



REGULAR CITY COUNCIL MEETING

6:30 PM – COUNCIL CHAMBERS – CITY HALL

OCTOBER 19, 2021

AGENDA

ALL CITIZENS DESIRING TO ADDRESS THE PORT ORANGE CITY COUNCIL DURING CITIZEN PARTICIPATION SHOULD COMPLETE A SPECIAL APPLICATION FORM WHICH IS LOCATED ON THE STANDS OUTSIDE THE COUNCIL CHAMBERS. AFTER COMPLETING THE FORM, PRESENT IT TO THE CITY CLERK.

A. OPENING

1. Invocation by Chaplain Carlos Hidalgo of Advent Health
2. Pledge of Allegiance
3. Roll Call

B. SPECIAL AWARDS, REPORTS, RECOGNITION AND PROCLAMATIONS

4. Volusia County Road Program Presentation by Jon Cheney, P.E., County of Volusia Traffic Engineering
5. Florida City Government Week Proclamation

C. CONSENT AGENDA

6. Public Comments on Consent Agenda Items Only
7. Agenda Approval
8. Approval of Minutes
 - a. October 5, 2021 - Regular City Council Meeting
9. Bid Awards and Contract Items
 - a. Approval of Change Order #1 to Playcore Wisconsin Inc. D/B/A Gametime
10. Resolution No. 21-58 - Request to move \$55,000 from 401 Water and Sewer Fund balance to Project SSP015- Water Reclamation Facility Expansion project to cover the difference from 2020 project estimate and the current bid price
11. Resolution No. 21-59 - State of Florida Department of Transportation (FDOT) Landscape Maintenance Memorandum of Agreement for a 12-foot wide sidewalk along Ridgewood Avenue.

12. Fire Training Facility Items

- a. Resolution No. 21-60 - Budget Appropriation to fund fire training facility using Fire Impact Fees
- b. Approval of Change Order #4 to A.G. Pifer Construction Services Co., Inc. to extend the completion date of the fire training facility project by 60 days, to include the installation of well-points, removal of surface rust, and application of paint to the structural steel members of the fire training facility in the amount of \$36,815.60

D. CITIZEN PARTICIPATION (Agenda)

13. Obituary reading in memory of Port Orange citizen, Garrett R. Watson by Corey Kingsbury

14. Volusia Forever: Call for Land Nominations and Collaborations - Derek LaMontagne

E. CITIZEN PARTICIPATION (Non-Agenda – 20 minutes)

F. COUNCIL COMMENTS

15. Comments/Concerns from Council Members

G. BOARD APPOINTMENTS, INTERVIEWS, REPORTS

16. Citizen Advisory Committee for TPO

17. Golf Course Advisory Board Report

H. PUBLIC HEARING

18. Second Reading - Ordinance No. 2021-13 - Land Development Code (LDC) Amendment/Chapters 2, 15, 16, 17, and 18 - Updated Sign Regulations (Case No. 21-25000004)

19. Second Reading - Ordinance No. 2021-23 - Rezoning and Approval of the Madeline Commons Planned Unit Development Master Development Agreement and Conceptual Development Plan (Case No. 20-65000002)

20. Special Exception/Port Orange Neighborhood Storage - 5404 S Williamson Boulevard (Case No. 21-70000001)

I. REGULAR AGENDA

21. Solid Waste

- a. First Reading - Ordinance No. 2021-27 - Solid Waste Collection and Disposal Services
- b. Resolution No. 21-57 - Solid Waste Rates

22. Resolution No. 21-64 - Endorsing and conceptually approving the proposal for relocation of grant benefits and obligations for submission to Florida Communities Trust

J. ADDITIONAL ITEMS

23. City Attorney
24. City Manager

K. COUNCIL COMMITTEE REPORTS

25. City Council Committee Reports
- a. ArtHaus
 - b. First Step Shelter
 - c. Port Orange/South Daytona Chamber of Commerce
 - d. Roundtable of Elected Officials

L. ADJOURNMENT

NOTICES – PURSUANT TO SECTION 286.0105 OF THE FLORIDA STATUTES, IF ANY PERSON DECIDES TO APPEAL ANY DECISION MADE BY THE CITY COUNCIL WITH RESPECT TO ANY MATTER CONSIDERED AT THIS PUBLIC MEETING OR HEARING, SUCH PERSON WILL NEED A RECORD OF THE PROCEEDINGS, AND THAT, FOR SUCH PURPOSE, SUCH PERSON 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. THE CITY DOES NOT PREPARE OR PROVIDE SUCH A RECORD.



FOR SPECIAL ACCOMMODATIONS, PLEASE NOTIFY THE CITY CLERK'S OFFICE (PHONE: 386-506-5563) AS FAR IN ADVANCE AS POSSIBLE, BUT PREFERABLY WITHIN 2 WORKING DAYS OF YOUR RECEIPT OF THIS NOTICE OR 5 DAYS PRIOR TO THE MEETING OR HEARING DATE.



HELP FOR THE HEARING IMPAIRED IS AVAILABLE THROUGH THE ASSISTIVE LISTENING SYSTEM RECEIVERS CAN BE OBTAINED FROM THE CITY CLERKS' OFFICE.

IN ACCORDANCE WITH THE AMERICANS WITH DISABILITIES ACT (ADA), IF YOU ARE A PERSON WITH A DISABILITY WHO NEEDS AN ACCOMMODATION IN ORDER TO PARTICIPATE IN THIS PROCEEDING, YOU ARE ENTITLED, AT NO COST TO YOU, THE PROVISION OF CERTAIN ASSISTANCE. PLEASE CONTACT THE CITY CLERK FOR THE CITY OF PORT ORANGE, 1000 CITY CENTER CIRCLE, PORT ORANGE, FLORIDA 32129, TELEPHONE NUMBER 386-506-5563, CITYCLERK@PORT-ORANGE.ORG, AS FAR IN ADVANCE AS POSSIBLE, BUT PREFERABLY WITHIN 2 WORKING DAYS OF YOUR RECEIPT OF THIS NOTICE OR 5 DAYS PRIOR TO THE MEETING OR HEARING DATE. IF YOU ARE HEARING OR VOICE IMPAIRED, CONTACT THE RELAY OPERATOR AT 7-1-1 or 1-800-955-8771.

UPON REQUEST BY A QUALIFIED INDIVIDUAL WITH A DISABILITY, THIS DOCUMENT WILL BE MADE AVAILABLE IN AN ALTERNATE FORMAT. IF YOU NEED TO REQUEST THIS DOCUMENT IN AN ALTERNATE FORMAT, PLEASE CONTACT THE CITY CLERK WHOSE CONTACT INFORMATION IS PROVIDED ABOVE.

ANY INVOCATION THAT IS OFFERED BEFORE THE OFFICIAL START OF THE CITY COUNCIL MEETING SHALL BE THE VOLUNTARY OFFERING OF A PRIVATE PERSON, TO AND FOR THE BENEFIT OF THE CITY COUNCIL. THE VIEWS OR BELIEFS EXPRESSED BY THE INVOCATION SPEAKER HAVE NOT BEEN PREVIOUSLY REVIEWED OR APPROVED BY THE CITY COUNCIL OR THE CITY STAFF, AND THE CITY IS NOT ALLOWED BY LAW TO ENDORSE THE RELIGIOUS BELIEFS OR VIEWS OF THIS, OR ANY OTHER SPEAKER. PERSONS IN ATTENDANCE AT THE CITY COUNCIL MEETING ARE INVITED TO STAND DURING THE OPENING INVOCATION AND PLEDGE OF ALLEGIANCE. HOWEVER, SUCH INVITATION SHALL NOT BE CONSTRUED AS A DEMAND, ORDER, OR ANY OTHER TYPE OF COMMAND. NO PERSON IN ATTENDANCE AT THE MEETING SHALL BE REQUIRED

Regular City Council Meeting

10/19/2021

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TO PARTICIPATE IN ANY OPENING INVOCATION THAT IS OFFERED. A PERSON MAY EXIT THE CITY COUNCIL CHAMBERS AND RETURN UPON COMPLETION OF THE OPENING INVOCATION IF A PERSON DOES NOT WISH TO PARTICIPATE IN OR WITNESS THE OPENING INVOCATION.



CITY COUNCIL AGENDA ITEM

REQUESTED COUNCIL MEETING DATE 10/19/2021

Consent item: No

SUBJECT: (C8) Approval of Minutes

DEPARTMENT: City Clerk

GOAL:

RECOMMENDED MOTION:

SUMMARY:

Project No.:

Funding Account No.:

Presenter:

ATTACHMENTS:

Robin Fenwick

Created/Initiated - 9/30/2021

REGULAR CITY COUNCIL MEETING MINUTES
COUNCIL CHAMBERS – CITY HALL
1000 CITY CENTER CIRCLE
PORT ORANGE, FLORIDA
OCTOBER 5, 2021

THE REGULAR CITY COUNCIL MEETING of the City of Port Orange was called to order by Mayor Donald O. Burnette at 6:30 p.m.

Silent Invocation

Pledge of Allegiance

Roll Call	Present:	Council Member Jonathan Foley Council Member Chase Tramont Council Member Scott Stiltner Vice Mayor Drew Bastian Mayor Donald Burnette
	Also Present:	City Manager Wayne Clark City Attorney Matthew Jones City Clerk Robin Fenwick

SPECIAL AWARDS, REPORTS, RECOGNITION AND PROCLAMATIONS

4. 2021 IBJJF Pan Am Championship Gold Medal Recognition for Professor Regis Calixto de Lima and Joe DiBella of Ralph Gracie Jiu Jitsu Academy

Vice Mayor Drew Bastian recognized and congratulated Professor Regis Calixto de Lima and Joe DeBella for earning gold medals at the recent championship. Captain Michael Fowler, Daytona Beach Shores Public Safety, spoke regarding the partnership they have had with Professor Calixto.

5. Domestic Violence Awareness Proclamation

Mayor Don Burnette read a proclamation for domestic violence awareness and presented the proclamation to the Victim Advocate for Port Orange, Odetta Horrunitiner.

6. Drug-Free Pain Management Awareness Month Proclamation

Mayor Don Burnette read the proclamation for drug-free pain management awareness month and presented the proclamation to Dr. Peter Martin, Palmer Chiropractic College.

7. Report from KemperSports on the Cypress Head Golf

Bob Duquette, General Manager, provided an update on the course conditions and financial position of the golf course. He also re-introduced Darren Bache, Superintendent, and provided a review of the year.

CONSENT AGENDA

8. Public Comments on Consent Agenda Items Only

There were none.

9. Agenda Approval

Vice Mayor Drew Bastian requested Item #14 be pulled for further discussion with the applicant.

Motion to approve the Agenda as amended was made by Vice Mayor Drew Bastian and Seconded by Council Member Scott Stiltner. Motion carried unanimously by voice vote.

10. Approval of Minutes

- a. September 21, 2021 - Regular City Council Meeting
- b. September 21, 2021 - Joint Special Meeting of City Council & Town Center CRA
- c. September 22, 2021 - City Council Special Meeting

11. Bid Awards and Contract Items

- a. Intent to Award ITB No. 21-16 to Don Bell Signs LLC for City Center Entrance LED Sign Board
- b. Renewal of MetLife Agreement for employee dental, vision, and group term life insurance for 2022
- c. Approval of Agreement with Florida Health Care Plans for Employee Health Insurance
- d. Approval of License Agreement with Council on Aging of Volusia County

12. Resolution No. 21-33 - Revising Fees at Cypress Head Golf Course

13. Resolution No. 21-53 - Statewide Mutual Aid Agreement for Emergency Management

14. Approval of Major Special Event Request – Daytona's Original First Turn Biketoberfest Event at 5164, 5204, and 5236 South Ridgewood Avenue

15. Approval of Interlocal Agreement with Volusia County Property Appraiser for the Utilization of the Uniform Method of Collection of Non-ad Valorem Assessments

16. Temporary Construction Easement for 3641 Ridgewood Avenue (Dave's Pest Control Property)

Motion to approve Consent Agenda as amended was made by Vice Mayor Drew Bastian and Seconded by Council Member Scott Stiltner. Motion carried unanimously by roll call vote.

Penelope Cruz, Planning Manager, spoke regarding the Major Special Event Request from Daytona's Original First Turn Biketoberfest Event and advised the applicant is requesting an additional hour of music (to end at 11:00 p.m. rather than 10:00 p.m.)

Matthew Jones, City Attorney, spoke regarding the City's noise ordinance and the business would still need to adhere to the ordinance.

Shane Snipes, applicant and owner, spoke regarding his request and upgrades they have worked on since purchasing the property. He thanked Staff for the help and support in the transition. He agreed to an additional hour on Friday and Saturday night as suggested by Council Member Scott Stiltner.

Mayor Don Burnette is concerned with the noise level at other establishments that regularly get complaints and allowing First Turn to have music longer, will set a precedence that he's not willing to do.

Motion to approve the application for Item #14 as recommended by Staff with an amendment of Friday and Saturday's outside music allowed until 11:00 pm was made by Council Member Scott Stiltner and Seconded by Council Member Jonathan Foley. Motion carried 4-1 by roll call vote with Mayor Don Burnette voting no.

CITIZEN PARTICIPATION (Non-Agenda – 20 minutes)

There were none.

Mayor Don Burnette recognized the Port Orange/South Daytona Chamber of Commerce Leadership Class and thanked them for their participation and attendance.

COUNCIL COMMENTS

17. Comments/Concerns from Council Members

Council Member Scott Stiltner thanked all involved with making Port Orange Family Days a huge success. He also encouraged citizens to patron the businesses at the Down Under area under the Dunlawton Bridge.

Council Member Chase Tramont also thanked those involved with Port Orange Family Days and also asked for an update on the new REC facility and new programs to come.

Council Member Jonathan Foley thanked the Leadership Class members for their participation.

PUBLIC HEARING

18. Second Reading - Ordinance No. 2021-22 - Port Orange Communications in Rights-of-Way Amendment

Mayor Don Burnette read Ordinance No. 2021-22.

ORDINANCE NO. 2021-22

AN ORDINANCE OF THE CITY OF PORT ORANGE, FLORIDA AMENDING THE CODE OF ORDINANCES OF THE CITY OF PORT ORANGE BY AMENDING CHAPTER 58, ARTICLE IV, SECTIONS 58-70 – 58-80, KNOWN AS THE "PORT ORANGE COMMUNICATIONS RIGHTS-OF-WAY ORDINANCE;" PROVIDING INTENT AND PURPOSE, APPLICABILITY AND AUTHORITY TO IMPLEMENT; PROVIDING DEFINITIONS; PROVIDING FOR REGISTRATION FOR PLACING OR MAINTAINING COMMUNICATIONS FACILITIES IN THE PUBLIC RIGHTS-OF-WAY; PROVIDING REQUIREMENT OF A PERMIT; PROVIDING APPLICATION REQUIREMENTS AND REVIEW PROCEDURES; PROVIDING FOR BONDS; PROVIDING FOR CONSTRUCTION METHODS; PROVIDING DEVELOPMENT AND OBJECTIVE DESIGN STANDARDS; PROVIDING FOR FEES AND TAXES; PROVIDING ENFORCEMENT REMEDIES; PROVIDING FOR SEVERABILITY; PROVIDING FOR CODIFICATION; PROVIDING FOR CONFLICTS; AND PROVIDING AN EFFECTIVE DATE.

Motion to adopt Ordinance No. 2021-22 was made by Vice Mayor Drew Bastian and Seconded by Council Member Scott Stiltner. Motion carried 4-1 by roll call vote with Mayor Don Burnette voting no.

19. Second Reading - Ordinance No. 2021-25 - Amendment to the Port Orange Town Center Community Redevelopment Plan (Case No. 21-15000001)

Mayor Don Burnette read Ordinance No. 2021-25.

ORDINANCE NO. 2021-25

AN ORDINANCE OF THE CITY OF PORT ORANGE, VOLUSIA COUNTY, FLORIDA, RELATING TO COMMUNITY REDEVELOPMENT; AMENDING THE COMMUNITY REDEVELOPMENT AREA PLAN FOR PORT ORANGE TOWN CENTER AND THE RIVERWALK PLANNED COMMUNITY

CONCEPT DEVELOPMENT PLAN; REPEALING CONFLICTING ORDINANCES AND RESOLUTIONS; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

Motion to adopt Ordinance No. 2021-25 was made by Vice Mayor Drew Bastian and Seconded by Council Member Scott Stiltner. Motion carried unanimously by roll call vote.

20. Second Reading Ordinance No. 2021-26 - LDC Amendment/ Chapters 2, 17, and 18 (Case No. 21-25000005)

Mayor Don Burnette read Ordinance No. 2021-26.

ORDINANCE NO. 2021-26

AN ORDINANCE OF THE CITY OF PORT ORANGE, VOLUSIA COUNTY, FLORIDA, AMENDING THE LAND DEVELOPMENT CODE BY AMENDING SECTION 2 OF CHAPTER 2 RELATING TO DEFINITIONS; AMENDING CHAPTERS 17 AND 18 RELATING TO RIVERWALK OVERLAY DISTRICT (ROD) AND THE PLANNED COMMERCIAL-RIVERWALK (PC-R) ZONING DISTRICT REGULATIONS FOR THE PURPOSE OF SUPPORTING REDEVELOPMENT EFFORTS IN THE RIVERWALK AREA; AMENDING THE BOUNDARY OF THE RIVERWALK OVERLAY DISTRICT (ROD); PROVIDING FOR CONFLICTING ORDINANCES; PROVIDING FOR SEVERABILITY AND PROVIDING AN EFFECTIVE DATE.

Motion to adopt Ordinance No. 2021-26 was made by Vice Mayor Drew Bastian and Seconded by Council Member Scott Stiltner. Motion carried unanimously by roll call vote.

21. First Reading - Ordinance No. 2021-24 - 21-1 Large-Scale Comprehensive Plan Amendment/Property Rights Element (Case No. 21-20000001)

Mayor Don Burnette read Ordinance No. 2021-24.

ORDINANCE NO. 2021-24

AN ORDINANCE OF THE CITY OF PORT ORANGE, VOLUSIA COUNTY, FLORIDA; AMENDING THE COMPREHENSIVE PLAN BY CREATING A NEW PROPERTY RIGHTS ELEMENT IN ACCORDANCE WITH SECTION 163.3177(6)(i), FLORIDA

STATUTES; PROVIDING FOR CONFLICTING ORDINANCES,
SEVERABILITY AND AN EFFECTIVE DATE.

Motion to adopt Ordinance No. 2021-24
was made by Vice Mayor Drew Bastian
and Seconded by Council Member Scott
Stiltner.

Mrs. Cruz spoke regarding the addition of a new property rights element. There is no
impact to local residents.

Motion carried unanimously by roll call
vote.

22. Approval of Subdivision Plat for The Palms at Ashton Lakes Subdivision
(Case No. 21-50000002)

Motion to approve the subdivision plat
for The Palms at Ashton Lakes
Subdivision was made by Vice Mayor
Drew Bastian and Seconded by Council
Member Scott Stiltner.

Mrs. Cruz provided details of the project and recommended approval by Council.

Motion carried unanimously by roll call
vote.

ADDITIONAL ITEMS

23. City Attorney

There was nothing further from the City Attorney.

24. City Manager

a. County Wide Universal Pet License

Deputy City Manager Jamie Miller provided details of the request from the County
regarding a county wide universal pet license. Staff recommended partnering with the
County but asked for objections from Council. Council consensus is to move forward.

COUNCIL COMMITTEE REPORTS

25. City Council Committee Reports

a. River to Sea TPO - Council Member Scott Stiltner was unable to attend
the meeting but will provide the minutes once received.

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- b. General Employees' Pension Plan - Council Member Scott Stiltner provided an update on the meeting held recently. Plan is doing well.

ADJOURNMENT - 7:59 p.m.

Mayor Donald O. Burnette

Attest:

Robin Fenwick, MMC
City Clerk



CITY COUNCIL AGENDA ITEM

REQUESTED COUNCIL MEETING DATE 10/19/2021

Consent item: Yes

SUBJECT: (C9a) Approval of Change Order #1 to Playcore Wisconsin Inc. D/B/A Gametime

DEPARTMENT: Parks & Recreation

GOAL: Organizational Excellence

RECOMMENDED MOTION: Move to approve Change Order No. 1 to Playcore Wisconsin, Inc. d/b/a Gametime and authorize the Mayor and City Clerk to execute the associated documents.

SUMMARY: Playcore Wisconsin Inc. D/B/A Gametime entered into a contract with the City for the design and installation of a new playground at Airport Road Park. The notice to proceed was signed 6/30/2021 and allowed for 110 days for substantial completion with an additional 10 days for final completion. Gametime updated staff weekly as to the status of the project. The equipment and pavilion have been delayed due to impacts from COVID-19 that has caused shipping and production delays.

As of today, all playground equipment has either arrived or has shipped and demolition of the current playground will start on October 18, 2021 with final completion on December 17, 2021, with the exception of the pavilion. The current contract expires on October 28, 2021 and staff is requesting an additional 90 days to get the playground and pavilion installed.

Attached for your review and consideration is Change Order #1, allowing for an additional 90 days. Staff arranged for the playground equipment to be installed and opened to the public without the pavilion structure so as to keep the disruption to users at a minimum. Once the pavilion comes in, it will be installed in the prepared area of the playground, and it is anticipated to be installed by the December 17th opening date.

Project No.: XLG 201

Funding Account No.: 600000

Presenter: Susan Lovallo

ATTACHMENTS:

1.	Change Order No.1 Airport Road Playground	Change Order No.1 Airport Road Playground.pdf
2.	FB4037 - GameTime Q3 Customer	FB4037 - GameTime Q3 Customer

	Updates	Updates.pdf
3.	1147193 - Airport Park	1147193 - Airport Park.pdf
4.	Render A OPT 1 - Pavilion copy	Render A OPT 1 - Pavilion copy.pdf

Susan Lovallo	Created/Initiated - 9/27/2021
Susan Lovallo	Approved - 9/27/2021
Alison Sylvester	Approved - 9/28/2021
Lupe Reyna-Coffin	Approved - 9/28/2021
Robin Hayes	Approved - 9/28/2021
Matthew Jones	Approved - 10/6/2021
Wayne Clark	Approved - 10/7/2021
Robin Fenwick	Final Approval - 10/8/2021

CHANGE ORDER NO. 1
To: Standard Contract for Services dated April 20th, 2021
Between City of Port Orange and Playcore Wisconsin, Inc. db/a GameTime,
a Wisconsin Corporation.

Project: XLG201 Airport Road Playground

The following changes are hereby made to the Contract Documents:

CHANGE IN CONTRACT PRICE:	CHANGE IN CONTRACT TIMES:
Original Contract Price: \$ 398,691.46	Original Contract Times : (NTP Issued June 30, 2021) Substantial Completion: 110 Days Final Completion: 10 Days
Net changes from previous Change Order: N/A	Changes in contract time from previous Change Orders: N/A
Contract Price prior to this Change Order: \$ 398,691.46	Contract Completion Date prior to this Change Order: Final Completion: October 28,2021
Net Increase (decrease) of this Change Order No.1: \$ N/A	Changes in contract time requested this Change Order No. 1: (Requires Council Approval) 90 Days
Contract Price with all approved Change Orders: \$ 398,691.46	Contract Times with all approved Change Orders: Final Completion: January 26,2022

CHANGES ORDERED:

- I. GENERAL: This Change Order is necessary to cover changes in the work to be performed under the Contract Agreement entered by and between the parties on **April 20, 2021.**
- II. REQUIRED CHANGES: **Change Order No.1 is necessary to extend the time from the original Notice to Proceed for an additional 90 days, due to product shipment and delivery delays for the playground equipment and pavilion building included in the project.** . No goods shall be delivered, nor services commenced hereunder until this Change Order has been fully executed by all parties.
- III. JUSTIFICATION:
Changes in scope require Council approval. Is this a scope change? **No**
- IV. PAYMENT: Payment for this Change Order shall be made in accordance with the terms of the Standard Contract Agreement dated April 20,2021, subject to a limit up to but not to exceed **\$398,691.46**. All payments shall be governed by the Local Government Prompt Payment Act as set forth in Florida Statutes Section 218.70 through 218.79, as amended.
- V. This Change Order may be executed in one or more counterparts, each of which shall be deemed to be an original but all of which together shall constitute one and the same instrument. The delivery by facsimile or e-mail of an executed copy of this Change Order shall be deemed valid as if an original signature was delivered. No contract shall be formed between the Contractor and the City until the City signs this Change Order.

Acknowledgments:

The aforementioned change, and work affected thereby, is subject to all provisions of the original contract not specifically changed by this Change Order;

It is expressly understood and agreed that the approval of the Change Order shall have no effect on the original contract other than matters expressly provided herein;

The prices quoted are fair and reasonable and in proper ratio to the cost of the original work contracted for under competitive bidding; and,

The change in price and/or delivery date described is considered to be fair and reasonable and has been mutually agreed upon in full agreement and final settlement of all claims arising out of this modification including all claims for delays and disruptions resulting from, caused by, or incident to such modifications and change orders.

RECOMMENDED BY:
PARKS AND RECREATION DEPARTMENT
Department Project Manager

ACCEPTED BY:
PLAYCORE WISCONSIN, INC. d/b/a GAMETIME
Contractor

By: _____
Printed Name: Susan L. Lovallo
Title: Parks and Recreation Director

By: _____
Printed Name: Clint T. Whiteside
Title: Manager of Sales Operations

Date Signed: _____

Date Signed: _____

RECOMMENDED BY:

City's Representative

RECOMMENDED BY:

Engineer of Record

By: _____
Printed Name: _____
Title: _____

By: _____
Printed Name: _____
Title: _____

Date Signed: _____

Date Signed: _____

APPROVED BY:
CITY OF PORT ORANGE
Department Head

By: _____
Printed Name: Susan L. Lovallo
Title: Parks and Recreation Director

Date Signed: _____

City Manager

By: _____
Wayne Clark, City Manager

Date Signed: _____

If Council approval is required:

Affirmed:

By: _____
Donald O. Burnette, Mayor

Robin L. Fenwick, MMC, City Clerk

Date Signed: _____

Date Signed: _____

GameTime Division
PlayCore Wisconsin, Inc.
150 PlayCore Drive SE
Fort Payne, Alabama 35967
Telephone: 800.235.2440



A PLAYCORE Company

Dear Valued Customer:

We're partners for play, recreation, and the health and wellness of our shared communities. And good partners are open and transparent with one another and communicate freely and often. In the spirit of open and honest communication, we want to share some important updates with you.

2020 and 2021 have been challenging years for all of us. We are all adjusting to frequent challenges and unforeseen circumstances associated with the COVID-19 pandemic. Shortages of raw materials, transportation availability, and cost fluctuation have impacted nearly every industry - including ours.

In July 2021, we shared with you the need to apply a material surcharge due to market volatility and supply shortages. Those same market conditions and labor force disruption by health and safety conditions outside of our control are now affecting manufacturing timelines.

To maintain our quality and customer service standards amid these circumstances, we must extend our production lead times to approximately 10 to 12 weeks for standard equipment and 14 to 16 weeks for custom designs. We will work with suppliers, freight providers, and efficiency experts to mitigate these lead times as quickly as possible.

We appreciate your patience and understanding as we work through these difficulties together as partners. We will continue to monitor market conditions and provide you with the most up-to-date information possible promptly. Our commitment is the same now as it has been for nearly a century - to provide you with high-quality products with a commitment to legendary service. If you have any questions or concerns, please contact us at 800.235.2440.

Your partners in play and recreation,

GameTime

A handwritten signature in blue ink that reads "S. Spencer Cheak". The signature is fluid and cursive, with the first name "S. Spencer" written in a more compact, stylized manner and the last name "Cheak" written in a more extended, flowing script.

S. Spencer Cheak
GameTime President
150 PlayCore Drive S.E.
Fort Payne, AL 35967

GameTime is a leading US manufacturer of commercial playgrounds, custom play spaces and outdoor fitness equipment. Our products combine play research with thoughtful design to create award-winning playgrounds for people of all abilities. Since 1929 we have partnered with local and national advocates for play to build healthy, active communities for this generation and the next. Find out more about our mission of enriching the lives of children and families through play at www.gametime.com.



September 30, 2021

RE : GT#1147193 Airport Park

Dear Peter,

When we first took on this project we had assurances and all indicators were positive that we could start and finish the project in the agreed upon time frame.

Since that time, there has been an unprecedented amount of supply shortages and Covid-19 positive tests both in our many factories and among our vital supply chain manufacturers. Then to cap it all off the extreme delays of ocean bound freight, it has stressed our supply chain and shipping schedules beyond what anyone anticipated.

Personally and professionally, the last 6 months have been the most difficult in my 27 years of meeting expectations and delivering on promises that our customers have come to expect from GameTime. With that being said, we wanted to communicate that this project is important to us and that we are consistently monitoring the time lines. Our goal is to not start and have to wait on a part or a portion and have a park half-built and not able to open.

We will continue to communicate through our installation team as new information becomes available. Thank you for the patience through these unprecedented times.

Sincerely,

Rob Dominica

Rob Dominica
President
800-432-0162 ext. 113
robd@gametime.com



**Pavilion Completion
To Be Determined**

Playpalette: Atlantic

Intellectual property of GameTime, a PlayCore Company. The site shown in rendering is an interpretation and may not reflect exact site conditions.

Airport Park Playground

Port Orange, FL



CITY COUNCIL AGENDA ITEM

REQUESTED COUNCIL MEETING DATE 10/19/2021

Consent item: Yes

SUBJECT: (C10) Resolution No. 21-58 - Request to move \$55,000 from 401 Water and Sewer Fund balance to Project SSP015- Water Reclamation Facility Expansion project to cover the difference from 2020 project estimate and the current bid price

DEPARTMENT: Public Utilities

GOAL: 2 - Infrastructure

RECOMMENDED MOTION: Move to approve Budget Resolution No 21-58 to transfer \$55,000 from 401-Water and Sewer Fund Balance to Project SSP015 – Water Reclamation Facility Building Expansion.

SUMMARY: The Public Works & Utilities Department is requesting City Council to approve Budget Resolution No 21-58 to transfer \$55,000 from 401-Water and Sewer Fund Balance to Project SSP015 – Water Reclamation Facility Building Expansion ITB 20-12.

The operations building at the Water Reclamation Facility was built in 1980 and accommodates 16-22 employees daily. During Hurricanes Irma and Matthew, it became evident that the facility has insufficient space to accommodate emergency response and maintenance staff. In addition, the building is lacking storage, office space, proper men's/ women's bathroom/shower facilities, and the plant operations control room needs information technology upgrades which require more space. Staff worked with the engineers to evaluate all options. In FY19, City Council approved the building expansion project (SSP015) in the CIP budget. In 2020, the design for the expansion of the Water Reclamation Facility Building began. On August 31, 2021, Purchasing received six (6) sealed bids for ITB 20-12 – Water Reclamation Facility Building Expansion. The lowest best responsive bidder was MGN Contracting, Inc. in the amount of \$318,244.00. Due to the age of the existing structure and the lack of adequate as-builts for the underground components where the expansion will be erected, staff is requesting an additional \$25,000 for unforeseen conditions allowance for a total project amount of \$343,244.

The current project budget is \$288,981, which was established in FY20. This leaves a shortage of \$54,263.00. The Department is requesting \$55,000 be transferred from 401 fund balance to Project SSP015 to provide sufficient funds to complete the project.

Project	Funding Account No.: <u>Fund: 401-Water and Sewer System, Cost</u>
No.: <u>SSP015</u>	<u>Center: Water and Sewer, Program: Wastewater Treatment, Spend</u>
	<u>Category: Building - New Construction, Additional Worktag: SSP015</u>

Presenter: Lynn Stevens

ATTACHMENTS:

1.	Budget Resolution No. 21-58 with exhibit	Bud Reso 21-58 Fund 401 Approp FB for Reclamation Fac (SSP015) - CC Mtg 10-19-2021.pdf
2.	Email	Email.pdf
3.	ITB 20-12 Bid Tabulation	ITB 20-12 Bid Tabulation.pdf
4.	Workday Budget vs Acutal SSP015	Workday Budget vs Acutal SSP015.pdf
5.	Justification Memo - Budget Resol Request	Justification Memo - Budget Resol Request.docx

Julia Wiggins	Created/Initiated - 9/14/2021
Kynah Cockcroft	Approved - 9/14/2021
Julia Wiggins	Approved - 9/16/2021
Junos Reed	Approved - 9/16/2021
Lynn Stevens	Approved - 9/22/2021
Lupe Reyna-Coffin	Approved - 9/23/2021
Robin Hayes	Approved - 9/23/2021
Matthew Jones	Approved - 10/6/2021
Wayne Clark	Approved - 10/7/2021
Robin Fenwick	Final Approval - 10/8/2021

RESOLUTION NO. 21-58

A RESOLUTION OF THE CITY OF PORT ORANGE,
VOLUSIA COUNTY, FLORIDA, APPROPRIATING
FUNDS FOR THE FISCAL YEAR 2022 BUDGET; TO
DESIGNATE FUND BALANCE IN THE AMOUNT
\$55,000 IN THE WATER AND SEWER FUND (401) AND
APPROPRIATE TO CAPITAL OUTLAY TO PROVIDE
ADDITIONAL FUNDING NEEDED TO COMPLETE
THE WATER RECLAMATION FACILITY BUILDING
EXPANSION PROJECT (SSP015) AND; SETTING
FORTH REVENUES AND EXPENDITURES; AND
PROVIDING AN EFFECTIVE DATE.

WHEREAS, The City Council desires to designate and appropriate fund balance in the amount of \$55,000 in the Water and Sewer Fund (401) to Operating Expenditures, Capital Outlay, to provide additional funding needed to complete the Water Reclamation Facility Building Expansion Project (SSP015)
and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE
CITY OF PORT ORANGE, VOLUSIA COUNTY, FLORIDA:

Section 1. The funds for the City operating items are hereby appropriated as set forth in Composite Exhibit A, attached hereto, which reflects revenues and corresponding expenditures for the designated expenditures.

Section 2. The Budget item adopted in the preceding section shall govern the expenditures relating to such operations for the City during the current fiscal year effective October 1, 2021 through September 30, 2022.

Section 3. Supplemental appropriations, reductions of appropriations, emergency appropriations, and interdepartmental transfers of appropriations may be effected by the City Council and the City Manager as deemed necessary in strict

compliance with the procedures specified in Chapter 2, Article VI, Division 3, Code of Ordinances, City of Port Orange, Florida.

Section 4. This resolution shall become effective immediately upon adoption.

MAYOR DONALD O. BURNETTE

ATTEST:

Robin L. Fenwick, MMC City Clerk

Adopted on the _____ day of _____

Reviewed and Approved: _____
Matthew J. Jones, City Attorney

FY2021 Water and Sewer Fund (401)
Prepared: September 22, 2021
Finance: Finance Staff

	<u>Budget Increase / (Decrease)</u>
<u>Revenues:</u>	
Appropriated Equity	(55,000)
Total Revenues:	<u>\$ (55,000)</u>
<u>Expenditures:</u>	
Capital Outlay	55,000
Total Expenditures:	<u>\$ 55,000</u>

To budget for the use of Fund Balance in the Water and Sewer Fund (401) to provide additional funding needed to complete the Water Reclamation Facility Project (SSP015)

Wiggins, Julia

From: Stevens, Lynn
Sent: Tuesday, September 14, 2021 11:49 AM
To: Wiggins, Julia
Cc: Reed, Junos; Parnell, Steve; Wall, Christopher; Cockcroft, Kynah
Subject: RE: Funding for SSP015 - WRF Ops Building ITB20-12

Use water/sewer fund balance....

From: Wiggins, Julia <jwiggins@port-orange.org>
Sent: Tuesday, September 14, 2021 10:53 AM
To: Stevens, Lynn <lstevens@port-orange.org>
Cc: Reed, Junos <jureed@port-orange.org>; Parnell, Steve <sparnell@port-orange.org>; Wall, Christopher <cwall@port-orange.org>; Cockcroft, Kynah <Kcockcroft@port-orange.org>
Subject: Funding for SSP015 - WRF Ops Building ITB20-12

Lynn

Kynah is working on the Intent to Award for the above project. The objective was to have it on the CC meeting for 10/19/2021.

After reviewing the project today, we do not have enough funds to cover the cost. There is currently \$288,981 in the project. The bid came in at \$318,244. That is a shortage of \$29,263.00.

Please let me know where you want me to find additional funding.

Thanks and have a wonderful day!

Julia Wiggins
City of Port Orange
Business Manager
Office: (386) 506-5751
Cell: (386) 416-9174
Fax: (386) 756-5370
Email: jwiggins@port-orange.org





ITB 20-12 WATER RECLAMATION FACILITY BUILDING EXPANSION
BID TABULATION
OPENING DATE/TIME August 31, 2021 @ 2:30PM

Required Forms Submitted: YES	Required Forms Submitted: YES	Required Forms Submitted: YES	Required Forms Submitted: YES	Required Forms Submitted: YES	Required Forms Submitted: YES
Responsive Bidder: YES	Responsive Bidder: YES	Responsive Bidder: YES	Responsive Bidder: YES	Responsive Bidder: YES	Responsive Bidder: YES
MGN CONTRACTING, INC.	APM CONSTRUCTION CORP.	PAUL CULVER CONSTRUCTION INC	DSR CONSTRUCTION, INC.	MEIERER CONTRACTING, INC.	A.G. PIFER CONSTRUCTION CO., INC.

ITEM #	DESCRIPTION	Quantity	Unit of Measure	Unit Cost	Extended Cost	Unit Cost	Extended Cost	Unit Cost	Extended Cost	Unit Cost	Extended Cost	Unit Cost	Extended Cost	Unit Cost	Extended Cost
1	MOBILIZATION	1	LS	\$ 24,380.00	\$ 24,380.00	\$ 2,000.00	\$ 2,000.00	\$ 11,910.00	\$ 11,910.00	\$ 42,482.00	\$ 42,482.00	\$ 41,700.00	\$ 41,700.00	\$ 8,400.00	\$ 8,400.00
2	SITEWORK & PREPARATION	1	LS	\$ 11,800.00	\$ 11,800.00	\$ 10,000.00	\$ 10,000.00	\$ 18,775.00	\$ 18,775.00	\$ 45,010.00	\$ 45,010.00	\$ 23,450.00	\$ 23,450.00	\$ 16,000.00	\$ 16,000.00
3	SURVEY & RECORD DRAWINGS	1	LS	\$ 3,000.00	\$ 3,000.00	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00	\$ 2,500.00	\$ 2,400.00	\$ 2,400.00	\$ 4,000.00	\$ 4,000.00	\$ 5,000.00	\$ 5,000.00
4	RESTORATION	1	LS	\$ 4,670.00	\$ 4,670.00	\$ 3,000.00	\$ 3,000.00	\$ 2,250.00	\$ 2,250.00	\$ 91,960.00	\$ 91,690.00	\$ 7,500.00	\$ 7,500.00	\$ 8,400.00	\$ 8,400.00
5	ADMINISTRATION BUILDING EXPANSION	1	LS	\$ 274,394.00	\$ 274,394.00	\$ 301,800.00	\$ 301,800.00	\$ 293,000.00	\$ 293,000.00	\$ 158,278.00	\$ 158,278.00	\$ 293,310.00	\$ 293,310.00	\$ 365,496.95	\$ 365,496.95
				TOTAL BASE BID	\$ 318,244.00	TOTAL BASE BID	\$ 319,300.00	TOTAL BASE BID	\$ 328,435.00	TOTAL BASE BID	\$ 339,860.00	TOTAL BASE BID	\$ 369,960.00	TOTAL BASE BID	\$ 403,296.95

DISCLAIMER: THIS BID TABULATION INDICATES ONLY THE BIDS AS RECEIVED. ALL BIDS ARE SUBJECT TO VERIFICATION FOR ACCURACY, AND FOR SPECIFICATION AND CONTRACT COMPLIANCE. NO CONCLUSIONS ABOUT CONTRACT AWARDS SHOULD BE DRAWN FROM THESE PRELIMINARY TABULATIONS.

CPO Budget vs Actuals for Cost Center

Repeat By Fund
 Company City of Port Orange
 Cost Center(s) **Cost Center: Water and Sewer**
 Period FY2021 - Sep
 Plan Structure Annual Budget Detail
 Fund **401 Water & Sewer System**
403 Water & Sewer R&R Fund
405 Water & Sewer Impact Fee
 Plan Name
 Book Modified Accrual
 Worktags **Project: SSP015 U WRF Ops Bldg Expansion**
 Has No Program No
 Exclude Projects? No

401 Water & Sewer System - WRF Project SSP015

Ledger Account	Original Budget	Amended Budget	Actuals (MTD)	Actuals (YTD)	Commitments	Obligations	Actuals & Encumbrances	Budget Remaining	Budget Used (%)
Revenues	0	0	0	0	0	0	0	0	0.00%
Total revenues	0	0	0	0	0	0	0	0	0.00%
Operating Expenditures	0	0	0	0	0	0	0	0	0.00%
Personnel	0	0	0	0	0	0	0	0	0.00%
Capital Outlay	0	288,981	0	0	0	0	0	288,981	0.00%
Capital Outlay	0	288,981	0	0	0	0	0	288,981	0.00%
Buildings	0	288,981	0	0	0	0	0	288,981	0.00%
Buildings - New Construction	0	288,981	0	0	0	0	0	288,981	0.00%
Debt Service	0	0	0	0	0	0	0	0	0.00%
Total expenditures	0	288,981	0	0	0	0	0	288,981	0.00%
Other Financing Sources	0	0	0	0	0	0	0	0	0.00%
Other Financing Uses	0	0	0	0	0	0	0	0	0.00%
Total Other Sources & Uses	0	0	0	0	0	0	0	0	0.00%
Net change	0	(288,981)	0	0	0	0	0	(288,981)	0.00%



City of Port Orange Public Works & Utilities Department

TO: Wayne Clark, City Manager

THRU: Lynn Stevens, Public Works & Utilities Director
Steve Parnell, Deputy Director of Public Utilities

FROM: Julia Wiggins, Public Works & Utilities Business Manager

DATE: August 18, 2021

SUBJECT: Budget Resolution Request – Additional funding for the Water Reclamation Facility Operating Building Expansion Project SSP015

REQUEST:

The Public Works & Utilities Department is requesting City Council to approve Budget Resolution No 21-58 to transfer \$55,000 from 401-Water and Sewer Fund Balance to Project SSP015 – Water Reclamation Facility Building Expansion ITB 20-12.

PURPOSE:

The purpose of this request is to provide additional funding to complete the Water Reclamation Facility Building Expansion Project under ITB 20-12.

CONSIDERATION:

The Public Works Deputy Director is requesting additional funds to complete the Water Reclamation Facility Building Expansion Project SSP015 under ITB 20-12.

On August 31, 2021, Purchasing received six (6) sealed bids for ITB 20-12 – Water Reclamation Facility Building Expansion. The lowest best responsive bidder was MGM Contracting, Inc. in the amount of \$318,244.00 with an additional \$25,000 unforeseen condition allowance for a total project amount of \$343,244. The current project budget is \$288,981. This leaves a shortage of \$64,263.00. The Director is requesting \$55,000 be moved from 401 fund balance to cover the cost.

BUDGET TRANSFER:

Fund: 401
Fund Name: Water and Sewer System
Cost Center: Water and Sewer
Program: Wastewater Treatment

Spend Category: Buildings – New Construction
Additional Worktag: Project SSP015
Amount: \$55,000

RECOMMENDATION:

The Public Works & Utilities Department recommends City Council approve Budget Resolution No 21-58 to transfer \$55,000 from 401-Water and Sewer Fund Balance to Project SSP015 – Water Reclamation Facility Building Expansion.

ANTICIPATED SCHEDULE:

- a.) Council Approval: October 19, 2021
- b.) Executed Budget Amendment: October 22, 2021

ATTACHMENTS:

- a.) Memo
- b.) Emails
- c.) Workday Budget vs Actual
- d.) ITB 20-21 Bid Tab

CC: Robin Hayes, Interim Finance Director



CITY COUNCIL AGENDA ITEM

REQUESTED COUNCIL MEETING DATE 10/19/2021

Consent item: Yes

SUBJECT: (C11) Resolution No. 21-59 - State of Florida Department of Transportation (FDOT) Landscape Maintenance Memorandum of Agreement for a 12-foot wide sidewalk along Ridgewood Avenue.

DEPARTMENT: Community Development

GOAL: 3 - Quality of Life

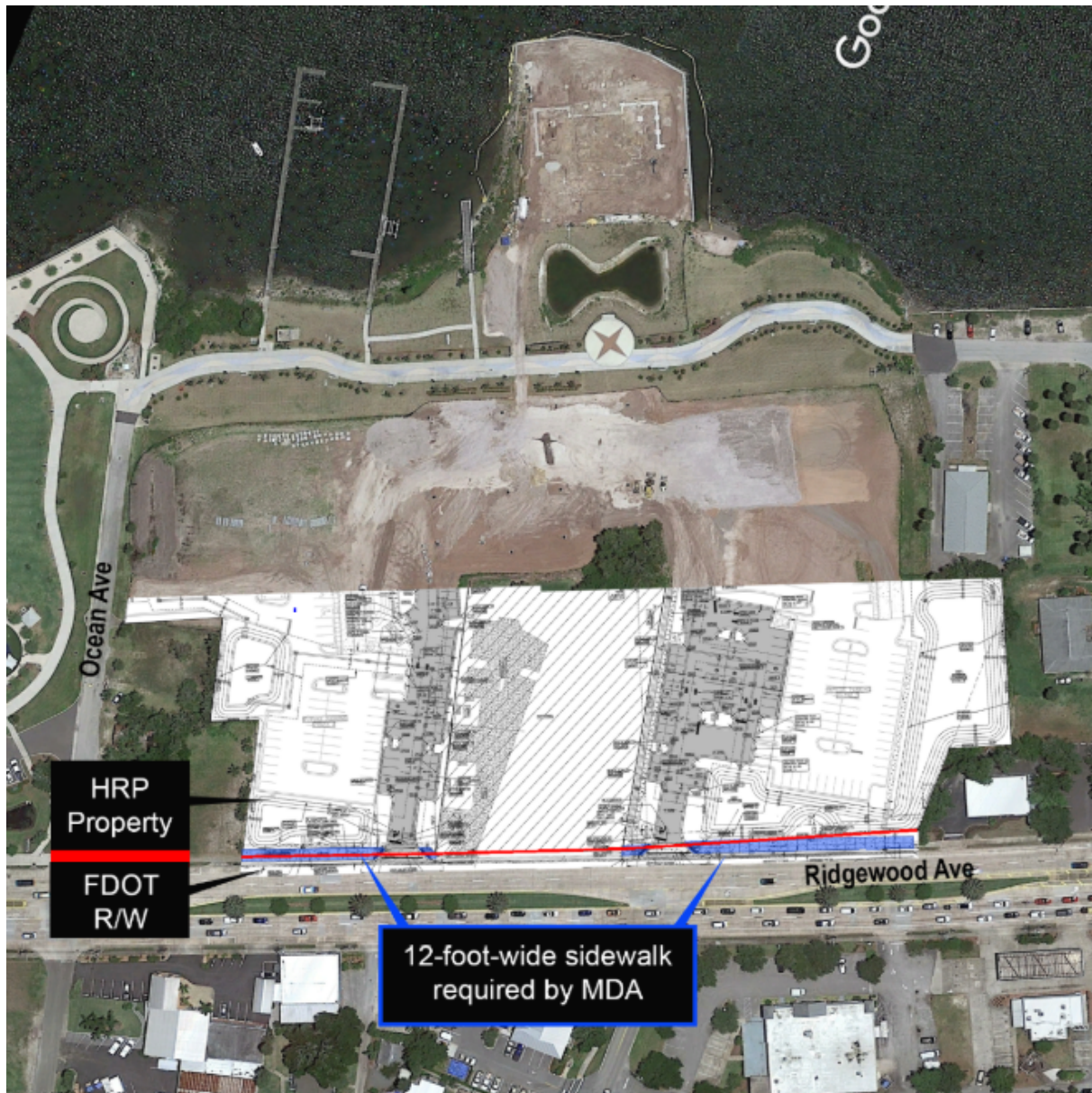
RECOMMENDED MOTION: Move to approve Resolution No. 21-59.

SUMMARY: The attached Landscape Maintenance Memorandum of Agreement is between FDOT and the City for the maintenance of the 12-foot-wide sidewalk being installed along Ridgewood Avenue as part of the Fysh Bar & Grill Restaurant project. Prior to FDOT issuing a permit to HRP to construct the sidewalk, a Landscape Maintenance Memorandum of Agreement between the City and FDOT needs to be executed (see graphic on Page 2). The requirement to build a 12-foot-wide sidewalk along Ridgewood Avenue from Riverwalk Park to Dunlawton Avenue and along Dunlawton Avenue from Ridgewood Avenue to Halifax Drive is to create a 1-mile trail around the Riverwalk project (See attached graphic).

As part of the Riverwalk Amended and Restated Master Development Agreement (MDA) between Halifax River Partners (HRP), HRP is required to construct the sidewalk along the portion of their property that abuts to Ridgewood Avenue as part of the Fysh Bar & Grill Restaurant project. According to FDOT, since the sidewalk extends beyond the FDOT right-of-way and onto private property and exceeds the minimum sidewalk width required by FDOT, the City is required to: 1) enter into an agreement with FDOT to maintain the sidewalk; or 2) enter into an agreement with FDOT to maintain the sidewalk and then the City can enter into a separate agreement between the City and the adjacent property owner (HRP) requiring the property owner to maintain the sidewalk. According to FDOT, they will not enter into a Landscape Maintenance Memorandum of Agreement with a property owner, only a local government.

As part of the current Riverwalk MDA, HRP is required to maintain the portion of the sidewalk located on their property and the City would be required to maintain the portion of the sidewalk located within the FDOT right-of-way. However, HRP has agreed to maintain the entire sidewalk built along Ridgewood Avenue as part of the Fysh Bar & Grill Restaurant project. An amendment to the Riverwalk MDA will need to be approved

to delegate all of the City's maintenance obligations associated with the sidewalk built in this area to HRP. This MDA amendment is currently under review by all parties and will go before the Planning Commission and City Council later this Fall.



Project No.: N/A

Funding Account No.: N/A

Presenter: Tim Burman

ATTACHMENTS:

1.	Resolution No. 21-59	Reso No 21-59.pdf
2.	FDOT Landscape (Sidewalk) Agreement RIVERWALK	FDOT Landscape (Sidewalk) Agreement (002) RIVERWALK.pdf
3.	Landscape Plans Exhibits to Agreement	Landscape Plans Exhibits.pdf

4.	Graphic	Exhibit A.pdf
Tim Burman	Created/Initiated - 10/1/2021	
Tim Burman	Approved - 10/1/2021	
Shannon Balmer	Approved - 10/7/2021	
Wayne Clark	Approved - 10/8/2021	
Robin Fenwick	Final Approval - 10/8/2021	

RESOLUTION NO. 21-59

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PORT ORANGE, VOLUSIA COUNTY, FLORIDA, AUTHORIZING THE MAYOR AND CITY CLERK TO EXECUTE A LANDSCAPE CONSTRUCTION AND MAINTENANCE MEMORANDUM OF AGREEMENT WITH THE FLORIDA DEPARTMENT OF TRANSPORTATION FOR MAINTENANCE OF THE 12 FOOT-WIDE SIDEWALK PARTIALLY LOCATED WITHIN A PORTION OF RIDGEWOOD AVENUE (US 1) RIGHT-OF-WAY; DIRECTING THE CITY CLERK TO FORWARD A COPY OF SAID RESOLUTION; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the State of Florida Department of Transportation (“FDOT”) has jurisdiction over and maintains State Road 5 (“US 1” or “Ridgewood Avenue”) as part of the State Highway System; and

WHEREAS, the City of Port Orange seeks to install and maintain certain landscaping improvements within US 1 right-of-way, specifically a 12 foot-wide sidewalk required as part of the Riverwalk Fysh Bar & Grill development (“Landscaping Improvements”); and

WHEREAS, the FDOT agrees to allow the Landscaping Improvements only under certain conditions necessary to protect the traveling public using said right of way; and

WHEREAS, Rule 14-40.003, Florida Administrative Code, requires the parties to enter into an Agreement designating and setting forth the responsibilities of each party; and

WHEREAS, the City of Port Orange, as part of said Landscaping Improvements, seeks to remove existing sidewalk from a portion of said right of way and anticipates replacing existing sidewalk with a 12 foot-wide sidewalk, a portion of which is located within said right of way with the remainder located off of said right of way on privately owned property; and

WHEREAS, the City Council of the City of Port Orange wishes to authorize the Mayor and City Clerk to execute a Landscape Construction and Maintenance Memorandum of Agreement between the City of Port Orange and the Florida Department of Transportation for right-of-way areas specified in the agreement.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF PORT ORANGE, VOLUSIA COUNTY, FLORIDA:

Section 1. The City Council of the City of Port Orange, Florida, hereby authorizes the Mayor and City Clerk to execute a Landscape Construction and Maintenance Memorandum of Agreement and any mutually agreed upon renewals, between the City of Port Orange and the Florida Department of Transportation for maintenance of State right-of-ways specified in the agreement, a copy of which is attached hereto as **Exhibit “1.”**

Section 2. The City Clerk of the City of Port Orange is hereby directed to send a copy of this resolution to the Florida Department of Transportation.

Section 3. This resolutions shall become effective immediately upon adoption.

DONALD O. BURNETTE, MAYOR

ATTEST:

Robin L. Fenwick, MMC, City Clerk

Adopted on the _____ day of _____, 2021.

Reviewed and Approved: _____
Shannon K. Balmer, Assistant City Attorney

**LANDSCAPE CONSTRUCTION
AND MAINTENANCE MEMORANDUM OF AGREEMENT**

THIS AGREEMENT, made and entered into this _____ day of _____, 2021, by and between the **STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION**, a component agency of the State of Florida, hereinafter called the “**DEPARTMENT**” and the City of Port Orange, a municipal corporation duly enacted under the laws of the State of Florida, hereinafter called the “**LOCAL GOVERNMENT**.”

W I T N E S S E T H

WHEREAS, the **DEPARTMENT** has jurisdiction over and maintains State Road 5 (US 1) as part of the State Highway System; and

WHEREAS, the **LOCAL GOVERNMENT** seeks to install and maintain certain landscaping within the right of way of State Road 5, specifically, a 12’ sidewalk as part of the Riverwalk Fysh Bar & Grill development; and

WHEREAS, the **LOCAL GOVERNMENT**, as part of said landscaping, seeks to remove or has removed sidewalk from a portion of said right of way and replace existing sidewalk or connect the remaining sidewalk to a **LOCAL GOVERNMENT** sidewalk located off of said right of way; and

WHEREAS, the **DEPARTMENT** agrees to allow the landscaping only under certain conditions necessary to protect the traveling public using said right of way; and

WHEREAS, Rule 14-40.003, Florida Administrative Code, requires the parties to enter into an Agreement designating and setting forth the responsibilities of each party; and

WHEREAS, the **LOCAL GOVERNMENT**, by Resolution No. _____, dated _____, 2021, and attached hereto as Exhibit “A,” has authorized its officers to execute this **AGREEMENT** on its behalf.

NOW THEREFORE, for and in consideration of the mutual benefits to flow each to the other, the parties covenant and agree as follows:

1. The **LOCAL GOVERNMENT** hereby agrees to install or cause to be installed landscaping as specified in the Landscape Plan(s) included as Exhibit “B.” Such installation shall be in conformance with Florida Administrative Code Rule 14-40.003, as it may be amended from time to time, and the Florida Highway Landscape Guide, which is incorporated into Rule 14-40.003 by reference. The **LOCAL GOVERNMENT** shall not change or deviate from said plans(s) without written approval of the **DEPARTMENT**.
2. The **LOCAL GOVERNMENT** agrees to maintain the landscaping referenced above in accordance with the Landscape Maintenance Plan(s) included as Exhibits “C.” Additionally, the **LOCAL GOVERNMENT** agrees to maintain existing sidewalk that

remains in the right of way, if any, within the area between the boundary line on either side of the abutting property extending forward to the back of the curb, or if no curb exists, then the edge of the travel lane, and within the area connecting with the sidewalk as shown in Exhibit "B", as well as any newly constructed pedestrian facilities depicted on Exhibit "B". Said maintenance will be in accordance with Florida Administrative Code Rule 14-40.003 and the Florida Highway Landscape Guide, as they may be amended from time to time. The **LOCAL GOVERNMENT's** responsibility for maintenance shall be consistent with the requirements of Florida Administrative Code Rule 14-40.003. The **LOCAL GOVERNMENT** also agrees to maintain the **LOCAL GOVERNMENT** sidewalk in conformance with generally accepted standards of sidewalk maintenance. The above-named functions to be performed by the **LOCAL GOVERNMENT** shall be subject to periodic inspections by the **DEPARTMENT**. The **LOCAL GOVERNMENT** shall not change or deviate from said plan(s) without written approval of the **DEPARTMENT**.

3. All landscape installation and all maintenance activities undertaken by the **LOCAL GOVERNMENT** shall be in accordance with the Maintenance of Traffic Plans(s) included as Exhibit "D" and Florida Administrative Code Rule 14-40.003.
4. If at any time after the **LOCAL GOVERNMENT** has assumed the landscaping installation or the maintenance responsibility above-mentioned, it shall come to the attention of the **DEPARTMENT** that the limits or a part thereof is not properly installed or maintained pursuant to the terms of this **AGREEMENT**, the District Secretary or his designee may issue a written notice that a deficiency or deficiencies exist(s), by sending a certified letter to the **LOCAL GOVERNMENT** to place said **LOCAL GOVERNMENT** on notice thereof. The certified letter shall be sent to the City Manager. Thereafter the **LOCAL GOVERNMENT** shall have a period of thirty (30) calendar days within which to correct the cited deficiencies. If said deficiencies are not corrected within this time period, the **DEPARTMENT** may at its option, proceed as follows:
 - (a) If installation is not completed in accordance with the plans in paragraph 1, the **DEPARTMENT** may complete the installation, with **DEPARTMENT** or Contractor's personnel, and invoice the **LOCAL GOVERNMENT** for expenses incurred.
 - (b) If installation has been properly completed or if the **DEPARTMENT** elects not to complete the installation under (a) above, and maintenance by the **LOCAL GOVERNMENT** is not in compliance with paragraphs 2 or 3, the **DEPARTMENT** may take action to maintain the landscaping or existing sidewalk or a part thereof, with **DEPARTMENT** or Contractor's personnel and invoice the **LOCAL GOVERNMENT** for expenses incurred, or
 - (c) The **DEPARTMENT** may terminate the **AGREEMENT**, in which case the **LOCAL GOVERNMENT** shall at its own expense and within sixty (60) days after written notice by the **DEPARTMENT**, remove all of the landscaping that the **DEPARTMENT** directs be removed and return the right-of-way to its original condition. The **LOCAL GOVERNMENT** will own such materials as it removes

and the **DEPARTMENT** shall own any materials remaining. The **DEPARTMENT** may, in its discretion, remove, relocate or adjust the landscaping materials, with the **LOCAL GOVERNMENT** being responsible for the cost of any removal.

Upon **DEPARTMENT** action under one of the above options and upon direction of the **DEPARTMENT**, the **LOCAL GOVERNMENT** shall cease installation and maintenance activities under this **AGREEMENT**.

5. It is understood between the parties hereto that the landscaping covered by this **AGREEMENT** may be removed, relocated or adjusted by the **DEPARTMENT** at any time in the future as determined to be necessary by the **DEPARTMENT** in order that the state road be widened, altered or otherwise changed which activities may include, but are not limited to, emergency or routine maintenance which may impact the landscaping. The **LOCAL GOVERNMENT** shall be given sixty (60) calendar days notice to remove said landscaping/hardscape after which time the **DEPARTMENT** may remove the same, with the **LOCAL GOVERNMENT** being responsible for the cost of removal.
6. The **LOCAL GOVERNMENT** may utilize its employees or third parties to accomplish its obligations under paragraphs 1, 2 or 3; however, the **LOCAL GOVERNMENT** remains responsible for proper performance under this **AGREEMENT** and shall take all steps necessary to ensure that its employees or third parties perform as required under this **AGREEMENT**.
7. The **LOCAL GOVERNMENT** agrees to include the following indemnification in all contracts with contractors, subcontractors, consultants, and subconsultants, who perform work in connection with this Agreement:

“The contractor/subcontractor/consultant/subconsultant shall indemnify, defend, save and hold harmless the State of Florida, Department of Transportation and all of its officers, agents or employees from all suits, actions, claims, demands, liability of any nature whatsoever arising out of, because of, or due to any negligent act or occurrence of omission or commission of the contractor/subcontractor/consultant/subconsultant, its officers, agents or employees.”
8. The term of this **AGREEMENT** commences upon execution. The **LOCAL GOVERNMENT** shall notify or cause the Department’s Maintenance Engineer or his designee to be notified a minimum of 48 hours, excluding Saturday, Sunday, and legal holidays, prior to starting work in the right-of-way, unless said Engineer or his designee waives this period in writing. When the Department through said Engineer or his designee issues a Notice to Proceed, the **LOCAL GOVERNMENT** may proceed with the project.
9. **LEGAL REQUIREMENTS.** This Agreement is executed and entered into in the State of Florida and will be construed, performed, and enforced in all respects in strict conformity with local, state, and federal laws, rules, and regulations.
 - (a) If any term or provision of the Agreement is found to be illegal or unenforceable, the remainder of the Agreement will remain in full force and effect and such term or provision will be deemed stricken.

- (b) The **LOCAL GOVERNMENT** shall allow public access to all documents, papers, letters, or other material subject to the provisions of Chapter 119, Florida Statutes, and made or received by the **LOCAL GOVERNMENT** in conjunction with this Agreement. Failure by the **LOCAL GOVERNMENT** to grant such public access shall be grounds for immediate unilateral cancellation of this Agreement by the **DEPARTMENT**.
 - (c) The **LOCAL GOVERNMENT** and the **DEPARTMENT** agree that the **LOCAL GOVERNMENT**, its employees, contractors, subcontractors, consultants, and sub consultants are not agents of the **DEPARTMENT** as a result of this Agreement.
 - (d) The **LOCAL GOVERNMENT** shall not cause any liens or encumbrances to attach to any portion of the **DEPARTMENT** right-of-way.
 - (e) Nothing herein shall be construed as a waiver of either party's sovereign immunity.
 - (f) **LOCAL GOVERNMENT**:
 - i. shall utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the **LOCAL GOVERNMENT** during the term of the contract; and
 - ii. shall expressly require any subcontractors performing work or providing services pursuant to the state contract to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term.
10. This writing embodies the entire **AGREEMENT** and understanding between the parties hereto and there are no other **AGREEMENTS** and understanding, oral or written, with reference to the subject matter hereof that are not merged herein and superseded hereby.
 11. This **AGREEMENT** may not be assigned or transferred by the **LOCAL GOVERNMENT** in whole or part without the consent of the **DEPARTMENT**.
 12. This **AGREEMENT** shall be governed by and construed in accordance with the laws of the State of Florida. In the event of a conflict between any portion of the **AGREEMENT** and Florida law, the laws of Florida shall prevail.
 13. Public Entity Crime - A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.
 14. Anti-Discrimination - An entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a

public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity.

15. The Parties agree to comply with s.20.055(5), Florida Statutes, and to incorporate in all subcontracts the obligation to comply with s.20.055(5), Florida Statutes.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed the day and year first above written.

**City of Port Orange
(LOCAL GOVERNMENT)**

By: _____

DONALD O. BURNETTE, MAYOR
Printed Name & Title

Attest: _____(SEAL)

ROBIN L. FENWICK, MMC, CITYCLERK
Printed Name & Title

Legal Approval _____
SHANNON K. BALMER, ASST. CITY ATTORNEY

**STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION**

By: _____
Ron Meade, P.E., District Maintenance Engineer

Attest: _____(SEAL)
Tina Carroll, Administrative Assistant

Legal Approval _____

**LANDSCAPE CONSTRUCTION
AND MAINTENANCE MEMORANDUM OF AGREEMENT**

THIS AGREEMENT, made and entered into this _____ day of _____, 2021, by and between the **STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION**, a component agency of the State of Florida, hereinafter called the “**DEPARTMENT**” and the City of Port Orange, a municipal corporation duly enacted under the laws of the State of Florida, hereinafter called the “**LOCAL GOVERNMENT**.”

WITNESSETH

WHEREAS, the **DEPARTMENT** has jurisdiction over and maintains State Road 5 (US 1) as part of the State Highway System; and

WHEREAS, the **LOCAL GOVERNMENT** seeks to install and maintain certain landscaping within the right of way of State Road 5, specifically, a 12’ sidewalk as part of the Riverwalk Fysh Bar & Grill development; and

WHEREAS, the **LOCAL GOVERNMENT**, as part of said landscaping, seeks to remove or has removed sidewalk from a portion of said right of way and replace existing sidewalk or connect the remaining sidewalk to a **LOCAL GOVERNMENT** sidewalk located off of said right of way; and

WHEREAS, the **DEPARTMENT** agrees to allow the landscaping only under certain conditions necessary to protect the traveling public using said right of way; and

WHEREAS, Rule 14-40.003, Florida Administrative Code, requires the parties to enter into an Agreement designating and setting forth the responsibilities of each party; and

WHEREAS, the **LOCAL GOVERNMENT**, by Resolution No. _____, dated _____, 2021, and attached hereto as Exhibit “A,” has authorized its officers to execute this **AGREEMENT** on its behalf.

NOW THEREFORE, for and in consideration of the mutual benefits to flow each to the other, the parties covenant and agree as follows:

1. The **LOCAL GOVERNMENT** hereby agrees to install or cause to be installed landscaping as specified in the Landscape Plan(s) included as Exhibit “B.” Such installation shall be in conformance with Florida Administrative Code Rule 14-40.003, as it may be amended from time to time, and the Florida Highway Landscape Guide, which is incorporated into Rule 14-40.003 by reference. The **LOCAL GOVERNMENT** shall not change or deviate from said plans(s) without written approval of the **DEPARTMENT**.
2. The **LOCAL GOVERNMENT** agrees to maintain the landscaping referenced above in accordance with the Landscape Maintenance Plan(s) included as Exhibits “C.” Additionally, the **LOCAL GOVERNMENT** agrees to maintain existing sidewalk that

remains in the right of way, if any, within the area between the boundary line on either side of the abutting property extending forward to the back of the curb, or if no curb exists, then the edge of the travel lane, and within the area connecting with the sidewalk as shown in Exhibit "B", as well as any newly constructed pedestrian facilities depicted on Exhibit "B". Said maintenance will be in accordance with Florida Administrative Code Rule 14-40.003 and the Florida Highway Landscape Guide, as they may be amended from time to time. The **LOCAL GOVERNMENT's** responsibility for maintenance shall be consistent with the requirements of Florida Administrative Code Rule 14-40.003. The **LOCAL GOVERNMENT** also agrees to maintain the **LOCAL GOVERNMENT** sidewalk in conformance with generally accepted standards of sidewalk maintenance. The above-named functions to be performed by the **LOCAL GOVERNMENT** shall be subject to periodic inspections by the **DEPARTMENT**. The **LOCAL GOVERNMENT** shall not change or deviate from said plan(s) without written approval of the **DEPARTMENT**.

3. All landscape installation and all maintenance activities undertaken by the **LOCAL GOVERNMENT** shall be in accordance with the Maintenance of Traffic Plans(s) included as Exhibit "D" and Florida Administrative Code Rule 14-40.003.
4. If at any time after the **LOCAL GOVERNMENT** has assumed the landscaping installation or the maintenance responsibility above-mentioned, it shall come to the attention of the **DEPARTMENT** that the limits or a part thereof is not properly installed or maintained pursuant to the terms of this **AGREEMENT**, the District Secretary or his designee may issue a written notice that a deficiency or deficiencies exist(s), by sending a certified letter to the **LOCAL GOVERNMENT** to place said **LOCAL GOVERNMENT** on notice thereof. The certified letter shall be sent to the City Manager. Thereafter the **LOCAL GOVERNMENT** shall have a period of thirty (30) calendar days within which to correct the cited deficiencies. If said deficiencies are not corrected within this time period, the **DEPARTMENT** may at its option, proceed as follows:
 - (a) If installation is not completed in accordance with the plans in paragraph 1, the **DEPARTMENT** may complete the installation, with **DEPARTMENT** or Contractor's personnel, and invoice the **LOCAL GOVERNMENT** for expenses incurred.
 - (b) If installation has been properly completed or if the **DEPARTMENT** elects not to complete the installation under (a) above, and maintenance by the **LOCAL GOVERNMENT** is not in compliance with paragraphs 2 or 3, the **DEPARTMENT** may take action to maintain the landscaping or existing sidewalk or a part thereof, with **DEPARTMENT** or Contractor's personnel and invoice the **LOCAL GOVERNMENT** for expenses incurred, or
 - (c) The **DEPARTMENT** may terminate the **AGREEMENT**, in which case the **LOCAL GOVERNMENT** shall at its own expense and within sixty (60) days after written notice by the **DEPARTMENT**, remove all of the landscaping that the **DEPARTMENT** directs be removed and return the right-of-way to its original condition. The **LOCAL GOVERNMENT** will own such materials as it removes

and the **DEPARTMENT** shall own any materials remaining. The **DEPARTMENT** may, in its discretion, remove, relocate or adjust the landscaping materials, with the **LOCAL GOVERNMENT** being responsible for the cost of any removal.

Upon **DEPARTMENT** action under one of the above options and upon direction of the **DEPARTMENT**, the **LOCAL GOVERNMENT** shall cease installation and maintenance activities under this **AGREEMENT**.

5. It is understood between the parties hereto that the landscaping covered by this **AGREEMENT** may be removed, relocated or adjusted by the **DEPARTMENT** at any time in the future as determined to be necessary by the **DEPARTMENT** in order that the state road be widened, altered or otherwise changed which activities may include, but are not limited to, emergency or routine maintenance which may impact the landscaping. The **LOCAL GOVERNMENT** shall be given sixty (60) calendar days notice to remove said landscaping/hardscape after which time the **DEPARTMENT** may remove the same, with the **LOCAL GOVERNMENT** being responsible for the cost of removal.
6. The **LOCAL GOVERNMENT** may utilize its employees or third parties to accomplish its obligations under paragraphs 1, 2 or 3; however, the **LOCAL GOVERNMENT** remains responsible for proper performance under this **AGREEMENT** and shall take all steps necessary to ensure that its employees or third parties perform as required under this **AGREEMENT**.
7. The **LOCAL GOVERNMENT** agrees to include the following indemnification in all contracts with contractors, subcontractors, consultants, and subconsultants, who perform work in connection with this Agreement:

“The contractor/subcontractor/consultant/subconsultant shall indemnify, defend, save and hold harmless the State of Florida, Department of Transportation and all of its officers, agents or employees from all suits, actions, claims, demands, liability of any nature whatsoever arising out of, because of, or due to any negligent act or occurrence of omission or commission of the contractor/subcontractor/consultant/subconsultant, its officers, agents or employees.”
8. The term of this **AGREEMENT** commences upon execution. The **LOCAL GOVERNMENT** shall notify or cause the Department’s Maintenance Engineer or his designee to be notified a minimum of 48 hours, excluding Saturday, Sunday, and legal holidays, prior to starting work in the right-of-way, unless said Engineer or his designee waives this period in writing. When the Department through said Engineer or his designee issues a Notice to Proceed, the **LOCAL GOVERNMENT** may proceed with the project.
9. **LEGAL REQUIREMENTS.** This Agreement is executed and entered into in the State of Florida and will be construed, performed, and enforced in all respects in strict conformity with local, state, and federal laws, rules, and regulations.
 - (a) If any term or provision of the Agreement is found to be illegal or unenforceable, the remainder of the Agreement will remain in full force and effect and such term or provision will be deemed stricken.

- (b) The **LOCAL GOVERNMENT** shall allow public access to all documents, papers, letters, or other material subject to the provisions of Chapter 119, Florida Statutes, and made or received by the **LOCAL GOVERNMENT** in conjunction with this Agreement. Failure by the **LOCAL GOVERNMENT** to grant such public access shall be grounds for immediate unilateral cancellation of this Agreement by the **DEPARTMENT**.
 - (c) The **LOCAL GOVERNMENT** and the **DEPARTMENT** agree that the **LOCAL GOVERNMENT**, its employees, contractors, subcontractors, consultants, and sub consultants are not agents of the **DEPARTMENT** as a result of this Agreement.
 - (d) The **LOCAL GOVERNMENT** shall not cause any liens or encumbrances to attach to any portion of the **DEPARTMENT** right-of-way.
 - (e) Nothing herein shall be construed as a waiver of either party's sovereign immunity.
 - (f) **LOCAL GOVERNMENT**:
 - i. shall utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the **LOCAL GOVERNMENT** during the term of the contract; and
 - ii. shall expressly require any subcontractors performing work or providing services pursuant to the state contract to likewise utilize the U.S. Department of Homeland Security's E-Verify system to verify the employment eligibility of all new employees hired by the subcontractor during the contract term.
10. This writing embodies the entire **AGREEMENT** and understanding between the parties hereto and there are no other **AGREEMENTS** and understanding, oral or written, with reference to the subject matter hereof that are not merged herein and superseded hereby.
 11. This **AGREEMENT** may not be assigned or transferred by the **LOCAL GOVERNMENT** in whole or part without the consent of the **DEPARTMENT**.
 12. This **AGREEMENT** shall be governed by and construed in accordance with the laws of the State of Florida. In the event of a conflict between any portion of the **AGREEMENT** and Florida law, the laws of Florida shall prevail.
 13. Public Entity Crime - A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, Florida Statutes, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.
 14. Anti-Discrimination - An entity or affiliate who has been placed on the discriminatory vendor list may not submit a bid on a contract to provide any goods or services to a public entity, may not submit a bid on a contract with a public entity for the construction or repair of a public building or public work, may not submit bids on leases of real property to a

public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity.

15. The Parties agree to comply with s.20.055(5), Florida Statutes, and to incorporate in all subcontracts the obligation to comply with s.20.055(5), Florida Statutes.

IN WITNESS WHEREOF, the parties hereto have caused these presents to be executed the day and year first above written.

**City of Port Orange
(LOCAL GOVERNMENT)**

By: _____

DONALD O. BURNETTE, MAYOR
Printed Name & Title

Attest: _____(SEAL)

ROBIN L. FENWICK, MMC, CITYCLERK
Printed Name & Title

Legal Approval _____
SHANNON K. BALMER, ASST. CITY ATTORNEY

**STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION**

By: _____
Ron Meade, P.E., District Maintenance Engineer

Attest: _____(SEAL)
Tina Carroll, Administrative Assistant

Legal Approval _____

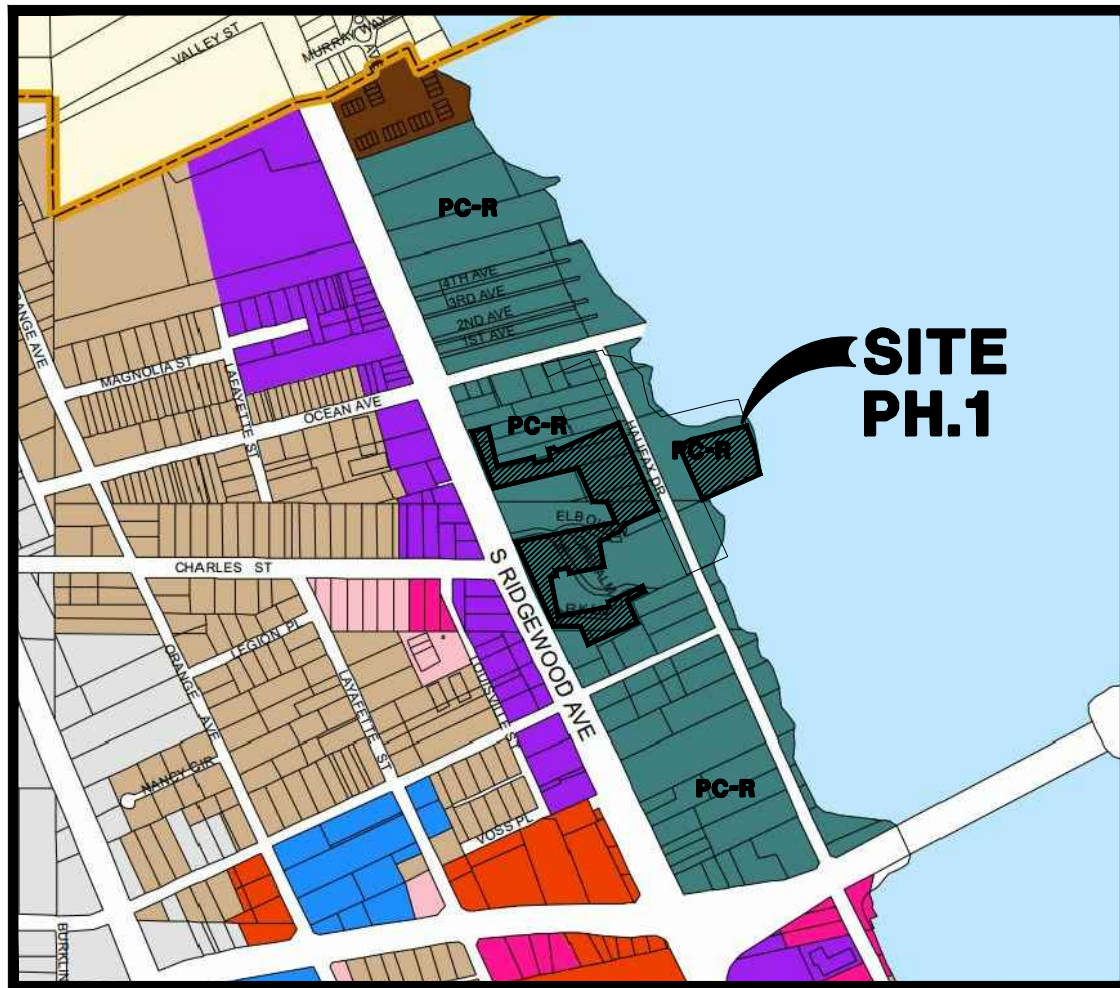
RIVERWALK FYSH BAR & GRILL & PHASE 1 SITE IMPROVEMENTS

PORT ORANGE, FLORIDA

EXHIBIT B FINAL SITE PLAN

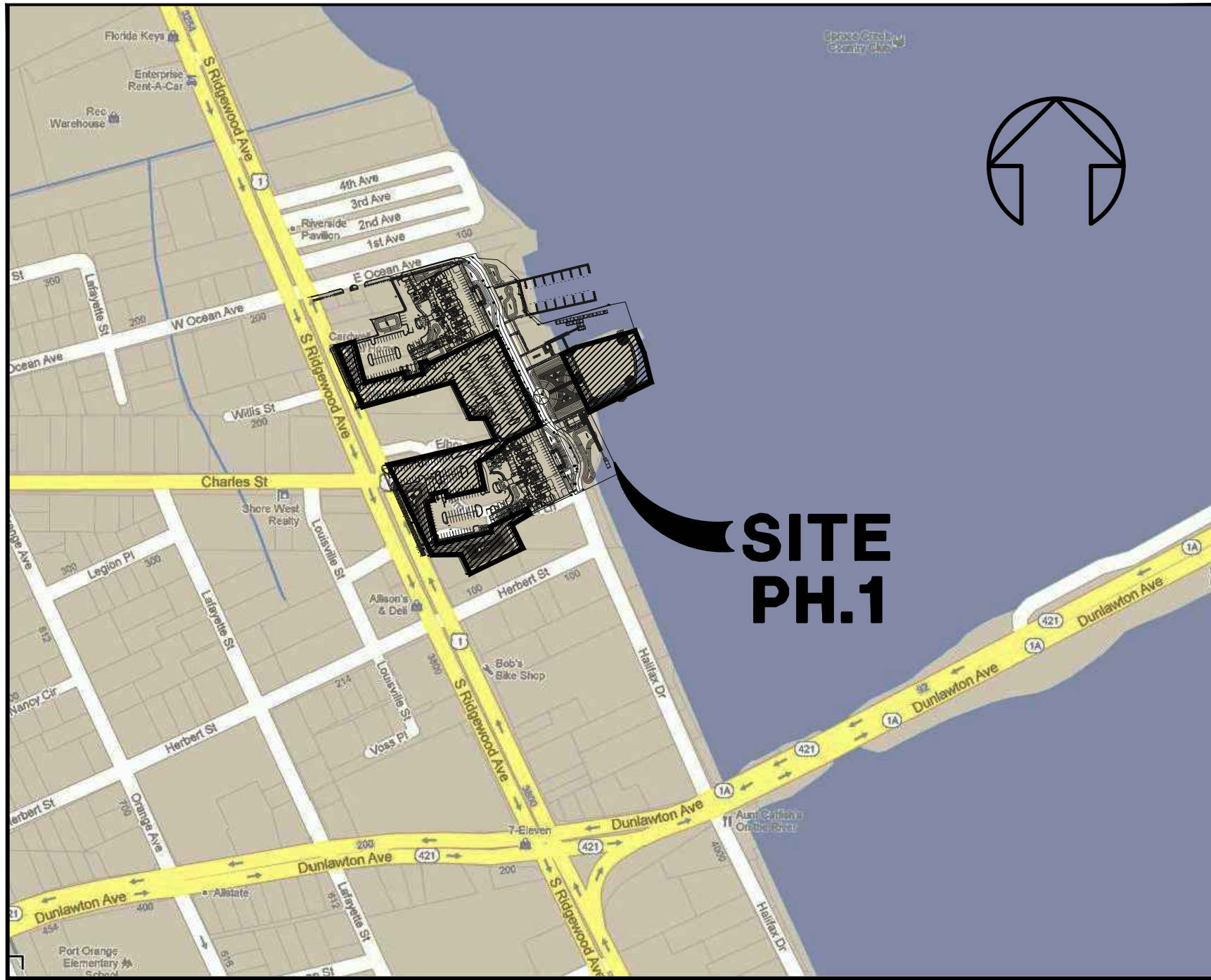
GENERAL NOTES

- CONTRACTOR TO VERIFY EXISTING UTILITIES PRIOR TO CONSTRUCTION AND TO REPORT ANY DISCREPANCIES TO DESIGN ENGINEER.
- 2" WATER MAINS SHALL BE DR-21.
- TRAFFIC CONTROL SIGNS TO BE IN ACCORDANCE WITH FDOT STANDARDS & SPECIFICATIONS AND INSTALLED BY THE CITY OF PORT ORANGE AFTER COLLECTION OF APPROPRIATE FEES.
- ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF PORT ORANGE LAND DEVELOPMENT CODE REQUIREMENTS.
- THE UTILITY COMPANIES LISTED BELOW:
POWER:
FLORIDA POWER AND LIGHT
5910 EAST HWY. 100
PALM BEACH, FL 32909
(800)868-9554
CONTACT: TRACEY STERN
GAS:
TECO
600 W. ROBINSON STREET
ORLANDO, FL 32801
(407)420-6609
WATER & SEWER:
CITY OF PORT ORANGE
1000 CITY CENTER CIRCLE
PORT ORANGE, FL 32129
(386)506-5750
CABLE:
SPECTRUM
DAYTONA BEACH, FL 32202
(904)350-2245
JACKSONVILLE, FL 32202
(904)350-2245
CONTACT: SCOTT FETZER
TELEPHONE:
AT&T
301 W. BAY
SUITE 11A1
JACKSONVILLE, FL 32202
(904)350-2245
ALL PROPOSED UTILITIES ARE TO BE INSTALLED UNDERGROUND.
ALL NON-PAVED AREAS SHALL BE PLANTED, GRASSED, OR MULCHED.
FLOOD ZONE, "X" AE-5.19 & AE-6.19 NAVD 88 (CONVERSION TO NGVD 29 = 1.19')
A AE-5.19, AE-6.19 NAVD 88
CONSTRUCTION SEQUENCING NOTES:
A. IF ANY MUCK OR MUCK-LIKE MATERIAL IS DISCOVERED, IT WILL BE REQUIRED TO BE REMOVED, BACKFILLED WITH APPROPRIATE FILL, COMPACTED, & TESTED USING AASHTO T-180 MODIFIED PROCTOR METHOD.
B. PRIOR TO THE FILLING ON FUTURE ROADWAY & LOT AREAS, THE REMOVAL OF ANY VEGETATION & TOP SOIL MUST BE PERFORMED.
C. SIGNED, SEALED, & DATED LETTER FROM A SOILS ENGINEER OR ENGINEER OF RECORD CERTIFYING THAT THE AREAS TO BE FILLED HAVE BEEN STRIPPED OF ORGANIC MATERIAL MUST BE SUBMITTED TO THE CITY PRIOR TO FILLING.
D. NO BURYING OF ANY ORGANIC MATERIALS IS PERMITTED.
E. ANY BURNING OF ANY MATERIALS ON-SITE MUST BE APPROVED AND PERMITTED BY THE FIRE MARSHALL. A PERMIT MUST BE OBTAINED ON A DAILY BASIS PRIOR TO THE DAY OF THE ANTICIPATED BURNING.
F. ALL FILLING IS TO BE PERFORMED IN ONE FOOT LIFTS. THE COMPACTION REQUIREMENT IS 98% FOR PAVED AREAS AND 95% FOR UNPAVED AREAS (FUTURE BUILDING PADS BASED ON THE AASHTO T-180 MODIFIED PROCTOR TEST).
G. TEMPORARY FILL STOCKPILING IS NOT GENERALLY PERMITTED BY THE CITY. WHEN ALLOWED STOCK PILE SHALL NOT EXCEED SIX FEET IN HEIGHT MEASURED FROM THE ORIGINAL GRADE.
H. AT A MINIMUM, STOCKPILES THAT WILL REMAIN IN PLACE IN EXCESS OF 20 DAYS, SHOULD BE SEEDED & MULCHED IMMEDIATELY UPON PLACEMENT OF THE FINAL LIFT.
I. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION & THE IMPACT TO NEIGHBORING COMMUNITIES.
J. UPON COMPLETION OF EACH PORTION OF A PROJECT WITHIN A PHASE OF THE PROJECT, SEEDING & MULCHING AND/OR SODDING IS TO BE PERFORMED PRIOR TO COMMENCING THE NEXT PHASE.
K. ONCE AN AREA IS SEEDED OR SODDED, IT MUST BE MAINTAINED TO ALLOW THE GRASS TO GROW.
L. FOR FILLING OF PROPOSED LOTS IN CONJUNCTION WITH SITE DEVELOPMENT, COMPACTION TESTS MUST BE PERFORMED ON THE BUILDING LOTS AT 300 FOOT INTERVALS. THESE TESTS ARE TO BE PERFORMED IN ONE FOOT VERTICAL INCREMENTS. THE RESULTS OF THESE TESTS ARE TO BE SUBMITTED TO THE CITY UPON COMPLETION OF THE TESTS.
10. ALL STORMWATER PIPING CONNECTION JOINTS MUST BE WRAPPED WITH FILTER FABRIC TO PROHIBIT THE SEEPAGE OF SEDIMENTS THROUGH THE JOINT. THE WRAP SHOULD BE A MINIMUM OF 36 INCHES IN WIDTH AND INSTALLED WITH AN OVERLAP OF AT LEAST 18 INCHES.
11. ALL CONSTRUCTION SHALL BE IN CONFORMANCE WITH THE CITY STANDARD CONSTRUCTION DETAILS, LATEST VERSION, UNLESS OTHERWISE SPECIFICALLY APPROVED.
12. WHERE EXISTING UTILITIES ARE LOCATED IN AREAS OF EXISTING PAVEMENT, AND THE PAVEMENT IS PROPOSED TO BE OVERLAID SUBSEQUENT TO INSTALLATION OF THE NEW UTILITY AND/OR DRAINAGE CONNECTIONS, ALL VALVE BOXES, MANHOLE LIDS AND COVERS AND SIMILAR APPURTENANCES MUST BE ADJUSTED ACCORDINGLY TO MATCH THE FINISHED GRADE.
13. INFORMATION ON THE BOUNDARY, TREE LOCATIONS, UTILITIES, AND EXISTING TOPOGRAPHY BASED ON AS BUILT SURVEY PREPARED BY SLIGER & ASSOCIATES, INC. ELEVATIONS SHOWN ARE REFERENCED TO THE NATIONAL GEODETIC VERTICAL DATUM, 1929 (NGVD29) PER MEASUREMENTS FROM BENCHMARK NO. 27. ELEVATION 24.33 AND BENCHMARK NO. 25. ELEVATION 28.03 AS ESTABLISHED AND PUBLISHED BY THE CITY OF PORT ORANGE. CONTOURS SHOWN AT 1.0' INTERVALS. (CONVERSION FACTOR TO NAVD 88 = 1.19 FEET.)
14. ALL TRAFFIC CONTROL SIGNS WITHIN CITY OF PORT ORANGE RIGHTS OF WAY SHALL BE FABRICATED AND INSTALLED IN ACCORDANCE WITH THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES AND THE FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS USING 3M BRAND "SCOTCHLITE" HIGH INTENSITY GRADE SHEETING ON MINIMUM 0.080 GAUGE 5052 H-38 ALUMINUM BLANKS.
ALL WARNING SIGNS SHALL BE 36"x36", ALL STOP SIGNS SHALL BE HIGH INTENSITY 36" OCTAGON ON THOROUGHFARES WITH 30" OCTAGON ON LOCAL ROADS INSTALLED ON 12 FT. LONG, 3 LBS/FT "U" CHANNEL POSTS OR 3" x 12" ROUND ALUMINUM POSTS. ALL ROUND POSTS SHALL BE INSTALLED WITH ANCHOR PLATES TO PREVENT POST ROTATION. "U" CHANNEL POSTS MAY BE USED FOR ALL SIGNS SMALLER THAN 36"x48". ALL STREET NAME SIGNS SHALL BE FABRICATED USING 3M BRAND HIGH INTENSITY REFLECTIVE SHEETING ONLY ON MINIMUM 0.063 GAUGE DOUBLE-BLADE, 5052 H-38 ALUMINUM BLANKS, ASSEMBLED WITH ONE 3/16" DIAMETER RIVET IN THE MIDDLE OF EACH END THROUGH PUNCHED/DRILLED HOLES 13/64" DIAMETER HOLES. SHALLOWER HOLES SHALL BE PUNCHED/DRILLED 1/4" FROM THE TOP AND THE BOTTOM CENTER EDGES OF THE STREET NAME SIGNS TO FIT A 24" TWIST BRACKET. THE FINISHED STREET NAME SIGNS SHALL BE 9" IN HEIGHT WITH 6" HIGH UPPER CASE AND 4.5" LOWER CASE. WHITE LETTERS ON A GREEN BACKGROUND. THE TWIST BRACKET FOR STREET NAME SIGNS SHALL BE 1-1/2" WIDE 1/4" THICK GALVANIZED STEEL 24" LONG WITH A 90" TWIST 8-1/8" FROM THE TOP END, 3/8" DIAMETER PUNCHED/DRILLED HOLES SHALL BE PROVIDED FOR THE TWIST BRACKET 1/2" FROM EACH END, 7-1/2" FROM THE TOP END AND (3) 3/8" DIAMETER HOLES SHALL BE PUNCHED/DRILLED 4-1/2" 6-1/2" AND 13-1/2" FROM THE BOTTOM END OF THE TWIST BRACKET.
15. ALL PAVEMENT MARKINGS AND STRIPING WITHIN CITY OF PORT ORANGE RIGHTS OF WAY WILL BE THERMOPLASTIC AND WILL BE INSTALLED IN ACCORDANCE WITH VERSION 2012 OF FDOT STANDARD INDEX 17346.
STOP BARS AND CROSSWALK STRIPING TO BE 24" THERMOPLASTIC PER CITY STANDARDS.
16. DESIGNATED HANDICAPPED PARKING AND LOADING SPACES SHALL BE MARKED ON THE SURFACE OF THE PARKING SPACE WITH PAINT OR PERMANENT MARKING MATERIAL IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD), AND MAINTAINED IN A CLEAR AND VISIBLE CONDITION.
17. ALL POWER LINES SERVING THE PROPOSED PROJECT AND STRUCTURES TO BE BURIED UNDERGROUND.
18. CONTRACTOR SHALL COMPLY WITH PORT ORANGE NOISE ORDINANCE; OVERNIGHT NOISE SHALL BE APPROVED IN ADVANCE BY THE CITY MANAGER. NOISE MAXIMUMS AS MEASURED AT THE NEAREST RESIDENTIAL PROPERTY LINE SHALL BE 60 DBA FROM 7:00 AM TO 10:00 PM & 50 DBA FROM 10:00 PM TO 7:00 AM.
19. PILE DRIVING SHALL BE LIMITED TO DAYLIGHT HOURS AND LIMITED TO NORMAL CITY ALLOWED WORKING HOURS.
20. CONTRACTOR SHALL ADJUST THE EXISTING FIRE HYDRANTS AND VALVES TO FINISHED GRADES.
21. PURSUANT TO THE RIVERWALK AMENDED AND RESTATED MASTER DEVELOPMENT AGREEMENT (BOOK 7306 PAGE 1188) THE SUBJECT SITE IS EXEMPTED FROM THE CITY'S TREE PRESERVATION REQUIREMENTS DUE TO THE AMOUNT OF FILL REQUIRED TO DEVELOP THE SITE.
22. ALL DISTURBED AREAS TO BE STABILIZED PRIOR TO CERTIFICATE OF OCCUPANCY OF RESTAURANT.
23. THE EOR UNDERSTANDS THAT THEY WILL BE FULLY RESPONSIBLE TO UPDATE/ADD/REMOVE ANY SIGNS AND PAVEMENT MARKINGS THAT NEED TO BE UPDATED/ADDED/REMOVED IN THE FIELD WITH THE PROPOSED CHANGES.
24. ALL AFFECTED SIDEWALKS, RAMPS AND CROSSWALKS, WILL BE BUILT AND INSPECTED TO MEET CURRENT ADA REQUIREMENTS.
25. ALL WALL MOUNTED EQUIPMENT INCLUDING BUT NOT LIMITED TO ELECTRICAL BOXES, METERS AND VENTS MUST BE PAINTED TO MATCH BUILDING.



ZONING MAP

(PC-R) PLANNED COMMUNITY - PO RIVERWALK



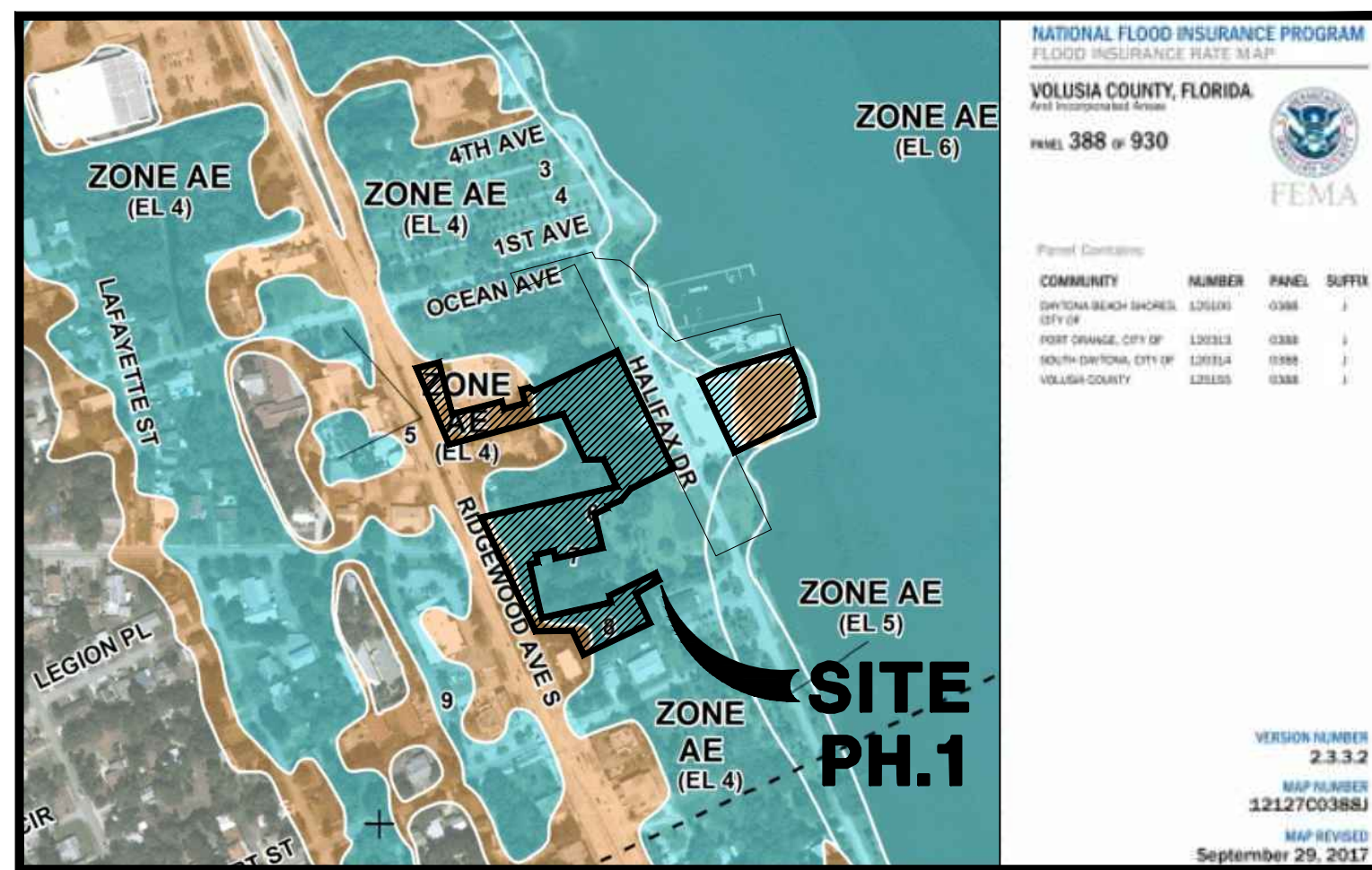
VICINITY MAP

INDEX TO DRAWINGS	
SHEET NO.	DESCRIPTION
1	COVER SHEET
2-6	BOUNDARY / TOPO SURVEY
7-11	DELETED PLAN
12	OVERALL PLAN / KEY MAP
12A	PHASING PLAN
13-17	DEMOLITION AND EROSION CONTROL PLAN
18-22	SITE PLAN
22A-22B	US1 TURN-LANE IMPROVEMENTS
23-27	CIVIL SITE PLAN
28-32	UTILITY SITE PLAN
33-37	LANDSCAPE PLAN
38	LANDSCAPE DETAILS
38A	LINE OF SIGHT
39-43	IRRIGATION PLAN
44	IRRIGATION DETAILS
45-53B	PAVING DRAINAGE & MISCELLANEOUS DETAILS
54-58A	WATER SYSTEM STANDARD DETAILS
57-58A	SANITARY SEWER STANDARD DETAILS
59-60A	REUSE WATER SYSTEM DETAILS
A21.1-A3.10	ARCHITECTURAL PLANS

SITE INFORMATION

PROJECT NAME:
RIVERWALK FYSH BAR & GRILL & PHASE 1 SITE IMPROVEMENTS
TAX PARCEL NUMBER: 6303-10-02-0041, 6303-10-02-0040, 6303-16-00-0010, 6303-16-00-0011, 6303-10-02-0024, 6303-10-02-0030, 6303-04-00-0010

SUBMERGED LAND PARCEL ID# (TFI)-131768, TFI-144127, TFI-129321
SUBMERGED LAND LEASE HOLD ID# (CS)-348219
EXISTING ZONING: PC-R PLANNED COMMUNITY - PO RIVERWALK
STREET ADDRESS/LOCATION:
3571 RIDGEWOOD AV
PORT ORANGE, FL 32129



FLOOD ZONE MAP

FLOOD ZONE: "X", BFE NGVD 29, AE-5.19 & AE-6.19 NGVD 29 AE-4, AE-5 NAVD 88

LAND USE TABULATION

TOTAL PROJECT AREA (PHASE 1) = 5.02 AC = 218,831 SF.
TOTAL PROPOSED BUILDING = BLDG. #1 = 17,024 S.F.
1ST FLOOR = 11,632 SF.
2ND FLOOR = 5,392 SF.
TOTAL = 17,024 SF.
248 INDOOR AND 208 OUTDOOR SEAT RESTAURANT
TOTAL BUILDING SQUARE FOOTAGE = 17,024 S.F.
FAR = 17,024 S.F. / 7.8%
218,831 S.F.
IMPERVIOUS AREA PRIOR TO DEMOLITION OF SIDEWALKS, RESTAURANT, AND MARINA BUILDINGS (INCLUDES PAVED PARKING) = 26,937 S.F.
PROPOSED IMPERVIOUS AREA:
BUILDING AREA = 11,632 SF.
PAVEMENT = 78,126 SF.
CONCRETE/PAVERS = 15,723 SF.
TOTAL IMPERVIOUS AREA = 105,481 SF = 48.20%
TOTAL OPEN SPACE AREA = 113,350 S.F. = 51.80%

PARKING CALCULATIONS

PARKING REQUIRED:
INDOOR SEATS = 248 SEATS X 1 SPACE / 3 SEATS = 82.67 SPACES
OUTDOOR (SEASONAL) SEATS = 208 SEATS X 1 SPACE / 3 SEATS (SEASONAL USE) = 69.33 X (50%)
= 34.67 SPACES
TOTAL PARKING REQUIRED = 145.34 (146) SPACES REQUIRED
PARKING PROVIDED:
STANDARD = 168 SPACES
HANDICAPPED = 8 SPACES
PARKING PROVIDED = 177 SPACES

LOADING ZONES REQUIRED:
RESTAURANT/MARINA = 2
LOADING ZONES PROVIDED = 2

NOTE:
THE VERTICAL DATUM FOR THIS PROJECT IS 1929 NGVD. THE CONVERSION FROM 1929 NGVD TO 1988 IS (-) 1.19 FEET.

9	12-07-20	REVISED	SWB
8	10-30-20	REVISED	SWB
7	10-06-20	REVISED	SWB
6	08-28-20	REVISED	SWB
5	07-13-20	REVISED PER FDOT COMMENTS	SWB
4	04-16-20	REVISED PER FDOT DRAINAGE COMMENTS	SWB
3	04-08-20	REVISED PER SURVMD	SWB
2	03-10-20	REVISED PER SURVMD	SWB
1	12-20-19	REVISED	SWB
NO.	DATE	DESCRIPTION	BY

PARKER MYNCHENBERG & ASSOCIATES, INC.

PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermychenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER 00003910

RIVERWALK FYSH BAR & GRILL & PHASE 1 SITE IMPROVEMENTS

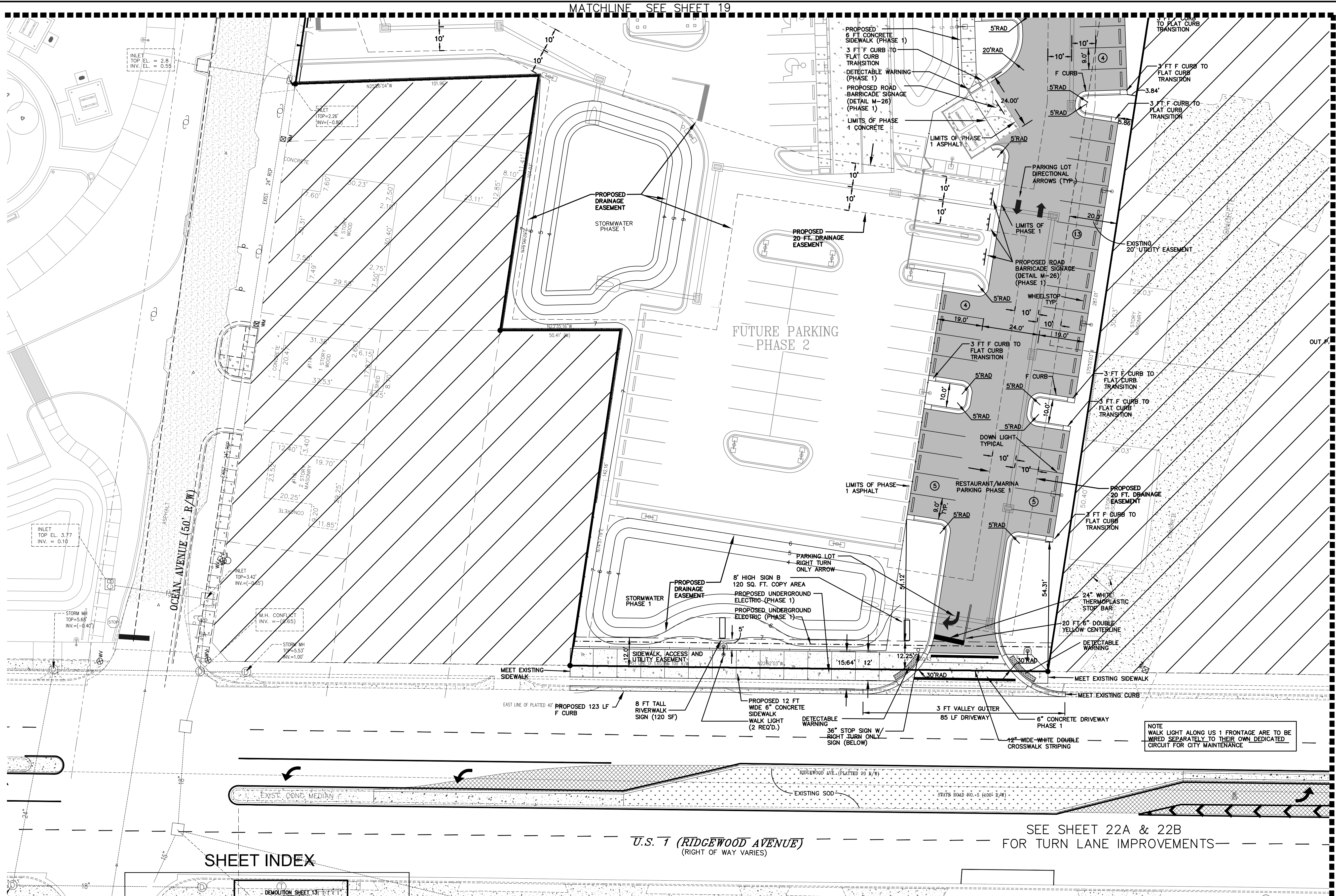
PORT ORANGE, FLORIDA

COVER SHEET

1	SHEET NO.
Drawn By: BH / SWB	
Date: 9-20-19	
SCALE: AS SHOWN	
JOB#	

Parker Mynchenberg, P.E.
32645
Digitally signed by Parker Mynchenberg, P.E. 32645
DN: cn=Parker Mynchenberg, P.E. 32645, email=info@parkermychenberg.com, ou=Parker Mynchenberg, P.E. 32645, date=2019.09.20.13:52:29, serial=135229

20190920135229
Scott Kirts
7/29/2021



NO.	DATE	DESCRIPTION	BY
10	6-17-21	REVISED	SWB
9	12-07-20	REVISED	SWB
8	10-30-20	REVISED	SWB
7	10-6-20	REVISED	SWB
6	8-28-20	REVISED PER FOOT COMMENTS	SWB
5	7-13-20	REVISED PER FOOT COMMENTS	SWB
4	4-16-20	REVISED PER FOOT COMMENTS	SWB
3	4-8-20	REVISED PER S/RWMD	SWB
2	3-10-20	REVISED PER S/RWMD	SWB
1	12-20-19	REVISED	SWB

**PARKER MYNCHENBERG
& ASSOCIATES, INC.**
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
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(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER 00003910

RIVERWALK FYSH BAR & GRILL
& PHASE 1 SITE IMPROVEMENTS
PORT ORANGE * FLORIDA
SITE PLAN

21
SHEET NO.

Drawn By: BH / SWB

Date: 9-20-19

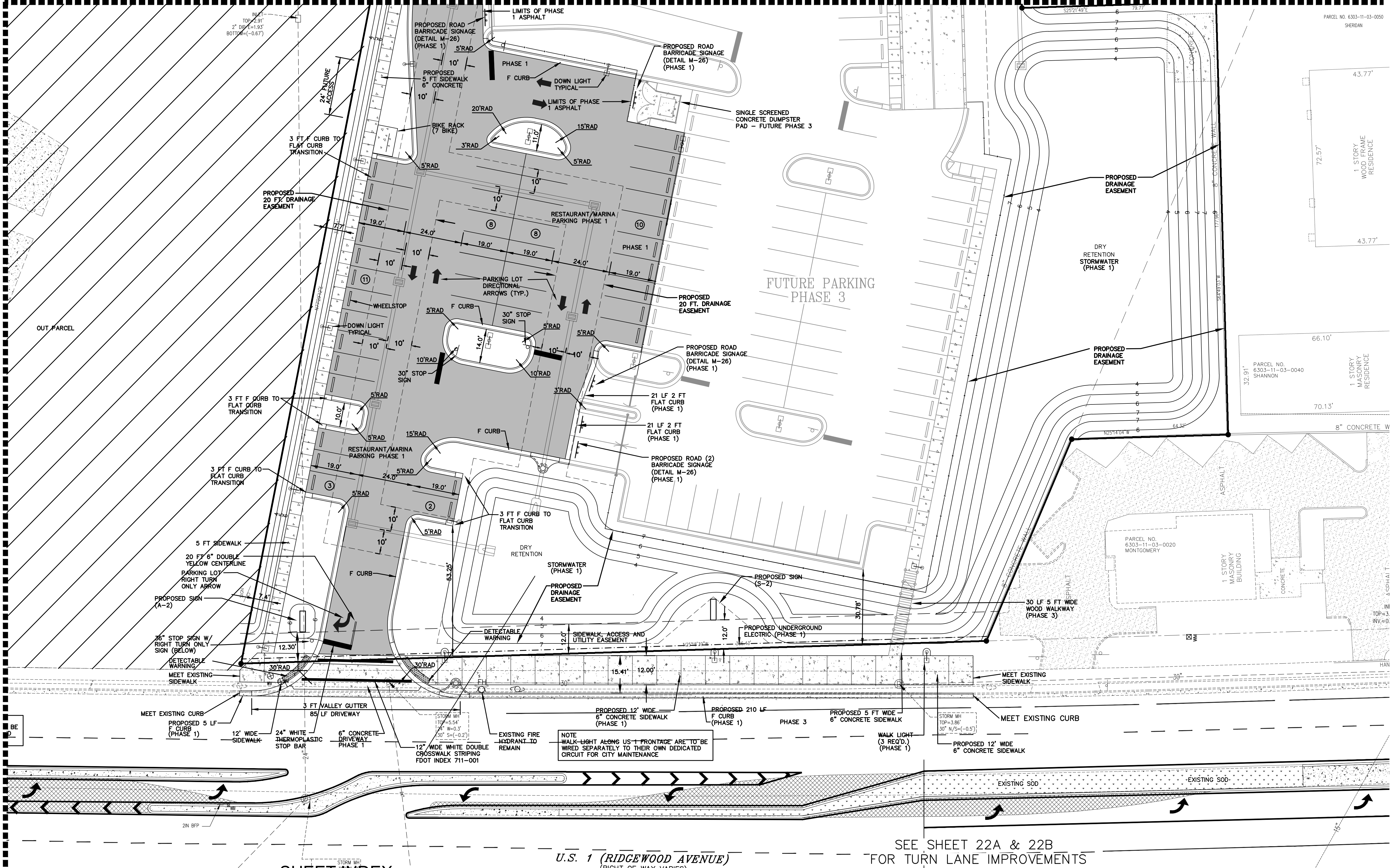
SCALE: AS SHOWN

JOB#

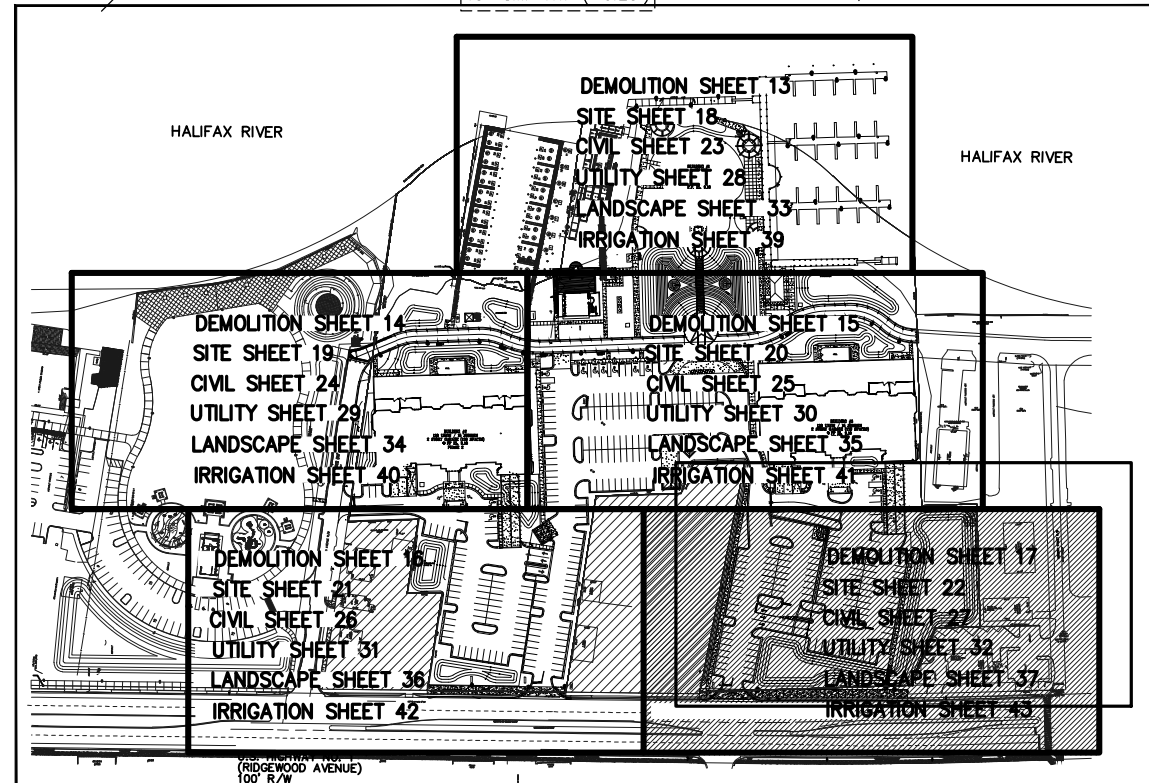
Approved
2020-A-591-0003
Seal
7/29/2021

MATCHLINE SEE SHEET 21

MATCHLINE SEE SHEET 20

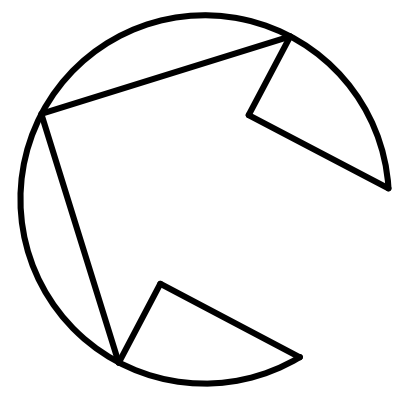


SHEET INDEX

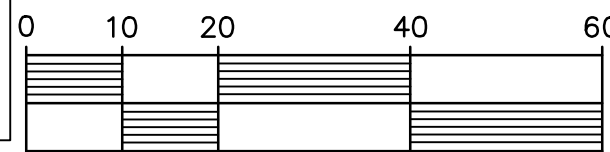


LEGEND

- 8\"/>



GRAPHIC SCALE



SCALE: 1\"/>

NO.	DATE	DESCRIPTION	BY
10	6-17-21	REVISED	SWB
9	12-07-20	REVISED	SWB
8	10-30-20	REVISED	SWB
7	10-6-20	REVISED	SWB
6	8-28-20	REVISED	SWB
5	7-13-20	REVISED PER FOOT COMMENTS	SWB
4	4-16-20	REVISED PER FOOT COMMENTS	SWB
3	4-8-20	REVISED PER SURMWD	SWB
2	3-10-20	REVISED PER SURMWD	SWB
1	12-20-19	REVISED	SWB

PARKER MYNCHENBERG & ASSOCIATES, INC.

PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermychenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER 00003910

RIVERWALK FYSH BAR & GRILL & PHASE 1 SITE IMPROVEMENTS

SITE PLAN

22 SHEET NO.

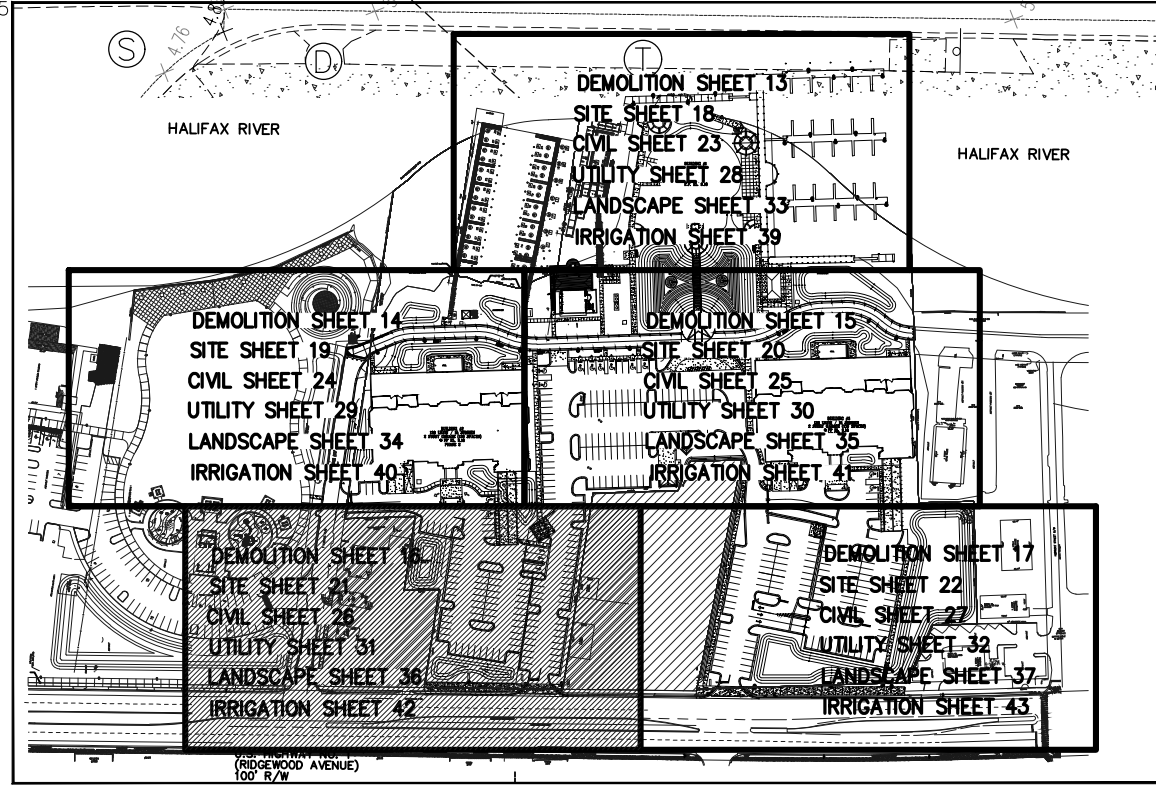
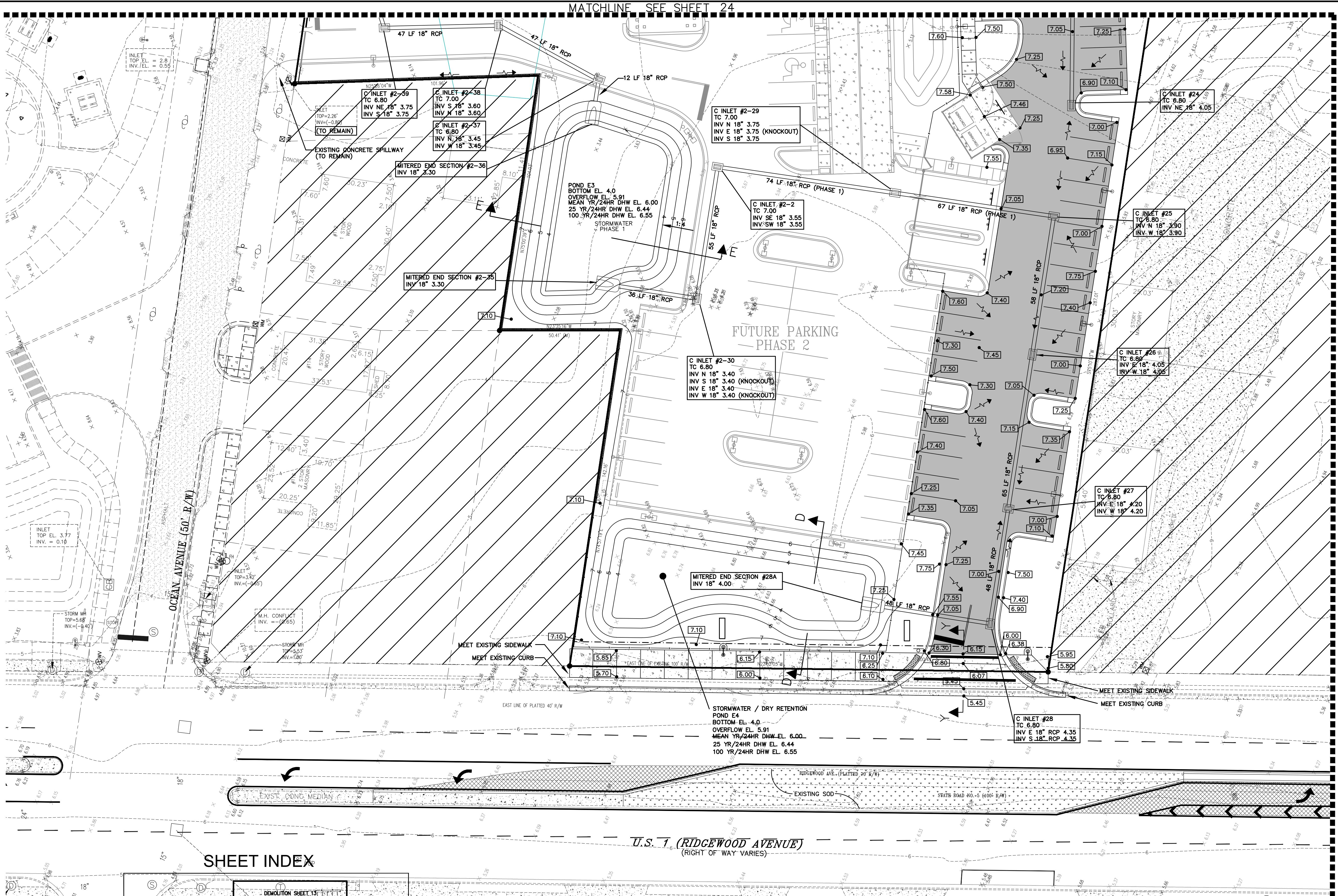
Drawn By: BH / SWB

Date: 9-20-19

SCALE: AS SHOWN

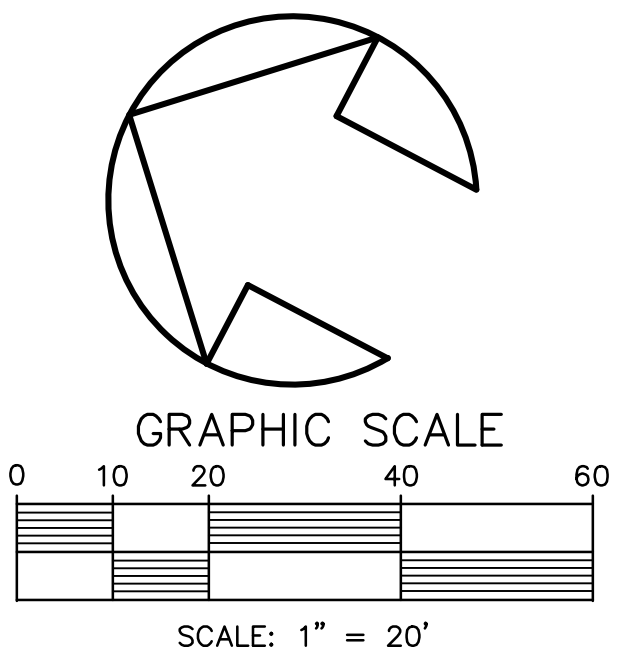
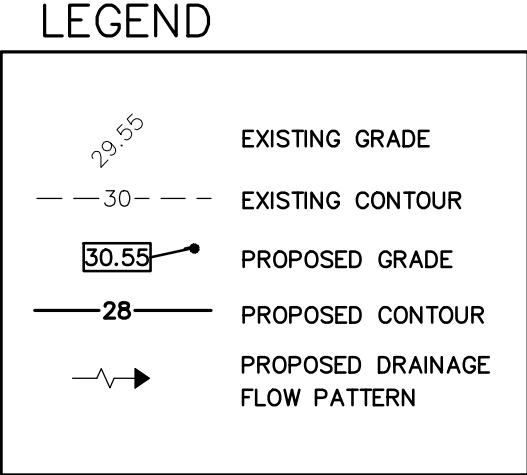
JOB#

Approved
2020-A-591-0003
SEAL
7/29/2021



(CONVERSION TO NAVD 88 = 1.19 FT)

NOTE:
1. SEDIMENT CONTROL SHALL BE ADDED TO ALL NEW INLETS UNTIL AFTER LANDSCAPING.



NO	DATE	DESCRIPTION	BY
10	6-17-21	REVISED	SWB
9	12-07-20	REVISED	SWB
8	10-30-20	REVISED	SWB
7	10-6-20	REVISED	SWB
6	8-28-20	REVISED	SWB
5	7-13-20	REVISED PER FOOT COMMENTS	SWB
4	4-16-20	REVISED PER FOOT COMMENTS	SWB
3	4-8-20	REVISED PER SURFWD	SWB
2	3-10-20	REVISED PER SURFWD	SWB
1	12-20-19	REVISED	SWB
NO		DESCRIPTION	BY

PARKER MYNCHENBERG & ASSOCIATES, INC.
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER 00003910

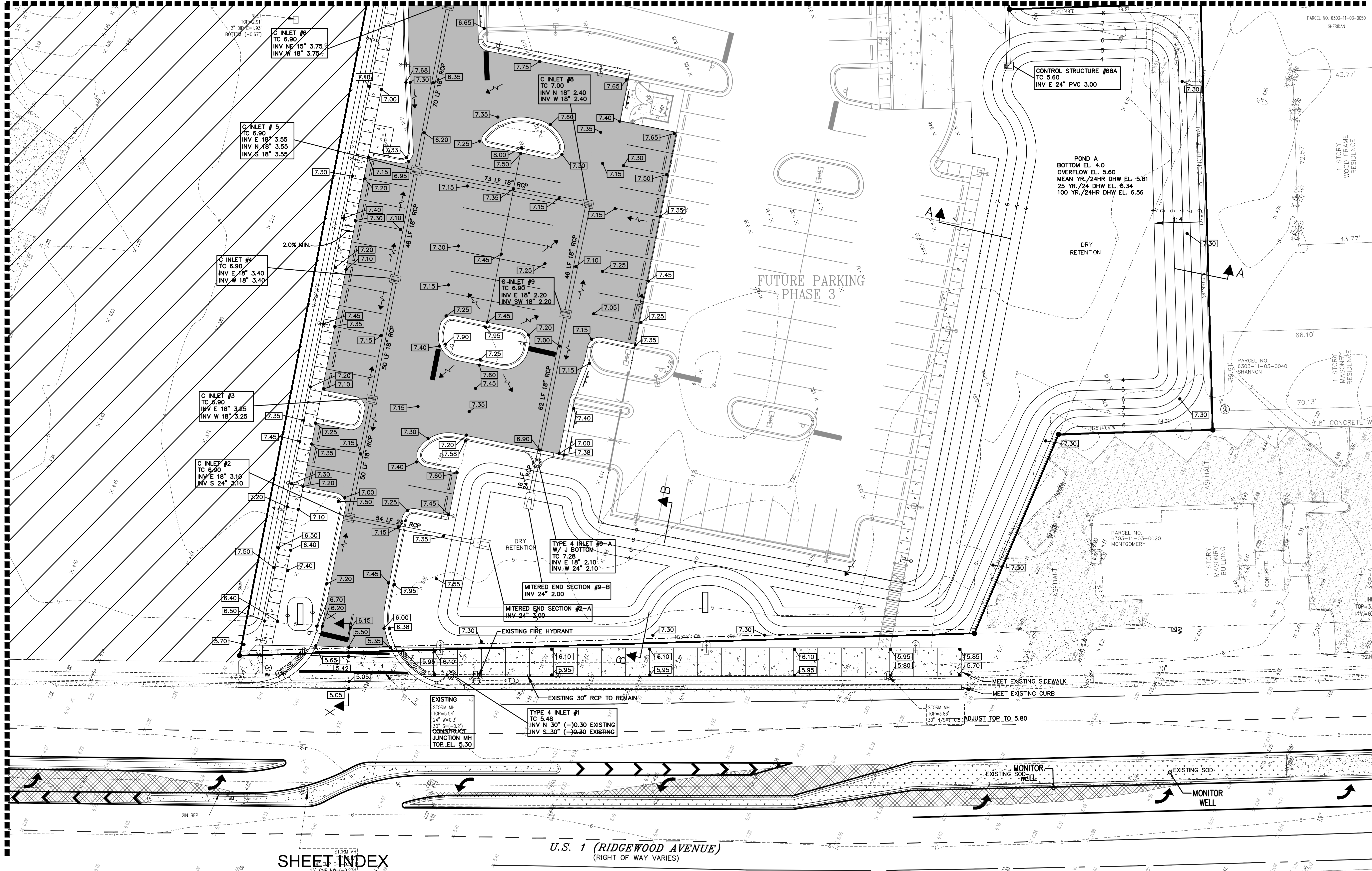
RIVERWALK FYSH BAR & GRILL
& PHASE 1 SITE IMPROVEMENTS
PORT ORANGE * FLORIDA
CIVIL SITE PLAN

26
SHEET NO.
Drawn By: BH / SWB
Date: 9-20-19
SCALE: AS SHOWN
JOB#

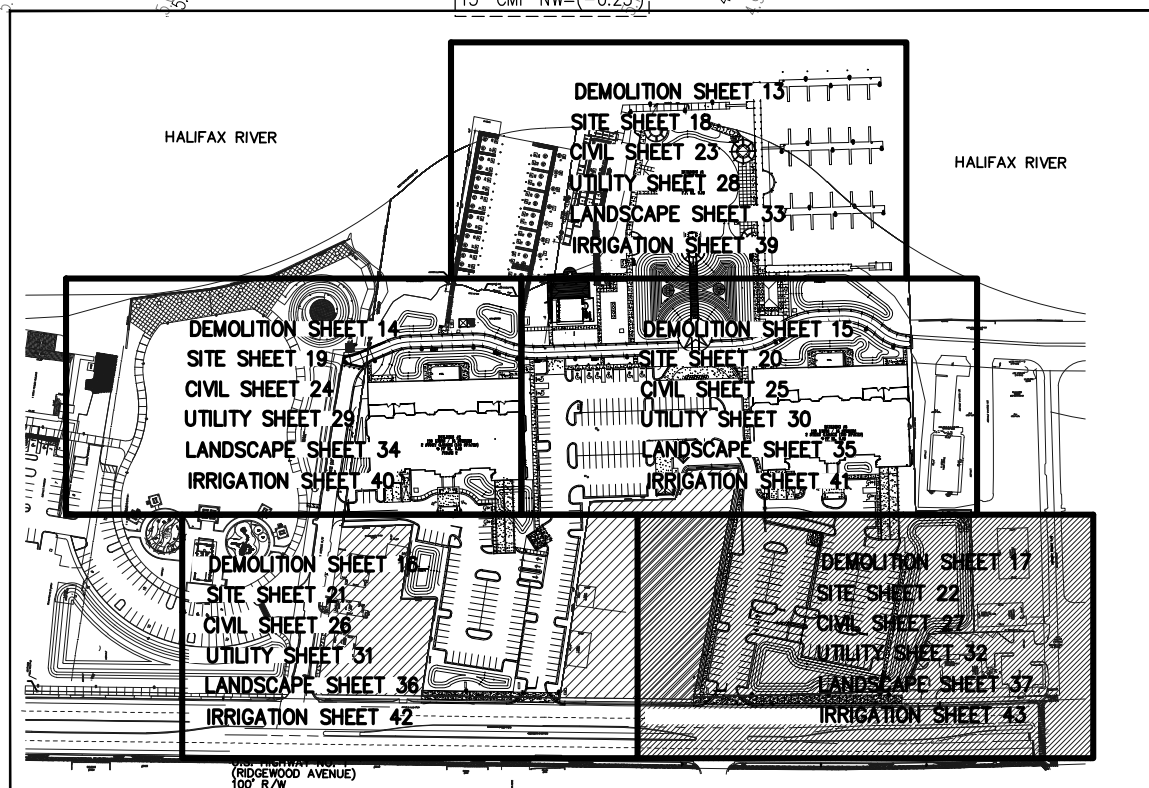
Approved
2020-A-591,0003
Seal
7/29/2021

MATCHLINE SEE SHEET 26

MATCHLINE SEE SHEET 25



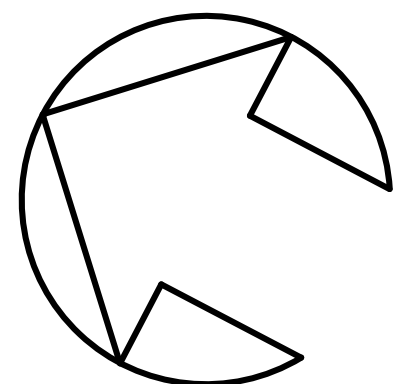
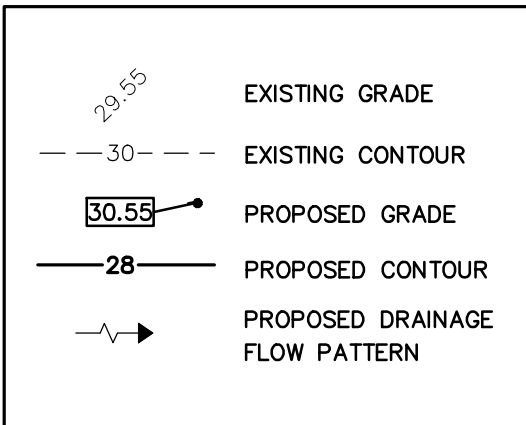
SHEET INDEX



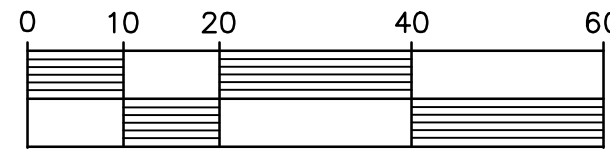
(CONVERSION TO NAVD 88 = 1.19 FT)

NOTE:
1. SEDIMENT CONTROL SHALL BE ADDED TO ALL NEW INLETS UNTIL AFTER LANDSCAPING.

LEGEND



GRAPHIC SCALE



SCALE: 1" = 20'

NO.	DATE	DESCRIPTION	BY
10	6-17-21	REVISED	SWB
9	12-07-20	REVISED	SWB
8	10-30-20	REVISED	SWB
7	10-6-20	REVISED	SWB
6	8-28-20	REVISED	SWB
5	7-13-20	REVISED PER FDOT COMMENTS	SWB
4	4-16-20	REVISED PER FDOT DRAINAGE COMMENTS	SWB
3	4-8-20	REVISED PER SIRMWD	SWB
2	3-10-20	REVISED PER SIRMWD	SWB
1	12-20-19	REVISED	SWB

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(386) 677-8891 FAX (386) 677-2114 E-MAIL: info@parkermychenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER 00003910

RIVERWALK FYSH BAR & GRILL
& PHASE 1 SITE IMPROVEMENTS
PORT ORANGE, FLORIDA
CIVIL SITE PLAN

27
SHEET NO.
Drawn By: BH / SWB
Date: 9-20-19
SCALE: AS SHOWN
JOB#

Approved
2020-A-591-0003
SEAL
7/29/2021

EXHIBIT C

MAINTENANCE PLAN

All landscaping shall be maintained in accordance with Rule Chapter 14-40, FAC, the Landscape Construction and Maintenance Memorandum of Agreement, Landscape Plans, and the FDOT Standard Plans Indices 522-001 & 522-002.

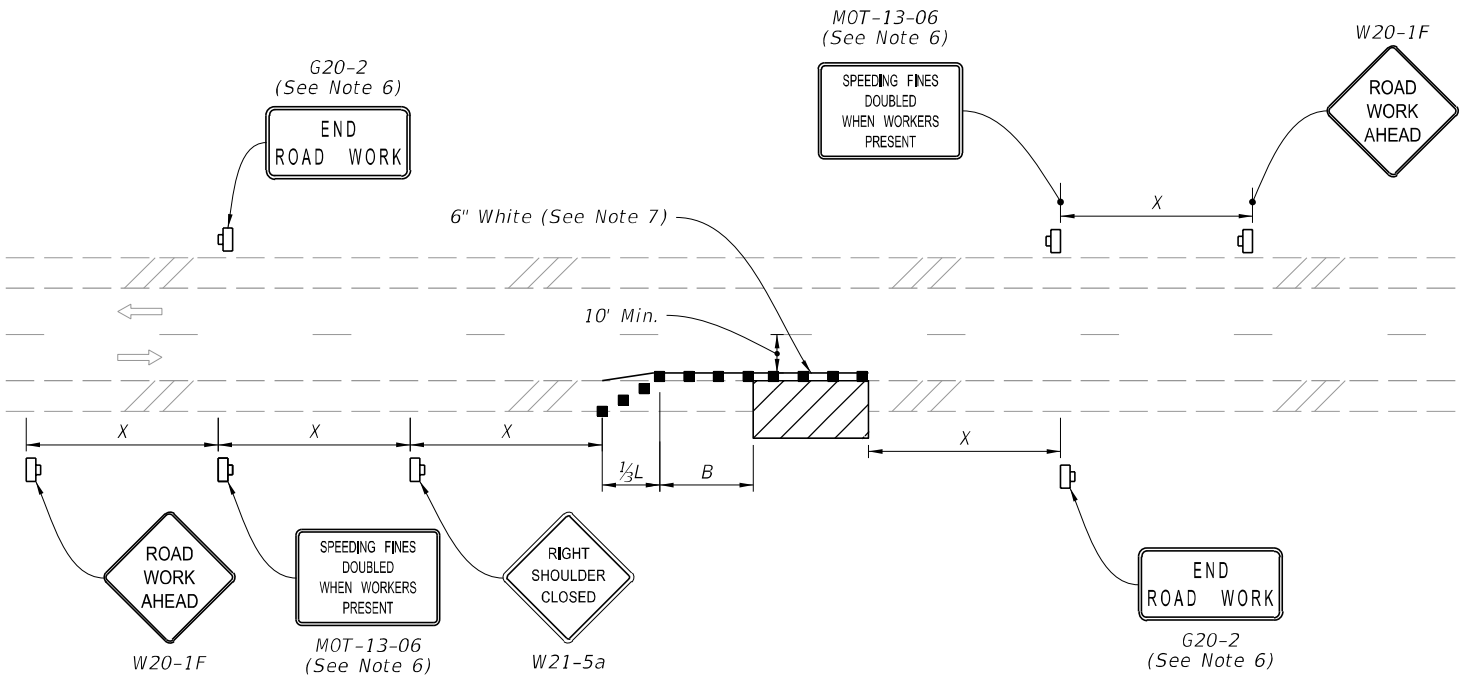
EXHIBIT D

NOTES:

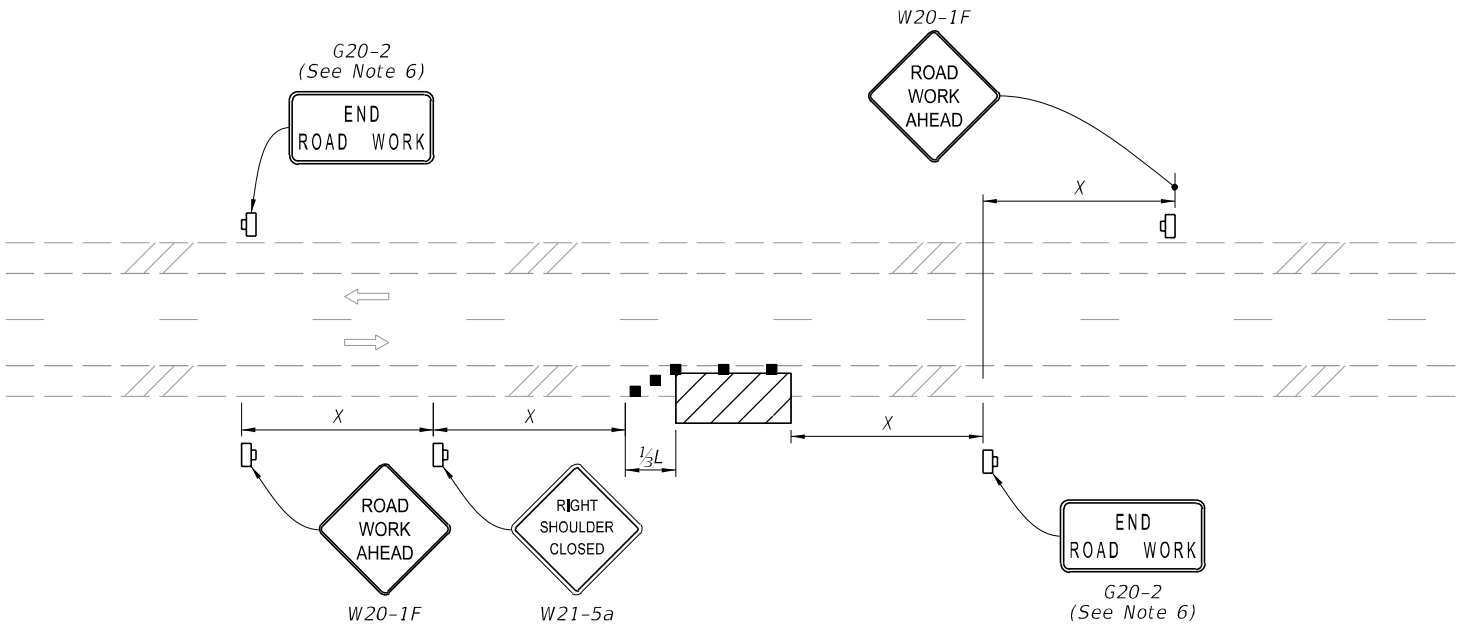
1. This Index applies to Two-Lane, Two-Way and Multilane Roadways, including Medians of divided roadways, with work on the shoulder.
2. L = Taper Length
 X = Work Zone Sign Spacing
 B = Buffer Length
See Index 102-600 for " L ", " X ", " B ", and channelizing device spacing values.
3. For incidental work (e.g. mowing or litter removal), only the Road Work Ahead sign is required.
4. When four or more work vehicles enter the through traffic lanes in a one hour period (excluding establishing and terminating the work area), use a flagger or lane closure to accommodate work vehicle ingress and egress.
5. For work less than two feet from the traveled way and work zone speed is greater than 45 MPH, use a lane closure.
6. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" Signs (G20-2) along with the associated work zone sign spacing distances may be omitted when the temporary condition is in place for 24 hours or less.
7. Temporary pavement markings may be omitted when the work zone is in place for 3 days or less.
8. If the work encroaches on a marked bicycle lane or rideable shoulder, close the lane or shoulder in accordance with the Plans.
9. Omit "Shoulder Closed" signs (W21-5a) along with associated work zone sign spacing distances for work on the median

SYMBOLS:

-  Work Area
-  Channelizing Device (See Index 102-600)
-  Work Zone Sign
-  Lane Identification and Direction of Traffic



TWO-LANE ROADWAY
SHOULDER WORK LESS THAN 2' FROM THE TRAVELED WAY
WITH WORK ZONE SPEED OF 45 MPH OR LESS



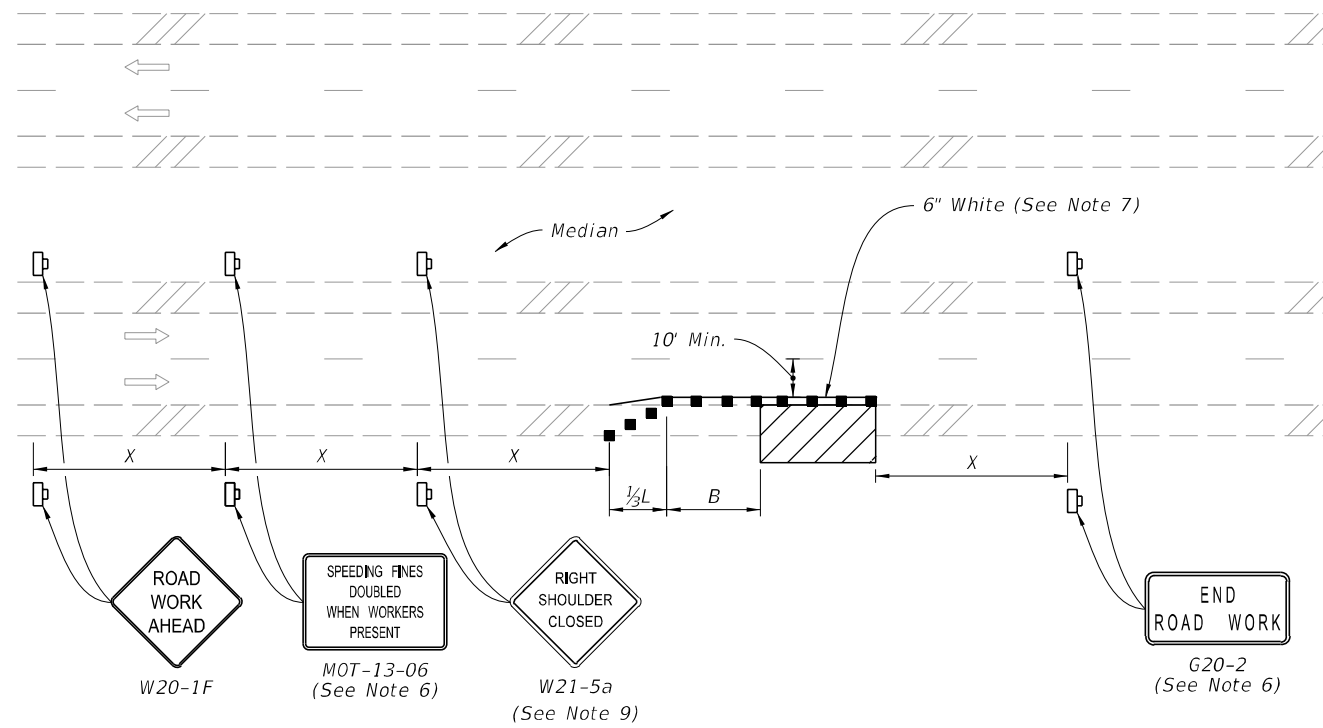
TWO-LANE ROADWAY
SHOULDER WORK BETWEEN 2' AND 15' FROM THE TRAVELED WAY

LAST REVISION	DESCRIPTION:	FDOT	FY 2021-22 STANDARD PLANS	TWO-LANE AND MULTILANE, WORK ON SHOULDER	INDEX	SHEET
11/01/20					102-602	1 of 2

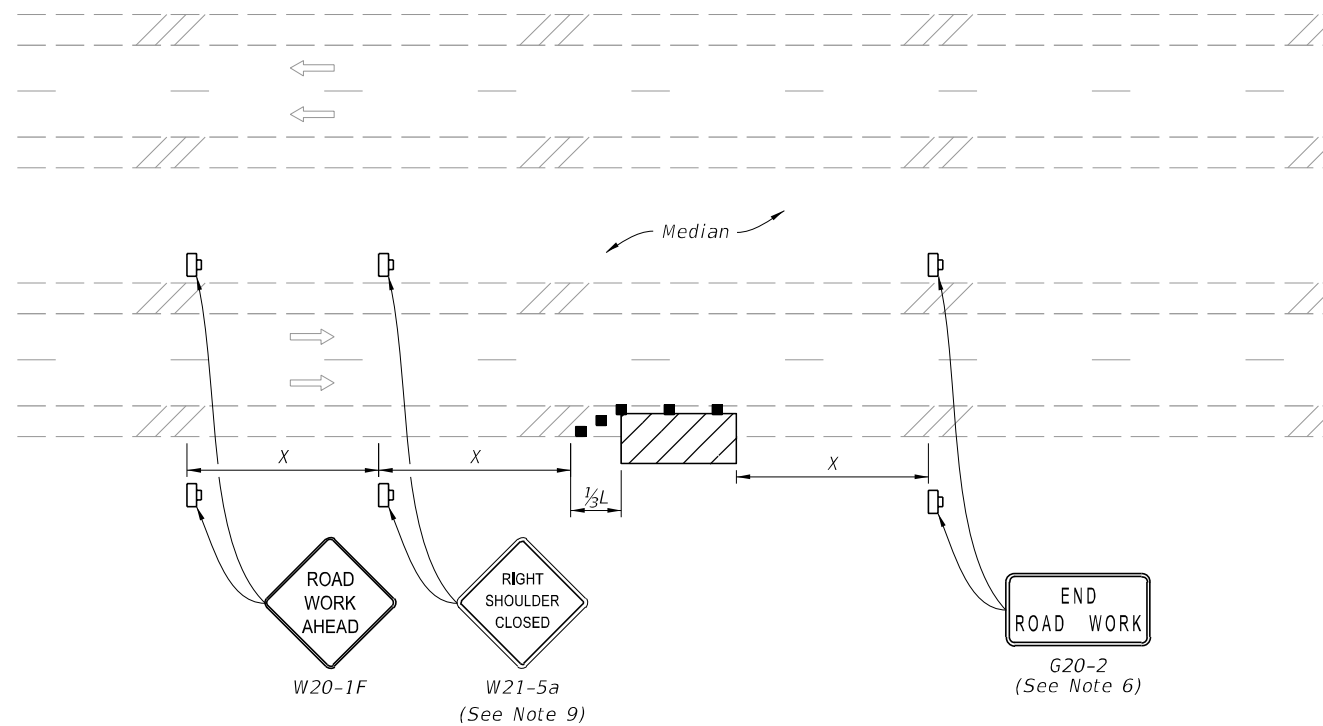
10/9/2020 9:31:06 AM

SYMBOLS:

-  Work Area
-  Channelizing Device (See Index 102-600)
-  Work Zone Sign
-  Lane Identification and Direction of Traffic



MULTILANE ROADWAY
SHOULDER WORK LESS THAN 2' FROM THE TRAVELED WAY
WITH WORK ZONE SPEED OF 45 MPH OR LESS



MULTILANE ROADWAY
SHOULDER WORK BETWEEN 2' AND 15' FROM THE TRAVELED WAY

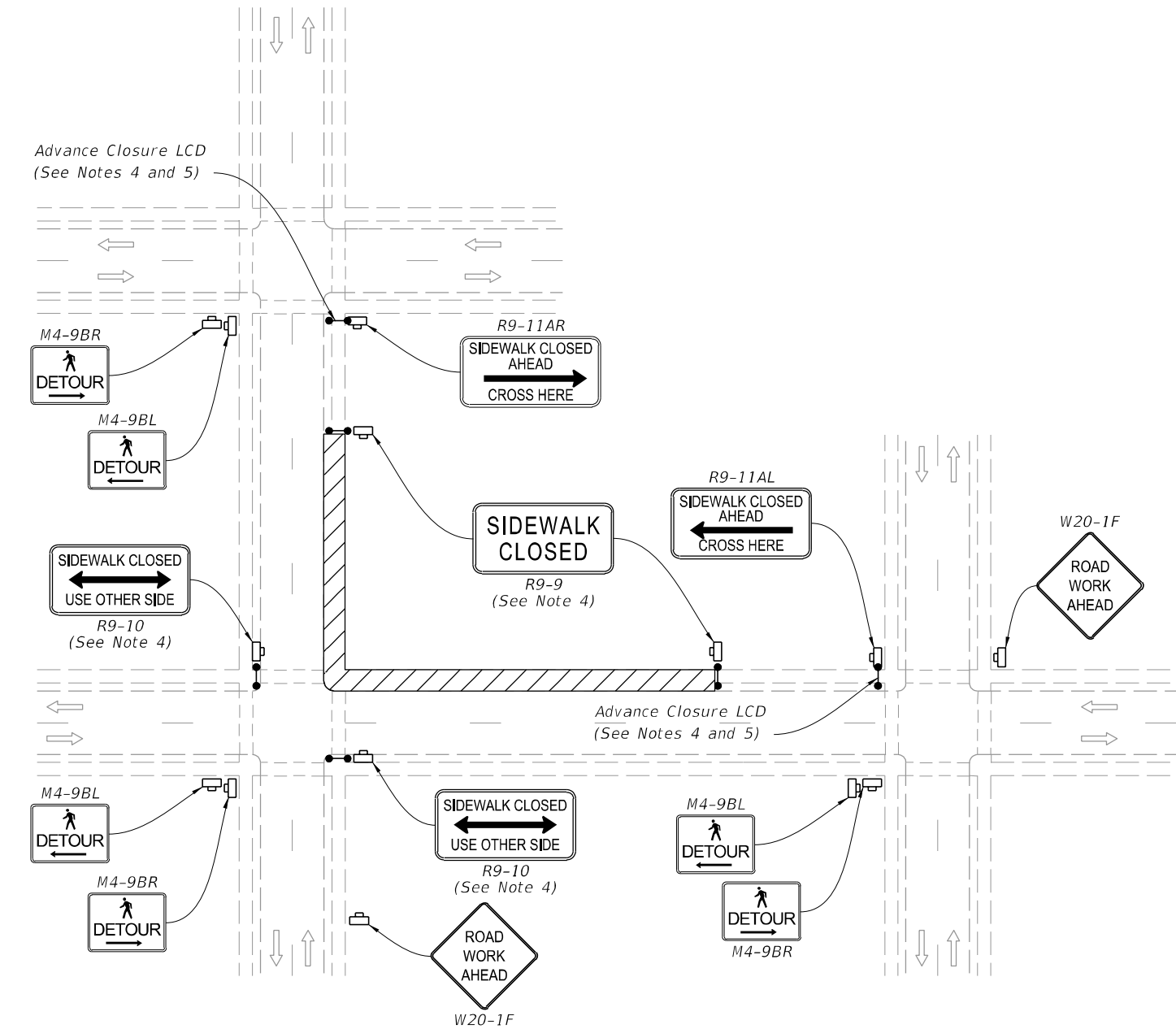
LAST REVISION 11/01/20	REVISION	DESCRIPTION:	 FY 2021-22 STANDARD PLANS	TWO-LANE AND MULTILANE, WORK ON SHOULDER	INDEX 102-602	SHEET 2 of 2
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NOTES:

- 1. Cover or deactivate pedestrian traffic signal display(s) controlling closed crosswalks.
- 2. Place pedestrian LCDs across the full width of the closed sidewalk.
- 3. For post mounted signs located near or adjacent to a sidewalk, maintain a minimum 7" clearance from the bottom of the sign panel to the surface of the sidewalk.
- 4. "Sidewalk Closed" signs (R9-XX) may be mounted on pedestrian LCDs in accordance with the manufacturer's instructions.
- 5. Omit the Advance Closure LCD if it blocks access to other pedestrian facilities (e.g., transit stops, residences, or business entrances).

SYMBOLS:

-  Work Area
-  Work Zone Sign
-  Lane Identification and Direction of Traffic
-  Pedestrian Longitudinal Channelizing Device (LCD)



PEDESTRIAN DETOUR



FY 2021-22
STANDARD PLANS

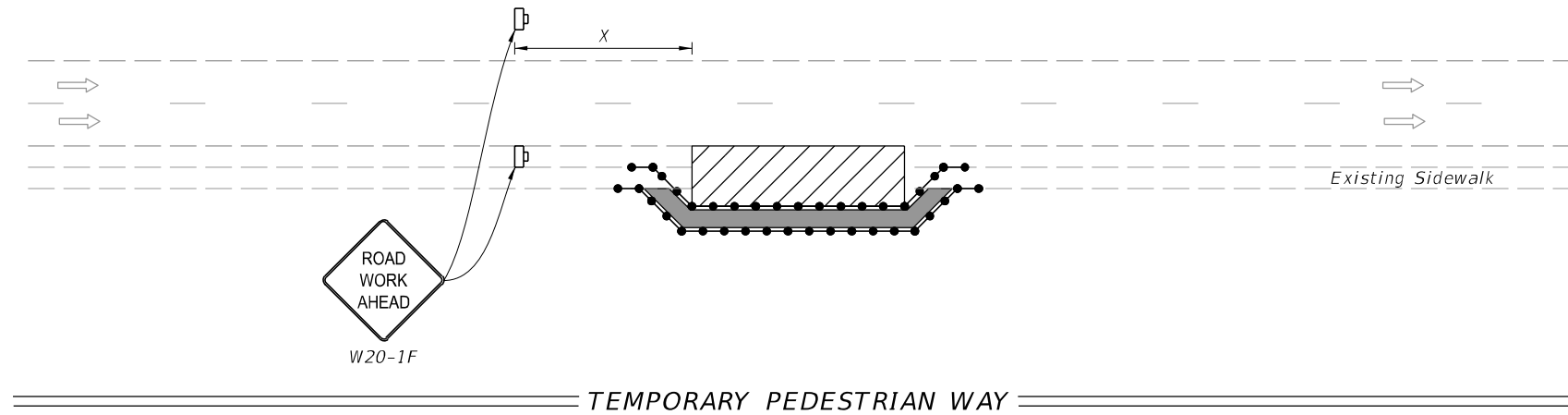
SIDEWALK CLOSURE

INDEX
102-660

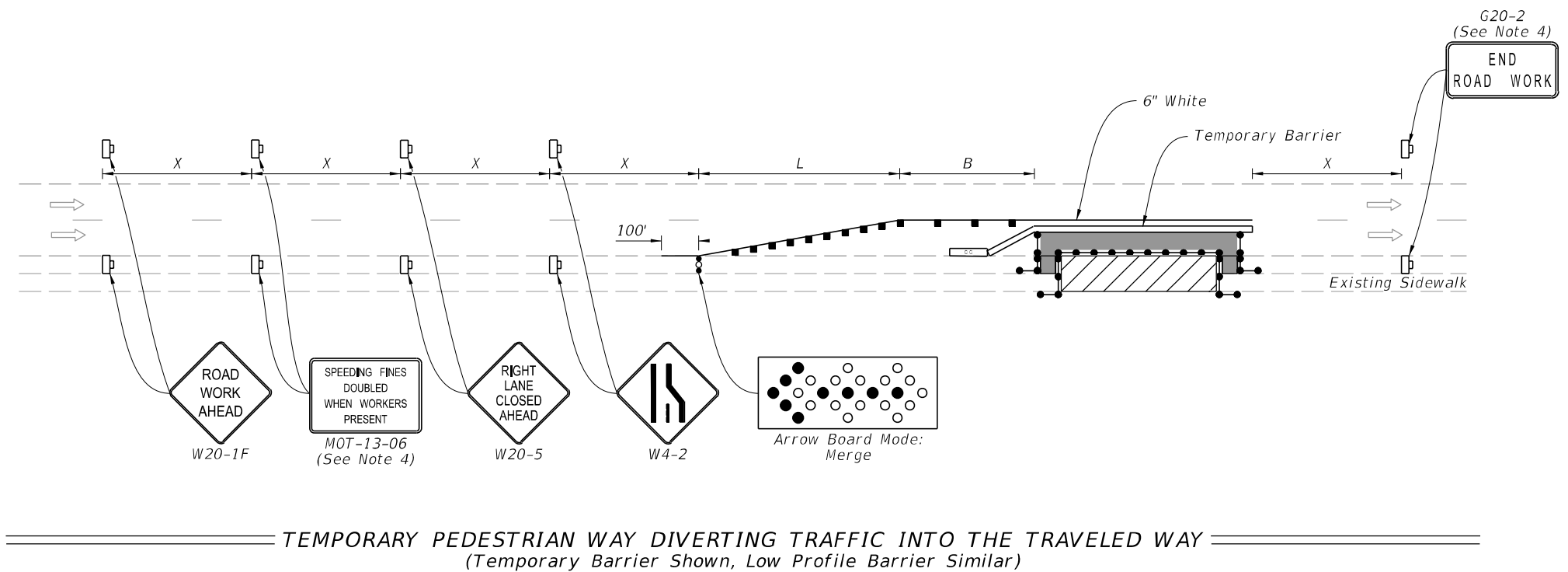
SHEET
1 of 2

1. L =Taper Length
 B =Buffer Length
 X =Work Zone Sign Distance

1. *L=Taper Length*
B=Buffer Length
X=Work Zone Sign Distance
See Index 102-600 for "L", "B", "X", channelizing device spacing values.
2. *Provide a 5' wide temporary pedestrian way with a maximum cross-slope of 0.02, except where space restrictions warrant a minimum width of 4". Provide a 5' x 5' passing space for temporary pedestrian ways less than 5' in width at intervals not to exceed 200'.*
3. *When temporary pedestrian ways require curb ramps, meet the requirements of Index 522-002. Detectable warnings are not required for curb ramps diverting pedestrian traffic into a closed lane.*
4. *The "Speeding Fines Doubled When Workers Present" signs (M0T-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign distances, may be omitted when the work zone will be in place for 24 hours or less.*



	<i>Work Area</i>
	<i>Temporary Pedestrian Way</i>
	<i>Channelizing Device (See Index 102-000)</i>
	<i>Work Zone Sign</i>
	<i>Lane Identification and Direction of Traffic</i>
	<i>Pedestrian Longitudinal Channelizing Device (LCD)</i>
	<i>Arrow Board</i>
	<i>Crash Cushion</i>





12-foot-wide
sidewalk

Sidewalk/Trail Network
+/- 6,000 LF or
+/- 1.1 miles

Riverwalk Trail

Ocean Ave.

S. Ridgewood Ave.

Herbert St.

Dunlawton Ave.



CITY COUNCIL AGENDA ITEM

REQUESTED COUNCIL MEETING DATE 10/19/2021

Consent item: Yes

SUBJECT: (C12a) Resolution No. 21-60 - Budget Appropriation to fund fire training facility using Fire Impact Fees

DEPARTMENT: Finance

GOAL: 5 - Fiscal Sustainability

RECOMMENDED MOTION: Move to approve Resolution No. 21-60.

SUMMARY: The Fire Department is in the process of erecting a fire training facility located at the City's Public Works facility. The notice to proceed was issued 5/17/2021, with a total project budget of \$813,405. The additional funds are needed to cover expenses associated with contaminated soil, drainage issues, and structural steel protection. The funds will be utilized from the Fire Impact Fee.

Change Order # 4 requires a budget transfer from the Fire Impact Fee Fund in order to provide funding for the installation of wellpoint pumps for construction site drainage, to remove surface rust and paint the structural steel members of the fire training facility, as well as providing a contingency of funding.

Staff requests to transfer \$80,000 from the Fire Impact Fee Fund, providing \$36,816 for the wellpoint pumps and removal of surface rust and the remaining \$43,184 for contingency for any additional unanticipated expenditures. If funds reside in the project once it is completed, then, as per policy, all funds revert back to the fund balance accounts within the assigned fund or, in this case, back to the fire impact fee fund.

Project No.: FIR027

Funding Account No.: CAPITAL OUTLAY

Presenter: Robin Hayes

ATTACHMENTS:

1.	Budget Resolution No. 21-60 with exhibit	Bud Reso 21-60 Fund 311 Approp FB for the Fire Training Tower -FIR027.pdf
----	--	---

Joe Wulfing
Joe Wulfing

Created/Initiated - 9/28/2021
Approved - 9/29/2021

Lupe Reyna-Coffin	Approved - 10/4/2021
Robin Hayes	Approved - 10/4/2021
Matthew Jones	Approved - 10/7/2021
Wayne Clark	Approved - 10/12/2021
Robin Fenwick	New - 1/1/1900

RESOLUTION NO. 21-60

A RESOLUTION OF THE CITY OF PORT ORANGE,
VOLUSIA COUNTY, FLORIDA, APPROPRIATING
OPERATING FUNDS FOR THE FISCAL YEAR 2022
BUDGET; TO APPROPRIATE FUND BALANCE OF \$80,000
IN THE FIRE IMPACT FEE FUND (311) CAPITAL OUTLAY
FOR THE FIRE TRAINING TOWER PROJECT (FIR027) AND
SETTING FORTH REVENUES AND EXPENDITURES; AND
PROVIDING AN EFFECTIVE DATE.

WHEREAS The City Council desires to designate and appropriate funds in the amount of \$80,000 from the Fire Impact Fee Fund (311) to provide additional funding for the Fire Training Tower (Project FIR027); and

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF PORT ORANGE, VOLUSIA COUNTY, FLORIDA:

Section 1. The funds for the City operating items are hereby appropriated as set forth in Composite Exhibit A, attached hereto, which reflects revenues and corresponding expenditures for the designated expenditures.

Section 2. The Budget item adopted in the preceding section shall govern the expenditures relating to such operations for the City during the current fiscal year effective October 1, 2021 through September 30, 2022.

Section 3. Supplemental appropriations, reductions of appropriations, emergency appropriations, and interdepartmental transfers of appropriations may be effected by the City Council and the City Manager as deemed necessary in strict compliance with the procedures specified in Chapter 2, Article VI, Division 3, Code of Ordinances, City of Port Orange, Florida.

Section 4. This resolution shall become effective immediately upon adoption

MAYOR DONALD O. BURNETTE

ATTEST:

Robin L. Fenwick, MMC City Clerk

Adopted on the _____ day of _____

Reviewed and Approved: _____
Matthew J. Jones, City Attorney

FY2022 Fire Impact Fees Fund (311)
 Prepared: October 4, 2021
 Finance: Finance Staff

	<u>Budget Increase / (Decrease)</u>
<u>Revenues:</u>	
Appropriated Equity	(80,000)
Total Revenues:	<u>\$ (80,000)</u>
<u>Expenditures:</u>	
Capital Outlay	80,000
Total Expenditures:	<u>\$ 80,000</u>

To budget for Appropriation of additional funds to complete the Fire Training Tower (Project FIR027) and provide funding for unanticipated costs, for a Total Project budget of \$893,405. Additional funds are needed to cover Change Order #4 (\$5,600) and #5 (\$ 32,000) to the A.G. Pifer Construction contract, project currently has a shortfall of \$11,166. Total projected Project Costs to complete = \$862,171

Available Fund balance after this appropriation is \$196,000



CITY COUNCIL AGENDA ITEM

REQUESTED COUNCIL MEETING DATE 10/19/2021

Consent item: Yes

SUBJECT: (C12b) Approval of Change Order #4 to A.G. Pifer Construction Services Co., Inc. to extend the completion date of the fire training facility project by 60 days, to include the installation of well-points, removal of surface rust, and application of paint to the structural steel members of the fire training facility in the amount of \$36,815.60

DEPARTMENT: Fire/Rescue Services

GOAL: 1 - Public Safety

RECOMMENDED MOTION: Move to approve Change Order #4 to A.G. Pifer subject to the approval of Budget Resolution No. 21-60.

SUMMARY: The Fire Department is in the process of erecting a fire training facility located at the City's Public Works facility. The notice to proceed with the project was issued on 5/17/2021 with a 120-day completion date. The requested change order has created a delay in the completion date of the project, but no modifications to the building permit have been needed.

Change Order #4 includes 1) providing and installing wellpoint pumps for the construction site drainage; 2) removal of surface rust, and painting the structural steel members of the fire training facility and 3) a 60-day extension to the completion date.

1) The construction site is located slightly below the surrounding areas, and when A.G Pifer removed the asphalt, it became the draining point for the areas adjacent to the site. In addition, the area had consistent summer rains that produced large amounts of runoff, requiring the installation of well-points to pump the runoff to a nearby retention pond. The construction process will include the installation of 200 lineal feet of suction headers with well points installed 10' below the surface and 150 linear feet of discharge piping. The total cost for installing wellpoint pumps is \$5,600. When the fire training facility project is completed, the surrounding parking lot will be resurfaced to prevent future runoff issues.

2) The fire training facility structure arrived in June of this year. The steel girders were not protected with a sealant or paint to prevent them from rusting. In addition, the building's location is approximately a quarter-mile from the Halifax River. This has already resulted in surface rust to the structural supports. Therefore, it is imperative to protect the structural members with a sealant before the facility is fully assembled. The steel protection process involves pressure washing, applying a coat of acrylic metal primer, and applying acrylic DTM enamel paint. This protection is critical for the long-

term life expectancy of the building. The cost is \$31,215.60.

These services will require an additional 45 days for completion, and an additional 15 days for unforeseen conditions, adding a total of 60 days to the original contract term. All work required will cost \$36,815.60, and will be funded utilizing the Fire Impact Fee revenues.

Project No.: FIR027

Funding Account No.: CAPITAL OUTLAY

Presenter: Joe Wulfing

ATTACHMENTS:

1.	Change Order 4	AG Pifer Change Order 4 - Fire Tower.pdf
2.	AG Pifer CO4 Quote	Fire tower PO Change order #4 with paint.docx
3.	Executed Change Order 3	Executed Change Order 3.pdf
4.	Executed Change Order 2	Executed Change Order 2.pdf
5.	Executed Change Order 1	EXECUTED Change Order No. 1 (3).pdf
6.	NTP signed-City PO Fire Training Tower	NTP signed-City PO Fire Training Tower.PDF
7.	Executed ITB 20-14 AG Pifer Construction Co Inc Standard Contract for Services	EXECUTED ITB 20-14 AG Pifer Construction Co Inc Standard Contract for Services.pdf

kwilliams kwilliams

Created/Initiated - 9/28/2021

Joe Wulfing

Approved - 9/29/2021

Lupe Reyna-Coffin

Approved - 10/4/2021

Robin Hayes

Approved - 10/5/2021

Matthew Jones

Approved - 10/7/2021

Wayne Clark

Approved - 10/8/2021

Robin Fenwick

Final Approval - 10/8/2021

CHANGE ORDER NO. 4
To CA7405 dated 3/16/2021
A.G. PIFER CONSTRUCTION SERVICES CO., INC., Contractor

Project: Fire Training Tower (FIR027)

The following changes are hereby made to the Contract Documents:

CHANGE IN CONTRACT PRICE:	CHANGE IN CONTRACT TIMES:
Original Contract Price: \$407,751.04	Original Contract Times Final Completion 120 days (NTP Issued: May 17, 2021)
Net changes from previous Change Order: No. 1: \$6,200.00 No. 2: \$9,823.00 No. 3: \$16,573.75	Changes in contract time from previous Change Orders: N/A
Contract Price prior to this Change Order: \$440,374.99	Contract Completion Date prior to this Change Order: Final Completion: 9/14/2021
Net Increase (decrease) of this Change Order No. 4: \$36,815.60	Changes in contract time requested this Change Order No. 4: (Requires Council Approval) 60 days
Contract Price with all approved Change Orders: \$477,190.59	Contract Times with all approved Change Orders: Final Completion: 11/18/2021

CHANGES ORDERED:

- I. GENERAL: This Change Order is necessary to cover changes in the work to be performed under the Standard Contract for Services entered into by and between the parties on March 16, 2021.
 - a
- II. REQUIRED CHANGES: This change order covers: 1. Providing and installing a diesel wellpoint pump, 200 lineal feet of suction header with well points installed 10' below grade surface, 150 lineal feet of discharge piping, and monitoring well pumps as needed. 2. Pressure washing, application of a coat of acrylic metal primer, and application of an acrylic DTM enamel paint for rust prevention and long-term life expectancy of structure. These services will require an additional 45 days for completion, and an additional 15 days for unforeseen conditions, adding a total of 60 days to the original contract term. No goods shall be delivered, nor services commenced hereunder until this Change Order has been fully executed by all parties.
- III. JUSTIFICATION: The contract included excavation, foundation and erection of the Fire Department Training Tower; however, the site now requires dewatering and rust prevention for the steel structure that was previously an unknown expense for this project.

Changes in scope require Council approval. Is this a scope change? Yes
- IV. PAYMENT: Payment for this Change Order shall be made in accordance with the terms of the Standard Contract for Services subject to a limit not to exceed \$477,190.59. All payments shall be governed by the Local Government Prompt Payment Act as set forth in Florida Statutes Section 218.70 through 218.79, as amended.
- V. This Change Order may be executed in one or more counterparts, each of which shall be deemed to be an original but all of which together shall constitute one and the same instrument. The delivery by facsimile or e-mail of an executed copy of this Change Order shall be deemed valid as if an original signature was delivered. No contract shall be formed between the Contractor and the City until the City signs this Change Order.

Acknowledgments:

The aforementioned change, and work affected thereby, is subject to all provisions of the original contract not specifically changed by this Change Order;

It is expressly understood and agreed that the approval of the Change Order shall have no effect on the original contract other than matters expressly provided herein;

The prices quoted are fair and reasonable and in proper ratio to the cost of the original work contracted for under competitive bidding; and,

The change in price and/or delivery date described is considered to be fair and reasonable and has been mutually agreed upon in full agreement and final settlement of all claims arising out of this modification including all claims for delays and disruptions resulting from, caused by, or incident to such modifications and change orders.

RECOMMENDED BY:
FIRE & RESCUE DEPARTMENT
Department Project Manager

ACCEPTED BY:
A.G. PIFER CONSTRUCTION CO., INC.
Contractor

By: _____
Printed Name: Joe Wulfing, Fire Chief

By: _____
Printed Name: Anthony G. Pifer, President

Date Signed: _____

Date Signed: _____

RECOMMENDED BY:

City's Representative

RECOMMENDED BY:

Engineer of Record

By: _____
Printed Name: _____
Title: _____

By: _____
Printed Name: _____
Title: _____

Date Signed: _____

Date Signed: _____

APPROVED BY:
CITY OF PORT ORANGE
Department Head

By: _____
Printed Name: Joe Wulfing, Fire Chief

Date Signed: _____

City Manager

By: _____
Wayne Clark, City Manager

Date Signed: _____

If Council approval is required:

By: _____
Donald O. Burnette, Mayor

Affirmed:

Date Signed: _____

Robin L. Fenwick, MMC, City Clerk

Date Signed: _____



A.G. PIFER CONSTRUCTION CO. INC.

General Contractor License # CGC040437

3629 Old Deland Road

Daytona Beach, FL 32124

Ph: (386) 257-4448 Fx: (386) 257-5503

E-mail: agpiferinc@gmail.com

www.agpiferconstruction.com

August 18, 2021

Page #1 of 1
City of port Orange Fire Tower
407 Virginia Ave.
Port Orange, Florida

Change Order #4

We are pleased to hereby submit to provide Labor, Materials, Services and Supervision remove saturated ground water to continue footers and concrete work. Pressure wash and paint structural steel.

Dewatering Of Site

1. Provide and install diesel wellpoint pump, 200 lineal feet of suction header with well points installed 10' below grade surface, 150 lineal feet of discharge piping. Length of time for well pointing to be 2 weeks after installed. Monitoring well pumps as needed.

The total cost as stated in the scope of work above: **\$5,600.00**

Pressure wash, prep and paint Steel structure

1. Pressure wash all structural steel, prep, prime steel with one (1) coat of Benjamin Moore V110 Acrylic Metal Primer.
2. Provide and apply (1) coat of Benjamin Moore V331 Acrylic DTM enamel paint to all steel structure after steel is installed.

The total cost as stated in the scope of work above: **\$31,215.60**

Change order #4 total ...\$ 36,815.60

Time extension required 45 days to contract due to site conditions and whether.

Owner/Agent: Port Orange Fire Services

Contractor: A.G. Pifer Construction Co. Inc.

By: _____
Signature date

By: _____
Signature

Print Name and Title

Timothy Wade Caldwell PM/Estimator

Print Name and Title

Chief Joe Wulfing, if there are any questions regarding this Bid proposal, please do not hesitate to call me at 386-257-4448. Thank you for giving us the opportunity to be of service to you.

Sincerely,

Timothy Caldwell Project Manager/Estimator

CHANGE ORDER NO. 3
To CA7405 dated 3/16/2021
A.G. PIFER CONSTRUCTION CO., INC., Contractor

Project: Fire Training Tower (FIR027)

The following changes are hereby made to the Contract Documents:

CHANGE IN CONTRACT PRICE:	CHANGE IN CONTRACT TIMES:
Original Contract Price: \$407,751.04	Original Contract Times Final Completion 120 days
Net changes from previous Change Order: No. 1: \$6,200.00 No. 2: \$9,823.00	Changes in contract time from previous Change Orders: No. : ____ days N/A days
Contract Price prior to this Change Order: \$423,774.24	Contract Completion Date prior to this Change Order: Final Completion: 9/14/2021 date
Net Increase (decrease) of this Change Order No. 3: \$16,573.75	Changes in contract time requested this Change Order No. __: (Requires Council Approval) N/A days
Contract Price with all approved Change Orders: \$440,374.99	Contract Times with all approved Change Orders: Final Completion: 9/14/2021 date

CHANGES ORDERED:

- I. **GENERAL:** This Change Order is necessary to cover changes in the work to be performed under the Standard Contract for Services entered into by and between the parties on March 16, 2021.
- II. **REQUIRED CHANGES:** This change order covers: 1. Excavation and removal of another 1' layer or 144 cy of organic material, in addition to 40 cy of fuel contaminated soil contained securely on site. Import place up to 288 cy of additional clean compactable, remove debris from site; 2. Contaminated soil testing and removal. Labor to provide on-site project scientist, mobilization, soil sampling, oversight, project setup, soil loading, letter report, and soil disposal to proper facility, all contaminated debris to be removed from site.
- III. **JUSTIFICATION:** The contract included excavation, foundation and erection of the Fire Department Training Tower, however upon starting the project, the contractor discovered a small drainage pipe that was previously unknown to be on the property that need to be removed as well as unsuitable building soil.
Changes in scope require Council approval. Is this a scope change? No
- IV. **PAYMENT:** Payment for this Change Order shall be made in accordance with the terms of the Standard Contract for Services subject to a limit not to exceed \$16,573.75. All payments shall be governed by the Local Government Prompt Payment Act as set forth in Florida Statutes Section 218.70 through 218.79, as amended.
- V. This Change Order may be executed in one or more counterparts, each of which shall be deemed to be an original but all of which together shall constitute one and the same instrument. The delivery by facsimile or e-mail of an executed copy of this Change Order shall be deemed valid as if an original signature was delivered. No contract shall be formed between the Contractor and the City until the City signs this Change Order.

Acknowledgments:

The aforementioned change, and work affected thereby, is subject to all provisions of the original contract not specifically changed by this Change Order;

It is expressly understood and agreed that the approval of the Change Order shall have no effect on the original contract other than matters expressly provided herein;

The prices quoted are fair and reasonable and in proper ratio to the cost of the original work contracted for under competitive bidding; and,

The change in price and/or delivery date described is considered to be fair and reasonable and has been mutually agreed upon in full agreement and final settlement of all claims arising out of this modification including all claims for delays and disruptions resulting from, caused by, or incident to such modifications and change orders.

RECOMMENDED BY:
PORT ORANGE FIRE & RESCUE
Department Project Manager

By: Joe Wulfin
Joe Wulfin, Fire Chief

Date Signed: 9/15/21

RECOMMENDED BY:
N/A
City's Representative

By: _____
Printed Name: _____
Title: _____

Date Signed: _____

ACCEPTED BY:
A.G. PIFER CONSTRUCTION CO., INC.
Contractor

By: Anthony G. Pifer
Anthony G. Pifer, President

Date Signed: 9/3/2021

RECOMMENDED BY:
N/A
Engineer of Record

By: _____
Printed Name: _____
Title: _____

Date Signed: _____

APPROVED BY:
CITY OF PORT ORANGE
Department Head

By: [Signature]
Printed Name: Joe Wulfing
Title: Fire Chief

Date Signed: 9/21/2021

City Manager
By: N/A
Wayne Clark, City Manager

Date Signed: _____

If Council approval is required:

By: [Signature]
Donald O. Burnette, Mayor

Date Signed: 9/21/2021

Affirmed: [Signature]
Robin L. Fenwick, MMC, City Clerk

Date Signed: 9/21/2021



CHANGE ORDER NO. 2
To CA7405 dated 3/16/2021
A.G. PIFER CONSTRUCTION SERVICES CO., INC., Contractor

Project: Fire Training Tower (FIR027)

The following changes are hereby made to the Contract Documents:

CHANGE IN CONTRACT PRICE:	CHANGE IN CONTRACT TIMES:
Original Contract Price: \$407,751.04	Original Contract Times Final Completion 120 days
Net changes from previous Change Order: No. 1: \$ \$6,200	Changes in contract time from previous Change Orders: No. : ____ days N/A days
Contract Price prior to this Change Order: \$413,951.04	Contract Completion Date prior to this Change Order: Final Completion: 9/14/2021 date
Net Increase (decrease) of this Change Order No. 2: \$9,823.20	Changes in contract time requested this Change Order No. __: (Requires Council Approval) N/A days
Contract Price with all approved Change Orders: \$423,774.24	Contract Times with all approved Change Orders: Final Completion: 9/14/2021 date

CHANGES ORDERED:

- I. GENERAL: This Change Order is necessary to cover changes in the work to be performed under the Standard Contract for Services entered into by and between the parties on March 16, 2021.
- II. REQUIRED CHANGES: This change order covers 1. Excavate 4.5' 50'x75' area for the building and retain on site. 2. Remove 144 CY of existing buried organics approximately 1' layer and dispose of site. 3. Backfill up to 481 CY of existing dirt, Import and place up to 216 CY of clean compactable fill. No goods shall be delivered nor services commenced hereunder until this Change Order has been fully executed by all parties.
- III. JUSTIFICATION: The contract included excavation, foundation and erection of the Fire Department Training Tower, however upon starting the project, the contractor discovered a small drainage pipe that was previously unknown to be on the property that need to be removed as well as unsuitable building soil.
Changes in scope require Council approval. Is this a scope change? No
- IV. PAYMENT: Payment for this Change Order shall be made in accordance with the terms of the Standard Contract for Services subject to a limit up to but not to exceed \$9,823.20. All payments shall be governed by the Local Government Prompt Payment Act as set forth in Florida Statutes Section 218.70 through 218.79, as amended.
- V. This Change Order may be executed in one or more counterparts, each of which shall be deemed to be an original but all of which together shall constitute one and the same instrument. The delivery by facsimile or e-mail of an executed copy of this Change Order shall be deemed valid as if an original signature was delivered. No contract shall be formed between the Contractor and the City until the City signs this Change Order.

Acknowledgments:

The aforementioned change, and work affected thereby, is subject to all provisions of the original contract not specifically changed by this Change Order;

It is expressly understood and agreed that the approval of the Change Order shall have no effect on the original contract other than matters expressly provided herein;

The prices quoted are fair and reasonable and in proper ratio to the cost of the original work contracted for under competitive bidding; and,

The change in price and/or delivery date described is considered to be fair and reasonable and has been mutually agreed upon in full agreement and final settlement of all claims arising out of this modification including all claims for delays and disruptions resulting from, caused by, or incident to such modifications and change orders.

RECOMMENDED BY:

Department Project Manager

By: _____

Printed Name: Joe Wulfin

Title: Interim Fire Chief

Date Signed: 6/15/21

ACCEPTED BY:

Contractor

By: _____

Printed Name: ANTHONY GREGG PIFER

Title: PRESIDENT

Date Signed: 06/15/2021

RECOMMENDED BY:

City's Representative

By: _____

Printed Name: _____

Title: _____

Date Signed: _____

RECOMMENDED BY:

Engineer of Record

By: _____

Printed Name: _____

Title: _____

Date Signed: _____

APPROVED BY:
CITY OF PORT ORANGE
Department Head

By: [Signature]
Printed Name: Joe Wulfinq
Title: Interim Fire Chief

Date Signed: 6/15/21

City Manager

By: [Signature]
Wayne Clark, City Manager

Date Signed: 6/15/21

If Council approval is required:

By: N/A
Donald O. Burnette, Mayor

Date Signed: _____

Affirmed:

[Signature]
Robin L. Fenwick, MMC, City Clerk

Date Signed: 6/15/2021



CHANGE ORDER NO. 1
To CA7405 dated 3/16/2021
A.G. PIFER CONSTRUCTION SERVICES CO., INC., Contractor

Project: Fire Training Tower (FIR027)

The following changes are hereby made to the Contract Documents:

CHANGE IN CONTRACT PRICE:	CHANGE IN CONTRACT TIMES:
Original Contract Price: \$407,751.04	Original Contract Times Final Completion 120 days
Net changes from previous Change Order: No. __: \$ \$	Changes in contract time from previous Change Orders: No. __: __ days __ days
Contract Price prior to this Change Order: \$407,751.04	Contract Completion Date prior to this Change Order: Final Completion: 9/14/2021 date
Net Increase (decrease) of this Change Order No. 1: \$6,200.00	Changes in contract time requested this Change Order No. __: (Requires Council Approval) __ days
Contract Price with all approved Change Orders: \$413,951.04	Contract Times with all approved Change Orders: Final Completion: 9/14/2021 date

CHANGES ORDERED:

- I. GENERAL: This Change Order is necessary to cover changes in the work to be performed under the Standard Contract for Services entered into by and between the parties on March 16, 2021.
- II. REQUIRED CHANGES: This change order covers the demolition and removal of 792 sqft of concrete slab and footers located at north end of new building location that was previously unknown. No goods shall be delivered nor services commenced hereunder until this Change Order has been fully executed by all parties.
- III. JUSTIFICATION: The contract included excavation, foundation and erection of the Fire Department Training Tower, however upon starting the project, the contractor discovered and additional 792 sqft slab and footers that were previously unknown to be on the property that need to be removed.
Changes in scope require Council approval. Is this a scope change? No
- IV. PAYMENT: Payment for this Change Order shall be made in accordance with the terms of the Standard Contract for Services subject to a limit up to but not to exceed \$6,200.00. All payments shall be governed by the Local Government Prompt Payment Act as set forth in Florida Statutes Section 218.70 through 218.79, as amended.
- V. This Change Order may be executed in one or more counterparts, each of which shall be deemed to be an original but all of which together shall constitute one and the same instrument. The delivery by facsimile or e-mail of an executed copy of this Change Order shall be deemed valid as if an original signature was delivered. No contract shall be formed between the Contractor and the City until the City signs this Change Order.

Acknowledgments:

The aforementioned change, and work affected thereby, is subject to all provisions of the original contract not specifically changed by this Change Order;

It is expressly understood and agreed that the approval of the Change Order shall have no effect on the original contract other than matters expressly provided herein;

The prices quoted are fair and reasonable and in proper ratio to the cost of the original work contracted for under competitive bidding; and,

The change in price and/or delivery date described is considered to be fair and reasonable and has been mutually agreed upon in full agreement and final settlement of all claims arising out of this modification including all claims for delays and disruptions resulting from, caused by, or incident to such modifications and change orders.

RECOMMENDED BY:

Department Project Manager

By: [Signature]
Printed Name: Joe Wulfin
Title: Interim Fire Chief

Date Signed: 5/28/21

RECOMMENDED BY:

City's Representative

By: _____
Printed Name: _____
Title: _____

Date Signed: _____

ACCEPTED BY:

Contractor

By: [Signature]
Printed Name: [Signature]
Title: [Signature]

Date Signed: 6/1/21

RECOMMENDED BY:

Engineer of Record

By: _____
Printed Name: _____
Title: _____

Date Signed: _____

APPROVED BY:
CITY OF PORT ORANGE
Department Head

By: [Signature]
Printed Name: Joe Wulring
Title: Interim Fire Chief

Date Signed: 6/2/21

City Manager
By: [Signature]
Wayne Clark, City Manager

Date Signed: 6/3/21

If Council approval is required:

By: N/A
Donald O. Burnette, Mayor

Date Signed: _____

Affirmed:

[Signature]
Robin L. Fenwick, MMC, City Clerk

Date Signed: 6/3/2021





CITY OF PORT ORANGE NOTICE TO PROCEED

Issued By: Joe Wulfinf- Interim Fire Chief
Fire & Rescue Department
1090 City Center Blvd
Port Orange, FL 32129
Ph: (386) 506-5902
jwulfinf@port-orange.org

Issued To: A.G. Pifer Const. Company, Inc
Anthony G. Pifer-President
3629 Old Deland Rd
Daytona Beach, FL 32124
Ph (386) ~~532-2100~~ 251-4448
AGPiferinc@gmail.com

PROJECT TITLE: Training Facility / Tower (fir027)

Contract NO. CA 7405

This **Notice to Proceed** issued to your company is for the above referenced project and in accordance with the Scope of Work and all terms and conditions of the agreement between the City of Port Orange and A.G. Pifer Construction Company, Inc., contract services CA dated The **effective date** of this **Notice to Proceed** is May 17, 2021, with the project being substantially completed within 120 days of the NTP or September 14 2021.

Please sign below acknowledging and agreeing to the contents of this Notice to Proceed and return a copy of this form to the Project Manager, Joe Wulfinf at the address below:

Project Manager: City of Port Orange, Fire Rescue Department
1090 City Center Boulevard, Port Orange, FL 32129

All future correspondence or requests for changes to the contract must be addressed to the Project Manager.

ISSUED BY:

Owner: City of Port Orange

This 12th day of May 2021.

By: 
Joe Wulfinf

Title: Interim Fire Chief

ACCEPTANCE NOTICE:

Receipt of the foregoing Notice to Proceed is hereby acknowledged and agreed by:

Company: A.G. Pifer Construction Company, Inc.

This 12th day of May 2021.

By: 

Title: PRESIDENT



CITY OF PORT ORANGE STANDARD CONTRACT FOR SERVICES

This Standard Contract for Services ("Contract") is entered into this 16 day of March, 2021, by and between the **CITY OF PORT ORANGE**, a Florida municipal corporation, whose principal address is 1000 City Center Circle, Port Orange, Florida 32129 (the "City"), and **A.G. PIFER CONSTRUCTION CO., INC.**, a Florida corporation whose principal address is 3629 Old DeLand Road, Daytona Beach, Florida 32124 ("Contractor"). The City and Contractor are collectively referred to herein as the "Parties."

1. Provision of Services

(a) The Contractor hereby agrees to provide to the City, Fire Department training tower excavation, foundation and erection, pursuant to Intent to Bid 20-14 ("ITB 20-14"). This Contract together with ITB 20-14, Addendum No. 1, Addendum No. 2, Attachment "A" Bid Set Drawings, and Contractor's proposal, all of which may be referred to as the "Contract" and all of which are made a part hereof by reference shall constitute the formal written contract between the City and Contractor. For convenience, Section 3, Scope of Services, Attachment "A" Bid Set Drawings, Addendum No. 1, and Addendum No. 2 of ITB 20-14 and the Bid Tabulation as submitted by Contractor in Contractor's Proposal, are attached hereto as **Exhibit "1"**. A complete copy of ITB 20-14, Addendums, and Contractor's Proposal are available in the Office of the City Clerk. Contractor represents that they are familiar with the documents that make up the Contract, as referenced hereinabove.

(b) The time, manner and place for performance of such services shall be:

Term: This term of this Contract shall become effective on the last date the Contract is signed by the Parties ("Effective Date"). Work shall commence upon issuance of a written Notice to Proceed and shall be completed 120 days thereafter ("Term").

Manner and Place: The work shall be performed in accordance with and in a manner as required by all current federal, state, county, fire, building and land development codes, laws, ordinances and regulations, and with applicable permits and licenses per the City Code of Ordinances.

Time and Essence: Contractor acknowledges that time is of the essence for this Contract.

Authorization for Services: This Contract standing alone does not authorize the purchase of any goods or services or require the City to place any orders for goods or service. Authorization for the purchase of goods or services from Contractor under this Contract shall be upon issuance of a Notice to Proceed and a written Purchase Order issued by the City and executed by the City Manager. The City reserves the right to contract with other parties for the goods and services contemplated by this Contract, as determined in the City's sole and absolute discretion.

2. City Obligations. In return for the services identified above, the City agrees to compensate the Contractor at the pricing set forth in Exhibit "1," attached hereto, in an amount not to exceed Four Hundred Seven Thousand Seven Hundred Fifty-One and 04/100 Dollars (\$407,751.04). All payments shall be governed by the Local Government Prompt Payment Act as set forth in Sections 218.70 through 218.79, Florida Statutes, as amended.

3. Contract Documents. The following forms, attached as Exhibit "2," are an integral part of this Contract and must be completed, signed, witnessed and notarized as indicated and returned with the signed Contract:

- a. Front Page for Bond (F.S. § 255.05)
- b. Combination Payment and Performance Bond (F.S. § 255.05)

4. Contract Administration. The Fire Chief, Ken Fustin, shall perform contract administration of this Contract. The City may change the contract administrator, from time to time and at any time, upon written notice to Contractor. For notice provisions, see the paragraph below entitled "Notice."

5. Liens. Contractor acknowledges that Contractor shall not be entitled to lien the City or other public property.

6. Termination for Convenience of the City

(a) The parties agree that the City may terminate this Contract, or any work or delivery required hereunder, from time to time either in whole or part, whenever the City Manager of Port Orange shall determine that such termination is in the best interest of the City.

(b) Termination, in whole or in part, shall be effected by delivery of a Notice of Termination signed by the City Manager or his designee, mailed or delivered to the Contractor, and specifically setting forth the effective date of termination.

(c) Upon receipt of such Notice, the Contractor shall:

- (i) cease any further deliveries or work due under this Contract, on the date, and to the extent, which may be specified in the Notice;
- (ii) place no further orders with any subcontractors except as may be necessary to perform that portion of this Contract not subject to the Notice;
- (iii) terminate all subcontracts except those made with respect to contract performance not subject to the Notice;
- (iv) settle all outstanding liabilities and claims which may arise out of such termination, with the ratification of the Finance Director of Port Orange; and
- (v) use best efforts to mitigate any damages which may be sustained by the Contractor as a consequence of termination under this clause.

(d) After complying with the provisions of subparagraph (c), above, the Contractor shall submit a termination claim, in no event later than six (6) months after the effective date of termination, unless one or more extensions of three (3) months each are granted by the Finance Director.

(e) The Finance Director, with the approval of the City Manager, shall pay from the using department's budget, reasonable costs of termination, including a reasonable amount for profit on supplies or services delivered or work completed. In no event shall this amount be greater than the original contract price, reduced by any payments made prior to Notice of Termination, and further reduced by the price of the supplies not delivered or the services not provided. This Contract shall be amended accordingly, and the Contractor shall be paid the agreed amount.

(f) In the event that the parties cannot agree on the whole amount to be paid to the Contractor by reason of termination under this clause, the Finance Director shall pay the Contractor the amounts determined as follows, without duplicating any amounts which may have already been paid under the preceding paragraph of this clause:

- (i) With respect to all Contract performance prior to the effective date of Notice of Termination, the total of:
 - (1) the cost of work performed or supplies delivered;
 - (2) the cost of settling and paying any reasonable claims as provided in paragraph (c) (iv), above;
 - (3) a sum as profit on (a) determined by the Finance Director to be fair and reasonable.
- (ii) The total sum to be paid under (i) above shall not exceed the contract price, as further reduced by the contract price of work or supplies not terminated.

(g) In the event that the Contractor is not satisfied with any payments which the Finance Director shall determine to be due under this clause, the Contractor may appeal any claim to the City Council in accordance with Paragraph 23 of this contract concerning disputes.

7. Termination for Convenience for Subcontractors. In accordance with the termination for the convenience of the City provision of this contract, the Contractor shall include similar provisions in any subcontract, and shall specifically include a requirement that subcontractors make all reasonable efforts to mitigate damages which may be suffered. Failure to include such provisions shall bar the Contractor from any recovery from the City whatsoever of loss or damage sustained by a subcontractor as a consequence of termination for convenience.

8. Termination for Default. Either party may terminate this Contract, without further obligation, for the default of the other party or its agents or employees with respect to any agreement or provision contained herein. In the event of default by the contractor, the City reserves the right to procure the item(s) bid from other sources and holds the bidder responsible for excess costs incurred as a result. City Council may elect to refrain from doing business with the bidder as stipulated in City Code 2-276 Suspension and Disbarment.

9. Examination of Records

(a) The Contractor agrees that the City, or any duly authorized representative, shall, until the expiration of five (5) years after final payment hereunder, have access to and the right to examine and copy any pertinent books, documents, papers and records of the Contractor involving transactions related to this Contract.

(b) The Contractor further agrees to include in any subcontract for more than \$10,000 entered into as a result of this Contract, a provision to the effect that the subcontractor agrees that the City or any duly authorized representative shall, until the expiration of five (5) years after final payment under the subcontract, have access to and the right to examine and copy any pertinent books, documents, papers and records of such contractor involved in transactions related to such subcontract, or this Contract. The term subcontract as used herein shall exclude purchase orders for public utility services at rates established for uniform applicability to the general public.

(c) The period of access provided in subparagraphs (a) and (b) above for records, books, documents and papers which may relate to any arbitration, litigation, or the settlement of claims arising out of the performance of this contract or any subcontract shall continue until any appeals, arbitration, litigation or claims shall have been finally disposed of.

10. Public Records Compliance. Contractor shall comply with public records laws as set forth in Chapter 119, Florida Statutes, and shall specifically:

- (a) Keep and maintain public records required by the City to perform the service.

(b) Upon request from the City's custodian of public records, provide the City with a copy of the requested record or allow the records to be inspected or copied within a reasonable time at a cost that does not exceed the cost provided in Section 119, Florida Statutes, or as otherwise provided by law.

(c) Ensure that public records that are exempt from public records disclosure requirements are not disclosed except as authorized by law for the duration of the Contract term and following completion of the Contract if the Contractor does not transfer the records to the City.

(d) Upon completion of the Contract, Contractor shall transfer to the City, at no cost, all public records in possession of the Contractor and destroy any duplicate public records that are exempt from public records disclosure requirements. All records stored electronically must be provided to the City, upon request from the City's custodian of public records, in a format that is compatible with the information technology systems of the City.

If Contractor does not comply with a public records request, the City shall deem the non-compliance a breach of this Contract, and the Contractor may be subject to penalties under Section 119.0701, Florida Statutes.

CONTRACTOR QUESTIONS RELATING TO CONTRACTOR'S DUTIES TO PROVIDE PUBLIC RECORDS RELATING TO THIS CONTRACT MUST BE FORWARDED TO THE OFFICE OF THE CITY CLERK, CITY HALL, 1000 CITY CENTER CIRCLE, PORT ORANGE, FLORIDA 32129; TELEPHONE: (386) 506-5563; E-MAIL: CITYCLERK@PORT-ORANGE.ORG.

11. Termination for Non-Appropriation of Funds

(a) If funds are not appropriated for any succeeding fiscal years subsequent to the one in which this contract is entered into, for the purpose of this Contract, then the City may terminate this Contract upon thirty (30) days prior written notice to the Contractor. Should termination be accomplished in accordance with this Section, the City shall be liable only for payments due through the date of termination.

(b) The City agrees that should it terminate in accordance with this Section, it shall not obtain services which are substantially equal to or similar to those for which this contract was entered into. This provision shall survive any termination of the Contract.

12. Insurance. Contractor shall maintain insurance, as required herein, during the life of this Contract. Contractor shall provide to the City, a certificate of insurance endorsing the City of Port Orange as an additional named insured. All insurance coverages of the Contractor shall be primary and non-contributory. All insurance coverages of the Contractor shall not seek contribution from any other insurance or self-insurance available to the City. For workers' compensation coverage, the Contractor's insurance certificate shall include the insurer's waiver of subrogation in lieu of endorsing the City as an additional insured for workers' compensation. The City shall not accept Workers' Compensation Exemptions. Contractor may use leased employees if the Contractor ensures that all workers who access the jobsite are employees covered by the employee leasing company, and no non-employees are permitted to access the jobsite. Any Contractor using a leased employee shall complete the City's Leased Employee Affidavit Form Exhibit. Policies for Workers' Compensation may be issued by companies authorized as a group self-insurer by F.S. 440.572.

Policies other than Workers' Compensation shall be issued by insurers licensed and/or duly authorized under Florida Law to do business in the State of Florida and all insuring companies are required to have a minimum rating of "A-" in the "Best Key Rating Guide" published by A.M. Best & Company, Inc. Contractor shall not commence work under this Contract until the City has received a certificate or certificates of insurance with endorsement evidencing the required insurance. Insurer shall provide the City written notice of cancellation, nonrenewal or any other changes in coverage no later than thirty (30) days prior to the effective date of the change and shall provide notice to the City

no later than 10 days after non-payment. The Certificates of Insurance and required insurance policies shall contain provisions that thirty (30) days prior written notice shall be given to the City of any cancellation, intent not to renew, or reduction in the policies or coverages.

Contractor shall require and ensure each of its subcontractors to maintain, until the completion of the subcontractor's work, insurance of the types and to the limits set forth herein. All insurance coverages shall be primary and non-contributory. All insurance coverages of the subcontractors shall not seek contribution from any other insurance or self-insurance available to the City. The Contractor is responsible for ensuring that its subcontractors maintain the required coverage. Failure of the Contractor to ensure the subcontractors maintain the required coverage, shall not relieve the Contractor of any contractual responsibility, obligation or liability.

The City reserves the right to increase insurance coverage as determined for higher risk contracts.

The acceptance by the City of any Certificate of Insurance does not constitute approval or agreement by the City that the insurance requirements have been satisfied or that the insurance policy shown on the Certificate of Insurance is in compliance with this Contract and does not waive the insurance required by this Contract.

Should at any time the Contractor or subcontractors not maintain the insurance coverages required herein, the City may terminate the Contract or at its sole discretion shall be authorized to purchase such coverages and charge the Contractor for such coverages purchased. The City shall be under no obligation to purchase such insurance, nor shall it be responsible for the coverages purchased or the insurance company or companies used. The decision of the City to purchase such insurance coverages shall in no way be construed to be a waiver of any of its rights under the Contract.

Standard Insurance Requirements											
	Insurance	Standards	Additional Requirements								
☒	<u>Workers' Compensation</u> The Contractor shall maintain coverage for its employees with statutory workers' compensation limits, and no less than the limits indicated in the Schedule of Limits for Employers' Liability. Said coverage shall include a waiver of subrogation in favor of the City. The City will not accept elective exemptions. Any contractor using an employee leasing company shall complete the Leased Employee Affidavit Form Exhibit.	<table><tr><td><u>Contract Amount</u></td><td><u>Limits</u></td></tr><tr><td>Up to \$10 million</td><td>Statutory/\$500,000</td></tr><tr><td>\$10 - \$20 million</td><td>Statutory/\$1,000,000</td></tr><tr><td colspan="2">Contracts over \$20 million To Be Determined by the City.</td></tr></table>	<u>Contract Amount</u>	<u>Limits</u>	Up to \$10 million	Statutory/\$500,000	\$10 - \$20 million	Statutory/\$1,000,000	Contracts over \$20 million To Be Determined by the City.		☐ If Contract requires work on or about navigable waters, Longshoreman's and Harbor Workers' Coverage required. ☐ If vessels involved, Jones Act coverage with limits of \$500,000 required.
<u>Contract Amount</u>	<u>Limits</u>										
Up to \$10 million	Statutory/\$500,000										
\$10 - \$20 million	Statutory/\$1,000,000										
Contracts over \$20 million To Be Determined by the City.											
☒	Comprehensive General Liability (including Completed Operations and Contractual Liability	<u>Limits:</u> Combined Single Limit Bodily Injury and Property damage \$1,000,000 occurrence \$1,000,000 aggregate	☐ When work is on or under Railroad rights of way or properties, the Contractor shall take out and maintain during the life of the Contract, Railroad protective liability and property damage insurance in amounts as requested by the Railroad.								

☒	Comprehensive Business, Automobile Liability to include all owned, hired and non-owned automobiles.	Limits: Auto Liability Body Injury and Property Damage: \$1,000,000 each occurrence \$1,000,000 aggregate	
Additional Insurance Requirements			
☒	Property Insurance Builders Risk. <u>Additional Coverage:</u>	Limits: Buildings - Completed value of Contract. "All Risk" coverage on latest ISO for or its equivalent. Permission granted to occupy. Owner named as insured AIMA	If Agreement requires handling or installation of Owner's equipment, coverage should be furnished on "All Risk" form, including transit and Owner shall be named.
☐	Professional Liability	Limits: Coverage - \$1,000,000	
☐	Installation Floater (IT)	Limits: Coverage - \$ <u>To be determined.</u>	
☐	Contractor Pollution Liability	Limits: Coverage - \$1,000,000	
☐	Errors and Omissions	Limits: Coverage - \$1,000,000	
☐	Umbrella Policy	Limits: Coverage - \$ <u>To be determined.</u>	
☒	Payment and Performance Bond Required	Limits: Coverage - Equal to amount of Contract.	
☐	City Manager waives Payment and Performance Bond for work under \$25,000.00.		
☐	Unless otherwise required by law, City Manager waives Insurance for FOB goods under \$25,000.00.		

13. A Contract for the purchase of supplies shall be governed by the City of Port Orange Code of Ordinances, as amended, and such supplies shall be deemed "goods," as defined therein.

14. Assignability of Contract. Neither this contract, nor any part hereof, may be assigned by the Contractor to any other party without the express written approval of the City Council.

15. Modifications or Changes to this Contract

(a) Change Orders. The Department Head, with the concurrence of the City's signatory as required by the City's Purchasing Policy, shall without notice to any sureties, have the authority to order changes in this Contract which affect the cost or time of performance. Such changes shall be ordered in writing specifically designated to be a change order. Such orders shall be limited to reasonable changes in the services to be performed or the time of the performance. The City will not be held liable for any changes which have not been properly authorized and approved in accordance with this Contract.

(b) If any change under this clause causes an increase or decrease in Contractor's cost of, or time required for the performance of the work hereunder, Contractor shall receive an equitable adjustment in accordance with subparagraph (d), which shall include all compensation to the Contractor, or the City, of any kind in connection with such change, including all costs and damages related to or incidental to such change.

(c) Contractor need not perform any work described in any change order unless it has received a certification from the City that there are funds budgeted and appropriated sufficient to cover the cost of such changes.

(d) No claim for changes ordered hereunder shall be considered if made after final payment in accordance with the Contract.

16. Sovereign Immunity. The City expressly retains all rights, benefits and immunities of sovereign immunity in accordance with Section 768.28, Florida Statutes. Notwithstanding anything set forth in any section of this Contract

to the contrary, nothing in this Contract shall be deemed as a waiver of immunity or limits of liability of the City beyond any statutory limited waiver of immunity or limits of liability which may have been adopted by the Florida Legislature or may be adopted by the Florida Legislature and the cap on the amount and liability of the City for damages regardless of the number or nature of claims in tort or equity shall not exceed the dollar amount set by the legislature for tort. Nothing in this Contract shall inure to the benefit of any third party for the purpose of allowing any claim against the City which would otherwise be barred under the Doctrine of Sovereign Immunity or operation of law.

17. Warranties. Contractor warrants that (1) the supplies to be provided to the City pursuant to this Contract are fit and sufficient for the purpose intended; (2) the supplies are merchantable, of good quality, and free from defects, whether patent or latent, in material or workmanship, and (3) the supplies sold to the City pursuant to this Contract conform to the standards required by this Contract.

Contractor further warrants that Contractor has title to the supplies provided, and that the supplies are free and clear of all liens encumbrances, and security interests. All warranties made in this Contract, together with service warranties and guarantees, shall run to the City and its successors and assigns.

18. Additional Warranties. Contractor further expressly warrants that materials and workmanship are warranted from defect for a one-year period. This is a minimum acceptable warranty.

19. Additional Bond Security. If any surety bond furnished in connection with this Contract becomes unacceptable to the City, Contractor shall promptly furnish such additional security as may be required from time to time to protect the interests of the City and a person supplying labor and materials in the prosecution of work contemplated by this Contract. Contractor expressly acknowledges that if the work to be performed hereunder is a public work, a Payment and Performance Bond, in accordance with Florida Statutes Section 255.05, in a form acceptable to the City, shall be provided and recorded with the Clerk of Volusia County at Contractor's expense.

20. Inspection

(a) All supplies (which term throughout this clause includes without limitation raw materials, components, intermediate assemblies, and their products) shall be subject to inspection and test by the City, to the extent practicable at all times and places including the place of manufacturer, and in any event prior to acceptance.

(b) In the event any supplies or lots of supplies are defective in material or workmanship, or otherwise not in conformity with the requirements of this Contract, the City shall have the right either to reject them (with or without instructions as to their disposition) or to require their correction. Supplies or lots of supplies which have been rejected or required to be corrected shall be removed or, if permitted or required by the Finance Director, corrected in place by and at the expense of Contractor promptly after notice, and shall not thereafter be tendered for acceptance unless the former rejection or requirement of correction is disclosed. If Contractor fails promptly to remove such supplies or lots of supplies which are required to be removed or promptly to replace or correct such supplies or lots of supplies, the City may either (i) by contract or otherwise replace or correct such supplies and charge Contractor the cost for such replacement or correction; or (ii) may terminate this Contract for default as provided in the clause of this Contract entitled "Termination for Default." Unless Contractor corrects or replaces such supplies within the delivery schedule, the Finance Director may require the delivery of such supplies at a reduction in price, which is equitable under the circumstances. Acceptance or rejection of the supplies shall be made as promptly as practicable after delivery, except as otherwise provided in this Contract. Failure to inspect and accept or reject supplies shall neither relieve Contractor from responsibility for such supplies as are not in accordance with the Contract requirements nor impose liability on the City therefor.

(c) The inspection and test by the City of any supplies or lots thereof does not relieve Contractor from any responsibility regarding defects or other failures to meet the Contract requirements, which may be discovered

prior to acceptance. Except as otherwise provided in this Contract, acceptance shall be conclusive except as regards latent defects, fraud, or such gross mistakes as amount to fraud.

21. Liability for Loss or Damage.

(a) Contractor shall be liable for any loss of, or damage to, City property caused by the negligence, recklessness, or intended wrongful misconduct of Contractor, his/its agents, servants and employees and shall indemnify and save the City harmless against all actions, proceedings, claims, demands, costs, damages and expenses, including attorney's fees, by reason of any suit or action brought for any actual or alleged injury to or death of any person or damage to property other than City property, resulting from the performance of the Contract by Contractor, his/its agents, servants and employees. Contractor shall submit a full written report to the Finance Director within twenty-four (24) hours following the occurrence of such damage, loss or injury.

(b) To the fullest extent permitted by law, in addition to the express duty to indemnify City when there is any causal connection between Contractor's work and any injury, loss, damage, death or property damage, Contractor expressly undertakes a duty to defend City as a separate duty, independent of and broader than the duty to indemnify. The duty to defend agreed to by Contractor hereby expressly include all costs of litigation, attorney's fees, settlement costs and reasonable expenses in connection with the litigation, whether or not the claims made for loss, injury, damage or property damage are valid or groundless and regardless of whether the defense of City is maintained by the City or assumed by Contractor as long as the claims made could be causally connected to Contractor as reasonable determined by City.

22. Non-discrimination. During the performance of this Contract, Contractor agrees as follows:

(a) Contractor will not discriminate against any employee or applicant for employment because of race, religion, color, sex, disability, marital status, age or national origin, except where such is a bona-fide occupational qualification reasonably necessary to the normal operation of Contractor. Contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices setting forth the provisions of this non-discrimination clause. Contractor agrees and fully supports and complies with the Americans with Disabilities Act of 1990.

(b) Contractor shall state in all solicitations or advertisements for employees placed by or on behalf of Contractor that Contractor is an equal opportunity employer.

(c) Notices, advertisements and solicitations placed in accordance with federal law, rule or regulation shall be deemed sufficient compliance with this provision. Contractor shall include the provisions of the foregoing subparagraphs (a), (b), and (c) in every subcontract or purchase order of over \$10,000 so that the provisions will be binding upon each subcontractor or vendor.

23. Disputes. The City Manager, who shall reduce his decision to writing and mail or otherwise furnish a copy thereof to Contractor, shall decide disputes with respect to this Agreement. The decision by the City Manager shall be final and binding unless, within five (5) business days from the date of delivery of the decision of the City Manager, appeal is made to the City Council in writing and delivered to the City Clerk, Robin L. Fenwick, MMC. The decision of the City Council shall be final and binding unless set aside by a court of competent jurisdiction as fraudulent, capricious, arbitrary, or so grossly erroneous as necessary to imply bad faith, or not to be supported by any evidence.

24. Force Majeure. Neither party shall be liable for any delay in performance or failure to perform any obligation hereunder if, and to the extent that, such failure or delay is caused by an event of Force Majeure. Force Majeure shall mean any act, event or condition that is beyond the party's reasonable control, that materially and adversely

affects the party's ability to perform its obligations hereunder, and that is not the result of the party's willful neglect, error, omission or failure to exercise reasonable due diligence.

25. Controlling Law. **THIS AGREEMENT CONTAINS IMPORTANT MATTERS AFFECTING LEGAL RIGHTS AND IS ACCEPTED AND ENTERED INTO IN FLORIDA AND ANY QUESTION REGARDING ITS VALIDITY, CONSTRUCTION, ENFORCEMENT, OR PERFORMANCE SHALL BE GOVERNED BY FLORIDA LAW. ANY LEGAL PROCEEDING ARISING FROM OR IN ANY WAY REGARDING THE AGREEMENT SHALL HAVE ITS VENUE LOCATED EXCLUSIVELY IN THE CIRCUIT COURT OF VOLUSIA COUNTY, FLORIDA, AND THE PARTIES HEREBY EXPRESSLY CONSENT AND SUBMIT THEMSELVES TO THE PERSONAL JURISDICTION AND VENUE OF THE COURT.**

26. Additional Provisions. This Contract includes all additional provisions as may have been outlined in written quotes and purchase orders and any attachments or exhibits to this Contract whether delivered herewith or subsequently approved as a part hereof, such as drawings or technical specifications prepared in the performance of this work. In the event of a conflict between any attachments or exhibits to this Contract, and this Contract, the language of this Contract shall control.

27. Integration. This Contract and the documents incorporated herein by reference shall constitute the whole agreement between the parties. There are no promises, terms, conditions, or obligations other than those contained herein, and this Contract shall supersede all previous communications, representations, or agreements, written or verbal, between the parties hereto.

28. Notice. For purposes of this agreement, notices shall be sent as follows:

City:	City of Port Orange Attention: City Manager 1000 City Center Circle Port Orange, Florida 32129 (386) 506-5501
Copy to:	City of Port Orange Attention: Ken Fustin, Fire Chief 1000 City Center Circle Port Orange, Florida 32129 (386) 506-5910
Contractor:	A.G. Pifer Construction Co., Inc. Attention: Anthony G. Pifer, President 3629 Old DeLand Road Daytona Beach, Florida 32124 (386) 257-4448 – Telephone (386) 257-5503 – Facsimile AGPiferinc@gmail.com

Any notice or other communication given under the Contract will be in writing and delivered by hand, sent by facsimile (provided acknowledgement of receipt thereof is delivered to the sender), sent by certified, registered mail, or sent by any nationally recognized overnight courier service to the addresses provided herein. The parties may, from time to time and at any time, change their respective addresses and each will have the right to specify as its address any other address by at least 10 days written notice to the other party.

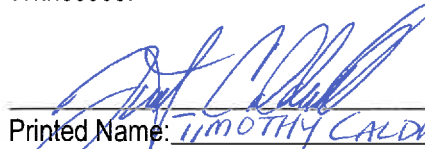
29. Contract Construction

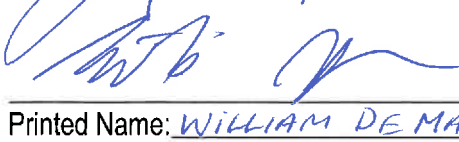
This Agreement may be executed in one or more counterparts, each of which shall be deemed to be an original but all of which together shall constitute one and the same instrument. The delivery by facsimile or e-mail of an executed copy of this Agreement shall be deemed valid as if an original signature was delivered. No contract shall be formed between Contractor and the City until the City signs this Agreement.

30. Authority to Sign. Each person signing this Agreement warrants that he or she is duly authorized to do so and to bind the respective party to the Agreement.

[Remainder of this page intentionally left blank]

Witnesses:


Printed Name: TIMOTHY CALDWELL


Printed Name: WILLIAM DEMATTIA

A.G. PIFER CONSTRUCTION CO., INC.

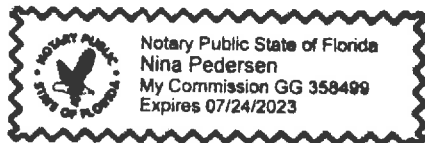
By: 
Anthony G. Pifer, President

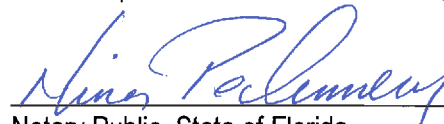
If this Contract is signed by an individual not identified as the President of the corporation in the records of the Florida Department of State, Division of Corporations, please provide written authorization for that individual to enter into contracts on behalf of the corporation.

Date: 03/01/2021

STATE OF FLORIDA
COUNTY OF VOLUSIA

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ___ online notarization, this 1 day of MARCH, 2021, by Anthony G. Pifer, as President of A.G. Pifer Construction Co., Inc., a Florida corporation. He is ☒ personally known or ___ produced ___ as identification.




Notary Public, State of Florida
Printed, typed or stamped name, commission and expiration:

Witnesses:

CITY OF PORT ORANGE

Printed Name: Donna Miller

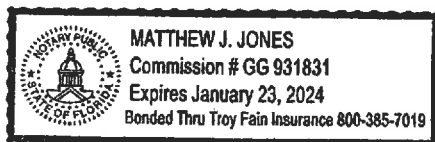
By: [Signature]
Donald O. Burnette, Mayor

Printed Name: Matt Jones

Date: 3/16/2021

STATE OF FLORIDA
COUNTY OF VOLUSIA

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization, this 16th day of Mar., 2021, by Donald O. Burnette, as Mayor of the City of Port Orange, a Florida municipal corporation, on behalf of the city. He is ☒ personally known or ☐ produced as identification.



[Signature]
Notary Public, State of Florida
Printed, typed or stamped name, commission and expiration:

Witnesses:

ATTEST:

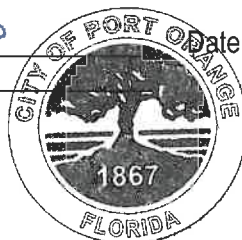
Printed Name: Jamie Miller

By: [Signature]
Robin L. Fenwick, MMC, City Clerk

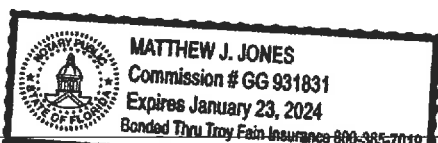
Printed Name: Matt Jones

Date: 3/16/2021

STATE OF FLORIDA
COUNTY OF VOLUSIA



The foregoing instrument was acknowledged before me, by means of ☒ physical presence or ☐ online notarization, this 16th day of Mar., 2021, by Robin L. Fenwick, as City Clerk of the City of Port Orange, a Florida municipal corporation, on behalf of the city. She is ☒ personally known or ☐ produced as identification.



[Signature]
Notary Public, State of Florida
Printed, typed or stamped name, commission and expiration:

CITY OF PORT ORANGE - STANDARD CONTRACT FOR SERVICES - A.G. PIFER CONSTRUCTION CO., INC.
ITB 20-14 FIRE TRAINING TOWER EXCAVATION, FOUNDATION & ERECTION - [CA 7405]

Page 12

EXHIBIT "1"

Contractor's Quote

Consisting of 87 Pages

**"ATTACHMENT 1" ITB 20-24 SCHEDULE OF UNIT PRICING****BID FORM****CITY OF PORT ORANGE****ITB 20-14 Fire Department Training Tower Excavation, Foundation and Erection**Completed Attachment 1 Bid Proposal form **MUST** be included with Bid Submission

Instruction to save Attachment from Demandstar website:

Perform "File Save As" and save spreadsheet to your computer. Fill in pricing in the highlighted cells electronically.

Bidders are required to complete all fields shaded in green. All other fields will be automatically calculated, if submitted electronically.

NAME OF BUSINESS: AG Pifer Construction Company, Inc.**CONTACT PERSON:** Anthony Gregg Pifer**EMAIL ADDRESS:** AGPiferInc@gmail.com**AUTHORIZED SIGNATURE:**

ITEM #	DESCRIPTION	QTY	UNIT	TOTAL UNIT COST	EXTENDED COST
A	PROJECT ITEMS				
1	Mobilization/Demobilization	1	LS	\$ 90,120.00	\$ 90,120.00
2	Survey Layout & Staking	1	LS	\$ 6,000.00	\$ 6,000.00
3	Clearing	1	LS	\$ -	\$ -
4	Certified As-Built Survey	1	LS	\$ 3,500.00	\$ 3,500.00
				Part A Subtotal	\$ 99,620.00
B	SITE ITEMS				
1	Grading	1	LS	\$ 3,500.00	\$ 3,500.00
2	Subgrade Preparation	1	LS	\$ 5,000.00	\$ 5,000.00
3	6" Concrete Apron	76	CY	\$ 333.04	\$ 25,311.04
				Part B Subtotal	\$ 33,811.04
C	BUILDING/FOUNDATION ERECTION				
1	Building Foundation, Piers, Slab	1	LS	\$ 49,920.00	\$ 49,920.00
2	Building Erection (Building Furnished to Site)	1	LS	\$ 224,400.00	\$ 224,400.00
				Part C Subtotal	\$ 274,320.00
				TOTAL BID (Sum of Parts A, B and C)	\$ 407,751.04
Confirm the number of calendar days to complete upon receipt of PO:				\$ 120.00	Days
Shall warrant all materials, labor and workmanship for the minimum period of:				\$ 1.00	Years
AWARD: THIS BID WILL BE AWARDED TO THE LOWEST, RESPONSIVE, RESPONSIBLE BIDDER					

SECTION 3 – SCOPE OF WORK

1) SUMMARY OF WORK:

This is for the excavation, foundation and erection of the **FIRE DEPARTMENT TRAINING TOWER**. The work consists of furnishing all labor, equipment, and materials for the construction of the facilities consisting of, but not limited to, the following:

Provide all labor, materials, and equipment necessary to prepare the site, build the foundation for, and erect the Public Safety Training Facility in accordance with the plans and specifications contained herein. Coordination with the City's electrical contractor to allow the placement of electrical wire and conduit to be run from an existing building to the project site. Along with the training facility's foundation, a concrete slab will be installed with connections to an existing drive path. The training facility is a prefabricated, 5-story steel structure that requires certification from the manufacturer to erect. Arrangements shall be made by the successful bidder to provide the manpower and equipment to take delivery of and properly store on the project site, the prefabricated training facility structure. In addition to the above, the contractor shall furnish all equipment, labor, and tools as necessary to complete the work and restore the site area, while maintaining full compliance with all applicable local, state, and federal requirements including, but not limited to, those promulgated by the City of Port Orange, Volusia County, the Florida Department of Transportation, the Florida Department of Environmental Protection, the US Environmental Protection Agency, the St. Johns River Water Management District, and the Occupational Safety and Health Administration within the given time frame. All construction shall be in accordance with the City of Port Orange details and specifications.

2) DRAWINGS, SPECIFICATIONS, AND REQUIREMENTS:

See Pages 12-23 and 87-94 of this solicitation for Specifications and Drawings. You can find a separate PDF of this document on the City of Port Orange website at the link below:

<https://www.port-orange.org/bids.aspx>

Document Title:

- **“Attachment A” ITB 20-14 Bid Set - Drawings for Fire Department Training Tower Excavation, Foundation, and Erection**

3) PROJECT TIMELINE:

- Notice of Award: After Bid Opening and complete review of submitted bid information.
- Notice to Proceed: After Pre-Construction Meeting.
- Final Completion Time: Not to exceed One Hundred & Twenty (120) calendar days maximum from the Notice to Proceed.

[Remainder of this page left intentionally blank]

DIVISION 13 - SPECIAL CONSTRUCTION

SECTION 13121 - PRE-ENGINEERED STEEL FIRE TRAINING TOWER

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

Drawings and general provisions of the contract, including General and Supplementary Conditions and Specification Sections, apply to this Section.

1.2 SUMMARY:

This Section includes the following:

- Fire Training Tower
- Design requirements

1.3 RELATED SECTIONS:

The following Sections contain requirements that relate to this section:

1.4 REFERENCES:

1.4.1 American Iron and Steel Institute (AISI):

"Specification for the Design of Cold-Formed Steel Structural Members."

1.4.2 American Institute of Steel Construction (AISC):

"Manual of Steel Construction", Allowable Stress or Load and Resistance Factor Design.

1.4.3 American Society for Testing and Materials (ASTM) Publications:

ASTM A-36 "Standard Specification for Carbon Structural Steel"

ASTM A-123 "Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products"

ASTM A-653 "Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process"

ASTM A924 "Standard Specification for General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process"

1.4.4 National Fire Protection Association (NFPA):

NFPA 1402 – "Guide To Building Fire Training Service Centers"

NFPA 1403 – "Standard On Live Fire Training Evolutions"

1.4.5 Occupational Safety and Health Standards (OSHA):

29 CFR 1910.23 – "Ladders"

29 CFR 1910.25 – "Stairways"

29 CFR 1910.29 – "Fall Protection Systems and Falling Object Protection"

PART 2-DESCRIPTION

FIRE TRAINING SIMULATOR

2.1 PURPOSE:

This structure will be used to provide training for fire fighters and leaders in controlled environments, which replicate actual conditions.

2.2 GENERAL:

The tower shall utilize a structural steel frame system and curtain wall design. Structural framing systems are considered the norm for high-rise and commercial structures. The curtain wall/exterior wall panel design produces an ideal buffer or protection between the main structural frame of our building and any exterior elements, so that if an exterior wall panel is damaged (i.e., fire truck hits the side of the tower) no structural damage is likely to occur. This wall panel system also creates a flat surface ideal for ladder or rappelling anywhere on the tower to simulate actual street conditions.

2.3 STRUCTURAL INTEGRITY:

The wind loads, deck and the roof loads stated herein represent the standard criteria. Increased loadings, as may be dictated by local jurisdictions, will be accommodated. The primary structural system shall utilize hot-rolled structural steel column and beam frames sized to meet and exceed the loads as indicated. This training simulator shall be considered a non-building structure for both code compliance and load interpretation. The primary and secondary structural system shall also meet and exceed the loads as indicated while maintaining a maximum deflection of L/240.

2.4 CODE COMPLIANCE:

The training simulator's primary structural and seismic design shall be in accordance with the building code having jurisdiction in the area of the project. Due to the nature of the intended use of these training towers, the stair and railing design, the means of egress, fire wall requirements as well as other construction issues, are not expected to satisfy the criteria of buildings intended to accommodate public occupancy. This may require a building code variance in some locations; however, this simulator shall meet all applicable NFPA and OSHA standards that are effective the date the structure is approved for construction (including any extended effective dates specifically stated within these standards). It is the responsibility of the owner to obtain such variance if required.

2.5 MATERIALS:

All materials shall be new and shall conform to applicable ASTM specifications. All structural or nonstructural materials used, 10 gauge or less in thickness, whether exposed or not to the elements shall be **hot-dipped galvanized. When any mention of galvanized is noted within these specifications, it shall be implied to mean hot-dipped galvanized.** Any exposed material which is not galvanized, shall be given one coat of shop paint.

2.6 FASTENERS:

All fasteners utilized with galvanized steel panels not exposed to the elements shall be electro-galvanized. All exterior fasteners shall be furnished with a contained EPDM washer under the head for sealing. Structural columns and beams shall be field bolted with (A325) 5/8" diameter electro- galvanized bolts or larger. Anchor bolts shall be furnished by the concrete contractor, unpainted and of the size specified on the anchor bolt plan.

2.7 WEATHER SEALING:

All joints in weather tight areas are to be sealed with tape caulk or foam closures as specified on the building plan. Because of the intended use water tightness of simulators is not required or assured.

2.8 ROOF SYSTEMS:

Roofs shall be decked with 30" or 36" wide, 18 ga. unpainted galvanized 18 gage steel deck per **ASTM A-653, class G60** with recessed fasteners and shall meet the stated design load. Panels must have 6" on center cell spacing with an actual 4 ¼" flats with an actual 1 ¾" wide recesses and a maximum of 1 ½" deep recesses. Panels must be roll formed.

2.9 EXTERIOR WALL SYSTEM:

Wall panel/curtain wall system shall provide for a concentrated rappelling/ladder load of 890 pounds while the primary structural framing supporting this wall system shall provide for a concentrated point load of 2300 pounds. **Rake trims, parapet rake trims, and window opening sill trim corners shall be beveled to prevent rope chafing, personal injury, or equipment damage.**

2.10 WALL PANELS:

The exterior wall panels shall be essentially flat to allow for safe laddering and rappelling anywhere on the simulator without the requirement of additional exterior surface plates to form a flat surface. The exterior wall panels shall be of 18 ga. hot-dipped galvanized steel per ASTM A-924, class G-90. Panels shall have nominal 4 ¾" flats with a maximum 1 1/8" wide recesses and shall be set in the horizontal plane. Since panels are set in the horizontal plane, sealants are not required to make this structure weather tight (sealants in extreme temperature environments will breakdown prematurely). Panels must be brake formed to provide a maximum 1/8" inside radius. All end joints of all panels must be backed by a splice panel, which extends a minimum of 12" either side of the joint (24" total). Exterior walls panels shall be painted from the customer's choice of the manufacturer's available colors.

The interior wall panels shall be corrugated for added strength and durability. The interior wall panels consist of hot-dipped galvanized steel per ASTM A-924. The interior wall panels shall have a ¾" deep maximum corrugation at 3 ½" on center and shall be set in the vertical plane. Interior wall panels shall be painted white.

Painted wall panels (interior and exterior) shall be manufactured from coil coated steel meeting ASTM A-924, hot-dipped galvanized, and painted with a **paint system on both sides** of the panel. The base coat shall be a 0.2 to 0.25 mil coat of a polyurethane primer. The topcoat shall be a 0.7 to 0.8 mil coat of silicon protected polyester on the face side. The paint, on both sides of the panel, is to be baked on. The finished surfaces are to have a light wax coating applied after painting.

2.11 SECONDARY WALL FRAMING:

Wall framing shall be of conventional steel stud construction. Studs are to run vertically to represent common stud construction and be spaced at no more than twenty-four (24) inches on center. Stud size and gage shall be determined by the design engineer and shall accommodate all design criteria stated in other sections of this specification. All rough openings shall be framed in the conventional manner and provide fastening surfaces for all interior and exterior finishes and trims as provided with the building system.

2.12 SECONDARY ROOF FRAMING:

Roof framing shall be of conventional steel joist construction. Joists are to be spaced at no more than 24 inches on center and shall have a maximum span length of 14 ft. All rough openings shall be framed in the conventional manner and provide fastening surfaces for all floor and roof decks as provided with the building system.

2.13 WINDOW & DOOR LOCATIONS:

Window and door locations indicated on the drawings are suggested only. All such openings are to be field cut and with the exception of the stair wall, may be located according to preference.

2.14 WINDOW SHUTTERS:

All window openings shall be provided with a swinging shutter of the proper size for the opening. Framed opening studs/jambs shall be 16 ga. galvanized steel. Shutters for all areas shall be made with double skins of 18 ga. galvanized steel per ASTM A-924. Shutters will be provided as a 1-3/8" thick factory welded hollow metal assembly with a minimum of 3 vertical interior hat channel stiffeners and a 14 ga. hinge reinforcement. The hinges shall be ball-bearing swaged mortise mount, 4" x 4" x 5/32" thick stainless steel, commercial grade, and provided with the appropriate quantities per shutter (see paragraph below). A hollow metal welded assembly shall be used to prevent premature temperature warping that occurs on single panel/sheet shutters. Galvanized shutters are required to prevent premature rusting. All shutters shall be provided with a galvanized hold open latch.

Shutters for all areas except the burn room shall have two heavy-duty hinges. Shutters for the burn room areas shall have three heavy-duty hinges. In addition, burn room shutters shall be protected with a 1" thick Westemp insulation panel mounted on the inside of the burn room.

2.15 DOORS:

Doors for all areas except for burn areas shall be double skins of 18 ga. galvanized steel (total thickness), per ASTM A-924, and shall be an insulated hollow metal swing doors with 3 stainless steel ball-bearing hinges and full weather stripping. Framed opening studs/jambs shall be 16 ga. galvanized steel. This 1 3/4" thick door shall have a baked-on enamel finish and will include a lockset. Locksets shall meet ANSI A156.2 Series 4000 Grade 2 certifications and shall be keyed alike. Doors on 1st floor mounted at top of curb shall include a door sweep to allow for hose advancement even when door is closed to exterior of tower.

Doors for the burn areas shall be made with double skins of 18 ga. galvanized steel per ASTM A-924 with four heavy-duty hinges. The hinges shall be ball-bearing swaged mortise mount, 4" x 4" x 5/32" thick stainless steel, commercial grade. Doors will be provided as a 1-3/8" thick factory welded hollow metal assembly with a minimum of 3 vertical interior hat channel stiffeners and a 14 ga. hinge reinforcement. A hollow metal welded assembly shall be used to prevent premature temperature warping that occurs on single sheet doors. Galvanized doors are required to prevent premature rusting. Framed opening studs/jambs shall be 16 ga. galvanized steel. Doors shall be provided with a galvanized hold open latch, a 6 1/2" door pull, and an adjustable spring closure. Door sweep is to be provided to allow hose advancement even when door is closed to exterior of burn room. In addition, burn room doors shall be protected with 1" thick Westemp insulation panels mounted on the inside of the burnroom.

2.16 PARAPET WALLS:

Parapet walls, if utilized, shall be designed to resist a load of 50 lb./ft. and a concentrated point load of 200 lbs. in any direction at the top. This wall shall incorporate a minimum of 12 ga. galvanized studs at one foot on center with 18 gage wall panels installed on both sides. The parapet shall incorporate an integral draining system that provides for uniform drainage without the need for a concrete roof covering.

2.17 SECONDARY FLOOR SYSTEM:

Interior decks shall be of six-inch-wide, unpainted 18 ga. **slip resistant galvanized** steel per **ASTM A-924, A-60** with recessed fasteners and shall meet the stated design load. Panels must have nominal 5" flats with a maximum 1" wide by 1" deep recesses (maximum 1" recess is required to prevent potential injuries). Panels must be brake formed at 90 degrees and provide inside radiuses no greater than 1/8". All floor and roof decks shall be framed with light gage steel "C" joists spaced at no more than 24 inches on center and shall have a maximum span length of 14 ft. Joists size and gage shall be determined by the design engineer and shall accommodate all design criteria stated in other sections of this specification. Concrete floor covering is not required in non-burn room areas due to the safe (no large recesses to twist ankles or injure knees) and user-friendly floor panels specified. Toe kicks shall be installed around the entire perimeter of each floor to prevent potential injuries due to exposed openings to floor below. Concrete floor covering can be specified for the entire floor system while still maintaining stated design live loads. All burn room areas shall have concrete floor covering as specified below. Concrete floor covering is by others.

If concrete floor covering is specified, the concrete shall be a minimum of 1 1/2" thick and shall be fiber reinforced. The concrete shall be pitched toward exterior walls and doors. Even with concrete covering, the steel floor panels, located below, shall alone be designed to carry all of the required loads and shall still be a minimum of 18 ga. thick galv. steel. Concrete is prone to damage in high temperature burn areas and in unheated structures due to freeze/thaw conditions, therefore concrete cannot be used to increase the design strength of the steel floor panels/decks in fire training structures.

2.18 STAIRS AND ACCESSORIES:

2.18.1 Stair widths shall be a minimum of 3'-0" wide and a maximum of 3'-8" wide. Stair rails shall include 36" high handrails and 42" high guardrails on both sides of the stairs. Handrail extensions are not to be utilized to prevent unnecessary hazards when training. Stringers shall be plate, treads and platforms are bar grate, and risers to be open. Bar grate treads (19W4 x 1" deep) are to be factory attached to the stringers and shall include a diamond plate nosing. Stairs shall be designed to resist a loading of 100 psf and a minimum concentrated load of 1000 lbs. applied at any point.

2.18.2 Handrails and guardrails shall consist of schedule 40 - 1 1/4" i.d. (1.66" o.d.) round pipe and the openings between rails shall not exceed 12" (minimum of three horizontal rails required). Handrails and guardrails shall be designed to resist a concentrated point load of 200 lbs. in any direction at the top. Guardrails on stairs shall be an all factory welded assembly. Guardrails at openings shall have a factory welded post assembly to allow for the attachment of horizontal rails and shall be a minimum of 42" high.

2.18.3 Stairs, stringers, handrails, guardrails, bar grating, ladders, and platform frames shall be hot-dipped galvanized per ASTM A-123. All welds, holes, cutting, and bending must be made prior to hot-dip galvanizing.

2.19 WH-4/FIRE CHIEF FEATURES:

2.19.1 TOWER SECTION:

- 12'-0" x 22'-0" x 50'-0"
- Lower Flat Roof with Parapet Upper Flat Roof with Railing Top Floor No Cladding (3) Sides
- Wind Load 140 MPH; Risk Category II; Exp. C Roof live load 100 PSF
- Floor live load 100 PSF
- 3' x 4' window openings with steel shutters (see drawings for Qty.) 3' x 7' metal door (see drawings for Qty.)
- 2'-8" x 7' metal door (see drawings for Qty.)
- 4' x 4' roof chop-out curb, 12 ga. galvanized (see drawings for Qty.) Interior stairs to the fourth deck level
- Parapet roof guard with exclusive roof drainage to the exterior of the building

2.19.2 RESIDENTIAL SECTION:

- 34'-0" x 22'-0" x 27'-3" ridge
- 16 degree double pitched, 2/3 gabled roof, 1/3 flat roof with parapet Wind Load 140 MPH; Risk Category II; Exp C
- Roof live load 100 PSF
- Deck live loads 100 PSF (including attic area) Interior "L" shaped stair to second floor Attic drywall frame
- Roof ladder fender brackets (see drawings for Qty.)
- 3' x 4' window openings with steel shutters (see drawings for Qty.) 6' x 4' window opening with steel shutters (see drawings for Qty.) 3' x 7' exterior steel door (see drawings for Qty.)
- 6' x 7' exterior double leaf steel door (see drawings for Qty.) 3' x 7' interior steel door (see drawings for Qty.)
- 3' x 3' hinged gable louvered shutters (see drawings for Qty.)
- 4' x 4' roof chop-out curbs, 12 ga. galvanized (see drawings for Qty.)
- Parapet roof guard with exclusive roof drainage to the exterior of the building with chained openings

2.19.3 ANNEX:

- 20'-0" x 22'-0" x 14'-0" High
- 3½" in 12" single pitch roof to flat roof
- Wind Load 140 MPH; Risk Category II; Exp C Roof live load 100 PSF
- 4' x 4' roof chop-out curb, 12 ga. galvanized (see drawings for Qty.) 3' x 4' window openings with steel shutters (see drawings for Qty.) 3' x 7' exterior steel door (see drawings for Qty.)
- 3' x 7' interior steel door (see drawings for Qty.)

2.20 ADDITIONAL FEATURES TO BE INCLUDED:

Fire Escape

Exterior fire escape to the *roof deck (40' high)*. Stair widths shall be 3'-0" wide and hot-dipped galvanized. Constructed of formed stringers welded to bar grate treads with open risers. Handrails to be manufactured from 1.25" I.D. (1.66" O.D.) schedule 40 round pipe and hot-dipped galvanized. To include swing doors at each upper floor.

Ships Ladders

Provide two (2) ships ladders that extends from the *4th floor to the lower roof deck & from the lower roof deck to the upper roof deck*. The ships ladder shall be constructed from heavy gage steel stringers and welded steel bar grate treads and open risers. The ladder shall have handrails on both sides and shall be provided hot-dipped galvanized.

Forged Swivel Rappelling Anchor

(7) Rappelling anchors shall be rated for an ultimate load of 10,000 lbs. and working load of 1,000 lbs. (exceeds OSHA load requirement 29 CFR 1926.502(d)(15) and meets NFPA 1402 standard 11.2.1). The anchor housing shall be galvanized aircraft quality alloy and capable of a 360-degree swivel and 180-degree pivot. Each anchor shall be 200% proof-load tested.

Roof Hatch 2'-6" x 4'-6"

Provide (2) Bilco 2'-6" x 4'-6" roof hatches; (1) in the lower *tower* roof & (1) in the upper *tower* roof. The hatch shall be equipped with compression spring operators, positive latching mechanism, automatic hold open arm, and shall be galvanized steel with prime paint covering.

Riser System

Brass Siamese fire department connection (4" x 2 ½" x 2 ½"; NST thread) located at the exterior of the tower, with galv. interior 4" diameter riser, *34' high*. Include a connection 2.5" NST thread on the towers interior at each deck level and a connection for future sprinklers at each floor.

Ladder Hook Bar

The ladder hook bar is used on sloped roofs to ensure a safe attachment of the trainee's ladder hook when setting the ladder on the roof itself. This system consists of 10'-6" long schedule 80 pipe with 12 ga. pipe angles for attachment. This system shall be hot-dipped galvanized. – (3) ladder hook bars required

Roof Guard Rails

Rails and posts to be manufactured from 1.25" I.D. (1.66" O.D.) schedule 40 round pipe and hot-dipped galvanized. Openings between rails shall not exceed 12" (minimum of three horizontal rails required) and top rail shall be a minimum height of 42" high. System to be installed around the perimeter of the; tower upper roof & annex flat roof and set back from the edge of the roof for additional safety.

Durabak™ Slip-Resistant Paint Roof System

18 ga. galvanized roof panels covered with a three-coat paint system. The basecoat shall consist of a etch primer while the two topcoats will consist of a finishing polyurethane paint with embedded rubber aggregate. This paint shall be slip resistant, waterproof, abrasion, chemical, salt water, UV and corrosion resistant. Note: Paint does not cover recesses in panels, only the flats of the panels.

Acceptable manufacturer of this paint system is The Durabak™ Company.

Sprinkler System

A two head sprinkler system shall be located on the 1st floor. The system shall utilize galvanized 1" diameter pipes, galvanized elbows/tees, and a shutoff valve, along with the threaded rods/clamps required for attachment. – (1) total sprinkler system(s) required

2.21 NOT USED:

2.22 NOT USED:

2.23 NOT USED:

2.24 DESIGN, DRAWINGS & DATA:

The supplier shall be responsible for providing the design exclusive of the foundation. Shall submit, as requested, structural calculations for review. Will, within fifteen (15) working days after the receipt of order, submit two (2) sets of drawings detailing anchor bolt loadings and locations as well as general plans and elevations. Will submit two (2) sets of assembly (steel erection) drawings and two (2) sets of assembly manuals concurrent with the shipment of materials. Building parts shall each be identified by individual part numbers clearly written on or attached to the part. Part numbers shall coincide with the drawings.

2.25 DELIVERY, INSPECTION & STORAGE:

All components and accessories shall arrive via flatbed trailer. Materials for the burn room may arrive separately via common carrier. Inventory of delivered materials must be taken during delivery or shortly thereafter. Damage to, or shortages noted during delivery must be noted on the freight bill and reported at once to the manufacturer. All claims for damages or shortages must be reported within forty-eight (48) hours of delivery. Security and materials protection in storage is the responsibility of the receiving party. Materials packaged in small cartons must be stored in a secured area to prevent theft and/or damage by the elements. Materials stored outside must be stacked on pallets and covered with suitable waterproof coverings (not plastic).

2.26 WARRANTY:

2.26.1 General Warranty:

The tower supplier shall certify that the training tower and its components have been designed to meet the contract specifications. The tower supplier shall warrant the materials and components to be free of fabricating defects for a period of **one (1)-year** from the date of shipment. This warranty is limited to the replacement of defective parts, or at the tower supplier's option, authorization may be given to the PURCHASER to charge back to the supplier an agreed upon amount for extra fieldwork. The supplier will not ship replacement parts nor authorize extra work to any party other than the ORIGINAL PURCHASER. Any pre-engineered structure will require the erector to furnish a certain amount of field fabrication and / or modifications as stated in the manufacturer's handbook. Sections of work requiring field cutting or drilling are indicated on the drawings or in the assembly manual. Other field modifications may be necessitated by site conditions beyond the manufacturer's control. The foregoing is not subject to warranty.

2.26.2 Burn Room Insulation Warranty:

The burn room wall and ceiling insulation system shall be covered by a **fifteen (15)-year** limited warranty that provides coverage against a break in the thermal barrier caused by cracking, breaking, and spalling. This warranty is to apply to products under normal use and recommended service temperatures - but shall also include damage that has been caused by thermal expansion, thermal contraction, impact load, and thermal shock. This warranty is to be limited to component replacement or repair of defective components at the manufacturer's option. The replacement cost of the materials shall not be prorated over the warranty period itself (i.e., the supplier shall bear 100% of the material replacement cost for the duration of the warranty).

2.26.3 Paint Warranty:

The paint system shall provide a **thirty/twenty-five (30/25)-year** limited warranty on paint finish, which includes chalking and breakdown of film integrity.

2.26.4 Structure Warranty:

A five (5)-year limited warranty shall be provided on the structure itself.

2.27 SUBMITTALS:

2.27.1 GENERAL: Submit the following in accordance with the Conditions of the Contract and Division 1 Specification Sections:

2.27.1.1 PRODUCT DATA, floor plans, elevations, catalog, general specifications, locations of similar projects completed.

2.27.1.2 SAMPLES of the manufacturer's standard color charts covering both the siding colors and the door and window trim colors shall be furnished to the owner.

2.27.2 QUALITY ASSURANCE:

2.27.2.1 ERECTOR QUALIFICATIONS: The erector shall provide evidence of successfully completing two Fire Training Towers of similar size and scope or shall be a certified Fire Facilities erector, as project requires.

2.28 SUPPLIERS/SYSTEMS:

2.28.1 Acceptable Suppliers/Systems: Fire Facilities, Inc.* , 314 Wilburn Road, Sun Prairie, WI, 53590, Phone: 800/929-3726 or 608/327-4100, Fax: 866/639-7012 or 608/834-1843, E-mail: info@firefacilities.com, Website: www.firefacilities.com

2.28.2 Alternate Suppliers/Systems: Any systems/materials not explicitly meeting the specifications stated herein, shall be reviewed for determination of equivalency after bid opening. For all systems/materials in question, the supplier/contractor shall provide samples, written specifications, burn room insulation thermal performance values, warranties, full set of drawings, and MSDS. An itemized list must be provided that specifically references each item that deviates from this specification. In any case, all performance and warranty criteria stated herein must be met without exception.

PART 3-EXECUTION

3.1 GENERAL:

Comply with the manufacturers recommendations for preparation and storage of the tower components.

3.2 EXAMINATION:

Verify that concrete work has cured a minimum of 14 days. Verify that anchor bolts are at the proper spacing and protrude the proper amount above the concrete. Report any variances to the owner's representative prior to proceeding with erection.

3.3 ERECTION:

Follow the details supplied by the manufacturer. Report any discrepancies to the manufacturer prior to proceeding.

3.4 FIELD QUALITY CONTROL:

3.4.1 DEFECTIVE WORK:

Materials, components and assemblies not complying with the manufacturer's installation recommendations shall be repaired or replaced, at the option of the manufacturer.

3.4.2 INSPECTION:

Verify that all bolted connections are tight, self-drilling screws with integral washers are seated snugly without washer distortion and rivets have not pulled through the attached materials.
Replace improperly set or damaged fasteners.

Inspect all panels, trims and accessories for proper installation and fit. Replace any item which is damaged, warped or distorted. Ensure that all field mitered corners fit tightly and smoothly.

3.4.3 ADJUSTING:

Adjust all shutters, swing doors and hatches so that they swing smoothly without binding and so that the appropriate hardware latches without forcing or slamming. Ensure that all closures are adjusted so that they close smoothly.

Check all electrical and mechanical devices to make sure that they are working properly. Temperature monitoring systems must be checked to see that each thermal-couple works accurately. Fans must be tested and demonstrated as working at all speeds.

3.4.4 CLEAN-UP:

At the end of each day check the site and pick all debris and garbage. Ensure that all materials are secured in a neat and orderly fashion.

Thoroughly clean the tower inside and out at the completion of the erection process to remove all debris, garbage, packing materials, metal shavings and dirt.

End of Scope of Work

CITY OF PORT ORANGE, FLORIDA

INVITATION TO BID

"Attachment A" BID SET – Drawings

FIRE DEPARTMENT TRAINING TOWER EXCAVATION, FOUNDATION AND ERECTION

Drawings can be found on the City of Port Orange website. See link for attachment of documents:
<https://www.port-orange.org/bids.aspx>

"Attachment A" ITB 20-14 Bid Set - Drawings for FIRE DEPARTMENT TRAINING TOWER
EXCAVATION, FOUNDATION AND ERECTION



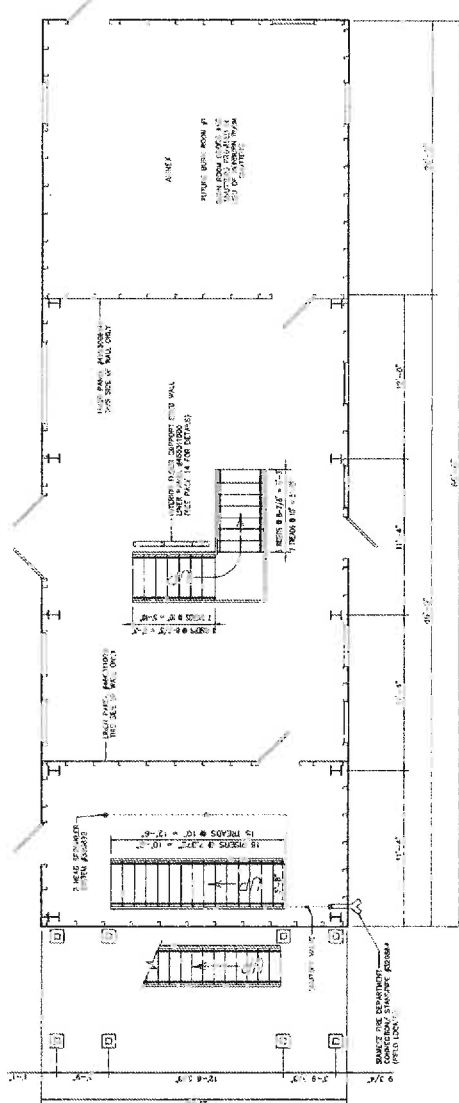
ITB #20-14

Prepared by: Michael Hall, Buyer
Release Date: January 8, 2021

Bid Due Date & Time: February 12, 2021 @ 2:30 PM

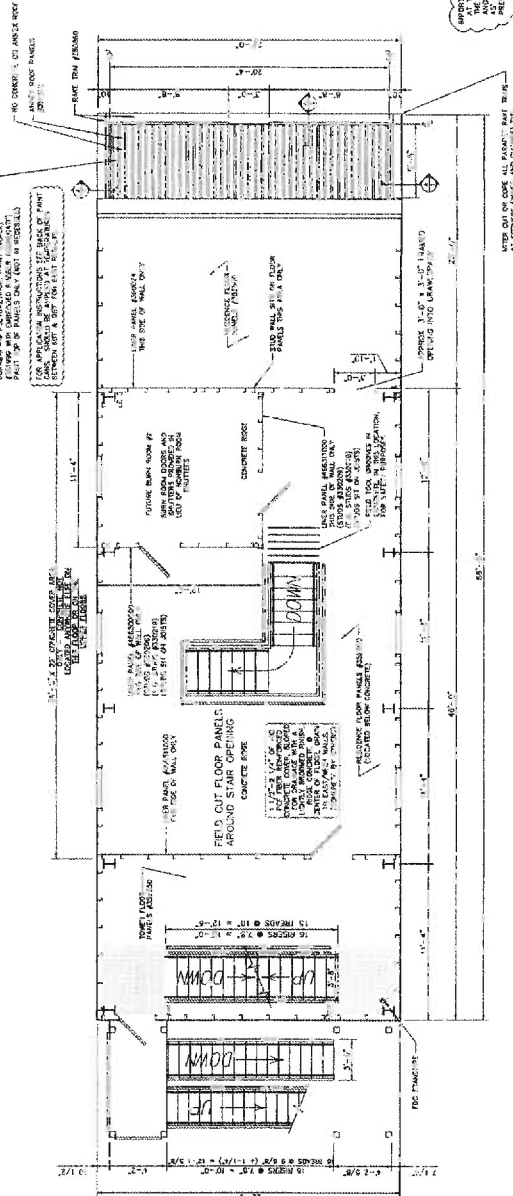
City of Port Orange, Florida
1000 City Center Circle
Port Orange, FL 32129
(386) 506-5740
purchdiv@port-orange.org
www.port-orange.org

NOTE: ALL SHUTTERS IN TOWER ROOM & ATTIC SWING IN, UNLESS OTHERWISE SHOWN
ALL SHUTTERS IN BURN ROOM & ATTIC SWING OUT, UNLESS OTHERWISE SHOWN



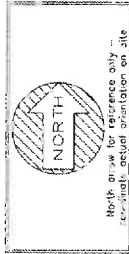
FIRST FLOOR PLAN

SCALE: 1/4" = 1'-0"

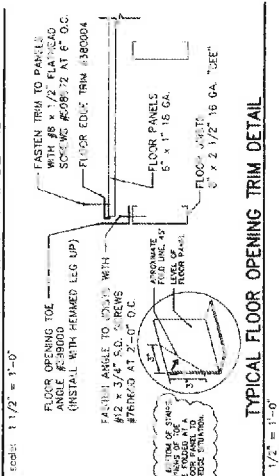
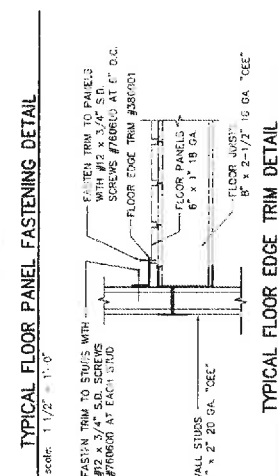
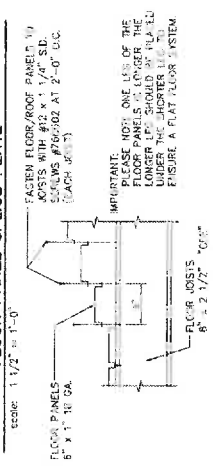
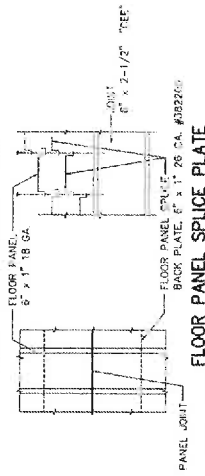


SECOND FLOOR PLAN

SCALE: 1/4" = 1'-0"



DESIGN LOADS:
ROOF LIVE LOAD: 100 PSF
FLOOR LIVE LOAD: 100 PSF
WIND LOAD: 140 MPH, RISK CAT II, EXP C
SEISMIC DESIGN CAT: LOCAL
SILE CLASS: LOCAL
DESIGN CODE: LOCAL & NFPA 1412



REVISION	DATE	BY	CHKD
1	10/1/03	WJ	WJ
2	10/1/03	WJ	WJ
3	10/1/03	WJ	WJ
4	10/1/03	WJ	WJ
5	10/1/03	WJ	WJ
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8	10/1/03	WJ	WJ
9	10/1/03	WJ	WJ
10	10/1/03	WJ	WJ

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OFFICE: 207-410-0000 FAX: (207) 410-0001
 PROJECT: 207-410-0000
 DRAWING: 207-410-0000

FIRE FACILITIES

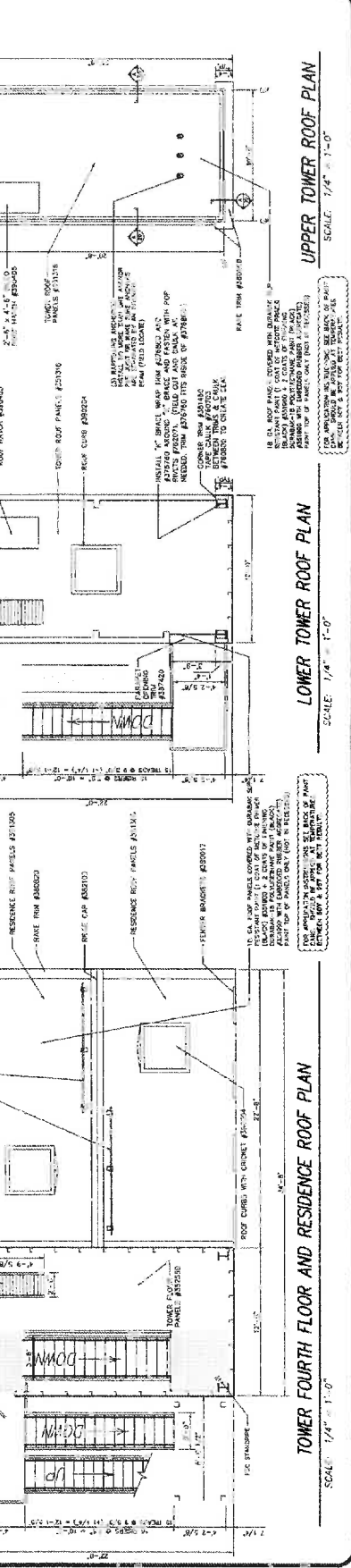
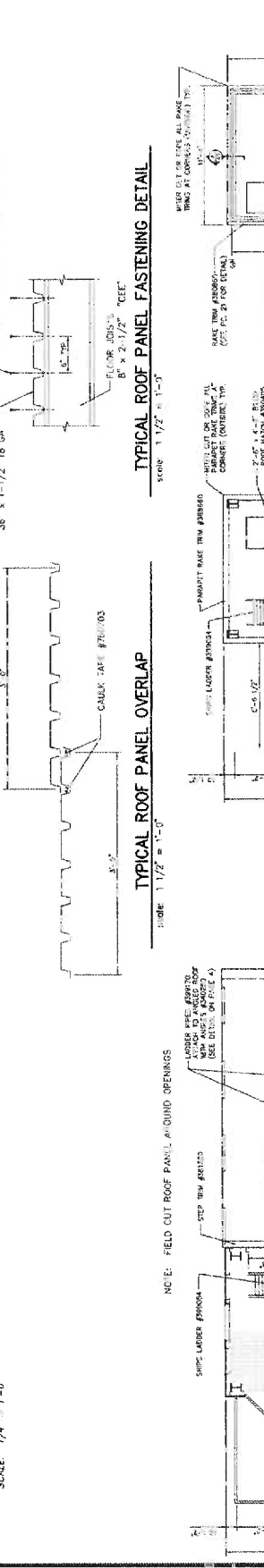
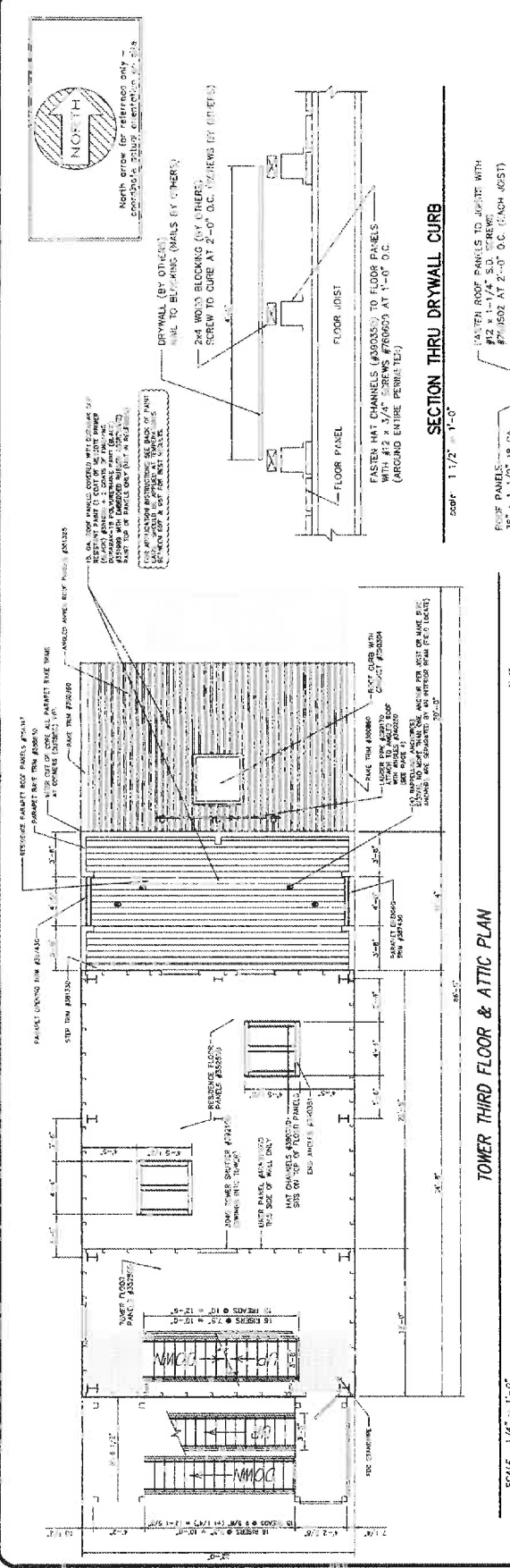
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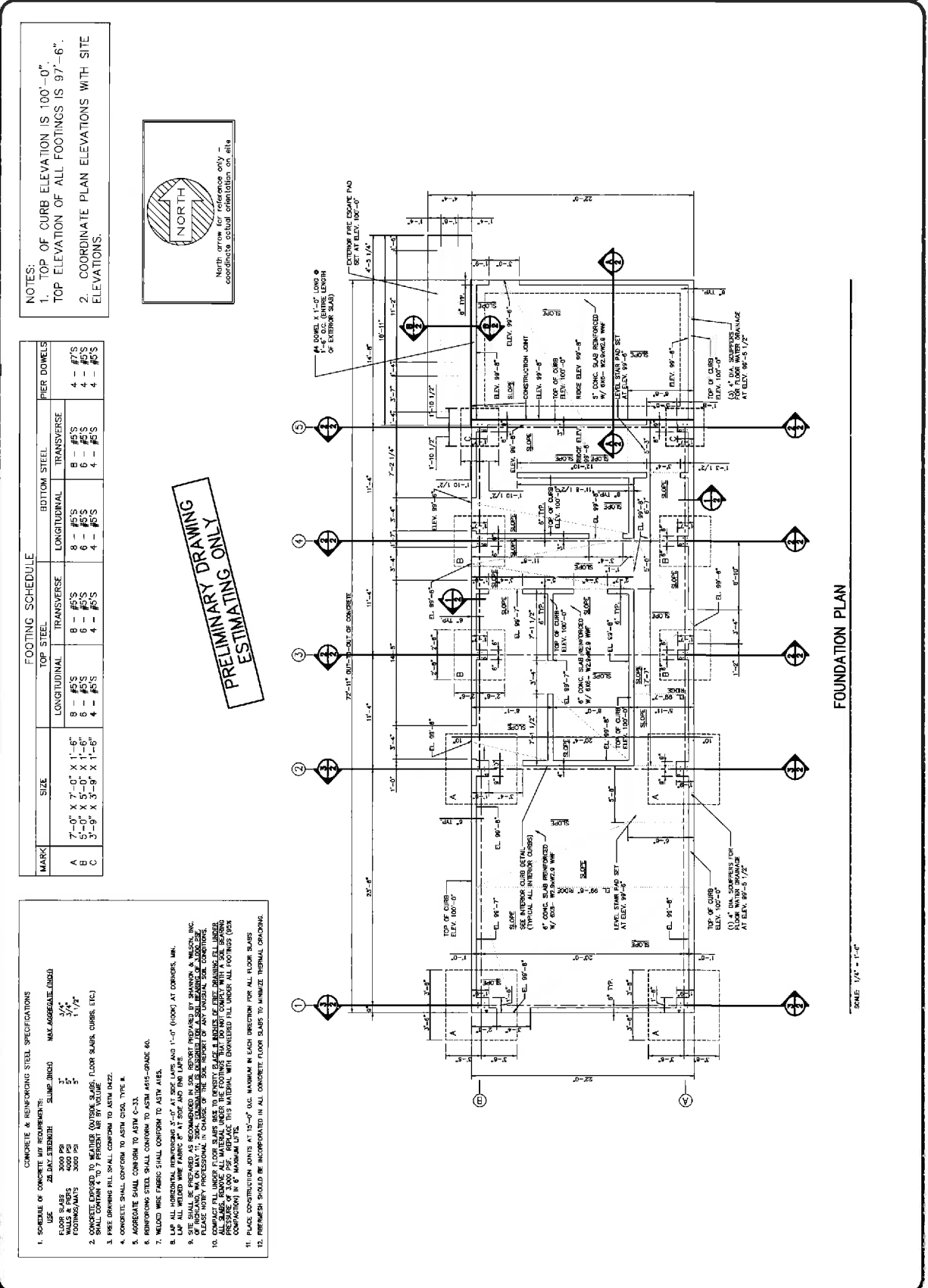
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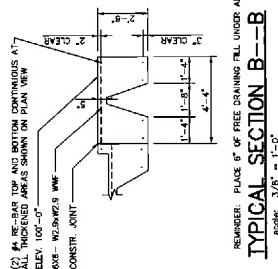
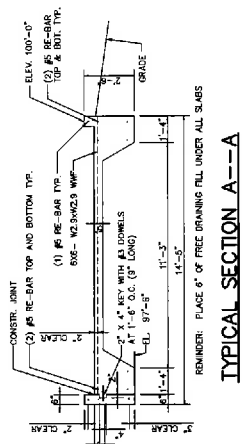
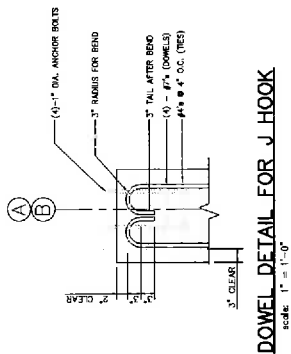
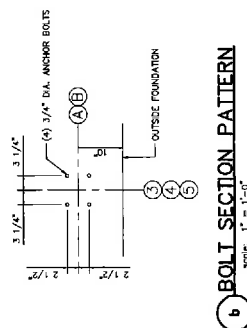
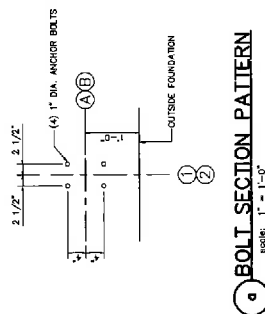
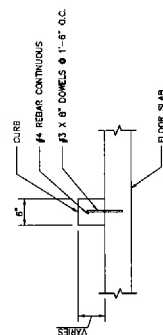
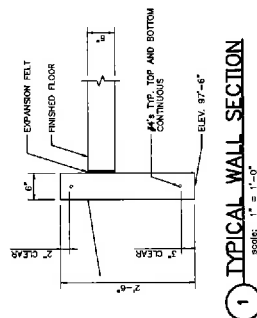
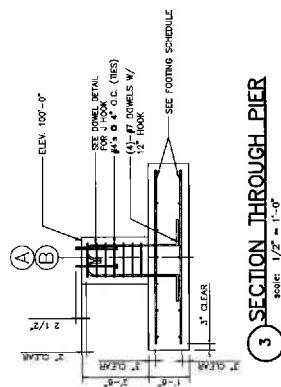
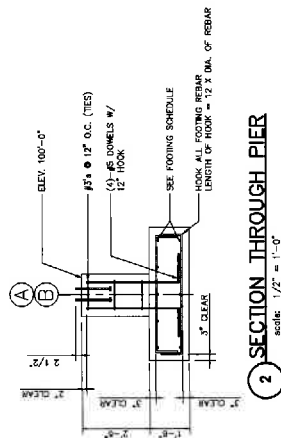
WESCO MODEL WH-4

DATE: 10/1/03
 DRAWN BY: WJ
 CHECKED BY: WJ
 SCALE: 1/4" = 1'-0"

02 of 04







PRELIMINARY DRAWING
ESTIMATING ONLY



CITY OF PORT ORANGE

PURCHASING DIVISION
1000 CITY CENTER CIRCLE
PORT ORANGE, FLORIDA 32129
TELEPHONE 386-506-5704
purchdiv@port-orange.org

ADDENDUM NO. # 1

January 20, 2021

ITB #20-14 Fire Department Training Tower Excavation, Foundation and Erection

To All Bidders:

The following changes, clarifications and additions are hereby made part of the bidding and specifications for the above referenced project dated January 8, 2021 and prepared by the City of Port Orange Purchasing Division as fully and completely as if the same were fully set forth therein. It is the sole responsibility of bidder to confirm that all addenda have been received prior to submitting bid and acknowledge such in the bid documents.

A. CLARIFICATIONS

Please see the attached Geotechnical Evaluation Report from Universal Engineering for the site of the Fire Department Training Tower.

B. CHANGES TO SPECIFICATIONS

N/A

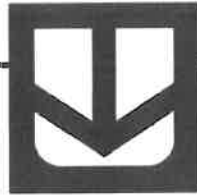
C. QUESTIONS AND ANSWERS

N/A

Michael Hall
Purchasing Agent
mhall@port-orange.org

In all other respects, except as specifically stated herein, the subject ITB #20-14 Fire Department Training Tower Excavation, Foundation and Erection remains unchanged.

END OF ADDENDUM NO. #1



UNIVERSAL ENGINEERING SCIENCES

GEOTECHNICAL EVALUATION

*Fire Training Tower, Post-Demolition
Port Orange, Volusia County, Florida*

**UES Project No. 0430.1900126.0000
UES Report No. 134942**

January 20, 2021

Prepared for:

**Mr. Ken Fustin
City of Port Orange
P.O. Box 291759
Port Orange, Florida 32129**

Prepared by:

**UNIVERSAL ENGINEERING SCIENCES
911 Beville Road, Suite 3
South Daytona, Florida 32119**

CONSULTANTS:

**Geotechnical Engineering • Environmental Engineering • Construction
Materials Testing Threshold Inspection • Private Provider Inspection •
Geophysical Studies**

OFFICES: Daytona Beach, FL • Fort Myers, FL • Fort Pierce, FL • Gainesville, FL • Jacksonville, FL • Leesburg, FL • Miami, FL • Norcross, GA • Ocala, FL • Orange City, Orlando, FL
Palm Coast, FL • Panama City, FL • Pensacola, FL • Rockledge, FL • Sarasota, FL • St. Augustine, FL • Tampa, FL • West Palm Beach, FL



UNIVERSAL ENGINEERING SCIENCES

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- Fort Pierce
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- Leesburg
- Miami
- Ocala
- Orlando (Headquarters)
- Palm Coast
- Panama City
- Pensacola
- Rockledge
- Sarasota
- Tampa
- West Palm Beach

January 20, 2021

Mr. Ken Fustin
City of Port Orange
P.O. Box 291759
Port Orange, Florida 32129

Reference: **GEOTECHNICAL EVALUATION**
Fire Training Tower, Post-Demolition
Port Orange, Volusia County, Florida
UES Project No. 0430.1900126.0000 and UES Report No. 134942

Dear Mr. Fustin:

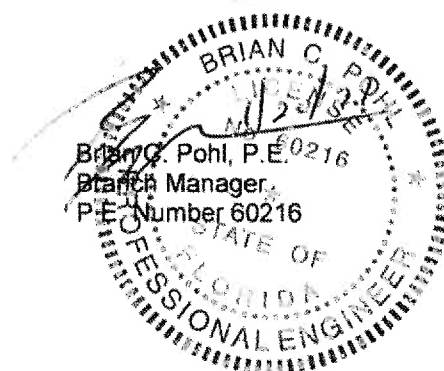
Universal Engineering Sciences, Inc. has completed the geotechnical evaluation for the subject project. This report contains the results of our evaluation, an engineering interpretation of these with respect to the project characteristics described to us, and recommendations for shallow foundation support and site preparation. UES previously submitted a geotechnical evaluation for the pre-demolition phase of the above mentioned project UES Report No. 136041, dated July 18, 2019.

We appreciate the opportunity to have worked with you on this project and look forward to a continued association. Please do not hesitate to contact us if you should have any questions, or if we may further assist you as your plans proceed.

Respectfully submitted,

UNIVERSAL ENGINEERING SCIENCES

Michael Mohnhey
Project Engineer



Attachments

MM/BCP/cme

1.0 INTRODUCTION

1.1 GENERAL

In this report we present the results of the subsurface evaluation for the proposed construction in Port Orange, Florida. We have divided this report into the following sections:

- SECTION 2.0 - SCOPE OF SERVICES
- SECTION 3.0 - FINDINGS
- SECTION 4.0 - FOUNDATION RECOMMENDATIONS
- SECTION 5.0 - CONSTRUCTION RELATED SERVICE
- SECTION 6.0 - LIMITATIONS

2.0 SCOPE OF SERVICES

2.1 PROJECT DESCRIPTION

Project information has been provided to us in correspondence with you. We understand the proposed project will consist of constructing a new fire training tower. We anticipate that footing and wall loads will not exceed 12 kips/foot and 120 kips, respectively. We also assume the site has been previously filled since a building has been demolished at this location since our previous geotechnical evaluation for this project. Some additional fill may be required.

Our recommendations are based upon the above considerations. If any of this information is incorrect, or if you anticipate any changes, inform Universal Engineering Sciences so that we may review our recommendations.

2.2 PURPOSE

The purposes of this investigation were:

- to investigate the general subsurface conditions at the site;
- to interpret and review the subsurface conditions with respect to the proposed construction; and,
- to provide geotechnical engineering recommendations for shallow foundation support and site preparation.

This report presents an evaluation of site conditions on the basis of traditional geotechnical procedures for site characterization. The recovered samples were not examined, either visually or analytically, for chemical composition or environmental hazards. Universal Engineering Sciences would be pleased to perform these services, at your request.

Our investigation was confined to the zone of soil likely to be influenced by the proposed construction. Our work did not address the potential for surface expression of deep geological conditions, such as sinkhole development related to karst activity. A deep geological evaluation requires a more extensive range of field services than performed in this study.



2.3 FIELD INVESTIGATION

2.3.1 Borings

The subsurface conditions within the proposed fire training tower area were investigated with one (1) Standard Penetration Test (SPT) boring (designated B-1) advanced to a depth of approximately 35 feet below existing grade and three (3) SPT borings (designated B-2 through B-4) advanced to a depth of approximately 25 feet each below existing grade. We performed the SPT borings according to the procedures of ASTM D-1586.

The borings were located by our field personnel using tape measurements from established landmarks, and should be considered accurate only to the degree implied by the method used. The location of the borings is presented on the attached Boring Location Plan in Appendix A.

Samples obtained from the borings were transported to our laboratory for further evaluation. Samples of the soils encountered will be held in our laboratory for your inspection for 60 days unless we are notified otherwise.

2.3.2 Test Pits

Due to the presence of the few pieces of wood debris encountered at Boring Location B-1, it was our opinion backhoe excavated test pits would enable UES to determine if it is necessary that the encountered debris should be removed from within the building footprint and if removal is required, to further determine the vertical and horizontal limits of the debris.

UES performed three (3) test pits (designated TP-1 through TP-3) advanced to depths varying between approximately 6 inches and 6 feet below existing grade at areas anticipated to be within the building footprint.

2.4 LABORATORY INVESTIGATION

2.4.1 Index Testing

The soil samples recovered from the soil borings were returned to our laboratory and a UES Engineer visually examined and reviewed the field descriptions. The soils were classified in accordance with the Unified Soil Classification System (USCS).

3.0 FINDINGS

3.1 SUBSURFACE CONDITIONS

The boring locations and detailed subsurface conditions are illustrated in Appendix A: Boring Location Plan and Subsurface Profiles. The classifications and descriptions shown on the profiles are based upon visual characterizations of the recovered soil samples. Also, see Appendix A: Key to Boring Log, for further explanation of the symbols and placement of data on the Subsurface Profiles. The following discussion summarizes the soil conditions encountered.

The results of the SPT borings generally indicated the presence of loose fine sand with silt (SP-SM) in the upper approximate 2.5 feet underlain by loose to very dense fine sand (SP), fine sand with silt (SP-SM) and weakly cemented fine sand with silt (SP-SM, HARDPAN) to approximately 13.5 feet below existing grade. This layer was further underlain by very loose to medium dense fine sand (SP), fine sand with silt (SP-SM), silty fine sand (SM), and clayey fine sand (SC) to the deepest boring termination depth of approximately 35 feet below existing grade.



The results of test pits TP-1 and TP-2 generally indicated the presence of fine sand with silt and few pieces of metal, asphalt, and concrete debris (SP-SM) in the upper approximate 1 foot, underlain by fine sand (SP), fine sand with silt (SP-SM), and weakly cemented fine sand with silt (SP-SM, HARDPAN) to the test pit termination depth of 6 feet each below existing grade. The results of test pit TP-3 generally indicated the presence of fine sand with silt (SP-SM) to the test pit termination depth of approximately 6 inches below existing grade. The test pit could not be advanced below 6 inches due to the presence of concrete. Therefore we were unable to determine the vertical extent of the concrete. Based on our knowledge of the site and that a building previously existed within this area, this concrete is likely the foundations not removed.

3.2 GROUNDWATER

The groundwater level was encountered at depths of either approximately 2.0 or 3.0 feet below existing grade. The depths of the measured groundwater levels are noted on the Subsurface Profiles. It should be anticipated the groundwater levels will fluctuate due to seasonal climatic variations, tidal fluctuations, surface water runoff patterns, construction operations, and other interrelated factors.

4.0 FOUNDATION RECOMMENDATIONS

4.1 GENERAL

The following recommendations are made based upon a review of the attached soil test data, our understanding of the proposed construction, and experience with similar projects and subsurface conditions. If the structural loadings, construction locations, or grading information change from those discussed previously, we request the opportunity to review and possibly amend our recommendations with respect to those changes.

As discussed, concrete was encountered approximately 6 inches below grade at Test Pit location TP-3. It is our opinion that the concrete should be over-excavated and replaced with suitable compacted backfill in accordance with Section 4.3.

Additionally, if subsurface conditions are encountered during construction which was not encountered in the borings, report those conditions immediately to us for observation and recommendations.

4.2 STRUCTURE FOUNDATIONS

4.2.1 Bearing Pressure

The maximum allowable net soil bearing pressure for shallow foundations should not exceed 3,000 pounds per square foot (psf). Net bearing pressure is defined as the soil bearing pressure at the base of the foundation in excess of the natural overburden pressure. The foundations should be designed based upon the maximum load that could be imposed by all loading conditions.

4.2.2 Foundation Size

The minimum widths recommended for any isolated column footing and continuous wall footings are 24 inches and 18 inches, respectively. Even though the maximum allowable soil bearing pressure may not be achieved, these width recommendations should control the size of the foundations.



4.2.3 Bearing Depth

The exterior foundations should bear at a depth of at least 18 inches below the exterior final grades and the interior footings should bear at a depth of at least 18 inches below the finish floor elevation to provide confinement to the bearing level soils. We recommend stormwater and surface water be diverted away from the building exterior, both during and after construction, to reduce the possibility of erosion beneath the exterior footings.

4.2.4 Bearing Material

The foundations may bear on either the compacted suitable natural soils or compacted structural fill. The bearing level soils, after compaction, should exhibit densities of at least 95 percent of the maximum dry density of the bearing soils as determined by ASTM D-1557 (Modified Proctor), to the depth described subsequently in the Site Preparation section of the report. In addition to compaction, the bearing soils must exhibit stability and be free of "pumping" conditions.

4.2.5 Settlement Estimates

Post-construction settlement of the structure will be influenced by several interrelated factors, such as (1) subsurface stratification and strength/compressibility characteristics of the bearing soils; (2) footing size, bearing level, applied loads, and resulting bearing pressures beneath the foundations; (3) site preparation and earthwork construction techniques used by the contractor, and (4) external factors, including but not limited to vibration from offsite sources and groundwater fluctuations beyond those normally anticipated for the naturally-occurring site and soil conditions which are present.

Our settlement estimates for the structure are based upon the use of successful adherence to the site preparation recommendations presented later in this report. Any deviation from these recommendations could result in an increase in the estimated post-construction settlement of the structures.

Due to the nature of the surficial soils, following the compaction operations, we expect a significant portion of settlement to be elastic in nature. This settlement is expected to occur relatively quickly, upon application of the loads, during and immediately following construction. Using the recommended maximum bearing pressure, the assumed maximum structural loads, and the field test data which we have correlated to the strength and compressibility characteristics of the subsurface soils, we estimate the total settlements of the structure to be less than one inch.

Differential settlement results from differences in applied bearing pressures and the variations in the compressibility characteristics of the subsurface soils. Based on the subsurface conditions as determined by our borings and required improvement, it is anticipated that differential settlements will be within tolerable limits.

4.3 SITE PREPARATION FOR SHALLOW FOUNDATIONS

We recommend the following site preparation procedures for the structure areas:

1. Prior to construction, the location of existing underground utility lines within the construction area should be established. Provisions should then be made to relocate interfering utilities to appropriate locations. It should be noted that if underground pipes are not properly removed or plugged, they may serve as conduits for subsurface erosion which may subsequently lead to excessive settlement of the overlying structures.



2. Strip the proposed construction limits of all debris, grass, roots, topsoil, asphalt and other deleterious materials within and 5 feet beyond the perimeter of the proposed structure. Expect initial clearing and grubbing to depths of approximately 6 to 12 inches.
3. Because of the need for over-excavation of the encountered concrete at Test Pit location TP-3, followed by replacement with compacted backfill, it may be necessary to install temporary groundwater control measures to dewater the area to facilitate the over-excavation and backfilling processes. We recommend implementing temporary groundwater control measures if the groundwater is within two feet of the required depth of excavation at the time of construction. Dewatering measures should be the responsibility of the contractor. We recommend the groundwater control measures remain in-place until compaction of the existing soils is completed and backfilling has reached a height of 2 feet above the groundwater level at the time of construction. The site should be graded to direct surface water runoff from the construction area.
4. Compact the exposed surface using tractor/ dozer or vibratory equipment. **We recommend that vibratory equipment be operated in static mode within 100 feet of any existing structures.** The upper one foot of soils below the exposed surface within the building areas should be improved to achieve a minimum compaction requirement of 95% of the Modified Proctor Test (ASTM D-1557). We recommend the compacted soils exhibit moisture content within 2 percent of the soils optimum moisture content as determined by the Modified Proctor Test (ASTM D-1557). Should the soils experience pumping and soil strength loss during the compaction operations, compaction work should be immediately terminated and (1) the disturbed soils removed and backfilled with dry structural fill soils which are then compacted, or (2) the excess moisture content within the disturbed soils allowed to dissipate before recompacting.
5. Test the compacted surface for compliance at a minimum of one location per 2,500 square feet within the building area, or at a minimum of four locations.
6. Place fill and backfill material, as required. The fill should consist of "clean," fine sand with less than 5 percent soil fines. You may use fill materials with soil fines between 5 percent and 10 percent, but strict moisture control may be required. Place fill in uniform 8 to 12-inch loose lifts and compact each lift to a minimum density of 95 percent of the Modified Proctor maximum dry density. We recommend the compacted soils exhibit moisture content within 2 percent of the soils optimum moisture content as determined by the Modified Proctor Test (ASTM D-1557). If light compaction equipment is used, we recommend the lift thickness be reduced to 8 inch thick lifts.
7. Perform compliance tests within the backfill and fill soils at a minimum of one location per 2,500 square feet per lift (minimum four locations).
8. Compact and test footing cuts for compaction to a depth of two feet below bearing levels. We recommend that you test one out of every four (25 percent) column footings and perform one test per every 50 linear feet of wall footing. Compaction operations in confined areas, such as footing excavations, can best be performed with a lightweight vibratory sled or other hand-held compaction equipment.



5.0 CONSTRUCTION RELATED SERVICES

We recommend the owner retain Universal Engineering Sciences to perform construction materials tests and observations on this project. Field tests and observations include verification of foundation subgrades by monitoring filling operations and performing quality assurance tests on the placement of compacted natural soils and structural fill. We can also perform concrete testing, pavement section testing, structural steel testing and other construction materials testing services.

The geotechnical engineering design does not end with the advertisement of the construction documents. The design is an on-going process throughout construction. Because of our familiarity with the site conditions and the intent of the engineering design, we are most qualified to address problems that might arise during construction in a timely and cost-effective manner.

6.0 LIMITATIONS

During the early stages of most construction projects, geotechnical issues not addressed in this report may arise. Because of the natural limitations inherent in working with the subsurface, it is not possible for a geotechnical engineer to predict and address all possible problems. An Association of Engineering Firms Practicing in the Geosciences (ASFE) publication, "Important Information about Your Geotechnical Engineering Report" appears in Appendix C, and will help explain the nature of geotechnical issues. Further, we present documents in Appendix C: Constraints and Restrictions, to bring to your attention the potential concerns and the basic limitations of a typical geotechnical report.



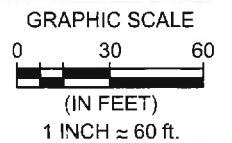
APPENDIX A

**BORING LOCATION PLAN
SUBSURFACE PROFILES
SOILS CLASSIFICATION CHART**

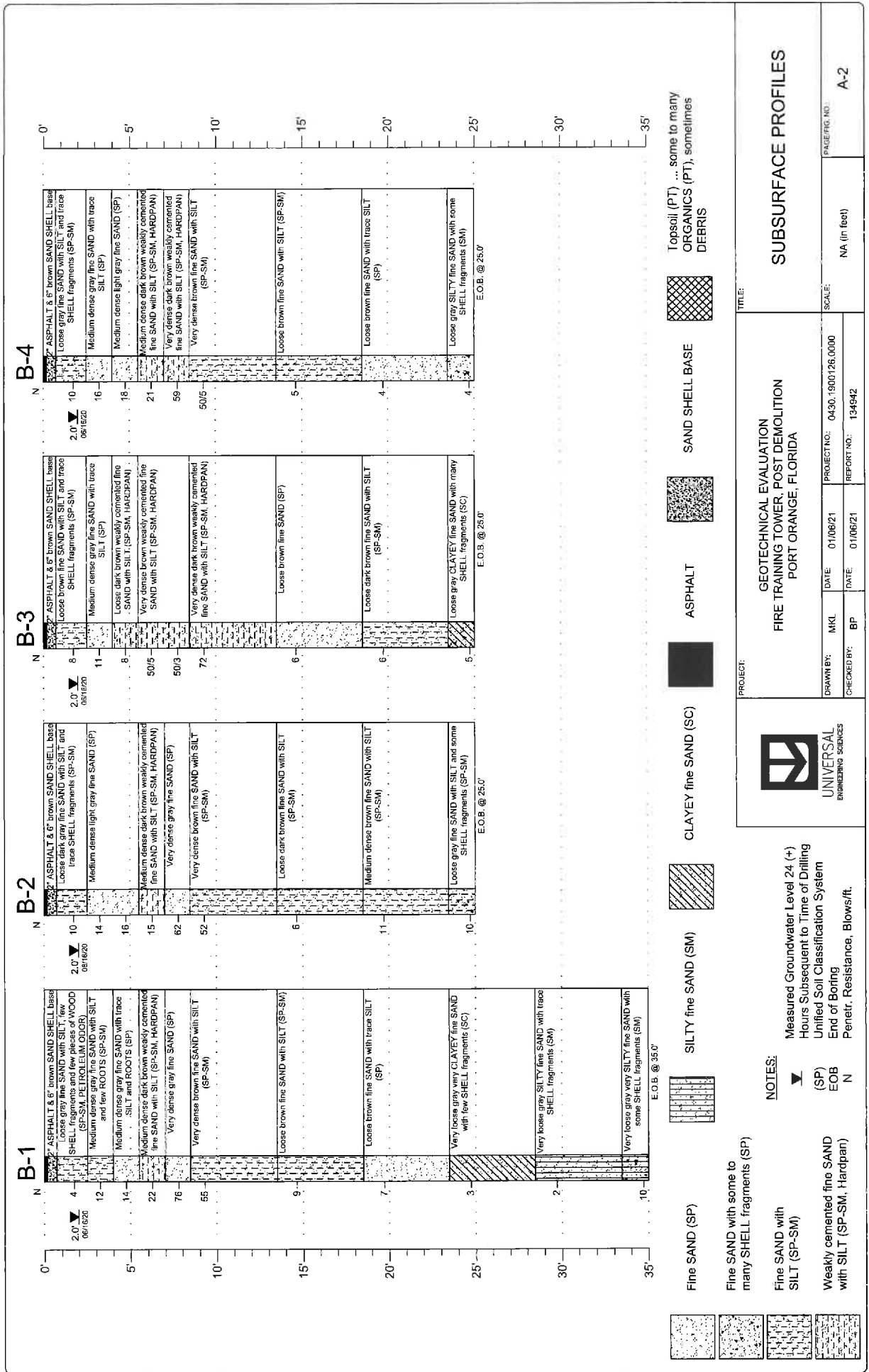


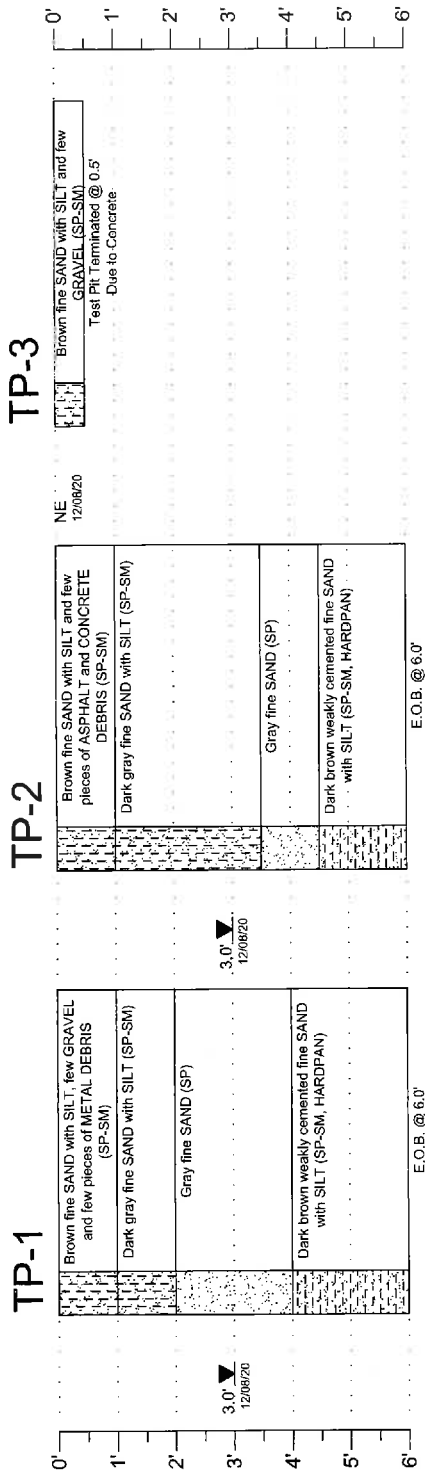
LEGEND

- ⊕ APPROXIMATE LOCATION OF STANDARD PENETRATION TEST (SPT) BORING
- APPROXIMATE LOCATION OF TEST PIT



TITLE: BORING LOCATION PLAN			SCALE: 1" ≈ 60'
PROJECT: GEOTECHNICAL EVALUATION FIRE TRAINING TOWER, POST DEMOLITION PORT ORANGE, FLORIDA			PAGE/FIG. NO.: A-1
DRAWN BY: MKL	DATE: 01/06/21	PROJECT NO.: 0430.1900126.0000	
CHECKED BY: BP	DATE: 01/06/21	REPORT NO.: 134942	





 UNIVERSAL ENGINEERING SCIENCES		PROJECT: GEOTECHNICAL EVALUATION FIRE TRAINING TOWER, POST DEMOLITION PORT ORANGE, FLORIDA		TITLE: SUBSURFACE PROFILES	
NOTES: Measured Groundwater Level 24 (+) Hours Subsequent to Time of Drilling Unified Soil Classification System End of Boring Groundwater not Encountered		DRAWN BY: MKL CHECKED BY: BP		SCALE: NA (in feet)	
Fine SAND (SP) Fine SAND with SILT (SP-SM) Weakly cemented fine SAND with SILT (SP-SM, Hardpan)		PROJECT NO: 0430.1900126.0000 REPORT NO: 134942		PAGE FIG. NO: A-3	



SYMBOLS

SYMBOL DESCRIPTION

N	No. of blows of a 140-lb weight falling 30 inches required to drive standard spoon 1 foot.
WOR	Weight of Drill Rods
WOH	Weight of Drill Rods and Hammer
% REC	Percent Core Recovery from Rock Core Drilling
RQD	Rock Quality Designation
EOB	End Of Boring
BT	Boring Terminated
-200	Fines Content or % Passing No. 200 Sieve
MC	Moisture Content
LL	Liquid Limit
PI	Plasticity Index
K	Coefficient of Permeability
O.C.	Organic Content
▽	Estimated seasonal high groundwater level
▼	Measured groundwater level at time of drilling

RELATIVE DENSITY (sand-silt)

Very Loose - Less Than 4 Blows/Ft.
Loose - 4 to 10 Blows/Ft.
Medium - 11 to 30 Blows/Ft.
Dense - 31 to 50 Blows/Ft.
Very Dense - More Than 50 Blows/Ft.

CONSISTENCY (clay)

Very Soft - Less than 2 Blows/Ft.
Soft - 2 to 4 Blows/Ft.
Medium - 5 to 8 Blows/Ft.
Stiff - 9 to 15 Blows/Ft.
Very Stiff - 16 to 30 Blows/Ft.
Hard - More Than 30 Blows/Ft.

RELATIVE HARDNESS (Limestone)

Soft - 100 Blows for more than 2"
Hard - 100 Blows for less than 2"

UNIFIED CLASSIFICATION SYSTEM

MAJOR DIVISIONS			GROUP SYMBOLS	TYPICAL NAMES
COARSE-GRAINED SOILS More than 50% retained on No. 200 sieve*	GRAVELS 50% or more of coarse fraction retained on No. 4 sieve	CLEAN GRAVELS	GW	Well-graded gravels and gravel-sand mixtures, little or no fines
			GP	Well-graded gravels and gravel-sand mixtures, little or no fines
	GRAVELS WITH FINES		GM	Silty gravels, gravel-sand-silt mixtures
			GC	Clayey gravels, gravel-sand-clay mixtures
	SANDS More than 50% of coarse fraction passes No. 4 sieve	CLEAN SANDS	SW**	Well-graded sands and gravelly sands, little or no fines
			SP**	Well-graded sands and gravelly sands, little or no fines
		SANDS WITH FINES	SM**	Silty sands, sand-silt mixtures
			SC**	Clayey sands, sand-clay mixtures
FINE-GRAINED SOILS 50% or more passes No. 200 sieve*	SILTS AND CLAYS Liquid limit 50% or less		ML	Inorganic silts, very fine sands, rock flour, silty or clayey fine sands
			CL	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays
			OL	Organic silts and organic silty clays of low plasticity
	SILTS AND CLAYS Liquid limit greater than 50%		MH	Inorganic silts, micaceous or diatomaceous fine sands or silts, elastic silts
			CH	Organic clays or high plasticity, fat clays
			OH	Organic clays of medium to high plasticity
			PT	Peat, muck and other highly organic soils

* Based on the material passing the 3-in. (75 mm) sieve.

** Use dual symbol (such as SP-SM and SP-SC) for soil with more than 5% but less than 12% passing through No. 200 sieve.

MODIFIERS

These modifiers provide our estimate of the amount of minor constituents (SILT or CLAY sized particles) in the soil sample.

Trace - 5% or less
With SILT or with CLAY - 6% to 11%
SILTY or CLAYEY - 12% to 30%
Very SILTY or Very CLAYEY - 31% to 50%

These modifiers provide our estimate of the amount of organic components in the soil sample.

Trace - 1% to 2%
Few - 3% to 4%
Some - 5% to 8%
Many - Greater than 8%

These modifiers provide our estimate of the amount of other components (Shell, Gravel, Etc.) in the soil sample

Trace - 5% or less
Few - 6% to 12%
Some - 13% to 30%
Many - 31% to 50%

APPENDIX B

LABORATORY TESTING PROCEDURES

DESCRIPTION OF LABORATORY TESTING PROCEDURES

LABORATORY PERMEABILITY TEST

The laboratory permeability test is a Falling Head Test that is performed on soil samples recovered from this site. The data recovered from this test are used to calculate Darcy's Coefficient of Permeability (k) of the soil.

WASH 200 TEST

The Wash 200 test is performed by passing a representative soil sample over a No. 200 sieve and rinsing with water. The percentage of the soil grains passing this sieve is then calculated.

ORGANIC CONTENT TESTS

The organic content test is performed by weighing a sample before and after placing in a high temperature oven which burns the organic material in the sample. The percent of organic material by weight is then calculated.

MOISTURE CONTENT DETERMINATION ASTM D-2216

Moisture content is the ratio of the weight of water to the dry weight of soil. Moisture content is measured by drying a sample at 105 degrees Celsius. The moisture content is expressed as a percent of the oven dried soil mass.

ATTERBERG LIMITS

The Atterberg Limits consist of the Liquid Limit (LL) and the Plastic Limit (PL). The LL and PL were determined in general accordance with the latest revision of ASTM D-4318. The LL is the water content of the material denoting the boundary between the liquid and plastic states. The PL is the water content denoting the boundary between the plastic and semi-solid states. The Plasticity Index (PI) is the range of water content over which a soil behaves plastically and is denoted numerically by as the difference between the LL and the PL. The water content of the sample tested was determined in general accordance with the latest revision of ASTM D-2216. The water content is defined as the ratio of "pore" or "free" water in a given mass of material to the mass of solid material particles.

CONSOLIDATION TESTING

A single selected portion of the undisturbed sample was extruded from the 3-inch diameter sample tube for consolidation testing. The selected sample was trimmed and confined into a stainless steel disc having a diameter of 2.5 inches and a height of 1 inch. The disc was then "sandwiched" between 2 porous stones, saturated and subjected to incrementally increasing loads. The resulting deformation of the sample within the steel disc was measured using a micrometer gauge.

APPENDIX C

GENERAL CONDITIONS CONSTRAINTS AND RESTRICTIONS AND IMPORTANT INFORMATION ABOUT YOUR GEOTECHNICAL ENGINEERING REPORT

Universal Engineering Sciences, LLC
GENERAL CONDITIONS

SECTION 1: RESPONSIBILITIES 1.1 Universal Engineering Sciences, LLC, and its subsidiaries and affiliated companies ("UES"), is responsible for providing the services described under the Scope of Services. The term "UES" as used herein includes all of UES's agents, employees, professional staff, and subcontractors. 1.2 The Client or a duly authorized representative is responsible for providing UES with a clear understanding of the project nature and scope. The Client shall supply UES with sufficient and adequate information, including, but not limited to, maps, site plans, reports, surveys, plans and specifications, and designs, to allow UES to properly complete the specified services. The Client shall also communicate changes in the nature and scope of the project as soon as possible during performance of the work so that the changes can be incorporated into the work product. 1.3 The Client acknowledges that UES's responsibilities in providing the services described under the Scope of Services section is limited to those services described therein, and the Client hereby assumes any collateral or affiliated duties necessitated by or for those services. Such duties may include, but are not limited to, reporting requirements imposed by any third party such as federal, state, or local entities, the provision of any required notices to any third party, or the securing of necessary permits or permissions from any third parties required for UES's provision of the services so described, unless otherwise agreed upon by both parties in writing.

SECTION 2: STANDARD OF CARE 2.1 Services performed by UES under this Agreement will be conducted in a manner consistent with the level of care and skill ordinarily exercised by members of UES's profession practicing contemporaneously under similar conditions in the locality of the project. No other warranty, express or implied, is made. 2.2 Execution of this document by UES is not a representation that UES has visited the site, become generally familiar with local conditions under which the work is to be performed, or correlated personal observations with the requirements of the Scope of Services. It is the Client's responsibility to provide UES with all information necessary for UES to provide the services described under the Scope of Services, and the Client assumes all liability for information not provided to UES that may affect the quality or sufficiency of the services so described.

SECTION 3: SITE ACCESS AND SITE CONDITIONS 3.1 Client will grant or obtain free access to the site for all equipment and personnel necessary for UES to perform the work set forth in this Agreement. The Client will notify any possessors of the project site that Client has granted UES free access to the site. UES will take reasonable precautions to minimize damage to the site, but it is understood by Client that, in the normal course of work, some damage may occur, and the correction of such damage is not part of this Agreement unless so specified in the Scope of Services. 3.2 The Client is responsible for the accuracy of locations for all subterranean structures and utilities. UES will take reasonable precautions to avoid known subterranean structures, and the Client waives any claim against UES, and agrees to defend, indemnify, and hold UES harmless from any claim or liability for injury or loss, including costs of defense, arising from damage done to subterranean structures and utilities not identified or accurately located. In addition, Client agrees to compensate UES for any time spent or expenses incurred by UES in defense of any such claim with compensation to be based upon UES's prevailing fee schedule and expense reimbursement policy.

SECTION 4: BILLING AND PAYMENT 4.1 UES will submit invoices to Client monthly or upon completion of services. Invoices will show charges for different personnel and expense classifications. 4.2 Payment is due 30 days after presentation of invoice and is past due 31 days from invoice date. Client agrees to pay a finance charge of one and one-half percent (1 ½ %) per month, or the maximum rate allowed by law, on past due accounts. 4.3 If UES incurs any expenses to collect overdue billings on invoices, the sums paid by UES for reasonable attorneys' fees, court costs, UES's time, UES's expenses, and interest will be due and owing by the Client.

SECTION 5: OWNERSHIP AND USE OF DOCUMENTS 5.1 All reports, boring logs, field data, field notes, laboratory test data, calculations, estimates, and other documents prepared by UES, as instruments of service, shall remain the property of UES. Neither Client nor any other entity shall change or modify UES's instruments of service. 5.2 Client agrees that all reports and other work furnished to the Client or his agents, which are not paid for, will be returned upon demand and will not be used by the Client for any purpose. 5.3 UES will retain all pertinent records relating to the services performed for a period of five years following submission of the report or completion of the Scope of Services, during which period the records will be made available to the Client in a reasonable time and manner. 5.4 All reports, boring logs, field data, field notes, laboratory test data, calculations, estimates, and other documents prepared by UES, are prepared for the sole and exclusive use of Client, and may not be given to any other entity, or used or relied upon by any other entity, without the express written consent of UES. Client is the only entity to which UES owes any duty or duties, in contract or tort, pursuant to or under this Agreement.

SECTION 6: DISCOVERY OF UNANTICIPATED HAZARDOUS MATERIALS 6.1 Client represents that a reasonable effort has been made to inform UES of known or suspected hazardous materials on or near the project site. 6.2 Under this agreement, the term hazardous materials include hazardous materials, hazardous wastes, hazardous substances (40 CFR 261.31, 261.32, 261.33), petroleum products, polychlorinated biphenyls, asbestos, and any other material defined by the U.S. EPA as a hazardous material. 6.3 Hazardous materials may exist at a site where there is no reason to believe they are present. The discovery of unanticipated hazardous materials constitutes a changed condition mandating a renegotiation of the scope of work. The discovery of unanticipated hazardous materials may make it necessary for UES to take immediate measures to protect health and safety. Client agrees to compensate UES for any equipment decontamination or other costs incident to the discovery of unanticipated hazardous materials. 6.4 UES will notify Client when unanticipated hazardous materials or suspected hazardous materials are encountered. Client will make any disclosures required by law to the appropriate governing agencies. Client will hold UES harmless for all consequences of disclosures made by UES which are required by governing law. In the event the project site is not owned by Client, Client it is the Client's responsibility to inform the property owner of the discovery of unanticipated hazardous materials or suspected hazardous materials. 6.5 Notwithstanding any other provision of the Agreement, Client waives any claim against UES, and to the maximum extent permitted by law, agrees to defend, indemnify, and save UES harmless from any claim, liability, and/or defense costs for injury or loss arising from UES's discovery of unanticipated hazardous materials or suspected hazardous materials including any costs created by delay of the project and any cost associated with possible reduction of the property's value. Client will be responsible for ultimate disposal of any samples secured by UES which are found to be contaminated.

SECTION 7: RISK ALLOCATION 7.1 Client agrees that UES's liability for any damage on account of any breach of contract, error, omission, or professional negligence will be limited to a sum not to exceed \$50,000 or UES's fee, whichever is greater. If Client prefers to have higher limits on contractual or professional liability, UES agrees to increase the limits up to a maximum of \$1,000,000.00 upon Client's written request at the time of accepting UES's proposal provided that Client agrees to pay an additional consideration of four percent of the total fee, or \$400.00, whichever is greater. If Client prefers a \$2,000,000.00 limit on contractual or professional liability, UES agrees to increase the limits up to a maximum of \$2,000,000.00 upon Client's written request at the time of accepting UES's proposal provided that Client agrees to pay an additional consideration of four percent of the total fee, or \$800.00, whichever is greater. The additional charge for the higher liability limits is because of the greater risk assumed and is not strictly a charge for additional professional liability insurance. 7.2 Client shall not be liable to UES and UES shall not be liable to Client for any incidental, special, or consequential damages (including lost profits, loss of use, and lost savings) incurred by either party due to the fault of the other, regardless of the nature of the fault, or whether it was committed by Client or UES, their employees, agents, or subcontractors; or whether such liability arises in breach of contract or warranty, tort (including negligence), statutory, or any other cause of action. 7.3 As used in this Agreement, the terms "claim" or "claims" mean any claim in contract, tort, or statute alleging negligence, errors, omissions, strict liability, statutory liability, breach of contract, breach of warranty, negligent misrepresentation, or any other act giving rise to liability.

SECTION 8: INSURANCE 8.1 UES represents it and its agents, staff and consultants employed by UES, is and are protected by worker's compensation insurance and that UES has such coverage under public liability and property damage insurance policies which UES deems to be adequate. Certificates for all such policies of insurance shall be provided to Client upon request in writing. Within the limits and conditions of such insurance, UES agrees to indemnify and save Client harmless from and against loss, damage, or liability arising from negligent acts by UES, its agents, staff, and consultants employed by it. UES shall not be responsible for any loss, damage or liability beyond the amounts, limits, and conditions of such insurance or the limits described in Section 7, whichever is less.

The Client agrees to defend, indemnify, and save UES harmless for loss, damage or liability arising from acts by Client, Client's agents, staff, and others employed by Client. **8.2** Under no circumstances will UES indemnify Client from or for Client's own actions, negligence, or breaches of contract. **8.3** To the extent damages are covered by property insurance, Client and UES waive all rights against each other and against the contractors, consultants, agents, and employees of the other for damages, except such rights as they may have to the proceeds of such insurance.

SECTION 9: DISPUTE RESOLUTION **9.1** All claims, disputes, and other matters in controversy between UES and Client arising out of or in any way related to this Agreement will be submitted to mediation or non-binding arbitration, before and as a condition precedent to other remedies provided by law. **9.2** If a dispute arises and that dispute is not resolved by mediation or non-binding arbitration, then: (a) the claim will be brought in the state or federal courts having jurisdiction where the UES office which provided the service is located; and (b) the prevailing party will be entitled to recovery of all reasonable costs incurred, including staff time, court costs, attorneys' fees, expert witness fees, and other claim related expenses.

SECTION 10: TERMINATION **10.1** This agreement may be terminated by either party upon seven (7) days written notice in the event of substantial failure by the other party to perform in accordance with the terms hereof, or in the case of a force majeure event such as terrorism, act of war, public health or other emergency. Such termination shall not be effective if such substantial failure or force majeure has been remedied before expiration of the period specified in the written notice. In the event of termination, UES shall be paid for services performed to the termination notice date plus reasonable termination expenses. **10.2** In the event of termination, or suspension for more than three (3) months, prior to completion of all reports contemplated by the Agreement, UES may complete such analyses and records as are necessary to complete its files and may also complete a report on the services performed to the date of notice of termination or suspension. The expense of termination or suspension shall include all direct costs of UES in completing such analyses, records, and reports.

SECTION 11: REVIEWS, INSPECTIONS, TESTING, AND OBSERVATIONS **11.1** Plan review, private provider inspections, and building inspections are performed for the purpose of observing compliance with applicable building codes. Threshold inspections are performed for the purpose of observing compliance with an approved threshold inspection plan. Construction materials testing ("CMT") is performed to document compliance of certain materials or components with applicable testing standards. UES's performance of plan reviews, private provider inspections, building inspections, threshold inspections, or CMT, or UES's presence on the site of Client's project while performing any of the foregoing activities, is not a representation or warranty by UES that Client's project is free of errors in either design or construction. **11.2** If UES is retained to provide construction monitoring or observation, UES will report to Client any observed work which, in UES's opinion, does not conform to the plans and specifications provided to UES. UES shall have no authority to reject or terminate the work of any agent or contractor of Client. No action, statements, or communications of UES, or UES's site representative, can be construed as modifying any agreement between Client and others. UES's performance of construction monitoring or observation is not a representation or warranty by UES that Client's project is free of errors in either design or construction. **11.3** Neither the activities of UES pursuant to this Agreement, nor the presence of UES or its employees, representatives, or subcontractors on the project site, shall be construed to impose upon UES any responsibility for means or methods of work performance, superintendence, sequencing of construction, or safety conditions at the project site. Client acknowledges that Client or its contractor is solely responsible for project jobsite safety. **11.4** Client is responsible for scheduling all inspections and CMT activities of UES. All testing and inspection services will be performed on a will-call basis. UES will not be responsible for tests and inspections that are not performed due to Client's failure to schedule UES's services on the project, or for any claims or damages arising from tests and inspections that are not scheduled or performed.

SECTION 12: ENVIRONMENTAL ASSESSMENTS Client acknowledges that an Environmental Site Assessment ("ESA") is conducted solely to permit UES to render a professional opinion about the likelihood or extent of regulated contaminants being present on, in, or beneath the site in question at the time services were conducted. No matter how thorough an ESA study may be, findings derived from the study are limited and UES cannot know or state for a fact that a site is unaffected by reportable quantities of regulated contaminants as a result of conducting the ESA study. Even if UES states that reportable quantities of regulated contaminants are not present, Client still bears the risk that such contaminants may be present or may migrate to the site after the ESA study is complete.

SECTION 13: SUBSURFACE EXPLORATIONS **13.1** Client acknowledges that subsurface conditions may vary from those observed at locations where borings, surveys, samples, or other explorations are made, and that site conditions may change with time. Data, interpretations, and recommendations by UES will be based solely on information available to UES at the time of service. UES is responsible for those data, interpretations, and recommendations, but will not be responsible for other parties' interpretations or use of the information developed or provided by UES. **13.2** Subsurface explorations may result in unavoidable cross-contamination of certain subsurface areas, as when a probe or boring device moves through a contaminated zone and links it to an aquifer, underground stream, or other hydrous body not previously contaminated. UES is unable to eliminate totally cross-contamination risk despite use of due care. Since subsurface explorations may be an essential element of UES's services indicated herein, Client shall, to the fullest extent permitted by law, waive any claim against UES, and indemnify, defend, and hold UES harmless from any claim or liability for injury or loss arising from cross-contamination allegedly caused by UES's subsurface explorations. In addition, Client agrees to compensate UES for any time spent or expenses incurred by UES in defense of any such claim with compensation to be based upon UES's prevailing fee schedule and expense reimbursement policy.

SECTION 14: SOLICITATION OF EMPLOYEES Client agrees not to hire UES's employees except through UES. In the event Client hires a UES employee within one year following any project through which Client had contact with said employee, Client shall pay UES an amount equal to one-half of the employee's annualized salary, as liquidated damages, without UES waiving other remedies it may have.

SECTION 15: ASSIGNS Neither Client nor UES may delegate, assign, sublet, or transfer its duties or interest in this Agreement without the written consent of the other party.

SECTION 16: GOVERNING LAW AND SURVIVAL **16.1** This Agreement shall be governed by and construed in accordance with the laws of the jurisdiction in which the UES office performing the services hereunder is located. **16.2** In any of the provisions of this Agreement are held illegal, invalid, or unenforceable, the enforceability of the remaining provisions will not be impaired and will survive. Limitations of liability and indemnities will survive termination of this agreement for any cause.

SECTION 17: INTEGRATION CLAUSE **17.1** This Agreement represents and contains the entire and only agreement and understanding among the parties with respect to the subject matter of this Agreement, and supersedes any and all prior and contemporaneous oral and written agreements, understandings, representations, inducements, promises, warranties, and conditions among the parties. No agreement, understanding, representation, inducement, promise, warranty, or condition of any kind with respect to the subject matter of this Agreement shall be relied upon by the parties unless expressly incorporated herein. **17.2** This Agreement may not be amended or modified except by an agreement in writing signed by the party against whom the enforcement of any modification or amendment is sought.

SECTION 18: WAIVER OF JURY TRIAL Both Client and UES waive trial by jury in any action arising out of or related to this Agreement.

SECTION 19: INDIVIDUAL LIABILITY PURSUANT TO FLORIDA STAT. 558.0035, AN INDIVIDUAL EMPLOYEE OR AGENT OF UES MAY NOT BE HELD INDIVIDUALLY LIABLE FOR NEGLIGENCE.

CONSTRAINTS AND RESTRICTIONS

WARRANTY

Universal Engineering Sciences has prepared this report for our client for his exclusive use, in accordance with generally accepted soil and foundation engineering practices, and makes no other warranty either expressed or implied as to the professional advice provided in the report.

UNANTICIPATED SOIL CONDITIONS

The analysis and recommendations submitted in this report are based upon the data obtained from soil borings performed at the locations indicated on the Boring Location Plan. This report does not reflect any variations which may occur between these borings.

The nature and extent of variations between borings may not become known until excavation begins. If variations appear, we may have to re-evaluate our recommendations after performing on-site observations and noting the characteristics of any variations.

CHANGED CONDITIONS

We recommend that the specifications for the project require that the contractor immediately notify Universal Engineering Sciences, as well as the owner, when subsurface conditions are encountered that are different from those present in this report.

No claim by the contractor for any conditions differing from those anticipated in the plans, specifications, and those found in this report, should be allowed unless the contractor notifies the owner and Universal Engineering Sciences of such changed conditions. Further, we recommend that all foundation work and site improvements be observed by a representative of Universal Engineering Sciences to monitor field conditions and changes, to verify design assumptions and to evaluate and recommend any appropriate modifications to this report.

MISINTERPRETATION OF SOIL ENGINEERING REPORT

Universal Engineering Sciences is responsible for the conclusions and opinions contained within this report based upon the data relating only to the specific project and location discussed herein. If the conclusions or recommendations based upon the data presented are made by others, those conclusions or recommendations are not the responsibility of Universal Engineering Sciences.

CHANGED STRUCTURE OR LOCATION

This report was prepared in order to aid in the evaluation of this project and to assist the architect or engineer in the design of this project. If any changes in the design or location of the structure as outlined in this report are planned, or if any structures are included or added that are not discussed in the report, the conclusions and recommendations contained in this report shall not be considered valid unless the changes are reviewed and the conclusions modified or approved by Universal Engineering Sciences.

USE OF REPORT BY BIDDERS

Bidders who are examining the report prior to submission of a bid are cautioned that this report was prepared as an aid to the designers of the project and it may affect actual construction operations.

Bidders are urged to make their own soil borings, test pits, test caissons or other investigations to determine those conditions that may affect construction operations. Universal Engineering Sciences cannot be responsible for any interpretations made from this report or the attached boring logs with regard to their adequacy in reflecting subsurface conditions which will affect construction operations.

STRATA CHANGES

Strata changes are indicated by a definite line on the boring logs which accompany this report. However, the actual change in the ground may be more gradual. Where changes occur between soil samples, the location of the change must necessarily be estimated using all available information and may not be shown at the exact depth.

OBSERVATIONS DURING DRILLING

Attempts are made to detect and/or identify occurrences during drilling and sampling, such as: water level, boulders, zones of lost circulation, relative ease or resistance to drilling progress, unusual sample recovery, variation of driving resistance, obstructions, etc.; however, lack of mention does not preclude their presence.

WATER LEVELS

Water level readings have been made in the drill holes during drilling and they indicate normally occurring conditions. Water levels may not have been stabilized at the last reading. This data has been reviewed and interpretations made in this report. However, it must be noted that fluctuations in the level of the groundwater may occur due to variations in rainfall, temperature, tides, and other factors not evident at the time measurements were made and reported. Since the probability of such variations is anticipated, design drawings and specifications should accommodate such possibilities and construction planning should be based upon such assumptions of variations.

LOCATION OF BURIED OBJECTS

All users of this report are cautioned that there was no requirement for Universal Engineering Sciences to attempt to locate any man-made buried objects during the course of this exploration and that no attempt was made by Universal Engineering Sciences to locate any such buried objects. Universal Engineering Sciences cannot be responsible for any buried man-made objects which are subsequently encountered during construction that are not discussed within the text of this report.

TIME

This report reflects the soil conditions at the time of investigation. If the report is not used in a reasonable amount of time, significant changes to the site may occur and additional reviews may be required.

Important Information about This Geotechnical-Engineering Report

Subsurface problems are a principal cause of construction delays, cost overruns, claims, and disputes.

While you cannot eliminate all such risks, you can manage them. The following information is provided to help.

Geotechnical Services Are Performed for Specific Purposes, Persons, and Projects

Geotechnical engineers structure their services to meet the specific needs of their clients. A geotechnical-engineering study conducted for a civil engineer may not fulfill the needs of a constructor — a construction contractor — or even another civil engineer. Because each geotechnical-engineering study is unique, each geotechnical-engineering report is unique, prepared *solely* for the client. No one except you should rely on this geotechnical-engineering report without first conferring with the geotechnical engineer who prepared it. *And no one — not even you — should apply this report for any purpose or project except the one originally contemplated.*

Read the Full Report

Serious problems have occurred because those relying on a geotechnical-engineering report did not read it all. Do not rely on an executive summary. Do not read selected elements only.

Geotechnical Engineers Base Each Report on a Unique Set of Project-Specific Factors

Geotechnical engineers consider many unique, project-specific factors when establishing the scope of a study. Typical factors include: the client's goals, objectives, and risk-management preferences; the general nature of the structure involved, its size, and configuration; the location of the structure on the site; and other planned or existing site improvements, such as access roads, parking lots, and underground utilities. Unless the geotechnical engineer who conducted the study specifically indicates otherwise, do not rely on a geotechnical-engineering report that was:

- not prepared for you;
- not prepared for your project;
- not prepared for the specific site explored; or
- completed before important project changes were made.

Typical changes that can erode the reliability of an existing geotechnical-engineering report include those that affect:

- the function of the proposed structure, as when it's changed from a parking garage to an office building, or from a light-industrial plant to a refrigerated warehouse;
- the elevation, configuration, location, orientation, or weight of the proposed structure;
- the composition of the design team; or
- project ownership.

As a general rule, *always* inform your geotechnical engineer of project changes—even minor ones—and request an

assessment of their impact. *Geotechnical engineers cannot accept responsibility or liability for problems that occur because their reports do not consider developments of which they were not informed.*

Subsurface Conditions Can Change

A geotechnical-engineering report is based on conditions that existed at the time the geotechnical engineer performed the study. *Do not rely on a geotechnical-engineering report whose adequacy may have been affected by:* the passage of time; man-made events, such as construction on or adjacent to the site; or natural events, such as floods, droughts, earthquakes, or groundwater fluctuations. *Contact the geotechnical engineer before applying this report to determine if it is still reliable.* A minor amount of additional testing or analysis could prevent major problems.

Most Geotechnical Findings Are Professional Opinions

Site exploration identifies subsurface conditions only at those points where subsurface tests are conducted or samples are taken. Geotechnical engineers review field and laboratory data and then apply their professional judgment to render an opinion about subsurface conditions throughout the site. Actual subsurface conditions may differ — sometimes significantly — from those indicated in your report. Retaining the geotechnical engineer who developed your report to provide geotechnical-construction observation is the most effective method of managing the risks associated with unanticipated conditions.

A Report's Recommendations Are Not Final

Do not overrely on the confirmation-dependent recommendations included in your report. *Confirmation-dependent recommendations are not final*, because geotechnical engineers develop them principally from judgment and opinion. Geotechnical engineers can finalize their recommendations *only* by observing actual subsurface conditions revealed during construction. *The geotechnical engineer who developed your report cannot assume responsibility or liability for the report's confirmation-dependent recommendations if that engineer does not perform the geotechnical-construction observation required to confirm the recommendations' applicability.*

A Geotechnical-Engineering Report Is Subject to Misinterpretation

Other design-team members' misinterpretation of geotechnical-engineering reports has resulted in costly

problems. Confront that risk by having your geotechnical engineer confer with appropriate members of the design team after submitting the report. Also retain your geotechnical engineer to review pertinent elements of the design team's plans and specifications. Constructors can also misinterpret a geotechnical-engineering report. Confront that risk by having your geotechnical engineer participate in prebid and preconstruction conferences, and by providing geotechnical construction observation.

Do Not Redraw the Engineer's Logs

Geotechnical engineers prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. To prevent errors or omissions, the logs included in a geotechnical-engineering report should *never* be redrawn for inclusion in architectural or other design drawings. Only photographic or electronic reproduction is acceptable, *but recognize that separating logs from the report can elevate risk.*

Give Constructors a Complete Report and Guidance

Some owners and design professionals mistakenly believe they can make constructors liable for unanticipated subsurface conditions by limiting what they provide for bid preparation. To help prevent costly problems, give constructors the complete geotechnical-engineering report, *but* preface it with a clearly written letter of transmittal. In that letter, advise constructors that the report was not prepared for purposes of bid development and that the report's accuracy is limited; encourage them to confer with the geotechnical engineer who prepared the report (a modest fee may be required) and/or to conduct additional study to obtain the specific types of information they need or prefer. A prebid conference can also be valuable. *Be sure constructors have sufficient time to perform additional study.* Only then might you be in a position to give constructors the best information available to you, while requiring them to at least share some of the financial responsibilities stemming from unanticipated conditions.

Read Responsibility Provisions Closely

Some clients, design professionals, and constructors fail to recognize that geotechnical engineering is far less exact than other engineering disciplines. This lack of understanding has created unrealistic expectations that have led to disappointments, claims, and disputes. To help reduce the risk of such outcomes, geotechnical engineers commonly include a variety of explanatory provisions in their reports. Sometimes labeled "limitations," many of these provisions indicate where geotechnical engineers' responsibilities begin and end, to help

others recognize their own responsibilities and risks. *Read these provisions closely.* Ask questions. Your geotechnical engineer should respond fully and frankly.

Environmental Concerns Are Not Covered

The equipment, techniques, and personnel used to perform an *environmental* study differ significantly from those used to perform a *geotechnical* study. For that reason, a geotechnical-engineering report does not usually relate any environmental findings, conclusions, or recommendations; e.g., about the likelihood of encountering underground storage tanks or regulated contaminants. *Unanticipated environmental problems have led to numerous project failures.* If you have not yet obtained your own environmental information, ask your geotechnical consultant for risk-management guidance. *Do not rely on an environmental report prepared for someone else.*

Obtain Professional Assistance To Deal with Mold

Diverse strategies can be applied during building design, construction, operation, and maintenance to prevent significant amounts of mold from growing on indoor surfaces. To be effective, all such strategies should be devised for the *express purpose* of mold prevention, integrated into a comprehensive plan, and executed with diligent oversight by a professional mold-prevention consultant. Because just a small amount of water or moisture can lead to the development of severe mold infestations, many mold- prevention strategies focus on keeping building surfaces dry. While groundwater, water infiltration, and similar issues may have been addressed as part of the geotechnical- engineering study whose findings are conveyed in this report, the geotechnical engineer in charge of this project is not a mold prevention consultant; *none of the services performed in connection with the geotechnical engineer's study were designed or conducted for the purpose of mold prevention. Proper implementation of the recommendations conveyed in this report will not of itself be sufficient to prevent mold from growing in or on the structure involved.*

Rely, on Your GBC-Member Geotechnical Engineer for Additional Assistance

Membership in the Geotechnical Business Council of the Geoprofessional Business Association exposes geotechnical engineers to a wide array of risk-confrontation techniques that can be of genuine benefit for everyone involved with a construction project. Confer with you GBC-Member geotechnical engineer for more information.



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CITY OF PORT ORANGE

PURCHASING DIVISION
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PORT ORANGE, FLORIDA 32129
TELEPHONE 386-506-5704
purchdiv@port-orange.org

ADDENDUM NO. #2

January 28, 2021

ITB #20-14 Fire Department Training Tower Excavation, Foundation and Erection

To All Bidders:

The following changes, clarifications and additions are hereby made part of the bidding and specifications for the above referenced project dated January 8, 2021 and prepared by the City of Port Orange Purchasing Division as fully and completely as if the same were fully set forth therein. It is the sole responsibility of bidder to confirm that all addenda have been received prior to submitting bid and acknowledge such in the bid documents.

A. CLARIFICATIONS

N/A

B. CHANGES TO SPECIFICATIONS

Please see the attached revised Foundation Plans and Fire Training Equipment Concrete Foundation Calculations by Fire Facilities, Inc.

C. QUESTIONS AND ANSWERS

Question 1: Will this building have fire in it for training purposes?

Answer: It will not be used—at this time—for live fire training.

Question 2: Are there any specialty products that a certified fire professional may install regarding this building?

Answer: No, there is not.

Question 3: Will the power for the site be provided by the Electric Pole on the Southeast corner?

Answer: Yes, the power will be run underground from that pole and will be used for the 100-amp lighting circuit panel for inside the building for work lighting.

Question 4: Can this pole be utilized for temporary power on the job site?

Answer: Yes, it can be utilized by the contractor on the job site.

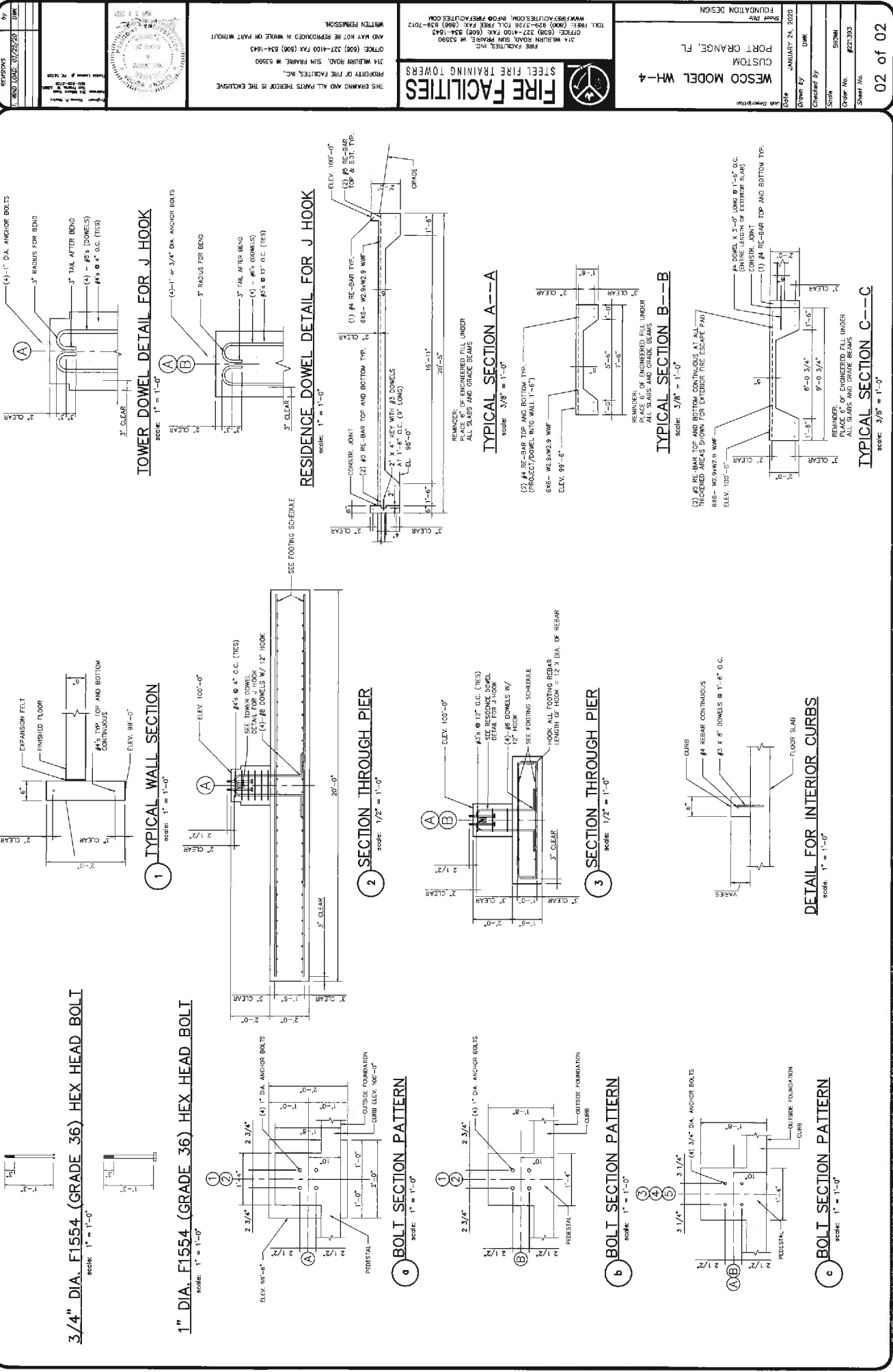
Michael Hall

Purchasing Agent

mhall@port-orange.org

In all other respects, except as specifically stated herein, the subject ITB #20-14 Fire Department Training Tower Excavation, Foundation and Erection remains unchanged.

END OF ADDENDUM NO. #2



**FIRE TRAINING EQUIPMENT
CONCRETE FOUNDATION CALCULATIONS**

WESCO MODEL WH-5 CUSTOM
12'X22'X50' TOWER SIMULATOR, 22'X34'X24' RESIDENCE SIMULATOR
FOR

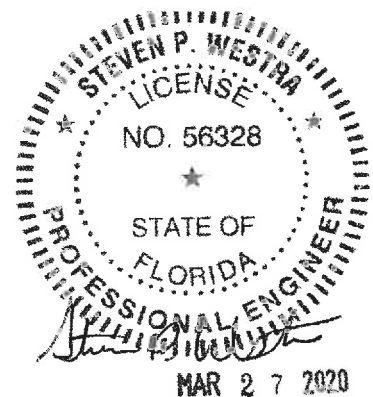
PORT ORANGE, FL

DESIGN CODE: FBC 2017

DESIGN LOADS TAKEN FROM STRUCTURAL CALCULATIONS
BASED ON THE INFORMATION SHOWN BELOW

ROOF LIVE LOAD: 100 psf
FLOOR LIVE LOAD: 100 psf
WIND LOAD: 140 mph, EXP C; Risk Cat. II
SEISMIC DESIGN CAT: B
SITE CLASS: D

PREPARED BY: DWK
DATE: 03/25/2020
ORDER NUMBER: #221393



WH-5

LOAD CASE	COLUMN	SHEAR (KIPS)	DOWNWARD (KIPS)	UPLIFT (KIPS)
WIND	A1,A2	17.69	69.11	102.46
	B1,B2	9.82	12.82	28.88
	A3,B3	4.78	4.01	15.77
	A4,B4	4.30	1.95	15.78
	A5,B5	2.91	1.06	7.89
DEAD	A1,A2	0.48	14.99	0.00
	B1,B2	0.48	14.99	0.00
	A3,B3	0.57	11.18	0.00
	A4,B4	0.58	9.85	0.00
	A5,B5	0.40	5.10	0.00
LIVE	A1,A2	1.41	53.37	0.00
	B1,B2	1.41	53.37	0.00
	A3,B3	1.46	40.71	0.00
	A4,B4	1.50	34.16	0.00
	A5,B5	0.89	13.86	0.00
SEISMIC	A1,A2	1.60	9.02	9.01
	B1,B2	0.51	1.84	1.84
	A3,B3	0.34	0.76	0.76
	A4,B4	0.29	0.63	0.63
	A5,B5	0.13	0.24	0.24

Reactions shown above are individual load cases with a load factor of one (no reductions). These reactions are based on FBC 2017 with a 140 mph; exp C wind and a seismic category B. Please also note that these reactions are based on the fire training simulator show on the Fire Facilities drawing dated or revised on 03/25/2020

CAST IN PLACE "HEADED" ANCHOR BOLT DESIGN

Columns - WH-4 (braced tower)

GENERAL INFORMATION - DATA ENTRY

NUMBER OF ANCHORS IN BASE PLATE $n := 4$

BOLT TYPE - F1554 (GRADE 36) ULTIMATE TENSILE STRENGTH $f_{ut} := 60000 \text{ psi}$

BOLT DIAMETER $d_o := 1.00 \text{ in}$

BOLT EMBEDMENT LENGTH $h_{ef} := 12.5 \text{ in}$

NUMBER OF THREADS PER INCH $n_t := 8$

BEARING AREA OF HEAD $A_b := 1.163 \text{ in}^2$

DEPTH OF SLAB/PIER $h := 24 \text{ in}$

EDGE DISTANCES/SPACING $c_{minx} := 9.25 \text{ in}$ $spacing_x := 5.5 \text{ in}$

$c_{miny} := 9.5 \text{ in}$ $spacing_y := 5 \text{ in}$

PIER/4EDGES (1=yes, 2=no) $P := 1$ $h_{ef} := h_{ef} - 6 \text{ in}$ $h_{cf} = 6.5 \text{ in}$

RIGIDLY WELDED (1=yes, 2=no) $RW := 2$

CONCRETE STRENGTH $f_c := 4000 \text{ psi}$

REBAR SIZE @ ANCHOR & EDGE OF CONC (<#4BAR, $\psi=1$; >#4BAR, $\psi=1.2$ & w/stirup space <=4" $\psi=1.4$) - (D6.2.7)

MODERATE OR HIGH SEISMIC RISK (1=yes, 2=no) (D3.3.4.4) $R := 2$ $\psi_c := 1.4$

Hef BETWEEN OR EQUAL TO 11 IN AND 25 (1=yes, 2=no) $EF := \text{if}(11 \text{ in} < h_{ef} \leq 25 \text{ in}, 1, 2)$ $EF = 2$

LOAD SUMMARY

SHEAR - UNFACTORED LOADS IN MOST CONSERVATIVE DIRECTION PER COLUMN

$$V_d := 0.48 \text{ k}$$

$$V_l := 1.41 \text{ k}$$

$$V_w := 17.69 \text{ k}$$

$$V_{seis} := 1.6 \text{ k}$$

TENSION - UNFACTORED LOADS PER COLUMN- UPLIFT MUST BE A NEGATIVE VALUE - (D3.2)

$$P_d := 14.99 \text{ k}$$

$$P_l := 53.37 \text{ k}$$

$$P_w := -102.46 \text{ k}$$

$$P_{seis} := -9.02 \text{ k}$$

SHEAR - FACTORED PER BOLT - (D3.2)

$$U_{v1} := \frac{(1.2 \cdot V_d + 1.6 \cdot V_l)}{n} \quad U_{v1} = 0.708 \cdot \text{k}$$

$$U_{v2} := \frac{(1.2 \cdot V_d + 0.5 \cdot V_l + 1.0 \cdot V_w)}{n} \quad U_{v2} = 4.743 \cdot \text{k}$$

$$U_{v3} := \frac{(0.9 \cdot V_d + 1.0 \cdot V_w)}{n} \quad U_{v3} = 4.53 \cdot \text{k}$$

$$U_{v4} := \frac{(1.2 \cdot V_d + 1.0 \cdot V_{seis} + 0.5 \cdot V_l)}{n} \quad U_{v4} = 0.72 \cdot \text{k}$$

$$U_{v5} := \frac{(0.9 \cdot V_d + 1.0 \cdot V_{seis})}{n} \quad U_{v5} = 0.508 \cdot \text{k}$$

$$U_{vmax} := \max(U_{v1}, U_{v2}, U_{v3}, U_{v4}, U_{v5}) \quad U_{vmax} = 4.743 \cdot \text{k}$$

TENSION - FACTORED PER BOLT - (D3.2)

$$U_{p1} := \frac{(1.2 \cdot P_d + 1.6 \cdot P_l)}{n} \quad U_{p1} = 25.845 \cdot \text{k}$$

$$U_{p2} := \frac{(1.2 \cdot P_d + 0.5 \cdot P_l + 1.0 \cdot P_w)}{n} \quad U_{p2} = -14.447 \cdot \text{k}$$

$$U_{p3} := \frac{(0.9 \cdot P_d + 1.0 \cdot P_w)}{n} \quad U_{p3} = -22.242 \cdot \text{k}$$

$$U_{p4} := \frac{(1.2 \cdot P_d + 1.0 \cdot P_{seis} + 0.5 \cdot P_l)}{n} \quad U_{p4} = 8.913 \cdot \text{k}$$

$$U_{p5} := \frac{(0.9 \cdot P_d + 1.0 \cdot P_{seis})}{n} \quad U_{p5} = 1.118 \cdot \text{k}$$

$$U_{pmax} := \min(U_{p1}, U_{p2}, U_{p3}, U_{p4}, U_{p5}, 0 \text{ k}) \quad U_{pmax} = -22.242 \cdot \text{k}$$

STEEL STRENGTH OF FASTENER

$$A_{sc} := \frac{\pi}{4} \cdot \left(d_o - \frac{.9743 \text{ in}}{n_t} \right)^2 \quad A_{sc} = 0.606 \cdot \text{in}^2$$

Tension - (D5.1 - EQ D-2)

D5.2.1

$$\begin{aligned} \phi_t &:= .75 & N_s &:= n \cdot A_{sc} \cdot f_{ut} & N_s &= 145.379 \cdot k \\ \phi N_s &:= \phi_t \cdot N_s & \phi N_s &= 109.034 \cdot k \\ \text{codecheck} &:= \text{if}(|U_{pmax}| \leq \phi N_s, \text{"OK"}, \text{"NOT OK"}) & \text{codecheck} &= \text{"OK"} \end{aligned}$$

Shear - (D6.1 - EQ D-29)

$$\begin{aligned} \phi_s &:= .65 & V_s &:= n \cdot (0.6) A_{sc} \cdot f_{ut} & V_s &= 87.227 \cdot k \\ \phi V_s &:= \phi_s \cdot V_s & \phi V_s &= 56.698 \cdot k \\ \text{codecheck} &:= \text{if}(U_{vmax} \leq \phi V_s, \text{"OK"}, \text{"NOT OK"}) & \text{codecheck} &= \text{"OK"} \end{aligned}$$

CONCRETE BREAKOUT STRENGTH OF FASTENERS IN TENSION (D5.2)

$$\begin{aligned} c_{max} &:= \max(c_{minx}, c_{miny}) & c_{max} &= 9.5 \cdot \text{in} & \phi &:= .75 \\ c_{min} &:= \min(c_{minx}, c_{miny}) & c_{min} &= 9.25 \cdot \text{in} \\ h'_{ef} &:= \text{if} \left(c_{max} \leq 1.5 \cdot h_{ef}, \frac{c_{max}}{1.5}, h_{ef} \right) & h'_{ef} &:= \text{if}(P = 1, h'_{ef}, h_{ef}) & h'_{ef} &= 6.333 \cdot \text{in} \\ c_{minx} &:= \min(c_{minx}, 1.5 \cdot h_{ef}) & c_{minx} &= 9.25 \cdot \text{in} & s_x &:= \min(\text{spacing}_x, 3 \cdot h_{ef}) & s_x &= 5.5 \cdot \text{in} \\ c_{miny} &:= \min(c_{miny}, 1.5 \cdot h_{ef}) & c_{miny} &= 9.5 \cdot \text{in} & s_y &:= \min(\text{spacing}_y, 3 \cdot h_{ef}) & s_y &= 5 \cdot \text{in} \\ A_{nc} &:= \text{if} \left[P = 2, (1.5 \cdot h_{ef} + s_x + c_{minx}) \cdot (1.5 \cdot h_{ef} + s_y + c_{miny}), (s_x + 2 \cdot c_{minx}) \cdot (s_y + 2 \cdot c_{miny}) \right] & A_{nc} &= 576 \cdot \text{in}^2 & \text{fig RD5.2.1} \\ A_{nco} &:= 9 \cdot h'_{ef}{}^2 & A_{nco} &= 361 \cdot \text{in}^2 \\ A_{nc} &:= \min(A_{nc}, n \cdot A_{nco}) & A_{nc} &= 576 \cdot \text{in}^2 \\ k_1 &:= 24 \text{ in}^{-.5} \cdot 11 \text{ bf}^{.5} & k_{ef} &:= 16 \text{ in}^{-.67} \cdot 11 \text{ bf}^{.5} \\ N_b &:= k_1 \cdot \sqrt{f_c} \cdot h'_{ef}{}^{1.5} & N_b &= 24.193 \cdot k & \text{D5.2.2 - EQ D-6} \\ EFN_b &:= k_{ef} \cdot \sqrt{f_c} \cdot h'_{ef}{}^{1.67} & EFN_b &= 22.074 \cdot k & \text{D5.2.2 - EQ D-7} \\ N_b &:= \text{if}(EF = 1, \min(N_b, EFN_b), N_b) & N_b &= 24.193 \cdot k \\ \psi_{ec} &:= 1.0 & \psi_{ec} &= 1.0 & \text{D5.2.4 - EQ D-8} \\ & & & & \text{not eccentrically loaded} \\ \psi_{ed} &:= \text{if} \left(c_{min} \geq 1.5 \cdot h'_{ef}, 1, 0.7 + 0.3 \cdot \frac{c_{min}}{1.5 \cdot h'_{ef}} \right) & \psi_{ed} &= 0.99 & \text{D5.2.5 - EQ D-10} \\ \psi_{cn} &:= 1.0 & \psi_{cn} &= 1.0 & \text{D5.2.6 - assumed cracking} \\ N_{cbg} &:= \frac{A_{nc}}{A_{nco}} \cdot \psi_{ec} \cdot \psi_{ed} \cdot \psi_{cn} \cdot N_b & N_{cbg} &= 38.297 \cdot k & \text{for a group of fasteners} \\ & & & & \text{D5.2.1 - EQ D-4} \\ \phi N_{cbg} &:= \text{if}(R = 1, .75 \cdot \phi \cdot N_{cbg}, \phi \cdot N_{cbg}) & \phi N_{cbg} &= 28.723 \cdot k \\ \text{codecheck} &:= \text{if}(|U_{pmax}| \leq \phi N_{cbg}, \text{"OK"}, \text{"NOT OK"}) & \text{codecheck} &= \text{"OK"} \end{aligned}$$

PULL OUT STRENGTH OF FASTENER IN TENSION (D5.3)

$$\psi_{cp} := 1.0$$

D5.3.6 - assumed cracking

$$N_{pn} := \psi_{cp} \cdot 8 \cdot f_c \cdot A_b$$

$$N_{pn} = 37.216 \cdot k$$

D5.3.1 - EQ D-13

$$\phi N_{pn} := \text{if}(R = 1, .75 \cdot \phi \cdot N_{pn}, \phi \cdot N_{pn})$$

$$\phi N_{pn} = 27.912 \cdot k$$

$$\text{codecheck} := \text{if}(|U_{pmax}| \leq \phi N_{pn}, "OK", "NOT OK")$$

codecheck = "OK"

CONCRETE SIDE FACE BLOW OUT STRENGTH OF FASTENERS IN TENSION (D5.4)

$$N_{sb} := 160 \cdot \left(\frac{\text{lb} \cdot \text{f} \cdot .5}{\text{in}} \right) \cdot c_{min} \cdot \sqrt{A_b} \cdot \sqrt{f_c}$$

$$N_{sb} = 100.944 \cdot k$$

D5.4.1 - EQ D-16

$$N_{sbg} := \text{if} \left[c_{min} < .4 \cdot h'_{ef}, \left(1 + \frac{\min(6 \cdot c_{min}, \text{spacing}_x, \text{spacing}_y)}{6 \cdot c_{min}} \right) \cdot N_{sb}, N_{pn} \right]$$

$$N_{sbg} = 37.216 \cdot k$$

D5.4.2 - EQ D-17

$$\phi N_{sbg} := \text{if}(R = 1, .75 \cdot \phi \cdot N_{sbg}, \phi \cdot N_{sbg})$$

$$\phi N_{sbg} = 27.912 \cdot k$$

$$\text{codecheck} := \text{if}(|U_{pmax}| \leq \phi N_{sbg}, "OK", "NOT OK")$$

codecheck = "OK"

CONCRETE BREAKOUT STRENGTH OF FASTENER IN SHEAR (D6.2)

$$c_{a1x} := \text{if}(RW = 1, c_{minx} + \text{spacing}_x, c_{minx})$$

$$c_{a1x} = 9.25 \cdot \text{in}$$

$$c_{a1y} := \text{if}(RW = 1, c_{miny} + \text{spacing}_y, c_{miny})$$

$$c_{a1y} = 9.5 \cdot \text{in}$$

$$c_{a2x} := \min(c_{miny}, 1.5 \cdot c_{a1x})$$

$$c_{a2x} = 9.5 \cdot \text{in}$$

$$c_{a2y} := \min(c_{minx}, 1.5 \cdot c_{a1y})$$

$$c_{a2y} = 9.25 \cdot \text{in}$$

$$c_{a3x} := \text{if}(P = 1, c_{a2x}, 1.5 \cdot c_{a1x})$$

$$c_{a3x} = 9.5 \cdot \text{in}$$

$$c_{a3y} := \text{if}(P = 1, c_{a2y}, 1.5 \cdot c_{a1y})$$

$$c_{a3y} = 9.25 \cdot \text{in}$$

$$h_x := \min(h, 1.5 \cdot c_{a1x})$$

$$h_x = 13.875 \cdot \text{in}$$

$$h_y := \min(h, 1.5 \cdot c_{a1y})$$

$$h_y = 14.25 \cdot \text{in}$$

D6.2.2 - EQ D-32

$$\text{spacing}_x = 5.5 \cdot \text{in}$$

$$\text{spacing}_y = 5 \cdot \text{in}$$

$$A_{vcx} := 4.5 \cdot c_{a1x}^2$$

$$A_{vcx} = 385 \cdot \text{in}^2$$

$$A_{vcy} := 4.5 \cdot c_{a1y}^2$$

$$A_{vcy} = 406.1 \cdot \text{in}^2$$

$$A_{vcx} := \text{if}[RW = 1, 2 \cdot (1.5 \cdot c_{a1x}) + \min(3 \cdot c_{a1x}, s_x), 2(1.5 \cdot c_{a1x})] \cdot h_x$$

$$A_{vcy} := \text{if}[RW = 1, 2 \cdot (1.5 \cdot c_{a1y}) + \min(3 \cdot c_{a1y}, s_y), 2(1.5 \cdot c_{a1y})] \cdot h_y$$

fig RD6.2.1

$$A_{vcx} = 385 \cdot \text{in}^2$$

$$A_{vcy} = 406.1 \cdot \text{in}^2$$

$$V_{bx} := \min \left[9 \cdot \sqrt{f_c} \cdot c_{a1x}^{1.5} \cdot \left(\frac{\text{lb} \cdot \text{f}}{\text{in}} \right)^{.5}, \text{if}(RW = 1, 8, 7) \cdot \left[\left(\frac{\min(h_{ef}, 8 \cdot d_o)}{d_o} \right)^2 \cdot \sqrt{d_o} \cdot \sqrt{f_c} \cdot c_{a1x}^{1.5} \right] \cdot \left(\frac{\text{lb} \cdot \text{f}}{\text{in}} \right)^{.5} \right]$$

$$V_{bx} = 16.013 \cdot k$$

D6.2.2, 3 - EQ D-33, 34, 35

$$V_{by} := \min \left[9 \cdot \sqrt{f_c} \cdot c_{a1y}^{1.5} \cdot \left(\frac{\text{lb} \cdot \text{f}}{\text{in}} \right)^{.5}, \text{if}(RW = 1, 8, 7) \cdot \left[\left(\frac{\min(h_{ef}, 8 \cdot d_o)}{d_o} \right)^2 \cdot \sqrt{d_o} \cdot \sqrt{f_c} \cdot c_{a1y}^{1.5} \right] \cdot \left(\frac{\text{lb} \cdot \text{f}}{\text{in}} \right)^{.5} \right]$$

$$V_{by} = 16.667 \cdot k$$

D6.2.2, 3 - EQ D-33, 34, 35

$$\psi_{edvx} := \min \left(1, .7 + .3 \cdot \frac{c_{a2x}}{1.5 \cdot c_{a1x}} \right)$$

$$\psi_{edvx} = 0.9$$

$$\psi_{edvy} := \min \left(1, .7 + .3 \cdot \frac{c_{a2y}}{1.5 \cdot c_{a1y}} \right)$$

$$\psi_{edvy} = 0.89$$

D6.2.6 - EQ D-37, 38

$$\psi_{ecv} := 1.0$$

D6.2.5 - EQ D-36

not eccentrically loaded

$$\psi_c = 1.4$$

D6.2.7 - See Above

D6.2.1 - EQ D-31

$$V_{cbgx} := \frac{A_{vcx}}{A_{vcx}} \cdot \psi_{ecv} \cdot \psi_{edvx} \cdot \psi_c \cdot V_{bx}$$

$$V_{cbgx} = 22.956 \cdot k$$

$$V_{cbgy} := \frac{A_{vcy}}{A_{vcy}} \cdot \psi_{ecv} \cdot \psi_{edvy} \cdot \psi_c \cdot V_{by}$$

$$V_{cbgy} = 21.127 \cdot k$$

$$\phi V_{cbgx} := \phi \cdot V_{cbgx}$$

$$\phi V_{cbgx} = 17.217 \cdot k$$

$$\phi V_{cbgy} := \phi \cdot V_{cbgy}$$

$$\phi V_{cbgy} = 15.845 \cdot k$$

$$\text{codecheckX} := \text{if}(U_{vmax} \leq \phi V_{cbgx}, "OK", "NOT OK")$$

$$\text{codecheckY} := \text{if}(U_{vmax} \leq \phi V_{cbgy}, "OK", "NOT OK")$$

codecheckX = "OK"

codecheckY = "OK"

CONCRETE PRYOUT STRENGTH OF FASTENER IN SHEAR (D6.3)

$$k_{cp} := \text{if}(h_{ef} < 2.5 \text{ in}, 1, 2)$$

$$k_{cp} = 2$$

$$N_{cbg} = 38.297 \cdot k$$

$$V_{cp} := k_{cp} \cdot N_{cbg}$$

$$V_{cp} = 76.594 \cdot k$$

D6.3.1 - EQ D-41

$$\phi V_{cp} := \phi \cdot V_{cp}$$

$$\phi V_{cp} = 57.445 \cdot k$$

$$\text{codecheck} := \text{if}(U_{vmax} \leq \phi V_{cp}, \text{"OK"}, \text{"NOT OK"})$$

$$\text{codecheck} = \text{"OK"}$$

COMBINATION OF TENSILE AND SHEAR FORCES

$$\phi N_n := \min(\phi N_s, \phi N_{cbg}, \phi N_{pn}, \phi N_{sbg})$$

$$\phi N_n = 27.912 \cdot k$$

$$\phi V_n := \min(\phi V_s, \phi V_{cbgx}, \phi V_{cbgy}, \phi V_{cp})$$

$$\phi V_n = 15.845 \cdot k$$

$$\text{SOLUTION1} := \text{if}(U_{vmax} \leq .2 \cdot \phi V_n, \text{"FULL TENSION ALLOWED"}, \text{"COMBINATION REQUIRED"})$$

$$\text{SOLUTION1} = \text{"COMBINATION REQUIRED"}$$

$$\text{SOLUTION2} := \text{if}(|U_{pmax}| \leq .2 \cdot \phi N_n, \text{"FULL SHEAR ALLOWED"}, \text{"COMBINATION REQUIRED"})$$

$$\text{SOLUTION2} = \text{"COMBINATION REQUIRED"}$$

COMBINATION

$$\text{Check} := \frac{|U_{pmax}|}{\phi N_n} + \frac{U_{vmax}}{\phi V_n} = 1.096$$

D7.3 - EQ D-42

$$\text{codecheck} := \text{if}(\text{Check} \leq 1.2, \text{"OK"}, \text{"NOT OK"})$$

$$\text{codecheck} = \text{"OK"}$$

CAST IN PLACE "HEADED" ANCHOR BOLT DESIGN

Columns - WH-5 (unbraced tower)

GENERAL INFORMATION - DATA ENTRY

NUMBER OF ANCHORS IN BASE PLATE $n := 4$

BOLT TYPE - F1554 (GRADE 36) **ULTIMATE TENSILE STRENGTH** $f_{ut} := 60000 \text{ psi}$

BOLT DIAMETER $d_o := 1.00 \text{ in}$

BOLT EMBEDMENT LENGTH $h_{ef} := 12.5 \text{ in}$

NUMBER OF THREADS PER INCH $n_t := 8$

BEARING AREA OF HEAD $A_b := 1.163 \text{ in}^2$

DEPTH OF SLAB/PIER $h := 24 \text{ in}$

EDGE DISTANCES/SPACING $c_{minx} := 5.25 \text{ in}$ $spacing_x := 5.5 \text{ in}$

$c_{miny} := 7.5 \text{ in}$ $spacing_y := 5 \text{ in}$

PIER/4EDGES (1=yes, 2=no) $P := 1$ $h_{ef} := h_{ef} - 6 \text{ in}$ $h_{ef} = 6.5 \text{ in}$

RIGIDLY WELDED (1=yes, 2=no) $RW := 2$

CONCRETE STRENGTH $f_c := 4000 \text{ psi}$

REBAR SIZE @ ANCHOR & EDGE OF CONC (<#4BAR, $\psi=1$; >#4BAR, $\psi=1.2$ & w/stirup space <=4" $\psi=1.4$) - (D6.2.7)

MODERATE OR HIGH SEISMIC RISK (1=yes, 2=no) (D3.3.4.4)

$R := 1$

$\psi_c := 1.0$

Hef BETWEEN OR EQUAL TO 11 IN AND 25 (1=yes, 2=no)

$EF := \text{if}(11 \text{ in} < h_{ef} \leq 25 \text{ in}, 1, 2)$

$EF = 2$

LOAD SUMMARY

SHEAR - UNFACTORED LOADS IN MOST CONSERVATIVE DIRECTION PER COLUMN

$V_d := 0.48 \text{ k}$

$V_l := 1.41 \text{ k}$

$V_w := 9.82 \text{ k}$

$V_{seis} := 0.51 \text{ k}$

TENSION - UNFACTORED LOADS PER COLUMN- UPLIFT MUST BE A NEGATIVE VALUE - (D3.2)

$P_d := 14.99 \text{ k}$

$P_l := 53.37 \text{ k}$

$P_w := -28.88 \text{ k}$

$P_{seis} := -1.84 \text{ k}$

SHEAR - FACTORED PER BOLT - (D3.2)

$$U_{v1} := \frac{(1.2 \cdot V_d + 1.6 \cdot V_l)}{n}$$

$U_{v1} = 0.708 \cdot \text{k}$

$$U_{v2} := \frac{(1.2 \cdot V_d + 0.5 \cdot V_l + 1.0 \cdot V_w)}{n}$$

$U_{v2} = 2.775 \cdot \text{k}$

$$U_{v3} := \frac{(0.9 \cdot V_d + 1.0 \cdot V_w)}{n}$$

$U_{v3} = 2.563 \cdot \text{k}$

$$U_{v4} := \frac{(1.2 \cdot V_d + 1.0 \cdot V_{seis} + 0.5 \cdot V_l)}{n}$$

$U_{v4} = 0.448 \cdot \text{k}$

$$U_{v5} := \frac{(0.9 \cdot V_d + 1.0 \cdot V_{seis})}{n}$$

$U_{v5} = 0.236 \cdot \text{k}$

$$U_{vmax} := \max(U_{v1}, U_{v2}, U_{v3}, U_{v4}, U_{v5})$$

$U_{vmax} = 2.775 \cdot \text{k}$

TENSION - FACTORED PER BOLT - (D3.2)

$$U_{p1} := \frac{(1.2 \cdot P_d + 1.6 \cdot P_l)}{n}$$

$U_{p1} = 25.845 \cdot \text{k}$

$$U_{p2} := \frac{(1.2 \cdot P_d + 0.5 \cdot P_l + 1.0 \cdot P_w)}{n}$$

$U_{p2} = 3.948 \cdot \text{k}$

$$U_{p3} := \frac{(0.9 \cdot P_d + 1.0 \cdot P_w)}{n}$$

$U_{p3} = -3.847 \cdot \text{k}$

$$U_{p4} := \frac{(1.2 \cdot P_d + 1.0 \cdot P_{seis} + 0.5 \cdot P_l)}{n}$$

$U_{p4} = 10.708 \cdot \text{k}$

$$U_{p5} := \frac{(0.9 \cdot P_d + 1.0 \cdot P_{seis})}{n}$$

$U_{p5} = 2.913 \cdot \text{k}$

$$U_{pmax} := \min(U_{p1}, U_{p2}, U_{p3}, U_{p4}, U_{p5}, 0 \text{ k})$$

$U_{pmax} = -3.847 \cdot \text{k}$

STEEL STRENGTH OF FASTENER

$$A_{se} := \frac{\pi}{4} \cdot \left(d_o - \frac{.9743 \text{ in}}{n_t} \right)^2 \quad A_{se} = 0.606 \cdot \text{in}^2$$

Tension - (D5.1 - EQ D-2)

D5.2.1

$$\begin{aligned} \phi_t &:= .75 & N_s &:= n \cdot A_{se} \cdot f_{ut} & N_s &= 145.379 \cdot k \\ \phi N_s &:= \phi_t \cdot N_s & \phi N_s &= 109.034 \cdot k \\ \text{codecheck} &:= \text{if}(|U_{pmax}| \leq \phi N_s, \text{"OK"}, \text{"NOT OK"}) & \text{codecheck} &= \text{"OK"} \end{aligned}$$

Shear - (D6.1 - EQ D-29)

$$\begin{aligned} \phi_s &:= .65 & V_s &:= n \cdot (0.6) A_{se} \cdot f_{ut} & V_s &= 87.227 \cdot k \\ \phi V_s &:= \phi_s \cdot V_s & \phi V_s &= 56.698 \cdot k \\ \text{codecheck} &:= \text{if}(U_{vmax} \leq \phi V_s, \text{"OK"}, \text{"NOT OK"}) & \text{codecheck} &= \text{"OK"} \end{aligned}$$

CONCRETE BREAKOUT STRENGTH OF FASTENERS IN TENSION (D5.2)

$$\begin{aligned} c_{max} &:= \max(c_{miny}, c_{minx}) & c_{max} &= 7.5 \cdot \text{in} & \phi &:= .75 \\ c_{min} &:= \min(c_{minx}, c_{miny}) & c_{min} &= 5.25 \cdot \text{in} \\ h'_{ef} &:= \text{if}\left(c_{max} \leq 1.5 \cdot h_{ef}, \frac{c_{max}}{1.5}, h_{ef}\right) & h'_{ef} &:= \text{if}(P = 1, h'_{ef}, h_{ef}) & h'_{ef} &= 5 \cdot \text{in} \\ c_{minx} &:= \min(c_{minx}, 1.5 \cdot h_{ef}) & c_{minx} &= 5.25 \cdot \text{in} & s_x &:= \min(\text{spacing}_x, 3 \cdot h_{ef}) & s_x &= 5.5 \cdot \text{in} \\ c_{miny} &:= \min(c_{miny}, 1.5 \cdot h_{ef}) & c_{miny} &= 7.5 \cdot \text{in} & s_y &:= \min(\text{spacing}_y, 3 \cdot h_{ef}) & s_y &= 5 \cdot \text{in} \\ A_{nc} &:= \text{if}\left[P = 2, (1.5 \cdot h_{ef} + s_x + c_{minx}) \cdot (1.5 \cdot h_{ef} + s_y + c_{miny}), (s_x + 2 \cdot c_{minx}) \cdot (s_y + 2 \cdot c_{miny})\right] & A_{nc} &= 320 \cdot \text{in}^2 & \text{fig RD5.2.1} \\ A_{nco} &:= 9 \cdot h'_{ef}{}^2 & A_{nco} &= 225 \cdot \text{in}^2 \\ A_{nc} &:= \min(A_{nc}, n \cdot A_{nco}) & A_{nc} &= 320 \cdot \text{in}^2 \\ k_1 &:= 24 \text{ in}^{-.5} \cdot 1 \text{ lbf}^{.5} & k_{ef} &:= 16 \text{ in}^{-.67} \cdot 1 \text{ lbf}^{.5} \\ N_b &:= k_1 \cdot \sqrt{f_c} \cdot h'_{ef}{}^{1.5} & N_b &= 16.971 \cdot k & \text{D5.2.2 - EQ D-6} \\ EFN_b &:= k_{ef} \cdot \sqrt{f_c} \cdot h'_{ef}{}^{1.67} & EFN_b &= 14.874 \cdot k & \text{D5.2.2 - EQ D-7} \\ N_b &:= \text{if}(EF = 1, \min(N_b, EFN_b), N_b) & N_b &= 16.971 \cdot k \\ \psi_{ec} &:= 1.0 & \psi_{ec} &:= 1.0 & \text{D5.2.4 - EQ D-8} \\ & & & & \text{not eccentrically loaded} \\ \psi_{ed} &:= \text{if}\left(c_{min} \geq 1.5 \cdot h'_{ef}, 1, 0.7 + 0.3 \cdot \frac{c_{min}}{1.5 \cdot h'_{ef}}\right) & \psi_{ed} &= 0.91 & \text{D5.2.5 - EQ D-10} \\ \psi_{cn} &:= 1.0 & \psi_{cn} &:= 1.0 & \text{D5.2.6 - assumed cracking} \\ N_{cbg} &:= \frac{A_{nc}}{A_{nco}} \cdot \psi_{ec} \cdot \psi_{ed} \cdot \psi_{cn} \cdot N_b & N_{cbg} &= 21.964 \cdot k & \text{for a group of fasteners} \\ & & & & \text{D5.2.1 - EQ D-4} \\ \phi N_{cbg} &:= \text{if}(R = 1, .75 \cdot \phi \cdot N_{cbg}, \phi \cdot N_{cbg}) & \phi N_{cbg} &= 12.355 \cdot k \\ \text{codecheck} &:= \text{if}(|U_{pmax}| \leq \phi N_{cbg}, \text{"OK"}, \text{"NOT OK"}) & \text{codecheck} &= \text{"OK"} \end{aligned}$$

PULL OUT STRENGTH OF FASTENER IN TENSION (D5.3)

$$\psi_{cp} := 1.0$$

D5.3.6 - assumed cracking

$$N_{pn} := \psi_{cp} \cdot 8 \cdot f_c \cdot A_b$$

$$N_{pn} = 37.216 \cdot k$$

D5.3.1 - EQ D-13

$$\phi N_{pn} := \text{if}(R = 1, .75 \cdot \phi \cdot N_{pn}, \phi \cdot N_{pn})$$

$$\phi N_{pn} = 20.934 \cdot k$$

$$\text{codecheck} := \text{if}(|U_{pmax}| \leq \phi N_{pn}, \text{"OK"}, \text{"NOT OK"})$$

codecheck = "OK"

CONCRETE SIDE FACE BLOW OUT STRENGTH OF FASTENERS IN TENSION (D5.4)

$$N_{sb} := 160 \cdot \left(\frac{\text{lb} \cdot \text{f}^5}{\text{in}} \right) \cdot c_{min} \cdot \sqrt{A_b} \cdot \sqrt{f_c}$$

$$N_{sb} = 57.293 \cdot k$$

D5.4.1 - EQ D-16

$$N_{sbg} := \text{if} \left[c_{min} < .4 \cdot h'_{ef}, \left(1 + \frac{\min(6 \cdot c_{min}, \text{spacing}_x, \text{spacing}_y)}{6 \cdot c_{min}} \right) \cdot N_{sb}, N_{pn} \right]$$

$$N_{sbg} = 37.216 \cdot k$$

D5.4.2 - EQ D-17

$$\phi N_{sbg} := \text{if}(R = 1, .75 \cdot \phi \cdot N_{sbg}, \phi \cdot N_{sbg})$$

$$\phi N_{sbg} = 20.934 \cdot k$$

$$\text{codecheck} := \text{if}(|U_{pmax}| \leq \phi N_{sbg}, \text{"OK"}, \text{"NOT OK"})$$

codecheck = "OK"

CONCRETE BREAKOUT STRENGTH OF FASTENER IN SHEAR (D6.2)

$$c_{a1x} := \text{if}(RW = 1, c_{minx} + \text{spacing}_x, c_{minx})$$

$$c_{a1x} = 5.25 \cdot \text{in}$$

$$c_{a1y} := \text{if}(RW = 1, c_{miny} + \text{spacing}_y, c_{miny})$$

$$c_{a1y} = 7.5 \cdot \text{in}$$

$$c_{a2x} := \min(c_{miny}, 1.5 \cdot c_{a1x})$$

$$c_{a2x} = 7.5 \cdot \text{in}$$

$$c_{a2y} := \min(c_{minx}, 1.5 \cdot c_{a1y})$$

$$c_{a2y} = 5.25 \cdot \text{in}$$

$$c_{a3x} := \text{if}(P = 1, c_{a2x}, 1.5 \cdot c_{a1x})$$

$$c_{a3x} = 7.5 \cdot \text{in}$$

$$c_{a3y} := \text{if}(P = 1, c_{a2y}, 1.5 \cdot c_{a1y})$$

$$c_{a3y} = 5.25 \cdot \text{in}$$

$$h_x := \min(h, 1.5 \cdot c_{a1x})$$

$$h_x = 7.875 \cdot \text{in}$$

$$h_y := \min(h, 1.5 \cdot c_{a1y})$$

$$h_y = 11.25 \cdot \text{in}$$

D6.2.2 - EQ D-32

$$\text{spacing}_x = 5.5 \cdot \text{in}$$

$$\text{spacing}_y = 5 \cdot \text{in}$$

$$A_{vcx} := 4.5 \cdot c_{a1x}^2$$

$$A_{vcx} = 124 \cdot \text{in}^2$$

$$A_{vcy} := 4.5 \cdot c_{a1y}^2$$

$$A_{vcy} = 253.1 \cdot \text{in}^2$$

$$A_{vcx} := \text{if}[RW = 1, 2 \cdot (1.5 \cdot c_{a1x}) + \min(3 \cdot c_{a1x}, s_x), 2(1.5 \cdot c_{a1x})] \cdot h_x$$

$$A_{vcy} := \text{if}[RW = 1, 2 \cdot (1.5 \cdot c_{a1y}) + \min(3 \cdot c_{a1y}, s_y), 2(1.5 \cdot c_{a1y})] \cdot h_y$$

fig RD6.2.1

$$A_{vcx} = 124 \cdot \text{in}^2$$

$$A_{vcy} = 253.1 \cdot \text{in}^2$$

$$V_{bx} := \min \left[9 \cdot \sqrt{f_c} \cdot c_{a1x}^{1.5} \cdot \left(\frac{\text{lb} \cdot \text{f}^5}{\text{in}} \right)^{.5}, \text{if}(RW = 1, 8, 7) \cdot \left[\left(\frac{\min(h_{ef}, 8 \cdot d_o)}{d_o} \right)^2 \cdot \sqrt{d_o} \cdot \sqrt{f_c} \cdot c_{a1x}^{1.5} \right] \cdot \left(\frac{\text{lb} \cdot \text{f}^5}{\text{in}} \right)^{.5} \right]$$

$$V_{bx} = 6.847 \cdot k$$

D6.2.2, 3 - EQ D-33, 34, 35

$$V_{by} := \min \left[9 \cdot \sqrt{f_c} \cdot c_{a1y}^{1.5} \cdot \left(\frac{\text{lb} \cdot \text{f}^5}{\text{in}} \right)^{.5}, \text{if}(RW = 1, 8, 7) \cdot \left[\left(\frac{\min(h_{ef}, 8 \cdot d_o)}{d_o} \right)^2 \cdot \sqrt{d_o} \cdot \sqrt{f_c} \cdot c_{a1y}^{1.5} \right] \cdot \left(\frac{\text{lb} \cdot \text{f}^5}{\text{in}} \right)^{.5} \right]$$

$$V_{by} = 11.691 \cdot k$$

D6.2.2, 3 - EQ D-33, 34, 35

$$\psi_{edvx} := \min \left(1, .7 + .3 \cdot \frac{c_{a2x}}{1.5 \cdot c_{a1x}} \right)$$

$$\psi_{edvx} = 1.0$$

$$\psi_{edvy} := \min \left(1, .7 + .3 \cdot \frac{c_{a2y}}{1.5 \cdot c_{a1y}} \right)$$

$$\psi_{edvy} = 0.84$$

$$\psi_{ecv} := 1.0$$

D6.2.5 - EQ D-36
not eccentrically loaded

D6.2.6 - EQ D-37,38

D6.2.1 - EQ D-31

$$\psi_c = 1.0$$

D6.2.7 - See Above

$$V_{cbgx} := \frac{A_{vcx}}{A_{vcx}} \cdot \psi_{ecv} \cdot \psi_{edvx} \cdot \psi_c \cdot V_{bx}$$

$$V_{cbgx} = 7.633 \cdot k$$

$$V_{cbgy} := \frac{A_{vcy}}{A_{vcy}} \cdot \psi_{ecv} \cdot \psi_{edvy} \cdot \psi_c \cdot V_{by}$$

$$V_{cbgy} = 11.524 \cdot k$$

$$\phi V_{cbgx} := \phi \cdot V_{cbgx}$$

$$\phi V_{cbgx} = 5.725 \cdot k$$

$$\phi V_{cbgy} := \phi \cdot V_{cbgy}$$

$$\phi V_{cbgy} = 8.643 \cdot k$$

$$\text{codecheckX} := \text{if}(U_{vmax} \leq \phi V_{cbgx}, \text{"OK"}, \text{"NOT OK"})$$

$$\text{codecheckY} := \text{if}(U_{vmax} \leq \phi V_{cbgy}, \text{"OK"}, \text{"NOT OK"})$$

codecheckX = "OK"

codecheckY = "OK"

CONCRETE PRYOUT STRENGTH OF FASTENER IN SHEAR (D6.3)

$$k_{cp} := \text{if}(h_{ef} < 2.5 \text{ in}, 1, 2)$$

$$k_{cp} = 2$$

$$N_{cbg} = 21.964 \cdot k$$

$$V_{cp} := k_{cp} \cdot N_{cbg}$$

$$V_{cp} = 43.927 \cdot k$$

D6.3.1 - EQ D-41

$$\phi V_{cp} := \phi \cdot V_{cp}$$

$$\phi V_{cp} = 32.946 \cdot k$$

$$\text{codecheck} := \text{if}(U_{vmax} \leq \phi V_{cp}, \text{"OK"}, \text{"NOT OK"})$$

codecheck = "OK"

COMBINATION OF TENSILE AND SHEAR FORCES

$$\phi N_n := \min(\phi N_s, \phi N_{cbg}, \phi N_{pn}, \phi N_{sbg})$$

$$\phi N_n = 12.355 \cdot k$$

$$\phi V_n := \min(\phi V_s, \phi V_{cbgx}, \phi V_{cbgy}, \phi V_{cp})$$

$$\phi V_n = 5.725 \cdot k$$

$$\text{SOLUTION1} := \text{if}(U_{vmax} \leq .2 \cdot \phi V_n, \text{"FULL TENSION ALLOWED"}, \text{"COMBINATION REQUIRED"})$$

$$\text{SOLUTION1} = \text{"COMBINATION REQUIRED"}$$

$$\text{SOLUTION2} := \text{if}(|U_{pmax}| \leq .2 \cdot \phi N_n, \text{"FULL SHEAR ALLOWED"}, \text{"COMBINATION REQUIRED"})$$

$$\text{SOLUTION2} = \text{"COMBINATION REQUIRED"}$$

COMBINATION

$$\text{Check} := \frac{|U_{pmax}|}{\phi N_n} + \frac{U_{vmax}}{\phi V_n} = 0.796$$

D7.3 - EQ D-42

$$\text{codecheck} := \text{if}(\text{Check} \leq 1.2, \text{"OK"}, \text{"NOT OK"})$$

codecheck = "OK"

CAST IN PLACE "HEADED" ANCHOR BOLT DESIGN

Columns - WH-5 (residence)

GENERAL INFORMATION - DATA ENTRY

NUMBER OF ANCHORS IN BASE PLATE

$$n := 4$$

BOLT TYPE - F1554 (GRADE 36)

ULTIMATE TENSILE STRENGTH

$$f_{ut} := 60000 \text{ psi}$$

BOLT DIAMETER

$$d_o := 0.75 \text{ in}$$

BOLT EMBEDMENT LENGTH

$$h_{ef} := 12.5 \text{ in}$$

NUMBER OF THREADS PER INCH

$$n_t := 10$$

BEARING AREA OF HEAD

$$A_b := 0.654 \text{ in}^2$$

DEPTH OF SLAB/PIER

$$h := 24 \text{ in}$$

EDGE DISTANCES/SPACING

$$c_{minx} := 4.75 \text{ in}$$

$$\text{spacing}_x := 5.5 \text{ in}$$

$$c_{miny} := 7.5 \text{ in}$$

$$\text{spacing}_y := 5 \text{ in}$$

PIER/4EDGES (1=yes, 2=no)

$$P := 1$$

$$h_{ef} := h_{ef} - 6 \text{ in}$$

$$h_{ef} = 6.5 \text{ in}$$

RIGIDLY WELDED (1=yes, 2=no)

$$RW := 2$$

CONCRETE STRENGTH

$$f_c := 4000 \text{ psi}$$

REBAR SIZE @ ANCHOR & EDGE OF CONC (<#4BAR,ψ=1; >#4BAR,ψ=1.2 & w/stirup space<=4"ψ=1.4) - (D6.2.7)

MODERATE OR HIGH SEISMIC RISK (1=yes, 2=no) (D3.3.4.4)

$$R := 2$$

$$\psi_c := 1.0$$

Hef BETWEEN OR EQUAL TO 11 IN AND 25 (1=yes, 2=no)

$$EF := \text{if}(11 \text{ in} < h_{ef} \leq 25 \text{ in}, 1, 2)$$

$$EF = 2$$

LOAD SUMMARY

SHEAR - UNFACTORED LOADS IN MOST CONSERVATIVE DIRECTION PER COLUMN

$$V_d := 0.57 \text{ k}$$

$$V_l := 1.46 \text{ k}$$

$$V_w := 4.78 \text{ k}$$

$$V_{seis} := 0.34 \text{ k}$$

TENSION - UNFACTORED LOADS PER COLUMN- UPLIFT MUST BE A NEGATIVE VALUE - (D3.2)

$$P_d := 11.18 \text{ k}$$

$$P_l := 40.71 \text{ k}$$

$$P_w := -15.77 \text{ k}$$

$$P_{seis} := -0.76 \text{ k}$$

SHEAR - FACTORED PER BOLT - (D3.2)

$$U_{v1} := \frac{(1.2 \cdot V_d + 1.6 \cdot V_l)}{n}$$

$$U_{v1} = 0.755 \cdot \text{k}$$

$$U_{v2} := \frac{(1.2 \cdot V_d + 0.5 \cdot V_l + 1.0 \cdot V_w)}{n}$$

$$U_{v2} = 1.548 \cdot \text{k}$$

$$U_{v3} := \frac{(0.9 \cdot V_d + 1.0 \cdot V_w)}{n}$$

$$U_{v3} = 1.323 \cdot \text{k}$$

$$U_{v4} := \frac{(1.2 \cdot V_d + 1.0 \cdot V_{seis} + 0.5 \cdot V_l)}{n}$$

$$U_{v4} = 0.438 \cdot \text{k}$$

$$U_{v5} := \frac{(0.9 \cdot V_d + 1.0 \cdot V_{seis})}{n}$$

$$U_{v5} = 0.213 \cdot \text{k}$$

$$U_{vmax} := \max(U_{v1}, U_{v2}, U_{v3}, U_{v4}, U_{v5})$$

$$U_{vmax} = 1.548 \cdot \text{k}$$

TENSION - FACTORED PER BOLT - (D3.2)

$$U_{p1} := \frac{(1.2 \cdot P_d + 1.6 \cdot P_l)}{n}$$

$$U_{p1} = 19.638 \cdot \text{k}$$

$$U_{p2} := \frac{(1.2 \cdot P_d + 0.5 \cdot P_l + 1.0 \cdot P_w)}{n}$$

$$U_{p2} = 4.5 \cdot \text{k}$$

$$U_{p3} := \frac{(0.9 \cdot P_d + 1.0 \cdot P_w)}{n}$$

$$U_{p3} = -1.427 \cdot \text{k}$$

$$U_{p4} := \frac{(1.2 \cdot P_d + 1.0 \cdot P_{seis} + 0.5 \cdot P_l)}{n}$$

$$U_{p4} = 8.253 \cdot \text{k}$$

$$U_{p5} := \frac{(0.9 \cdot P_d + 1.0 \cdot P_{seis})}{n}$$

$$U_{p5} = 2.325 \cdot \text{k}$$

$$U_{pmax} := \min(U_{p1}, U_{p2}, U_{p3}, U_{p4}, U_{p5}, 0 \text{ k})$$

$$U_{pmax} = -1.427 \cdot \text{k}$$

STEEL STRENGTH OF FASTENER

$$A_{se} := \frac{\pi}{4} \cdot \left(d_o - \frac{.9743 \text{ in}}{n_t} \right)^2 \quad A_{se} = 0.334 \cdot \text{in}^2$$

Tension - (D5.1 - EQ D-2)**D5.2.1**

$$\begin{aligned} \phi_t &:= .75 & N_s &:= n \cdot A_{se} \cdot f_{ut} & N_s &= 80.27 \cdot k \\ \phi N_s &:= \phi_t \cdot N_s & \phi N_s &= 60.203 \cdot k \\ \text{codecheck} &:= \text{if}(|U_{pmax}| \leq \phi N_s, \text{"OK"}, \text{"NOT OK"}) & \text{codecheck} &= \text{"OK"} \end{aligned}$$

Shear - (D6.1 - EQ D-29)

$$\begin{aligned} \phi_s &:= .65 & V_s &:= n \cdot (0.6) A_{se} \cdot f_{ut} & V_s &= 48.162 \cdot k \\ \phi V_s &:= \phi_s \cdot V_s & \phi V_s &= 31.305 \cdot k \\ \text{codecheck} &:= \text{if}(U_{vmax} \leq \phi V_s, \text{"OK"}, \text{"NOT OK"}) & \text{codecheck} &= \text{"OK"} \end{aligned}$$

CONCRETE BREAKOUT STRENGTH OF FASTENERS IN TENSION (D5.2)

$$\begin{aligned} c_{max} &:= \max(c_{minx}, c_{miny}) & c_{max} &= 7.5 \cdot \text{in} & \phi &:= .75 \\ c_{min} &:= \min(c_{minx}, c_{miny}) & c_{min} &= 4.75 \cdot \text{in} \\ h'_{ef} &:= \text{if} \left(c_{max} \leq 1.5 \cdot h_{ef}, \frac{c_{max}}{1.5}, h_{ef} \right) & h'_{ef} &:= \text{if}(P = 1, h'_{ef}, h_{ef}) & h'_{ef} &= 5 \cdot \text{in} \\ c_{minx} &:= \min(c_{minx}, 1.5 \cdot h_{ef}) & c_{minx} &= 4.75 \cdot \text{in} & s_x &:= \min(\text{spacing}_x, 3 \cdot h_{ef}) & s_x &= 5.5 \cdot \text{in} \\ c_{miny} &:= \min(c_{miny}, 1.5 \cdot h_{ef}) & c_{miny} &= 7.5 \cdot \text{in} & s_y &:= \min(\text{spacing}_y, 3 \cdot h_{ef}) & s_y &= 5 \cdot \text{in} \\ A_{nc} &:= \text{if} \left[P = 2, (1.5 \cdot h_{ef} + s_x + c_{minx}) \cdot (1.5 \cdot h_{ef} + s_y + c_{miny}), (s_x + 2 \cdot c_{minx}) \cdot (s_y + 2 \cdot c_{miny}) \right] & A_{nc} &= 300 \cdot \text{in}^2 & \text{fig RD5.2.1} \\ A_{nco} &:= 9 \cdot h'_{ef}{}^2 & A_{nco} &= 225 \cdot \text{in}^2 \\ A_{nc} &:= \min(A_{nc}, n \cdot A_{nco}) & A_{nc} &= 300 \cdot \text{in}^2 \\ k_1 &:= 24 \text{ in}^{-.5} \cdot 11 \text{ bf}^{.5} & k_{ef} &:= 16 \text{ in}^{-.67} \cdot 11 \text{ bf}^{.5} \\ N_b &:= k_1 \cdot \sqrt{f_c} \cdot h'_{ef}{}^{1.5} & N_b &= 16.971 \cdot k & \text{D5.2.2 - EQ D-6} \\ EFN_b &:= k_{ef} \cdot \sqrt{f_c} \cdot h'_{ef}{}^{1.67} & EFN_b &= 14.874 \cdot k & \text{D5.2.2 - EQ D-7} \\ N_b &:= \text{if}(EF = 1, \min(N_b, EFN_b), N_b) & N_b &= 16.971 \cdot k \\ \psi_{ec} &:= 1.0 & \psi_{ec} &= 1.0 & \text{D5.2.4 - EQ D-8} \\ & & & & \text{not eccentrically loaded} \\ \psi_{ed} &:= \text{if} \left(c_{min} \geq 1.5 \cdot h'_{ef}, 1, 0.7 + 0.3 \cdot \frac{c_{min}}{1.5 \cdot h'_{ef}} \right) & \psi_{ed} &= 0.89 & \text{D5.2.5 - EQ D-10} \\ \psi_{cn} &:= 1.0 & \psi_{cn} &= 1.0 & \text{D5.2.6 - assumed cracking} \\ N_{cbg} &:= \frac{A_{nc}}{A_{nco}} \cdot \psi_{ec} \cdot \psi_{ed} \cdot \psi_{cn} \cdot N_b & N_{cbg} &= 20.138 \cdot k & \text{for a group of fasteners} \\ & & & & \text{D5.2.1 - EQ D-4} \\ \phi N_{cbg} &:= \text{if}(R = 1, .75 \cdot \phi \cdot N_{cbg}, \phi \cdot N_{cbg}) & \phi N_{cbg} &= 15.104 \cdot k \\ \text{codecheck} &:= \text{if}(|U_{pmax}| \leq \phi N_{cbg}, \text{"OK"}, \text{"NOT OK"}) & \text{codecheck} &= \text{"OK"} \end{aligned}$$

PULL OUT STRENGTH OF FASTENER IN TENSION (D5.3)

$$\psi_{cp} := 1.0$$

D5.3.6 - assumed cracking

$$N_{pn} := \psi_{cp} \cdot 8 \cdot f_c \cdot A_b$$

$$N_{pn} = 20.928 \cdot k$$

D5.3.1 - EQ D-13

$$\phi N_{pn} := \text{if}(R = 1, .75 \cdot \phi \cdot N_{pn}, \phi \cdot N_{pn})$$

$$\phi N_{pn} = 15.696 \cdot k$$

$$\text{codecheck} := \text{if}(|U_{pmax}| \leq \phi N_{pn}, \text{"OK"}, \text{"NOT OK"})$$

codecheck = "OK"

CONCRETE SIDE FACE BLOW OUT STRENGTH OF FASTENERS IN TENSION (D5.4)

$$N_{sb} := 160 \cdot \left(\frac{\text{lb} \cdot \text{f} \cdot .5}{\text{in}} \right) \cdot c_{min} \cdot \sqrt{A_b} \cdot \sqrt{f_c}$$

$$N_{sb} = 38.872 \cdot k$$

D5.4.1 - EQ D-16

$$N_{sbg} := \text{if} \left[c_{min} < .4 \cdot h'_{ef}, \left(1 + \frac{\min(6 \cdot c_{min}, \text{spacing}_x, \text{spacing}_y)}{6 \cdot c_{min}} \right) \cdot N_{sb}, N_{pn} \right]$$

$$N_{sbg} = 20.928 \cdot k$$

D5.4.2 - EQ D-17

$$\phi N_{sbg} := \text{if}(R = 1, .75 \cdot \phi \cdot N_{sbg}, \phi \cdot N_{sbg})$$

$$\phi N_{sbg} = 15.696 \cdot k$$

$$\text{codecheck} := \text{if}(|U_{pmax}| \leq \phi N_{sbg}, \text{"OK"}, \text{"NOT OK"})$$

codecheck = "OK"

CONCRETE BREAKOUT STRENGTH OF FASTENER IN SHEAR (D6.2)

$$c_{a1x} := \text{if}(RW = 1, c_{minx} + \text{spacing}_x, c_{minx})$$

$$c_{a1x} = 4.75 \cdot \text{in}$$

$$c_{a1y} := \text{if}(RW = 1, c_{miny} + \text{spacing}_y, c_{miny})$$

$$c_{a1y} = 7.5 \cdot \text{in}$$

$$c_{a2x} := \min(c_{miny}, 1.5 \cdot c_{a1x})$$

$$c_{a2x} = 7.125 \cdot \text{in}$$

$$c_{a2y} := \min(c_{minx}, 1.5 \cdot c_{a1y})$$

$$c_{a2y} = 4.75 \cdot \text{in}$$

$$c_{a3x} := \text{if}(P = 1, c_{a2x}, 1.5 \cdot c_{a1x})$$

$$c_{a3x} = 7.125 \cdot \text{in}$$

$$c_{a3y} := \text{if}(P = 1, c_{a2y}, 1.5 \cdot c_{a1y})$$

$$c_{a3y} = 4.75 \cdot \text{in}$$

$$h_x := \min(h, 1.5 \cdot c_{a1x})$$

$$h_x = 7.125 \cdot \text{in}$$

$$h_y := \min(h, 1.5 \cdot c_{a1y})$$

$$h_y = 11.25 \cdot \text{in}$$

D6.2.2 - EQ D-32

$$\text{spacing}_x = 5.5 \cdot \text{in}$$

$$\text{spacing}_y = 5 \cdot \text{in}$$

$$A_{vcx} := 4.5 \cdot c_{a1x}^2$$

$$A_{vcx} = 101.5 \cdot \text{in}^2$$

$$A_{vcy} := 4.5 \cdot c_{a1y}^2$$

$$A_{vcy} = 253.1 \cdot \text{in}^2$$

$$A_{vcx} := \text{if}[RW = 1, 2 \cdot (1.5 \cdot c_{a1x}) + \min(3 \cdot c_{a1x}, s_x), 2(1.5 \cdot c_{a1x})] \cdot h_x$$

$$A_{vcy} := \text{if}[RW = 1, 2 \cdot (1.5 \cdot c_{a1y}) + \min(3 \cdot c_{a1y}, s_y), 2(1.5 \cdot c_{a1y})] \cdot h_y$$

fig RD6.2.1

$$A_{vcx} = 101.5 \cdot \text{in}^2$$

$$A_{vcy} = 253.1 \cdot \text{in}^2$$

$$V_{bx} := \min \left[9 \cdot \sqrt{f_c} \cdot c_{a1x}^{1.5} \cdot \left(\frac{\text{lb} \cdot \text{f}}{\text{in}} \right)^{.5}, \text{if}(RW = 1, 8, 7) \cdot \left[\left(\frac{\min(h_{ef}, 8 \cdot d_o)}{d_o} \right)^2 \cdot \sqrt{d_o} \cdot \sqrt{f_c} \cdot c_{a1x}^{1.5} \right] \cdot \left(\frac{\text{lb} \cdot \text{f}}{\text{in}} \right)^{.5} \right]$$

$$V_{bx} = 5.893 \cdot k$$

D6.2.2, 3 - EQ D-33, 34, 35

$$V_{by} := \min \left[9 \cdot \sqrt{f_c} \cdot c_{a1y}^{1.5} \cdot \left(\frac{\text{lb} \cdot \text{f}}{\text{in}} \right)^{.5}, \text{if}(RW = 1, 8, 7) \cdot \left[\left(\frac{\min(h_{ef}, 8 \cdot d_o)}{d_o} \right)^2 \cdot \sqrt{d_o} \cdot \sqrt{f_c} \cdot c_{a1y}^{1.5} \right] \cdot \left(\frac{\text{lb} \cdot \text{f}}{\text{in}} \right)^{.5} \right]$$

$$V_{by} = 11.691 \cdot k$$

D6.2.2, 3 - EQ D-33, 34, 35

$$\psi_{edvx} := \min \left(1, .7 + .3 \cdot \frac{c_{a2x}}{1.5 \cdot c_{a1x}} \right)$$

$$\psi_{edvx} = 1.0$$

$$\psi_{edvy} := \min \left(1, .7 + .3 \cdot \frac{c_{a2y}}{1.5 \cdot c_{a1y}} \right)$$

$$\psi_{edvy} = 0.83$$

$$\psi_{ecv} := 1.0$$

D6.2.5 - EQ D-36
not eccentrically loaded

D6.2.6 - EQ D-37,38

D6.2.1 - EQ D-31

$$\psi_c = 1.0$$

D6.2.7 - See Above

$$V_{cbgx} := \frac{A_{vcx}}{A_{vcx}} \cdot \psi_{ecv} \cdot \psi_{edvx} \cdot \psi_c \cdot V_{bx}$$

$$V_{cbgx} = 6.016 \cdot k$$

$$V_{cbgy} := \frac{A_{vcy}}{A_{vcy}} \cdot \psi_{ecv} \cdot \psi_{edvy} \cdot \psi_c \cdot V_{by}$$

$$V_{cbgy} = 11.691 \cdot k$$

$$\phi V_{cbgx} := \phi \cdot V_{cbgx}$$

$$\phi V_{cbgx} = 4.512 \cdot k$$

$$\phi V_{cbgy} := \phi \cdot V_{cbgy}$$

$$\phi V_{cbgy} = 8.769 \cdot k$$

$$\text{codecheckX} := \text{if}(U_{vmax} \leq \phi V_{cbgx}, \text{"OK"}, \text{"NOT OK"})$$

$$\text{codecheckY} := \text{if}(U_{vmax} \leq \phi V_{cbgy}, \text{"OK"}, \text{"NOT OK"})$$

codecheckX = "OK"

codecheckY = "OK"

CONCRETE PRYOUT STRENGTH OF FASTENER IN SHEAR (D6.3)

$$k_{cp} := \text{if}(h_{ef} < 2.5 \text{ in}, 1, 2)$$

$$k_{cp} = 2$$

$$N_{cbg} = 20.138 \cdot k$$

$$V_{cp} := k_{cp} \cdot N_{cbg}$$

$$V_{cp} = 40.277 \cdot k$$

D6.3.1 - EQ D-41

$$\phi V_{cp} := \phi \cdot V_{cp}$$

$$\phi V_{cp} = 30.208 \cdot k$$

$$\text{codecheck} := \text{if}(U_{vmax} \leq \phi V_{cp}, \text{"OK"}, \text{"NOT OK"})$$

codecheck = "OK"

COMBINATION OF TENSILE AND SHEAR FORCES

$$\phi N_n := \min(\phi N_s, \phi N_{cbg}, \phi N_{pn}, \phi N_{sbg})$$

$$\phi N_n = 15.104 \cdot k$$

$$\phi V_n := \min(\phi V_s, \phi V_{cbgx}, \phi V_{cbgy}, \phi V_{cp})$$

$$\phi V_n = 4.512 \cdot k$$

$$\text{SOLUTION1} := \text{if}(U_{vmax} \leq .2 \cdot \phi V_n, \text{"FULL TENSION ALLOWED"}, \text{"COMBINATION REQUIRED"})$$

SOLUTION1 = "COMBINATION REQUIRED"

$$\text{SOLUTION2} := \text{if}(|U_{pmax}| \leq .2 \cdot \phi N_n, \text{"FULL SHEAR ALLOWED"}, \text{"COMBINATION REQUIRED"})$$

SOLUTION2 = "FULL SHEAR ALLOWED"

COMBINATION

$$\text{Check} := \frac{|U_{pmax}|}{\phi N_n} + \frac{U_{vmax}}{\phi V_n} = 0.438$$

D7.3 - EQ D-42

$$\text{codecheck} := \text{if}(\text{Check} \leq 1.2, \text{"OK"}, \text{"NOT OK"})$$

codecheck = "OK"

CAST IN PLACE "HEADED" ANCHOR BOLT DESIGN

Columns - WH-5 (residence flat to gable)

GENERAL INFORMATION - DATA ENTRY

NUMBER OF ANCHORS IN BASE PLATE $n := 4$

BOLT TYPE - F1554 (GRADE 36) **ULTIMATE TENSILE STRENGTH** $f_{ut} := 60000 \text{ psi}$

BOLT DIAMETER $d_o := 0.75 \text{ in}$

BOLT EMBEDMENT LENGTH $h_{ef} := 12.5 \text{ in}$

NUMBER OF THREADS PER INCH $n_t := 10$

BEARING AREA OF HEAD $A_b := 0.654 \text{ in}^2$

DEPTH OF SLAB/PIER $h := 24 \text{ in}$

EDGE DISTANCES/SPACING $c_{minx} := 4.75 \text{ in}$ $spacing_x := 5.5 \text{ in}$

$c_{miny} := 7.5 \text{ in}$ $spacing_y := 5 \text{ in}$

PIER/4EDGES (1=yes, 2=no) $P := 1$ $h_{ef} := h_{ef} - 6 \text{ in}$ $h_{ef} = 6.5 \text{ in}$

RIGIDLY WELDED (1=yes, 2=no) $RW := 2$

CONCRETE STRENGTH $f_c := 4000 \text{ psi}$

REBAR SIZE @ ANCHOR & EDGE OF CONC (<#4BAR, $\psi=1$; >#4BAR, $\psi=1.2$ & w/stirup space <=4" $\psi=1.4$) - (D6.2.7)

MODERATE OR HIGH SEISMIC RISK (1=yes, 2=no) (D3.3.4.4) $R := 2$ $\psi_c := 1.0$

Hef BETWEEN OR EQUAL TO 11 IN AND 25 (1=yes, 2=no) $EF := \text{if}(11 \text{ in} < h_{ef} \leq 25 \text{ in}, 1, 2)$ $EF = 2$

LOAD SUMMARY

SHEAR - UNFACTORED LOADS IN MOST CONSERVATIVE DIRECTION PER COLUMN

$$V_d := 0.58 \text{ k}$$

$$V_l := 1.5 \text{ k}$$

$$V_w := 4.3 \text{ k}$$

$$V_{seis} := 0.29 \text{ k}$$

TENSION - UNFACTORED LOADS PER COLUMN- UPLIFT MUST BE A NEGATIVE VALUE - (D3.2)

$$P_d := 9.85 \text{ k}$$

$$P_l := 34.16 \text{ k}$$

$$P_w := -15.78 \text{ k}$$

$$P_{seis} := -.63 \text{ k}$$

SHEAR - FACTORED PER BOLT - (D3.2)

$$U_{v1} := \frac{(1.2 \cdot V_d + 1.6 \cdot V_l)}{n} \quad U_{v1} = 0.774 \cdot \text{k}$$

$$U_{v2} := \frac{(1.2 \cdot V_d + 0.5 \cdot V_l + 1.0 \cdot V_w)}{n} \quad U_{v2} = 1.436 \cdot \text{k}$$

$$U_{v3} := \frac{(.9 \cdot V_d + 1.0 \cdot V_w)}{n} \quad U_{v3} = 1.205 \cdot \text{k}$$

$$U_{v4} := \frac{(1.2 \cdot V_d + 1.0 \cdot V_{seis} + .5 \cdot V_l)}{n} \quad U_{v4} = 0.434 \cdot \text{k}$$

$$U_{v5} := \frac{(.9 \cdot V_d + 1.0 \cdot V_{seis})}{n} \quad U_{v5} = 0.203 \cdot \text{k}$$

$$U_{vmax} := \max(U_{v1}, U_{v2}, U_{v3}, U_{v4}, U_{v5}) \quad U_{vmax} = 1.436 \cdot \text{k}$$

TENSION - FACTORED PER BOLT - (D3.2)

$$U_{p1} := \frac{(1.2 \cdot P_d + 1.6 \cdot P_l)}{n} \quad U_{p1} = 16.619 \cdot \text{k}$$

$$U_{p2} := \frac{(1.2 \cdot P_d + 0.5 \cdot P_l + 1.0 \cdot P_w)}{n} \quad U_{p2} = 3.28 \cdot \text{k}$$

$$U_{p3} := \frac{(.9 \cdot P_d + 1.0 \cdot P_w)}{n} \quad U_{p3} = -1.729 \cdot \text{k}$$

$$U_{p4} := \frac{(1.2 \cdot P_d + 1.0 \cdot P_{seis} + .5 \cdot P_l)}{n} \quad U_{p4} = 7.067 \cdot \text{k}$$

$$U_{p5} := \frac{(.9 \cdot P_d + 1.0 \cdot P_{seis})}{n} \quad U_{p5} = 2.059 \cdot \text{k}$$

$$U_{pmax} := \min(U_{p1}, U_{p2}, U_{p3}, U_{p4}, U_{p5}, 0 \text{ k}) \quad U_{pmax} = -1.729 \cdot \text{k}$$

STEEL STRENGTH OF FASTENER

$$A_{sc} := \frac{\pi}{4} \cdot \left(d_o - \frac{.9743 \text{ in}}{n_t} \right)^2 \quad A_{se} = 0.334 \cdot \text{in}^2$$

Tension - (D5.1 - EQ D-2)**D5.2.1**

$$\begin{aligned} \phi_t &:= .75 & N_s &:= n \cdot A_{se} \cdot f_{ut} & N_s &= 80.27 \cdot k \\ \phi N_s &:= \phi_t \cdot N_s & \phi N_s &= 60.203 \cdot k \\ \text{codecheck} &:= \text{if}(|U_{pmax}| \leq \phi N_s, \text{"OK"}, \text{"NOT OK"}) & \text{codecheck} &= \text{"OK"} \end{aligned}$$

Shear - (D6.1 - EQ D-29)

$$\begin{aligned} \phi_s &:= .65 & V_s &:= n \cdot (0.6) A_{se} \cdot f_{ut} & V_s &= 48.162 \cdot k \\ \phi V_s &:= \phi_s \cdot V_s & \phi V_s &= 31.305 \cdot k \\ \text{codecheck} &:= \text{if}(U_{vmax} \leq \phi V_s, \text{"OK"}, \text{"NOT OK"}) & \text{codecheck} &= \text{"OK"} \end{aligned}$$

CONCRETE BREAKOUT STRENGTH OF FASTENERS IN TENSION (D5.2)

$$\begin{aligned} c_{max} &:= \max(c_{minx}, c_{miny}) & c_{max} &= 7.5 \cdot \text{in} & \phi &:= .75 \\ c_{min} &:= \min(c_{minx}, c_{miny}) & c_{min} &= 4.75 \cdot \text{in} \\ h'_{ef} &:= \text{if} \left(c_{max} \leq 1.5 \cdot h_{ef}, \frac{c_{max}}{1.5}, h_{ef} \right) & h'_{ef} &:= \text{if}(P = 1, h'_{ef}, h_{ef}) & h'_{ef} &= 5 \cdot \text{in} \\ c_{minx} &:= \min(c_{minx}, 1.5 \cdot h_{ef}) & c_{minx} &= 4.75 \cdot \text{in} & s_x &:= \min(\text{spacing}_x, 3 \cdot h_{ef}) & s_x &= 5.5 \cdot \text{in} \\ c_{miny} &:= \min(c_{miny}, 1.5 \cdot h_{ef}) & c_{miny} &= 7.5 \cdot \text{in} & s_y &:= \min(\text{spacing}_y, 3 \cdot h_{ef}) & s_y &= 5 \cdot \text{in} \\ A_{nc} &:= \text{if} \left[P = 2, (1.5 \cdot h_{ef} + s_x + c_{minx}) \cdot (1.5 \cdot h_{ef} + s_y + c_{miny}), (s_x + 2 \cdot c_{minx}) \cdot (s_y + 2 \cdot c_{miny}) \right] & A_{nc} &= 300 \cdot \text{in}^2 & \text{fig RD5.2.1} \\ A_{nco} &:= 9 \cdot h'_{ef}{}^2 & A_{nco} &= 225 \cdot \text{in}^2 \\ A_{nc} &:= \min(A_{nc}, n \cdot A_{nco}) & A_{nc} &= 300 \cdot \text{in}^2 \\ k_1 &:= 24 \text{ in}^{-.5} \cdot 11 \text{ bf}^{.5} & k_{ef} &:= 16 \text{ in}^{-.67} \cdot 11 \text{ bf}^{.5} \\ N_b &:= k_1 \cdot \sqrt{f_c} \cdot h'_{ef}{}^{1.5} & N_b &= 16.971 \cdot k & \text{D5.2.2 - EQ D-6} \\ EFN_b &:= k_{ef} \cdot \sqrt{f_c} \cdot h'_{ef}{}^{1.67} & EFN_b &= 14.874 \cdot k & \text{D5.2.2 - EQ D-7} \\ N_b &:= \text{if}(EF = 1, \min(N_b, EFN_b), N_b) & N_b &= 16.971 \cdot k \\ \psi_{ec} &:= 1.0 & \psi_{ec} &:= 1.0 & \text{D5.2.4 - EQ D-8} \\ & & & & \text{not eccentrically loaded} \\ \psi_{ed} &:= \text{if} \left(c_{min} \geq 1.5 \cdot h'_{ef}, 1, 0.7 + 0.3 \cdot \frac{c_{min}}{1.5 \cdot h'_{ef}} \right) & \psi_{ed} &= 0.89 & \text{D5.2.5 - EQ D-10} \\ \psi_{cn} &:= 1.0 & \psi_{cn} &:= 1.0 & \text{D5.2.6 - assumed cracking} \\ N_{cbg} &:= \frac{A_{nc}}{A_{nco}} \cdot \psi_{ec} \cdot \psi_{ed} \cdot \psi_{cn} \cdot N_b & N_{cbg} &= 20.138 \cdot k & \text{for a group of fasteners} \\ & & & & \text{D5.2.1 - EQ D-4} \\ \phi N_{cbg} &:= \text{if}(R = 1, .75 \cdot \phi \cdot N_{cbg}, \phi \cdot N_{cbg}) & \phi N_{cbg} &= 15.104 \cdot k \\ \text{codecheck} &:= \text{if}(|U_{pmax}| \leq \phi N_{cbg}, \text{"OK"}, \text{"NOT OK"}) & \text{codecheck} &= \text{"OK"} \end{aligned}$$

PULL OUT STRENGTH OF FASTENER IN TENSION (D5.3)

$$\psi_{cp} := 1.0$$

D5.3.6 - assumed cracking

$$N_{pn} := \psi_{cp} \cdot 8 \cdot f_c \cdot A_b$$

$$N_{pn} = 20.928 \cdot k$$

D5.3.1 - EQ D-13

$$\phi N_{pn} := \text{if}(R = 1, .75 \cdot \phi \cdot N_{pn}, \phi \cdot N_{pn})$$

$$\phi N_{pn} = 15.696 \cdot k$$

$$\text{codecheck} := \text{if}(|U_{pmax}| \leq \phi N_{pn}, \text{"OK"}, \text{"NOT OK"})$$

codecheck = "OK"

CONCRETE SIDE FACE BLOW OUT STRENGTH OF FASTENERS IN TENSION (D5.4)

$$N_{sb} := 160 \cdot \left(\frac{\text{lb} \cdot \text{f} \cdot .5}{\text{in}} \right) \cdot c_{min} \cdot \sqrt{A_b} \cdot \sqrt{f_c}$$

$$N_{sb} = 38.872 \cdot k$$

D5.4.1 - EQ D-16

$$N_{sbg} := \text{if} \left[c_{min} < .4 \cdot h'_{ef}, \left(1 + \frac{\min(6 \cdot c_{min}, \text{spacing}_x, \text{spacing}_y)}{6 \cdot c_{min}} \right) \cdot N_{sb}, N_{pn} \right]$$

$$N_{sbg} = 20.928 \cdot k$$

D5.4.2 - EQ D-17

$$\phi N_{sbg} := \text{if}(R = 1, .75 \cdot \phi \cdot N_{sbg}, \phi \cdot N_{sbg})$$

$$\phi N_{sbg} = 15.696 \cdot k$$

$$\text{codecheck} := \text{if}(|U_{pmax}| \leq \phi N_{sbg}, \text{"OK"}, \text{"NOT OK"})$$

codecheck = "OK"

CONCRETE BREAKOUT STRENGTH OF FASTENER IN SHEAR (D6.2)

$$c_{a1x} := \text{if}(RW = 1, c_{minx} + \text{spacing}_x, c_{minx})$$

$$c_{a1x} = 4.75 \cdot \text{in}$$

$$c_{a1y} := \text{if}(RW = 1, c_{miny} + \text{spacing}_y, c_{miny})$$

$$c_{a1y} = 7.5 \cdot \text{in}$$

$$c_{a2x} := \min(c_{miny}, 1.5 \cdot c_{a1x})$$

$$c_{a2x} = 7.125 \cdot \text{in}$$

$$c_{a2y} := \min(c_{minx}, 1.5 \cdot c_{a1y})$$

$$c_{a2y} = 4.75 \cdot \text{in}$$

$$c_{a3x} := \text{if}(P = 1, c_{a2x}, 1.5 \cdot c_{a1x})$$

$$c_{a3x} = 7.125 \cdot \text{in}$$

$$c_{a3y} := \text{if}(P = 1, c_{a2y}, 1.5 \cdot c_{a1y})$$

$$c_{a3y} = 4.75 \cdot \text{in}$$

$$h_x := \min(h, 1.5 \cdot c_{a1x})$$

$$h_x = 7.125 \cdot \text{in}$$

$$h_y := \min(h, 1.5 \cdot c_{a1y})$$

$$h_y = 11.25 \cdot \text{in}$$

D6.2.2 - EQ D-32

$$\text{spacing}_x = 5.5 \cdot \text{in}$$

$$\text{spacing}_y = 5 \cdot \text{in}$$

$$A_{vcx} := 4.5 \cdot c_{a1x}^2$$

$$A_{vcx} = 101.5 \cdot \text{in}^2$$

$$A_{vcy} := 4.5 \cdot c_{a1y}^2$$

$$A_{vcy} = 253.1 \cdot \text{in}^2$$

$$A_{vcx} := \text{if}[RW = 1, 2 \cdot (1.5 \cdot c_{a1x}) + \min(3 \cdot c_{a1x}, s_x), 2(1.5 \cdot c_{a1x})] \cdot h_x$$

$$A_{vcy} := \text{if}[RW = 1, 2 \cdot (1.5 \cdot c_{a1y}) + \min(3 \cdot c_{a1y}, s_y), 2(1.5 \cdot c_{a1y})] \cdot h_y$$

fig RD6.2.1

$$A_{vcx} = 101.5 \cdot \text{in}^2$$

$$A_{vcy} = 253.1 \cdot \text{in}^2$$

$$V_{bx} := \min \left[9 \cdot \sqrt{f_c} \cdot c_{a1x}^{1.5} \cdot \left(\frac{\text{lb} \cdot \text{f}}{\text{in}} \right)^{.5}, \text{if}(RW = 1, 8, 7) \cdot \left[\left(\frac{\min(h_{ef}, 8 \cdot d_o)}{d_o} \right)^2 \cdot \sqrt{d_o} \cdot \sqrt{f_c} \cdot c_{a1x}^{1.5} \right] \cdot \left(\frac{\text{lb} \cdot \text{f}}{\text{in}} \right)^{.5} \right]$$

$$V_{bx} = 5.893 \cdot k$$

D6.2.2, 3 - EQ D-33, 34, 35

$$V_{by} := \min \left[9 \cdot \sqrt{f_c} \cdot c_{a1y}^{1.5} \cdot \left(\frac{\text{lb} \cdot \text{f}}{\text{in}} \right)^{.5}, \text{if}(RW = 1, 8, 7) \cdot \left[\left(\frac{\min(h_{ef}, 8 \cdot d_o)}{d_o} \right)^2 \cdot \sqrt{d_o} \cdot \sqrt{f_c} \cdot c_{a1y}^{1.5} \right] \cdot \left(\frac{\text{lb} \cdot \text{f}}{\text{in}} \right)^{.5} \right]$$

$$V_{by} = 11.691 \cdot k$$

D6.2.2, 3 - EQ D-33, 34, 35

$$\psi_{edvx} := \min \left(1, .7 + .3 \cdot \frac{c_{a2x}}{1.5 \cdot c_{a1x}} \right)$$

$$\psi_{edvx} = 1.0$$

$$\psi_{edvy} := \min \left(1, .7 + .3 \cdot \frac{c_{a2y}}{1.5 \cdot c_{a1y}} \right)$$

$$\psi_{edvy} = 0.83$$

$$\psi_{ecv} := 1.0$$

D6.2.5 - EQ D-36
not eccentrically loaded

D6.2.6 - EQ D-37,38

D6.2.1 - EQ D-31

$$\psi_c = 1.0$$

D6.2.7 - See Above

$$V_{cbgx} := \frac{A_{vcx}}{A_{vcx}} \cdot \psi_{ecv} \cdot \psi_{edvx} \cdot \psi_c \cdot V_{bx}$$

$$V_{cbgx} = 6.016 \cdot k$$

$$V_{cbgy} := \frac{A_{vcy}}{A_{vcy}} \cdot \psi_{ecv} \cdot \psi_{edvy} \cdot \psi_c \cdot V_{by}$$

$$V_{cbgy} = 11.691 \cdot k$$

$$\phi V_{cbgx} := \phi \cdot V_{cbgx}$$

$$\phi V_{cbgx} = 4.512 \cdot k$$

$$\phi V_{cbgy} := \phi \cdot V_{cbgy}$$

$$\phi V_{cbgy} = 8.769 \cdot k$$

$$\text{codecheckX} := \text{if}(U_{vmax} \leq \phi V_{cbgx}, \text{"OK"}, \text{"NOT OK"})$$

$$\text{codecheckY} := \text{if}(U_{vmax} \leq \phi V_{cbgy}, \text{"OK"}, \text{"NOT OK"})$$

codecheckX = "OK"

codecheckY = "OK"

CONCRETE PRYOUT STRENGTH OF FASTENER IN SHEAR (D6.3)

$$k_{cp} := \text{if}(h_{ef} < 2.5 \text{ in}, 1, 2)$$

$$k_{cp} = 2$$

$$N_{cbg} = 20.138 \cdot k$$

$$V_{cp} := k_{cp} \cdot N_{cbg}$$

$$V_{cp} = 40.277 \cdot k$$

D6.3.1 - EQ D-41

$$\phi V_{cp} := \phi \cdot V_{cp}$$

$$\phi V_{cp} = 30.208 \cdot k$$

$$\text{codecheck} := \text{if}(U_{vmax} \leq \phi V_{cp}, \text{"OK"}, \text{"NOT OK"})$$

codecheck = "OK"

COMBINATION OF TENSILE AND SHEAR FORCES

$$\phi N_n := \min(\phi N_s, \phi N_{cbg}, \phi N_{pn}, \phi N_{sbg})$$

$$\phi N_n = 15.104 \cdot k$$

$$\phi V_n := \min(\phi V_s, \phi V_{cbgx}, \phi V_{cbgy}, \phi V_{cp})$$

$$\phi V_n = 4.512 \cdot k$$

$$\text{SOLUTION1} := \text{if}(U_{vmax} \leq .2 \cdot \phi V_n, \text{"FULL TENSION ALLOWED"}, \text{"COMBINATION REQUIRED"})$$

$$\text{SOLUTION1} = \text{"COMBINATION REQUIRED"}$$

$$\text{SOLUTION2} := \text{if}(|U_{pmax}| \leq .2 \cdot \phi N_n, \text{"FULL SHEAR ALLOWED"}, \text{"COMBINATION REQUIRED"})$$

$$\text{SOLUTION2} = \text{"FULL SHEAR ALLOWED"}$$

COMBINATION

$$\text{Check} := \frac{|U_{pmax}|}{\phi N_n} + \frac{U_{vmax}}{\phi V_n} = 0.433$$

D7.3 - EQ D-42

$$\text{codecheck} := \text{if}(\text{Check} \leq 1.2, \text{"OK"}, \text{"NOT OK"})$$

codecheck = "OK"

CAST IN PLACE "HEADED" ANCHOR BOLT DESIGN

Columns - WH-5 (residence end)

GENERAL INFORMATION - DATA ENTRY

NUMBER OF ANCHORS IN BASE PLATE $n := 4$

BOLT TYPE - F1554 (GRADE 36) ULTIMATE TENSILE STRENGTH $f_{ut} := 60000 \text{ psi}$

BOLT DIAMETER $d_o := 0.75 \text{ in}$

BOLT EMBEDMENT LENGTH $h_{ef} := 12.5 \text{ in}$

NUMBER OF THREADS PER INCH $n_t := 10$

BEARING AREA OF HEAD $A_b := 0.654 \text{ in}^2$

DEPTH OF SLAB/PIER $h := 24 \text{ in}$

EDGE DISTANCES/SPACING $c_{minx} := 4.75 \text{ in}$ $spacing_x := 5.5 \text{ in}$

$c_{miny} := 7.5 \text{ in}$ $spacing_y := 5 \text{ in}$

PIER/4EDGES (1=yes, 2=no) $P := 1$ $h_{ef} := h_{ef} - 6 \text{ in}$ $h_{ef} = 6.5 \text{ in}$

RIGIDLY WELDED (1=yes, 2=no) $RW := 2$

CONCRETE STRENGTH $f_c := 4000 \text{ psi}$

REBAR SIZE @ ANCHOR & EDGE OF CONC (<#4BAR, $\psi=1$; >#4BAR, $\psi=1.2$ & w/stirup space <=4" $\psi=1.4$) - (D6.2.7)

MODERATE OR HIGH SEISMIC RISK (1=yes, 2=no) (D3.3.4.4) $R := 2$ $\psi_c := 1.0$

Hef BETWEEN OR EQUAL TO 11 IN AND 25 (1=yes, 2=no) $EF := \text{if}(11 \text{ in} < h_{ef} \leq 25 \text{ in}, 1, 2)$ $EF = 2$

LOAD SUMMARY

SHEAR - UNFACTORED LOADS IN MOST CONSERVATIVE DIRECTION PER COLUMN

$$V_d := 0.4 \text{ k}$$

$$V_l := 0.89 \text{ k}$$

$$V_w := 2.91 \text{ k}$$

$$V_{seis} := 0.13 \text{ k}$$

TENSION - UNFACTORED LOADS PER COLUMN- UPLIFT MUST BE A NEGATIVE VALUE - (D3.2)

$$P_d := 5.1 \text{ k}$$

$$P_l := 13.86 \text{ k}$$

$$P_w := -7.89 \text{ k}$$

$$P_{seis} := -0.24 \text{ k}$$

SHEAR - FACTORED PER BOLT - (D3.2)

$$U_{v1} := \frac{(1.2 \cdot V_d + 1.6 \cdot V_l)}{n} \quad U_{v1} = 0.476 \cdot \text{k}$$

$$U_{v2} := \frac{(1.2 \cdot V_d + 0.5 \cdot V_l + 1.0 \cdot V_w)}{n} \quad U_{v2} = 0.959 \cdot \text{k}$$

$$U_{v3} := \frac{(0.9 \cdot V_d + 1.0 \cdot V_w)}{n} \quad U_{v3} = 0.818 \cdot \text{k}$$

$$U_{v4} := \frac{(1.2 \cdot V_d + 1.0 \cdot V_{seis} + 0.5 \cdot V_l)}{n} \quad U_{v4} = 0.264 \cdot \text{k}$$

$$U_{v5} := \frac{(0.9 \cdot V_d + 1.0 \cdot V_{seis})}{n} \quad U_{v5} = 0.123 \cdot \text{k}$$

$$U_{vmax} := \max(U_{v1}, U_{v2}, U_{v3}, U_{v4}, U_{v5}) \quad U_{vmax} = 0.959 \cdot \text{k}$$

TENSION - FACTORED PER BOLT - (D3.2)

$$U_{p1} := \frac{(1.2 \cdot P_d + 1.6 \cdot P_l)}{n} \quad U_{p1} = 7.074 \cdot \text{k}$$

$$U_{p2} := \frac{(1.2 \cdot P_d + 0.5 \cdot P_l + 1.0 \cdot P_w)}{n} \quad U_{p2} = 1.29 \cdot \text{k}$$

$$U_{p3} := \frac{(0.9 \cdot P_d + 1.0 \cdot P_w)}{n} \quad U_{p3} = -0.825 \cdot \text{k}$$

$$U_{p4} := \frac{(1.2 \cdot P_d + 1.0 \cdot P_{seis} + 0.5 \cdot P_l)}{n} \quad U_{p4} = 3.202 \cdot \text{k}$$

$$U_{p5} := \frac{(0.9 \cdot P_d + 1.0 \cdot P_{seis})}{n} \quad U_{p5} = 1.087 \cdot \text{k}$$

$$U_{pmax} := \min(U_{p1}, U_{p2}, U_{p3}, U_{p4}, U_{p5}, 0 \text{ k}) \quad U_{pmax} = -0.825 \cdot \text{k}$$

STEEL STRENGTH OF FASTENER

$$A_{se} := \frac{\pi}{4} \cdot \left(d_o - \frac{.9743 \text{ in}}{n_t} \right)^2 \quad A_{se} = 0.334 \cdot \text{in}^2$$

Tension - (D5.1 - EQ D-2)

D5.2.1

$$\begin{aligned} \phi_t &:= .75 & N_s &:= n \cdot A_{se} \cdot f_{ut} & N_s &= 80.27 \cdot \text{k} \\ \phi N_s &:= \phi_t \cdot N_s & \phi N_s &= 60.203 \cdot \text{k} \\ \text{codecheck} &:= \text{if}(|U_{pmax}| \leq \phi N_s, \text{"OK"}, \text{"NOT OK"}) & \text{codecheck} &= \text{"OK"} \end{aligned}$$

Shear - (D6.1 - EQ D-29)

$$\begin{aligned} \phi_s &:= .65 & V_s &:= n \cdot (0.6) A_{se} \cdot f_{ut} & V_s &= 48.162 \cdot \text{k} \\ \phi V_s &:= \phi_s \cdot V_s & \phi V_s &= 31.305 \cdot \text{k} \\ \text{codecheck} &:= \text{if}(U_{vmax} \leq \phi V_s, \text{"OK"}, \text{"NOT OK"}) & \text{codecheck} &= \text{"OK"} \end{aligned}$$

CONCRETE BREAKOUT STRENGTH OF FASTENERS IN TENSION (D5.2)

$$\begin{aligned} c_{max} &:= \max(c_{minx}, c_{miny}) & c_{max} &= 7.5 \cdot \text{in} & \phi &:= .75 \\ c_{min} &:= \min(c_{minx}, c_{miny}) & c_{min} &= 4.75 \cdot \text{in} \\ h'_{ef} &:= \text{if}\left(c_{max} \leq 1.5 \cdot h_{ef}, \frac{c_{max}}{1.5}, h_{ef}\right) & h'_{ef} &:= \text{if}(P = 1, h'_{ef}, h_{ef}) & h'_{ef} &= 5 \cdot \text{in} \\ c_{minx} &:= \min(c_{minx}, 1.5 \cdot h_{ef}) & c_{minx} &= 4.75 \cdot \text{in} & s_x &:= \min(\text{spacing}_x, 3 \cdot h_{ef}) & s_x &= 5.5 \cdot \text{in} \\ c_{miny} &:= \min(c_{miny}, 1.5 \cdot h_{ef}) & c_{miny} &= 7.5 \cdot \text{in} & s_y &:= \min(\text{spacing}_y, 3 \cdot h_{ef}) & s_y &= 5 \cdot \text{in} \\ A_{nc} &:= \text{if}[P = 2, (1.5 \cdot h_{ef} + s_x + c_{minx}) \cdot (1.5 \cdot h_{ef} + s_y + c_{miny}), (s_x + 2 \cdot c_{minx}) \cdot (s_y + 2 \cdot c_{miny})] & A_{nc} &= 300 \cdot \text{in}^2 & \text{fig RD5.2.1} \\ A_{nco} &:= 9 \cdot h'_{ef}{}^2 & A_{nco} &= 225 \cdot \text{in}^2 \\ A_{nc} &:= \min(A_{nc}, n \cdot A_{nco}) & A_{nc} &= 300 \cdot \text{in}^2 \\ k_1 &:= 24 \text{ in}^{-.5} \cdot 11 \text{ bf}^{.5} & k_{ef} &:= 16 \text{ in}^{-.67} \cdot 11 \text{ bf}^{.5} \\ N_b &:= k_1 \cdot \sqrt{f_c} \cdot h'_{ef}{}^{1.5} & N_b &= 16.971 \cdot \text{k} & \text{D5.2.2 - EQ D-6} \\ EFN_b &:= k_{ef} \cdot \sqrt{f_c} \cdot h'_{ef}{}^{1.67} & EFN_b &= 14.874 \cdot \text{k} & \text{D5.2.2 - EQ D-7} \\ N_b &:= \text{if}(EF = 1, \min(N_b, EFN_b), N_b) & N_b &= 16.971 \cdot \text{k} \\ \psi_{ec} &:= 1.0 & \psi_{ec} &= 1.0 & \text{D5.2.4 - EQ D-8} \\ & & & & \text{not eccentrically loaded} \\ \psi_{ed} &:= \text{if}\left(c_{min} \geq 1.5 \cdot h'_{ef}, 1, 0.7 + 0.3 \cdot \frac{c_{min}}{1.5 \cdot h'_{ef}}\right) & \psi_{ed} &= 0.89 & \text{D5.2.5 - EQ D-10} \\ \psi_{cn} &:= 1.0 & \psi_{cn} &= 1.0 & \text{D5.2.6 - assumed cracking} \\ N_{cbg} &:= \frac{A_{nc}}{A_{nco}} \cdot \psi_{ec} \cdot \psi_{ed} \cdot \psi_{cn} \cdot N_b & N_{cbg} &= 20.138 \cdot \text{k} & \text{for a group of fasteners} \\ & & & & \text{D5.2.1 - EQ D-4} \\ \phi N_{cbg} &:= \text{if}(R = 1, .75 \cdot \phi \cdot N_{cbg}, \phi \cdot N_{cbg}) & \phi N_{cbg} &= 15.104 \cdot \text{k} \\ \text{codecheck} &:= \text{if}(|U_{pmax}| \leq \phi N_{cbg}, \text{"OK"}, \text{"NOT OK"}) & \text{codecheck} &= \text{"OK"} \end{aligned}$$

PULL OUT STRENGTH OF FASTENER IN TENSION (D5.3)

$$\psi_{cp} := 1.0$$

D5.3.6 - assumed cracking

$$N_{pn} := \psi_{cp} \cdot 8 \cdot f_c \cdot A_b$$

$$N_{pn} = 20.928 \cdot k$$

D5.3.1 - EQ D-13

$$\phi N_{pn} := \text{if}(R = 1, .75 \cdot \phi \cdot N_{pn}, \phi \cdot N_{pn})$$

$$\phi N_{pn} = 15.696 \cdot k$$

$$\text{codecheck} := \text{if}(|U_{pmax}| \leq \phi N_{pn}, \text{"OK"}, \text{"NOT OK"})$$

codecheck = "OK"

CONCRETE SIDE FACE BLOW OUT STRENGTH OF FASTENERS IN TENSION (D5.4)

$$N_{sb} := 160 \cdot \left(\frac{\text{lb} \cdot \text{f}^5}{\text{in}} \right) \cdot c_{min} \cdot \sqrt{A_b} \cdot \sqrt{f_c}$$

$$N_{sb} = 38.872 \cdot k$$

D5.4.1 - EQ D-16

$$N_{sbg} := \text{if} \left[c_{min} < .4 \cdot h'_{ef}, \left(1 + \frac{\min(6 \cdot c_{min}, \text{spacing}_x, \text{spacing}_y)}{6 \cdot c_{min}} \right) \cdot N_{sb}, N_{pn} \right]$$

$$N_{sbg} = 20.928 \cdot k$$

D5.4.2 - EQ D-17

$$\phi N_{sbg} := \text{if}(R = 1, .75 \cdot \phi \cdot N_{sbg}, \phi \cdot N_{sbg})$$

$$\phi N_{sbg} = 15.696 \cdot k$$

$$\text{codecheck} := \text{if}(|U_{pmax}| \leq \phi N_{sbg}, \text{"OK"}, \text{"NOT OK"})$$

codecheck = "OK"

CONCRETE BREAKOUT STRENGTH OF FASTENER IN SHEAR (D6.2)

$$c_{a1x} := \text{if}(RW = 1, c_{minx} + \text{spacing}_x, c_{minx})$$

$$c_{a1x} = 4.75 \cdot \text{in}$$

$$c_{a1y} := \text{if}(RW = 1, c_{miny} + \text{spacing}_y, c_{miny})$$

$$c_{a1y} = 7.5 \cdot \text{in}$$

$$c_{a2x} := \min(c_{miny}, 1.5 \cdot c_{a1x})$$

$$c_{a2x} = 7.125 \cdot \text{in}$$

$$c_{a2y} := \min(c_{minx}, 1.5 \cdot c_{a1y})$$

$$c_{a2y} = 4.75 \cdot \text{in}$$

$$c_{a3x} := \text{if}(P = 1, c_{a2x}, 1.5 \cdot c_{a1x})$$

$$c_{a3x} = 7.125 \cdot \text{in}$$

$$c_{a3y} := \text{if}(P = 1, c_{a2y}, 1.5 \cdot c_{a1y})$$

$$c_{a3y} = 4.75 \cdot \text{in}$$

$$h_x := \min(h, 1.5 \cdot c_{a1x})$$

$$h_x = 7.125 \cdot \text{in}$$

$$h_y := \min(h, 1.5 \cdot c_{a1y})$$

$$h_y = 11.25 \cdot \text{in}$$

D6.2.2 - EQ D-32

$$\text{spacing}_x = 5.5 \cdot \text{in}$$

$$\text{spacing}_y = 5 \cdot \text{in}$$

$$A_{vcx} := 4.5 \cdot c_{a1x}^2$$

$$A_{vcx} = 101.5 \cdot \text{in}^2$$

$$A_{vcy} := 4.5 \cdot c_{a1y}^2$$

$$A_{vcy} = 253.1 \cdot \text{in}^2$$

$$A_{vcx} := \text{if}(RW = 1, 2 \cdot (1.5 \cdot c_{a1x}) + \min(3 \cdot c_{a1x}, s_x), 2(1.5 \cdot c_{a1x})) \cdot h_x$$

$$A_{vcy} := \text{if}(RW = 1, 2 \cdot (1.5 \cdot c_{a1y}) + \min(3 \cdot c_{a1y}, s_y), 2(1.5 \cdot c_{a1y})) \cdot h_y$$

fig RD6.2.1

$$A_{vcx} = 101.5 \cdot \text{in}^2$$

$$A_{vcy} = 253.1 \cdot \text{in}^2$$

$$V_{bx} := \min \left[9 \cdot \sqrt{f_c} \cdot c_{a1x}^{1.5} \cdot \left(\frac{\text{lb} \cdot \text{f}^5}{\text{in}} \right)^{.5}, \text{if}(RW = 1, 8, 7) \cdot \left[\left(\frac{\min(h_{ef}, 8 \cdot d_o)}{d_o} \right)^2 \cdot \sqrt{d_o} \cdot \sqrt{f_c} \cdot c_{a1x}^{1.5} \right] \cdot \left(\frac{\text{lb} \cdot \text{f}^5}{\text{in}} \right)^{.5} \right]$$

$$V_{bx} = 5.893 \cdot k$$

D6.2.2, 3 - EQ D-33, 34, 35

$$V_{by} := \min \left[9 \cdot \sqrt{f_c} \cdot c_{a1y}^{1.5} \cdot \left(\frac{\text{lb} \cdot \text{f}^5}{\text{in}} \right)^{.5}, \text{if}(RW = 1, 8, 7) \cdot \left[\left(\frac{\min(h_{ef}, 8 \cdot d_o)}{d_o} \right)^2 \cdot \sqrt{d_o} \cdot \sqrt{f_c} \cdot c_{a1y}^{1.5} \right] \cdot \left(\frac{\text{lb} \cdot \text{f}^5}{\text{in}} \right)^{.5} \right]$$

$$V_{by} = 11.691 \cdot k$$

D6.2.2, 3 - EQ D-33, 34, 35

$$\psi_{edvx} := \min \left(1, .7 + .3 \cdot \frac{c_{a2x}}{1.5 \cdot c_{a1x}} \right)$$

$$\psi_{edvx} = 1.0$$

$$\psi_{edvy} := \min \left(1, .7 + .3 \cdot \frac{c_{a2y}}{1.5 \cdot c_{a1y}} \right)$$

$$\psi_{edvy} = 0.83$$

$$\psi_{ecv} := 1.0$$

D6.2.5 - EQ D-36
not eccentrically loaded

D6.2.6 - EQ D-37,38

D6.2.7 - See Above

D6.2.1 - EQ D-31

$$\psi_c = 1.0$$

$$V_{cbgx} := \frac{A_{vcx}}{A_{vcx}} \cdot \psi_{ecv} \cdot \psi_{edvx} \cdot \psi_c \cdot V_{bx}$$

$$V_{cbgx} = 6.016 \cdot k$$

$$V_{cbgy} := \frac{A_{vcy}}{A_{vcy}} \cdot \psi_{ecv} \cdot \psi_{edvy} \cdot \psi_c \cdot V_{by}$$

$$V_{cbgy} = 11.691 \cdot k$$

$$\phi V_{cbgx} := \phi \cdot V_{cbgx}$$

$$\phi V_{cbgx} = 4.512 \cdot k$$

$$\phi V_{cbgy} := \phi \cdot V_{cbgy}$$

$$\phi V_{cbgy} = 8.769 \cdot k$$

$$\text{codecheckX} := \text{if}(U_{vmax} \leq \phi V_{cbgx}, \text{"OK"}, \text{"NOT OK"})$$

$$\text{codecheckY} := \text{if}(U_{vmax} \leq \phi V_{cbgy}, \text{"OK"}, \text{"NOT OK"})$$

codecheckX = "OK"

codecheckY = "OK"

CONCRETE PRYOUT STRENGTH OF FASTENER IN SHEAR (D6.3)

$$k_{cp} := \text{if}(h_{ef} < 2.5 \cdot d_n, 1, 2)$$

$$k_{cp} = 2$$

$$N_{cbg} = 20.138 \cdot k$$

$$V_{cp} := k_{cp} \cdot N_{cbg}$$

$$V_{cp} = 40.277 \cdot k$$

D6.3.1 - EQ D-41

$$\phi V_{cp} := \phi \cdot V_{cp}$$

$$\phi V_{cp} = 30.208 \cdot k$$

$$\text{codecheck} := \text{if}(U_{vmax} \leq \phi V_{cp}, \text{"OK"}, \text{"NOT OK"})$$

codecheck = "OK"

COMBINATION OF TENSILE AND SHEAR FORCES

$$\phi N_n := \min(\phi N_s, \phi N_{cbg}, \phi N_{pn}, \phi N_{sbg})$$

$$\phi N_n = 15.104 \cdot k$$

$$\phi V_n := \min(\phi V_s, \phi V_{cbgx}, \phi V_{cbgy}, \phi V_{cp})$$

$$\phi V_n = 4.512 \cdot k$$

$$\text{SOLUTION1} := \text{if}(U_{vmax} \leq .2 \cdot \phi V_n, \text{"FULL TENSION ALLOWED"}, \text{"COMBINATION REQUIRED"})$$

$$\text{SOLUTION1} = \text{"COMBINATION REQUIRED"}$$

$$\text{SOLUTION2} := \text{if}(|U_{pmax}| \leq .2 \cdot \phi N_n, \text{"FULL SHEAR ALLOWED"}, \text{"COMBINATION REQUIRED"})$$

$$\text{SOLUTION2} = \text{"FULL SHEAR ALLOWED"}$$

COMBINATION

$$\text{Check} := \frac{|U_{pmax}|}{\phi N_n} + \frac{U_{vmax}}{\phi V_n} = 0.267$$

D7.3 - EQ D-42

$$\text{codecheck} := \text{if}(\text{Check} \leq 1.2, \text{"OK"}, \text{"NOT OK"})$$

codecheck = "OK"

PROBLEM TITLE: A1, A2
 JOB LOCATION: PORT ORANGE, FL
 DESIGNER: DWK
 DATE: 01/24/2020

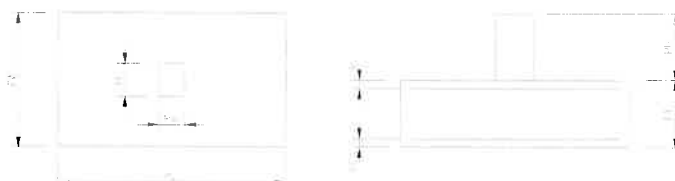
	P (k)	V (k)
DEAD	14.99	0.48
LIVE	53.37	1.41
WIND - D	69.11	17.69
(negative) WIND - U	-102.46	
H		
F		
E	9.02	1.6

SERVICE LOAD COMB.

$S = D + .6W$
 $S = .6D + .6W$
 $S = D + .75L + .45W$
 $S = .6D + .7E$
 $S = D + .75L + .525E$
 $S = D + L$
 $S = D + .7E$

DESIGN LOAD COMB.

$U = 1.4D$
 $U = 1.2D + 1.6L$
 $U = 1.2D + .5W$
 $U = 1.2D + 1.0W + .5L$
 $U = 1.2D + 1.0E + .5L$
 $U = .9D + 1.0W$
 $U = .9D + 1.0E$



GROSS SAFE SOIL
 BEARING CAPACITY: 3000 psf

FORCE FOOTING
 TO BE SQUARE (Y/N): N
 JNHOOKED(U) HOOKED(H): U

NOT DESIGNED FOR LIGHTWEIGHT CONCRETE**STEEL**

Fy: 60000 psi
 REBAR TC: 3 in
 REBAR BC: 3 in
 MIN. SPACING BETWEEN REBAR: 6 in

FOOTING

MAX LENGTH(FL): 100 ft
 MIN LENGTH(FL): 20 ft
 MAX WIDTH(FW): 100 ft
 MIN WIDTH(FW): 10.6667 ft
 MAX THICKNESS(FT): 100 ft
 MIN THICKNESS(FT): 2 ft
 DEPTH(D)= FT-BC: 1.75 ft

PEDESTAL

HEIGHT(PH): 2 ft
 LENGTH(PL): 2 ft
 WIDTH(PW): 2 ft
 DOWEL SIZE: 8 #
 # OF DOWEL: 4

CONCRETE

f'c: 3000 psi
 DENSITY: 150 pcf

SOIL

4 NIT WEIGHT OF SOIL: 100 pcf

IMPORTANT: MIN FL, FW, AND FT MUST BE GREATER THAN ZERO AT FIRST ENTRY (recommend FT equal to 1 or 1.5)

1. SERVICE LOADS TO SIZE FOOTING

IF SQUARE FOOTING FW & FL = 6 ft
 W/ UPLIFT = 10.25

RECT LENGTH = 2.25
 RECT WIDTH = 16

FOOTING VOLUME = 426.668 ft³
 ACTUAL SOIL BEARING CAPACITY = 914.0727685 psf

ACT.BEARING VS. ALLOWABLE BEARING: **OK**

2. DESIGN/FACTORED LOAD, Pu

Pu = 263.1168 k UPLIFT Pu = 7.0313 k **OK**

3. NET FACTORED SOIL PRESSURE, p(net) = p(u) = Pu/[FL*FW]

p(net) = p(u) = 1.233356146 ksf

4. ULTIMATE SHEAR, Vu = p(u) * critical area

Vu (ONE-WAY) = 95.37984 k 95,379.84 lb or Vu = 63,723.81 lb Max Vu (ONE-WAY) = 95,379.84
 Vu (TWO-WAY) = 475.9983875 k 475,998.39 lb

5. NOMINAL SHEAR STRENGTH, Vc, W/O SHEAR REINFORCEMENT**A. ONE-WAY SHEAR, Vc = 2*(f'c)^.5*FW*(FT-BC)**

Vc = 294,456.57 lb
 .75*Vc = 220,842.43 lb

B. TWO-WAY SHEAR, $V_c = (2+4/B_c) \cdot (f'_c)^{.5} \cdot b(o) \cdot (FT-BC) \leq 4 \cdot (f'_c)^{.5} \cdot b(o) \cdot (FT-BC)$

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$$b(o) = 180 \text{ in}$$

$$\begin{aligned} B_c &= 1 \geq 2 \\ B_c &= 2 \end{aligned}$$

$$\begin{aligned} V_c &= 828,156.51 \text{ lb} &<= \text{MAX. } V_c &= 828,156.51 \text{ lb} \\ .75 \cdot V_c &= 621,117.38 \text{ lb} \end{aligned}$$

6. CHECK FOR SHEAR REINFORCING**A. ONE-WAY SHEAR CHECK**

$$\begin{aligned} .75 \cdot V_c &= 220,842.43 \text{ lb} &.75 \cdot V_c &\geq V_u \quad \text{OK} \\ V_u &= 95,379.84 \text{ lb} \end{aligned}$$

B. TWO-WAY SHEAR CHECK

$$\begin{aligned} .75 \cdot V_c &= 621,117.38 \text{ lb} &.75 \cdot V_c &\geq V_u \quad \text{OK} \\ V_u &= 475,998.39 \text{ lb} \end{aligned}$$

7. ULTIMATE BENDING MOMENT, $M_u (\text{long}) = (p(\text{net}) \cdot FW \cdot b(m)^2)/2$, $M_u (\text{tran}) = (p(\text{net}) \cdot FL \cdot b(m)^2)/2$ **A. BOTTOM REINFORCING****1. LONGITUDINAL**

$$\begin{aligned} b(m) &= 9 \text{ ft} \\ M_u &= 532.81152 \text{ k-ft} \end{aligned}$$

2. TRANSVERSE

$$\begin{aligned} b(m) &= 4.33335 \text{ ft} \\ M_u &= 231.5986578 \text{ k-ft} \end{aligned}$$

B. TOP REINFORCING

$$p(\text{net}) = \text{max neg factored load combination}/(FL \cdot FW)$$

1. LONGITUDINAL

$$\begin{aligned} p(\text{net}) &= -0.41704088 \text{ ksf} \\ b(m) &= 9 \text{ ft} \\ M_u &= -180.162225 \text{ k-ft} \end{aligned}$$

2. TRANSVERSE

$$\begin{aligned} p(\text{net}) &= -0.41704088 \text{ ksf} \\ b(m) &= 4.33335 \text{ ft} \\ M_u &= -78.3116129 \text{ k-ft} \end{aligned}$$

8. REQUIRED COEFFICIENT OF RESISTANCE, $R_u (\text{long}) = M_u / (.9 \cdot FW \cdot (FT-BC)^2)$, $R_u (\text{tran}) = M_u / (.9 \cdot FL \cdot (FT-BC)^2)$ **A. BOTTOM REINFORCING****1. LONGITUDINAL**

$$R_u = 125.8526679 \text{ psi}$$

2. TRANSVERSE

$$R_u = 29.1759458 \text{ psi}$$

B. TOP REINFORCING**1. LONGITUDINAL**

$$R_u = 42.55519227 \text{ psi}$$

2. TRANSVERSE

$$R_u = 9.865408526 \text{ psi}$$

9. REINFORCEMENT RATIO, $\text{roe} = .85 \cdot f'_c / f_y \cdot [1 - (1 - 2 \cdot R_u / .85 \cdot f'_c)^{.5}]$ **A. BOTTOM REINFORCING****1. LONGITUDINAL**

$$\text{roe} = 0.00215203 \quad \text{must be } \geq \quad \text{roe (min)} = 0.0018 \quad \text{herefore roe required} = 0.002152$$

2. TRANSVERSE

$$\text{roe} = 0.00048908 \quad \text{must be } \geq \quad \text{roe (min)} = 0.0018 \quad \text{herefore roe required} = 0.0018$$

B. TOP REINFORCING**1. LONGITUDINAL**

$$\text{roe} = 0.000715272 \quad \text{must be } \geq \quad \text{roe (min)} = 0.0018 \quad \text{herefore roe required} = 0.0018$$

2. TRANSVERSE

$$\text{roe} = 0.000164743 \quad \text{must be } \geq \quad \text{roe (min)} = 0.0018 \quad \text{herefore roe required} = 0.0018$$

10. REQUIRED STEEL AREA, $A_{st} (\text{long}) = \text{roe} \cdot (FT-BC) \cdot FW$, $A_{st} (\text{tran}) = \text{roe} \cdot (FT-BC) \cdot FL$ **A. BOTTOM REINFORCING****1. LONGITUDINAL**

$$A_{st} = 5.784673474 \text{ sq in}$$

2. TRANSVERSE

$$A_{st} = 9.072 \text{ sq in}$$

B. TOP REINFORCING**1. LONGITUDINAL**

$$A_{st} = 4.83841512 \text{ sq in}$$

2. TRANSVERSE

$$A_{st} = 9.072 \text{ sq in}$$

11. CHOOSE REINFORCING STEEL**A. BOTTOM REINFORCING****1. LONGITUDINAL**

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#5	19	6.7778	5.833
OPTION 2:	#6	14	9.384646154	6.188

2. TRANSVERSE**INSIDE BAND (BAND WIDTH = FOOTING WIDTH)**

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#5	21	6.30002	6.447
OPTION 2:	#6	15	9.000028571	6.63

OUTSIDE BAND (BAND WIDTH = FOOTING WIDTH)

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#4	15	7.06664	2.94
OPTION 2:	#5	9	11.77773333	2.763

B. TOP REINFORCING**1. LONGITUDINAL**

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#5	16	8.13336	4.912
OPTION 2:	#6	11	12.20004	4.862

2. TRANSVERSE**INSIDE BAND (BAND WIDTH = FOOTING WIDTH)**

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#5	21	6.30002	6.447
OPTION 2:	#6	15	9.000028571	6.63

OUTSIDE BAND (BAND WIDTH = FOOTING WIDTH)

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#4	15	7.06664	2.94
OPTION 2:	#5	9	11.77773333	2.763

12. CHOOSE DOWELS FOR PEDESTAL**A. REQUIRED REINFORCING**

$$1. A_{st} = 0.005 \cdot A_c$$

$$A_{st} = 2.88 \text{ sq in}$$

$$2. A_{st} = P_u, \text{tension} / (\phi \cdot f_y)$$

$$A_{st} = 1.744 \text{ sq in}$$

$$A_{st, \text{required}} =$$

$$2.88 \text{ sq in}$$

$$A_{st, \text{supplied}} =$$

$$3.14 \text{ sq in}$$

OK**B. UNHOOKED DEVELOPMENT LENGTH**

$$\max L_d = ((f_y / (25 \cdot (f'_c)^{.5}))) \cdot d_b, 12 \text{ in}$$

$$L_d = 54.77 \text{ in}$$

$$\text{Pedestal } L_d =$$

$$22 \text{ in}$$

J-HOOK REQ'D IN PEDESTAL**C. HOOKED DEVELOPMENT LENGTH**

$$\max L_d = ((0.02 \cdot f_y \cdot d_b \cdot 0.7) / (f'_c)^{.5}), 8 \cdot d_b, 6 \text{ in}$$

$$L_d = 15.34 \text{ in}$$

$$\text{Footing } L_d =$$

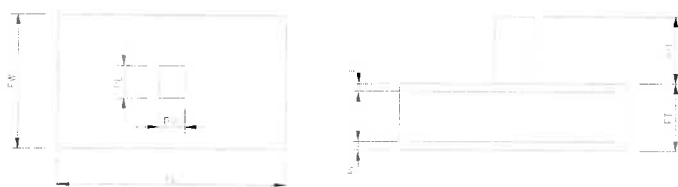
$$21 \text{ in}$$

HOOK REQ'D IN FOOTING

PROBLEM TITLE: B1,B2
 JOB LOCATION: PORT ORANGE, FL
 DESIGNER: DWK
 DATE: 03/25/2020

	P (k)	V (k)	SERVICE LOAD COMB.	DESIGN LOAD COMB.
DEAD	14.99	0.48	$S = D + .6W$	$U = 1.4D$
LIVE	53.37	1.41	$S = .6D + .6W$	$U = 1.2D + 1.6L$
WIND - D	12.82	9.82	$S = D + .75L + .45W$	$U = 1.2D + .5W$
WIND - U	-28.88		$S = .6D + .7E$	$U = 1.2D + 1.0W + .5L$
H			$S = D + .75L + .525E$	$U = 1.2D + 1.0E + .5L$
F			$S = D + L$	$U = .9D + 1.0W$
E	1.84	0.51	$S = D + .7E$	$U = .9D + 1.0E$

(negative)



GROSS SAFE SOIL
 BEARING CAPACITY: 3000 psf

FORCE FOOTING
 TO BE SQUARE (Y/N): Y
 JNHOOKED(U) HOOKED(H): H

NOT DESIGNED FOR LIGHTWEIGHT CONCRETE**STEEL**

Fy: 60000 psi
 REBAR TC: 3 in
 REBAR BC: 3 in
 MIN. SPACING BETWEEN REBAR: 6 in

FOOTING

MAX LENGTH(FL): 100 ft
 MIN LENGTH(FL): 6.5 ft
 MAX WIDTH(FW): 100 ft
 MIN WIDTH(FW): 6.5 ft
 MAX THICKNESS(FT): 100 ft
 MIN THICKNESS(FT): 1.5 ft
 DEPTH(D)= FT-BC: 1.25 ft

PEDESTAL

HEIGHT(PH): 2 ft
 LENGTH(PL): 1.666666667 ft
 WIDTH(PW): 1.333333333 ft
 DOWEL SIZE: 6 #
 # OF DOWEL: 4

CONCRETE

f'c: 3000 psi
 DENSITY: 150 pcf

SOIL

UNIT WEIGHT OF SOIL: 100 pcf

IMPORTANT: MIN FL, FW, AND FT MUST BE GREATER THAN ZERO AT FIRST ENTRY (recommend FT equal to 1 or 1.5)

1. SERVICE LOADS TO SIZE FOOTING

IF SQUARE FOOTING FW & FL = 5.25 ft
 W/ UPLIFT = 4.5
 FOOTING VOLUME = 63.375 ft³
 ACTUAL SOIL BEARING CAPACITY = 2135.798361 psf

RECT LENGTH = 4.5
 RECT WIDTH = 6.25

ACT.BEARING VS. ALLOWABLE BEARING: **OK**

2. DESIGN/FACTORED LOAD, Pu

Pu = 128.51875 k UPLIFT Pu = 0.771625 k **OK**

3. NET FACTORED SOIL PRESSURE, p(net) = p(u) = Pu/[FL*FW]

p(net) = p(u) = 3.041863905 ksf

4. ULTIMATE SHEAR, Vu = p(u) * critical area

Vu (ONE-WAY) = 26.36282051 k 26,362.82 lb or Vu = 23,067.47 lb Max Vu (ONE-WAY) = 26,362.82
 Vu (TWO-WAY) = 108.2185332 k 108,218.53 lb

5. NOMINAL SHEAR STRENGTH, Vc, W/O SHEAR REINFORCEMENT**A. ONE-WAY SHEAR, Vc = 2*(f'c)^.5*FW*(FT-BC)**

Vc = 128,167.08 lb
 .75*Vc = 96,125.31 lb

B. TWO-WAY SHEAR, $V_c = (2+4/B_c) \cdot (f'_c)^{.5} \cdot b(o) \cdot (FT-BC) \leq 4 \cdot (f'_c)^{.5} \cdot b(o) \cdot (FT-BC)$

$$b(o) = 124 \text{ in}$$

$$B_c = 0.8 \geq 2$$

$$B_c = 2$$

$$V_c = 407,505.58 \text{ lb}$$

$$\leq \text{MAX. } V_c \quad 407,505.58 \text{ lb}$$

$$.75 \cdot V_c = 305,629.19 \text{ lb}$$

6. CHECK FOR SHEAR REINFORCING**A. ONE-WAY SHEAR CHECK**

$$.75 \cdot V_c = 96,125.31 \text{ lb}$$

$$.75 \cdot V_c \geq V_u \quad \text{OK}$$

$$V_u = 26,362.82 \text{ lb}$$

B. TWO-WAY SHEAR CHECK

$$.75 \cdot V_c = 305,629.19 \text{ lb}$$

$$.75 \cdot V_c \geq V_u \quad \text{OK}$$

$$V_u = 108,218.53 \text{ lb}$$

7. ULTIMATE BENDING MOMENT, $\mu_u (\text{long}) = (p(\text{net}) \cdot FW \cdot b(m)^2)/2$, $\mu_u (\text{tran}) = (p(\text{net}) \cdot FL \cdot b(m)^2)/2$ **A. BOTTOM REINFORCING****1. LONGITUDINAL**

$$b(m) = 2.583333333 \text{ ft}$$

$$\mu_u = 65.97570446 \text{ k-ft}$$

2. TRANSVERSE

$$b(m) = 2.416666667 \text{ ft}$$

$$\mu_u = 57.73732305 \text{ k-ft}$$

B. TOP REINFORCING

$$p(\text{net}) = \text{max neg factored load combination} / (FL \cdot FW)$$

1. LONGITUDINAL

$$p(\text{net}) = -0.36423669 \text{ ksf}$$

$$b(m) = 2.583333333 \text{ ft}$$

$$\mu_u = -7.90001549 \text{ k-ft}$$

2. TRANSVERSE

$$p(\text{net}) = -0.36423669 \text{ ksf}$$

$$b(m) = 2.416666667 \text{ ft}$$

$$\mu_u = -6.91354113 \text{ k-ft}$$

8. REQUIRED COEFFICIENT OF RESISTANCE, $R_u (\text{long}) = \mu_u / (.9 \cdot FW \cdot (FT-BC)^2)$, $R_u (\text{tran}) = \mu_u / (.9 \cdot FL \cdot (FT-BC)^2)$ **A. BOTTOM REINFORCING****1. LONGITUDINAL**

$$R_u = 50.12399199 \text{ psi}$$

2. TRANSVERSE

$$R_u = 43.86501276 \text{ psi}$$

B. TOP REINFORCING**1. LONGITUDINAL**

$$R_u = 6.001911105 \text{ psi}$$

2. TRANSVERSE

$$R_u = 5.252452902 \text{ psi}$$

9. REINFORCEMENT RATIO, $\text{ro}_e = .85 \cdot f'_c / f_y \cdot [1 - (1 - 2 \cdot R_u / .85 \cdot f'_c)^{.5}]$ **A. BOTTOM REINFORCING****1. LONGITUDINAL**

$$\text{ro}_e = 0.000843776 \text{ must be } \geq \text{ro}_e (\text{min}) = 0.0018 \quad \text{herefore roe required} = 0.0018$$

2. TRANSVERSE

$$\text{ro}_e = 0.000737482 \text{ must be } \geq \text{ro}_e (\text{min}) = 0.0018 \quad \text{herefore roe required} = 0.0018$$

B. TOP REINFORCING**1. LONGITUDINAL**

$$\text{ro}_e = 0.00010015 \text{ must be } \geq \text{ro}_e (\text{min}) = 0.0018 \quad \text{herefore roe required} = 0.0018$$

2. TRANSVERSE

$$\text{ro}_e = 8.76312\text{E-}05 \text{ must be } \geq \text{ro}_e (\text{min}) = 0.0018 \quad \text{herefore roe required} = 0.0018$$

10. REQUIRED STEEL AREA, $A_{st} (\text{long}) = \text{ro}_e \cdot (FT-BC) \cdot FW$, $A_{st} (\text{tran}) = \text{ro}_e \cdot (FT-BC) \cdot FL$ **A. BOTTOM REINFORCING****1. LONGITUDINAL**

$$A_{st} = 2.106 \text{ sq in}$$

2. TRANSVERSE

$$A_{st} = 2.106 \text{ sq in}$$

B. TOP REINFORCING**1. LONGITUDINAL**

$$A_{st} = 2.106 \text{ sq in}$$

2. TRANSVERSE

$$A_{st} = 2.106 \text{ sq in}$$

11. CHOOSE REINFORCING STEEL**A. BOTTOM REINFORCING****1. LONGITUDINAL**

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#4	11	7.2	2.156
OPTION 2:	#5	7	12	2.149

2. TRANSVERSE**INSIDE BAND (BAND WIDTH = FOOTING WIDTH)**

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#4	11	7.2	2.156
OPTION 2:	#5	7	12	2.149

OUTSIDE BAND (BAND WIDTH = FOOTING WIDTH)

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	N/A			
OPTION 2:	N/A			

B. TOP REINFORCING**1. LONGITUDINAL**

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#4	11	7.2	2.156
OPTION 2:	#5	7	12	2.149

2. TRANSVERSE**INSIDE BAND (BAND WIDTH = FOOTING WIDTH)**

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#4	11	7.2	2.156
OPTION 2:	#5	7	12	2.149

OUTSIDE BAND (BAND WIDTH = FOOTING WIDTH)

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	N/A			
OPTION 2:	N/A			

12. CHOOSE DOWELS FOR PEDESTAL**A. REQUIRED REINFORCING**

1. $A_{st} = 0.005 \cdot A_c$

$A_{st} = 1.6 \text{ sq in}$

2. $A_{st} = P_u, \text{tension} / (\phi \cdot f_y)$

$A_{st} = 0.302 \text{ sq in}$

$A_{st, \text{required}} = 1.60 \text{ sq in}$

$A_{st, \text{supplied}} = 1.77 \text{ sq in}$

OK**B. UNHOOKED DEVELOPMENT LENGTH**

$\text{max } l_d = ((f_y / (25 \cdot (f'_c)^{.5}))) \cdot d_b, 12 \text{ in}$

$l_d = 32.86 \text{ in}$

$\text{Pedestal } l_d = 22 \text{ in}$

J-HOOK REQ'D IN PEDESTAL**C. HOOKED DEVELOPMENT LENGTH**

$\text{max } l_d = ((0.02 \cdot f_y \cdot d_b \cdot 0.7) / (f'_c)^{.5}), 8 \cdot d_b, 6 \text{ in}$

$l_d = 11.50 \text{ in}$

$\text{Footing } l_d = 15 \text{ in}$

HOOK REQ'D IN FOOTING

PROBLEM TITLE: A3, B3
 JOB LOCATION: PORT ORANGE, FL
 DESIGNER: DWK
 DATE: 03/25/2020

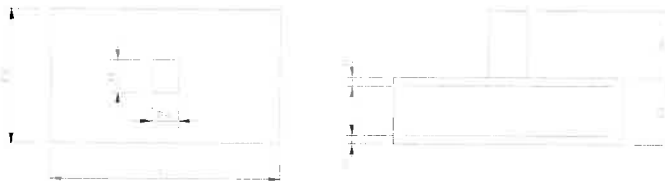
	P (k)	V (k)
DEAD	11.18	0.57
LIVE	40.71	1.46
WIND - D	4.01	4.78
(negative) WIND - U	-15.77	
H		
F		
E	0.76	0.34

SERVICE LOAD COMB.

$S = D + .6W$
 $S = .6D + .6W$
 $S = D + .75L + .45W$
 $S = .6D + .7E$
 $S = D + .75L + .525E$
 $S = D + L$
 $S = D + .7E$

DESIGN LOAD COMB.

$U = 1.4D$
 $U = 1.2D + 1.6L$
 $U = 1.2D + .5W$
 $U = 1.2D + 1.0W + .5L$
 $U = 1.2D + 1.0E + .5L$
 $U = .9D + 1.0W$
 $U = .9D + 1.0E$



GROSS SAFE SOIL
 BEARING CAPACITY: 3000 psf

FORCE FOOTING
 TO BE SQUARE (Y/N): Y
 UNHOOKED(U) HOOKED(H): H

NOT DESIGNED FOR LIGHTWEIGHT CONCRETE**STEEL**

F_y : 60000 psi
 REBAR TC: 3 in
 REBAR BC: 3 in
 MIN. SPACING BETWEEN REBAR: 6 in

FOOTING

MAX LENGTH(FL): 100 ft
 MIN LENGTH(FL): 4.75 ft
 MAX WIDTH(FW): 100 ft
 MIN WIDTH(FW): 4.75 ft
 MAX THICKNESS(FT): 100 ft
 MIN THICKNESS(FT): 1.5 ft
 DEPTH(D)= FT-BC: 1.25 ft

PEDESTAL

HEIGHT(PH): 2 ft
 LENGTH(PL): 1.666666667 ft
 WIDTH(PW): 1.333333333 ft
 DOWEL SIZE: 6 #
 # OF DOWEL: 4

CONCRETE

f'_c : 3000 psi
 DENSITY: 150 pcf

SOIL

UNIT WEIGHT OF SOIL: 100 pcf

IMPORTANT: MIN FL, FW, AND FT MUST BE GREATER THAN ZERO AT FIRST ENTRY (recommend FT equal to 1 or 1.5)

1. SERVICE LOADS TO SIZE FOOTING

IF SQUARE FOOTING FW & FL = 4.75 ft
 W/ UPLIFT = 2.75
 FOOTING VOLUME = 33.84375 ft³

RECT LENGTH = 5
 RECT WIDTH = 4.75

ACTUAL SOIL BEARING CAPACITY = 2867.259221 psf

ACT.BEARING VS. ALLOWABLE BEARING: **OK**

2. DESIGN/FACTORED LOAD, P_u

P_u = 91.9766875 k UPLIFT P_u = 2.92215625 k **OK**

3. NET FACTORED SOIL PRESSURE, $p_{(net)} = p(u) = P_u/[FL*FW]$

$p_{(net)} = p(u) = 4.076529086$ ksf

4. ULTIMATE SHEAR, $V_u = p(u) * \text{critical area}$

V_u (ONE-WAY) = 8.874943531 k 8,874.94 lb or V_u = 5,647.69 lb Max V_u (ONE-WAY) = 8,874.94
 V_u (TWO-WAY) = 64.7715177 k 64,771.52 lb

5. NOMINAL SHEAR STRENGTH, V_c , W/O SHEAR REINFORCEMENT**A. ONE-WAY SHEAR, $V_c = 2*(f'_c)^{.5}*FW*(FT-BC)$**

V_c = 93,660.56 lb
 $.75*V_c$ = 70,245.42 lb

B. TWO-WAY SHEAR, $V_c = (2+4/B_c) \cdot (f'_c)^{.5} \cdot b(o) \cdot (FT-BC) \leq 4 \cdot (f'_c)^{.5} \cdot b(o) \cdot (FT-BC)$

$$b(o) = 124 \text{ in}$$

$$B_c = 0.8 \geq 2$$

$$B_c = 2$$

$$V_c = 407,505.58 \text{ lb}$$

$$\leq \text{MAX. } V_c \quad 407,505.58 \text{ lb}$$

$$.75 \cdot V_c = 305,629.19 \text{ lb}$$

6. CHECK FOR SHEAR REINFORCING**A. ONE-WAY SHEAR CHECK**

$$.75 \cdot V_c = 70,245.42 \text{ lb}$$

$$.75 \cdot V_c \geq V_u \quad \text{OK}$$

$$V_u = 8,874.94 \text{ lb}$$

B. TWO-WAY SHEAR CHECK

$$.75 \cdot V_c = 305,629.19 \text{ lb}$$

$$.75 \cdot V_c \geq V_u \quad \text{OK}$$

$$V_u = 64,771.52 \text{ lb}$$

7. ULTIMATE BENDING MOMENT, $M_u (\text{long}) = (p(\text{net}) \cdot FW \cdot b(m)^2)/2$, $M_u (\text{tran}) = (p(\text{net}) \cdot FL \cdot b(m)^2)/2$ **A. BOTTOM REINFORCING****1. LONGITUDINAL**

$$b(m) = 1.708333333 \text{ ft}$$

$$M_u = 28.25526529 \text{ k-ft}$$

2. TRANSVERSE

$$b(m) = 1.541666667 \text{ ft}$$

$$M_u = 23.01098048 \text{ k-ft}$$

B. TOP REINFORCING

$$p(\text{net}) = \text{max neg factored load combination} / (FL \cdot FW)$$

1. LONGITUDINAL

$$p(\text{net}) = -0.25298615 \text{ ksf}$$

$$b(m) = 1.708333333 \text{ ft}$$

$$M_u = -1.75349927 \text{ k-ft}$$

2. TRANSVERSE

$$p(\text{net}) = -0.25298615 \text{ ksf}$$

$$b(m) = 1.541666667 \text{ ft}$$

$$M_u = -1.42804313 \text{ k-ft}$$

8. REQUIRED COEFFICIENT OF RESISTANCE, $R_u (\text{long}) = M_u / (.9 \cdot FW \cdot (FT-BC)^2)$, $R_u (\text{tran}) = M_u / (.9 \cdot FL \cdot (FT-BC)^2)$ **A. BOTTOM REINFORCING****1. LONGITUDINAL**

$$R_u = 29.37519459 \text{ psi}$$

2. TRANSVERSE

$$R_u = 23.92304663 \text{ psi}$$

B. TOP REINFORCING**1. LONGITUDINAL**

$$R_u = 1.823001189 \text{ psi}$$

2. TRANSVERSE

$$R_u = 1.484645228 \text{ psi}$$

9. REINFORCEMENT RATIO, $\text{roe} = .85 \cdot f'_c / f_y \cdot [1 - (1 - 2 \cdot R_u / .85 \cdot f'_c)^{.5}]$ **A. BOTTOM REINFORCING****1. LONGITUDINAL**

$$\text{roe} = 0.000492439 \quad \text{must be } \geq \quad \text{roe (min)} = 0.0018 \quad \text{herefore roe required} = 0.0018$$

2. TRANSVERSE

$$\text{roe} = 0.000400605 \quad \text{must be } \geq \quad \text{roe (min)} = 0.0018 \quad \text{herefore roe required} = 0.0018$$

B. TOP REINFORCING**1. LONGITUDINAL**

$$\text{roe} = 3.03942\text{E-}05 \quad \text{must be } \geq \quad \text{roe (min)} = 0.0018 \quad \text{herefore roe required} = 0.0018$$

2. TRANSVERSE

$$\text{roe} = 2.47513\text{E-}05 \quad \text{must be } \geq \quad \text{roe (min)} = 0.0018 \quad \text{herefore roe required} = 0.0018$$

10. REQUIRED STEEL AREA, $A_{st} (\text{long}) = \text{roe} \cdot (FT-BC) \cdot FW$, $A_{st} (\text{tran}) = \text{roe} \cdot (FT-BC) \cdot FL$ **A. BOTTOM REINFORCING****1. LONGITUDINAL**

$$A_{st} = 1.539 \text{ sq in}$$

2. TRANSVERSE

$$A_{st} = 1.539 \text{ sq in}$$

B. TOP REINFORCING**1. LONGITUDINAL**

$$A_{st} = 1.539 \text{ sq in}$$

2. TRANSVERSE

$$A_{st} = 1.539 \text{ sq in}$$

11. CHOOSE REINFORCING STEEL**A. BOTTOM REINFORCING****1. LONGITUDINAL**

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#4	8	7.285714286	1.568
OPTION 2:	#5	6	10.2	1.842

2. TRANSVERSE**INSIDE BAND (BAND WIDTH = FOOTING WIDTH)**

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#4	8	7.285714286	1.568
OPTION 2:	#5	6	10.2	1.842

OUTSIDE BAND (BAND WIDTH = FOOTING WIDTH)

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	N/A			
OPTION 2:	N/A			

B. TOP REINFORCING**1. LONGITUDINAL**

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#4	8	7.285714286	1.568
OPTION 2:	#5	6	10.2	1.842

2. TRANSVERSE**INSIDE BAND (BAND WIDTH = FOOTING WIDTH)**

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#4	8	7.285714286	1.568
OPTION 2:	#5	6	10.2	1.842

OUTSIDE BAND (BAND WIDTH = FOOTING WIDTH)

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	N/A			
OPTION 2:	N/A			

12. CHOOSE DOWELS FOR PEDESTAL**A. REQUIRED REINFORCING**

1. $A_{st} = 0.005 \cdot A_c$

$A_{st} = 1.6 \text{ sq in}$

2. $A_{st} = P_u, \text{tension} / (\phi \cdot f_y)$

$A_{st} = 0.112 \text{ sq in}$

$A_{st, \text{required}} = 1.60 \text{ sq in}$

$A_{st, \text{supplied}} = 1.77 \text{ sq in}$

OK**B. UNHOOKED DEVELOPMENT LENGTH**

$\max L_d = ((f_y / (25 \cdot (f'_c)^{.5}))) \cdot d_b, 12 \text{ in}$

$L_d = 32.86 \text{ in}$

$\text{Pedestal } L_d = 22 \text{ in}$

J-HOOK REQ'D IN PEDESTAL**C. HOOKED DEVELOPMENT LENGTH**

$\max L_d = ((0.02 \cdot f_y \cdot d_b \cdot 0.7) / (f'_c)^{.5}), 8 \cdot d_b, 6 \text{ in}$

$L_d = 11.50 \text{ in}$

$\text{Footing } L_d = 15 \text{ in}$

HOOK REQ'D IN FOOTING

PROBLEM TITLE: A4, B4
 JOB LOCATION: PORT ORANGE, FL
 DESIGNER: DWK
 DATE: 03/25/2020

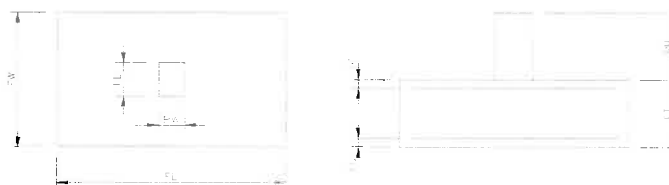
	P (k)	V (k)
DEAD	9.85	0.58
LIVE	34.16	1.5
WIND - D	1.95	4.3
(negative) WIND - U	-15.78	
H		
F		
E	0.63	0.29

SERVICE LOAD COMB.

S = D + .6W
 S = .6D + .6W
 S = D + .75L + .45W
 S = .6D + .7E
 S = D + .75L + .525E
 S = D + L
 S = D + .7E

DESIGN LOAD COMB.

U = 1.4D
 U = 1.2D + 1.6L
 U = 1.2D + .5W
 U = 1.2D + 1.0W + .5L
 U = 1.2D + 1.0E + .5L
 U = .9D + 1.0W
 U = .9D + 1.0E



GROSS SAFE SOIL
 BEARING CAPACITY: 3000 psf

FORCE FOOTING
 TO BE SQUARE (Y/N): Y
 JNHOOKED(U) HOOKED(H): H

NOT DESIGNED FOR LIGHTWEIGHT CONCRETE**STEEL**

Fy: 60000 psi
 REBAR TC: 3 in
 REBAR BC: 3 in
 MIN. SPACING BETWEEN REBAR: 6 in

FOOTING

MAX LENGTH(FL): 100 ft
 MIN LENGTH(FL): 4.75 ft
 MAX WIDTH(FW): 100 ft
 MIN WIDTH(FW): 4.75 ft
 MAX THICKNESS(FT): 100 ft
 MIN THICKNESS(FT): 1.5 ft
 DEPTH(D)= FT-BC: 1.25 ft

PEDESTAL

HEIGHT(PH): 2 ft
 LENGTH(PL): 1.666666667 ft
 WIDTH(PW): 1.333333333 ft
 DOWEL SIZE 6 #
 # OF DOWEL 4

CONCRETE

f'c: 3000 psi
 DENSITY: 150 pcf

SOIL

WIT WEIGHT OF SOIL: 100 pcf

IMPORTANT: MIN FL, FW, AND FT MUST BE GREATER THAN ZERO AT FIRST ENTRY (recommend FT equal to 1 or 1.5)

1. SERVICE LOADS TO SIZE FOOTING

IF SQUARE FOOTING FW & FL = 4.25 ft
 W/ UPLIFT = 3

RECT LENGTH = 4.25
 RECT WIDTH = 4.25

FOOTING VOLUME = 33.84375 ft^3
 ACTUAL SOIL BEARING CAPACITY = 2511.438256 psf

ACT.BEARING VS. ALLOWABLE BEARING: **OK**

2. DESIGN/FACTORED LOAD, Pu

Pu = 79.9006875 k UPLIFT Pu = 1.71515625 k **OK**

3. NET FACTORED SOIL PRESSURE, p(net) = p(u) = Pu/[FL*FW]

p(net) = p(u) = 3.541304709 ksf

4. ULTIMATE SHEAR, Vu = p(u) * critical area

Vu (ONE-WAY) = 7.709715461 k 7,709.72 lb or Vu = 4,906.18 lb Max Vu (ONE-WAY) = 7,709.72
 Vu (TWO-WAY) = 56.26739705 k 56,267.40 lb

5. NOMINAL SHEAR STRENGTH, Vc, W/O SHEAR REINFORCEMENT**A. ONE-WAY SHEAR, Vc = 2*(f'c)^.5*FW*(FT-BC)**

Vc = 93,660.56 lb
 .75*Vc = 70,245.42 lb

B. TWO-WAY SHEAR, $V_c = (2+4/Bc)*(f'_c)^{.5}*b(o)*(FT-BC) \leq 4*(f'_c)^{.5}*b(o)*(FT-BC)$

$$b(o) = 124 \text{ in}$$

$$Bc = 0.8 \geq 2$$

$$Bc = 2$$

$$V_c = 407,505.58 \text{ lb} \quad \leq \text{MAX. } V_c \quad 407,505.58 \text{ lb}$$

$$.75*V_c = 305,629.19 \text{ lb}$$

6. CHECK FOR SHEAR REINFORCING**A. ONE-WAY SHEAR CHECK**

$$.75*V_c = 70,245.42 \text{ lb} \quad .75*V_c \geq V_u \quad \text{OK}$$

$$V_u = 7,709.72 \text{ lb}$$

B. TWO-WAY SHEAR CHECK

$$.75*V_c = 305,629.19 \text{ lb} \quad .75*V_c \geq V_u \quad \text{OK}$$

$$V_u = 56,267.40 \text{ lb}$$

7. ULTIMATE BENDING MOMENT, $M_u (\text{long}) = (p(\text{net}) * FW * b(m)^2) / 2$, $M_u (\text{tran}) = (p(\text{net}) * FL * b(m)^2) / 2$ **A. BOTTOM REINFORCING****1. LONGITUDINAL**

$$b(m) = 1.708333333 \text{ ft}$$

$$M_u = 24.54551456 \text{ k-ft}$$

2. TRANSVERSE

$$b(m) = 1.541666667 \text{ ft}$$

$$M_u = 19.98977361 \text{ k-ft}$$

B. TOP REINFORCING

$$p(\text{net}) = \text{max neg factored load combination} / (FL * FW)$$

1. LONGITUDINAL

$$p(\text{net}) = -0.30648199 \text{ ksf}$$

$$b(m) = 1.708333333 \text{ ft}$$

$$M_u = -2.12429002 \text{ k-ft}$$

2. TRANSVERSE

$$p(\text{net}) = -0.30648199 \text{ ksf}$$

$$b(m) = 1.541666667 \text{ ft}$$

$$M_u = -1.73001371 \text{ k-ft}$$

8. REQUIRED COEFFICIENT OF RESISTANCE, $R_u (\text{long}) = M_u / (.9 * FW * (FT-BC)^2)$, $R_u (\text{tran}) = M_u / (.9 * FL * (FT-BC)^2)$ **A. BOTTOM REINFORCING****1. LONGITUDINAL**

$$R_u = 25.5184037 \text{ psi}$$

2. TRANSVERSE

$$R_u = 20.78209082 \text{ psi}$$

B. TOP REINFORCING**1. LONGITUDINAL**

$$R_u = 2.208488652 \text{ psi}$$

2. TRANSVERSE

$$R_u = 1.79858475 \text{ psi}$$

9. REINFORCEMENT RATIO, $\text{roe} = .85 * f'_c / f_y * [1 - (1 - 2 * R_u / .85 * f'_c)^{.5}]$ **A. BOTTOM REINFORCING****1. LONGITUDINAL**

$$\text{roe} = 0.000427456 \text{ must be } \geq \text{roe (min)} = 0.0018 \text{ herefore roe required} = 0.0018$$

2. TRANSVERSE

$$\text{roe} = 0.000347791 \text{ must be } \geq \text{roe (min)} = 0.0018 \text{ herefore roe required} = 0.0018$$

B. TOP REINFORCING**1. LONGITUDINAL**

$$\text{roe} = 3.68241\text{E-}05 \text{ must be } \geq \text{roe (min)} = 0.0018 \text{ herefore roe required} = 0.0018$$

2. TRANSVERSE

$$\text{roe} = 2.9987\text{E-}05 \text{ must be } \geq \text{roe (min)} = 0.0018 \text{ herefore roe required} = 0.0018$$

10. REQUIRED STEEL AREA, $A_{st} (\text{long}) = \text{roe} * (FT-BC) * FW$, $A_{st} (\text{tran}) = \text{roe} * (FT-BC) * FL$ **A. BOTTOM REINFORCING****1. LONGITUDINAL**

$$A_{st} = 1.539 \text{ sq in}$$

2. TRANSVERSE

$$A_{st} = 1.539 \text{ sq in}$$

B. TOP REINFORCING**1. LONGITUDINAL**

$$A_{st} = 1.539 \text{ sq in}$$

2. TRANSVERSE

$$A_{st} = 1.539 \text{ sq in}$$

11. CHOOSE REINFORCING STEEL**A. BOTTOM REINFORCING****1. LONGITUDINAL**

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#4	8	7.285714286	1.568
OPTION 2:	#5	6	10.2	1.842

2. TRANSVERSE**INSIDE BAND (BAND WIDTH = FOOTING WIDTH)**

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#4	8	7.285714286	1.568
OPTION 2:	#5	6	10.2	1.842

OUTSIDE BAND (BAND WIDTH = FOOTING WIDTH)

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	N/A			
OPTION 2:	N/A			

B. TOP REINFORCING**1. LONGITUDINAL**

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#4	8	7.285714286	1.568
OPTION 2:	#5	6	10.2	1.842

2. TRANSVERSE**INSIDE BAND (BAND WIDTH = FOOTING WIDTH)**

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#4	8	7.285714286	1.568
OPTION 2:	#5	6	10.2	1.842

OUTSIDE BAND (BAND WIDTH = FOOTING WIDTH)

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	N/A			
OPTION 2:	N/A			

12. CHOOSE DOWELS FOR PEDESTAL**A. REQUIRED REINFORCING**

1. $A_{st}=0.005 \cdot A_c$			
$A_{st}=$	1.6 sq in		
2. $A_{st}=P_u \cdot \text{tension} / (\phi \cdot f_y)$			
$A_{st}=$	0.136 sq in	$A_{st, \text{required}}=$	1.60 sq in
		$A_{st, \text{supplied}}=$	1.77 sq in

OK**B. UNHOOKED DEVELOPMENT LENGTH**

$\max l_d = ((f_y / (25 \cdot (f'_c)^{.5}))) \cdot d_b$, 12 in			
$l_d=$	32.86 in	Pedestal $l_d=$	22 in

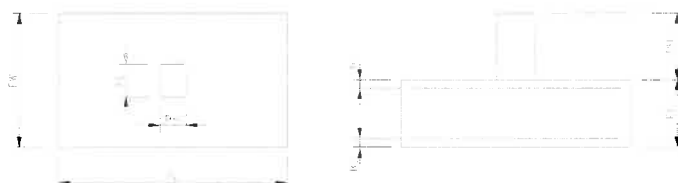
J-HOOK REQ'D IN PEDESTAL**C. HOOKED DEVELOPMENT LENGTH**

$\max l_d = ((0.02 \cdot f_y \cdot d_b \cdot 0.7) / (f'_c)^{.5})$, 8" db , 6 in			
$l_d=$	11.50 in	Footing $l_d=$	15 in

HOOK REQ'D IN FOOTING

PROBLEM TITLE: A5,B5
 JOB LOCATION: PORT ORANGE, FL
 DESIGNER: DWK
 DATE: 03/25/2020

	P (k)	V (k)	SERVICE LOAD COMB.	DESIGN LOAD COMB.
DEAD	5.1	0.4	$S = D + .6W$	$U = 1.4D$
LIVE	13.86	0.89	$S = .6D + .6W$	$U = 1.2D + 1.6L$
WIND - D	1.06	2.91	$S = D + .75L + .45W$	$U = 1.2D + .5W$
(negative) WIND - U	-7.89		$S = .6D + .7E$	$U = 1.2D + 1.0W + .5L$
H			$S = D + .75L + .525E$	$U = 1.2D + 1.0E + .5L$
F			$S = D + L$	$U = .9D + 1.0W$
E	0.24	0.13	$S = D + .7E$	$U = .9D + 1.0E$



GROSS SAFE SOIL BEARING CAPACITY:	3000 psf	NOT DESIGNED FOR LIGHTWEIGHT CONCRETE
FORCE FOOTING TO BE SQUARE (Y/N): Y		STEEL
JNHOOKED(U) HOOKED(H): H		Fy: 60000 psi
		REBAR TC: 3 in
		REBAR BC: 3 in
		MIN. SPACING BETWEEN REBAR: 6 in
FOOTING	PEDESTAL	CONCRETE
MAX LENGTH(FL): 100 ft	HEIGHT(PH): 2 ft	f'c: 3000 psi
MIN LENGTH(FL): 3.75 ft	LENGTH(PL): 1.666666667 ft	DENSITY: 150 pcf
MAX WIDTH(FW): 100 ft	WIDTH(PW): 1.333333333 ft	
MIN WIDTH(FW): 3.75 ft	DOWEL SIZE: 6 #	SOIL
MAX THICKNESS(FT): 100 ft	# OF DOWEL: 4	WIT WEIGHT OF SOIL: 100 pcf
MIN THICKNESS(FT): 1.5 ft		
DEPTH(D)= FT-BC: 1.25 ft		

IMPORTANT: MIN FL, FW, AND FT MUST BE GREATER THAN ZERO AT FIRST ENTRY (recommend FT equal to 1 or 1.5)

1. SERVICE LOADS TO SIZE FOOTING

IF SQUARE FOOTING FW & FL = 3 ft RECT LENGTH = 2.75
 W/ UPLIFT = 2 RECT WIDTH = 3.5

FOOTING VOLUME = 21.09375 ft³
 ACTUAL SOIL BEARING CAPACITY = 1953.566519 psf

ACT.BEARING VS. ALLOWABLE BEARING: **OK**

2. DESIGN/FACTORED LOAD, Pu

Pu = 36.6631875 k UPLIFT Pu = 2.07890625 k **OK**

3. NET FACTORED SOIL PRESSURE, p(net) = p(u) = Pu/[FL*FW]

p(net) = p(u) = 2.60716 ksf

4. ULTIMATE SHEAR, Vu = p(u) * critical area

Vu (ONE-WAY) = -0.40736875 k -407.37 lb or Vu = -2,036.84 lb Max Vu (ONE-WAY) = -407.37
 Vu (TWO-WAY) = 19.26401556 k 19,264.02 lb

5. NOMINAL SHEAR STRENGTH, Vc, W/O SHEAR REINFORCEMENT

A. ONE-WAY SHEAR, Vc = 2*(f'c)^{.5}*FW*(FT-BC)

Vc = 73,942.55 lb
 .75*Vc = 55,456.91 lb

B. TWO-WAY SHEAR, $V_c = (2+4/Bc) \cdot (f'_c)^{.5} \cdot b(o) \cdot (FT-BC) \leq 4 \cdot (f'_c)^{.5} \cdot b(o) \cdot (FT-BC)$

$$b(o) = 124 \text{ in}$$

$$Bc = 0.8 \geq 2$$

$$Bc = 2$$

$$V_c = 407,505.58 \text{ lb} \quad \leq \text{MAX. } V_c \quad 407,505.58 \text{ lb}$$

$$.75 \cdot V_c = 305,629.19 \text{ lb}$$

6. CHECK FOR SHEAR REINFORCING**A. ONE-WAY SHEAR CHECK**

$$.75 \cdot V_c = 55,456.91 \text{ lb} \quad .75 \cdot V_c \geq V_u \quad \text{OK}$$

$$V_u = -407.37 \text{ lb}$$

B. TWO-WAY SHEAR CHECK

$$.75 \cdot V_c = 305,629.19 \text{ lb} \quad .75 \cdot V_c \geq V_u \quad \text{OK}$$

$$V_u = 19,264.02 \text{ lb}$$

7. ULTIMATE BENDING MOMENT, $M_u(\text{long}) = (p(\text{net}) \cdot FW \cdot b(m)^2)/2$, $M_u(\text{tran}) = (p(\text{net}) \cdot FL \cdot b(m)^2)/2$ **A. BOTTOM REINFORCING****1. LONGITUDINAL**

$$b(m) = 1.208333333 \text{ ft}$$

$$M_u = 7.137439974 \text{ k-ft}$$

2. TRANSVERSE

$$b(m) = 1.041666667 \text{ ft}$$

$$M_u = 5.304280599 \text{ k-ft}$$

B. TOP REINFORCING $p(\text{net}) = \text{max neg factored load combination}/(FL \cdot FW)$ **1. LONGITUDINAL**

$$p(\text{net}) = -0.23466667 \text{ ksf}$$

$$b(m) = 1.208333333 \text{ ft}$$

$$M_u = -0.64243056 \text{ k-ft}$$

2. TRANSVERSE

$$p(\text{net}) = -0.23466667 \text{ ksf}$$

$$b(m) = 1.041666667 \text{ ft}$$

$$M_u = -0.47743056 \text{ k-ft}$$

8. REQUIRED COEFFICIENT OF RESISTANCE, $R_u(\text{long}) = M_u/(.9 \cdot FW \cdot (FT-BC)^2)$, $R_u(\text{tran}) = M_u/(.9 \cdot FL \cdot (FT-BC)^2)$ **A. BOTTOM REINFORCING****1. LONGITUDINAL**

$$R_u = 9.399097908 \text{ psi}$$

2. TRANSVERSE

$$R_u = 6.985060871 \text{ psi}$$

B. TOP REINFORCING**1. LONGITUDINAL**

$$R_u = 0.845999086 \text{ psi}$$

2. TRANSVERSE

$$R_u = 0.628715135 \text{ psi}$$

9. REINFORCEMENT RATIO, $ro_e = .85 \cdot f'_c / f_y \cdot [1 - (1 - 2 \cdot R_u / .85 \cdot f'_c)^{.5}]$ **A. BOTTOM REINFORCING****1. LONGITUDINAL**

$$ro_e = 0.000156941 \text{ must be } \geq ro_e(\text{min}) = 0.0018 \text{ herefore } ro_e \text{ required} = 0.0018$$

2. TRANSVERSE

$$ro_e = 0.000116578 \text{ must be } \geq ro_e(\text{min}) = 0.0018 \text{ herefore } ro_e \text{ required} = 0.0018$$

B. TOP REINFORCING**1. LONGITUDINAL**

$$ro_e = 1.41023\text{E-}05 \text{ must be } \geq ro_e(\text{min}) = 0.0018 \text{ herefore } ro_e \text{ required} = 0.0018$$

2. TRANSVERSE

$$ro_e = 1.04799\text{E-}05 \text{ must be } \geq ro_e(\text{min}) = 0.0018 \text{ herefore } ro_e \text{ required} = 0.0018$$

10. REQUIRED STEEL AREA, $A_{st}(\text{long}) = ro_e \cdot (FT-BC) \cdot FW$, $A_{st}(\text{tran}) = ro_e \cdot (FT-BC) \cdot FL$ **A. BOTTOM REINFORCING****1. LONGITUDINAL**

$$A_{st} = 1.215 \text{ sq in}$$

2. TRANSVERSE

$$A_{st} = 1.215 \text{ sq in}$$

B. TOP REINFORCING**1. LONGITUDINAL**

$$A_{st} = 1.215 \text{ sq in}$$

2. TRANSVERSE

$$A_{st} = 1.215 \text{ sq in}$$

11. CHOOSE REINFORCING STEEL**A. BOTTOM REINFORCING****1. LONGITUDINAL**

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#4	7	6.5	1.372
OPTION 2:	#5	4	13	1.228

2. TRANSVERSE**INSIDE BAND (BAND WIDTH = FOOTING WIDTH)**

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#4	7	6.5	1.372
OPTION 2:				

OUTSIDE BAND (BAND WIDTH = FOOTING WIDTH)

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	N/A			
OPTION 2:	N/A			

B. TOP REINFORCING**1. LONGITUDINAL**

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#4	7	6.5	1.372
OPTION 2:	#5	4	13	1.228

2. TRANSVERSE**INSIDE BAND (BAND WIDTH = FOOTING WIDTH)**

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	#4	7	6.5	1.372
OPTION 2:				

OUTSIDE BAND (BAND WIDTH = FOOTING WIDTH)

	<u>REBAR SIZE</u>	<u>QUANTITY</u>	<u>SPACING</u>	<u>AREA</u>
OPTION 1:	N/A			
OPTION 2:	N/A			

12. CHOOSE DOWELS FOR PEDESTAL**A. REQUIRED REINFORCING**

$$1. A_{st} = 0.005 \cdot A_c$$

$$A_{st} = 1.6 \text{ sq in}$$

$$2. A_{st} = P_u \cdot \text{tension} / (\phi \cdot f_y)$$

$$A_{st} = 0.065 \text{ sq in}$$

$$A_{st, \text{required}} = 1.60 \text{ sq in}$$

$$A_{st, \text{supplied}} = 1.77 \text{ sq in}$$

OK**B. UNHOOKED DEVELOPMENT LENGTH**

$$\max L_d = ((f_y / (25 \cdot (f'_c)^{.5}))) \cdot d_b, 12 \text{ in}$$

$$L_d = 32.86 \text{ in}$$

$$\text{Pedestal } L_d = 22 \text{ in}$$

J-HOOK REQ'D IN PEDESTAL**C. HOOKED DEVELOPMENT LENGTH**

$$\max L_d = ((0.02 \cdot f_y \cdot d_b \cdot 0.7) / (f'_c)^{.5}), 8 \cdot d_b, 6 \text{ in}$$

$$L_d = 11.50 \text{ in}$$

$$\text{Footing } L_d = 15 \text{ in}$$

HOOK REQ'D IN FOOTING

GRADE BEAM DESIGN

Order No: #221393
 Job Description: WH-5
 Location: Port Orange, FL
 Completed By: DWK
 Date: March 25, 2020

GENERAL INFORMATION - DATA ENTRY

Unfactored Load W/ Floor Slab Load

$$P := 2.25 \frac{\text{k}}{\text{ft}}$$

Unfactored Load W/O Floor Slab Load

$$P_{\text{ult}} := 2\text{k}$$

Soil Bearing Pressure

$$q_{\text{all}} := 3000\text{psf}$$

Strength Of Concrete

$$f_c := 3000\text{psi}$$

Resistance Factor (Shear)

$$\phi_s := 0.75 \cdot \frac{\sqrt{\text{lbf}}}{\text{in}}$$

Resistance Factor (Bending)

$$\phi_b := 0.90$$

Minimum Yield Stress

$$f_y := 60000\text{psi}$$

Depth Of Footing (Assume On 1st Run)

$$D := 1.5\text{ft}$$

Depth To Reinforcement

$$d := D - 3\text{in} \quad d = 15\text{in}$$

Area of Steel (Insert Value Calculated At The End
Of The Sheet To Check Codes)

$$A_{\text{st}} := .62\text{in}^2$$

STEP 1: Find Footing Width

Width Of Footing

$$B := \frac{P \cdot 1.6}{q_{\text{all}}}$$

$$B = 14.4\text{in} \quad \boxed{B := 18\text{in}}$$

STEP 2: Reinforcement Ratio

$$X_1 := 0.85 - \left(0.05 \cdot \frac{f_c - 4000\text{psi}}{1000\text{psi}} \right) \quad X_1 = 0.9$$

$$X_2 := 0.85$$

$$\beta_1 := \text{if}(f_c \leq 4000\text{psi}, X_2, X_1)$$

$$\beta_1 = 0.85$$

$$\beta_1 := \text{if}(\beta_1 \geq 0.65, \beta_1, .65)$$

$$\beta_1 = 0.85$$

$$\text{Reinforcement Ratio} \quad \rho := \frac{A_{st}}{B \cdot d} \quad \rho = 0.0023$$

$$\rho_{balanced} := \left(\frac{0.85 \cdot \beta_1 \cdot f_c}{f_y} \right) \cdot \left(\frac{87000 \text{ psi}}{87000 \text{ psi} + f_y} \right) \quad \rho_{balanced} = 0.021$$

$$X_3 := \rho_{balanced} \cdot 0.75 \quad X_3 = 0.016$$

$$\text{CodeCheck} := \text{if}(X_3 \geq \rho, \text{"OK"}, \text{"NOT BALANCED"}) \quad \boxed{\text{CodeCheck} = \text{"OK"}}$$

$$X_4 := \frac{200 \cdot \text{psi}}{f_y} \quad X_4 = 0.0033$$

$$\text{CodeCheck} := \text{if}(X_4 \leq \rho, \text{"OK"}, \text{"NOT BALANCED"}) \quad \boxed{\text{CodeCheck} = \text{"NOT BALANCED"}}$$

OK because cont. supported

STEP 3: Check Wide-Beam Shear (Transverse Reinforced For Shear)

$$q_{ult} := \frac{P_{ult} \cdot 1.6}{B} \quad q_{ult} = 2133.333 \cdot \frac{\text{lbf}}{\text{ft}}$$

$$\text{Length Of Wall} \quad L := 1 \text{ ft}$$

$$V_u := q_{ult} \cdot L \quad V_u = 2133.333 \cdot \text{lbf}$$

$$v_a := \frac{V_u}{L \cdot d} \quad v_a = 11.852 \cdot \text{psi}$$

$$V_a := 2 \cdot \phi_s \cdot \sqrt{f_c} \quad V_a = 82.16 \cdot \text{psi}$$

$$\text{CodeCheck} := \text{if}(V_a > v_a, \text{"OK"}, \text{"NOT OK"}) \quad \boxed{\text{CodeCheck} = \text{"OK"}}$$

STEP 4: Required Reinforcement For Transverse Bending

$$M_u := \left[\phi_b \cdot A_s \cdot f_y \cdot \left(d - \frac{a \cdot A_s}{2} \right) \right] \quad \text{expands to} \quad \frac{-(A_s^2 \cdot a \cdot \phi_b \cdot f_y)}{2} + A_s \cdot d \cdot \phi_b \cdot f_y - M_u := 0$$

$$\text{Moment Arm} \quad L_1 := 12 \text{ in}$$

$$\text{Ultimate Moment} \quad M_u := q_{ult} \cdot \left(\frac{L_1^2}{2} \right) \quad M_u = 12800 \cdot \text{lbf} \cdot \text{in}$$

$$\text{Coefficient For a Value} \quad a := \left(\frac{f_y}{0.85 \cdot f_c \cdot B} \right) \quad a = 1.31 \cdot \frac{1}{\text{in}}$$

Coefficients For Equation To Solve For As

$$X_1 := \frac{-a \cdot \phi_b \cdot f_y}{2}$$

$$X_2 := d \cdot \phi_b \cdot f_y$$

$$X_3 := -M_u$$

$$X_1 = -35294 \cdot \frac{\text{lbf}}{\text{in}^3}$$

$$X_2 = 810000 \cdot \frac{\text{lbf}}{\text{in}}$$

$$X_3 = -12800 \cdot \text{lbf} \cdot \text{in}$$

$$a := \frac{X_1}{X_1}$$

$$b := \frac{X_2}{X_1}$$

$$c := \frac{X_3}{X_1}$$

$$a = 1$$

$$b = -0.159 \text{ ft}^2$$

$$c = 1.749 \times 10^{-5} \text{ ft}^4$$

$$a \cdot A_s^2 + b \cdot A_s + c := 0$$

$$A_{s1} := \frac{-b + \sqrt{b^2 - 4 \cdot a \cdot c}}{2 \cdot a}$$

$$A_{s1} = 22.9342 \cdot \text{in}^2$$

$$A_{s2} := \frac{-b - \sqrt{b^2 - 4 \cdot a \cdot c}}{2 \cdot a}$$

$$A_{s2} = 0.0158 \cdot \text{in}^2$$

Choose The Reasonable Answer

$$A_s := 0.0158 \text{ in}^2$$

Use (-) #- As=-.-

STEP 5: Check For Temperature & Shrinkage For Steel

$$\rho_{\min} := 0.0018$$

$$A_s := \rho_{\min} \cdot d \cdot B$$

$$A_s = 0.486 \cdot \text{in}^2$$

Use (2) # 5 As=0.62

Check Spacing Requirements Per 7.12.2.2

Spacing Every 6"

STEP 6: Select Longitudinal Steel

Base On The Reinforcement Ratio Of The Beam See Step #2 But A Continually Supported Beam So Therefore Use $\rho_{\min}$ From Step 5 $\rho_{\min}=0.0018$ Which Governs Because There Is No Moment

Therefore Use (2) # 5 T&B As=1.24

EXHIBIT "2"

Payment and Performance Bond

Consisting of 4 Pages

FRONT PAGE FOR BOND REQUIRED BY SECTION 255.05, F.S.

PAYMENT AND PERFORMANCE BOND

(Public Works)

Notice and Time Limitations Must Be In Accordance
With Section 255.05(2), (8) and (10), Florida Statutes

BOND NO. _____

PRINCIPAL:

Developer or Contractor: A.G. Pifer Construction Co., Inc.
Principal Business Address: 3629 Old DeLand Road
Daytona Beach, Florida 32124
Contact Person: Anthony G. Pifer, President
Phone Number: (386) 257-4448

SURETY:

Address: _____

Contact Person: _____
Phone Number: _____

OWNER:

City of Port Orange, Florida, a chartered municipal corporation
1000 City Center Circle
Port Orange, Florida 32129-4144
Contact Person: City Manager
Phone Number: (386) 506-5501

Amount: \$407,751.04 **City Case/ Bid 20-14 Fire Department Training Tower Excavation,
Foundation and Erection**

Description of Work: Bid 20-14 Fire Department Training Tower Excavation, Foundation and Erection

Project Location: Public Works Facility located at 407 Virginia Avenue, Port Orange, Volusia
County, Florida

Legal Description: Portions of Parcel ID #: 6310-19-00-0090.
See Attached **Exhibit "A"**

Front Page

All other pages are subsequent to this page regardless of any numbers that may be printed thereon.

**City of Port Orange Public Works Facility
407 Virginia Avenue, Port Orange, FL 32127**

Short Parcel ID:
6310-19-00-0090

Legal Description:
A portion of the Parcel ID listed above.

EXHIBIT "A"

A.G. Pifer Construction Co., Inc.
Bid 20-14 Fire Department Training Tower Excavation, Foundation, and Erection

Bond No. _____

**COMBINATION PAYMENT AND PERFORMANCE BOND
FOR
PUBLIC CONSTRUCTION**

per Section 255.05, Florida Statutes
Guaranty for Construction of Public Improvements

BY THIS BOND, We, **A.G. Pifer Construction Co., Inc.**, as Principal, and _____, a corporation, as Surety, are bound to **CITY OF PORT ORANGE, FLORIDA**, a Florida municipal corporation, herein called "Owner" or sometimes referred to as "City," in the sum of **FOUR HUNDRED SEVEN THOUSAND SEVEN HUNDRED FIFTY-ONE AND 04/100 DOLLARS (\$407,751.04)**, for payment of which we bind ourselves, our heirs, personal representatives, successors, and assigns, jointly and severally.

THE CONDITION OF THIS BOND is that if Principal:

1. Performs the terms of that certain Standard Contract for Services, having an effective date of _____, 2021, entered into by and between the Principal and the City, for Fire Department Training Tower Excavation, Foundation and Erection, hereinafter referred to as the "Contract," being made a part of this bond by reference, at the times and in the manner prescribed in the Contract; and
2. Promptly makes payments to all claimants, as defined in Section 255.05(1), Florida Statutes, supplying Principal with labor, materials, or supplies, used directly or indirectly by Principal in the prosecution of the work provided for in the Contract (the "Work"); and
3. Pays Owner all losses, damages, delay damages (including contractually authorized liquidated damages), expenses, costs, and attorney's fees, including appellate proceedings, that Owner sustains because of a breach or material breach by Principal under the Contract documents; and
4. Performs the guarantee of all work and materials furnished under the Contract for the time specified in the Contract, then this bond is void; otherwise it remains in full force.

Notice of Nonpayment and Time Limitations

Any action instituted by a claimant under this bond for payment must be in accordance with the notice and time limitation provisions in Sections 255.05(2), (8) and (10), Florida Statutes.

Any changes in or under the contract documents and compliance or noncompliance with any formalities connected with the contract or the changes does not affect Surety's obligation under this bond.

IN WITNESS WHEREOF, this performance and payment bond is executed and shall be deemed an original, this _____, day of _____, 2021.

Attest:

(Principal)

(As to Corporate Principal) Secretary

By: _____
Anthony G. Pifer, President

(Witness to Principal)

(Corporate Seal)

(Surety)

(Witness to Surety)

By: _____
Name: _____
(Attorney-in-Fact)

(Corporate Seal)

NOTE: **Date of BOND must not be prior to date of Contract.** If Developer/Principal is Partnership, all partners should execute BOND. All BONDS signed by an agent must be accompanied by a certified copy of the authority to act.

IMPORTANT: Surety companies executing BONDS must appear on the Treasury Department's most current list (Circular 570 as amended) and be authorized to transact business in the State of Florida.



CITY COUNCIL AGENDA ITEM

REQUESTED COUNCIL MEETING DATE 10/19/2021

Consent item: No

SUBJECT: (H18) Second Reading - Ordinance No. 2021-13 - Land Development Code (LDC) Amendment/Chapters 2, 15, 16, 17, and 18 - Updated Sign Regulations (Case No. 21-25000004)

DEPARTMENT: Community Development

GOAL: 1 - Public Safety 3 - Quality of Life 4 - Economic Development

RECOMMENDED MOTION: Move to approve Ordinance No. 2021-13, amending Chapters 2, 15, 16, 17, and 18 of the Land Development Code related to City Signage Requirements.

SUMMARY: Planning Commission Action (5/3/21): Recommended Approval (6-0)

The proposed text amendment to the Land Development Code is to revise the current signage regulations, primarily to conform to the United States Supreme Court ruling in Reed v. Town of Gilbert that signage regulations are to be content neutral. This means that sign regulations cannot have different standards such as size, location, and duration based on the message of the sign (e.g. "political sign" or "grand opening sign" or "now hiring sign"). The draft amendment includes necessary changes to the City's sign regulations to remove content-based requirements and replace with content neutral requirements.

In the Spring of 2021, presentations were made to the Planning Commission and City Council with necessary updates to shift from content-based sign regulations to content neutral sign regulations, along with sign standards to provide new sign opportunities, streamline the sign code to no longer include redundant, out-of-date, and/or inconsistent requirements, and expand the use of digital signs for single use tenants. The majority of the proposed revisions are related to compliance with the Reed case to provide content neutral requirements while still maintaining the existing character of Port Orange as it relates to the type of signage allowed.

See attached staff report and ordinance for more information

Project No.: N/a

Funding Account No.: 0

Presenter: Tim Burman

ATTACHMENTS:

1.	Ord. No. 2021-13 LDC Amendments Ch 2 15 16 17 18	Ord. No. 2021-13 LDC Amendments Ch 2 15 16 17 18 .pdf
2.	Staff Report	Staff Report - Chapters 2, 15, 16, 17 and 18 Sign Code Update - CC 9-21-21.pdf

Robin Fenwick

Created/Initiated - 9/30/2021

ORDINANCE NO. 2021-13

AN ORDINANCE OF THE CITY OF PORT ORANGE, VOLUSIA COUNTY, FLORIDA AMENDING THE LAND DEVELOPMENT CODE CHAPTERS 2, 15, 16, 17 AND 18 UPDATING THE CURRENT SIGNAGE REGULATIONS TO ADOPT CONTENT-NEUTRAL REGULATION BY AMENDING DEFINITIONS; UPDATING SIGN STANDARDS TO INCLUDE NEW SIGN OPPORTUNITIES; REMOVING REDUNDANT AND OUT-OF-DATE PROVISIONS; PROVIDING FOR CODIFICATION; PROVIDING FOR REPEAL OF CONFLICTING ORDINANCES; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the proposed amendments are necessary to improve the content of the existing Land Development Code ("Code") by making necessary updates to the City's signage regulations to establish content-neutral sign regulations, along with sign standards to provide new sign opportunities and streamline the sign code to no longer include redundant, out-of-date, and/or inconsistent requirements; and

WHEREAS, the Planning Commission has recommended amendments to the Land Development Code; and

WHEREAS, for purposes of this ordinance words with underlined (underlined) type shall constitute additions to the original text and words with strikethrough (~~strikethrough~~) type shall constitute deletions from the original text.

NOW, THEREFORE, BE IT ENACTED BY THE CITY COUNCIL OF THE CITY OF PORT ORANGE, VOLUSIA COUNTY, FLORIDA:

SECTION 1: The City Council of the City of Port Orange hereby amends Chapter 2, Section 2 of the Land Development Code, to read as follows:

Chapter 2 - DEFINITIONS AND INTERPRETATIONS

Section 2: - Definitions.

Animated sign. Any sign or part of a sign, other than a digital sign, that changes physical position or light intensity by any movement, rotation, strobing, illumination or other means, or that gives the visual impression or illusion of movement, rotation, illumination or rotation.

Attention Getting Device. A sign, device, or ornamentation designed for the purpose of attracting attention or promotion this code. This includes feather flags, teardrop banner sign, pennants, streamers, lighter than air objects, or other similar wind driven signs, inflatable object, sign, or material placed on the ground or on buildings or tethered to other objects or structures, and rope lights, string lights, LED, neon tubes, or similar lighting strings of light bulbs surrounding a sign face or otherwise drawing attention to a sign, except strings of lights during holidays or in conjunction with an approved outdoor seating areas as approved by the City, or on residential property.

Audible Sign. A sign that projects an audible message intended to be heard by either pedestrians or vehicles.

~~*Awning.* A rooflike cover, securely fastened on one side or end to a building, and the balance of which extends over or before a place (as over walkway or before a window) as a shelter and whose bottom edge is at least seven feet above the highest grade level beneath it.~~ An architectural projection that provides weather protection, identity or decoration, and is partially or wholly supported by the building to which it is attached. An awning is comprised of a lightweight frame structure over which a covering is attached.

~~*Awning, illuminated.* A structure, which is illuminated from the reverse side with artificial light emanating from a minimum 800-milliamp high output fluorescent fixture, to the extent that such artificial light is visible through to the exterior.~~

Awning Sign. Any sign painted, printed, attached, or otherwise applied to any facet or support structure of an awning.

~~*Banner.* Any sign with characters, letters, illustrations, or ornamentation applied to cloth, paper, or fabric of any kind that is not permanently attached to a solid backing of wood, plastic, metal, masonry, or similar rigid material. A flag shall not be considered a banner. A sign made of fabric, cloth, bunting, plastic, paper, or any other non-rigid material with no enclosing framework. This definition does not include flags, pennants or streamers.~~

~~*Box or cabinet sign.* Any sign, the face of which is enclosed, bordered or contained within a box-like structure, frame or other device.~~

Bumper sticker. A strip of adhesive paper or plastic of up to two square feet bearing a printed message affixed to any part of a motor vehicle.

Building elevation. The view of any building or other structure from any one of its sides.

Cabinet sign. A sign structure consisting of the frame and face(s), not including the internal components, embellishments or support structure.

Canopy. A permanent structure or architectural projection of rigid construction over which a covering is attached that provides weather protection, identity or decoration. A canopy may be structurally independent (a “detached canopy”) or supported by attachment to a building on one or more sides.

Canopy detached. A canopy that is structurally independent of a building.

Canopy sign. Sign permanently affixed to a canopy.

~~*Changeable copy sign.* A sign which has letters, numbers, symbols or other characters which can be manually attached to or removed from the face of a sign, without altering the face or structure of the sign. Such signs are sometimes referred to~~

~~as reader boards.~~ Copy, other than digital copy, that can be manually changed or rearranged without altering the Sign Face or Sign Structure.

Channel letter. A fabricated or formed three-dimensional letter, number, logo or symbol.

Character. Any letter, number, symbol, picture, or logo.

~~Commercial message. Any sign, wording, logo, or other representation or image that directly or indirectly names, advertises, or calls attention to a product, service, sale or sales event or other commercial activity.~~ Any sign text, logo, or other representation that, directly or indirectly, names, advertises, or calls attention to a business, product, service, or other commercial activity.

Copy. Any words, letters, numbers, figures, designs or other symbolic representations incorporated into a sign.

Digital copy. Static images that are controlled by electronic communications that allow the images to be turned on or off intermittently.

Digital sign. A sign that displays Digital Copy, including any illuminated sign on which the illumination is not kept stationary or constant in intensity and color when the sign is in use, including any light emitting diode (LED) or digital panel, and which varies in color or intensity. In the sign industry, digital signs are also referred to as dynamic signs, changeable electronic variable message signs (CEVMS), electronic message centers (EMCs), etc.

~~Directional sign.~~ Any sign used to indicate the direction to entrances, exits, parking areas, restrooms, drive-through facilities or other nonbusiness related facilities on the site.

~~Directory sign.~~ A sign which gives the names of the businesses or individuals located in the building or complex where it is located. A directory sign shall be of a unified design and common material, and shall allow for a uniform size sign for each

~~business or unit of space in the development. Directory signs shall be limited to the name and type of business and its location within the building or complex.~~

Double-faced sign. A sign with two parallel, identical faces or two identical sign faces that are not parallel but diverge from a common point. ~~faces which are no more than three feet apart at their closest point, and which describe an internal angle between face planes extended of no more than 30 degrees.~~

Drive-thru sign. A sign oriented to occupants of a vehicle utilizing a drive-through lane at an establishment that offers transactions or exchanges through a window, with or without ordering capability.

Embellishment. An addition to the sign structure on which a continuation of the copy is placed. Standard bases and standard trim are not considered embellishments. If copy is placed on an embellishment, the embellishment is considered part of the sign area.

Emitting Sign. A sign that emits smoke, open flames, visible vapors, particles, sound, or odor.

Exposed Neon. A neon sign in which the neon tubes are not enclosed by an opaque covering.

Façade. The exterior wall of a building exposed to public view or a wall viewed by persons not within the building.

Fascia. The horizontal plain of a building just below the roof or coping, and above the wall or supports.

Feather Sign. A sign made of flexible material in the shape of a feather, quill, sail, blade or teardrop, and mounted on a solid or flexible pole or cord. These are sometimes referred to as “quill signs” or “sail banners.”

Flag. ~~A rectangular piece of fabric of distinctive design that is used as a symbol (as of a nation, state or city), or is displayed to show affiliation with a specific recognized organization (such as fraternal, religious or charitable organizations).~~ a piece of fabric or other flexible material, with distinctive colors and patterns, customarily mounted on a pole or similar freestanding structure or a pole mounted on a building.

Free expression sign. ~~A sign, not in excess of three square feet in size (area) and the top of the sign is not more than six feet off the ground, communicating information or views on matters of public policy concern or containing any other noncommercial message, that is otherwise lawful.~~

Freestanding sign. ~~Any sign supported by uprights or braces placed upon or in or supported by the ground, a fence or nonstructural wall. This shall include signs attached to buildings but supported in whole or in part as described above.~~ A single or double-faced sign supported by pole(s), post(s), or braces placed upon or in the ground or supported by the ground and not attached to any building. A flagpole shall not be considered a freestanding sign.

Front-foot, building. Each lineal foot, or major portion thereof, measured along the main entry side of a building. Where buildings form an L-shape or U-shape, all main entry sides are measured.

Front-foot, property. Each lineal foot, or major portion thereof, measured along the public right-of-way where the subject property abuts said right-of-way.

Front-foot, tenant. Each lineal foot, or major portion thereof, measured along the main entry side of a tenant space.

Frontage. The linear frontage(s) of a lot or parcel abutting on a private or public street that provides principal access to, or visibility of, the premises.

Ground sign. ~~A sign which is in contact with or in close proximity, to the ground for a minimum of 80 percent of its greatest horizontal dimension.~~

~~Height of sign.~~ ~~The distance between the top of a sign and the average grade elevation below it, or centerline grade of the adjacent roadway, whichever is less. The height of sign shall be measured to surface roads only and shall not apply to bridges, overpasses or similar elevated roads.~~

Halo Lit. Illumination created by concealing the light source behind three-dimensional opaque letters, numbers, or other characters of a sign, resulting in the nighttime perception of a halo around the silhouette of each character. This is also referred to as "reverse channel" or "reverse lit" illumination. A halo lit sign is not considered an internally illuminated sign.



Examples of signs with halo lit illumination

Handheld Sign. A temporary sign held, suspended, or supported by an individual. Handheld signs do not include handheld signs utilized for traffic control or safety purposes. Also known as a human directional, sign spinner, or sign twirler sign.

Illuminated Awning. Any awning lighted by or exposed to artificial lighting, either by lights on or in the awning, or directed toward the awning.

Illumination. An artificial light source incorporated internally or externally to emanate light from, or direct light to, a surface. Light sources may include exposed tubing, electrical bulbs, fluorescent lights, neon tubes, light emitting diodes (LED), liquid crystal displays, or other artificial sources of light.

Illumination, External. A sign that is illuminated by an external light source.



Examples of signs with external illumination

Illumination, Internal, Illumination created by a light source internal to the sign, transparent or translucent material from a light source within the sign structure or panel, or exposed lighting on the sign face.



Examples of signs with internal illumination

Illuminated Sign. Any sign that incorporates illumination on or in the sign, or that directs illumination toward or over all or part of the sign, or that is created by the projection of illumination onto a surface (such as a building wall).

Illuminated sign. A sign that uses artificial light, either internal or external to the sign faces, to draw attention to the sign or otherwise increase its visibility.

~~Incidental Sign.~~ A sign with copy located on a panel and mounted on a pole or a wall or similar structure, with or without a structural frame, that is normally incidental to the allowed use of the property but can contain any message or content.

~~Identification sign.~~ A sign that indicates the name and type of business or service, or the name of the development located on the site where the sign is located including street address, phone number, and graphic of business logo.

~~Instructional sign.~~ A sign conveying nonadvertising information relating to the use of the premises, including such signs as no parking, no trespassing and warning signs.

~~Internally illuminated sign.~~ A sign that uses artificial light from behind the sign face to increase its visibility.

~~Light pole sign.~~ A sign applied to fabric or other flexible, durable material and attached to a light pole located on private property.

~~Memorial sign.~~ A permanent sign, plaque, inscription or similar group of symbols recording historical data relating to the construction of the building to which it is affixed.

~~Monument sign.~~ A freestanding sign whose sign face is attached to a base or structural frame with a width and thickness of at least two-thirds (2/3) the width of the widest part of the sign face or sign face mounted between two decorative columns.

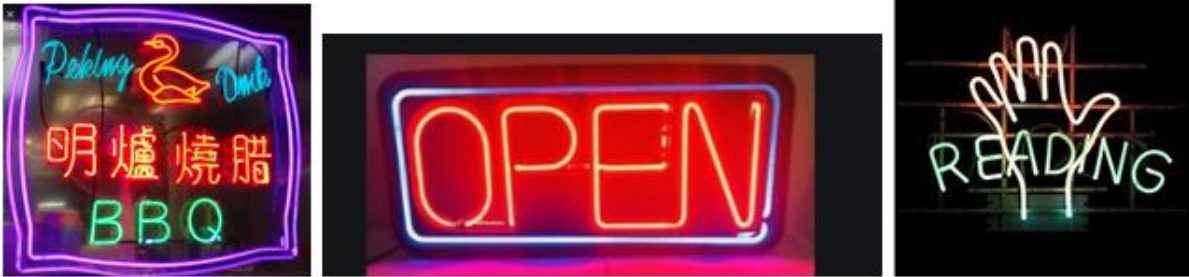
~~Mullion.~~ Vertical posts between the portion of a window through which day light may pass, such as a pane of glass.

~~Mural.~~ A sign which consists of a picture or graphic illustration applied directly to a wall of a building or structure that does not contain a commercial message.

~~Nit.~~ A unit of illuminative brightness equal to one candle per square meter, measured perpendicular to the rays of the source.

~~Neon, decorative.~~ Neon used as an accent feature on a roof, wall or around openings, which does not contain copy or any identifiable design, logo or symbol.

Neon. A source of light supplied by a glass tube that is filled with neon gas, argon, mercury or other inert gas that produces ultraviolet light, and bent to form letters, symbols, or other shapes. Neon includes all tubular light sources that employ a charged gas to illuminate a tube that glows, similar gas-activated tubular light systems that emit colors, and other tubular light sources (including fiber optics) that are used to form letters and shapes.



Examples of signs with neon

~~New employment sign.~~ A sign which announces that a new business has employment vacancies, including "now hiring" sign.

~~Non-Commercial copy.~~ Any copy other than commercial copy.

~~Noncommercial onsite directional or instructional sign.~~ A noncommercial on-site sign that functions to provide direction, information or instruction to pedestrian or vehicular traffic that is related or reasonably necessary to the movement of pedestrian or vehicular traffic on the premises, and not displaying a commercial message, e.g., "entrance," "exit," "caution," "no parking," "one way only," "no trespassing," and the like.

Nonconforming sign. Any sign that does not conform to one or more applicable provisions of this code, but that was lawfully erected and maintained, or approved in an official development plan, prior to the applicable provision or provisions.

Painted sign. Paint that is applied directly on a building wall to create a sign.

Panel. A plate, backing material, or other delineating surface that contains copy within a sign structure.

Parasite sign. Any sign not exempted from permitting by this sign code, for which no permit has been issued, and which is attached to another sign.

Pennant. A sign made of flexible materials that typically features a series of geometric shapes (e.g., triangles), suspended from one or two corners fastened to a string, which is secured or tethered so as to allow movement and used as an attention-getting form of media.

~~Pennant.~~ Any flag-like piece of cloth, plastic or paper attached to any staff, cord, building or other structure that hangs loosely for the purpose of attracting attention to its site.

Pixel Pitch. the distance (generally in millimeters) between the center of a light-emitting diode (LED) cluster (pixel) and the center of the adjacent LED pixel.

Pole sign. A sign which is supported by one or two poles of no greater than eight inches in diameter and otherwise separated from the ground by air

~~Portable sign.~~ A sign that has no permanent attachment to a building or to the ground by means of a footing, including but not limited to, an A-frame sign, sign with wheels, pull attachments, or hot air or gas filled balloons.

Post Sign. A freestanding sign that projects perpendicular from a post, or that is suspended from or mounted between one or more posts constructed of wood, masonry, iron, or similar materials.

~~Projecting sign.~~ A sign supported by a wall of a building, projecting away from that wall 12 inches or more, and designed with a face or faces reading at an angle to that wall. This term shall include the term "blade sign." A sign supported by, and with any part extending at least eighteen (18) inches from, a building wall.

Public Property. Any property, real or personal, owned, leased or licensed by the city, county, state or federal government, including public rights-of-way, and for which the right to possess and control such property has not been legally surrendered, granted, licensed, or conveyed to a private person or entity.

Public Sign. A sign erected by any governmental entity in conjunction with the conduct of any governmental program, operation or activity, including, but not limited to, federal, state, county, and city governments, and local school districts.

Raceway. An enclosed box that functions as a mounting mechanism, and electronic component enclosure for wall mounted signage.

Roofline. The eave or fascia of any wall plane.

~~*Sandwich board sign.* Any sign consisting of two faces that are partially joined together and is free of structure or support and not secured to the ground. A portable sign that is ordinarily displayed as an A-frame with back-to-back sign faces, an easel, or a similar configuration.~~

~~*Sign.* Any device, fixture, placard or structure which uses color, form, graphics, illumination, architectural style or design, with text or writing to advertise, attract attention, announce the purpose of, or identify the purpose of, or identify the purpose of any person or entity or to communicate information of any kind to the public. The term "sign" includes sign structure. The term "sign" does not include artwork or holiday and seasonal decorations. Any object, device, flag, display, structure, or part thereof, situated outdoors or indoors, that is used to advertise, identify, display, direct, or attract attention to an object, person, institution, organization, business, product, service, event, or location by any means, including, but not limited to, words, letters, figures, designs, symbols, fixtures, colors, illumination, or projected images. A sign includes the sign structure.~~

~~Sign, area, of. The total surface of a sign including the background and frame but not structural supporting elements outside of its frame. Where a sign is composed of skeleton letters, characters, or symbols applied to a background which is not a structural part of the sign, the area of the sign shall be the smallest rectangle (measured perpendicular to a horizontal grade), triangle or circle which will include the display. Where a sign is built with two faces back to back, the area of the sign shall be the larger of the areas of the two faces computed as herein before specified. In the case of three-faced signs forming an equilateral triangle, sign area shall be calculated as 1½ times the largest face. In the case of four-faced signs forming a square or cube, sign area shall be calculated as two times the largest face. The entire sign face, including the display surface and any framing, trim, or molding, but not including the supporting structure. The sign area shall be measured as a rectangle, encompassing the largest horizontal width and largest vertical height.~~

Sign copy. The graphic content of a sign in either permanent or removable words, letters, figures, designs, symbols, fixtures, colors, illumination, or projected images.

~~Sign face. The area or display surface used for the graphic message. Any plane, surface, curve or other area containing a sign. The total surface of a sign including the background and frame but not structural supporting elements outside of its frame. Where a sign is composed of skeleton letters, characters or symbols applied to a background which is not a structural part of the sign, the face of the sign shall be the smallest rectangle, triangle or circle which will include the display.~~

Sign height. The vertical distance measured from the highest point of a sign to the lowest grade beneath the sign.

Sign permit. A permit authorizing the display, installation, construction or maintenance of a sign pursuant to the code.

Sign structure. ~~Any combination of materials or structures constructed for the purpose of attaching, fixing, or otherwise supporting a sign, whether installed on, above, or below the surface of the land, a building, or any other solid surface. Any structure which is designed specifically for the purpose of supporting a sign, which has supports or which is capable of supporting a sign. The definition shall include any decorative covers, braces, wires, supports, or other components attached to or placed around the sign structure.~~

Site sign. A temporary freestanding sign constructed of vinyl, plastic, wood, metal, or similar material and designed or intended to be displayed for a limited period of time on a site with an active listing for sale or for rent, or on properties with active building permits.

Snipe sign. A sign illegally attached to a utility pole or utility box or affixed to a public sign or placed in a public right-of-way.

Streamer. An attention-getting device consisting of two or more balloons, ribbons, reflectors, fringes or similar objects strung together on a common line, pole, or sign structure, or attached to one or more products offered for sale.

String light. A lighting fixture that is composed of electrical wiring encased in plastic with sockets for bulb placement.

Subdivision entry sign. A monument sign located along the entry to a subdivision from a collector, arterial, or local street.

Surface area sign. A sign located on the front of a building, tenant space, residence, structure, post or pole, or similar feature within a front yard, or an authorized United States Postal Service mailbox, that displays copy for public safety and delivery of mail and official governmental notification.



Examples of surface area signs

Teardrop banner sign. A type of temporary sign consisting of cloth, bunting, canvas, or similar fabric, attached to a single vertical support structure with distinctive color, words, patterns, or symbolic logos for display. Also known as a feather banner, flying banner, or a wave banner sign.

Temporary sign. A sign based upon its materials, location, and/or means of construction, e.g., light fabric, cardboard, wallboard, plywood, paper, or other light materials, with or without a frame, intended or designed to be displayed for a limited period of time. ~~Any sign that is used only temporarily and is not permanently mounted. Temporary signs shall include portable signs, as defined in this chapter.~~

Temporary sign cover. A sign based upon its materials, placement, and/or means of construction, e.g., light fabric, plastic, or other light materials, intended or designed to cover a permitted monument sign for a limited period of time.

Tenant. ~~That portion of a façade attached to interior space that is occupied by one occupant that has a ground floor entry that provides public or customer access to the occupant. An “occupant” includes one tenant, owner or business. One who is in possession of a premises under title, lease, or rental plan. Such premises, for purposes of this code, is referred to as a tenant space.~~

Traffic control sign. A sign erected in a public right-of way by an authorized governmental agency for the purposes of traffic regulation and safety.

Transition duration. The time interval it takes the display to change from one complete static message to another complete static message.

Transition method. A visual effect applied to a message to transition from one message to the next. Transition methods include:

a. Dissolve – a frame effect accomplished by varying the light intensity or pattern, where the first frame gradually appears to dissipate and lose legibility simultaneously with the gradual appearance and legibility of the second frame.

b. Fade – a frame effect accomplished by varying the light intensity, where the first frame gradually reduces intensity to the point of not being legible (i.e. fading to black) and the subsequent frame gradually increases intensity to the point of legibility.

Vehicle sign. A sign that is printed, painted upon, or attached to a motor vehicle, including semi-truck trailers, used primarily for the delivery of products, transporting passengers or services or for business purposes other than primarily serving as a sign.

Wall sign. A sign that is fastened to or painted on the wall of a building or other structure so that the wall becomes the supporting structure for, or forms the background surface of, the sign; and does not extend more than 12 inches from a building surface. ~~A sign painted on or affixed to the structural wall of a building, with a sign face approximately parallel to the wall perpendicular to the ground and projecting no more than 12 inches from the wall. The general term "wall sign" shall also include window signs and fascia signs. A banner made of cloth, paper, or fabric of any kind shall not be considered a wall sign.~~

Warning sign. A sign that warns of a dangerous condition on a parcel of property or that posts the property warning of restrictions or that gives notice to the public of information required by law

Wind sign. An attention-getting device with or without copy, or a series of devices such as streamers, balloons, feather signs, and pennants with or without copy, fastened in such a manner as to move in the wind.

Window. An opening constructed in a wall and which admits light or air to an enclosure, is framed and spanned with glass, and which may be mounted to permit opening and closing.

Window sign. A sign posted, painted, placed, or affixed to a window and inside a building, but clearly visible from outside the building. This includes any sign that is mounted within three (3) feet of a window and oriented to the window in a manner that is visible from the outside of the building or wraps or film that reduce the transparency of the window.

~~Window sign.~~ A permanent sign affixed to, suspended within three feet behind, or painted on either face of a window or glass door that leads to the exterior of the building.

Yard sign. A temporary freestanding sign constructed of paper, vinyl, plastic, wood, metal, or other comparable material, and designed or intended to be displayed for a limited period of time on a lot with one or more existing permanent structures.

[No other changes to Section 2, Chapter 2, Land Development Code]

SECTION 2: The City Council of the City of Port Orange hereby repeals in its entirety Chapter 15 of the Land Development Code, and replaces herewith the following:

Chapter 15 - SIGNS

Section 1: - Purpose, intent, and scope.

It is the purpose of this division to promote the public health, safety and general welfare through reasonable, consistent and non-discriminatory sign standards. The sign regulations in this chapter are also designed and intended to meet the statutory requirement that this municipality adopt land development regulations that regulate signage, a requirement set forth in F.S. § 163.3202(f). The sign regulations in this

chapter are not intended to censor speech or to regulate viewpoints, but instead are intended to regulate the adverse secondary effects of signs. The sign regulations are especially intended to address the secondary effects that may adversely impact aesthetics and safety. The sign regulations are designed to serve substantial governmental interests and, in some cases, compelling governmental interests such as traffic safety and warning signs of threats to bodily injury or death.

This chapter regulates signs, as defined in this code, which are placed on private property or on property owned by public agencies including the city and over which the city has zoning authority. This division is not intended to extend its regulatory regime to objects that are not traditionally considered signs for purpose of government regulation.

In order to preserve and promote the city as a desirable community in which to live and do business, a pleasing, visually attractive environment is of foremost importance. The regulation of signs within the city is a highly contributive means by which to achieve this desired end.

These sign regulations have been prepared with the intent of enhancing the visual environment of the city and promoting its continued well-being, and are intended to:

- (a) Encourage the effective use of signs as a means of communication in the city.
- (b) Maintain and enhance the aesthetic environment and the city's ability to attract sources of economic development and growth.
- (c) Improve pedestrian and traffic safety.
- (d) Minimize the possible adverse effect of signs on nearby public and private property.
- (e) Foster the integration of signage with architectural and landscape designs.
- (f) Lessen the visual clutter that may otherwise be caused by the proliferation, improper placement, illumination, animation, excessive height, and excessive size (area) of signs which compete for the attention of pedestrian and vehicular traffic.

- (g) Allow signs that are compatible with their surroundings and aid orientation, while precluding the placement of signs that contribute to sign clutter or that conceal or obstruct adjacent land uses or signs.
- (h) Encourage and allow signs that are appropriate to the zoning district in which they are located.
- (i) Establish sign size in relationship to the scale of the lot and building on which the sign is to be placed or to which it pertains.
- (j) Preclude signs from conflicting with the principal permitted use of the site and adjoining sites.
- (k) Regulate signs in a manner to not interfere with, obstruct the vision of or distract motorists, bicyclists or pedestrians.
- (l) Except to the extent expressly preempted by state or federal law, ensure that signs are constructed, installed, and maintained in a safe and satisfactory manner, and protect the public from unsafe signs.
- (m) Preserve, conserve, protect, and enhance the aesthetic quality and scenic beauty of all districts of the city.
- (n) Allow for traffic control devices consistent with national standards and whose purpose is to promote highway safety and efficiency by providing for the orderly movement of road users on streets and highways, and that notify road users of regulations and provide warning and guidance needed for the safe, uniform, and efficient operation of all elements of the traffic stream.
- (o) Protect property values by precluding, to the maximum extent possible, sign types that create a nuisance to the occupancy or use of other properties because of their size, height, illumination, brightness, or movement.
- (p) Protect property values by ensuring that sign types, as well as the number of signs, are in harmony with buildings, neighborhoods, and conforming signs in the area.
- (q) Regulate the appearance and design of signs in a manner that promotes and enhances the beautification of the city and that complements the natural surroundings in recognition of this city's reliance on its natural surroundings and

beautification efforts in retaining economic advantage for its resort community, as well as for its major subdivisions, shopping centers and industrial parks.

- (r) Enable the fair and consistent enforcement of these sign regulations.
- (s) Promote the use of signs that positively contribute to the aesthetics of the community, are appropriate in scale to the surrounding buildings and landscape and advance the city's goals of quality development.
- (t) Provide standards regarding the non-communicative aspects of signs, which are consistent with city, county, state and federal law.
- (u) Provide flexibility and encourage variety in signage, and create an incentive to relate signage to the basic principles of good design; and
- (v) Assure that the benefits derived from the expenditure of public funds for the improvement and beautification of streets, sidewalks, public parks, public rights-of-way, and other public places and spaces, are protected by exercising reasonable controls over the physical characteristics and structural design of signs.

Section 2: - Applicability

All signs placed upon lands within the city shall conform to the standards set forth in this Chapter except where deviations have been permitted by i. a Master Development Agreement (MDA) for a Planned Unit Development (PUD) or Planned Commercial Development (PCD), ii. variance, or iii. other written agreement with the city.

- (a) Signs may be erected, altered, and maintained only for a permitted use located on the same lot as the permitted use.
- (b) Notwithstanding anything contained in this code to the contrary, any legal sign erected pursuant to the provisions of this code may, at the option of the owner, contain a non-commercial message in lieu of a commercial message and the non-commercial copy may be substituted at any time in place of the commercial copy. The non-commercial message (copy) may occupy the entire sign face or any portion thereof. The sign face may be changed from commercial to non-commercial messages, or from one non-commercial message to another non-

commercial message, once per day as desired by the owner of the sign, provided that the size, height, setback, other dimensional criteria and permitting requirements contained in this code have been satisfied.

(c) Effective Date: The effective date of this chapter is October xx 2021.

(d) All signs displayed, constructed, erected, or altered after the effective date of these regulations, as adopted on October xx, 2021, by Ordinance 21-13, shall be in conformance with the provisions of these regulations. All signs that are existing at the time of the adoption of these regulations shall not be altered or enlarged without being brought into conformance with these regulations.

(e) Completion of permits commenced under previous code.

(1) A valid building permit issued for a permanent or temporary sign issued prior to the effective date of this chapter shall remain valid for the term of approval of the permit.

(2) A complete building permit application for a sign or any other type of approval for a sign shall be reviewed and considered in accordance with either the provisions of the code in place on the date of submittal of the application or the provisions of this code, at the applicant's option.

(f) The regulations and limitations contained in this section shall not apply to any signage that is placed or installed by the city, or at the direction of the city, on city property or within a public right-of-way when such signage has been approved by the city council or city manager as serving a public purpose.

Section 3: - Permit required

(a) An application for a sign permit shall be submitted to the Community Development Department on the forms provided by the Community Development Department in order to change copy, erect, move, alter, reconstruct, or repair any permanent or temporary sign, except signs that are exempt from permitting and in compliance with this chapter. Each application for a sign permit shall include the following, unless waived by the administrative official:

- (1) An elevation drawing of the proposed sign, drawn to scale, showing the height, size, sign area, dimensions, the proposed copy, and all other information required to determine zoning compliance for the sign that is proposed to be erected or installed.
 - (2) The color, finish, and construction materials of the sign and sign structure.
 - (3) A scaled survey of drawing showing the location of the sign to be erected on the property along with distance from a right-of-way or driveway and all other relevant measurements required to determine zoning compliance.
 - (4) Measurements of existing signage to remain on the property including the sign height, sign area, location, and number of existing signs, where applicable, to determine zoning compliance for the sign that is proposed to be erected or installed.
 - (5) Engineered drawings certified by a State of Florida registered engineer for method of construction, attachment, structural integrity, wind design speed, and other requirements in accordance with the current edition of the Florida Building Code, where applicable.
 - (6) A scaled landscaping plan or drawing that includes the dimensions of the landscape area and the number and type of shrubs and groundcover to be installed, if required.
 - (7) Documentation and drawings for lighting and/or electrical components of the proposed sign(s) showing all pertinent electrical details are in accordance with the current edition of the Florida Building Code.
 - (8) Additional submittal requirements to determine zoning compliance with this chapter, as requested at the discretion of the city.
 - (9) The number of copies of application submittal items as determined by the City.
- (b) Upon receipt of a complete application along with payment of the application fee, as established by resolution of city council, the City shall review the application

for compliance with this section, all applicable Florida Building Code requirements, and any other applicable City codes and regulations, and either approve, approve with conditions, or deny the application.

(c) The City shall have the right to inspect the proposed sign location prior to acting on the application and shall also have the right to inspect the sign after construction to ensure compliance with these regulations and any conditions of approval.

(d) A sign permit shall expire and become invalid after the timeframe specified in the current edition of the Florida Building Code for all building permits.

(e) If an applicant wishes to appeal a decision on an application for a sign, the applicant must file a request for appeal as provided in chapter 3, article I, section 7.1.

Section 4: - Exempt signs

(a) The following signs are exempt from the permit requirements of section 3; however, exempt signs remain subject to the remaining provisions of this chapter. Exempt signs shall otherwise be in conformance with all applicable requirements of this chapter, and the construction and safety standards of the city. Exempt signs shall be placed on private property by the property owner or by consent of the property owner and shall not reduce otherwise allowed signage for a property. Unless otherwise specifically provided, exempt signs may not incorporate illumination.

(b) Exempt signs include:

(1) Ordinary repair and upkeep of an existing sign.

(2) Changing the changeable copy of a sign unless the changeable copy is being replaced with a permanent sign.

(3) Surface area sign less than four (4) square feet.

(a) On the front of a building, tenant space, residence, or structure.

(b) On each side of an authorized United States Postal Service mailbox.

(c) On one post which measures no more than 48 inches in height and 6 inches in width.

- (d) Within the front yard.
- (4) Signs required to be installed by law or specifically authorized for a public purpose and erected by a government entity, including but not limited to transit or bus stop signs, interpretive signs, commemorative or historic plaques or signs, wayfinding signs for public facilities, towing signs, traffic control signs, and civic or public event signs. These signs may utilize illumination for safety purposes.
- (5) Warning sign not exceeding four (4) square feet in area.
- (6) Temporary decorations or displays that are displayed for a period of not more than forty-five (45) consecutive days nor more than seventy-five (75) days in any one calendar year. Such decorations or displays may be of any type, number, area, height, location, illumination, or animation, provided that such decorations or displays:
- (a) Are maintained and do not constitute a fire hazard; and
- (b) Are located so as not to conflict with, interfere with or visually distract from traffic regulatory devices.



Examples of temporary decorations or displays

- (7) Merchandise displays behind storefront windows so long as no part of the display moves or contains flashing lights.
- (8) Incidental objects such as small decals less than two (2) square-foot affixed to machines, equipment, fences, gates, walls, gasoline pumps, public telephones, utility cabinets, or windows and door panes/panels.
- (9) A sign affixed to a vehicle, except as provided in section 5 below.
- (10) Window signs, subject to the standards in this chapter.
- (11) Site signs, subject to the standards in this chapter

(12) Yard signs, subject to the standards in this chapter

(13) Handheld signs so long as the person or the sign being held does not obstruct or makes hazardous the free passage of pedestrians and motor vehicles on any street, sidewalk, or public-right-of way.

(14) Flags, subject to the following standards:

(a) A flag shall not exceed thirty-two (32) square feet in area and shall be generally rectangular in shape.

(b) A flag shall be attached to a permanent flagpole or a flag bracket or flag stanchion mounted to a building, dwelling, or accessory structure.

(c) A maximum of three (3) flags shall be allowed per lot. Unless otherwise required or authorized by law, no more than two (2) flags are allowed on a flagpole, flag bracket or flag stanchion.

(d) Maximum height of a flagpole shall be according to chapter 16 of this code. A building permit is required to install a flagpole.

(e) A flag may be externally illuminated in compliance with this code.

(f) A flag on a lot zoned non-residential or multi-family shall maintain a minimum clearance of eight (8) feet from any surface.

(g) Flags shall not be torn, tattered or in disrepair.



Examples of flags

(15) Umbrella signs subject to the following standards:

(a) An umbrella having a sign affixed shall only be allowed outside a seating area for a licensed business establishment where the outside seating area is designated on an approved site plan or building permit.

(b) One (1) umbrella sign per table is allowed.

(c) An umbrella having an affixed sign shall not exceed ten (10) feet in height.

(d) An umbrella having an affixed sign shall be mounted on or in the table or in an umbrella holder adjacent to the table.

(e) Changeable copy is not permitted on umbrellas.

Section 5: - Prohibited signs

(a) The following types of signs are prohibited and shall neither be erected nor maintained within the City, except as noted:

(1) All signs not expressly permitted in this chapter.

(2) Signs that communicate obscenities, child pornography, or other unprotected speech as defined by the United States Supreme Court.

(3) Any sign other than traffic control signs, that is erected, constructed, or maintained within, over or upon a public right-of-way or city property, unless pursuant to the express permission of the city.

(4) Abandoned signs.

(5) Animated signs.

(6) Audible signs.

(7) Beacons or searchlights.

(8) Emitting sign.

(9) Billboards.

(10) Parasite sign

(11) Attention-Getting Devices.



Examples of attention-getting devices

- (12) Commercial off-site advertising sign, unless allowed by an approved variance or development agreement approved by the city.
- (13) Any sign that is projected onto a surface using light from a remote source.
- (14) Any sign painted, erected, or constructed upon, above or over the roof or parapet of any building.
- (15) Snipe sign.
- (16) Any sign which is of a size, location, movement, coloring, or manner which may be confused with, or construed as a traffic control sign, signal or device or which obscure or interfere any traffic or street sign or signal, such as those signs approved and shown in the current edition of the Uniform Traffic Code.
- (17) Any sign which obstructs free ingress to or egress from a door, window, fire escape or other required exit way.
- (18) Any sign, other than a bumper sticker, displayed on a vehicle, trailer, boat, or recreational vehicle that is used primarily to display the sign. Signs are permitted on a vehicle, trailer, boat, or recreational vehicle if the vehicle is used by a business owner or employee of the business primarily as a means of transportation of people or goods or for delivery of services (i.e. tow truck).
- (19) Any sign erected within any navigable waterway within the city so as to be located beyond any established bulkhead line.
- (20) Any signs mounted to fences or walls, except signage that is incorporated as part of an approved entrance feature for a residential subdivision with a recorded plat.
- (21) Any sign that extends into or is placed within a public right-of-way unless specifically authorized by an approved License Agreement, variance or other express approval by the city council.
- (22) Any sign structure that no longer contains a sign panel.

(23) Signs, handbills, circulars, dodgers or other advertising distributed or placed or caused to be distributed or placed on any public or private property in the city any handbills, circulars, dodgers or other advertising matter in such a manner that the same may be blown, carried by water or otherwise scattered by the elements, or so as to constitute litter. Handbill or other similar form of advertising placed on or into vehicles within the city.

(b) Removal of prohibited signs.

(1) Prohibited signs located on public property or public rights-of-way shall be removed immediately and may be removed by the city or its agent without notice.

(2) Any prohibited sign, except abandoned or billboard signs, located on private property shall be removed within forty-eight (48) hours after receipt of written notification from the city.

(3) Abandoned or billboard signs shall be removed by the owner, agent or person in charge of the premises within thirty (30) days after receipt of written notification by the City. If the sign is not removed in a timely manner, the City may initiate code enforcement proceedings.

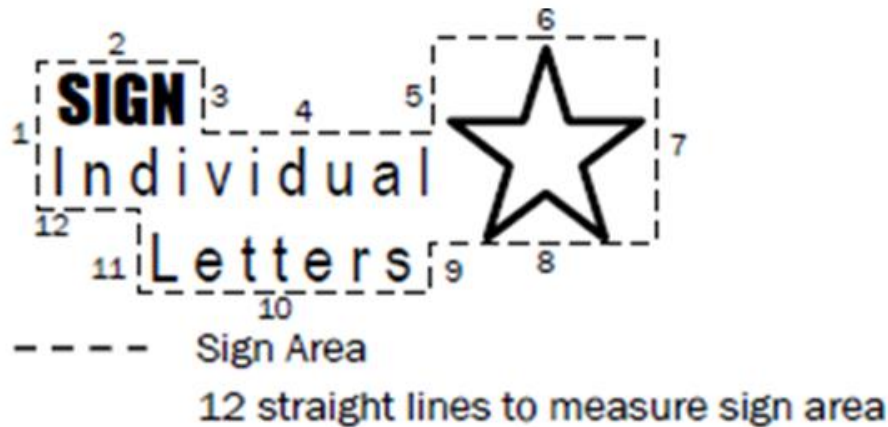
Section 6: - Sign measurement

(a) Area of single-faced signs.

(1) Sign area is the entire surface area of a sign, including non-structural trim, frame, or other material or color forming an integral part of the display or used to differentiate the sign's contents from the background against which they are placed. The supports, uprights, or structures on which any sign is mounted shall not be included in measuring sign area. A building's architectural features, structural supports, and landscape elements shall not be included within the sign area.

(2) An awning, canopy, projecting, or non-cabinet wall sign's area shall be measured by including within a single continuous rectilinear perimeter of not

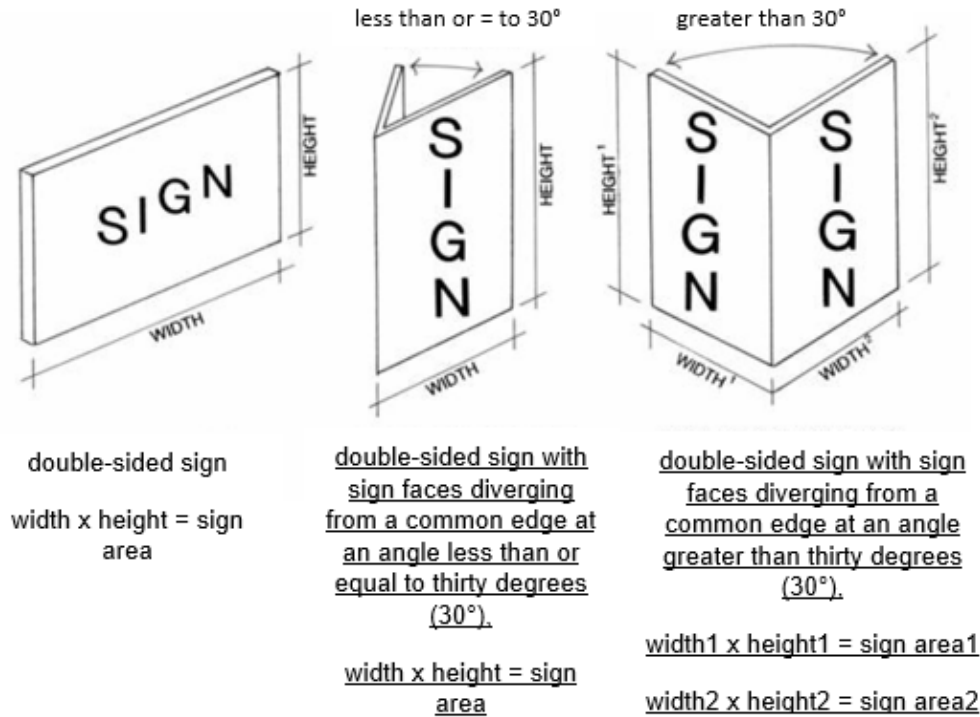
more than twelve (12) straight lines that enclose the extreme limits of writing, representation, lines, emblems, or figures contained within all modules together with any air space, materials, or colors forming an integral part or background of the display or materials used to differentiate such sign from the structure against which the sign is placed.



Example of calculating sign area

(b) Area of double-faced signs.

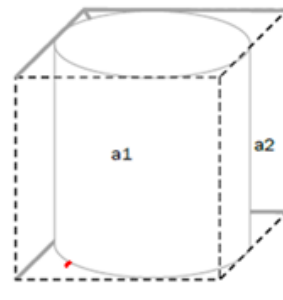
- (1) Sign area is the entire surface area of a sign, including non-structural trim, frame, or other material or color forming an integral part of the display or used to differentiate the sign's contents from the background against which they are placed. The supports, uprights, or structures on which any sign is mounted shall not be included in measuring sign area. If the sign faces are connected in a manner that forms an angle between the two sign faces of greater than thirty degrees (30°), then each sign face is considered a separate sign.



Example of double-sided signs and sign area calculations

(2) Sign area of a free form sign shall be the sum of two adjacent vertical faces as seen at the same time from a viewer's perspective, of the smallest cube that can encompass the sign.

Area 1 (a1) + Area 2 (a2)
= Free Form Sign Area
 ---- Sign Area

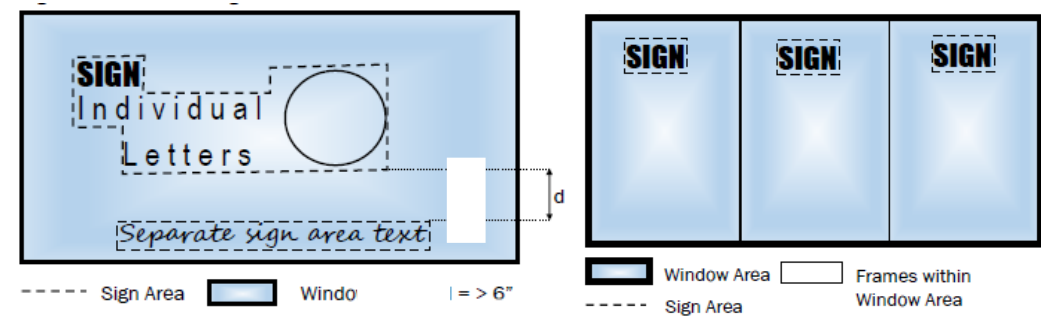


Example of calculating sign area for a free form sign

(c) Area of window signs.

(1) Window sign area is the total window area of all window signs for a tenant divided by percentage of window signage allowed. If a window includes

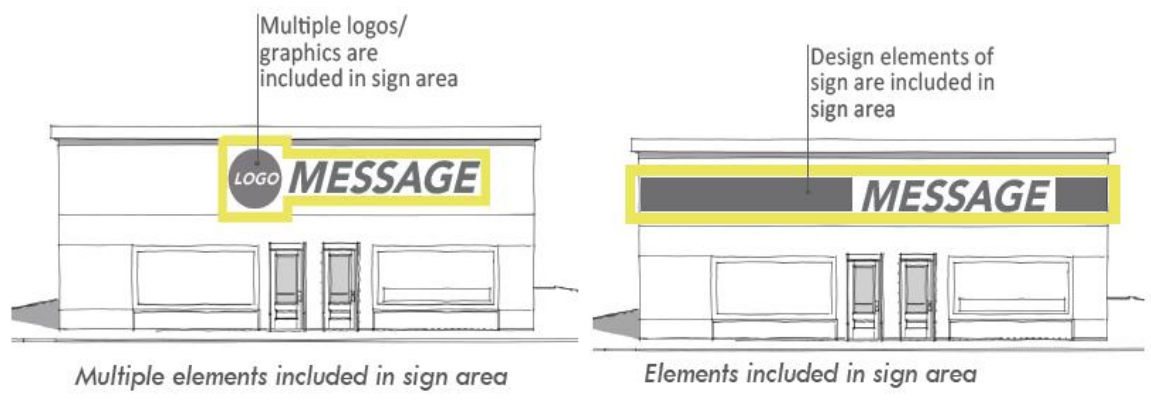
multiple areas or frames, the outer most frame will determine the extent of the window area.



Examples of determining window sign area

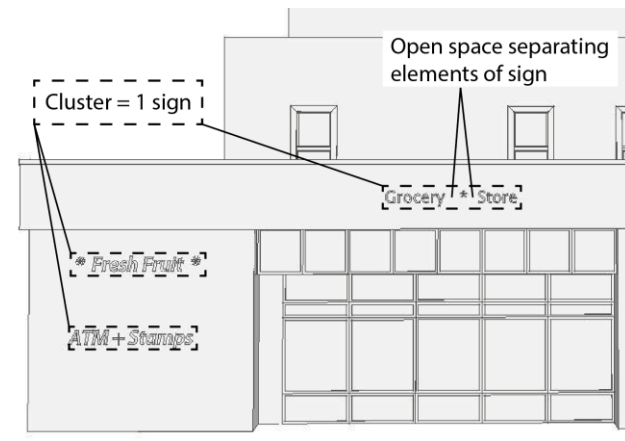
(d) Area of multiple signs.

- (1) Whenever more than one (1) sign is placed on a freestanding structure, or on a projecting structure, the combination of signs shall be considered as one (1) sign for the purpose of computing sign area and determining the number of signs on a site.
- (2) Total sign area on a building shall be computed by adding the areas of the individual sign elements.



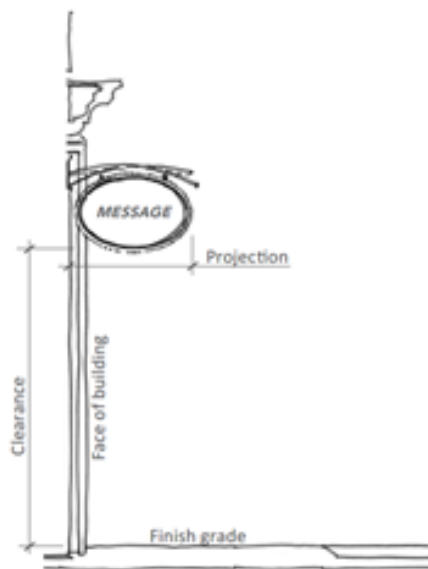
Example of determining sign area on a building

- (3) A distinct cluster of individual letters, figures or elements is considered a single sign for purposes of determining the number of attached signs per facade for each wall.



Example of determining distinct cluster of individual letters on a building

- (e) Projection is measured as the distance from the face of the building to which a sign is mounted to the furthest point on the sign away from the wall.
- (f) Clearance is measured as the shortest distance between the bottom of a sign and the grade below.



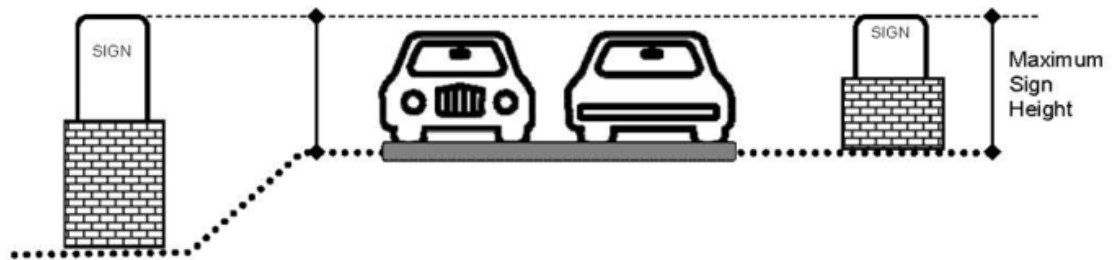
Example of determining projection and clearance

(g) Height.

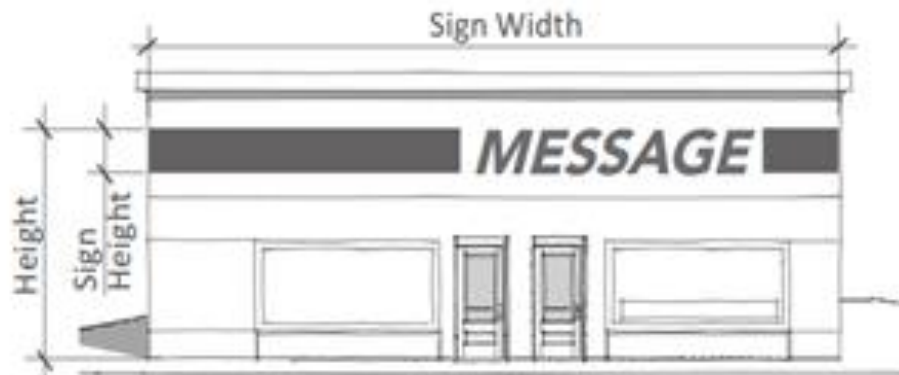
- (1) The height of a freestanding sign is the vertical distance to the top of the structure or sign face, whichever is higher, measured from the elevation of

average grade in the area within the required landscape area around the base of the sign.

- (2) For freestanding signs adjacent to a street, if average grade around the base of the sign is lower than the average grade of the nearest abutting street, then the height of the sign shall be measured from the roadway line elevation of said street to the top of the sign face or sign structure, whichever is higher. This only applies to surface roadways and shall not apply to bridges, overpasses, or similar elevated roads.
- (3) The sign height of an attached sign is the vertical distance of the sign area.



Example of measuring sign height



Example of measuring sign height on a building

Section 7: - Sign placement or location

- (a) A sign shall meet the visual clearance zone and setback requirements in chapter 16 of this code.
- (1) On existing lots of substandard width, where existing conditions or requirements conflict with the ability to meet the signage setback requirements of this chapter, the administrative official may allow the setback to be reduced to the largest dimension available.
- (2) Front setback requirements for signs may be reduced or waived by the administrative official where properties front on a dedicated right-of-way with sufficient width to accommodate any foreseeable future widening and still maintain a minimum twenty feet (20') distance between the sign and the nearest edge of the travel lane.
- (b) A sign shall be setback twenty-five feet (25') from a side lot line unless reduced by the administrative official pursuant to this section.
- (c) Frontage is the portion of a lot abutting a public right-of-way, alley, access easement, drive aisle, private access, public right-of-way, private right-of-way
- (1) Primary is the frontage that a business or tenant abuts or adjacent to and addressed from.
- (2) Secondary is the frontage that a business or tenant abuts or adjacent to that is not the primary frontage.
- (d) A sign shall not obstruct any window, door, fire escape, stairway, ladder or opening intended to provide light, air, ingress, egress for any building as required by law.
- (e) Window signs shall be arranged so as to provide visibility through windows at eye level, between four and six feet in height.
- (f) Signs shall be located to maintain clearance from all overhead electrical or utility lines. Clearance shall be determined by the electrical or other utility provider.

Section 8: - Sign design and materials

- (a) In general, permanent signs and supporting sign structures shall be designed as a compatible architectural element to the principal structure, overall development or neighborhood in which it is located and have common unifying elements which may include materials, primary finish and colors, size, scale with the building it advertises, height, letter style, sign type, shape, lighting, location on buildings, and design theme.
- (b) Signs shall be constructed of durable, all-weather materials and may include but are not limited to metal, galvanized steel or of an equivalent corrosion resistant material, glass, stone, stucco or similar material, concrete, brick, plexiglass, fiberglass, wood, or other approved materials.
- (1) Paint, vinyl, or other similar materials may be used for window or wall signage.
- (2) Plastic substrate, particle board, Masonite, paper, fabric, plywood, unfinished wood, or similar materials are prohibited, unless it is shown to the satisfaction of the administrative official that an otherwise prohibited material has been modified or packaged to eliminate any unacceptable characteristics affecting durability.
- (3) Temporary Signs shall be constructed of durable, all-weather materials and may include but are not limited to metal, plexiglass, fiberglass, wood, plastic substrate, plywood, woven fabrics, vinyl fabrics, or other approved materials.
- (c) Exposed raceways shall be as thin and narrow as possible and not exceed eight inches (8"). Exposed raceways shall be finished to match the background wall and shall not extend in width or height beyond the area of the sign's lettering or graphics.
- (d) The numeric street address of the property upon which the sign is located shall be identified on the top portion of the side and front of a monument sign, unless

waived by the administrative official. The street address numbers shall be between six to twelve inches (6" - 12") in height.

- (e) The supporting features or structures of a sign shall appear to be free of any extra bracing angle iron, guy wires, cables, etc. The supports shall appear to be an architectural and integral part of the building and/or sign.

Section 9: - Digital signs and string lighting

- (a) Digital Signs. Digital signs are subject to the following standards:



Examples of digital signs

- (1) The digital sign area of a monument sign shall be integrated into the design of the sign. The digital sign area shall not be an add-on feature onto the monument sign, but rather must be fully integrated into the sign design.



Examples of electronic message area intergrated into a monument sign



Example of the digital sign area not being intergrated into a monument sign

- (2) Each message on the digital sign shall be displayed for at least sixty (60) seconds in duration. Message changes shall be completed instantaneously and shall be unnoticeable.
- (3) Digital signs shall contain static messages changed only through dissolve or fade transitions and shall not have movement or the appearance or optical illusion of movement during the static display period of any part of the sign. A static message shall not include any flashing or the varying of light intensity, and the message shall not scroll. The change of message using dissolve or fade transition shall not exceed one (1) second of time between each message displayed on the sign.
- (4) The intensity of the light source for a digital sign shall not produce glare, the effect of which constitutes a traffic hazard or is otherwise detrimental to the public health, safety, or welfare.

- (5) Digital signs shall not operate at brightness levels of more than 0.3 foot-candles above ambient light as measured using a foot candle (Lux) meter at a preset distance depending on sign area. Illuminance measurement requires two steps: First – ambient light shall be measured with the sign turned off. Second – sign light output shall be measured with the sign turned on as a solid white display. The difference between the two measurements shall be 0.3 foot-candles or less. The distance at which to take measurements is calculated with the following formula and rounded to the next whole number: Measurement Distance = $\sqrt{\text{Area of sign Sq. Ft.} \times 100}$
- (6) Prior to the issuance of a sign permit for a digital sign, the applicant shall provide written certification from the sign manufacturer that the light intensity has been factory pre-set not to exceed 0.3 foot-candles above ambient light and that the intensity level is protected from end-user manipulation by password-protected software or other similar method as deemed appropriate by the Administrative Official. The electronic message center shall have automatic dimmer software or solar sensors to control brightness for nighttime viewing or as ambient light conditions change.
- (7) The technology currently being deployed for digital signs is LED (light emitting diode), but there may be alternate, preferred and superior technology available in the future. Any other technology that complies with the performance standards for digital signs, including the maximum brightness levels as stated above, is permitted.
- (8) A digital sign shall include systems and monitoring to either turn the display off, show "full black" on the display, or include a default mechanism that freezes the sign in one position if a malfunction occurs, and
- (9) Be designed so that a catastrophic power surge will cause the sign to go dark or to deploy the maximum brightness limitations, and
- (10) Digital sign faces shall have a pixel pitch of no more than eight (8) millimeters.
- (11) Prior to the issuance of a sign permit, the applicant shall provide the phone number and email address of a person or company available to be contacted at any time and to turn off the digital sign promptly if a malfunction occurs.

- (12) The light modules for a digital sign shall be repaired or replaced if they become broken, burned-out or substantially dimmed.

(b) String lights.

- (1) String lights are allowed in all zoning districts as an accent element for outdoor dining area, porches, patios, event spaces, or similar structures or elements.
- (2) String lights are not counted toward the maximum wall sign area allocation in this chapter.
- (3) String lights on non-residential or multi-family zoned lots shall be shown and approved on a site plan, subdivision, building permit, or an approved application form provided by the city.
- (4) The intensity of the light source for string lighting shall not produce glare, the effect of which constitutes a traffic hazard or is otherwise detrimental to the public health, safety, or welfare.



Examples of allowed string lighting

Section 10: - District areas

- (a) Section 11 below sets forth standards applicable to each of the following districts defined as follows:
- (1) Residential (Res): Generally, this area is comprised of residentially zoned properties, or properties developed with residential uses (attached or detached). This area includes properties zoned AP, A, RMH, RR, R-20SF, R-10SF, R-8SF, R-7SF, NP, PUD, and R-2D. This also may include properties zoned PC-A within districts that allow attached or detached residential uses.

- (2) Multi-Family/Institutional (MF/I): Generally, this area includes properties with multi-family or institutional zoned properties, or properties developed with multi-family or institutional uses. This area includes properties zoned R-3L, R-3M, R-3H, REC and GPU. This also may include properties zoned PC-A within a district that allows multi-family or institutional uses, PUD, PCD, or PC-R within a project type that allows multi-family or institutional uses.
- (3) Commercial (Comm): Generally, this area includes properties with commercial zoning. This area includes properties that are zoned F-C, PO, NC, CC, HC, ICD, CI, LI, and RD located north of Dunlawton Avenue. This also may include properties zoned PC-A within a district that allows commercial uses, PUD, PCD or PC-R with a project type that allows commercial uses.
- (4) Mixed-Use (MXU): Generally, this area includes properties that are zoned MXC, ORT, PC-A within a district that allows Mixed-Use or PC-R with a project type that allows Mixed-Use.
- (5) Ridgewood Corridor (RC): This area includes properties with Ridgewood Development (RD) zoning and properties abutting Ridgewood Avenue between Dunlawton Avenue and the Rose Bay Bridge and properties located on the west side of Ridgewood Avenue abutting Ridgewood Avenue from Dunlawton Avenue to the southern City limits.

Section 11: - Permanent signs

- (a) The standards of this section apply to all permanent signs. Permanent signs may be subject to additional standards set out elsewhere in these regulations. The standards below do not authorize the installation of a sign without first obtaining any necessary building permit in compliance with the current edition of the Florida Building Code and this code.
- (b) Upon receipt of written notification by the city that a sign is unlawfully illuminated or animated in violation of this chapter, the owner, his agent, or person in control of the premises, shall immediately terminate the prohibited illumination or animation of such sign.

(1) Monument Sign. Monument signs are subject to the following standards:



Examples of monument signs

- (a) All monument signs shall be located along a primary or secondary street frontage. A site only has one primary frontage which is determined by the street identified in its address. Sites may have one or more secondary frontage.
- (b) I-95 frontage monument sign: I-95 frontage areas are defined as those properties with at least one hundred feet (100') of common property line with the I-95 right-of-way. Each such property shall be permitted one additional monument sign, oriented toward I-95, with a maximum height of fifteen feet (15') and a maximum area of two hundred square feet (200 ft²).
- (c) Monument signs can be designed with the sign placed on a base at least eighteen inches (18") in height measured from the average grade elevation or a sign mounted between two decorative columns. Monument sign base and column supports shall be consistent with and/or complement the building design and materials.
- (d) A sign shall be located in a landscaped area. A minimum of three-square feet (3 ft²) of landscaping area shall be provided for one square foot (1 ft²) of sign area. Only one face of a two-sided sign shall be counted for sign area. The minimum quantity of shrubs or groundcover plants shall be based on the following formula:
 - (1) Total area of the sign face (in square feet) × 0.45 = the number of shrubs or groundcover plants, rounded up to the nearest whole

number. This requirement is waived if the sign is installed within an approved right-of-way landscape buffer required by this code.

(e) Two (2) additional feet in height for a monument sign shall be allowed for architectural embellishments that are consistent with and/or complement the building design and materials. The border on all sides of the sign shall be consistent with and/or complement the building design and materials. Illuminated sign containing internal illumination within a cabinet without a border are prohibited.

(f) For all monument signs located on a lot in the Commercial or Mixed-Use district areas, the border on all sides of the sign shall be consistent with and/or complement the building design and materials. Illuminated signs using internal illumination within a cabinet without a decorative base or columns and border around the cabinet are prohibited. The sign base or columns and cabinet border shall be constructed of brick, stone, stucco, wood, decorative concrete, high quality metal, or other similar materials as approved by the administrative official.



Examples of monument signs with a base, and/or columns consistent with and/or that complements the building design and materials.

(g) The minimum dimensional requirements and number of signs allowed for each district shall be as follows:

Standard	Res	MF/I	Com	MXC	RD
Allowed	No, except as provided for in section 3 below	No, except as provided for in section 3 below	Yes	Yes	Yes
Permit required	N/A	N/A	Yes	Yes	Yes
Max. number of signs for a single tenant building	N/A	N/A	1 per primary frontage, 1 per secondary frontage, not to exceed 2 total signs on a frontage	1 per primary frontage, 1 per secondary frontage, not to exceed 2 total signs on a frontage	1 per primary frontage, 1 per secondary frontage, not to exceed 2 total signs on a frontage
Max. sign area for single tenant building	N/A	N/A	48 sf – Arterial or Collector Roadway 32 sf – All other roadways	48 sf – Arterial or Collector Roadway 32 sf – All other roadways	48 sf – Arterial or Collector Roadway 32 sf – All other roadways
Max. height for single tenant building sign	N/A	N/A	8 ft	8 ft	8 ft
Max. number of signs for multi-tenant building	N/A	N/A	Sites with more than three hundred feet (300') of primary or secondary frontage shall be allowed to place an additional sign meeting these standards on the frontage the second sign is located.	Sites with more than three hundred feet (300') of primary or secondary frontage shall be allowed to place an additional sign meeting these standards on the frontage the second sign is located.	Sites with more than three hundred feet (300') of primary or secondary frontage shall be allowed to place an additional sign meeting these standards on the frontage the second sign is located.
Max. number for tenant in a multi-tenant building	N/A	N/A	56 sf - less than 10,000 sf of floor area 84 sf – 10,000	56 sf - less than 10,000 sf of floor area 84 sf – 10,000	56 sf - less than 10,000 sf of floor area 84 sf – 10,000

			sf to 75,000 sf of floor area 112 sf – greater than 75,000 sf	sf to 75,000 sf of floor area 112 sf – greater than 75,000 sf	sf to 75,000 sf of floor area 112 sf – greater than 75,000 sf
Min size for tenant panel	N/A	N/A	10 sf	10 sf	10 sf
Max. sign height	N/A	N/A	12 ft	12 ft	12 ft
Illumination	N/A	N/A	Internally, externally or halo lit	Internally, externally or halo lit	Internally, externally or halo lit
Changeable copy area	N/A	N/A	50% of the sign face	None	50% of the sign face
Digital sign	N/A	N/A	25% of the sign face	25% of the sign face	25% of the sign face

(2) Post sign. Post signs are subject to the following standards:



Examples of a post sign

- (a) A post sign may be installed in lieu of a monument sign on a lot in the Ridgewood Corridor (RC) area.
- (b) The design of the post(s) for a post sign shall include a decorative base, decorative cap, ball or other similar embellishment, and be consistent with and/or complement the building design and materials.
- (c) The sign copy shall be engraved into or affixed onto a beveled edge sign panel or using similar materials and design to achieve an attractive appearance.

(d) A sign shall be located in a landscaped area. A minimum of one (1) square foot of landscaping area shall be provided for one (1) square foot of sign area. Only one face of a two-sided sign shall be counted for sign area. The minimum quantity of shrubs or groundcover plants shall be based on the following formula: Total area of the sign face (in square feet) $\times 0.45$ = the number of shrubs or groundcover plants, rounded up to the nearest whole number. The administrative official may reduce or waive this requirement if the sign is installed within an approved right-of-way landscape buffer required by this code or in areas without reasonable access to water for irrigation.

(e) The minimum dimensional requirements and number of signs allowed for each district shall be as follows:

Standard	Res	MF/I	Comm	MXU	RC
Allowed	No	No	No	No	Yes
Permit required	N/A	N/A	N/A	N/A	Yes
		N/a			1 per primary frontage, 1 per secondary frontage or parking lot frontage, not to exceed 2 total signs on a lot
Max. number	N/A		N/A	N/A	
Max. area	N/A	N/A	N/A	N/A	16 sf. - sign with 1 pole 32 sf – sign with 2 poles
Illumination	N/A	N/A	N/A	N/A	External
Max sign height	N/A	N/A	N/A	N/A	6 ft
Digital sign	N/A	N/A	N/A	N/A	No
Changeable copy	N/A	N/A	N/A	N/A	No

(3) Subdivision entry sign. These regulations apply to all subdivision entry signs:



Examples of subdivision entry signs

- (a) A sign may be affixed to a wall that complies with the architectural requirements in chapter 14 of this code, provided the wall is expressly authorized by an approved subdivision plan, site plan, or building permit and is not located in a public right-of-way.
- (b) A sign shall be located at a primary or secondary subdivision entrance or entry drive, on privately owned common area, or a privately owned and maintained median. Such signs shall be setback at least ten feet (10') from the nose of the median.
- (c) A sign must be constructed of an opaque background or uniform color and shall be of high-quality materials that are compatible with the character of the neighborhood. Freestanding sign bases or column supports shall be constructed of stone, brick, wood, decorative concrete, high-quality metal, or other similar materials.
- (d) A sign shall only be permitted for subdivisions with an active Homeowners' Associations (HOA) to ensure signs are properly maintained over time. If a HOA dissolves, the HOA shall be responsible for removal of the sign prior to dissolving.
- (e) In place of one sign at a subdivision entrance, a sign may be placed on each side of the street at the neighborhood entrance, provided the maximum area of both signs combined does not exceed the permitted maximum area for one sign.

(f) A sign shall be located in a landscaped area on privately owned common area. A minimum of three (3) square feet of landscaping area shall be provided for every one (1) square foot of sign area. Only one face of a two-sided sign shall be counted for sign area. The minimum quantity of shrubs or groundcover plants shall be based on the following formula: Total area of the sign face (in square feet) × 0.45 = the number of shrubs or groundcover plants, rounded up to the nearest whole number. The administrative official may reduce or waive this requirement if the sign is installed within an approved right-of-way landscape buffer required by this code.

(g) The minimum dimensional requirements and number of signs allowed for each district shall be as follows:

Standard	Res	MF/I	Comm	MXU	RC
Allowed	Yes	Yes	No	No	No
Permit required	Yes	Yes	N/A	N/A	N/A
Max. number	1 sign at each entrance into a subdivision or entrance into a phase of a subdivision	1 sign at each entry drive	N/A	N/A	N/A
Max. sign area per roadway entrance	60 sf - Located on a collector or arterial roadway 32 sf - Located on a local street	48 sf – All roadways	N/A	N/A	N/A
Max. sign height	8 ft	8 ft	N/A	N/A	N/A
Illumination	Externally lit or halo lit	Externally or halo lit	N/A	N/A	N/A
Digital sign	No	No	N/A	N/A	N/A
Changeable copy	No	No	N/A	N/A	N/A

(4) Incidental sign. Incidental signs are subject to the standards below:



Examples of incidental signs with four (4) square feet or less of sign area



Examples of incidental sign with greater than four (4) square feet of sign area

- (a) Sign shall consist of a rigid background with a structural frame or similar frame.
- (b) Signs with four (4) square feet or less sign area can be mounted on a base or pole.
- (c) Signs greater than four (4) square feet of sign area shall be designed with a base at least eighteen inches (18") in height measured from the average grade elevation or mounted between two decorative columns and shall be constructed of brick, stone, stucco, wood, decorative concrete, high quality metal, or other similar materials and consistent with and/or complement the building design and materials.
- (d) The minimum dimensional requirements and number of signs allowed for each district shall be as follows:

Standard	Res	MF/I	Comm	MXU	RC
Allowed	Yes, but only located on common area with HOA approval as applicable	Yes	Yes	Yes	Yes
Permit required	Yes	Yes	Yes	Yes	Yes
Max. number	Unlimited, subject to max. sign area allowed	Unlimited, subject to max. sign area allowed	Unlimited, subject to max. sign area allowed	Unlimited, subject to max. sign area allowed	Unlimited, subject to max. sign area allowed
Max. area	40 sf per phase	40 sf	Sites < 5 acres = 40 sf Sites > 5 acres = 80 sf	Sites < 5 acres = 40 sf Sites > 5 acres = 80 sf	Sites < 5 acres = 40 sf Sites > 5 acres = 80 sf
Illumination	External	External, Internal or Halo lit	External, Internal or Halo lit	External, Internal or Halo lit	External, Internal or Halo lit
Max sign height	8 ft	8 ft	8 ft	8 ft	8 ft
Digital sign	No	No	No	No	No
Changeable copy	Yes	No	No	No	No

(5) Drive-thru signs. Drive-thru signs are subject to the standards below:



Examples of drive-thru signs

(a) A sign may emit sound only as part of a business transaction subject to chapter 42 of the Code of Ordinances.

- (b) A sign is allowed in addition to freestanding and wall signs permitted by this chapter.
- (c) The sign support shall be constructed from similar materials and consistent with and/or complementary to the building design and materials.
- (d) The sign shall be screened from a public right-of-way by placement, landscape, or wall or fence.
- (e) The sign shall comply with section 9 of this chapter.
- (f) The minimum dimensional requirements and number of signs allowed for each district shall be as follows:

Standard	Res	MF/I	Comm	MXU	RC
Allowed	No	No	Yes	Yes	Yes
Permit required	N/A	N/A	Yes	Yes	Yes
Max. number of signs	N/A	N/A	1 per drive-thru lane per tenant	1 per drive-thru lane per tenant	1 per drive-thru lane per tenant
Max. area	N/A	N/A	6 sf – building wall 54 sf - drive-thru per drive-thru	6 sf – building wall 54 sf - drive-thru per drive-thru	6 sf – building wall 54 sf - drive-thru per drive-thru
Max. height	N/A	N/A	12 ft	12 ft	12 ft
Digital sign	N/A	N/A	100% of the sign area,	100% of the sign area	100% of the sign area
Illumination	N/A	N/A	Internally or Externally lit	Internally or Externally lit	Internally or Externally lit
Changeable copy	N/A	N/A	Yes	Yes	Yes
Subject to max. wall sign allowance	N/A	N/A	No	No	No

(6) Awning sign. Awning signs are subject to the standards below.



Examples of awning signs

- (a) The sign displayed on an awning shall be used to determine the sign area. The entire awning area shall not be included in sign area calculation.
- (b) No awnings with signs shall extend above the roof line of a building, or the first story, whichever is lesser in height.
- (c) No sign affixed to an awning shall project beyond, above, or below the face of the awning.
- (d) The principal function of any awning with a sign shall be to provide shelter for a window, a door, or an outdoor seating area.
- (e) Awnings that contain signs shall be designed to be compatible with the storefront in scale, proportion, material, and color.
- (f) The minimum dimensional requirements and number of signs allowed for each district shall be as follows:

Standard	Res	MF/I	Comm	MXU	RC
Allowed	No	Yes	Yes	Yes	Yes
Permit required	N/A	Yes	Yes	Yes	Yes
Max. number	N/A	1 per building	1 per awning installed	1 per awning installed	1 per awning installed
Max. sign area	N/A	40% of area of awning face	40% of area of awning face	40% of area of awning face	50% of area of awning face

Min. clearance	N/A	8 ft	8 ft	8 ft	8 ft
Illumination	N/A	External	External	External	External
Subject to max. wall sign allowance	N/A	Yes	Yes	Yes	Yes
Changeable copy	N/A	No	No	No	No
Digital sign	N/A	No	No	No	No

(7) Canopy signs in vehicular areas. Canopy signs in vehicular areas are subject to the standards below:



Examples of Canopy Signs in Vehicular Areas

- (a) Canopies in vehicular areas with signs shall be designed to be compatible with the associated building(s) in scale, proportion, and color.
- (b) Sign on a canopy in a vehicular area shall be located on the face of the canopy that abuts a public roadway.
- (c) Corporate stripes, logos, and designs proposed on the canopy in a vehicular area shall be counted as part of the overall permitted sign area.
- (d) The minimum dimensional requirements and number of signs allowed for each district shall be as follows:

Standard	Res	MF/I	Comm	MXU	RC
Allowed	No	Yes	Yes	Yes	Yes
Permit required	N/A	Yes	Yes	Yes	Yes
Max. number	N/A	1 per lot	1 per frontage	1 per frontage	1 per frontage
Max. sign area	N/A	20 sf	20 sf	20 sf	30 sf
Illumination	N/A	External	External, Internal or Halo lit	External, Internal or Halo lit	External, Internal or Halo lit
Max. sign height	N/A	2 ft	2 ft	2 ft	2 ft
Subject to max. wall sign allowance	N/A	Yes	Yes	Yes	Yes
Changeable copy	N/A	No	No	No	No
Digital sign	N/A	No	No	No	No

(8) Canopy signs in pedestrian areas. Canopy signs in a pedestrian area are subject to the standards below:



Examples of canopy signs in a pedestrian area

(a) Signs mounted to the top of a canopy shall be designed such that:

- (1) Sign can be affixed to the canopy and shall only be comprised of channel letters or other three-dimensional forms.
- (2) Mounting hardware and supporting structures of the sign are to be concealed from view unless hardware and supporting structures are integral to the design of the structure.

(3) Sign does not extend more than two feet (2') above the top of the canopy, or extend above the nearest roofline, whichever is lesser in height.

(b) Sign shall not extend beyond the vertical edge of the canopy.

(c) Canopy with a sign shall be designed to be compatible with the building in scale, proportion, material, and color.

(d) Corporate stripes, logos, and designs proposed on the canopy in a pedestrian area shall be counted as part of the overall permitted sign area.

(e) The minimum dimensional requirements and number of signs allowed for each district shall be as follows:

Standard	Res	MF/I	Comm	MXU	RC
Allowed	No	Yes	Yes	Yes	Yes
Permit required	N/A	Yes	Yes	Yes	Yes
Max. number	N/A	1 per lot	1 per frontage	1 per frontage	1 per frontage
Max. sign area	N/A	20 sf	20 sf	20 sf	30 sf
Illumination	N/A	External	External, Internal or Halo lit	External, Internal or Halo lit	External, Internal or Halo lit
Max. sign height	N/A	2 ft	2 ft	2 ft	2 ft
Subject to max. wall sign allowance	N/A	Yes	Yes	Yes	Yes
Changeable copy	N/A	No	No	No	No
Digital sign	N/A	No	No	No	No

(9) Projecting Signs. Projecting signs are subject to the following standards:



Examples of projecting signs

- (a) Projecting signs may be attached vertically or horizontally to any building frontage.
- (b) Projecting signs shall be attached to any building frontage that abuts an arterial or collector roadway.
- (c) Projecting signs shall not extend four feet (4') above the top of the building wall to which it is attached.
- (d) Projecting signs shall be spaced a minimum of ten feet (10') apart on multi-tenant buildings, unless there is less than ten feet (10') separating tenant entrances.
- (e) The minimum dimensional requirements and number of signs allowed for each district shall be as follows:

Standard	Res	MF/I	Comm	MXU	RC
Allowed	No	No	Yes	Yes	Yes
Permit required	N/A	Yes	Yes	Yes	Yes
Max. number	N/A	1 per building	1 per tenant	1 per tenant	1 per tenant
Max. area	N/A	48 sf	48 sf	48 sf	32 ft
Min. clearance	N/A	8 ft	8 ft	8 ft	8 ft
Max. projection from wall	N/A	4 ft	4 ft	4 ft	4 ft
Illumination	N/A	External	External, Halo, or Internal	External, Halo, or Internal	External, Halo, or Internal

Subject to max. wall sign allowance	N/A	Yes	Yes	Yes	Yes
Changeable copy	N/A	No	No	No	No
Digital sign	N/A	No	No	No	No

(10) Suspended signs. Suspended signs are subject to the following standards:



Examples of suspended signs

(a) Sign shall be perpendicular to the primary face of the building wall and located under an overhang of a covered porch or walkway, within ten feet (10') of the primary pedestrian entrance of the associated tenant or use.

(b) The minimum dimensional requirements and number of signs allowed for each district shall be as follows:

Standard	Res	MF/I	Comm	MXU	RC
Allowed	No	No	Yes	Yes	Yes
Permit required	N/A	N/A	Yes	Yes	Yes
Max. number	N/A	N/A	1 per tenant	1 per tenant	1 per tenant
Max. area	N/A	N/A	6 sf	6 sf	6 sf

Min. clearance	N/A	N/A	8 ft	8 ft	8 ft
Illumination	N/A	N/A	Internally or Externally	Internally or externally	Internally or Externally
Subject to max. wall sign allowance	N/A	N/A	Yes	Yes	Yes
Changeable copy	N/A	N/A	No	No	No
Digital sign	N/A	N/A	No	No	No

(11) Murals. Murals are subject to the following standards:

(a) Murals may be located on a principal structure, accessory structure, fence or wall, or other structure on a lot.

(b) The minimum dimensional requirements and number of signs allowed for each district shall be as follows:

Standard	Res	MF/I	Comm	MXU	RC
Allowed	No	Yes	Yes	Yes	Yes
Permit required	N/A	Yes	Yes	Yes	Yes
Max. number	N/A	Unlimited, subject to max. area	Unlimited, subject to max. area	Unlimited, subject to max. area	Unlimited, subject to max. area
Max. area	N/A	25% of an eligible building facade or accessory structure area	75% of an eligible building facade or accessory structure area	75% of an eligible building facade or accessory structure area	100% of an eligible building facade or accessory structure area
Max. height	N/A	Roof line	Roof line	Roof line	Roof line
Illumination	N/A	External	External	External	External
Subject to max. wall sign area allowance	N/A	No	No	No	No

(12) Wall signs. The standards below apply to all wall signs:

- (a) No sign part, including channel letters, shall project more than twelve inches (12").
- (b) Signage area is determined, as shown below, based on the linear feet of the building frontage. Any sign area not used on the building frontage may be distributed onto the sides and/or rear of a building that is finished with a similar architectural facade treatment.
- (c) Signage shall not be oriented toward an adjacent residential use.
- (d) The sign area allowance for wall signs shall include any sign area utilized on a canopy sign, awning sign, illuminated window sign, or a projecting sign.
- (e) Signage attached to a multi-story (greater than two (2) stories) multi-tenant building shall be arranged so the signs share a common horizontal centerline along the façade, spaced evenly across the building façade, and are separated vertically from all other signs a minimum of twice the height of the building height.
- (f) The minimum dimensional requirements and number of signs allowed for each district shall be as follows:

Standard	Res	MF/I	Comm	MXU	RC
Permitted	Yes	Yes	Yes	Yes	Yes
Permit required	No	Yes	Yes	Yes	Yes
Max. number for single tenant building	1 per dwelling unit	1 per building	Unlimited, subject to max. area	Unlimited, subject to max. area	Unlimited, subject to max. area
Max. number for tenant in a multi-tenant building	N/A	Unlimited, subject to max. area for institutional uses	Unlimited, subject to max. area	Unlimited, subject to max. area	Unlimited, subject to max. area
Max. sign area	4 sf	1 sf per 1 linear ft of the primary building frontage,	2 sf per 1 linear ft of the primary building frontage,	2 sf per 1 linear ft of the primary building frontage, not to	2 sf per 1 linear ft of the primary building frontage, not to

		not to exceed 200 sf.	not to exceed 500 sf.	exceed 500 sf.	exceed 500 sf.
Max. sign height for single tenant building	N/A	3 ft	25% of building height	25% of building height	25% of building height
Max. sign height for tenant in a multi-tenant building	N/A	2 ft. or 25% of building height for anchor tenant or tenant with specialized architectural feature whichever is greater	2 ft. or 25% of building height for anchor tenant or tenant with specialized architectural feature whichever is greater	2 ft. or 25% of building height for anchor tenant or tenant with specialized architectural feature whichever is greater	2 ft. or 25% of building height for anchor tenant or tenant with specialized architectural feature whichever is greater
Illumination	External	External, Internal or Halo lit	External, Internal or Halo lit	External, Internal or Halo lit	External, Internal or Halo lit
Digital sign	No	No	No	No	No
Changeable copy	No	No	No	No	No
Channel letters (raceway or mounted to wall)	N/A	Yes	Yes	Yes	Yes
Cabinet & box sign	N/A	No	No	No	Yes

(13) Window signs. Window signs are subject to the following standards:



Examples of Window Signs

(a) A window sign may be painted on, attached to, or placed within three feet (3') of the inside of a window.

(b) The minimum dimensional requirements and number of signs allowed for each district shall be as follows:

Standard	Res	MF/I	Comm	MXU	RC
Allowed	Yes	Yes	Yes	Yes	Yes
Permit required	No	No	No	No	No
Max. number	Unlimited, subject to max. area	Unlimited, subject to max. area	Unlimited, subject to max. area	Unlimited, subject to max. area	Unlimited, subject to max. area
Max. sign area	6 sf	10% of total door and window area for a tenant	50% of total door and window area for a tenant	50% of total door and window area for a tenant	50% of total door and window area for a tenant
Illumination	No	Internal	Internal or Neon	Internal or Neon	Internal or Neon
Subject to max. wall sign area allowance	No	No	No	No	No

(14) Light pole signs. Light pole signs are subject to the following standards:



Examples of light pole signs

- (a) Light pole signs shall only be attached on a decorative parking light pole, walk light pole, or streetlight pole located on private property or within a private right-of-way that has been approved through city-approved site plan, subdivision, or building permit.
- (b) Light pole signs shall be consistent throughout the site, including size, height, cohesive theme and colors.
- (c) Light pole signs shall not encroach into existing tree canopies and trees shall not be unnecessarily trimmed in an effort to accommodate light pole signs.
- (d) Light pole signs shall be attached securely to a decorative parking light pole, walk light pole, or streetlight pole on all four (4) corners to ensure they do not move, or flap and shall maintain the minimum clearance requirement.
- (e) All existing light poles on a property shall comply with the regulations in this code before a light pole sign permit is issued for any portion of the property.
- (f) Light pole signs can be changed out on intervals throughout the year as long as the sign continues to comply with the regulations in this chapter.
- (g) If light pole signs are not maintained in an accordance with this code the light pole signs are to be removed and replaced within thirty (30) days with a new light pole sign in compliance with this chapter. Failure to maintain and replace the light pole signs in compliance with this code shall require the property owner to remove all light pole signs within thirty (30) days.
- (h) Light pole signs shall be allowed only with approval from the owner(s) of the underlying real property and the light pole.
- (i) The minimum dimensional requirements and number of signs allowed for each district shall be as follows:

Standard	Res	MF/I	Comm	MXU	RC
Allowed	Yes	Yes	Yes	Yes	Yes
Permit required	Yes	Yes	Yes	Yes	Yes
Max. number pr subdivision or lot	Unlimited	Unlimited	Unlimited	Unlimited	Unlimited
Max. number on a pole	2	2	2	2	2
Max. sign area	6 sf	6 sf	6 sf	6 sf	6 sf
Illumination	No	No	No	No	No
Subject to max. wall sign area allowance	No	No	No	No	No
Changeable copy	No	No	No	No	No
Clearance over pedestrian areas	8 ft	8 ft	8 ft	8 ft	8 ft

Section 13: - Temporary Signs

- (a) The standards of this section apply to all temporary signs. Temporary signs may be subject to additional standards set out elsewhere within these regulations.
- (b) The purpose of a temporary sign is to display a message for a temporary duration. Temporary signs shall not be used to circumvent the regulations that apply to permanent signs or to add permanent signage to a property in addition to that which is allowed by these regulations.
- (c) If any person erects, or any business or organization causes to be erected, a temporary sign that requires a permit without first obtaining a permit, as herein provided, the person, business or organization shall be ineligible to receive a permit for a temporary sign for six (6) months from the date of the violation, if the violation occurs more than once in any twelve (12) month period.
- (d) In general, a temporary sign shall be removed as of the date:

(1) The sign becomes an abandoned sign, as defined in this code;

(2) The sign is no longer in the condition in which it was installed. This includes no longer being in an upright position, is missing structural components or has become detached from the structure to which it was affixed, or the sign copy is no longer legible; or

(3) It becomes expired as per the number of days in the tables below.

(e) Temporary sign types. Temporary signs include the following types:

(1) Banner:



Examples of banners

(a) Banners shall be attached to the wall of the building front elevation and shall not obstruct any portion of a window, doorway, or other architectural detail.

(b) Banners shall not be attached to trees, non-metal poles or support, or landscaping. A banner can be attached between two (2) temporarily installed metal poles not exceeding six feet (6') in height.

(c) The minimum dimensional requirements and number of signs allowed for each district shall be as follows:

Standard	Res	MF/I	Comm	MXU	RC
Allowed	No	Yes	Yes	Yes	Yes
Permit required	N/A	Yes	Yes	Yes	Yes

Max. number	N/A	1 per lot	1 per tenant	1 per tenant	1 per tenant
Max. area	N/A	32 sf	32 sf	32 sf	32 sf
Max. height	N/A	Roof line or 25 ft, whichever is less in height if attached to a principal building & 6 ft if display at ground mounted	Roof line or 25 ft, whichever is less in height if attached to a principal building & 6 ft if display at ground mounted	Roof line or 25 ft, whichever is less in height if attached to a principal building & 6 ft if display at ground mounted	Roof line or 25 ft, whichever is less in height if attached to a principal building & 6 ft if display at ground mounted
Max. time permitted	N/A	30 days in a calendar year, not required to be consecutive	60 days in a calendar year, not required to be consecutive	60 days in a calendar year, not required to be consecutive	90 days in a calendar year, not required to be consecutive
Illumination	N/A	No	No	No	No

(2) Sandwich board sign. Sandwich board signs are subject to the standards below:



Examples of sandwich board signs

(a) A sandwich board may convey changeable messages through the use of re-writable surfaces, such as chalkboards or dry-erase boards. Individual changeable copy plastic letters shall not be permitted, and paper signs shall not be attached to a sandwich board sign. Sandwich Board sign with shall not be composed of plastic.

(b) A sandwich board sign shall not obstruct pedestrian access or movement. A minimum of four feet (4') of sidewalk clearance or as otherwise required by law, including but not limited to the Americans with Disabilities Act (ADA) requirements, whichever is greater shall be maintained at all times.

- (c) Sandwich board signs must be removed each day at close of business and stored indoors.
- (d) Sandwich board signs shall be located no more than fifteen feet (15') from the main pedestrian entrance of the use. This distance may be increased only by the minimum amount necessary to achieve the minimum width for pedestrian ingress and egress or as required by the ADA.
- (e) Sandwich board signs must be anchored to the ground or weighted sufficiently to prevent movement by wind.
- (f) Other sign types similar to a conventional sandwich board sign such as an "A-frame", "T-frame", or other design may be approved by the Administrative Official.
- (g) The minimum dimensional requirements and number of signs allowed for each district shall be as follows:

Standard	Res	MF/I	Comm	MXU	RC
Allowed	Yes, only for permitted model homes in a subdivision	Yes	Yes	Yes	Yes
Permit required	Yes	Yes	Yes	Yes	Yes
Max. number	1 per lot or parcel	1 per lot	1 per tenant	1 per tenant	1 per tenant
Max. area	6 sf	6 sf	6 sf	6 sf	6 sf
Max. height	4 ft	6 sf	6 ft	6 ft	6 ft
Illumination	No	No	external	external	external

- (3) Site sign. Site signs are subject to the following standards:



Examples of site signs

- (a) Site signs shall not be installed as an alternative to or in place of a permanent sign.
- (b) Site signs are only allowed on properties with active listings for sale or for rent, or on properties with an active building permit, site development permit, a subdivision development permit, or a special event permit approved by the City.
- (c) The minimum dimensional requirements and number of signs allowed for each district shall be as follows:

Standard	Res	MF/I	Comm	MXU	RC
Allowed	Yes	Yes	Yes	Yes	Yes
Permit required	Yes, if sign area is greater than 6 sf	Yes, if sign area is greater than 6 sf	Yes, if sign area is greater than 6 sf	Yes, if sign area is greater than 6 sf	Yes, if sign area is greater than 6 sf
Max. number	1 per lot < then 3 acres & 2 per lot ≥ then 3 acres	2 per lot with minimum 100 ft distance between site signs	2 per lot with minimum 100 ft distance between site signs	2 per lot with minimum 100 ft distance between site signs	2 per lot with minimum 100 ft distance between site signs
Max. area	6 sf for lot < then 3	6 sf for lot <	32 sf	32 sf	32 sf

	acres & 32 sf for parcel ≥ 3 acres	then 3 acres & 32 sf for parcel > 3 acres			
	6 ft for lot < then 3 acres & 8 ft for parcel ≥ 3 acres	8 ft	8 ft	8 ft	8 ft
Illumination	No	No	No	No	No
Min. setback	2 ft for lot < 3 acres & 5 ft for lot ≥ 3 acres	5 ft	5 ft	5 ft	5 ft

(4) Yard sign. Yard signs are subject to the standards below.



Examples of yard signs

- (a) Yard signs may not be placed in a visual clearance area as defined in chapter 16 of this code.
- (b) In addition to the maximum number of yard signs shown in the table below, three (3) additional small yard signs may be allowed during each period that is forty-five (45) days prior to an election day, as such term is defined in F.S. § 97.021 on any lot regardless of zoning district, or on a

vacant property. Within five (5) days after each election day, any additional yard sign authorized by this subsection shall be removed.

(c) The minimum dimensional requirements and number of signs allowed for each district shall be as follows:

Standard	Res	MF/I	Comm	MXU	RC
Allowed	Yes	Yes	Yes	Yes	Yes
Permit required	No	No	No	No	No
Max. number	1 per lot	1 per lot	1 per tenant	1 per tenant	1 per tenant
Max. area	6 sf	6 sf	6 sf	6 sf	6 sf
Max. height	4 ft	4 ft	4 ft	4 ft	4 ft
Max. time permitted	None	None	None	None	None
Illumination	No	No	No	No	No
Min. setback	None	None	None	None	None

(5) Temporary sign cover. Temporary sign cover is subject to the standards below:

- (a) Applies to a temporary covering placed over a monument sign that has been constructed pursuant to an approved building permit.
- (b) Temporary sign cover shall be fitted tightly and be secured to the permanent monument sign to avoid movement in windy conditions.
- (c) A temporary sign cover may be displayed no more than a total of sixty (60) days in a calendar year.

- (d) A permit is required each time a temporary sign cover is placed over a permanent sign.

Section 14: - Maintenance

- (a) The owner or lessee of any sign shall be responsible for taking all reasonable actions to maintain signs and/or sign structures in accordance with this section.
- (b) All signs and sign structures shall be maintained in good condition, in compliance with this section and in accordance with the following:
- (1) A sign or sign structure that is broken, torn, bent, has a broken, bent, or damaged support, or is not vertical, level and plumb, shall be repaired or reinstalled.
 - (2) A sign or sign structure that is disfigured, cracked, rippled, or peeling material or paint shall be repaired or repainted.
 - (3) A sign or sign structure, including lighting, shall function properly at all times as approved by a permit and/or required by this code.
 - (4) A sign panel that is broken or damaged shall be replaced with a tenant sign panel or a blank neutral color sign panel.
 - (5) The vegetation around, in front of, behind, and underneath an approved freestanding sign with column supports shall be kept trimmed and free of trash and debris as required by this code and the Code of Ordinances.
 - (6) A sign with a solid base shall be maintained so there is not visible area between the sign base and ground, except for an approved freestanding monument sign with columns.
 - (7) A sign that no longer contains a sign panel shall be removed or replaced with a blank neutral color sign panel within thirty (30) days of the date on which the sign panel was removed.
 - (8) A permitted temporary sign that has not been maintained in accordance with this code shall be removed within forty-eight (48) hours after issuance of a

- notice of violation. In addition to any applicable code enforcement remedies available, failure to remove or repair the temporary sign within forty-eight (48) hours after issuance of a notice of violation shall result in the person responsible for removal or repair of the temporary sign being ineligible to display a temporary sign for six (6) months from the date of the violation, if the violation occurs more than once in any twelve (12) month period.
- (c) All signs and sign structures shall be maintained in a safe condition, in compliance with all applicable building and electrical codes and this code. If it is determined that a violation has occurred, the city shall give written notice to the owner or lessee of such sign and sign structure. If the owner or lessee fails to remove or alter the sign and sign structure to comply with the regulations set forth in this chapter within the time prescribed in the notice, such sign or sign structure may be removed or altered to comply by the city at the expense of the owner or lessee of the property upon which it is located.
- (d) The issuance of any sign permit shall be conditioned upon the restoration of any building facade which has been damaged by placement of a previous sign. Such restoration shall include, but not be limited to, patching, repainting, and concealing visible electrical components, when applicable.
- (e) Repair work required by this code shall comply with the permit requirements in this code.
- (f) Should any sign become unsecured or in danger of falling, in disrepair or deteriorated, or otherwise unsafe in the opinion of the building official, the owner thereof, or person or firm maintaining it, shall, upon receipt of written notification from the building official immediately, in the case of imminent danger, or within ten (10) days in other instances, secure the sign or cause it to be placed in good repair in a manner approved by the building official, or said sign shall be removed by the owner thereof. If such order is not complied with, the city may remove the sign at the expense of the owner and may place a lien for the cost thereof upon the property on which the sign was located together with any other cost incurred

by the city by filing such lien. The lien may be foreclosed in the same manner provided by law for the foreclosure of mortgages and the city shall have the right to receive all costs of court including reasonable attorney fees.

Section 15: - Nonconforming signs.

- (a) It is the intent of this chapter to allow nonconforming signs permitted before the adoption of this code to continue until they are no longer used, or become hazardous, but not to encourage their survival. Such signs are hereby declared to be incompatible with the overall intent of this chapter.
- (b) All nonconforming and nonpermitted signs, except as provided herein, shall be removed immediately or as otherwise provided under this chapter.
- (c) Use of a nonconforming sign may be continued, subject to the following regulations:

 - (1) No nonconforming sign shall be enlarged or increased in any way from its lawful size at the time it was installed or constructed, nor shall a nonconforming sign be relocated from its lawful location at the time it was installed or constructed.
 - (2) Nonconforming signs or sign structures that are considered abandoned signs under this chapter shall not be permitted for reuse.
 - (3) Use of a nonconforming sign shall immediately terminate upon a change of business type, business ownership or business name, regardless of whether property ownership of the lot on which the nonconforming sign is located has been transferred.
 - (4) Signs existing as of the date this chapter is adopted, whose height and/or sign area do not exceed one hundred fifteen percent (115%) of that allowed by this chapter, shall be deemed conforming. Installation or construction of all new signs, and any modification or replacement of signs permitted under this

subsection, shall comply with all applicable height, sign area, and other requirements of this chapter.

(5) Any sign that is nonconforming and is determined by the administrative official to be in good repair shall be permitted to continue past the compliance deadline established in subsection (4). Signs that have substantial rust, missing parts, dents, or other structural or aesthetic deficiencies shall not be considered in good repair.

(6) Nonconforming real estate or construction signs shall be removed no later than six (6) months after the adoption of this chapter. Thereafter, all such nonconforming signs shall be deemed unlawful and prohibited and subject to the enforcement provisions of this chapter.

(d) Normal repairs, maintenance and improvements may be made to nonconforming signs or sign structures; however, the cost of such repairs, maintenance or improvements made during any two-year period shall not exceed twenty-five percent (25%) of the overall replacement cost of the sign or sign structure at the end of the two-year period.

(e) If any nonconforming sign is damaged by fire, flood, explosion, collapse, wind, war or other catastrophe to such an extent that the cost of repair and reconstruction will exceed fifty percent (50%) of the overall replacement cost of the sign at the time of damage, it shall not be repaired or reconstructed except in full conformity with the provisions of this code, except as follows:

(1) A nonconforming offsite sign damaged by catastrophe exceeding fifty percent (50%) of the overall replacement cost of the sign may be reconstructed pursuant to the authority set forth in F.S. § 70.20, if the reconstruction agreement complies with all of the requirements set forth as follows:

(a) The reconstructed sign shall be located on the same property as the damaged sign.

- (b) The reconstructed sign shall be located within a commercially zoned district, not including a planned commercial development or a planned unit development zoned district and shall comply with the requirements of this chapter regarding prohibited signs.
- (c) The sign owner shall submit a proposed agreement for the reconstructed sign to the city for review.
- (d) City council shall determine whether to approve or deny the proposed agreement submitted in accordance with this section; The reconstructed sign shall be a nonconforming sign.
- (e) The sign owner agrees to remove or to abstain from rebuilding other damaged nonconforming signs within the city at a ratio of at least four (4) sign faces for each reconstructed sign face
- (f) The sign owner agrees to remove or to abstain from rebuilding other damaged nonconforming signs within the city at a ratio of at least four (4) sign faces for each reconstructed sign face.
- (g) The vertical dimension for the reconstructed sign face shall not exceed twenty five percent (25%) of the permitted building height in the commercial district or twelve feet (12'), whichever is greater in height.
- (h) The vertical dimension for the reconstructed sign face shall not exceed twenty five percent (25%) of the permitted building height in the commercial district or twelve feet (12'), whichever is greater in height.
- (i) The vertical dimension for the reconstructed sign face shall not exceed twenty five percent (25%) of the permitted building height in the commercial district or twelve feet (12'), whichever is greater in height.
- (j) The reconstructed sign face shall not exceed the square footage of the largest damaged sign face for any one (1) sign display being removed or not rebuilt, notwithstanding the location within the city of the sign face removed or not rebuilt.

- (k) The reconstructed sign face shall not exceed the square footage of the largest damaged sign face for any one (1) sign display being removed or not rebuilt, notwithstanding the location within the city of the sign face removed or not rebuilt.
- (l) Structural components surrounding the sign face shall not exceed a size of ten percent (10%) of the sign face.
- (m)The reconstructed sign face may change copy and if electronic or digital, the frequency of copy change shall not be less than ten (10) second intervals.
- (n) The reconstructed sign, if electronic or digital, shall provide a high-quality resolution for the display of not more than eight (8) millimeter pixel spacing, and shall include dimmers installed and operated to eliminate glare, and at night the sign face display light shall not exceed a brightness levels of more than 0.3 foot-candles above ambient light as measured using a foot candle (Lux) meter at a preset distance depending on sign area. Illuminance measurement requires two steps: First – ambient light shall be measured with the sign turned off. Second – sign light output shall be measured with the sign turned on as a solid white display. The difference between the two measurements shall be 0.3 foot-candles or less. The distance at which to take measurements is calculated with the following formula and rounded to the next whole number: Measurement Distance = $\sqrt{\text{Area of sign Sq. Ft.} \times 100}$.
- (o) The tallest portion of the reconstructed sign, including appurtenances, shall not exceed the permitted building height in the commercial district.
- (p) The sign agreement shall not contain any provision that would require the city to pay compensation for any sign removed or not rebuilt pursuant to the agreement.

(g) The reconstructed sign shall comply with setback, landscaping, and architectural standards consistent with the requirements for the construction of a building within the zoning district and applicable design manuals.

(6) The casual, temporary, or illegal use of any sign shall not be sufficient to establish the existence of a nonconforming use or to create any rights in the continuance of such use.

Section 16: - Enforcement.

(a) It shall be unlawful for any person to violate any provision of this chapter or fail to comply with any of the requirements of this chapter. Any person who has violated, causes to be violated or continues to violate the provisions of this article shall be subject to appropriate code enforcement action. Furthermore, any continuing violation of any of the provisions of this chapter shall be deemed a public nuisance and may be abated by the city as provided by law.

Section 17: - Variances and appeals.

(a) Appeals from technical decisions of the administrative official or any other official empowered to rule on sign issues shall be processed according to the procedures as outlined in chapter 3 of this code.

(b) Variances from the requirements of this chapter shall be processed according to the provisions of chapter 19 of this code.

Section 18: - Severability.

(a) Generally. If any part, section, subsection, paragraph, subparagraph, sentence, phrase, clause, term, or word of this chapter is declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction, the declaration of such unconstitutionality shall not affect any other part, section, subsection,

paragraph, subparagraph, sentence, phrase, clause, term, or word of this chapter.

- (b) *Severability where less speech results.* Without diminishing or limiting in any way the declaration of severability set forth above in subsection (a), or elsewhere in this chapter, this code, or any adopting ordinance, if any part, section, subsection, paragraph, subparagraph, sentence, phrase, clause, term, or word of this chapter is declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction, the declaration of such unconstitutionality shall not affect any other part, section, subsection, paragraph, subparagraph, sentence, phrase, clause, term, or word of this chapter, even if such severability would result in a situation where there would be less speech, whether by subjecting previously exempt signs to permitting or otherwise.
- (c) *Severability of provisions pertaining to prohibited signs.* Without diminishing or limiting in any way the declaration of severability set forth above in subsection (a), or elsewhere in this chapter, this code, or any adopting ordinance, if any part, section, subsection, paragraph, subparagraph, sentence, phrase, clause, term, or word of this chapter or any other law is declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction, the declaration of such unconstitutionality shall not affect any other part, section, subsection, paragraph, subparagraph, sentence, phrase, clause, term, or word of this chapter that pertains to prohibited signs, including specifically those signs and sign-types prohibited and not allowed in this chapter. Furthermore, if any part, section, subsection, paragraph, subparagraph, sentence, phrase, clause, term, or word of section 3 is declared unconstitutional by the valid judgment or decree of any court of competent jurisdiction, the declaration of such unconstitutionality shall not affect any other part, section, subsection, paragraph, subparagraph, sentence, phrase, clause, term, or word of section 3.
- (d) *Severability of prohibition on billboards.* If any part, section, subsection, paragraph, subparagraph, sentence, phrase, clause, term, or word of this chapter and/or any other code provisions and/or laws are declared invalid or

unconstitutional by the valid judgment or decree of any court of competent jurisdiction, the declaration of such unconstitutionality shall not affect the prohibition on billboards as contained herein.

SECTION 3: The City Council of the City of Port Orange hereby amends Chapter 16 of the Land Development Code, to read as follows:

Chapter 16 - MISCELLANEOUS REGULATIONS

Section 1-6: - No Changes.

Section 7: - Renewable energy systems.

(a) No changes.

(b) *Small wind energy systems.*

(1) *Permitted use.* Small wind energy systems shall be a permitted accessory use in all zoning classifications, subject to the requirements set forth below:

Allowable Tower Types	Monopole on properties subject to the city's architectural requirements; lattice, guyed, and monopole in all others.
Maximum Height	Property less than one acre in size: 120 feet Property one acre or more in size: 300 feet, except as limited by Federal Aviation Administration (FAA) regulations or other governmental entities having jurisdiction.
Ground Clearance	25 feet for moving parts (rotor/turbine blade).
Setback	The wind system structure must be set back from the property line, adjacent rights-of-way, utility transmission lines, and other wind system structures, by a distance equal to 1.2 times the total height of the structure (rotor and tower). The setback for guy wire anchors from those same points is ten feet.
Screening	None required.
Design Requirements	(1) Towers shall either be painted white or a neutral color to reduce visual obtrusiveness, subject to any applicable regulations of the FAA. (2) Wind turbine nacelles and blades shall also be of a neutral color that is

	identical to or closely compatible with the color of the tower.
Co-location	(1) A wind turbine may be co-located on a communication tower, in which case the wind turbine must conform to the setback requirements for small wind energy systems, and the height requirements for communication towers. (2) A wind turbine may be co-located on a parking lot and street light poles, in which case the wind turbine must be set back from buildings, utility transmission lines, and other wind system structures, by a distance equal to 1.2 times the total height of the structure (rotor and tower), and must conform to the height requirements for small wind energy systems. (3) A wind turbine may be mounted onto the roof of a building, in which case the wind turbine must conform to the setback and height requirements for small wind energy systems.
Noise	Not to exceed 60 dBA, as measured at the property line. The described level may be exceeded during short-term events such as utility outages and/or severe wind storms.
Signage	Prohibited where visible from any public right-of-way, except for appropriate warning signs and to identify the manufacturer, installer, and/or owner. Signage shall be as provided in chapter 15 of this code
Lighting	No illumination of the turbine or tower shall be allowed unless required by the FAA or other governmental entities having jurisdiction. If lighting is required, the lighting used shall comply with all applicable regulations and cause the least adverse impact to adjoining properties.
Certification	Small wind energy systems must be approved through a certification program recognized by the American Wind Energy Association.
Building Permit Required	A building permit is required pursuant to the Florida Building Code.
Compliance with the Florida Building Code	Building permit applications for small wind energy systems shall be accompanied by standard drawings of the wind turbine structure, including the tower, base, footings, and the manufacturer's electrical drawings. An engineering analysis of the tower showing compliance with the Florida Building Code and certified by a licensed professional engineer shall also be submitted.

Utility Notification	Before installation, evidence must be provided to the city showing that the utility company has been informed of the customer's intent to install an interconnected customer-owned generator. Off-grid systems shall be exempt from this requirement.
Abandonment	The small wind energy system shall be considered abandoned if its usage is discontinued for 180 days or more. The administrative official shall have authority to determine date of abandonment and to request documentation and affidavits to that effect from the small wind energy system owner/operator. The owner/operator shall provide all requested information within five business days after receiving the administrative official's request. The owner/operator shall have 90 days from the date of the administrative official's written finding of abandonment to either reactivate or dismantle and remove the small wind energy system.

(c) No changes.

Section 8 – 13 - No changes.

SECTION 4: The City Council of the City of Port Orange hereby amends Chapter 17, Section 29 of the Land Development Code, to read as follows:

Chapter 17, Section 29: - Planned community—Agricultural (PC-A) district.

(a) No changes.

(b) *West Town Center District.*

(1) thru (8) No changes.

(7) *Signage.* Within this district, signage shall be as provided in chapter 15 of this code. ~~In addition, projecting signs and sandwich board signs shall be permitted, as provided in chapter 15, section 6(e).~~

(c) *Community district.*

(1) thru (8) No changes.

(9) *Signage.* ~~Except as provided below,~~ Signage requirements within this district shall be as provided in chapter 15 of this code. ~~Live-work units are permitted to have one externally illuminated wall sign per street frontage of four square feet in size. The wall sign shall be placed on the ground floor at eye level.~~

(d) *Neighborhood district*

(1) thru (8) No changes.

(9) *Signage.*

(a) No changes

(b) Signage for detached residential development with a building coverage greater than 35 percent per lot and less than or equal to 50 percent per lot shall be as provided below.

(1) Each residential subdivision or residential development shall be required to design and construct ~~entry signage~~ a subdivision entry sign and entry features along all abutting major collector roads within Planned Community No. 1.

~~(2) At a minimum, such features shall incorporate similar materials, finishes and colors as used on the majority of houses or principal buildings within the subdivision or project, although higher quality materials are encouraged.~~

~~(3)~~ (2) Size (ground area) of the entry features and associated signage subdivision entry sign shall be required at the rate of 150 square feet per residential lot or unit within a development. Total square footage of the entry feature will be based upon the total number of lots within all phases in the subdivision.

~~(4) The entry feature area(s) shall be installed with the required subdivision infrastructure and improvements and shall be placed at the main entrance. However, if there are multiple subdivision phases with multiple entrances along the major collector or arterial roads, the square footage may be allocated among the entrances.~~

~~(5)~~ (3) The design of the entry feature enhancements proposed by the developer shall be subject to review by staff, the planning commission, and subject to final approval of the city council.

~~(6) Entry features shall be maintained by the owners association of the residential subdivision or residential development or specific phase thereof.~~

~~(7)~~ (4) Entry Features that meet the definition of common open space that are incorporated into the entry feature will count toward both the common open space calculation and the entry feature calculation.

(e) thru (g) No changes.

(h) *Special roadway corridor provisions.*

(1) No changes.

(2) No changes.

(a - c) No changes.

- (d) Signage ~~Freestanding and wall signage along Williamson Boulevard requirements shall be as provided in~~ chapter 15 of this code.

(3) No changes.

(i) thru (q) No changes.

SECTION 5: The City Council of the City of Port Orange hereby amends Chapter 18 of the Land Development Code, to read as follows:

Chapter 18 - CONDITIONAL USES, SPECIAL EXCEPTIONS AND PERMITTED USES WITH SPECIAL DEVELOPMENT REQUIREMENTS^{[1](#)}

Section 1 - 2: - No changes.

Section 3: - Special exceptions.

(a - c) No changes.

(d) *Special requirements for special exception uses.*

(1) thru (8) No changes.

(9) *Houses of worship (PO).*

(a) No changes.

(b) Use of an existing developed multi-tenant office complex containing more than one office shall be in compliance with the following requirements:

(1 - 3) No changes.

(4) Signage shall be limited to signs permitted by chapter 15 of this code ~~for office buildings and complexes and approved for the particular site.~~

(5-7) No changes.

(9.4) thru (17) No changes.

(18) *Recreational vehicle parks and campgrounds (RMH).*

(a - d) No changes.

(e) Convenience establishments, such as grocery stores, restaurants and laundries may be permitted in recreational vehicle parks or campgrounds subject to the following conditions:

(1) No changes.

(2) Signage shall comply with the standards established in chapter 15 of this code ~~for convenience establishments shall be limited to the freestanding signage permitted for the recreational vehicle park or campground. There shall be no signage on any convenience structure, except for one identification sign not to exceed four square feet in area.~~

(19) thru (24) No changes.

Section 4: - Special development requirements for permitted uses.

(a) No changes.

(b) *Special development requirements.*

(1) thru (12) No changes.

(13) *Personal services (PO).*

(a) No changes.

(b) Signage shall comply with the standards established in chapter 15 of this code. ~~shall be limited to signs permitted by this code for office buildings and complexes and approved for the particular site.~~

(c-d) No changes.

(14) thru (18) No changes.

(c) No changes.

SECTION 6: All ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed to the extent of such conflict.

SECTION 7: The provisions of this Ordinance shall become and be made a part of the Land Development Code of the City of Port Orange and the Sections of this Ordinance may be renumbered or re-lettered to accomplish such intention. The Code codifier is granted liberal authority to codify the provisions of this Ordinance.

SECTION 8: 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 of the ordinance which can be given effect without the invalid provision or application, and to this end the provisions of this ordinance are declared severable.

SECTION 9: This Ordinance shall take effect immediately upon adoption.

MAYOR DONALD O. BURNETTE

ATTEST:

Robin L. Fenwick, MMC, City Clerk

Passed on first reading on the day of

Passed and adopted on second and final reading on the day of

Reviewed and Approved: _____
Matthew J. Jones, City Attorney



STAFF REPORT

CASE NO. 21-25000004

LDC Amendment/Chapters 2, 15, 16, 17 and 18

REQUEST:	To amend Chapters 2, 15, 16, 17 and 18 of the Land Development Code (LDC) related to Signage.
APPLICANT:	City of Port Orange
STAFF RECOMMENDATION:	Approval
STAFF CONTACT:	Tim Burman, Community Development Director (386) 506-5675
PLANNING COMMISSION:	May 3, 2021 - Approved 6-0
CITY COUNCIL:	September 21, 2021 (First Reading)

Summary

The proposed text amendment to the Land Development Code is to revise the current signage regulations, primarily to conform to the United States Supreme Court ruling in *Reed v. Town of Gilbert* that signage regulations are to be content neutral. This means that sign regulations cannot vary standards such as size, location, and duration based on the message of the sign (e.g. “political sign” or “grand opening sign”). The draft amendment includes necessary changes to the City’s sign regulations to remove content-based requirements and replace with content neutral requirements.

In the Spring of 2021, presentations were made to the Planning Commission at their March 25th meeting and the City Council at their March 2nd meeting to discuss necessary updates to the City’s signage regulations to shift from content-based sign regulations to content neutral sign regulations, along with sign standards to provide new sign opportunities and streamline the sign code to no longer include redundant, out-of-date, and/or inconsistent requirements. Based on the feedback, staff developed a proposed draft to the sign regulations to shift from content based to content neutral and add new sign opportunities and streamline the sign code. The following is a summary of proposed revisions to the sign regulations. The majority of the proposed revisions are related to compliance with the Reed case to provide the content neutral requirements while still maintaining the existing character of Port Orange as it relates to the type of signage allowed. The following is a summary of the proposed revision, new requirements, and requirements or prohibited signage not changing:

- **Compliance with Reed v. Gilbert:** Eliminated content-based regulations and replace them with content-neutral regulations. In many cases, the general framework of the content-based regulation (for example, permitted location, duration, and quantity) has been preserved, but in other cases regulations and sign categories have been merged, changed, or eliminated.
- **Code clean-up:** Developed a streamlined code that no longer includes redundant, out-of-date, and/or inconsistent provisions.

- **New Sign Types:** Developed new requirements to allow for permanent signage options not previously allowed for all non-residential uses, such as projecting signs, sandwich board signs, digital signs (percentage of allowed sign area), etc.
- **Ridgewood Corridor Sign Regulations:** Developed new requirements specific to businesses located along the Ridgewood Avenue corridor to allow alternative design styles of monument signage and location requirements.
- **Digital Signage:** Allow a percentage of the sign area allowed for freestanding sign to be digital. Updated standards for digital sign allowed on multi-tenant buildings and applied those to single-tenant signage.
- **Signage Districts:** Established districts (Residential, Multi-Family/Institutional, Commercial, Mixed-Use, and Ridgewood) and specific signage requirements for each District.
- **Definitions:** Developed new or updated existing definitions to more clearly define terms used throughout the sign code.
- **Prohibited Signs:** There has been no change to feather flags, inflatable objects, animated signs, signs in public right-of-way, etc. being prohibited.
- **Temporary Sign Sections:** Developed new requirements to regulate temporary signs (banner, site signs, and yard signs) and provide options for temporary signage for residential and non-residential uses similar to those allowed in the current code but now these requirements are content neutral.
- **Chapters 16, 17, and 18:** Removed sign criteria from Chapters 16 (Miscellaneous Regulations), 17 (Zoning District Regulations) and 18 (Conditional Uses, Special Exceptions and Permitted Uses with Special Development Requirements) and replaced text to refer to Chapter 15 (Signs) for all sign regulations.

RECOMMENDATION:

Approval of the amendment to the LDC related to Signage.

ATTACHMENTS:

Exhibit A - Proposed LDC Amendments to Chapters 2, 15, 16, 17 and 18



CITY COUNCIL AGENDA ITEM

REQUESTED COUNCIL MEETING DATE 10/19/2021

Consent item: No

SUBJECT: (H19) Second Reading - Ordinance No. 2021-23 - Rezoning and Approval of the Madeline Commons Planned Unit Development Master Development Agreement and Conceptual Development Plan (Case No. 20-65000002)

DEPARTMENT: Community Development

GOAL: 3 - Quality of Life

RECOMMENDED MOTION: Move to approve Ordinance No. 2021-23, rezoning ±34.6 acres from Two-Family Residential (R-2D) to Planned Unit Development (PUD) and approving the Madeline Commons PUD Master Development Agreement and Conceptual Development Plan.

SUMMARY: Planning Commission Action (8/26/21): Recommended Approval (7-0)

The applicant, Joey Posey, Storch Law Firm, requests to rezone ±34.6 acres, located north of Charles Street and Sugar Mill Elementary School, between McDonald Road and 5th Street, from Two-Family Residential (R-2D) to Planned Unit Development (PUD) and approval of the Madeline Commons PUD Master Development Agreement (MDA) and Conceptual Development Plan (CDP). If approved, the MDA and CDP will establish the framework for development of a 149-lot detached single-family subdivision.

The current FLU designation of the subject property is Urban Medium Density Residential (4 to 8 units per acre) and according to the City's Comprehensive Plan, the Urban Medium Density Residential designation is intended to allow for the development of various types of residential uses, such as, duplexes, villas, cluster homes, townhouses, mobile homes, manufactured homes, or multi-family development at densities between four (4) and eight (8) units per acre. The proposed PUD rezoning, the Madeline Commons MDA and CDP, and the project density (4.3 units per acre) is in accordance with the current FLU designation of the property. The density of the proposed PUD is also consistent with the density of the surrounding residential subdivisions.

The proposed CDP shows the general layout of the 149 single-family lots, stormwater improvements, open space areas, common open space areas, tree preservation areas, public roadways, and off-site roadway improvements. The lots will be generally consistent in size with other single-family lot subdivisions that have recently been approved and the setbacks requested are generally consistent with the proposed lot sizes.

The proposed PUD will be accessed from Madeline Avenue/McDonald Road, Charles Street, and 5th Street. The rights-of-way within the PUD will be public and on-street parking will be required to comply with Chapter 70 in the Code of Ordinances. As part of the PUD, the following off-site roadway projects will be required to be completed by the developer of the project as part of the subdivision infrastructure: 1) a round-about at the entrance of the subdivision with Madeline Avenue/McDonald Road to provide a safer and more efficient intersection with Madeline Avenue/McDonald Road and the PUD entrance/exit road; 2) a westbound right-turn lane on Charles Street at the Sugar Mill Elementary School drop-off/pick-up driveway to minimize on-street vehicle stacking on Charles Street during school drop-off and pick-up times.

The PUD zoning allows the applicant to request flexibility from the standard code requirements. As part of the review of this proposal, the applicant is requesting a deviation from the Land Development Code (LDC) to allow a minimum lot open space requirement of 32% and a maximum lot building coverage of 55% for the single-family lots. According to the applicant, unlike conventional residential City zoning districts, a PUD zoning requires 60% of the subject property (20.7 acres) to be open space in addition to the 32% required on the individual lots (5.2 acres) and that the additional acreage of open space area in the subdivision design off-sets the reduction in the percentage of private open space on the 149 single-family lots. The applicant states that under the subject property's current zoning (R-2D), the subject property could be developed as a 156-unit duplex subdivision and would not require additional open space beyond the 35% required on the individual lots (6.3 acres) and the minimum 15% tree preservation area (5.2 acres) and typical area for stormwater (5.2 acres). Therefore, the applicant anticipates the PUD will provide about +/- 9.2 acres of open space above the acreage required under the current zoning for the property.

The staff report is attached for more information.

Project No.: N/A

Funding Account No.: N/A

Presenter: Penelope Cruz, Tim Burman

ATTACHMENTS:

1.	ORDINANCE 2021-23 with exhibits	ORDINANCE 2021-23 with exhibits.pdf
2.	Staff Report	Staff Report.pdf
3.	MDA and CDP	MDA and CDP.pdf

Penelope Cruz
Robin Fenwick

Created/Initiated - 9/23/2021
Final Approval - 9/23/2021

ORDINANCE NO. 2021-23

AN ORDINANCE OF THE CITY OF PORT ORANGE,
VOLUSIA COUNTY, FLORIDA, REZONING
PROPERTY CONSISTING OF APPROXIMATELY
±34.6 ACRES LOCATED NORTH OF CHARLES
STREET AND SUGAR MILL ELEMENTARY
SCHOOL, BETWEEN MCDONALD ROAD AND 5TH
STREET, FROM TWO-FAMILY RESIDENTIAL (R-
2D) TO PLANNED UNIT DEVELOPMENT (PUD)
AND APPROVAL OF THE MADELINE COMMONS
PUD MASTER DEVELOPMENT AGREEMENT AND
CONCEPTUAL DEVELOPMENT PLAN;
AUTHORIZING REVISION OF THE OFFICIAL
ZONING ATLAS; PROVIDING FOR CONFLICTING
ORDINANCES; PROVIDING FOR SEVERABILITY;
AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, the property owner has requested the rezoning of the property consisting of approximately ±34.6 acres from Two Family Residential (R-2D) to Planned Unit Development (PUD); and

WHEREAS, the city and Developer desire to enter into the Madeline Commons Planned Unit Development Master Development Agreement ("MDA") and Conceptual Development Plan ("CDP");

WHEREAS, Developer submitted a request to the Planning Commission to approve the MDA and CDP for Madeline Commons Planned Unit Development; and

WHEREAS, a public hearing was held following public notice as prescribed by ordinance; and

WHEREAS, the Planning Commission has by a majority vote recommended approval of the proposed Madeline Commons Planned Unit Development Master Development Agreement ("MDA") and Conceptual Development Plan ("CDP");

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PORT ORANGE, VOLUSIA COUNTY, FLORIDA:

Section 1. The City Council of the City of Port Orange does hereby rezone the property consisting of approximately ±34.6 acres located north of Charles Street and Sugar Mill Elementary described in **Exhibit "1"**, attached

hereto, from Two Family Residential (R-2D) to Planned Unit Development (PUD).

Section 2. The City Council of the City of Port Orange does hereby approve, authorize and direct the revision of the City's Official Zoning Atlas classification as shown on **Exhibit "2"** attached hereto.

Section 3. The City Council of the City of Port Orange does hereby approve the Madeline Commons Planned Unit Development Master Development Agreement ("MDA") and Conceptual Development Plan ("CDP"), attached hereto as **Exhibit "3"**.

Section 4. The Mayor and City Manager are hereby authorized to execute said Madeline Commons Planned Unit Development Master Development Agreement on behalf of the City of Port Orange.

Section 5. All ordinances or resolutions or parts of ordinances or resolutions in conflict with the provisions of this ordinance are hereby repealed to the extent of such conflict.

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 of this ordinance which can be given effect without the invalid provision or application, and to this end the provisions of this ordinance are declared severable.

Section 8. This ordinance shall become effective immediately upon adoption.

MAYOR DONALD O. BURNETTE

ATTEST:

Robin L. Fenwick, MMC, City Clerk

Passed on first reading on the day of

Passed and adopted on second and final reading on the day of

Reviewed and Approved: _____
Shannon K. Balmer, Assistant City Attorney

Exhibit 1

LEGAL DESCRIPTION -per Schedule A

Parcel 1: All of Blocks 22 through 27, inclusive, PORTONA, according to the map or plat thereof recorded in Map Book 10, at Page 107, of the Public Records of Volusia County, Florida

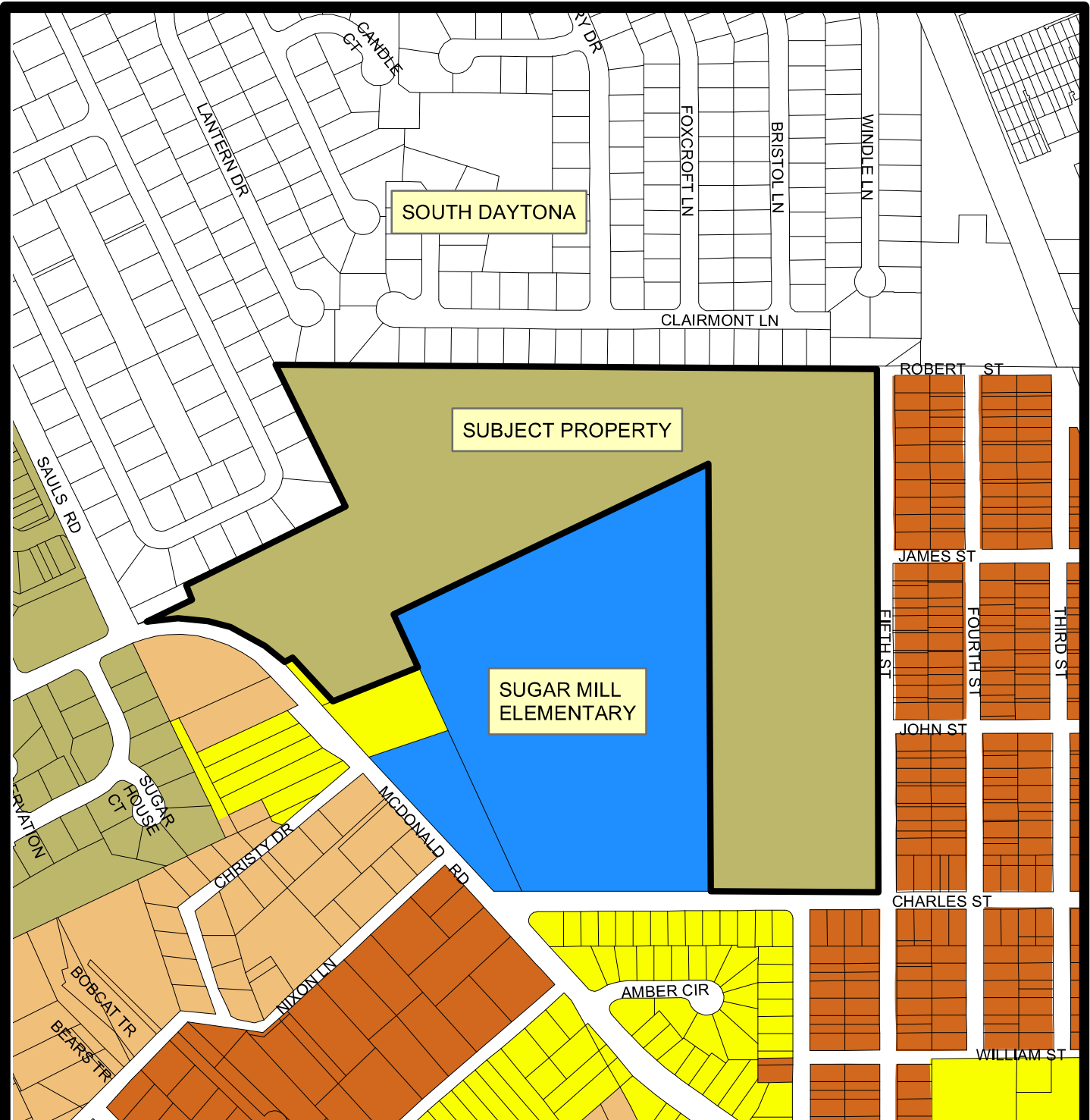
Parcel 2: Lot 2 (except one-half acre north of canal on West line of Lot 2 and except the East 625 feet), Section 4, Township 16 South, Range 33 East, Volusia County, Florida. AND Less and Except any portion of Lot 2 lying West of McDonald Road. AND Less and Except that portion of Lot 2 conveyed in Warranty Deed recorded in Official Records Book 2317, Page 1472, of the Public Records of Volusia County, Florida. AND Less and Except all of that portion platted as Amber Village, according to plat thereof recorded in Plat Book 40, Page 61, of the Public Records of Volusia County, Florida.

Parcel 3: North 290 feet of the East 660 feet, East of McDonald Road of Sugar House Reservation and East 500 feet of South 50 feet of Lot 2, Block 12, Dunlawton, Port Orange, Florida. Lying and being in Volusia County, Florida.

Parcel 4: The North 170 feet of the South 370 feet of the North 660 feet of the East 660 feet, East of McDonald Road of Dunlawton Sugar House Reservation, according to the map recorded in Deed Book "M", Page 187, Public Records of Volusia county, Florida.

Containing 1,507,262.61 square feet (34.602 acres±)

Exhibit 2



ZONING

- Government/Public Use
- Planned Unit Development
- R-10SF Single Family Residential
- R-2D Two Family Residential
- R-8SF Single Family Residential



CITY OF PORT ORANGE
DEPARTMENT OF COMMUNITY DEVELOPMENT

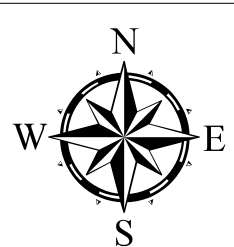


Exhibit 3

MADELINE COMMONS PLANNED UNIT DEVELOPMENT PUD MASTER DEVELOPMENT AGREEMENT

This Madeline Commons Planned Unit Development (“PUD”) Master Development Agreement (“MDA”) is entered into by and between the City of Port Orange, a Florida municipal corporation (the “City”), and Madeline Commons, LLC, a Delaware limited liability company (the “Owner”), including its successors and assigns, (collectively the “Parties”), hereby covenant and agree, and bind their successor and assigns as follows:

1. OWNERSHIP OF THE PROPERTY

This Planned Unit Development, commonly known as “Madeline Commons”, involves approximately +/- 34.602 acres of land which is legally described on Exhibit A attached hereto, and shall henceforth be referred to as the “Property”. The Property is under unified ownership of the Owner, a signatory to this Agreement. This Agreement between the City and the Owner shall revoke any and all prior development agreements applicable to the Property.

2. DEVELOPMENT CONCEPT

The Madeline Commons PUD provides for single-family detached residential development and townhomes that protect the moderate-density and transitional character of the Charles Street area. The Property will be subdivided into a maximum of one hundred and forty-nine (149) single-family lots for detached dwelling units, with buffers that ensure the project is compatible with the surrounding, existing neighborhoods. All single-family-lots will be privately owned.

3. DEVELOPMENT AGREEMENT AND CONCEPTUAL DEVELOPMENT PLAN

Development of the Property shall be controlled by the terms and provisions of this Madeline Commons PUD, The MDA and the Conceptual Development Plan (“CDP”), attached hereto as Exhibit “B”, for the Property which generally depicts the planned layout of public roads, lots, amenities, and other planned features or improvements to the Property and demonstrates the

lot coverage requirements available to lot owners within the PUD. Collectively, this MDA and the CDP for the Property may be referred to as the “Plan”. In the event of a conflict between the terms and provisions of the MDA and the graphic illustrations of the CDP, the MDA shall control. If the MDA is silent regarding a particular subject or requirement, such silence shall not be construed as a conflict with the CDP. If the Plan fails to address a particular subject or requirement, the applicable City ordinances in effect at the time of development, as defined by the City of Port Orange Land Development Code (“LDC”) shall control. The parties acknowledge that compliance with the City’s LDC may necessitate modification to the CDP. In the event modification to comply with the LDC is required, and the modifications to the CDP are not in conflict with the textual provisions of this MDA and any City ordinances not superseded by this MDA, the modifications shall be deemed “minor” and may be approved without formal amendment of this MDA. Minor modifications shall require the City Administrative Official’s written approval. If the Owner is not satisfied with the suggested resolution of any problem or the decision by the City Administrative Official categorizing the modification as minor or major, the Owner may appeal the decision pursuant to the LDC.

4. USAGE OF THE PROPERTY

A. Permitted Uses

The Property shall be used for residential purposes and developed as a residential community with common open space and other buffers as specified herein. The Property shall be developed for a maximum of one hundred and forty-nine (149) single-family, detached dwelling units, for a maximum of 4.31 dwelling units per acre. When considered in light of other housing and community choices in the vicinity, the Madeline Commons PUD will provide for a compatible residential development that is consistent with the surrounding land use pattern and will protect

the character of the existing residential subdivisions in the vicinity to the Madeline Commons PUD.

The PUD will have an overall density of 4.31 dwelling units per acre which is consistent with the density requirements of the “Urban Medium Density Residential (4 to 8 Units per acre)” Future Land Use designation of the Property. This design also provides for a compatible transition between the varying densities of the surrounding properties.

B. Dimensional Requirements

Lot dimensions and configurations within the Property are generally depicted on the CDP. The lot sizes and configurations shall comply with the minimum dimensional requirements described below. The lot dimensions and areas shown on Exhibit “B” may be adjusted during the final subdivision process.

The total number of residential units in the development shall not exceed 149 dwelling units or a gross project density of 4.31 dwelling units per acre.

1. Single Family Lot Development Requirements

a. Setbacks

- i. Front: 20 feet
- ii. Front Corner: 20 feet
- iii. Rear: 15 feet
- iv. Side: 5 feet

b. Minimum Lot Size

i. 40-Foot-Wide Lots

- 1. Width: 40 feet
- 2. Depth: 110 feet

3. Area: 4,400 square feet
- ii. 50-Foot-Wide Lots
 1. Width: 50 feet
 2. Depth: 100 feet
 3. Area: 5,000 square feet
- c. Maximum Building Height: 35 feet (measured from the grade to the mid-point of the trusses)
- d. Minimum Open Space: 32%
- e. Maximum Impervious Area: 68%
- f. Maximum Building Coverage: 55%
- g. Minimum Living Area: 1,100 square feet
- h. Permitted accessory structures for single-family residential lots shall be as provided for in the City LDC.
2. Overall PUD Development Requirements
 - a. Maximum Building Coverage: 40%
 - b. Minimum Open Space: 60% (20% of which shall be common open space)

C. Open Space

Notwithstanding the open space requirements for individual lots, 60% of the Madeline Commons PUD shall be open space, and 20% of the Madeline Commons PUD shall be common open space.

D. Notice

The Owner shall provide a written notice in the covenants and restrictions and in each contract for sale and purchase of lots in the Madeline Commons PUD stating the following:

“Accessory structures shall not be permitted to be located in the perimeter landscape buffers established in Section 11 of the Madeline Commons PUD MDA, except as provided in that section. Buildings on the lots shall not be permitted to exceed the total building lot coverage requirements established in Section 4 of the MDA.”

5. ARCHITECTURAL STANDARDS AND REVIEW

The overall architectural theme of the project shall be consistent with covenants and restrictions adopted for the non-profit homeowners’ association created pursuant to Section 11 of the Madeline Commons PUD MDA.

6. PHASING

The development of the Madeline Commons PUD may occur in a single or two phases. Each proposed phase shall include the construction of all subdivision and infrastructure improvements necessary for said phase to stand alone. Project amenities, such as park areas and on-street parking spaces, shall be constructed prior to issuance of a certificate of occupancy for the first house in the phase in which they are located. Any proposed phasing must meet the minimum requirements of the City LDC.

7. SANITARY WASTE, STORMWATER, AND POTABLE WATER

In the event of development, the Owner will extend water and sewer lines to serve the Property and the development authorized herein and the water and sewer lines shall be public utilities. If the City desires to extend the water and sewer lines prior to the Owner’s need for installation of the Owner’s lines, the Owner shall grant the necessary utility easement to the City and the City shall install and pay for such lines. All lines and other necessary infrastructure shall be sized adequately to serve both the adjoining property and the lots within the PUD. The Owner shall comply with the City’s LDC and the rules and regulations of the St. Johns River Water

Management District concerning stormwater drainage. Stormwater flow calculations for all turn lane improvements, including modifications to the Charles Street northerly ditch and Fifth Avenue westerly ditch, must take into account all contributing flow from the school property and watershed southerly of Charles Street. Fifth Avenue westerly ditch south of John Street will require a minimum 30" stormwater pipe. Driveway aprons along Fifth Street must not block existing stormwater flow draining to Halifax River through John Street infrastructure.

Irrigation to be provided by the lowest quality water source, including reclaimed water, surface/storm water, or an irrigation well if available. If a lower quality water source is not available or not deemed feasible pursuant to St. Johns River Water Management District Rule or applicable state law, then potable water will be used for irrigation. Potable water and sanitary sewer will be supplied to the Property by City of Port Orange. Upon completion of all infrastructure for utilities, the same will be conveyed to the City of Port Orange. Currently, there is an existing lift station on 5th Street for sewer and an existing water main for potable water for the Property to tie into. The Owner shall be responsible for any utility infrastructure upgrades needed for the development, including the relocation of any existing utilities. Improvements will be constructed in accordance with City of Port Orange Utility Construction Standards.

All single-family lots shall maintain a minimum eight (8) foot separation between air conditioning units, door stoops, generators, gas tanks, or other mechanical equipment on adjacent lots, and fences shall have a minimum six (6) inch clearance under them for stormwater runoff to flow, and there shall be no landscaping between homes in the side yard except for one (1) three (3) gallon shrub in front of the air conditioning unit or other mechanical equipment.

Runoff from higher adjacent lands, if any, shall be considered as part of site plan and subdivision review, and provisions for conveyance of said runoff shall be included in the

drainage plan. The Port Orange Nova Canal North and Halifax River Watersheds Stormwater Master Plan will be used to establish tailwater and other project boundary conditions. The stormwater report shall include the depressional storage volume when modeling the pre-existing conditions for the 25 year/24 hour and 100 year/24-hour frequency storms. The minimum floor finished elevation shall be one foot above the Base Flood Elevation project wide.

8. ACCESS AND PARKING

A. ACCESS. The minimum fifty (50) foot wide roadways identified as Lavender Drive and Hibiscus Drive shall be dedicated to the City for use by public as generally depicted on the CDP. The exact location of all roadways and reserved street names will be provided and depicted when the Property is subject to the subdivision process. A minimum 20-foot clearance will be provided along all roadways to ensure emergency response vehicle access.

B. PARKING

i. Single Family Lot Parking

1. Each single-family lot shall have a driveway with adequate space to park at least two standard size vehicles and a garage with adequate space to park at least two standard size vehicles.

ii. Common Parking Spaces

1. The additional parking spaces shown on the Conceptual Development Plan shall be provided to accommodate visitors and guests.

9. INFRASTRUCTURE IMPROVEMENTS.

The proposed development will require the Owner's removal of the existing eastbound Madeline Avenue curve transition to McDonald Road and dedication of the northwest property

corner for new proposed roadway round-about connecting Madeline Avenue and McDonald Road, as generally depicted on the CDP. The round-about will be dedicated to the City by either subdivision plat or separate instrument. Pedestrian crossing signaling, crosswalk striping, and yield signage shall be constructed for the round-about together with appropriate pedestrian crossing improvements for Lavender Drive and Sauls Street, at the Owner's expense. An off-site right turn lane, generally depicted on the CDP west of the project entrance on Charles Street, shall be constructed by the Owner and connect to the first parent loop for Sugar Mill Elementary School for use by the school. All roadway improvements proposed for the realignment of the Madeline Avenue and McDonald Road intersection shall be constructed at the same time as the other roadway infrastructure for the subdivision; however, roadway improvements on Charles Street shall only be constructed during the summer months to avoid the fall and spring school sessions at Sugar Mill Elementary.

The City acknowledges that the above connection to the first parent loop for Sugar Mill Elementary School will help address needed roadway improvements identified by the City. In furtherance of the obligations set forth herein, the City and the Owner shall enter into a Transportation Impact Fee Credit Agreement for said improvements and provision of plans for future improvements at the time of submission of plat and plans for the Project, with amount of credits not to exceed \$134,398.00, in a form substantially the same as the attached, marked as Exhibit "C" and made a part hereof by reference.

Sidewalks shall be constructed as depicted on the CDP. A five-foot (5') sidewalk shall be installed for public use along each side of the public roadways within the development.

10. IMPACT FEE CREDIT

The development of the Property shall comply with the transportation concurrency management requirements established in the City of Port Orange Comprehensive Plan and LDC. Nothing in this Agreement shall be construed as a waiver by the Owner of its right to pursue impact fee credits for any and all work performed by Owner for which impact fee credits can be awarded.

11. MAINTENANCE OF COMMON OPEN SPACE AND COMMON FACILITIES

The Owner shall form and incorporate a non-profit homeowners' association (the "HOA") which will operate, maintain and control, subject to other documents of record, the common areas, and common facilities, including but not limited to stormwater drainage systems within the Property, the vehicle staging and mail kiosk areas, and the entrance features and landscape buffers on the Property. The development will be a platted subdivision of the Property.

The general scope and format of the HOA documents, and the covenants and restrictions, will be similar in concept to the documents of similar home owners' associations in Port Orange. The covenants and restrictions governing the Property and association responsibility shall be executed and recorded in the Public Records of Volusia County, Florida. The HOA will have a board of directors to legislate and govern the rules and orders of the HOA. The HOA board will have the means and authorization to carry out and regulate the by-laws and restrictions governing the maintenance, operation and repairs of all common areas and facilities. Not only will the board of directors be able to regulate and govern the common area; the board will also regulate each member requiring the maintenance and service of their own individual building site. The HOA rules may be enforced by fines and liens upon the individual building sites and any other remedy available at law. The HOA covenants and restrictions shall include provisions limiting on-street parking within the development to those parking areas identified on the Conceptual Development

Plan and shall include provisions requiring the ongoing maintenance and repair of any sidewalks and roadways not dedicated to the City. The HOA may charge and collect dues to maintain operate and service all common facilities on the Property. The HOA will have authority to place a lien against individual building sites to collect unpaid HOA dues. The owner of each lot within the Property will automatically become a member of the HOA by virtue of purchasing a building subject to the rules, covenants, and restrictions of the HOA. The HOA will have the authority and means to hire, supervise, and regulate persons employed by them for the maintenance, repair and operation of common areas and facilities. If the association fails to perform the maintenance, repair or replacement, as necessary, of the storm water drainage facility, the City shall have the right to enter upon the common area of the Property and to provide the maintenance, repair, or replacement of the stormwater drainage facility and shall have the right to lien all owners of record in the Property for the cost of such maintenance, repair, and replacement as the City may deem necessary. If requested by the City and as otherwise needed for plat improvements, the Owner will provide easements and grants for the installation, maintenance and upkeep of the public utilities including water, sewer, and electricity. The Owner may from time to time add additional covenants and restrictions or make changes in the Association by-laws as may be required to guarantee that the project will be developed in accordance with the policies outlined in this Agreement.

12. PROJECT BUFFERS AND LANDSCAPING

In order to comply with the requirements of Chapter 13, Sections 3 and 3.5 of the Port Orange LDC, a perimeter buffer shall be provided as shown on the CDP and shall comply with the following standards and requirements. The intent of the landscape buffer is to provide a protected green space separation between the Property and surrounding neighborhoods. There shall be a perimeter buffer with a width of ten (10') feet along the Property boundary adjacent to the City of

South Daytona, twenty (20') feet along 5th Street where lots are not present, twenty (20') along Charles Street, twenty (20') feet along McDonald Road, and ten (10') feet along the Property boundary adjacent to Sugar Mill Elementary School. A six (6) foot privacy fence setback a minimum 3-feet from the Property line for maintenance shall also be installed along the Property boundary adjacent to Sugar Mill Elementary School. All buffers will remain as existing conditions or at time of each lot build out shall be required to install minimum landscape requirements for the Port Orange LDC. Landscape buffers and privacy fencing shall be constructed in the initial phase of development. No clearing or altering of the Property shall occur until the phase of that project area has been issued an approved construction plan. Existing vegetation in the perimeter buffer that may remain undisturbed shall count toward the landscaping requirements for the buffer. Existing vegetation that is determined by the City to be invasive exotics, diseased/dying and/or interfering with required extension of utilities may be removed, provided that any viable protected or specimen trees shall be mitigated in accordance with the City of Port Orange LDC. The landscape plans required for the final plat shall account for the removal and mitigation of trees with the perimeter buffers. No structures, primary or accessory, will be allowed within perimeter buffers, except for fencing. The Madeline Commons HOA shall establish maintenance standards in the covenants and restrictions for the landscape/buffer easements. The covenants and restrictions shall provide for procedures to allow the HOA to notice individual lot owners that landscaping is not being maintained in accordance with the standards established in the covenants and restrictions. The covenants and restrictions shall include provisions for the HOA to charge the individual lot owners for the costs of the HOA maintaining the landscape buffer.

13. ENVIRONMENTAL CONSIDERATIONS

Both during and after construction, the Owner will use reasonable efforts to preserve trees and natural vegetation within the Property and maximize protection of natural drainage pathways. The PUD shall comply with the tree preservations of the City's LDC. The Owner shall comply with all rules, statutes, laws and regulations pertaining to protected wildlife species, including but limited to the rules and permitting requirements of the Florida Game and Freshwater Fish Commission concerning gopher tortoises. Compliance with the City Environmental Preservation Code may necessitate modification of the Conceptual Development Plan.

14. EXPIRATION

Development of the Madeline Commons PUD shall commence within five (5) years from the effective date of this Agreement and all development shall be completed within ten (10) years from the effective date. Failure to comply with the schedule set out above shall cause this Agreement to lapse unless the schedule is modified by mutual agreement of the Owner and the City. Development shall be as defined by the LDC.

15. EFFECTIVE DATE

This Agreement shall become effective and run with the land upon recording by the City of Port Orange at the Owner's expense in the public records of Volusia County, Florida.

16. AMENDMENTS

Amendments to this Agreement and CDP shall comply with the requirements established in Chapter 3, Article 1 and Chapter 17, Section 17 of the City of Port Orange LDC. The City may grant administrative variance for the dimensional requirements of this PUD when deemed appropriate by the administrative official. Application for administrative variances from the dimensional requirements of this PUD shall be made on the appropriate forms provided by the

City for that purpose and shall be accompanied by the appropriate review fee. In no case shall an administrative variance be granted when such variance exceeds ten (10%) percent of the required dimension.

17. CONFORMANCE WITH THE LAWS

The Owner agrees:

- A. To develop the Property according to all PUD regulations of the City to the extent those regulations are not inconsistent with the CDP for the Property.
- B. To provide agreements, contracts, deed restrictions, and sureties and other documents required by the City Legal Department for completion of the development or approved development phases, and for the continuing operation and maintenance of such areas, functions and facilities as are not to be provided, operated or maintained at public expense, and that the Owner's successors in title will be bound by the Owner's commitments made in the Agreement.
- C. To be bound by all City codes and ordinances that are not in conflict with the provisions of this Agreement.

18. ENFORCEABILITY

If any provision of this Agreement is held by a court of competent jurisdiction to be invalid or otherwise unenforceable, such holding shall not affect the validity of enforceability of any other provision of this Agreement unless the holding so states.

19. PRIOR AGREEMENTS

This Agreement represents the complete understandings by and between the parties with respect to the development and continued use of the subject Property. Any and all prior agreements

between the Parties with respect to any subject comprehended by this Agreement is hereby voided and superseded by this Agreement.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties hereto attached their hands and seals this ____ day of _____, 20____.

WITNESSES:

CITY OF PORT ORANGE, FLORIDA
A Chartered Municipal Corporation

Name: _____

By: _____
Donald O. Burnette, Mayor

Name: _____

Date: _____, 2021

STATE OF FLORIDA
COUNTY OF VOLUSIA

The foregoing instrument was acknowledged before me by means of **[XX]** physical presence or [] online notarization this ____ day of _____, 2021, by Donald O. Burnette as Mayor, of the City of Port Orange, Florida, a chartered municipal corporation, who acknowledge that he is duly authorized to execute the foregoing agreement on behalf of the city. He is personally known to me.

Notary Public, State of Florida at Large
Printed, typed or stamped name, commission and expiration of commission term

WITNESSES:

Name: _____

Attest: _____
Robin L. Fenwick, MMC, City Clerk

Name: _____

Date: _____, 2021

STATE OF FLORIDA
COUNTY OF VOLUSIA

The foregoing instrument was acknowledged before me by means of **[XX]** physical presence or [] online notarization this ____ day of _____, 2021, by Robin L. Fenwick, as City Clerk, of the City of Port Orange, Florida, a chartered municipal corporation, who acknowledge that she is duly authorized to execute the foregoing agreement on behalf of the city. She is personally known to me.

Notary Public, State of Florida at Large
Printed, typed or stamped name, commission and expiration of commission term

Signed, sealed and delivered
In the presence of

Witness 1 Signature

Owner:
Madeline Commons, LLC

Print Name of Witness 1

By: Moishe Goldshmidt, Managing Member

Witness 2 Signature

Print Name of Witness 2

STATE OF _____
COUNTY OF _____

The forgoing instrument was acknowledged before me, by means of ☐ online notarization or ☐ physical presence, this ____ day of _____, 20____, by Moishe Goldshmidt, as Managing Member of Madeline Commons, LLC. He / She is ☐ personally known to me or ☐ has produced the following as identification _____, and he / she did not take an oath.

Notary Type, Print, or Stamp Name

My Commission Expires: _____

Exhibit A
Legal Description

Exhibit A

LEGAL DESCRIPTION -per Schedule A

Parcel 1: All of Blocks 22 through 27, inclusive, PORTONA, according to the map or plat thereof recorded in Map Book 10, at Page 107, of the Public Records of Volusia County, Florida

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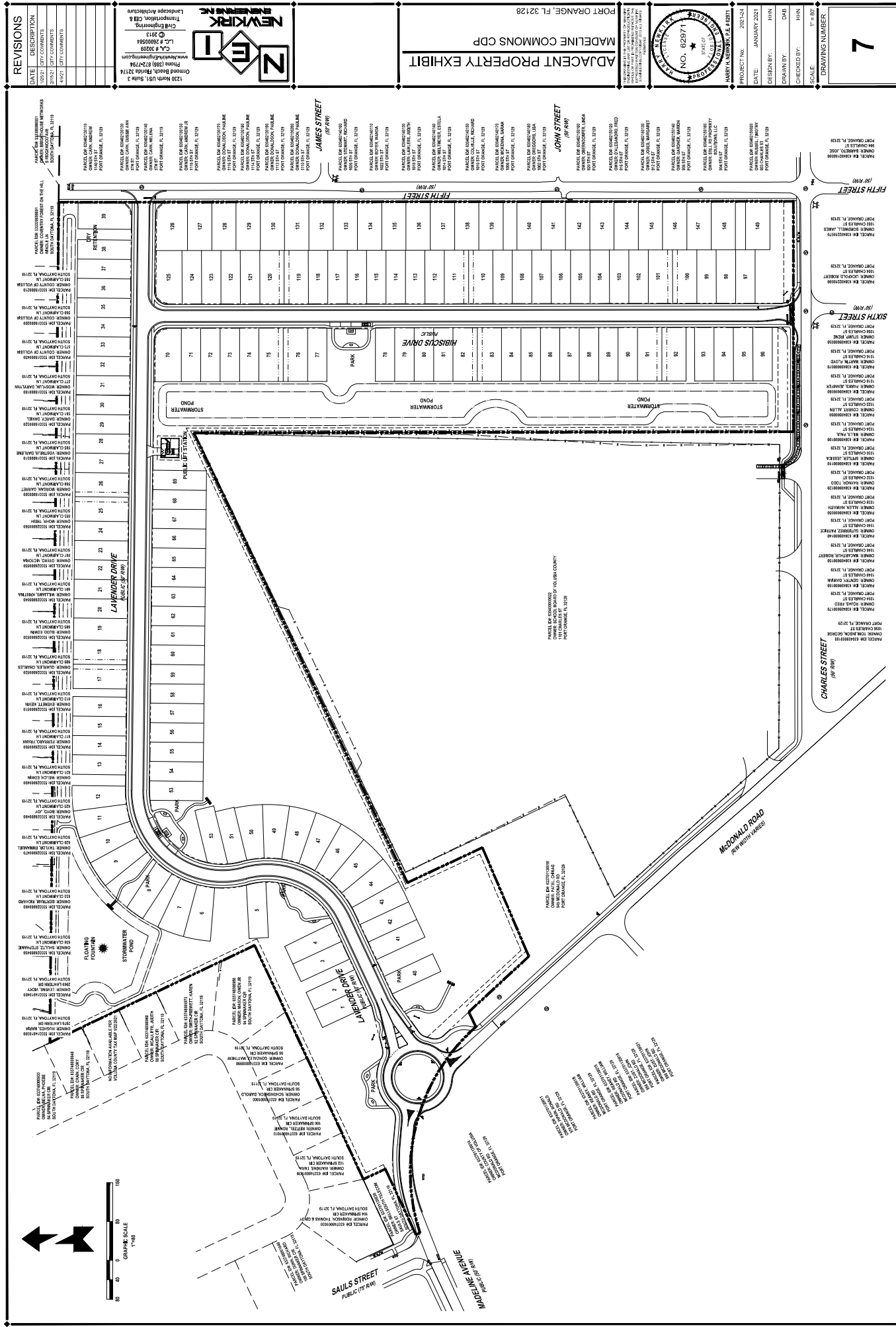
Parcel 3: North 290 feet of the East 660 feet, East of McDonald Road of Sugar House Reservation and East 500 feet of South 50 feet of Lot 2, Block 12, Dunlawton, Port Orange, Florida. Lying and being in Volusia County, Florida.

Parcel 4: The North 170 feet of the South 370 feet of the North 660 feet of the East 660 feet, East of McDonald Road of Dunlawton Sugar House Reservation, according to the map recorded in Deed Book "M", Page 187, Public Records of Volusia county, Florida.

Containing 1,507,262.61 square feet (34.602 acres±)

Exhibit B
Conceptual Development Plan





DATE	DESCRIPTION
10/21/21	10/21/21
10/21/21	10/21/21
10/21/21	10/21/21

DATE	DESCRIPTION
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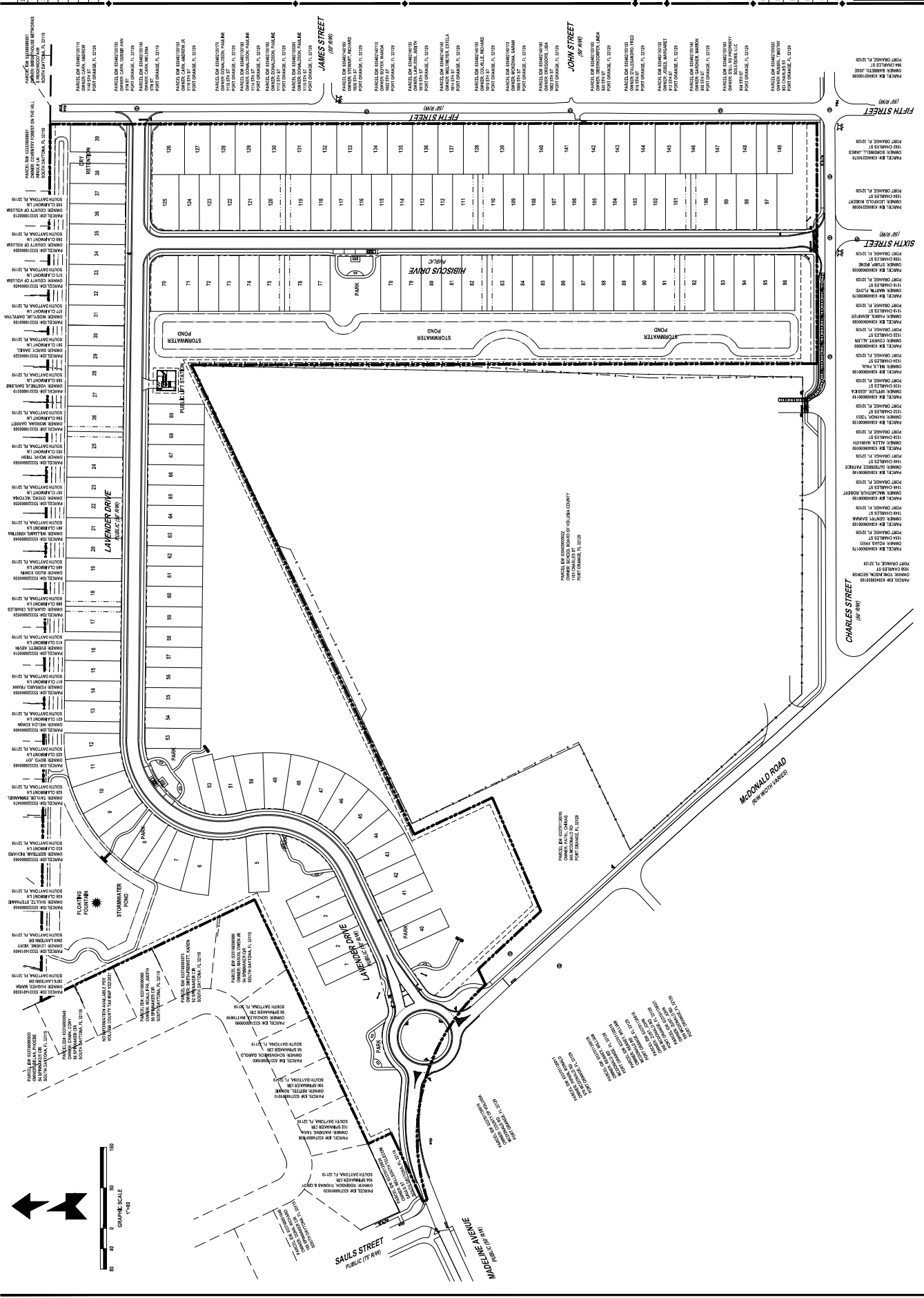
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Exhibit C
Transportation Impact Fee Credit Agreement

EXHIBIT "C"

TRANSPORTATION IMPACT FEE CREDIT AGREEMENT

THIS TRANSPORTATION IMPACT FEE CREDIT AGREEMENT (the "Agreement") is made and entered into this _____ day of _____, 2021 (the "Effective Date") by and between the **CITY OF PORT ORANGE, FLORIDA**, a chartered municipal corporation located in Volusia County, Florida (the "City"), and _____, a _____, (the "Developer/Owner"); collectively referred to as "Parties".

RECITALS

WHEREAS, the Developer/Owner warrants that they are the current record title owners of the property (the "Subject Property") legally described on **Exhibit "A"** attached hereto and by this reference made a part hereof; and

WHEREAS, the City approved certain entitlements for the construction of improvements on the Subject Property, which are more particularly described as the Madeline Commons Planned Unit Development ("PUD") Master Development Agreement of record in Official Records Book _____, Page _____, Public Records of Volusia County, Florida (the "MDA"); and

WHEREAS, the City owns the right-of-way adjacent to the Subject Property, commonly known as Madeline Avenue, McDonald Road, and Charles Street; and

WHEREAS, certain off-site roadway improvements, including appropriate pedestrian crossing improvements, are required for the purpose of roadway realignment, as more particularly described in **Exhibit "B"** ("Roundabout and Right Turn Lane Improvements") and

WHEREAS, Developer/Owner desires to provide completed, LDC compliant plans to the City for certain off-site roadway improvements for the purpose of City's construction of said improvements as more particularly described in **Exhibit "C"** ("Plans for City Construction"); and

WHEREAS, in accordance with Chapter 21, Article II, Division 1, of the City of Port Orange Code of Ordinances, the City requires developers to pay certain transportation impact fees for the purpose of paying its fair share of the impacts attributable to said development on the transportation system of the City: and

WHEREAS, in accordance with Chapter 21, Article II, Division 1, Section 11, of the City of Port Orange Code of Ordinances, the Developer/Owner may seek transportation impact fee credits based upon the Developer/Owner's qualifying contribution, as defined in Chapter 21, Article II, Division 1, Section 11(c)(1), of constructing the Roundabout and Right Turn Lane Improvements, more particularly described in Exhibit "B", and providing the Plans for City Construction, more particularly described in Exhibit "C" for the benefit of the City in the construction of the necessary roadway improvements as shown in said Exhibit; and

WHEREAS, the construction of the Roundabout and Right Turn Lane Improvements will realign and improve the safety and efficiency of the Madeline Avenue and McDonald Road intersection; and

WHEREAS, providing the Plans for City Construction to the City, will save the City money and time in the design phase and opportunity for acceleration of the construction of the necessary roadway improvements; and

WHEREAS, City and Owner recognize the value of the construction of certain roadway improvements as provided herein, and the provision of completed engineered plans to the City for the benefit of the City's ability to complete the construction of certain roadway improvements; and

WHEREAS, the City and Developer/Owner now desire to enter into this Agreement to set forth the duties and obligations for such contributions to the City, and establish the impact fee credits to which the Developer/Owner will be entitled.

NOW THEREFORE, in consideration of the mutual promises contained herein and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the parties agree as follows:

1. **Recitals.** City and Developer/Owner hereby represent to each other that the above recitals are true and correct and by this reference are made a part of this Agreement.

2. **Agreement to Construct Roundabout and Right Turn Lane Improvements.** Subject to and in accordance with the terms and conditions of this Agreement, Developer/Owner agrees to construct the roundabout at the intersection of McDonald Road and Madeline Avenue and construct the Charles Street right-turn lane into the school in accordance with the engineered plans, submitted and approved by the City of Port Orange and in accordance with the requirements set forth in the Land Development Code of the City of Port Orange ("LDC") and any other requirements of law, as more particularly described in **Exhibit "B"** attached hereto and made a part hereof by reference, hereinafter referred to as "Roundabout and Right Turn Lane Improvements".

3. **Agreement to design, permit, and provide to the City, Plans for the City's construction of roadway improvements.** Subject to and in accordance with the terms and conditions of this Agreement, Developer/Owner agrees to provide for the design and permitting of the engineered plans of the Charles Street left turn lane into the school and Charles Street left turn lane onto McDonald Road; and the intersection improvements at Madeline Avenue and Nova Road in accordance with the City's 2021 River 2 Sea Transportation Planning Organization (TPO) application for this intersection or an approved Feasibility Study from the River 2 Sea Transportation Planning Organization (TPO), as more particularly described in **Exhibit "C"** attached hereto and made a part hereof by reference, hereinafter referred to as "Plans for City Construction".

4. **Ownership of the Plans for City Construction.** Developer/Owner shall facilitate the conveyance and certification to the City of a set of Plans for City Construction stamped "Approved for Construction".

5. **Costs and Obligations of the Plans for City Construction.** Developer/Owner shall be solely responsible for the financial costs and obligations associated with constructing Roundabout and Right Turn Lane Improvements and providing the Plans for City Construction to the City and completing the process of submitting the Plans for City Construction to the City for review and approval and acceptance by the City.

6. **Transportation Impact Fee Credits.**

- a. Value of the Impact Fee Credits. The amount of transportation impact fee credits to which the Developer/Owner is entitled hereunder have been determined in accordance with Chapter 21, Article II, Division 1, Section 6, of the City of Port Orange Code of Ordinances. The total amount of such credit shall not exceed **\$134,398.00**, based on the development of 149 residential units at **\$902 per unit**.
- b. Vesting of Impact Fee Credits. Upon approval and acceptance of the Roundabout and Right Turn Lane Improvements and the approval and acceptance of Plans for City Construction, all in accordance with this Agreement, this Agreement shall serve as a final authorization of a Transportation Impact Fee Credit for the Developer/Owner's project on the Subject Property in the dollar amount not to exceed the amount set forth in **Paragraph 6.a.** hereinabove, recognizing that such credit will be used in connection with the future development of the Developer/Owner's project on the Subject Property in accordance with the entitlements as set forth in the MDA. The Transportation Impact Fee Credit shall be applied to the Transportation Impact Fee at the rate in effect at the time of this Agreement and as set forth in Paragraph 6.a., hereinabove.
- c. Vesting subject to TPO Approval. In the event that the plans for the intersection improvements at Madeline Avenue and Nova Road in accordance with the City's 2021 River 2 Sea Transportation Planning Organization (TPO) application for this intersection or an approved Feasibility Study from the River 2 Sea Transportation Planning Organization (TPO) are not accepted or approved by TPO, then said obligation to provide the plans for this particular improvements shall be considered removed from this Agreement and any Transportation Impact Fee Credit allowed as set forth in Paragraph 6.a. shall be reduced accordingly. All other construction of improvements and provision of plans as set forth herein shall be taken only as a whole for the purpose of vesting.
- d. Use of Impact Fee Credits.
 - i. Upon vesting per Paragraph 6.b., the City shall establish a Transportation Impact Fee Credit for the Developer/Owner in the amounts outlined in Paragraph 6.a hereinabove, from which the Developer/Owner can draw down as needed to obtain building permits from the City for the development of the Subject Property.

- ii. It shall be the responsibility of the Developer/Owner prior to the submittal of an application for a building permit to the City, to submit such information as required by the City to assess Transportation Impact Fees on any development of the Subject Property. Upon payment of any other applicable fees due on the planned construction and until such time that the Transportation Impact Fee Credit has been fully exhausted, the City shall issue an impact fee voucher to the Developer/Owner that indicates that the Transportation Impact Fee has been paid.

7. Notwithstanding any language to the contrary, the Parties hereby agree as follows:

- a. The acceptance of the Plans for City Construction, shall be subject to the submittal and review process as set forth in the LDC, and approval and acceptance by the City, with the understanding that the Developer/Owner retains the responsibility and liability following such acceptance for compliance with all outstanding construction standards, codes, regulations, ordinances and state laws. This provision shall survive the termination or expiration of this Agreement.
- b. Upon City's approval and acceptance of the Plans for City Construction, ownership of said plans shall be transferred and assigned to the City. The engineer of record for the Plans for City Construction shall join in the signing of this Agreement for the purpose of concurrence and consent of such transfer of ownership and to the terms and conditions set forth herein.

8. **Relationship Between the Parties.** The Parties hereby mutually agree that this Agreement shall not operate to create the relationship of partnership, joint venture, between City and Developer/Owner. Developer/Owner's contractors are exclusively and solely under the control and dominion of Developer/Owner. Nothing herein shall be deemed to make Developer/Owner or its contractors an agent or contractor of the City.

9. **Amendment; Modification.** No supplement, modification, or amendment of this Agreement shall be binding unless executed in writing and signed by both Parties.

10. **Waiver.** No waiver of any default shall constitute a waiver of any other default or breach, whether of the same or other covenant or condition. No waiver, benefit, privilege, or service voluntarily given or performed by a Party shall give the other Party any contractual right by custom, estoppel, or otherwise.

11. **Binding Effect.** Each and all of the covenants and conditions shall be binding on and shall inure to the benefit of the Parties, and their successors, heirs, personal representatives, or assigns. This section shall not be construed as an authorization for any Party to assign any right or obligation.

12. **No Third Party Beneficiaries.** The City shall not be liable to any third party who may have relied on this Agreement. This Agreement is solely for the benefit of the Parties hereto

and no causes of action shall accrue upon or by reason hereof to or for the benefit of any third party.

13. **Invalidity; Severability.** If any provision of this Agreement is contrary to, or prohibited by any applicable law or regulation, or deemed invalid by any court of competent jurisdiction, such provisions shall be inapplicable and deemed omitted to the extent so contrary, prohibited or invalid. The remainder of this Agreement shall not be invalidated thereby and shall be given full force and effect.

14. **Effective Date.** This Agreement shall become effective upon approval and execution by all Parties.

15. **Entire Agreement.** This Agreement contains and sets forth all the promises, covenants, agreements, conditions, and understandings between the Parties with respect to the subject matter of this Agreement.

16. **Counterparts.** This Agreement may be executed in any number of counterparts and by the Parties hereto in separate counterparts, each of which when so executed shall be deemed to be an original and all of which taken together shall constitute one and the same agreement.

17. **Assignment.** This Agreement and the terms and conditions hereof shall run with be binding upon the Subject property as covenants running with the land, and this Agreement shall be binding upon and inure to the benefit of the City and the Developer/Owner and their respective assigns and successors in interest to the Subject Property.

[Signatures on Following Page]

IN WITNESS WHEREOF, City and Developer/Owner have executed this Agreement as of the dates set forth below.

Signed, sealed and delivered
in the presence of:

CITY OF PORT ORANGE,
a Florida Municipal Corporation

Witness 1

By: _____
Wayne Clark, City Manager

Print Name of Witness 1

Attest:

Witness 2

By: _____
Robin Fenwick, City Clerk

Print Name of Witness 2

Date: _____

STATE OF FLORIDA
COUNTY OF VOLUSIA

The foregoing instrument was acknowledged before me by means of [XX] physical presence or [] online notarization this _____ day of __, 2021, by Wayne Clark, City Manager of City of Port Orange, Florida, a chartered municipal corporation, on behalf of City, who is personally known to me and did not take an oath.

(Seal)

Notary Type, Print or Stamp Name
My commission Expires _____

STATE OF FLORIDA
COUNTY OF VOLUSIA

The foregoing instrument was acknowledged before me by means of [XX] physical presence or [] online notarization this _____ day of __, 2021, by Robin Fenwick, City Clerk of City of Port Orange, Florida, a chartered municipal corporation, on behalf of City, who is personally known to me and did not take an oath.

(Seal)

Notary Type, Print or Stamp Name
My commission Expires _____

Signed, sealed and delivered
in the presence of:

OWNER/DEVELOPER

Witness 1

Print Name of Witness 1

Witness 2

Print Name of Witness 2

By: _____
Print Name & Title

Dated: _____

STATE OF FLORIDA
COUNTY OF _____

The foregoing instrument was acknowledged before me by means of [XX] physical presence
or [] online notarization this ____ day of _____, 2021, by _____, as
_____ of _____, a _____. They are [] personally
known to me or produced _____ as identification and did not take an oath.

(Seal)

Notary Type, Print or Stamp Name
My commission Expires _____

IN WITNESS WHEREOF, this Concurrence and Consent to the transfer of ownership of the Plans for City Construction, subject to the terms and conditions set forth in this Agreement is executed by the undersigned on the date set forth below.

WITNESSES:

ENGINEER

Name: _____

By: _____

Name: _____

Title: _____

Name: _____

Date: _____

STATE OF FLORIDA
COUNTY OF VOLUSIA

The foregoing instrument was acknowledged before me before me by means of [XX] physical presence or [] online notarization this _____ day of _____, _____ by _____ . He/She is personally known to me or has produced _____ as identification.

(Seal)

Notary Type, Print or Stamp Name

My commission Expires _____

EXHIBIT “A”

Legal Description

DRAFT

EXHIBIT “B”

“Roundabout and Right Turn Lane Improvements”

DRAFT

EXHIBIT “C”

“Plans for City Construction”

DRAFT



STAFF REPORT

PUD Rezoning and Madeline Commons Planned Unit Development (PUD) Master Development Agreement and Conceptual Development Plan

CASE NO. 20-65000002

REQUEST:	To approve the rezoning of 34.6 acres from R-2D (Two-Family Residential) to PUD (Planned Unit Development) and the Madeline Commons Master Development Agreement and Conceptual Development plan
LOCATION:	North of Charles Street, East of Madeline Avenue and McDonald Road, West of 5 th Street
PROPERTY OWNERS:	Madeline Commons, LLC
APPLICANT:	A. Joseph Posey Jr., Storch Law Firm
STAFF CONTACT:	Gwen Perney, Principal Planner (386) 506-5673
STAFF RECOMMENDATION:	Approval
PLANNING COMMISSION:	Recommended Approval (August 26, 2021)
CITY COUNCIL:	September 21, 2021

INTRODUCTION

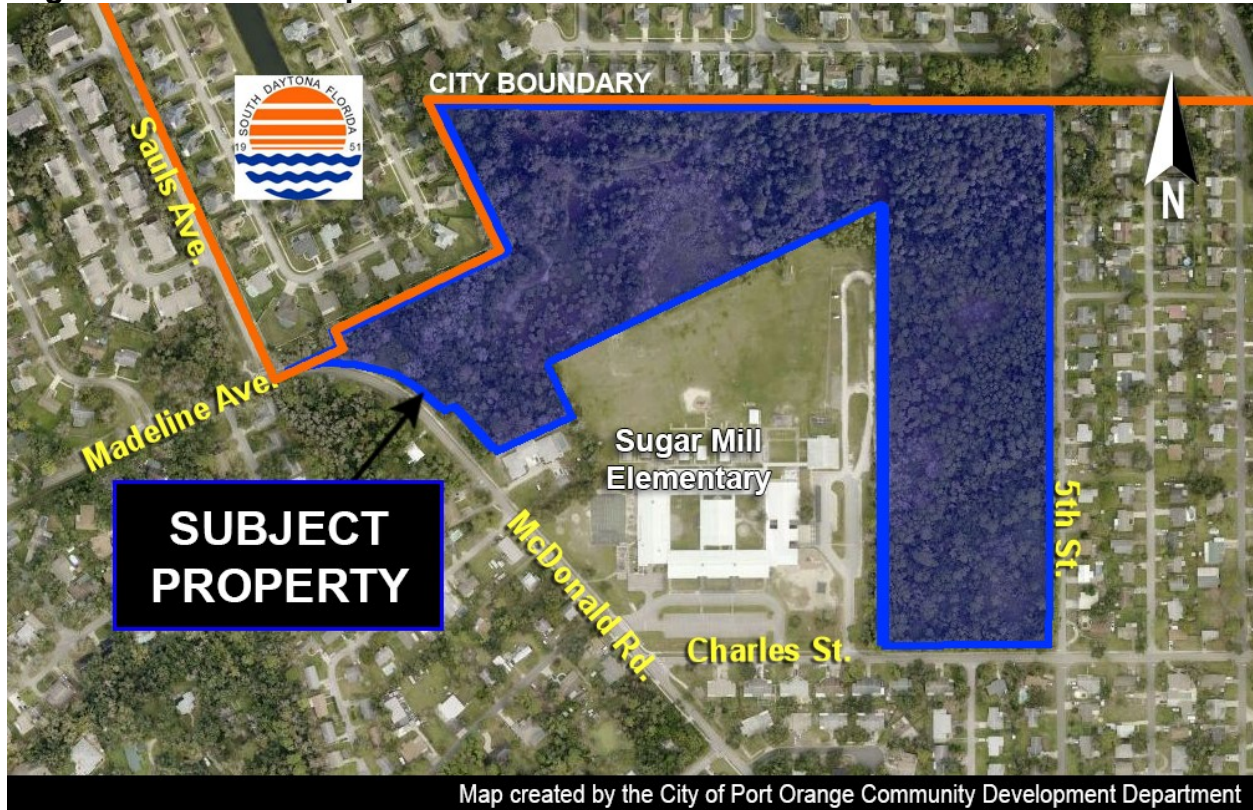
The applicant requests to rezone ±34.6 acres from Two-Family Residential (R-2D) to PUD Planned Unit Development (PUD) and requests approval of the Madeline Commons Master Development Agreement (MDA) and Conceptual Development Plan (CDP). If approved, the intent is to develop the subject property as a residential subdivision with a maximum of 149 single-family lots, along with associated subdivision improvements. The subject property is located north of Charles Street and Sugar Mill Elementary School, between McDonald Road and 5th Street (Figure 1 – Location Map on Page 2).

According to the Land Development Code (LDC), the MDA for the proposed PUD constitutes a zoning document for the subject property, establishing permitted uses and certain development requirements. An MDA and CDP does not grant approval of any specific development itself, but rather establishes parameters for how the property can be developed. The CDP is an exhibit to the MDA that graphically depicts the dimensional requirements and general location of lots, roads, off-site improvements, parking, open space, landscape buffers, utilities, and drainage areas.

Specific subdivision development requirements listed in the MDA and LDC, such as the type and location of trees and shrubs in the landscape buffers, location and size of the stormwater pipes, and water and sewer lines, roadway design, and other development requirements are finalized with the subdivision plat and plans. The subdivision plat and plans are typically a 20 to 50-page set of technical documents that are signed and sealed by a licensed engineer and contain extensive engineering and construction details. The

subdivision plat and plans for the Madeline Commons PUD property is required to be designed to meet the requirements of the LDC and the proposed MDA and CDP. At this time, subdivision plat and plans have not been submitted.

Figure 1. Location Map



The subject property is currently undeveloped and surrounded by Sugar Mill Elementary School and several existing residential subdivisions with various sized lots. The residential subdivisions to the north of the subject property are in the city of South Daytona. The subject property has an existing Future Land Use (FLU) designation of *Urban Medium Density Residential* (4 to 8 units per acre) and is zoned Two-Family Residential (R-2D). The land use, zoning, future land use, and density of the adjacent properties is provided below in Table 1. The Future Land Use and zoning maps of the subject property and adjacent properties are attached as Exhibits A and B. The subject property has not been subject to any FLU or zoning amendments since 1985.

Table 1. Surrounding Land Uses, FLU Designations, Zoning, and Density

Direction	Existing Land Use	FLU Designation	Zoning District	Existing Density
North	City of South Daytona Single Family Homes (Harborside Village)	City of South Daytona <i>Residential Density 1</i> (0-4 units/acre)	City of South Daytona Single-Family Residential (R1B)	2.96 u/a
	City of South Daytona Single Family Homes (Coventry Forest)	City of South Daytona <i>Residential Density 2</i> (4-8 units/acre)	City of South Daytona Single-Family Residential (R1C)	3.56 u/a
South	City of Port Orange Sugar Mill Elementary	City of Port Orange <i>Public/Institutional</i>	City of Port Orange Government Public Use (GPU)	N/A
	City of Port Orange Two-Family Homes (Amber Village)	City of Port Orange Urban <i>Medium Density Residential</i> (4-8 units/acre)	City of Port Orange Two-Family Residential (R-2D)	5.03 u/a
	City of Port Orange Single Family Homes (Portona)	City of Port Orange <i>Suburban Residential</i> (2-4 units/acre)	City of Port Orange Single-Family Residential (R-8SF)	4.02 u/a
East	City of Port Orange Single Family Homes (Portona)	City of Port Orange <i>Urban Medium Density Residential</i> (4-8 units/acre)	City of Port Orange Single-Family Residential (R-8SF)	4.02 u/a
West	City of Port Orange Single Family Homes	City of Port Orange <i>Suburban Residential</i> (2-4 units/acre)	City of Port Orange Single-Family Residential (R-10SF)	1.5 u/a

According to the applicant, new homeowners are looking for quality homes on smaller, less maintenance-intensive lots than the homes that have been previously constructed in this area. The applicant also states that the proposed development will complement the surrounding neighborhood by condensing the lots within the boundary of the subject property and allowing more open space for common areas within the PUD property that include stormwater retention areas, tree preservation areas and passive park areas than if the property was developed as a duplex subdivision under its current zoning.

CONSISTENCY WITH THE COMPREHENSIVE PLAN

The ±34.6-acre subject property is designated *Urban Medium Density Residential* (4 to 8 units per acre) on the City's Future Land Use Map (Exhibit 1). The FLU designation for the subject property is **not** proposed to be changed as part of this development proposal and will remain consistent with the surrounding neighborhoods. The Comprehensive Plan states that the *Urban Medium Density Residential* designation is intended to allow for the development of various types of residential uses, such as, duplexes, villas, cluster homes, townhouses, mobile homes, manufactured homes, or multi-family development at densities between four (4) and eight (8) units per acre. The density for the proposed single-family development is 4.3 residential units per acre. As shown in Table 2 below, the density for the proposed Madeline Commons PUD is consistent with the density of the existing FLU for the subject property and the existing residential subdivisions in the surrounding area.

Table 2. Density of Surrounding Subdivisions

Subdivision	Years Plat(s) Recorded	Current FLU	Actual Units per Acre
Proposed Madeline Commons PUD		4-8 units/acre	4.30
Harborside Village – South Daytona	1995-2000	0-4 units/acre	2.96
Countrywalk	1985-1987	4-8 units/acre	3.10
Coventry Forest – South Daytona	1994-2000	4-8 units/acre	3.56
Portona	1925	2-4 units/acre	4.02
Sugar Forest	1977-1978	2-4 units/acre	4.67
Amber Village	1985	4-8 units/acre	5.03
Oak Hammock	1999	4-8 units/acre	5.94
Average Density for Surrounding Area			4.18

Figure 2. Subject Property, Surrounding Developments, and Roadway Network



The City's Comprehensive Plan Policy Objective 2.8 states that the City shall discourage urban sprawl by directing development to the areas within the City's service area boundaries and areas where public facilities and services are available and encouraged infill development consistent with the underlying future land use designation. The proposed Madeline Commons PUD is considered an infill development as it is currently surrounded by existing development and the subject property is served by existing public infrastructure and services (water, sewer, roads, fire, police, schools, etc.) that can support new development. Figure 2 above shows the location of the subject property in relation to the existing developments and roadway network.

DEVELOPMENT PROPOSAL

The following discussion will focus on the significant aspects of the proposed MDA and CDP for the development of the subject property with a maximum of 149 single-family lots (Conceptual Development Plan – Exhibit 3) such as general site layout, access, dimensional requirements, landscape buffers, utilities, and drainage areas.

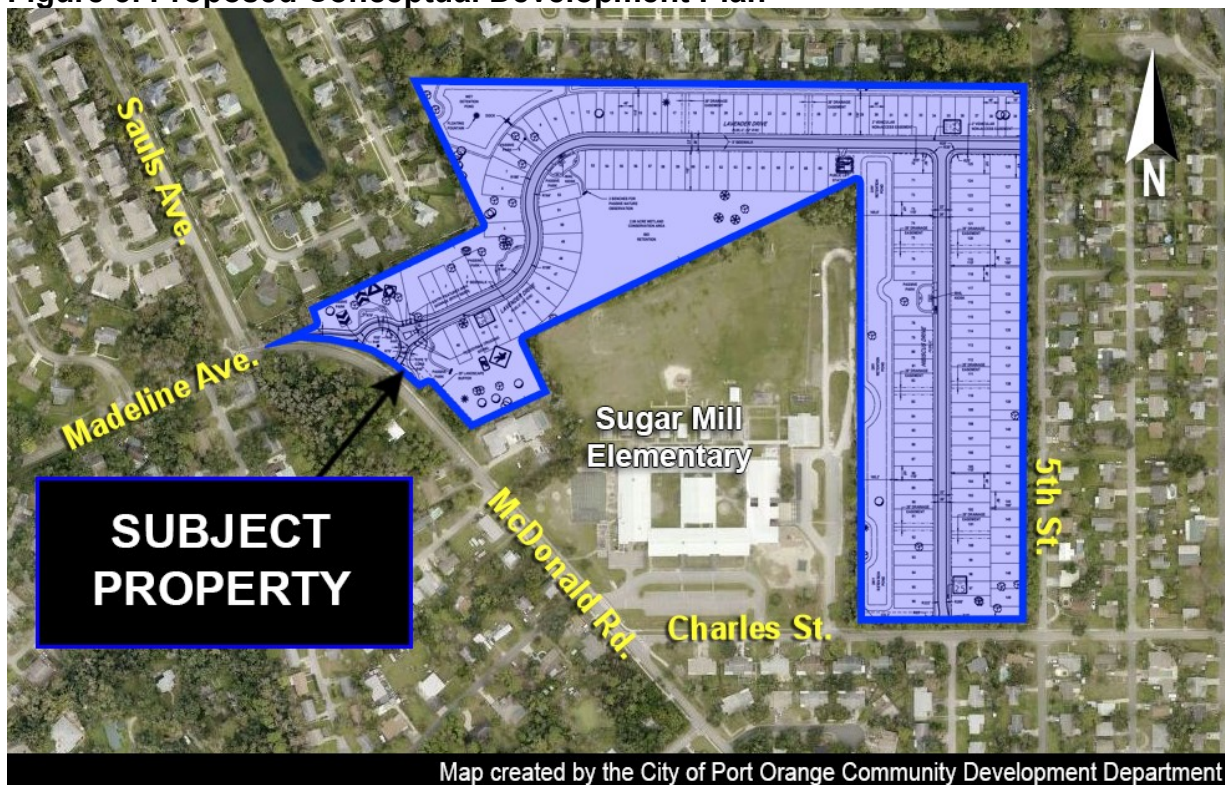
The applicant has requested the PUD zoning to permit the development of single-family homes and the ability to request flexibility in setbacks and lot size to incorporate the existing natural features such as specimen trees, historic trees, and a wetland area into the subdivision design. However, as typical with PUDs, there are deviations from the LDC as part of the proposed Madeline Commons MDA and CDP which are further discussed in the report.

General Layout

The Conceptual Development Plan (CDP) shows the general layout of the single-family lots, stormwater improvements, open space areas, common open space areas, tree preservation areas, public roadways, and off-site roadway improvements (Figure 3 of the Staff Report and Exhibit B of the MDA).

The applicant has also proposed a redesign of the existing Madeline Avenue and McDonald Road curve and the entrance to the PUD development as a round-about to assist in traffic flow and safety at this future intersection. Also, the applicant has proposed a new westbound right turn lane along Charles Street into the Sugar Mill Elementary parent pick-up driveway to assist in reducing on-street school traffic. The proposed improvements are discussed further in the report.

Figure 3. Proposed Conceptual Development Plan



Dimensional Requirements

The proposed MDA provides the dimensional requirements (lot width and area, setbacks, building height, open space, building coverage, etc.) for the single-family lots. According to the applicant, the dimensional requirements in the MDA are to create buildable lots for detached single-family homes while allowing for the preservation of as many trees as possible and a +/- 2-acre wetland; therefore, some of the dimensional requirements are less than conventionally zoned single-family subdivisions. The table below (Table 3) lists the proposed dimensional requirements for the PUD. The requested deviation from the required minimum open space and maximum building coverage requirements for the Madeline Commons PUD are discussed further in the report.

Table 3 - Dimensional Requirements – Single Family Lots

Zoning District	Minimum Lot Width	Minimum Lot Area	Maximum Building Coverage	Minimum Open Space	Front Bldg. Setback	Side Bldg. Setback	Rear Bldg. Setback	Maximum Height
Madeline Commons PUD 40-foot Lots	40 ft.	4,400 sq. ft.	55%	32%	20 ft.	5 ft.	15 ft.	35 ft.
Madeline Commons PUD 50-foot Lots Lot Fronting onto 5th Street)	50 ft.	5,000 sq. ft.	55%	32%	20 ft.	5 ft.	15 ft.	35 ft.
PUD	---	--	40%	40%	--	--	--	35 ft.

Traffic

If the PUD is approved, the proposed subdivision will be required to comply with the City's Transportation Concurrency Management requirements in the LDC. The developer may be required to enter into a Proportionate Fair-Share Agreement with the City to pay for part of scheduled improvements for any impacted areas, similar to other developments within the City.

According to the Institute of Transportation Engineers (ITE) Trip Generation Manual, the proposed 149 single-family-lot development is anticipated to create less trips than if the subject property was developed under the current R-2D zoning as a duplex subdivision. The number of duplex units (156) is based on a conceptual design provided by the applicant that illustrated how a standard duplex development designed under the R-2D zoning district could potentially fit on the subject property. The table below (Table 4) provides the anticipated trips for the proposed single-family subdivision in the Madeline Commons PUD compared to a duplex subdivision.

Table 4. Trip Generation Table

	ITE Code	Daily Trips	AM Peak	PM Peak
Single-Family (149 units)				
Proposed Zoning - Madeline Commons PUD	210	1,502	115	149
Two-Family Residential (156 units)				
Current Zoning – R-2D (Duplex Subdivision)	210	1,566	121	156

Source: ITE Trip Generation Manual 10th Edition

The Institute of Transportation Engineers (ITE) Trip Generation Manual is nationally recognized by transportation professionals including transportation engineers, transportation planners, consultants, educators, technologists, and researchers for conducting vehicle trip generation rate analysis studies, determining on-site circulation patterns, performing access management studies, and determining traffic signal timing.

According to the latest traffic counts for Charles Street, McDonald Road, and Madeline Avenue, there is capacity for the anticipated $\pm 1,502$ vehicular trips estimated to be generated by the proposed Madeline Commons PUD project (Table 5). The city conducts traffic counts each year and during the school year to capture all daily traffic along its streets. The 2020 Traffic Counts were completed in October 2020 and are anticipated to increase in 2021 to a more typical volume as schools and businesses return to regular operations from the decrease seen during the COVID-19 state of emergency in 2020.

Table 5. Roadway Capacities for Roadways Adjacent to Madeline Commons

Roadway Segment	Roadway Classification Per City Comp Plan	Maximum Capacity Vehicles Per Day	2019 Volume Per Day	2020 Volume Per Day	Remaining Capacity Vehicles Per Day	V/C Ratio****
Charles St. (US1 to FEC Railroad)	Local Collector*	12,744	2,031	1,879	10,865	14.74%
Charles St. (FEC Railroad to McDonald Rd.)	Local Collector*	12,744	2,776	2,114	10,630	16.59%
McDonald Rd. (Charles St. to Madeline Ave.)	Local Collector*	12,744	2,990	2,656	10,088	20.84%
Madeline Ave. (Sauls Rd. to Nova Rd.)	Minor Arterial**	14,040	5,264	4,652	9,388	33.13%
Nova Rd. (N. City Limits to Madeline Ave.)	Principal Arterial ***	39,800	27,000	--	12,800	67.84%

Source: City of Port Orange, Traffic counts conducted by Traffic Engineering Data Solutions, Inc. (TEDS)

* Local Collector Roadway – A route that provides primary access to or through a subdivision or subdivisions and connects those developments to the major collector and arterial system.

** Minor Arterial Roadway – A route which generally interconnects with principal arterial routes and provides service to trips of shorter length and a lower level of travel mobility.

*** Principal Arterial Roadway - A route which generally serves the major centers of activity of an urban area, the highest traffic volume corridors, and the longest trip purpose and carries a high proportion of the total urban area travel on a minimum of mileage.

****Volume/Capacity (V/C) Ratio - Volume-Demand-to-Capacity Ratio compares roadway demand (vehicle volumes) with roadway supply (carrying capacity). A V/C ratio of 1.00 indicates the roadway is operating at its capacity.

Although roadway capacity exists along the adjacent roadways, it has been observed that during the school year, cars stack within the travel lanes along Charles Street during parent pick-up and drop-off times. To minimize on-street stacking along westbound Charles Street, a requirement of the MDA is for the developer to dedicate additional right-of-way along Charles Street for a right-turn lane into the parent pick-up/drop off loop on the east side of the school property to be constructed as part of the subdivision improvements. The MDA additionally specifies that this work may only be done when school is not in session.

Access and Parking

The subdivision will be accessed from entrances along McDonald Road/Madeline Avenue, Charles Street, and 5th Street. The streets within the Madeline Commons PUD will be designed as public roads as required by the LDC.

The CDP proposes to modify the curve that transitions Madeline Avenue to McDonald Road and build a round-about at the entrance to the subdivision. The round-about is an alternative to installing a new street entrance along the existing curve which could potentially be a traffic safety issue regarding visibility around the curve. According to research conducted by the Federal Highway Administration, roundabouts are a safer alternative to two-way stops and signalized intersections as they reduce vehicular and pedestrian conflict points and serve as a traffic-calming devices as slower speed are required to navigate the circle. The traffic circle is not anticipated to reduce roadway capacity and according to FDOT, up to 14,000 vehicles per day can travel through a single-lane, three-leg round-about. Pedestrian safety improvements will be provided including signage, lighting, and pavement markings to warn drivers and assist pedestrians travelling through the traffic circle. The Volusia County School District was provided the CDP for review and had no comments or concerns regarding the proposed round-about.

The proposed subdivision will comply with the parking requirements in the City's LDC for residential single-family homes. The CDP also shows on-street parking spaces, separate from the travel lanes adjacent to the proposed mail kiosk areas. These parking spaces will be maintained by the HOA and allow residents to park to get their mail without blocking a travel lane. Sidewalks will be provided along both sides of the proposed public streets as well as the west side of 5th Street, as required by the LDC.

Tree Preservation, Landscaping, and Buffers

The proposed PUD will comply with the landscaping and tree preservation requirements of the LDC, including perimeter landscape buffers and tree preservation. A formal review of the landscaping and tree preservation will occur with the review of the subdivision plat and plans to verify compliance with the proposed MDA and LDC.

A minimum ten (10) foot wide buffer is proposed along the north perimeter and adjacent to the school property. A twenty (20) foot wide right-of-way buffer will be provided along McDonald Road and Charles Street. The proposed perimeter buffers meet or exceed the minimum perimeter buffers required by the LDC. At the request of the Volusia County School District, the applicant has agreed to install a 6-foot-tall privacy fence between the PUD property and the school property at the time the subdivision is developed.

The LDC requires a minimum 15% of the subject property to be reserved for the protection of existing trees. The proposed CDP provides 8.26 acres (23.9%) of the subject property as tree preservation area, which is greater than the minimum 15% (5.19 acres) required by the LDC.

The LDC requires a minimum of 80% of the existing 81 specimen trees on the subject property to remain. The proposed CDP shows 66 specimen trees or 81% of the existing trees being preserved. The specimen trees proposed to be removed will be mitigated with a contribution towards the City's Tree Mitigation Bank or replacement trees, or a combination of both, as per the requirements of the LDC. Within the specimen tree count, there are three (3) historic live oak trees on the subject property that will remain and be incorporated into the design of the subdivision common areas.

The proposed MDA requires any proposed development of the subject property to comply with the City, County, State, or Federal regulations that pertain to protected wildlife species and wetlands. There are five (5) areas identified as isolated wetlands on the subject property totaling ± 3.4 acres. Of the five (5) wetland areas, four (4) of the smaller wetland areas (± 1.39 acres) are proposed to be impacted and mitigated at the time the subdivision is developed, according to the current Volusia County and LDC mitigation requirements. According to the environmental study prepared by Ecological Consulting Solutions, Inc. that was submitted with the PUD application, the four (4) small wetland areas have been impacted by adjacent development over time, are isolated and of poor quality and will be filled as part of developing the subdivision. The larger ± 2 -acre wetland, located north of the school property will remain and be covered by a conservation easement.

Potable Water and Sanitary Sewer

The proposed subdivision will be served by City potable water and sanitary sewer and will comply with the requirements of the City's Land Development Code (LDC) and proposed MDA for improvements related to potable water and sanitary sewer. Irrigation will be provided by a private well and will comply with the requirements of the City's LDC.

Stormwater Management

The stormwater drainage infrastructure for this project will be provided as generally depicted on the CDP with a combination of both wet and dry retention areas. The stormwater drainage design will be reviewed with the submittal of the subdivision plans. Per the City's Land Development Code, the applicant will be required to construct on-site stormwater facilities designed to accommodate and treat the 25 year, 24-hour storm event, without causing flooding to adjacent properties or polluting the receiving water bodies.

The drainage area shown on the CDP will provide stormwater drainage for the entire 34.6-acre property and will also be required to meet the stormwater requirements of the St. Johns River Water Management District. The CDP shows the existing ditches along 5th Street and Charles Street being piped to maintain the conveyance capacity of existing runoff patterns. If the PUD zoning amendment is approved, formal engineered drainage plans are required to be submitted as part of subdivision plat and plans application.

Architecture

The single-family homes in the Madeline Commons PUD will be detached one or two-story homes. If the rezoning is approved, the subdivision covenants and restrictions will govern the aesthetics of the homes.

Schools

The Volusia County School District provided a determination that there is adequate school capacity at existing schools for the estimated forty-two (42) students anticipated to be generated by the proposed development (Exhibit 4). Concurrency reservations are required to be made at the time of subdivision plat and plans review.

Policy Issues

The following is an analysis of the requested deviations from the Land Development Code (LDC) in the proposed Madeline Commons PUD. The PUD zoning district allows the applicant to request flexibility from standard code requirements. To be eligible for this flexibility, the applicant must provide innovative subdivision or site design. The Planning Commission and City Council will need to consider the following deviations from the LDC requested by the applicant:

Establish a minimum open space requirement of 32% and a maximum building coverage of 55%. The LDC has both a maximum building coverage and a minimum open space requirement per lot that varies based on the zoning category. The PUD zoning district requires a maximum building coverage of 40% and 40% of the lot to remain as open space, with the remaining 20% of the lot area dedicated for impervious improvements such as driveways, patios, pool decks, sidewalks, etc. According to the applicant, the direction of this project is to provide enhanced common open space and amenities (walking paths, seating areas, park areas, conservation areas, etc.) for the enjoyment of all homeowners rather than providing more private open space on individual lots. This creates less yard maintenance for individual homeowners and allows for more of the existing trees to be preserved in common areas. The applicant states that because a PUD requires 60% of the subject property to be open space, it off-sets the reduction in the amount of open space on the proposed single-family lots. In comparison to the current zoning on the subject property (R-2D), development of a duplex subdivision would not require additional open space beyond the 32% on a platted lot and a minimum 15% tree preservation area.

- a. The LDC requires the maximum building coverage on each single-family lot to be 40%. The intent of the maximum building coverage for the single-family lot is to establish the maximum area of a lot that can be covered by both principal and accessory buildings to preserve open space on the lot. Based on the information provided by the applicant, the proposed building coverage for the single-family lots is 55%. According to the applicant, the intent of this subdivision is to provide detached single-family homes that meet the current demands of home buyers and off-set the reduced private yard area with common open area and amenities for all homeowners to use instead of private open space on individual lots.

- b. The LDC requires a minimum of 40% open space on each single-family lot. The intent of this code requirement is to retain a portion of each lot that is not developed with impervious surfaces or a building. According to the applicant, while the proposed lots do not meet the 40% open space requirement, the overall 34.6-acre development is designed with open space that exceeds 60%. The applicant states that the intent of this subdivision is to create a subdivision with a priority on providing open area and amenities for all homeowners to use instead of private open space on individual lots. Based on information provided by the applicant, the minimum open space for a lot is 32%.

Public Notice

A Public Notice sign was posted on the site on September 18, 2020. As of September 1, 2021, staff has received phone calls or office visits from seventeen (17) people requesting general information regarding the proposed PUD rezoning. Concerns included traffic, drainage, environmental issues, and school impacts.

A neighborhood meeting was held by the applicant on February 23, 2021 at The Lakeside Center and was attended by approximately 90 people. According to the applicant's summary of the neighborhood meeting (Exhibit 5), questions from the residents that attended were regarding drainage, traffic, and the project's effect on their quality of life. A second neighborhood meeting was held by the applicant on April 16, 2021 at the Piggotte Center in South Daytona and was attended by approximately 40 people. The purpose of this meeting was to discuss the updated proposed rezoning and to receive additional feedback. Attendees had similar concerns as the previous meeting. The initial PUD submittal was for a residential subdivision with 192 townhome lots and 62 single-family lots (254 total units). However, based on feedback from staff and residents over the last 6 months, the applicant revised the request to be for a residential subdivision with 149 single-family lots. The current plan does NOT contain any townhome units.

Recommendation

Staff recommends approval of the rezoning of ±34.6 acres from R-2D (Two-Family Dwelling) to PUD (Planned Unit Development) and approval of the Madeline Commons PUD Master Development Agreement and Conceptual Development Plan, subject to approval of the policy issues discussed in the staff report as requested by the applicant:

1. Establish a minimum open space requirement of 32% and a maximum building coverage of 55% for the individual lots.

Attachments

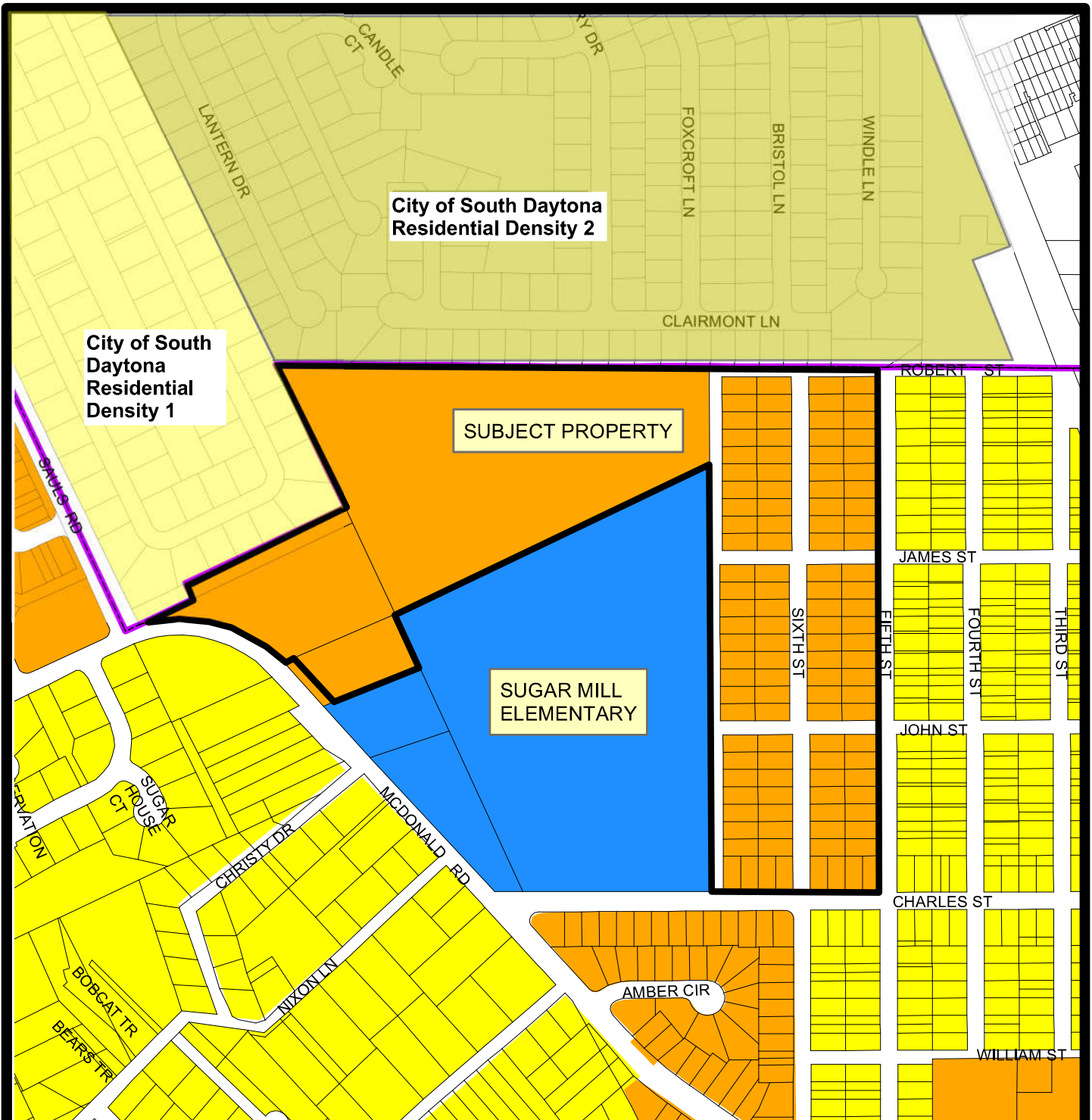
Exhibit 1 – Current Future Land Use Map

Exhibit 2 – Current and Future Zoning Map

Exhibit 3 – Madeline Commons Master Development Agreement and Conceptual Development Plan (See Ordinance Exhibit)

Exhibit 4 – School District Review Letter

Exhibit 5 – Neighborhood Meeting Summaries



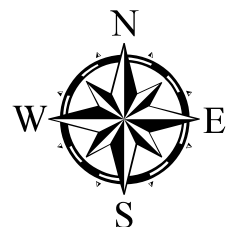
CURRENT FUTURE LAND USE

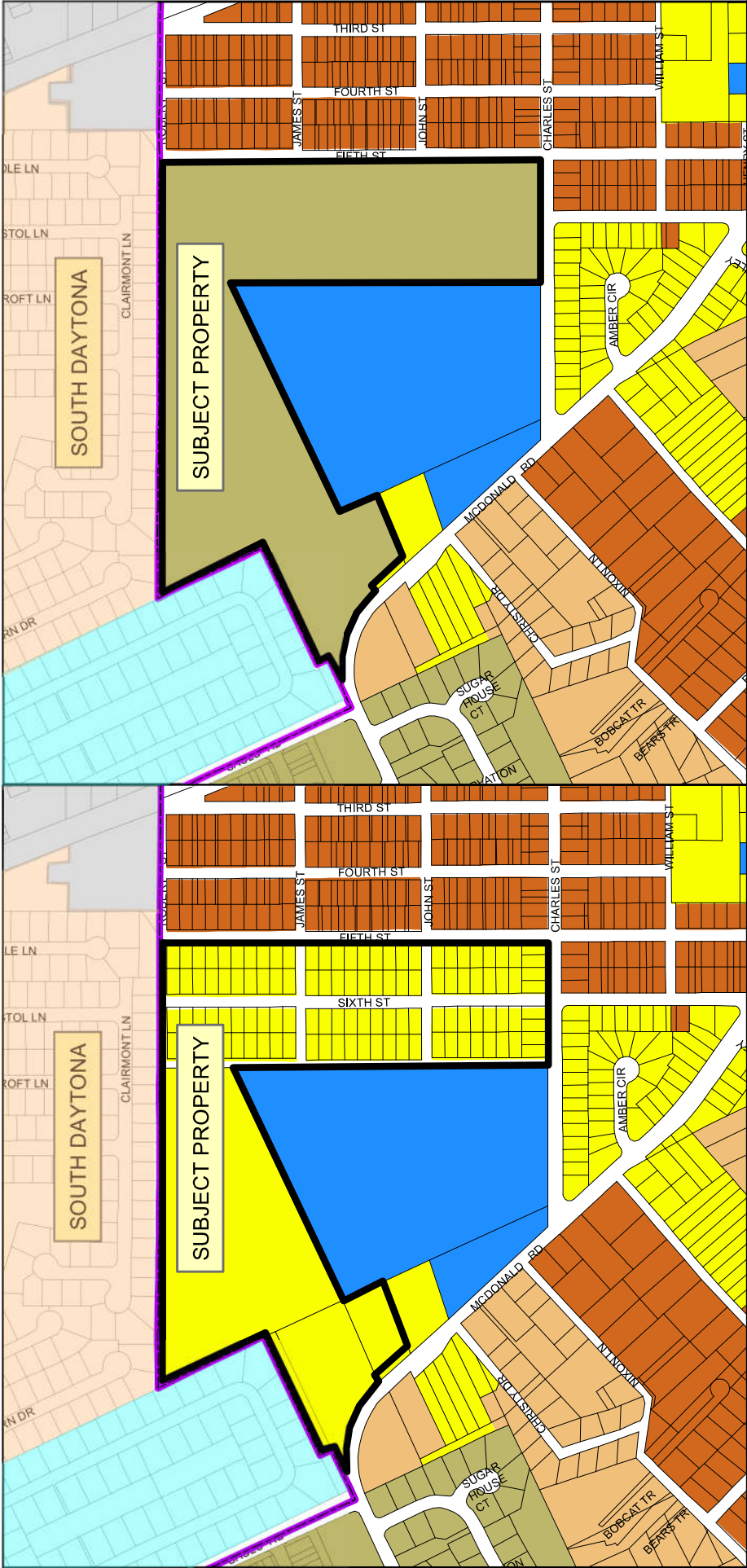
- Public/Institutional
- Suburban Residential
- Urban Medium Density Residential
- City Boundary



CITY OF PORT ORANGE

DEPARTMENT OF COMMUNITY DEVELOPMENT

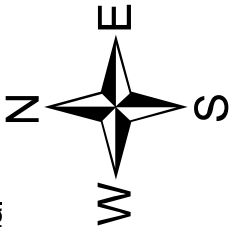




PROPOSED ZONING

- City of South Daytona R1C Single Family Residential
- City of South Daytona Light Industrial

- R-10SF Single Family Residential
- R-2D Two Family Residential
- R-8SF Single Family Residential
- City of South Daytona R1B Single Family Residential



CURRENT ZONING

City Boundary

ZONING

Government/Public Use

Planned Unit Development



Scott Fritz, Ed.D.
Superintendent of Schools

School Board of Volusia County

Mrs. Linda Cuthbert, Chairman
Ms. Jamie M. Haynes, Vice Chairman
Mrs. Anita Burnette
Mr. Ruben Colón
Mr. Carl Persis

School Adequate Capacity Determination Finding of Adequate Capacity Letter

July 20, 2021

Mr. A. Joseph Posey, Jr., Esq.
Storch Law Firm
420 South Nova Road
Daytona Beach, FL 32114

RE: Madeline Commons – City of Port Orange (Second Amended Application)
School Capacity Review #20-10-13-001-A

Dear Mr. Posey:

The County Charter requires any Comprehensive Plan Amendment or Rezoning that allows increased residential density to be effective only when adequate public schools can be timely planned and constructed to serve the projected increase in student population. The district uses this requirement as the guiding principle behind the school adequate capacity review.

The District has reviewed the updated information for the proposed PUD Madeline Commons associated with 34.602 +/- acres of property located at the intersection of Madeline Avenue and Nova Road within Port Orange city limits. Proposed amendment would provide for one hundred and forty-nine (149) single-family-home units.

The district uses a county wide Student Generation Rate (SGR) of (0.273) per single-family dwelling unit to calculate projected students. By applying the SGR to the use types in Table 1 below, the project could generate forty-two (42) full time students.

Table 1

UNIT TYPE	SGR	UNIT COUNT	STUDENTS GENERATED
Single Family Dwelling Unit	0.273	149	42
Multifamily Dwelling Unit	0.127	0	0
Manufactured Home Dwelling Unit	0.047	0	0
	Total	149	42

Madeline Commons – Daytona Beach
July 20, 2021

When performing adequate capacity review district staff evaluates the effects of the proposed change compared to any remaining permanent capacity within the impacted schools, up to 100%, Table 2. The projected increase in student population may be over 100% if there are plans to serve increased student population in that planning area within the long-term planning horizon. A finding of adequate capacity may be issued in either case.

Table 2

Schools	2019-20 SY Enrollment	% of Permanent Capacity	Plans for capacity increase long-term	Traditional K-12 Students projected
Sugar Mill Elementary	633	112.84%	No	18
Silver Sands Middle	1,324	118.26%	No	11
Spruce Creek High	2,501	122.27%	No	12
Other				1

The student projections generated by this project will increase the existing percentage above 100% permanent capacity at all levels. Sugar Mill Elementary is projected to decrease in total students over the next several years to be at or below 100%. Currently, the planning area (Halifax) for Silver Sands Middle School and Spruce Creek High is at or over 100% but below 115% and 120%, respectively, for concurrency. Based on this and long-term plans for growth, the school district has no objections to the proposed development plan. Minimum planning considerations should include pedestrian and vehicular access, safety, connectivity, and buffering.

All future development orders, such as site plans and subdivisions, are subject to school concurrency review. School concurrency will be evaluated at that time when the impact of development is specifically quantified and known. Only funded school improvements and then current capacity will be considered at that time.

No Student Reservations have been made at this time.

Please note the School Board has the right to adjust the attendance boundaries to balance the student enrollment populations at these area schools. Consequently, students generated from this project may not attend the current assigned schools.

Should you have additional questions, please contact me at (386) 947-8786, extension 50709.

Sincerely,



Stephanie B. Doster,
Coordinator, Planning

CC: Scott Fritz, Ed.D, Superintendent of Schools
Steven Grube, Director, Planning and Construction
Perney Gwen, Principal Planner, City of Port Orange
Lisa Divina, Volusia County School Board Project File



Finding of Adequate School Capacity **Volusia County School Board**

Project Information	
Project Name	Madeline Commons
VCSB Project #	#20-10-13-001-A
Jurisdiction Project#	
Parcel ID Numbers:	6304-00-00-0021; 6337-01-13-010; 6304-02-22-0010; 6337-01-13-0017
Project Location:	Madeline Avenue and Nova Road
Potential Residential Units:	149 Single Family Units
Property Owner/Applicant:	A. Joseph Posey, Jr., Esq. – Agent
Notes: Additional review will be required at the time of subdivision/site plan submittal(s). No Student Reservations have been made.	

Based upon the Findings of Fact, pursuant to School Board Policy 612 and Section 206 of the County Charter, the school district has determined at this time that school capacity is adequate to serve the proposed increase in residential density. This Finding shall constitute competent substantial evidence that adequate public school capacity is likely to be available at the time it is required to serve the planned new development.

Capacity is not being reserved with this Finding unless otherwise noted on this document. This Finding of Adequate School Capacity allows this subject project to continue through the Comprehensive Plan Amendment and/or rezoning process; however, it may be subject to additional school capacity review in the future.

A blue ink signature of Stephanie B. Doster, consisting of a stylized 'S' and 'D'.

Stephanie B. Doster
Coordinator, Planning

20 July 2021
Issue Date

Exhibit 5

SUMMARY OF NEIGHBORHOOD MEETING FOR MADELINE COMMONS

A neighborhood meeting was held on February 22 at 6:00PM at the Lakeside Community Center to discuss the proposed residential Planned Development rezoning for Parcel Nos. 6304-00-00-0021, 6337-01-13-0010, 6304-02-22-0010, and 6337-01-11-30-0017. In attendance at the meeting were A. Joseph Posey of Stoch Law Firm, attorney for the developer; Harry Newkirk of Newkirk Engineering, the project engineer. Approximately 90 area residents and neighbors were in attendance. A sign-in sheet was provided, however, the number of attendees made it difficult to direct an orderly use of the sign-in sheet, therefore, it was not utilized. Although there were a number of attendees from neighborhoods in the City of South Daytona, most of the attendees lived in the City of Port Orange.

Mr. Posey began by giving a presentation that explained existing conditions and entitlements for the property, and then moved to explain the features of the Madeline Commons Planned Development. The presentation highlighted the additional amenities being proposed with this development (i.e., club house for residents, the clustering of development that allow for an increase in buffers and open space, redesign of Madeline and McDonald transition to alleviate congestion and address pedestrian safety and assisting the City with the redesign of the Madeline and Nova intersection). There were several comments provided prior to the meeting by area residents, with regard to traffic, drainage and environments, and those comments were incorporated into the presentation. A full-size concept plan, several building elevations and a proposed entrance feature were on display before, during and after the meeting so that attendees could see a graphic depiction of the development. After finishing his presentation of the project, Mr. Posey opened the meeting to questions. The questions included:

- How compatible is this project with the surrounding community?
- How will this project access 5th Street?
- How will this project affect access from Sauls Street?
- How much will homes cost in the development?
- What traffic improvements options are available for the Madelina and McDonald transition?
- How far is the development from adjoining residents?
- Why are you proposing townhomes as part of the project?
- What density are you proposing? Can density be reduced for this project?
- How much of a buffer will be provided along Charles, McDonald and Madeline?
- How will you be addressing drainage issues in the area?
- How will you be addressing traffic congestion during and after school hours?
- Can you work with the school to help with the traffic situation?
- How will the existing wildlife be affected? What areas of the project are being preserved?
- Will the project have an HOA?
- What is the process for approval and how many hearings will there be on this project?

Mr. Newkirk addressed the design questions related to drainage and traffic. The question-and-answer session for the project continued for about an hour and half. There were many comments about the affect on quality of life in the area. All attendees were encouraged to contact Mr. Posey's office if they had any follow up questions or comments. Mr. Posey stated that he will investigate options to address the traffic and design related concerns raised by the residents. The meeting ended approximately at 8:15 PM.

SUMMARY OF SECOND NEIGHBORHOOD MEETING FOR MADELINE COMMONS

A neighborhood meeting was held on April 16th at 6:00PM at the Piggotte Center Reception Hall to discuss the updated concept plan form the proposed residential Planned Development rezoning for Parcel Nos. 6304-00-00-0021, 6337-01-13-0010, 6304-02-22-0010, and 6337-01-11-30-0017. In attendance at the meeting were A. Joseph Posey of Stoch Law Firm, attorney for the developer; Harry Newkirk of Newkirk Engineering, the project engineer; and Crystal Mercedes, Transportation Planner for Lassiter Transportation. Approximately 40 area residents and neighbors were in attendance. A sign-in sheet was provided and copy of same is enclosed. Although there were a number of attendees from neighborhoods in the City of South Daytona, most of the attendees appeared to be from the City of Port Orange.

Mr. Posey began by giving a presentation that explained the revisions to the concept plan, which included the traffic improvements, proposed round-about and turn lane for school traffic. He then moved to explain the reduced number of townhomes proposed and the addition of more single-family lots within the project. The presentation was structured as an update to compare the changes from the previous plan. A full-size concept plan, several building elevations and a proposed entrance feature were on display before, during and after the meeting so that attendees could see a graphic depiction of the development. After finishing his presentation of the project, Mr. Posey opened the meeting to questions. The questions included:

- How much are homes within the development?
- How can short term rentals be restricted within the community?
- How can quality be maintained for area residents?
- With project have an HOA?
- What are the existing entitlements for the project? How do they affect future development rights?
- How much will homes cost in the development?
- How large are the buffers within the development?
- What other traffic improvements are possible for the project?
- What drainage improvements are proposed for the project?
- Can you elaborate on the discussions with the School to address the traffic situation?
- What is the process for approval? How many hearings will there be on this project?

The question-and-answer session for the project continued for most of the meeting. Mr. Newkirk addressed the design questions related to site design and drainage, and Crystal Mercedes addressed traffic related questions. There were many comments about the quality within the development and a back and forth about options to address traffic, including the potential use of traffic tables for speeding. All attendees were encouraged to contact Mr. Posey's office if they had any follow up questions or comments. Mr. Posey stated that he will continue investigating options to address the traffic and design related concerns raised by the residents. The meeting ended approximately at 8:00 PM.

**MADELINE COMMONS PLANNED UNIT DEVELOPMENT PUD
MASTER DEVELOPMENT AGREEMENT**

This Madeline Commons Planned Unit Development (“PUD”) Master Development Agreement (“MDA”) is entered into by and between the City of Port Orange, a Florida municipal corporation (the “City”), and Madeline Commons, LLC, a Delaware limited liability company (the “Owner”), including its successors and assigns, (collectively the “Parties”), hereby covenant and agree, and bind their successor and assigns as follows:

1. OWNERSHIP OF THE PROPERTY

This Planned Unit Development, commonly known as “Madeline Commons”, involves approximately +/- 34.602 acres of land which is legally described on Exhibit A attached hereto, and shall henceforth be referred to as the “Property”. The Property is under unified ownership of the Owner, a signatory to this Agreement. This Agreement between the City and the Owner shall revoke any and all prior development agreements applicable to the Property.

2. DEVELOPMENT CONCEPT

The Madeline Commons PUD provides for single-family detached residential development and townhomes that protect the moderate-density and transitional character of the Charles Street area. The Property will be subdivided into a maximum of one hundred and forty-nine (149) single-family lots for detached dwelling units, with buffers that ensure the project is compatible with the surrounding, existing neighborhoods. All single-family-lots will be privately owned.

3. DEVELOPMENT AGREEMENT AND CONCEPTUAL DEVELOPMENT PLAN

Development of the Property shall be controlled by the terms and provisions of this Madeline Commons PUD, The MDA and the Conceptual Development Plan (“CDP”), attached hereto as Exhibit “B”, for the Property which generally depicts the planned layout of public roads, lots, amenities, and other planned features or improvements to the Property and demonstrates the

lot coverage requirements available to lot owners within the PUD. Collectively, this MDA and the CDP for the Property may be referred to as the “Plan”. In the event of a conflict between the terms and provisions of the MDA and the graphic illustrations of the CDP, the MDA shall control. If the MDA is silent regarding a particular subject or requirement, such silence shall not be construed as a conflict with the CDP. If the Plan fails to address a particular subject or requirement, the applicable City ordinances in effect at the time of development, as defined by the City of Port Orange Land Development Code (“LDC”) shall control. The parties acknowledge that compliance with the City’s LDC may necessitate modification to the CDP. In the event modification to comply with the LDC is required, and the modifications to the CDP are not in conflict with the textual provisions of this MDA and any City ordinances not superseded by this MDA, the modifications shall be deemed “minor” and may be approved without formal amendment of this MDA. Minor modifications shall require the City Administrative Official’s written approval. If the Owner is not satisfied with the suggested resolution of any problem or the decision by the City Administrative Official categorizing the modification as minor or major, the Owner may appeal the decision pursuant to the LDC.

4. USAGE OF THE PROPERTY

A. Permitted Uses

The Property shall be used for residential purposes and developed as a residential community with common open space and other buffers as specified herein. The Property shall be developed for a maximum of one hundred and forty-nine (149) single-family, detached dwelling units, for a maximum of 4.31 dwelling units per acre. When considered in light of other housing and community choices in the vicinity, the Madeline Commons PUD will provide for a compatible residential development that is consistent with the surrounding land use pattern and will protect

the character of the existing residential subdivisions in the vicinity to the Madeline Commons PUD.

The PUD will have an overall density of 4.31 dwelling units per acre which is consistent with the density requirements of the “Urban Medium Density Residential (4 to 8 Units per acre)” Future Land Use designation of the Property. This design also provides for a compatible transition between the varying densities of the surrounding properties.

B. Dimensional Requirements

Lot dimensions and configurations within the Property are generally depicted on the CDP. The lot sizes and configurations shall comply with the minimum dimensional requirements described below. The lot dimensions and areas shown on Exhibit “B” may be adjusted during the final subdivision process.

The total number of residential units in the development shall not exceed 149 dwelling units or a gross project density of 4.31 dwelling units per acre.

1. Single Family Lot Development Requirements

a. Setbacks

- i. Front: 20 feet
- ii. Front Corner: 20 feet
- iii. Rear: 15 feet
- iv. Side: 5 feet

b. Minimum Lot Size

i. 40-Foot-Wide Lots

- 1. Width: 40 feet
- 2. Depth: 110 feet

3. Area: 4,400 square feet
 - ii. 50-Foot-Wide Lots
 1. Width: 50 feet
 2. Depth: 100 feet
 3. Area: 5,000 square feet
 - c. Maximum Building Height: 35 feet (measured from the grade to the mid-point of the trusses)
 - d. Minimum Open Space: 32%
 - e. Maximum Impervious Area: 68%
 - f. Maximum Building Coverage: 55%
 - g. Minimum Living Area: 1,100 square feet
 - h. Permitted accessory structures for single-family residential lots shall be as provided for in the City LDC.
2. Overall PUD Development Requirements
 - a. Maximum Building Coverage: 40%
 - b. Minimum Open Space: 60% (20% of which shall be common open space)

C. Open Space

Notwithstanding the open space requirements for individual lots, 60% of the Madeline Commons PUD shall be open space, and 20% of the Madeline Commons PUD shall be common open space.

D. Notice

The Owner shall provide a written notice in the covenants and restrictions and in each contract for sale and purchase of lots in the Madeline Commons PUD stating the following:

“Accessory structures shall not be permitted to be located in the perimeter landscape buffers established in Section 11 of the Madeline Commons PUD MDA, except as provided in that section. Buildings on the lots shall not be permitted to exceed the total building lot coverage requirements established in Section 4 of the MDA.”

5. ARCHITECTURAL STANDARDS AND REVIEW

The overall architectural theme of the project shall be consistent with covenants and restrictions adopted for the non-profit homeowners’ association created pursuant to Section 11 of the Madeline Commons PUD MDA.

6. PHASING

The development of the Madeline Commons PUD may occur in a single or two phases. Each proposed phase shall include the construction of all subdivision and infrastructure improvements necessary for said phase to stand alone. Project amenities, such as park areas and on-street parking spaces, shall be constructed prior to issuance of a certificate of occupancy for the first house in the phase in which they are located. Any proposed phasing must meet the minimum requirements of the City LDC.

7. SANITARY WASTE, STORMWATER, AND POTABLE WATER

In the event of development, the Owner will extend water and sewer lines to serve the Property and the development authorized herein and the water and sewer lines shall be public utilities. If the City desires to extend the water and sewer lines prior to the Owner’s need for installation of the Owner’s lines, the Owner shall grant the necessary utility easement to the City and the City shall install and pay for such lines. All lines and other necessary infrastructure shall be sized adequately to serve both the adjoining property and the lots within the PUD. The Owner shall comply with the City’s LDC and the rules and regulations of the St. Johns River Water

Management District concerning stormwater drainage. Stormwater flow calculations for all turn lane improvements, including modifications to the Charles Street northerly ditch and Fifth Avenue westerly ditch, must take into account all contributing flow from the school property and watershed southerly of Charles Street. Fifth Avenue westerly ditch south of John Street will require a minimum 30" stormwater pipe. Driveway aprons along Fifth Street must not block existing stormwater flow draining to Halifax River through John Street infrastructure.

Irrigation to be provided by the lowest quality water source, including reclaimed water, surface/storm water, or an irrigation well if available. If a lower quality water source is not available or not deemed feasible pursuant to St. Johns River Water Management District Rule or applicable state law, then potable water will be used for irrigation. Potable water and sanitary sewer will be supplied to the Property by City of Port Orange. Upon completion of all infrastructure for utilities, the same will be conveyed to the City of Port Orange. Currently, there is an existing lift station on 5th Street for sewer and an existing water main for potable water for the Property to tie into. The Owner shall be responsible for any utility infrastructure upgrades needed for the development, including the relocation of any existing utilities. Improvements will be constructed in accordance with City of Port Orange Utility Construction Standards.

All single-family lots shall maintain a minimum eight (8) foot separation between air conditioning units, door stoops, generators, gas tanks, or other mechanical equipment on adjacent lots, and fences shall have a minimum six (6) inch clearance under them for stormwater runoff to flow, and there shall be no landscaping between homes in the side yard except for one (1) three (3) gallon shrub in front of the air conditioning unit or other mechanical equipment.

Runoff from higher adjacent lands, if any, shall be considered as part of site plan and subdivision review, and provisions for conveyance of said runoff shall be included in the

drainage plan. The Port Orange Nova Canal North and Halifax River Watersheds Stormwater Master Plan will be used to establish tailwater and other project boundary conditions. The stormwater report shall include the depressional storage volume when modeling the pre-existing conditions for the 25 year/24 hour and 100 year/24-hour frequency storms. The minimum floor finished elevation shall be one foot above the Base Flood Elevation project wide.

8. ACCESS AND PARKING

A. ACCESS. The minimum fifty (50) foot wide roadways identified as Lavender Drive and Hibiscus Drive shall be dedicated to the City for use by public as generally depicted on the CDP. The exact location of all roadways and reserved street names will be provided and depicted when the Property is subject to the subdivision process. A minimum 20-foot clearance will be provided along all roadways to ensure emergency response vehicle access.

B. PARKING

i. Single Family Lot Parking

1. Each single-family lot shall have a driveway with adequate space to park at least two standard size vehicles and a garage with adequate space to park at least two standard size vehicles.

ii. Common Parking Spaces

1. The additional parking spaces shown on the Conceptual Development Plan shall be provided to accommodate visitors and guests.

9. INFRASTRUCTURE IMPROVEMENTS.

The proposed development will require the Owner's removal of the existing eastbound Madeline Avenue curve transition to McDonald Road and dedication of the northwest property

corner for new proposed roadway round-about connecting Madeline Avenue and McDonald Road, as generally depicted on the CDP. The round-about will be dedicated to the City by either subdivision plat or separate instrument. Pedestrian crossing signaling, crosswalk striping, and yield signage shall be constructed for the round-about together with appropriate pedestrian crossing improvements for Lavender Drive and Sauls Street, at the Owner's expense. An off-site right turn lane, generally depicted on the CDP west of the project entrance on Charles Street, shall be constructed by the Owner and connect to the first parent loop for Sugar Mill Elementary School for use by the school. All roadway improvements proposed for the realignment of the Madeline Avenue and McDonald Road intersection shall be constructed at the same time as the other roadway infrastructure for the subdivision; however, roadway improvements on Charles Street shall only be constructed during the summer months to avoid the fall and spring school sessions at Sugar Mill Elementary.

The City acknowledges that the above connection to the first parent loop for Sugar Mill Elementary School will help address needed roadway improvements identified by the City. In furtherance of the obligations set forth herein, the City and the Owner shall enter into a Transportation Impact Fee Credit Agreement for said improvements and provision of plans for future improvements at the time of submission of plat and plans for the Project, with amount of credits not to exceed \$134,398.00, in a form substantially the same as the attached, marked as Exhibit "C" and made a part hereof by reference.

Sidewalks shall be constructed as depicted on the CDP. A five-foot (5') sidewalk shall be installed for public use along each side of the public roadways within the development.

10. IMPACT FEE CREDIT

The development of the Property shall comply with the transportation concurrency management requirements established in the City of Port Orange Comprehensive Plan and LDC. Nothing in this Agreement shall be construed as a waiver by the Owner of its right to pursue impact fee credits for any and all work performed by Owner for which impact fee credits can be awarded.

11. MAINTENANCE OF COMMON OPEN SPACE AND COMMON FACILITIES

The Owner shall form and incorporate a non-profit homeowners' association (the "HOA") which will operate, maintain and control, subject to other documents of record, the common areas, and common facilities, including but not limited to stormwater drainage systems within the Property, the vehicle staging and mail kiosk areas, and the entrance features and landscape buffers on the Property. The development will be a platted subdivision of the Property.

The general scope and format of the HOA documents, and the covenants and restrictions, will be similar in concept to the documents of similar home owners' associations in Port Orange. The covenants and restrictions governing the Property and association responsibility shall be executed and recorded in the Public Records of Volusia County, Florida. The HOA will have a board of directors to legislate and govern the rules and orders of the HOA. The HOA board will have the means and authorization to carry out and regulate the by-laws and restrictions governing the maintenance, operation and repairs of all common areas and facilities. Not only will the board of directors be able to regulate and govern the common area; the board will also regulate each member requiring the maintenance and service of their own individual building site. The HOA rules may be enforced by fines and liens upon the individual building sites and any other remedy available at law. The HOA covenants and restrictions shall include provisions limiting on-street parking within the development to those parking areas identified on the Conceptual Development

Plan and shall include provisions requiring the ongoing maintenance and repair of any sidewalks and roadways not dedicated to the City. The HOA may charge and collect dues to maintain operate and service all common facilities on the Property. The HOA will have authority to place a lien against individual building sites to collect unpaid HOA dues. The owner of each lot within the Property will automatically become a member of the HOA by virtue of purchasing a building subject to the rules, covenants, and restrictions of the HOA. The HOA will have the authority and means to hire, supervise, and regulate persons employed by them for the maintenance, repair and operation of common areas and facilities. If the association fails to perform the maintenance, repair or replacement, as necessary, of the storm water drainage facility, the City shall have the right to enter upon the common area of the Property and to provide the maintenance, repair, or replacement of the stormwater drainage facility and shall have the right to lien all owners of record in the Property for the cost of such maintenance, repair, and replacement as the City may deem necessary. If requested by the City and as otherwise needed for plat improvements, the Owner will provide easements and grants for the installation, maintenance and upkeep of the public utilities including water, sewer, and electricity. The Owner may from time to time add additional covenants and restrictions or make changes in the Association by-laws as may be required to guarantee that the project will be developed in accordance with the policies outlined in this Agreement.

12. PROJECT BUFFERS AND LANDSCAPING

In order to comply with the requirements of Chapter 13, Sections 3 and 3.5 of the Port Orange LDC, a perimeter buffer shall be provided as shown on the CDP and shall comply with the following standards and requirements. The intent of the landscape buffer is to provide a protected green space separation between the Property and surrounding neighborhoods. There shall be a perimeter buffer with a width of ten (10') feet along the Property boundary adjacent to the City of

South Daytona, twenty (20') feet along 5th Street where lots are not present, twenty (20') along Charles Street, twenty (20') feet along McDonald Road, and ten (10') feet along the Property boundary adjacent to Sugar Mill Elementary School. A six (6) foot privacy fence setback a minimum 3-feet from the Property line for maintenance shall also be installed along the Property boundary adjacent to Sugar Mill Elementary School. All buffers will remain as existing conditions or at time of each lot build out shall be required to install minimum landscape requirements for the Port Orange LDC. Landscape buffers and privacy fencing shall be constructed in the initial phase of development. No clearing or altering of the Property shall occur until the phase of that project area has been issued an approved construction plan. Existing vegetation in the perimeter buffer that may remain undisturbed shall count toward the landscaping requirements for the buffer. Existing vegetation that is determined by the City to be invasive exotics, diseased/dying and/or interfering with required extension of utilities may be removed, provided that any viable protected or specimen trees shall be mitigated in accordance with the City of Port Orange LDC. The landscape plans required for the final plat shall account for the removal and mitigation of trees with the perimeter buffers. No structures, primary or accessory, will be allowed within perimeter buffers, except for fencing. The Madeline Commons HOA shall establish maintenance standards in the covenants and restrictions for the landscape/buffer easements. The covenants and restrictions shall provide for procedures to allow the HOA to notice individual lot owners that landscaping is not being maintained in accordance with the standards established in the covenants and restrictions. The covenants and restrictions shall include provisions for the HOA to charge the individual lot owners for the costs of the HOA maintaining the landscape buffer.

13. ENVIRONMENTAL CONSIDERATIONS

Both during and after construction, the Owner will use reasonable efforts to preserve trees and natural vegetation within the Property and maximize protection of natural drainage pathways. The PUD shall comply with the tree preservations of the City's LDC. The Owner shall comply with all rules, statutes, laws and regulations pertaining to protected wildlife species, including but limited to the rules and permitting requirements of the Florida Game and Freshwater Fish Commission concerning gopher tortoises. Compliance with the City Environmental Preservation Code may necessitate modification of the Conceptual Development Plan.

14. EXPIRATION

Development of the Madeline Commons PUD shall commence within five (5) years from the effective date of this Agreement and all development shall be completed within ten (10) years from the effective date. Failure to comply with the schedule set out above shall cause this Agreement to lapse unless the schedule is modified by mutual agreement of the Owner and the City. Development shall be as defined by the LDC.

15. EFFECTIVE DATE

This Agreement shall become effective and run with the land upon recording by the City of Port Orange at the Owner's expense in the public records of Volusia County, Florida.

16. AMENDMENTS

Amendments to this Agreement and CDP shall comply with the requirements established in Chapter 3, Article 1 and Chapter 17, Section 17 of the City of Port Orange LDC. The City may grant administrative variance for the dimensional requirements of this PUD when deemed appropriate by the administrative official. Application for administrative variances from the dimensional requirements of this PUD shall be made on the appropriate forms provided by the

City for that purpose and shall be accompanied by the appropriate review fee. In no case shall an administrative variance be granted when such variance exceeds ten (10%) percent of the required dimension.

17. CONFORMANCE WITH THE LAWS

The Owner agrees:

- A. To develop the Property according to all PUD regulations of the City to the extent those regulations are not inconsistent with the CDP for the Property.
- B. To provide agreements, contracts, deed restrictions, and sureties and other documents required by the City Legal Department for completion of the development or approved development phases, and for the continuing operation and maintenance of such areas, functions and facilities as are not to be provided, operated or maintained at public expense, and that the Owner's successors in title will be bound by the Owner's commitments made in the Agreement.
- C. To be bound by all City codes and ordinances that are not in conflict with the provisions of this Agreement.

18. ENFORCEABILITY

If any provision of this Agreement is held by a court of competent jurisdiction to be invalid or otherwise unenforceable, such holding shall not affect the validity of enforceability of any other provision of this Agreement unless the holding so states.

19. PRIOR AGREEMENTS

This Agreement represents the complete understandings by and between the parties with respect to the development and continued use of the subject Property. Any and all prior agreements

between the Parties with respect to any subject comprehended by this Agreement is hereby voided and superseded by this Agreement.

[Remainder of Page Intentionally Left Blank]

IN WITNESS WHEREOF, the parties hereto attached their hands and seals this ____ day of _____, 20____.

WITNESSES:

CITY OF PORT ORANGE, FLORIDA
A Chartered Municipal Corporation

Name: _____

By: _____
Donald O. Burnette, Mayor

Name: _____

Date: _____, 2021

STATE OF FLORIDA
COUNTY OF VOLUSIA

The foregoing instrument was acknowledged before me by means of **[XX]** physical presence or [] online notarization this ____ day of _____, 2021, by Donald O. Burnette as Mayor, of the City of Port Orange, Florida, a chartered municipal corporation, who acknowledge that he is duly authorized to execute the foregoing agreement on behalf of the city. He is personally known to me.

Notary Public, State of Florida at Large

Printed, typed or stamped name, commission and expiration of commission term

WITNESSES:

Name: _____

Attest: _____
Robin L. Fenwick, MMC, City Clerk

Name: _____

Date: _____, 2021

STATE OF FLORIDA
COUNTY OF VOLUSIA

The foregoing instrument was acknowledged before me by means of **[XX]** physical presence or [] online notarization this ____ day of _____, 2021, by Robin L. Fenwick, as City Clerk, of the City of Port Orange, Florida, a chartered municipal corporation, who acknowledge that she is duly authorized to execute the foregoing agreement on behalf of the city. She is personally known to me.

Notary Public, State of Florida at Large

Printed, typed or stamped name, commission and expiration of commission term

Signed, sealed and delivered
In the presence of

Witness 1 Signature

Owner:
Madeline Commons, LLC

Print Name of Witness 1

By: Moishe Goldshmidt, Managing Member

Witness 2 Signature

Print Name of Witness 2

STATE OF _____
COUNTY OF _____

The forgoing instrument was acknowledged before me, by means of ☐ online notarization or ☐ physical presence, this ____ day of _____, 20____, by Moishe Goldshmidt, as Managing Member of Madeline Commons, LLC. He / She is ☐ personally known to me or ☐ has produced the following as identification _____, and he / she did not take an oath.

Notary Type, Print, or Stamp Name

My Commission Expires: _____

Exhibit A
Legal Description

Exhibit A

LEGAL DESCRIPTION -per Schedule A

Parcel 1: All of Blocks 22 through 27, inclusive, PORTONA, according to the map or plat thereof recorded in Map Book 10, at Page 107, of the Public Records of Volusia County, Florida

Parcel 2: Lot 2 (except one-half acre north of canal on West line of Lot 2 and except the East 625 feet), Section 4, Township 16 South, Range 33 East, Volusia County, Florida. AND Less and Except any portion of Lot 2 lying West of McDonald Road. AND Less and Except that portion of Lot 2 conveyed in Warranty Deed recorded in Official Records Book 2317, Page 1472, of the Public Records of Volusia County, Florida. AND Less and Except all of that portion platted as Amber Village, according to plat thereof recorded in Plat Book 40, Page 61, of the Public Records of Volusia County, Florida.

Parcel 3: North 290 feet of the East 660 feet, East of McDonald Road of Sugar House Reservation and East 500 feet of South 50 feet of Lot 2, Block 12, Dunlawton, Port Orange, Florida. Lying and being in Volusia County, Florida.

Parcel 4: The North 170 feet of the South 370 feet of the North 660 feet of the East 660 feet, East of McDonald Road of Dunlawton Sugar House Reservation, according to the map recorded in Deed Book "M", Page 187, Public Records of Volusia county, Florida.

Containing 1,507,262.61 square feet (34.602 acres±)

Exhibit B
Conceptual Development Plan

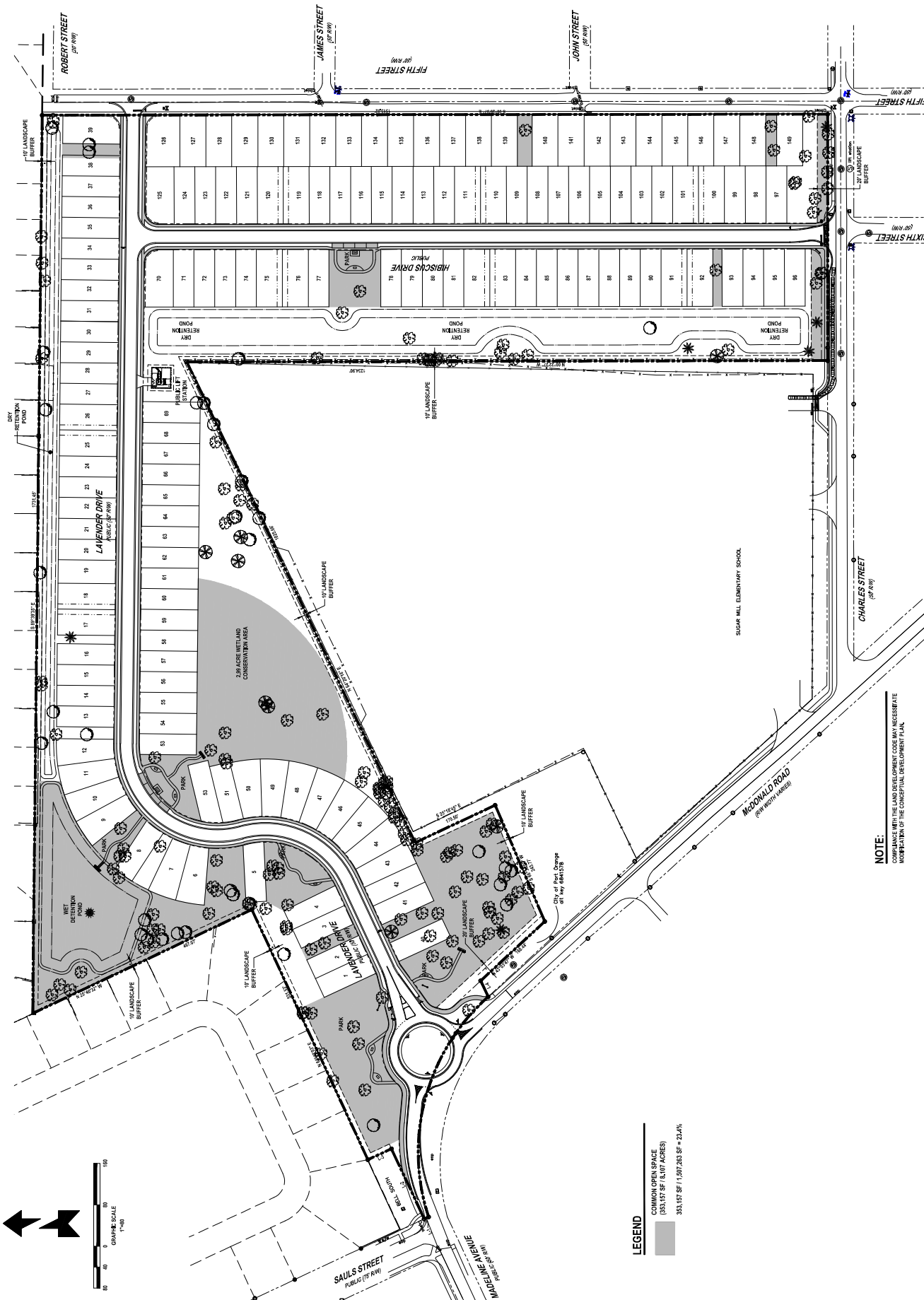
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10/22/21	10/22/21 CITY COMMENTS
10/22/21	10/22/21 CITY COMMENTS
10/22/21	10/22/21 CITY COMMENTS
10/22/21	10/22/21 CITY COMMENTS

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 Landscape Architecture
 C.A. # 30209
 L.C. # 2000004
 Phone: (386) 672-7744
 www.newkirkengineering.com
 Orlando Branch, Florida 32714
 1230 North US-1, Suite 3

COMMON OPEN SPACE CDP
MADELINE COMMONS CDP
 PORT ORANGE, FL 32128

REGISTERED PROFESSIONAL
NO. 62971
FLORIDA
LANDSCAPE ARCHITECT
HARRY A. NEWKIRK, P.E. & LPA
 PROJECT NO. 2002-024
 DATE: JANUARY 2021
 DESIGN BY: HAN
 DRAWN BY: DAB
 CHECKED BY: HAN
 SCALE: 1" = 80'
 DRAWING NUMBER

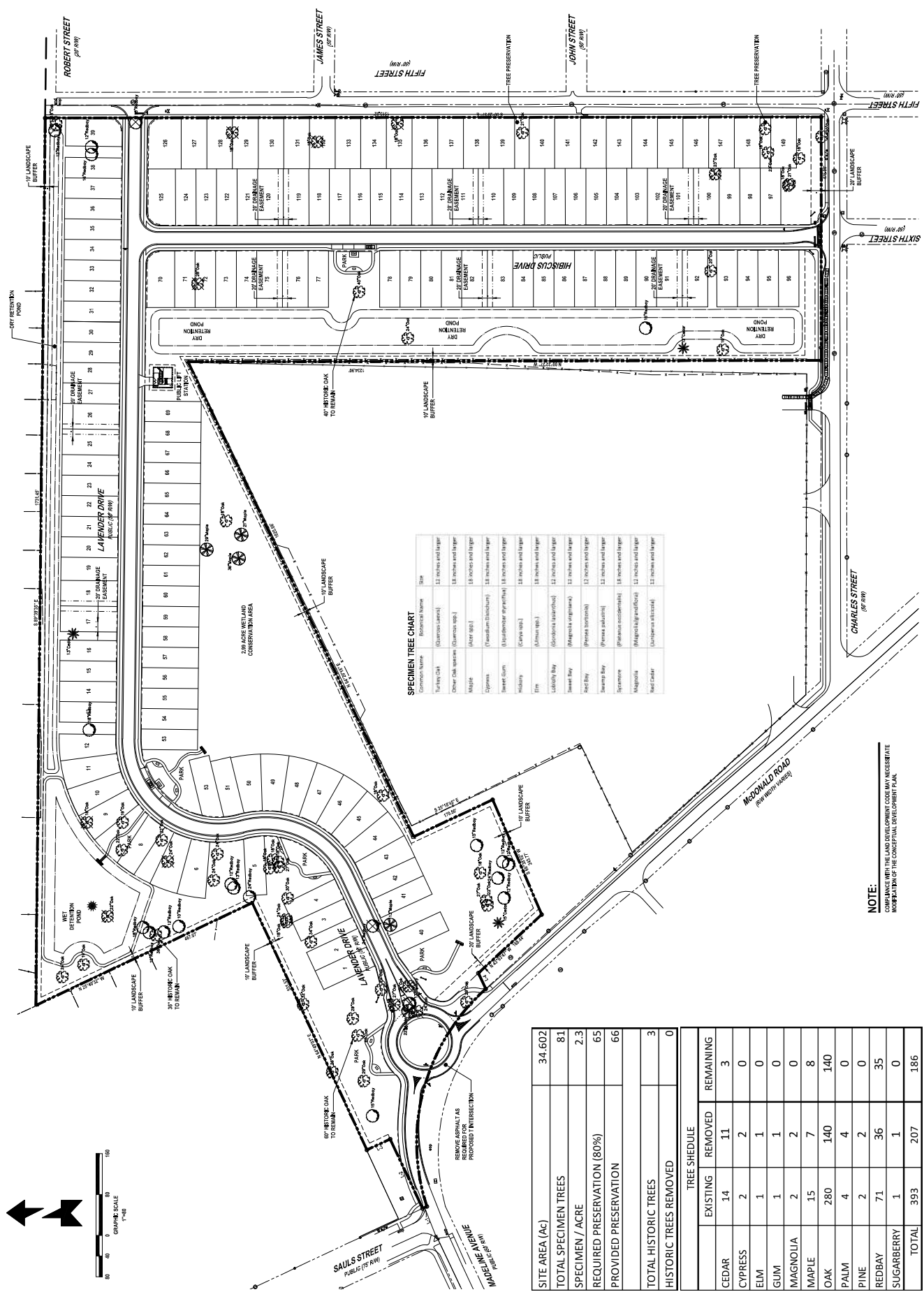
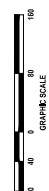
3



LEGEND
 COMMON OPEN SPACE
 (353,151 S.F. / 8.117 ACRES)
 353,151 SF / 1,597,263 SF = 22.4%

NOTE:
 COMPLIANCE WITH THE LAND DEVELOPMENT CODE MAY NECESSITATE
 MODIFICATION OF THE CONCEPTUAL DEVELOPMENT PLAN.





SPECIMEN TREE CHART

Common Name	Scientific Name	Size
Turkey Oak	Quercus laevis	12 inches and larger
Cherry Oak	Quercus sp.	18 inches and larger
Maple	Acer spp.	18 inches and larger
Cypress	Taxodium distichum	18 inches and larger
Sweet Gum	Liquidambar styraciflua	18 inches and larger
Hickory	Carya spp.	18 inches and larger
Elm	Ulmus spp.	18 inches and larger
Lavender Bay	Glomera laurifolia	12 inches and larger
Sweet Bay	Magnolia virginiana	12 inches and larger
Red Bay	Persea borbonica	12 inches and larger
Sourwood	Platanus occidentalis	12 inches and larger
Magnolia	Magnolia grandiflora	12 inches and larger
Red Cedar	Juniperus horizontalis	12 inches and larger

SITE AREA (Ac)	34.602		
TOTAL SPECIMEN TREES	81		
SPECIMEN / ACRE	2.3		
REQUIRED PRESERVATION (80%)	65		
PROVIDED PRESERVATION	66		
TOTAL HISTORIC TREES	3		
HISTORIC TREES REMOVED	0		
TREE SCHEDULE			
EXISTING	REMOVED	REMAINING	
CEDAR	14	11	3
CYPRESS	2	2	0
ELM	1	1	0
GUM	1	1	0
MAGNOLIA	2	2	0
MAPLE	15	7	8
OAK	280	140	140
PALM	4	4	0
PINE	2	2	0
REDBAY	71	36	35
SUGARBERRY	1	1	0
TOTAL	393	207	186

NOTE:
COMPLIANCE WITH THE LAND DEVELOPMENT CODE MAY REQUIRE STATE MODIFICATION OF THE CONCEPTUAL DEVELOPMENT PLAN.

REVISIONS

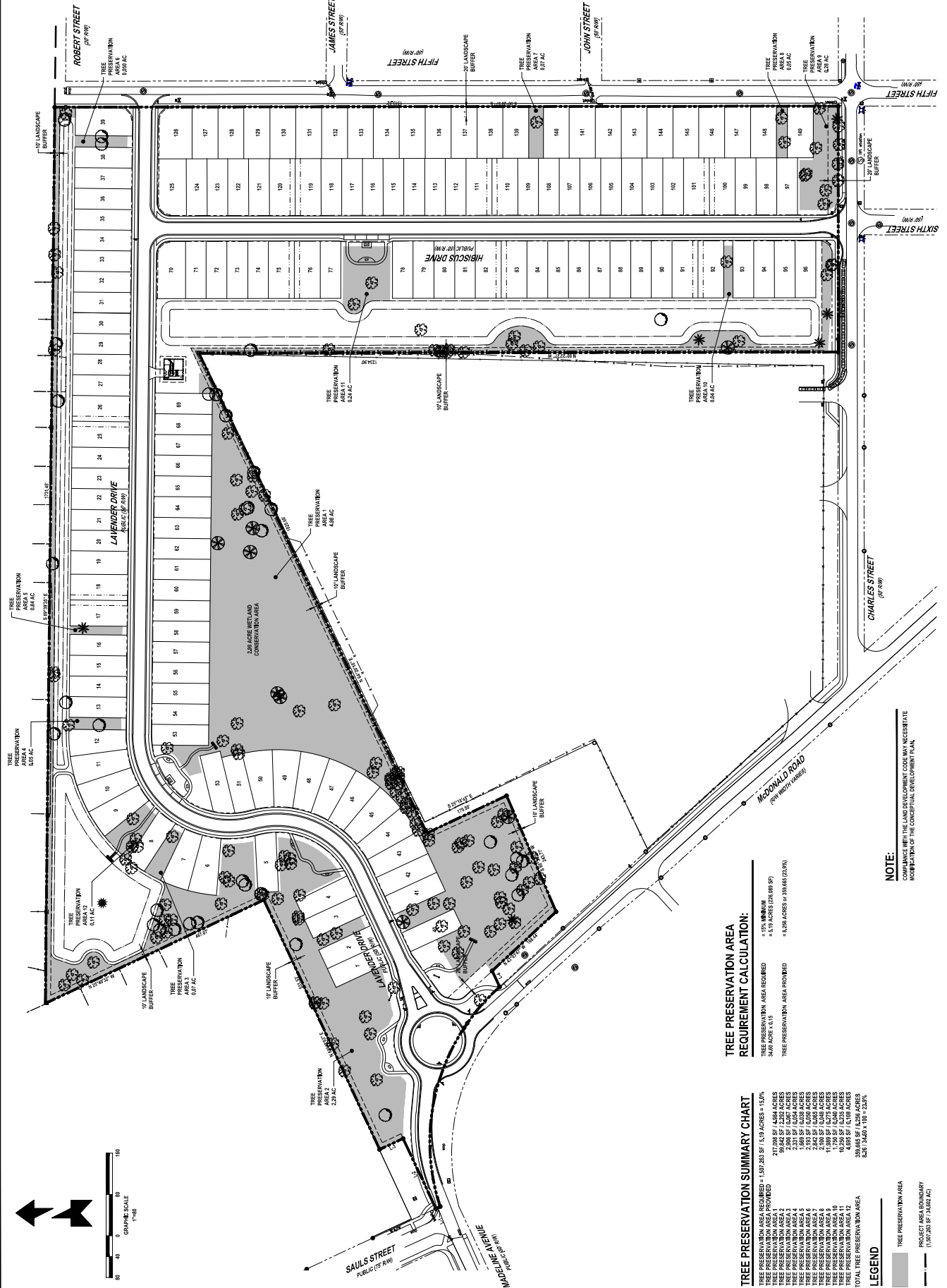
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Phone: (407) 272-7174

PORT ORANGE, FL 32128
MADELINE COMMONS CDP
TREE PLAN

NO. 62971
HARRY A. NEWKIRK, P.E. & EIGHT
REGISTERED PROFESSIONAL ENGINEERS
FLORIDA
PROJECT NO. 2002-024
DATE: JANUARY 2021
DESIGN BY: HAN
DRAWN BY: DAB
CHECKED BY: HAN
SCALE: 1"=60'
DRAWING NUMBER: 5

Page 362 of





CITY COUNCIL AGENDA ITEM

REQUESTED COUNCIL MEETING DATE 10/19/2021

Consent item: No

SUBJECT: (H20) Special Exception/Port Orange Neighborhood Storage - 5404 S Williamson Boulevard (Case No. 21-70000001)

DEPARTMENT: Community Development

GOAL: 3 - Quality of Life

RECOMMENDED MOTION: Move to approve the Special Exception to allow a mini-warehouse facility to be developed at 5404 S. Williamson Boulevard, as recommended by the Planning Commission.

SUMMARY: Planning Commission Action (9/23/21): Recommended Approval (7-0)

Mark Dowst, applicant for the property owner, Port Orange Holdings II, LLC, has applied for a Special Exception to operate a mini-warehouse facility within the Workplace District of the Planned Community – Agricultural (PC-A) zoning district. The proposed facility would be located on the south side of Williamson Boulevard, between the Whitepalm Apartments and the Springs at Port Orange Apartments.

The Special Exception criteria for the proposed mini-warehouse facility (architecture, parking, landscaping, screening, access, traffic generation, etc.) have been met. According to the applicant, the 2.3-acre site is proposed to be developed with a 3-story building with ±750 internally accessed storage cubicles, designed similar to a multi-story office building.



If the Special Exception is approved, the applicant will have to submit a site plan for staff review and the proposed development will be required to meet all architecture, landscape buffer and screening, site development and infrastructure, stormwater, and traffic concurrency requirements in the City's Land Development Code.

The Staff Report is attached for more information.

Project No.: N/A

Funding Account No.: N/A

Presenter: Penelope Cruz, Tim Burman

ATTACHMENTS:

1.	Staff Report	Staff Report.pdf
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Penelope Cruz	Created/Initiated - 9/24/2021
Tim Burman	Approved - 9/27/2021
Shannon Balmer	Approved - 10/8/2021
Wayne Clark	Approved - 10/8/2021
Robin Fenwick	Final Approval - 10/8/2021



STAFF REPORT

Special Exception for a Mini-Warehouse Facility in the Planned Community – Agricultural District CASE NO. 21-70000001

REQUEST:	To allow the operation of a mini-warehouse facility within the Planned Community - Agricultural (PC-A) Workplace District.
PROPERTY OWNER:	Port Orange Holdings II, LLC
APPLICANT:	Mark S. Dowst, Mark Dowst and Associates, Inc.
LOCATION:	5404 S. Williamson Boulevard
STAFF CONTACT:	Chris Carson, Senior Planner (386) 506-5676
STAFF RECOMMENDATION:	Approval
PLANNING COMMISSION:	Recommended Approval (September 23, 2021)
CITY COUNCIL:	October 19, 2021

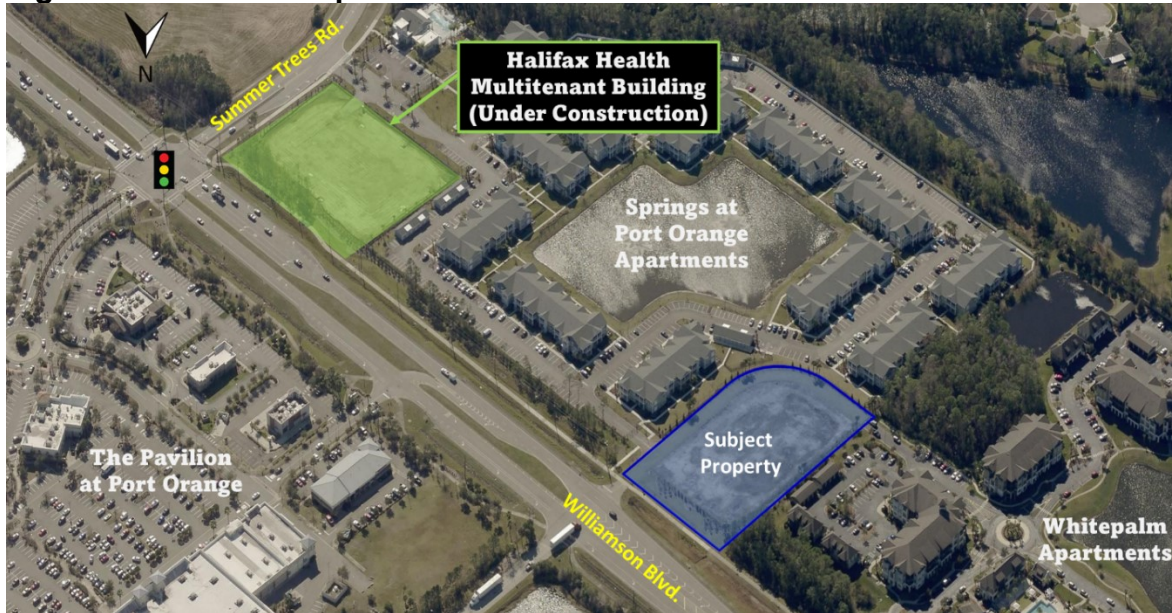
INTRODUCTION

Mark Dowst, applicant for the property owner, Port Orange Holdings II, LLC, has applied for a Special Exception to operate a mini-warehouse facility within the Workplace District of the Planned Community – Agricultural (PC-A) zoning district. The LDC defines a mini-warehouse as, “a self-service storage facility in a building consisting of individual self-contained units of varying sizes that are leased or owned for the storage of business and household goods, or for contractor’s supplies.” According to the LDC, “a special exception is a use that would not be appropriate without restriction, but which, if controlled as to number, area, location or relation to the surrounding area, would promote the public health, safety and general welfare.”

If approved, the applicant intends to submit a site plan to establish a 3-story building with ± 750 internally accessed storage cubicles, designed to resemble an office building, on a ± 2.3 -acre site located on the south side of Williamson Boulevard, between the Whitepalm Apartments and the Springs at Port Orange Apartments. According to the applicant’s own market analysis, they have determined that the demand for a mini-warehouse does exist at this location. The site plan will be required to meet all architecture, landscaping, stormwater and infrastructure requirements of the City’s Land Development Code (LDC).

The subject property has had Planned Community – Agricultural (PC-A) Workplace District zoning district since 2002. In addition to the proposed mini-warehouse special exception use, the existing zoning of the property also allows uses such as banks, health/exercise clubs, hotels, motor vehicle and boat storage facilities, motor vehicle service stations, offices, retail sales and service, and restaurants (including drive-thrus).

Figure 1. Location Map – 5404 S. Williamson Blvd.



SPECIAL EXCEPTION DEVELOPMENT STANDARDS

All Special Exception uses are required to meet a uniform list of development standards, encompassing traffic generation, landscaping and buffering, and others [Ch. 18, Sec. 2(d)(2) of the LDC]. The following are the development standards and how they apply to the request.

Standard Special Exception Development Standards:

1. *Traffic generation and access for the proposed use shall not adversely impact adjoining properties and the general public safety.*

According to the applicant, a mini-warehouse facility use produces very low traffic volumes compared to other retail, restaurant, and office uses permitted on the subject property. The proposed ± 750 mini-warehouse use is estimated to generate 210 daily trips.

Table 1. ITE Daily Trip Rate for uses in Workplace District of the Planned Community – Agricultural (PC-A) Zoning District

Use	Daily Trip Rate	Multiplier
Mini-warehouse	2.5	Per 1,000 SF
Warehouse (Motor vehicle and boat storage)	3.56	Per 1,000 SF
General Office	11.03	Per 1,000 SF
Health/ Exercise Club	32.93	Per 1,000 SF
Medical/Dental Office	36.13	Per 1,000 SF
Retail	44.32	Per 1,000 SF
Restaurant without a Drive-Thru	127.15	Per 1,000 SF
Bank	148.15	Per 1,000 SF
Restaurant with Drive-Thru	496.12	Per 1,000 SF
Convenience Store with Gas	845.6	Per 1,000 SF

According to the latest traffic counts for Williamson Boulevard and Summer Trees Road, adjacent to the subject property, there is capacity for the traffic (210 daily trips) anticipated to be generated by the proposed development of this property (Table 2). The site plan submittal for this property will be required to comply with the City's Concurrency Management requirements in the LDC. Detailed traffic analysis occurs at the site plan review stage to identify any improvements that might be required. Similar to other developments within the city, the developer may be required to enter into a Proportionate Fair Share Agreement with the City and Volusia County to pay for part of the scheduled transportation improvements for any impacted areas.

Table 2. Traffic Capacity

Roadway Segment	Maximum Capacity Vehicles Per Day	Current Vehicles Per Day*	Remaining Capacity Vehicle Per Day	Daily V/C Ratio**
Williamson Blvd. from Taylor Rd. to Town West Blvd.	37,970	20,840	17,130	0.55
Summer Trees Rd. from Williamson Blvd. to Taylor Rd.***	12,744	4,691	8,053	0.37

*Source Volusia County Traffic Engineering, 2019

**V/C Ratio (Volume-Demand-to-Capacity Ratio) Compares roadway demand (vehicle volumes) with roadway supply (carrying capacity).

***Source City of Port Orange Traffic Counts, 2020

The subject property is Lot 2 of the 3-lot Springs at Port Orange subdivision. There is an existing driveway along Williamson Boulevard that currently serves as the emergency only access point to the Springs at Port Orange Apartments and the Whitepalm Apartments. The driveway was approved by Volusia County and constructed with the Springs at Port Orange Apartments in 2019. Access to the proposed mini-warehouse facility will be from the existing driveway along Williamson Boulevard. Access from Williamson Boulevard in this area is under Volusia County's jurisdiction, and Volusia County must approve the access drive for the proposed during the site plan review.

Figure 2. Access Point for the Proposed Mini-Warehouse Facility (Lot 2) and Location of Emergency Access Gates for Apartments



The new access drive for the subject property (Lot 2) will tie in with the existing Williamson Boulevard driveway and existing gated emergency only access driveway to the Springs at Port Orange Apartments. There are no proposed changes to the location of the emergency gate for the Springs at Port Orange Apartments.

The existing emergency only gate for the Whitepalm Apartments that is currently located behind the Williamson Boulevard sidewalk will be relocated. The existing emergency access drive, located on Lot 2, will be maintained in its current condition as a sodded and stabilized emergency only access drive (Figure 2).

2. *Off-street parking, loading and service areas shall be provided and located such that there is no adverse impact on adjoining properties, beyond that generally experienced in the district.*

Parking will be provided as required by the LDC. The total number of parking spaces and design of the parking lot and spaces will be reviewed with the submittal of the site plan. The LDC currently requires one space per 50 cubic feet for a mini-warehouse, plus 1 loading space at all public entry doors for a facility with interior corridor access.

3. *Required yards, screening or buffering, and landscaping shall be consistent with the district in general and the specific needs of the abutting land uses.*

The site will be developed with landscape buffers in accordance with the LDC for screening the surrounding properties and rights-of-way from a mini-warehouse

facility. The LDC requires a minimum 50' landscape buffer along Williamson Boulevard, a minimum 10' landscape buffer along the sides and rear property lines, and foundation plantings around the building. In addition to the 10' landscape buffer on the sides and rear. A review of the landscape buffers will occur with the site plan.

4. *Architectural and signage treatments shall comply with the general provisions applicable to permitted uses in the district, to the greatest extent possible, and be sensitive to surrounding development.*

The architectural style of the building, accessory structures, and wall/fence will be developed with a common architectural theme and comply with the LDC. A formal review of the architecture will occur with the site plan to verify compliance with the LDC. Any proposed signage will have to meet the regulations set forth by the LDC. Figure 3 illustrates the proposed design for the mini-warehouse facility that complies with the LDC.

Figure 3. Conceptual Architectural Elevations



5. *Size, location or number of special exception uses in an area shall be limited so as to maintain the overall character of the district as intended by this code.*

There are no other Special Exception for mini warehouse uses in the general area of the subject property (Figure 4). The proposed development is located approximately 0.87 miles from an existing mini-warehouse facility (Westport Storage) and approximately 0.93 miles from a proposed mini-warehouse facility (Crane Lakes Depot); both of these facilities were approved through a Planned Commercial Development (PCD).

Figure 4. Nearby Mini-Warehouse Facilities



The subject site will be developed to meet the building setback, building coverage and open space requirements for the Workplace District of the Planned Community – Agricultural (PC-A) Zoning District, and the proposed use generates less vehicular trips than other uses permitted on the subject property.

In addition to the standard development requirements for all special exceptions, a mini-warehouse use in the PC-A zoning district must also comply with three additional development requirements [Ch. 18, Sec. 3(b)(10) of the LDC]. The following are the additional development requirements for a mini-warehouse use and how they apply to the request.

Specific Mini-Warehouse Development Requirements:

1. *Warehouse buildings shall be screened from any public rights-of-way by a six-foot high opaque fence or wall with a type 2 buffer yard planted along the street side of the fence or wall. Buffer yard requirements may be increased in accordance with chapter 13 of this Code.*

The proposed development will comply with the 50-foot Williamson Boulevard right-of-way landscape buffer and wall/fence requirement in the LDC. A review of the landscape buffers and the wall/fence will occur with the site plan.

2. *The proposed site shall be a minimum of two acres.*

The subject property is ±2.3 acres.

3. *The proposed site shall front on an arterial roadway.*

The site fronts on Williamson Boulevard. Williamson Boulevard is defined by the City's Comprehensive Plan as an urban principal arterial roadway.

RECOMMENDATION

Staff recommends approval of the Special Exception to allow a mini-warehouse facility to be developed at 5404 S. Williamson Boulevard.

ATTACHMENTS

Exhibit A – Applicant's Letter Dated August 6, 2021

August 6, 2021

Via Hand Delivery & Email

Melanie Schmotzer
Community Development
City of Port Orange
1000 City Center Circle
Port Orange, FL 32129

RE: Port Orange Neighborhood Storage – Special Exception Application
5404 S Williamson Blvd, Port Orange, FL 32128
MDA #1550

Dear Melanie:

Please find enclosed the following exhibits for review and approval:

1. Special Exception Application, one (1) original.
2. Civil Construction Plans, one (1) copy, signed and sealed.
3. Landscape Plans, one (1) copy, signed and sealed.
4. Boundary, Topo & Tree Surveys, one copy (1) signed and sealed.
5. Architectural Elevations, one (1) copy, signed and sealed.
6. Trip Generation Estimate, one (1) copy, signed and sealed.
7. Copy of Deed, one (1) copy.
8. Owner Authorization, one (1) copy.
9. Check in the amount of \$450 for application fee.
10. 11x17 copies of items 2-5.
11. CD with PDFs of items 1-9.

The purpose of this application is to construct a 750+/- cubicle neighborhood mini storage facility on a vacant 2.26 ac site.

The Special Exception General Requirements [Chapter 18, Section 2 (d)(2)] have been addressed as follows:

1. Traffic generation and access for the proposed use shall not adversely impact adjoining properties and the general public safety.
Response: The proposed use is a very low traffic generator generating only 210 ADT.
2. Off-street parking, loading and service areas shall be provided and located such that there is no adverse impact on adjoining properties, beyond that generally experienced in the district.
Response: General activity on the proposed site is less than that occurring on adjacent multifamily property.
3. Required yards, screening or buffering, and landscaping shall be consistent with the district in general and the specific needs of the abutting land uses.
Response: All required buffer yards and screening have been met.

4. Architectural and signage treatments shall comply with the general provisions applicable to permitted uses in the district, to the greatest extent possible, and be sensitive to surrounding development.

Response: The architectural elevations and signage has been designed to comply with all requirements and be sensitive to surrounding developments.

5. Size, location or number of special exception uses in an area shall be limited so as to maintain the overall character of the district as intended by this code.

Response: The proposed use will provide convenient storage to the surrounding neighborhood.

The mini warehouse specific special exception requirements [Chapter 18, Section 3(b)(10)] have been addressed as follows:

- a. Warehouse buildings shall be screened from any public rights-of-way by a six-foot high opaque fence or wall with a type 2 buffer yard planted along the street side of the fence or wall. Buffer yard requirements may be increased in accordance with chapter 13 of this Code.

Response: minimum type 2 buffer yards have been provided.

- b. The proposed site shall be a minimum of two acres.

Response: The site is 2.26 acres.

- c. The proposed site shall front on an arterial roadway.

Response: The site fronts on Williamson Boulevard which is a designated arterial roadway.

Thank you for your assistance regarding the above. I especially appreciate the information and time provided by Penelope Cruz in the preparation of this application. If you have any questions, or require additional information, please do not hesitate to give me a call.

Very truly yours,
MARK DOWST & ASSOCIATES, INC.



Mark S. Dowst, P.E.
President

MD/AG

Cc: Hugh Home via email



CITY COUNCIL AGENDA ITEM

REQUESTED COUNCIL MEETING DATE 10/19/2021

Consent item: No

SUBJECT: (I21a) First Reading - Ordinance No. 2021-27 - Solid Waste Collection and Disposal Services

DEPARTMENT: Public Utilities

GOAL: 5 - Fiscal Sustainability

RECOMMENDED MOTION: Move to approve Ordinance No. 2021-27

SUMMARY: In March 2021, the City awarded the new bid for solid waste collection services to begin November 1, 2021. This contract replaced a 10 year contract for the service which expires October 31, 2021. Solid Waste is an enterprise fund which solely relies upon solid waste rates paid by the customer to support the needs of the level of service provided. The last rate increase was 2014. Revenue into the fund has been relatively flat, while expenses have continued to rise. Once the new contract was awarded, the City underwent a rate study for solid waste services.

The results of the rate study along with staff recommendations regarding proposed rates were provided to City Council on August 24, 2021. Staff is asking City Council to approve the attached ordinance amending the Land Development Code, Chapter 56, Solid Waste, Article II, Collection and Disposal Service. The amendment updates the requirements for garbage, recycling, and yard waste services, removes the energy fee, provides for an automatic annual CPI adjustment of the rates, updates billing requirements and provides for enforcement.

Project No.: N/A

Funding Account No.: Contractual

Presenter: Lynn Stevens

ATTACHMENTS:

1.	Ordinance No. 2021-27	Ordinance 21-27.pdf
2.	Final Port Orange Solid Waste Report 8-6-21	Final Port Orange Solid Waste Report 8-6-21.pdf
3.	solid waste presentation Oct 2021	solid waste presentation Oct 2021.pptx

Julia Wiggins

Created/Initiated - 9/7/2021

Julia Wiggins	Approved - 9/7/2021
Lynn Stevens	Approved - 9/15/2021
Robin Hayes	Approved - 9/22/2021
Matthew Jones	Approved - 10/6/2021
Wayne Clark	Approved - 10/7/2021
Robin Fenwick	Final Approval - 10/8/2021

ORDINANCE NO. 2021-27

AN ORDINANCE OF THE CITY OF PORT ORANGE, VOLUSIA COUNTY, FLORIDA, AMENDING THE LAND DEVELOPMENT CODE, CHAPTER 56, SOLID WASTE, ARTICLE II, COLLECTION AND DISPOSAL SERVICE, UPDATING REQUIREMENTS FOR GARBAGE, RECYCLING AND YARD WASTE SERVICE, REMOVING THE ENERGY FEE, PROVIDING FOR AN AUTOMATIC CPI ADJUSTMENT FOR CHARGES AND RATES; AMENDING BILLING REQUIREMENTS; DELETING OBSOLETE BILLING PROVISIONS; PROVIDING FOR ENFORCEMENT; PROVIDING FOR REPEAL OF CONFLICTING ORDINANCES; PROVIDING FOR CODIFICATION; PROVIDING FOR SEVERABILITY; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, in order to provide for the sound management of Residential and Commercial Solid Waste, to continue to reduce the volume of Residential and Commercial Waste disposed in sanitary landfills through recycling and to continue to promote more efficient Residential and Commercial Solid Waste Disposal; and

WHEREAS, in order to maintain a safe and beautiful City and protect the integrity, value and character of residential neighborhoods, requirements need to be updated and rates adjusted for garbage, recycling and yard waste service; and

WHEREAS, it is in the best interest of the public health, safety and welfare that this ordinance be adopted; and

WHEREAS, for purposes of this ordinance words with underlined (underlined) type shall constitute additions to the original text and words with strikethrough (~~strikethrough~~) type shall constitute deletions from the original text.

NOW, THEREFORE, BE IT ORDAINED BY THE CITY COUNCIL OF THE CITY OF PORT ORANGE, VOLUSIA COUNTY, FLORIDA:

SECTION 1. The City Council of the City of Port Orange, Florida, hereby amends Chapter 56, Solid Waste, Article II Collection and Disposal Service, of the City of Port Orange Land Development Code to read as follows:

Sec. 56-26. Definitions.

The following words, terms and phrases, when used in this chapter, shall have the meanings ascribed to them in this section, except where the context clearly indicates a different meaning:

Business or commercial shall apply to any establishment or firm wherein a business or commercial occupational license is required by the city, except as otherwise provided herein.

Construction and demolition debris means discarded materials generally considered to be not water-soluble and nonhazardous in nature, including, but not limited to, steel, glass, brick, concrete, asphalt, roofing material, pipe, gypsum wallboard, and lumber, from the construction or destruction of a structure as part of a construction or demolition project or from the renovation of a structure, and including rocks, soils, tree remains, trees, and other vegetative matter that normally results from land clearing or land development operations for a construction project, including such debris from construction of structures at a site remote from the construction or demolition project site. Mixing of construction and demolition debris with other types of solid waste will cause it to be classified as other than construction and demolition debris.

Contaminated recyclable material means recyclable material that is comingled or mixed with solid waste or other material.

~~*Coordinator* means the coordinator of the solid waste division of the department.~~

Department means the public works department for the city.

Garbage means every refuse accumulation of animal, fruit or vegetable matter that attends the preparation, use, cooking and dealing in, or storage of meats, fish, fowl, fruits or vegetables, and any refuse accumulation of paper, wooden or paper boxes, containers, sweepings, and all other accumulations of a nature usual to housekeeping. Garbage shall not include any recyclable material or yard waste.

Garbage can means a galvanized metal or plastic can of the type commonly sold as garbage cans of a capacity not to exceed 32 gallons or 50 pounds. Such cans are required to have handles on the sides of the can by which it may be lifted. Each can shall have a tightfitting top or cover.

Mobile home park or trailer park means any business enterprise maintaining premises for the rent of mobile home sites, and each mobile home contained on such park shall be considered as a separate unit whether the same is permanently affixed to the realty or not.

Multiple dwelling means a structure or structures having more than one single-family unit and shall include apartment buildings, motels and hotels.

Recyclable material means those materials which are capable of being recycled and which would otherwise be processed or disposed of as garbage. Recyclable material shall include but not be limited to plastics, newspapers, glass containers, aluminum cans, and other similar materials.

Recycling means any process by which garbage, or materials which would otherwise become garbage are collected, separated, or processed and reused or returned to use in the form of raw materials or products.

Residence means a single-family unit.

Roll-off container means a ten-, 15-, 20-, 30- or 40-yard container.

Solid waste manager means the manager of the solid waste division of the Department.

Travel trailer park means any business enterprise maintaining premises for the rent of trailer or camp sites for campers or travel trailers.

Yard waste means all reasonable accumulations of grass, trees, shrubbery or weed cuttings, pine needles, grass clippings, branches, palm fronds, other vegetation trimmings, and other refuse incident to the care of lawns, shrubbery, vines, trees and gardens. The term "yard waste" shall not be taken to include used or broken appliances, furniture, bedding, building materials, lumber, logs or other material of like nature.

Sec. 56-27. Scope of service.

- (a) No human or animal excrement will be picked up or transported by the public works department or by any franchisee.
- (b) Basic garbage service will include twice weekly pickup of three cans of garbage or equivalent containers per residence and five garbage cans per commercial activity. Garbage in excess of the quantity specified ~~will~~ may require an additional charge as prescribed by resolution of the city council.
- (c) ~~Basic Residential~~ recycling service will include once weekly pickup of recyclable material placed in one or more containers approved by the city and designated for recycling purposes.

Any recycling container used for the collection or storage of non-recyclable materials and/or contaminated recyclable material will not be picked up.

Commercial recycling service is open market and the responsibility of the commercial customer to secure recycling services.

- (d) Basic yard waste service will include once a week pickup of yard waste material from the property which is bagged in garden-size plastic bags, boxed or bundled. All yard waste shall be no greater than four feet in length and no more than eighteen inches in diameter. Bundles of branches shall be securely tied with string, rope, cord or twine so as to facilitate handling. Bundled materials shall not exceed four feet in length by four feet in width by four feet in height and each bundle shall not exceed

4050 pounds in weight. Accumulations or piles of yard waste that are not properly bagged, boxed or bundled will be picked up by city crews or employees of a franchisee and ~~will~~ may be subject to a special handling charge as prescribed by resolution of the city council.

Sec. 56-28. Container service for large producers.

- (a) The ~~coordinator~~ solid waste manager shall assign to the large producers cubic yard containers provided by the city or a franchisee and will designate placement in one or more areas. The city or franchisee will maintain the containers' structure, provide paint, etc. The producer will maintain the container in a sanitary condition by cleaning and disinfecting in accordance with state and local health regulations. The producer will also ensure that a firm foundation is provided under each canister to prevent rollover. The ~~coordinator~~ solid waste manager shall have the authority to change commercial can customers to commercial containers when the volume of trash is warranted.
- ~~(b) The cost of any special attachment such as wheels, etc., to any container shall be paid by the customer.~~
- ~~(c)~~ (b) Costs for container service shall be as specified by resolution of the city council.

Sec. 56-29. Service charges and rates.

- (a) The city shall maintain and operate, or franchise, a service for the collection and disposal of garbage, recyclable material and yard waste, and all persons whose premises are serviced thereby shall pay to the city for the use of such service rates as are set by resolution adopted by the city council.
- (b) The city council shall establish the rate by resolution for solid waste collection and disposal, including the costs of garbage, recycling, yard waste, landfill, ~~street~~ sweeping and other costs for the service. ~~The city council shall adjust the rate as determined necessary by the city council to ensure adequate revenue for the operation of the solid waste enterprise fund and to satisfy good accounting and business practices. All rates for service shall be reviewed at least annually in conjunction with the preparation of the annual operating budget. All rates will be adjusted annually by the amount of the percentage change in the Consumer Price Index (CPI), "Garbage and trash collection in U.S. city average, all Urban Consumers, not seasonally adjust" published by the U.S. Department of Labor, Bureau of Labor Statistics, and determined by comparing the CPI from April 1 of the preceding calendar year until March 31 of the present calendar year or 5% whichever is less. The adjusted rate will be applied to all billings for services dated on or after October 1 of each year. The percentage change in the Consumer Price Index will be applied to the charges as follows:~~
 - (1) Multiply the percentage change in the Consumer Price Index from April 1 of the preceding calendar year through March 31 of the present calendar year times the existing charges. The Consumer Price Index used to make this

calculation will be the same as the index required to be used for cost adjustments in the city refuse contract.

- (2) Add the product as determined in subsection (b)(1) of this section to the existing charges and round to the nearest cent.

This annual adjustment will be applied automatically to all billings for services dated on or after October 1 of the year in which the adjustment is made. City council may adopt an annual rate increase that is less than the annual adjusted amount set forth in this subsection by resolution of city council.

- (c) The issuance of a certificate of occupancy to any residential or commercial property in the city is prima facie evidence of the need for garbage, recycling and yard waste service. All such ~~residences~~ properties within the city shall be charged monthly the rates adopted by resolution of city council~~regardless of whether the premises are occupied~~ and regardless of whether services are being utilized. Payment of the monthly charge shall be the responsibility of the owner or customer of record of the residence or commercial property. The service charge may be prorated on an person's initial and final utility bill to reflect actual days of service.
- (d) ~~Notwithstanding the foregoing, the~~ The owner of a trailer park or mobile home park which is served water through a master meter shall, before the 15th day of each month, declare the number of vacant lots occupied units by lot number or address on their respective premises and shall furnish the information to the city clerk or designee customer service department, and such trailer parks or mobile home parks shall be billed on the basis of occupied the vacant lot rate and unoccupied units as outlined in the rate resolution adopted by city council for each vacant lot reported. The owner shall immediately notify the city once a property in vacant lot status is no longer vacant. The city, at any time through its employees or agents, may periodically check the use of any trailer parks or mobile home parks for the purpose of ascertaining if there is a discrepancy on the part of the owner's or operator's declarations of vacant lot status use, and checks thereof by the city and the city's investigation will prevail unless reversed on appeal to the city council. Vacant lot for purposes of this section means an empty lot with no building or other structure on it. Master meter for purposes of this section means a single meter serving all lots within a mobile home park or trailer park.
- (e) Should any person fail to pay the prescribed service charges when same become due and payable, the city manager shall have the authority to disconnect and discontinue water service and/or garbage service to the premises and such services shall not be reconnected or furnished to the premises until all unpaid service charges are paid in full, together with established reconnection fees for water service.
- (f) Any person who violates the provisions of this article or any rule or regulation promulgated pursuant to this article shall be subject to the penalties provided in section 1-8 of this Code. The procedures set forth in this section provide an additional or supplemental means of obtaining compliance with this article. Nothing contained in this section shall prohibit the city from enforcing this article by any other means, including, but not limited to code enforcement proceedings. For improperly reporting a vacant or unoccupied status or failing to update the status within 30 days of the

change, a separate violation shall be assessed for each lot or unit and for each month the violation occurs.

~~An energy fee shall be levied based on the fuel cost and any adjustment thereto.~~

~~This energy fee shall be charged or credited to customers. The energy fee adjustment shall be calculated on a systemwide basis allocating the percentage of increase or decrease to the initial fee in accordance with the adjustment calculation, attached hereto as exhibit A.~~

~~The energy fee shall be established by resolution of the city council. After the six-month base period, commencing on the effective date of the contract and concluding on the last day of the sixth month following, this energy fee shall be adjusted by resolution semiannually in accordance with the contract. The first adjustment shall be on or after the first anniversary of the effective date of the contract. Energy fee adjustments shall be implemented no later than the first day of the fourth month following the adjustment calculation.~~

[No changes to Section 56-30]

Sec. 56-31. Containers required.

The occupants of each residence, multiple dwelling, business or commercial enterprise and trailer park are required to provide garbage cans and yard waste containers to sufficiently hold the accumulation of garbage and yard waste from each residence, multiple dwelling, business or commercial establishment or trailer park between the days the garbage and yard waste is collected. The city or franchisee shall provide containers designated for recycling purposes to sufficiently hold the accumulation of recyclable material from each residence, multiple dwelling, business or commercial establishment or trailer park between the days such recyclable material is collected.

Sec. 56-32. Wrapping and preparation of garbage; keeping containers covered.

All wet garbage matter shall be wrapped in paper contained in a plastic bag before being placed in garbage cans. ~~Containers shall first be drained of all liquids prior to being~~No liquids shall be placed in garbage cans. All garbage cans shall be kept tightly covered at all times except when it becomes necessary to lift the covers to deposit garbage in the garbage can or empty such can in a garbage truck.

Sec. 56-33. Preparation of yard waste.

- (a) All yard waste which is absorbent, such as grass and leaves, including fine grass cuttings, shall be contained in the required yard waste containers, except that yard waste containing no combustible matter, which will deteriorate or decay without giving off offensive odors, may be accumulated by the owner as such if maintained

in a neat, orderly and sightly condition. All yard waste shall be separated from garbage prior to pickup.

- (b) ~~No yard waste pickups will be made of vacant lots; provided, however, the owner of any vacant lot may make arrangements with the city or franchisee for pickup of yard waste, and a reasonable charge for such service shall be determined by the coordinator.~~

Yard waste volumes of up to five cubic yards from residential vacant lots will be collected by the city or franchisee. Volumes in excess of five cubic yards are the responsibility of the property owner to properly dispose of. This section does not replace the requirements of section 56-36. Yard waste from vacant commercial property is solely the responsibility of the property owner to properly dispose of.

- (c) Yard waste which is not prepared or separated as required herein will not be picked up ~~but~~ and will shall be a violation of this article.

Sec. 56-34. Location and separation of containers.

(a) Garbage, recycling and yard waste containers when not in use shall be kept away from the front of any building or premises. No garbage, recycling or yard waste container shall be kept or maintained upon or adjacent to any road, alley, street, sidewalk, parkway or front yard and no such container shall be ~~placed~~ kept or maintained within five feet of any property line. No garbage can, recycling container or yard waste container shall be deposited upon any adjoining lot or premises, whether vacant or improved, occupied or unoccupied, or in any sidewalk, road, street, alley or park in the city. Yard waste not required to be in yard waste containers, garbage, recycling and yard waste containers filled for pickup, shall be neatly placed near, but not upon or blocking, the street, alley or road ~~roadway~~ on days of garbage, recycling and yard waste pickup so as to be convenient and accessible for collection.

(b) Garbage and recycling shall each be placed and maintained in separate containers.

(c) Garbage, recycling, and yard waste will be collected between 7 a.m. and 7 p.m. on designated days. Containers used for collection shall be placed by the curb or by the edge of pavement (when no curb exists) near, but not upon or blocking, the street, alley or road prior to 7 a.m. on the day of designated collection, but no earlier than 7 p.m. the day prior to service. Containers shall be promptly removed and properly stored after collection but no later than 7 a.m. the next morning.

**Sec. 56-35. Inspection of garbage can, recycling and yard waste containers;
condemnation.**

All garbage cans, recycling containers and yard waste containers shall be subject to the approval ~~and condemnation~~ of the ~~coordinator~~ solid waste manager. ~~No appeal for such condemnation shall be possible except to the city council.~~

[No changes to Section 56-36]

SECTION 2. All ordinances or parts of ordinances in conflict with the provisions of this ordinance are hereby repealed to the extent of such conflict.

SECTION 3. 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 of the ordinance which can be given effect without the invalid provision or application, and to this end the provisions of this ordinance are declared severable.

SECTION 4. The provisions of this ordinance shall become and be made a part of the Code of Ordinances of the City of Port Orange and the sections of this ordinance may be renumbered or re-lettered to accomplish such intention. The code codifier is granted liberal authority to codify the provisions of the ordinance.

SECTION 5. This ordinance shall become effective upon final passage by the City Council.

MAYOR DONALD O. BURNETTE

ATTEST:

Robin L. Fenwick, MMC, City Clerk

Passed on first reading on the day of _____

Passed and adopted on second and final reading on the day of _____

Reviewed and Approved: _____
Matthew J. Jones, City Attorney

[CA 7640]

City of Port Orange, Florida

Solid Waste Rate Study

AUGUST 2021

Presented By:

Government Services Group, Inc.
1500 Mahan Drive, Suite 250
Tallahassee, Florida 32308
(850) 681-3717
(850) 224-7206 Fax

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Introduction

The City of Port Orange (City) has retained Government Services Group, Inc. (GSG) to assist the City with updating the existing program to impose fees on residential and non-residential properties to fund the costs of solid waste collection and disposal services for Fiscal Year 2021-22 and future fiscal years.

GSG is a consulting firm that specializes in addressing and resolving local government finance and taxation issues by working with cities, counties, special districts, and state agencies to develop uniquely tailored funding and service delivery solutions for critical infrastructure and service needs.

This document is the City of Port Orange Solid Waste Rate Study, which is one of the project deliverables specified by the agreed-to Scope of Services.

BACKGROUND

In Fiscal Year 2020-21 the program funded approximately \$7.40 million of the City's total solid waste costs. Table 1 shows current rates as implemented by the City for Fiscal Year 2020-21.

Table 1
City of Port Orange Solid Waste Rates (Fiscal Year 2020-21)

Container Size X Weekly Pickup Frequency	Monthly Rate
Residential	\$18.67
1 x 1	\$28.71
2 X 1	\$57.73
2 X 2	\$115.46
2 X 3	\$173.20
2 X 4	\$230.93
2 X 5	\$288.66
2 X 6	\$346.39
2 X 7	\$404.12
4 X 1	\$115.46
4 X 2	\$230.93
4 X 3	\$346.39
4 X 4	\$461.86
4 X 5	\$577.32
4 X 6	\$692.78
4 X 7	\$808.25
6 X 1	\$173.20
6 X 2	\$346.39
6 X 3	\$519.59
6 X 4	\$692.78
6 X 5	\$865.98

Container Size X Weekly Pickup Frequency	Monthly Rate
6 X 6	\$1,039.18
6 X 7	\$1,212.37
8 X 1	\$230.93
8 X 2	\$461.86
8 X 3	\$692.78
8 X 4	\$923.71
8 X 5	\$1,154.64
8 X 6	\$1,385.57
8 X 7	\$1,616.45

For Fiscal Year 2021-22, the City has decided to update the solid waste rate study to reflect changes in the customer account data, budget, contract costs and services provided.

Service Delivery Description and Cost Calculations

SERVICE DELIVERY DESCRIPTION

The City's solid waste services include both residential and non-residential collection and disposal. Residential service includes twice weekly curbside pickup and disposal through contract with Waste Pro services as well as once weekly recycling and yard waste pickup and disposal. Non-Residential service includes dumpster service pickup and disposal. The container size and pickup frequency for non-residential properties is dependent on the property use and/or services requested by the property owner or tenant.

COST CALCULATIONS

To determine the solid waste rates, GSG obtained the projected budget from the City of Port Orange for Fiscal Year 2021-22. This was utilized to form the basis of a five-year projected budget, as well as a five-year average budget. All costs incurred to implement and maintain the proposed rates have also been included.

The solid waste services cost calculations for Fiscal Years 2021-22 through 2025-26 are based on the following assumptions for the purpose of this Solid Waste Rate Study.

- A seven percent annual increase was applied to personnel costs for Fiscal Years 2022 and 2023 and a three percent annual increase was applied to all other expenditures and revenues.
- The line item "Under Collections @ 5%" under "Additional Costs" reflects a 95% collection of the solid waste rates to cover a reserve for under collections.

In order to allocate the City's solid waste budget between residential and non-residential, certain line items were allocated between residential and non-residential based on tonnage. This allocation factor is derived by creating a ratio between residential tonnage and commercial tonnage. The estimated residential tonnage for Calendar Year 2020 was 38,630.33. The estimated commercial tonnage for Calendar Year 2020 for the City was 12,572.12, for a total of 51,202.45. This yields a 76.7 percent residential tonnage factor and 23.3 percent non-residential tonnage factor.

These tonnage factors were applied to all revenue and expenditure line items to determine residential and non-residential portion of the solid waste budget based on information provided by the City.

Table 2 provides a calculation of the costs for the residential portion of the Fiscal Year 2021-22 budget based on an application of the above factors to the Fiscal Year 2020-21 projected budget as provided by the City. The calculation yields a total included cost of \$6,649,254 for Fiscal Year 2021-22

Table 2
Residential Budget (Fiscal Year 2021-22)

	Fiscal Year 21-22 Total Budget	Fiscal Year 21-22 Residential Budget
Expenditures		
Garbage/Landfill Closeout		
Employee Assistance Program	\$149	\$112
Health and Dental Insurance	\$28,772	\$21,707
Life Insurance	\$505	\$381
Overtime	\$1,000	\$754
FICA Taxes	\$14,923	\$11,259
Car Allowance	\$654	\$493
Salaries and Wages	\$196,924	\$148,572
Retirement Contributions	\$24,555	\$18,526
Workmen's Comp	\$364	\$275
Audit Fee	\$5,040	\$3,802
Landfill Services	\$1,823,021	\$1,375,401
Other Contracted Services	\$5,250,000	\$3,960,928
Software Maintenance	\$1,270	\$958
Vehicle Maintenance/Repair	\$2,250	\$1,698
City Phones	\$720	\$543
Communication Services	\$86	\$65
Dues and Memberships	\$250	\$189
Employee Training	\$1,200	\$905
Gas, Diesel, Oil, and Grease	\$2,000	\$1,509
Internet Services	\$504	\$380
Office Supplies	\$250	\$189
Other Operating Supplies	\$1,500	\$1,132
Per Diem	\$250	\$189
Travel	\$250	\$189
Uniforms	\$150	\$113
Fleet Maintenance Charge	\$265	\$200
Fleet Financing	\$2,238	\$1,688
Internal Building Maintenance Charge	\$11,067	\$8,350
Internal IT Charge	\$279,695	\$211,019
Internal Insurance Charge	\$10,908	\$8,230
Miscellaneous Charge	\$420,734	\$317,428
Vehicle Insurance	\$508	\$383
Interfund Transfer	\$210,569	\$158,866
Reserves	\$100,000	\$113,169
Total Garbage/Landfill Closeout	\$8,392,571	\$6,331,881
Revenues		
Interest Earnings	\$20,000	\$15,089
Total Revenues	\$20,000	\$15,089
Additional Costs		
Under Collections @ 5%		\$332,463
Total Additional Costs		\$332,463
Total Residential Budget		\$6,649,254

Table 3 provides a calculation of the costs for Non-Residential portion of the Fiscal Year 2021-22 budget based on an application of the above factors to the Fiscal Year 2020-21 projected budget as provided by the City. The calculation yields a total included cost of \$2,155,787 for Fiscal Year 2021-22.

Table 3
Non-Residential Budget (Fiscal Year 2021-22)

	Fiscal Year 21-22 Projected Budget	Fiscal Year 21-22 Non-Residential Budget
Expenditures		
Garbage/Landfill Closeout		
Employee Assistance Program	\$149	\$37
Health and Dental Insurance	\$28,772	\$7,065
Life Insurance	\$505	\$124
Overtime	\$1,000	\$246
FICA Taxes	\$14,923	\$3,664
Car Allowance	\$654	\$161
Salaries and Wages	\$196,924	\$48,352
Retirement Contributions	\$24,555	\$6,029
Workmen's Comp	\$364	\$89
Audit Fee	\$5,040	\$1,238
Landfill Services	\$1,823,021	\$447,620
Other Contracted Services	\$5,250,000	\$1,289,072
Software Maintenance	\$1,270	\$312
Vehicle Maintenance/Repair	\$2,250	\$552
City Phones	\$720	\$177
Communication Services	\$86	\$21
Dues and Memberships	\$250	\$61
Employee Training	\$1,200	\$295
Gas, Diesel, Oil, and Grease	\$2,000	\$491
Internet Services	\$504	\$124
Office Supplies	\$250	\$61
Other Operating Supplies	\$1,500	\$368
Per Diem	\$250	\$61
Travel	\$250	\$61
Uniforms	\$150	\$37
Fleet Maintenance Charge	\$265	\$65
Fleet Financing	\$2,238	\$550
Internal Building Maintenance Charge	\$11,067	\$2,717
Internal IT Charge	\$279,695	\$68,676
Internal Insurance Charge	\$10,908	\$2,678
Miscellaneous Charge	\$420,734	\$103,306
Vehicle Insurance	\$508	\$125
Additional Operating	\$210,569	\$51,703
Reserves	\$100,000	\$24,554
Total Garbage/Landfill Closeout	\$8,392,571	\$2,060,691
Revenues		
Commercial Roll Off Revenue	\$25,000	\$7,783
Interest Earnings	\$20,000	\$4,911
Total Revenues	\$45,000	\$12,693
Additional Costs		
Under Collections@ 5%		\$107,789
Total Additional Costs		\$107,789
Total Non-Residential Budget		\$2,155,787

Table 4 shows the residential Fiscal Year 2021-22 through Fiscal Year 2025-26 annual budget as well as the residential five-year average cost of solid waste services for Fiscal Year 2021-22 through Fiscal Year 2025-26.

Table 4
Residential Proforma Budget
(Fiscal Year 2021-22 through Fiscal Year 2025-26 and Five-Year Average)

	Fiscal Year 2021-22 Budget	Fiscal Year 2022-23 Budget	Fiscal Year 2023-24 Budget	Fiscal Year 2024-25 Budget	Fiscal Year 2025-26 Budget	Five-Year Average Budget
Expenditures						
Garbage/Landfill Closeout	\$6,331,881	\$6,521,998	\$6,718,323	\$6,912,843	\$7,113,199	\$6,719,649
Total Expenditures	\$6,331,881	\$6,521,998	\$6,718,323	\$6,912,843	\$7,113,199	\$6,719,649
Revenues	\$15,089	\$15,542	\$16,008	\$16,488	\$16,983	\$16,022
Additional Costs	\$332,463	\$342,445	\$352,753	\$362,966	\$373,485	\$352,822
Total Residential Budget	\$6,649,254	\$6,848,902	\$7,055,068	\$7,259,321	\$7,469,701	\$7,056,449

Table 5 shows the non-residential Fiscal Year 2021-22 through Fiscal Year 2025-26 annual budget as well as the non-residential five-year average cost of solid waste services for Fiscal Year 2021-22 through Fiscal Year 2025-26.

Table 5
Non-Residential Proforma Budget
(Fiscal Year 2021-22 through Fiscal Year 2025-26 and Five-Year Average)

	Fiscal Year 2021-22 Budget	Fiscal Year 2022-23 Budget	Fiscal Year 2023-24 Budget	Fiscal Year 2024-25 Budget	Fiscal Year 2025-26 Budget	Five-Year Average Budget
Expenditures						
Garbage/Landfill Closeout	\$2,060,691	\$2,124,115	\$2,189,606	\$2,254,557	\$2,321,458	\$2,190,085
Total Expenditures	\$2,060,691	\$2,124,115	\$2,189,606	\$2,254,557	\$2,321,458	\$2,190,085
Revenues	\$12,693	\$13,074	\$13,466	\$13,870	\$14,286	\$13,478
Additional Costs	\$107,789	\$111,107	\$114,534	\$117,931	\$121,430	\$114,558
Total Non-Residential Budget	\$2,155,787	\$2,222,148	\$2,290,673	\$2,358,618	\$2,428,601	\$2,291,166

Computation of Solid Waste Rates

SPECIAL BENEFIT ASSUMPTIONS

The following assumptions support a finding that the provision of solid waste services, providing disposal, by the City provides a special benefit to the charged parcels.

- The provision of comprehensive solid waste collection and disposal services, possesses a logical relationship to the use and enjoyment of improved residential property by: (i) properly and safely disposing of solid waste generated on improved property, (ii) enhancing improved property through the environmentally responsible use of and enjoyment of the property, and (iii) potentially increasing and preserving the value of property due to the proper disposal of waste within the City.
- The provision of comprehensive solid waste collection and disposal services, protects property values and the health and safety of the owners or occupants of all property resulting from the delivery and availability of such services.
- All improved residential and non-residential properties produce solid waste or are capable of generating solid waste that requires disposal.
- All improved residential properties produce approximately the same amount of solid waste per dwelling unit annually.

The following assumption supports the findings that the parcel apportionment applied in the apportionment methodology is fair and reasonable.

- Apportioning the costs for the provision of solid waste collection and disposal services attributable to the residential properties on a per dwelling unit basis is required to avoid cost inefficiency and unnecessary administration and is a fair and reasonable method of parcel apportionment based upon an average annual dwelling unit solid waste generation amount.
- Apportioning the costs for the provision of solid waste collection and disposal services attributable to the non-residential properties based on their estimated annual cubic yards of solid waste generation is required to avoid cost inefficiency and unnecessary administration and is a fair and reasonable method of parcel apportionment based upon the best estimates of actual solid waste generated.

APPORTIONMENT METHODOLOGY

The following section describes apportionment methodology used for the Solid Waste Rate Study, which provides lawful collection and disposal of solid waste.

All residential properties within the benefit area benefit from solid waste collection and disposal services based upon each parcel's classification as residential property and the number of dwelling units contained on such parcels. Accordingly, the costs of the provided solid waste services are proposed to be apportioned based on the number of dwelling units or their equivalent on each parcel of residential property. Each resultant dwelling unit or its equivalent within the benefit area is expected to benefit equally.

All improved non-residential properties within the benefit area benefit from the collection and disposal of the solid waste that they generate based on each parcel's classification as non-residential property. Accordingly, the costs of the provided solid waste services are proposed to be apportioned based on the estimated solid waste generated by each property and the associated administrative and overhead costs attributable to each parcel of non-residential property.

The total amount charged for any given residential parcel will be calculated by multiplying the number of dwelling units assigned to the parcel by the rate per dwelling unit to determine the total amount charged.

The total amount charged for any given non-residential parcel will be calculated by multiplying the solid waste generated, in estimated annual cubic yards (rounded up to the nearest whole number and assigned to the parcel based on container size and collection frequency) by the rate per estimated rounded annual cubic yard to determine the total amount charged. Per City direction, non-residential units receiving small hand pick-up services will be charged half the rate of the smallest dumpster container on a once-per-week basis.

The rates presented on a per unit basis are based on the total solid waste operating budget minus the revenue that will be generated from other miscellaneous fees and/or charges. The net budget is then allocated to the residential and non-residential categories by application of the percent of total annual tonnage for the corresponding categories. The resulting apportioned budgets are then divided by the number of units for that property type to calculate a rate per unit.

CUSTOMER DATA

The City provided GSG with information from the City's utility billing system to determine the total number of residential dwelling units. Table 6 shows the total number of dwelling units in the residential property use category, as used for rate calculation purposes.

Table 6
Residential Billing Units

Residential Property Use Category	Number of Dwelling Units
Residential	24,563

The City provided GSG with a listing of all non-residential properties that are receiving solid waste services that included the container size and collection frequency. The estimated annual cubic yards for all non-residential properties were rounded up to the nearest whole number and aggregated across all non-residential properties. Table 7 below shows the rounded estimated annual cubic yards.

Table 7
Non-Residential Billing Units

Residential Property Use Category	Estimated Annual Rounded Cubic Yards
Non-Residential	272,428

COMPUTATION OF SOLID WASTE RATES

Residential

Applying the apportionment methodology, solid waste rates were computed on a per dwelling unit basis based on the costs of providing residential solid waste services and the number of residential dwelling units. Table 8 illustrates the rates after application of the methodology based on 100 percent funding of the total costs for Fiscal Year 2021-22 through Fiscal Year 2025-26 as well as the five-year average.

Table 8
City of Port Orange Residential Solid Waste Rates
(Fiscal Year 2021-22 through Fiscal Year 2025-26 and Five-Year Average)

	Fiscal Year 2021-22	Fiscal Year 2022-23	Fiscal Year 2023-24	Fiscal Year 2024-25	Fiscal Year 2025-26	Five-Year Average
Total Residential Budget	\$6,595,514	\$6,791,166	\$6,992,688	\$7,200,255	\$7,414,049	\$6,998,735
Residential Dwelling Units	24,563	24,563	24,563	24,563	24,563	24,563
Annual Rate Per Dwelling Unit	\$271	\$279	\$287	\$296	\$304	\$287
Monthly Rate Per Dwelling Unit	\$22.56	\$23.24	\$23.94	\$24.63	\$25.34	\$23.94

Non-Residential

Applying the apportionment methodology, solid waste rates were computed on a per estimated annual cubic yard basis based on the costs of providing non-residential solid waste services and the number of non-residential billing units. Table 9 illustrates the cost per cubic yard after application of the methodology based on 100 percent funding of the total costs for Fiscal Year 2021-22 through Fiscal Year 2025-26 as well as the five-year average.

Table 9
City of Port Orange Non-Residential Solid Waste Cost Per Cubic Yard
(Fiscal Year 2021-22 through Fiscal Year 2025-26 and Five-Year Average)

	Fiscal Year 2021-22	Fiscal Year 2022-23	Fiscal Year 2023-24	Fiscal Year 2024-25	Fiscal Year 2025-26	Five-Year Average
Total Non-Residential Budget	\$2,138,297	\$2,203,747	\$2,268,696	\$2,335,594	\$2,404,498	\$2,270,166
Estimated Annual Cubic Yards	272,428	272,428	272,428	272,428	272,428	272,428
Cost Per Estimated Annual Cubic Yard	\$7.91	\$8.16	\$8.41	\$8.66	\$8.91	\$8.41

The cost per estimated annual cubic ton from table 9 was multiplied by the container size and weekly pickup frequency to get the weekly cubic yards and then multiplied by 4.33 to get the monthly rate per container as shown below in Table 10.

Table 10
City of Port Orange Non-Residential Solid Waste Monthly Rates
(Fiscal Year 2021-22 through Fiscal Year 2025-26 and Five-Year Average)

	Fiscal Year 2021-22	Fiscal Year 2022-23	Fiscal Year 2023-24	Fiscal Year 2024-25	Fiscal Year 2025-26	Five-Year Average
Container Size X Weekly Pickup Frequency	Monthly Rate	Monthly Rate	Monthly Rate	Monthly Rate	Monthly Rate	Monthly Rate
1 x 1	\$34.26	\$35.32	\$36.41	\$37.49	\$38.60	\$36.42
2 X 1	\$68.53	\$70.64	\$72.82	\$74.98	\$77.20	\$72.83
2 X 2	\$137.06	\$141.28	\$145.63	\$149.95	\$154.40	\$145.66
2 X 3	\$205.59	\$211.91	\$218.45	\$224.93	\$231.60	\$218.50
2 X 4	\$274.11	\$282.55	\$291.27	\$299.91	\$308.80	\$291.33
2 X 5	\$342.64	\$353.19	\$364.08	\$374.88	\$386.00	\$364.16
2 X 6	\$411.17	\$423.83	\$436.90	\$449.86	\$463.21	\$436.99
2 X 7	\$479.70	\$494.47	\$509.71	\$524.83	\$540.41	\$509.82
4 X 1	\$137.06	\$141.28	\$145.63	\$149.95	\$154.40	\$145.66
4 X 2	\$274.11	\$282.55	\$291.27	\$299.91	\$308.80	\$291.33
4 X 3	\$411.17	\$423.83	\$436.90	\$449.86	\$463.21	\$436.99
4 X 4	\$584.23	\$565.11	\$582.53	\$599.81	\$617.61	\$582.66
4 X 5	\$685.29	\$706.38	\$728.16	\$749.76	\$772.01	\$728.32
4 X 6	\$822.34	\$847.66	\$873.80	\$899.72	\$926.41	\$873.98
4 X 7	\$959.40	\$988.93	\$1,019.43	\$1,049.67	\$1,080.81	\$1,019.65
6 X 1	\$205.59	\$211.91	\$218.45	\$224.93	\$231.60	\$218.50
6 X 2	\$411.17	\$423.83	\$436.90	\$449.86	\$463.21	\$436.99
6 X 3	\$616.76	\$635.74	\$655.35	\$674.79	\$694.81	\$655.49
6 X 4	\$822.34	\$847.66	\$873.80	\$899.72	\$926.41	\$873.98
6 X 5	\$1,027.93	\$1,059.57	\$1,092.25	\$1,124.64	\$1,158.01	\$1,092.48
6 X 6	\$1,233.52	\$1,271.49	\$1,310.70	\$1,349.57	\$1,389.62	\$1,310.98
6 X 7	\$1,439.10	\$1,483.40	\$1,529.14	\$1,574.50	\$1,621.22	\$1,529.47
8 X 1	\$274.11	\$282.55	\$291.27	\$299.91	\$308.80	\$291.33
8 X 2	\$548.23	\$565.11	\$582.53	\$599.81	\$617.61	\$582.66
8 X 3	\$822.34	\$847.66	\$873.80	\$899.72	\$926.41	\$873.98
8 X 4	\$1,096.46	\$1,130.21	\$1,165.06	\$1,199.62	\$1,235.21	\$1,165.31
8 X 5	\$1,370.57	\$1,412.76	\$1,456.33	\$1,499.53	\$1,544.02	\$1,456.64
8 X 6	\$1,644.69	\$1,695.32	\$1,747.59	\$1,799.43	\$1,852.82	\$1,747.97
8 X 7	\$1,918.80	\$1,977.87	\$2,038.86	\$2,099.34	\$2,161.63	\$2,039.30



Solid Waste Rate Study

**City Council Meeting
October 19, 2021**

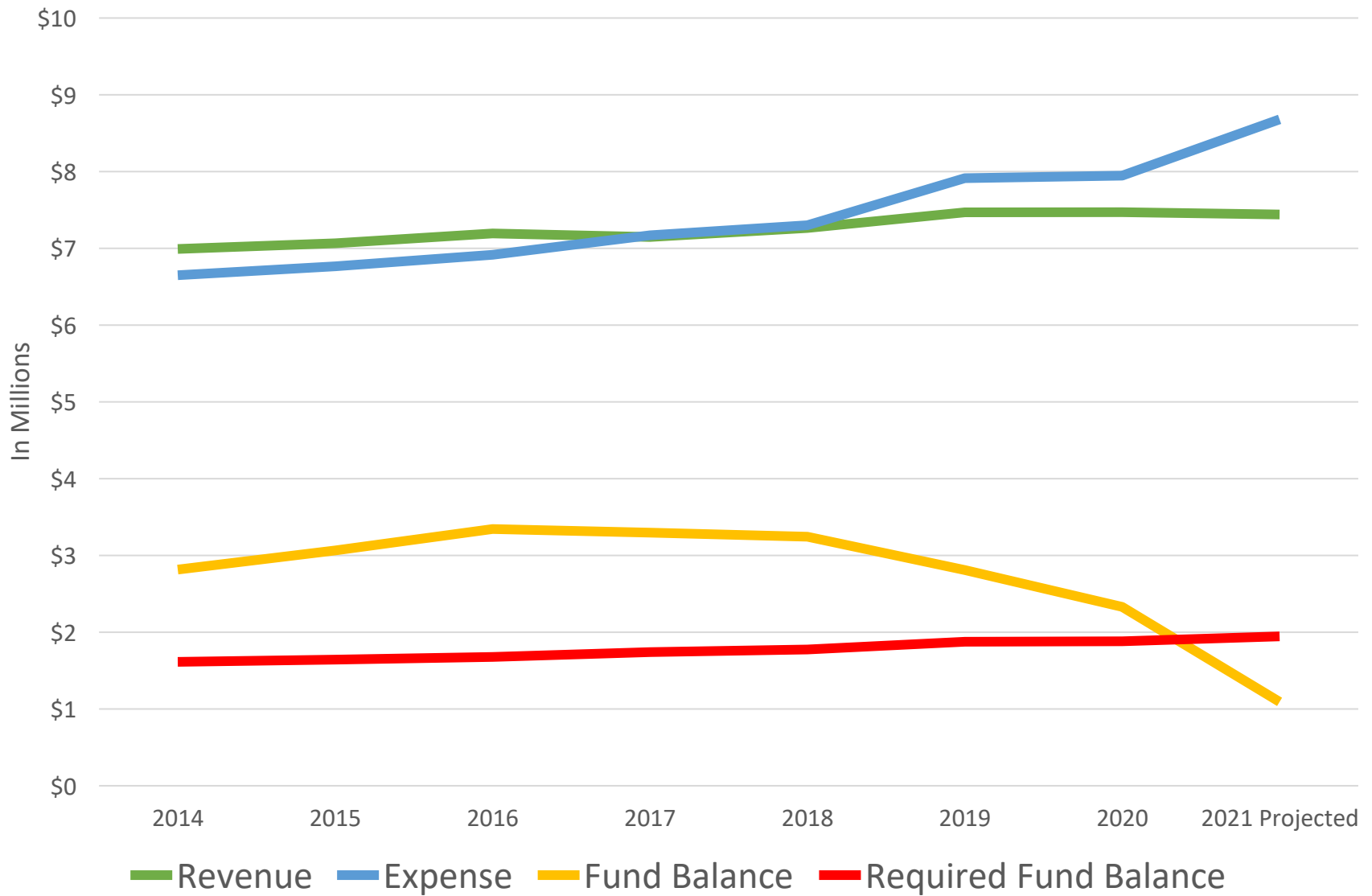
Lynn Stevens

- **Purpose:**
 - To Discuss Solid Waste Rates
- **Agenda:**
 - History
 - Current Operating Overview
 - Rate Study by GSG
 - Recommendations/Conclusions

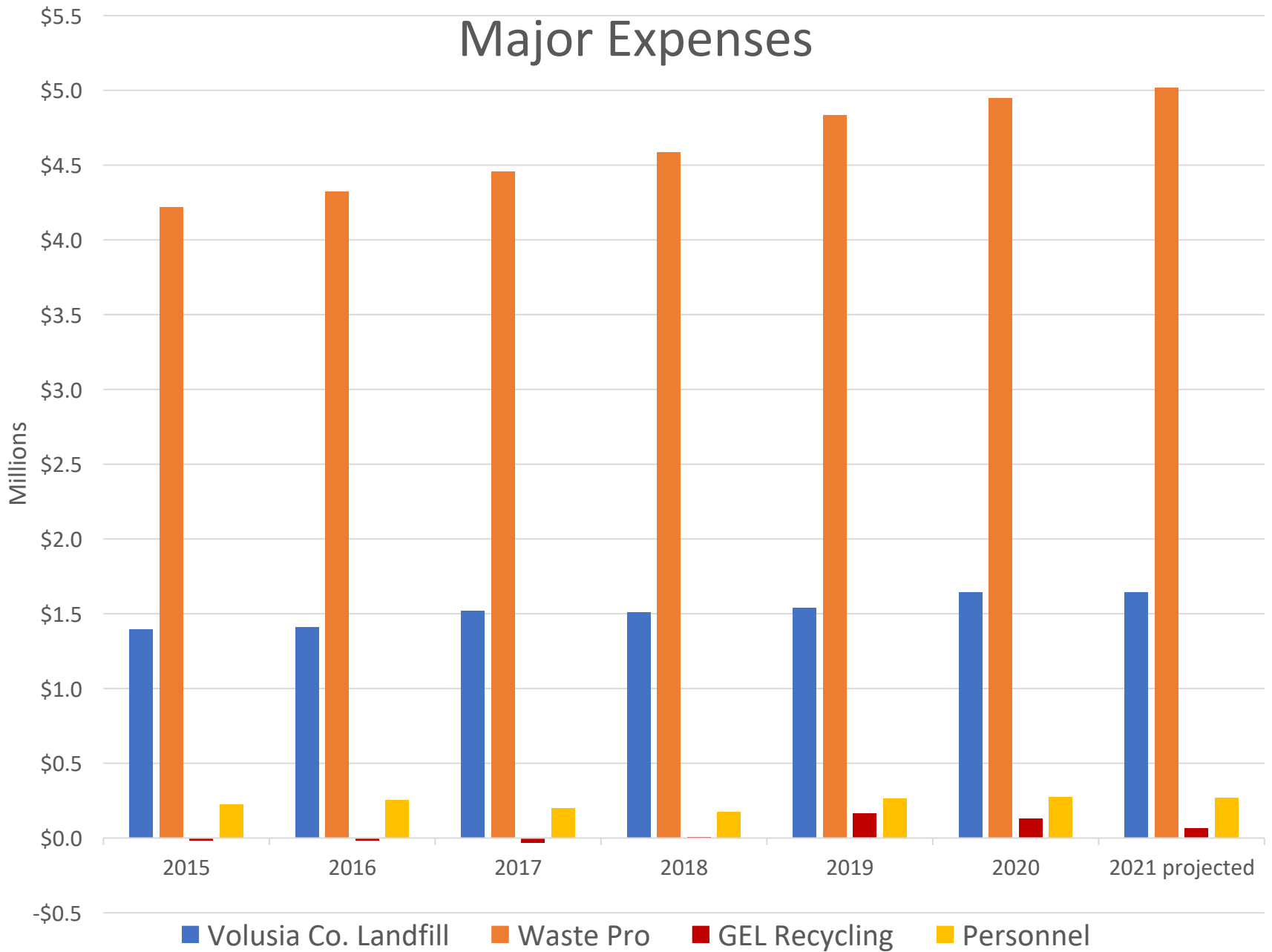
- Current Rates established in 2014
 - Residential - \$18.67
 - Commercial Hand Pick Up - \$28.71
 - Commercial Dumpster Service - \$6.67 cu yd
- Level of Service and Rates remain unchanged
 - 2x per week garbage
 - 1x per week unlimited yard waste
 - 1x per week recycling
 - Unlimited bulk pick up

- Waste Pro awarded bid in 2011
 - 5 - year term
 - 1 – 5 year renewal option exercised in 2016
 - Included CPI and fuel adjustments
 - Contract expires September 2021
- 2021 New bid awarded to Waste Pro
 - Begins November 1, 2021

Financial Overview



Major Expenses



- 2018/19 fund balance dropping
- Bids scheduled for new collection contract
- Contracted with Government Services Group Inc. for rate evaluation

Fiscal Year 2021-22 through Fiscal Year 2025-26 and Five-Year Average Residential Rates



GOVERNMENT SERVICES GROUP, INC.

	FY 21-22 Budget	FY 22-23 Budget	FY 23-24 Budget	FY 24-25 Budget	FY 25-26 Budget	Five-Year Avg. Budget
Total Costs	\$6,649,254	\$6,848,902	\$7,055,068	\$7,259,321	\$7,469,701	\$7,056,449
Total Dwelling Units	24,563	24,563	24,563	24,563	24,563	24,563
Annual Rate Per Dwelling Unit	\$271	\$279	\$287	\$295	\$303	\$287
Monthly Rate Per Dwelling Unit	\$22.56	\$23.24	\$23.94	\$24.63	\$25.34	\$23.94

Fiscal Year 2021-22 through Fiscal Year 2025-26 and Five-Year Average Non-Residential Budget



GOVERNMENT SERVICES GROUP, INC.

	FY 21-22 Budget	FY 22-23 Budget	FY 23-24 Budget	FY 24-25 Budget	FY 25-26 Budget	Five-Year Avg. Budget
Total Expenditures	\$2,060,691	\$2,124,115	\$2,189,606	\$2,254,557	\$2,321,458	\$2,190,085
Total Revenues	\$12,693	\$13,074	\$13,466	\$13,870	\$14,286	\$13,478
Total Additional Costs	\$107,789	\$111,107	\$114,534	\$117,931	\$121,430	\$114,558
Total Costs	\$2,155,787	\$2,222,148	\$2,290,673	\$2,358,618	\$2,428,601	\$2,291,166

Non-Residential Rates



GOVERNMENT SERVICES GROUP, INC.

- Non-Residential rates are dependent on the container size and pick-up frequency.
- Five-Year Average of \$8.41 per cubic yard
- Ranges from \$36.42 - \$2,039.30 per month

Generated Revenue from Updated Rates



GOVERNMENT SERVICES GROUP, INC.

	FY 21-22 Budget	FY 22-23 Budget	FY 23-24 Budget	FY 24-25 Budget	FY 25-26 Budget	Five-Year Avg. Budget
Residential Revenue	\$6,649,254	\$6,848,902	\$7,055,068	\$7,259,321	\$7,469,701	\$7,056,449
Non-Residential Revenue	\$2,155,787	\$2,222,148	\$2,290,673	\$2,358,618	\$2,428,601	\$2,291,166
Total Revenue from Solid Waste Fees	\$8,805,041	\$9,071,050	\$9,345,741	\$9,617,939	\$9,898,302	\$9,347,615
Total Net Expenses	\$8,805,041	\$9,071,050	\$9,345,741	\$9,617,939	\$9,898,302	\$9,347,615

Note: Estimated revenue generated by updated solid waste fees covers projected expenditures.

- City policy for Enterprise fund balance
 - 25 - 30% of operating less transfers
 - If below 25%, must have a plan to replenish
- Projected shortage @\$700,000 if rate is not adjusted

- Recommend Rates effective January 1, 2022
 - Based on expenses, no capital component
 - Residential \$22.58 per month
 - Maintains level of service
 - Eliminates Energy fee
 - Commercial \$7.91 per cubic yard
- City has not raised rates since 2014

- Recommend resolution include automatic rate adjustment October 1 each year
 - CPI % = garbage and trash in US (city average), all urban consumers, not seasonally adjusted as published by Bureau of Labor Statistics
 - Or 5% whichever is LESS
 - Same language in Waste Pro contract
- Add language - if fund balance meets policy, then rate increase may be adjusted down



Questions

- Rates have not changed since 2014
- Expenses have increased
- Fund balance below policy and GFOA recommendation
- Effective date January 1, 2022
- Annual increases based on CPI or 5% whichever is less



CITY COUNCIL AGENDA ITEM

REQUESTED COUNCIL MEETING DATE 10/19/2021

Consent item: Yes

SUBJECT: (I21b) Resolution No. 21-57 - Solid Waste Rates

DEPARTMENT: Public Utilities

GOAL: 5 - Fiscal Sustainability

RECOMMENDED MOTION: Move to approve Resolution No. 21-57.

SUMMARY: In March 2021, the City awarded the new bid for solid waste collection services to begin November 1, 2021. This contract replaced a 10 year contract for the service which expires October 31, 2021. Solid Waste is an enterprise fund which solely relies upon solid waste rates paid by the customer to support the needs of the level of service provided. The last rate increase was 2014. Revenue into the fund has been relatively flat, while expenses have continued to rise. Once the new contract was awarded, the City underwent a rate study for solid waste services.

The results of the rate study along with staff recommendations regarding proposed rates were provided to City Council on August 24, 2021. Staff is asking City Council to approve the attached resolution modifying rates for the collection of residential and commercial garbage services, residential recycling service, and yard waste collection. The resolution includes an automatic annual increase of rates based upon the Consumer Price Index for all Urban Consumers as published by the U.S. Department of Labor, Bureau of Labor Statistics. The new rates will be effective January 1, 2022 and will be adjusted every October thereafter. The resolution provides that the city council may adopt an annual rate increase that is less than the annual adjusted amount by resolution.

Project No.: N/A

Funding Account No.: Contractual

Presenter: Lynn Stevens

ATTACHMENTS:

1.	Resolution 21-57	Resolution 21-57 3.pdf
2.	Final Port Orange Solid Waste Report 8-6-21	Final Port Orange Solid Waste Report 8-6-21.pdf

Julia Wiggins	Created/Initiated - 9/7/2021
Julia Wiggins	Approved - 9/7/2021
Lynn Stevens	Approved - 9/15/2021
Robin Hayes	Approved - 9/22/2021
Matthew Jones	Approved - 10/6/2021
Wayne Clark	Approved - 10/7/2021
Robin Fenwick	Final Approval - 10/8/2021

RESOLUTION NO. 21-57

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PORT ORANGE, VOLUSIA COUNTY, FLORIDA; ESTABLISHING REVISED SERVICE CHARGES AND RATES FOR COLLECTION AND DISPOSAL OF SOLID WASTE; SUPERSEDING PRIOR RESOLUTION; AND PROVIDING AN EFFECTIVE DATE.

WHEREAS, Subsection 56-29(a) of the Code of Ordinances, City of Port Orange, Florida, provides for solid waste collection and disposal rates to be set by resolution of the City Council; and

WHEREAS, Subsection 56-29(b) of the Code of Ordinances, City of Port Orange, Florida, requires rates including garbage, recyclable material, yard waste, landfill, and other costs for the service to be reviewed and adjusted to ensure adequate revenue for the operation of the solid waste enterprise fund without using general fund monies to subsidize such operation and to satisfy good accounting and business practices; and

WHEREAS, the City Council has reviewed staff reports, rate studies, budgetary and such other information as needed to ensure that the rates adopted herein are fair and equitable to all citizens and are in compliance with the mandates of the Code of Ordinances, City of Port Orange, Florida.

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF PORT ORANGE, VOLUSIA COUNTY, FLORIDA:

Section 1. The City of Port Orange shall franchise a service for the collection and disposal of solid waste as prescribed by Section 56-29 of the Code of Ordinances, and all persons, firms or corporations whose premises are serviced thereby shall pay the following rates effective on January 1, 2022:

A. RESIDENTIAL SINGLE FAMILY UNIT

Garbage, recycle, yard waste	
Occupied Single-Family Unit	\$ 22.58 per month
Unoccupied* Single-Family Unit	\$11.29 per month
Yard Waste put in Plastic Bags	No Charge
Yard Waste Bundled, Boxed and Tied — Weight not to Exceed 50 Pounds per Bundle	No Charge

B. RESIDENTIAL MULTIPLE DWELLING UNIT

Garbage, recycle, yard waste	
Occupied Units	\$ 22.58 per month per unit
Unoccupied* Units	\$ 11.29 per month per unit
Yard Waste put in Plastic Bags	No Charge
Yard Waste Bundled, Boxed and Tied — Weight not to Exceed 50 Pounds per Bundle	No Charge

C. MOBILE HOME PARK

Garbage, recycle, yard waste	
Occupied Units	\$ 22.58 per month per unit
Unoccupied* Units	\$ 11.29 per month per unit
Vacant Lot**	\$ 11.29 per month per lot

Yard Waste put in Plastic Bags	No Charge
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Yard Waste Bundled, Boxed and Tied — Weight not to Exceed 50 Pounds per Bundle	No Charge
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*Unoccupied –

- When a single family unit; multi-family unit; business, commercial, industrial unit; or mobile home is vacant AND water/sewer service is turned off, the resident, owner, and/or customer may request unoccupied status by contacting the customer service department to notify the City that the Unit is unoccupied. The rate shall be increased to the occupied rate once water/sewer service is turned on and/or the property is occupied. The resident, customer, and/or owner shall notify the City immediately once the property is occupied.

****Vacant Lot**

- The owner of a trailer park or mobile home park, which is served water through a master meter, may request vacant lot status when a lot is vacant. Vacant lot for purposes of this section means no building or other structure on it. In order to receive the vacant lot rate, the number of vacant lots, along with the lot number and address of each lot, must be reported in writing to the customer service department before the 15th day of each month. The owner must immediately notify the City once a property in vacant lot status is no longer vacant. Master meter for purposes of this section means a single meter serving all lots within a mobile home park or trailer park.
- The city, at any time through its employees or agents, may periodically check the use of any trailer parks or mobile home parks for the purpose of ascertaining if there is a discrepancy on the part of the owner's or operator's declarations of vacant lot status.

D. TRAVEL TRAILER PARK

Garbage Cans – 3 Can Limit

Garbage, recycle, yard waste	\$ 22.58 per month/per unit
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E. BUSINESS, COMMERCIAL AND INDUSTRIAL

Garbage Cans - 5 Can Limit

Garbage and yard waste	
Occupied per unit	\$ 34.26 per month per unit
Unoccupied* per unit	<u>\$ 17.13</u> per month per unit

F. CONTAINERS (FOR RESIDENTIAL MULTIPLE DWELLINGS, MOBILE HOME PARKS, TRAVEL TRAILER PARKS, AND BUSINESS, COMMERCIAL AND INDUSTRIAL PROPERTY)

2 Cubic Yard Container

1 pickup per week	\$ 68.53 per month
2 pickups per week	\$ 137.06 per month
3 pickups per week	\$ 205.59 per month
4 pickups per week	\$ 274.11 per month
5 pickups per week	\$ 342.64 per month
6 pickups per week	\$ 411.17 per month
7 pickups per week	\$ 479.70 per month

4 Cubic Yard Container

1 pickup per week	\$ 137.06 per month
2 pickups per week	\$ 274.11 per month
3 pickups per week	\$ 411.17 per month
4 pickups per week	\$ 584.23 per month
5 pickups per week	\$ 685.29 per month
6 pickups per week	\$ 822.34 per month
7 pickups per week	\$ 959.40 per month

6 Cubic Yard Container

1 pickup per week	\$ 205.59 per month
2 pickups per week	\$ 411.17 per month
3 pickups per week	\$ 616.76 per month
4 pickups per week	\$ 822.34 per month
5 pickups per week	\$1,027.93 per month
6 pickups per week	\$1,233.52 per month
7 pickups per week	\$1,439.10 per month

8 Cubic Yard Container

1 pickup per week	\$ 274.11 per month
2 pickups per week	\$ 548.23 per month
3 pickups per week	\$ 822.34 per month
4 pickups per week	\$1,096.46 per month
5 pickups per week	\$1,370.57 per month
6 pickups per week	\$1,644.69 per month
7 pickups per week	\$1,918.80 per month

Additional pick up not to exceed 1 per month \$75.00 Flat Rate

G. COMPACTED GARBAGE PICKUP

Pull Charge \$ 207.23 per collection plus Contractor's landfill charge

H. EXCESSIVE GARBAGE RATE AND SPECIAL HANDLING CHARGE FOR YARD

WASTE (Subsection 56-27 of the Code of Ordinances)

Cubic Yard Rate \$9.71

I. GARBAGE ONLY COMMERCIAL ACCOUNTS

Garbage only commercial accounts are customers who do not receive a water/sewer bill from the City of Port Orange and whose business is located within the Port Orange solid waste service area. Garbage only commercial customer accounts shall establish an account with the City of Port Orange for garbage only service and shall provide a deposit equal to 1.5 times the established monthly service fee outlined above. Unless service level is increased by a factor of 2, the deposit amount shall be established at the time when initial service is started. The maximum deposit required shall not exceed \$2,000.

Section 2. The rates outlined in Section 1 will be automatically adjusted annually by the amount of the percentage change in the Consumer Price Index (CPI), "Garbage and trash collection in U.S. city average, all Urban Consumers, not seasonally adjusted" published by the U.S. Department of Labor, Bureau of Labor Statistics, and determined by comparing the CPI from April 1 of the preceding calendar year until March 31 of the present calendar year or 5% whichever is less. The adjusted rate will be applied to all billings for services dated on or after October 1 of each year beginning October 1, 2022. The percentage change in the Consumer Price Index will be applied to the charges as follows:

(1) Multiply the percentage change in the Consumer Price Index from April 1 of the preceding calendar year through March 31 of the present calendar year times the existing charges.

The Consumer Price Index used to make this calculation will be the same as the index required to be used for cost adjustments in the city refuse contract.

(2) Add the product as determined in subsection (1) of this section to the existing charges and round to the nearest cent.

This annual adjustment will be applied automatically to all billings for services dated on or after October 1 of the year in which the adjustment is made. City council may adopt an annual rate increase that is less than the annual adjusted amount set forth in this subsection by resolution of city council.

Section 3. This resolution shall supersede and repeals Resolution No. 14-3.

Section 4. This resolution shall become effective January 1, 2022.

MAYOR DONALD O. BURNETTE

ATTEST:

Robin L. Fenwick, MMC City Clerk

Adopted on the _____ day of _____

Reviewed and Approved: _____
Matthew J. Jones, City Attorney

[CA-7640]

City of Port Orange, Florida

Solid Waste Rate Study

AUGUST 2021

Presented By:

Government Services Group, Inc.
1500 Mahan Drive, Suite 250
Tallahassee, Florida 32308
(850) 681-3717
(850) 224-7206 Fax

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Introduction

The City of Port Orange (City) has retained Government Services Group, Inc. (GSG) to assist the City with updating the existing program to impose fees on residential and non-residential properties to fund the costs of solid waste collection and disposal services for Fiscal Year 2021-22 and future fiscal years.

GSG is a consulting firm that specializes in addressing and resolving local government finance and taxation issues by working with cities, counties, special districts, and state agencies to develop uniquely tailored funding and service delivery solutions for critical infrastructure and service needs.

This document is the City of Port Orange Solid Waste Rate Study, which is one of the project deliverables specified by the agreed-to Scope of Services.

BACKGROUND

In Fiscal Year 2020-21 the program funded approximately \$7.40 million of the City's total solid waste costs. Table 1 shows current rates as implemented by the City for Fiscal Year 2020-21.

Table 1
City of Port Orange Solid Waste Rates (Fiscal Year 2020-21)

Container Size X Weekly Pickup Frequency	Monthly Rate
Residential	\$18.67
1 x 1	\$28.71
2 X 1	\$57.73
2 X 2	\$115.46
2 X 3	\$173.20
2 X 4	\$230.93
2 X 5	\$288.66
2 X 6	\$346.39
2 X 7	\$404.12
4 X 1	\$115.46
4 X 2	\$230.93
4 X 3	\$346.39
4 X 4	\$461.86
4 X 5	\$577.32
4 X 6	\$692.78
4 X 7	\$808.25
6 X 1	\$173.20
6 X 2	\$346.39
6 X 3	\$519.59
6 X 4	\$692.78
6 X 5	\$865.98

Container Size X Weekly Pickup Frequency	Monthly Rate
6 X 6	\$1,039.18
6 X 7	\$1,212.37
8 X 1	\$230.93
8 X 2	\$461.86
8 X 3	\$692.78
8 X 4	\$923.71
8 X 5	\$1,154.64
8 X 6	\$1,385.57
8 X 7	\$1,616.45

For Fiscal Year 2021-22, the City has decided to update the solid waste rate study to reflect changes in the customer account data, budget, contract costs and services provided.

Service Delivery Description and Cost Calculations

SERVICE DELIVERY DESCRIPTION

The City's solid waste services include both residential and non-residential collection and disposal. Residential service includes twice weekly curbside pickup and disposal through contract with Waste Pro services as well as once weekly recycling and yard waste pickup and disposal. Non-Residential service includes dumpster service pickup and disposal. The container size and pickup frequency for non-residential properties is dependent on the property use and/or services requested by the property owner or tenant.

COST CALCULATIONS

To determine the solid waste rates, GSG obtained the projected budget from the City of Port Orange for Fiscal Year 2021-22. This was utilized to form the basis of a five-year projected budget, as well as a five-year average budget. All costs incurred to implement and maintain the proposed rates have also been included.

The solid waste services cost calculations for Fiscal Years 2021-22 through 2025-26 are based on the following assumptions for the purpose of this Solid Waste Rate Study.

- A seven percent annual increase was applied to personnel costs for Fiscal Years 2022 and 2023 and a three percent annual increase was applied to all other expenditures and revenues.
- The line item "Under Collections @ 5%" under "Additional Costs" reflects a 95% collection of the solid waste rates to cover a reserve for under collections.

In order to allocate the City's solid waste budget between residential and non-residential, certain line items were allocated between residential and non-residential based on tonnage. This allocation factor is derived by creating a ratio between residential tonnage and commercial tonnage. The estimated residential tonnage for Calendar Year 2020 was 38,630.33. The estimated commercial tonnage for Calendar Year 2020 for the City was 12,572.12, for a total of 51,202.45. This yields a 76.7 percent residential tonnage factor and 23.3 percent non-residential tonnage factor.

These tonnage factors were applied to all revenue and expenditure line items to determine residential and non-residential portion of the solid waste budget based on information provided by the City.

Table 2 provides a calculation of the costs for the residential portion of the Fiscal Year 2021-22 budget based on an application of the above factors to the Fiscal Year 2020-21 projected budget as provided by the City. The calculation yields a total included cost of \$6,649,254 for Fiscal Year 2021-22

Table 2
Residential Budget (Fiscal Year 2021-22)

	Fiscal Year 21-22 Total Budget	Fiscal Year 21-22 Residential Budget
Expenditures		
Garbage/Landfill Closeout		
Employee Assistance Program	\$149	\$112
Health and Dental Insurance	\$28,772	\$21,707
Life Insurance	\$505	\$381
Overtime	\$1,000	\$754
FICA Taxes	\$14,923	\$11,259
Car Allowance	\$654	\$493
Salaries and Wages	\$196,924	\$148,572
Retirement Contributions	\$24,555	\$18,526
Workmen's Comp	\$364	\$275
Audit Fee	\$5,040	\$3,802
Landfill Services	\$1,823,021	\$1,375,401
Other Contracted Services	\$5,250,000	\$3,960,928
Software Maintenance	\$1,270	\$958
Vehicle Maintenance/Repair	\$2,250	\$1,698
City Phones	\$720	\$543
Communication Services	\$86	\$65
Dues and Memberships	\$250	\$189
Employee Training	\$1,200	\$905
Gas, Diesel, Oil, and Grease	\$2,000	\$1,509
Internet Services	\$504	\$380
Office Supplies	\$250	\$189
Other Operating Supplies	\$1,500	\$1,132
Per Diem	\$250	\$189
Travel	\$250	\$189
Uniforms	\$150	\$113
Fleet Maintenance Charge	\$265	\$200
Fleet Financing	\$2,238	\$1,688
Internal Building Maintenance Charge	\$11,067	\$8,350
Internal IT Charge	\$279,695	\$211,019
Internal Insurance Charge	\$10,908	\$8,230
Miscellaneous Charge	\$420,734	\$317,428
Vehicle Insurance	\$508	\$383
Interfund Transfer	\$210,569	\$158,866
Reserves	\$100,000	\$113,169
Total Garbage/Landfill Closeout	\$8,392,571	\$6,331,881
Revenues		
Interest Earnings	\$20,000	\$15,089
Total Revenues	\$20,000	\$15,089
Additional Costs		
Under Collections @ 5%		\$332,463
Total Additional Costs		\$332,463
Total Residential Budget		\$6,649,254

Table 3 provides a calculation of the costs for Non-Residential portion of the Fiscal Year 2021-22 budget based on an application of the above factors to the Fiscal Year 2020-21 projected budget as provided by the City. The calculation yields a total included cost of \$2,155,787 for Fiscal Year 2021-22.

Table 3
Non-Residential Budget (Fiscal Year 2021-22)

	Fiscal Year 21-22 Projected Budget	Fiscal Year 21-22 Non-Residential Budget
Expenditures		
Garbage/Landfill Closeout		
Employee Assistance Program	\$149	\$37
Health and Dental Insurance	\$28,772	\$7,065
Life Insurance	\$505	\$124
Overtime	\$1,000	\$246
FICA Taxes	\$14,923	\$3,664
Car Allowance	\$654	\$161
Salaries and Wages	\$196,924	\$48,352
Retirement Contributions	\$24,555	\$6,029
Workmen's Comp	\$364	\$89
Audit Fee	\$5,040	\$1,238
Landfill Services	\$1,823,021	\$447,620
Other Contracted Services	\$5,250,000	\$1,289,072
Software Maintenance	\$1,270	\$312
Vehicle Maintenance/Repair	\$2,250	\$552
City Phones	\$720	\$177
Communication Services	\$86	\$21
Dues and Memberships	\$250	\$61
Employee Training	\$1,200	\$295
Gas, Diesel, Oil, and Grease	\$2,000	\$491
Internet Services	\$504	\$124
Office Supplies	\$250	\$61
Other Operating Supplies	\$1,500	\$368
Per Diem	\$250	\$61
Travel	\$250	\$61
Uniforms	\$150	\$37
Fleet Maintenance Charge	\$265	\$65
Fleet Financing	\$2,238	\$550
Internal Building Maintenance Charge	\$11,067	\$2,717
Internal IT Charge	\$279,695	\$68,676
Internal Insurance Charge	\$10,908	\$2,678
Miscellaneous Charge	\$420,734	\$103,306
Vehicle Insurance	\$508	\$125
Additional Operating	\$210,569	\$51,703
Reserves	\$100,000	\$24,554
Total Garbage/Landfill Closeout	\$8,392,571	\$2,060,691
Revenues		
Commercial Roll Off Revenue	\$25,000	\$7,783
Interest Earnings	\$20,000	\$4,911
Total Revenues	\$45,000	\$12,693
Additional Costs		
Under Collections@ 5%		\$107,789
Total Additional Costs		\$107,789
Total Non-Residential Budget		\$2,155,787

Table 4 shows the residential Fiscal Year 2021-22 through Fiscal Year 2025-26 annual budget as well as the residential five-year average cost of solid waste services for Fiscal Year 2021-22 through Fiscal Year 2025-26.

Table 4
Residential Proforma Budget
(Fiscal Year 2021-22 through Fiscal Year 2025-26 and Five-Year Average)

	Fiscal Year 2021-22 Budget	Fiscal Year 2022-23 Budget	Fiscal Year 2023-24 Budget	Fiscal Year 2024-25 Budget	Fiscal Year 2025-26 Budget	Five-Year Average Budget
Expenditures						
Garbage/Landfill Closeout	\$6,331,881	\$6,521,998	\$6,718,323	\$6,912,843	\$7,113,199	\$6,719,649
Total Expenditures	\$6,331,881	\$6,521,998	\$6,718,323	\$6,912,843	\$7,113,199	\$6,719,649
Revenues	\$15,089	\$15,542	\$16,008	\$16,488	\$16,983	\$16,022
Additional Costs	\$332,463	\$342,445	\$352,753	\$362,966	\$373,485	\$352,822
Total Residential Budget	\$6,649,254	\$6,848,902	\$7,055,068	\$7,259,321	\$7,469,701	\$7,056,449

Table 5 shows the non-residential Fiscal Year 2021-22 through Fiscal Year 2025-26 annual budget as well as the non-residential five-year average cost of solid waste services for Fiscal Year 2021-22 through Fiscal Year 2025-26.

Table 5
Non-Residential Proforma Budget
(Fiscal Year 2021-22 through Fiscal Year 2025-26 and Five-Year Average)

	Fiscal Year 2021-22 Budget	Fiscal Year 2022-23 Budget	Fiscal Year 2023-24 Budget	Fiscal Year 2024-25 Budget	Fiscal Year 2025-26 Budget	Five-Year Average Budget
Expenditures						
Garbage/Landfill Closeout	\$2,060,691	\$2,124,115	\$2,189,606	\$2,254,557	\$2,321,458	\$2,190,085
Total Expenditures	\$2,060,691	\$2,124,115	\$2,189,606	\$2,254,557	\$2,321,458	\$2,190,085
Revenues	\$12,693	\$13,074	\$13,466	\$13,870	\$14,286	\$13,478
Additional Costs	\$107,789	\$111,107	\$114,534	\$117,931	\$121,430	\$114,558
Total Non-Residential Budget	\$2,155,787	\$2,222,148	\$2,290,673	\$2,358,618	\$2,428,601	\$2,291,166

Computation of Solid Waste Rates

SPECIAL BENEFIT ASSUMPTIONS

The following assumptions support a finding that the provision of solid waste services, providing disposal, by the City provides a special benefit to the charged parcels.

- The provision of comprehensive solid waste collection and disposal services, possesses a logical relationship to the use and enjoyment of improved residential property by: (i) properly and safely disposing of solid waste generated on improved property, (ii) enhancing improved property through the environmentally responsible use of and enjoyment of the property, and (iii) potentially increasing and preserving the value of property due to the proper disposal of waste within the City.
- The provision of comprehensive solid waste collection and disposal services, protects property values and the health and safety of the owners or occupants of all property resulting from the delivery and availability of such services.
- All improved residential and non-residential properties produce solid waste or are capable of generating solid waste that requires disposal.
- All improved residential properties produce approximately the same amount of solid waste per dwelling unit annually.

The following assumption supports the findings that the parcel apportionment applied in the apportionment methodology is fair and reasonable.

- Apportioning the costs for the provision of solid waste collection and disposal services attributable to the residential properties on a per dwelling unit basis is required to avoid cost inefficiency and unnecessary administration and is a fair and reasonable method of parcel apportionment based upon an average annual dwelling unit solid waste generation amount.
- Apportioning the costs for the provision of solid waste collection and disposal services attributable to the non-residential properties based on their estimated annual cubic yards of solid waste generation is required to avoid cost inefficiency and unnecessary administration and is a fair and reasonable method of parcel apportionment based upon the best estimates of actual solid waste generated.

APPORTIONMENT METHODOLOGY

The following section describes apportionment methodology used for the Solid Waste Rate Study, which provides lawful collection and disposal of solid waste.

All residential properties within the benefit area benefit from solid waste collection and disposal services based upon each parcel's classification as residential property and the number of dwelling units contained on such parcels. Accordingly, the costs of the provided solid waste services are proposed to be apportioned based on the number of dwelling units or their equivalent on each parcel of residential property. Each resultant dwelling unit or its equivalent within the benefit area is expected to benefit equally.

All improved non-residential properties within the benefit area benefit from the collection and disposal of the solid waste that they generate based on each parcel's classification as non-residential property. Accordingly, the costs of the provided solid waste services are proposed to be apportioned based on the estimated solid waste generated by each property and the associated administrative and overhead costs attributable to each parcel of non-residential property.

The total amount charged for any given residential parcel will be calculated by multiplying the number of dwelling units assigned to the parcel by the rate per dwelling unit to determine the total amount charged.

The total amount charged for any given non-residential parcel will be calculated by multiplying the solid waste generated, in estimated annual cubic yards (rounded up to the nearest whole number and assigned to the parcel based on container size and collection frequency) by the rate per estimated rounded annual cubic yard to determine the total amount charged. Per City direction, non-residential units receiving small hand pick-up services will be charged half the rate of the smallest dumpster container on a once-per-week basis.

The rates presented on a per unit basis are based on the total solid waste operating budget minus the revenue that will be generated from other miscellaneous fees and/or charges. The net budget is then allocated to the residential and non-residential categories by application of the percent of total annual tonnage for the corresponding categories. The resulting apportioned budgets are then divided by the number of units for that property type to calculate a rate per unit.

CUSTOMER DATA

The City provided GSG with information from the City's utility billing system to determine the total number of residential dwelling units. Table 6 shows the total number of dwelling units in the residential property use category, as used for rate calculation purposes.

Table 6
Residential Billing Units

Residential Property Use Category	Number of Dwelling Units
Residential	24,563

The City provided GSG with a listing of all non-residential properties that are receiving solid waste services that included the container size and collection frequency. The estimated annual cubic yards for all non-residential properties were rounded up to the nearest whole number and aggregated across all non-residential properties. Table 7 below shows the rounded estimated annual cubic yards.

Table 7
Non-Residential Billing Units

Residential Property Use Category	Estimated Annual Rounded Cubic Yards
Non-Residential	272,428

COMPUTATION OF SOLID WASTE RATES

Residential

Applying the apportionment methodology, solid waste rates were computed on a per dwelling unit basis based on the costs of providing residential solid waste services and the number of residential dwelling units. Table 8 illustrates the rates after application of the methodology based on 100 percent funding of the total costs for Fiscal Year 2021-22 through Fiscal Year 2025-26 as well as the five-year average.

Table 8
City of Port Orange Residential Solid Waste Rates
(Fiscal Year 2021-22 through Fiscal Year 2025-26 and Five-Year Average)

	Fiscal Year 2021-22	Fiscal Year 2022-23	Fiscal Year 2023-24	Fiscal Year 2024-25	Fiscal Year 2025-26	Five-Year Average
Total Residential Budget	\$6,595,514	\$6,791,166	\$6,992,688	\$7,200,255	\$7,414,049	\$6,998,735
Residential Dwelling Units	24,563	24,563	24,563	24,563	24,563	24,563
Annual Rate Per Dwelling Unit	\$271	\$279	\$287	\$296	\$304	\$287
Monthly Rate Per Dwelling Unit	\$22.56	\$23.24	\$23.94	\$24.63	\$25.34	\$23.94

Non-Residential

Applying the apportionment methodology, solid waste rates were computed on a per estimated annual cubic yard basis based on the costs of providing non-residential solid waste services and the number of non-residential billing units. Table 9 illustrates the cost per cubic yard after application of the methodology based on 100 percent funding of the total costs for Fiscal Year 2021-22 through Fiscal Year 2025-26 as well as the five-year average.

Table 9
City of Port Orange Non-Residential Solid Waste Cost Per Cubic Yard
(Fiscal Year 2021-22 through Fiscal Year 2025-26 and Five-Year Average)

	Fiscal Year 2021-22	Fiscal Year 2022-23	Fiscal Year 2023-24	Fiscal Year 2024-25	Fiscal Year 2025-26	Five-Year Average
Total Non-Residential Budget	\$2,138,297	\$2,203,747	\$2,268,696	\$2,335,594	\$2,404,498	\$2,270,166
Estimated Annual Cubic Yards	272,428	272,428	272,428	272,428	272,428	272,428
Cost Per Estimated Annual Cubic Yard	\$7.91	\$8.16	\$8.41	\$8.66	\$8.91	\$8.41

The cost per estimated annual cubic ton from table 9 was multiplied by the container size and weekly pickup frequency to get the weekly cubic yards and then multiplied by 4.33 to get the monthly rate per container as shown below in Table 10.

Table 10
City of Port Orange Non-Residential Solid Waste Monthly Rates
(Fiscal Year 2021-22 through Fiscal Year 2025-26 and Five-Year Average)

	Fiscal Year 2021-22	Fiscal Year 2022-23	Fiscal Year 2023-24	Fiscal Year 2024-25	Fiscal Year 2025-26	Five-Year Average
Container Size X Weekly Pickup Frequency	Monthly Rate	Monthly Rate	Monthly Rate	Monthly Rate	Monthly Rate	Monthly Rate
1 x 1	\$34.26	\$35.32	\$36.41	\$37.49	\$38.60	\$36.42
2 X 1	\$68.53	\$70.64	\$72.82	\$74.98	\$77.20	\$72.83
2 X 2	\$137.06	\$141.28	\$145.63	\$149.95	\$154.40	\$145.66
2 X 3	\$205.59	\$211.91	\$218.45	\$224.93	\$231.60	\$218.50
2 X 4	\$274.11	\$282.55	\$291.27	\$299.91	\$308.80	\$291.33
2 X 5	\$342.64	\$353.19	\$364.08	\$374.88	\$386.00	\$364.16
2 X 6	\$411.17	\$423.83	\$436.90	\$449.86	\$463.21	\$436.99
2 X 7	\$479.70	\$494.47	\$509.71	\$524.83	\$540.41	\$509.82
4 X 1	\$137.06	\$141.28	\$145.63	\$149.95	\$154.40	\$145.66
4 X 2	\$274.11	\$282.55	\$291.27	\$299.91	\$308.80	\$291.33
4 X 3	\$411.17	\$423.83	\$436.90	\$449.86	\$463.21	\$436.99
4 X 4	\$584.23	\$565.11	\$582.53	\$599.81	\$617.61	\$582.66
4 X 5	\$685.29	\$706.38	\$728.16	\$749.76	\$772.01	\$728.32
4 X 6	\$822.34	\$847.66	\$873.80	\$899.72	\$926.41	\$873.98
4 X 7	\$959.40	\$988.93	\$1,019.43	\$1,049.67	\$1,080.81	\$1,019.65
6 X 1	\$205.59	\$211.91	\$218.45	\$224.93	\$231.60	\$218.50
6 X 2	\$411.17	\$423.83	\$436.90	\$449.86	\$463.21	\$436.99
6 X 3	\$616.76	\$635.74	\$655.35	\$674.79	\$694.81	\$655.49
6 X 4	\$822.34	\$847.66	\$873.80	\$899.72	\$926.41	\$873.98
6 X 5	\$1,027.93	\$1,059.57	\$1,092.25	\$1,124.64	\$1,158.01	\$1,092.48
6 X 6	\$1,233.52	\$1,271.49	\$1,310.70	\$1,349.57	\$1,389.62	\$1,310.98
6 X 7	\$1,439.10	\$1,483.40	\$1,529.14	\$1,574.50	\$1,621.22	\$1,529.47
8 X 1	\$274.11	\$282.55	\$291.27	\$299.91	\$308.80	\$291.33
8 X 2	\$548.23	\$565.11	\$582.53	\$599.81	\$617.61	\$582.66
8 X 3	\$822.34	\$847.66	\$873.80	\$899.72	\$926.41	\$873.98
8 X 4	\$1,096.46	\$1,130.21	\$1,165.06	\$1,199.62	\$1,235.21	\$1,165.31
8 X 5	\$1,370.57	\$1,412.76	\$1,456.33	\$1,499.53	\$1,544.02	\$1,456.64
8 X 6	\$1,644.69	\$1,695.32	\$1,747.59	\$1,799.43	\$1,852.82	\$1,747.97
8 X 7	\$1,918.80	\$1,977.87	\$2,038.86	\$2,099.34	\$2,161.63	\$2,039.30



CITY COUNCIL AGENDA ITEM

REQUESTED COUNCIL MEETING DATE 10/19/2021

Consent item: No

SUBJECT: (I22) Resolution No. 21-64 - Endorsing and conceptually approving the proposal for relocation of grant benefits and obligations for submission to Florida Communities Trust

DEPARTMENT: Community Development

GOAL: 3 - Quality of Life

RECOMMENDED MOTION: Move to approve Resolution No. 21-64.

SUMMARY: In June 2004, the City of Port Orange was awarded a Florida Communities Trust (FCT) grant in the amount of \$133,217 to partially fund acquisition of a +/- 0.74-acre property, known as “Marcantonio Property”, to create public recreational open space. The Marcantonio Property is located along Halifax Drive, south of Herbert Street and is in the Port Orange Town Center CRA .



In early 2021, the City began discussions with FCT about transferring the Marcantonio Property grant obligations to the already established Riverwalk Park property. After

additional consultation with FCT staff, it was determined the City could submit a 'Consideration of Recipient's Request for Land Exchanges' application per Rule 62-818.016 F.A.C. in order to receive approval from the FCT for relocation of the Marcantonio Property grant obligations to the Riverwalk Park Property. The Riverwalk Park property is developed with public recreational open space that exceeds the Marcantonio Property grant obligations. Based on the size difference between the Riverwalk Park property and the Marcantonio property, the amount of public open space and recreational opportunities provided on the Riverwalk Park property are much greater than what could be developed on the Marcantonio property.

Part 2(a) of the Rule requires "a written statement from the City Council that it has reviewed the proposal and that the council conceptually approves the proposed land exchange by an affirmative vote of at least three-fourths of its members or the local requirement, whichever is higher." If Council approves the submittal of a 'Consideration of Recipient's Request for Land Exchanges' application, staff will submit to FCT on or before a deadline of November 1, 2021, for full consideration by the Florida Communities Trust during their scheduled December 2021 meeting.

Project No.: N/A

Funding Account No.: N/A

Presenter: Tim Burman

ATTACHMENTS:

1.	Resolution No. 21-64	Resolution 21-64.pdf
2.	DRAFT Plan	DRAFT FCT With Exhibits and App.pdf

Robin Fenwick	Created/Initiated - 10/6/2021
Tim Burman	Approved - 10/7/2021
Shannon Balmer	Approved - 10/12/2021
Wayne Clark	Approved - 10/12/2021
Robin Fenwick	New - 1/1/1900

RESOLUTION NO. 21-64

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PORT ORANGE, VOLUSIA COUNTY, FLORIDA; ENDORSING AND CONCEPTUALLY APPROVING THE PROPOSAL OF THE CITY OF PORT ORANGE, FLORIDA, PURSUANT TO RULE 62-818.016, FLORIDA ADMINISTRATIVE CODE, FOR A LAND EXCHANGE AND RELOCATION OF THE GRANT BENEFITS AND OBLIGATIONS FROM THE MARCANTONIO PROPERTY (3814 HALIFAX DRIVE) TO A PORTION OF THE RIVERWALK PARK PROPERTY WHICH IS CONTIGUOUS TO THE HOFFMEISTER/WILSON PROPERTY, A TRUST PROJECT SITE; AUTHORIZING THE MAYOR AND CITY CLERK TO EXECUTE THE SAME; AND PROVIDING AN EFFECTIVE DATE

WHEREAS, in June of 2004, the City of Port Orange, Florida ("City") was awarded a Florida Communities Trust (FCT) grant in the amount of \$133,217 to partially fund the acquisition of a +/- 0.74-acre property, known as "Marcantonio Property", in furtherance of creating public recreational open space in the Port Orange Town Center Community Redevelopment Area "(CRA)"; and

WHEREAS, subsequent to the acquisition of the Marcantonio Property, development of public recreational open space along the Halifax River was achieved with the completion of the public park parcel consisting of +/- 8.075 acres, known as Riverwalk Park, north of the Marcantonio Property, within the Port Orange Town Center Community Redevelopment Area; and

WHEREAS, the Riverwalk Park property provides premier waterfront public recreational open space that exceeds the Marcantonio Property grant obligations in that the amount of public open space and recreational and educational opportunities provided with the Riverwalk Park property are much greater than what could be developed on the Marcantonio property; and

WHEREAS, the Riverwalk Park property, as developed, includes the property known as "Hoffmeister/Wilson Property" that is subject to an FCT Grant Award Agreement. Said property is

the Trust Project Site that is contiguous to the proposed exchange parcel, said parcel being a portion of the Riverwalk Park property; and

WHEREAS, the purposes contained in the Amended and Restated Riverwalk Park Management Plan (*FKA Management Plan for Town Center Hoffmeister/Wilson Properties 01-129-FF1 & Marcantonio House 02-094-FF2*), ensures that the Riverwalk Park property will be developed and maintained in accordance with the FCT Grant Award Agreement and continue to further the intended redevelopment goals of the Town Center Redevelopment Area by increasing the recreational and educational opportunities for the citizens and visitors of the City; and

WHEREAS, Part 2(a) of Rule 62-818.016, F.A.C. requires "a written statement from the Recipient's governing council that it has reviewed the proposal and that the governing body conceptually approves the proposed land exchange by an affirmative vote of at least 3/4 of its members or the local requirement, whichever is higher".

NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF PORT ORANGE, VOLUSIA COUNTY, FLORIDA:

Section 1. Acknowledgement of Recitals. The foregoing recitals are hereby acknowledged as being true and correct and are incorporated herein.

Section 2. Purpose. The City Council, as the governing council of the city of Port Orange, Florida, declares it has reviewed the proposal to relocate the FCT Grant benefits and obligations from the Marcantonio Property to the Riverwalk Park property, and the City Council conceptually approves the proposed land exchange.

Section 3. Applicable Law. The City shall comply with all applicable law in regard to the public availability of records of official acts by public entities such as the City, including making this Resolution available for public inspection.

Section 4. Compliance. It is the intent of the City that the purpose of this Resolution is to meet the requirements of Rule 62-818.016, F.A.C., and to be a declaration of official intent and conceptual approval of the relocation of the FCT Grant benefits and obligations from the Marcantonio Property to the Riverwalk Park Property under such Rule.

Section 5. Severability. In the event that any portion or section of this Resolution is determined to be invalid, illegal or unconstitutional by a court of competent jurisdiction, such decision shall in no manner affect the remaining portions or sections of this Resolution which shall remain in full force and effect.

Section 6. Effective Date. This Resolution shall become effective immediately upon adoption.

MAYOR DONALD O. BURNETTE

ATTEST:

Robin L. Fenwick, MMC, City Clerk

Passed and adopted on the _____ day of _____

Reviewed and Approved: _____
Shannon K. Balmer, Assistant City Attorney

Amended and Restated Riverwalk Park Management Plan

(FKA Management Plan Town Center Hoffmeister/Wilson Properties

01-129-FF1 & Marcantonio House 02-094-FF2)

FCT Project Name – TBD

Project Number – TBD

October 2021

Prepared for
Florida Communities Trust
by
City of Port Orange



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DRAFT

1.0 INTRODUCTION

Riverwalk Park is a +/- 8-acre tract of land located in east central Volusia County adjacent to Highway US1 (Ridgewood Avenue) and on the west shore of the Halifax River. The property is open to the public, passive recreation, and enjoyment of the property by residents and visitors is encouraged. Riverwalk Park is in the Township 16 (South), Range 33 (East), Section 03 of the United States Geological Survey (USGS) Port Orange Quadrangle. The address of the park is 3441 Ridgewood Avenue (Exhibit A – Location Map) and the public access to the park is along Ridgewood Avenue and multi-use trail, approximately 1,040 feet, 0.2 miles north of Dunlawton Avenue (SR 421). Adjacent land use is a mixture of residential and commercial. There are no anticipated conflicts regarding the use or management of this property.

The land for Riverwalk Park was acquired with grant funding from Florida Communities Trust (FCT) and the City of Port Orange to provide a premier waterfront park that offers a wide variety of recreational activities for all ages. Prior to the purchase of the park property, it was developed with privately owned single-family homes and a mobile home park and restricted public access to Halifax River. The park was constructed on these previously disturbed residential lands to minimize clearing of native vegetation. The construction of Riverwalk Park was funded by a combination of grants from Volusia ECHO and the Florida Inland Navigation District (FIND), and the City of Port Orange. This Management Plan (MP) has been developed to ensure that the Park will be developed and maintained in accordance with the Florida Community Trust (FCT) Grant Award Agreement and in furtherance of the purpose of the grant application (***Appendix 1 – Needs to be drafted***).

Construction of the north end of Riverwalk Park, broke ground in June 2015 and was completed in February 2016. The north end consists of a kayak, canoe and stand-up paddle board launch, a fishing pier, a multi-use trail and sidewalks, shoreline stabilization and wave break to enhance mangrove growth, landscaping, parking, stormwater, and lighting. The south end of the park, which broke ground in August 2016 and was completed in October 2017, includes a restroom building, multiple parking areas,

continuation of the multi-use trail, a playground, a splash pad, multiple picnic pavilions, +/- 1 acre event lawn, seawall promenade, preservation of mangroves, and additional shoreline stabilization. The MP outlines the monitoring and management activities for the property.



The Park was constructed on previously disturbed lands to minimize clearing of native vegetation. The restroom facilities provided are connected to the city's sewer system and underground sewer lines are located away from no less than 130 ft from wetlands on or off the project site and the Halifax River. There are 141 parking spaces provided onsite.

Riverwalk Park is located within the Port Orange Town Center Community Redevelopment Agency (CRA). The Port Orange Town Center (POTC) Community Redevelopment District includes three hundred (300) parcels constituting two hundred seventy-one (271) acres of land situated within the eastern section of Port Orange. The goal of the Town Center is to encourage redevelopment in the CRA along with providing public open space, access to the Halifax River, and preserving natural areas. Riverwalk Park is a focal point of the City's redevelopment efforts in this area and demonstrates the City's investment in Town Center and goals and objectives.

2.0 PURPOSE

The primary purpose of the acquisition of property and construction of Riverwalk Park is to provide opportunities for passive recreation, environmental education, and conservation of natural resources. The recreational components of this project will include multi-use trails, a kayak/paddleboard launch, fishing and observation piers, picnic pavilions, playground, splash pad, open space, and an elevated observation platform to view the Halifax River. All recreational amenities were sited to have the lowest possible impact on the property. For example, the kayak/paddleboard launch was located to have the least impact on the mangrove fringe along the Halifax River while still providing an accessible launch site. Visitors will be educated by interpretive signs and brochures about listed species, native communities, Halifax River and why conservation of native communities and ecosystems is critical in this part of Florida. The project site will be managed only for conservation, protection, and enhancement of natural resources, and for public outdoor recreation that is compatible with the conservation, protection, and enhancement of the site.

The majority of the passive recreation elements of the park have been constructed and open to the public. The site is developed with a mixture of passive and active outdoor recreational opportunities that harmonize with the natural environment with well-placed educational signage that emphasizes to the community the importance of the natural flora and fauna and the benefits of conservation. Acquisition of this property and development of Riverwalk Park furthers the goals of many government and nongovernment organizations including the St. Johns River Water Management District (SJRWMD), Florida Department of Environmental Protection (FDEP), United States Fish and Wildlife Service (USFWS), Florida Fish and Wildlife Conservation Commission (FWC), Florida Inland Navigation District (FIND), and Volusia County. Each of these organizations stress creating recreational opportunities and preservation of native communities as part of their goals. The purpose of the Management Plan is to identify the recreational opportunities, historic features, and natural resources of this area, outline the monitoring and management objectives, and provide a framework and estimated schedule for

management activities. The Management Plan will be modified as necessary and adaptive management principals will allow staff to change strategies over time for the property.

The Management Plan objectives for Riverwalk Park are:

- Preserve the unique scenic features of the Halifax River;
- Provide the public with access to the Halifax River;
- Provide public open space that blends with existing and proposed commercial development within the Port Orange Town Center CRA;
- Protect native plant communities, with emphasis on flora and fauna designated as species of concern, threatened or endangered;
- Provide for context-appropriate recreation opportunities;
- Restore vegetative communities to the extent feasible, and where appropriate, enhance the site to improve its biological function; and
- Educate the public about the unique scenic, natural, cultural, and historical features present on site.

Several comprehensive plan directives have been furthered by the purchase of land and construction of Riverwalk Park to provide public access points to the Halifax River, recreational opportunities, and open space, and preserve natural areas.

1. Policy 5.2.1 in the Future Land Use Element: The Riverwalk district shall be the focus of the Plan's public and private initiatives. The district will be characterized by the following elements that will be memorialized in an architectural design manual utilizing New Urbanist principles:
 - Pedestrian-friendly pathways leading to public spaces
 - Promenade from Dunlawton Avenue to Port Orange-South Daytona Chamber of Commerce
 - Public waterfront with views and vistas
 - "Sense of arrival" created by design improvements to the intersection of Dunlawton and Ridgewood Avenues
 - Mixed-use: entertainment, retail, office and residential

- Florida vernacular styles of architecture including Key West, Marina/Coastal, and Mediterranean with nautical themes
 - Shared parking with a “park-once” preference
 - Master-planned stormwater facilities
 - River-based activities and events
2. Recreation & Open Space Element, Objective 5: Maintain existing public access and acquire additional public access points to local waterways. The City shall coordinate any acquisition program with the appropriate local, regional, state, and federal agencies, so as not to harm or degrade the habitat of the Florida manatee.
 3. Recreation & Open Space Element, Policy 5.1: The City will retain and improve existing public access points to the Halifax River, consistent with the Volusia County Manatee Protection Plan.
 4. Recreation & Open Space Element, Policy 5.4: The City will work with the appropriate local, regional, state, and federal agencies, in its efforts to acquire additional public access along the Halifax River in concert with the Port Orange Town Center redevelopment plan.
 5. Recreation & Open Space Element, Objective 6: Coordinate efforts with all levels of government, quasi-public agencies, and the private sector to provide recreational opportunities and open space while exploring and utilizing creative mechanisms for funding acquisition and development of parks and facilities.

The City of Port Orange's Future Land Use map identifies the boundary of Riverwalk Park being designated as Planned Community (Exhibit B), and the Zoning map identifies the boundary of Riverwalk Park being designated as Planned Community-Riverwalk - Recreation/Conservation (Exhibit C). According to the Future Land Use and Zoning designations for the Riverwalk Park property, it is designated for environmental conservation and outdoor recreation.

According to the City's Comprehensive Plan, the recreation and open space areas within the Planned Community-Riverwalk area are to focus on the natural amenities and both active and passive recreation opportunities provided by the Halifax River. The ordinances that established the Future Land Use and Zoning for the Riverwalk Park property are available upon request. If the Future Land Use or Zoning designation is changed, the City commits to forwarding FCT a copy of the approved ordinance along with reporting the changes in the Annual Stewardship Report.

As part of any literature and advertising of the park, the City will indicate that a portion of the land for the park was acquired with funds from Florida Communities Trust and operated as an outdoor recreation area and promotes environmental education and conservation of natural resources.

3.0 SITE DEVELOPMENT AND IMPROVEMENT

3.1 Acknowledgement Sign

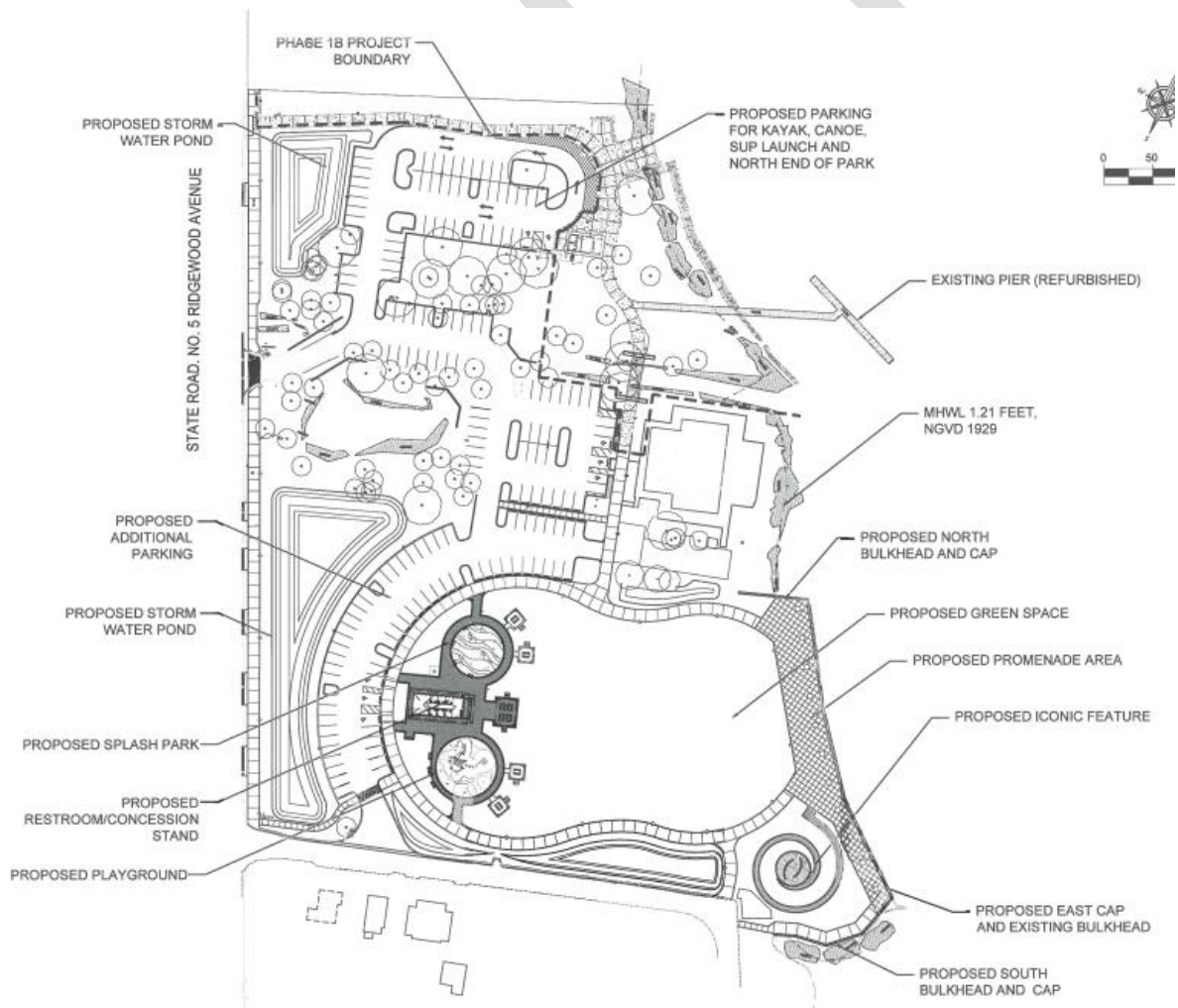
The acknowledgment sign will be designed to "FCT" specifications, at least 3' x 4', and include the FCT logo, the date portions of the Riverwalk Park property were acquired and with FCT funds. Funding for the acquisition of the Riverwalk Park property was provided by City of Port Orange and the FTC using Florida Forever funds. Signs have been created to assist the public in enjoying the features of this property. In addition to the acknowledgment sign, trail signs and signs directing the public to the canoe/kayak launch site as well as other site amenities are on the property.

3.2 Existing Physical Improvements

The Park includes a kayak, canoe and stand-up paddle board launch, a fishing pier, trailways and sidewalks, landscaping, stormwater and lighting, tree preservation areas, pavilion seating/picnic tables, a restroom building, multiple parking areas, a playground, a splash park, multiple picnic pavilions, sidewalks/trails, +/- 1 acre event lawn, and seawall promenade.

Throughout the park there are bike racks in high activity areas, benches, trash cans at key locations to protect water quality and natural areas. The park can be accessed from a non-motorized boat, sidewalks, motor vehicle, and Votran bus service (Route #4).

All site improvements were constructed on previously disturbed lands to minimize clearing of native vegetation. The restroom facilities provided are connected to the city's sewer system and underground sewer lines are located away from no less than 130 ft from wetlands on or off the project site and the Halifax River. There are 141 parking spaces provided onsite.



Shade trees and shrubs were planted around the parking area, playground, resting benches and other facilities to improve the recreational experience. Vegetative screens to camouflage off-site development were installed along the north boundary line. Natural areas that included most of the live oaks and native trees were successfully preserved. Most of the trees removed were either diseased or Australian Pines.

3.3 Wetland Buffer

There is a +/- 2.7-acre wetland system, which includes a 25' wide buffer, located on the northeastern portion of the site along the Halifax River shoreline.

3.4 Stormwater Facilities

Onsite stormwater facilities were designed to provide recreational open space or wildlife habitat in a park-like setting and reduce untreated stormwater runoff from discharging directly into the Halifax River. Onsite stormwater facilities accommodate runoff from onsite development and improve pre-existing water quality and flooding issues. Natural wetlands were not used to accommodate stormwater management needs.

If stormwater facilities need to be expanded or new stormwater facilities built, the facilities will be designed to provide recreational open space and wildlife habitat in a park like setting, with shallow slopes and no fencing.

3.5 Hazard Mitigation

The majority of Riverwalk Park is located within the Special Flood Hazard Area, Zone AE, with a base flood elevation of 5.0. (**Exhibit D**). As such, no major structures have been constructed on the property, except for the public restroom building which is elevated above the base flood elevation. The kayak/canoe launch is located on the Halifax River and the public restroom building, picnic pavilions and parking lot are located more than 100 feet from the river. Another important fact is that this property will act as a buffer for wind and storm surge associated with a storm event.

3.6 Permits

City of Port Orange obtained Environmental Resource Permits from the St. Johns River Water Management District, Driveway and Drainage connection permits from the Florida Department of Transportation, Water, Wastewater and Construction General permits from FDEP, and a swimming pool operating permit from the State of Florida Department of Health for construction of the park and associated site improvements. Additionally, local permits were obtained for the site improvements associated with the park and building permits for all structures and piers; no impacts to mangroves or the aquatic resources are anticipated.

3.7 Proposed Physical Improvements

In addition to the improvements constructed (section 3.2), the city also proposed to add or construct the following improvements in future phases:

- Phase 1 - provide/install interpretive signs intended to educate residents and visitors about the natural environment and Port Orange history.
- Phase 2- extend a boardwalk from the Riverwalk Park Pier to the Riverwalk Park promenade to expand the existing trail along the Halifax River.

Prior to the construction/installation of any improvements City of Port Orange will conduct surveys for listed species to insure no listed/threatened species will be impacted by any improvements made at Riverwalk Park. Any proposed modification of the Management Plan and/or undertaking any site alterations or physical improvements that are not addressed in the Recipient's approved Management Plan requires prior FCT review and approval.

3.8 Easements, Concessions and Leases

There are no existing easements, concessions or leases involving this property at the time of drafting of this management plan. City of Port Orange will provide FCT 60-day prior written notice and information regarding any lease of any interest, the operation of any concession, any sale or option, the granting of any management contracts, and any

use by any person other than in such person's capacity as a member of the public and no document will be executed without the prior written approval of FCT. If fees are collected on the project site, all fees will be placed in a segregated account solely for the upkeep and maintenance of the Project Site.

4.0 NATURAL AND CULTURAL RESOURCES

4.1 Natural Communities

Prior to construction of Riverwalk Park, most of the northern portion of the property contained a large stand of Australian pine that composed most of the tree canopy along with a mixture of live oak, cabbage palms and southern red cedar. The eastern perimeter of the north section abutting the Halifax River contained a thin fringe of mangroves. Mangroves also occurred along the Dougherty canal banks which runs along the perimeter between the north and central portions of the property. Disturbance within the north portion of the property was focused in the area which had contained Australian pine. Most of the live oaks and native trees were successfully preserved. The central portion of the property included two community buildings and associated parking lot, retention pond, landscaping and mangroves that dotted the revetment flanking the Halifax River shoreline. Additionally, a thick ring of mangroves encompassed the retention pond located on the western side of the central portion of the property. None of the existing native vegetation was disturbed in the central portion of the property. The parking lot and building landscaping was refurbished with native plantings of Cabbage Palm, Live Oak, Dwarf Fakahatchee grass, Muhly grass and Coontie. The southern portion of the property was an old mobile home park that had been purchased by the City in xxxx and phased out in xxxx. The dominant landscape within the mobile home park consisted of cabbage palms and bahia sod. Disturbance within the south portion of the property consisted of removal of four streets and sewer laterals that had serviced the mobile home park. The large event lawn and more active recreation activities were in the south portion to take advantage of the existing open space. During planning and design of the park, care was taken to preserve much of the live oak and native trees as well as protection of all the mangroves lining the canal and Halifax River. During construction, a combination of silt

fence, floating turbidity barrier and tree protection barricades were deployed to protect the trees and vegetation from heavy machinery and construction activity.

Riverwalk Park contains upland and benthic habitats located along the Halifax River.

Natural communities that are present within Riverwalk Park include (**Exhibit E**):

Developed, Commercial and Services

Developed, Residential, High Density

Urban Open Land 18211

This was the dominant land use identified within the south portion of park area. The area was characterized by paved drives and sidewalks, open sandy areas, and landscaped areas dominated by Cabbage palm (*Sabal palmetto*) and Bahia grass (*paspalum notatum*).

Estuarine Subtidal 5100

This subsystem includes the area below the lowest tide that is permanently flooded with tidal water. (NYNHP)

Estuarine Intertidal 5200

Includes the area between the highest tide level and the lowest tide level; the substrate is periodically exposed and flooded by semidiurnal tides (two high tides and two low tides per tidal day). (NYNHP), This land use type is located along the shoreline of the Halifax River and contains red and black mangrove and buttonwood.

Oyster Bar 5230

Mangrove Swamp 5250

Estuarine wetland on muck/sand/or limestone substrate; inundated with saltwater by daily tides; central peninsula and Keys; no fire; dominated by mangrove and mangrove associate species; red mangrove, black mangrove, white mangrove, buttonwood. (FNAI), This land use type is located along the Dougherty canal that bisects the park and outfalls into the Halifax River.

The project site is mostly urban land that has been disturbed or improved over the years and contains remnant natural plant communities of cabbage palm, live oak, southern yellow pine, southern red cedar, sugarberry, winged elm, and american holly trees in the upland portions and red and black mangroves and buttonwood along the shoreline of the Dougherty canal and the Halifax River. Existing trees and vegetation will be managed in a manner that maintains the natural, functional, and successional integrity of each species.

4.2 Inventory of Natural Communities

The natural communities will be monitored once every two years. In this routine monitoring, photos will be taken. When occurrences of previously unknown protected and special plant and animal species are observed onsite, these observations will be reported to Florida Natural Areas Inventory (FNAI) utilizing the FNAI Field Report Forms or the FNAI web site. Information on identified listed species will be forwarded to the Florida Natural Areas Inventory using the forms located in (**Appendix 2**).

4.3 Listed Species

Listed animal species with the potential to be present include Atlantic Salt Marsh Snake, Eastern Indigo Snake, Gopher Tortoise, American Oyster Catcher, Wood Stork, and the West Indian Manatee.

4.4 Invasive/Exotic Plants Management

The need for removal of exotic invasive plant species is essential for the maintenance of healthy natural Florida ecosystems. If any species are discovered on the project site that

are listed on the Florida Exotic Pest Plant Council's list of Florida's Most Invasive Species (**Appendix 3**), they will be removed in a timely manner to prevent the spread of these species on site. As part of constructing Riverwalk Park, the property was eradicated of exotic/invasive vegetation, most notably the removal of Brazilian pepper and Australian Pine. The site is monitored annually, to assess the presence of invasive/exotic plant species.

4.5 Restoration

The mangrove fringe located along the eastern perimeter of the north portion of the property was thin due to wave action. A four-foot-tall wave break consisting of stacked 2' diameter boulders was installed under the fishing pier and parallel to the natural shoreline running south to the start of the existing rock revetment. Restoration efforts are succeeding as the mangroves behind the wave break have multiplied and grown denser.

4.6 Feral Animal Program

At the time of drafting this document, staff has observed no evidence to support the presence of a feral animal population on the property. The City of Port Orange will be monitoring annually for presence of feral animals. Should any evidence of habitation be discovered, the City of Port Orange will have the feral animal removed in a timely manner to prevent the spread of these species on site.

4.7 Archeological, Cultural and Historic Resource Protection

The protection and management of any discovered archaeological and historical resources on the project site will be coordinated with Division of Historical Resources. The collection of artifacts or the disturbance of archaeological and historic sites on the Project Site will be prohibited unless prior authorization has been obtained from the Department of State, Division of Historical Resources. The management of the archaeological and historic resources will comply with the provisions of Chapter 267, Florida Statutes. Specifically, Sections 267.061 2(a) and (b)." A cultural resource assessment survey was conducted in 2007, and Riverwalk Park is not recognized by a

local historic board or the Division of Historical Resources as being significant at the local, regional, or state level.

In 2007, an arch study was conducted, and no features or structural remains were identified. According to the study, based on the low density and unremarkable nature of the artifact assemblage, the area of the park did not meet the criteria for listing on the National Register of Historic Places and no further work was recommended.

5.0 MANAGEMENT NEEDS

5.1 Coordinated Management

City of Port Orange Parks and Recreation staff is committed to working with all interested parties in accomplishing the management goals. When appropriate, Staff works on coordination and management of the park with various City Departments, the Parks and Recreation Advisory Board. Coordination also takes place with DEP, and FWC concerning permitting and wildlife management where necessary. The City of Port Orange Police Department assists in coordinating security on the property.

5.2 Greenways and Trails

The acquisition of Riverwalk Park provides a point along the Halifax River for residents and visitors to access the Halifax River with kayaks/canoes/paddleboards (**Exhibit C**). The acquisition of the Riverwalk Park property protects 1,358 linear feet of riparian corridor along the Halifax River.



The Park is connected to the existing City's sidewalk network and the Riverwalk 20-foot-wide waterfront trail through the City's Riverwalk project. Just over a ¼ mile in length, the waterfront trail will provide residents and visitors access to the Halifax River and entertainment uses. In addition, the Park connects to the national East Coast Greenway Trail planned from Maine to Key West, Florida.

5.3 Staffing

City of Port Orange Parks and Recreation Department staff will be responsible for monitoring the land management strategies and maintaining the park.

5.4 Public Education and Outreach

The City is committed to providing appropriate outdoor recreational opportunities and educational programming opportunities designed to facilitate a greater understanding and appreciation of natural resources and history. Public education will be through interpretive signs onsite to educate visitors of the site and the surrounding natural environment or history of the area.



5.5 Maintenance

City of Port Orange Parks and Recreation Department is responsible for managing and maintaining the Park. The maintenance objectives for the Park are visitor and employee health, safety, and welfare, maintenance of aesthetic qualities, and protection of natural resource values. Structures, such as bridges, fences, kayak/paddleboard launch, and restroom building are inspected during monthly site inspections for maintenance and repair needs. Exotic vegetation treatment needs are met with both habitat management and maintenance activities. The site will have dedicated staff to perform routine maintenance tasks:

- Mowing and pruning
- Upkeep and cleaning of the facilities (including parking areas, fencing, and signage)
- Garbage and debris removal
- Land Management (including removal of exotic species)

- The Division may utilize contracted and/or volunteer services as needed to assist in maintenance tasks.

5.6 Security

City of Port Orange is concerned about both the safety of visitors and the protection of natural resources. The City ultimately has the responsibility for site security, including prevention of vandalism, property damage, and trespassing. A three-tiered approach to site security is employed:

- **Signage**– Signs have been installed to educate users against restricted or prohibited activities.
- **Staff** – Parks and Recreation staff monitors the park site, repairs damage by vandalism, and takes measures to clarify restricted activities to citizens with signage.
- **Port Orange Police and Fire/EMS** – City of Port Orange Police Department is the first line of defense against vandalism by providing regular police patrols of the park.

6.0 COST ESTIMATE AND FUNDING SOURCES

A portion of this park was acquired using funds from FCT. The remainder was funded by Volusia ECHO, Florida Inland Navigation District (FIND) and ad valorem City taxes. The Park will be managed using ad valorem City taxes.

The cost estimate was broken into five major categories:

- **Structures and Improvements**
 - Phase 1A Construction - \$1,048,664.45
 - Phase 1B Construction - \$3,605,400.43
- **Educational Sign Program**
 - Waiting for cost estimate
- **Boardwalk from the Riverwalk Park Pier to the Riverwalk Park promenade**
 - Waiting for cost estimate for design and construction cost

➤ **Maintenance**

- Annual cost - \$35,938.85

➤ **Staffing**

- Annual cost - \$28,648.62

7.0 PRIORITY SCHEDULE

A priority schedule that details a timeline for major events is included in **Appendix 4**.

This priority schedule covers 2021-2041.

8.0 MONITORING AND REPORTING

City of Port Orange staff will prepare and submit an Annual Stewardship Report on **Month XX** of each year that will outline the implementation of the management plan. If any modification of the management plan is needed, or site alterations are needed, City of Port Orange County will seek FCT review and approval prior to any such work.

Staff will also prepare and submit an annual revenue report. This report will contain data on revenue earned during the previous State Fiscal Year. FCT provides a Revenue Reporting Form for this purpose.

8.1 Stewardship Report

It is the Division's responsibility to provide an Annual Stewardship Report each year on or before **Month XX**, as required by Rule 9K-7.013 F.A.C. which evaluates the implementation of the Management Plan. Any proposed modification of the Management Plan and/or undertaking any site alternations or physical improvements that are not addressed in the FCT-approved Management Plan requires FCT review and approval.

8.2 Revenue Report

The FCT is required annually to report on revenue earned on project sites acquired with FCT grant funds. To meet this requirement, by July 31 of each year, the Division will

provide an annual report of revenue earned in the previous State Fiscal Year, July 1 through June 30.

DRAFT



Riverwalk Park

Ocean Ave.

S. Ridgewood Ave.

Herbert St.

Halifax Dr.

Dunlawton Ave.

Areas not included in
Management Plan

Exhibit B – Future Land Use Map

Planned Community

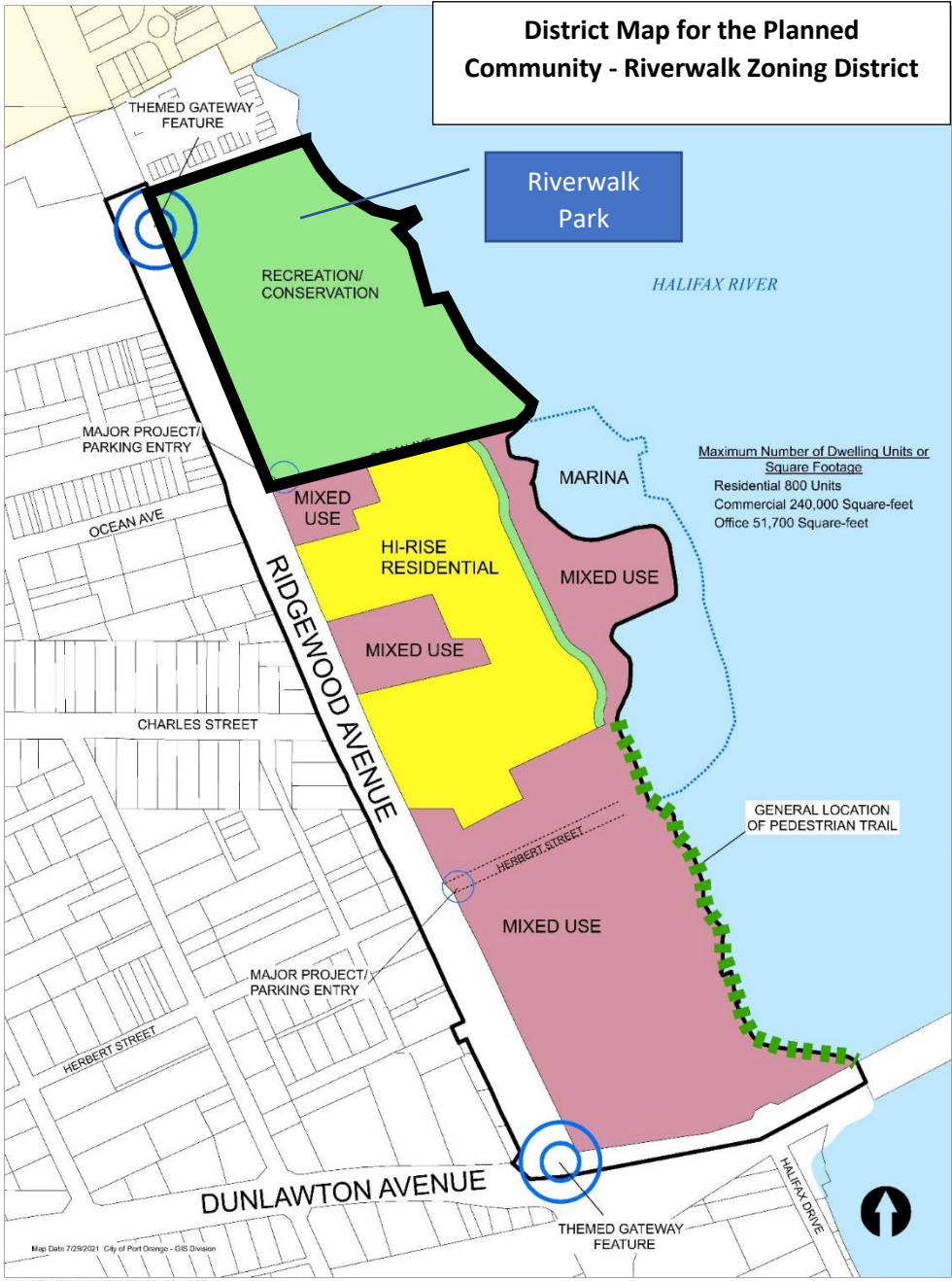


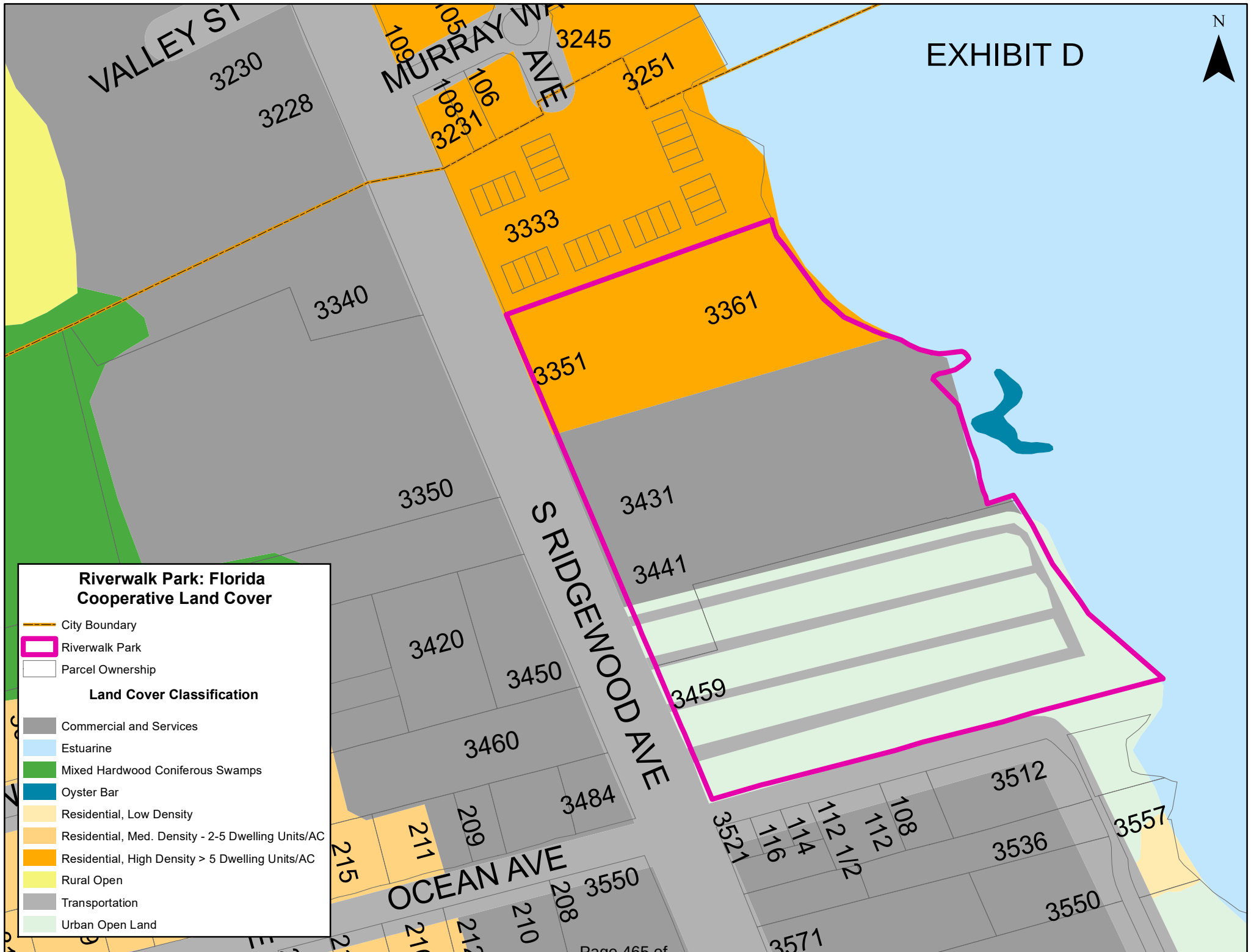
Exhibit C – Zoning Map

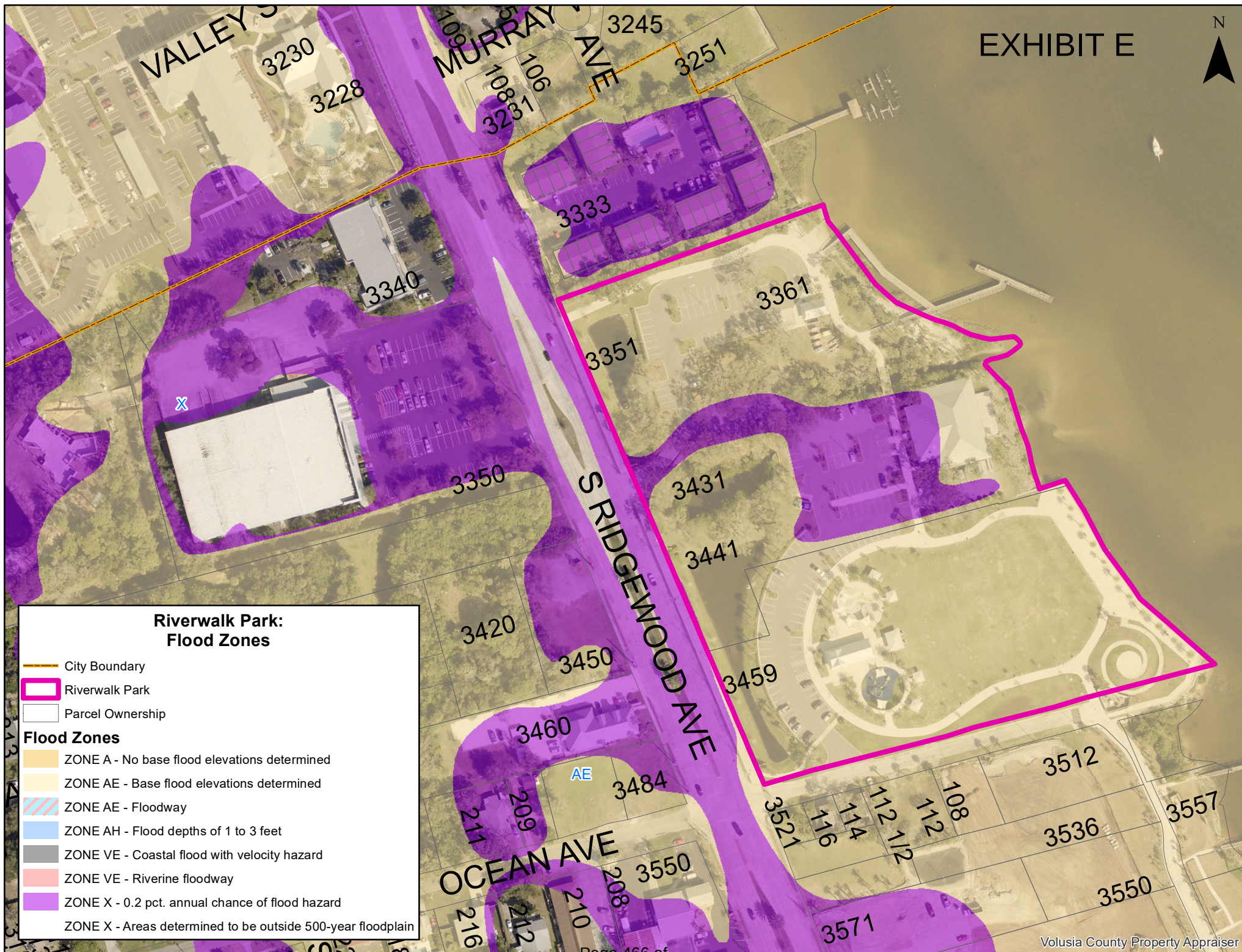
Planned Community - Riverwalk Zoning District



Exhibit C – District Map for the Planned Community - Riverwalk Zoning District







**Riverwalk Park:
Flood Zones**

-  City Boundary
-  Riverwalk Park
-  Parcel Ownership

Flood Zones

-  ZONE A - No base flood elevations determined
-  ZONE AE - Base flood elevations determined
-  ZONE AE - Floodway
-  ZONE AH - Flood depths of 1 to 3 feet
-  ZONE VE - Coastal flood with velocity hazard
-  ZONE VE - Riverine floodway
-  ZONE X - 0.2 pct. annual chance of flood hazard
-  ZONE X - Areas determined to be outside 500-year floodplain

Appendix 1 – Needs to be drafted

FLORIDA NATURAL AREAS INVENTORY FIELD REPORT FORM - OCCURRENCE OF SPECIAL ANIMAL

Instructions: (note: each form should include only ***one species, one locality, and preferably one date***)
 (please include any additional information on the back of this sheet, or attach separately)
 (complete what you can, leave fields blank or write unknown if you lack information)
 (Note - you may use the tab key or the cursor to move between fields)

Scientific Name: _____

Common Name: _____

Observer: _____

Date observed: _____

Basis for Identification: _____

County: _____

Location of Animal(s): _____

(please attach or send map and give specific directions; if possible, mark site on copy of USGS 7.5 minute topo map or aerial photograph or draw detailed map with landmarks)

GPS coordinates: North: _____ West: _____ GPS accuracy if known: _____

Describe habitats or plant communities, including dominant plant species: _____

Extent of this habitat at site that may support animal (e.g., acres, miles): _____

Number of individuals (or nests, burrows, etc.) seen: _____

Estimated number of individuals in population (basis?): _____

Age or population structure (adults, young, etc.): _____

Ecological & behavioral notes (e.g., reproductive stage, activity type, feeding, flying, nesting): _____

Have you seen this species at the same location in the past? Yes _____ No _____

If yes, please give date(s): _____ Previous condition or notes: _____

Is there evidence of disturbance at the site? Yes _____ No _____

If yes, please describe: _____

Owner(s) of site: _____

Is owner protecting this animal? Yes _____ No _____ Comment _____

Conservation/Management Needs: _____

Additional comments (other useful information concerning this animal and site -- e.g., names and addresses of individuals who might be helpful, publications, museum specimen numbers, etc.): _____

Submitted by: _____

Affiliation: _____

Address: _____

Phone: _____ Fax: _____

e-mail: _____

Date: _____

Please submit completed field report form to:

Dr. Dale R. Jackson, Sr. Research Zoologist

Florida Natural Areas Inventory

1018 Thomasville Road, Suite 200-C

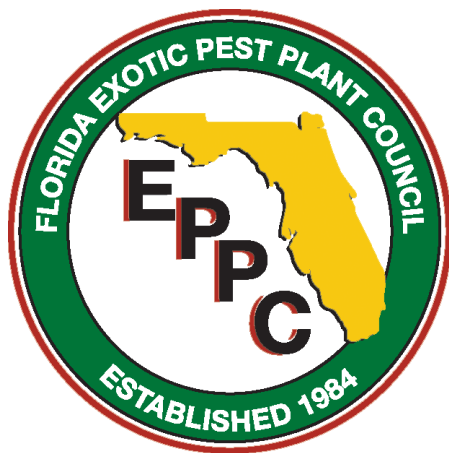
Tallahassee, FL 32303

tel: 850-224-0626

fax: 850-681-9364

e-mail: djackson@fnai.org

www.fnai.org



For more information on
invasive exotic plants
including links to related
web pages, visit:
www.fleppc.org

FLEPPC List Definitions:

Exotic—a species introduced to Florida, purposefully or accidentally, from a natural range outside of Florida. **Native**—a species whose natural range includes Florida. **Naturalized exotic**—an exotic that sustains itself outside cultivation (it is still exotic; it has not “become” native). **Invasive exotic**— an exotic that has not only naturalized, but is expanding on its own in Florida native plant communities.

Zone: N = north, **C** = central, **S** = south, Referring to each species’ general distribution in regions of Florida (not its potential range in the state). Please refer to the map below.



Citation example:

FLEPPC. 2019 List of Invasive Plant Species.
Florida Exotic Pest Plant Council. Internet: www.fleppc.org

**The 2019 list was prepared by
the FLEPPC Plant List Committee**

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- Arthur Stiles**, Florida Park Service, arthur.stiles@dep.state.fl.us
- Richard P. Wunderlin**, Professor Emeritus, University of South Florida, rwunder@usf.edu

**Florida Exotic Pest Plant
Council’s 2019 List of
Invasive Plant Species**

*The mission of the **Florida Exotic Pest Plant Council** is to reduce the impacts of invasive plants in Florida through the exchange of scientific, educational, and technical information.*

Note: The FLEPPC List of Invasive Plant Species is not a regulatory list. Only those plants listed as Federal Noxious Weeds, Florida Noxious Weeds, Florida Prohibited Aquatic Plants, or in local ordinances are regulated by law.

Purpose of the List

To provide a list of plants determined by the Florida Exotic Pest Plant Council to be invasive in natural areas of Florida and routinely update the list based upon information of newly identified occurrences and changes in distribution over time. Also, to focus attention on:

- The adverse effects exotic pest plants have on Florida’s biodiversity and native plant communities,
- The habitat losses in natural areas from exotic pest plant infestations,
- The impacts on endangered species via habitat loss and alteration,
- The need for pest plant management,
- The socio-economic impacts of these plants (e.g., increased wildfires or flooding in certain areas),
- Changes in the severity of different pest plant infestations over time,
- Providing information to help managers set priorities for research and control programs.

www.fleppc.org

CATEGORY I

Invasive exotics that are altering native plant communities by displacing native species, changing community structures or ecological functions, or hybridizing with natives. This definition does not rely on the economic severity or geographic range of the problem, but on the documented ecological damage caused.

Scientific Name	Common Name	Zone	Scientific Name	Common Name	Zone
<i>Abrus precatorius</i>	rosary pea	C, S	<i>Melinis repens</i>	Natalgrass	C, S
<i>Acacia auriculiformis</i>	earleaf acacia	C, S	<i>Microsorium grossum</i> ⁴	serpent fern, wart fern	S
<i>Albizia julibrissin</i>	mimosa, silk tree	N, C	<i>Microstegium vimineum</i>	Japanese stiltgrass	N
<i>Albizia lebbbeck</i>	woman's tongue	C, S	<i>Mimosa pigra</i>	catclaw mimosa	C, S
<i>Ardisia crenata</i>	coral ardisia	N, C, S	<i>Nandina domestica</i>	heavenly bamboo, nandina	N, C
<i>Ardisia elliptica</i>	shoebutton ardisia	C, S	<i>Nephrolepis brownii</i>	Asian sword fern	C, S
<i>Asparagus aethiopicus</i>	asparagus fern	N, C, S	<i>Nephrolepis cordifolia</i>	sword fern	N, C, S
<i>Bauhinia variegata</i>	orchid tree	C, S	<i>Neyraudia reynaudiana</i>	Burma reed	S
<i>Bischofia javanica</i>	bishopwood	C, S	<i>Nymphoides cristata</i>	crested floatingheart	C, S
<i>Calophyllum antillanum</i>	Santa Maria	S	<i>Paederia cruddasiana</i>	sewer vine	S
<i>Casuarina equisetifolia</i>	Australian-pine	N, C, S	<i>Paederia foetida</i>	skunk vine	N, C, S
<i>Casuarina glauca</i>	suckering Australian-pine	C, S	<i>Panicum repens</i>	torpedograss	N, C, S
<i>Cenchrus purpureus</i> (<i>Pennisetum purpureum</i>)	elephantgrass, Napier grass	N, C, S	<i>Pistia stratiotes</i>	water-lettuce	N, C, S
<i>Cinnamomum camphora</i>	camphor-tree	N, C, S	<i>Psidium cattleianum</i>	stawberry guava	C, S
<i>Colocasia esculenta</i>	wild taro	N, C, S	<i>Psidium guajava</i>	guava	C, S
<i>Colubrina asiatica</i>	latherleaf	S	<i>Pueraria montana</i> var. <i>lobata</i>	kudzu	N, C, S
<i>Cupaniopsis anacardioides</i>	carrotwood	C, S	<i>Rhodomyrtus tomentosa</i>	downy rose-myrtle	C, S
<i>Deparia petersenii</i>	Japanese false spleenwort	N, C	<i>Ruellia simplex</i>	Mexican petunia	N, C, S
<i>Dioscorea alata</i>	winged yam	N, C, S	<i>Salvinia minima</i>	water spangles	N, C, S
<i>Dioscorea bulbifera</i>	air potato	N, C, S	<i>Scaevola taccada</i>	beach naupaka, half-flower	N, C, S
<i>Dolichandra unguis-cati</i> (<i>Macfadyena unguis-cati</i>)	cat's-claw vine	N, C, S	<i>Schefflera actinophylla</i>	schefflera, umbrella tree	C, S
<i>Eichhornia crassipes</i>	water-hyacinth	N, C, S	<i>Schinus terebinthifolia</i>	Brazilian pepper	N, C, S
<i>Eugenia uniflora</i>	Surinam cherry	C, S	<i>Scleria lacustris</i>	Wright's nutrush	C, S
<i>Ficus microcarpa</i> ¹	laurel fig	C, S	<i>Scleria microcarpa</i> [*]	tropical nutrush	C, S
<i>Hydrilla verticillata</i>	hydrilla	N, C, S	<i>Senna pendula</i> var. <i>glabrata</i>	Christmas senna, climbing cassia	C, S
<i>Hygrophila polysperma</i>	green hygro	N, C, S	<i>Solanum tampicense</i>	wetland night shade	C, S
<i>Hymenachne amplexicaulis</i>	West Indian marsh grass	N, C, S	<i>Solanum viarum</i>	tropical soda apple	N, C, S
<i>Imperata cylindrica</i>	cogongrass	N, C, S	<i>Sporobolus jacquemontii</i>	West Indian dropseed	C, S
<i>Ipomoea aquatica</i>	water-spinach	C	<i>Syngonium podophyllum</i>	arrowhead vine	N, C, S
<i>Jasminum dichotomum</i>	Gold Coast jasmine	C, S	<i>Syzygium cumini</i>	Java plum	C, S
<i>Jasminum fluminense</i>	Brazilian Jasmine	C, S	<i>Tectaria incisa</i>	incised halberd fern	S
<i>Lantana strigocamara</i> ²	lantana, shrub verbena	N, C, S	<i>Thelypteris opulenta</i>	jeweled maidenhair fern	S
<i>Ligustrum lucidum</i>	glossy privet	N, C	<i>Thespesia populnea</i>	seaside mahoe	C, S
<i>Ligustrum sinense</i>	Chinese privet	N, C, S	<i>Tradescantia fluminensis</i>	small-leaf spiderwort	N, C
<i>Lonicera japonica</i>	Japanese honeysuckle	N, C, S	<i>Tradescantia spathacea</i>	oyster plant	C, S
<i>Ludwigia peruviana</i>	Peruvian primrosewillow	N, C, S	<i>Triadica sebifera</i>	Chinese tallow-tree	N, C, S
<i>Lumnitzera racemosa</i>	black mangrove	S	<i>(Sapium sebiferum)</i>		
<i>Luziola subintegra</i>	Tropical American watergrass	S	<i>Urena lobata</i>	Caesar's weed	N, C, S
<i>Lygodium japonicum</i>	Japanese climbing fern	N, C, S	<i>Urochloa mutica</i>	paragrass	N, C, S
<i>Lygodium microphyllum</i>	Old World climbing fern	N, C, S	<i>Vitex rotundifolia</i>	beach vitex	N
<i>Manilkara zapota</i>	sapodilla	S			
<i>Melaleuca quinquenervia</i>	melaleuca, paper bark	C, S			

¹ Does not include *Ficus microcarpa* var. *fuyuensis*, which is sold as “green island ficus”.
² Historically this non-native has been referred to as *Lantana camara*, a species not known to occur in Florida.
³ Does not include the native endemic *Spermacoce neoterminalis*.
⁴ *Microsorium grossum* has been previously misidentified as *Microsorium scolopendria*.
^{*} Added to the FLEPPC List of Invasive Species in 2019.

CATEGORY II

Invasive exotics that have increased in abundance or frequency but have not yet altered Florida plant communities to the extent shown by Category 1 species. These species may become Category 1 if ecological damage is demonstrated.

Scientific Name	Common Name	Zone	Scientific Name	Common Name	Zone
<i>Adenanthera pavonina</i>	red sandalwood	S	<i>Koeleruteria elegans</i> subsp. <i>formosana</i>	flamegold tree	C, S
<i>Agave sisalana</i>	sisal hemp	C, S	<i>Landoltia punctata</i>	spotted duckweed	N, C, S
<i>Alstonia macrophylla</i>	devil tree	S	<i>Leucaena leucocephala</i>	leadtree	N, C, S
<i>Alternanthera philoxeroides</i>	alligatorweed	N, C, S	<i>Limnophila sessiliflora</i>	Asian marshweed	N,C, S
<i>Antigonon leptopus</i>	coral vine	N, C, S	<i>Livistona chinensis</i>	Chinese fan palm	C, S
<i>Ardisia japonica</i>	Japanese ardisia	N	<i>Macroptilium lathyroides</i>	wild bushbean	N, C, S
<i>Aristolochia elegans</i> (<i>Aristolochia littoralis</i>)	calico flower	N, C, S	<i>Melaleuca viminalis</i> (<i>Callistemon viminalis</i>)	bottlebrush	C, S
<i>Asystasia gangetica</i>	Ganges primrose	C, S	<i>Melia azedarach</i>	Chinaberry	N, C, S
<i>Begonia cucullata</i>	wax begonia	N, C, S	<i>Melinis minutiflora</i>	molasses grass	C S
<i>Broussonetia papyrifera</i>	paper mulberry	N, C, S	<i>Mikania micrantha</i>	mile-a-minute vine	S
<i>Bruguiera gymnorhiza</i>	large-leafed mangrove	S	<i>Momordica charantia</i>	balsam-apple	N, C, S
<i>Callisia fragrans</i>	Inch plant	C, S	<i>Murraya paniculata</i>	orange-jessamine	S
<i>Casuarina cunninghamiana</i>	river sheoak	C, S	<i>Myriophyllum spicatum</i>	Eurasian water-milfoil	N, C, S
<i>Cecropia palmata</i>	trumpet tree	S	<i>Passiflora biflora</i>	twin-flowered passion vine	S
<i>Cenchrus polystachios</i> (<i>Pennisetum polystachios</i>)	mission grass	S	<i>Phoenix reclinata</i>	Senegal date palm	C, S
<i>Cenchrus setaceus</i> (<i>Pennisetum setaceum</i>)	fountain grass	S	<i>Phyllostachys aurea</i>	golden bamboo	N, C
<i>Cestrum diurnum</i>	day jessamine	C, S	<i>Pittosporum pentandrum</i>	Taiwanese cheesewood	S
<i>Chamaedorea seifrizii</i>	bamboo palm	S	<i>Platycerium bifurcatum</i>	staghorn fern	S
<i>Clematis terniflora</i>	Japanese clematis	N, C	<i>Praxelis clematidea</i>	praxelis	C
<i>Cocos nucifera</i>	coconut palm	S	<i>Pteris vittata</i>	Chinese brake, ladder brake	N, C, S
<i>Crassocephalum crepidioides</i>	redflower ragleaf	C, S	<i>Ptychosperma elegans</i>	solitary palm	S
<i>Cryptostegia madagascariensis</i>	Madagascar rubbervine	C, S	<i>Richardia grandiflora</i>	largeflower Mexican clover	N, C, S
<i>Cyperus involucratus</i>	umbrella plant	C, S	<i>Ricinus communis</i>	castorbean	N, C, S
<i>Cyperus prolifer</i>	dwarf papyrus	C, S	<i>Rotala rotundifolia</i>	dwarf rotala, roundleaf toothcup	S
<i>Dactyloctenium aegyptium</i>	Durban crow's-foot grass	C, S	<i>Ruellia blechum</i>	green shrimp plant	N, C, S
<i>Dalbergia sissoo</i>	Indian rosewood, sissoo	C, S	<i>Sesbania punicea</i>	rattlebox	N, C, S
<i>Dalechampia scandens</i> [*]	spurge-creeper	S	<i>Sida planicaulis</i>	mata-pasto	C, S
<i>Distimake tuberosus</i> (<i>Merremia tuberosa</i>)	Spanish arbor vine, wood-rose	C, S	<i>Solanum diphyllum</i>	twingleaf nightshade	N, C, S
<i>Dracaena hyacinthoides</i> (<i>Sansevieria hyacinthoides</i>)	bowstring hemp	C, S	<i>Solanum torvum</i>	turkey berry	N, C, S
<i>Elaeagnus pungens</i>	silverthorn, thorny olive	N, C	<i>Spermacoce verticillata</i> ³	shrubby false buttonweed	C, S
<i>Elaeagnus umbellata</i>	autumn olive, silverberry	N	<i>Sphagneticola trilobata</i>	wedelia	N, C, S
<i>Epipremnum pinnatum</i> cv. ‘Aureum’	pothos	C, S	<i>Stachytarpheta cayennensis</i>	nettle-leaf porterweed	S
<i>Eulophia graminea</i>	Chinese crown orchid	C, S	<i>Syagrus romanzoffiana</i>	queen palm	C, S
<i>Ficus altissima</i>	council tree, false banyan	S	<i>Syzygium jambos</i>	Malabar plum, rose-apple	N, C, S
<i>Flacourtia indica</i>	governor's plum	S	<i>Talipariti tiliaceum</i>	mahoe, sea hibiscus	C, S
<i>Hemarthria altissima</i>	limpograss	C, S	<i>Terminalia catappa</i>	tropical-almond	C, S
<i>Heteropterys brachiata</i>	redwing	S	<i>Terminalia muelleri</i>	Australian-almond	C, S
<i>Hyparrhenia rufa</i>	jaragua	N, C, S	<i>Tribulus cistoides</i>	puncture vine, burr-nut	N, C, S
<i>Ipomoea carnea</i> subsp <i>fistulosa</i>	shrub morning-glory	C, S	<i>Urochloa maxima</i> (<i>Panicum maximum</i>)	Guineagrass	N, C, S
<i>Kalanchoe x houghtonii</i>	mother of millions	N, C, S	<i>Vernicia fordii</i>	tung-oil tree	N, C, S
<i>Kalanchoe pinnata</i>	life plant	C, S	<i>Vitex trifolia</i>	simple-leaf chastetree	C, S
			<i>Washingtonia robusta</i>	Washington fan palm	C, S
			<i>Wisteria sinensis</i>	Chinese wisteria	N, C
			<i>Xanthosoma sagittifolium</i>	malanga, elephant ear	N, C, S

Riverwalk Park
3441 Ridgewood Avenue

	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	2040	2041
Management Plan Improvement																					
Install Environmental or Historic Interpretive Sign (Phase 1)			x		x		x														
Boardwalk (Phase 2)												x									
Maintenance of the Park	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x	x
Reports																					
Annual Stewardship Report	N/A	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD	TBD
Revenue Report	N/A	July	July	July	July	July	July	July	July	July	July	July	July	July	July	July	July	July	July	July	July