AGENDA

PLANNING AND ZONING BOARD/LOCAL PLANNING AGENCY

Regular Meeting 2021-11
October 6, 2021 - 7:00 PM

City Hall Council Chambers, 120 Malabar Road SE

CALL TO ORDER:

PLEDGE OF ALLEGIANCE:

ROLL CALL:

ADOPTION OF MINUTES:

1. **Adoption of Minutes - Regular Meeting 2021-10; September 1, 2021**

ANNOUNCEMENTS:

NEW BUSINESS:

1. ****V-38-2021 - Larry Huffman - A variance to grant a proposed detached garage relief from the requirement that no accessory structure shall exceed the size of the principal structure's living area in an RS-2, Single-Family Residential District, as established by Section 185.118(C) of the Palm Bay Code of Ordinances. Lots 14 through 16 and Lot 22, Block 947, Port Malabar Unit 18, Section 21, Township 29, Range 37, Brevard County, Florida, containing approximately .92 acres. South of and adjacent to Tugwell Street SE, and north of and adjacent to Sandusky Street SE, specifically at 1518 Tugwell Street SE**
2. ****FD-35-2021 - St. Johns Preserve-Tract A - Mike Evans, St. Johns Preserve, LLC (BSE Consultants, Inc., Rep.) - Final Development Plan to allow a proposed PMU for a 120-unit residential development called St. Johns Preserve-Tract A. Tract A of St. Johns Preserve - Phase 1, Section 32, Township 28, Range 36, Brevard County, Florida, containing approximately 19.12 acres. North of and adjacent to Malabar Road NW, in the vicinity west of St. Johns Heritage Parkway NW**
3. ****CU-39-2021 - Rusty's Express Car Wash – Robert Black (David M. Tom, P.E, Rep.) - Amendment to an existing Conditional Use to allow a proposed car wash in a CC, Community Commercial District. Tax Parcel 22, Section 5, Township 29, Range 37, Brevard County, Florida, containing approximately 1.19 acres. South of and adjacent to Malabar Road SE, in the vicinity east of Valor Drive SE, specifically at 1000 Malabar Road SE**
4. ****FD-40-2021 - The Reserve at Country Club Lakes Estates - Mario Oliveira, Palm Bay Greens, Inc. (David Bassford and Brian Bussen, Reps.) - Final Development Plan to allow a proposed PUD for a 200-unit multiple-family and single-family residential**

development called The Reserve at Country Club Lakes Estates. Tax Parcels 251 and 253, Section 28, Township 28, Range 37, Brevard County, Florida, containing approximately 74.2 acres. In the vicinity north of Country Club Drive NE and south of Riviera Drive NE

5. ****FD-41-2021 - Cypress Bay West Phase III - Benjamin E. Jefferies, Waterstone Farms, LLC (Jake Wise, P.E., Rochelle W. Lawandales, FAICP, and Chris Tyree, Forestar (USA) Real Estate Group, Reps.) - Final Development Plan to allow a proposed PUD for a 544-unit residential development called Cypress Bay West Phase III. Part of Tax Parcel 500 of Section 4, Township 30, Range 37, and Tracts 750, 752, and Part of 1 of San Sebastian Farms, Section 5, Township 30, Range 37, Brevard County, Florida, containing approximately 190.5 acres. In the vicinity west of Babcock Street and west of Mara Loma Boulevard SE**
6. ****CU-43-2021 - WITHDRAWN - Randall and Kimberly Haire - Conditional Use to allow a proposed wedding venue in an RR, Rural Residential District. Tract 3.01, Block 8, Melbourne Poultry Colony Addition No. 1, Section 22, Township 28, Range 36, Brevard County, Florida, containing approximately 18.06 acres. South of and adjacent to Hield Road NW, in the vicinity between Studley Drive NW and Henley Road NW, specifically at 4236 Hield Road NW**

OTHER BUSINESS:

ADJOURNMENT:

If an individual decides to appeal any decision made by the Planning and Zoning Board/Local Planning Agency with respect to any matter considered at this meeting, a record of the proceedings will be required and the individual will need to ensure that a verbatim transcript of the proceedings is made, which record includes the testimony and evidence upon which the appeal is based (FS 286.0105). Such person must provide a method for recording the proceedings verbatim.

Any aggrieved or adversely affected person desiring to become a party in the quasi-judicial proceeding shall provide written notice to the city clerk which notice shall, at a minimum, set forth the aggrieved or affected person's name, address, and telephone number, indicate how the aggrieved or affected person qualifies as an aggrieved or affected person and indicate whether the aggrieved or affected person is in favor of or opposed to the requested quasi-judicial action. The required notice must be received by the clerk no later than five (5) business days at the close of business, which is 5 p.m., before the hearing. (Section 59.03, Palm Bay Code of Ordinances)

In accordance with the Americans with Disabilities Act, persons needing special accommodations for this meeting shall, at least 48 hours prior to the meeting, contact the Land Development Division at (321) 733-3042 or Florida Relay System at 711.

If you use assistive technology (such as a Braille reader, a screen reader, or TTY) and the format of any material on this website or documents contained therein interferes with your ability to access information, please contact us. To enable us to respond in a manner most helpful to you, please indicate the nature of your accessibility problem, the preferred format in which to receive the material, the web address of the requested material, and your contact information. Users who need accessibility assistance can also contact us by phone through the Federal Information Relay Service at 1-800-877-8339 for TTY/Voice communication.

**Quasi-Judicial Proceeding.

The City of Palm Bay Florida

MEMORANDUM

DATE: October 6, 2021

SUBJECT: Adoption of Minutes - Regular Meeting 2021-10; September 1, 2021

ATTACHMENTS:

Description

- **P&Z/LPA Minutes - Regular Meeting 2021-10; September 1, 2021**

CITY OF PALM BAY, FLORIDA

PLANNING AND ZONING BOARD/
LOCAL PLANNING AGENCY
REGULAR MEETING 2021-10

Held on Wednesday, September 1, 2021, in the City Hall Council Chambers, 120 Malabar Road SE, Palm Bay, Florida.

This meeting was properly noticed pursuant to law; the minutes are on file in the Land Development Division, Palm Bay, Florida. The minutes are not a verbatim transcript but a brief summary of the discussions and actions taken at this meeting.

Mr. Philip Weinberg called the meeting to order at approximately 7:00 p.m.

Ms. Leeta Jordan led the Pledge of Allegiance to the Flag.

ROLL CALL:

CHAIRPERSON:	Philip Weinberg	Present	
VICE CHAIRPERSON:	Leeta Jordan	Present	
MEMBER:	Donald Boerema	Present	
MEMBER:	James Boothroyd	Present	
MEMBER:	Richard Hill	Absent	(Excused)
MEMBER:	Khalilah Maragh	Present	
MEMBER:	Rainer Warner	Absent	(Excused)
NON-VOTING MEMBER:	David Karaffa (School Board Appointee)	Absent	(Excused)

The absence of Mr. Hill and Mr. Warner were excused.

CITY STAFF: Present were Mr. Patrick Murphy, Acting Growth Management Director; Mr. Christopher Balter, Senior Planner; Mr. Grayson Taylor, Planner; Ms. Chandra Powell, Recording Secretary; Ms. Jennifer Cockcroft, Deputy City Attorney; Mr. Christopher Little, Utilities Director.

ADOPTION OF MINUTES:

1. **Regular Planning and Zoning Board/Local Planning Agency Meeting 2021-09 August 4, 2021.**

Motion to approve the minutes as presented.

Motion by Ms. Jordan, seconded by Mr. Boothroyd. Motion carried with members voting as follows:

Aye: Weinberg, Jordan, Boerema, Boothroyd, Maragh.

ANNOUNCEMENTS:

1. Mr. Weinberg addressed the audience on the meeting procedures and explained that the Planning and Zoning Board/Local Planning Agency consists of volunteers who act as an advisory board to City Council.

OLD/UNFINISHED BUSINESS:

1. ****FD-30-2021 - Cypress Bay West Phase II - Benjamin E. Jefferies, Waterstone Holdings, LLC and Waterstone Farms, LLC / Chris Tyree, Forestar (USA) Real Estate Group (Jake Wise, P.E. and Rochelle W. Lawandales, FAICP, Reps.) - A Final Development Plan to allow a proposed PUD for a 570-unit residential development called Cypress Bay West Phase II. Part of Tax Parcels 500, 5, and 1 of Section 4, Township 30, Range 37, and Part of Tract 750 of San Sebastian Farms, Section 5, Township 30, Range 37, Brevard County, Florida, containing approximately 185.74 acres (West of and adjacent to Babcock Street, in the vicinity south of Mara Loma Boulevard SE)**

   Mr. Balter presented the staff report for Case FD-30-2021. Staff recommended Case FD-30-2021 for approval, subject to the staff comments contained in the staff report.

   Mr. Jake Wise with Construction Engineering Group, LLC (civil engineer for the project and representative for the applicant) described how Phase II of the overall development included 124 townhomes in addition to single-family homes. Mara Loma Boulevard would be looped on the southside and utilized by other projects in the vicinity for significant improvements in traffic flow north to Babcock Street SE and south to St. Johns Heritage Parkway SE. He said that there were no attendees at the Citizen Participation Plan (CPP) meeting. Roads would be built to City standards but privately maintained; utilities would be extended for City water and

wastewater; and the project would benefit from the traffic signal at the intersection of Mara Loma Boulevard and Babcock Street proposed by a seperate development. He stated that an updated traffic study was in progress with real trip counts, and the applicant was in agreement with all staff comments.

Ms. Maragh asked if the developer planned to dedicate Mara Loma Boulevard and Journey Drive SE to the City. Mr. Wise indicated that this was correct once road construction and all testing and as-built surveys were completed.

Mr. Boerema commented on the plans to access St. Johns Heritage Parkway, which was not yet built beyond Babcock Street west. Mr. Wise explained that the proposal was for the project to be extended to Mara Loma Boulevard.

Mr. Boothroyd inquired about the possibility of a traffic light at the St. John Heritage Parkway. Mr. Wise explained that Brevard County was already requiring a traffic signal to be installed by the City at St. Johns Heritage Parkway as a condition of the driveway permit for the intersection.

The floor was opened for public comments.

Mr. Bill Battin (resident at Ocean Spray Street SW) spoke about the need for new studies for the proposed development since many changes had occurred in the area since the project began in 2004. He appreciated that the proposal would not be at maximum density; however, the density being proposed was higher than what was originally planned. He inquired about the commitments the City had made for the wastewater plant expansion to accommodate new growth in the area and the source of funding. He wanted to know how traffic from the development would be able to cross the canal to access Babcock Street.

Ms. Maragh asked if there was specific information from 2004 that Mr. Battin wanted addressed. Mr. Battin reiterated how decisions were being made based on outdated information. There were prior discussions regarding the Project Development and Environmental (PD&E) study for where the Parkway would connect west of Babcock Street that had not happened. Existing traffic on Babcock Street was entirely different from what was conducted in the 2004 traffic study, so a new traffic study should be completed before granting approval to the proposed project.

In response to the public comments, Mr. Wise stated that old data was not being relied upon. The project had evolved since 2004 with many citizen and homeowner association meetings, revised shared maintenance agreements, and a 2017 traffic study that was based on anticipated Parkway traffic trips. An updated traffic study would capture actual St. Johns Heritage Parkway traffic, which could be less than previously anticipated. In working with Brevard County and the City, the Parkway would accommodate potential hurricane routes. He stated how the reduced density and high-end amenities planned for the development were based on current circumstances and market conditions.

Mr. Boerema inquired whether the proposed multiple-family housing would be duplexes. Mr. Wise indicated that there would be a small area for townhomes.

Mr. Boothroyd asked if there would be a single builder for the development. Mr. Wise stated that there were four homebuilders presently involved for variety.

The floor was closed for public comments, and there was no correspondence in the file.

Motion to submit Case FD-30-2021 to City Council for approval, subject to the staff comments contained in the staff report.

Motion by Ms. Maragh, seconded by Mr. Boerema. Motion carried with members voting as follows:

Aye: Weinberg, Jordan, Boerema, Boothroyd, Maragh.

City Council will hear Case FD-30-2021 on September 16, 2021.

NEW BUSINESS:

1. ****V-31-2021 - Ida and Scott Miller - A variance to grant a proposed detached garage relief from the requirement that no accessory structure shall exceed the size of the principal structure's living area in an RS-2, Single-Family Residential District, as established by Section 185.118(C) of the Palm Bay Code of Ordinances. Lot 3, Block 748, Port Malabar Unit 16, Section 16, Township 29, Range 37, Brevard County, Florida, containing approximately**

1.17 acres. Southeast corner of Valencia Street SE and Van Camp Avenue SE, specifically at 1398 Valencia Street SE

Mr. Taylor presented the staff report for Case V-31-2021. The board had to determine, based on the facts presented, the degree of minimal relief, if any, to meet the needs of the variance request, as required by Section 169.009 of the City of Palm Bay Code of Ordinances.

Ms. Ida Miller (applicant) stated that the requested detached four-car garage would allow her to park three cars inside.

Mr. Boerema asked whether the garage would be painted and textured to match the home, and if the structure would be hidden within the trees on the property. Ms. Miller explained that a possible structure and builder would not be decided upon until the variance was obtained. Many of the trees on the property had been cleared; however, the garage would not be too visible or a monstrosity.

Ms. Maragh asked if the applicant would be able to comply with the requirement that should a metal structure be chosen for the garage, the structure would have to match the color or texture of the home. Ms. Miller stated that she would comply with the requirement, and that many of the garage builders had a special paint to match metal buildings to homes.

Mr. Weinberg asked if a driveway would be located off Valencia Street. Ms. Miller described how the garage would utilize her existing driveway off Valencia Street.

The floor was opened and closed for public comments; there were no comments from the audience, and there was no correspondence in the file.

Motion to submit Case V-31-2021 to City Council for approval, subject to the staff condition that requirements of 185.188(G) must be met if a metal building was installed.

Motion by Ms. Maragh, seconded by Mr. Boothroyd. Motion carried with members voting as follows:

Aye: Weinberg, Jordan, Boerema, Boothroyd, Maragh.

2. ****PD-32-2021 - Cypress Bay West Phase III - Benjamin E. Jefferies, Waterstone Farms, LLC (Chris Tyree, Forestar (USA) Real Estate Group, Rochelle W. Lawandales, FAICP, and Jake Wise, P.E., Reps.) - Preliminary Development Plan to allow a proposed PUD for a 544-unit residential development called Cypress Bay West Phase III. Part of Tax Parcel 500 of Section 4, Township 30, Range 37, and Tracts 750, 752, and Part of 1 of San Sebastian Farms, Section 5, Township 30, Range 37, Brevard County, Florida, containing approximately 190.5 acres. In the vicinity west of Babcock Street and west of Mara Loma Boulevard SE**

   Mr. Balter presented the staff report for Case PD-32-2021. Staff recommended Case PD-32-2021 for approval, subject to the staff comments contained in the staff report.

   Mr. Jake Wise with Construction Engineering Group, LLC (civil engineer for the project and co-representative for the applicant) stated that the subject project would be a mix of different single-family residential lot sizes, and the amenities would be shared by three phases of the master development. The density would be less than three units per acre; roads would be built to City standards and privately maintained; City utilities would be extended; and an updated traffic study would be completed. The applicant was in agreement with staff comments with the exception of two technical comments by the Public Works Department that did not pertain to the subject project. Mr. Balter stated that the Public Works Department had confirmed the elimination of the two technical items.

   Mr. Boothroyd asked about the properties west of the project that would be landlocked. Mr. Wise stated that the project surveyor was working with staff so that no adjacent properties would be landlocked.

   The floor was opened for public comments.

   Mr. Bill Battin (resident at Ocean Spray Street SW) stated that his comments under Case FD-30-2021 coincided with the subject case. The east side of Babcock Street was not part of the initial master development plan, but both the west and east sides of Babcock Street were now being treated as same identity items. The projects were separate and made a difference in the density of population. He wanted to know what commitments the City had made for the wastewater plant expansion to

accommodate new growth in the area. He asked if the development would be a gated community or would public access facilities be available to the general public.

In response to the public comments, Mr. Balter explained that in 2004, total entitlements were obtained for the Waterstone development on both the east and west sides of Babcock Street in entirety and deemed interchangeable densities. Mr. Wise stated that this was correct, and in response to the City's regional expansion of its water and wastewater plants, he explained that utility mains would be extended by the developer of the subject project to the subject site. The mains would also benefit other developments in the area and the neighborhoods to the north. He stated that the communities would be gated, but Mara Loma Boulevard would be open to the public. Mr. Chris Tyree with Forestar (USA) Real Estate Group (Cypress Bay West and East landowner and co-representative for the applicant) added that the amenities within the development would be private and managed by a homeowner's association.

The floor was closed for public comments, and there was no correspondence in the file.

Motion to submit Case PD-32-2021 to City Council for approval, subject to the staff comments contained in the staff report.

Motion by Ms. Jordan, seconded by Ms. Maragh. Motion carried with members voting as follows:

Aye: Weinberg, Jordan, Boerema, Boothroyd, Maragh.

3. ****FD-33-2021 - Gardens at Waterstone Phase II - Benjamin E. Jefferies, Waterstone Farms, LLC (Jake Wise, P.E., P. Michael Evans, Rochelle W. Lawandales, FAICP, Reps.) - Final Development Plan to allow a proposed PUD for a 174-unit residential development called Gardens at Waterstone Phase II. Tract 1, San Sebastian Farms, Section 5, Township 30, Range 37, and Part of Tax Parcel 250, Section 4, Township 30, Range 37, Brevard County, Florida, containing approximately 52.26. In the vicinity west of Mara Loma Boulevard SE and south of Melbourne Tillman Water Control District Canal 38**

Mr. Balter presented the staff report for Case FD-33-2021. Staff recommended Case FD-33-2021 for approval, subject to the staff comments contained in the staff report.

Mr. Jake Wise with Construction Engineering Group, LLC (civil engineer for the project and co-representative for the applicant) stated that the density for the subject development was just over three units per acre, and there had been no attendees to the Citizen Participation Plan (CPP) meeting. He indicated how proposed Phase II of the overall development would have small pocket parks since Phase I had a larger amenity center. An update to the 2017 traffic study would be completed, and a traffic signal would be installed at the Mara Loma Boulevard and Babcock Street intersection. Roads would be built to City standards and privately maintained, and water and wastewater utilities would be extended to the gated community. He noted how the technical comments by the Public Works Department that did not pertain to the subject request would be removed prior to the City Council hearing. He also wanted relief from the condition that required the traffic signal at Mara Loma Boulevard and Babcock Street to be constructed and operational before the issuance of the Certificate of Completion of Phase II since delays could be caused by the Brevard County permitting process, the City's review, and shortages in construction materials. Bonding the traffic signal at 125 percent of cost estimate would be a solution for situations that could occur outside the development's control.

Mr. Balter stated that in speaking with the City Traffic Engineer, staff could not recommend the traffic signal for bonding. Completion of the roads, infrastructure, stormwater ponds, and all utilities prior to issuance of a Certificate of Completion was a sufficient and reasonable amount of time to meet the traffic signal deadline. Mr. Wise commented that scarce products and hurricanes were uncontrollable factors that had caused projects in the past to undergo nine-month delays. He did not want the subject project to be delayed so that house permits could not be issued based on circumstances that the development could not control. Mr. Balter stated that the applicant could ask City Council to remove the condition in the future if a timing problem was to arise.

Ms. Maragh asked for clarification on the timing of the traffic signal. Mr. Balter explained that the signal warrant analysis for the project required a traffic signal to be operational at the completion of 354 units. The City wanted the traffic signal to

be operational prior to the issuance of the Certificate of Completion for the project, and prior to any homes being built.

Mr. Boothroyd inquired whether a temporary traffic signal could be installed if there were delays.

Ms. Cockcroft advised the board that the traffic signal fell under the purview of the Public Works Department. Land Development staff could not opine upon bonding and other suggestions regarding the signal.

The floor was opened for public comments.

Mr. Bill Battin (resident at Ocean Spray Street SW) stated that public roads in a gated community that were inaccessible to the public must be maintained privately and not with City funds. He was concerned about the thousands of acres with Babcock Street as the sole access point out of the area. He questioned whether there was a plan to allow traffic to cross the canal to travel north. A secondary access would help the subject area, but the southwest residential areas of Palm Bay would be impacted by the large amount of traffic.

In response to the public comments, Mr. Balter stated that all roads in the development would be private except for Mara Loma Boulevard that might become a public road in the future subject to Section 182 of the Code of Ordinances. He said that the St. Johns Heritage Parkway would eventually extend to the north once all studies were completed and funding was secured. There would be additional traffic trips onto Babcock Street; however, most of the traffic would travel the Parkway to reach Interchange 95 directly, which was now open.

Mr. Wise asked the board to consider allowing the traffic signal to be installed and operational by the issuance of the project's 354th Certificate of Occupancy; prior to the first issuance of a Certificate of Occupancy for Gardens at Waterstone Phase II; and with the ability to revisit the timeframe if there were uncontrollable delays. Mr. Murphy stated that the condition as proposed by the Public Works Department was reconfirmed by the City Engineer earlier in the day; thus, the stated condition could not be superseded by the Land Development staff. The board, however, had the ability to make recommendations.

Mr. Weinberg stated that the board could approve the request with the condition that the case could come back in the future regarding the timeline for the traffic signal. Mr. Wise stated that he was amendable to the suggestion and would work with the City Engineer.

Ms. Jordan questioned whether the City Engineer had made changes to the conditions earlier. Mr. Murphy stated that no changes had been made. The City Engineer had confirmed his stance and had explained that the condition was based on the need for a traffic signal with a timeframe because of the multiple subdivisions developing in the vicinity that would impact the subject intersection.

Mr. Balter advised the board that a condition was not necessary for the applicant to approach City Council in the future to modify the timeline for the traffic signal.

Mr. Michael Evans (developer for the project and representative for the applicant) stated that there would not be any homes built for months in the Courtyards at Waterstone Phase I or the Gardens at Waterstone Phases I and II to generate traffic. He wanted to come back before the board and City Council in the future to give an update on the status of permits, which were done through Brevard County and reviewed by the City. He did not want uncontrollable delays in receiving a Certificate of Completion to risk a $4 million project. Mr. Weinberg was in favor of a proviso to give the applicant the ability to come back before City Council to amend the timeline.

The floor was closed for public comments, and there was no correspondence in the file.

Motion to submit Case FD-33-2021 to City Council for approval, subject to the staff comments contained in the staff report with the condition that the applicant could petition City Council in the future to remove the timing condition for the traffic signal.

Motion by Ms. Maragh, seconded by Mr. Boerema.

Mr. Wise asked if the motion could also stipulate the removal of the technical comments by the Public Works Department that did not apply to the project.

Following discussion to clarify the motion, Ms. Cockcroft suggested potential language to approve the request.

Motion amended to submit Case FD-33-2021 to City Council for approval, subject to the staff comments contained in the staff report, with the exception of an option for the applicant to come back before City Council to remove the timing of the installation of the traffic signal, and a condition to remove all inapplicable staff comments.

Motion amended by Ms. Maragh, seconded by Mr. Boerema. Motion carried with members voting as follows:

Aye: Weinberg, Jordan, Boerema, Boothroyd, Maragh.

4. ****PD-34-2021 - Malabar Springs - Sadique Jaffer, Malabar Holdings Group, LLC (BSE Consultants, Inc., Rep.) - Preliminary Development Plan to allow a proposed PUD for an 879-unit residential development called Malabar Springs. Tax Parcels 250, 251, 252, and 500 of Section 32, Township 28, Range 36, Brevard County, Florida, containing approximately 294.70 acres. North of and adjacent to Malabar Road NW, in the vicinity west of St. Johns Heritage Parkway NW amendment to the Code of Ordinances, Title XVII, Land Development Code, Chapter 185: Zoning Code, Section 185.045, to modify provisions within the LI, Light Industrial and Warehousing District to allow for tree and landscape businesses as a conditional use**

Mr. Murphy presented the staff report for Case PD-34-2021. Staff recommended Case PD-34-2021 for approval, subject to the staff comments.

Mr. Boothroyd asked who would be responsible for paving the dirt road from Malabar Road to the subject site. Mr. Murphy stated that the developer was required to complete the paving from Malabar Road to their entrance and possibly to the end of the parcel.

Ms. Ana Saunders, P.E. with BSE Consultants, Inc. (representative for the applicant) stated that all conditions of approval would be complied with, and a Citizen Participation Plan meeting was held with one resident in attendance.

The floor was opened for public comments.

Mr. Tom Velie (resident at Malabar Road West) stated his concern about the approximate 1,600 cars he believed the project would bring into the area. The additional traffic would also increase the current morning and evening congestion at Heritage High School. He suggested a second access for the development.

Mr. Kevin Velie (resident at Seeley Circle NW) stated that there was traffic congestion each morning at the Malabar Road and St. Johns Heritage Parkway intersection, and cars were usually backed up during evening events at Heritage High School.

In response to comments from the audience, Ms. Saunders stated that the traffic study required for the project would include in its analysis the traffic from the high school and the surrounding communities to the north and east to determine traffic improvements and timing thresholds. The methodology of the analysis would be agreed upon prior to the study. She noted that the St. Johns Preserve community located east of Heritage High school had installed a locked emergency access that would allow the school to bypass the busy intersection during emergencies.

The floor was closed for public comments, and there was no correspondence in the file.

Motion to submit Case PD-34-2021 to City Council for approval, subject to the staff comments.

Motion by Ms. Jordan, seconded by Mr. Boerema. Motion carried with members voting as follows:

Aye: Weinberg, Jordan, Boerema, Boothroyd, Maragh.

5. **T-36-2021 - Tree and Landscape Recycling in LI - Michael and Lisa Cram - A textual amendment to the Code of Ordinances, Title XVII, Land Development Code, Chapter 185: Zoning Code, Section 185.045, to modify provisions within the LI, Light Industrial 185: Zoning Code, Section 185.045, to modify provisions within the LI, Light Industrial use**

Mr. Taylor presented the staff report for Case T-36-2021. Staff recommended Case T-36-2021 for approval.

Mr. William Alcock (representative for the applicant) stated that the applicant wanted to expand their Palm Bay landscaping business to include land clearing recycling, and staff was cooperative in determining LI as the appropriate zoning district for the proposed use. The land clearing debris that was currently being dumped in landfills could now be recycled into mulch, landscaping, and biofuels. He stated that the applicant was in agreement with the conditions in the amendment.

Mr. Boothroyd asked if the applicant had a specific location for the subject recycling. Mr. Alcock stated that a site was being considered. Mr. Weinberg clarified that the applicant would still have to apply for conditional use approval to permit the subject use on any LI property.

Ms. Maragh commented that noise would be a concern that would need to be addressed during conditional use reviews. Mr. Alcock stated that the noise data submitted to staff regarding the subject use was in compliance with the code.

The floor was opened for public comments.

Mr. Bill Battin (resident at Ocean Spray Street SW) wanted to know if the mulch material would be maintained onsite and in a secondary containment because of the degrading that would be caused by the biowaste material. He was also concerned about ongoing noise from mulching machinery.

In response to public comments, Mr. Taylor explained that although mulch could be stored near property lines, there was a 100-foot setback requirement between any operation of machinery and property lines. LI properties adjacent to residential land would have to meet a 250-foot buffer between machinery and residential lines. In addition, the City's noise ordinance must be met.

Mr. Michael Cram (applicant and owner of Flawless Lawn Care & Landscaping, Inc.) stated that at approximately 150 feet of distance, the largest recycling machinery would be quieter than the average consistent traffic on Babcock Street. He wanted to expand his business and create a hub for the City to bring landscape debris during

hurricanes. He explained that mulch would be trucked offsite as soon as possible with no onsite storage for more than 60 days, which would not allow for decomposition or odors.

Mr. Taylor stated that the board and City Council could add conditions to the proposed amendment, and that site-specific conditions could be added when conditional use applications were submitted for the subject use.

The floor was closed for public comments, and there was no correspondence in the file.

Motion to submit Case T-36-2021 to City Council for approval.

Motion by Mr. Boerema, seconded by Ms. Jordan. Motion carried with members voting as follows:

Aye: Weinberg, Jordan, Boerema, Boothroyd, Maragh.

6. ****CU-37-2021 - Cabot Drive Lift Station Relocation - City of Palm Bay (Utilities Department) - A conditional use to allow a proposed public utilities facility/equipment (lift station) in an RS-2, Single-Family Residential District. Lot 22, Block 9, Port Malabar Unit 2, Section 25, Township 28, Range 37, Brevard County, Florida, containing approximately .29 acres. South of and adjacent to Cabot Drive NE, in the vicinity east of Bianca Drive NE**

Mr. Balter presented the staff report for Case CU-37-2021. Staff recommended Case CU-37-2021 for approval.

Ms. Maragh asked if the proposed facility would be hidden in the center of the property and fenced, and she wanted to know about potential noise. Mr. Balter indicated the relocation of the lift station from the southwest portion of the site to the center of the parcel. The facility would be camouflaged and would meet the Utilities Department's standard guidelines for lift stations.

Mr. Clayton McCormack, P.E. with Infrastructure Solution Services, LLC (engineer for the project) stated that in 2007 the Utilities Department had indicated the subject site as one of their worst lift station sites because of its location in an easement in

the rear of a residential backyard. The homeowner's driveway had to be used to access the lift station.

Mr. Weinberg wanted to know what would be done with the old lift station equipment. Mr. McCormack explained that the wet well where the pumps were located would be converted into a manhole and the concrete structure that housed the old pumps and electrical gear would be demolished. He stated that lift stations did not generally create a lot of noise as the pumps were submerged. Noise might occur when the emergency generator underwent monthly testing and during hurricane and power outages. He said that the large station serviced about 1,000 homes.

The floor was closed for public comments, and there was no correspondence in the file.

Motion to submit Case CU-37-2021 to City Council for approval.

Motion by Ms. Jordan, seconded by Mr. Boothroyd. Motion carried with members voting as follows:

Aye: Weinberg, Jordan, Boerema, Boothroyd, Maragh.

OTHER BUSINESS:

1. **Amendment to the Planning and Zoning Board By-Laws - Proposed amendment to the Planning and Zoning Board By-Laws, Article VI Meetings, to establish guidelines for tardiness and early departures**

   Mr. Weinberg stated that the proposed amendment was based on Ordinance 2021-41 that was recently adopted by City Council.

   Ms. Maragh inquired how the attendance of 50 percent of a meeting would be determined. Mr. Weinberg and Mr. Murphy explained that the percentage would be based on the length of the meeting, and that an absence of 50 percent of a meeting would be counted as an unexcused absence.

   Motion to submit to City Council for approval of an amendment to the Planning and Zoning Board By-Laws, Article VI Meetings, Section 11, Attendance.

Motion by Ms. Jordan, seconded by Mr. Boothroyd. Motion carried with members voting as follows:

Aye: Weinberg, Jordan, Boerema, Boothroyd, Maragh.

City Council will consider the bylaws on September 16, 2021.

2. By consensus, the board agreed that the Planning and Zoning Board meeting tentatively scheduled for Monday, November 15, 2021, would be held at 6:00 p.m. The meeting was based on an expected overflow of cases in November due to Florida House Bill 59.

ADJOURNMENT:

The meeting was adjourned at approximately 9:01 p.m.

_____
Philip Weinberg, CHAIRPERSON

Attest:

_____
Chandra Powell, SECRETARY

******Quasi-Judicial Proceeding

MEMORANDUM

TO: Planning and Zoning Board Members

FROM: Grayson Taylor, Planner

DATE: October 6, 2021

SUBJECT: **V-38-2021 - Larry Huffman - A variance to grant a proposed detached garage relief from the requirement that no accessory structure shall exceed the size of the principal structure's living area in an RS-2, Single-Family Residential District, as established by Section 185.118(C) of the Palm Bay Code of Ordinances. Lots 14 through 16 and Lot 22, Block 947, Port Malabar Unit 18, Section 21, Township 29, Range 37, Brevard County, Florida, containing approximately .92 acres. South of and adjacent to Tugwell Street SE, and north of and adjacent to Sandusky Street SE, specifically at 1518 Tugwell Street SE

♣Quasi-Judicial Proceeding.

ATTACHMENTS:

Description

- **Case V-38-2021 - Staff Report**
- **Case V-38-2021 - Survey**
- **Case V-38-2021 - Accessory Structure Survey**
- **Case V-38-2021 - Application**

STAFF REPORT

LAND DEVELOPMENT DIVISION

120 Malabar Road SE • Palm Bay, FL 32907 • Telephone: 321-733-3042
landdevelopmentweb@palmbayflorida.org

Prepared by
Grayson Taylor, Planner

CASE NUMBER
V-38-2021

PLANNING & ZONING BOARD HEARING DATE
October 6, 2021

PROPERTY OWNER & APPLICANT
Larry Huffman

PROPERTY LOCATION/ADDRESS
Lots 14, 15, 16, and 22, Block 947, Port Malabar Unit 18, Section 21, Township 29, Range 37, Brevard County, Florida, specifically 1518 Tugwell Street SE

SUMMARY OF REQUEST
A variance to allow existing accessory structures (a detached garage, a detached shed, and a detached metal building) to exceed the size of the principal structure, as established by Section 185.118(C) of the Palm Bay Code of Ordinances.

Existing Zoning	RS-2, Single-Family Residential District
Existing Land Use	Single-Family Residential Use
Site Improvements	Single-Family Home
Site Acreage	0.92 acres

SURROUNDING ZONING & USE OF LAND

North	RS-2, Single-Family Residential, Single-Family Home
East	RS-2, Single-Family Residential, Single-Family Home
South	RS-2, Single-Family Residential, Single-Family Home
West	RS-2, Single-Family Residential, Single-Family Home

BACKGROUND:

The property consists of four standard General Development Corporation lots, forming an L-shaped lot with 3 lots fronting Tugwell Street SE, and one fronting Sandusky Street SE. The home was constructed in 1985, and the property has been owned by the applicant since 2001. The applicant received a permit for a 30' x 40' concrete slab via permit 21-4887 earlier this year. Following this permit, then applicant then applied for a metal accessory structure to be placed on top of the slab via permit 21-6842. The Building Department informed the applicant that he could not construct the building as it exceeded the allowance for accessory structure square footage. The metal building proposed in the permit has already been constructed, and the applicant now seeks a variance to allow for three existing accessory structures to exceed the allowed limit by 1,525 square feet.

ANALYSIS:

Variances from the terms of the Land Development Code may be granted when special conditions exist that would result in unnecessary hardship if the provisions of the Land Development Code were enforced. However, a variance may not be granted when the public health and safety would be compromised as a result of the variance. An application must demonstrate that items 1 through 7 of Section 169.009 of the Code of Ordinances have been met. A review of these items is as follows:

Item 1 - *"Special conditions and circumstances exist which are peculiar to the land, structure, or building involved and which are not applicable to other lands, buildings or structures in the same land use category, zoning district, or situation."*

The applicant states "the shed sits on one of three lots by home entirely fenced in." The newly constructed shed is one of several accessory structures on the property. According to the applicant, the shed was constructed behind the existing 6' fence adjacent to the accessory garage. The home is 1,635 square feet under air. The three (3) accessory structures on the lot total 3,160 square feet (detached garage at 1,800 square feet, metal building at 1,200 square feet, and shed at 160 square feet). Other than the applicant owning four contiguous lots, there does not appear to be any special conditions or circumstances peculiar to the land, structure, or buildings involved.

Item 2 - *"The special conditions and circumstances identified in Item 1 above are not the result of the actions of the applicant."*

The construction of accessory structures are so the applicant can store items and vehicles on the property. There are no special conditions and circumstances identified, and the need of a variance is a result of the actions of the applicant.

Item 3 - *"Literal interpretation and enforcement of the Land Development Code regulations would deprive the applicant of rights commonly enjoyed by other properties in the same land use category, zoning district or situation under the terms of the Land Development Code, and would work unnecessary and undue hardship on the applicant."*

Literal interpretation and enforcement of the Land Development Code would require the applicant to build within the applicable accessory structure requirement. Building within the required accessory structure allowance would require the applicant to remove the newly constructed accessory structure and the existing shed in order to meet code. The total square footage of accessory structures is supposed to fall under the total square footage of the primary residence's living area, per 185.118(C).

Item 4 - *"The variance, if granted, is the minimum variance necessary to make possible the reasonable use of the land, building, or structure."*

A 1,525 square foot variance would be needed to meet the applicant's request and have the applicant come into code compliance.

Item 5 - *"Granting of the variance request will not confer on the applicant any special privilege that is denied by the development code to other lands, buildings or structures in the same land use category, zoning district or situation."*

Granting of the variance would confer upon the applicant a special privilege for excess square footage for accessory structures, as the same development standards apply to other properties in this community. This excess, however, does not appear to create any health or safety hazards to adjacent properties.

Item 6 - *"The granting of the variance will be in harmony with the general intent and purpose of this code and will not be injurious to the surrounding properties or detrimental to the public welfare."*

Staff has not identified any detrimental effect to public welfare.

Item 7 - *"The variance represents a reasonable disposition of a claim brought under the Bert J. Harris Private Property Rights Protection Act, chapter 95-181, Laws of Florida, that a development order of the city has reasonably burdened the applicant's property, based on the recommendations of the special master appointed in accordance with the act, or the order of a court as described in the act."*

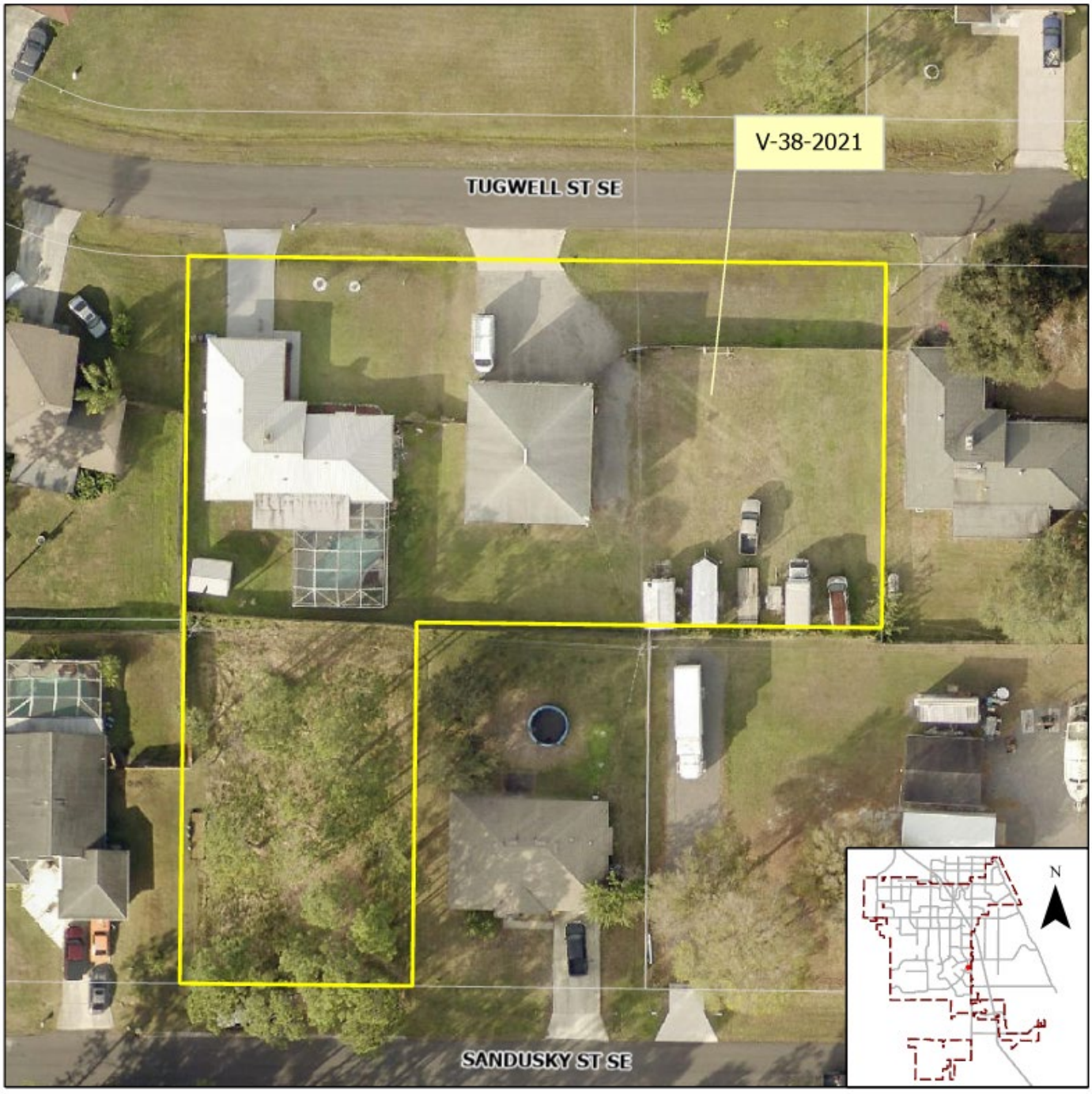
Staff has not received a claim made upon this property, with respect to the "Bert J. Harris Act," or any development order, as indicated above. Therefore, Item 7 is not applicable to the variance request.

Note: The applicant has specified that the shed has been painted the same color as the home and accessory garage, therefore meeting the requirements of 185.118(G). This requirement must be continuously met in perpetuity, in order to maintain code compliance.

STAFF RECOMMENDATION:

The Planning and Zoning Board must determine, based on the facts presented, to what degree, if any, of minimal relief, is required to meet the needs of the variance being requested, as required under Section 169.009 of the City of Palm Bay Code of Ordinances and make recommendations to City Council for a final review. Under 59.05(A)(14) of the City of Palm Bay Code of Ordinances, "The quasi-judicial body shall direct the clerk or [city] attorney acting as the body's legal counsel to prepare the necessary and appropriate written order in accordance with the purpose of the hearing and findings of the quasi-judicial body. Pursuant to Florida Statutes, in the event relief is denied to the applicant, the specific provision of statute or code that was deficient shall be stated for record."

Map is not to scale—for illustrative purposes only; not to be construed as binding or as a survey.



SITE LOCATION MAP CASE: V-38-2021

Subject Property

South of and adjacent to Tugwell Street SE, and north of and adjacent to Sandusky Street SE, specifically at 1518 Tugwell Street SE

Map is not to scale—for illustrative purposes only; not to be construed as binding or as a survey.

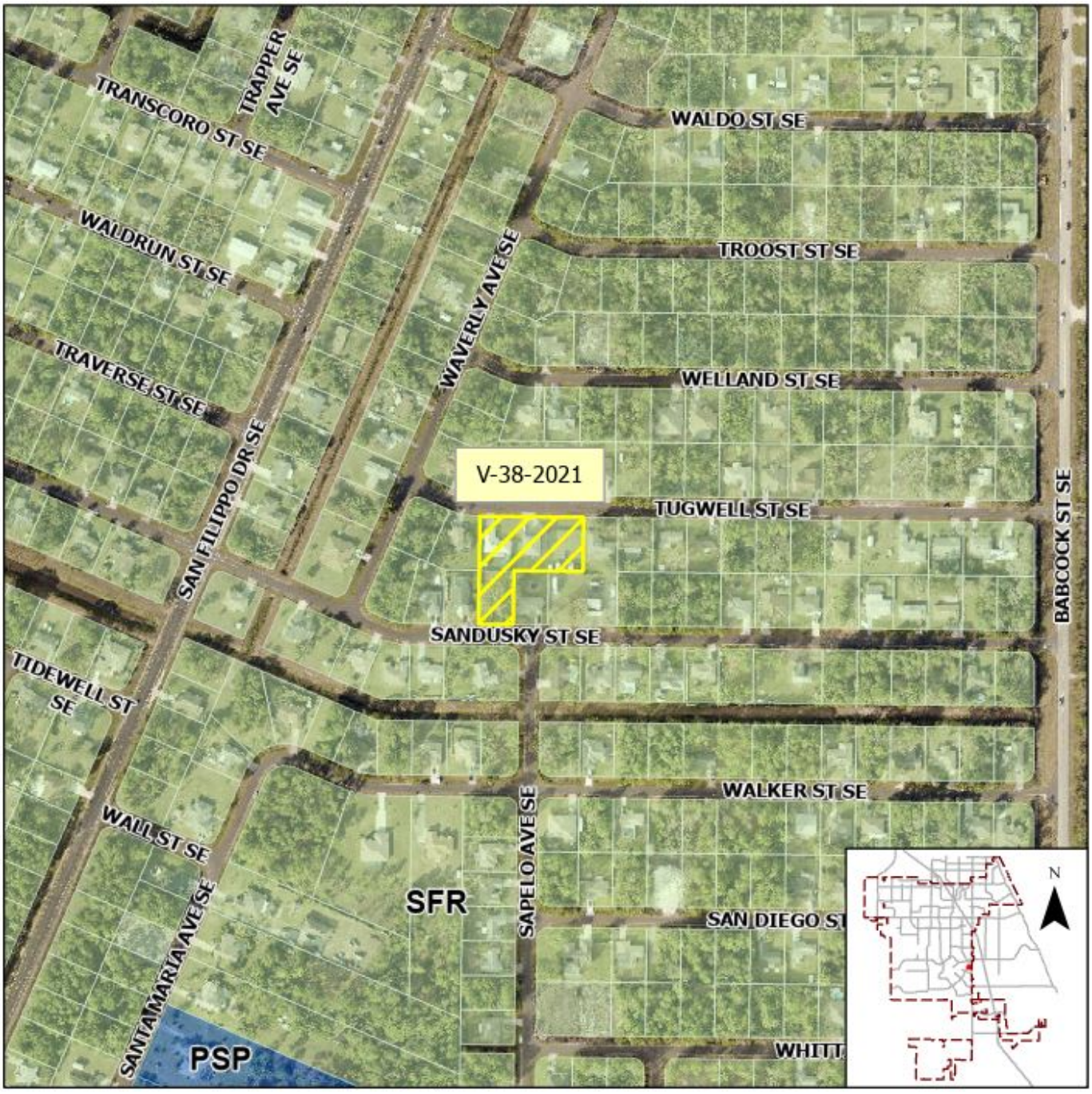


AERIAL LOCATION MAP CASE: V-38-2021

Subject Property

South of and adjacent to Tugwell Street SE, and north of and adjacent to Sandusky Street SE, specifically at 1518 Tugwell Street SE

Map is not to scale—for illustrative purposes only; not to be construed as binding or as a survey.



FUTURE LAND USE MAP CASE: V-38-2021

Subject Property
South of and adjacent to Tugwell Street SE, and north of and adjacent to Sandusky Street SE, specifically at 1518 Tugwell Street SE

Future Land Use Classification
SFR – Single Family Residential Use

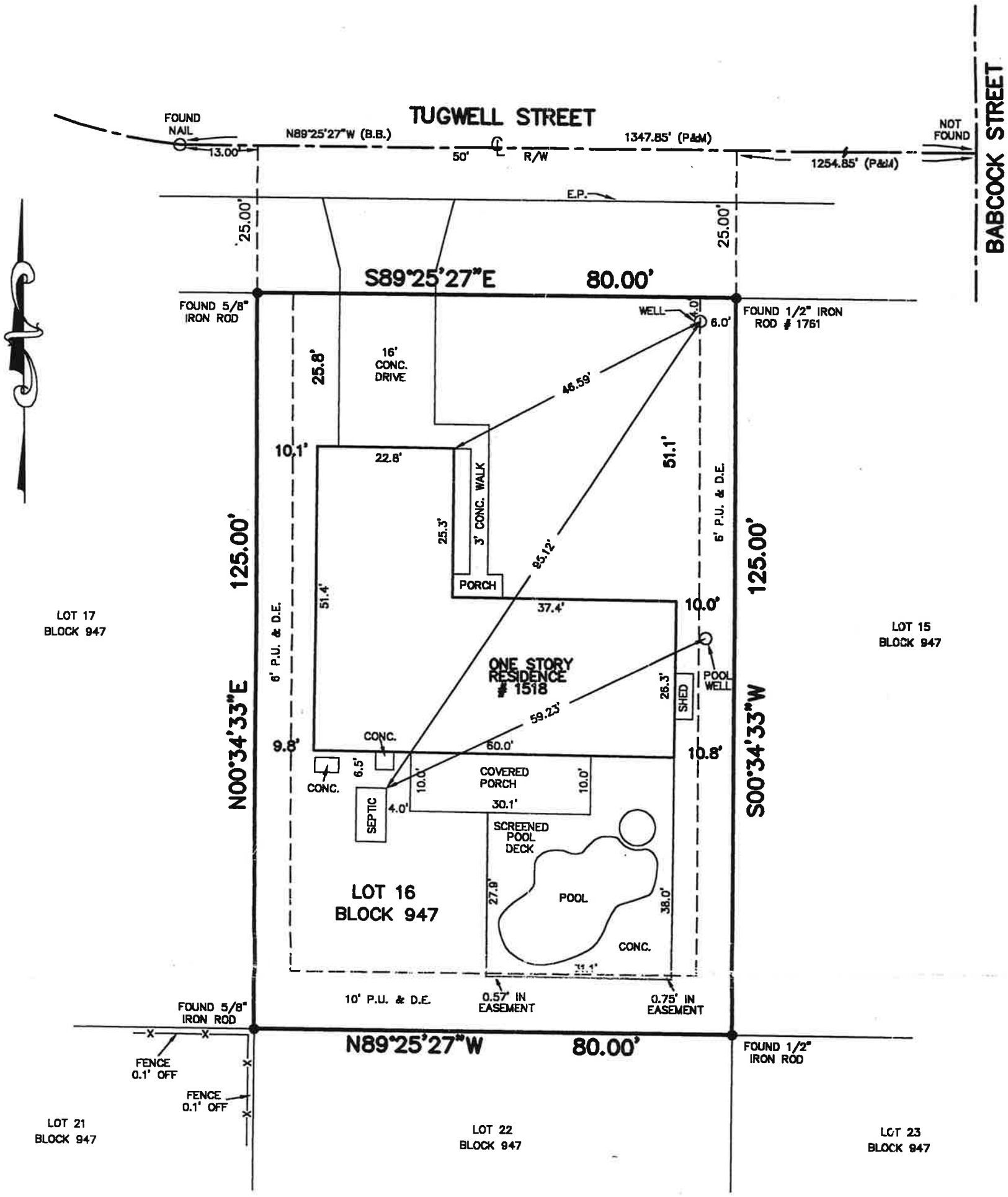
Map is not to scale—for illustrative purposes only; not to be construed as binding or as a survey.



ZONING MAP CASE: V-38-2021

Subject Property
South of and adjacent to Tugwell Street SE, and north of and adjacent to Sandusky Street SE, specifically at 1518 Tugwell Street SE

Current Zoning Classification
RS-2 – Single-Family Residential District



BOUNDARY SURVEY PREPARED FOR:
LARRY B. HUFFMAN, III AND DONNA J. HUFFMAN
CONTEMPORARY MORTGAGE SERVICES, INC.
STATE TITLE ASSOCIATES, LLLP
OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY

DESCRIPTION: LOT 16, BLOCK 947, PORT MALABAR UNIT EIGHTEEN, ACCORDING TO THE PLAT THEREOF AS RECORDED IN PLAT BOOK 15, PAGES 109-119, OF THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA.

AAL LAND SURVEYING SERVICES, INC.

ACCORDING TO F.I.R.M. #12009C 0585 E, DATED APRIL 3, 1989 THIS PROPERTY IS LOCATED WITHIN FLOOD ZONE X

TYPE OF SURVEY: BOUNDARY

SCALE: 1" = 20'

FIELD DATE: 09-17-01

SECTION 21, TOWNSHIP 29 SOUTH, RANGE 37 EAST

PROJECT #6805

GENERAL NOTES:

1. THIS SURVEY AND DRAWING HAS BEEN PREPARED TO CONFORM WITH APPLICABLE MINIMUM TECHNICAL STANDARDS AS SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS IN CHAPTER 61G17-6, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027 OF THE FLORIDA STATUTES.
2. THIS SURVEY AND DRAWING IS FOR THE SOLE USE AND BENEFIT OF THE PARTIES NAMED HEREON AND FOR THE SPECIFIC PURPOSE AS NOTED, AND SHOULD NOT BE RELIED UPON BY ANY OTHER ENTITY, AND IS NOT TRANSFERABLE UNDER ANY CIRCUMSTANCES.
3. THIS SURVEY IS NOT VALID WITHOUT THE EMBOSSED SEAL OF THE SURVEYOR, AND ANY REPRODUCTION OF THIS DRAWING WITHOUT WRITTEN PERMISSION OF THE SURVEYOR IS HEREBY FORBIDDEN.
4. NO OPINION OF TITLE OR OWNERSHIP IS HEREBY EXPRESSED OR IMPLIED BY THE SURVEYOR.
5. THIS SURVEY WAS PREPARED FROM INFORMATION FURNISHED TO THE SURVEYOR BY THE CLIENT, AND MAY BE SUBJECT TO EASEMENTS OR LIMITATIONS EITHER RECORDED OR IMPLIED.
6. BEARINGS ARE BASED ON AN ASSUMED DATUM AND ON THE LINE SHOWN AS BEING THE BASIS OF BEARINGS.
7. NO UNDERGROUND IMPROVEMENTS HAVE BEEN LOCATED UNLESS OTHERWISE SHOWN.
8. ELEVATIONS, IF SHOWN, ARE BASED ON THE NATIONAL GEODETIC VERTICAL DATUM OF 1929.

L.B. #6623

ANDREW W. POWSHOK
P.L.S. No. 5383

1103 W. HIBISCUS BOULEVARD
SUITE 403
WEST MELBOURNE, FLORIDA 32901
PHONE: (321)768-8110
FAX: (321)952-9771
E-MAIL: aalsurvey@aalsurvey.com

ROBERT L. BARCLEY
P.S.M. No. 5882

LEGEND

BB	–	BEARING BASE
(M)	–	MEASURED
(P)	–	PLAT
(D)	–	DEED
O.R.B.	–	OFFICIAL RECORD BOOK OF BREVARD COUNTY, FLORIDA.
P.B.	–	PLAT BOOK OF BREVARD COUNTY, FLORIDA.
N&D	–	NAIL AND DISC
N&TT	–	NAIL AND TIN TAB
C.M.	–	CONCRETE MONUMENT
PRM	–	PERMANENT REFERENCE MARKER
PCP	–	PERMANENT CONTROL POINT
TBM	–	TEMPORARY BENCHMARK
Δ	–	DELTA
R	–	RADIUS
L	–	ARC LENGTH
CB	–	CHORD BEARING
CH	–	CHORD LENGTH
P.C.	–	POINT OF CURVATURE
P.T.	–	POINT OF TANGENCY
P.I.	–	POINT OF INTERSECTION
P.O.L.	–	POINT ON LINE
R/W	–	RIGHT OF WAY
B.S.L.	–	BUILDING SETBACK LINE
OHW	–	OVERHEAD WIRES
E.P.	–	EDGE OF PAVEMENT
P.U.	–	PUBLIC UTILITY EASEMENT
D.E.	–	DRAINAGE EASEMENT
EL	–	ELEVATION
FF	–	FINISHED FLOOR
CONC.	–	CONCRETE
R.C.P.	–	REINFORCED CONCRETE PIPE
C.M.P.	–	CORRUGATED METAL PIPE
℄	–	CENTERLINE

APPROVED 04/19/2021 11:34:34 AM

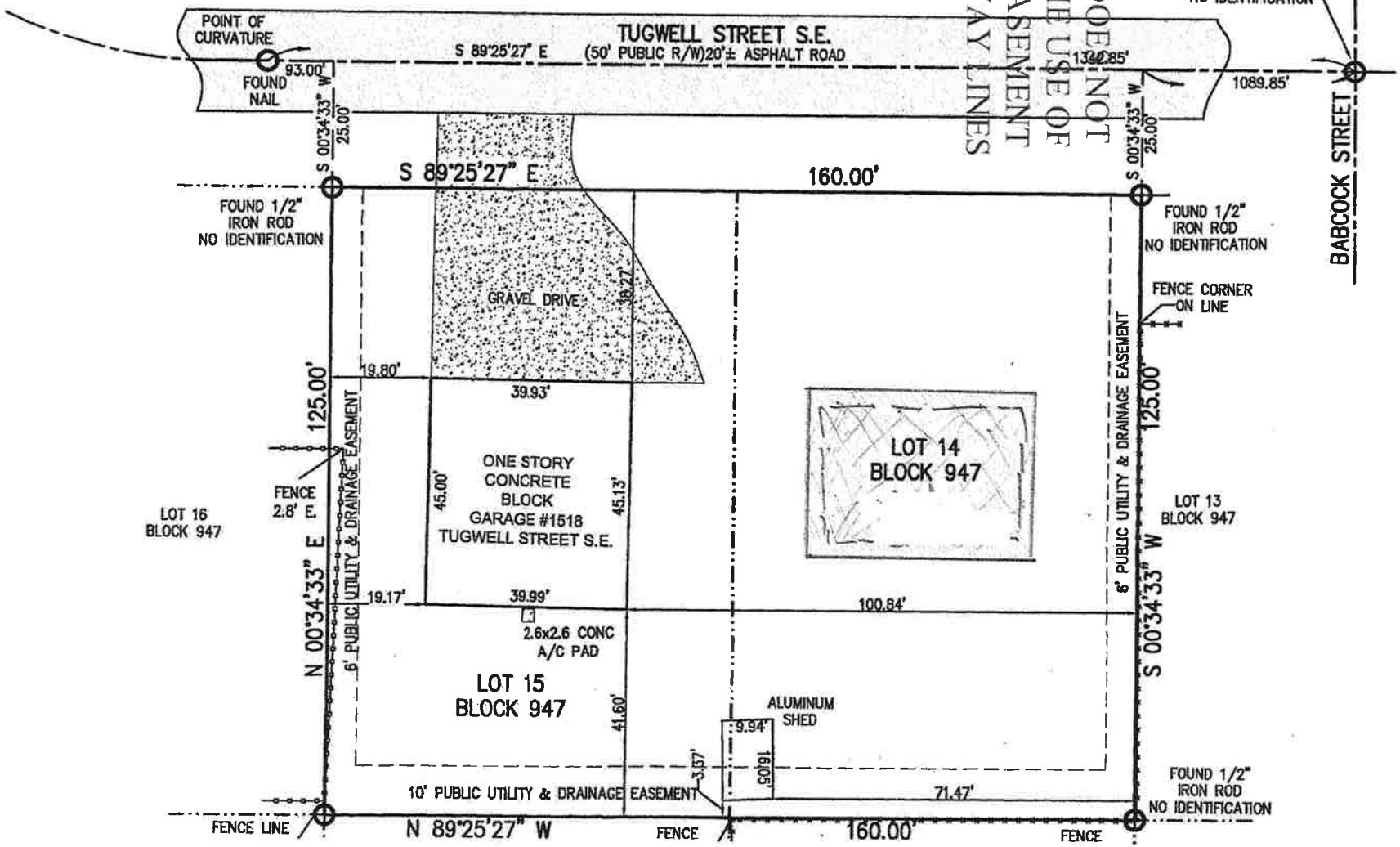
21 4887 in

MAP OF SURVEY
BOUNDARY SURVEY
OF

LOTS 14 & 15, BLOCK 947, PORT MALABAR UNIT 18, according to the plat thereof as recorded in Plat Book 15, Page(s) 109–119, of the Public Records of Brevard County, Florida. (Contains 0.46 acres)

New slab. 40FL x 30 Fw.
3000 PSI fiber glass.
4" thick, Footers. 12"W x 12"D
2 Rebars #5.

Slab only approved for zoning. Future structure must comply with 25' front, 8' side and 10'rear setback.



The City of Palm Bay Florida

LAND DEVELOPMENT DIVISION
120 Malabar Road SE • Palm Bay, FL 32907 • Telephone: (321) 733-3042
Landdevelopment@palmbayflorida.org

VARIANCE APPLICATION

This application must be deemed complete and legible, and must be returned by the first day of the month during division office hours, with all enclosures referred to herein, to the Land Development Division, Palm Bay, Florida, to be processed for consideration the following month at the earliest by the Planning and Zoning Board. The application will then be referred by the Planning and Zoning Board for study and recommendation to the City Council. You or your representative are required to attend the meeting(s) and will be notified by mail of the date and time of the meeting(s). The Planning and Zoning Board holds their regular meeting the first Wednesday of every month at 7:00 p.m. in the City Hall Council Chambers, 120 Malabar Road SE, Palm Bay, Florida, unless otherwise stated.

PARCEL ID 29-37-21-GR-947-16

TAX ACCOUNT NUMBER 2940023

LEGAL DESCRIPTION OF THE PROPERTY COVERED BY THIS APPLICATION:

Port Malabar Unit 18, Lots 14, 15, 16, 22 & Block 947

STREET ADDRESS OF PROPERTY COVERED BY APPLICATION:
1518 TUGWell ST Palm Bay FL 32905

SIZE OF AREA COVERED BY THIS APPLICATION (calculate acreage): 0.92

EXISTING ZONING CLASSIFICATION OF PROPERTY (ex.: RS-2, CC, etc.) RS-2

ARE THERE ANY STRUCTURES ON THE PROPERTY NOW? ☑ YES ☐ NO

HAS A VARIANCE APPLICATION PREVIOUSLY BEEN FILED FOR THIS PROPERTY?

☐ YES ☑ NO

IF SO, STATE THE NATURE OF THE PREVIOUS APPLICATION, WHETHER THE REQUEST WAS APPROVED OR DENIED, AND DATE OF ACTION:

DESCRIBE THE EXTENT OF THE VARIANCE REQUESTED AND THE INTENDED USE OF THE PROPERTY IF THE VARIANCE IS GRANTED (SPECIFY NUMBER OF INCHES/FEET ENCROACHING INTO SPECIFIC REQUIRED YARD SETBACK OR HEIGHT RESTRICTIONS):

An accessory structures exceeding the principal living area by 1,465sf, including an existing garage, an existing shed, and an existing metal building.

CITE THE APPLICABLE SECTION(S) OF THE ZONING ORDINANCE AND ITS REQUIREMENT FROM WHICH VARIANCE IS REQUESTED (ex.: 185.034(f)(7)):

195.119 (C)

GIVE WRITTEN EXPLANATION(S) DEMONSTRATING HOW THE VARIANCE MEETS THE FOLLOWING CONDITIONS PER SECTION 169.009:

(a) That special conditions and circumstances exist which are peculiar to the land, structures or buildings involved and which are not applicable to other lands, structures or buildings in the same land use category, zoning district, or situation.

(b) That special conditions and circumstances referred to above do not result from the actions of the applicant.

(c) That literal interpretation and enforcement of the development code regulations would deprive the applicant of rights commonly enjoyed by other properties in the same land use category, zoning district, or situation under the terms of the development code, and would work unnecessary and undue hardship on the applicant.

(d) That if granted, the variance is the minimum variance necessary to make possible the reasonable use of the land, building or structure.

(e) That granting the variance requested will not confer on the applicant any special privilege that is denied by the development code to other lands, buildings, or structures in the same land use category, zoning district, or situation.

(f) That granting the requested variance will be in harmony with the general intent and purpose of this code and will not be injurious to the surrounding properties or detrimental to the public welfare.

The shed sits on one of three lots by itself by my home intively fenced in. The city has already approved a permit for the slab. & I am asking for a variance to pass approval for the shed which is already built.

Paited the same color of the house, Beige

EVIDENCE MUST BE PROVIDED TO CONSIDER VARIANCES BASED ON THE FOLLOWING CLAIMS:

N/A **BERT J. HARRIS PRIVATE PROPERTY RIGHTS PROTECTION ACT**, Chapter 95-181, Laws of Florida. Provide a copy of one of the following:

- ☐ Special master appointed in accordance with the act.
- ☐ Court order as described in the act.

N/A **AMERICANS WITH DISABILITIES ACT.** Cite the section of the act from which the variance request will provide relief: _____

THE FOLLOWING PROCEDURES AND ENCLOSURES ARE REQUIRED TO COMPLETE THIS APPLICATION:

- ☐ *$350.00 Application Fee. Make Check payable to "City of Palm Bay."
- ☐ List of legal descriptions of all properties within a 500-foot radius of the boundaries of the property covered by this application, together with the names and mailing addresses (including zip codes) of all respective property owners within the above referenced area. (This should be obtained for a fee from the Brevard County Planning and Zoning Department at (321) 633-2060.)
- ☐ A site plan drawn to scale which shows all property and yard dimensions, its structures (if any) and the variance desired, including abutting highway or road boundaries. The site plan shall also be provided on Memory Drive.
- ☐ Site plan data may be shown on a copy of the survey and must also be provided on Memory Drive.
- ☐ A survey prepared by a registered surveyor showing all property lines and structures. The survey shall also be provided on Memory Drive.
- ☐ Sign(s) posted on the subject property. Refer to Section 51.07(C) of the Legislative Code for guideline.
- ☐ **Where the property owner is not the representative for the request**, a LETTER must be attached giving the notarized consent of the property owner(s) to a representative.

Name of Representative _____

I, the undersigned understand that this application must be complete and accurate before consideration by the Planning and Zoning Board/Local Planning Agency and certify that all the answers to the questions in said application, and all data and matter attached to and made a part of said application are honest and true to the best of my knowledge and belief.

Under penalties of perjury, I declare that I have read the foregoing Variance application and that the facts stated in it are true.

Owner Signature Larry Husfman **Date** 9-1-21

Printed Name Larry Husfman

Full Address 1518 Tuscorell St SE Palm Bay FL 32909

Telephone 321-508-4872 **Email** larrysac2@yahoo.com

LARRYSAC2

***NOTE: APPLICATION FEE IS NON-REFUNDABLE UPON PAYMENT TO THE CITY**

RECEIVED
SEP 01 2021
City of Palm Bay
LAND DEVELOPMENT

MEMORANDUM

TO: Planning and Zoning Board Members

FROM: Patrick Murphy, Acting Growth Management Director

DATE: October 6, 2021

SUBJECT: **FD-35-2021 - St. Johns Preserve-Tract A - Mike Evans, St. Johns Preserve, LLC (BSE Consultants, Inc., Rep.) - Final Development Plan to allow a proposed PMU for a 120-unit residential development called St. Johns Preserve-Tract A. Tract A of St. Johns Preserve - Phase 1, Section 32, Township 28, Range 36, Brevard County, Florida, containing approximately 19.12 acres. North of and adjacent to Malabar Road NW, in the vicinity west of St. Johns Heritage Parkway NW

**Quasi-Judicial Proceeding.

ATTACHMENTS:

Description

- **Case FD-35-2021 - Staff Report**
- **Case FD-35-2021 - Plat**
- **Case FD-35-2021 - Final Development Plan**
- **Case FD-35-2021 - Application**

STAFF REPORT

LAND DEVELOPMENT DIVISION

120 Malabar Road SE • Palm Bay, FL 32907 • Telephone: (321) 733-3042
landdevelopmentweb@palmbayflorida.org

Prepared by
Patrick J. Murphy, Assistant Growth Management Director

CASE NUMBER
FD-35-2021

PLANNING & ZONING BOARD HEARING DATE
October 6, 2021

PROPERTY OWNER & APPLICANT
St. Johns Preserve Investment Group, LLC. (Mike Evans, Owner), Represented by B.S.E. Engineering Consultants, Inc.

PROPERTY LOCATION/ADDRESS
The property is located NW of the intersection of Malabar Road and the St. Johns Heritage Parkway. Specifically, the property is Tract A of the St. Johns Preserve – Phase 1; located in Section 32, Township 28 south, Range 36 east, Brevard County, Florida

SUMMARY OF REQUEST	Final Development Plan (PDP) approval for a 120-unit residential development to be called **St. Johns Preserve Townhomes**.
Existing Zoning	PMU, Parkway Mixed Use
Existing Land Use	Parkway Flex Use
Site Improvements	Vacant, Cleared Land
Site Acreage	19.12 acres

SURROUNDING ZONING & USE OF LAND

North	PMU, Parkway Mixed Use; St. Johns Preserve PMU (future homes)
East	PMU, Parkway Mixed Use; St. Johns Preserve (future commercial tract – currently undeveloped)
South	AU, Agricultural Residential (Brevard County); Undeveloped Land
West	GU, General Use (Brevard County); Heritage High School

COMPREHENSIVE PLAN COMPATIBILITY	Yes, per Ordinance 2017-84

BACKGROUND:

The property is located NW of the intersection of Malabar Road and the St. Johns Heritage Parkway. Specifically, the property is Tract A of the St. Johns Preserve – Phase 1; located in Section 32, Township 28 south, Range 36 east, Brevard County, Florida. It includes 19.12 acres and was rezoned to the PMU, Parkway Mixed Use district via Ordinance 2014-12.

To the north is the remainder of the St. John Preserve community, which was previously approved for 620 single-family homes. To the east is a portion of the overall St. Johns Preserve project that is designated for commercial use(s). Both these areas of the project are also zoned PMU. To the west is Heritage High School, zoned GU, General Use. Across Malabar Road to the south are undeveloped lands zoned AU, Agricultural Use (Brevard County).

On May 3, 2018, City Council granted approval for Ordinance 2017-84, which amended the future land use map to change the designation of the subject property from Single Family Residential Use to Parkway Flex Use. The map amendment covered 202.9 acres, of which the subject property was/is a part of.

The Parkway Flex Use category permits a mix of commercial and residential uses. A minimum of 40 square feet of commercial space shall be provided for each residential unit. Typical commercial uses permitted include retail, personal service establishments, daycare centers, church/religious uses, restaurants, financial institutions, office uses, service stations with fuel sales, food service, theaters, professional office uses, and medical and/or veterinary clinics. Allowable residential uses include both single and multiple family residential uses, with a total maximum of ten (10) residential units per acre. Typical residential uses include detached single-family homes, attached single-family housing (with a maximum of eight (8) units per structure) and traditional multi-family housing such as apartments and condominiums.

On August 13, 2019, City Council granted approval of Ordinance 2019-45, which effectuated the Final Development Plan for the single-family portion of the overall property, to consist of 620 lots. A 20-acre future development tract and a 15-acre commercial tract were included in the FDP and identified on the subdivision plat as Tracts A and X, respectively. Two (2) specific conditions of approval were that the applicant provide a signal warrant study for Malabar Road and the Parkway; and that any landscaping in the Parkway ROW would be maintained in perpetuity by the HOA. These items were completed during the Phase 1 construction process.

The applicant is currently seeking Final Development Plan (FDP) approval for the 20-acre future development Tract A. The purpose of this request is to allow for the development of 120 townhomes. This phase of the project includes a residential density of 6.28 units per acre. The applicant for this request is the St. Johns Preserve Investment Group, LLC. They are being represented by B.S.E. Engineering Consultants, Inc.

ANALYSIS:

The Parkway Mixed Use (PMU) zoning district is a Planned Development intended to establish types of development and arrangements of land uses that are consistent with the Comprehensive Plan, but which are not otherwise provided for or allowed in the zoning districts set out in this chapter. Subsequent development within the PMU district is implemented by the approval of one or more site and development plans, known as Final PMU Development Plans. The purpose of planned developments is to encourage the creation of designed neighborhoods and communities that provide a full range of residence types, as well as commercial uses that serve the inhabitants of the immediate community and surrounding neighborhoods.

The standards for creating a new PMU district are intended to promote flexibility of design and diversification and integration of uses and structures. The process allows the City Council to evaluate applications to establish new PMU districts and to render final determination as to whether applications should be approved, approved with conditions, or denied. In addition, the City Council may establish such additional limitations and regulations as are deemed necessary to protect the public health, safety, and general welfare.

Specifically, the development plan indicates the 120 townhomes will be in the SW portion of the overall community. Access will be from the existing single-family development via a new roadway, Kylar Drive SW. Kylar will directly connect to Pinwherry Street SW, which is the main roadway that connects to the Parkway. A future roadway connection from the south end of the development will provide internal access to the future commercial tract. There will be no direct access to Malabar Road from this phase of development.

Townhome lots are 75’ wide x 120’ deep, with the typical townhome built on a 4,500-sf pad (60’ x 75’). Each townhome building will be accessed via internal roadways that are designed to meet city construction standards. All roads will be owned and maintained by the HOA. The road network and any off-site impacts that might be caused by this phase of development are currently being reviewed by the city’s Engineering Division, as the applicant has jointly submitted full-design construction drawings.

City water will be provided to the townhomes by connection to the existing 20” PVC water distribution pipe located on the north side of Malabar Road. However, the Utilities Department will not accept the water main as designed. If the watermain cannot be relocated from under the pavement, due to the narrow Right-of-Way, the development must be master metered, and the potable water system for this phase will be private. Sanitary Sewer will be provided via 10” PVC gravity fed collection line that discharges into the sewer lift station on Pinwherry Street. These lines shall be centered within each road ROW.

Stormwater runoff will be directed to Ponds 1 and 2, which connect to the stormwater treatment system being constructed in the single-family development. Outfall from the overall system will be to Melbourne-Tillman Canal No. 6, which runs along the west side of the property.

A mastery amenity center is currently under administrative site plan review. Site Plan #1393 proposes a 750 square foot pavilion, connected to a large, swimming pool with a concrete deck and lounge chairs. The recreation area will be located on Dorian Drive, between the townhome and single-family developments. A mail kiosk is located across from the amenity.

On June 15, 2018, the Brevard County School Board issued the School Capacity Availability Determination Letter (SCADL 2018-18). The letter determined that there is sufficient capacity for the total projected student membership to accommodate the St. Johns Preserve development. Included in the school concurrency application was 620 single-family homes and 304 townhomes. Since FD-35-2021 reduces the unit count, a new SCADL is not required.

The submitted plans for the townhome development indicate that the homes are 20-30' from the western property line, which is shared in common with Heritage High School. Homes will also be constructed 15' from the south property line, which is shared in common with the Malabar Road ROW. For the purpose of screening/buffering (and health & safety) staff recommends that the two (2) property lines be provided with a 6' high wall or opaque fence.

Per Section 185.057(B)(1)(a); approval of a Parkway Mixed Use project shall include a minimum of forty (40) square feet of commercial space for each residential unit proposed within the PMU. Since FD-16-2019 was approved for 620 units, and this request includes an additional 120 units, a minimum of 29,600 square feet of commercial use(s) shall be developed upon what is currently designated as Tract X. The Planning and Zoning Board and City Council should decide at what stage of residential development that this commercial development is submitted for site plan review/approval.

CONDITIONS:

To receive Final PMU Development Plan approval, the proposal must meet the requirements of Section 185.057 of the City of Palm Bay's Code of Ordinances. Upon review, it appears that the request is in conformance with the applicable requirements of this section, subject to the following items being addressed during the construction plan review process:

- Approval of the subdivision plat and Opinion of Title.
- Development standards shall be provided in the Covenants, Conditions, Restrictions and Easements for review/approval.
- 6' high wall or opaque fence provided along the south and west property lines of this phase.

- A traffic impact analysis that includes the A.M. and P.M. trip generations in conformance with ITE Trip Generation Manual 10th Edition.

Lastly, technical staff review comments are attached to this report.

STAFF RECOMMENDATION:

Case FD-35-2021 is recommended for approval, subject to the staff comments.

TECHNICAL COMMENTS

CASE FD-35-2021 – ST. JOHNS PRESERVE TOWNHOMES (PMU)

PUBILC WORKS (Natalie Shaber, Engineer II; Joe Hale, City Surveyor):

Survey:

A plat was not provided for staff review. Until this is provided project should not be forwarded. Unknown geometry and dedications.

Driveway/ROW:

1. If an access connection is to be made to Malabar Rd.- Brevard County right of way use permit and traffic concurrency (Malabar Road).
2. S/W connection and extension to northern limits of project from the access point.
3. Pre -vs Post discharge rate (MTWCD permit for outfall to Tillman Canal).
4. Traffic study and improvements at Parkway and Malabar.

Traffic:

As there is a reduction in the proposed MFR units from the approved 300 units to 120 units, a statement from the Engineer of Record certifying the proposed trip generation reduction is required in lieu of an updated traffic impact study.

Where possible cross-access shall be provided between the multifamily and commercial.

The Heritage H.S. driveway and the proposed driveway on Malabar shall be a minimum of 50 ft apart at the right-of-way line.

Environmental:

With respect to the wood stork foraging habitat please provide confirmation from SJRWMD that the site is cleared for construction prior to scheduling a pre-sitework meeting.

Stormwater Management:

Stormwater management for this Phase shall meet all of the applicable criteria n Ch.174, including Ch.174.071 Outside agency and governmental entities coordination. Please provide SJRWMD ERP 120600-5 for the City's files prior to scheduling a pre-sitework meeting.

Drainage easements shall be recorded over and across the interconnected stormwater management system granting separate HOA's or other separate maintenance entities the right to access the system as needed.

UTILITIES (Christopher Little, Utilities Director):

1. The applicant/owner, at their expense, will be required to design, permit, install, inspect and test water & sewer systems of adequate size to accommodate the development and to connect to the City's water and sewer system [§ 200.11(d)(1) - On-site Facilities]. At this time the nearest point of connection to the mainline water distribution system is a 20" PVC pipe on the North side of Malabar Road. The nearest point of connection to the mainline wastewater collection system force main is a 16" PVC pipe on the South side of Malabar Road.

2. The applicant/owner will be responsible for the property's hydraulic share for the new utilities. Oversizing of utilities at the request of the Utilities Department will be subject to a refunding agreement or refundable advance [§ 200.11(D) &(E)]. The City of Palm Bay's 2017 Wastewater Master Plan & 2017 Water Master Plan, both of which are available upon request, identify proposed mainline extensions with the current piping size requirements.

3. A City of Palm Bay "Utility Agreement" shall be executed between the Property Owner and the City. All Utility impact/connection charges noted in the "Utility Agreement" must be paid as outlined in the terms and conditions of the Utility Agreement. All fees are subject to change annually on October 1. The Property Owner shall submit a certified copy of the property deed as verification of ownership as part of the Utility Agreement.

4. All Utility construction, materials, and testing shall be in accordance with the latest revision of the Palm Bay Utilities Department Policies, Procedures, and Standards Handbook and the Standard Detail Drawings.

5. Prior to any construction, all required FDEP Permit applications for the Water and Sanitary Sewer Construction shall be processed through and copies of the Permits filed with the Utilities Department.

FIRE (Mark Whorton, Fire Consultant):

No comments.

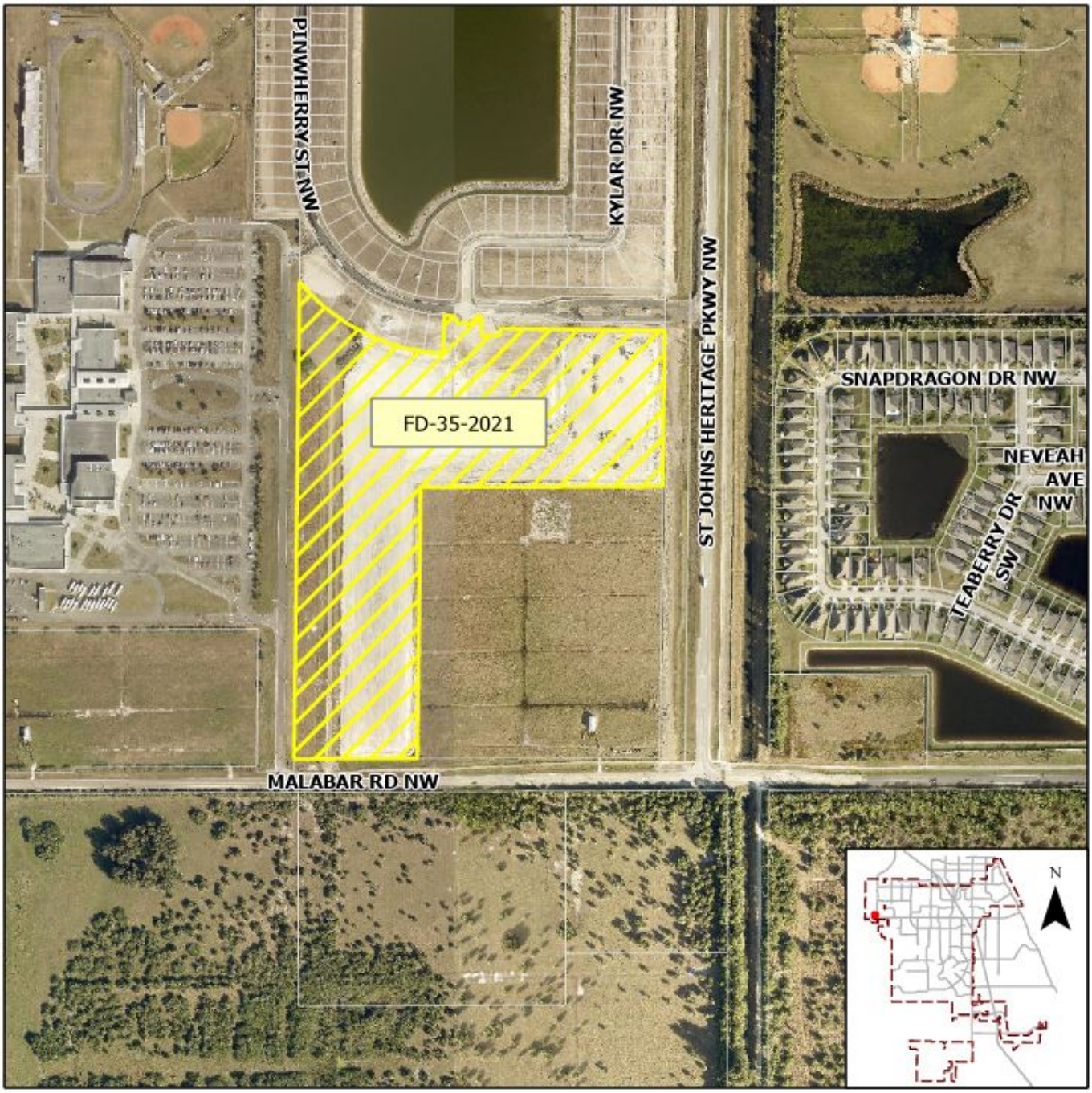
BUILDING (James Williams, Flood Plain Administrator):

The project is in FEMA Floodzone AE and will need an approved Conditional Letter of Map Amendment (CLOMA) before any buildings are constructed. For the final CO an approved Letter of Map Revision (LOMR) removing the entire project from the Special Flood Hazard Area is required.

Per the City’s Floodplain Ordinance, any structure built within a Special Flood Hazard Area (SFHA) will require a Floodplain Permit at time of construction. An approved CLOMR does not exempt the requirement for a Floodplain Permit in the SFHA. The Building Official will not issue any building permits without a Floodplain Permit.

If you get the approved Subdivision LOMR before any buildings permits are applied for, you don’t need to apply for individual Floodplain permits for each structure.

Map is not to scale—for illustrative purposes only; not to be construed as binding or as a survey.

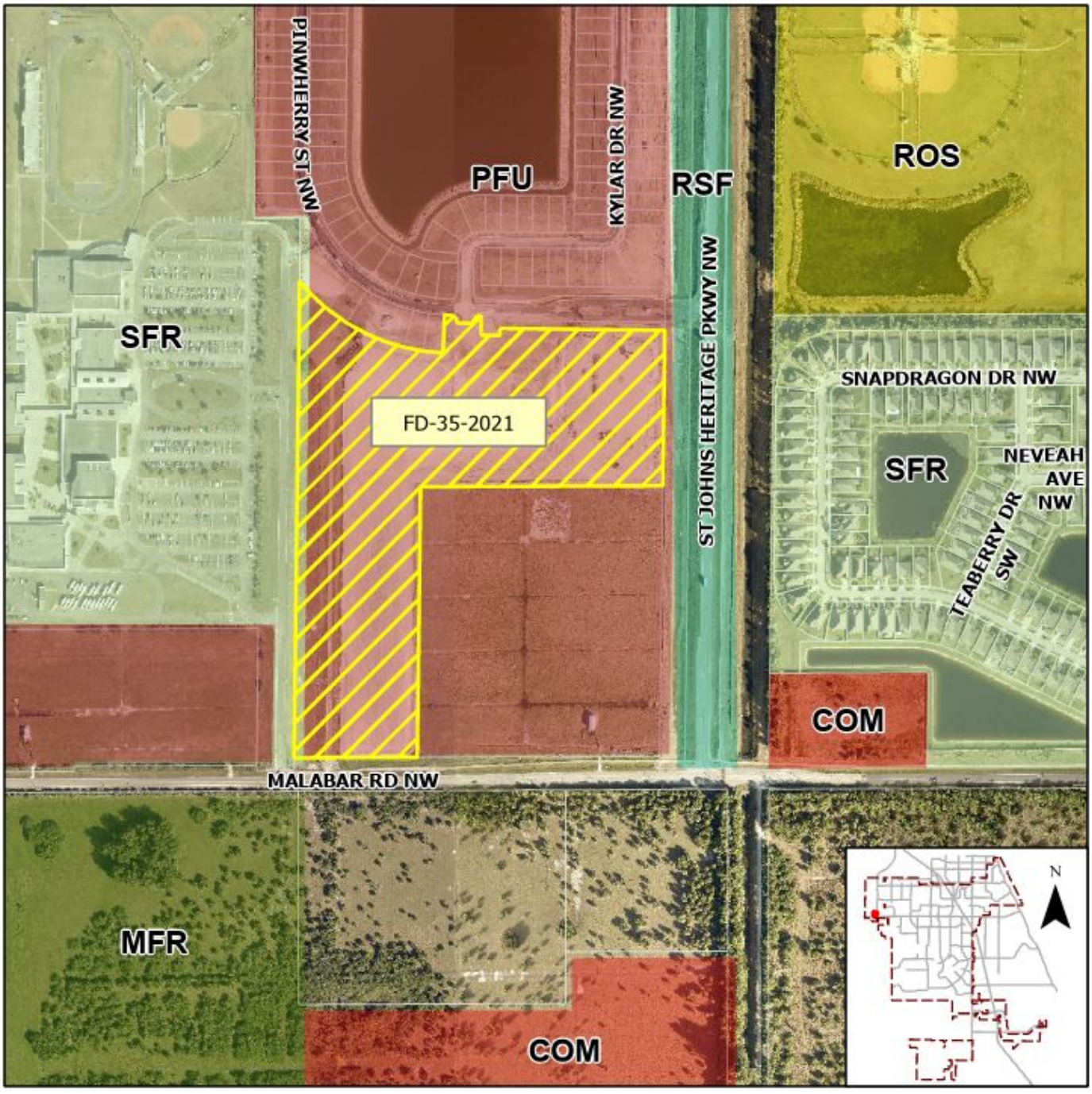


AERIAL LOCATION MAP CASE: FD-35-2021

Subject Property

North of and adjacent to Malabar Road NW, in the vicinity west of St. Johns Heritage Parkway NW

Map is not to scale—for illustrative purposes only; not to be construed as binding or as a survey.

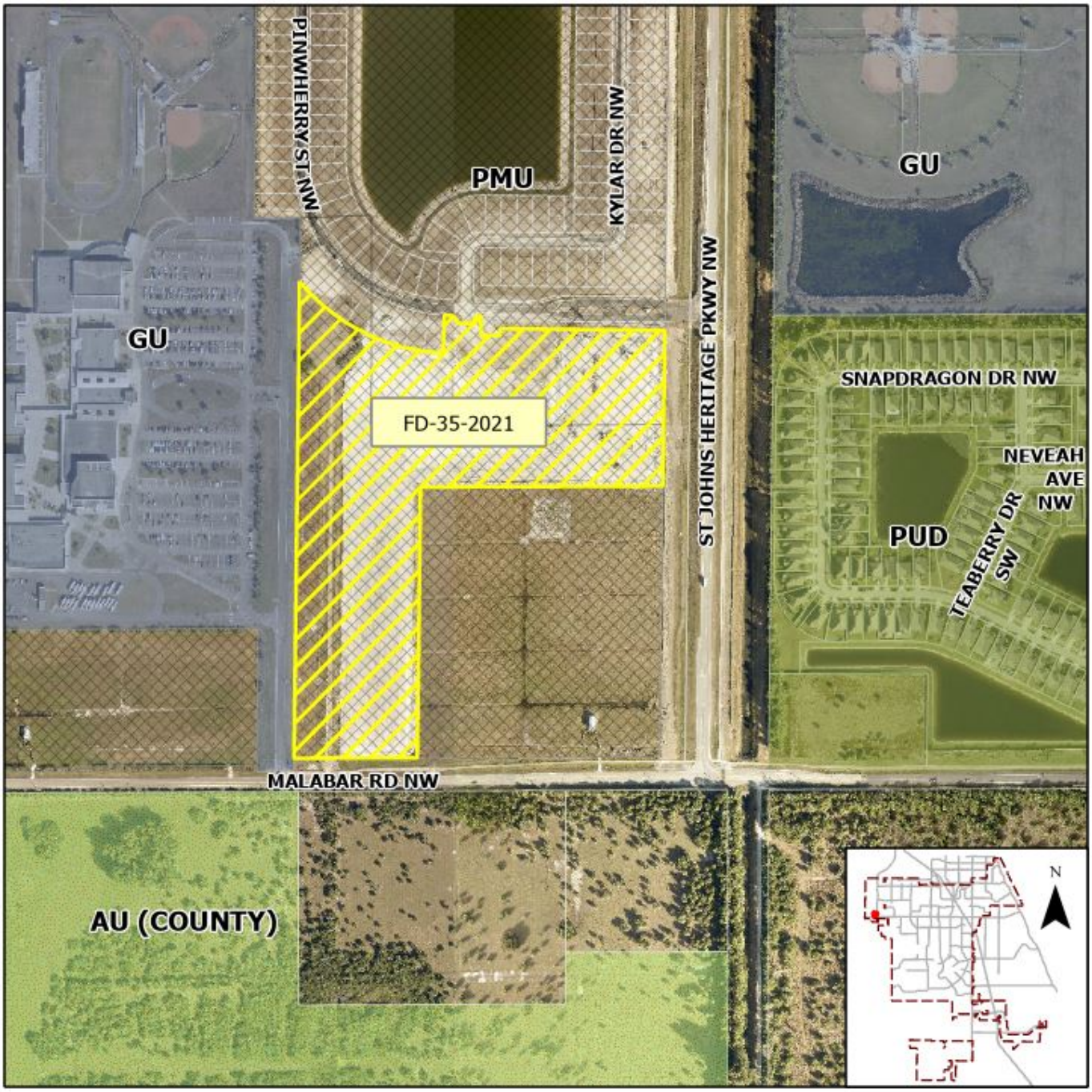


FUTURE LAND USE MAP CASE: FD-35-2021

Subject Property
North of and adjacent to Malabar Road NW, in the vicinity west of St. Johns Heritage Parkway NW

Future Land Use Classification
SFR, PFU – Single Family Residential Use, Parkway Flex Use

Map is not to scale—for illustrative purposes only; not to be construed as binding or as a survey.



ZONING MAP CASE: FD-35-2021

Subject Property
North of and adjacent to Malabar Road NW, in the vicinity west of St. Johns Heritage Parkway NW

Current Zoning Classification
PMU – Parkway Mixed Use

ST JOHNS PRESERVE - TRACT A TOWNHOMES

BEING A REPLAT OF A PORTION OF TRACT A, ST JOHNS PRESERVE-PHASE 1, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 69, PAGE 4, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA, LYING AND BEING IN SECTION 32, TOWNSHIP 28 SOUTH, RANGE 36 EAST CITY OF PALM BAY, BREVARD COUNTY, FLORIDA

-PRELIMINARY PLAT-

PLAT NOTES

1. BEARINGS SHOWN HEREON ARE BASED ON THE WEST RIGHT-OF-WAY LINE OF ST. JOHNS HERITAGE PARKWAY BEING ASSUMED AS N00°41'13"E.
2. SURVEY MONUMENTATION WITHIN THE SUBDIVISION SHALL BE SET IN ACCORDANCE WITH FLORIDA STATUTES CHAPTERS 177.091(8) & 177.091(9).
3. UNLESS OTHERWISE NOTED, ALL LINES ARE RADIAL.
4. ALL LOT DRAINAGE IS PRIVATE AND IS TO BE MAINTAINED BY THE INDIVIDUAL LOT OWNER OR THE DECLARED MAINTENANCE ENTITY (I.E. HOMEOWNER ASSOCIATION).
5. ALL PLATTED UTILITY EASEMENTS SHALL PROVIDE THAT SUCH EASEMENTS SHALL ALSO BE EASEMENTS FOR THE CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES; PROVIDED, HOWEVER, NO SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION OF CABLE TELEVISION SERVICES SHALL INTERFERE WITH THE FACILITIES AND SERVICES OF AN ELECTRIC, TELEPHONE, GAS, OR OTHER PUBLIC UTILITY. IN THE EVENT A CABLE TELEVISION COMPANY DAMAGES THE FACILITIES OF A PUBLIC UTILITY, IT SHALL BE SOLELY RESPONSIBLE FOR THE DAMAGES. THIS SECTION SHALL NOT APPLY TO THOSE PRIVATE EASEMENTS GRANTED TO OR OBTAINED BY A PARTICULAR ELECTRIC, TELEPHONE, GAS, OR OTHER PUBLIC UTILITY. SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE, AND OPERATION SHALL COMPLY WITH THE NATIONAL ELECTRICAL SAFETY CODE AS ADOPTED BY THE FLORIDA PUBLIC SERVICE COMMISSION.
6. THERE IS HEREBY DEDICATED OVER AND ACROSS THE FRONT OF ALL LOTS AND TRACTS ABUTTING AND COINCIDENT WITH TRACT "Z1" AND "Z2" A 10.00 (TEN) FOOT WIDE PERPETUAL PUBLIC UTILITY EASEMENT (UNLESS OTHERWISE NOTED). A 5.00 (FIVE) FOOT WIDE PERPETUAL PUBLIC UTILITY AND PRIVATE DRAINAGE EASEMENT IS HEREBY DEDICATED ALONG ALL SIDE LOT LINES (UNLESS OTHERWISE NOTED). WHERE MORE THAN ONE LOT OR PARTS OF LOTS ARE USED AS A BUILDING SITE, ONLY THE OUTER BOUNDARIES SHALL CARRY THE EASEMENTS.
7. DRAINAGE AND UTILITY EASEMENTS SHOWN ARE CENTERED ALONG LOT LINES UNLESS SPECIFICALLY DIMENSIONED OTHERWISE.
8. LOTS AND TRACTS ABUTTING ANY EXISTING STORM WATER LAKE AND TRACT, OR FLOW WAYS, WETLANDS AND ANY OTHER STORM WATER MANAGEMENT FACILITIES CONSTRUCTED SUBSEQUENT TO THIS PLAT, SHALL NOT HAVE RIPARIAN RIGHTS WITH RESPECT TO ANY SUCH TRACTS AND DRAINAGE FACILITIES, INCLUDING WITHOUT LIMITATION, ANY DRAINAGE PONDS OR LAKES, DRAINAGE STRUCTURES OR AQUATIC LANDSCAPE FEATURES WHICH MAY BE CONSTRUCTED WITHIN SAID FACILITIES.
9. A PERPETUAL NON-EXCLUSIVE EASEMENT IS HEREBY GRANTED TO THE CITY OF PALM BAY, AND PRIVATE AND PUBLIC UTILITY COMPANIES, OVER, UNDER, AND ACROSS TRACT "Z1" & TRACT "Z2" FOR THE INSTALLATION, MAINTENANCE, REPAIR, AND IMPROVEMENT OF UTILITIES AND RELATED IMPROVEMENTS, TOGETHER WITH THE RIGHT OF VEHICULAR AND PEDESTRIAN INGRESS AND EGRESS IN CONNECTION THEREWITH.
10. ALL DRAINAGE TRACTS AND THOSE DRAINAGE EASEMENTS DESCRIBED HEREON (OTHER THAN ANY DRAINAGE EASEMENT SHOWN GRAPHICALLY OR OTHERWISE DESCRIBED HEREON AS A PUBLIC DRAINAGE EASEMENT), SHALL BE PRIVATE EXCEPT AS OTHERWISE EXPRESSLY PROVIDED HEREON. THE CITY OF PALM BAY SHALL NOT HAVE ANY RESPONSIBILITY REGARDING THE MAINTENANCE, REPAIR AND/OR RESTORATION OF ANY STORM PIPES, STORM STRUCTURES OR ASSOCIATED STORM WATER MANAGEMENT FACILITIES LOCATED WITHIN THE LIMITS OF ANY SUCH PRIVATE DRAINAGE EASEMENT.
11. THE LANDS SUBDIVIDED HEREON ARE SUBJECT TO THE TERMS AND CONDITIONS OF THOSE CERTAIN COVENANTS, CONDITIONS AND RESTRICTIONS ST JOHNS PRESERVE - TRACT A TOWNHOMES AS RECORDED IN OFFICIAL RECORDS BOOK _____, PAGE_____, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA.
12. THE LANDS SUBDIVIDED HEREON ARE SUBJECT TO THE TERMS AND CONDITIONS OF THAT CERTAIN ACCESS EASEMENT AGREEMENT AS RECORDED IN OFFICIAL RECORDS BOOK 8488, PAGE 2440, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA.
13. THE LANDS SUBDIVIDED HEREON ARE SUBJECT TO THE TERMS AND CONDITIONS OF THAT CERTAIN CITY OF PALM BAY ORDINANCE, ORDINANCE NO. 2019-45, AS RECORDED IN OFFICIAL RECORDS BOOK 8538, PAGE 2476, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA.
14. THE LANDS SUBDIVIDED HEREON ARE SUBJECT TO THE TERMS AND CONDITIONS OF THAT CERTAIN CITY OF PALM BAY WATER AND WASTEWATER SYSTEM AGREEMENT AS RECORDED IN OFFICIAL RECORDS BOOK 8821, PAGE 1150, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA.

DESCRIPTION OF REMAINDER OF TRACT A

TRACT A, ST JOHNS PRESERVE-PHASE 1, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 69, PAGE 4, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA, LYING IN SECTION 32, TOWNSHIP 28 SOUTH, RANGE 36 EAST, BREVARD COUNTY, FLORIDA, LESS AND EXCEPT THE FOLLOWING DESCRIBED PARCEL OF LAND:

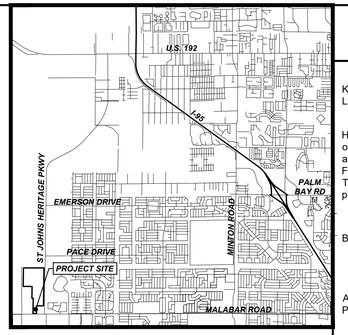
PART OF TRACT A, ST JOHNS PRESERVE-PHASE 1, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 69, PAGE 4, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA, LYING IN SECTION 32, TOWNSHIP 28 SOUTH, RANGE 36 EAST, BREVARD COUNTY, FLORIDA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGIN AT THE NORTHWEST CORNER OF TRACT B, OF SAID ST JOHNS PRESERVE-PHASE 1 AND RUN ALONG THE BOUNDARY OF SAID TRACT B THE FOLLOWING THREE (3) COURSES AND DISTANCES; 1) THENCE S00°41'13"W, A DISTANCE OF 62.00 FEET TO THE SOUTHWEST CORNER OF SAID TRACT B; 2) THENCE S89°18'47"E, A DISTANCE OF 60.00 FEET TO THE SOUTHEAST CORNER OF SAID TRACT B; 3) THENCE N00°41'13"E, A DISTANCE OF 22.00 FEET TO THE SOUTHWEST CORNER OF TRACT C OF SAID ST JOHNS PRESERVE-PHASE 1; THENCE S89°18'47"E ALONG THE SOUTH LINE OF SAID TRACT C, A DISTANCE OF 164.79 FEET; THENCE S00°41'13"W, A DISTANCE OF 205.99 FEET; THENCE N89°19'47"W, A DISTANCE OF 224.82 FEET; THENCE S00°40'13"W, A DISTANCE OF 150.00 FEET; THENCE N89°19'47"W, A DISTANCE OF 100.00 FEET; THENCE N00°40'13"E, A DISTANCE OF 30.00 FEET TO A NON-TANGENT INTERSECTION WITH A CURVE TO THE LEFT; THENCE ALONG THE ARC OF SAID CURVE, (SAID CURVE BEING CURVED CONCAVE TO THE NORTHWEST, AND HAVING A RADIUS OF 25.00 FEET, A CENTRAL ANGLE OF 89°59'00", A CHORD BEARING OF N45°40'43"E AND A CHORD LENGTH OF 35.35 FEET), A DISTANCE OF 39.26 FEET TO THE END OF SAID CURVE; THENCE N00°41'13"E, A DISTANCE OF 316.08 FEET; THENCE S89°18'47"E, A DISTANCE OF 50.00 FEET TO A NON-TANGENT INTERSECTION WITH A CURVE TO THE RIGHT; THENCE ALONG THE ARC OF SAID CURVE, (SAID CURVE BEING CURVED CONCAVE TO THE SOUTHEAST, AND HAVING A RADIUS OF 25.00 FEET, A CENTRAL ANGLE OF 90°00'00", A CHORD BEARING OF N45°41'13"E, AND A CHORD LENGTH OF 35.36 FEET); A DISTANCE OF 39.27 FEET TO THE POINT OF BEGINNING.

CONTAINING 19.12 NET ACRES, MORE OR LESS.

TRACT TABLE			
TRACT ID	AREA (ACRES)	TRACT USE	OWNERSHIP AND MAINTENANCE ENTITY
TRACT A	2.77	STORM WATER AND MAIL KIOSK	HOMEOWNER ASSOCITAION, ITS SUCCESSORS AND/OR ASSIGNS
TRACT B	0.45	DRAINAGE AND UTILTIES	HOMEOWNER ASSOCITAION, ITS SUCCESSORS AND/OR ASSIGNS
TRACT C	1.37	STORM WATER	HOMEOWNER ASSOCITAION, ITS SUCCESSORS AND/OR ASSIGNS
TRACT D	0.04	LANDSCAPING AND UTILITIES	HOMEOWNER ASSOCITAION, ITS SUCCESSORS AND/OR ASSIGNS
TRACT Z1	1.72	VEHICULAR ACCESS, UTILITIES, AND DRAINAGE	HOMEOWNER ASSOCITAION, ITS SUCCESSORS AND/OR ASSIGNS
TRACT Z2	0.47	VEHICULAR ACCESS, UTILITIES, AND DRAINAGE	HOMEOWNER ASSOCITAION, ITS SUCCESSORS AND/OR ASSIGNS

NOTICE: THIS PLAT, AS RECORDED IN ITS GRAPHIC FORM, IS THE OFFICIAL DEPICTION OF THE SUBDIVIDED LANDS DESCRIBED HEREIN AND WILL IN NO CIRCUMSTANCES BE SUPPLANTED IN AUTHORITY BY ANY OTHER GRAPHIC OR DIGITAL FORM OF THE PLAT. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.



N

LOCATION MAP
NTS

SURVEY SYMBOL LEGEND

- ■ PERMANENT REFERENCE MONUMENT (PRM); FOUND 4X4 INCH CONCRETE MONUMENT WITH DISK STAMPED PRM LB4905, UNLESS OTHERWISE NOTED
- ○ FOUND 5/8" IRON ROD AND CAP ID# PRM LB4905 UNLESS OTHER WISE NOTED
- ● SET 5/8" IRON ROD AND CAP ID# PRM LB4905 UNLESS OTHER WISE NOTED

ABBREVIATIONS

AL	ARC LENGTH	(NR)	NON-RADIAL
BOC	BEGINNING OF CURVE	(NTI)	NON-TANGENT INTERSECTION
CA	CENTRAL ANGLE	(NTL)	NON-TANGENT LINE
CB	CHORD BEARING	OR/ORB	OFFICIAL RECORDS BOOK
CH	CHORD LENGTH	PB	PLAT BOOK
COR	CORNER	PG(S)	PAGE(S)
D.E.	PRIVATE DRAINAGE EASEMENT	POB	POINT OF BEGINNING
DEL	DELTA / CENTRAL ANGLE	POC	POINT OF COMMENCEMENT
EOC	END OF CURVE	PRC	POINT OF REVERSE CURVATURE
F.B.E.	FENCE & BERM EASEMENT	R	RADIUS
FGT	FLORIDA GAS TRANSMISSION	RCP	REINFORCED CONCRETE PIPE
FP&L	FLORIDA POWER AND LIGHT	RPB	ROAD PLAT BOOK
FD	FOUND	SW	SOUTHWEST
LB	LICENSED BUSINESS	TYP	TYPICAL

- THIS PLAT PREPARED BY -

B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4 MELBOURNE, FL 32901
PHONE: (321) 723-5400 FAX: (321) 723-5406
CERTIFICATE OF BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905

DATE: 08/27/21
DESIGN/DRAWN: LEH/AH
DRAWING# 1141601_303_001
PROJECT# 11416.01

PLAT BOOK _____, PAGE _____
SHEET 1 OF 4
SECTION 32, TOWNSHIP 28 SOUTH, RANGE 36 EAST

DEDICATION

KNOW ALL MEN BY THESE PRESENTS, that St Johns Preserve Investment Group, LLC., being the owner in fee simple of

ST. JOHNS PRESERVE - TRACT A TOWNHOMES

Hereby dedicates to The City of Palm Bay, Florida, an ingress and egress easement over and across TRACT "Z1" and TRACT "Z2" for law enforcement, emergency access and emergency maintenance and hereby further dedicates to the City of Palm Bay, Florida an easement for the installation and maintenance of public utilities within said TRACT "Z1" and TRACT "Z2". No other easements are dedicated or granted to the public.

By:_____
P. Michael Evans, Manager

SEAL

Attest:_____
Printed Name:

Attest:_____
Printed Name:

ST. JOHNS PRESERVE INVESTMENT GROUP, LLC.
1698 W. HIBISCUS BLVD. SUITE A
MELBOURNE, FL 32901

STATE OF FLORIDA COUNTY OF BREVARD

The foregoing instrument was acknowledged before me by means of _____ physical presence or ____ online notarization, this _____, by P. Michael Evans, Manager of the above named limited liability company, on behalf of the above named limited liability company, who is ____ personally known to me or ____ has produced _____ _____ as identification.

IN WITNESS WHEREOF, I have hereunto set my hand and seal on the above date.

_____
NOTARY PUBLIC

_____ SEAL
Notary Public, State of Florida
My Comm. Expires:
Comm. No.:

CERTIFICATE OF SURVEYOR

KNOW ALL MEN BY THESE PRESENTS, That the undersigned, being a licensed professional surveyor and mapper, does hereby certify that on 07/28/2021 he completed the boundary survey of the lands shown on the foregoing plat; and that said plat was prepared under his direction and supervision and that said plat complies with all of the survey requirements of Chapter 177, part 1, Florida Statutes, The City of Palm Bay, and that said lands are located in Brevard County, Florida.

_____ Registration Number 5611
LESLIE E. HOWARD
B.S.E. Consultants, Inc.
312 South Harbor City Boulevard, Suite #4
Melbourne, Fla. 32901
Certificate of Authorization Number: LB-0004905

CERTIFICATE OF REVIEWING SURVEYOR FOR THE CITY OF PALM BAY

I HEREBY CERTIFY, That I have reviewed the foregoing plat and find that it is in conformity with Chapter 177, part 1, Florida Statutes and County Ordinance 62-2841(c)(d) as amended.

_____
Joseph N. Hale, Professional Surveyor & Mapper No. 6366

CERTIFICATE OF APPROVAL BY MUNICIPALITY

THIS IS TO CERTIFY, That on: _____the City Council of the City of Palm Bay, Florida approved the foregoing plat.

_____
Mayor - Rob Medina

_____
Attest

_____
City Clerk - Terese M. Jones

CERTIFICATE OF CLERK

I HEREBY CERTIFY, That I have examined the foregoing plat and find that it complies in form with all the requirements of Chapter 177, part 1 Florida Statutes, and was filed for record on _____ at _____, File No._____

ATTEST: _____
Clerk of the Circuit Court in and for Brevard County, Fla.

H:\Projects Folder\11416.01\Drawings\1141601_303 (Tract A Townhomes)\1141601_303_001-002.dwg August 27, 2021 10:28:35 AM AH

PLAT BOOK _____, PAGE _____
SHEET 2 OF 4
SECTION 32, TOWNSHIP 28 SOUTH, RANGE 36 EAST

UNPLATTED
SCHOOL BOARD OF BREVARD COUNTY, FLORIDA
ORB 5788, PG 698

S00°40'13"W 1504.80'
854.11'
650.69'
TRACT A
33'
33'
R/W LINE
SECTION LINE
R/W LINE
N89°44'45"E 389.03'
R/W LINE
37' R/W ORB 6480, PG 488
BLOCK A
BARRINGTON DRIVE
BLOCK B
BARRINGTON DRIVE
BLOCK C
ARTOS DRIVE
BLOCK D
ARTOS DRIVE
BLOCK E
KUMMER DRIVE
BLOCK F
TRACT A
CENARIA DRIVE
TRACT "Z1"
CENARIA DRIVE
TRACT D
BLOCK I
N00°41'13"E 854.12'

ABBREVIATIONS

AL	ARC LENGTH	(NR)	NON-RADIAL
BOC	BEGINNING OF CURVE	(NTI)	NON-TANGENT INTERSECTION
CA	CENTRAL ANGLE	(NTL)	NON-TANGENT LINE
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DEL	DELTA / CENTRAL ANGLE	POC	POINT OF COMMENCEMENT
EOC	END OF CURVE	PRC	POINT OF REVERSE CURVATURE
F.B.E.	FENCE & BERM EASEMENT	R	RADIUS
FGT	FLORIDA GAS TRANSMISSION	RCP	REINFORCED CONCRETE PIPE
FP&L	FLORIDA POWER AND LIGHT	RPB	ROAD PLAT BOOK
FD	FOUND	SW	SOUTHWEST
LB	LICENSED BUSINESS	TYP	TYPICAL

SURVEY SYMBOL LEGEND

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○ FOUND 5/8" IRON ROD AND CAP ID# PRM LB4905 UNLESS OTHER WISE NOTED

● SET 5/8" IRON ROD AND CAP ID# PRM LB4905 UNLESS OTHER WISE NOTED

WILLARD PALMER TRUST NOT INCLUDED TRACT X ST JOHNS PRESERVE - PHASE 1, PB 69, PG 4

ST JOHNS PRESERVE - TRACT A TOWNHOMES

BEING A REPLAT OF A PORTION OF TRACT A, ST JOHNS PRESERVE-PHASE 1, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 69, PAGE 4, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA, LYING AND BEING IN SECTION 32, TOWNSHIP 28 SOUTH, RANGE 36 EAST CITY OF PALM BAY, BREVARD COUNTY, FLORIDA

-PRELIMINARY PLAT-

TRACT A
AL=521.11' R=920.00' DEL=32°27'16" CB=N63°26'02"W CH=514.27'
AL=521.11' R=920.00' DEL=49°09'26" CB=N63°26'02"W CH=505.91'
ST JOHNS PRESERVE - PHASE 1 PB 69, PG 4
TRACT F
BLOCK D
BLOCK E PB 69, PG 4
AL=15.47' R=500.00' DEL=1°46'23" CB=N88°25'35"W CH=15.47'
S02°25'41"W 120.00'
AL=39.27' R=25.00' DEL=90°00'00" CB=N44°18'47"W CH=35.36'
AL=39.27' R=25.00' DEL=90°00'00" CB=N45°41'13"E CH=35.36'
NTI
EOC
AL=39.26' R=25.00' DEL=89°59'00" CB=N45°40'43"E CH=35.35'
N00°41'13"E 316.08'
DORIAN DRIVE
ST JOHNS PRESERVE - PHASE 2 PB__, PG__
N89°19'47"W 100.00'
N00°40'13"E 30.00'
S89°18'47"E 50.00'
NTI
S00°40'13"W 150.00'
SW CORNER TRACT B
S00°41'13"W 62.00'
POB LESS AND EXCEPT
NW CORNER TRACT B
S89°18'47"E 60.00'
TRACT B PB 69, PG 4
SE CORNER TRACT B
N00°41'13"E 22.00'
ST JOHNS PRESERVE - PHASE 2 TRACT A PB__, PG__
S89°18'47"E 164.79'
TRACT C PB 69, PG 4
TRACT D PB 69, PG 4
BLOCK A PB 69, PG 4
S89°44'45"W 765.10'
BLOCK H
CENARIA DRIVE
BLOCK G
N89°19'47"W 224.82'
S00°41'13"W 205.99'
SOUTH LINE TRACT C
TRACT B
TRACT "Z2"
TRACT C
PINWHERRY STREET NW R/W WIDTH VARIES PB 69, PG 4
S89°18'46"E 355.21'
WEST RIGHT-OF-WAY LINE
N00°41'13"E 490.88' (BASIS OF BEARINGS)

60 0 30 60
1 INCH = 60 FEET

MALABAR ROAD
TOWNSHIP 29 SOUTH
TOWNSHIP 28 SOUTH
33'
33'
80' R/W ORB 6507, PG 2112
120' R/W ORB 6149, PG 2610
ST. JOHNS HERITAGE PARKWAY

- THIS PLAT PREPARED BY -

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CERTIFICATE OF BUSINESS AUTHORIZATION: 49925
CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB00004905

DATE: 08/27/21
DESIGN/DRAWN: LEH/AH
DRAWING# 1141601_303_002
PROJECT# 11416.01

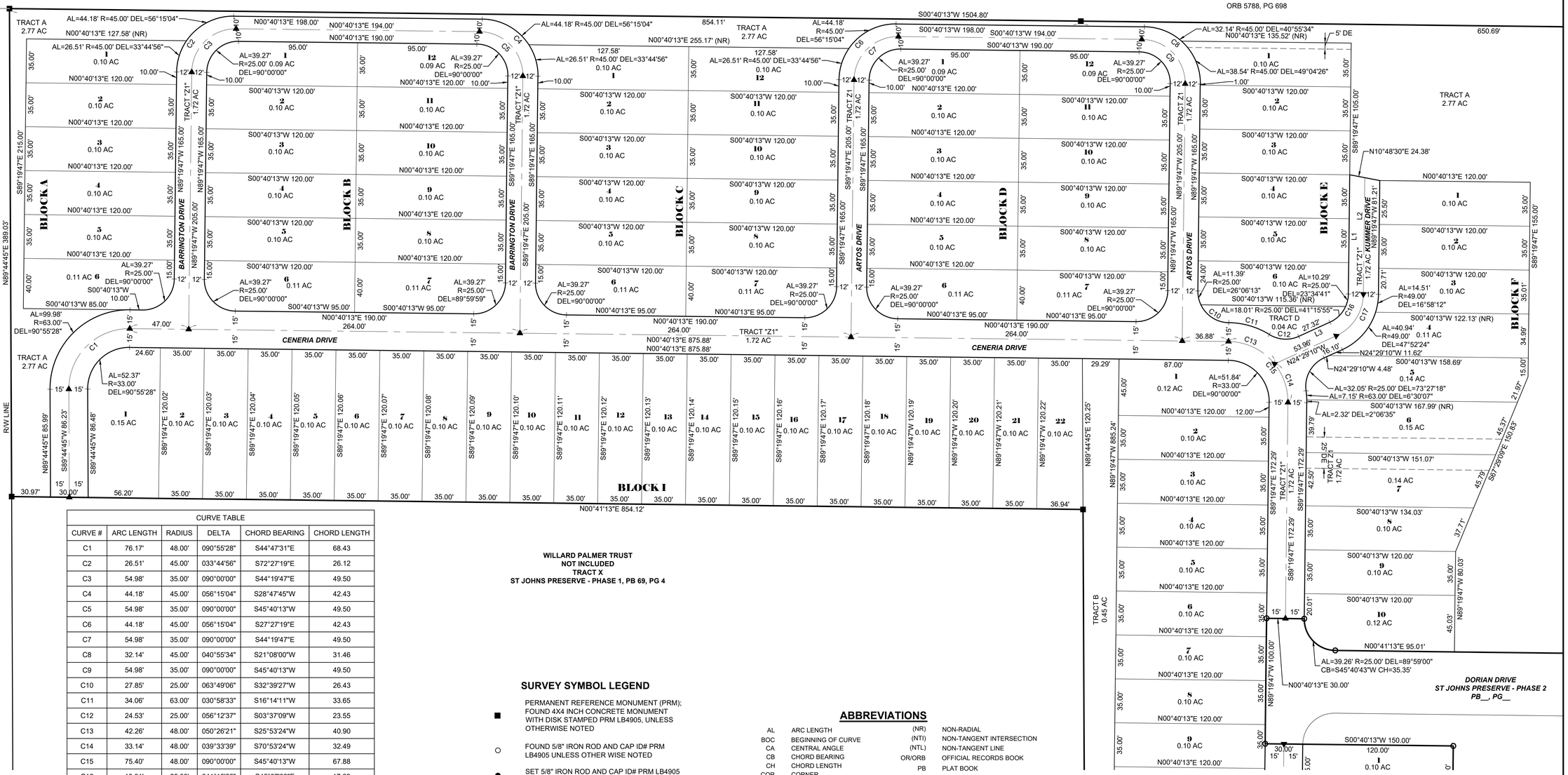
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PLAT BOOK _____, PAGE _____
SHEET 3 OF 4
SECTION 32, TOWNSHIP 28 SOUTH, RANGE 36 EAST

ST JOHNS PRESERVE - TRACT A TOWNHOMES

BEING A REPLAT OF A PORTION OF TRACT A, ST JOHNS PRESERVE-PHASE 1, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 69, PAGE 4, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA, LYING AND BEING IN SECTION 32, TOWNSHIP 28 SOUTH, RANGE 36 EAST CITY OF PALM BAY, BREVARD COUNTY, FLORIDA

-PRELIMINARY PLAT-



CURVE TABLE					
CURVE #	ARC LENGTH	RADIUS	DELTA	CHORD BEARING	CHORD LENGTH
C1	76.17'	48.00'	090°55'28"	S44°47'31"E	68.43
C2	26.51'	45.00'	033°44'56"	S72°27'19"E	26.12
C3	54.98'	35.00'	090°00'00"	S44°19'47"E	49.50
C4	44.18'	45.00'	056°15'04"	S28°47'45"W	42.43
C5	54.98'	35.00'	090°00'00"	S45°40'13"W	49.50
C6	44.18'	45.00'	056°15'04"	S27°27'19"E	42.43
C7	54.98'	35.00'	090°00'00"	S44°19'47"E	49.50
C8	32.14'	45.00'	040°55'34"	S21°08'00"W	31.46
C9	54.98'	35.00'	090°00'00"	S45°40'13"W	49.50
C10	27.85'	25.00'	063°49'06"	S32°39'27"W	26.43
C11	34.06'	63.00'	030°58'33"	S16°14'11"W	33.65
C12	24.53'	25.00'	056°12'37"	S03°37'09"W	23.55
C13	42.26'	48.00'	050°26'21"	S25°53'24"W	40.90
C14	33.14'	48.00'	039°33'39"	S70°53'24"W	32.49
C15	75.40'	48.00'	090°00'00"	S45°40'13"W	67.88
C16	18.01'	25.00'	041°15'55"	S45°07'08"E	17.62
C17	41.87'	37.00'	064°50'37"	N56°54'29"W	39.67

LINE TABLE		
LINE #	BEARING	LENGTH
L1	N89°19'47"W	35.00'
L2	N89°19'47"W	92.85'
L3	N24°29'10"W	27.32'

SURVEY SYMBOL LEGEND

- ■ PERMANENT REFERENCE MONUMENT (PRM); FOUND 4X4 INCH CONCRETE MONUMENT WITH DISK STAMPED PRM LB4905, UNLESS OTHERWISE NOTED
- ○ FOUND 5/8" IRON ROD AND CAP ID# PRM LB4905 UNLESS OTHER WISE NOTED
- ● SET 5/8" IRON ROD AND CAP ID# PRM LB4905 UNLESS OTHER WISE NOTED

ABBREVIATIONS

AL	ARC LENGTH	(NR)	NON-RADIAL
BOC	BEGINNING OF CURVE	(NTI)	NON-TANGENT INTERSECTION
CA	CENTRAL ANGLE	(NTL)	NON-TANGENT LINE
CB	CHORD BEARING	OR/ORB	OFFICIAL RECORDS BOOK
CH	CHORD LENGTH	PB	PLAT BOOK
COR	CORNER	PG(S)	PAGE(S)
D.E.	PRIVATE DRAINAGE EASEMENT	POB	POINT OF BEGINNING
DEL	DELTA / CENTRAL ANGLE	POC	POINT OF COMMENCEMENT
EOC	END OF CURVE	PRC	POINT OF REVERSE CURVATURE
F.B.E.	FENCE & BERM EASEMENT	R	RADIUS
FGT	FLORIDA GAS TRANSMISSION	RCP	REINFORCED CONCRETE PIPE
FP&L	FLORIDA POWER AND LIGHT	RPB	ROAD PLAT BOOK
FD	FOUND	SW	SOUTHWEST
LB	LICENSED BUSINESS	TYP	TYPICAL

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DATE: 08/27/21
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PROJECT# 11416.01

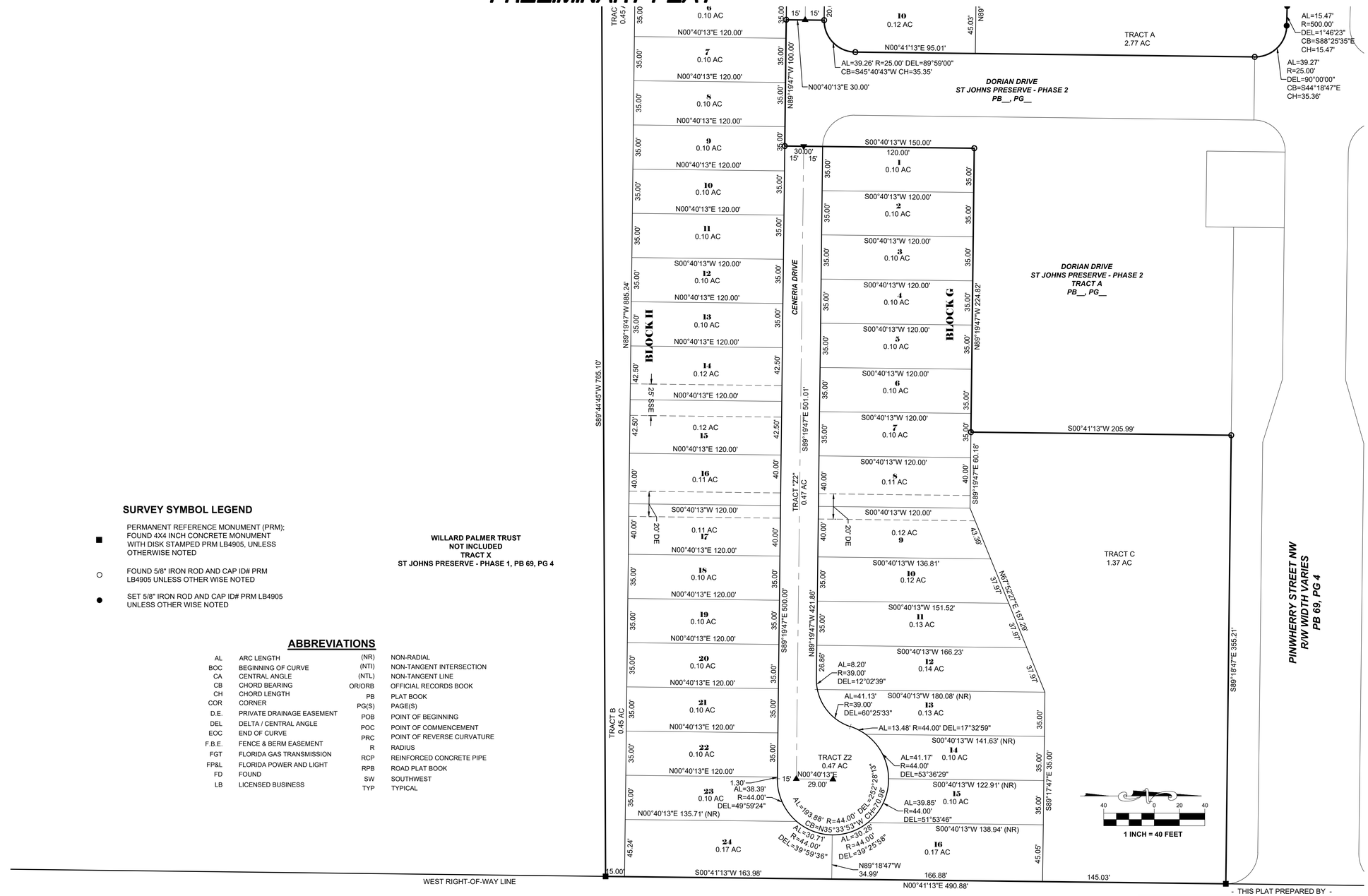
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PLAT BOOK _____, PAGE _____
SHEET 4 OF 4
SECTION 32, TOWNSHIP 28 SOUTH, RANGE 36 EAST

ST JOHNS PRESERVE - TRACT A TOWNHOMES

BEING A REPLAT OF A PORTION OF TRACT A, ST JOHNS PRESERVE-PHASE 1, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 69, PAGE 4, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA, LYING AND BEING IN SECTION 32, TOWNSHIP 28 SOUTH, RANGE 36 EAST CITY OF PALM BAY, BREVARD COUNTY, FLORIDA

-PRELIMINARY PLAT-



SURVEY SYMBOL LEGEND

■ PERMANENT REFERENCE MONUMENT (PRM); FOUND 4X4 INCH CONCRETE MONUMENT WITH DISK STAMPED PRM LB4905, UNLESS OTHERWISE NOTED

○ FOUND 5/8" IRON ROD AND CAP ID# PRM LB4905 UNLESS OTHER WISE NOTED

● SET 5/8" IRON ROD AND CAP ID# PRM LB4905 UNLESS OTHER WISE NOTED

ABBREVIATIONS

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CA	CENTRAL ANGLE	(NTL)	NON-TANGENT LINE
CB	CHORD BEARING	OR/ORB	OFFICIAL RECORDS BOOK
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D.E.	PRIVATE DRAINAGE EASEMENT	POB	POINT OF BEGINNING
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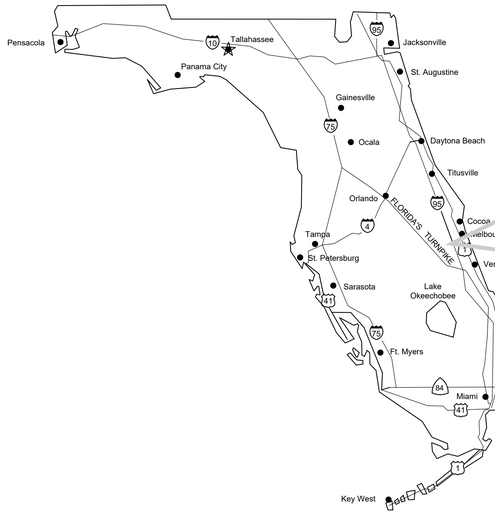
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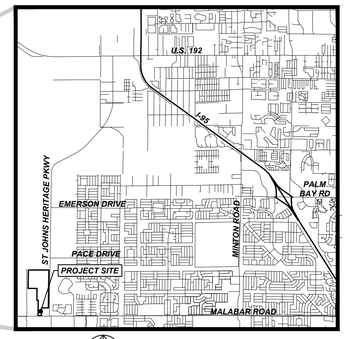
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ST. JOHNS PRESERVE - TRACT A TOWNHOMES

SECTION 32, TOWNSHIP 28 SOUTH, RANGE 36 EAST
CITY OF PALM BAY, BREVARD COUNTY, FLORIDA

SHEET INDEX		
SHEET #	DRAWING #	SHEET TITLE
1	1141601_402_001	COVER SHEET
2	1141601_402_002	SYMBOLS AND ABBREVIATIONS
3	1141601_402_003	GENERAL NOTES
4	1141601_402_004	EXISTING CONDITIONS PLAN
5	1141601_402_005	SITE PLAN
6	1141601_402_006	OVERALL DRAINAGE PLAN
7	1141601_402_007	PAVING, GRADING, AND DRAINAGE PLAN
8	1141601_402_008	PAVING, GRADING, AND DRAINAGE PLAN
9	1141601_402_009	UTILITIES PLAN
10	1141601_402_010	STREET A STA 10+00 TO 20+50
11	1141601_402_011	STREET A STA 20+50 TO 29+15.98
12	1141601_402_012	STREET B STA 10+00 TO 17+13.96
13	1141601_402_013	STREET C STA 10+00 TO 17+13.96
14	1141601_402_014	STREET D STA 10+00 TO 11+73.54
15	1141601_402_015	CITY OF PALM BAY DETAILS
16	1141601_402_016	GENERAL DETAILS
17	1141601_402_017	FDOT DETAILS
18	1141601_402_018	STORM WATER POLLUTION PREVENTION PLAN (SWPPP)





LOCATION MAP
NTS

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MELBOURNE, FL 32901
OFFICE: (321) 727-1000

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VERTICAL DATUM: NGVD29

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CERTIFICATE OF LAND SURVEYING
BUSINESS AUTHORIZATION: LB0004905

SCOTT M. GLAUBITZ, P.E. & P.L.S.
STATE OF FLORIDA, No. 33659 No. 4151

SCOTT M. GLAUBITZ LICENSE No. 33659 STATE OF FLORIDA PROFESSIONAL ENGINEER

Digitally signed by Scott M Glaubitz
Date: 2021.07.30 15:36:43 -04'00'

HASSAN A. KAMAL, P.E.
STATE OF FLORIDA, No. 41951

DATE:	06/16/21
DESIGN/DRAWN:	ALS/AH

PROJECT TITLE
ST. JOHNS PRESERVE - TRACT A TOWNHOMES

SHEET TITLE
COVER SHEET

PROJECT NO.
11416.01

DRAWING NO.
1141601_402_001

SHEET
1 of 18

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SYMBOLS SHOWN ARE GRAPHIC IN NATURE; DUE TO SCALE, ALL DESIGN ELEMENTS ARE NOT NECESSARILY SHOWN ON PLAN VIEWS. THE CONTRACTOR SHALL ALSO REFER TO SPECIFICATION AND DETAIL SHEETS AS WELL AS THE COMPLETE PLAN SET.

LANDSCAPE SYMBOL LEGEND

- CABBAGE PALM TREE
- PALM TREE
- PINE TREE
- OAK TREE
- TREE LINE
- SHURB 1
- SHRUB 2

IRRIGATION SYMBOL LEGEND

- SPRINKLER
- RAINBIRD 1/4
- RAINBIRD 1/2
- RAINBIRD 3/4
- RAINBIRD FULL

LINE TYPES

- BEL — EXISTING BURIED ELECTRIC
- BTL — EXISTING BURIED TELEPHONE
- CATV — EXISTING CABLE TV
- X — FENCE (TYPE, HEIGHT AS NOTED)
- FM — EXISTING FORCE MAIN (SIZE, TYPE AS NOTED)
- FO — EXISTING FIBER OPTIC
- GAS — EXISTING GAS LINE
- IRR — EXISTING IRRIGATION (SIZE, TYPE AS NOTED)
- OHE — EXISTING OVERHEAD ELECTRIC
- OHU — EXISTING OVERHEAD UTILITY
- RM — EXISTING REUSE MAIN (SIZE, TYPE AS NOTED)
- SF — SILT FENCE
- SS — EXISTING SANITARY SEWER (SIZE, TYPE AS NOTED)
- WM — EXISTING WATER MAIN (SIZE, TYPE AS NOTED)
- CENTERLINE
- BASIN BOUNDARY
- COLUMN / WALL
- GUARD RAIL
- TREE LINE
- DRAINAGE PIPE (SIZE, TYPE AS NOTED)

SYMBOL LEGEND

- EXISTING SANITARY MANHOLE
- EXISTING MANHOLE (TYPE NOTED)
- PROPOSED MANHOLE
- TYPE 2 INLET
- TYPE 3 INLET
- TYPE 4 INLET
- TYPE 5 INLET
- CATCH BASIN
- YARD DRAIN
- FLARED END SECTION
- MITERED END SECTION
- EXISTING GATE VALVE
- PROPOSED GATE VALVE
- EXISTING FIRE HYDRANT
- PROPOSED FIRE HYDRANT
- EXISTING BLOW-OFF
- PROPOSED BLOW-OFF ASSEMBLY WITH GATE VALVE
- EXISTING FIRE DEPT. CONNECTION
- PROPOSED FIRE DEPT. CONNECTION
- EXISTING WATER METER
- PROPOSED WATER METER
- EXISTING WATER SERVICE
- PROPOSED WATER SERVICE
- EXISTING REUSE SERVICE
- PROPOSED REUSE SERVICE
- SANITARY SERVICE
- STUB OUT
- EXISTING AIR RELEASE VALVE
- AIR RELEASE VALVE
- EXISTING CLEAN OUT
- CLEAN OUT
- CROSS TEE
- TEE
- BACK FLOW PREVENTION DEVICE
- REDUCER
- POST INDICATOR VALVE
- UTILITY RISER
- CONCRETE POWER POLE
- WOOD UTILITY POLE
- GUY WIRE
- GUY POLE
- EXISTING LIGHT POLE
- PROPOSED LIGHT POLE
- EXISTING SIGN
- PROPOSED SIGN
- DIRT PAD ELEVATION
- FINISHED FLOOR ELEVATION
- TYPE A LOT DRAINAGE
- TYPE B LOT DRAINAGE
- 12 — LOT NUMBER
- FLOW ARROW

ABBREVIATIONS

'	MINUTES/FEET
"	SECONDS/INCHES
°	DEGREES
(C)	CALCULATED DIMENSION
(D)	DEED DIMENSION
(F)	FIELD MEASURED DIMENSION
(M)	METER(S)
(NR)	NOT RADIAL
(P)	PLAT DIMENSION
A/C	AIR CONDITIONER
AC	ACRES
ADS	ADVANCED DRAINAGE SYSTEMS (CPP)
AL	ARC LENGTH
ARV	AIR RELEASE VALVE
AVE	AVENUE
BLVD	BOULEVARD
BM	BENCH MARK
BVC	BEGIN VERTICAL CURVE
BVP	BEGIN VERTICAL PROFILE
C/L	CENTERLINE
C/O	CLEAN OUT
CA	CENTRAL ANGLE
CATV	CABLE TELEVISION
CB	CHORD BEARING
CBS	CONCRETE BLOCK STRUCTURE
CH	CHORD LENGTH
CM	CONCRETE MONUMENT
CMP	CORRUGATED METAL PIPE
CONC	CONCRETE
COR	CORNER
CPP	CORRUGATED PLASTIC PIPE
DE	DRAINAGE EASEMENT
DEL	DELTA/CENTRAL ANGLE
DI	DITCH INLET/ CATCH BASIN
DIP	DUCTILE IRON PIPE
DS	DRAINAGE STRUCTURE
E	EAST
EG	EXISTING GROUND
ELEC	ELECTRIC
EL/ELEV	ELEVATION
EOP	EDGE OF PAVEMENT
EOW	EDGE OF WATER
ERCP	ELLIPTICAL REINFORCED CONCRETE PIPE
ESMT	EASEMENT
EVC	END VERTICAL CURVE
EVP	END VERTICAL PROFILE
EX	EXISTING
FD	FOUND
FDC	FIRE DEPARTMENT CONNECTION
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION
FES	FLARED END SECTION
FFE	FINISHED FLOOR ELEVATION
FH	FIRE HYDRANT
FL	FLOW LINE
FM	FORCE MAIN
FPL	FLORIDA POWER AND LIGHT
FT	FEET
GLO	GENERAL LAND OFFICE
GR	GROUND
GV	GATE VALVE(S)
H/C	HANDICAP
HP	HIGH POINT
HWY	HIGHWAY
ID#	IDENTIFICATION NUMBER
INV	INVERT
IP	IRON PIPE
IPC	IRON PIPE AND CAP
IR	IRON ROD
IRC	IRON ROD AND CAP
JCT	JUNCTION
LF	LINEAR FEET
L	LEFT
LP	LOW POINT

ABBREVIATIONS

LS	LANDSCAPE
LWP	LIGHTER WOOD POST
MAX	MAXIMUM
MES	MITERED END SECTION
MH	MANHOLE
MHW	MEAN HIGH WATER
MI	MILE(S)
MIN	MINIMUM
N	NORTH
N&D	NAIL AND DISK
NAVD88	NORTH AMERICAN VERTICAL DATUM 1988
NGVD29	NATIONAL GEODETIC VERTICAL DATUM 1929
NG	NATURAL GROUND
NIC	NOT IN CONTRACT
NTS	NOT TO SCALE
NWL	NORMAL WATER LEVEL
OHE	OVERHEAD ELECTRIC/ UTILITY
OR/ORB	OFFICIAL RECORDS BOOK
P/L	PROPERTY LINE
PAVT	PAVEMENT
PB	PLAT BOOK
PC	POINT OF CURVATURE
PCC	POINT OF COMPOUND CURVATURE
PCP	PERMANENT CONTROL POINT
PD&UE	PUBLIC DRAINAGE AND UTILITY EASEMENT
PDE	PUBLIC DRAINAGE EASEMENT
PG(S)	PAGE(S)
PGL	PROPOSED GRADE LINE
PK	PARKER-KALEN
POB	POINT OF BEGINNING
POC	POINT OF COMMENCEMENT
POL	POINT ON LINE
PP	POWER/UTILITY POLE
PR	PRIVATE
PRC	POINT OF REVERSE CURVATURE
PT	POINT OF TANGENCY
PVC	POLYVINYL CHLORIDE PIPE
PVI	POINT OF VERTICAL INTERSECTION
R	RADIUS/RIGHT
R/W	RIGHT-OF-WAY
RAD	RADIAL
RB	RADIAL BEARING
RCP	REINFORCED CONCRETE PIPE
REF	REFERENCE
RGE	RANGE
RM	REUSE MAIN
RND	ROUND
RPB	ROAD PLAT BOOK
RR	RAILROAD
S	SOUTH
SEC	SECTION
SF	SQUARE FOOT
SMH	SEWER MANHOLE
SPK	SPIKE
SS	SANITARY SEWER
ST	STREET
STA	STATION
SVC	SERVICE
SW	SIDEWALK
TEL	TELEPHONE
TOB	TOP OF BANK
TOE	TOE OF SLOPE
TWP	TOWNSHIP
TYP	TYPICAL
UE	UTILITY EASEMENT
UG	UNDERGROUND
UTIL	UTILITY
W	WEST
WM	WATER MAIN

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DATE:	06/16/21
DESIGN/DRAWN:	ALS/AH

PROJECT TITLE

ST. JOHNS PRESERVE - TRACT A TOWNHOMES

SHEET TITLE

SYMBOLS AND ABBREVIATIONS

PROJECT NO.
11416.01

DRAWING NO.
1141601_402_002

SHEET
2 of 18

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SYMBOLS SHOWN ARE GRAPHIC IN NATURE; DUE TO SCALE, ALL DESIGN ELEMENTS ARE NOT NECESSARILY SHOWN ON PLAN VIEWS. THE CONTRACTOR SHALL ALSO REFER TO SPECIFICATION AND DETAIL SHEETS AS WELL AS THE COMPLETE PLAN SET.

GENERAL

1. THE REQUIREMENTS OF THE PALM BAY UTILITIES DEPARTMENT SHALL GOVERN ALL UTILITIES WORK. WHERE A CONFLICT EXISTS IN THE REQUIREMENTS OF A REFERENCED MATERIAL OR INSTALLATION STANDARD, THE REQUIREMENTS OF THE PALM BAY UTILITIES DEPARTMENT SHALL PREVAIL. WHERE THE REQUIREMENTS OF A STATE OR LOCAL AGENCY HAVING JURISDICTION ARE MORE STRINGENT, THOSE REQUIREMENTS SHALL PREVAIL.
2. THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE, AT ALL TIMES, ONE COPY OF THE PALM BAY UTILITIES DEPARTMENT SPECIFICATIONS. ONE COPY OF THE CONTRACT DOCUMENTS INCLUDING PLANS, SPECIFICATIONS AND SPECIAL PROVISIONS, AND COPIES OF ANY REQUIRED CONSTRUCTION PERMITS.
3. THE STANDARD HANDBOOK PREPARED BY THE UTILITIES DEPARTMENT OF THE CITY OF PALM BAY, JANUARY 2014, OR LATEST EDITION, SHALL BE INCORPORATED BY REFERENCE.
4. THE CONTRACTOR WILL BE REQUIRED TO PROVIDE TEST RESULTS OF THE PROPOSED ROAD IMPROVEMENTS TO THE CITY OF PALM BAY, PUBLIC WORKS, AT 321-953-8996.
5. TESTING ON PAVED AREAS SHALL BE SPECIFIED ON PLANS WITH DESCRIPTION OF THE IMPROVEMENTS LOCATION ZONES AND TESTING METHODS TO BE USED. COPIES OF ALL TESTING RESULTS ARE REQUIRED TO BE PROVIDED TO THE PUBLIC WORKS INSPECTOR FROM THE PUBLIC WORKS DEPARTMENT.
6. PROVIDE AS-BUILT INFORMATION FIVE (5) WORKING DAYS PRIOR TO REQUEST FOR CERTIFICATE OF COMPLETION.
7. THE ENGINEER SHALL BE NOTIFIED:
   A. PRIOR TO ANY MAJOR DEVIATION FROM THE APPROVED PLANS.
   B. PRIOR TO BACKFILLING ANY PIPE TRENCHES.
   C. UPON COMPLETION OF SUBGRADE GRADING AND COMPACTION.
   D. UPON BEGINNING OF SPREADING OF ROCK BASE MATERIAL.
   E. UPON COMPLETION OF GRADING AND COMPACTION OF THE BASE MATERIAL AND PRIOR TO PRIMING.
   F. IMMEDIATELY PRIOR TO AND UPON APPLICATION OF A.C.S.C.
   G. UPON COMPLETION OF CONSTRUCTION.
8. THE ENGINEER OF RECORD (EOR) WILL REVIEW AND APPROVE SHOP DRAWINGS AND FURNISH APPROVALS TO THE APPROPRIATE CITY DEPARTMENT AND TESTING LOGS, FROM THE TESTING COMPANY, WILL BE "CARBON COPIED" TO THE APPROPRIATE CITY DEPARTMENT.

PRE-WORK SITE MEETINGS:

A. NOTIFY THE INSPECTOR IN THE LAND DEVELOPMENT DIVISION BY E-MAIL LANDDEVELOPMENT@PBFL.ORG 72 HOURS PRIOR TO START OF CONSTRUCTION TO SCHEDULE A PRE- CONSTRUCTION MEETING. PLEASE PROVIDE CORRECT INFORMATION (NAMES AND PHONE NUMBER TO CONTACT CONTRACTORS, AND SUB-CONTRACTORS) WITH PROPOSED PROJECT SCHEDULE AND SEQUENCE OF WORK. FOR ADDITIONAL INFORMATION OR ANY CHANGES CALL (321) 733-3042.

B. NOTIFY THE CITY OF PALM BAY PUBLIC WORKS RIGHT-OF-WAY USE SERVICES DIVISION AT (321) 952-3403 48 HOURS PRIOR TO THE START OF CONSTRUCTION ACTIVITIES IN A ROAD RIGHT-OF-WAY, SUCH AS PAVING, PLACING OF PIPES, GRADING AND SIDEWALK WORK ETC. THESE ACTIVITIES SHALL BE PERFORMED ONLY IN THE PRESENCE OF A PALM BAY PUBLIC WORKS DEPARTMENT INSPECTOR.

C. THE CONTRACTOR WILL NOTIFY THE LAND DEVELOPMENT DIVISION 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR WILL PROVIDE THE LAND DEVELOPMENT DIVISION WITH A COPY OF ALL TEST RESULTS FROM THE PROPOSED IMPROVEMENTS. ALL TESTING SUCH AS CONCRETE TESTING, COMPACTION TESTING, AND ASPHALT TESTING ETC. FOR THE IMPROVEMENTS SHALL BE PROVIDED.

WATER CONTROL

1. PER THE CITY PUBLIC WORKS MANUAL SECTION 2.1.4.5: THE CONTRACTOR SHALL PROVIDE FOR SATISFACTORY DISPOSAL OF SURPLUS WATER AND SHALL SUBMIT A PLAN TO THE ENGINEER FOR HIS/HER REVIEW PRIOR TO INITIATION AND IMPLEMENTATION OF THE PLAN.

EROSION CONTROL NOTES:

1. ALL EROSION CONTROL MEASURES SHALL BE IN FULL CONFORMANCE WITH ALL APPLICABLE SJRWMD PERMITS AND REGULATIONS, AND DEP (NPDES PERMIT) REQUIREMENTS.
2. ALL EROSION CONTROL DEVICES SHALL BE PER CURRENT FDOT STANDARD INDEX #102 AND #103.
3. AS A MINIMUM, ALL EROSION CONTROL STRUCTURES SHALL REMAIN IN PLACE UNTIL VEGETATIVE COVER IS REESTABLISHED (MINIMUM GERMINATION OF 80%) IN THE UPLAND CONTRIBUTING DRAINAGE AREA.
4. CONTRACTOR SHALL UTILIZE BALED HAY AND OR SILT BARRIERS AS APPROPRIATE AT ALL CONTROL STRUCTURE AND OUTFALL CULVERT INSTALLATIONS.
5. THROUGHOUT THE CONSTRUCTION OF THE SITE THE CONTRACTOR SHALL UTILIZE BEST MANAGEMENT PRACTICES TO CONTROL EROSION AND TRANSPORT OF SEDIMENTS INTO PRESERVED WETLANDS AND DOWNSTREAM RECEIVING WATERS.
6. ALL DISTURBED AREAS (ABOVE NORMAL WATER LEVELS) UNLESS OTHERWISE NOTED HEREIN, SHALL BE SEEDED AND MULCHED WITHIN 14 DAYS OF FINAL GRADING. ALL POND SIDE SLOPES ALONG NORMAL WATER LEVEL SHALL BE SODDED.

SEWER COLLECTION SYSTEM

1. GRAVITY SEWER PIPE AND FITTINGS SHALL CONFORM TO ASTM 1784 AND 3034 SDR-35, GREEN
2. FORCE MAIN SEWER PIPE SHALL CONFORM TO ASTM, D2241 DR 18, WHITE.
3. JOINTS FOR PVC SEWER SHALL BE RUBBER GASKET TYPE CONFORMING TO ASTM D3202 AND ASTM F477.
4. ALL PVC SEWER PIPE SHALL BE INSTALLED AS REQUIRED BY THE PIPE MANUFACTURE
5. ALL SEWER MAINS TO HAVE A MINIMUM COVER OF 3' - 0" UNLESS OTHERWISE NOTED.
6. WHERE SEWER AND WATER MAINS CROSS, AT LEAST 18" VERTICAL CLEARANCE SHALL BE MAINTAINED.
   WHERE A SEWER MAIN PARALLELS A WATER MAIN, A SEPARATION OF AT LEAST 10' SHALL BE MAINTAINED.
   SPECIAL PROVISIONS SHALL APPLY WHEN THESE CONDITIONS CANNOT BE MET. THIS REQUIREMENT PERTAINS TO STORM SEWER AS WELL AS SANITARY SEWER.
7. WHERE A SEWER MAIN IS TO BE INSTALLED BELOW A STORM DRAIN PIPE, A MINIMUM OF 2' VERTICAL SEPARATION SHALL BE MAINTAINED. SPECIAL PROVISIONS SHALL APPLY WHEN THESE CONDITIONS CANNOT BE MET.
8. UNLESS OTHERWISE NOTED, MANHOLE TOP ELEVATIONS SHALL BE:
   PAVED AREA -- FLUSH WITH PAVEMENT
   UNPAVED AREA -- 1.0" ABOVE FINISH GRADE MINIMUM
9. AIR RELEASE VALVES SHALL BE INSTALLED AT ALL HIGH POINTS ALONG FORCE MAIN.
10. SERVICE CONNECTIONS SHALL BE 6" IN DIAMETER (MIN.) FOR RESIDENTIAL AND COMMERCIAL SERVICES. LOCATE EACH SERVICE CONNECTION FROM THE CENTER OF THE DOWNSTREAM MANHOLE AND RECORD THEIR LOCATION.
11. INSTALL MAGNETIC MARKERS AT THE END OF EACH SERVICE LINE OR OPPOSITE WYES AND RECORD THEIR LOCATION.
12. THE SEWER COLLECTION SYSTEM SHALL NOT BE PLACED IN SERVICE UNTIL THE SYSTEM HAS BEEN VISUALLY INSPECTED AND FLUSHED OF SEDIMENT AND DEBRIS. THE SYSTEM SHALL BE "LAMPED" BETWEEN MANHOLES IN ORDER TO ASCERTAIN THAT THEY ARE CLEAR AND TO CORRECT ALIGNMENT. T.V. INSPECTION SHALL BE REQUIRED IF CORRECT ALIGNMENT CAN NOT BE DETERMINED BY LAMPING PROCEDURE.
13. THE SEWER LINES SHALL BE TESTED BY ONE OF THE FOLLOWING METHODS -- WATER INFILTRATION, WATER EXFILTRATION OR LOW PRESSURE AIR TESTING AS DIRECTED BY UTILITIES DEPARTMENT REPRESENTATIVE.
14. FORCE MAIN SEWER PIPE FITTING SHALL BE OF DUCTILE IRON, MECHANICAL JOINT, POLYBOARD COATED WITH A MINIMUM PRESSURE RATING OF 250 PSI IN ACCORDANCE WITH ANSI/ANNA C-110/A21.10 OR ANSI/ANNA C153 /A21.53 AS APPROVED BY PBU, VIA SUBMITTAL.
15. ID TAPE SHALL BE PLACED OVER ALL P.V.C. AND D.I. PIPE IN ACCORDANCE WITH PALM BAY UTILITIES
16. PALM BAY UTILITIES DEPARTMENT SHALL BE GIVEN A MINIMUM OF 48 HOURS NOTICE PRIOR TO ANY MAIN TAPPING FOR SCHEDULING OF AN INSPECTION.
17. SANITARY FORCE MAIN CONNECTION SHALL BE SCHEDULED NOT TO CONFLICT WITH SCHOOL OPERATION SCHEDULE.

WATER DISTRIBUTION SYSTEM

1. PVC PIPE 4 TO 12 INCHES IN DIAMETER SHALL BE PER AWWA C900-89 CLASS 150 psi (DR-18). PIPING LESS THAN FOUR INCHES IN DIAMETER SHALL BE PER ASTM D1784, SCHEDULE 80 AND APPROVED BY NSF FOR POTABLE WATER USE, COLOR BLUE.
2. DUCTILE IRON PIPE SHALL BE CEMENT - MORTAR LINED, CLASS 51 MECHANICAL OR PUSH-ON JOINT AND SHALL MEET ALL THE REQUIREMENTS OF THE FOLLOWING ANSI/AWWA C 104/A.21.4; ANSI/AWWA C 111/A 21.11 (FOR RUBBER GASKET JOINTS); ANSI/AWWA C 150/21.50 (FOR THICKNESS DESIGN) AND ANSI/AWWA C 151/A 21.51 (FOR D.I.P. MOLDS).
3. FITTINGS FOR P.V.C. PRESSURE PIPE AND D.I.P. SHALL BE OF CAST IRON OR DUCTILE IRON, MECHANICAL JOINT CEMENT MORTAR LINED IN ACCORDANCE WITH ANSI B-16.1 CLASS 125 AND SHALL COMPLY WITH ANSI/AWWA C110/A21.10 AND C111/A21.11.
4. INSTALLATIONS OF WATER LINES SHALL BE IN ACCORDANCE WITH ANSI/AWWA C900 (MANUAL M23) FOR P.V.C. PRESSURE PIPE, AND C 600 FOR DUCTILE IRON PIPE.
5. ALL WATER MAINS TO HAVE MINIMUM COVER OF 36".
6. WHERE WATER AND SEWER MAINS CROSS WITH LESS THAN 18": VERTICAL CLEARANCE, THE SEWER WILL BE 20' OF EITHER DUCTILE IRON PIPE OR CONCRETE ENCASED PIPE, CENTERED ON THE POINT OF CROSSING. WHEN A WATER MAIN PARALLELS A SEWER MAIN, A SEPARATION OF AT LEAST 10' SHALL BE MAINTAINED. THIS REQUIREMENT APPLIES TO SANITARY AND STORM SEWERS, FORCE MAINS AND REUSE MAINS.
7. WHERE A WATER MAIN IS TO BE INSTALLED BELOW A STORM DRAIN PIPE, A MINIMUM OF 18" VERTICAL CLEARANCE BETWEEN PIPES SHALL BE MAINTAINED UNLESS OTHERWISE DIRECTED BY THE ENGINEER.
8. WHERE WATER LINES CROSS UNDER DRAINAGE PIPES WITH LESS THAN 18 INCHES VERTICAL CLEARANCE, THE WATER PIPES SHALL BE OF 20' OF CLASS 52 D.I.P. CENTERED ON THE POINT OF CROSSING, OR CONCRETE ENCASEMENTS.
9. WATER SUPPLY FACILITIES INCLUDING MAINS SHALL BE INSTALLED, CLEANED, DISINFECTED AND BACTERIOLOGICALLY CLEARED FOR SERVICE, IN ACCORDANCE WITH THE LATEST APPLICABLE AWWA STANDARDS AND THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION RULES.
10. HYDROSTATIC TESTING (PRESSURE AND LEAKAGE TESTS) SHALL MEET THE REQUIREMENTS OF THE ANSI/AWWA C 600.
11. DISINFECTIONS OF WATER MAINS SHALL COMPLY WITH ANSI/AWWA C 651, AND ALL OTHER APPROPRIATE APPROVAL AGENCIES. ALL INTERNAL PARTS ON TAPPING MACHINES, SUCH AS CUTTING HEADS, ETC. WILL BE DISINFECTED IN COMPLIANCE AWWA C 651 PRIOR TO MAKING ANY TAP.
12. DUCTILE IRON PIPE IS TO BE WRAPPED WITH POLYETHYLENE PER AWWA C105, WITHIN AREAS OF SEVERE CORROSIVE CONDITIONS.
13. MINIMUM HORIZONTAL SEPARATION BETWEEN WATER LINES AND UNRESTRICTED ACCESS REUSE WATER SHALL BE 5 FEET.
14. ALL SERVICE LINES WILL BE 1" POLYETHYLENE PIPE.
15. ID TAPE SHALL BE PLACED OVER ALL P.V.C. AND D.I. PIPE IN ACCORDANCE WITH PALM BAY UTILITIES REQUIREMENTS.
16. PALM BAY UTILITIES DEPARTMENT SHALL BE GIVEN A MINIMUM OF 48 HOURS NOTICE PRIOR TO ANY MAIN TAPPING FOR SCHEDULING OF AN INSPECTION.
17. IF THE 18" MINIMUM VERTICAL CLEARANCE BETWEEN A WATER MAIN AND STORM SEWER CAN NOT BE MET THEN THE WATER MAIN WILL BE UPGRADED TO DUCTILE IRON PIPE.
18. WATER MAINS WILL NOT COME IN CONTACT WITH OR PASS THROUGH ANY SANITARY OR STORM MANHOLE OR STRUCTURE.
19. ALL PIPE SHALL BE MECHANICALLY RESTRAINED INSTEAD OF THRUST BLOCKED.

CONSTRUCTION IN STREETS, ROAD RIGHT-OF-WAYS & PARKING AREAS

1. OPEN ROAD CUTS REQUIRES PRIOR APPROVAL OF THE CITY, COUNTY, STATE OR ANY OTHER AGENCY WHICH MAY HAVE JURISDICTION.
2. ALL CONSTRUCTION, MATERIALS AND WORKMANSHIP ARE TO BE IN ACCORDANCE WITH FLORIDA DEPARTMENT OF TRANSPORTATION SPECIFICATIONS AND STANDARDS, AND THE CITY OF PALM BAY PUBLIC WORKS MANUAL.
3. ALL AREAS IN EXISTING RIGHT-OF-WAYS DISTURBED BY CONSTRUCTION SHALL MATCH EXISTING AND RECEIVE GRASS, MULCH OR SOLID SOD, AS STATED ON THE PLANS.
4. STREET OR HIGHWAY RESTORATION TO BE DONE AS PER LOCAL OR STATE AGENCY HAVING JURISDICTION.
5. THE CONTRACTOR SHALL COMPLY WITH ALL RULES AND REGULATIONS OF THE STATE, COUNTY AND CITY AUTHORITIES REGARDING CLOSING OR RESTRICTING THE USE OF PUBLIC STREETS OR HIGHWAYS.
6. TRAFFIC CONTROL ON ALL CITY OF PALM BAY, COUNTY AND STATE HIGHWAY RIGHT-OF-WAYS SHALL MEET THE REQUIREMENTS OF THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (U.S. DOT/FHA) AND THE REQUIREMENTS OF THE STATE AND ANY LOCAL AGENCY HAVING JURISDICTION.
7. IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY AND DOCUMENT THE ACTUAL LOCATION AND EXTENT OF ALL EXISTING UTILITIES WHICH MAY AFFECT CONSTRUCTION. EXISTING UTILITIES SHOWN ARE BASED UPON THE BEST AVAILABLE INFORMATION SUPPLIED TO THE OWNER/ENGINEER AND IS SHOWN FOR INFORMATIONAL PURPOSE ONLY.
8. CONTRACTOR IS RESPONSIBLE FOR CHECKING ACTUAL SITE CONDITIONS BEFORE STARTING CONSTRUCTION.
9. ANY DISCREPANCIES ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER OF RECORD BEFORE COMMENCING WORK.
10. CONTRACTOR SHALL OBTAIN ALL REQUIRED PERMITS BEFORE COMMENCING WORK.
11. THE CONTRACTOR SHALL CONTACT ALL CONCERNED UTILITIES AT LEAST 48 HOURS IN ADVANCE OF CONSTRUCTION OPERATIONS.
12. NO FIELD CHANGES OR DEVIATIONS FROM DESIGN TO BE MADE WITHOUT PRIOR APPROVAL OF THE ENGINEER OF RECORD AND THE APPROPRIATE GOVERNMENTAL ENTITY.
13. ALL POND SIDE SLOPES ABOVE NORMAL WATER LEVEL SHALL BE SODDED.
14. ALL MUCK OR OTHER SUCH UNSUITABLE MATERIAL ENCOUNTERED WITHIN ROAD RIGHT-OF-WAYS AND LOT AREAS SHALL BE FULLY EXCAVATED AND REPLACED WITH CLEAN, ON-SITE FILL MATERIAL COMPACTED TO 98% MAXIMUM DENSITY. ACTUAL EXTENT AND QUANTITY OF EXCAVATION SHALL BE DETERMINED AT THE TIME OF CONSTRUCTION BY APPROPRIATE FIELD MEASUREMENT. DISPOSAL OF UNSUITABLE MATERIAL SHALL BE AS DIRECTED BY OWNER OR OWNER'S ENGINEER.

6.1 MINIMUM STANDARDS

1. SEDIMENT BASINS AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UPSLOPE LAND DISTURBANCE TAKES PLACE.
2. ALL SEDIMENT CONTROL MEASURES ARE TO BE ADJUSTED TO MEET FIELD CONDITIONS AT HE TIME OF CONNSTRUCTION AND BE CONSTRUCTED PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL ON BALANCE OF SITE.PERIMETER SEDIMENT BARRIERS SHALL BE CONSTRUCTED TO PREVENT SEDIMENT OR TRASH FROM FLOWING OR FLOATING ONTO ADJACENT PROPERTIES.
3. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN UNDISTURBED FOR LONGER THAN 30 DAYS.PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT UNDISTURBED FOR MORE THAN ONE YEAR.
4. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.BREVARD COUNTY CODE CHAPTER 14 SECTION 20.17 SHOULD BE CONSULTED FOR PROTECTION OF STOCKPILES FROM WIND.
5. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE REVIEWER, IS UNIFORM, HAS MINIMUM GERMINATION OF 80%, IS MATURE ENOUGH TO SURVIVE, AND WILL INHIBIT EROSION.
6. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
7. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE SEDIMENT BASIN SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE THE ANTICIPATED SEDIMENT LOADING FROM THE LAND-DISTURBING ACTIVITY. THE OUTFALL DEVICE OR SYSTEM DESIGN SHALL TAKE INTO ACCOUNT THE TOTAL DRAINAGE AREA FLOWING THROUGH THE DISTURBED AREA TO BE SERVED BY THE BASIN.
8. AFTER ANY SIGNIFICANT RAINFALL OF AT LEAST A 1/2 INCH, SEDIMENT CONTROL STRUCTURES WILL BE INSPECTED FOR INTEGRITY. ANY DAMAGED DEVICES SHALL BE CORRECTED IMMEDIATELY.
9. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN, CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.
10. WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
11. SEDIMENT WILL BE PREVENTED FROM ENTERING ANY STORM DRAIN SYSTEM, DITCH OR CHANNEL. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
12. BEFORE TEMPORARY OR NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.
13. WEEKLY INSPECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL STRUCTURES MUST BE PROVIDED TO ENSURE INTENDED PURPOSE IS ACCOMPLISHED. THE DEVELOPER, OWNER, AND/OR CONTRACTOR SHALL BE CONTINUALLY RESPONSIBLE FOR ALL SEDIMENT LEAVING THE PROPERTY. SEDIMENT CONTROL MEASURES SHALL BE IN WORKING CONDITION AT THE END OF EACH WORKING DAY.
14. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
    A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
    B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
    C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOTE ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
    D. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
15. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY TRACKING ONTO THE PAVED SURFACE. WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE WITH CURBS AND GUTTERS, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL SUBDIVISION LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.
16. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, IN THE OPINION OF THE INSPECTOR. DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
17. PROPERTIES AND WATERWAYS DOWNSTREAM FROM CONSTRUCTION SITES SHALL BE PROTECTED FROM SEDIMENT DEPOSITION AND EROSION.
18. PHASED PROJECTS SHOULD BE CLEARED IN CONJUNCTION WITH CONSTRUCTION OF EACH PHASE.
19. EROSION CONTROL DESIGN AND CONSTRUCTION SHALL FOLLOW THE REQUIREMENTS IN INDEX NOS. 101, 102, AND 103 OF FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS.

MAINTENANCE OF TRAFFIC

ALL CONSTRUCTION OPERATIONS ARE SUBJECT TO FDOT MAINTENANCE OF TRAFFIC INDEXES & MUTCD - LATEST EDITIONS.

FDEP LOCATION OF PUBLIC WATER SYSTEM:

VERTICAL SEPARATION (OUTSIDE OF PIPE TO OUTSIDE OF PIPE)*

- STORM SEWER, STORMWATER FORCE MAIN, RECLAIMED WATER (1):
  12 INCHES IS THE MINIMUM, EXCEPT FOR STORM SEWER, THEN 6 INCHES IS THE MINIMUM AND 12 INCHES IS PREFERRED
- VACUUM SANITARY SEWER:
  12 INCHES PREFERRED, 6 INCHES MINIMUM
- GRAVITY OR PRESSURE SANITARY SEWER, SANITARY SEWER FORCE MAIN, RECLAIMED WATER (2):
  12 INCHES IS THE MINIMUM, EXCEPT FOR GRAVITY SEWER, THEN 6 INCHES IS THE MINIMUM AND 12 INCHES IS PREFERRED

HORIZONTAL SEPARATION (OUTSIDE OF PIPE TO OUTSIDE OF PIPE)

- STORM SEWER, STORMWATER FORCE MAIN, RECLAIMED WATER (1):
  3 FT MINIMUM
- VACUUM SANITARY SEWER:
  10 FT PREFERRED, 3 FT MINIMUM
- GRAVITY OR PRESSURE SANITARY SEWER, SANITARY SEWER FORCE MAIN, RECLAIMED WATER (2):
  10 FT PREFERRED, 6 FT MINIMUM**
- ON-SITE SEWAGE TREATMENT & DISPOSAL SYSTEM:
  10 FT MINIMUM

JOINT SPACING AT CROSSINGS (FULL JOINT CENTERED)

- STORM SEWER, STORMWATER FORCE MAIN, RECLAIMED WATER (1):
  ALTERNATE 3 FT MINIMUM
- VACUUM SANITARY SEWER:
  ALTERNATE 3 FT MINIMUM
- GRAVITY OR PRESSURE SANITARY SEWER, SANITARY SEWER FORCE MAIN, RECLAIMED WATER (2):
  ALTERNATE 6 FT MINIMUM

*WATER MAIN SHOULD CROSS ABOVE OTHER PIPE. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MINIMUM SEPARATION IS 12 INCHES.

**3 FT FOR GRAVITY SANITARY SEWER WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST 6 INCHES ABOVE THE TOP OF THE GRAVITY SANITARY SEWER.

(1) RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
(2) RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

HORIZONTAL & VERTICAL SEPARATION SHALL MEET THE MOST STRINGENT OF LOCAL, STATE & FEDERAL REQUIREMENTS

DRAINAGE SYSTEM MATERIAL AND CONSTRUCTION

5.1 SCOPE

THE SCOPE OF THIS DIVISION INCLUDES MATERIALS AND CONSTRUCTION OF DRAINAGE SYSTEMS. THE TERM DRAINAGE SYSTEM INCLUDES SEWERS, DITCHES, SWALES, CULVERTS, ALL DETENTION/RETENTION FACILITIES AND ALL APPURTENANCES.

5.2 PIPE

CEMENT ASBESTOS, CAST IRON, VITRIFIED CLAY AND POLYVINYL CHLORIDE PIPE WILL NOT BE ALLOWED IN THE CITY OF PALM BAY DRAINAGE SYSTEM.

5.2.1 REINFORCED CIRCULAR CONCRETE PIPE

PIPE SHALL BE CAST VIBRATED, MACHINE MADE OR FLAT BED CONCRETE PIPE, DESIGNED, MANUFACTURED, CURED, TESTED, AND MARKED IN ACCORDANCE WITH ASTM C76. PIPE SHALL BE OF THE CLASS SHOWN ON THE PLANS OR CALLED FOR ON THE BIDDING FORM. PIPE SHALL BE MANUFACTURED IN LENGTHS NOT LONGER THAN SIXTEEN (16) FEET, NOR SHORTER THAN EIGHT (8) FEET, EXCEPT THAT SHORTER LENGTHS AS REQUIRED AT CLOSURES OR JUNCTIONS WITH STRUCTURES SHALL BE PROVIDED. PIPE WITH ELLIPTICAL REINFORCING SHALL BE ADEQUATELY MARKED TO PREVENT IMPROPER PLACEMENT IN THE TRENCH.

JOINTS SHALL BE OF ROUND RUBBER GASKET TYPE USING A BELL AND SPIGOT DESIGN. JOINTS SHALL BE SO DESIGNED THAT WHEN THE PIPE IS LAID AND JOINT COMPLETED, THE GASKET WILL BE ENCLOSED ON ALL FOUR SURFACES. THE JOINT SHALL BE SO DESIGNED AND FABRICATED THAT WHEN THE PIPE IS LAID, IT SHALL BE SELF-CENTERING AND THE GASKET SHALL NOT BE REQUIRED TO SUPPORT THE WEIGHT OF THE PIPE, BUT SHALL KEEP THE JOINT TIGHT UNDER ALL NORMAL CONDITIONS OF SERVICE INCLUDING EXPANSION, CONTRACTION, AND EARTH SETTLEMENT.

RUBBER GASKET SHALL CONFORM TO REQUIREMENTS STATED IN ASTM C361.

5.2.1.1 FIBER REINFORCED CONCRETE PIPE (FRCP)

PIPE MEETING ASTM C-1450 REQUIREMENTS AS SPECIFIED IN FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, 2004 EDITION, SECTION 449-5 INCLUDING REVISIONS, AND SHALL BE INSTALLED IN ACCORDANCE WITH SECTION 125 OF FDOT STANDARD SPECIFICATIONS FOR THE PROJECT APPLICATION. CLASS III OR HIGHER PIPE IS ALLOWED AND WILL BE DETERMINED BASED UPON FILL HEIGHTS SHOWN IN FDOT DESIGN STANDARDS INDEX 205 (2004 EDITION).

5.2.2 REINFORCED ELLIPTICAL CONCRETE PIPE

PIPE SHALL BE CAST VIBRATED, MACHINE MADE, OR FLAT BED ELLIPTICALLY SHAPED CONCRETE PIPE DESIGNED, MANUFACTURED, CURED, TESTED, AND MARKET IN ACCORDANCE WITH ASTM C507. PIPE SHALL BE OF THE CLASS SHOWN ON THE PLANS OR CALLED FOR ON THE BIDDING FORM AND SHALL BE MANUFACTURED IN LENGTHS NOT LONGER THAN SIXTEEN (16) FEET, NOR SHORTER THAN (8) FEET, EXCEPT THAT SHORTER LENGTHS AS REQUIRED AT CLOSURES OR JUNCTIONS WITH STRUCTURES SHALL BE PROVIDED. PIPE DESIGNED FOR PLACEMENT WITH THE MAJOR AXIS HORIZONTAL SHALL BE DESIGNED AS "HORIZONTAL ELLIPTICAL PIPE" (CLASS HE-III) AND SHALL BE SO MARKED.

JOINTS FOR ELLIPTICAL PIPE SHALL BE COLD ADHESIVE PREFORMED PLASTIC GASKETS CONFORMING TO STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION FDOT, SECTION 942, PARAGRAPH 942-2. INSTALLATION OF JOINT MATERIAL SHALL CONFORM TO THE REQUIREMENTS OF SECTION 430, PARAGRAPH 430-7.3 OF THE ABOVE REFERENCED SPECIFICATION.

5.2.3 CORRUGATED STEEL PIPE

CORRUGATED STEEL PIPE, INCLUDING ROUND CULVERT PIPE, PIPE ARCH, AND UNDERDRAIN SHALL MEET THE REQUIREMENTS OF THE AASHTO-M36, UTILIZING A BASE METAL OF COPPER-BEARING STEEL. PIPE SHALL BE MANUFACTURED, FURNISHED AND INSTALLED IN STANDARD LENGTHS EXCEPT AT JUNCTIONS WITH STRUCTURES, WHICH CANNOT BE ADJUSTED IN LOCATION. PIPE SHALL BE STRAIGHT, TRUE IN FORM AND OF FULL DIAMETER OR SPECIFIED CROSS-SECTION THROUGHOUT. AFTER FABRICATION, THE PIPE SHALL BE FULLY COATED WITH A SUITABLE BITUMINOUS MATERIAL SO THE MINIMUM THICKNESS OF THE COATING AS MEASURED ON THE CREST OF THE CORRUGATION SHALL BE 0.05 INCHES. THE BITUMINOUS MATERIAL SHALL ADHERE TO THE METAL TENACIOUSLY, SHALL NOT BE SUSCEPTIBLE TO SPELLING UNDER SHOCK, SHALL NOT FLOW WHEN SUBJECTED TO SUMMER TEMPERATURES AND SHALL BE IMPERVIOUS TO MOISTURE. THE COATING SHALL BE RESISTANT TO THE EROSIVE ACTION OF HYDRAULIC TRAFFIC, AND MEET REQUIREMENTS OF AASHTO M190.

WHEN SPECIFIED, PAVED INVERTS SHALL CONSIST OF ASPHALT CEMENT APPLIED ON THE INSIDE OF THE PIPE FOR ONE QUARTER OF ITS CIRCUMFERENCE. THE PAVEMENT SHALL HAVE A MINIMUM THICKNESS OF 0.50 INCHES MEASURED ON THE CREST OF THE CORRUGATIONS AT THE CENTERLINE AND SHALL TAPER TO 0.1 INCHES AT THE SIDES.

COUPLING BANDS SHALL BE OF THE SAME GAUGE AND MATERIAL AS THE PIPE AND SHALL BE AT LEAST TEN (10) INCHES WIDE. THE METAL SHALL BE CORRUGATED, DIMPLED, OR CHANNELED TO EFFECTIVELY ENGAGE THE CORRUGATIONS OF THE PIPE. IF WATERTIGHT JOINTS ARE SPECIFIED, THEY SHALL BE PROVIDED BY "O" RING RUBBER GASKETS WHICH SHALL CONFORM TO ASTM C443 FOR ANNULAR END PIPES. WATER TIGHTNESS FOR HELICAL END PIPE SHALL BE PROVIDED BY APPROVED SEALANT OR GASKET MATERIALS.

PIPE FOR UNDERDRAINS SHALL BE THE FULL CIRCLE TYPES, AND PERFORATIONS IN THE PIPE MAY BE DRILLED OR PUNCHED. PERFORATIONS SHALL BE 3/8 INCH AND SHALL BE UNIFORMLY SPACED AROUND THE FULL PERIPHERY OF THE PIPE. THERE SHALL BE NO LESS THAN 30 PERFORATIONS PER SQUARE FOOT OF PIPE SURFACE. CARE SHALL BE TAKEN THE COATING PROCESS DOES NOT REDUCE THE OPEN AREA BELOW 3.31 SQUARE INCHES PER SQUARE FOOT OF PIPE SURFACE. SLEEVE TYPE COUPLINGS MAY BE SUBSTITUTED FOR THE BAND COUPLERS.

5.2.4 CORRUGATED ALUMINUM PIPE

ALUMINUM-ALLOY CULVERT PIPE AND UNDERDRAIN SHALL MEET THE REQUIREMENTS OF AASHTO-M196. ALUMINUM-ALLOY PIPE ARCH SHALL MEET THE REQUIREMENTS OF AASHTO-M219.

BITUMINOUS COATING, PAVED INVERT AND COUPLING BANDS SHALL MEET THE REQUIREMENTS FOR CORRUGATED STEEL PIPE.

5.2.5 POLYETHYLENE PIPE

UPON THE SUBMITTAL BY THE PROJECT ENGINEER TO AND APPROVAL BY THE PUBLIC WORKS DIRECTOR OR HIS REPRESENTATIVE OF APPROPRIATE DESIGN INFORMATION, PLASTIC PIPES SHALL BE ALLOWED.

POLYETHYLENE PIPE USED SHALL MEET ALL REQUIREMENTS OF FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE SPECIFICATIONS, SECTION 948-2.

5.2.6 PIPE CRADLE

WHEN ORDERED OR INDICATED ON THE PLANS, PIPE CRADLE SHALL BE OF 3000-PSI CONCRETE.

5.2.7 JOINT WRAPPING

ALL PIPE JOINTS ARE TO BE WRAPPED WITH FILTER FABRIC IN ACCORDANCE WITH FDOT DESIGN INDEX 280.

5.3 MANHOLES

5.3.1 PRECAST REINFORCED CONCRETE MANHOLES

MANHOLES SHALL CONFORM TO THE REQUIREMENTS OF ASTM C478.

MANHOLES SHALL CONSIST OF A BASE UNIT, RISER UNITS WITH NECESSARY OPENINGS FOR SEWER PIPE AND CONCENTRIC CONES OR FLAT LIDS PROVIDING THE SUPPORT FOR THE MANHOLE FRAME AND COVER. THE BASE UNIT SHALL CONSIST OF A MONOLITHICALLY POURED BASE AND BOTTOM-RING SECTION. LIFTING HOLES THROUGH THE STRUCTURE SHALL NOT BE PERMITTED.

WHEN CALLED FOR THE PLANS, A NON-SAG GRADE OF POLYSULPHIDE RUBBER FILLER SHALL BE USED IN CONJUNCTION WITH COMPRESSION RING.

5.3.2 BRICK MANHOLES

BRICK FOR MANHOLE CONSTRUCTION SHALL BE AS SPECIFIED ON PARAGRAPH

THE BASE SHALL BE OF 3000-PSI CONCRETE.

THE CHANNEL SHALL BE A MINIMUM OF 2400-PSI CONCRETE.

THE MORTAR FOR BRICKWORK AND SURFACE PLASTERING SHALL BE MADE WITH ACID RESISTANT CEMENT.

5.3.3 MANHOLE FRAMES AND COVERS

MANHOLE FRAMES AND COVERS SHALL BE GRAY CAST IRON, SHALL BE FREE FROM CRACKS, HOLES, AND COLD SHUTS AND SHALL CONFORM TO FEDERAL SPECIFICATION QQ-I-65A FOR GRAY IRON CASTINGS. FRAMES AND COVERS SHALL CONFORM TO THE DETAILS SHOWN ON THE DRAWING AND SHALL BE COATED WITH COAL TAR PITCH VARNISH. BEARING SURFACES SHALL BE MACHINED TO PROVIDE EVEN BEARING SURFACING OR SHALL HAVE A NON-ROCKING FEATURE.

5.3.4 BRICK

CONCRETE BRICK SHALL CONFORM TO ASTM C-139.

CLAY BRICK SHALL BE DENSE, HARD BURNED AND SHALL CONFORM TO ASTM DESIGNATION C-32 GRADE MM OR ASTM C62 GRADE MW, EXCEPT THAT BRICK ABSORPTION SHALL BE BETWEEN FIVE AND TWENTY-FIVE GRAMS OF WATER ABSORBED IN ONE MINUTE BY DRIED BRICK, SET FLAT DOWN IN 1/8 INCH OF WATER.

5.3.5 CATCH BASIN

CATCH BASINS SHALL CONFORM TO THE FORM AND DIMENSIONS AND BE CONSTRUCTED OF THE MATERIALS SHOWN IN THE FDOT STANDARDS OR ON THE STANDARD PLANS WHICH EVER IS SPECIFIED.

PRECAST UNITS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C478 AND TO THE FORM AND DIMENSIONS CALLED FOR THE PLANS.

BRICK CATCH BASINS SHALL CONFORM TO FORM AND DIMENSIONS CALLED FOR ON THE

PLANS. CATCH BASIN SHALL BE OF 3000-PSI CONCRETE.

MORTAR FOR BRICKWORK AND SURFACE PLASTERING SHALL BE MADE WITH ACID RESISTANT CEMENT.

5.3.6 CATCH BASIN FRAMES AND GRATES

CAST IRON FRAMES AND GRATES SHALL BE GRAY CAST IRON CONFORMING TO ASTM A48, SHALL BE FREE OF CRACKS, HOLES, AND SHUTS SHALL CONFORM TO THE DETAILS SHOWN ON THE PLANS OR SPECIFIED. BEARING SURFACES SHALL BE MACHINED TO PROVIDE AN EVEN NON-ROCKING BEARING SURFACE.

STRUCTURAL STEEL FRAMES AND GRATES SHALL BE GALVANIZED IN ACCORDANCE WITH THE REQUIREMENTS OF ASTM A-123 UNLESS A-588 STEEL IS USED IN THE MANUFACTURE.

5.3.7 HEADWALLS, VALLEY GUTTERS AND OTHER CONCRETE STRUCTURES

HEADWALLS, VALLEYS, GUTTERS, AND OTHER CONCRETE STRUCTURES SHALL BE CONSTRUCTED WITH 3000-PSI CONCRETE.

5.3.8 FRENCH DRAIN

CORRUGATED PIPE SHALL BE STEEL OR ALUMINUM MEETING THE REQUIREMENTS OF ARTICLES 4.2.3 OR 4.2.4 OF THIS DIVISION.

BALLAST ROCK SHALL MEET THE GRADATIONS OF ASTM SIZE NO. 4 COARSE AGGREGATE OR UNDERGROUND DISPOSAL OF WATER, DESIGNATION D 488-54.

AMOUNT PASSING (SQUARE OPENINGS) WEIGHT PERCENT

SIZE NUMBER	NORMAL SIZES SQUARE OPENINGS	2" (50mm)	1-1/2" (37.5mm)	1" (25.0mm)	3/4" (19.0mm)	3/8" (9.53mm)
4	1-1/2" - 3/4"	100	90 TO 100	20 TO 55	0 TO 15	0 TO 5

AGGREGATE SHALL BE SOUND AND DURABLE.

FILTER FABRIC SHALL BE IN ACCORDANCE WITH FDOT DESIGN STANDARDS INDEX 199. IT SHALL BE THE PRODUCT OF AN ESTABLISHED MANUFACTURER. IT SHALL MANUFACTURED IN ONE PIECE TO MEET THE TRENCH SIZE REQUIREMENTS, SHALL BE FREE OF TEARS AND OTHER IMPERFECTIONS.

5.3.9 CHECK DAM

STONE SHALL BE 3/4 INCH, CRUSHED, CLEAN AND DURABLE ROCK.

FILTER FABRIC SHALL BE AS SPECIFIED IN PARAGRAPH 4.15.3 OF THIS DIVISION.

SOD SHALL BE EITHER CENTIPEDE OR BAHIA GRASS WELL MATTED WITH ROOTS FURNISHED IN COMMERCIAL-SIZE RECTANGLES, 12 INCH OR LARGER.

5.4 CONSTRUCTION

5.4.1 EXCAVATION AND BACKFILL

(1) TRENCH - TRENCH WIDTH SHALL BE KEPT TO A MINIMUM NECESSARY FOR INSTALLATION OF THE PIPE. THE TRENCH BOTTOM SHALL BE GRADED UNIFORMLY TO MATCH THE OUTSIDE OF THE PIPE.

(2) UNSUITABLE MATERIAL BELOW PIPE GRADE - WHEREVER EXCAVATION OF THE TRENCH EXPOSES UNSUITABLE MATERIALS SUCH AS PEAT, SOFT CLAY, QUICK SAND, OR OTHER UNSTABLE MATERIAL IN THE BOTTOM OF THE TRENCH, WHICH IN THE OPINION OF THE ENGINEER, IS UNSUITABLE FOUNDATION UPON WHICH TO LAY OR SUPPORT THE PIPE, BACKFILL, AND EXPECTED SUPERIMPOSED LOADS. SUCH UNSUITABLE MATERIALS SHALL BE REMOVED TO DEPTH NECESSARY TO REACH MATERIAL HAVING ADEQUATE CAPACITY. THE TRENCH SHALL THEN BE BACKFILLED TO A POINT SIX (6) INCHES ABOVE THE BOTTOM OF THE PIPE AND THE MATERIAL SHAPED TO FIT THE PIPE. THE MATERIAL FOR BEDDING MAY BE CLEAN NATURAL SAND OR GRAVEL, IMPORTED QUARRY WASTE, SELECTED EXCAVATION OR A MIXTURE THEREOF. SAMPLES OF THE MATERIAL SHALL BE SUBMITTED SUFFICIENTLY IN ADVANCE OF INTENDED USE TO ENABLE INSPECTION AND TESTING. THE MATERIAL SHALL BE PLACED IN SIX (6) INCH LAYERS AND COMPACTED TO A DRY DENSITY EQUAL TO 95 PERCENT OF THE MAXIMUM DRY DENSITY AS DETERMINED BY THE STANDARD PROCTOR COMPACTION TEST ASTM DO690. EACH LAYER SHALL BE COMPACTED TO THE REQUIRED DENSITY PRIOR TO PLACING THE NEXT LAYER.

(3) BACKFILL - ONLY GOOD QUALITY BACKFILL, FREE OF STONES, ROOTS, ROCKS, BROKEN CEMENT, OR OTHER MATERIAL WHICH MIGHT BE DAMAGING TO THE PIPE SHALL BE USED. ALL BACKFILL MUST BE COMPACTED BY TAMPING FROM UNDER THE PIPE UP TO 12 INCHES ABOVE THE PIPE. BACKFILL SHALL BE COMPACTED IN LIFTS UP TO THE SURFACE TO ACHIEVE A MINIMUM COMPACTION OF 95 PERCENT OF MAXIMUM DENSITY IN ACCORDANCE WITH AASHO T-180 AND ASTM D-2167.

(4) WELL-POINTING - CONSTRUCTION SHALL BE ACCOMPLISHED IN A DRY TRENCH. WELL-POINTING OR OTHER APPROVED METHOD OF DEWATERING SHALL BE CARRIED OUT TO MAINTAIN A DRY TRENCH.

SHEETING AND SHORING SHALL BE INSTALLED AS MAY BE NECESSARY FOR THE PROTECTION OF THE WORK, PRESERVATION OF ADJACENT PROPERTY AND STRUCTURES, AND THE SAFETY OF EMPLOYEES.

5.4.2 PIPE LAYING

PIPE LAYING SHALL PROCEED UPGRADE WITH THE SPIGOT ENDS OF THE PIPE POINTING IN THE DIRECTION OF FLOW. EACH PIPE SHALL BE LAID TRUE TO LINE AND GRADE SO AS TO FORM A CLOSE CONCENTRIC JOINT WITH THE ADJOINING PIPE, PREVENTING OFFSETS IN THE FLOW LINE. AS THE WORK PROGRESSES, THE INTERIOR OF THE PIPE SHALL BE CLEANED OF ALL DIRT AND SUPERFLUOUS MATERIALS. IN ADDITION, PIPE SHALL BE LAID EITHER ON A PREPARED BED OF UNDISTURBED EARTH IN THE BOTTOM OF THE TRENCH, SHAPED AS REQUIRED TO FIT THE PIPE, OR UPON A LAYER OF PROPERLY PLACED BEDDING MATERIAL. THE REQUIREMENTS FOR PIPE BEDDING VARY WITH THE TYPE OF PIPE TO BE INSTALLED AND THESE REQUIREMENTS ARE SET FORTH IN OTHER APPLICABLE PARAGRAPHS OR THE PLANS.

PIPE OUTFALLS SHOULD HAVE EITHER CONCRETE END TREATMENTS OR EXTENDED ONE FOOT BEYOND NORMAL WATER'S EDGE. CONCRETE PIPE SHOULD HAVE JOINTS SECURED IN ACCORDANCE TO CITY OF PALM BAY STANDARD DRAINAGE DETAIL SD-12.

5.4.3 MANHOLES AND CATCH BASINS

PRECAST BASE SHALL BE PLACED OR BASE SHALL BE CAST IN PLACE ON UNDISTURBED SOIL, OR IT SHALL BE INSTALLED ON APPROVED BEDDING. INSTALLATION WILL BE AT THE LOCATIONS AND TO THE GRADES SHOWN ON THE PLANS BEFORE THE PIPE IS LAID TO OR AWAY FROM THE MANHOLE OR CATCH BASIN.

BRICK MANHOLES AND CATCH BASINS SHALL BE MADE TO CONFORM TO THE SHAPE AND DIMENSIONS SHOWN ON THE DRAWINGS. FOR MANHOLES, BRICK SHALL BE LAID RADIALLY WITH HORIZONTAL JOINTS. BRICK MANHOLES AND CATCH BASINS MUST HAVE 1/2 INCH OF PLASTER ON THE OUTSIDE.

ALL MANHOLES AND CATCH BASINS SHALL BE CONSTRUCTED SO THAT THE TOP SHALL BE SET BETWEEN 5½ INCHES AND 14½ INCHES BELOW THE BOTTOM OF THE FRAME. IT IS THE INTENT OF THE SPECIFICATIONS TO PROVIDE A MINIMUM OF 2½ INCHES TO ACCOMMODATE FUTURE GRADE CHANGES WITHOUT DISTURBING THE MANHOLE OR CATCH BASIN.

ON PRECAST UNITS THE ANNULAR SPACE BETWEEN THE PIPE AND THE OPENING IN THE UNIT SHALL BE GROUTED WITH PORTLAND CEMENT MORTAR CONTAINING AN APPROVED ADDITIVE TO INSURE A WATERTIGHT JOINT.

FRAMES SHALL BE CENTERED OVER THE OPENING, RAISED AND TILTED AS NECESSARY TO MEET THE ROADWAY OR FINISH GRADE BY THE USE OF BRICK SHINS AND SET IN A FULL BED OF MORTAR. ANY COVER OR GRATING, WHICH ROCKS IN ITS FRAME UPON INSTALLATION, WILL NOT BE ACCEPTED.

HEADWALLS, VALLEYS, GUTTERS, AND OTHER CONCRETE STRUCTURES SHALL BE CONSTRUCTED TO THE FORM AND DIMENSIONS SHOWN ON THE PLANS OR SPECIFIED.

5.4.4 FRENCH DRAINS

EXCAVATION SHALL BE MADE TO THE REQUIRED DEPTH AFTER DEWATERING TO TWO (2) FEET BELOW PROPOSED TRENCH BOTTOM. AFTER EXCAVATION, A SLOPE FORM OF PLYWOOD OR STEEL SHALL BE SET LINING THE SIDES AND ENDS OF THE TRENCH. THE FILTER FABRIC SHALL BE DRAPED OVER THE FORMS FORMING AN ENVELOPE. THE BALLAST ROCK SHALL BE PLACED IN THE BOTTOM OF THE TRENCH TO THE PIPE INVERT. IT SHALL BE COMPACTED TO PREVENT SUBSEQUENT PIPE SETTLING.

THE PIPE SHALL BE SET IN PLACE TO THE LINES AND GRADES INDICATED ON THE PLANS. BACKFILL SHALL BE PLACED IN LAYERS AND COMPACTED TO PROVIDE FOR ELIMINATIONS OF ALL VOIDS BETWEEN THE EXTERIOR OF THE FILTER FABRIC AND THE NATIVE SOILS FORMING THE WALLS OF THE EXCAVATION. IN ORDER TO ACCOMPLISH THIS, THE SLIP FORMS WILL GRADUALLY BE PULLED AS EACH LAYER OF BALLAST IS PLACED BUT BEFORE COMPACTION.

WHEN THE SPECIFIED ELEVATION IS REACHED THE FILTER FABRIC WILL BE LAID OVER THE TOP OF THE BALLAST ROCK AND OVERLAP A MINIMUM OF TWO (2) FEET TO PREVENT SEDIMENT INFILTRATION INTO THE BALLAST ROCK.

A MINIMUM OF SIX (6) FOOT WIDE BAND OF HAY BALES SHALL BE FIRMLY SET AROUND THE PERIPHERY OF THE EXCAVATION TO PREVENT PREMATURE SURFACE FLOWS OF SEDIMENT CARRYING WATERS INTO THE EXCAVATION. UPON COMPLETION OF THE BACKFILL, A SIX- (6) FOOT WIDE BAND OF SOD SHALL BE SET AROUND THE PERIPHERY OF RISER PIPE. TO AVOID PREMATURE FLOWS INTO THE DRAIN, THE CONSTRUCTION SHALL BE SCHEDULED FOR COMPLETE CONSTRUCTION IN ONE WORKING RAINLESS DAY.

5.4.5 CHECK DAMS

CHECK DAMS SHALL BE CONSTRUCTED TO THE DIMENSIONS, LINES, AND GRADES SHOWN ON THE PLANS.

AFTER EXCAVATION TO THE REQUIRED DEPTH, THE FILTER FABRIC SHALL BE PLACED ON THE PREPARED BOTTOM; THE STONE SHALL BE PLACED ON THE FABRIC IN A MANNER THAT WILL CONFORM TO THE REQUIRED CONFIGURATION. THE FILTER FABRIC WILL BE LAID OVER THE STONE AND OVERLAP A MINIMUM OF TWO (2) FEET TO PREVENT SEDIMENT INFILTRATION INTO THE BALLAST ROCK.

SOD SHALL BE PLACED ON THE SURFACE OF THE FABRIC WITH EDGES IN CLOSE CONTACT AND SHALL BE FIRMLY AND SMOOTHLY IMBEDDED BY LIGHT TAMPING. THE EDGES OF THE SOD SHALL BE STAGGERED TO AVOID A CONTINUOUS SEAM ALONG THE LINE OF FLOW.

NOTE: THE CITY OF PALM BAY UTILITIES INSPECTOR MUST BE NOTIFIED 48 HOURS PRIOR TO ANY UTILITIES WORK OR ANY WORK OCCURRING WITHIN THE VICINITY OF EXISTING WATER AND SEWER UTILITIES.

B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING
312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
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CERTIFICATE OF PROFESSIONAL ENGINEERS BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905

SCOTT M. GLAUBITZ, P.E. & P.L.S.
STATE OF FLORIDA, No. 33659 No. 4151

HASSAN A. KAMAL, P.E.
STATE OF FLORIDA, No. 41951

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DATE:	06/16/21
DESIGN/DRAWN:	ALS/AH

PROJECT TITLE

ST. JOHNS PRESERVE - TRACT A TOWNHOMES

SHEET TITLE

GENERAL NOTES

PROJECT NO.

11416.01

DRAWING NO.

1141601_402_003

SHEET

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REMAINDER OF TRACT A
ST JOHNS PRESERVE - PHASE 1
(PB 60, PG 4)

PERIMETER
INTERCONNECT DITCH

REMOVE ±8LF OF 18" RCP AND RELOCATE
TYPE C STRUCTURE; SEE SHEET 7

SAWCUT 12" AND REMOVE SIGNS

SHOWN FOR REFERENCE ONLY;
TO BE CONSTRUCTED PER BSE# 11416.02

KYLAR DRIVE

SAWCUT 12" AND REMOVE SIGNS

A PORTION OF TRACT A
ST JOHNS PRESERVE -
PHASE 1
(PB 60, PG 4)

REMAINDER OF TRACT A
ST JOHNS PRESERVE - PHASE 1
(PB 60, PG 4)

PERIMETER
INTERCONNECT DITCH

ST. JOHNS PRESERVE -
PHASE 1
(PB 60, PG 4)

PINWHERRY STREET

ST. JOHNS HERITAGE PARKWAY

24.00
20.00
20.00
22.25

BLOCK D
BLOCK E
TRACT D
TRACT C

60 0 30 60
(IN FEET)

VERTICAL DATUM: NGVD29

B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING -
LAND SURVEYING

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STATE OF FLORIDA, No. 41951

DATE:	06/16/21
DESIGN/DRAWN:	ALS/AH

PROJECT TITLE

ST. JOHNS PRESERVE - TRACT A TOWNHOMES

SHEET TITLE

EXISTING CONDITIONS AND DEMO PLAN

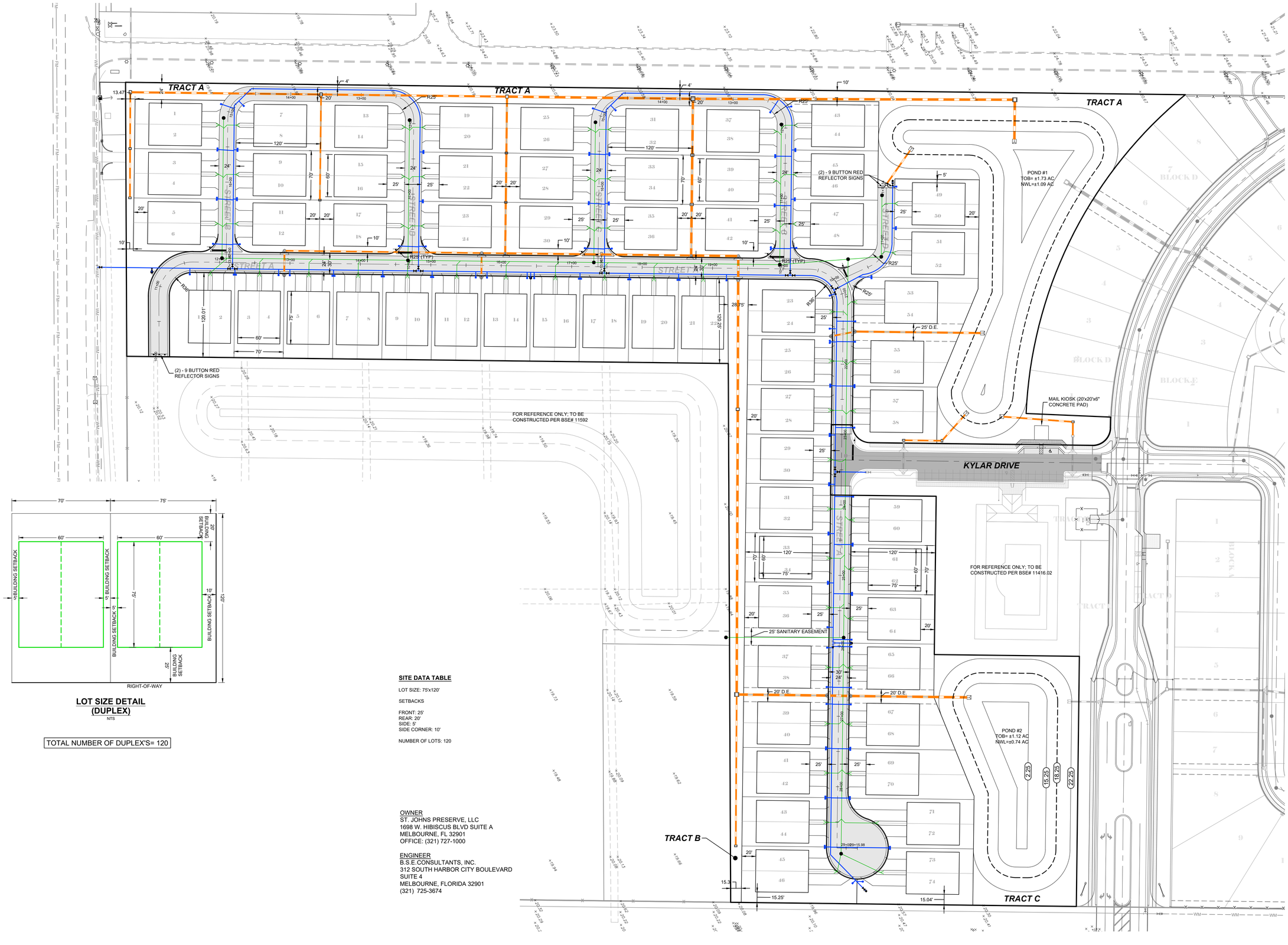
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SYMBOLS SHOWN ARE GRAPHIC IN NATURE; DUE TO SCALE, ALL DESIGN ELEMENTS ARE NOT NECESSARILY SHOWN ON PLAN VIEWS. THE CONTRACTOR SHALL ALSO REFER TO SPECIFICATION AND DETAIL SHEETS AS WELL AS THE COMPLETE PLAN SET.



LOT SIZE DETAIL (DUPLEX)
NTS

TOTAL NUMBER OF DUPLEX'S= 120

SITE DATA TABLE

LOT SIZE: 75'x120'

SETBACKS

FRONT: 25'
REAR: 20'
SIDE: 5'
SIDE CORNER: 10'

NUMBER OF LOTS: 120

OWNER
ST. JOHNS PRESERVE, LLC
1698 W. HIBISCUS BLVD SUITE A
MELBOURNE, FL 32901
OFFICE: (321) 727-1000

ENGINEER
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(IN FEET)
VERTICAL DATUM: NGVD29

DATE:	06/16/21
DESIGN/DRAWN:	ALS/AH

PROJECT TITLE
ST. JOHNS PRESERVE - TRACT A TOWNHOMES

SHEET TITLE
SITE PLAN

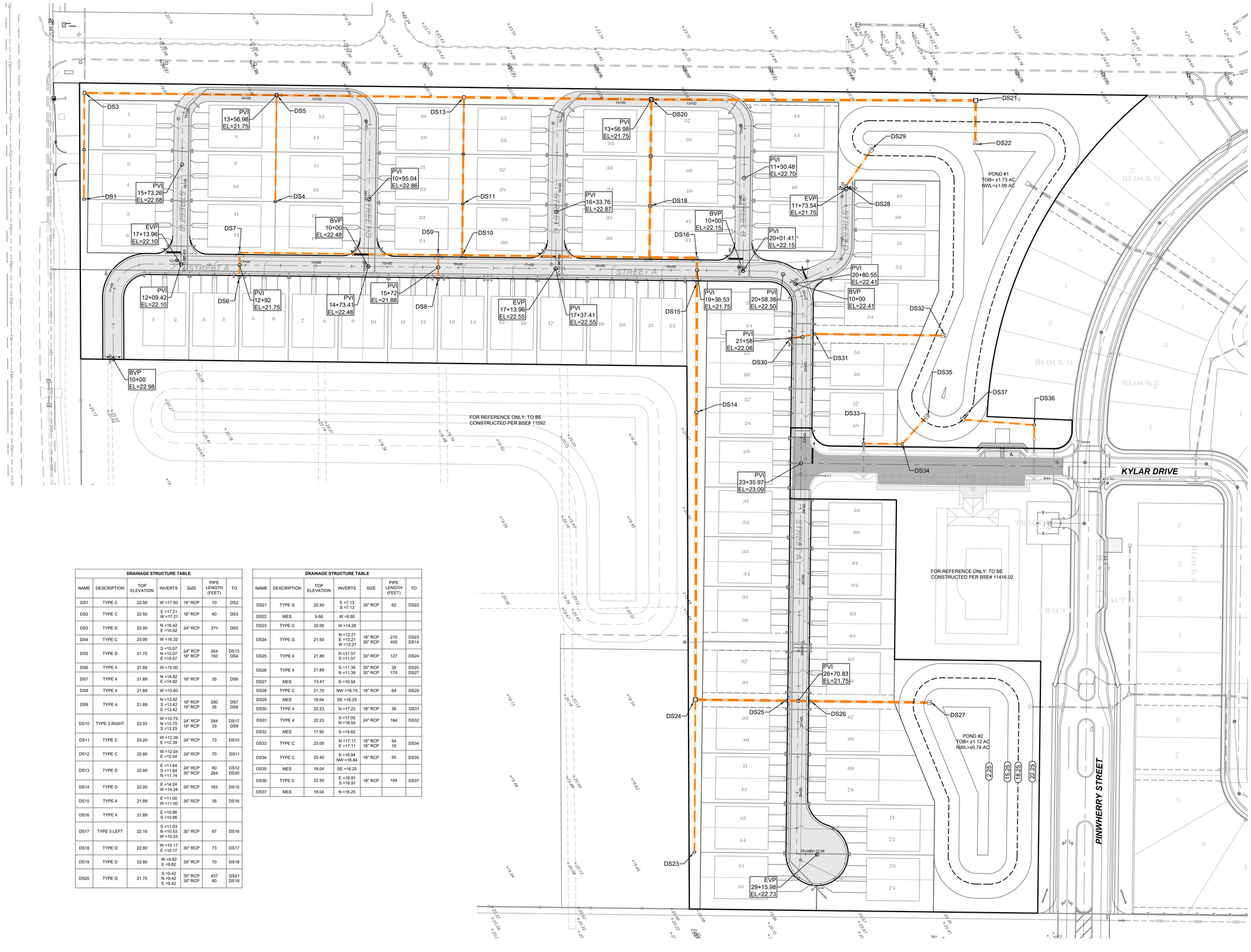
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DRAINAGE STRUCTURE TABLE

NAME	DESCRIPTION	TOP ELEVATION	INVERTS	SIZE	PIPE LENGTH (FEET)	TO
DS1	TYPE C	22.50	W =17.50	18" RCP	70	DS2
DS2	TYPE C	22.50	E =17.21 W =17.21	18" RCP	80	DS3
DS3	TYPE D	22.00	N =16.42 E =16.92	24" RCP	271	DS5
DS4	TYPE C	23.00	W =16.32			
DS5	TYPE D	21.75	S =15.07 N =15.07 E =15.57	24" RCP 18" RCP	264 150	DS13 DS4
DS6	TYPE 4	21.89	W =15.00			
DS7	TYPE 4	21.89	N =14.82 E =14.82	18" RCP	35	DS6
DS8	TYPE 4	21.89	W =13.60			
DS9	TYPE 4	21.89	N =13.42 S =13.42 E =13.42	18" RCP 18" RCP	280 35	DS7 DS8
DS10	TYPE 3 RIGHT	22.03	W =12.75 N =12.75 S =13.25	24" RCP 18" RCP	264 33	DS17 DS9
DS11	TYPE C	23.20	W =12.39 E =12.39	24" RCP	73	DS10
DS12	TYPE C	22.80	W =12.04 E =12.04	24" RCP	70	DS11
DS13	TYPE D	22.40	E =11.84 S =11.64 N =11.14	24" RCP 30" RCP	80 264	DS12 DS20
DS14	TYPE D	22.00	E =14.24 W =14.24	30" RCP	183	DS15
DS15	TYPE 4	21.89	E =11.00 W =11.00	30" RCP	35	DS16
DS16	TYPE 4	21.89	E =10.86 S =10.86			
DS17	TYPE 3 LEFT	22.16	S =11.03 N =10.53 W =10.53	30" RCP	67	DS16
DS18	TYPE D	22.80	W =10.17 E =10.17	30" RCP	73	DS17
DS19	TYPE D	22.80	W =9.82 E =9.82	30" RCP	70	DS18
DS20	TYPE G	21.75	S =9.42 N =9.42 E =9.42	30" RCP 30" RCP	457 80	DS21 DS19

DRAINAGE STRUCTURE TABLE

NAME	DESCRIPTION	TOP ELEVATION	INVERTS	SIZE	PIPE LENGTH (FEET)	TO
DS21	TYPE G	22.40	E =7.13 S =7.13	30" RCP	62	DS22
DS22	MES	9.68	W =6.80			
DS23	TYPE C	22.00	W =14.28			
DS24	TYPE G	21.50	N =12.21 E =13.21 W =12.21	18" RCP 30" RCP	215 405	DS23 DS14
DS25	TYPE 4	21.89	N =11.57 S =11.57	30" RCP	127	DS24
DS26	TYPE 4	21.89	S =11.39 N =11.39	30" RCP 30" RCP	35 170	DS25 DS27
DS27	MES	13.41	S =10.54			
DS28	TYPE C	21.75	NW =16.75	18" RCP	64	DS29
DS29	MES	18.04	SE =16.25			
DS30	TYPE 4	22.23	N =17.23	18" RCP	36	DS31
DS31	TYPE 4	22.23	S =17.05 N =16.55	24" RCP	184	DS32
DS32	MES	17.95	S =15.62			
DS33	TYPE C	23.00	N =17.11 E =17.11	18" RCP 18" RCP	54 10	DS34
DS34	TYPE C	22.40	S =16.84 NW =16.84	18" RCP	55	DS35
DS35	MES	18.04	SE =16.25			
DS36	TYPE C	22.50	E =16.91 S =16.91	18" RCP	104	DS37
DS37	MES	18.04	N =16.25			

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STATE OF FLORIDA, No. 41951

60 0 30 60
(IN FEET)
VERTICAL DATUM: NGVD29

DATE:	06/16/21
DESIGN/DRAWN:	ALS/AH

PROJECT TITLE
ST. JOHNS PRESERVE - TRACT A TOWNHOMES

SHEET TITLE
OVERALL DRAINAGE PLAN

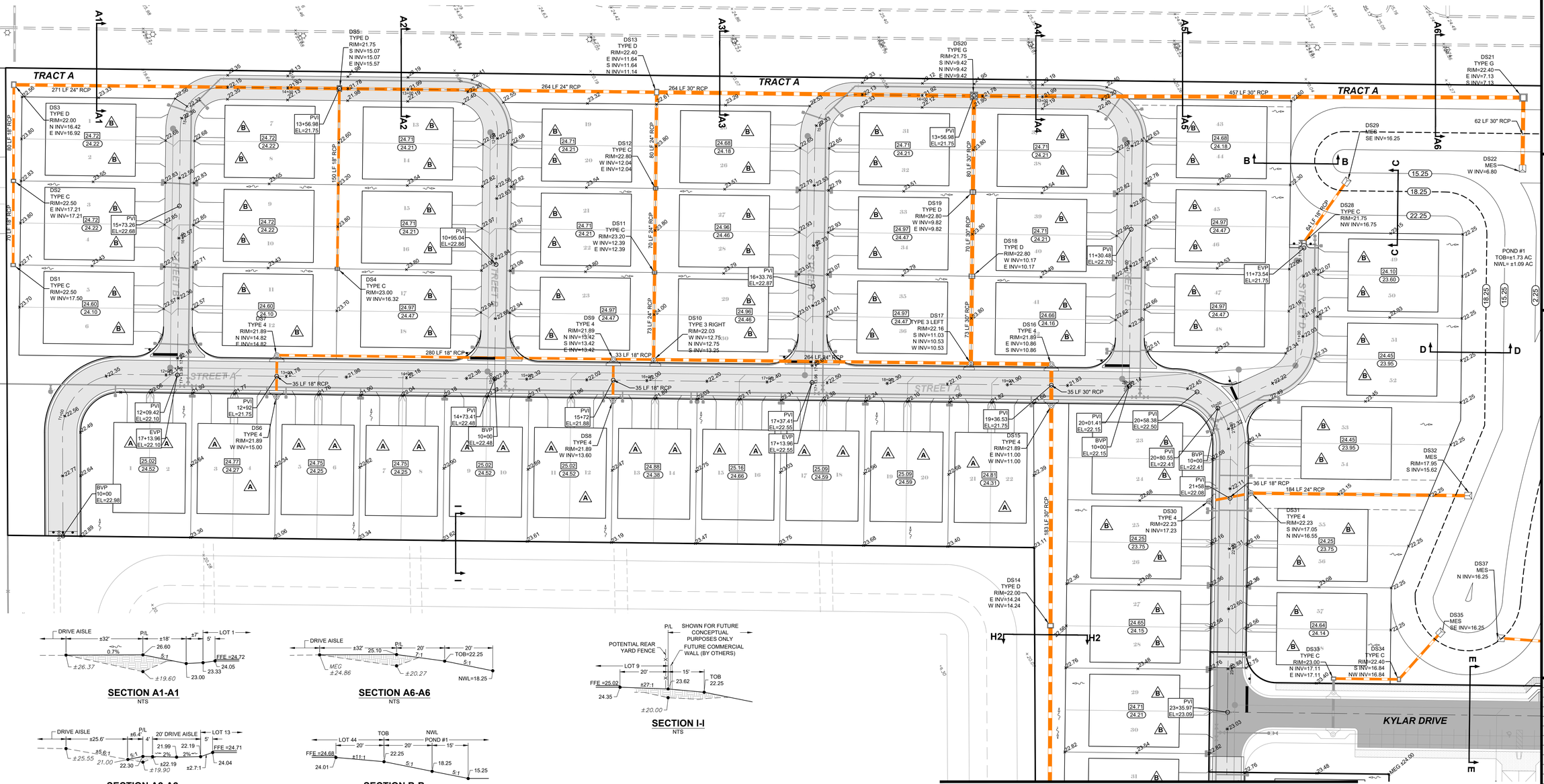
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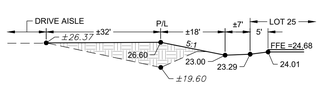
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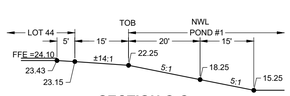
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SECTION A2-A2
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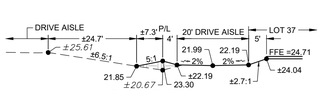
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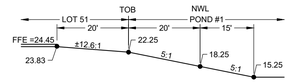
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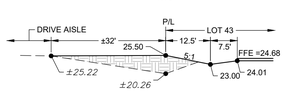
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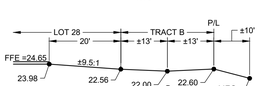
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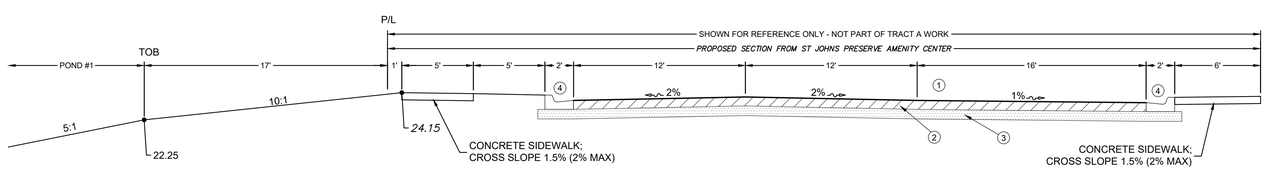
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NTS



SECTION A5-A5
NTS



SECTION H2-H2
NTS



SECTION E-E
N.T.S.

KEY

1. 1-1/2" TYPE SP-12.5 ASPHALTIC CONCRETE
2. 8" BASE WITH FDOT APPROVED PRIME COAT
   OPTIONS:
   - LIMEROCK, L.B.R. 100 MIN.
   - CEMENTED COQUINA SHELL, F.D.O.T. APPROVED, L.B.R. 100 MIN., COMPACTED TO 98% MAX. DENSITY PER AASHTO T-180
3. 10" STABILIZED SUB-GRADE, L.B.R. 50 MIN., COMPACTED TO 98% MAX. DENSITY PER AASHTO T-180 (EXTEND 6" BEYOND CURB)
4. TYPE "F" CURB - 2' WIDE

SEE SHEET 8 FOR CONTINUATION

B.S.E. CONSULTANTS, INC.
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CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905

SCOTT M. GLAUBITZ, P.E. & P.L.S.
STATE OF FLORIDA, No. 33659 No. 4151

HASSAN A. KAMAL, P.E.
STATE OF FLORIDA, No. 41951

40 0 20 40
(IN FEET)
VERTICAL DATUM: NGVD29

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DATE:	06/16/21
DESIGN/DRAWN:	ALS/AH

PROJECT TITLE

ST. JOHNS PRESERVE - TRACT A TOWNHOMES

SHEET TITLE

PAVING, GRADING, AND DRAINAGE PLAN

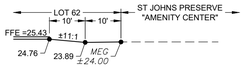
PROJECT NO.
11416.01

DRAWING NO.
1141601_402_007

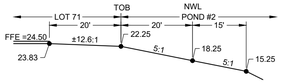
SHEET
7 of 18

SYMBOLS SHOWN ARE GRAPHIC IN NATURE; DUE TO SCALE, ALL DESIGN ELEMENTS ARE NOT NECESSARILY SHOWN ON PLAN VIEWS. THE CONTRACTOR SHALL ALSO REFER TO SPECIFICATION AND DETAIL SHEETS AS WELL AS THE COMPLETE PLAN SET.

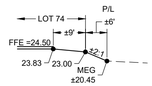
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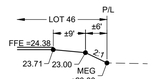
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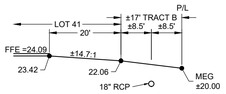
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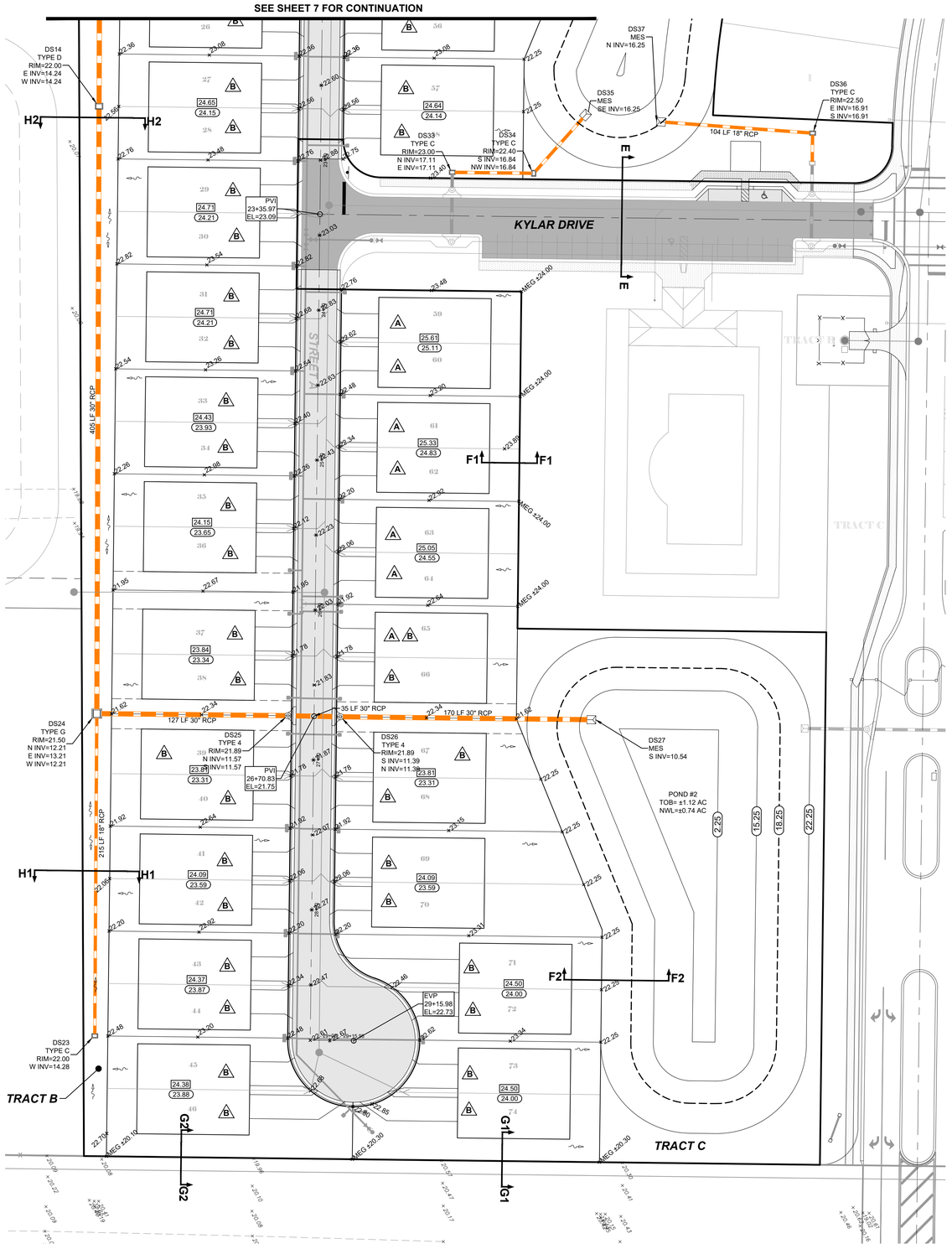
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SECTION G2-G2
NTS



SECTION H1-H1
NTS



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STATE OF FLORIDA, No. 41951

40 0 20 40
(IN FEET)
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DESIGN/DRAWN:	ALS/AH

PROJECT TITLE

ST. JOHNS PRESERVE - TRACT A TOWNHOMES

SHEET TITLE

PAVING, GRADING, AND DRAINAGE PLAN

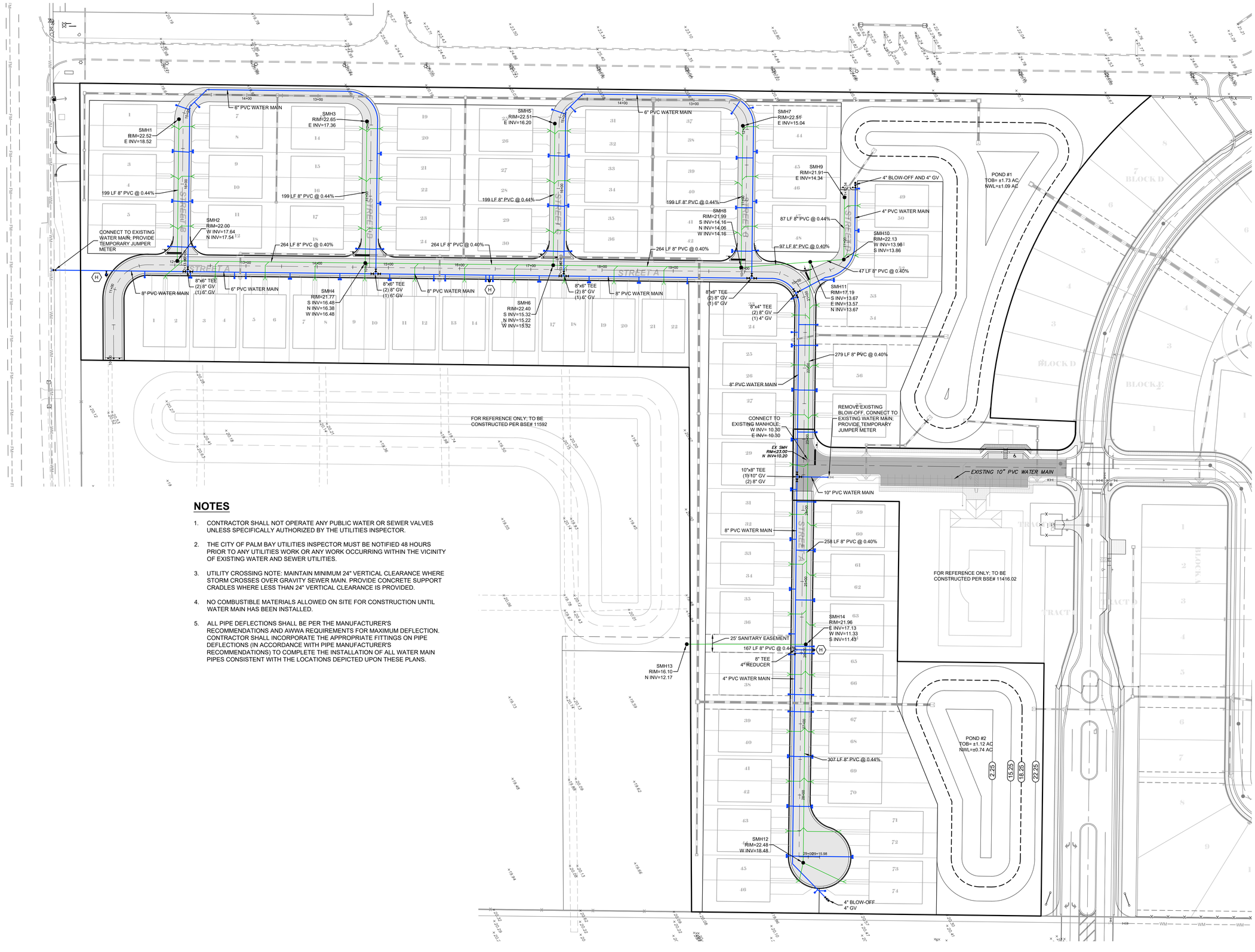
PROJECT NO.
11416.01

DRAWING NO.
1141601_402_008

SHEET
8 of 18

SYMBOLS SHOWN ARE GRAPHIC IN NATURE; DUE TO SCALE, ALL DESIGN ELEMENTS ARE NOT NECESSARILY SHOWN ON PLAN VIEWS. THE CONTRACTOR SHALL ALSO REFER TO SPECIFICATION AND DETAIL SHEETS AS WELL AS THE COMPLETE PLAN SET.

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NOTES

1. CONTRACTOR SHALL NOT OPERATE ANY PUBLIC WATER OR SEWER VALVES UNLESS SPECIFICALLY AUTHORIZED BY THE UTILITIES INSPECTOR.
2. THE CITY OF PALM BAY UTILITIES INSPECTOR MUST BE NOTIFIED 48 HOURS PRIOR TO ANY UTILITIES WORK OR ANY WORK OCCURRING WITHIN THE VICINITY OF EXISTING WATER AND SEWER UTILITIES.
3. UTILITY CROSSING NOTE: MAINTAIN MINIMUM 24" VERTICAL CLEARANCE WHERE STORM CROSSES OVER GRAVITY SEWER MAIN. PROVIDE CONCRETE SUPPORT CRADLES WHERE LESS THAN 24" VERTICAL CLEARANCE IS PROVIDED.
4. NO COMBUSTIBLE MATERIALS ALLOWED ON SITE FOR CONSTRUCTION UNTIL WATER MAIN HAS BEEN INSTALLED.
5. ALL PIPE DEFLECTIONS SHALL BE PER THE MANUFACTURER'S RECOMMENDATIONS AND AWWA REQUIREMENTS FOR MAXIMUM DEFLECTION. CONTRACTOR SHALL INCORPORATE THE APPROPRIATE FITTINGS ON PIPE DEFLECTIONS (IN ACCORDANCE WITH PIPE MANUFACTURER'S RECOMMENDATIONS) TO COMPLETE THE INSTALLATION OF ALL WATER MAIN PIPES CONSISTENT WITH THE LOCATIONS DEPICTED UPON THESE PLANS.

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(H) FIRE HYDRANT ASSEMBLY

60 0 30 60
(IN FEET)
VERTICAL DATUM: NGVD29

DATE:	06/16/21
DESIGN/DRAWN:	ALS/AH

PROJECT TITLE

ST. JOHNS PRESERVE - TRACT A TOWNHOMES

SHEET TITLE

UTILITIES PLAN

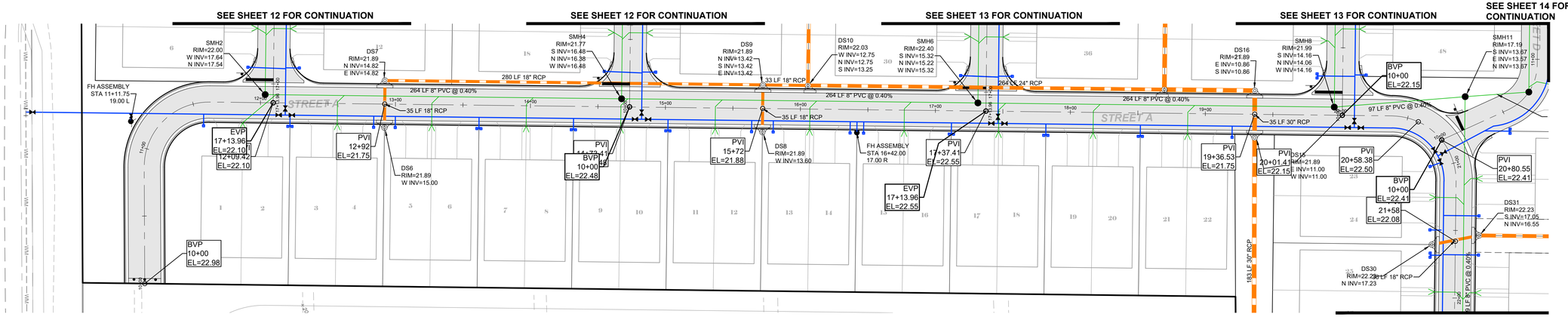
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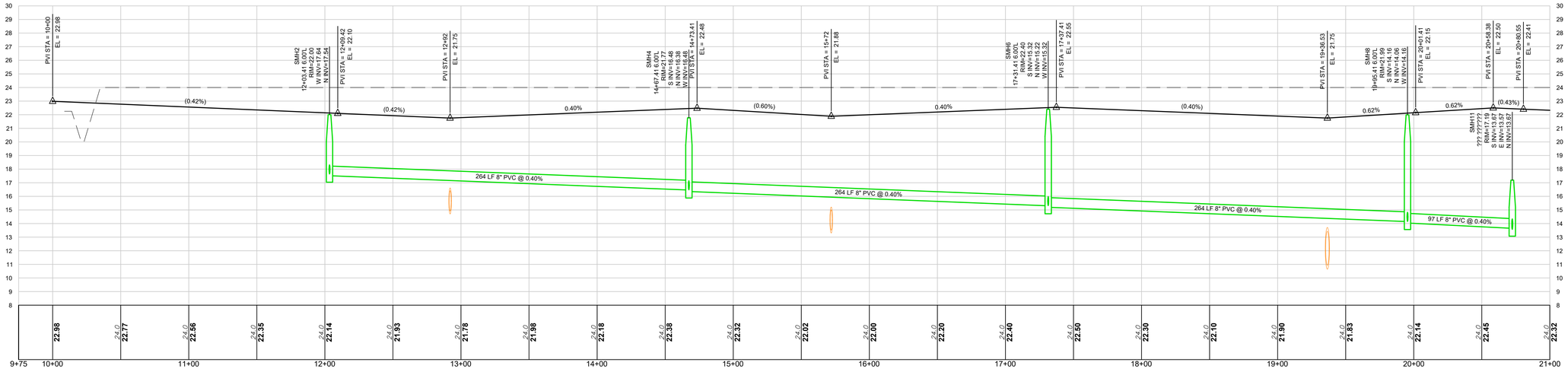
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SHEET 9 of 18

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STATE OF FLORIDA, No. 41951

(IN FEET)

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DESIGN/DRAWN:	ALS/AH

PROJECT TITLE

ST. JOHNS PRESERVE - TRACT A TOWNHOMES

SHEET TITLE

STREET A STA 10+00 TO 20+50

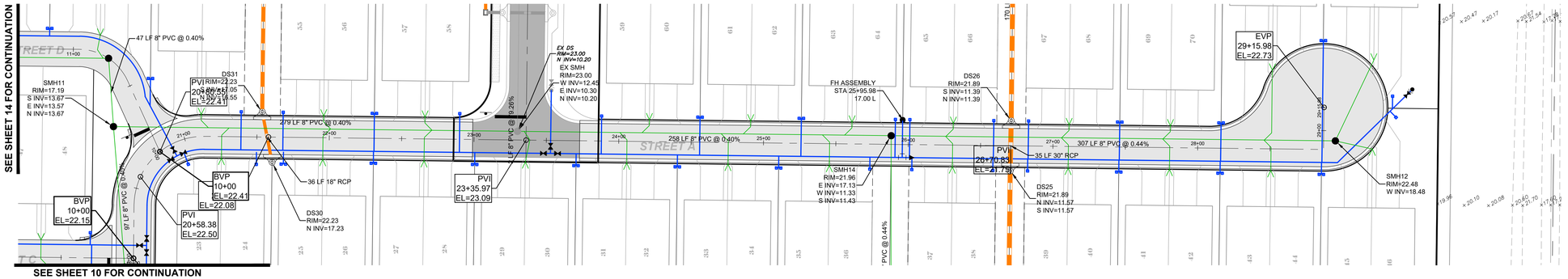
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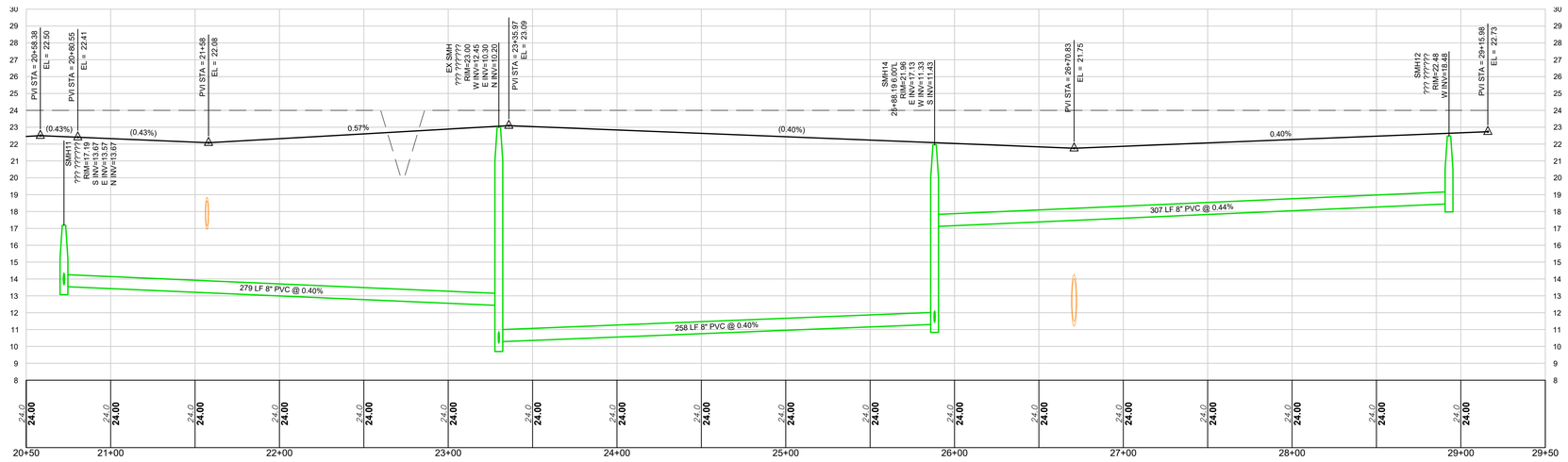
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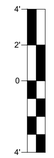
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10 of 18

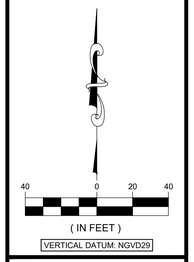
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HASSAN A. KAMAL, P.E.
STATE OF FLORIDA, No. 41951

DATE:	06/16/21
DESIGN/DRAWN:	ALS/AH

PROJECT TITLE

ST. JOHNS PRESERVE - TRACT A TOWNHOMES

SHEET TITLE

STREET A STA 20+50 TO 29+15.98

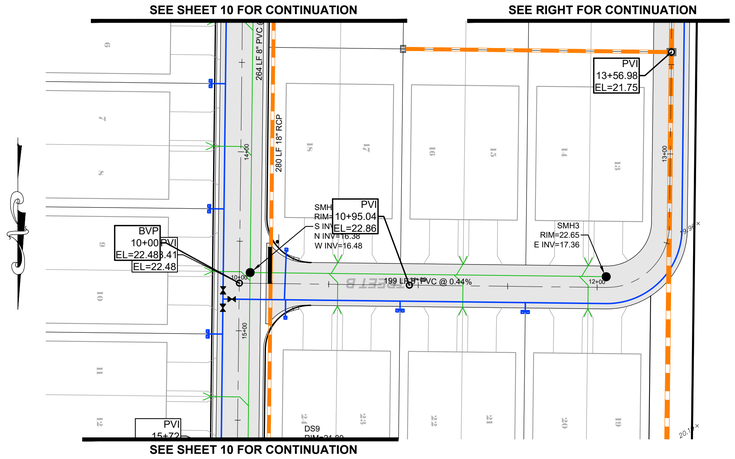
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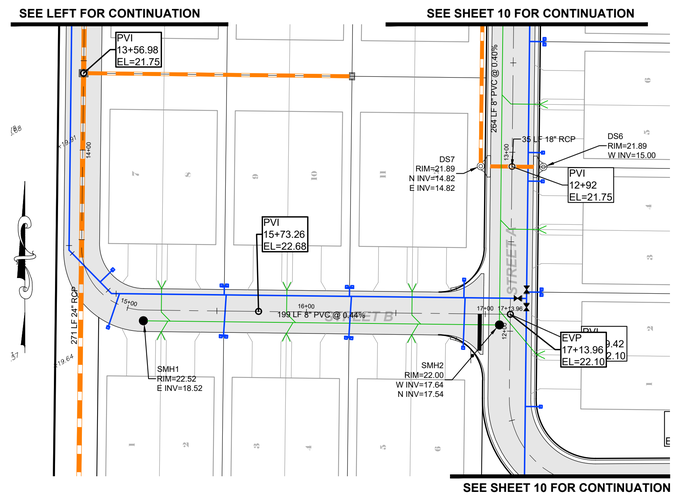
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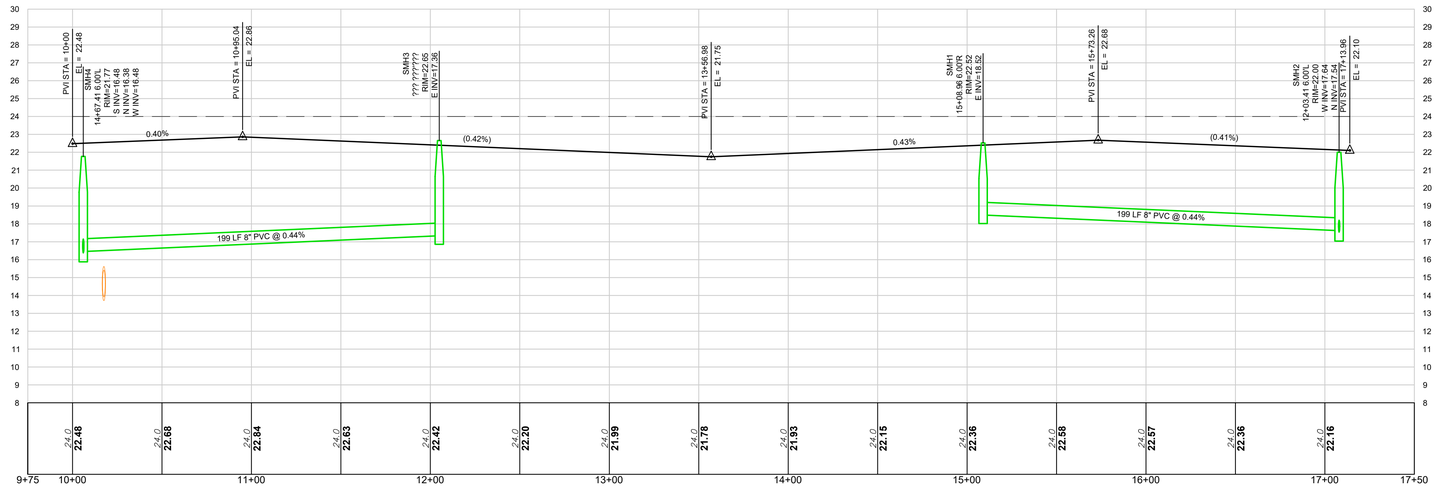
SHEET
11 of 18

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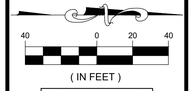
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PROJECT TITLE

ST. JOHNS PRESERVE - TRACT A TOWNHOMES

SHEET TITLE

STREET B STA 10+00 TO 17+13.96

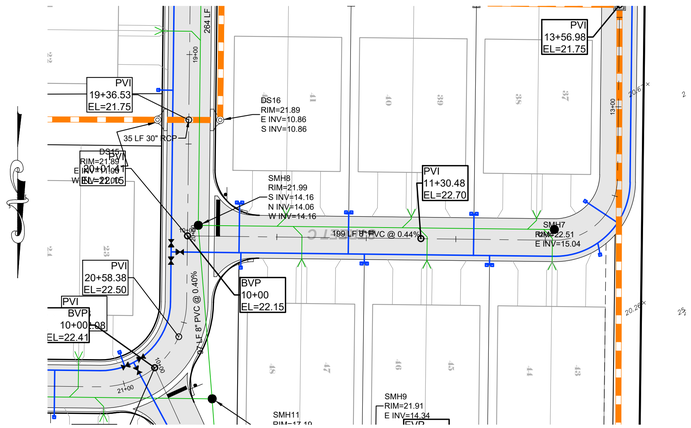
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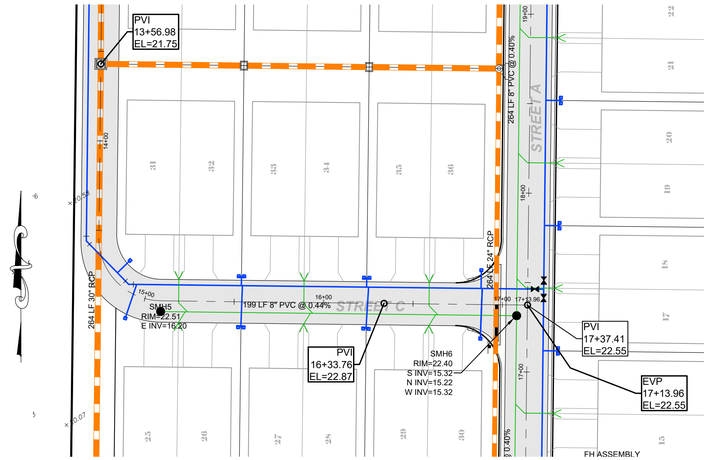
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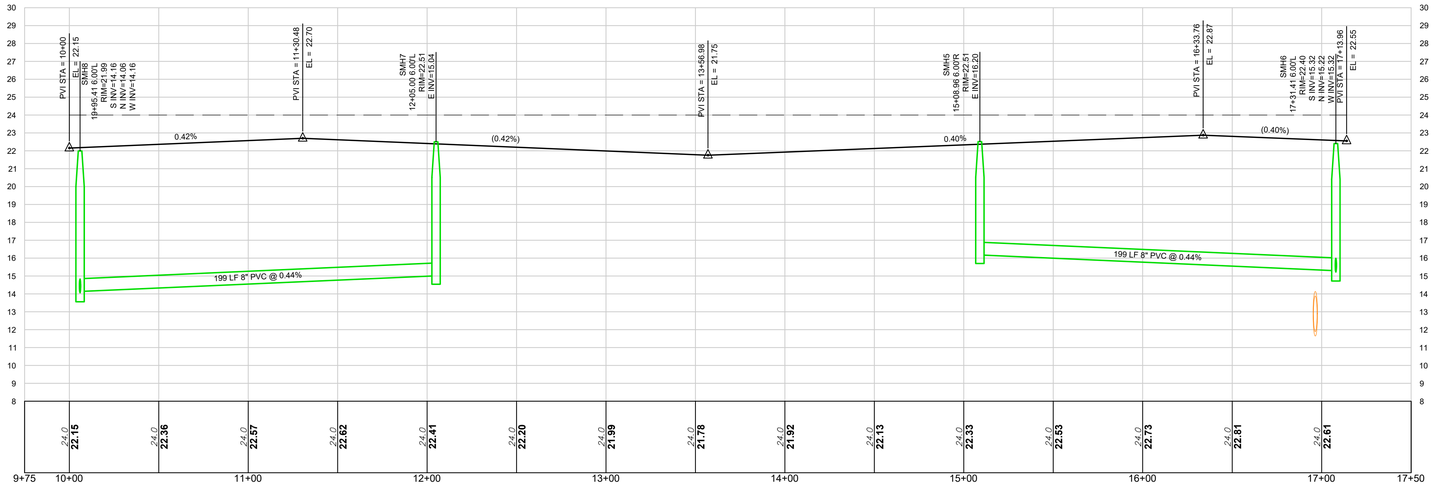
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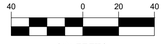
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ST. JOHNS PRESERVE - TRACT A TOWNHOMES

SHEET TITLE

STREET C STA 10+00 TO 17+13.96

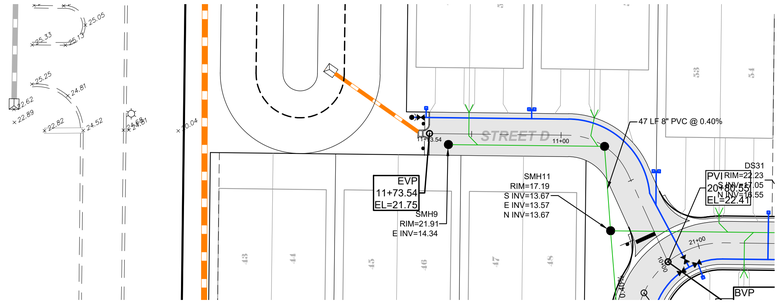
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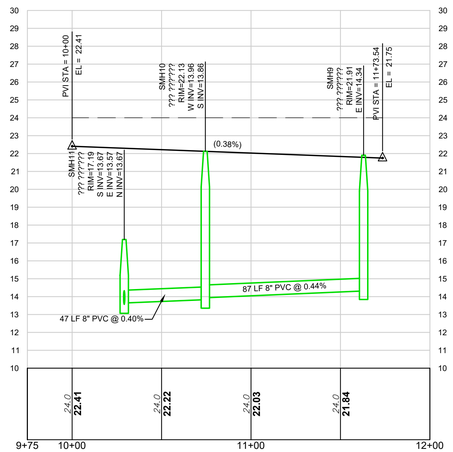
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13 of 18

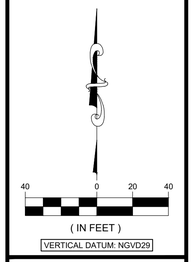
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SHEET TITLE

STREET D STA 10+00 TO 11+73.54

PROJECT NO.
11416.01

DRAWING NO.
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SHEET
14 of 18

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THRUST RESTRAINTS FOR DUCTILE IRON PIPE
MINIMUM LENGTH (FT) TO BE RESTRAINED ON EACH SIDE OF FITTING(S)

FITTINGS	PIPE SIZE								
	4"	6"	8"	10"	12"	16"	20"	24"	30"
90° BEND	43(54)	61(76)	79(97)	95(117)	110(137)	140(173)	168(207)	194(239)	229(282)
45° BEND	18(22)	25(31)	33(40)	39(49)	46(57)	58(72)	69(86)	80(99)	95(117)
22.5° BEND	9(11)	12(15)	16(19)	19(23)	22(27)	28(34)	33(41)	39(47)	46(56)
11.25° BEND	4(5)	6(7)	8(10)	9(12)	11(13)	14(17)	17(20)	19(24)	23(28)
TEE BRANCH	43(61)	70(99)	96(137)	121(172)	145(207)	190(272)	233(333)	275(393)	330(475)
DEAD END	67(96)	95(136)	123(176)	149(212)	174(248)	221(316)	266(380)	310(443)	370(528)

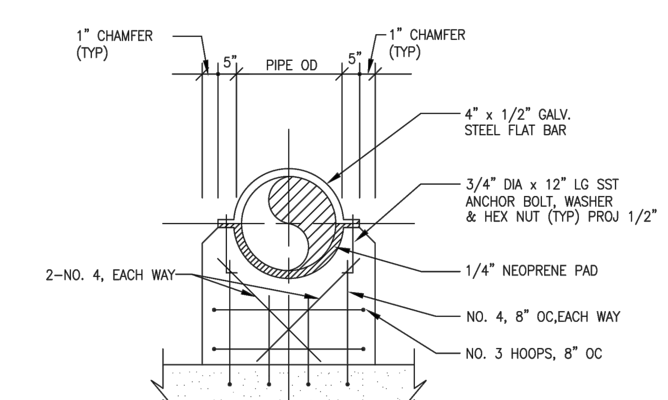
THRUST RESTRAINTS FOR PVC AND PE PIPE
MINIMUM LENGTH (FT) TO BE RESTRAINED ON EACH SIDE OF FITTING(S)

FITTINGS	PIPE SIZE								
	4"	6"	8"	10"	12"	16"	20"	24"	30"
90° BEND	58	82	107	128	149	189	227	262	309
45° BEND	24	34	45	53	62	78	93	108	128
22.5° BEND	12	16	22	26	30	38	45	53	62
11.25° BEND	5	8	11	12	15	19	23	26	31
TEE BRANCH	58	95	130	163	196	257	315	371	448
DEAD END	90	128	166	201	235	298	359	419	500

NOTES:

1 FITTINGS SHALL BE RESTRAINED JOINTS UNLESS OTHERWISE INDICATED
2 INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO OR GREATER THAN SHOWN IN THE TABLE.
3 WHERE TWO OR MORE FITTINGS ARE TOGETHER, USE FITTING WHICH YIELDS GREATEST LENGTH OF RESTRAINED PIPE.
4 IN LINE VALVES AND THROUGH RUN OF TEES OUTSIDE LIMITS OF RESTRAINED JOINTS FROM OTHER FITTINGS NEED NOT BE RESTRAINED UNLESS OTHERWISE INDICATED
5 LENGTHS SHOWN IN THE TABLE WILL HAVE BEEN CALCULATED IN ACCORDANCE WITH THE PROCEDURE OUTLINED IN "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" AS PUBLISHED BY DIPRA, WITH THE FOLLOWING ASSUMPTIONS,
   WORKING PRESSURE 70 P.S.I.
   SOIL DESIGNATION 2000 P.S.F.
   LAYING CONDITION TYPE 2 SAFETY FACTOR 1.5
6 FOR PIPE ENCASED IN POLYETHYLENE, INCREASE THE GIVEN VALUES BY A FACTOR OF 1.2, OR USE VALUES IN PARENTHESIS.

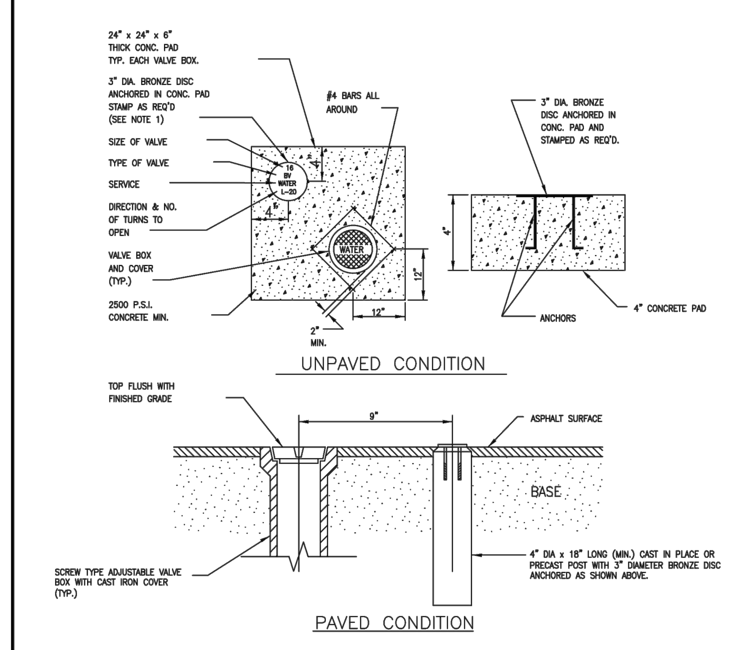
CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	RESTRAINED JOINT TABLE	DWN.BY: M.K.L. REV. E.K.R. 2-4-10	DATE: 1-1-08 DWG. NO. FIG 6



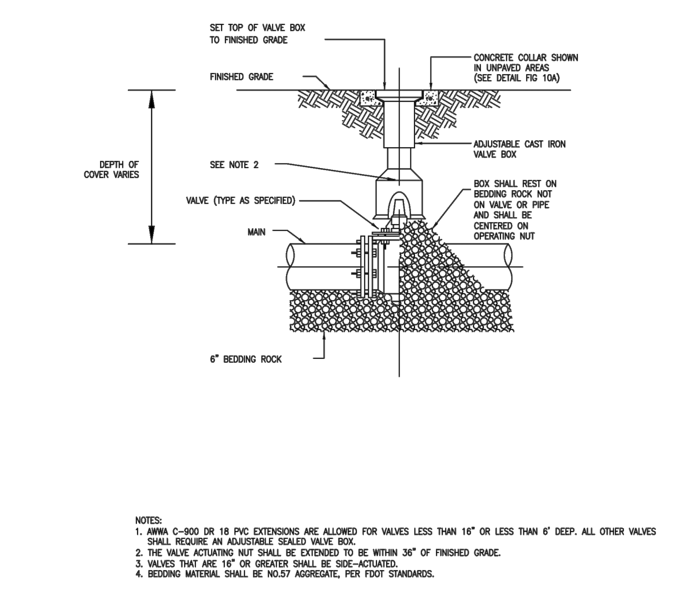
NOTES:

1.) SET # 4 VERT. IN EPOXY GROUT IN EXIST. SLABS.
2.) MINIMUM SUPPORT DEPTH SHALL EQUAL NOMINAL PIPE DIAMETER UNLESS OTHERWISE SPECIFIED.
3.) MINIMUM CONCRETE STRENGTH, 3,000 PSI.
4.) ALL ANCHORS, FASTENERS, BOLTS, NUTS, RODS, WASHERS, SCREWS, ETC. SHALL BE 316 ST. STL.
5.) ENGINEER OF RECORD (EOR) TO PROVIDE STRUCTURAL DESIGN FOR APPROVAL BY PBUD.

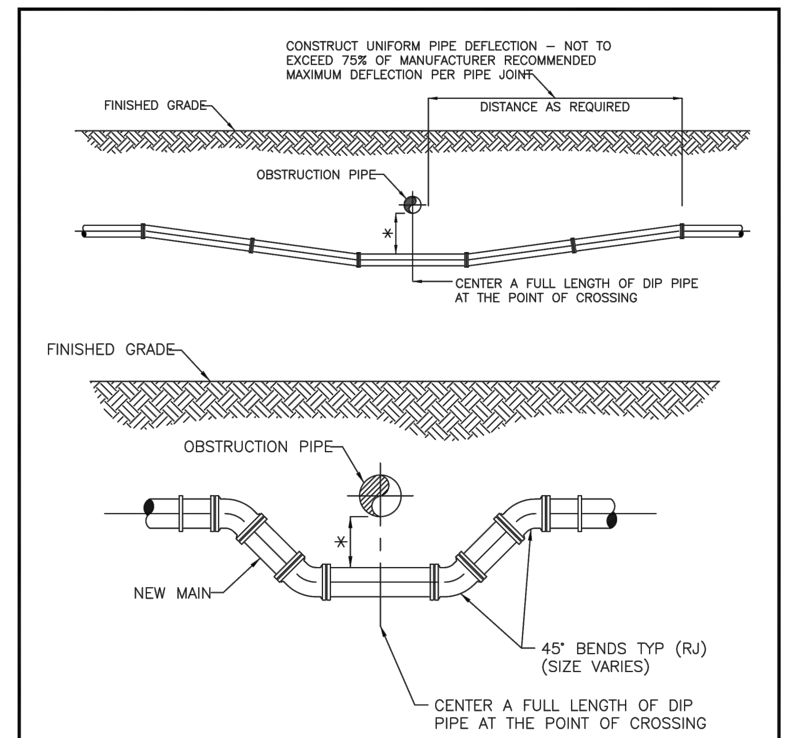
CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	CONCRETE PIPE SUPPORT DETAIL	DWN.BY: M.K.L. REV.	DATE: 1-1-08 DWG. NO. FIG 7



CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	VALVE BOX COLLAR DETAILS WITH ID DISK	DWN.BY: M.K.L. REV. E.K.R. 9-19-11	DATE: 1-1-08 DWG. NO. FIG 10A

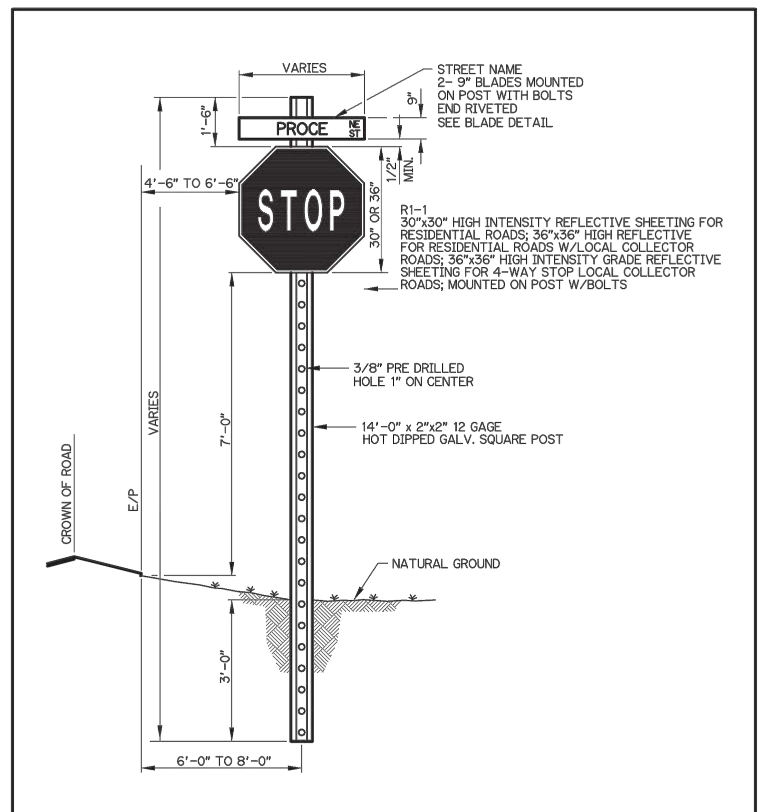


CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	GATE/PLUG VALVE AND BOX DETAIL	DWN.BY: M.K.L. REV. E.K.R. 9-19-11	DATE: 1-1-08 DWG. NO. FIG 10B



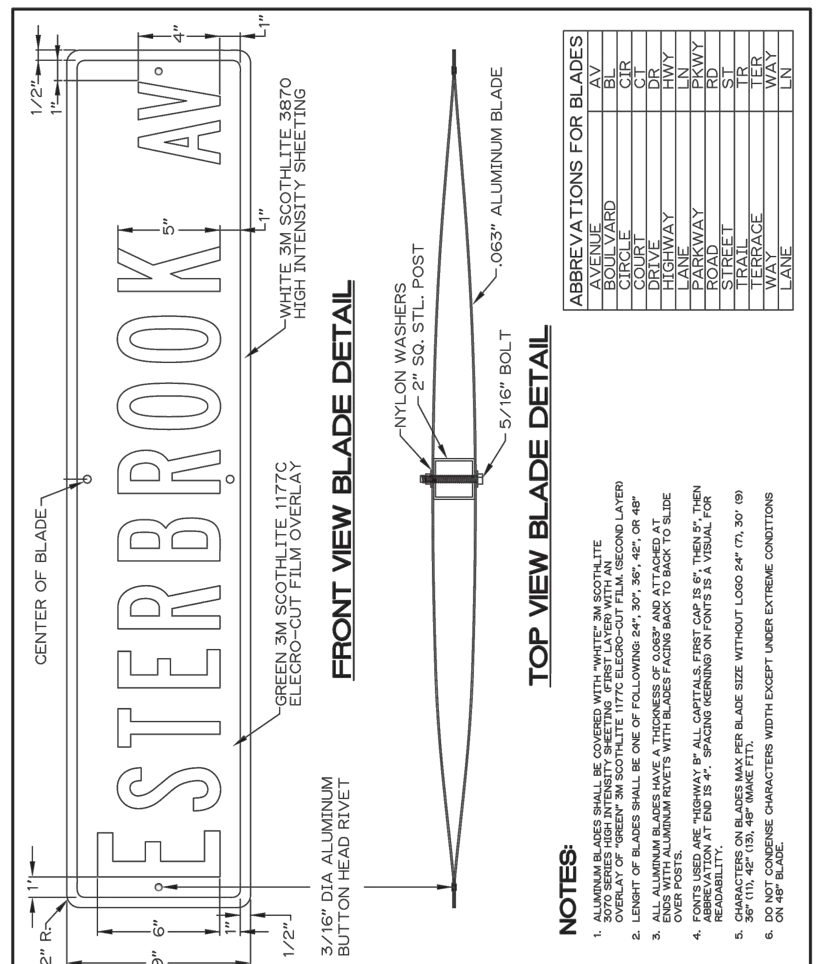
* PIPE CROSSING CONFLICTS WILL BE RESOLVED IN ACCORDANCE WITH THE SEPARATIONS REQUIREMENTS NOTED IN FAC62-555-314(1) AND OR THE FDEP PERMIT. FDEP IS THE SOLE MITIGATION AUTHORITY FOR CONFLICT RESOLUTION AND THE CONTRACTOR WILL SUBMIT REQUEST FOR PIPE SEPARATION MITIGATION THROUGH THE PROJECT ENGINEER TO FDEP. ONLY THE FDEP WRITTEN MITIGATION WILL BE REFLECTED IN THE UTILITY AS-BUILT DRAWINGS. (REF SECT02660)

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	DEFLECTION OF PIPE DETAIL AT UTILITY CROSSING BY JOINT DEFLECTION	DWN.BY: M.K.L. REV.	DATE: 1-1-08 DWG. NO. FIG 13

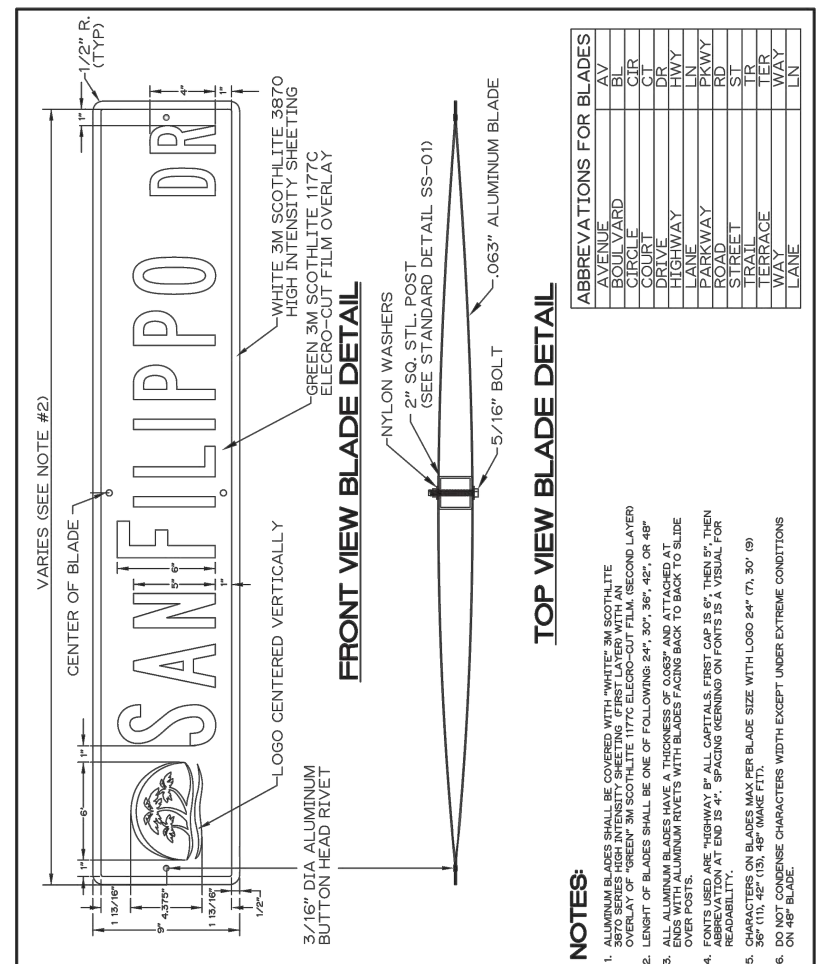


STREET SIGN INSTALLATION DETAIL

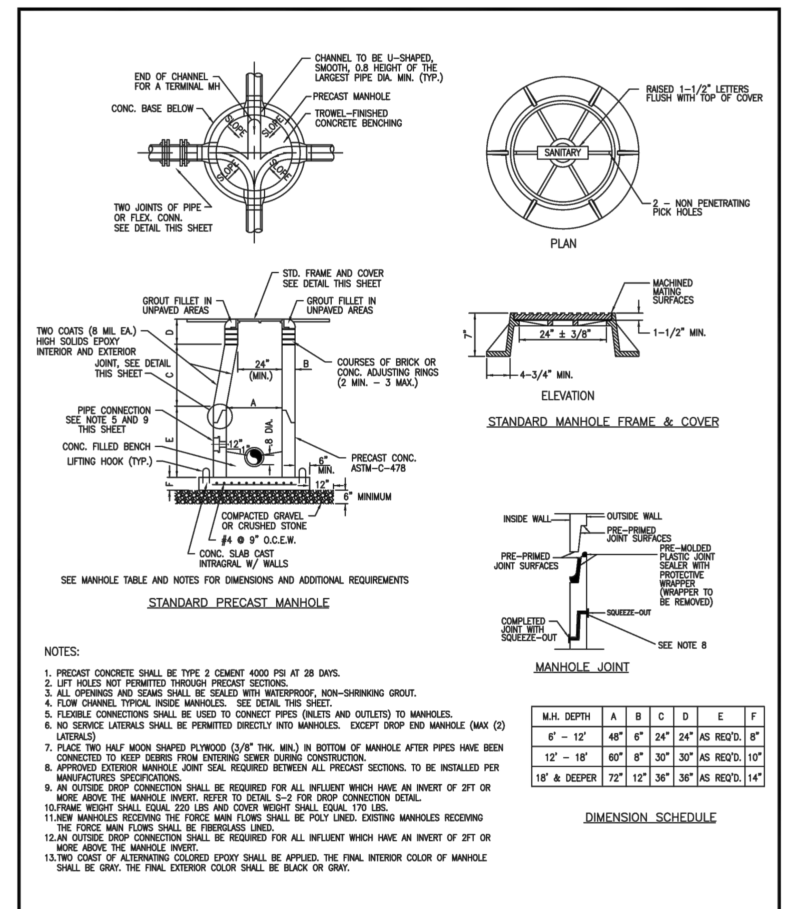
CITY OF PALM BAY PUBLIC WORKS DEPARTMENT	STANDARD SIGN DETAIL SS - 01	DATE: APRIL 07 APPROVED:



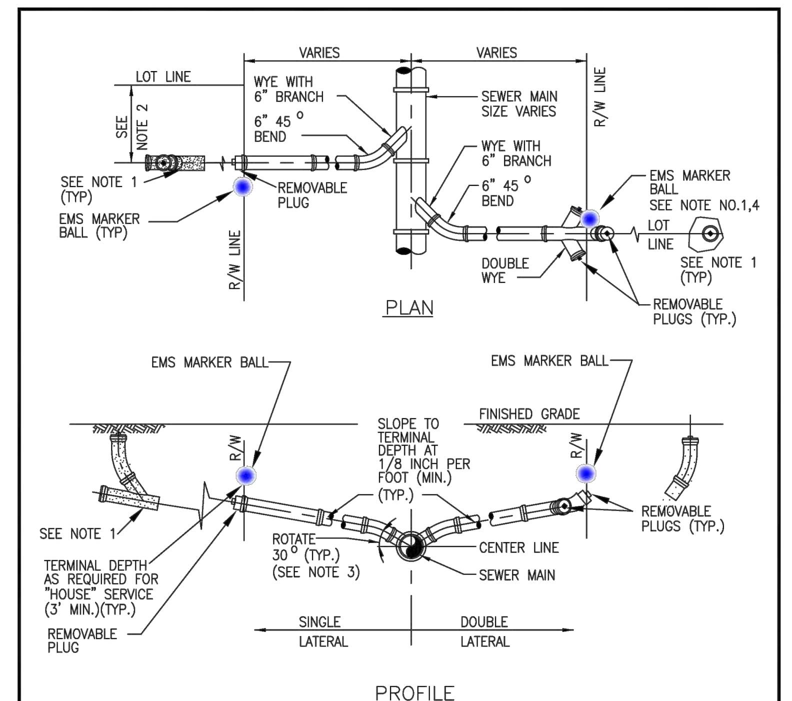
CITY OF PALM BAY PUBLIC WORKS DEPARTMENT	STANDARD SIGN DETAIL SS - 04	DATE: APRIL 07 APPROVED:



CITY OF PALM BAY PUBLIC WORKS DEPARTMENT	STANDARD SIGN DETAIL SS - 05	DATE: APRIL 07 APPROVED:



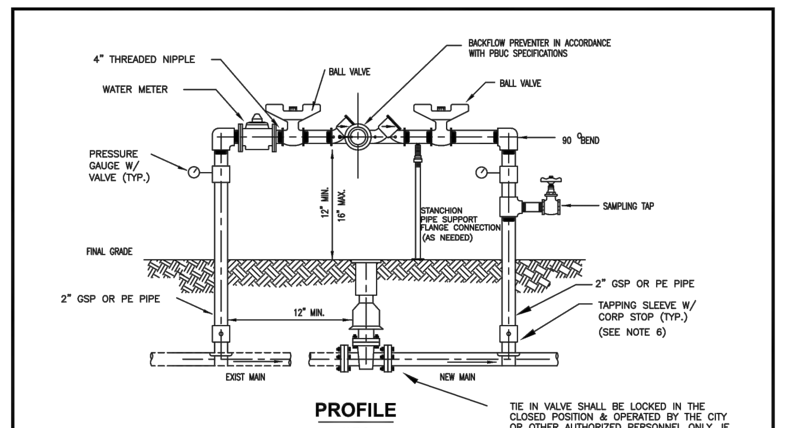
CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	GRAVITY SEWER MANHOLE DETAILS	DWN.BY: M.K.L. REV. E.K.R. 8-15-13	DATE: 1-1-08 DWG. NO. S-1A



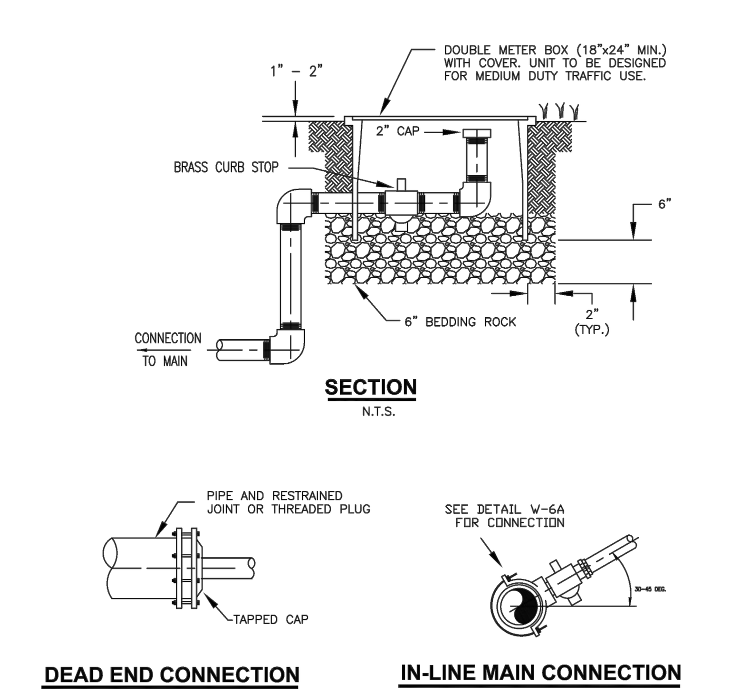
NOTES:

1. CLEAN-OUT (SHOWN SHADED) SHALL BE INSTALLED BY THE BUILDER IN ACCORDANCE WITH STANDARD PLUMBING CODE.
2. LOCATE SINGLE LATERAL AS CLOSE TO LOT LINE AS POSSIBLE, 25' MAXIMUM.
3. INVERT OF SERVICE LATERAL SHALL NOT ENTER SEWER MAIN BELOW HORIZONTAL CENTER LINE.
4. INSTALL EMS MARKER BALL AT THE END OF EACH SERVICE LINE.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	SEWER SERVICE LATERAL DETAIL	DWN.BY: M.K.L. REV.	DATE: 1-1-08 DWG. NO. S-3



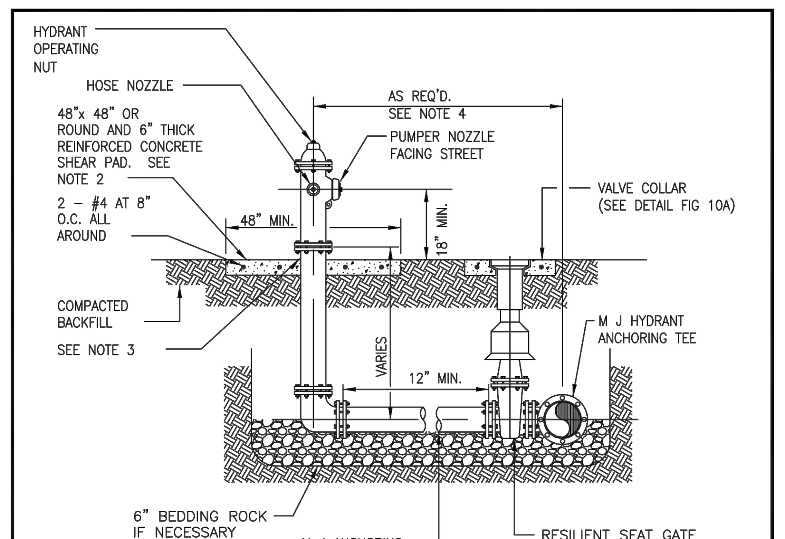
CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	WATER MAIN BLOWOFF VALVE AND BOX DETAIL	DWN.BY: M.K.L. REV. E.K.R. 11-3-11	DATE: 1-1-08 DWG. NO. W-1



NOTES:

1. ALL 2" PIPE SHALL BE POLYETHYLENE TUBING C.T.S. OR BRASS PIPE WITH THREADED (NPT) BRASS JOINTS.
2. A 2" CAP SHALL BE INSTALLED AT THE END OF THE BLOW OFF
3. METER BOX SHALL BE SET TO A DISTANCE OF 1 TO 2 INCHES ABOVE THE FINAL GRADE

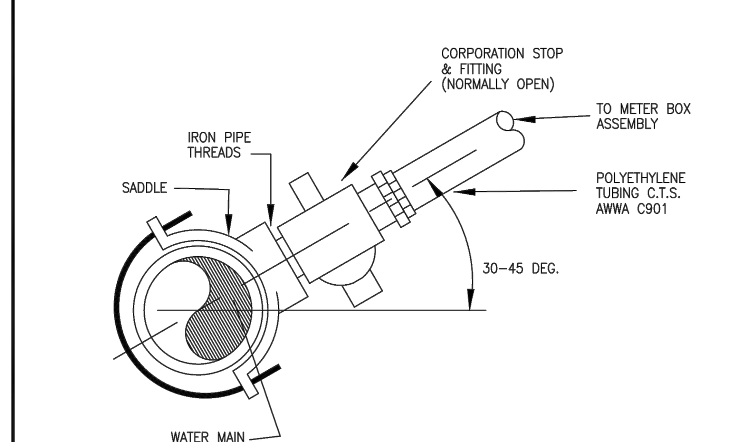
CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	WATER MAIN BLOWOFF VALVE AND BOX DETAIL	DWN.BY: M.K.L. REV. E.K.R. 06-13-11	DATE: 1-1-08 DWG. NO. W-2



NOTES:

1. FIRE HYDRANT SHALL BE SUPPLIED WITHOUT A WEEP HOLE, OR WITH A PERMANENTLY PLUGGED WEEP HOLE.
2. THE BUILDER MAY INSTALL THE SHEAR PAD RECESSED UP TO 4 INCHES BELOW FINISHED GRADE AND SOD THE RECESSED SECTION.
3. CLEARANCE BETWEEN BOTTOM OF BOLTS AND TOP OF SHEAR PAD SHALL BE A 6" MINIMUM.
4. IF THE HYDRANT IS LOCATED IN THE BOTTOM OF A ROADSIDE SWALE, MOVE THE HYDRANT TO BACKSLOPE OF THE SWALE.
5. CLEARANCE OF SEVEN AND ONE HALF FEET IN FRONT OF AND TO THE SIDES OF FIRE HYDRANTS AND APPLIANCES SHALL BE MAINTAINED. CLEARANCE OF FOUR FEET TO THE REAR OF FIRE HYDRANTS SHALL BE MAINTAINED.
6. FIRE HYDRANTS IN RESIDENTIAL SUBDIVISION/DEVELOPMENTS SHALL BE INSTALLED, WITH INTERMEDIATE HYDRANTS SPACED AT INTERVALS NOT TO EXCEED 1,000 FEET APART. FIRE HYDRANTS SHALL BE LOCATED NOT FURTHER THAN 15 FEET NOR LESS THAN 3 FEET FROM AN IMPROVED SURFACE. City Ord. Sec. 33.28. THE MINUMIM MEASUREMENT STARTS FROM THE OUTSIDE EDGE OF THE CURB.

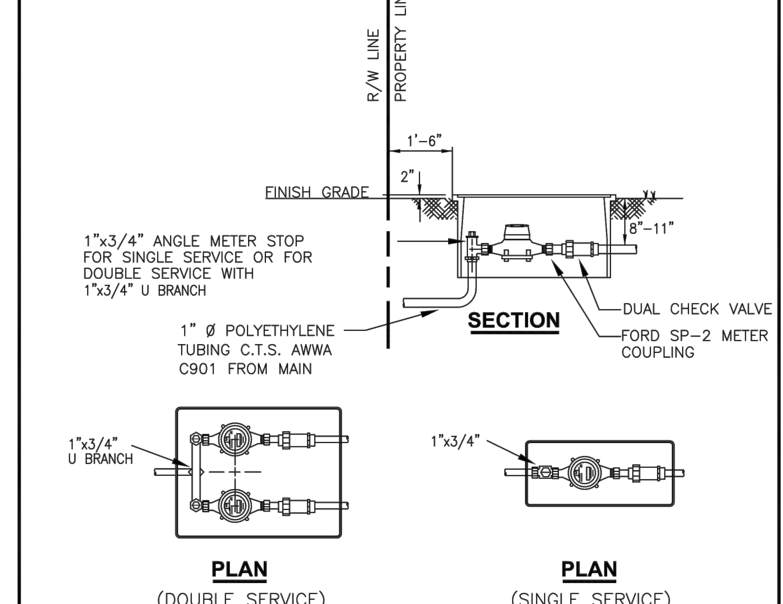
CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	FIRE HYDRANT ASSEMBLY DETAIL	DWN.BY: M.K.L. REV. E.K.R. 2-3-11	DATE: 1-1-08 DWG. NO. W-3



NOTES:

1. ALL MATERIALS MUST CONFORM TO THE CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS HANDBOOK SPECIFICATIONS

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	TYPICAL MAIN CONNECTION	DWN.BY: M.K.L. REV. E.K.R. 1-29-10	DATE: 1-1-08 DWG. NO. W-6A



NOTES:

1. ALL MATERIALS MUST CONFORM TO THE CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS HANDBOOK SPECIFICATIONS

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	TYPICAL RESIDENTAL SERVICE CONNECTION	DWN.BY: M.K.L. REV. E.K.R. 1-29-10	DATE: 1-1-08 DWG. NO. W-6B

B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING

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MELBOURNE, FLORIDA 32901
PHONE: (321) 725-3674 FAX: (321) 723-1159

CERTIFICATE OF PROFESSIONAL ENGINEERS
BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING
BUSINESS AUTHORIZATION: LB0004905

SCOTT M. GLAUBITZ, P.E. & P.L.S.
STATE OF FLORIDA, No. 33659 No. 4151

HASSAN A. KAMAL, P.E.
STATE OF FLORIDA, No. 41951

9	
8	
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DATE:	06/16/21
DESIGN/DRAWN:	ALS/AH

PROJECT TITLE

ST. JOHNS PRESERVE - TRACT A TOWNHOMES

SHEET TITLE

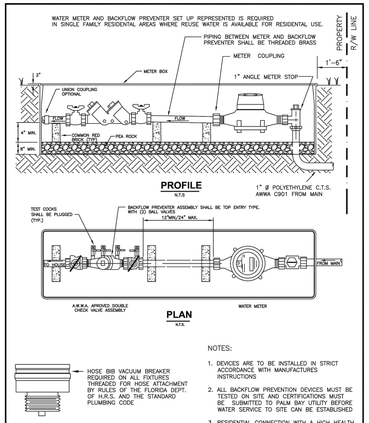
CITY OF PALM BAY DETAILS

PROJECT NO.
11416.01

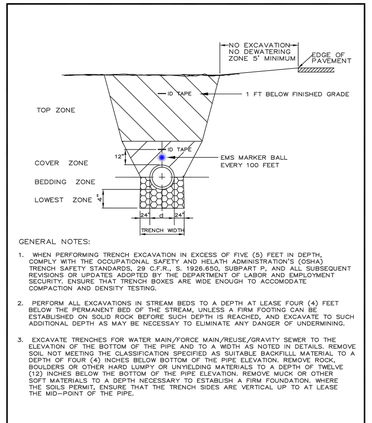
DRAWING NO.
1141601_402_015

SHEET
15 of 18

SYMBOLS SHOWN ARE GRAPHIC IN NATURE; DUE TO SCALE, ALL DESIGN ELEMENTS ARE NOT NECESSARILY SHOWN ON PLAN VIEWS. THE CONTRACTOR SHALL ALSO REFER TO SPECIFICATION AND DETAIL SHEETS AS WELL AS THE COMPLETE PLAN SET.



CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	SINGLE FAMILY RESIDENTIAL BACKFLOW AND WATER METER ASSEMBLY LOW HEALTH HAZARD	DWN.BY: M.C.L. REV. E.K.R. 03-04-11	DATE: 1-1-08 DWG. NO. W-7



GENERAL NOTES:

1. WHEN PERFORMING TRENCH EXCAVATION IN EXCESS OF FIVE (5) FEET IN DEPTH, COMPLY WITH THE OCCUPATIONAL SAFETY AND HELATH ADMINISTRATION'S (OSHA) TRENCH SAFETY STANDARDS, 29 C.F.R., S. 1926.650, SUBPART P, AND ALL SUBSEQUENT REVISIONS OR UPDATES ADOPTED BY THE DEPARTMENT OF LABOR AND EMPLOYMENT SECURITY. ENSURE THAT TRENCH BOXES ARE WIDE ENOUGH TO ACCOMODATE COMPACTION AND DENSITY TESTING.
2. PERFORM ALL EXCAVATIONS IN STREAM BEDS TO A DEPTH AT LEASE FOUR (4) FEET BELOW THE PERMANENT BED OF THE STREAM, UNLESS A FIRM FOOTING CAN BE ESTABLISHED ON SOLID ROCK BEFORE SUCH DEPTH IS REACHED, AND EXCAVATE TO SUCH ADDITIONAL DEPTH AS MAY BE NECESSAY TO ELIMINATE ANY DANGER OF UNDERMINING.
3. EXCAVATE TRENCHES FOR WATER MAIN,/FORCE MAIN/REUSE/GRAVITY SEWER TO THE ELEVATION OF THE BOTTOM OF THE PIPE AND TO A WIDTH AS NOTED IN DETAILS. REMOVE SOIL NOT MEETING THE CLASSIFICATION SPECIFIED AS SUITABLE BACKFILL MATERIAL TO A DEPTH OF FOUR (4) INCHES BELOW BOTTOM OF THE PIPE ELEVATION. REMOVE ROCK, BOULDERS OR OTHER HARD LUMPY OR UNYIELDING MATERIALS TO A DEPTH OF TWELVE (12) INCHES BELOW THE BOTTOM OF THE PIPE ELEVATION. REMOVE MUCK OR OTHER SOFT MATERIALS TO A DEPTH NECESSARY TO ESTABLISH A FIRM FOUNDATION. WHERE THE SOILS PERMIT, ENSURE THAT THE TRENCH SIDES ARE VERTICAL UP TO AT LEASE THE MID-POINT OF THE PIPE.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	EXCAVATION AND BACKFILL FOR UTILITIES PIPE PAGE 1	DWN.BY: M.C.L. REV. E.K.R. 10-26-10	DATE: 1-1-08 DWG. NO. FIG 1

(CONT. FROM SHEET 1)

GENERAL NOTES:

4. PROVIDE NORMAL DEWATERING EQUIPMENT INCLUDING, BUT NOT LIMITED TO SURFACE PUMPS, SUMP PUMPS, WELLPOINTS AND HEADER PIPE AND TRENCHING/DIGGING MACHINERY.
5. BACKFILL TO THE ORIGINAL GROUND SURFACE OR SUBGRADE SURFACE OF OPENINGS MADE FOR STRUCTURES, WITH A SUFFICIENT ALLOWANCE FOR SETTLEMENT, DO NOT ALLOW HEAVY CONSTRUCTION EQUIPMENT TO CROSS OVER CULVERT OR STORM SEWER PIPES UNTIL PLACING AND COMPACTING BACKFILL MATERIAL TO THE FINISHED EARTHWORK GRADE OR TO AN ELEVATION AT LEASE (4) FEET ABOVE THE CROWN OF THE PIPE.
6. PLACE THE MATERIAL IN HORIZONTAL LAYERS NOT EXCEEDING SIX (6) INCHES COMPACTED THINKNESS, IN DEPTH ABOVE WATER LEVEL, BEHIND ABUTMENTS, WINGWALLS AND END BENTS, UNDER THE HAUNCHES OF THE PIPES AND AROUND BOX CULVERTS AND ALL STRUCTURES INCLUDING PIPE CULVERTS. THE CONTRACTOR MAY ELECT TO PLACE MATERIAL IN THICKER LIFTS OF NO MORE THAN 12 INCHES COMPACTED THICKNESS OUTSIDE THE SOIL ENVELOPE IF HE/SHE CAN DEMONSTRATE WITH THE SUCCESSFULL TEST SECTION THAT DENSITY CAN BE ACHIEVED.
7. MATERIAL:
   A) LOWEST ZONE: BACKFILL AREAS UNDERCUT BELOW THE BEDDING ZONE OF A PIPE WITH COURSE SAND, OR OTHER SUITABLE GRANULAR MATERIAL, OBTAINED FROM THE GRADING OPERATIONS ON THE PROJECT, OR A COMMERCIAL MATERIAL IF NO SUITABLE MATERIAL IS AVAILABLE.
   (12) INCHES BELOW THE BOTTOM OF THE PIPE ELEVATION. REMOVE MUCK OR OTHER SOFT MATERIALS TO A DEPTH NECESSAY TO ESTABLISH A FIRM FOUNDATION. WHERE THE SOILS PERMIT, ENSURE THAT THE TRENCH SIDES ARE VERTICAL UP TO AT LEASE THE MID-POINT OF THE PIPE.
   A) LOWEST ZONE: BACKFILL AREAS UNDERCUT BELOW THE BEDDING ZONE OF A PIPE WITH COURSE SAND, OR OTHER SUITABLE GRANULAR MATERIAL, OBTAINED FROM THE THE GRADING OPERATIONS ON THE PROJECT, OR A COMMERCIAL MATERIAL IF NO SUITABLE MATERIAL IS AVAILABLE.
   B) SOIL ENVELOPE: IN BOTH THE BEDDING ZONE AND THE COVER ZONE OF THE PIPE, BACKFILL WITH MATERIALS CLASSIFIED AS A-1, A-2, OR A-3. MATERIAL CLASSIFIED AS A-4 MAY BE USED IF THE PIPE IS CONCRETE PIPE.
   C) TOP ZONE: BACKFILL THE AREA OF THE TRENCH ABOVE THE SOIL ENVELOPE OF THE PIPE WITH MATERIALS CLASSIFIED AS A-1 OR A-3. WHEN PIPE IS UNDER ROADWAY, BACKFILL TO BOTTOM OF ROADWAY SUBGRADE. SUBGRADE AND MATERIAL SHALL BE IN ACCORDANCE WITH PLANS.
8. COMPACTION:
   A) LOWEST ZONE: COMPACT THE SOIL IN THE LOWEST ZONE TO APPROXIMATELY MATCH THE DENSITY OF THE SOIL IN WHICH THE TRENCH WAS CUT.
   B) BEDDING ZONE: IF THE TRENCH WAS NOT UNDERCUT BELOW THE BOTTOM OF THE PIPE, LOOSEN THE SOIL IN THE BOTTOM OF THE TRENCH IMMEDIATELY BELOW THE APPROXIMATE MIDDLE THIRD OF THE OUTSIDE DIAMETER OF THE PIPE. IF THE TRENCH WAS UNDERCUT, PLACE THE BEDDING MATERIAL AND LEAVE IT IN A LOOSE CONDITION BELOW THE MIDDLE THIRD OF THE OUTSIDE DIAMETER OF THE PIPE. COMPACT THE MATERIAL TO 100% MAXIMUM DENSITY PER AASHTO T-99 METHOD C. PLACE THE MATERIAL IN LIFTS NO GREATER THAN SIX (6) INCHES (COMPACTED THICKNESS).

(CONT. ON SHEET 3)

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	EXCAVATION AND BACKFILL FOR UTILITIES PIPE PAGE 2	DWN.BY: M.C.L. REV.	DATE: 1-1-08 DWG. NO. FIG 1

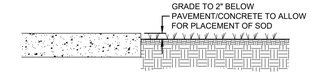
(CONT. FROM SHEET 2)

C) COVER ZONE: BEFORE PLACING THE COVER ZONE MATERIAL; LAY PIPE ACCORDING TO ALIGNMENT AND GRADES GIVEN. DO NOT ALLOW DEPARTURE FROM ALIGNMENT OR GRADE TO EXCEED 1/16 PER FOOT OF NOMINAL PIPE LENGTH; TAKE UP AND RELAY ANY PIPE THAT IS NOT TRUE TO ALIGNMENT OR WHICH SHOWS SETTLTEMENT AFTER LAYING. EXCAVATE FOR PIPE BELLS BEFORE LAYING PIPE. PLACE THE MATERIAL IN SIX (6) INCH LAYERS (COMPACTED THICKNESS), EVENLY DEPOSITED ON BOTH SIDES OF THE PIPE, AND COMPACT WITH MECHANICAL TAMPERS SUITABLE FOR THIS PURPOSE. HAND TAMP MATERIAL BELOW THE PIPE HAUNCH THAT CANNOT BE REACHED BY MECHANICAL TAMPERS. COMPACT THE MATERIAL TO 98% MAXIMUM DENSITY PER AASHTO T-99 METHOD C.

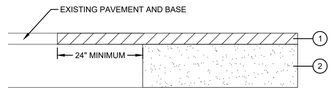
D) TOP ZONE: PLACE THE MATERIAL IN LAYERS NOT TO EXCEED 12 INCHES IN COMPACTED THICKNESS. COMPACT THE MATERIAL TO 95% MAXIMUM DENSITY PER AASHTO T-99 METHOD C FOR GREATER THAN 12 INCHES OUTSIDE OF ROADWAY, 98% FOR AREAS LESS THAN 12 INCHES TO THE EDGE OF PAVEMENT AND UNDER THE ROADWAY.

9. BACKFILL UNDER WET CONDITIONS: WHERE WET CONDITIONS ARE SUCH THAT DEWATERING BY NORMAL PUMPING METHODS WOULD NOT BE EFFECTIVE, THE USE OF COURSE AGGREGATE BELOW THE ELEVATION AT WHICH MECHANICAL TAMPERS WOULD BE EFFECTIVE WOULD BE ACCEPTABLE. USE COARSE AGGREGATE AS SPECIFIED IN FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION SECTION 901 FOR AGGREGATE SIZE NUMBER 89, 8, 78, 7, 68, 6, OR 57. PLACE THE COURSE AGGREGATE SUCH THAT IT WILL BE STABLE AND FIRM. FULLY WRAP THE AGGREGATE WITH A LAYER OF TYPE D-4 FILTER FABRIC, AS SPECIFIC ON FDOT DESIGN STANDARDS INDEX NO. 199. DO NOT PLACE COARSE AGGREGATE WITHIN FOUR (4) FEET OF THE ENDS OF THE TRENCH OR DITCH. USE NORMALLY ACCEPTED BACKFILL MATERIAL AT THE ENDS.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	EXCAVATION AND BACKFILL FOR UTILITIES PIPE PAGE 3	DWN.BY: M.C.L. REV. E.K.R. 1-28-10	DATE: 1-1-08 DWG. NO. FIG 1



SOD PLACEMENT DETAIL
N.T.S.



1. 1-1/2" TYPE S-III ASPHALT
2. 8" BASE

NOTE:
THE EXISTING ASPHALT WEARING SURFACE SHALL BE SAW CUT AND REMOVED 24" FROM THE END OF THE TRAVEL LANE WHERE NEW PAVEMENT SHALL ABUT THE EXISTING PAVEMENT.

BUTT JOINT
MATCH EXISTING PAVEMENT CONNECTION

KEY

1. 1-1/2" TYPE SP-12.5 ASPHALTIC CONCRETE
2. 8" BASE WITH FDOT APPROVED PRIME COAT
   OPTIONS:
   - LIMEROCK, L.B.R. 100 MIN.
   - CEMENTED COQUINA SHELL, F.D.O.T. APPROVED, L.B.R. 100 MIN., COMPACTED TO 98% MAX. DENSITY PER AASHTO T-180
3. 10" STABILIZED SUB-GRADE, L.B.R. 50 MIN., COMPACTED TO 98% MAX. DENSITY PER AASHTO T-180 (EXTEND 6" BEYOND CURB)
4. MIAMI CURB - 2' WIDE

"STREET A" ROAD SECTION DETAIL
N.T.S.

KEY

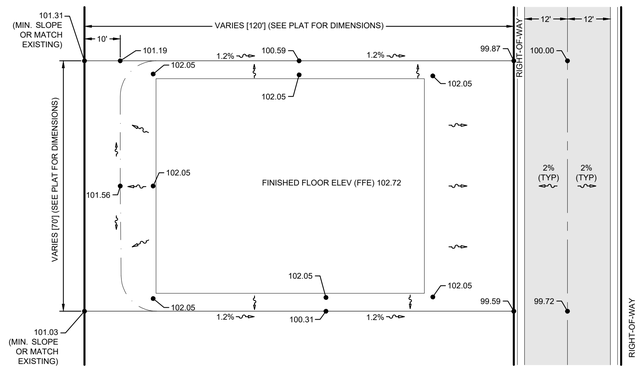
1. 1-1/2" TYPE SP-12.5 ASPHALTIC CONCRETE
2. 8" BASE WITH FDOT APPROVED PRIME COAT
   OPTIONS:
   - LIMEROCK, L.B.R. 100 MIN.
   - CEMENTED COQUINA SHELL, F.D.O.T. APPROVED, L.B.R. 100 MIN., COMPACTED TO 98% MAX. DENSITY PER AASHTO T-180
3. 10" STABILIZED SUB-GRADE, L.B.R. 50 MIN., COMPACTED TO 98% MAX. DENSITY PER AASHTO T-180 (EXTEND 6" BEYOND CURB)

"STREET B AND C" ROAD SECTION DETAIL
N.T.S.

KEY

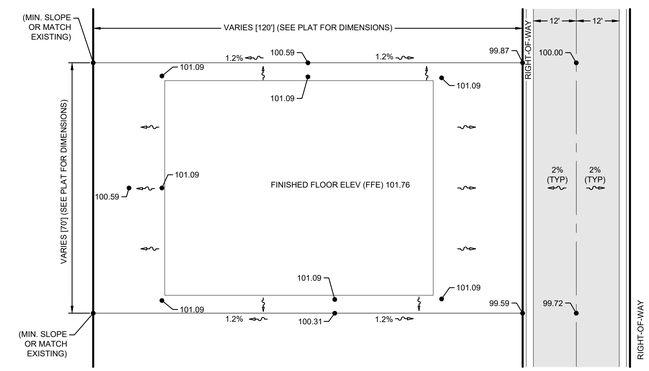
1. 1-1/2" TYPE SP-12.5 ASPHALTIC CONCRETE
2. 8" BASE WITH FDOT APPROVED PRIME COAT
   OPTIONS:
   - LIMEROCK, L.B.R. 100 MIN.
   - CEMENTED COQUINA SHELL, F.D.O.T. APPROVED, L.B.R. 100 MIN., COMPACTED TO 98% MAX. DENSITY PER AASHTO T-180
3. 10" STABILIZED SUB-GRADE, L.B.R. 50 MIN., COMPACTED TO 98% MAX. DENSITY PER AASHTO T-180 (EXTEND 6" BEYOND CURB)

"STREET D" ROAD SECTION DETAIL
N.T.S.



TYPICAL TYPE "A" LOT GRADING DETAIL
N.T.S.

LOT GRADING DESIGN PARAMETERS:
- SIDE YARD SWALE:
  - TYPE "A" LOT: 1.5%
  - TYPE "B" LOT: 1.5%
- BUILDING DIRT PAD: 6" BELOW F.F.E.
- GRADE ADJACENT TO HOME: 8" BELOW F.F.E. (6" + 2" TO ALLOW FOR SOD PLACEMENT)
- MINIMUM SLOPE AWAY FROM HOME AT REAR: 5% TO CENTRAL GRADE POINT 10' FROM BUILDING



TYPICAL TYPE "B" (SPLIT) LOT GRADING DETAIL
N.T.S.

MIAMI CURB
N.T.S.

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CONSULTING - ENGINEERING - LAND SURVEYING
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CERTIFICATE OF PROFESSIONAL ENGINEERS BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING BUSINESS AUTHORIZATION: LB0004905
SCOTT M. GLAUBITZ, P.E. & P.L.S.
STATE OF FLORIDA, No. 33659 No. 4151
HASSAN A. KAMAL, P.E.
STATE OF FLORIDA, No. 41951

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DATE:	06/16/21
DESIGN/DRAWN:	ALS/AH

PROJECT TITLE
ST. JOHNS PRESERVE - TRACT A TOWNHOMES

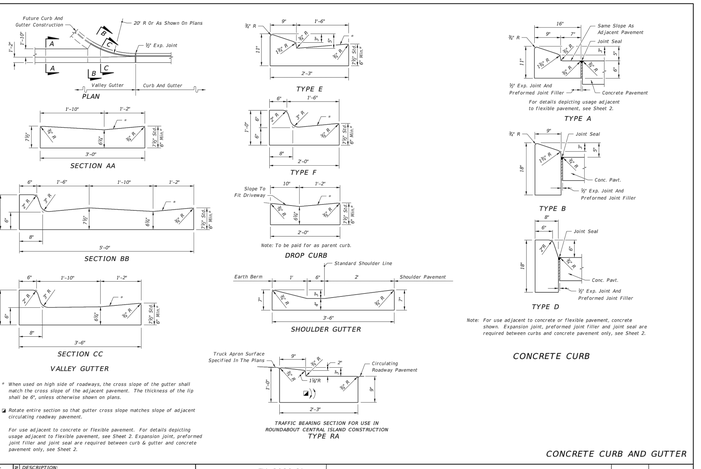
SHEET TITLE
GENERAL DETAILS

PROJECT NO.
11416.01

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CONCRETE CURB AND GUTTER

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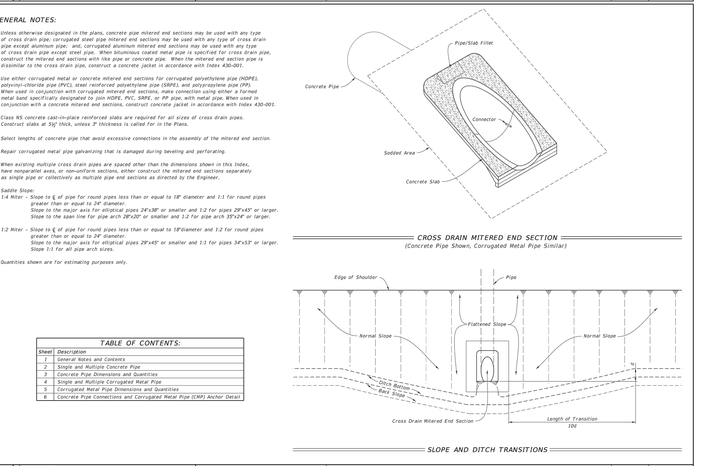
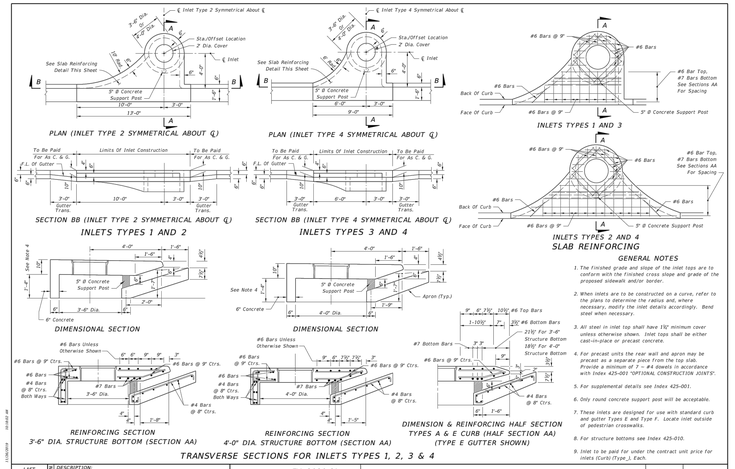


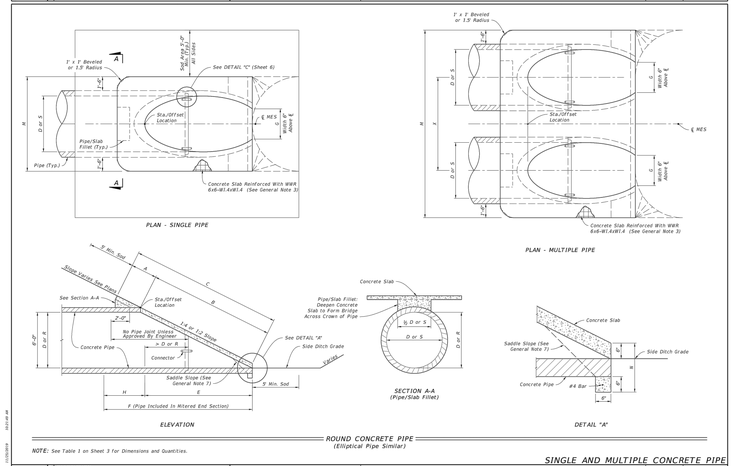
TABLE OF CONTENTS:

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2	Single and Multiple Concrete Pipe
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4	Single and Multiple Corrugated Metal Pipe
5	Corrugated Metal Pipe Dimensions and Quantities
6	Concrete Pipe Connections and Corrugated Metal Pipe (CMP) Anchor Detail

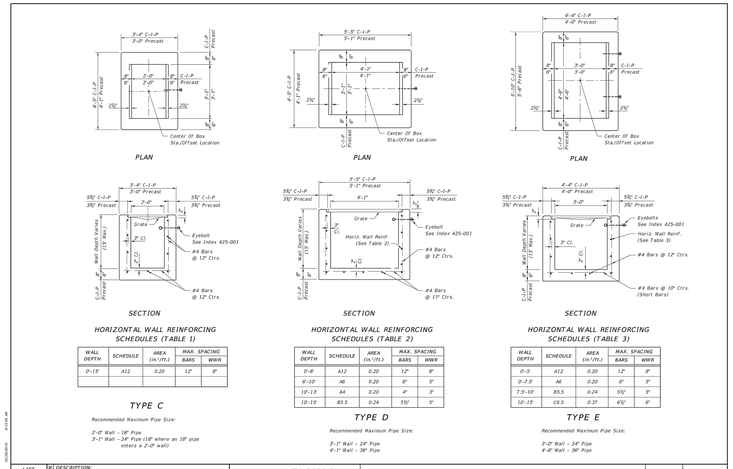
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LAST REVISION 11/01/17	DESCRIPTION:	FY 2020-21 STANDARD PLANS	CURB INLET TOPS TYPES 1, 2, 3 AND 4	INDEX 425-020	SHEET 1 of 1



LAST REVISION 11/01/19	DESCRIPTION:	FY 2020-21 STANDARD PLANS	CROSS DRAIN MITERED END SECTION	INDEX 430-021	SHEET 2 of 6

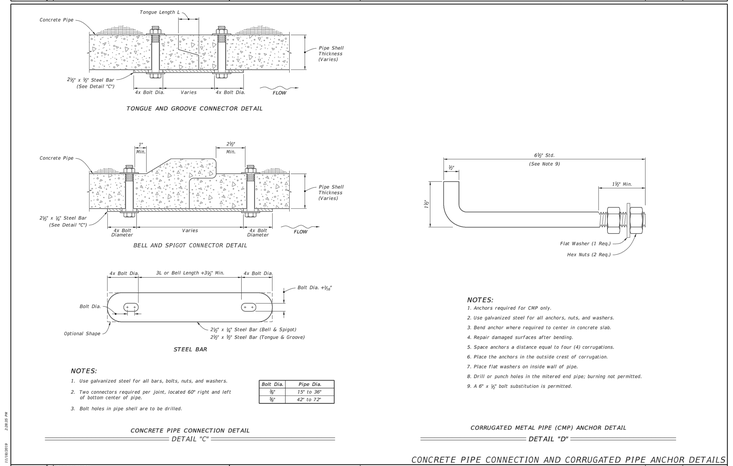


WALL DEPTH	SCHEDULE	AREA (IN²/FT.)	MAX. SPACING BARS	MAX. SPACING WWR
0'-13"	A12	0.20	12"	8"

WALL DEPTH	SCHEDULE	AREA (IN²/FT.)	MAX. SPACING BARS	MAX. SPACING WWR
0'-6"	A12	0.20	12"	8"
0'-10"	A6	0.20	6"	5"
10'-13"	A4	0.20	4"	3"
10'-15"	B5.5	0.24	5½"	5"

WALL DEPTH	SCHEDULE	AREA (IN²/FT.)	MAX. SPACING BARS	MAX. SPACING WWR
0'-6"	A12	0.20	12"	8"
0'-7.5"	A6	0.20	6"	5"
7.5'-10"	B5.5	0.24	5½"	5"
10'-13"	C6.5	0.31	6½"	6"

LAST REVISION 11/01/17	DESCRIPTION:	FY 2020-21 STANDARD PLANS	DITCH BOTTOM INLET TYPES C, D, E AND H	INDEX 425-052	SHEET 1 of 7



LAST REVISION 11/01/17	DESCRIPTION:	FY 2020-21 STANDARD PLANS	CROSS DRAIN MITERED END SECTION	INDEX 430-021	SHEET 6 of 6

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PROJECT TITLE

ST. JOHNS PRESERVE - TRACT A TOWNHOMES

SHEET TITLE

FDOT DETAILS

PROJECT NO.

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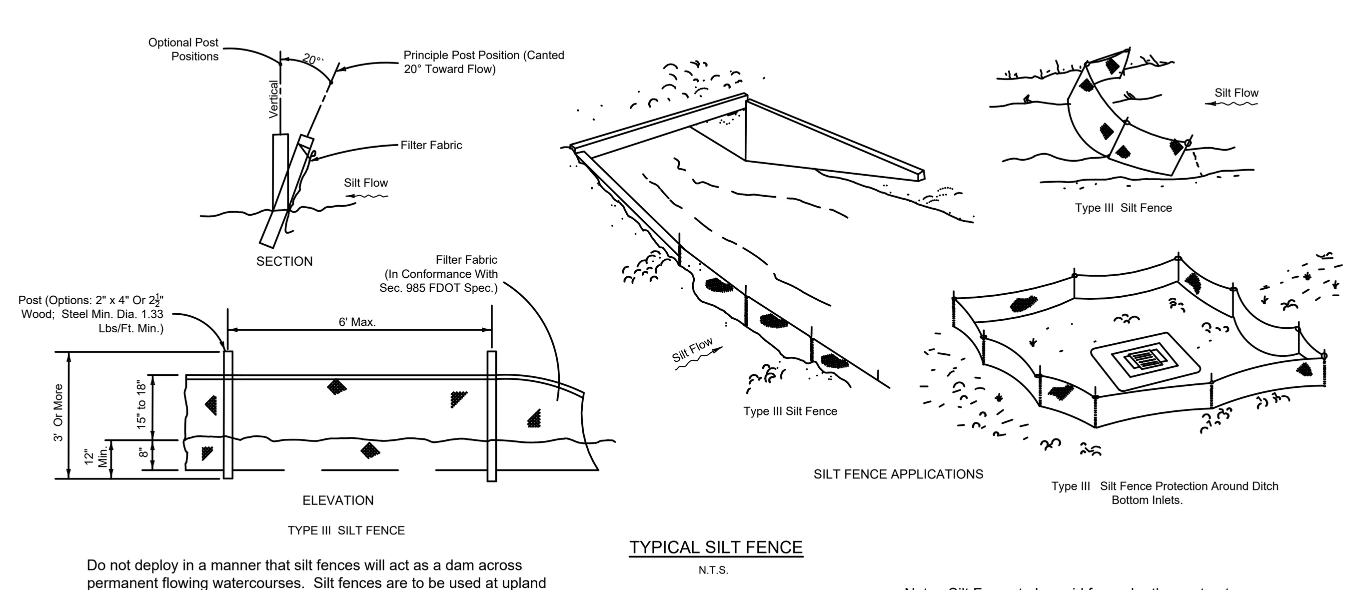
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SYMBOLS SHOWN ARE GRAPHIC IN NATURE; DUE TO SCALE, ALL DESIGN ELEMENTS ARE NOT NECESSARILY SHOWN ON PLAN VIEWS. THE CONTRACTOR SHALL ALSO REFER TO SPECIFICATION AND DETAIL SHEETS AS WELL AS THE COMPLETE PLAN SET.


TYPICAL SILT FENCE
N.T.S.

Do not deploy in a manner that silt fences will act as a dam across permanent flowing watercourses. Silt fences are to be used at upland locations and turbidity barriers used at permanent bodies of water.

Note: Silt Fence to be paid for under the contract unit price for Staked Silt Fence (LF).

FIGURE 1

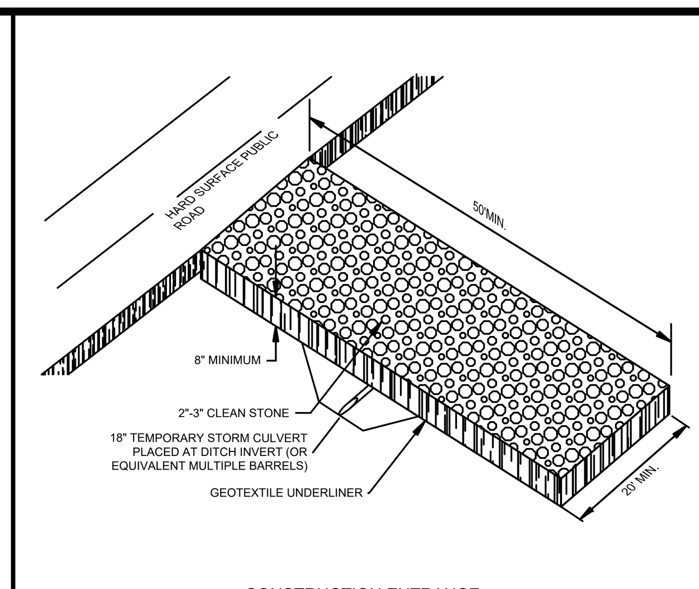
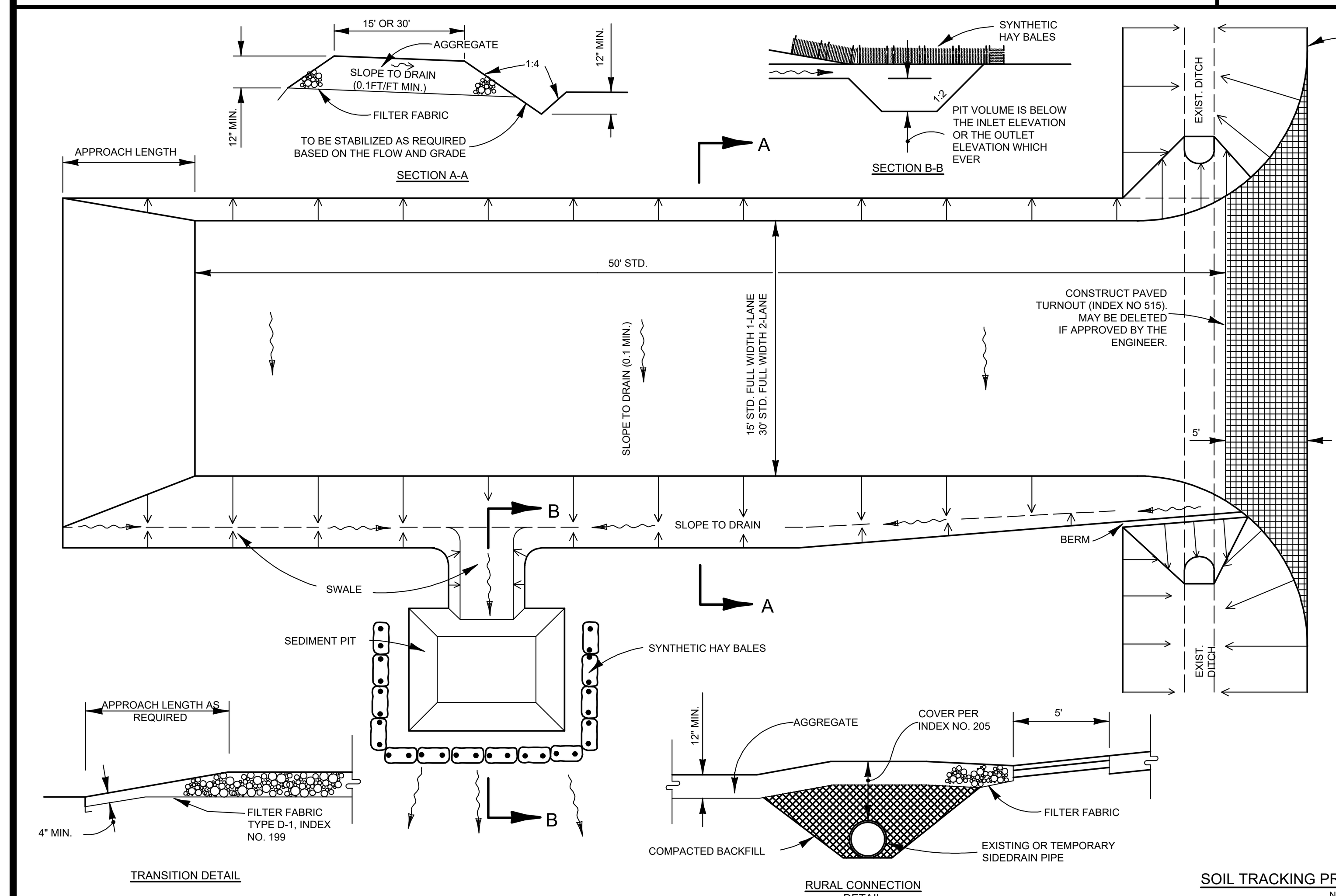

CONSTRUCTION ENTRANCE
NTS

FIGURE 2


GENERAL NOTES

1. A SOIL TRACKING PREVENTION DEVICE (STPD) SHALL BE CONSTRUCTED AT LOCATION DESIGNATED BY THE ENGINEER FOR POINTS OF EGRESS FROM UNSTABILIZED AREAS OF THE PROJECT TO PUBLIC ROADS WHERE OFFSITE TRACKING OF MUD COULD OCCUR. TRAFFIC FROM UNSTABILIZED AREAS OF THE CONSTRUCTION PROJECT SHALL BE DIRECTED THRU A STPD. BARRIERS, FLAGGING, OR OTHER POSITIVE MEANS SHALL BE USED AS REQUIRED TP LIMIT AND DIRECT VEHICULAR EGRESS ACROSS STPD.
2. THE CONTRACTOR MAY PROPOSE AN ALTERNATIVE TECHNIQUE TO MINIMIZE OFFSITE TRACKING OF SEDIMENT. THE ALTERNATIVE MUST BE REVIEWED AND APPROVED BY THE ENGINEER PRIOR TO ITS USE.
3. ALL MATERIALS SPILLED, DROPPED, OR TRACKED ONTO PUBLIC ROADS (INCLUDING THE STPD AGGREGATE AND CONSTRUCTION MUD) SHALL BE REMOVED DAILY, OR MORE FREQUENTLY IF SO DIRECTED BY THE ENGINEER.
4. AGGREGATES SHALL BE DESCRIBED IN SECTION 901 EXCLUDING 901-2.3. AGGREGATES SHALL BE FDOT SIZE #1. IF THIS SIZE IS NOT AVAILABLE, THE NEXT AVAILABLE SMALLER SIZE AGGREGATE MAY BE SUBSTITUTED WITH THE APPROVAL OF THE ENGINEER. SIZES CONTAINING EXCESSIVE SMALL AGGREGATE WILL TRACK OFF THE PROJECT AND ARE UNSUITABLE.
5. THE SEDIMENT PIT SHOULD PROVIDE A RETENTION VOLUME OF 3600 CUBIC FEET/ACRE OF SURFACE AREA DRAINING TO THE PIT. WHEN THE STPD IS ISOLATED FROM OTHER DRAINAGE AREAS, THE FOLLOWING PIT VOLUMES WILL SATISFY THIS REQUIREMENT: 15' X 50' = 100 CU. FT. 30' X 50' = 200 CU. FT.
6. AS AN OPTION TO THE SEDIMENT PIT, THE WIDTH OF THE SWALE BOTTOM CAN BE INCREASED TO OBTAIN THE VOLUME. WHEN THE SEDIMENT PIT OR SWALE VOLUME HAS BEEN REDUCED TO ONE HALF, IT SHALL BE CLEANED. WHEN THE SWALE IS USED, SYNTHETIC HAY BALES OR SILT FENCE SHALL BE PLACED ALONG THE ENTIRE LENGTH.
7. THE SWALE DITCH DRAINING THE STPD SHALL HAVE A 0.2% MINIMUM AND A 0.1% MAXIMUM GRADE ALONG THE STPD AND TO THE SEDIMENT PIT.
8. MITERED AND SECTIONS ARE NOT REQUIRED WHEN THE SIDEDRAIN PIPE SATISFIES THE CLEAR ZONE REQUIREMENTS.
9. THE STPD SHALL BE MAINTAINED IN A CONDITION THAT WILL ALLOW IT TO PERFORM ITS FUNCTION. TO PREVENT OFFSITE TRACKING, THE STPD SHALL BE RINSED (DAILY WHEN IN USE) TO MOVE ACCUMULATED MUD DOWNWARD THRU THE STONE. ADDITIONAL STABILIZATION OF THE VEHICULAR ROUTE LEADING TO THE STPD MAY BE REQUIRED TO LIMIT THE MUD TRACKED.
10. A STPD SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR SOIL TRACKING PREVENTION DEVICE, EA. THE UNIT PRICE SHALL CONSTITUTE FULL COMPENSATION FOR CONSTRUCTION, MAINTENANCE, REPLACEMENT OF MATERIALS, REMOVAL, AND RESTORATION OF THE AREA UTILIZED FOR THE STPD; INCLUDING BUT NOT LIMITED TO EXCAVATION, GRADING, TEMPORARY PIPE (INCLUDING MES WHEN REQUIRED), FILTER FABRIC, AGGREGATE, PAVED TURNOUT (INCLUDING ASPHALT AND BASE CONSTRUCTION), DITCH STABILIZATION, APPROACH ROUTE STABILIZATION, SEDIMENT REMOVAL AND DISPOSAL, WATER, RINSING AND CLEANING OF THE STPD AND CLEANING OF THE PUBLIC ROADS, GRASSING AND SOD, SYNTHETIC HAY BALES SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR HAY OR STRAW BAILED, EA. SILT FENCE SHALL BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE, LF.
11. THE NOMINAL SIZE OF A STANDARD STPD IS 15' X 50' UNLESS OTHERWISE SHOWN IN THE PLANS. IF THE VOLUMES OF ENTERING AND EXITING VEHICLES WARRANT, A 30' WIDTH STPD MAY BE USED IF APPROVED BY THE ENGINEER, WHEN A DOUBLE WIDTH (30') STPD IS USED, THE PAY QUANTITY SHALL BE 2 FOR EACH LOCATION.

SOIL TRACKING PREVENTION DEVICE
NTS

FIGURE 2A

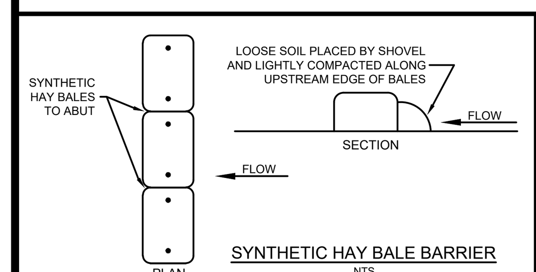

SYNTHETIC HAY BALE BARRIER
NTS

FIGURE 3

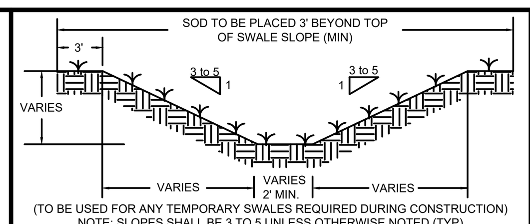

TYPICAL SWALE SECTION
N.T.S.

FIGURE 4

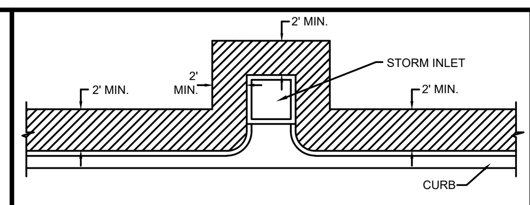

SOD ALONG CURB AND AROUND INLET
N.T.S.

FIGURE 5

ANCHOR SYNTHETIC BALES WITH 2-2" x 2" x 4' STAKES PER BALE.

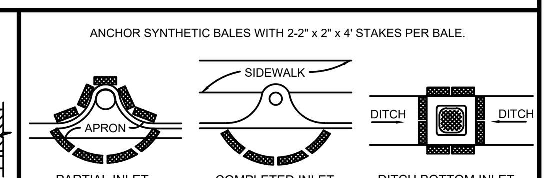

PROTECTION AROUND INLETS OR SIMILAR STRUCTURES:SYNTHETIC HAY BALES
N.T.S.

FIGURE 6

NOTE: SEE ** STORMWATER MANAGEMENT CRITERIA FOR MINIMUM STANDARDS.

THIS PLAN IS INTENDED TO COMPLY WITH APPROPRIATE CONDITIONS OF THE BREVARD COUNTY LAND DEVELOPMENT REGULATIONS, THE RULES OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION, CHAPTER 17-25, F.A.C., AND THE ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT, DURING ALL CONSTRUCTION ACTIVITIES. THE PLAN ADDRESSES THE FOLLOWING AREAS:

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

THE VARIOUS TECHNIQUES OR ACTIONS IDENTIFIED UNDER EACH SECTION INDICATE THE APPROPRIATE SITUATION WHEN THE TECHNIQUES SHOULD BE EMPLOYED. ALSO IDENTIFIED IS A CROSS-REFERENCE TO A DIAGRAM OR FIGURE REPRESENTING THE TECHNIQUE.

IT SHOULD BE NOTED THAT THE MEASURES IDENTIFIED ON THIS PLAN ARE ONLY SUGGESTED BMP(S). THE CONTRACTOR SHALL PROVIDE POLLUTION PREVENTION AND EROSION CONTROL MEASURES AS REQUIRED BY NPDES AND AS NECESSARY FOR EACH SPECIFIC APPLICATION.

SECTION 1 GENERAL EROSION CONTROL

GENERAL EROSION CONTROL BMP'S SHALL BE EMPLOYED TO MINIMIZE SOIL EROSION AND POTENTIAL LAKE SLOPE CAVE-INS. WHILE THE VARIOUS TECHNIQUES REQUIRED WILL BE SITE AND PLAN SPECIFIC, THEY SHOULD BE EMPLOYED AS SOON AS POSSIBLE DURING CONSTRUCTION ACTIVITIES.

CLEARED SITE DEVELOPMENT AREAS NOT CONTINUALLY SCHEDULED FOR CONSTRUCTION ACTIVITIES SHALL BE COVERED WITH HAY OR OVER SEEDED AND PERIODICALLY WATERED SUFFICIENTLY TO STABILIZE THE TEMPORARY GROUND COVER.

SLOPES OF BANKS OF RETENTION / DETENTION PONDS SHALL BE CONSTRUCTED NOT STEEPER THAN 3H:1V FROM TOP OF BANK TO TWO FEET BELOW NORMAL WATER LEVEL UNLESS SPECIFIED OTHERWISE.

SOD SHALL BE PLACED IN A MINIMUM OF A 2- FOOT WIDE STRIP ADJOINING ALL CURBING AND AROUND ALL INLETS AS SHOWN IN FIGURE 5 OR AS REQUIRED BY THE LANDSCAPE PLAN OR CONTRACT DOCUMENTS. SOD SHALL BE PLACED BEFORE SILT BARRIERS, SHOWN IN FIGURE 8, ARE REMOVED.

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

SURFACE WATER QUALITY SHALL BE MAINTAINED BY EMPLOYING, AT A MINIMUM, THE FOLLOWING BMP'S AND OTHER MEASURES AS REQUIRED IN THE PLANNING AND CONSTRUCTION OF ALL IMPROVEMENTS.

WHERE PRACTICAL, STORM WATER SHALL BE CONVEYED BY SWALES.

EROSION CONTROL MEASURES SHALL BE EMPLOYED TO MINIMIZE TURBIDITY OF SURFACE WATERS LOCATED DOWNSTREAM OF ANY CONSTRUCTION ACTIVITY. WHILE THE VARIOUS MEASURES REQUIRED WILL BE SITE SPECIFIC, THE FOLLOWING MEASURES SHALL BE UTILIZED AS A MINIMUM.

IN GENERAL EROSION SHALL BE CONTROLLED AT THE FURTHEST PRACTICAL UPSTREAM LOCATION.

STORM WATER INLETS SHALL BE PROTECTED DURING CONSTRUCTION AS SHOWN IN FIGURES 5,6, AND 8. PROTECTION MEASURES SHALL BE EMPLOYED AS SOON AS PRACTICAL DURING THE VARIOUS STAGES OF INLET CONSTRUCTION. SILT BARRIERS SHALL REMAIN IN PLACE UNTIL SODDING AROUND INLETS IS COMPLETE OR AS OTHERWISE REQUIRED.

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

SILT BARRIERS SHALL BE ERECTED AS SHOWN PRIOR THE INITIATION OF CLEARING OR EARTHWORK AND SHALL REMAIN UNTIL VEGETATIVE COVER OR ALL DISTURBED AREAS HAVE BEEN ESTABLISHED OR AS REQUIRED BY THE OWNER. SILT BARRIERS SHALL BE CONTINUOUSLY MAINTAINED FOR ENTIRE PROJECT DURATION. SILT BARRIERS SHALL NOT BE REMOVED UNTIL APPROVED BY THE OWNER. SILT BARRIERS, ANY SILT WHICH ACCUMULATES BEHIND THE BARRIERS, AND ANY FILL USED TO ANCHOR THE BARRIERS SHALL BE REMOVED PROMPTLY AFTER THE END OF THE MAINTENANCE PERIOD SPECIFIED FOR THE BARRIERS.

WHERE REQUIRED TO PREVENT EROSION FROM SHEET FLOW ACROSS BARE GROUND FROM ENTERING A LAKE OR SWALE AND IN THE ABSENCE OF AN ACCEPTABLE TEMPORARY LAKE OR SUMP AREA, A TEMPORARY SUMP SHALL REMAIN IN PLACE UNTIL VEGETATION IS ESTABLISHED ON THE GROUND DRAINING TO THE SUMP.

SECTION 3 CONTROL OF WIND EROSION

WIND EROSION SHALL BE CONTROLLED BY EMPLOYING BMP'S WHICH SHALL INCLUDE THE FOLLOWING AND/OR OTHER METHODS AS A MINIMUM:

BARE EARTH AREAS SHALL BE WATERED DURING CONSTRUCTION AS NECESSARY TO MINIMIZE THE TRANSPORT OF FUGITIVE DUST. IT MAY BE NECESSARY TO LIMIT CONSTRUCTION VEHICLE SPEED IF BARE EARTH HAS NOT BEEN EFFECTIVELY WATERED. IN NO CASE SHALL FUGITIVE DUST BE ALLOWED TO LEAVE THE SITE UNDER CONSTRUCTION.

AS SOON AS PRACTICAL AFTER COMPLETION OF CONSTRUCTION, BARE EARTH AREAS SHALL BE VEGETATED.

AT ANY TIME BOTH DURING AND AFTER SITE CONSTRUCTION THAT WATERING AND/OR VEGETATION ARE NOT EFFECTIVE IN CONTROLLING WIND EROSION AND/OR TRANSPORT OF FUGITIVE DUST, OTHER METHODS AS ARE NECESSARY FOR SUCH CONTROL SHALL BE EMPLOYED. THESE METHODS MAY INCLUDE ERECTION OF DUST CONTROL FENCES. IF REQUIRED, DUST CONTROL FENCES SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE DETAIL FOR A SILT FENCE SHOWN IN FIGURE 1 EXCEPT THE MINIMUM HEIGHT SHALL BE 4 FEET.

SWPPP COORDINATOR DUTIES

THE CONTRACTOR SHALL COMPLY WITH THE FOLLOWING AND ALL OTHER REQUIREMENTS OF THE EPA, FDEP, SJRWMD, AND BREVARD COUNTY REGULATIONS:

1. MAINTAIN RECORDS OF CONSTRUCTION ACTIVITIES, INCLUDING:
   DATES WHEN MAJOR GRADING ACTIVITIES OCCUR.
   DATES WHEN CONSTRUCTION ACTIVATES TEMPORARILY CEASE ON A PORTION OF THE SITE.
   DATES WHEN STABILIZATION MEASURES ARE INITIATED ON SITE.
   RECORDS MUST BE MAINTAINED AT THE JOB SITE.
2. PREPARE INSPECTION REPORTS SUMMARIZING:
   QUALIFICATIONS OF INSPECTOR.
   DAILY RAINFALL TOTALS.
   MEASURES/AREAS INSPECTED.
   CHANGES NECESSARY TO THE SWPPP.
   INSPECTIONS SHALL BE COMPLETED ON A WEEKLY BASIS; AND AFTER RAINFALL EVENTS EXCEEDING 1/2" INTENSITY.
3. A SAMPLE INSPECTION FORM SHALL BE SUPPLIED TO THE CONTRACTOR FOR HIS USE. CONTRACTOR MUST UTILIZE THIS INSPECTION FORM OR AN APPROVED EQUIVALENT.
4. CONTRACTOR MUST EXECUTE NPDES CERTIFICATION FORM AND INSURE THAT ALL SUBCONTRACTORS RESPONSIBLE FOR EROSION CONTROL MEASURES EXECUTE THE NPDES CERTIFICATION FORM. COPIES OF THIS CERTIFICATION MUST BE PROVIDED TO THE OWNER PRIOR TO THE START OF ANY NEW CONSTRUCTION, AND COPIES SHALL BE MAINTAINED AT THE JOB SITE.
5. REPORT RELEASES OF REPORTABLE QUANTITIES OF OIL OR HAZARDOUS MATERIALS (IF THEY OCCUR):
   NOTIFY NATIONAL RESPONSE CENTER @ 1-800-424-8802.
   NOTIFY PERMITTING AUTHORITY IN WRITING WITHIN 14 DAYS.
   MODIFY THE POLLUTION PREVENTION PLAN TO INCLUDE IMPROVED MANAGEMENT CONTROLS.
6. MODIFY THE STORM WATER POLLUTION PREVENTION PLAN (SWPPP) AS NECESSARY TO:
   COMPLY WITH MINIMUM PERMIT REQUIREMENTS WHEN NOTIFIED BY THE EPA, ADDRESS CHANGES IN DESIGN, CONSTRUCTION OPERATION OR MAINTENANCE WHICH HAVE AN AFFECT ON THE POTENTIAL FOR DISCHARGE OF POLLUTANTS INTO STATE WATERS.
   PREVENT REOCCURRENCE OF REPORTABLE QUANTITY RELEASES HAZARDOUS MATERIAL, OIL, AND OR FUEL.
7. AT THE COMPLETION OF THE PROJECT AND AS A CONDITION OF FINAL PAYMENT, CONTRACTOR SHALL PROVIDE THE OWNER WITH TWO COPIES OF THE THE ABOVE DESCRIBED REPORTS IN A CONSOLIDATED REPORT FORMAT; THREE RING BINDERS OR EQUIVALENT.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR FOLLOWING AND MAINTAINING A COPY OF DEP DOCUMENT NO. 62-621.300(4)(A). THIS PERMIT IS THE STATE OF FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION GENERIC PERMIT FOR STORMWATER DISCHARGE FROM CONSTRUCTION ACTIVITIES THAT DISTURB ONE OR MORE ACRES OF LAND.
9. ALL FERTILIZERS, HERBICIDES, AND PESTICIDES TO BE APPLIED, STORED, AND DISPOSED OF PER THE MANUFACTURER RECOMMENDATIONS.
10. CONTRACTOR IS RESPONSIBLE TO ASSURE THAT ALL WASTE, SUCH AS DISCARDED BUILDING MATERIALS, CHEMICALS, LITTER, AND SANITARY WASTE ARE PROPERLY CONTROLLED AND DISPOSED OF IN ACCORDANCE WITH ALL APPLICABLE STATE, LOCAL, AND FEDERAL REGULATIONS.

GENERAL MAINTENANCE PLAN

THE FOLLOWING MAINTENANCE PLAN IS GENERAL IN NATURE AND IS INTENDED TO PROVIDE A GUIDELINE FOR THE CONTRACTOR. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO COMPLETE THE PROJECT IN CONFORMANCE WITH THE NPDES STANDARDS AND APPROVED PLANS AND PERMITS.

SHORT TERM:

1. ALL EROSION CONTROL PRACTICES WILL BE CHECKED FOR STABILITY AND OPERATION FOLLOWING EVERY 1/2" RAINFALL EVENT, BUT IN NO CASE LESS THAN ONCE EVERY WEEK. ALL NEEDED REPAIRS WILL BE RECORDED AND MADE IMMEDIATELY TO MAINTAIN ALL PRACTICES AS DESIGNED.
2. SEDIMENT BUILDUP WILL BE CLOSELY MONITORED AND REMOVED FROM INLET PROTECTION DEVICES TO ENSURE PROPER MANAGEMENT AND STORAGE CAPACITIES. SEDIMENT CONTROL DEVICES SHALL BE CLEANED OR REPLACED WHEN THE SEDIMENT CONTROL NO LONGER WORKS EFFECTIVELY AS DESIGNED.
3. THE SEDIMENT CONTROLLING SILT FENCE SHALL BE MAINTAINED AND/OR REPLACED AS NECESSARY TO MAINTAIN A BARRIER.
4. ALL SEEDED AREAS SHALL BE RESEEDED AS NECESSARY, AND MULCHED ACCORDING TO SPECIFICATIONS IN THE VEGETATIVE PLAN TO MAINTAIN A VEGETATIVE COVER, ADEQUATE TO PREVENT EROSION TO OFFSITE AREAS.
5. AS NEEDED, NEW OR ADDITIONAL WORKERS WILL BE INFORMED OF THE PLAN DETAILS IN THE OPERATION AND MAINTENANCE OF PLAN FEATURES.

LONG TERM:

1. ALL VEGETATED AREAS WILL BE MAINTAINED IN ADEQUATE CONDITION TO PROVIDE PROPER GROUND COVER, THEREBY REDUCING EROSION POTENTIAL.
2. AREAS WHERE VEGETATION IS LOST WILL BE RESTABILIZED AND MAINTAINED AS NECESSARY TO RESTORE PROPER GROUND COVER.
3. STRUCTURAL MEASURES WILL BE EXAMINED AT LEAST ANNUALLY AND MAINTENANCE PERFORMED AS NEEDED.

GENERAL CONSTRUCTION SEQUENCING PLAN

THE FOLLOWING CONSTRUCTION SEQUENCING IS GENERAL IN NATURE AND IS INTENDED TO PROVIDE A GUIDELINE FOR THE CONTRACTOR. IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO COMPLETE THE PROJECT IN CONFORMANCE WITH THE NPDES STANDARDS AND APPROVED PLANS AND PERMITS.

1. OBTAIN PLAN APPROVAL AND OTHER APPLICABLE PERMITS.
2. FLAG THE WORK LIMITS OF CONSTRUCTION AND IDENTIFY AREAS NOT TO BE DISTURBED.
3. HOLD PRE CONSTRUCTION CONFERENCE AT LEAST ONE WEEK PRIOR TO STARTING CONSTRUCTION. WEEKLY REVIEWS OF EROSION, SEDIMENT, AND STORM WATER CONTROLS WILL BE CONDUCTED. REVIEWS WILL ALSO BE CONDUCTED WITHIN 24 HOURS FOLLOWING ALL RAIN EVENTS EXCEEDING 1/2" INTENSITY.
4. INSTALL SEDIMENT CONTROLS AS THE FIRST CONSTRUCTION ACTIVITY.
5. INSTALL STORM DRAIN WITH STABILIZED INLET PROTECTION AT THE CONSTRUCTION ENTRANCE/EXIT.
6. INSTALL TEMPORARY STABILIZED CONSTRUCTION ENTRANCE/EXIT.
7. COMPLETE SITE CLEARING EXCEPT FOR AREAS DESIGNATED NOT TO BE DISTURBED.
8. ROUGH GRADE SITE, STOCKPILE TOPSOIL, CONSTRUCT WATERWAYS, INSTALL CULVERTS AND OUTLET PROTECTION (INSTALL SEDIMENT CONTROLS AND SILT FENCING AS NEEDED).
   BARE AREAS OF EXPOSED LAND SHALL BE MULCHED AND SEEDED ONCE GRADING HAS BEEN COMPLETED.
9. FINISH THE SLOPES AROUND BUILDING DIRT PADS AS SOON AS ROUGH GRADING IS COMPLETE.
10. COMPLETE FINAL GRADING FOR ROADS AND STABILIZE WITH APPROVED MATERIAL.
11. COMPLETE FINAL GRADING OF GROUNDS, TOPSOIL CRITICAL AREAS, AND PERMANENTLY VEGETATE, LANDSCAPE, AND MULCH.
12. ALL EROSION AND SEDIMENT CONTROL PRACTICES WILL BE INSPECTED WEEKLY AND FOLLOWING 1/2" RAINFALL EVENTS. NEEDED REPAIRS WILL BE RECORDED WITHIN 24 HOURS, AND CORRECTED IMMEDIATELY.
13. AFTER SITE IS STABILIZED, REMOVE ALL TEMPORARY MEASURES AND INSTALL PERMANENT VEGETATION ON THE DISTURBED AREAS.

SPECIAL NOTICE:

THE CERTIFICATIONS BELOW ARE INCLUDED FOR INFORMATIONAL PURPOSES ONLY. OFFICIAL EXECUTED CERTIFICATIONS ARE KEPT IN THE PROJECT FILE.

CONTRACTORS CERTIFICATION

"I CERTIFY UNDER PENALTY OF LAW THAT I UNDERSTAND AND SHALL COMPLY WITH, THE TERMS AND CONDITIONS OF THE STATE OF FLORIDA GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES AND THIS STORMWATER POLLUTION PREVENTION PLAN PREPARED THEREUNDER."

NAME:.. ____________________________
TITLE:... ____________________________
COMPANY NAME:....................... ____________________________
COMPANY ADDRESS:................. ____________________________
____
COMPANY PHONE #:.................(___) ___-____
PROJECT SITE DESCRIPTION:....

SIGNATURE:____

DATE OF CERTIFICATION:______________________________

ENGINEERS CERTIFICATION

"I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."

NAME:.. Scott M. Glaubitz, P.E./Hassan Kamal, P.E.
TITLE:... President/Vice President
COMPANY NAME...................... B.S.E. Consultants, Inc.
COMPANY ADDRESS:.............. 312 S. Harbor City Blvd., Suite 4
Melbourne, Florida 32901
COMPANY PHONE #:.................(321) 725-3674
PROJECT SITE DESCRIPTION:....

SIGNATURE:____

DATE OF CERTIFICATION:______________________________

CORPORATE OFFICERS CERTIFICATION

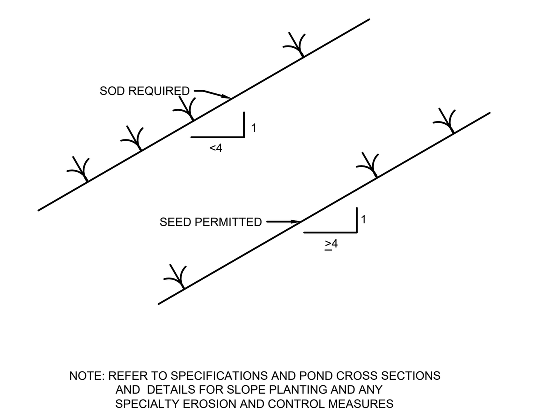
"I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS."

NAME:..
TITLE:...
COMPANY NAME.........................
COMPANY ADDRESS:..................

COMPANY PHONE #:.................
PROJECT SITE DESCRIPTION:....

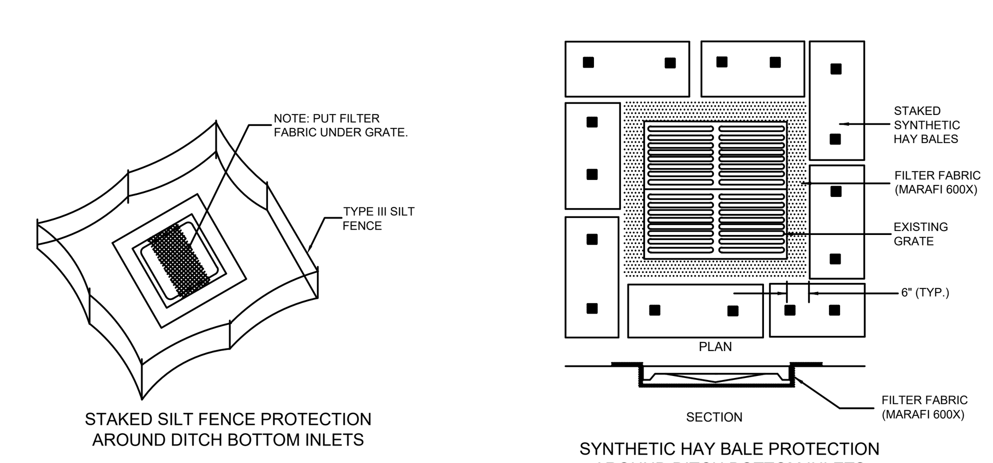
SIGNATURE:____

DATE OF CERTIFICATION:______________________________


NOTE: REFER TO SPECIFICATIONS AND POND CROSS SECTIONS AND DETAILS FOR SLOPE PLANTING AND ANY SPECIALTY EROSION AND CONTROL MEASURES

GRASS SLOPES
N.T.S.

FIGURE 7


STAKED SILT FENCE PROTECTION AROUND DITCH BOTTOM INLETS

SYNTHETIC HAY BALE PROTECTION AROUND DITCH BOTTOM INLETS

SEDIMENT CONTROL DETAIL
NTS

FIGURE 8

NON-SYNTHETIC HAY BALES SHALL NOT BE PERMITTED

GENERAL SITE INFORMATION

SITE DESCRIPTION:

TOTAL AREA AND DISTURBED AREA:

QUALITY RECEIVING SURFACE WATERS AND WETLANDS:

EXISTING SOIL TYPES:

STORM WATER POLLUTION PREVENTION MEASURES & CONTROLS:
THERE ARE A VARIETY OF CONTROLS PROPOSED FOR THIS SITE. SOME CONTROLS ARE INTENDED TO FUNCTION TEMPORARILY AND WILL BE USED AS NEEDED FOR POLLUTANT CONTROL. THESE INCLUDE TEMPORARY SEDIMENT BARRIERS AND SILT FENCES. FOR MOST DISTURBED AREAS, PERMANENT STABILIZATION WILL BE ACCOMPLISHED BY COVERING THE SOIL WITH PAVEMENT OR VEGETATION.

SOIL STABILIZATION:
THE PURPOSE OF SOIL STABILIZATION IS TO PREVENT SOIL FROM LEAVING THE SITE. IN THE NATURAL CONDITION, SOIL IS STABILIZED BY NATIVE VEGETATION. THE PRIMARY TECHNIQUES TO BE USED AT THIS PROJECT FOR STABILIZATION AFTER CONSTRUCTION WILL BE TO PROVIDE PROTECTIVE TURF GRASS OR PAVEMENT.

NOTES:
ACCESS SHALL BE PROVIDED BY AN UNOBSTRUCTED ALL WEATHER DRIVING SURFACE CAPABLE OF SUPPORTING THE LOADS IMPOSED BY RESPONDING APPARATUS OF NOT LESS THAN 20 FEET AND SHALL BE MAINTAINED DURING CONSTRUCTION (SEE FIGURE 2). THE LOCATION OF EROSION CONTROL FEATURES SHOWN ON THIS PLAN REPRESENTS MINIMUM REQUIREMENTS. DEPENDING UPON THE CONTRACTORS OPERATIONS, IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO INSTALL AND MAINTAIN ANY NECESSARY EROSION CONTROL FACILITIES NEEDED TO CONTROL EROSION OR THE DISCHARGE OF TURBIDITY INTO DOWNSTREAM WATERS OR ADJACENT PROPERTY.

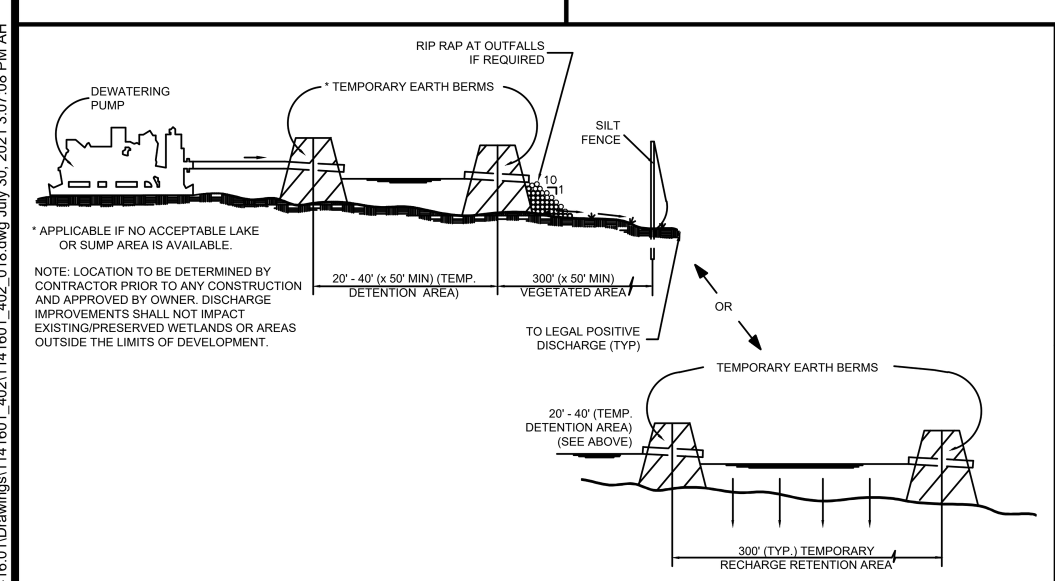

TYPICAL DEWATERING DISCHARGE PLAN
NTS

FIGURE 9

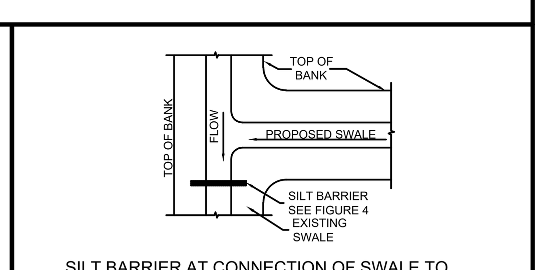

SILT BARRIER AT CONNECTION OF SWALE TO EXISTING SWALE
N.T.S.

FIGURE 10

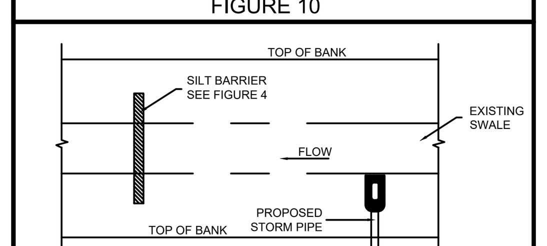
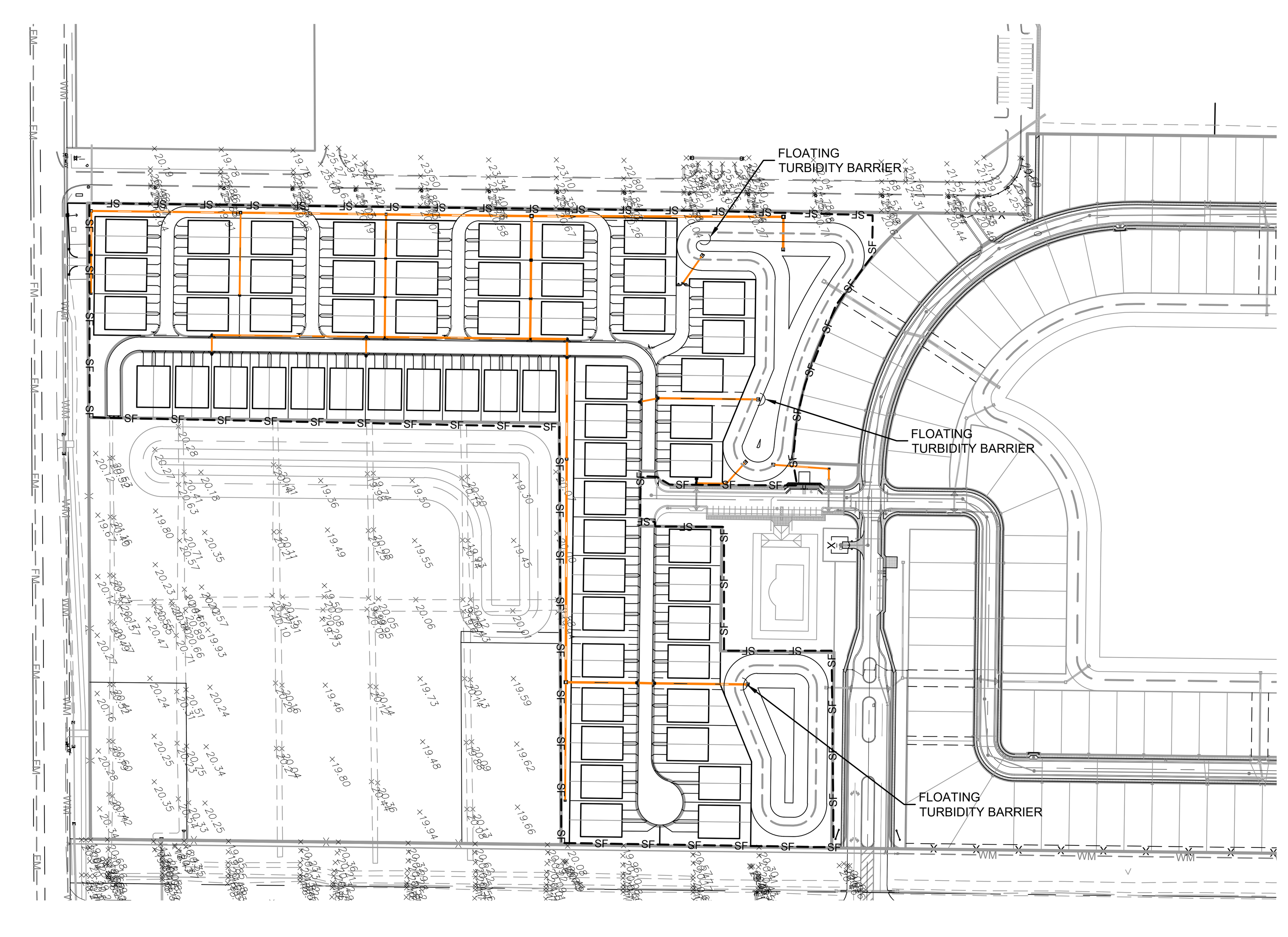

SILT BARRIER AT CONNECTION OF STORM PIPE TO EXISTING SWALE
N.T.S.

FIGURE 11

NOTE: SILT FENCE LOCATION IS SCHEMATIC REPRESENTATION. CONTRACTOR SHALL BE RESPONSIBLE FOR INSTALLING SILT FENCE AT THE LOCATION NEEDED TO PREVENT THE TRANSPORT OF SEDIMENT OFFSITE AND NOT INTERFERE WITH THE REQUIRED ONSITE CONSTRUCTION. CONTRACTOR MAY NEED TO RELOCATE/REPLACE/ADJUST SILT FENCE LOCATIONS TO ACCOMMODATE CONSTRUCTION SEQUENCING.



B.S.E. CONSULTANTS, INC.
CONSULTING - ENGINEERING - LAND SURVEYING

312 SOUTH HARBOR CITY BOULEVARD, SUITE 4
MELBOURNE, FLORIDA 32901
PHONE: (321) 725-3674 FAX: (321) 723-1159

CERTIFICATE OF PROFESSIONAL ENGINEERS
BUSINESS AUTHORIZATION: 4905
CERTIFICATE OF LAND SURVEYING
BUSINESS AUTHORIZATION: LB0004905

SCOTT M. GLAUBITZ, P.E. & P.L.S.
STATE OF FLORIDA, No. 33659 No. 4151

HASSAN A. KAMAL, P.E.
STATE OF FLORIDA, No. 41951

200 0 100 200
(IN FEET)

DATE: 06/16/21
DESIGN/DRAWN: ALS/AH

PROJECT TITLE

ST. JOHNS PRESERVE - TRACT A TOWNHOMES

SHEET TITLE

STORM WATER POLLUTION PREVENTION PLAN (SWPPP)

PROJECT NO.
11416.01

DRAWING NO.
1141601_402_018

SHEET
18 of 18

LAND DEVELOPMENT DIVISION
120 Malabar Road SE • Palm Bay, FL 32907 • Telephone: (321) 733-3042
Landdevelopmentweb@palmbayflorida.org

FINAL DEVELOPMENT PLAN APPLICATION

This application must be deemed complete and legible, and must be returned by the first day of the month during division office hours, with all enclosures referred to herein, to the Land Development Division, Palm Bay, Florida, to be processed for consideration the following month at the earliest by the Planning and Zoning Board. The application will then be referred by the Planning and Zoning Board for study and recommendation to the City Council. You or your representative are required to attend the meeting(s) and will be notified by mail of the date and time of the meeting(s). The Planning and Zoning Board holds their regular meeting the first Wednesday of every month at 7:00 p.m. in the City Hall Council Chambers, 120 Malabar Road SE, Palm Bay, Florida, unless otherwise stated.

APPLICATION AMENDMENT TYPE:

- ☐ **PUD** - Planned Unit Development (Section 185.067)
- ■ **PMU** - Parkway Mixed Use District (Final Design Plan) (Section 185.057(C))
- ☐ **PCRD** - Planned Community Redevelopment District (Section 185.055(L))
- ☐ **RAC** - Regional Activity Center District (Section 185.056(C))

PROPOSED DEVELOPMENT NAME:

St. Johns Preserve - Tract A

PARCEL ID(S):

28-36-32-00-751

TAX ACCOUNT NUMBER(S):

2865741

New Tax Account:#3023625 – Parcel ID 28-36-32-01-*-A

LEGAL DESCRIPTION OF THE PROPERTY COVERED BY THIS APPLICATION: (attach additional sheets if necessary):

See attached.

SIZE OF AREA COVERED BY THIS APPLICATION (calculate acreage):

+/- 20.83 AC

TOTAL LOTS PROPOSED (list by use):

120

DEVELOPER St. Johns Preserve Investment Group, LLC

Full Address 1698 W. Hibiscus Blvd., Suite A, Melbourne, FL, 32901

Telephone (321) 953-3300 **Email** mike.fmdc@gmail.com

ENGINEER B.S.E. Consultants, Inc.

Full Address 312 South Harbor City Blvd., Suite #4 Melbourne, FL 32901

Telephone 321-725-3674 **Email** info@bseconsult.com

SURVEYOR B.S.E. Consultants, Inc.

Full Address 312 South Harbor City Blvd., Suite #4 Melbourne, FL 32901

Telephone 321-725-3674 **Email** info@bseconsult.com

FINAL DEVELOPMENT PLAN CRITERIA FOR SUBMITTAL:

1) Two (2) copies of the Final Development Plan and supporting documentation shall be attached to the application. The final plan and supporting documentation **must also be provided on memory drive.**

2) Layout of the development plan shall be in plat form that meets the requirements of Florida Statute Chapter 177.

3) The Final Development Plan shall contain the information required per the City of Palm Bay Land Development Code section for a PUD, PMU, PCRD, or RAC. **Additional conditions must be met and incorporated into the site plan for the specific type of development requested (PUD, PMU, PCRD, RAC).** The additional criteria is listed in the Code of Ordinances and available from staff.

THE FOLLOWING PROCEDURES AND ENCLOSURES ARE REQUIRED TO COMPLETE THIS FINAL DEVELOPMENT PLAN APPLICATION:

- [■] *A $1,500.00 application fee shall accompany the Final Development Plan application for the purposes of administration. Make Check payable to "City of Palm Bay."
- [■] Final Development Plan (see aforementioned Final Development Plan Criteria for Submittal).
- [■] Boundary Survey.
- [■] Site Sketch to scale with legal descriptions of properties covered by this application.
- [■] List of legal descriptions of all properties within a 500-foot radius of the boundaries of the property covered by this application, together with the names and mailing addresses (including zip codes) of all respective property owners within the above referenced area. (This should be obtained for a fee from the Brevard County Planning and Zoning Department at (321) 633-2060.)
- [■] Citizen Participation Plan. Required when a Preliminary Development Plan application was not submitted. Refer to Section 169.005 of the Land Development Code for guidelines.
- [ ] School Board of Brevard County School Impact Analysis Application (if applicable). The application is obtained from the Planning and Project Management Department of the School Board of Brevard County at (321) 633-1000, extension 11418.
- [ ] Sign(s) posted on the subject property. Refer to Section 51.07(C) of the Legislative Code for guidelines. Staff will provide a sign template.
- [ ] **Where the property owner is not the representative for the request**, a LETTER must be attached giving the notarized consent of the property owner(s) to a representative.

Name of Representative _____

I, THE UNDERSIGNED UNDERSTAND THAT THIS APPLICATION MUST BE COMPLETE AND ACCURATE BEFORE CONSIDERATION BY THE PLANNING AND ZONING BOARD/LOCAL PLANNING AGENCY AND CERTIFY THAT ALL THE ANSWERS TO THE QUESTIONS IN SAID APPLICATION, AND ALL DATA AND MATTER ATTACHED TO AND MADE A PART OF SAID APPLICATION ARE HONEST AND TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

UNDER PENALTIES OF PERJURY, I DECLARE THAT I HAVE READ THE FOREGOING FINAL DEVELOPMENT PLAN APPLICATION AND THAT THE FACTS STATED IN IT ARE TRUE.

Owner Signature _____ **Date** 5/30/25

Printed Name Mike Evans

Full Address St. Johns Preserve Investment Group, LLC 1698 W. Hibiscus Blvd., Suite A, Melbourne, FL, 32901

Telephone (321) 953-3300 **Email** mike.fmdc@gmail.com

***NOTE: APPLICATION FEE IS NON-REFUNDABLE UPON PAYMENT TO THE CITY**

September 30, 20 21

Re: Letter of Authorization

As the property owner of the site legally described as:

St. Johns Preserve - Tract A
28-36-32-00-751 New Tax Account:#3023625 – Parcel ID 28-36-32-01-*-A

I, Owner Name: Peter M. Evans, St. Johns Preserve Investment Group, LLC

Address: 1698 W. Hibiscus Blvd., Suite A, Melbourne, FL, 32901

Telephone: (321) 953-3300

Email: mike.fmdc@gmail.com

hereby authorize:

Representative: B.S.E. Consultants, Inc.

Address: 312 South Harbor City Blvd., Suite 4 Melbourne, FL 32901

Telephone: 321-725-3674

Email: info@bseconsult.com

to represent the request(s) for:

St. Johns Preserve - Tract A - Final Development Plan

P. Michael Evans
(Property Owner Signature)

STATE OF Florida

COUNTY OF Brevard

The foregoing instrument was acknowledged before me by means of ☒ physical presence or ☐ online notarization, this 30 day of September, 20 21 by Peter M. Evans as Manager of St Johns Preserve LLC, property owner.

BONNIE L. KENNEDY
MY COMMISSION # GG 126171
EXPIRES: October 9, 2021
Bonded Thru Notary Public Underwriters

Bonnie L Kennedy
Bonnie L Kennedy, Notary Public

☒ Personally Known or ☐ Produced the Following Type of Identification:

AUTHORIZATION TO ACT AS AGENT

I, Mr. Peter M. Evans, Manager of St. Johns Preserve Investment Group, LLC and which St. Johns Preserve Investment Group, LLC owns the property, hereby authorize Scott M. Glaubitz, P.E., P.L.S., President; Hassan Kamal, P.E., Vice President; Ana Saunders, P.E., Project Engineer; or Ken A. Ludwa, P.E., Project Engineer, of B.S.E. Consultants, Inc., to act as agent in all permitting and certification matters for St. Johns Preserve – Tract A (subdivision) in Palm Bay, Brevard County, Florida. This authorization shall include all engineering and permitting services for this subdivision/site.

Signature
Peter M. Evans, Manager
St. Johns Preserve, LLC

Sworn to and subscribed before me this 30th day of August, 2021, by P Michael Evans who is personally known to me and who (did) (did not) take an oath.

NOTARY PUBLIC AT LARGE

(SEAL)

ELIZABETH E. KENNEDY
MY COMMISSION # HH 008367
EXPIRES: August 31, 2024
Bonded Thru Notary Public Underwriters

For B.S.E. use only. Please do not write below this line.

STATE OF FLORIDA,
COUNTY OF BREVARD

On this 30th day of August, 2021, I attest that the preceding document is a true, exact, complete, and unaltered photocopy made by me of the AUTHORIZATION TO ACT AS AGENT presented to me by the document's custodian, B.S.E. Consultants, Inc. and, to the best of my knowledge, that the photocopied document is neither a public record nor a publicly recordable document, certified copies of which are not available from an official source other than a notary public.

Sonya Michelle Peters-Snyder

NOTARY PUBLIC AT LARGE

SONYA MICHELLE PETERS-SNYDER
State of Florida-Notary Public
Commission # GG 275906
My Commission Expires
November 16, 2022

DESCRIPTION OF REMAINDER OF TRACT A

TRACT A, ST JOHNS PRESERVE-PHASE 1, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 69, PAGE 4, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA, LYING IN SECTION 32, TOWNSHIP 28 SOUTH, RANGE 36 EAST, BREVARD COUNTY, FLORIDA, LESS AND EXCEPT THE FOLLOWING DESCRIBED PARCEL OF LAND:

PART OF TRACT A, ST JOHNS PRESERVE-PHASE 1, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 69, PAGE 4, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA, LYING IN SECTION 32, TOWNSHIP 28 SOUTH, RANGE 36 EAST, BREVARD COUNTY, FLORIDA, MORE PARTICULARLY DESCRIBED AS FOLLOWS:

BEGIN AT THE NORTHWEST CORNER OF TRACT B, OF SAID ST JOHNS PRESERVE-PHASE 1 AND RUN ALONG THE BOUNDARY OF SAID TRACT B THE FOLLOWING THREE (3) COURSES AND DISTANCES; 1) THENCE S00°41'13"W, A DISTANCE OF 62.00 FEET TO THE SOUTHWEST CORNER OF SAID TRACT B; 2) THENCE S89°18'47"E, A DISTANCE OF 60.00 FEET TO THE SOUTHEAST CORNER OF SAID TRACT B; 3) THENCE N00°41'13"E, A DISTANCE OF 22.00 FEET TO THE SOUTHWEST CORNER OF TRACT C OF SAID ST JOHNS PRESERVE-PHASE 1; THENCE S89°18'47"E ALONG THE SOUTH LINE OF SAID TRACT C, A DISTANCE OF 164.79 FEET; THENCE S00°41'13"W, A DISTANCE OF 205.99 FEET; THENCE N89°19'47"W, A DISTANCE OF 224.82 FEET; THENCE S00°40'13"W, A DISTANCE OF 150.00 FEET; THENCE N89°19'47"W, A DISTANCE OF 100.00 FEET; THENCE N00°40'13"E, A DISTANCE OF 30.00 FEET TO A NON-TANGENT INTERSECTION WITH A CURVE TO THE LEFT; THENCE ALONG THE ARC OF SAID CURVE, (SAID CURVE BEING CURVED CONCAVE TO THE NORTHWEST, AND HAVING A RADIUS OF 25.00 FEET, A CENTRAL ANGLE OF 89°59'00", A CHORD BEARING OF N45°40'43"E AND A CHORD LENGTH OF 35.35 FEET), A DISTANCE OF 39.26 FEET TO THE END OF SAID CURVE; THENCE N00°41'13"E, A DISTANCE OF 316.08 FEET; THENCE S89°18'47"E, A DISTANCE OF 50.00 FEET TO A NON-TANGENT INTERSECTION WITH A CURVE TO THE RIGHT; THENCE ALONG THE ARC OF SAID CURVE, (SAID CURVE BEING CURVED CONCAVE TO THE SOUTHEAST, AND HAVING A RADIUS OF 25.00 FEET, A CENTRAL ANGLE OF 90°00'00", A CHORD BEARING OF N45°41'13"E, AND A CHORD LENGTH OF 35.36 FEET); A DISTANCE OF 39.27 FEET TO THE POINT OF BEGINNING.

CONTAINING 19.12 NET ACRES, MORE OR LESS.

MEMORANDUM

TO: Planning and Zoning Board Members

FROM: Christopher Balter, Senior Planner

DATE: October 6, 2021

SUBJECT: **CU-39-2021 - Rusty's Express Car Wash – Robert Black (David M. Tom, P.E, Rep.) - Amendment to an existing Conditional Use to allow a proposed car wash in a CC, Community Commercial District. Tax Parcel 22, Section 5, Township 29, Range 37, Brevard County, Florida, containing approximately 1.19 acres. South of and adjacent to Malabar Road SE, in the vicinity east of Valor Drive SE, specifically at 1000 Malabar Road SE

♣Quasi-Judicial Proceeding.

ATTACHMENTS:

Description

- **Case CU-39-2021 - Staff Report**
- **Case CU-39-2021 - Exhibit**
- **Case CU-39-2021 - Stacking Concept Plan**
- **Case CU-39-2021 - Application**

STAFF REPORT

LAND DEVELOPMENT DIVISION

120 Malabar Road SE • Palm Bay, FL 32907 • Telephone: (321) 733-3042
landdevelopmentweb@palmbayflorida.org

Prepared by
Christopher Balter, Senior Planner

CASE NUMBER
CU-39-2021

PLANNING & ZONING BOARD HEARING DATE
October 6, 2021

PROPERTY OWNER & APPLICANT
Robert Black (Represented by David M. Tom P.E. of CEG)

PROPERTY LOCATION/ADDRESS
Tax Parcel 22, Section 5, Township 29, Range 37, Brevard County, Florida. Specifically, 1000 Malabar Road SE

SUMMARY OF REQUEST
Amendment to an existing Conditional Use and binding site plan to allow removal and replacement of a car wash facility in a CC, Community Commercial District.

Existing Zoning	CC, Community Commercial District
Existing Land Use	Commercial Use
Site Improvements	Existing Carwash Facility
Site Acreage	1.19 acres

SURROUNDING ZONING & USE OF LAND

North	Malabar Road SE
East	CC, Community Commercial District, Sonny's BBQ
South	CC, Community Commercial District, Storm Water Management Pond, Lot 2 of Crown Square Commercial Subdivision
West	CC, Community Commercial District, Lot 1 and 2 of Crown Square Commercial Subdivision

COMPREHENSIVE PLAN COMPATIBILITY
Yes

BACKGROUND:

The subject property is located south of and adjacent to Malabar Road SE, in the vicinity east of Valor Driver SE. Specifically, Tax Parcel 22, Section 5, Township 29, Range 37, of Brevard County Florida. The subject property received conditional use approval via case CU-12-2000 (Resolution 2000-16). The request from 2000 was approved with a binding site plan, any substantial changes to said plan require an amendment to the existing approval. This request includes approximately 1.19 acres of land.

ANALYSIS:

The proposed request is to demolish the existing outdated carwash parking areas, and construct a 4,024 square foot single-story automatic tunnel carwash with 20 self-operated cleaning areas (vacuum and drying stations.)

CODE REQUIREMENTS:

To be granted conditional use approval, requests are evaluated upon items (A) through (I) of the General Requirements and Conditions of Section 185.087 of the Code of Ordinances. A review of these items is as follows:

Item (A): Adequate ingress and egress may be obtained to and from the property, with particular reference to automotive and pedestrian safety and convenience, traffic flow and control, and access in case of fire or other emergencies.

According to the conceptual site plan, the site will be accessed from the existing driveway located along the Malabar Road SE that is shared with Sonny's BBQ. The site has existing cross-access to Sonny's BBQ parking lot. Sonny's BBQ has a cross-access agreement with Wal-Mart.

Item (B): Adequate off-street parking and loading areas may be provided, without creating undue noise, glare, odor, or other detrimental effects upon adjoining properties.

The City's Land Development Code does not contain a minimum parking standard for a car wash facility. The concern with such a facility is the stacking area provided for vehicles waiting to enter the car wash facility. For this particular operation, vehicles move through the washing facility on a computer-controlled track that brings the vehicle thorough the wash and automatic blowers. Patrons have the option of leaving the site or pulling into a self-serve space to vacuum the inside of the vehicle and/or dry off any excess water. The plan proposes 20 such spaces as well as an additional 2 standard parking spaces (no facilities). Based on the stacking concept plan 17 vehicles may be accommodated north of the building without blocking traffic entering or existing the site.

Item (C): Adequate and properly located utilities are available or may be reasonably provided to serve the proposed development.

The existing carwash is currently serviced by a 2-inch water main that connects to the existing 4-inch water main located along Malabar Road, and a 3-inch force main from a private lift station located on the northeast portion of the site. The property is currently serviced by Florida Power and Light. Any additional upgrades will be required to be designed, permitted, installed, and inspected at the developer's cost.

Item (D): Adequate screening and/or buffering will be provided to protect and provide compatibility with adjoining properties.

The parcel of land for which this development is proposed is currently an existing carwash The site abuts Malabar Road to the north, Sonny's BBQ to the east, and Crown Square (a Commercial subdivision) to the south, and west. The building is approximately 400 feet from the proposed apartment complex, located south of the proposed carwash. The standard landscape code and separation distance appear sufficient buffering from existing development.

Item (E): Signs, if any, and proposed exterior lighting will be so designed and arranged to promote traffic safety and to eliminate or minimize any undue glare, incompatibility, or disharmony with adjoining properties.

No signs are shown on the drawing and a lighting plan was not provided. It shall be noted that City codes require any lighting to be shielded and/or directed downward to avoid creating a nuisance to adjacent properties. During the administrative site plan review a lighting and photometric plan will be required.

Item (F): Yards and open spaces will be adequate to properly serve the proposed development and to ensure compatibility with adjoining properties.

The yards and open space requirements of the Zoning Code have been met. The new station will be constructed in the center of the lot.

Item (G): The proposed use will not constitute a nuisance or hazard because of the number of persons who will attend or use the facility, or because of vehicular movement, noise, fume generation, or type of physical activity.

The project has been designed with sufficient drive aisles and ample on-site maneuverability. Moreover, the looped stacking on the site and internal driveway connections, will provide for the safe off-street movement of vehicles.

Item (H): The use as proposed for development will be compatible with the existing or permitted uses of adjacent properties.

The proposed use is permitted (via conditional use), and the site was previously a carwash facility. The site is bordered by commercial land to the south, east, and by Malabar Road to the North.

Item (I): Development and operation of the proposed use will be in full compliance with any additional conditions and safeguards which the City Council may prescribe, including, but not limited to, a reasonable time limit within which the action for which special approval is requested shall be begun or completed, or both.

The Board and Council have the authority and right to impose any additional and justifiable safeguards, and/or conditions, to ensure that the facility operates safely and harmoniously with its surroundings.

STAFF CONCLUSION:

Case CU-39-2021 is recommended for approval, subject to the staff comments contained in this report.

TECHNICAL COMMENTS

CASE CU-39-2021 – RUSTY'S EXPRESS CAR WASH

PUBLIC WORKS (Natalie Shaber, Engineer II):

Survey:

Please submit a signed & sealed Survey.

- Need to provide queuing of vehicle and storage so they will not queue onto Malabar Road.
- Per ITE Trip Generation an automatic car wash Code 948 will generate 57 PM trips.
- Since PM trip is under 100 AM/PM, no traffic study so statement from EOR.
- How about service trucks to make the internal radius, so truck turning radius.
- Please provide the radius on the plans and the truck turning template.
- The 9 ft lanes at the entrance is tight and should be mini 10 ft.
- The sidewalk connection to the sidewalk on Malabar will need to meet PW Manual within City RW.
- Parking will require wheel stop if no raised sidewalk or curb along frontage.
- The retention ponds appear to be very small for the amount of impervious area.
- Provide an internal lighting plan demonstrating zero lumens at the site boundary with existing sites.

Demonstrate compliance with Ch 174 Palm Bay Code of Ordinances through submitted plans and calculations in the site plan review process.

Ch 174.073 which requires that the most stringent stormwater management criteria be met would require the provision of an SJRWMD ERP prior to scheduling a pre-sitework meeting.

Provide an SJRWMD permit. This would be a permit modification to the existing site which may be a part of a larger plan the includes Sonny's Barbeque.

Provide the plan for wastewater disposal and FDEP/ and Palm Bay Utilities approval for said disposal.

Obtain a commercial driveway and right-of-way permit for the Malabar Rd /Sonny's driveway.

UTILITIES (Christopher Little, Utilities Director):

The Utilities Department has no objection to the proposed car wash in the CC District, provided that the user continues to conform to the conditions as defined in Title XX, Chapters 200 (Utilities Code) and 201 (Sewer Code) of the City of Palm Bay Code Ordinances.

BUILDING-FIRE (Michael Bloom, Fire Plans Examiner):

1. (FFPC 1-18.2.3.5.4) Dead-end fire department access roads in excess of 150 ft. (46 m) in length shall be provided with approved provisions for the fire apparatus to turn around.

2. (FFPC 1-18.4) Indicate the minimum required fire flow on the plan. Include specific construction type. Please indicate on the plans.

BUILDING-FLOODZONE (James Williams, Certified Floodplain Manager):

The entire site is in floodzone X, no floodplain permit required.

Map is not to scale—for illustrative purposes only; not to be construed as binding or as a survey.



SITE LOCATION MAP CASE: CU-39-2021

Subject Property

South of and adjacent to Malabar Road SE, in the vicinity east of Valor Drive SE, specifically at 1000 Malabar Road SE

Map is not to scale—for illustrative purposes only; not to be construed as binding or as a survey.

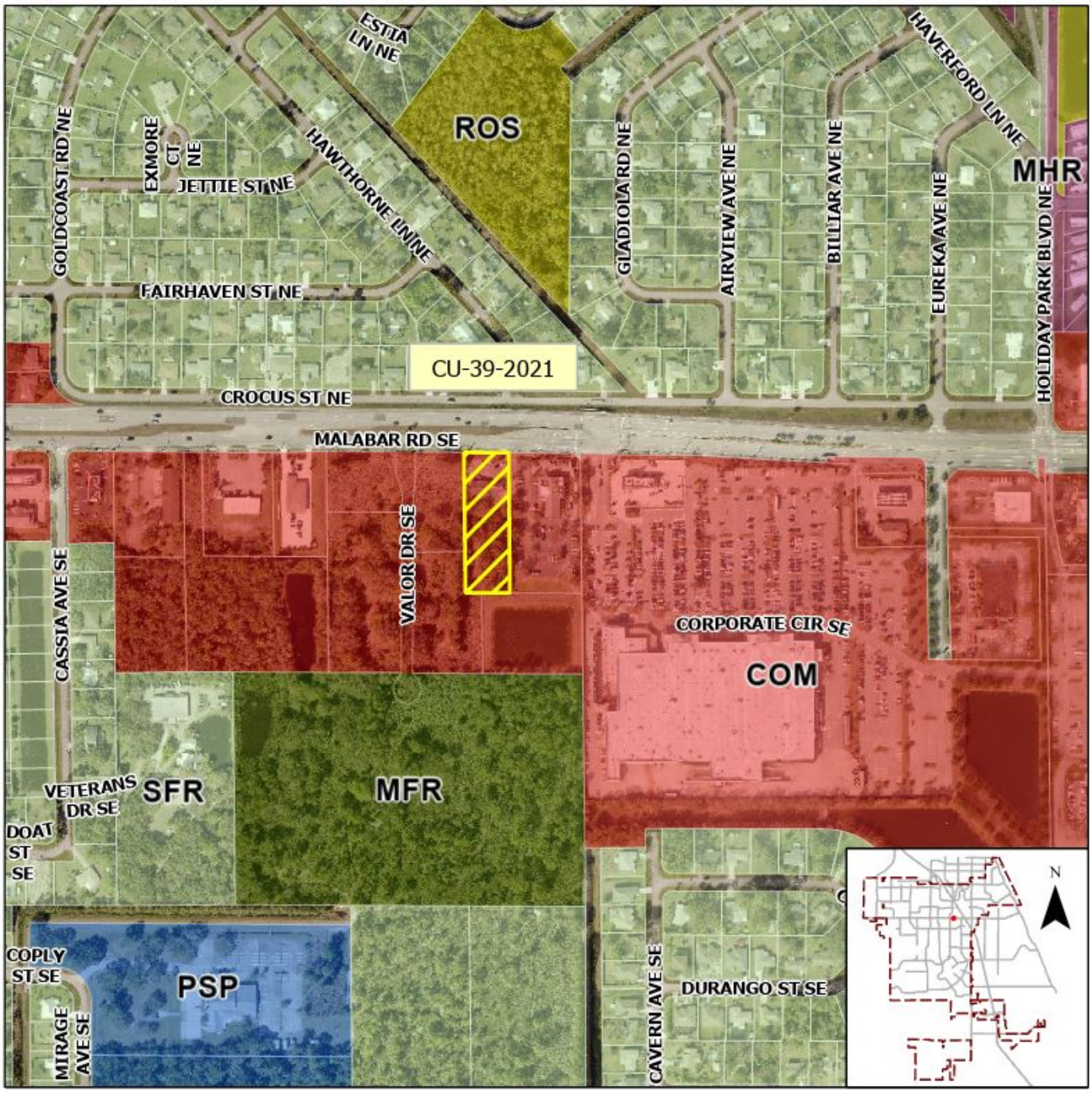


AERIAL LOCATION MAP CASE: CU-39-2021

Subject Property

South of and adjacent to Malabar Road SE, in the vicinity east of Valor Drive SE, specifically at 1000 Malabar Road SE

Map is not to scale—for illustrative purposes only; not to be construed as binding or as a survey.



FUTURE LAND USE MAP CASE: CU-39-2021

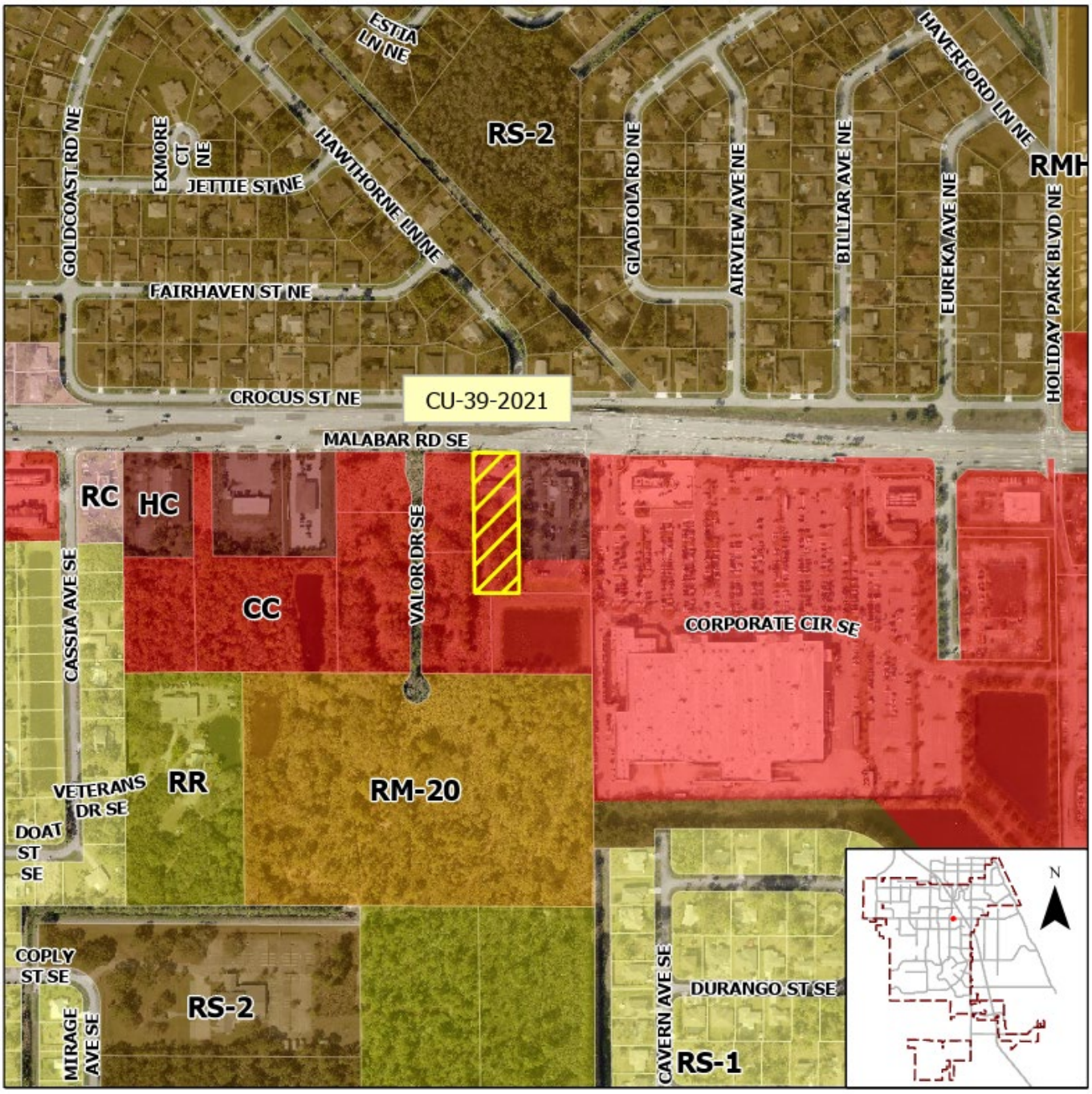
Subject Property

South of and adjacent to Malabar Road SE, in the vicinity east of Valor Drive SE, specifically at 1000 Malabar Road SE

Future Land Use Classification

COM – Commercial Use

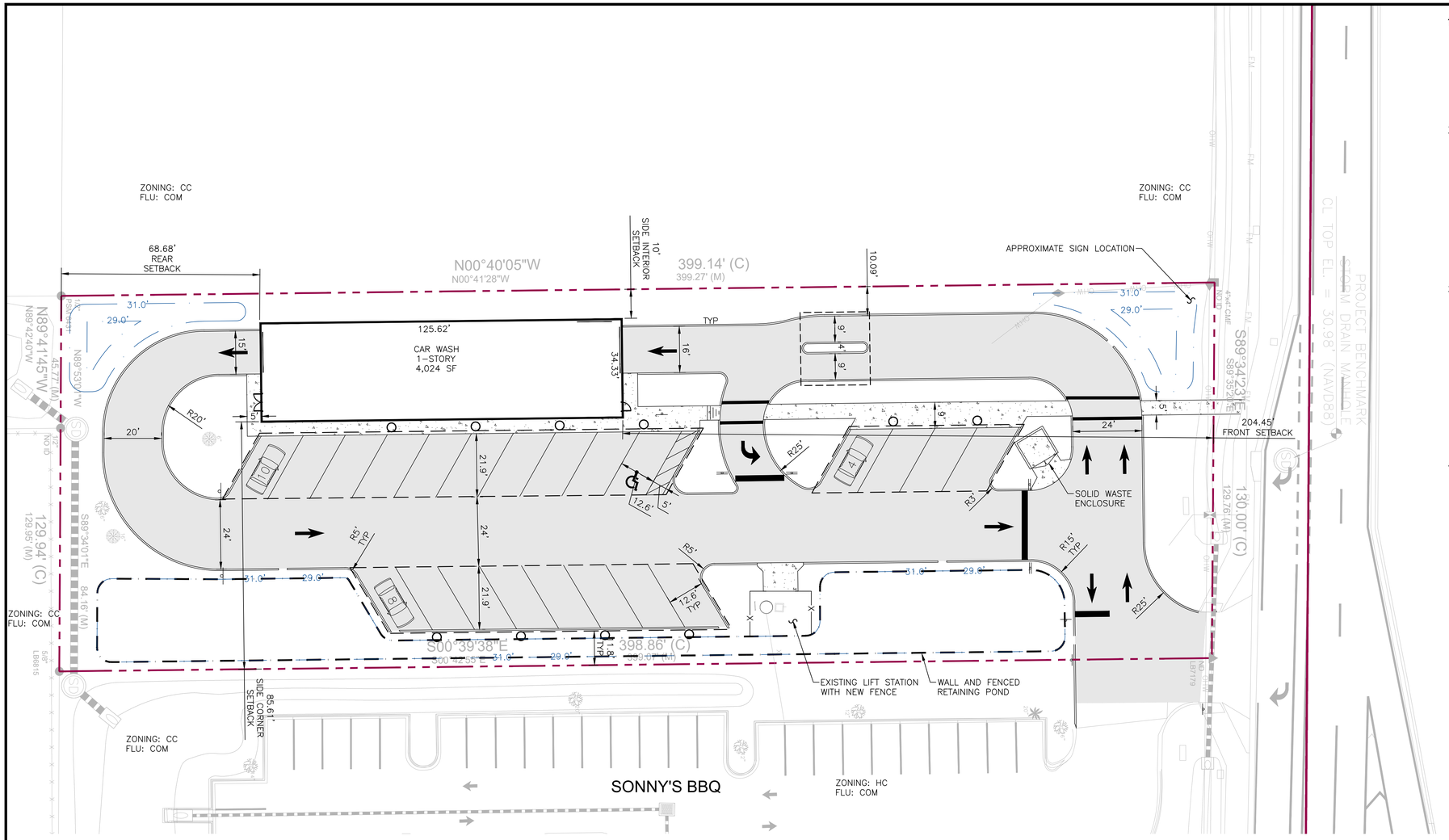
Map is not to scale—for illustrative purposes only; not to be construed as binding or as a survey.



ZONING MAP CASE: CU-39-2021

Subject Property
South of and adjacent to Malabar Road SE, in the vicinity east of Valor Drive SE, specifically at 1000 Malabar Road SE

Current Zoning Classification
CC – Community Commercial District



CONDITIONAL USE EXHIBIT

1"=20'

1. GENERAL STATEMENT:

THE PROPOSED PROJECT WILL CONSTRUCTION A ±4,024 SF SINGLE STORY CAR WASH BUILDING WITH 20 SELF-SERVE VACUUM PARKING SPACES AND 2 EMPLOYEE/VISITOR PARKING SPACES. NEW CONSTRUCTION WILL ALSO INCLUDE DRIVEWAYS, SIDEWALKS, DRY RETENTION TREATMENT SYSTEM, A WATER SERVICE, SITE LIGHTING AND LANDSCAPING. THERE IS AN EXISTING LIFT STATION FOR SEWER COLLECTION AND DISTRIBUTION THAT WILL REMAIN. THE STORMWATER TREATMENT SYSTEM WILL BE PERMITTED BY SJRWMD PERMIT AND THE CITY OF PALM BAY. THE ENTRANCE DRIVE IS SHARED USE AND WILL HAVE ACCESS FOR THE ADJACENT PROPERTY THROUGHOUT CONSTRUCTION.

2. CONTACT INFORMATION:

OWNER:
ROBERT BLACK
145 RIVERBEND DRIVE
CLARKS HILL, SC 29821
TEL: (706) 267-8693
EMAIL: RWBLACK@WCTEL.NET

CIVIL ENGINEER:
CONSTRUCTION ENGINEERING GROUP, LLC
DAVID M. TOM, PE
2651 W. EAU GALLIE BOULEVARD, SUITE A
MELBOURNE, FL 32935
TEL: (321)-610-1763
EMAIL: DTOM@CEGENGINEERING.COM

SURVEYOR:
MORGAN & ASSOCIATES
CONSULTING ENGINEERS, INC.
504 N. HARBOR CITY BLVD.
MELBOURNE, FL 32935
TEL: (321) 751-6088

ADDRESS:
TOWNSHIP: 29
RANGE: 37
SECTION: 05
PARCEL ID: 29-37-05-00-22
TAX ACCOUNT NUMBER: 2960943

3. SITE CHARACTERISTICS:

TOTAL ACREAGE: 1.19
ZONING CLASSIFICATIONS: CC
FUTURE LAND USE: COMMERCIAL
FLOOD ZONE: X

BUILDING HEIGHT:
MAX. PERMITTED = 70'
PROPOSED HEIGHT = ±35'

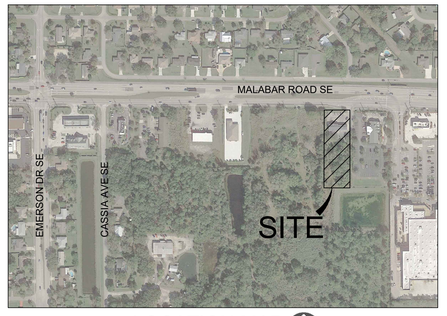
SETBACKS:

	REQUIRED	PROPOSED
FRONT:	30'	204.45'
SIDE CORNER:	25'	68.68'
SIDE INTERIOR:	10'	10'
REAR:	25'	85.61'

4. PARKING SPACE CALCULATIONS:

PARKING REQUIRED
USE: CAR WASH
CALCULATION: 1 SPACE PER 200 SF BUILDING
4,024 SF / 200 = 21 SPACES

TOTAL SPACES:
21 SPACES REQUIRED INCLUDING 1 HANDICAP SPACES
22 SPACES PROVIDED INCLUDING 1 HANDICAP SPACES



LOCATION MAP
NTS

LEGAL DESCRIPTION:

THE WEST 130 FEET OF THE NORTH HALF OF THE EAST HALF OF LOT 30, SECTION 5, TOWNSHIP 29 SOUTH, RANGE 37 EAST, FLORIDA INDIAN RIVER LAND COMPANY, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 1, PAGE 165, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA; LESS LAND CONVEYED TO BREVARD COUNTY BY THAT CERTAIN WARRANTY DEED RECORDED IN OFFICIAL RECORDS BOOK 3406, PAGE 1913, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA; AND, LESS LAND CONVEYED BY WARRANTY DEED RECORDED IN OFFICIAL RECORDS BOOK 5747, PAGE 8439, PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA; AND, LESS PORTION THAT LIES WITHIN MALABAR ROAD.

CIVIL LEGEND:

BUILDING OR STRUCTURE	
CONCRETE SIDEWALK	
ASPHALTIC PAVEMENT	
DEMOLITION	
PROPERTY LINE	
POND WITH RETAINING WALL	
POND	

20' 0' 20' 40'

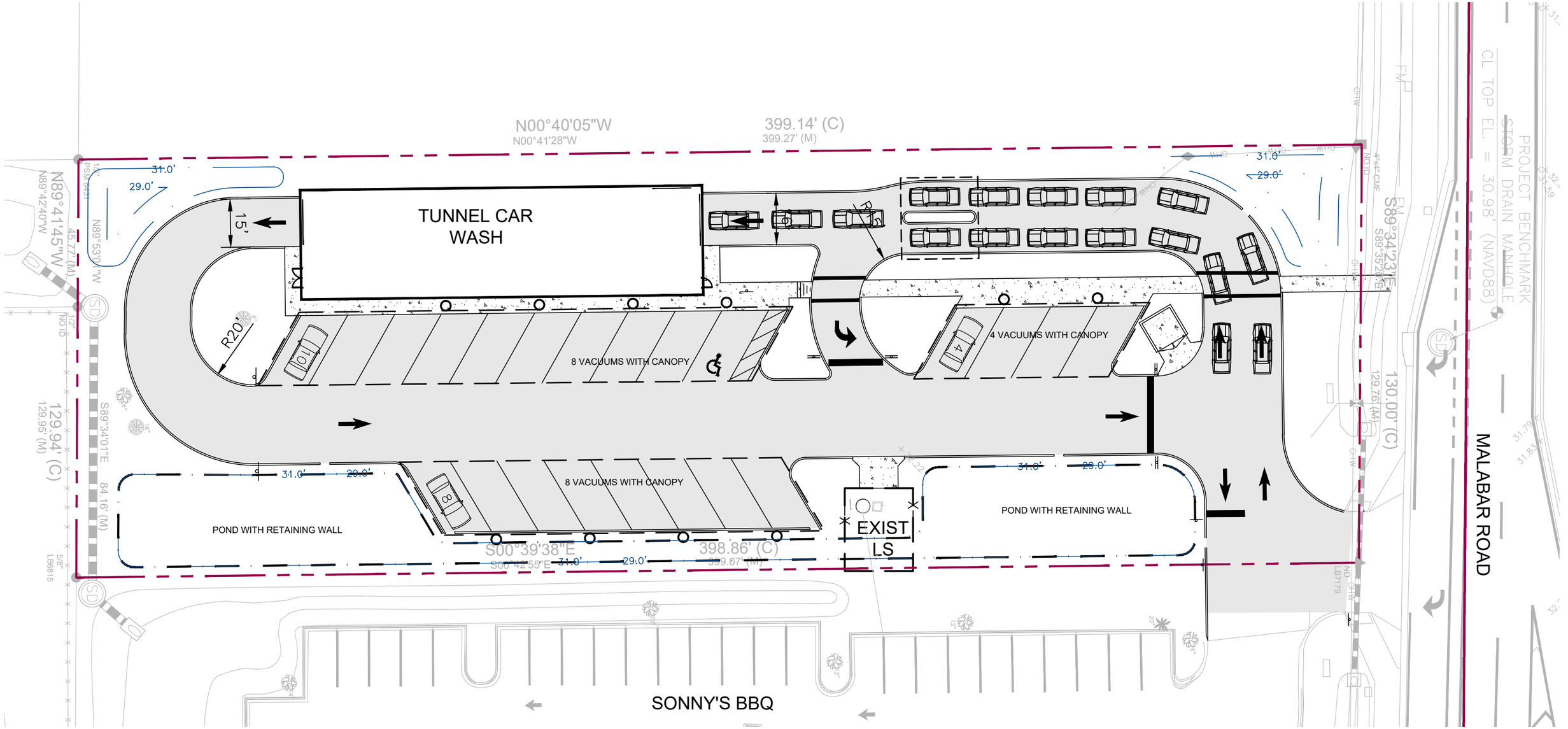
REV#	DATE	REVISION

CONSTRUCTION ENGINEERING GROUP
Consulting Engineers
2651 Eau Gallie Blvd., Suite A
Melbourne, FL 32935
Tel. 321.233.1221
www.cegengineering.com
COA #0008097

RUSTY'S EXPRESS CAR WASH
ROBERT BLACK
MALABAR ROAD
DRAWING TITLE
CONDITIONAL USE EXHIBIT

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DATE: 03/15/2021
SCALE: 1"=20'
PROJ. NO. : 200241
DESIGNED BY: RJN
DRAWN BY: NTW
CHECKED BY: DMT
DRAWING NO.: RCEX-1



STACKING CONCEPT PLAN

1"=30'

09-29-21 | SCP-1

CONSTRUCTION ENGINEERING GROUP
Consulting Engineers
2651 Eau Gallie Blvd., Suite A
Melbourne, FL 32935
Tel. 321.253.1221
www.cegengineering.com
COA #0008097

LAND DEVELOPMENT DIVISION
120 Malabar Road SE • Palm Bay, FL 32907 • Telephone: (321) 733-3042
Landdevelopmentweb@palmbayflorida.org

CONDITIONAL USE APPLICATION

This application must be deemed complete and legible, and the original application with original signature(s) must be returned by the first day of the month during division office hours, with all enclosures referred to herein, to the Land Development Division, Palm Bay, Florida, to be processed for consideration the following month at the earliest by the Planning and Zoning Board. The application will then be referred by the Planning and Zoning Board for study and recommendation to the City Council. You or your representative are required to attend the meeting(s) and will be notified by mail of the date and time of the meeting(s). The Planning and Zoning Board holds their regular meeting the first Wednesday of every month at 7:00 p.m. in the City Hall Council Chambers, 120 Malabar Road SE, Palm Bay, Florida, unless otherwise stated.

PARCEL ID(S):

29-37-05-00-22

TAX ACCOUNT NUMBER(S):

2960943

PROPERTY ADDRESS:

1000 Malabar Road SE; Palm Bay, FL

SIZE OF AREA COVERED BY THIS APPLICATION (calculate acreage):

+/- 1.19 acres

ZONING CLASSIFICATION AT PRESENT (ex.: RS-2, CC, etc.):

CC

CONDITIONAL USE SOUGHT:

Car Wash

BE ADVISED: All Conditional Use applications/projects are evaluated based on the following items located in Section 185.087 of the Code of Ordinances:

1. Proposed building and structures.
2. Proposed parking areas, vehicular and pedestrian circulation;
3. Proposed driveways and roadways near the site;
4. Conceptual stormwater management system; and
5. The provisions for potable water, sewer, and fire protection.

A SITE SKETCH TO SCALE MUST BE PROVIDED OF THE FOLLOWING:

(A) Adequate ingress and egress may be obtained to and from the property, with particular reference to automotive and pedestrian safety and convenience, traffic flow and control, and access in case of fire or other emergency.

(B) Adequate off-street parking and loading areas may be provided, without creating undue noise, glare, odor, or other detrimental effects upon adjoining properties.

(C) Adequate and properly located utilities that are available or may be reasonably provided to serve the proposed development.

(D) Adequate screening and/or buffering will be provided to protect and provide compatibility with adjoining properties.

(E) Signs, if any, and proposed exterior lighting will be so designed and arranged so as to promote traffic safety and to eliminate or minimize any undue glare, incompatibility, or disharmony with adjoining properties.

(F) Yards and open spaces will be adequate to properly serve the proposed development and to ensure compatibility with adjoining properties.

(G) The proposed use will not constitute a nuisance or hazard because of the number of persons who will attend or use the facility, or because of vehicular movement, noise, fume generation, or type of physical activity.

(H) Development and operation of the proposed use will be in full compliance with any additional conditions and safeguards which the City Council may prescribe, including, but not limited to, reasonable time limit within which the action for which special approval is requested shall be begun or completed, or both.

ADDITIONAL CONDITIONS MUST BE MET AND INCORPORATED INTO THE SITE SKETCH FOR THE SPECIFIC CONDITIONAL USE. Additional criteria is listed in Section 185.088 and available from staff (check all that apply):

- ☐ **Church** [Sec. 185.088(A)]
- ☐ **Club or Lodge** [Sec. 185.088(B)]
- ☐ **Commercial Dog Kennel** [Sec. 185.088(C)]
- ☐ **Planned Industrial Development** (industrially zoned site over 5 acres) [Sec. 185.088(D)]
- ☐ **Public or Private School** [Sec. 185.088(E)]
- ☐ **Self-Storage Facility** [Sec. 185.088(F)]
- ☐ **Communication Tower and Facilities** [Sec. 185.088(G)]
- ☐ **Dance Club** [Sec. 185.088(H)]
- ☐ **Security Dwelling Unit** [Sec. 185.088(I)]
- ☐ **Wedding Venue** [Sec. 185.088(J)]
- ☐ **Event Hall** [Sec. 185.088(K)]

THE FOLLOWING PROCEDURES AND ENCLOSURES ARE REQUIRED TO COMPLETE THIS APPLICATION:

- [x] *$650.00 Application Fee. Make Check payable to "City of Palm Bay."

- [x] List of legal descriptions of all properties within a 500-foot radius of the boundaries of the property covered by this application, together with the names and mailing addresses (including zip codes) of all respective property owners within the above referenced area. (This should be obtained for a fee from the Brevard County Planning and Zoning Department at (321) 633-2060.)

- [x] Site Sketch (See page 2 for requirements). **Also provide the site sketch on Memory Drive.**

- [x] Citizen Participation Plan. Refer to Section 169.005 of the Land Development Code for guidelines.

- [x] Sign(s) posted on the subject property. Refer to Section 51.07(C) of the Legislative Code for guidelines. Staff will provide a sign template.

- [x] **Where the property owner is not the representative for the request**, a LETTER must be attached giving the notarized consent of the property owner(s) to a representative.

Name of Representative David M. Tom, PE- Construction Engineering Group, LLC

I, the undersigned understand that this application must be complete and accurate before consideration by the Planning and Zoning Board/Local Planning Agency and certify that all the answers to the questions in said application, and all data and matter attached to and made a part of said application are honest and true to the best of my knowledge and belief.

Under penalties of perjury, I declare that I have read the foregoing conditional use application and that the facts stated in it are true.

Owner Signature _____ **Date** 8-16-21

Printed Name Robert Black

Full Address 145 Riverbend Drive; Clarks Hill, SC 29821

Telephone 706-267-8693 **Email** rwblack@wctel.net

***NOTE: APPLICATION FEE IS NON-REFUNDABLE UPON PAYMENT TO THE CITY**

August 5, 2021

Re: Letter of Authorization

As the property owner of the site legally described as:

29-37-05-00-22

I, Owner Name: Robert Black

Address: 145 Riverbend Drive; Clarks Hill, SC 29821

Telephone: 706-267-8693

Email: rwblack@wctel.net

hereby authorize:

Representative: David M. Tom, PE- Construction Engineering Group, LLC

Address: 2651 W Eau Gallie Blvd; Suite A; Melbourne, FL 32935

Telephone: 321-610-1763

Email: dtom@cegengineering.com

to represent the request(s) for:

Conditional Use and all related submittals

Robert W Black
(Property Owner Signature)

STATE OF Georgia

COUNTY OF Columbia

The foregoing instrument was acknowledged before me by means of ☑ physical presence or ☐ online notarization, this 6 day of August, 2021 by Robert W Black, property owner.

LISA M. DAVIS NOTARY PUBLIC COLUMBIA COUNTY GEORGIA EXPIRES June 16, 2024

June 16 2024
Lisa M Davis, Notary Public

☐ Personally Known or ☑ Produced the Following Type of Identification:
Drivers License

MEMORANDUM

TO: Planning and Zoning Board Members

FROM: Patrick Murphy, Acting Growth Management Director

DATE: October 6, 2021

SUBJECT: **FD-40-2021 - The Reserve at Country Club Lakes Estates - Mario Oliveira, Palm Bay Greens, Inc. (David Bassford and Brian Bussen, Reps.) - Final Development Plan to allow a proposed PUD for a 200-unit multiple-family and single-family residential development called The Reserve at Country Club Lakes Estates. Tax Parcels 251 and 253, Section 28, Township 28, Range 37, Brevard County, Florida, containing approximately 74.2 acres. In the vicinity north of Country Club Drive NE and south of Riviera Drive NE

♣Quasi-Judicial Proceeding.

ATTACHMENTS:

Description

- **Case FD-40-2021 - Staff Report**
- **Case FD-40-2021 - Final Development Plan**
- **Case FD-40-2021 - Tree Survey**
- **Case FD-40-2021 - Plat**
- **Case FD-40-2021 - Construction Plans - Part 1**
- **Case FD-40-2021 - Construction Plans - Part 2**
- **FD-40-2021 - Application**

STAFF REPORT

LAND DEVELOPMENT DIVISION

120 Malabar Road SE • Palm Bay, FL 32907 • Telephone: (321) 733-3042
landdevelopmentweb@palmbayflorida.org

Prepared by
Patrick J. Murphy, Assistant Growth Management Director

CASE NUMBER
FD-40-2021

PLANNING & ZONING BOARD HEARING DATE
October 6, 2021

PROPERTY OWNER & APPLICANT
Palm Bay Greens, LLC (Mario Oliveira, Manager), Represented by David Bassford of MBV Engineering and Brian Bussen of Country Club Lakes Developers, LLC

PROPERTY LOCATION/ADDRESS
The property is located at the terminus of Country Club Drive NE; between Port Malabar Boulevard to the east, and Riviera Drive to the west.

SUMMARY OF REQUEST	Final Planned Unit Development approval for a 199-unit residential subdivision: "The Reserve at Country Club Lakes Estates"
Existing Zoning	RS-1, Single-Family Residential
Existing Land Use	Single Family Residential Use
Site Improvements	Vacant, former Golf Course
Site Acreage	74.24 acres

SURROUNDING ZONING & USE OF LAND

North	RS-1, Single-Family Residential; Single-Family Homes
East	RS-1, Single-Family Residential; Single-Family Homes
South	RS-1, Single-Family Residential; Single-Family Homes
West	RS-1, Single-Family Residential; Single-Family Homes AND RM-10, Single-, Two-, and Multiple-family Residential; Bimini Bay Townhomes and Malabar Lakes Apartments

COMPREHENSIVE PLAN COMPATIBILITY	Yes, subject to Ordinance 2021-07 [CP-2-2021]

BACKGROUND:

The property is located at the terminus of Country Club Drive NE, between Port Malabar Boulevard to the east, and Riviera Drive to the west. Specifically, the property is Tax Parcels 251 and 253, Section 28, Township 28 south, Range 37 east, Brevard County, Florida. The properties include approximately 74.24 acres of land.

The property consists of the northern portion of what was once the Port Malabar Country Club Golf Course. The current zoning of the property is RS-1, Single-Family Residential and the property is bordered by RS-1 zoning to the north, south, and east. To the west is RS-1 zoning and RM-10, Single-, Two-, and Multiple-Family Residential zoning. Single-family homes, Townhomes, condominiums, and apartments lie adjacent to the project.

Project History:

Final Subdivision Approval (November-2015) Phase 1 & 2; 101 lots on 52.2 acres (FS-2-2015)

Final Subdivision Approval (July-2018) Phase 3; 30 lots on 13.48 acres (FS-3-2018)

Final Subdivision Approval (June-2021) Phase 4; 68 lots on 32.31 acres (FS-1-2021)

Preliminary PUD Approval (February-2021) Phase 5: 200 units on 74.24 acres (PD-2-2021)

The current request is for Final Development Plan (PUD zoning) approval upon the remaining 74 acres of the overall development. This will be the 5th and final phase of the Country Club Lakes Estates (CCLE) subdivision. Upon completion, CCLE will total 172 acres of mixed housing. The applicant is Palm Bay Greens, LLC. (Mario Oliveira, Manager). They are represented by their Civil Engineer, Mr. David Bassford of MBV Engineering, Inc.

ANALYSIS:

The planned unit development (PUD) is a concept which encourages and permits variation in residential developments by allowing deviation in lot size, bulk or type of dwellings, density, lot coverage, setbacks, and open space, from those elements required in any singular zoning classification found in the city's Zoning Code. The purpose of a planned unit development is to encourage the development of planned residential neighborhoods and communities that provide a full range of residence types, as well as commercial uses designed to serve the inhabitants of the proposed community.

The planned unit development process simplifies the procedure for obtaining approval of these developments through simultaneous review of the proposed land use, site consideration, public needs and requirements, and health and safety factors. Approval of the FDP request would be in the form of an ordinance and recorded in the Public Records of Brevard County.

Specifically, the FDP proposes a 199-unit residential development consisting of 153 single-family lots and 46 duplex lots. A total of 72 lots (80' wide) are placed along the perimeter of the project, adjacent to existing lots outside the project, which carry the same lot width. 81 interior lots (at 60' wide) complete the single-family portion of the project. The 46 duplex lots are located between the Bimini Bay townhome community and the Malabar Apartment complex, to the west, and the Island Green Villas (condominiums) to the east. The overall density of the project is 2.68 Units per Acre. The minimum sized home shall be 800 sf.

There are many exceptional "specimen" trees present on the site as the property is part of a former golf course. The City's Subdivision Code (Section 184.24) requires the Applicant to make a concerted effort to preserve as many of these trees as possible. Existing specimen trees have been surveyed as to size and location, and the project designed to preserve many of them through various Open Space Tracts. Several specimen trees will be removed due to the future infrastructure (roads and utilities) and future homesites (within the buildable area) and will be mitigated for during the construction plan review.

Interconnected wet detention ponds will serve as stormwater treatment for all phases of this development, with an overflow structure that discharges into the existing ponds in Phase 1&2 of CCLE. That system outfalls into the C-1 Canal. Historical flow from off-site will also be accommodated. Engineered stormwater designs will be required for the Final Development Plan submittal. Prior to commencement of construction, the design shall be approved by both the City's Public Works Department of the St. Johns River Water Management District.

The internal road network will be designed to meet city standards. Unless formally requested for city acceptance, the roads shall be maintained by the Homeowner's Association (HOA). An easement error has been discovered regarding the location of the existing 24' wide driveway access for the Island Green Villas (IGV), which is a condominium development that is surrounded by CCLE. That is, a portion of the driveway exists upon the applicant's property.

The applicant has informed staff that they intend prepare a quit claim deed for a 30' wide parcel to be centered on the existing drive, at no cost to IGV. This is also being done to include (preserve) a row of existing trees that parallel the entrance drive. Execution of this action (deed) shall be required prior to construction plan approval of this phase. Additionally, the applicant intends to reconfigure the Country Club Drive access, in front of IGV, to include a landscape island within the road, to preserve an exceptional specimen oak tree.

As part of the FDP submittal, a traffic impact analysis has been submitted that examines the overall project to identify roadway improvements that might be needed for a 2026 "build-out" scenario. The study, prepared by the Lassiter Transportation Group, Inc., determined that the unsignalized intersections in the study area are functioning at accepted levels and would not be negatively affected by this project. Based on the analysis neither a southbound left-turn lane nor a northbound right-turn lane is warranted at the project driveway (at Riviera Drive).

However, the study did show that three (3) road segments would be affected when the overall CCLE community is built-out. These segments are Port Malabar Boulevard (from Riviera Drive to Babcock Street); Babcock Street (from Charles Boulevard to Malabar Road); and Malabar Road (from Babcock Street to I-95). Moreover, it is recommended that the road segments of Babcock Street (from Port Malabar to Charles), and Port Malabar Boulevard (from Riviera Drive to Babcock Street) be deemed critical due to the road segments approaching maximum capacity, under the build-out scenario. During construction plan review City staff will be determining the developer's proportionate fair share for these road improvements. City staff will also need to optimize the splits at nearby traffic signals.

City water & sewer will be extended from existing, nearby lines and provided to all residential units of this phase. A Utility Agreement shall be executed prior to construction plan approval.

Section 185.065 of the City's Code of Ordinances requires a Planned Unit Development to permanently set aside and designate on the site plan recreational and/or open space for use by residents of the PUD. Such useable space shall in the form of active or passive recreation areas. Common open space shall be improved to the extent necessary to complement the residential uses and may contain compatible and complimentary structures for the benefit and enjoyment of the residents of the PUD.

The Preliminary Development Plan (Sheet PUD-1) provided a breakdown showing that the minimum set aside of 25% of the acreage of the PUD has been met by a series of Open Space Tracts and upland areas within the stormwater tracts. A note was included upon this plan that the ponds shall be improved with either docks or piers. It is staff's position that the intent of 185.065 is to provide more than just "open areas". To that extent, staff recommends that the large area in the south of this phase, indicated as Tract OS-D (which contains many large specimen trees), be provided with a walking trail, and sitting benches.

A condition of the PDP approval was to provide an Environmental Study that included Wetland and Endangered Species Assessments. The study was conducted by Atlantic Environmental of Florida, LLC. The conclusion of the report found no wetlands to exist upon the property. It did identify that there is suitable gopher tortoise habitat within a portion of the property, and the Consultant recommends having a formal gopher tortoise survey completed prior to clearing/development over 100% of the suitable on-site habitat.

The survey did not indicate any protected wading bird species are using the property in a way that is significantly dependent upon the on-site habitat. No nests were observed on the property and no signs of these species were noted. However, Environmental Atlantic noted that the St. Johns River Water Management District ('District') may consider portions of the existing surface waters (ditches and/or pond banks) to be suitable wood stork foraging habitat and may require mitigation during review of the Environmental Resource Permit that the 'District' will issue for this phase of development.

The PDP was also conditioned upon the applicant providing a Remedial Action Plan for mitigation of potential soil contaminants due to the long-term use of fertilizers and other chemicals typically associated with golf course management. A *Source Removal Report of Executed Limited Scope Remedial Action Plan* was conducted by Agee Consulting. The report included a recommendation for No Further Action, without conditions. The report was reviewed by the Florida Department of Environmental Protection ('Department'). Based on the Department's review, the Source Removal Report was approved. The Department further wrote that the site assessment requirements in Rule 62-780.600 (F.A.C.) have been satisfied and site assessment is considered complete. Therefore, a Site Rehabilitation Completion Order (without Conditions) was issued to the applicant by the 'Department'.

Lastly, technical staff review comments are attached to this report and shall be incorporated into the construction drawings and subdivision plat.

CONDITIONS:

To receive Final Planned Unit Development approval, the proposal must meet the requirements of Section 185.067 of the City of Palm Bay's Code of Ordinances. Upon review, it appears that the request is in conformance with the applicable requirements of this section, subject to the following items being addressed during the construction plan review process:

- Approval of the subdivision plat and Opinion of Title.
- Development standards shall be provided in the 5th Amendment to the Covenants, Conditions, Restrictions and Easements for CCLE; specifically, minimum home size and minimum setbacks for all structures (principal and accessory).
- Construction plan review/approval.
- The Applicant is required to design water & sewer systems of adequate size to accommodate the development and depict such design on construction drawings.
- Provide benches and a walking trail within Tract OS-D.

STAFF RECOMMENDATION:

Case FD-40-2021 is recommended for approval, subject to the staff comments contained in this report.

TECHNICAL COMMENTS

CASE FD-40-2021 – THE RESERVE AT COUNTRY CLUB LAKES PUD

PUBLIC WORKS (Natalie Shaber, Engineer II):

Survey:

1. All roads to be dedicated as private with no City maintenance responsibilities.

2. Drainage easement allowing the City emergency access and maintenance will be required.

3. Required drainage easement along rear of all lots adjacent to existing subdivisions, allowing but not requiring City emergency maintenance.

Engineering:

1. The proposed stormwater management system shall be sized to meet the stormwater management criteria per Ch 174, in particular Ch 174.073 which requires the most stringent stormwater management design and performance standards and specifications be met.

2. A St. John's River Water Management District permit must be obtained prior to scheduling a pre-sitework meeting

3. This site accepts offsite flow from all of the existing residential neighborhoods and streets. Please demonstrate through plans and calculations that the proposed system is adequately sized to treat and attenuate the offsite flow in addition to the treatment and attenuation required for the proposed land development

4. The discharge from this site drains to the City's R/W and then to private subdivisions prior to final outfall at the C 1 canal. All drainage easements shall be obtained, executed and recorded prior to site plan approval.

5. The City shall have a drainage easement over the entire system granting the right but not the obligation to access the stormwater management system as needed.

6. Post-development discharge rates for all applicable design storms shall not exceed pre-development discharge rates.

7. Staff reserves the right to review the plans and calculations provided for site plan review to ensure that all engineering standards, and specifications, laws, rules, and ordinances that protect health safety, land values, and the environment are met, including but not limited to stormwater management, roadway construction, paving and grading.

- Sheet C-203 - There needs to be continuous sidewalk and why does it end on Tract D.
- Sheet C-203 - looks like Miami curbs with inlets.

- Sheet C-204 shows connect to Riviera Drive with install of valley gutter which will not be allowed, need curb returns and inlets and pipe under the driveway.
- Sheet C-209 shows the south entrance and parking area, need dimensions of parking spaces, signage and pavement marking on one way.
- Sheet C-209 add more striping and pavement markings to direction traffic.
- Sheet C-303 show the drainage system and there are inlets and Miami curb and large pipes with box structures.
- Sheet C-304 show pipes under roadway, so pipes will be RCP or meet depth of coverage.
- Sheet C-310 show some long drainage flow runs between inlets, question runoff and volume.

UTILITIES (Christopher Little, Utilities Director):

1. The applicant/owner, at their expense, will be required to design, permit, install, inspect and test water & sewer systems of adequate size to accommodate the development and to connect to the City's water and sewer system [§ 200.11(d)(1) - On-site Facilities]. At this time the nearest point of connection to the mainline water distribution system is a 8" PVC pipe on the North side of Country Club Drive NE. The nearest point of connection to the mainline wastewater collection system force main is a 12" PVC pipe on the North side of Country Club Drive NE. Note, the proposed water and sewer connections will need to be redesigned to reflect conditions in the field.

2. The applicant/owner will be responsible for the property's hydraulic share for the new utilities. Oversizing of utilities at the request of the Utilities Department will be subject to a refunding agreement or refundable advance [§ 200.11(D) &(E)]. The City of Palm Bay's 2017 Wastewater Master Plan & 2017 Water Master Plan, both of which are available upon request, identify proposed mainline extensions with the current piping size requirements.

3. A City of Palm Bay "Utility Agreement" shall be executed between the Property Owner and the City. All Utility impact/connection charges noted in the "Utility Agreement" must be paid as outlined in the terms and conditions of the Utility Agreement. All fees are subject to change annually on October 1. The Property Owner shall submit a certified copy of the property deed as verification of ownership as part of the Utility Agreement.

4. All Utility construction, materials, and testing shall be in accordance with the latest revision of the Palm Bay Utilities Department Policies, Procedures, and Standards Handbook and the Standard Detail Drawings.

5. Prior to any construction, all required FDEP Permit applications for the Water and Sanitary Sewer Construction shall be processed through and copies of the Permits filed with the Utilities Department.

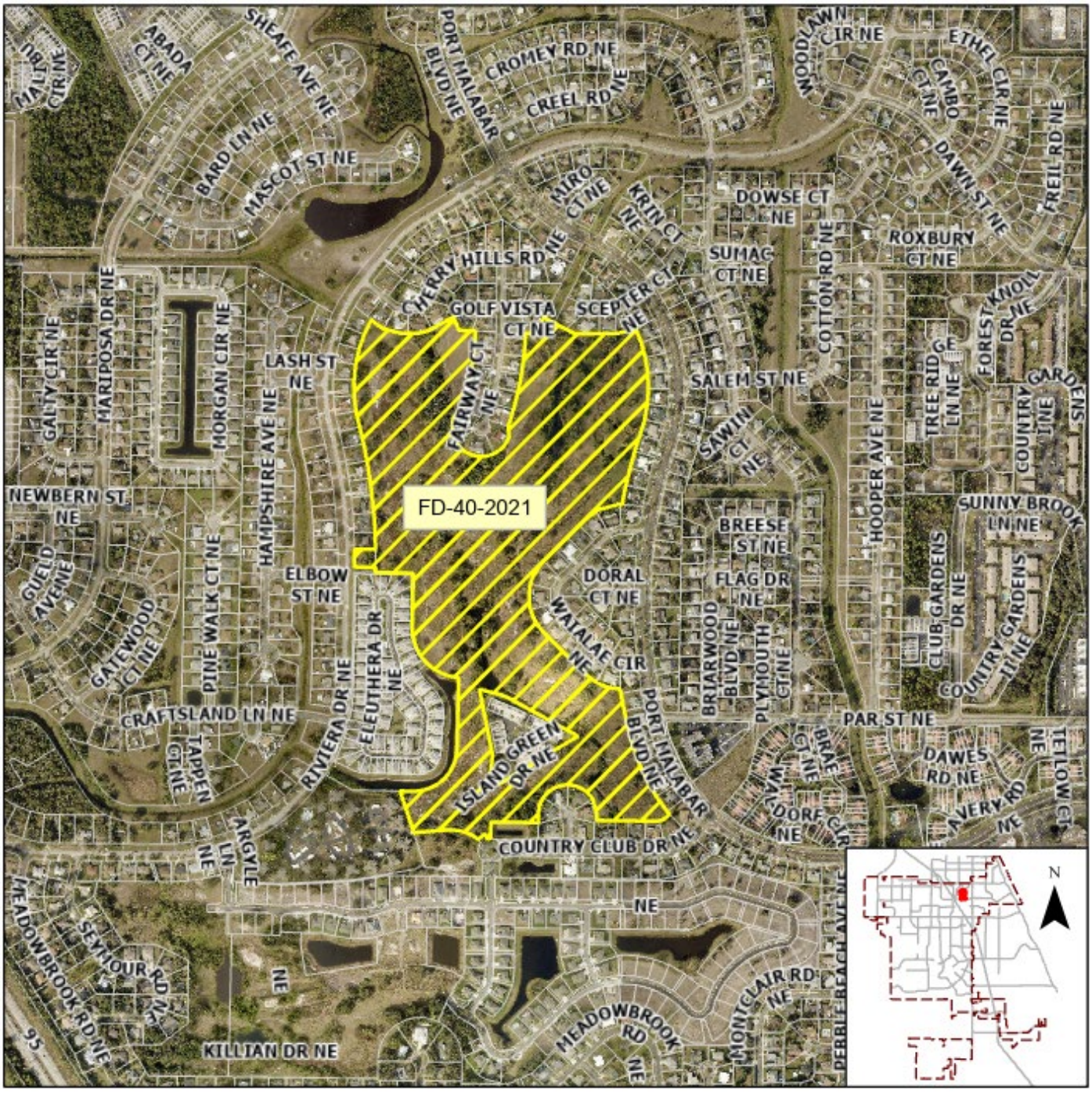
FIRE (Mark Whorton, Fire Consultant):

No comments.

BUILDING (James Williams, Certified Floodplain Manager):

The entire site is in floodzone X, no floodplain permits, CLOMA or LOMR-F required.

Map is not to scale—for illustrative purposes only; not to be construed as binding or as a survey.

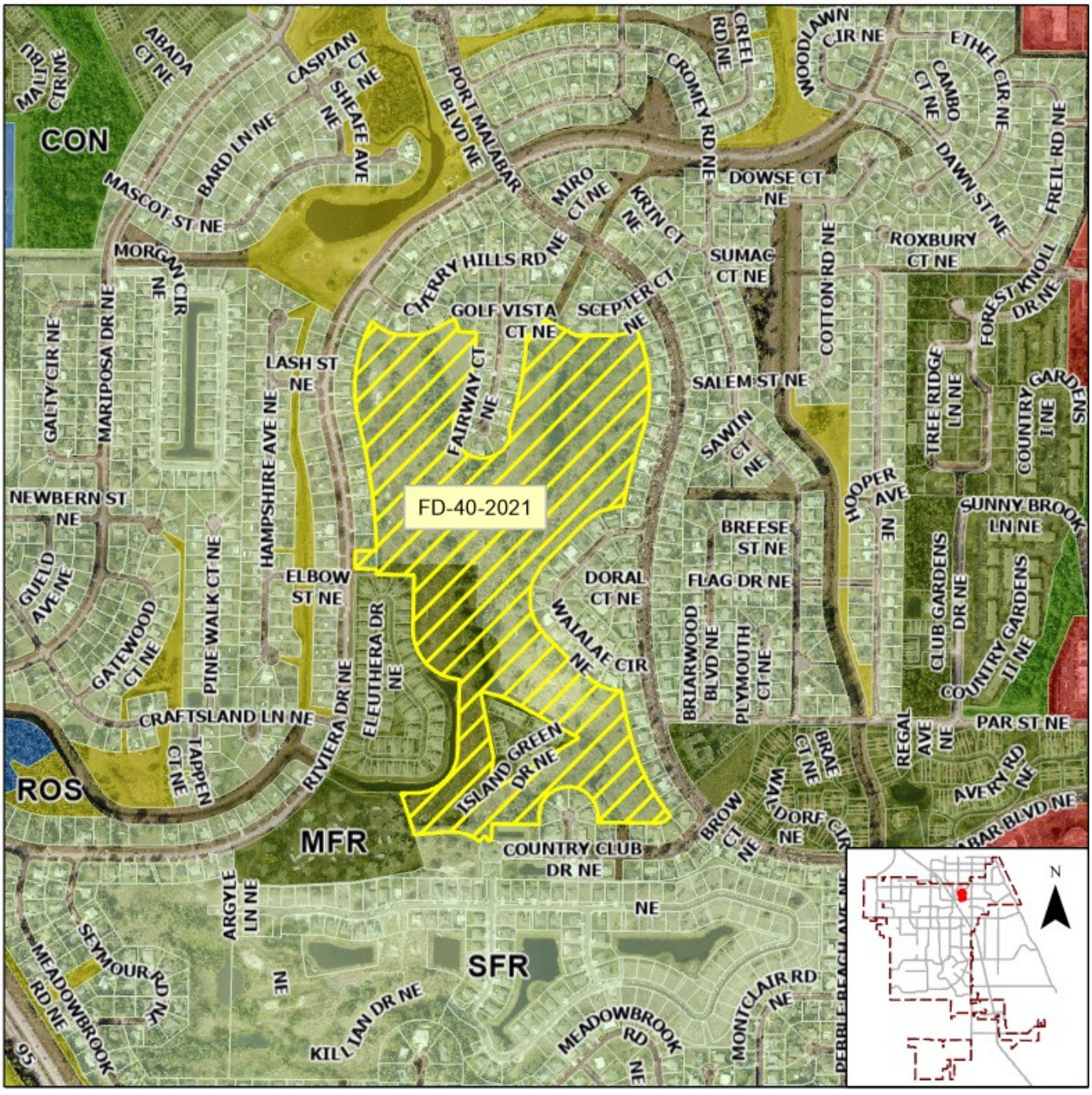


AERIAL LOCATION MAP CASE: FD-40-2021

Subject Property

In the vicinity north of Country Club Drive NE and south of Riviera Drive NE

Map is not to scale—for illustrative purposes only; not to be construed as binding or as a survey.

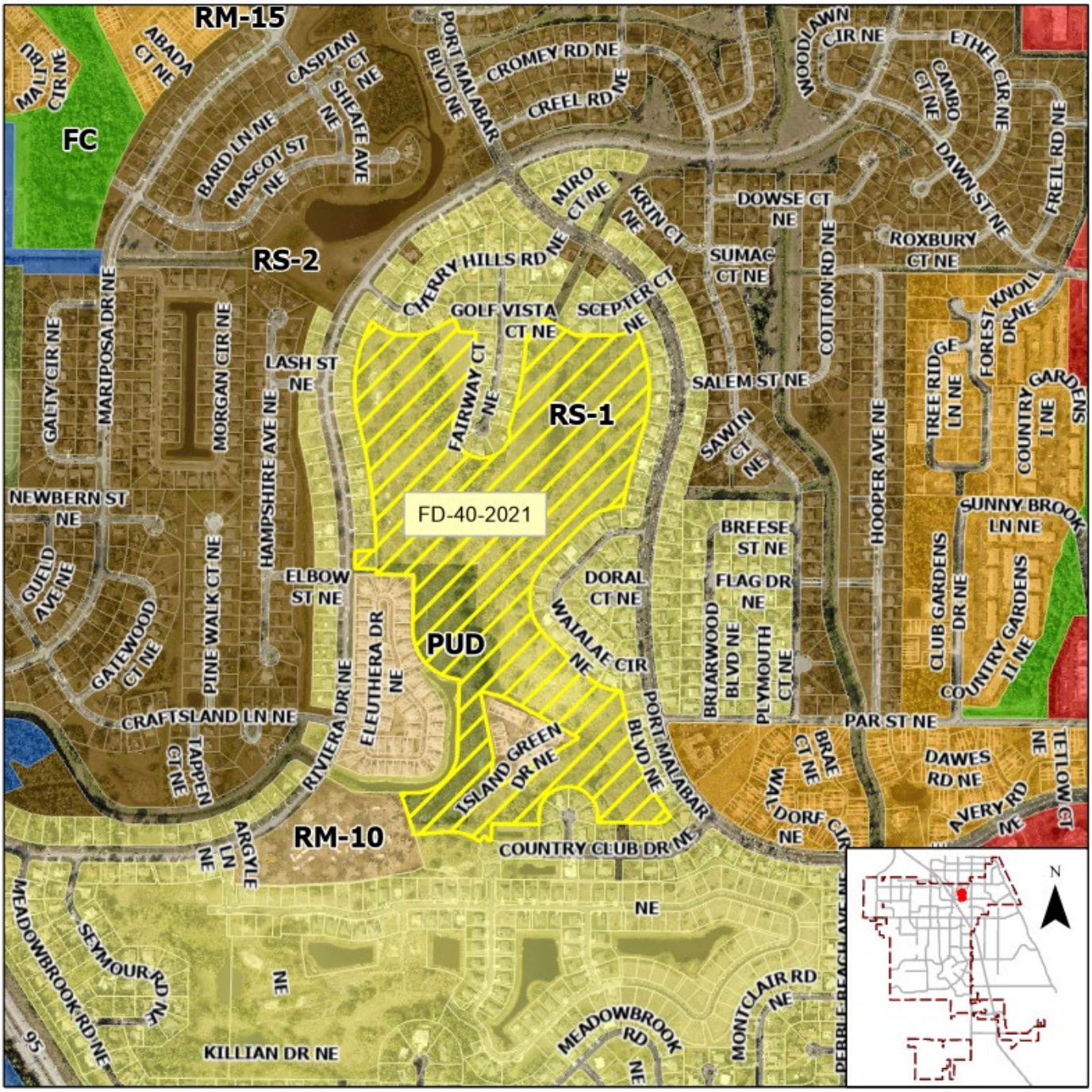


FUTURE LAND USE MAP CASE: FD-40-2021

Subject Property
In the vicinity north of Country Club Drive NE and south of Riviera Drive NE

Future Land Use Classification
SFR – Single Family Residential Use

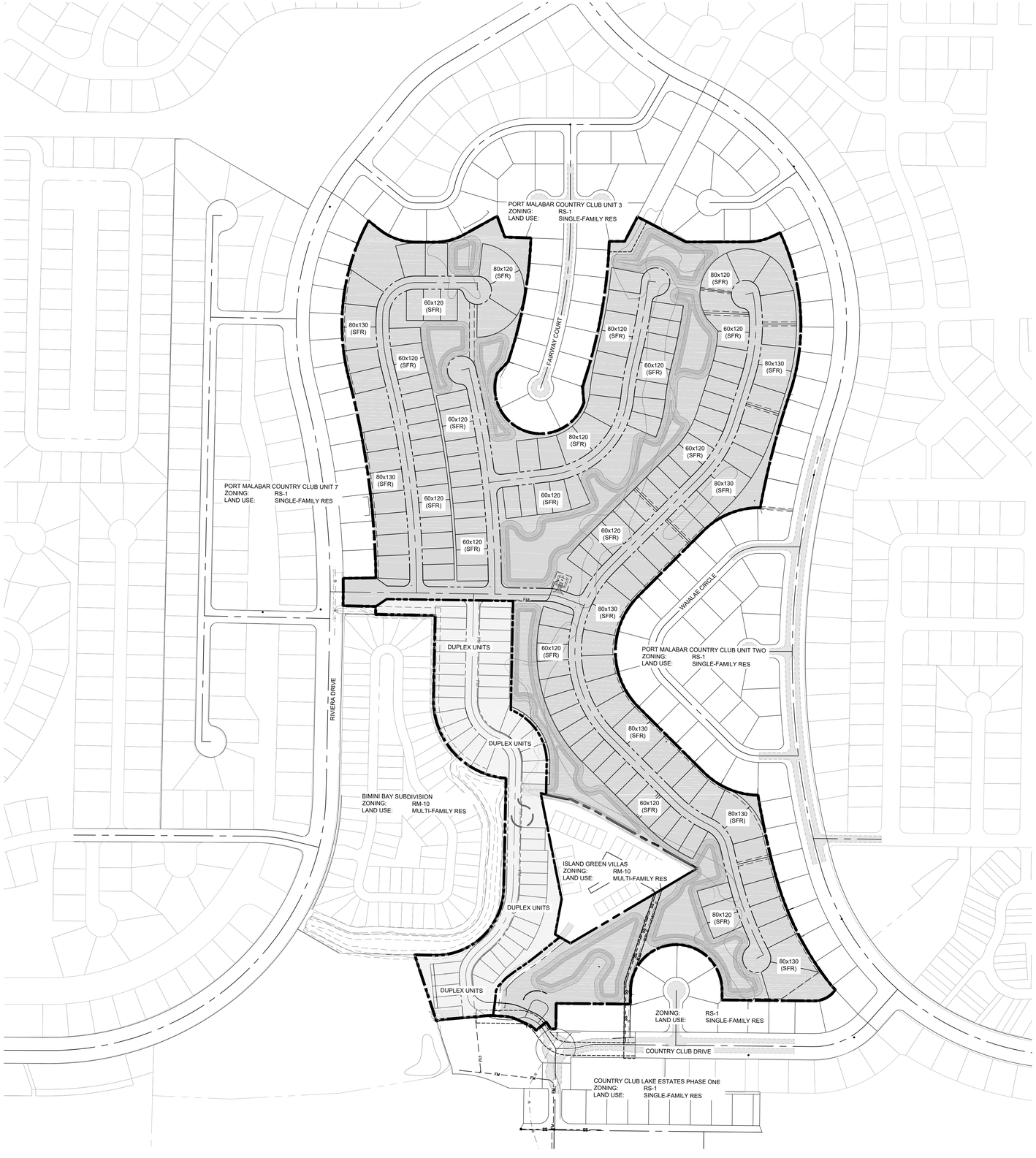
Map is not to scale—for illustrative purposes only; not to be construed as binding or as a survey.

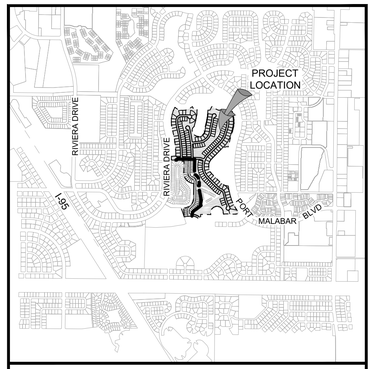


ZONING MAP CASE: FD-40-2021

Subject Property
In the vicinity north of Country Club Drive NE and south of Riviera Drive NE

Current Zoning Classification
RS-1, PUD – Single-Family Residential, Planned Unit Development





VICINITY MAP

LEGEND

- LAND USE: SINGLE-FAMILY RESIDENTIAL
- LAND USE: MULTI-FAMILY RESIDENTIAL

SITE INFORMATION

GENERAL STATEMENT

THIS PROPOSED PROJECT INVOLVES CONSTRUCTION AND DEVELOPMENT A SINGLE-FAMILY RESIDENTIAL SUBDIVISION WITHIN THE EXTENTS OF A FORMER GOLF COURSE. INFRASTRUCTURE IMPROVEMENTS CONSIST OF DRAINAGE PIPES AND STRUCTURES, PROPOSED ROADS, WATER AND SEWER MAIN EXTENSIONS. CONSTRUCTION OF THE FACILITIES WILL INVOLVE CLEARING, GRUBBING, FILLING, EXCAVATION, GRADING AND STABILIZATION. POTENTIAL POLLUTION SOURCES INCLUDE SOIL EROSION AND SILTATION, AND DISCHARGES FROM CONSTRUCTION EQUIPMENT (I.E. OIL, GAS).

OWNER

PALM BAY GREENS
JACK B. SPIRA
5205 N. BABCOCK STREET
PALM BAY, FLORIDA 32905
PHONE: (321) 775-9441

ENGINEER

MBV ENGINEERING, INC.
1250 W EAU GALLIE BLVD, UNIT L
MELBOURNE, FL 32935
PHONE: (321) 253-1510

APPLICANT

COUNTRY CLUB LAKES DEVELOPERS LLC
SCOTT BUESCHER
4885 N. WICKHAM ROAD
MELBOURNE, FLORIDA 32940
(321) 543-5732

SURVEYOR

WILLIAM MOTT LAND SURVEYING, INC.
3159 ALZANTE CIRCLE, SUITE 103
ROCKLEDGE, FLORIDA 32940
PHONE: (321) 751-4444

SITE ADDRESS

COUNTRY CLUB DRIVE
PALM BAY, FL 32926

FUTURE LAND USE

EXISTING: SINGLE-FAMILY RESIDENTIAL
PROPOSED: SFR (64.25 AC) / MFR (9.99 AC)

ZONING

EXISTING: RS-1
PROPOSED: PUD

TAX PARCEL I.D. NUMBER(S)

28-37-28-00-251

TAX ACCOUNT NO.

2836559

PLANNED UNIT DEVELOPMENT NOTES:

1. NO BUILDINGS, PARKING LOTS OR OTHER STRUCTURES MAY BE LOCATED WITHIN THE PERIMETER SETBACK AREA, HOWEVER, SWIMMING POOLS AND POOL DECKS MAY BE PERMITTED SUBJECT TO THE NORMAL RESIDENTIAL SETBACK REQUIREMENTS.
2. WITHIN THE PUD, ALL UTILITIES INCLUDING, BUT NOT LIMITED TO, TELEPHONE, TELEVISION CABLE AND ELECTRICAL SYSTEMS SHALL BE INSTALLED UNDERGROUND.
3. THE MINIMUM REQUIREMENTS FOR STREETS OR ROADS, SIDEWALKS, SEWER FACILITIES, UTILITIES AND DRAINAGE SHALL BE IN COMPLIANCE WITH THE REQUIREMENTS OF THE CITY OF PALM BAY SUBDIVISION REGULATIONS.
4. SUBDIVISION SIGNS SHALL BE IN ACCORDANCE WITH CHAPTER 178 OF THE LAND DEVELOPMENT REGULATIONS.
5. WALLS AND FENCES SHALL MEET ALL THE REQUIREMENTS OF CHAPTER 170 OF THE LAND DEVELOPMENT REGULATIONS.
6. PARKING SHALL MEET ALL THE REQUIREMENTS OF CHAPTER 185 OF THE LAND DEVELOPMENT REGULATIONS.
7. LANDSCAPING SHALL MEET ALL THE REQUIREMENTS OF CHAPTER 180 OF THE LAND DEVELOPMENT REGULATIONS.

PROJECT INFORMATION

SITE AREA	3,233,894 SF	74.24 AC.	100.00 %
LOTS	1,646,257 SF	37.79 AC.	50.91 %
ROADS	261,176 SF	6.00 AC.	8.08 %
SIDEWALK	92,393 SF	2.12 AC.	2.86 %
PROPOSED IMPERVIOUS	1,098,069 SF	25.21 AC.	33.96 %
PROPOSED PERVIOUS	1,786,726 SF	41.02 AC.	55.24 %
WET PONDS (NWL)	349,099 SF	8.01 AC.	10.80 %
TOTAL UNITS	199 UNITS	100.00 %	
DUPLEX UNITS	46 UNITS	23.12 %	
SINGLE-FAMILY (60x120)	81 UNITS	40.70 %	
SINGLE-FAMILY (80x120)	73 UNITS	36.18 %	

TRACTS F, AND G AS WELL AS THE PROPOSED DUPLEX LOTS AND ROAD RIGHT-OF-WAY SHALL HAVE THEIR LANDUSE MODIFIED TO MULTI-FAMILY RESIDENTIAL. THESE AREAS COMBINED TOTAL 9.99 ACRES.

NOTE: ASSUMES 50x70 PAD ON ALL SINGLE-FAMILY DETACHED HOUSES AND 35x50 ON SINGLE-FAMILY ATTACHED HOUSES AND 25x25 DRIVEWAY FOR IMPERVIOUS AREA.

MINIMUM DISTANCE BETWEEN STRUCTURES SHALL BE 10 FEET FOR 2-STORY OR BELOW.

MINIMUM LIVING AREA SHALL BE 800 SF FOR UNITS.

MINIMUM LOT AREA

	REQ'D	PROVIDED
SINGLE-FAMILY	4,050 SF	4,067 SF

DENSITY 2.69 U.P.A. (5.0 MAX)

BUILDING SETBACKS

	REQ'D	PROVIDED
FRONT	0'	25'
REAR	10'	10'
SIDE	5'	5'
SIDE INTERIOR	10'	10'

P.U.D. STANDARDS

	REQ'D	PROVIDED
DEVELOPMENT SIZE	5 AC.	74.24 AC.
BUILDING LENGTH	200 FT (MAX)	70 FT
PARKING (PER UNIT)	2 SPACES	2 SPACES

FLOOD ZONE

THE SUBJECT PROPERTY IS LOCATED IN FLOOD ZONE "X" PER F.I.R.M. PANEL No. 12009C 0594 G, DATED MARCH 17, 2014.

SANITARY SEWER SOURCE

PALM BAY SANITARY SEWER SYSTEM

POTABLE WATER SOURCE

PALM BAY WATER SYSTEM

TRACT	USE	TRACT AREA	AREA AT N.W.L.	OPEN SPACE CREDIT	MAINTENANCE RESPONSIBILITY	CONSTRUCTION PHASE
A	RECREATION	0.07	0.00	0.07	H.O.A.	1
B	RECREATION	0.45	0.00	0.45	H.O.A.	3
C	STORMWATER & RECREATION	12.85	4.98	11.61	H.O.A.	2
D	STORMWATER & RECREATION	10.08	4.71	8.90	H.O.A.	1
E	RECREATION	0.10	0.00	0.10	H.O.A.	1
F	RECREATION	0.72	0.00	0.72	H.O.A.	1
G	RECREATION	0.36	0.00	0.36	H.O.A.	2

NOTE: TOTAL USABLE COMMON RECREATION & OPEN SPACE REQUIRED IS 18.62 ACRES (25%). OPEN SPACE CREDIT LISTED ABOVE IS CALCULATED AS THE TRACT ACREAGE LESS 25% OF THE ACREAGE OF THE STORMWATER PONDS AND SHALL BE IMPROVED WITH EITHER DOCKS OR PIERS.

LAND USE	AREA (AC.)	PERCENT (%)
LOTS	37.30	50.09%
TRACT A (REC)	0.07	0.09%
TRACT B (REC)	0.45	0.60%
TRACT C (REC & STRM)	12.85	17.26%
TRACT D (REC & STRM)	10.08	13.54%
TRACT E (REC)	0.10	0.13%
TRACT F (REC)	0.72	0.97%
TRACT G (REC)	0.36	0.48%
EASEMENT (POND)	0.30	0.40%
EASEMENT (ACCESS)	0.20	0.27%
RIGHTS-OF-WAY	11.81	15.86%
TOTAL AREA	74.24	100.00%
TOTAL OPEN SPACE	22.21	29.82%

GRAPHIC SCALE
200 0 100 200
(IN FEET)
1 inch = 200 ft.

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REVISIONS

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	DWB
DATE	09-10-2020
CHECKED	DWB
DATE ISSUED	9/29/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD, SUITE E
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
CA#3728
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-436-9999

OVERALL FDP PLAN

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

NOT FOR CONSTRUCTION
PLAN SHEETS ARE PRELIMINARY AND FOR INFORMATION ONLY. PLANS SHOULD NOT BE USED AS A BASIS FOR BIDS. CONTRACTOR SHOULD ORDER THE OFFICIAL PLANS FROM THE ENGINEER OF RECORD TO ENSURE THAT ANY ADDENDUMS ARE PROPERLY DISTRIBUTED. PLANS ARE INVALID WITHOUT ENGINEER OF RECORDS SEAL AND SIGNATURE.

SHEET
FDP-1

19-1025
PRELIMINARY SET

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PORT MALABAR COUNTRY CLUB UNIT THREE BLOCK 18

PORT MALABAR COUNTRY CLUB UNIT TWO BLOCK 15

DRAINAGE EASEMENT (O.R. BOOK 6888 PG 2463)

70' DRAINAGE RIGHT-OF-WAY

TRACT OS C

TRACT OS B

MATCHLINE - SEE SHEET -- FOR CONTINUATION

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(IN FEET)
1 inch = 60 ft.

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JOB NO.	19-1025
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DATE ISSUED	9/30/2021

MBV ENGINEERING, INC.
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1250 W. EAU GALLIE BLVD, SUITE E MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
CA#3128 LB#3128
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-436-9999

FPD PLAN SHEET 02

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

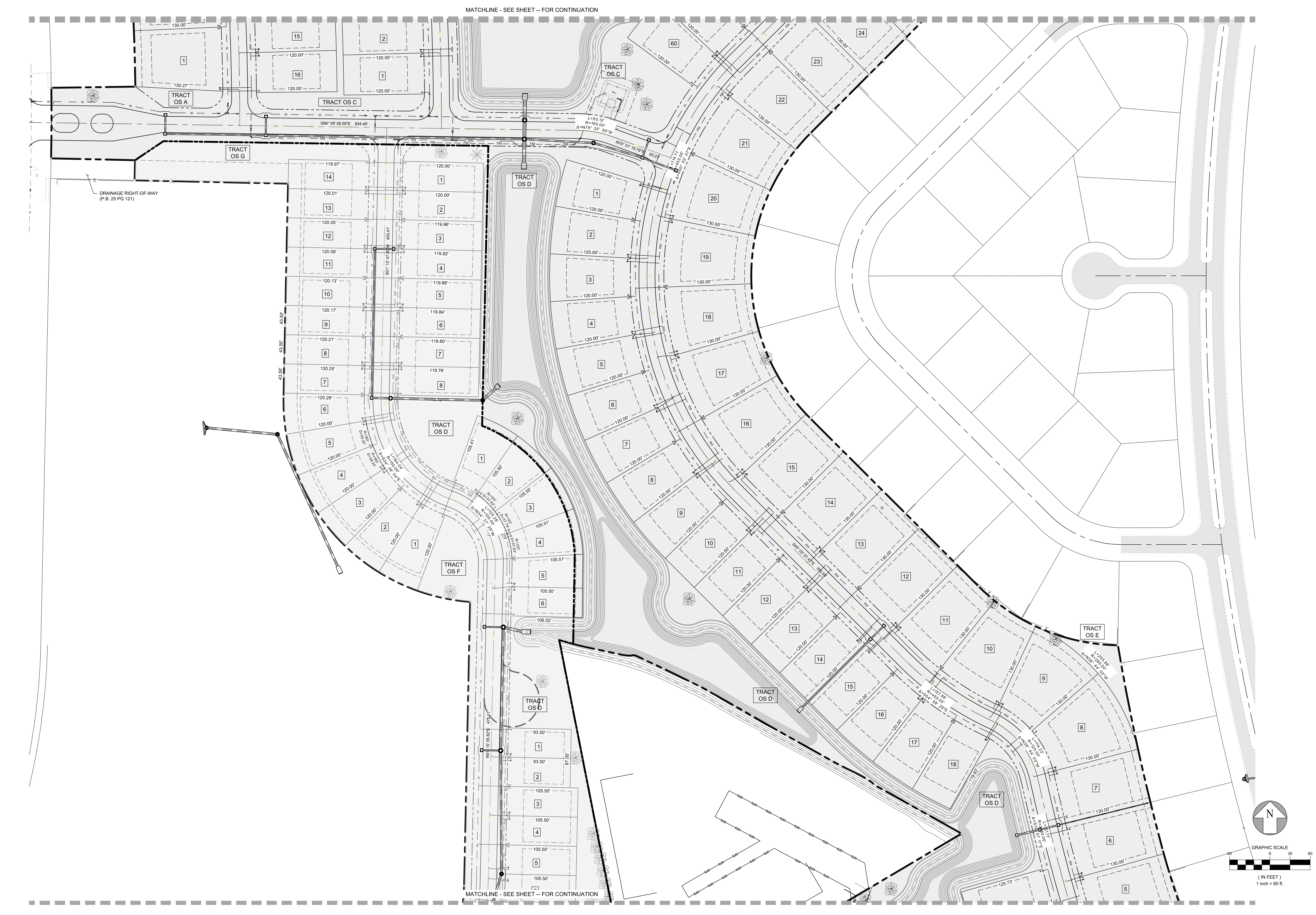
CITY OF PALM BAY FLORIDA

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△ REVISIONS	DATE

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DESIGNED	DWB
DRAWN	DWB
DATE	09-10-2020
CHECKED	DWB
DATE ISSUED	9/30/2021

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL ▪ STRUCTURAL ▪ SURVEYING ▪ ENVIRONMENTAL
1250 W. EAU GALLIE BLVD, SUITE H CA#3728
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F:321-253-0911
ALSO WITH OFFICES IN:
VERO: 772-569-0035, FT PIERCE: 772-468-9055, PALM CITY: 772-426-9959

FDP PLAN SHEET 03

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

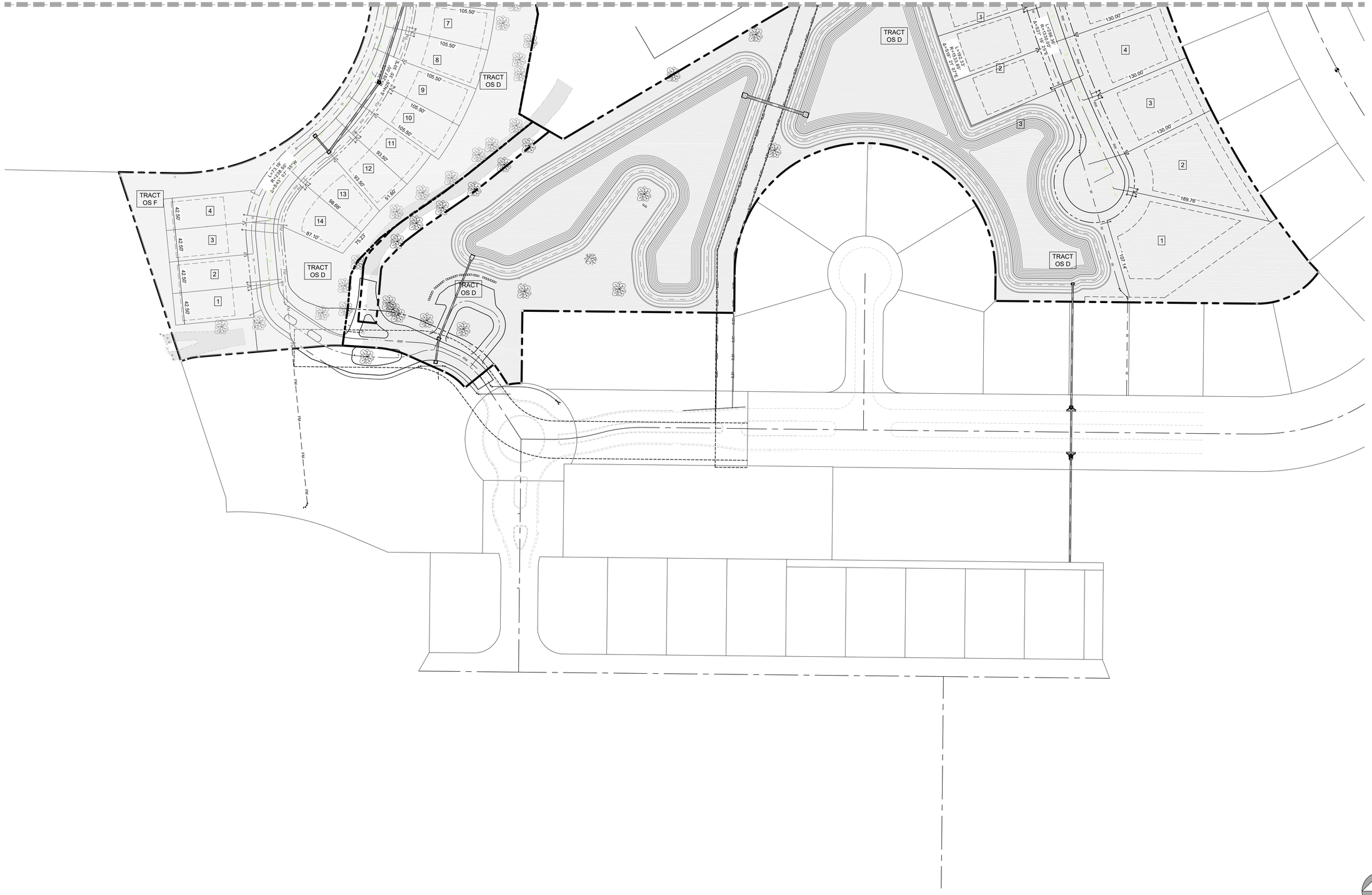
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19-1025

PRELIMINARY SET

MATCHLINE - SEE SHEET -- FOR CONTINUATION



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DRAWN	DWB
DATE	09-10-2020
CHECKED	DWB
DATE ISSUED	9/20/2021

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1	COMMENTS	xx-xx-xxxx
△	**REVISIONS**	**DATE**

MBV ENGINEERING, INC.
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1250 W. EAU GALLIE BLVD, SUITE E MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
AUTH. NO. CA 0007428 LB 3591
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-436-9999

FDP PLAN SHEET 04

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

NOT FOR CONSTRUCTION

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GRAPHIC SCALE
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(IN FEET)
1 inch = 60 ft.

SHEET

FDP-4

19-1025

PRELIMINARY SET

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PORT MALABAR

LEGEND

- SIGNIFICANT LIVE OAK; MAKE AN INCREASED EFFORT TO SAVE; A+ QUALITY SPECIMEN
- A - RATED LIVE OAK; SAVE
- B - RATED LIVE OAK
- A - RATED LAUREL OAK
- B - RATED LAUREL OAK
- DON'T SAVE

TREE LEGEND:
- = OAK TREE WITH TRUNK DIAMETER IN INCHES
- = PINE TREE WITH TRUNK DIAMETER IN INCHES
- = BANYAN TREE WITH TRUNK DIAMETER IN INCHES
- = GUM TREE WITH TRUNK DIAMETER IN INCHES
- = MAPLE TREE WITH TRUNK DIAMETER IN INCHES
- = SWAMP MAGNOLIA WITH TRUNK DIAMETER IN INCHES

SUSAN HALL LANDSCAPE ARCHITECTURE

COUNTRY CLUB LAKES ESTATES FIELD SURVEY - EXISTING TREES

1" = 100.0' MAY 15, 2020

Susan Hall 321.443.0190

The Reserve at Country Club Lakes Estates

LYING IN SECTION 28, TOWNSHIP 28 SOUTH, RANGE 37 EAST AND IN THE CITY OF PALM BAY, FLORIDA

LEGAL DESCRIPTION: The Reserve at Country Club Lakes Estates

Part of lands described in O.R.B. 5330, Page 1263, together with lands described in O.R.B. 6300, Page 1668 of the Public Records of Brevard County, Florida, lying in Section 28, Township 28 South, Range 37 East, said Brevard County and being more particularly described as follows:

Beginning at the Northeast corner of Bimini Bay, according to the plat thereof, as recorded in Plat Book 50, Page's 46 through 47 of the said public records; thence run North 88°47'13" West, along the North line of said Bimini Bay, a distance of 228.32 feet to the East line of a 30 foot wide drainage right-of-way per Port Malabar Country Club Unit Seven, according to the plat thereof, as recorded in Plat Book 25, Page's 121 through 126 of the said public records; thence North 01°12'47" East, along said East line, a distance of 30.00 feet; thence North 88°47'13" West along the North line of said 30 foot wide drainage right-of-way, a distance of 125.00 feet to the East right-of-way line of Riviera Boulevard per said Port Malabar Country Club Unit Seven, said point being the point of curvature of a non-tangent circular curve, concave to the West, having a radius of 3,050.00 feet and a central angle of 01°58'25"; thence from a tangent bearing of North 01°12'47" East, run Northerly along said right-of-way line and the arc of said curve, an arc distance of 105.06 feet to the North line of said O.R.B. 6300, Page 1668; thence North 89°14'22" East, along said North line, a distance of 125.00 feet to the West line of said O.R.B. 5330, Page 126, said point being the point of curvature of a non-tangent circular curve, concave to the West, having a radius of 3,175.00 feet and a central angle of 03°56'47"; thence from a tangent bearing of North 00°45'38" West, run Northerly along the arc of said curve and said West line, an arc distance of 218.69 feet to a 4"x4" concrete monument "P.R.M." at the Southeast corner of Lot 12, Block 75, said Port Malabar Country Club Unit Seven; thence continue along the East line of said Port Malabar Country Club Unit Seven and the arc of said curve having a radius of 3175.00 feet and a central angle of 09°56'42", an arc distance of 551.09 feet to the point of reverse curvature with a circular curve concave to the East, having a radius of 825.00 feet and a central angle of 43°25'51"; thence Northerly along the said East line of Port Malabar Country Club Unit Seven and the arc of said curve, an arc distance of 625.36 feet to the South line of Port Malabar Country Club Unit Three, according to the plat thereof, as recorded in Plat Book 23, Page's 88 through 89 of the said public records; thence South 50°37'24" East, along the said South line, a distance of 49.00 feet to the point of curvature of a circular curve concave to the North, having a radius of 225.00 feet and a central angle of 39°22'36"; thence Easterly along the arc of said curve and said South line, an arc distance of 154.63 feet; thence East, along said South line, a distance of 74.04 feet to the point of curvature of a circular curve concave to the North, having a radius of 225.00 feet and a central angle of 28°38'52"; thence Easterly along the arc of said curve and said South line, an arc distance of 112.50 feet; thence North 61°00'47" East, along said South line a distance of 148.00 feet; thence South 20°01'40" East, along the Westerly line of said Port Malabar Country Club Unit Three, a distance of 84.96 feet; thence South 87°56'45" East, along the said South line of Port Malabar Country Club Unit Three, a distance of 100.00 feet, to a 4"x4" concrete monument marked "PRM LS 2257" and the point of curvature of a non-tangent circular curve, concave to the West, having a radius of 1,650.00 feet and a central angle of 16°44'45"; thence from a tangent bearing of South 02°03'15" West, run Southerly along the arc of said curve and the said Westerly line of Port Malabar Country Club Unit Three, an arc distance of 482.25 feet; thence South 42°53'42" West, along said Westerly line, a distance of 61.24 feet to the point of curvature of a non-tangent circular curve, concave to the North, having a radius of 175.00 feet and a central angle of 180°00'00"; thence from a tangent bearing of South 18°48'00" West, run Easterly along the Southerly line of said Port Malabar Country Club Unit Three and arc of said curve, an arc distance of 549.78 feet; thence North 05°17'42" West, along the Easterly line of said Port Malabar Country Club Unit Three, a distance of 61.24 feet to the point of curvature of a non-tangent circular curve, concave to the West, having a radius of 1,950.00 feet and a central angle of 16°40'47"; thence from a tangent bearing of North 18°48'00" East, run Northerly along the arc of said curve and said Easterly line Port Malabar Country Club Unit Three, an arc distance of 567.68 feet; thence East, along the said South line of Port Malabar Country Club Unit Three, a distance of 59.05 feet; thence North 27°30'00" East, along the Easterly line of said Port Malabar Country Club Unit Three a distance of 105.93 feet to the South line of Port Malabar Country Club Unit Two, according to the plat thereof, as recorded in Plat Book 21, Page's 134 through 136 of the said Public records; thence South 62°32'07" East, along said South line, a distance of 208.42 feet; thence North 89°57'53" East, along said South line, a distance of 236.10 feet to the point of curvature of a circular curve concave to the North, having a radius of 225.00 feet and a central angle of 25°18'12"; thence Easterly along the arc of said curve and said South line, an arc distance of 99.37 feet; thence North 64°39'41" East, along said South line, a distance of 31.50 feet to the point of curvature of a non-tangent circular curve, concave to the West, having a radius of 825.00 feet and a central angle of 43°54'02"; thence from a tangent bearing of South 25°20'19" East, run Southerly along the arc of said curve and the Westerly line of said Port Malabar Country Club Unit Two, an arc distance of 632.12 feet to the point of reverse curvature with a circular curve concave to the East, having a radius of 3,175.00 feet and a central angle of 08°08'27"; thence Southerly along the arc of said curve and said Westerly line, an arc distance of 451.12 feet; thence South 89°57'53" West along said Westerly line, a distance of 4.35 feet to the point of curvature of a circular curve concave to the Southeast, having a radius of 300.00 feet and a central angle of 45°00'00"; thence Southwesterly along the arc of said curve and said Westerly line, an arc distance of 235.62 feet; thence South 44°57'53" West, along said Westerly line, a distance of 353.55 feet to the point of curvature of a circular curve concave to the East, having a radius of 300.00 feet and a central angle of 90°00'00"; thence Southerly along the arc of said curve and said Westerly line, an arc distance of 471.24 feet; thence South 45°02'07" East, along said Westerly line, a distance of 353.55 feet to the point of curvature of a circular curve concave to the Northeast, having a radius of 300.00 feet and a central angle of 44°04'03"; thence Southeasterly along the arc of said curve and said Westerly line, an arc distance of 230.74 feet to the point of curvature of a non-tangent circular curve, concave to the East, having a radius of 3,175.00 feet and a central angle of 05°37'31"; thence from a tangent bearing of South 09°31'48" East, run Southerly along the arc of said curve and said Westerly line, an arc distance of 311.72 feet to a point lying South 74°50'41" West a distance of 125.00 from a 4"x4" concrete monument "P.R.M." and the point of compound curvature with a circular curve concave to the Northeast, having a radius of 1,175.00 feet and a central angle of 23°27'34"; thence Southeasterly along the arc of said curve and said Westerly line of Port Malabar Country Club Unit Two, an arc distance of 481.10 feet; thence South 43°04'32" East, along said Westerly line, a distance of 19.71 feet to the North line of Raysteff Country Club Subdivision, according to the plat thereof, as recorded in Plat Book 32, Page 61 of the said public records and the point of curvature of a non-tangent circular curve, concave to the Northwest, having a radius of 100.00 feet and a central angle of 55°23'27"; thence from a tangent bearing of South 35°12'35" West, run Southwesterly along the arc of said curve and said North line, an arc distance of 96.68 feet; thence North 89°23'58" West, along said North line, a distance of 351.00 feet; thence North 00°36'02" East, along the East line of said Raysteff Country Club Subdivision, a distance of 35.00 feet to the point of curvature of a circular curve concave to the South, having a radius of 175.00 feet and a central angle of 180°00'00"; thence Westerly along the arc of said curve, and said North line, an arc distance of 549.78 feet; thence South 00°36'02" West, along the West line of said Raysteff Country Club Subdivision, a distance of 54.75 feet to the North line of Country Club Lakes Estates Phase One, according to the plat thereof, as recorded in Plat Book 66, Page's 66 through 80 of the said public records; thence North 89°23'58" West, along said North line, a distance of 284.20 feet; thence South 00°36'02" West, along the West line of said Country Club Lakes Estates Phase One, a distance of 97.24 feet to the point of curvature of a non-tangent circular curve, concave to the South, having a radius of 75.00 feet and a central angle of 14°11'47"; thence from a tangent bearing of North 89°23'58" West, run Westerly along the arc of said curve and said North line, an arc distance of 18.58 feet; thence North 32°58'00" West, along said North Line, a distance of 20.24 feet to the point of curvature of a circular curve concave to the Southwest, having a radius of 125.00 feet and a central angle of 05°57'32"; thence Northwesterly along the arc of said curve, and said North line, an arc distance of 13.00 feet; thence South 51°04'29" West, along said North line, a distance of 50.00 feet to the point of curvature of a non-tangent circular curve, concave to the Southwest, having a radius of 75.00 feet and a central angle of 26°53'09"; thence from a tangent bearing of North 38°55'31" West, run Northwesterly along the arc of said curve and said North line, an arc distance of 35.19 feet; thence North 65°48'40" West, along said North line, a distance of 52.57 feet to the point of curvature of a circular curve concave to the South, having a radius of 125.00 feet and a central angle of 20°31'31"; thence Westerly along the arc of said curve and said North line, an arc distance of 44.78 feet; thence North 86°20'11" West, along said North line, a distance of 45.46 feet to the point of curvature of a circular curve concave to the South, having a radius of 150.00 feet and a central angle of 08°35'34"; thence Westerly along the arc of said curve and said North line, an arc distance of 22.50 feet; thence South 85°04'15" West, along said North line, a distance of 171.00 feet to the point of curvature of a circular curve concave to the South, having a radius of 75.00 feet and a central angle of 13°15'31"; thence Westerly along the arc of said curve and said North line, an arc distance of 17.36 feet; thence South 71°48'44" West, along said North line, a distance of 7.32 feet to the East line of O.R.B. 7457, Page 2053 of the said public records; thence North 18°11'16" West, along said East line, a distance of 266.77 feet to the South line of said Bimini Bay; thence South 88°47'13" East, along said South line, a distance of 75.32 feet and the point of curvature of a circular curve concave to the Northwest, having a radius of 260.00 feet and a central angle of 90°00'00"; thence Northeasterly along the arc of said curve and said South line, an arc distance of 408.41 feet; thence North 01°12'47" East, along the East line of said Bimini Bay, a distance of 422.65 feet to the point of curvature of a non-tangent circular curve, concave to the Northeast, having a radius of 300.00 feet and a central angle of 86°56'52"; thence from a tangent bearing of North 85°44'05" West, run Northwesterly along the arc of said curve and the said East line, an arc distance of 455.26 feet; thence North 01°12'47" East, along said East line, a distance of 317.10 feet to the POINT OF BEGINNING.

Less and except Island Green Villas, as recorded in O.R.B. 2746, Page 0093 and O.R.B 2750, Page 2105 of the Public Records of Brevard County, Florida

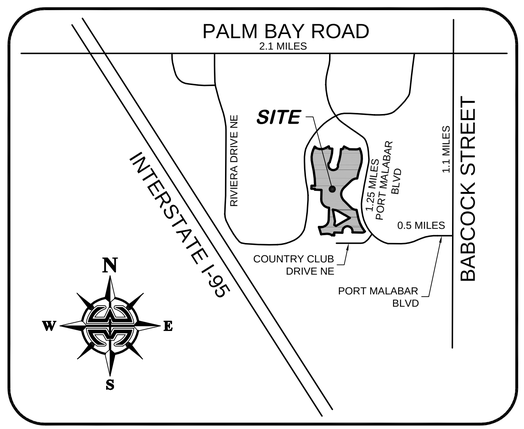
Containing 74.240 acres of land, more or less.

Notes:

1. The bearings shown hereon are based on the East line of Bimini Bay, as recorded in Plat Book 50, Page 46 of the Public Records of Brevard County, Florida, being N 01°12'47" E. Said bearing is identical with the plat.
2. The following easements are hereby dedicated:
   a. A public utility easement 10 feet in width along the front of all lots and tracts contiguous with and adjacent to the private roadways as shown hereon for the installation of Florida Power and Light (F.P.& L.), other public utilities, private roads, and private sidewalks.
   b. A public utility and private drainage easement 5 feet in width along the side of all lots with the exception of lots with a 7.5-foot-wide private drainage easements as shown hereon. The 6-foot-wide public utility easement is not dedicated along these lot lines.
3. All lot drainage is private and is the responsibility of the individual lot owner and/or the homeowners' association to maintain.
4. All platted utility easements shall provide that such easements shall also be easements for the construction, installation, maintenance, and operation of cable television services; provided, however, no such construction, installation, maintenance, and operation of cable television services shall interfere with the facilities and services of an electric, telephone, gas, or other public utility. In the event a cable television company damages the facilities of a public utility, it shall be solely responsible for the damages. This shall not apply to those private easements granted to or obtained by a particular electric, telephone, gas, or other public utility. Such construction, installation, maintenance, and operation shall comply with the national electrical safety code as adopted by the Florida Public Service Commission.

Notes Continued:

5. Tract R-1 is hereby conveyed to, controlled by, and maintained by the Country Club Lakes Estates Property Owner's Association, Inc. for private road right-of-way.
6. Tracts A, B, C, D, E, F and G, are hereby conveyed to, controlled by, and maintained by the Country Club Lakes Estates Property Owner's Association, Inc. for stormwater retention, recreation, landscaping and common open space.
7. Tract LS-1 is hereby conveyed to, controlled by, and maintained by the City of Palm Bay for a sanitary sewer lift station.
8. This is a residential subdivision - Palm Bay No. FS-2-2015
9. Subdivision signs are regulated by chapter 178 of the City of Palm Bay code.
10. Fencing of easements is regulated by chapter 170 of the City of Palm Bay code.
11. Survey monumentation within the subdivision shall be set in accordance with Florida Statutes Chapters 177.091(8) & 177.091(9).
12. All lot lines are radial to curves unless otherwise noted.



VICINITY MAP
(NOT TO SCALE)

NOTICE: THIS PLAT, AS RECORDED IN ITS GRAPHIC FORM, IS THE OFFICIAL DEPICTION OF THE SUBDIVIDED LANDS DESCRIBED HEREIN AND WILL IN NO CIRCUMSTANCES BE SUPPLANTED IN AUTHORITY BY ANY OTHER GRAPHIC OR DIGITAL FORM OF THE PLAT. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.

PREPARED BY:
WILLIAM MOTT LAND SURVEYING INC.
3159 ALZANTE CIRCLE, SUITE 103
MELBOURNE, FLORIDA 32940
PHONE (321) 751-4444 FAX (321) 751-4445
PROJECT NUMBER: 220-0046

PLAT BOOK _____ PAGE _____

SHEET 1 OF 9

SECTION 28, TOWNSHIP 28 SOUTH, RANGE 37 EAST

DEDICATION

KNOW ALL MEN BY THESE PRESENTS, That the Corporation named below, being the owners in fee simple of the lands described in

The Reserve at Club Lakes Estates

The developer hereby dedicates to the public and the City of Palm Bay all Public Utility Easements and an easement over Tract R-1 (private road) for ingress/egress for law enforcement and emergency vehicles, and for the installation and maintenance of public utilities. The roadway, drainage facilities and drainage easements within the subdivision are private and not dedicated to, or the responsibility of the City of Palm Bay.

IN WITNESS WHEREOF, has caused these presents to be signed and attested to by the officer named below on _____

Country Club Lakes Developers LLC
4885 N Wickham Road
Melbourne, Florida 32940

By: _____

Signed in the presence of: _____

_____

State of Florida, County of Brevard

THIS IS TO CERTIFY, That on _____ before me, an officer duly authorized to take acknowledgments in the State and County aforesaid, personally appeared _____, to me know to be the individual described in and who executed the foregoing Dedication and severally acknowledged the execution thereof to be his free act and deed for the uses and purposes therein expressed.

IN WITNESS WHEREOF, I have hereto set my hand and seal on the above date.

_____
NOTARY PUBLIC

CERTIFICATE OF SURVEYOR

KNOW ALL MEN BY THESE PRESENTS, That the undersigned, being a licensed Professional Surveyor and Mapper, does hereby certify that on November 16, 2020, he completed the survey of the lands as shown in the foregoing plat; and that said plat was prepared under his direction and supervision and that said plat complies with all of the survey requirements of Chapters 177 Part 1 & Florida Statutes and County Ordinance 62-2841 (c)(d) as amended and that said lands are located in Brevard County Florida.

_____ Registration Number 5060

Jonathan M. Mott, P.L.S.
William Mott Land Surveying, Inc.
3189 Alzante Circle, Suite 3
Melbourne, FL 32940
Certificate of Authorization Number LB-0003608

CERTIFICATE OF CITY SURVEYOR

I HEREBY CERTIFY, That I have reviewed the foregoing plat and find that it is in conformity with Chapter 177, part 1, Florida Statues

_____
Joseph N. Hale, P.L.S. No. 6366
Reviewing Surveyor for the City of Palm Bay

CERTIFICATE OF APPROVAL BY MUNICIPALITY

THIS IS TO CERTIFY, that on _____ the City of Palm Bay City Council approved the foregoing plat

_____
Mayor

ATTEST: _____
City Clerk

CERTIFICATE OF CLERK

I HEREBY CERTIFY, That I have examined the foregoing plat and find that it complies in form with all the requirements of Chapter 177, Part 1, Florida Statutes, and was filed for record on _____ at _____ File No. _____

ATTEST: _____
Clerk of the Circuit Court in and for Brevard County, Florida

The Reserve at Country Club Lakes Estates

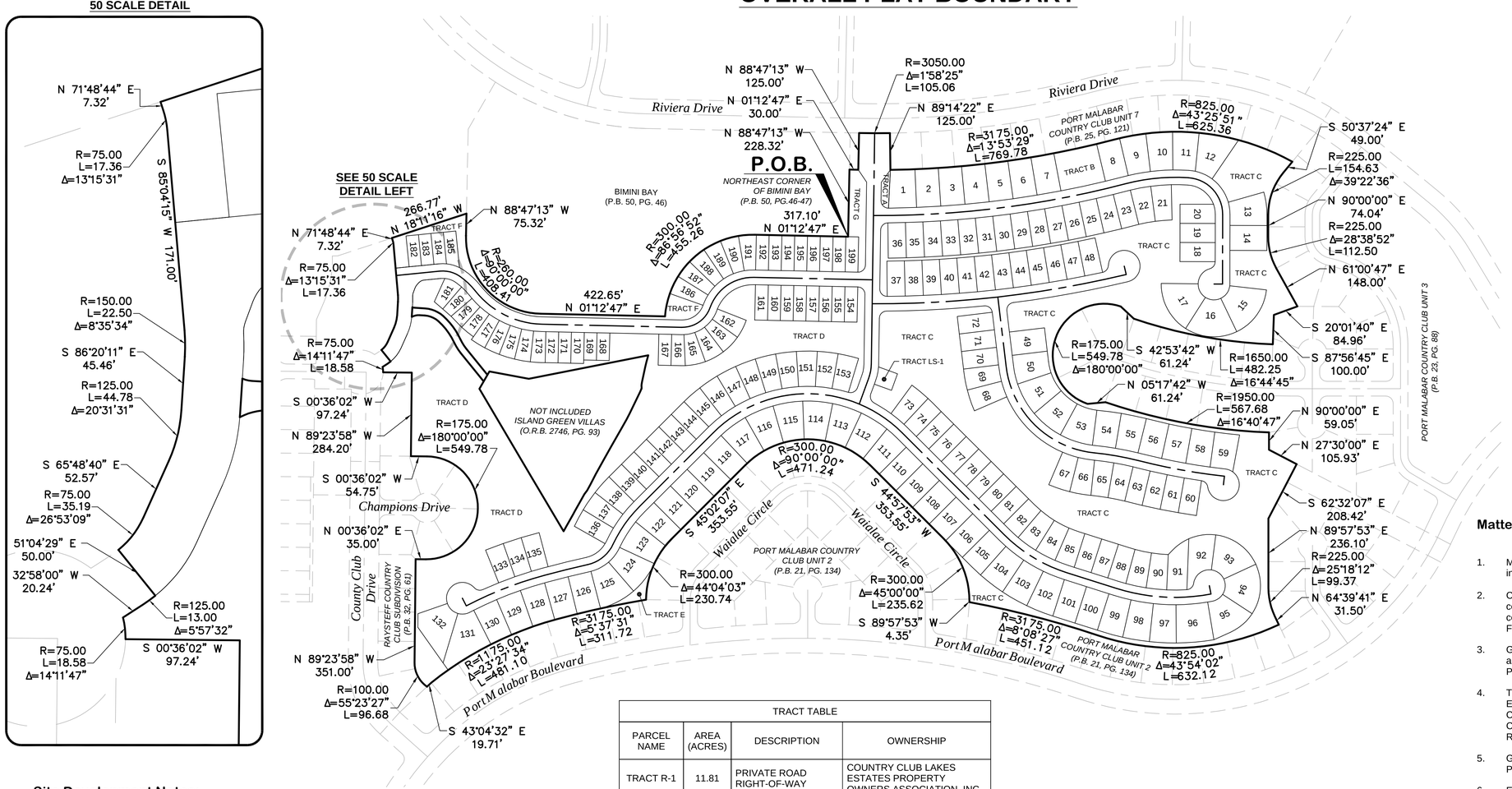
LYING IN SECTION 28, TOWNSHIP 28 SOUTH, RANGE 37 EAST AND IN THE CITY OF PALM BAY, FLORIDA

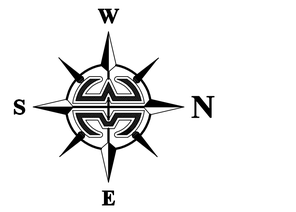
PLAT BOOK ____ PAGE ____

SHEET 2 OF 9

SECTION 28, TOWNSHIP 28 SOUTH, RANGE 37 EAST

OVERALL PLAT BOUNDARY





GRAPHIC SCALE

200 0 100 200 400 800

(IN FEET)
1 inch = 200 ft.

PREPARED BY:

WILLIAM MOTT LAND SURVEYING INC.

3159 ALZANTE CIRCLE, SUITE 103
MELBOURNE, FLORIDA 32934-3285
PHONE (321) 751-4444 FAX (321) 751-4445
PROJECT NUMBER: 220-0046

Site Development Notes:

Zoning: PUD

Total Acreage: 74.240 Acres +/-

Total No. of Lots 199

Minimum Lot Size: 4,067 Square Feet

Setbacks:

Front: 25 Feet

Side: 5 feet

Side: (Interior) 10 feet

Rear: 15 feet

Building Setbacks must be verified with the City of Palm Bay prior to construction.

TRACT TABLE

PARCEL NAME	AREA (ACRES)	DESCRIPTION	OWNERSHIP
TRACT R-1	11.81	PRIVATE ROAD RIGHT-OF-WAY	COUNTRY CLUB LAKES ESTATES PROPERTY OWNERS ASSOCIATION, INC
TRACT A	0.07	LANDSCAPE AND OPEN SPACE	COUNTRY CLUB LAKES ESTATES PROPERTY OWNERS ASSOCIATION, INC
TRACT B	0.45	OPEN SPACE AND RECREATION	COUNTRY CLUB LAKES ESTATES PROPERTY OWNERS ASSOCIATION, INC
TRACT C	12.85	RETENTION, OPEN SPACE AND RECREATION	COUNTRY CLUB LAKES ESTATES PROPERTY OWNERS ASSOCIATION, INC
TRACT D	10.08	RETENTION, OPEN SPACE AND RECREATION	COUNTRY CLUB LAKES ESTATES PROPERTY OWNERS ASSOCIATION, INC
TRACT E	0.10	OPEN SPACE	COUNTRY CLUB LAKES ESTATES PROPERTY OWNERS ASSOCIATION, INC
TRACT F	0.72	LANDSCAPE AND OPEN SPACE	COUNTRY CLUB LAKES ESTATES PROPERTY OWNERS ASSOCIATION, INC
TRACT G	0.36	LANDSCAPE AND OPEN SPACE	COUNTRY CLUB LAKES ESTATES PROPERTY OWNERS ASSOCIATION, INC

Matters of record affecting the plat:

1. Matters contained on the plat of Florida Indian River Land Company, as recorded in Plat Book 1, Page 164, Public Records of Brevard County, Florida.
2. Covenants, conditions, restrictions, reservations, easements, and other matters contained in Warranty Deed recorded in O.R. Book 2285, Page 1067, and corrected in O.R. Book 2383, Page 159, Public Records of Brevard County, Florida.
3. Grant of Easement to Malabar Lakes, Ltd. recorded in O.R. Book 2579, Page 750, as affected by Consent to Easements recorded in O.R. Book 2604, Page 1701, Public Records of Brevard County, Florida.
4. Terms, covenants, conditions, easements, and other matters contained in Easement Agreement recorded in O.R. Book 2579, Page 755, as affected by Consent to Easements recorded in O.R. Book 2604, Page 1701, and Confirmation of Access Easement recorded in O.R. Book 2680, Page 1457, Public Records of Brevard County, Florida.
5. Grant of Easement to Island Green, Inc. recorded in O.R. Book 2679, Page 1449, Public Records of Brevard County, Florida.
6. Easement to Island Green, Inc. recorded in O.R. Book 2742, Page 2575, Public Records of Brevard County, Florida.
7. Easement to General Development Utilities, Inc. recorded in O.R. Book 2742, Page 2579, as assigned to the City of Palm Bay, Florida, by Assignment of Easements recorded in O.R. Book 3255, Page 908, as further assigned to Palm Bay Utility Corporation by Assignment of Easements recorded in O.R. Book 3255, Page 1048, and Assignment of Plat and Other Easements recorded in O.R. Book 3255, Page 1152, Public Records of Brevard County, Florida.
8. Grant of Easement to General Development Utilities, Inc. recorded in O.R. Book 2752, Page 1494, Public Records of Brevard County, Florida.
9. Easement to Vincent Larosa and Vincent Gangi recorded in O.R. Book 2872, Page 540, Public Records of Brevard County, Florida.
10. Covenants, conditions, easements, and other matters contained in Settlement Agreement by and Between Palm Bay Greens, L.L.C. and City of Palm Bay, Florida, recorded in O.R. Book 6888, Page 2463, Public Records of Brevard County, Florida.
11. Recorded Notice of Environmental Resource Permit recorded in O.R. Book 7590, Page 1928, Public Records of Brevard County, Florida.
12. Recorded Notice of Environmental Resource Permit recorded in O.R. Book 8205, Page 2375, Public Records of Brevard County, Florida.

The Reserve at Country Club Lakes Estates

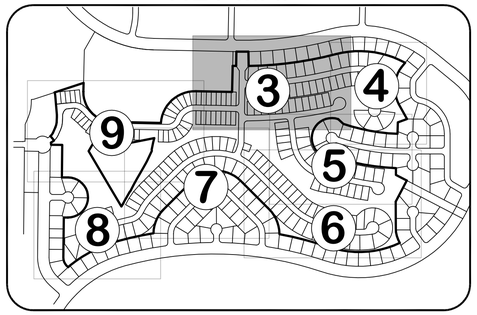
PLAT BOOK ____ PAGE ____

SHEET 3 OF 9

SECTION 28, TOWNSHIP 28 SOUTH, RANGE 37 EAST

LYING IN SECTION 28, TOWNSHIP 28 SOUTH, RANGE 37 EAST AND IN THE CITY OF PALM BAY, FLORIDA

KEY MAP



PREPARED BY:

WILLIAM MOTT LAND SURVEYING INC.

3159 ALZANTE CIRCLE, SUITE 103
MELBOURNE, FLORIDA 32934-3285
PHONE (321) 751-4444 FAX (321) 751-4445
PROJECT NUMBER: 220-0046

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

W S N E

LEGEND:

□	= 4"x4" CONCRETE MONUMENT WITH NAIL AND DISK MARKED "PRM LB 3608" (SET)		
⊕	= 5/8" IRON ROD WITH 2" ALUMINUM CAP MARKED "PRM LB 3608" (SET)		
⊠	= 1/2" IRON ROD WITH CAP MARKED "SMITH PRM LB 7426" (FOUND)		
●	= NAIL AND DISK MARKED "PCP LB 3608" (SET)		
PU&DE	= PUBLIC UTILITIES AND DRAINAGE EASEMENT		
C##	= CURVE NUMBER FOR CURVE TABLE		
L##	= LINE NUMBER FOR LINE TABLE	X	= DENOTES LINE BREAK/CHANGE IN DIRECTION
R/W	= RIGHT-OF-WAY	(R)	= RADIAL
P.B.	= PLAT BOOK	(NR)	= NON-RADIAL
PG.	= PAGE	ESMT.	= EASEMENT
PG(S)	= PAGES	O.R.B./O.R.BOOK	= OFFICIAL RECORDS BOOK
RP	= RADIUS POINT	H.O.A.	= HOME OWNERS ASSOCIATION
POL	= POINT-ON-LINE	LB	= LICENSED BUSINESS
POC	= POINT-ON-CURVE	PLS	= PROFESSIONAL LAND SURVEYOR
PI	= POINT-OF-INTERSECTION	PSM	= PROFESSIONAL SURVEYOR AND MAPPER
PT	= POINT-OF-TANGENCY	R	= RADIUS
PC	= POINT-OF-CURVATURE	D/ Δ	= DELTA
PRC	= POINT-OF-REVERSE CURVATURE	L	= LENGTH
PCC	= POINT-OF-COMPOUND CURVATURE	CD/CH	= CHORD DISTANCE
P.O.B.	= POINT-OF-BEGINNING	CB	= CHORD BEARING
P.O.C.	= POINT-OF-COMMENCEMENT	BLK	= BLOCK
PRM	= PERMANENT REFERENCE MONUMENT		
PCP	= PERMANENT CONTROL POINT		

Riviera Drive
100' WIDE PUBLIC ROAD RIGHT-OF-WAY
(PER P.B. 25, PG. 121)

P.R.M. "1506"
R=3050.00
L=105.06
Δ=1°58'25"
Δ=0°59'45" L=53.02
Δ=0°58'40" L=52.05
N 89°14'22" E 125.00'
EAST RIGHT-OF-WAY LINE OF RIVIERA DRIVE
DRAINAGE RIGHT-OF-WAY (PER P.B. 25, PG.121)
N 88°47'13" W 125.00'
NORTH LINE OF O.R.B. 6300, PG. 1668
280.10'
N 01°12'47" E 30.00'
S 56°11'45" W 50.74'
BIMINI BAY (P.B. 50, PG. 46)
NORTH LINE OF BIMINI BAY
N 88°47'13" W 228.32'
30' PRIVATE DRAINAGE EASEMENT
N 88°47'13" W
498.79'
S 89°09'59" E
S 33°45'00" E 52.66'
N 89°09'59" W 62.27'
TRACT A
281.60'
TRACT G
P.O.B.
NORTHEAST CORNER OF BIMINI BAY (P.B. 50, PG.46-47)
N 01°12'47" E 317.10'
35.98'
S 89°09'59" E
20' PRIVATE DRAINAGE EASEMENT
44'41" 6.26' 5.08'
5.98'
S 01°12'47" W 353.08'
S 01°12'47" W 403.41'
Road Name TBD
50' WIDE PRIVATE ROAD RIGHT-OF-WAY (TRACT R-1)
S 01°12'47" W 353.74'
S 01°12'47" W 348.00'
R=25.00 Δ=90°22'46" L=39.44'
R=25.00 Δ=89°37'14" L=39.10'
R=25.00 Δ=89°37'14" L=39.10'
R=25.00 Δ=90°22'46" L=39.44'
R=25.00 Δ=88°42'37" L=38.71'
R=25.00 Δ=88°49'16" L=38.76'
S 89°09'59" E 300.01'
S 89°09'59" E 200.06'
S 89°09'59" E 204.46'
50' WIDE PRIVATE ROAD RIGHT-OF-WAY
Road Name TBD
O.R.B. 3994 PG. 2931
O.R.B. 7884 PG. 0672
LOT 12 BLOCK 75
LOT 11 BLOCK 75
LOT 10 BLOCK 75
LOT 9 BLOCK 75
LOT 8 BLOCK 75
LOT 7 BLOCK 75
LOT 6 BLOCK 75
PORT MALABAR COUNTRY CLUB UNIT 7 (P.B. 25, PG. 121)
EAST LINE OF PORT MALABAR COUNTRY CLUB UNIT 7 (P.B. 25, PG. 121)
WEST LINE OF O.R.B. 5330, PG. 126
10.0' DRAINAGE EASEMENT
L=769.78 R=3175.00 Δ=13°53'29"
Δ=1°30'07" L=83.23
Δ=1°25'53" L=79.32
Δ=1°26'25" L=79.81
Δ=1°25'23" L=78.85
Δ=1°25'54" L=79.33
Δ=2°41'22" L=149.03
Δ=6°18'49" L=90.91
Δ=1°06'39" L=61.56
Δ=1°18'17" L=18.78
S 83°10'51" W 130.00'
S 79°51'21" W 130.00'
S 79°14'44" W 130.00'
S 80°37'26" W 130.00'
S 82°00'08" W 130.00'
S 83°22'26" W 130.00'
S 84°45'31" W 130.00'
S 86°08'37" W 130.00'
S 87°30'55" W 130.00'
S 88°53'14" W 130.00'
S 76°38'22" W 130.00'
Δ=1°25'54" L=79.33
Δ=1°25'46" L=82.46
Δ=1°25'15" L=81.96
Δ=1°26'17" L=82.95
Δ=1°25'45" L=82.45
Δ=1°25'46" L=82.45
Δ=1°39'29" L=95.64
S 87°01'06" E 130.27'
TRACT B
1
2
3
4
5
6
7
8
9
Δ=1°16'00" L=15.36
Δ=6°18'41" L=76.56
Δ=1°07'07" L=64.53
Δ=2°41'08" L=154.90
Δ=1°25'46" L=82.46
L=222.62 R=
L=214
Δ=18°21'10"
L=206.60 R
Δ=6°15'02" L=70.36
Δ=6°15'02 L=57.27
R=
Δ=1
L=
Road Name TBD
50' WIDE PRIVATE ROAD RIGHT-OF-WAY (TRACT R-1)
L=809.80 R=3305.00 Δ=14°02'20"
L=867.20 R=3330.00 Δ=14°55'15" CH=N07°11'29"W 864.75
L=824.56 R=3355.00 Δ=14°04'54"
R=25.00 Δ=89°37'46" L=39.10'
R=25.00 Δ=90°22'14" L=39.44'
25.00'
52.00'
S 89°09'59" E
S 89°09'59" E
Δ=1°01'02" L=59.56
Δ=1°01'02" L=61.69
N 89°25'47" E 120.00'
N 88°24'45" E 120.00'
N 87°23'44" E 120.00'
N 86°22'42" E 120.00'
N 85°21'41" E 120.00'
N 84°20'39" E 120.00'
N 83°19'38" E 120.00'
N 82°18'36" E 120.00'
N 81°17'35" E 120.00'
N 80°16'33" E 120.00'
N 79°15'32" E 120.00'
N 78°14'30" E 120.00'
N 77°13'29" E 120.00'
N 76°12'27" E 120.00'
36
35
34
33
32
31
30
29
28
27
26
25
24
23
22
TRACT C
L=713.81 R=3485.00 Δ=11°44'08" (LOT 37-48)
L=854.05 R=3475.00 Δ=14°04'54" (LOT 23-36)
Δ=0°58'41" L=59.48
Δ=0°58'41" L=61.53
S 89°30'26" W 120.00'
S 88°31'48" W 120.00'
S 87°33'08" W 120.00'
S 86°34'27" W 120.00'
S 85°35'46" W 120.00'
S 84°37'06" W 120.00'
S 83°38'25" W 120.00'
S 82°39'44" W 120.00'
S 81°41'04" W 120.00'
S 80°42'23" W 120.00'
S 79°43'43" W 120.00'
S 78°45'02" W 120.00'
S 77°46'21" W 120.00'
37
38
39
40
41
42
43
44
45
46
47
48
R=25.00 Δ=75°11'33" L=32.81
L=239.53 R=54.00 Δ=254°09'55"
S 02°34'48" W 54.00'
N 76°43'43" E 54.00'
Road Name TBD
50' WIDE PRIVATE ROAD RIGHT-OF-WAY (TRACT R-1)
L=871.58 R=3630.00 Δ=13°45'25" CH=N06°33'46"W 869.49
L=443.45 R=3630.00 Δ=6°59'58" CH=N09°56'30"W 443.17
L=428.14 R=3630.00 Δ=6°45'28" CH=N03°03'48"W 427.89
L=396.41 R=3655.00 Δ=6°12'51"
L=332.56 R=3655.00 Δ=5°12'47"
R=25.00 Δ=88°49'16" L=38.76'
R=25.00 Δ=89°37'14" L=39.10'
TRACT C
N 06°50'52" W 120.00'
72
60.00'
N 83°09'08" E
N 83°09'08" W
72.86'
TRACT C
Δ=80°00'00"
S 42°53'42" W 61.24'
LOT 19 BLOCK 18
N 01°12'47" E 317.10'
20' PRIVATE DRAINAGE EASEMENT
Δ=0°44'41" L=5.81'
5.08'
S 01°12'47" W 353.08'
S 01°12'47" W 348.00'
N 88°47'13" W 120.00'
43.50'
191
192
193
194
195
196
197
198
199
161
160
159
158
157
156
155
154
TRACT D
SEE SHEET 9 FOR CONTINUATION
SEE SHEET 4 FOR CONTINUATION
SEE SHEET 7 FOR CONTINUATION
SEE SHEET 5 FOR CONTINUATION

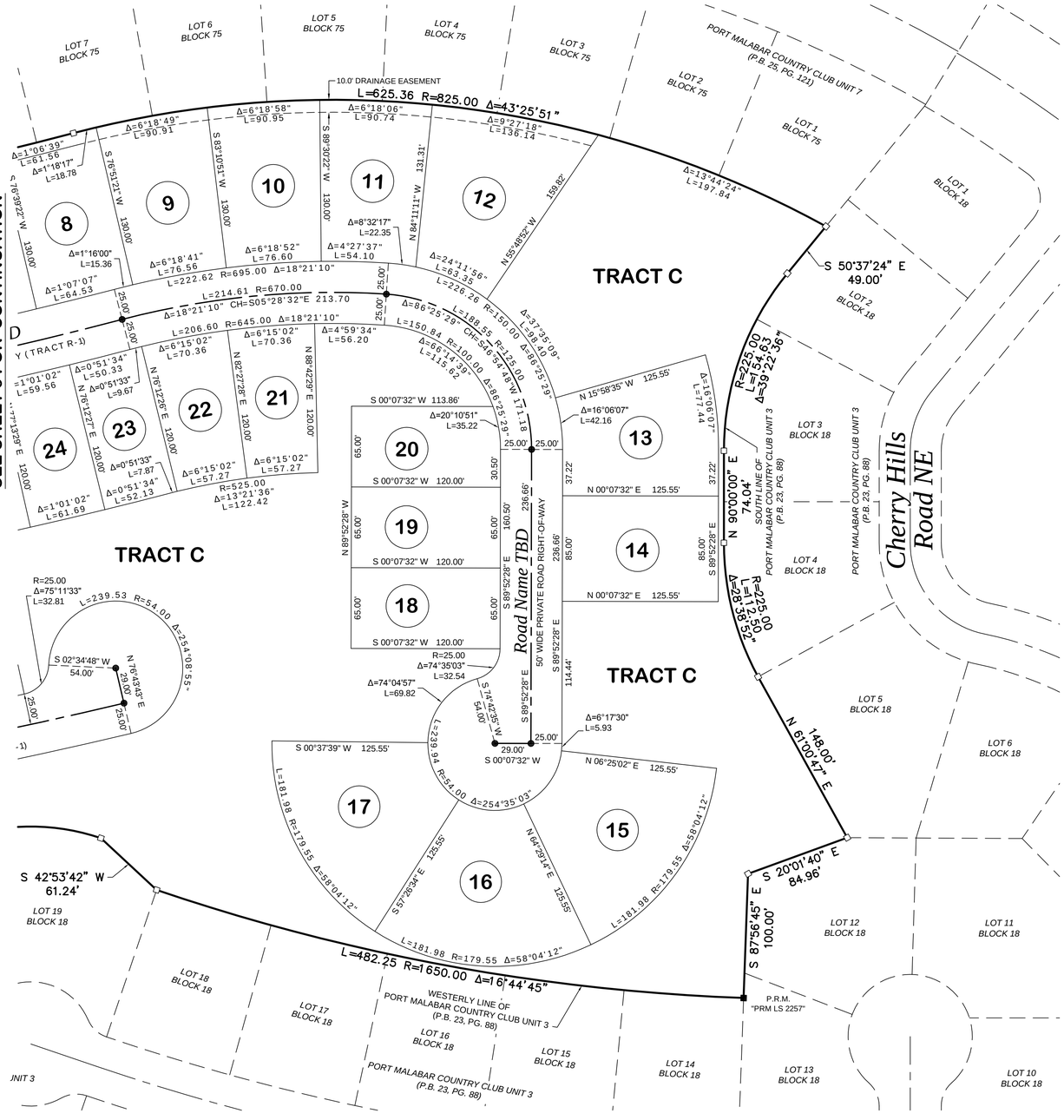
The Reserve at Country Club Lakes Estates

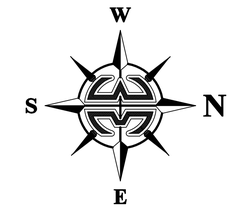
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SHEET 4 OF 9

SECTION 28, TOWNSHIP 28 SOUTH, RANGE 37 EAST

LYING IN SECTION 28, TOWNSHIP 28 SOUTH, RANGE 37 EAST AND IN THE CITY OF PALM BAY, FLORIDA





GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

1 inch = 50 ft.

PREPARED BY:

WILLIAM MOTT LAND SURVEYING INC.

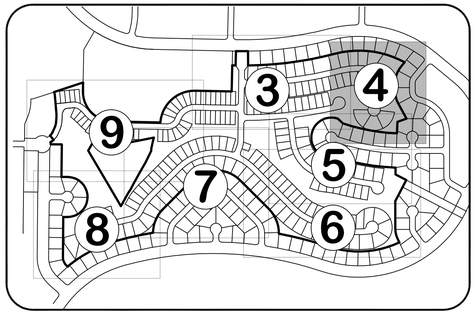
3159 ALZANTE CIRCLE, SUITE 103
MELBOURNE, FLORIDA 32934-3285
PHONE (321) 751-4444 FAX (321) 751-4445
PROJECT NUMBER: 220-0046

LEGEND:

- □ = 4"x4" CONCRETE MONUMENT WITH NAIL AND DISK MARKED "PRM LB 3608" (SET)
- ⊕ = 5/8" IRON ROD WITH 2" ALUMINUM CAP MARKED "PRM LB 3608" (SET)
- ⊠ = 1/2" IRON ROD WITH CAP MARKED "SMITH PRM LB 7426" (FOUND)
- ● = NAIL AND DISK MARKED "PCP LB 3608" (SET)

PUSDE	= PUBLIC UTILITIES AND DRAINAGE EASEMENT		
C##	= CURVE NUMBER FOR CURVE TABLE		
L##	= LINE NUMBER FOR LINE TABLE	X	= DENOTES LINE BREAK/CHANGE IN DIRECTION
R/W	= RIGHT-OF-WAY	(R)	= RADIAL
P.B.	= PLAT BOOK	(NR)	= NON-RADIAL
PG.	= PAGE	ESMT.	= EASEMENT
PG(S)	= PAGES	O.R.B./O.R.BOOK	= OFFICIAL RECORDS BOOK
RP	= RADIUS POINT	H.O.A.	= HOME OWNERS ASSOCIATION
POL	= POINT-ON-LINE	LB	= LICENSED BUSINESS
POC	= POINT-ON-CURVE	PLS	= PROFESSIONAL LAND SURVEYOR
PI	= POINT-OF-INTERSECTION	PSM	= PROFESSIONAL SURVEYOR AND MAPPER
PT	= POINT-OF-TANGENCY	R	= RADIUS
PC	= POINT-OF-CURVATURE	D/ Δ	= DELTA
PRC	= POINT-OF-REVERSE CURVATURE	L	= LENGTH
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P.O.B.	= POINT-OF-BEGINNING	CB	= CHORD BEARING
P.O.C.	= POINT-OF-COMMENCEMENT	BLK	= BLOCK
PRM	= PERMANENT REFERENCE MONUMENT		
PCP	= PERMANENT CONTROL POINT		

KEY MAP



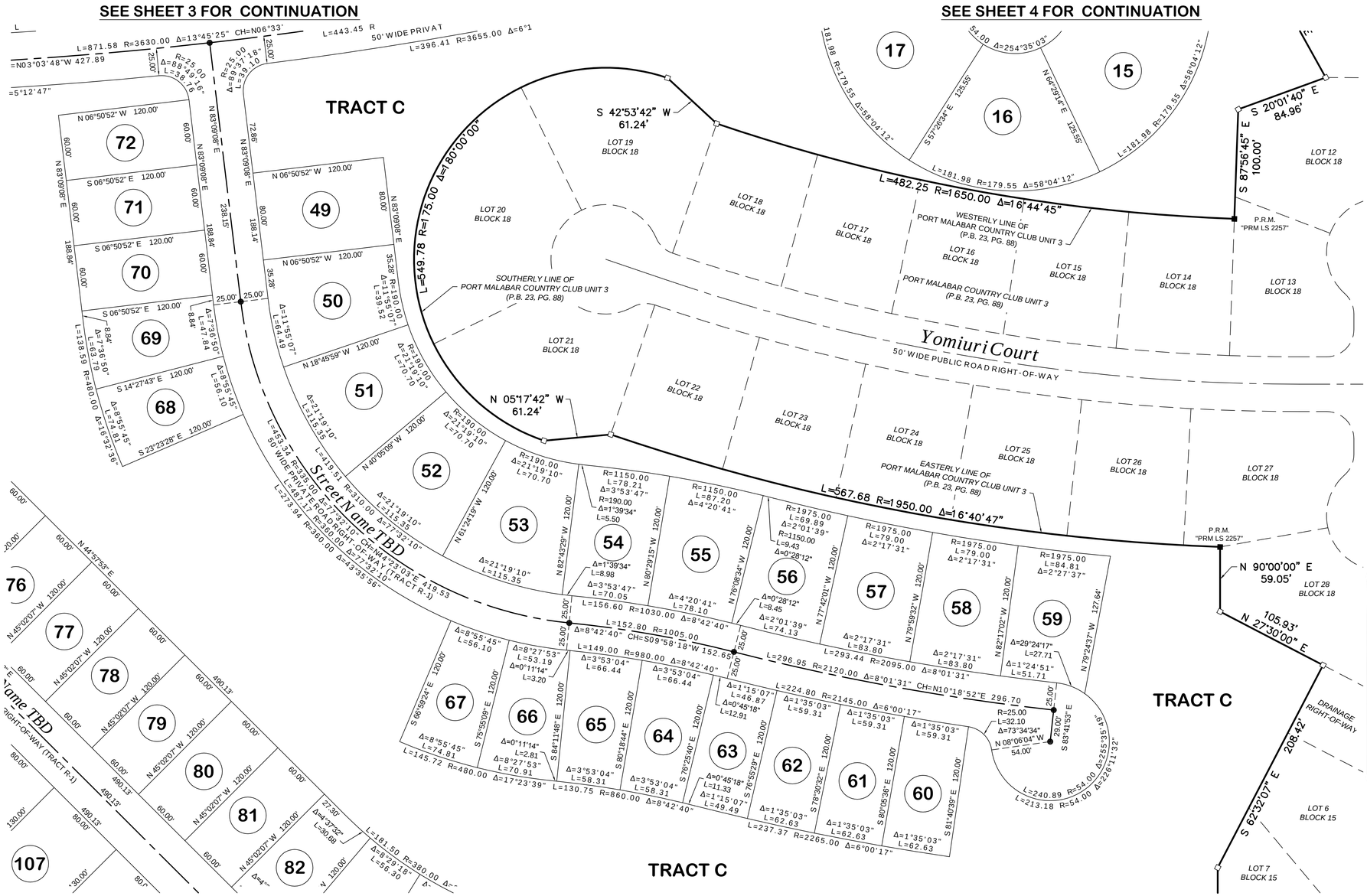
The Reserve at Country Club Lakes Estates

LYING IN SECTION 28, TOWNSHIP 28 SOUTH, RANGE 37 EAST AND IN THE CITY OF PALM BAY, FLORIDA

PLAT BOOK ____ PAGE ____

SHEET 5 OF 9

SECTION 28, TOWNSHIP 28 SOUTH, RANGE 37 EAST



SEE SHEET 6 FOR CONTINUATION

W
S N
E

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

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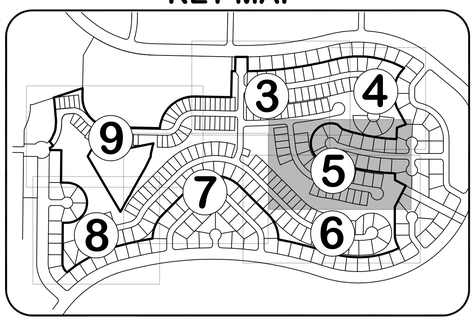
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MELBOURNE, FLORIDA 32934-3285
PHONE (321) 751-4444 FAX (321) 751-4445
PROJECT NUMBER: 220-0046

LEGEND:

- □ = 4"x4" CONCRETE MONUMENT WITH NAIL AND DISK MARKED "PRM LB 3608" (SET)
- ⊕ = 5/8" IRON ROD WITH 2" ALUMINUM CAP MARKED "PRM LB 3608" (SET)
- ■ = 1/2" IRON ROD WITH CAP MARKED "SMITH PRM LB 7426" (FOUND)
- ● = NAIL AND DISK MARKED "PCP LB 3608" (SET)

PU&DE	= PUBLIC UTILITIES AND DRAINAGE EASEMENT		
C/#	= CURVE NUMBER FOR CURVE TABLE		
L/#	= LINE NUMBER FOR LINE TABLE	X	= DENOTES LINE BREAK/CHANGE IN DIRECTION
R/W	= RIGHT-OF-WAY	(R)	= RADIAL
P.B.	= PLAT BOOK	(NR)	= NON-RADIAL
PG.	= PAGE	ESMT.	= EASEMENT
PG(S)	= PAGES	O.R.B./O.R.BOOK	= OFFICIAL RECORDS BOOK
RP	= RADIUS POINT	H.O.A.	= HOME OWNERS ASSOCIATION
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POC	= POINT-ON-CURVE	PLS	= PROFESSIONAL LAND SURVEYOR
PI	= POINT-OF-INTERSECTION	PSM	= PROFESSIONAL SURVEYOR AND MAPPER
PT	= POINT-OF-TANGENCY	R	= RADIUS
PC	= POINT-OF-CURVATURE	Δ	= DELTA
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KEY MAP



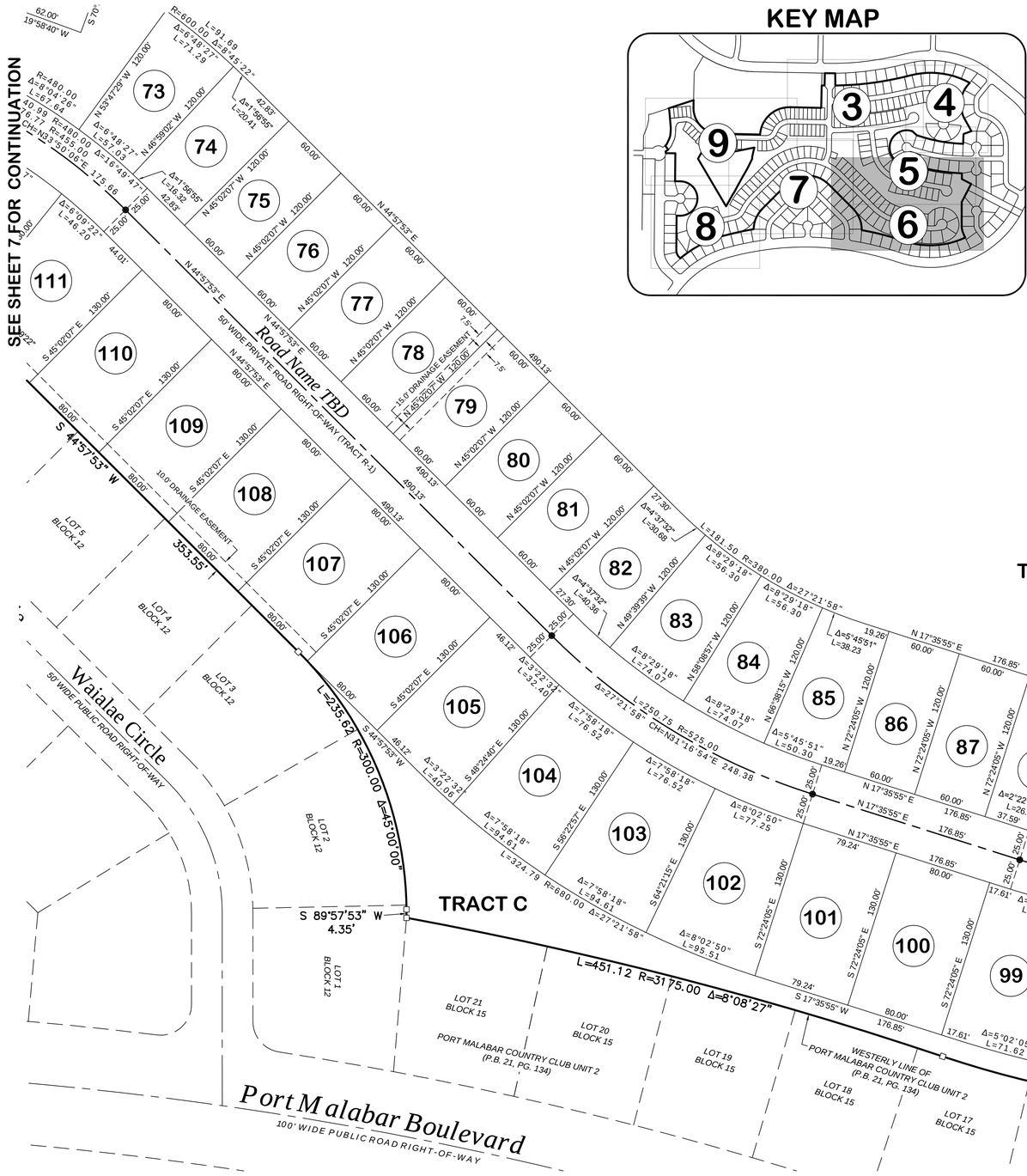
The Reserve at Country Club Lakes Estates

LYING IN SECTION 28, TOWNSHIP 28 SOUTH, RANGE 37 EAST AND IN THE CITY OF PALM BAY, FLORIDA

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SHEET 6 OF 9

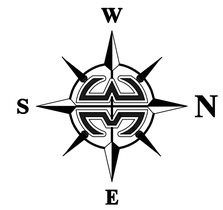
SECTION 28, TOWNSHIP 28 SOUTH, RANGE 37 EAST



KEY MAP

LEGEND:

□	= 4"x4" CONCRETE MONUMENT WITH NAIL AND DISK MARKED "PRM LB 3608" (SET)		
◉	= 5/8" IRON ROD WITH 2" ALUMINUM CAP MARKED "PRM LB 3608" (SET)		
⊠	= 1/2" IRON ROD WITH CAP MARKED "SMITH PRM LB 7428" (FOUND)		
●	= NAIL AND DISK MARKED "PCP LB 3608" (SET)		
PU&DE	= PUBLIC UTILITIES AND DRAINAGE EASEMENT		
C##	= CURVE NUMBER FOR CURVE TABLE		
L##	= LINE NUMBER FOR LINE TABLE	X	= DENOTES LINE BREAK/CHANGE IN DIRECTION
R/W	= RIGHT-OF-WAY	(R)	= RADIAL
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PT	= POINT-OF-TANGENCY	R	= RADIUS
PC	= POINT-OF-CURVATURE	D/ Δ	= DELTA
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PRM	= PERMANENT REFERENCE MONUMENT		
PCP	= PERMANENT CONTROL POINT		



GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)
1 inch = 50 ft.

PREPARED BY:

WILLIAM MOTT LAND SURVEYING INC.

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PROJECT NUMBER: 220-0046

The Reserve at Country Club Lakes Estates

PLAT BOOK ____ PAGE ____

SHEET 7 OF 9

SECTION 28, TOWNSHIP 28 SOUTH, RANGE 37 EAST

LYING IN SECTION 28, TOWNSHIP 28 SOUTH, RANGE 37 EAST AND IN THE CITY OF PALM BAY, FLORIDA

SEE SHEET 9 FOR CONTINUATION

SEE SHEET 3 FOR CONTINUATION

SEE SHEET 8 FOR CONTINUATION

SEE SHEET 6 FOR CONTINUATION

TRACT D

TRACT C

TRACT LS-1

TRACT E

NOT INCLUDED ISLAND GREEN VILLAS (O.R.B. 2746, PG. 93)

SOUTHEASTERLY 642'± APPROXIMATE CENTERLINE OF CANAL

TIE LINE ONLY

Road Name TBD 50' WIDE PRIVATE ROAD RIGHT-OF-WAY (TRACT R-1)

Waialae Circle 50' WIDE PUBLIC ROAD RIGHT-OF-WAY

PORT MALABAR COUNTRY CLUB UNIT 2 (P.B. 21, PG. 134)

LOT 8 BLOCK 12

LOT 9 BLOCK 12

LOT 10 BLOCK 12

LOT 11 BLOCK 12

LOT 12 BLOCK 12

LOT 13 BLOCK 12

LOT 14 BLOCK 12

LOT 7 BLOCK 12

LOT 6 BLOCK 12

LOT 5 BLOCK 12

LOT 4 BLOCK 12

LOT 3 BLOCK 12

LEGEND:

□	= 4"x4" CONCRETE MONUMENT WITH NAIL AND DISK MARKED "PRM LB 3608" (SET)
⊙	= 5/8" IRON ROD WITH 2" ALUMINUM CAP MARKED "PRM LB 3608" (SET)
■	= 1/2" IRON ROD WITH CAP MARKED "SMITH PRM LB 7426" (FOUND)
●	= NAIL AND DISK MARKED "PCP LB 3608" (SET)
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R/W	= RIGHT-OF-WAY
P.B.	= PLAT BOOK
PG.	= PAGE
PG(S)	= PAGES
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POC	= POINT-ON-CURVE
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PT	= POINT-OF-TANGENCY
PC	= POINT-OF-CURVATURE
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Δ/ Δ	= DELTA
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CD/CH	= CHORD DISTANCE
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BLK	= BLOCK

GRAPHIC SCALE

50 0 25 50 100 200

(IN FEET)

1 inch = 50 ft.

PREPARED BY:

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3159 ALZANTE CIRCLE, SUITE 103

MELBOURNE, FLORIDA 32934-3285

PHONE (321) 751-4444 FAX (321) 751-4445

PROJECT NUMBER: 220-0046

KEY MAP

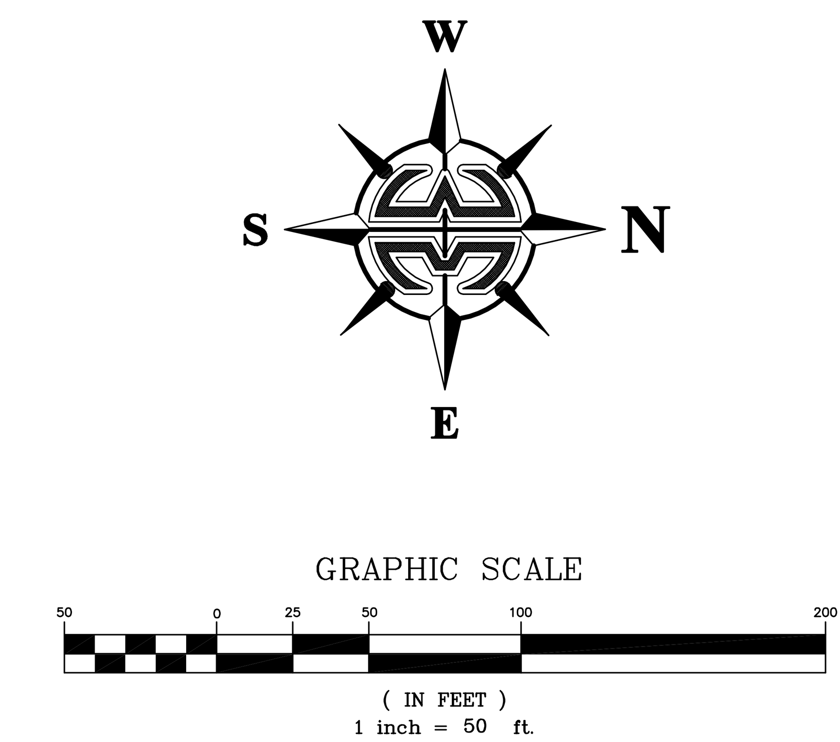
The Reserve at Country Club Lakes Estates

LYING IN SECTION 28, TOWNSHIP 28 SOUTH, RANGE 37 EAST AND IN THE CITY OF PALM BAY, FLORIDA

SEE SHEET 9 FOR CONTINUATION



SEE SHEET 7 FOR CONTINUATION



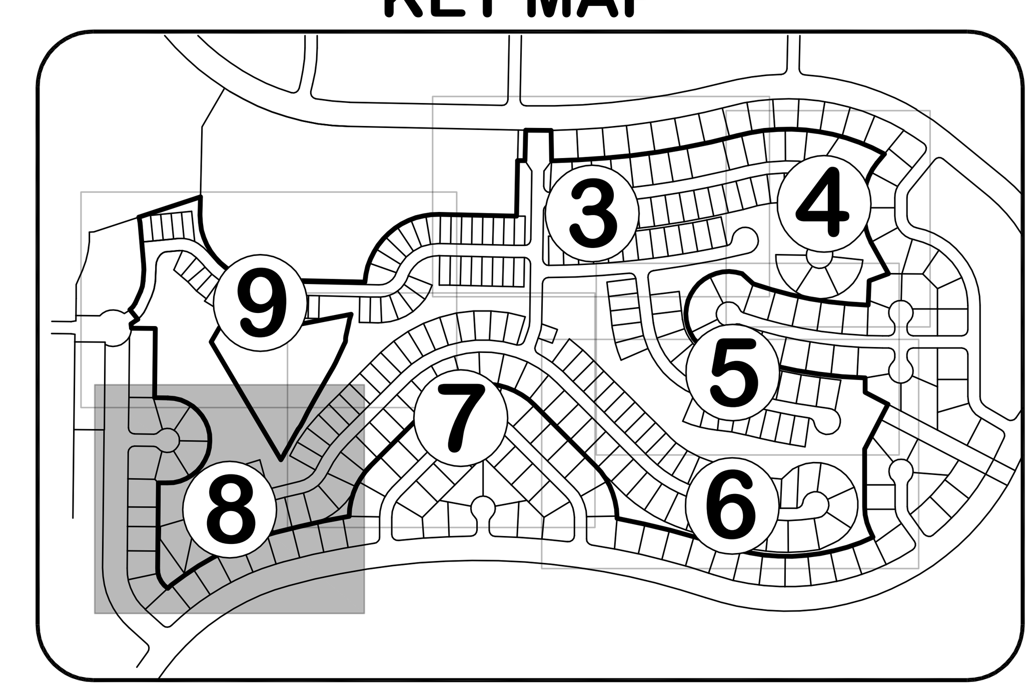
PREPARED BY:
WILLIAM MOTT LAND SURVEYING INC.
3159 ALZANTE CIRCLE, SUITE 103
MELBOURNE, FLORIDA 32934-3285
PHONE (321) 751-4444 FAX (321) 751-4445
PROJECT NUMBER: 220-0046

LEGEND:

- □ = 4"x4" CONCRETE MONUMENT WITH NAIL AND DISK MARKED "PRM LB 3608" (SET)
- ▣ = 5/8" IRON ROD WITH 2" ALUMINUM CAP MARKED "PRM LB 3608" (SET)
- ◘ = 1/2" IRON ROD WITH CAP MARKED "SMITH PRM LB 7426" (FOUND)
- ● = NAIL AND DISK MARKED "PCP LB 3608" (SET)

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KEY MAP



The Reserve at Country Club Lakes Estates

LYING IN SECTION 28, TOWNSHIP 28 SOUTH, RANGE 37 EAST AND IN THE CITY OF PALM BAY, FLORIDA

PREPARED BY:
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3159 ALZANTE CIRCLE, SUITE 103
MELBOURNE, FLORIDA 32934-3285
PHONE (321) 751-4444 FAX (321) 751-4445
PROJECT NUMBER: 220-0046

GRAPHIC SCALE
(IN FEET)
1 inch = 50 ft.

KEY MAP

LEGEND:

- ☐ = 4"x4" CONCRETE MONUMENT WITH NAIL AND DISK MARKED "PRM LB 3608" (SET)
- ▣ = 5/8" IRON ROD WITH 2" ALUMINUM CAP MARKED "PRM LB 3608" (SET)
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- PG(S) = PAGES
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- PT = POINT-OF-TANGENCY
- PC = POINT-OF-CURVATURE
- PRC = POINT-OF-REVERSE CURVATURE
- PCC = POINT-OF-COMPOUND CURVATURE
- P.O.B. = POINT-OF-BEGINNING
- P.O.C. = POINT-OF-COMMENCEMENT
- PRM = PERMANENT REFERENCE MONUMENT
- PCP = PERMANENT CONTROL POINT
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- D/ Δ = DELTA
- L = LENGTH
- CD/CH = CHORD DISTANCE
- CB = CHORD BEARING
- BLK = BLOCK

CENTERLINE DATA

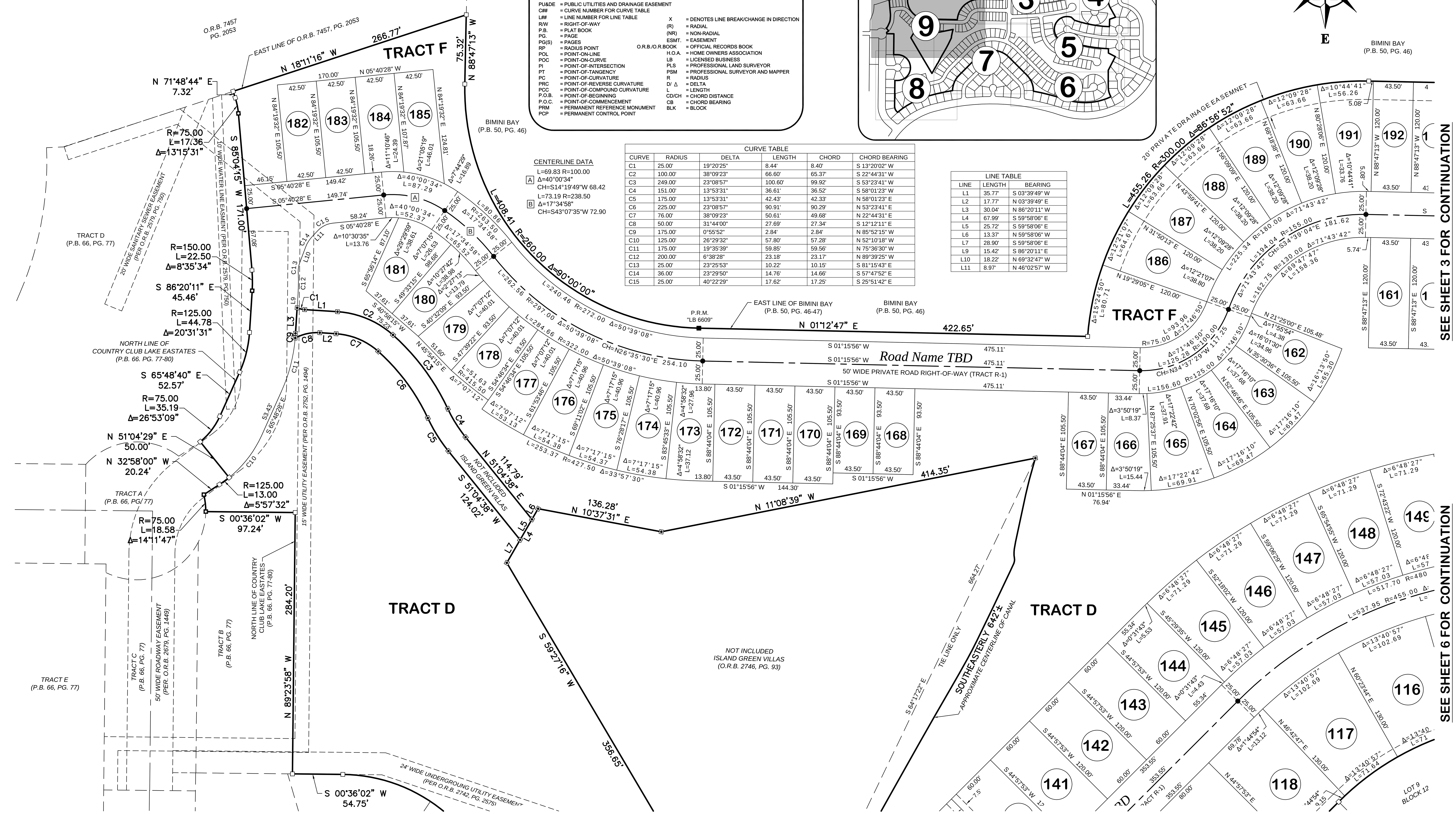
L=69.83 R=100.00
A Δ=40°00'34"
CH=S14°19'49"W 68.42
L=73.19 R=238.50
B Δ=17°34'58"
CH=S43°07'35"W 72.90

CURVE TABLE

CURVE	RADIUS	DELTA	LENGTH	CHORD	CHORD BEARING
C1	25.00'	19°20'25"	8.44'	8.40'	S 13°20'02" W
C2	100.00'	38°09'23"	66.60'	65.37'	S 22°44'31" W
C3	249.00'	23°08'57"	100.60'	99.92'	S 53°23'41" W
C4	151.00'	13°53'31"	36.61'	36.52'	S 58°01'23" W
C5	175.00'	13°53'31"	42.43'	42.33'	N 58°01'23" E
C6	225.00'	23°08'57"	90.91'	90.29'	N 53°23'41" E
C7	76.00'	38°09'23"	50.61'	49.68'	N 22°44'31" E
C8	50.00'	31°44'00"	27.69'	27.34'	S 12°12'11" E
C9	175.00'	0°55'52"	2.84'	2.84'	N 85°52'15" W
C10	125.00'	26°29'32"	57.80'	57.28'	N 52°10'18" W
C11	175.00'	19°35'39"	59.85'	59.56'	N 75°36'30" W
C12	200.00'	6°38'28"	23.18'	23.17'	N 89°39'25" W
C13	25.00'	23°25'53"	10.22'	10.15'	S 81°15'43" E
C14	36.00'	23°29'50"	14.76'	14.66'	S 57°47'52" E
C15	25.00'	40°22'29"	17.62'	17.25'	S 25°51'42" E

LINE TABLE

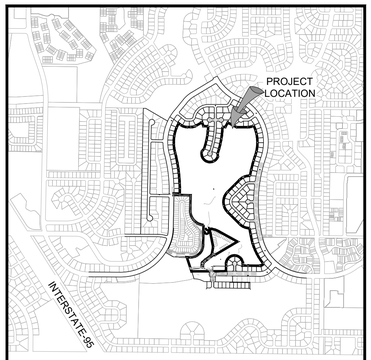
LINE	LENGTH	BEARING
L1	35.77'	S 03°39'49" W
L2	17.77'	N 03°39'49" E
L3	30.04'	N 86°20'11" W
L4	67.99'	S 59°58'06" E
L5	25.72'	S 59°58'06" E
L6	13.37'	N 59°58'06" W
L7	28.90'	S 59°58'06" E
L9	15.42'	S 86°20'11" E
L10	18.22'	N 69°32'47" W
L11	8.97'	N 46°02'57" W



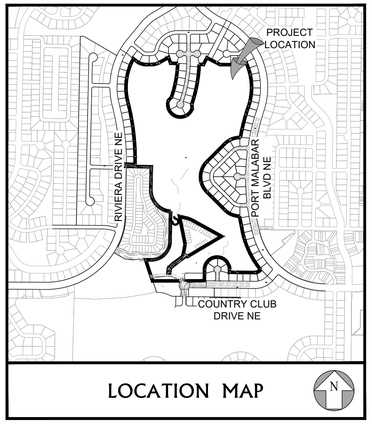
SEE SHEET 3 FOR CONTINUATION
SEE SHEET 6 FOR CONTINUATION
SEE SHEET 8 FOR CONTINUATION
SEE SHEET 8 FOR CONTINUATION

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

SECTION 28, TOWNSHIP 28S, RANGE 37E
CITY OF PALM BAY, FLORIDA
AUGUST 2021



VICINITY MAP



LOCATION MAP

OWNER / APPLICANT

PALM BAY GREENS
JACK B. SPIRA
5205 N. BABCOCK STREET
PALM BAY, FLORIDA 32905
PHONE: (321)775-9441

ENGINEER

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL ▪ STRUCTURAL ▪ SURVEYING ▪ ENVIRONMENTAL
1250 W. EAU GALLIE BLVD., SUITE H
MELBOURNE, FL 32935
PH: (321) 253-1510
VERO BEACH, FL - PH: (772) 569-0035
FT. PIERCE, FL - PH: (772) 468-9055
PALM CITY, FL - PH: (772) 426-9959

SURVEYOR

WILLIAM MOTT LAND SURVEYING INC.
3159 ALZANTE CIRCLE, SUITE 103
ROCKLEDGE, FLORIDA 32940
PHONE: (321)751-4444

GENERAL STATEMENT

THIS PROPOSED PROJECT INVOLVES CONSTRUCTION AND DEVELOPMENT A SINGLE-FAMILY RESIDENTIAL SUBDIVISION WITHIN THE EXTENTS OF A FORMER GOLF COURSE. INFRASTRUCTURE IMPROVEMENTS CONSIST OF DRAINAGE PIPES AND STRUCTURES, PROPOSED ROADS, WATER AND SEWER MAIN EXTENSIONS. CONSTRUCTION OF THE FACILITIES WILL INVOLVE CLEARING, GRUBBING, FILLING, EXCAVATION, GRADING AND STABILIZATION. POTENTIAL POLLUTION SOURCES INCLUDE SOIL EROSION AND SILTATION, AND DISCHARGES FROM CONSTRUCTION EQUIPMENT (I.E. OIL, GAS).

OWNER
PALM BAY GREENS
JACK B. SPIRA
5205 N. BABCOCK STREET
PALM BAY, FLORIDA 32905
PHONE: (321) 775-9441

APPLICANT
COUNTRY CLUB LAKES DEVELOPERS LLC
BRIAN BUSSEN
4885 N. WICKHAM ROAD
MELBOURNE, FLORIDA 32940
(321) 543-5732

SITE ADDRESS
1300 COUNTRY CLUB DRIVE
PALM BAY, FL 32926

FUTURE LAND USE
EXISTING: SINGLE-FAMILY RESIDENTIAL
PROPOSED: SFR (64.25 AC) / MFR (9.99 AC)

TAX PARCEL I.D. NUMBER(S)
28-37-28-00-251

ENGINEER
MBV ENGINEERING, INC.
1250 W.EAU GALLIE BLVD, UNIT L
MELBOURNE, FL 32935
PHONE: (321) 253-1510

SURVEYOR
WILLIAM MOTT LAND SURVEYING, INC.
3159 ALZANTE CIRCLE, SUITE 103
ROCKLEDGE, FLORIDA 32940
PHONE: (321) 751-4444

ZONING
EXISTING: RS-1
PROPOSED: PUD

TAX ACCOUNT NO.
2836559

Sheet List Table

Sheet Number	Sheet Title
G-001	COVER
G-002	GENERAL NOTES
C-101	EXISTING SITE CONDITIONS AND DEMOLITION PLAN - OVERALL
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C-103	EXISTING SITE CONDITIONS AND DEMOLITION PLAN 02
C-104	EXISTING SITE CONDITIONS AND DEMOLITION PLAN 03
C-105	EXISTING SITE CONDITIONS AND DEMOLITION PLAN 04
C-106	EXISTING SITE CONDITIONS AND DEMOLITION PLAN 05
C-107	EXISTING SITE CONDITIONS AND DEMOLITION PLAN 06
C-108	DEWATERING PLAN - STAGE 01
C-109	DEWATERING PLAN - STAGE 02
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C-111	DEWATERING PLAN - STAGE 04
C-201	SITE PHASING PLAN
C-202	OVERALL SITE PLAN
C-203	SITE PLAN 01
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C-206	SITE PLAN 04
C-207	SITE PLAN 05
C-208	SITE PLAN 06
C-209	SITE PLAN DETAILS
C-301	OVERALL DRAINAGE PLAN
C-302	STRUCTURE & PIPE TABLE
C-303	GRADING & DRAINAGE PLAN (PHASE 1 - SHEET 01)
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C-306	ENLARGED GRADING DETAILS (PHASE 1 - SHEET 02)
C-307	GRADING & DRAINAGE PLAN (PHASE 2 - SHEET 01)
C-308	GRADING & DRAINAGE PLAN (PHASE 2 - SHEET 02)
C-309	GRADING & DRAINAGE PLAN (PHASE 3 - SHEET 01)
C-310	GRADING & DRAINAGE PLAN (PHASE 4 - SHEET 01)
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C-809	PALM BAY SPECIFICATIONS 01
C-810	PALM BAY SPECIFICATIONS 02
C-811	PALM BAY SPECIFICATIONS 03
C-812	PALM BAY SPECIFICATIONS 04
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LEGAL DESCRIPTION: The Reserve at Country Club Lakes Estates

Part of lands described in O.R.B. 5330, Page 1263, together with lands described in O.R.B. 6300, Page 1668 of the Public Records of Brevard County, Florida, lying in Section 28, Township 28 South, Range 37 East, said Brevard County and being more particularly described as follows:

Beginning at the Northeast corner of Bimini Bay, according to the plat thereof, as recorded in Plat Book 50, Page's 46 through 47 of the said public records; thence run North 88°47'13" West, along the North line of said Bimini Bay, a distance of 228.32 feet to the East line of a 30 foot wide drainage right-of-way per Port Malabar Country Club Unit Seven, according to the plat thereof, as recorded in Plat Book 25, Page's 121 through 126 of the said public records; thence North 01°12'47" East, along said East line, a distance of 30.00 feet; thence North 88°47'13" West along the North line of said 30 foot wide drainage right-of-way, a distance of 125.00 feet to the East right-of-way line of Riviera Boulevard per said Port Malabar Country Club Unit Seven, said point being the point of curvature of a non-tangent circular curve, concave to the West, having a radius of 3,050.00 feet and a central angle of 01°58'25", thence from a tangent bearing of North 01°12'47" East, run Northerly along said right-of-way line and the arc of said curve, an arc distance of 105.06 feet to the North line of said O.R.B. 6300, Page 1668; thence North 89°14'22" East, along said North line, a distance of 125.00 feet to the West line of said O.R.B. 5330, Page 126, said point being the point of curvature of a non-tangent circular curve, concave to the West, having a radius of 3,175.00 feet and a central angle of 03°56'47"; thence from a tangent bearing of North 00°45'38" West, run Northerly along the arc of said curve and said West line, an arc distance of 218.69 feet to a 4"x4" concrete monument "P.R.M." at the Southeast corner of Lot 12, Block 75, said Port Malabar Country Club Unit Seven; thence continue along the East line of said Port Malabar Country Club Unit Seven and the arc of said curve having a radius of 3175.00 feet and a central angle of 09°58'42", an arc distance of 551.09 feet to the point of reverse curvature with a circular curve concave to the East, having a radius of 825.00 feet and a central angle of 43°25'51"; thence Northerly along the said East line of Port Malabar Country Club Unit Seven and the arc of said curve, an arc distance of 625.36 feet to the South line of Port Malabar Country Club Unit Three, according to the plat thereof, as recorded in Plat Book 23, Page's 89 through 89 of the said public records; thence South 50°37'24" East, along the said South line, a distance of 49.00 feet to the point of curvature of a circular curve concave to the North, having a radius of 225.00 feet and a central angle of 39°22'36"; thence Easterly along the arc of said curve and said South line, an arc distance of 154.63 feet; thence East, along said South line, a distance of 74.04 feet to the point of curvature of a circular curve concave to the North, having a radius of 225.00 feet and a central angle of 28°38'52"; thence Easterly along the arc of said curve and said South line, an arc distance of 112.50 feet; thence North 61°00'47" East, along said South line a distance of 148.00 feet; thence South 20°01'40" East, along the Westerly line of said Port Malabar Country Club Unit Three, a distance of 84.96 feet; thence South 87°56'45" East, along the said South line of Port Malabar Country Club Unit Three, a distance of 100.00 feet, to a 4"x4" concrete monument marked "PRM LS 2257" and the point of curvature of a non-tangent circular curve, concave to the West, having a radius of 1,650.00 feet and a central angle of 16°44'45"; thence from a tangent bearing of South 02°03'15" West, run Southerly along the arc of said curve and the said Westerly line of Port Malabar Country Club Unit Three, an arc distance of 482.25 feet; thence South 42°53'42" West, along said Westerly line, a distance of 61.24 feet to the point of curvature of a non-tangent circular curve, concave to the North, having a radius of 175.00 feet and a central angle of 180°00'00"; thence from a tangent bearing of South 18°48'00" West, run Easterly along the Southerly line of said Port Malabar Country Club Unit Three and arc of said curve, an arc distance of 549.78 feet; thence North 05°17'42" West, along the Easterly line of said Port Malabar Country Club Unit Three, a distance of 61.24 feet to the point of curvature of a non-tangent circular curve, concave to the West, having a radius of 1,950.00 feet and a central angle of 16°40'47"; thence from a tangent bearing of North 18°48'00" East, run Northerly along the arc of said curve and said Easterly line Port Malabar Country Club Unit Three, an arc distance of 567.68 feet; thence East, along the said South line of Port Malabar Country Club Unit Three, a distance of 59.05 feet; thence North 27°30'00" East, along the Easterly line of said Port Malabar Country Club Unit Three a distance of 105.93 feet to the South line of Port Malabar Country Club Unit Two, according to the plat thereof, as recorded in Plat Book 21, Page's 134 through 136 of the said Public records; thence South 62°32'07" East, along said South line, a distance of 208.42 feet; thence North 89°57'53" East, along said South line, a distance of 236.10 feet to the point of curvature of a circular curve concave to the North, having a radius of 225.00 feet and a central angle of 25°18'12"; thence Easterly along the arc of said curve and said South line, an arc distance of 99.37 feet; thence North 64°39'41" East, along said South line, a distance of 31.50 feet to the point of curvature of a non-tangent circular curve, concave to the West, having a radius of 825.00 feet and a central angle of 43°54'02"; thence from a tangent bearing of South 25°20'19" East, run Southerly along the arc of said curve and the Westerly line of said Port Malabar Country Club Unit Two, an arc distance of 632.12 feet to the point of reverse curvature with a circular curve concave to the East, having a radius of 3,175.00 feet and a central angle of 08°36'27"; thence Southerly along the arc of said curve and said Westerly line, an arc distance of 451.12 feet; thence South 89°57'53" West along said Westerly line, a distance of 4.35 feet to the point of curvature of a circular curve concave to the Southeast, having a radius of 300.00 feet and a central angle of 45°00'00"; thence Southwesterly along the arc of said curve and said Westerly line, an arc distance of 235.62 feet; thence South 44°57'53" West, along said Westerly line, a distance of 353.55 feet to the point of curvature of a circular curve concave to the East, having a radius of 300.00 feet and a central angle of 90°00'00"; thence Southerly along the arc of said curve and said Westerly line, an arc distance of 471.24 feet; thence South 45°02'07" East, along said Westerly line, a distance of 353.55 feet to the point of curvature of a circular curve concave to the Northeast, having a radius of 300.00 feet and a central angle of 44°04'03"; thence Southeasterly along the arc of said curve and said Westerly line, an arc distance of 230.74 feet to the point of curvature of a non-tangent circular curve, concave to the East, having a radius of 3,175.00 feet and a central angle of 05°37'31"; thence from a tangent bearing of South 09°31'48" East, run Southerly along the arc of said curve and said Westerly line, an arc distance of 311.72 feet to a point lying South 74°50'41" West a distance of 125.00 from a 4"x4" concrete monument "P.R.M." and the point of compound curvature with a circular curve concave to the Northeast, having a radius of 1,175.00 feet and a central angle of 23°27'34"; thence Southeasterly along the arc of said curve and said Westerly line of Port Malabar Country Club Unit Two, an arc distance of 481.10 feet; thence South 43°04'32" East, along said Westerly line, a distance of 19.71 feet to the North line of Raystelf Country Club Subdivision, according to the plat thereof, as recorded in Plat Book 32, Page 61 of the said public records and the point of curvature of a non-tangent circular curve, concave to the Northwest, having a radius of 100.00 feet and a central angle of 55°23'27"; thence from a tangent bearing of South 35°12'35" West, run Southwesterly along the arc of said curve and said North line, an arc distance of 96.68 feet; thence North 89°23'58" West, along said North line, a distance of 351.00 feet; thence North 00°36'02" East, along the East line of said Raystelf Country Club Subdivision, a distance of 35.00 feet to the point of curvature of a circular curve concave to the South, having a radius of 175.00 feet and a central angle of 180°00'00"; thence Westerly along the arc of said curve, and said North line, an arc distance of 549.78 feet; thence South 00°36'02" West, along the West line of said Raystelf Country Club Subdivision, a distance of 54.75 feet to the North line of Country Club Lakes Estates Phase One, according to the plat thereof, as recorded in Plat Book 66, Page's 66 through 80 of the said public records; thence North 89°23'58" West, along said North line, a distance of 284.20 feet; thence South 00°36'02" West, along the West line of said Country Club Lakes Estates Phase One, a distance of 97.24 feet to the point of curvature of a non-tangent circular curve, concave to the South, having a radius of 75.00 feet and a central angle of 14°11'47"; thence from a tangent bearing of North 89°23'58" West, run Westerly along the arc of said curve and said North line, an arc distance of 18.58 feet; thence North 32°58'00" West, along said North Line, a distance of 20.24 feet to the point of curvature of a circular curve concave to the Southwest, having a radius of 125.00 feet and a central angle of 05°57'32"; thence Northwesterly along the arc of said curve, and said North line, an arc distance of 13.00 feet; thence South 51°04'29" West, along said North line, a distance of 50.00 feet to the point of curvature of a non-tangent circular curve, concave to the Southwest, having a radius of 75.00 feet and a central angle of 26°53'09"; thence from a tangent bearing of North 38°50'31" West, run Northwesterly along the arc of said curve and said North line, an arc distance of 35.19 feet; thence North 65°48'40" West, along said North line, a distance of 52.57 feet to the point of curvature of a circular curve concave to the South, having a radius of 125.00 feet and a central angle of 20°31'31"; thence Westerly along the arc of said curve and said North line, an arc distance of 44.78 feet; thence North 86°20'11" West, along said North line, a distance of 45.46 feet to the point of curvature of a circular curve concave to the South, having a radius of 150.00 feet and a central angle of 08°35'34"; thence Westerly along the arc of said curve and said North line, an arc distance of 22.50 feet; thence South 85°04'15" West, along said North line, a distance of 171.00 feet to the point of curvature of a circular curve concave to the South, having a radius of 75.00 feet and a central angle of 13°11'31"; thence Westerly along the arc of said curve and said North line, an arc distance of 17.36 feet; thence South 71°46'44" West, along said North line, a distance of 7.32 feet to the East line of O.R.B. 7457, Page 2053 of the said public records; thence North 18°11'16" West, along said East line, a distance of 266.77 feet to the South line of said Bimini Bay; thence South 88°47'13" East, along said South line, a distance of 75.32 feet and the point of curvature of a circular curve concave to the Northwest, having a radius of 260.00 feet and a central angle of 90°00'00", thence Northeasterly along the arc of said curve and said South line, an arc distance of 408.41 feet; thence North 01°12'47" East, along the East line of said Bimini Bay, a distance of 422.65 feet to the point of curvature of a non-tangent circular curve, concave to the Northeast, having a radius of 300.00 feet and a central angle of 86°56'52", thence from a tangent bearing of North 85°44'05" West, run Northwesterly along the arc of said curve and the said East line, an arc distance of 455.26 feet; thence North 01°12'47" East, along said East line, a distance of 317.10 feet to the POINT OF BEGINNING.

Less and except Island Green Villas, as recorded in O.R.B. 2746, Page 0093 and O.R.B 2750, Page 2105 of the Public Records of Brevard County, Florida

Containing 74.240 acres of land, more or less.

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

REQUIRED PERMITS

CITY OF PALM BAY FORMAL SITE PLAN
CITY OF PALM BAY UTILITY
FDEP POTABLE WATER DISTRIBUTION
FDEP WASTEWATER COLLECTION
SJRWMD ERP

CITY OF PALM BAY
CITY PERMIT NUMBER: --

SJRWMD
SJRWMD PERMIT NUMBER: --

DAVID N. BASSFORD
LICENSE
No. 83267
STATE OF FLORIDA
PROFESSIONAL ENGINEER

DAVID W. BASSFORD
FL. P.E. #83267

DATE: 8/19/2021

DATE: 8/19/2021

PROJECT: 19-1025

SHEET
G-001

PRELIMINARY SET

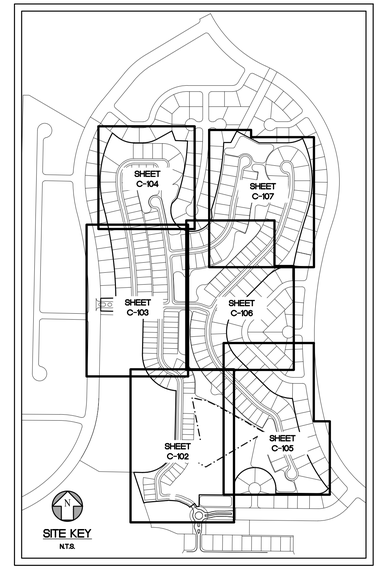


TOTAL TREE REMOVAL (ON-SITE)

OAKS =	172 TREES	86 TREES > 18"Ø	2,483 INCHES
MAGNOLIA=	1 TREE	1 TREE > 18"Ø	24 INCHES
PINES =	29 TREES	20 TREES > 18"Ø	416 INCHES
BANYAN=	45 TREES	8 TREES > 18"Ø	378 INCHES
HOLLY=	1 TREE	1 TREE > 18"Ø	19 INCHES
GUM TREES=	1 TREE	1 TREE > 18"Ø	36 INCHES
TOTAL=	249 TREES	117 TREES > 18"Ø	3,356 INCHES

SITE BENCHMARKS

LABEL	TYPE	DESCRIPTION	ELEV. (NGVD 1929)
A	NAIL & DISK	PALM BAY CONTROL POINT	28.00
B	NAIL & DISK	MOTT TRAVERSE	26.39
C	NAIL & DISK	MOTT TRAVERSE	26.60
D	NAIL & DISK	MOTT TRAVERSE	26.50
E	NAIL & DISK	MOTT TRAVERSE	26.52
F	NAIL & DISK	MOTT TRAVERSE	25.17
G	NAIL & DISK	MOTT TRAVERSE	32.64
H	NAIL & DISK	MOTT TRAVERSE	30.24
I	NAIL & DISK	MOTT TRAVERSE	28.06



SITE DESCRIPTION

THIS PROPOSED PROJECT INVOLVES CONSTRUCTION AND DEVELOPMENT A PLANNED UNIT DEVELOPMENT. INFRASTRUCTURE IMPROVEMENTS CONSIST OF DRAINAGE PIPES AND STRUCTURE, PARKING AREA, DRIVE AISLE AND WATER AND SEWER SERVICE. CONSTRUCTION WILL INVOLVE CLEARING, GRUBBING, FILLING, EXCAVATION, GRADING AND STABILIZATION, POTENTIAL POLLUTION SOURCES INCLUDE SOIL EROSION AND SILTATION, AND DISCHARGES FROM CONSTRUCTION EQUIPMENT (I.E. OIL, GAS).

GENERAL NOTES

1. CONTRACTOR SHALL INSTALL SILT FENCE AND TURBIDITY BARRIER AS INDICATED ON SHEET C-801 PRIOR TO ANY LAND DISTURBING ACTIVITIES. SILT FENCE MAY BE REMOVED ONLY AFTER DISTURBED AREAS HAVE BEEN PROPERLY STABILIZED.
2. CONTRACTOR IS RESPONSIBLE FOR SUBMITTING AND OBTAINING ANY TREE CLEARING PERMITS.

EROSION AND SEDIMENTATION CONTROL NOTES

1. THE LAND-DISTURBING ACTIVITY SHALL CONFORM TO EXISTING TOPOGRAPHY AND SOIL TYPE SO AS TO CREATE THE LOWEST PRACTICAL EROSION POTENTIAL.
2. LAND-DISTURBING ACTIVITIES SHALL BE CONDUCTED IN A MANNER MINIMIZING EROSION.
3. THE DISTURBED AREA AND THE DURATION OF EXPOSURE TO EROSIVE ELEMENTS SHALL BE KEPT TO A PRACTICAL MINIMUM.
4. EROSION CONTROL MUST BE STRICTLY MAINTAINED DURING CUT AND FILL OPERATIONS AND MODIFICATION EXISTING CONTROL STRUCTURE.
5. DISTURBED SOIL SHALL BE STABILIZED AS QUICKLY AS PRACTICAL.
6. WHENEVER FEASIBLE, NATURAL VEGETATION SHALL BE RETAINED, PROTECTED AND SUPPLEMENTED.
7. TEMPORARY VEGETATION OR MULCHING SHALL BE EMPLOYED TO PROTECT EXPOSED CRITICAL AREAS DURING DEVELOPMENT.
8. PERMANENT VEGETATION AND STRUCTURAL EROSION CONTROL MEASURES SHALL BE INSTALLED AS SOON AS PRACTICAL.
9. ADEQUATE PROVISIONS MUST BE PROVIDED TO MINIMIZE DAMAGE FROM SURFACE WATER TO CUT THE FACE OF EXCAVATIONS OR THE SLOPING SURFACE OF FILLS.
10. TO THE EXTENT NECESSARY, SEDIMENT IN RUNOFF WATER MUST BE TRAPPED BY THE USE OF DEBRIS BASINS, SEDIMENT BASINS, SILT TRAPS OR SIMILAR MEASURES UNTIL THE DISTURBED AREA IS STABILIZED.
11. CUTS AND FILLS MUST BE CONSTRUCTED IN SUCH A MANNER THAT EROSION AND RUNOFF FROM THE SITE DOES NOT ENDANGER ADJOINING PROPERTY.
12. CONTRACTOR TO PLACE SILT FENCE IN ALL AREAS WHERE THE POTENTIAL FOR OFFSITE EROSION EXISTS.

FDEP NPDES CERTIFICATION STATEMENT

I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHERED AND EVALUATED THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM, OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS, TO THE BEST OF MY KNOWLEDGE AND BELIEF, TRUE, ACCURATE, AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS.

STORMWATER POLLUTION PREVENTION NOTES

1. CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS FROM FDEP AS REQUIRED TO MEET NPDES STANDARDS.
2. CONTRACTOR SHALL INCORPORATE BEST MANAGEMENT PRACTICES AND EROSION CONTROLS AS SHOWN OR NOTED ON THIS PLAN TO MINIMIZE OR ELIMINATE THE POTENTIAL FOR POLLUTION DISCHARGES.
3. CONTRACTOR SHALL BE RESPONSIBLE TO PERFORM ALL WORK AND MAINTAIN ALL DEVICES IN ACCORDANCE WITH FDEP NPDES STANDARDS.
4. CONTRACTOR SHALL PERFORM ALL REQUIRED INSPECTIONS AND REPORTING.
5. CONTRACTOR SHALL PROVIDE ADDITIONAL EROSION CONTROL DEVICES, AS MAYBE NECESSARY, TO PREVENT OFF-SITE POLLUTION DISCHARGES.
6. CONTRACTOR SHALL MAINTAIN UPDATED AND REVISED SWPP TO MATCH SITE CONDITIONS THROUGHOUT CONSTRUCTION.
7. CONTRACTOR SHALL REMOVE EROSION CONTROL DEVICES ONLY AFTER ALL DISTURBED AREAS ARE ADEQUATELY STABILIZED AS ACKNOWLEDGED BY APPLICABLE AGENCY INSPECTIONS.
8. CONTRACTOR SHALL FILE AND OBTAIN ALL REQUIRED CERTIFICATIONS OF COMPLETION FROM FDEP TO MEET NPDES STANDARDS.
9. CONTRACTOR SHALL INSTALL SILT FENCE AS SHOWN PRIOR TO ANY LAND DISTURBING ACTIVITIES. CONTRACTOR SHALL MAINTAIN SILT FENCE THROUGHOUT CONSTRUCTION ACTIVITIES. CONTRACTOR SHALL REMOVE SILT FENCE ONLY AFTER DISTURBANCE AREAS HAVE BEEN.

DEWATERING SEQUENCING NOTES

SEE SHEETS C-108 THRU C-111 FOR DEWATERING SEQUENCE AND NOTES.

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

N

GRAPHIC SCALE
200 0 100 200
(IN FEET)
1 inch = 200 ft.

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REVISIONS	

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD. SUITE H MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
CA#7726 LB#7726
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-426-9959

EXISTING SITE CONDITIONS AND DEMOLITION PLAN - OVERALL

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

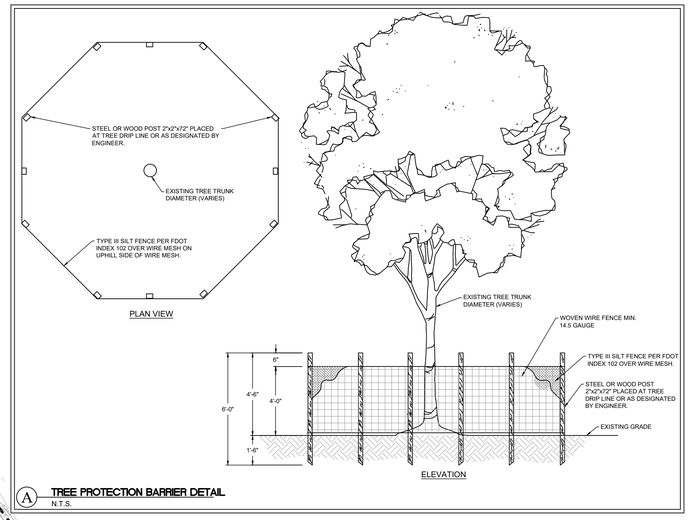
SHEET
C-101

19-1025
PERMITTING SET

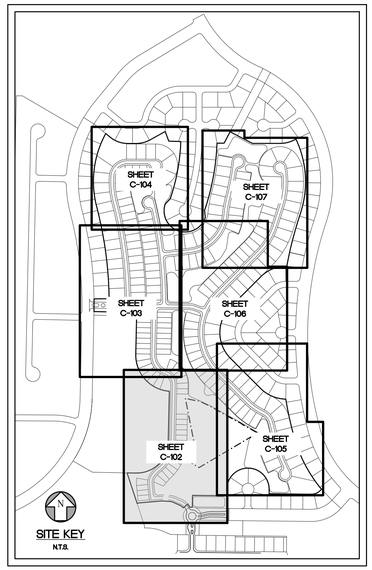
W:\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\DESIGN\19-1025 EXIST.DEMO.dwg 8/19/2021 4:19 PM ANTHONY REILAND

LEGEND

- EXISTING PAVEMENT TO BE REMOVED
- EXISTING PAVEMENT TO REMAIN
- PROPOSED TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
- SILT FENCE
- CRITICAL ROOT BARRIER
- PROPERTY BOUNDARY
- EXISTING TREE TO BE REMOVED
- EXISTING OAK TREES AND SIZE
- EXISTING PINE TREES AND SIZE
- EXISTING SWAMP MAGNOLIA TREES AND SIZE
- EXISTING GUM TREES AND SIZE
- EXISTING BANYAN TREES AND SIZE



A TREE PROTECTION BARRIER DETAIL
N.T.S.



SITE KEY
N.T.S.

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

GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.

TREE REMOVAL (ON-SITE) THIS SHEET

OAKS =	43 TREES	9 TREES > 18"Ø	246 INCHES
PINES =	0 TREES	0 TREES > 18"Ø	0 INCHES
TOTAL=	43 TREES	9 TREES > 18"Ø	246 INCHES

FORCE MAIN INSET
SCALE: 1"=40'

SEE MATCHLINE BELOW

SEE FORCE MAIN INSET THIS SHEET

MATCHLINE - SEE SHEET C-103 FOR CONTINUATION

MATCHLINE - SEE SHEET C-104 FOR CONTINUATION

EXISTING 6" PVC FORCEMAIN

EXISTING 8" WATER MAIN

EXISTING 6" PVC WATER MAIN

EXISTING 6" REUSE WATER MAIN

EXISTING 6" REUSE GATE VALVE

EXISTING 8" PVC WATER MAIN

15' WIDE WATER LINE EASEMENT PER O.R.B. 2575, PG. 1561

100' WIDE ROAD EASEMENT (PER O.R.B. 2575, PG. 1561)

15' WIDE UTILITY EASEMENT (PER O.R.B. 2732, PG. 1464)

24' WIDE UNDERGROUND UTILITY EASEMENT (PER O.R.B. 2742, PG. 2575)

COUNTRY CLUB DRIVE

EXISTING DRY RETENTION POND (NOT PART OF THIS SUBMITTAL)

INSTALL ±83 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', THIS SHEET.

EXISTING ASPHALT ROADWAY TO BE PARTIALLY REMOVED AND REPLACE. SEE SHEET C-203 FOR LAYOUT.

EXISTING TREE TO BE REMOVED (TYP)

INSTALL ±302 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', THIS SHEET.

INSTALL ±50 LF (EACH) TREE PROTECTION BARRIER, SEE DETAIL 'A', THIS SHEET.

INSTALL ±72 LF TREE PROTECTION BARRIEI DETAIL 'A', THIS SHEET.

INSTALL ±102 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', THIS SHEET.

INSTALL ±81 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', THIS SHEET.

INSTALL ±146 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', THIS SHEET.

INSTALL ±81 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', THIS SHEET.

INSTALL ±82 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', THIS SHEET.

INSTALL ±50 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', THIS SHEET.

INSTALL ±83 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', THIS SHEET.

INSTALL ±41 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', SHEET C-102.

EXISTING GOLF CART PATH PAVEMENT TO BE REMOVED

EXISTING BIMINI BAY STORMWATER POND

EXISTING STORM WATER POND 050

CONTRACTOR SHALL INSTALL ±2,481 LF TYPE IV SILT FENCE, SEE SHEET C-801 FOR DETAILS.

CONTRACTOR SHALL INSTALL ±666 LF TYPE IV SILT FENCE, SEE SHEET C-801 FOR DETAILS.

CONTRACTOR SHALL INSTALL ±1,331 LF TYPE IV SILT FENCE, SEE SHEET C-801 FOR DETAILS.

ISLAND GREEN VILLAS
PARCEL #28-37-28-00-506

P.R.M. 4"x4" MONUMENT "LB 6609"

P.R.M. 4"x4" MONUMENT (NO I.D.) (BROKEN)

P.R.M. 4"x4" MONUMENT "LB 6609"

P.C.P. 4"x4" CONCRETE MONUMENT "LB 6609"

REVISIONS	DATE
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JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
CA#7726
1250 W. EAU GALLIE BLVD. SUITE H
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
WWW.MBVENGINEERING.COM
VERO: 772-569-0035, FT PIERCE: 772-489-9055, PALM CITY: 772-426-9959

EXISTING SITE CONDITIONS AND DEMOLITION PLAN 01

THE RESERVE AT COUNTRY CLUB LAKE ESTATES
CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD
FL. P.E. #83267

DATE: 8/19/2021

SHEET
C-102

19-1025
PERMITTING SET

W:\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\ACAD\sheets\19-1025 EXIST DEMO.dwg 8/19/2021 4:39 PM ANTHONY REVERTER

TREE REMOVAL (ON-SITE) THIS SHEET

OAKS =	31 TREES	21 TREES > 18"Ø	628 INCHES
MAGNOLIA=	1 TREE	1 TREE > 18"Ø	24 INCHES
PINE=	2 TREES	0 TREES > 18"Ø	0 INCHES
BANYAN =	3 TREES	3 TREES > 18"Ø	144 INCHES
TOTAL=	35 TREES	25 TREES > 18"Ø	796 INCHES

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

N

GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.

LEGEND

- EXISTING PAVEMENT TO BE REMOVED
- EXISTING PAVEMENT TO REMAIN
- PROPOSED TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
- SILT FENCE
- CRITICAL ROOT BARRIER
- PROPERTY BOUNDARY
- EXISTING TREE TO BE REMOVED
- EXISTING OAK TREES AND SIZE
- EXISTING PINE TREES AND SIZE
- EXISTING SWAMP MAGNOLIA TREES AND SIZE
- EXISTING GUM TREES AND SIZE
- EXISTING BANYAN TREES AND SIZE

SHEET C-104
SHEET C-107
SHEET C-103
SHEET C-106
SHEET C-102
SHEET C-105
SITE KEY
N.T.S.

EXISTING 12" WATER MAIN. CONTRACTOR TO FIELD VERIFY. EXISTING WATER MAIN WAS PHOTO INTERPRETED VIA AS-BUILT INFORMATION PROVIDED BY CITY.
TEMPORARY CONSTRUCTION ENTRANCE. SEE SHEET C-801 FOR DETAILS.
RIVIERA DRIVE
EXISTING CONCRETE FLUME (TO REMAIN)
P.C.
P.R.M. 4"x4" MONUMENT "LB6"
5/8" ROD FOUND "PLS 6612"
EXISTING 50 LF DRAINAGE RIGHT-OF-WAY PER PLAT BOOK 25, PG. 121.
EXISTING VINYL FENCE (TO REMAIN)
INSTALL ±82 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', THIS SHEET.
EXISTING SWALE (TO REMAIN)
5/8" ROD FOUND (NO I.D.) (IN CONCRETE)
5/8" ROD FOUND "PLS 6612"
CONTRACTOR SHALL INSTALL ±772 LF TYPE IV SILT FENCE, SEE SHEET C-801 FOR DETAILS.
EXISTING SWALE TO BE REGRADED SEE SHEET C-303 FOR DETAILS.
BIMINI BAY SUBDIVISION PARCEL #28-37-28-25
EXISTING HALF SWALE PER SJRWMD PERMITTED PLANS 16198-4 DATED OCTOBER 2002.
P.R.M. 4"x4" MONUMENT (NO I.D.) (BROKEN)
P.T.
EXISTING STORM PIPE (NOT FIELD LOCATED - SHOWN FOR REFERENCE PURPOSES ONLY, BASED ON AS-BUILT PLANS).
EXISTING SWALE TO BE REGRADED SEE SHEET C-303 FOR DETAILS.
CONTRACTOR SHALL INSTALL ±859 LF TYPE IV SILT FENCE, SEE SHEET C-801 FOR DETAILS.
EXISTING GOLF CART PATH PAVEMENT TO BE REMOVED
MATCHLINE - SEE SHEET C-102 FOR CONTINUATION
EXISTING STORM WATER POND 050
INSTALL ±190 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', SHEET C-102.
MATCHLINE - SEE SHEET C-106 FOR CONTINUATION

PORT MALABAR COUNTRY CLUB UNIT 7
LOT 9
LOT 10
LOT 11
LOT 12
LOT 13
LOT 14 (VACANT)
P.R.M. 4"x4" MONUMENT (NO I.D.) (CRACKED TOP)
INSTALL ±47 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', SHEET C-102.
MATCHLINE - SEE SHEET C-104 FOR CONTINUATION
EXISTING TREE TO BE REMOVED (TYP)
EXISTING GOLF CART PATH PAVEMENT TO BE REMOVED
INSTALL ±314 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', SHEET C-102.
INSTALL ±275 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', SHEET C-102.
CONTRACTOR SHALL INSTALL ±124 LF TYPE IV SILT FENCE, SEE SHEET C-801 FOR DETAILS.

REVISIONS	DATE
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JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD. SUITE F
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F:321-253-0911
CA#7724
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-426-9669

EXISTING SITE CONDITIONS AND DEMOLITION PLAN 02

THE RESERVE AT COUNTRY CLUB LAKE ESTATES
CITY OF PALM BAY FLORIDA

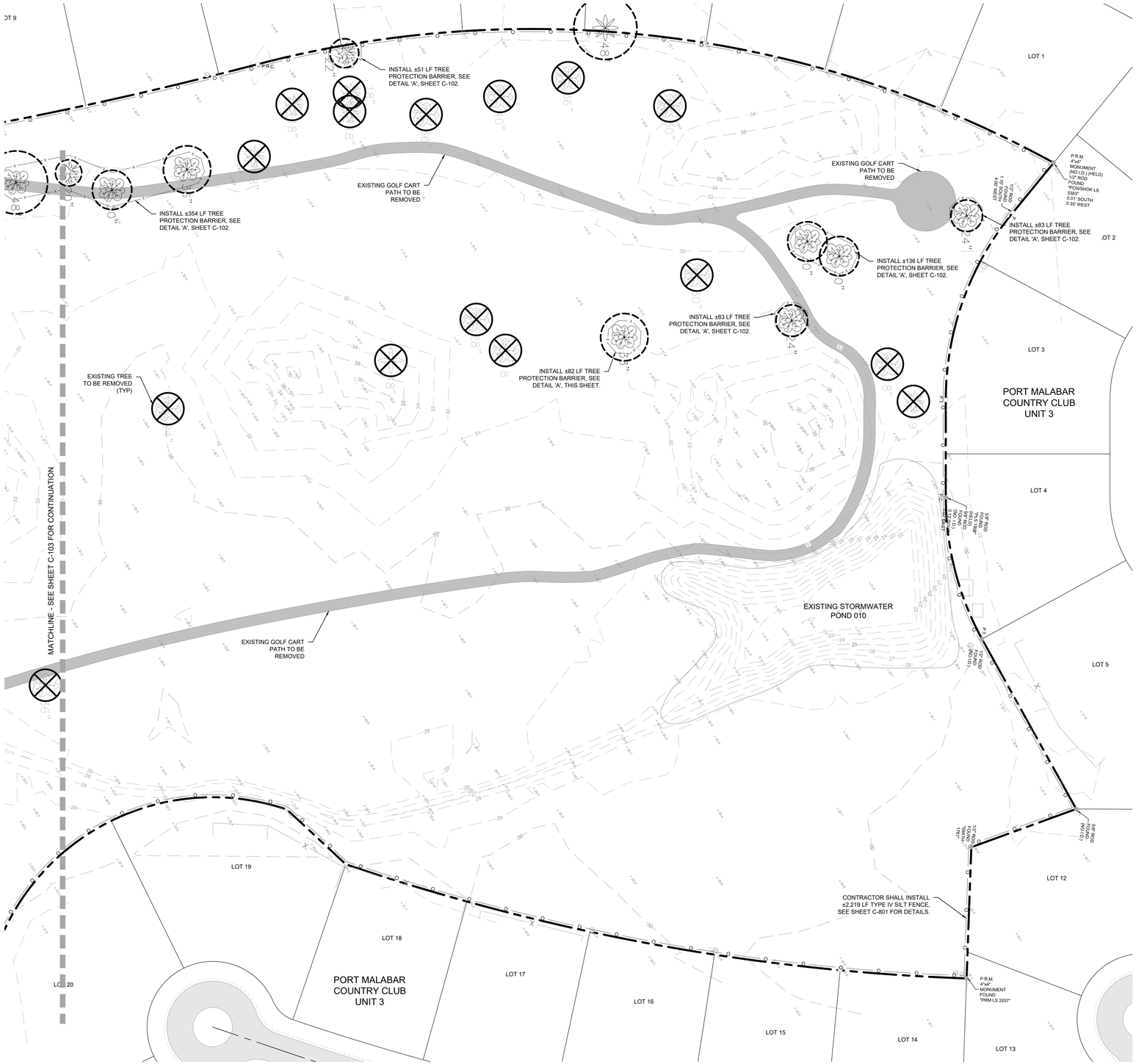
DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

SHEET
C-103

19-1025
PERMITTING SET

W:\19-25-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\Sheets\19-1025 EXIST DEMO.dwg 8/19/2021 4:41 PM ANTHONY RELAFORD

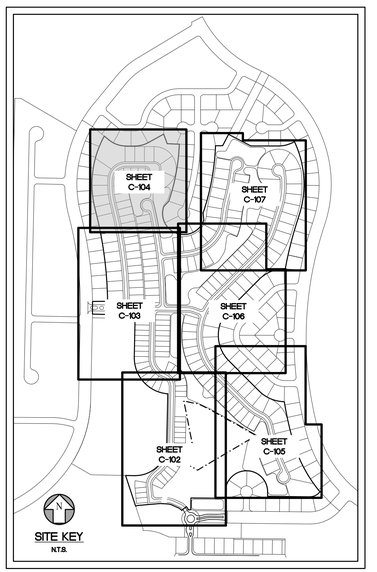


TREE REMOVAL (ON-SITE) THIS SHEET

OAKS =	16 TREES	9 TREES > 18"Ø	260 INCHES
PINE =	7 TREES	5 TREES > 18"Ø	77 INCHES
BANYAN =	1 TREES	1 TREES > 18"Ø	48 INCHES
TOTAL=	24 TREES	15 TREES > 18"Ø	385 INCHES

LEGEND

- EXISTING PAVEMENT TO BE REMOVED
- EXISTING PAVEMENT TO REMAIN
- PROPOSED TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
- SILT FENCE
- CRITICAL ROOT BARRIER
- PROPERTY BOUNDARY
- EXISTING TREE TO BE REMOVED
- EXISTING OAK TREES AND SIZE
- EXISTING PINE TREES AND SIZE
- EXISTING SWAMP MAGNOLIA TREES AND SIZE
- EXISTING GUM TREES AND SIZE
- EXISTING BANYAN TREES AND SIZE



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

GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

	REVISIONS	DATE
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MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD. SUITE H
MELBOURNE, FLORIDA 32935
P: 321-253-1510, F:321-253-0911
CA#7724, LB#3591, LC#26000135
VERO: 772-569-0035, FT PIERCE: 772-468-9055, PALM CITY: 772-426-9959

EXISTING SITE CONDITIONS AND DEMOLITION PLAN 03

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

SHEET
C-104

19-1025
PERMITTING SET

W:\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\Sheets\19-1025 EXIST_DEMO.dwg 8/19/2021 4:19 PM ANTHONY RELAFORD

MATCHLINE - SEE SHEET C-102 FOR CONTINUATION

INSTALL ±41 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', SHEET C-102.

INSTALL ±83 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', SHEET C-102.

EXISTING GOLF CART PATH PAVEMENT TO BE REMOVED

INSTALL ±65 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', SHEET C-102.

ISLAND GREEN VILLAS
PARCEL #28-37-28-00-506

INSTALL ±83 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', SHEET C-102.

INSTALL ±83 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', SHEET C-102.

INSTALL ±167 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', SHEET C-102.

CONTRACTOR SHALL INSTALL ±769 LF TYPE IV SILT FENCE, SEE SHEET C-801 FOR DETAILS.

EXISTING GOLF CART PATH PAVEMENT TO BE REMOVED

INSTALL ±49 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', SHEET C-102.

MATCHLINE - SEE SHEET C-106 FOR CONTINUATION

LOT 9

LOT 8

LOT 7

LOT 6

LOT 12

LOT 13

LOT 14

LOT 10

LOT 1

LOT 2

LOT 3

LOT 4

LOT 5

PORT MALABAR COUNTRY CLUB UNIT 1

PORT MALABAR COUNTRY CLUB UNIT 2

CHAMPION DRIVE

WAIALAE CIRCLE

PORT MALABAR BLVD
100' ROW

EXISTING SURFACE WATER POND 060

EXISTING SURFACE WATER POND 050

EXISTING PIPE (NOT FOUND) TO BE REMOVED

EXISTING TREE TO BE REMOVED (TYP)

INSTALL ±57 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', SHEET C-102.

EXISTING STORM PIPE. (NO LONGER IN OPERATION, TO BE REMOVED TO PROPERTY BOUNDARY AND GROUTED IF FOUND).

±53LF OF TURBIDITY BARRIER, SEE SHEET C-801 FOR DETAIL.

EXISTING STAND PIPE TO BE REMOVED AND REPLACED WITH PROPOSED CONTROL STRUCTURE, SEE SHEETS C-307, AND C-802 FOR DETAILS.

EXISTING PIPE (TO REMAIN).

CONTRACTOR SHALL INSTALL ±2,517 LF TYPE IV SILT FENCE, SEE SHEET C-801 FOR DETAILS.

24' WIDE UNDERGROUND UTILITY EASEMENT (PER O.R.B. 3742, PG. 2575)

VISCAYA CONSERVATION CORRIDOR (PER O.R.B. 2742, PG. 2575)

1/2" ROD FOUND (NO I.D.) 1.35' NORTH 2.10' EAST

1/2" ROD FOUND (NO I.D.) 0.90' NORTH 0.04' EAST

P.R.M. 4"x4" MONUMENT FOUND

P.C.C.

LEGEND

- EXISTING PAVEMENT TO BE REMOVED
- EXISTING PAVEMENT TO REMAIN
- PROPOSED TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
- SILT FENCE
- CRITICAL ROOT BARRIER
- PROPERTY BOUNDARY
- EXISTING TREE TO BE REMOVED
- EXISTING OAK TREES AND SIZE
- EXISTING PINE TREES AND SIZE
- EXISTING SWAMP MAGNOLIA TREES AND SIZE
- EXISTING GUM TREES AND SIZE
- EXISTING BANYAN TREES AND SIZE

TREE REMOVAL (ON-SITE) THIS SHEET

OAKS =	30 TREES	21 TREES > 18"Ø	574 INCHES
HOLLY =	1 TREES	1 TREES > 18"Ø	19 INCHES
TOTAL=	31 TREES	22 TREES > 18"Ø	593 INCHES

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

GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.

SITE KEY
N.T.S.

SHEET C-104 · SHEET C-107 · SHEET C-103 · SHEET C-106 · SHEET C-102 · SHEET C-105

	REVISIONS	DATE
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JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
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MBV ENGINEERING, INC.
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1250 W. EAU GALLIE BLVD. SUITE F MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
CA#7724 LB#3591 LC#26000536
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-426-9669

EXISTING SITE CONDITIONS AND DEMOLITION PLAN 04

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

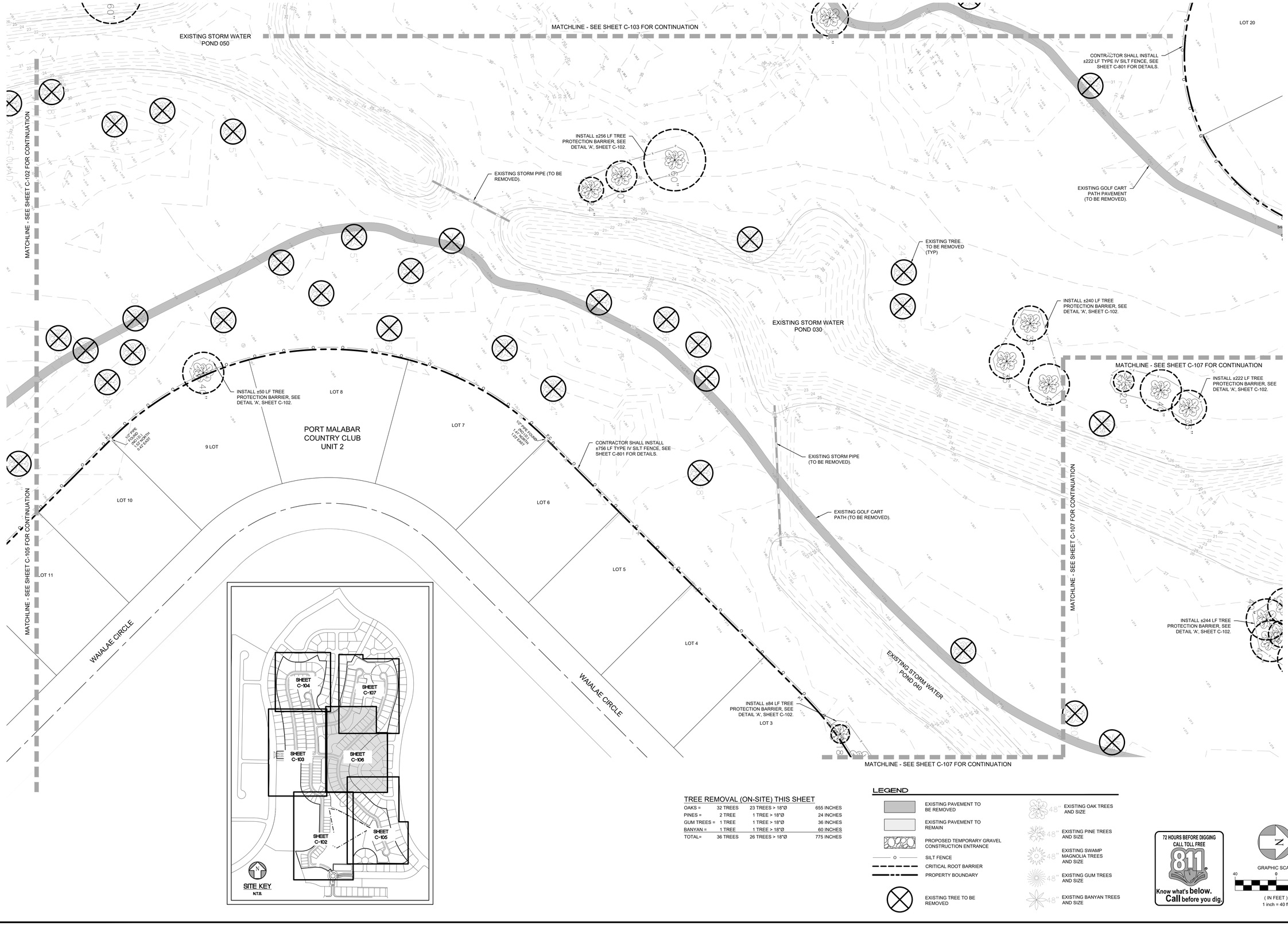
DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 — DATE: 8/19/2021

SHEET
C-105

19-1025
PERMITTING SET

W:\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\Sheet\19-1025 EXIST DEMO.dwg 8/19/2021 4:20 PM ANTHONY RELAFORD



TREE REMOVAL (ON-SITE) THIS SHEET

OAKS =	32 TREES	23 TREES > 18"Ø	655 INCHES
PINES =	2 TREE	1 TREE > 18"Ø	24 INCHES
GUM TREES =	1 TREE	1 TREE > 18"Ø	36 INCHES
BANYAN =	1 TREE	1 TREE > 18"Ø	60 INCHES
TOTAL=	36 TREES	26 TREES > 18"Ø	775 INCHES

LEGEND

- EXISTING PAVEMENT TO BE REMOVED
- EXISTING PAVEMENT TO REMAIN
- PROPOSED TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
- SILT FENCE
- CRITICAL ROOT BARRIER
- PROPERTY BOUNDARY
- EXISTING TREE TO BE REMOVED
- EXISTING OAK TREES AND SIZE
- EXISTING PINE TREES AND SIZE
- EXISTING SWAMP MAGNOLIA TREES AND SIZE
- EXISTING GUM TREES AND SIZE
- EXISTING BANYAN TREES AND SIZE

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

GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.

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MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD. SUITE F MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
CA#3729 LB#3729
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-426-9669

EXISTING SITE CONDITIONS AND DEMOLITION PLAN 05

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

SHEET
C-106

19-1025
PERMITTING SET

M:\19\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\Sht#19-1025 EXIST DEMO.dwg, 8/19/2021 4:20 PM, ANTHONY RELAFORD

(TO BE REMOVED).

EXISTING TREE TO BE REMOVED (TYP)

INSTALL ±240 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', SHEET C-102.

MATCHLINE - SEE SHEET C-106 FOR CONTINUATION

INSTALL ±222 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', SHEET C-102.

EXISTING GOLF CART PATH PAVEMENT TO BE REMOVED

5/8" ROD FOUND (NO I.D.) 0.12' SOUTH 0.43' WEST

1/2" ROD FOUND (NO I.D.)

CONTRACTOR SHALL INSTALL ±2,633 LF TYPE IV SILT FENCE, SEE SHEET C-801 FOR DETAILS.

LOT 24

LOT 25

PORT MALABAR COUNTRY CLUB UNIT 3

LOT 26

LOT 27

LOT 28

EXISTING STORM WATER POND 020

EXISTING STORM PIPE (TO BE REMOVED).

EXISTING STORM WATER POND 030

INSTALL ±244 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', SHEET C-102.

INSTALL ±120 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', SHEET C-102.

EXISTING TREE TO BE REMOVED (TYP)

EXISTING TREE TO BE REMOVED (TYP)

EXISTING STORM WATER POND 040

MATCHLINE - SEE SHEET C-106 FOR CONTINUATION

MATCHLINE - SEE SHEET C-106 FOR CONTINUATION

EXISTING GOLF CART PATH PAVEMENT (TO BE REMOVED).

INSTALL ±83 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', THIS SHEET.

INSTALL ±274 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', SHEET C-102.

INSTALL ±83 LF TREE PROTECTION BARRIER, SEE DETAIL 'A', THIS SHEET.

4"x4" MONUMENT FOUND (NO I.D.)

LOT 21

LOT 20

PORT MALABAR COUNTRY CLUB UNIT 2

LOT 19

LOT 18

5/8" ROD FOUND "PLS INC LB 6947" 0.48' NORTH 0.24' WEST

LOT 11

LOT 12

TREE REMOVAL (ON-SITE) THIS SHEET

OAKS =	20 TREES	5 TREES > 18"Ø	120 INCHES
BANYANS =	4 TREES	3 TREES > 18"Ø	126 INCHES
PINES =	18 TREES	14 TREES > 18"Ø	315 INCHES
TOTAL=	42 TREES	22 TREES > 18"Ø	561 INCHES

LEGEND

- EXISTING PAVEMENT TO BE REMOVED
- EXISTING PAVEMENT TO REMAIN
- PROPOSED TEMPORARY GRAVEL CONSTRUCTION ENTRANCE
- SILT FENCE
- CRITICAL ROOT BARRIER
- PROPERTY BOUNDARY
- EXISTING TREE TO BE REMOVED
- EXISTING OAK TREES AND SIZE
- EXISTING PINE TREES AND SIZE
- EXISTING SWAMP MAGNOLIA TREES AND SIZE
- EXISTING GUM TREES AND SIZE
- EXISTING BANYAN TREES AND SIZE

SITE KEY N.T.S.

SHEET C-104 | SHEET C-107 | SHEET C-103 | SHEET C-106 | SHEET C-102 | SHEET C-105

GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.

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

NO.	REVISIONS	DATE
8		
7		
6		
5		
4		
3		
2		
1		

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
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CA#7729
1250 W. EAU GALLIE BLVD. SUITE H
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P: 321-253-1510 F:321-253-0911
WWW.MBVENGINEERING.COM
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-426-9959

EXISTING SITE CONDITIONS AND DEMOLITION PLAN 06

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

FLORIDA

CITY OF PALM BAY

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 — DATE: 8/19/2021

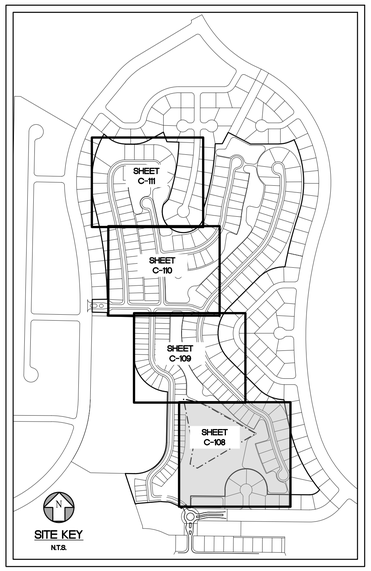
SHEET

C-107

19-1025

PERMITTING SET

M:\19\19-1025 COUNTRY CLUB LAKE ESTATES\NORTH\CAD\Shts\19-1025 EXIST DEMO.dwg 8/19/2021 4:25 PM ANTHONY RELAFORD



GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.

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

LEGEND

PROPOSED SILT FENCE

PROPOSED TURBIDITY BARRIER

DEWATERING SEQUENCING NOTES

STAGE I
1. INSTALL INLET FILTER. SEE DETAIL ON SHEET C-801.
2. INSTALL TURBIDITY BARRIER. SEE SHEET C-105.
3. DEWATERING TO OCCUR VIA EXISTING CURB INLET ON COUNTRY CLUB DRIVE.
4. REMOVE/ REPLACE EXISTING OUTFALL PIPE AND STAND PIPE, SEE SHEETS C-105, (PGD), AND (CONTROL STRUCTURE) FOR DETAILS.
5. MODIFY EXISTING POND AS SHOWN AND REMOVE EXISTING EQUALIZATION PIPE.
6. INSTALL PROPOSED EQUALIZATION PIPE 'A' AND CONSTRUCT REMAINDER OF STORMWATER PONDS 100B AND 100C.

DEWATERING PLAN NOTES

1. CONTRACTOR SHALL CONSTRUCT THE PROJECT IMPROVEMENTS WITHOUT DIRECT DEWATERING DISCHARGES TO OFF-SITE LOCATIONS.
2. ALL CONSTRUCTION METHODS FOR COMPLETION OF PROJECT IMPROVEMENTS INCLUDING DEWATERING SHALL BE COMPLETED IN A MANOR THAT WILL NOT:
   - A. WILL NOT CAUSE ADVERSE WATER QUANTITY IMPACTS TO RECEIVING WATERS AND ADJACENT LANDS.
   - B. WILL NOT CAUSE ADVERSE FLOODING TO ON-SITE PROPERTY.
   - C. WILL NOT ADVERSE IMPACTS TO EXISTING SURFACE WATER STORAGE AND CONVEYANCE CAPABILITIES.
   - D. WILL NOT ADVERSELY IMPACT THE VALUE OF FUNCTIONS PROVIDED TO FISH AND WILDLIFE AND LISTED SPECIES BY WETLANDS AND OTHER SURFACE WATERS.
   - E. WILL NOT ADVERSELY AFFECT THE QUALIFY OF RECEIVING WATER SUCH THAT THE WATER QUALITY STANDARDS SET FORTH IN CHAPTERS 62-3, 62-4, 62-302, 62-520, F.A.C., INCLUDING ANY ANTIDEGRADATION PROVISIONS OF RULES 62-4.242 (1)(A) AND (B), 62-4.242(2) AND (3), F.A.C., WILL BE VIOLATED.
   - F. WILL NOT CAUSE ADVERSE SECONDARY IMPACTS TO THE WATER RESOURCES.
   - G. WILL NOT ADVERSELY IMPACT THE MAINTENANCE OF SURFACE OR GROUND WATER LEVELS OR SURFACE WATER FLOWS ESTABLISHED ON CHAPTER 40C-8, F.A.C.
3. DIRECT DISCHARGE OR DISTURBANCE OF EXISTING WETLANDS TO REMAIN, SHALL NOT BE ALLOWED DURING DEWATERING OPERATIONS AND/OR EXCAVATION OF PONDS, UNLESS SPECIFICALLY NOTED OTHERWISE.
4. IF INSTALLATION OF ANY CONTROL STRUCTURES OCCUR PRIOR TO THE COMPLETION OF DEWATERING ALL WET DETENTION PONDS, CONTRACTOR IS TO PROVIDE HAIL BAILS OR FILTER CLOTH AROUND THE CONSTRUCTED CONTROL STRUCTURES.
5. CONTRACTOR MUST SUBMIT A TURBIDITY MONITORING PLAN TO DISTRICT FOR APPROVAL PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. THE IS TO INCLUDE, AT MINIMUM, THE LOCATIONS THAT SAMPLES WILL BE COLLECTED, WHO WILL COLLECT AND ANALYZE, THE SAMPLES, THE EQUIPMENT AND METHOD THAT WILL BE UTILIZED, AND REMEDIAL STEPS TO BE TAKEN IF TURBIDITY LEVELS EXCEED THE WATER QUALITY IS ALLOWED ABOVE BACKGROUND CONDITIONS IN THE AQUATIC PRESERVE, TURBIDITY SHOULD BE MONITORED ON A DAILY BASIS AND REPORTED WEEKLY DURING DISCHARGE.

EXISTING SURFACE WATER POND 050
POND N100B
EXISTING STORM PIPE (NO LONGER IN OPERATION, TO BE REMOVED TO PROPERTY BOUNDARY AND GROUTED).
PORT MALABAR BOULEVARD
PAR STREET
LOT 3
LOT 4
LOT 5
PORT MALABAR COUNTRY CLUB UNIT 2
LOT 6
LOT 7
LOT 8
EXISTING SURFACE WATER POND 050
EXISTING EQUALIZATION PIPE #1 (TO BE REMOVED)
POND N100B
EXISTING SURFACE WATER POND 060
INSTALL PROPOSED EQUALIZATION PIPE #A (TO BE REMOVED)
24' WIDE UNDERGROUND UTILITY EASEMENT (PER O.R.B. 42, PG. 2576)
POND N100C
LOT 8
LOT 7
PORT MALABAR COUNTRY CLUB UNIT 1
LOT 9
LOT 6
LOT 10
LOT 5
LOT 4
LOT 3
LOT 2
LOT 1
INSTALL TURBIDITY BARRIER
EXISTING STAND PIPE TO BE REMOVED AND REPLACED WITH CONTROL STRUCTURE (SEE SHEET ** FOR CONTROL STRUCTURE DETAIL)
EXISTING DRY POND (TO REMAIN)
INSTALL INLET FILTER
15' WIDE UTILITY EASEMENT (PER O.R.B. 2752, PG. 1494)
EXISTING PIPE TO REMAIN.
COUNTRY CLUB DRIVE
EXISTING INLET TO REMAIN
EXISTING STORM PIPE TO REMAIN
EXISTING INLET TO REMAIN

	DATE	REVISIONS
1	XX-XX-XXXX	COMMENTS
2		
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JOB NO.	19-1025	
DESIGNED	DWB	
DRAWN	AFR	
DATE	03-23-2021	
CHECKED	DWB	
DATE ISSUED	8/19/2021	

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1615 CROWN POINTE DRIVE, SUITE H
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F:321-253-0911
LICENSED BUSINESS No. 8428
VERO: 772-569-0035, FT PIERCE: 772-469-9955, PALM CITY: 772-429-9959

DEWATERING PLAN - STAGE 01

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

FLORIDA

CITY OF PALM BAY

DAVID W. BASSFORD
LICENSE
No. 83267
STATE OF FLORIDA
PROFESSIONAL ENGINEER

DAVID W. BASSFORD
FL. P.E. #83267

DATE: 8/19/2021

SHEET

C-108

19-1025

PERMITTING SET

W:\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\Sht\19-1025 DEWATER.dwg 8/19/2021 4:20 PM ANTHONY RELAFORD

GRAPHIC SCALE
50 0 25 50
(IN FEET)
1 inch = 50 ft.

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

LEGEND

——— o ——— PROPOSED SILT FENCE

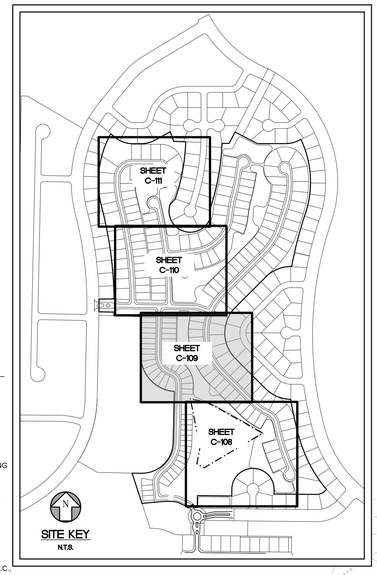
———□——— PROPOSED TURBIDITY BARRIER

DEWATERING SEQUENCING NOTES

STEP II
1. DEWATER TO STORMWATER POND 100B.
2. CONSTRUCT STORMWATER POND 100A.
3. PORTION OF EXISTING SURFACE WATER POND 050 (AS HATCHED) SHALL REMAIN TO ALLOW CONNECTIVITY OF POND 030 TO 050 UNTIL PHASE 3 OF DEVELOPMENT CONSTRUCTION.

DEWATERING PLAN NOTES

1. CONTRACTOR SHALL CONSTRUCT THE PROJECT IMPROVEMENTS WITHOUT DIRECT DEWATERING DISCHARGES TO OFF-SITE LOCATIONS.
2. ALL CONSTRUCTION METHODS FOR COMPLETION OF PROJECT IMPROVEMENTS INCLUDING DEWATERING SHALL BE COMPLETED IN A MANOR THAT WILL NOT:
   - A. WILL NOT CAUSE ADVERSE WATER QUANTITY IMPACTS TO RECEIVING WATERS AND ADJACENT LANDS.
   - B. WILL NOT CAUSE ADVERSE FLOODING TO ON-SITE PROPERTY.
   - C. WILL NOT ADVERSE IMPACTS TO EXISTING SURFACE WATER STORAGE AND CONVEYANCE CAPABILITIES.
   - D. WILL NOT ADVERSELY IMPACT THE VALUE OF FUNCTIONS PROVIDED TO FISH AND WILDLIFE AND LISTED SPECIES BY WETLANDS AND OTHER SURFACE WATERS.
   - E. WILL NOT ADVERSELY AFFECT THE QUALIFY OF RECEIVING WATER SUCH THAT THE WATER QUALITY STANDARDS SET FORTH IN CHAPTERS 62-3, 62-4, 62-302, 62-520, F.A.C., INCLUDING ANY ANTIDEGRADATION PROVISIONS OF RULES 62-4.242 (1)(A) AND (B), 62-4.242(2) AND (3), F.A.C., WILL BE VIOLATED.
   - F. WILL NOT CAUSE ADVERSE SECONDARY IMPACTS TO THE WATER RESOURCES.
   - G. WILL NOT ADVERSELY IMPACT THE MAINTENANCE OF SURFACE OR GROUND WATER LEVELS OR SURFACE WATER FLOWS ESTABLISHED ON CHAPTER 40C-8, F.A.C.
3. DIRECT DISCHARGE OR DISTURBANCE OF EXISTING WETLANDS TO REMAIN, SHALL NOT BE ALLOWED DURING DEWATERING OPERATIONS AND/OR EXCAVATION OF PONDS, UNLESS SPECIFICALLY NOTED OTHERWISE.
4. IF INSTALLATION OF ANY CONTROL STRUCTURES OCCUR PRIOR TO THE COMPLETION OF DEWATERING ALL WET DETENTION PONDS, CONTRACTOR IS TO PROVIDE HAIL BAILS OR FILTER CLOTH AROUND THE CONSTRUCTED CONTROL STRUCTURES.
5. CONTRACTOR MUST SUBMIT A TURBIDITY MONITORING PLAN TO DISTRICT FOR APPROVAL PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. THE IS TO INCLUDE, AT MINIMUM, THE LOCATIONS THAT SAMPLES WILL BE COLLECTED, WHO WILL COLLECT AND ANALYZE, THE SAMPLES, THE EQUIPMENT AND METHOD THAT WILL BE UTILIZED, AND REMEDIAL STEPS TO BE TAKEN IF TURBIDITY LEVELS EXCEED THE WATER QUALITY IS ALLOWED ABOVE BACKGROUND CONDITIONS IN THE AQUATIC PRESERVE. TURBIDITY SHOULD BE MONITORED ON A DAILY BASIS AND REPORTED WEEKLY DURING DISCHARGE.



INSTALL PROPOSED EQUALIZATION PIPES B - STAGE 02

EXISTING SURFACE WATER POND 030

EXISTING EQUALIZATION PIPE #2

SWP 050

POND 100A

SURFACE WATER POND 050 SHALL REMAIN (AS HATCHED) TO ALLOW CONNECTIVITY OF POND 030 TO 050 UNTIL PHASE 3 OF DEVELOPMENT CONSTRUCTION

WAIALAE CIRCLE

PORT MALABAR COUNTRY CLUB UNIT 2

POND 100A

EXISTING SURFACE WATER POND 050

DEWATER TO POND 100B

SEE STAGE 1 ON SHEET C-108.

POND BACKSLOPE TO REMAIN AS IS WITHIN ISLAND GREEN VILLAS PROPERTY.

EXISTING SURFACE WATER POND 050

POND N100B

REVISIONS		DATE
1	COMMENTS	xx-xx-xxxx
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JOB NO.	19-1025		
DESIGNED	DWB	AFR	
DRAWN		AFR	
DATE	03-23-2021		
CHECKED	DWB		
DATE ISSUED	8/19/2021		

MBV ENGINEERING, INC.
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VERO: 772-569-0035, FT PIERCE: 772-465-9005, PALM CITY: 772-429-9969

DEWATERING PLAN - STAGE 02

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

STATE OF FLORIDA
DAVID W. BASSFORD
LICENSE No. 83267
PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

SHEET
C-109

19-1025
PERMITTING SET

X:\19\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\Sheets\19-1025 DEWATER.dwg 8/18/2021 4:41 PM ANTHONY RELAFORD

GRAPHIC SCALE

50 0 25 50

(IN FEET)
1 inch = 50 ft.

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

LEGEND

——— o ——— PROPOSED SILT FENCE

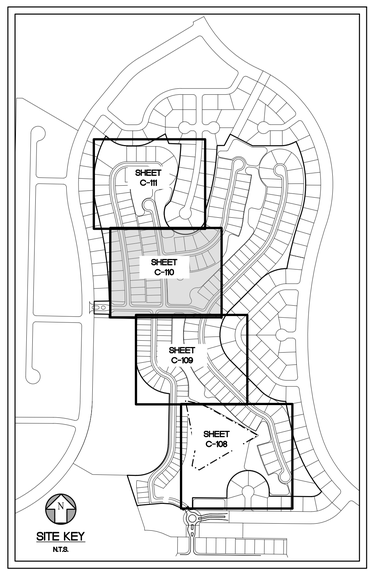
———□——— PROPOSED TURBIDITY BARRIER

DEWATERING SEQUENCING NOTES

STEP III
1. DEWATER TO STORMWATER POND 100A.
2. INSTALL EQUALIZATION PIPE BETWEEN STORMWATER PONDS 300 AND 200.
3. CONSTRUCT A PORTION OF STORMWATER POND 200. EXISTING EQUALIZATION PIPES #3 AND #4 TO REMAIN UNTIL PHASE 3 OF DEVELOPMENT CONSTRUCTION.
4. REMOVE EQUALIZATION PIPE #2 AND FILL REMAINING PORTION OF EXISTING SURFACE WATER.

DEWATERING PLAN NOTES

1. CONTRACTOR SHALL CONSTRUCT THE PROJECT IMPROVEMENTS WITHOUT DIRECT DEWATERING DISCHARGES TO OFF-SITE LOCATIONS.
2. ALL CONSTRUCTION METHODS FOR COMPLETION OF PROJECT IMPROVEMENTS INCLUDING DEWATERING SHALL BE COMPLETED IN A MANOR THAT WILL NOT:
   - A. WILL NOT CAUSE ADVERSE WATER QUANTITY IMPACTS TO RECEIVING WATERS AND ADJACENT LANDS.
   - B. WILL NOT CAUSE ADVERSE FLOODING TO ON-SITE PROPERTY.
   - C. WILL NOT ADVERSE IMPACTS TO EXISTING SURFACE WATER STORAGE AND CONVEYANCE CAPABILITIES.
   - D. WILL NOT ADVERSELY IMPACT THE VALUE OF FUNCTIONS PROVIDED TO FISH AND WILDLIFE AND LISTED SPECIES BY WETLANDS AND OTHER SURFACE WATERS.
   - E. WILL NOT ADVERSELY AFFECT THE QUALIFY OF RECEIVING WATER SUCH THAT THE WATER QUALITY STANDARDS SET FORTH IN CHAPTERS 62-3, 62-4, 62-302, 62-520, F.A.C., INCLUDING ANY ANTIDEGRADATION PROVISIONS OF RULES 62-4.242 (1)(A) AND (B), 62-4.242(2) AND (3), F.A.C., WILL BE VIOLATED.
   - F. WILL NOT CAUSE ADVERSE SECONDARY IMPACTS TO THE WATER RESOURCES.
   - G. WILL NOT ADVERSELY IMPACT THE MAINTENANCE OF SURFACE OR GROUND WATER LEVELS OR SURFACE WATER FLOWS ESTABLISHED ON CHAPTER 40C-8, F.A.C.
3. DIRECT DISCHARGE OR DISTURBANCE OF EXISTING WETLANDS TO REMAIN, SHALL NOT BE ALLOWED DURING DEWATERING OPERATIONS AND/OR EXCAVATION OF PONDS, UNLESS SPECIFICALLY NOTED OTHERWISE.
4. IF INSTALLATION OF ANY CONTROL STRUCTURES OCCUR PRIOR TO THE COMPLETION OF DEWATERING ALL WET DETENTION PONDS, CONTRACTOR IS TO PROVIDE HAIL BAILS OR FILTER CLOTH AROUND THE CONSTRUCTED CONTROL STRUCTURES.
5. CONTRACTOR MUST SUBMIT A TURBIDITY MONITORING PLAN TO DISTRICT FOR APPROVAL PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. THE IS TO INCLUDE, AT MINIMUM, THE LOCATIONS THAT SAMPLES WILL BE COLLECTED, WHO WILL COLLECT AND ANALYZE, THE SAMPLES, THE EQUIPMENT AND METHOD THAT WILL BE UTILIZED, AND REMEDIAL STEPS TO BE TAKEN IF TURBIDITY LEVELS EXCEED THE WATER QUALITY IS ALLOWED ABOVE BACKGROUND CONDITIONS IN THE AQUATIC PRESERVE, TURBIDITY SHOULD BE MONITORED ON A DAILY BASIS AND REPORTED WEEKLY DURING DISCHARGE.



POND 300

FAIRWAY COURT

PORT MALABAR COUNTRY CLUB UNIT 3

EXISTING SURFACE WATER POND 030

INSTALL PROPOSED EQUALIZATION PIPES C - STAGE 03

PORT MALABAR COUNTRY CLUB UNIT 7

RIVIERA DRIVE

POND 200

EXISTING EQUALIZATION PIPE #3

EXISTING SURFACE WATER POND 040

PORT MALABAR COUNTRY CLUB UNIT 2

INSTALL PROPOSED EQUALIZATION PIPES B - STAGE 02

EXISTING SURFACE WATER POND 030

WAIALAE CIRCLE

8		
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1	COMMENTS	XX-XX-XXXX
△	**REVISIONS**	**DATE**

JOB NO.	19-1025	
DESIGNED	DWB	
DRAWN	AFR	
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CA#29126
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DEWATERING PLAN - STAGE 03

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD
LICENSE
No. 83267
STATE OF FLORIDA
PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

SHEET

C-110

19-1025
PERMITTING SET

X:\19\19-1025 COUNTRY CLUB LAKE ESTATES 3 NORTH\CAD\Sht\19-1025 DEWATER.dwg 8/18/2021 4:20 PM ANTHONY RELAFORD

GRAPHIC SCALE
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(IN FEET)
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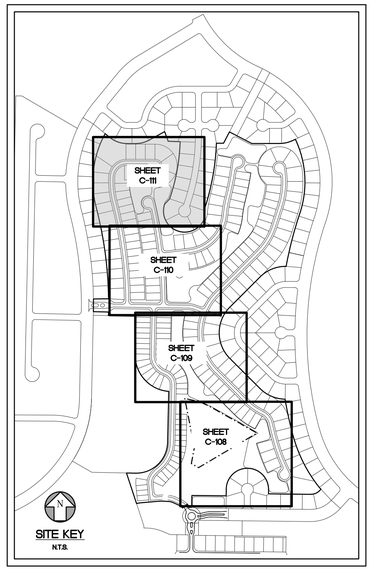
72 HOURS BEFORE DIGGING
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811
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Call before you dig.

DEWATERING SEQUENCING NOTES

STEP IV
1. DEWATER EXISTING STORMWATER POND 010 TO STORMWATER POND 400.
2. INSTALL PROPOSED EQUALIZATION PIPES 'D' AND 'E'.
3. CONSTRUCT STORMWATER POND 400 AND 500, FILL PORTIONS OF EXISTING SURFACE WATER 010 AS SHOWN.

DEWATERING PLAN NOTES

1. CONTRACTOR SHALL CONSTRUCT THE PROJECT IMPROVEMENTS WITHOUT DIRECT DEWATERING DISCHARGES TO OFF-SITE LOCATIONS.
2. ALL CONSTRUCTION METHODS FOR COMPLETION OF PROJECT IMPROVEMENTS INCLUDING DEWATERING SHALL BE COMPLETED IN A MANOR THAT WILL NOT:
   A. WILL NOT CAUSE ADVERSE WATER QUANTITY IMPACTS TO RECEIVING WATERS AND ADJACENT LANDS.
   B. WILL NOT CAUSE ADVERSE FLOODING TO ON-SITE PROPERTY.
   C. WILL NOT ADVERSE IMPACTS TO EXISTING SURFACE WATER STORAGE AND CONVEYANCE CAPABILITIES.
   D. WILL NOT ADVERSELY IMPACT THE VALUE OF FUNCTIONS PROVIDED TO FISH AND WILDLIFE AND LISTED SPECIES BY WETLANDS AND OTHER SURFACE WATERS.
   E. WILL NOT ADVERSELY AFFECT THE QUALIFY OF RECEIVING WATER SUCH THAT THE WATER QUALITY STANDARDS SET FORTH IN CHAPTERS 62-3, 62-4, 62-302, 62-520, F.A.C., INCLUDING ANY ANTIDEGRADATION PROVISIONS OF RULES 62-4.242 (1)(A) AND (B), 62-4.242(2) AND (3), F.A.C., WILL BE VIOLATED.
   F. WILL NOT CAUSE ADVERSE SECONDARY IMPACTS TO THE WATER RESOURCES.
   G. WILL NOT ADVERSELY IMPACT THE MAINTENANCE OF SURFACE OR GROUND WATER LEVELS OR SURFACE WATER FLOWS ESTABLISHED ON CHAPTER 40C-8, F.A.C.
3. DIRECT DISCHARGE OR DISTURBANCE OF EXISTING WETLANDS TO REMAIN, SHALL NOT BE ALLOWED DURING DEWATERING OPERATIONS AND/OR EXCAVATION OF PONDS, UNLESS SPECIFICALLY NOTED OTHERWISE.
4. IF INSTALLATION OF ANY CONTROL STRUCTURES OCCUR PRIOR TO THE COMPLETION OF DEWATERING ALL WET DETENTION PONDS, CONTRACTOR IS TO PROVIDE HAIL BAILS OR FILTER CLOTH AROUND THE CONSTRUCTED CONTROL STRUCTURES.
5. CONTRACTOR MUST SUBMIT A TURBIDITY MONITORING PLAN TO DISTRICT FOR APPROVAL PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION. THE IS TO INCLUDE, AT MINIMUM, THE LOCATIONS THAT SAMPLES WILL BE COLLECTED, WHO WILL COLLECT AND ANALYZE, THE SAMPLES, THE EQUIPMENT AND METHOD THAT WILL BE UTILIZED, AND REMEDIAL STEPS TO BE TAKEN IF TURBIDITY LEVELS EXCEED THE WATER QUALITY IS ALLOWED ABOVE BACKGROUND CONDITIONS IN THE AQUATIC PRESERVE, TURBIDITY SHOULD BE MONITORED ON A DAILY BASIS AND REPORTED WEEKLY DURING DISCHARGE.



EXISTING SURFACE WATER POND 010
POND 500
INSTALL PROPOSED EQUALIZATION PIPES E - STAGE 04
INSTALL PROPOSED EQUALIZATION PIPE D - STAGE 04
POND 400
POND 300
PROPOSED EQUALIZATION PIPE C - STAGE 03
EXISTING SURFACE WATER POND 020
EXISTING EQUALIZATION PIPE - #4 - STAGE 03
EXISTING SURFACE WATER POND 030
RIVIERA DRIVE
FAIRWAY COURT
PORT MALABAR COUNTRY CLUB UNIT 7
PORT MALABAR COUNTRY CLUB UNIT 3

JOB NO.	19-1025		
DESIGNED	DWB		
DRAWN	AFR		
DATE	03-23-2021		
CHECKED	DWB		
DATE ISSUED	8/19/2021		

8			
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1	COMMENTS	XX-XX-XXXX	
△	**REVISIONS**		**DATE**

MBV ENGINEERING, INC.
MOJA BOIVILES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1005 W. EAU GALLIE BLVD., SUITE H 32935
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F:321-253-0911
LB #3591 LS #6986
VERO: 772-569-0035, FT PIERCE: 772-489-9055, PALM CITY: 772-429-9969

DEWATERING PLAN - STAGE 04

THE RESERVE AT COUNTRY CLUB LAKE ESTATES
CITY OF PALM BAY FLORIDA

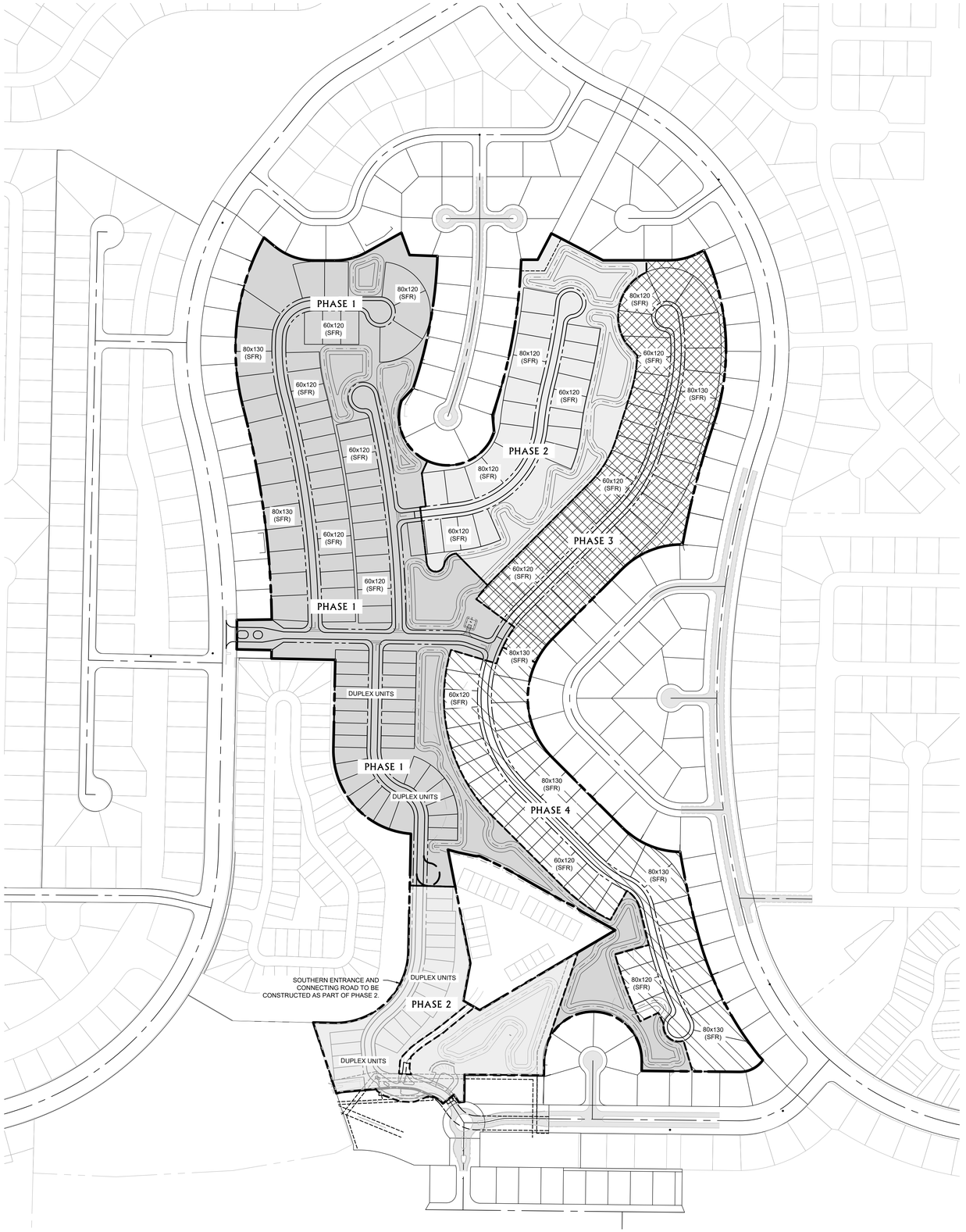
DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

SHEET
C-111

19-1025
PERMITTING SET

W:\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\Sht\9-1025 DEWATER.dwg 8/19/2021 4:29 PM ANTHONY RELAFORD



LOT TYPE (BY PHASE)

PHASE I	
80' LOTS	17
60' LOTS	31
DUPLEX	28
PHASE II	
80' LOTS	11
60' LOTS	13
DUPLEX	18
PHASE III	
80' LOTS	21
60' LOTS	19
PHASE IV	
80' LOTS	23
60' LOTS	18

LEGEND

- PHASE 1
- PHASE 2
- PHASE 3
- PHASE 4

N

GRAPHIC SCALE
200 0 100 200
(IN FEET)
1 inch = 200 ft.

SITE PHASING PLAN

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

JOB NO.	19-1025
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DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

	COMMENTS	DATE
8		
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6		
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1		xx-xx-xxxx

REVISIONS

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
2250 W. EAU GALLIE BLVD, SUITE H
MELBOURNE, FLORIDA 32935
P: 321-253-1510, F:321-253-0911
CA#7724 LA#6667 LB#3653
VERO: 772-569-0035, FT PIERCE: 772-468-9055, PALM CITY: 772-408-9999

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

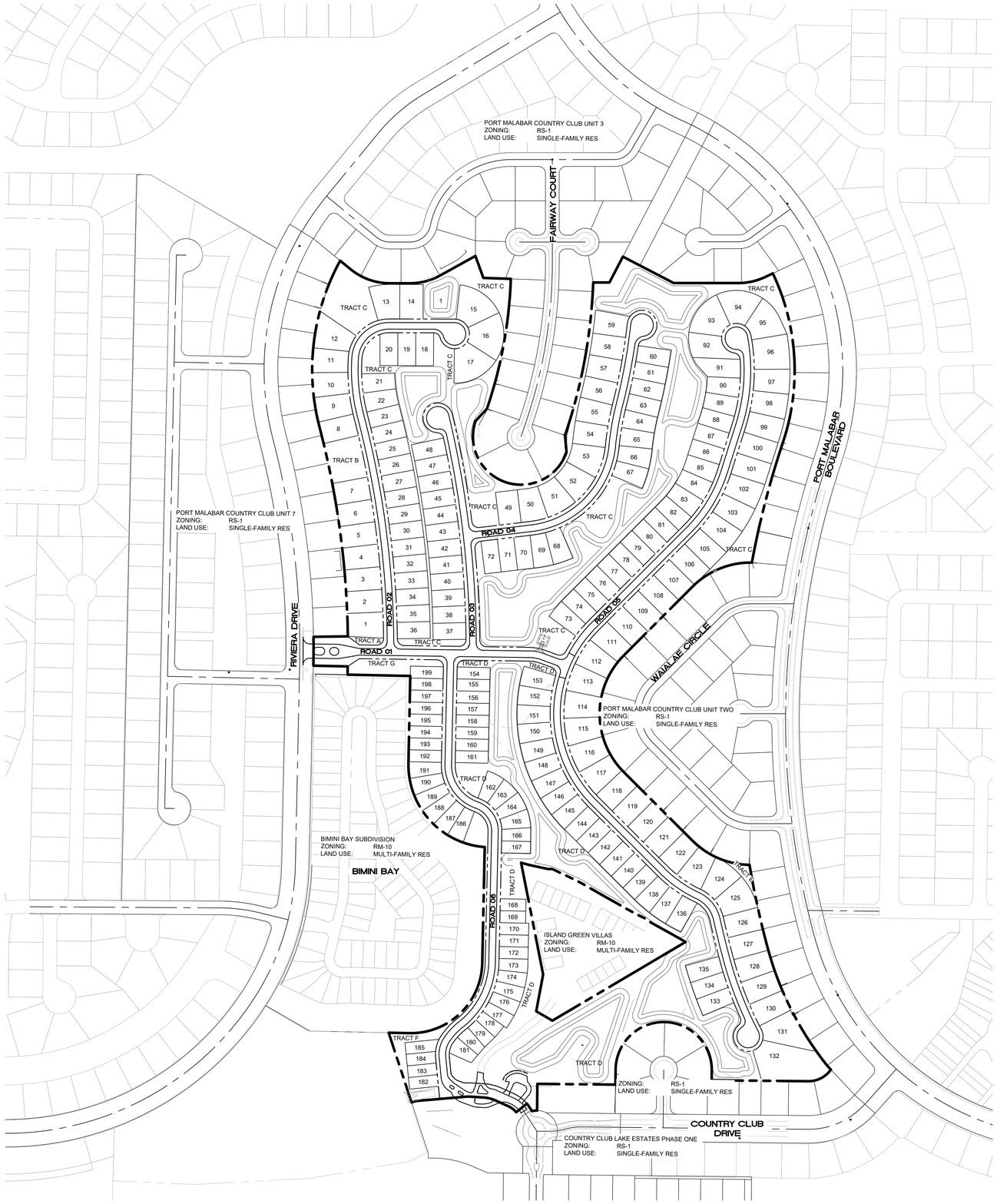
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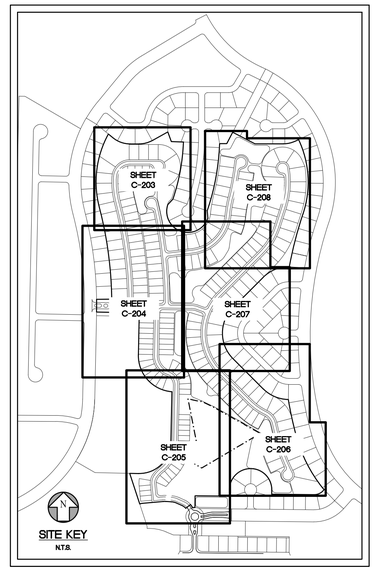
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19-1025

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SITE INFORMATION

GENERAL STATEMENT

THIS PROPOSED PROJECT INVOLVES CONSTRUCTION AND DEVELOPMENT A SINGLE-FAMILY RESIDENTIAL SUBDIVISION WITHIN THE EXTENTS OF A FORMER GOLF COURSE. INFRASTRUCTURE IMPROVEMENTS CONSIST OF DRAINAGE PIPES AND STRUCTURES, PROPOSED ROADS, WATER AND SEWER MAIN EXTENSIONS. CONSTRUCTION OF THE FACILITIES WILL INVOLVE CLEARING, GRUBBING, FILLING, EXCAVATION, GRADING AND STABILIZATION. POTENTIAL POLLUTION SOURCES INCLUDE SOIL EROSION AND SILTATION, AND DISCHARGES FROM CONSTRUCTION EQUIPMENT (I.E. OIL, GAS).

OWNER

PALM BAY GREENS
JACK B. SPIRA
5205 N. BABCOCK STREET
PALM BAY, FLORIDA 32905
PHONE: (321) 775-9441

ENGINEER

MBV ENGINEERING, INC.
1250 W.EAU GALLIE BLVD, UNIT L
MELBOURNE, FL 32935
PHONE: (321) 253-1510

APPLICANT

COUNTRY CLUB LAKES DEVELOPERS LLC
SCOTT BUESCHER
4885 N. WICKHAM ROAD
MELBOURNE, FLORIDA 32940
(321) 543-5732

SITE ADDRESS

COUNTRY CLUB DRIVE
PALM BAY, FL 32926

SURVEYOR

WILLIAM MOTT LAND SURVEYING, INC.
3159 ALZANTE CIRCLE, SUITE 103
ROCKLEDGE, FLORIDA 32940
PHONE: (321) 751-4444

FUTURE LAND USE

EXISTING: SINGLE-FAMILY RESIDENTIAL
PROPOSED: SFR (64.25 AC) / MFR (9.99 AC)

ZONING

EXISTING: RS-1
PROPOSED: PUD

TAX PARCEL I.D. NUMBER(S)

28-37-28-00-251

TAX ACCOUNT NO.

2836559

PLANNED UNIT DEVELOPMENT NOTES:

1. NO BUILDINGS, PARKING LOTS OR OTHER STRUCTURES MAY BE LOCATED WITHIN THE PERIMETER SETBACK AREA. HOWEVER, SWIMMING POOLS AND POOL DECKS MAY BE PERMITTED SUBJECT TO THE NORMAL RESIDENTIAL SETBACK REQUIREMENTS.
2. WITHIN THE PUD, ALL UTILITIES INCLUDING, BUT NOT LIMITED TO, TELEPHONE, TELEVISION CABLE AND ELECTRICAL SYSTEMS SHALL BE INSTALLED UNDERGROUND.
3. THE MINIMUM REQUIREMENTS FOR STREETS OR ROADS, SIDEWALKS, SEWER FACILITIES, UTILITIES AND DRAINAGE SHALL BE IN COMPLIANCE WITH THE REQUIREMENTS OF THE CITY OF PALM BAY SUBDIVISION REGULATIONS.
4. SUBDIVISION SIGNS SHALL BE IN ACCORDANCE WITH CHAPTER 178 OF THE LAND DEVELOPMENT REGULATIONS.
5. WALLS AND FENCES SHALL MEET ALL THE REQUIREMENTS OF CHAPTER 170 OF THE LAND DEVELOPMENT REGULATIONS.
6. PARKING SHALL MEET ALL THE REQUIREMENTS OF CHAPTER 185 OF THE LAND DEVELOPMENT REGULATIONS.
7. LANDSCAPING SHALL MEET ALL THE REQUIREMENTS OF CHAPTER 180 OF THE LAND DEVELOPMENT REGULATIONS.

PROJECT INFORMATION

SITE AREA	3,233,894 SF	74.24 AC.	100.00 %
LOTS	1,646,257 SF	37.79 AC.	50.91 %
ROADS	261,176 SF	6.00 AC.	8.08 %
SIDEWALK	92,393 SF	2.12 AC.	2.86 %
PROPOSED IMPERVIOUS	1,098,069 SF	25.21 AC.	33.96 %
PROPOSED PERVIOUS	1,786,726 SF	41.02 AC.	55.24 %
WET PONDS (NWL)	349,099 SF	8.01 AC.	10.80 %
TOTAL UNITS	199 UNITS	100.00 %	
DUPLEX UNITS	46 UNITS	23.12 %	
SINGLE-FAMILY (60x120)	81 UNITS	40.70 %	
SINGLE-FAMILY (80x120)	72 UNITS	36.18 %	

TRACTS E, F, G, AND H AS WELL AS THE PROPOSED DUPLEX LOTS AND ROAD RIGHT-OF-WAY SHALL HAVE THEIR LANDUSE MODIFIED TO MULTI-FAMILY RESIDENTIAL. THESE AREAS COMBINED TOTAL 9.99 ACRES.

NOTE: ASSUMES 50x70 PAD ON ALL SINGLE-FAMILY DETACHED HOUSES AND 35x50 ON SINGLE-FAMILY ATTACHED HOUSES AND 25x25 DRIVEWAY FOR IMPERVIOUS AREA.

MINIMUM DISTANCE BETWEEN STRUCTURES SHALL BE 10 FEET FOR 2-STORY OR BELOW.

MINIMUM LIVING AREA SHALL BE 800 SF FOR UNITS.

MINIMUM LOT AREA

	REQ'D	PROVIDED
SINGLE-FAMILY	4,050 SF	4,067 SF

DENSITY 2.69 U.P.A. (5.0 MAX)

BUILDING SETBACKS

	REQ'D	PROVIDED
FRONT	0'	25'
REAR	10'	10'
SIDE	5'	5'
SIDE INTERIOR	10'	10'

P.U.D. STANDARDS

DEVELOPMENT SIZE	REQ'D	PROVIDED
	5 AC.	74.24 AC.
BUILDING LENGTH	200 FT (MAX)	70 FT
PARKING (PER UNIT)	2 SPACES	2 SPACES

FLOOD ZONE

THE SUBJECT PROPERTY IS LOCATED IN FLOOD ZONE "X" PER F.I.R.M. PANEL No. 12009C 0594 G, DATED MARCH 17, 2014.

SANITARY SEWER SOURCE

PALM BAY SANITARY SEWER SYSTEM

POTABLE WATER SOURCE

PALM BAY WATER SYSTEM

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

GRAPHIC SCALE
200 0 100 200
(IN FEET)
1 inch = 200 ft.

	DATE	REVISIONS	COMMENTS
1	xx-xx-xxxx		
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JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
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1250 W. EAU GALLIE BLVD, SUITE H MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
CA#7726
VERO: 772-569-0036, FT PIERCE: 772-468-9055, PALM CITY: 772-408-9969

OVERALL SITE PLAN

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL P.E #83267 DATE: 8/19/2021

SHEET
C-202

19-1025

PERMITTING SET

W:\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\dwg\19-1025 SITE OVERALL.dwg 8/19/2021 4:20 PM ANTHONY RELAFORD

Point Table		
Point #	Northing	Easting
1	1341281.6292	773472.3123
2	1341276.8272	773802.2952
3	1341273.6439	774021.0488
4	1341272.4618	774102.2768
5	1341269.4867	774306.7156
6	1341260.4763	774355.7815
7	1341228.6093	774443.4408
8	1342134.7725	773694.0411
9	1342347.4928	773673.6500
10	1342464.4242	773798.6634
11	1342463.9053	774035.3224
12	1341699.7410	774079.4113
13	1342136.2566	774002.8995
14	1341728.1361	774315.8621
15	1342027.9626	774609.3113
16	1342178.3071	774635.7444
17	1342470.2153	774688.8694
18	1339892.0163	775129.5616
19	1340158.2602	775025.6315
20	1340305.0199	774989.4349
21	1340391.0583	774920.4209
22	1340481.2069	774791.7963

Point Table		
Point #	Northing	Easting
23	1340731.0499	774541.6442
24	1341374.5170	774541.2466
25	1341721.3053	774887.6065
26	1341933.5753	775016.5752
27	1342102.1490	775070.0453
28	1342425.6856	775089.1835
29	1339607.2308	774287.6298
30	1339644.6191	774244.0098
31	1339650.1412	774231.7162
32	1339650.6726	774198.5331
33	1339643.3562	774154.2013
34	1339645.5067	774120.1284
35	1339666.7229	774058.2107
36	1339692.1966	774020.7508
37	1339729.3268	773998.6793
38	1339802.7207	773991.3868
39	1339869.0114	774008.3215
40	1339922.2193	774058.1587
41	1340149.4364	774171.8990
42	1340624.4334	774182.3921
43	1340720.9149	774115.7723
44	1340870.3194	774012.5084

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

GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.

LEGEND
- EXISTING ASPHALT
- PROPOSED ASPHALT (SEE DETAIL 6 ON SHEET C-802)
- (7) NUMBER OF PARKING SPACES
- PROPOSED 5' SIDEWALK (BY HOME BUILDER) (SEE SHEET C-803 FOR DETAIL)
- PROPOSED 5' SIDEWALK (BY CONTRACTOR) (SEE SHEET C-803 FOR DETAIL)

SIGNING AND STRIPING LEGEND	
1	(R1-1) 36" STOP SIGN AND 24" THERMOPLASTIC SOLID WHITE STOP BAR. SEE DETAIL 2 ON SHEET C-802.
2	5' WIDE CROSSWALK SEE DETAIL 2 ON SHEET C-802.
3	6" DOUBLE YELLOW (20 FT MIN.)
4	6" THERMOPLASTIC SOLID WHITE
SITE LEGEND	
5	FDOT MIAMI CURB AND GUTTER SEE DETAIL 3 ON SHEET C-802
6	FDOT TYPE 'A' CURB SEE DETAIL 4 ON SHEET C-802
7	HANDICAMP RAMP - TYPE 'CR-E' SEE DETAIL ON SHEET C-808
8	CURB FLARE, SEE DETAIL 3 SHEET C-802.
9	CURB TRANSITION - SEE CURB TRANSITION DETAIL ON SHEET C-803.
10	CURB TRANSITION AT INLET, SEE DETAIL ON SHEET C-402.
11	TYPE 'F CURB AND GUTTER, SEE DETAIL ON SHEET C-802.
12	VALLEY GUTTER, SEE DETAIL ON SHEET C-802.

R4-7 DO NOT ENTER R5-1

TRACT F
TRACT D
TRACT D
TRACT D
TRACT D
TRACT D
TRACT D
POND N100C
POND N100A
ROAD 06 50' PRIVATE ROW
ROAD 05 50' ROW
ENTRY GATE (BY OTHERS)
SPLIT HIGHWAY SIGN (R4-7)
SPLIT HIGHWAY SIGN (R4-7)
DO NOT ENTER SIGN (R5-1)
DO NOT ENTER SIGN (R5-1)
CBU, SEE DETAIL ON SHEET C-802
CURB STOP, SEE DETAIL ON SHEET C-802
PASSIVE PARK AREA SEE DETAIL ON SHEET C-209
TEMPORARY CUL-DE-SAC TO BE BUILT IN PHASE I AND REMOVED IN PHASE II
PHASE I
PHASE II
MATCHLINE - SEE SHEET – FOR CONTINUATION
COUNTRY CLUB DRIVE
182 183 184 185 181 180 179 178 177 176 175 174 173 172 171 170 169 168 188 187 186 167 166 165 164 145 144 143 142 141

SITE KEY
N.T.S.
SHEET C-203
SHEET C-208
SHEET C-204
SHEET C-207
SHEET C-205
SHEET C-206

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								REVISIONS	**DATE**

JOB NO.	19-1025		
DESIGNED	DWB		
DRAWN	AFR		
DATE	03-23-2021		
CHECKED	DWB		
DATE ISSUED	8/19/2021		

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD. SUITE F, MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
CA#7724 LB#3591
VERO: 772-569-0035, FT PIERCE: 772-468-9055, PALM CITY: 772-426-9959

SITE PLAN 01

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

FLORIDA

CITY OF PALM BAY

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD, FL. P.E. #83267 — DATE: 8/19/2021

SHEET

C-203

19-1025

PERMITTING SET

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SIGNING AND STRIPING LEGEND

1	(R1-1) 36" STOP SIGN AND 24" THERMOPLASTIC SOLID WHITE STOP BAR. SEE DETAIL 2 ON SHEET C-802.
2	5' WIDE CROSSWALK SEE DETAIL 2 ON SHEET C-802.
3	6" DOUBLE YELLOW (20 FT MIN.)
4	6" THERMOPLASTIC SOLID WHITE

SITE LEGEND

5	FDOT MIAMI CURB AND GUTTER SEE DETAIL 3 ON SHEET C-802
6	FDOT TYPE 'A' CURB SEE DETAIL 4 ON SHEET C-802
7	HANDICAMP RAMP - TYPE 'CR-E' SEE DETAIL ON SHEET C-808
8	CURB FLARE, SEE DETAIL 3 SHEET C-802.
9	CURB TRANSITION - SEE CURB TRANSITION DETAIL ON SHEET C-803.
10	CURB TRANSITION AT INLET, SEE DETAIL ON SHEET C-402.
11	TYPE 'F' CURB AND GUTTER, SEE DETAIL ON SHEET C-802.
12	VALLEY GUTTER, SEE DETAIL ON SHEET C-802.

SHEET C-203 | SHEET C-208 | SHEET C-204 | SHEET C-207 | SHEET C-205 | SHEET C-206

SITE KEY
N.T.S.

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

R1-1

GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.

LEGEND
- EXISTING ASPHALT
- PROPOSED ASPHALT (SEE DETAIL 6 ON SHEET C-802)
- (7) NUMBER OF PARKING SPACES
- PROPOSED 5' SIDEWALK (BY HOME BUILDER) (SEE SHEET C-803 FOR DETAIL)
- PROPOSED 5' SIDEWALK (BY CONTRACTOR) (SEE SHEET C-803 FOR DETAIL)

RIVIERA DRIVE
INSTALL 101LF OF VALLEY GUTTER, SEE VALLEY GUTTER DETAIL ON SHEET C-802
SEE DETAIL #5 ON SHEET C-802
ENTRY GATES (BY OTHERS)
S89°47'13"E 125.00
S89°14'27"W 125.00
S01°12'47"W 30.00
S88°47'13"E 228.32
S01°12'47"W 317.10
S89°09'59"E 330.02
S89°09'59"E 218.78
S89°09'59"E 81.24
S89°09'59"E 204.46
51 N01°12'47"E 403.41
MATCHLINE - SEE SHEET -- FOR CONTINUATION

LOT 9 | LOT 10 | LOT 11 | LOT 12 | LOT 13 | LOT 14 (VACANT)
PORT MALABAR COUNTRY CLUB UNIT 7
10' BUFFER EASEMENT
L=769.78 R=3175.00

TRACT A | TRACT C | TRACT D | TRACT G
POND N100A | POND N200 | POND N300

ROAD 01 50' ROW
ROAD 02 50' PRIVATE ROW
ROAD 03 50' PRIVATE ROW
ROAD 04 50' PRIVATE ROW
ROAD 06 50' PRIVATE ROW
L=867.20 R=3330.00
L=428.14 R=3630.00
L=443.45 R=3630.00
L=114.04 R=100.00
L=26.39 R=100.00
L=278.78 R=174.00

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△	REVISIONS							DATE

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LB#3591 WWW.MBVENGINEERING.COM
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-426-9959

SITE PLAN 02

THE RESERVE AT COUNTRY CLUB LAKE ESTATES
FLORIDA
CITY OF PALM BAY

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER
DAVID W. BASSFORD FL. P.E. #83267
DATE: 8/19/2021

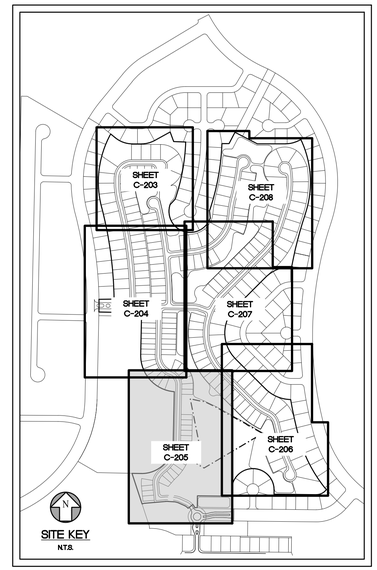
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19-1025
PERMITTING SET

MATCHLINE - SEE SHEET -- FOR CONTINUATION

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LEGEND

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- PROPOSED 5' SIDEWALK (BY CONTRACTOR) (SEE SHEET C-803 FOR DETAIL)

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40 0 20 40
(IN FEET)
1 inch = 40 ft.

SIGNING AND STRIPING LEGEND	
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1 COMMENTS	xx-xx-xxxx
REVISIONS	**DATE**

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MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD. SUITE H MELBOURNE, FLORIDA 32935
P: 321-253-1510 F:321-253-0911 CA#7724 LB#3653
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9669

SITE PLAN 03

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL P.E. #83267 DATE: 8/19/2021

SHEET
C-205

19-1025
PERMITTING SET

W:\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\Sheets\19-1025 SITE.dwg 8/19/2021 4:21 PM ANTHONY RELAFORD

MATCHLINE - SEE SHEET -- FOR CONTINUATION

SEE SHEET C-209 FOR EXPANDED DETAIL

CHAMPION DRIVE

PORT MALABAR COUNTRY CLUB UNIT 1

LOT 6 | LOT 7 | LOT 8 | LOT 9

L=549.78
R=475.00

N00°36'27"E 49.72
N00°31'57"E 5.03

24' WIDE UNDERGROUND UTILITY EASEMENT (PER O.R.B. 3742, PG. 2976)

N00°24'04"E 208.26

ISLAND GREEN VILLAS

POND N100B

L=6.92
R=27.23

L=27.76
R=1050.00

L=49.15
R=49.81

L=458.47
R=1050.00

L=439.74
R=2250.00

C=81.11
R=3317.65

N60°49'35"W 35.29
N60°26'38"W 19.75
N60°25'31"W 4.71
N60°25'05"W 20.13
N60°26'19"W 20.51

LOT 9 | LOT 10 | LOT 11 | LOT 12 | LOT 13 | LOT 14 | LOT 7

PORT MALABAR COUNTRY CLUB UNIT 2

WAIALAE CIRCLE

LOT 1 | LOT 2 | LOT 3 | LOT 4 | LOT 5 | LOT 6 | LOT 7 | LOT 8

PORT MALABAR BLVD

TRACT D | TRACT E

ROAD 05
50' ROW

R25' | R41'

L=288.38
R=1335.00

L=151.17
R=3330.00

L=144.33
R=925.00

L=280.77
R=300.00

L=311.72
R=3175.00

L=48.30
R=3175.00

L=388.25
R=1150.00

L=58.80
R=100.00

N43°04'32"W 19.71

S00°36'02"W 35.00

10' BUFFER EASEMENT

7.5' D.&U.E.

135 | 134 | 133 | 132 | 131 | 130 | 129 | 128 | 127 | 126 | 125 | 124 | 123 | 122 | 121 | 120 | 119 | 118 | 117 | 143 | 142 | 141 | 140 | 139 | 138 | 137 | 136

9 LOT

N45°22'07"W 353.55

N45°07'07"W 353.55

40'x30' | 45'x30' | 50'x30' | 55'x30' | 60'x30'

(10) (TYP)

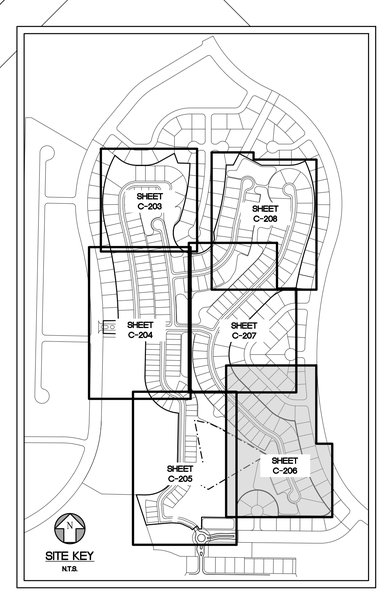
(18) (19) (20) (21) (22) (23)

LEGEND

- EXISTING ASPHALT
- PROPOSED ASPHALT (SEE DETAIL 6 ON SHEET C-802)
- (7) NUMBER OF PARKING SPACES
- PROPOSED 5' SIDEWALK (BY HOME BUILDER) (SEE SHEET C-803 FOR DETAIL)
- PROPOSED 5' SIDEWALK (BY CONTRACTOR) (SEE SHEET C-803 FOR DETAIL)

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

GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.



SIGNING AND STRIPING LEGEND

(1)	(R1-1) 36" STOP SIGN AND 24" THERMOPLASTIC SOLID WHITE STOP BAR. SEE DETAIL 2 ON SHEET C-802.
(2)	5' WIDE CROSSWALK SEE DETAIL 2 ON SHEET C-802.
(3)	6" DOUBLE YELLOW (20 FT MIN.)
(4)	6" THERMOPLASTIC SOLID WHITE

SITE LEGEND

(5)	FDOT MIAMI CURB AND GUTTER SEE DETAIL 3 ON SHEET C-802
(6)	FDOT TYPE 'A' CURB SEE DETAIL 4 ON SHEET C-802
(7)	HANDICAMP RAMP - TYPE 'CR-E' SEE DETAIL ON SHEET C-808
(8)	CURB FLARE, SEE DETAIL 3 SHEET C-802.
(9)	CURB TRANSITION - SEE CURB TRANSITION DETAIL ON SHEET C-803.
(10)	CURB TRANSITION AT INLET, SEE DETAIL ON SHEET C-402.
(11)	TYPE 'F CURB AND GUTTER, SEE DETAIL ON SHEET C-802.
(12)	VALLEY GUTTER, SEE DETAIL ON SHEET C-802.

	DATE	COMMENTS
8		
7		
6		
5		
4		
3		
2		
1	xx-xx-xxxx	

REVISIONS

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
2250 W. EAU GALLIE BLVD. SUITE H
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F:321-253-0911
CA#7724 LB#3591 LC#26000184
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9669

SITE PLAN 04

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

FLORIDA

CITY OF PALM BAY

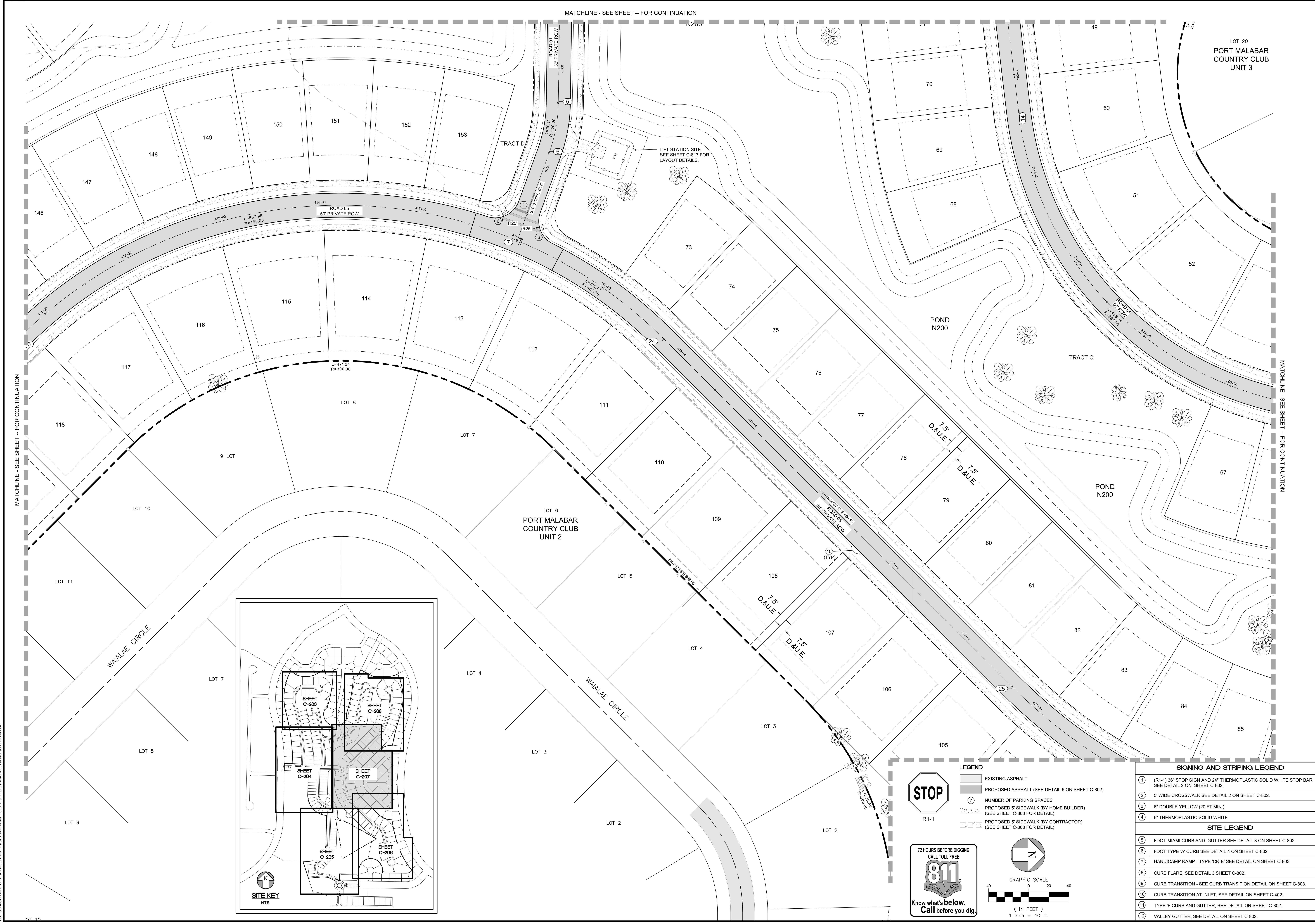
DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL P.E. #83267 — DATE: 8/19/2021

SHEET
C-206

19-1025
PERMITTING SET

W:\19-1025 COUNTRY CLUB LAKE ESTATES\NORTH\DGN\site1025.SITE.dwg 8/19/2021 4:21 PM ANTHONY RELAFORD



LEGEND

- EXISTING ASPHALT
- PROPOSED ASPHALT (SEE DETAIL 6 ON SHEET C-802)
- (7) NUMBER OF PARKING SPACES
- PROPOSED 5' SIDEWALK (BY HOME BUILDER) (SEE SHEET C-803 FOR DETAIL)
- PROPOSED 5' SIDEWALK (BY CONTRACTOR) (SEE SHEET C-803 FOR DETAIL)

STOP
R1-1

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

GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.

SIGNING AND STRIPING LEGEND	
1	(R1-1) 36" STOP SIGN AND 24" THERMOPLASTIC SOLID WHITE STOP BAR. SEE DETAIL 2 ON SHEET C-802.
2	5' WIDE CROSSWALK SEE DETAIL 2 ON SHEET C-802.
3	6" DOUBLE YELLOW (20 FT MIN.)
4	6" THERMOPLASTIC SOLID WHITE
SITE LEGEND	
5	FDOT MIAMI CURB AND GUTTER SEE DETAIL 3 ON SHEET C-802
6	FDOT TYPE 'A' CURB SEE DETAIL 4 ON SHEET C-802
7	HANDICAMP RAMP - TYPE 'CR-E' SEE DETAIL ON SHEET C-803
8	CURB FLARE, SEE DETAIL 3 SHEET C-802.
9	CURB TRANSITION - SEE CURB TRANSITION DETAIL ON SHEET C-803.
10	CURB TRANSITION AT INLET, SEE DETAIL ON SHEET C-402.
11	TYPE 'F CURB AND GUTTER, SEE DETAIL ON SHEET C-802.
12	VALLEY GUTTER, SEE DETAIL ON SHEET C-802.

8	
7	
6	
5	
4	
3	
2	
1	XX-XX-XXXX
COMMENTS	
△ REVISIONS	DATE

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL ▪ STRUCTURAL ▪ SURVEYING ▪ ENVIRONMENTAL CA#3728
1250 W. EAU GALLIE BLVD, SUITE H
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F:321-253-0911
ALSO WITH OFFICES IN:
VERO: 772-569-0035, FT PIERCE: 772-468-9055, PALM CITY: 772-426-9959

SITE PLAN 05

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD
LICENSE No. 83267
STATE OF FLORIDA
PROFESSIONAL ENGINEER

DAVID W. BASSFORD DATE
FL. P.E. #83267 8/19/2021

SHEET
C-207
19-1025
PERMITTING SET

W:\19\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\Set\19-1025 SITE.dwg 8/19/2021 4:21 PM ANTHONY RELAFORD

MATCHLINE - SEE SHEET -- FOR CONTINUATION

MATCHLINE - SEE SHEET -- FOR CONTINUATION

POND N200

TRACT C

POND N200

POND N200

POND N600

POND N200

TRACT C

TRACT C

LOT 21

LOT 20

PORT MALABAR COUNTRY CLUB UNIT 2

LOT 19

LOT 18

LOT 11

LOT 12

LOT 24

LOT 25

LOT 26

PORT MALABAR COUNTRY CLUB UNIT 3

LOT 27

LOT 28

52 53 54 55 56 57 58 59

78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106

67 66 65 64 63 62 61 60

S05°17'42"E 61.24

L=567.68
R=1950.00

N00°00'00"W 59.05

EXISTING 40' D& U.E.

S07°30'00"W 105.93

N60°00'00"W 69.42

S89°57'57"W 256.10

L=1698.75
R=1975.00

S89°57'57"W 51.00

L=632.12
R=825.00

L=1451.15
R=1975.00

L=153.37
R=1950.00

L=152.80
R=1005.00

L=298.95
R=2150.00

L=365.43
R=660.00

L=250.75
R=825.00

ROAD 04
50' ROW

ROAD 05
50' ROW

N17°35'35"E 176.85

R38'

R41'

R25'

R41'

7.5' D&U.E.

7.5' D.&U.E.

7.5' D.&U.E.

7.5' D.&U.E.

7.5' D.&U.E.

7.5' D.&U.E.

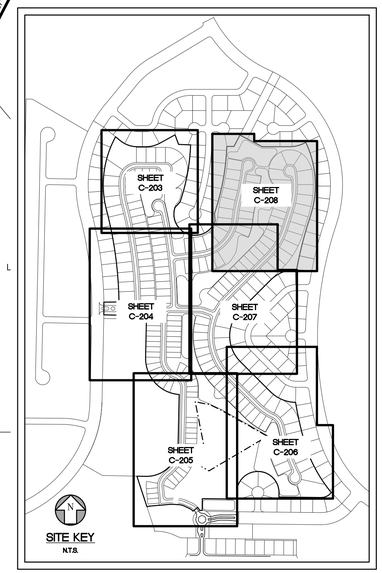
10' DRAINAGE AND UTILITY EASEMENT

15 16 17 25 26 27 28 10 (TYP)

304+00 305+00 306+00 307+00 308+00 309+00 310+00 311+00 311+41 421+00 424+00 428+00 427+00 429+00 430+00 430+61

LEGEND

- EXISTING ASPHALT
- PROPOSED ASPHALT (SEE DETAIL 6 ON SHEET C-802)
- (7) NUMBER OF PARKING SPACES
- PROPOSED 5' SIDEWALK (BY HOME BUILDER) (SEE SHEET C-803 FOR DETAIL)
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GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.

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

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(11)	TYPE 'F CURB AND GUTTER, SEE DETAIL ON SHEET C-802.
(12)	VALLEY GUTTER, SEE DETAIL ON SHEET C-802.

REVISIONS		DATE
8		
7		
6		
5		
4		
3		
2		
1	COMMENTS	xx-xx-xxxx

JOB NO.	19-1025	
DESIGNED	DWB	
DRAWN	AFR	
DATE	03-23-2021	
CHECKED	DWB	
DATE ISSUED	8/19/2021	

MBV ENGINEERING, INC.
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1250 W. EAU GALLIE BLVD. SUITE H MELBOURNE, FLORIDA 32935
P: 321-253-1510 F:321-253-0911
CA#7724 LB#3591
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9669

SITE PLAN 06

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD
FL. P.E. #83267

DATE: 8/19/2021

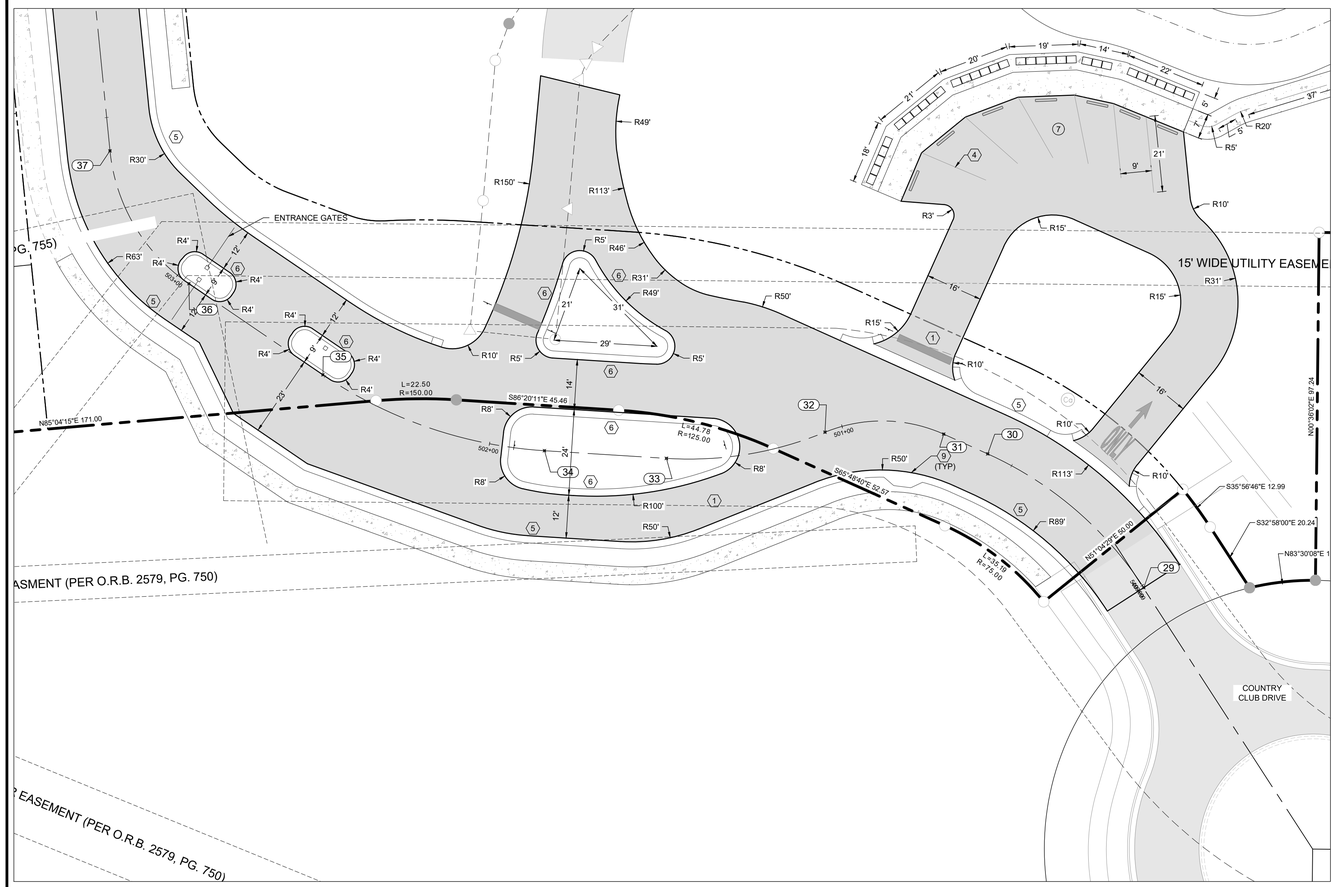
SHEET

C-208

19-1025

PERMITTING SET

W:\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\Sheets\19-1025 SITE.dwg 8/19/2021 1:21 PM ANTHONY RELAFORD



SOUTH ENTRANCE DETAIL

1" = 20'

LEGEND

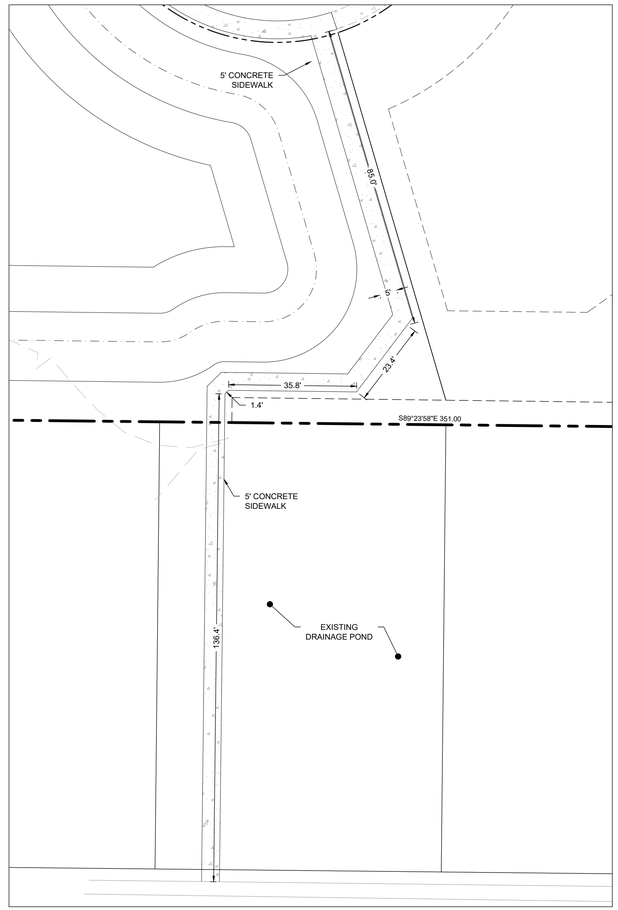
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N

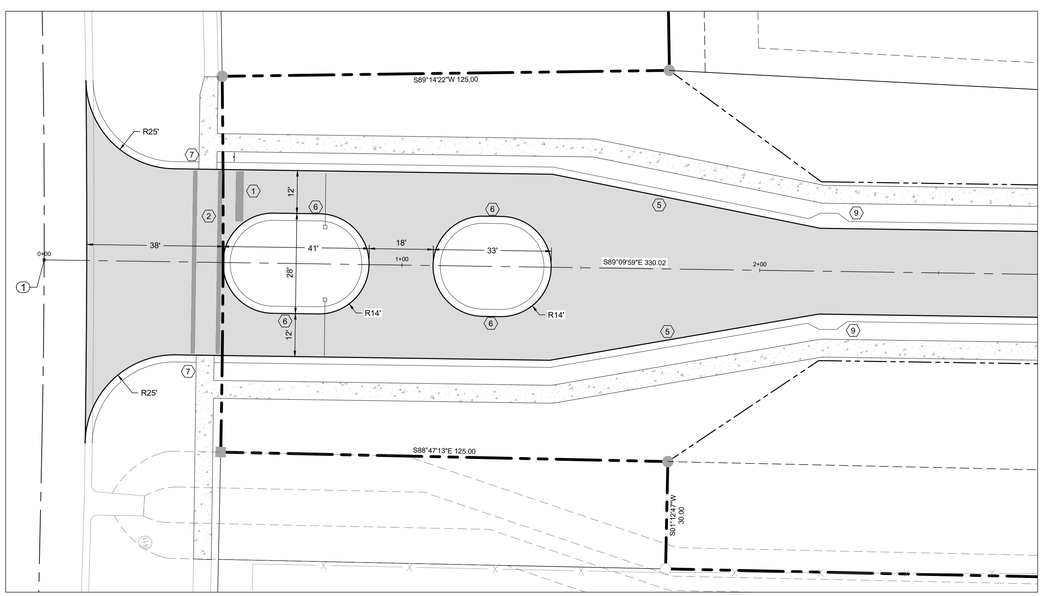
GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.

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



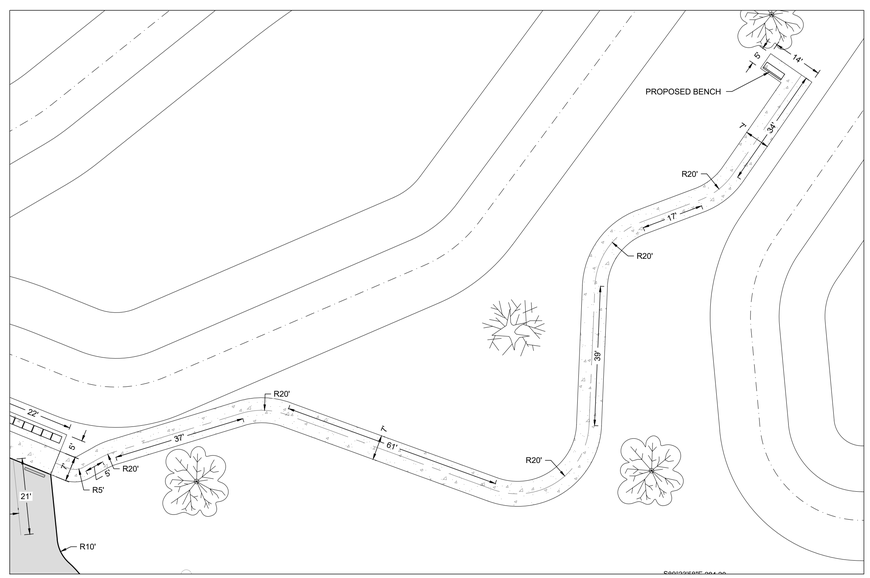
SOUTH SIDEWALK DETAIL

1" = 20'



WEST ENTRANCE DETAIL

1" = 20'



PASSIVE PARK DETAIL

1" = 20'

8			
7			
6			
5			
4			
3			
2			
1	COMMENTS		xx-xx-xxxx
	REVISIONS		**DATE**

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
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1250 W. EAU GALLIE BLVD. SUITE H MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
LA #6667 LB #3591 CA# 27753
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-426-9959

SITE PLAN DETAILS

THE RESERVE AT COUNTRY CLUB LAKE ESTATES
CITY OF PALM BAY FLORIDA

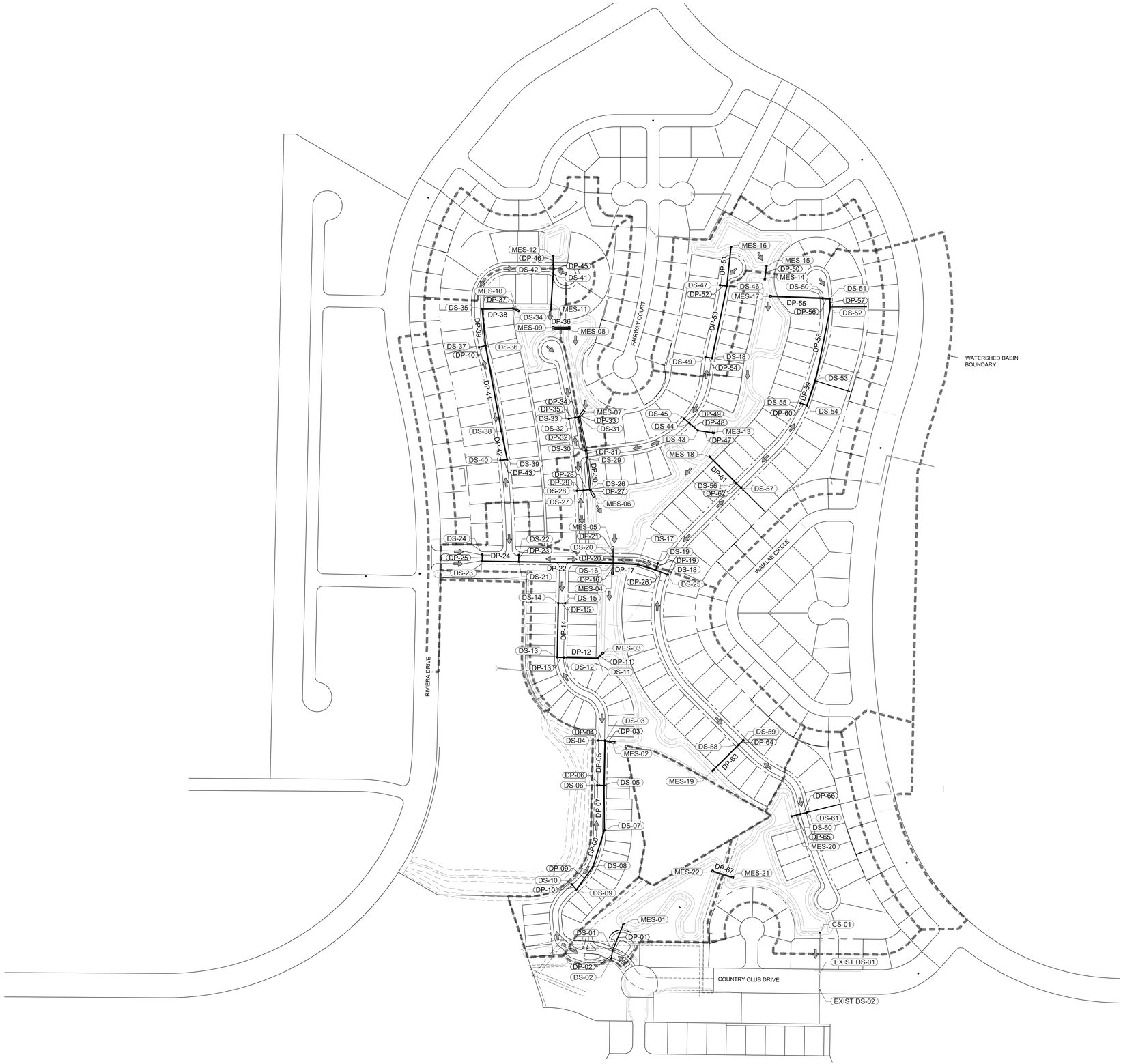
DAVID W. BASSFORD
LICENSE
No. 83267
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL P.E. #83267 DATE: 8/19/2021

SHEET
C-209

19-1025
PERMITTING SET

W:\19-R-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\dwg\19-1025 SITE.dwg 8/19/2021 4:21 PM ANTHONY RELAFORD



DRAINAGE NOTES:

1. SEE SHEETS C-601 - C-603 FOR SECTIONS.
2. SEE SHEET C-807 FOR DISCHARGE STRUCTURE DETAILS.
3. SEE SHEET C-302 FOR STRUCTURE AND PIPE INFORMATION.
4. ELEVATIONS BASED ON NGVD 29, PRIMARY BENCHMARK "PALM BAY CONTROL POINT" FROM TOPOGRAPHICAL INFORMATION PROVIDED BY SURVEYOR.
5. CONVERSION FACTOR FROM NGVD29 TO NAVD88, SUBTRACT 1.378 FEET.
6. ALL STORMWATER PONDS ARE TO BE SODDED TO 1 FT BELOW CONTROL ELEVATION.
7. PIPE LENGTHS SHOWN ARE CENTER-TO-CENTER OF STRUCTURES AND INCLUDE MITERED PIPE LENGTHS.
8. SILT FENCES WILL BE INSTALLED PRIOR TO CONSTRUCTION. SEE PLAN SHEET C-101 THROUGH C-107 FOR SILT FENCE LOCATION. SEE PLAN SHEET C-801 FOR EROSION & SEDIMENT CONTROL DETAILS.
9. I HEREBY CERTIFY THAT THE DESIGN OF THE STORMWATER MANAGEMENT SYSTEM FOR THE PROJECT KNOWN AS "THE RESERVE AT COUNTRY CLUB LAKE ESTATES" MEETS ALL OF THE REQUIREMENTS AND HAS BEEN DESIGNED SUBSTANTIALLY IN ACCORDANCE WITH THE REQUIREMENTS OF THE CITY OF PALM BAY'S ORDINANCE NO. 95-33 AND THE PUBLIC WORKS MANUAL.

LEGEND

- EXISTING ASPHALT PAVEMENT
- PROPOSED ASPHALT PAVEMENT
- STORMWATER FLOW DIRECTION
- SD-06 DRAINAGE STRUCTURE NAME I.D.
- FDOT TYPE 'V' GUTTER INLET
- FDOT TYPE 'V' G.I. W/ ROUND BOTTOM
- FDOT TYPE 8 MANHOLE
- PROPOSED DRAINAGE PIPE
- WATERSHED BASIN LINE

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

PRIMARY BENCHMARK:
THE ELEVATION DATUM SHOWN HEREON ARE BASED ON PALM BAY CONTROL POINT
ELEV = 28.00 (N.G.V.D. 29)
26.62 (N.A.V.D. 88)

CONVERSION FACTOR FROM NGVD (29) TO NAVD (88) SUBTRACT 1.378 FEET.

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

N

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

8			
7			
6			
5			
4			
3			
2			
1	COMMENTS		xx-xx-xxxx
△	**REVISIONS**		**DATE**

JOB NO.	19-1025
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DRAWN	AFR
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P: 321-253-1510 F:321-253-0911 CA#7726
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

OVERALL DRAINAGE PLAN

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

SHEET
C-301

19-1025
PERMITTING SET

W:\MBV\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\dwg\19-1025 POD.dwg 8/19/2021 4:23 PM ANTHONY RELAFORD

PHASE 1 STRUCUTRE & PIPE TABLES

STORM STRUCTURE TABLE

STRUCTURE I.D.	DESCRIPTION	DATA
CS-01	TYPE 'C' D.B.I. FDOT Index 425-052	RIM: 0.00 [EXIST DP-01] S INV: -4.71 (18")
DS-07	TYPE 8 MANHOLE FDOT Index 425-001 W/ 60" ROUND BOTTOM	RIM: 28.79 [DP-08] S INV: 21.54 (24") [DP-07] N INV: 21.54 (24")
DS-08	TYPE 8 MANHOLE W/ 60" ROUND BOTTOM	RIM: 29.19 [DP-09] SW INV: 21.94 (24") [DP-08] N INV: 21.94 (24")
DS-11	TYPE 8 MANHOLE W/ 60" ROUND BOTTOM	RIM: 28.20 [DP-12] W INV: 22.41 (30") [DP-11] NE INV: 21.91 (36")
DS-17	TYPE 8 MANHOLE FDOT Index 425-001 60" ROUND BOTTOM	RIM: 28.12 [DP-18] E INV: 23.51 (24") [DP-17] W INV: 20.51 (24")
DS-26	TYPE 8 MANHOLE W/ 96" ROUND BOTTOM	RIM: 27.54 [DP-30] N INV: 20.85 (60") [DP-28] W INV: 24.77 (18") [DP-27] SE INV: 20.85 (60")
DS-31	TYPE 8 MANHOLE W/ 96" ROUND BOTTOM	RIM: 28.04 [DP-32] S INV: 20.85 (60") [DP-34] W INV: 24.80 (18") [DP-33] NE INV: 20.85 (60")
DS-34	TYPE 8 MANHOLE W/ 60" ROUND BOTTOM	RIM: 27.86 [DP-38] W INV: 21.46 (36") [DP-37] SE INV: 21.46 (36")
DS-35	TYPE 8 MANHOLE W/ 60" ROUND BOTTOM	RIM: 27.36 [DP-39] S INV: 22.27 (30") [DP-38] E INV: 21.77 (36")
DS-38	TYPE 8 MANHOLE W/ 48" ROUND BOTTOM	RIM: 28.12 [DP-42] S INV: 24.04 (24") [DP-41] N INV: 23.54 (30")

MITERED END STRUCTURE TABLE

STRUCTURE I.D.	DESCRIPTION	STRUCTURE DATA
MES-01	M.E.S. [4:1] FDOT Index 430-021	[DP-01] S INV: 22.43 (18")
MES-02	M.E.S. [4:1] FDOT Index 430-021	[DP-03] W INV: 20.04 (36")
MES-03	M.E.S. [2:1] FDOT Index 430-021	[DP-11] SW INV: 20.43 (36")
MES-04	M.E.S. [2:1] FDOT Index 430-021	[DP-16] N INV: 19.00 (48")
MES-05	M.E.S. [2:1] FDOT Index 430-021	[DP-21] S INV: 19.00 (48")
MES-06	M.E.S. [4:1] FDOT Index 430-021	[DP-27] NW INV: 20.85 (60")
MES-07	M.E.S. [4:1] FDOT Index 430-021	[DP-33] SW INV: 20.85 (60")
MES-08	M.E.S. [2:1] FDOT Index 430-021	[DP-36] W INV: 20.00 (36")
MES-08A	M.E.S. [2:1] FDOT Index 430-021	[DP-36A] W INV: 20.00 (36")
MES-09	M.E.S. [2:1] FDOT Index 430-021	[DP-36] E INV: 20.00 (36")
MES-09A	M.E.S. [2:1] FDOT Index 430-021	[DP-36A] E INV: 20.00 (36")
MES-10	M.E.S. [4:1] FDOT Index 430-021	[DP-37] NW INV: 21.00 (36")
MES-11	M.E.S. [2:1] FDOT Index 430-021	[DP-44] N INV: 21.75 (24")
MES-12	M.E.S. [2:1] FDOT Index 430-021	[DP-46] S INV: 21.75 (24")
MES-21	M.E.S. [2:1] FDOT Index 430-021	[DP-67] W INV: 16.00 (36")
MES-22	M.E.S. [2:1] FDOT Index 430-021	[DP-67] E INV: 16.00 (36")

TYPE 'V' STRUCTURE TABLE

STRUCTURE I.D.	DESCRIPTION	DATA
DS-01	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 29.70 FL: 29.58 [DP-02] S INV: 26.72 (18") [DP-01] N INV: 26.72 (18")
DS-02	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 29.79 FL: 29.67 [DP-02] N INV: 26.80 (18")
DS-03	TYPE 'V' GUTTER INLET FDOT Index 425-041 W/ 72" ROUND BOTTOM	TOP: 27.40 FL: 27.28 [DP-04] W INV: 24.18 (18") [DP-03] S INV: 20.12 (30") [DP-03] E INV: 20.12 (36")
DS-04	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.40 FL: 27.28 [DP-04] E INV: 24.25 (18")
DS-05	TYPE 'V' GUTTER INLET FDOT Index 425-041 W/ 60" ROUND BOTTOM	TOP: 28.14 FL: 28.01 [DP-07] S INV: 21.08 (24") [DP-06] W INV: 25.44 (18") [DP-05] N INV: 20.58 (30")
DS-06	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 28.14 FL: 28.01 [DP-06] E INV: 25.51 (18")
DS-09	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 28.00 FL: 27.87 [DP-10] NW INV: 22.73 (18") [DP-09] NE INV: 22.23 (24")
DS-10	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 28.00 FL: 27.87 [DP-10] SE INV: 22.80 (18")
DS-12	TYPE 'V' GUTTER INLET FDOT Index 425-041 W/ 60" ROUND BOTTOM	TOP: 27.39 FL: 27.27 [DP-13] W INV: 23.25 (24") [DP-12] E INV: 22.75 (30")
DS-13	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.39 FL: 27.27 [DP-14] N INV: 23.82 (18") [DP-13] E INV: 23.32 (24")
DS-14	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.53 FL: 27.41 [DP-15] E INV: 24.38 (18") [DP-14] S INV: 24.38 (18")
DS-15	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.53 FL: 27.41 [DP-15] W INV: 24.45 (18")
DS-16	TYPE 'V' GUTTER INLET FDOT Index 425-041 W/ 72" ROUND BOTTOM	TOP: 27.53 FL: 27.40 [DP-20] N INV: 19.00 (48") [DP-17] E INV: 20.00 (24") [DP-22] W INV: 23.00 (24") [DP-16] S INV: 19.00 (48")
DS-18	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.55 FL: 27.43 [DP-24] E INV: 24.20 (18") [DP-18] N INV: 24.20 (18") [DP-18] W INV: 23.70 (24")
DS-19	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.55 FL: 27.43 [DP-19] S INV: 24.27 (18")
DS-20	TYPE 'V' GUTTER INLET FDOT Index 425-041 W/ 72" ROUND BOTTOM	TOP: 27.53 FL: 27.40 [DP-21] N INV: 19.00 (48") [DP-20] S INV: 19.00 (48")
DS-21	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.85 FL: 27.72 [DP-23] N INV: 24.46 (18") [DP-24] W INV: 24.47 (18") [DP-22] E INV: 23.96 (24")
DS-22	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.85 FL: 27.72 [DP-23] S INV: 24.61 (18")
DS-23	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.54 FL: 27.41 [DP-25] N INV: 24.84 (18") [DP-24] E INV: 24.84 (18")
DS-24	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.54 FL: 27.41 [DP-25] S INV: 24.91 (18")

TYPE 'V' STRUCTURE TABLE

STRUCTURE I.D.	DESCRIPTION	DATA
DS-25	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.80 FL: 27.68 [DP-26] W INV: 24.34 (18")
DS-27	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.53 FL: 27.41 [DP-29] W INV: 24.84 (18") [DP-28] E INV: 24.84 (18")
DS-28	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.53 FL: 27.41 [DP-29] E INV: 24.91 (18")
DS-29	TYPE 'V' GUTTER INLET FDOT Index 425-041 W/ 96" ROUND BOTTOM	TOP: 27.54 FL: 27.41 [DP-31] N INV: 20.85 (60") [DP-30] S INV: 20.85 (60")
DS-30	TYPE 'V' GUTTER INLET FDOT Index 425-041 W/ 96" ROUND BOTTOM	TOP: 27.54 FL: 27.41 [DP-32] N INV: 20.85 (60") [DP-31] S INV: 20.85 (60")
DS-32	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.53 FL: 27.40 [DP-35] W INV: 24.84 (18") [DP-34] E INV: 24.84 (18")
DS-33	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.53 FL: 27.40 [DP-35] E INV: 24.91 (18")
DS-36	TYPE 'V' GUTTER INLET FDOT Index 425-041 W/ 60" ROUND BOTTOM	TOP: 27.53 FL: 27.41 [DP-41] S INV: 22.65 (30") [DP-40] W INV: 24.84 (18") [DP-36] N INV: 22.65 (30")
DS-37	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.53 FL: 27.41 [DP-40] E INV: 24.91 (18")
DS-39	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.53 FL: 27.41 [DP-43] W INV: 24.34 (24") [DP-42] N INV: 24.34 (24")
DS-40	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.53 FL: 27.41 [DP-43] E INV: 24.41 (24")
DS-41	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 28.80 FL: 28.68 [DP-45] N INV: 21.75 (24") [DP-44] S INV: 21.75 (24")
DS-42	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 28.55 FL: 28.42 [DP-45] S INV: 21.75 (24") [DP-46] N INV: 21.75 (24")

PIPE TABLE

PIPE NAME	SIZE	LENGTH	SLOPE	MATERIAL
DP-01	18 "	117'	3.68%	HDPE
DP-02	18 "	32'	0.25%	HDPE
DP-03	36 "	31'	0.25%	HDPE
DP-04	18 "	28'	0.25%	HDPE
DP-05	30 "	184'	0.25%	HDPE
DP-06	18 "	28'	0.25%	HDPE
DP-07	24 "	184'	0.25%	HDPE
DP-08	24 "	157'	0.26%	HDPE
DP-09	24 "	115'	0.25%	HDPE
DP-10	18 "	28'	0.25%	HDPE
DP-11	36 "	28'	5.28%	HDPE
DP-12	30 "	137'	0.25%	RCP
DP-13	24 "	28'	0.25%	RCP
DP-14	18 "	222'	0.25%	RCP
DP-15	18 "	28'	0.25%	HDPE
DP-16	48 "	37'	0.00%	HP
DP-17	24 "	103'	0.50%	HDPE
DP-18	24 "	76'	0.25%	HDPE
DP-19	18 "	28'	0.25%	HDPE
DP-20	48 "	28'	0.00%	HP
DP-21	48 "	32'	0.00%	HP
DP-22	24 "	385'	0.25%	HDPE
DP-23	18 "	28'	0.50%	HDPE
DP-24	18 "	150'	0.25%	HDPE
DP-25	18 "	28'	0.25%	HDPE
DP-26	18 "	53'	0.25%	HDPE
DP-27	60 "	15'	0.00%	HP
DP-28	18 "	27'	0.25%	RCP
DP-29	18 "	28'	0.25%	HDPE
DP-30	60 "	133'	0.00%	HDPE
DP-31	60 "	28'	0.00%	HP
DP-32	60 "	140'	0.00%	HDPE
DP-33	60 "	14'	0.00%	HP
DP-34	18 "	16'	0.25%	RCP
DP-35	18 "	28'	0.25%	HDPE
DP-36	36 "	62'	0.00%	HP
DP-36A	36 "	62'	0.00%	HP
DP-37	36 "	19'	2.48%	RCP
DP-38	36 "	126'	0.25%	RCP
DP-39	30 "	150'	0.25%	HDPE
DP-40	18 "	28'	0.25%	HDPE
DP-41	30 "	356'	0.25%	RCP
DP-42	24 "	119'	0.25%	HDPE
DP-43	24 "	28'	0.25%	RCP
DP-44	24 "	145'	0.00%	HP
DP-45	24 "	37'	0.00%	HP
DP-46	24 "	35'	0.00%	HP
DP-67	36 "	82'	0.00%	HP

PHASE 2 STRUCUTRE & PIPE TABLES

TYPE 'V' STRUCTURE TABLE

STRUCTURE I.D.	DESCRIPTION	DATA
DS-44	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.53 FL: 27.41 [DP-49] NW INV: 24.38 (18") [DP-48] SE INV: 24.38 (18")
DS-45	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.53 FL: 27.41 [DP-49] SE INV: 24.45 (18")
DS-46	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.54 FL: 27.41 [DP-53] S INV: 23.13 (24") [DP-52] W INV: 21.68 (18") [DP-51] N INV: 21.18 (24")
DS-47	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.54 FL: 27.41 [DP-52] E INV: 21.75 (18")
DS-48	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.53 FL: 27.41 [DP-50] W INV: 24.38 (18") [DP-53] N INV: 23.88 (24")
DS-49	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.53 FL: 27.41 [DP-54] E INV: 24.45 (18")

STORM STRUCTURE TABLE

STRUCTURE I.D.	DESCRIPTION	DATA
DS-43	TYPE 8 MANHOLE W/ 48" ROUND BOTTOM	RIM: 28.72 [DP-48] NW INV: 24.26 (18") [DP-47] E INV: 24.26 (18")

MITERED END STRUCTURE TABLE

STRUCTURE I.D.	DESCRIPTION	STRUCTURE DATA
MES-13	M.E.S. [4:1] FDOT Index 430-021	[DP-47] W INV: 22.43 (18")
MES-14	M.E.S. [2:1] FDOT Index 430-021	[DP-50] N INV: 20.00 (24")
MES-15	M.E.S. [2:1] FDOT Index 430-021	[DP-50] S INV: 20.00 (24")
MES-16	M.E.S. [2:1] FDOT Index 430-021	[DP-51] S INV: 20.00 (24")

PIPE TABLE

PIPE NAME	SIZE	LENGTH	SLOPE	MATERIAL
DP-47	18 "	61'	3.01%	RCP
DP-48	18 "	48'	0.25%	RCP
DP-49	18 "	28'	0.25%	HDPE
DP-50	24 "	53'	0.00%	HP
DP-51	24 "	160'	0.74%	HDPE
DP-52	18 "	28'	0.25%	HDPE
DP-53	24 "	301'	0.25%	HDPE
DP-54	18 "	28'	0.25%	HDPE

PHASE 3 STRUCUTRE & PIPE TABLES

TYPE 'V' STRUCTURE TABLE

STRUCTURE I.D.	DESCRIPTION	DATA
DS-50	TYPE 'V' GUTTER INLET FDOT Index 425-041 W/ 60" ROUND BOTTOM	TOP: 27.56 FL: 27.43 [DP-56] E INV: 19.68 (36") [DP-55] W INV: 19.68 (36")
DS-51	TYPE 'V' GUTTER INLET FDOT Index 425-041 W/ 60" ROUND BOTTOM	TOP: 27.54 FL: 27.41 [DP-57] S INV: 20.75 (24") [DP-56] W INV: 19.75 (36")
DS-54	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.53 FL: 27.41 [DP-60] W INV: 24.38 (18") [DP-59] N INV: 23.88 (24")
DS-55	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.53 FL: 27.41 [DP-60] E INV: 24.45 (18")
DS-56	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.53 FL: 27.41 [DP-62] SE INV: 24.18 (18") [DP-61] NW INV: 23.68 (24")
DS-57	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.53 FL: 27.40 [YP-02] SE INV: 24.75 (12") [DP-62] NW INV: 24.25 (18")

STORM STRUCTURE TABLE

STRUCTURE I.D.	DESCRIPTION	DATA
DS-52	TYPE 8 MANHOLE W/ 48" ROUND BOTTOM	RIM: 27.83 [DP-58] S INV: 22.84 (24") [YP-04] E INV: 22.84 (8") [DP-57] N INV: 22.84 (24")
DS-53	TYPE 8 MANHOLE W/ 48" ROUND BOTTOM	RIM: 28.12 [DP-59] S INV: 23.61 (24") [YP-03] E INV: 24.04 (8") [DP-58] N INV: 23.61 (24")

MITERED END STRUCTURE TABLE

STRUCTURE I.D.	DESCRIPTION	STRUCTURE DATA
MES-17	M.E.S. [2:1] FDOT Index 430-021	[DP-55] E INV: 19.15 (36")
MES-18	M.E.S. [2:1] FDOT Index 430-021	[DP-61] SE INV: 20.00 (24")

YARD DRAIN SCHEDULE

STRUCTURE NAME	STRUCTURE DESCRIPTION	STRUCTURE DATA
YD-02	12" PEDESTRIAN RATED YARD DRAIN	RIM = 27.34 NW INV = 25.09
YD-03	12" PEDESTRIAN RATED YARD DRAIN	RIM = 27.68 W INV = 24.40
YD-04	12" PEDESTRIAN RATED YARD DRAIN	RIM = 25.95 W INV = 23.20

PIPE TABLE

PIPE NAME	SIZE	LENGTH	SLOPE	MATERIAL
DP-55	36 "	212'	0.25%	HDPE
DP-56	36 "	29'	0.25%	HDPE
DP-57	24 "	34'	6.07%	HDPE
DP-58	24 "	308'	0.25%	HDPE
DP-59	24 "	108'	0.25%	HDPE
DP-60	18 "	28'	0.25%	HDPE
DP-61	24 "	152'	2.42%	HDPE
DP-62	18 "	28'	0.25%	HDPE
YP-02	12 "	136'	0.25%	HDPE
YP-03	8 "	147'	0.24%	HDPE
YP-04	8 "	147'	0.24%	HDPE

PHASE 4 STRUCUTRE & PIPE TABLES

TYPE 'V' STRUCTURE TABLE

STRUCTURE I.D.	DESCRIPTION	DATA
DS-58	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.53 FL: 27.41 [DP-64] NE INV: 24.38 (18") [DP-63] SW INV: 23.88 (24")
DS-59	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.53 FL: 27.41 [DP-64] SW INV: 24.45 (18")
DS-60	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.53 FL: 27.41 [DP-66] E INV: 21.35 (18") [DP-65] W INV: 20.85 (24")
DS-61	TYPE 'V' GUTTER INLET FDOT Index 425-041	TOP: 27.53 FL: 27.41 [YP-01] E INV: 21.92 (12") [DP-66] W INV: 21.42 (18")

MITERED END STRUCTURE TABLE

STRUCTURE I.D.	DESCRIPTION	STRUCTURE DATA
MES-19	M.E.S. [2:1] FDOT Index 430-021	[DP-63] NE INV: 22.49 (24")
MES-20	M.E.S. [2:1] FDOT Index 430-021	[DP-65] E INV: 20.50 (24")

YARD DRAIN SCHEDULE

STRUCTURE NAME	STRUCTURE DESCRIPTION	STRUCTURE DATA
YD-01	12" PEDESTRIAN RATED YARD DRAIN	RIM = 26.83 W INV = 25.00

PIPE TABLE

PIPE NAME	SIZE	LENGTH	SLOPE	MATERIAL
DP-63	24 "	146'	0.95%	HDPE
DP-64	18 "	28'	0.25%	HDPE
DP-65	24 "	35'	1.00%	RCP
DP-66	18 "	28'	0.25%	HDPE
YP-01	12 "	136'	2.27%	HDPE

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5								
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3								
2								
1	COMMENTS							XX-XX-XXXX
	REVISIONS							DATE

MBV ENGINEERING, INC.
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JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

STRUCTURE & PIPE TABLE

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL P.E. #83267 DATE: 8/19/2021

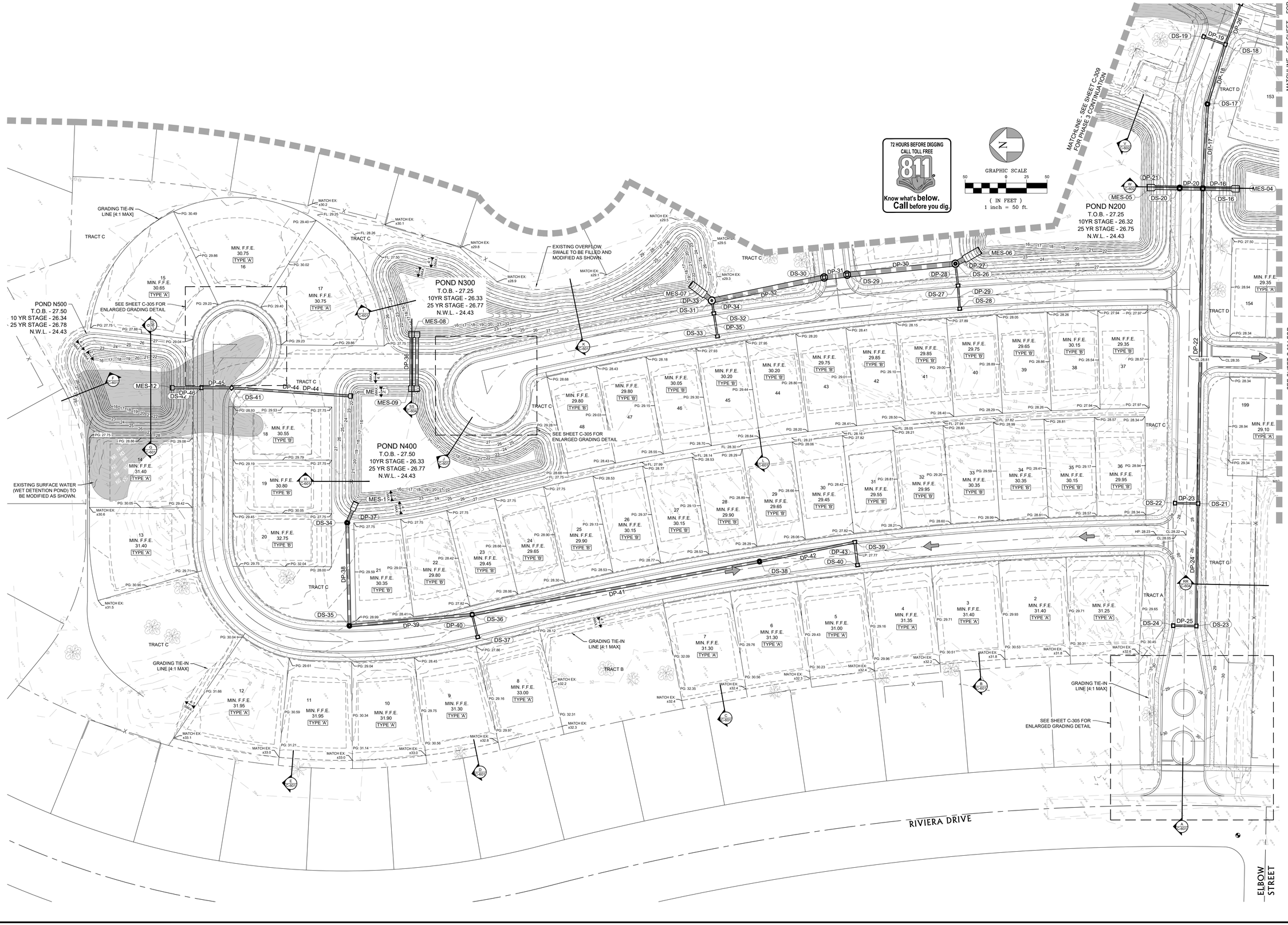
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	REVISIONS							**DATE**

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
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CA#7726
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

GRADING & DRAINAGE PLAN
(PHASE 1 - SHEET 01)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY — FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 — DATE 8/19/2021

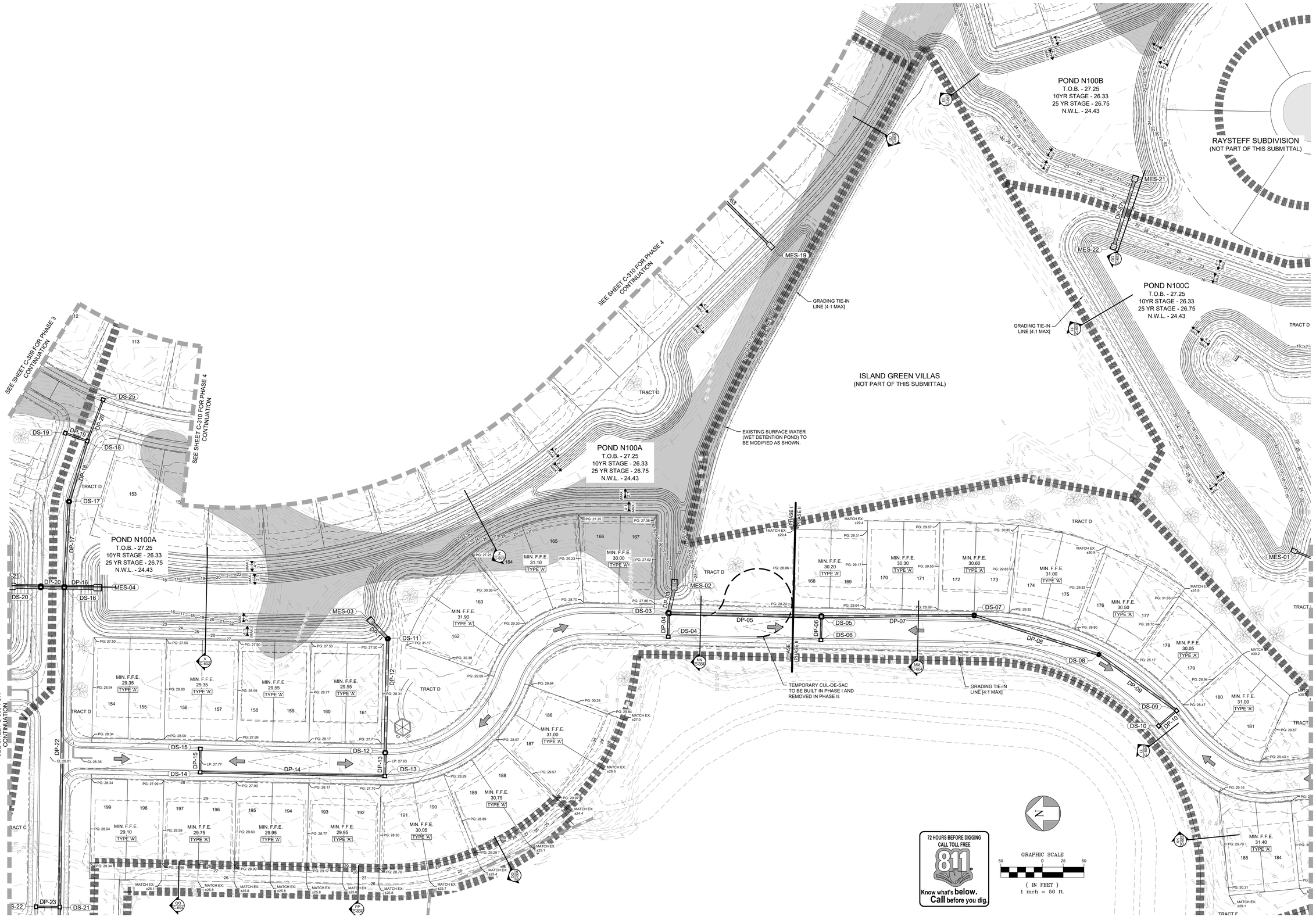
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△	**REVISIONS**			**DATE**

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
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GRADING & DRAINAGE PLAN (PHASE 1 - SHEET 02)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

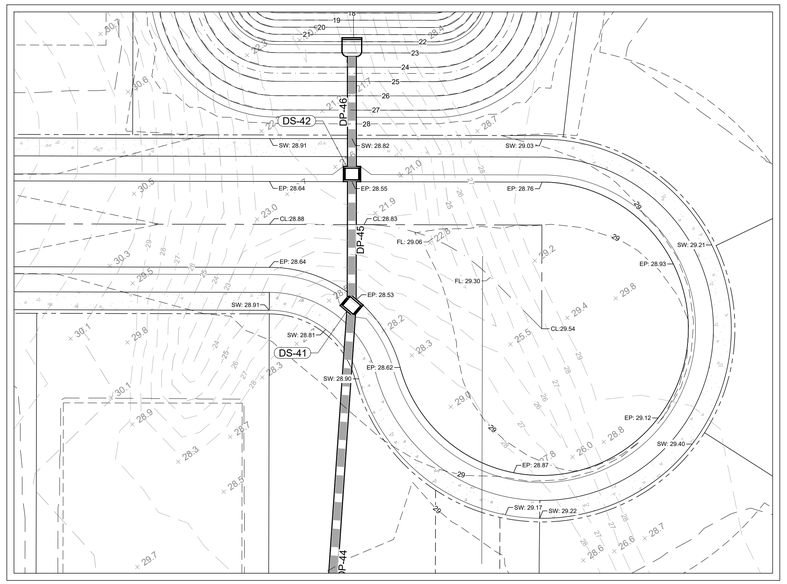
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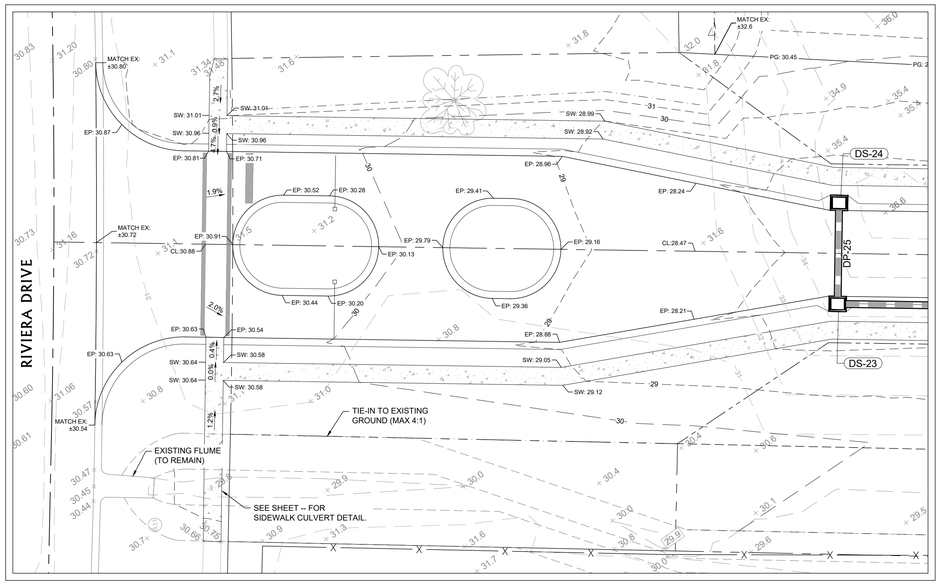
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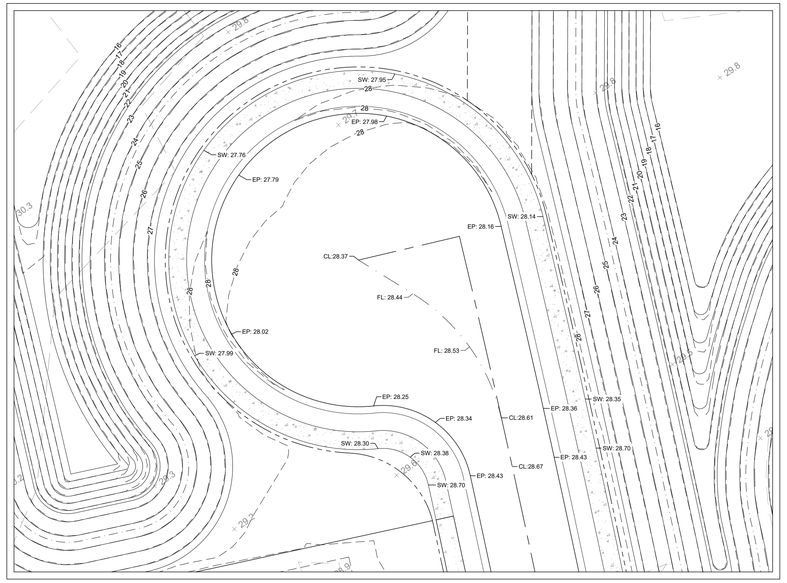
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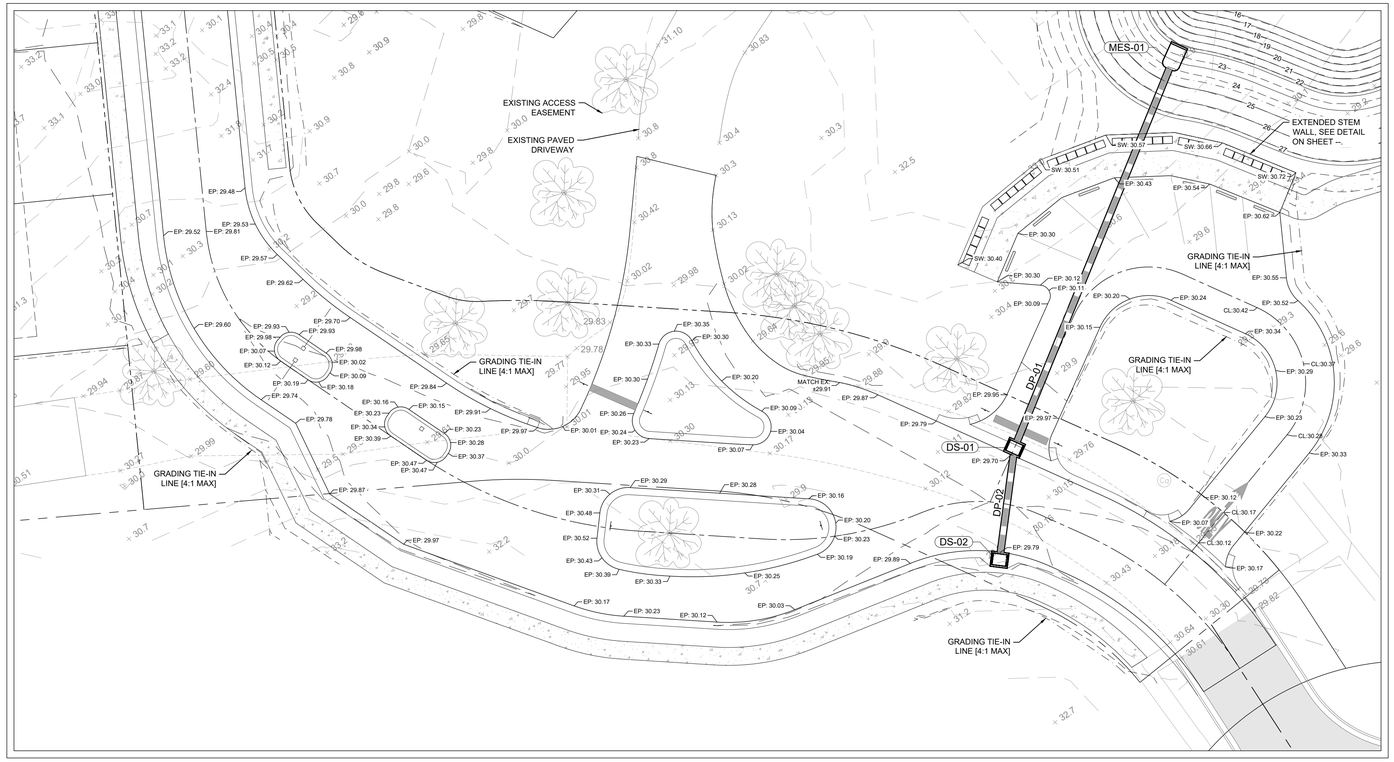
ROAD 02 CUL-DE-SAC GRADING DETAIL
SCALE 1" = 20'



RIVIERA DRIVE ENTRANCE ROAD GRADING DETAIL
SCALE 1" = 20'



ROAD 03 CUL-DE-SAC GRADING DETAIL
SCALE 1" = 20'



COUNTRY CLUB DRIVE ENTRANCE ROAD GRADING DETAIL
SCALE 1" = 20'

W:\2019-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\dwg\19-1025 PSD.dwg 8/19/2021 4:23 PM ANTHONY BELAFORD

JOB NO.	19-1025		
DESIGNED	DWB		
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DATE	03-23-2021		
CHECKED	DWB		
DATE ISSUED	8/19/2021		

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1	COMMENTS	xx-xx-xxxx
	REVISIONS	DATE

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
2250 W. EAU GALLIE BLVD, SUITE H MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911 CA#7724
VERO: 772-569-0036 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

ENLARGED GRADING DETAIL-1
(PHASE 1 - SHEET 01)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

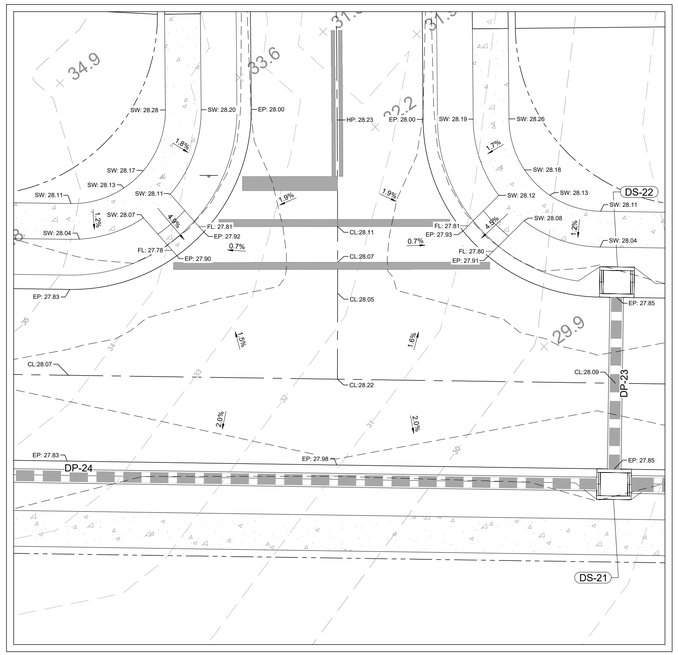
CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

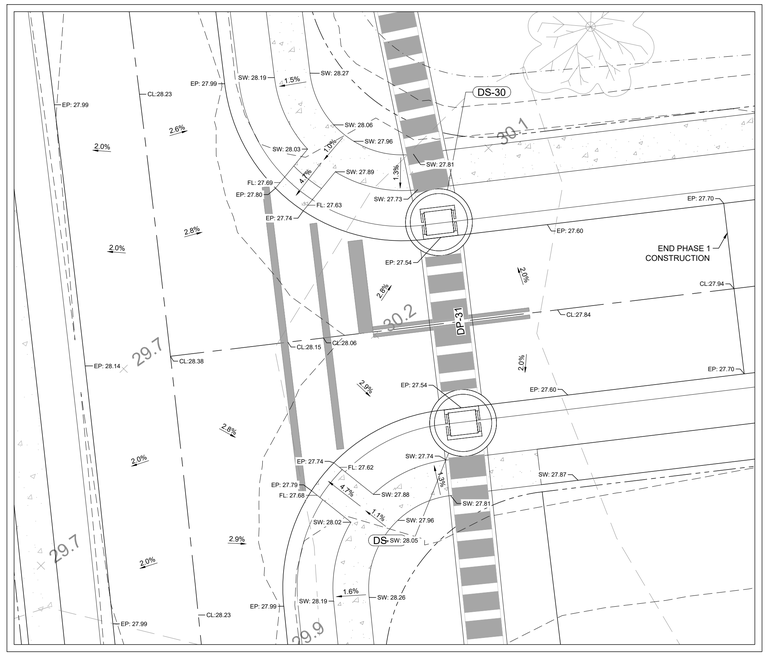
DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

SHEET
C-305

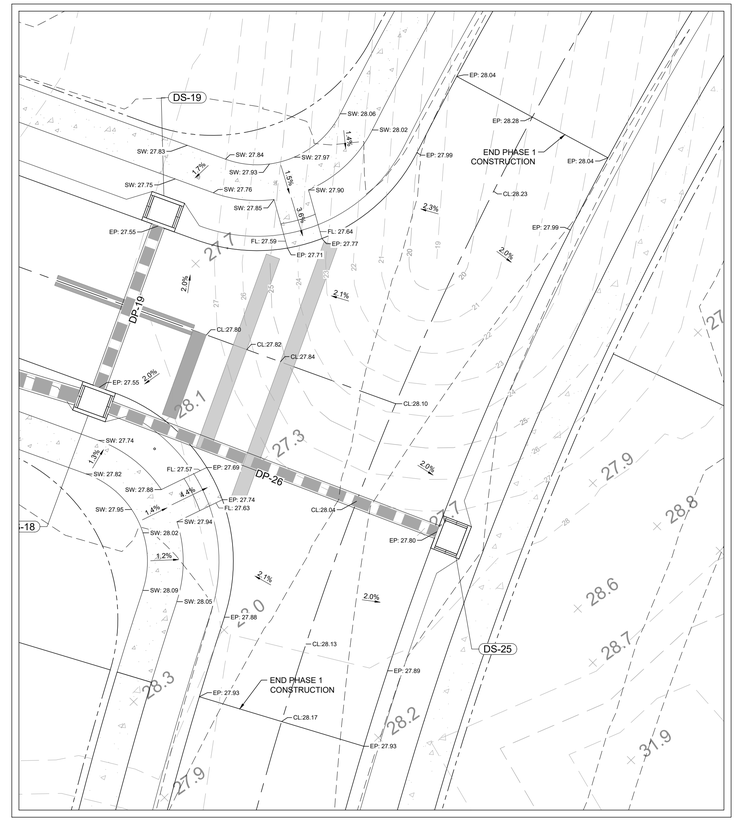
19-1025
PERMITTING SET



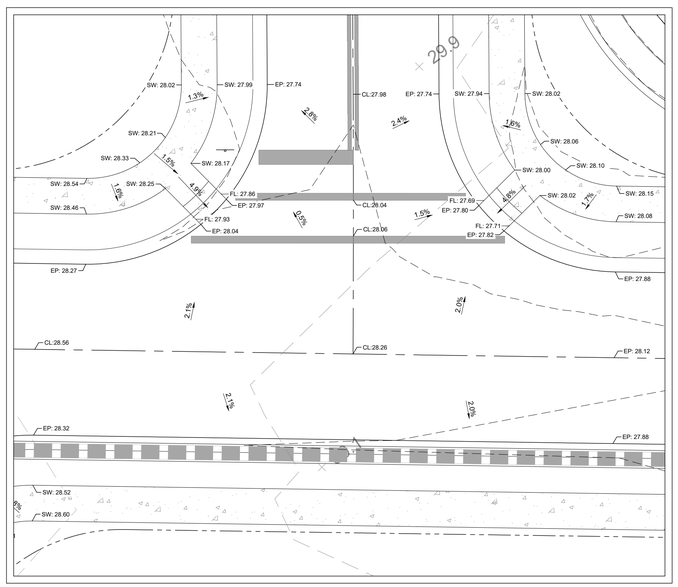
GRADING DETAIL (INTERSECTION OF ROAD 01 AND ROAD 02)
SCALE 1" = 10'



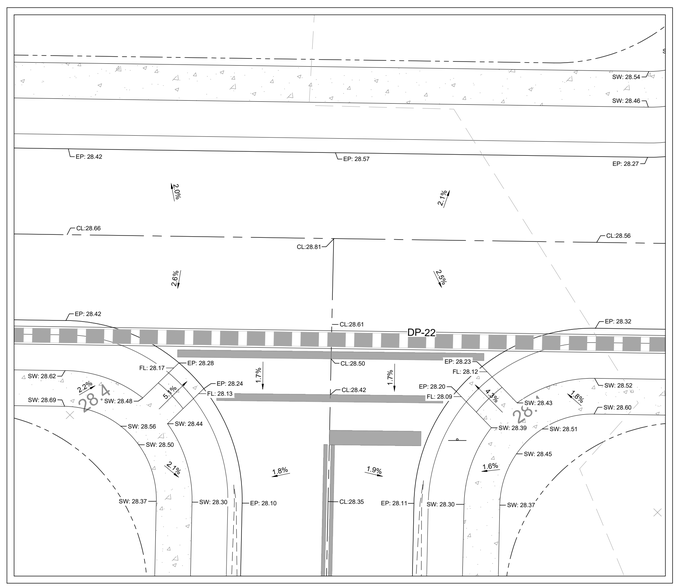
GRADING DETAIL (INTERSECTION OF ROAD 03 AND ROAD 04)
SCALE 1" = 10'



GRADING DETAIL (INTERSECTION OF ROAD 01 AND ROAD 05)
SCALE 1" = 10'



GRADING DETAIL (INTERSECTION OF ROAD 01 AND ROAD 03)
SCALE 1" = 10'



GRADING DETAIL (INTERSECTION OF ROAD 01 AND ROAD 06)
SCALE 1" = 10'

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△	**REVISIONS**	**DATE**

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
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2250 W. BAU GALLIE BLVD, SUITE H MELBOURNE, FLORIDA 32935
P: 321-253-1510 F:321-253-0911 CA#7728
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

ENLARGED GRADING DETAILS
(PHASE 1 - SHEET 02)

THE RESERVE AT COUNTRY CLUB
LAKE ESTATES

FLORIDA
CITY OF PALM BAY

DAVID W. BASSFORD
LICENSE
No. 83267
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

DAVID W. BASSFORD
FL P.E. #83267
DATE: 8/19/2021

SHEET
C-306

19-1025
PERMITTING SET

W:\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CADD\civil\19-1025 PSD.dwg 8/19/2021 4:23 PM ANTHONY RELAFORD

POND N100A
T.O.B. - 27.25
10YR STAGE - 26.33
25 YR STAGE - 26.75
N.W.L. - 24.43

SEE SHEET C-310 FOR PHASE 4 INFORMATION

MES-19

GRADING TIE-IN LINE [4:1 MAX]

EXISTING SURFACE WATER (WET DETENTION POND) TO BE MODIFIED AS SHOWN.

DP-68

MES-20

DP-65

ISLAND GREEN VILLAS
(NOT PART OF THIS SUBMITTAL)

GRADING TIE-IN LINE [4:1 MAX]

POND N100B
T.O.B. - 27.25
10YR STAGE - 26.33
25 YR STAGE - 26.75
N.W.L. - 24.43

SEE SHEET C-310 FOR PHASE 4 INFORMATION

MES-22

DP-67

MES-21

EXISTING SURFACE WATER (WET DETENTION POND) TO BE MODIFIED AS SHOWN.

TRACT D

POND N100C
T.O.B. - 27.25
10YR STAGE - 26.33
25 YR STAGE - 26.75
N.W.L. - 24.43

SEE SHEET C-304 FOR PHASE 2 CONTINUATION

MIN. F.F.E. 31.00 TYPE 'A'

MIN. F.F.E. 31.40 TYPE 'A'

MATCH EX. ±30.2

MATCH EX. ±30.8

MATCH EX. ±29.6

MATCH EX. ±30.6

PG: 29.43

PG: 29.87

PG: 30.64

P: 30.22

PG: 29.69

PG: 31.07

PG: 30.13

181

182

183

184

TRACT D

MES-01

DP-01

DP-02

DS-01

DS-02

10' WIDE WATER LINE EASEMENT (PER O.R.B. 2579, PG. 750)

10' WIDE ROAD EASEMENT (PER O.R.B. 2752, PG. 1456)

10' WIDE UTILITY EASEMENT (PER O.R.B. 2752, PG. 1456)

10' WIDE WATER LINE EASEMENT (PER O.R.B. 2579, PG. 750)

30' WIDE SANITARY SEWER EASEMENT (PER O.R.B. 2579, PG. 750)

SEE SHEET C-305 FOR SOUTH ENTRANCE GRADING.

RAYSTEFF SUBDIVISION
(NOT PART OF THIS SUBMITTAL)

SEE SHEET C-310 FOR PHASE 4 CONTINUATION

COUNTRY CLUB DRIVE

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

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GRAPHIC SCALE
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(IN FEET)
1 inch = 50 ft.

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	REVISIONS	**DATE**

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD, SUITE H MELBOURNE, FLORIDA 32935
P: 321.253.1510 F: 321.253.0911 CA#7724
LA#6667 BUS#6667
VERO: 772-569-0035 FT PIERCE: 772-468-9955 PALM CITY: 772-408-9999

GRADING & DRAINAGE PLAN
(PHASE 2 - SHEET 01)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

FLORIDA

CITY OF PALM BAY

DAVID W. BASSFORD
LICENSE
No. 83267
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

DAVID W. BASSFORD
FL P.E. #83267

DATE:
8/19/2021

SHEET

C-307

19-1025

PERMITTING SET

W:\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\Sheets\19-1025 PSDI.dwg 8/19/2021 4:23 PM ANTHONY RELAFORD

SEE SHEET C-309 FOR PHASE 3 CONTINUATION

PORT MALABAR COUNTRY CLUB UNIT 3 (NOT PART OF THIS SUBMITTAL)

TIE-IN TO EXISTING GROUND [4:1 MAX.]

POND N600
T.O.B. - 27.25
10YR STAGE - 26.33
25 YR STAGE - 26.75
N.W.L. - 24.43

POND N200
T.O.B. - 27.25
10YR STAGE - 26.32
25 YR STAGE - 26.75
N.W.L. - 24.43

TREE PRESERVATION AREA.

SEE SHEET C-311 FOR ENLARGED GRADING DETAIL

EXISTING SURFACE WATER (WET DETENTION POND) TO BE MODIFIED AS SHOWN.

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

GRAPHIC SCALE
50 0 25 50
(IN FEET)
1 inch = 50 ft.

ROAD 04

ROAD 05

ROAD 03

ROAD 01

FAIRWAY COURT

TRACT C

TRACT D

GRADING TIE-IN LINE [4:1 MAX]

SEE SHEET C-310 FOR PHASE 4 CONTINUATION

SEE SHEET C-304 FOR PHASE 1 CONTINUATION

SEE SHEET C-303 FOR PHASE 1 CONTINUATION

POND N500
T.O.B. - 27.50
10YR STAGE - 26.34
25 YR STAGE - 26.78
N.W.L. - 24.43

POND N300
T.O.B. - 27.25
10YR STAGE - 26.33
25 YR STAGE - 26.76
N.W.L. - 24.43

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JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
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CAM1728
1250 W. EAU GALLIE BLVD, SUITE H
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
WWW.MBVENGINEERING.COM
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

GRADING & DRAINAGE PLAN (PHASE 2 - SHEET 02)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

SHEET
C-308

19-1025
PERMITTING SET

M:\19\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\Sheets\19-1025 PSD - PHASE 2\1-2 dwg 8/19/2021 4:25 PM ANTHONY RELAFORD

PORT MALABAR COUNTRY CLUB UNIT TWO
(NOT PART OF THIS SUBMITTAL)

PORT MALABAR BLVD

WAIALAE CIRCLE

ROAD 05

TRACT C

TRACT D

TREE PRESERVATION AREA (TO REMAIN AT GRADE)

POND N200
T.O.B. - 27.25
10YR STAGE - 26.32
25 YR STAGE - 26.75
N.W.L. - 24.43

GRADING TIE-IN LINE [4:1 MAX.]

EXISTING SURFACE WATER (WET DETENTION POND) TO BE MODIFIED AS SHOWN.

EXISTING SURFACE WATER (WET DETENTION POND) TO BE FILLED AND GRADED AS SHOWN.

EXISTING SURFACE WATER (WET DETENTION POND) TO BE MODIFIED AS SHOWN.

SEE SHEET C-308 FOR PHASE 2 CONTINUATION

SEE SHEET C-310 FOR PHASE 4 CONTINUATION

SEE SHEET C-303 FOR PHASE 1 CONTINUATION

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

GRAPHIC SCALE
50 0 25 50
(IN FEET)
1 inch = 50 ft.

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1	COMMENTS	xx-xx-xxxx
	REVISIONS	**DATE**

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
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1250 W. EAU GALLIE BLVD, SUITE H MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
CA#7728
VERO: 772-569-0035 FT PIERCE: 772-468-9955 PALM CITY: 772-408-9999

GRADING & DRAINAGE PLAN (PHASE 3 - SHEET 01)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

SHEET
C-309

19-1025
PERMITTING SET

W:\PMA-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\civil\A-1025 POD - PHASE 2-3-4.dwg 8/19/2021 4:24 PM ANTHONY RELAFORD

PORT MALABAR BLVD

EXISTING SURFACE WATER (WET DETENTION POND) TO BE MODIFIED AS SHOWN.

PORT MALABAR COUNTRY CLUB UNIT TWO (NOT PART OF THIS SUBMITTAL)

WAIALAE CIRCLE

ROAD 05

PORT MALABAR COUNTRY CLUB UNIT TWO (NOT PART OF THIS SUBMITTAL)

EXISTING DRY RETENTION POND TO REMAIN

TRACT D

TRACT E

TRACT D

EXISTING DRY SWALE TO REMAIN

EXISTING OUTFALL PIPE (TO REMAIN)

EXISTING STAND PIPE / OUTFALL STRUCTURE TO BE MODIFIED DURING PHASE 1 CONSTRUCTION, SEE SHEET ~ FOR DETAIL

EXISTING SURFACE WATER (WET DETENTION POND) TO BE MODIFIED AS SHOWN DURING PHASE 1 CONSTRUCTION.

RAYSTEFF SUBDIVISION (NOT PART OF THIS SUBMITTAL)

CHAMPION DRIVE

POND N100B
T.O.B. - 27.25
10YR STAGE - 26.33
25 YR STAGE - 26.75
N.W.L. - 24.43

EXISTING SURFACE WATER (WET DETENTION POND) TO BE MODIFIED AS SHOWN DURING PHASE 1 CONSTRUCTION.

POND N100C
T.O.B. - 27.25
10YR STAGE - 26.33
25 YR STAGE - 26.75
N.W.L. - 24.43

TIE-IN TO EXISTING GROUND [4:1 MAX.]

TIE-IN TO EXISTING GROUND [4:1 MAX.]

TIE-IN TO EXISTING GROUND [4:1 MAX.]

ISLAND GREEN VILLAS (NOT PART OF THIS SUBMITTAL)

POND N100A
T.O.B. - 27.25
10YR STAGE - 26.33
25 YR STAGE - 26.75
N.W.L. - 24.43

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

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GRAPHIC SCALE
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(IN FEET)
1 inch = 50 ft.

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JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
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2250 W. EAU GALLIE BLVD, SUITE H
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
CA#7728
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

GRADING & DRAINAGE PLAN (PHASE 4 - SHEET 01)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

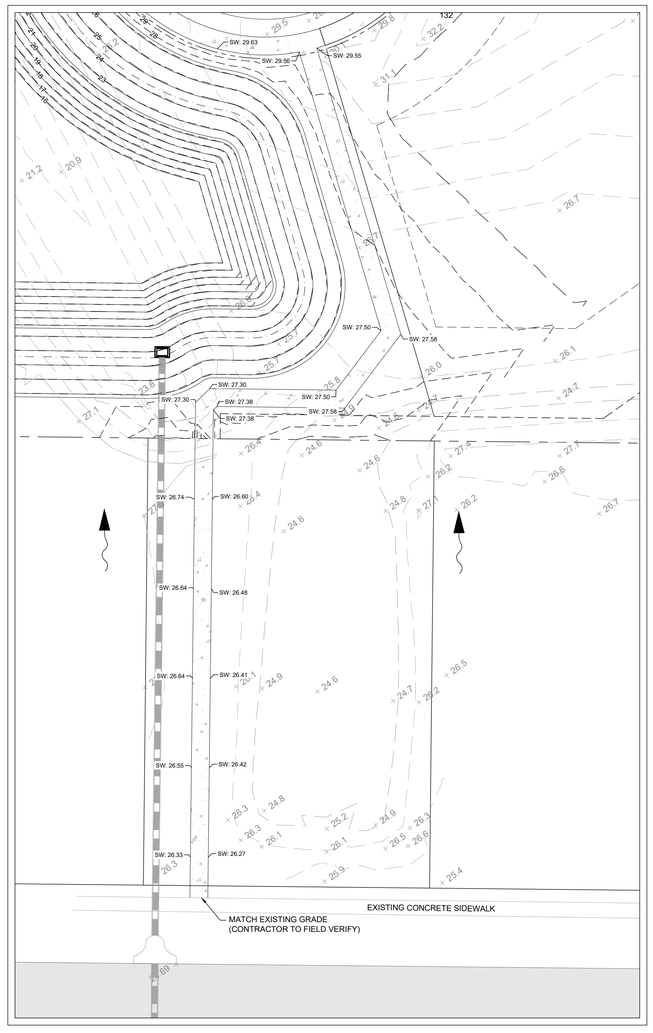
DAVID W. BASSFORD
LICENSE No. 83267
STATE OF FLORIDA
PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

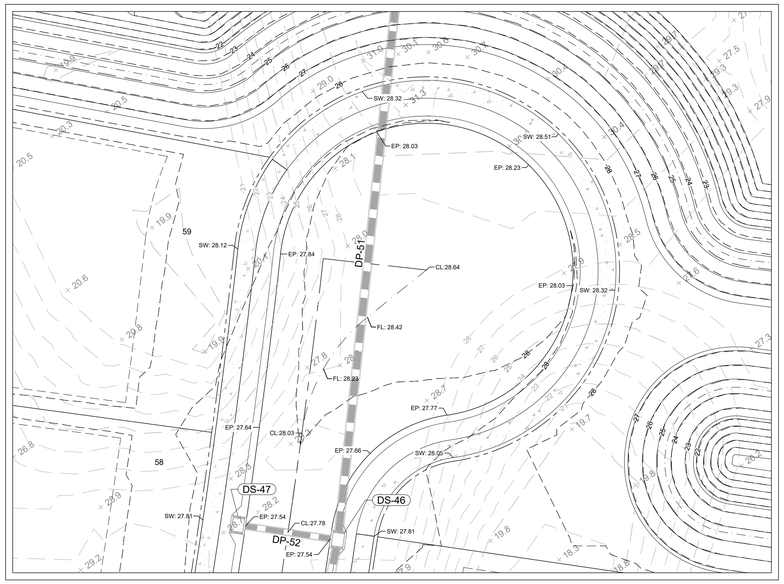
SHEET
C-310

19-1025
PERMITTING SET

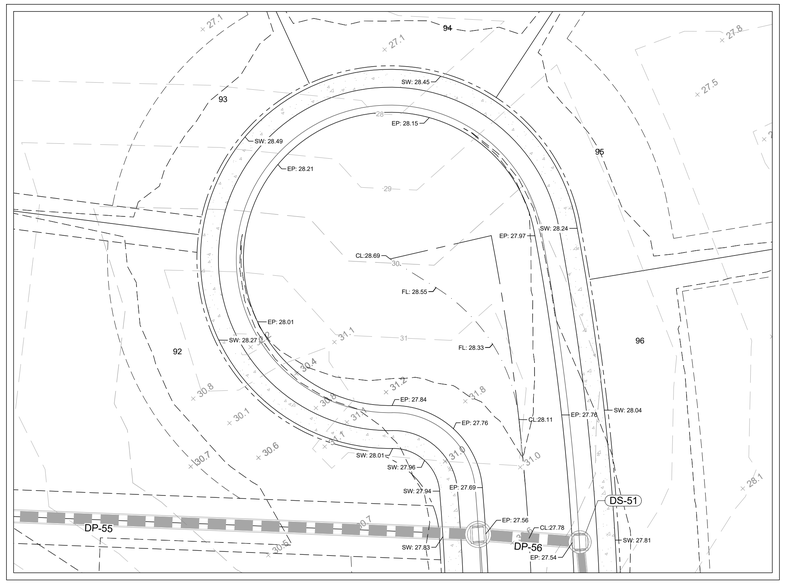
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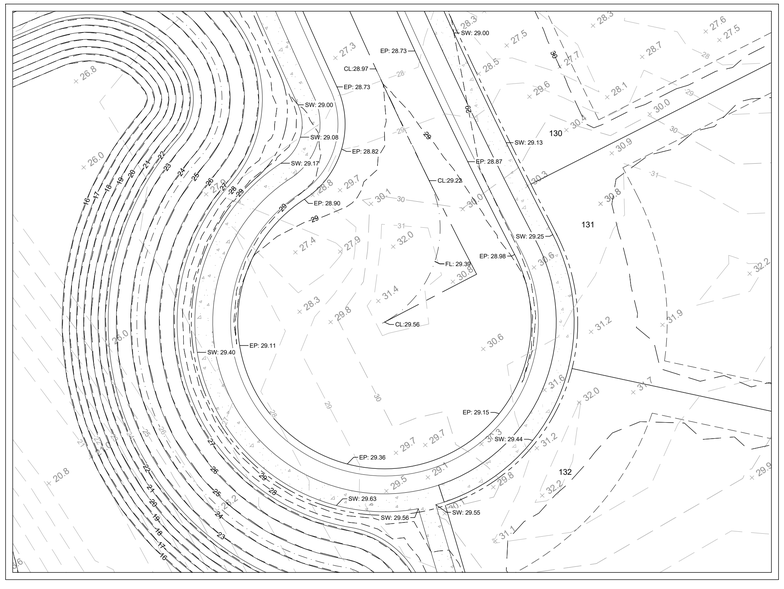
SOUTH SIDEWALK GRADING DETAIL
SCALE 1" = 20'



ROAD 04 CUL-DE-SAC GRADING DETAIL
SCALE 1" = 20'



ROAD 05 NORTH CUL-DE-SAC GRADING DETAIL
SCALE 1" = 20'



ROAD 05 SOUTH CUL-DE-SAC GRADING DETAIL
SCALE 1" = 20'

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	REVISIONS		**DATE**

JOB NO.	19-1025
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MBV ENGINEERING, INC.
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CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
2250 W. BAU GALLE BLVD, SUITE H
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
CA#7726
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

ENLARGED GRADING DETAILS
(PHASES 2 THRU 4)

THE RESERVE AT COUNTRY CLUB
LAKE ESTATES

CITY OF PALM BAY FLORIDA

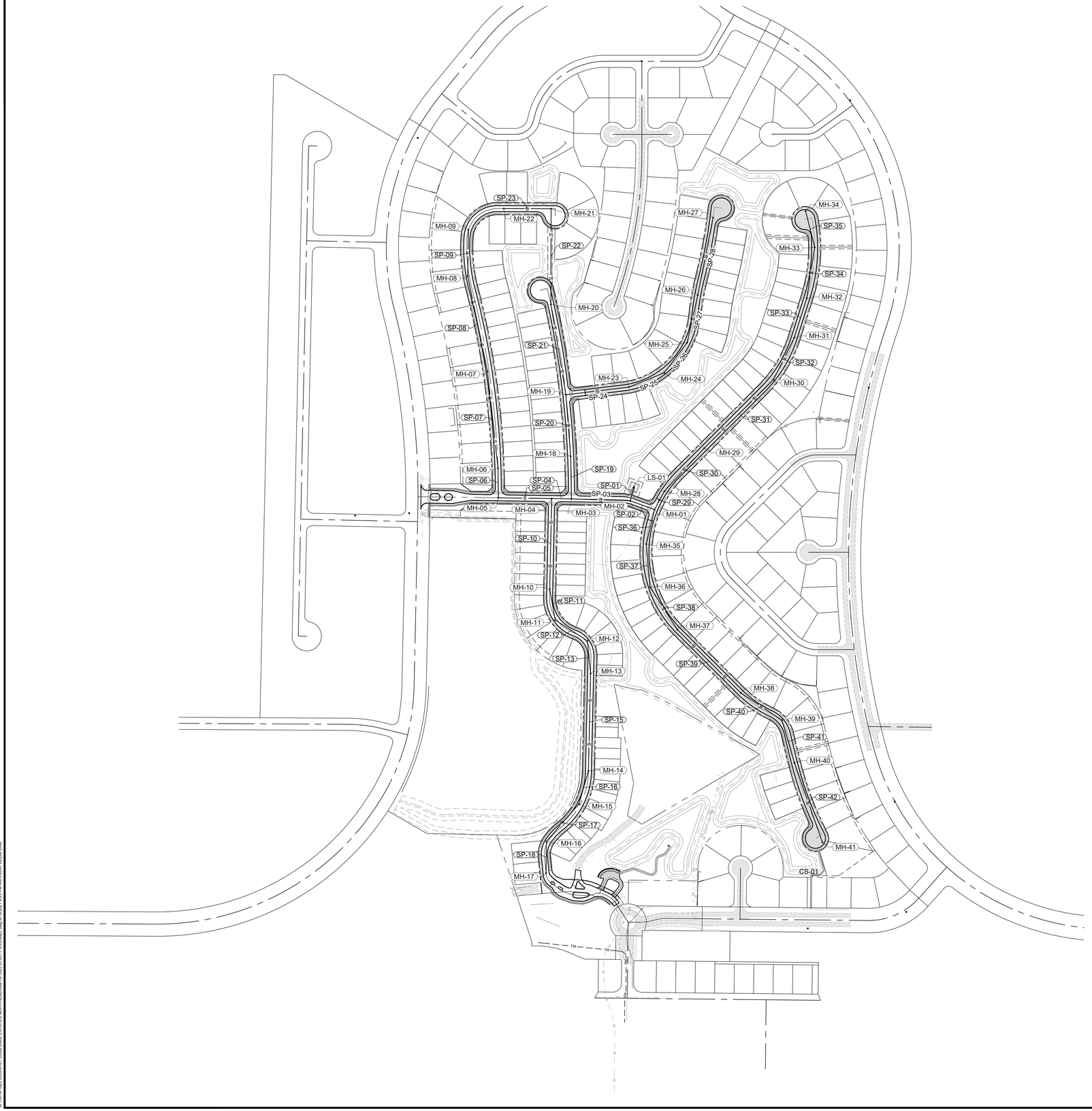
DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

SHEET
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PERMITTING SET

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UTILITY GENERAL NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING EXISTING WATER MAINS, SANITARY SEWER, STORM MAINS AND OTHER UTILITIES AND MAINTAIN MINIMUM CLEARANCE BETWEEN WATER MAINS AND OTHER UTILITIES AT ALL POINTS ALONG THEIR LENGTH AS REQUIRED IN THE PLANS, DETAILS AND SPECIFICATIONS.
2. NO UTILITY LATERALS, METER BOXES, VALVES, ETC. SHALL BE LOCATED IN PROPOSED SIDEWALK AREAS.
3. ALL SANITARY SEWER LINE CONSTRUCTION SHALL CONFORM WITH THE CITY OF ROCKLEDGE SPECIFICATIONS. ALL WATER LINE CONSTRUCTION SHALL CONFORM WITH THE CITY OF COCOA SPECIFICATIONS. RIGHTS-OF-WAY FOR THIS SUBDIVISION ARE TO BE PRIVATE. A PUBLIC EASEMENT OVER ALL RIGHTS-OF-WAY SHALL BE PROVIDED FOR UTILITY ACCESS AND MAINTENANCE. REFER TO PLAT FOR EASEMENT DEDICATION LANGUAGE.
4. IF ANY EXISTING STRUCTURES TO REMAIN ARE DAMAGED DURING CONSTRUCTION IT SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR AND/OR REPLACE THE EXISTING STRUCTURE AS NECESSARY TO RETURN IT TO EXISTING CONDITIONS OR BETTER.
5. THE CONTRACTOR WILL NOTIFY THE CITY OF ROCKLEDGE AND THE CITY OF COCOA WATER DEPARTMENT AT LEAST 48 HOURS PRIOR TO ANY CONSTRUCTION ACTIVITY. THE CONTRACTOR WILL PROVIDE THE CITY DIVISION WITH A COPY OF ALL TEST RESULTS FROM THE PROPOSED IMPROVEMENTS. ALL CONCRETE TESTS AND ALL TEST RESULTS FROM THE PROPOSED IMPROVEMENTS.
6. THE CITY OF ROCKLEDGE PUBLIC WORKS AND THE CITY OF COCOA WATER DEPARTMENT INSPECTOR MUST BE NOTIFIED 48 HOURS PRIOR TO ANY UTILITIES WORK OR ANY WORK OCCURRING WITHIN VICINITY OF EXISTING WATER AND SEWER UTILITIES.
7. TESTING ON PAVED AREAS SHALL BE SPECIFIED ON PLANS WITH DESCRIPTION OF IMPROVEMENTS, LOCATION ZONES AND TESTING METHODS TO BE USED. COPIES OF ALL TEST RESULTS ARE TO BE PROVIDED TO THE PUBLIC WORKS DEPARTMENT.
8. NOTIFY THE PUBLIC WORKS DEPARTMENT FOR INSPECTION, 72 HOURS PRIOR TO CONSTRUCTION START WITH CORRECT INFORMATION (NAMES AND PHONE NUMBERS OF CONTRACTOR AND SUB CONTRACTOR). SEQUENCE OF WORK IS REQUIRED. FOR ADDITIONAL INFORMATION OR CHANGES.
9. PROVIDE AS-BUILT INFORMATION FIVE (5) WORKING DAYS PRIOR TO REQUEST FOR CERTIFICATE OF OCCUPANCY.
10. PAVEMENT MARKINGS AND SIGNAGE AT DRIVEWAY ENTRANCE ARE THE PERPETUAL RESPONSIBILITY OF OWNER AND ASSIGNED.
11. ALL DISTURBED AREA SHALL HAVE GRASS/VEGETATION ESTABLISHED PRIOR TO THE FINAL INSPECTION FOR A CERTIFICATE OF OCCUPANCY.
12. A COPY OF NPDES CONSTRUCTION PERMIT IS REQUIRED FOR PROJECTS OVER 1 ACRE. THE CONTRACTOR SHALL PREPARE THE NECESSARY NOTICE OF INTENT (NOI) AND STORMWATER POLLUTION PREVENTION PLAN (SWPPP). THE NOI WILL BE FILED TO THE APPROPRIATE SECTION OF FDEP. COPIES OF THE NOI AND THE SWPPP SHALL BE SUBMITTED TO THE PUBLIC WORKS DEPARTMENT BEFORE WORKS BEGINS ON SITE.
13. CONTRACTOR SHALL NOT OPERATE ANY PUBLIC WATER OR SEWER VALVES UNLESS SPECIFICALLY AUTHORIZED BY UTILITIES INSPECTOR.
14. CONTRACTOR SHALL REMOVE ALL UNUSED SERVICE SURROUNDING PROPOSED SITE. THIS EFFORT SHALL BE COORDINATED WITH THE UTILITIES INSPECTOR.
15. ALL FIRE HYDRANT ASSEMBLIES TO INCLUDE A HYDRANT TEE, GATE VALVE, AND HYDRANT.
16. CONTRACTOR SHALL PROVIDE A BY-PASS PUMP TO THE CITY OF PALM BAY UTILITIES DEPARTMENT FOR EACH LIFT SUFFICIENT TO MAINTAIN ADEQUATE PUMPING CAPACITY SO AS NOT TO ALLOW A SEWER OVERFLOW DUE TO LOSS OF POWER.

FDEP SEPARATION CRITERIA:

(1) HORIZONTAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORM WATER, FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS.

(A) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED STORM SEWER, STORM WATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610,F.A.C.
(B) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST THREE FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER.
(C) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST SIX FEET, AND PREFERABLY TEN FEET, BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY OR PREASSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610,F.A.C. THE MINIMUM HORIZONTAL SEPARATION DISTANCE BETWEEN WATER MAINS AND GRAVITY TYPE SANITARY SEWERS SHALL BE REDUCED TO THREE FEET WHERE THE BOTTOM OF THE WATER MAIN IS LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER.
(D) NEW OR RELOCATED, UNDERGROUND WATER MAINS SHALL BE LAID TO PROVIDE A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065(2),F.S., AND RULE 64E-6.002, F.A.C.

(2) VERTICAL SEPARATION BETWEEN UNDERGROUND WATER MAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORM WATER, FORCE MAINS, AND RECLAIMED WATER PIPELINES.

(A) NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED GRAVITY OR VACUUME-TYPE SANITARY SEWER OR STORM SEWER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES, AND PREFERABLY 12 INCHES, ABOVE OR AT LEAST 12 INCHES BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.
(B) NEW OR RELOCATED, UNDERGROUND WATER MAINS CROSSING ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORM WATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER SHALL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OUTSIDE OF THE OTHER PIPELINE. HOWEVER, IT IS PREFERABLE TO LAY THE WATER MAIN ABOVE THE OTHER PIPELINE.
(C) AT THE UTILITY CROSSINGS DESCRIBED IN PARAGRAPHS (A) AND (B) ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE. ALTERNATIVELY, AT SUCH CROSSINGS, THE PIPES SHALL BE ARRANGED SO THAT ALL THE WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORM WATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

(1) SEPARATION BETWEEN WATER MAINS AND SANITARY OR STORM SEWER MANHOLES
(A) NO WATER MAIN SHALL PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A SANITARY SEWER MANHOLE.
(B) EFFECTIVE AUGUST 28, 2003, WATER MAINS SHALL NOT BE CONSTRUCTED OR ALTERED TO PASS THROUGH, OR COME INTO CONTACT WITH, ANY PART OF A STORM SEWER MANHOLE OR INLET STRUCTURE.

(4) SEPARATION BETWEEN FIRE HYDRANT DRAINS AND SANITARY OR STORM SEWERS, WASTEWATER OR STORM WATER FORCE MAINS, RECLAIMED WATER PIPELINES, AND ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEMS. NEW OR RELOCATED FIRE HYDRANTS WITH UNDERGROUND DRAINS SHALL BE LOCATED SO THAT THE DRAINS ARE AT LEAST THREE FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORM WATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C; AT LEAST THREE FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED VACUUM-TYPE SANITARY SEWER; AT LEAST SIX FEET, AND PREFERABLY TEN FEET, FROM ANY EXISTING OR PROPOSED GRAVITY-OR PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; AND AT LEAST TEN FEET FROM ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM" AS DEFINED IN SECTION 381.0065(2), F.S., AND RULE 64E-6.002, F.A.C.

NOTE:
SEE SHEETS C-402 - C-407 FOR STRUCTURE AND PIPE TABLES BY PHASE.

LEGEND

- EXISTING ASPHALT PAVEMENT
- MH-06 — SANITARY SEWER STRUCTURE NAME I.D.
- SD-06 — SANITARY SEWER PIPE NAME I.D.
- Ⓢ — SANITARY SEWER MANHOLE
- PROPOSED SANITARY SEWER PIPE

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

N

GRAPHIC SCALE
20 0 10 20
(IN FEET)
1 inch = 20 ft.

8								
7								
6								
5								
4								
3								
2								
1								
	COMMENTS							xx-xx-xxxx
	REVISIONS							**DATE**

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD, SUITE H MELBOURNE, FLORIDA 32935
P: 321-253-1510 F:321-253-0911 CA#3728
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9969

OVERALL UTILITY PLAN

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

FLORIDA

CITY OF PALM BAY

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 — DATE: 8/19/2021

SHEET

C-401

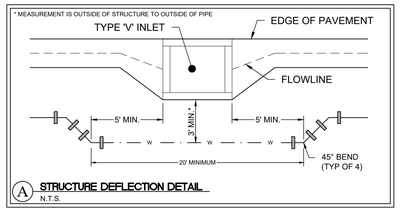
19-1025

PERMITTING SET

M:\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\Sheets\19-1025 UTILITY OVERALL.dwg 8/19/2021 4:25 PM ANTHONY RELAFORD

PRESSURIZED FIXTURE TABLE			
(1)	8" 11.25º BEND	(13)	8" R.P.Z. & METER
(2)	4" 22.5º BEND	(14)	FIRE HYDRANT
(3)	8" 22.5º BEND	(15)	8" CAP
(4)	4" 45º BEND	(16)	SINGLE WATER SERVICE
(5)	8" 45º BEND	(17)	DOUBLE WATER SERVICE
(6)	4" 90º BEND	(18)	SINGLE SEWER SERVICE
(7)	8" 90º BEND	(19)	DOUBLE SEWER SERVICE
(8)	4" TEE	(20)	SINGLE REUSE SERVICE
(9)	8" TEE	(21)	DOUBLE REUSE SERVICE
(10)	4" GATE VALVE	(22)	2" BLOW OFF VALVE
(11)	8" GATE VALVE	(23)	UTILITY DEFLECTION AT STRUCTURE SEE DETAIL THIS SHEET
(12)	4" R.P.Z. & METER		

NOTE: SEE SHEET C-403 FOR PHASE 1 SANITARY SEWER STRUCTURE AND PIPE TABLE.



A STRUCTURE DEFLECTION DETAIL
N.T.S.

PHASE 3 UTILITIES (SEE SHEET C-406 FOR INFORMATION)

PHASE 4 UTILITIES (SEE SHEET C-407 FOR INFORMATION)

PHASE 1 UTILITIES (SEE SHEET C-403 FOR INFORMATION)

MATCHLINE - SEE SHEET C-405 FOR PHASE 2 CONTINUATION

MH-01 MH-02 MH-03 MH-04 MH-05 MH-06 MH-07 MH-08 MH-09 MH-18 MH-19 MH-20 MH-21 MH-22

SP-01 SP-02 SP-03 SP-04 SP-05 SP-06 SP-07 SP-08 SP-09 SP-19 SP-20 SP-21 SP-22 SP-23

LS-01

ROAD 01 50' PUBLIC R/W
ROAD 02 50' PUBLIC R/W
ROAD 03 50' PUBLIC R/W

TRACT A TRACT B TRACT C TRACT D TRACT G

±79 LF 4" C906 HDPE (SDR-11) FORCE MAIN
±13 LF 4" C906 HDPE (SDR-11) FORCE MAIN
±253 LF 4" C906 HDPE (SDR-11) FORCE MAIN
±7 LF 4" C906 HDPE (SDR-11) FORCE MAIN
±80 LF 8" C900 PVC (DR-25) WATERMAIN
±24 LF 8" C900 PVC (DR-25) WATERMAIN
±440 LF 8" C900 PVC (DR-25) WATERMAIN
±219 LF 8" C900 PVC (DR-25) WATERMAIN
±266 LF 8" C900 PVC (DR-25) WATERMAIN
±1,475 LF 8" C900 PVC (DR-25) WATERMAIN
±1,541 LF 4" C900 (DR 25) PVC REUSE MAIN

INSTALL 12"x8" TAPPING SLEEVE & VALVE.
EXISTING 12" VALVE
EXISTING 12" W.M. CONTRACTOR TO FIELD VERIFY. EXISTING WATER MAIN LOCATION WAS PHOTO INTERPRETED VIA AS-BUILT INFORMATION PROVIDED BY CITY.

RIVIERA DRIVE

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

GRAPHIC SCALE
50 0 25 50
(IN FEET)
1 inch = 50 ft.

	DATE	REVISIONS	COMMENTS
1	xx-xx-xxxx		
2			
3			
4			
5			
6			
7			
8			

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
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2250 W. BAU GALLIE BLVD, SUITE H MELBOURNE, FLORIDA 32935
P: 321-253-1510 F:321-253-0911
CA#7726
VERO: 772-569-0035 FT PIERCE: 772-468-9955 PALM CITY: 772-408-9999

UTILITY PLAN (PHASE 1 - SHEET 01)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

SHEET

C-402

19-1025

PERMITTING SET

W:\2019\1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\SHEETS\1025 UTILITY.dwg 8/19/2021 1:4:35 PM ANTHONY RELAFORD

PRESSURIZED FIXTURE TABLE			
(1)	8" 11.25° BEND	(13)	8" R.P.Z. & METER
(2)	4" 22.5° BEND	(14)	FIRE HYDRANT
(3)	8" 22.5° BEND	(15)	8" CAP
(4)	4" 45° BEND	(16)	SINGLE WATER SERVICE
(5)	8" 45° BEND	(17)	DOUBLE WATER SERVICE
(6)	4" 90° BEND	(18)	SINGLE SEWER SERVICE
(7)	8" 90° BEND	(19)	DOUBLE SEWER SERVICE
(8)	4" TEE	(20)	SINGLE REUSE SERVICE
(9)	8" TEE	(21)	DOUBLE REUSE SERVICE
(10)	4" GATE VALVE	(22)	2" BLOW OFF VALVE
(11)	8" GATE VALVE	(23)	UTILITY DEFLECTION AT STRUCTURE SEE DETAIL SHEET C-402
(12)	4" R.P.Z. & METER		

NOTE: SEE SHEET C-405 FOR PHASE 2 SANITARY SEWER STRUCTURE AND PIPE TABLE.

PHASE 1 STRUCTURE & PIPE TABLES

SANITARY STRUCTURE TABLE		
STRUCTURE I.D.	DESCRIPTION	DATA
LS-01	LIFT STATION	RIM: 28.44 [SP-01] S INV: 15.53 (8")
MH-01	4 FT. Ø MH	RIM: 21.81 [SP-36] S INV: 18.29 (8") [SP-29] NE INV: 18.22 (8") [SP-02] W INV: 18.12 (8")
MH-02	4 FT. Ø MH	RIM: 28.13 [SP-02] E INV: 17.59 (8") [SP-03] W INV: 15.86 (8") [SP-01] N INV: 15.76 (8")
MH-03	4 FT. Ø MH	RIM: 28.26 [SP-10] N INV: 16.92 (8") [SP-04] W INV: 18.38 (8") [SP-03] E INV: 16.82 (8")
MH-04	4 FT. Ø MH	RIM: 28.81 [SP-05] W INV: 18.82 (8") [SP-10] S INV: 18.80 (8") [SP-04] E INV: 18.70 (8")
MH-05	4 FT. Ø MH	RIM: 28.22 [SP-06] N INV: 19.71 (8") [SP-05] E INV: 19.61 (8")
MH-06	4 FT. Ø MH	RIM: 28.58 [SP-07] N INV: 20.25 (8") [SP-06] S INV: 20.14 (8")
MH-07	4 FT. Ø MH	RIM: 28.12 [SP-08] N INV: 21.78 (8") [SP-07] S INV: 21.68 (8")
MH-08	4 FT. Ø MH	RIM: 28.01 [SP-09] N INV: 23.32 (8") [SP-08] S INV: 23.22 (8")
MH-09	4 FT. Ø MH	RIM: 29.65 [SP-09] S INV: 24.16 (8")
MH-10	4 FT. Ø MH	RIM: 27.79 [SP-11] S INV: 20.39 (8") [SP-10] N INV: 20.29 (8")
MH-11	4 FT. Ø MH	RIM: 28.49 [SP-12] SE INV: 21.01 (8") [SP-11] N INV: 20.91 (8")
MH-12	4 FT. Ø MH	RIM: 29.12 [SP-13] S INV: 21.73 (8") [SP-12] NW INV: 21.64 (8")
MH-13	4 FT. Ø MH	RIM: 27.89 [SP-15] S INV: 22.37 (8") [SP-13] N INV: 22.27 (8")
MH-18	4 FT. Ø MH	RIM: 28.21 [SP-20] N INV: 17.72 (8") [SP-19] S INV: 17.62 (8")
MH-19	4 FT. Ø MH	RIM: 28.38 [SP-24] E INV: 18.84 (8") [SP-21] N INV: 20.30 (8") [SP-20] S INV: 18.74 (8")
MH-20	4 FT. Ø MH	RIM: 28.67 [SP-22] N INV: 23.22 (8") [SP-21] S INV: 23.12 (8")
MH-21	4 FT. Ø MH	RIM: 28.99 [SP-23] W INV: 24.89 (8") [SP-22] S INV: 24.79 (8")
MH-22	4 FT. Ø MH	RIM: 29.42 [SP-23] E INV: 25.75 (8")

PIPE TABLE				
PIPE NAME	SIZE	LENGTH	SLOPE	MATERIAL
SP-01	8 "	57'	0.40%	PVC Pipe
SP-02	8 "	106'	0.50%	PVC Pipe
SP-03	8 "	241'	0.40%	PVC Pipe
SP-04	8 "	81'	0.40%	PVC Pipe
SP-05	8 "	219'	0.36%	PVC Pipe
SP-06	8 "	122'	0.36%	PVC Pipe
SP-07	8 "	399'	0.36%	PVC Pipe
SP-08	8 "	400'	0.36%	PVC Pipe
SP-09	8 "	190'	0.44%	PVC Pipe
SP-10	8 "	372'	0.40%	PVC Pipe
SP-11	8 "	128'	0.40%	PVC Pipe
SP-12	8 "	157'	0.40%	PVC Pipe
SP-13	8 "	135'	0.40%	PVC Pipe
SP-19	8 "	175'	0.40%	PVC Pipe
SP-20	8 "	253'	0.40%	PVC Pipe
SP-21	8 "	376'	0.75%	PVC Pipe
SP-22	8 "	393'	0.40%	PVC Pipe
SP-23	8 "	195'	0.44%	PVC Pipe

PHASE 3 UTILITIES (SEE SHEET C-406 FOR INFORMATION)

PHASE 4 UTILITIES (SEE SHEET C-407 FOR INFORMATION)

PHASE 2 UTILITIES (SEE SHEET C-405 FOR INFORMATION)

PHASE 1 UTILITIES (SEE SHEET C-402 FOR INFORMATION)

PHASE 2 UTILITIES (SEE SHEET C-404 FOR INFORMATION)

TEMPORARY CUL-DE-SAC TO BE BUILT IN PHASE I AND REMOVED IN PHASE II.

PHASE I

PHASE II

ROAD 01 50' PUBLIC R/W

ROAD 06 80' PUBLIC R/W

TRACT A

TRACT C

TRACT D

TRACT F

TRACT G

LS-01

MH-01 MH-02 MH-03 MH-04 MH-05 MH-10 MH-11 MH-12 MH-13 MH-14 MH-15 MH-16

SP-01 SP-02 SP-03 SP-04 SP-05 SP-10 SP-11 SP-12 SP-13 SP-15 SP-16 SP-17 SP-29 SP-36

±79 LF 4" C906 HDPE (SDR-11) FORCE MAIN

±13 LF 4" C906 HDPE (SDR-11) FORCE MAIN

±253 LF 4" C906 HDPE (SDR-11) FORCE MAIN

±7 LF 4" C906 HDPE (SDR-11) FORCE MAIN

±1,673 4" C900 (DR 25) PVC REUSE WATER MAIN

±2,102 LF 8" C900 PVC (DR-25) WATERMAIN

GRAPHIC SCALE
50 0 25 50
(IN FEET)
1 inch = 50 ft.

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

		DATE
8		
7		
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2		
1	COMMENTS	XX-XX-XXXX
	REVISIONS	DATE

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
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1250 W. EAU GALLIE BLVD, SUITE H
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
CA#7726 LB#3591 SURVEY CA#7726
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

UTILITY PLAN (PHASE 1 - SHEET 02)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

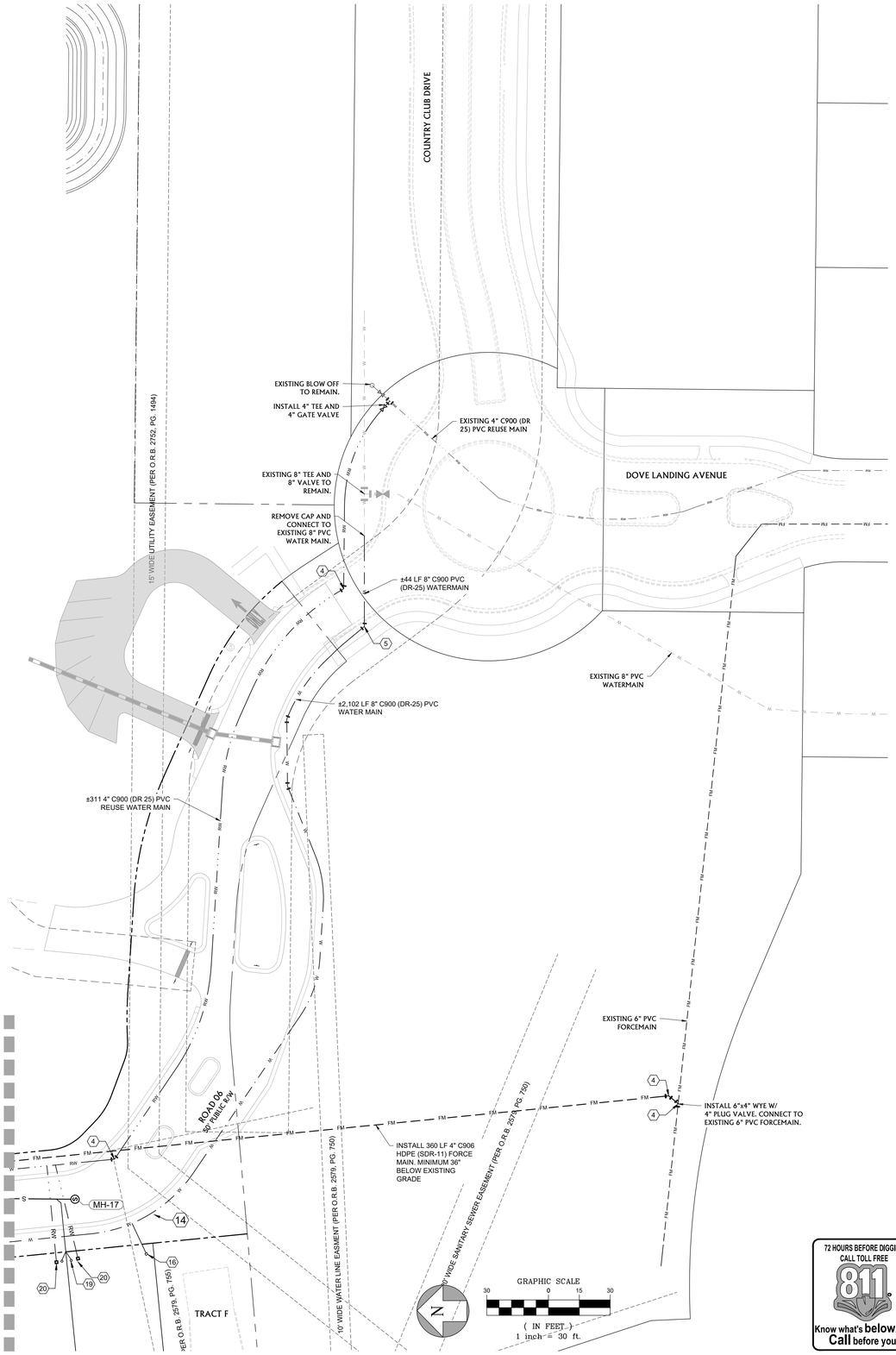
DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 — DATE: 8/19/2021

SHEET
C-403

19-1025
PERMITTING SET

W:\19-1025 (COUNTRY CLUB LAKE ESTATES NORTH)\CAD\Sheets\1025 UTILITY.dwg 8/19/2021 1:25 PM ANTHONY RELAFORD



PHASE 1 UTILITIES (SEE SHEET C-403 FOR INFORMATION)

NOTES:
1. SEE SHEET C-405 FOR PHASE 2 SANITARY SEWER STRUCTURE AND PIPE TABLE.
2. SEE SHEET C-403 FOR PHASE 1 SANITARY SEWER STRUCTURE AND PIPE TABLE.

PRESSURIZED FIXTURE TABLE			
1	8" 11.25° BEND	13	8" R.P.Z. & METER
2	4" 22.5° BEND	14	FIRE HYDRANT
3	8" 22.5° BEND	15	8" CAP
4	4" 45° BEND	16	SINGLE WATER SERVICE
5	8" 45° BEND	17	DOUBLE WATER SERVICE
6	4" 90° BEND	18	SINGLE SEWER SERVICE
7	8" 90° BEND	19	DOUBLE SEWER SERVICE
8	4" TEE	20	SINGLE REUSE SERVICE
9	8" TEE	21	DOUBLE REUSE SERVICE
10	4" GATE VALVE	22	2" BLOW OFF VALVE
11	8" GATE VALVE	23	UTILITY DEFLECTION AT STRUCTURE SEE DETAIL SHEET C-402
12	4" R.P.Z. & METER		

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

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

	COMMENTS	DATE
8		
7		
6		
5		
4		
3		
2		
1		xx-xx-xxxx

REVISIONS

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
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CA#7726
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

UTILITY PLAN (PHASE 2 - SHEET 01)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD, FL. P.E. #83267 DATE: 8/19/2021

SHEET

C-404

19-1025

PERMITTING SET

W:\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\dwg\19-1025 UTILITY 2.dwg 8/19/2021 4:35 PM ANTHONY REILAFORD

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

PHASE 2 STRUCTURE & PIPE TABLES

SANITARY STRUCTURE TABLE		
STRUCTURE I.D.	DESCRIPTION	DATA
MH-14	4 FT. Ø MH	RIM: 29.14 [SP-16] S INV: 24.07 (8") [SP-15] N INV: 23.97 (8")
MH-15	4 FT. Ø MH	RIM: 28.69 [SP-17] SW INV: 24.75 (8") [SP-16] N INV: 24.65 (8")
MH-16	4 FT. Ø MH	RIM: 29.20 [SP-18] S INV: 25.68 (8") [SP-17] NE INV: 25.58 (8")
MH-17	4 FT. Ø MH	RIM: 29.77 [SP-18] N INV: 26.20 (8")
MH-23	4 FT. Ø MH	RIM: 28.66 [SP-25] E INV: 20.63 (8") [SP-24] W INV: 20.53 (8")

PIPE TABLE				
PIPE NAME	SIZE	LENGTH	SLOPE	MATERIAL
SP-15	8 "	400'	0.40%	PVC Pipe
SP-16	8 "	142'	0.41%	PVC Pipe
SP-17	8 "	204'	0.41%	PVC Pipe
SP-18	8 "	131'	0.40%	PVC Pipe
SP-24	8 "	261'	0.65%	PVC Pipe

PRESSURIZED FIXTURE TABLE			
1	8" 11.25º BEND	13	8" R.P.Z. & METER
2	4" 22.5º BEND	14	FIRE HYDRANT
3	8" 22.5º BEND	15	8" CAP
4	4" 45º BEND	16	SINGLE WATER SERVICE
5	8" 45º BEND	17	DOUBLE WATER SERVICE
6	4" 90º BEND	18	SINGLE SEWER SERVICE
7	8" 90º BEND	19	DOUBLE SEWER SERVICE
8	4" TEE	20	SINGLE REUSE SERVICE
9	8" TEE	21	DOUBLE REUSE SERVICE
10	4" GATE VALVE	22	2" BLOW OFF VALVE
11	8" GATE VALVE	23	UTILITY DEFLECTION AT STRUCTURE SEE DETAIL SHEET C-402
12	4" R.P.Z. & METER		

±362 LF 8" C900 PVC (DR-25) WATERMAIN
MH-27
ROAD 04 50' PUBLIC R/W
SP-28
±303 LF 8" C900 PVC (DR-25) WATERMAIN
MH-26
SP-27
MH-25
TRACT C
±1,197 LF 4" C900 (DR 25) PVC REUSE MAIN
±785 LF 8" C900 PVC (DR-25) WATERMAIN
MH-24
SP-25
MH-23
SP-24
TRACT C
ROAD 03 50' PUBLIC R/W
SP-20
MH-18
SP-19
MH-19
SP-21
±440 LF 8" C900 PVC (DR-25) WATERMAIN
MH-20
SP-22
±24 LF 8" C900 PVC (DR-25) WATERMAIN
MH-21
TRACT C
PHASE 3 UTILITIES (SEE SHEET C-406 FOR INFORMATION)
MH-28
SP-29
MH-01
SP-01
LS-01
TRACT D
MH-02
±79 LF 4" C906 HDPE (SDR-11) FORCE MAIN
±13 LF 4" C906 HDPE (SDR-11) FORCE MAI
PHASE 4 UTILITIES (SEE SHEET C-407 FOR INFORMATION)
ROAD 01 50' PUBLIC R/W
SP-03
±253 LF 4" C906 HD (SDR-11) FORCE MA
MH-03
SP-04
TRACT D
±7 LF 4" C906 HDF (SDR-11) FORCE M
±80 LF 8" C900 PVC (DR-25) WATERMAIN
MH-04
PHASE 1 UTILITIES (SEE SHEET C-404 FOR INFORMATION)
PHASE 1 UTILITIES (SEE SHEET C-402 FOR INFORMATION)

GRAPHIC SCALE
50 0 25 50
(IN FEET)
1 inch = 50 ft.

	DATE	REVISIONS	COMMENTS
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JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD, SUITE H MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
CA#7724 LA#6667 BSM#6543
VERO: 772-569-0036 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

UTILITY PLAN (PHASE 2 - SHEET 02)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

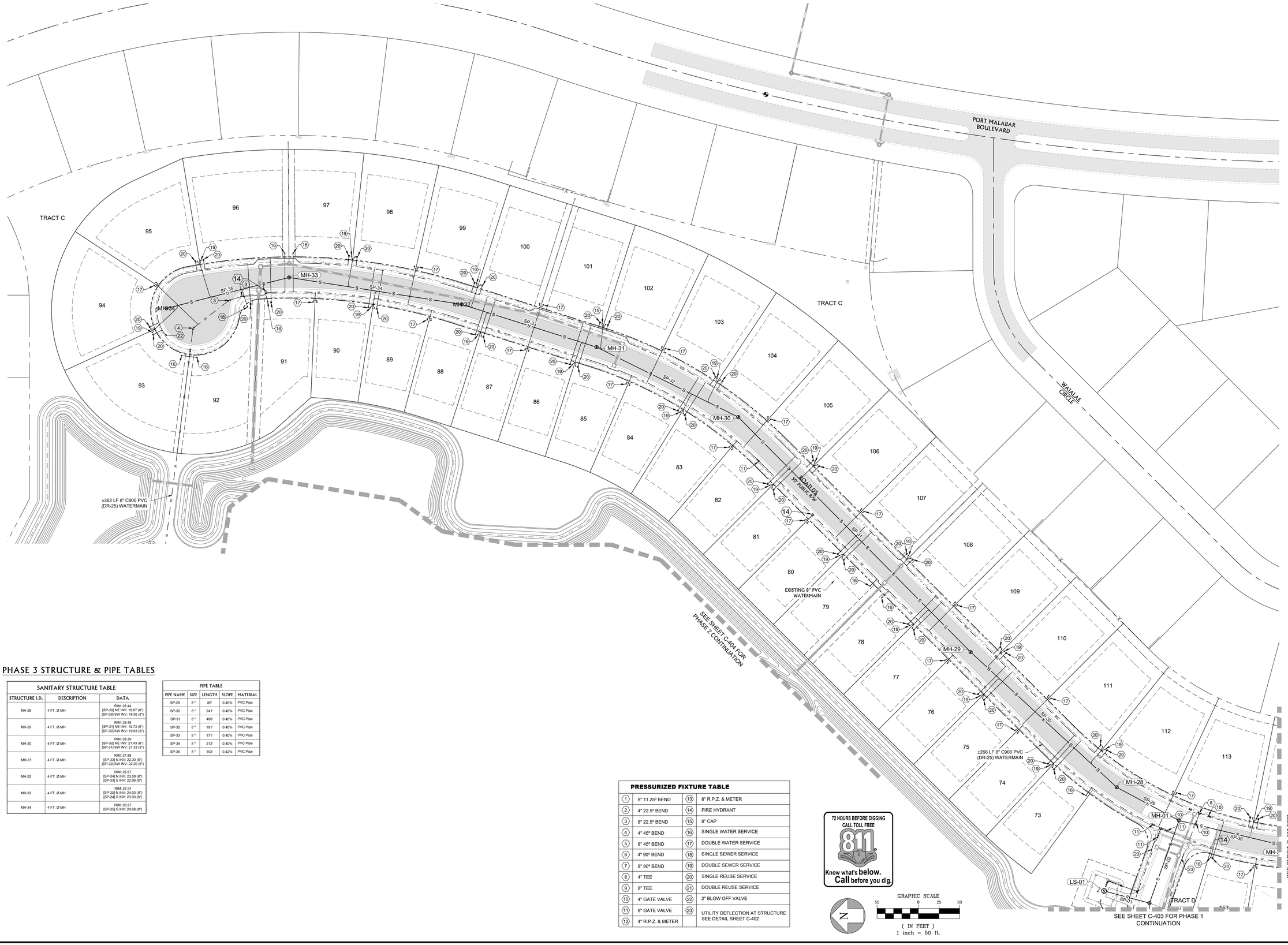
CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER
DAVID W. BASSFORD FL. P.E. #83267
DATE: 8/19/2021

SHEET
C-405

19-1025
PERMITTING SET

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PHASE 3 STRUCTURE & PIPE TABLES

SANITARY STRUCTURE TABLE		
STRUCTURE I.D.	DESCRIPTION	DATA
MH-28	4 FT. Ø MH	RIM: 28.44 [SP-30] NE INV: 18.67 (8") [SP-29] SW INV: 18.56 (8")
MH-29	4 FT. Ø MH	RIM: 28.46 [SP-31] NE INV: 19.73 (8") [SP-30] SW INV: 19.63 (8")
MH-30	4 FT. Ø MH	RIM: 28.30 [SP-32] NE INV: 21.43 (8") [SP-31] SW INV: 21.33 (8")
MH-31	4 FT. Ø MH	RIM: 27.88 [SP-33] N INV: 22.30 (8") [SP-32] SW INV: 22.20 (8")
MH-32	4 FT. Ø MH	RIM: 28.57 [SP-34] N INV: 23.08 (8") [SP-33] S INV: 22.98 (8")
MH-33	4 FT. Ø MH	RIM: 27.91 [SP-35] N INV: 24.03 (8") [SP-34] S INV: 23.93 (8")
MH-34	4 FT. Ø MH	RIM: 28.27 [SP-35] S INV: 24.68 (8")

PIPE TABLE				
PIPE NAME	SIZE	LENGTH	SLOPE	MATERIAL
SP-29	8 "	85'	0.40%	PVC Pipe
SP-30	8 "	241'	0.40%	PVC Pipe
SP-31	8 "	400'	0.40%	PVC Pipe
SP-32	8 "	191'	0.40%	PVC Pipe
SP-33	8 "	171'	0.40%	PVC Pipe
SP-34	8 "	212'	0.40%	PVC Pipe
SP-35	8 "	153'	0.42%	PVC Pipe

PRESSURIZED FIXTURE TABLE			
1	8" 11.25° BEND	13	8" R.P.Z. & METER
2	4" 22.5° BEND	14	FIRE HYDRANT
3	8" 22.5° BEND	15	8" CAP
4	4" 45° BEND	16	SINGLE WATER SERVICE
5	8" 45° BEND	17	DOUBLE WATER SERVICE
6	4" 90° BEND	18	SINGLE SEWER SERVICE
7	8" 90° BEND	19	DOUBLE SEWER SERVICE
8	4" TEE	20	SINGLE REUSE SERVICE
9	8" TEE	21	DOUBLE REUSE SERVICE
10	4" GATE VALVE	22	2" BLOW OFF VALVE
11	8" GATE VALVE	23	UTILITY DEFLECTION AT STRUCTURE SEE DETAIL SHEET C-402
12	4" R.P.Z. & METER		

REVISIONS		
	DATE	COMMENTS
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JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
2250 W. BAU GALLIE BLVD, SUITE H MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
CA#7724 LB#8653
VERO: 772-569-0036 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

UTILITY PLAN (PHASE 3 - SHEET 01)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

SHEET

C-406

19-1025

PERMITTING SET

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PHASE 4 STRUCTURE & PIPE TABLES

SANITARY STRUCTURE TABLE

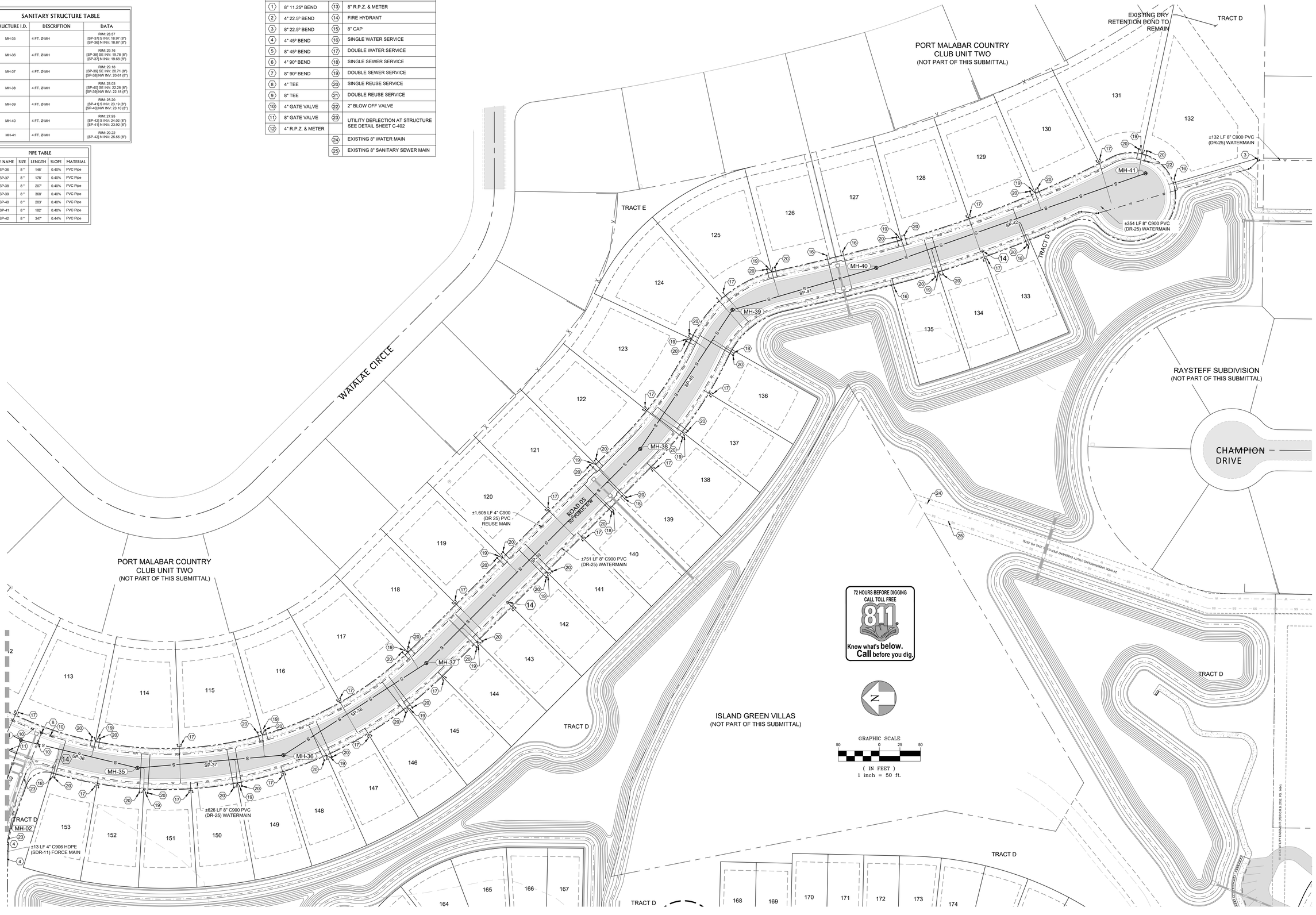
STRUCTURE I.D.	DESCRIPTION	DATA
MH-35	4 FT. Ø MH	RIM: 28.57 [SP-37] S INV: 18.97 (8") [SP-36] N INV: 18.87 (8")
MH-36	4 FT. Ø MH	RIM: 29.16 [SP-38] SE INV: 19.78 (8") [SP-37] N INV: 19.68 (8")
MH-37	4 FT. Ø MH	RIM: 29.18 [SP-39] SE INV: 20.71 (8") [SP-38] NW INV: 20.61 (8")
MH-38	4 FT. Ø MH	RIM: 28.03 [SP-40] SE INV: 22.28 (8") [SP-39] NW INV: 22.18 (8")
MH-39	4 FT. Ø MH	RIM: 28.20 [SP-41] S INV: 23.19 (8") [SP-40] NW INV: 23.10 (8")
MH-40	4 FT. Ø MH	RIM: 27.95 [SP-42] S INV: 24.02 (8") [SP-41] N INV: 23.92 (8")
MH-41	4 FT. Ø MH	RIM: 29.22 [SP-42] N INV: 25.55 (8")

PIPE TABLE

PIPE NAME	SIZE	LENGTH	SLOPE	MATERIAL
SP-36	8 "	146'	0.40%	PVC Pipe
SP-37	8 "	178'	0.40%	PVC Pipe
SP-38	8 "	207'	0.40%	PVC Pipe
SP-39	8 "	368'	0.40%	PVC Pipe
SP-40	8 "	203'	0.40%	PVC Pipe
SP-41	8 "	182'	0.40%	PVC Pipe
SP-42	8 "	347'	0.44%	PVC Pipe

PRESSURIZED FIXTURE TABLE

1	8" 11.25° BEND	13	8" R.P.Z. & METER
2	4" 22.5° BEND	14	FIRE HYDRANT
3	8" 22.5° BEND	15	8" CAP
4	4" 45° BEND	16	SINGLE WATER SERVICE
5	8" 45° BEND	17	DOUBLE WATER SERVICE
6	4" 90° BEND	18	SINGLE SEWER SERVICE
7	8" 90° BEND	19	DOUBLE SEWER SERVICE
8	4" TEE	20	SINGLE REUSE SERVICE
9	8" TEE	21	DOUBLE REUSE SERVICE
10	4" GATE VALVE	22	2" BLOW OFF VALVE
11	8" GATE VALVE	23	UTILITY DEFLECTION AT STRUCTURE SEE DETAIL SHEET C-402
12	4" R.P.Z. & METER	24	EXISTING 8" WATER MAIN
		25	EXISTING 8" SANITARY SEWER MAIN



	DATE	COMMENTS
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REVISIONS

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
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1250 W. EAU GALLIE BLVD, SUITE H MELBOURNE, FLORIDA 32935
P: 321-253-1510 F:321-253-0911
CA#7726 LB#8153
VERO: 772-569-0036 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

UTILITY PLAN (PHASE 4 - SHEET 01)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES
CITY OF PALM BAY FLORIDA

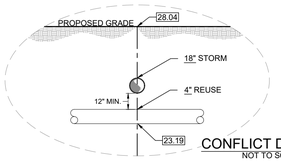
DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

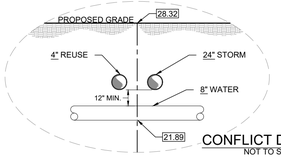
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19-1025
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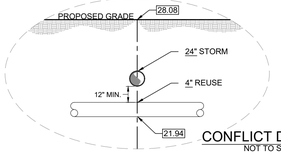
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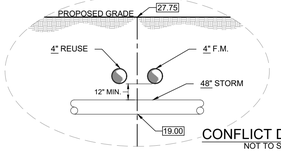
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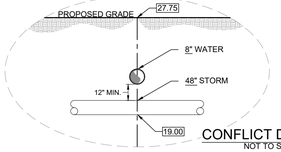
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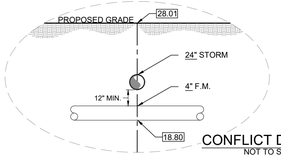
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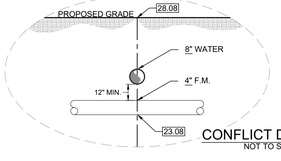
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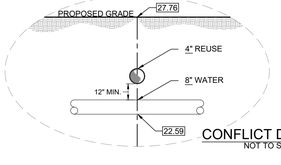
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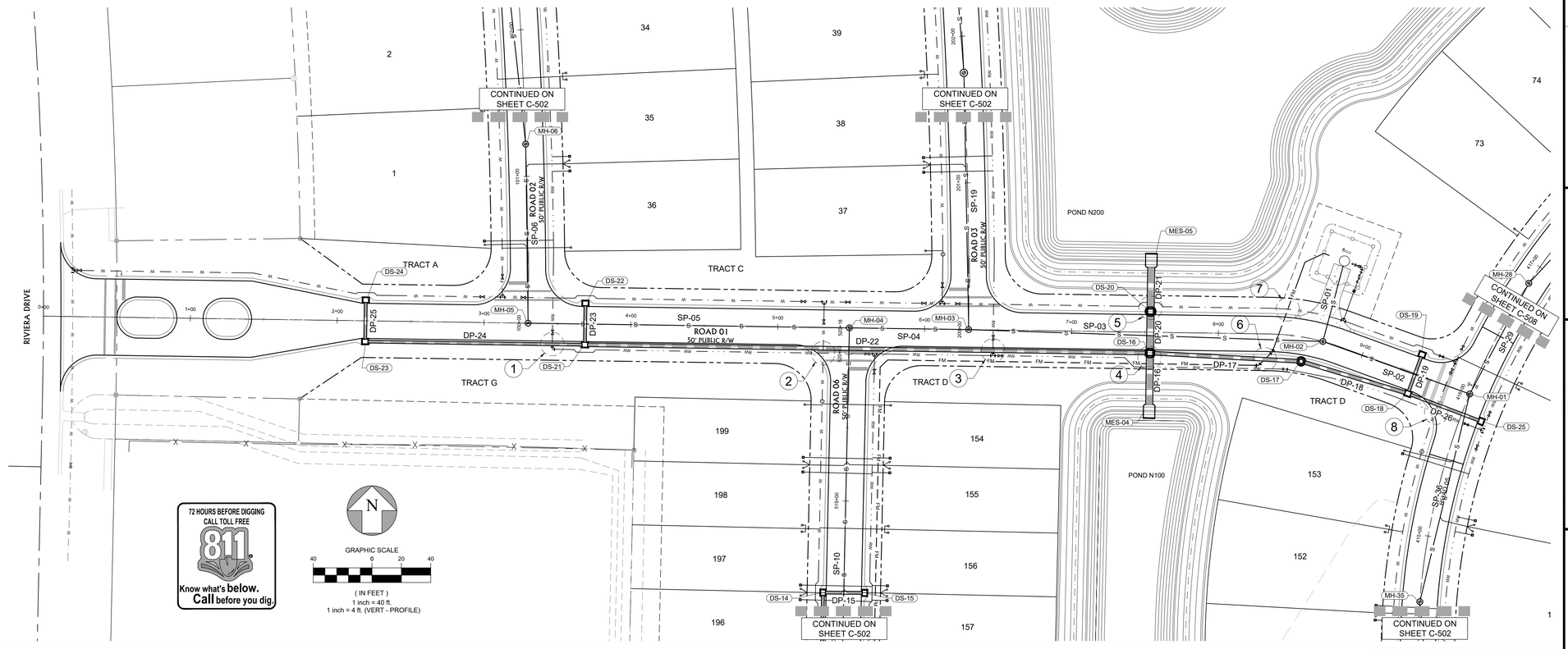
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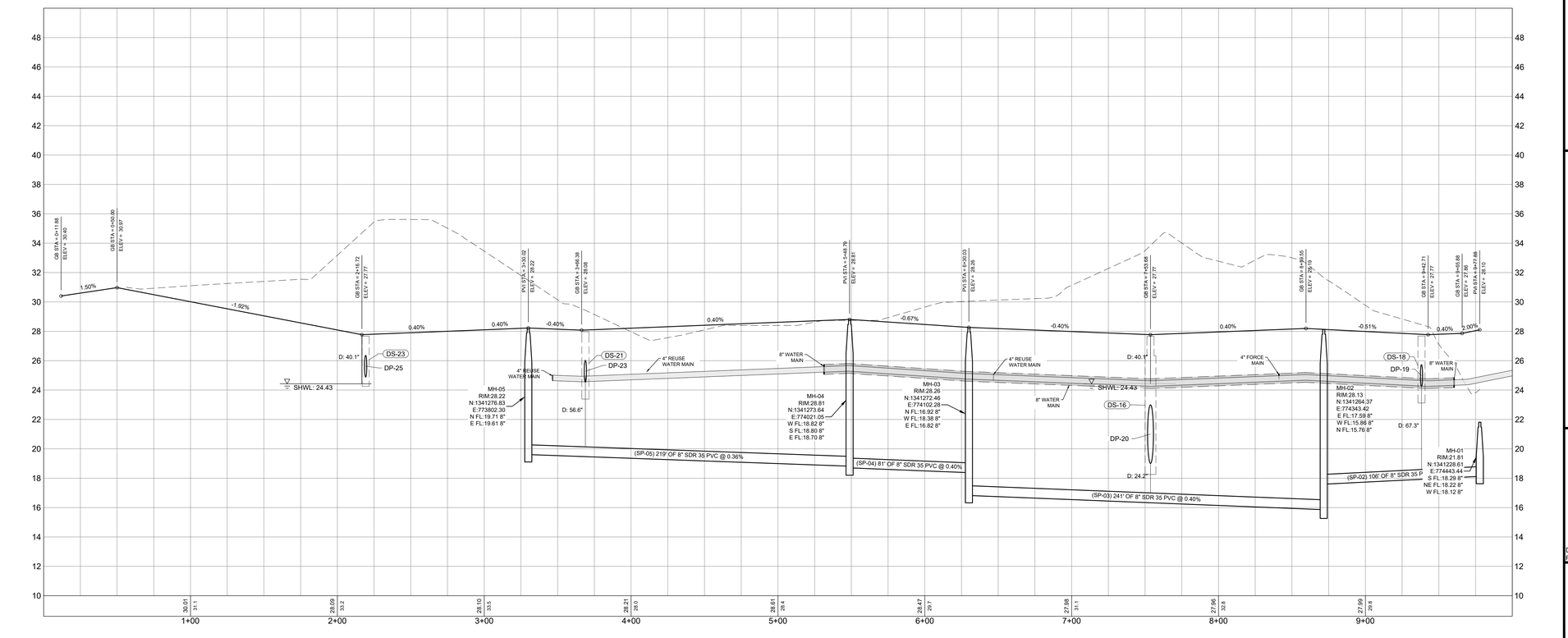


CONFLICT DETAIL #7
NOT TO SCALE



CONFLICT DETAIL #8
NOT TO SCALE





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1	COMMENTS	xx-xx-xxxx
	REVISIONS	DATE

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
2350 W. BAU GALLE BLVD, SUITE H MELBOURNE, FLORIDA 32935
P: 321-253-1510 F:321-253-0911
CAM3728
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

ROAD 01 (00+00 TO END)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD
FL. P.E. #83267

DATE:
8/19/2021

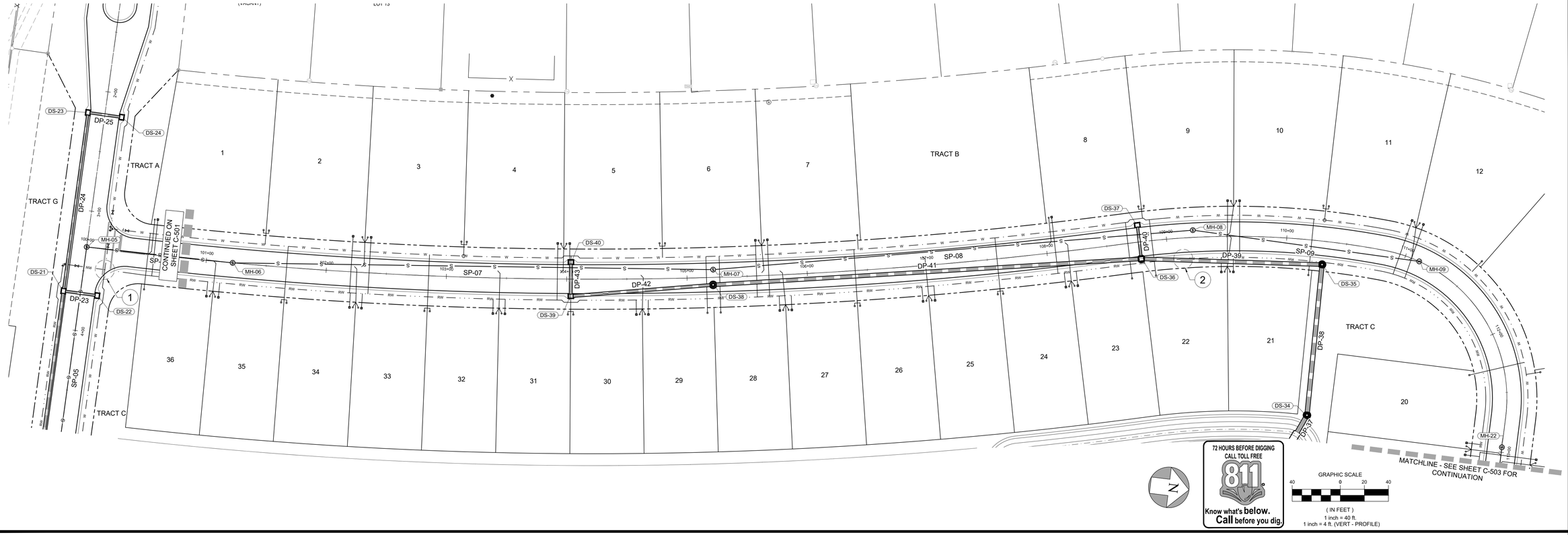
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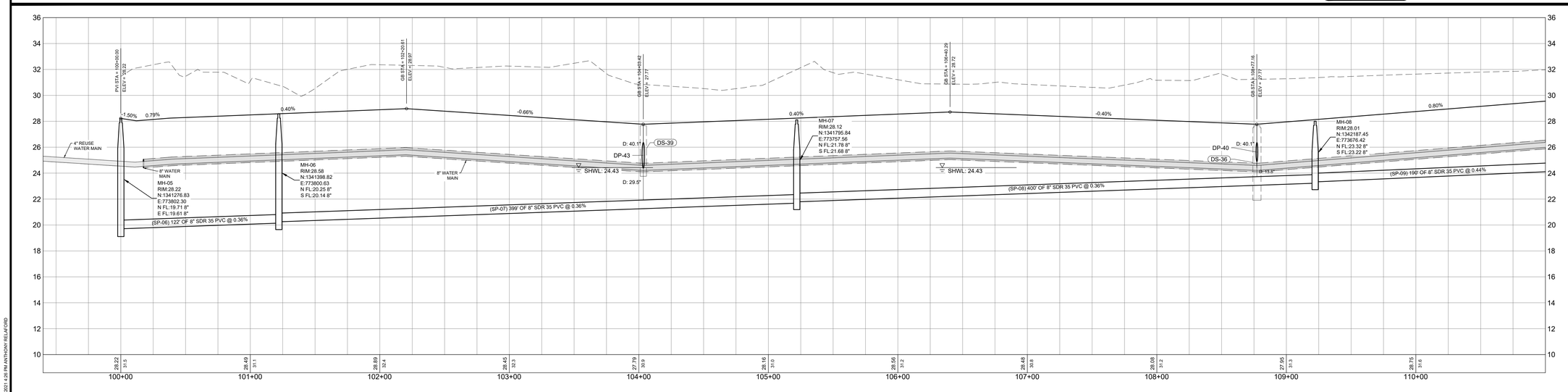
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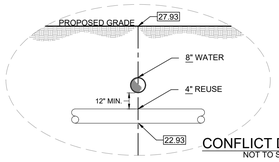
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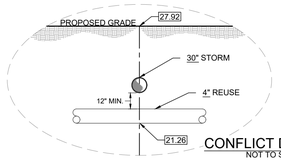
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CONFLICT DETAIL #1
NOT TO SCALE



CONFLICT DETAIL #2
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REVISIONS	

JOB NO.	19-1025
DESIGNED	DWB
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DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD, SUITE H MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
CA#7726 LB#3591 WWW.MBVENG.COM
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

ROAD 02 (100+00 TO 111+00)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD
LICENSE
No. 83267
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

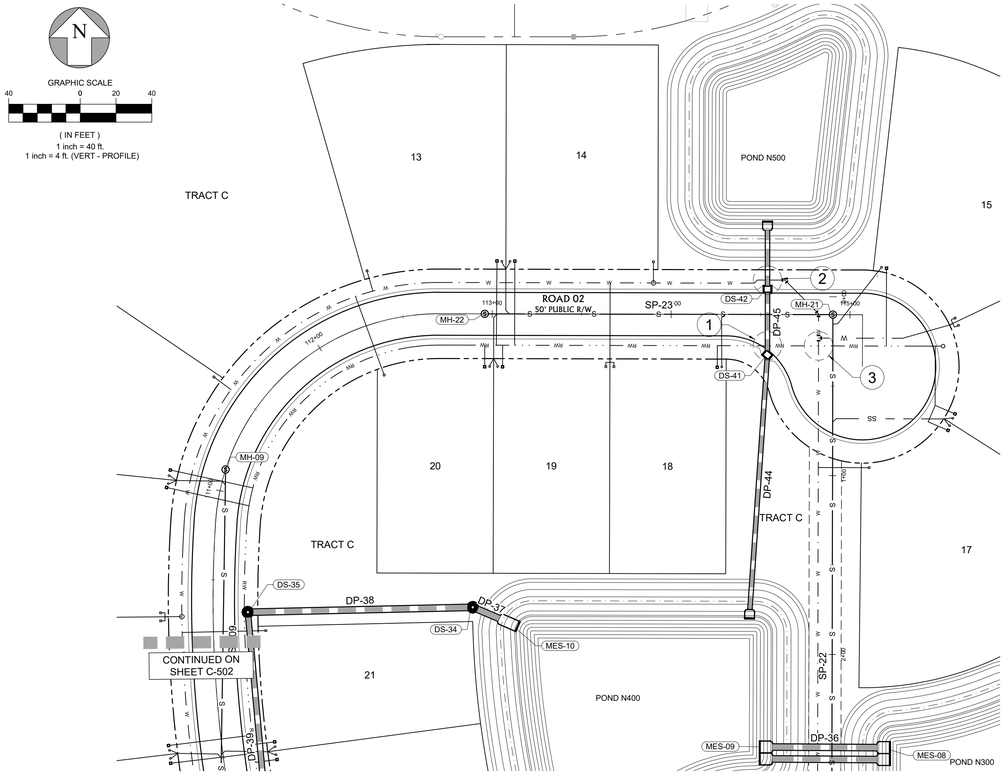
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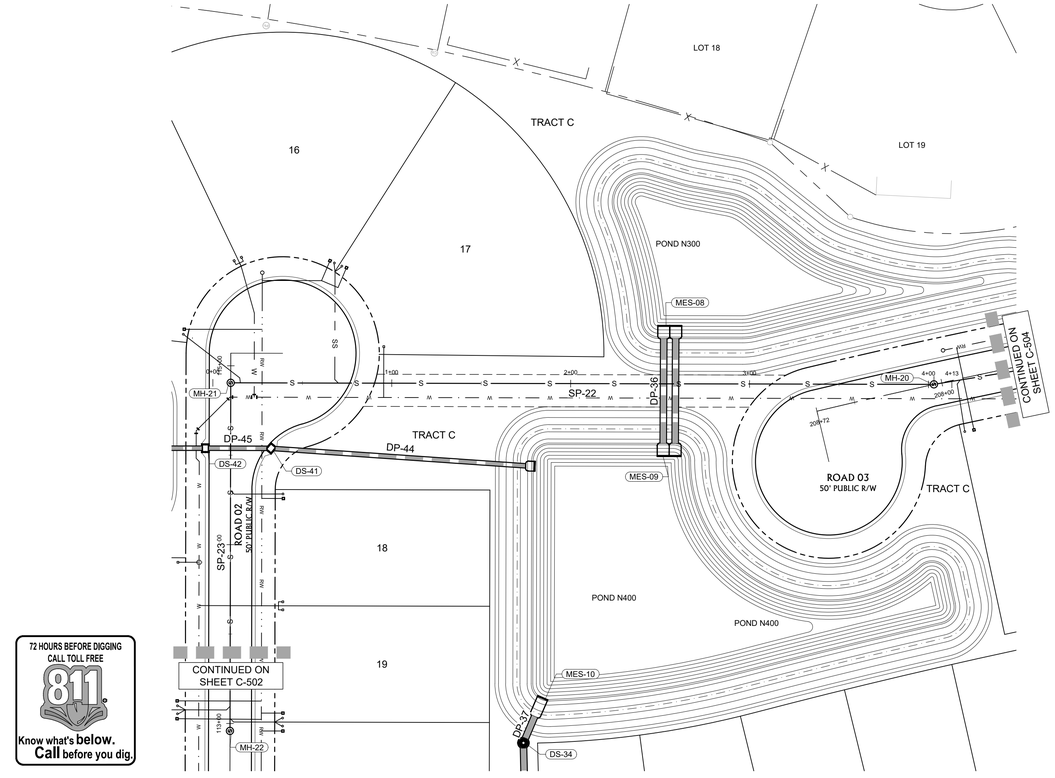
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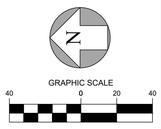
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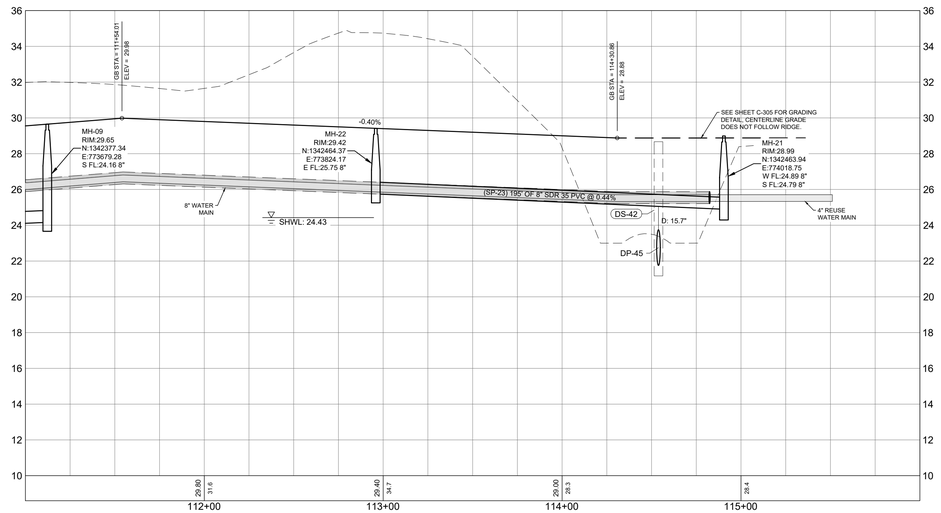
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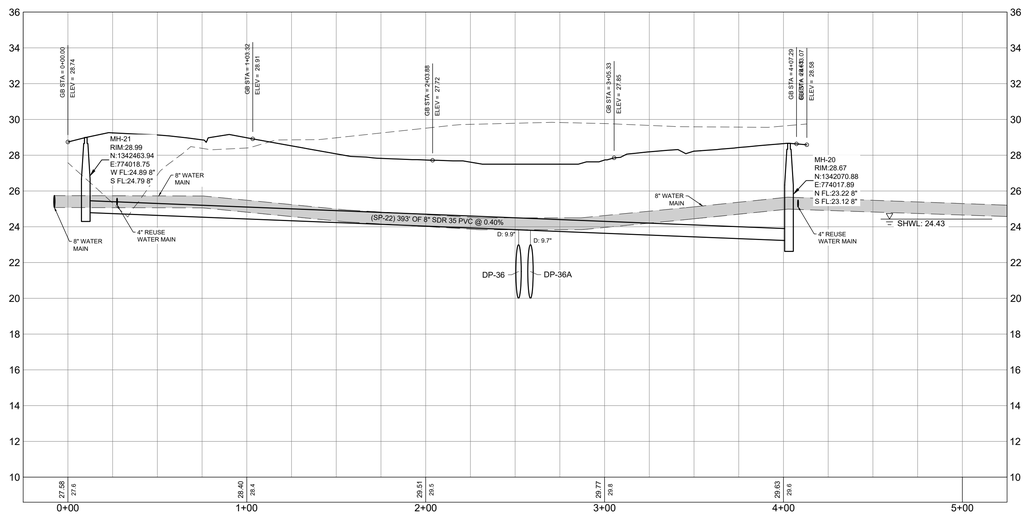


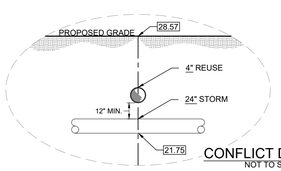




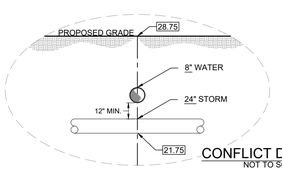
72 HOURS BEFORE DIGGING
CALL TOLL FREE
811
Know what's **below.**
Call before you dig.



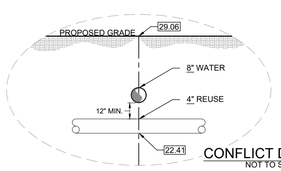




CONFLICT DETAIL #1
NOT TO SCALE



CONFLICT DETAIL #2
NOT TO SCALE



CONFLICT DETAIL #3
NOT TO SCALE

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JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
CAA0726
1250 W. EAU GALLIE BLVD, SUITE H
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
ALSO LICENSED IN: VERO, PALM BEACH, FT PIERCE: 772-468-9055, PALM CITY: 772-408-9999

ROAD 02 (111+00 TO END)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

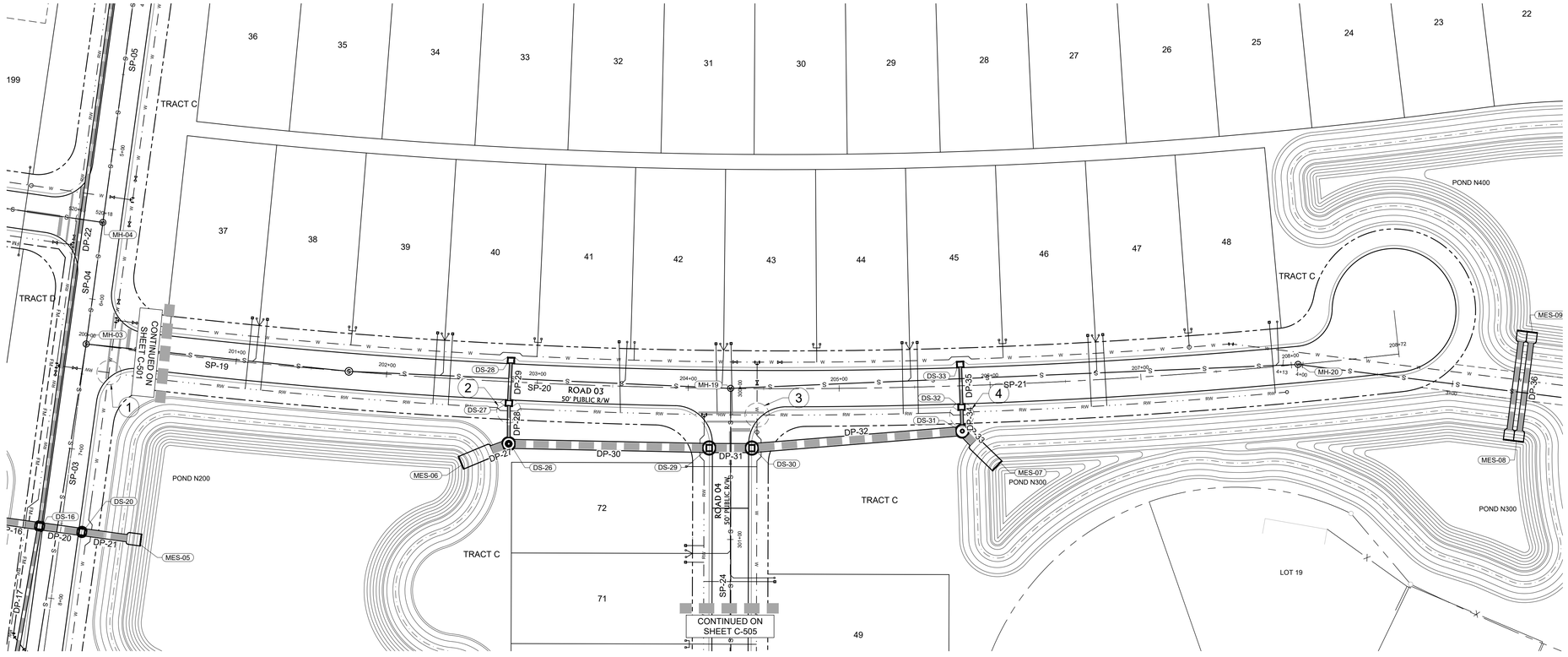
DAVID W. BASSFORD
LICENSE
No. 83267
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

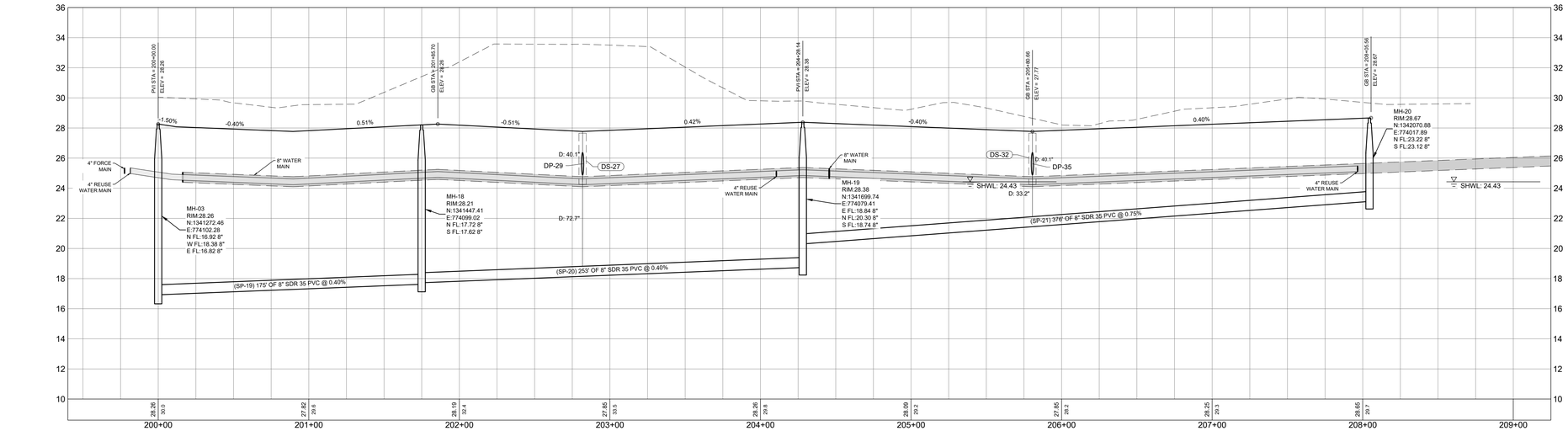
DAVID W. BASSFORD FL P.E. #83267 DATE: 8/19/2021

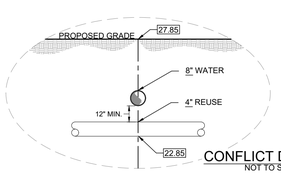
SHEET
C-503

19-1025
PERMITTING SET

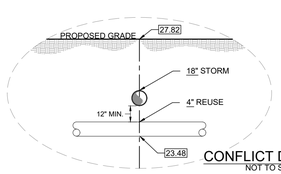
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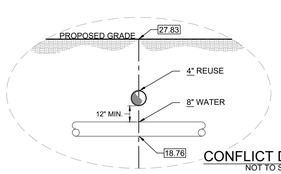




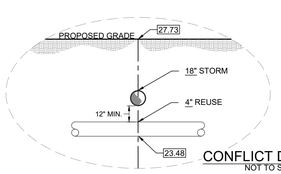
CONFLICT DETAIL #1
NOT TO SCALE



CONFLICT DETAIL #2
NOT TO SCALE



CONFLICT DETAIL #3
NOT TO SCALE



CONFLICT DETAIL #4
NOT TO SCALE

	DATE	REVISIONS	COMMENTS
1	xx-xx-xxxx		
2			
3			
4			
5			
6			
7			
8			

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD, SUITE H
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
CA#7726
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

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

GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.

ROAD 03 (200+00 TO END)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD * LICENSE No. 83267 * STATE OF FLORIDA * PROFESSIONAL ENGINEER *

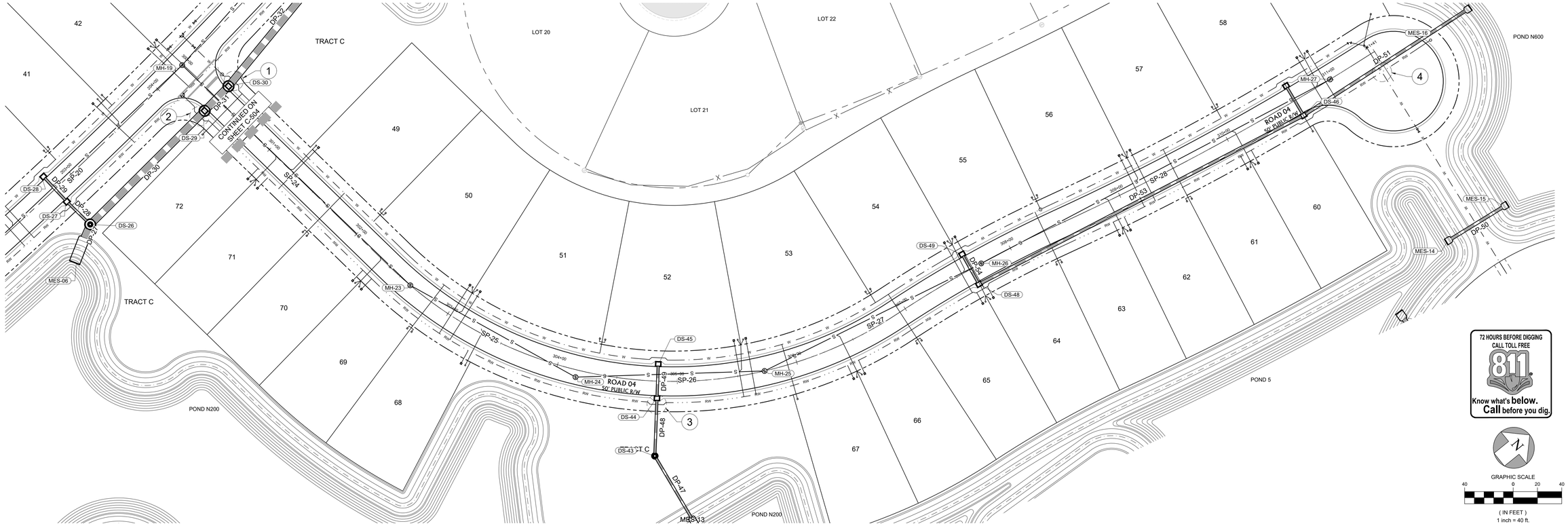
DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

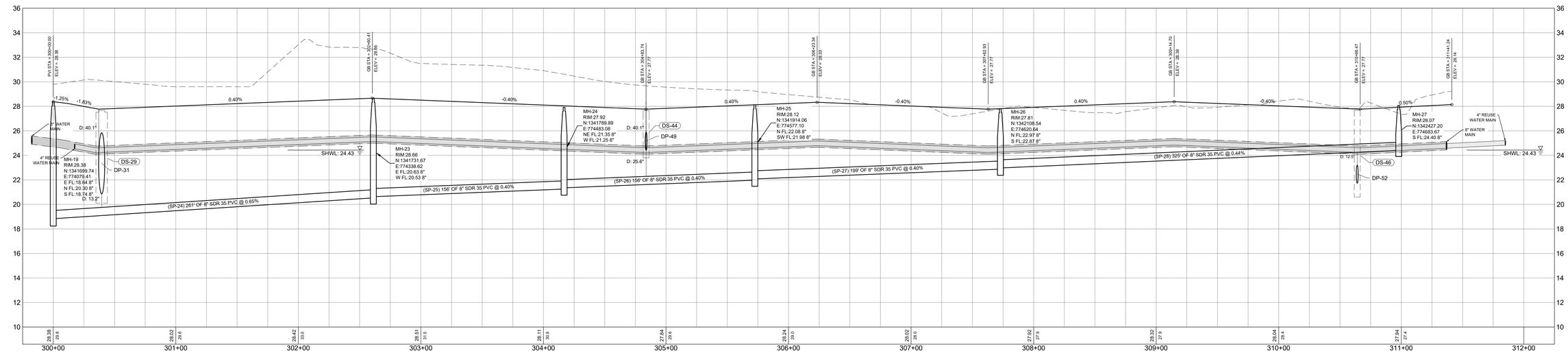
SHEET
C-504

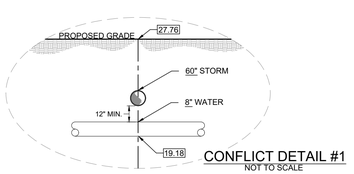
GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.
1 inch = 4 ft. (VERT)

19-1025
PERMITTING SET

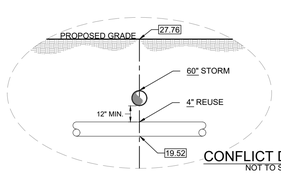
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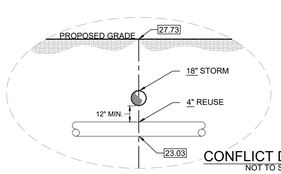




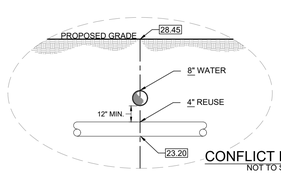
CONFLICT DETAIL #1
NOT TO SCALE



CONFLICT DETAIL #2
NOT TO SCALE



CONFLICT DETAIL #3
NOT TO SCALE



CONFLICT DETAIL #4
NOT TO SCALE

GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.
1 inch = 4 ft. (VERT)

8			
7			
6			
5			
4			
3			
2			
1	COMMENTS		xx-xx-xxxx
	REVISIONS		**DATE**

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
CA#7728
1250 W. EAU GALLIE BLVD, SUITE F, MELBOURNE, FLORIDA 32935
P: 321-253-1510 F:321-253-0911
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

ROAD 04 (300+00 TO END)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

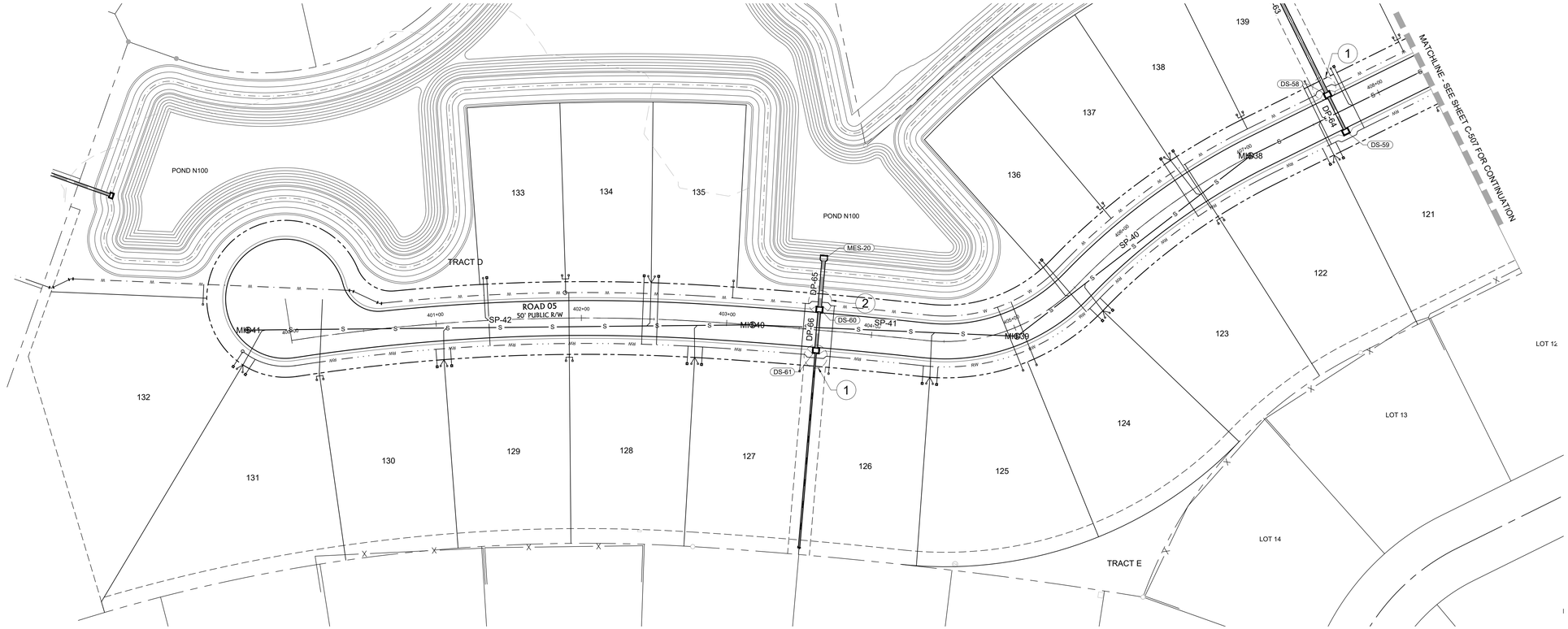
DAVID W. BASSFORD * LICENSE No. 83267 * STATE OF FLORIDA * PROFESSIONAL ENGINEER *

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

SHEET
C-505

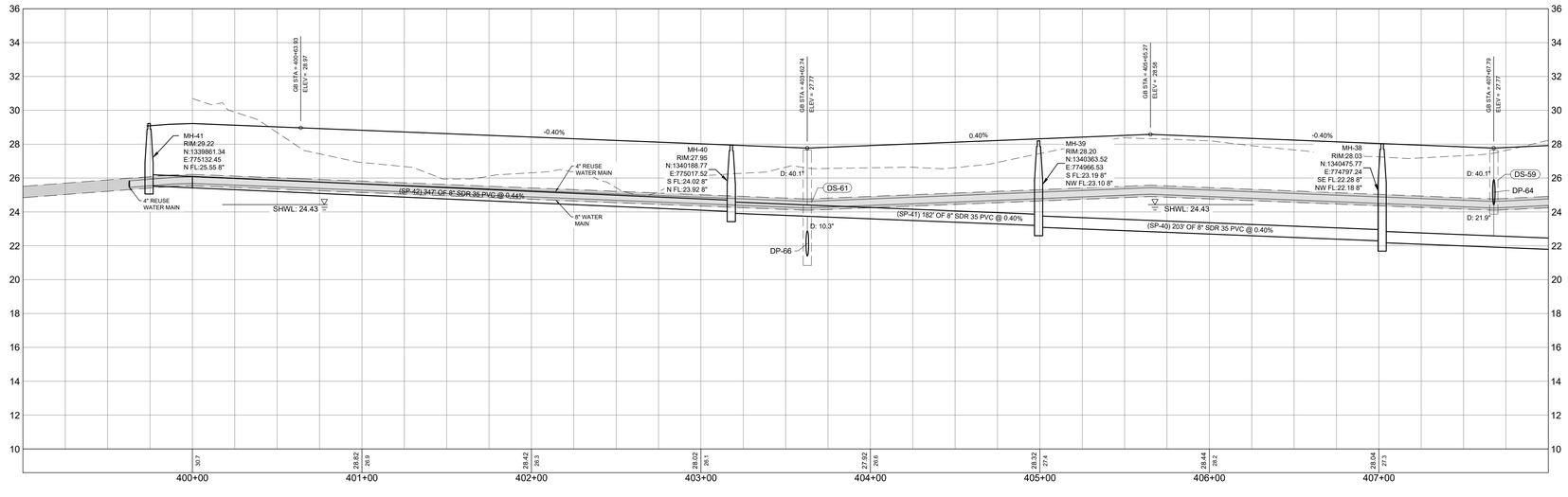
19-1025
PERMITTING SET

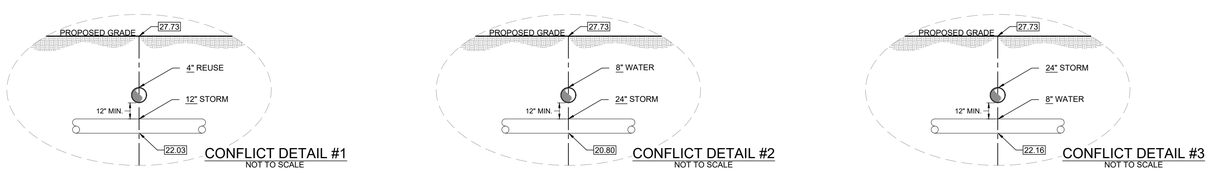
W:\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CADD\civil\19-1025 ROAD PROFILES.dwg 8/19/2021 4:37 PM ANTHONY REL.M^ORD



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

GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.





GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.
1 inch = 4 ft. (VERT)

8			
7			
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1	COMMENTS		xx-xx-xxxx
△	**REVISIONS**		**DATE**

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
2250 W. BAU GALLE BLVD, SUITE H MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
CA#7726 LB#3591 FIRM CERTIFICATE NO.
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

ROAD 05 (400+00 TO 408+00)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

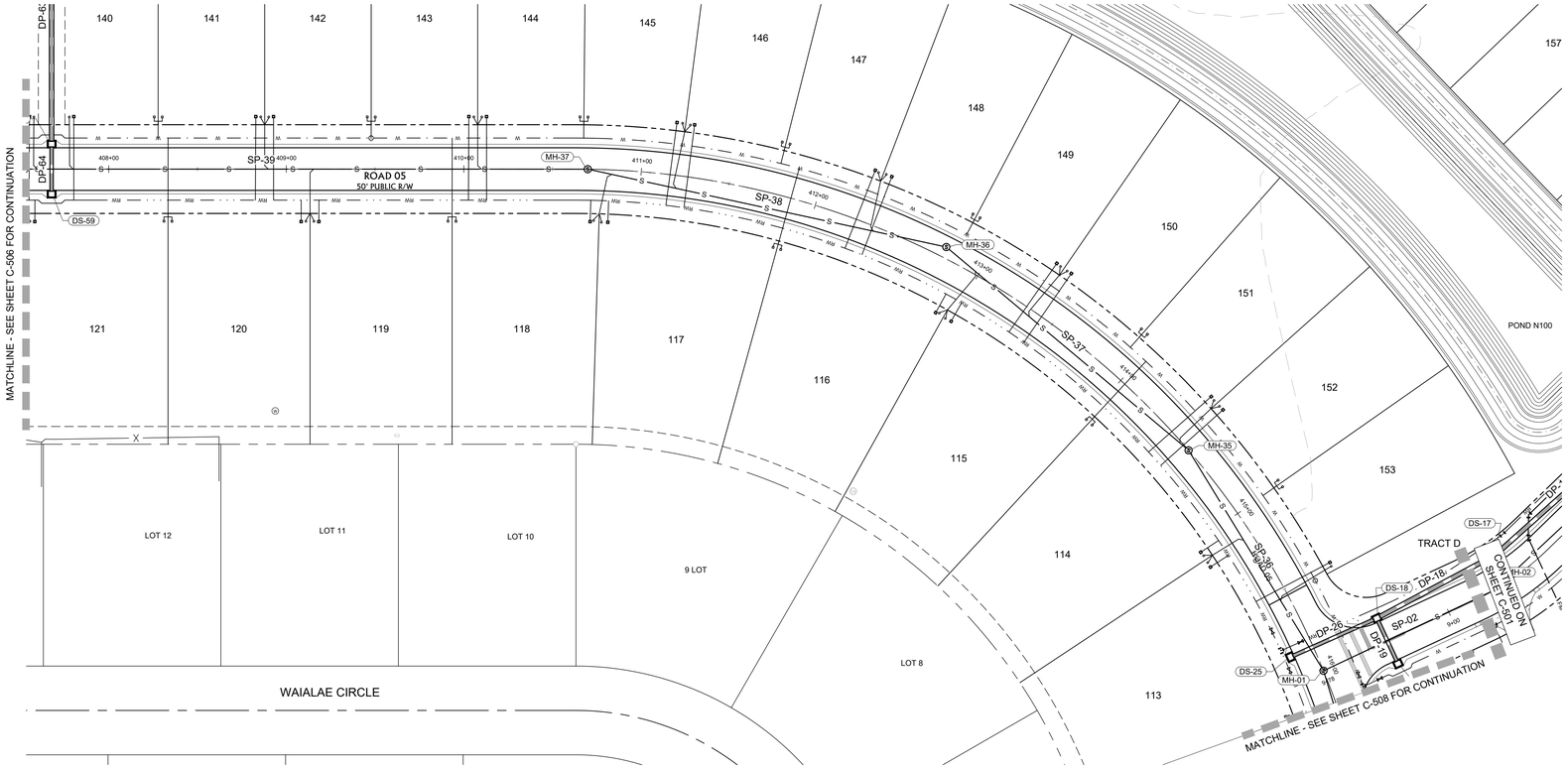
STATE OF FLORIDA
DAVID W. BASSFORD
LICENSE No. 83267
PROFESSIONAL ENGINEER

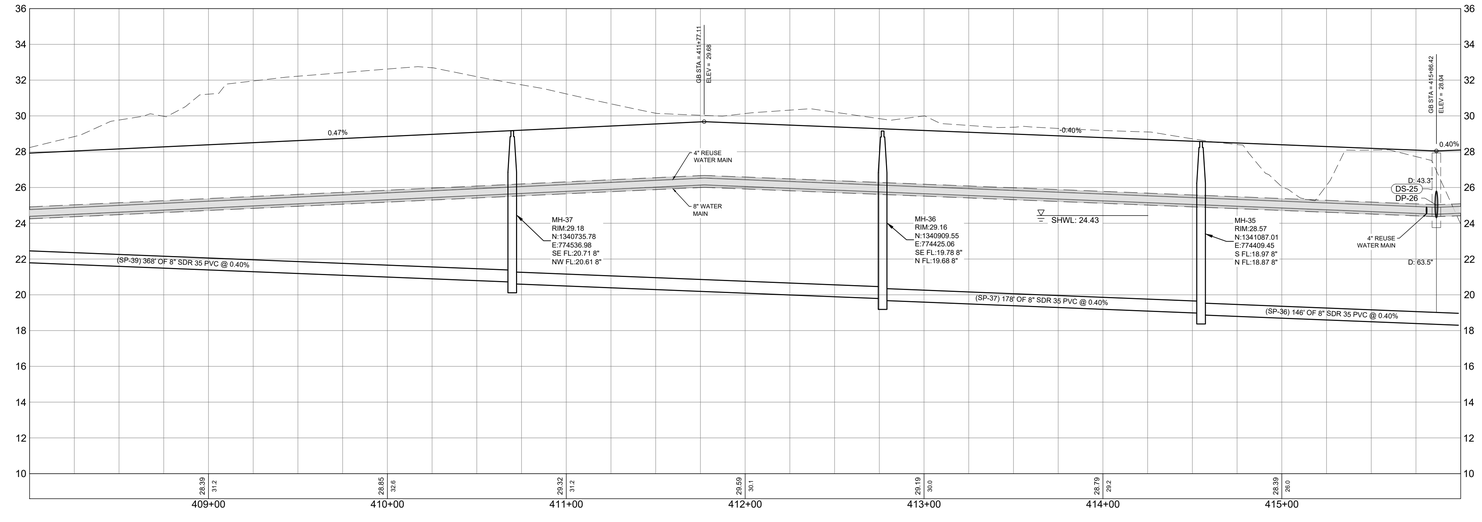
DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

SHEET
C-506

19-1025
PERMITTING SET

M:\19\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\Sheets\19-1025 ROAD PROFILES.dwg, 8/19/2021 1:47 PM, ANTHONY REUP2080





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

GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.

8		
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1	COMMENTS	xx-xx-xxxx
	REVISIONS	**DATE**

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
2250 W. BAU GALLE BLVD, SUITE H
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F:321-253-0911
CA#3726 LA#0001102 LB#3726
VERO: 772-569-0036 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

ROAD 05 (408+00 TO 416+00)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES
CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

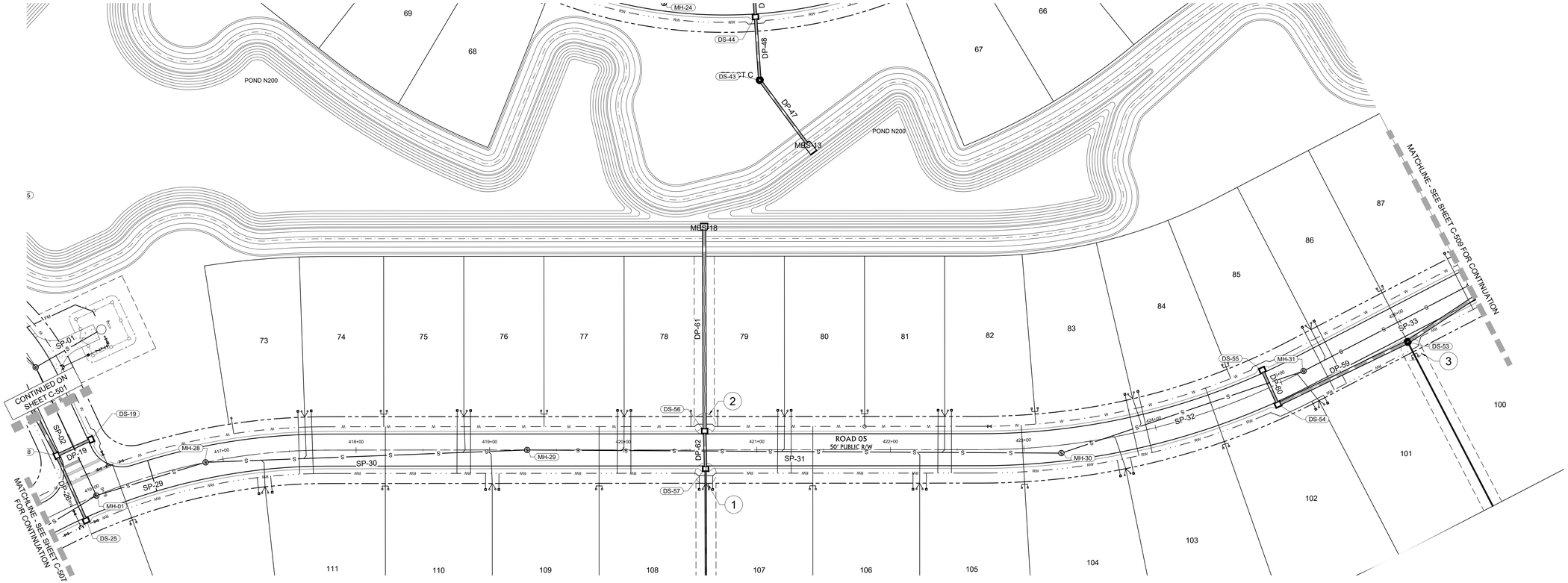
DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

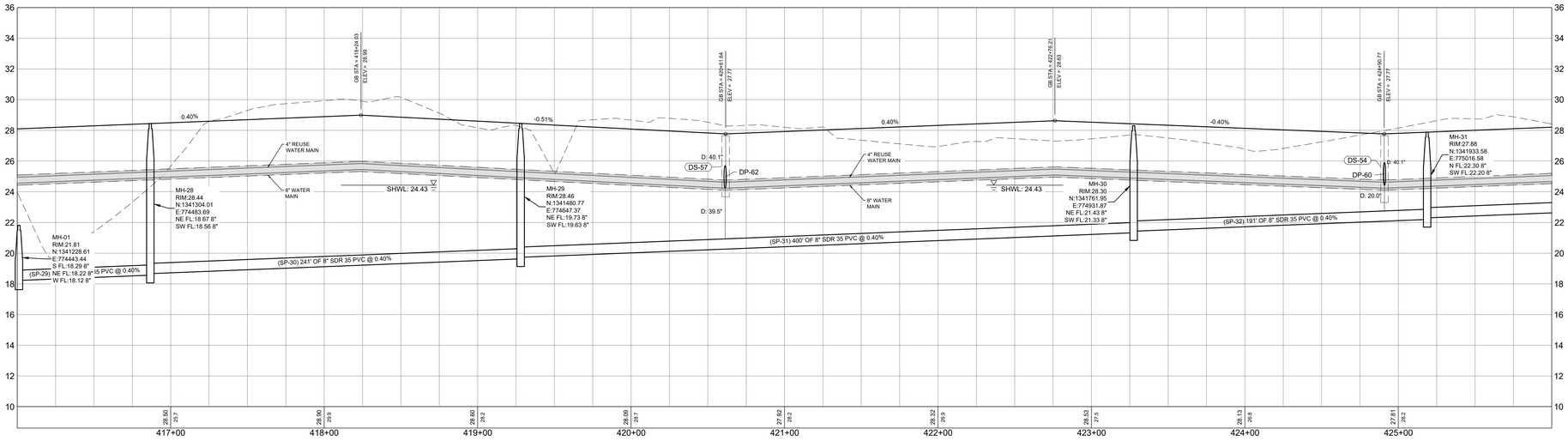
GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.
1 inch = 4 ft. (VERT)

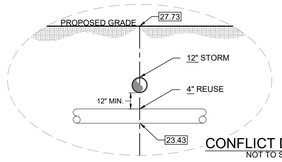
SHEET
C-507

19-1025
PERMITTING SET

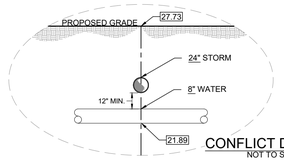
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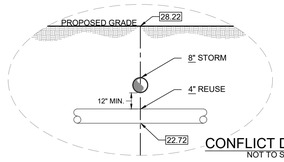




CONFLICT DETAIL #1
NOT TO SCALE



CONFLICT DETAIL #2
NOT TO SCALE



CONFLICT DETAIL #3
NOT TO SCALE

8			
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2			
1	COMMENTS		xx-xx-xxxx
	REVISIONS		DATE

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD, SUITE H MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911 CA#7726
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

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

GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.

ROAD 05 (416+00 TO 426+00)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

FLORIDA

CITY OF PALM BAY

DAVID W. BASSFORD
LICENSE
No. 83267
STATE OF FLORIDA
PROFESSIONAL ENGINEER

DAVID W. BASSFORD
FL. P.E. #83267

DATE:
8/19/2021

SHEET

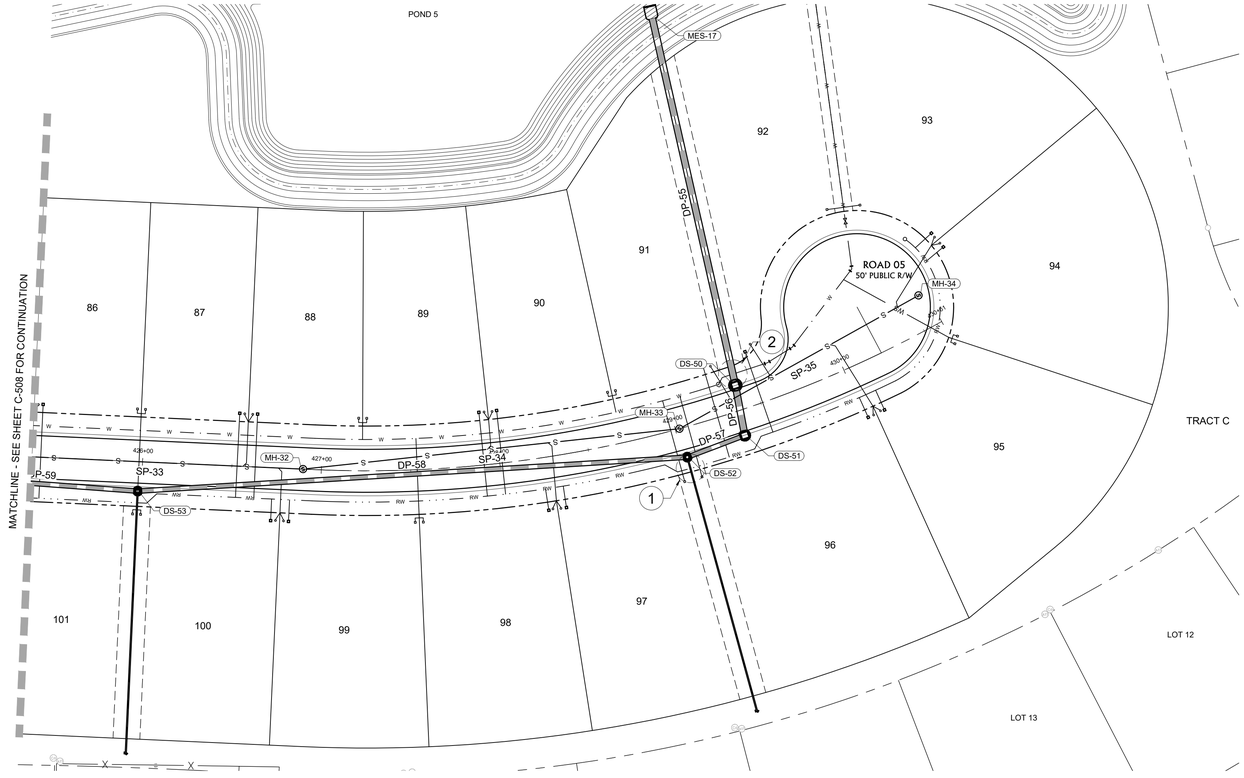
C-508

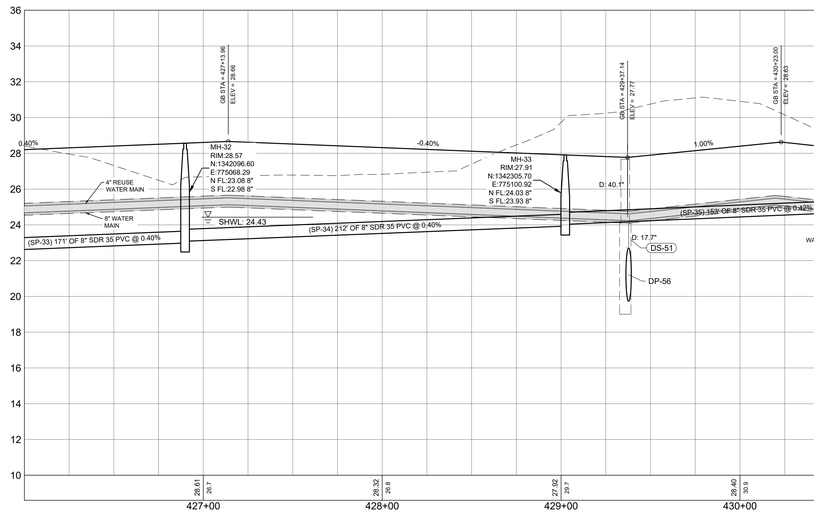
GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.
1 inch = 4 ft. (VERT)

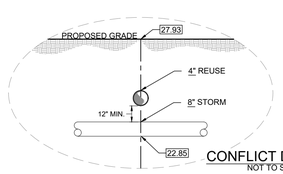
19-1025

PERMITTING SET

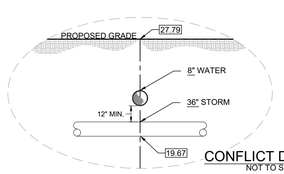
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CONFLICT DETAIL #1
NOT TO SCALE



CONFLICT DETAIL #2
NOT TO SCALE

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

GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.

8		
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2		
1	COMMENTS	xx-xx-xxxx
△	**REVISIONS**	**DATE**

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD, SUITE H MELBOURNE, FLORIDA 32935
P: 321-253-1510 F:321-253-0911
CA#7726 LA#6667 LB#3653
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

ROAD 05 (426+00 TO END)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD
LICENSE
No. 83267
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

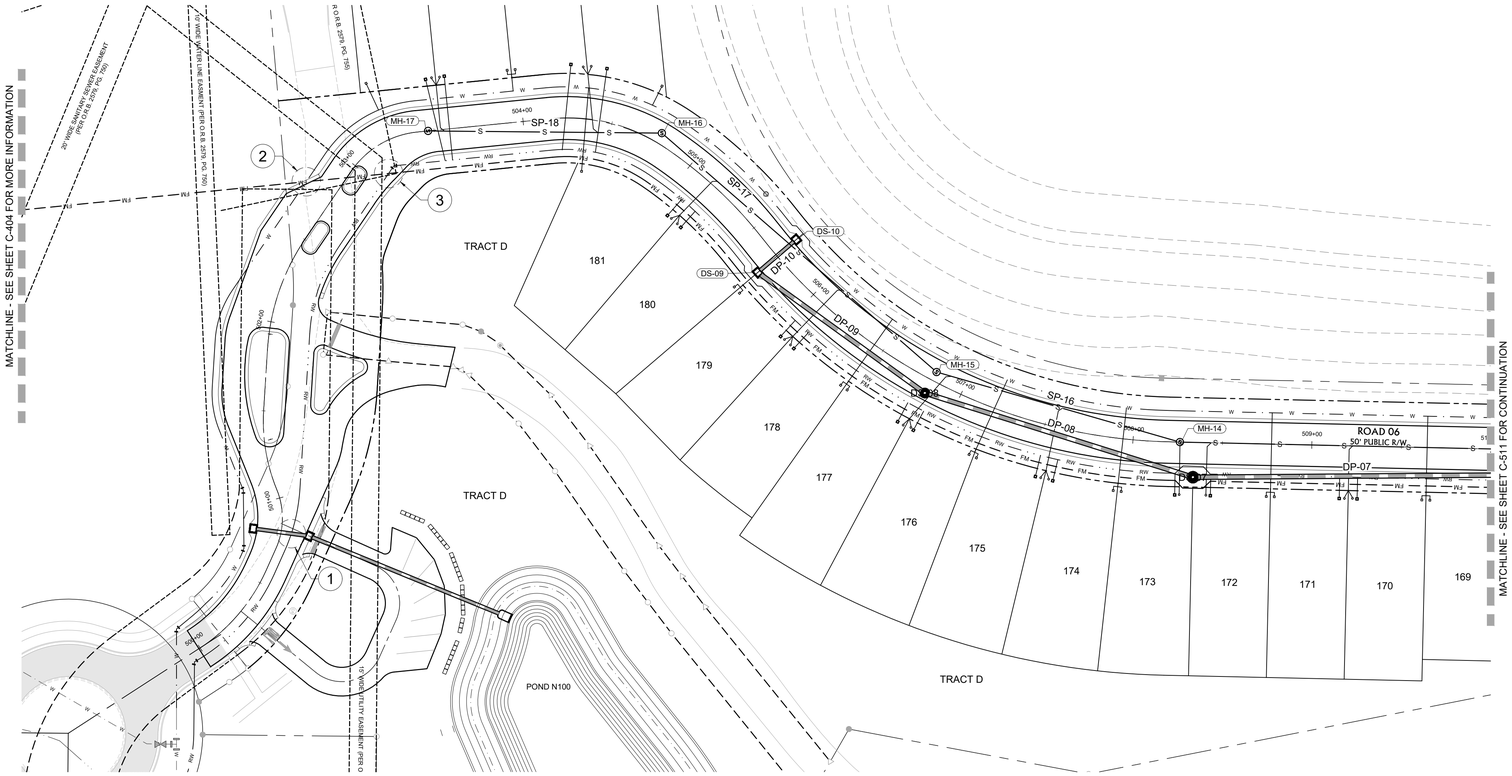
DAVID W. BASSFORD FL. P.E. #83267
DATE: 8/19/2021

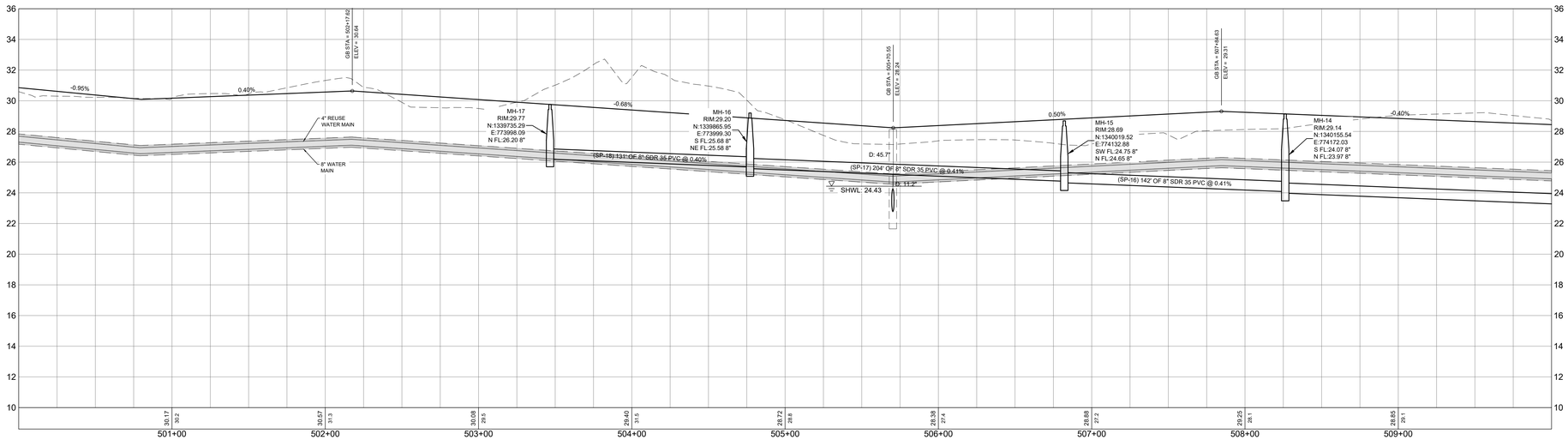
SHEET
C-509

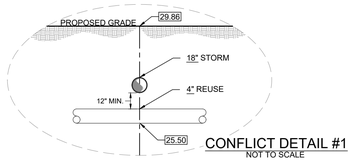
GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.
1 inch = 4 ft. (VERT)

19-1025
PERMITTING SET

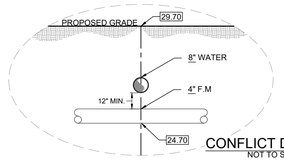
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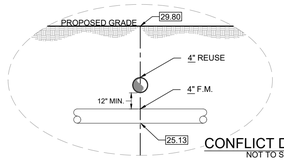




CONFLICT DETAIL #1
NOT TO SCALE



CONFLICT DETAIL #2
NOT TO SCALE



CONFLICT DETAIL #3
NOT TO SCALE

	DATE
8	
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2	
1 COMMENTS	xx-xx-xxxx
REVISIONS	DATE

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD, SUITE H MELBOURNE, FLORIDA 32935
P: 321-253-1510 F:321-253-0911
CA#7726
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

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

GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.

ROAD 06 (500+00 TO 510+00)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES
CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD
LICENSE
No. 83267
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

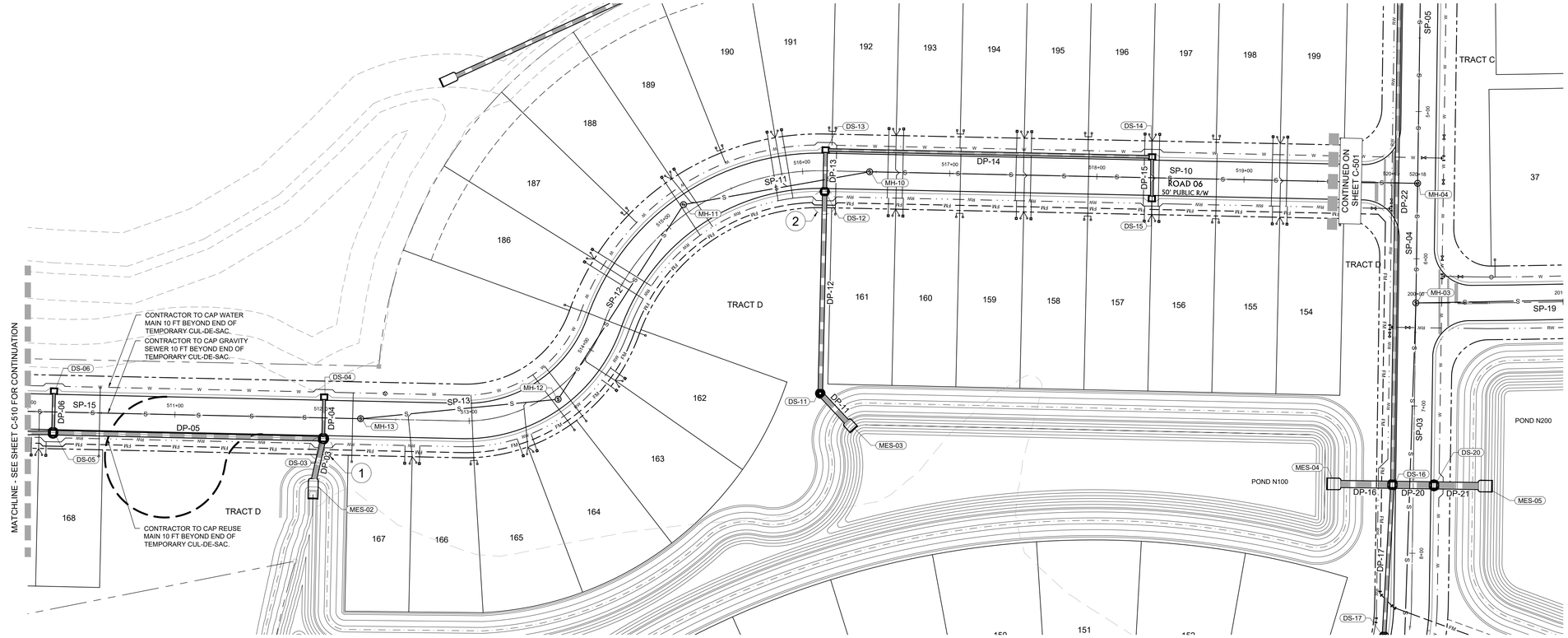
DAVID W. BASSFORD FL. P.E. #83267
DATE: 8/19/2021

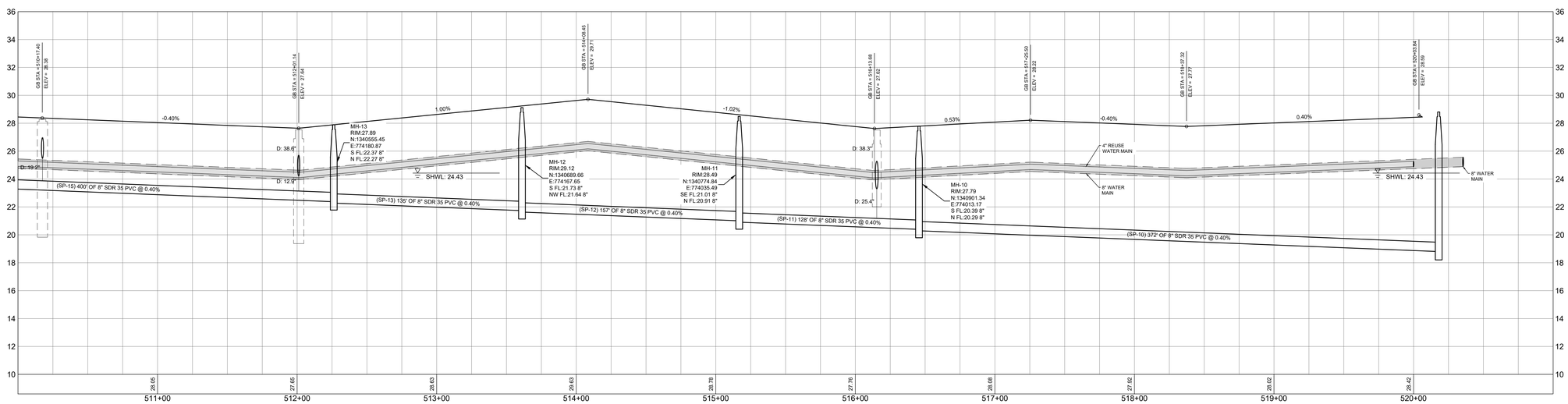
SHEET
C-510

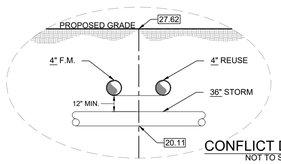
GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.
1 inch = 4 ft. (VERT)

19-1025
PERMITTING SET

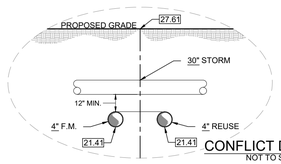
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CONFLICT DETAIL #1
NOT TO SCALE



CONFLICT DETAIL #2
NOT TO SCALE

GRAPHIC SCALE
40 0 20 40
(IN FEET)
1 inch = 40 ft.
1 inch = 4 ft. (VERT)

8			
7			
6			
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4			
3			
2			
1	COMMENTS		xx-xx-xxxx
△	**REVISIONS**		**DATE**

JOB NO.	19-1025		
DESIGNED	DWB		
DRAWN	AFR		
DATE	03-23-2021		
CHECKED	DWB		
DATE ISSUED	8/19/2021		

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
CAM7726
2350 W. BAU GALLE BLVD, SUITE H
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
WWW.MBVENGINEERING.COM
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

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

ROAD 06 (510+00 TO END)

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID N. BASSFORD
LICENSE
No. 83267
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

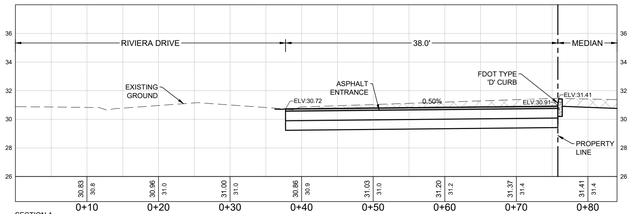
DAVID W. BASSFORD
FL. P.E. #83267

DATE: 8/19/2021

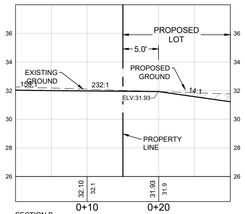
SHEET
C-511

19-1025
PERMITTING SET

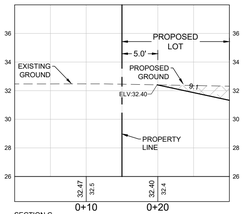
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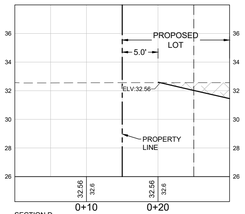
SECTION A
H: 1"=10'
V: 1"=5'



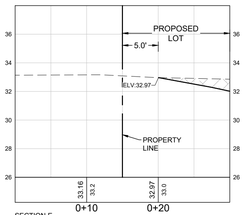
SECTION B
H: 1"=10'
V: 1"=5'



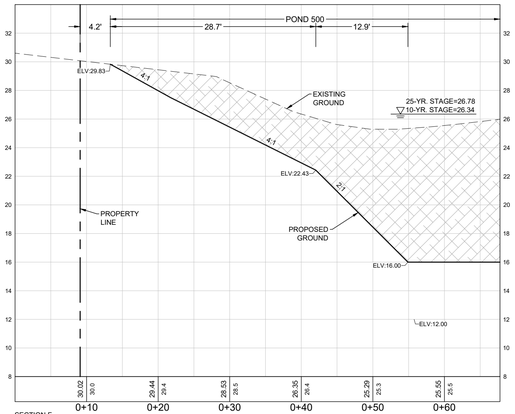
SECTION C
H: 1"=10'
V: 1"=5'



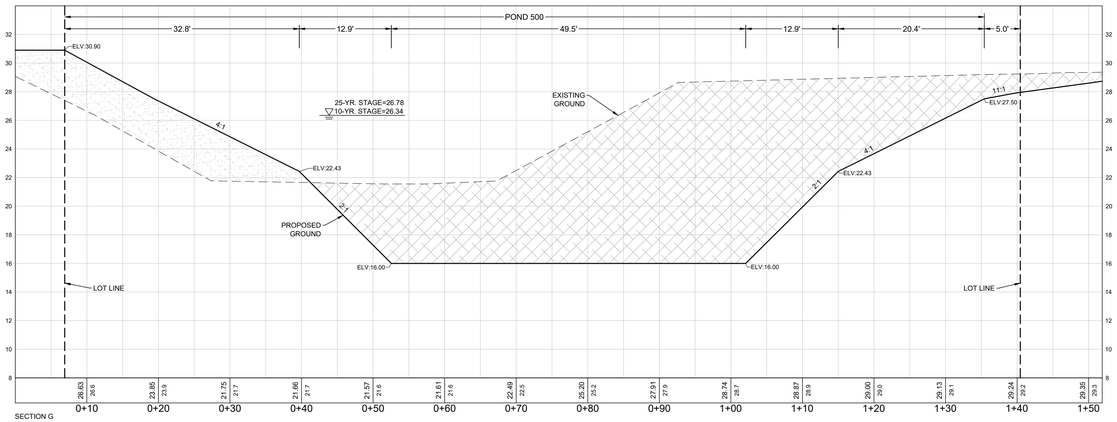
SECTION D
H: 1"=10'
V: 1"=5'



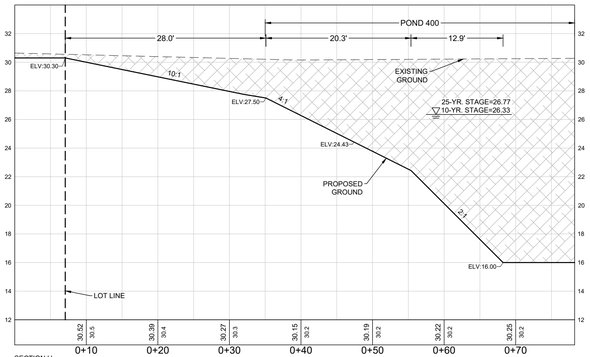
SECTION E
H: 1"=10'
V: 1"=5'



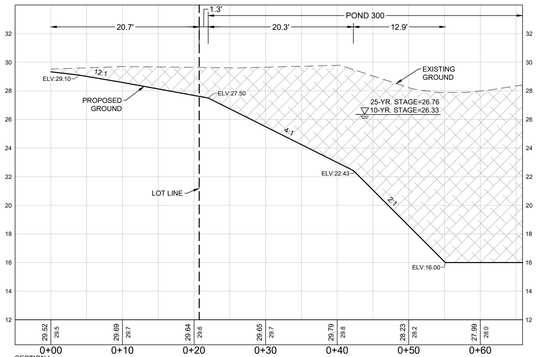
SECTION F
H: 1"=10'
V: 1"=5'



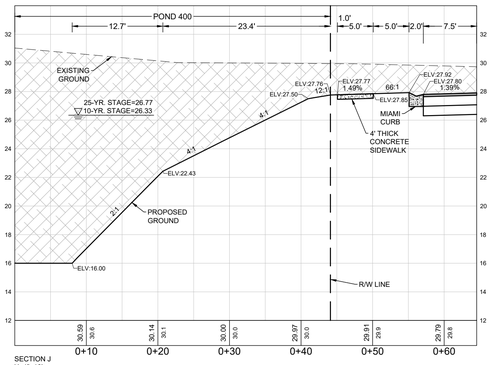
SECTION G
H: 1"=10'
V: 1"=5'



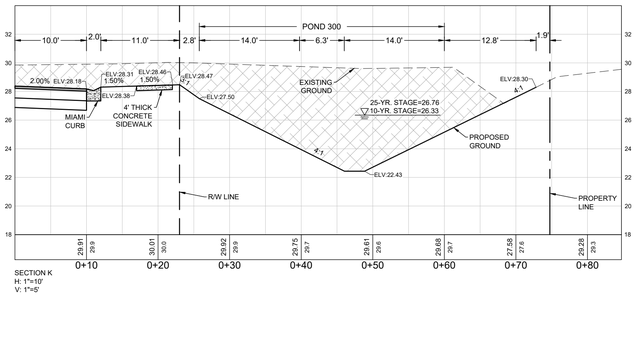
SECTION H
H: 1"=10'
V: 1"=5'



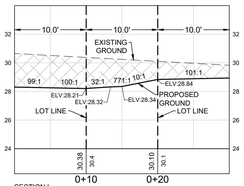
SECTION I
H: 1"=10'
V: 1"=5'



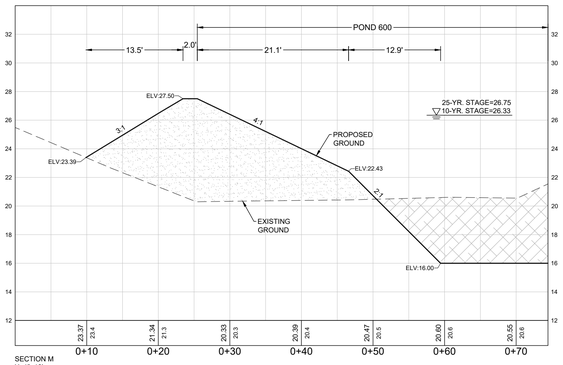
SECTION J
H: 1"=10'
V: 1"=5'



SECTION K
H: 1"=10'
V: 1"=5'



SECTION L
H: 1"=10'
V: 1"=5'



SECTION M
H: 1"=10'
V: 1"=5'

	DATE	COMMENTS
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REVISIONS

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
CA#7726
1250 W. EAU GALLIE BLVD, SUITE H
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
WWW.MBVENGINEERING.COM
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

SECTIONS 01

THE RESERVE AT COUNTRY CLUB
LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD
LICENSE
No. 83267
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

DAVID W. BASSFORD
FL. P.E. #83267

DATE:
8/19/2021

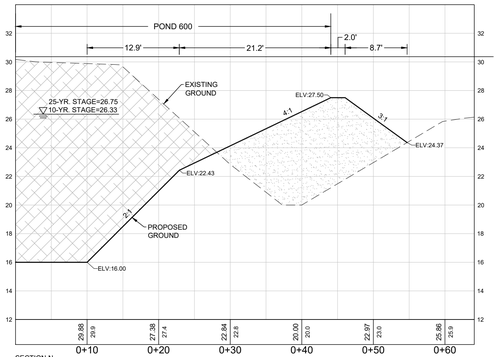
SHEET

C-601

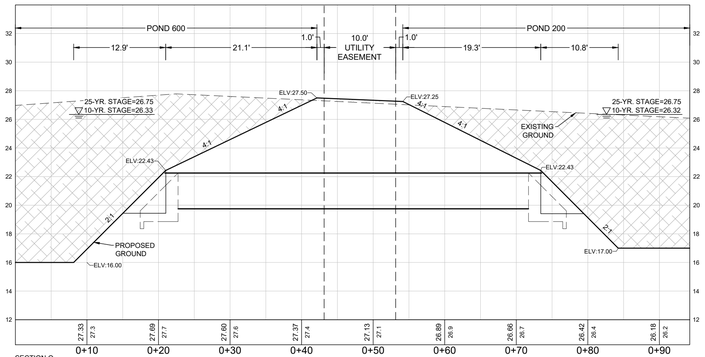
19-1025

PERMITTING SET

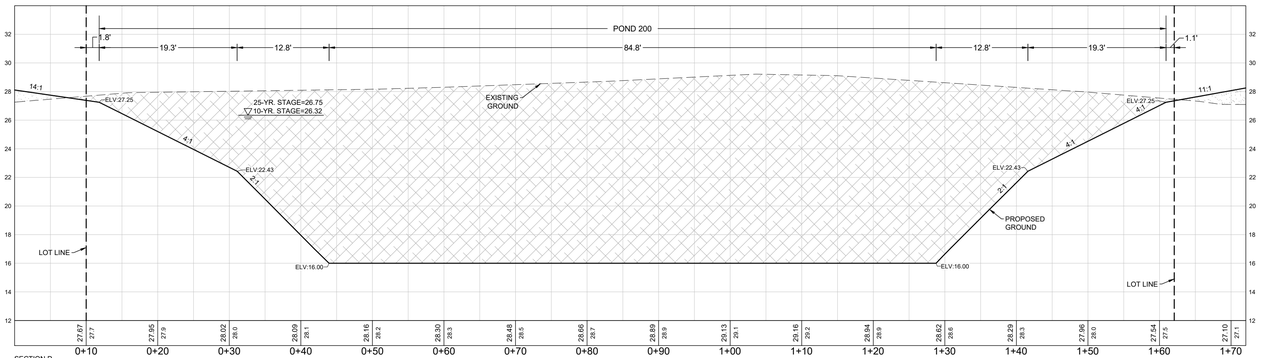
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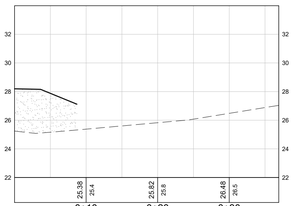
SECTION N
H: 1"=10'
V: 1"=5'



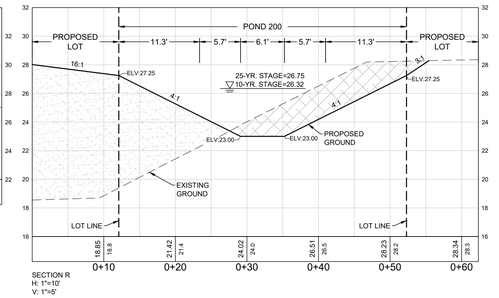
SECTION O
H: 1"=10'
V: 1"=5'



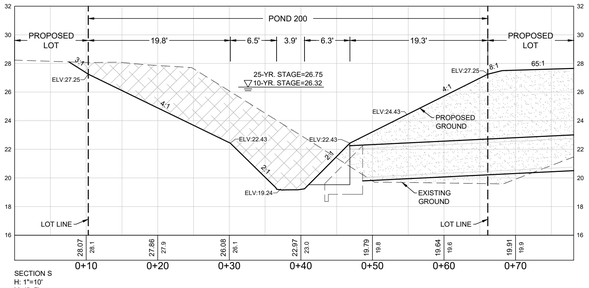
SECTION P
H: 1"=10'
V: 1"=5'



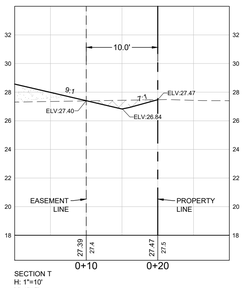
SECTION Q
H: 1"=10'
V: 1"=5'



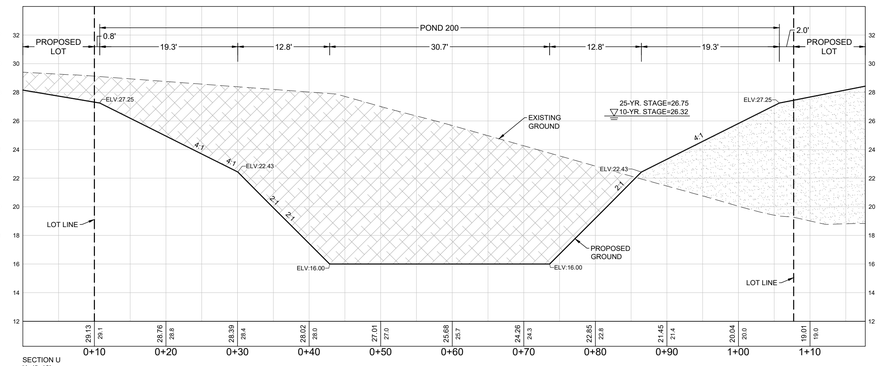
SECTION R
H: 1"=10'
V: 1"=5'



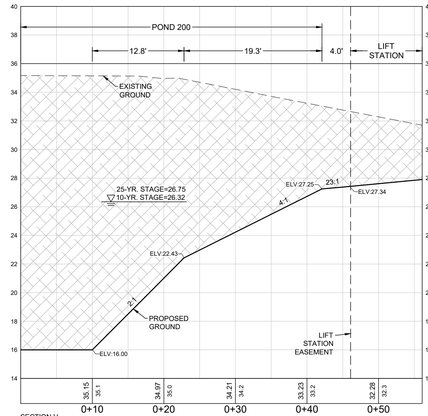
SECTION S
H: 1"=10'
V: 1"=5'



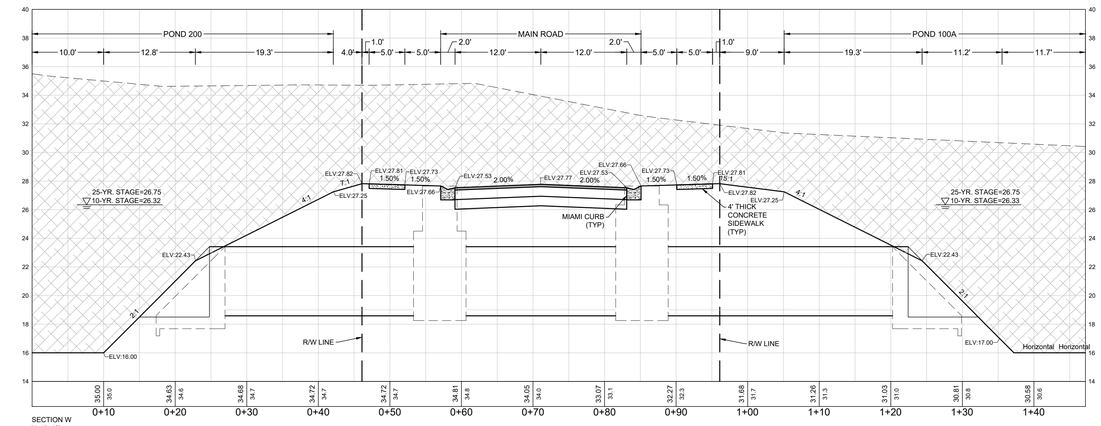
SECTION T
H: 1"=10'
V: 1"=5'



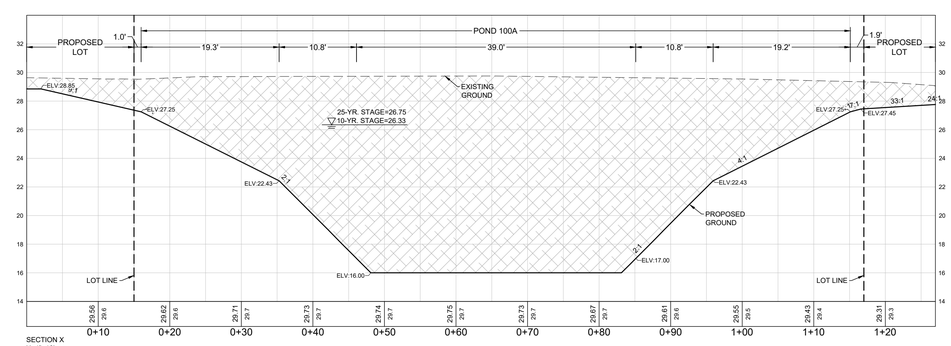
SECTION U
H: 1"=10'
V: 1"=5'



SECTION V
H: 1"=10'
V: 1"=5'



SECTION W
H: 1"=10'
V: 1"=5'



SECTION X
H: 1"=10'
V: 1"=5'

		DATE
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1	COMMENTS	xx-xx-xxxx
	REVISIONS	**DATE**

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
CAM0728
1250 W. EAU GALLIE BLVD, SUITE H
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
WWW.MBVENGINEERING.COM
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

SECTIONS 02

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD
LICENSE
No. 63267
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL P.E. #63267 DATE: 8/19/2021

SHEET

C-602

19-1025

PERMITTING SET

W:\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\civil\sht 1502 SECTIONS.dwg 8/19/2021 4:29 PM ANTHONY RELAFORD

SECTION Y
H: 1"=10'
V: 1"=5'

SECTION Z
H: 1"=10'
V: 1"=5'

SECTION AA
H: 1"=10'
V: 1"=5'

SECTION BB
H: 1"=10'
V: 1"=5'

SECTION CC
H: 1"=10'
V: 1"=5'

SECTION DD
H: 1"=10'
V: 1"=5'

SECTION EE
H: 1"=10'
V: 1"=5'

SECTION FF
H: 1"=10'
V: 1"=5'

SECTION GG
H: 1"=10'
V: 1"=5'

SECTION HH
H: 1"=10'
V: 1"=5'

SECTION II
H: 1"=10'
V: 1"=5'

SECTION JJ
H: 1"=10'
V: 1"=5'

SECTION KK
H: 1"=10'
V: 1"=5'

8			
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1	COMMENTS		xx-xx-xxxx
△	**REVISIONS**		**DATE**

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD, SUITE H
MELBOURNE, FLORIDA 32935
P: 321-253-1510, F:321-253-0911
CA#3726 LB#3726
VERO: 772-569-0035, FT PIERCE: 772-468-9055, PALM CITY: 772-408-9999

SECTIONS 03

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

FLORIDA

CITY OF PALM BAY

DAVID W. BASSFORD
LICENSE
No. 83267
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

DAVID W. BASSFORD
FL P.E. #83267

DATE:
8/19/2021

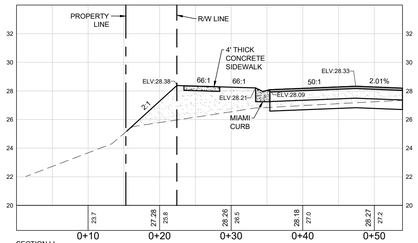
SHEET

C-603

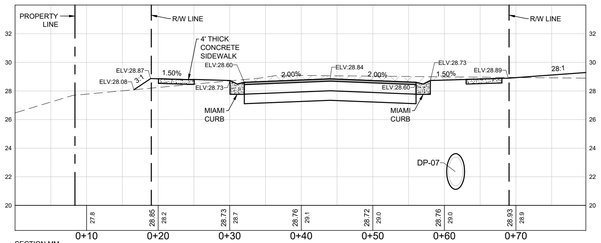
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PERMITTING SET

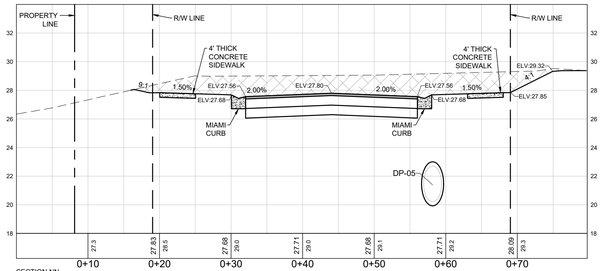
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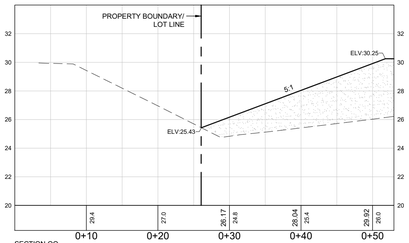
SECTION LL
H: 1"=10'
V: 1"=5'



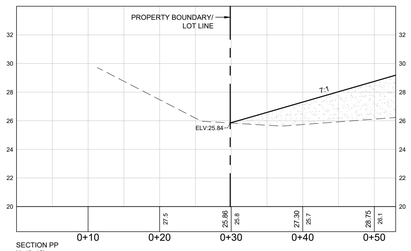
SECTION MM
H: 1"=10'
V: 1"=5'



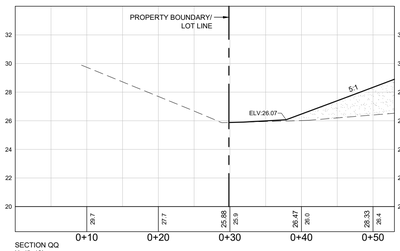
SECTION NN
H: 1"=10'
V: 1"=5'



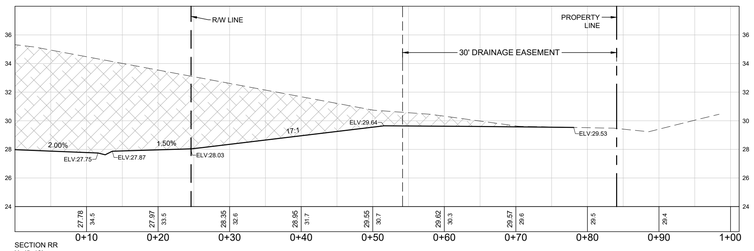
SECTION OO
H: 1"=10'
V: 1"=5'



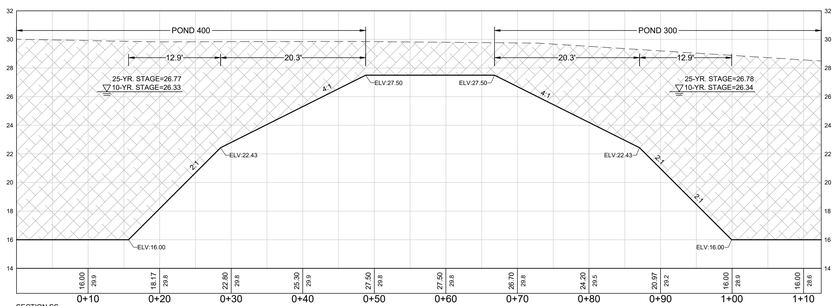
SECTION PP
H: 1"=10'
V: 1"=5'



SECTION QQ
H: 1"=10'
V: 1"=5'



SECTION RR
H: 1"=10'
V: 1"=5'



SECTION SS
H: 1"=10'
V: 1"=5'

W:\19\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\Sht\19-1025 SECTIONS.dwg 8/19/2021 4:49 PM ANTHONY FIELAFORD

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1	COMMENTS	xx-xx-xxxx
	REVISIONS	DATE

JOB NO.	19-1025
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DRAWN	AFR
DATE	03-23-2021
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DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD, SUITE H
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F:321-253-0911
CA#7726
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

SECTIONS 04

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

FLORIDA

CITY OF PALM BAY

DAVID W. BASSFORD
LICENSE
No. 83267
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

DAVID W. BASSFORD
FL. P.E. #83267

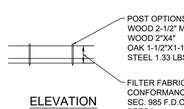
DATE
8/19/2021

SHEET

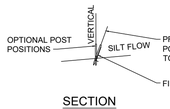
C-604

19-1025

PERMITTING SET



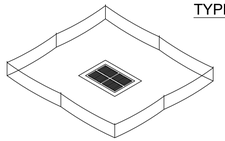
ELEVATION



SECTION

NOTES: SILT FENCE TO BE PAID FOR UNDER THE CONTRACT UNIT PRICE FOR STAKED SILT FENCE (L.F.)

TYPE III SILT FENCE



NOTE: SPACING FOR TYPE III FENCE TO BE IN ACCORDANCE WITH CHART I, SHEET 1 OF 3 AND DITCH INSTALLATIONS AT DRAINAGE STRUCTURES SHEET 2 OF 3

TYPE III SILT FENCE PROTECTION AROUND DITCH BOTTOM INLETS

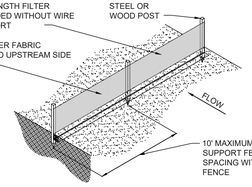


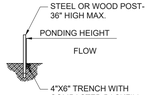
DO NOT DEPLOY IN A MANNER THAT SILT FENCES WILL ACT AS A DAM ACROSS PERMANENT FLOWING WATERCOURSES. SILT FENCES ARE TO BE USED AT UPLAND LOCATIONS AND TURBIDITY BARRIERS USED AT PERMANENT BODIES OF WATER.

SILT FENCE APPLICATIONS

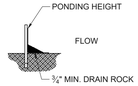
N.T.S.

NOTES:
1. SILT FENCE SHALL BE PLACED ON SLOPE CONTOURS TO MAXIMIZE PONDING EFFICIENCY.
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" MAXIMUM RECOMMENDED STORAGE HEIGHT.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.





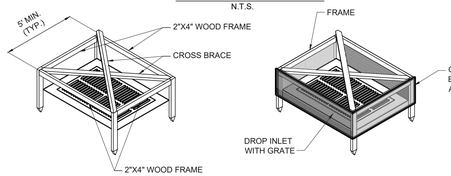
TRENCH DETAIL



INSTALLATION WITHOUT TRENCHING

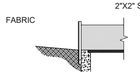
TYPE IV SILT FENCE

N.T.S.



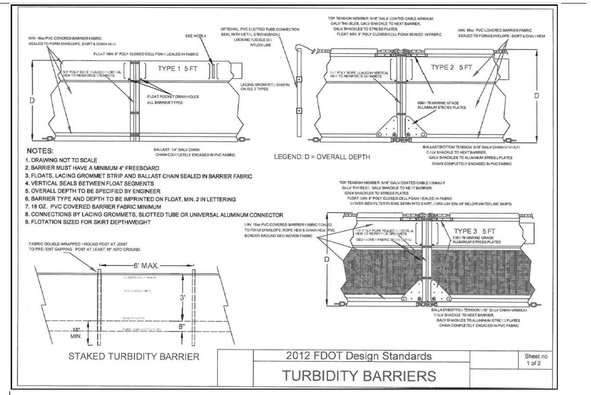
VIEW OF FRAME WITHOUT SILT FENCE

VIEW OF FRAME WITH SILT FENCE



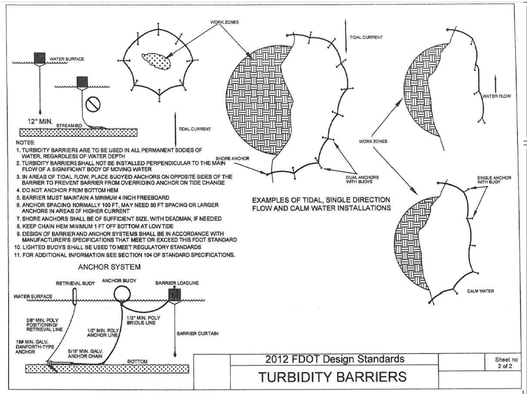
SILT FENCE INLET PROTECTION

N.T.S.



STAKED TURBIDITY BARRIER

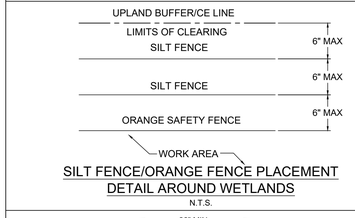
2012 FDOT Design Standards	Sheet no 1 of 2
TURBIDITY BARRIERS	



2012 FDOT Design Standards	Sheet no 2 of 2
TURBIDITY BARRIERS	

TURBIDITY BARRIER APPLICATIONS

N.T.S.

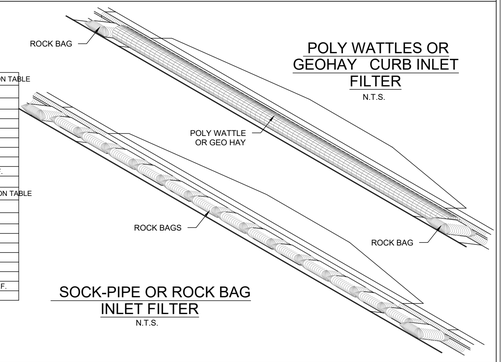


SILT FENCE/ORANGE FENCE PLACEMENT DETAIL AROUND WETLANDS

N.T.S.

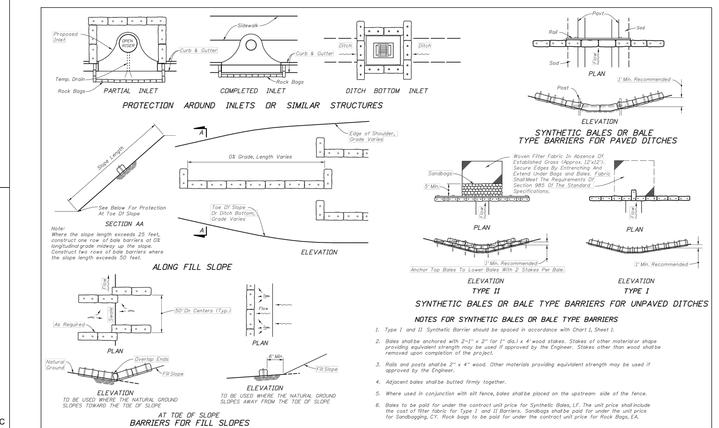
LOW TO MODERATE FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	300 LBS.
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	120 LBS.
MULLEN BURST	ASTM D-3786	800 P.S.I.
TRAPEZOID TEAR	ASTM D-4533	120 LBS.
UV RESISTANCE	ASTM D-4355	80%
APPARENT OPENING SIZE	ASTM D-4751	40 US SIEVE
FLOW RATE	ASTM D-4491	40 GAL./MIN./S.F.
PERMITTIVITY	ASTM D-4491	0.55 SEC. -1

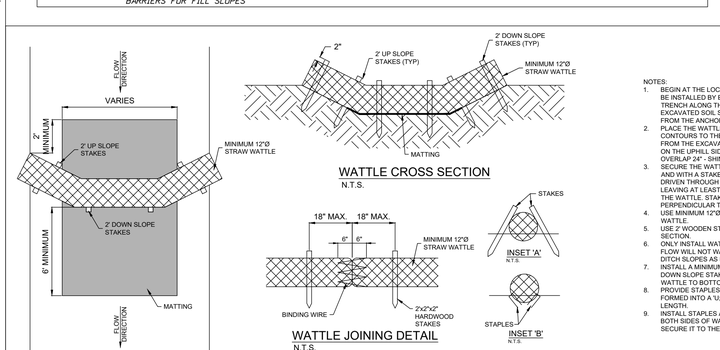
MODERATE TO HIGH FLOW GEOTEXTILE FABRIC SPECIFICATION TABLE		
PROPERTIES	TEST METHOD	UNITS
GRAB TENSILE STRENGTH	ASTM D-4632	265 LBS.
GRAB TENSILE ELONGATION	ASTM D-4632	20%
PUNCTURE	ASTM D-4833	135 LBS.
MULLEN BURST	ASTM D-3786	420 P.S.I.
TRAPEZOID TEAR	ASTM D-4533	45 LBS.
UV RESISTANCE	ASTM D-4355	90%
APPARENT OPENING SIZE	ASTM D-4751	20 US SIEVE
FLOW RATE	ASTM D-4491	200 GAL./MIN./S.F.
PERMITTIVITY	ASTM D-4491	1.5 SEC. -1



SOCK-PIPE OR ROCK BAG INLET FILTER

N.T.S.

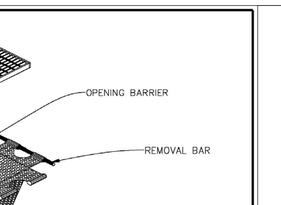




NOTES:
1. BEGIN AT THE LOCATION WHERE THE WATTLE IS TO BE INSTALLED BY EXCAVATING A 2"-3" DEEP x 9" WIDE TRENCH ALONG THE CONTOUR OF THE SLOPE. EXCAVATED SOIL SHOULD BE PLACED UP-SLOPE FROM THE ANCHOR TRENCH.
2. PLACE THE WATTLE IN THE TRENCH SO THAT IT CONTOURS TO THE SOIL SURFACE. COMPACT SOIL FROM THE EXCAVATED TRENCH AGAINST THE WATTLE ON THE UPHILL SIDE. ADJACENT WATTLES SHOULD OVERLAP 24" - SHINGLE IN DIRECTION OF FLOW.
3. SECURE THE WATTLE WITH 18"-24" STAKES EVERY 3'-4' AND WITH A STAKE ON EACH END. STAKES SHOULD BE DRIVEN THROUGH THE MIDDLE OF THE WATTLE LEAVING AT LEAST 2"-3" OF STAKE EXTENDING ABOVE THE WATTLE. STAKE SHOULD BE DRIVEN PERPENDICULAR TO SLOPE FACE.
4. USE MINIMUM 12"Ø COIR (COCONUT FIBER)/STRAW WATTLE.
5. USE 2' WOODEN STAKES WITH A 2"x2" NOMINAL CROSS SECTION.
6. ONLY INSTALL WATTLE(S) TO A HEIGHT IN DITCH SO FLOW WILL NOT WASH AROUND WATTLE AND SCOUR DITCH SLOPES AS DIRECTED.
7. INSTALL A MINIMUM OF 2 UP SLOPE STAKES AND 4 DOWN SLOPE STAKES AT AN ANGLE TO WEDGE WATTLE TO BOTTOM OF DITCH.
8. PROVIDE STAPLES MADE OF 0.125"Ø STEEL WIRE FORMED INTO A 'U,' SHAPE NOT LESS THAN 12" IN LENGTH.
9. INSTALL STAPLES APPROX. EVERY 1 LINEAR FOOT ON BOTH SIDES OF WATTLE AND AT EACH END TO SECURE IT TO THE SOIL.

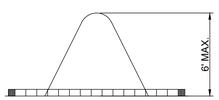
SYNTHETIC HAY BALE DETAILS

N.T.S.



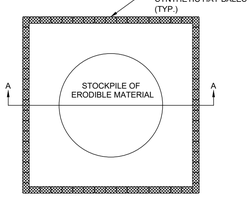
INLET INSERT SEDIMENT CONTAINMENT SYSTEM

N.T.S.



NOTE:
ALL STOCKPILES SHALL BE A MAXIMUM OF 6' HIGH.

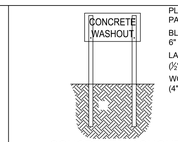
SECTION A-A



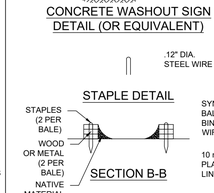
NOTE:
FOR STOCKPILING ERODIBLE MATERIAL FOR EXTENDED PERIODS, THE AREA SHALL BE SEEDED AND MULCHED.

SEDIMENT CONTROL DETAIL FOR STOCKPILING OF ERODIBLE MATERIAL

N.T.S.



CONCRETE WASHOUT SIGN DETAIL (OR EQUIVALENT)

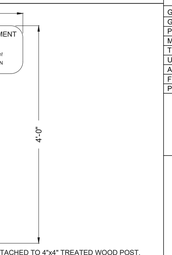


NOTES:
1. ACTUAL LAYOUT DETERMINED IN THE FIELD.
2. THE CONCRETE WASHOUT SIGN SHALL BE INSTALLED WITHIN 30' OF THE TEMPORARY CONCRETE WASHOUT FACILITY.

TYPE "ABOVE GRADE" WITH SYNTHETIC BALES

CONCRETE & STUCCO WASTE MANAGEMENT

N.T.S.



NOTE:
1. SIGN MATERIAL SHALL BE PLASTIC OR METAL, ATTACHED TO 4"x4" TREATED WOOD POST.
2. CONSERVATION EASEMENT SHALL BE 3" HIGH LETTERS.
3. ALL OTHER LINES OF TEXT SHALL BE 1" HIGH WITH 1" SPACING BETWEEN LINES.
4. SIGN SHALL HAVE WHITE BACKGROUND WITH CONTRASTING COLOR FOR THE LETTERING.
5. SIGNS SHALL BE PLACED AS SHOWN ON PLANS, BUT NO LESS THAN EVERY 200 LINEAR FEET AND AT VERTICES NOT CLOSER THAN 25 FEET AND IN NO CASE SHOULD EXCLUDE AREAS INCLUDED IN THE CONSERVATION EASEMENT.

CONSERVATION EASEMENT SIGN

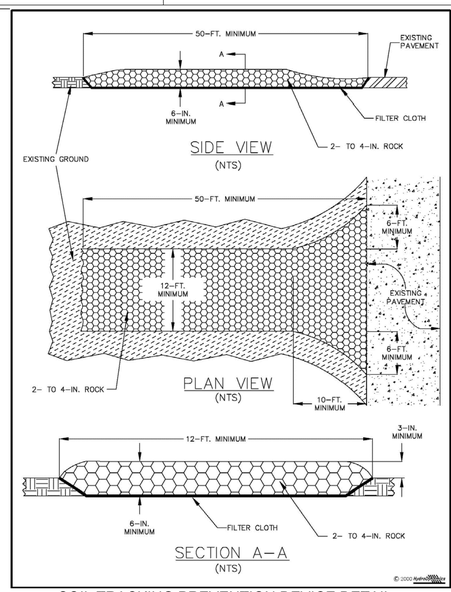
N.T.S.

EROSION AND SEDIMENTATION CONTROL NOTES

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

MINIMUM STANDARDS

1. SEDIMENT BASIN AND TRAPS, PERIMETER DIKES, SEDIMENT BARRIERS AND OTHER MEASURES INTENDED TO TRAP SEDIMENT SHALL BE CONSTRUCTED AS A FIRST STEP IN ANY LAND-DISTURBING ACTIVITY AND SHALL BE MADE FUNCTIONAL BEFORE UNSLOPE LAND DISTURBANCE TAKES PLACE.
2. ALL SEDIMENT CONTROL MEASURES ARE TO BE ADJUSTED TO MEET FIELD CONDITIONS AT THE TIME OF CONSTRUCTION AND BE CONSTRUCTED PRIOR TO ANY GRADING OR DISTURBANCE OF EXISTING SURFACE MATERIAL ON BALANCE OF SITE. PERIMETER SEDIMENT BARRIERS SHALL BE CONSTRUCTED TO PREVENT SEDIMENT OR TRASH FROM FLOWING OR FLOATING ON TO ADJACENT PROPERTIES.
3. PERMANENT OR TEMPORARY SOIL STABILIZATION SHALL BE APPLIED TO DENUDED AREAS WITHIN SEVEN DAYS AFTER FINAL GRADE IS REACHED ON ANY PORTION OF THE SITE. TEMPORARY SOIL STABILIZATION SHALL BE APPLIED WITHIN SEVEN DAYS TO DENUDED AREAS THAT MAY NOT BE AT FINAL GRADE BUT WILL REMAIN UNDISTURBED FOR LONGER THAN 30 DAYS. PERMANENT STABILIZATION SHALL BE APPLIED TO AREAS THAT ARE TO BE LEFT UNDISTURBED FOR MORE THAN ONE YEAR.
4. DURING CONSTRUCTION OF THE PROJECT, SOIL STOCKPILES SHALL BE STABILIZED OR PROTECTED WITH SEDIMENT TRAPPING MEASURES. THE APPLICANT IS RESPONSIBLE FOR THE TEMPORARY PROTECTION AND PERMANENT STABILIZATION OF ALL SOIL STOCKPILES ON SITE AS WELL AS SOIL INTENTIONALLY TRANSPORTED FROM THE PROJECT SITE.
5. A PERMANENT VEGETATIVE COVER SHALL BE ESTABLISHED ON DENUDED AREAS NOT OTHERWISE PERMANENTLY STABILIZED. PERMANENT VEGETATION SHALL NOT BE CONSIDERED ESTABLISHED UNTIL A GROUND COVER IS ACHIEVED THAT, IN THE OPINION OF THE REVIEWER, IS UNIFORM, MATURE ENOUGH TO SURVIVE AND WILL INHIBIT EROSION.
6. STABILIZATION MEASURES SHALL BE APPLIED TO EARTHEN STRUCTURES SUCH AS DAMS, DIKES AND DIVERSIONS IMMEDIATELY AFTER INSTALLATION.
7. SURFACE RUNOFF FROM DISTURBED AREAS THAT IS COMPRISED OF FLOW FROM DRAINAGE AREAS GREATER THAN OR EQUAL TO THREE ACRES SHALL BE CONTROLLED BY A SEDIMENT BASIN. THE SEDIMENT BASIN SHALL BE DESIGNED AND CONSTRUCTED TO ACCOMMODATE THE ANTICIPATED SEDIMENT LOADING FROM THE LAND-DISTURBING ACTIVITY. THE OUTFALL DEVICE OR SYSTEM DESIGN SHALL TAKE INTO ACCOUNT THE TOTAL DRAINAGE AREA FLOWING THROUGH THE DISTURBED AREA TO BE SERVED BY THE BASIN.
8. AFTER ANY SIGNIFICANT RAINFALL, SEDIMENT CONTROL STRUCTURES WILL BE INSPECTED FOR INTEGRITY. ANY DAMAGED DEVICES SHALL BE CORRECTED IMMEDIATELY.
9. CONCENTRATED RUNOFF SHALL NOT FLOW DOWN CUT OR FILL SLOPES UNLESS CONTAINED WITHIN AN ADEQUATE TEMPORARY OR PERMANENT CHANNEL, FLUME OR SLOPE DRAIN STRUCTURE.
10. WHENEVER WATER SEEPS FROM A SLOPE FACE, ADEQUATE DRAINAGE OR OTHER PROTECTION SHALL BE PROVIDED.
11. SEDIMENT WILL BE PREVENTED FROM ENTERING ANY STORM DRAIN SYSTEM, DITCH OR CHANNEL. ALL STORM SEWER INLETS THAT ARE MADE OPERABLE DURING CONSTRUCTION SHALL BE PROTECTED SO THAT SEDIMENT-LADEN WATER CANNOT ENTER THE CONVEYANCE SYSTEM WITHOUT FIRST BEING FILTERED OR OTHERWISE TREATED TO REMOVE SEDIMENT.
12. BEFORE TEMPORARY OR NEWLY CONSTRUCTED STORMWATER CONVEYANCE CHANNELS ARE MADE OPERATIONAL, ADEQUATE OUTLET PROTECTION AND ANY REQUIRED TEMPORARY OR PERMANENT CHANNEL LINING SHALL BE INSTALLED IN BOTH THE CONVEYANCE CHANNEL AND RECEIVING CHANNEL.
13. WHEN WORK IN A LIVE WATERCOURSE IS PERFORMED, PRECAUTIONS SHALL BE TAKEN TO MINIMIZE ENCROACHMENT, CONTROL SEDIMENT TRANSPORT AND STABILIZE THE WORK AREA TO THE GREATEST EXTENT POSSIBLE DURING CONSTRUCTION. NONERODIBLE MATERIAL SHALL BE USED FOR THE CONSTRUCTION OF CAUSEWAYS AND COFFERDAMS. EARTHEN FILL MAY BE USED FOR THESE STRUCTURES IF ARMORED BY NONERODIBLE COVER MATERIALS.
14. WHEN A LIVE WATERCOURSE MUST BE CROSSED BY CONSTRUCTION VEHICLES, A TEMPORARY STREAM CROSSING CONSTRUCTED OF NONERODIBLE MATERIAL SHALL BE PROVIDED.
15. THE BED AND BANKS OF A WATERCOURSE SHALL BE STABILIZED IMMEDIATELY AFTER WORK IN THE WATERCOURSE IS COMPLETED.
16. PERIODIC INSPECTION AND MAINTENANCE OF ALL SEDIMENT CONTROL STRUCTURES MUST BE PROVIDED TO ENSURE INTENDED PURPOSE IS ACCOMPLISHED. THE DEVELOPER, OWNER AND/OR CONTRACTOR SHALL BE CONTINUALLY RESPONSIBLE FOR ALL SEDIMENT LEAVING THE PROPERTY. SEDIMENT CONTROL MEASURES SHALL BE IN WORKING CONDITION AT THE END OF EACH WORKING DAY.
17. UNDERGROUND UTILITY LINES SHALL BE INSTALLED IN ACCORDANCE WITH THE FOLLOWING STANDARDS IN ADDITION TO OTHER APPLICABLE CRITERIA:
    A. NO MORE THAN 500 LINEAR FEET OF TRENCH MAY BE OPENED AT ONE TIME.
    B. EXCAVATED MATERIAL SHALL BE PLACED ON THE UPHILL SIDE OF TRENCHES.
    C. EFFLUENT FROM DEWATERING OPERATIONS SHALL BE FILTERED OR PASSED THROUGH AN APPROVED SEDIMENT TRAPPING DEVICE, OR BOTH, AND DISCHARGED IN A MANNER THAT DOES NOT ADVERSELY AFFECT FLOWING STREAMS OR OFF-SITE PROPERTY.
    D. RESTABILIZATION SHALL BE ACCOMPLISHED IN ACCORDANCE WITH THESE REGULATIONS.
18. WHERE CONSTRUCTION VEHICLE ACCESS ROUTES INTERSECT PAVED PUBLIC ROADS, PROVISIONS SHALL BE MADE TO MINIMIZE THE TRANSPORT OF SEDIMENT BY TRACKING ONTO THE PAVED SURFACE, WHERE SEDIMENT IS TRANSPORTED ONTO A PUBLIC ROAD SURFACE WITH CURBS AND GUTTERS, THE ROAD SHALL BE CLEANED THOROUGHLY AT THE END OF EACH DAY. SEDIMENT SHALL BE REMOVED FROM THE ROADS BY SHOVELING OR SWEEPING AND TRANSPORTED TO A SEDIMENT CONTROL DISPOSAL AREA. STREET WASHING SHALL BE ALLOWED ONLY AFTER SEDIMENT IS REMOVED IN THIS MANNER. THIS PROVISION SHALL APPLY TO INDIVIDUAL SUBDIVISION LOTS AS WELL AS TO LARGER LAND-DISTURBING ACTIVITIES.
19. ALL TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SHALL BE REMOVED WITHIN 30 DAYS AFTER FINAL SITE STABILIZATION OR AFTER THE TEMPORARY MEASURES ARE NO LONGER NEEDED, IN THE OPINION OF THE REVIEWER. DISTURBED SOIL AREAS RESULTING FROM THE DISPOSITION OF TEMPORARY MEASURES SHALL BE PERMANENTLY STABILIZED TO PREVENT FURTHER EROSION AND SEDIMENTATION.
20. PROPERTIES AND WATERWAYS DOWNSTREAM FROM CONSTRUCTION SITE SHALL BE PROTECTED FROM SEDIMENT DISPOSITION AND EROSION.
21. PHASED PROJECTS SHOULD BE CLEARED IN CONJUNCTION WITH CONSTRUCTION OF EACH PHASE.
22. EROSION CONTROL DESIGN AND CONSTRUCTION SHALL FOLLOW THE REQUIREMENTS OF THE FLORIDA STORMWATER EROSION AND SEDIMENTATION CONTROL MANUAL (JULY 2018).
23. THE REVIEWER MAY APPROVE MODIFICATIONS OR ALTER PLANS TO THESE EROSION CONTROL CRITERIA DUE TO SITE SPECIFIC CONDITIONS.



SOIL TRACKING PREVENTION DEVICE DETAIL

N.T.S.

8	7	6	5	4	3	2	1	COMMENTS	DATE
									XX-XX-XXXX
								REVISIONS	

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD, SUITE H MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
CA#27126 LB#8100
VERO: 772-569-0036 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9969

EROSION CONTROL DETAILS

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD, P.E. LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267

DATE 8/19/2021

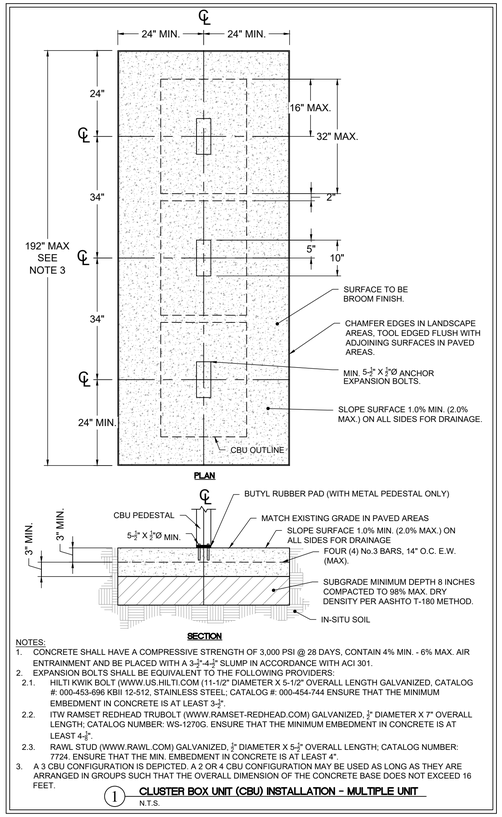
SHEET

C-801

19-1025

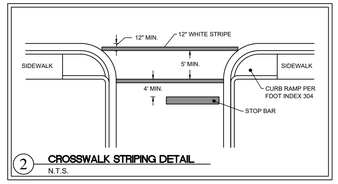
PERMITTING SET

W:\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\civil\19-1025 COVER DETAILS.dwg 8/19/2021 4:29 PM ANTHONY RELAFORD

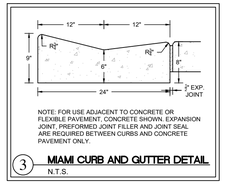


NOTES:
1. CONCRETE SHALL HAVE A COMPRESSIVE STRENGTH OF 3,000 PSI @ 28 DAYS, CONTAIN 4% MIN. - 6% MAX. AIR ENTRAINMENT AND BE PLACED WITH A 3-½"-4-½" SLUMP IN ACCORDANCE WITH ACI 301.
2. EXPANSION BOLTS SHALL BE EQUIVALENT TO THE FOLLOWING PROVIDERS:
   - 2.1. HILTI KWIK BOLT (WWW.US.HILTI.COM (11-1/2" DIAMETER X 5-1/2" OVERALL LENGTH GALVANIZED, CATALOG #: 000-453-696 KBII 12-512, STAINLESS STEEL; CATALOG #: 000-454-744 ENSURE THAT THE MINIMUM EMBEDMENT IN CONCRETE IS AT LEAST 3-½".
   - 2.2. ITW RAMSET REDHEAD TRUBOLT (WWW.RAMSET-REDHEAD.COM) GALVANIZED, ½" DIAMETER X 7" OVERALL LENGTH; CATALOG NUMBER: WS-1270G. ENSURE THAT THE MINIMUM EMBEDMENT IN CONCRETE IS AT LEAST 4-½".
   - 2.3. RAWL STUD (WWW.RAWL.COM) GALVANIZED, ½" DIAMETER X 5-½" OVERALL LENGTH; CATALOG NUMBER: 7724. ENSURE THAT THE MIN. EMBEDMENT IN CONCRETE IS AT LEAST 4".
3. A 3 CBU CONFIGURATION IS DEPICTED. A 2 OR 4 CBU CONFIGURATION MAY BE USED AS LONG AS THEY ARE ARRANGED IN GROUPS SUCH THAT THE OVERALL DIMENSION OF THE CONCRETE BASE DOES NOT EXCEED 16 FEET.

1 **CLUSTER BOX UNIT (CBU) INSTALLATION - MULTIPLE UNIT**
N.T.S.

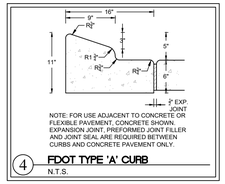


2 **CROSSWALK STRIPING DETAIL**
N.T.S.



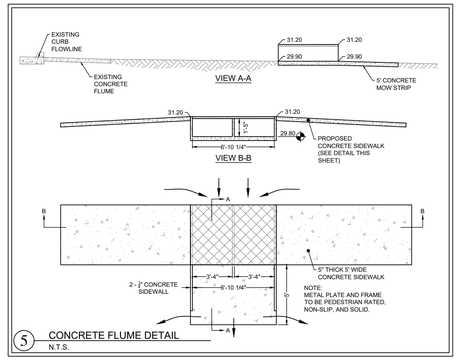
NOTE: FOR USE ADJACENT TO CONCRETE OR FLEXIBLE PAVEMENT, CONCRETE SHOWN. EXPANSION JOINT, PREFORMED JOINT FILLER AND JOINT SEAL ARE REQUIRED BETWEEN CURBS AND CONCRETE PAVEMENT ONLY.

3 **MIAMI CURB AND GUTTER DETAIL**
N.T.S.

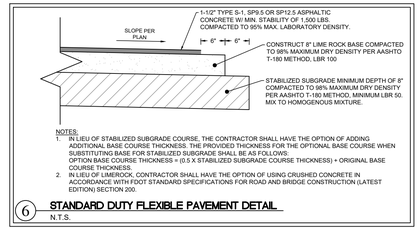


NOTE: FOR USE ADJACENT TO CONCRETE OR FLEXIBLE PAVEMENT, CONCRETE SHOWN. EXPANSION JOINT, PREFORMED JOINT FILLER AND JOINT SEAL ARE REQUIRED BETWEEN CURBS AND CONCRETE PAVEMENT ONLY.

4 **FDOT TYPE 'A' CURB**
N.T.S.

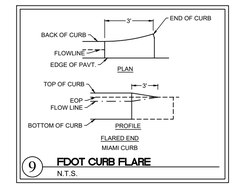


5 **CONCRETE FLUME DETAIL**
N.T.S.

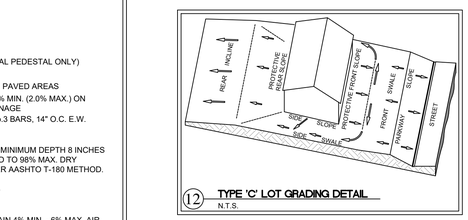


NOTES:
1. IN LIEU OF STABILIZED SUBGRADE COURSE, THE CONTRACTOR SHALL HAVE THE OPTION OF ADDING ADDITIONAL BASE COURSE THICKNESS. THE PROVIDED THICKNESS FOR THE OPTIONAL BASE COURSE WHEN SUBSTITUTING BASE FOR STABILIZED SUBGRADE SHALL BE AS FOLLOWS:
   OPTION BASE COURSE THICKNESS = (0.5 X STABILIZED SUBGRADE COURSE THICKNESS) + ORIGINAL BASE COURSE THICKNESS.
2. IN LIEU OF LIMEROCK, CONTRACTOR SHALL HAVE THE OPTION OF USING CRUSHED CONCRETE IN ACCORDANCE WITH FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION) SECTION 200.

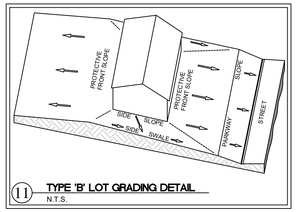
6 **STANDARD DUTY FLEXIBLE PAVEMENT DETAIL**
N.T.S.



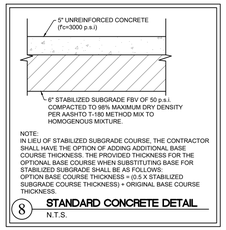
9 **FDOT CURB FLARE**
N.T.S.



10 **TYPE 'A' LOT GRADING DETAIL**
N.T.S.



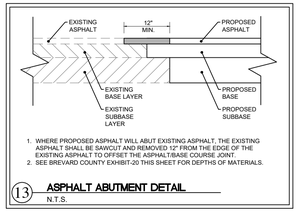
11 **TYPE 'B' LOT GRADING DETAIL**
N.T.S.



NOTE:
IN LIEU OF STABILIZED SUBGRADE COURSE, THE CONTRACTOR SHALL HAVE THE OPTION OF ADDING ADDITIONAL BASE COURSE THICKNESS. THE PROVIDED THICKNESS FOR THE OPTIONAL BASE COURSE WHEN SUBSTITUTING BASE FOR STABILIZED SUBGRADE SHALL BE AS FOLLOWS:
OPTION BASE COURSE THICKNESS = (0.5 X STABILIZED SUBGRADE COURSE THICKNESS) + ORIGINAL BASE COURSE THICKNESS.

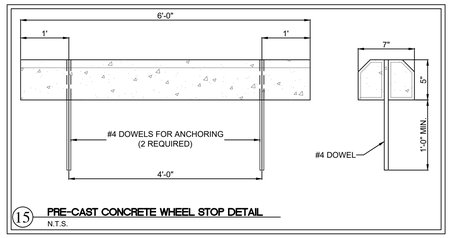
8 **STANDARD CONCRETE DETAIL**
N.T.S.

12 **TYPE 'C' LOT GRADING DETAIL**
N.T.S.



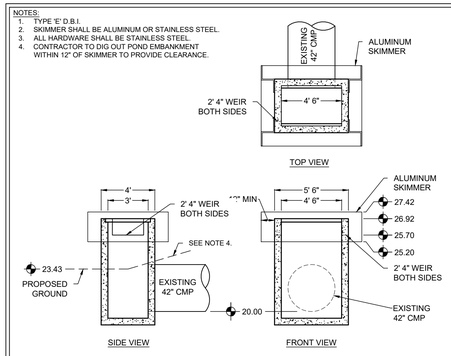
1. WHERE PROPOSED ASPHALT WILL ABUT EXISTING ASPHALT, THE EXISTING ASPHALT SHALL BE SAWCUT AND REMOVED 12" FROM THE EDGE OF THE EXISTING ASPHALT TO OFFSET THE ASPHALT/BASE COURSE JOINT.
2. SEE BREVARD COUNTY EXHIBIT-20 THIS SHEET FOR DEPTHS OF MATERIALS.

13 **ASPHALT ABUTMENT DETAIL**
N.T.S.

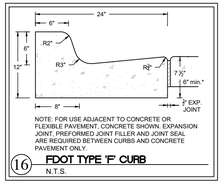


15 **PRE-CAST CONCRETE WHEEL STOP DETAIL**
N.T.S.

NOTES:
1. TYPE 'E' D.B.I.
2. SKIMMER SHALL BE ALUMINUM OR STAINLESS STEEL.
3. ALL HARDWARE SHALL BE STAINLESS STEEL.
4. CONTRACTOR TO DIG OUT POND EMBANKMENT WITHIN 12" OF SKIMMER TO PROVIDE CLEARANCE.

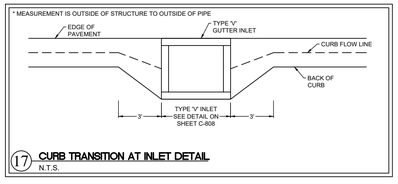


14 **CONTROL STRUCTURE DETAIL (CS-01)**
N.T.S.

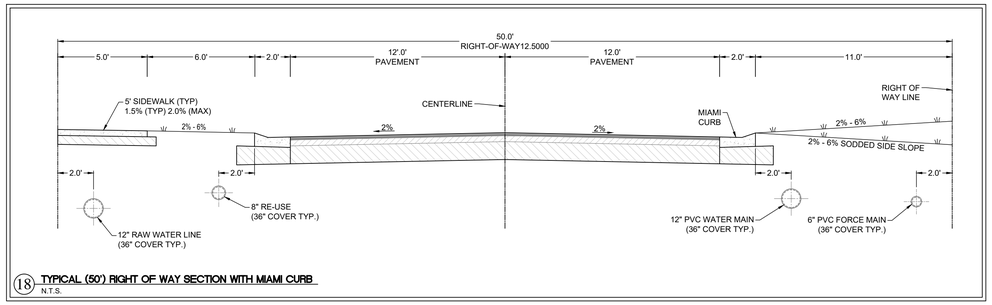


NOTE: FOR USE ADJACENT TO CONCRETE OR FLEXIBLE PAVEMENT, CONCRETE SHOWN. EXPANSION JOINT, PREFORMED JOINT FILLER AND JOINT SEAL ARE REQUIRED BETWEEN CURBS AND CONCRETE PAVEMENT ONLY.

16 **FDOT TYPE 'F' CURB**
N.T.S.



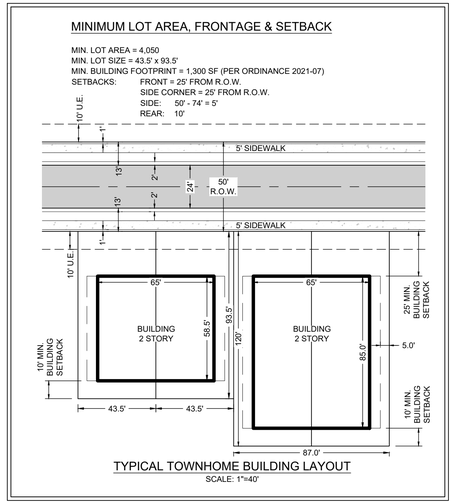
17 **CURB TRANSITION AT INLET DETAIL**
N.T.S.



18 **TYPICAL (50') RIGHT OF WAY SECTION WITH MIAMI CURB**
N.T.S.

MINIMUM LOT AREA, FRONTAGE & SETBACK

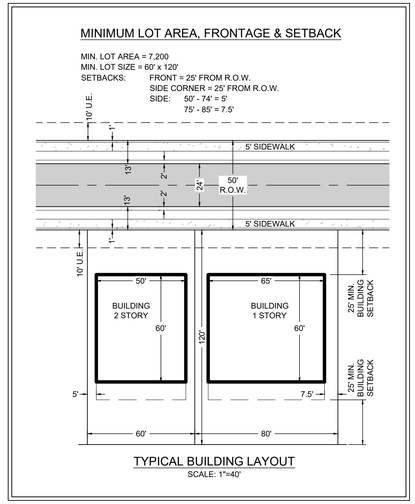
MIN. LOT AREA = 4,050
MIN. LOT SIZE = 43.5' x 93.5'
MIN. BUILDING FOOTPRINT = 1,300 SF (PER ORDINANCE 2021-07)
SETBACKS: FRONT = 25' FROM R.O.W.
SIDE CORNER = 25' FROM R.O.W.
SIDE: 50' - 74' = 5'
REAR: 10'



TYPICAL TOWNHOME BUILDING LAYOUT
SCALE: 1"=40'

MINIMUM LOT AREA, FRONTAGE & SETBACK

MIN. LOT AREA = 7,200
MIN. LOT SIZE = 60' x 120'
SETBACKS: FRONT = 25' FROM R.O.W.
SIDE CORNER = 25' FROM R.O.W.
SIDE: 50' - 74' = 5'
75' - 85' = 7.5'



TYPICAL BUILDING LAYOUT
SCALE: 1"=40'

	DATE	COMMENTS
8		
7		
6		
5		
4		
3		
2		
1	XX-XX-XXXX	

REVISIONS

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
CA#7724
1250 W. EAU GALLIE BLVD, SUITE H
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F:321-253-0911
WWW.MBVENGINEERING.COM
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-408-9999

GENERAL DETAILS 01

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

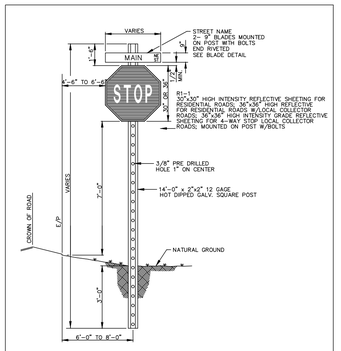
DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

SHEET
C-802

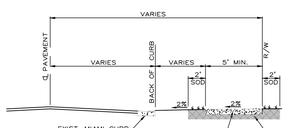
19-1025
PERMITTING SET

W:\19\19-1025 (COUNTRY CLUB LAKE ESTATES NORTH)\CAD\civil\19-1025 (COVER,DETAILS).dwg 8/19/2021 4:29 PM ANTHONY RELAFORD



STREET SIGN INSTALLATION DETAIL

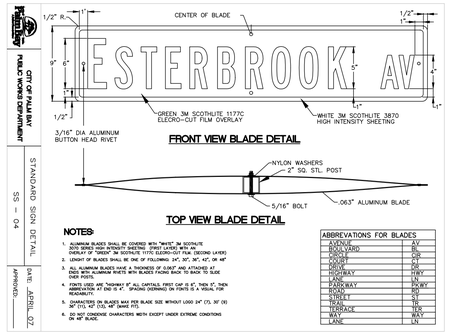
CITY OF PALM BAY PUBLIC WORKS DEPARTMENT	STANDARD SIGN DETAIL	DATE: APRIL 07	
	SS – 01	APPROVED:	



STANDARD CONCRETE SIDEWALK SECTION W/MIAMI CURB

(N.T.S.)

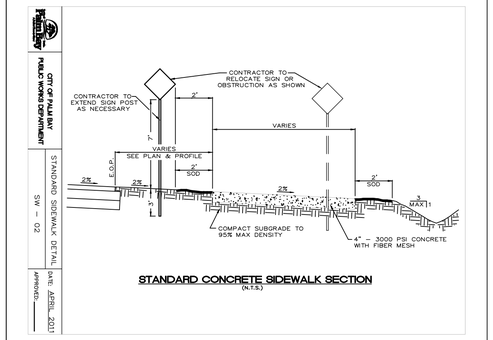
CITY OF PALM BAY PUBLIC WORKS DEPARTMENT	STANDARD SIDEWALK DETAIL	DATE: APRIL 2011	
	SW – 01	APPROVED:	



NOTES:

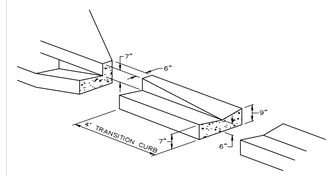
1. ALUMINUM BLADES SHALL BE COVERED WITH "WHITE" 3M SCOTHLITE 3070 SERIES HIGH INTENSITY SHEETING (FIRST LAYER) WITH AN OVERLAY OF "GREEN" 3M SCOTHLITE 1177C ELECRO-CUT FILM (SECOND LAYER)
2. LENGHT OF BLADES SHALL BE ONE OF FOLLOWING: 24", 30", 36", 42", OR 48"
3. ALL ALUMINUM BLADES HAVE A THICKNESS OF 0.063" AND ATTACHED AT MID-POINT WITH ALUMINUM RIVETS WITH BLADES FACING BACK TO BACK TO SLIDE OVER POST.
4. FONTS USED ARE "HIGHWAY 8" ALL CAPITALS, FIRST CAP IS 6", THEN 5", THEN ABBREVIATION AT END IS 4". SPACING DEPENDS ON FONTS IS A VISUAL FOR READABILITY.
5. LETTERS/NUMBERS ON BLADES MAX PER BLADE SIZE WITHOUT LOGO 24" (7), 30" (9) 36" (10) 42" (12) & 48" (MAKE FIT).
6. DO NOT CONDENSE CHARACTERS WIDTH EXCEPT UNDER EXTREME CONDITIONS ON 48" BLADE.

ABBREVIATIONS FOR BLADES	
AVENUE	AV
BOULVARD	BL
CIRCLE	CIR
COURT	CT
DRIVE	DR
HIGHWAY	HWY
LOOP	LOOP
PARKWAY	PKWY
ROAD	RD
STREET	ST
TRAIL	TR
TERRACE	TER
WAY	WAY
LANE	LN



STANDARD CONCRETE SIDEWALK SECTION

(N.T.S.)

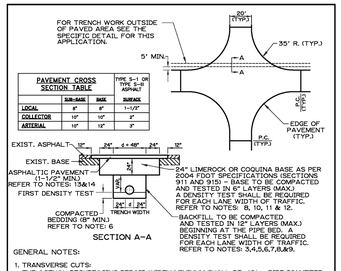


GENERAL NOTES:

1. ALL STEEL BARS SHALL BE TIED TOGETHER.
2. CHAMFER ALL EXPOSED EDGES AND CORNERS .
3. REINFORCING STEEL SHALL BE GRADE 40 OR 60.
4. ALL CONCRETE SHALL BE CLASS II.
5. ALL STEEL BARS SHALL HAVE 1 MINIMUM COVER.

TRANSITION CURB DETAIL

CITY OF PALM BAY PUBLIC WORKS DEPARTMENT	STANDARD ROAD DETAIL	DATE: AUG 2006	
	SR – 06 (4 of 4)	APPROVED:	



SECTION A–A

GENERAL NOTES:

1. TRANSVERSE CUTS:
   THE ACTUAL RESURFACING REPAIR WIDTH MINIMUM SHALL BE 10' + PIPE DIAMETER OR AS WIDE AS NECESSARY TO PROVIDE NEAT SAWCUT LINES AT RIGHT ANGLES TO PAVEMENT CENTERLINE.
2. LONGITUDINAL CUTS:
   THE PAVEMENT SHALL BE RESURFACED ALONG NEAT SAWCUT LINES FOR THE FULL LANE WIDTH FOR EACH LANE WITHIN WHICH THE CUT EXTENDS. REFER TO THE SPECIFIC DETAIL FOR THIS APPLICATION.
3. USE OF A SLOPE TRENCH WALL, TRENCH BOX, SHEETING OR SHORING SHALL MEET FLORIDA DEPARTMENT OF TRANSPORTATION AND OCCUPATIONAL SAFETY HEALTH ACT GUIDELINES.
4. CONSTRUCTION SHALL BE ACCOMPLISHED ONLY IN A DRY TRENCH.

(CONT. ON PAGE 2)

TRENCH / PAVEMENT RESTORATION DETAIL

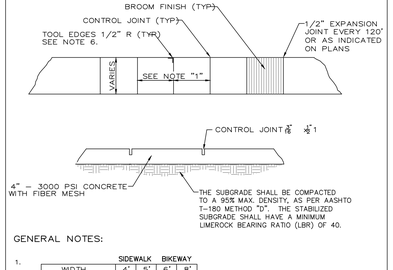
CITY OF PALM BAY PUBLIC WORKS DEPARTMENT	STANDARD ROAD DETAIL	DATE: JULY 2017	
	SR – 10 (1 of 2)	APPROVED:	

(CONT. FROM PAGE 1)

GENERAL NOTES:

5. THE MINIMUM TRENCH WIDTH SHALL BE 48"+d AT THE PIPE BED LEVEL.
6. UTILITY OR PIPE INSTALLATION SHALL BE PLACED ON 8" MINIMUM COMPACTED SOIL BACKFILL. IF THE EXPOSED MATERIAL IS UNSUITABLE OR DISTURBED, THE PIPE BED BACKFILL SOIL SHALL BE COMPACTED TO 98% MAXIMUM DENSITY, AS PER AASHTO T180-D METHOD. 3/4" ROCK GRAVEL, NUMBER 57 STONE, CLEAN NATURAL SAND, IMPORTED QUARRY WASTE OR A MIXTURE THEREOF MAY BE USED AS AN ALTERNATIVE TO COMPACTED SOIL. SAMPLES OF THE MATERIAL SHALL BE SUBMITTED SUFFICIENTLY IN ADVANCE OF THE INTENDED USE TO ENABLE INSPECTION, TESTING AND APPROVAL OR REJECTION THEREOF.
7. BACKFILL SOIL SHALL BE COMPACTED IN MAXIMUM 12" LAYERS 98% MAXIMUM DENSITY, AS PER AASHTO T-1800 METHOD. IN PLACE DENSITY TEST SHALL BE IN ACCORDANCE WITH AASHTO-T 310-06 METHOD. COMPACTION SHALL BE ACCOMPLISHED BY SUITABLE EQUIPMENT SPECIFICALLY DESIGNED FOR THIS PURPOSE.
8. LIMEROCK BASE SHALL HAVE AN LIMEROCK BEARING RATIO–LBR VALUE OF NOT LESS THAN ONE HUNDRED (100%) .
9. FLOWABLE BACKFILL MAY BE USED AS AN ALTERNATIVE TO COMPACTED SOIL. REFER TO THE FLORIDA DEPARTMENT OF TRANSPORTATION STANDARDS FOR THIS APPLICATION.
10. THE BASE SHALL BE RECONSTRUCTED A MINIMUM OF 12" BEYOND THE EDGE OF PAVEMENT.
11. LIMEROCK OR COQUINA BACKFILL SHALL BE COMPACTED IN 6" LAYERS (MAX.) TO 98% MAXIMUM DENSITY, AS PER FM-1-T180 METHOD "D".
12. DENSITY TEST SHALL BE ACCEPTED ON STABILIZED NON-YIELDING SURFACES ONLY.
13. PRIME COAT ALL SURFACES AND EDGES. THE RATE OF APPLICATION SHALL BE 0.10 TO 0.15 GALLONS OF SS 1 EMULSIFIED ASPHALT PER SQUARE YARD AND SHALL BE APPLIED THOROUGHLY AND UNIFORMLY WITH NO EXCESS. CLEAN ALL SURFACES PRIOR TO PAVING.
14. ASPHALTIC PAVEMENT SHALL BE FDOT TYPE S-I OR TYPE S-III (1" MIN.) OR CONSISTENT WITH EXISTING PAVEMENT THICKNESS WHICHEVER IS GREATER AND SHALL BE INSTALLED ON A CONTINUOUS PLANE WITHOUT HUMPS OR DEPRESSIONS.
15. OTHER CONDITIONS MAY APPLY, REFER TO THE PALM BAY CODE OF ORDINANCE AND PUBLIC WORKS MANUAL.

CITY OF PALM BAY PUBLIC WORKS DEPARTMENT	STANDARD ROAD DETAIL	DATE: JULY 2017	
	SR – 10 (2 of 2)	APPROVED:	



GENERAL NOTES:

1.

	SIDEWALK		BIKEWAY	
WIDTH	4'	5'	6'	8'
CONTROL JOINT	5'		8'	

2. ALL SAWCUTS TO BE MADE AT A CONTROL JOINT.
3. THE MINIMUM BIKEWAY/SIDEWALK REPAIR SHALL BE ONE FULL SECTION BETWEEN CONTROL JOINTS.
4. REMOVE ACCUMULATED DEBRIS FROM THE SITE AND DISPOSE OF IN A LAWFUL MANNER.
5. STABILIZE THE DISTURBED AREAS ABUTTING THE BIKEWAY/SIDEWALK WITH A MINIMUM TWO (2) FOOT WIDE STRIP OF MATCHING SOD.
6. TOOL EDGES SHALL BE USED WHERE EXISTING SIDEWALKS HAVE BEEN CONSTRUCTED WITH SIMILAR FINISHES.
7. EXPANSION JOINT MATERIAL REQUIRED AROUND ALL MANHOLES AND STRUCTURES.

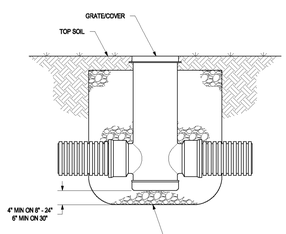
CONCRETE BIKEWAY/SIDEWALK TOOLING DETAIL

(N.T.S.)

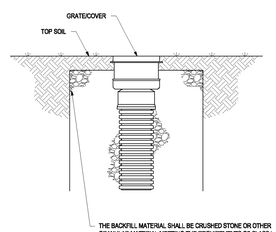
CITY OF PALM BAY PUBLIC WORKS DEPARTMENT	STANDARD SIDEWALK DETAIL	DATE: APRIL 2011	
	SW – 04	APPROVED:	

NON TRAFFIC INSTALLATION

DRAIN BASIN



INLINE DRAIN



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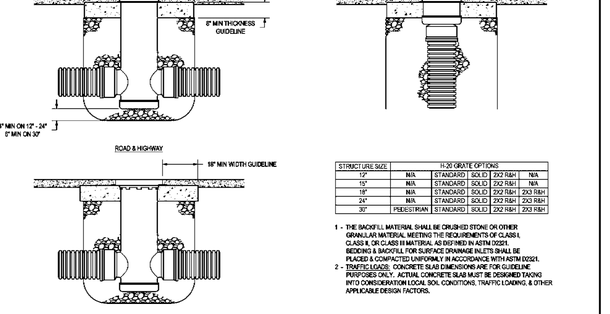
DRAWN BY	CJA	MATERIAL	
DATE	9-30-99		
REVISED BY	MMH	PROJECT NO./NAME	
DATE	03-11-16		
DWG SIZE	A	SCALE 1:25	SHEET 1 OF 1

Nyloplast — 3128 VERONA AVE BUFORD, GA 30518 PHN (770) 932-5443 FAX (770) 932-2490 www.nyloplast-us.com

TITLE: DRAIN BASIN & INLINE DRAIN NON TRAFFIC INSTALLATION

DWG NO. 7901-116-111 REV E

ASPHALT INSTALLATION



STRNGT URE SIZE		H-20 GRATE OPTIONS			
12"	N/A	STANDARD	SOLID	2X2 R&H	N/A
15"	N/A	STANDARD	SOLID	2X2 R&H	N/A
18"	N/A	STANDARD	SOLID	2X2 R&H	2X3 R&H
24"	N/A	STANDARD	SOLID	2X2 R&H	2X3 R&H
30"	PEDESTRIAN	STANDARD	SOLID	2X2 R&H	2X3 R&H

1 - THE BACKFILL MATERIAL SHALL BE CRUSHED STONE OR OTHER GRANULAR MATERIAL MEETING THE REQUIREMENTS OF CLASS I, CLASS II, OR CLASS III MATERIAL AS DEFINED IN ASTM D2321. BEDDING & BACKFILL FOR SURFACE DRAINAGE INLETS SHALL BE PLACED & COMPACTED UNIFORMLY IN ACCORDANCE WITH ASTM D2321.

2 - TRAFFIC LOADS: CONCRETE SLAB DIMENSIONS ARE FOR GUIDELINE PURPOSES ONLY. ACTUAL CONCRETE SLAB MUST BE DESIGNED TAKING INTO CONSIDERATION LOCAL SOIL CONDITIONS, TRAFFIC LOADING, & OTHER APPLICABLE DESIGN FACTORS.

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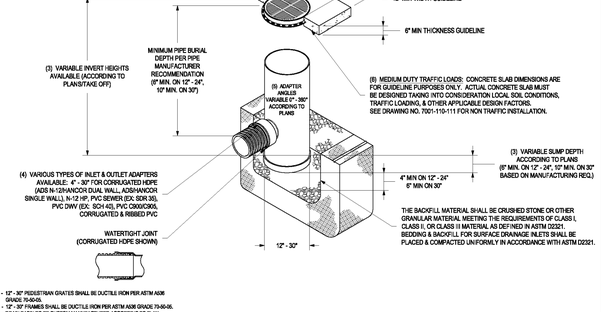
DRAWN BY	ESC	MATERIAL	
DATE	4-04-06		
REVISED BY	MMH	PROJECT NO./NAME	
DATE	03-14-16		
DWG SIZE	A	SCALE 1:30	SHEET 1 OF 1

Nyloplast — 3128 VERONA AVE BUFORD, GA 30518 PHN (770) 932-5443 FAX (770) 932-2490 www.nyloplast-us.com

TITLE: DRAIN BASIN, INLINE DRAIN, & ROAD & HIGHWAY (H-20 TRAFFIC LOAD) ASPHALT INSTALLATION DETAIL

DWG NO. 7901-113-186 REV E

NYLOPLAST DRAIN BASIN WITH PEDESTRIAN GRATE



1 - 12" - 30" PEDESTRIAN GRATES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-60-05.
2 - 12" - 30" FRAMES SHALL BE DUCTILE IRON PER ASTM A536 GRADE 70-60-05.
3 - DRAIN BASIN TO BE CUSTOM MANUFACTURED ACCORDING TO PLAN DETAILS. RISERS ARE NEEDED FOR BASINS OVER 84" DUE TO SHIPPING RESTRICTIONS. SEE DRAWING NO. 7001-110-080.
4 - DRAINAGE CONNECTION STUB JOINT TIGHTNESS SHALL CONFORM TO ASTM D3212. CORRUGATED HDPE (ADS N-12/HANCOR DUAL WALL), N-12 HP, & PVC SEWER PIPE.
5 - ADAPTERS CAN BE MOUNTED 0° TO 360°. TO DETERMINE MINIMUM ANGLE BETWEEN ADAPTERS SEE DRAWING NO. 7001-110-012.
6 - 12" - 24" PEDESTRIAN GRATES SHALL MEET H-10 LOAD RATING. 30" PEDESTRIAN GRATE SHALL MEET H-20 LOAD RATING (SEE DRAWING NO. 7001-110-144 FOR H-20 TRAFFIC LOAD GUIDELINES).

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DRAWN BY	ESC	MATERIAL	PVC
DATE	4-26-07		
REVISED BY	MMH	PROJECT NO./NAME	
DATE	03-11-16		
DWG SIZE	A	SCALE 1:40	SHEET 1 OF 1

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TITLE: DRAIN BASIN WITH PEDESTRIAN GRATE QUICK SPEC INSTALLATION DETAIL

DWG NO. 7901-116-203 REV D

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								REVISIONS	DATE

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

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GENERAL DETAILS 02

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

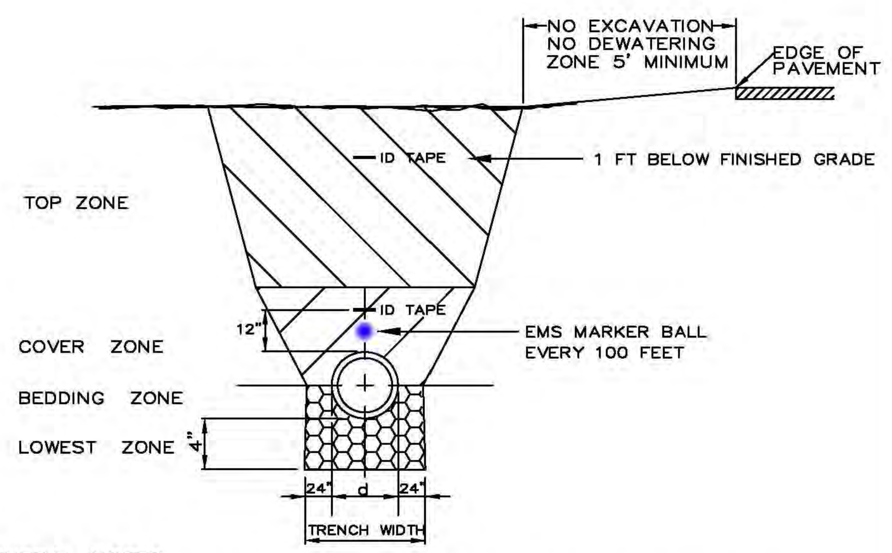
DAVID W. BASSFORD DATE: 8/19/2021
FL P.E. #83267

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PERMITTING SET

W:\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CADD\19-1025 COVER DETAILS.dwg 8/19/2021 4:29 PM ANTHONY RELAFORD



GENERAL NOTES:

1. WHEN PERFORMING TRENCH EXCAVATION IN EXCESS OF FIVE (5) FEET IN DEPTH, COMPLY WITH THE OCCUPATIONAL SAFETY AND HELATH ADMINISTRATION'S (OSHA) TRENCH SAFETY STANDARDS, 29 C.F.R., S. 1926.650, SUBPART P, AND ALL SUBSEQUENT REVISIONS OR UPDATES ADOPTED BY THE DEPARTMENT OF LABOR AND EMPLOYMENT SECURITY. ENSURE THAT TRENCH BOXES ARE WIDE ENOUGH TO ACCOMODATE COMPACTION AND DENSITY TESTING.

2. PERFORM ALL EXCAVATIONS IN STREAM BEDS TO A DEPTH AT LEASE FOUR (4) FEET BELOW THE PERMANENT BED OF THE STREAM, UNLESS A FIRM FOOTING CAN BE ESTABLISHED ON SOLID ROCK BEFORE SUCH DEPTH IS REACHED, AND EXCAVATE TO SUCH ADDITIONAL DEPTH AS MAY BE NECESSAY TO ELIMINATE ANY DANGER OF UNDERMINING.

3. EXCAVATE TRENCHES FOR WATER MAIN/FORCE MAIN/REUSE/GRAVITY SEWER TO THE ELEVATION OF THE BOTTOM OF THE PIPE AND TO A WIDTH AS NOTED IN DETAILS. REMOVE SOIL NOT MEETING THE CLASSIFICATION SPECIFIED AS SUITABLE BACKFILLL MATERIAL TO A DEPTH OF FOUR (4) INCHES BELOW BOTTOM OF THE PIPE ELEVATION. REMOVE ROCK, BOULDERS OR OTHER HARD LUMPY OR UNYIELDING MATERIALS TO A DEPTH OF TWELVE (12) INCHES BELOW THE BOTTOM OF THE PIPE ELEVATION. REMOVE MUCK OR OTHER SOFT MATERIALS TO A DEPTH NECESSARY TO ESTABLISH A FIRM FOUNDATION. WHERE THE SOILS PERMIT, ENSURE THAT THE TRENCH SIDES ARE VERTICAL UP TO AT LEASE THE MID-POINT OF THE PIPE.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	EXCAVATION AND BACKFILL FOR UTILITIES PIPE PAGE 1	DWN.BY: M.K.L.	DATE: 1-1-08
		REV. E.K.R. 10-26-10	DWG. NO. FIG 1

(CONT. FROM SHEET 1)

GENERAL NOTES:

4. PROVIDE NORMAL DEWATERING EQUIPMENT INCLUDING, BUT NOT LIMITED TO SURFACE PUMPS, SUMP PUMPS, WELLPOINTS AND HEADER PIPE AND TRENCHING/DIGGING MACHINERY.

5. BACKFILL TO THE ORIGINAL GROUND SURFACE OR SUBGRADE SURFACE OF OPENINGS MADE FOR STRUCTURES, WITH A SUFFICIENT ALLOWANCE FOR SETTLEMENT. DO NOT ALLOW HEAVY CONSTRUCTION EQUIPMENT TO CROSS OVER CULVERT OR STORM SEWER PIPES UNTIL PLACING AND COMPACTING BACKFILL MATERIAL TO THE FINISHED EARTHWORK GRADE OR TO AN ELEVATION AT LEASE (4) FEET ABOVE THE CROWN OF THE PIPE.

6. PLACE THE MATERIAL IN HORIZONTAL LAYERS NOT EXCEEDING SIX (6) INCHES COMPACTED THINKNESS, IN DEPTH ABOVE WATER LEVEL, BEHIND ABUTMENTS, WINGWALLS AND END BENTS, UNDER THE HAUNCHES OF THE PIPES AND AROUND BOX CULVERTS AND ALL STRUCTURES INCLUDING PIPE CULVERTS. THE CONTRACTOR MAY ELECT TO PLACE MATERIAL IN THICKER LIFTS OF NO MORE THAN 12 INCHES COMPACTED THICKNESS OUTSIDE THE SOIL ENVELOPE IF HE/SHE CAN DEMONSTRATE WITH THE SUCCESSFULL TEST SECTION THAT DENSITY CAN BE ACHIEVED.

7. MATERIAL:
A) LOWEST ZONE: BACKFILL AREAS UNDERCUT BELOW THE BEDDING ZONE OF A PIPE WITH COURSE SAND, OR OTHER SUITABLE GRANULAR MATERIAL, OBTAINED FROM THE GRADING OPERATIONS ON THE PROJECT, OR A COMMERCIAL MATERIAL IF NO SUITABLE MATERIAL IS AVAILABLE.
(12) INCHES BELOW THE BOTTOM OF THE PIPE ELEVATION. REMOVE MUCK OR OTHER SOFT MATERIALS TO A DEPTH NECESSAY TO ESTABLISH A FIRM FOUNDATION. WHERE THE SOILS PERMIT, ENSURE THAT THE TRENCH SIDES ARE VERTICAL UP TO AT LEASE THE MID-POINT OF THE PIPE.
   - A) LOWEST ZONE: BACKFILL AREAS UNDERCUT BELOW THE BEDDING ZONE OF A PIPE WITH COURSE SAND, OR OTHER SUITABLE GRANULAR MATERIAL, OBTAINED FROM THE THE GRADING OPERATIONS ON THE PROJECT, OR A COMMERCIAL MATERIAL IF NO SUITABLE MATERIAL IS AVAILABLE.
   - B) SOIL ENVELOPE: IN BOTH THE BEDDING ZONE AND THE COVER ZONE OF THE PIPE, BACKFILL WITH MATERIALS CLASSIFIED AS A-1, A-2, OR A-3. MATERIAL CLASSIFIED AS A-4 MAY BE USED IF THE PIPE IS CONCRETE PIPE.
   - C) TOP ZONE: BACKFILL THE AREA OF THE TRENCH ABOVE THE SOIL ENVELOPE OF THE PIPE WITH MATERIALS CLASSIFIED AS A-1 OR A-3. WHEN PIPE IS UNDER ROADWAY, BACKFILL TO BOTTOM OF ROADWAY SUBGRADE. SUBGRADE AND MATERIAL SHALL BE IN ACCORDANCE WITH PLANS.

8. COMPACTION:
   - A) LOWEST ZONE: COMPACT THE SOIL IN THE LOWEST ZONE TO APPROXIMATELY MATCH THE DENSITY OF THE SOIL IN WHICH THE TRENCH WAS CUT.
   - B) BEDDING ZONE: IF THE TRENCH WAS NOT UNDERCUT BELOW THE BOTTOM OF THE PIPE, LOOSEN THE SOIL IN THE BOTTOM OF THE TRENCH IMMEDIATELY BELOW THE APPROXIMATE MIDDLE THIRD OF THE OUTSIDE DIAMETER OF THE PIPE. IF THE TRENCH WAS UNDERCUT, PLACE THE BEDDING MATERIAL AND LEAVE IT IN A LOOSE CONDITION BELOW THE MIDDLE THIRD OF THE OUTSIDE DIAMETER OF THE PIPE. COMPACT THE MATERIAL TO 100% MAXIMUM DENSITY PER AASHTO T-99 METHOD C. PLACE THE MATERIAL IN LIFTS NO GREATER THAN SIX (6) INCHES (COMPACTED THICKNESS).

(CONT. ON SHEET 3)

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	EXCAVATION AND BACKFILL FOR UTILITIES PIPE PAGE 2	DWN.BY: M.K.L.	DATE: 1-1-08
		REV.	DWG. NO. FIG 1

(CONT. FROM SHEET 2)

C) COVER ZONE: BEFORE PLACING THE COVER ZONE MATERIAL, LAY PIPE ACCORDING TO ALIGNMENT AND GRADES GIVEN. DO NOT ALLOW DEPARTURE FROM ALIGNMENT OR GRADE TO EXCEED 1/16 PER FOOT OF NOMINAL PIPE LENGTH. TAKE UP AND RELAY ANY PIPE THAT IS NOT TRUE TO ALIGNMENT OR WHICH SHOWS SELTTLEMENT AFTER LAYING. EXCAVATE FOR PIPE BELLS BEFORE LAYING PIPE. PLACE THE MATERIAL IN SIX (6) INCH LAYERS (COMPACTED THICKNESS), EVENLY DEPOSITED ON BOTH SIDES OF THE PIPE, AND COMPACT WITH MECHANICAL TAMPERS SUITABLE FOR THIS PURPOSE. HAND TAMP MATERIAL BELOW THE PIPE HAUNCH THAT CANNOT BE REACHED BY MECHANICAL TAMPERS. COMPACT THE MATERIAL TO 98% MAXIMUM DENSITY PER AASHTO T-99 METHOD C.

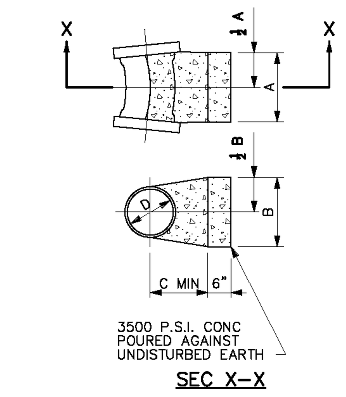
D) TOP ZONE: PLACE THE MATERIAL IN LAYERS NOT TO EXCEED 12 INCHES IN COMPACTED THICKNESS. COMPACT THE MATERIAL TO 95% MAXIMUM DENSITY PER AASHTO T-99 METHOD C FOR GREATER THAN 12 INCHES OUTSIDE OF ROADWAY, 98% FOR AREAS LESS THAN 12 INCHES TO THE EDGE OF PAVEMENT AND UNDER THE ROADWAY.

9. BACKFILL UNDER WET CONDITIONS: WHERE WET CONDITIONS ARE SUCH THAT DEWATERING BY NORMAL PUMPING METHODS WOULD NOT BE EFFECTIVE, THE USE OF COURSE AGGREGATE BELOW THE ELEVATION AT WHICH MECHANICAL TAMPERS WOULD BE EFFECTIVE WOULD BE ACCEPTABLE. USE COARSE AGGREGATE AS SPECIFIED IN FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE COSNTRUCTION SECTION 901 FOR AGGREGATE SIZE NUMBER 89, 8, 78, 7, 68, 6, OR 57. PLACE THE COURSE AGGREGATE SUCH THAT IT WILL BE STABLE AND FIRM. FULLY WRAP THE AGGREGATE WITH A LAYER OF TYPE D-4 FILTER FABRIC, AS SPECIFIC ON FDOT DESIGN STANDARDS INDEX NO. 199. DO NOT PLACE COARSE AGGREGATE WITHIN FOUR (4) FEET OF THE ENDS OF THE TRENCH OR DITCH. USE NORMALLY ACCEPTED BACKFILL MATERIAL AT THE ENDS.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	EXCAVATION AND BACKFILL FOR UTILITIES PIPE PAGE 3	DWN.BY:	DATE:
		REV. E.K.R. 1-28-10	DWG. NO. FIG 1

DIA OF WATER MAIN	THRUST BLOCK		
D	A	B	C
6"	1'-0"	1'-0"	1'-0"
8"	1'-3"	1'-3"	1'-0"
10" & 12"	1'-6"	1'-6"	1'-3"
14" & 16"	2'-0"	2'-0"	1'-6"
18" & 20"	3'-1"	2'-0"	1'-9"
24"	3'-0"	3'-0"	2'-0"

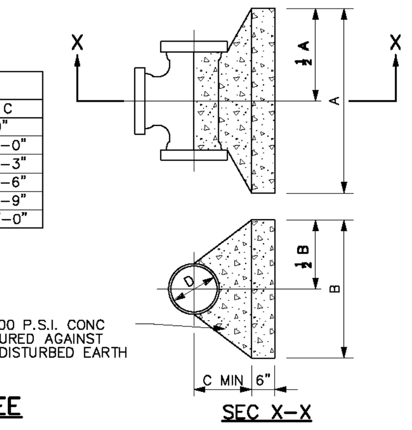
NOTE:
THESE TABLES ARE BASED ON SOIL BEARING OF 1500 P.S.F. IN MUCK, PEET OR OTHER UNSUITABLE SOILS HAVING A SOIL BEARING LESS THAN 1500 P.S.F., THE CONTRACTOR SHALL PROVIDE SUITABLE ADDITIONAL BLOCKING, ENCASEMENTS OR RESTRAINTS, BLOCKING IN BORE PIT EXCAVATIONS SHALL BE AGAINST UNDISTURBED SOIL OR SHALL BE PROVIDED WITH RESTRAINTS AS REQUIRED.



THRUST BLOCK AT 11 1/4° BEND

DIA OF WATER MAIN	THRUST BLOCK		
D	A	B	C
6"	2'-0"	1'-6"	9"
8"	2'-6"	2'-0"	1'-0"
10" & 12"	4'-0"	3'-0"	1'-3"
14" & 16"	5'-0"	4'-0"	1'-6"
18" & 20"	8'-0"	4'-0"	1'-9"
24"	9'-0"	5'-0"	2'-0"

NOTE:
WHEN DIMENSION "A" IS 6'-0" OR GREATER, USE #4 BARS AT 12" CENTERS EACH WAY.



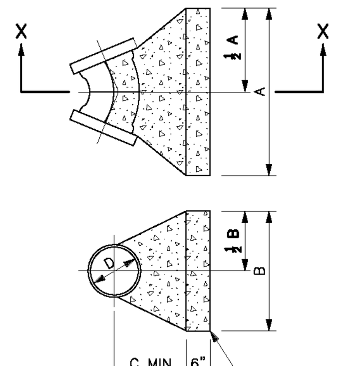
THRUST BLOCK AT TEE

* THE USE OF THRUST BLOCKS SHALL ONLY BY ALLOWED BY WRITTEN REQUEST AND APPROVAL OF THE UTILITIES ENGINEER.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	THRUST BLOCK DETAIL	DWN.BY: M.K.L.	DATE: 1-1-08
		REV. E.K.R. 8-28-13	DWG. NO. FIG 5A

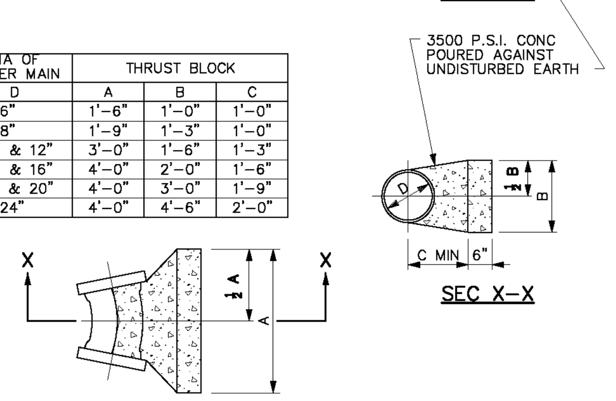
DIA OF WATER MAIN	THRUST BLOCK		
D	A	B	C
6"	2'-0"	1'-6"	1'-0"
8"	2'-0"	2'-0"	1'-3"
10" & 12"	3'-6"	2'-6"	1'-6"
14" & 16"	5'-6"	3'-0"	1'-9"
18" & 20"	6'-6"	4'-0"	1'-9"
24"	7'-0"	5'-0"	2'-0"

NOTE:
WHEN DIMENSION "A" IS 6'-0" OR GREATER, USE #4 BARS AT 12" CENTERS EACH WAY.



THRUST BLOCK AT 30° & 45° BEND

DIA OF WATER MAIN	THRUST BLOCK		
D	A	B	C
6"	1'-6"	1'-0"	1'-0"
8"	1'-9"	1'-3"	1'-0"
10" & 12"	3'-0"	1'-6"	1'-3"
14" & 16"	4'-0"	2'-0"	1'-6"
18" & 20"	4'-0"	3'-0"	1'-9"
24"	4'-0"	4'-6"	2'-0"



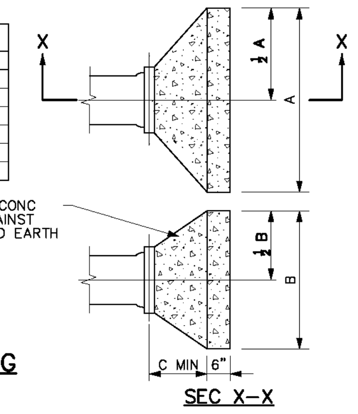
THRUST BLOCK AT 22 1/2° BEND

* THE USE OF THRUST BLOCKS SHALL ONLY BY ALLOWED BY WRITTEN REQUEST AND APPROVAL OF THE UTILITIES ENGINEER.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	THRUST BLOCK DETAIL	DWN.BY: M.K.L.	DATE: 1-1-08
		REV. E.K.R. 8-28-13	DWG. NO. FIG 5B

DIA OF WATER MAIN	THRUST BLOCK		
D	A	B	C
6"	2'-0"	1'-6"	9"
8"	2'-6"	2'-0"	1'-0"
10" & 12"	4'-0"	3'-0"	1'-3"
14" & 16"	5'-0"	4'-0"	1'-6"
18" & 20"	8'-0"	4'-0"	1'-9"
24"	9'-0"	5'-0"	2'-0"

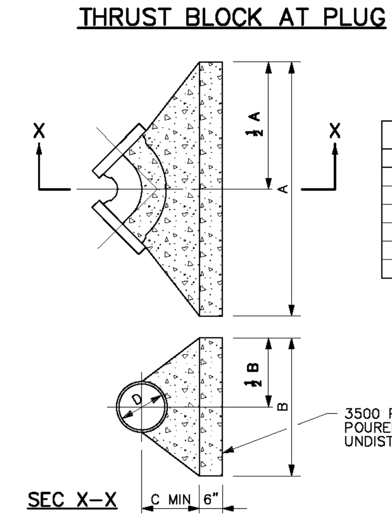
NOTE:
WHEN DIMENSION "A" IS 6'-0" OR GREATER, USE #4 BARS AT 12" CENTERS EACH WAY.



THRUST BLOCK AT PLUG

DIA OF WATER MAIN	THRUST BLOCK		
D	A	B	C
6"	2'-9"	1'-6"	9"
8"	3'-0"	2'-6"	1'-0"
10" & 12"	5'-6"	3'-0"	1'-3"
14" & 16"	6'-0"	5'-0"	1'-6"
18" & 20"	9'-0"	5'-0"	1'-9"
24"	11'-0"	6'-0"	2'-0"

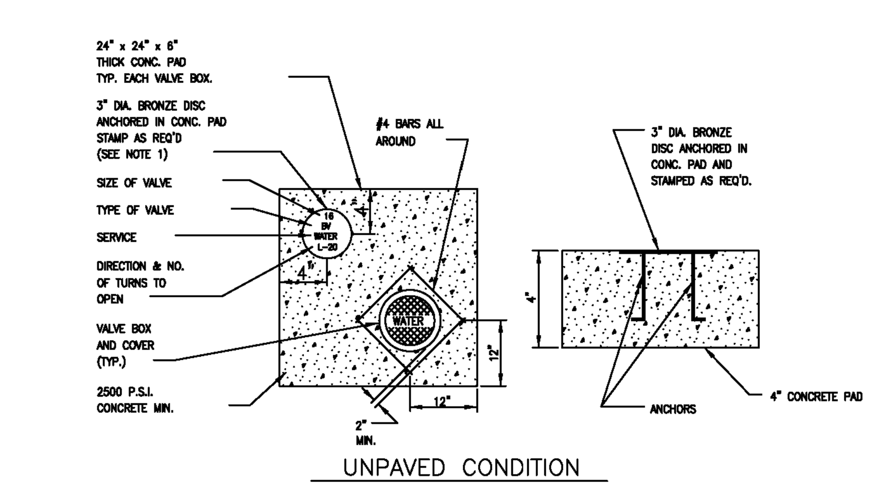
NOTE:
WHEN DIMENSION "A" IS 6'-0" OR GREATER, USE #4 BARS AT 12" CENTERS EACH WAY.

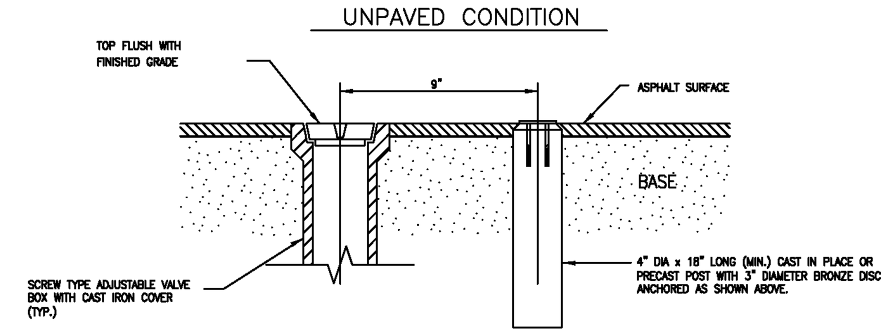


THRUST BLOCK AT 60° & 90° BEND

* THE USE OF THRUST BLOCKS SHALL ONLY BY ALLOWED BY WRITTEN REQUEST AND APPROVAL OF THE UTILITIES ENGINEER.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	THRUST BLOCK DETAIL	DWN.BY: M.K.L.	DATE: 1-1-08
		REV. E.K.R. 8-28-13	DWG. NO. FIG 5C

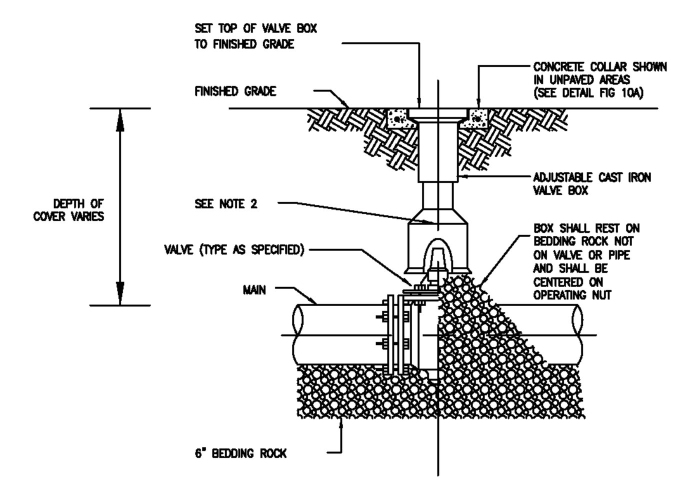




PAVED CONDITION

NOTES:
1. BRONZE IDENTIFICATION DISC SHALL BE REQUIRED FOR ALL VALVES AND SHALL BE IMBEDDED WITH ANCHORS IN FRESH CONCRETE. IF THE CONCRETE IS PREVIOUSLY CURED, THE IDENTIFICATION DISC SHALL BE DRILLED, EPOXY APPLIED, AND BOLTED TO THE EXISTING CONCRETE WITHOUT MARRING THE IDENTIFICATION INFORMATION.
2. VALVE COVERS SHALL BE ROUND AND MARKED "WATER", "RECLAIMED WATER", OR "SEWER".
3. VALVE COVERS SHALL BE PAINTED BLUE FOR WATER, GREEN FOR SEWER, OR WHITE FOR FIRE HYDRANT VALVES.
4. CONCRETE COLLAR TO BE USED IN UNPAVED AREAS ONLY
5. VALVES SHALL NOT BE LOCATED IN STREET CURBS.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	VALVE BOX COLLAR DETAILS WITH ID DISK	DWN.BY: M.K.L.	DATE: 1-1-08
		REV. E.K.R. 9-19-11	DWG. NO. FIG 10A



NOTES:
1. AWWA C-900 DR 18 PVC EXTENSIONS ARE ALLOWED FOR VALVES LESS THAN 16" OR LESS THAN 6' DEEP. ALL OTHER VALVES SHALL REQUIRE AN ADJUSTABLE SEALED VALVE BOX.
2. THE VALVE ACTUATING NUT SHALL BE EXTENDED TO BE WITHIN 36" OF FINISHED GRADE.
3. VALVES THAT ARE 16" OR GREATER SHALL BE SIDE-ACTUATED.
4. BEDDING MATERIAL SHALL BE NO.57 AGGREGATE, PER FDOT STANDARDS.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	GATE/PLUG VALVE AND BOX DETAIL	DWN.BY: M.K.L.	DATE: 1-1-08
		REV. E.K.R. 9-19-11	DWG. NO. FIG 10B

REVISIONS	COMMENTS	DATE
8		
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JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

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ALSO WITH OFFICES IN:
VERO: 772-569-0035, FT PIERCE: 772-468-9055, PALM CITY: 772-426-9959

UTILITY DETAILS 01

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

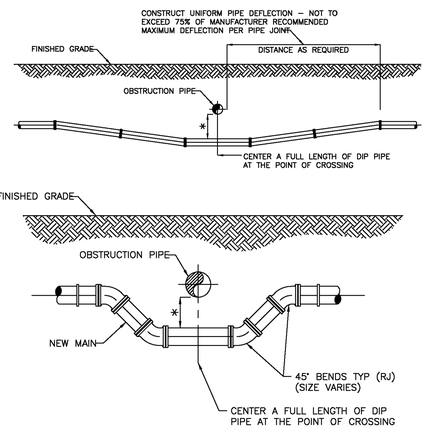
DAVID W. BASSFORD DATE:
FL. P.E. #83267 8/19/2021

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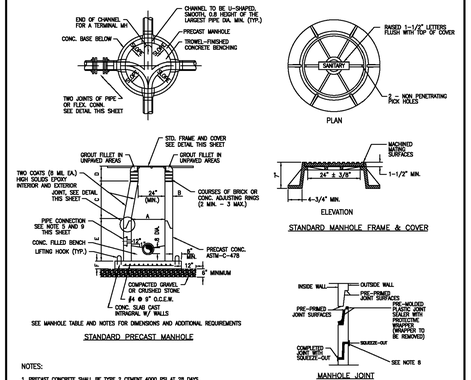
19-1025

PERMITTING SET



* PIPE CROSSING CONFLICTS WILL BE RESOLVED IN ACCORDANCE WITH THE SEPARATIONS REQUIREMENTS NOTED IN FAC62-555-314(1) AND OR THE FDEP PERMIT. FDEP IS THE SOLE MITIGATION AUTHORITY FOR CONFLICT RESOLUTION AND THE CONTRACTOR WILL SUBMIT REQUEST FOR PIPE SEPARATION MITIGATION THROUGH THE PROJECT ENGINEER TO FDEP. ONLY THE FDEP WRITTEN MITIGATION WILL BE REFLECTED IN THE UTILITY AS-BUILT DRAWINGS. (REF SECTO2660)

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	DEFLECTION OF PIPE DETAIL AT UTILITY CROSSING BY JOINT DEFLECTION	DWN.BY: M.K.L.	DATE: 1-1-08
		REV.	DWG. NO. FIG 13

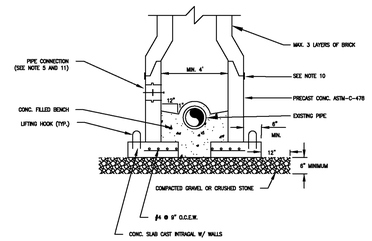


M.H. DEPTH	A	B	C	D	E	F
6' - 12'	48"	6"	24"	24"	AS REQ'D.	8"
12' - 18'	60"	6"	30"	30"	AS REQ'D.	10"
18' & DEEPER	72"	12"	36"	36"	AS REQ'D.	14"

DIMENSION SCHEDULE

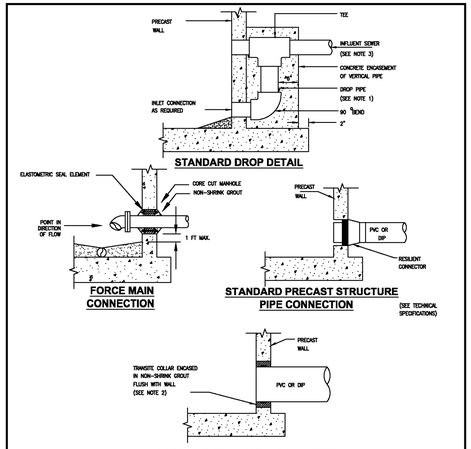
NOTES:
1. PRECAST CONCRETE SHALL BE TYPE 2 CEMENT 4000 PSI AT 28 DAYS.
2. LIFT HOLES NOT PERMITTED THROUGH PRECAST SECTIONS.
3. ALL OPENINGS AND SEAMS SHALL BE SEALED WITH WATERPROOF, NON-SHRINKING GROUT.
4. FLOW CHANNEL TYPICAL INSIDE MANHOLES. SEE DETAIL THIS SHEET.
5. FLEXIBLE CONNECTIONS SHALL BE USED TO CONNECT PIPES (INLETS AND OUTLETS) TO MANHOLES.
6. NO SERVICE LATERALS SHALL BE PERMITTED DIRECTLY INTO MANHOLES. EXCEPT DROP END MANHOLE (MAX (2) LATERALS)
7. PLACE TWO HALF MOON SHAPED PLYWOOD (3/8" THK. MIN.) IN BOTTOM OF MANHOLE AFTER PIPES HAVE BEEN CONNECTED TO KEEP DEBRIS FROM ENTERING SEWER DURING CONSTRUCTION.
8. APPROVED EXTERIOR MANHOLE JOINT SEAL REQUIRED BETWEEN ALL PRECAST SECTIONS. TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
9. AN OUTSIDE DROP CONNECTION SHALL BE REQUIRED FOR ALL INFLUENT WHICH HAVE AN INVERT OF 2FT OR MORE ABOVE THE MANHOLE INVERT. REFER TO DETAIL S-2 FOR DROP CONNECTION DETAIL.
10. FRAME WEIGHT SHALL EQUAL 220 LBS AND COVER WEIGHT SHALL EQUAL 170 LBS.
11. NEW MANHOLES RECEIVING THE FORCE MAIN FLOWS SHALL BE POLY LINED. EXISTING MANHOLES RECEIVING THE FORCE MAIN FLOWS SHALL BE FIBERGLASS LINED.
12. AN OUTSIDE DROP CONNECTION SHALL BE REQUIRED FOR ALL INFLUENT WHICH HAVE AN INVERT OF 2FT OR MORE ABOVE THE MANHOLE INVERT.
13. TWO COAST UP ALTERNATING COLORED EPOXY SHALL BE APPLIED. THE FINAL INTERIOR COLOR OF MANHOLE SHALL BE GRAY. THE FINAL EXTERIOR COLOR SHALL BE BLACK OR GRAY.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	GRAVITY SEWER MANHOLE DETAILS	DWN.BY: M.K.L.	DATE: 1-1-08
		REV. E.K.R. 8-15-13	DWG. NO. S-1A



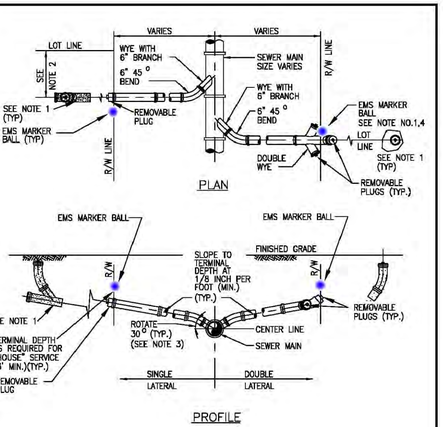
NOTES:
1. PRECAST CONCRETE SHALL BE TYPE 2 CEMENT 4000 PSI AT 28 DAYS.
2. LIFT HOLES NOT PERMITTED THROUGH PRECAST SECTIONS.
3. ALL OPENINGS SHALL BE SEALED WITH WATERPROOF, NON-SHRINKING GROUT.
4. FLOW CHANNEL TYPICAL INSIDE MANHOLES. SEE DETAIL THIS SHEET.
5. FLEXIBLE CONNECTIONS SHALL BE USED TO CONNECT PIPES (INLETS AND OUTLETS) TO MANHOLES.
6. PLACE TWO HALF MOON SHAPED PLYWOOD (3/8" THK. MIN.) IN BOTTOM OF MANHOLE AFTER PIPES HAVE BEEN CONNECTED TO KEEP DEBRIS FROM ENTERING SEWER DURING CONSTRUCTION.
7. LADDER RUNGS SHALL NOT BE INSTALLED IN MANHOLES.
8. DOGHOUSE OPENINGS SHALL BE SEALED WITH WATERTIGHT NON-SHRINK GROUT.
9. REFER TO DETAIL S-1A FOR TYPICAL MANHOLE DETAILS.
10. APPROVED EXTERIOR MANHOLE JOINT SEAL REQUIRED BETWEEN ALL PRECAST SECTIONS. TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS.
11. REFER TO DETAIL S-2 FOR DROP CONNECTION DETAIL.
12. AFTER THE MANHOLE IS PLACED AND THE REQUIRED INSPECTION IS COMPLETED, THE EXISTING MAIN SHALL BE CUT AWAY AND THE FLOW CHANNEL GROUTED.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	DOGHOUSE PRECAST MANHOLE DETAIL	DWN.BY: M.K.L.	DATE: 1-1-08
		REV. E.K.R. 9-19-11	DWG. NO. S-1B



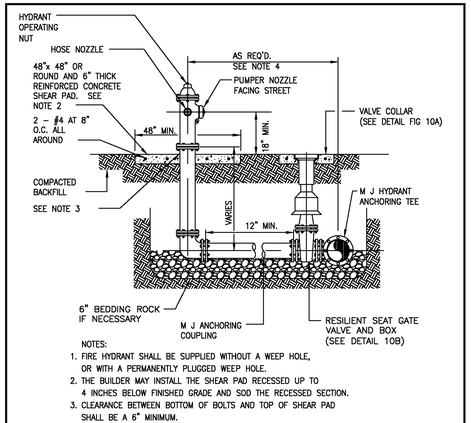
NOTES:
1. DROP PIPE AND FITTINGS SHALL BE OF EQUAL SIZE AND MATERIAL AS THE INFLUENT SEWER.
2. UTILITIES ENGINEER MUST APPROVE ALTERNATE WATER TIGHT CONNECTION DETAILS FOR CONNECTION OF 24" DIAMETER PIPES AND LARGER.
3. AN OUTSIDE DROP CONNECTION SHALL BE REQUIRED FOR ALL INFLUENT WHICH HAVE AN INVERT 2' OR MORE ABOVE THE MANHOLE INVERT.
4. INSIDE DROP MANHOLE SHALL ONLY BE USED WHEN APPROVED IN WRITING BY UTILITIES ENGINEER.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	MANHOLE / WET WELL CONNECTION DETAIL	DWN.BY: M.K.L.	DATE: 1-1-08
		REV. E.K.R. 8-14-13	DWG. NO. S-2



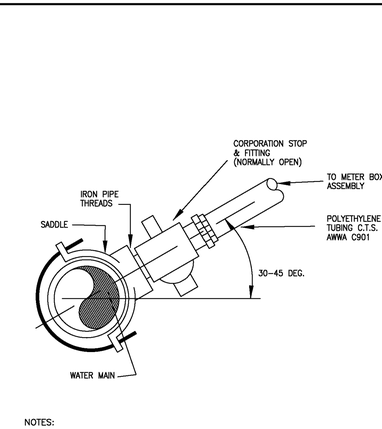
NOTES:
1. CLEAN-OUT (SHOWN SHADED) SHALL BE INSTALLED BY THE BUILDER IN ACCORDANCE WITH STANDARD PLUMBING CODE.
2. LOCATE SINGLE LATERAL AS CLOSE TO LOT LINE AS POSSIBLE, 25' MAXIMUM.
3. INVENT OF SERVICE LATERAL SHALL NOT ENTER SEWER MAIN BELOW HORIZONTAL CENTER LINE.
4. INSTALL EMS MARKER BALL AT THE END OF EACH SERVICE LINE.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	SEWER SERVICE LATERAL DETAIL	DWN.BY: M.K.L.	DATE: 1-1-08
		REV.	DWG. NO. S-3



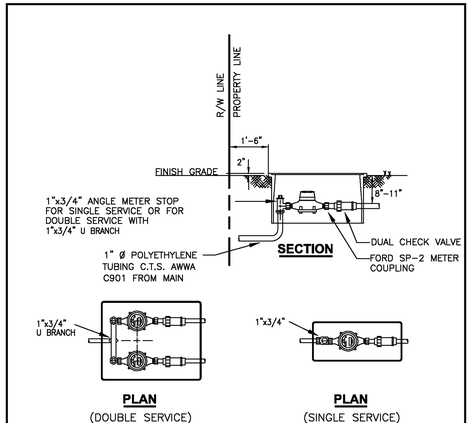
NOTES:
1. FIRE HYDRANT SHALL BE SUPPLIED WITHOUT A WEEP HOLE, OR WITH A PERMANENTLY PLUGGED WEEP HOLE.
2. THE BUILDER MAY INSTALL THE SHEAR PAD RECESSED UP TO 4 INCHES BELOW FINISHED GRADE AND SOD THE RECESSED SECTION.
3. CLEARANCE BETWEEN BOTTOM OF BOLTS AND TOP OF SHEAR PAD SHALL BE A 6" MINIMUM.
4. IF THE HYDRANT IS LOCATED IN THE BOTTOM OF A ROADSIDE SWALE, MOVE THE HYDRANT TO BACKSLOPE OF THE SWALE.
5. CLEARANCE OF SEVEN AND ONE HALF FEET IN FRONT OF AND TO THE SIDES OF FIRE HYDRANTS AND APPLIANCES SHALL BE MAINTAINED. CLEARANCE OF FOUR FEET TO THE REAR OF FIRE HYDRANTS SHALL BE MAINTAINED.
6. FIRE HYDRANTS IN RESIDENTIAL SUBDIVISION/DEVELOPMENTS SHALL BE INSTALLED, WITH INTERMEDIATE HYDRANTS SPACED AT INTERVALS NOT TO EXCEED 1,000 FEET APART. FIRE HYDRANTS SHALL BE LOCATED NOT FURTHER THAN 15 FEET NOR LESS THAN 3 FEET FROM AN IMPROVED SURFACE, City Ord. Sec. 33.28. THE MINUMIM MEASUREMENT STARTS FROM THE OUTSIDE EDGE OF THE CURB.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	FIRE HYDRANT ASSEMBLY DETAIL	DWN.BY: M.K.L.	DATE: 1-1-08
		REV. E.K.R. 2-3-11	DWG. NO. W-3



NOTES:
1. ALL MATERIALS MUST CONFORM TO THE CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS HANDBOOK SPECIFICATIONS

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	TYPICAL MAIN CONNECTION	DWN.BY: M.K.L.	DATE: 1-1-08
		REV. E.K.R. 1-29-10	DWG. NO. W-6A



NOTES:
1. ALL MATERIALS MUST CONFORM TO THE CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS HANDBOOK SPECIFICATIONS

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	TYPICAL RESIDENTAL SERVICE CONNECTION	DWN.BY: M.K.L.	DATE: 1-1-08
		REV. E.K.R. 1-29-10	DWG. NO. W-6B

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1	COMMENTS		XX-XX-XXXX
	REVISIONS		DATE

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

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UTILITY DETAILS 02

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

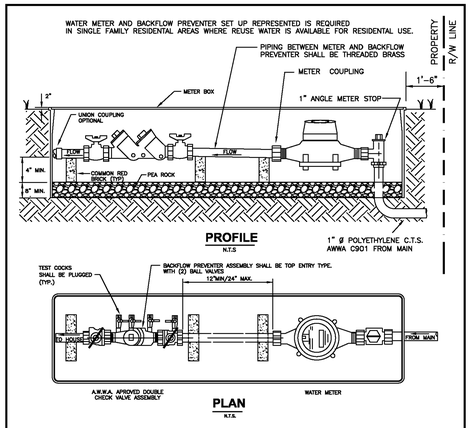
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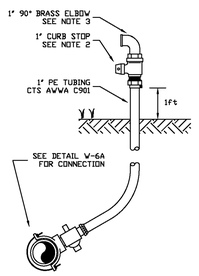


HOSE BIB VACUUM BREAKER REQUIRED ON ALL FIXTURES THREADED FOR HOSE ATTACHMENT BY RULES OF THE FLORIDA DEPT. OF H.R.S. AND THE STANDARD PLUMBING CODE

NOTES:

1. DEVICES ARE TO BE INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURES INSTRUCTIONS
2. ALL BACKFLOW PREVENTION DEVICES MUST BE TESTED ON SITE AND CERTIFICATIONS MUST BE SUBMITTED TO PALM BAY UTILITY BEFORE WATER SERVICE TO SITE CAN BE ESTABLISHED
3. RESIDENTIAL CONNECTION WITH A HIGH HEALTH HAZARD MUST UTILIZE DETAIL W-10

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	SINGLE FAMILY RESIDENTIAL BACKFLOW AND WATER METER ASSEMBLY LOW HEALTH HAZARD	DWN.BY: M.K.L. / REV.: E.K.R. 03-04-11	DATE: 1-1-08 / DWG. NO.: W-7

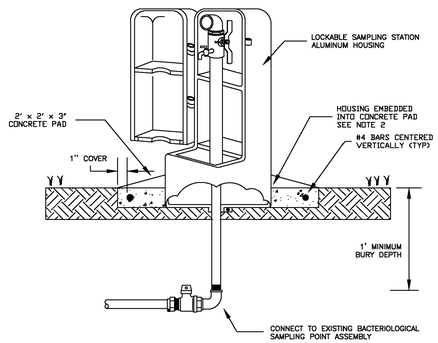


PROFILE
n.t.s.

NOTES:

1. ALL MATERIALS MUST CONFORM TO THE CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS HANDBOOK SPECIFICATIONS
2. BALL VALVE CURB STOP SHALL BE PACK JOINT FOR PE TUBING (CTS) BY FEMALE IRON PIPE THREAD
3. 90 DEGREE BRASS ELBOW SHALL BE MALE IRON PIPE THREAD BY FEMALE IRON PIPE THREAD

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	BACTERIOLOGICAL SAMPLING POINT DETAIL	DWN.BY: E.K.R. / REV.:	DATE: 06-13-11 / DWG. NO.: W-8A



NOTES:

1. SAMPLING STATION SHALL BE MODEL #88WC ECLIPSE MANUFACTURED BY THE KUPFERLE FOUNDRY COMPANY
2. BOTTOM OF HOUSING SHALL BE FLUSH WITH THE BOTTOM OF THE CONCRETE PAD
3. HOUSING SHALL BE POSITIONED WITH THE DOOR SIDE CLOSEST TO THE RIGHT OF WAY LINE, SO THAT THE BLOW OFF FACES THE SWALE

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	WATER MAIN SAMPLING STATION DETAIL	DWN.BY: E.K.R. / REV.:	DATE: 06-14-11 / DWG. NO.: W-8B

	DATE	COMMENTS
8		
7		
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REVISIONS

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

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UTILITY DETAILS 03

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD
FL. P.E. #83267

DATE: 8/19/2021

SHEET

C-806

19-1025

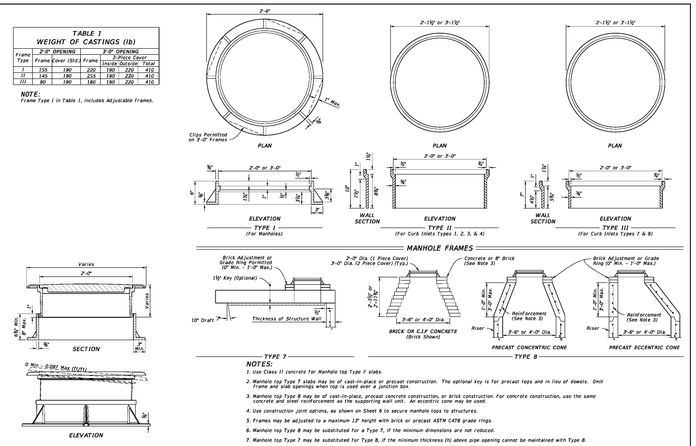
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TABLE 1
WEIGHT OF CASTINGS (lb)

Frame Type	2'-0" OPENING Frame	2'-0" OPENING Cover (Std.)	2'-0" OPENING 3-Piece Cover Inside Diameter	2'-0" OPENING 3-Piece Cover Total
I	155	190	220	190	220	410
II	80	190	220	190	220	410
III	80	190	180	190	220	410

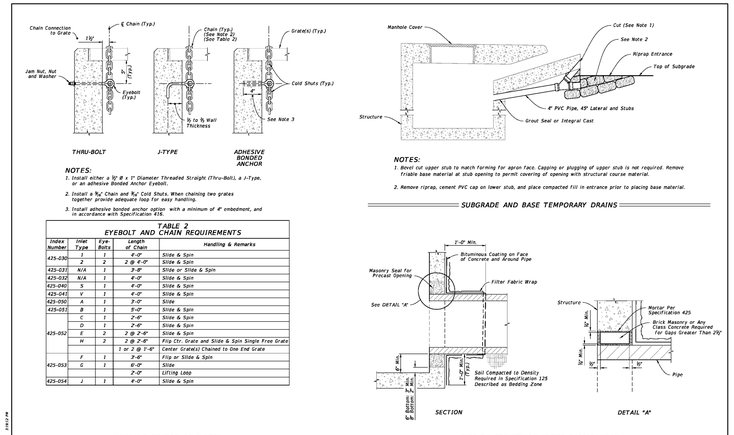
NOTE:
Frame Type I in Table 1, includes Adjustable frames.



NOTES:
1. Use Class II concrete for Manhole top Type 7 slabs.
2. Manhole top Type 7 slabs may be of cast-in-place or precast construction. The optional key is for precast tops and in lieu of dowels. Omit frame and slab openings when top is used over a junction box.
3. Manhole top Type 8 may be of cast-in-place, precast concrete construction, or brick construction. For concrete construction, use the same concrete and steel reinforcement as the supporting wall unit. An eccentric cone may be used.
4. Use construction joint options, as shown on Sheet 6 to secure manhole tops to structures.
5. Frames may be adjusted to a maximum 12" height with brick or precast ASTM C478 grade rings.
6. Manhole top Type 8 may be substituted for a Type 7, if the minimum dimensions are not reduced.
7. Manhole top Type 7 may be substituted for Type 8, if the minimum thickness (t) above pipe opening cannot be maintained with Type 8.

MANHOLE FRAMES AND MANHOLE TOPS

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2021-22 STANDARD PLANS	SUPPLEMENTARY DETAILS FOR DRAINAGE STRUCTURES	INDEX 425-001	SHEET 2 of 8



NOTES:
1. Install either a ½" Ø x 1" Diameter Threaded Straight (Thru-Bolt), a J-Type, or an adhesive Bonded Anchor Eyebolt.
2. Install a ⅝" Chain and ⅝" Cold Shuts, When chaining two grates together provide adequate loop for easy handling.
3. Install adhesive bonded anchor eyebol with a minimum of 4" embedment, and in accordance with Specification 416.

TABLE 2
EYEBOLT AND CHAIN REQUIREMENTS

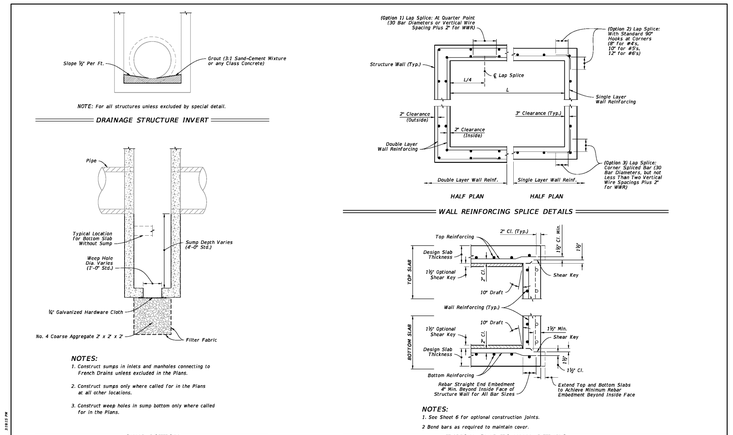
Inlet Number	Inlet Type	Eye-Bolts	Length of Chain	Handling & Remarks
425-030	1	1	4'-0"	Slide & Spin
	2	2	2 @ 4'-0"	Slide & Spin
425-033	N/A	1	3'-0"	Slide or Slide & Spin
425-035	N/A	1	4'-0"	Slide & Spin
425-040	5	1	4'-0"	Slide & Spin
425-045	V	1	4'-0"	Slide & Spin
425-050	A	1	3'-0"	Slide
425-051	B	1	5'-0"	Slide & Spin
	C	1	7'-0"	Slide & Spin
	D	1	2'-0"	Slide & Spin
425-052	E	2	2 @ 2'-0"	Slide & Spin
	H	2	2 @ 2'-0"	Flip Ctr. Grate and Slide & Spin Single Free Grate
		1 or 2 @ 1'-0"	Center Grate(s) Chained to One End Grate	
	F	1	3'-0"	Flip or Slide & Spin
425-053	G	1	6'-0"	Slide
			2'-0"	Lifting Loop
425-054	J	1	4'-0"	Slide & Spin

LOCKING GRATES TO INLETS

PIPE TO STRUCTURE FILTER FABRIC WRAP

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2021-22 STANDARD PLANS	SUPPLEMENTARY DETAILS FOR DRAINAGE STRUCTURES	INDEX 425-001	SHEET 3 of 8

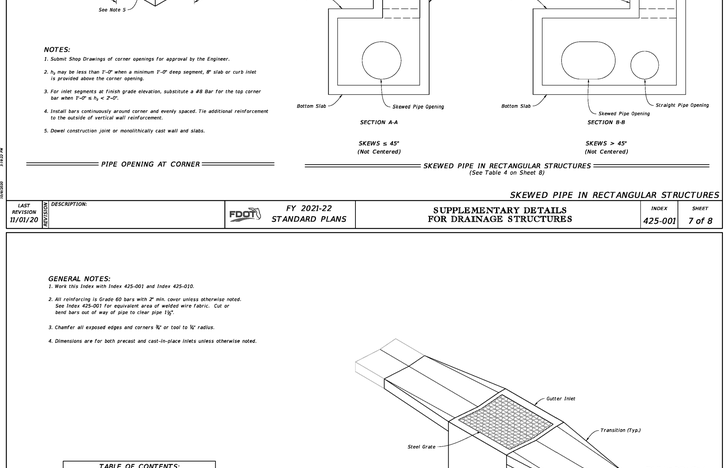
LOCKING GRATES, SUBGRADE AND BASE TEMPORARY DRAINS, AND PIPE TO STRUCTURE FILTER FABRIC WRAP



NOTES:
1. See Sheet 6 for optional construction joints.
2. Bond bars as required to maintain cover.

DRAINAGE STRUCTURE INVERT, SUMP BOTTOM, WALL REINFORCING SPLICE DETAILS, AND TYPICAL SLAB TO WALL DETAILS

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2021-22 STANDARD PLANS	SUPPLEMENTARY DETAILS FOR DRAINAGE STRUCTURES	INDEX 425-001	SHEET 4 of 8



NOTES:
1. Submit Shop Drawings of corner openings for approval by the Engineer.
2. h_2 may be less than 3'-0" when a minimum 3'-0" deep segment, W slab or curb inlet is provided above the corner opening.
3. For inlet segments at finish grade elevation, substitute a #8 Bar for the top corner bar when h_1=0' & h_2 < 2'-0".
4. Install bars continuously around corner and evenly spaced. Tie additional reinforcement to the outside of vertical wall reinforcement.
5. Dowel construction joint or monolithically cast wall and slabs.

PIPE OPENING AT CORNER

SKEWED PIPE IN RECTANGULAR STRUCTURES (See Table 4 on Sheet 8)

SKEWED PIPE IN RECTANGULAR STRUCTURES

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2021-22 STANDARD PLANS	SUPPLEMENTARY DETAILS FOR DRAINAGE STRUCTURES	INDEX 425-001	SHEET 7 of 8

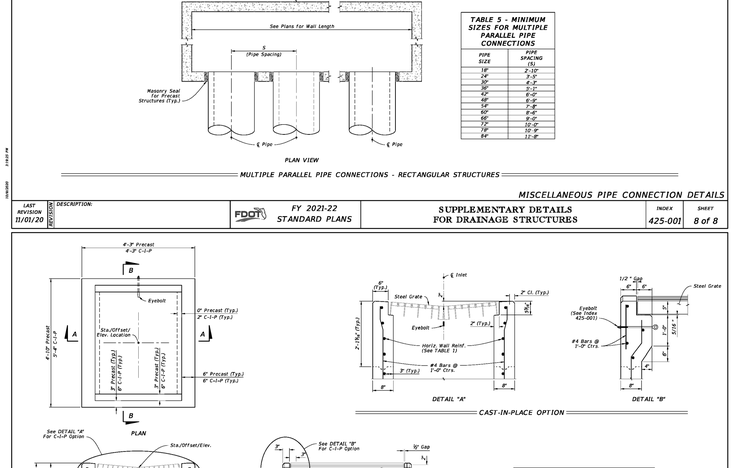


TABLE 4 - MAXIMUM PIPE SKEW FOR PRECAST ROUND OPENINGS

WALL THICKNESS	PIPE SIZE 18"	24"	30"	36"	42"	48"	54"	60"	66"	72"	78"	84"
MAXIMUM SKEW ANGLE	8"	19°	15°	12°	10°	9°	8°	7°	6°	6°	5°	5°	4°

NOTE:
These values are based on 2" clearance for precast structures. Larger skews are possible for Cast-in-Place Structures or elliptical pipe openings when approved by the Engineer.

MAXIMUM PIPE SKEW FOR PRECAST ROUND OPENINGS

NOTE:
Lap splice: 20 bar diameter for deformed wire or bar, but not less than vertical wire spacing plus 2" for WWR or 40 bar diameters for smooth wire.

MULTIPLE PIPE CONNECTIONS - PRECAST ROUND STRUCTURES

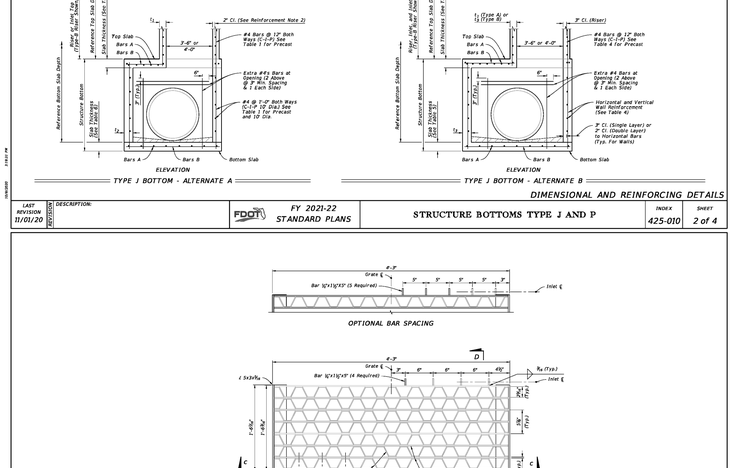
TABLE 5 - MINIMUM SIZES FOR MULTIPLE PARALLEL PIPE CONNECTIONS

PIPE SIZE	PIPE SPACING (S)
18"	2'-10"
24"	3'-5"
30"	4'-1"
36"	5'-1"
42"	6'-0"
48"	6'-8"
54"	7'-8"
60"	8'-6"
66"	9'-0"
72"	10'-0"
78"	10'-9"
84"	11'-8"

MULTIPLE PARALLEL PIPE CONNECTIONS - RECTANGULAR STRUCTURES

MISCELLANEOUS PIPE CONNECTION DETAILS

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2021-22 STANDARD PLANS	SUPPLEMENTARY DETAILS FOR DRAINAGE STRUCTURES	INDEX 425-001	SHEET 8 of 8



ALTERNATE A NOTES:
1. Areas #4 Bars as required to maintain cover.
2. Construct the top or riser of the structure according the top slab ui the "Special Top Slab" details, when the inside diameter of a round structure is not more than 1'-0" larger than the opening in the riser or top slab.
3. Alternate A slab reinforcing not applicable for Type A, B, I, O, & U Ditch Bottom Inlets or Type S & V Gutter Inlets. See Indexes 425-040, 425-041, 425-050, 425-051, and 425-052.

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2021-22 STANDARD PLANS	STRUCTURE BOTTOMS TYPE J AND P	INDEX 425-010	SHEET 2 of 4

GENERAL NOTES:
1. Work this Index with Index 425-001 and Index 425-010.
2. All reinforcing is Grade 60 bars with 2" min. cover unless otherwise noted. See Index 425-001 for equivalent area of welded wire fabric. Cut or bend bars out of way of pipe to clear pipe 1½".
3. Chamfer all exposed edges and corners ¾" or tool to ¾" radius.
4. Dimensions are for both precast and cast-in-place inlets unless otherwise noted.

TABLE OF CONTENTS:

Sheet	Description
1	General Notes and Contents
2	Dimensional and Reinforcing Details
3	Steel Grate Details
4	Alternate A Structure Bottom - Top Slab Details

GUTTER INLET TYPE V (Pipe Opening Not Shown)

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2021-22 STANDARD PLANS	GUTTER INLET TYPE V	INDEX 425-041	SHEET 1 of 4

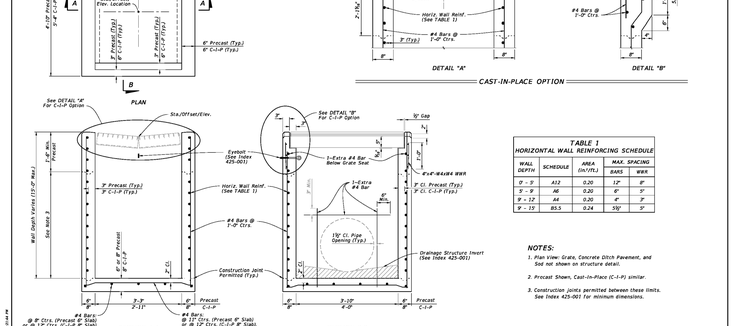


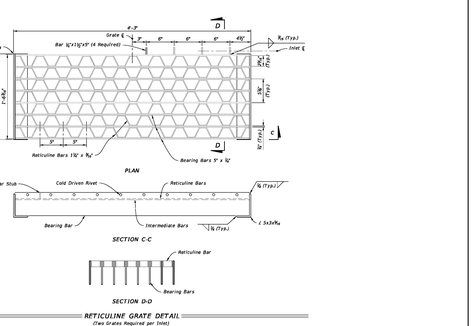
TABLE 1
HORIZONTAL WALL REINFORCING SCHEDULE

WALL DEPTH	SCHEDULE	AREA (in²/ft.)	MAX. SPACING BARS	MAX. SPACING WWR
0' - 5'	A12	0.20	12"	8"
5' - 9'	A8	0.20	8"	5"
9' - 12'	A4	0.20	4"	3"
9' - 15'	B5.5	0.24	5½"	5"

NOTES:
1. Plan View: Grate, Concrete Ditch Pavement, and Sod not shown on structure detail.
2. Precast Shown, Cast-in-Place (C-I-P) similar.
3. Construction joints permitted between these limits. See Index 425-001 for minimum dimensions.

DIMENSIONAL AND REINFORCING DETAILS

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2021-22 STANDARD PLANS	GUTTER INLET TYPE V	INDEX 425-041	SHEET 2 of 4



STEEL GRATE DETAILS

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2021-22 STANDARD PLANS	GUTTER INLET TYPE V	INDEX 425-041	SHEET 3 of 4

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CA#27126 LB#8055
VERO: 772-569-0036 FT PIERCE: 772-468-9065 PALM CITY: 772-408-9969

JOB NO.	19-1025							8	
DESIGNED	DWB							7	
DRAWN	AFR							6	
DATE	03-23-2021							5	
CHECKED	DWB							4	
DATE ISSUED	8/19/2021							3	
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							COMMENTS	△	REVISIONS
							XX-XX-XXXX		DATE

FDOT DETAILS 01

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 63267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD DATE: 8/19/2021
FL P.E. #63267

SHEET
C-807

19-1025
PERMITTING SET

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TABLE 2
TOP SLAB OPENING

DIAMETER	OPENING SIZE Min.	Max.
5'-0" to 8'-0"	2'-11" x 4'-0"	3' x 5'-10"

TABLE 3
TOP SLAB REINFORCING SCHEDULE

SCHEDULE	GRADE 60 (BAR) OR 65 KSI & 70 KSI (WELDED WIRE) in./ft.
A	0.20
B	0.30
D	0.37
E	0.53
F	0.75
G	1.06
C	1.45

TABLE 4
TOP SLAB WITH CENTERED OPENING

STRUCTURE DEPTH	SLAB THICKNESS	REINFORCING (2 WAY) SCHEDULE
SIZE: 3'-0"		
≥0.1'<3'0"	9½"	C
3'0"<40'	9½"	D
SIZE: 4'-0"		
0.1'<4'	9½"	B
4'<18'	9½"	C
18'<30'	9½"	D
30'<37'	9½"	E
37'<40'	9½"	G
SIZE: 5'-0"		
≥0.1'<9'	11½"	C
9'<13'	11½"	D
13'<23'	11½"	E
23'<33'	11½"	E
33'<40'	11½"	G

ALTERNATE A STRUCTURE BOTTOM - TOP SLAB DETAILS

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2021-22 STANDARD PLANS	GUTTER INLET TYPE V	INDEX 425-041	SHEET 4 of 4

NOTE: See Table 1 on Sheet 3 for Dimensions and Quantities.

ROUND CONCRETE PIPE (Elliptical Pipe Similar)

SINGLE AND MULTIPLE CONCRETE PIPE

LAST REVISION 11/01/19	DESCRIPTION:	FDOT FY 2021-22 STANDARD PLANS	CROSS DRAIN MITERED END SECTION	INDEX 430-021	SHEET 2 of 6

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

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

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

CONCRETE CURB AND GUTTER

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2021-22 STANDARD PLANS	CURB AND GUTTER	INDEX 520-001	SHEET 1 of 2

GENERAL NOTES

1. For curb, gutter and curb & gutter provide ⅛" - ¼" contraction joints at 10' centers (max.). Contraction joints adjacent to concrete pavement on tangents and flat curves are to match the pavement joints, with intermediate joints not to exceed 10' centers. Curb, gutter and curb & gutter expansion joints shall be located in accordance with Specification 520.
2. Ends of Curbs Types B and D shall transition from full to zero heights in 3'.

LAST REVISION 11/01/17	DESCRIPTION:	FDOT FY 2021-22 STANDARD PLANS	CURB AND GUTTER	INDEX 520-001	SHEET 2 of 2

SIDEWALK CURB RAMPS CR-D, CR-E, CR-F & CR-G

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2021-22 STANDARD PLANS	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	INDEX 522-002	SHEET 4 of 7

NOTES:

1. For crosswalk width, exceed width of the adjacent sidewalk, but do not make width less than 6' for intersection crosswalks and 10' for midblock crosswalks. Measure width from the inside of the transverse crosswalk markings.
2. When the Special Emphasis Crosswalk is not perpendicular to the lane lines, make the longitudinal markings parallel to the lane lines.
3. Refer to Index 522-002 when Curb Ramps are present.

LAST REVISION 11/01/20	DESCRIPTION:	FDOT FY 2021-22 STANDARD PLANS	PAVEMENT MARKINGS	INDEX 711-001	SHEET 10 of 13

NO.	COMMENTS	DATE
8		
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△	REVISIONS	XX-XX-XXXX

JOB NO.	19-1025	
DESIGNED	DWB	
DRAWN	AFR	
DATE	03-23-2021	
CHECKED	DWB	
DATE ISSUED	8/19/2021	

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
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FDOT DETAILS 02

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE 8/19/2021

SHEET

C-808

19-1025

PERMITTING SET

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PALM BAY SPECIFICATIONS

SECTION 02645
HYDRANT ASSEMBLIES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: Furnish and install hydrant assemblies of the type(s) and size(s) and in the location(s) shown on the Drawings and as specified herein. Hydrant assemblies consist of:
   1. Hydrant tee.
   2. 6 inch gate valve and curb box.
   3. 6 inch hydrant branch piping.
   4. Hydrant.
   5. Drainage material.
   6. Restraints and or Thrust blocking.
B. Related Work Specified Elsewhere:
   1. Gate Valves: Section 15101.

1.02 QUALITY ASSURANCE

A. Hydrants shall conform to AWWA C502 and all hydrants shall be from one (1) manufacturer.
B. Gate valves shall conform to AWWA C500.
C. Acceptable manufacturers:
   1. Mueller Company, Decatur, Illinois.
   2. American Cast Iron Pipe (American Darling), Birmingham, Alabama.

1.03 SUBMITTALS

A. The Contractor shall submit in conformance with Section 01340: Shop Drawings, Working Drawing and Samples for review by the Engineer, complete sets of detailed and dimensioned working shop drawings.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Fire Hydrants.
   1. Dry barrel compression type with break-away upper section conforming to AWWA C502.
   2. Connections:
      a. Hose connections:
         (1) Two (2) 2-1/2 inch hose connection.
         (2) One (1) 4-1/2 inch pumper connection.
         (3) Threads:
            (a) 2-1/2 inch: 60 degree V threads, 7-1/2 threads to the inch, external outside diameter (OD) 3-1/16 inch National Standard.
            (b) 4-1/2 inch: Four (4) threads to the inch, external OD 5-3/4 inches, National Standard.
            (c) Threads that conform to the Fire Division Standard for the area.
      b. Inlet connection:
         (1) 6 inch bottom inlet.
         (2) Five and one quarter inch (5 1/4 inch) minimum valve opening.
   3. Pressure rating:
      a. Working pressure: 150 psi.
   4. Working parts:
      a. Bronze and open counterclockwise unless otherwise noted.
      b. Removable from top of hydrant while in place.
   5. Design:
      a. Low profile, maximum height 30 inches.
      b. Hose caps chained to hydrant barrel fitted with nuts similar to hydrant operating nut.
      c. Barrel lengths sufficient for 3 foot pipe burial.
      d. Stand pipe breaking ring or breakable sections.
      e. Constructed in at least two (2) section bolted together.
      f. Renewable O-ring stem seals.
   6. Supply one (1) collision repair kit.
   7. Hydrant barrels shall be painted per paragraphs 3.01 and 3.02 below.

B. Gate valves: Non-rising stem type, AWWA valves as specified in Section 15101: Gate Valves:

C. Valve boxes:
   1. Adjustable to fit depth of bury. Extension sections shall be cast iron only.
   2. Size:
      a. Interior diameter: Not less than 5 inches.
      b. Minimum thickness: 0.3 inches.
   3. Covers marked appropriately:
      a. N.P.W. (non-potable water)
      b. Water (potable water)
   4. Manufacturers:
      a. Tyler Corp., Tyler Pipe/Utilities, Tyler, Texas
      b. U.S. Foundry, Inc., Medley, Florida

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install hydrants as shown in the details and using manufacturer's written instructions.
B. No hydrant assembly shall be backfilled until approved by the Engineer.
C. Provide drainage material and thrust blocks as shown.
D. Provide barrel extensions as required for hydrant to be installed at proper grade.
E. Provide finish paint on all exposed surfaces. Color(s) shall meet the requirement of paragraph 3.02 below or the Owner's requirements as approved by the Engineer.

3.02 PAINTING AND CLEANING

A. Paint hydrants per specification of Section 09900.
   1. Privately maintained hydrant and appurtenances shall be painted "Red".
   2. City owned hydrant shall be painted in the color(s) specified by the Owner.
      Bonnet and Caps: Rust-oleum Forest Green No. 1282402
      Body: Rust-oleum High Gloss White No. 2766404
   Clean all hydrants of concrete, etc., and repaint as necessary.

END OF SECTION

SECTION 02660
WATER DISTRIBUTION SYSTEM

PART 1 - GENERAL

1.01 DESCRIPTION

A. The work included under this Section consists of furnishing all labor, equipment and materials necessary for the construction and testing of water mains and appurtenances as shown on the Drawings and specified herein.
B. Related Work Specified Elsewhere:
   1. Trenching, Backfilling and Compacting: Section 02220
   2. Hydrostatic Testing of Piping: Section 15044.
   3. Ductile Iron Pipe and Fittings: Section 15062.
   4. Polyvinyl Chloride (PVC) Pressure Pipe: Section 15071.
   5. Gate Valves: Section 15101.
   6. Butterfly Valves: Section 15103.
   7. Fire Hydrant Assemblies: Section 02645 AND 15120.

1.02 SUBMITTALS

A. The Contractor shall submit Shop Drawings, work drawings and samples in accordance with the General Conditions and Section 01340. In addition the requirements of each related section and the following shall apply.
B. Shop Drawings for piping, valves, hydrants and other equipment and appurtenances shall be prepared by the manufacturer and include, as a minimum, the following:
   1. Details of all fittings, valves, hydrants and other appurtenances.
   2. Lists of materials of construction, standards and spare parts.
   3. Provide detailed drawings of joints and gaskets to be supplied.
   4. Calculations and/or test data demonstrating that the proposed restrained joint arrangement can be transmit the required forces.
   5. Copy of the manufacturer's quality control check of materials and production.
   6. Provide from the manufacturer's an affidavit of compliance with AWWA standards referenced in the specifications. Affidavit shall be included with Shop Drawings submittals.
C. Prove a tabulated layout schedule including:
   1. Order of installation and closures.
   2. Pipe invert station and elevation at changes of grade and alignment.
   3. Elements of curves and bends, both in horizontal and vertical alignment, including elements of the resultant true angular deflections in cases of combined curvature.
   4. The limits of each reach of pipe thickness class and of restrained joints.
   5. The limits of each reach of concrete encasement or encasement in casing.
   6. Locations of closures for length adjustment and for construction convenience.
   7. Locations of valves, hydrants and other equipment.
   8. Methods and locations of support.
D. Provide detailed working drawings of each meter and vault installation.

1.03 QUALITY ASSURANCE

A. Standards: All pipe, fitting, valves, hydrants and other appurtenances, where applicable, shall conform to the latest AWWA standards.
B. Qualifications: All pipe and appurtenances of similar type and material shall be furnished by a single manufacturer who is fully experienced, reputable and qualified in the manufacture of the items to be furnished. The equipment shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these Specifications.
C. Special tools, solvents, lubricants and caulking compounds required for normal installation shall be furnished by the respective pipe and equipment manufacturer.

1.04 HANDLING, SHIPPING AND STORAGE

A. All pipe, fittings, valves, hydrants and accessories shall be handled and stored at the job site in conformance with AWWA standards and the manufacturers' recommendations.
B. Factory assembled parts and components shall not be dismantled for shipment unless permission is received in writing from the Engineer.
C. After hydrostatic or other tests, all entrapped water shall be drained prior to shipment and proper care shall be taken to protect parts from the entrance of water during shipment, storage and handling.
D. Storage:
   1. Pipes shall be stored on level ground, preferably turf or sand, free of sharp objects which could damage the pipe.
   2. Finished surfaces of all valve and hydrant opening shall be protected by wooden blanks, strongly built and securely bolted.
   3. Finished iron or steel surfaces not painted shall be protected to prevent rust and corrosion.
   4. All pipe and equipment shall be properly protected so that no damage or deterioration will occur during a prolonged delay from the time of shipment until installation is completed and the pipe and equipment are ready for operation.

PART 2 - PRODUCTS

2.01 GENERAL

A. Product materials and construction shall conform to the respective sections of these Specifications.

2.02 PIPE AND FITTING MATERIALS

A. Buried pipe, four (4) inches through twelve (12) inches diameter, shall be AWWA C-900, DR18 PVC as specified in Section 15071 or Class 50 ductile iron pipe (DIP) as specified in Section 15062, unless otherwise shown on the Drawings.
B. Buried pipe larger than twelve (12) inches diameter shall be Class 50 DIP as specified in Section 15062.
C. All fitting shall be ductile iron as specified in Section 15062.

2.03 VALVES

A. Valves twelve (12) inches and smaller shall be gate valves as specified in Section 15101.
B. Valves larger than twelve (12) inches shall be butterfly valves as specified in Section 15103.

2.04 FIRE HYDRANT ASSEMBLIES

A. Fire hydrant assemblies shall be as specified in Section 02645.

PART 3 - EXECUTION

3.01 GENERAL

Water main piping shall be installed in accordance with AWWA standards C-600 and C-900, the manufacturer's recommendations and these Specifications.

3.02 TRENCH EXCAVATION AND PIPE BEDDING

Trench shall be excavated and pipe bedding prepared in accordance with Section 02221 and the Drawings.

3.03 TRENCH DEWATERING AND DRAINAGE CONTROL

Excavation, construction and laying of pipe, concrete work, fill and bedding rocks shall be "in-the-dry" as specified in Section 02140 and 02221. Contractor shall prevent water from entering the trench during excavation and pipe laying operations to the extent required to properly grade the bottom of the trench and allow for proper compaction of the backfill. Pipe shall not be laid in water.

3.04 PIPE PREPARATION, HANDLING AND INSTALLATION

A. General:
   1. All pipe, fittings and appurtenances shall be inspected prior to lowering into trench to insure no cracked, broken or otherwise defective materials are being used.
   2. Contractor shall clean ends of pipe thoroughly and remove foreign matter and dirt from inside of pipe.
   3. Contractor shall use proper implements, tools and facilities for the safe and proper protection of the Work. Contractor shall lower pipe into the trench in such a manner as to avoid any physical damage to the pipe. Care shall be taken to not drop or dump pipe into trenches under any circumstances.
   4. Contractor shall prevent foreign material from entering the pipe while it is being placed in the trench. Contractor shall remove all foreign material from the pipe or joint ring before the next pipe is placed. During installation, Contractor shall keep debris, tools, clothing or other materials out of the pipe.
   5. Contractor shall provide special tools and devices such as special jacks, chokers and similar items required for proper installation.
   6. Lubricant for the pipe gaskets shall be furnished by the pipe manufacturer and no substitutes will be permitted under any circumstances.

B. Lines and Grades:

   1. Pipe shall be installed to the lines and grades shown on the Drawings. The Contractor shall provide line and grade staking at on hundred (100) foot maximum spacing and at all line and grade change locations.
   2. The minimum pipe depth shall be three (3) feet below the finished grade surface or three (3) feet below the elevation of the edge of the road surface, whichever is greater, unless greater depths are shown on the Drawings.

C. Pipe Deflection:

   Long radius curves, either horizontal or vertical, may be installed with standard pipe by deflections at the joints. Maximum deflections at pipe joints and laying radius for the various pipe lengths shall be in accordance with the pipe manufacturer's recommendations.

D. Installation of PVC Pipe:

   All PVC pipe shall be installed in accordance with the UNI-BELL "Handbook of PVC Pipe Design and Construction", AWWA C-900 and these Specifications.

E. Installation of Ductile Iron Pipe:

   1. All ductile iron pipe (DIP) shall be polyethylene encased (minimum 8 mils) where shown on the Drawings in accordance with ANSI/AWWA A21.51/C105.

3.05 BACKFILL AND COMPACTION FOR PIPES

The requirements of Section 02221 shall apply.

3.06 PIPE RESTRAINING AND THRUST BLOCKS

A. General:
   1. Pipe fittings and other items requiring pressure restraint shall be braced with thrust blocks or other restraining assemblies as specified herein.
   2. For all PVC pipe, thrust restraint to prevent movement of lines under pressure at bends, tees, caps, valves, hydrants etc., shall be by use of thrust blocks unless otherwise shown on the Drawings.
   3. Thrust restraint of pipe and fittings sixteen (16) inches and larger shall be by restrained joints. Use of thrust blocks for pressure pipe and fittings sixteen (16) inches and larger shall not be allowed.
   4. Ductile iron pipe twelve (12) inches and smaller may be restrained by use of restrained joints.
B. Thrust Blocks:
   1. Suitable concrete reaction or thrust blocking shall be applied on all pressure pipe lines, 12" and smaller, at all tees, plugs, caps and at bends deflecting 11 1/4 degrees or more. Concrete used for thrust blocking shall have a minimum compressive strength of 3,000 psi at 28 days. A schedule and details for the required thrust blocks are included on Drawings.
   2. Areas where thrust blocks are to be placed shall be hand excavated. Excavation for thrust blocks shall be completed following installation of the pipe and fitting to be restrained. For thrust blocks, hand excavate to undisturbed-soil and to the sizes and configurations shown on Drawings. Use extreme care following excavation not to disturb soil in the thrust block area, prior to pouring concrete.
   3. Each fitting and pipe shall be wrapped with 8-mil thick polyethylene prior to pouring concrete, so that no concrete comes in direct contact with the surface of the fitting or pipe. Concrete shall cure a minimum of five (5) days prior to putting the line under pressure. Concrete shall be placed against undisturbed material and shall not cover joints, bolts or nuts or interfere with the removal of any joint. Wooden side forms shall be provided for thrust blocks where trench conditions require.
C. Restrained Joints:
   1. Piping requiring restrained joints shall be constructed using pipe and fittings with restrained "Locked-type" joints manufactured by the pipe and fitting manufacturer. The restrained joints shall be capable of holding against at least 250 psi with a minimum safety factor of 2:1.
   2. Mechanical joint ductile iron pipe retainer glands and restrained joints that require field welding will not be acceptable. Any restrained joints that allow for elongation upon pressurization will not be allowed in those locations where the pipe comes out of the ground.
   3. Restrained pipe joints that achieve restraint by incorporating cut out sections in the wall of the pipe shall have a minimum wall thickness at the point of cut out that corresponds with the minimum specified wall thickness for the rest of the pipe.
   4. The minimum number of restrained joints required for resisting forces at fittings and changes in direction of pipe shall be determined from the length of restrained pipe on each side of fittings and changes in direction necessary to develop adequate resisting friction with the soil.
   5. As a minimum, ductile iron pipe joints shall be restrained each side of the fitting for a continuous distance as shown on/the Drawings. The lengths shall be increased by 25% for pipe that is encased in polyethylene. Where conditions do not provide adequate soil friction the required lengths may be increased.
   6. Bolts and nuts for restrained joints shall be corten, low alloy, high strength steel conforming to AWWA standards.
   7. Mechanical Joint Restraint:
      a. Mechanical joint restraint as specified herein may be substituted for the restrained "Locked-Type" joints manufactured by the ductile iron pipe and fitting manufacturer. The minimum number of joints to be restrained shall be as shown in the Drawings.
      b. Mechanical joint restraint shall be incorporated in the design of the follower gland and shall include a restraining mechanism which, when actuated, imparts multiple wedging action against the pipe, increasing its resistance as the pressure increases. Flexibility of the joint shall be maintained after burial. Glands shall be manufactured of ductile iron conforming to ASTM A 536. Restraining devices shall be of ductile iron heat treated to a minimum hardness of 370 BHN. Dimensions of the gland shall be such that it can be used with the standard mechanical joint bell and tee-head bolts conforming to ANSI A21.11 and ANSI/AWWA C 153/A21.53. Twist-off nuts shall be used to insure proper actuating of the restraining devices.
      c. The mechanical joint restraint device shall have a working pressure of at least 250 psi with a minimum safety factor of 2:1.

3.07 HYDROSTATIC TESTS

Hydrostatic tests shall be conducted on all pressure pipe, joints, fitting and valves. Testing shall be in accordance with Section 15044.

3.08 DISINFECTION OF WATER MAINS

A. General:
   1. Before being placed in service, all new water mains shall be disinfected in accordance with the specifications below and the procedures outlined in AWWA C-651 "Standard Procedures for Disinfecting Water Mains".
   2. All taps required for chlorination or flushing purpose or for temporary release of air shall be provided for by at Contractor's cost. After the disinfection, all such taps shall be sealed to the satisfaction of the Owner.
B. Flushing:
   Sections of pipe to be disinfected shall first be flushed (full diameter) to remove any solids or contaminated material that may have become lodged in the pipe. Contractor shall make provisions such that a minimum velocity of at least two and a half (2.5) feet per second in the main is maintained during flushing.
C. Before being placed into service, all new mains and repaired portions of or extensions to existing mains shall be chlorinated so that the initial chlorine residual is not less than 50 mg/l and that a chlorine residual of not less than twenty-five (25 mg/l) remains in the water after standing twenty-four (24) hours in the pipe.
D. Chlorine may be applied as a liquid chlorine (gas-water mixture) or a mixture of water and high-test calcium hypochlorite. Contractor shall assume responsibility for safe handling of chlorine and shall meet requirements of OSHA and other regulatory agencies.
E. The preferred point of application of the chlorinating agent as at the beginning of the pipe extension or any valved section of it and through a corporation stop inserted in the pipe. Alternate points of application may be used when approved by the Engineer.
F. Valves shall be manipulated so that the chlorine solution in the line being treated will not flow back into the line supplying the water. Contractor shall test chlorine residuals on adjacent pipe lines following injection of chlorine to insure no leakage of chlorine into in-service mains.
G. In the process of chlorinating newly installed pipe, all valves, hydrants and other appurtenances shall be operated while the pipe is filled with the chlorinating agent and under normal operating pressure.
H. Following chlorination, all treated water shall be thoroughly flushed from the pipe until the water throughout its lengths shows a free chlorine residual not in excess of 1.0 mg/l.
I. After flushing, water samples collected on two (2) successive days from the treated piping system shall show acceptable bacteriological results. Bacteriological analysis must be performed by a laboratory certified by the State of Florida.
J. Copies of testing results and all related correspondence with the Florida Department of Environmental Protection (FDEP) shall be submitted to the Engineer.
K. Should the testing result in an unsatisfactory bacterial test, the chlorination procedure shall be repeated by the Contractor, at his cost, until satisfactory results are obtained.

3.09 LOCATION AND IDENTIFICATION

A. All PVC water mains shall be either a solid blue color with white lettering or white with blue lettering. All lettering shall appear on three sides of the pipe and shall run the entire length of the pipe and shall be a minimum 3/4" in height with the words "Potable Water Main" appearing one or more times every 30 inches along the length of the pipe. The lettering must be permanently stenciled to the pipe surface.
B. All ductile iron mains shall be marked with a continuous painted stripe located within the top 90 degrees of the pipe. The strip shall be a minimum 2 inches in width and shall be blue in color. Backfill shall not be placed for 30 minutes following paint application. Paint shall be as specified in Section 09900.

3.11 CONNECTIONS TO EXISTING SYSTEMS

A. All connections to existing mains shall be made after complete disinfection of the proposed system. Valves separating the mains being installed from existing mains shall be operated by or under the direction of said Owner's representative. The cost of the work in making connections shall be paid for by the Contractor.
B. A temporary plug or cap shall be installed on the new main until the pressure tests and disinfecting are completed. Upon satisfactory completion, the cap or plug shall be removed from both mains and the connection made with tapping sleeve, valve and pipe which has been swabbed out with a solution of chlorine and water. The connection shall be made as swiftly as possible and any water in the ditch shall be kept below the level of the pipe. The pipeline may only be placed in service by the Owner's personnel.

END OF SECTION

SECTION 02670
RECLAIMED WATER DISTRIBUTION SYSTEM

PART 1 – GENERAL

1.01 DESCRIPTION

A. The work included under this Specification consists of furnishing all labor, equipment and materials necessary for the construction and testing of reclaim water mains and appurtenances as shown on the Drawings and specified herein.
B. Related Work Specified Elsewhere:
   1. Florida Administrative Code Chapter 62-610
   2. Recommended Standards for Water Works (2003 Edition), Section 8.0 through 8.5 and 8.7 through 8.11.
   3. Trenching, Backfill and Compaction: Refer to City of Palm Bay Public Works Manual Section 5.4.1
   4. Hydrostatic Testing of Piping: Section 15044.
   5. Ductile Iron Pipe and Fittings: Section 15062.
   6. Polyvinyl Chloride (PVC) Pressure Pipe: Section 15071.
   7. Gate Valves: Section 15101.
   8. Miscellaneous Piping Specialties: Section 15120

1.02 SUBMITTALS

A. The Developer shall submit Shop Drawings, work drawings and samples in accordance with the General Conditions and Section 01340.
B. In addition the requirements of each related section and the following shall apply.
C. Shop Drawings for piping, valves, hydrants and other equipment and appurtenances shall be prepared by the manufacturer and include, as a minimum, the following:
   1. Details of all fittings, valves, hydrants and other appurtenances.
   2. Lists of materials of construction standards and spare parts.
   3. Provide detailed drawings of joints and gaskets to be supplied.
   4. Calculations and/or test data demonstrating that the proposed restrained joint arrangement can be transmit the required forces.
   5. Copy of the manufacturer's quality control check of materials and production.
   6. Provide from the manufacturer's an affidavit of compliance with AWWA standards referenced in the specifications. Affidavit shall be included with Shop Drawings submittals.
   7. Provide a tabulated layout schedule including
      a. Order of installation and closures.
      b. Pipe invert station and elevation at changes of grade and alignment.
      c. Elements of curves and bends, both in horizontal and vertical alignment, including elements of the resultant true angular deflections in cases of combined curvature.
      d. The limits of each reach of pipe thickness class and of restrained joints.
      e. Locations of closures for length adjustment and for construction convenience.
      f. Locations of valves, hydrants and other equipment.
      g. Methods and locations of support.
B. Provide detailed working drawings of each meter and vault installation.

1.02 QUALITY ASSURANCE

A. Standards
   1. All pipe, fitting, valves, hydrants and other appurtenances, where applicable, shall conform to the latest AWWA standards.
B. Qualifications
   1. All pipe and appurtenances of similar type and material shall be furnished by a single manufacturer who is fully experienced, reputable and qualified in the manufacture of the items to be furnished.
   2. The equipment shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these Specifications.
C. Special tools, solvents, lubricants and caulking compounds required for normal installation shall be furnished by the respective pipe and equipment manufacturer.
D. All materials shall be inspected and approved by the City of Palm Bay Utilities Department prior to installation.

1.03 HANDLING, SHIPPING AND STORAGE

A. All pipe, fittings, valves, hydrants and accessories shall be handled and stored at the job site in conformance with AWWA standards and the manufacturers' recommendations.
B. Factory assembled parts and components shall not be dismantled for shipment unless permission is received in writing from the Engineer.
C. After hydrostatic or other tests, all entrapped water shall be drained prior to shipment and proper care shall be taken to protect parts from the entrance of water during shipment, storage and handling.
D. Storage
   1. Pipes shall be stored on level ground, preferably turf or sand, free of sharp objects which could damage the pipe.
   2. Finished surfaces of all valve and hydrant opening shall be protected by wooden blanks, strongly built and securely bolted.
   3. Finished iron or steel surfaces not painted shall be protected to prevent rust and corrosion.
   4. All pipe and equipment shall be properly protected so that no damage or deterioration will occur during a prolonged delay from the time of shipment until installation is completed and the pipe and equipment are ready for operation.

PART 2 - PRODUCTS

2.01 MATERIALS - Refer to Section 11: Approved Materials

2.02 GENERAL

A. Product materials and construction shall conform to the respective sections of these Specifications.

2.03 PIPE AND FITTING MATERIALS

A. Buried pipe, four (4) inches through twelve (16) inches diameter, shall be AWWA C-900 or C-905, DR-25 PVC as specified in Section 15071 or Class 250 ductile iron pipe (DIP) as specified in Section 15062, unless otherwise shown on the Drawings.
B. Buried pipe larger than sixteen (16) inches diameter shall be Class 250 DIP as specified in Section 15062.
C. All fitting shall be ductile iron as specified in Section 15062.

2.04 VALVES

A. Valves twelve (12) inches and smaller shall be gate valves as specified in Section 15101.
B. Valves larger than twelve (12) inches shall be gate valves with gear drive actuators as specified in Section 15101.

PART 3 - EXECUTION

3.01 GENERAL

A. Reclaim water main piping shall be installed in accordance with AWWA standards C-600 and C-900, the manufacturer's recommendations and these Specifications.

3.02 TRENCH EXCAVATION AND PIPE BEDDING

A. Trenches shall be excavated and pipe bedding prepared in accordance with the City of Palm Bay Public Works Manual and the Drawings.

3.03 TRENCH DEWATERING AND DRAINAGE CONTROL

A. Excavation, construction and laying of pipe, concrete work, fill and bedding rocks shall be "in-the-dry" as specified in the City of Palm Bay Public Works Manual and this Handbook.
B. Developer shall prevent water from entering the trench during excavation and pipe laying operations to the extent required to properly grade the bottom of the trench and allow for proper compaction of the backfill.
C. Pipe shall not be laid in water. Construction shall be accomplished in a dry trench and no dewatering within five (5) feet of the edge of pavement.

3.04 PIPE PREPARATION, HANDLING AND INSTALLATION

A. General
   1. All pipe, fittings and appurtenances shall be inspected prior to lowering into trench to insure no cracked, broken or otherwise defective materials are being used.
   2. Developer shall clean ends of pipe thoroughly and remove foreign matter and dirt from inside of pipe.
   3. Developer shall use proper implements, tools and facilities for the safe and proper protection of the Work.
   4. Developer shall lower pipe into the trench in such a manner as to avoid any physical damage to the pipe.
   5. Care shall be taken to not drop or dump pipe into trenches under any circumstances.
   6. Developer shall prevent foreign material from entering the pipe while it is being placed in the trench.
   7. Developer shall remove all foreign material from the pipe or joint ring before the next pipe is placed.
   8. During installation, Developer shall keep debris, tools, clothing or other materials out of the pipe.
   9. Developer shall provide special tools and devices such as special jacks, chokers and similar items required for proper installation.
   10. Food Grade Lubricant for the pipe gaskets shall be furnished by the pipe manufacturer and no substitutes will be permitted under any circumstances.

B. Lines and Grades
   1. Pipe shall be installed to the lines and grades shown on the Drawings. The Developer shall provide line and grade staking at one hundred (100) foot maximum spacing and at all line and grade change locations.
   2. Minimum cover depth
      a. For pipe sizes less than 16 inches in diameter:
         1) The minimum pipe depth from top of pipe shall be three (3) feet below the finished grade surface or three (3) feet below the elevation of the edge of the road surface, whichever is greater, unless greater depths are shown on the Drawings.
      b. For pipe sizes 16 inches to 24 inches in diameter:
         1) The minimum pipe depth from top of pipe shall be four (4) feet below the finished grade surface or four (4) feet below the elevation of the edge of the road surface, whichever is greater, unless greater depths are shown on the Drawings.
      c. For pipe sizes larger than 24 inches in diameter:
         1) Only as approved by the City of Palm Bay's Utilities Engineer.
      d. For pipe under roadway, the minimum cover is five (5) feet.
C. Pipe Deflection
   1. Long radius curves, either horizontal or vertical, may be installed with standard pipe by deflections at the joints.
   2. Maximum deflections at pipe joints and laying radius for the various pipe lengths shall be in accordance with the pipe manufacturer's recommendations.
D. Installation of PVC Pipe
   1. All PVC pipe shall be installed in accordance with the UNI-BELL "Handbook of PVC Pipe Design and Construction", AWWA C-900, and these Specifications.
E. Installation of Ductile Iron Pipe
   1. All ductile iron pipe (DIP) shall be polyethylene encased (minimum 8 mils) where shown on the Drawings in accordance with ANSI/AWWA A21.51/C105.

3.02 BACKFILL AND COMPACTION FOR PIPES

A. The requirements of the City of Palm Bay Public Works Manual shall apply.

3.03 PIPE RESTRAINING AND THRUST BLOCKS

A. General
   1. Pipe fittings and other items requiring pressure restraint shall be braced with mechanical restraints or other restraining assemblies as specified herein.
   2. For all PVC pipe, mechanical restraints are required to prevent movement of lines under pressure at bends, tees, caps, valves, hydrants etc.
   3. Thrust restraint of pipe and fittings sixteen (16) inches and larger shall be by restrained joints.
   4. Ductile iron pipe twelve (12) inches and smaller may be restrained by use of restrained joints.
   5. The use of thrust blocks will only be allowed by written request and with the approval of the City of Palm Bay Utilities Engineer.
B. Restrained Joints
   1. Piping requiring restrained joints shall be constructed using pipe and fittings with restrained "Locked-type" joints manufactured by the pipe and fitting manufacturer.
   2. The restrained joints shall be capable of holding against at least 250 psi with a minimum safety factor of 2:1.
   3. Mechanical joint ductile iron pipe retainer glands and restrained joints that require field welding will not be acceptable.
   4. Any restrained joints that allow for elongation upon pressurization will not be allowed in those locations where the pipe comes out of the ground.
   5. Restrained pipe joints that achieve restraint by incorporating cut out sections in the wall of the pipe shall have a minimum wall thickness at the point of cut outthat corresponds with the minimum specified wall thickness for the rest of the pipe.
   6. The minimum number of restrained joints required for resisting forces at fittings and changes in direction of pipe shall be determined from the length of restrained pipe on each side of fittings and changes in direction necessary to develop adequate resisting friction with the soil. See Figure 6 in Section 10 of this Manual.
   7. As a minimum, ductile iron pipe joints shall be restrained each side of the fitting for a continuous distance as shown on the Drawings.
   8. The lengths shall be increased by 20% for pipe that is encased in polyethylene.
   9. Where conditions do not provide adequate soil friction the required lengths may be increased.
   10. Bolts and nuts for restrained joints shall be corten, low alloy, high strength steel conforming to AWWA standards.
   11. Mechanical Joint Restraint
      a. Mechanical joint restraint as specified herein may be substituted for the restrained "Locked-Type" joints manufactured by the ductile iron pipe and fitting manufacturer.
      b. The minimum number of joints to be restrained shall be as shown in the Drawings. See Figure 6 in Section 10 of this Manual.
      c. Mechanical joint restraint shall be incorporated in the design of the follower gland and shall include a restraining mechanism which, when actuated, imparts multiple wedging action against the pipe, increasing its resistance as the pressure increases. Flexibility of the joint shall be maintained after burial.
         1.) Glands shall be manufactured of ductile iron conforming to ASTM A 536. Restraining devices shall be of ductile iron heat treated to a minimum hardness of 370 BHN.
         2) Dimensions of the gland shall be such that it can be used with the standard mechanical joint bell and tee-head bolts conforming to ANSI A21.11 and ANSI/AWWA C 153/A21.53.
         3) Twist-off nuts shall be used to insure proper actuating of the restraining devices.
      d. The mechanical joint restraint device shall have a working pressure of at least 250 psi with a minimum safety factor of 2:1.
B. Thrust Blocks: Only by written request and approval by CPBUD Engineer.

3.01 HYDROSTATIC TESTS

A. Hydrostatic tests shall be conducted on all pressure pipe, joints, fitting and valves. Testing shall be in accordance with Section 15044.

3.02 CONNECTIONS TO EXISTING SYSTEMS

A. All connections to existing mains shall be made after complete testing of the proposed system.
B. Valves separating the mains being installed from existing mains shall have locking mechanisms and be operated by or under the direction of said Owner's representative.
C. The cost of the work in making connections shall be paid for by the Developer.
D. The pipeline may only be placed in service by the Owner's personnel. It shall be required to notify the Utilities Inspector 48 hours prior.

3.03 LOCATION AND IDENTIFICATION (ref. F.A.C. 62-610)

A. All reclaim water main pipe, including fittings, shall be color coded or marked using pantone purple 522C (PURPLE) as a predominant color to differentiate drinking water from reclaimed or other water.
B. Underground plastic pipe shall be PURPLE pipe, or shall be white pipe with PURPLE stripes incorporated into, or applied to, the pipe wall.
C. Underground metal pipe shall have PURPLE stripes applied to the pipe wall.
D. Pipe striped during manufacturing of the pipe shall have continuous stripes that run parallel to the axis of the pipe, that are located at no greater than 90-degree intervals around the pipe, and that will remain intact during and after installation of the pipe.
   1. If tape or paint is used to stripe pipe during installation of the pipe, the tape or paint shall be applied in a continuous line that runs parallel to the axis of the pipe and that is located along the top of the pipe; for pipes with an internal diameter of 24 inches or greater, tape or paint shall be applied in continuous lines along each side of the pipe as well as along the top of the pipe.
E. Above ground pipe shall be painted PURPLE or shall be color coded or marked like underground pipe.
F. Electronic ball markers, model 3M EMS 4" extended range 5' ball marker General Purpose 1428 XR, shall be placed at all buried fittings.
   1. Markers shall be placed at crosses, tees, and change of direction.
   2. Where the distance of two (2) fittings is more than 100 feet, the water main shall have the ball markers placed at a minimum distance of 100 feet.
   3. All EMS markers shall be noted on As-Built Drawings.
   4. Markers shall not be buried at a depth greater than 5 feet below the finish grade elevation.

3.10 SURFACE WATER CROSSINGS

A. Above Water Crossings [Ref. Recommended Water Standards for Water Works, Part 8.9.1]
   1. The pipe shall be adequately supported and anchored, protected from damage and freezing, and accessible for repair and replacement.
B. Under Water Crossings [Ref. Recommended Water Standards for Water Works, Part 8.5.1 and 8.9.2]
   1. A minimum cover of three feet shall be provided over the pipe. When crossing water courses which are greater than 15 feet in width, the following shall be provided:
      a. The pipe shall be of special construction, having flexible, restrained or welded watertight joints.
      b. Valves shall be provided at the right-of-way line at both ends of water crossings so that the section can be isolated for testing and repair; the valves shall be easily accessible, and not subject to flooding.
      c. Blow-offs shall be provided between the valve and the water crossing at both ends so that any air accumulation can be removed.
      d. Permanent taps or other provisions to allow insertion of a small meter to determine leakage and obtain water samples shall be made on each side of the valve closest to the supply source.

END OF SECTION

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1	COMMENTS	XX-XX-XXXX
△	**REVISIONS**	**DATE**

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

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PALM BAY SPECIFICATIONS 01

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD, FL. P.E. #83267 — DATE: 8/19/2021

SHEET

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19-1025

PERMITTING SET

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SECTION 02680
WASTEWATER TRANSMISSION SYSTEM

PART 1 - GENERAL

1.01 DESCRIPTION

A. The work included under this Section consists of furnishing all labor, equipment and materials necessary for the construction and testing of force mains and appurtenances as shown on the Drawings and specified herein.
B. Related Work Specified Elsewhere:
   1. Excavation, Backfill and Compaction: Section 02221.
   2. Hydrostatic Testing of Piping: Section 15044.
   3. Ductile Iron Pipe and Fittings: Section 15062.
   4. Polyvinyl Chloride (PVC) Pressure Pipe: Section 15071.
   5. Plug Valves: Section 15117.

1.02 SUBMITTALS

A. The Contractor shall submit Shop Drawings, working drawings and samples in accordance with the General Conditions and Section 01340. In addition the requirements of each related section and the following shall apply.
B. Shop Drawings for piping, valves and other equipment and appurtenances shall be prepared by the manufacturer and include, as a minimum, the following:
   1. Details of all fittings, valves and other appurtenances.
   2. Lists of the materials of construction, standard and spare parts.
   3. Provide detailed drawings of joints and gaskets to be supplied.
   4. Calculations and/or test data demonstrating that the proposed retrained joint arrangement can transmit the required forces.
   5. Copy of the manufacturer's quality control check of materials and production.
   6. Provide from the manufacturer an affidavit of compliance with AWWA standards referenced in the Specifications. Affidavit shall be included with Shop Drawings submittals.
C. Prove a tabulated layout scheduled including:
   1. Order of installation and closures.
   2. Pipe invert station and elevation at Changes of grade and alinement.
   3. Elements of curves and bends, both in horizontal and vertical alignment, including elements of the resultant true angular deflections in cases of combined curvature.
   4. The limits of each reach of pipe thickness class and of restrained joints.
   5. The limits of each reach of concrete encasement or encasement in casing.
   6. Locations of closures for length adjustment and for construction convenience.
   7. Locations of valves, fittings and other equipment.
   8. Methods and locations of support.
D. Provide detailed working drawings of all piping.

1.03 QUALITY ASSURANCE

A. Standards: All pipe, fittings, valves and other appurtenances, where applicable, shall conform to the latest standards.
B. Qualifications: All pipe and appurtenances of similar type and material shall be furnished by a single manufacturer who is fully experienced, reputable and qualified in the manufacture of the items to be furnished. The equipment shall be designed, constructed and installed in accordance with the best practices and methods and shall comply with these Specifications.
C. Special tools, solvents, lubricants and caulking compounds required for normal installation shall be furnished by the respective pipe and requirement manufacturer.

1.04 HANDLING, SHIPPING AND STORAGE

A. All pipe, fittings, valves and accessories shall be handled and stored at the job site in conformance with standards and the manufacturer's recommendations.
B. Factory assembled parts and components shall not be dismantled for shipment unless permission is received in writing from the Engineer.
C. Storage:
   1. Pipes shall be stored on level ground, preferably turf or sand, free of sharp objects which could damage the pipe.
   2. Finished surfaces of all valve and hydrant openings shall be protected by wooden blanks, strongly built and securely bolted.
   3. Finished iron or steel surfaces not painted shall be protected to prevent rust and corrosion.
   4. All pipe and equipment shall be properly protected so that no damage or deterioration will occur during a prolonged delay from the time of shipment until installation is completed and the pipe and equipment are ready for operation.
D. After hydrostatic or other tests, all entrapped water shall be drained prior to shipment and proper care shall be taken to protect parts from the entrance of water during shipment, storage and handling.

PART 2 - PRODUCTS

2.01 GENERAL

A. Product materials and construction shall conform to the respective section of these Specifications.

2.02 PIPE AND FITTINGS

A. PVC and ductile iron pipe may be used for wastewater force mains unless otherwise shown on the Drawings. Ductile iron shall be used for all pipe with pump station and valve vault and shall extend approximately 10 feet past last fitting, as shown on the Drawings.
B. PVC pipe shall be AWWA C-900 or C-905, DR-18 as specified in Section 15071.
C. Buried ductile iron pipe shall be Class 50, as specified in Section 15062.
D. Fittings for PVC and ductile iron pipe shall be ductile iron as specified in Section 15062.

2.03 VALVES

Valves shall be plug valves as specified in Section 15117.

PART 3 - EXECUTION

3.01 GENERAL

Piping shall be installed in accordance with the manufacturer's recommendations and these Specifications.

3.02 TRENCH EXCAVATION AND PIPE BEDDING

Trench shall be excavated and pipe bedding prepared in accordance with Section 02221 and the Drawings.

3.03 TRENCH DEWATERING AND DRAINAGE CONTROL

Excavation, construction and laying of pipe, concrete work, fill and bedding rocks shall be "in-the-dry" as specified in Sections 02140 and 02221. Contractor shall prevent water from entering the trench during excavation and pipe laying operations to the extent required to properly grade the bottom of the trench and allow for proper compaction of the backfill. Pipe shall not be laid in water.

3.04 PIPE PREPARATION, HANDLING AND INSTALLATION

A. General:
   1. All pipe, fittings and appurtenances shall be inspected prior to lowering into trench to insure no cracked, broken or otherwise defective materials are being used.
   2. Contractor shall clean ends of pipe thoroughly and remove foreign matter and dirt from inside of pipe.
   3. Contractor shall use proper implements, tools and facilities for the safe and proper protection of the work. Contractor shall lower pipe into the trench in such a manner as to avoid any physical damage to the pipe. Care shall be taken to not drop or dump pipe into trenches under any circumstances.
   4. Contractor shall prevent foreign material from entering the pipe while it is being placed in the trench. Contractor shall remove all foreign material from the pipe or joint ring before the next pipe is placed. During installation, Contractor shall keep debris, tools, clothing or other materials out of the pipe.
   5. Contractor shall provide special tools and devices, such as special jacks, chokers and similar items required for proper installation.
   6. Lubricant for the pipe gaskets shall be furnished by the pipe manufacture and no substitutes will be permitted under any circumstances.
B. Lines and Grades:
   1. Pipe shall be installed to the lines and grades shown on the Drawings. The Contractor shall provide line and grade staking at one hundred (100) foot maximum spacing and at all line and grade change locations.
   2. The minimum pipe depth shall be three (3) feet below the finished grade surface, unless greater depths are shown on the Drawings.
C. Pipe Deflection:
   Long radius curves, either horizontal or vertical, may be installed with standard pipe by deflections at the joints. Maximum deflections at pipe joints and laying radius for the various pipe lengths shall be in accordance with the pipe manufacturer's recommendations.

3.05 BACKFILL AND COMPACTION FOR PIPES

The requirements of Section 02221 shall apply.

3.06 PIPE RESTRAINING AND THRUST BLOCKS

A. General:
   1. Pipe fittings and other items requiring pressure restraint shall be braced with restraining assemblies as specified herein.
   2. Thrust restraint of pipe and fittings shall be by restrained joints or thrust blocks.
B. Restrained Joints (12 Inch and Larger):
   1. Piping requiring restrained joints shall be constructed using pipe and fittings with restrained "Locked-Type" joints manufactured by the pipe and fitting manufacturer. The restrained joints shall be capable of holding against at least 250 psi with a minimum safety factor of 2:1.
   2. Mechanical joint ductile iron pipe retainer glands and restrained joints that required field welding will not be acceptable. Any restrained joints that allow f or elongation upon pressurization will not be allowed in those locations where the pipe comes out of the ground.
   3. Restrained pipe joints that achieve restraint by incorporating cut out sections in the wall of the pipe shall have a minimum wall thickness at the point of cut out that corresponds with the minimum specified wall thickness for the rest of the pipe.
   4. The minimum number of restrained joints required for resisting forces at fittings and changes in direction of pipe shall be determined from the length of restrained pipe on each side of fittings and changes in direction necessary to develop adequate resisting friction with the soil.
   5. As a minimum, ductile iron pipe joints shall be restrained each side of the fitting for a continuous distance as shown on the Drawings. The lengths shall be increased by 50% for pipe that is encased in polyethylene. Where conditions do not provide adequate soil friction the required lengths may be increased.
   6. Bolts and nuts for restrained joints shall be CORTEN, low alloy, high strength steel comforting to AWWA standards.
   7. Mechanical Joint Restraint:
      a. Mechanical joint restraint as specified herein may be substituted for the restrained "Locked-Type" joints manufactured by the ductile iron pipe and fitting manufacturer. The minimum number of joints to be restrained shall be as shown in the Drawings.
      b. Mechanical joint restraint shall be incorporated in the design of the follower gland and shall include a restraining mechanism which, when actuated, imparts multiple wedging action against the pipe, increasing its resistance as the pressure increases. Flexibility of the joint shall be maintained after burial. Glands shall be manufactured of ductile iron conforming to ASTM A 536. Restraining devices shall be of ductile iron heat treated to a minimum hardness of 370 BHN. Dimensions of the gland shall be such that it can be used with the standard mechanical joint bell and tee-head bolts conforming to ANSI A21.11 and ANSI/AWWA C153/A21.53. Twist-off nuts shall be used to insure proper actuation of the restraining devices.
      c. The mechanical joint restraint device shall have a working pressure of at least 250 psi with a minimum safety factor of 2:1.
   8. When prior approval is obtained from the Engineer, ductile iron pipe and fittings may be restrained using tie rods. All bolts, nuts, wasliers, tie rods and other fasteners for the joint restraint system shall be manufactured of CORTEN high strength, low alloy, corrosion resistant steel in conformance with ASTM A 242. Tie bolts shall be manufactured of heat treated CORTEN steel. Tie rods shall have a minimum diameter of 3/4 inch. Prior to backfilling all parts of the joint restraint system shall be coated with coal tar epoxy equal to Amercoat No. 78 or Koppers Bitumastic No. 300M.

3.07 HYDROSTATIC TESTS

A. Hydrostatic tests shall be conducted on all pressure pipes, joints, fittings and valves. Testing shall be in accordance with Section 15044.

3.08 CONNECTIONS TO EXISTING SYSTEMS

A. All connections to existing force mains shall be made after completion of the proposed system. Valves separating the mains being installed from existing mains shall be operated by or under the direction of said Owner's representative. The cost of work in making the connections shall be paid for by the Contractor.
B. A temporary plug or cap shall be installed on the new main until the pressure tests are completed. The connection shall be made as swiftly as possible and any water in the excavated area shall be kept below the level of the pipe. The pipeline may only be placed in service with the Owner's personnel present.
C. Connections at all structures shall be made using an approved flexable, water tight connections, such as Link-Seal or Kor-N-Seal.

3.09 LOCATION AND IDENTIFICATION

A. All PVC wastewater force mains shall be a solid green color with white lettering. All lettering shall appear on three sides of the pipe and shall run the entire length of the pipe and shall be a minimum 3/4" in height with the words "Wastewater Main" appearing one or more times every 30 inches along the length of the pipe. The lettering must be permanently stenciled to the pipe surface.
B. All ductile iron mains shall be marked with a continuous painted stripe located within the top 90 degrees of the pipe. The stripe shall be a minimum 2 inches in width and shall be green in color. Backfill shall not be placed for 30 minutes following paint application. Paint shall be as specified in Section 09900.

END OF SECTION

SECTION 02730
SANITARY SEWER SYSTEMS

PART 1 - GENERAL

1.01 WORK INCLUDED

A. The work included under this Section consists of furnishing all labor, equipment and materials necessary for the construction of sanitary sewers, manholes, service laterals, connections and appurtenances as shown on the Drawings and specified herein.
B. Related Work Specified Elsewhere:
   1. Trenching, Backfill and Compaction: Section 02221.
   2. Precast Concrete Structures: Section 03410.
   3. Polyvinyl Chloride (PVC) Gravity Sewer Pipe: Section 15072

1.02 SUBMITTALS

A. Submit shop drawings, manufacturer's literature and other descriptive material, the following in accordance with Section 01340: Shop Drawings, Working Drawings and Samples.
   1. Precast manholes and joint materials.
   2. Manholes frames, covers and other castings.
   3. Manufacturers certified test report on castings.
   4. Catalog Data: Submit for pipe and fittings.
   5. Manhole - Pipe Connections.

1.03 DAMAGE CONTROL - PIPE

A. Transportation: Care shall be taken during transportation of the pipe that it is not cut, kinked or otherwise damaged.
B. Handling Pipe Lengths:
   1. Ropes, fabric or rubber protected slings and straps shall be used when handling pipe.
   2. Chains, cables or hooks inserted into the pipe ends shall not be used. Two slings spread apart shall be used for lifting each length of pipe. Pipe or fittings shall not be dropped onto rocky or unprepared ground.
C. Storage: Pipes shall be stored on level ground, preferably turf or sand, free of sharp objects which could damage the pipe.
   1. Stacking of the polyvinyl chloride pipe shall be limited to a height that will not cause excessive deformation of the bottom layers of pipes under anticipated temperature conditions.
   2. Where necessary due to ground conditions the pipe shall be stored on wooden sleepers, spaces suitable and of such width as not to allow deformation of the pipe at the point of contact with the sleeper or between supports.

PART 2 - PRODUCTS

2.01 PIPE AND FITTINGS

A. Polyvinyl Chloride Pipe:
   1. Polyvinyl Chloride (PVC) Gravity Sewer Pipe shall conform to Section 15072.
B. Ductile Iron Pipe:
   1. Ductile iron sewer pipe shall conform to the requirements of Section 15062: Ductile Iron Pipe and Fittings.

2.02 CASTINGS

A. Castings shall conform to Section 03480.

2.03 MANHOLES

A. Manholes shall conform to Section 03410: Precast Concrete Structures.

2.04 BRICK

A. Brick for manhole construction shall be dense, hard burned, shale or clay brick conforming to ASTM Designation D 32, Grade MS.

2.05 CEMENT MORTAR

A. Cement mortar for manhole construction shall be as specified in ASTM Designation C 270, Type M, except the cement shall be Portland Type II. No mortars that have stood for more than one hour shall be used.

2.06 MISCELLANEOUS MATERIALS

A. Additional items of construction such as cleanouts, special manholes and other items necessary for the complete installation of the system shall conform to specific details on the Drawings and shall be constructed of first class materials conforming to the applicable portions of these specifications.

2.07 PIPE CONNECTIONS

A. All opening for pipes in manholes shall be sealed watertight by Kor-N-Seal or equal.

2.08 SERVICE LATERALS

A. The pipe and fittings for service laterals shall conform to Article 2.01.A of this Section.

PART 3 - EXECUTION

3.01 PREPARATION

A. Upon satisfactory excavation of the pipe trench, as specified in Section 02221, a continuous through for the pipe barrel and recesses for the pipe bells shall be excavated by hand digging so that, when the pipe is laid in the trench, true to line and grade, the pipe and barrel will receive continuous uniform support and the bell will receive no pressure from the trench bottom.
B. The interior of all pipe shall be thoroughly cleaned of all foreign material before being lowered in the trench and shall be kept clean during laying operations by means of plugs or other approved methods.

3.02 INSTALLATION

A. Sewer Pipe:
   1. General:
      a. Pipe laying shall proceed upgrade with spigot ends pointing in the direction of flow. Before pipe is joined, gaskets shall be cleaned of all dirt and stones and other foreign material. The spigot ends of the pipe and/or pipe gaskets shall be lubricated lightly with a lubricant as specified by the pipe manufacturer and approved by the Engineer. Sufficient pressure shall be applied to the pipe so as to properly seat the socket into the bell of the pipe. All pipe shall be laid straight, true to the lines and grades shown on the Drawings.
      b. Any pipe which is disturbed or found to be defective after laying shall be taken up and re-laid or replaced.
      c. Approved utility crossing signs shall be placed on the pipe alignment at each side of a waterway crossing.
      d. Do not deviate from line and grade, as established by the Engineer, more than 2 inch for line and 1/4 inch for grade, provided that such variation does not results in a level or reverse sloping invert. Measure for grade at the pipe invert, not at the top of the pipe, because of the permissible variation in pipe-wall thickness.
   2. PVC Pipe:
      a. Handling pipeline: The handling of the pipe line shall be in such a manner that the pipe is not damaged by dragging it over sharp and cutting objects. Section of the pipes with deep cuts and gouges shall be removed.
      b. Lowering pipe into trench: Care shall be exercised when lowering pipe into the trench to prevent damage to or twisting of the pipe.
      c. Special precautions: PVC pipe connected to heavy fittings, manholes and rigid structures shall be supported in such a manner that no subsequent relative movement between the pipe and the joint with the rigid structures is possible.
B. Service Laterals: No Service Lateral shall enter directly into a manhole structure. The projects design location of manholes will be so that all service laterals enter the gravity sewer systems main pipe.
   1. Service laterals shall be provided in accordance with the details as shown on the Drawings.
   2. Service laterals shall be plugged air tight with an approved removable plastic plug. All plugs shall be secured to prevent blowout during testing. All connections and changes of direction shall be made using standard fittings designed for the purpose.
   3. Where no curb exists or is planned, locations shall be adequately marked as indicated on the Detail Drawings.
   4. Locations and type of laterals indicated on Drawings are schematic and may be field adjusted by the RPR.
   5. Service laterals shall be green in color and conform to identification criteria as specified in this section.
C. Concrete easement: Class B concrete encasement shall be constructed in accordance with details shown on the Drawings. Encasement shall be constructed where:
   1. The sewer or service crosses over, or at a depth which provides less than 18 inches clear distance between pipes when crossing under potable or reclaimed water mains. Encasement shall extend a minimum of 10 feet of each side of the point of crossing. In lieu of encasement, the sewer line may be constructed of ductile iron pipe and shall be laid such that both joints will be a minimum of ten (10) feet from the crossing.
   2. Engineer may order the line encase:
      a. If, through failure to provide suitable trench sheeting or other causes the maximum for trench excavations is exceeded, the Contractor shall construct concrete encasement around the pipe for the length of the excessive excavation. No payment will be made for the concrete encasement required due to excessive trench widths.
      b. The points of beginning and ending of sewer or service pipe encasement shall be not more than 6 inches from a pipe joint to protect the pipe from cracking due to uneven settlement of its foundation or the effects of superimposed live loads.
D. Concrete protective slabs: Concrete protective slabs shall be constructed over gravity sewer that has less than 3 feet of cover from finish grade and where indicated on the Drawings.
E. Manholes:
   1. General:
      a. Outside drop connections shall be made in accordance with the details shown on the Drawings.
      b. The invert channels shall be smooth and accurately shaped to a semicircular bottom conforming to the inside of the adjacent sewer section. Steep slopes outside the invert channels shall be avoided. Changes in size and grade shall be made gradually and evenly. Changes in the direction of the sewer or entering branch shall be a smooth curve with radius as long as practicable. Invert channels shall also be formed for pipe stub-outs.
      c. The interior and exterior surfaces of all manholes shall be coated prior to installation in accordance with Section 09900. Upon installation, inside coating will be touched up.
      d. Frames and covers shall be set accurately to-grade to conform to the finished grade of the adjacent areas.
      e. Manholes shall be completed as the work progresses so that testing as prescribed in Article 3.03 Field Quality Control may be completed.
   2. Manholes precast concrete:
      a. Precast manholes shall conform to the requirements of Section 03410.
      b. Top sections shall be eccentric, except that concentric top section shall be used where shallow cover requires a top section less than 3 feet deep.
      c. Precast manholes tops shall terminate at such elevations as will permit the laying up of no more then 3 brick courses under the manhole frames as indicated on the Drawings for upward adjustment of top elevation. Adjustments beyond the allowed brick courses will require cast iron manhole rings for upward adjustment of top elevation.
      d. Drop connections, where required on precast manholes, shall be manufactured with the manhole elements at the cast yard. The manufacturer shall submit for approval the method of drop manhole construction.
      e. Where additional pipe connections or modifications of existing factory made openings are required on new or existing precast concrete manholes, all cutting shall be performed only be a power driven abrasive wheel or saw. It is specifically noted that connections to existing manholes shall be installed in accordance with this paragraph and with details for new units shown on the Drawings.
      f. Connections at all structures shall be made using an approved flexible, water tight connections, such as Link-Seal or Kor-N-Seal.
      g. Manhole frames and covers shall be gray cast iron conforming to ASTM Designation A48, Class 30, and shall be U.S. Foundry and Manufacturing Corporation:

         4' dia. manhole with a minimum 24" access opening, No.425 or 427 with an AS cover.

         5' dia. manholes shall have a minimum access opening of 30"
         Covers shall have no perforations and shall be cast with the word "SANITARY". Frames shall be suitable for the future addition of cast iron rings for upward adjustment of top elevation. Frames and covers shall be fully bedded in mortar to the correct finish grade elevation, with adjustment brick courses placed below, for precast manholes. Brick coursed for adjustment will be limited to 3 courses.

3.03 LOCATION AND IDENTIFICATION

A. All PVC sanitary sewer lines shall be a solid green color with black lettering. All lettering shall appear on three sides of the pipe and shall run the entire length of the pipe and shall be a minimum 3/4" in height with the words "Sanitary Sewer" appearing one or more times every 30 inches along the length of the pipe. The lettering must be permanently stenciled to the pipe surface.
B. All ductile iron mains shall be marked with a continuous painted stripe located within the top 90 degrees of the pipe. The stripe shall be a minimum 2 inches in width and shall be green in color. Backfill shall not be placed for 30 minutes following paint application. Paint shall be as specified in Section 09900.

3.04 FIELD QUALITY CONTROL

A. Workmanship: It is imperative that all sewers and appurtenances be built practically watertight and that the Contractor adheres rigidly to the specifications for materials and workmanship. Upon completion, the sewers will be tested and gauged and if leakage is above the allowable limits specified, the sewer will be rejected.
B. Cleaning:
   1. Prior to final acceptance and final manhole-manhole inspection of the sewer system, flush and clean all parts of the system. Remove all accumulated construction debris, rocks, gravel, sand silt and other foreign material from the sewer system at or near the closest downstream manhole. If necessary, use mechanic rodding or bucketing equipment.
   2. Upon the Engineers final manhole-to-manhole inspection of the sewer system, if any foreign matter is still present in the system, reflux and clean the section and portions of the lines as required.
C. Inspection: Upon completion of each section of sewer (manhole-to-manhole) or such other times as the Engineer may direct the section of sewer shall be cleaned, tested and inspected.
   1. Gravity Sewer Pipe Inspection:
   A televised video (T.V.) inspection shall be required on all newly installed Sanitary Sewer Mains. After completion of the pipe installation and all back fill work is completed, compacted and tested the Contractor will perform the required Video inspection of the gravity sanitary sewer pipe(s). One copy if the video and the video log will be given to the Utility Engineer for his review and file.
      a. Flushing:
      Prior to video inspection, the Contractor shall flush all sewers with water sufficient in volume to obtain free flow through each line. Flushing water and debris shall not enter any pump station wet well. Water will be pumped from the sewer system during flushing to an acceptable discharge location. A visual inspection shall be made and all obstructions removed.
      b. Video Inspection:
      If the video inspection reveals cracked, broken or defective pipe, or pipe misalignment resulting in vertical sags in excess of and ½ inch ± ¼ inch for pipe grade and ½ inch for the line of the pipe and in the case of PVC pipe a ring deflection in excess of 5%, the Contractor shall be required to repair or replace the deflected pipeline. Upon completion of all required repairs, the Contractor will again perform an internal video inspection for the gravity sewer pipe to verify the repairs meet the proscribed specifications.

   2. Deflection and Alignment Testing:
   All polyvinyl chloride sewer pipe(s) shall be subject to deflection testing assuring that the maximum deflection of 5% has not been exceeded. The test shall be by lamping with the installed sewers shall be "lamped" between manholes, or other structures in order to ascertain that they are clear and to correct alignment. The Utilities Department reserves the right to pass a mandrel through the PVC pipe to confirm ring deflection. If upon determination by the Utilities Department that the installed sewer pipe do not meet proper deflection and or alignment than the Contractor will perform an internal video inspection for the gravity sewer pipe to identify the extent of the failed area.
   3. Manhole Inspection:
   Each manhole wall shall be sealed and painted watertight (no leakage allowed by visual inspection), neatly and substantially constructed, with the top set permanently to the position and grade shown on the Drawings. All repairs shown necessary by the inspection shall be made; broken or cracked pipe replaced; all deposits removed and the sewer left true to line and grade, entirely clean resealed and painted, inverts finished and ready for use.
D. Testing:
All new sewer lines installed shall be flushed and tested for leakage. The test used will be Infiltration , Exfiltration Testing or Low Pressure Air Testing for gravity lines.
   1. Flushing
   All mains shall be flushed to remove all sand and other foreign matter. The velocity of the flushing water shall be at least 4 feet/second. The Builder shall dispose of the flushing water without causing a nuisance or property damage.
   2. Infiltration and Exfiltration
      h. Exfiltration
      Each test section of sewer shall be tested between successive manholes by closing the lower end of the sewer and be tested and the inlet sewer of the upper manhole with stoppers. The pipe and manhole shall be filled with water to a point 4 feet above the invert of the sewer at the center of the upper manhole; or if ground water is present, 4 feet above the average adjacent ground water level.
      The allowable leakage will be computed by the formula:

      E = 0.0001 LD (H) 2

      Where:
         L = length of sewer line tested, in feet
         E = allowable leakage in gallons per minute of sewer tested
         D= diameter of the pipe in inches
         H= the difference in elevation between the water surface in the upper manhole and the invert of the pipe at the lower manhole; or if ground water is present above the invert of the pipe in the lower manhole, the difference in elevation between the water surface in the upper manhole and the ground water at the lower manhole.
      i. Infiltration
      If, in the opinion of PBUC excessive ground water is encountered in the construction of a section of the sewer, the infiltration test for leakage shall be used.
      The end of the sewer at the upper structure shall be closed sufficiently to prevent the entrance of water and pumping of ground water shall be discontinued for a least three (3) days, after which the section shall be tested for infiltration.
      The infiltration into each individual run of sewer between adjoining manholes shall not exceed that allowed by the formula shown above where H is the difference in the elevation between the ground water surface and the invert of the sewer at the downstream manhole.
   3. Low Pressure Air Exfiltration Testing:
      a. Contractor shall perform low pressure air testing in conformance to the requirements of UNI-B-679 Recommend Practice for Low-Pressure Air Testing of Installed Sewer Pipe, as published by UNI-Bell Plastic Pipe Association. The RPR shall be present during all testing.
      b. During sewer construction, all service laterals, stubs and fitting shall be properly capped or plugged so as not to allow air loss. Where necessary, the Contractor shall restrain and seal caps, plugs or short pipe lengths such that blowouts and leaks are prevented.
      c. Before testing, Contractor shall determine groundwater level and adjust test pressure accordingly. The Contractor shall install sufficient monitoring wells to determine groundwater elevations. Wells shall be installed a minimum of 24 hours prior to testing. In no case shall the test pressure exceed 9.0 psig. All pressurizing equipment shall include a regulator or relief valve set no higher than 9.0 psig to avoid over-pressurizing.
      d. Low pressure air shall be slowly introduced into the sealed line until the internal air pressure reaches 4.0 psig greater than the average back pressure of any groundwater above the invert of the pipe, but not greater than 9.0 psig.
      When temperatures have been equalized and pressure stabilized at 4.0 psig (greater than the average groundwater back pressure), the air hose from the control panel to the air supply shall be shut off or disconnected. The continuous monitoring pressure gauge shall then be observed while the pressure is decreased to no less than 3.5 psig (greater than the average groundwater back pressure). At a reading of 3.5 psig (greater than the average groundwater back pressure), timing shall commence with a stop watch or other timing device that is at least 99.8 percent accurate.
      f. If the time shown in the table, for the designated pipe size and length, elapses before the air pressure drops 1.0 psig, the section undergoing test shall have passed. The test may be discontinued once the prescribed time has elapsed.
      If the pressure drops 1.0 psig before the appropriate time shown in the table has elapsed, the air loss rate shall be considered excessive and the section of pipe has failed the test.
      g. Should the section fail to meet test requirements, the Contractor shall determine the source, or sources of leakage, and make all necessary repairs as approved by the Engineer and repeat the test until section is within specified limits.

END OF SECTION

SECTION 03410
PRECAST CONCRETE STRUCTURES

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: The work under this Section includes furnishing and installing precast concrete units and castings for manholes, and precast concrete wetwells and valve vaults as indicated on the Drawings and specified herein.
B. Related Work Described Elsewhere:
   Trenching, Backfilling and Compacting: Section 02221.
   Sanitary Sewer Systems: Section 02730
   Painting: Section 09900.
   Submersible Wastewater Pumping Station: Section 11305.

1.02 SUBMITTALS

   1. See Section 01340 for a complete description of submittal requirements.
   2. Shop Drawings of the concrete units, including bottom and top slabs showing details of construction, reinforcing and joints shall be submitted to and approved by the Engineer prior to the manufacture of the units. Units which are not manufactured in strict compliance with the approved Shop Drawings and these Specifications will be rejected.
   3. Manufacturer's data sheets and Shop Drawings shall be submitted on the following:
      Joint mastic and gaskets.
      Grout material.
      Pipe connections.
      Castings.

1.03 INSPECTION

A. The quality of all materials, the process of manufacture and the finished sections shall be subject to inspection and approval by the Utilities Department. Such inspection may be made at the place of manufacture or at the site after delivery, or at both places and the sections shall be subject to Specification requirements; even though sample sections may have been accepted as satisfactory at the place of manufacture. Sections rejected after delivery to the job shall be marked for identification and shall be removed from the job at once. All sections which have been damaged after delivery will be rejected and, if already installed, shall be removed and replaced entirely at the Contractor's expense.

PART 2 - PRODUCTS

2.01 MANHOLES

   1. Precast concrete structures shall conform to the requirements of ASTM Designation C478, Precast Reinforced Concrete Manhole Sections, with reinforcement of Grade 60 bars and the following modifications thereto:

      Minimum wall thickness shall be as indicated on the Drawings.
      Cement shall be Type II Portland Cement conforming to ASTM Designation C150.
      Sections shall have tongue and groove joints. Joints shall be filled with performed flexible plastic joint sealer "Ram-Nek" as manufactured by the K.T. Snyder Co. Or equal.
      The date of manufacture and the name or trademark of the manufacturer shall be clearly marked on the inside of each precast section.
      Top sections shall be eccentric except that precast concrete slabs shall be used where cover over the top of the pipe is less than four feet for all manholes.
      Precast concrete slabs over top section, where required, shall be capable of supporting the overburden plus a live load equivalent to AASHTO H-20 loading.
      The tops of bases shall be suitably shaped to mate with the precast barrel section.
      Base section shall consist of a circular slab base with a minimum thickness of eight inches for manholes and twelve inches for wetwells and shall be reinforced as required. The base slab shall extend beyond the outside diameter of the barrel section as shown on the Drawings.
      Barrel and base sections shall be constructed with preformed openings properly located for making sewer line connections. The diameter of such openings shall not be more than two inches larger than the outside diameter of the pipe or pipe bell to be connected. The distance between the crown of such openings and the shoulder of the barrel joint shall be six inches minimum.
      Interior and exterior surfaces shall be coated prior to installation in accordance with Section 09900.

2.02 CASTINGS

   1. Castings for manhole frames, covers, and other items shall conform to the ASTM Designation A48, Class 30. Castings shall be true to pattern in form and dimensions and free of pouring faults and other defects in positions which would impair their strength, or otherwise make them unfit for the service intended. The seating surfaces between frames and covers shall be machined to fit true. No plugging or filling will be allowed.
   2. Lifting or "pick" holes shall be provided, but shall not penetrate the cover.
   3. Casting patterns shall conform to those shown or indicated on the Drawings.
   4. All manhole frames and covers shall be traffic bearing.
   5. Manhole frames and covers shall be USF #227-AS or approved equal.

2.03 CEMENT MORTAR

   1. Cement mortar shall be one part cement and three parts clean sharp sand to which may be added lime in the amount of not over ten percent volume of cement. It shall be mixed dry and then wetted to proper consistency for use. No mortars that have stood for more than one hour shall be used.

PART 3 - EXECUTION

3.01 INSTALLATION

   1. All openings for sewer pipes shall be sealed watertight by means of a connections, such as Link-Seal, Kor-N-Seal or equal.
   2. Precast structures shall be constructed to the dimensions shown on the Drawings and as specified herein. Install at elevations and locations shown on the Drawings or as otherwise directed by Engineer.
   3. Place the precast base unit on a thoroughly compacted gravel subbase. The tops of the bases shall be shaped to make with the precast barrel section, and shall be adjusted in grade so that the top of cone section is at the approximately correct elevation. Drain all water from the bottom of the excavation before placing base.
   4. Construct the floor and invert of manholes of 3,000 psi cement mortar to conform to the shape and size of the sewer inverts connected. After the concrete has set, rub down the inverts using a Carborundum brick so as to provide a smooth passageway for flow.
   5. Construct the floor of the wetwell and valve vault using cement mortar to the requirements of the Drawings.
   6. Set precast concrete sections so that the sections are vertical and in true alignment with a 1/4-inch maximum tolerance allowed. Fill the outside and inside joint with a comparatively dry mortar (one part cement to two parts sand) and finish flush with the adjoining surfaces. Backfill in a careful manner brining the fill up evenly on all sides. The Contractor shall install precast sections in a manner that will result in a watertight joint.
   7. Plug holes in the concrete sections made for handling or other purposes with a non-shrinking grout or by grout in combination with concrete plugs.
   8. Where holes must be cut in the precast sections to accommodate pipes, do all cutting before setting them in place to prevent any subsequent jarring which may loosen the mortar joints.
   9. Coatings shall be touched up after installation.

END OF SECTION

SECTION 03600
GROUT

PART 1 - GENERAL

1.01 DESCRIPTION
A. Scope of Work: The work included in this Section consists of grouting the various items listed hereinafter and indicated on the Drawings:
   1. Related Work Described Elsewhere:
      Cast-In-Place Concrete: Section 03300.

1.02 SUBMITTALS
   1. Materials and Shop Drawings: Manufacturer's literature shall be submitted for review on nonshrink grout data shall include grout properties, mixing, surface preparation and installation instructions shall be in accordance with Section 01340: Shop Drawings, Working Drawings and Samples.

1.03 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Grouting materials shall be delivered and stored in unbroken containers with seals and labels intact as packaged by the manufacturer.

PART 2 - PRODUCTS
   1. Nonshrink, Nonmetallic Grout: Sauereisen F-100 Level Fill, Master Builders Masterflow 713, Burke Non-Ferrous, Non-Shrink Grout or equal pre-mixed type.
   2. Nonshrink Metallic Grout: Master Builders Embeco 636 Grout pre-mixed type.

PART 3 - EXECUTION

3.01 PREPARATION
   1. All bonding surfaces shall be clean and dust and oil free.

3.02 INSTALLATION

   1. Nonshrink Grout:
   Nonshrink, nonmetallic grout shall be used for grouting column base plates, anchor bolts, reinforcing bars, pipe sleeves, machinery supports and pump base plates.
   Nonshrink grout shall be mixed and places as recommended by the manufacturer.
   Grout shall be mixed as close to the work area as possible and transported quickly to its final position in a manner which will not permit segregation of materials.
   Nonshrink grout shall be cured with water saturated burlap for at least 3 days.
   Machinery set on grout pads shall not be operated until the grout has cured for at least 36 hours.

END OF SECTION

SECTION 03601
FLOWABLE FILL

PART 1 - GENERAL

1.01 DESCRIPTION

This section specifies the requirements for flowable fill used for trenches, support for pipes structures,culverts, utility cuts and other works where cavities exist and where firm support is needed for pavements and structural elements. Flowable fill may alsobe used tofill water and sewer lines and fuel tanks placed out of service and at other locations approved by the appropriate agencies.

1.02 SUBMITTALS

   1. Materials and Shop Drawings: The following information shall be submitted for approval in accordance with Section 01340: Shop Drawings, Working Drawings and Samples. No Flowable fill shall be furnished until submittal has been approved.
   2. Plant Qualification: Satisfactory evidence shall be submitted indicating compliance with the specified qualification requirements.
   3. Materials: Satisfactory evidence shall be submitted indicating that materials to be used, including cement, aggregates and admixtures meet the specified requirements.
   4. Design Mix: The design mix to be used shall be prepared by qualified persons and submitted for approval. The design of the mix is the responsibility of the Contractor subject to the limitations of the Specifications. Approval of this submission will be required only as minimum requirements of the Specifications have been met. Such approval will in no way alter the responsibility of the Contractor to furnish concrete meeting the requirements of the Specifications relative to strength and slump.
   5. Ready Mix Flowable Fill: Provide delivery tickets to weigh masters certificate per ASTM C-94, including weights of cement and each size aggregate, amount of water in the aggregate and amount of water in aggregate and amount of water added at the plant. Write in the amount of water added on the job.

PART 2 - PRODUCTS
2.01 MATERIALS

The materials used shall conform with the requirements specified in Division III, FDOT, Standard Specifications for Road and Bridge Construction most current edition. Specific references are as follows:

(1) Portland Cement (Types I, II or III). . . . . .Section 921

(2) Fly Ash, Slag and other Pozzolanic Materials for Portland Cement Concrete . . . . Section 929

(3) Fine Aggregate (Sand)* . . . . .Section 902

(4) Water . . . . .Section 923

2.02 MIX PROPORTIONS

The Contractor shall be responsible for procuring a flowable mixture using these guidelines and adjusting his mixture design as called for by circumstances or as may be directed by the Engineer and/or Utilities Department.

Flowable fill material shall be proportioned to produce a 28-day compressive strength of approximately 150 psi ± 25 psi.

General mix quantities are as follows:

Components	Pounds per Cubic Yard
Cement	50 - 100 *
Fly Ash or Granulated Blast Furnace Slag	0 - 600
Fine Sand	2750 (adjust to yield on cubic yard on flowable fill)
Water	500 (maximum)

* The percentage of cement may be increased above these limits only when early strength is required and future removal is very unlikely.
Weights for fine aggregate and water shall be adjusted according to cementitious content. The mix proportions shall be adjusted for removability, pumpability and flowability. If required, strength test data shall be provided prior to batching.
If required by the Utilities Department, the flowability can be measured by afflux time determined in accordance with ASTM C 939 and shall be 30 second ± 5 seconds as measured on mortar passing the No. 4 sieve. The equipment required to perform this test shall be provided by the Contractor.

PART 3 - EXECUTION

3.01 PRODUCTION AND PLACING

Flowable fill shall be produced and delivered using concrete construction equipment. Placing flowable fill shall be chute, pumping or other methods approved by the Engineer.

PART 4 - INSTALLATION

4.01 CONSTRUCTION REQUIREMENTS

The flowable fill shall be placed to the designated fill line without vibration or other means of compaction. Placement shall be avoided during inclement weather, e.g., rain or ambient temperatures below 40 degrees F. The Contractor shall take all necessary precautions to prevent any damages caused by the hydraulic pressure of the fill during placement prior to hardening. Also, necessary means to confine the material within the designated space shall be provided by the Contractor.

4.02 ACCEPTANCE

The flowable fill shall be proportioned and placed as specified herein. In general, the strength desired is the maximum hardness that can be excavated at a later date using conventional excavating equipment. No curing protection is required.

The fill shall be left undisturbed until material obtains sufficient strength. Sufficient strength is 250 psi penetration resistance as measured using a hand held penetrometer or Swiss hammer. The penetrometer or Swiss hammer shall be provided by the Contractor.

All flowable fill areas subjected to traffic loads must have a durable riding surface.

4.03 METHOD OF MEASUREMENT

When flowable fill is called for in the plans, it shall be measured by volume in accordance with the plan and specification call-out.

4.04 BASIS OF PAYMENT

When the item of flowable is included in the Contract, payment will be made at the contract unit price per cubic yard. Such price and payment shall include all costs of the mixture, in place and accepted; determined as specified above. No measurement and payment will be made for material placed outside the neat line limits or outside the adjusted limits or for unused or wasted material.

When no item of flowable fill is contained in the Contract and the Contractor elects to utilize this material as allowed herein, no additional compensation will be made for this use. Any additional cost will be considered incidental to the cost of material being replaced.

Payment, if specified, shall be made under:

Flowable Fill - per cubic yard

END OF SECTION

REVISIONS: 1–8 | COMMENTS | DATE

JOB NO. 19-1025
DESIGNED DWB
DRAWN AFR
DATE 03-23-2021
CHECKED DWB
DATE ISSUED 8/19/2021

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PALM BAY
SPECIFICATIONS 02

THE RESERVE AT COUNTRY CLUB
LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD · LICENSE No. 83267 · STATE OF FLORIDA · PROFESSIONAL ENGINEER
DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

SHEET
C-810
19-1025
PERMITTING SET

SECTION 07120
WATERPROOFING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work: The work under this Section includes the application of liquid membrane waterproofings.

1.02 QUALITY ASSURANCE

1. Applicator: Applicator shall present proof of having successfully waterproofed other projects under comparable conditions over a period of at least two (2) years, using similar materials and methods to those specified herein.
2. Acceptance of Surfaces: The applicator shall make sure that substrates meet the requirements of the specifications. The Utilities Department shall be notified of any defects which will adversely affect proper installation of waterproofing. Application of waterproofing without such notification shall denote acceptance of substrate.

1.03 SUBMITTALS

A. The Contractor shall submit data sheets on products and shop drawings in accordance with Section 01340: Shop Drawings, Working Drawings and Samples, showing proposed methods of flashing pipe and other penetrations, cants at wall and joints.

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Materials shall be delivered to the job site in manufacturer's original unopened containers with manufacturer's brand name clearly marked thereon. Material shall be stored in a manner to prevent damage, deterioration or contamination.

PART 2 - PRODUCTS

2.01 MATERIALS

1. Waterproofing: Waterproofing shall be a liquid applied polyurethane rubber of modified urethane; for horizontal surfaces that material shall be GACOFLEX UWM-28, TREMproof SO or equal and for vertical surfaces the material shall be trowel grade GACOFLEX UWM-29T, TREMproof 50 or equal. The material shall have an elongation of not less than 450 percent (450%) or tensile strength of less than 140 psi when tested under ASTM D-412 test methods.
2. Accessories and Related Products: Accessories and related products including but not limited to caulking, flashing, cants, tape and thinner shall be as recommended by the waterproofing manufacturer as approved by the Utilities Department.
3. Protection Board: Protection board shall be non-reactive with membrane and as manufactured by W.R. Meadows (Seal Tight Protective Course), Mead Paperbound Products (Membra-Mat Protection Course), J & P Petrolemn Products, Inc. (Tex-Mastic Backerboard 502-A) or equal. Protection board shall be approximately 1/8 inch in thickness for horizontal surfaces and 1.4 inch or thicker for vertical surfaces. The adhesive shall be steep asphalt or as recommended by the waterproofing manufacturer.

PART 3 - EXECUTION

3.01 SURFACE PREPARATION

1. Concrete shall be cured not less than 10 days and longer if recommended by the waterproofing manufacturer. Laitance, loose material on the surface, dust, grease, oil and other contaminants which will affect bond of the membrane shall be removed. Surfaces shall be vacuum cleaned or clear water washed. Concrete surface shall be dry, and horizontal surfaces shall pass a 4 hour rubber mat test (no condensation) prior to application of the membrane system. Cant strips shall be provided as recommended by the waterproofing manufacturer for the juncture of vertical surfaces with protrusions.

3.02 APPLICATION

1. General: Waterproofing shall be applied to horizontal and vertical surfaces shown on Drawings to be waterproofed. Application shall be in strict accordance with manufacturer's printed instructions. Installation shall be coordinated with the placement of backfill in order to prevent damage to waterproofing and protection board.
2. Membrane: Membrane material shall be applied with calibrated notched squeegee, trowel or approved spray equipment to produce a 60 mil dry thickness.
3. Protection Board: Protection board shall be applied to horizontal and vertical surfaces of the membrane 24 hours after the material cures. Mechanical fasteners that penetrate the membrane shall not be used and only an approved adhesive shall be used to secure the protection board. On horizontal surfaces the protection board shall be laid up to 6 inches from the edge of slab.

3.03 FIELD QUALITY CONTROL

1. Testing: Testing by flooding of horizontal surfaces will not be required; however, any damaged membrane or insufficient thickness material shall be corrected as approved by the Utilities Department.

SECTION 09900
PAINTING

PART I - GENERAL

1.01 DESCRIPTION

A. Scope of Work:
1. The Specification outlines the requirements for protective coating systems for the Utility Service Area for the surfaces listed herein and not otherwise excluded.
2. The work includes painting and finishing of interior and exterior exposed items and surfaces such as ceilings, walls, floors, miscellaneous metal, doors, frames, transoms, roof fans, construction signs, guardrails, posts, pipes, fittings, valves, equipment, and all other work obviously required to be painted.
3. "Paint" as used herein means all coating systems, materials, including primers, emulsions, enamels, sealers and fillers, and other applied materials whether used a prime, intermediate or finish coats.
4. The following items will not be painted:
   a. Any code-requiring labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment identification, performance rating, name or nomenclature plates.
   b. Any moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sensing devices, motor and fan shafts, unless otherwise indicated.
   c. Aluminum or fiberglass handrails, walkways, toe boards, windows, louvers, grating, checker plate, hatches, and stairways.
   d. Stainless steel angles, tube, pipe, etc.
   e. Products with polished chrome, aluminum, nickel or stainless steel finish.
   f. Stainless steel, brass, bronze, and aluminum other that exposed utility tubing.
   g. Flexible couplings, lubricated bearing surfaces, insulation and plastic pipe or duct interiors.
   h. Plastic switch plates and receptacle plates.
   i. Signs and nameplates.
   j. Finish hardware.
   k. Packing glands and other adjustable parts, unless otherwise indicated.
   l. Portions of metal, other than aluminum, embedded in concrete. This does not apply to the back face of items mounted to concrete or masonry surfaces which shall be painted before erection. Aluminum to be embedded in, or in contact with, concrete shall be coated to prevent electrolysis.
   m. Galvanized metals unless specifically noted otherwise.

B. Related Work Described Elsewhere:
1. Piping and Equipment Identification System: Section 09905.

1.02 QUALITY ASSURANCE

A. Provide the best quality grade of the various types of coatings as regularly manufactured by approved paint materials manufacturers. Materials not displaying the manufacturer's identification as a standard, best grade product will not be acceptable.
B. Provide undercoat paint produced by the same manufacturer as the finish coats. Undercoat and finish coat paints shall be compatible. Use only thinners approved by the paint manufacturer, and use only within recommended limits.
C. Painting shall be accomplished by experienced painters specializing in industrial painting familiar with all aspects of surface preparations and applications required for this project. Work shall be done in a safe and workmanlike manner.
D. Standards:
1. ASTM.
2. OSHA.
3. NFPA.
4. SSPC.
5. NACE.
6. NSF
7. AWWA
E. Acceptable Manufacturers:
1. Tnemec Company, Inc.
2. Kop-Coat/Carboline Company.

1.03 DELIVERY, HANDLING AND STORAGE

A. Deliver all materials to the job site in original, unopened packages and containers bearing manufacturer's name and label.
1. Provide labels on each container with the following information:
   a. Name or title of material.
   b. Fed. Specification number if applicable.
   c. Manufacturer's stock number and color.
   d. Manufacturer's name.
   e. Generic type.
   f. Contents by volume, for major pigment and vehicle constituents.
   g. Application instructions: thinning, ambient conditions, etc.
   h. Date of manufacture and expiration date (shelf life).
2. Containers shall be clearly marked to indicate any hazards connected with the use of the paint and steps which should be taken to prevent injury to those handling the product.

B. All containers shall be handled and stored in such a manner as to prevent damage or loss of labels or containers.
C. Store only acceptable product materials on project site. Restrict storage to paint materials and related equipment. Storage of paint materials and related equipment shall comply with the requirements or pertinent codes and fire regulations. In addition, all safety precautions noted on the manufacturer's Material Safety Data Sheets and other literature shall be strictly followed. Proper containers outside of the building shall be provided by the Builder and used for painting wastes. No plumbing fixtures shall be used for this purpose.
D. Used rags shall be removed from the buildings every night and every precaution taken against spontaneous combustion.

PART 2 - PRODUCTS

2.01 MATERIALS

A. All paint shall be manufactured by one of the suppliers listed in Paragraph 1.02E., herein, and shall be their highest grade of paint.
B. Paint used in successive field coats shall be produced by the same manufacturer. Paint used in the first field coat over shop painted or previously painted surfaces shall cause no wrinkling, lifting, or other damage to underlying paint. Shop paint shall be of the same type and manufacture as used for field painting by the Builder.
C. Emulsion and alkyd paints shall contain a mildewcide and both the paint and mildewcide shall conform to OSHA and Federal requirements, including Federal Specification TT-P- 19.
D. Finish coats containing lead shall not be allowed. Oil shall be pure boiled linseed oil.
E. Rags shall be clean painter's rags, completely sterilized.

2.02 COATING SYSTEMS

General: Where exposures or coating are not specified or when two (2) classifications can apply, the worst-case condition shall be used to determine the coating system.

A. Concrete and Masonry - Interior, Non-immersion excluding Floors.
1. Examples of this classification include the following surfaces:
   a. Interior masonry and plaster.
   b. Concrete block walls.
   c. Concrete walls, columns and supports.
   d. Concrete ceilings and beams.
2. Surface Preparation: As specified in Paragraph 3.02, herein, including cleaning and air-blasting.
3. Coating System (Use a & b):
   a. Epoxy Polyamide Filler for Concrete Block:
      (1) Tnemec 54-660: One (1) coat at 75 to 100 Square feet/gallon (sq. ft./gal.).
      (2) Kop-Coat Epoxy Block Filler: One (1) coat at 75 to 100 sq. ft./gal.
   b. Epoxy Polyamide or Amine-Cure (Semigloss or Gloss):
      (1) Tnemec 66-Color H.B. Epoxoline: Two (2) coats at 4.0 to 6.0 mils DFT each.
      (2) Kop-Coat Hi-Gard Epoxy: One (1) coat at 6.0 to 8.0 mils DFT each plus Glamorglaze 200 Epoxy: One (1) coat at 2.0 to 3.0 mils DFT each.

B. Concrete and Masonry - Immersion, Non-Potable:
1. The proposed concrete wastewater treatment structures including pump stations, manholes and other applicable structures not specifically listed shall receive the following coating system. Coat entire concrete interior including floors, ceilings and walls.
   a. Surface Preparation: As specified in Paragraph 3.02, herein, including brush-off blasting.
   b. Coating System (Use (1), (2), (3) and (4)):
      (1) Bond Coat: Thinned coal tar epoxy (25 percent to 33 percent by volume).
         (a) Kop-Coat No. 300 M Bitumastic Black: One (1) coat at 4.0 mils DFT.
      (2) Coal Tar Epoxy:
         (a) Kop-Coat No. 300M Bitumastic: One (1) coat at 6.0 mils DFT.
      (3) Conditioner:
         (a) When second coat is allowed to cure more than two (2) days, or exposed to sunlight more than 24 hours before application of third coat, apply Kop-Coat Bitumastic 2 CB conditioner as recommended by manufacturer.
         (b) When four (4) days has passed between coats of Tnemec Series 46-413, TNEME-TAR scarify surface by brush blasting per SSPC-SP7.
      (4) Coal Tar Epoxy:
         (a) Kop-Coat No. 300M Bitumastic: One (1) coat at 6.0 mils DFT.
         (b) Tnemec Series 46-413 TNEME-TAR at 6.0 mils DFT.
2. The proposed chlorine contact chamber interior shall receive the following coating system:
   a. Surface Preparation: Brush off blasting per SSPC-SP7 as outlined in Section 3.02: Surface Preparation.
   b. Coating System:
      (1) Primer: Tnemec Series 20-AA90 (White) Pota-Pox (Epoxy-Polyamide Potable Water Tank System) at 3.0 to 5.0 mils DFT.
      (2) Second Coat: Tnemec Series 20-AA83 (Tank White) Pota Pox at 3.0 to 5.0 mills DFT.
      (3) Topcoat: Tnemec Series 20-BB62 (Delft Blue) Pota-Pox at 4.0 to 6.0 mils DFT.

C. Concrete and Masonry - Exterior, Non-Immersion.
1. Examples of this classification include, but are not limited to the following surfaces:
   a. Exterior Masonry
   b. Exterior surfaces of all proposed concrete structures.
2. Surface Preparation:
   a. As specified in Paragraph 3.02, herein, including cleaning and air blasting.
3. Coating System:
   a. Acrylic Emulsion (low gloss):
      (1) Tnemec 6-Color Tnemec-Cryl Two (2) coats at 2.0 to 3.0 mils DFT each.
      (2) Kop-Coat 600 Interior-Exterior: Two (2) coats at 2.0 to 3.0 mils DFT each.

D. Ferrous Metal: Interior and Exterior, Non-Immersion excluding Buried Surfaces.
1. Examples of this classification include, but not limited to, the following surfaces:
   a. Pipe.
   b. Joists.
   c. Equipment.
   d. Steel plate.
   e. Doors and frames.
   f. Steel tank exteriors.
2. Surface Preparation: As specified in Paragraph 3.02, herein, including sandblasting to SSPC-SP6.
3. Coating System (Use a, b, & c):
   a. Epoxy Polyamide Primer:
      (1) Tnemec 66-1211 Epoxy Primer: One (1) coat at 2.0 to 3.0 mils DFT each.
      (2) Kop-Coat 340 Gold Primer: One (1) coat at 2.0 to 3.0 mils DFT each.
      For shop primed items kept on-site for prolonged periods, follow manufacturer's recommendations prior to applying touch-up and subsequent coats, e.g., brush-off blasting.
   b. Epoxy Polyamide:
      (1) Tnemec 66 - Color H.B. Epoxoline: One (1) coat at 4 to 6.0 mils DFT each.
      (2) Kop-Coat Hi-Gard Epoxy: One (1) coat at 4 to 6.0 mils DFT each.
      For non-skid surface (e.g., at accessible tank covers), add 5 pounds of 50-mesh kiln-dried washed silica sand to each gallon. Agitate mixture to prevent settling and uneven distribution of sand in to the coating.
   c. Aliphatic Polyurethane (Gloss):
      (1) Tnemec 74 - Color Endura - Shield IV: One (1) coat at 2.0 to 3.0 mils DFT each.
      (2) Kop-Coat Carboline 134 H. S.: One (1) coat at 1.0 to 2.0 mils DFT each.
   d. Where brush or roller application is required, use:
      (1) Tnemec 74 - Color Endura Shield IV: One (1) coat at 2.0 to 3.0 mils each.
      (2) Kop-Coat Carboline as previously specified.
4. Coating System for Existing Ferrous Metal, Non-immersion:
   a. Surface Preparation: SSPC-SP6 where possible, otherwise in order of preference SP3 or SP2.
   b. Aromatic Polyurethane, Epoxy Mastic or Amine-Cure:
      (1) Tnemec 135 Chembuild Poly Ura Prime: One (1) coat at 4.0 to 6.0 mils DFT each.
      (2) Kop-Coat Carbomastic 90: One (1) coat at 6.5 mils DFT each.
   c. Aliphatic Polyurethane (Gloss):
      (1) Tnemec 74 Endura - Shield IV: Two (2) coats at 2.0 to 3.0 mils DFT each.
      (2) Kop-Coat Carbothane 134 H.S.: Two (2) coats at 1.0 to 2.0 mils DFT each.

E. Ferrous Metal - Immersion, Non-Potable
1. Examples of this classification include, but not limited to, the following surf aces:
   a. Pipe.
   b. Other submerged or partially submerged ferrous metal.
   c. Disturbed and rusted areas in the existing Davco and Sanitaire WWTPs.
2. Surface Preparation: As specified in Paragraph 3.02, herein, including sandblasting to SSPC-SP10.
3. Coating System (Use a & b or b as needed):
   a. Epoxy Polyamide or Amine-Cure Primer - Shop primer only.
      (1) Tnemec 66-1211 Epoxy Primer: One (1) coat at 3.0 to 5.0 mils DFT each.
      (2) Kop-Coat 340 Gold Primer: One (1) coat at 3.0 to 5.0 mils DFT each.
      For shop-primed items kept on-site for prolonged period, follow manufacturer's recommendations prior to applying touch-up and subsequent coats, e.g. brush-off blasting.
   b. Epoxy Amine-Cure:
      (1) Tnemec 104: Color H.S. Epoxy: Two (2) coats at 6.0 to 8.0 mils DFT each.
      (2) Kop-Coat Super High Gard 891: Two (2) coats at 6.0 to 8.0 mils DFT each.

F. Ferrous Metals - Immersion, Potable
1. Examples of this classification include the following surfaces:
   a. Steel tanks interior.
   b. Pipe.
   c. Other submerged or partially submerged ferrous metals.
2. Surface Preparation: As specified in Paragraph 3.02, herein, including sand blasting to SSPC-SP10.
3. Coating System (Use a & b).
   a. Epoxy Polyamide Primer:
      (1) Tnemec 20-1255: One (1) coat at 3.0 to 5.0 mils DFT each.
      (2) Kop-Coat 340 Gold Primer: One (1) coat at 2.0 to 3.0 mils DFT each.
      For shop-primed items kept on-site for prolonged periods, follow manufacturer's recommendations prior to applying touch-up and subsequent coats, e.g., brush-off blasting.
   b. Epoxy Polyamide:
      (1) Tnemec 20-AA83: One (1) coat at 4.0 to 6.0 mils DFT each.
      (2) Kop-Coat Hi-Gard Epoxy: One (1) coat at 4.0 to 6.0 mils DFT each.

G. Galvanized Steel and Non-Ferrous Metal - Non-immersion.
1. Examples of this classification include the following surfaces:
   a. Galvanized steel pipe where specifically noted or specified.
   b. Galvanized or zinc-coated steel fabrications where specifically noted or specified.
   c. Aluminum fabrications where specifically noted otherwise.
   d. Aluminum or other non-ferrous pipe or tubing
   e. Copper pipe and tubing.
2. Surface Preparation: As specified in Paragraph 3.02, herein, including cleaning to SSPC - SPl.
3. Coating System (Use a, b, & c).
   a. Wash primer and/or Epoxy Polyamide
      (1) Tnemec 66-color H.B. Epoxoline: One (1) coat at 4.0 to 6.0 mils DFT each.
      (2) Kop-Coat 40 Passivator: One (1) coat at 0.3 to 0.5 mils DFT each + Kop-Coat Hi-Gard Epoxy: One (1) coat at 4.0 to 6.0 mils DFT each.
   b. Aliphatic Polyurethane (Gloss):
      (1) Tnemec 74-Color Endura-Shield IV: One (1) coat at 2.0 to 3.0 mils DFT each.
      (2) Kop-Coat Carbothane 134 H.S. Liner Polyurethane: One (1) coat at 1.0 to 2.0 mils DFT each.
   c. Where brush or roller application is required, use:
      (1) Tnemec 74-Color Endura-Shield IV: One (1) coat at 2.0 to 3.0 mils DFT each.
      (2) Kop-Coat Carbothane as previously specified.

H. High Temperature Steel to 1200 Degrees Fahrenheit (EF).
1. Examples of this classification include the following surfaces:
   a. Aeration piping.
   b. Equipment.

   Surfaces at temperatures above 200EF that are not insulated will receive this coating.

2. Surface Preparation: As specified in Paragraph 3.02, herein, including sandblasting to SSPC-SP10.

3. Coating System (Use a, b, or c):

   a. Silicone Aluminum for 200EF to 750EF temperatures

      (1) Tnemec 39-1061: Two (2) coats at 1.0 to 1.5 mils DFT each.

      (2) Kop-Coat Carboline 4631: Two (2) coats at 2.5 mils DFT each.

   b. Silicone Aluminum for 750EF to 1000EF temperatures:

      (1) Tnemec 391061: Two (2) coats at 1.0 to 1.5 mils DFT each.

      (2) Kop-Coat Carboline 4631: Two (2) coats at 1.5 mils DFT each.

   c. Silicone Aluminum for 1000EF to 1200EF temperatures.

      (1) Tnemec 39-1261: Two (2) coats at 1.0 to 1.5 mils DFT each.

      (2) Kop-Coat Carboline 4631: Two (2) coats at 1.0 to 1.5 mils DFT each.

I. Aluminum embedded or in contact with concrete.

1. Examples of this classification include the following surfaces:

   a. Portions of slide gate frames.

   b. Portions of hatch cover frames.

   c. Portions of stair stringers.

   d. Portions of grating and floor plate frames.

2. Surface Preparation: As specified in Paragraph 3.02, herein, including cleaning to SSPC-SPl.

3. Coating System (Use a & b):

   a. Zinc chromate primer.

      (1) Kop-Coat 40 Passivator: One (1) coat at 0.3 to 0.5 mils DFT each.

   b. Aluminum Pigmented Asphalt Paint.

      (1) Kop-Coat Carboline Carbomastic 15: One (1) coat at 7.0 mils DFT.

      (2) No Tnemec primer required.

J. Miscellaneous surfaces requiring coal tar epoxy.

1. Examples of this classification include the following surfaces:

   a. Pipe interiors not specified elsewhere.

   b. Miscellaneous castings not specified elsewhere.

2. Surface Preparation - As specified in Paragraph 3.02, herein.

3. Coating System (Use a):

   a. Coal Tar Epoxy, High-Build:

      (1) Tnemec 46H-413: One (1) coat at 14 to 20 mils DFT each.

      (2) Kop-Coat No. 300-M Bitumastic H.B.: One (1) coat at 20 mils DFT each.

K. Wood - Interior and Exterior.

1. Examples of this classification include the following surfaces:

   a. Wood trim.

   b. Shelves.

   c. Cabinets.

2. Surface Preparation: As specified in Paragraph 3.02, herein, including sealing knots, filling, and sanding.

3. Coating System (Use a & b or a & c as directed by Owner).

   a. Alkyd Primer.

      (1) Tnemec 36-603: One (1) coat at 2.0 to 3.5 mils DFT each.

      (2) Kop-Coat Rustarmor 500 speed: One (1) coat at 1.5 to 2.0 mils DFT each.

   b. Acrylic Emulsion (Semi-Gloss):

      (1) Tnemec 7-Color Tneme-Cryl SG: Two (2) coats at 2.0 to 3.0 mils DFT each.

      (2) Kop-Coat Acrylic: Two (2) coats at 2.0 to 3.0 mils DFT each.

   c. Alkyd (Gloss):

      (1) Tnemec 2H H.B. Tneme-Gloss: Two (2) coats at 1.5 to 2.5 DFT each.

      (2) Kop-Coat Rustarmor 500 speed: Two (2) coats at 1.4 to 2.0 mils DFT each.

L. Gypsum Board.

1. This classification includes interior surfaces of gypsum board where coating or covering is not otherwise specified.

2. Surface Preparation: As specified in Paragraph 3.02, herein, including priming and sanding.

3. Coating System (Use a & b):

   a. Acrylic Wall Sealer: 0.75 mils DFT minimum.

      (1) Tnemec 51-7923 PVA Sealer: One (1) coat at 1.0 to 2.0 mils DFT each.

      (2) Kop-Coat Sanitile D.W. Base: One (1) coat at 0.5 to 1.0 mil DFT each.

   b. Acrylic Emulsion (Semi-Gloss or Gloss):

      (1) Tnemec 7-Color Tneme-Cryl SG: Two (2) coats at 2.0 to 3.0 mils DFT each.

      (2) Kop-Coat 620 Acrylic Emulsion: Two (2) coats at 2.0 to 3 .0 mils DFT each.

M. PVC Pipe.

1. This classification includes exteriors of PVC pipe.

2. Surface Preparation: As specified in Paragraph 3.02, herein.

3. Coating System (Use a or a & b, as required):

   a. Epoxy Polyamide, Aliphatic Polyurethane, or Modified Acrylic (Semi-Gloss):

      (1) Tnemec 66-Color H.B. Epoxoline: One (1) coat at 2.0 to 3.0 mils DFT each.

      (2) Kop-Coat Glamorglaze 200 Epoxy: One (1) coat at 2.0 to 3.0 mils DFT each.

   b. Aliphatic Polyurethane topcoat for exterior exposure only:

      (1) Tnemec 74-Color Endura Shield: One (1) coat at 2.0 to 3.0 mils DFT each.

      (2) Kop-Coat Carbothane 134 H.B.: One (1) coat at 1.0 to 2.0 mils DFT each.

N. Fiberglass Reinforced Plastic.

1. This classification includes all exterior surfaces of fiberglass reinforced plastic. Interior surfaces exposed to process air or liquid shall be coated.

2. Surface Preparation: SSPC-SPI Solvent cleaning.

3. Coating System: (Use a. and b.):

   a. Polyamide Epoxy, not less than 40 percent solids by volume:

      (1) Tnemec Series 66 HB Expoxoline: One (1) coat at 3.0 to 4.0 mils DFT.

      (2) Kop-Coat Hi-gard Epoxy: One (1) coat at 3.0 to 4.0 mils DFT.

   b. Semigloss High Build Acrylic Aliphatic Polyurethane, not less than 54 percent solids by volume.

      (1) Tnemec Series 73 Endura Shield III: One (1) coat at 3.0 to 5.0 mils DFT.

      (2) Kop-Coat Carbothane 134 H.S. Polyurethane: One (1) Coat at 3.0 to 5.0 mils DFT.

PART 3 - EXECUTION

3.01 SHOP PAINTING

A. Surface Preparation - All ferrous metal to be primed in the shop shall have all rust, dust and scale, as well as all other foreign substances, removed by sandblasting or pickling in accordance with SSPC-SP10 or SP8, respectively. Cleaned metal shall be primed or pretreated immediately after cleaning to prevent new rusting. Under no circumstances will cleaned metal be allowed to sit overnight before priming, or pretreatment and priming. All nonferrous metals shall be solvent cleaned prior to the application of primer. In addition, galvanized surfaces which are to be top coated shall first be degreased then primed.

B. Materials Preparation:

1. Mix and prepare painting materials in strict accordance with manufacturer's recommendations and directions, stirring materials before and during application to maintain a mixture of uniform density, free of film, dirt and other foreign materials.

2. No thinners shall be used except those specifically mentioned and only in such quantity as directed by the manufacturer in his instructions. If thinning is used, sufficient additional coats shall be applied to assure the required dry film thickness is achieved. The manufacturer's recommended thinner or cleanup solvent shall be used for all clean-up. Application by brush, spray, airless spray or roller shall be as recommended by the manufacturer for optimum performance and appearance.

C. Applications:

1. All painting shall be done by skilled and experienced craftsmen and shall be of highest quality workmanship. Coating systems shall be as specified herein.

2. Apply paint in accordance with the manufacturer's directions. Use applicators and techniques best suited for the type of material being applied.

3. All paint and coatings materials shall be stored under cover and at a temperature within 10EF of the anticipated application temperature and at least 5EF above the dew point.

4. Apply additional coats when undercoats, stains or other conditions show through the final coat of paint, until the paint film is of uniform finish, color and appearance.

5. Paint shall be applied in a neat manner with finished surfaces free of runs, sags, ridges, laps and brush marks. Each coat shall be applied in a manner that will produce an even film of uniform and proper thickness.

6. Paint back sides of access panels and removable or hinged covers to match the exposed surfaces.

7. Equipment manufacturer or supplier shall provide touch-up paint for items with shop applied finish coats.

8. Where specified in the individual sections, primer coat(s) shall be applied in the shop by the equipment manufacturer. The shop coats shall be as specified and shall be compatible with the field coat or coats.

D. Certification: The Contractor shall obtain from the equipment manufacturer or supplier, prior to shipment of equipment, a written certification that surface preparation, coating brand, material, DFT and application method complied with this section.

3.02 SURFACE PREPARATION

A. All dirt, rust, scale, splinters, loose particles, disintegrated paint, grease oil and other deleterious substances shall be removed from all surfaces which are to be coated.

B. Hardware, hardware accessories, machined surfaces, plates, lighting fixtures and similar items and surfaces not to be painted which are in contact with or nearby surfaces to be painted shall be removed, masked, or otherwise protected prior to surface preparation and painting operations. Refer to Paragraph 3.09B.

C. Before commencing work, the painter must make certain that surfaces to be covered are in perfect condition. The application of paint shall be held as an acceptance of the surfaces and working conditions and the painter will be held responsible for the results reasonably expected from the materials and processes specified.

D. Program the cleaning and painting so contaminants from the cleaning process will not fall onto wet, newly-painted surfaces.
E. Ferrous Metal Surfaces:

1. Remove any oil or grease from surfaces to be coated with clean rags soaked in toluol or other solvent recommended by coating manufacturer in accordance with SSPC specifications. Any chemical contamination shall be eliminated by means of neutralization or flushing or both prior to additional surface preparation. Clean rags shall be changed each 100 square feet.

2. For immersion service, all sharp edges and welds shall be ground smooth to a rounder contour, all weld splatter shall be removed, and all pits and dents shall be filled, and all imperfections shall be corrected prior to sandblasting.

3. For non-immersion service, all sharp edges and welds shall be ground, all weld splatter shall be removed, all pits and dents shall be filled, and all imperfections shall be corrected prior to sandblasting.

4. For immersion service, all surfaces to be coated shall be sandblasted to white metal in accordance with Steel Structures Painting Council Specification SP-5 of National Association of Corrosion Engineers Specification NACE-2. A white metal blast is defined as removing all rust, scale, paint, etc., to a clean white metal which has a uniform gray-white appearance. No streaks or stains or rust or any other contaminants are allowed. The proper abrasive to obtain the specified surface profile (anchor pattern) designated in the coating manufacturer's most recent printed application instructions shall be used. After sandblasting, dust and spent sand shall be removed from the surfaces by brushing or vacuum cleaning. The prime coat shall be applied as soon as possible after the blasting preparation is finished and always before the surface starts to rust. No sandblasted surface shall stand overnight before coating.

5. For immersion service, or wherever specified in the coating manufacturer's most recent printed application instructions for other services, all surfaces to be coated shall be sandblasted to near white metal in accordance with Steel Structures Painting Council Specification SP-10 or National Association of Corrosion Engineers Specification NACE-2. A near white metal blast is defined as removing all rust, scale, paint, etc., except for very light shadows, very slight streaks or slight discolorations caused by rust stain, mill scale oxides, or slight, tight residues of paint or coatings that may remain. The proper abrasive to obtain the specified surface profile (anchor pattern) designated in the coating manufacturer's most recent printed Application Instructions shall be used. After sandblasting, dust and spent sand shall be removed from the surfaces by brushing or vacuum cleaning. The prime coat shall be applied as soon as possible after the blasting preparation is finished and always before the surface starts to rust. No sandblasted surface shall stand overnight before coating. (This is 95 percent of any given surface area blasted to white metal).

6. For non-immersion service surfaces to be coated shall be sandblasted to a commercial sandblast in accordance with Steel Structures Painting Council Specification SP-6 or National Association of Corrosion Engineers Specification NACE 3. A commercial sandblast is defined as removing all rust, scale, paint, etc., except for slight shadows, streaks or discolorations caused by rust stain, mill scale oxides or slight, tight residues of paint or coating that may remain; if the surface is pitted, slight residues or paint or rust, may be found in the bottom of pits. The proper abrasive to obtain the specified surface profile (anchor pattern) designated in the coating manufacturer's most recent printed Application Instructions shall be used. After sandblasting, dust and spent sand shall be removed from the surfaces by brushing or vacuum cleaning. The prime coat shall be applied as soon a possible after the blasting preparation is finished and always before the surface starts to rust. no sandblasted surface shall stand overnight before coating. (This is 2/3 of any given surface area blasted to white metal).
7. Ferrous metal surfaces previously exposed to sulfides shall be sandblasted, flame cleaned, and sandblasted again in accordance with the recommended surface preparation for the particular service in question.
8. Where blast cleaning is done in the field, only "virgin" sand, grit, or abrasive will be used.
9. Inaccessible areas, such as, behind tank rafters or skip-welded lap joints, or in between back-to-back angle iron bracing, shall be coated before assembly to prevent corrosive action from taking place in these inaccessible areas. All surface voids shall be sealed-welded and back-to-back bracing and tank rafters either coated before assembly or eliminated from the design and construction. Sharp corners and edges shall be ground to a smooth contour and welds prepared as described above.

F. Concrete Surfaces:
1. All concrete surfaces to be coated shall be clean and dry. "Dry" is defined for new concrete as free of moisture and fully cured which is a minimum of 28 days at 75EF and 50 percent Relative Humidity or some equivalent cure time at other conditions (7 days minimum for stucco). Moisture content of concrete shall be checked by taping a asphalt tile or a one-foot square piece of 20 mil thick minimum plastic film on the surface. Pieces of tile or test film should be placed at various locations that are likely to be slow drying out, such as below grade, low spots in floors, inside corners and lower wall areas. The tile or film should be carefully sealed with tape to prevent the escape of any moisture or vapor that would be trapped behind the film. The film should be left in place over night of longer to allow sufficient time for moisture migration. After 48 hours remove and examine the backside for moisture condensation and inspect the concrete surface for darkened areas. The source of the moisture, if present, shall be located, and the cause corrected prior to coating. All oil, grease, dirt, etc., shall be removed either by steam cleaning with detergent or by scrubbing with a hot trisodium phosphate solution consisting of 2 pounds of trisodium phosphate to each gallon of hot water (160EF). Repeat the cleaning operation until the contamination is removed and flush the area with clean water to remove residual cleaning solution. Allow to dry thoroughly before coating.
2. Old paint and unremoved tar stains shall be solvent cleaned with naphtha, trichloroethylene, or perchloroethylene. Proper safety precautions shall be observed if this step is necessary. The surface shall be flushed with fresh water and dried.
3. Do not use form oils incompatible with coating, concrete curing agents or concrete hardeners on concrete surfaces to be coated.
4. Concrete and/or cinder block walls to receive a coating shall be air-blasted with 100 psi clean, dry, oil-free air to remove dust, etc., and wire brushed to remove all loose and/or weak mortar. See requirements for sumps, tanks and other water-bearing structures below.
5. Concrete floors shall be thoroughly swept clean and then acid etched. Acid etching consists of first dampening the entire surface with clean water - avoid and excess of water that will for puddles. Acid etch the damp floor with a 10 to 15 percent solution of hydrochloric (muriatic) or phosphoric acid. Allow the acid to stand on the floor until the bubbling stops. For best results, while the acid is bubbling scrub the floor with a stiff bristled brushes. Do not allow the "spent" acid to dry on the floor. Rinse the surface thoroughly with fresh water. If the surface does not appear as rough as medium grit sandpaper, repeat the above steps. Neutralize the surface with a 5 percent solution of soda ash, tri-sodium phosphate, or ammonium hydroxide in clean water. Let the solution stand for 10 minutes on the surface. Rinse thoroughly with water. The surface must be neutral or slightly alkaline (pH of 8.0 maximum) prior to coating.
6. The floors or concrete sumps, tanks or other water-bearing structures should be acid etched as described above or they may be sandblasted. The walls of concrete sumps and tanks must be sandblasted. Roughen the surface to a texture equivalent to that of medium grit sandpaper. Use compressed air blast nozzle with oil-free air. The abrasive used should be dry silica sand with the maximum particle size that will pass through a 16 mesh screen and minimum particle size retained on a 30 mesh screen. After blast cleaning is completed, sand, dust and loose particles should be removed from the surface by vacuuming or blowing off with high pressure oil-free air. Examine the surface for texture and uniformity, as well as the removal of dust, efflorescence and laitance. patch voids and cracks that will cause discontinuities in the coating or unsightly appearance using a patching compound compatible with the coating system.

G. Wood Surfaces: Wood should be clean and dry. Remove surface deposits of sap or pitch by scraping and wiping clean with rags dampened with mineral spirits or VM & P Naphtha. Seal knots and pitch pockets with shellac reduced with equal parts of shellac thinner (denatured alcohol) before sandpaper and finishing with fine grit and remove sanding dust. After the prime coat is dry, fill cracks and holes with putty or spackling compound. When filler is hard, sand flush with the surface using fine grit sandpaper. Sand lightly between coats with fine grit, open-coated sandpaper

H. Galvanized Steel, and Non-Ferrous Metal:
1. Galvanized steel and aluminum will only be coated when so specified.
2. Surfaces shall be clean and dry. Remove dust and dirt by blowing off the surface with high pressure air or wiping clean with dry rags. Oil, grease and protective mill coatings should be removed by solvent cleaning in accordance with SSPC-SPl.
3. White rust should be removed from galvanized steel or aluminum by hand or power brushing. Care should be taken not to damage or remove the galvanizing. Rust should be removed from old galvanized steel by Hand or Power Tool Cleaning in accordance with SSPC-SP2 or SP3.
4. Other surface preparation as outlined in the coating manufacturer's latest written Application Instructions shall be observed more demanding exposures.

I. Stainless Steel:
1. Stainless steel will only be coated when so specified.
2. Stainless steel requires only solvent cleaning prior to coating using any one of the methods in SSPC-SP1. Only solvents and cleaning solutions containing less than 200 ppm of halogens should be used to prevent stress corrosion cracking.
3. Stainless steel may be whip-blasted to provide a surface profile to increase the mechanical bond of the coating system. The height of the profile and the texture required should be defined for the operator and as a standard for the acceptance of the work. Pictorial standards for the surface cleanliness of carbon steel are not applicable to stainless steel, since there are no corrosion products or mill scale to remove from the surface.
4. Abrasive blast cleaning procedures outlined by Steel Structures Painting Council for carbon steel may also be used for stainless steel. Only very hard silica sand or other abrasive media should be used for a fast cutting action and to obtain a sharp angular profile.

J. Gypsum Drywall:
1. Sand joint compound with fine grit, open-coated sandpaper to provide a smooth flat surface. Avoid heavy sanding of the adjacent wall board surfaces, which will raise the nap of the paper covering. Remove dust from the surface by wiping with clean rags or other means. If additional joint finishing is required to provide a smooth surface, the same joint compound of a ready-mixed spackling compound should be used. Putty, patching pencils, caulking or masking tape should not be applied to dry wall surfaces to be painted.
2. Lightly scuff-sand tape joints after priming to remove raised paper nap. Take care not to sand through the prime coat and remove dust by wiping with clean rags.

K. Previously-Painted Surfaces (except ferrous metal, non-immersion)
1. Careful examination of the old coating is necessary in order to determine the condition of the coating prior to recommending the degree of surface preparation that will be needed. The old coating should be shaved with a knife to ascertain its present adhesion to the substrate, as well as the flexibility of the film. If the old coating has a tendency to powder of shatter easily under the knife, or disbonds freely from the substrate or underfilms, it would indicate total removal is necessary.
   a. When up to 10 percent of the total area has failed, spot blasting back to at least one-inch into sound film, feathering of edges and spot priming is required.
   b. When the coating system has deteriorated to approximately 25 percent of the total area, or if the coating is brittle, eroded or underfilm rusting is present, completely remove original coating system by sandblasting as specified.
2. Tank linings, immersion-service coatings, and some other types of high performance coatings generally require total removal before recoating. Consult manufacturer's recommendations for which of the other types of high performance coatings require total removal.
3. In instances where the film has been eroded due to weathering or worn thin due to abrasion or impingement with no rusting, the surface contaminants may be removed through water blasting (approximately 2,000 psi, over 4 gallons per minute) with emulsifying agents or cleaners, rinsed and dried. Roughening of the surface shall be used to improve the adhesion of subsequent coats. Recoat with the recommended finish coat(s).

L. PVC or Other Plastic Piping or Ductwork:
1. Solvent clean.
2. If recommended by manufacturer, lightly abrade surface with medium grade sandpaper. Remove dust by wiping with clean rags.

3.03 MATERIALS PREPARATION

A. Mix and prepare painting materials in strict accordance with manufacturer's recommendations and directions, stirring materials before and during application to maintain a mixture of uniform density, free of film, dirt and other foreign materials.
B. Except where otherwise specified, thinning shall be done only if necessary for the workability of the coating material and then, only in accordance with the coating manufacturer's most recent printed Application instructions. Use only thinner provided by coating manufacturer. If thinning is used, sufficient additional coats shall be applied to assure the required dry film thickness is achieved. The manufacturer's recommended thinner or cleanup solvent shall be used for all clean-up. Application by brush, spray, airless spray or roller shall be as recommended by the manufacturer for optimum performance and appearance.

3.04 APPLICATION

A. Paint all exposed surfaces in rooms scheduled for painting whether or not colors are designated in schedules, except where the natural finish of material is obviously intended and specifically noted as a surface not be painted. Where items or surfaces are not specifically mentioned, paint these the same as adjacent similar materials or areas. If color of finish is not designated, the Engineer will select these from standard colors available for the materials systems as specified.
B. Color Selection
1. Colors for Multi-coat Systems: Each coat shall be applied in a different color or shade from the preceding coat to aid in determining the uniformity and coverage of the coating. The finish coat color shall be selected by the Owner or Engineer. When a white finish coat is specified, the last two (2) coats shall be white.
2. Color Coding Piping: All exposed piping shall be identified as specified in Section 09905: Piping and Equipment Identification System. Pipe identification system shall include color coding or banding, legends and arrows.
C. All painting shall be done by skilled and experienced craftsmen and shall be of highest quality workmanship.
D. Apply paint in accordance with the manufacturer's directions. Use applicators and techniques best suited for the type of material being applied. All equipment shall be maintained in good working order and shall be comparable to that described in the coating manufacturer's most recent Application Instructions. It shall be thoroughly cleaned and inspected daily. Worn spray nozzles, tips, etc., shall be replaced regularly. Effective oil and water separators shall be used and serviced on all air lines.
E. All paints and coating materials shall be stored under cover and at a temperature within 10EF of the anticipated application temperature and at least 5EF above the dew point.
F. Apply additional coats when undercoats, stains or other conditions show through the final coat or paint, until the paint film is of uniform finish, color and appearance.
G. Paint shall be applied in a neat manner with finished surfaces free of runs, sags, ridges, laps and brush marks. Each coat shall be applied in a manner that will produce an even film of uniform and proper thickness. Allow each coat to dry thoroughly before applying the next coat; follow manufacturer's recommendations taking into account temperature and relative humidity.
H. All interior surfaces of structures shall be finish coated prior to installation of equipment, conduit and other exposed items by Mechanical, Electrical or Instrumentation.
1. Paint back sides of access panels and removable or hinged covers to match the exposed surfaces.
J. Finish exterior doors on tops, bottoms, and side edges the same as the exterior faces, unless otherwise indicated.
K. Sand lightly between each succeeding enamel or varnish coat.
L. Omit the first coat (primer) on metal surfaces which have been shop-primed and touch-up painted, unless otherwise specified.
M. Retouching Existing Painted Surfaces: Existing painted surfaces damaged by the modification work or other operations of the Builder shall be retouched to conform to the above coating systems and blend in with the new and existing work. Damaged surfaces shall be repainted with not less that two (2) coats, and other existing surfaces that are listed shall be repainted with the coating system specified.
N. Shop primed items shall be given a touch up of primer followed by the finish.

3.05 APPLICATION RESTRICTIONS

A. Environmental Requirements:

1. Comply with manufacturer's recommendations as to environmental conditions under which coatings and coating systems can be applied.
   a. The conditions below shall be adhered to even if manufacturer's recommendations are less stringent. If manufacturer's recommendations are more stringent, they shall apply.
   b. No coatings shall be applied when the air, surface, and material temperature is below 55EF or above 100EF for 24 hours prior to and 24 hours after coating application. Surface temperature shall be at least 5EF above the dew point for 24 hours prior to and 24 hours after coating application. No painting shall be done when the surfaces may become damaged by rain, fog or condensation or when it is anticipated that these conditions will prevail during the drying period, unless suitable enclosures to protect the surface are used. Where heat is necessary, it shall be supplied by the painting applicator and shall be of such type that it will maintain an air and coated surface temperature of 55EF minimum prior to and after the coating application as described above, and 90EF minimum during the cure stage if hot air forced curing is recommended by the coating manufacturer for special coatings. Further, this heater shall be of such type as not to contaminate the surface area to be of being coated with combustion products. Any surface coating damaged by moisture or rain shall be removed and redone.
2. Do not apply finish in areas where dust is being or will be generated during application through full cure.
3. All exterior painting shall be done only in dry whether.
4. Spray application shall occur only when wind velocities, including gusts, are less that 10 miles per hour. All materials, equipment, etc. in the vicinity of spray application shall be protected from overspray.

B. Application of materials shall be done only on properly prepared surfaces as herein specified. Between any two coats of material, unless specifically cover in the coating manufacturer's most recent printed application instructions, if more than one (1) week passes between subsequent coats, the coating manufacturer will be contacted for his recommended preparation of the surface prior to application of the next coat. This preparation might include brush-off blasting, steam cleaning, or solvent wiping (with an indicated solvent) and shall be specified in writing by the material supplier and followed by the applicator. Any surface coating damaged by moisture or rain shall be removed and redone.
C. In no case shall paint be applied to surfaces which show a moisture content greater that 15 percent.

3.06 MINIMUM COATING THICKNESS

A. Coating thickness shall meet or exceed the specified minimum DFT in all areas. The average coating thickness as determined by multiple representative DFT measurements shall meet or exceed the mid-point of DFT range. If below this DFT value, the surface shall be recoated with at least the minimum DFT until the total DFT meets or exceeds the mid-point DFT.
B. Coverage rates are theoretical as calculated by the coating manufacturer and are, therefore, the maximum allowable.
C. Apply a prime coat to material which is required to be painted or finished, and which has not been prime coated by others.
D. On masonry, application rates will vary according to surface texture; however, in no case shall the manufacturer's stated coverage rate be exceeded. On porous surfaces, is shall be the painter's responsibility to achieve a protective and decorative finish either by decreasing the coverage rate or by applying additional coats of paint.
E. Touch up primed and sealed walls and ceilings where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.

3.07 FINISHES

A. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable.
B. Complete Work: Match approved samples for color, texture and coverage. Remove, refinish or repaint work not in compliance with specific requirements.

3.08 FIELD QUALITY CONTROL

A. All nonferrous surfaces shall be checked for number of coats and thickness by use of a Tooke gauge. All ferrous surfaces shall be checked for film thickness by use of an Elcometer or Micro-Test magnetic dry film gauge properly calibrated. In addition, submerged tank linings and metals shall be tested for freedom from holidays and pinholes by use of a Tinker-Rasor or K-D Bird Dog Holiday Detector. All defects shall be corrected to the satisfaction of the City.

3.09 PROTECTION

A. All other surfaces shall be protected while painting.
B. Protection of furniture and other movable objects, equipment, fittings, and accessories shall be provided throughout the painting operation. Remove all electric plates, surface hardware, etc., before painting, protect and replace when completed. Mask all machinery nameplates and all machined parts not to receive paint. Lay drop cloths in all area where painting is being done to adequately protect flooring and other work from all damage.

3.10 CLEANING
A. The Builder shall perform the work under this Section while keeping the premises free from accumulation of dust, debris and rubbish and shall remove all scaffolding, paint cloths, paint, and brushes from the building when completed.
B. Cleaning: All paint brushed, splattered, spilled or splashed on any surface not specified to be painted shall be removed.
C. The Builder shall insure that all glass throughout that portion of the facility in which he worked is cleaned of dirt and paint before he leaves the job site. Further, the Builder shall insure that all glass in this area is thoroughly washed and polished.
D. Upon completion of the project, the job site shall be left neat and clean.

END OF SECTION

REVISIONS		
	COMMENTS	DATE
8		
7		
6		
5		
4		
3		
2		
1		XX-XX-XXXX

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
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PALM BAY
SPECIFICATIONS 03

THE RESERVE AT COUNTRY CLUB
LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD DATE
FL. P.E. #83267 8/19/2021

SHEET
C-811

19-1025
PERMITTING SET

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SECTION 09905
PIPING AND EQUIPMENT IDENTIFICATION SYSTEM

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Specification outlines the requirements for providing an identification system for piping and related requipment.

PART 2 - PRODUCTS

2.01 MATERIALS (Not Used)

PART 3 - EXECUTION

3.01 COLOR CODING FOR PIPES AND EQUIPMENT

A. Piping color codes, and code labels for pipe identification shall conform to Table 09905-A.

B. General Notes and Guidelines:

1. Pipe lines, equipment, or other items which are not listed there shall be assigned a color by the Utilities Department.

2. When color coding is specified by the Utilities Department, it shall consist of color code painting and identification of all exposed conduits, through lines and pipelines for the transport of gases, liquids, or semiliquids including all accessories such as valves, insulated pipe coverings, fittings, junction boxes, bus bars, connectors and any operating accessories which are integral to a whole functional mechanical pipe and electrical conduit systems.

3. Description on titles (Abbreviated Code on Pipe/Equipment) and flow arrows to be stenciled on pipes or equipment will be black or white to contrast with color of pipes and equipment and shall be as approved by the Utilities Department.

4. All moving parts, drive assemblies, and covers for moving parts which are potential hazards shall be Safety Orange.

5. All safety equipment shall be painted in accordance with OSHA standards.

6. All in-line equipment and appurtenances not assigned another color shall be painted the same base color as the piping. The pipe system shall be painted with the pipe color up to, but not including, the flanges attached to pumps and mechanical equipment assigned another color.

C. All hangers and pipe support floor and accessories stands, if not excluded from painting in Section 09900, shall be painted to match their piping. The system shall be painted up to, but not including, the face of flanges or the flexible conduit connected to electrical equipment. Structural members used solely for pipe hangers or support shall be painted to match their piping.

D. All systems which are an integral part of the equipment, that is originating from the equipment and returning to the same piece of equipment, shall be painted between and up to, but not including, the face of flanges or connections on the equipment.

E. All insulated surfaces, unless otherwise specified, shall be given one coat of glue sizing, one prime coat and one finish coat.

F. System code lettering and arrows shall conform to the requirements of ANSI A-13.1 stenciled on piping as follows:

1. Stenciled legends shall be of the color shown in Table 09905-B.

2. Lettering shall be:

a. 2-1/4 inches high for pipes 3 inches diameter and larger.

b. 1-1/8 inches high for pipes less than 3 inches diameter.

3. Flow arrows shall be:

a. 2-1/4 inches by 6 inches for pipes 3 inches diameter and larger.

b. 1-1/8 inches by 3 inches for pipes less than 3 inches diameter.

4. Markers shall be placed no more than 20 feet apart with at least one marker on every straight run and additional markers at turns and where pipe passes through walls.

5. An arrow indicating direction of flow shall be placed adjacent to each marker.

3.02 FABRICATED EQUIPMENT

A. Unless otherwise indicated or specifically approved, all fabricated equipment shall be shop primed and finished. See Section 09900: Painting.

B. The Contractor shall be responsible for and take whatever steps are necessary to properly protect the shop prime and finish coats against damage from weather or any other cause. See Section 01500: Mechanical - General Requirements.

C. If, in the opinion of the Utilities Department or Engineer, a shop finish coat does not give the protection quality of other work of similar nature, the Contractor shall apply the coat or coats of paint as directed by the Engineer to accomplish the desired protection quality. If shop finish coat is unsatisfactory due to poor adhesion or other problems with primer or finish coats, coatings shall be removed and replaced by sandblasting, priming and finishing in accordance with Section 09900: Painting and this section.

D. Wherever fabricated equipment is required to be sandblasted, the Contractor shall protect all motors, drives, bearings, gears, etc., from the entry of grit. Any equipment found to contain grit shall be promptly and thoroughly cleaned. Equipment contaminated by grit is critical areas, such as bearings, gears, seals, etc., shall be replaced at not cost to the Owner.

E. The Owner shall determine which pre-painted equipment, such as exhaust from housings and air handling units, shall be repainted to match the interior or exterior building colors.

TABLE 09905-A
EQUIPMENT AND PIPING COLOR CODES

Piping System	Pipe Color	Letter and Flow Legend	Arrow Color
Potable Hot Water	Blue	HW	White
Potable Cold Water	Blue	CW	White
Non-Potable Water	Dark Green	NPW	White
Air	Gray	Air	Black
Alum	Orange	Alum	Black
Polymer Solution	Orange w/Green Band	PS	Black
Raw Wastewater	Green	RW	Black
WAS/Scum	Brown	WAS/Scum	White
Secondary Effluent	Green	SE	Black
Backwash Water	Green	BWW	Black
Filtered Effluent	Green	FE	Black
Supernatent	Green	SUP	Black
Chlorinated Effluent	Green	CLE	Black
Reuse	Dark Green	RE	White
Chlorine Gas	Yellow	CG	Black
Chlorine Solution	Yellow w/Green Band	CS	Black

Other piping shall be painted as directed by the Owner.

Table 09905-B

	Key to Classification of Predominant Colors For Piping	Color of Letters for Stenciling, if not otherwise specified
(F) Fire Protection	Red	White
(D) Dangerous	Yellow	Black
	Orange	Black
(S) Safe	Green	Black
	White	Black
	Black	White
	Light Gray	Black
	Dark Gray	White
	Aluminum	Black
(P) Protective	Blue	White

END OF SECTION

SECTION 11305
SUBMERSIBLE PUMP STATIONS

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Specification outlines the requirements for submersible pump stations installed within the Utility Service Area.

1.02 QUALITY ASSURANCE

A. Unit Responsibility: The pumps, motors, control panel, frames, covers and guide bars shall be supplied by the pump supplier to insure unit responsibility.

B. Factory Tests: The pump manufacturer shall perform the following tests on each pump before shipment from the factory:

1. Megged the pump for insulation breaks or moisture.
2. Prior to submergence, the pump shall be run dry and be checked for correct rotation.
3. Pump shall be run for 30 minutes in a submerged condition.
4. Pump shall be removed from test tank, megged immediately for moisture; oil plug removed for checking lower seal; inspection plug removed for checking of upper seal and possible water intrusion of stator housing.
5. A written certified test report giving the above information shall be supplied with each pump at the time of shipment.
6. All ends of pump cables will then be fitted with a rubber shrink fit boot to protect cable prior to electrical installation.

C. Guaranteed Parts Stock Program: The pump supplier shall have a Guaranteed Parts Stock Program in the State of Florida. In lieu of a Guaranteed Parts Stock Program, the pump supplier shall provide one (1) set of spare parts as detailed below for each different mode of pump supplied on this Contract.

1. Upper Mechanical Seal
2. Lower Mechanical Seal
3. Wear Rings
4. Motor Cable
5. Cable Entry Washer/Grommet
6. Complete Set of AO@ Rings
7. Inspection Plug Washers
8. Impeller Bolt
9. Impeller Key
10. Upper Bearing
11 Lower Bearing
12 Impeller

D. Standards:

1. ANSI
2. ASTM
3. NEC
4. NEMA

PART 2 - PRODUCTS

2.01 MATERIALS

A. All metal components in the wet well, with the exception of the pumps, motors and station piping, shall be stainless steel.

B. Piping: Pipe and fittings shall be ductile iron with flanges and conform to the requirements of Section 15062: Ductile Iron Pipe and Fittings.

C. All electrical systems and components (i.e., pump motors, cables, float switches) located in the pump stations shall comply with the National Electric Code requirements.

D. All miscellaneous hardware.

E. All locations where pipes enter or leave the wet well or the valve vault shall be made water tight by using an approved flexible, water tight connections, such as Link-Seal, Kor-N-Seal.

(CONTINUED)

2.02 EQUIPMENT

A. Pumps:

1. Submersible sewage pumps shall be as manufactured by Flygt or ABS.

2. Pump Design: The design shall be such that pumping units will be automatically connected to the discharge piping when lowered into place on the discharge connection. The pumps shall be easily removable for inspection or service, requiring no bolts, nuts or other fastening to be removed for this purpose and no need for personnel to enter pump well. Each pump shall be fitted with a stainless steel wire rope of adequate strength and length to permit raising the pump for inspection and removal.

3. Pump Construction:

a. The stator casing, oil casing and impeller shall be of gray iron construction, with all parts coming into contact with sewage protected by coal tar epoxy 12 mils in thickness (minimum). All external bolts and nuts shall be of stainless steel. A wear ring or spiral bottom plate designed for abrasion resistance shall be installed at pump to provide protection against wear to the impeller. The impeller shall be of a single vane, non-clog design capable of passing solids, fibrous material, and heavy sludge and constructed with long throughway with no acute turns.

b. Each pump shall be provide with a tandem double mechanical seal running in an oil reservoir, composed of two separate lapped face seals, the lower consisting of one stationary and one rotating silicon carbide ring, the upper consisting of one stationary silicon carbide ring and one rotating carbon ring, with each pair held in contact by separate springs. The seals shall require neither maintenance nor adjustment and shall be easily replaceable. Conventional double mechanical seals with a single or double spring between the rotating faces, requiring constant differential pressure to effect sealing and subject to opening and penetration by pumping forces shall not be considered equal to the tandem seal specified and required.

c. A sliding guide bracket shall be an integral part of the pumping unit and the pump casing shall be a machined connecting flange to connect with the cast iron discharge connection, which shall be bolted to the floor of the pump chamber and so designed as to receive the pump connecting flange without the need of any bolts or nuts.

d. Sealing of the pumping unit to the discharge connection shall be accomplished by a simple linear downward motion of the pump with the entire weight of the pumping unit guided by no less than 1 stainless steel guide rail to press tightly against the discharge connection; no portion of the pump shall bear directly on the floor of the sump and no rotary motion of the pump shall be required for sealing. Sealing at the discharge connection by means of a diaphragm, O-ring or similar method of sealing will not be accepted as an equal to a metal contact of the pump discharge and mating discharge connection specified and required.

4. Pump Motor: The pump motor shall be housed in an air filled watertight casing and shall have Class F insulated windings, which shall be moisture resistant; the temperature at any point in the windings shall not exceed 155 degrees Centigrade 8 at any load which could be imposed by the pump at any point on its curve. The motor shall be provided with over temperature sensors and shall be NEMA Design B. Pump motors shall have cooling characteristics suitable to permit continuous operation, in a totally, partially or non-submerged condition. The pump shall be capable of running dry continuously in a totally dry condition. Before final acceptance, a field running test demonstrating this ability, with 24 hours of continuous operation under the above conditions shall be performed for all pumps being supplied, if required. The cable entrance seal shall be provided by a compression fitting.

5. Cable junction box and motor shall be separated by a stator lead sealing gland or terminal board, which shall isolate motor from any water or solids gaining access through pump top. An epoxy potted cable entry system shall be considered equal. The pump shall not load the motor beyond its nominal (nameplate) rating at any point on the pump curve.

6. Cable: Pump motor cable shall be continuous (no splices) from pump to junction box at panel suitable for submersible pump applications and the rating shall be permanently embossed on the cable. Cable sizing shall conform to NEC requirement for the full load currents of the pump motors.

B. Control Panels

1. General: One (1) control panel for each pump station shall be supplied containing all the electrical and mechanical equipment necessary to provide for the operation of designated number of electric submersible pumps. The follow is a typical parts list a lift station control panel.

2. Operation Requirements:

a. The control panels shall consist of a main circuit breaker, emergency circuit breaker and a motor circuit protector and magnetic starter for each pump motor, and 20 amp, 120 volt circuit breakers as required. A low and high level alarm and pump shutoff shall be accomplished by a float type liquid level control system with all control components mounted in one common enclosure. Control switches shall provide means to operate each pump manually or automatically.

b. A float system shall continuously monitor wet well liquid level and control operation for the pumps.

c. Construction and Materials: The control panel shall be NEMA 3R of Type 316 stainless steel construction with welded double locking hasps and dead front aluminum inner door, and oriented as shown on the Standard Drawings or as approved by PBUC.

d. Panel Exterior:

1. Panel shall have a stainless steel heavy duty 3 point pad locking door. Mounted on the exterior enclosure shall be an alarm light. The enclosure shall be equipped with a door and shall incorporate a removable back panel on which control components shall be mounted. Back panel shall be secured to enclosure with collar studs. Enclosure shall be equipped with a stainless steel drip shield.

2. All exterior mounted accessories shall be constructed of corrosion proof materials such as stainless steel or aluminum.

3. Control wiring from the wet well shall enter the panel in a manner to prevent the possible entry of gases from the wet well as shown in the Standard Drawings.

e. Panel Inner Door:

1. The inner aluminum door mounted on a continuous hinge, shall be furnished for protection against exposed wiring and shall have cutouts for access to the circuit breakers. Mounted on the inner door will be pump status lights, hand-off automatic switches, elapsed time meters, 20 ampere ground fault duplex receptacle, motor resets and motor circuit breakers. All devices mounted on inner door shall be NEMA 4X. The door shall include a door stop mechanism to secure the inner door in the open position.

2. A permanently affixed 11 inch by 17 inch (minimum), laminated panel wiring schematic and pump motor data sheet shall be installed on the interior of the enclosure door.

f. Control Circuits: All wet well (level sensor) circuits shall operate at 24 volts DC. The control circuit breakers shall operate on 120 volts.

g. All operating controls and indicators shall be securely mounted on the control compartment door. All control components and indicators shall be clearly labeled to indicate function.

h. Panel Components: The following power, control and alarm components shall be provided:

1. Circuit Breakers: All circuit breakers shall be heavy duty Q Frame molded case breakers as manufactured by Square D.

2. All motor circuit breakers, motor starters and control relays shall be of highest industrial quality, and securely fastened to the removable back panels with screws and washers. Back panels shall be tapped to accept all mounting screws. Self-tapping screws shall not be used to mount any component.

3. Duplex Service Receptacle: A duplex service receptacle 20 amps at 120 volts shall be provided on the panel. The duplex receptacle shall be provided with ground fault protection.

4. Lightning Arrestor and Surge Capacitor: A lightning arrestor and surge capacitor shall be installed and wired to protect motors and control equipment from lightning induced line surges and transient voltage surges. The arrestor and capacitor shall be mounted on the back plate.

5. Elapsed Time Meters: Elapsed time meters shall be 120-volt non-reset types and shall indicate pump running time in hours and tenths of hours to 99999.9 hours.

6. Motor Starters:

a. Reduced Voltage: The panel shall contain NEMA auto transformer closed transition reduced voltage starters designed for the specified motors. The motor starters shall be reduced voltage magnetic starters with individual overload protection on each power leg with motor resets installed through the dead front door. Acceptable manufacturer is Square D or equal.

b. Across the Line: An open frame, across-the-line, NEMA rated, magnetic motor-starter, square D or equal shall be furnished for each pump motor. All motor starters shall be equipped to provide under-voltage release and individual overload protection on all three (3) phases. Motor starter contacts shall be easily replaceable without removing the motor starter from its mounted position. Overload reset push-buttons shall be located on the exterior of the inner compartment door.

7. Phase Monitor: A 3-phase monitor shall be installed and wired to disconnect control power from the motor starters in the event of loss of power, phase reversal, loss of any phase or phase balance, or low voltage. The phase monitor shall automatically reset upon removal of any and all of the preceding conditions.

8. Indicator Lights: Indicator lamps shall be mounted in NEMA 4X modules. Push-to-test lamp modules shall be transformer type equipped to operate at 120 volt input. Lamps shall be easily replaceable from the front of the control compartment door without removing lamp module from it mounted position.

a. Pump Run Lights: a 120 volt pump run light shall be connected in parallel with each motor starter and indicate when a particular pump is running.

9. Control System: The control system shall consist of three (3) phase monitor and terminal strip for the installation of field wiring. All control wiring shall be color coded (minimum 18 colors) or numbered at both ends, size 18, rated for 300 volts, 80 C stranded tinned copper, PVC insulated and shall be installed in wiring duct with cover and Ty-wrapped.

10. Engraved nameplates shall be supplied for marking all components. The labels shall be attached with a 5 mil thick, 3 M type adhesive. No foam tape will be acceptable. The labels shall be uniform in size with 1/4" minimum letter size.

11. Alarm Light: The alarm light shall consist of a weatherproof light with lexan globe.

12. Alarm Control: An alarm light shall flash. An acknowledgement button shall cause the light shall go to steady. When alarm condition clears, light shall go off when the level condition has been corrected.

14. Alarms:

a. High level alarm: Provide dry alarm contact to activate alarm for remote indication.

15. Emergency Power Receptacle: The control panel shall include an external mounted generator receptacle of the required size. The generator receptacle shall be one of the following based on the designed callout for pumps:

- For 19 or smaller horsepower, 230 volt, pumps use a Pyle National model #JRE 4100, 100 amp. Confirm exact model number during design with PBUC.
- For 20 horsepower and larger, 230/480 volt, pumps us a Meltric model #GNR37-29047, 200 amp. Confirm exact model number during design with PBUD.

C. Level Sensor Control System

1. Float Switches: The Contractor shall furnish and install float switches for the pump station as follows:

a. Float switches shall consist of a hermetically sealed mercury switch Floats shall be supplied with two conductor fine stranded No. 19 AWG cable with heavy-duty neoprene jacket. The cable length shall be adequate to run un-spliced to the control panel or junction box, plus an additional 10 feet for adjustment. The minimum acceptable cable length shall be 40 feet.

b. The float switches shall be Roto-Float or approved equal.

D. Radio Telemetry System

1. A radio-telemetry system may be required by PBUD on selected lift stations. The exact requirements and specifications to be confirmed by PBUD during design.

2.03 ACCESSORIES

A. Pump Access Frame and Guides:

1. The access frames, complete with hinged and hasp equipped covers, stainless steel upper guide holders and level sensor cable holder, shall be furnished and installed. The frames shall have a safety locking handle for locking in the open position. The covers shall be of checkered plate, with minimum load ratings of 150 lb/s.f.

2. Lower guide holders shall be integral with discharge connection; guide bars shall be of Schedule 40 welded Type 304 stainless steel pipe, of the size recommended by the pump manufacturer.

3. All material used to fabricate the cover, frame, upper guide holder and cable holder shall be aluminum or stainless steel. All bolts, anchors, hinge pins and other fasteners shall be stainless steel.

PART 3 - EXECUTION

3.01 INSTALLATION

A. All materials and equipment shall be installed as shown on the Drawings and as recommended by the manufacturer.

3.02 INSPECTION AND TESTING

A. Field Tests: A qualified representative of the pumping system supplier shall inspect the installation and supervise start-up performed by the Contractors personnel. All components of the system shall be tested for proper operation prior to and during the start-up operation. Representatives shall provide a written report to PBU verifying that all their equipment is properly installed and ready to start-up, prior to system start-up. The report shall include, at a minimum, the following data:

1. Date of installation
2. Date of test
3. Description of pump, including impeller size
4. Serial number of pump and motor
5. Field data collected
6. Pump performance curve
7. Name and signature of technician performing test
8. Diagram of test set up
9. List of test equipment

TABLE 11305-A

EXAMPLE OF A TYPICAL SUBMERSIBLE PUMPS SCHEDULE

1.	Pump Station	Effluent Transfer Pump
2.	No. of Pumps Required	Two (2)
3.	Pump Size, Inches	6-inch
4.	Primary Condition (GPM @ TH (FT.)	885 GPM @ 37.3 FT.
5.	Primary Min. Hydraulic Efficiency	50%
6.	Secondary Condition	1305 GPM @ 18.5 FT.
7.	Secondary Min. Hydraulic Efficiency	45%
8.	Min. Motor, Hp	20
9.	Speed, RPM	1,750
10.	Voltage, Volts	460
11.	Phase	3
12.	Frequency, Hertz	60
13.	Service	Secondary Effluent
14.	Control Panel Construction Material	NEMA 3R 316 S.STL.
15.	Level Sensor System	Float
16.	Manufacturer Model No. Impeller No.	FLYGT C-3152, IMP. 4

TABLE 11305-B

EXAMPLE OF SYSTEM COMPONENETS

Panel Components	Effluent Pump Stations
1. Circuit Breakers	X
2. Emergency power receptacle	---
3. Mechanical Disconnects	---
4. Time delay relay	X
5. Duplex service	X
6. Lightning arrestor and surge capacitor	X
7. Elapsed time meters	X
8. Motor starters	
a. reduced voltage	O
b. Across-the-line	X
9. Phase Monitor	X
10. Indicator Lights	
a. pump run lights	X
b. Liquid level indicators	X
11. Control Systems	X
12. Audible Alarm	X
13. Alarm Lights	X
14. Moisture and Temperature Sensors	X
15. Alarm Control	X
16. Alarms	
a. Low level Alarm and high level alarm	X
b. pump failure alarm/low flow limit switches	O

NOTE: "X" INDICATES THAT PARTICULAR ITEM IS REQUIRED.
"O" INDICATES THAT PARTICULAR ITEM IS NOT REQUIRED.

END OF SECTION

SECTION 15000
MECHANICAL-GENERAL REQUIREMENTS

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:

1. All equipment furnished and installed under this contract shall conform to the general stipulations set forth in this section except as otherwise specified in other Sections.
2. Contractor shall coordinate all details of equipment with other related parts of the Work, including verification that all structures, piping, wiring, and equipment components are compatible. Contractor shall be responsible for all structural and other alternations in the Work required to accommodate equipment differing in dimensions or other characteristics from that contemplated in the Contract Drawings or Specifications.

B. Related Work Described Elsewhere: Other sections directly referenced in this section include the following:

1. General Requirements: Division 1
2. Concrete: Division 3
3. Metals: Division 5
4. Painting: Division 9
5. Equipment: Division 11
6. Electrical: Division 16

C. Contract Drawings and Specifications: The Contract Drawings and Specifications shall be considered as complementary, one to the other, so that materials and work indicated, called for, or implied by the one and not by the other shall be supplied and installed as though specifically called for by both. The Contract Drawings are to be considered diagrammatic, not necessarily showing in detail or to scale all of the equipment or minor items. In the event of discrepancies between the Contract Drawings and Specifications, or between either of these and any regulations or ordinances governing work of these specifications, the bidder shall notify the Engineer in ample time to permit revisions.

1.02 QUALITY ASSURANCE

A. Materials and Equipment: Unless otherwise specified, all materials and equipment furnished for permanent installation in the work shall conform to applicable standards and specifications and shall be new, unused, and undamaged when installed or otherwise incorporated in the work. No such material or equipment shall be used by the Contractor for any purpose other than that intended or specified, unless such use is specifically authorized in writing by the Owner. No material shall be delivered to the work site workout prior acceptance of drawings and data by Engineer.

B. Equivalent Materials and Equipment:

1. Whenever a material or article is specified or described by using the name of a proprietary product or the name of a particular manufacturer or vendor, the specific item mentioned shall be understood as establishing the type, function and quality desired. Other manufacturers products will be accepted provided sufficient information is submitted to allow the Engineer to determine that the products proposed are equivalent to those named. Such items shall be submitted for review in accordance with Section 01340: Shop Drawings, Working Drawings and Samples.

2. Requests for review of equivalency will not be accepted from anyone except the Contractor and such requests will not be considered until after the contract has been awarded.

C. Governing Standards: Equipment and appurtenances shall be designed in conformity with ANSI, ASME, ASTM, IEEE, NEMA, OSHA, AGMA and other generally accepted applicable standards. They shall be of rugged construction and of sufficient strength to withstand all stresses which may occur during fabrication, testing, transportation, installation, and all conditions or operations. All bearings and moving parts shall be adequately protected against wear by bushings or other acceptable means. Provisions shall be made for adequate lubrication with readily accessible means.

D. Tolerances: Machinery parts shall conform to the dimensions indicated on the drawings within allowable tolerances. Protruding members such as joint, corners and gear covers shall be finished in appearance. All exposed welds shall be ground smooth and the corners of structural shapes shall be rounded or chamfered.

E. Clearances: Ample clearances shall be provided for inspection and adjustment. All equipment shall fit the allotted space and shall leave reasonable access room for servicing and repairs. Greater space and room required by substituted equipment shall be provided by the Contractor and at his expense.

F. Testing:

1. When the equipment is specified to be factory tested, the results of the tests shall be submitted to the Engineer and approval of the test results shall be obtained before shipment of the equipment.

2. When an item of equipment, including controls and instrumentation, has been completely erected, the Contractor shall notify the Engineer, who will designate a time to make such tests as required, and operate the item to the satisfaction of the Engineer. All testing shall be done in the presence of the Engineer. ACompletely Erected@ shall mean that the installation is erected, all necessary adjustments have been made, all required utility connections have been made, required lubricants and hydraulic fluid have been added and the unit has been cleaned and painted.

G. Pressure Test:

1. After installation, all piping shall be pressure tested. Piping shall be tested in accordance with Section 15044: Pressure Testing of Piping.

2. All tests shall be made in the presence of and to the satisfaction of the Owner having jurisdiction.

a. Provide not less than three (3) days notice to the Inspector and the authority having jurisdiction when it proposed to make the tests.

b. Any piping or equipment that has been left unprotected and subject to mechanical or other injury in the opinion of the Owner shall be retested in part or in whole as directed by the Owner.

c. The piping systems may be tested in sections as the work progress but no joint or portion of the system shall be left untested.

3. All elements within the system that may be damaged by the testing operation shall be removed or otherwise protected during the operation.

4. All defects and leaks observed during the tests shall be corrected and made tight in an approved manner and the tests repeated until the system is proven tight.

5. Repair all damage done to existing or adjacent work or materials due to or on account of the tests.

6. Provide test pumps, gauges or other instruments and equipment required for the performance of all tests. Provide all temporary bracing, test plugs, additional restraint, and thrust blocking which may be required for test pressures above normal working pressures.

7. All tests shall be maintained for as long a time as required to detect all defects and leaks but not less than the duration specified for each type of pipe or piping system in this Division.

H. Failure of Test:

1. Defects: Any defects in the equipment, or deviations from the guarantees or requirements of the Specifications, shall be promptly corrected by the Contractor by replacements or otherwise. The decision of the Owner as to whether or not the Contractor has fulfilled his obligations under the Contract shall be final and conclusive. If the Contractor fails to correct any defects or deviations, or if the replaced equipment when tested shall fail again to meet the guarantees or specified requirements, the Owner, notwithstanding his having made partial payment for work and materials which have entered into the manufacturer for such equipment, may reject that equipment and order the Contractor to remove it from the premises at the Contractors expense.

2. Rejection of Equipment: In case the Owner rejects a particular item of equipment, then the Contractor hereby agrees to repay to the Owner all sums of money paid to him to deliver to the Contractor a bill of sale of all his rights, title and interest in and to the rejected equipment provided, however that the equipment shall not be removed from the premises until the Owner obtains from other sources other equipment to take the place of that rejected. The bill of sale shall not abrogate the Owners right to recover damages for delays, losses or other conditions arising out of the basic Contract. The Owner hereby agrees to obtain the alternate equipment within a reasonable time and the Contractor agrees that the Owner may use the original equipment furnished by him without rental or other charge until the other equipment is obtained.

I. Responsibility During Tests: The Contractor shall be fully responsible for the proper operation of equipment during tests and instruction periods and shall neither have nor make any claim for damage which may occur to equipment prior to the time when the Owner formally takes over the operation thereof.

J. Acceptance of Materials:

1. Only new materials and equipment shall be incorporated in the work. All materials and equipment furnished by the Contractor shall be subject to the inspection and acceptance of the Owner. No material shall be delivered to the work without prior submittal approval of the Engineer.

2. The Contractor shall submit to the Engineer data relating to materials and equipment he proposes to furnish for the work. Such data shall have in sufficient detail to enable the Engineer to identify the particular product and to form an opinion as to its conformity to the specifications.

3. Facilities and labor for handling and inspection of all materials and equipment shall be furnished by the Contractor. If the Engineer requires, either prior to beginning or during the progress of the work, the Contractor shall submit samples of materials for such special test as may be necessary to demonstrate that they conform to the specification. Such sample shall be furnished, stored, packed and shipped as directed at the Contractors expense. Except as otherwise noted, the Owner will make arrangements for and pay for tests.

4. The Contractor shall submit data and samples sufficiently early to permit consideration and acceptance before materials are necessary for incorporation in the work.

K. Safety Requirements:

1. In addition to the components shown and specified, all machinery and equipment shall be safeguarded in accordance with the safety features required by the current codes and regulations of ANSI, OSHA and local industrial codes.

1.03 SUBMITTALS (SEE SECTION 01340: SHOP DRAWINGS, WORKING DRAWINGS AND SAMPLES)

1.04 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Packaging: All equipment shall be suitably packaged to facilitate handling and protect against damage during transit and storage. All equipment shall be boxed, crated or otherwise completely enclosed and protected during shipment, handling and storage. All equipment shall be protected from exposure to the elements and shall be kept thoroughly dry at all times.

B. Protection: All machined surfaces and shafting shall be cleaned and protected from corrosion by the proper type and amount of coating necessary to assure protection during shipment and prior to installation. Painted surfaces shall be protected against impact, abrasion, discoloration and other damage as specified in Sections 09900: All painted surfaces which are damaged prior to acceptance of equipment shall be repainted to the satisfaction of Engineer.

C. Lubrication: Grease and lubricating oil shall be applied to all bearings and similar items as necessary to prevent damage during shipment and storage.

D. Marking: Each item of equipment shall be tagged or marked as identified in the delivery schedule or on the Shop Drawings. Complete packing lists and bills of material shall be included with each shipment.

E. Fabricated sub-assemblies, if any, shall be shipped in convenient sections as permitted by carrier regulations and shall be properly match-marked for ease of field erection.

F. Responsibility:

1. The Contractor shall be responsible for all material, equipment, and supplies sold and delivered to the site under this Contract until final inspection of the work and acceptance thereof by the Owner. In the event any such material, equipment and supplies are lost, stolen, damaged or destroyed prior to final inspection and acceptance, the Contractor shall replace same without additional cost to the Owner.

2. Should the Contractor fail to take proper action on storage and handling of equipment supplied under this Contract within seven (7) days after written notice to do so has been given, the Owner retains the right to correct all deficiencies noted in previously transmitted written notice and deduct the cost associated with these corrections from the Contractors Contract. These costs may be comprised of expenditures for labor, equipment usage, administrative, clerical, engineering and any other costs associated with making the necessary corrections.

G. Delivery: The contractor shall arrange deliveries of products in accordance with construction schedules and coordinate to avoid conflict with work and condition at the site.

1. The Contractor shall deliver products in undamaged condition, in manufacturers original containers or packaging, with identifying labels intact and legible.

2. Immediately on delivery, the Contractor shall inspect shipments to assure compliance with requirements of Contract Documents and accepted submittals, and that products are properly protected and undamaged.

3. Under no circumstances shall the Contractor deliver equipment to the site more than one month prior to installation without written authorization from the Owner.

H. Storage and Protection of Products:

1. The Contractor shall furnish a covered, weather-protected storage structure providing a clean, dry noncorrosive environment for all mechanical equipment, valves, architectural items, electrical and instrumentation equipment, and special equipment to be incorporated into this project. Storage of equipment shall be in strict accordance with the AInstructions for Storage@ of each equipment supplier and manufacturer including connection of space heaters and placing of storage lubricants in equipment. Corroded, damaged or deteriorated equipment and parts shall be replaced before acceptance of the project. Equipment and materials not properly stored will not be included in a payment estimate.

a. The Contractor shall store products subject to damage by the elements in weather tight enclosures.

b. The Contractor shall maintain temperature and humidity within the ranges required by manufacturers instructions.

c. The Contractor shall store fabricated products above the ground, on blocking or skids, to prevent soiling or staining. The Contractor shall cover products which are subject to deterioration with impervious sheet coverings and provide adequate ventilation to avoid condensation.

d. The Contractor shall store loose granular materials in a well-drained area on solid surfaces to prevent mixing with foreign matter.

2. All materials and equipment to be incorporated in the work shall be handled and stored by the Contractor before, during and after shipment in a manner to prevent warping, twisting, bending, breaking, chipping, rusting and any injury, theft or damage of any kind whatsoever to the material or equipment.

3. Cement, sand and lime shall be stored under a roof and off the ground, and shall be kept completely dry at all times. All structural and miscellaneous steel and reinforcing steel shall be stored off the ground or otherwise to prevent accumulations of dirt, or grease and in a position to prevent accumulations of standing water, staining, chipping or cracking. Brick, block and similar masonry products shall be handled and stored in a manner to reduce breakage, chipping, cracking and spalling to a minimum.

4. All materials which, in the opinion of the Owner have become damaged and are unfit for the use intended or specified, shall be promptly removed from the site of the work and the Contractor shall receive no compensation for the damaged material or its removal.

5. The Contractor shall arrange storage in a manner to provide easy access for inspection. The Contractor shall make periodic inspections of stored products to assure products are maintained under specified conditions and free from damage or deterioration.

6. Protection After Installation: The Contractor shall provide substantial coverings as necessary to protect installed products from damage from traffic and subsequent construction operations. The Contractor shall remove covering when no longer needed.

I. Extended Storage Requirements for Equipment: Because of the long period allowed for construction, special attention shall be given to extended storage and handling of equipment onsite. As a minimum, the procedure specified herein shall be followed:

1. No equipment shall be stored onsite for more than one month without prior written authorization from the Owner.

2. All equipment having moving parts including gears, electric motors, and/or instruments shall be stored in a temperature and humidity controlled building accepted by the Owner, until such time as the equipment is to be installed.

3. All equipment shall be stored fully lubricated with oil and grease unless otherwise instructed by the manufacturer.

4. Manufacturers storage instructions shall be carefully studied by the Contractor and reviewed by him with the Owner. These instructions shall be carefully followed and a written record of this review kept the Contractor.

5. Moving parts shall be rotated a minimum of once weekly to ensure proper lubrication and to avoid metal-to-metal welding. Upon installation of the equipment, the Contractor shall start the equipment, and operate loaded when possible, weekly for an adequate period of time to ensure that the equipment does not deteriorate from lack of use.

6. Lubricants shall be changed upon completion of installation and as frequently as required thereafter during the period between installation and acceptance. Mechanical equipment to be used in the work, if stored for longer than ninety (90) days, shall have the bearings cleaned, flushed and lubricated prior to testing and start-up, at no extra cost to the Owner.

7. Prior to acceptance of the equipment, the Contractor shall have the manufacturer inspect the equipment and certify that its condition has not been detrimentally affected by the long storage period. Such certifications by the manufacturer shall be deemed to mean that the equipment is judged by the manufacturer to be in condition equal to that of equipment that has been shipped, installed, tested and accepted in a minimum time period. As such, the manufacturer will guarantee the equipment equally in both instances. If such a certification is not given, the equipment shall be judged to be defective, and it shall be removed and replaced at the Contractors expense.

8. A maintenance log shall be maintained by the Contractor outlining the schedule of maintenance required for each piece of equipment as well as the date on which the maintenance was actually performed and the initials of the individual performing the work. Submit a copy of the maintenance log monthly with the progress pay application.

1.05 WARRANTY AND GUARANTEES

A. The Manufacturers written warranty shall be submitted for all major pieces of equipment, as specified in Section 01740: Warranties and Bonds. The manufacturers warranty period shall be concurrent with the Contractors correction period for one (1) year after the time of completion and acceptance.

1.06 SPARE PARTS

A. Spare parts for certain equipment provided under Divisions 11 - Equipment; 13 - Special Construction; 14 - Conveying Systems; 15 - Mechanical; and 16 - Electrical have been specified in the pertinent sections of the specifications. The Contractor shall collect and store all spare parts in an area to be designated by the Owner. In addition, the Contractor shall furnish to the Owner an inventory listing of all spare parts, the equipment they are associated with, and the name and address of the supplier.

1.07 MAINTENANCE MATERIALS

A. All grease, oil and fuel required for testing of equipment shall be furnished with the respective equipment. The Owner shall be furnished with a years supply of required lubricants including grease and oil of the type recommended by the manufacturer with each time of equipment supplied.

B. The Contractor shall be responsible for changing the oil in all drives and intermediate drives of each mechanical equipment after initial break-in of the equipment, which in no event shall be any longer than three weeks of operation.

PART 2 - PRODUCTS

2.01 FABRICATION AND MANUFACTURE

A. Workmanship and Materials:

1. Contractor shall guarantee all equipment against faulty or inadequate design, improper assembly or erection, defective workmanship or materials and leakage, breakage or other failure. Materials shall be suitable for service conditions.

2. All equipment shall be designed, fabricated and assembled in accordance with recognized and acceptable engineering and shop practice. Individual parts shall be manufactured to standard sizes and gages so that repair parts, furnished at any time, can be installed in the field. Like parts of duplicate units shall be interchangeable. Equipment shall not have been in service at any time prior to delivery, except as required by tests.

3. Except where otherwise specified, structural and miscellaneous fabricated steel used in equipment shall conform to AISC standards. All structural members shall be designed for shock or vibratory loads. Unless otherwise specified, all steel which will be submerged, all or in part, during normal operation of the equipment shall be at least 1/4 inch thick.

B. Lubrication:

1. Equipment shall be adequately lubricated by systems which require attention no more frequently than weekly during continuous operation. Lubrications systems shall not require attention during startup or shutdown and shall not waste lubricants.

2. Lubricants of the type recommended by the equipment manufacturer shall be furnished by the Contractor in sufficient quantity to fill all lubricant reservoirs and to replace all consumption during testing, startup and operation for the entire warranty period prior to acceptance of equipment by Owner. Unless otherwise specified or permitted, the use of synthetic lubricants will not be acceptable.
3. Lubrication facilities shall be convenient and accessible. Lubrication fitting shall be the zerk type for each piece of equipment. Oil drains and fill openings shall be easily accessible from the normal operating area or platform. Drains shall allow for convenient collection of waste oil in containers from the normal operating area or platform without removing the unit from its normal installed position.

C. Electric Motors: Unless otherwise specified, motors furnished with equipment shall meet the following requirements:

1. Designed and applied in accordance with NEMA, ANSI, IEEE, AFBMA, and NEC for the duty service imposed by the driven equipment, such as frequent starting, intermittent overload, high inertia, mounting configuration or service environment.

2. Rated for continuous duty at 40 C ambient, unless the application is well recognized for intermittent duty service as a standard industry practice.

3. Insulated with Class B, Class F or Class H insulation and designed for a service factor of 1.00, 1.15 or greater.

4. Three phase motors shall have Class F insulation with a Class B temperature rise at rated nameplate horsepower and 1.15 service factor.

5. When operating at service factor load, maximum observable temperature rise of insulation and motor parts, as determined by resistance or thermometer methods, shall not exceed the NEMA allowable limits for the type of motor, the type of enclosure and the particular application with regard to continuous or intermittent duty.

6. To ensure long motor life, nameplate horsepower, regardless of service factor, shall be at least 115 percent of the maximum load imposed by the driven equipment.

7. Designed for full voltage starting.

8. Derated, if required, for the altitude at which the equipment is installed.

9. Clamp-type grounding terminal shall be inside motor conduit box.

10. External conduit boxes shall be oversized at least one size larger than NEMA standard.

11. Totally enclosed motors shall have a continuous moisture drain which also excludes insects.

12. Bearings shall be either oil or grease lubricated.

13. Manufacturer standard motor may be supplied on integrally constructed, packaged assemblies such as appliances, tools, unit heaters and similar equipment specified by model number, in which case a redesign of the unit would be required to furnish motors of other than the manufacturer standard design. However, in all cases, totally enclosed motors are preferred and shall be furnished if offered by the manufacturer as a standard option.

14. Totally enclosed motors shall be furnished on:

a. Outdoor equipment
b. Equipment for installation below grade
c. Chemical feeding and chemical handling equipment
d. Equipment operating in wet or dust-laden locations.

15. Drip proof motors, or totally enclosed motors at the supplier option, shall be furnished on equipment in indoor, above-grade, clean and dry locations.

16. Explosion proof or submersible motors shall be furnished as required by applicable codes, as specified in other sections or at the supplier option.

17. Motors shall be rated and constructed as follows unless specified otherwise:

a. Below 2 hp:

115 volt, 60 Hz, single phase.

Built-in manual-reset thermal protector, or integrally mounted stainless steel enclosed manual motor starter.

b. 2 hp and above:

460 volt, 60 Hz, 3 phase.

Where specified or required by the drawings, motors used on 208 volt systems shall be 200 volt, 60 Hz, 3 phase.

18. Energy efficient motors shall be provided for the motor driven equipment, except where Explosion proof motors are required or where used in ventilation equipment above the roof and for submersible use. Certifications shall be supplied for each size, speed and type of motor indicating the guaranteed minimum efficiency at full load and that the efficiency tests were done in accordance with IEEE Standard 112, Test Method B, using accuracy improvement by segregated loss determination including stray load loss improvement as specified in NEMA Standard MGI-12.53a.

19. Six certified copies of the shop test results shall be furnished for each motor larger than 50 horsepower. Balance and vibration tests shall be included to meet NEMA Standards MG 1-12.06. The Contractor shall submit shop drawings and data sheets covering all items listed herein including frame dimensions, mounting, coupling details and full load power factor, efficiency of full load and maximum KVAR factor for the Engineers acceptance. The Contractor shall furnish operation and maintenance manuals as specified in Section 01730: Operating and Maintenance Data.

D. Drive Units: The nominal input horsepower rating of each gear or speed reducer shall be at least equal to the nameplate horsepower of the drive motor. Drive units shall be designed for 24 hour continuous service.
1. Gear Reducers:
a. Each gear reducer shall be a totally enclosed unit with oil or grease lubricated antifriction, rolling element bearings throughout.
b. Helical, spiral bevel, combination bevel-helical, and worm gear reducers shall have a service factor of at least 1.50 based on the nameplate horsepower of the drive motor. Shaft-mounted and flange-mounted gear reducers shall be rated AGMA Class 11. Helical gear reducers shall have a gear strength rating to catalog rating of 1.5. Each gear reducer shall bear an AGMA nameplate.
c. The thermal horsepower rating of each unit shall equal or exceed the nameplate horsepower of the drive motor. During continuous operation, the maximum sump oil temperature shall not rise more than 100 degrees Fahrenheit (°F) above the ambient air temperature in the vicinity of the unit and shall not exceed 200°F.
d. Each grease lubricated bearing shall be installed in a bearing housing designed to facilitate periodic greasing of the bearing by means of a manually operated grease gun. Each bearing housing shall be designed to evenly distribute new grease, to properly dispose of old grease and to prevent over greasing of the bearing. The use of permanently sealed, grease lubricated bearings will not be acceptable. An internal or external oil pump and appurtenances shall be provided if required to properly lubricate oil lubricated bearings. A dipstick or sight glass arranged to permit visual inspection of lubricant level shall be provided on each unit.
e. Gear reducers which require the removal of parts or periodic disassembly of the unit for cleaning and manual greasing of bearings will not be acceptable.
f. Certification shall be furnished by the gear reducer manufacturer indicating that the intended application of each unit has been reviewed in detail by the manufacture and that the unit provided is full compatible with the conditions of installation and service.
2. Variable Speed Drives: Each variable speed drive shall have a service factor of at least 1.75 at maximum speed based on the nameplate horsepower of the drive motor. A spare belt shall be provided with each variable speed drive unit employing a belt for speed change. Unless specifically permitted by the detailed equipment specifications, bracket type mounting will not be acceptable for variable speed drives.
3. V-Belt Drives: Each V-belt drive shall include a sliding base or other suitable tension adjustment. V-belt drives shall have a service factor of at least 1.6 maximum speed based on the nameplate horsepower of the drive motor.

E. Safety Guards: All belt or chain drives, fan blades, couplings and other moving or rotating parts shall be covered on all sides by a safety guard. Safety guards shall be fabricated form 16 USS gage or heavier galvanized or aluminum-clad sheet steel or 2 inch mesh galvanized expanded metal. Each guard shall be designed for easy installation and removal. All necessary supports and accessories shall be provided for each guard. Supports and accessories, including bolts, shall be galvanized. All safety guards in outdoor locations shall be designed to prevent the entrance of rain and dripping water.

F. Equipment Foundation Supports:
1. All foundations, platforms and hangers required for the proper installation of equipment shall be furnished and installed by the Contractor.
2. Unless otherwise indicated or specified, all equipment shall be installed on reinforced concrete bases at least 6 inches high and shall conform to Section 03300: Cast-In-Place Concrete. Cast iron or welded steel base plates shall be provided for pumps, compressors and other equipment. Each unit and its drive assembly shall be supported on a single baseplate of neat design. Base plates shall have pads for anchoring all components and adequate grout holes. Base plates for pumps shall have a means for collecting leakage and a threaded drain connection. Base plates shall be anchored to the concrete base with suitable anchor bolts and the space beneath filled with 1 inch minimum grout as specified in Section 03600: Grout. All open equipment bases shall be filled with nonshrinking grout sloped to drain to the perimeter of the base.
3. The Contractor shall furnish, install and protect all necessary guides, bearing plates, anchor and attachment bolts and all other appurtenances required for the installation of equipment. These shall be of ample size and strength for the purpose intended.
4. All anchor bolts, anchor bolt templates and location drawings required for the installation of the equipment, support columns and for all other equipment or machinery included under this Contract shall be furnished by the Contractor. All mechanical equipment shall be anchored using hook anchor bolts, cast-in-place, unless specifically called for otherwise on the drawings. Anchor bolts, sleeves and inserts shall be set in place in forms and cast in the concrete by the General Contractor. It shall be the responsibility of the Contractor to obtain such anchor bolts, templates and approved location drawings in proper time to avoid delay and it shall be his further responsibility to check and approve the location and setting of the anchor bolts, sleeves and inserts prior to the casting of the concrete. Parts of anchors or metal work that are not built into masonry and concrete shall be coated with approved red lead paint. Anchor bolts for column base plates and other structural elements shall be of galvanized steel unless indicated otherwise; anchor bolts for drives, motors, fans, blowers and other mechanical equipment shall be of 304 stainless steel or high-strength bronze. Anchor bolts shall be of ample size and shall provided with hexagonal nuts of the same quality of metal as the bolts. All threads shall be clean cut and of U.S. Standard sizes. All anchor bolts and nuts for anchoring equipment exposed to sewage shall be 316 stainless steel.
5. Expansion bolts shall have malleable iron and lead composition elements of the required number of units and sizes. Expansion bolts, if called for on the drawings, shall be furnished and installed by the Contractor. All the expansion bolts exposed to sewage shall be 316 stainless steel. No other use of expansion bolts will be allowed without prior approval of the Engineer.
6. Unless specified otherwise, stud, tap and machine bolts shall be of the best quality refined bar iron. Hexagonal nuts of the same quality of metal as the bolts shall be used. All threads shall be clean cut and shall conform to ANSI B1.1-latest for AUnified and American Screw Threads for Screws, Bolts, Nuts and Other Threaded Parts.@ All bolts exposed to sewage shall be 316 stainless steel.
7. Bolts, anchor bolts, nuts and washers not specified to be stainless steel shall be zinc-coated by the hot-dip process, after being threaded, in conformity with the ASTM Standard Specification for AZinc (Hot Forged Steel Shapes, Plates, Bars and Strip,@ Designation A 123-latest, or the ASTM Standard Specification for AZinc Coating (Hot Dip) on Iron and Steel Hardware,@ Designation A 153-latest, as is appropriate.
8. Anchor bolts and expansion bolts shall be set accurately. Anchor bolts which are set before the concrete has been placed shall be carefully held in suitable templates of approved designed provided under this Contract. Where indicated on the drawings, specified or required, anchor bolts shall be provided with square plates at least 4"x4"x 3/8" or shall have square heads and washers and be set in the concrete forms with suitable pipe sleeves, or both. If expansion or, with prior approval, anchor bolts are set after the concrete has been placed, all necessary drilling and grouting or caulking shall be done at the Contractors expense and care shall be taken not to damage the structure or finish by cracking, chipping, spalling or otherwise during the drilling and caulking.
9. Structural steel supports and miscellaneous steel required for supporting and/or hanging equipment and piping furnished under this Division shall be provided and installed by Contractor.
10. All foundations, anchor pads, piers, thrust blocks, inertia blocks and structural steel supports shall be built to template and reinforced as required for loads imposed on them.
11. The Contractor shall assume all responsibility for sizes, locations and design of all foundations, anchor pads, pier, thrust blocks, inertia blocks, curbs and structural steel supports.

H. Shop Painting:
1. All steel and iron surfaces shall be protected by suitable paint or coatings applied in the shop. Surfaces which will be inaccessible after assembly shall be protected for the life of the equipment. Exposed surfaces shall be finished smooth, thoroughly cleaned and filled as necessary to provide a smooth uniform base for painting. Electric motors, speed, reducers, starters and other self-contained or enclosed components shall be shop primed or finished with a high-grade oil-resistant enamel suitable for coating in the field with an alkyd enamel. Coatings shall be suitable for the environment where the equipment is installed.
2. Surfaces to be painted after installation shall be prepared for painting as recommended by the paint manufacturer for the intended service and then shop painted with one or more coats of the specified primer. Unless otherwise specified, the shop primer for steel and iron surfaces shall be Koppers ANo. 10 Inhibitive Primer@, or equal.
3. Machined, polished and nonferrous surfaces which are not to be painted shall be coated with rust-preventive compound, Houghton ARust Veto 344", Rust-O-leum AR-9", or equal.

I. Nameplates: Contractor shall provide equipment identification nameplates for each item of equipment. Nameplates shall be 1/8 inch Type 304 stainless steel and shall be permanently fastened. Plates shall be fastened using round head metallic drive screws or where metallic drive screws are impractical, with stainless steel pop rivets. Metallic drive screws shall be brass or stainless steel, Type V and No. 8 by 3/8 inch long. Names and/or equipment designations shall be engraved on the plates and the engraving painted with a primer and black paint system compatible with stainless steel. Contractor shall submit a list of proposed names and designations for review prior to fabrication of nameplates. At a minimum, each nameplate shall include equipment manufacturers name, year of manufacture, serial number and principal rating data.

J. Pipe Identification:
1. All pipe (except underground) shall have code letters and flow arrows painted as per specification Section 09900: Painting. The contractor shall ensure that the pipes are properly marked.
2. Underground pipe and tube: Pipe and tube shall be located by laying 2 inch wide plastic tape continuously along the run of pipe or tube per Section 15200: Identification Tape for Buried Pipe.

K. Valve Identification: On all valves, except shut-off valves located at fixture or piece of equipment, the Contractor shall provide a coded and numbered tag attachment with brass chain and/or brass AS@ hooks.
1. Tag Types:
a. Tags for valves on pipe and tube lines conducting hot medium (steam, condensate, hot water, etc.) shall be brass or anodized aluminum.
b. Tags for all other valves shall be Type 304 stainless steel.
c. Square tags shall be used to indicate normally closed valves and round tags shall indicate normally open valves.
2. Coding: In addition to the color coding, each tag shall be stamped or engraved with wording or abbreviations to indicate the line service. All color and letter coding shall be approved by the Engineer.
3. Valve Schedule: The Contractor shall provide a typewritten list of all tagged valves giving tag shape, letter code and number, the valve size, type, use and general location within building.

L. Noise Attention and Control:
1. Unless otherwise specified, the maximum permissible noise level for a complete installed piece of equipment located within or outside a structure shall not exceed 85 dB at 3 feet. A complete piece of equipment includes the driver and driven equipment, plus any intermediate couplings, gears and auxiliaries. All equipment provided herein that is specified to be factory and field tested shall be tested as specified herein for noise generation at the equipment manufacturers expense.
2. Maximum permissible noise (sound pressure) levels shall be in decibels as read on the AA@ weighting scale of a standard sound level meter (dB); all measurements shall be made in relation to a reference pressure of 0.0002 micro bar. Measurements of emitted noise levels shall be made on a sound level meter meeting at least the Type 2 requirements set forth in ANSI S1.4, Specification for Sound Level Meters. The sound level meter shall be set on the A scale and to slow response. Unless otherwise specified for a particular piece of equipment, the point of measurement of sound level shall be made at the specified distance from any major surface along the entire perimeter and at midheight of the piece of equipment, or at the specified distance from an outer major surface encompassing the sound source including inlets or outlets.

M. Fire Hazard Rating:
1. All piping, duct work and equipment insulation, fastener and jacketing materials shall have a fire hazard rating not to exceed 25 for flame spread, 50 for fuel contributed and 50 for smoke developed. Rating shall be determined by ASTM Designation E84, ASurface Burning Characteristics of Building Materials. Corresponding ratings determined by Underwriters Laboratories, Inc., UL-723, ATest Method for Fire Hazard Classification of Building Materials, will also be acceptable.
2. Flame proofing treatments will not be acceptable.

N. Heating, Ventilation and Domestic Plumbing Equipment
1. Interchangeability: In all design and purchasing, interchangeability of items of equipment, subassemblies, parts, motors, starters, relays and other items is essential. All similar items shall be of the same manufacturer, type, model and dimensions.

2.02 ACCESSORIES

A. Special Tools and Accessories: Equipment requiring periodic repair and adjustment shall be furnished complete with all special tools, instruments and accessories required for proper maintenance. Equipment requiring special devices for lifting or handling shall be furnished complete with those devices.
B. Fasteners: All nuts, bolts, anchors and other fastening devices shall be a minimum of 304 stainless steel.

PART 3 - EXECUTION

3.01 INSTALLATION AND OPERATION

A. Installation: Equipment shall not be installed or operated except by, or with the guidance of qualified personnel having the knowledge and experience necessary for proper results. When so specified, or when employees of Contractor or his subcontractors are not qualified, such personnel shall be field representatives of the manufacturer of the equipment or materials being installed.
1. The Contractor shall have on site sufficient proper construction equipment and machinery of ample capacity to facilitate the work and to handle all emergencies normally encountered in work of this character. To minimize field erection problems, mechanic units shall be factory assembled when practical.
2. Equipment shall be erected in a neat and workmanlike manner on the foundations and supports at the locations and elevations shown on the Drawings, unless otherwise directed by the Owner during installation.
3. All equipment shall be installed in such a manner as to provide access for routine maintenance including lubrication.
4. For equipment such as pumping units, which require field alignment and connections, the Contractor shall provide the services of the equipment manufacturers qualified mechanic, millwright, machinist or authorized representative to align the pump and motor prior to making piping connections or anchoring the pump base.
5. Equipment of a portable nature which require no installation shall be delivered to a location designated by the Owner.

B. Tolerances: Precision gauges and levels shall be used in setting all equipment. All piping and equipment shall be perfectly aligned, horizontally and vertically. Tolerances for piping and equipment installation shall be 2 inch to 30 ft. horizontal and vertically. All valves and operators shall be installed in the position shown on the Contract Drawings or as directed by the Engineer, if not shown.

C. Alignment and Level: The equipment shall be brought to proper level by shims (1/4 inch maximum). After the machine has been leveled and aligned, the nuts on the anchor bolts shall be tightened to bend the machine firmly into place against the wedges or shims. Grouting shall be as specified in Section 03600: Grout.

D. Grouting: The grout shall be tamped into position with a board, steel bar or other tool. Tamping should not be so hard as to raise or otherwise displace the plate.

E. Contact of Dissimilar Metals: Where the contact of dissimilar metal may cause electrolysis and where aluminum will contact concrete, mortar or plaster, the contact surface of the metals shall be separated using not less than one coat of zinc chromate primer and one heavy coat of aluminum pigmented asphalt paint on each surface.

F. Cutting and Patching: All cutting and patching necessary for the work shall be performed by the Contractor.

G. Operation: All equipment installed under this Contract, including that furnished by Owner or others under separate contract, shall be placed into successful operation according to the written instructions of the manufacturer or the instructions of the manufacturers field representative. All required adjustments, tests, operation checks and other start-up activity shall be provided.

3.02 OBSERVATION OF PERFORMANCE TESTS

A. Where the specifications require observation of performance tests by the Engineer, such tests shall comply with the quality assurance paragraph in this section.

3.03 MANUFACTURER=S FIELD SERVICES

A. Services Furnished Under This Contract:
1. An experienced, competent and authorized representative of the manufacturer of each item of equipment shall visit the site of the Work and inspect, check, adjust if necessary and approve the equipment installation. In each case, the manufactures representative shall be present when the equipment is placed in operation. The manufacturers representative shall revisit the job site as often as necessary until all trouble is corrected and the equipment installation and operation are satisfactory in the opinion of the Owner.
2. Each manufacturers representative shall furnish to the Owner, a letter of certification stating that the equipment has been properly installed and lubricated; is in accurate alignment, is free from any undue stress imposed by connecting piping or anchor bolts; and has been operated under full load conditions and that it operated satisfactorily.
3. All costs for field services shall be included in the contract amount.

END OF SECTION

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△	COMMENTS	XX-XX-XXXX
	REVISIONS	DATE

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

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PALM BAY
SPECIFICATIONS 04

THE RESERVE AT COUNTRY CLUB
LAKE ESTATES
CITY OF PALM BAY
FLORIDA

DAVID W. BASSFORD
LICENSE No. 83267
STATE OF FLORIDA
PROFESSIONAL ENGINEER

DAVID W. BASSFORD
FL. P.E. #83267
DATE: 8/19/2021

SHEET
C-812

19-1025
PERMITTING SET

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SECTION 15044
PRESSURE TESTING OF PIPING

PART 1 - GENERAL

1.01 DESCRIPTION

A. Scope of Work:
   1. This Section specifies the leakage testing requirements for water, sanitary force mains and reuse main.
   2. It is the intent of this specification section that all piping be pressure tested. At a minimum, the pipe shall be tested at 1.5 times the working pressure for a duration of 2 hours, unless specified otherwise herein.
B. Test Pressures: Test pressure for the various services and types of piping are shown in Table 15044-A.
C. Test Times: Duration of pressure tests for the various services and types piping are shown in Table 15044-A.
D. Testing Records:

   1. Provide record of each piping installation during the testing. The pressure test form furnished by the Utilities Department shall be completed for the record of this testing. These records shall include:
      a. Date of Test.
      b. Identification of use of pipeline tested or retested.
      c. Identification of pipeline material.
      d. Identification of pipe section length (feet) tested.
      e. Test pressure (psi).
      f. Remarks: Leaks identified (type and location), types of repairs or corrections made.
      g. Certification by Contractor that the leakage rate measured conformed to the specifications.
      h. Signature of Owner's representative witnessing pipe test.
   2. Submit three (3) copies of the pressure test form to the Owner's representative upon completion of the testing.

PART 2 - PRODUCTS

2.01 GENERAL

A. Testing fluid shall be approved by the Utility Representative.

2.02 MATERIALS AND EQUIPMENT

A. Provide pressure gauges, pipes, bulkheads, pumps and meters to perform the hydrostatic testing.

PART 3 - EXECUTION

3.01 TESTING

A. The Contractor shall perform hydrostatic testing of all pressurized water, wastewater force and reuse mains, as set forth herein, and shall conduct said tests in the presence of representatives from or other authorized agencies, with two business (2) days advance notice provided.
(1) Piping and appurtenances to be tested shall be within sections between valves, unless alternate methods have received prior approval. Testing shall not proceed until concrete thrust blocks are in place and cured, or other restraining devices installed. All piping shall be thoroughly cleaned and flushed prior to testing to clear the lines of all foreign matter. While the piping is being filled with water, care shall be exercised to permit the escape of air from extremities of the test section, with additional release cocks provided if required. Flushing shall be at full flow conditions and at least 2.5 feet per second flow rate.
(2) Hydrostatic testing shall be performed at 150 pounds per square inch pressure or 1.5 times the working pressure, whichever is greater, for a period of not less than two (2) hours. Testing shall be in accordance with the applicable provisions as set forth in section 4 of AWWA Standard C600. The allowable rate of leakage for ductile iron piping shall be less than the number of gallons per hour determined by the following formula:

$$L = \frac{SD(P)^{1/2}}{133{,}200}$$

L = allowable leakage in gallons per hour
S = length of pipe tested, in feet
D = nominal diameter of the pipe in inches
P= average test pressure maintained during the leakage test in pounds per square inch gauge, (min. 150 psi)
The allowable leakage for PVC piping shall be determined by the following formula:

$$L = \frac{ND(P)^{1/2}}{7{,}400}$$

L = allowable leakage in gallons per hour
N = number of joints in length of pipeline tested
D = nominal diameter of the pipe in inches
P= average test pressure maintained during the leakage test in pounds per square inch gauge, (min. 150 psi)

(3) The testing procedure shall include the continued application of the specified pressure to the test system, for the two hour period, by way of a pump taking supply from a container suitable for measuring water loss. The amount of loss shall be determined by measuring the volume displaced from said container. Should the test fail, necessary repairs shall be accomplished by the Contractor and the test repeated until within the established limits. The Contractor shall furnish the necessary labor, water, pumps, gauges and all other items required to conduct the required water distribution system testing and perform necessary repairs.

3.02 DISINFECTION

A. Following pressure testing, the Builder shall disinfect all sections of the water distribution system, and receive approval thereof from the appropriate agencies, prior to placing in service. Two (2) business days advance notice shall be provided to the Utilities Department before disinfecting procedures start. The disinfection shall be accomplished in accordance with the applicable provisions of AWWA Standard C651, "Disinfecting Water Mains", and all appropriate approval agencies.
B. Care shall be taken to provide disinfection to the total system and extremities shall be carefully flushed to accomplish this end. Following disinfection, bacteriological test results shall be submitted to the Utilities Department. Should the test results be unsatisfactory the piping shall again be disinfected and re-tested until sufficient number of satisfactory results are obtained.
C. The Contractor shall furnish all equipment and materials and perform the work necessary for the disinfecting and testing (re-testing if required) procedures, including additional disinfection as required.
D. All internal parts on tapping machines, such as cutting heads, etc., will be disinfected in compliance with AWWA C651, prior to making any tap.

TABLE 15044-A
PIPING PRESSURE TEST SCHEDULE

MARK	SERVICE	TEST PRESSURE (psig)	DURATION (hours)
PW	Potable Water/Reuse Mains	150	2
FM	Force Main	100	2

1. Provide restraint, bracing, test plugs and other devices necessary to successfully complete pressure testing of all piping systems at indicated test pressures.

END OF SECTION

SECTION 15068
POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS FOR GRAVITY SEWERS

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Specification outlines the requirements for polyvinyl chloride pipe and fittings for gravity sewers installed within the Utility Service Area.

1.02 QUALITY ASSURANCE

A. Standards:
   1. Materials: ASTM 1784:
a. PVC normal impact: Type I, Grade I, PVC 1120.
B. Acceptable Manufacturers:
   1. J-M Manufacturing Company, Inc.
   2. Certainteed
   3. Or equal.

1.03 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Pipe and fittings shall be handled and stored in a manner which will ensure installation in sound, undamaged condition. Handling methods and equipment used shall prevent damage to the pipe. Bare cables, chains, or metal bars shall not be used. Pipe shall be stored off the ground on wide padded skids. Whenever the storage period on the job exceeds 30 days, pipe shall be covered or otherwise protected from exposure to sunlight.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Pipe:
   1. Pipe shall be homogeneous throughout. It shall be free from voids, cracks, inclusions and other defects. It shall be uniform as commercially practical in color, density, and other physical properties. Pipe surfaces shall be free from nicks and scratches. Joining surfaces of spigots and joints shall be free from gouges and imperfections that could cause leakage.
   2. PVC pipe and fittings for wastewater gravity sewer lines and services shall conform to the requirements of ASTM D3034, latest revision, with a standard dimension ratio (SDR) 35. PVC pipe shall be suitable for use as a wastewater gravity sewer conduit. Pipe shall have integral wall bell and spigot joints.
B. Joints:
   1. Bell and Spigot: Pipe joints shall be an integral wall bell and spigot with solid cross section, elastomeric ring gasket which shall conform to the manufacturer's standard dimensions and tolerances and meet the requirements of ASTM D3201 and ASTM F477. The elastomeric ring gasket shall be factory assembled in the pipe bell and securely located in place to prevent displacement during jointing in the field.
C. Fittings:
   1. All fittings and accessories shall be manufactured of PVC in accordance with the same specifications as PVC pipe of the same size. Fittings shall have bell ends with elastomeric gaskets which conform to the same dimensions, tolerances and specifications as the PVC pipe.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Pipe:
   1. Pipe shall be installed as recommended by the pipe manufacturer.
   2. Pipe shall be cut from measurements taken at the site and not from the drawings. All necessary provisions shall be taken in laying out and installing piping to provide throughout for expansion and contraction.
B. Jointing:
   1. Clear each pipe length, coupling and fitting of all debris and dirt before installing.
   2. Provide and use coupling pullers for joining the pipe when required.
   3. Shove home each length of pipe against the pipe previously laid and hold securely in position.
   4. Do not pull or cramp joints.
   5. Use water soluble gasket lubricant for joint assembly for pipes smaller than or equal to 12 inches in size.
C. Fabrication - Cutting:
   1. Use a hand saw or pipe cutter with blades (not rollers).
   2. Examine all cut ends for possible cracks caused by cutting.

3.02 INSPECTION AND TESTING

A. Before installation, make sure there is no evidence of splitting or cracking, or breaking in the pipe.
B. Upon installation, all pipes shall be hydrostatically tested in accordance with Section 5, 6 or 7 as applicable.

END OF SECTION

SECTION 15070
SMALL DIAMETER POLYVINYL CHLORIDE (PVC) PIPE AND FITTINGS

PART 1 - GENERAL

1.01 DESCRIPTION

A. This specification outlines the requirements for small diameter (3 inches and smaller) polyvinyl chloride pipe, fittings and appurtenances installed within the Utility Service Area.

PART 2 - PRODUCTS

2.01 PVC PIPE

A. Pipe shall be made of polyvinyl chloride, Schedule 80 pipe, conforming to ASTM D1785. Schedule 80 pipe shall have solvent welded or threaded joints. PVC pipes must bear NSF logo for potable water use.

2.02 FITTINGS

A. Fittings for Schedule 80 pipe shall be socket type, solvent welded in conformance with ASTM D 2467 or threaded type in conformance with ASTM D 2464. Solvent welded and threaded joints shall be watertight.

2.03 SOLVENT CEMENT

A. PVC solvent cement shall be in compliance with ASTM D 2564.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install PVC pipe in strict accordance with the manufacturer's technical data and printed instructions.
B. Joints for Schedule 80 PVC pipe and fittings shall be solvent welded or threaded. All joints shall be made watertight. All pipe cutting, threading and jointing procedures for solvent welded and threaded PVC pipe joints shall be in strict accordance with the pipe and fittings manufacturer's printed installation instructions. Thread lubricant for threaded joints shall be Teflon tape only. In making solvent welded connections, clean dirt and moisture from pipe and fittings, bevel pipe ends slightly with emery cloth, if necessary and apply solvent coment of proper grade.
C. Installation of valves and fittings shall be strictly in accordance with the manufacturer's instructions. Particular care shall be taken not to over-stress threaded connections at sleeves. In making solvent weld connections the solvent shall not be spilled on valves or allowed to run from joints.
D. All piping shall have sufficient number of unions to allow convenient removal .
E. Where plastic passes through wall sleeves, joints shall be sealed with a mechanical sealing element equal to Link-Seal as manufactured by Thunderline Corp.

3.02 FIELD PAINTING

A. Pipe normally exposed to view shall be painted and marked as specified by PBUC.

3.03 TESTING AND FLUSHING

A. All PVC piping shall be hydrostatically pressure tested and flushed in accordance with the applicable section of this Handbook.

END OF SECTION

SECTION 15071
POLYVINYL CHLORIDE (PVC) PRESSURE PIPE

PART 1 - GENERAL

1.01 DESCRIPTION

Work: This Specification outlines the requirements for PVC pressure pipe installed within the Utility Service Area.

1.02 QUALITY ASSURANCE
A. Standards:
   1. Pressure rated (DR/SDR) pipe: ASTM-D2241.
   2. AWWA C-900 4 inches to 12 inches.
   3. AWWA C-905 14 inches to 36 inches
   4. Materials: ASTM 1784:
      a. Class 12454-A, 4000 psi @ 73.4°F
      b. Class 12454-B, 4000 psi @ 73.4°F
B. Acceptable Manufacturers:
   1. J-M Manufacturing Company, Inc.
   2. CertainTeed Corporation
C. Fittings: Fittings shall be the compact Ductile iron fitting for mechanical joint and rated at a minimum pressure of 250 psi: AWWA C-153 / ANSI A-21.53
   1. Submit the manufacturer specification to the Utility Engineer for review

1.03 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Pipe and fittings shall be handled and stored in a manner which will ensure installation in sound, undamaged condition. Handling methods and equipment used shall prevent damage to the pipe. Bare cables, chains, or metal bars shall not be used. Pipe shall be stored off the ground on wide padded skids. Whenever the storage period on the job exceeds 30 days, pipe shall be covered or otherwise protected from exposure to sunlight.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Pipe:
   1. Pipe shall be homogeneous throughout. It shall be free from voids, cracks, inclusions and other defects. It shall be uniform as commercially practical in color, density, and other physical properties. Pipe surfaces shall be free from nicks and scratches. Joining surfaces of spigots and joints shall be free from gouges and imperfections that could cause leakage.
   2. Pipe and pipe fittings shall be gasketed style, utilizing single gasket bell and spigot, unless otherwise approved by PBUC.
   3. Pipe shall be of the class and color as specified herein:
      a. Wastewater force mains: Minimum DR-18; white
      b. Potable Water Main: Minimum DR-18; blue
      c. Reuse Main: Minimum DR-18; purple
B. Fittings:
   1. Fittings for use with PVC pressure pipe shall be the compact ductile iron mechanical joint fitting with a minimum pressure rating of 250 psi and shall conform to AWWA C-153 / A21.53 and approved by PBU, via submittal.
   2. Interior lining of fittings shall be as follows:
      a. Epoxy lining for wastewater service: Two component self priming, chemically cured, hi-build coal tar epoxy protective coating with a minimum DFT of 30 mils.
      b. Cement-Mortar lining for potable water and reuse service: In accordance with ANSI 21.4 for cement-mortar linings.
C. Joints:
   1. A gasket joint shall be provided with each length of pipe.
   2. The joints shall provide a positive seal against pressure or vacuum.
   3. Joints shall comply with the requirements defined in UNI-B-1 for pipe sizes greater than 12 inches, and in ASTM D3139 for pipe sizes less than or equal to 12 inches.
   4. The dimensions of the gasket joint for pipe size greater than 12 inches when measured according to ASTM D2122 shall meet the following requirements:
      a. The coupling wall thickness at any point shall conform to the dimensions ratio (DR) of the pipe, except in the annular gasket space and coupling entry section where the wall thickness shall be at least the minimum wall thickness of the pipe.
      b. In lieu of Paragraph B.4.a. above, the manufacturer's joint design shall be tested to verify that the Hydrostatic Design Basis Category for the joint assembly is not lower than the pressure rating requirements in ASTM D3139. The dimensions and tolerances shall be those specified by the manufacturer's drawings.
   5. Provide couplings of the same quality as the pipe that will maintain tight joints when subjected to the same hydrostatic tests designated for the pipe.

D. Adapters: When applicable, provide adapters for connecting PVC pipe to pipes constructed from other material.
E. Thrust Restraint:
   1. Thrust Blocks: As detailed and called out on the Drawings.
      a. Conform to thrust block details shown in this Handbook.
   2. Restrained Joints:
      a. Pipe joints shall be restrained each side of the fitting for a continuous distance in accordance with DIPRA "Thrust Restraint Design for Ductile Iron Pipe." Distance restrained shall be based on sand-silt soil type, test pressure as specified in the applicable section of this Handbook, 3.0 feet of cover, polyethylene encased and Type 3 laying condition.
      b. Mechanical joint restraint shall be accomplished using a mechanism consisting of plurality of individually activated gripping surfaces incorporated into the design of the follower gland. Restraint device shall be Megalug, Series 1100 PV or Series 2000 PV.
      c. Push-on joints for pipe that are required to be restrained shall be restrained using a harness device. The harness shall be split to enable installation after the spigot has been installed into the bell. The restraint ring of the harness shall consist of a plurality of individually activated gripping surfaces to hold the spigot. Harness restraint shall be Megalug, Series 1100 HV or Series 1500.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Pipe:
   1. Pipe shall be installed as recommended by the pipe manufacturer.
   2. Pipe shall be cut from measurements taken at the site and not from the drawings. All necessary provisions shall be taken in laying out and installing piping to provide throughout for expansion and contraction.
B. Jointing:
   1. Clear each pipe length, coupling and fitting of all debris and dirt before installing.
   2. Provide and use coupling pullers for joining the pipe when required.
   3. Shove home each length of pipe against the pipe previously laid and hold securely in position.
   4. Do not pull or cramp joints.
   5. Use water soluble gasket lubricant for joint assembly for pipes smaller than or equal to 12 inches in size.
C. Fabrication - Cutting:
   1. Use a hand saw or pipe cutter with blades (not rollers).
   2. Examine all cut ends for possible cracks caused by cutting.

3.02 INSPECTION AND TESTING
A. Before installation, make sure there is no evidence of splitting or cracking, or breaking in the pipe.
B. Upon installation, all pipe shall be hydrostatically tested in accordance applicable AWWA STANDARD.

END OF SECTION

SECTION 15072
POLYETHYLENE (PE) AND HIGH DENSITY POLYETHYLENE (HDPE) PIPE AND FITTINGS

PART 1 - GENERAL

NOTE
THIS PRODUCT REQUIRES THE PRIOR WRITTEN APPROVAL OF THE UTILITY ENGINEER FOR THE DESIGN, THE INSTALLATION AND OR CONNECTION TO EXISTING SYSTEMS, WITHIN THE UTILITIES SERVICE AREA.

1.01 DESCRIPTION

A. Product Submittal: The use of PE or HDPE products within the Utilities Systems shall require the review of submittal for the pipe and fittings and written approval of the submittal by the Utilities Engineer prior to the commencement of any installation.
B. Work: This Specification outlines the requirements for Polyethylene (PE) pipe and solid Blue, Green and Purple or the Blue or Green striped High Density Polyethylene (HDPE) pressure pipe intended for the transportation of water, re-use water and sanitary wastewater that may be installed within the Utility Service Area.

1.02 QUALITY ASSURANCE

A. Standards:
   1. ASTM D3261: Butt heat fusion polyethylene pipe and tuning.
   2. AWWA C-901/ASTM D2683, DR-9, PE (CTS) pipe/tubing for water service; ½ inches to 2 inches.
   3. AWWA C-906/ ASTM D3350. DR-11 or DR-17, HDPE (DI) water distribution pipe; 4 inches to 30 inches
   4. Cell Classification of 345434C, 1600 psi @ 73°F in accordance with PPI TR-3 and be listed in the name of the manufacturer in PPITR-4.
   5. Meet Pipe and Fitting requirements and be approved by the National Sanitation Foundation (NSF) meeting NSF 61 Standards
   6. HDEP permanent identification of pipe service shall be provided by co-extruding a solid blue or purple pipe or longitudinal blue stripes for water or reuse transmission / distribution main or a solid green or longitudinal green stripes for sanitary sewer /force main, of the same pipe material into the pipe's outside surface. Stripes painted or printed on the pipe outside surface shall not be accepted.
   7. Related work specifications and standards described elsewhere; Sections 02541, 15044, 15062, 15071, 15101, 1510, 15117, 15120, 15200.

B. Acceptable Manufacturers:
   1. PLEXCO, Chevron
   2. DRISCOPIPE, Phillips 66
C. Fittings: Consult the pipe manufacturer for recommendation and instruction specification for their use of fittings. Submit the manufacturer recommendation and instruction specification to the Utility Engineer for review and written approval.
   1. a. Fittings shall be the compact Ductile iron fitting AWWA C-153 / ANSI A-21.5 mechanical joint (MJ) and rated at a minimum pressure of 250psi.
      a. Polyethylene Fittings shall be molded or fabricated by the manufacturer of the pipe.
   2. Pipe Stiffening inserts to provide circumferential support shall be of stainless steel and of the wedge type and shall be required for used in all plain end of the HDPE pipe in conjunction with all mechanical fittings and any fittings that rely on compressing the pipe O.D. The insert shall be installed per the manufactures instructions.
   3. Service Saddle, ether fused or mechanical shall be installed and tested per the pipe manufacturer instructions

1.03 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Pipe and fittings shall be handled and stored in a manner which will ensure installation in sound, undamaged condition. Handling methods and equipment used shall prevent damage to the pipe. Bare cables, chains, or metal bars shall not be used. Pipe shall be stored off the ground on wide padded skids. Whenever the storage period on the job exceeds 30 days, pipe will be covered or otherwise protected from exposure to sunlight. All pipes found damaged , shall be rejected for inclusion in the designed work and removed from the project site. Cost associated with the rejection and replacement of damaged pipe and fitting will be the responsibility of the Developer or Contractor as the Ulility shall incur no expense.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Pipe:
   1. Pipe shall be homogeneous throughout. It shall be free from voids, cracks, inclusions and other defects. It shall be uniform as commercially practical in color, density, and other physical properties. Pipe surfaces shall be free from nicks and scratches. Joining surfaces shall be free from gouges and imperfections that could cause leakage.
   2. HDPE Pipe shall be of the class and color as specified herein:
      a. Potable Water Main: Minimum DR-17, BLUE or longitudinal blue line striped.
      b. Reuse Main: Minimum DR-17, PURPLE, or longitudinal blue line striped.
      c. Wastewater force mains: Minimum DR-17,GREEN, or longitudinal green line striped.
B. Fittings:
   1. Polyethylene fittings shall be molded or fabricated by the manufacturer of the pipe.
   2. Push joint fittings for use with C906 D-11 or DR-17 (DI) HDPE pressure pipe shall be the compact ductile iron mechanical joint fitting with a minimum pressure rating of 250 psi and shall conform to AWWA 153 / A21.53 and approved by PBU, via submittal. Interior lining of fittings shall be as follows:
      a. Epoxy lining for wastewater service: Two component self priming, chemically cured, hi-build coal tar epoxy protective coating with a minimum DFT of 30 mils.
      b. Cement-Mortar lining for potable water and reuse service: In accordance with ANSI 21.4 for cement-mortar linings
C. Joints:
   1. The fuse joints shall provide a leak tight joint and a positive seal against pressure or vacuum.
   2. Mechanical coupled joints shall maintain leak tight joints when subjected to the same hydrostatic tests designated for the pipe.
D. Adapters: When applicable, provide adapters for connecting HDEP pipe to pipes constructed from other material.
E. Thrust Restraint:
   1. Thrust Blocks: As detailed and called out on the Drawings.
   2. Restrained Joints: As detailed and called out on the Drawings.
      a. Push-on pipe joints when required shall be restrained each side of the fitting for a continuous distance in accordance with DIPRA "Thrust Restraint Design for Ductile Iron Pipe." Distance restrained shall be based on sand-silt soil type, test pressure as specified in the applicable section of this Handbook, 3.0 feet of cover, polyethylene encased and Type 3 laying condition.
      b. Mechanical joint restraint shall be accomplished using a mechanism consisting of plurality of individually activated gripping surfaces incorporated into the design of the follower gland. Restraint device shall be Megalug, Series 1100 PV or Series 2000 PV.
      c. Push-on joints for pipe that are required to be restrained shall be restrained using a harness device. The harness shall be split to enable installation after the spigot has been installed into the bell. The restraint ring of the harness shall consist of a plurality of individually activated gripping surfaces to hold the spigot. Harness restraint shall be Megalug, Series 1100 HV or Series 1500.
F. The use of "Manufacture's Restrained Joint Pipe" shall meet all the restrained distance requirements as specified by the design Engineer.

PART 3 - EXECUTION

3.01 INSTALLATION
NOTE
FAILURE OF THE CONTRACTOR TO FOLLOW THE INSTRUCTIONS FOR INSTALLATION AND TESTING OF THE PIPE AND FITTING, AS FURNISHED BY THE MANUFACTURER MAY RESULT IN REJECTION OF THE WORK, CAUSE FOR THE REMOVAL OR PERMITTED ABANDONMENT AND SEALING OF THE MATERIAL, ALL RESTORATION AT NO EXPENSE TO THE OWNER OR THIS UTILITY AS TO INCURRED COST.
A. Pipe:
   1. Pipe shall be installed as recommended by the pipe manufacturer.
   2. Pipe shall be cut from measurements taken at the site and not from the drawings. All necessary provisions shall be taken in laying out and installing piping to provide throughout for expansion and contraction.
B. Jointing: Pipe shall be joined and tested as recommended by the pipe manufacturer.
C. Fabrication - Cutting and fitting:
   1. Pipe shall be cut and fitted as recommended by the pipe manufacturer

3.02 INSPECTION AND TESTING

The contractor shall furnish as part of the required work; all test equipment, material, labor and the specialty to complete the inspection and testing. Water shall be the test medium.
Air will not be used as a test medium.
A. Before installation, insure all fuse joints satisfactory and make sure there is no evidence of splitting or cracking, or breaking in the pipe.
B. Upon installation, all pipe shall be hydrostatically tested in accordance with Section 5, 6, 7 or per the manufacturer procedures as applicable. Test on HDPE shall be readied during the morning and only after equilibrium is established, then the testing maybe conducted.
C. Bacteriological test and clear the main and APPURTANCE for the FDEP Permit per AWWA Standard C-651 "Disinfecting Water Mains", when required.

END OF SECTION

SECTION 15100
VALVES AND SPECIALTIES - GENERAL

PART 1 - GENERAL

1.01 DESCRIPTION
A. This specification outlines the general requirements for valves and specialties installed within the Utility Service Area.

1.02 QUALITY ASSURANCE
A. Qualifications:
   1. All equipment furnished under this Specification shall be new and unused and shall be a standard product which has a successful record of reliable service in similar installations for a minimum of five (5) years.
   2. All valves of same type and duty shall be furnished by a single manufacturer.
B. Standards:
   1. ANSI.
   2. AISI.
   3. SSPC.
   4. AWWA.

1.03 PRODUCT DELIVERY, STORAGE AND HANDLING
A. Shipping:
   1. All parts shall be properly protected so that no damage or deterioration will occur during a prolonged delay from the time of shipment until installation is completed.
   2. Finished surfaces of all exposed openings shall be protected by wooden blanks, strongly built and securely bolted thereto.
   3. Finished iron or steel surfaces not painted shall be properly protected to prevent rust and corrosion.
   4. After hydrostatic or other tests, all entrapped water shall be drained prior to shipment, and proper care shall be taken to protect parts from the entrance of water during shipment, storage and handling.
   5. Each box or package shall be properly marked to show its net weight in additional to its contents.
B. Storage:
   1. Store valves and accessories in an area on the construction site protected from weather, moisture, or possible damage.
   2. Do not store valves or accessories directly on the ground.
C. Handling:
   1. Handle valves and accessories to prevent damage of any nature.
   2. Carefully inspect all materials for:
      a. Defects in workmanship and materials.
      b. Removal of debris and foreign material in valve openings and seats.
      c. Proper functioning of all operating mechanisms.
      d. Tightness of all nuts and bolts.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Materials shall be as indicated in specific Sections of this Handbook and be compatible with intended use.
B. Valves shall have the name of the manufacturer and the size of the valve cast or molded onto the valve body or bonnet or shown on a permanently stainless steel attached plate.
C. Bolts, washers, nuts, and gaskets for flanged valves shall be as described in the specific piping sections.
D. Coat metal valves located above ground or in vaults and structures the same as the adjacent piping. Apply the specified prime coat at the place of manufacture. Apply finish coat in field. Finish coat shall match color of the adjacent piping.

PART 3 - EXECUTION

3.01 PREPARATION

A. Apply a shop coat finish to an asphalt varnish to:
   1. Interior surfaces of all valves except corrosion resistant or specially coated valves as specified.
   2. Exterior surfaces of buried or submerged valves.
   3. Miscellaneous piping appurtenances.
B. Apply coats of paint filler and enamel to parts customarily finished at the shop.
C. Apply a shop coat of grease or other suitable rust resistant coating to ferrous surfaces obviously not to be painted.

3.02 INSTALLATION

A. Install valves and accessories in strict accordance with manufacturer's instruction and recommendations.
B. Carefully erect all valves and support them in their respective positions free from distortion and strain.
C. Bolt holes of flanged valves shall straddle the horizontal and vertical centerlines of the pipe run to which the valves are attached. Clean flanges by wire brushing before installing flanged valves. Clean flange bolts and nuts by wire brushing, lubricate threads with oil and graphite, and tighten nuts uniformly and progressively. Clean threaded joints by wire brushing or swabbing. Apply Teflon joint compound or Teflon tape to pipe threads before installing threaded valves. Joints shall be watertight.
D. Support all valves connected to pumps and equipment, and in piping systems that cannot support valves.
E. Repair any scratches, marks and other types of surface damage etc., with original coating as supplied by the factory.

3.03 INSPECTION AND TESTING

A. Check and adjust all valves and accessories for smooth operation.
B. Test valves for leakage at the same time that connecting pipelines are tested. See other Sections of this Handbook, as applicable, for pressure testing requirements. Protect or isolate any parts of valves, operators, or control and instrument systems whose pressure rating is less than the pressure tests.
C. If flanges leak under pressure testing, loosen or remove the nuts and bolts, reseat or replace the gasket, reinstall or retighten the bolts and nuts, and retest the joints.

END OF SECTION

SECTION 15101
GATE VALVES

PART 1 - GENERAL

1.01 DESCRIPTION

A. This Specification outlines the requirements for gate valves installed within the Utility Service Area.

1.02 QUALITY ASSURANCE

A. All gate valves of same type and style shall be manufactured by one (1) manufacturer.
B. Equipment Manufacturer and Number:
   1. General Service non-rising stem (NRS): 3 inches through 16 inches.
      a. Mueller Company, Super-seal Resilient Seat Valve.
      b. American Flow Control, AFC-2500.

PART 2 - PRODUCTS

2.01 MATERIALS AND EQUIPMENT

A. General: Gate valves for potable water or reuse service shall be of the resilient wedge type. Gate valves shall have a clear waterway equal to the nominal diameter of the pipe when fully open.
   1. The valve operating nut or wheel shall have an arrow cast in the metal indicating the direction of opening. Each valve shall have the manufacturer's distinctive marking, pressure rating and year of manufacture cast on the body. Prior to shipment from the factory, each valve shall be testing applying to it a hydrostatic pressure equal to twice the specified working pressure.
   2. Hydrostatic and leakage tests shall be conducted in strict accordance with ANSI/AWWA C500, latest edition or ANSI/AWWA C509, latest revision whichever is applicable.
B. Design: Gate valves with nominal sizes from 3 to 12 inches shall conform to ANSI/AWWA C509, latest revision and shall be designed for a minimum working pressure of 150 psi. Valves shall be iron body, resilient wedge type with non-rising stem and O-ring stem seals. The valve stem, stem nut, glands and bushings shall be bronze. Valve disc shall be constructed to assure uniform seating pressure between disc seat and body seating surface. The body seating surface shall be machined smooth with no recesses to trap debris. The resilient seal of the valve shall be formed by styrene butadiene elastomer which is permanently bonded to and completely encapsulates a cast iron valve disc. Gate valves shall open left or counter-closewise when viewed from the stem.
   (1) Gate Valves with a nominal gauge from 2-1/2 inch and small shall be approved by the Utility Department via submittal. These valves shall be wheel activated and be manufactured by Crane or Watts.
C. Connections: All gate valves shall be mechanical joint, flanged, or screwed ends to fit the pipe run in which they are to be used, except valves installed on slip joint pipe shall have mechanical joint ends unless otherwise specified. Flanged valves shall be faced and drilled to ANSI 125/150 pound standard. Mechanical joint ends shall be to the AWWA Standard C111-72. Screwed ends shall be to the NPT standard.
D. Coatings: The inside and outside of each valve shall be coated, minimum 3-5 mils, with epoxy meeting AWWA C-550 latest revision.
E. Valve Operators: Manual
   1. