City of Stuart

A G E N D A
LOCAL PLANNING AGENCY / PLANNING ADVISORY BOARD
TO BE HELD FEBRUARY 20, 2020
AT 5:30 PM
COMMISSION CHAMBERS
121 S.W. FLAGLER AVE. STUART, FLORIDA 34994

LOCAL PLANNING AGENCY

Chair - Ryan Strom
Vice Chair - Li Roberts
Board Member - Larry Massing
Board Member - Bill Mathers
Board Member - Christina de la Vega
Board Member - Michael Herbach
Board Member - Campbell Rich
Ex Officio - Garret Grabowski

ADMINISTRATIVE

Development Director, Kev Freeman
Board Secretary, Jordan Pinkston

In compliance with the Americans with Disabilities Act (ADA), anyone who needs a special accommodation to attend this meeting should contact the City's ADA coordinator at 288-5306 at least 48 hours in advance of the meeting, excluding Saturday and Sunday.

If a person decides to appeal any decision made by the Board with respect to any matter considered at this meeting, he will need a record of the proceeding, and that for such purpose he may need to ensure that a verbatim record of the proceedings is made, which record includes the testimony and evidence upon which the appeal is to be based.

CALL TO ORDER

ROLL CALL

APPROVAL OF MINUTES

Approval of LPA Minutes

COMMENTS FROM THE PUBLIC ON NON-AGENDA ITEMS

COMMENTS FROM THE BOARD MEMBERS

ACTION ITEMS

ORDINANCES

1. Amendment to City Tree Replacement code to comply with State Statue and to incorporate innovative stormwater design.(RC)

Ord 2432-2020: AN ORDINANCE OF THE CITY OF STUART, FLORIDA, AMENDING THE EXISTING CHAPTER V OF THE CITY'S LAND DEVELOPMENT CODE ENTITLED 'RESOURCE PROTECTION RELATED DEVELOPMENT STANDARDS' TO COMPLY WITH STATE STATUTE REGARDING TREE REMOVAL PERMITS AND TO PROMOTE INNOVATIVE STORMWATER TREATMENT AND LOW IMPACT DEVELOPMENT PRACTICES AND TO ALLOW THE CITY'S TREE REPLACEMENT FUND TO BE UTILIZED FOR INNOVATIVE STORMWATER TREATMENT SYSTEMS ON PUBLIC LANDS; PROVIDING FOR REPEAL OF CONFLICTING ORDINANCES; PROVIDING FOR SEVERABILITY; PROVIDING FOR CODIFICATION; AND PROVIDING FOR AN EFFECTIVE DATE, AND FOR OTHER PURPOSES.

2. ORDINANCE No. 2434-2020: AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF STUART, FLORIDA, BEING THE THIRD AMENDMENT OF ORDINANCE NO. 2307-2015, ALSO KNOWN AS THE "NEW AVONLEA PLANNED UNIT DEVELOPMENT (PUD)" CONSISTING OF 12.40 ACRES ZONED RESIDENTIAL PLANNED UNIT DEVELOPMENT (RPUD), 16.24 ACRES ZONED COMMERCIAL PLANNED UNIT DEVELOPMENT (CPUD), AND 20.4 ACRES OF WETLAND/UPLAND PRESERVE ZONED RPUD, FOR A TOTAL OF 49.04 ACRES; SAID PUD BEING GENERALLY LOCATED BETWEEN NE DIXIE HIGHWAY TO THE SOUTH, LAND ON BOTH SIDES OF GREEN RIVER PARKWAY ON THE WEST, LAND ON BOTH SIDES OF CARDINAL AVENUE ON THE EAST AND THE CITY BOUNDARY TO THE NORTH, BEING MORE FULLY DESCRIBED BY EXHIBIT "A" ATTACHED; AMENDING SAID PUD TO PROVIDE FOR THE APPROVAL OF THE MASTER PARCEL SITE PLAN FOR THE AVONLEA CROSSINGS PARCEL B (PARCEL 16); PROVIDING FOR A MASTER OFF-SITE INFRASTRUCTURE PLAN FOR THE ENTIRE PUD; PROVIDING FOR REVISED AND ADDITIONAL DEVELOPMENT CONDITIONS OF APPROVAL; PROVIDING FOR AMENDED AND NEW TIMETABLES FOR DEVELOPMENT, DECLARING THE PLAN TO BE CONSISTENT WITH THE CITY'S COMPREHENSIVE PLAN; PROVIDING DIRECTIONS TO THE CITY CLERK; PROVIDING FOR REPEAL OF ALL ORDINANCES IN CONFLICT; PROVIDING FOR SEVERABILITY; PROVIDING FOR AN EFFECTIVE DATE, AND FOR OTHER PURPOSES. (QJ) (RC)

3. STUART OCEAN RPUD - FIRST READING (QUASI-JUDICIAL)(RC):

ORDINANCE No. 2435-2020: AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF STUART, FLORIDA, TO APPPROVE A REZONING FROM R-3 MULTIFAMILY/OFFICE TO RESIDENTIAL PLANNED UNIT DEVELOPMENT "RPUD" ON THE CITY'S OFFICIAL ZONING MAP; FOR AN 11.04 ACRES PARCEL, OWNED BY SERRAGUI GROUP INVESTMENTS LLC, LOCATED ON THE SOUTH SIDE OF SE OCEAN BLVD BETWEEN THE POINTE ASSISTED LIVING FACILTY AND KINGSWOOD CONDO ASSOCIATION, SAID LAND BEING MORE FULLY DESCRIBED IN EXHIBIT "A" ATTACHED; ESTABLISHING STUART OCEAN TOWNHOMES RPUD CONSISTING OF EIGHTY (80) ATTACHED HOMES; APPROVING A MASTER SITE PLAN; PROVIDING FOR

DEVELOPMENT CONDITIONS AND A TIMETABLE FOR DEVELOPMENT, DECLARING THE PLAN TO BE CONSISTENT WITH THE CITY'S COMPREHENSIVE PLAN; PROVIDING DIRECTIONS TO THE CITY CLERK; PROVIDING FOR REPEAL OF ALL ORDINANCES IN CONFLICT; PROVIDING FOR SEVERABILITY; PROVIDING FOR AN EFFECTIVE DATE, AND FOR OTHER PURPOSES.

STAFF UPDATE

ADJOURNMENT

CITY OF STUART, FLORIDA
AGENDA ITEM REQUEST
Local Planning Agency

Meeting Date: 2/20/2020

Prepared by: Jordan Pinkston

Title of Item:
Approval of January 30, 2020 LPA Minutes.

Summary Explanation/Background Information on Agenda Request:
N/A

Funding Source:
N/A

Recommended Action:
Approve.

ATTACHMENTS:

	Description	Upload Date	Type
	LPA Minutes 1.30.20	2/13/2020	Cover Memo

City of Stuart

MINUTES

LOCAL PLANNING AGENCY/PLANNING ADVISORY BOARD
TO BE HELD JANUARY 30, 2020 AT 5:30PM
COMMISSION CHAMBERS
121 SW FLAGLER AVE.
STUART, FL 34994

LOCAL PLANNING AGENCY

Chair – Michael Herbach
Vice Chair – Ryan Strom
Board Member – Li Roberts
Board Member – Larry Massing
Board Member – Campbell Rich
Board Member – Bill Mathers
Board Member – Cristina de la Vega
Ex Officio – Garrett Grabowski

ADMINISTRATIVE

Development Director – Kev Freeman
Board Secretary – Jordan Pinkston

CALL TO ORDER

ROLL CALL
Present: Michael Herbach, Li Roberts, Campbell Rich, Ryan Strom, Bill Mathers, Li Roberts, Larry Massing
Absent: Christina de la Vega

ANNUAL BOARD REORGANIZATION
Motion: Appoint Ryan Strom as Chair.
Moved by: Larry Massing
Seconded by: Bill Mathers
Motion passed unanimously.

Motion: Appoint Li Roberts as Vice Chair.

Moved by: Larry Massing
Seconded by: Bill Mathers
Motion passed unanimously.

APPROVAL OF MINUTES:

Li Roberts asked about Mike Mortell's comment on page 6 of 185.

Kev Freeman stated that the zoning would allow you to attempt his statement.

Campbell Rich's name needs to be changed on last month's minutes.

Motion: Action: Approve.
Moved by: Campbell Rich
Seconded by: Bill Mathers
Motion passed unanimously.

COMMENTS FROM THE PUBLIC ON NON-AGENDA ITEMS: None.

COMMENTS FROM THE BOARD MEMBERS: None.

ACTION ITEMS:

1. STUART SPRINGTREE RPUD - FLUM AND RE-ZONING (QUASI-JUDICIAL)(RC): AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF STUART, FLORIDA, AMENDING THE FUTURE LAND USE MAP OF THE CITY'S COMPREHENSIVE PLAN THEREBY ASSIGNING A FUTURE LAND USE DESIGNATION OF "MULTI-FAMILY RESIDENTIAL" FOR THREE PARCELS EQUALING 13.59 ACRES ANNEXED BY ORDINANCE NO. 2352-2017, OWNED BY STUART 13 ACRES, LLC, TIERRA DEL LAGO, INC. AND STUART HARBOR MARINA AND YACHT CLUB, LOCATED W EST OF S.E. FEDERAL HIGHWAY, SOUTH OF S.E. HARRISON STREET, AND NORTH OF THE NATALIE ESTATES MOBILE HOME PARK W ITH SAID LANDS BEING MORE FULLY DESCRIBED IN EXHIBIT "A" ATTACHED; AND FURTHER PROVIDING THAT SAID LANDS SHALL CONCURRENTLY ESTABLISH THE STUART–SPRINGTREE RESIDENTIAL PLANNED UNIT DEVELOPMENT RPUD CONSISTING OF TWO HUNDRED EIGHTY (280) MULTI-FAMILY UNITS W ITHIN SEVEN (7) INDIVIDUAL FOUR-STORY APARTMENT BUILDINGS; APPROVING A DEVELOPMENT SITE PLAN; PROVIDING FOR DEVELOPMENT CONDITIONS AND A TIMETABLE FOR DEVELOPMENT; DECLARING THE PLAN TO BE CONSISTENT W ITH THE CITY'S COMPREHENSIVE PLAN; PROVIDING DIRECTIONS TO THE CITY CLERK; PROVIDING FOR REPEAL OF ALL ORDINANCES IN CONFLICT; PROVIDING FOR SEVERABILITY; PROVIDING FOR AN EFFECTIVE DATE, AND FOR OTHER PURPOSES.

PRESENTATION: Tom Reetz, Senior Planner 5:34 PM

Terry McCarthy, Project Attorney
Michael Houston, HJA Design Studio
Jim Lott, Waypoint
Howard Ehrsam, Bowman Consulting

BOARD COMMENT:

Li Roberts asked if specific amenities were included in the project.

Jim Lott confirmed what is included in the plan and said he would provide a floor plan.

Li Roberts asked about garages the changes in the plans regarding the number of units.

Tom Reetz clarified why the numbers have changed over time.

Li Roberts asked if those changes affect parking and asked for clarification on the amount of spaces being allocated for parking.

Jim Lott explained what they initially submitted as a plan and why there are changes after speaking with commission.

Li Roberts asked about mail boxes.

Jim Lott said the mailboxes will be in a kiosk that was not included in this site plan. He said there will be parcel locker systems as well.

Li Roberts asked about bike racks.

Ryan Strom pointed out were the bike racks are on the site plan.

Li Roberts asked about grills.

Jim Lott said that the grills will be around the pool area.

Li Roberts asked about exterior trash cans.

Jim Lott said that they have valet trash and onsite maintenance, so there will not be trash cans on sidewalks but there will be some in the breezeways.

Li Roberts asked about playgrounds.

Jim Lott said that they do not typically put in playgrounds.

Li Roberts asked about continuing a sidewalk through the preserve area.

Jim Lott said potentially that is something they would consider doing, but they do not own that property.

Li Roberts asked about the homeless population living on the property.

Jim Lott said that he has been told there is, but during the permit process we would have an appropriate way to handle that.

Michael Houston said that he does not expect people to stay on site when construction begins.

Li Roberts asked about the ornamental fence on the property.

Jim Lott said that they are going to have a preserve on the east side of their boundary and on the west side of their property line it is all preserve area so there is no reason to have ornamental fence in the preserve.

Li Roberts said she would consider it coming in from the north end. She asked about trash service.

Jim Lott said that they have a service that comes door to door specific days of the week. He said that this third-party service will go to all floors and take it to the compactor.

Li Roberts asked about a bus stop and explained why it is important to have one designated.

Jim Lott described where the current bus stops.

Li Roberts said she does not know what signs will look like and she doesn't think they have enough parking. She asked about where the more expensive units would be located and why the parking garages do not seem to reflect correlating with the most expensive units. She asked how much rent is.

Jim Lott said each unit has a different price point and it would be $1300 - $1900 range based on floorplan and location.

Bill Mathers asked if the main thing they are counting on is traffic flow and if they have had any contact with Martin County about right-of-ways. He encouraged having people go north as an exit.

Michael Herbach asked about school bus parking and suggested to have it in the north east quadrant on Harrison. He asked about car charging stations.

Jim Lott said they are thinking about adding conduit for this in front of their clubhouse.

Campbell Rich asked about the actual cost of the project.

Jim Lott said right now their budget is between $50 and $51 million.

Campbell Rich asked about Jim Platt's company and the types of projects they do.

Jim Lott explained what they typically do for each project and how long they own them.

Campbell Rich asked how tall the building is going to be.

Ryan Strom confirmed that it would be 59 feet on the site plan.

Campbell Rich asked for a concurrency update.

Michael Houston said that US1 capacity is not an issue.

Larry Massing asked about the construction type.

Jim Lott said that it is fiber cement siding, asphalt shingles; it is stick built.

Ryan Strom agreed with Li's concerns about mailbox delivery and school bus stops.

Li Roberts made a motion.

Ryan Strom requested that Li Roberts amend two of her conditions.

Jim Lott explained why they have the parking garages where they do.

Li Roberts removed item eight from her motion.

Ryan Strom said that it goes back to the parking spaces.

Michael Houston said they are undergoing parking changes across the country and this analysis shows that we are over parking requirements.

Li Roberts asked about her parking calculation and why it is not meeting our standards.

Kev Freeman said there are two dimensions to this. He said national and worldwide analysis shows that the ratio per unit is less than what we have in the City of Stuart code. He said our goal is to work with the developer and explain their parking demand demonstrate their analysis. He said to remember that the city code is a blanket number. He explained that our analysis is conservative, with one bedroom units we should have 1.25 and two bedroom would be 1.75.

Campbell Rich asked if the parking garages are calculated in the parking calculation.

Michael Houston said that garages are not calculated in the parking calculation. He discussed the parking study that occurred on January 2nd.

Li Roberts said explained the ways around parking requirements.

Michael Houston explained why they used the calculation they did.

Larry Massing asked why they aren't counting the garages in the calculation.

Kev Freeman said that was the applicant's decision, but they would normally be calculated.

Li Roberts said that she will leave the parking calculation in the motion to meet 484.

Kev Freeman asked that the motion be amended to include a condition about construction activity.

Public comments began.

Ryan Strom asked for clarification of density transition differences in Martin County and the City of Stuart.

Kev Freeman said that density transition is not a component of City analysis, that is more of a County requirement.

PUBLIC COMMENT: 7:11 PM

1. David Earle (South Federal Highway) – Representing Springtree Property Owners Association. He complained that notice has not been sufficient. He explained that they are not for or against the project yet and explained some of his residents' concerns.
2. Maureen Wilt (SE Springtree) – Concerned about cars, traffic, bus stops, preserve buffers, height limit, security and more.
3. Suzanne Bowman (SE Winter Haven Court) – She asked about offsetting reasons for density, road widening, additional sidewalks, variances, zoning, traffic lights and flipping the property.
4. William Bowman (SE Winter Haven Court) – He addressed the issue with parking and expressed concerns with transitions, code violations, family development, buffers, view impacts, dog estimate, children estimate, and school capacities.
5. Melissa Iemmolo (SE Harrison Court) – Concerned about the distance from her home, height of building, traffic, busing, density, and the overflow ditch behind her house.
6. Cyndy Williams (SW Perry Lane) – Asked what size the garages are. She is concerned about traffic, open space, number of stories, parking, public utilities, environmental impacts, and suggested single family homes instead.
7. Tascha Reeves (SE Springtree Place) – She is concerned about traffic, buses, and four-story height.

8. Jonathan Irvin (SE Harrison Street) – He strongly opposes the project and is concerned about the height limit, traffic, drainage, wetlands, garbage and dog park.
9. Alek Loudakis (SE Winter Haven Court) – He explained the reasons why he moved to Martin County and is concerned about activity at all hours of the night, parking, distance from his neighborhood, and the project turning into low income housing.
10. Abbey Jones (SE Harrison Street) – She expressed concerns about the lack of compassion and respect for this area. She is concerned about the trees, animals, homeless, chemical run-off, environmental impacts, infrastructure and four stories.
11. Alek Loudakis (SE Winter Haven Court) – He is concerned traffic.
12. Tascha Reeves (SE Springtree Place) – Brought up her concerns about how many cars are in each household.
13. David Earle (South Federal Highway) – He is concerned about traffic going through Harrison Street

BOARD COMMENT:

Larry Massing asked about the Harrison Street access.

Michael Houston said that the property is commercial general, but it would need to be discussed with Martin County.

Howard Ehrsam with Bowman said that he has spoken with Martin County, but they would need a right-of-way permit still.

Li Roberts said that we have a site plan that indicates a northern entrance, but if they do not get permission what happens.

Tom Reetz the traffic report would have to be recalculated.

Kev Freeman said that the northern entrance is part of the recommended site plan, but if that was not available it would have to come back to LPA.

Li Roberts asked for clarification regarding the drainage ditch. She asked if the project was not approved, what could be on the property.

Kev Freeman said that you would have to maintain the ditch. He said that the county is zoned as R3A and limited commercial, but if it remained in the county it would be mandatory rezoning to a combination of general and limited commercial. He said the property has already been annexed into the city, so county rules do not apply unless they came in and filed for rezoning. He said they could do R3 with fifteen units per acre, three stories, and similar setbacks.

Li Roberts said that without the board being able to put restrictions on a project there are things the property owner would be able to do. She asked if she owned the property outright without a PUD where would the entrance be.

Kev Freeman said that it would be the same qualifications.

Larry Massing asked what benefits the city is getting from this application.

Michael Houston apologized if he offended anyone about homelessness. He explained nearby projects that were approved and are similar to theirs. He said that they are providing needed housing. He understands the debate about the height of the project, but there is a 500-foot separation. He said this is not an affordable housing community, these are nice market rate apartments with garages that are sized for parking cars. He said that this is an important provision for the city, and they hope to keep the construction traffic off of Springtree.

Li Roberts asked about the distances on the north side and requested a bigger buffer.

Michael Houston explained what is currently in the buffer areas.

Li Roberts asked about Harrison Street at the north end of the property and planting additional vegetation for a buffer.

Michael Houston said that he can work that out with the residents.

Howard Ehrsam said that the site line will block the entire building.

Li Roberts asked where the bus stops for the Harrison Street residents. She said that there is still traffic that is coming out and that needs to be handled. She made a motion for construction activity.

Howard Ehrsam said they are working on getting an FDOT permit.

Li Roberts explained why she was adding to her motion.

Kev Freeman described what they are looking for.

Discussion about the preserve sidewalk occurred.

Larry Massing asked for garage size clarifications.

Michael Houston clarified the garage dimensions.

Li Roberts said that the plans go to Martin County for review, but they rarely make comments on them. She said that it puts the City of Stuart in a weird position.

MOTION:
Action: Move approval with the following conditions:

1. Address bus stops to make them safer

2. Extend ornamental fence on the west side of the road
3. Increase parking calculation to 484, but garages can be included in the calculation
4. Include exterior trash cans, grills, signage, exterior lighting in site plan
5. Implement a car wash station
6. Solution to mail delivery and mailboxes
7. Work to get permission to add sidewalk connection through "preserve" area
8. Indicate the correct unit count and submit the floor plans
9. Address charging stations
10. Include rules or deed restrictions regarding dogs
11. Submit a detailed construction activity plan

Moved by: Li Roberts
Second by: Larry Massing
Motion passed unanimously.

ORDINANCES:

1. ORDINANCE NO. 2428-2020: AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF STUART, FLORIDA, REZONING FROM COMMERCIAL PLANNED UNIT DEVELOPMENT (CPUD) TO SINGLE FAMILY GENERAL (R-1) ON THE CITY'S OFFICIAL ZONING MAP FOR PROPERTY TOTALING 0.42 ACRES, OWNED BY MEDALIST BUILDING GROUP, LLC LOCATED ON THE NORTHEAST CORNER OF SE DOLPHIN DRIVE AND SE 5TH STREET; BEING MORE FULLY DESCRIBED IN EXHIBIT "A" ATTACHED; DECLARING THE PROJECT TO BE CONSISTENT W ITH THE CITY'S COMPREHENSIVE PLAN; PROVIDING DIRECTIONS TO THE CITY CLERK; PROVIDING FOR REPEAL OF ALL ORDINANCES IN CONFLICT; PROVIDING FOR SEVERABILITY; PROVIDING FOR AN EFFECTIVE DATE, PROVIDING FOR ACCEPTANCE BY THE APPLICANT AND FOR OTHER PURPOSES.

PRESENTATION: Stephen Mayer, Senior Planner 8:24 PM

BOARD COMMENT: None.

PUBLIC COMMENTS: None.

MOTION:
Action: Approve.
Moved by: Larry Massing
Second by: Michael Herbach
Motion passed unanimously.

BOARD COMMENT:

Michael Herbach made two motions.

MOTION: Send staff a request to develop an electric vehicle ordinance, similar to the City of Atlanta's electric vehicle ordinance, and report back to the LPA board within 60 days.
Action: Approve.
Moved by: Michael Herbach
Second by: Li Roberts
Motion passed unanimously.

MOTION: Request staff to review the LPA by-laws and/or rules or regulations to suggest updates and include an agenda item at the next LPA meeting.
Action: Approve.
Moved by: Michael Herbach
Second by: Bill Mathers
Motion passed unanimously.

STAFF UPDATE:

Kev Freeman said he is going to request that the MPO come in to do a presentation for the status of Marty.

Larry Massing said that there are a lot of buses in the county.

ADJOURNMENT:
Motion: Action: Adjourn.
Moved by: Campbell Rich
Seconded by: Larry Massing

_____ _____
Ryan Strom, Chair Jordan Pinkston, Board Secretary

1.

CITY OF STUART, FLORIDA
AGENDA ITEM REQUEST
Local Planning Agency

Meeting Date:2/20/2020 **Prepared by:**Kev Freeman

Title of Item:
Amendment to City Tree Replacement code to comply with State Statue and to incorporate innovative stormwater design.(RC)

Ord 2432-2020: AN ORDINANCE OF THE CITY OF STUART, FLORIDA, AMENDING THE EXISTING CHAPTER V OF THE CITY'S LAND DEVELOPMENT CODE ENTITLED 'RESOURCE PROTECTION RELATED DEVELOPMENT STANDARDS' TO COMPLY WITH STATE STATUTE REGARDING TREE REMOVAL PERMITS AND TO PROMOTE INNOVATIVE STORMWATER TREATMENT AND LOW IMPACT DEVELOPMENT PRACTICES AND TO ALLOW THE CITY'S TREE REPLACEMENT FUND TO BE UTILIZED FOR INNOVATIVE STORMWATER TREATMENT SYSTEMS ON PUBLIC LANDS; PROVIDING FOR REPEAL OF CONFLICTING ORDINANCES; PROVIDING FOR SEVERABILITY; PROVIDING FOR CODIFICATION; AND PROVIDING FOR AN EFFECTIVE DATE, AND FOR OTHER PURPOSES.

Summary Explanation/Background Information on Agenda Request:
This amendment to the land development code sets out the following changes:

1. Compliance with HB1159 which prevents a municipality from requiring a tree removal permit on residential properties if where an arborist or landscape architect provides documentation that the tree presents a danger to persons or property.

2. Promote the implementation of Innovative Stormwater Design. This amendment allows credits to the required tree mitigation to be allowed subject to the removal of certain percentages of Nitrates and Phosphates on site. The higher the amount of removal the higher the potential credit. The amount of credit is based on the probable cost of construction of the additional stormwater treatment installation.

3. Promote the use of Low Impact Development (LID) practices that incorporate practices such as bio-swales, rain gardens and pervious pavements. This amendment allows credits to the required tree mitigation. Reference material published by the University of Florida IFAS and entitled Field Guide to Low Impact Development (2008) is attached.

4. Promote additional tree canopy coverage by the use of shade trees within landscape design. This amendment allows credits to the required tree replacement fund based on the proportion of tree canopy coverage provided.

5. Promote a natural habitat environment by providing that additional inches required under the tree replacement calculation may be credited through the planting of native understory shrubs that are made in addition to landscaping code requirements. Credit is calculated based on shrub size.

6. Extend the use of the City's Tree Replacement fund to include potential use of the fund for innovative stormwater treatment and living shoreline projects within the City's right of way and City property.

Funding Source:
N/A

Recommended Action:
Recommend approval and move to the City Commission for first reading of the ordinance.

ATTACHMENTS:

	Description	Upload Date	Type
🗋	Ord 2432-2020; Amendment to Tree Removal and Tree Replacement	2/7/2020	DRAFT ORDINANCE
🗋	House of Representatives Memo HB1159	1/24/2020	Backup Material
🗋	LID- IFAS Bio Swales	1/29/2020	Backup Material
🗋	LID- IFAS Bio Retention	1/29/2020	Backup Material
🗋	LID- IFAS Cisterns	1/29/2020	Backup Material
🗋	LID- IFAS Stormwater Basins	1/29/2020	Backup Material
🗋	LID- IFAS Exfiltration	1/29/2020	Backup Material
🗋	LID- IFAS Eco Roofs	1/29/2020	Backup Material
🗋	LID- IFAS Site Preparation	1/29/2020	Backup Material
🗋	LID- IFAS Permeable Surfaces	1/29/2020	Backup Material
🗋	LID- IFAS Resoure Efficiency	1/29/2020	Backup Material
🗋	LID- IFAS Moisture Sensors	1/29/2020	Backup Material
🗋	LID- IFAS Stormwater Reuse	1/29/2020	Backup Material

BEFORE THE CITY COMMISSION
CITY OF STUART, FLORIDA

ORDINANCE NUMBER 2432-2020

AN ORDINANCE OF THE CITY OF STUART, FLORIDA, AMENDING THE EXISTING CHAPTER V OF THE CITY'S LAND DEVELOPMENT CODE ENTITLED 'RESOURCE PROTECTION RELATED DEVELOPMENT STANDARDS' TO COMPLY WITH STATE STATUTE REGARDING TREE REMOVAL PERMITS AND TO PROMOTE INNOVATIVE STORMWATER TREATMENT AND LOW IMPACT DEVELOPMENT PRACTICES AND TO ALLOW THE CITY'S TREE REPLACEMENT FUND TO BE UTILIZED FOR INNOVATIVE STORMWATER TREATMENT SYSTEMS ON PUBLIC LANDS; PROVIDING FOR REPEAL OF CONFLICTING ORDINANCES; PROVIDING FOR SEVERABILITY; PROVIDING FOR CODIFICATION; AND PROVIDING FOR AN EFFECTIVE DATE, AND FOR OTHER PURPOSES.

* * * * *

WHEREAS, the purpose of this Land Development Code amendment is to support the objectives of the City's Comprehensive Plan to encourage Low Impact Development (LID) practices in development projects to reduce, treat, infiltrate, and manage runoff flows caused by storms, urban run-off and impervious surfaces; and

WHEREAS, the purpose of this Land Development Code amendment is to promote the implementation of innovative stormwater treatment methodologies on development sites, City property and within the City owned Right of Way; and

WHEREAS, the purpose of this Land Development Code amendment is to promote landscaping which supports a variety of native habitat and which promotes tree canopy coverage; and

WHEREAS, the purpose of this Land Development Code amendment is to comply with State Statute (HB1159) regarding issuance of tree removal permits; and

WHEREAS, the Land Planning Agency reviewed the proposed amendments to the Land Development Code at a public hearing on February 20th, 2020 and

WHEREAS, the City Commission duly scheduled, advertised, and held a public hearing on _____, 2020, to consider this ordinance and provide for full public participation in the Land Development Code amendment process.

NOW THEREFORE, BE IT ORDAINED BY THE CITY COMMISSION OF THE CITY OF STUART, FLORIDA, that:

SECTION 1: The Stuart Land Development Code is hereby amended as follows:

Chapter V - RESOURCE PROTECTION RELATED DEVELOPMENT STANDARDS

*****

Sec. 5.05.02. - Tree replacement and protection requirements.

A. *Historic trees and specimen trees.* Historic trees and specimen trees located within that portion of a development site to be developed shall be protected or replaced in accordance

with the following criteria. No historic or specimen trees shall be removed without a tree removal permit, unless:

a. The tree is located on residential property and an arborist or landscape architect has provided documentation that the tree presents a danger to persons or property; or

b. The removal is in conjunction with an approved development order where a tree survey was submitted.

B. If required ~~A~~ a tree removal permit must be issued by the city development department for work undertaken pursuant to this section. Application for such permit shall be on forms prescribed by the city development director. The fee for such permit shall be set by the city manager.

C. Specimen trees. Unless the Specimen tree is located on a residential property where an arborist or landscape architect provides documentation that the tree presents a danger to persons or property, then ~~All~~ all practical measures shall be taken to leave specimen trees in place and preserved within development sites.

a. Specimen trees within parking areas shall be preserved with tree wells or other appropriate measures, if practical. Any parking space requirement that would require the removal of a specimen tree may be waived by the city development director if no fewer than 90 percent of the required parking spaces will be provided. Otherwise, specimen trees shall be relocated within the development site.

b. Specimen trees within building envelopes or for which there is no practical alternative for preservation shall be relocated within the development site.

c. Specimen trees, excluding Slash Pine trees, for which relocation is not possible or is not expected to be successful, shall be replaced with like species within the development site. Replacement trees shall have a combined DBH of 2.5 times the DBH of the trees replaced. The minimum size for replacement trees is 4.5 inches DBH. Determination of the number of replacement trees or contribution to city tree fund shall be calculated in accordance with Table 1 below. Replacement trees shall be native to Florida or not documented as an invasive species.

d. Specimen trees, specifically and only Slash Pines, for which relocation is not possible or is not expected to be successful, shall be replaced with like species within the development site. Replacement trees shall have a combined DBH of 1.5 times the DBH of the trees replaced. The minimum size for replacement trees is 2.5 inches DBH. Determination of the number of slash pines or contribution to city tree fund shall be calculated in accordance with Table 1 below.

e. When not feasible to replant with like species of Slash Pine, replacement trees may be substituted with the following ~~palm~~ trees on a 1:1 ratio:

- Alexander Palm.
- Coconut Palm.
- Chinese Fan Palm.
- Date Palm.
- Majesty Palm.

- Royal Palm.
- Christmas Palm.
- Washington Palm.

Canopy Trees (may count towards canopy coverage calculations)

- Live Oak
- Variegated Mahoe.
- Maple.
- Sycamore.

For every one foot of clear trunk of palm tree exceeding minimum palm tree size per section 6.04.02.A.2 and for each additional inch of DBH of canopy or specimen trees of the landscape code, credit will be given for one inch of replacement.

f. Additional preservation of native habitat beyond that required by section 5.04.00 may be substituted for a proportion of the tree replacement requirements of this section as approved by the city development director. Such preservation is additional to requirements for wetlands and preserve areas and shall include sufficient native trees to meet the DBH replacement requirements in subsection A.1.c of this section.

g. Credit towards tree replacement requirements shall be provided for landscaping required by section 6.04.00 only if all required trees are planted at a minimum DBH of 4.5 inches and all required palms are planted at a minimum of 14 feet clear trunk. If required trees or palms, as proposed for a development site in accordance with the landscape code, are planted at minimum landscape code requirements, then no credit is obtainable.

h. As determined by the city development director, monies may be contributed as part of tree replacement requirements. This tree replacement mitigation, through payment into the city tree replacement fund, shall only provide for a 50 percent mitigation of the required number of trees to be replaced. The city development director shall coordinate the recovery and disbursement of said funds in accordance with the general provisions of this chapter.

i. Innovative stormwater treatment design which is demonstrated to exceed water quality treatment above that required in section 6.03.00 and South Florida Water Management District best management practice and reduces post-development stormwater pollutant loading of total nitrates and phosphates by 81 or more percent may be substituted for a proportion of the tree replacement fund payment in accordance with Table 2 of this section and as approved by the city development director.

j. Proposals that incorporate Low Impact Development (LID) practices that include, but are not limited to, a combination of sustainable drainage design, preservation of open space above code requirement, bio-swales and pervious pavement may be substituted for a proportion of the tree replacement requirements of this section and as approved by the city development director.

k. Proposals that demonstrate a tree canopy coverage greater than 30% of the site area may qualify for a reduction in a proportion of the City Tree Replacement Fund payment in accordance with the provisions of Table 3 of this section and as approved by the city development director. Tree canopy coverage is calculated as the area of shade generated by tree foliage at ground level.

l. Additional inches required under the tree replacement calculation may be credited through the planting of native understory shrubs that are made in addition to landscaping code requirements and listed here; credit will be at a proportion in accordance with Table 4 of this section and as approved by the city development director.

Native Shrub and Ground Cover List:

- Coco Plum
- Silver Buttonwood
- Dwarf Firebush
- Spider Lily
- Dwarf Schillings Holly
- Pink Muhly
- Fakahatchee Grass
- Coontie
- Sand Cord Grass
- Wax Myrtle

m. Relocated trees that do not survive at least two years shall, in turn, be replaced. A mechanism for financial assurance that relocated, and replacement trees will meet survival criteria shall be provided.

n. Wherever feasible, tree removal within single family and duplex properties shall substitute replacement trees with like species on a 1:1 ratio~~, if feasible~~.

Table 1

Proposed Formulas for Tree Replacement and Contribution into City Tree Fund

Tree Replacement Formula—Slash Pine:														
Total # inches to remove	×	1.5	=	Total # inches to be replaced	/	Minimum size to replace 2.5"	=	Total # trees to plant	×	50% mitigation to pay into city tree fund	×	175% of plant finder wholesale	=	Total $ amount to pay into city tree fund

Tree Replacement Formula—All trees less Slash Pine:														
Total # inches to remove	×	2.5	=	Total # inches to be replaced	/	Minimum size to replace 4.5"	=	Total # trees to plant	×	50% mitigation to pay into city tree fund	×	175% of plant finder wholesale	=	Total $ amount to pay into city tree fund

Table 2

Credit for providing additional Nitrate and Phosphate removal

Percentage of Nitrate and Phosphate loading reduction from stormwater	Maximum Pollutant Removal Factor for construction value of additional stormwater treatment[a]
81% to 85%	1.25
86% to 89%	1.5
90% +	2.0

Table 2 Notes:

a. The value of additional stormwater treatment measures as provided by an engineer's probable cost of construction is multiplied by the Pollutant Removal Factor to provide an equivalent $ amount, which may only be credited to offset all or part of the required City Tree Replacement fund.

Table 3

Credit for providing additional tree canopy

Total Site Tree Canopy Coverage	Maximum Credit Reduction to the required City Tree Replacement Fund
30% to 35%	15%
36% to 40%	30%
40% +	50%

Table 4

Credit for providing additional understory native planting

Size of Native Shrub	Maximum Credit Inches
1 Gallon Plant	1 inch per 24 plants
3 Gallon Plant	1 inch per 12 plants

(Ord. No. 1788-01, § 1, 6-25-01)

2. *Historic trees.* Unless the historic tree is located on a residential property where an arborist or landscape architect provides documentation that the tree presents a danger to persons or property ~~A all historic trees located within a proposed site~~ the tree shall be preserved.

   a. A site plan, development permit, or plat application shall indicate the preservation of all historic trees in all areas proposed for development. The site application shall indicate protective measures to ensure the preservation and longevity of all historic trees, such as tree wells, construction barricades or fencing, or relocation.

   b. Any parking space requirement or building envelope which would require the removal of a historic tree may be waived by the city development director if no fewer than 90 percent of the required parking spaces are provided.

      In the event no practical alternative exists to locating structures on the site so as to accommodate a historic tree, the applicant for development may submit for major development plan approval or planned unit development (PUD) to consider the removal and replacement of the historic tree. The city commission shall be guided by a consideration of the environmental as well as aesthetic and economic value of the historic tree to be replaced in deciding the appropriate means and manner of its removal and replacement.

   c. Wherever feasible, tree removal within single family and duplex properties shall substitute replacement trees with like species on a 1:1 ratio~~, if feasible~~.

(Ord. No. 2165-08, § 2, 11-24-08)

*****

Sec. 5.05.07. - City tree replacement fund.

A. *Establishment of the city tree replacement fund.* The city tree replacement fund is created in association with the City of Stuart department of financial services for the purpose of accepting and disbursing payments made to the city as part of tree replacement mitigation and other monies deposited from penalties for tree removal, illegal grading, or illegal clearing. These monies shall be placed in an account and shall be used for funding tree planting and replacement on private or public property within the city, exotic vegetation removal and native

habitat enhancement on private or public property within the city, acquisition of land within the city for preservation purposes, matches for habitat management related grants.

B. *Term of existence.* The city tree replacement fund account shall be self-perpetuating from year to year unless specifically terminated by the city commission.

C. *Purpose.* Funds received shall be utilized for acquiring and planting trees for public purposes within the city or for creating innovative stormwater treatment systems or living shoreline installations within public lands. Acquired trees shall be suitable to the site conditions and listed within the city tree list. Public lands selected for plantings, living shoreline installations or innovative stormwater treatment systems shall be publicly owned or managed lands in public right-of-way.

D. *Source of funds.* Fund monies may consist of the following:

1. All monies collected pursuant to the penalties outlined in section this Code and the Code of Ordinances.
2. All monies collected as part of tree replacement mitigation allowances.

E. *Fund administration.*

1. Funds shall be expended, utilized and disbursed only for the purposes designated herein.
2. The fund shall be a separate set of self-balancing accounts established and maintained by the City of Stuart.
3. Funds shall be managed in accordance with the city's Code of Ordinances as they relate to financial matters.
4. Monies obtained pursuant to this section may be accepted on behalf of the City of Stuart by the city development director or their designee, and upon receipt shall be delivered to the City of Stuart department of financial services, which shall cause the same to be credited to the trust.

(Ord. No. 1788-01, § 1, 6-25-01; Ord. No. 1966-04, § 2, 1-26-04; Ord. No. 2165-08, § 2, 11-24-08)

SECTION 2: All ordinances or parts of ordinances herewith are hereby repealed to the extent of such conflict.

SECTION 3: If any word, clause, sentence, paragraph, section or part thereof contained in this Ordinance is declared to be unconstitutional, unenforceable, void or inoperative by a court of competent jurisdiction, such declaration shall not affect the validity of the remainder of this Ordinance.

SECTION 4: The provision of Sections 1 of this ordinance shall be codified.

SECTION 5: This ordinance shall take effect upon adoption

Passed on first reading the ___ day of _____, 2020

Commissioner _____ offered the foregoing Ordinance and moved its adoption. The motion was seconded by Commissioner _____ and upon being put to a roll call vote, the vote was as follows:

	YES	NO	ABSENT	ABSTAIN
MICHAEL J. MEIER, MAYOR				
EULA R. CLARKE, VICE MAYOR				
KELLI GLASS LEIGHTON, COMMISSIONER				
MERRITT MATHESON, COMMISSIONER				
REBECCA S. BRUNER, COMMISSIONER				

ATTEST:

_____
MARY R. KINDEL
CITY CLERK

_____
MICHAEL J. MEIER
MAYOR

APPROVED AS TO FORM
AND CORRECTNESS:

_____
MICHAEL J. MORTELL
CITY ATTORNEY

2432-2020

The Florida House of Representatives

Office of the Speaker

MEMORANDUM

To: Local Government Officials

From: Jose R. Oliva, Speaker
Florida House of Representatives

Date: January 07, 2020

Re: Private Property Rights, Chapter 2019-155, Laws of Florida

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Please take note of legislation passed in the 2019 session and signed into law by Governor Ron DeSantis. CS/HB 1159 prohibits a local government from requiring a notice, application, approval, permit, fee, or mitigation for the pruning, trimming, or removal of a tree on residential property when an arborist or landscape architect documents that the tree presents a danger to persons or property.

Continued enforcement of local regulations in conflict with this provision will constitute illegal requirements under this new law. I strongly encourage you to review your local ordinances that may restrict property owners' ability to remove or prune trees. Staff of the House of Representatives are available to discuss any questions you may have about the bill.

Please expect the House to be diligent in executing its oversight responsibilities in order to protect the rights of property owners and prevent any illegal governmental actions that interfere with these rights.

Thank you for your attention to this important issue.

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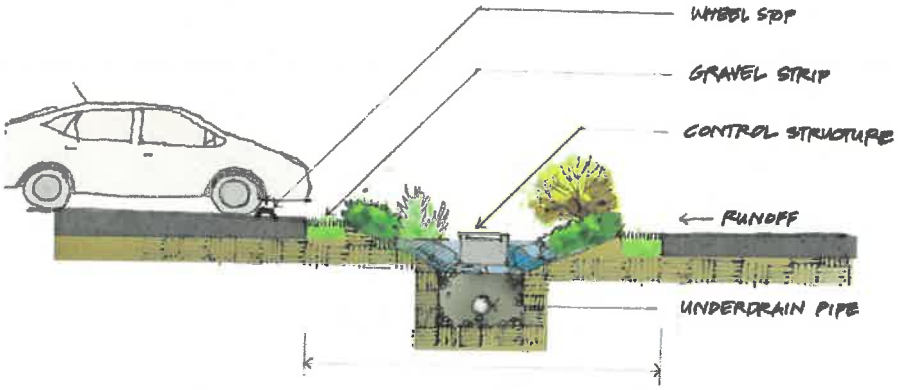
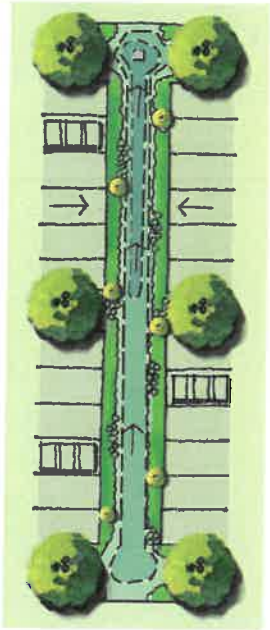
420 The Capitol, 402 South Monroe Street, TALLAHASSEE, FL 32399-1300

Bioswales/Vegetated Swales





This bioswale cross section (left) depicts the swale with an underdrain, which may not be necessary in naturally well drained soils. Surface runoff from the adjacent impervious area enters the swale diffusely through an energy reducing gravel strip and then flows through vegetative buffers along the edge of the bioswale. Swales can be designed with swale blocks (dashed lines perpendicular to flow arrows in plat view (right)) if there is a significant slope or by setting the discharge elevation of the control structure higher than the swale bottom if the swale has little relief.

Definition:

A bioswale or vegetated swale is a form of bioretention used to partially treat water quality, attenuate flooding potential and convey stormwater away from critical infrastructure. These systems are linear, with length to width dimensions much greater than the more typical 2:1 applied to bioretention cells.

Applications

- Parking lot island and medians
- Residential roadside swales
- Highway medians
- Landscape buff

Objectives:

The function of these open-channel (broad) drainageways is to convey stormwater runoff. They are often used as an alternative to, or an enhancement of, traditional stormwater piping. Bioswales are often integrated into parking lot and road medians and parallel to roadways to infiltrate and treat a portion of the stormwater volume. These systems can often be integrated into existing ditch and swale systems to increase their treatment function. Where soils are well drained, infiltration can also be facilitated in the swale by placing ditch blocks or weirs perpendicular to the flow path, causing small volumes of water to be captured in the swale and allowing more time for infiltration.

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Overview:

Conveyance systems are often required to move stormwater away from critical infrastructure. The purpose of a bioswale is to increase the function of these conveyance systems by integrating features that improve water quality, reduce runoff volume and enhance landscape aesthetics. By creating in-swale storage opportunities, small storm volumes can be captured and allowed to infiltrate within the bioswale. Where soils are poorly drained, under drain systems may be used to attenuate peak flows and force water stored within the swale through a soil filter media before continuing downstream. For larger flow events, vegetation within the swale and ditch blocks helps to stabilize soils and increase sedimentation potential. The shape and location of the bioswale and selection of vegetation can also be integrated into the site's overall landscaping design to create a multifunctional system. The size of the bioswale will determine the volume of runoff that can be stored or reduced, as well as the treatment benefits. Where the volume of runoff exceeds that of the bioswale(s), further stormwater devices will be required to handle the design storm.

Bioswales can be found in an open area or within a restricted area like a parking lot. Two types of vegetated swales are commonly used. Dry swales provide both quantity (volume) and quality control by facilitating stormwater infiltration. Wet swales use residence time and natural growth to reduce peak discharge and provide water quality treatment. A wet swale typically has water tolerant vegetation permanently growing in the retained body of water. Swales are most effective when used in conjunction with other IMPs, such as bioretention basins and infiltration trenches.

Water Protection Benefits:

Water conservation implications – Like bioretention basins/rain gardens, vegetated swales are designed to capture and retain stormwater in recessed drainageways, which typically do not need irrigation beyond plant establishment. These areas can provide significant aesthetic benefit while avoiding water requirements associated with other landscape types. They can also conserve biodiversity when native plants are used.

Stormwater implications – Bioretention swales provide both stormwater treatment and conveyance functions. The swale component provides pre-treatment of stormwater to remove coarse to medium sediments, while the bioretention system removes finer particulates and associated contaminants. Bioretention swales filter stormwater via the following processes: 1) passing through surface vegetation; 2) percolating through prescribed filter media, which provides treatment through fine filtration, extended detention treatment and some biological uptake; 3) disconnecting impervious areas from downstream waterways; and 4) providing protection to natural wetland systems from frequent storm events by reducing storm flow velocities when compared to pipe systems.

Benefits:

- **Treat water quality using soil, vegetation and microbes**
- **Reduce total volume of stormwater runoff**
- **Increase infiltration and groundwater recharge**
- **Multifunctional conveyance system**
- **Can be aesthetic part of landscape and improve biodiversity**

Design Considerations:

This is an infiltration dependent practice affected by soil type, groundwater table, size of the area serviced, imperviousness of the contributing watershed, and dimensions and slope of the swale system. Swales are impractical for areas with very flat grades or steep slopes, and should be used to serve areas of less than 10 acres with slopes no greater than 5%. As a simple rule of thumb, the total surface area of the swale should be one percent of the area from which it is receiving stormwater. Large areas should be divided and treated using multiple swales. Vegetated swales should not be installed in areas with high water tables where groundwater reaches the bottom of the swale.

Plant material selection and location are critical design choices. Additional considerations include the following:

- Bioswale function and treatment is improved when applied in areas with well drained soils.

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Design Keys:

- **The design of a bioswale is a balance of stormwater conveyance function with storage, infiltration and soil and biological treatment processes. That means there must be consideration of:**
- **Swale design, including outlet design**
- **Location in the treatment train**
- **Plant material selection**
- **Soil composition**
- **On-going managemen**

- Poorly drained sites require an underdrain system.
- Slopes greater than 5% require multiple ditch blocks or weirs perpendicular to the flow to facilitate storage volume and extend time for infiltration.
- Where phosphorus control is important, soils used in construction should have a low phosphorus content and high phosphorous sorption capacity.
- Where nitrogen control is important, mulch and organic matter incorporated into the soil should have a high carbon to nitrogen ratio.
- A high flow bypass (outlet or control structure) should be included to safely convey high flows.

Vegetation is ideally a fine, close-growing water-tolerant species that provides high amounts of vegetative surface area for contact with stormwater. Plants should be selected specifically for their nutrient uptake ability and site appropriateness. Where possible, use native plants to improve biodiversity.

Check dams, slight slopes, permeable soils, dense vegetative cover, increased contact time, and small storm events all aid pollutant removal. On the other hand, compacted soils, short runoff contact time, large storm events, steep slopes, and high runoff velocities and discharge rates reduce the effectiveness of swales.

Operations and Maintenance:

It is important that the storage capacity and functional integrity of the bioswale be maintained through regular monitoring and maintenance of vegetation, infiltration capacity, and structures. Regular inspection of bioswales should be conducted to identify signs of erosion, accumulation of debris around structures and signs of excessive sedimentation. Soil infiltration capacity should be tested annually to determine if soils are becoming clogged. Maintenance requirements include seasonal trimming of vegetation and removal of debris and trash that may foul downstream structures.

HOA or Regulatory Considerations:

To receive permit credit for a bioswale under Florida's current stormwater regulations requires infiltration of 80% of the runoff from a 3-year, 1 hour storm (2.5 inches).

Credits in Green Building Certification Programs:

- FGBC-Home Standard (waterfront prerequisite: use of terraces, swales or berms to slow stormwater)
- Florida Yards & Neighborhoods (stormwater runoff: swales, terraces and/or rain gardens created to catch and filter stormwater; all rain and storm water drains away from the building foundation using legal drainage conveyance systems on-site)
- LEED for Homes (SS 4.3 management of runoff from roof)
- LEED for Neighborhood Development Pilot (GCT Credit 9: Stormwater Management)
- NAHB Model Green Home Building Guidelines (1.3.5 Manage storm water using low-impact development when possible)

Relative Costs:

Swales are inexpensive relative to traditional curb and gutter treatment or underground stormwater systems. Maintenance is required more frequently but is considerably less costly than curb and gutter system maintenance. Cost of this practice compares favorably to other LID practices. In a U.S. Army Corps of Engineers study from 2004, costs per square foot were $0.50 (source: www.wbdg.org).

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References and Resources:

EPA Stormwater BMP Fact Sheet: Grassed Swales http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=75

EPA Storm Water Technology Fact Sheet: Vegetated Swales http://www.epa.gov/owm/mtb/vegswale.pdf

California Stormwater BMP Handbook – Vegetated Swales http://www.cabmphandbooks.com/Documents/Development/TC-30.pdf

Massachusetts LID Toolkit – LID Factsheet – Vegetated Swales

http://www.mapc.org/regional_planning/LID/swales.html

Credits

Authors:

Mark Clark
Soil and Water Science Department

Glenn Acomb
Landscape Architecture Departmen

Fact Sheet Illustrations:

Glenn Acomb
Landscape Architecture Department

Wei Ren
Landscape Architecture Department

Fact Sheet Illustration Assistance:

Brian Niemann
Florida Yards & Neighborhoods

Layout:

Barbara Haldeman
Program for Resource Efficient Communities

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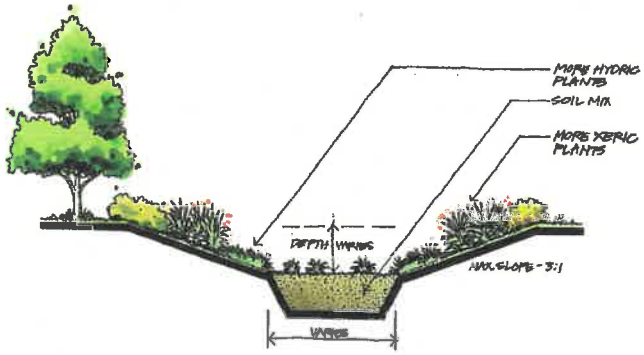
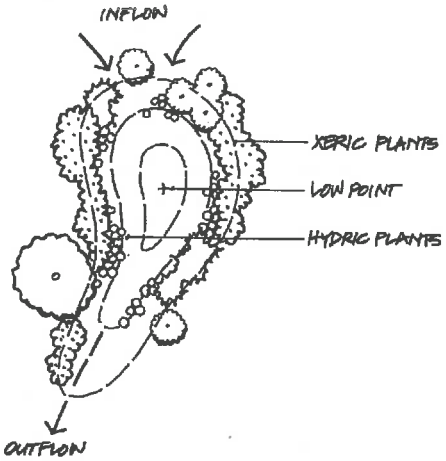
Bioretention Basins/Rain Gardens





Depiction of typical bioretention area design illustrating shallow slopes, well drained soil profile and location of plant material along hydrologic gradient. Basins with large catchments should include an over drain or provide a spillway in case of high flow event, and underdrains can be used in areas with low conductivity soils.

Definition:

A bioretention area or rain garden is a shallow planted depression designed to retain or detain stormwater before it is infiltrated or discharged downstream. While the terms "rain garden" and "bioretention basin" may be used interchangeably, they can be considered along a continuum of size, where the term "rain garden" is typically used to describe a planted depression on an individual homeowner's lot, where the lot comprises the extent of the catchment area. Bioretention basins serve the same purpose but that more technical term typically describes larger projects in community common areas as well as non-residential applications.

Applications

- Residential yards (most common in smaller, urban sites)
- Commercial developments
- Parking lot islands
- Roadways (off-line cells adjacent to roadways accessed by curb cut)

Objectives:

Bioretention basins/rain gardens retain, filter, and treat stormwater runoff using a shallow depression of conditioned soil topped with a layer of mulch or high carbon soil layer and vegetation tolerant of short-term flooding. Depending on the design, they can provide retention or detention of runoff water and will trap and remove suspended solids and filter or absorb pollutants to soils and plant material.

Overview:

Bioretention basins can be installed at various scales, for example, integrated with traffic calming measures in suburban parks and in retarding basins. In larger applications, it is considered good practice to have pretreatment measures (e.g. vegetated strips and swales) upstream of the basin to capture sediment and reduce the maintenance frequency of a bioretention basin.

The size of the rain garden or bioretention area will determine the volume of runoff that can be stored or reduced, as well as the treatment benefits. Where the volume of runoff exceeds that of the bioretention area, additional stormwater devices will be required in the treatment train to handle the design storm.

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Benefits

- Pollutant removal through infiltration and plant absorption
- Reduction of water runoff from site
- Reduced irrigation for planting beds
- Increased biodiversity in the landscape with wildlife and aesthetic values

Water Protection Benefits:

Bioretention basins use vegetation in retention areas to reduce nutrient export through plant uptake, filtering and sorption. The vegetation also improves soil infiltration.

Water conservation implications – Biorention basins are designed to capture and retain stormwater in recessed gardens that typically do not need irrigation beyond plant establishment.

Stormwater implications – Infiltration processes and adsorption to plant roots remove pollutants from the flow stream. This is a key practice in the LID suite for improving stormwater quality. This also reduces the quantity of water flowing off-site into the larger municipal stormwater system.

Design Considerations:

This is an infiltration dependent practice affected by soil type and groundwater table. Where soils are well drained and groundwater tables are well below the surface, an under drain is not required. Where soils have low conductivity, underdrains can be used to reduce ponding time and increase treated volume. There is no specific slope requirement for bioretention, although size of the basin will typically decrease or become narrower and follow the elevation contour as slopes increase above 5%.

Determination of ponding depth should consider inflow characteristics (inflow rate, total volume, etc.), soil infiltration rate, and total ponding volume available. The ponding depth should not be greater than 12 inches, with 6-8 inch depths preferred. The duration of ponding after a storm should also not exceed 24 hours to reduce the likelihood of mosquito breeding or safety hazards.

A bioretention area/rain garden is used to encourage infiltration, so place it in an area where infiltration is good, not where water normally pools. It should be at least 10 ft. from any building, to avoid moisture around the building's foundation. Don't place a rain garden over a septic system. Consider how it can be integrated into existing and future landscaping. When adding plant material, do not place woody plants in the inflow path. Use native plants to improve the site's biodiversity.

Operations and Maintenance:

When rain gardens are installed on individual lots, it is important to implement educational programming to homeowners on proper maintenance. It is also important that the storage capacity of the rain garden/bioretention area be maintained through regular maintenance of vegetation and removal of debris that may compromise any structures during a high flow event. Regular visual inspection of the basin, looking for signs of erosion, excessive sediment deposits or dead and diseased vegetation, should be conducted. Mulch in the bioretention area should also be monitored for bare spots and should be replaced every 2-3 years. Plant selection is critical to aid operation, and other considerations may include gravel or stone to limit volunteer growth that can reduce storage area.

Design Keys

- The design of a bioretention area/rain garden is a balance of stormwater function with biological functions. That means there must be consideration of:
- Basin design (soil type, drainage, groundwater table, slope, outfall device)
- Location in the treatment train
- Plant material selection and placement
- On-going management

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HOA or Regulatory Considerations:

There is presently no regulatory "presumption of compliance" granted to rain gardens or bioretention basins in stormwater permits. Although not significantly different than a conventional dry retention basin except for size, spatial distribution and landscape integration of this practice requires them to be submitted as an "alternative" management practice during the permitting process. Water management districts are also cautious about giving credit toward volume storage for any structure installed on a homeowner's property without sufficient guarantee that the structure will be adequately maintained in the long-term.

Credits in Green Building Certification Programs:

- FGBC-Home Standard (S-15 onsite designated retention areas)
- Florida Yards & Neighborhoods (stormwater runoff: swales, terraces and/or rain gardens created to catch and filter stormwater)
- LEED for Homes (SS 4.3 management of runoff from roof)
- LEED for Neighborhood Development Pilot (GCT Credit 9: Stormwater Management)
- NAHB Model Green Home Building Guidelines (1.3.5 Manage storm water using low-impact development when possible)

Relative Costs:

While this practice may create additional site work costs as compared to conventional practices, it can be offset by reduced infrastructure such as stormwater pipes, storm drains and stormwater ponds. Costs per acre of development range from $5,000 to $10,000 for larger areas and costs per square foot range from $3 to $15. In some cases it has been found that bioretention can yield a 50% savings over conventional systems for overall site drainage. In most cases the area would have been landscaped, so the cost of installing and maintaining a bioretention area should be compared to the cost of otherwise landscaping the area.

References and Resources:

Bannerman, R. and E. Considine. 2003. *Rain Gardens, A How-To Manual for Homeowners.* University of Wisconsin. http://clean-water.uwex.edu/pubs/pdf/home.rgmanual.pdf

Bioretention Basins Factsheet (Lake Superior Streams.Org) http://www.lakesuperiorstreams.org/stormwater/toolkit/bioretention.html

Bioretention (Rain Gardens) Fact Sheet (EPA) http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=72

Clar, M., A.P. Davis, W.F. Hunt, and R.G.Traver, 2007. Bioretention Technology: An Overview of Current Practice and Future Needs, Paper presented at the 2nd National Low Impact Development (LID) Conference, sponsored by North Carolina State University, Wilmington, NC.

Engineering Technologies Associates and Biohabitats. 1993. *Design Manual for Use of Bioretention in Stormwater Management.* Prepared for Prince George's County Government, Watershed Protection Branch, Landover, MD.

LID BMP Fact Sheet – Bioretention Basins (Fairfax County) http://www.lowimpactdevelopment.org/ffxcty/1-1_bioretentionbasin_draft.pdf

Winogradoff, Derek A. 2002. *Bioretention Manual.* Programs & Planning Division,

Department of Environmental Resources, Prince George's County, Maryland. http://www.princegeorgescountymd.gov/Government/AgencyIndex/DER/ESG/Bioretention/bioretention.asp

Credits

Authors:

Mark Clark
Soil and Water Science Department

Glenn Acomb
Landscape Architecture Departmen

Fact Sheet Illustrations:

Glenn Acomb
Landscape Architecture Department

Wei Ren
Landscape Architecture Department

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Fact Sheet Illustration Assistance:

Brian Niemann
Florida Yards & Neighborhoods

Layout:

Barbara Haldeman
Program for Resource Efficient Communities

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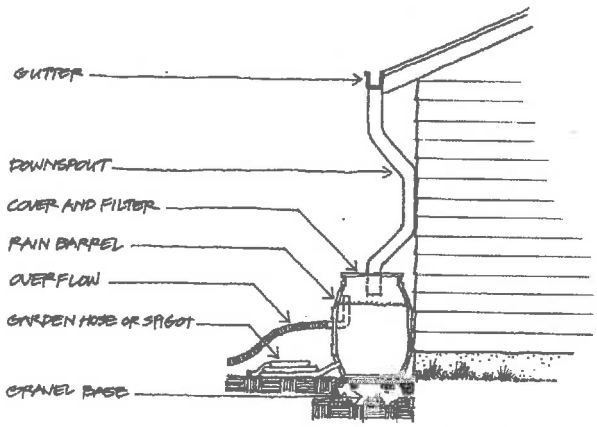
Cisterns/Rain Barrels



Rainbarrel rainfall harvesting system fitted with overflow pipe, spigot and hose for watering. To increase pressure, the rainbarrel can be elevated above the ground, but it must be secured. A rainbarrel full of water weighs over 400 lbs.

Definition:

Cisterns and rain barrels are storage tanks that capture runoff water from a catchment area such as a rooftop. Cisterns are essentially large-scale rain barrels.

Objectives:

Cisterns are typically used as commercial or industrial catchment devices for rainwater harvesting, storage, and reuse. Rain barrels are used for the same purposes by homeowners. Cisterns are more costly but can hold significantly more water.

Benefits

- Reduces use of potable water for irrigation
- On site reuse reduces quantity of stormwater runoff

Applications

- New construction
- Retrofits
- Commercial
- Residential communities

Overview:

Cisterns can be located above or below ground, depending on site conditions and the preferred use of the harvested rainwater. Runoff collected from roof tops is often relatively clean and can be used for irrigation or for flushing toilets. Rain barrels, often made from 55-gallon plastic drums, are becoming popular with homeowners as a supplemental irrigation source. The University of Florida's Florida Yards & Neighborhoods program offers rain barrel workshops in a growing number of counties (find your county's Extension office at http://solutionsforyourlife.ufl.edu/map/.

Water Protection Benefits:

Water conservation implications – When cistern-harvested rainwater is used for landscape irrigation, which can account for as much as 50% of household potable water use in Florida, the potential to offset potable water demands is significant. The quality of water harvested by cisterns is dependent on a variety of factors, including rainfall quality, catchment debris that may have accumulated on the roof since the last rain, and inclusion of a first flush diversion devise. The amount of water captured and therefore the amount of water available for use will depend on the size of the cistern and rainfall pattern. Cistern size can range from hundreds to thousands of gallons. A typical size for residential application in Florida is around 5,000 gallons.

Stormwater implications – Similar to the benefits of green roofs, rainwater harvesting with cisterns reduces stormwater runoff through interception, reducing stress on downstream management and treatment systems.

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Design Considerations:

Cisterns or rain barrels can be applied across various site conditions. Because they function independent of soil types and site slopes, the possibilities for residential and commercial application of cisterns throughout Florida are widespread. Their sizing is based on expected water demands, rainfall pattern, and cistern system cost. A general rule of thumb is that 1" of rain on 1000 sq. ft. of roof will yield approximately 600 gallons. Rain barrels are often elevated on stands to improve water pressure of the outflow. Cisterns and rain barrels are placed near the catchment site. Cisterns should not be placed near trees whose roots may damage the cistern walls. A spigot is usually attached to the rain barrel or cistern for use and drainage. Submersible or surface pumps can also be used with cisterns to increase pressure for use in most irrigation systems.

Design Keys

- Size of roof
- Water demand
- Rainfall pattern
- Cistern capacity
- Overflow device
- First flush bypass

Operations and Maintenance:

Rain barrels and cisterns require minimal maintenance. The tank should be cleaned out about once a year if debris is present. Gutters and downspouts should be inspected regularly and kept clear. If a first flush bypass system is used, remove debris from the bypass and make sure drain holes are kept open so that the system functions properly. No maintenance is required to prevent mosquito breeding in a rain barrel if all surfaces at the downspout entrance are sealed. However, the seals should be inspected periodically, and if mosquitoes become a problem, mosquito dunks [floating donut-shaped briquettes containing the biological insecticide *Bacillus thuringiensis* (Bt)] can be used.

Credits in Green Building Certification Programs:

- FGBC-Home Standard (W10-11 rainwater harvesting)
- Florida Yards & Neighborhoods (stormwater runoff: storage provided for harvested water in a rain barrel, cistern or above ground tank; underground distribution tanks installed to collect stormwater)
- LEED for Homes (SS 4.3 management of runoff from roof)
- LEED for Neighborhood Development Pilot (GCT Credit 9: Stormwater Management)
- NAHB Model Green Home Building Guidelines (1.3.5 Manage storm water using low-impact development when possible; 4.1 indoor/outdoor water use)

Relative Costs:

Materials and installation costs vary substantially across cistern applications, depending on the source (e.g., manufactured or pre-fabricated vs. constructed on site), storage capacity (size), location (above or below ground), and structural material. A single residential rain barrel with typical attachments and accessories costs around $50 for the parts for self assembly and $200 assembled, whereas cisterns costs can start at about $1,500 and a large commercial cistern can cost thousands or tens of thousands of dollars. These upfront costs can be partially offset by reduced demand for potable water, but they do not directly offset regularly incurred materials and installation costs of conventional stormwater system components.

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Two 1,550 gallon cisterns are used to harvest rainwater that has filtered through the Perry Construction Yard green roof at the University of Florida in Gainesville

References and Resources:

Bucklin, Ray. 2003. Cisterns To Collect Non-Potable Water For Domestic Use. University of Florida/ IFAS, Agricultural and Biological Engineering Department. EDIS # AE64.

Hillsborough County UF Extension. *Rain Barrels.* http://hillsborough_fyn.ifas.ufl.edu/RainBarrels.html

Rainwater Harvesting from Rooftop Catchments (Organization of American States Department of Sustainable Development): www.oas.org/dsd/publications/Unit/oea59e/ch10.htm.

Southwest Florida Water Management District. *Recycle the Rain: A How-to For Installing a Rain Barrel:* http://www.swfwmd.state.fl.us/conservation/rainbarrel/

Specifications of Rain Barrels and Cisterns (Low Impact Development Center, Inc.): www.lid-stormwater.net/raincist/raincist_specs.htm.

Tampa Bay Water. 2007. *A Review of Applicable Policies and Permitting Requirements For Non-Potable Use of Cisterns.* http://www.tampabaywater.org/documents/conservation/cisterns.pdf

Texas Water Development Board. 2005. *The Texas Manual on Rainwater Harvesting.* http://www.twdb.state.tx.us/publications/reports/RainwaterHarvestingManual_3rdedition.pdf

Credits

Authors:

Mark Clark
Soil and Water Science Department

Glenn Acomb
Landscape Architecture Departmen

Fact Sheet Illustrations:

Glenn Acomb
Landscape Architecture Department

Wei Ren
Landscape Architecture Department

Fact Sheet Illustration Assistance:

Brian Niemann
Florida Yards & Neighborhoods

Layout:

Barbara Haldeman
Program for Resource Efficient Communities

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Enhanced Stormwater Basins

The Stormwater Ecological Enhancement Project (SEEP) on the University of Florida campus in Gainesville was created by re-contouring and introducing new vegetation to a 3-acre retention pond. Over a period of seven years, the number of vegetative species on the site increased four-fold, and pollutant treatment has improved.

Definition:

Stormwater basins are designed to store stormwater runoff temporarily (detention) or permanently (retention) to reduce flooding potential and to improve water quality. Also known as stormwater wetlands, enhanced stormwater basin designs facilitate increased vegetative diversity and complexity of biogeochemical processes to improve water treatment, biodiversity, aesthetics. Enhanced stormwater basins can be considered along the same continuum of biophysically enhanced stormwater practices where rain gardens are followed by bioretention basins, with enhanced stormwater basins falling at the highest end of the continuum.

Applications

- Common areas in residential communities
- Commercial development

Objectives:

An enhanced basin design creates a multipurpose area serving the need to reduce flooding while adding vital wetland functions such as unique plant and wildlife habitat, recreational opportunities, aesthetics and the potential to treat stormwater to a higher level of quality. By adding lower topographic areas for open-water habitat and berms to temporarily impound entering stormwater, a greater hydrologic diversity within the basin is created. Planting species known to take up heavy metals and remove nutrients as well as introducing a wide range of species that can become established within the basin increases the viability of the basin and its ability to optimize natural processes and resources.

Overview:

Enhanced stormwater basins are engineered to mimic the treatment and runoff attenuation properties of natural wetlands. This is done by integrating two essential elements into a stormwater basin design: increased topographic relief and vegetative diversity. Irregular perimeters, varying basin depths, meandering internal conveyance channels, multiple cells and undulating bottom contours are key features that increase the topographic variability of a retention basin, improving stormwater retention and treatment capacity. Introduction of diverse plantings suited

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to site conditions (i.e., inundation tolerant native species) improve the stormwater treatment performance while simultaneously providing ecological, wildlife, and aesthetic amenities. Enhanced stormwater basins typically use berms to partition the main basin in to multiple zones or cells. Cells can be designed in series resulting in each zone having a different depth, duration and frequency of flooding. These varied hydrologic characteristics result in different treatment processes and long-term development of different vegetative communities.

Benefits

- Retention
- Detention
- Sedimentation
- Metals and nutrient retention
- Increases wildlife habitat and biodiversity
- Community amenity
- Passive recreation
- Educational opportunity
- Aesthetics

Water Protection Benefits:

Water conservation implications – Enhanced stormwater basins do not provide direct potable water benefits, although they do facilitate groundwater recharge and improve downstream water quality.

Stormwater implications -

Quantity

Because these basins use conventional design volume specifications they are as effective as conventional basins at controlling volume.

Quality

As the name implies, the modified design of these stormwater basins enhances and improves upon the pollutant treatment and runoff attenuation properties of traditional retention ponds. Pollutant uptake is increased and peak discharges are reduced. Construction of a forebay and creation of multiple cells within the basin slows water movement and increases particulate settling in designated areas. Planting of species known to assimilate contaminants and creating longer duration flooding conditions in these areas facilitates sediment accumulation, trapping contaminants in the soil. Establishing a variety of plant species and hydrologic conditions diversifies the biogeochemical processes within the basin, increasing the system's ability to reduce contaminants and respond to dynamic environmental conditions.

Design Considerations:

If a site has low permeability, is prone to flooding, or is sensitive to groundwater input, a conventional stormwater basin might be the only viable management option. However, increasing research has developed methods for more naturally-mimicked systems. As with traditional stormwater retention basins, the treatment and volume control performance of ecologically enhanced stormwater ponds is dependent upon the infiltration capacity of site soils. Relatively large land areas are required to construct a suitable treatment basin, but the principles of enhanced stormwater basins can be applied to existing retention ponds of varying sizes and locations. When designing an enhanced stormwater basin, the goal is to optimize multiple functions so that under varying conditions the basin can continue to protect water quality.

Enhanced stormwater basins can become effective teaching opportunities to educate people about the relationship between their activities and water quality, stormwater and ultimately the natural environment. By integrating trails around the edge of the basin or a boardwalk through the basin, these educational opportunities can be enhanced and should be incorporated where possible into the management of these systems. As such, enhanced stormwater basins can become valued community amenities.

Design Keys

- Infiltration capacity of site soils
- Large land area
- Type of plant material
- Construction equipment
- Limit compaction
- Types of soils

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Diagram of enhanced stormwater basin design depicting varied water depth, internal partition, vegetative planting zones and integrated boardwalk and trail to facilitate public access. The "birds eye view" (right) illustrates irregular and elongated basin edge, extended flow path facilitated by internal berm and complex basin topography resulting in multiple cells in series and a wide range in hydrologic conditions within the basin.

Operations and Maintenance:

Increased trapping of sediments and other contaminants within the basin may need to be removed periodically at inlets. By creating multiple cells within the basin, increased detention time and sedimentation in a small portion of the basin is facilitated. This allows for any periodic maintenance requirements to disturb only a small portion of the basin. Care of plantings, especially during initial establishment may also be required depending on aesthetic expectations, including management of invasive plants.

Credits in Green Building Certification Programs:

- LEED for Neighborhood Development Pilot (SLL Credit 10: Restoration of Habitat or Wetlands; GCT Credit 9: Stormwater Management)
- NAHB Model Green Home Building Guidelines (1.3.5 Manage storm water using low-impact development when possible)

Relative Costs:

Although costs and benefits will vary depending upon site conditions, local climate and topography, etc., the Center for Watershed Protection (www.cwp.org) estimates that average construction costs for an enhanced stormwater basin range from $0.60 to $1.25 per cubic foot. Maintenance costs are relatively low compared to those for conventional stormwater retention basins.

References and Resources:

EPA Stormwater BMP Fact Sheet: Stormwater Wetland http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=74

Stormwater Ecological Enhancement Project (University of Florida Natural Area Teaching Laboratory): http://natl.ifas.ufl.edu/seep.htm

Stormwater Wetland Fact Sheet (Stormwater Manager's Resource Center) http://www.stormwatercenter.net/Assorted%20Fact%20Sheets/Tool6_Stormwater_Practices/Wetland/Wetland.htm

Credits

Authors:

Mark Clark
Soil and Water Science Department

Glenn Acomb
Landscape Architecture Departmen

Fact Sheet Illustrations:

Glenn Acomb
Landscape Architecture Department

Wei Ren
Landscape Architecture Department

Fact Sheet Illustration Assistance:

Brian Niemann
Florida Yards & Neighborhoods

Layout:

Barbara Haldeman
Program for Resource Efficient Communities

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Exfiltration Tanks/Trenches

The modular system shown here was installed at the Madera *subdivision in Gainesville in 2003; together with permeable pavers, this system captures and exfiltrates, on average, one-third of the roof's runoff.*

Definition:

Exfiltration tanks and trenches (or dry wells) are sub-surface engineered detention and infiltration cells with significant volume or pore space to store and control site runoff. They are sometimes referred to as subsurface detention or retention, infiltration or percolation tanks, soakaways or underground infiltration basins. While infiltration trenches are usually rock filled ditches into which stormwater enters from the top, exfiltration trenches often involve a pipe in the middle of the trench through which stormwater enters.

Objectives:

These structures capture and discharge stormwater at a controlled rate. They function in concert with pervious surfaces by enhancing the infiltration and storage capacity of on-site soils and treating runoff before it recharges the groundwater. Exfiltration systems act as small, distributed, underground stormwater retention ponds.

Overview:

Exfiltration tanks and trenches can be used to convey and distribute captured runoff across a lot or subdivision. These exfiltration structures provide a storage area for rapid runoff during a storm, then allow it to infiltrate gradually through the soil into the groundwater. Runoff water enters the underground chamber at the inlet and a physical filtration process removes pollutants as the exfiltrate enters the surrounding soil. However, some pollutants can remain in the exfiltrate water, so additional source control is needed where groundwater contamination is a concern.

Exfiltration tanks and trenches can vary considerably in size. Large underground exfiltration designs generally utilize concrete and large pipe systems. Modular products are available that are usually constructed of lightweight but durable plastic wrapped in a geo-textile. Modular

Applications

- Residential lots
- Commercial development
- Parking lots
- Green spaces
- Golf courses

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Benefits

- Detention
- Infiltration
- Stormwater reuse
- Groundwater recharge
- Runoff attenuation
- Reduction in peak velocity
- Reduction in stormwater runoff volume
- Possible reduction in size of centralized stormwater retention ponds

products are the best option for individual homes, which on a per lot basis, typically have very small stormwater volumes. These products take up little space and can be buried under the lawn areas. The modular design allows for flexibility in applications and integration with existing site features. They are lightweight and easy to install and are engineered to be resistant to very high loads.

Water Protection Benefits:

Water conservation implications – Exfiltration systems do not benefit potable water supplies directly, but do assist in groundwater recharge and reducing some demand by on site vegetation.

Stormwater implications – Sub-surface infiltration systems such as exfiltration tanks reduce peak velocity and volume of stormwater runoff. When significant storage volumes and mitigation of peak runoff velocity are attained, zero stormwater discharge from the lot may be achieved. This in turn can reduce the size of centralized stormwater retention ponds..

Design Considerations:

Underground exfiltration is infiltration dependant and can be incorporated into most site designs having well drained soils. Application of this practice is particularly beneficial where land costs are high or space availability is low. This practice can also be applied in high water table conditions, but the effective vertical storage volume is reduced requiring greater area coverage for similar volume capacity.

Operations and Maintenance:

Exfiltration trenches can become clogged, so it is important to prevent sediments and materials from entering the system as much as possible and periodically remove those that accumulate. Access for maintenance should be considered in the design, potentially including an observation well of PVC pipe leading to the bottom of the trench to allow for monitoring of the drawdown rate. Some systems incorporate an underdrain below the filtering system, which can be used as an overflow should clogging occur.

Credits in Green Building Certification Programs:

- LEED for Homes (SS 4.3 management of runoff from roof)
- LEED for Neighborhood Development Pilot (GCT Credit 9: Stormwater Management)
- NAHB Model Green Home Building Guidelines (1.3.5 Manage storm water using low-impact development when possible)

Relative Costs:

Materials are the highest percentage of the overall exfiltration system costs. The modular system installed at *Madera* for a single-family residential lot cost just over $1000 and is part of an LID treatment train at both the lot and community scales. When evaluating costs, consider that the use of exfiltration tanks or trenches can reduce or eliminate the costs of monitoring effluent because of reductions in runoff/discharge.

Design Keys

- Good where land costs are high or space availability is low
- Well-drained soils
- Low water table

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References and Resources:

Atlantis© Infiltration Tank System (Atlantis Corp – Australia): http://www.atlantiscorp.com.au/applications/infiltration_tank

EPA Stormwater BMP Fact Sheet: Infiltration Trench http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=70

Livingston, Eric H., Robert Baldwin, and Brian Clevenger. "Lessons Learned About Successfully Using Infiltration Practices." National Conference on Tools for Urban Water Resource Management and Protection Proceedings. Chicago, IL, February 7-10, 2000. EPA/625/R-00/001, pp. 141-161. July 2000.

Sub-Surface Infiltration Areas (Pennsylvania Association of Conservation Districts' Best Management Practices Fact Sheet): http://www.pacd.org/resources/pollution_solutions/Dauphin/InfiltrationArea.pdf

Credits

Authors:

Mark Clark
Soil and Water Science Department

Glenn Acomb
Landscape Architecture Departmen

Fact Sheet Illustrations:

Glenn Acomb
Landscape Architecture Department

Wei Ren
Landscape Architecture Department

Fact Sheet Illustration Assistance:

Brian Niemann
Florida Yards & Neighborhoods

Layout:

Barbara Haldeman
Program for Resource Efficient Communities

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Green Roofs/Eco-roofs

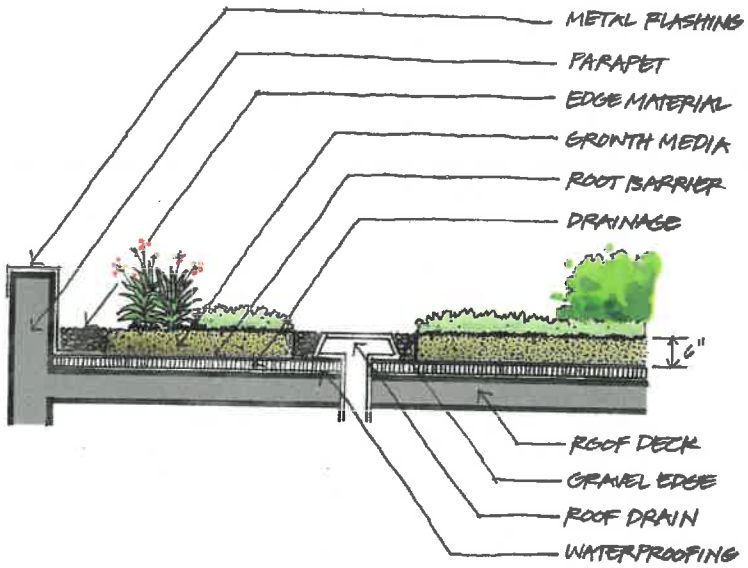

Diagram illustrates layered components of a typical green roof.

Definition:

A green roof or eco-roof is a planted roof top that provides benefits of water harvesting, stormwater management, energy conservation, pollution abatement, and aesthetic value.

Green roofs vary in depth of growing media, types of plants (climate-dependent), infrastructure, and intended use.

Objectives:

Green roofs reduce total stormwater runoff volume and peak flows, improve building insulation properties (reducing heat island effects), and extend the expected life of the roof's base material.

Applications

- Commercial buildings
- Industrial buildings
- Residential buildings

Overview:

Green roofs are generally categorized into two types: extensive and intensive. Extensive green roofs have a shallow (<6" depth) growing media and are light-weight structures (approximately 10-35 lbs./sq.ft. when wet) that cover large expanses of rooftop, requiring minimal maintenance. Intensive green roofs, or "rooftop gardens," use deeper growing media (>6") and can include small trees and shrubs, creating park-like settings that are more accessible. They tend to be more expensive and their heavier weight on the roof (approx. 50-300 lbs./sq.ft. when wet) must be considered in the design. Intensive green roofs are more common in tropical climates than extensive green roofs.

Examples of Florida applications of green roofs include: a 2400 ft² storage facility in the Bonita Bay Group's master-planned community Shadow Wood Preserve (Lee County); the University of Central Florida Student Union roof (1600 ft²); and the University of Florida Charles R. Perry Construction Yard roof (2600 ft²) in Gainesville. The University of Central Florida has monitored pollutants in roof filtrate water on a green roof designed for stormwater treatment and found that the green roof effectively reduced pollutants, including nitrate and ammonia, relative to a conventional roof.

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Benefits

- Reduces stormwater volume (50% to 85%)
- Improves stormwater quality through load reduction
- Saves water by harvesting rain
- Reduces heat island effect
- Lowers surface temperatures by 40°-50° F
- Energy savings can reach 15%-30%
- Reduces noise for building occupants
- Increases the life of the roof and reduces roof maintenance costs
- Contributes to biodiversity and creates habitats for birds and invertebrates
- Filters air pollutants and captures airborne particles

Water Protection Benefits:

Water conservation implications – When used in conjunction with cisterns for stormwater management, green roofs can allow for more consistent capture and provision of harvested rainwater, with the potential to indirectly reduce potable water demands for landscape irrigation.

Stormwater implications – By intercepting, retaining, detaining, and filtering rainwater at the beginning of the stormwater treatment train, green roofs can play an important role in source control stormwater management, reducing stress on downstream treatment systems.

Design Keys

- Infrastructure
- Type of growing media
- Depth of growing media
- Species of plants
- Rainwater collection
- Irrigation
- Intended purpose

Design Considerations:

Green roofs function independent of the infiltration capacity of the site soils and can be applied to residential buildings, although they are most appropriate for commercial and industrial use. Extensive and intensive green roofs require a minimum slope of 2%; those with slopes less than 2% require additional drainage measures to avoid water logging. Additional requirements include good drainage, lightweight growth media, good waterproofing, additional structural support, rainwater harvesting and the use of drought/heat tolerant plants. While it may be challenging, it is important to engineer for proper drainage, which will avoid root rot on the plants. A thicker substrate needed if drainage is not adequate will also mean higher load bearing, which adds to the cost.

Components of green roofs include: 1.) waterproofing membranes; 2.) insulation (if the building is heated or cooled); 3.) a root barrier to protect the membrane (made of gravel, impervious concrete, pvc, tpo, hdpe, or copper); 4.) a drainage system; 5.) a filter cloth (polyester fiber mats, polypropylene mats or non-biodegradable fabrics); 6.) a growing medium, consisting of inorganic matter (expanded slate, pumice, vermiculite, volcanic rock, etc.), organic material (straw, peat, wood, grass, sawdust, etc.), and air (cavities); 7.) plants.

There are several considerations when choosing the plant material. Overall, plants should be selected for their ability to thrive with minimal to no inputs (water, fertilizers, etc.) after establishment. Appropriate natives are recommended, and all should prefer full-sun and be drought tolerant. Plants should also be cold tolerant and have no severe pest susceptibility or maintenance needs. Root systems should be shallow. Use pollen/nectar producers when possible, which will help not only in pollination but also to attract beneficial insects for biological pest management.

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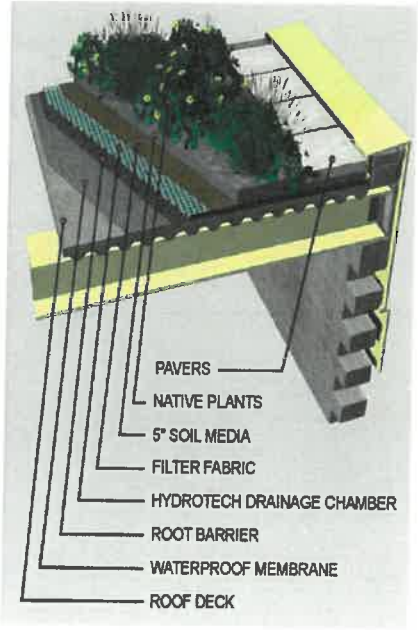

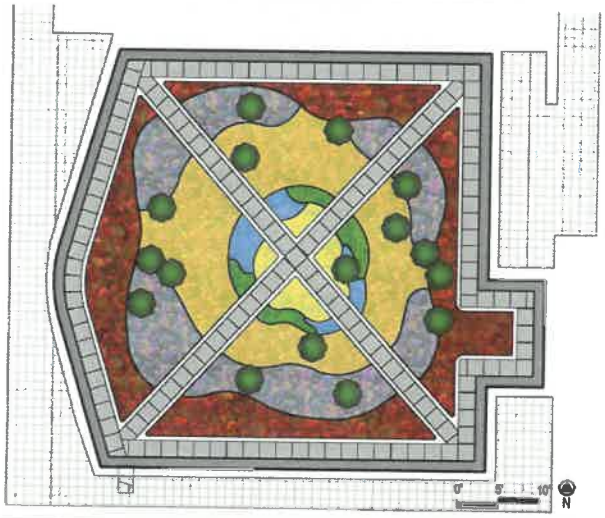

Operations and Maintenance:

Although plants should be chosen to be maintenance free after establishment, plants will need some maintenance, particularly during establishment, including irrigation system inspections. Annual maintenance walks should be performed until plants fill in.

Credits in Green Building Certification Programs:

- LEED for Homes (SS 4.3 management of runoff from roof)
- LEED for Neighborhood Development Pilot (GCT Credit 9: Stormwater Management)
- NAHB Model Green Home Building Guidelines (1.3.5 Manage storm water using low-impact development when possible)

Relative Costs:

Materials and installation of a typical green roof in the U.S. cost between $15 and $20 per square foot, with the soil substrate, growing medium, and planting materials accounting for the largest portion of these costs. When considering the cost of a green roof, it is important to compare it to the cost of a conventional roof and consider energy cost savings. As a result of the improved insulation properties of a building with a green roof, most applications result in cost savings from improved energy efficiency. A one-story building with a green roof can be expected to save 20%-30% in cooling costs.

References and Resources:

EPA Stormwater BMP Fact Sheet: Green Roof: http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=114

Green Roofs for Healthy Cities: www.greenroofs.org.

Green Roofs 101 (The Greenroof Industry Research Portal): http://www.greenroofs.com/Greenroofs101/index.html.

The green roof on the Perry Construction Yard building at the University of Florida is an extensive green roof of 2,600 square feet with a media depth of 5". All plants are less than 30" tall. Two 1,550 gallon cisterns harvest rainwater and serve as the main source of the roof's drip irrigation system, with the campus' reclaimed water system as a backup

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Credits

Authors:

Mark Clark
Soil and Water Science Department

Glenn Acomb
Landscape Architecture Departmen

Slyvia Lang
Soil and Water Science

Fact Sheet Illustrations:

Glenn Acomb
Landscape Architecture Department

Wei Ren
Landscape Architecture Department

Fact Sheet Illustration Assistance:

Brian Niemann
Florida Yards & Neighborhoods

Layout:

Barbara Haldeman
Program for Resource Efficient Communities

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Low Impact Site Preparation

Definition:

Low impact site preparation is a suite of practices that seek to preserve the site's natural hydrological and biological characteristics.

Benefits

- **Lower irrigation and fertilizer requirements**
- **Reduction in runoff volume**
- **Preserving quality of stormwater**
- **Enhanced biodiversity**

Objectives:

The overall goal is to conserve natural areas, minimize development impacts and maintain site runoff rate and volume so that post-development conditions match pre-development conditions to the greatest extent possible. Therefore, low impact site preparation focuses on four main objectives. First, existing rainfall interception should be retained and new interception should be promoted. Second, infiltration capacity should be preserved, which requires minimized compaction and impervious surface area. Third, existing depressional storage should be retained, and new depressional storage should be created in conjunction with infiltration. Finally, stormwater treatment by soils and vegetation should be promoted through maximization of contact area and time.

Overview:

Conventional development processes often drastically alter natural landscapes and their capacity to treat and infiltrate stormwater. Removing trees or replacing large ones with smaller ones, leveling and grading topography, disturbing soil profiles and compacting soils all are common land development activities that significantly affect the functioning of important natural hydrological services in the landscape. Low impact site preparation requires comprehensive development planning, ranging from thoughtful site layout to strict land clearing practices on the ground.

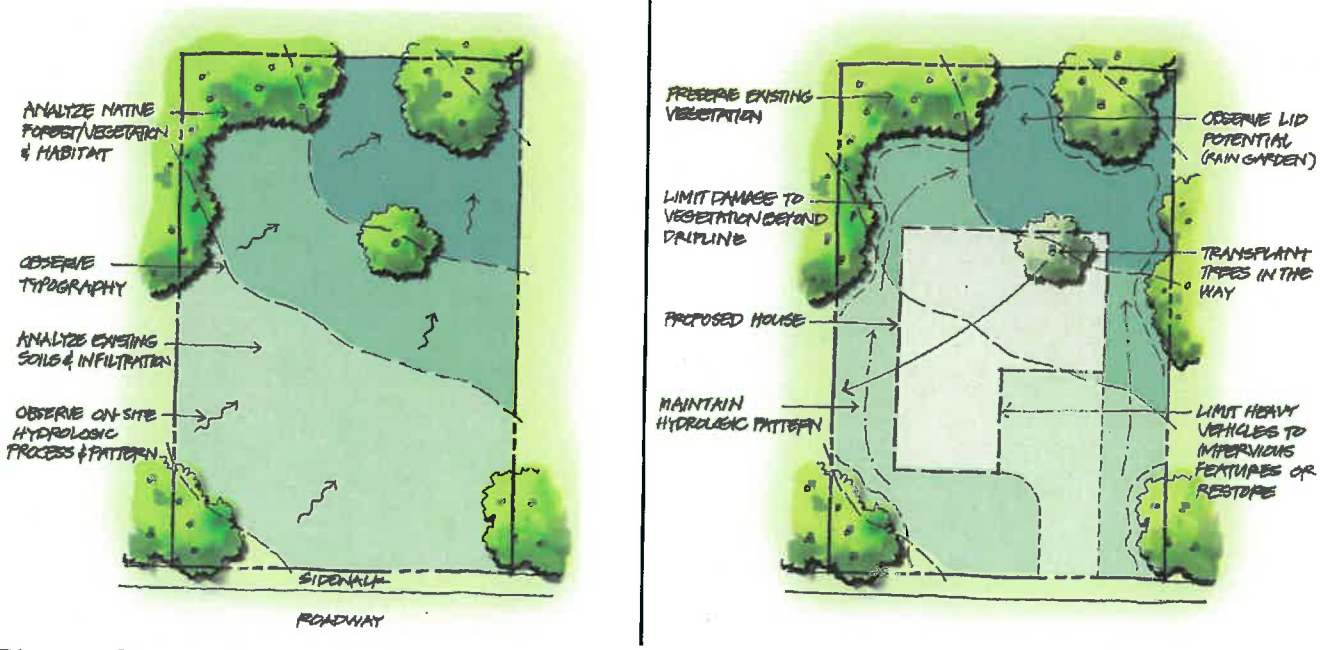

Diagram of site considerations before and after placement of house on site. Integrity of drainage pattern and canopy cover are maintained and soils are evaluated for placement of on-site LID practices such as a rain garden, permeable surfaces or exfiltration system.

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These principles require non-conventional land development practices such as minimized clearing, minimized grading, preservation of high infiltration soils, and limited lot-level disturbance. Practices should be integrated into a holistic process that begins with definition of the development envelope and protected areas. Ultimately, it is ideal to reduce the total area that is cleared and graded and the number and size of structure footprints on the site. This process begins with identifying, mapping, and avoiding wetlands and floodplains and using stem wall or pier construction. Implementing these practices as an alternative to site grading and slab on grade construction complements floodplain avoidance and reduces the amount of excavation and fill required during site preparation and construction.

Specific LID site preparation practices include:

- Minimal paving and compaction of permeable soils (including limiting movement of construction equipment to specific areas)
- Reduced size of construction easements and material storage areas
- Stockpiles sited within the development envelope during the construction phase of a project
- Siting the building layout and clearing and grading to avoid removal of existing trees
- Marking off tree protection areas to prevent compaction and mounding around roots during construction
- Disconnected impervious areas to increase opportunities for infiltration and reduce stormwater runoff flows
- Maintenance of existing topography and associated drainage divides to encourage dispersed flow paths
- Using hydrology/drainage as a design element
- Saving topsoil for reapplication before landscape planting, and applying soil amendments before planting

Applications

- New construction
- Residential communities
- Commercial

Water Protection Benefits:

Water conservation implications –Minimal site disturbance that retains existing vegetation and soil characteristics can result in lower irrigation requirements. Retention of existing trees leads to higher moisture levels throughout the landscape and less need for irrigation.

Stormwater implications – Preserving and promoting interception, infiltration, depressional storage, and on-site treatment are essential elements to reducing the runoff quantity and preserving the quality of stormwater.

Quantity

Minimal impervious area, retention of infiltration capacities, preservation of depressional storage and other benefits from LID site preparation greatly increase the ability of the landscape to manage stormwater at the source. This reduces dependence on the conventional stormwater system, and if done correctly, LID site preparation can reduce piping size and length as well as the land area allocated to conventional stormwater ponds.

Quality

By reducing and treating stormwater at the source, there is significant improvement of water quality percolating into the aquifer or running into downstream water bodies. Retained vegetation preserves natural interception processes and helps cleanse water. In addition, soil compaction can make establishing new landscapes very difficult and can substantially decrease infiltration rates (up to 99% in one north central Florida study). Removing or burying topsoil can have similar impacts on infiltration and provides poor soil quality for establishment of new landscape plant material. By maintaining native, uncompacted soils, plant stress is lower and less fertilizer is likely to be applied or run off, resulting in greater source control.

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Design Keys

- **Preservation of:**
- **Interception**
- **Infiltration**
- **Depressional storage**
- **Soil and vegetation treatment**

Design Considerations:

Pre-development site preparation options are determined largely by existing site constraints. LID site preparation practices are designed to preserve existing natural features. A site with streams, floodplains, wetlands, or steep slopes will require very careful land development planning. Because there can be no single strategy of low impact site preparation, it is important to focus on preservation of four key features: interception; infiltration; depressional storage; and soil and vegetation treatment.

Operations and Maintenance:

By applying the concept of low impact site preparation, long term maintenance costs of stormwater infrastructure and landscaping can be significantly reduced. For example, grading and applying disturbed fill soil to a site often results in poor establishment and quality of installed plants, requiring replacement and resulting in perpetual maintenance problems. By preserving native soils and minimizing compaction, plant stress is reduced and the need for added water, fertilizer and pesticides can be significantly reduced. Similarly, creating protection zones around existing trees during construction can reduce or eliminate the incidence of damage to tree roots that often results in tree death later on. Implementing invasive exotic control when needed will provide biodiversity benefits.

Credits in Green Building Certification Programs:

- FGBC Home Standard (S-2 maximize tree survivability; S-3 minimize soil compaction; S-4 25% of site protected from mechanical soils compaction via barrier; saving and reusing topsoil)
- Florida Water StarSM (preservation of existing vegetation)
- LEED for Homes (SS 1.2 minimize disturbed area of site)
- LEED for Neighborhood Development Pilot (GCT Prerequisite 1: Construction Activity Pollution Prevention; GCT Credit 6: Minimize Site Disturbance Through Site Design; GCT Credit 7: Minimize Site Disturbance During Construction)
- NAHB Model Green Home Building Guidelines (1.3.4 Minimize soil disturbance and erosion; 1.3.5 Manage storm water using low-impact development when possible; 1.4 Minimize environmental intrusion during onsite construction)

Relative Costs:

Costs for LID site preparation practices are typically lower than those for conventional practices. In an example from the Madera subdivision in Gainesville, FL, grading and clearing costs were $1,612 for a LID lot, compared to $2,016 for a similar-sized conventionally-cleared lot. Labor is spent on more careful clearing of smaller areas instead of rapid clearing of large areas. These two strategies tend to balance out, resulting in similar clearing costs. Less cleared area, however, can result in lower overall costs.

References and Resources:

EPA Stormwater BMP Fact Sheet: Preserving Natural Vegetation http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=browse&Rbutton=detail&bmp=34

Gregory, J.H., M.D. Dukes,P.H. Jones, and G.L. Miller. 2006. Effect of urban soil compaction on infiltration rate. *Journal of Soil and Water Conservation* 61(3):117-124.

Low Impact Development (LID) Practices for Storm Water Management (Toolbase Services): http://toolbase.org/Techinventory/TechDetails.aspx?ContentDetailID=909&BucketID=6&CategoryID=11

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Credits

Authors:

Mark Clark
Soil and Water Science Department

Glenn Acomb
Landscape Architecture Departmen

Fact Sheet Illustrations:

Glenn Acomb
Landscape Architecture Department

Wei Ren
Landscape Architecture Department

Fact Sheet Illustration Assistance:

Brian Niemann
Florida Yards & Neighborhoods

Layout:

Barbara Haldeman
Program for Resource Efficient Communities

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Permeable Surfaces

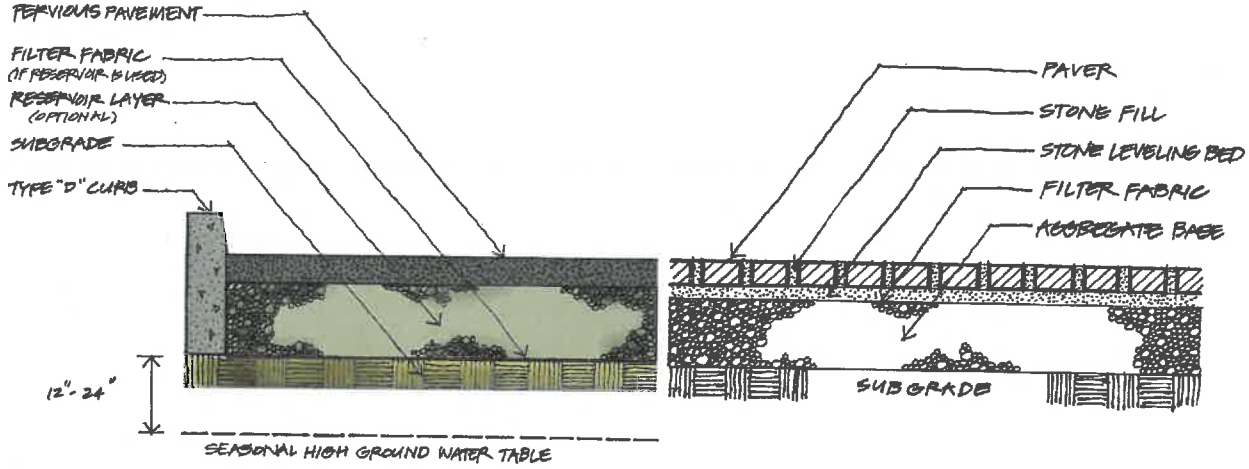

Illustration of two types of pervious surfaces, pervious paving (left) and pervious pavers (right). Although the permeable surfaces are different, they are each layered on the same type of aggregate base and underlying sub base.

Definition:

Permeable surfaces consist of a variety of types of pavement, pavers and other devices that provide stormwater infiltration while serving as a structural surface.

Objectives:

Permeable pavements function similarly to sand filters, in that they filter the water by forcing it to pass through different aggregate sizes and typically some sort of filter fabric. Therefore, most of the treatment is through physical (or mechanical) processes. As precipitation falls on the pavement, it infiltrates down into the storage basin where it slowly is released into the surrounding soil.

Overview:

Permeable, or pervious, pavers refer to unit (block, plastic grid) or poured (concrete) paving systems that incorporate permeable or semi-permeable materials overlaying a gravel storage layer. They are infiltration-based, volume control IMPs that substitute pervious for impervious surfaces, minimizing flooding and pollutant loads in stormwater runoff. They can be used for roads, driveways, walkways, patios, etc. and rainwater can be conveyed to exfiltration tanks or cisterns beneath the permeable pavers. Permeable pavers are most effective when used in conjunction with other LID treatment train IMPs (e.g., vegetated swales, cisterns, or exfiltration tanks).

There are several types of pervious paving materials, including permeable interlocking concrete pavers (PICP), concrete grid pavers (CGP), pervious (porous) pavements (PC & PA), and plastic reinforcing grids (PRG). According to the Florida Concrete Products Association, Florida has been a leader in the adoption of pervious pavement, with hundreds of applications across the state. Installation and maintenance of permeable pavers tends to be more labor and time intensive than that for concrete or asphalt paving. Additionally, vacuum sweeping is required as part of routine maintenance to prevent void space clogging.

Applications

- Parking lots
- Low traffic streets
- Walkways
- Driveways

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Water Protection Benefits:

Water conservation implications – As with green roofs and cisterns, permeable pavers can reduce stress on potable water resources by acting as a component of a treatment train for capture, storage, and reuse of stormwater.

Stormwater implications – Interconnected void spaces in permeable paving materials (surface, base, and subsurface) allow for infiltration and stormwater percolation to underlying soils, reducing runoff volumes, peak flows, and pollutant loads and facilitating groundwater recharge.

Design Keys

- Low traffic areas
- Sandy soils
- Shallow slopes (<5°)
- Low water table
- Retention
- Detention
- Reduce runoff volume
- Reduce pollutant loads

Design Considerations:

Permeable surfaces are appropriate for both residential and commercial land uses and new construction and retrofit projects. Permeable pavers are most suitable for use in low traffic areas with sandy soils, shallow slopes (<5°), and a low water table (i.e., seasonal highs 24" or more beneath paver base). Water will only fill the permeable pavers to the lowest elevation of the surface, and on a slope it could exit the pavement cell through the lower end. Permeable pavers are therefore not recommended for slopes.

Permeable pavements are typically not as strong as traditional cement or asphalt pavements. Permeable pavement is composed of asphalt or concrete without the finer particles that are normally found in the cement mix. The finished product is a strong pavement with a matrix of large pore spaces. The pavement can be designed to provide percolation rates from 5.6 to 18.5 gallons per minute per square foot. Before the pavement is installed, the soil surface is over-laid with a layer of geo-textile fabric and then a layer of stone aggregate. The aggregate forms a reservoir for retention and enhances infiltration capacity. It is crucial for underlying soils to have an infiltration capacity of >0.5 in/hr. for the pavement to function properly. It is also important to restrict heavy truck traffic to avoid damage. Although traffic of heavy weight vehicles (garbage trucks, fire engines, tractor-trailers) can be accommodated, construction due to excavation and materials increases substantially.

Operations and Maintenance:

Clogging is the main source of permeable pavements not functioning as well as they should. Large particles trap smaller and smaller particles, reducing the infiltration rate. Sediments can be deposited by vehicle traffic, foot traffic, wind blown sediments, or be transported by runoff.

If clogging occurs in porous pavement and the surface infiltration rate is reduced lower than the rainfall rate, then either water will pond or runoff will be produced. Therefore, periodic maintenance is required for continued functioning. Maintenance should include vacuum sweeping at least four times a year, followed by high-pressure hosing to free pores in the top layer from clogging. Potholes and cracks can be filled with patching mixes unless more than 10% of the surface area needs repair. Spot-clogging may be fixed by drilling half-inch holes through the porous pavement layer every few feet. Estimated cost of maintenance is approximately $200 per acre per year, which would include four inspections with appropriate jet hosing and vacuum sweeping treatments.

HOA or Regulatory Considerations:

The porosity of the paving material does not determine the amount of credit received in stormwater permitting, so selection is generally based on cost and aesthetics.

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These interlocking concrete pavers were used on the driveway at the model home of the Madera subdivision in Gainesville.

Credits in Green Building Certification Programs:

- FGBC-Home Standard (S-17 maintain pervious surface area)
- Florida Yards & Neighborhoods (stormwater runoff: mulch, bricks, flagstones, gravel, or other porous surfaces used on walkways, patios or drives)
- LEED for Homes (SS 4.1 permeable lot)
- LEED for Neighborhood Development Pilot (GCT Credit 9: Stormwater Management)
- NAHB Model Green Home Building Guidelines (1.3.5 Manage storm water using low-impact development when possible)

Relative Costs:

The amount and type of materials as well as site preparation largely determine the final cost of paver installations. Typical construction costs vary from $5 to $10 per square foot. The necessity for deeper drainage/storage basins (typically driven by increased load or frequency of vehicles use) will increase the cost substantially. Though permeable pavement is more expensive than conventional pavement, it can be cost competitive when it reduces the size of, or eliminates, the need for curb and gutter conveyance systems and large stormwater retention ponds.

References and Resources:

Pervious Concrete Pavements: The Environmentally Friendly Choice (Concrete Network):

http://www.concretenetwork.com/pervious

Watershed Benefits of Permeable Pavers (Low Impact Development Center, Inc.)

Credits

Authors:

Mark Clark
Soil and Water Science Department

Glenn Acomb
Landscape Architecture Departmen

Eban Bean
Agriculture and Biological Engineering Department

Fact Sheet Illustrations:

Glenn Acomb
Landscape Architecture Department

Wei Ren
Landscape Architecture Department

Fact Sheet Illustration Assistance:

Brian Niemann
Florida Yards & Neighborhoods

Layout:

Barbara Haldeman
Program for Resource Efficient Communities

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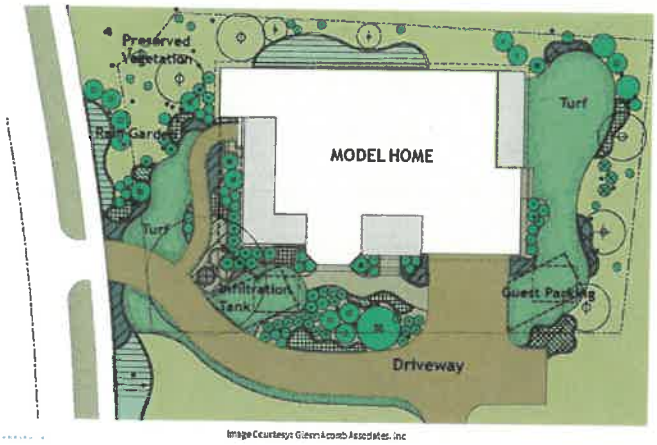
IFAS Extension

Resource Efficient Landscapes and Irrigation



Landscape design for a resource efficient landscape in the Madera subdivision in Gainesville, FL. Photo illustrates the front yard portion of the installed landscape.

Definition:

Resource efficient landscapes in Florida are those Florida-friendly landscapes that minimize environmental impacts to the greatest extent possible. According to the Florida Statutes (FS 373.185), " 'Xeriscape' or 'Florida-friendly landscape' means quality landscapes that conserve water and protect the environment and are adaptable to local conditions and which are drought tolerant. The principles of Xeriscape include planning and design, appropriate choice of plants, soil analysis which may include the use of solid waste compost, efficient irrigation, practical use of turf, appropriate use of mulches, and proper maintenance."

Objectives:

Resource efficient landscaping entails use of a number of principles and practices that reduce the nutrient, water, and energy inputs and outputs resulting from residential landscapes. The two core goals of resource efficient landscaping and irrigation are nutrient source control and efficient irrigation application.

Overview:

A principal component of resource efficient landscapes is the adoption of the highest standard (gold level) of the Florida Yards and Neighborhoods (FYN) program, which requires practices such as appropriate fertilization and use of the "right plant, right place" philosophy. In the last few years, FYN's target audience has expanded to include builders, developers, landscape architects, landscape maintenance professionals and real estate professionals. Currently, FYN has coordinators working (either full or part-time) with builders and developers in nearly two dozen counties, and the state office provides support for those counties that currently do not have a staff person formally in the Builder/Developer Coordinator role.

Additional principles that can help reduce the water quality and quantity impact from landscapes are preservation or planting of tree canopy, reduction of high maintenance turfgrass, use of appropriately sited native plants, and use of reclaimed water for irrigation. All of these integrate with the "reduce, reuse, recycle" philosophy. Technologies such as soil moisture sensors and micro-irrigation can help reduce overwatering. Stormwater and graywater reuse systems can replace potable water use and help mimic natural

Applications

- New construction
- Retrofits
- Commercial
- Residential communities

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hydrological function. Dual metered and piped reclaimed water systems recycle treated wastewater back onto urban landscapes in a controlled and distributed pattern.

Benefits

- Reduction of pollutant load
- Reduced water consumption

Water Protection Benefits:

Water conservation implications – The average Florida household uses approximately 50% of its water for outdoor irrigation. In most cases this is potable water, which is of a quality far above that required for landscape irrigation. Matching landscape design and installation to local soils and natural hydrology can significantly reduce, or eliminate, potable water consumption.

Stormwater implications - Quantity

Reducing excessive landscape irrigation minimizes the amount of water running off of the landscape into the stormwater management system. This can translate to reduced nutrient and contaminant concentrations in stormwater runoff.

Stormwater implications - Quality

Nutrients added to urban landscapes are likely to be one of the greatest contributors to non-point source nutrient pollution in Florida. For example, high nutrient loading from urban fertilizer use has been implicated as a driving factor contributing to the algal blooms in 2004 and 2005 in the St. Johns River. Limiting or eliminating fertilizer in residential landscapes and applying it correctly when used can help to preserve existing water quality. Additionally, reducing excessive landscape irrigation can translate to reduced nutrient and contaminant concentrations in stormwater runoff.

Design Considerations:

Landscape plant suitability is integrally connected to groundwater elevation, slope, soil composition, and a variety of other localized characteristics. Resource efficient landscaping and irrigation can be applied to any home site. The plant palette available depends on climate and varies widely from the Panhandle to south Florida and from coastal to interior regions. Numerous resources exist for assistance in selecting the right plants for a landscape. Additionally, plant water requirements vary, being lower in cooler northern areas and higher in warmer southern areas.

Under ideal conditions, a resource efficient landscape and irrigation system would far exceed performance of a traditional landscape. This type of "gold standard" landscape is designed and maintained to exist predominantly on rainfall once plants are established. In this case minimal to no supplemental fertilization is used in the landscape and no pesticides are use in the landscape or only biological and biorational pesticides are used when needed. Meeting these standards achieves the highest recognition level from the Florida Yards & Neighborhoods program. This can be achieved in part by starting with adequate soil conditions (avoiding compaction and not planting on fill soil) and preserving existing vegetation or installing drought tolerant, hardy plants that are highly adapted to the site's conditions.

Design Keys

- Selection of plants appropriate to site conditions
- Maintenance practices

Operations and Maintenance:

The principles related to resource efficient or Florida friendly landscapes include putting the right plant in the right place, watering efficiently, fertilizing appropriately, mulching, attracting wildlife, managing yard pests responsibly, recycling, reducing stormwater runoff and protecting the waterfront. See the University of Florida's *A Guide to Florida-Friendly Landscaping: Florida Yards & Neighborhoods Handbook* for detailed information on designing and maintaining a low maintenance landscape using those nine principles.

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HOA or Regulatory Considerations:

F.S. 373.185 requires that "A deed restriction or covenant entered after October 1, 2001, or local government ordinance may not prohibit any property owner from implementing Xeriscape or Florida-friendly landscape on his or her land." This statute also directs the state's water management districts to design and implement incentive programs for local governments to adopt or amend existing ordinances to require Florida friendly landscaping in new developments, including providing a model Florida friendly landscaping code.

In 2002, the Florida Department of Environmental Protection, together with Florida's nursery and landscape industry and the University of Florida, created the *Guidelines for Model Ordinance Language for the Protection of Water Resources in Florida*, which provides example landscape ordinance language for local governments.

In 2006, the University of Florida's Conservation Law Clinic created model CCR language for the FYN program, which was made available as a tool for developers.

Credits in Green Building Certification Programs:

- FGBC-Home Standard (waterfront prerequisites: use of native, aquatic vegetation on shoreline, no turf adjacent to water, use of terraces, swales or berms to slow stormwater; W16 drought tolerant turf; W17 drought tolerant plants; W-18 plants compatible with local conditions; W-19 turf less than 50% of landscape; W-20 evenly shaped turf and no turf on berms; W-21 plants with similar maintenance requirements grouped together; W-22 mulch 3-4 inches deep; W-23 non-cypress mulch used; W-24 soil tested and amended where necessary; W-25 no permanent irrigation system; W-26 innovative irrigation technology; W-27 meet or exceed Water Star standards; W-28 irrigated land according to FGBC standard)
- FGBC-Development Standard (A-4 compost or mulch facility; A6 drought resistant landscape material in non-recreational common areas; CDR-2 no language in CCRs that prohibits green practices)
- Florida Yards & Neighborhoods New Construction Certification and Homeowner Recognition (points are earned for using various specific resource efficient landscaping practices)
- Florida Water Star℠ (points are earned for using various specific resource efficient landscaping practices)
- LEED for Homes (SS-2 landscaping)
- LEED for Neighborhood Development Pilot (GCT Credit 3: Reduced Water Use, no permanent irrigation system; GCT Credit 9: Stormwater Management)
- NAHB Model Green Home Building Guidelines (1.3.5 Manage storm water using low-impact development when possible; 1.3.6 Devise landscape plans to limit water and energy demand while preserving or enhancing the natural environment; 4.1 indoor/outdoor water use)

Relative Costs:

Costs for resource efficient landscapes can vary greatly depending on homeowner preferences. There is evidence that both upfront and maintenance costs for these practices can be lower when compared to those for conventional practices, particularly over time.

References and Resources:

Florida Department of Environmental Protection. 2002. *Guidelines for Model Ordinance Language for the Protection of Water Resources in Florida*. http://fyn.ifas.ufl.edu/materials/fdep%20model%20ordinance%20language%20for%20florida%20friendly%20landscapes.pdf

Florida Department of Environmental Protection. 2006. *Landscape Irrigation and Florida Friendly Design Standards*. http://www.dep.state.fl.us/water/waterpolicy/docs/landscapeirrigationfloridafriendlydesign.pdf

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University of Florida IFAS – Florida Yards & Neighborhoods: http://fyn.ifas.ufl.edu

Florida Yards.Org – Florida Friendly Landscaping: The Smart Way to Grow: www.FloridaYards.org

Credits

Authors:

Mark Clark
Soil and Water Science Department

Glenn Acomb
Landscape Architecture Departmen

Fact Sheet Illustrations:

Glenn Acomb
Landscape Architecture Department

Wei Ren
Landscape Architecture Department

Fact Sheet Illustration Assistance:

Brian Niemann
Florida Yards & Neighborhoods

Layout:

Barbara Haldeman
Program for Resource Efficient Communities

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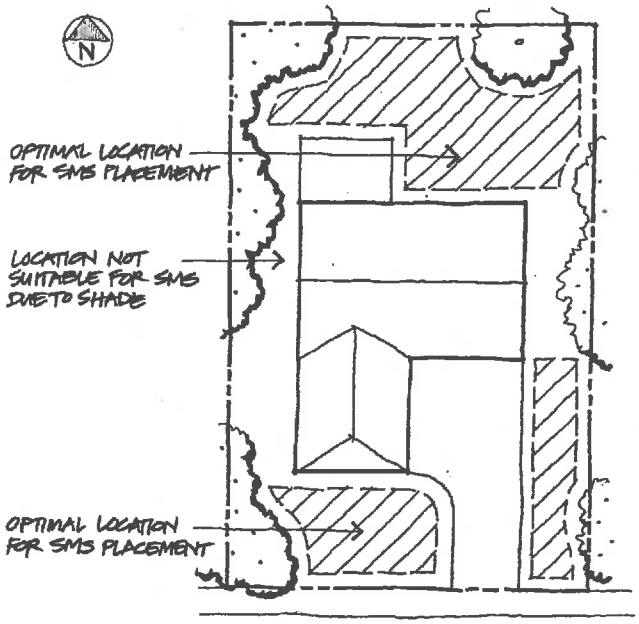
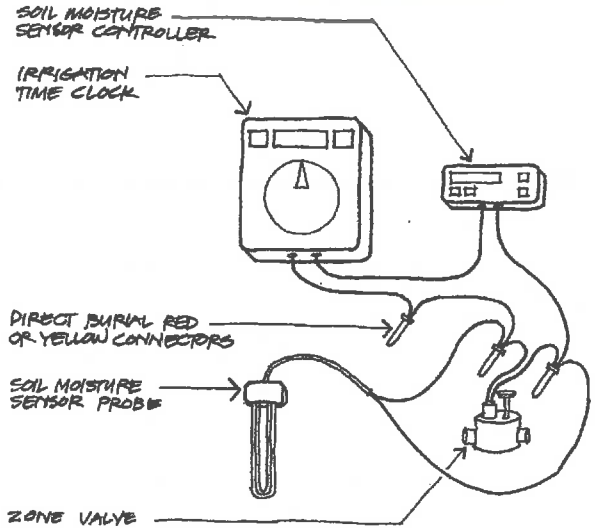
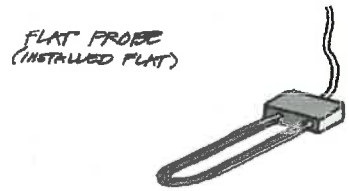
Soil Moisture Sensors







(Above left) Layout of irrigated areas showing optimal and unsuitable locations for sensor placement.

(Above right) Components of an installed soil moisture sensor system. Distances between components are not representative of final installation and are meant to illustrate the connections between the sensor, the zone valve, the controller and the irrigation time clock.

(Right) Two types of soil moisture probes used in typical soil moisture sensor systems.

Definition:

The soil moisture sensor (SMS) is a sensor connected to an irrigation system controller that measures soil moisture content in the active root zone before each scheduled irrigation event and bypasses the cycle if soil moisture is above a user-defined set point. Soil moisture sensors, like rain sensors, are considered rain shut off devices, but while rain sensors measure evapotranspiration rates, soil moisture sensors measure real time soil moisture.

Objectives:

Soil moisture sensors (SMSs) measure soil moisture at the root zone and regulate the existing conventional irrigation timer, resulting in considerable water savings when installed and used properly. A customized soil water content threshold is set, allowing for dryer or wetter soil condition. SMSs function similarly to rain sensors by bypassing irrigation events under rainy conditions, but by measuring soil moisture at the root zone they are more effective at minimizing irrigation when plants do not need additional water.

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Applications

- New construction
- Retrofits
- Commercial
- Residential communities

Overview:

When connected to conventional irrigation system time clocks, soil-moisture sensors can override scheduled watering events by interrupting the irrigation controller circuit when adequate moisture is detected in the soil. The sensors have user-adjustable moisture content set-points that allow unique watering regimes based on plant species, soil type, and/or seasonal rainfall. Though each device manufacturer uses their own method, all soil-moisture sensors detect the electrical conductivity of the soil and convert it to moisture units.

Water Protection Benefits:

Water conservation implications – University of Florida research shows that SMSs can reduce residential irrigation application by 50%. Water savings have been measured between 5% to 88% over typical timer-based irrigation systems, with 59% average savings in one University of Florida study. In another University of Florida study comparing SMSs to water use with and without a rain sensor, the rain sensor resulted in a 34% reduction in water use while the SMS savings ranged from 69-92% for three of the four SMSs tested. In Florida, approximately 50% of residential water use goes to irrigation, meaning that SMSs can reduce overall residential water use by 25%. Use of soil moisture sensors results in greatest water savings during rainy periods.

Stormwater implications – The significant reduction in unneeded landscape irrigation translates to reduced runoff. As a result, fewer nutrients from fertilizers and chemicals from pesticides are carried off individual lots and landscaped areas. Additionally, there is a reduction in the overall burden placed on the stormwater conveyance system.

Design Considerations:

SMSs appear to be effective in all soil types. However, there is a range in effectiveness, and uniform performance across soil types should not be assumed. There is no strong variance for application and use of SMSs across soil types in Florida. SMSs can be used regardless of slope in Florida.

A SMS should be placed in a location that is representative of the water requirements in the zone(s) it is controlling. Where there are variations due to shade, topography, etc., the sensor should be placed in the driest location (ie., in full sun, on high elevation points). In larger landscapes, use of multiple sensors is most effective, with one sensor per irrigation zone (hydrozone). If one sensor is used for the entire landscape, it should be placed in a turfgrass hydrozone and in a location where it is most representative of the average water requirements of that zone.

SMSs should be placed at least 5 ft. from any structure, from impervious surfaces, from depressions/swales, from the property line (to avoid overspray from neighboring irrigation systems), and from septic tanks/drainfields, and at least 3 ft. from plant beds. They should also be placed to avoid high moisture areas, and so should be at least 5 ft. from downspouts, overhangs, hose bibs, air conditioning condensate lines, tree canopy drip lines, and shade on the north side of a home. Sensors are installed in the root zone, in undisturbed soil when possible. Refer to the *Field Guide to Soil Moisture Use in Florida* for detailed installation and calibration instructions.

Benefits

- Reduced water consumption
- Can be set to lower and upper thresholds to maintain optimum soil moisture saturation and minimize plant wilting.
- Can contribute to deeper plant root growth, reduced soil runoff/leaching, and less favorable conditions for insects and fungal diseases.

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Operations and Maintenance:

The SMS overrides the controller's scheduled irrigation events when they are not needed but it does not control the duration of those events. To achieve maximum water use efficiency, the irrigation run time must be set appropriately on the irrigation controller according to application rate, season, region and plant needs.

If the system is applying excessive amounts of irrigation, an irrigation contractor trained in the installation and operation of soil moisture sensors should be called in for an inspection. If the system is running properly, an annual recalibration is recommended along with an inspection. More frequent recalibration may be needed due to changing plant needs (site changes or termination of establishment period), seasonal weather variation, or if the sensors were placed improperly.

When a landscape maintenance company or homeowner makes fertilization or pesticide applications, they may temporarily turn off the SMS controller to allow a watering-in application. The technician or homeowner must make sure that the SMS controller is turned back on following that event.

HOA or Regulatory Considerations:

Florida Statute 373.62 states that "Any person who purchases and installs an automatic lawn sprinkler system after May 1, 1991, shall install, and must maintain and operate, a rain sensor device or switch that will override the irrigation cycle of the sprinkler system when adequate rainfall has occurred." Soil moisture sensors are considered rain sensor devices.

The SMS reduces water use by having irrigation events determined by soil moisture conditions rather than a predetermined irrigation schedule. However, watering restrictions in many parts of the state limit irrigation to specific days of the week. Be sure to follow local watering restrictions when inputting timer settings.

Credits in Green Building Certification Programs:

- FGBC-Development Standard (A-6 water conserving irrigation in common areas)
- FGBC-Home Standard (W-26 innovative irrigation technology)
- Florida Water Star℠
- Florida Yards and Neighborhoods
- LEED for Homes (WE 2.1 high efficiency irrigation system)
- NAHB Model Green Home Building Guidelines (1.3.5 Manage storm water using low-impact development when possible)

Relative Costs:

Relative costs for a SMS system are low compared to the quantity of potable saved over the lifetime of the technology. Materials and installation costs currently, range from $150 to $400. This is likely the simplest, most cost-effective, and socially acceptable water-efficiency LID practice in Florida. Complex landscapes with multiple hydrozones and plant watering needs may require numerous sensors and increase costs. SMSs can often pay for themselves in as little as 12 months or less as a result of water savings (depending on water use fees and residential consumption).

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"Sensors of today...Savings for tomorrow." http://www.igin.com/Irrigation/pageSensorsToday.htm

Soil Moisture Sensor page at the homepage of Dr. Michael Dukes at UF: http://irrigation.ifas.ufl.edu/SMS/publications.htm

Credits

Authors:

Mark Clark
Soil and Water Science Department

Glenn Acomb
Landscape Architecture Departmen

Brent Philpot
Florida Water Star℠

Fact Sheet Illustrations:

Glenn Acomb
Landscape Architecture Department

Wei Ren
Landscape Architecture Department

Fact Sheet Illustration Assistance:

Brian Niemann
Florida Yards & Neighborhoods

Layout:

Barbara Haldeman
Program for Resource Efficient Communities

This fact sheet was produced with funding from The Elizabeth Ordway Dunn Foundation.

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Stormwater Reuse

Stormwater reuse retrofit project in Cocoa, FL serving a 12-acre downtown drainage basin. Photos courtesy of Eric Livingston.

Definition:

Although similar in concept to rainwater harvesting using rainbarrels and cisterns, stormwater reuse systems are typically much large in size using a surface detention pond or other water storage system to capture water and recycle that water for non-potable needs, especially irrigation.

Objectives:

This practice can significantly reduce demand on higher quality water sources, but is also considered part of a treatment train by allowing stormwater runoff a second chance to infiltrate into the ground and water is treated by landscape vegetation and soils.

Overview:

Stormwater reuse entails storing stormwater runoff from a surface pond or underground catchment device and then using it as a source of irrigation water. The philosophy behind the practice is that the lowest quality water should be used for the lowest quality need.

Applications

- New construction
- Retrofits
- Commercial
- Residential communities

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Benefits

- **Conservation of potable water**
- **Maintains hydrologic balance**
- **Improved water treatment**

Water Protection Benefits:

Water conservation implications – Potable water is directly conserved because stormwater acts as an alternative water source through direct substitution in landscape irrigation.

Stormwater implications – By redistributing captured stormwater across an extensive landscape area in a controlled fashion, this practice helps maintain the hydrologic balance and uses natural cleansing processes for improved water treatment.

Design Considerations:

This practice is somewhat infiltration dependent in the sense that water is applied to the landscape and then infiltrates naturally. Water intake systems should use horizontal wells placed in the subsoil below the storage basin or utilize a post pump filtration system to remove particulate matter. Although water conservation during irrigation should still be practiced, the type of emitter used should take into account the lower quality water supply and increased likelihood of particulate fouling. A backup source of water should be identified and factored into the design of the system.

Operations and Maintenance:

Stormwater reuse has relatively low requirements for maintenance. Irrigation pumps, filtration system, pipes and other components should be inspected and repaired as needed.

Credits in Green Building Certification Programs:

- FGBC-Development Standard (Category U-3: supply irrigation system with storm or reuse water)
- LEED for Homes (WE 1.1 rainwater harvesting system)
- LEED for Neighborhood Development Pilot (GCT Credit 3: Reduced Water Use)
- NAHB Model Green Home Building Guidelines (1.3.5 Manage storm water using low-impact development when possible)

Relative Costs:

Stormwater reuse is very cost effective for consumers and water utilities. Water costs for stormwater reuse range from $0.12 - $0.50 per kgal (thousand gallons) versus $2.00 - $5.00 per kgal for potable water. Many Florida-specific examples exist where utilities have profited from selling stormwater for irrigation to both residential and commercial consumers. For utilities, costs are low because of low energy requirements due to reduced stormwater treatment requirements.

References and Resources:

Shukla, Sanjay and Fouad H. Jaber. 2006. *Stormwater as an Alternative Source of Water Supply: Feasibility and Implications for Watershed Management*. UF/IFAS EDIS Circular 1493, Agricultural and Biological Engineering Department. http://edis.ifas.ufl.edu/pdffiles/AE/AE39800.pdf

Stormwater Reuse (Marty Wanielista) www.stormwater.ucf.edu/FILES/StC-P_Wanielista.B104.doc

Design Keys

- **Storage volume**
- **Irrigation demand**
- **Supplemental water source**
- **Water intake, pump, filtration and irrigation emitter selection**

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Stormwater Reuse: The Utility Business Practice (Gerry Hartman and Marty Wanielista) http://www.stormwater.ucf.edu/conferences/9thstormwaterCD/documents/StormwaterReuse.pdf

Stormwater Reuse: Why? And Examples (Marty Wanielista)

http://www.stormwater.ucf.edu/research/presentations/Reuse,%20Why%20and%20Examples.pdf

Credits

Authors:

Mark Clark
Soil and Water Science Department

Glenn Acomb
Landscape Architecture Departmen

Fact Sheet Illustrations:

Glenn Acomb
Landscape Architecture Department

Wei Ren
Landscape Architecture Department

Fact Sheet Illustration Assistance:

Brian Niemann
Florida Yards & Neighborhoods

Layout:

Barbara Haldeman
Program for Resource Efficient Communities

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CITY OF STUART, FLORIDA
AGENDA ITEM REQUEST
Local Planning Agency

Meeting Date:2/20/2020 **Prepared by:**Stephen Mayer

Title of Item:

ORDINANCE No. 2434-2020: AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF STUART, FLORIDA, BEING THE THIRD AMENDMENT OF ORDINANCE NO. 2307-2015, ALSO KNOWN AS THE "NEW AVONLEA PLANNED UNIT DEVELOPMENT (PUD)" CONSISTING OF 12.40 ACRES ZONED RESIDENTIAL PLANNED UNIT DEVELOPMENT (RPUD), 16.24 ACRES ZONED COMMERCIAL PLANNED UNIT DEVELOPMENT (CPUD), AND 20.4 ACRES OF WETLAND/UPLAND PRESERVE ZONED RPUD, FOR A TOTAL OF 49.04 ACRES; SAID PUD BEING GENERALLY LOCATED BETWEEN NE DIXIE HIGHWAY TO THE SOUTH, LAND ON BOTH SIDES OF GREEN RIVER PARKWAY ON THE WEST, LAND ON BOTH SIDES OF CARDINAL AVENUE ON THE EAST AND THE CITY BOUNDARY TO THE NORTH, BEING MORE FULLY DESCRIBED BY EXHIBIT "A" ATTACHED; AMENDING SAID PUD TO PROVIDE FOR THE APPROVAL OF THE MASTER PARCEL SITE PLAN FOR THE AVONLEA CROSSINGS PARCEL B (PARCEL 16); PROVIDING FOR A MASTER OFF-SITE INFRASTRUCTURE PLAN FOR THE ENTIRE PUD; PROVIDING FOR REVISED AND ADDITIONAL DEVELOPMENT CONDITIONS OF APPROVAL; PROVIDING FOR AMENDED AND NEW TIMETABLES FOR DEVELOPMENT, DECLARING THE PLAN TO BE CONSISTENT WITH THE CITY'S COMPREHENSIVE PLAN; PROVIDING DIRECTIONS TO THE CITY CLERK; PROVIDING FOR REPEAL OF ALL ORDINANCES IN CONFLICT; PROVIDING FOR SEVERABILITY; PROVIDING FOR AN EFFECTIVE DATE, AND FOR OTHER PURPOSES. (QJ) (RC)

Summary Explanation/Background Information on Agenda Request:

The vacant subject property is approximately 4.14 acres and is a part of the New Avonlea PUD. The New Avonlea PUD was approved by the City Commission on June 8, 2015, via Ordinance 2307-2015, and consists of multiple parcels that are zoned CPUD and RPUD as shown on a Master Parcel Plan. The Master Parcel Plan also consisted of development maximum approvals. This request represents the third amendment and is specific to Parcel 16 of the Master PUD.

The Master Parcel Plan (Exhibit D) of the original New Avonlea PUD, delineated this parcel to be a Commercial Planned Unit Development, allowing for up to 75 residential units and 65,000 square feet of commercial development. The applicant would like to build 69 residential units and no commercial development on the site.

The site approximately 4.14 acres in size and on the south and west is near to the Haney Creek Natural Area. To the east and across from Green River Parkway are undeveloped parcels of the New Avonlea PUD. To the north and across Baker Road is an unincorporated undeveloped site.

The proposed development for Avonlea Crossings Parcel B – (Parcel 16) consists of 47 two-story, two-bedroom townhouses in 12 buildings and 22 two-story, three-bedroom detached, single-family cottage homes. The New Avonlea Masterplan allows for up to 75 units on Parcel 16, a site density of 18.1 du per acre. The proposed 69 units, a site density of 16.7 du per acre.

The stated desire from the developer, New Urban Communities, is to meet a market need for middle-income families who may otherwise have a hard time finding housing in a location in Stuart. With close proximity to downtown Stuart, Jensen Beach, quality schools, and commercial amenities, many middle-income families appear in large numbers to be priced out of the market. The developer seeks to meet this need by providing smaller, efficiently designed cottage units with superior site and landscape design. The site plan and building

siting and massing combines to create a unique, intimate community with a real sense of place. The two distinct product types offered will allow a broader spectrum of households to live in the community, consistent with the original concept of Avonlea.

The application has been reviewed for consistency with the City's LDC. Approval of the rezoning to RPUD would allow for attached housing to be constructed at the site. The Master Parcel Plan approved up to 75 units on the CPUD, based on available density. The applicant is proposing 69 units, which is less than the Master Parcel Plan permits. The applicant shall continue to maintain an appropriate mix of Commercial and Residential uses within the entire Master Parcel Plan, by maintaining not less than 10% of the entire PUD as commercial, which is a requirement of the Special Neighborhood Future Land Use designation.

This site is one of the benefitting properties of the existing Avonlea Real Estate Development Accelerator (REDA) agreement established by the Community Redevelopment Agency Resolution 01-2020.

Funding Source:
N/A

Recommended Action:
Motion to recommend approval of Ordinance 2434-2020 and move to forward to the City Commission for First Reading.

ATTACHMENTS:

	Description	Upload Date	Type
	2434-2020 Avonleam Parcel 16 PUD Amendment.pdf	2/13/2020	Cover Memo
	Staff Report	2/10/2020	Staff Report
	Landscape Plan	2/10/2020	Exhibit
	Site Plan Page 1	2/10/2020	Exhibit
	Site Plan Page 2	2/10/2020	Exhibit
	Design Guidelines	2/10/2020	Exhibit
	Architectural Elevations and footprint	2/10/2020	Exhibit
	Survey Page 1	2/10/2020	Exhibit
	Survey Page 2	2/10/2020	Exhibit
	Auto Turn Plan	2/10/2020	Backup Material
	Preliminary Engineering page 1	2/10/2020	Backup Material
	Preliminary Engineering Page 2	2/10/2020	Backup Material
	Master Parcel Plan for Avonlea	2/10/2020	Backup Material
	PUD Checklist 1	2/13/2020	Cover Memo
	PUD Checklist 2	2/13/2020	Cover Memo

BEFORE THE CITY COMMISSION

CITY OF STUART, FLORIDA

ORDINANCE NUMBER 2434-2020

AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF STUART, FLORIDA, BEING THE THIRD AMENDMENT OF ORDINANCE NO. 2307-2015, ALSO KNOWN AS THE "NEW AVONLEA PLANNED UNIT DEVELOPMENT (PUD)" CONSISTING OF 12.40 ACRES ZONED RESIDENTIAL PLANNED UNIT DEVELOPMENT (RPUD), 16.24 ACRES ZONED COMMERCIAL PLANNED UNIT DEVELOPMENT (CPUD), AND 20.4 ACRES OF WETLAND/UPLAND PRESERVE ZONED RPUD, FOR A TOTAL OF 49.04 ACRES; SAID PUD BEING GENERALLY LOCATED BETWEEN NE DIXIE HIGHWAY TO THE SOUTH, LAND ON BOTH SIDES OF GREEN RIVER PARKWAY ON THE WEST, LAND ON BOTH SIDES OF CARDINAL AVENUE ON THE EAST AND THE CITY BOUNDARY TO THE NORTH, BEING MORE FULLY DESCRIBED BY EXHIBIT "A" ATTACHED; AMENDING SAID PUD TO PROVIDE FOR THE APPROVAL OF THE MASTER PARCEL SITE PLAN FOR THE AVONLEA CROSSINGS PARCEL B (PARCEL 16); PROVIDING FOR A MASTER OFF-SITE INFRASTRUCTURE PLAN FOR THE ENTIRE PUD; PROVIDING FOR REVISED AND ADDITIONAL DEVELOPMENT CONDITIONS OF APPROVAL; PROVIDING FOR AMENDED AND NEW TIMETABLES FOR DEVELOPMENT, DECLARING THE PLAN TO BE CONSISTENT WITH THE CITY'S COMPREHENSIVE PLAN; PROVIDING DIRECTIONS TO THE CITY CLERK; PROVIDING FOR REPEAL OF ALL ORDINANCES IN CONFLICT; PROVIDING FOR SEVERABILITY; PROVIDING FOR AN EFFECTIVE DATE, AND FOR OTHER PURPOSES.

* * * * *

WHEREAS, on June 8, 2015, the City Commission adopted Ordinance No. 2307-2015, whereby establishing the "New Avonlea PUD" which consists of a Master Parcel Plan and provides that any future development activities on any of the project's multiple parcels (with the exception of

Phase II of an existing Avonlea Commerce Center Parcel) shall require a master site plan approval thru a major PUD amendment, further requiring that an off-site infrastructure plan be added to the Master Parcel Plan at the time of first amendment.

WHEREAS, at the hearing the applicant showed by substantial competent evidence that the application is consistent with the Stuart Comprehensive Plan, and the Land Development Code of the City, and with the procedural requirements of law; and

WHEREAS, the Avonlea Crossings Parcel B (Parcel 16) RPUD development, including the New Avonlea Off-Site Infrastructure Plan are consistent with the master PUD and anticipated development;

WHEREAS, the foregoing recitals are true and adopted as findings of fact and conclusions of law.

WHEREAS, the New Avonlea PUD is legally described in **"Exhibit A"** of this ordinance. A map depicting the New Avonlea PUD is attached hereto as **Exhibit "B"** and made a part hereof by reference; and amended development conditions including revised timetables for development attached hereto as **Exhibit "C";**

NOW THEREFORE, BE IT ORDAINED BY THE CITY COMMISSION OF THE CITY OF STUART, FLORIDA THAT:

SECTION 1: The following items consisting of documents already approved by Ordinance 2305-2015 and the first Amendment (Ordinance 2366-2018), as well as revised and new documents adopted hereby are on file as public records at the office of the City Clerk in City Hall and are attached hereto as **Exhibit "D"**, hereinafter the "Development Documents", which shall be deemed a part of this Ordinance:

The following are General New Avonlea PUD Plans and Documents (reinstated by Ordinance 2420-2019:

1. The Master Parcel Plan, Sheet 1 of 1 by Lucido and Associates, dated 5.27.18 (existing)
2. South Florida Water Management District Permit #43-01387-P, issued 6.9.16. (existing)
3. Department of the Army Permit #SAJ-1998-03203. (existing)
4. Drainage Statement, by Grzelka Engineering, Inc. and as built plans for master drainage. (existing)
5. Master Drainage Plan, by DLS Environmental Services, Inc. dated March 2016 (revised)
6. Environmental Assessment Report, prepared by DLS Environmental Services, Inc. dated July 2014 (existing)
7. Preserve Area Management Plan, prepared by DLS Environmental Services, Inc., dated March 2017 (existing)
8. Traffic Impact Analysis prepared by MacKenzie Engineering and Planning, dated October 2014 (existing)
9. 2015 Pattern Book for Avonlea Commerce Center Phase II (existing)
10. PUD Boundary Survey prepared by Velcon Group, Inc., dated 01.08.14 (existing)
11. Avonlea PUD Off-Site Infrastructure Plan, by HJA Design Studio, Sheet 1 and 2 of 2, dated 1.11.16 (existing)
12. Avonlea Typical Cross Section, by Cotleur and Hearing, Inc., dated 4.19.18 (existing)
13. Amended and Restated Declaration of Covenants and Restrictions for the New Avonlea P.U.D., dated 11.30.16. (existing)

Master Parcel Plans for Avonlea Crossings Parcel A (Parcel 1)

14. Site Plan for Avonlea Crossing A, by Kuoppala & Associates, dated 9.30.19 (existing)
15. Landscape Plan for Avonlea Crossing A, by Litterick Landscape Architecture, dated 9.30.19 (existing)
16. Architectural Elevations and Floor Plans for Avonlea Crossing A, by Kuoppala & Associates, dated 9.30.19 (existing)
17. Boundary Survey for Avonlea Crossing A, by Velcon Engineering and Surveying, dated 4.30.19 (existing)

The following documents are established by Ordinance 2366-2018 and are not being replaced:

Master Parcel Plans for Avonlea Preserve Parcel A (Parcel 2) and B (Parcel 12)

18. Site Plan for Avonlea Preserve A, by Cotleur and Hearing, Inc, dated 11.20.17 (existing)
19. Site Plan for Avonlea Preserve B, by Cotleur and Hearing, Inc., dated 11.20.17 (existing)
20. Lot Plan for Avonlea Preserve A and B, by Cotleur and Hearing, Inc., dated 4.24.18 (existing)
21. Landscape Plan for Avonlea Preserve A, by Cotleur and Hearing, Inc., dated 5.25.18 (existing)
22. Landscape Plan for Avonlea Preserve B, by Cotleur and Hearing, Inc., dated 5.25.18 (existing)
23. Landscape Plan details for Avonlea Preserve A and B, by Cotleur and Hearing, Inc., dated 5.25.18 (existing)
24. Boundary Survey for Avonlea Preserve A, by Velcon Group, Inc., dated 1.27.17 (existing)
25. Boundary Survey for Avonlea Preserve B, by Velcon Group, Inc., dated 2.6.17 (existing)
26. Amenity Package, dated 2.2.18 (existing)

The following documents are being established by Ordinance 2434-2020:

Master Parcel Plans for Avonlea Crossings Parcel B (Parcel 16)

27. Site Plan for Avonlea Lot 16, by Peter Wayne Aquart, P.E., SP-1 and SP-2, dated 1.23.20 (new)
28. Landscape Plan for Avonlea New Urban Communities, by Cotleur and Hearing, sheets 1 thru 4, dated 1.23.20 (new)
29. Architectural Elevations and Floor Plans, prepared by Architectural Studio, Inc., Sheets A1-5, dated 1.1.20 (new)
30. Boundary and Topographic Survey, by Richard H Smith, Inc., sheets 1 and 2, dated 8.1.19 (new)
31. Design Guidelines, prepared by New Urban Communities (new)

SECTION 2: Except as otherwise provided herein, no development permits, site permits, or building permits shall be issued by the City except in compliance with the City's Land Development

Code and with the aforesaid Development Documents. The failure of an Owner to complete their development, or to comply with the Development Documents, or with any term or condition of development set forth in this ordinance, shall be deemed a zoning violation and no further permits, or other development approvals or orders shall be issued by the City to the owners until the violation has been resolved, and the matter may become the subject of a code enforcement action brought by the City. This section shall not impair the due process or other legal rights of the Owners to seek administrative or judicial redress.

SECTION 3: Following the adoption and acceptance of this ordinance by the Owners, and in addition to any other action for failure by an owner to complete development or otherwise comply with the Development Documents, the City Development Director may obtain a hearing before the City Commission, and shall thereupon give at least five (5) days written notice of the time, date and location of the hearing, along with specific notice of the alleged breach. At the hearing before the City Commission the Owners may appear and may contest the allegation of breach or explain the reason or reasons for the breach. Upon a finding of a material breach of the Development Documents and therefore, the Ordinance(s) adopting the same, the City Commission may impose or do any or all of the following:

a. Initiate the process to amend or repeal the portion of this or any other ordinance pertaining to the portion of the development in breach.
b. Direct the City Development Director to initiate the process to rezone the PUD property or any portion of the PUD property in breach.
c. Impose an administrative penalty of up to $1,000.00 for each violation, and up to $5,000.00 for each repeat violation that occurs, along with all reasonable costs, including attorney's fees incurred by the City.

Any breach of any provision or condition of this PUD ordinance by the Owner shall be considered a zoning violation subject to any remedies provided herein, or as otherwise provided by law. In the event a violation found continues from day to day, each day the violation is found to continue shall be deemed a separate violation.

SECTION 4: All ordinances or parts of ordinances in conflict with this ordinance or any part thereof is hereby repealed to the extent of such conflict. If any provision of this ordinance conflicts with any contractual provision between the City and the Owner of the site, this ordinance shall prevail.

SECTION 5: If any provision of this ordinance or the application thereof to any person or circumstance is held invalid, the invalidity shall not affect other provisions or applications which can be given effect without the invalid provision or application, and to this end the provisions of this ordinance are declared severable.

SECTION 6: This ordinance and agreement shall be effective upon the last of the following to occur: adoption by the City Commission, and proper execution and acceptance by the Owners.

SECTION 7: The complete execution and recording of this Ordinance by the City Clerk shall occur no later than 60 days from the date of this approval, failing which this ordinance shall be void.

SECTION 8: Upon complete execution of this Ordinance, including the Acceptance and Agreement by the Owner, the City Clerk is directed to record a Certified Copy of the same in the Public Records of Martin County, Florida.

PASSED on First Reading this ____ day of _____, 2020.

Commissioner _____ offered the foregoing Ordinance and moved its adoption. The motion was seconded by Commissioner _____and upon being put to a roll call vote, the vote was as follows:

	YES	NO	ABSENT	ABSTAIN
MICHAEL J. MEIER, MAYOR				
EULA R. CLARKE, VICE MAYOR				
BECKY BRUNER, COMMISSIONER				
KELLI GLASS LEIGHTON, COMMISSIONER				
MERRITT MATHESON, COMMISSIONER				

ADOPTED on second and final reading this __ day of _____, 2020.

ATTEST:

_____
MARY R. KINDEL
CITY CLERK

_____
MICHAEL J. MEIER
MAYOR

APPROVED AS TO FORM
AND CORRECTNESS:

_____
MICHAEL J. MORTELL
CITY ATTORNEY

ACCEPTANCE AND AGREEMENT

BY SIGNING THIS ACCEPTANCE AND AGREEMENT, THE UNDERSIGNED HEREBY ACCEPTS AND AGREES TO ALL OF THE TERMS AND CONDITIONS CONTAINED IN A RESIDENTIAL PLANNED UNIT DEVELOPMENT AND IN ALL EXHIBITS, ATTACHMENTS AND DEVELOPMENT DOCUMENTS, INTENDING TO BE BOUND THEREBY, AND THAT SUCH ACCEPTANCE AND AGREEMENT IS DONE FREELY, KNOWINGLY, AND WITHOUT

ANY RESERVATION, AND FOR THE PURPOSES EXPRESSED WITHIN THE ABOVE ORDINANCE. IF IT IS LATER DISCOVERED THAT THE UNDERSIGNED, OR ITS SUCCESSORS OR ASSIGNS HAVE FAILED IN ANY MATERIAL WAY TO DEVELOP THIS RESIDENTIAL PLANNED UNIT DEVELOPMENT ACCORDING TO THIS ORDINANCE, ITS CONDITIONS, AND THE DEVELOPMENT PLANS AND DOCUMENTS, THE UNDERSIGNED UNDERSTANDS AND AGREES THAT THIS ORDINANCE MAY BE AMENDED OR REPEALED BY THE CITY COMMISSION, AND THAT OTHER ACTIONS MAY BE TAKEN AGAINST THE UNDERSIGNED BY THE CITY, INCLUDING BUT NOT LIMITED TO CODE ENFORCEMENT ACTIONS, PERMIT AND LICENSING REVOCATIONS, AND ALL APPLICABLE CIVIL AND CRIMINAL ACTIONS.

IN WITNESS WHEREOF THE UNDERSIGNED HAS EXECUTED THIS ACCEPTANCE AND AGREEMENT:

WITNESSES:

Frank A. Wacha Jr., Trustee

_____

By: _____

Print Name: _____

Frank A. Wacha Jr.

_____

Print Name: _____

WITNESSES:

STB Outdoors, LLC

A Florida Limited Liability Company

_____

By: _____

Print Name: _____

Nikolas Schroth, Member

_____

Print Name: _____

Parcel 1 of Avonlea

_____

By: _____

Print Name: _____

Melissa C. Kindig, Owner

(Continued to next page)

WITNESSES

Print Name: _____

_____

Parcel 16 of Avonea

By:_____

Tim Hernandez, New Urban Communities, LLC

OWNERS' ACKNOWLEDGMENT

The above Ordinance, Acceptance and Agreement was acknowledged before me this _____ day of _____, 2020, by Frank Wacha, Owner.

_____
Notary Public, State of Florida
My Commission Expires:

Notary Seal

Personally Known _____ OR Produced Identification _____
Type of Identification Produced _____

The above Ordinance, Acceptance and Agreement was acknowledged before me this _____ day of _____, 2020, by Nikolas Schroth.

_____
Notary Public, State of Florida
My Commission Expires:

Notary Seal

Personally Known _____ OR Produced Identification _____
Type of Identification Produced _____

(Continued to next page)

OWNERS' ACKNOWLEDGMENT

(Continued)

The above Ordinance, Acceptance and Agreement was acknowledged before me this _____ day

of _____, 2020, by Melissa C Kindig.

_____

Notary Public, State of Florida

My Commission Expires:

Notary Seal

Personally Known _____ OR Produced Identification _____

Type of Identification Produced _____

CITY'S ACKNOWLEDGMENT

The above Ordinance, Acceptance and Agreement was acknowledged before me this _____day of _____, 2020, by BECKY BRUNER, Mayor, and Mary R. Kindel, City Clerk, respectively, of the City of Stuart, Florida, a Florida municipal corporation.

_____

Notary Public, State of Florida

My Commission Expires:

Notary Seal

Personally Known _____ OR Produced Identification _____

Type of Identification Produced _____

EXHIBIT "A" – LEGAL DESCRIPTION

AND LESS, HOWEVER, THAT PART THAT LIES SOUTH OF THE SOUTHERLY RIGHT-OF-WAY OF STATE ROAD #707 AND NE SAVANNAH ROAD.

AND LESS, HOWEVER, THAT PART OF THE NE 1/4 OF THE SE 1/4 OF THE SW 1/4 IN SECTION 28, TOWNSHIP 37 SOUTH, RANGE 41 EAST LYING NORTH OF THE NORTHERLY RIGHT-OF-WAY OF NE SAVANNAH ROAD AND THE EXTENSION OF BAKER ROAD.

AND LESS, HOWEVER, THE EAST 202.00 FEET OF THE NORTHWEST ONE-QUARTER (NW 1/4) OF THE SOUTHEAST ONE-QUARTER (SE 1/4) OF THE SOUTHWEST ONE-QUARTER (SW 1/4) OF SECTION 28, TOWNSHIP 37 SOUTH, RANGE 41 EAST, MARTIN COUNTY, FLORIDA, LYING NORTH ON THE NORTH RIGHT-OF-WAY LINE OF NE BAKER ROAD ACCORDING TO THE PLANS FOR BAKER ROAD EXTENSION (MARTIN COUNTY PROJECT NO. SS-R-5). THE AREA OF THIS PARCEL IS 1.65 ACRES, MORE OR LESS.

SUBJECT TO EASEMENTS, RESTRICTIONS, RESERVATIONS AND RIGHT-OF-WAYS OF RECORD, IF ANY.

TOGETHER WITH

AVONLEA COMMECIAL CENTER
A PARCEL OF LAND LYING IN SECTION 28, T37S, R41E, MARTIN COUNTY, FLORIDA BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:
BEGIN AT THE POINT OF INTERSECTION OF THE WEST LINE OF THE EAST 202.00' OF THE NORTHWEST 1/4 OF THE SOUTHEAST 1/4 OF THE SOUTHWEST 1/4 SAID SECTION 28, T37S, R41E OF PARCEL 6 AS DESCRIBED IN OFFICIAL RECORDS BOOK 895, PAGE 19, PUBLIC RECORDS OF MARTIN COUNTY, FLORIDA AND THE NORTHERLY RIGHT OF WAY LINE OF BAKER ROAD EXTENTION AS DESCRIBED IN OFFICIAL RECORDS BOOK 726, PAGE 1921, PUBLIC RECORDS OF MARTIN COUNTY, FLORIDA FOR THE POINT OF BEGINNING; THENCE N89°28'19"W ALONG SAID NORTHERLY RIGHT OF WAY LINE OF BAKER ROAD EXTENTION, 348.92' TO THE POINT OF INTERSECTION WITH THE EASTERLY RIGHT OF WAY LINE OF N.E.CARDINAL WAY BEING A 60.00' RIGHT OF WAY AS NOW LAID OUT AND IN USE; THENCE N10°56'26"W ALONG SAID EASTERLY RIGHT OF WAY LINE OF N.E.CARDINAL WAY, 381.26' TO THE POINT OF INTERSECTION WITH THE SOUTH LINE OF A PARCEL DESCRIBED IN OFFICIAL RECORDS BOOK 895, PAGE 25 AND 19, PUBLIC RECORDS OF MARTIN COUNTY, FLORIDA AND PHYSICALLY DESCRIBED BY MONUMENTS AND OCCUPATION; THENCE S89°15'48"E ALONG SAID OCCUPIED LINE, 426.24' TO THE POINT OF INTERSECTION WITH THE AFORESAID PARCEL 6; THENCE S00°45'39"W ALONG SAID WEST LINE OF THE EAST 202.00' OF PARCEL 6 A DISTANCE OF 372.11' TO THE POINT OF BEGINNING.

TOGETHER WITH

JENSEN INDUSTRIAL PARK SITE

A PARCEL OF LAND LYING IN SECTION 28, TOWNSHIP 37 SOUTH, RANGE 41 EAST, MARTIN COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCING AT THE SOUTHWEST CORNER OF SAID SECTION 28, THENCE, NORTH 00° 15' 38" EAST, ALONG THE WEST LINE OF SAID SECTION 28, A DISTANCE 861.35 FEET, MORE OR LESS, TO THE INTERSECTION THEREOF WITH SOUTHERLY RIGHT-OF-WAY LINE OF BAKER ROAD EXTENSION; THENCE SOUTH 89° 58' 55" EAST, ALONG SAID SOUTHERLY RIGHT-OF-WAY LINE, A DISTANCE 1545.39 FEET FOR A POINT OF BEGINNING (P.O.B.);

THENCE, SOUTH 89° 58' 55" EAST, CONTINUING ALONG SAID SOUTHERLY RIGHT-OF-WAY LINE, A DISTANCE OF 520.27 FEET; THENCE, SOUTH 20° 06' 54" EAST CONTINUING ALONG SAID RIGHT-OF-WAY LINE, A DISTANCE OF 142.51 FEET MORE OR LESS, TO THE INTERSECTION THEREOF WITH THE NORTHERLY RIGHT-OF-WAY LINE FOR SAVANNAH ROAD; THENCE, SOUTH 49° 53' 54" WEST, ALONG NORTHERLY RIGHT-OF-WAY LINE, A DISTANCE OF 412.74 FEET, MORE OR LESS, TO THE POINT ON THE EASTERLY RIGHT-OF-WAY LINE OF CARDINAL AVENUE, SAID POINT BEING THE POINT OF CURVATURE OF A CURVE TO THE RIGHT HAVING A RADIUS OF 75.00 FEET, THENCE, SOUTHERLY, WESTERLY, AND NORTHERLY ALONG SAID CURVE AND SAID EASTERLY RIGHT-OF-WAY LINE, THROUGH A CENTRAL ANGLE OF 78° 51' 33", A DISTANCE OF 103.23 FEET TO A POINT OF COMPOUND CURVATURE OF A CURVE CONCAVE EASTERLY HAVING A RADIUS OF 585.00 FEET AND WHOSE RADIUS POINT BEARS NORTH 38° 45' 27" EAST, THENCE, NORTHWESTERLY ALONG SAID CURVE AND CONTINUING ALONG SAID EASTERLY RIGHT-OF-WAY LINE, THROUGH A CENTRAL ANGLE OF 39° 47' 31", A DISTANCE OF 406.28 FEET TO THE POINT OF

EXHIBIT "A" – LEGAL DESCRIPTION
(con't.)

TANGENCY, THENCE, NORTH 11° 27' 12" WEST, CONTINUING ALONG SAID EASTERLY RIGHT-OF-WAY LINE, A DISTANCE OF 1.01 FEET TO THE POINT OF CURVATURE OF A CURVE TO THE RIGHT HAVING A RADIUS OF 50.00 FEET; THENCE, NORTHEASTERLY ALONG SAID CURVE AND CONTINUING ALONG SAID EASTERLY RIGHT-OF-WAY LINE, THROUGH A CENTRAL ANGLE OF 101° 28' 07", A DISTANCE OF 88.55 FEET TO THE POINT OF BEGINNING.

CONTAINING; 4.06 ACRES, MORE OR LESS.

SUBJECT TO EASEMENTS, RESERVATIONS, AND RIGHTS-OF-WAY OF RECORD.

THE BEARINGS AS STATED HEREIN ARE BASED ON AN ASSUMED BEARING OF NORTH 00° 15' 38" EAST ALONG THE WEST LINE OF SAID SECTION 28.

LESS, HOWEVER,

LEGAL DESCRIPTION OF A PORTION OF PROPOSED
GREEN RIVER PARKWAY RIGHT-OF-WAY

A PARCEL OF LAND LYING IN SECTION 28 AND SECTION 29, TOWNSHIP 37 SOUTH, RANGE 41 EAST, MARTIN COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGINNING AT THE SOUTHEAST CORNER OF SAID SECTION 29; THENCE, NORTH 88° 48' 22" WEST, ALONG THE SOUTH LINE OF SAID SECTION 29, A DISTANCE OF 500.00 FEET; THENCE, NORTH 00° 15' 52" EAST DEPARTING SAID SECTION LINE, A DISTANCE OF 55.02 FEET; THENCE, NORTH 33° 12' 44" EAST, A DISTANCE OF 172.02 FEET TO THE POINT OF CURVATURE OF A CURVE TO THE LEFT, HAVING A RADIUS OF 2028.75 FEET; THENCE, NORTHERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 27° 30' 11", A DISTANCE OF 973.84 FEET, MORE OR LESS, TO THE INTERSECTION THEREOF WITH THE EASTERLY RIGHT-OF-WAY LINE OF BASELINE ROAD; THENCE, NORTH 30° 40' 07" EAST, ALONG SAID EASTERLY RIGHT-OF-WAY LINE, A DISTANCE OF 238.43 FEET, MORE OR LESS, TO THE INTERSECTION THEREOF WITH THE SOUTH PLAT BOUNDARY LINE OF NORTHWOOD SUBDIVISION, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN THE PLAT BOOK 1, PAGE 55, PUBLIC RECORDS, MARTIN COUNTY, FLORIDA; THENCE , SOUTH 89° 58' 55" EAST, ALONG SAID SOUTH PLAT BOUNDARY LINE, A DISTANCE OF 10.00 FEET, MORE OR LESS, TO A POINT 40.00 FEET EASTERLY OF THE SOUTHWEST CORNER OF SAID PLAT OF NORTHWOOD SUBDIVISION, THENCE, SOUTH 00° 15' 15" WEST, DEPARTING SAID SOUTH PLAT BOUNDARY LINE, A DISTANCE OF 10.21 FEET TO THE POINT OF CURVATURE OF A CURVE TO THE RIGHT, HAVING A RADIUS OF 2148.75 FEET; THENCE, SOUTHERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 28° 34' 54", A DISTANCE OF 1071.89 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE CONCAVE NORTHEASTERLY, HAVING A RADIUS OF 180.00 FEET; THENCE, SOUTHEASTERLY ALONG SAID CURVE, THROUGH A CENTRAL ANGLE OF 117°38'31", A DISTANCE OF 307.99 FEET TO A POINT OF TANGENCY; THENCE, SOUTH 88° 48' 22" EAST, ALONG A LINE 60.00 FEET NORTH OF, AS MEASURED AT RIGHT ANGLES TO, THE SOUTH LINE OF SAID SECTION 29, A DISTANCE OF 92.47 FEET TO THE INTERSECTION THEREOF WITH THE EAST LINE OF SAID SECTION 29; THENCE, SOUTH 00° 15' 38" WEST ALONG SAID EAST SECTION LINE, A DISTANCE OF 60.00 FEET TO THE SOUTHEAST CORNER OF SAID SECTION 29 AND THE POINT OF BEGINNING.

EXCEPTING THE WEST 50 FEET OF THE EAST 420 FEET OF THE NORTH 100 FEET OF THE SOUTH 133 FEET OF SAID SECTION 29 AND EXCEPTING THE RIGHTS-OF-WAY FOR BAKER ROAD EXTENSION AND STATE ROAD NO. 707.

SUBJECT TO EASEMENTS, RESTRICTIONS, RESERVATIONS AND RIGHTS OF WAY OF RECORD

EXHIBIT B – LOCATION MAP

EXHIBIT C – DEVELOPMENT CONDITIONS

All conditions adopted under Ordinance No. 2305-2015 shall remain in effect unless revised or superseded by the conditions below:

Approved Plans and Documents (Exhibit "D")

1. All development approved hereby and the use thereof shall comply with the following documents and drawings:

The following are General New Avonlea PUD Plans and Documents (reinstated by Ordinance 2420-2019:

a. The Master Parcel Plan, Sheet 1 of 1 by Lucido and Associates, dated 5.27.18 (existing)
b. South Florida Water Management District Permit #43-01387-P, issued 6.9.16. (existing)
c. Department of the Army Permit #SAJ-1998-03203. (existing)
d. Drainage Statement, by Grzelka Engineering, Inc. and as built plans for master drainage. (existing)
e. Master Drainage Plan, by DLS Environmental Services, Inc. dated March 2016 (revised)
f. Environmental Assessment Report, prepared by DLS Environmental Services, Inc. dated July 2014 (existing)
g. Preserve Area Management Plan, prepared by DLS Environmental Services, Inc., dated March 2017 (existing)
h. Traffic Impact Analysis prepared by MacKenzie Engineering and Planning, dated October 2014 (existing)
i. 2015 Pattern Book for Avonlea Commerce Center Phase II (existing)
j. PUD Boundary Survey prepared by Velcon Group, Inc., dated 01.08.14 (existing)
k. Avonlea PUD Off-Site Infrastructure Plan, by HJA Design Studio, Sheet 1 and 2 of 2, dated 1.11.16 (existing)
l. Avonlea Typical Cross Section, by Cotleur and Hearing, Inc., dated 4.19.18 (existing)
m. Amended and Restated Declaration of Covenants and Restrictions for the New Avonlea P.U.D., dated 11.30.16. (existing)

Master Parcel Plans for Avonlea Crossings Parcel A (Parcel 1)

n. Site Plan for Avonlea Crossing A, by Kuoppala & Associates, dated 9.30.19 (existing)
o. Landscape Plan for Avonlea Crossing A, by Litterick Landscape Architecture, dated 9.30.19 (existing)
p. Architectural Elevations and Floor Plans for Avonlea Crossing A, by Kuoppala & Associates, dated 9.30.19 (existing)
q. Boundary Survey for Avonlea Crossing A, by Velcon Engineering and Surveying, dated 4.30.19 (existing)

<u>The following documents are established by Ordinance 2366-2018 and are not being replaced:</u>

Master Parcel Plans for Avonlea Preserve Parcel A (Parcel 2) and B (Parcel 12)

r. Site Plan for Avonlea Preserve A, by Cotleur and Hearing, Inc, dated 11.20.17 (existing)
s. Site Plan for Avonlea Preserve B, by Cotleur and Hearing, Inc., dated 11.20.17 (existing)
t. Lot Plan for Avonlea Preserve A and B, by Cotleur and Hearing, Inc., dated 4.24.18 (existing)
u. Landscape Plan for Avonlea Preserve A, by Cotleur and Hearing, Inc., dated 5.25.18 (existing)
v. Landscape Plan for Avonlea Preserve B, by Cotleur and Hearing, Inc., dated 5.25.18 (existing)
w. Landscape Plan details for Avonlea Preserve A and B, by Cotleur and Hearing, Inc., dated 5.25.18 (existing)
x. Boundary Survey for Avonlea Preserve A, by Velcon Group, Inc., dated 1.27.17 (existing)
y. Boundary Survey for Avonlea Preserve B, by Velcon Group, Inc., dated 2.6.17 (existing)
z. Amenity Package, dated 2.2.18 (existing)

<u>The following documents are being established by Ordinance 2434-2020:</u>

Master Parcel Plans for Avonlea Crossings Parcel B (Parcel 16)

aa. Site Plan for Avonlea Lot 16, by Peter Wayne Aquart, P.E., SP-1 and SP-2, dated 1.23.20 (new)
bb. Landscape Plan for Avonlea New Urban Communities, by Cotleur and Hearing, sheets 1 thru 4, dated 1.23.20 (new)

cc. Architectural Elevations and Floor Plans, prepared by Architectural Studio, Inc., Sheets A1-5, dated 1.1.20 (new)

dd. Boundary and Topographic Survey, by Richard H Smith, Inc., sheets 1 and 2, dated 8.1.19 (new)

ee. Design Guidelines, prepared by New Urban Communities (new)

General PUD Conditions

2. Any modifications to the Master Parcel Plan and individual Master Site Plans of the PUD that does not exceed 10% of the approved building footprint, building setbacks, gross square footage, building location, parking size, location and number of parking, drainage areas, and location of landscaping may be approved by the City's Development Director, provided however, the Development Director may refer the matter to the City Commission for approval via public hearing. (existing)

3. This ordinance constitutes a revised Master Parcel Plan which extends development approval to Parcels 1, 2, 12, and 16, and off-site infrastructure improvements only. Development of remaining Parcels shall require future amendments to Ordinance No. 2305-2015. More specifically, Avonlea Crossings A (Parcel 1) shall be built in two phases: Phase 1 is a 4,389 square foot medical office building, Phase 2 is a 4,992 square foot medical or professional office building; Avonlea Preserve A (Parcel 2) shall consist of 30 residential dwelling units and Avonlea Preserve B (Parcel 12) shall consist of 32 residential dwelling units; Parcel 16 shall consist of a single phase: 47 townhomes and 22 single family cottages. (revised)

4. The City may elect at any time to assign a future land use designation of "Conservation" to the PUD's preserve areas without objection by the Owners. Said preserve areas shall be identified in the Preserve Area Maintenance Plan (PAMP), as more particularly set forth in condition #6. (existing)

Environmental and Landscaping

5. To ensure the integrity and viability of the preserved and restored/enhanced wetland and upland areas on a regular basis, including the submittal of an updated Annual Monitoring and Maintenance Plan, the master property owners association (the "POA"), as formed through the Amended and Restated Declaration of Covenants and Restrictions for the New Avonlea P.U.D. shall be singularly responsible for the perpetual maintenance of wetland and upland areas governed by SFWMD permit #43-01387-P, as well as all other common area improvements. The separate parcels (hereinafter referred to as "Parcel" or collectively as "Parcels) as shown on the Master Parcel Plan shall have the ability to establish separate homeowner's associations for the purpose of maintaining on site infrastructure and common areas within such Parcels. (existing)

6. Except as follows, the project shall comply with Section 5.05.02 of the "Tree replacement and protection requirements" of the City's Land Development Code.

    a. In the event the developer chooses to address tree mitigation by planting in the project's preserve area or elsewhere on the site, an estimated budget shall be provided to the city at the time of permitting. For plantings in the preserve area, not less than 50% shall consist of pines or hardwoods and 50% of palms. Of the 50% palms which may include Sabal palms, the developer may be permitted to plant half mature palms and half saw palmetto no less than 7 gallons in size. (existing)

7. The preserve Area shall be maintained in perpetuity in accordance with the Preserve Area Maintenance Plan prepared by DLS Environmental Services, Inc., dated 03.17. Any trash, debris, and exotics shall be removed from the preserve area. (existing)

8. Not less than 25% of the PUD shall be open space as defined in the City Land Development Regulations. Required open space may include native vegetation areas, excluding wetlands defined by the SFWMD, and landscape buffers between the PUD and adjacent property. (existing)

9. Plantings in upland preserve areas shall count toward tree replacement in accordance with Section 5.05.02 of the City's Land Development Code. (existing)

10. "Hat racking" of trees is prohibited on the property. (existing)

11. Prior to any site clearing or development activities, compliance with all applicable federal, state and local regulations, including U.S. Army Corps of Engineers, SFWMD, and Florida Fish and Wildlife Conservation Commission (FFWCC) regulations, shall be demonstrated to the City. (existing)

12. Clearing of invasive species, including any required filling incidental to said clearing activities, as per SFWMD Permit #43-01387-P, shall be permitted at any time provided a permit is first obtained from the City. Further, the Owners shall demonstrate to the city coordination with the FFWCC with regard to relocation/conservation permits of protected species. (existing)

13. A tree mitigation plan and tree survey depicting the proposed tree impact and mitigation including preservation, relocation and replacement, shall be submitted with each master parcel site plan approval. A tree removal permit will be required prior to the removal or relocation of existing specimen or historic trees and in the case of the removal of trees in the process of utility construction, such as lift stations, etc. (existing)

14. Subject to Development Department approval, trees planted in public spaces and public rights-of-way may be credited towards tree replacement requirements. The cost of the trees may be deducted from the total amount owed to the City's Tree Trust Fund. (existing)

15. A final landscape plan for each Parcel shall be provided with a master site plan application for such Parcel except the Avonlea Commerce Center Parcels 3 thru 9 and shall be consistent with the SFWMD Permit #43-01387-P. The landscape plan for each Parcel shall include a streetscape plan for public roads adjacent to that Parcel consistent with the approved Off-Site Infrastructure Plan. (existing)

16. A landscape maintenance agreement for each Parcel, executed in accordance with the Land Development Regulations, shall be submitted prior to the issuance of the first Certificate of

Occupancy for such Parcel shown on the Master Parcel Plan. In order to monitor the proper installation of landscape material, material quality and long term maintenance of the site, a Letter of Credit, Certificate of Deposit or bond in the amount of 125% of the fair market value of the new landscape material shall be provided to the city for each Parcel shown on the Master Parcel Plan prior to the issuance of the first Certificate of Occupancy for such Parcel. The security shall be held for two years. (existing)

17. All common buffers and other common areas shall be provided with landscaping with an irrigation system of sufficient capacity to maintain the landscaping in a healthy growing condition. (existing)

18. The City's landscape inspector shall have the opportunity to inspect all trees and/or landscape material with the landscape architect prior to installation. The Owner shall bear the pass-thru fee for landscape consulting fees not to exceed $1,500.00. (existing)

19. Prior to the development activities on Avonlea Preserve A and B (Parcels 2 and 12), any applicable payment into the City's tree replacement fund based on the City's Tree Replacement Formula, Section 5.05.02, shall be made as followed in the mitigation data requirements provided in the Landscape Plan details for Avonlea Preserve A and B, and prepared by DLS Environmental Services. Solely at the City's discretion, or the applicant may donate and/or locate mitigated trees in a public area designated by the City. (existing)

20. A tree protective barrier plan shall be reviewed, approved and inspected by the landscape architect and by a City staff person on-site prior to construction activity to ensure that all preserve areas are not disturbed. (existing)

21. In addition to the landscaping depicted on the Landscape Plan for Avonlea Preserve Parcel 12, and at the owners discretion, the Owners may (with Development Department approval) provide pedestrian access thru the street frontage landscaping along Baker Road from the front door to the Baker Road sidewalk, so long as each residence is treated with the same access to the Baker Road sidewalk. The potential sidewalk access will not diminish the number of required street trees demonstrated on the landscape plan, but rather will be allowed to shift the landscaping to accommodate the pedestrian access and may result in a small

reduction of ground cover and shrub area. A decision by the Development Department to withhold approval for the pedestrian access plan shall be appealable to the City Commission. (existing)

22. Property owners in Avonlea Preserve A and B (Parcels 2 and 12) may not construct fences or structures (such as sheds) in any yard. The individual POA for the particular Parcel may provide a uniform fencing program acceptable to the Development Department via an administrative amendment, which may allow fences to delineate property boundaries and separate residential property from common areas. (existing)

Signage

23. All signs throughout the PUD must have a consistent treatment, as to number, location, size, height, lighting, and materials with a unified theme throughout the Planned Unit Development. Monument signs shall be grounded mounted, limited to ten feet (10') in height with design criteria conforming to the City's Land Development Code. No cabinet signs or pole signs shall be permitted. (existing)

Potable Water and Sewer Utilities

24. Parcels 1, 2 10, 11 and 12 shall be served by Martin County Utilities, parcels 13, 14, 15 and 16 shall be served by City of Stuart (existing)

Off-Site Infrastructure Plan

25. The Off-Site Infrastructure plan (Avonlea PUD Off-Site Infrastructure Plan, by HJA Design Studio, Sheet 1 and 2 of 2, dated 1.11.16) identifies the phasing of delivery of sidewalks, street and intersections, street furniture, landscaping, parking, lighting, utilities and storm water improvements, which is in addition to the Master Parcel Plan. The Off-Site Infrastructure Plan shall be reviewed for each phase of development of this PUD. Amendments to the Off-Site Infrastructure Plan shall be processed through a minor PUD amendment in order to secure a consistency of improvements throughout the PUD and to account for any off-site infrastructure provided by the City. Any amendment to the Off-Site Infrastructure Plan will necessitate a review and potential updating of the approved REDA

agreement (Resolution 01-2018 CRA Avonlea Real Estate Development accelerator). (Revised)

26. Parcel 1 of Avonlea, also known as Kindig Professional Office, is required to build or bond the off-site patio prior to a Certificate of Occupancy in accordance with the attached site plan for Parcel 1, notwithstanding the phasing plan for the Off-Site Infrastructure Plan, which shall remain in full force and effect. (existing)

27. Parcel 16 of Avonlea, applied for by New Urban Communities, LLC, is required to build or bond the off-site sidewalks and a cross walk across Green River Parkway at the traffic circle prior to the first Certificate of Occupancy in accordance with the attached site plan, notwithstanding the phasing plan for the Off-Site Infrastructure Plan, which shall remain in full force and effect (new)

28. All remaining_infrastructure improvements within a given phase as required by the Off-Site Infrastructure Plan shall be built or bonded prior to any vertical construction in accordance with the phasing plan for the Off-Site Infrastructure Plan. Vertical construction within a phase of development is not contingent on the completion of off-site infrastructure work within the separate phase indicated in the phasing plan. (existing)

29. All utilities within adjacent rights-of-ways, within a given phase as depicted in the Off-Site Infrastructure Plan, must be buried, except for the existing FPL transmission line, prior to the issuance of a Certificate of Occupancy for any vertical construction. (existing)

30. Sidewalks of at least 8 feet in width, including provisions for bicycles, shall be shown on the Off-Site Infrastructure Plan, which shall demonstrate full connectivity to surrounding pedestrian facilities. Any sidewalk damaged during construction shall be repaired or replaced at the expense of the POA and sub-POA (henceforth known as a "Village Association") prior to the issuance of a Certificate of Occupancy for such Parcel. The Off-Site Infrastructure Plan and the individual master site plans shall at a minimum demonstrate safe and adequate pedestrian and bicycle circulation, including handicap accessibility and access to public transit. (existing)

31. Any on-street parking constructed by the Owners shall be depicted on the Off-Site Infrastructure Plan and shall be built at the Owners' expense. On-street parking may be creditable toward required parking for individual Parcels as shown on the Master Parcel Plan, but shall not exclude use by the general public. (existing)

On-Site Infrastructure

32. All utilities internal to the development must be buried, except for the existing FPL transmission lines. Prior to the issuance of a Certificate of Occupancy for a Parcel for any vertical construction, any overhead utilities associated with such Parcel shall be buried. (existing)

33. Typical cross-sections for streets and alleys shall be submitted with each master site plan submittal indicating the proposed right-of-way width, pavement width, utilities, drainage, sidewalk, curb and gutter, on street parking and street lighting. (existing)

34. Parking areas shall be interconnected between adjacent CPUDs and through each CPUD Parcel to the extent feasible. (existing)

35. The Owner shall ensure a continuous pedestrian connection between all Parcels of the PUD, whenever practicable. (existing)

Prior to Issuance of Site Permits

36. Applicant shall provide a digital boundary survey and civil plan prior to the issuance of any site permits. (existing)

37. Final Development plans and/or Construction Drawings and Building Plans shall be submitted, reviewed, and approved by the City prior to the issuance of any Development Permits. (existing)

38. Civil Plans shall be reviewed and approved by all applicable City departments prior to the issuance of a site permit. (existing)

39. Where applicable, the Owner shall provide enclosed dumpster details on submitted civil construction plans prior to final site plan approval acceptable to the City's Public Works Department. (existing)

40. All regulatory agency permits, including but not limited to the South Florida Water Management District and Army Corp of Engineers, shall be obtained by the applicant and copies provided to the City prior to the commencement of any development activities. (existing)

Development and Construction

41. All applicable state or federal permits must be obtained before the commencement any development activities. Issuance of this development order/permit/approval by the City of Stuart does not in any way create any right on the part of an applicant to obtain a permit from a state or federal agency and does not create any liability on the part of the City of Stuart for the issuance of this order/permit/approval if the applicant fails to obtain requisite approvals or fulfill the obligations imposed by a state or federal agency or undertakes actions that result in a violation of state or federal law. (existing)

42. At the time of every Major Site Plan Amendment application for the remaining Parcels, the Owners' proposed Master Site Plan shall include, but not be limited to, the following features: proposed residential density or non-residential square footage; uses; lot layout and dimensions; typical cross sections for streets and alleys; building locations; accessory structures; dumpster locations; parking stall and aisle dimensions; fences, walls and landscaping; site lighting, pedestrian ways; recreational and other amenities, preserve areas; traffic circulation patterns; access for emergency and sanitation vehicles; utility locations; storm water facilities; architectural characteristics, appropriate building mass and scale; building elevations; finished floor elevations; color schemes; and signage. (existing)

43. The property is within the Community Redevelopment Area, and accordingly, prior to the issuance of any construction permits for vertical construction on a Parcel, the Owners of such Parcel shall either: A) contribute an amount equal to or greater than one and one-half percent of the value of vertical construction costs for such Parcel into the public art trust fund; or b)

provide work of art on the property, the value of which shall not be less than one percent of the vertical construction costs for such Parcel and shall be submitted and approved by the City's Community Redevelopment Board for conformity with the public art standards as required in Sec. 3.01.08 of the City's Land Development Code. (existing)

44. Final site plan construction drawings for each Parcel as shown on the Master Parcel Plan shall be consistent with the approved master site plan. (existing)

45. The maximum front façade width of any proposed Assisted Living Facility, as defined herein, shall be 200 feet. (existing)

46. To sustain harmony, building or tenant improvement plans for business with outdoor speakers and/or entertainment will include a noise mitigation plan consisting of the location and orientation of speakers to contain sound within the business's area including the use of specific sound barriers and absorbs together with the time of use and volume that will meet or exceed the City's code requirements. (existing)

47. Pursuant to City/County/School Board inter-local agreement and for the purposes of determining the applicability of school impact fees, appropriateness of design, and impacts on school concurrency, the Martin County School Board shall be provided an opportunity to review all proposed residential development at the time of application for master site plan approval. (existing)

48. Construction traffic shall be reasonably controlled. The City may impose access management restrictions if deemed necessary. (existing)

49. Construction activity shall be limited from 7:00 a.m. to 6:00 p.m. Monday – Saturday. (existing)

50. Erosion and dust control measures to be implemented during construction shall be provided on the civil plans and submitted during site permit review. Water trucks shall be provided by the applicant as necessary during construction in order to reduce dust generated on-site. Prior to and during the construction period, the applicant shall provide a schedule for the inspection and maintenance of barricades and erosion controls. (existing)

51. No trailers, pre-fabricated or modular structures shall be permitted except on a temporary basis to assist in development and with rentals and sales of realty within the PUD. Such trailers or structures shall be removed within thirty (30) days of a direction to do so, as issued by the City Development Director. Failure to remove such a trailer or structure accordingly shall be deemed a violation of the City Code. (existing)

52. Owners shall comply with all requirements of the City's Comprehensive Plan and all applicable provisions of the City's Land Development Code not in conflict herewith. (existing)

53. All utility improvements constructed by the Owner within Martin County's right-of-way, shall be constructed in a manner and form acceptable to Martin County's Engineering Department. The Owner shall grant any such utility easements necessary for this site as may be required by Martin County. (existing)

54. Lighting shall comply with Section 6.07.00 of the Land Development Code and reviewed by Police for CEPTED/Crime Prevention recommendations prior to final site plan approval. Lighting shall include shields to direct the light away from residential areas. (existing)

55. The development of Parcels 2 and 12 may occur in up to two phases, or both as one phase. Prior to the issuance of a permit for whichever Parcel(2) constitutes Phase 1, with the exception of two (2) permits for model units on that Phase, the off-sit improvements as depicted as Phase 1 of the offsite improvement plan will be completed, inclusive of landscaping to be places within the right-of-way(s), stormwater drainage, grading and road base on the parcel(s) shall be in place, and demonstration of connection to City Water and Sewer and power to the parcel shall be completed. Prior to the issuance of the first Certificate of Occupancy within Phase 1, the curbing, first lift of asphalt, and all underground utilities within Phase 1 will be in place. Landscaping within the boundary of the lot being certified shall be completed. And finally, the amenity package and common areas for that phase will be completed. Prior to the issuance of the last five (5) Certificates of Occupancy within Phase 1, site development will be completed inclusive, but not limited to final lift of asphalt, landscaping, street lighting, mail boxes, etc. The timing of construction will apply to Phase 2 in the same manner. (existing)

Future Amendments

56. Any amendments to this agreement shall be governed by the following:

Any amendments to this agreement shall be governed by the following:

The owner of a Parcel, as the Parcels are depicted in Exhibit "D" attached hereto, who seeks to amend this agreement with respect to such Parcel, shall not be required to obtain consent to such amendment from any owner of property, the POA or any home owners association, included in this agreement, provided, however, notice of any hearing before either the City Local Planning Agency, or the City Commission, shall be given to all owners of property subject to this agreement. The determination of whether such amendment is a major or minor amendment, and the hearings required for major or minor amendments, shall be governed by the laws in effect in the City at the time an application to amend this agreement is filed with the City. (existing)

The Avonlea Property Owners Association Inc. and Developers control the Avonlea Property Owners Association "Association" (Master Association). This association has been established to maintain the common areas and elements of the PUD and provide surety of maintenance to the governing bodies regulating the maintenance of the common areas and is regulated in accordance with the Covenants and Restrictions and By Laws recorded in OR Book 2893 Page 2898 as may be amended. At such a time that the Developers turn over the Association to the property owners, "Village Associations" are to make up the voting board of the Association. (existing)

Parcels 2 and 12 are a Village Association within the Association (Master Association). Any future amendments to the Development Conditions of Parcels 2 and 12 shall require the written consent of the Village Association. Until such a time that the Developers have turned over control of the Association to the property owners, written consent of the Association (Master Association) shall be required. (existing)

Phase II of existing Commercial Development

57. Consistent with Ordinance No. 2307-2015, development approval for the remaining undeveloped portion of the Avonlea Commercial Center, located on the northeast corner of

Cardinal Road and Baker Road shall be administratively approved, provided the proposed development adhered to the Pattern Book included by reference herein. (existing)

Development Timetables

58. Timetables for development shall be as follows:

Phase One. Off-Site Infrastructure Plan:

Completion of the Off-Site Infrastructure shall occur in two phases as demonstrated on the Avonlea PUD Off-Site Infrastructure Plan, by HJA Design Studio, dated 12.8.17. The first phase shall be completed prior to the first Certificate of Occupancy for the developments of Avonlea Preserve A and B. The completion of the second phase shall be triggered with an application for a Master Parcel site plan or site plans and shall be completed prior to the first Certificate of Occupancy of the development of said Parcel or Parcels.

Phase Two. Deadlines for master site plan approval for individual Parcels:

Master site plan approval for all Parcels as depicted on the Master Parcel Plan shall be obtained no later than three years of the completion of the water and sewer infrastructure.

PARCEL	DEADLINE FOR MASTER PUD SITE PLAN APPROVAL	TIMELINE FOR DEVELOPMENT
1	Completed	Phase 1 by June 1, 2022 Phase 2 by December 1, 2024
2	Completed	July 31, 2021
3-9	n/a	By administrative approval, no deadline
10	December 1, 2020	TBD at Major Amendment
11	December 1, 2020	TBD at Major Amendment

12	Completed	July 31, 2021
13	December 1, 2020	TBD at Major Amendment
14	December 1, 2020	TBD at Major Amendment
15	December 1, 2020	TBD at Major Amendment
16	Completed	March 31, 2023

Failure to meet the deadline(s) for master site plan approval identified above for any default under this Ordinance for any particular Parcel(s) shall not constitute a breach on a part of any other Parcel(s) which have met the deadline and have otherwise performed under this Ordinance. (revised)

Allowable Uses

59. The following uses, derived in part from the City's Urban Code, may be permitted individually or in combination in all CPUD parcels, notwithstanding the existing Avonlea Commercial Plaza (Parcels 3 thru 9) in which allowable uses are set forth in the approved Pattern Book: (existing)

    a. Multifamily;
    b. Live-Work unit (for the purposes of this Ordinance "Live-work unit" means a single residential unit consisting of a professional or business office component, the area of which does not exceed 50% of the unit's total floor space. A professional or business office located within a Live-Work unit shall be solely owned/operated by the tenant/resident of the unit);
    c. Accessory buildings;
    d. Greenhouses;
    e. Public utility stations;
    f. Government buildings;
    g. Hotels/motels;
    h. Bed and breakfast hotels;

i. Retail sales and services, non-intensive
j. Retail manufacturing and warehouse for service trades;
k. Professional and medical offices;
l. Banks;
m. Theaters;
n. Restaurants;
o. Art Galleries;
p. Dry cleaning, provided all cleaning is conducted off premises;
q. Bakeries
r. Mortuaries without cremation;
s. Day care facilities;
t. Home occupations as defined in Section 2.06.10 of the Stuart Land Development Code
u. Health spas;
v. Personal services;
w. Drugstores and pharmacies;
x. Parking garages;
y. Nursing Homes;
z. Assisted Living Facility (for the purposes of this ordinance, "Assisted Living Facility" means a facility operated for profit, which provides housing, meals, and one or more personal services for a period exceeding 24 hours to one or more adults who are unrelated to the owner/administrator.

60. The following uses shall be permitted individually or in combination in all RPUD Parcels: (existing)

aa. Single Family;
bb. Townhouse;
cc. Multi-family;
dd. Assisted Living Facility (for the purposes of this ordinance, "Assisted Living Facility" means a facility operated for profit, which provides housing, meals, and one or more personal services for a period exceeding 24 hours to one or more adults who are unrelated to the owner/administrator.

Prohibited

61. Billboards are prohibited within the entire PUD. (existing)

62. Banners and any other sign or advertising device not in accordance with the City's Land Development Regulations are prohibited. (existing)

Platting

63. Plat approval per Section 11.01.06.1 of the City's Land Development Code shall occur prior to any future development permit being issued. (existing)

64. The new Avonlea PUD property may be platted and conveyed to separate owners without further amendment to this Ordinance. Prior to application for any development, the applicants shall form a master POA or other similar entity acceptable to the City Attorney, which shall be singularly responsible for the perpetual maintenance of the common infrastructure and common areas. (existing)

65. The Avonlea Preserve A and B (Parcels 2 and 12) shall be re-platted with City Commission approval prior to any building permit activity is approved on the respective Parcel. Each Parcel is permitted to be individually platted and developed subject to the specific timetable for development herein. (revised)

Densities and Intensities

66. Density transfers shall not apply to this PUD. (existing)

67. The property is designated Neighborhood/Special District, which is a mixed-use category within the City's Comprehensive Plan, and accordingly, shall achieve the vertical or horizontal mix of uses through strict adherence to the minimum and maximum ratios of residential and non-residential uses depicted in the City's Comprehensive Plan. The ratios that must be maintained for the entire PUD are 30% to 90% for residential and 10% to 70% for non-residential. (existing)

68. The following matrix shows maximum densities and intensities for each Parcel as depicted on the Master Parcel Plan. However, it should be noted, due to design constraints such as, lot dimensions, building configurations, parking, landscaping, stormwater, and preserve area requirements, etc., this does not guarantee that these maximums will be approved. (revised)

Avonlea PUD Maximum Density (RPUD and CPUD)								
Parcel	Name	PUD Type	Total Acres including preserve areas	Residential/Live work Units		Commercial SF	Residential Units permitted in CPUD	ALF Beds (Total Maximum within PUD)
				Maximum	Approved			
1	Avonlea Crossings A	CPUD	2.07	N/A		20,000 Phase 1 – 4,389 Phase 2 – 4,992	N/A	200
2	Preserve A	RPUD	3.11	44	30	N/A	N/A	
3-9	Avonlea Commerce Phase 2	CPUD	0.79	5	TBD	33,300	N/A	
*	Avonlea Commerce Phase 1	CPUD	2.21	5 (Complete)		23,700 sf (Complete)	N/A	
10	East Village	CPUD	4.07	50	TBD	100,000	80	
11	Preserve D	CPUD	0.90	N/A		15,000	N/A	
12	Preserve B	RPUD	3.07	46	32	N/A	N/A	
13	Preserve C	RPUD	6.35	123	TBD	N/A	N/A	
14	Avonlea Crossings C	CPUD	1.60	N/A		20,000	N/A	
15	Avonlea Crossings D	CPUD	0.90	5	TBD	5,000	0	
16	Avonlea Crossings B	CPUD	4.22	75	69	65,000 (none proposed)	80	

CITY OF STUART
Local Planning Agency
February 20, 2020

Project Name: Avonlea Crossing Parcel B – Parcel 16 PUD	**Property Owner:** New Urban Communities, LLC
Project No.: Z	**Applicant/Petitioner:** New Urban Communities, LLC
Ordinance No: 2434-2020	**Agent/Representative:** Cotluer and Hearing, LLC
	Case Planner: Stephen Mayer
Location: On the Southwest corner of Baker Road and Green River Parkway, east and north of the Haney Creek Natural Area	

Location Map

PROJECT SUMMARY		
Property Size (area)		4.14 Acres
Present Use		Undeveloped
Subject Property Land Use		Neighborhood/ Special District
Adjacent FLU	*North*	Martin County – Mobile Home
	South	City – Downtown
	East	City – Neighborhood/Special District
	West	County – Medium Density
Subject Property Zoning		Commercial Planned Unit Development (CPUD)
Adjacent Zoning	*North*	Martin County - RT
	South	City of Stuart – CPUD
	East	City of Stuart – CPUD (New Avonlea PUD)
	West	Martin County – R-5 and RM-8
Proposed Land Use Designation		Neighborhood/Special District
Proposed Zoning District		Residential Planned Unit Development RPUD
Proposed Use		47 townhomes and 22 single family cottages (69 units)
City Approvals		Building Department – No comments at this time. Fire Department – See comments attached Public Works – See comments attached Police Department – No comments at this time
Brief Explanation		The intent of this application is to request a major PUD amendment to rezone the property from CPUD to RPUD, allowing the construction of 47 townhomes and 22 single family cottages on a 4.14 acre site, known as the Avonlea Crossing Parcel B – Parcel 16, which was master planned with a potential of 75 residential units.
Staff Recommendation: Staff recommends approval for the Major PUD amendment to rezone the property to RPUD (Residential Planned Unit Development) and accept site and landscape plans, a design guideline for the RPUD and elevations and footprints for 47 townhomes and 22 single family cottages.		

STAFF REPORT AND RECOMMENDATION

I. LEGAL NOTICE REQUIREMENTS

A. Requirements for Application – The applications for the Future Land Use amendment to Multi-Family Density Residential, and zoning district designation to RPUD have been noticed in accordance with the requirements set forth in Sections 11.01.02, 11.01.09, and 11.02.00 of the Land Development Regulations.

B. Site Posting Date: 2-9-2020

C. Mail Notice Postmark: 2-9-2020 to property owners within 300 feet

D. Publication Date: 10 days prior to Second Reading

II. LARGE SCALE COMPREHENSIVE PLAN AMENDMENT AND ZONING MAP AMENDMENT ORDINANCE NO. 2427-2020

III. APPLICATION: Dated October 21, 2019

IV. HISTORY OF THE SITE

The vacant subject property is approximately 4.14 acres and is a part of the New Avonlea PUD. The New Avonlea PUD was approved by the City Commission on June 8, 2015, via Ordinance 2307-2015, and consists of multiple parcels that are zoned CPUD and RPUD as shown on a Master Parcel Plan. The Master Parcel Plan also consisted of development maximum approvals. This request represents the third amendment and is specific to Parcel 16 of the Master PUD.

V. ANALYSIS

A. Site and Area Characteristics

The Master Parcel Plan (Exhibit D) of the original New Avonlea PUD, delineated this parcel to be a Commercial Planned Unit Development, allowing for up to 75 residential units and 65,000 square feet of commercial development. The applicant would like to build 69 residential units and no commercial development on the site.

The site approximately 4.14 acres in size and on the south and west is near to the Haney Creek Natural Area. To the east and across from Green River Parkway are undeveloped parcels of the New Avonlea PUD. To the north and across Baker Road is preserve area that is an unincorporated undeveloped site.

B. Project Description

The proposed development for Avonlea Crossings Parcel B – (Parcel 16) consists of 47 two-story, two-bedroom townhouses in 12 buildings and 22 two-story, three-bedroom detached,

single-family cottage homes. The New Avonlea Masterplan allows for up to 75 units on Parcel 16, a site density of 18.1 du per acre. The proposed 69 units, a site density of 16.7 du per acre.

The stated desire from the developer, New Urban Communities, is to meet a market need for middle-income families who may otherwise have a hard time finding housing in a location in Stuart. With close proximity to downtown Stuart, Jensen Beach, quality schools, and commercial amenities, many middle-income families appear in large numbers to be priced out of the market. The developer seeks to meet this need by providing smaller, efficiently designed cottage units with superior site and landscape design. The site plan and building siting and massing combines to create a unique, intimate community with a real sense of place. The two distinct product types offered will allow a broader spectrum of households to live in the community, consistent with the original concept of Avonlea.

The development's location adjacent to the Haney Creek Natural Area to the West and South will allow residents to experience nature through a direct connection to the Haney Creek Park trail system.

The main access to the community will be from Baker Road. The applicant is providing 34% open space (or 61,378 square feet) where a minimum of 30% is required on site. The natural preserve and wetland areas have been delineated through an overall PUD agreement with the Department of Environmental Protection.

Landscaping: The development is fully landscaped with adequate perimeter buffers of the required number of shade trees per 30 linear feet of property. The applicant is providing a full Jamaica Caper hedge at the property line and 26 Live Oak shade trees along the western and northern property lines. The street frontage along the Green River Parkway property line consists of Florida Royal Palms. Other plant coverage includes Silver Buttonwoods, Mahogany and Gumbo Limbos. The landscape plan also includes planting schemes around the perimeter of the townhomes and cottages.

