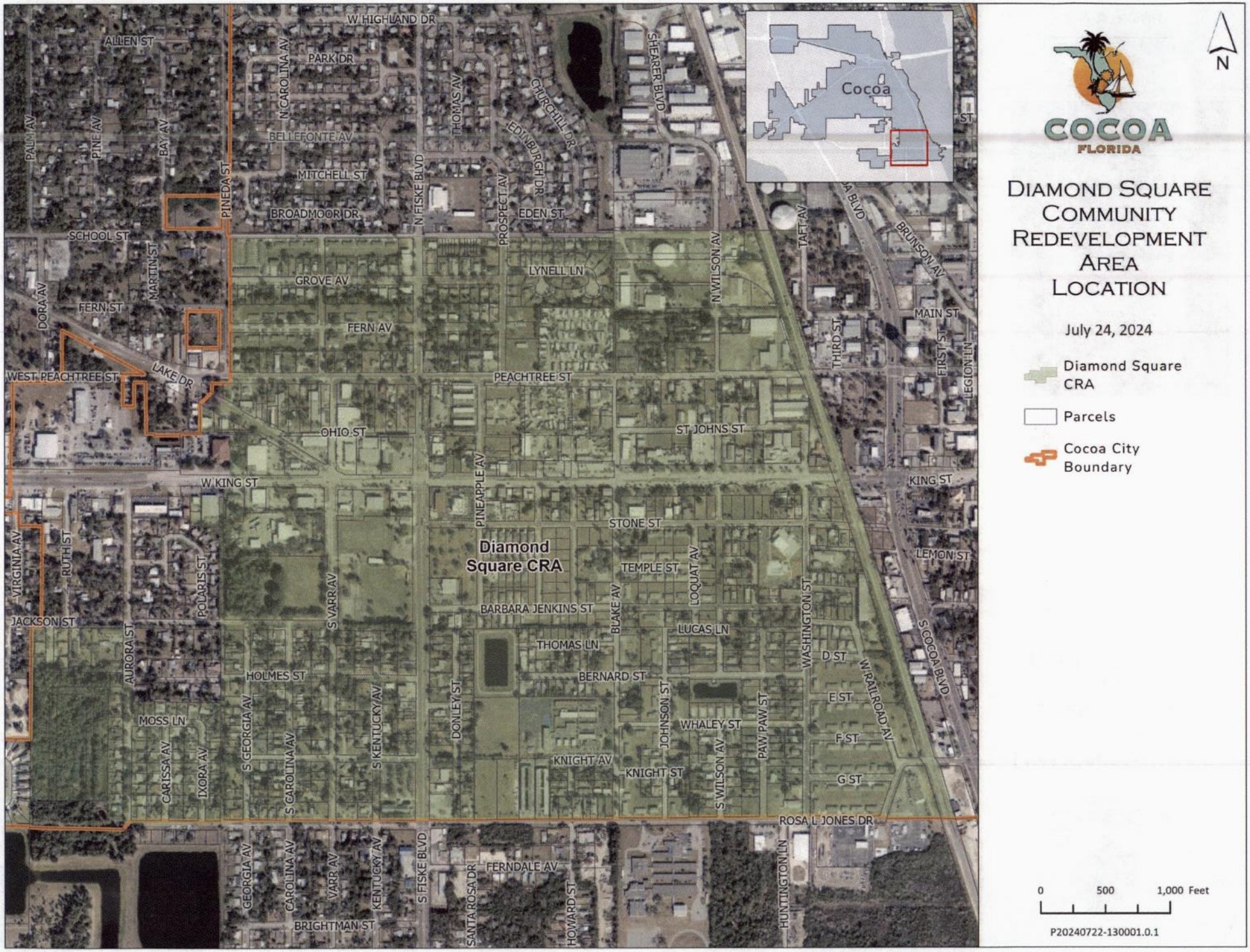
ADOPTED by the City Council of the City of, Florida, in a regular meeting assembled on the __ day of _____,2024.

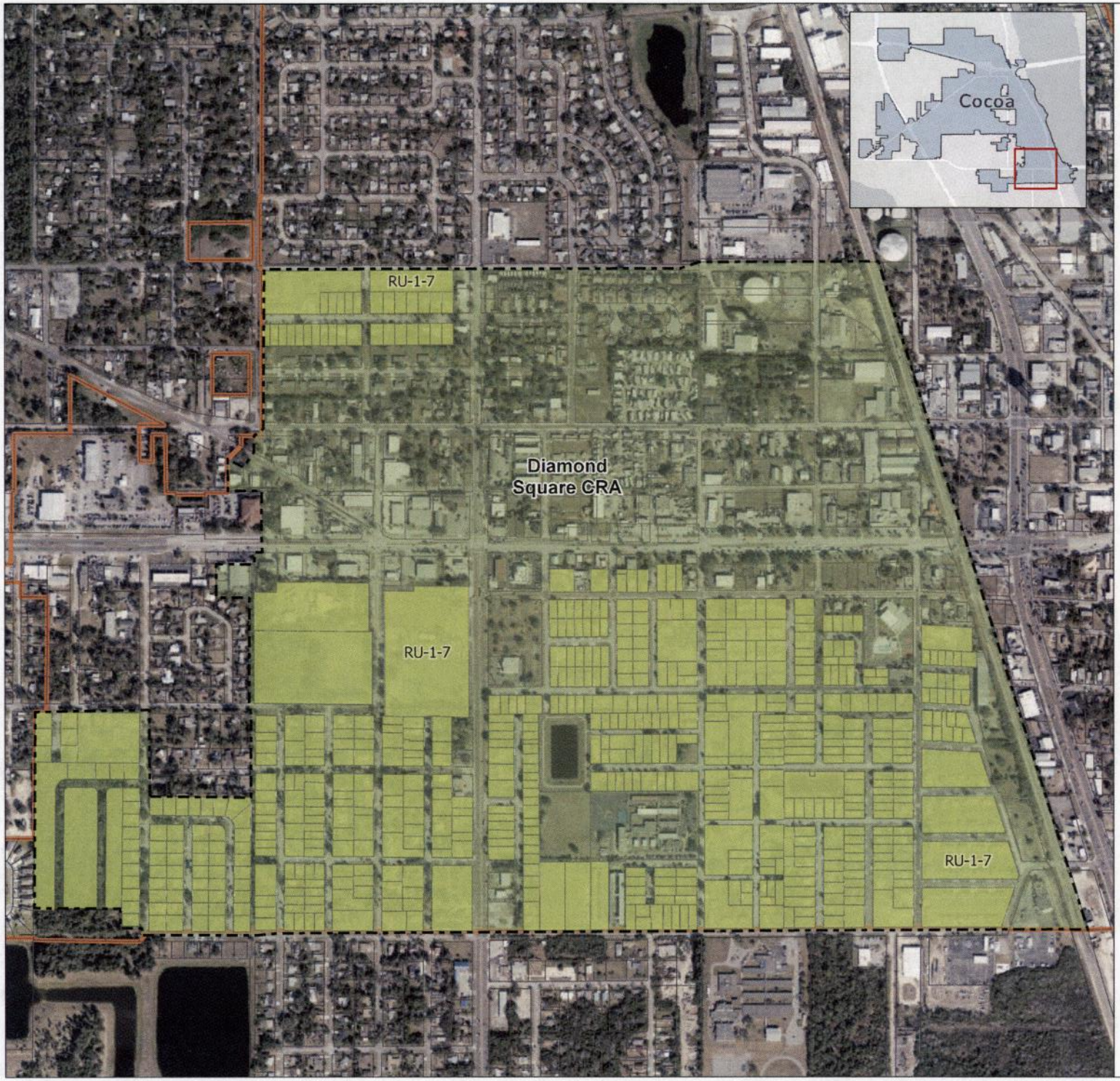
_____
MICHAEL C. BLAKE,
Mayor

ATTEST:

_____
MONICAARSENAULT, CMC
City Clerk

Legal Ad Published: _____
First Reading: _____
Legal Ad Published: _____
Effective Date: _____


Cocoa
Diamond Square CRA
W HIGHLAND DR
ALLEN ST
PARK DR
N CAROLINA AV
THOMAS AV
CHURCHILL DR
EDINBURGH DR
SHEARER BLVD
BELLEFONTE AV
MITCHELL ST
N FISKE BLVD
PROSPECT AV
EDEN ST
BROADMOOR DR
PALM AV
PINE AV
BAY AV
PINEDA ST
SCHOOL ST
MARTIN ST
DORA AV
FERN ST
GROVE AV
LYNELL LN
N WILSON AV
TAFT AV
BRUNSON AV
MAIN ST
THIRD ST
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LEGION LN
FERN AV
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PINEAPPLE AV
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STONE ST
LEMON ST
VIRGINIA AV
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TEMPLE ST
LOQUAT AV
BARBARA JENKINS ST
BLAKE AV
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COCOA
FLORIDA
DIAMOND SQUARE COMMUNITY REDEVELOPMENT AREA LOCATION
July 24, 2024
Diamond Square CRA
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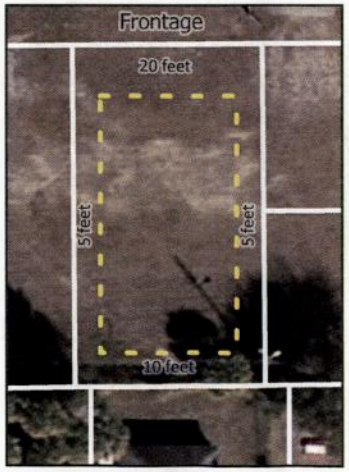
COCOA
FLORIDA

N

Diamond Square Community Redevelopment Area RU-1-7 Zoning

July 30, 2024

- Diamond Square CRA
- RU-1-7 - Single-Family Residential
- Parcels
- Cocoa City Boundary



0 500 1,000 Feet

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PO Box 631244 Cincinnati, OH 45263-1244

AFFIDAVIT OF PUBLICATION

Monica Arsenault
Attn: Accounting Division
City Of Cocoa (Te)
65 Stone St
Cocoa FL 32922-7982

STATE OF WISCONSIN, COUNTY OF BROWN

Before the undersigned authority personally appeared, who on oath says that he or she is the Legal Advertising Representative of the Florida Today, a daily newspaper published in Brevard County, Florida; that the attached copy of advertisement, being a Legal Ad in the matter of Public Notices, was published on the publicly accessible website of Brevard County, Florida, or in a newspaper by print in the issues of, on:

07/23/2024

Affiant further says that the website or newspaper complies with all legal requirements for publication in chapter 50, Florida Statutes.
Subscribed and sworn to before me, by the legal clerk, who is personally known to me, on 07/23/2024

Legal Clerk

Notary, State of WI, County of Brown

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My commission expires

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State of Wisconsin

Ad#10399696; 7/23/2024

CITY OF COCOA
NOTICE OF PUBLIC HEARING
NOTICE IS HEREBY GIVEN THAT
THE PLANNING & ZONING BOARD/LOCAL PLANNING AGENCY PROPOSE TO CONSIDER THE FOLLOWING:

ORDINANCE NO. 17-2024 – Zoning Text Amendment (RU-1-7 Diamond Square)

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PZ-22-000011 – Preliminary PUD (Kargil Associates, LLC – Tax Acct IDs 2415105, 2423194, 2423188)

Consideration of a Preliminary Planned Unit Development (PUD) consistent with Appendix A, Zoning, Article XI, Section 17, for a 61-lot single-family residential subdivision on +/- 57.23 acres of property located on the east side of N. Range Rd., North of Kathi-Kim St.

PLANNING & ZONING BOARD/ LOCAL PLANNING AGENCY PUBLIC HEARING WILL BE HELD ON:
August 7, 2024
CITY COUNCIL PUBLIC HEARING WILL BE HELD ON:
August 13, 2024
ALL HEARINGS WILL TAKE PLACE AT 6:00 P.M. OR SOON THEREAFTER IN THE COCOA CITY HALL COUNCIL CHAMBERS LOCATED AT 65 STONE STREET, COCOA, FL

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