Traffic Study: A traffic study was already approved for the Master Site Plan. Because the project is not utilizing all 75 residential units or any of the commercial square footage allowed on the site, the number of trips generated will be significantly less that what the traffic study assumed and approved for Parcel 16.

Parking Provisions: City of Stuart Land Development Code, Sec. 6.01.13. - Off-street parking schedule, requires two (2) parking spaces per unit when two (2) or more bedrooms are proposed, for a total 138 parking spaces required. The single-family units will have a driveway with an optional carport and will accommodate two (2) parking spaces each unit. The townhomes will front along the northern and eastern property lines and adjacent to the central amenity feature. An 88-space surface parking lot is provided adjacent to the townhomes, along with six (6) on street parking spaces on site, and an additional five (5) on-street parking spaces along Baker Road. In total, the site will provide 140 parking spaces, or two (2) more than required.

Architectural Details: Architectural details are included on each of the four sides of the proposed townhome and cottage units offering a high standard of design and scale.

C. Rezoning and Land Development Code Consistency Review

The application has been reviewed for consistency with the City's LDC. Approval of the rezoning to RPUD would allow for attached housing to be constructed at the site. The Master Parcel Plan approved up to 75 units on the CPUD, based on available density. The applicant is proposing 69 units, which is less than the Master Parcel Plan permits. The applicant shall continue to maintain an appropriate mix of Commercial and Residential uses within the entire Master Parcel Plan, by maintaining not less than 10% of the entire PUD as commercial, which is a requirement of the Special Neighborhood Future Land Use designation.

The proposed project on Parcel 16 of the New Avonlea PUD is consistent with Element I in the City of Stuart's Comprehensive Plan through its compact residential development pattern (Policy A5.1), compatibility with surrounding existing homes (Policy A5.2, Policy B3.2, and Policy B3.6), provision of market-rate units that are affordable to residents in the moderate-income level (Policy A5.4), compatibility with families (Policy A5.5), and quality landscape and streetscape design (Policy A5.6).

The proposed project is consisted with Element III in the Comprehensive Plan through its provision of housing on adequate residential land to accommodate population growth (Policy A1.2), provision of small-lot homes in a new development (Policy A1.4), provision of market-rate housing that is affordable to those in the moderate-income level (Policy A2.1), provision of a distinct, but compatible housing type that provides a more diverse housing option to residents (Policy A2.6), and provision of a project that can demonstrate a new possibility for the design and construction of housing in Stuart (Policy A2.7).

D. Technical Review by Other Agencies

The City Building, Public Works, Fire, and Police Departments have reviewed the applications and have offered their comments. See attachment to this agenda item. Each department will provide specific comments at final site approval for permitting.

The applicant will be responsible to meet all federal, state and local permitting and environmental standards. Further, the applicant will also be required to demonstrate full compliance at all times.

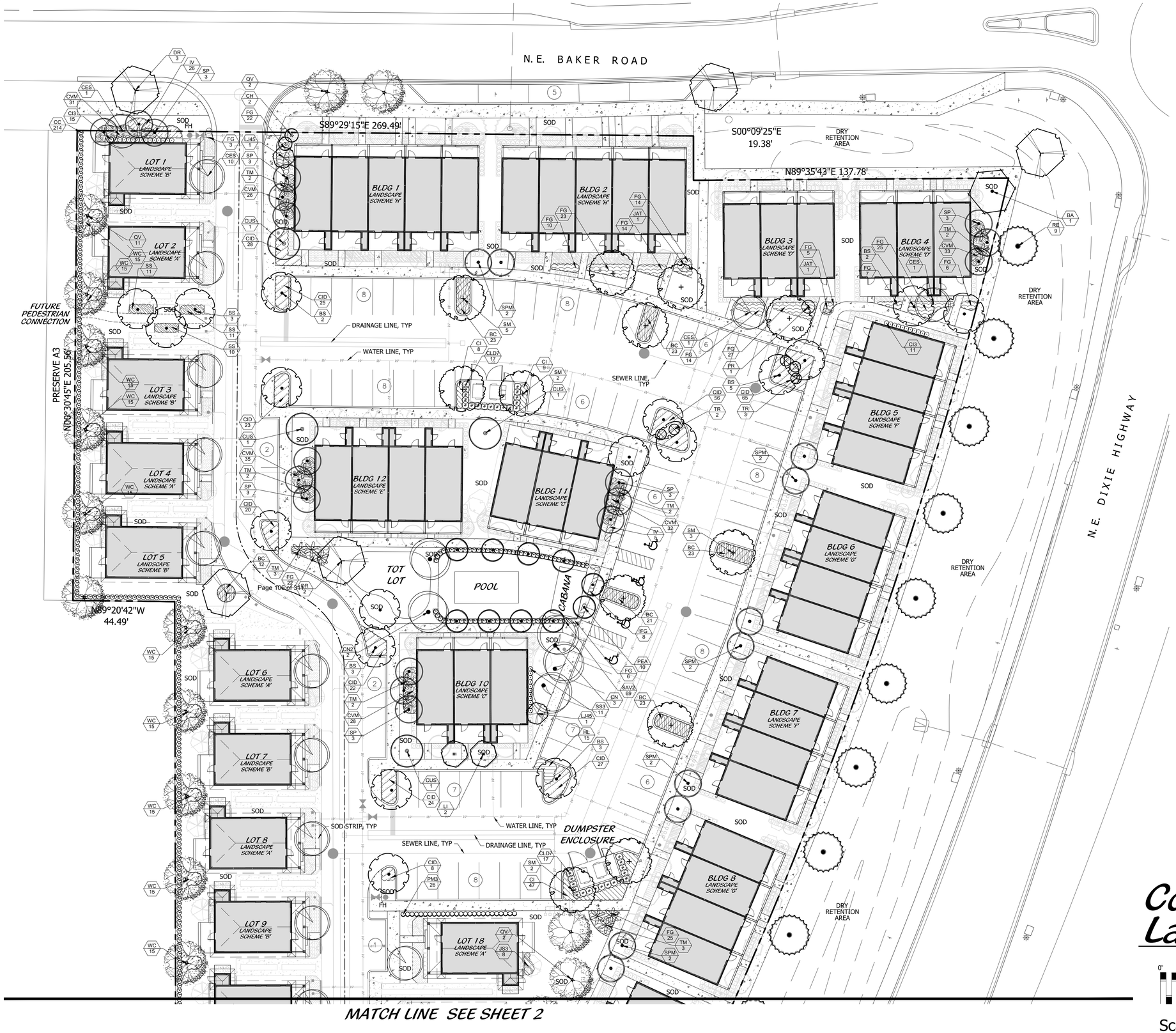
VI. LOCAL PLANNING AGENCY BOARD RECOMMENDATION

The Local Planning Agency shall make an advisory recommendation to the City Commission as to the need and justification for the change and as to the relationship of the proposed change to the goals, objectives and policies of the Comprehensive Plan and of the Land Development Code. The Local Planning Agency shall include in its

recommendation to the City Commission any information which it deems is relevant to issues relating to the proposed amendment.

VII. STAFF RECOMMENDATION (APPROVAL WITH CONDITIONS)

Staff has determined that the proposed major PUD amendment with a rezoning from CPUD to RPUD is consistent with the goals, objectives and policies of the Comprehensive Plan and the regulations in the Land Development Code. Staff offers no objection to the requests.



Common Areas Landscape Plan

0' 10' 20' 40' 80' 120'

Scale: 1" = 20'

North

Cotleur & Hearing

Landscape Architects
Land Planners
Environmental Consultants

1934 Commerce Lane
Suite 1
Jupiter, Florida 33458
561.747.6336 · Fax 747.1377
www.cotleurhearing.com
Lic# LC-26000535

AVONLEA
NEW URBAN COMMUNITIES
Stuart, Florida

DESIGNED	DEH
DRAWN	JAE
APPROVED	DEH
JOB NUMBER	19-1014
DATE	01-23-2020
REVISIONS	

January 23, 2020 11:17:2 a.m.
Drawing: 191014_LP.DWG

SHEET 1 OF 4

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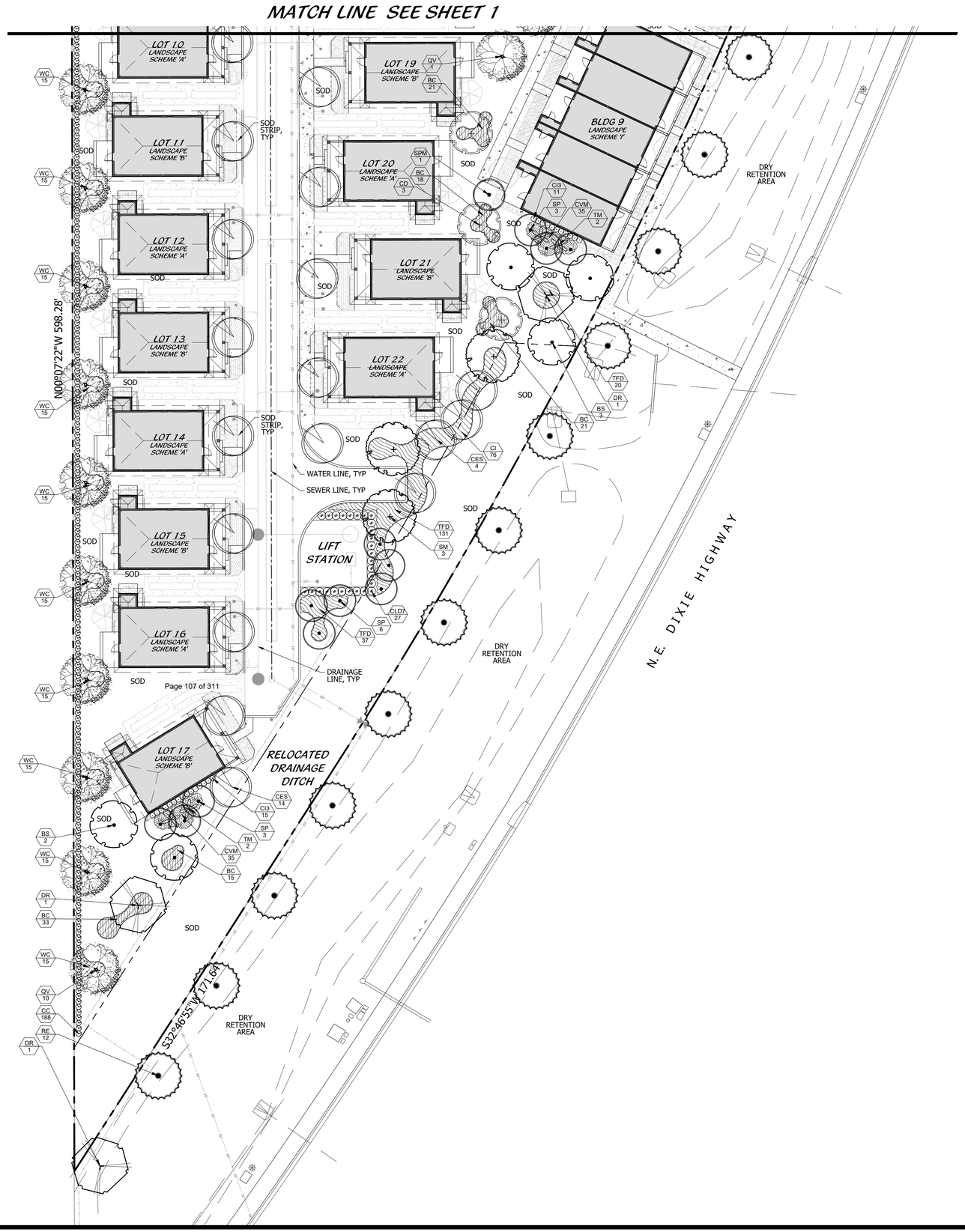

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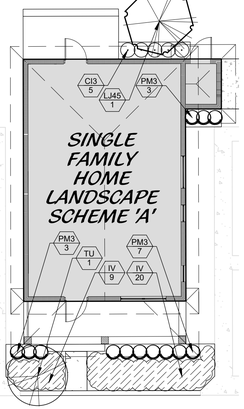
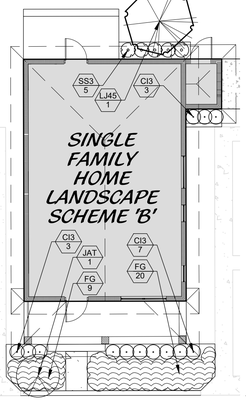
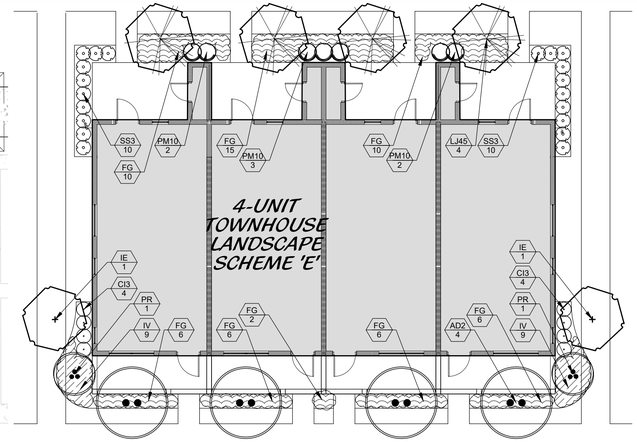
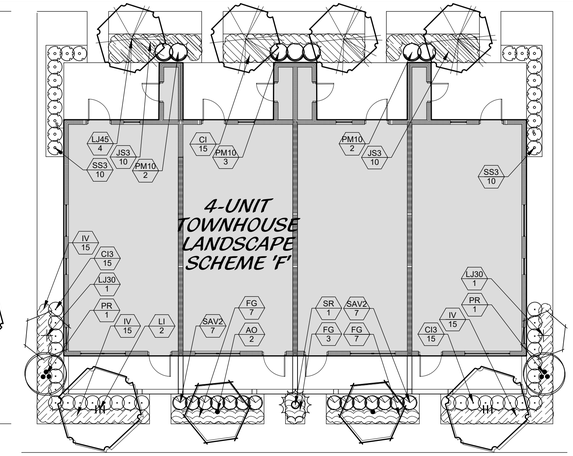
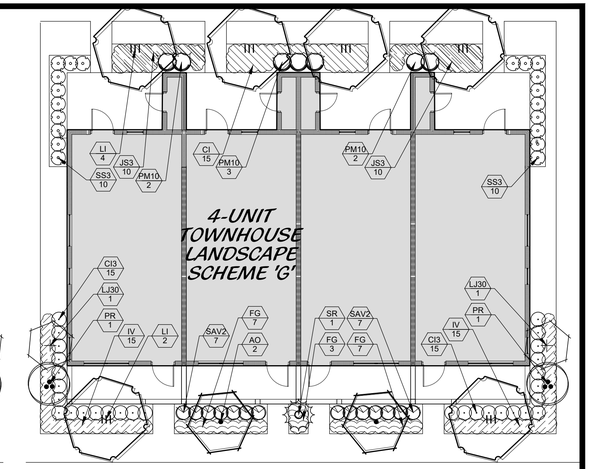










PLANT LIST - SCHEME 'A'

ACCENT PLANTS	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
LJ45	1	LIGUSTRUM JAPONICUM	JAPANESE PRIVET	45 GAL	N/A	7`-8` HT X 7` SPRD	N	FULL CANOPY, MULTI-STEM, LIMB UP
TU	1	TIBOUCHINA GRANULOSA	PURPLE GLORY TREE	10 GAL	1.5" CAL	5` HT X 4` SPRD	N	FULL CANOPY, SYMETRICAL, MULTI-TRUNK
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACE	NATIVE	REMARKS
CI3	5	CHRYSOBALANUS ICACO	COCOPLUM	3 GAL	1.5` X 1.5`	2` OC	Y	FULL & THICK
PM3	13	PODOCARPUS MAKII	PODOCARPUS	3 GAL	1.5` X 1.5`	2` OC	N	FULL & THICK
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACE	NATIVE	REMARKS
IV	29	ILEX VOMITORIA `STOKES DWARF`	DWARF YAUPON HOLLY	3 GAL	12" X 12"	24" OC	Y	FULL & THICK

PLANT LIST - SCHEME 'B'

ACCENT PLANTS	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
JAT	1	JATROPHA STANDARD	JATROPHA	10 GAL	1" CAL	4` HT X 3` SPRD	Y	FULL CANOPY
LJ45	1	LIGUSTRUM JAPONICUM	JAPANESE PRIVET	45 GAL	N/A	7`-8` HT X 7` SPRD	N	FULL CANOPY, MULTI-STEM, LIMB UP
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACE	NATIVE	REMARKS
CI3	13	CHRYSOBALANUS ICACO	COCOPLUM	3 GAL	1.5` X 1.5`	2` OC	Y	FULL & THICK
SS3	5	MYRCIANTHES FRAGRANS	SIMPSONS STOPPER	3 GAL	1.5` X 1.5`	2` OC	Y	FULL & THICK
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACE	NATIVE	REMARKS
FG	29	FICUS MACROPHYLLA	GREEN ISLAND FICUS	3 GAL	12" X 12"	24" OC	N	FULL & THICK

PLANT LIST - SCHEME 'E'

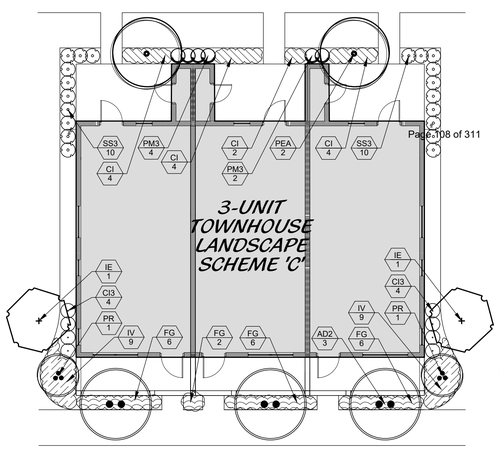
TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
IE	2	ILEX X ATTENUATA `EAGLESTON`	EAGLESTON HOLLY	65 GAL	2.5" CAL	12` HT X 4` SPRD	Y	FULL CANOPY, 5` CT. SOUTH GROWN, MATCHED, FLORIDA FANCY, FULL TO BASE
ACCENT PLANTS	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
LJ45	4	LIGUSTRUM JAPONICUM	JAPANESE PRIVET	45 GAL	N/A	7`-8` HT X 7` SPRD	N	FULL CANOPY, MULTI-STEM, LIMB UP
PR	2	PHOENIX ROEBELENII	PYGMY DATE PALM	30 GAL	3" CAL EACH, 3 TRK MIN	4`-5` OA	N	TRIPLE TRUNK, FLORIDA FANCY
PALM TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
AD2	4	VEITCHIA MERRILLII	DOUBLE CHRISTMAS PALM	FIELD GROWN	N/A	10` OA	N	FULL CANOPY, MATCHED
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACE	NATIVE	REMARKS
CI3	8	CHRYSOBALANUS ICACO	COCOPLUM	3 GAL	1.5` X 1.5`	2` OC	Y	FULL & THICK
SS3	20	MYRCIANTHES FRAGRANS	SIMPSONS STOPPER	3 GAL	1.5` X 1.5`	2` OC	Y	FULL & THICK
PM10	7	PODOCARPUS MAKII --	PODOCARPUS	10 GAL	3` X 2`	30" OC	N	FULL & THICK
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACE	NATIVE	REMARKS
FG	61	FICUS MACROPHYLLA	GREEN ISLAND FICUS	3 GAL	12" X 12"	24" OC	N	FULL & THICK
IV	18	ILEX VOMITORIA `STOKES DWARF`	DWARF YAUPON HOLLY	3 GAL	12" X 12"	24" OC	Y	FULL & THICK

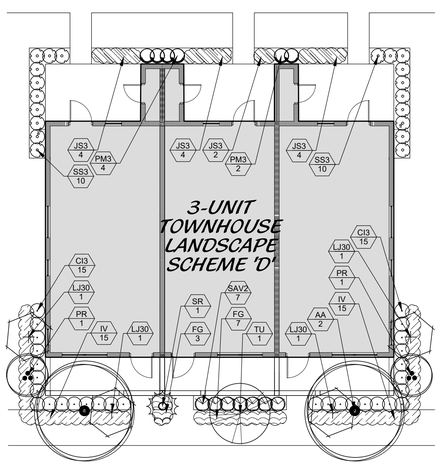
PLANT LIST - SCHEME 'F'

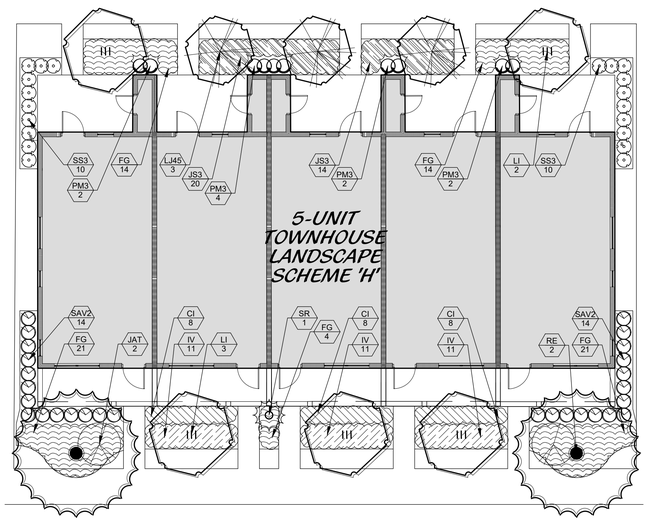
TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
LI	2	LAGERSTROEMIA IND `MUSKOGEE` / `TUSKEGEE`	CRAPE MYRTLE	30 GAL	1.5" CAL	12` HT X 5` SPRD	N	MULTI, LIMB UP 5`, CHERRY LAKE NURSERY.
ACCENT PLANTS	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
AO	2	AGLAIA ODORATA	CHINESE PERFUME TREE	15 GAL	1" CAL	5`-6` OA	N	FULL CANOPY
LJ45	4	LIGUSTRUM JAPONICUM	JAPANESE PRIVET	45 GAL	N/A	7`-8` HT X 7` SPRD	N	FULL CANOPY, MULTI-STEM, LIMB UP
PR	2	PHOENIX ROEBELENII	PYGMY DATE PALM	30 GAL	3" CAL EACH, 3 TRK MIN	4`-5` OA	N	TRIPLE TRUNK, FLORIDA FANCY
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACE	NATIVE	REMARKS
CI3	30	CHRYSOBALANUS ICACO	COCOPLUM	3 GAL	1.5` X 1.5`	2` OC	Y	FULL & THICK
LJ30	2	LIGUSTRUM JAPONICUM	JAPANESE PRIVET	30 GAL	4`-5` OA	AS	N	FULL CANOPY, MULTI-STEM, LIMB UP
SS3	20	MYRCIANTHES FRAGRANS	SIMPSONS STOPPER	3 GAL	1.5` X 1.5`	2` OC	Y	FULL & THICK
PM10	7	PODOCARPUS MAKII --	PODOCARPUS	10 GAL	3` X 2`	30" OC	N	FULL & THICK
SAV2	14	SCHEFFLERA ARBORICOLA `TRINETTE`	DWARF VARIEGATED SCHEFFLERA	3 GAL	1.5` X 1.5`	2` OC	N	FULL & THICK
SR	1	STRELITZIA REGINAE	ORANGE BIRD OF PARADISE	7 GAL	2.5` X 2`	AS	N	FULL & THICK, FLORIDA FANCY
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACE	NATIVE	REMARKS
CI	15	CHRYSOBALANUS ICACO	COCOPLUM	3 GAL	18" X 18"	24" OC	Y	FULL & THICK
FG	17	FICUS MACROPHYLLA	GREEN ISLAND FICUS	3 GAL	12" X 12"	24" OC	N	FULL & THICK
IV	30	ILEX VOMITORIA `STOKES DWARF`	DWARF YAUPON HOLLY	3 GAL	12" X 12"	24" OC	Y	FULL & THICK
JS3	20	JASMINUM VOLUBILE	WAX JASMINE	3 GAL	18" X 18"	24" OC	N	FULL & THICK

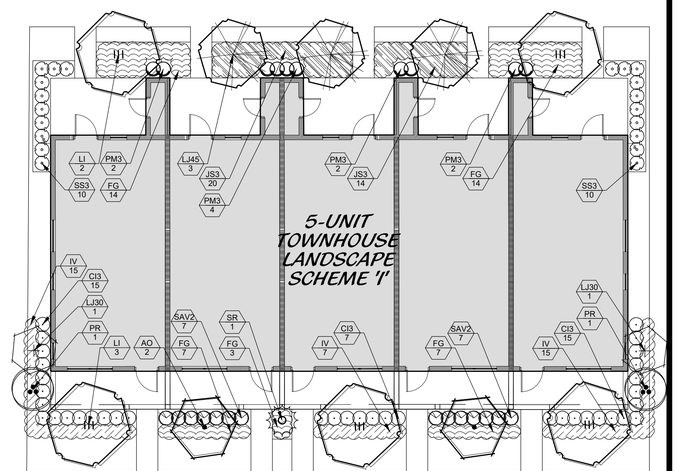
PLANT LIST - SCHEME 'G'

TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
LI	6	LAGERSTROEMIA IND `MUSKOGEE` / `TUSKEGEE`	CRAPE MYRTLE	30 GAL	1.5" CAL	12` HT X 5` SPRD	N	MULTI, LIMB UP 5`, CHERRY LAKE NURSERY.
ACCENT PLANTS	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
AO	2	AGLAIA ODORATA	CHINESE PERFUME TREE	15 GAL	1" CAL	5`-6` OA	N	FULL CANOPY
PR	2	PHOENIX ROEBELENII	PYGMY DATE PALM	30 GAL	3" CAL EACH, 3 TRK MIN	4`-5` OA	N	TRIPLE TRUNK, FLORIDA FANCY
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACE	NATIVE	REMARKS
CI3	30	CHRYSOBALANUS ICACO	COCOPLUM	3 GAL	1.5` X 1.5`	2` OC	Y	FULL & THICK
LJ30	2	LIGUSTRUM JAPONICUM	JAPANESE PRIVET	30 GAL	4`-5` OA	AS	N	FULL CANOPY, MULTI-STEM, LIMB UP
SS3	20	MYRCIANTHES FRAGRANS	SIMPSONS STOPPER	3 GAL	1.5` X 1.5`	2` OC	Y	FULL & THICK
PM10	7	PODOCARPUS MAKII --	PODOCARPUS	10 GAL	3` X 2`	30" OC	N	FULL & THICK
SAV2	14	SCHEFFLERA ARBORICOLA `TRINETTE`	DWARF VARIEGATED SCHEFFLERA	3 GAL	1.5` X 1.5`	2` OC	N	FULL & THICK
SR	1	STRELITZIA REGINAE	ORANGE BIRD OF PARADISE	7 GAL	2.5` X 2`	AS	N	FULL & THICK, FLORIDA FANCY
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACE	NATIVE	REMARKS
CI	15	CHRYSOBALANUS ICACO	COCOPLUM	3 GAL	18" X 18"	24" OC	Y	FULL & THICK
FG	17	FICUS MACROPHYLLA	GREEN ISLAND FICUS	3 GAL	12" X 12"	24" OC	N	FULL & THICK
IV	30	ILEX VOMITORIA `STOKES DWARF`	DWARF YAUPON HOLLY	3 GAL	12" X 12"	24" OC	Y	FULL & THICK
JS3	20	JASMINUM VOLUBILE	WAX JASMINE	3 GAL	18" X 18"	24" OC	N	FULL & THICK









PLANT LIST - SCHEME 'C'

TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
IE	2	ILEX X ATTENUATA `EAGLESTON`	EAGLESTON HOLLY	65 GAL	2.5" CAL	12` HT X 4` SPRD	Y	FULL CANOPY, 5` CT. SOUTH GROWN, MATCHED, FLORIDA FANCY, FULL TO BASE
ACCENT PLANTS	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
PR	2	PHOENIX ROEBELENII	PYGMY DATE PALM	30 GAL	3" CAL EACH, 3 TRK MIN	4`-5` OA	N	TRIPLE TRUNK, FLORIDA FANCY
PALM TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
PEA	2	PTYCHOSPERMA ELEGANS	SINGLE ALEXANDER PALM	FIELD GROWN	N/A	10` OA	N	FULL CANOPY, SINGLE STEM, MATCHED
AD2	3	VEITCHIA MERRILLII	DOUBLE CHRISTMAS PALM	FIELD GROWN	N/A	10` OA	N	FULL CANOPY, MATCHED
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACE	NATIVE	REMARKS
CI3	8	CHRYSOBALANUS ICACO	COCOPLUM	3 GAL	1.5` X 1.5`	2` OC	Y	FULL & THICK
SS3	20	MYRCIANTHES FRAGRANS	SIMPSONS STOPPER	3 GAL	1.5` X 1.5`	2` OC	Y	FULL & THICK
PM3	6	PODOCARPUS MAKII	PODOCARPUS	3 GAL	1.5` X 1.5`	2` OC	N	FULL & THICK
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACE	NATIVE	REMARKS
CI	14	CHRYSOBALANUS ICACO	COCOPLUM	3 GAL	18" X 18"	24" OC	Y	FULL & THICK
FG	20	FICUS MACROPHYLLA	GREEN ISLAND FICUS	3 GAL	12" X 12"	24" OC	N	FULL & THICK
IV	18	ILEX VOMITORIA `STOKES DWARF`	DWARF YAUPON HOLLY	3 GAL	12" X 12"	24" OC	Y	FULL & THICK

PLANT LIST - SCHEME 'D'

ACCENT PLANTS	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
PR	2	PHOENIX ROEBELENII	PYGMY DATE PALM	30 GAL	3" CAL EACH, 3 TRK MIN	4`-5` OA	N	TRIPLE TRUNK, FLORIDA FANCY
TU	1	TIBOUCHINA GRANULOSA	PURPLE GLORY TREE	10 GAL	1.5" CAL	5` HT X 4` SPRD	N	FULL CANOPY, SYMETRICAL, MULTI-TRUNK
PALM TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
AA	2	ARCHONTOPHOENIX ALEXANDRAE	ALEXANDRA PALM	FIELD GROWN	N/A	16` HT, 10` CT	N	FULL CANOPY
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACE	NATIVE	REMARKS
CI3	30	CHRYSOBALANUS ICACO	COCOPLUM	3 GAL	1.5` X 1.5`	2` OC	Y	FULL & THICK
LJ30	4	LIGUSTRUM JAPONICUM	JAPANESE PRIVET	30 GAL	4`-5` OA	AS	N	FULL CANOPY, MULTI-STEM, LIMB UP
SS3	20	MYRCIANTHES FRAGRANS	SIMPSONS STOPPER	3 GAL	1.5` X 1.5`	2` OC	Y	FULL & THICK
PM3	6	PODOCARPUS MAKII	PODOCARPUS	3 GAL	1.5` X 1.5`	2` OC	N	FULL & THICK
SAV2	7	SCHEFFLERA ARBORICOLA `TRINETTE`	DWARF VARIEGATED SCHEFFLERA	3 GAL	1.5` X 1.5`	2` OC	N	FULL & THICK
SR	1	STRELITZIA REGINAE	ORANGE BIRD OF PARADISE	7 GAL	2.5` X 2`	AS	N	FULL & THICK, FLORIDA FANCY
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACE	NATIVE	REMARKS
FG	10	FICUS MACROPHYLLA	GREEN ISLAND FICUS	3 GAL	12" X 12"	24" OC	N	FULL & THICK
IV	30	ILEX VOMITORIA `STOKES DWARF`	DWARF YAUPON HOLLY	3 GAL	12" X 12"	24" OC	Y	FULL & THICK
JS3	14	JASMINUM VOLUBILE	WAX JASMINE	3 GAL	18" X 18"	24" OC	N	FULL & THICK

PLANT LIST - SCHEME 'H'

TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
LI	5	LAGERSTROEMIA IND `MUSKOGEE` / `TUSKEGEE`	CRAPE MYRTLE	30 GAL	1.5" CAL	12` HT X 5` SPRD	N	MULTI, LIMB UP 5`, CHERRY LAKE NURSERY.
ACCENT PLANTS	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
JAT	2	JATROPHA STANDARD	JATROPHA	10 GAL	1" CAL	4` HT X 3` SPRD	Y	FULL CANOPY
LJ45	3	LIGUSTRUM JAPONICUM	JAPANESE PRIVET	45 GAL	N/A	7`-8` HT X 7` SPRD	N	FULL CANOPY, MULTI-STEM, LIMB UP
PALM TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
RE	2	ROYSTONEA ELATA	FLORIDA ROYAL PALM	FIELD GROWN	N/A	8` GW	Y	FULL, STRAIGHT TRUNK, MATCHED
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACE	NATIVE	REMARKS
SS3	20	MYRCIANTHES FRAGRANS	SIMPSONS STOPPER	3 GAL	1.5` X 1.5`	2` OC	Y	FULL & THICK
PM3	10	PODOCARPUS MAKII	PODOCARPUS	3 GAL	1.5` X 1.5`	2` OC	N	FULL & THICK
SAV2	28	SCHEFFLERA ARBORICOLA `TRINETTE`	DWARF VARIEGATED SCHEFFLERA	3 GAL	1.5` X 1.5`	2` OC	N	FULL & THICK
SR	1	STRELITZIA REGINAE	ORANGE BIRD OF PARADISE	7 GAL	2.5` X 2`	AS	N	FULL & THICK, FLORIDA FANCY
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACE	NATIVE	REMARKS
CI	24	CHRYSOBALANUS ICACO	COCOPLUM	3 GAL	18" X 18"	24" OC	Y	FULL & THICK
FG	74	FICUS MACROPHYLLA	GREEN ISLAND FICUS	3 GAL	12" X 12"	24" OC	N	FULL & THICK
IV	33	ILEX VOMITORIA `STOKES DWARF`	DWARF YAUPON HOLLY	3 GAL	12" X 12"	24" OC	Y	FULL & THICK
JS3	34	JASMINUM VOLUBILE	WAX JASMINE	3 GAL	18" X 18"	24" OC	N	FULL & THICK

PLANT LIST - SCHEME 'I'

TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
LI	5	LAGERSTROEMIA IND `MUSKOGEE` / `TUSKEGEE`	CRAPE MYRTLE	30 GAL	1.5" CAL	12` HT X 5` SPRD	N	MULTI, LIMB UP 5`, CHERRY LAKE NURSERY.
ACCENT PLANTS	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
AO	2	AGLAIA ODORATA	CHINESE PERFUME TREE	15 GAL	1" CAL	5`-6` OA	N	FULL CANOPY
LJ45	3	LIGUSTRUM JAPONICUM	JAPANESE PRIVET	45 GAL	N/A	7`-8` HT X 7` SPRD	N	FULL CANOPY, MULTI-STEM, LIMB UP
PR	2	PHOENIX ROEBELENII	PYGMY DATE PALM	30 GAL	3" CAL EACH, 3 TRK MIN	4`-5` OA	N	TRIPLE TRUNK, FLORIDA FANCY
SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACE	NATIVE	REMARKS
CI3	37	CHRYSOBALANUS ICACO	COCOPLUM	3 GAL	1.5` X 1.5`	2` OC	Y	FULL & THICK
LJ30	2	LIGUSTRUM JAPONICUM	JAPANESE PRIVET	30 GAL	4`-5` OA	AS	N	FULL CANOPY, MULTI-STEM, LIMB UP
SS3	20	MYRCIANTHES FRAGRANS	SIMPSONS STOPPER	3 GAL	1.5` X 1.5`	2` OC	Y	FULL & THICK
PM3	10	PODOCARPUS MAKII	PODOCARPUS	3 GAL	1.5` X 1.5`	2` OC	N	FULL & THICK
SAV2	14	SCHEFFLERA ARBORICOLA `TRINETTE`	DWARF VARIEGATED SCHEFFLERA	3 GAL	1.5` X 1.5`	2` OC	N	FULL & THICK
SR	1	STRELITZIA REGINAE	ORANGE BIRD OF PARADISE	7 GAL	2.5` X 2`	AS	N	FULL & THICK, FLORIDA FANCY
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACE	NATIVE	REMARKS
FG	45	FICUS MACROPHYLLA	GREEN ISLAND FICUS	3 GAL	12" X 12"	24" OC	N	FULL & THICK
IV	37	ILEX VOMITORIA `STOKES DWARF`	DWARF YAUPON HOLLY	3 GAL	12" X 12"	24" OC	Y	FULL & THICK
JS3	34	JASMINUM VOLUBILE	WAX JASMINE	3 GAL	18" X 18"	24" OC	N	FULL & THICK

Landscape Plan Typicals

Cotleur & Hearing
Landscape Architects
Land Planners
Environmental Consultants
1934 Commerce Lane
Suite 1
Jupiter, Florida 33458
561.747.6336 · Fax 747.1377
www.cotleurhearing.com
Lic# LC-26000535

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NEW URBAN COMMUNITIES
Stuart, Florida

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DRAWN JAE
APPROVED DEH
JOB NUMBER 19-1014
DATE 01-23-2020
REVISIONS

January 23, 2020 11:17:2 a.m.
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LANDSCAPE NOTES

ALL PLANT MATERIAL SHALL BE FLORIDA NUMBER 1 OR BETTER AS DEFINED BY THE DIVISION OF PLANT INDUSTRY 'FLORIDA GRADES AND STANDARDS' LATEST EDITION.

ALL LANDSCAPE SHALL CONFORM TO THE REQUIREMENTS OF THE CITY OF SUTART LANDSCAPE CODE SHALL GOVERN IN THE EVENT OF A CONFLICT.

VEGETATION REMOVAL PERMITS ARE REQUIRED PRIOR TO REMOVING, CLEARING OR STRIPPING ANY VEGETATION FROM THE PROPERTY.

AT THE TIME OF BUILDING PERMIT, THE APPLICANT SHALL EXECUTE HOLD HARMLESS AGREEMENTS WITH ALL APPLICABLE UTILITIES FOR LANDSCAPING WITHIN UTILITY EASEMENTS.

THE LANDSCAPE CONTRACTOR SHALL NOT MAKE ANY SUBSTITUTIONS AND/ OR CHANGES WITHOUT THE AUTHORIZATION OF CITY OF STUART, THE OWNER AND THE LANDSCAPE ARCHITECT.

THE LANDSCAPE CONTRACTOR SHALL REVIEW THE PROJECT DRAINAGE AND UTILITY PLANS PRIOR TO CONSTRUCTION AND AVOID ALL CONFLICTS. THE LANDSCAPE CONTRACTOR SHALL VERIFY THE LOCATION OF ALL UNDERGROUND UTILITIES PRIOR TO COMMENCING WORK.

THE LANDSCAPE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL PERMITS.

THE CONTRACTOR SHALL COORDINATE THE PLANTING AND TRIMMING OF STREET TREES TO ENSURE FULL VISIBILITY TO TRAFFIC CONTROL AND SAFETY SIGNAGE

TREES SHALL BE POSITIONED TO AVOID CONFLICTS WITH SIGNAGE AND SITE LIGHTING. LARGER TREES WILL BE PROVIDED AT INTERSECTIONS WHERE DEEMED NECESSARY.

ALL VEGETATION SHALL BE SELECTED AND POSITIONED SO THAT IT DOES NOT PRESENT OBSTRUCTIONS TO THE LINE OF SIGHT AT INTERSECTIONS PURSUANT TO THE CITY OF STUART CODE.

ALL ABOVE GROUND UTILITIES I.E. TRANSFORMERS, SWITCH BOXES, AC CONDENSERS AND ALIKE SHALL BE FULLY SCREENED FROM VIEW ON THREE SIDES WITH LANDSCAPING. THE LANDSCAPING SHALL TO THE TALLEST POINT OF SAID EQUIPMENT AT TIME OF PLANTING.

ALL TREES SHALL BE LOCATED WITHIN A MULCH PLANTING BED WITH A MINIMUM OF TWO (2) FEET OF CLEARANCE TO THE EDGE OF THE BED.

SOD AND IRRIGATION SHALL BE INSTALLED IN ANY ADJACENT RIGHT OF WAY BETWEEN THE SIDEWALK AND THE CURB.

ALL SOD SHALL BE STENOTAPHRUM SECONDATUS FLORITAM-PALMETTO (ST. AUGUSTINE SOD).

TREES WITHIN PLANTING ISLANDS LESS THAN FIVE (5) FEET IN WIDTH SHALL BE LOCATED TO AVOID CONFLICTS WITH THE OVERHANG OF VEHICLES.

TYPE D RAISED CONCRETE CURBING SHALL BE PROVIDED AROUND ALL PLANTING ISLANDS WITHIN VEHICULAR USE AREAS.

TREES AT ENTRANCE WAYS AND WITHIN SIGHT TRIANGLES SHALL BE TRIMMED IN SUCH A FASHION TO MINIMIZE SITE VISIBILITY CONFLICTS. CLEAR VISIBILITY SHALL BE MAINTAINED BETWEEN 30 INCHES AND 7 FEET. TEN FOOT BY THIRTY FOOT SIGHT VISIBILITY TRIANGLES SHALL BE PROVIDED AT THE INTERSECTIONS WITH THE PUBLIC RIGHT OF WAY. IN ADDITION ALL LANDSCAPING SHALL CONFORM TO THE REQUIREMENTS OF FDOT INDEX 546.

EARTH BERMS SHALL NOT EXCEED A 3:1 SLOPE 4:1 SLOPES OR GREATER ARE PREFERABLE.

ALL TREES PLANTED UNDER OR ADJACENT TO FPL POWER LINES WILL COMPLY WITH THE FPL RIGHT TREE IN THE RIGHT PLACE GUIDELINES (REV 5/95)

PERIMETER TREES AT THE TIME OF PLANTING SHALL BE SPACED IN A WAY THAT COMPLEMENTS THE SPACING OF ANY EXISTING TREES ON ADJACENT DEVELOPED AREAS.

ALL LANDSCAPE ISLANDS AND BEDS SHALL BE FREE FROM SHELL ROCK AND CONSTRUCTION DEBRIS, EXCAVATED TO A DEPTH OF 30 INCHES OR TO CLEAN NATIVE SOILS AND FILLED WITH THE SPECIFIED BACKFILL MIXTURE.

ALL LANDSCAPE ISLANDS SHALL INCORPORATE THE INSTALLATION OF MOUNDING OF NATIVE SOILS A MINIMUM OF SIX INCHES (6") ABOVE THE TOP OF CURB.

19.5" 'BIO BARRIER' ROOT BARRIER SHALL BE PROVIDED FOR SHADE TREES PLANTED WITHIN SIX (6') FEET OF PUBLIC CURBS, SIDEWALKS OR PUBLIC RIGHT OF WAYS. ALL ROOT BARRIER SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURES RECOMMENDATIONS. THE TOTAL LENGTH OF THE ROOT BARRIERS SHALL BE 20' ADJACENT TO THE SIDEWALK AND 20' ADJACENT TO THE CURB.

ALL AREAS SHALL BE FULLY IRRIGATED IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF STUART. THE IRRIGATION WATER SOURCE SHALL BE WELL WATER FOR COMMON AREAS AND POTABLE WATER AROUND THE BUILDING FOUNDATION.

CATCH BASINS AND DRAINAGE SHALL NOT BE LOCATED WITH IN REQUIRED PERIMETER BUFFERS OR PRESERVE AREAS.

THE IRRIGATION SYSTEM SHALL BE DESIGNED TO PROVIDE 100% OVERLAP COVERAGE TO ALL LANDSCAPE AND SOD AREAS.

THE IRRIGATION SYSTEM SHALL BE EQUIPPED WITH A RAIN SENSOR/CUT OFF SWITCH IN ACCORDANCE WITH STATE AND LOCAL REQUIREMENTS.

EXISTING TREES AND VEGETATION TO REMAIN SHALL BE STAKED AND BARRICADED PRIOR TO ANY LAND CLEARING. TREES TO BE RELOCATED SHALL BE ROOT PRUNED AND PROTECTED DURING CONSTRUCTION.

ALL TREES PROPOSED TO BE PRESERVED ON SITE SHALL BE PROTECTED IN ACCORDANCE WITH THE PROCEDURES OUTLINED IN DIVISION IV., VEGETATION REMOVAL REQUIREMENTS IN THE CITY OF STUART CODE PRIOR TO THE ISSUANCE OF A C.O.

ANY AREA DESIGNATED WITH EXISTING VEGETATION TO REMAIN THAT IS DISTURBED DURING CONSTRUCTION WILL BE RESTORED WITH NATIVE PLANTINGS.

EXISTING TREES PRESERVED OR RELOCATED ON SITE SHALL BE PRUNED ACCORDING TO ANSI A300 STANDARDS OR BY AN ISA CERTIFIED ARBORIST.

ALL EXISTING LANDSCAPING AND TREES TO REMAIN SHALL BE BARRICADED WITH ORANGE CONSTRUCTION BARRICADE. THE BARRICADE SHALL BE INSTALLED AT THE DRIP LINE OF THE TREE/PALM OR AT THE EDGE OF THE SHRUB MASS. BARRICADES SHALL REMAIN IN PLACE THROUGHOUT THE DURATION OF CONSTRUCTION.

EXISTING, SUITABLE NATIVE VEGETATION LOCATED WITHIN THE PROPOSED DEVELOPMENT AREAS SHALL BE RELOCATED TO SUPPLEMENT THE LANDSCAPING. NATIVE VEGETATION SHALL BE RELOCATED BY TREE SPADE OR CRANE. PRIOR TO THE CLEARING OF THE SITE THE APPLICANT SHALL IDENTIFY ALL NATIVE VEGETATION TO BE RELOCATED.

RELOCATION METHODOLOGY: EXISTING NATIVE VEGETATION DETERMINED TO BE SUITABLE FOR RELOCATION SHALL BE RELOCATED TO TARGET AREAS USING HYDROLOGIC TREE SPADES. THE SIZE OF SPADE SHALL VARY FROM 90" TO 45" DEPENDING ON THE SIZE AND TYPE OF VEGETATION TO BE MOVED. THE APPLICANT SHALL IDENTIFY PRIOR TO THE CLEARING OF THE SITE ALL EXISTING NATIVE VEGETATION TO BE RELOCATED. FOLLOWING RELOCATION, VEGETATION SHALL BE WATERED DAILY FOR A PERIOD NOT LESS THAN 90 DAYS AFTER WHICH IT SHALL BE WATERED ON AN AS NEED BASIS TO INSURE SURVIVAL. AT A MINIMUM THE APPLICANT SHALL INSURE 60% SURVIVAL FOR ALL RELOCATED PLANT MATERIAL.

LANDSCAPE SPECIFICATIONS

1. GENERAL LANDSCAPE REQUIREMENTS

LANDSCAPE CONTRACT WORK INCLUDES, BUT IS NOT LIMITED TO, SOIL PREPARATION, FINE OR FINISH GRADING, FURNISHING AND INSTALLING PLANT MATERIAL, WATERING, STAKING, GUYING AND MULCHING.

PLANT SIZE AND QUALITY

TREES, PALMS, SHRUBS, GROUNDCOVERS:
PLANT SPECIES AND SIZES SHALL CONFORM TO THOSE INDICATED ON THE DRAWINGS, NOMENCLATURE SHALL CONFORM TO STANDARD PLANT NAMES, 1942 EDITION. ALL NURSERY STOCK SHALL BE IN ACCORDANCE WITH GRADES AND STANDARDS FOR NURSERY PLANTS PARTS I & II, LATEST EDITION PUBLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES, UNLESS SPECIFIED OTHERWISE. ALL PLANTS SHALL BE FLORIDA GRADE NUMBER 1 OR BETTER AS DETERMINED BY THE FLORIDA DIVISION OF PLANT INDUSTRY.

ALL CONTAINER GROWN MATERIAL SHALL BE HEALTHY, VIGOROUS, WELL-ROOTED PLANTS AND ESTABLISHED IN THE CONTAINER IN WHICH THEY ARE SOLD. THE PLANTS SHALL HAVE TOPS OF GOOD QUALITY AND BE IN A HEALTHY GROWING CONDITION.

AN ESTABLISHED CONTAINER GROWN PLANT SHALL BE TRANSPLANTED INTO A CONTAINER AND GROWN IN THAT CONTAINER SUFFICIENTLY LONG ENOUGH FOR THE NEW FIBROUS ROOTS TO HAVE DEVELOPED SO THAT THE ROOT MASS WILL RETAIN ITS SHAPE AND HOLD TOGETHER WHEN REMOVED FROM THE CONTAINER.

STANDARD PLANTING MIXTURE SHALL BE ONE (1) PART RECYCLED ORGANIC MATERIAL ADDED TO THREE (3) PARTS EXISTING NATIVE SOIL.

REPLACEMENT SOIL SHALL BE USED AS SPECIFIED TO REPLACE EXISTING SOILS THAT ARE DETERMINED BY THE LANDSCAPE ARCHITEC TO BE UNSUITABLE FOR PLANTING, IE. ROAD BASE, PAVEMENT, ETC. REPLACMENT SOIL MIX SHALL CONTAIN 60% SAND AND 40% MUCK. SAND SHALL BE 100% CLEAN NATIVE SAND SCREENED TO 1/4" AND MUCK SHALL BE 100% CLEAN ORGANIC NATIVE MUCK SCREENED TO 1/2". ALL SOIL SHALL BE MIXED PRIOR TO DELIVERY ON SITE.

MULCH SHALL BE SHREDDED MELALEUCA, EUCALYPTUS OR GRADE "A" RECYCLED. ALL MULCH IS TO BE APPLIED TO A DEPTH OF 3", EXCEPT AS OTHERWISE NOTED.

FERTILIZER IN BACKFILL MIXTURE FOR ALL PLANTS SHALL CONSIST OF MILORGANITE ACTIVATED SLUDGE MIXED WITH THE BACKFILL AT A RATE OF NOT LESS THAN 50 LBS. PER CUBIC YARD.

FERTILIZER FOR TREES AND SHRUBS MAY BE TABLET FORM OR GRANULAR. GRANULAR FERTILIZER SHALL BE UNIFORM IN COMPOSITION, DRY AND FREE-FLOWING. THIS FERTILIZER SHALL BE DELIVERED TO THE SITE IN THE ORIGINAL UNOPENED BAGS, EACH BEARING THE MANUFACTURER'S STATEMENT OF ANALYSIS, AND SHALL MEET THE FOLLOWING REQUIREMENTS: 16% NITROGEN, 7% PHOSPHORUS, 12% POTASSIUM, PLUS IRON. TABLET FERTILIZER (AGRIFORM OR EQUAL) IN 21 GRAM SIZE SHALL MEET THE FOLLOWING REQUIREMENTS: 20% NITROGEN, 10% PHOSPHORUS AND 5% POTASSIUM.

FERTILIZER WILL BE APPLIED AT THE FOLLOWING RATES:

PLANT SIZE	16-7-12	AGRIFORM TABLETS (21 GRAM)
1 GAL.	1/4 LB.	1
3 GAL.	1/3 LB.	3
7-15 GAL.	1/2 LB.	6
1"-6" CALIPER	2 LBS./1" CALIPER	2 PER 1" CALIPER
6" AND LARGER	3 LBS./1" CALIPER	2 PER 1" CALIPER

"FLORIDA EAST COAST PALM SPECIAL" SHALL BE APPLIED TO ALL PALMS AT INSTALLATION AT A RATE OF ½ LB. PER INCH OF TRUNK UNLESS OTHERWISE SPECIFIED.

FIELD GROWN TREES AND PALMS PREVIOUSLY ROOT PRUNED SHALL OBTAIN A ROOT BALL WITH SUFFICIENT ROOTS FOR CONTINUED GROWTH WITHOUT RESULTING SHOCK.

CONTRACTOR SHALL NOT MARK OR SCAR TRUNK IN ANY FASHION.

PLANTS SHALL BE WATERED AS NECESSARY OR WITHIN 24 HOURS AFTER NOTIFICATION BY THE LANDSCAPE ARCHITECT.

THE LOCATIONS OF PLANTS, AS SHOWN IN THESE PLANS, ARE APPROXIMATE. THE FINAL LOCATIONS MAY BE ADJUSTED TO ACCOMMODATE UNFORESEEN FIELD CONDITIONS. MAJOR ADJUSTMENTS TO THE LAYOUT ARE TO BE APPROVED BY THE LANDSCAPE ARCHITECT.

ALL PLASTIC FABRIC SHALL BE REMOVED FROM PLANT MATERIAL AT TIME OF INSTALLATION.

ALL TREES MUST BE STAKED AS SHOWN ON THE PLANTING DETAILS WITHIN 24 HOURS OF PLANTING. STAKES TO REMAIN FOR A MINIMUM OF 9 MONTHS, BUT NO LONGER THAN 18 MONTHS. CONTRACTOR IS RESPONSIBLE FOR MAINTENANCE AND REMOVAL OF THE STAKES.

ALL TREES MUST BE PRUNED AS PER LANDSCAPE ARCHITECT'S DIRECTION. SABAL PALMS MAY BE HURRICANE CUT.

ALL SHRUBS, TREES AND GROUND COVER WILL HAVE IMPROVED SOIL AS PER PLANTING SOIL NOTES. THE SOILS SHALL BE PLACED IN THE HOLE DURING PLANTING. TOP DRESSING ONLY IS NOT ACCEPTABLE.

DO NOT ALLOW AIR POCKETS TO FORM WHEN BACKFILLING. ALL TREES SHALL BE SPIKED IN UTILIZING WATER AND A TREE BAR.

THE LANDSCAPE CONTRACTOR SHALL WATER, MULCH, WEED, PRUNE, AND OTHERWISE MAINTAIN ALL PLANTS, INCLUDING SOD, UNTIL COMPLETION OF CONTRACT OR ACCEPTANCE BY LANDSCAPE ARCHITECT. SETTLED PLANTS SHALL BE RESET TO PROPER GRADE, PLANTING SAUCERS RESTORED, AND DEFECTIVE WORK CORRECTED.

THE LANDSCAPE CONTRACTOR SHALL AT ALL TIMES KEEP THE PREMISES FREE FROM ACCUMULATION OF WASTE MATERIALS OR DEBRIS CAUSED BY HIS CREWS DURING THE PERFORMANCE OF THE WORK. UPON COMPLETION OF THE WORK, THE CONTRACTOR SHALL PROMPTLY REMOVE ALL WASTE MATERIALS, DEBRIS, UNUSED PLANT MATERIAL, EMPTY PLANT CONTAINERS AND ALL EQUIPMENT FROM THE PROJECT SITE.

UPON COMPLETION OF THE WORK, THE LANDSCAPE CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT AND REQUEST A FINAL INSPECTION. ANY ITEMS THAT ARE JUDGED INCOMPLETE OR UNACCEPTABLE BY THE LANDSCAPE ARCHITECT OR OWNER'S REPRESENTATIVE SHALL BE CORRECTED BY THE LANDSCAPE CONTRACTOR WITHIN 14 DAYS.

ALL LABOR AND MATERIAL FOR SOIL AMENDMENTS AND FERTILIZER THAT IS REQUIRED TO INSURE THE SUCCESSFUL ESTABLISHMENT AND SURVIVAL OF THE PROPOSED VEGETATION, AS WELL AS ALL THE COST FOR THE REMOVAL OF UNSUITABLE OR EXCESS BACKFILL MATERIAL, SHALL BE INCLUDED IN THE CONTRACTOR'S BID TO PERFORM THE WORK REPRESENTED IN THIS PLAN SET.

2. PLANTING TREES

EXCAVATE PIT AS PER PLANTING DETAILS.

BACKFILL AROUND BALL WITH STANDARD PLANTING MIXTURE AND SLIGHTLY COMPACT, WATER THOROUGHLY AS LAYERS ARE PLACED TO ELIMINATE VOIDS AND AIR POCKETS. BUILD A 6" HIGH BERM OF STANDARD PLANTING MIXTURE BEYOND EDGE OF EXCAVATION. APPLY 3" (AFTER SETTLEMENT) OF MULCH EXCEPT WITHIN 6" OF TRUNK.

PRUNE TREE TO REMOVE DAMAGED BRANCHES, IMPROVE NATURAL SHAPE AND THIN OUT STRUCTURE. DO NOT REMOVE MORE THAN 15% OF BRANCHES. DO NOT PRUNE BACK TERMINAL LEADER.

GUY AND STAKE TREE IN ACCORDANCE WIT THE STAKING DETAILS IMMEDIATELY AFTER PLANTING.

3. PLANTING SHRUBS

LAYOUT SHRUBS TO CREATE A CONTINUOUS SMOOTH FRONT LINE AND FILL IN BEHIND.

EXCAVATE PIT OR TRENCH TO 1-1/2 TIMES THE DIAMETER OF THE BALLS OR CONTAINERS OR 1'-0" WIDER THAN THE SPREAD OF ROOTS FOR POSITIONING AT PROPER HEIGHT. BACKFILL AROUND PLANTS WITH STANDARD PLANTING MIXTURE, COMPACTED TO ELIMINATE VOIDS AND AIR POCKETS. FORM GRADE SLIGHTLY DISHED AND BERMED AT EDGES OF EXCAVATION. APPLY 3" OF MULCH EXCEPT WITHIN 3" OF STEMS.

PRUNE SHRUBS TO REMOVE DAMAGED BRANCHES, IMPROVE NATURAL SHAPE AND THIN OUT STRUCTURE. DO NOT REMOVE MORE THAN 15% OF BRANCHES.

4. PLANTING GROUND COVER

LOOSEN SUBGRADE TO DEPTH OF 4" IN AREAS WHERE TOPSOIL HAS BEEN STRIPPED AND SPREAD SMOOTH.

SPACE PLANTS AS OTHERWISE INDICATED. DIG HOLES LARGE ENOUGH TO ALLOW SPREADING OF ROOTS. COMPACT BACKFILLTO ELIMINATE VOIDS AND LEAVE GRADE SLIGHTLY DISHED AT EACH PLANT. WATER THOROUGHLY. APPLY 3" OF MULCH OVER ENTIRE PLANTING BED, LIFTING PLANT FOLIAGE ABOVE MULCH.

DURING PERIODS OF HOT SUN AND/OR WIND AT TIME OF PLANTING, PROVIDE PROTECTIVE COVER FOR SEVERAL DAYS OR AS NEEDED.

5. PLANTING LAWNS

SODDING: SOD TYPE SPECIFIED ON PLANT LIST SHALL BE MACHINE STRIPPED NOT MORE THAN 24 HOURS PRIOR TO LAYING.

LOOSEN SUBGRADE TO DEPTH OF 4" AND GRADE WITH TOPSOIL EITHER PROVIDED ON SITE OR IMPORTED STANDARD PLANTING MIX TO FINISH DESIGN ELEVATIONS. ROLL PREPARED LAWN SURFACE. WATER THOROUGHLY, BUT DO NOT CREATE MUDDY SOIL CONDITION.

FERTILIZE SOIL AT THE RATE OF APPROXIMATELY 10 LBS. PER 1,000 S.F. SPREAD FERTILIZER OVER THE AREA TO RECEIVE GRASS BY USING AN APPROVED DISTRIBUTION DEVICE CALIBRATED TO DISTRIBUTE THE APPROPRIATE QUANTITY. DO NOT FERTILIZE WHEN WIND VELOCITY EXCEEDS 15 M.P.H. THOROUGHLY MIX FERTILIZER INTO THE TOP 2" OF TOPSOIL.

LAY SOD STRIPS WITH TIGHT JOINTS, DO NOT OVERLAP, STAGGER STRIPS TO OFFSET JOINTS IN ADJACENT COURSES. WORK SIFTED STANDARD PLANTING MIXTURE INTO MINOR CRACKS BETWEEN PIECES OF SOD AND REMOVE EXCESS SOIL DEPOSITS FROM SODDED AREAS. SOD ON SLOPES GREATER THAN 3:1 SHALL BE STAKED IN PLACE. ROLL OR STAMP LIGHTLY AND WATER THOROUGHLY WITH A FINE SPRAY IMMEDIATELY AFTER PLANTING.

6. MISCELLANEOUS LANDSCAPE WORK

LANDSCAPE MAINTENANCE

MAINTAIN LANDSCAPE WORK UNTIL FINAL ACCEPTANCE IS ISSUED BY THE OWNER'S REPRESENTATIVE. INCLUDE WATERING, WEEDING, CULTIVATING, RESTORATION OF GRADE, MOWING AND TRIMMING GRASS, PRUNING TREES AND SHRUBS, PROTECTION FROM INSECTS AND DISEASES, FERTILIZING AND SIMILAR OPERATIONS AS NEEDED TO INSURE NORMAL GROWTH AND GOOD HEALTH FOR LIVE PLANT MATERIAL.

PLANT MATERIAL SUBSTITUTION

NO SUBSTITUTION OF PLANT MATERIAL, TYPE OR SIZES WILL BE PERMITTED WITHOUT AUTHORIZATION FROM THE LANDSCAPE ARCHITECT.

PLANTING BED PREPARATION

ALL PLANTING BEDS SHALL BE PROPERLY PREPARED PRIOR TO THE COMMENCEMENT OF ANY PLANTING. PLANTING AREAS, INCLUDING LAWNS SHALL BE FREE OF ALL WEEDS AND NUISANCE VEGETATION. IF TORPEDO GRASS (PANICUM REPENS) IS PRESENT OR ENCOUNTERED DURING PLANTING, THE LANDSCAPE CONTRACTOR SHALL STOP ALL PLANTING UNTIL IT CAN BE DEMONSTRATED THAT IT HAS BEEN COMPLETELY REMOVED OR ERADICATED. THERE SHALL BE NO EXCEPTIONS TO THIS PROVISION.

ALL LANDSCAPE ISLANDS AND BEDS WILL BE FREE OF SHELL ROCK AND CONSTRUCTION DEBRIS AND WILL BE EXCAVATED TO A DEPTH OF 30 INCHES OR TO CLEAN, NATIVE SOIL AND FILLED WITH THE SPECIFIED REPLACMENT SOIL.

LANDSCAPE WARRENTY

THE LANDSCAPE CONTRACTOR SHALL GUARANTEE ALL PLANT MATERIAL FOR A PERIOD OF SIX (6) MONTHS FROM THE DATE OF CONDITIONAL ACCEPTANCE IN WRITING FROM THE LANDSCAPE ARCHITECT. AT THE TIME OF CONDITIONAL ACCEPTANCE, THE SIX (6) MONTH PERIOD SHALL COMMENCE. ANY MATERIALS WHICH HAVE DIED OR DECLINED TO THE POINT WHERE THEY NO LONGER MEET FLORIDA #1 CONDTION DURING THIS PERIOD SHALL BE PROMPTLY REPLACED WITH SPECIMENS THAT MEET THE MINIMUM REQUIREMENTS CALLED FOR ON THE DRAWINGS. THE LANDSCAPE CONTRACTOR SHALL NOT BE HELD RESPONSIBLE FOR THE DEATH OR DAMAGE RESULTING FROM ACTS OF GOD SUCH AS LIGHTNING, VANDALISM, AND AUTOMOBILES OR FROM NEGLIGENCE BY THE OWNER. CONTRACTOR SHALL BE RESPONSIBLE FOR WATERING AND OTHERWISE MAINTAINING PLANTS UP TO THE CONDITIONAL ACCEPTANCE PERIOD, UNLESS A WRITTEN AGREEMENT WITH THE LANDSCAPE ARCHITECT PROVIDES FOR A DIFFERENT ARRANGEMENT.

LANDSCAPE DATA

PROPOSED PLANT TYPE	% NATIVE
TREES	72%
PALMS	75%
SHRUBS & GROUNDCOVER / ACCENT PLANTS	62%

PLANT LIST

TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
BA	1	BULNESIA ARBOREA	VERAWOOD	45 GAL	2.5" CAL	12` HT X 5` SPRD	N	FULL CANOPY
BS	23	BURSERA SIMARUBA	GUMBO LIMBO	45 GAL	2.5" CAL	12` HT X 6` SPRD	Y	FULL CANOPY
CD	3	COCCOLOBA DIVERSIFOLIA	PIGEON PLUM	45 GAL	2.5" CAL	12` HT X 5` SPRD	Y	FULL CANOPY
CUS	4	COCCOLOBA UVIFERA	SEAGRAPE	45 GAL	2.5" CAL	12` HT X 6` SPRD	Y	FULL CANOPY
CES	31	CONOCARPUS ERECTUS `SERICEUS`	SILVER BUTTONWOOD TREE	FIELD GROWN	2" CAL	12` HT X 5` SPRD	Y	FULL CANOPY. SINGLE STRAIGHT TRUNK.
DR	8	DELONIX REGIA	ROYAL POINCIANA	45 GAL	2.5" CAL	12` HT X 6` SPRD	N	SINGLE STRAIGHT TRUNK. FULL CANOPY. FLORIDA FANCY.
LI	2	LAGERSTROEMIA IND `MUSKOGEE`/`TUSKEGEE`	CRAPE MYRTLE	30 GAL	1.5" CAL	12` HT X 5` SPRD	N	MULTI, LIMB UP 5`. CHERRY LAKE NURSERY.
QV	26	QUERCUS VIRGINIANA	LIVE OAK	65 GAL	3" CAL	12`-14` HT X 6` SPRD	Y	FULL CANOPY, 5` C.T. MIN.
SM	15	SWIETENIA MAHAGONI	MAHOGANY TREE	45 GAL	2.5" CAL	12` HT X 6` SPRD	Y	FULL CANOPY, GRADE #1

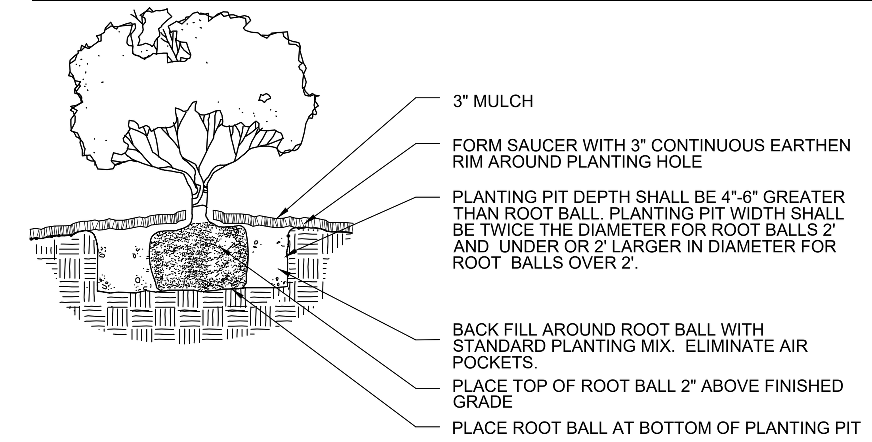
ACCENT PLANTS	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
CH	2	CHAMAEROPS HUMILIS `SILVER SELECT`	EUROPEAN FAN SILVER SELECT	30 GAL	N/A	4`-5` OA	N	MULTI TRUNK, FULL CANOPY
JAT	2	JATROPHA STANDARD	JATROPHA	10 GAL	1" CAL	4` HT X 3` SPRD		FULL CANOPY
LJ45	2	LIGUSTRUM JAPONICUM	JAPANESE PRIVET	45 GAL	N/A	7`-8` HT X 7` SPRD	N	FULL CANOPY, MULTI-STEM, LIMB UP
PR	1	PHOENIX ROEBELENII	PYGMY DATE PALM	30 GAL	3" CAL EACH, 3 TRK MIN	4`-5` OA	N	TRIPLE TRUNK, FLORIDA FANCY
TM	20	THRINAX MORRISII	KEYS THATCH PALM	FIELD GROWN	N/A	4`-5` OA	Y	FULL & THICK, TRIPLE STEM
TR	5	THRINAX RADIATA	FLORIDA THATCH PALM	FIELD GROWN	N.A.	4` OA HT	Y	FULL & THICK

PALM TREES	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	SIZE	NATIVE	REMARKS
CN	3	COCOS NUCIFERA `MAYPAN`	COCONUT PALM	FIELD GROWN	N/A	6` - 8` GW	N	FULL CANOPY, CURVED TRUNK
CN2	2	COCOS NUCIFERA `MAYPAN`	COCONUT PALM	FIELD GROWN	N/A	6` - 8` GW	N	FULL CANOPY, STRAIGHT TRUNK
PEA	10	PTYCHOSPERMA ELEGANS	SINGLE ALEXANDER PALM	FIELD GROWN	N/A	10` OA	N	FULL CANOPY, SINGLE STEM, MATCHED
RE	21	ROYSTONEA ELATA	FLORIDA ROYAL PALM	FIELD GROWN	N/A	8` GW	Y	FULL, STRAIGHT TRUNK, MATCHED
SP	30	SABAL PALMETTO	SABAL PALMETTO	FIELD GROWN	N/A	12`, 14`, 16` CT, STAGGERED	Y	STAGGERED, SLICK TRUNK
SPM	11	SABAL PALMETTO	SABAL PALMETTO	FIELD GROWN	N/A	16` CT	Y	MATCHED, SLICK TRUNK

SHRUBS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACE	NATIVE	REMARKS
CC	402	CAPPARIS CYNOPHALLOPHORA	JAMIACA CAPER	3 GAL	2` X 2`	2` OC	Y	FULL & THICK
CI3	52	CHRYSOBALANUS ICACO	COCOPLUM	3 GAL	1.5` X 1.5`	2` OC	Y	FULL & THICK
CLD7	61	CLUSIA FLAVA	SMALL LEAF CLUSIA	7 GAL	3` X 2`	2.5` OC	Y	FULL & THICK
SS3	11	MYRCIANTHES FRAGRANS	SIMPSONS STOPPER	3 GAL	1.5` X 1.5`	2` OC	Y	FULL & THICK
PM3	26	PODOCARPUS MAKII	PODOCARPUS	3 GAL	1.5` X 1.5`	2` OC	N	FULL & THICK
SAV2	69	SCHEFFLERA ARBORICOLA `TRINETTE`	DWARF VARIEGATED SCHEFFLERA	3 GAL	1.5` X 1.5`	2` OC	N	FULL & THICK

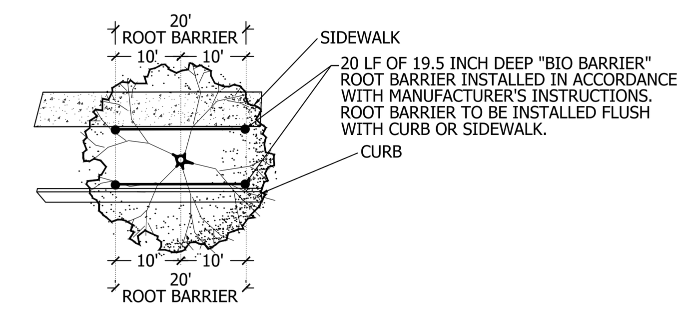
GROUND COVERS	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	SPACE	NATIVE	REMARKS
CI	140	CHRYSOBALANUS ICACO	COCOPLUM	3 GAL	18" X 18"	24" OC	Y	FULL & THICK
CID	298	CHRYSOBALANUS ICACO `HORIZONTAL`	DWARF COCOPLUM	3 GAL	12" X 18"	24" OC	Y	FULL & THICK, NOT STRETCHED
CVM	255	CODIAEUM X MAMMY	CROTON MAMMY	3 GAL	18" X 18"	24" OC	N	FULL & THICK
FG	231	FICUS MACROPHYLLA	GREEN ISLAND FICUS	3 GAL	12" X 12"	24" OC	N	FULL & THICK
HL	15	HYMENOCALLIS LATIFOLIA	SPIDER LILY	3 GAL	18" X 18"	24" OC	Y	FULL & THICK
IV	31	ILEX VOMITORIA `STOKES DWARF`	DWARF YAUPON HOLLY	3 GAL	12" X 12"	24" OC	Y	FULL & THICK
JS3	8	JASMINUM VOLUBILE	WAX JASMINE	3 GAL	18" X 18"	24" OC	N	FULL & THICK
SS	32	MYRCIANTHES FRAGRANS	SIMPSONS STOPPER	3 GAL	24" X 24"	24" OC	Y	FULL & THICK
BC	233	PSYCHOTRIA LIGUSTRIFOLIA	BAHAMA COFFEE	3 GAL	18" X 18"	24" OC	Y	FULL & THICK
WC	300	PSYCHOTRIA NERVOSA	WILD COFFEE	3 GAL	15" X 15"	24" OC	Y	FULL & THICK
TFD	188	TRIPSACUM DACTYLOIDES	DWARF FAKAHATCHEE GRASS	3 GAL	24" X 24"	24" OC	Y	FULL & THICK

PLANTING DETAILS



SHRUB/GROUNDCOVER PLANTING DETAIL

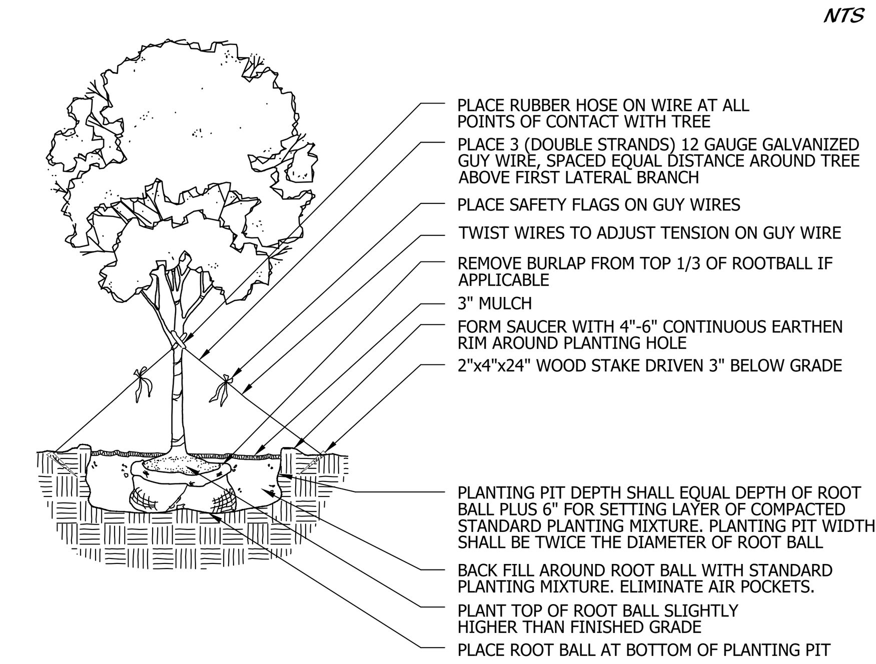
NTS



ROOT BARRIER DETAIL

PLAN VIEW

NTS



LARGE TREE PLANTING DETAIL

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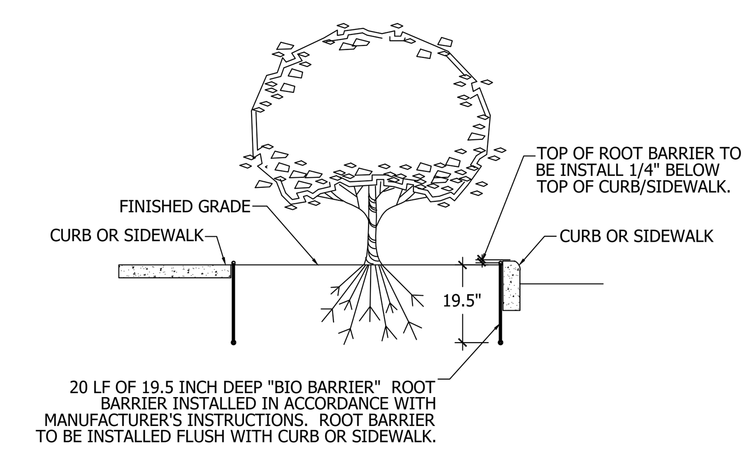
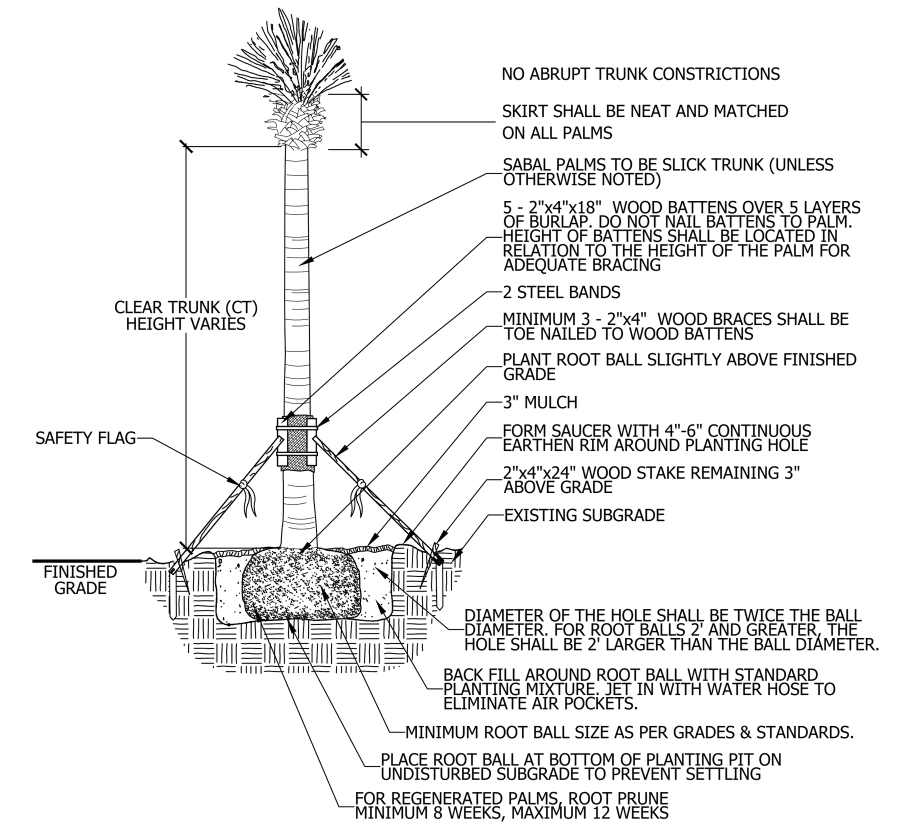


ROOT BARRIER DETAIL

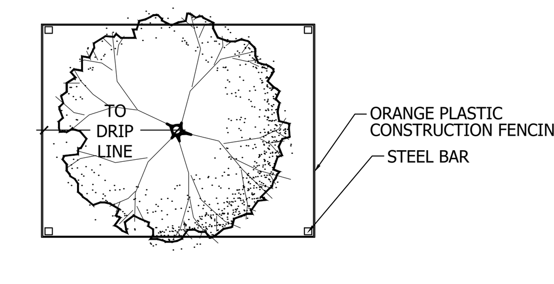
SECTION VIEW

NTS



SABAL PALM PLANTING DETAIL

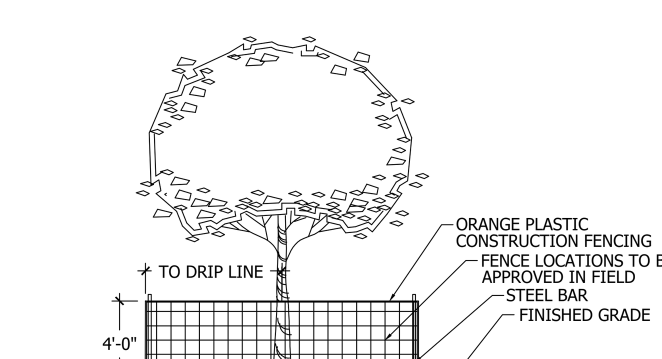
NTS



TREE PROTECTION DETAIL

PLAN VIEW

NTS



TREE PROTECTION DETAIL

SECTION VIEW

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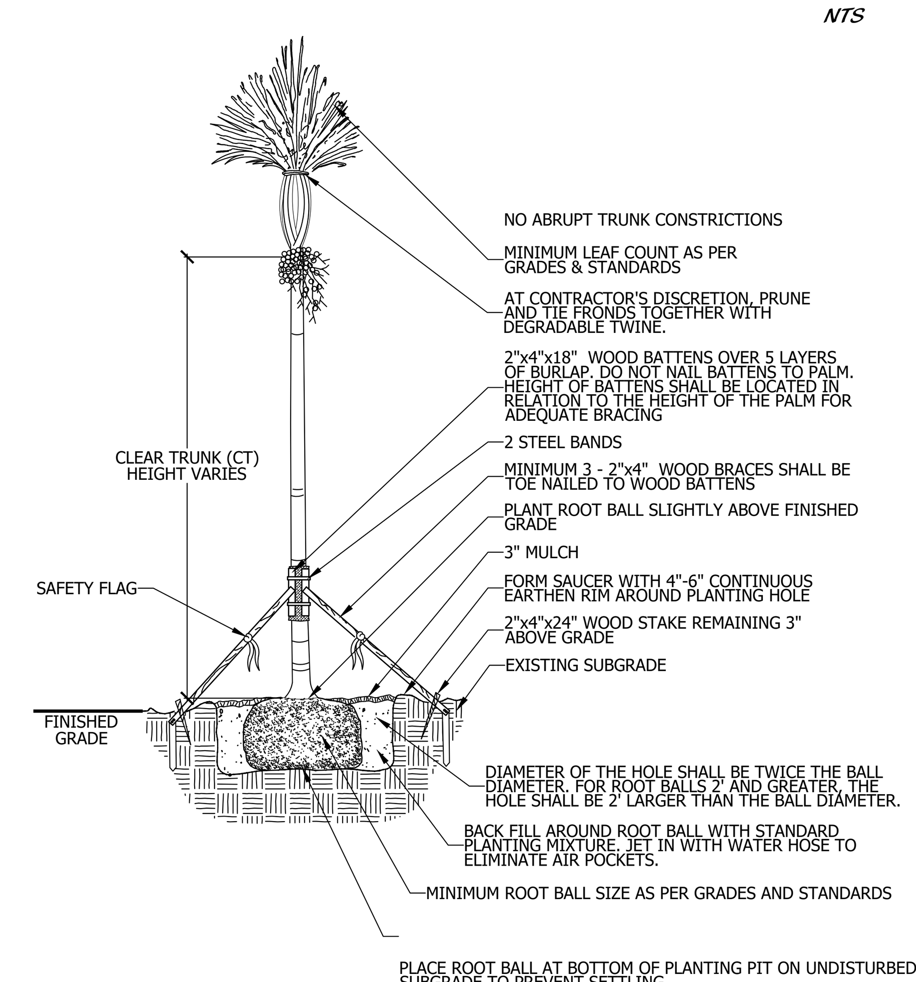
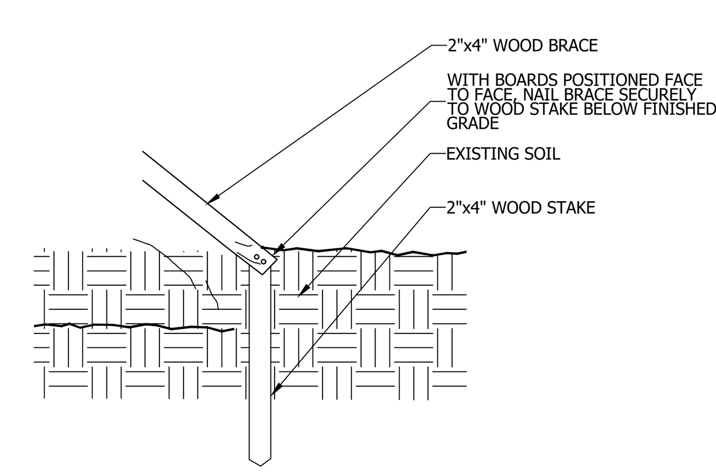


MEDIUM PALM PLANTING DETAIL

WININ, MONTGOMERY, ALEXANDRA, ETC.

NTS



WOOD STAKING DETAIL

NTS

Landscape Details

Cotleur & Hearing
Landscape Architects
Land Planners
Environmental Consultants
1934 Commerce Lane
Suite 1
Jupiter, Florida 33458
561.747.6336 · Fax 747.1377
www.cotleurhearing.com
Lic# LC-26000535

AVONLEA
NEW URBAN COMMUNITIES
Stuart, Florida

DESIGNED	DEH
DRAWN	JAE
APPROVED	DEH
JOB NUMBER	19-1014
DATE	01-23-2020
REVISIONS	

January 23, 2020 11:17:2 a.m.
Drawing: 191014_LP.DWG

SHEET 1 OF 4

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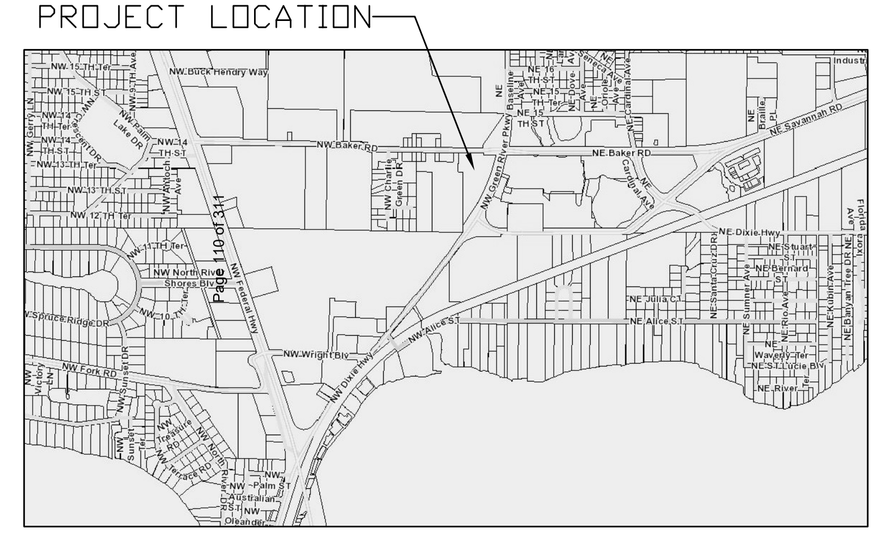
SITE DATA

PROJECT AREA:	180,322 SQ. FT. = 4.140 ACS.
RESIDENTIAL UNITS:	69
DENSITY:	16.7 UNITS/ACRE
BUILDING AREA:	57,971 SQ. FT. = 32%
IMPERVIOUS AREA:	60,973 SQ. FT. = 34%
PERVIOUS AREA:	61,378 SQ. FT. = 34%
LOT COVERAGE OF STRUCTURES:	32%
IMPERVIOUS SURFACE COVERAGE:	66%
FUTURE LAND USE DESIGNATION:	NEIGHBORHOOD/SPECIAL DISTRICT
EXISTING ZONING:	CPUD-COMMERCIAL PUD
PROPOSED ZONING:	CPUD-COMMERCIAL PUD
EXISTING USE:	VACANT
PROPOSED USE:	RESIDENTIAL
PARKING PROVIDED:	140 91 SPACES FOR 47 TOWNHOMES 44 DRIVEWAY SPACES FOR 22 COTTAGES 5 SPACES ON-STREET
REQUIRED PARKING:	138 69 UNITS X 2 SPACES/UNIT

PROJECT LOCATION



VICINITY MAP NTS

1	PER REVIEW COMMENTS	PWA 1.15.2020
	DESCRIPTION:	BY: DATE:

DATE DRAWN: 19OCT19
SCALE: 1"=30'
DESIGN BY: PWA
DRAWN BY: PWA
CHECKED BY: PWA
APPROVED BY: PWA

PETER WAYNE AQUART, P.E.
CONSULTING CIVIL ENGINEER
14032 SW 48TH STREET, MIAMI, FL 33175
TEL: (561) 379-2879 E-MAIL:PAQUART@AOL.COM
FLORIDA LICENSED PROFESSIONAL ENGINEER No. 34176

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AVONLEA PUD
LOT 16
CITY OF STUART FLORIDA

PREPARED FOR:
NEW URBAN COMMUNITIES

SITE PLAN

NOT VALID UNLESS IT BEARS AN ORIGINAL SIGNATURE AND A RAISED, EMBOSSED ENGINEER SEAL

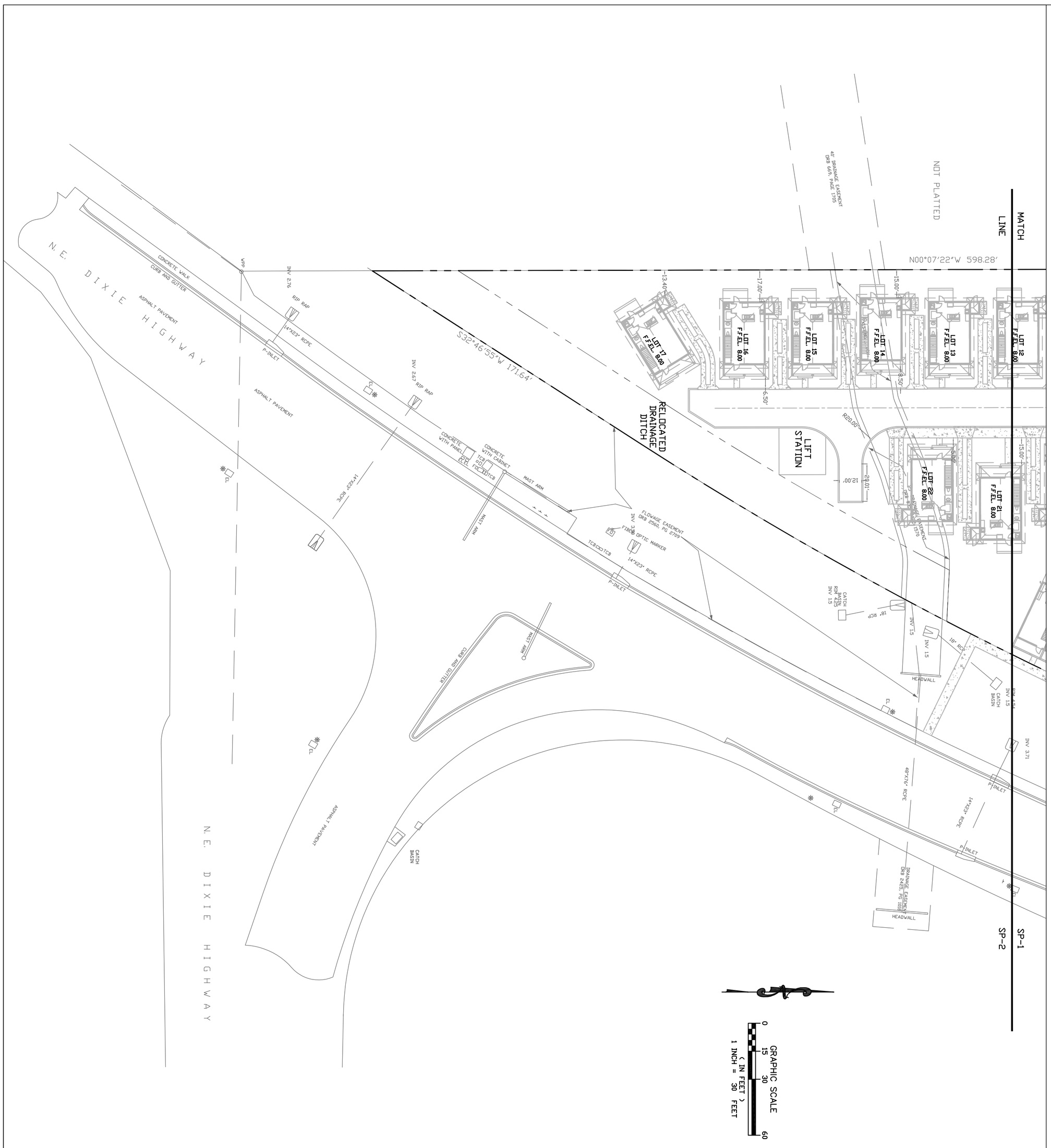
January 23, 2020
Peter Wayne Aquart
Florida P.E. No. 34176

PROJECT NO.
105

SP-1
SHEET 1 OF 2

Drawing name: C:\Users\paquart\Documents\PROJECTS_2019\AVONLEA\Plans\Site Plan Revision 1\Site Plan.dwg Layout Name: North Plotted by: paquart Plotted on: Jan 23, 2020 - 5:35am

Drawing name: C:\Users\paquart\Documents\PROJECTS\1_2019\AVONLEA\Plans\Site Plan Revision 1\Site Plan.dwg Layout Name: South Plotted by: paquart Plotted on: Jan 23, 2020 - 5:37am



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January 23, 2020
Peter Wayne Aquart
Florida P.E. No. 34176

PROJECT NO. 105

SP-2
SHEET 2 OF 2

AVONLEA PUD
LOT 16
CITY OF STUART FLORIDA

PREPARED FOR:
NEW URBAN COMMUNITIES

SITE PLAN

PETER WAYNE AQUART, P.E.
CONSULTING CIVIL ENGINEER
14032 SW 48TH STREET, MIAMI, FL 33175
TEL.: (561) 379-2879 E-MAIL: PAQUART@AOL.COM
FLORIDA LICENSED PROFESSIONAL ENGINEER No. 34176

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	DESCRIPTION:	BY:	DATE:
1	PER REVIEW COMMENTS	PWA	1.15.2020

DATE DRAWN:	19OCT19
SCALE:	1"=30'
DESIGN BY:	PWA
DRAWN BY:	PWA
CHECKED BY:	PWA
APPROVED BY:	PWA

Avonlea Parcel 16

DESIGN GUIDELINES

New Urban Communities

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Purpose & Intent

To maintain a high standard of design through a proper balance of consistency and variety within the community. These design guidelines will help ensure the creation and maintenance of a residential community with a distinct character.

1 Single-Family Elevations

1.1 Intent

The single-family homes will use a variety of elevations and color palettes with a level of architectural consistency to unify its character, while being varied enough to make for an interesting streetscape.

1.2 Single-Family Guidelines

1.2.1 Elevation Repetition

No single-family home shall have the same front elevation design as the home(s) next door or directly across the street.

1.2.2 Color Repetition

No single-family home shall have the same color palette as the home(s) next door or directly across the street.

1.3 Elevations

1.3.1 Option A

FRONT ELEVATION
(OPTION A)

1.3.2 Option B

FRONT ELEVATION
(OPTION B)

1.3.3 Option C

FRONT ELEVATION
(OPTION C)

1.4 Color Palettes

HOMESCAPES™

Choose Color With Confidence

Welcome to HomeScapes by Sherwin-Williams. It's an exclusive program designed to take the guesswork out of color selection, so you, the homebuyer, can choose your exterior color scheme with confidence.

We're proud to partner with Sherwin Williams to provide this unique service. Sherwin-Williams is the largest provider of high-quality paints in North America and a color innovator for more than 130 years, with a complete c.ommilment to service, excellence and quality.

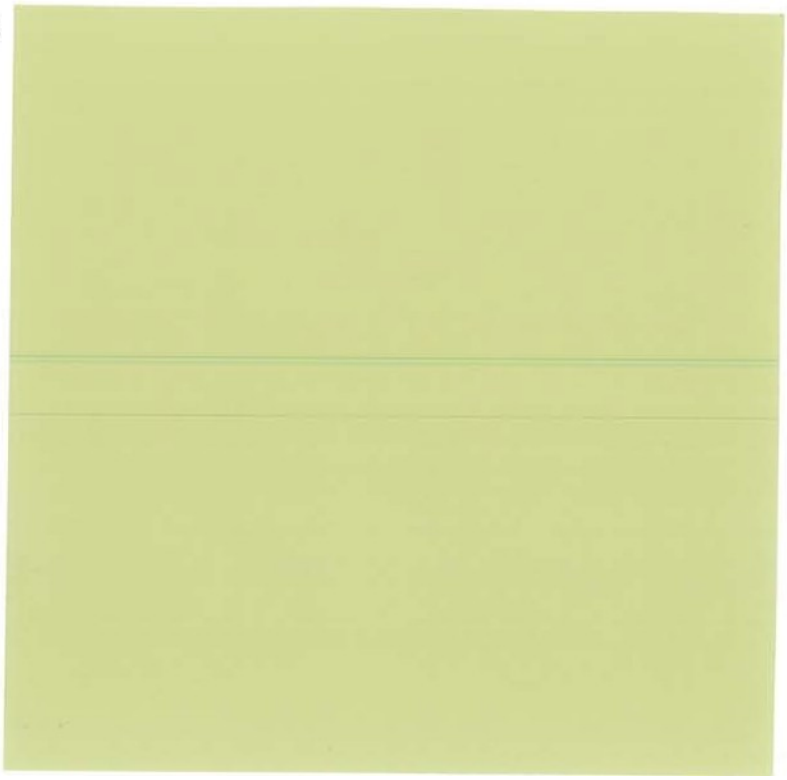
Working with Sherwin-Williams color and design experts, we've put together this signature por olio of distinct color combinations for you to choose from. The color schemes were selected to complement each other, yet give your home a distinct look that reflects your individual tastes.

We'1e delighted to help you put the finishing touch on your new home

THE
FINISHING
TOUCH

SCHEME#!

2



3

4

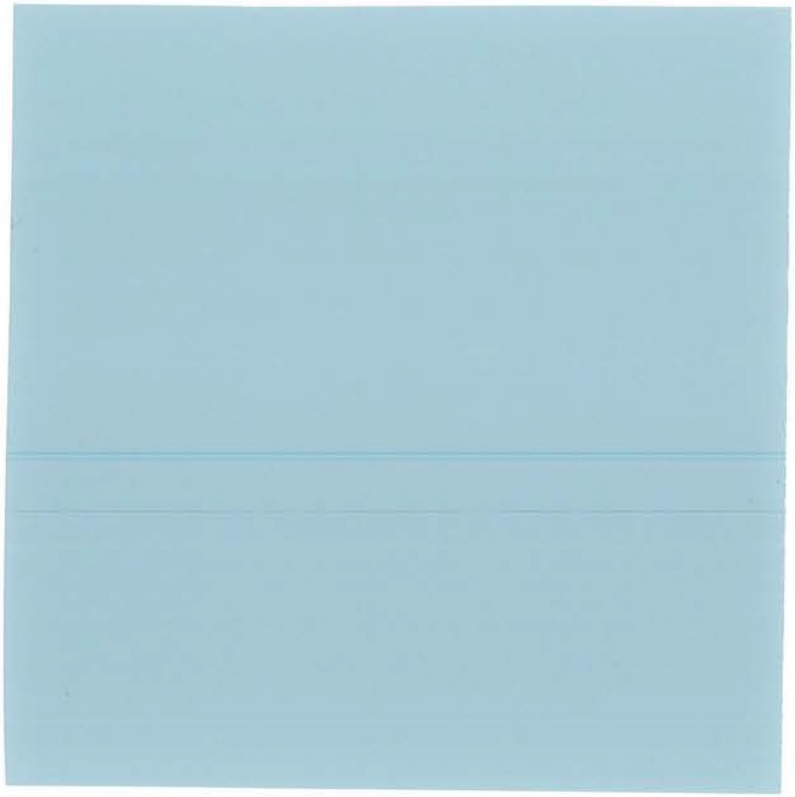
SCHEME 1)

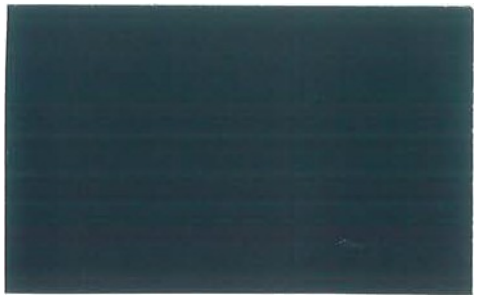
Lap Siding: Acadia White AC-41

Body:Henderson Buff HC-15

Shutter•:Black

scheme 2



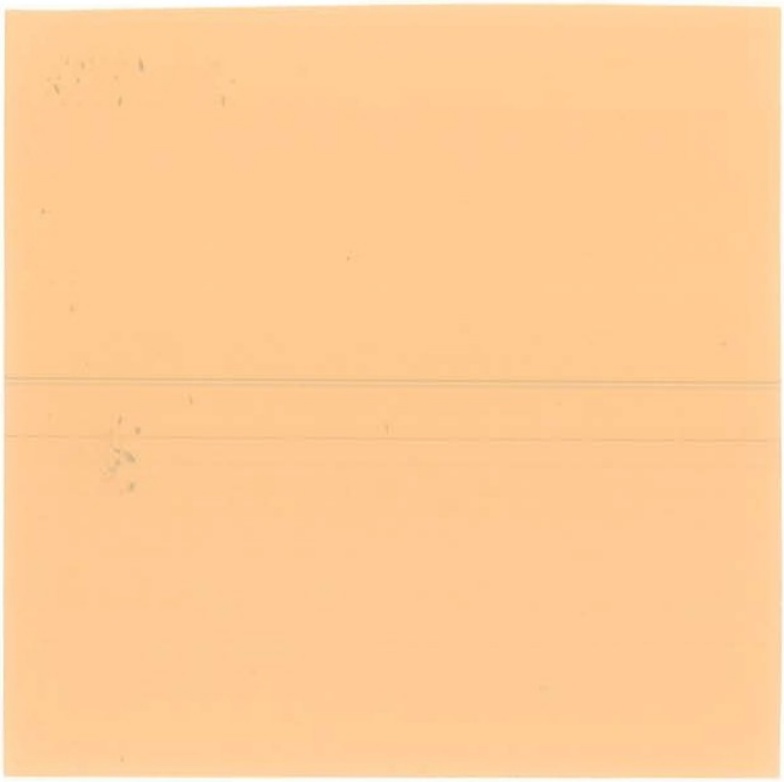


THE FINISHING TOUCH™
04-03-025

Botanica

1 **Body**	AC-22
2 **lap Siding**	AC-4
3 **Trim**	Brilliant While
4 **Shutter**	Block

scheme 3



4

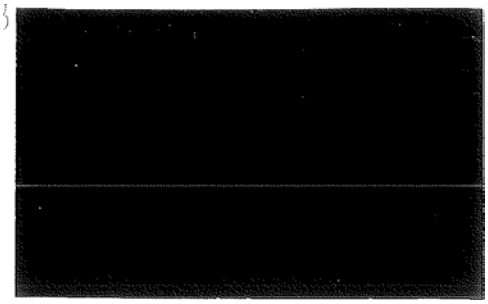
3

THE FINISHING TOUCH"
04-03-025

Botanica

1 Body	2157-40
2 Lap Siding	AC-41
3 Trim	Brilliant White
4 Shutter	Block

scheme 4



THE
FINISHING TOUCH™
04-03-025

Botanica

1 Body	2034-70
2 Trim	Brilliant White
3 Shutters	Black

scheme 5

\

4

3

Botanica

1	**Body**	HC-90
2	**Lap Siding**	AC-41
3	**Trim**	Brilliant White
4	**ShuHer**	HC-159

THE FINISHING TOUCH

04-03-025

scheme 6

3

4

THE FINISHING TOUCH™
04-03-025

	Botanica
1 Body	2175-40
2 Lap Siding	AC-41
3 Trim	Brilliant White
4 Shutter	HC-159

scheme 7

4

Botanica

1	Body	2159-40
2	Lap Siding	AC-41
3	Trim	Brillion!White
4	Shutter	HC 159

THE FINISHING TOUCH

04-03-025

scheme 8

3

THE
FINISHING
TOUCH™
04-03-025

Botonico

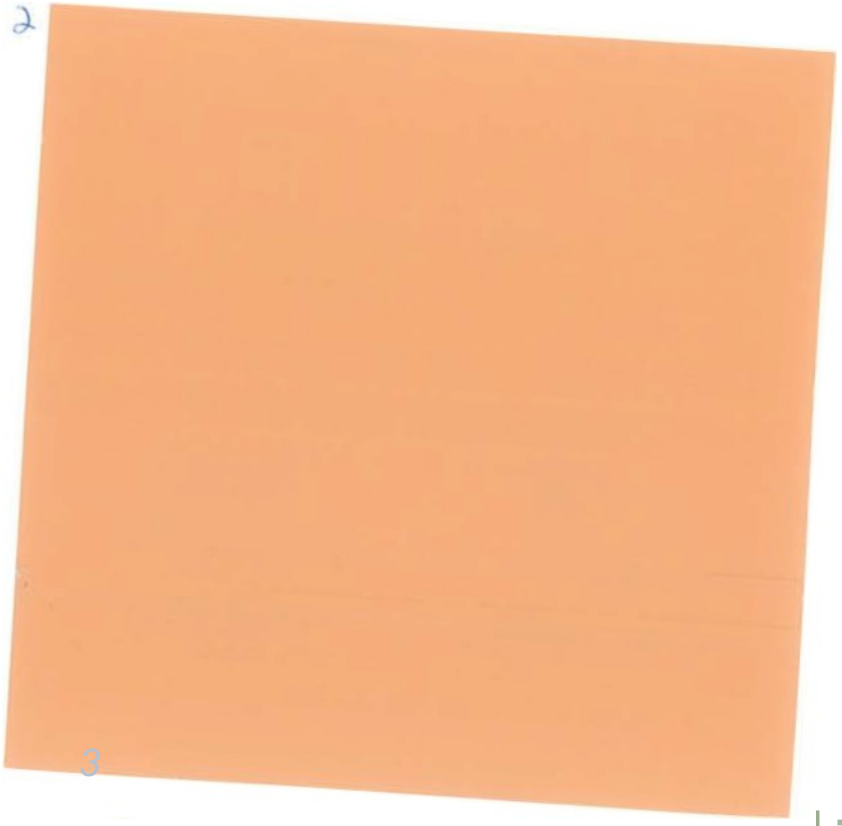
1	**Body**	2167-40
2	**Trim**	Brilliant White
3	**ShuHers**	HC-159

scheme 9

THE FINISHING TOUCH
04-03-025

		Botanica
1	Body	2154-40
2	Lap Siding	AC-41
3	Trim	Brilliant White
4	Shutter	HC-113

SCHEME #10



SCHEME1Q)

Lap Siding: Acadia White AC-41

Body: Soft Pumpkin 2166-40

Trim: Brilliant White

Shuttere: Louisburg Green HC–113

SCHEME#11

"SCHEME 11)

I Lap Siding:Acadia White AC-41

J- Body: Crown Point Sand HC-90

3 Trim:Brilliant White

'-1 Shuttere:Louisburg Green HC-113

SCHEME#12

3

tCHEME 12)

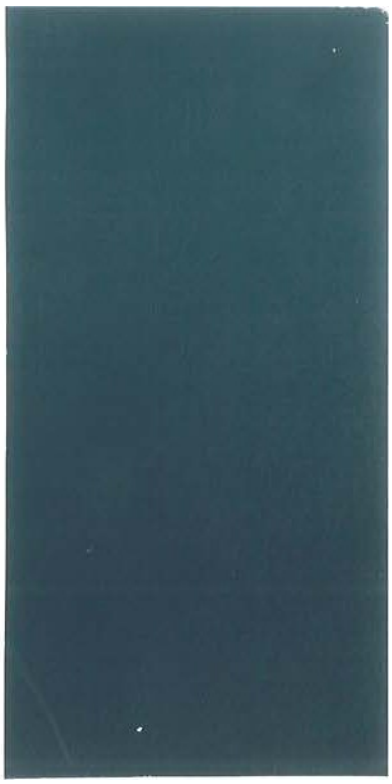
Body:Straw 2154-50

Trim: Brilliant White

Shuttera:Louisburg Green HC–113

scheme 13

4



THE FINISHING TOUCH

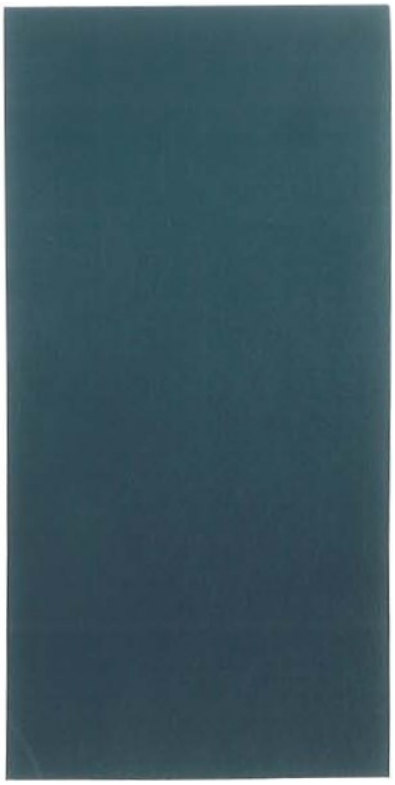
04-03-025

		Botanica
	Body	AC-1 6
2	lap Siding	AC-41
3	Trim	Brilliant White
4	Shutter	HC-154

scheme 14

3

4



THE FINISHING TOUCH™
04-03-025

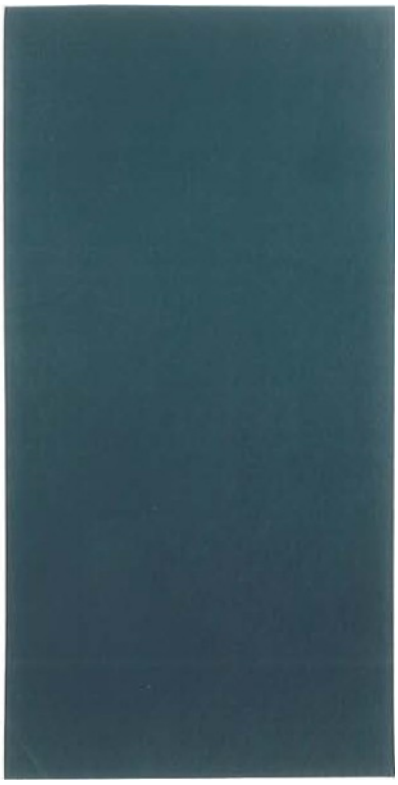
Botanica

	Body	HC-29
2	Lap Siding	AC-41
3	Trim	Brilliant White
4	ShuHer	HC-154

scheme 15

3

4



THE FINISHING TOUCH™
04-03-025

Botanica

1	Body	2158-40
2	lap Siding	AC-41
3	Trim	Brillion!White
4	Shutter	HC-154

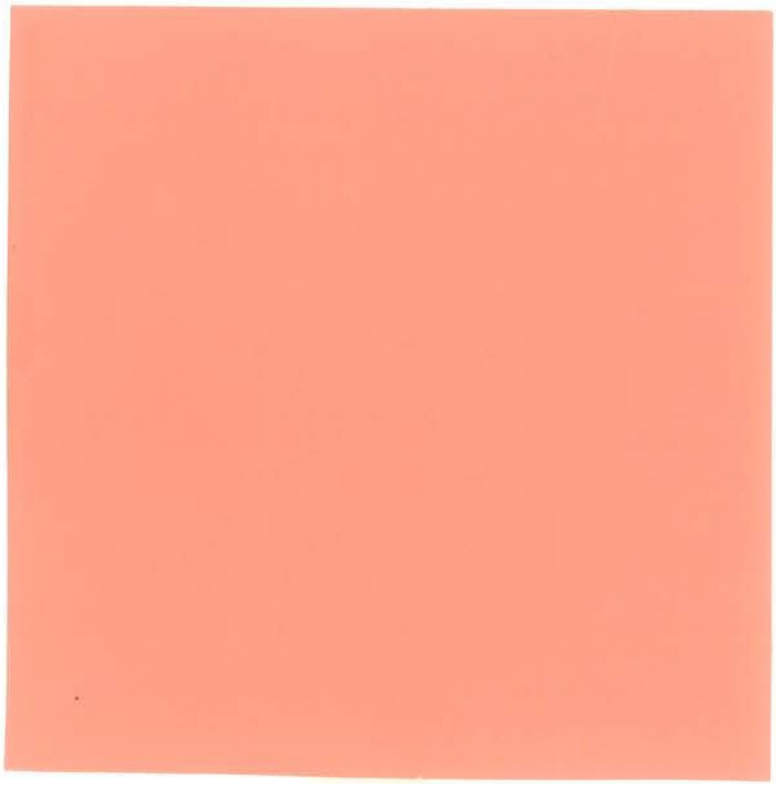
scheme 16

3

THE FINISHING TOUCH
04-03-025

	Botanica
1 Body	2146-50
2 Trim	Brilliant White
3 Shutters	HC-154

scheme 17



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THE FINISHING roue
04-03-025

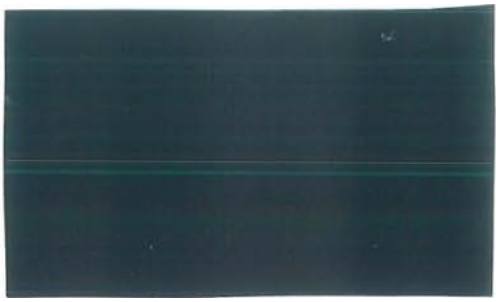
Botonico

1	**Body**	2170-40
2	**Lap Siding**	AC-41
3	**Trim**	Brilliant White
4	**Shutter**	Bbck

SCHEME#18

I

4



J

SCHEME 18)

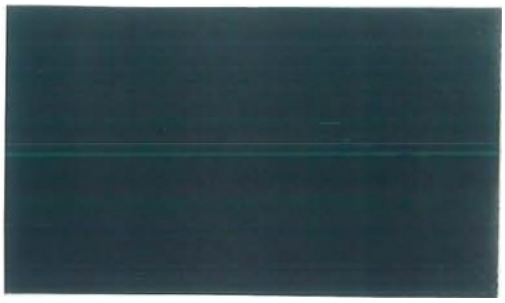
I Lap Siding:Acadia White AC-41

J Body:Castleton Mist HC-1

J Trim:Brilliant Whit

1 Shutters:Black

scheme 1 9



THE FINISHING TOUCH

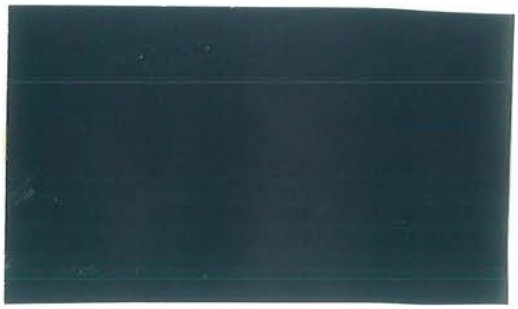
04-03-025

Botanica

1 Body	2167-30
2 Lap Siding	AC-41
3 Trim	Brillion! While
4 Shutter	Block

scheme 20

3



THE FINISHING TOUCH*
04-03-025

		Botanica
1	Body	2027-60
2	Trim	Brilliant White
3	Shutters	Black

scheme 21

3

'--I

THE
FINISHING
TOUCH"
04-03-025

Botanica

1 Body	2154 -50
2 Lap Siding	AC-41
3 Trim	Brilliant White
4 ShuHer	HC-117

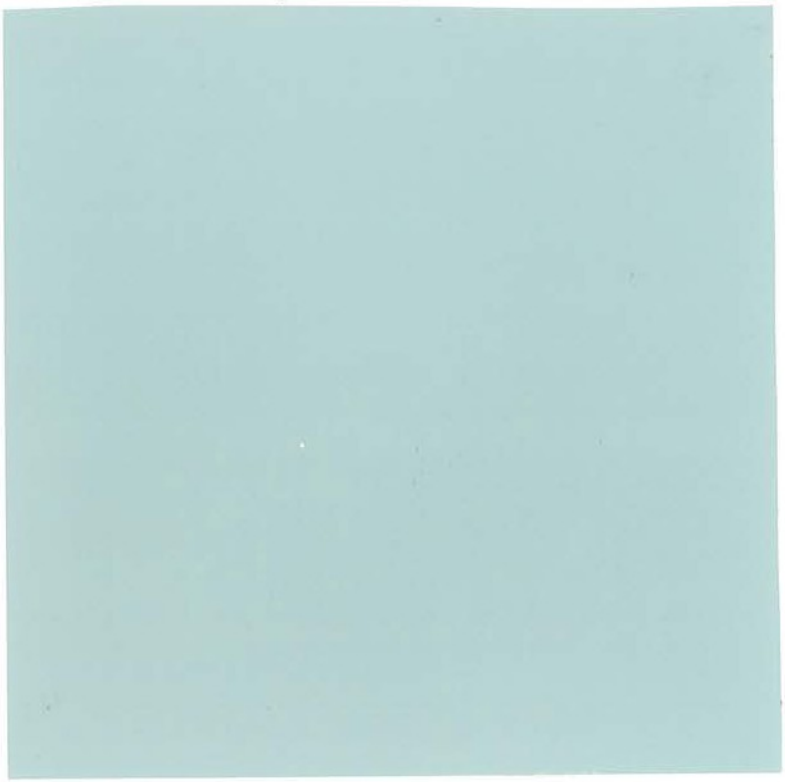
scheme 22

THE
FINISHING
TOUCH™
04-03-025

Botanica

1 Body	HC-24
2 Lap Siding	AC-41
3 Trim	Brilliant White
4 Shutter	HC-117

scheme 23



THE FINISHING TOUCH™
04-03-025

Botanica

1	**Body**	HC-146
2	**Lap Siding**	AC-41
3	**Trim**	Brilliant White
4	**ShuHer**	HC-117

scheme 24

THE FINISHING TOUCH™

04-03-025

Botanica

1 **Body**	HC-12
2 **Trim**	Brilliant White
3 **ShuHers**	HC-117

SCHEME#25

SCHEME25)
Lap Siding:Acadia White AC-41
Body:Hawthom Yellow HC-4
Trim:Brilliant White
Shuttera:Van Deusen Blue HC–156

scheme 26

ansonia peach

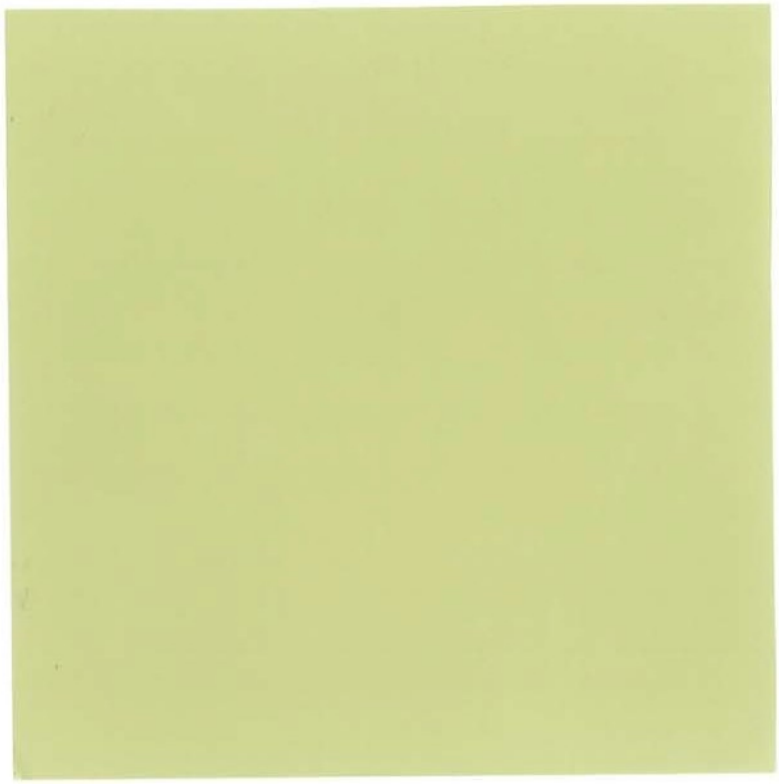
Botanica

1 Body	HC-52
2 Lap Siding	AC-41
3 Trim	Brilliant White
4 ShuHer	HC-156

THE FINISHING TOUCH™
04-03-025

SCHEME#27

2



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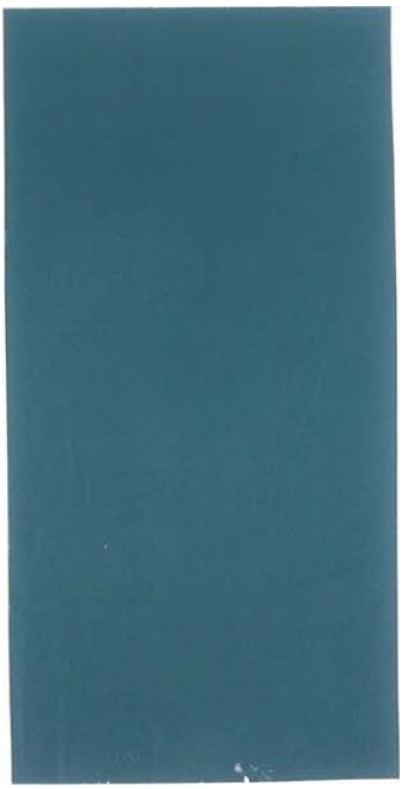


- **8CHEME27)**

I **Lllp Siding:** Acadia White AC-41

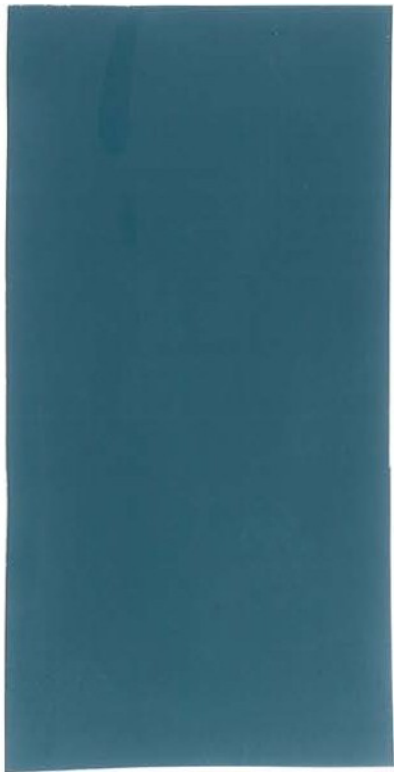
1 **I!lody:** Henderson Buff HC-15

J **Trim:** Brilliant White

tf **Shuttera:** Van Deusen Blue HC–156"'

scheme 28

3



jumel peachtone

jumel peachtone

THE FINISHING TOUCH™

04-03-025

Botanica

1 **Body**	HC-54
2 **Trim**	Brilliant White
3 **ShuHers**	HC-156

scheme29

i

THE FINISHING TOUCH
04-03-025

Botanica

1 Body	HC-90
2 lap Siding	AC-41
3 Trim	Brilliant White
4 Shutter	Block

scheme 30

3

THE FINISHING TOUCH

04-03-025

Botanica

1 Body	2154-50
2 Trim	Brilliant White
3 Shutters	11c-1S

2 Driveways

2.1 Intent

Tandem driveways for the single-family homes provide each home with its own parking spaces. The design was inspired by driveways for cottage homes in historic neighborhoods in and around West Palm Beach, as well as some more recent New Urbanist cottage projects around the country. By parking in driveways between each house, the elevations of each home will not be broken up by parked cars.

Figure 1: Driveways between Single-Family Homes in Fayetteville, AR

2.2 Driveway Designs

2.2.1 Ribbon Driveways

The use of ribbon driveways is preferred so as to lessen the amount of asphalt or other hardscape material.

2.2.2 Paver Driveways

The use of pavers is allowed as either a ribbon driveway or a single-slab driveway.

Figure 2: Ribbon Driveway with Pavers

2.3 Driveway Guidelines

2.3.1 Width of Driveway

Each driveway shall have a width of no less than 7 feet and no more than 9 feet measured from the outside edge of one ribbon to the outside edge of the other ribbon.

2.3.2 Depth of Driveway

Each driveway shall have a depth of no less than 36 feet and no more than 38 feet, so as to accommodate two automobiles parked in tandem.

2.3.3 Width of Each Ribbon

The strips in each ribbon driveway shall be no less than 2 feet and no more than 3 feet in width and located so they are spaced 5 feet apart on center.

2.3.4 Between Each Ribbon

The space between each paved ribbon shall be sod, turf, or some other permeable landscape or hardscape material.

2.4 Driveway Materials

2.4.1 Concrete

Concrete may be used in ribbon driveways, but single-slab concrete driveways are prohibited.

Figure 3: Ribbon Driveway with Concrete, Grandview Heights, West Palm Beach, FL

2.4.2 Pavers

Pavers may be used for either ribbon driveways or single-slab driveways.

3 Fencing

3.1 Intent

Fences will be used in the rear and side yards of the single-family homes to separate backyards. Every fence shall comply with the design guidelines of this section.

3.2 Fence Guidelines

3.2.1 Fence Height

Fences shall be no less than 36 inches and no more than 72 inches in height as measured from grade.

3.2.2 Fence Materials

Materials shall be PVC, Composite (Trex or approved equivalent) or Aluminum.

3.2.3 Fence Styles

Styles shall be consistent with the designs illustrated below.

A

B

C D

E

F

G

H

CALCULATIONS

AIR CONDITIONED AREAS

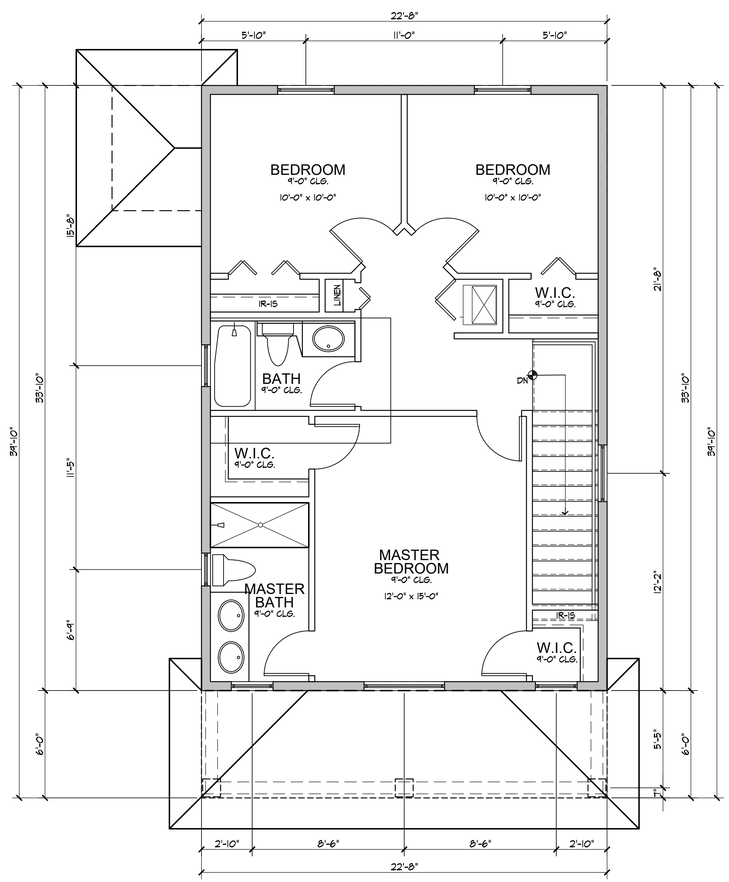
FIRST FLOOR	767 SF
SECOND FLOOR	704 SF
	1471 SF

NON CONDITIONED AREAS

STORAGE	35 SF
COVERED PORCH	136 SF
	171 SF

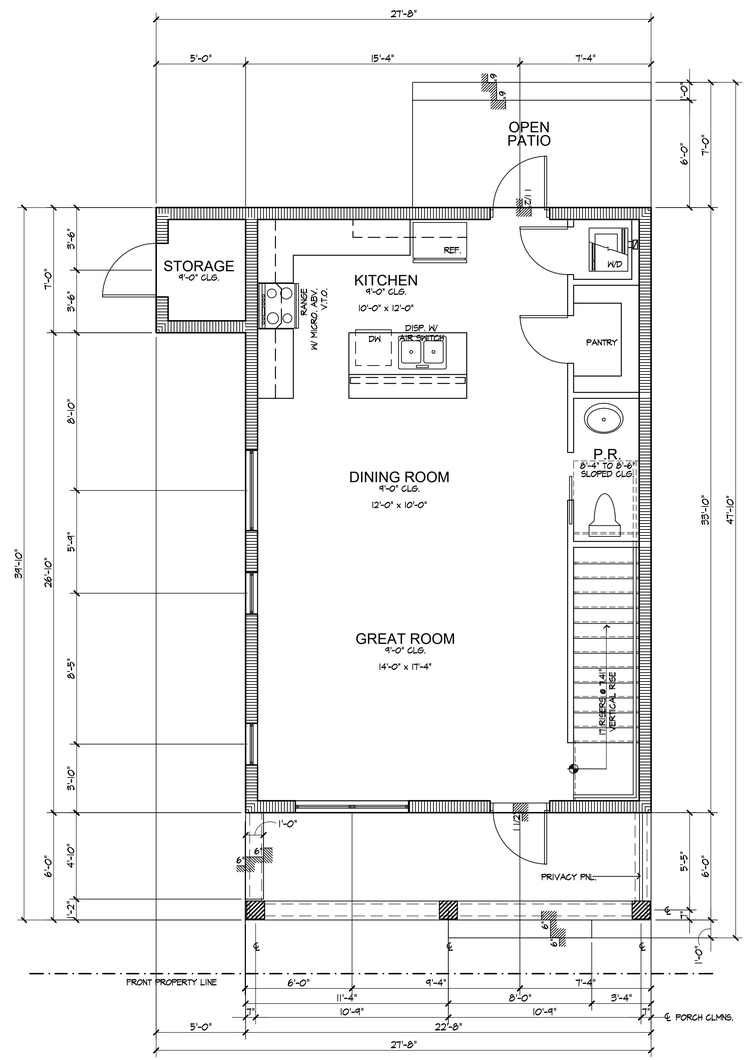
GROSS AREA

GROSS AREA	1642 SF



SECOND FLOOR PLAN

(OPTION "A" ROOF SHOWN)



FIRST FLOOR PLAN

revisions

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-	-

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drawn	LTH
checked	SBD
date	01/01/20
scale	1/4" = 1'-0" U.N.O.
job no.	190440.rvt

Scott Blakeslee Disher
AR-0011586 AA-0003285

project

MODEL I ELEVATION C

AVONLEA
CITY OF STUART
FLORIDA

by: NEW URBAN COMMUNITIES

ARCHITECTURAL Studio, Inc.

Architecture
▪
Planning

300 Avenue of Champions
Suite 260
Palm Beach Gardens, Florida 33418

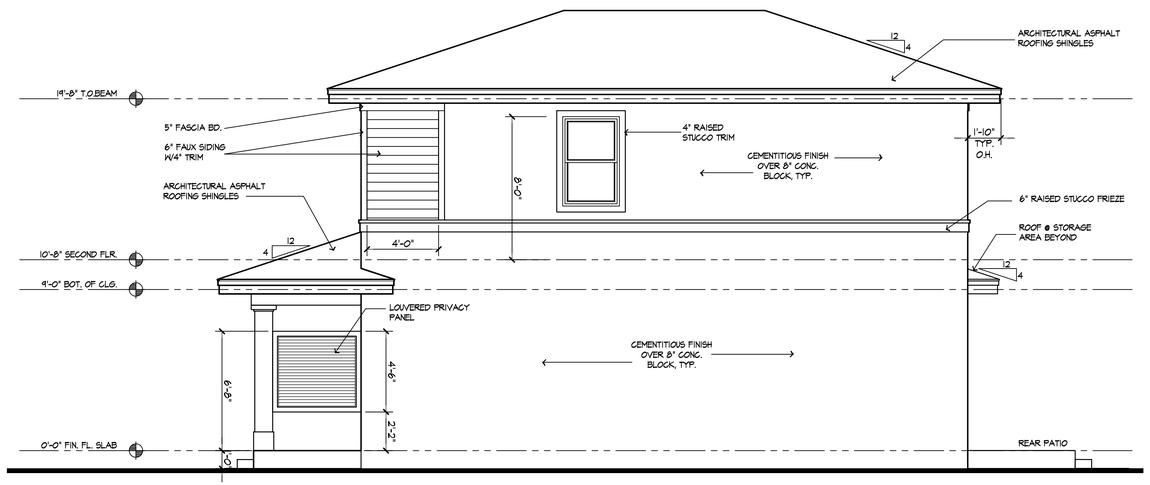
Phone 561.202.6990
Fax 561.296.2494
archstudioll.com

drawing

FLOOR PLANS

sheet

A-1



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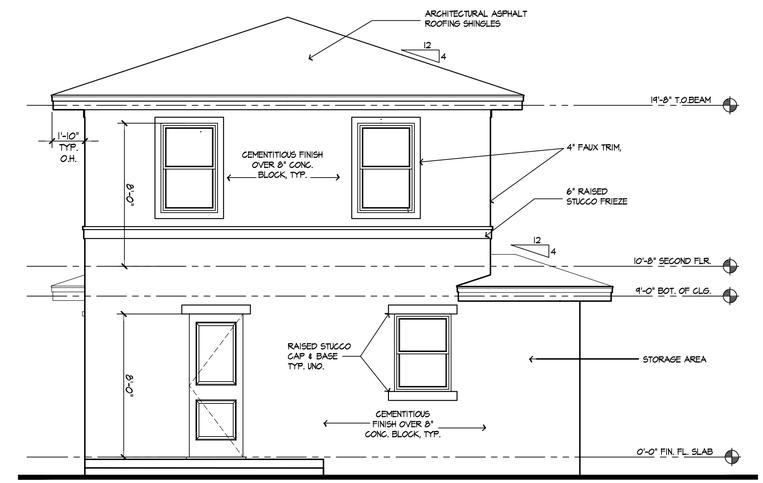

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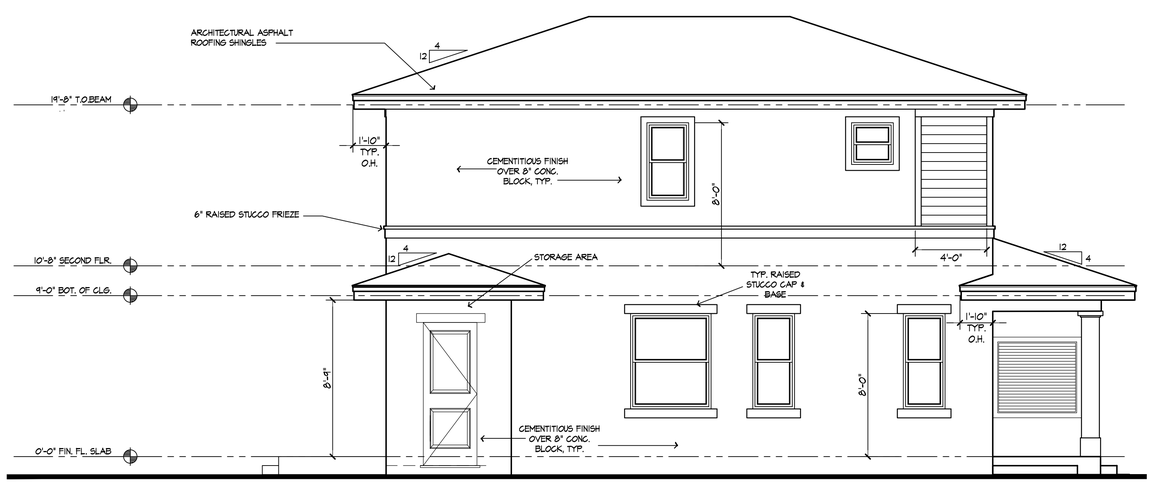

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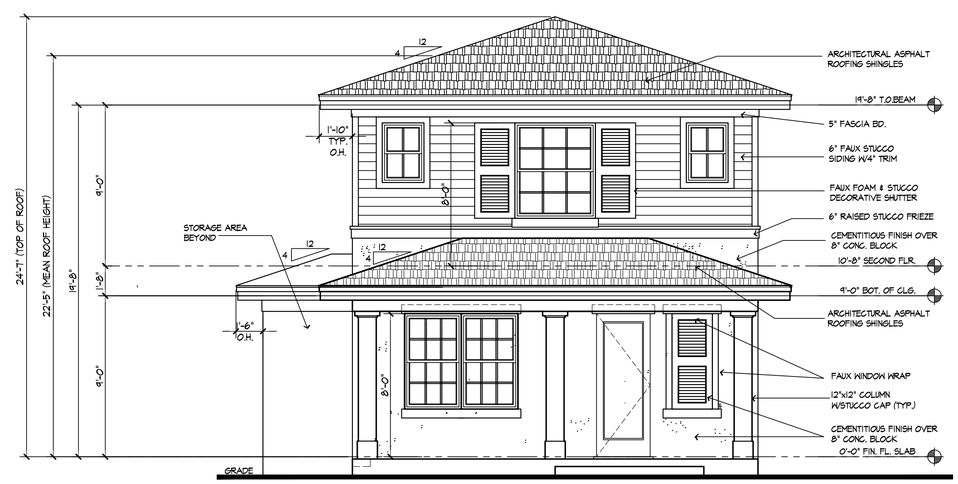

FRONT ELEVATION
(OPTION A)

revisions

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project

MODEL I ELEVATION A

AVONLEA
CITY OF STUART
FLORIDA

by: NEW URBAN COMMUNITIES

ARCHITECTURAL Studio, Inc.

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300 Avenue of Champions
Suite 260
Palm Beach Gardens, Florida 33418

Phone 561.202.6990
Fax 561.296.2494
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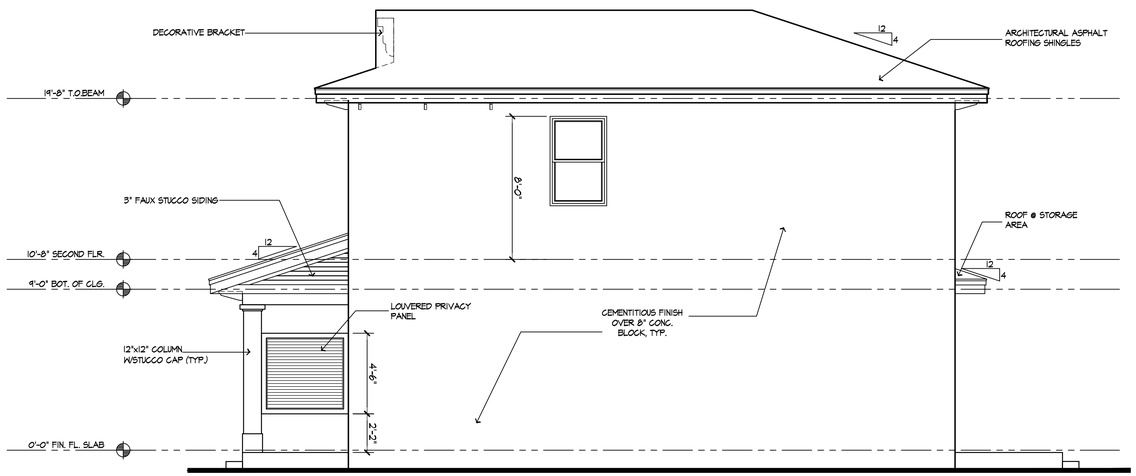
ELEVATIONS A

sheet

A-2



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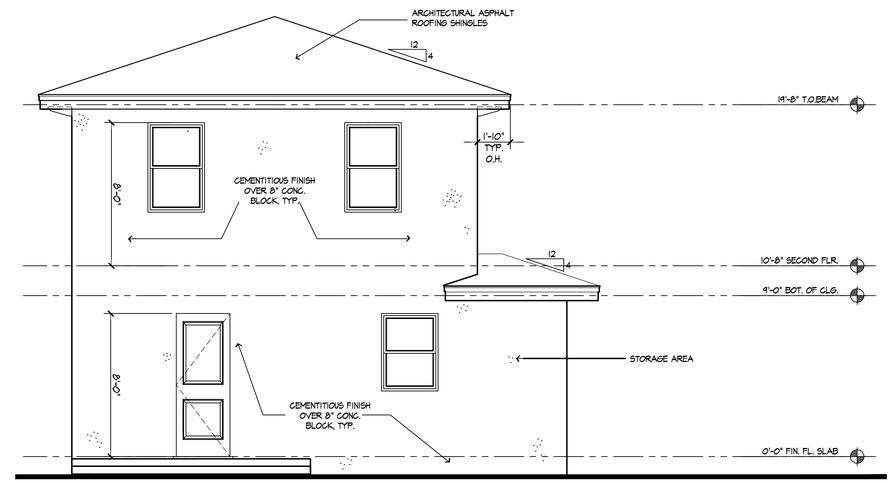

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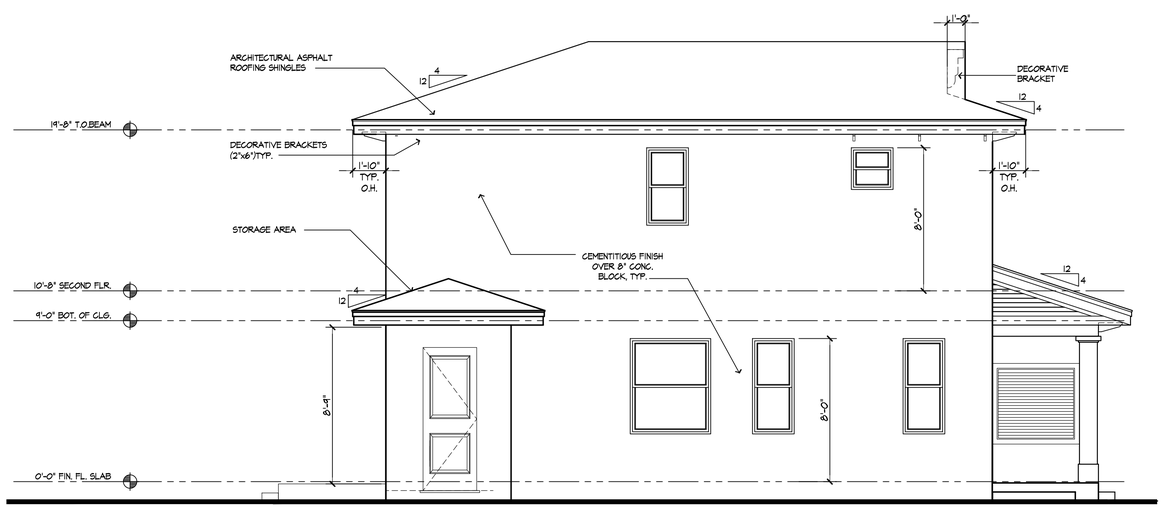

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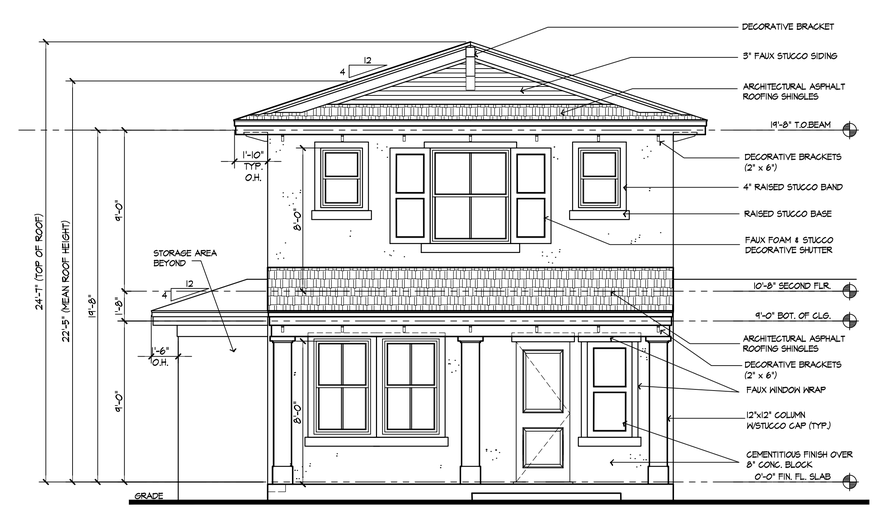

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(OPTION B)

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-	-

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job no.	190440.rvt

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MODEL I ELEVATION B

AVONLEA
CITY OF STUART
FLORIDA

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Architecture
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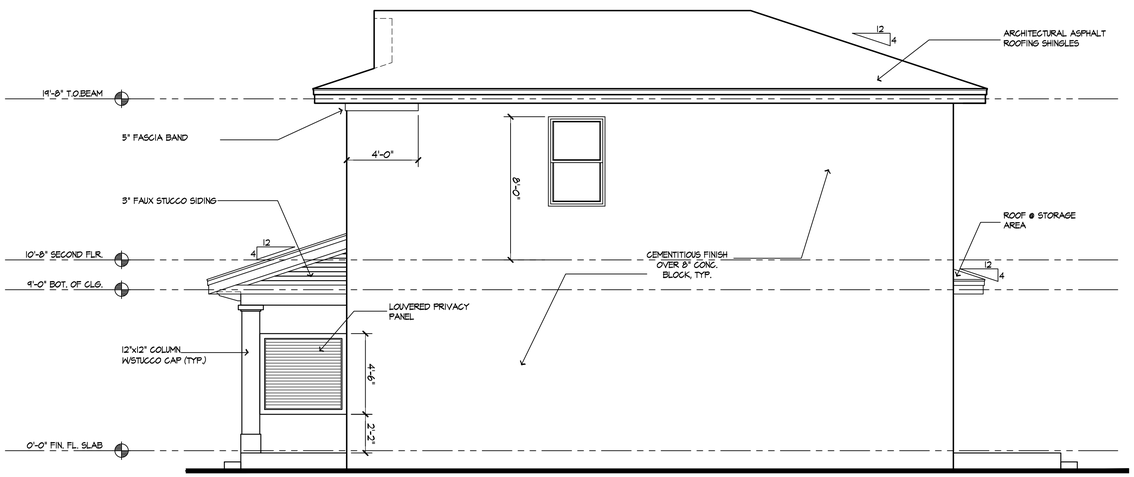
300 Avenue of Champions
Suite 260
Palm Beach Gardens, Florida 33418
Phone 561.202.6990
Fax 561.296.2494
archstudioflI.com

drawing
ELEVATIONS B

sheet
A-3



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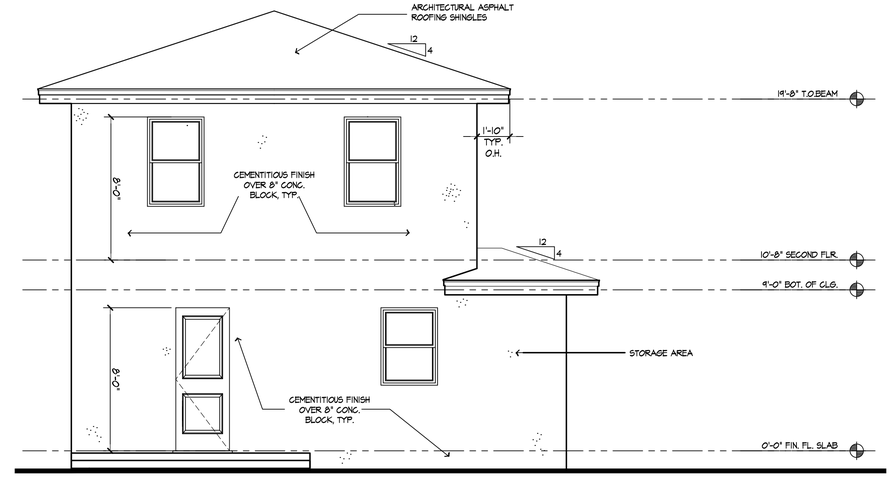

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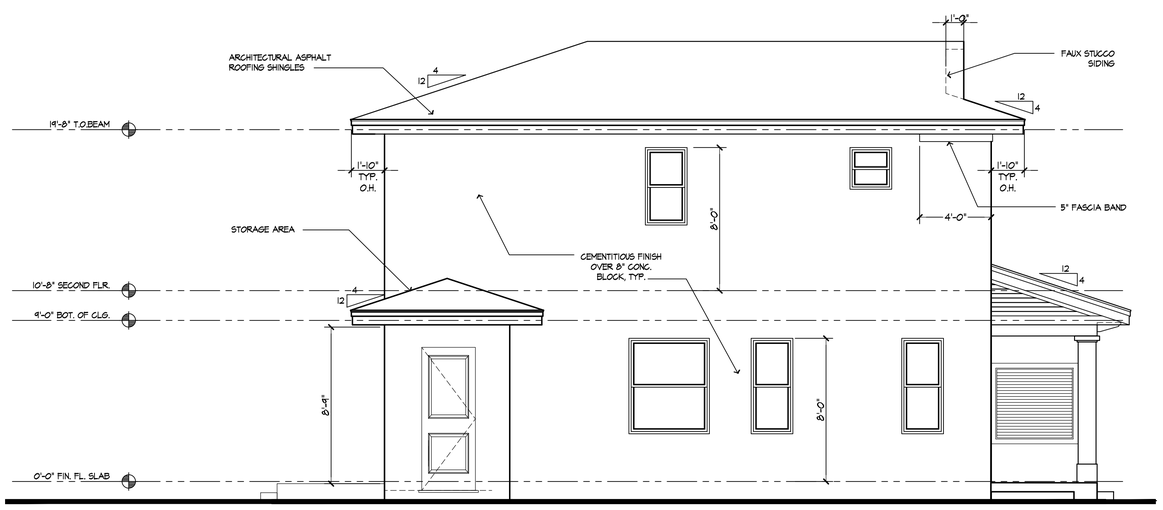

LEFT ELEVATION

FRONT ELEVATION
(OPTION C)

revisions

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job no.	190440.rvc

Scott Blakeslee Disher
AR-0011586 AA-0003285

project
MODEL I ELEVATION C

AVONLEA
CITY OF STUART
FLORIDA

by: NEW URBAN COMMUNITIES

ARCHITECTURAL Studio, Inc.
Architecture
Planning
300 Avenue of Champions
Suite 260
Palm Beach Gardens, Florida 33418
Phone 561.202.6990
Fax 561.296.2494
archstudioflcom

drawing
ELEVATIONS C

sheet
A-4

revisions

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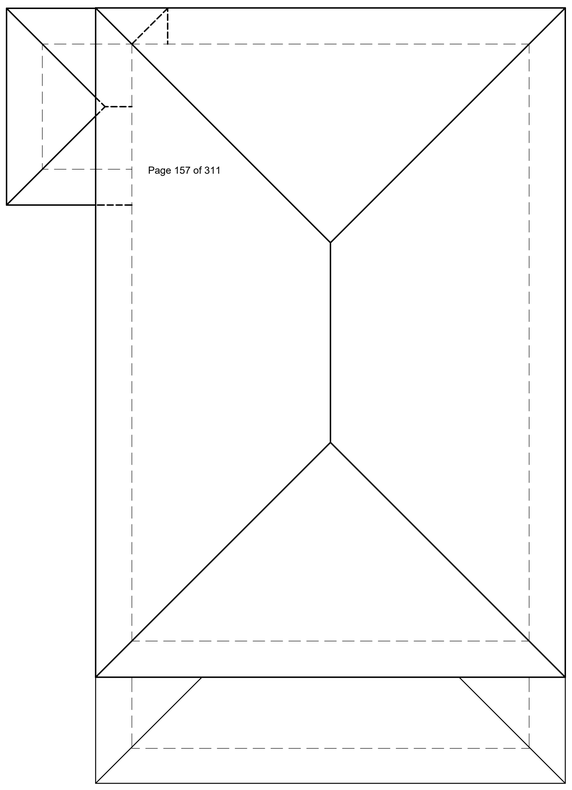
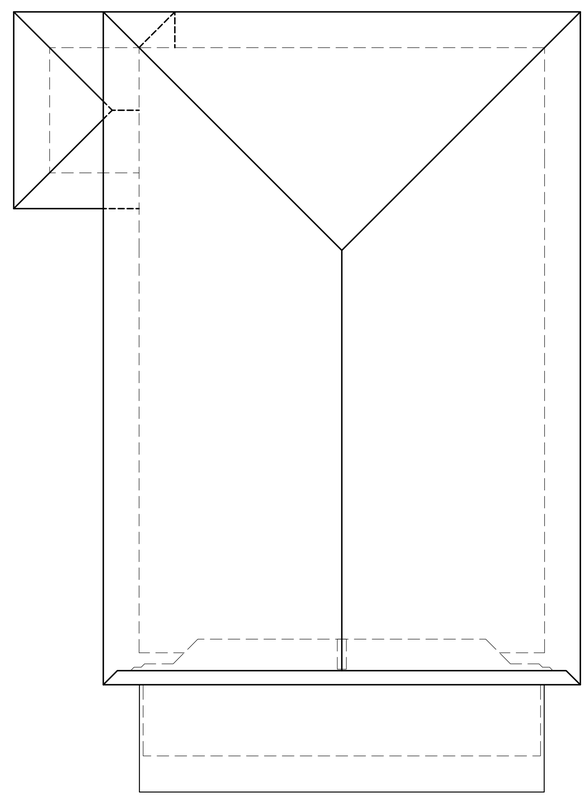
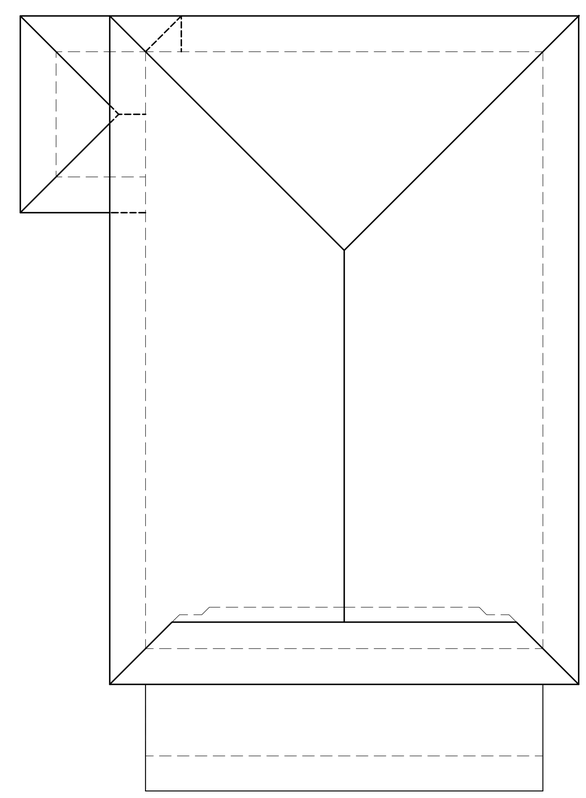


ROOF PLAN
A



ROOF PLAN
B



ROOF PLAN
C

MODEL I
project

AVONLEA
CITY OF STUART
FLORIDA

by: NEW URBAN COMMUNITIES

ARCHITECTURAL Studio, Inc.

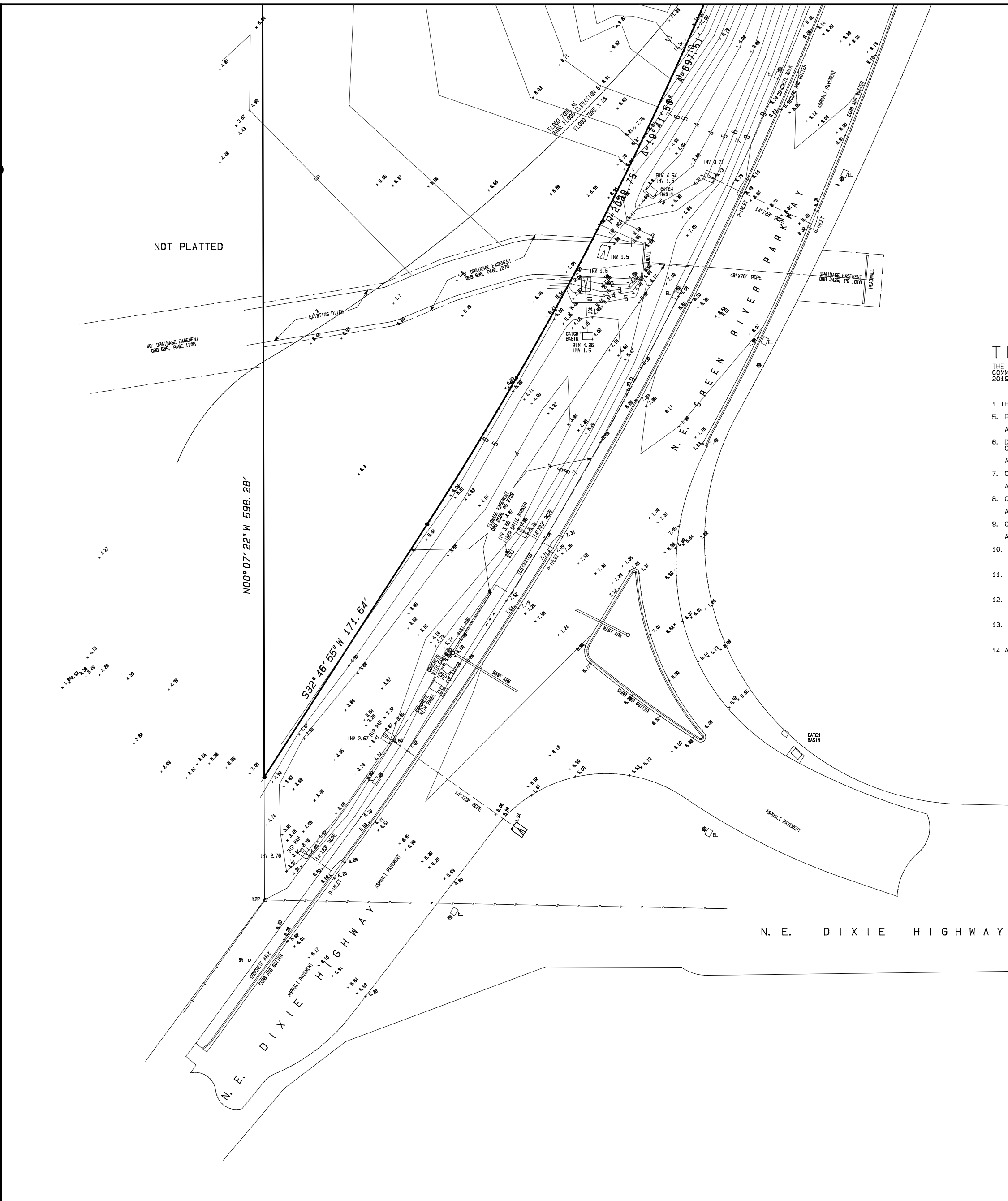
Architecture
•
Planning

300 Avenue of Champions
Suite 260
Palm Beach Gardens, Florida 33418

Phone 561.202.6990
Fax 561.296.2494
archstudioflI.com

drawing
ROOF PLANS

sheet
A-5



0 30' 60' 120'

GRAPHIC SCALE IN FEET
SCALE 1" = 30'

LEGEND

A - CURVE ARC LENGTH
Δ - CURVE CENTRAL ANGLE
R - CURVE RADIUS
CPP - CONCRETE POWER POLE
EL - ELECTRIC HAND HOLE (IN CONCRETE)
FH - FIRE HYDRANT
FO - FIBER OPTIC BOX
TCB - TRAFFIC CONTROL BOX
WPP - WOOD POWER POLE
WV - WATER VALVE

- LIGHT POLE
- MITERED END SECTION
OVERHEAD UTILITY LINES

TITLE NOTES

THE FOLLOWING NOTES CORRESPOND TO THE SCHEDULE B-II EXCEPTIONS CONTAINED IN THAT COMMITMENT FOR TITLE INSURANCE ISSUED BY STEWART TITLE GUARANTY COMPANY, FILE NO 20191220, EFFECTIVE MAY 7, 2019.

1 THROUGH 4 - NOT ADDRESSED

5. PLAT - PLAT BOOK 17, PAGE 35.
AFFECTS - PLOTTABLE MATTERS ARE SHOWN HEREON.

6. DECLARATION OF COVENANTS, CONDITIONS, EASEMENTS AND OTHER MATTERS: ORB 1975, PAGE 1348; ORB 2893, PAGE 2898.
AFFECTS

7. ORDINANCE NO. 1499-97 - ORB 1277, PAGE 1666.
AFFECTS

8. ORDINANCE NO. 2026-05 - ORB 2029, PAGE 764.
AFFECTS

9. ORDINANCE NO. 2094-07 - ORB 2241, PAGE 547.
AFFECTS

10. DRAINAGE EASEMENT(S) - ORB 2425, PAGE 1018 AND ORB 2425, PAGE 1028.
DO NOT AFFECT - PLOTTED HEREON.

11. ORDINANCE NO. 2307-2015 - ORB 2809, PAGE 2750.
AFFECTS

12. ORDINANCE NO. 2366-2018 - ORB 3016, PAGE 2510.
AFFECTS

13. FPL EASEMENT - ORB 898, PAGE 833.
DOES NOT AFFECT.

14 AND 15 NOT ADDRESSED.

DESCRIPTION

LOT 16, NEW AVONLEA P.U.D., ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 17, PAGE 35, OF THE PUBLIC RECORDS OF MARTIN COUNTY, FLORIDA.

LYING IN THE CITY OF STUART, MARTIN COUNTY, FLORIDA.
CONTAINING 180,322 SQUARE FEET, 4.1396 ACRES, MORE OR LESS.

NOTES

1. REPRODUCTIONS OF THIS MAP ARE NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.
2. THIS MAP WAS PREPARED WITH THE BENEFIT OF THAT COMMITMENT FOR TITLE INSURANCE ISSUED BY STEWART TITLE GUARANTY COMPANY, FILE NO.: 20191220, EFFECTIVE MAY 7, 2019.
3. ELEVATIONS SHOWN HEREON ARE IN FEET, BASED ON THE NORTH AMERICAN VERTICAL DATUM OF 1988, NAVD 88, AND ARE RELATIVE TO MARTIN COUNTY BENCHMARK GPR-B, WHOSE PUBLISHED ELEVATION IS 11.86, NAVD 88.
4. PARCEL IS LOCATED IN FLOOD ZONE X 2% AND FLOOD ZONE AE, BASE FLOOD ELEVATION 6 FEET, ACCORDING TO FLOOD MAP 12085C0132 G, EFFECTIVE MARCH 16, 2015.
5. PARCEL ID NUMBER: 28-37-41-013-000-00160-0

CERTIFICATION

I HEREBY CERTIFY THAT THIS SURVEY IS ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF AND CONFORMS TO THE STANDARDS OF PRACTICE AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 5J-17.050-052, FLORIDA ADMINISTRATIVE CODE. THERE ARE NO VISIBLE ABOVE GROUND ENCROACHMENTS OTHER THAN THOSE SHOWN HEREON, SUBJECT TO THE QUALIFICATIONS NOTED HEREON.

Richard H. Smith

Digitally signed by Richard H. Smith
DN: cn=Richard H. Smith, o=Richard H. Smith, Inc., ou=PSM 5239, email=rsmithsurvey@bellsouth.net, c=US
Date: 2019.10.17 17:56:29 -04'00'

FOR THE FIRM, BY:

RICHARD H. SMITH
PROFESSIONAL SURVEYOR AND MAPPER
FLORIDA LICENSE NUMBER 5239

08/01/19	RHS	5800	BOUNDARY SURVEY

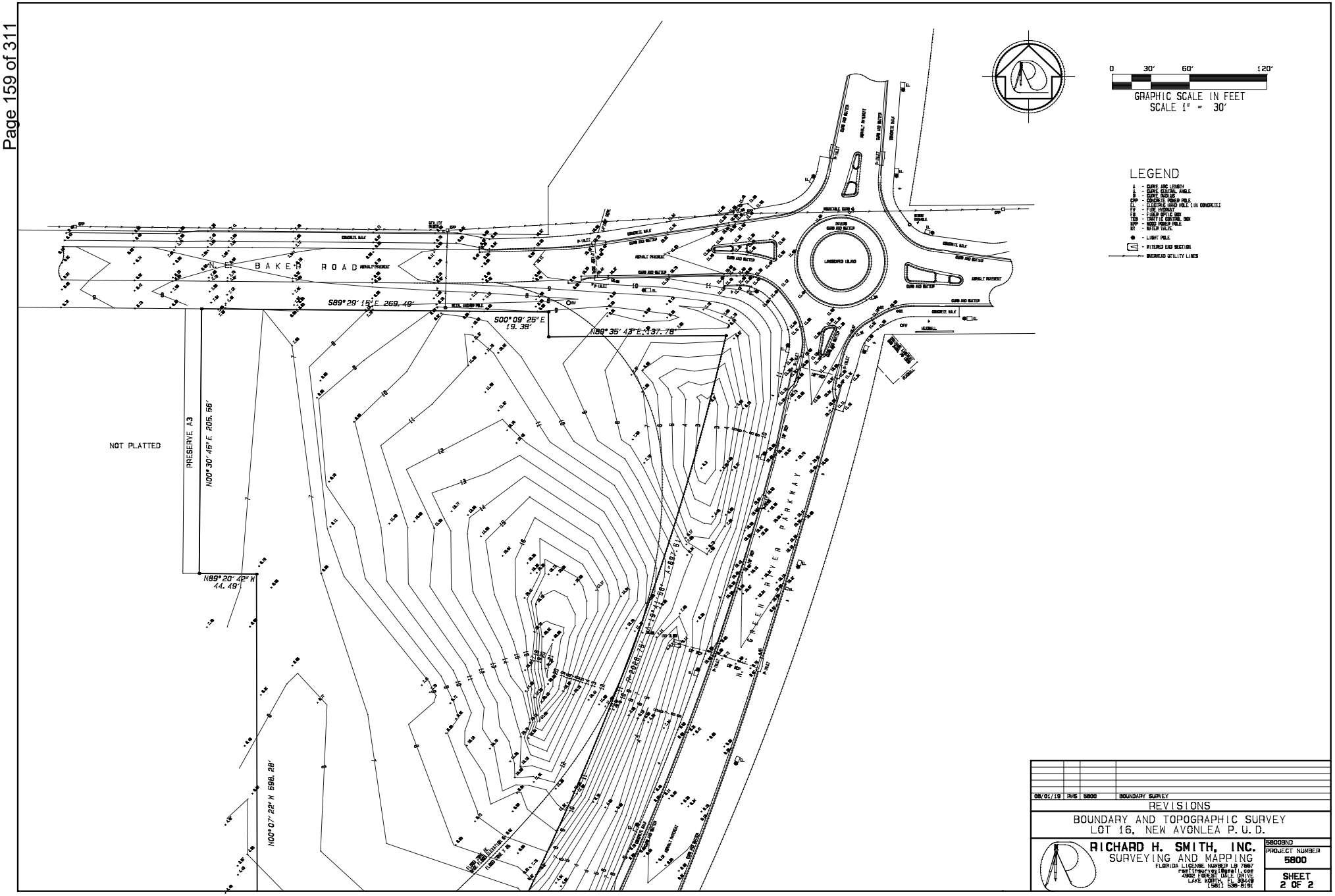
REVISIONS

BOUNDARY AND TOPOGRAPHIC SURVEY
LOT 16, NEW AVONLEA P.U.D.

RICHARD H. SMITH, INC.
SURVEYING AND MAPPING
FLORIDA LICENSE NUMBER LB 7667
rsmithsurvey1@gmail.com
4902 FOREST DALE DRIVE
LAKE WORTH, FL 33449
(561) 536-8191

5800BND
PROJECT NUMBER
5800

SHEET 1 OF 2



08/01/19	RHS	5800	BOUNDARY SURVEY

REVISIONS

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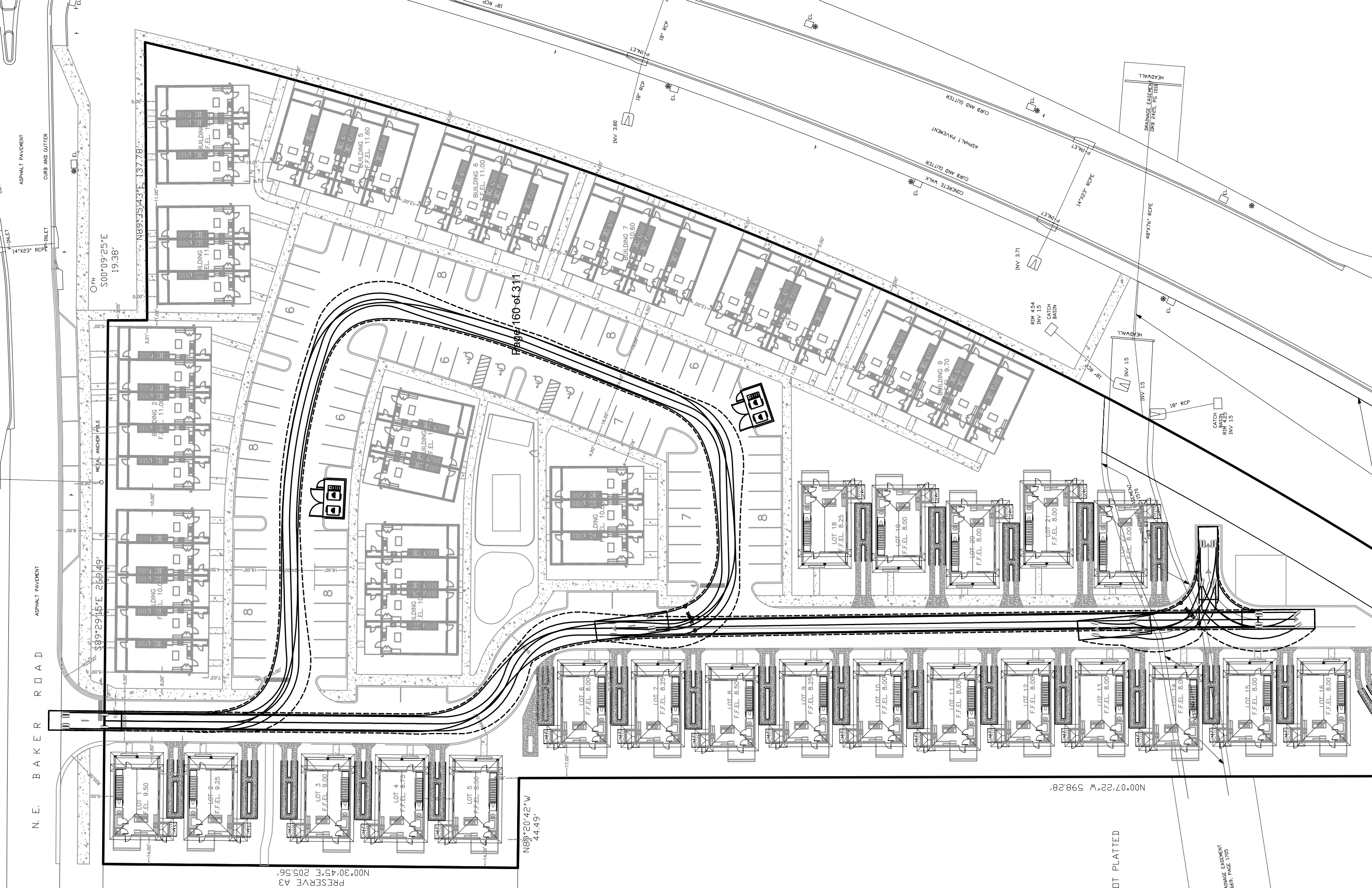
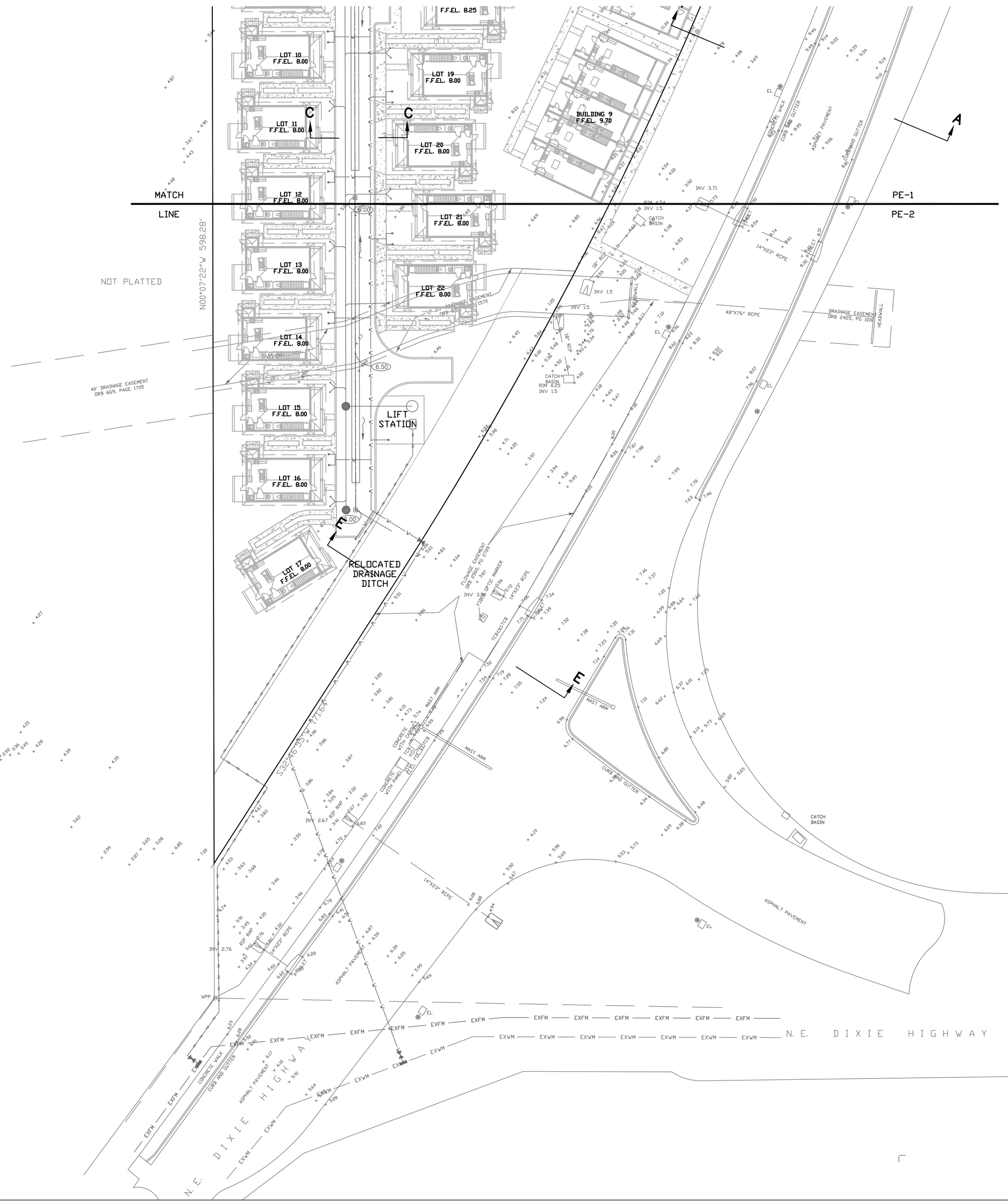
SHEET
2 OF 2


N. E. BAKER ROAD
ASPHALT PAVEMENT
CURB AND GUTTER
S00°09'25"E 19.38'
N89°35'43"E 137.78'
S89°29'45"E 269.49'
N89°20'42"W 44.49'
N00°30'45"E 205.56'
N00°07'22"W 598.28'
PRESERVE A3
NOT PLATTED
BUILDING 5 F.F.EL. 11.60
BUILDING 6 F.F.EL. 11.00
BUILDING 7 F.F.EL. 10.60
BUILDING 9 9.70
LOT 1 F.F.EL. 9.50
LOT 2 F.F.EL. 9.25
LOT 3 F.F.EL. 9.00
LOT 4 F.F.EL. 8.75
LOT 5 F.F.EL. 8.50
LOT 6 F.F.EL. 8.00
LOT 7 F.F.EL. 8.25
LOT 8 F.F.EL. 8.50
LOT 9 F.F.EL. 8.25
LOT 10 F.F.EL. 8.00
LOT 11 F.F.EL. 8.00
LOT 12 F.F.EL. 8.00
LOT 13 F.F.EL. 8.00
LOT 14 F.F.EL. 8.00
LOT 15 F.F.EL. 8.00
LOT 16 F.F.EL. 8.00
LOT 18 F.F.EL. 8.25
LOT 19 F.F.EL. 8.00
LOT 20 F.F.EL. 8.00
LOT 21 F.F.EL. 8.00
CONCRETE WALK
CURB AND GUTTER
ASPHALT PAVEMENT
INLET
18" RCP
14"X23" RCPE
48"X76" RCPE
INV 3.80
INV 3.71
INV 1.5
RIM 4.54 INV 1.5 CATCH BASIN
CATCH BASIN RIM 4.25 INV 1.5
HEADWALL
DRAINAGE EASEMENT DRB 2425, PG 1008
DRAINAGE EASEMENT DRB 2669, PAGE 1705
METAL ANCHOR POLE
FH
EL



GRAPHIC SCALE
0 15 30 60
(IN FEET)
1 INCH = 30 FEET

LEGEND

- EXISTING ELEVATION
- PROPOSED ELEVATION
- EXFM — EXISTING SANITARY SEWER FORCE MAIN
- EXWM — EXISTING WATER MAIN
- EXDN — EXISTING DRAINAGE
- PROPOSED DIRECTION OF SURFACE WATER FLOW
- PROPOSED CATCH BASIN, PIPE, EXFILTRATION TRENCH & MANHOLE
- PROPOSED MANHOLE & SANITARY SEWER PIPE
- PROPOSED SANITARY SEWER FORCE MAIN
- PROPOSED WATER MAIN, TAPPING SLEEVE & VALVE
- PROPOSED WATER MAIN, VALVE & FIRE HYDRANT
- PROPOSED SINGLE WATER SERVICE
- PROPOSED DOUBLE WATER SERVICE
- PROPOSED TRIPLE WATER SERVICE
- PROPOSED QUAD WATER SERVICE
- PROPOSED PENTA WATER SERVICE
- PROPOSED DOUBLE SEWER SERVICE
- PROPOSED SEWER SERVICE
- PROPOSED STOP SIGN AND STOP BAR
- PROPOSED TRAFFIC CONTROL SIGN

DATE DRAWN:	19OCT19
SCALE:	1"=30'
DESIGN BY:	PWA
DRAWN BY:	PWA
CHECKED BY:	PWA
APPROVED BY:	PWA

BY:	DATE:	DESCRIPTION:
PWA	1.15.2020	1. PER REVIEW COMMENTS

PETER WAYNE AQUART, P.E.
CONSULTING CIVIL ENGINEER
14032 SW 48TH STREET, MIAMI, FL 33175
TEL.: (561) 379-2879 E-MAIL:PAQUART@AOL.COM
FLORIDA LICENSED PROFESSIONAL ENGINEER No. 34176

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AVONLEA PUD
LOT 16
CITY OF STUART FLORIDA

PREPARED FOR:
NEW URBAN COMMUNITIES

PRELIMINARY ENGINEERING PLAN

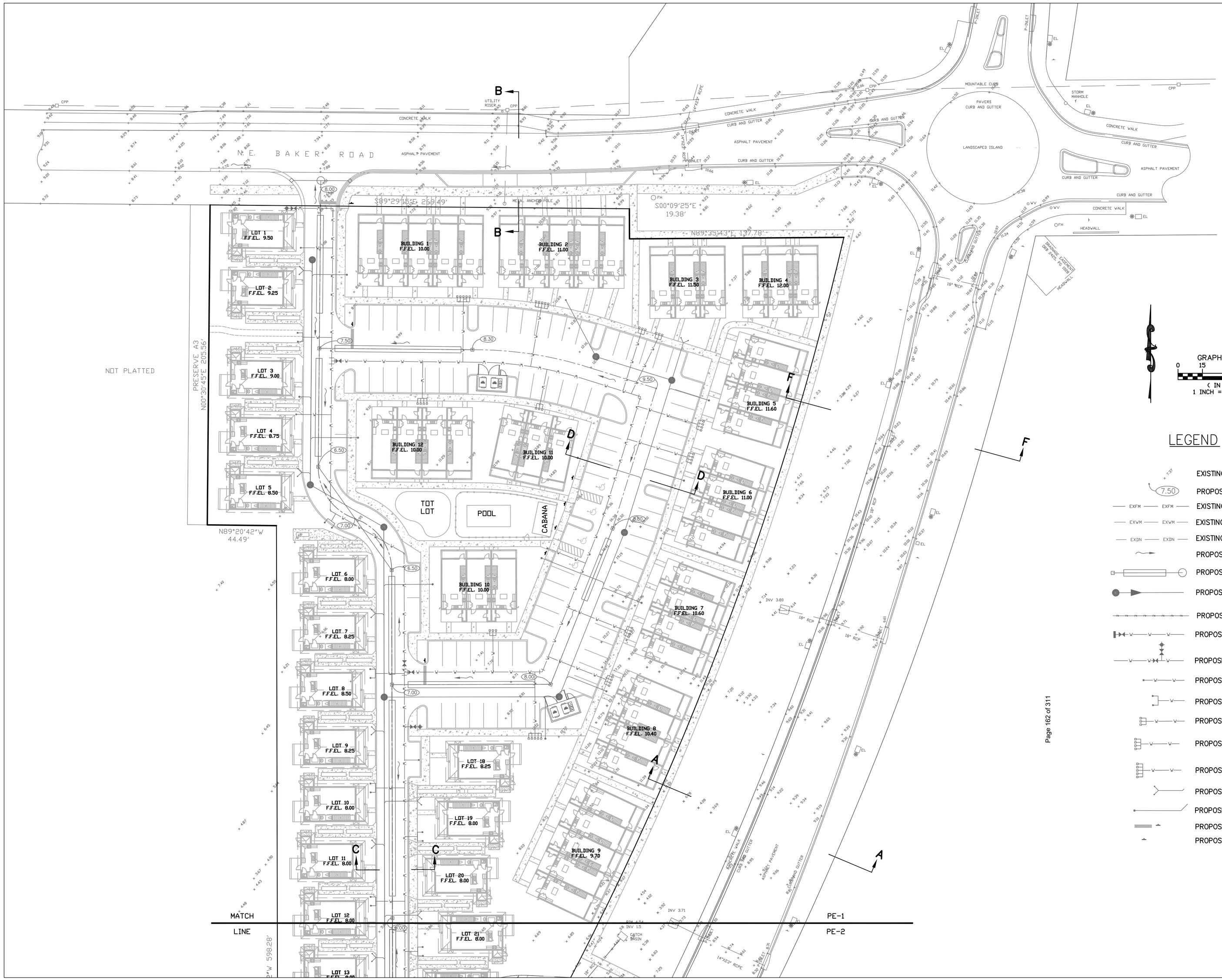
NOT VALID UNLESS IT BEARS AN ORIGINAL SIGNATURE AND A RAISED, EMBOSSED ENGINEER SEAL

January 16, 2020
Peter Wayne Aquart
Florida P.E. No. 34176

PROJECT NO.
105

PE-2
SHEET 2 OF 3

Drawing name: C:\Users\paquart\Documents\PROJECTS\1_2019\AVONLEA\Plans\Preliminary Engineering - Revision 1\Preliminary Engineering.dwg Layout Name: South Plotted by: paquart Plotted on: Jan 16, 2020 - 12:43pm



LEGEND

- EXISTING ELEVATION
- PROPOSED ELEVATION
- EXISTING SANITARY SEWER FORCE MAIN
- EXISTING WATER MAIN
- EXISTING DRAINAGE
- PROPOSED DIRECTION OF SURFACE WATER FLOW
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- PROPOSED DOUBLE SEWER SERVICE
- PROPOSED SEWER SERVICE
- PROPOSED STOP SIGN AND STOP BAR
- PROPOSED TRAFFIC CONTROL SIGN

DATE DRAWN:	19OCT19
SCALE:	1"=30'
DESIGN BY:	PWA
DRAWN BY:	PWA
CHECKED BY:	PWA
APPROVED BY:	PWA

BY:	DATE:	DESCRIPTION:
PWA	1.15.2020	1 PER REVIEW COMMENTS

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AVONLEA PUD
LOT 16
CITY OF STUART FLORIDA

PREPARED FOR:
NEW URBAN COMMUNITIES

PRELIMINARY ENGINEERING PLAN

NOT VALID UNLESS IT BEARS AN ORIGINAL SIGNATURE AND A RAISED, EMBOSSED ENGINEER SEAL

January 16, 2020
Peter Wayne Aquart
Florida P.E. No. 34176

PROJECT NO.
105

PE-1
SHEET 1 OF 3

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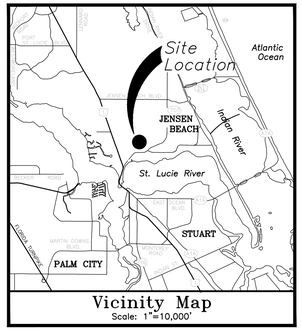
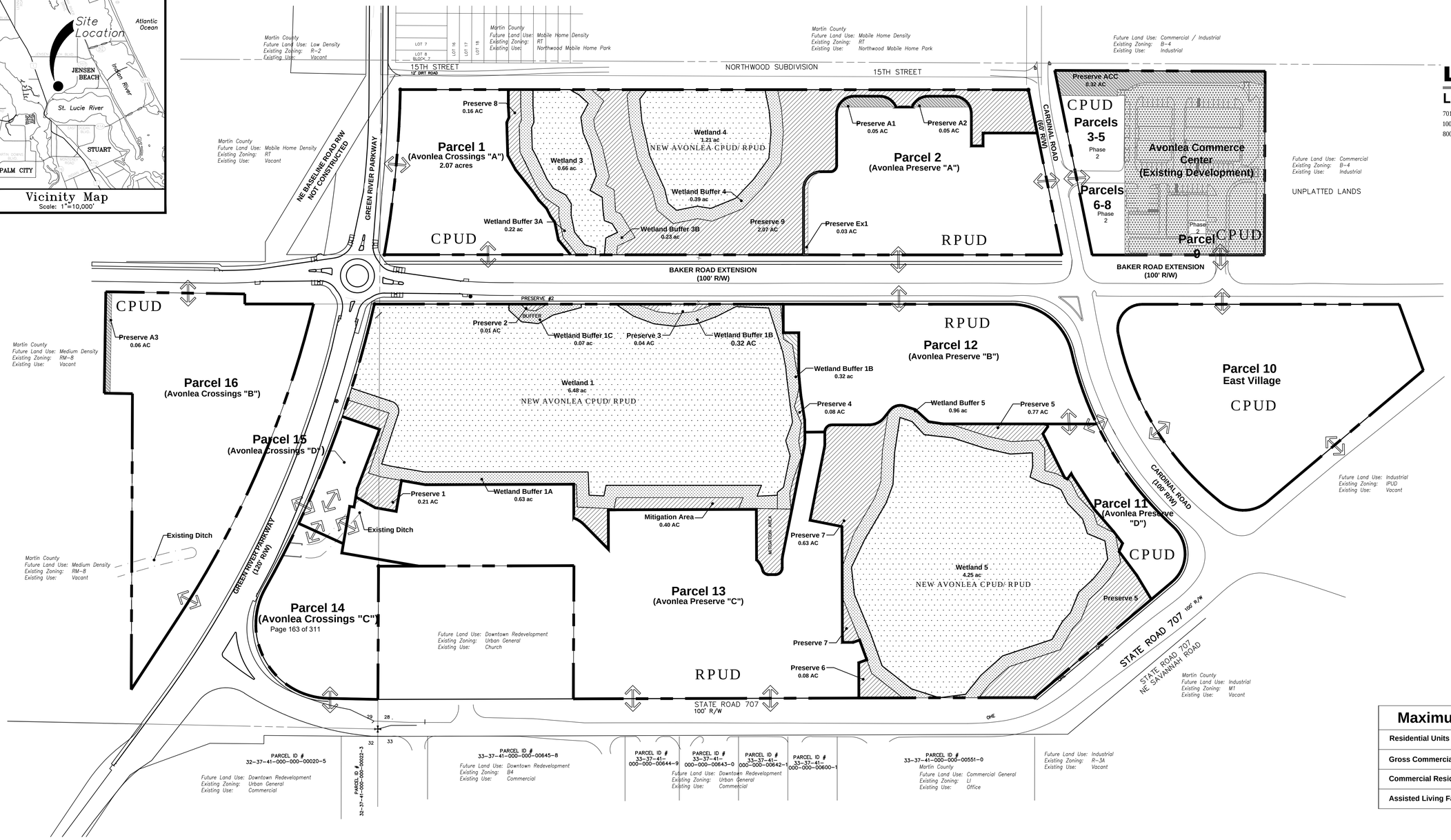


Vicinity Map
Scale: 1"=10,000'



Lucido & Associates

Land Planning / Landscape Architecture

701 E Ocean Blvd., Stuart, Florida 34994 (772) 220-2100, Fax (772) 223-0220
100 Avenue A Suite 2A, Fort Pierce, Florida 34950 (772) 467-1301, Fax (772) 467-1303
800 Highland Avenue, Orlando, Florida 32803 (407) 839-3701, Fax (407) 872-0869

Preservation Data:	Acres	%
Total Site Area	49.04 ac	100.0%
Created Upland	5.28 ac	10.8%
Proposed Wetland Preserve	12.60 ac	25.7%
Existing Native Upland Habitat	31.16 ac	63.5%
Required Upland Preserve Area (25% of Existing Native Upland Habitat)	7.79 ac	
Proposed Upland Preserve	7.79 ac	
Total Preserve Area (Includes Wetland and Upland Preserves)	20.40 ac	41.6%
Total Development Area	28.64 ac	58.4%
Total Site Area:	49.04 ac	100%

Open Space Calculations:*	Acres
Total Site Area:	49.04 ac
(Less) Wetlands:	12.60 ac
Area Subject To Open Space Requirement:	36.44 ac
Minimum Open Space Required (30%):	10.93 ac
Open Space Provided By Upland Preserve:	7.79 ac
Open Space To Be Provided Within Development:	3.14 ac
Open Space To Be Provided In RPUD: 1.48 ac	
Open Space To Be Provided In CPUD: 1.66 ac	
Total Open Space Provided:	10.93 ac

*Open space shall be 30% of total site area less wetlands.

General Notes

-Sidewalks along Cardinal Road shall be a minimum of 8'
-Sidewalks along Baker Road shall be a minimum of 6' and have a minimum average width of 8' for Avonlea East Village. Street front plazas and divided sidewalks may count towards this requirement.

Legal Description

See Exhibit 'A' in PUD Agreement

Legend

- Existing Wetlands under South Florida Water Management Conservation Easement
- Existing Wetland Buffer under South Florida Water Management Conservation Easement
- Existing Upland Preserve under South Florida Water Management Conservation Easement
- Proposed Upland Preserve
- Existing Development
- Arrows represent conceptual driveway connections and interconnectivity between parcels.

Maximum Density per CPUD and RPUD

Residential Units	325 units
Gross Commercial Floor Area	282,000 sf
Commercial Residential Units	160 units
Assisted Living Facility	200 units

RPUD	Parcel	Site Area	Maximum Building Coverage	Developable Area	Max. Impervious	Maximum Density	Maximum Units	Maximum ALF Units	Permitted Uses:
Avonlea Preserve A	2	3.11 ac	30%	2.98 ac	75%	9.65 upa	30 units	200 Units Combined w/ CPUD	Multifamily, Attached, Single Family,ALF
Avonlea Preserve B	12	3.07 ac	30%	3.07 ac	75%	10.42 upa	32 units		
Avonlea Preserve C	13	6.35 ac	30%	6.35 ac	75%	19.37 upa	123 units		
Total		12.53 ac		12.40 ac		15.00 upa	185 units		
		Total: 12.53 ac							

Notes:
(1) The development mix in the CPUD and RPUD meet the minimum 10% commercial and 30% residential of the Neighborhood Special District land use.
(2) Maximum building coverage within the RPUD shall not exceed 30% of the total site area of the RPUD including a pro-rata share of the preserve area (43.3%)

CPUD	Parcel	Site Area	Developable Area	Maximum Gross Commercial Floor Area (2)	Max. Residential Units/ Live Work Units	Maximum Commercial Residential	Maximum ALF Units
Avonlea Commerce Phase 1	N/A	2.20 ac	2.20 ac	23,700 sf (Completed)	5 units (Completed)	Not Applicable	200 Units Combined w/ RPUD
Avonlea Commerce Phase 2	3-9	0.79 ac	0.79 ac	33,300 sf	5 units	Not Applicable	
East Village	10	4.07 ac	4.07 ac	100,000 sf	50 units	80 units	
Avonlea Crossings A	1	2.07 ac	2.07 ac	20,000 sf	Not Applicable		
Avonlea Crossings B	16	4.22 ac	4.16 ac	65,000 sf	75 units	80 units	
Avonlea Crossings C	14	1.60 ac	1.60 ac	20,000 sf	Not Applicable		
Avonlea Crossings D	15	0.45 ac	0.45 ac	5,000 sf	5 units	Not Applicable	
Avonlea Preserve D	11	0.90 ac	0.90 ac	15,000 sf	Not Applicable		
Total		16.30 ac	16.24 ac	282,000 sf	140 units	160 units	

(1) The development mix in the CPUD and RPUD meet the minimum 10% commercial and 30% residential of the Neighborhood Special District land use.
(2) Allowable commercial uses listed in Avonlea PUD Agreement

NORTH

SCALE 0 50' 100' 200'

New Avonlea PUD
Master Parcel Plan
City of Stuart, Martin County, Florida

Scale	1"= 100'	Revisions
Drawn by		
Checked By		
Computer File	13-571 Master Site Plan Final Re	Sheet
Computer Station	Server	1 of 1
Project Number	13-571	
Date	4-06-2015	

Drawing Name: J:\Projects Active\13-571 Avonlea PUD Master Site Plan\Site Plan\ Apr 06, 2015 - 2:45pm 13-571 Master Site Plan Final-SCC Set.dwg

Residential PUD

Project:	Avonlea Parcel 16 RPUD
Date	2.10.20

Adjacent N	County Preserve
Adjacent S	Haney Creek Natrual Preserve
Adjacent E	Avonlea PUD
Adjacent W	Haney Creek Natural Preserve
Total Floor Space (sq.ft)	**None**

LDR Reference	Land Development Regulations	RPUD REVIEW STATUS
2.07.00 D.1	Land Use Designation	COMPLY
2.07.00 D.2 a	Uses	COMPLY
2.07.00 D.2 b	Compatible Residential Uses	COMPLY
2.07.00 D.2 c	Commercial (<30%)	NOT APPLICABLE
2.07.00.D.2.d	Commercial Uses (<30%) vertical	NOT APPLICABLE
2.07.00.D.3	Density	COMPLY
2.07.03 D.4.b	Open Space (>30%)	COMPLY
2.07.03 D.4.c	FAR	COMPLY
2.07.03.D.4.d	Native Vegetaion (>25%)	COMPLY

AREA, IMPERVIOUS SURFACE, SETBACK AND HEIGHT

2.04.03	Supplemental impervious surface	COMPLY
2.04.04	Supplemental setback requirements	COMPLY
2.04.05	Waterfront setbacks	NOT APPLICABLE
2.04.06	Certain street setbacks	NOT APPLICABLE
2.04.07	Supplemental building height	COMPLY
2.06.00	Supplemental Use standards	NOT APPLICABLE

4.04.01	Traffic Concurrency	COMPLY
4.09.00	School Concurrency	TO BE REVIEWED

RESOURCE PROTECTION

5.02.00	Environmental Assessment	COMPLY
5.03.02	Wetland Protection	COMPLY
5.04.00	Evironmentally sensitive lands	COMPLY
5.04.03	Monitoring & Maintenance	REVIEWED AT SITE PLAN
5.05.01	Tree Survey	COMPLY
5.05.02	Tree removal	COMPLY

5.06.00	Mangrove & Shoreline	NOT APPLICABLE
5.07.00	Floodplain Management	COMPLY
Comp Plan	Comprehensive Plan	COMPLY

TRANSPORTATION

6.01.04	Sidewalks/bikeways	COMPLY
6.01.05	Bike Ped (LCD)	COMPLY
6.01.06	Access	COMPLY
6.01.07	Drive-through	NOT APPLICABLE
6.01.08	Vehicular Access	COMPLY
6.01.09	Parking Code	COMPLY
6.01.18	Off-Street Loading	NOT APPLICABLE
6.01.19	PILOP	NOT APPLICABLE

STORMWATER

6.03.01	Generally	TO BE REVIEWED
6.03.04	Management	TO BE REVIEWED
6.03.08	Erosion	TO BE REVIEWED

LANDSCAPING

6.04.02	General Standards	COMPLY
6.04.02 A.1	Native Landscaping	COMPLY
6.06.02 A.2	Shade Trees Required	COMPLY
6.06.02 A.4	Banyan, Fiscus & Rubber Trees	NOT APPLICABLE
6.06.02 A.5	Proximity to power lines	COMPLY
6.06.02 A.6	Shrubs	COMPLY
6.06.02 A.7	Hedges	COMPLY
6.06.02 A.8	Vines	NOT APPLICABLE
6.06.02 A.9	Ground cover	COMPLY
6.06.02 A.10	Grass Area	COMPLY
6.06.02 B	Irrigation	REVIEWED AT SITE PLAN

LANDSCAPE DESIGN

6.04.03 A	Utility Lines (Existing and Proposed)	COMPLY
6.04.03 B.1	Landscaped Area >20%	COMPLY
6.04.03 B.2	Interior landscaping >50%	COMPLY
6.04.03 B.3	location of impervious	COMPLY
6.04.03 B.4	Mulch	COMPLY
6.04.03 B.5	Shoreline protection	NOT APPLICABLE
6.04.03 B.8	Visibility triangles	COMPLY

6.04.06	Land Use Transitions	COMPLY

LANDSCAPING - PARKING AREAS

6.04.07 A.1	Landscaped strip adjacent to street	COMPLY
6.04.07 A.2	Landscaped strip length linear feet	COMPLY
6.04.07 A.2a	Parking area adjacent to street	COMPLY
6.04.07 A.2b	Hedge/wall/berm on outside of strip	COMPLY
6.04.07 A.2c	Other Landscaping	COMPLY
6.06.07 A.2d	Grass	COMPLY
6.04.07 A.3	Shrubs/ground cover	COMPLY
6.04.07 B	parking screened from private propery	NOT APPLICABLE
6.04.07 B.1	Landscaped strip adjacent to private property	NOT APPLICABLE
6.04.07 B.2a	Parking area adjacent to private property	NOT APPLICABLE
6.04.07 B.2b	Hedge/wall/berm on outside of strip	NOT APPLICABLE
6.04.07 B.2c	Other Landscaping	NOT APPLICABLE
6.04.07 B.2d	Grass	NOT APPLICABLE
6.04.07 B.3	Shrubs/ground cover	NOT APPLICABLE
6.04.07 C.1	Parking Area (Major Dev't only)	COMPLY
6.04.07 C.2	Parking area rear and sides of building	COMPLY
6.04.07 C.3	Interior trees	COMPLY
6.04.07 C.4	Vechicle encroachment	COMPLY
6.04.07 C.5	Interior landscaped islands	COMPLY
6.04.07 C.6	Terminal landscaped islands	COMPLY
6.04.07 C.7	Interior landscaped medians	COMPLY
6.04.07 C.8	Interior shade trees	COMPLY
6.04.07 D	Visability triangles	COMPLY
6.04.08	Tree Requirements	COMPLY
6.04.10	Loading Storage	NOT APPLICABLE

COMMERCIAL DEVELOPMENT STANDARDS

6.05.02 B	Building Location	NOT APPLICABLE
6.05.02 C	Building Orientation	NOT APPLICABLE
6.05.02 D	Façade Design	NOT APPLICABLE
6.05.02 E	Massing	NOT APPLICABLE
6.05.02 F	Other Features	NOT APPLICABLE
6.05.02 G	Transitional Elevations	NOT APPLICABLE
6.05.03 B	Blank Wall Area	NOT APPLICABLE
6.05.03 C	Repeating Façade	NOT APPLICABLE
6.05.04	Additional Façade	NOT APPLICABLE

6.05.05	Roof Treatments	NOT APPLICABLE
6.05.06	Entryways and customer entrance	NOT APPLICABLE
6.05.07	Materials and Color	NOT APPLICABLE
6.06.00	Green Development	NOT APPLICABLE
6.07.00	Lighting	NOT APPLICABLE
6.08.00	Dumpster & Recycling	NOT APPLICABLE
6.09.05	Fences	NOT APPLICABLE
6.11.00	Signs	TO BE REVIEWED

Trees

	Shade or Canopy
	Palm
	Flowering
	Accent

Tree Species	Name	number	interior
(Ptychosperma elegans)	Alexander Palm*		
(Ilex opaca)	American Holly		
(Cordia boissieri)	Anacahuita, White Corda*		
(Phoenix canariensis)	Canary Island Date Palm*		
(Prunus caroliniana)	Cherry Laurel		
(Livistonia chinensis)	Chinese Fan Palm*		
(Ilex cassine)	Dahoon Holly		
(Ilex attenuata 'EastPalatka')	East Palatka Holly		
(Plumeria acuminata)	Frangipani Plumeria*		
(Cordia sebestena)	Geiger Tree		
(Cassia surattensis)	Glaucous Cassia*		
(Duranta repens)	Golden Dewdrop		
(Koelreuteria formosana)	Golden Rain Tree*		
(Bauhinia blakeana)	Hong Kong Orchid*		
(Capparis cynophallophora)	Jamaica Caper		
(Parkinsonia aculeata)	Jerusalem Thorn*		
(Quercus laurifolia)	Laurel Oak		
(Callistemon lanceolata)	Lemon Bottlebrush*		
(Quercus virginiana)	Live Oak		
(Gordonia lasianthus)	Loblolly Bay		
(Ptychosperma macarthuri)	MacArthur Palm*		
(Swietenia mahagoni)	Mahogany		
(Washingtonia robusta)	Mexican Washington Palm*		
(Myrsine guianensis)	Myrsine		
(Simaruba glauca)	Paradise Tree		
(Acoelorrhaphe wrightii)	Paurotis Palm		
(Tabebuia heterophylla)	Pink Tab or Trumpet Tree*		
(Tibouchina grandiflora)	Princess Flower Tree*		
(Tibouchina grandiflora)	Princess Flower Tree1*		
(Arecastrum romanzoffianum)	Queen Palm*		
(Lagerstromia speciosa)	Queens Crepe Myrtle*		
(Persea borbonia)	Red Bay		
(Acer rubrum)	Red Maple		
(Cocothrinax argentata)	Silver Palm		

(Tabebuia caraiba)	Silver Trumpet*		
(Pinus elliottii)	Slash Pine		
(Magnolia grandiflora)	Southern Magnolia		
(Magnolia virginiana)	Sweet Bay		
(Liquidambar styraciflua)	Sweet Gum		
(Plantanus occidentalis)	Sycamore		
(Myrica cerifera)	Wax Myrtle		
(Callistemon viminallis)	Weeping Bottlebrush*		
(Tecoma stans)	Yellow Elder		
Other			
	TOTALS	**0**	**0**

Shrubs/ground cover

	Shrub
	Ground Cover
	Vine

Shrub/Ground cover Species	Name	number	native
(Antigonon Leptopus)	Coral Honeysuckle		0
(Blechnum serrulatum)	Swamp Fern		0
(Catharanthus roseus)	Periwinkle		0
(Chrysobalanus icaco)	Cocoplum		0
(Conocarpus erectus sericeus)	Silver Buttonwood		0
(Conocarpus erectus)	Buttonwood		0
(Crinum americanum)	Swamp Lilly		0
(Forestiera segregata)	Florida Privet		0
(Glesminum Sempervirens)	Carolina Jessamine		0
(Hamelia patens)	Firebush		0
(Helianthus debilis)	Beach Sunflower		0
(Hymenocallis latifolia)	Spider Lily		0
(Ilex glabra)	Gallberry		0
(Lantana spp.)	Lantana species		0
(Lonicera)	Trumpet Honeysuckle		0
(Myrcianthes fragrans)	Simpson's Stopper		0
(Myrica cerifera)	Wax Myrtle		0
(Myrsine guianensis)	Myrsine		0
(Nephrolepis cordifolia)	Erect Swordfern		0
(Prunus caroliniana)	Cherry Laurel		0
(Spartina bakerii)	Cordgrass		0
(Sysirinchium)	Blue Eyed Grass		0
(Urechites lutea)	Wild Allamanda		0
(Vaccinium myrsinites)	Shiny Blueberry		0

(Viburnum obovatum)	Walter's Virburnum		0
(Zamia floridana)	Coontie		0
Other			0
	TOTALS	0	0

	tree	shrub	shade tree	palms	tree+shrub	Interior Shade
native	0	0	0	0	0	
other	0	0	0	0	0	
Total	0	0	0	0	0	0
interior	0		0			
Perimeter	0		0			

	%
Native	#DIV/0!
Shade	#DIV/0!
Int Shade	#DIV/0!

3.

CITY OF STUART, FLORIDA
AGENDA ITEM REQUEST
Local Planning Agency

Meeting Date:2/20/2020 **Prepared by:**Tom Reetz

Title of Item:
STUART OCEAN RPUD - FIRST READING (QUASI-JUDICIAL)(RC):

ORDINANCE No. 2435-2020: AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF STUART, FLORIDA, TO APPPROVE A REZONING FROM R-3 MULTIFAMILY/OFFICE TO RESIDENTIAL PLANNED UNIT DEVELOPMENT "RPUD" ON THE CITY'S OFFICIAL ZONING MAP; FOR AN 11.04 ACRES PARCEL, OWNED BY SERRAGUI GROUP INVESTMENTS LLC, LOCATED ON THE SOUTH SIDE OF SE OCEAN BLVD BETWEEN THE POINTE ASSISTED LIVING FACILTY AND KINGSWOOD CONDO ASSOCIATION, SAID LAND BEING MORE FULLY DESCRIBED IN EXHIBIT "A" ATTACHED; ESTABLISHING STUART OCEAN TOWNHOMES RPUD CONSISTING OF EIGHTY (80) ATTACHED HOMES; APPROVING A MASTER SITE PLAN; PROVIDING FOR DEVELOPMENT CONDITIONS AND A TIMETABLE FOR DEVELOPMENT, DECLARING THE PLAN TO BE CONSISTENT WITH THE CITY'S COMPREHENSIVE PLAN; PROVIDING DIRECTIONS TO THE CITY CLERK; PROVIDING FOR REPEAL OF ALL ORDINANCES IN CONFLICT; PROVIDING FOR SEVERABILITY; PROVIDING FOR AN EFFECTIVE DATE, AND FOR OTHER PURPOSES.

Summary Explanation/Background Information on Agenda Request:
The subject property is an approximately 11.04-acre vacant property located on SE Ocean A1A Blvd. in an urban area of on the eastern edge of jurisdictional limits of the City of Stuart. The Future Land Use Map (FLUM) designation of the property is Multifamily (MF) with a compatible zoning district designation of R-3 Residential - multi-family/office. The subject property had been part of the Kingswood Condominium community, built starting in 1970 through to 1995. The subject property includes the lands that remained vacant and unbuilt and now within separate ownership to the Kingswood Condo community. In a number of places, existing driveways and parking areas from the Kingswood community encroach onto the subject site.

The proposed project consist of eighty 80 townhomes housed in 14 buildings, with 3.11 acres of preserved/ enhanced native areas or 28% of the site. The six dry retention areas totaling 26,848 sq. ft. will be planted with native vegetation. In Parcel B, 17,285 sq. ft. of the 34,571 sq. ft. of offsite preserve areas are proposed to be credited to the RPUD. Additionally, a 40,485 sq. ft. wet pond / lake is accommodating the retention of existing parking areas which serve the established Kingswood Condo community and is also intended to satisfy the drainage requirements of the proposed townhome community.

The proposed site plan achieves the preservation by creating preserve areas and native landscape areas in order to meet the 25% code requirements. Upland buffers/littoral planting is accommodated and includes an extension of existing preserve areas. To compensate for the removed native trees additional numbers of larger than required native trees and various palm trees are proposed on the site as indicated on the submitted landscape plans. However, the required pine tree mitigation has been met on site but the hardwoods cannot be reasonably accommodated on the site and so the applicant is proposing to contribute 50% of the required replacement inches which comes out to $111,125 to the City's Tree Fund.

The applicant proposes to preserve trees and native understory for much of the area along this common boundary and the nature trail. In addition, supplemental native trees and shrubs will be planted in less dense areas to 'fill out" the native habitat.

The subject site includes a driveway that runs through the parcel from the Kingswood entrance off East Ocean Boulevard and connects to the south and SE Kingswood Terrace. That driveway alignment will be slightly changed, and new asphalt constructed. Other existing driveways and parking areas which are part of the Kingswood communities will not be changed as well as existing trails and sidewalk connections.Within the proposed Stuart Ocean Townhomes project driveways have been designed to measure 30' as private access drives with 20' wide drive types. Established access and circulation roads connected with the Kingswood Cond community are intended to be maintained and effectively linked to the proposed subject property driveways and circulation provisions.

In addition to vehicular access, the site includes effective pedestrian circulation that will accommodate the new residents of the subject property while also maintaining and enhancing pedestrian connectivity within the established Kingswood Condo community. The creation of trails around the proposed detention area and connections to the existing trails in place and serving existing communities, will provide an enhanced level of pedestrian connectivity benefiting all of the residents within the area.

The developer has met with all three phases of the neighboring Kingswood Condo Association and have made progress toward a more cohesive project with design features including buffers that provided positive attributes benefitting both communities.

If approved, The developer is ready to follow through obtain necessary permits with state agencies and the City's Development Department. The applicant has coordinated final plans with City of Stuart Public Works for water/sewer improvements. City staff and professional consultants have reviewed the project and are satisfied with the applicant's response and revisions to the plans.

Funding Source:
N/A

Recommended Action:
Motion to recommend approval of Ordinance No. 2435-2020 for consideration by the City Commission.

ATTACHMENTS:

	Description	Upload Date	Type
	Staff Report - By Tom Reetz	2/10/2020	Staff Report
	Ordinance No. 2435-2020	2/10/2020	Ordinance add to Y drive
	Ordinance No. 2435-2020 Exhibit D	2/10/2020	Backup Material
	Architectural Rendering	2/10/2020	Backup Material
	Project Narrative	2/10/2020	Backup Material
	Applicant's justification letter with revisions	2/10/2020	Backup Material
	Applicants response to second round of comments	2/10/2020	Backup Material
	Traffic Analysis	2/10/2020	Backup Material
	KHA final review	2/10/2020	Backup Material
	Staff Code Review	2/10/2020	Backup Material
	Stormwater Report	2/10/2020	Backup Material
	FWC and FS letters	2/10/2020	Backup Material

CITY OF STUART
Local Planning Agency
February 20th, 2020

Project Name: Stuart-Ocean Townhomes RPUD	**Property Owner:** Serragui Group Investments, LLC
Project No.: Z19090005	**Applicant/Petitioner**: Pulte Home Company, LLC /HJA Design Studio
Ordinance No: 2435-2020	**Agent/Representative:** Michael Houston HJA Design Studio
	Case Planner: Tom Reetz
Location: Located on the south side of SE Ocean Blvd between The Pointe Assisted Living Facility and Kingswood Condo Association.	

PROJECT SUMMARY		
Property Size (area)		11.04 Acres
Present Use		Undeveloped
Subject Property Land Use		Multi-Family
Adjacent FLU	*North*	Martin County Medium Density
	South	Multifamily
	East	Multifamily
	West	Institutional
Subject Property Zoning		R3 Multifamily /Office
Adjacent Zoning	*North*	Martin County Multifamily
	South	R3 Multifamily/Office

	East	R3 Multifamily/Office
	West	R3 Multifamily/Office
Proposed Use		Attached homes (up to 7) – See Ordinance 2435-2020
City Approvals		Building Department – No comments at this time. Fire Department – See attached comments Public Works – See attached comments
Brief Explanation		The intent of this application is to rezone from R-3 to RPUD. The subject property is 11.04 acres. The property is currently undeveloped. The intent of this project is to allow 80 attached homes to be developed on the site while upgrading the drainage and enhancing the buffers and creating a lake with Littoral plantings and footpaths.
Staff Recommendation: Staff recommends approval for the land use and zoning change for 80 town-home units and master site plan approval.		

STAFF REPORT AND RECOMMENDATION

I. LEGAL NOTICE REQUIREMENTS

A. Requirements for Application – The applications to rezone to RPUD have been noticed in accordance with the requirements set forth in Sections 11.01.02, 11.01.09, and 11.02.00 of the Land Development Regulations.

B. Site Posting Date: 02-05-2020

C. Mail Notice Postmark: 02-05-2020 to property owners within 300 feet

D. Publication Date: 10 days prior to Second Reading

II. MAJOR AMENDMENT TO THE RPUD ORDINANCE NO. 2319-2019

III. APPLICATION: Dated September 20, 2020

IV. HISTORY OF THE SITE

The subject property is an approximately 11.04-acre vacant property located on SE Ocean A1A Blvd. in an urban area of on the eastern edge of jurisdictional limits of the City of Stuart. The Future Land Use Map (FLUM) designation of the property is Multifamily (MF) with a compatible zoning district designation of R-3 Residential - multi-family/office. The subject property had been part of the Kingswood Condominium community, built starting in 1970 through to 1995. The subject property includes the lands that remained vacant and unbuilt and now within separate ownership to the Kingswood Condo community. In a number of places, existing driveways and parking areas from the Kingswood community encroach onto the subject site.

V. STAFF ANALYSIS

Site and Area Characteristics

The site plan along with the townhomes in 14 buildings, depicts 3.11 acres of preserved / enhanced native areas or 28% of the site. The six dry retention areas totaling 26,848 sq. ft. will be planted with native vegetation. In Parcel B, 17,285 sq. ft. of the 34,571 sq. ft of offsite preserve areas are to be credited to the subject property proposal. Additionally, a 40, 485 sq. ft. wet pond / lake is accommodating the retention of existing parking areas which serve the established Kingswood Condo community and is also intended to be utilized by the proposed Pulte Home Company, LLC townhome community.

The existing vegetation on the site has been surveyed and the proposed development respects the preservation of existing vegetation where applicable and possible while accommodating an infill proposal within an urban area of the City of Stuart. The proposed site plan achieves the preservation by creating preserve areas and native landscape areas

to meet the 25% code requirements. Upland buffers/littoral planting is accommodated and includes an extension of existing preserve areas.

Project Description

This unique townhouse project is a request for a rezoning from R-3 to RPUD and a Major Development

Site Plan Application. The site is located on the south side of East Ocean Boulevard and adjacent on three sides to the multi- family Kingswood community. The Point at Ocean Boulevard senior community ACLF is to the west of the site. The property consists of three separate parcels all owned by the same owner. The subject parcel for the rezoning consists of the largest parcel which is 11.04 acres and includes 80 proposed townhomes on the north and a 1.09-acre stormwater lake, preserve areas and recreational trails on the south. Parcels B is 0.57 acres and is not included in the rezoning but is being used for preserve credits. No use is proposed for Parcel A. The proposed townhouse project will be 7.25 units per acre and will be owned in fee- simple ownership. All of the townhomes are two stories with three bedrooms and have one and two car garages with a tandem parking space in their driveway. The site plan reflects, however, that the end units only have one garage space but have space for two cars. Eleven on- street guest spaces are proposed which include spaces for the mail kiosk area. A nature trail that exists between Kingswood and the subject site will be preserved and extended.

The site's proposed native vegetation and upland preserve are made up of three separate areas. The on- site preserve is 1.83 acres. Parcel B will have an offsite preserve credit of 0.40 acres. In addition, created native vegetation areas consist of 0.88 acres of littoral zones in the storm water lake, dry retention areas and their perimeters will be planted with native vegetation. The total proposed native vegetation areas / preserve areas equals 3.11 acres or 28% of the site which exceeds the City's 25% requirement.

This project is a classic opportunity for well-planned and contextual in-fill development within this area of older apartment complexes. The subject site includes a driveway that runs through the parcel from the Kingswood entrance off East Ocean Boulevard and connects to the south and SE Kingswood Terrace. That driveway alignment will be slightly changed, and new asphalt constructed. Other existing driveways and parking areas which are part of the Kingswood communities will not be changed as well as existing trails and sidewalk connections.

The proposed project has been planned and designed to harmonize with the existing neighborhood while providing for much needed new townhome

concept not found in this part of the City. The applicant is excited about the opportunity of developing their first new community in the City of Stuart.

Future Land Use Amendment and Comprehensive Plan Consistency Review

A review of the Comprehensive Plan finds that the proposed list of uses that are consistent with the proposed Low-Density Future Land Designation:

This land-use category allows for one or two dwelling units per building. Includes single family detached, duplex/townhomes, patio homes, garden homes, and adult living facilities, foster homes and zero-lot-line residences. Also, public facilities, churches day care centers, schools and electric distribution substations are allowed.

Section 11.01.05G.1 (large-Scale Comprehensive Plan Amendments) of the Land Development Code requires the Local Planning Agency to consider the following criteria prior to making an advisory recommendation to the City Commission:

1. The existing land use pattern;

The subject property has a Future Land Use designation of Multi-family Residential, Per Section 2.01.03, Table 1, the zoning on the subject property is compatible with Residential Planned Unit Development (RPUD). A townhome development is a permitted use as either a single family or multi-family land use classification. The land use pattern will remain unchanged as part of this proposal with Multi-family Residential dominating this part of the eastern edge of the City of Stuart's jurisdictional area. Patterns of development are predominantly residential, with a number of condominium communities having been established and an independent living facility to the immediate west of the property. Existing properties range in height from 2 to 4 stories with the proposed Stuart Ocean townhome community including maximum heights of 2 stories as part of the development pattern and scale. The proposal is consistent with the future land use provisions and consistent with the City Land Development Code provisions regarding use as per Section 2.01.03.

2. The possible creation of an isolated land use classification unrelated to adjacent and nearby classifications;

Rezoning the property to the RPUD will not detract from the overriding Multi- family future land use designation policy protection measures associated with the property. The majority of the properties surrounding the site are zoned R-3, Liberal

Multiple Family zoning district designation which includes the townhomes as a permitted use consistent with the applicant's request. The RPUD zoning agreement affords the project the opportunity to attached conditions specific to expectations for development on the site, will ensure safeguards are in place to complement existing patterns of development. Some of those additional safeguards will also offer the necessary assurances to the established Kingswood Condo residents regarding preservation of existing trails and parking areas, open space and upland preservation area provisions which offer significant amenity to the proposed and existing communities.

3. The population density pattern of the area and possible increase or overtaxing of the load on public facilities such as schools, utilities and streets;

The proposal site is located on the edge of the urban fringe of the City of Stuart's jurisdiction where infrastructure is readily available and access to stores and businesses lie close to the property. As an urban infill site, the property is located within a well-established residential community with schools, utilities and existing streets to be utilized to accommodate the project all readily available. Utilizing the subject property offers an opportunity to add to the existing City population, strengthening support of the existing schools, commercial and community infrastructure within the City limits and achieves a sustainable and complimentary form of development.

4. The possible overloading of the City's sewage collection, treatment and disposal facilities;

As per the Engineer's report and analysis provided in support of the project, existing water and sewer provisions are readily available and impact fees will be paid to contribute towards the introduction and maintenance of the project. Adding residential provisions to this part of the City will also provide a growth in tax revenues to add to the overall maintenance and provision of public service provisions within the City of Stuart.

5. The existence of changed or changing conditions which make the passage of the proposed amendment necessary or appropriate;

Rezoning the property to RPUD is an acceptable zoning district designation for properties with a Multi-family land use designation. A zoning change is required on the property to RPUD to address certain elements of the City of Stuart Land Development Regulations which do not make the necessary provisions to allow for the design and siting of townhomes regarding minimum lot sizes and minimum lot widths and introducing a townhouse type dwelling. Right of way requirements afforded to a property ordinarily require a 20' to center line for a two-way traffic access road whereas a townhome development such as that proposed on the subject property can achieve reduced driveway widths while ensuring the safe travel through the proposed community.

6. The impact of the proposed amendment upon living conditions in the adjacent neighborhood;

The development of a vacant infill lot in an urban area of the City of Stuart will provide additional residential units in this area of the City. Benefits to the adjacent neighborhood include greater access to an improved and well-planned set of open space and upland preservation areas through an expansion and formulization of trails. Proposed buffer provisions, landscape improvements and the introduction of a townhome development is of a scale, use and layout complimentary to the long-established residential condominium communities.

7. The impact of the amendment upon the flow of light and air to adjacent areas;

The proposed townhome units have been placed in blocks ranging from 2 to 7 units throughout the site. None of the units are within proximity to any single family residential units. The proposed two-story height will not detract from established residential units ranging from 2 to 4 stories in height at the Kingswood Condo community.

8. The impact of the proposed amendment upon property values in the adjacent area;

Developing the property with the assurances and development parameters clearly established in the PUD will increase property values and add to the tax bases in both the City and County.

9. The impact of the proposed rezoning upon improvement or development of adjacent property in accordance with existing regulations:

The proposed rezone to RPUD provides additional assurances in the form of a PUD zoning agreement in addition to the parameters of development afforded to a property with an R-3 zoning district designation.

10. The existence of other adequate sites in the City for the proposed land use classifications already permitting such use.

An objective of the City of Stuart is to plan for a city with diverse and sustainable supply of a mixed housing provision. This project will increase those provisions available within the City of Stuart.

A. Technical Review by Other Agencies

The City Building, Public Works, Fire, and Police Departments have reviewed the applications and have offered their comments. Each department will provide specific comments at final site approval for permitting.

The applicant will be responsible to meet all federal, state and local permitting and environmental standards. Further, the applicant will also be required to demonstrate full compliance at all times.

VI. LOCAL PLANNING AGENCY BOARD RECOMMENDATION

The Local Planning Agency shall include in its recommendation to the City Commission any information which it deems is relevant to issues relating to the proposed amendment to the RPUD.

VII. STAFF RECOMMENDATION (APPROVAL WITH CONDITIONS)

Staff has determined that the proposed rezoning to RPUD is consistent with the goals, objectives and policies of the Comprehensive Plan and the regulations in the Land Development Code. Staff offers no objection to the requests.

BEFORE THE CITY COMMISSION

CITY OF STUART, FLORIDA

ORDINANCE NUMBER 2435-2020

* * * * *

AN ORDINANCE OF THE CITY COMMISSION OF THE CITY OF STUART, FLORIDA, TO APPPROVE A REZONING FROM R-3 MULTIFAMILY/OFFICE TO RESIDENTIAL PLANNED UNIT DEVELOPMENT "RPUD" ON THE CITY'S OFFICIAL ZONING MAP; FOR AN 11.04 ACRES PARCEL, OWNED BY SERRAGUI GROUP INVESTMENTS LLC, LOCATED ON THE SOUTH SIDE OF SE OCEAN BLVD BETWEEN THE POINTE ASSISTED LIVING FACILTY AND KINGSWOOD CONDO ASSOCIATION, SAID LAND BEING MORE FULLY DESCRIBED IN EXHIBIT "A" ATTACHED; ESTABLISHING STUART OCEAN TOWNHOMES RPUD CONSISTING OF EIGHTY (80) ATTACHED HOMES; APPROVING A MASTER SITE PLAN; PROVIDING FOR DEVELOPMENT CONDITIONS AND A TIMETABLE FOR DEVELOPMENT, DECLARING THE PLAN TO BE CONSISTENT WITH THE CITY'S COMPREHENSIVE PLAN; PROVIDING DIRECTIONS TO THE CITY CLERK; PROVIDING FOR REPEAL OF ALL ORDINANCES IN CONFLICT; PROVIDING FOR SEVERABILITY; PROVIDING FOR AN EFFECTIVE DATE, AND FOR OTHER PURPOSES.

* * * * *

WHEREAS, the City Commission held a properly noticed hearing at a regularly scheduled City Commission to consider the application by HJA DESIGN STUDIO and PULTE

HOME COMPANY, LLC representing Serragui Group Investments, LLC (owner), for a 11.04 acre parcel of land located on the south side of S.E. Ocean Blvd abutting The Pointe Assisted Living Facility and Kingswood Condo Association; and

WHEREAS, the City of Stuart has determined the need to rezone said lands; and

WHEREAS, the City Commission, has considered the Petitioner's voluntary request for zoning designation, and has also considered the recommendation of the City staff.

WHEREAS, the Applicant has committed to the City that its development will comply with all development codes, plans, standards and conditions approved by the City Commission; and that it will bind its successors in title to any such commitments made upon approval of the RPUD; and

WHEREAS, at the hearing the applicant showed by substantial competent evidence that the application is consistent with the Stuart Comprehensive Plan, and the Land Development Code of the City, and with the procedural requirements of law; and

WHEREAS, the RPUD development will be in harmony with surrounding properties and their anticipated development;

WHEREAS, the foregoing recitals are true and adopted as findings of fact and conclusions of law.

WHEREAS, the property is legally described in **"Exhibit A"** of this ordinance. A map depicting the property is attached hereto as **Exhibit "B"** and made a part hereof by reference; and development conditions including a timetable for construction attached hereto as **Exhibit "C";**

NOW THEREFORE, BE IT ORDAINED BY THE CITY COMMISSION OF THE CITY OF STUART, FLORIDA THAT:

SECTION 1: The following new documents are on file as public records of the City, at the office of the City Clerk in City Hall, and attached hereto as **Exhibit "D"**, hereinafter the

"Development Documents", shall be deemed a part of the development conditions, and shall supplement any earlier approvals:

a. **Major Development Site Plan (RPUD), Sheet SP-1, Sheet SP-2 &Sheet SP-3 prepared by HJA Design Studio, dated 09.20.19, resubmitted on 12.05.19.**
b. **ALTA/NSPS Land Title Survey, Sheets 1 & 2 of 2, by Caulfield and Wheeler, Inc, dated 05.1.2019.**
c. **Existing Tree Survey / Removal Plan, Landscape Plan, and Landscape Specifications, Sheets LP-1, LP-2, LP-3, LP-4, LP-5, LP-6, prepared by HJA Design Studios, dated 09.06.19, and most recently submitted on 1-16-20.**
d. **Architectural Floor Plans & Elevations and rendering, prepared by Florida Zone, dated 02.16.18**
e. **Truck Route Plan, Sheets TR-1, TR-2 dated 09/20/2019, by Bowman Consulting, dated 09.20.19.**
f. **Site Lighting Photometric Plan, Sheets L-1 & L-2, by HJA Design Studio, dated, 09.18.19.**

SECTION 2: The Land Development (Zoning) District designation on the City of Stuart Official Zoning Map shall be established as "RPUD" Residential Planned Unit Development amended by this ordinance to allow for 80 attached townhome units.

SECTION 3: This ordinance becomes effective upon adoption.

SECTION 4: Except as otherwise provided herein, no development permits, site permits, or building permits shall be issued by the City except in compliance with the City's Land Development Code.

SECTION 5: All ordinances or parts of ordinances in conflict with this ordinance or any part thereof is hereby repealed to the extent of such conflict. If any provision of this ordinance

conflicts with any contractual provision between the City and the developer of the site, this ordinance shall prevail.

SECTION 6: If any provision of this ordinance or the application thereof to any person or circumstance is held invalid, the invalidity shall not affect other provisions or applications which can be given effect without the invalid provision or application, and to this end the provisions of this ordinance are declared severable.

SECTION 7: This ordinance shall be effective upon the following to occur: adoption by the City Commission, and proper execution and acceptance by the Owner.

SECTION 8: The complete execution and recording of this Ordinance by the City Clerk shall occur no later than 60 days from the date of this approval, failing which this ordinance shall be void.

SECTION 9: Upon complete execution of this Ordinance, including the Acceptance and Agreement by the Owner, the City Clerk is directed to record a Certified Copy of the same in the Public Records of Martin County, Florida.

Passed on first reading the 9th day of February 2020.

Commissioner _____ offered the foregoing Ordinance and moved its adoption. The motion was seconded by Commissioner _____ and upon being put to a roll call vote, the vote was as follows:

	YES	NO	ABSENT	ABSTAIN
MICHAEL J. MEIER, MAYOR				
EULA R. CLARKE, VICE MAYOR				
BECKY BRUNER, COMMISSIONER				
KELLI GLASS LEIGHTON, COMMISSIONER				
MERRITT MATHESON, COMMISSIONER				

ADOPTED on second and final reading this _____day of _____, 2020.

ATTEST:

_____ _____

MARY R. KINDEL MICHAEL J. MEIER

CITY CLERK MAYOR

APPROVED AS TO FORM
AND CORRECTNESS:

_____

MICHAEL J. MORTELL
CITY ATTORNEY

ACCEPTANCE AND AGREEMENT

BY SIGNING THIS ACCEPTANCE AND AGREEMENT, THE UNDERSIGNED HEREBY ACCEPTS AND AGREES TO ALL OF THE TERMS AND CONDITIONS CONTAINED IN A RESIDENTIAL PLANNED UNIT DEVELOPMENT AND IN ALL EXHIBITS, ATTACHMENTS AND DEVELOPMENT DOCUMENTS, INTENDING TO BE BOUND THEREBY, AND THAT SUCH ACCEPTANCE AND AGREEMENT IS DONE FREELY, KNOWINGLY, AND WITHOUT ANY RESERVATION, AND FOR THE PURPOSES EXPRESSED WITHIN THE ABOVE ORDINANCE. IF IT IS LATER DISCOVERED THAT THE UNDERSIGNED, OR ITS SUCCESSORS OR ASSIGNS HAVE FAILED IN ANY MATERIAL WAY TO DEVELOP THIS RESIDENTIAL PLANNED UNIT DEVELOPMENT ACCORDING TO THIS ORDINANCE, ITS CONDITIONS, AND THE DEVELOPMENT PLANS AND DOCUMENTS, THE UNDERSIGNED UNDERSTANDS AND AGREES THAT THIS ORDINANCE MAY BE AMENDED OR REPEALED BY THE CITY COMMISSION, AND THAT OTHER ACTIONS MAY BE TAKEN AGAINST THE UNDERSIGNED BY THE CITY, INCLUDING BUT NOT LIMITED TO CODE ENFORCEMENT ACTIONS, PERMIT AND LICENSING REVOCATIONS, AND ALL APPLICABLE CIVIL AND CRIMINAL ACTIONS.

IN WITNESS WHEREOF THE UNDERSIGNED HAS EXECUTED THIS ACCEPTANCE AND AGREEMENT:

WITNESSES:

Serragui Group Investments, LLC,

_____

By: _____

Print Name: _____

Mauricio Chico – Managing Member

_____

Print Name: _____

OWNERS ACKNOWLEDGMENT

The above Ordinance, Acceptance and Agreement was acknowledged before me this _____ day

of _____, 2020, by Mauricio Chico – Managing Member of Serragui Group Investments, LLC, _____

Notary Public, State of Florida
My Commission Expires:

Notary Seal

Personally Known _____ OR Produced Identification _____
Type of Identification Produced _____

CITY'S ACKNOWLEDGMENT

The above Ordinance, Acceptance and Agreement was acknowledged before me this _____day of _____, 2020, by MICHAEL J. MEIER, MAYOR , and Mary R. Kindel, City Clerk, respectively, of the City of Stuart, Florida, a Florida municipal corporation.

_____
Notary Public, State of Florida
My Commission Expires:

Notary Seal

Personally Known _____ OR Produced Identification _____
Type of Identification Produced _____

EXHIBIT A – LEGAL DESCRIPTION - Stuart Ocean Townhomes

PARCEL 1:

The Northeast 1/4 of the Southwest 1/4 of Section 2, Township 38 South, Range 41 East, Martin County, Florida, lying South of the right-of-way for State Road A-1-A.

Less and Except the Westerly 250.00 feet thereof.

Also, Less and Except Buildings 1 through 21, inclusive, Buildings 33 through 43, inclusive, Buildings 53 through 59, inclusive, Recreation Areas 1, 2 and 3, and Sewer Pump Stations 1 and 2, Kingswood Condominium Apartment Buildings, according to the Declarations of Condominium thereof, recorded in Official Records Book 325, Page 1560, Official Records Book 332, Page 2706, Official Records Book 344, Page 1409, Official Records Book 359, Page 1191, Official Records Book 360, Page 546, Official Records Book 366, Page 1974, Official Records Book 366, Page 2065, Official Records Book 367, Page 2659, Official Records Book 369, Page 1771, Official Records Book 391, Page 1877, Official Records Book 392, Page 1887, Official Records Book 393, Page 1094, Official Records Book 399, Page 1214, Official Records Book 406, Page 504, Official Records Book 406, Page 593, Official Records Book 411, Page 2331 and Official Records Book 426, Page 696, and any amendments thereto, of the Public Records of Martin County, Florida.

The above described parcel being more particularly described as follows:

From the Southwest corner of the Northeast 1/4 of the Southwest 1/4 of said Section 2, bear South 89°45'22" East, along the South line of said Northeast 1/4, a distance of 250.00 feet; thence North 00°17'50" East a distance of 238.48 feet to the Point of Beginning; thence continue North 00°17'50" East a distance of 612.25 to a point on the South right-of-way line of State Road A-1-A, said point being a curve concave to the North, having a radius of 3,324.14 feet, whose center bears North 07°54'58" West, having a chord bearing and distance of North 78°31'28" East 412.75 feet; thence Easterly, along the arc of said curve through a central angle of 07°07'08", a distance of 413.02 feet to the Northwest corner of Building 54, Kingswood Condominium, as recorded in Official Records Book 411, Page 2331, Public Records of Martin County, Florida; thence the following courses along said Kingswood Condominium, South 15°02'31" East a distance of 120.00 feet; thence South 00°07'11" West a distance of 93.35 feet; thence North 89°52'49" West a distance of 20.00 feet; thence South 00°07'11" West a distance of 20.00 feet; thence South 89°52'49" East a distance of 20.00 feet; thence South 00°07'11" West a distance of 216.06 feet; thence South 33°09'58" West a distance of 51.55 feet; thence South 00°07'11" West a distance of 220.00 feet; thence continue South 00°07'11" West a distance of 224.85 feet to a point on the South line of the Northeast 1/4 of the Southwest 1/4 of said Section 2; thence North 89°45'22" West, along said South line, a distance of 261.44 feet; thence North 00°07'21" East a distance of 95.00 feet; thence North 45°47'29" West a distance of 206.67 feet to the Point of Beginning.

TOGETHER WITH:

Parcel A:

A parcel of land lying in Section 2, Township 38 South, Range 41 East, Martin County, Florida, said parcel being more particularly described as follows:

Commence at the Southwest corner of aforesaid Section 2, thence bear South 89°32'19" East, along the South line of said Section 2, a distance of 1,333.00 feet to a point on the Westerly line of the Southeast 1/4 of the Southwest 1/4 of said Section 2; thence North 00°21'51" East, along said Westerly line, a distance of 665.00 feet to a point on the South line of the North 1/2 of the Southeast 1/4 of the Southwest 1/4 of said Section 2 and the Point of Beginning of the herein described parcel of land; thence continue North 00°21'51" East, along said Westerly line, a

O2582698.v1

distance of 223.11 feet to a point on the South line of Kingswood Condominium, Phase Three, Apartment Building No. 127 Parcel, as recorded in Official Records Book 637, Page 1736, Public Records of Martin County, Florida; thence the following courses, along the South line of Building No. 127 Parcel, South 89°44'25" East a distance of 81.08 feet; thence North 86°04'20" East a distance of 157.10 feet to the Southwest corner of Kingswood Condominium, Phase Three, Apartment Building No. 129 Parcel, as recorded in Official Records Book 597, Page 389, Public Records of Martin County, Florida; thence North 80°22'19" East, along the South line of said Building No. 129 Parcel, a distance of 118.87 feet to a point on West line of the drainage area conveyed to Kingswood Association No. 3, Inc., a Florida not for profit corporation, as recorded in Official Records Book 476, Page 2524, Public Records of Martin County, Florida; thence the following courses along said drainage area, South 09°37'41" East a distance of 18.13 feet; thence South 84°37'41" East a distance of 15.97 feet to the Northwest corner of Kingswood Condominium, Phase Three, Apartment Building No. 121 Parcel, as recorded in Official Records Book 729, Page 317, Public Records of Martin County, Florida; thence South 02°32'41" East, along the West line of said Building No. 121 Parcel, a distance of 107.60 feet to a point on the North line of Kingswood Condominium, Phase Three, Apartment No. 124 Parcel, as recorded in Official Records Book 739, Page 537, Public Records of Martin County, Florida; thence South 84°58'52" West, along the North line of said Building No. 124 Parcel, and the North line of Kingswood Condominium, Phase Three, Apartment No. 126 Parcel, as recorded in Official Records Book 719, Page 2289, Public Records of Martin County, Florida, a distance of 147.38 feet; thence South 85°01'04" West a distance of 27.38 feet to the Northeast Corner of Kingswood Condominium, Phase Three, Apartment Building No. 128 Parcel; thence North 89°32'40" West, along the North line of said parcel, a distance of 145.35 feet; thence South 00°21'51" West, along the West line of said Building No. 128 Parcel, a distance of 112.67 feet to a point on the South line of the North 1/2 of the Southeast 1/4 of the Southwest 1/4 of said Section 2; thence North 89°31'49" West, along said South line, a distance of 60.00 feet to the Point of Beginning.

Parcel B:

A parcel of land lying in Section 2, Township 38 South, Range 41 East, Martin County, Florida, said parcel being more particularly described as follows:

Commence at the Southwest corner of said Section 2, thence bear South 89°32'19" East, along the South line of said Section 2, a distance of 1,333.00 feet to a point on the West line of the Southeast 1/4 of the Southwest 1/4 of said Section 2; thence North 00°21'51" East, along said West line, a distance of 665.00 feet to a point on the South line of the North 1/2 of the Southeast 1/4 of the Southwest 1/4 of said Section 2; thence South 89°31'49" East, along said South line, a distance of 909.51 feet to the Southeast corner of Kingswood Condominium Apartment Building No. 118 Parcel, as recorded in Official Records Book 790, Page 985, Public Records of Martin County, Florida, and the Point of Beginning of the herein described parcel of land; thence proceed North 02°40'00" West, along the Easterly line of said Building No. 118 Parcel, a distance of 127.86 feet to a point on the South line of Kingswood Apartment Building No. 115 Parcel, as recorded in Official Records Book 790, Page 938, Public Records of Martin County, Florida; thence the following courses along said parcel, North 85°41'06" East, a distance of 78.68 feet; thence North 00°00'00" East a distance of 90.73 feet to a point on the South line of the drainage area conveyed to Kingswood Association No. 3, Inc., a Florida not for profit corporation, recorded in Official Records Book 476, Page 2524, Public Records of Martin County, Florida; thence the following courses along said drainage area, South 74°37'41" East a distance of 13.88 feet; thence South 84°37'41" East a distance of 98.97 feet; thence North 10°22'19" East a distance of 208.26 feet to a point on the West line of the 44 foot parcel added to Kingswood Condominium Building No. 109 Parcel, as recorded in Official Records Book 1117, Page 281, Public Records of Martin County, Florida; thence South 00°40'15" West, along said West line, a distance of 84.86 feet to the Northwesterly corner of

EXHIBIT B – LOCATION MAP

Stuart Ocean Townhomes

Acrial Map
City of Stuart

Prepared by:

HJA DESIGN STUDIO

North

Project # : 19005

EXHIBIT C – DEVELOPMENT CONDITIONS

Approved Plans and Documents

1. The Stuart Ocean Townhomes RPUD project and use thereof shall comply with the following drawings:

a. **Major Development Site Plan (RPUD), Sheet SP-1, Sheet SP-2 &Sheet SP-3 prepared by HJA Design Studio, dated 09.20.19, resubmitted on 12.05.19.**
b. **ALTA/NSPS Land Title Survey, Sheets 1 & 2 of 2, by Caulfield and Wheeler, Inc, dated 05.1.2019.**
c. **Existing Tree Survey / Removal Plan, Landscape Plan, and Landscape Specifications, Sheets LP-1, LP-2, LP-3, LP-4, LP-5, LP-6, prepared by HJA Design Studios, dated 09.06.19, and most recently submitted on 1-16-20.**
d. **Architectural Floor Plans & Elevations and rendering, prepared by Florida Zone, dated 02.16.18**
e. **Truck Route Plan, Sheets TR-1, TR-2 dated 09/20/2019, by Bowman Consulting, dated 09.20.19.**
f. **Site Lighting Photometric Plan, Sheets L-1 & L-2, by HJA Design Studio, dated, 09.18.19.**

2. Any modifications to the Master RPUD Site Plan that exceeds 10% of the approved building footprint, building setbacks, gross square footage, building location, parking size, location and number of parking, drainage areas, and location of landscaping may be approved by the City's Development Director, provided however, the Development Director may refer the matter to the City Commission for approval via a public hearing.

3. Development of the Subject Property as a RPUD shall include an impervious area of not more than 248,848 sf or 5.71 acres (52% of the site) within the RPUD. The maximum building height within the RPUD shall be 2 stories or 30 feet. Height shall be measured

from the lowest permissible finished first floor elevation to the surface of a flat roof or to the eave of a pitched roof. The peak of a pitched roof may not exceed 15 feet above the maximum building height.

4. The developer shall post a sign at the mailboxes located along perpendicular stalls reserving spaces specifically for mail delivery and pick-up only.

Landscaping

5. The common areas shall be provided with landscaping with an irrigation system of enough capacity to maintain the landscaping in a healthy growing condition.

6. The City's landscape inspector shall have the opportunity to inspect all trees and/or landscape material with the landscape architect prior to installation. The developer shall bear the pass-thru fee for landscape consulting fees not to exceed $1,500.00.

7. A Landscape maintenance plan, executed in accordance with the Land Development Regulations, shall be submitted to the Development Department and approved prior to the issuance of a certificate of occupancy.

Required Pervious and Native Preserve Area

8. Not less than 28.0% (3.11 acres) of the RPUD shall be Native Preserve that may include landscaped buffer and a .40 acre offsite preservation credit (Parcel B) areas as depicted on the Master Site Plan by HJA Design Studios as described in Exhibit C.

Tree Mitigation

9. The project shall comply with project's tree mitigation plan, Sht. LP-3 by HJA Design Studio including $111,125 contribution to the City's Tree fund.

Prior to Issuance of Site Permits

10. Applicant shall provide a digital boundary survey and civil plan prior to the issuance of a site permit.

11. Civil Plans shall be reviewed and approved by all applicable City departments prior to the issuance of a site permit.

12. All regulatory agency permits, including but not limited to the South Florida Water Management District and Army Corp of Engineers, shall be obtained by the applicant and copies provided to the City prior to the commencement of any development activities.

13. All development activities shall comply with the City's Concurrency Management System prior to the issuance of building permits.

Development and Construction

14. The Developer shall construct the project's infrastructure in one phase and is required to control the sales of lots in blocks and will create a lot sales and construction plan which shall be provided to the City's Development Department for review and approval prior to application for the first building permit. The last building's townhouse unit shall obtain a certificate of occupancy by December 30, 2023.

15. The developer shall obtain an easement from the Kingswood Condo Association for the access egress over the remaining existing roadway at the project's entry along SE Ocean Blvd.

16. The Developer shall install landscaping development's entry as shown on the landscaping plan prior to the first certificate of occupancy for a residential unit.

17. The developer shall eradicate all invasive vegetation for the entire site to be completed and inspected prior the first building permit being issued.

18. The property owner shall provide easements for licensed cable services. Preserve area easements shall be dedicated to state agencies with the City of Stuart having the option to have those same easements.

19. Water Services shall be provided by the City of Stuart with the site water supply taking place at/from the City of Stuart owned infrastructure and within the SE Ocean Blvd. R.O.W. with applicable backflow.

20. Sewer Services shall be provided by Martin County Utilities. Additionally, the development shall use reclaimed water (Purple Pipe) for watering common areas and make available to individual lots if made available by Martin County.

21. In the event of any conflict in the provisions of Exhibit 'C' Development Conditions and attached exhibits, Exhibit 'C' shall prevail.

22. Prior to certificate of occupancy of the last building, the applicant shall provide an engineer's written confirmation attesting that the RPUD's storm water system is in place and functioning in compliance with all approved plans and specifications.

23. Erosion and dust control measures to be implemented during construction shall be provided on the civil plans and submitted during site permit review. Water trucks shall be provided by the applicant as necessary during construction in order to reduce dust generated on-site.

24. All utility improvements constructed by the developer within DOT's right-of-way, shall be constructed in a manner and form acceptable to the DOT.

25. The project's Native Planting schemes at the lake will be designed using Low Impact Development "(LID) Techniques as described in the University of Florida IFSA Extension publication LID Practices: Integration Wetlands and Enhancing Storm water Basins".

26. Temporary or freestanding storage units are prohibited on the property once construction is complete.

27. A lighting plan shall be included on the Landscape plan for the community's common areas including any street lighting at permitting. All lights at the common areas shall be limited to 15 feet in height and shielded from neighboring property.

28. Site work including but not limited to land preparation, wet pond lake excavation, clearing and grading, drainage and water, irrigation lines, shall be reviewed approved by the City's Public Works department and the city's engineering consultant prior to permitting.

29. The developer shall make provision for the modification of the road system abutting the Kingwood pool area(s) shall be phased to maintain access to the pool area by residents.

Signage

30. All signs throughout the PUD must have a consistent treatment, as to number, location, size, height, lighting, and materials with a unified theme throughout the Planned Unit Development. The development's monument sign shall adhere to the conceptual Monument Sign on sheet SP-2 by HJA Design Studio.

Platting- HOA Requirements & Future Amendments

31. Plat approval per Section 11.01.06.1 shall occur prior to any future development permit for any development activity, no permit for development including site work and infrastructure, shall be issued by the City unless and until a plat has been approved by the City Commission and recorded in the public records.

32. The PUD may be conveyed to 80 separate homeowners without further amendment to this Ordinance. Prior to application for any development, the applicant/developer shall

form a HOA (Homeowners Association) or other similar entity acceptable to the City Attorney, which shall be singularly responsible for the perpetual maintenance of the common site features and include restrictions regarding boats, boat trailers, sheds, etc.

33. City of Stuart waste receptacles, including recycle shall be stored in garages only. The developments HOA shall be responsible for enforcing this waste receptable policy. The property-owners association shall pay for initial bins (one trash bin and one recycle bin) for each unit for a total of 80 trash bins and 80 recycle bins at the time of permitting. The City will provide a single bill to the POA for trash pick-up.

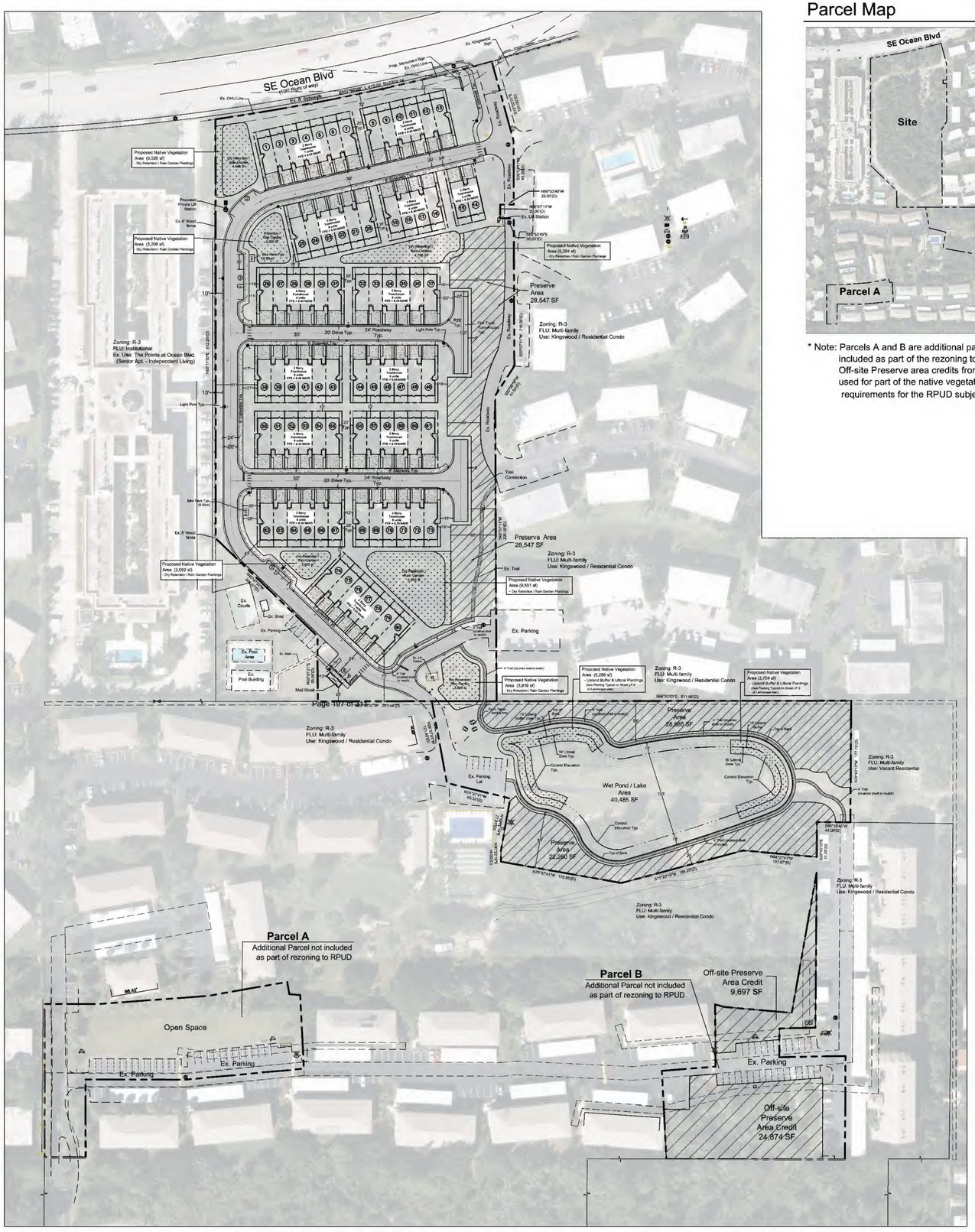
34. There shall be no on street parking on trash/recycle collection days. The developer and home-owners association shall request and consent to law enforcement entry to property and enforcement of state and city laws to include traffic enforcement. Additionally, the City of Stuart Police Department shall have authority to enforce city laws and all conditions of development of Ordinance 2435-2020.

35. No yard waste shall be placed in the street.

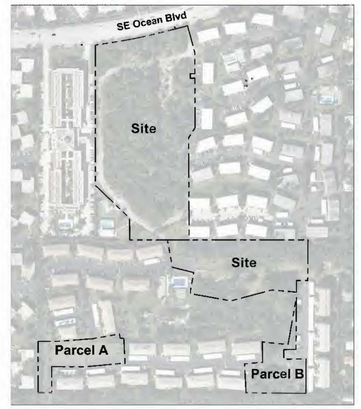
36. All new fences shall be maintained by the Stuart Ocean Townhomes Home-Owners Association.

37. Any applications to amend this Ordinance shall be limited to the developer or the Home-Owners Association.

38. The Home-Owner's Association shall regulate any permits for guest parking.



Parcel Map



* Note: Parcels A and B are additional parcels and are not included as part of the rezoning to RPUD.
Off-site Preserve area credits from Parcel B shall be used for part of the native vegetation / preserve area requirements for the RPUD subject property.

Location Map

Site Data

Total Site Area	11.04 Ac. / 481,103 sf
Future Land Use	Multi-family Residential
Existing Zoning	R-3
Proposed Zoning	RPUD
Proposed Use	2-Story / Single Family Townhomes
Proposed Dwelling Units	80

Density

Maximum Density - 30 DU/Ac. (11.04 Ac. x 30)	331 Max. Units
Proposed Density	80 Units
Proposed Gross Site Density	7.25 DU / Ac.

Impervious Area

Building Coverage	83,230 sf	1.91 Ac.	17%
Existing & Proposed Vehicular Use Areas	66,670 sf	1.53 Ac.	14%
Sidewalks / Paved Areas / Rear Patios	58,463 sf	1.34 Ac.	12%
Wet Pond / Lake	40,485 sf	0.93 Ac.	9%
Total:	248,848 sf	5.71 Ac.	52%

Pervious Area / Open Space

Dry Detention Areas	26,848 sf	0.62 Ac.	6%
Native Preserve Areas (On-site)	79,692 sf	1.83 Ac.	16%
Other Landscape / Open Space	125,715 sf	2.88 Ac.	26%
Total:	232,255 sf	5.33 Ac.	48%

Native Vegetation Area / Upland Preserve Data

Required Native Vegetation Area:	(481,103 sf x 25%)	120,275 sf / 2.76 Ac. / 25%
Provided Native Vegetation Area:		135,374 sf / 3.11 Ac. / 28%
Native Upland Preserve Areas		79,692 sf / 1.83 Ac.
Parcel B - Offsite Preserve Area Credit	(34,571 sf x 50% Credit)	17,285 sf / 0.40 Ac.
Proposed Native Vegetation Area		38,397 sf / 0.88 Ac.

Parking Data

Required Parking Spaces: (2 spaces per unit w/ 2 or more bedrooms)	160 Spaces
Provided Parking Spaces:	198 Spaces
One Car Garages (80 D.U.)	80 Spaces
One Car Driveways (53 D.U.)	53 Spaces
Two Car Driveways (27 D.U.)	54 Spaces
On-Street Parking (3 - 9' x 18 + 1 Handicap + 7 Parallel)	11 Spaces

Required Minimum Building Setbacks

Front Setback (From SE Ocean Blvd / North Property):	25 ft
Side Setback (From East And West Property Line):	15 ft (10 ft for Mail Kiosk)
Rear Setback (From South Property Line):	20 ft (10 ft for Mail Kiosk)

Lot Building Setbacks

Front Setback :	20 ft
Side Setback (Exterior Units):	4 ft
Side Setback (interior Units):	0 ft
Rear Setback :	10 ft
Building Separtion :	20 ft

Legend

Ex. Preserve Area

Proposed Native Vegetation Area

Site Lighting / Light Pole Typ.

Scale: 1" = 80'

0' 40' 80' 160' 240'

North

HJA DESIGN STUDIO
LANDSCAPE ARCHITECTURE
50 E. Ocean Blvd., Suite 101
Stuart, Florida 34994
T 772.678.7200
F 772.678.7201
www.hjadesignstudio.com
LA 0000905

Stuart Ocean Townhomes

City of Stuart
Major Development Site Plan (RPUD)

Florida

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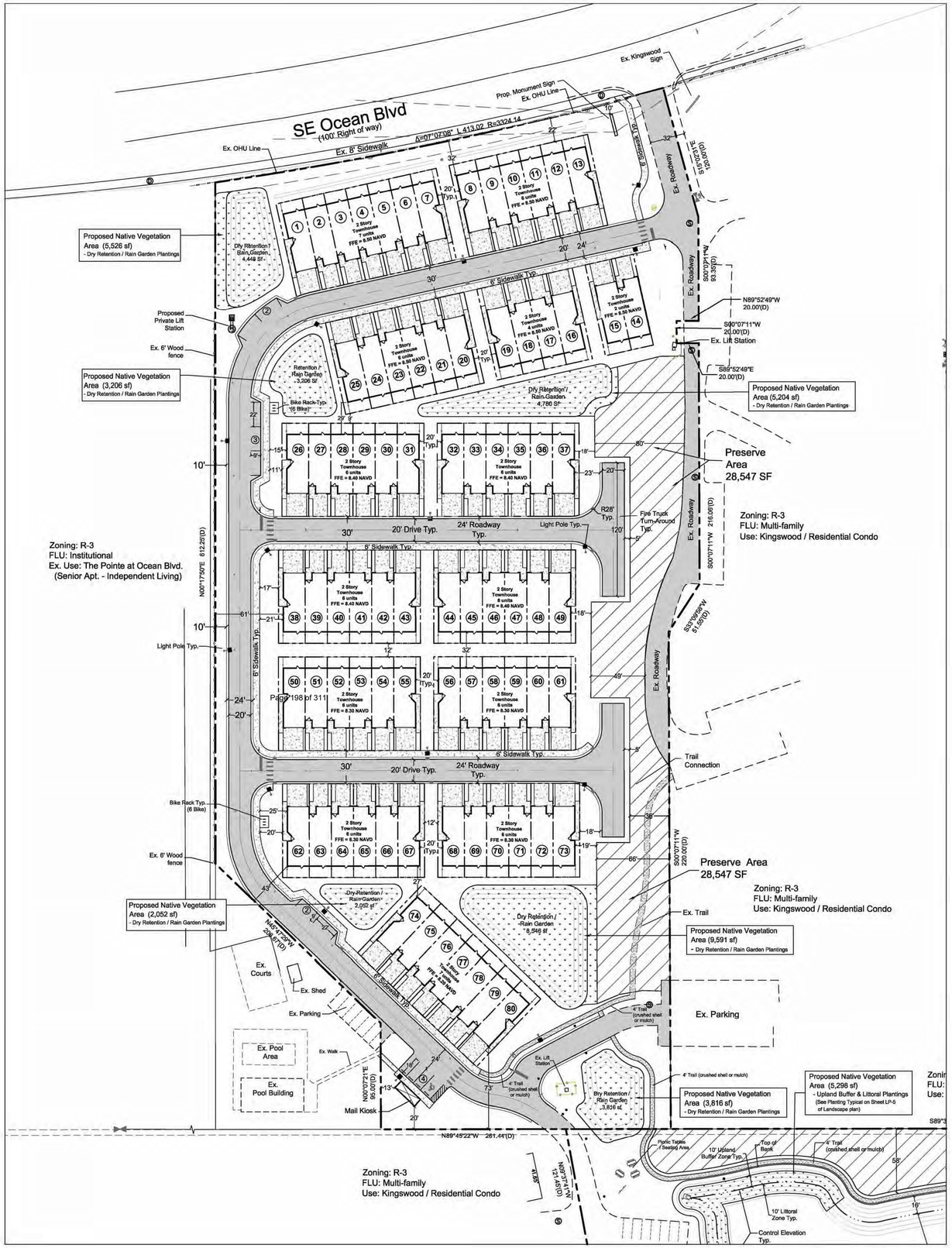
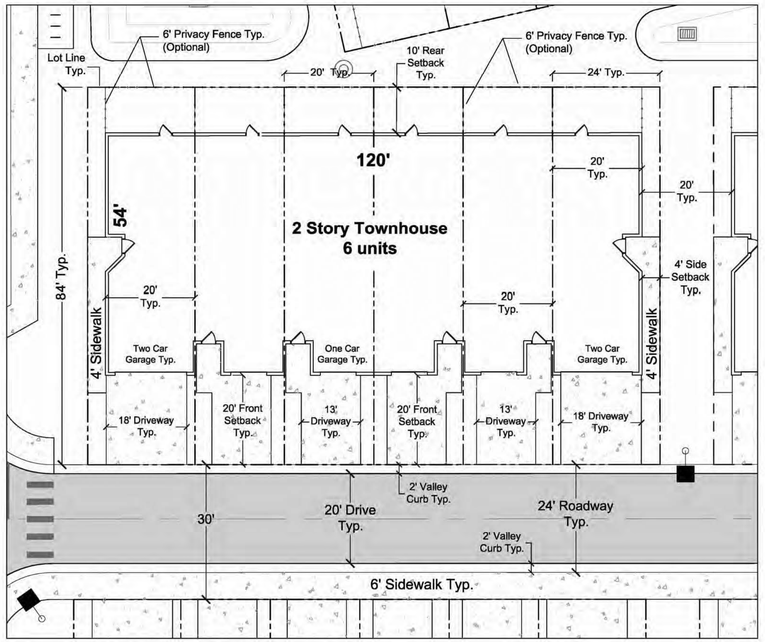
Job No.	19005
Drawn By	TT
Checked By	MH
Approved By	MH
Submittal Dates	9-20-19
	12-05-19
Revision Dates	

SP-1



Townhouse & Lot Typical

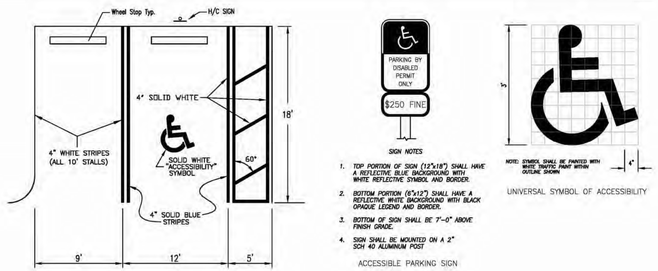


Lot Building Setbacks

Front Setback :	20 ft
Side Setback (Exterior Units):	4 ft
Side Setback (interior Units):	0 ft
Rear Setback :	10 ft
Building Separtion :	20 ft

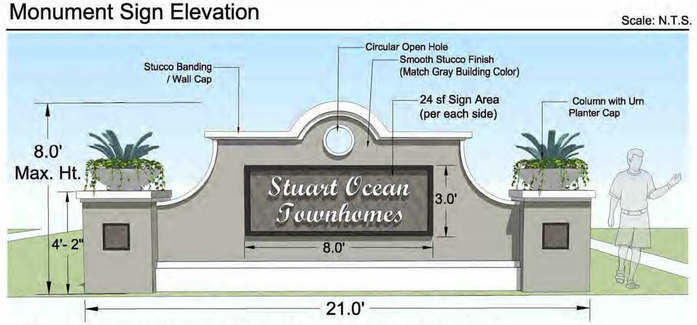
Parking Space Detail

Scale: N.T.S.



Monument Sign Elevation

Scale: N.T.S.



*Note: Monument Sign is conceptual. Final sign design and dimensions may vary.

Scale: 1" = 50'

0' 25' 50' 100' 150'

North

HJA DESIGN STUDIO LANDSCAPE ARCHITECTURE
50 E. Ocean Blvd., Suite 101
Stuart, Florida 34994
T 772.678.7200
F 772.678.7201
www.hjadesignstudio.com
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Stuart Ocean Townhomes

City of Stuart
Florida
Major Development Site Plan (RPUD)

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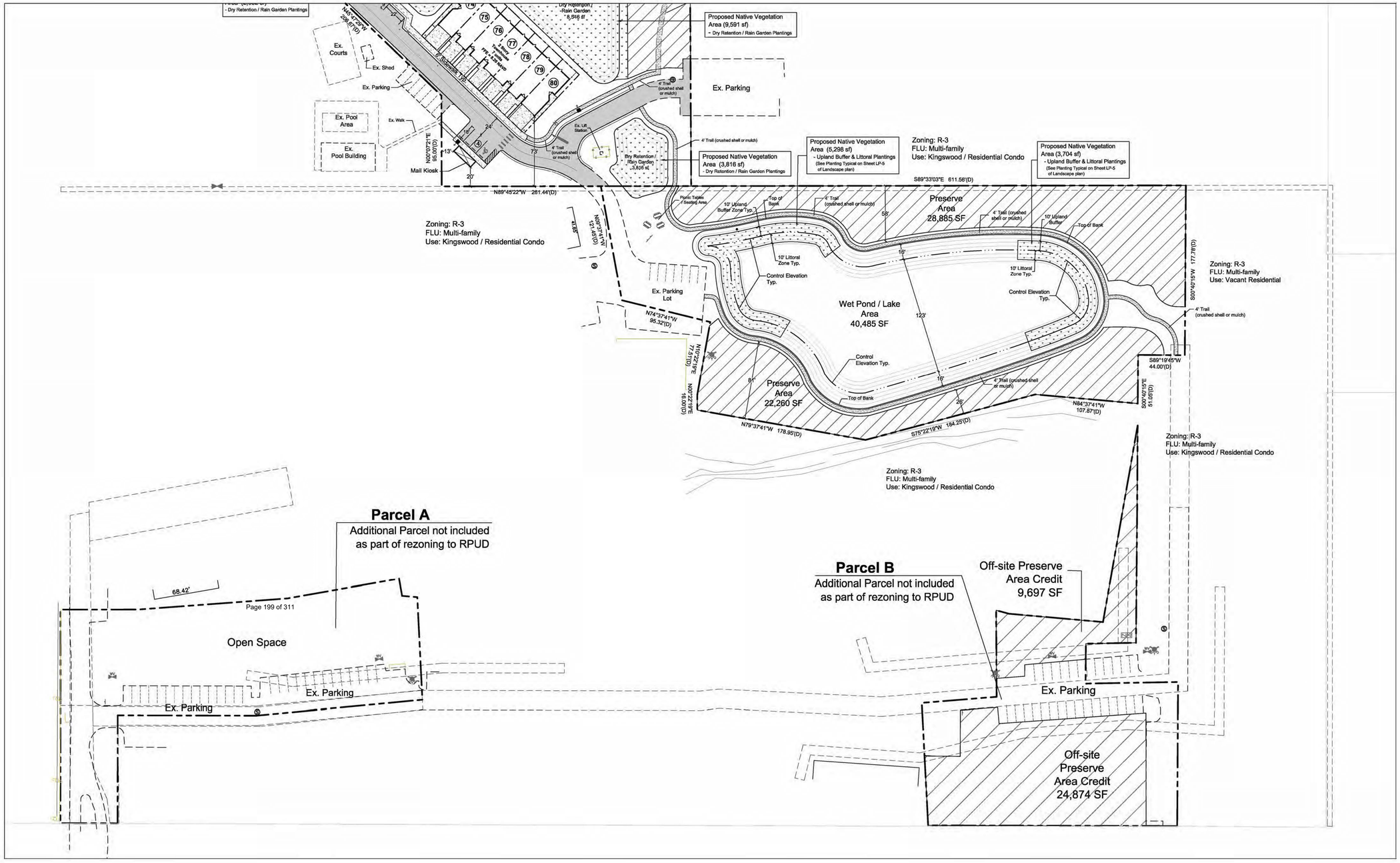
Job No.	19005
Drawn By	TT
Checked By	MH
Approved By	MH
Submittal Dates	9-20-19
	12-05-19
Revision Dates	

SP-2



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Stuart Ocean Townhomes

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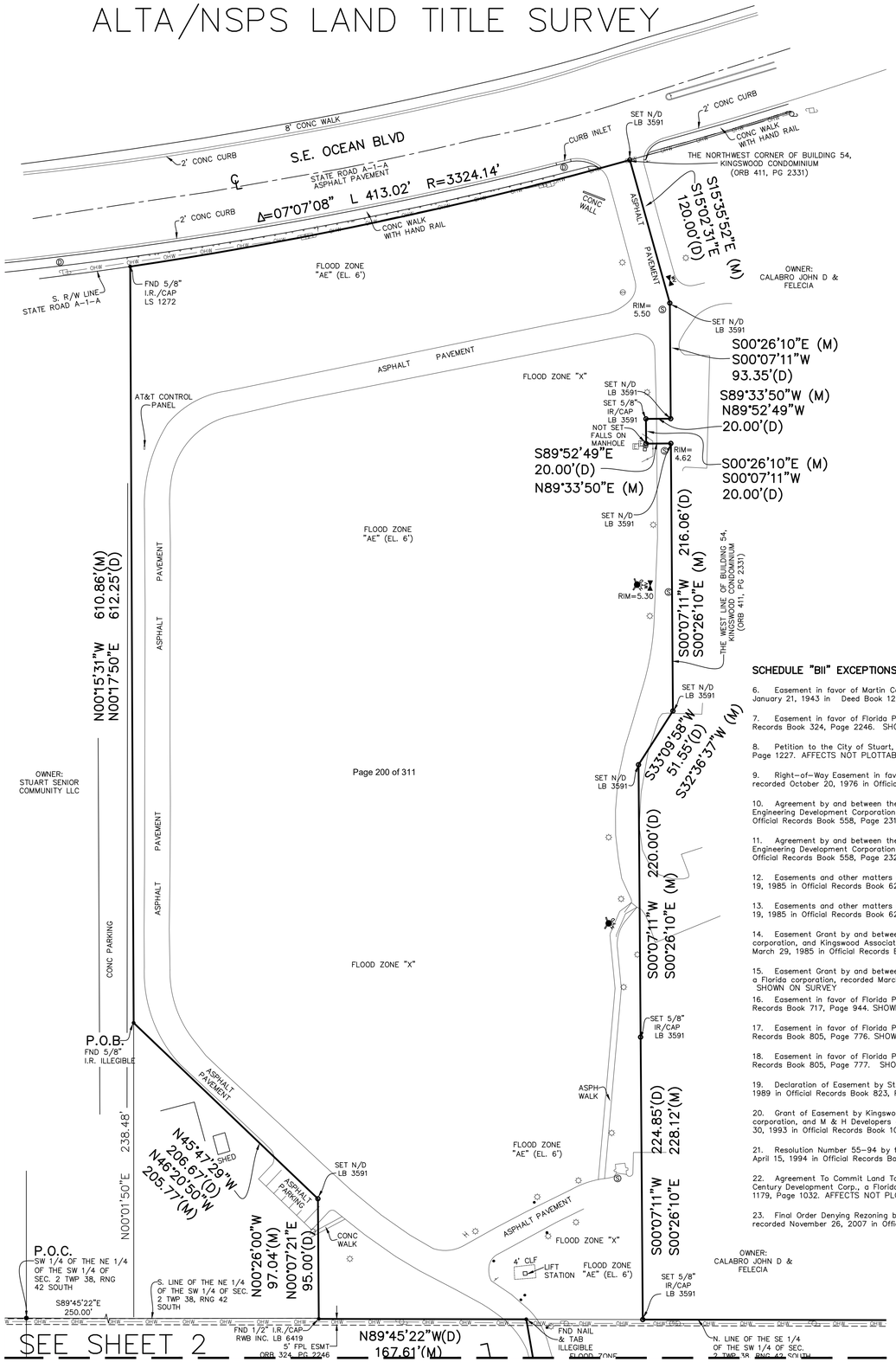
Scale: 1" = 50'
0' 25' 50' 100' 150'
North

SP-3

ALTA/NSPS LAND TITLE SURVEY



SEE SHEET 2

SCHEDULE "BII" EXCEPTIONS

6. Easement in favor of Martin County, a political subdivision of the State of Florida, recorded January 21, 1943 in Deed Book 12, Page 506. BLANKET EASEMENT

7. Easement in favor of Florida Power & Light Company recorded March 1, 1971 in Official Records Book 324, Page 2246. SHOWN ON SURVEY

8. Petition to the City of Stuart, Florida, recorded May 22, 1972 in Official Records Book 339, Page 1227. AFFECTS NOT PLOTTABLE

9. Right-of-Way Easement in favor of Southern Bell Telephone and Telegraph Company recorded October 20, 1976 in Official Records Book 408, Page 1241. AFFECTS NOT PLOTTABLE

10. Agreement by and between the City of Stuart, Florida, a municipal corporation, and Florida Engineering Development Corporation, a Florida corporation, recorded December 14, 1982 in Official Records Book 558, Page 2310. AFFECTS NOT PLOTTABLE

11. Agreement by and between the City of Stuart, Florida, a municipal corporation, and Florida Engineering Development Corporation, a Florida corporation, recorded December 14, 1982 in Official Records Book 558, Page 2323. AFFECTS NOT PLOTTABLE

12. Easements and other matters as shown on Kingswood South Site Plan recorded February 19, 1985 in Official Records Book 627, Page 2006. AFFECTS NOT PLOTTABLE

13. Easements and other matters as shown on Kingswood South Site Plan recorded February 19, 1985 in Official Records Book 627, Page 2394. AFFECTS NOT PLOTTABLE

14. Easement Grant by and between Florida Engineering Development Corporation, a Florida corporation, and Kingswood Association No. 4, Inc., a Florida not for profit corporation, recorded March 29, 1985 in Official Records Book 631, Page 1771.SHOWN ON SURVEY

15. Easement Grant by and between Angela McLaughlin and J. Byrnes Development Group, Inc., a Florida corporation, recorded March 6, 1987 in Official Records Book 710, Page 1696. SHOWN ON SURVEY

16. Easement in favor of Florida Power & Light Company recorded April 30, 1987 in Official Records Book 717, Page 944. SHOWN ON SURVEY

17. Easement in favor of Florida Power & Light Company recorded March 30, 1989 in Official Records Book 805, Page 776. SHOWN ON SURVEY

18. Easement in favor of Florida Power & Light Company recorded March 30, 1989 in Official Records Book 805, Page 777. SHOWN ON SURVEY

19. Declaration of Easement by St. Lucie View, Inc., a Florida corporation, recorded August 10, 1989 in Official Records Book 823, Page 1885. SHOWN ON SURVEY

20. Grant of Easement by Kingswood Association No. 3, Inc., a Florida not-for-profit corporation, and M & H Developers of Palm Beach, Inc., a Florida corporation, recorded December 30, 1993 in Official Records Book 1048, Page 1055. SHOWN ON SURVEY

21. Resolution Number 55-94 by the City Commission of the City of Stuart, Florida, recorded April 15, 1994 in Official Records Book 1066, Page 880. AFFECTS PARCELS A, B AND C ONLY NOT PLOTTABLE

22. Agreement To Commit Land To Development by and between Angela C. McLaughlin and Century Development Corp., a Florida corporation, recorded May 24, 1996 in Official Records Book 1179, Page 1032. AFFECTS NOT PLOTTABLE

23. Final Order Denying Rezoning by the City Commission of the City of Stuart, Florida, recorded November 26, 2007 in Official Record. AFFECTS NOT PLOTTABLE

DESCRIPTION:

A PARCEL OF LAND LYING IN SECTION 2, TOWNSHIP 38 SOUTH, RANGE 41 EAST, MARTIN COUNTY, FLORIDA, LYING SOUTH OF THE RIGHT-OF-WAY FOR STATE ROAD A-1-A.

LESS AND EXCEPT THE WESTERLY 250.00 FEET THEREOF.

ALSO, LESS AND EXCEPT BUILDINGS 1 THROUGH 21, INCLUSIVE, BUILDINGS 33 THROUGH 43, INCLUSIVE, BUILDINGS 53 THROUGH 59, INCLUSIVE, RECREATION AREAS 1, 2 AND 3, AND SEWER PUMP STATIONS 1 AND 2, KINGSWOOD CONDOMINIUM APARTMENT BUILDINGS, ACCORDING TO THE DECLARATIONS OF CONDOMINIUM THEREOF, RECORDED IN OFFICIAL RECORDS BOOK 325, PAGE 1560, OFFICIAL RECORDS BOOK 332, PAGE 2706, OFFICIAL RECORDS BOOK 344, PAGE 1409, OFFICIAL RECORDS BOOK 359, PAGE 1191, OFFICIAL RECORDS BOOK 360, PAGE 546, OFFICIAL RECORDS BOOK 366, PAGE 1974, OFFICIAL RECORDS BOOK 366, PAGE 2065, OFFICIAL RECORDS BOOK 367, PAGE 2659, OFFICIAL RECORDS BOOK 369, PAGE 1771, OFFICIAL RECORDS BOOK 391, PAGE 1877, OFFICIAL RECORDS BOOK 392, PAGE 1887, OFFICIAL RECORDS BOOK 393, PAGE 1094, OFFICIAL RECORDS BOOK 399, PAGE 1214, OFFICIAL RECORDS BOOK 406, PAGE 504, OFFICIAL RECORDS BOOK 406, PAGE 593, OFFICIAL RECORDS BOOK 411, PAGE 2331 AND OFFICIAL RECORDS BOOK 426, PAGE 696, AND ANY AMENDMENTS THERETO, OF THE PUBLIC RECORDS OF MARTIN COUNTY, FLORIDA.

THE ABOVE DESCRIBED PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

FROM THE SOUTHWEST CORNER OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 2, BEAR SOUTH 89°45'22" EAST, ALONG THE SOUTH LINE OF SAID NORTHEAST 1/4, A DISTANCE OF 250.00 FEET; THENCE NORTH 00°17'50" EAST A DISTANCE OF 238.48 FEET TO THE POINT OF BEGINNING; THENCE CONTINUE NORTH 00°17'50" EAST A DISTANCE OF 612.25 TO A POINT ON THE SOUTH RIGHT-OF-WAY LINE OF STATE ROAD A-1-A, SAID POINT BEING A CURVE CONCAVE TO THE NORTH, HAVING A RADIUS OF 3,324.14 FEET, WHOSE CENTER BEARS NORTH 07°54'58" WEST, HAVING A CHORD BEARING AND DISTANCE OF NORTH 78°31'28" EAST 412.75 FEET; THENCE EASTERLY, ALONG THE ARC OF SAID CURVE THROUGH A CENTRAL ANGLE OF 07°07'08", A DISTANCE OF 413.02 FEET TO THE NORTHWEST CORNER OF BUILDING 54, KINGSWOOD CONDOMINIUM, AS RECORDED IN OFFICIAL RECORDS BOOK 411, PAGE 2331, PUBLIC RECORDS OF MARTIN COUNTY, FLORIDA; THENCE THE FOLLOWING COURSES ALONG SAID KINGSWOOD CONDOMINIUM, SOUTH 15°02'31" EAST A DISTANCE OF 120.00 FEET; THENCE SOUTH 00°07'11" WEST A DISTANCE OF 93.35 FEET; THENCE NORTH 89°52'49" WEST A DISTANCE OF 20.00 FEET; THENCE SOUTH 00°07'11" WEST A DISTANCE OF 20.00 FEET; THENCE SOUTH 89°52'49" EAST A DISTANCE OF 20.00 FEET; THENCE SOUTH 00°07'11" WEST A DISTANCE OF 216.06 FEET; THENCE SOUTH 33°09'58" WEST A DISTANCE OF 51.55 FEET; THENCE SOUTH 00°07'11" WEST A DISTANCE OF 220.00 FEET; THENCE CONTINUE SOUTH 00°07'11" WEST A DISTANCE OF 224.85 FEET TO A POINT ON THE NORTH LINE OF THE SOUTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 2; THENCE SOUTH 89°33'03" EAST, ALONG SAID NORTH LINE, A DISTANCE OF 517.30 FEET; THENCE SOUTH 00°40'15" WEST A DISTANCE OF 177.78 FEET; THENCE NORTH 89°19'45" WEST A DISTANCE OF 5.00 FEET TO THE NORTHEAST CORNER OF THE 44 FOOT PARCEL ADDED TO KINGSWOOD CONDOMINIUM BUILDING NO. 109 PARCEL, AS RECORDED IN OFFICIAL RECORDS BOOK 1117, PAGE 281, PUBLIC RECORDS OF MARTIN COUNTY, FLORIDA; THENCE THE FOLLOWING COURSES ALONG SAID PARCEL, NORTH 89°19'45" WEST A DISTANCE OF 44.00 FEET; THENCE SOUTH 00°40'15" WEST A DISTANCE OF 51.05 FEET TO A POINT ON THE NORTH LINE OF THE DRAINAGE AREA CONVEYED TO KINGSWOOD ASSOCIATION NO. 3, INC., A FLORIDA NOT FOR PROFIT CORPORATION, AS RECORDED IN OFFICIAL RECORDS BOOK 476, PAGE 2524, PUBLIC RECORDS OF MARTIN COUNTY, FLORIDA; THENCE THE FOLLOWING COURSES ALONG SAID DRAINAGE AREA, NORTH 84°37'41" WEST A DISTANCE OF 107.87 FEET; THENCE SOUTH 75°22'19" WEST A DISTANCE OF 184.25 FEET; THENCE NORTH 79°37'41" WEST A DISTANCE OF 178.95 FEET TO A POINT ON THE EAST LINE OF RECREATION AREA NO. 4 PARCEL, AS DESCRIBED IN OFFICIAL RECORDS BOOK 1501, PAGE 1564, PUBLIC RECORDS OF MARTIN COUNTY, FLORIDA; THENCE THE FOLLOWING COURSES ALONG SAID RECREATION AREA NO. 4 PARCEL, NORTH 00°22'19" EAST A DISTANCE OF 16.00 FEET; THENCE NORTH 10°22'19" EAST A DISTANCE OF 77.51 FEET; THENCE NORTH 74°37'41" WEST A DISTANCE OF 95.32 FEET; THENCE LEAVING SAID RECREATION AREA NO. 4 PARCEL, NORTH 09°37'41" WEST A DISTANCE OF 121.45 FEET TO A POINT ON THE SOUTH LINE OF THE NORTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 2; THENCE NORTH 89°45'22" WEST, ALONG SAID SOUTH LINE, A DISTANCE OF 167.61 FEET; THENCE NORTH 00°07'21" EAST A DISTANCE OF 95.00 FEET; THENCE NORTH 45°47'29" WEST A DISTANCE OF 206.67 FEET TO THE POINT OF BEGINNING.

SAID LANDS SITUATE IN MARTIN COUNTY, FLORIDA.

CONTAINING 481,103 SQ. FT. / 11.045 ACRES, MORE OR LESS. (M)

SUBJECT TO EASEMENTS, RESTRICTIONS, RESERVATIONS, COVENANTS, AND RIGHTS-OF-WAY OF RECORD.

TOGETHER WITH:

PARCEL A:

A PARCEL OF LAND LYING IN SECTION 2, TOWNSHIP 38 SOUTH, RANGE 41 EAST, MARTIN COUNTY, FLORIDA, SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHWEST CORNER OF AFORESAID SECTION 2, THENCE BEAR SOUTH 89°32'19" EAST, ALONG THE SOUTH LINE OF SAID SECTION 2, A DISTANCE OF 1,333.00 FEET TO A POINT ON THE WESTERLY LINE OF THE SOUTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 2; THENCE NORTH 00°21'51" EAST, ALONG SAID WESTERLY LINE, A DISTANCE OF 665.00 FEET TO A POINT ON THE SOUTH LINE OF THE NORTH 1/2 OF THE SOUTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 2 AND THE POINT OF BEGINNING OF THE HEREIN DESCRIBED PARCEL OF LAND; THENCE CONTINUE NORTH 00°21'51" EAST, ALONG SAID WESTERLY LINE, A DISTANCE OF 223.11 FEET TO A POINT ON THE SOUTH LINE OF KINGSWOOD CONDOMINIUM, PHASE THREE, APARTMENT BUILDING NO. 127 PARCEL, AS RECORDED IN OFFICIAL RECORDS BOOK 637, PAGE 1736, PUBLIC RECORDS OF MARTIN COUNTY, FLORIDA; THENCE THE FOLLOWING COURSES, ALONG THE SOUTH LINE OF BUILDING NO. 127 PARCEL, SOUTH 89°44'25" EAST A DISTANCE OF 81.08 FEET; THENCE NORTH 86°04'20" EAST A DISTANCE OF 157.10 FEET TO THE SOUTHWEST CORNER OF KINGSWOOD CONDOMINIUM, PHASE THREE, APARTMENT BUILDING NO. 129 PARCEL, AS RECORDED IN OFFICIAL RECORDS BOOK 597, PAGE 389, PUBLIC RECORDS OF MARTIN COUNTY, FLORIDA; THENCE NORTH 80°22'19" EAST, ALONG THE SOUTH LINE OF SAID BUILDING NO. 129 PARCEL, A DISTANCE OF 118.87 FEET TO A POINT ON WEST LINE OF THE DRAINAGE AREA CONVEYED TO KINGSWOOD ASSOCIATION NO. 3, INC., A FLORIDA NOT FOR PROFIT CORPORATION, AS RECORDED IN OFFICIAL RECORDS BOOK 476, PAGE 2524, PUBLIC RECORDS OF MARTIN COUNTY, FLORIDA; THENCE THE FOLLOWING COURSES ALONG SAID DRAINAGE AREA, SOUTH 09°37'41" EAST A DISTANCE OF 18.13 FEET; THENCE SOUTH 84°37'41" EAST A DISTANCE OF 15.97 FEET TO THE NORTHWEST CORNER OF KINGSWOOD CONDOMINIUM, PHASE THREE, APARTMENT BUILDING NO. 121 PARCEL, AS RECORDED IN OFFICIAL RECORDS BOOK 729, PAGE 317, PUBLIC RECORDS OF MARTIN COUNTY, FLORIDA; THENCE SOUTH 02°32'41" EAST, ALONG THE WEST LINE OF SAID BUILDING NO. 121 PARCEL, A DISTANCE OF 107.60 FEET TO A POINT ON THE NORTH LINE OF KINGSWOOD CONDOMINIUM, PHASE THREE, APARTMENT NO. 124 PARCEL, AS RECORDED IN OFFICIAL RECORDS BOOK 739, PAGE 537, PUBLIC RECORDS OF MARTIN COUNTY, FLORIDA; THENCE SOUTH 84°58'52" WEST, ALONG THE NORTH LINE OF SAID BUILDING NO. 124 PARCEL, AND THE NORTH LINE OF KINGSWOOD CONDOMINIUM, PHASE THREE, APARTMENT NO. 126 PARCEL, AS RECORDED IN OFFICIAL RECORDS BOOK 719, PAGE 2289, PUBLIC RECORDS OF MARTIN COUNTY, FLORIDA, A DISTANCE OF 147.38 FEET; THENCE SOUTH 85°01'04" WEST A DISTANCE OF 27.38 FEET TO THE NORTHEAST CORNER OF KINGSWOOD CONDOMINIUM, PHASE THREE, APARTMENT BUILDING NO. 128 PARCEL; THENCE NORTH 89°32'40" WEST, ALONG THE NORTH LINE OF SAID PARCEL, A DISTANCE OF 145.35 FEET; THENCE SOUTH 00°21'51" WEST, ALONG THE WEST LINE OF SAID BUILDING NO. 128 PARCEL, A DISTANCE OF 112.67 FEET TO A POINT ON THE SOUTH LINE OF THE NORTH 1/2 OF THE SOUTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 2; THENCE NORTH 89°31'49" WEST, ALONG SAID SOUTH LINE, A DISTANCE OF 60.00 FEET TO THE POINT OF BEGINNING.

SAID LANDS SITUATE IN MARTIN COUNTY, FLORIDA.

CONTAINING 50,929 SQ. FT. / 1.169 ACRES, MORE OR LESS. (M)

SUBJECT TO EASEMENTS, RESTRICTIONS, RESERVATIONS, COVENANTS, AND RIGHTS-OF-WAY OF RECORD.

LEGEND

ASPH – ASPHALT
L – ARC LENGTH
CLF – CHAIN LINK FENCE
CONC. – CONCRETE
F.P.L.–FLORIDA POWER & LIGHT
FND. – FOUND
I.R./CAP – IRON ROD & CAP
INV. – INVERT
O.R.B. – OFFICIAL RECORD BOOK
P.B. – PLAT BOOK
P.B.C.R. – PALM BEACH COUNTY RECORD
P.O.B. – POINT OF BEGINNING
P.O.C.– POINT OF COMMENCEMENT
PGS – PAGE(S)
R – RADIUS
R/W – RIGHT-OF-WAY
RGE. – RANGE
SEC – SECTION
Δ – DELTA (CENTRAL ANGLE)
RPZ – RPZ/DDCV
(D) – DEED
(M) – MEASURED
NO ID – NO IDENTIFICATION
N/D – NAIL/DISC
– EXISTING ELEVATION
SQ. FT. – SQUARE FEET
TWP. – TOWNSHIP
TYP. – TYPICAL
U.E. – UTILITY EASEMENT
– LIGHT POLE
– FIRE HYDRANT
– CATCH BASIN
– WATER VALVE
– SET 5/8" IR/CAP LB 3591
– SET NAIL/DISC LB 3591
– SANITARY MANHOLE
– DRAINAGE MANHOLE
– WOOD POWER POLE (UNLESS NOTED)
– CENTER LINE
– TRAFIC SIGN
– ELECTRICAL WIRES OVERHEAD
– ANCHOR
– WATER METER
– ELECTRIC HAND HOLE
– IRRIGATION CONTROL VALVE
– CONCRETE POWER POLE

DESCRIPTION CONTINUED:

PARCEL B:

A PARCEL OF LAND LYING IN SECTION 2, TOWNSHIP 38 SOUTH, RANGE 41 EAST, MARTIN COUNTY, FLORIDA, SAID PARCEL BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHWEST CORNER OF SAID SECTION 2, THENCE BEAR SOUTH 89°32'19" EAST, ALONG THE SOUTH LINE OF SAID SECTION 2, A DISTANCE OF 1,333.00 FEET TO A POINT ON THE WEST LINE OF THE SOUTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 2; THENCE NORTH 00°21'51" EAST, ALONG SAID WEST LINE, A DISTANCE OF 665.00 FEET TO A POINT ON THE SOUTH LINE OF THE NORTH 1/2 OF THE SOUTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 2; THENCE SOUTH 89°31'49" EAST, ALONG SAID SOUTH LINE, A DISTANCE OF 909.51 FEET TO THE SOUTHEAST CORNER OF KINGSWOOD CONDOMINIUM APARTMENT BUILDING NO. 118 PARCEL, AS RECORDED IN OFFICIAL RECORDS BOOK 790, PAGE 985, PUBLIC RECORDS OF MARTIN COUNTY, FLORIDA, AND THE POINT OF BEGINNING OF THE HEREIN DESCRIBED PARCEL OF LAND; THENCE PROCEED NORTH 02°40'00" WEST, ALONG THE EASTERLY LINE OF SAID BUILDING NO. 118 PARCEL, A DISTANCE OF 127.86 FEET TO A POINT ON THE SOUTH LINE OF KINGSWOOD APARTMENT BUILDING NO. 115 PARCEL, AS RECORDED IN OFFICIAL RECORDS BOOK 790, PAGE 938, PUBLIC RECORDS OF MARTIN COUNTY, FLORIDA; THENCE THE FOLLOWING COURSES ALONG SAID PARCEL, NORTH 85°41'06" EAST, A DISTANCE OF 78.68 FEET; THENCE NORTH 00°00'00" EAST A DISTANCE OF 90.73 FEET TO A POINT ON THE SOUTH LINE OF THE DRAINAGE AREA CONVEYED TO KINGSWOOD ASSOCIATION NO. 3, INC., A FLORIDA NOT FOR PROFIT CORPORATION, RECORDED IN OFFICIAL RECORDS BOOK 476, PAGE 2524, PUBLIC RECORDS OF MARTIN COUNTY, FLORIDA; THENCE THE FOLLOWING COURSES ALONG SAID DRAINAGE AREA, SOUTH 74°37'41" EAST A DISTANCE OF 13.88 FEET; THENCE SOUTH 84°37'41" EAST A DISTANCE OF 98.97 FEET; THENCE NORTH 10°22'19" EAST A DISTANCE OF 208.26 FEET TO A POINT ON THE WEST LINE OF THE 44 FOOT PARCEL ADDED TO KINGSWOOD CONDOMINIUM BUILDING NO. 109 PARCEL, AS RECORDED IN OFFICIAL RECORDS BOOK 1117, PAGE 281, PUBLIC RECORDS OF MARTIN COUNTY, FLORIDA; THENCE SOUTH 00°40'15" WEST, ALONG SAID WEST LINE, A DISTANCE OF 84.86 FEET TO THE NORTHWESTERLY CORNER OF THE PARCEL CONVEYED TO KINGSWOOD ASSOCIATION NO. 3, INC., A FLORIDA NOT-FOR-PROFIT CORPORATION, AS RECORDED IN OFFICIAL RECORDS BOOK 1364, PAGE 768, PUBLIC RECORDS OF MARTIN COUNTY, FLORIDA; THENCE THE FOLLOWING COURSES ALONG SAID PARCEL, SOUTH 00°48'55" WEST A DISTANCE OF 141.90 FEET; THENCE SOUTH 89°19'45" WEST A DISTANCE OF 52.58 FEET; THENCE SOUTH 00°40'15" WEST A DISTANCE OF 42.07 FEET; THENCE NORTH 89°19'45" EAST A DISTANCE OF 96.95 FEET TO A POINT ON THE WESTERLY LINE OF KINGSWOOD CONDOMINIUM BUILDING NO. 112 PARCEL, AS RECORDED IN OFFICIAL RECORDS BOOK 814, PAGE 757, PUBLIC RECORDS OF MARTIN COUNTY, FLORIDA; THENCE SOUTH 00°40'15" WEST, ALONG THE WESTERLY LINE OF SAID PARCEL, A DISTANCE OF 149.98 FEET TO A POINT ON THE SOUTH LINE OF THE NORTH 1/2 OF THE SOUTHEAST 1/4 OF THE SOUTHWEST 1/4 OF SAID SECTION 2; THENCE NORTH 89°31'49" WEST, ALONG SAID SOUTH LINE, A DISTANCE OF 261.03 FEET TO THE POINT OF BEGINNING.

SAID LANDS SITUATE IN MARTIN COUNTY, FLORIDA.

CONTAINING 49,374 SQ. FT. / 1.134 ACRES, MORE OR LESS. (M)

SUBJECT TO EASEMENTS, RESTRICTIONS, RESERVATIONS, COVENANTS, AND RIGHTS-OF-WAY OF RECORD.

1. SURVEY MAP OR THE COPIES THEREOF ARE NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL SEAL OF A FLORIDA LICENSED PROFESSIONAL LAND SURVEYOR.
2. LANDS SHOWN HEREON WERE ABSTRACTED BY COMMONWEALTH LAND TITLE INSURANCE COMPANY COMMITMENT ORDER NO.: 7566276, DATED MARCH 28, 2019 @ 8:00 AM.
3. ELEVATIONS SHOWN HEREON ARE RELATIVE TO THE NORTH AMERICAN VERTICAL DATUM OF 1988.
4. BEARINGS SHOWN HEREON ARE RELATIVE TO THE SOUTH LINE OF SECTION 2 TOWNSHIP 38 SOUTH, RANGE 41 EAST, BEARING S89°32'19"E.
5. THE "DESCRIPTION" SHOWN HEREON IS IN ACCORD WITH THE DESCRIPTION PROVIDED BY THE CLIENT.
6. UNDERGROUND FOUNDATIONS WERE NOT LOCATED.
7. ADDITIONS OR DELETIONS TO SURVEY MAPS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.
8. FLOOD ZONE: "AE"(6') AND "X"; COMMUNITY PANEL NO. 120161 0154 G; DATE: MARCH 6, 2015.
9. BENCHMARK ORIGIN DESCRIPTION: MARTIN COUNTY BENCHMARK #890158. ELEVATION = 5.48' NAVD.
10. AT THE TIME OF THIS SURVEY, THERE WAS NO OBSERVABLE EVIDENCE OF THE SUBJECT PROPERTY BEING USED AS A SOLID WASTE DUMP, SUMP OR SANITARY LANDFILL, CEMETARY OR BURIAL GROUND.
11. AT THE TIME OF THIS SURVEY THERE WAS NO OBSERVABLE SURFACE EVIDENCE OF EARTH MOVING WORK OR BUILDING CONSTRUCTION.
12. AT THE TIME OF THIS SURVEY THERE WAS NO OBSERVED EVIDENCE OF RECENT STREET OR SIDEWALK CONSTRUCTION OR REPAIRS OR CHANGES IN STREET RIGHT-OF-WAY LINES.
13. AT THE TIME OF THIS SURVEY THERE WAS NO OBSERVED EVIDENCE OF WETLANDS DELINEATED BY APPROPRIATE AUTHORITIES.

CERTIFICATE:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2016 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/NSPS LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 2, 3. 4, 5, 8, 11, 12, 13, 16, 17, 18, AND 19. DATE OF FIELD WORK 4/19/19.

I FURTHER CERTIFY THAT THIS SURVEY MEETS THE STANDARDS OF PRACTICE SET FORTH IN CHAPTER 5J-17 ADOPTED BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS, PURSUANT TO FLORIDA STATUTES 472.027.

RONNIE L. FURNISS, P.S.M.
REG. LAND SURVEYOR #6272
STATE OF FLORIDA–LB 3591

REVISIONS	DATE	BY

FILE NAME 8164-1-SURVEY

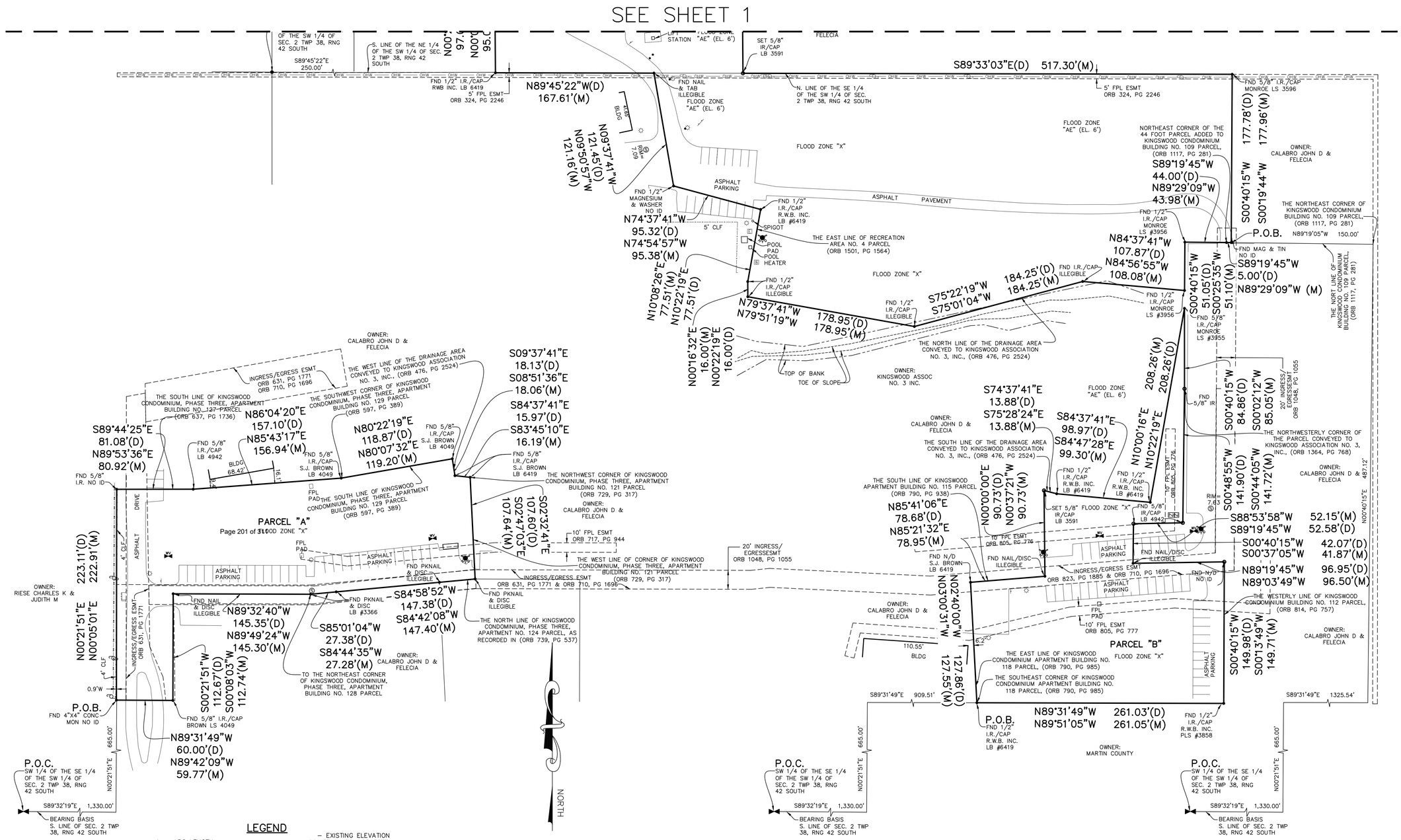
CAULFIELD & WHEELER, INC.
CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE • SURVEYING
7900 GLADES ROAD • SUITE 100
BOCA RATON, FLORIDA 33434
PHONE (561) 392-1991 / FAX (561) 750-1452

STUART PROPERTY 13.3 ACRES
A PORTION OF SW 1/4
SEC. 2, TWP 38, RNG 41
ALTA/NSPS LAND TITLE SURVEY

DATE	5/01/2019
DRAWN BY	RLF
F.B./ PG.	N/A
SCALE	1"=50'

JOB # 8164-1
SHT.NO. 1 OF 2 SHEETS

ALTA/NSPS LAND TITLE SURVEY



LEGEND

L – ARC LENGTH
CLF – CHAIN LINK FENCE
CONC. – CONCRETE
F.P.L.–FLORIDA POWER & LIGHT
FND. – FOUND
I.R./CAP – IRON ROD & CAP
INV. – INVERT
O.R.B. – OFFICIAL RECORD BOOK
P.B. – PLAT BOOK
P.B.C.R. – PALM BEACH COUNTY RECORD
P.O.B. – POINT OF BEGINNING
P.O.C.– POINT OF COMMENCEMENT
PGS – PAGE(S)
R – RADIUS
R/W – RIGHT-OF-WAY
RGE. – RANGE
SEC – SECTION
Δ – DELTA (CENTRAL ANGLE)
RPZ/DDCV – RPZ/DDCV
(D) – DEED
(M) – MEASURED

– EXISTING ELEVATION
SQ. FT. – SQUARE FEET
TWP. – TOWNSHIP
TYP. – TYPICAL
U.E. – UTILITY EASEMENT
– LIGHT POLE
– FIRE HYDRANT
– CATCH BASIN
– WATER VALVE
– SET 5/8" IR/CAP LB 3591
– SANITARY MANHOLE
– DRAINAGE MANHOLE
– WOOD POWER POLE (UNLESS NOTED)
– CENTER LINE
– TRAFFIC SIGN
– ELECTRICAL WIRES OVERHEAD
– ANCHOR
– WATER METER
– ELECTRIC HAND HOLE
– IRRIGATION CONTROL VALVE

GRAPHIC SCALE
50 0 25 50 100
(IN FEET)
1 INCH = 50 FT.

REVISIONS	DATE	BY

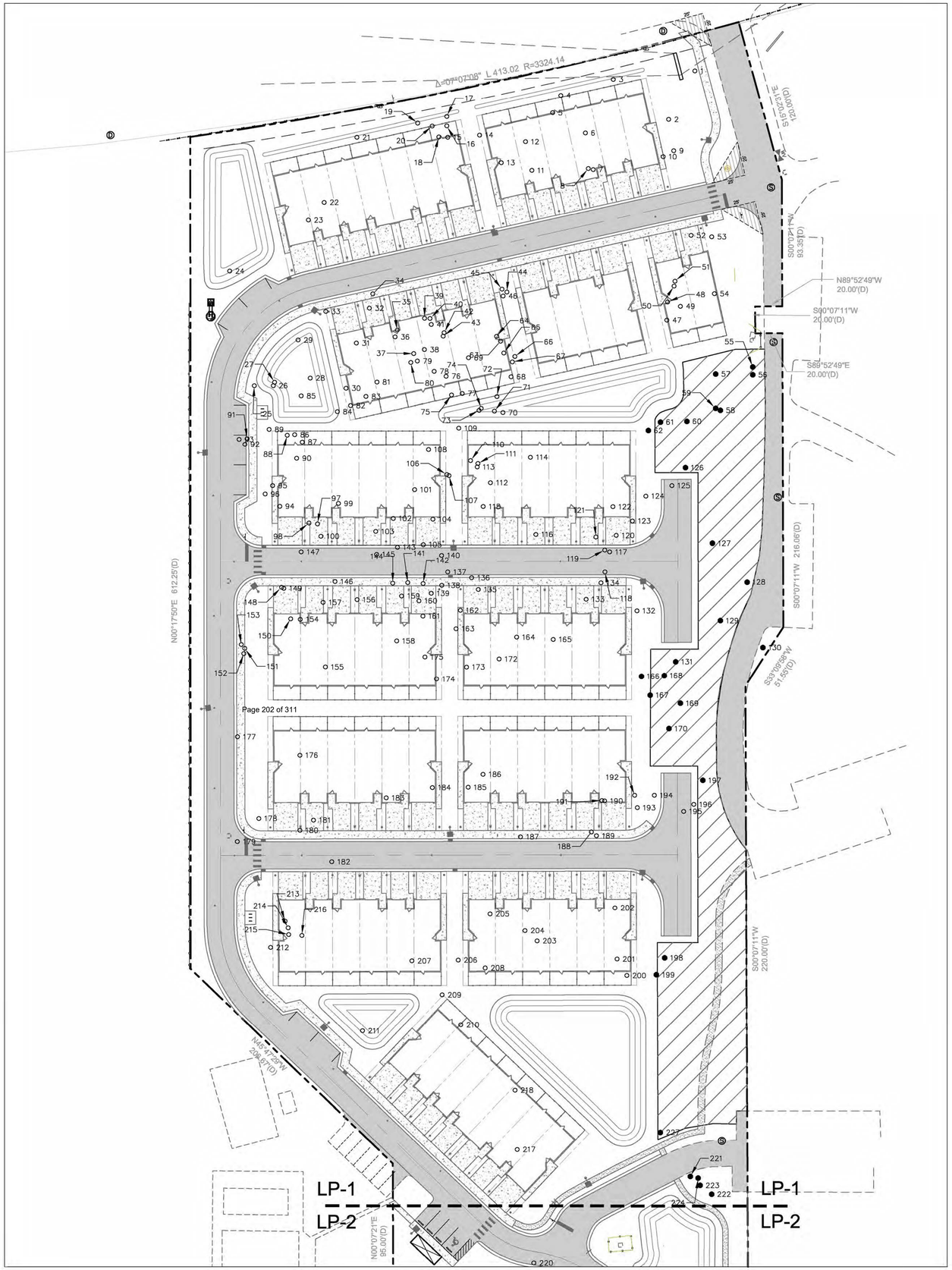
FILE NAME 8164-1-SURVEY

CAULFIELD & WHEELER, INC.
CIVIL ENGINEERING
LANDSCAPE ARCHITECTURE - SURVEYING
7900 GLADES ROAD - SUITE 100
BOCA RATON, FLORIDA 33434
PHONE (561)-392-1991 / FAX (561)-750-1452

STUART PROPERTY 13.3 ACRES
A PORTION OF SW 1/4
SEC. 2, TWP 38, RNG 41
ALTA/NSPS LAND TITLE SURVEY

DATE	5/01/2019
DRAWN BY	RF
F.B./ PG.	N/A
SCALE	1"=50'

JOB # 8164-1
SHT.NO. 2 OF 2 SHEETS



Existing Tree Chart

Tree No.	Species	Size DBH	Protected	Description	Status
1	Laurel Oak	22	Yes		Remove
2	Slash Pine	18	Yes		Remove
3	Slash Pine	19	Yes		Remove
4	Laurel Oak	7	Yes		Remove
5	Slash Pine	15	Yes		Remove
6	Laurel Oak	12	Yes	multi-stem	Remove
7	Laurel Oak	5	Yes	multi-stem	Remove
8	Laurel Oak	5	Yes	multi-stem	Remove
9	Slash Pine	15	Yes		Remove
10	Slash Pine	17	Yes		Remove
11	Laurel Oak	5	Yes	multi-stem	Remove
12	Slash Pine	19	Yes		Remove
13	Laurel Oak	5	Yes		Remove
14	Laurel Oak	9	Yes		Remove
15	Laurel Oak	17	Yes		Remove
16	Laurel Oak	8	Yes		Remove
17	Laurel Oak	6	Yes		Remove
18	Laurel Oak	6	Yes		Remove
19	Laurel Oak	7	Yes		Remove
20	Laurel Oak	17	Yes		Remove
21	Laurel Oak	26	Yes		Remove
22	Slash Pine	10	Yes		Remove
23	Slash Pine	12	Yes		Remove
24	Laurel Oak	21	Yes		Remove
25	Slash Pine	15	Yes		Remove
26	Laurel Oak	8	Yes		Remove
27	Slash Pine	15	Yes		Remove
28	Laurel Oak	9	Yes		Remove
★ 29	Laurel Oak	7	Yes		Relocate
30	Laurel Oak	10	Yes		Remove
31	Laurel Oak	15	Yes		Remove
32	Laurel Oak	12	Yes		Remove
33	Laurel Oak	10	Yes		Remove
34	Slash Pine	10	Yes		Remove
35	Slash Pine	14	Yes		Remove
36	Laurel Oak	7	Yes		Remove
37	Laurel Oak	8	Yes		Remove
38	Slash Pine	10	Yes		Remove
39	Laurel Oak	7	Yes		Remove
40	Laurel Oak	7	Yes		Remove
41	Laurel Oak	7	Yes		Remove
42	Slash Pine	13	Yes		Remove
43	Slash Pine	13	Yes		Remove
44	Slash Pine	13	Yes		Remove
45	Slash Pine	10	Yes		Remove
Tree No.	**Species**	**Size DBH**	**Protected**	**Description**	**Status**
46	Slash Pine	19	Yes		Remove
47	Live Oak	18	Yes		Remove
48	Live Oak	5	Yes		Remove
49	Live Oak	7	Yes		Remove
50	Live Oak	8	Yes		Remove
51	Live Oak	10	Yes	multi-stem	Remove
52	Live Oak	7	Yes		Remove
53	Live Oak	14	Yes		Remove
54	Slash Pine	23	Yes		Remove
55	Slash Pine	14	Yes		Preserve
56	Slash Pine	15	Yes		Preserve
57	Slash Pine	16	Yes		Preserve
58	Live Oak	5	Yes		Preserve
59	Live Oak	12	Yes		Preserve
60	Live Oak	6	Yes		Preserve
61	Live Oak	8	Yes	multi-stem	Preserve
62	Live Oak	5	Yes		Preserve
63	Slash Pine	16	Yes		Remove
64	Slash Pine	16	Yes		Remove
65	Slash Pine	12	Yes		Remove
66	Slash Pine	14	Yes		Remove
67	Live Oak	5	Yes	multi-stem	Remove
68	Slash Pine	17	Yes		Remove
69	Slash Pine	11	Yes		Remove
70	Slash Pine	24	Yes		Remove
71	Slash Pine	14	Yes		Remove
72	Slash Pine	10	Yes		Remove
73	Slash Pine	15	Yes		Remove
74	Slash Pine	13	Yes		Remove
75	Live Oak	8	Yes		Remove
76	Slash Pine	10	Yes		Remove
77	NA		Yes		
78	Slash Pine	12	Yes		Remove
79	Live Oak	6	Yes		Remove
80	Slash Pine	10	Yes		Remove
81	Slash Pine	14	Yes		Remove
82	Slash Pine	12	Yes		Remove
83	Dahoon Holly	5	Yes		Remove
84	Slash Pine	11	Yes		Remove
85	Slash Pine	15	Yes		Remove
86	Slash Pine	17	Yes		Remove
87	Slash Pine	10	Yes		Remove
88	Slash Pine	10	Yes		Remove
89	Slash Pine	15	Yes		Remove
90	Slash Pine	16	Yes		Remove
Tree No.	**Species**	**Size DBH**	**Protected**	**Description**	**Status**
91	Live Oak	6	Yes		Remove
92	Live Oak	7	Yes		Remove
93	Slash Pine	11	Yes		Remove
94	Live Oak	11	Yes		Remove
95	Live Oak	8	Yes		Remove
96	Live Oak	6	Yes		Remove
97	Slash Pine	11	Yes		Remove
98	Slash Pine	11	Yes		Remove
99	Slash Pine	14	Yes		Remove
100	Live Oak	6	Yes		Remove
101	Slash Pine	19	Yes		Remove
102	Slash Pine	15	Yes		Remove
103	Live Oak	10	Yes		Remove
104	Slash Pine	13	Yes		Remove
105	Slash Pine	12	Yes		Remove
106	Dahoon Holly	5	Yes		Remove
107	Slash Pine	12	Yes		Remove
108	Laurel Oak	8	Yes		Remove
109	Laurel Oak	6	Yes		Remove
110	Slash Pine	10	Yes		Remove
111	Slash Pine	12	Yes		Remove
112	Slash Pine	15	Yes		Remove
113	Slash Pine	13	Yes		Remove
114	Live Oak	6	Yes	multi-stem	Remove
115	Slash Pine	18	Yes		Remove
116	Slash Pine	12	Yes		Remove
117	Slash Pine	10	Yes		Remove
118	Live Oak	6	Yes		Remove
119	Slash Pine	13	Yes		Remove
★ 120	Live Oak	7	Yes		Relocate
★ 121	Live Oak	7	Yes		Relocate
★ 122	Live Oak	6	Yes		Relocate
123	Live Oak	11	Yes		Remove
★ 124	Live Oak	6	Yes		Relocate
125	Live Oak	10	Yes		Remove
126	Live Oak	6	Yes		Preserve
127	Live Oak	21	Yes		Preserve
128	Live Oak	17	Yes		Preserve
129	Slash Pine	15	Yes		Preserve
130	Slash Pine	17	Yes		Preserve
131	Live Oak	19	Yes		Preserve
132	Slash Pine	23	Yes		Remove
133	Slash Pine	10	Yes		Remove
134	Live Oak	11	Yes		Remove
135	Slash Pine	12	Yes		Remove
136	Slash Pine	15	Yes		Remove
137	Slash Pine	11	Yes		Remove
138	Slash Pine	11	Yes		Remove
139	Slash Pine	9	No		Remove
140	Slash Pine	17	Yes		Remove
141	Slash Pine	18	Yes		Remove
142	Slash Pine	10	Yes		Remove
143	Slash Pine	15	Yes		Remove
144	Slash Pine	10	Yes		Remove
145	Slash Pine	14	Yes		Remove
146	Slash Pine	11	Yes		Remove
147	Live Oak	10	Yes		Remove
148	Live Oak	7	Yes		Remove
149	Slash Pine	22	Yes		Remove
150	Slash Pine	13	Yes		Remove
151	Sand Oak	4	No		Remove
152	Sand Oak	6	No		Remove
153	Sand Oak	11	No		Remove
154	Slash Pine	15	Yes		Remove
155	Slash Pine	12	Yes		Remove
156	Slash Pine	14	Yes		Remove
157	Slash Pine	11	Yes		Remove
158	Slash Pine	14	Yes		Remove
159	Slash Pine	13	Yes		Remove
160	Slash Pine	13	Yes		Remove
161	Slash Pine	11	Yes		Remove
162	Slash Pine	18	Yes		Remove
163	Slash Pine	14	Yes		Remove
164	Slash Pine	15	Yes		Remove
165	Sand Oak	6	No		Remove
166	Slash Pine	18	Yes		Preserve
167	Slash Pine	10	Yes		Preserve
168	Slash Pine	15	Yes		Preserve
169	Slash Pine	19	Yes		Preserve
170	Slash Pine	19	Yes		Preserve
171	Slash Pine	21	Yes		Remove
172	Slash Pine	19	Yes		Remove
173	Slash Pine	14	Yes		Remove
174	Slash Pine	11	Yes		Remove
175	Slash Pine	10	Yes		Remove
176	Slash Pine	15	Yes		Remove
177	Slash Pine	14	Yes		Remove
178	Sand Pine	5	No		Remove
179	Sand Pine	7	No		Remove
180	Sand Pine	7	No		Remove
Tree No.	**Species**	**Size DBH**	**Protected**	**Description**	**Status**
181	Sand Pine	5	No		Remove
182	Sand Oak	5	No		Remove
183	Sand Oak	8	No		Remove
184	Slash Pine	19	Yes		Remove
185	Slash Pine	17	Yes		Remove
186	Slash Pine	18	Yes		Remove
187	Slash Pine	19	Yes		Remove
188	Sand Oak	9	No		Remove
189	Sand Oak	9	No		Remove
190	Sand Oak	5	No		Remove
191	Sand Oak	8	No		Remove
192	Sand Oak	8	No		Remove
193	Sand Oak	5	No		Remove
194	Sand Oak	8	No		Remove
195	Slash Pine	13	Yes		Remove
196	Slash Pine	13	Yes		Remove
197	Slash Pine	13	Yes		Preserve
198	Sand Oak	4	No		Preserve
199	Sand Oak	10	No		Preserve
200	Sand Oak	11	No		Remove
201	Sand Oak	11	No		Remove
202	Sand Oak	7	No		Remove
203	Sand Oak	7	No		Remove
204	Sand Oak	12	No		Remove
205	Sand Oak	5	No		Remove
206	Sand Oak	5	No		Remove
207	Sand Oak	5	No		Remove
208	Sand Oak	11	No		Remove
209	Sand Oak	9	No		Remove
210	Cedar	10	Yes		Remove
211	Sand Oak	10	No		Remove
212	Sand Oak	9	No		Remove
213	Sand Oak	6	No		Remove
214	Sand Oak	4	No		Remove
215	Sand Oak	5	No		Remove
216	Sand Oak	7	No		Remove
217	Slash Pine	17	Yes		Remove
218	Sand Pine	8	No		Remove
219	Slash Pine	20	Yes		Preserve
220	Slash Pine	16	Yes		Remove
221	Slash Pine	11	Yes		Preserve
222	Slash Pine	15	Yes		Preserve
223	Slash Pine	11	Yes		Preserve
224	Slash Pine	16	Yes		Preserve
225	Slash Pine	24	Yes		Preserve
Tree No.	**Species**	**Size DBH**	**Protected**	**Description**	**Status**
226	Slash Pine	18	Yes		Preserve
227	Slash Pine	16	Yes		Preserve
228	Slash Pine	18	Yes		Preserve
229	Slash Pine	17	Yes		Preserve
230	Slash Pine	16	Yes		Preserve
231	Slash Pine	25	Yes		Preserve
232	Slash Pine	14	Yes		Preserve
233	Slash Pine	19	Yes		Preserve
234	Slash Pine	16	Yes		Preserve
235	Slash Pine	15	Yes		Off-site
236	Sand Oak	12	No		Off-site
237	Slash Pine	16	Yes		Remove
238	Sand Oak	8	No		Remove
239	Slash Pine	11	Yes		Preserve
240	Slash Pine	16	Yes		Preserve
241	Slash Pine	11	Yes		Preserve
242	Slash Pine	20	Yes		Preserve
243	Banyan	348	Yes	multi-stem	Preserve
244	Sand Pine	10	Yes		Off-site
245	Slash Pine	16	Yes		Off-site
246	Slash Pine	18	Yes		Off-site
247	Slash Pine	20	Yes		Preserve
248	Slash Pine	15	Yes		Preserve
249	Slash Pine	16	Yes		Preserve
250	Sand Pine	7	Yes		Preserve
251	Live Oak	9	Yes		Preserve
252	Sand Pine	9	Yes		Off-site
253	Live Oak	8	Yes		Preserve
254	Slash Pine	24	Yes		Preserve

Protected Tree Removal Summary

Protected Specimen Trees (Hardwood)

Total Inches (DBH) to be Removed	522 Inches
Total Inches (DBH) for Replacement (522 x 2.5)	1,305 Inches

Protected Specimen Pines (Softwood)

Total Inches (DBH) to be Removed	1,413 Inches
Total Inches (DBH) to be Replaced (1,429 x 1.5)	2,143.5 Inches

Legend

Ex. Trees to be Preserved

* Ex. Trees to be Relocated
(1 Laurel Oak & 4 Live Oaks)

Ex. Trees to be Removed

Notes

1. See Sheet LP-6 for applicable details and notes related to Tree Protection Barricades and Root Pruning / Tree Relocation.
2. See Sheet LP-3 for the location of Relocated Trees.
3. See Tree Mitigation data on Sheet LP-3 for proposed replacement inches.

Scale: 1" = 40'

0' 20' 40' 80' 120'

North

HJA DESIGN STUDIO
LANDSCAPE ARCHITECTURE
50 E. Ocean Blvd., Suite 101
Stuart, Florida 34994
T 772.678.7200
F 772.678.7201
www.hjadesignstudio.com
LA 0000905

Stuart Ocean Townhomes

Florida

City of Stuart
Existing Tree Survey / Removal Plan

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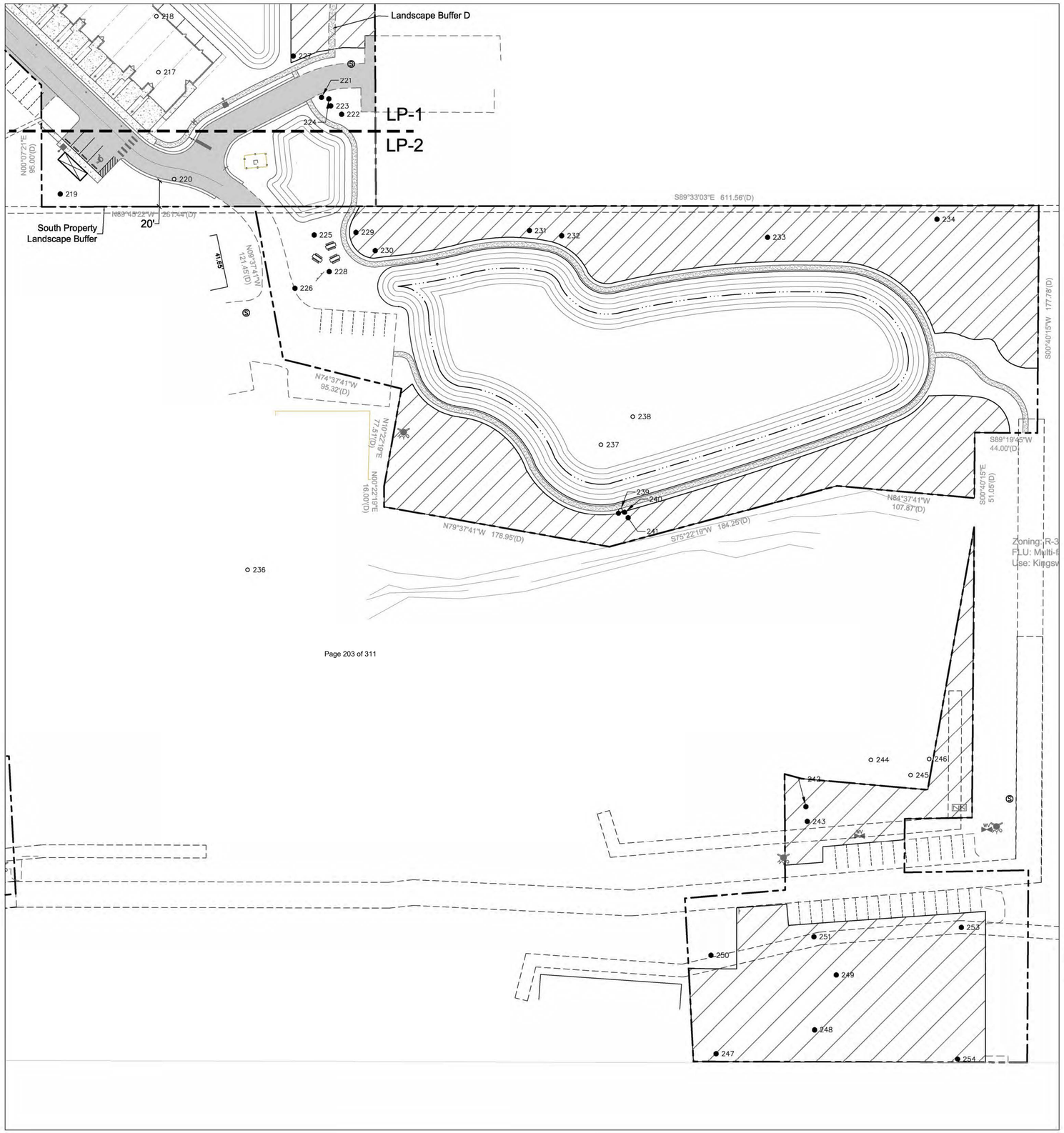
Job No. 19005
Drawn By TT
Checked By MH
Approved By MH
Submittal Dates 9-20-19
12-05-19 1-16-20
Revision Dates

LP-1



Existing Tree Chart

Tree No.	Species	Size DBH	Protected	Description	Status
1	Laurel Oak	22	Yes		Remove
2	Slash Pine	18	Yes		Remove
3	Slash Pine	19	Yes		Remove
4	Laurel Oak	7	Yes		Remove
5	Slash Pine	15	Yes		Remove
6	Laurel Oak	12	Yes	multi-stem	Remove
7	Laurel Oak	5	Yes	multi-stem	Remove
8	Laurel Oak	5	Yes	multi-stem	Remove
9	Slash Pine	15	Yes		Remove
10	Slash Pine	17	Yes		Remove
11	Laurel Oak	5	Yes	multi-stem	Remove
12	Slash Pine	19	Yes		Remove
13	Laurel Oak	5	Yes		Remove
14	Laurel Oak	9	Yes		Remove
15	Laurel Oak	17	Yes		Remove
16	Laurel Oak	8	Yes		Remove
17	Laurel Oak	6	Yes		Remove
18	Laurel Oak	6	Yes		Remove
19	Laurel Oak	7	Yes		Remove
20	Laurel Oak	17	Yes		Remove
21	Laurel Oak	26	Yes		Remove
22	Slash Pine	10	Yes		Remove
23	Slash Pine	12	Yes		Remove
24	Laurel Oak	21	Yes		Remove
25	Slash Pine	15	Yes		Remove
26	Laurel Oak	8	Yes		Remove
27	Slash Pine	15	Yes		Remove
28	Laurel Oak	9	Yes		Remove
* 29	Laurel Oak	7	Yes		Relocate
30	Laurel Oak	10	Yes		Remove
31	Laurel Oak	15	Yes		Remove
32	Laurel Oak	12	Yes		Remove
33	Laurel Oak	10	Yes		Remove
34	Slash Pine	10	Yes		Remove
35	Slash Pine	14	Yes		Remove
36	Laurel Oak	7	Yes		Remove
37	Laurel Oak	8	Yes		Remove
38	Slash Pine	10	Yes		Remove
39	Laurel Oak	7	Yes		Remove
40	Laurel Oak	7	Yes		Remove
41	Laurel Oak	7	Yes		Remove
42	Slash Pine	13	Yes		Remove
43	Slash Pine	13	Yes		Remove
44	Slash Pine	13	Yes		Remove
45	Slash Pine	10	Yes		Remove
Tree No.	**Species**	**Size DBH**	**Protected**	**Description**	**Status**
46	Slash Pine	19	Yes		Remove
47	Live Oak	18	Yes		Remove
48	Live Oak	5	Yes		Remove
49	Live Oak	7	Yes		Remove
50	Live Oak	8	Yes		Remove
51	Live Oak	10	Yes	multi-stem	Remove
52	Live Oak	7	Yes		Remove
53	Live Oak	14	Yes		Remove
54	Slash Pine	23	Yes		Remove
55	Slash Pine	14	Yes		Preserve
56	Slash Pine	15	Yes		Preserve
57	Slash Pine	16	Yes		Preserve
58	Live Oak	5	Yes		Preserve
59	Live Oak	12	Yes		Preserve
60	Live Oak	6	Yes		Preserve
61	Live Oak	8	Yes	multi-stem	Preserve
62	Live Oak	5	Yes		Preserve
63	Slash Pine	16	Yes		Remove
64	Slash Pine	16	Yes		Remove
65	Slash Pine	12	Yes		Remove
66	Slash Pine	14	Yes		Remove
67	Live Oak	5	Yes	multi-stem	Remove
68	Slash Pine	17	Yes		Remove
69	Slash Pine	11	Yes		Remove
70	Slash Pine	24	Yes		Remove
71	Slash Pine	14	Yes		Remove
72	Slash Pine	10	Yes		Remove
73	Slash Pine	15	Yes		Remove
74	Slash Pine	13	Yes		Remove
75	Live Oak	8	Yes		Remove
76	Slash Pine	10	Yes		Remove
77	NA		Yes		
78	Slash Pine	12	Yes		Remove
79	Live Oak	6	Yes		Remove
80	Slash Pine	10	Yes		Remove
81	Slash Pine	14	Yes		Remove
82	Slash Pine	12	Yes		Remove
83	Dahoon Holly	5	Yes		Remove
84	Slash Pine	11	Yes		Remove
85	Slash Pine	15	Yes		Remove
86	Slash Pine	17	Yes		Remove
87	Slash Pine	10	Yes		Remove
88	Slash Pine	10	Yes		Remove
89	Slash Pine	15	Yes		Remove
90	Slash Pine	16	Yes		Remove
Tree No.	**Species**	**Size DBH**	**Protected**	**Description**	**Status**
91	Live Oak	6	Yes		Remove
92	Live Oak	7	Yes		Remove
93	Slash Pine	11	Yes		Remove
94	Live Oak	11	Yes		Remove
95	Live Oak	8	Yes		Remove
96	Live Oak	6	Yes		Remove
97	Slash Pine	11	Yes		Remove
98	Slash Pine	11	Yes		Remove
99	Slash Pine	14	Yes		Remove
100	Live Oak	6	Yes		Remove
101	Slash Pine	19	Yes		Remove
102	Slash Pine	15	Yes		Remove
103	Live Oak	10	Yes		Remove
104	Slash Pine	13	Yes		Remove
105	Slash Pine	12	Yes		Remove
106	Dahoon Holly	5	Yes		Remove
107	Slash Pine	12	Yes		Remove
108	Laurel Oak	8	Yes		Remove
109	Laurel Oak	6	Yes		Remove
110	Slash Pine	10	Yes		Remove
111	Slash Pine	12	Yes		Remove
112	Slash Pine	15	Yes		Remove
113	Slash Pine	13	Yes		Remove
114	Live Oak	6	Yes	multi-stem	Remove
115	Slash Pine	18	Yes		Remove
116	Slash Pine	12	Yes		Remove
117	Slash Pine	10	Yes		Remove
118	Live Oak	6	Yes		Remove
119	Slash Pine	13	Yes		Remove
* 120	Live Oak	7	Yes		Relocate
* 121	Live Oak	7	Yes		Relocate
* 122	Live Oak	6	Yes		Relocate
123	Live Oak	11	Yes		Remove
* 124	Live Oak	6	Yes		Relocate
125	Live Oak	10	Yes		Remove
126	Live Oak	6	Yes		Preserve
127	Live Oak	21	Yes		Preserve
128	Live Oak	17	Yes		Preserve
129	Slash Pine	15	Yes		Preserve
130	Slash Pine	17	Yes		Preserve
131	Live Oak	19	Yes		Preserve
132	Slash Pine	23	Yes		Remove
133	Slash Pine	10	Yes		Remove
134	Live Oak	11	Yes		Remove
135	Slash Pine	12	Yes		Remove
Tree No.	**Species**	**Size DBH**	**Protected**	**Description**	**Status**
136	Slash Pine	15	Yes		Remove
137	Slash Pine	11	Yes		Remove
138	Slash Pine	11	Yes		Remove
139	Slash Pine	9	No		Remove
140	Slash Pine	17	Yes		Remove
141	Slash Pine	18	Yes		Remove
142	Slash Pine	10	Yes		Remove
143	Slash Pine	15	Yes		Remove
144	Slash Pine	10	Yes		Remove
145	Slash Pine	14	Yes		Remove
146	Slash Pine	11	Yes		Remove
147	Live Oak	10	Yes		Remove
148	Live Oak	7	Yes		Remove
149	Slash Pine	22	Yes		Remove
150	Slash Pine	13	Yes		Remove
151	Sand Oak	4	No		Remove
152	Sand Oak	6	No		Remove
153	Sand Oak	11	No		Remove
154	Slash Pine	15	Yes		Remove
155	Slash Pine	12	Yes		Remove
156	Slash Pine	14	Yes		Remove
157	Slash Pine	11	Yes		Remove
158	Slash Pine	14	Yes		Remove
159	Slash Pine	13	Yes		Remove
160	Slash Pine	13	Yes		Remove
161	Slash Pine	11	Yes		Remove
162	Slash Pine	18	Yes		Remove
163	Slash Pine	14	Yes		Remove
164	Slash Pine	15	Yes		Remove
165	Sand Oak	6	No		Remove
166	Slash Pine	18	Yes		Preserve
167	Slash Pine	10	Yes		Preserve
168	Slash Pine	15	Yes		Preserve
169	Slash Pine	19	Yes		Preserve
170	Slash Pine	19	Yes		Preserve
171	Slash Pine	21	Yes		Remove
172	Slash Pine	19	Yes		Remove
173	Slash Pine	14	Yes		Remove
174	Slash Pine	11	Yes		Remove
175	Slash Pine	10	Yes		Remove
176	Slash Pine	15	Yes		Remove
177	Slash Pine	14	Yes		Remove
178	Sand Pine	5	No		Remove
179	Sand Pine	7	No		Remove
180	Sand Pine	7	No		Remove
Tree No.	**Species**	**Size DBH**	**Protected**	**Description**	**Status**
181	Sand Pine	5	No		Remove
182	Sand Oak	5	No		Remove
183	Sand Oak	8	No		Remove
184	Slash Pine	19	Yes		Remove
185	Slash Pine	17	Yes		Remove
186	Slash Pine	18	Yes		Remove
187	Slash Pine	19	Yes		Remove
188	Sand Oak	9	No		Remove
189	Sand Oak	9	No		Remove
190	Sand Oak	5	No		Remove
191	Sand Oak	8	No		Remove
192	Sand Oak	8	No		Remove
193	Sand Oak	5	No		Remove
194	Sand Oak	8	No		Remove
195	Slash Pine	13	Yes		Remove
196	Slash Pine	13	Yes		Remove
197	Slash Pine	13	Yes		Preserve
198	Sand Oak	4	No		Preserve
199	Sand Oak	10	No		Preserve
200	Sand Oak	11	No		Remove
201	Sand Oak	11	No		Remove
202	Sand Oak	7	No		Remove
203	Sand Oak	7	No		Remove
204	Sand Oak	12	No		Remove
205	Sand Oak	5	No		Remove
206	Sand Oak	5	No		Remove
207	Sand Oak	5	No		Remove
208	Sand Oak	11	No		Remove
209	Sand Oak	9	No		Remove
210	Cedar	10	Yes		Remove
211	Sand Oak	10	No		Remove
212	Sand Oak	9	No		Remove
213	Sand Oak	6	No		Remove
214	Sand Oak	4	No		Remove
215	Sand Oak	5	No		Remove
216	Sand Oak	7	No		Remove
217	Slash Pine	17	Yes		Remove
218	Sand Pine	8	No		Remove
219	Slash Pine	20	Yes		Preserve
220	Slash Pine	16	Yes		Remove
221	Slash Pine	11	Yes		Preserve
222	Slash Pine	15	Yes		Preserve
223	Slash Pine	11	Yes		Preserve
224	Slash Pine	16	Yes		Preserve
225	Slash Pine	24	Yes		Preserve
Tree No.	**Species**	**Size DBH**	**Protected**	**Description**	**Status**
226	Slash Pine	18	Yes		Preserve
227	Slash Pine	16	Yes		Preserve
228	Slash Pine	18	Yes		Preserve
229	Slash Pine	17	Yes		Preserve
230	Slash Pine	16	Yes		Preserve
231	Slash Pine	25	Yes		Preserve
232	Slash Pine	14	Yes		Preserve
233	Slash Pine	19	Yes		Preserve
234	Slash Pine	16	Yes		Preserve
235	Slash Pine	15	Yes		Off site
236	Sand Oak	12	No		Off site
237	Slash Pine	16	Yes		Remove
238	Sand Oak	8	No		Remove
239	Slash Pine	11	Yes		Preserve
240	Slash Pine	16	Yes		Preserve
241	Slash Pine	11	Yes		Preserve
242	Slash Pine	20	Yes		Preserve
243	Banyan	148	Yes	multi stem	Preserve
244	Sand Pine	10	Yes		Off site
245	Slash Pine	16	Yes		Off site
246	Slash Pine	18	Yes		Off site
247	Slash Pine	20	Yes		Preserve
248	Slash Pine	15	Yes		Preserve
249	Slash Pine	16	Yes		Preserve
250	Sand Pine	7	Yes		Preserve
251	Live Oak	9	Yes		Preserve
252	Sand Pine	9	Yes		Off site
253	Live Oak	8	Yes		Preserve
254	Slash Pine	24	Yes		Preserve

Protected Tree Removal Summary

Protected Specimen Trees (Hardwood)

Total Inches (DBH) to be Removed	522 Inches
Total Inches (DBH) for Replacement (522 x 2.5)	1,305 Inches

Protected Specimen Pines (Softwood)

Total Inches (DBH) to be Removed	1,413 Inches
Total Inches (DBH) to be Replaced (1,429 x 1.5)	2,143.5 Inches

Legend

Ex. Trees to be Preserved

* Ex. Trees to be Relocated
(1 Laurel Oak & 4 Live Oaks)

Ex. Trees to be Removed

Notes

1. See Sheet LP-6 for applicable details and notes related to Tree Protection Barricades and Root Pruning / Tree Relocation.
2. See Sheet LP-3 for the location of Relocated Trees.
3. See Tree Mitigation data on Sheet LP-3 for proposed replacement inches.

Scale: 1" = 40'

0' 20' 40' 80' 120'

North

HJA DESIGN STUDIO
LANDSCAPE ARCHITECTURE
50 E. Ocean Blvd., Suite 101
Stuart, Florida 34994
T 772.678.7200
F 772.678.7201
www.hjadesignstudio.com
LA 0000905

Stuart Ocean Townhomes

City of Stuart Florida

Existing Tree Survey / Removal Plan

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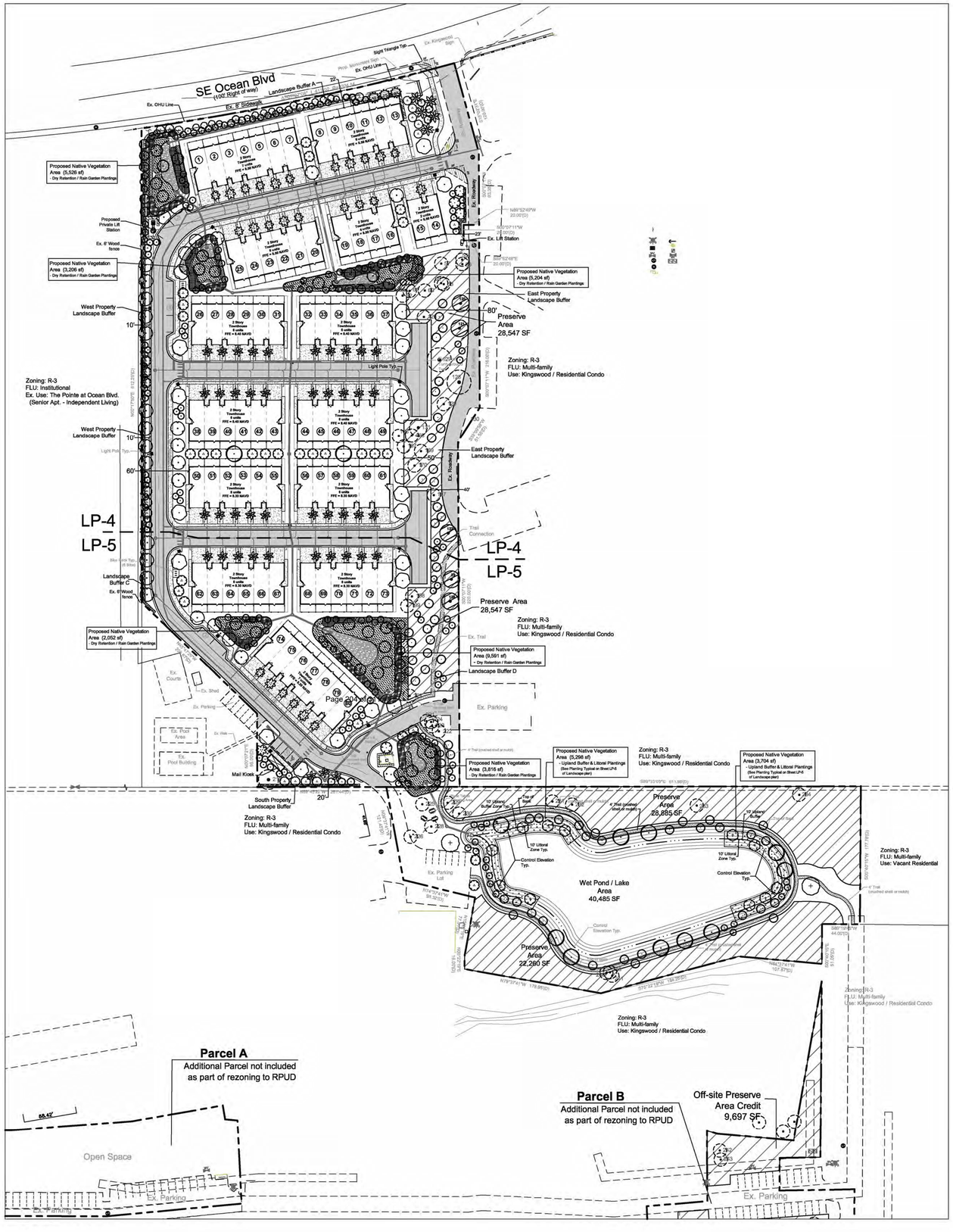
Job No.	19005
Drawn By	TT
Checked By	MH
Approved By	MH
Submittal Dates	9-20-19
	12-05-19 1-16-20
Revision Dates	

LP-2



Landscape Data

Total Site Area	11.04 Ac. / 481,103 sf
Future Land Use	Multi-family Residential
Existing Zoning	R-3
Proposed Zoning	RPUD
Proposed Use	2-Story / Single Family Townhomes
Proposed Dwelling Units	80

Required Landscape Area (20% of the total site gross area)

Total Gross Site Area	11.04 Ac. / 481,103 sf
Required Area (481,103 sf x 20%)	2.21 Ac. / 96,221 sf
Provided Area	5.33 Ac. / 232,255 sf (48%)

1 Tree per 1,500 sf of Development Site (Min. 50% Shade Trees)

Development Site (excludes ex. on-site preserve area)	401,411 sf (9.21 Ac.)
Total Trees Required (401,411 sf / 1,500 sf)	**268 Total Trees**
Total Shade Trees Required (268 Trees x 50%)	134 Trees
Total Trees Provided	**393 Total Trees**
4.5" DBH Shade Trees	163 Trees
2.5" DBH Shade Trees	88 Trees
Palms @ 1:1 Ratio	30 Trees
Palms @ 2:1 Ratio	112 Trees (224 Palms / 2)
	393 Total Trees

Perimeter Landscape Buffers

North Property Landscape Buffer- Adjacent to SE Ocean Blvd :

No Landscape Buffer required by city code
- Sec. 6.04.08. B.2. : 10' Landscape strip between abutting Right of Way and parking areas.
- No parking areas are being proposed abutting SE Ocean Blvd.

Buffer Provided :	22'
Trees Required:	Not Applicable
Trees Provided:	36 Trees
Trees	19 Trees
Palms @ 1:1 Ratio	3 Trees
Palms @ 2:1 Ratio	14 Trees (28 Palms / 2)
Trees Provided	36 Trees

South Property Landscape Buffer - Adjacent to Existing Multi-family

(Buffer not required for Proposed Single Family Dev. abutting Multi-family)

Multi-family abutting Multi-family Buffer Requirement - 672 LF

Buffer Width:	35' (25' + 10' for each additional bldg. story)
Buffer Screen:	8.75' (35' Buffer Width x 25%)
Trees:	22 Trees (1 tree per 30 LF)
Buffer Provided :	50' Average, Enhanced Native Upland Preserve Area

West Property Landscape Buffer - Adjacent to Existing Multi-family

(Buffer not required for Proposed Single Family Dev. abutting Multi-family)

Multi-family abutting Multi-family Buffer Requirement - 612 LF

Buffer Width:	35' (25' + 10' for each additional bldg. story)
Buffer Screen:	8.75' (35' Buffer Width x 25%)
Trees:	21 Trees (1 tree per 30 LF)
Buffer Provided :	10'
Trees Provided :	36 Trees
Trees	25 Trees
Palms @ 2:1 Ratio	11 Trees (22 Palms / 2)
Trees Provided	36 Trees

South Property Landscape Buffer - Adjacent to Existing Multi-family

(Buffer not required for Proposed Single Family Dev. abutting Multi-family)

Multi-family abutting Multi-family Buffer Requirement - 147 LF

Buffer Width:	35' (25' + 10' for each additional bldg. story)
Buffer Screen:	8.75' (35' Buffer Width x 25%)
Trees:	5 Trees (1 tree per 30 LF)
Buffer Provided :	20' Average
Trees Provided :	11 Trees
Trees	7 Trees
Ex. Trees	1 Tree (Ex. Pine # 219)
Palms @ 2:1 Ratio	3 Trees (6 Palms / 2)
Trees Provided	11 Trees

Interior / Parking Area Landscape Requirements

Interior / Terminal Landscape Island Requirement:

Each interior island shall contain a min. of 1 tree and a combination of shrubs, ground cover, grass and mulch. Hedge material used must be maintained at a max. height of 24". Not less than 50% of trees used in parking area interior landscaping shall be shade trees.

Trees Required:	8 Trees
Trees Provided:	8 Trees
Shade Trees	6 Trees (75%)
Palms @ 2:1 Ratio	2 Trees (4 Palms / 2)
Trees Provided	8 Trees

Tree Replacement / Mitigation Data

Protected Specimen Trees (Hardwood):

Inches to be Removed	522 Inches
Required Replacement Inches (522 x 2.5)	1,305 Inches
Provided On-site Replacement Inches	733.5 Inches
Total Amount to be paid into the City's Tree Fund	$111,125.00

City's Tree Fund Calculation:

571.5" (Remaining Inches) / 4.5" (Min. Size to Replace) = 127 Trees

127 Trees x $875 Each (175% of Average Plant Finder Cost of Tree)

* Applicant proposes to use the tree fund contribution for improvements to the existing community

Protected Specimen Pines (Softwood):

Inches to be Removed	1,429 Inches
Required Replacement Inches (1,429 x 1.5)	2,143.5 Inches
Provided On-site Replacement Inches	2,147 Inches

* Note: See Tree Schedule on Sheet LP-6 for total provided mitigation inches per tree

Legend

Relocated Trees (1 Laurel Oak & 4 Live Oaks)

Existing Trees to be Preserved

*Note: See Existing Tree Chart on Sheet LP-1 for more detailed info

Scale: 1" = 70'

0' 35' 70' 140' 210'

North

HJA DESIGN STUDIO
LANDSCAPE ARCHITECTURE
50 E. Ocean Blvd., Suite 101
Stuart, Florida 34994
T 772.678.7200
F 772.678.7201
www.hjadesignstudio.com
LA 0000905

Stuart Ocean Townhomes

City of Stuart Florida

Landscape Plan

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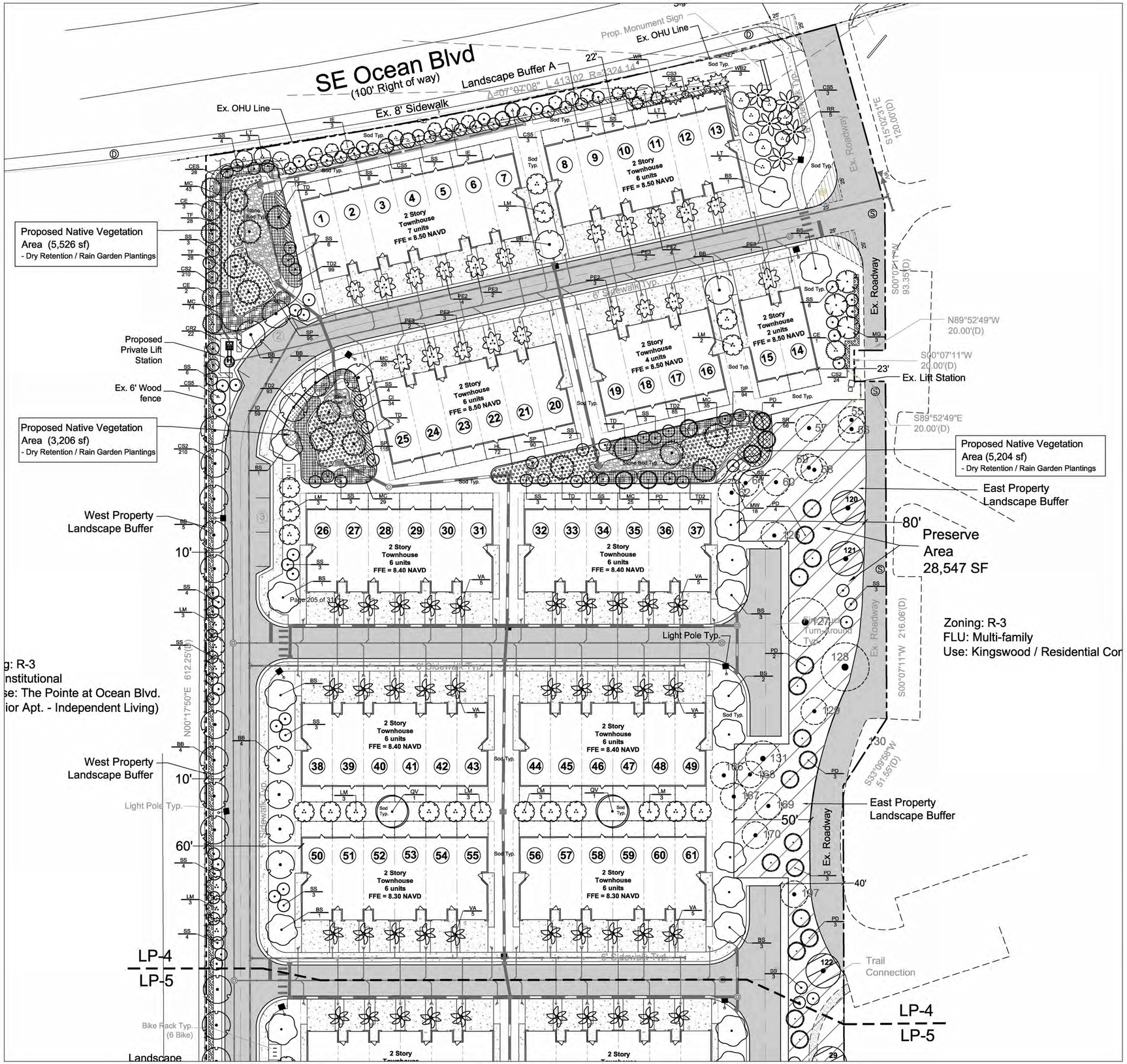
Revision Dates	

LP-3



ABBREVIATED TREE SCHEDULE			
TREES (2.5" DBH)	CODE	QTY	BOTANICAL / COMMON NAME
	IE	9	Ilex x attenuata `Eagleston` / Eagleston Holly
	PD	68	Pinus elliotti `Densa` / Slash Pine
	TD3	11	Taxodium distichum / Bald Cypress
TREES (4.5" DBH)	CODE	QTY	BOTANICAL / COMMON NAME
	BB	28	Bucida buceras `Shady Lady` / Shady Lady Black Olive
	BS	23	Bursera simaruba / Gumbo Limbo
	CE	13	Conocarpus erectus / Green Buttonwood
	CS5	13	Conocarpus erectus `Sericeus` / Silver Buttonwood
	DR	2	Delonix regia / Royal Poinciana
	LM	33	Lagerstroemia fauriei `Muskogee` / Muskogee Crape Myrtle
	LT	9	Lagerstroemia fauriei `Tuscarora` / Crape Myrtle Coral Pink
	MG	4	Magnolia grandiflora `D.D. Blanchard` / Southern Magnolia
	QV	12	Quercus virginiana / Southern Live Oak
	TD	26	Taxodium distichum / Bald Cypress
PALM TREES	CODE	QTY	BOTANICAL / COMMON NAME
	PE2	17	Ptychosperma elegans / Alexander Palm
	PE3	10	Ptychosperma elegans / Alexander Palm
	RR	5	Roystonea regia / Royal Palm
	SS	172	Sabal palmetto / Cabbage Palm
	VA	43	Veitchia arecina / Montgomery Palm
	WR	4	Washingtonia robusta / Mexican Fan Palm
	WB2	3	Wodyetia bifurcata / Foxtail Palm

NOTE: These are abbreviated Tree & Shrub Schedules.
See Sheet LP-6 for Schedules with Specifications.

ABBREVIATED SHRUB SCHEDULE		
GRASSES / GROUNDCOVERS	QTY	BOTANICAL / COMMON NAME
HL	333	Hymenocallis latifolia / Spider Lily
MC	467	Muhlenbergia capillaris / Pink Muhly
SP	1,145	Spartina bakeri / Sand Cord Grass
TF	80	Tripsacum dactyloides / Fakahatchee Grass
TD2	497	Tripsacum floridanum / Dwarf Fakahatchee
SHRUBS	QTY	BOTANICAL / COMMON NAME
CI	168	Chrysobalanus icaco / Cocoplum
CR2	22	Chrysobalanus icaco `Red Tip` / Red Tip Cocoplum
CS3	138	Clusia guttifera / Small-Leaf Clusia
CS2	280	Clusia guttifera / Small-Leaf Clusia
CES	51	Conocarpus erectus `sericeus` / Silver Buttonwood
ID	59	Ilex vomitoria `Schillings Dwarf` / Dwarf Schillings Holly
MW	31	Myrica cerifera / Wax Myrtle
SR	90	Serenoa repens / Saw Palmetto

Legend

Relocated Trees
(1 Laurel Oak & 4 Live Oaks)

Existing Trees to be Preserved

*Note: See Existing Tree Chart on Sheet LP-1 for more detailed info

Scale: 1" = 30'

0' 15' 30' 60' 90'

North

HJA DESIGN STUDIO
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50 E. Ocean Blvd., Suite 101
Stuart, Florida 34994
T 772.678.7200
F 772.678.7201
www.hjadesignstudio.com
LA 0000905

Stuart Ocean Townhomes

City of Stuart
Florida

Landscape Plan

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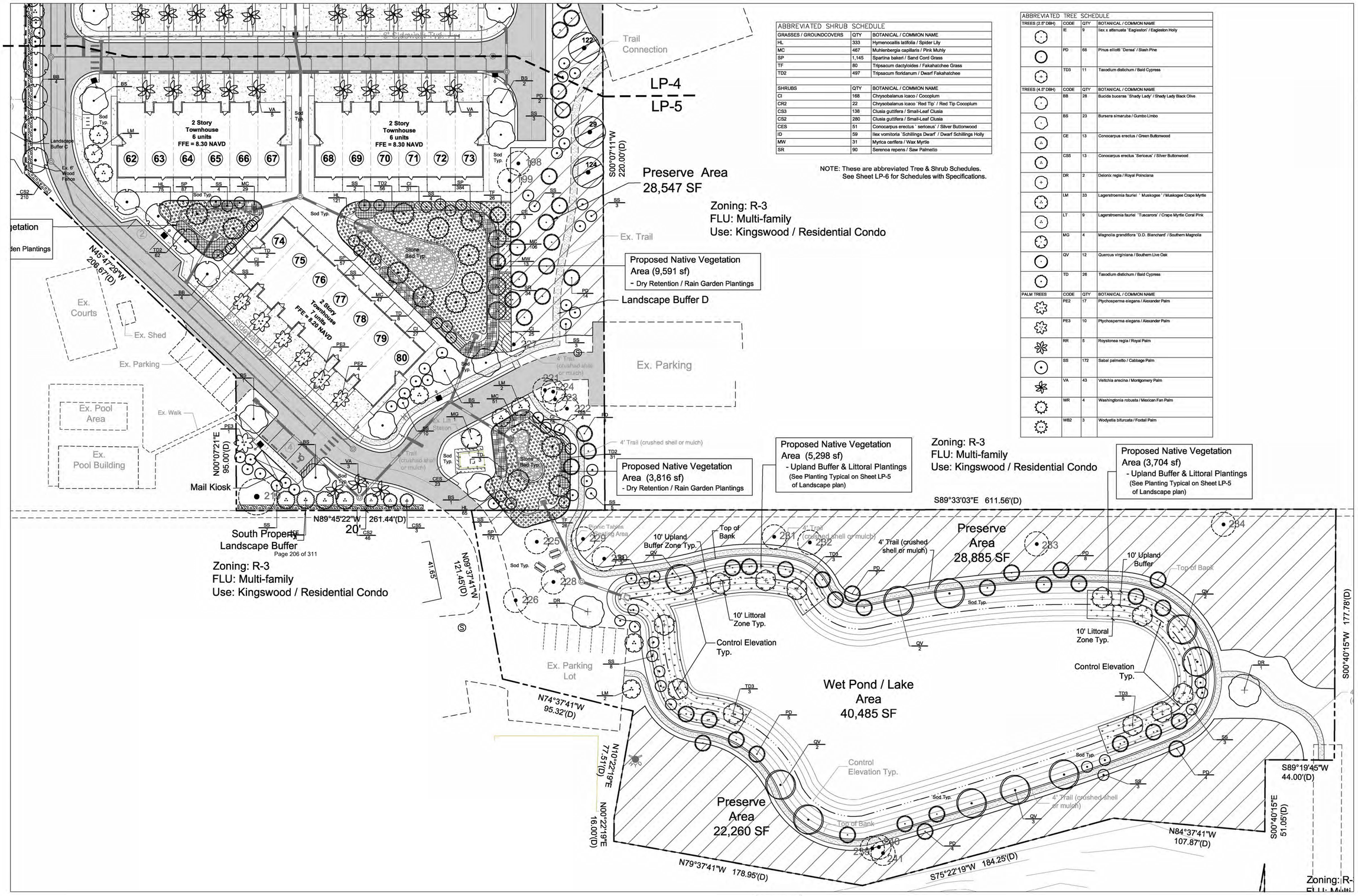
Revision Dates	

LP-4



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NOTE: These are abbreviated Tree & Shrub Schedules.
See Sheet LP-6 for Schedules with Specifications.

ABBREVIATED TREE SCHEDULE			
TREES (2.5" DBH)	CODE	QTY	BOTANICAL / COMMON NAME
	IE	9	Ilex x attenuata ˙Eagleston' / Eagleston Holly
	PD	68	Pinus elliottii ˙Densa' / Slash Pine
	TD3	11	Taxodium distichum / Bald Cypress
TREES (4.5" DBH)	CODE	QTY	BOTANICAL / COMMON NAME
	BB	28	Bucida buceras ˙Shady Lady' / Shady Lady Black Olive
	BS	23	Bursera simaruba / Gumbo Limbo
	CE	13	Conocarpus erectus / Green Buttonwood
	CS5	13	Conocarpus erectus ˙Sericeus' / Silver Buttonwood
	DR	2	Delonix regia / Royal Poinciana
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Legend

Relocated Trees (1 Laurel Oak & 4 Live Oaks)

Existing Trees to be Preserved

*Note: See Existing Tree Chart on Sheet LP-1 for more detailed info

Scale: 1" = 30'

0' 15' 30' 60' 90'

North

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City of Stuart Landscape Plan

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Submittal Dates	9-20-19
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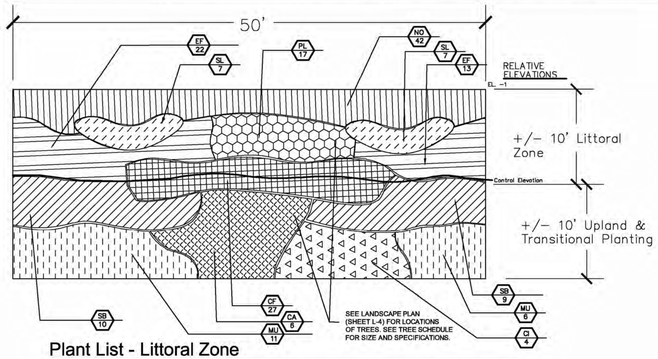
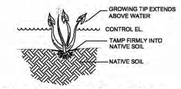
Revision Dates	

LP-5

50' Section of Typical Lake Littoral & Upland Buffer Planting Zone - 20' Width

N.T.S.





Littoral Planting Detail / Notes

N.T.S.

1. ALL PLANT MATERIALS SHALL BE PLANTED AND MAINTAINED IN A NATURAL ARRANGEMENT.

2. LITTORAL PLANTING ESTABLISHMENT SHALL BE COMPLETED ON STABILIZED SLOPES CONFORMING TO GRADES SET FROM CONTROL ELEVATION AND THE APPROVED CONSTRUCTION DRAWINGS.

3. PLANT SPECIES MAY BE SUBSTITUTED WITH SIMILAR NATIVE SPECIES
INDIGENOUS TO THE REGION BASED ON AVAILABILITY FROM LOCAL
NATIVE NURSERIES.

4. THE SLOPES OF CONSTRUCTED LAKE FROM THE TOP OF THE BANK TO THE
CONTROL ELEVATION SHALL BE IMMEDIATELY STABILIZED AND / OR SODDED TO THE SATISFACTION OF THE GROWTH MANAGEMENT DEPTARTMENT UPON COMPLETION OF THE LAKE CONSTRUCTION.

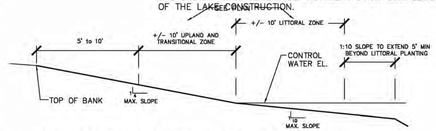
Plant List - Littoral Zone

QTY (50' TYP)	QTY (TOTAL)	SYMBOL	SPECIES(BOTANICAL/COMMON)	SPECIFICATION
14	130	SL*	SAGITTARIA LATIFOLIA / DUCK POTATO	2' O.C., BARE ROOT
42	391	NO*	NYMPHEA ODORATA / FRAGRANT WATER LILY	2' O.C., BARE ROOT
35	326	EF*	ELEOCHARIS FLAVESCENS / SPIKE RUSH	2' O.C., BARE ROOT
27	251	CF*	CANNA FLACCIDA / GOLDEN CANNA LILY	2' O.C., BARE ROOT
17	158	PL*	PONTEDERIA LANCEOLATA / PICKEREL WEED	2' O.C., BARE ROOT

Plant List - Upland Buffer Zone

QTY (50' TYP)	QTY (TOTAL)	SYMBOL	SPECIES(BOTANICAL/COMMON)	SPECIFICATION
19	177	SB*	SPARTINA BAKERI / SMOOTH CORDGRASS	3' O.C., 1 GAL., FULL
6	56	CA*	CALLICARPA AMERICANA / BEAUTYBERRY	5' O.C., 3 GAL., FULL
17	158	MU*	MUHLENBERGIA CAPILLARIS / MUHLY GRASS	3' O.C., 1 GAL., FULL
4	37	CI*	CHRYSOBALANUS ICACO / COCOPLUM	5' O.C., 3 GAL., FULL

*=FLORIDA NATIVE

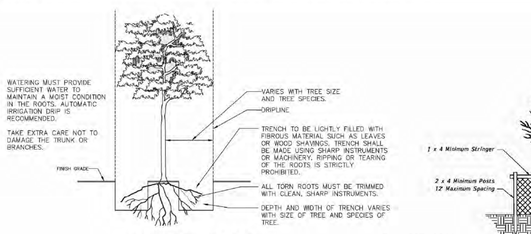


Littoral / Upland Buffer Zone - Cross Section

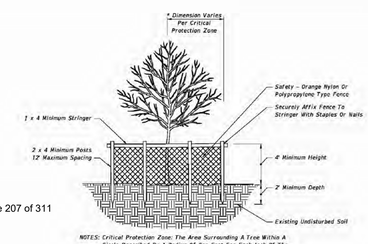
N.T.S.

* QUANTITIES ARE FOR A TYPICAL 50' SECTION. LINEAR FOOTAGE OF LITTORAL / UPLAND BUFFER SHOWN AROUND PERIMETER OF LAKE IS 463 LF. THEREFORE QUANTITIES SHOULD BE MULTIPLIED BY 9.3 (463 LF / 50) . SEE LANDSCAPE PLAN (SHEET LP-5) FOR LOCATION OF REQUIRED TREES. SEE TREE SCHEDULE FOR SIZE AND SPECIFICATIONS.

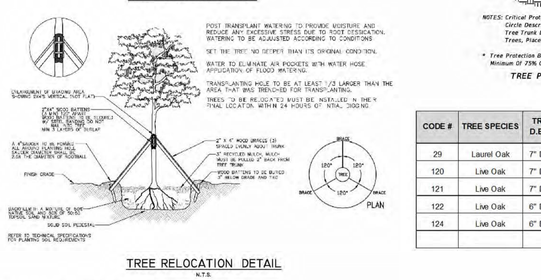
Root Pruning / Tree Relocation Chart & Details



ROOT PRUNING DETAIL



TREE PROTECTION BARRICADE

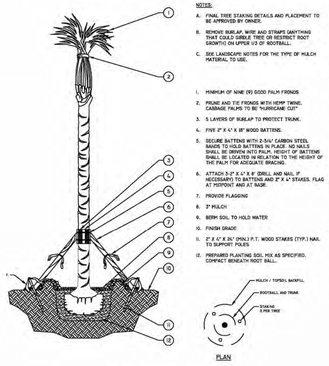


TREE RELOCATION DETAIL

N.T.S.

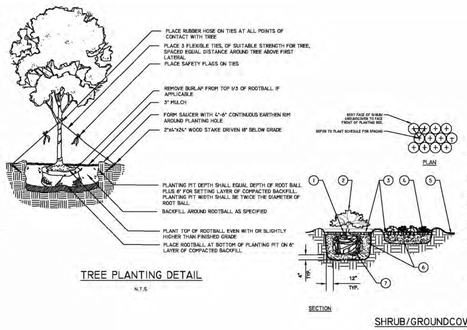
CODE #	TREE SPECIES	TREE D.B.H.	ROOTBALL DIAMETER	TRANSPLANTING HOLE SIZE (Min.)	MIN. WAITING TIME BETWEEN ROOT PRUNING & RELOCATION
29	Laurel Oak	7" DBH	70" DIA.	93" DIA.	2 Months (8 weeks)
120	Live Oak	7" DBH	70" DIA.	93" DIA.	2 Months (8 weeks)
121	Live Oak	7" DBH	70" DIA.	93" DIA.	2 Months (8 weeks)
122	Live Oak	6" DBH	60" DIA.	80" DIA.	2 Months (8 weeks)
124	Live Oak	6" DBH	60" DIA.	80" DIA.	2 Months (8 weeks)

Planting / Landscape Details



PALM TREE PLANTING

N.T.S.



TREE PLANTING DETAIL

N.T.S.

1. TOP OF SHRUB ROOTBALLS TO BE PLANTED 1" - 2" HIGH WITH SOIL MOUNDING UP TO THE TOP OF ROOTBALL.
2. WHEN USED IN MASSES: PRUNE ALL SHRUBS TO ACHIEVE A UNIFORM MASS/HEIGHT.
3. 3" MULCH AS SPECIFIED.
4. EXCAVATE ENTIRE BED SPECIFIED FOR GROUNDCOVER BED.
5. 6" MINIMUM OF TOPSOIL TO BRING TO FINISHED GRADE (SEE GRADING PLAN).
6. PREPARED PLANTING SOIL AS SPECIFIED. NOTE: WHEN GROUND COVERS AND SHRUBS USED IN MASSES ENTIRE BED TO BE AMENDED WITH PLANTING SOIL MIX AS SPECIFIED IN THE PLANTING SPECIFICATION.
7. SCARIFY ROOTBALL SIDES AND BOTTOM.

SHRUB/GROUNDCOVER PLANTING

N.T.S.

Xeriscape Landscape Requirement

To obtain a development permit, an applicant shall attain a minimum of 50 points from the following table of design options. As used in the table, "list" means the list of drought tolerant species set forth in the most current South Florida Water Management District's Waterwise, South Florida Landscapes, Landscaping to Promote Water Conservation Using the Principles of Xeriscape

Design Options:	Points	Points Received
(1) Utilization of moisture sensing controller other than rain switch	5	5
(2) Plan submitted with low, moderate and high water usage zones indicated on the landscape plan	5	
(3) Grasses / ground covers:		
25 - 50 % of the grasses / ground covers are made up of drought tolerant species from the list	5	
51 % or more of the grasses / ground covers are made up of drought tolerant species from the list	10	10
(4) Shrubs:		
25 - 50 % of the required shrubs are made up of drought tolerant species from the list	5	
51 % or more of the required shrubs are made up of drought tolerant species from the list	10	10
(5) Trees:		
25 - 50 % of the required trees are made up of drought tolerant species from the list	5	
51 % or more of the required trees are made up of drought tolerant species from the list	10	10
(6) Extra shade trees in vehicular use areas:		
25 % more than the required shade trees planted in the vehicular use areas.	5	5
50 % more than the required shade trees planted in the vehicular use areas.	10	
(7) Sod area less than 50 percent of provided landscape area.	10	
(8) Utilization of compacted mulched planting beds at least three inches in depth in all planted areas except ground covers. (Use of Cypress Mulch prohibited)	10	10

Total Points Provided: 50 Points

Landscape Notes

1. Plant materials used in conformance with the provisions of this landscape code shall conform to the Standards for Florida No. 1 or better as given in "Grades and Standards for Nursery Plants" Part I and Part II, 1963, State of Florida, Department of Agriculture, Tallahassee.
2. Tree locations may be adjusted for site permit application based on final construction and utility plans. Alternative plant species and enhanced landscaping beyond minimum requirements may be permitted subject to review and approval by the City of Stuart prior to installation. Trees and shrubs may be substituted based on availability.
3. For existing or proposed utilities, no tree shall be planted where it could, at maturity, cause conflict with overhead power lines. Large trees (height at maturity of no more than 30') from the nearest overhead power line. Medium height tree (height at maturity between 20' and 30' shall be offset at least 20') and small trees (height at maturity of less than 20') require no offset. Palms should be planted at a distance equal to or greater than the average frond length plus two (2) feet from power lines.
5. No tree, shrubs, hedges or vines shall be planted within 5' of an existing or proposed utility pole, guy wire or pad-mounted transformer. Tree species shall be selected as to minimize conflicts with existing or proposed utilities.
6. Ground cover used in lieu of grass shall be planted so as to present a finished appearance and reasonable complete coverage within three months of installation. All landscaped areas shall be sodded or otherwise covered with ground cover.
7. Mulch shall be installed in all planting areas to a minimum depth of three inches. The use of cypress mulch is prohibited
8. All landscaping within a visibility triangle shall provide unobstructed cross-visibility at a level between three feet and six feet and shall comply with the most current edition of the State of Florida DOT Roadway and Traffic Design Standards, Index 546 regarding visibility triangles.
9. Any hedge materials located within an interior landscaped island shall be maintained at a height of not more than 24 inches.
10. All above ground utilities shall be screened in accordance with City of Stuart requirements.
11. All required landscaping installed pursuant to this landscape code shall be installed according to accepted good planting practices.
12. All prohibited, exotic, and invasive species shall be removed from the entire site prior to the issuance of a certificate of occupancy.
13. All native vegetation which is not located in areas requiring their removal as reflected by an approved plan document shall be retained in an undisturbed state as provided in Chapter V, Resource Protection Related Development Standards.
14. To assure the health and survival of protected trees that are not to be removed, the contractor shall avoid the following kinds of tree injuries during all development activities: a. Mechanical injuries to roots, trunk, and branches; b. Injuries by chemical poisoning; c. Injuries by grade changes; d. Injuries by excavations, fill and; e. Injuries by paving.
15. Prior to any land preparation or other development activities a protective barrier easily visible to equipment operators shall be placed around all protected trees so as to encompass the entire tree protection zone.
16. No attachment, wires (other than supportive wires), signs or permits may be fastened to any protected tree.
17. No equipment, construction materials or debris of any kind shall be placed within the protective barrier.
18. Sod areas and quantities shall be provided at the time of site permit. 51% of sod areas provided shall be either zoysia or bahia sod species.

Irrigation Notes

1. All landscape & sod areas shall be irrigated by an automated system that provides 100% coverage and overlap.

2. Irrigation systems shall conform to the following standards: Irrigation systems shall be continuously maintained in working order and shall be designed not to overlap water zones or to water impervious areas.

3. No irrigation system shall be installed or maintained abutting any public street which causes water from the system to overspray onto the roadway or to strike passing vehicular traffic.

4.Irrigation Water Source: To Be Determined

5.Irrigation system shall provide a moisture sensing controller other than rain switch to monitor rain levels and irrigation needs.

TREE SCHEDULE

	TREES (2.5" DBH)	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	NATIVE	CREDIT
		IE	9	Ilex x attenuata `Eagleston` / Eagleston Holly * Pine Mitigation (Softwoods)	2.5" DBH, 12 - 13` Ht. x 6` Spr., Std., 4-5` ct.	Yes	22.5 inches
		PD	68	Pinus elliotti `Densa` / Slash Pine * Pine Mitigation (Softwoods)	2.5" DBH., 12` ht. x 6` Spr., Std., 4-5` ct.	Yes	170 inches
		TD3	11	Taxodium distichum / Bald Cypress * Pine Mitigation (Softwoods)	2.5"DBH, 12` - 13` Ht. x 6` Spr., Std., 4-5` ct.	Yes	27.5 inches
	TREES (4.5" DBH)	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	NATIVE	CREDIT
*		BB	28	Bucida buceras `Shady Lady` / Shady Lady Black Olive * Tree Mitigation (Hardwoods)	4.5" DBH., 15` - 17` Ht. x 6 - 7` Spr., Std., 4-5` ct.	No	126 inches
		BS	23	Bursera simaruba / Gumbo Limbo * Tree Mitigation (Hardwoods)	4.5" DBH, 14` - 16` Ht. x 6 - 8` Spr., Std., 5` - 6` ct.	Yes	103.5 inches
*		CE	13	Conocarpus erectus / Green Buttonwood * Tree Mitigation (Hardwoods)	4.5" DBH., 12 - 14` Ht. x 6` - 8` Spr., Multi-trunk, 4-5` ct.	Yes	58.5 inches
		CS5	13	Conocarpus erectus `Sericeus` / Silver Buttonwood * Tree Mitigation (Hardwoods)	4.5" DBH., 12` Ht. x 6` Spr., Multi-trunk, 4` ct.	Yes	58.5 inches
*		DR	2	Delonix regia / Royal Poinciana * Tree Mitigation (Hardwoods)	4.5" DBH, 14` - 16` Ht. x 6 - 8` Spr., Std., 5` - 6` ct.	No	9 inches
*		LM	33	Lagerstroemia fauriei ` Muskogee ` / Muskogee Crape Myrtle * Tree Mitigation (Hardwoods)	4.5" DBH., 12 - 13` Ht. x 6` Spr., Multi-trunk, 5- 6` ct.	No	148.5 Inches
*		LT	9	Lagerstroemia fauriei `Tuscarora` / Crape Myrtle Coral Pink * Tree Mitigation (Hardwoods)	4.5" DBH., 12 - 13` Ht. x 6` Spr., Multi-trunk, 5- 6` ct.	no	40.5 inches
		MG	4	Magnolia grandiflora `D.D. Blanchard` / Southern Magnolia * Tree Mitigation (Hardwoods)	4.5" DBH., 15` - 17` Ht. x 6 - 7` Spr., Std., 4-5` ct.	Yes	18 inches
*		QV	12	Quercus virginiana / Southern Live Oak * Tree Mitigation (Hardwoods)	4.5" DBH, 16 -18` Ht x 7 - 9` Spr., Std., 6` ct.	Yes	54 inches
*		TD	26	Taxodium distichum / Bald Cypress * Tree Mitigation (Hardwoods)	4.5" DBH., 15` - 17` Ht. x 6 - 7` Spr., Std., 4-5` ct.	Yes	117 inches
*	PALM TREES	CODE	QTY	BOTANICAL / COMMON NAME	SIZE	NATIVE	CREDIT
*		PE2	17	Ptychosperma elegans / Alexander Palm * Pine Mitigation (Softwoods)	13` ct., Double Specimen	No	76.5 inches
*		PE3	10	Ptychosperma elegans / Alexander Palm * Pine Mitigation (Softwoods)	14` ct., Triple Specimen	No	45 inches
*		RR	5	Roystonea regia / Royal Palm * Pine Mitigation (Softwoods)	18` ct.	Yes	42.5 inches
*		SS	172	Sabal palmetto / Cabbage Palm * Pine Mitigation (Softwoods)	32 @ 15` ct., 40 @ 17` ct., 50 @ 19`ct., 50 @ 21` ct.	Yes	1,526 inches
		VA	43	Veitchia arecina / Montgomery Palm * Pine Mitigation (Softwoods)	14` ct., Single Specimen	No	193.5 inches
*		WR	4	Washingtonia robusta / Mexican Fan Palm * Pine Mitigation (Softwoods)	2 @ 16` ct., 2 @ 18` ct.	No	30 inches
*		WB2	3	Wodyetia bifurcata / Foxtail Palm * Pine Mitigation (Softwoods)	14` ct., Double Specimen	No	13.5 inches

Note: 14' ct. = 4.5 inches. For every one foot of clear trunk of palm tree exceeding 14' ct., credit will be given for one inch of replacement .

*** Drought Tolerant Tree Species**
(per most current SFWMD Waterwise, South Florida Landscapes, Landscaping to Promote Water Conservation Using the Principles of Xeriscape)

Total Provided / Req. Trees		393 Trees
Shade Trees	251 Trees	
1:1 Palm Trees	30 Trees	
2:1 Palm Trees	112 Trees (224 Palm / 2)	
Drought Tolerant Trees Provided		335 Trees (85%)

Native Tree Requirement (50% Minimum)

Total Provided / Req. Trees		393 Trees
Shade Trees	251 Trees	
1:1 Palm Trees	30 Trees	
2:1 Palm Trees	112 Trees (224 Palm / 2)	
Native Trees Required (383 Required Trees x 50%)		197 Trees (50%)
Native Trees Provided		267 Trees (68%)

SHRUB SCHEDULE

	GRASSES / GROUNDCOVERS	QTY	BOTANICAL / COMMON NAME	SIZE	DETAILS	NATIVE	SPACING
**	HL	333	Hymenocallis latifolia / Spider Lily	1 gal	* Full pot	Yes	24" o.c.
**	MC	467	Muhlenbergia capillaris / Pink Muhly	1 gal	* Full pot	Yes	36" o.c.
**	SP	1,145	Spartina bakeri / Sand Cord Grass	1 gal	* Full pot	Yes	36" o.c.
**	TF	80	Tripsacum dactyloides / Fakahatchee Grass	1 gal	Full	Yes	48" o.c.
**	TD2	497	Tripsacum floridanum / Dwarf Fakahatchee	1 gal	Full	Yes	30" o.c.
	SHRUBS	QTY	BOTANICAL / COMMON NAME	SIZE	DETAILS	NATIVE	SPACING
*	CI	168	Chrysobalanus icaco / Cocoplum	3 gal	Full	Yes	36" o.c.
	CR2	22	Chrysobalanus icaco `Red Tip` / Red Tip Cocoplum	3 gal	24" Ht., full	Yes	36" o.c.
*	CS3	138	Clusia guttifera / Small-Leaf Clusia	3 gal	24" - 30" Ht., Full	Yes	30" o.c.
*	CS2	280	Clusia guttifera / Small-Leaf Clusia	3 gal	24" Ht. Min.	Yes	36" o.c.
*	CES	51	Conocarpus erectus ` sericeus` / Silver Buttonwood	3 gal	24" Ht., full	Yes	30" o.c.
*	ID	59	Ilex vomitoria `Schillings Dwarf` / Dwarf Schillings Holly	3 gal	Full	Yes	24" o.c.
*	MW	31	Myrica cerifera / Wax Myrtle	3 gal	Full	Yes	48" o.c.
*	SR	90	Serenoa repens / Saw Palmetto	1 gal	Full	Yes	36" o.c.

*** Drought Tolerant Shrub Species**
(per most current SFWMD Waterwise, South Florida Landscapes, Landscaping to Promote Water Conservation Using the Principles of Xeriscape)

Total Provided Shrubs	864 Shrubs
Drought Tolerant Shrubs	842 Shrubs (97%)

**** Drought Tolerant Grasses / Ground Covers Species**
(per most current SFWMD Waterwise, South Florida Landscapes, Landscaping to Promote Water Conservation Using the Principles of Xeriscape)

Total Provided Grasses / GC	2,449 Grasses / GC
Drought Tolerant Grasses / GC	2,449 Grasses / GC (100%)

Native Shrub Requirement (50% Minimum)

Total Provided Shrubs	864 Shrubs
Native Shrubs Provided	864 Shrubs (100%)

Native Grasses / Ground Cover Requirement (50% Minimum)

Total Provided Grasses / GC	2,449 Grasses / GC
Native Grasses / Ground Covers	2,449 Grasses / GC (100%)

HJA DESIGN STUDIO
LANDSCAPE ARCHITECTURE
50 E. Ocean Blvd., Suite 101
Stuart, Florida 34994
T 772.678.7200
F 772.678.7201
www.hjadesignstudio.com
LA 0000905

Stuart Ocean Townhomes

City of Stuart
Florida

Landscape Specifications

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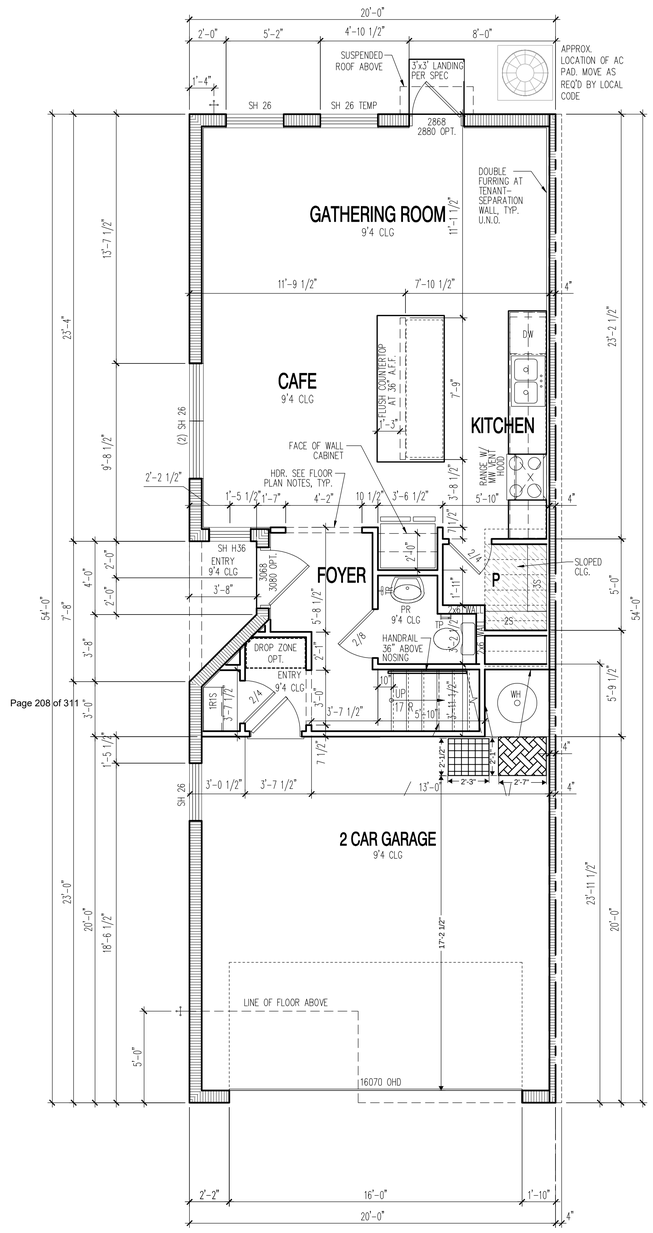
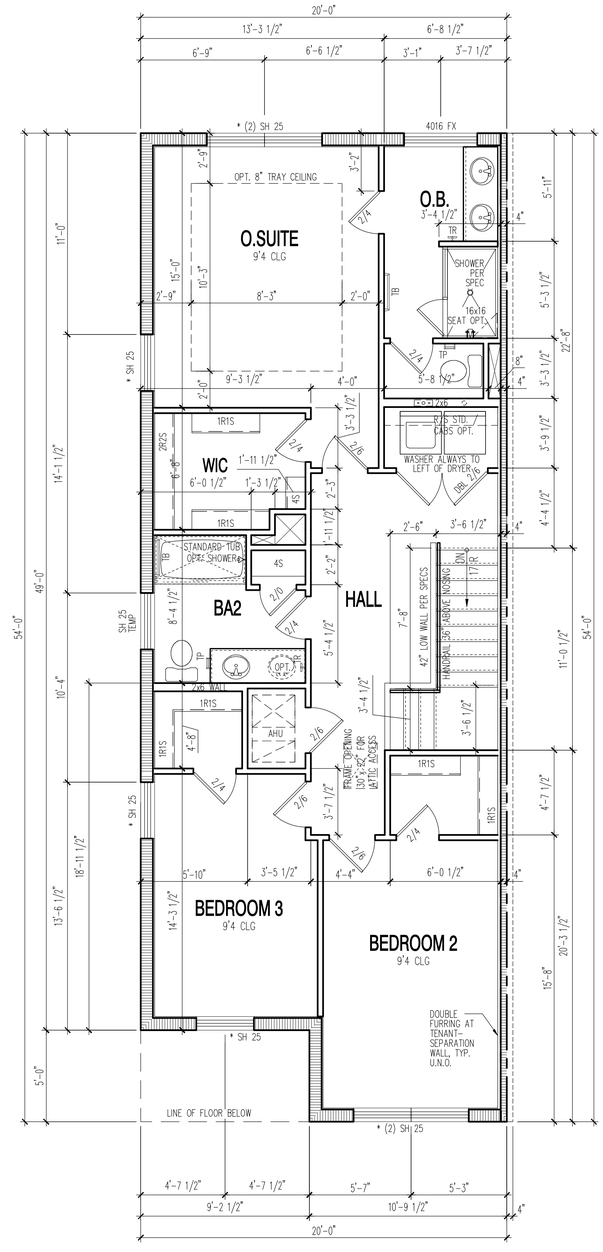
Job No. 19005
Drawn By TT
Checked By MH
Approved By MH
Submittal Dates 9-6-19
12-05-19 1-16-20
Revision Dates

LP-6



GRAYTON - 1ST FLOOR

SCALE: 1/4"=1'-0"



GRAYTON - 2ND FLOOR

SCALE: 1/4"=1'-0"

LEGEND

TRASH RECEPTICLE 25"x27"

RECYCLE RECEPTICLE 26"x31"

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BASE FLOOR PLANS

PRODUCTION MANAGER

CONTROL DATE: 2/16/18

REV #	DATE / DESCRIPTION

PROJECT TYPE
SF ATTACHED

COMMUNITY NAME

LAWSON COMMUNITY ID

GARAGE HANDING
–

VERSION NUMBER
1.0

PLAN NAME / NPC
NAVARRE 2498.502

GRAYTON 2567.508

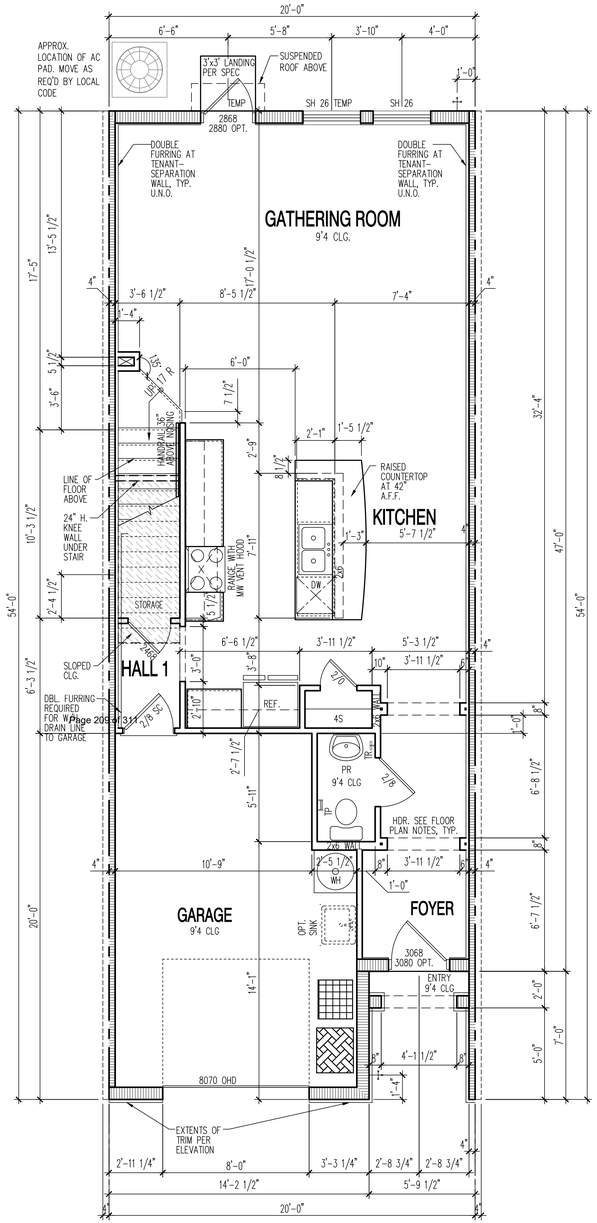
LAWSON PLAN ID

LEGACY PLAN NUMBER / NAME

SHEET
A1.11

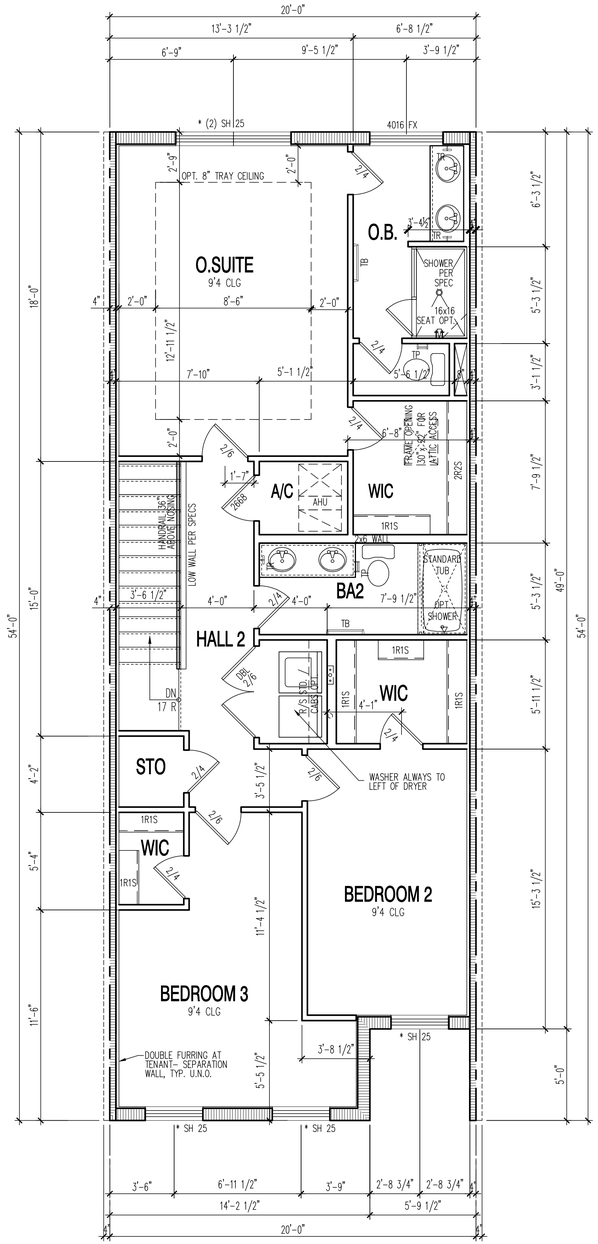
NOTE: SCALES NOTED ON DRAWINGS RELATE TO FULL SIZE PLOTS ON 22x34 SHEETS - 11x17 SHEETS REPRESENT 1/2 SCALE PLOTS

PLOTTED: June 13, 2018 / Rajeev Kumar / TQS 3_18"_20"-TN_GRAYTON_NAVARRE_MASTER_ARCH_2018-06-13.DWG



NAVARRE - 1ST FLOOR (INTERIOR UNIT)

SCALE: 1/4"=1'-0"



NAVARRE - 2ND FLOOR (INTERIOR UNIT)

SCALE: 1/4"=1'-0"

LEGEND

TRASH RECEPTICLE 25"x27"

RECYCLE RECEPTICLE 26"x31"

NOTE: SCALES NOTED ON DRAWINGS RELATE TO FULL SIZE PLOTS ON 22x34 SHEETS - 11x17 SHEETS REPRESENT 1/2 SCALE PLOTS

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BASE FLOOR PLANS-INTERIOR UNIT

PRODUCTION MANAGER
--
CONTROL DATE: 2/16/18

REV #	DATE / DESCRIPTION

PROJECT TYPE
SF ATTACHED

COMMUNITY NAME
LAWSON COMMUNITY ID

GARAGE HANDING
--

VERSION NUMBER
1.0

PLAN NAME / NPC
NAVARRE 2498.502

LAWSON PLAN ID

LEGACY PLAN NUMBER / NAME

SHEET
A1.11

PLOTTED: May 22, 2019 / Mark Anderson / TC3 3_20"-TH_NAVARRE_MASTER_ARCH_2019-05-09.DWG

FRONT ELEVATION

SCALE: 3/16"=1'-0"

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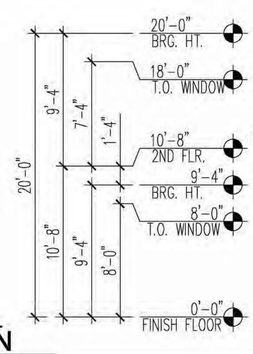
REAR ELEVATION

SCALE: 3/16"=1'-0"

LEFT ELEVATION

SCALE: 3/16"=1'-0"



RIGHT ELEVATION

SCALE: 3/16"=1'-0"

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ELEVATIONS - FM1A

PRODUCTION MANAGER
--
CONTROL DATE: 2/16/18

REV #	DATE / DESCRIPTION

PROJECT TYPE: SF ATTACHED

COMMUNITY NAME
LAWSON COMMUNITY ID

GARAGE HANDING
--

VERSION NUMBER
1.0

PLAN NAME / NPC
NAVARRE 2498.502

GRAYTON 2567.508
LAWSON PLAN ID
LEGACY PLAN NUMBER / NAME

SHEET
B6.3-FM1A

[NOTE: SCALES NOTED ON DRAWINGS RELATE TO FULL SIZE PLOTS ON 22x34 SHEETS – 11x17 SHEETS REPRESENT 1/2 SCALE PLOTS]

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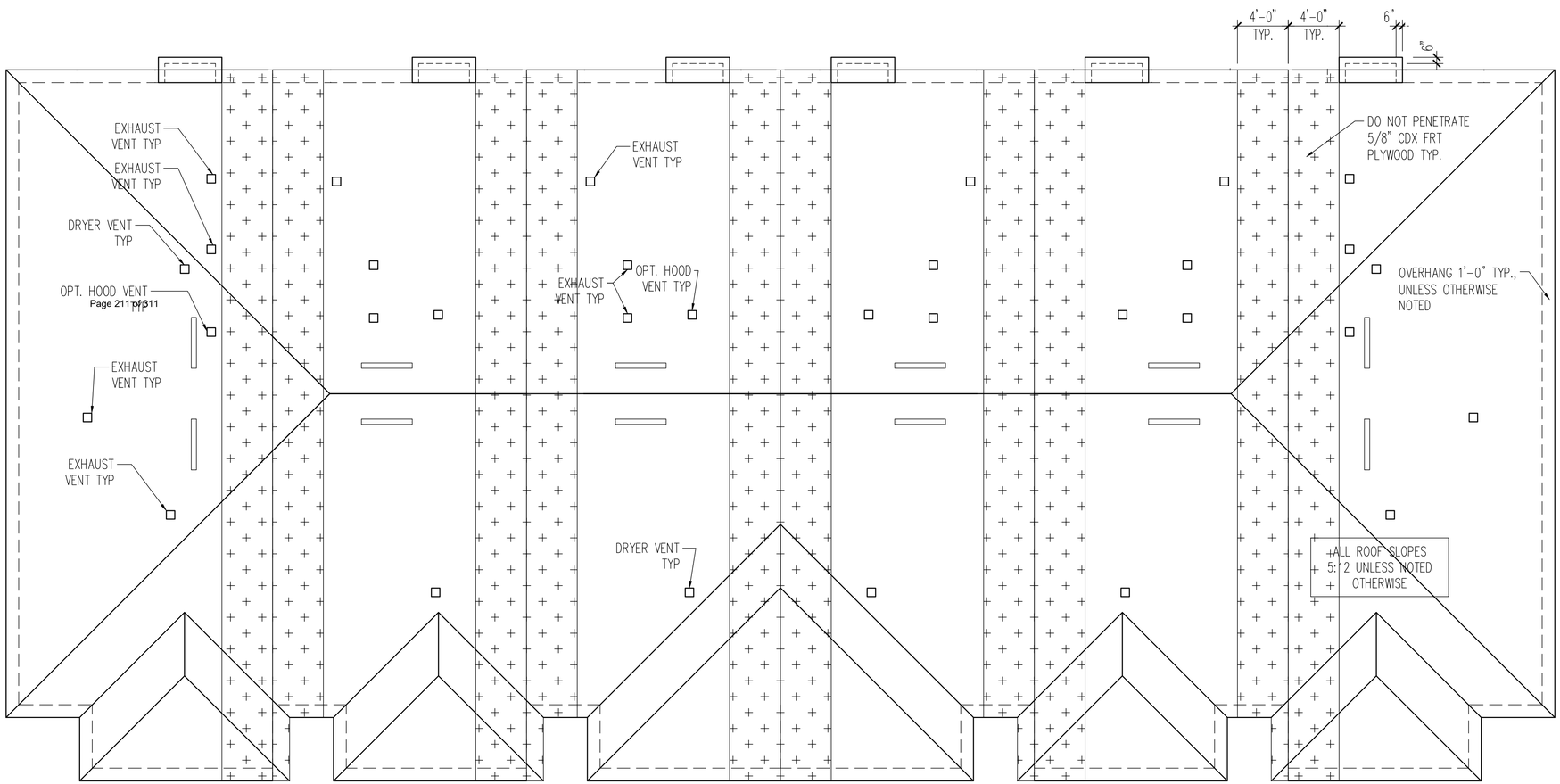

ROOF PLAN

SCALE: 3/16"=1'-0"

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ROOF PLAN

PRODUCTION MANAGER
--
CONTROL DATE: 2/16/18

REV #	DATE / DESCRIPTION

NOTE: SCALES NOTED ON DRAWINGS RELATE TO FULL SIZE PLOTS ON 22x34 SHEETS – 11x17 SHEETS REPRESENT 1/2 SCALE PLOTS

PROJECT TYPE
SF ATTACHED

COMMUNITY NAME
LAWSON COMMUNITY ID

GARAGE HANDING
--

VERSION NUMBER
1.0

PLAN NAME / NPC
NAVARRE 2498.502

LAWSON PLAN ID
LEGACY PLAN NUMBER / NAME

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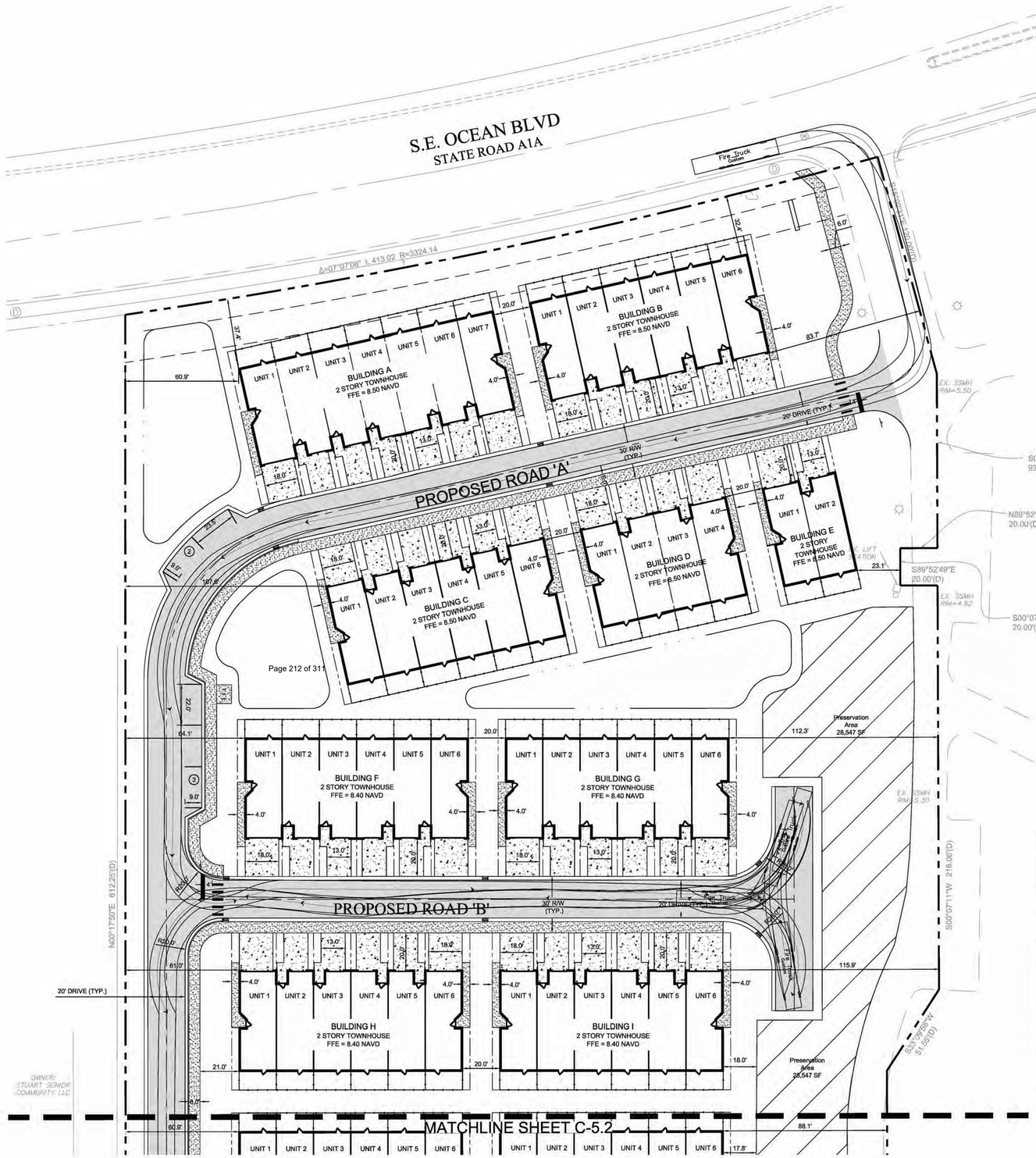

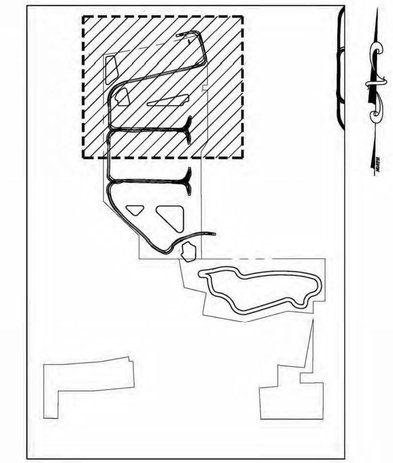

PROPERTY LINE
ADJACENT PROPERTY LINE
EDGE OF SIDEWALK
UTILITY EASEMENT
WOOD FENCE
EDGE OF PAVEMENT
CHAIN LINK FENCE
CENTERLINE OF ROAD
OVERHEAD ELECTRIC SERVICE
WATER LINE
SEWER LINE
TYPE "F" CURB & GUTTER
DRAINAGE MANHOLE
IRRIGATION CONTROL VALVE
RPZ / DDCV
SIGN / CROSSWALK SIGNAL
FIRE HYRANT
CONCRETE UTILITY POLE/CONCRETE POWER POLE
SANITARY SEWER MANHOLE
SPOT ELEVATION
WATER VALVE / BACKFLOW PREVENTER
GUY ANCHOR
SANITARY SEWER MANHOLE
HAND HOLE
TRAFFIC JUNCTION BOX
UTILITY BOX
LIGHT POLE
WOOD UTILITY POLE

PROPOSED LEGEND

ASPHALT PAVEMENT
HEAVY DUTY CONCRETE PAVEMENT
CONCRETE PAVEMENT
TREE RESERVATION
TYPE "F" CURB & GUTTER
BUILDING SETBACK LINE
LANDSCAPE BUFFER LINE
FPL EASEMENT
PARKING OVERHANG
RETENTION POND
EDGE OF PAVEMENT
ELECTRIC TRANSFORMER W/ BOLLARDS
PARKING STRIPING
PARKING COUNT
FUEL VENTS
AIR/VAC
SIGN
MONUMENT SIGN
FUEL VENTS
AIR/VAC
BIKE RACK
RAMP

DATUM NOTE

1. THE ELEVATIONS SHOWN HERON ARE REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).

ABBREVIATIONS

EX.	EXISTING	S	SOUTH
INV.	INVERT	SAN.	SANITARY
N	NORTH	SS	SANITARY SEWER
PUB.	PUBLIC	SD	STORM DRAIN
PL	PROPERTY LINE	TYP.	TYPICAL
PROP.	PROPOSED	W	WEST
PRIV.	PRIVATE	W/	WITH
R/W	RIGHT OF WAY	WV	WATER VALVE

SITE DATA	
APPLICATION NAME	SERRAGUI GROUP INVESTMENTS LLC.
PARCEL CONTROL NUMBER	02-38-41-000-000-00020-6 & 01-38-41-000-000-00050-9
ZONING	R-3 - RESIDENTIAL (MULTI-FAMILY/DUPLEX)
SECTION/TOWNSHIP/RANGE	SECTION 2; TOWNSHIP 38 SOUTH; RANGE 41 EAST
PROPOSED USE	2-STORY SINGLE FAMILY TOWNHOMES
PROPOSED ZONING	RPUD (30 DU/ AC)
PROPOSED DWELLING UNITS	80 UNITS
F.A.R	0.17

SITE CALCULATIONS			
AREA	SF	ACRES	%
PARCEL A	349,446	8.02	73
PARCEL B	131,156	3.01	27
TOTAL SITE AREA (PARCEL A + B)	480,602	11.03	100
IMPERVIOUS AREAS: PAVEMENT/SIDEWALK/REAR PATIOS	55,082	1.26	12
EXISTING & PROPOSED VEHICULAR USED AREAS	66,670	1.53	14
BUILDING COVERAGE	83,230	1.91	17
TOTAL IMPERVIOUS AREA	204,962	4.70	43
DRY RETENTION AREAS	70,868	1.63	14
NATIVE PRESERVE AREAS	87,975	2.02	18
OTHER LANDSCAPE / OPEN SPACE	119,797	2.75	25
OPEN SPACE (GREEN)	275,640	6.33	57
OPEN SPACE REQUIRED			35% (MIN)

BUILDING SETBACKS		
DIRECTION	REQUIRED	PROPOSED
NORTH	50 FT	32.4 FT
EAST	5 FT	23 FT
SOUTH	10' FT	72.8 FT
WEST	5 FT	43 FT

PARKING	
PARKING REQUIRED	
2 SPACES PER UNIT W/ 2 OR MORE BEDROOMS	160 SPACES
PARKING PROVIDED	
1 SPACE PER GARAGE + 1 PER DRIVEWAY + 11 ON-STREET	171 SPACES
TOTAL PROVIDED	331 SPACES

LANDSCAPE BUFFERS		
DIRECTION	REQUIRED	PROPOSED
NORTH	15 FT	21.6 FT
EAST	25 FT	40.6 FT
SOUTH	25 FT	20.5 FT
WEST	25 FT	10.0 FT

GRAPHIC SCALE
30 0 15 30 60
(IN FEET)
1 inch = 30 ft.

Bowman CONSULTING
Certificate of Authorization License No. 30462
Bowman Consulting Group, Ltd.
13450 W. Sunrise Blvd.,
Suite 320
Sunrise, FL 33323
Phone: (954) 314-8460
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TRUCK ROUTE PLAN
STUART OCEAN TOWNHOMES
S.E. OCEAN BLVD
CITY OF STUART
MARTIN COUNTY, FLORIDA

Pulte Homes

REVISIONS	
DATE	DESCRIPTION

BR DESIGN	SU DRAWN	JT CHKD

SCALE: 1" = 20'
JOB No.: 010655-01-001
DATE: 09/20/2019
SHEET TR-1

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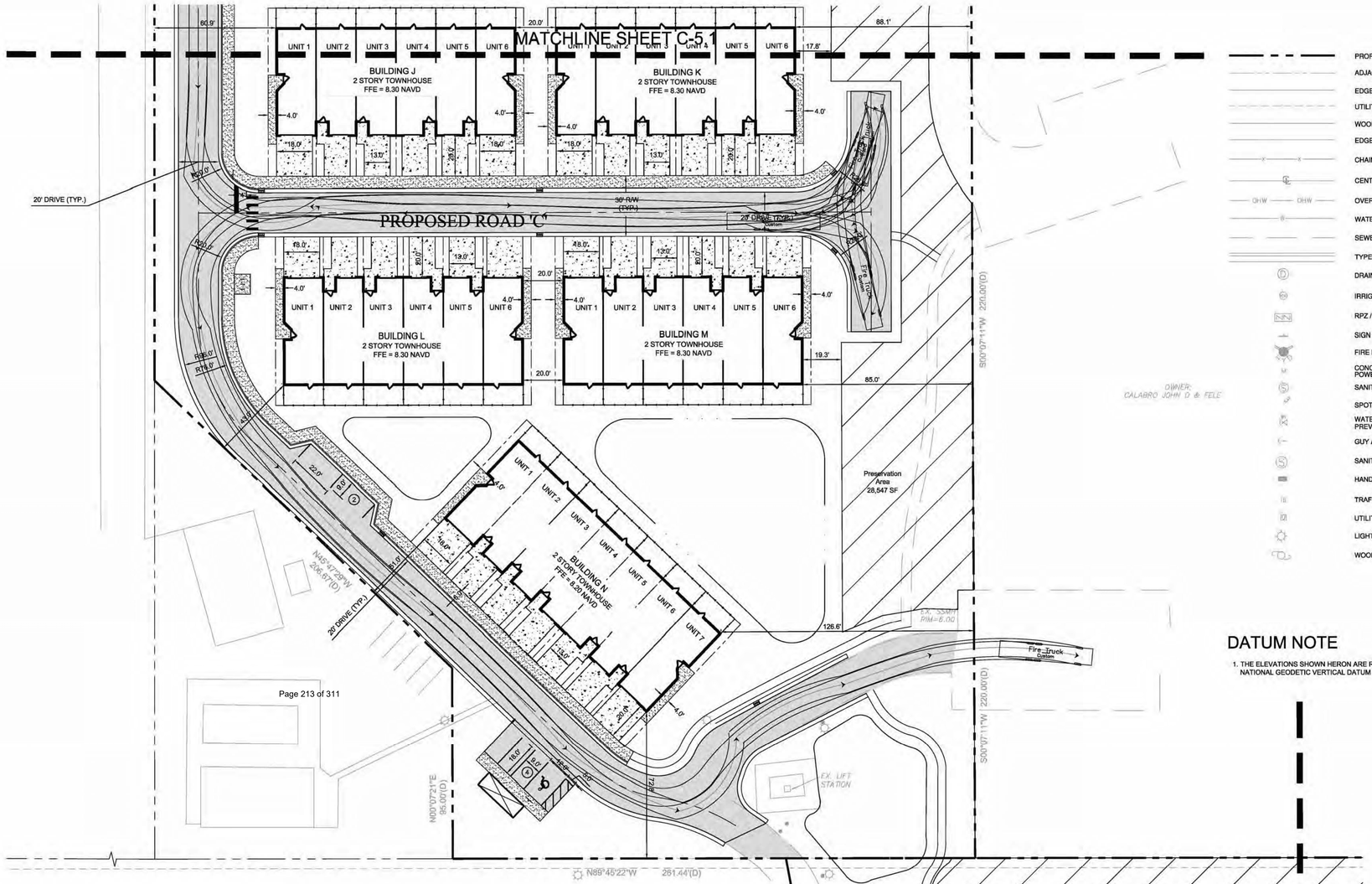

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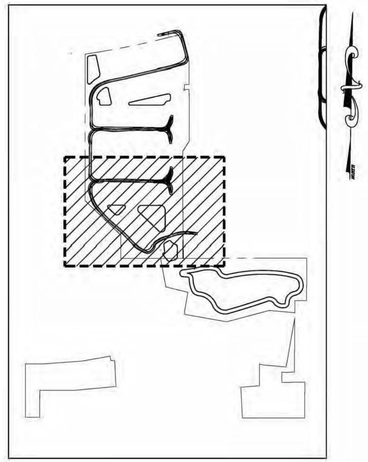
PROPOSED LEGEND

- ASPHALT PAVEMENT
- HEAVY DUTY CONCRETE PAVEMENT
- CONCRETE PAVEMENT
- TREE RESERVATION
- TYPE "F" CURB & GUTTER
- BUILDING SETBACK LINE
- LANDSCAPE BUFFER LINE
- FPL EASEMENT
- PARKING OVERHANG
- RETENTION POND
- EDGE OF PAVEMENT
- ELECTRIC TRANSFORMER W/ BOLLARDS
- PARKING STRIPING
- PARKING COUNT
- FUEL VENTS
- AIR/VAC
- SIGN
- MONUMENT SIGN
- FUEL VENTS
- AIR/VAC
- BIKE RACK
- RAMP

- PROPERTY LINE
- ADJACENT PROPERTY LINE
- EDGE OF SIDEWALK
- UTILITY EASEMENT
- WOOD FENCE
- EDGE OF PAVEMENT
- CHAIN LINK FENCE
- CENTERLINE OF ROAD
- OVERHEAD ELECTRIC SERVICE
- WATER LINE
- SEWER LINE
- TYPE "F" CURB & GUTTER
- DRAINAGE MANHOLE
- IRRIGATION CONTROL VALVE
- RPZ / DDCV
- SIGN / CROSSWALK SIGNAL
- FIRE HYRANT
- CONCRETE UTILITY POLE/CONCRETE POWER POLE
- SANITARY SEWER MANHOLE
- SPOT ELEVATION
- WATER VALVE / BACKFLOW PREVENTER
- GUY ANCHOR
- SANITARY SEWER MANHOLE
- HAND HOLE
- TRAFFIC JUNCTION BOX
- UTILITY BOX
- LIGHT POLE
- WOOD UTILITY POLE



ABBREVIATIONS

EX.	EXISTING	S	SOUTH
INV.	INVERT	SAN.	SANITARY
N	NORTH	SS	SANITARY SEWER
PUB.	PUBLIC	SD	STORM DRAIN
PL	PROPERTY LINE	TYP.	TYPICAL
PROP.	PROPOSED	W	WEST
PRIV.	PRIVATE	W/	WITH
R/W	RIGHT OF WAY	WV	WATER VALVE

SITE DATA

APPLICATION NAME	SERRAGUI GROUP INVESTMENTS LLC.
PARCEL CONTROL NUMBER	02-38-41-000-000-00020-6 & 01-38-41-000-000-00050-9
ZONING	R-3 - RESIDENTIAL (MULTI-FAMILY/DUPLEX)
SECTION/TOWNSHIP/RANGE	SECTION 2; TOWNSHIP 38 SOUTH; RANGE 41 EAST
PROPOSED USE	2-STORY SINGLE FAMILY TOWNHOMES
PROPOSED ZONING	RPUD (30 DU/ AC)
PROPOSED DWELLING UNITS	80 UNITS
F.A.R	0.17

SITE CALCULATIONS

AREA	SF	ACRES	%
PARCEL A	349,446	8.02	73
PARCEL B	131,156	3.01	27
TOTAL SITE AREA (PARCEL A + B)	480,602	11.03	100
IMPERVIOUS AREAS: PAVEMENT/SIDEWALK/REAR PATIOS	55,062	1.26	12
EXISTING & PROPOSED VEHICULAR USED AREAS	66,670	1.53	14
BUILDING COVERAGE	83,230	1.91	17
TOTAL IMPERVIOUS AREA	204,962	4.70	43
DRY RETENTION AREAS	70,868	1.63	14
NATIVE PRESERVE AREAS	87,975	2.02	18
OTHER LANDSCAPE / OPEN SPACE	119,797	2.75	25
OPEN SPACE (GREEN)	275,640	6.33	57
OPEN SPACE REQUIRED			35% (MIN)

BUILDING SETBACKS

DIRECTION	REQUIRED	PROPOSED
NORTH	50 FT	32.4 FT
EAST	5 FT	23 FT
SOUTH	10' FT	72.8 FT
WEST	5 FT	43 FT

PARKING

PARKING REQUIRED	
2 SPACES PER UNIT W/ 2 OR MORE BEDROOMS	160 SPACES
PARKING PROVIDED	
1 SPACE PER GARAGE + 1 PER DRIVEWAY + 11 ON-STREET	171 SPACES
TOTAL PROVIDED	331 SPACES

LANDSCAPE BUFFERS

DIRECTION	REQUIRED	PROPOSED
NORTH	15 FT	21.6 FT
EAST	25 FT	40.6 FT
SOUTH	25 FT	20.5 FT
WEST	25 FT	10.0 FT

DATUM NOTE

1. THE ELEVATIONS SHOWN HERON ARE REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM 1929 (NGVD 29).

GRAPHIC SCALE

30 0 15 30 60

(IN FEET)
1 inch = 30 ft.

Bowman CONSULTING
Certificate of Authorization License No. 30462

Bowman Consulting Group, Ltd.
13450 W. Sunrise Blvd.,
Suite 320
Sunrise, FL 33323
Phone: (954) 314-8460
www.bowmanconsulting.com
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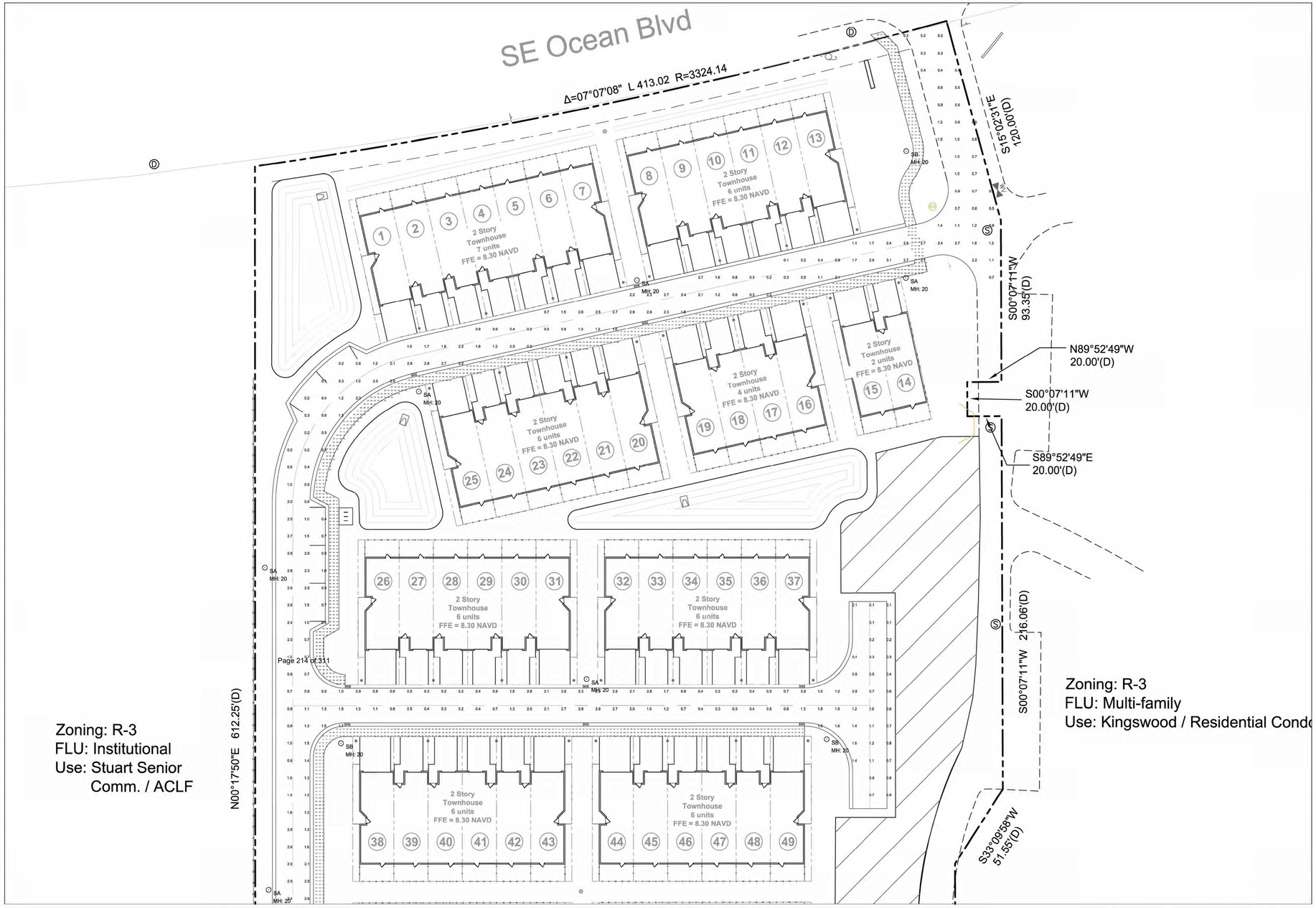
TRUCK ROUTE PLAN
STUART OCEAN TOWNHOMES
S.E. OCEAN BLVD
CITY OF STUART
MARTIN COUNTY, FLORIDA

Pulte Homes

REVISIONS

DATE	DESCRIPTION	
BR DESIGN	SU DRAWN	JT CHKD
SCALE:	1" = 20'	
JOB No.:	010655-01-001	
DATE:	09/20/2019	
SHEET	TR-2	

THIS DOCUMENT, TOGETHER WITH THE CONCEPTS AND DESIGNS PRESENTED HEREIN, AS AN INSTRUMENT OF SERVICE, IS INTENDED ONLY FOR THE SPECIFIC PURPOSE AND CLIENT FOR WHICH IT WAS PREPARED. REUSE OF AND IMPROPER RELIANCE ON THIS DOCUMENT WITHOUT WRITTEN AUTHORIZATION AND ADAPTATION BY BOWMAN CONSULTING SHALL BE WITHOUT LIABILITY TO BOWMAN CONSULTING.



Photometrics Calculation Software Generated Luminaire Schedule								
Symbol	Qty	Label	Arrangement	Lum. Lumens	Arr. Lum. Lumens	LLF	Lum. Watts	Arr. Watts
⊙	10	SA	SINGLE	12184	12184	0.900	156.5	156.5
⊙	5	SB	SINGLE	12893	12893	0.900	156.5	156.5

Calculation Summary							
Label	CalcType	Units	Avg	Max	Min	Avg/Min	Max/Min
CENTER SIDEWALK	Illuminance	Fc	0.91	2.9	0.1	9.10	29.00
NORTH SIDEWALK	Illuminance	Fc	1.12	3.2	0.1	11.20	32.00
SITE	Illuminance	Fc	1.09	3.1	0.0	N.A.	N.A.
SOUTH SIDEWALK	Illuminance	Fc	1.28	2.9	0.0	N.A.	N.A.

STUART OCEAN TOWNHOMES - SITE

LIGHTING FIXTURE SCHEDULE

TYPE	DESCRIPTION	MFR	CATALOG NUMBER	VOLTS	LAMPS	INPUT WATTS	MOUNTING	DIMMING (If Req)	REMARKS
SA	LED SITE LUMINAIRE	INVUE	MSA-F06-LED-E1-T2-FINISH	UNV	LED	156W	20' POLE	0-10V	NOTE 1, 2
SB	LED SITE LUMINAIRE	INVUE	MSA-F06-LED-E1-5XQ-FINISH	UNV	LED	156W	20' POLE	0-10V	NOTE 1, 2

FIXTURE SCHEDULE NOTES

NOTE 1: ADVISE FINISH

NOTE 2: FIXTURES MOUNTED ON 20' DIRECT-BURIAL FIBERGLASS PLP POLE #SFLD525

FOR QUESTIONS PERTAINING TO THIS FIXTURE SCHEDULE PLEASE CONTACT RYAN HUFF @ LIGHTING DYNAMICS (772) 285-7169; RHUFF@LIGHTINGDYNAMICS.COM

Lighting Plan By:

LIGHTING DYNAMICS, INC.
7835 West Commercial Blvd.
Tamarac, FL 33351
(954) 944-0286
www.lightingdynamics.com

Scale: 1" = 30'

0' 15' 30' 60' 90'

North

HJA DESIGN STUDIO
LANDSCAPE ARCHITECTURE
50 E. Ocean Blvd., Suite 101
Stuart, Florida 34994
T 772.678.7200
F 772.678.7201
www.hjadesignstudio.com
LA 0000905

Stuart Ocean Townhomes

City of Stuart
Site Lighting / Photometric Plan

Florida

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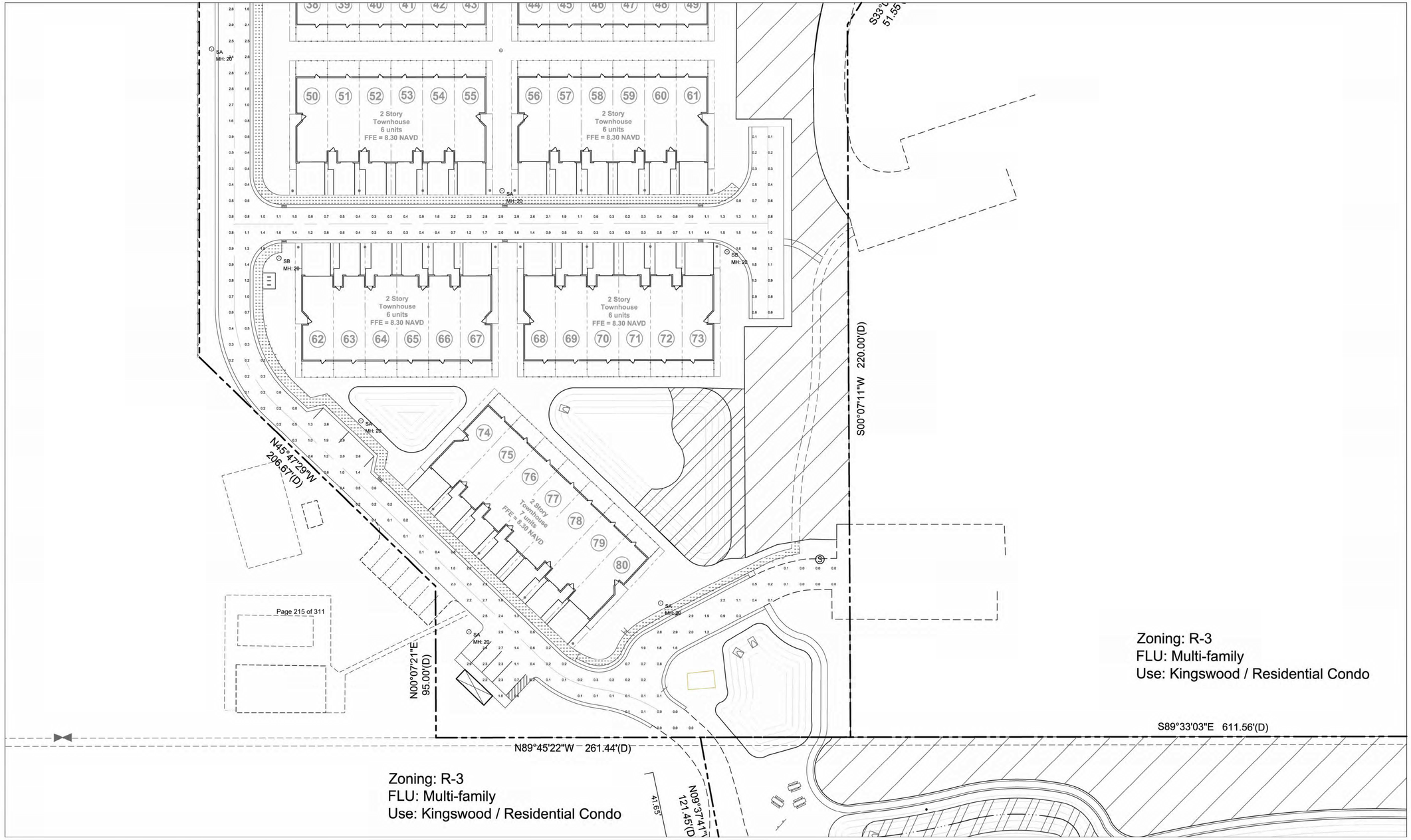
Job No. 19005
Drawn By TT
Checked By MH
Approved By MH
Submittal Dates 9-18-19

Revision Dates

L-1



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Scale: 1" = 30'

0' 15' 30' 60' 90'

North

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F 772.678.7201
www.hjadesignstudio.com
LA 0000905

Stuart Ocean Townhomes

City of Stuart
Florida

Site Lighting / Photometric Plan

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Job No. 19005
Drawn By TT
Checked By MH
Approved By MH
Submittal Dates 9-18-19

Revision Dates

L-2

December 5, 2019

Stuart Ocean Townhomes
RPUD Zoning & Major Development Site Plan Approval

Project Narrative

This unique townhouse project is a request for a rezoning from R-3 to RPUD and a Major Development Site Plan Application. The site is located on the south side of East Ocean Boulevard and adjacent on three sides to the multi- family Kingswood community. The Point at Ocean Boulevard senior community ACLF is to the west of the site. The property consists of three separate parcels all owned by the same owner. The subject parcel for the rezoning consists of the largest parcel which is 11.04 acres and includes 80 proposed townhomes on the north and a 1.09 acre stormwater lake, preserve areas and recreational trails on the south. Parcels B is 0.57 acres and is not included in the rezoning but is being used for preserve credits. No use is proposed for Parcel A. The proposed townhouse project will be 7.25 units per acre and will be owned in fee- simple ownership. All of the townhomes are two stories with three bedrooms and have one and two car garages with a tandem parking space in their driveway. The site plan reflects, however, that the end units only have one garage space but have space for two cars. Eleven on- street guest spaces are proposed which include spaces for the mail kiosk area. A nature trail that exists between Kingswood and the subject site will be preserved and extended.

The site's proposed native vegetation and upland preserve are made up of three separate areas. The on-site preserve is 1.83 acres. Parcel B will have an offsite preserve credit of 0.40 acres. In addition, created native vegetation areas consist of 0.88 acres of littoral zones in the storm water lake, dry retention areas and their perimeters will be planted with native vegetation. The total proposed native vegetation areas / preserve areas equals 3.11 acres or 28% of the site which exceeds the City's 25% requirement.

This project is a classic opportunity for well planned and contextual in-fill development within this area of older apartment complexes. The subject site includes a driveway that runs through the parcel from the Kingswood entrance off East Ocean Boulevard and connects to the south and SE Kingswood Terrace. That driveway alignment will be slightly changed, and new asphalt constructed. Other existing driveways and parking areas which are part of the Kingswood communities will not be changed as well as existing trails and sidewalk connections.

The proposed project has been planned and designed to harmonize with the existing neighborhood while providing for a much needed new townhome concept not found in this part of the City. The applicant is excited about the opportunity of developing their first new community in the City of Stuart.

HJA Design Studio
50 East Ocean Boulevard, Suite 101 Stuart, Florida USA 34994 T 772.678.7200 F 772.678.7201

December 5, 2019
Our Ref #: 19-005

Stuart Ocean Townhomes
RPUD Zoning &
Major Development Site Plan Approval

The Request: On behalf of Pulte Home Company, LLC as the Contract Purchaser, this is a request to rezone the property from R-3, residential - multi-family/office to a Residential Planned Unit Development (RPUD) to allow the construction of 80 unit two story townhomes located off of SE Ocean A1A Blvd. in Stuart, Florida. A major development site plan is also required to approve the project. These requests are to be considered concurrent by staff.

The Subject Property: The subject property is an approximately 11.04-acre vacant property located on SE Ocean A1A Blvd. in an urban area of on the eastern edge of jurisdictional limits of the City of Stuart. The Future Land Use Map (FLUM) designation of the property is Multifamily (MF) with a compatible zoning district designation of R-3 Residential - multi-family/office. The subject property had been part of the Kingswood Condominium community, built starting in 1970 through to 1995. The subject property includes the lands that remained vacant and unbuilt and now within separate ownership to the Kingswood Condo community. In a number of places, existing driveways and parking areas from the Kingswood community encroach onto the subject site.

The property owner is Serragui Group Investments, LLC with the prospective purchaser and applicant being Pulte Home Company, LLC.

The property is included in the Kingswood Condo subdivision and consists of two legal parcels depicted as parcel control numbers 02-38-41-000-00000020-6 and 02-38-41-000-00000050-9. The largest parcel 02-38-41-000-00000020-6 fronts SE Ocean Blvd. and consists of 8.0291 acres of vacant property intended to accommodate the proposed 80-unit two story Pulte Home Company, LLC townhome community. Two vacant parcels (A and B) as per parcel 02-38-41-000-00000050-9 includes 5.2840 acres of land intended to accommodate upland preserve.

The site plan along with the townhomes in 14 buildings, depicts 3.11 acres of preserved / enhanced native areas or 28% of the site. The six dry retention areas totaling 26,848 sq. ft. will be planted with native vegetation. In Parcel B, 17,285 sq. ft. of the 34,571 sq. ft of offsite preserve areas are to be credited to the subject property proposal. Additionally, a 40, 485 sq. ft. wet pond / lake is accommodating the retention of existing parking areas which serve the established Kingswood Condo community and is also intended to be utilized by the proposed Pulte Home Company, LLC townhome community.

The existing vegetation on the site has been surveyed and the proposed development respects the preservation of existing vegetation where applicable and possible while accommodating an infill proposal within an urban area of the City of Stuart. The proposed site plan achieves the preservation by creating preserve areas and native landscape areas

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to meet the 25% code requirements. Upland buffers/littoral planting is accommodated and includes an extension of existing preserve areas.

Tree Mitigation: This in-fill site, like many vacant parcels in the City of Stuart, will require the removal of native trees to allow for this new much- needed townhome community. The adjacent Kingswood community has utilized the eastern portion of the site for a nature trail and in a number of cases for driveways and parking areas. The applicant proposes to preserve trees and native understory for much of the area along this common boundary and the nature trail. In addition, supplemental native trees and shrubs will be planted in less dense areas to 'fill out" the native habitat.

To compensate for the removed native trees additional numbers of larger than required native trees and various palm trees are proposed on the site as indicated on the submitted landscape plans. However, the required pine tree mitigation has been met on site but the hardwoods cannot be reasonably accommodated on the site and so the applicant is proposing to contribute 50% of the required replacement inches which comes out to $111,125 to the City's Tree Fund. The applicant is proposing that, where feasible, this amount be used to supplement non- landscaped areas within the Kingswood Community including the existing pool southwest of the proposed project and other open spaces.

Surrounding Properties Land Use & Zoning: The subject property consists of two vacant parcels located to the south of SE Ocean A1A Blvd. with an established principle access off this State maintained as a major arterial right-of-way.

Property immediately abutting to the north of the subject property consists of the SE Ocean A1A Blvd. and an established Cedar Pointe Village residential condominium community further north of SE Ocean A1A Blvd. Cedar Pointe Village is a property located within Martin County's jurisdiction with a Future Land Use designation of High Density Residential and a zoning district designation of R-3, Liberal Multiple Family. The subject property is within the City of Stuart and has a Land Use designation of Multi-family and is zoned R-3, Residential - multi-family/office.

To the east and south of the subject property is the long established 444-unit Kingswood Condominium Community built from 1970 until 1995 with floor plans ranging from 2-bedroom, 2-bathroom condos with 1,236 sq. ft. to 1-bed, 1-bath condos with 691 sq.ft. of living area. Most of the Kingswood community consists of two-story condos with three newer 4 story elevator buildings having been completed more recently on the neighboring property. The Kingswood Condo community is separated into three phases with each having a separate property management company and HOA structure. Phases 1 and 3 each have one pool, clubhouse and shuffleboard courts and Phase 2 has the same amenities but with two pools and clubhouses. The property to the east and south has a Multi-family future land use designation and is zoned R-3, Liberal Multiple Family. The vacant parcels the subject of this development proposal have been carefully designed to safeguard the Kingswood Condo existing amenities while introducing an infill project of a scale and architectural style that is sympathetic and mindful of the existing established residential community.

To the West of the subject property is The Pointe at Ocean Blvd., an independent living community with apartments consisting of 3 story units with an Institutional Future Land Use and an R-3, Liberal Multiple Family zoning district designation. Further west of the subject property is Vista Pines condo community with a Multi-family future land use and R-3, Liberal Multiple Family zoning district designation.

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Proposed Development: The applicant is proposing to construct 80-unit two story townhomes known as Stuart Ocean Townhomes on a vacant infill property situated on the urban edge of the City of Stuart jurisdiction. The 80 units are to be accommodated in 14 separate townhome buildings consisting of the following breakdown in number of units per each:

Building A 7 units
Building B 6 units
Building C 6 units
Building D 4 units
Building E 2 units
Building F 6 units
Building G 6 units
Building H 6 units
Building I 6 units
Building J 6 units
Building K 6 units
Building L 6 units
Building M 6 units
Building N 7 units

The townhome development has been designed to be easily accessed of SE Ocean A-1A Blvd. with multiple driveway connections creating a well-planned urban infill project of a scale and density sympathetic to the longer standing established communities. Proposed driveways and sidewalks consist of layouts that will improve pedestrian and vehicular connections within the subject property and the surrounding established Kingswood Condo community. The townhomes have open floor plans and a two-car garage. Each of the floorplans consists of three-bedrooms and 2.5-baths measuring just under 1,900 square feet of living space.

A rezone to RPUD is required to address certain code provisions that are not included in the City LDR when considering the introduction of townhomes when property is zoned R-3:

- Section Sec. 2.04.01. - Generally. Minimum lot area 6,000 sq.ft.
- Minimum lot width 60 ft.
- Minimum Setbacks – front 25 ft,, sides 8 ft. and rear 20 ft.
- Sec. 6.01.03. - Rights-of-way. - Minimum driveway access requires 20 ft each side of center line as a local street and 15ft as an alley. The site plan makes provisions for 30 ft. private access driveways.
- Section 6.07.00.C.- Lighting maximum of 15 feet in height within non-vehicular pedestrian areas where the applicant requests a maximum height of 20 feet.
- Sec. 6.11.17. - Design standards matrix requires a maximum height of 6 ft. where the applicant is requesting a maximum height of 8 ft.

The public benefits offered as part of the development application and PUD zoning agreement include the following:

- The creation of preserve areas and native landscape areas to meet the 25% on property.

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- Upland buffer provisions where a littoral and extension of existing preserve is proposed.
- The creation of recreational lake trails that provide connectivity for pedestrians throughout the proposed and existing communities.

Such a request is consistent with Comprehensive Plan Objective B1 – Compact Urban Form, as the project discourages urban sprawl by facilitating urban redevelopment an infill development of properties and planning for urban infill and redevelopment of lands located within Stuart to achieve a compact urban form. The project is also consistent with Comprehensive Plan Objective B3. Desirable pattern of land uses. The proposal will enhance the pattern of development in a way that is compatible and convenient to City residents, businesses and visitors and avoids inappropriate or wasteful use of land.

Access & Vehicular Circulation & Pedestrian Connectivity: The main access to the subject property is intended to utilize the existing connection from the Kingswood Condo Community to SE Ocean SR A-1A Blvd. In addition, a cross connection on the southern portion of the subject property is intended to be accommodated to achieve a connection of vehicular traffic directly to Monterey Road (SR-714), via Kingswood Terrace. Within the proposed Stuart Ocean Townhomes project driveways have been designed to measure 30' as private access drives with 20' wide drive types. Established access and circulation roads connected with the Kingswood Cond community are intended to be maintained and effectively linked to the proposed subject property driveways and circulation provisions.

In addition to vehicular access, the site includes effective pedestrian circulation that will accommodate the new residents of the subject property while also maintaining and enhancing pedestrian connectivity within the established Kingswood Condo community. The creation of trails around the proposed detention area and connections to the existing trails in place and serving existing communities, will provide an enhanced level of pedestrian connectivity benefiting all of the residents within the area.

Traffic Study: A Traffic Impact Study has been prepared by the JFO Group, Inc. Trip distribution and assignment has incorporated the characteristics of the proposed development as well as the surrounding network configuration. The proposal was assessed against the provisions of the Land Development Code and categorized as a project with de minimis impact and a development in compliance with the Adequate Public Facilities Standards. Refer to the Traffic Impact Study for the full and complete analysis of the proposal against traffic and concurrency code provisions.

Parking Provisions: City of Stuart Land Development Code, Sec. 6.01.13. - Off-street parking schedule, requires 2 parking spaces per unit when 2 or more bedrooms are proposed. Parking within the subject property is proposed to include 198 spaces where 160 spaces are required. The 38 additional parking spaces will ensure adequate parking provision within the community and includes 11 on street parking spaces. The retention of existing parking on parcels A and B as indicated on the site plan achieves the retention of parking that has been historically connected with serving existing residents of the Kingswood Condo Community. The subject property site plan has been designed to achieve an unobstructed access through the parking areas to ensure emergency service vehicles may navigate through the property safely and effectively.

Architectural Details: The project has been designed with the theme of the architecture being South Florida Mediterranean with an emphasis on residential details of a high standard to represent Pulte Home, LLC products well established within other communities across Florida. The facades and variable size of the townhome buildings in

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blocks ranging from two to seven units within each of the structures, create a visual interest and varying scale of development throughout the proposed community. Architectural details are included on each of the four sides of the proposed townhome units with the entry to the development via SE East Ocean A1A Blvd offering a high standard of design and scale.

Landscaping & Buffers: The landscape as proposed meets the requirements of the City's approved plant list and exceeds the 50% native requirements.

Landscape buffers have been provided on the eastern and western sides of the subject property with a 10' landscape buffer to be included on the western edge and measuring 80 ft. at its widest point along a large part of the eastern edge of the subject property. Throughout the subject property a series of dry retention areas are also intended to accommodate rain gardens, adding an extensive visual and environmental amenity to the project. Internal to the property the applicant has provided the necessary plantings according to the height of the respective buildings. Additional landscaping will be provided within the trail areas, around the dry detention areas and within the public open space areas.

Signage: A signage program will be proposed as part of the site plan application. The signage will include a proposed monument sign intended to identify Stuart Ocean Townhome development to the public. The sign will be located at the main vehicular entrance off of SE East Ocean A1-A Blvd. 10 feet from the right of way. The sign will be a maximum height of 8' by a maximum base width of 21'. The sign will include the project address and name of the residential community.

Request for Major Site Plan Approval:

Demonstration that the proposed 80 unit townhome development is consistent with the relevant components of the City of Stuart Comprehensive Plan including concurrency with adopted levels-of-service for utilities/facilities and compatibility with existing/planned uses.

FLU – The subject property has a future land use (FLU) designation of Multifamily (MF). Per Section 2.01.03 Table 1, the zoning of the subject property is a compatible Residential Planned Unit Development (RPUD). A townhome use is a permitted use in the RPUD zoning district per code Section 2.02.02 Table 2.

The Multi-family future land use designation and proposed RPUD zoning district designation affords the property the opportunity to accommodate 330 residential units on the subject property and a maximum density of 30 dwelling units per acre. The applicant proposes to accommodate 80-unit townhome development, with a proposed density of 7.25 dwelling units per acre which will not exceed the density requirements of Section 2.03.03 regarding density provisions. The intensity is of the will not exceed LDC Sec. 2.03.10. - Table 4 requirements.

The use is compatible with both existing uses, zoning and FLU. The proposed use is compatible with the surrounding established namely residential condo communities.

LOS Transportation - The proposed development is located on SE East Ocean A-1a Blvd. It is anticipated that the proposed development will have no adverse impact on the level

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of service applicable to SE Ocean Blvd and this part of the community. The Traffic Impact Study provides details to support this statement.

The following Level of Service standards are adopted in the Comprehensive Plan Infrastructure element to be used as the basis for determining the availability of facility capacity.

• Sanitary sewer facilities o 80 gallons per capita per day (residential) o 1,100 gallons per acre per day (nonresidential) o 115 gallons per capita per day (total wastewater flow rate) • Solid waste facilities o 3.5 pounds per capita per day (residential) o 0.007 pounds per square foot per day (nonresidential) • Drainage facilities o Retention of half of the runoff of a 25-year/3-day-duration storm event for parcels greater than 1 acre, and retention of half of the runoff of a 10-year/3-day storm event for parcels less than 1 acre • Finished Potable water o 250 gallons per day per equivalent residential connection o The site is within the service area whereby such levels of service are available and adequate to accommodate an 80 unit townhome development.

With the exception of those applicable code provisions detailed above as applicable for review against the merits of the request to rezone the property to RPUD, the project complies with the relevant development standards of the City of Stuart Land Development Code.

Rezoning Application:

Rezoning and Land Development Code Consistency Review : Section 11.01.02.7 (Zoning Map Changes) of the Land Development Code requires the Local Planning Agency to consider the following criteria prior to making an advisory recommendation to the City Commission.

Comprehensive Plan Policy A7.1. includes townhomes as a permitted use for properties with either a Low Density Residential or Multi-Family Residential land use designation. As the property has a Multi-Family Land Use designation, a townhome use is therefore permitted, as is the case with a property zoned R-3, Liberal Multiple Family zoning district designation.

The existing land use pattern: The subject property has a Future Land Use designation of Multi-family Residential, Per Section 2.01.03, Table 1, the zoning on the subject property is compatible with Residential Planned Unit Development (RPUD). A townhome development is a permitted use as either a single family or multi-family land use classification. The land use pattern will remain unchanged as part of this proposal with Multi-family Residential dominating this part of the eastern edge of the City of Stuart's jurisdictional area. Patterns of development are predominantly residential, with a number of condominium communities having been established and an independent living facility to the immediate west of the property. Existing properties range in height from 2 to 4 stories with the proposed Stuart Ocean townhome community including maximum heights of 2 stories as part of the development pattern and scale. The proposal is consistent with the future land use provisions and consistent with the City Land Development Code provisions regarding use as per Section 2.01.03.

The possible creation of an isolated district unrelated to adjacent and nearby districts: Rezoning the property to the RPUD will not detract from the overriding Multi-family future land use designation policy protection measures associated with the property. The majority of the properties surrounding the site are zoned R-3, Liberal

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Multiple Family zoning district designation which includes the townhomes as a permitted use consistent with the applicant's request. The RPUD zoning agreement affords the project the opportunity to attached conditions specific to expectations for development on the site, will ensure safeguards are in place to compliment existing patterns of development. Some of those additional safeguards will also offer the necessary assurances to the established Kingswood Condo residents regarding preservation of existing trails and parking areas, open space and upland preservation area provisions which offer significant amenity to the proposed and existing communities.

The population density pattern of the area and possible increase or overtaxing of the land on public facilities such as schools, utilities and streets: The proposal site is located on the edge of the urban fringe of the City of Stuart's jurisdiction where infrastructure is readily available and access to stores and businesses lie close to the property. As an urban infill site, the property is located within a well-established residential community with schools, utilities and existing streets to be utilized to accommodate the project all readily available. Utilizing the subject property offers an opportunity to add to the existing City population, strengthening support of the existing schools, commercial and community infrastructure within the City limits and achieves a sustainable and complimentary form of development.

The possible overloading of the City's utility system: As per the Engineer's report and analysis provided in support of the project, existing water and sewer provisions are readily available and impact fees will be paid to contribute towards the introduction and maintenance of the project. Adding residential provisions to this part of the City will also provide a growth in tax revenues to add to the overall maintenance and provision of public service provisions within the City of Stuart.

The existing district boundaries in relation to existing conditions on the subject property: Addressed above.

The existence of changed or changing conditions which make the passage of the proposed rezoning necessary or appropriate: Rezoning the property to RPUD is an acceptable zoning district designation for properties with a Multi-family land use designation. A zoning change is required on the property to RPUD to address certain elements of the City of Stuart Land Development Regulations which do not make the necessary provisions to allow for the design and siting of townhomes regarding minimum lot sizes and minimum lot widths and introducing a townhouse type dwelling. Right of way requirements afforded to a property ordinarily require a 20' to center line for a two-way traffic access road whereas a townhome development such as that proposed on the subject property can achieve reduced driveway widths while ensuring the safe travel through the proposed community.

The impact of the proposed rezoning upon living conditions in the adjacent neighborhood: The development of a vacant infill lot in an urban area of the City of Stuart will provide additional residential units in this area of the City. Benefits to the adjacent neighborhood include greater access to an improved and well-planned set of open space and upland preservation areas through an expansion and formulization of trails. Proposed buffer provisions, landscape improvements and the introduction of a townhome development is of a scale, use and layout complimentary to the long-established residential condominium communities.

The impact of the rezoning upon the flow of light and air to adjacent areas: The proposed townhome units have been placed in blocks ranging from 2 to 7 units throughout

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the site. None of the units are within proximity to any single family residential units. The proposed two-story height will not detract from established residential units ranging from 2 to 4 stories in height at the Kingswood Condo community.

The impact of the proposed rezoning upon property values in the adjacent area: Developing the property with the assurances and development parameters clearly established in the PUD will increase property values and add to the tax bases in both the City and County.

The impact of the proposed rezoning upon improvement or development of adjacent property in accordance with existing regulations: The proposed rezone to RPUD provides additional assurances in the form of a PUD zoning agreement in addition to the parameters of development afforded to a property with an R-3 zoning district designation.

The existence of other adequate sites in the City for the proposed use in districts already permitting such use: An objective of the City of Stuart is to plan for a city with diverse and sustainable supply of a mixed housing provision. This project will increase those provisions available within the City of Stuart.

Application to Rezone Real Property Components (as per application form requirements).

Item#	Typical Plan Components	Response
1	Schedule a pre-application	Pre-application meeting completed 2019
2	Plans 24” x 36” – 2 sets	Attached are 2 sets of the final site plan in State Plan Coordinates
3	Folded drawings	All documents are folded as per requirements
4	Graphic scale displayed	Completed
5	Title Block	Completed with north arrow, street address, date prepared and the company who produced the document
6	Site data summary	Provided a final site plan consistent with the Major Development Plan application. The site plan indicates density, the number of proposed townhouse units, open space provision and upland preserve areas. Parameters for development of the site in accordance with the proposed Multi-Family Residential Future Land Use.
7	Legal Description and parcel boundary survey	Boundary survey prepared by a licensed surveyor in the State of Florida
8	Vicinity Map	Attached
9	Zoning Map, Future Land Use Map and Aerial Map	Attached & labelled
10	CD in pdf downloadable file	Completed and file combined to provide bookmarks of each document submitted downloadable file on disc.

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11	Signed and sealed pdf downloadable file on disc	Scanned versions of the documents requiring signature have been attached to be read in conjunction with the original paper sets
12	Revised plans to be clouded and accompanied by a cover letter	Not applicable
13	Access and traffic flow plans	Access is from the A1A - SE OceanBlvd. utilizing an existing access roadway established to accommodate the Kingswood Condo community. A Traffic Impact Study is attached.
14	Any traffic lights installed will require traffic pre-emption device	N/A
15	Fire Department Access, Water Supply, etc.	The utilization of an existing access road is detailed on the site plan. Adequate access has been provided to accommodate Emergency Service Vehicles and maintain effective links with the existing roadway layouts connected with the established residential communities.
16	Existing buildings and structures on the project and within 50 feet of the project's property lines	The site plan depicts links with existing infrastructure and proximity to existing structures and buildings within 50 feet of the subject property. An aerial map has also been provided showing the surrounding properties.
17	Existing uses and zoning on all adjacent property	The site plan, a series of map exhibits and the justification letter/narrative depict the existing uses, zoning and land use on adjacent properties.
18	Locations of the nearest available public water supply and wastewater disposal system and the proposed tie-in points	Such details are included on the site plan and civil plans and demonstrate water and wastewater systems are in place to accommodate the subject property proposal.
19	Proposed development to show location, size, allowable use, height, total gross floor area, and distance to property lines and between buildings. Number of buildings, density per gross acre, height and type of fences, walls, etc. Architectural elevations, off street parking, etc.	Details as applicable are included on the site plan and architectural elevations with more specific parameters for development included within the draft RPUD.
20	Building setback distances from property lines, abutting right of way centerlines, and all adjacent buildings and structures.	Details are included on the site plan and the Draft RPUD zoning agreement.

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21	Minimum floor elevations of buildings and finished floor elevations of subject property and adjacent property.	Provided on the site plan details in accordance with Florida Statutes and Building Code provisions.
22	Pedestrian Circulation System and Points of Ingress and egress	Provided on the final site plan with efforts to maintain and improve pedestrian and vehicular access within the subject property and with the established adjacent communities.
23	Concurrency review. Traffic Study or Statement. School Concurrency.	A Traffic Impact Study has been provided demonstrating compliance. A school concurrency form has been completed and attached to the application packet demonstrating compliance with school concurrency requirements.
24	Phasing plan/details.	The project will be completed in a single phase as per the site plan details.
25	Dumpsters.	Not applicable.
26	Various plans included. Site lighting plan. Signage plan, landscape plan	Provided in accordance with LDR requirements.
27	Location, names and widths of proposed streets. etc.	Location of streets provided, private access drives within the property. Naming of such will need to be completed as the project progresses.
28	Utility lines and structures such as water, sewer, gas, electric, telephone, hydrants, main size, etc.	Utility lines and structures are depicted in the civil drawings/documentation as provided by the Engineer of Record.
29	Cross sections and specifications of all proposed pavements	Provided as part of the civil drawings/documentation provided by the Engineer of Record.
30	Location of proposed retention/detention areas	Provided on the site plan details and supporting civil documents
31	Typical and special roadway and drainage sections	Provided by the Engineer of Record
32	Locations of all land to be abandoned, dedicated or reserved for all public and private uses including rights-of way, easements, special reservations	Not applicable.
33	Location of onsite well and any wells within 1500 feet.	Will be analyzed and provided at the time of site permit.
34	Pre-application meetings – potential environmental impacts to be discussed.	A pre-application meeting was completed ahead of the submittal of the development application. Discussions included ensuring environmental elements of the existing site and established residential communities are respected.

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34A	Avoidance or minimization of wetland or other environmental impacts.	No wetlands exist on the property or immediately adjacent to. Environmental impacts have been minimized while achieving the effective utilization of an infill property within an urban part of the City.
34B	On site minimization.	As per the site plan details.
34C	All waterbodies, watercourses, wetlands and associated buffers on site and immediately adjacent to the site	No wetlands or waterbodies on or immediately adjacent to the subject property.
34D	Existing vegetation on site	Existing vegetation on the property has been depicted on the survey/tree survey and environmental report.
34E	Wetlands – wetland delineation map and opinion from professional regarding wetland environmental value	Not applicable as no wetlands exist on or adjacent to the property.
34F	Wildlife observed	As per the environmental report.
34G	Preserve area and upland buffer evaluation	Achieved preserve area requirements on the subject property and provided buffers to minimize impacts on the surrounding established residential communities as applicable.
34H	Native vegetation Preserve Area Onsite/Offsite	Achieved on site as per the details depicted on the site plan and landscape plan. Utilized existing parcels connected to the site for open space and upland preserve calculations.
34I	Use of drought-tolerant native vegetation in landscaping	Refer to landscape plan for details.
34J	Exotic and invasive vegetation to be removed	Refer to environmental study.
35	Frontage type(s).	Two story townhouse structures have been located with principle elevations of Buildings A and B fronting East Ocean Blvd. Refer to architectural elevations for details regarding architectural styles, scale and massing of the building(s).
36	Minimum percentage of façade	Not applicable.
37	Location of transition line if applicable.	Not applicable.
38	Minimum percentage of glass	Not applicable.
39	Slope of pitched roof.	As per architectural elevations and details.
40	Height of parapet wall, if any	Not applicable.
41	List of exterior materials, colors and finishes.	As per architectural elevations and details.
42	Architectural details.	As per architectural elevations and details.
43	Curb cut, if any	Utilizing existing curb cut onto East Ocean Blvd.
44	Outbuildings, if any	Not applicable.

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45	Height, length, depth, projection of balcony rails.	As per architectural elevations and details.
46	Traffic Drive aisle width.	As per site plan details and civil plans
47	Material of roofs and gutters	As per architectural elevations and details.
48	Specification of arcades and porches if any	Not applicable.
49	Materials, configuration, and operations of windows and doors	As per architectural elevations and details.
50	Garden wall, if any	Not applicable

Objective B1. - Compact urban form.
Discourage urban sprawl by facilitating urban redevelopment and infill development of properties and planning for urban infill and redevelopment of lands located within Stuart in order to achieve a compact urban form.

Objective B3. - Desirable pattern of land uses.
Promote and enhance a pattern of land uses that are compatible; that are convenient to City residents, businesses, and visitors; that avoid inappropriate or wasteful use of land; and that encourage efficient use of land, resources and facilities. Future land uses shall be designated to support the existing or planned community character, thereby prohibiting the development or expansion of uses which are inconsistent with the community's character. Reduce blighted areas through redevelopment. Land development and use regulations shall include provisions to ensure consistency with this Comprehensive Plan.

Water service is to be provided by the City of Stuart.

The Service Provider will be City of Stuart. A subsequent site plan submittal packet, complete with Engineering construction plans will demonstrate adequate treatment plan capacity exists to service the development of the site. *A potable water service capacity reservation for any development on the site will require the execution of a Water and Wastewater Service Agreement with City of Stuart Utilities to secure such provisions.*

Sanitary sewer service is to be provided by the City of Stuart Treatment Facility. Sanitary sewer treatment plan capacity will be required to be reserved through the execution of the water and wastewater service agreement with City of Stuart and the payment of applicable fees. Wastewater lines of adequate capacity to service the development site are in place.

If you have any questions or comments or need additional information- please call or email me. Thank you for your time and assistance. We look forward to working with you and your team.

Sincerely,

Michael Houston ASLA

HJA Design Studio
50 East Ocean Boulevard, Suite 101 Stuart, Florida USA 34994 T 772.678.7200 F 772.678.7201

President HJA Design Studio, LLC

HJA Design Studio
50 East Ocean Boulevard, Suite 101 Stuart, Florida USA 34994 T 772.678.7200 F 772.678.7201

VIA EMAIL

January 31, 2020

Tom Reetz
Senior Planner
City of Stuart Planning Department
49 Flagler Avenue
Stuart, Florida

Re: Stuart Ocean Townhomes -RPUD Rezoning & Major Development Site Plan
3rd Resubmittal - Response Letter

Our Ref #: 19005

Dear Tom,

Below, please see responses to 2nd round of comments received from staff regarding Public Works and Fire Department comments on 1-29-20. Please let me know if you have any questions or would like to discuss in more detail. Thank you.

Fire Department

1. FFPC 6th edition, NFPA 1 18.5.1 Fire hydrants shall be provided in accordance with Section 18.5 for all new buildings, or buildings relocated into the jurisdiction unless otherwise permitted by 18.5.1.1 or 18.5.1.2. NFPA 1 18.5.1.4 The distances specified in Section 18.5 shall be measured along the fire department access roads in accordance with 18.2.3.
Response: Acknowledged. The plans have been updated to ensure hydrant have been provided in accordance with Section 18.5 of FFPC 6th Edition. Please see attached sheets C-10.0, C-10.1, TR-1 and TR-2.

2. Curbs at the turn arounds shall be mountable curbs.
Response: The curbs at the turn arounds shall be mountable Type E curbs. Please see attached sheet C-5.1, 5.2 & 5.5.

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Public Works

1. WATER- The proposed water supply connection is not approved. The site water supply must take place at/from the City of Stuart owned infrastructure and within the SE Ocean Blvd. R.O.W. with applicable backflow protection.

Response: The proposed water supply has been revised to connect to the City of Stuart owned infrastructure within SE Ocean Blvd. with backflow protection. Please see attached sheet C-10.4.

2. Must utilized City of Stuart Construction Standard details (latest version) as it relates to the all proposed construction within the Public ROW as well as the proposed potable water meters & water meter boxes. Each potable water meter box must include an inlet lockable curb stop, a dual check located on the outlet side of the meter and a manufactured opening within the meter box lid for the AMR antenna for radio read meters.

Response: All proposed construction within public right-of-way, will utilize the City of Stuart Construction Standard details. The water meters have been provided with the mentioned specifications. Please see attached sheets C-10.0 and C-10.4.

3. All construction pertinent to this Department shall be installed, inspected and tested in accordance with the City of Stuart Minimum Design and Construction Standards latest edition and the City of Stuart Specifications and Ordinances where applicable. In case of discrepancies between the construction plans and afore mentioned manuals, the most restrictive shall apply.
All plans to be reviewed by this Department shall be routed through the Permit Technician in the Development Department. Approval by this department shall not be construed to be a license to proceed with work and shall not be construed as authority to violate, cancel, alter or set aside any of the provisions of the City Code. Approval shall not prevent this department from thereafter requiring a correction of errors in plans, construction or violation of City Code.
CODE COMPLIANCE RESTS WITH THE DESIGN ENGINEER.

Response: Acknowledged. All construction pertinent to the department will be installed, inspected and tested in accordance with City of Stuart Minimum Design and Construction Standards.

If you have any questions or comments or need additional materials please call or email me. Thank you for your time and assistance.

Sincerely,

Michael Houston ASLA
President HJA Design Studio, LLC

c.c. Aimee Carlson
Andrew Maxey
Todd Troxell

Revised November 8, 2019
August 31, 2019

Aimee Craig Carlson, AICP
Director of Land Planning & Entitlement
SE Florida Division
4400 PGA Blvd, Suite 700
Palm Beach Gardens, FL 33410

RE: Stuart Ocean Townhomes – Traffic Impact Study
Parcel ID: 27-37-41-033-000-00040-2/-00050-9

Dear Aimee,

JFO Group Inc. has been retained to evaluate a traffic impact analysis to determine compliance with the *Martin County Adequate Public Facilities Standards – Article V, Division 3, Section 5.63-5.64, of the Martin County Land Development Code*. This traffic statement is associated with the site plan application for the Stuart Ocean Townhomes property. The site is located on the south side of Ocean Boulevard (SR-A1A), about 0.60 miles east of Monterey Road (SR-714) in the City of Stuart. Figure 1 shows the project location in relation to the transportation network. Parcel ID Number associated with this project is 02-38-41-000-000-00020-6/-00050-9. A copy of the property appraiser information is included as Exhibit 1 while Exhibit 2 includes a copy of the proposed site plan for the project. Project buildout is expected in the year 2024.

Figure 1 : Project Location

The Stuart Ocean Townhomes project is proposing 80 townhomes. Project trip generation rates used for this analysis were based on ITE Trip Generation Rates, 10th Edition. Table 1 shows the rates used in order to determine the trip generation for Daily, AM, and PM peak hour conditions. Exhibit 3 includes the ITE Trip Generation rates used in this analysis.

Table 2 summarizes the net Daily, AM, and PM peak trips potentially generated by the proposed development. According to Table 2, the net Daily, AM and PM peak trips potentially generated due to the proposed development are 586, 37 and 45 trips respectively. According to Section 5.64.C. from the Land Development Regulations (LDR) and given the trip generation characteristics from Table 2, this analysis needs to consider the first directly accessed road on the major road network.

Table 1: Trip Generation Rates

Land Use	ITE Code	Daily Trip Gen.	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Townhouse	220	7.32	23%	77%	0.46	63%	37%	0.56

Table 2: Trip Generation

Land Use	Intensity	Daily Traffic	AM Peak Hour			PM Peak Hour		
			In	Out	Total	In	Out	Total
Townhouse	80 DU	586	9	28	37	28	17	45

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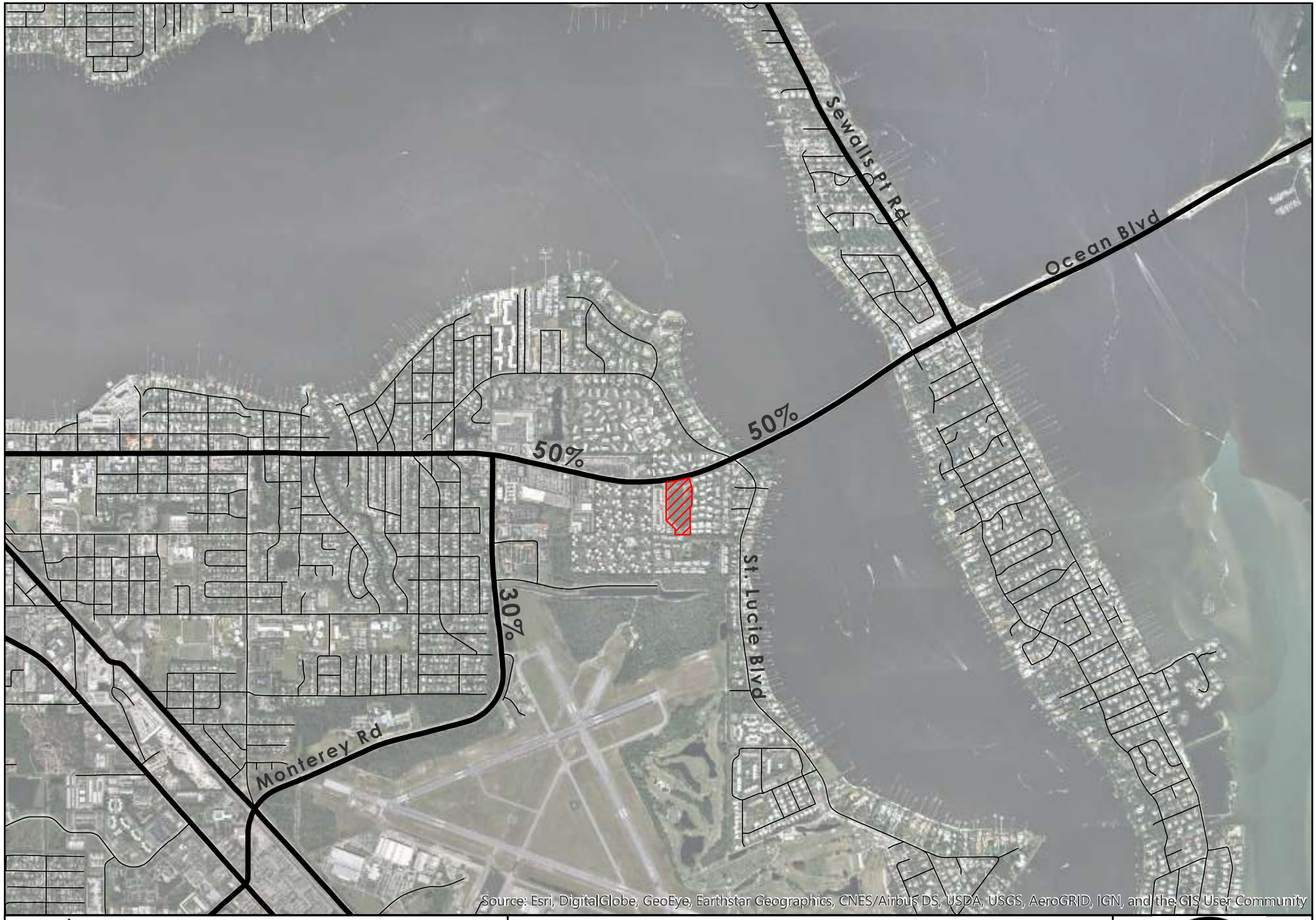

Project Site

0.15 0.07 0 0.15 0.3 0.45 0.6 Miles

Figure 2: Trip Distribution Stuart Ocean

JFO GROUP INC

The main access to the site is being proposed on the existing connection from the Kingswood Community to Ocean Boulevard (SR-A1A). In addition, there is a cross connection on the southern portion of the site that will connect vehicular traffic directly to Monterey Road (SR-714) via SE Kingswood Terrace. Trip distribution and assignment included in Figure 2 incorporates the characteristics of the proposed development as well as the surrounding network configuration. Figure 3 provides Daily, AM and PM peak hour driveway volumes for the Stuart Ocean Townhomes property.

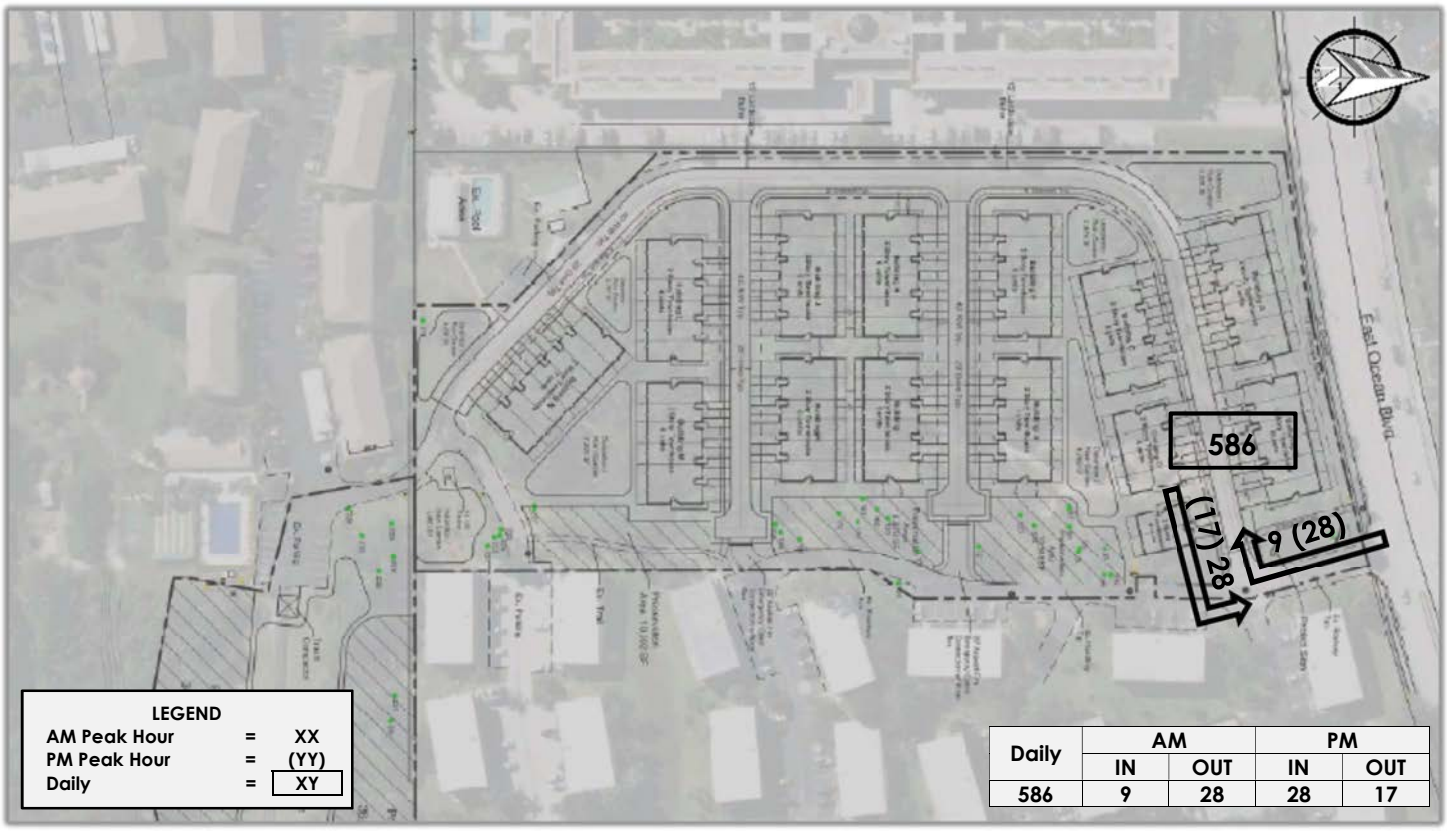

Figure 3: Project Driveway Volumes

Based on the trip generation characteristics shown in Table 2, PM peak hour period has higher trip generation than the AM peak hour period. Therefore, following Martin County LDR, project traffic impact shall be analyzed for PM peak hour conditions. Table 3 presents a summary of the project impact on the roadway links for the project build-out during peak hour conditions. Under the assumed distribution, Volume/Capacity (V/C) ratios for peak hour conditions were analyzed for the project build-out. This V/C calculation provides a preliminary understanding of future conditions at the assumed project build-out in 2024.

Table 3: Level of Service Analysis

Link	From	To	Capacity	Average Annual Growth Rate[1]	2018 Peak Hour Directional Volume[1]	2024 Projected Traffic	Project Assignment	PM Peak Hour				
								Project Traffic Peak Direction	Project Impact	2024 Total Peak Hour Directional	2024 V/C	Exceeds LOS?
SR-A1A (Ocean Blvd)	SR-714	St Lucie Blvd	1,630	1.4%	1,193	1,297	50%	14	0.86%	1,311	0.80	NO
SR-714 (Monterey Rd)	CR-A1A	SR-A1A	1,910	2.4%	1,068	1,231	30%	8	0.42%	1,239	0.65	NO

PM Directional Peak Hour = 28 Trips (IN)

[1] Source: *Martin County 2018 Roadway LOS inventory Report*, effective March 1, 2018. See Exhibit 4.

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As shown in Table 3, the Stuart Ocean Townhomes development will potentially generate less than one percent (1%) of the adopted LOS "D" for major thoroughfares within the study area. In addition, V/C ratios will be less than one hundred ten percent (110%).

Furthermore, on April 12, 2019, turning movement counts at the proposed access were collected to determine if a right turn lane will be warranted at project buildout. On April 18, 2019, F-DOT issued a conceptual approval for the project to use the existing full median on the south side of SE Ocean Boulevard (SR-A1A), located approximately 750 feet west of SE St. Lucie Boulevard. See Exhibit 5 for a copy of the FDOT approval. Exhibit 6 includes HCS analyses for the project driveway. Table 4 summarizes the results of the HCS analyses. As shown in Table 4, a right turn lane at the project driveway is not warranted, and, the existing left turn lane will be able to accommodate existing and future traffic.

Table 4: HCS Driveway Analysis Summary

Approach	Eastbound				Westbound				Northbound			
Movement	**U**	**L**	**T**	**R**	**U**	**L**	**T**	**R**	**U**	**L**	**T**	**R**
AM												
Volume (veh/h)	-	-	722	12	0	11	1231	-	-	35	-	29
95% Queue Length, Q_{95} (veh)	-	-	-	-	-	0.0	-	-	-	0.5	-	0.2
95% Queue Length, Q_{95} (ft)	-	-	-	-	-	-	-	-	-	12.5	-	5
Turn Lane (ft)	-	-	-	-	-	160	-	-	-	100	-	100
PM												
Volume (veh/h)	-	-	1126	36	0	30	908	-	-	25	-	13
95% Queue Length, Q_{95} (veh)	-	-	-	-	-	0.2	-	-	-	0.5	-	0.1
95% Queue Length, Q_{95} (ft)	-	-	-	-	-	5	-	-	-	12.5	-	2.5
Turn Lane (ft)	-	-	-	-	-	160	-	-	-	100	-	100

Therefore, according to Section 5.64.B from the *Martin County - Land Development Code* the subject development is categorized as a *project with de minimis impact*. The traffic impact of the proposed site plan for the Stuart Ocean Townhomes development has been evaluated following *Section V.3.5.64 of the Martin County Land Development Code*. This analysis shows that the proposed development will be in compliance with *Martin County Adequate Public Facilities Standards – Article V, Division 3 of the Martin County Land Development Code*.

Sincerely,

JFO GROUP INC
COA Number 32276

JUAN F. ORTEGA
LICENSE
No. 63422
Digitally signed by Juan F Ortega
Date: 2019.11.08 21:18:44 -05'00'
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

Enclosures:
Exhibit 1: Property Appraiser Information
Exhibit 2: Preliminary Site Plan
Exhibit 3: ITE Trip Generation Rates
Exhibit 4: 2018 Roadway LOS Report
Exhibit 5: F-DOT Conceptual Approval
Exhibit 6: Driveway Analysis
Exhibit 7: Traffic Impact Analysis Review

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This item has been electronically signed and sealed by Dr. Juan F. Ortega PE on November 8, 2019 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.

Martin County Property Information Lookup

General Information

Parcel #	023841000000000206
Owner Name:	SERRAGUI GROUP INVESTMENTS LLC
Owner Address:	21 SW 15TH RD STE 200 MIAMI, FL 33129
Site Address:	,
Storm Surge Evacuation Zone:	
Flood Zone:	AE,X500,X
Base Flood Elevation:	6,N/A' NAVD
FIRM Panel:	12085C0154G
Urban Service District:	Primary
Municipality:	City of Stuart
Taxing District:	Municipality
ISO-PPC Rating:	Contact City of Stuart Fire Rescue
Subdivision infill applicability:	No

Building Design Wind Speed

Occupancy Category I:	150
Occupancy Category II:	160
Occupancy Category III and IV:	170

Land Use

*NOTE: Land Use information can change frequently, please verify with the Martin County Growth Management Department at 772-288-5495

Zoning:	STUART
Zoning Details:	N/A
Future Landuse	NO DATA
Landuse Details:	N/A

Community Redevelopment

CRA:	N/A
Zoning Overlay Zone:	N/A
Mixed Use Areas:	N/A

Schools

School information obtained from the Martin County School District system. If there are any questions, please contact the Martin County School District at 772-219-1200

Elementary School:	J D Parker Elem
Middle School:	Stuart Middle School
High School:	Jensen Beach High School

Created: August , 16th, 2019 10:56 PM

Property Location Map

Election Information

Election information obtained from the Martin County GIS system. If there are any questions, please contact the Martin County Supervisor of Elections at 772-288-5637

Voter Precinct	7	
Commission District:	1	
Commissioner:	Doug Smith	772-288-5400
Clerk of Circuit Court:	Carolyn Timmann	772-288-5576
County Sheriff:	William Snyder	772-220-7000
Property Appraiser:	Laurel Kelly	772-288-5608
School Superintendent:	Laurie J. Gaylord	772-219-1200
Supervisor of Elections:	Vicki Davis	772-288-5637
Tax Collector:	Ruth Pietruszewski	772-288-5600

Utilities & Solid Waste

Service:	Utility:	Availability:	Phone:
Water:	City of Stuart Utilities	Call	772-288-5317
Sewer:	City of Stuart Utilities	Call	772-288-5317

Recycle Collection:	N/A
Trash Collection:	N/A

Print

Disclaimer: The Geographic Information System map product, received from Martin County, ("COUNTY") is provided "as is" without warranty of any kind, and the COUNTY expressly disclaims all express and implied warranties, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. The COUNTY does not warrant, guarantee, or make any representations regarding the use, or the results of the use, of the information provided to you by the COUNTY in terms of correctness, accuracy, reliability, timeliness or otherwise. The entire risk as to the results and performance of any information obtained from the COUNTY is entirely assumed by the recipient. Please contact the responsible Martin County Department for specific determinations.

Martin County Property Information Lookup

General Information

Parcel #	023841000000000509
Owner Name:	SERRAGUI GROUP INVESTMENTS LLC
Owner Address:	21 SW 15TH RD STE 200 MIAMI, FL 33129
Site Address:	,
Storm Surge Evacuation Zone:	
Flood Zone:	AE,X500,X
Base Flood Elevation:	6,N/A' NAVD
FIRM Panel:	12085C0154G
Urban Service District:	Primary
Municipality:	City of Stuart
Taxing District:	Municipality
ISO-PPC Rating:	Contact City of Stuart Fire Rescue
Subdivision infill applicability:	No

Building Design Wind Speed

Occupancy Category I:	150
Occupancy Category II:	160
Occupancy Category III and IV:	170

Land Use

*NOTE: Land Use information can change frequently, please verify with the Martin County Growth Management Department at 772-288-5495

Zoning:	STUART
Zoning Details:	N/A
Future Landuse	NO DATA
Landuse Details:	N/A

Community Redevelopment

CRA:	N/A
Zoning Overlay Zone:	N/A
Mixed Use Areas:	N/A

Schools

School information obtained from the Martin County School District system. If there are any questions, please contact the Martin County School District at 772-219-1200

Elementary School:	J D Parker Elem
Middle School:	Stuart Middle School
High School:	Jensen Beach High School

Created: August , 16th, 2019 10:55 PM

Property Location Map

Election Information

Election information obtained from the Martin County GIS system. If there are any questions, please contact the Martin County Supervisor of Elections at 772-288-5637

Voter Precinct	7	
Commission District:	1	
Commissioner:	Doug Smith	772-288-5400
Clerk of Circuit Court:	Carolyn Timmann	772-288-5576
County Sheriff:	William Snyder	772-220-7000
Property Appraiser:	Laurel Kelly	772-288-5608
School Superintendent:	Laurie J. Gaylord	772-219-1200
Supervisor of Elections:	Vicki Davis	772-288-5637
Tax Collector:	Ruth Pietruszewski	772-288-5600

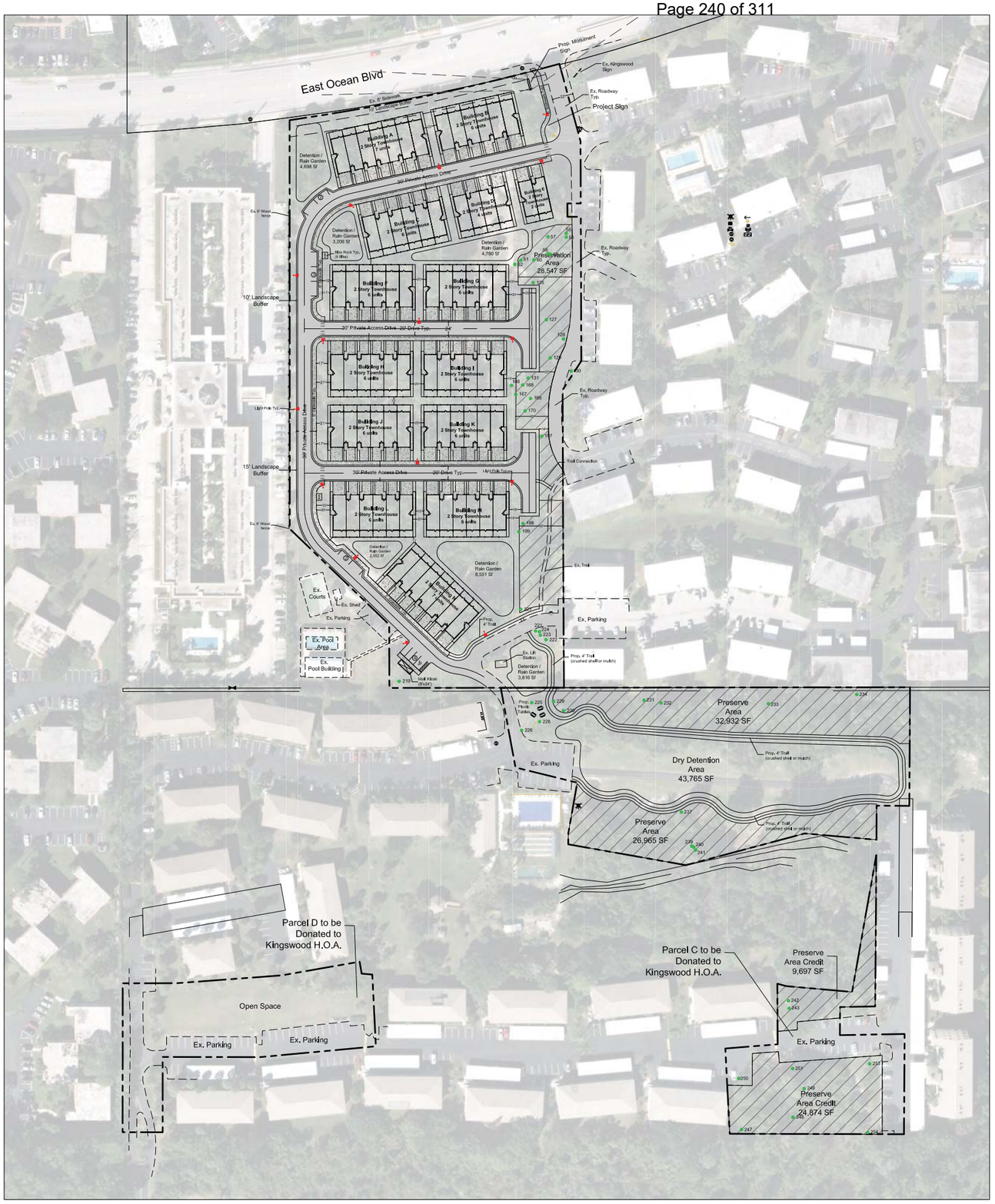
Utilities & Solid Waste

Service:	Utility:	Availability:	Phone:
Water:	City of Stuart Utilities	Call	772-288-5317
Sewer:	City of Stuart Utilities	Call	772-288-5317

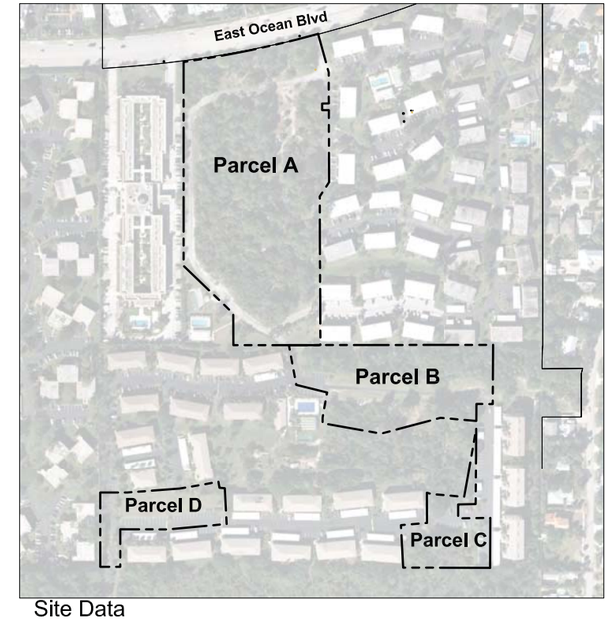
Recycle Collection:	
Trash Collection:	N/A

Print

Disclaimer: The Geographic Information System map product, received from Martin County, ("COUNTY") is provided "as is" without warranty of any kind, and the COUNTY expressly disclaims all express and implied warranties, including but not limited to the implied warranties of merchantability and fitness for a particular purpose. The COUNTY does not warrant, guarantee, or make any representations regarding the use, or the results of the use, of the information provided to you by the COUNTY in terms of correctness, accuracy, reliability, timeliness or otherwise. The entire risk as to the results and performance of any information obtained from the COUNTY is entirely assumed by the recipient. Please contact the responsible Martin County Department for specific determinations.



Parcel Map



Site Data

Total Site Area	11.03 Ac. / 480,602 sf
Parcel A	8.02 Ac. / 349,446 sf
Parcel B	3.01 Ac. / 131,156 sf
Future Land Use	Multi-family Residential
Existing Zoning	R-3
Proposed Zoning	RPUD (30 DU/ AC)
Proposed Use	2-Story Single Family Townhomes
Proposed Dwelling Units	80 Units

Density

Maximum Density - 30 DU/Ac. (11.03 Ac. x 30)	330 Max. Units
Proposed Density	80 Units
Proposed Gross Site Density	7.25 DU / Ac.

Impervious Area

Building Coverage	83,230 sf		
Existing & Proposed Vehicular Use Areas	66,670 sf		
Sidewalks / Paved Areas / Rear Patios	58,463 sf		
Total:	208,363 sf	4.78 Ac.	43%

Pervious Area / Open Space

Dry Detention Areas	70,868 sf		
Native Preserve Areas	88,444 sf		
Other Landscape / Open Space	112,927 sf		
Total:	272,239 sf	6.25 Ac.	57%

Native Upland Preserve Data

Required Native Preserve Area: (480,602 sf x 25%)	120,150 sf / 2.76 Ac. / 25%
Provided Native Preserve Area:	123,015 sf / 2.82 Ac. / 26%
Parcel A & B -Native Preserve Areas	88,444 sf
Parcel C - Native Preserve Area Credit	34,571 sf

Parking Data

Required Parking Spaces: (2 spaces per unit w/ 2 or more bedrooms)	160 Spaces
Provided Parking Spaces:	198 Spaces
One Car Garages (80 D.U.)	80 Spaces
One Car Driveways (53 D.U.)	53 Spaces
Two Car Driveways (27 D.U.)	54 Spaces
On-Street Parking (3 - 9' x 18 + 1 Handicap + 7 Parallel)	11 Spaces

Scale: 1" = 80'

0' 40' 80' 160' 240'

North

HJA DESIGN STUDIO
LANDSCAPE ARCHITECTURE
50 E. Ocean Blvd., Suite 101
Stuart, Florida 34994
T 772.678.7200
F 772.678.7201
www.hjadesignstudio.com
LA 0000905

Stuart Ocean Townhomes

City of Stuart
Major Development Site Plan (RPUD)

Florida

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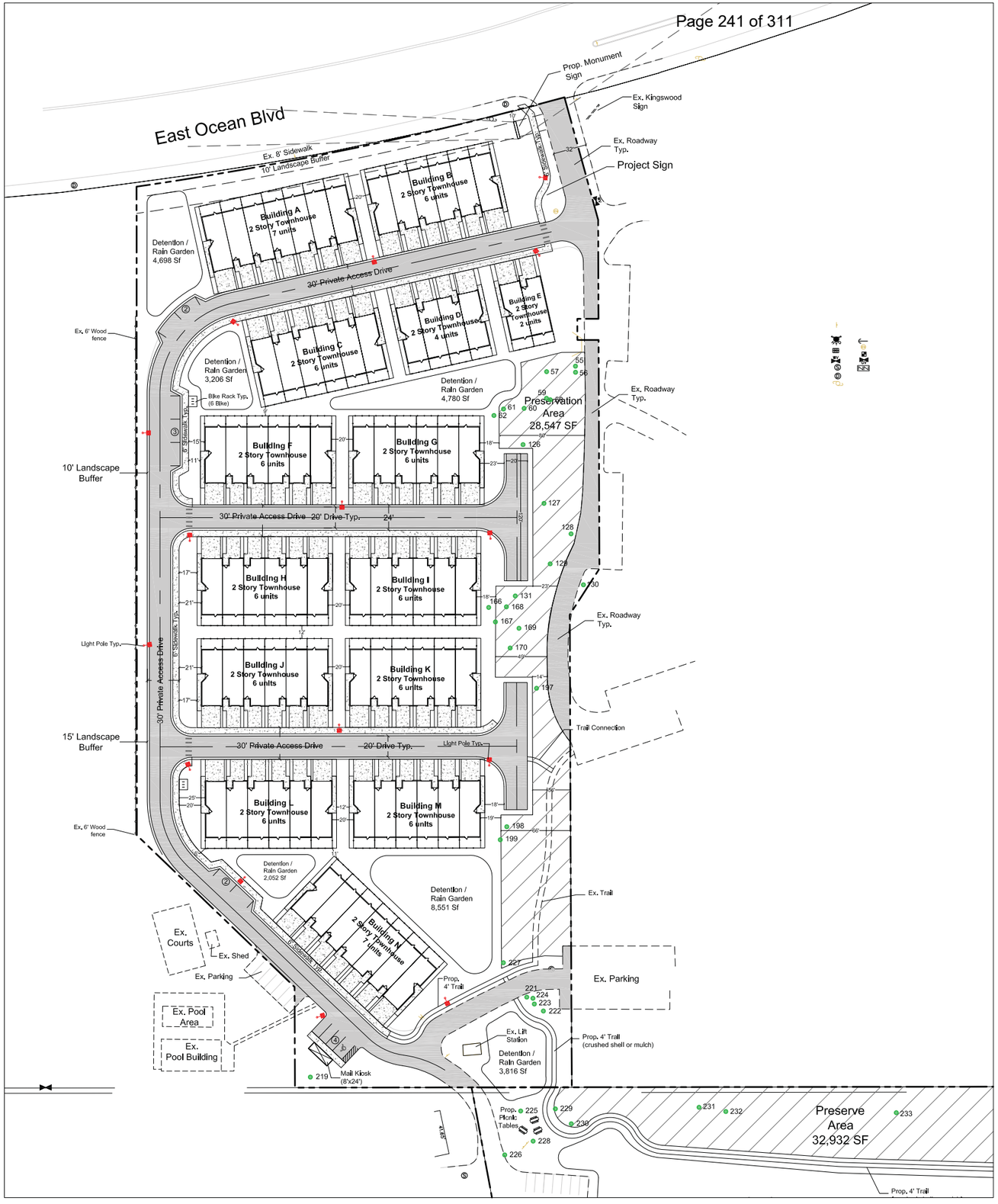
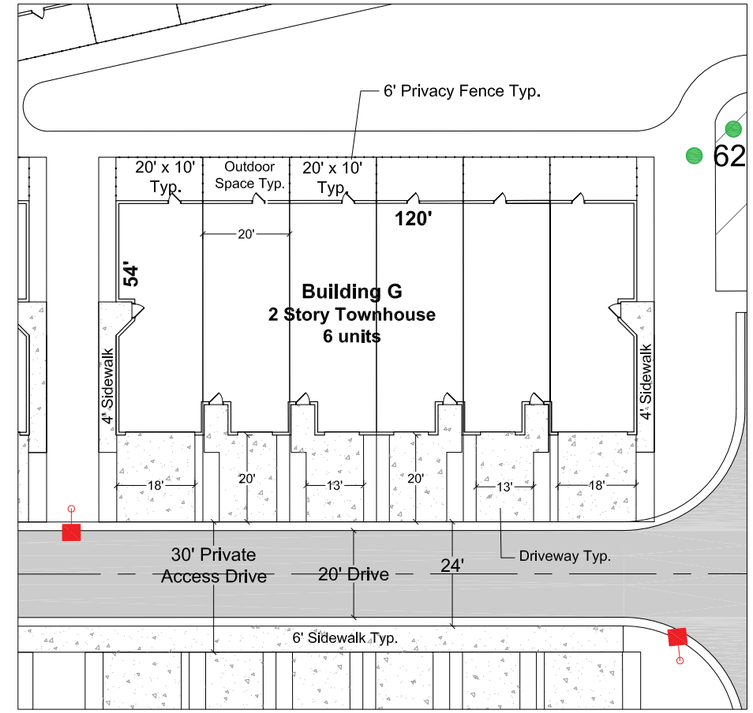
Job No.	19005
Drawn By	TT
Checked By	MH
Approved By	MH
Submittal Dates	9-6-19
Revision Dates	

SP-1



Townhouse Enlargement Typical



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Stuart Ocean Townhomes

City of Stuart
Florida
Major Development Site Plan (RPUD)

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Job No.	19005
Drawn By	TT
Checked By	MH
Approved By	MH
Submittal Dates	9-6-19
Revision Dates	

SP-2

Scale: 1" = 50'

0' 25' 50' 100' 150'

North

Multifamily Housing (Low-Rise)
(220)

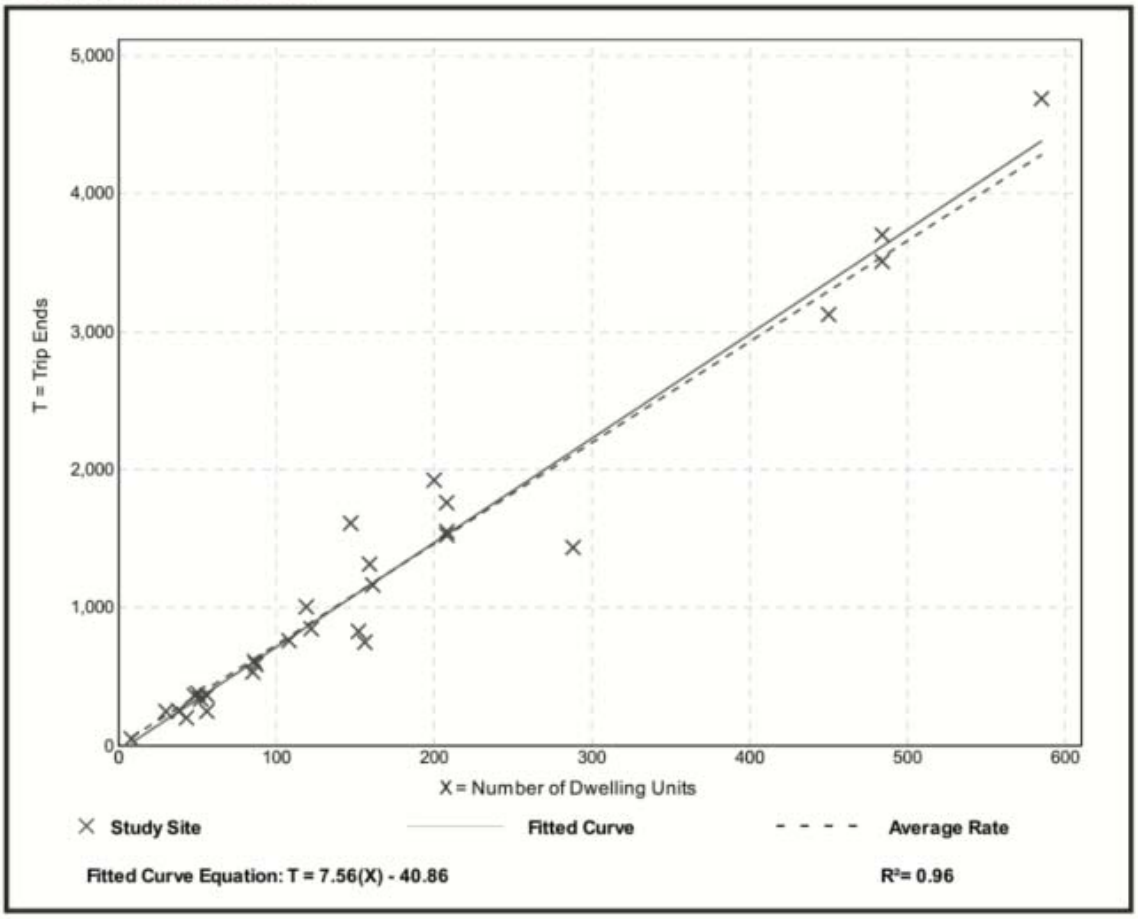
Vehicle Trip Ends vs: Dwelling Units
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 29
Avg. Num. of Dwelling Units: 168
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
7.32	4.45 - 10.97	1.31

Data Plot and Equation



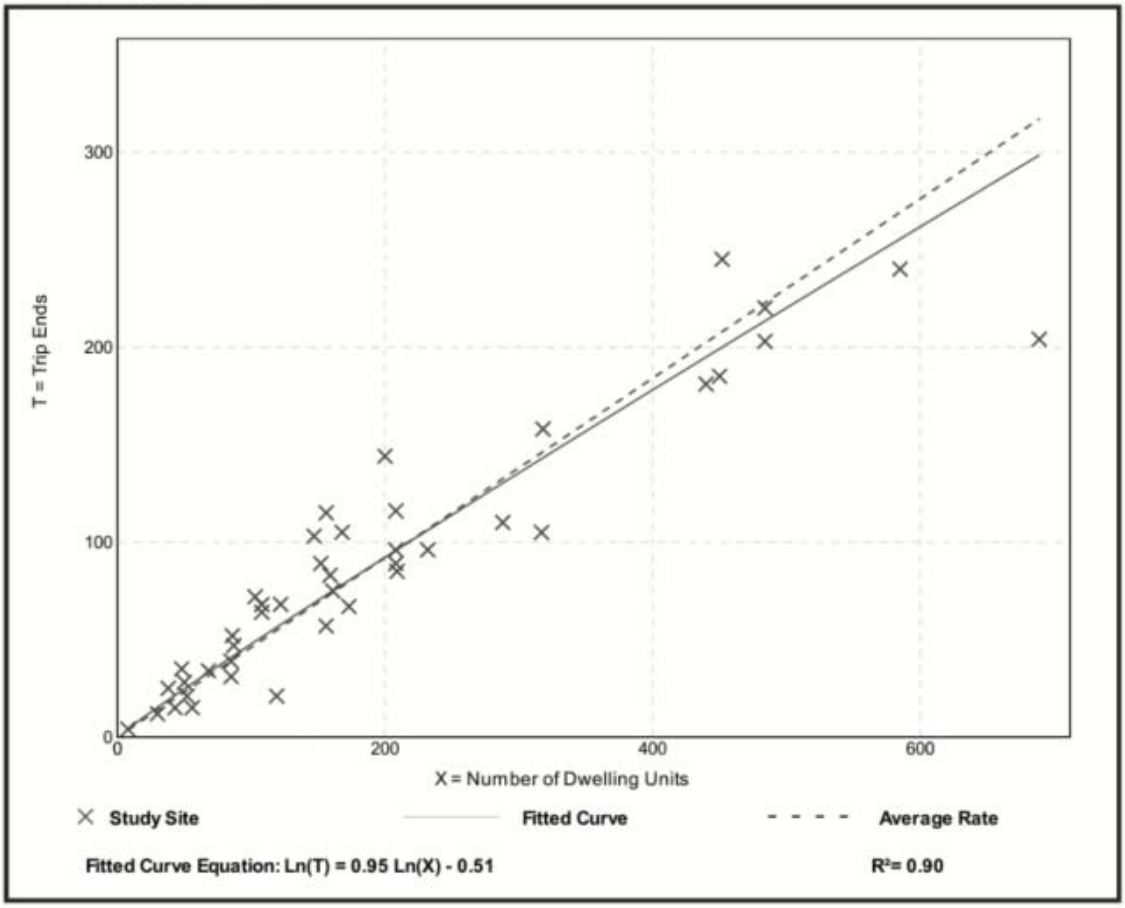
Multifamily Housing (Low-Rise)
(220)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	42
Avg. Num. of Dwelling Units:	199
Directional Distribution:	23% entering, 77% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.46	0.18 - 0.74	0.12

Data Plot and Equation



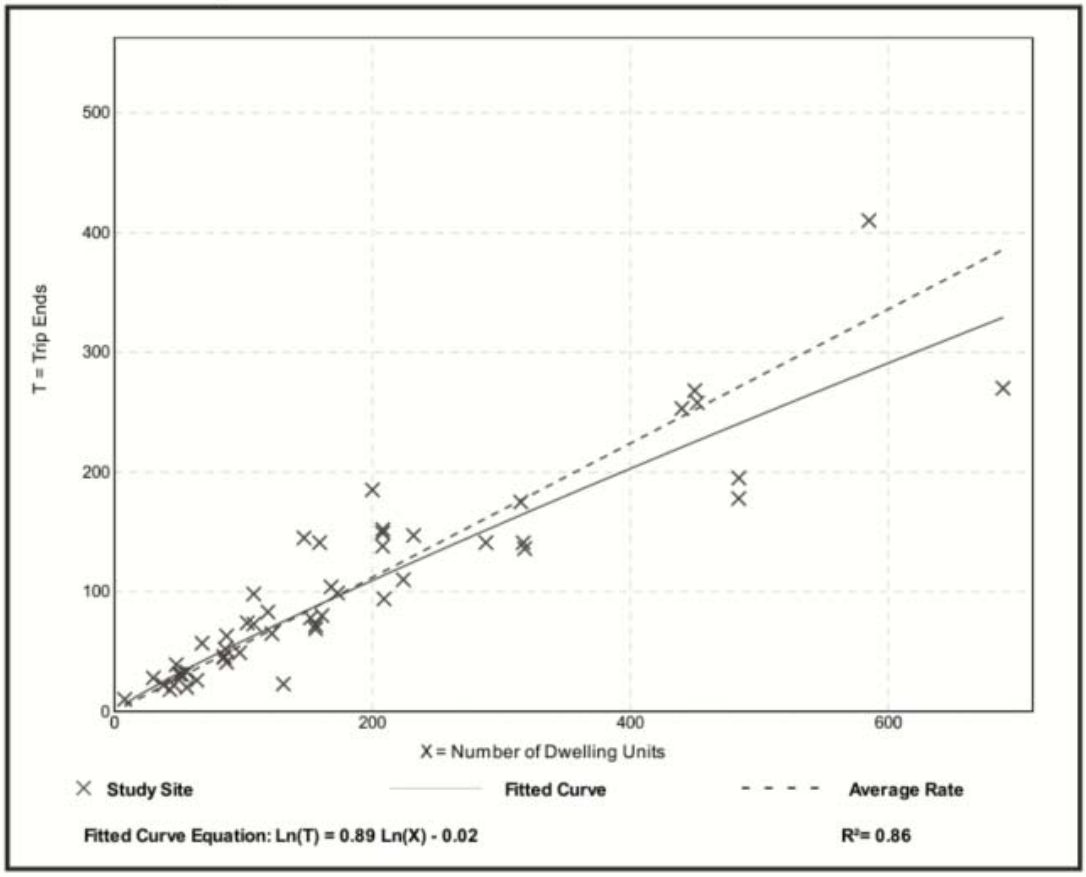
Multifamily Housing (Low-Rise)
(220)

Vehicle Trip Ends vs:	**Dwelling Units**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	50
Avg. Num. of Dwelling Units:	187
Directional Distribution:	63% entering, 37% exiting

Vehicle Trip Generation per Dwelling Unit

Average Rate	Range of Rates	Standard Deviation
0.56	0.18 - 1.25	0.16

Data Plot and Equation



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Martin County 2018 Roadway Level of Service Inventory Report

Road Name	From	To	Generalized Service Capacity	2018 Average Annual Daily Traffic	Peak Hour Factor K_{30}	Directional Distribution D_{100}	2018 Peak Hour Directional Volume	2018 Generalized LOS	Avg. Annual Growth Rate
SR-5 (US-1)	Baker Rd	Britt Rd	3020	53,335	0.08	0.51	2,203	C	0.5%
SR-5 (US-1)	Britt Rd	SR-732	3020	55,454	0.09	0.53	2,616	C	0.9%
SR-5 (US-1)	SR-732	Westmoreland Blvd	4040	64,326	0.09	0.61	3,414	C	0.6%
SR-5 (US-1)	Westmoreland Blvd	St Lucie County	4040	62,920	0.08	0.52	2,519	C	1.1%
SR-710 (Warfield Blvd)	Okeechobee County	Fox Brown Rd	670	6,227	0.06	0.59	231	A/B	4.4%
SR-710 (Warfield Blvd)	Fox Brown Rd	CR-609 (Allapattah)	670	7,587	0.07	0.51	279	C	4.7%
SR-710 (Warfield Blvd)	CR-609 (Allapattah)	Van Buren	870	11,942	0.10	0.60	709	C	8.0%
SR-710 (Warfield Blvd)	Van Buren	CR-726 (Citrus)	765	11,942	0.10	0.60	709	C	8.0%
SR-710 (Warfield Blvd)	CR-726	SR-76 (Kanner)	2450	10,528	0.06	0.53	329	A/B	5.7%
SR-710 (Warfield Blvd)	SR-76	Palm Beach County	2450	6,863	0.07	0.53	251	A/B	1.4%
SR-714 (Martin Hwy)	I-95	CR-76A (Citrus)	1200	12,902	0.10	0.53	684	C	4.7%
SR-714 (Martin Hwy)	CR-76A (Citrus)	Florida's Turnpike	2000	20,756	0.10	0.58	1,180	C	4.8%
SR-714 (Martin Downs Blvd)	Florida's Turnpike	CR-713	2000	20,107	0.09	0.53	948	C	1.8%
SR-714 (Martin Downs Blvd)	CR-713	Matheson Ave	2000	28,929	0.09	0.61	1,588	C	1.2%
SR-714 (Martin Downs Blvd)	Matheson Ave	Mapp Rd	2000	32,616	0.10	0.53	1,718	C	2.7%
SR-714 (Palm City Bridge)	Mapp Rd	SR-76	2000	34,965	0.10	0.59	2,022	F	0.9%
SR-714 (Monterey Rd)	SR-76	Willoughby Blvd	2000	28,608	0.10	0.52	1,488	C	5.2%
SR-714 (Monterey Rd)	Willoughby Blvd	Monterey Extension	2000	25,028	0.10	0.54	1,284	C	1.7%
SR-714 (Monterey Rd)	Monterey Extension	SR-5	2000	15,598	0.09	0.62	899	C	0.5%
SR-714 (Monterey Rd)	SR-5	CR-A1A	1630	20,190	0.09	0.52	966	D	0.5%
SR-714 (Monterey Rd)	CR-A1A	SR-A1A	1910	18,242	0.10	0.61	1,068	C	2.4%

Segments with shaded LOS require additional analysis.
The peaks are: CR-A1A (PM/SB); CR-713 (PM/NB); Murphy Rd (PM/NB); SR-5 (AM/SB); SR-714 [Palm City Bridge] (PM/WB) and SR-714 (PM/WB).

Martin County 2018 Roadway Level of Service Inventory Report

Road Name	From	To	Generalized Service Capacity	2018 Average Annual Daily Traffic	Peak Hour Factor K_{30}	Directional Distribution D_{100}	2018 Peak Hour Directional Volume	2018 Generalized LOS	Avg. Annual Growth Rate
SR-732 (Causeway Blvd)	CR-707	SR-A1A	1190	13,403	0.10	0.51	684	C	0.8%
SR-732 (Jensen Beach Blvd)	SR-5	Green River Pkwy	2000	25,891	0.10	0.52	1,319	C	0.5%
SR-732 (Jensen Beach Blvd)	Green River Pkwy	CR-723	2000	24,869	0.09	0.56	1,253	C	0.5%
SR-76 (Kanner Hwy)	SR-15	SR-710	740	2,117	0.09	0.57	105	A/B	8.0%
SR-76 (Kanner Hwy)	SR-710	CR-708	740	3,488	0.08	0.59	171	A/B	8.0%
SR-76 (Kanner Hwy)	CR-708	CR-711/CR-76A	1200	3,027	0.11	0.54	180	A/B	1.9%
SR-76 (Kanner Hwy)	CR-711/CR76A	Locks Rd	2000	12,928	0.12	0.52	813	C	1.2%
SR-76 (Kanner Hwy)	Locks Rd	Jack James	2000	20,494	0.09	0.60	1,082	C	2.0%
SR-76 (Kanner Hwy)	Jack James	Cove Rd	3020	45,918	0.10	0.52	2,409	C	2.4%
SR-76 (Kanner Hwy)	Cove Rd	Salerno Rd	3020	31,734	0.09	0.52	1,436	C	0.9%
SR-76 (Kanner Hwy)	Salerno Rd	Indian St	3020	29,492	0.10	0.52	1,468	C	2.6%
SR-76 (Kanner Hwy)	Indian St	SR-714	3020	21,161	0.07	0.52	759	C	0.5%
SR-76 (Kanner Hwy)	SR-714	SR-5	3020	25,033	0.08	0.50	1,001	C	0.5%
SR-A1A (Ocean Blvd)	SR-714	St Lucie Blvd	1630	19,372	0.11	0.57	1,193	D	1.4%
SR-A1A (Ocean Blvd)	St Lucie Blvd	Sewalls Point Rd	2000	21,532	0.09	0.51	1,010	C	0.5%
SR-A1A (Ocean Blvd)	Sewalls Point Rd	Macarthur Blvd	925	12,803	0.09	0.54	650	C	0.5%
SR-A1A (Ocean Blvd)	MacArthur Blvd	SR-732	1190	8,278	0.09	0.53	395	A/B	2.5%
SR-A1A (Ocean Blvd)	SR-732	St Lucie County	1190	14,957	0.12	0.54	953	D	3.6%
St Lucie Blvd	CR-A1A	Indian St	675	3,083	0.10	0.55	163	C	0.5%
St Lucie Blvd	Indian St	SR-A1A	675	7,420	0.11	0.54	421	D	0.8%
Westmoreland Blvd	St Lucie County	SR-5	790	12,542	0.08	0.60	632	D	2.6%

Segments with shaded LOS require additional analysis.
The peaks are: CR-A1A (PM/SB); CR-713 (PM/NB); Murphy Rd (PM/NB); SR-5 (AM/SB); SR-714 [Palm City Bridge] (PM/WB) and SR-714 (PM/WB).

Florida Department of Transportation

RON DESANTIS
GOVERNOR

3400 West Commercial Boulevard
Fort Lauderdale, FL 33309

KEVIN J. THIBAULT
SECRETARY

April 18, 2019

THIS PRE-APPLICATION LETTER IS VALID UNTIL – April 18, 2020
THIS LETTER IS NOT A PERMIT APPROVAL

Juan F. Ortega
JFO Group Inc
11924 Forest Hill Boulevard
Suite 10A-123, Wellington, FL 33414

Dear Juan F. Ortega:

RE: April 18, 2019- Pre-application Meeting for Category D Driveway
Martin- Not within City Limits, Urban; SR A1A; Sec. # 89040; MP: 2.299
Access Class - 07; Posted Speed - 35; SIS - N; Ref. Project:

Request: To use existing full median on the south side of SE Ocean Boulevard(SR-A1A), located approximately 750 feet east of SE St. Lucie Blvd.

SITE SPECIFIC INFORMATION
Project Name & Address: Stuart Ocean – 2950 Southeast Ocean Blvd, Stuart, FL 34996
Applicant/Property Owner: PulteGroup, Inc
Parcel Size: 8.0 Acres Development Size: 80 DU/Townhouses

WE APPROVE YOUR REQUEST

This decision is based on your presentation of the facts, site plan and survey - please see the conditions and comments below. You may choose to review this concept further with the District Access Management Review Committee (AMRC).

Conditions:
- A minimum driveway length of 25 feet, as measured from the ultimate right-of-way line to the first conflict point shall be provided. If a gate is installed a minimum driveway length of 100 feet is required.
- A recorded cross access agreement or easement with the adjacent property to the east shall be provided prior to the Permit approval.

Comments:

- Drainage mitigation is required for any impacts within FDOT right-of-way (i.e. increased runoff or reduction of existing storage). A Storm Water Pollution Prevention Plan must be submitted with the application for more than one acre of "disturbed area" as defined by the Florida Department of Environmental Protection (FDEP).
- The applicant shall donate the right-of-way to the Department if right-of-way dedication is required to implement the improvements,
- Dimensions between driveways are measured from the near edge of pavement to near edge of pavement and for median openings are measured from centerline to centerline unless otherwise indicated.

The purpose of this Pre-Application letter is to document the conceptual review of the approximate location of driveway(s) to the State Highway system and to note required improvements, if any. This letter shall be submitted with any further reviews and for permitting. The Department's personnel shall review permit plans for compliance with this letter as well as current Department standards and/or specifications. Final design must consider the existing roadway profile and any impacts to the existing drainage system. Note, this letter does not guarantee permit approval. The permit may be denied based on the review of the submitted engineering plans. Be aware that any approved median openings may be modified (or closed) in the future, at the sole discretion of the Department. For right-of-way dedication requirements go to: https://gis.dot.state.fl.us/OneStopPermitting; click on Statewide Permit News; Scroll down to District 4; Scroll down to Additional Information and Examples and choose Right-of-way Donations/Dedications.
Please contact the Access Management Manager - Tel. # 954-777-4363 or e-mail: ashok.sampath@dot.state.fl.us with any questions regarding the Pre-Approval Letter and Permits Office - Tel. # 954-777-4383 with any questions regarding permits.

Sincerely,

S. Ashok

Ashok Sampath, M.S.
District Access Management Manager

cc: Nesa Y. Harden NYH
File: S:\Transportation Operations\Traffic Operations\Access Management\1. Pre-Apps and Variance\2019-04-18\4. 89040 MP 2.29 SR A1A_Stuart Ocean\89040 MP 2.29 SR A1A_Stuart Ocean.docx

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Intersection Volume Development

SE Ocean Blvd and Kingwood Development

Stuart Ocean

Input Data

GR	=	1.40%
Peak Season	=	1.03
Traffic Count Year	=	2019
Buildout Year	=	2023
Years	=	4

AM Peak Hour		PM Peak Hour		Intensity
In	Out	In	Out	
9	28	28	17	80 Townhomes

AM Peak Hour

AM	Eastbound			Westbound			Northbound			Southbound		
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT
Volume 12-Apr-19	-	663	7	6	1,130	-	19	-	14	-	-	-
Peak Season Volume (Existing)	**-**	**683**	**7**	**6**	**1,164**	**-**	**20**	**-**	**14**	**-**	**-**	**-**
2023 Historic Growth	-	722	7	6	1,231	-	21	-	15	-	-	-
Major Project Traffic	-	0	0	0	0	-	0	-	0	-	-	-
Future Background	**-**	**722**	**7**	**6**	**1,231**	**-**	**21**	**-**	**15**	**-**	**-**	**-**
% Project Traffic	-	-	50%	50%	-	-	50%	-	50%	-	-	-
Project Traffic Direction	-	-	IN	IN	-	-	OUT	-	OUT	-	-	-
Project Traffic	-	-	5	5	-	-	14	-	14	-	-	-
2023 Future Total	**-**	**722**	**12**	**11**	**1,231**	**-**	**35**	**-**	**29**	**-**	**-**	**-**

PM Peak Hour

PM	Eastbound			Westbound			Northbound			Southbound		
	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT	LT	Thru	RT
Volume 12-Apr-19	-	1,034	20	15	834	-	15	-	4	-	-	-
Peak Season Volume (Existing)	**-**	**1,065**	**21**	**15**	**859**	**-**	**15**	**-**	**4**	**-**	**-**	**-**
2023 Historic Growth	-	1,126	22	16	908	-	16	-	4	-	-	-
Major Project Traffic	-	0	0	0	0	-	0	-	0	-	-	-
Future Background	**-**	**1,126**	**22**	**16**	**908**	**-**	**16**	**-**	**4**	**-**	**-**	**-**
% Project Traffic	-	-	50%	50%	-	-	50%	-	50%	-	-	-
Project Traffic Direction	-	-	IN	IN	-	-	OUT	-	OUT	-	-	-
Project Traffic	-	-	14	14	-	-	9	-	9	-	-	-
2023 Future Total	**-**	**1,126**	**36**	**30**	**908**	**-**	**25**	**-**	**13**	**-**	**-**	**-**

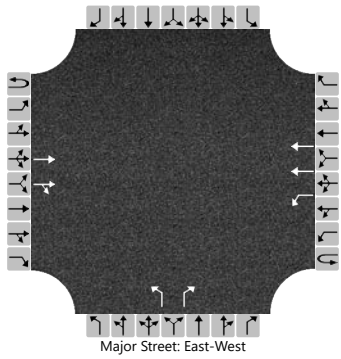
General Information

Analyst	JF
Agency/Co.	JFO
Date Performed	10/28/2019
Analysis Year	2023
Time Analyzed	AM
Intersection Orientation	East-West
Project Description	Stuart Ocean Townhomes

Site Information

Intersection	SE Ocean Blvd & Kingswood
Jurisdiction	F-DOT
East/West Street	SE Ocean Blvd
North/South Street	Kingswood
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		1	0	1		0	0	0
Configuration			T	TR		L	T			L		R				
Volume (veh/h)			722	12	0	11	1231			35		29				
Percent Heavy Vehicles (%)					0	2				2		2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized									No							
Median Type | Storage	Left + Thru								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.14				6.84		6.94				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						12				37		31				
Capacity, c (veh/h)						838				257		612				
v/c Ratio						0.01				0.14		0.05				
95% Queue Length, Q_{95} (veh)						0.0				0.5		0.2				
Control Delay (s/veh)						9.4				21.4		11.2				
Level of Service (LOS)						A				C		B				
Approach Delay (s/veh)					0.1				16.8							
Approach LOS									C							

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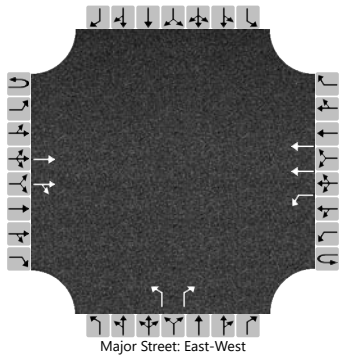
General Information

Analyst	JF
Agency/Co.	JFO
Date Performed	10/28/2019
Analysis Year	2023
Time Analyzed	PM
Intersection Orientation	East-West
Project Description	Stuart Ocean Townhomes

Site Information

Intersection	SE Ocean Blvd & Kingswood
Jurisdiction	F-DOT
East/West Street	SE Ocean Blvd
North/South Street	Kingswood
Peak Hour Factor	0.95
Analysis Time Period (hrs)	0.25

Lanes



Major Street: East-West

Vehicle Volumes and Adjustments

Approach	Eastbound				Westbound				Northbound				Southbound			
Movement	U	L	T	R	U	L	T	R	U	L	T	R	U	L	T	R
Priority	1U	1	2	3	4U	4	5	6		7	8	9		10	11	12
Number of Lanes	0	0	2	0	0	1	2	0		1	0	1		0	0	0
Configuration			T	TR		L	T			L		R				
Volume (veh/h)			1126	36	0	30	908			25		13				
Percent Heavy Vehicles (%)					0	2				2		2				
Proportion Time Blocked																
Percent Grade (%)									0							
Right Turn Channelized									No							
Median Type | Storage	Left + Thru								1							

Critical and Follow-up Headways

Base Critical Headway (sec)						4.1				7.5		6.9				
Critical Headway (sec)						4.14				6.84		6.94				
Base Follow-Up Headway (sec)						2.2				3.5		3.3				
Follow-Up Headway (sec)						2.22				3.52		3.32				

Delay, Queue Length, and Level of Service

Flow Rate, v (veh/h)						32				26		14				
Capacity, c (veh/h)						566				181		436				
v/c Ratio						0.06				0.15		0.03				
95% Queue Length, Q_{95} (veh)						0.2				0.5		0.1				
Control Delay (s/veh)						11.7				28.3		13.5				
Level of Service (LOS)						B				D		B				
Approach Delay (s/veh)					0.4				23.2							
Approach LOS									C							

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KMF Traffic Group, LLC
Stuart, FL
(772) 221-7971

Manual Traffic Count - All Traffic
SE Ocean Blvd and Kingwood Development
Stuart, FL

File Name : OCAMPM
Site Code : JO1920
Start Date : 4/12/2019
Page No : 1

Groups Printed- All Traffic

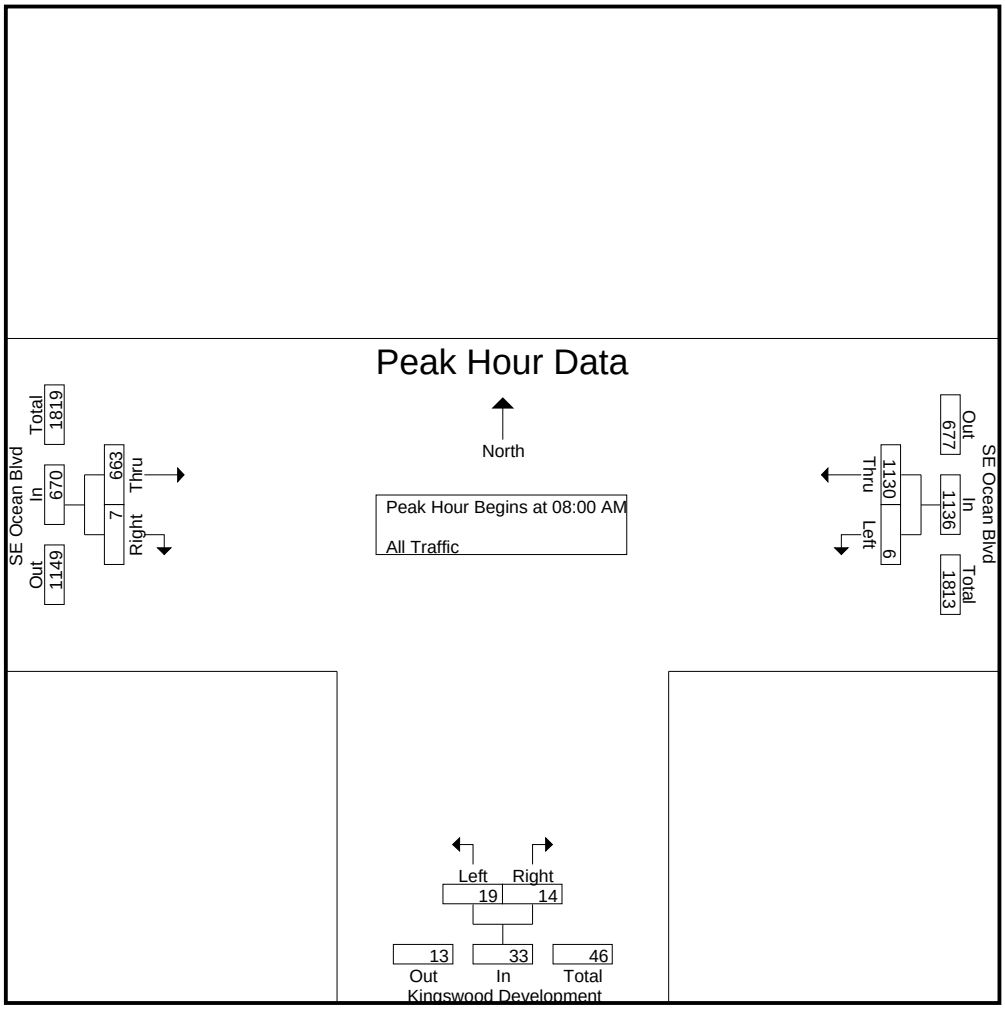
	Kingswood Development NB			SE Ocean Blvd EB			SE Ocean Blvd WB			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
07:00 AM	0	2	2	1	54	55	147	0	147	204
07:15 AM	2	0	2	1	91	92	160	1	161	255
07:30 AM	4	0	4	2	138	140	218	1	219	363
07:45 AM	1	5	6	1	155	156	218	0	218	380
Total	7	7	14	5	438	443	743	2	745	1202
08:00 AM	4	3	7	2	132	134	237	1	238	379
08:15 AM	2	7	9	1	168	169	333	0	333	511
08:30 AM	3	5	8	2	186	188	248	0	248	444
08:45 AM	5	4	9	2	177	179	312	5	317	505
Total	14	19	33	7	663	670	1130	6	1136	1839
*** BREAK ***										
04:00 PM	2	2	4	5	225	230	148	3	151	385
04:15 PM	2	4	6	0	234	234	165	4	169	409
04:30 PM	3	6	9	5	248	253	209	3	212	474
04:45 PM	1	4	5	9	266	275	255	6	261	541
Total	8	16	24	19	973	992	777	16	793	1809
05:00 PM	0	0	0	5	255	260	177	2	179	439
05:15 PM	0	5	5	1	265	266	193	4	197	468
05:30 PM	0	1	1	4	273	277	181	1	182	460
05:45 PM	1	0	1	2	223	225	178	1	179	405
Total	1	6	7	12	1016	1028	729	8	737	1772
Grand Total	30	48	78	43	3090	3133	3379	32	3411	6622
Apprch %	38.5	61.5		1.4	98.6		99.1	0.9		
Total %	0.5	0.7	1.2	0.6	46.7	47.3	51	0.5	51.5	

KMF Traffic Group, LLC
Stuart, FL
(772) 221-7971

Manual Traffic Count - All Traffic
SE Ocean Blvd and Kingwood Development
Stuart, FL

File Name : OCAMPM
Site Code : JO1920
Start Date : 4/12/2019
Page No : 2

	Kingswood Development NB			SE Ocean Blvd EB			SE Ocean Blvd WB			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 08:00 AM										
08:00 AM	4	3	7	2	132	134	237	1	238	379
08:15 AM	2	7	9	1	168	169	333	0	333	511
08:30 AM	3	5	8	2	186	188	248	0	248	444
08:45 AM	5	4	9	2	177	179	312	5	317	505
Total Volume	14	19	33	7	663	670	1130	6	1136	1839
% App. Total	42.4	57.6		1	99		99.5	0.5		
PHF	.700	.679	.917	.875	.891	.891	.848	.300	.853	.900

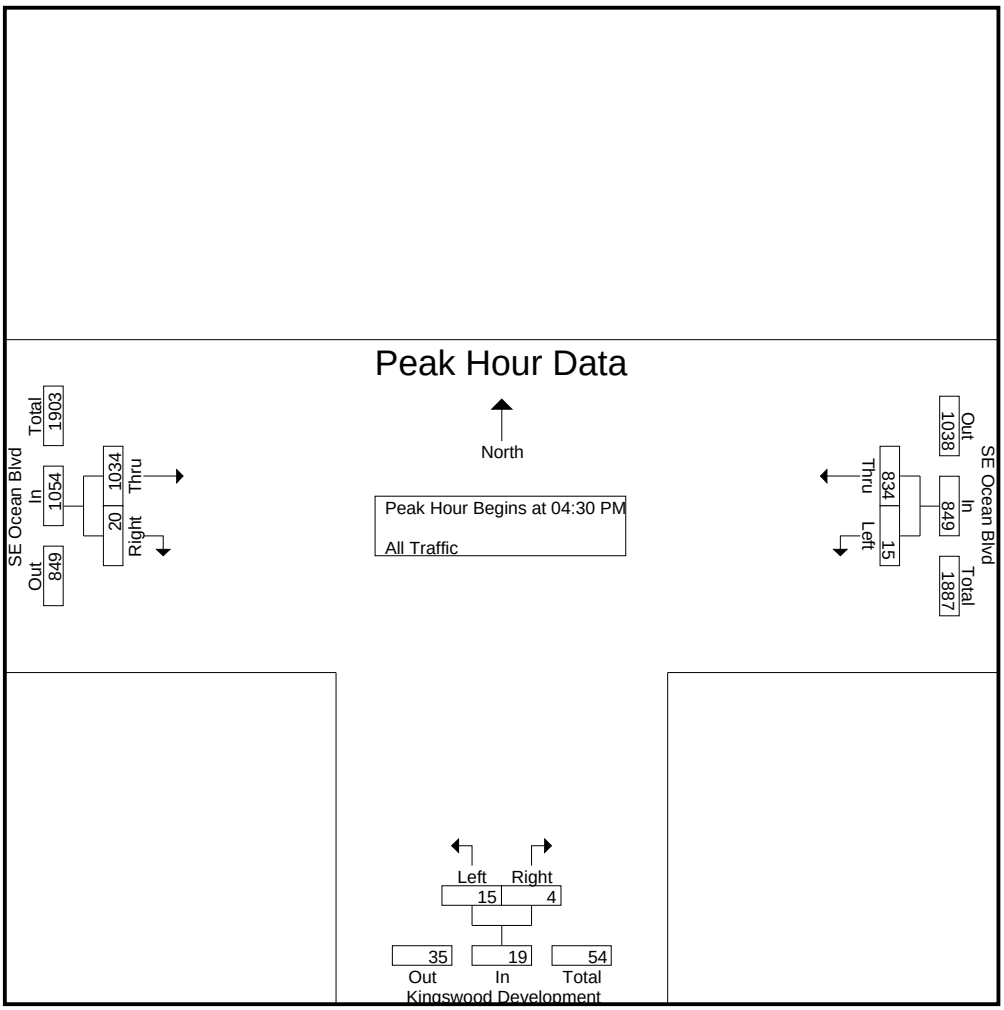


KMF Traffic Group, LLC
Stuart, FL
(772) 221-7971

Manual Traffic Count - All Traffic
SE Ocean Blvd and Kingwood Development
Stuart, FL

File Name : OCAMPM
Site Code : JO1920
Start Date : 4/12/2019
Page No : 3

	Kingswood Development NB			SE Ocean Blvd EB			SE Ocean Blvd WB			
Start Time	Right	Left	App. Total	Right	Thru	App. Total	Thru	Left	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1										
Peak Hour for Entire Intersection Begins at 04:30 PM										
04:30 PM	3	6	9	5	248	253	209	3	212	474
04:45 PM	1	4	5	9	266	275	255	6	261	541
05:00 PM	0	0	0	5	255	260	177	2	179	439
05:15 PM	0	5	5	1	265	266	193	4	197	468
Total Volume	4	15	19	20	1034	1054	834	15	849	1922
% App. Total	21.1	78.9		1.9	98.1		98.2	1.8		
PHF	.333	.625	.528	.556	.972	.958	.818	.625	.813	.888



2018 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 8900 EAST- A1A TO US1

MOCF: 0.87

WEEK	DATES	SF	PSCF
1	01/01/2018 - 01/06/2018	1.02	1.17
2	01/07/2018 - 01/13/2018	0.98	1.13
3	01/14/2018 - 01/20/2018	0.94	1.08
* 4	01/21/2018 - 01/27/2018	0.91	1.05
* 5	01/28/2018 - 02/03/2018	0.89	1.02
* 6	02/04/2018 - 02/10/2018	0.86	0.99
* 7	02/11/2018 - 02/17/2018	0.84	0.97
* 8	02/18/2018 - 02/24/2018	0.84	0.97
* 9	02/25/2018 - 03/03/2018	0.84	0.97
*10	03/04/2018 - 03/10/2018	0.84	0.97
*11	03/11/2018 - 03/17/2018	0.84	0.97
*12	03/18/2018 - 03/24/2018	0.85	0.98
*13	03/25/2018 - 03/31/2018	0.87	1.00
*14	04/01/2018 - 04/07/2018	0.88	1.01
*15	04/08/2018 - 04/14/2018	0.90	1.03
*16	04/15/2018 - 04/21/2018	0.92	1.06
17	04/22/2018 - 04/28/2018	0.96	1.10
18	04/29/2018 - 05/05/2018	1.01	1.16
19	05/06/2018 - 05/12/2018	1.06	1.22
20	05/13/2018 - 05/19/2018	1.11	1.28
21	05/20/2018 - 05/26/2018	1.11	1.28
22	05/27/2018 - 06/02/2018	1.10	1.26
23	06/03/2018 - 06/09/2018	1.10	1.26
24	06/10/2018 - 06/16/2018	1.09	1.25
25	06/17/2018 - 06/23/2018	1.09	1.25
26	06/24/2018 - 06/30/2018	1.09	1.25
27	07/01/2018 - 07/07/2018	1.09	1.25
28	07/08/2018 - 07/14/2018	1.09	1.25
29	07/15/2018 - 07/21/2018	1.10	1.26
30	07/22/2018 - 07/28/2018	1.10	1.26
31	07/29/2018 - 08/04/2018	1.10	1.26
32	08/05/2018 - 08/11/2018	1.11	1.28
33	08/12/2018 - 08/18/2018	1.11	1.28
34	08/19/2018 - 08/25/2018	1.11	1.28
35	08/26/2018 - 09/01/2018	1.12	1.29
36	09/02/2018 - 09/08/2018	1.12	1.29
37	09/09/2018 - 09/15/2018	1.12	1.29
38	09/16/2018 - 09/22/2018	1.12	1.29
39	09/23/2018 - 09/29/2018	1.12	1.29
40	09/30/2018 - 10/06/2018	1.12	1.29
41	10/07/2018 - 10/13/2018	1.12	1.29
42	10/14/2018 - 10/20/2018	1.12	1.29
43	10/21/2018 - 10/27/2018	1.10	1.26
44	10/28/2018 - 11/03/2018	1.09	1.25
45	11/04/2018 - 11/10/2018	1.07	1.23
46	11/11/2018 - 11/17/2018	1.05	1.21
47	11/18/2018 - 11/24/2018	1.04	1.20
48	11/25/2018 - 12/01/2018	1.03	1.18
49	12/02/2018 - 12/08/2018	1.02	1.17
50	12/09/2018 - 12/15/2018	1.02	1.17
51	12/16/2018 - 12/22/2018	0.99	1.14
52	12/23/2018 - 12/29/2018	0.96	1.10
53	12/30/2018 - 12/31/2018	0.94	1.08

* PEAK SEASON

25-FEB-2019 16:26:26 830UPD 4_8900_PKSEASON.TXT

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Kimley»Horn

To: Tom Reetz
Senior Planner
City of Stuart Development Department

From: Nicholas J. Mora, P.E.
Kimley-Horn and Associates, Inc.

Alexander R. Memering, E.I.T.
Kimley-Horn and Associates, Inc.

Date: October 14, 2019

Re: **Stuart Ocean Townhomes – City of Stuart, Florida**
Review of Traffic Impact Analysis

Kimley-Horn has reviewed the Traffic Impact Analysis (dated August 31, 2019) prepared by JFO Group Inc. related to the above-mentioned project. Please find below our review comments pertaining to the development's impacts to adjacent transportation facilities.

1. Based on the City of Stuart's Land Development Code, "An analysis of all project driveways shall be performed which includes, at a minimum, projected turning movements in and out of the project during the AM and PM peak hours. A capacity analysis of the proposed driveways shall be performed to determine the need for separate turning lanes and/or any other necessary improvement." Please evaluate the project driveway during the AM and PM peak hours and detail the project Level of Service and whether an eastbound ingress right-turn lane is warranted along SE Ocean Boulevard. Please also evaluate the storage length of the westbound left-turn lane to determine if the storage length is sufficient for project traffic.

2. A peak season correctional factor was not used within the intersection volume development sheets for the intersection of SE Ocean Boulevard & Site Driveway. Please update the volume development sheet to incorporate the appropriate peak season correctional factor.

3. Figure 3 conflicts with the intersection volume development sheet for SE Ocean Boulevard & Site Driveway. Please clarify the proposed project driveway assignment for the site.

Thank you for the opportunity to assist the City of Stuart in reviewing the noted project. Please contact us if you have any questions or need additional information.

Kimley Horn
October 14, 2019
Re: Stuart Ocean Townhomes – City of Stuart, Florida
Review of Traffic Impact Analysis

1. Based on the City of Stuart's Land Development Code, "An analysis of all project driveways shall be performed which includes, at a minimum, projected turning movements in and out of the project during the AM and PM peak hours. A capacity analysis of the proposed driveways shall be performed to determine the need for separate turning lanes and/or any other necessary improvement." Please evaluate the project driveway during the AM and PM peak hours and detail the project Level of Service and whether an eastbound ingress right-turn lane is warranted along SE Ocean Boulevard. Please also evaluate the storage length of the westbound left-turn lane to determine if the storage length is sufficient for project traffic.

[JFO->] *Traffic analysis has been revised accordingly. Exhibit 6 includes detailed driveway analysis.*

2. A peak season correctional factor was not used within the intersection volume development sheets for the intersection of SE Ocean Boulevard & Site Driveway. Please update the volume development sheet to incorporate the appropriate peak season correctional factor.

[JFO->] *Traffic analysis has been revised accordingly.*

3. Figure 3 conflicts with the intersection volume development sheet for SE Ocean Boulevard & Site Driveway. Please clarify the proposed project driveway assignment for the site.

[JFO->] *Traffic analysis has been revised. The intersection volume development sheet for SE Ocean Boulevard & Site Driveway included in Exhibit 5 of the traffic analysis dated August 31, 2019 was the driveway analysis submitted to F-DOT to obtain the driveway pre-approval letter. The conceptual approval from F-DOT assumed all project traffic on the Ocean Boulevard driveway. To avoid confusion, the FDOT analysis was removed from the revised traffic analysis and a revised driveway analysis matching FDOT conservative assumptions has been provided in Exhibit 6 including the feedback from comment #1 above.*

Kimley»Horn

To: Tom Reetz
Senior Planner
City of Stuart Development Department

From: Kevin Roberson, P.E.
Kimley-Horn and Associates, Inc.

Date: January 29, 2020

Re: **Stuart Ocean Townhomes – Stuart, Florida**
RPUD Rezoning and Major Development Site Plan Review - Engineering

---

Dear Mr. Reetz,

Kimley-Horn has reviewed the 3rd submittal of the RPUD Rezoning and Major Development Site Plan Application and associated documents, dated January 17, 2019, provided to Kimley Horn on January 24, 2019, prepared by HJA Design Studio for the proposed Stuart Ocean Townhomes development in Stuart, Florida. Please find below our review comments pertaining to the following items listed within the application:

We have completed our review of the applicant's submittal and have no further comments at this time.

Thank you for the opportunity to assist the City of Stuart in reviewing the noted project. Please contact us if you have any questions or need additional information.

Sincerely,

Kimley-Horn and Associates, Inc.

Kevin M. Roberson, P.E.
Vice President

Residential PUD

Project:	Stuart Ocean RPUD
Date	2.20.2020

Adjacent N	Martin County Multifamily
Adjacent S	Kingswood Multifamily
Adjacent E	Institutional The Point ALF
Adjacent W	Kingswood Multifamily
Total Floor Space (sq.ft)	**83,230 sq. ft.**

LDR Reference	Land Development Regulations	RPUD REVIEW STATUS
2.07.00 D.1	Land Use Designation	COMPLY
2.07.00 D.2 a	Uses	COMPLY
2.07.00 D.2 b	Compatible Residential Uses	COMPLY
2.07.00 D.2 c	Commercial (<30%)	NOT APPLICABLE
2.07.00.D.2.d	Commercial Uses (<30%) vertical	NOT APPLICABLE
2.07.00.D.3	Density	COMPLY
2.07.03 D.4.b	Open Space (>30%)	COMPLY
2.07.03 D.4.c	FAR	COMPLY
2.07.03.D.4.d	Native Vegetaion (>25%)	NOT APPLICABLE

AREA, IMPERVIOUS SURFACE, SETBACK AND HEIGHT

2.04.03	Supplemental impervious surface	COMPLY
2.04.04	Supplemental setback requirements	COMPLY
2.04.05	Waterfront setbacks	NOT APPLICABLE
2.04.06	Certain street setbacks	NOT APPLICABLE
2.04.07	Supplemental building height	COMPLY
2.06.00	Supplemental Use standards	NOT APPLICABLE

4.04.01	Traffic Concurrency	COMPLY
4.09.00	School Concurrency	TO BE REVIEWED

RESOURCE PROTECTION

5.02.00	Environmental Assessment	COMPLY
5.03.02	Wetland Protection	COMPLY
5.04.00	Evironmentally sensitive lands	COMPLY
5.04.03	Monitoring & Maintenance	REVIEWED AT SITE PLAN
5.05.01	Tree Survey	COMPLY
5.05.02	Tree removal	COMPLY

5.06.00	Mangrove & Shoreline	NOT APPLICABLE
5.07.00	Floodplain Management	COMPLY
Comp Plan	Comprehensive Plan	COMPLY

TRANSPORTATION

6.01.04	Sidewalks/bikeways	COMPLY
6.01.05	Bike Ped (LCD)	COMPLY
6.01.06	Access	COMPLY
6.01.07	Drive-through	NOT APPLICABLE
6.01.08	Vehicular Access	NOT APPLICABLE
6.01.09	Parking Code	COMPLY
6.01.18	Off-Street Loading	NOT APPLICABLE
6.01.19	PILOP	NOT APPLICABLE

STORMWATER

6.03.01	Generally	TO BE REVIEWED
6.03.04	Management	TO BE REVIEWED
6.03.08	Erosion	TO BE REVIEWED

LANDSCAPING

6.04.02	General Standards	COMPLY
6.04.02 A.1	Native Landscaping	COMPLY
6.06.02 A.2	Shade Trees Required	COMPLY
6.06.02 A.4	Banyan, Fiscus & Rubber Trees	NOT APPLICABLE
6.06.02 A.5	Proximity to power lines	COMPLY
6.06.02 A.6	Shrubs	COMPLY
6.06.02 A.7	Hedges	COMPLY
6.06.02 A.8	Vines	NOT APPLICABLE
6.06.02 A.9	Ground cover	COMPLY
6.06.02 A.10	Grass Area	COMPLY
6.06.02 B	Irrigation	REVIEWED AT SITE PLAN

LANDSCAPE DESIGN

6.04.03 A	Utility Lines (Existing and Proposed)	COMPLY
6.04.03 B.1	Landscaped Area >20%	COMPLY
6.04.03 B.2	Interior landscaping >50%	COMPLY
6.04.03 B.3	location of impervious	COMPLY
6.04.03 B.4	Mulch	COMPLY
6.04.03 B.5	Shoreline protection	NOT APPLICABLE
6.04.03 B.8	Visibility triangles	TO BE REVIEWED

6.04.06	Land Use Transitions	COMPLY

LANDSCAPING - PARKING AREAS

6.04.07 A.1	Landscaped strip adjacent to street	COMPLY
6.04.07 A.2	Landscaped strip length linear feet	COMPLY
6.04.07 A.2a	Parking area adjacent to street	COMPLY
6.04.07 A.2b	Hedge/wall/berm on outside of strip	COMPLY
6.04.07 A.2c	Other Landscaping	COMPLY
6.06.07 A.2d	Grass	COMPLY
6.04.07 A.3	Shrubs/ground cover	COMPLY
6.04.07 B	parking screened from private propery	NOT APPLICABLE
6.04.07 B.1	Landscaped strip adjacent to private property	NOT APPLICABLE
6.04.07 B.2a	Parking area adjacent to private property	NOT APPLICABLE
6.04.07 B.2b	Hedge/wall/berm on outside of strip	NOT APPLICABLE
6.04.07 B.2c	Other Landscaping	NOT APPLICABLE
6.04.07 B.2d	Grass	NOT APPLICABLE
6.04.07 B.3	Shrubs/ground cover	NOT APPLICABLE
6.04.07 C.1	Parking Area (Major Dev't only)	COMPLY
6.04.07 C.2	Parking area rear and sides of building	COMPLY
6.04.07 C.3	Interior trees	COMPLY
6.04.07 C.4	Vechicle encroachment	COMPLY
6.04.07 C.5	Interior landscaped islands	COMPLY
6.04.07 C.6	Terminal landscaped islands	COMPLY
6.04.07 C.7	Interior landscaped medians	COMPLY
6.04.07 C.8	Interior shade trees	COMPLY
6.04.07 D	Visability triangles	REVIEWED AT SITE PLAN
6.04.08	Tree Requirements	COMPLY
6.04.10	Loading Storage	NOT APPLICABLE

COMMERCIAL DEVELOPMENT STANDARDS

6.05.02 B	Building Location	NOT APPLICABLE
6.05.02 C	Building Orientation	NOT APPLICABLE
6.05.02 D	Façade Design	NOT APPLICABLE
6.05.02 E	Massing	NOT APPLICABLE
6.05.02 F	Other Features	NOT APPLICABLE
6.05.02 G	Transitional Elevations	NOT APPLICABLE
6.05.03 B	Blank Wall Area	NOT APPLICABLE
6.05.03 C	Repeating Façade	NOT APPLICABLE
6.05.04	Additional Façade	NOT APPLICABLE

6.05.05	Roof Treatments	NOT APPLICABLE
6.05.06	Entryways and customer entrance	NOT APPLICABLE
6.05.07	Materials and Color	NOT APPLICABLE
6.06.00	Green Development	NOT APPLICABLE
6.07.00	Lighting	NOT APPLICABLE
6.08.00	Dumpster & Recycling	NOT APPLICABLE
6.09.05	Fences	COMPLY
6.11.00	Signs	TO BE REVIEWED

Trees

	Shade or Canopy
	Palm
	Flowering
	Accent

Tree Species	Name	number	interior
(Ptychosperma elegans)	Alexander Palm*		
(Ilex opaca)	American Holly		
(Cordia boissieri)	Anacahuita, White Corda*		
(Phoenix canariensis)	Canary Island Date Palm*		
(Prunus caroliniana)	Cherry Laurel		
(Livistonia chinensis)	Chinese Fan Palm*		
(Ilex cassine)	Dahoon Holly		
(Ilex attenuata 'EastPalatka')	East Palatka Holly		
(Plumeria acuminata)	Frangipani Plumeria*		
(Cordia sebestena)	Geiger Tree		
(Cassia surattensis)	Glaucous Cassia*		
(Duranta repens)	Golden Dewdrop		
(Koelreuteria formosana)	Golden Rain Tree*		
(Bauhinia blakeana)	Hong Kong Orchid*		
(Capparis cynophallophora)	Jamaica Caper		
(Parkinsonia aculeata)	Jerusalem Thorn*		
(Quercus laurifolia)	Laurel Oak		
(Callistemon lanceolata)	Lemon Bottlebrush*		
(Quercus virginiana)	Live Oak		
(Gordonia lasianthus)	Loblolly Bay		
(Ptychosperma macarthuri)	MacArthur Palm*		
(Swietenia mahagoni)	Mahogany		
(Washingtonia robusta)	Mexican Washington Palm*		
(Myrsine guianensis)	Myrsine		
(Simaruba glauca)	Paradise Tree		
(Acoelorrhaphe wrightii)	Paurotis Palm		
(Tabebuia heterophylla)	Pink Tab or Trumpet Tree*		
(Tibouchina grandiflora)	Princess Flower Tree*		
(Tibouchina grandiflora)	Princess Flower Tree1*		
(Arecastrum romanzoffianum)	Queen Palm*		
(Lagerstromia speciosa)	Queens Crepe Myrtle*		
(Persea borbonia)	Red Bay		
(Acer rubrum)	Red Maple		

(Cocothrinax argentata)	Silver Palm		
(Tabebuia caraiba)	Silver Trumpet*		
(Pinus elliottii)	Slash Pine		
(Magnolia grandiflora)	Southern Magnolia		
(Magnolia virginiana)	Sweet Bay		
(Liquidambar styraciflua)	Sweet Gum		
(Plantanus occidentalis)	Sycamore		
(Myrica cerifera)	Wax Myrtle		
(Callistemon viminallis)	Weeping Bottlebrush*		
(Tecoma stans)	Yellow Elder		
Other			
	TOTALS	**0**	**0**

Shrubs/ground cover

	Shrub
	Ground Cover
	Vine

Shrub/Ground cover Species	Name	number	native
(Antigonon Leptopus)	Coral Honeysuckle		0
(Blechnum serrulatum)	Swamp Fern		0
(Catharanthus roseus)	Periwinkle		0
(Chrysobalanus icaco)	Cocoplum		0
(Conocarpus erectus sericeus)	Silver Buttonwood		0
(Conocarpus erectus)	Buttonwood		0
(Crinum americanum)	Swamp Lilly		0
(Forestiera segregata)	Florida Privet		0
(Glesminum Sempervirens)	Carolina Jessamine		0
(Hamelia patens)	Firebush		0
(Helianthus debilis)	Beach Sunflower		0
(Hymenocallis latifolia)	Spider Lily		0
(Ilex glabra)	Gallberry		0
(Lantana spp.)	Lantana species		0
(Lonicera)	Trumpet Honeysuckle		0
(Myrcianthes fragrans)	Simpson's Stopper		0
(Myrica cerifera)	Wax Myrtle		0
(Myrsine guianensis)	Myrsine		0
(Nephrolepis cordifolia)	Erect Swordfern		0
(Prunus caroliniana)	Cherry Laurel		0
(Spartina bakerii)	Cordgrass		0
(Sysirinchium)	Blue Eyed Grass		0
(Urechites lutea)	Wild Allamanda		0

(Vaccinium myrsinites)	Shiny Blueberry		0
(Viburnum obovatum)	Walter's Virburnum		0
(Zamia floridana)	Coontie		0
Other			0
	TOTALS	0	0

	tree	shrub	shade tree	palms	tree+shrub	Interior Shade
native	0	0	0	0	0	
other	0	0	0	0	0	
Total	0	0	0	0	0	0
interior	0		0			
Perimeter	0		0			

	%
Native	#DIV/0!
Shade	#DIV/0!
Int Shade	#DIV/0!

Bowman CONSULTING

STORMWATER MANAGEMENT REPORT

FOR

Pulte Homes Stuart Ocean

SE Ocean Boulevard, Stuart, FL 34996

September 20, 2019
December 5, 2019
Revised: January 16, 2020

Justin Thompson, P.E.
Florida License No. 84595
Bowman Consulting Group, LTD.
Board of Professional Engineers –
Certificate of Authorization No. 30462

PROJECT #010655-01-001

13450 W Sunrise Blvd, Suite 320
Sunrise, FL 33323
954.314.8480
www.bowmanconsulting.com

Bowman CONSULTING

Stormwater Management Report

Pulte Homes Stuart Ocean, SE Ocean Blvd, Stuart Fl

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Introduction

Project Information

The project area consists of two (2) parcels of land, and two satellite parcels south of the project area known as Parcel A and B, abutting the Kingswood Condominium apartments on SE Ocean Boulevard in the City of Stuart, Martin County, Florida. The folio numbers are 02-38-41-000-000-00050-9 and 02-38-41-000-000-00020-6, which contains +/- 11.03 acres, and is currently zoned R-3 Residential (Multi-Family/Duplex). The proposed project consists of an eighty (80) unit townhome residential community development with pedestrian trails, lush landscaped tree preservation areas and lake area for drainage purposes.

Site Conditions

Existing Conditions

The existing +/- 11.03-acre site is currently vacant consisting of an existing private asphalt road that traverses the site connecting the communities south of the project area to SE Ocean Boulevard. There are two (2) existing lift stations, connecting to existing private force mains, that services the abutting communities service by the City of Stuart Utilities. The site is approximately eighty-nine percent (89%) pervious and 11% impervious, generating a Runoff Curve Number (RCN) of 74.

Proposed Conditions

The proposed improvements include demolishing the existing site, and private asphalt road, to construct an eighty (80) unit townhome residential community development, with pedestrian trials and lush landscaped preservation areas. A new drainage system will be constructed consisting of catch basins, to keep runoff from leaving the site, that will be directed to detention areas onsite to meet water quality requirements. A wet retention pond is proposed to provide attenuation of the larger storm events including the 100 year storm event. Under proposed conditions, the site will be forty-three percent (43%) impervious and fifty-seven percent (57%) pervious grass and open space, which generates an RCN of 74.

Water Table

The geotechnical report enclosed describes the water table elevations encountered during the soil borings and exfiltration rate studies done on the site. On average, the water table was encountered at a depth of two and a half (2.5') to seven and a half (7.5') feet below ground surface, or elevation 3.0' (NGVD).

Flood Elevations

The FEMA FIRM 12085C0154H indicates the site to be in FEMA Flood Zone X, which has determined areas to be outside the 0.2% annual chance floodplain. FEMA panel number 12085C0154H has been enclosed for reference.

Land Use Calculations

Existing Conditions

Area Description	Square Feet	Acreage	%
Building	-	-	-
Sidewalk / Paving	52,771	1.21	11
Grass / Open Area	428,332	9.83	89
Total Area	**481,103**	**11.04**	**100**

Proposed Conditions

Area Description	Square Feet	Acreage	%
Building	83,230	1.91	17
Sidewalk / Paving / Rear Patios	58,463	1.34	12
Vehicular Use Area	66,670	1.53	14
Native Pres./Dry Ret./Other Grass	232,255	5.33	49
Wet Pond	40,485	0.93	8
Total Area	**481,103**	**11.04**	**100**

Soil Storage and Runoff Calculations:

Existing Conditions

The existing soils are comprised of an even mix of class A and D soils; therefore, flatwoods soils will be used. According to the SFWMD Manual, Page F-1, a depth to the water table of 3.0' corresponds to a developed available storage of 4.05".

%Impervious = $\frac{1.21}{11.04}$

%Impervious = 0.11

$$S = S_{Uncomp}(1 - \%\,Impervious)$$
$$S = 4.05"(1 - 0.11)$$
$$\therefore \boldsymbol{S = 3.60}$$

$$CN = \frac{1000}{S + 10}$$

$$CN = \frac{1000}{(3.60 + 10)}$$

$$\therefore \boldsymbol{CN = 73.53}$$

Proposed Conditions

The existing soils are comprised of an even mix of class A and D soils; therefore, flatwoods soils will be used. Due to the site being raised considerably from existing conditions, a depth to water table of 4.0' will be used. According to the SFWMD Manual, Page F-1, a depth to the water table of 4.0' corresponds to a developed available storage of 6.75".

%Impervious = $\frac{4.78}{11.04}$

%Impervious = 0.43

$$S = S_{Comp}(1 - \%\,Impervious)$$
$$S = 6.75"(1 - 0.48)$$
$$\therefore \boldsymbol{S = 3.85}$$

$$CN = \frac{1000}{S + 10}$$

$$CN = \frac{1000}{(3.85 + 10)}$$

$$\therefore \boldsymbol{CN = 72.20}$$

Stage/Storage

Tabulation

"SITE"
NODE

	PONDS					SITE						
WSEL	Area (ft^2)	Average Area (ft^2)	Change in Head (ft)	Change in Volume (ft^3)	Total Volume (ft^3)	Area (ft^2)	Average Area (ft^2)	Change in Head (ft)	Change in Volume (ft^3)	Total Volume (ft^3)	Total Σ Volume (ft^3)	Total Volume (ac-ft)
3.00	40,484				0	0				0	0	0.00
		47,244	1.00	47,244			0	0.00	0			
4.00	54,003				47,244	0				0	47,244	1.08
		58,426	1.00	58,426			0	1.00	0			
5.00	62,849				105,670	0				0	105,670	2.43
		67,846	1.00	67,846			0	1.00	0			
6.00	72,842				173,515	0				0	173,515	3.98
		78,181	1.00	78,181			29,563	1.00	29,563			
7.00	83,519				251,696	59,125				29,563	281,258	6.46
		83,519	1.00	83,519			245,185	1.00	245,185			
8.00	83,519				335,215	431,244				274,747	609,962	14.00

METHODOLOGY

Water Quality

Per South Florida Water Management District design criteria for commercial properties, water quality treatment is required for wet detention areas. The wet detention volume shall be provided for the first inch of runoff from the developed project, or the total runoff of 2.5 inches times the percentage of imperviousness, whichever is greater. The required water quality volume of 0.97 ac-ft will be met in the proposed on-site retention ponds, which provide 4.845ac-ft. of storage.

- **1 in. x Site**

  $\left(1\ in.\ \times\ 11.04\ ac.\ \div 12\ \frac{in}{ft}\right) = 0.92\ ac.-ft$

  ∴ 0.92 ac.-ft. Required Water Quality

- **2.5 in. x (% Impervious)**
  - Site Area for Water Quality Calculations

    = (Total Site – Roof Area)

    $= (11.04\ ac - 1.91\ ac)$

    $= 9.13\ ac$
  - Impervious Area for Water Quality Calculations

    = (Site Area for Water Quality – Pervious)

    $= (9.13\ ac - 5.33\ ac)$

    $= 3.80\ ac$
  - Percentage of Impervious for Water Quality Calculations

    = (Impervious Area for WQ / Site Area for WQ) × 100%

    $= (3.80\ ac.\ \div\ 9.13\ ac) \times 100\% = 42\%$

    $= (2.5\ in.\ \times 0.42) = 1.05\ inches\ to\ be\ treated$
  - Inches to Be Treated × Total Site Area = Treatment Volume

    $= (1.05\ in.\ \times 11.04\ ac.) = 11.59 ac.-in.$

    $= \left(11.59\ ac.-in.\ \div\ 12\ \frac{in}{ft}\right) = 0.966\ ac.-ft.$

    ∴ 0.966 ac.-ft. Required Water Quality

- **0.966 ac.-ft. > 0.92 ac.-ft.**
  0.966 ac.-ft ← Controls

Water Quality Treatment Required = 0.97 ac-ft

Water Quality Treatment Provided = 1.08 ac-ft @ elevation 4.00 NAVD

Pre vs. Post Analysis

A Pre vs. Post analysis has been performed to model the existing conditions and compare it to the proposed conditions. Please see Appendix B for the Stage Storage tabulations and ICPR Model outputs. Cascade Models account for the difference as follows:

SFWMD Rainfall Used for Modeling Purposes

Storm Event	Rainfall (Inches)
10-year, 1-day	7
25-year, 3-day	11.5
100-year, 3-day	14

Maximum Stage

Storm Event	Pre (NGVD)	Post (NGVD)
10-year - 1-day	5.82’	5.69’
25-year - 3-day	6.61’	6.78’
100-year – 3day	6.98’	7.16’

CONCLUSION

In summary, the proposed dry detention areas and wet retention pond will provide adequate storm water management to construct the proposed eighty (80) unit townhome residential community development. Water quality volume is being met by providing 0.97 ac-ft of storage volume. In addition, the ICPR model run for the 10-Year, 1-day and the 25-Year, 3-Day storm events demonstrate that staging is not increased over all storm events.

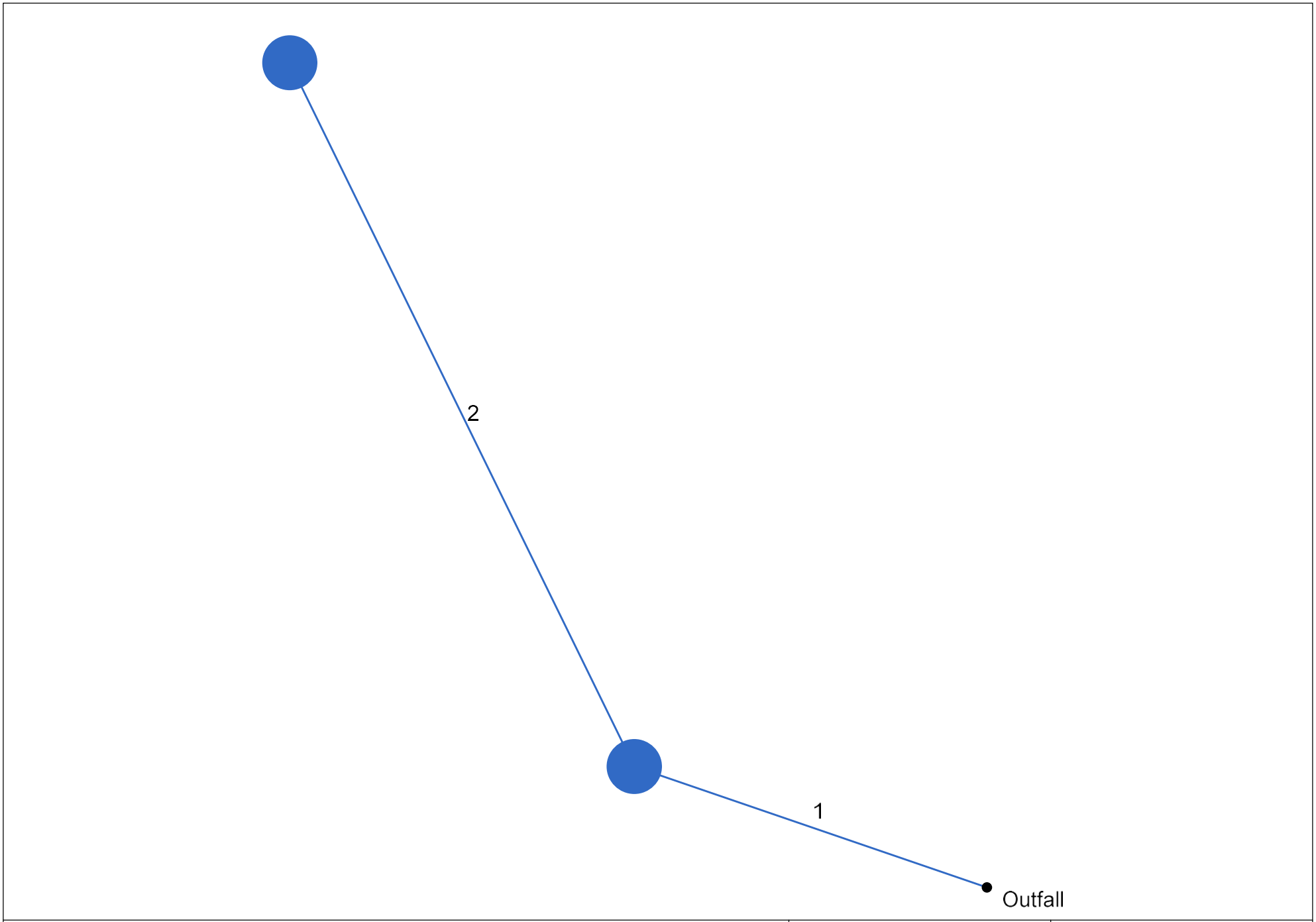
Appendix

Appendix

ICPR Model

Storm Pipe Analysis

Hydraflow Storm Sewers Extension for Autodesk® AutoCAD® Civil 3D® Plan



Project File: Model.stm	Number of lines: 2	Date: 12/5/2019

Storm Sewer Summary Report

10-Year Event

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1		24.73	24	Cir	28.0	3.00	3.00	0.000	4.87*	5.24*	0.72	5.96	End	Manhole
2		0.07	24	Cir	59.0	3.00	3.00	0.000	5.96*	5.96*	0.00	5.96	1	DropGrate

Project File: Model.stm | Number of lines: 2 | Run Date: 12/5/2019

NOTES: Return period = 10 Yrs. ; *Surcharged (HGL above crown).

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream Invert elev (ft)	Downstream HGL elev (ft)	Downstream Depth (ft)	Downstream Area (sqft)	Downstream Vel (ft/s)	Downstream Vel head (ft)	Downstream EGL elev (ft)	Downstream Sf (%)	Len (ft)	Upstream Invert elev (ft)	Upstream HGL elev (ft)	Upstream Depth (ft)	Upstream Area (sqft)	Upstream Vel (ft/s)	Upstream Vel head (ft)	Upstream EGL elev (ft)	Upstream Sf (%)	Check Ave Sf (%)	Check Enrgy loss (ft)	JL coeff (K)	Minor loss (ft)
1	24	24.73	3.00	4.87	1.87	3.05	8.10	1.02	5.89	1.033	28.0	3.00	5.24	2.00	3.14	7.87	0.96	6.20	1.196	1.115	0.312	0.75	0.72
2	24	0.07	3.00	5.96	2.00	3.14	0.02	0.00	5.96	0.000	59.0	3.00	5.96	2.00	3.14	0.02	0.00	5.96	0.000	0.000	0.000	1.00	0.00

Project File: Model.stm | Number of lines: 2 | Run Date: 12/5/2019

; c = cir e = ellip b = box

Storm Sewer Summary Report

25-Year Event

Line No.	Line ID	Flow rate (cfs)	Line Size (in)	Line shape	Line length (ft)	Invert EL Dn (ft)	Invert EL Up (ft)	Line Slope (%)	HGL Down (ft)	HGL Up (ft)	Minor loss (ft)	HGL Junct (ft)	Dns Line No.	Junction Type
1		30.74	24	Cir	28.0	3.00	3.00	0.000	4.87*	5.44*	1.12	6.55	End	Manhole
2		0.08	24	Cir	59.0	3.00	3.00	0.000	6.55*	6.55*	0.00	6.55	1	DropGrate

Project File: Model.stm | Number of lines: 2 | Run Date: 12/5/2019

NOTES: Return period = 25 Yrs. ; *Surcharged (HGL above crown).

Hydraulic Grade Line Computations

Line	Size (in)	Q (cfs)	Downstream Invert elev (ft)	Downstream HGL elev (ft)	Downstream Depth (ft)	Downstream Area (sqft)	Downstream Vel (ft/s)	Downstream Vel head (ft)	Downstream EGL elev (ft)	Downstream Sf (%)	Len (ft)	Upstream Invert elev (ft)	Upstream HGL elev (ft)	Upstream Depth (ft)	Upstream Area (sqft)	Upstream Vel (ft/s)	Upstream Vel head (ft)	Upstream EGL elev (ft)	Upstream Sf (%)	Check Ave Sf (%)	Check Enrgy loss (ft)	JL coeff (K)	Minor loss (ft)
1	24	30.74	3.00	4.87	1.87	3.06	10.05	1.57	6.44	1.596	28.0	3.00	5.44	2.00	3.14	9.78	1.49	6.93	1.847	1.721	0.482	0.75	1.12
2	24	0.08	3.00	6.55	2.00	3.14	0.03	0.00	6.55	0.000	59.0	3.00	6.55	2.00	3.14	0.03	0.00	6.55	0.000	0.000	0.000	1.00	0.00

Project File: Model.stm | Number of lines: 2 | Run Date: 12/5/2019

; c = cir e = ellip b = box

ICPR Model - Existing

Manual Basin: Watershed

Scenario: Scenario1
Node: Existing Site
Hydrograph Method: Santa Barbara Urban Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 999999.00 cfs
Time Shift: 0.0000 hr
Area: 11.0300 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
1.2100	Impervious	A/D	A		
9.8200	Pervious	A/D	A		

Comment:

Node: Existing Site

Scenario: Scenario1
Type: Stage/Volume
Base Flow: 0.00 cfs
Initial Stage: 3.00 ft
Warning Stage: 5.35 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
3.00	0.00	0
4.00	0.38	16553
5.00	1.49	64904
6.00	4.99	217364
7.00	10.53	458687

Comment:

Simulation: 100YR-72HR

Scenario: Scenario1
Run Date/Time: 12/5/2019 9:47:36 AM
Program Version: ICPR4 4.03.02.00

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	80.0000

Hydrology [sec]	Surface Hydraulics	Groundwater [sec]

	[sec]		
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: 1
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: 1
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft

IA Recovery Time: 24.0000 hr
ET for Manual Basins: False
Smp/Man Basin Rain Opt: Global
OF Region Rain Opt: Global
Rainfall Name: ~SFWMD-72

		Rainfall Amount:	14.00 in
Edge Length Option:	Automatic	Storm Duration:	72.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	113 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: 10YR-24HR

Scenario: Scenario1
Run Date/Time: 12/5/2019 9:49:21 AM
Program Version: ICPR4 4.03.02.00

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:	
Reference ET Folder:	
Unit Hydrograph Folder:	

Lookup Tables

Boundary Stage Set:	
Extern Hydrograph Set:	
Curve Number Set:	1
Green-Ampt Set:	
Vertical Layers Set:	
Impervious Set:	1
Roughness Set:	
Crop Coef Set:	
Fillable Porosity Set:	
Conductivity Set:	
Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	7.00 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	113 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: 25YR-72HR

Scenario:	Scenario1
Run Date/Time:	12/5/2019 9:49:59 AM
Program Version:	ICPR4 4.03.02.00

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	80.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: 1
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: 1
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft

IA Recovery Time: 24.0000 hr
ET for Manual Basins: False
Smp/Man Basin Rain Opt: Global

Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SFWMD-72
		Rainfall Amount:	11.50 in
Edge Length Option:	Automatic	Storm Duration:	72.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	113 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: 5YR-1HR

Scenario:	Scenario1
Run Date/Time:	12/5/2019 9:51:44 AM
Program Version:	ICPR4 4.03.02.00

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources		Lookup Tables	
Rainfall Folder:		Boundary Stage Set:	
Reference ET Folder:		Extern Hydrograph Set:	
Unit Hydrograph Folder:		Curve Number Set:	1
		Green-Ampt Set:	
		Vertical Layers Set:	
		Impervious Set:	1
		Roughness Set:	
		Crop Coef Set:	
		Fillable Porosity Set:	
		Conductivity Set:	
		Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	6.00 in
Edge Length Option:	Automatic	Storm Duration:	1.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	113 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Node Max Conditions [Scenario1]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Existing Site	100YR-72HR	5.35	6.98	0.0010	70.38	0.00	283743
Existing Site	10YR-24HR	5.35	5.82	0.0010	41.91	0.00	179157
Existing Site	25YR-72HR	5.35	6.61	0.0010	56.82	0.00	251353
Existing Site	5YR-1HR	5.35	5.60	0.0010	129.52	0.00	158016

ICPR Model - Proposed

Manual Basin: Total Site Basin

Scenario: Scenario1
Node: Total Site
Hydrograph Method: NRCS Unit Hydrograph
Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 0.00 cfs
Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0
Area: 11.0400 ac

Area [ac]	Land Cover Zone	Soil Zone	Rainfall Name	Crop Coefficient Zone	Reference ET Station
5.7100	Impervious	A			
5.3300	Pervious	A			

Comment:

Node: Total Site

Scenario: Scenario1
Type: Stage/Volume
Base Flow: 0.00 cfs
Initial Stage: 3.00 ft
Warning Stage: 8.20 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
3.00	0.00	0
4.00	1.08	47045
5.00	2.43	105851
6.00	3.98	173369
7.00	6.46	281398
8.00	14.00	609840

Comment:

Simulation: 100YR-72HR

Scenario: Scenario1
Run Date/Time: 1/16/2020 8:29:17 PM
Program Version: ICPR4 4.05.02

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000

End Time:	0	0	0	80.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: 1
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: 1
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain	Global

		Opt:	
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SFWMD-72
		Rainfall Amount:	14.00 in
Edge Length Option:	Automatic	Storm Duration:	72.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	113 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: 10YR-24HR

Scenario: Scenario1
Run Date/Time: 1/16/2020 8:31:43 PM
Program Version: ICPR4 4.05.02

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart:	False

Resources & Lookup Tables

Resources

Rainfall Folder:	
Reference ET Folder:	
Unit Hydrograph Folder:	

Lookup Tables

Boundary Stage Set:	
Extern Hydrograph Set:	
Curve Number Set:	1
Green-Ampt Set:	
Vertical Layers Set:	
Impervious Set:	1
Roughness Set:	
Crop Coef Set:	
Fillable Porosity Set:	
Conductivity Set:	
Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~FLMOD
		Rainfall Amount:	7.00 in
Edge Length Option:	Automatic	Storm Duration:	24.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	113 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: 25YR-72HR

Scenario:	Scenario1
Run Date/Time:	1/16/2020 8:32:38 PM
Program Version:	ICPR4 4.05.02

General

Run Mode:	Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	80.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: 1
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: 1
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight 0.5 dec

IA Recovery Time: 24.0000 hr
ET for Manual Basins: False

Fact:			
dZ Tolerance:	0.0010 ft	Smp/Man Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SFWMD-72
		Rainfall Amount:	11.50 in
Edge Length Option:	Automatic	Storm Duration:	72.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	113 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Simulation: 5YR-1HR

Scenario:	Scenario1
Run Date/Time:	1/16/2020 8:35:01 PM
Program Version:	ICPR4 4.05.02

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	24.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: 1
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: 1
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight Fact: 0.5 dec
dZ Tolerance: 0.0010 ft
Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft
Edge Length Option: Automatic
Dflt Damping (2D): 0.0050 ft
Min Node Srf Area (2D): 100 ft2
Energy Switch (2D): Energy

IA Recovery Time: 24.0000 hr
ET for Manual Basins: False
Smp/Man Basin Rain Opt: Global
OF Region Rain Opt: Global
Rainfall Name: ~FLMOD
Rainfall Amount: 6.00 in
Storm Duration: 1.0000 hr
Dflt Damping (1D): 0.0050 ft
Min Node Srf Area (1D): 113 ft2
Energy Switch (1D): Energy

Comment:

Curve Number: 1 [Set]

Land Cover Zone	Soil Zone	Curve Number [dec]
Impervious	A	98.0
Pervious	A	39.0

Impervious: 1 [Set]

Land Cover Zone	% Impervious	% DCIA	% Direct	Ia Impervious [in]	Ia Pervious [in]
Impervious	0.00	0.00	0.00	0.000	0.000
Pervious	0.00	0.00	0.00	0.000	0.000

Node Max Conditions [Scenario1]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta Stage [ft]	Max Total Inflow [cfs]	Max Total Outflow [cfs]	Max Surface Area [ft2]
Total Site	100YR-72HR	8.20	7.16	0.0010	50.94	0.00	253268
Total Site	10YR-24HR	8.20	5.69	0.0010	25.10	0.00	80236
Total Site	25YR-72HR	8.20	6.78	0.0010	39.44	0.00	190097
Total Site	5YR-1HR	8.20	5.34	0.0010	78.01	0.00	71503

Curve Number: 1 [Set]

Land Cover Zone	Soil Zone	Curve Number [dec]
Impervious	A	98.0
Pervious	A	39.0

Weir Cross Section: Cross Section 1

Scenario: Scenario1

Lid: No

Bottom Point Table

Order	Station [ft]	Elevation [ft]
0	0.00	11.00
1	300.00	11.00
2	600.00	11.00

Comment:

Node: Ground

Scenario: Scenario1
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 3.00 ft
Warning Stage: 3.00 ft
Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	3.00
0	0	0	999.0000	3.00

Comment:

Node: Total Site

Scenario: Scenario1
Type: Stage/Volume
Base Flow: 0.00 cfs
Initial Stage: 3.80 ft
Warning Stage: 3.80 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
3.00	0.00	0
4.00	1.08	47045
5.00	2.43	105851
6.00	3.98	173369
7.00	6.46	281398
8.00	14.00	609840

Comment:

Percolation Link: PERC

Scenario: Scenario1
From Node: Total Site
To Node: Ground
Link Count: 1
Flow Direction: Both
Aquifer Base Elevation: -50.00 ft
Water Table Elevation: 2.50 ft
Annual Recharge Rate: 0 ipy
Horizontal Conductivity: 38.000 fpd
Vertical Conductivity: 25.000 fpd
Fillable Porosity: 0.400
Layer Thickness: 0.00 ft

Surface Area Option: Vary Based on Stage/Area Table
Vertical Flow Termination: Horizontal Flow Algorithm
Perimeter 1: 4239.00 ft
Perimeter 2: 8478.00 ft
Perimeter 3: 21195.00 ft
Distance P1 to P2: 50.00 ft
Distance P2 to P3: 450.00 ft
# of Cells P1 to P2: 10
# of Cells P2 to P3: 45

Comment:

Simulation: Recovery

Scenario: Scenario1
Run Date/Time: 1/17/2020 12:23:19 AM
Program Version: ICPR4 4.03.02.00

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	100.0000

	Hydrology [sec]	Surface Hydraulics [sec]	Groundwater [sec]
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		30.0000	

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	60.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Rainfall Folder:
Reference ET Folder:
Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: 1
Green-Ampt Set:
Vertical Layers Set:
Impervious Set: 1
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:

Conductivity Set:	
Leakage Set:	

Tolerances & Options

Time Marching:	SAOR	IA Recovery Time:	24.0000 hr
Max Iterations:	6	ET for Manual Basins:	False
Over-Relax Weight Fact:	0.5 dec		
dZ Tolerance:	0.0010 ft	Manual Basin Rain Opt:	Global
Max dZ:	1.0000 ft	OF Region Rain Opt:	Global
Link Optimizer Tol:	0.0001 ft	Rainfall Name:	~SFWMD-72
		Rainfall Amount:	11.50 in
Edge Length Option:	Automatic	Storm Duration:	72.0000 hr
Dflt Damping (2D):	0.0050 ft	Dflt Damping (1D):	0.0050 ft
Min Node Srf Area (2D):	100 ft2	Min Node Srf Area (1D):	113 ft2
Energy Switch (2D):	Energy	Energy Switch (1D):	Energy

Comment:

Impervious: 1 [Set]

Land Cover Zone	% Impervious	% DCIA	% Direct	Ia Impervious [in]	Ia Pervious [in]
Impervious	0.00	0.00	0.00	0.000	0.000
Pervious	0.00	0.00	0.00	0.000	0.000

Curve Number: 1 [Set]

Land Cover Zone	Soil Zone	Curve Number [dec]
Impervious	A	98.0
Pervious	A	39.0

1D Nodes - Volume 1-1

Sim	Node Name	Relative Time [hrs]	Stage [ft]
Recovery	Total Site	0.0000	3.80
Recovery	Total Site	1.0011	3.26
Recovery	Total Site	2.0081	3.10
Recovery	Total Site	3.0081	3.01
Recovery	Total Site	4.0081	3.00
Recovery	Total Site	5.0081	3.00
Recovery	Total Site	6.0081	3.00
Recovery	Total Site	7.0081	3.00
Recovery	Total Site	8.0081	3.00
Recovery	Total Site	9.0081	3.00
Recovery	Total Site	10.0081	3.00
Recovery	Total Site	11.0081	3.00
Recovery	Total Site	12.0081	3.00
Recovery	Total Site	13.0081	3.00
Recovery	Total Site	14.0081	3.00
Recovery	Total Site	15.0081	3.00
Recovery	Total Site	16.0081	3.00
Recovery	Total Site	17.0081	3.00
Recovery	Total Site	18.0081	3.00
Recovery	Total Site	19.0081	3.00
Recovery	Total Site	20.0081	3.00
Recovery	Total Site	21.0081	3.00
Recovery	Total Site	22.0081	3.00
Recovery	Total Site	23.0081	3.00
Recovery	Total Site	24.0081	3.00
Recovery	Total Site	25.0081	3.00
Recovery	Total Site	26.0081	3.00
Recovery	Total Site	27.0081	3.00
Recovery	Total Site	28.0081	3.00
Recovery	Total Site	29.0081	3.00
Recovery	Total Site	30.0081	3.00
Recovery	Total Site	31.0081	3.00
Recovery	Total Site	32.0081	3.00
Recovery	Total Site	33.0081	3.00
Recovery	Total Site	34.0081	3.00
Recovery	Total Site	35.0081	3.00
Recovery	Total Site	36.0081	3.00
Recovery	Total Site	37.0081	3.00
Recovery	Total Site	38.0081	3.00
Recovery	Total Site	39.0081	3.00
Recovery	Total Site	40.0081	3.00
Recovery	Total Site	41.0081	3.00

November 13, 2019

Dr. Thomas Reinert, Regional Director
Florida Fish & Wildlife Conservation Commission
8535 Northlake Boulevard
West Palm Beach, FL 33412

Re: Listed Species Data Base Search For Stuart Ocean Townhomes
Section 2, Township 38 South, Range 41 East

Dear Dr. Reinert:

As the registered environmental consultant for the project known as Stuart Ocean Townhomes located on the south side of SE Ocean Boulevard, west of SE St. Lucie Boulevard, Stuart, Martin County (Section 2, Township 38 South, Range 41 East), I respectfully request a search of the Florida Fish & Wildlife Conservation Commission data base files in order to determine the potential existence of threatened and endangered species on the subject property. The parcel control identification numbers for the project site are as follows: 27-37-41-033-000-00040-2 and 27-37-41-033-000-00050-9.

The project site is comprised of native and non-native canopy coverage with some intact native habitats including pine flatwoods and sand live oak as well as existing paved roads and other amenities. The project site is completely surrounded by residential and commercial development.

Please let me know if you require any additional information in order to make this determination.

Sincerely,
Ecotone Services, Inc.

Jerry Renick

Jerry Renick, MS, CEP
Principal Environmental Scientist

November 13, 2019

Ms. Ashley Blackford
U. S. Fish & Wildlife Service
South Florida Ecological Services Office
1339 20th Street
Vero Beach, FL 32960

Re: Listed Species Data Base Search For Stuart Ocean Townhomes
Section 2, Township 38 South, Range 41 East

Dear Ms. Blackford:

As the registered environmental consultant for the project known as Stuart Ocean Townhomes located on the south side of SE Ocean Boulevard, west of SE St. Lucie Boulevard, Stuart, Martin County (Section 2, Township 38 South, Range 41 East), I respectfully request a search of the U. S. Fish & Wildlife Service data base files in order to determine the potential existence of threatened and endangered species on the subject property. The parcel control identification numbers for the project site are as follows: 27-37-41-033-000-00040-2 and 27-37-41-033-000-00050-9.

The project site is comprised of native and non-native canopy coverage with some intact native habitats including pine flatwoods and sand live oak as well as existing paved roads and other amenities. The project site is completely surrounded by residential and commercial development.

Please let me know if you require any additional information in order to make this determination.

Sincerely,
Ecotone Services, Inc.

Jerry Renick

Jerry Renick, MS, CEP
Principal Environmental Scientist

Ecotone Services, Inc. 13945 89th Street Fellsmere, FL 32948 Phone: 772-453-3339
Email: ecotoneservices@gmail.com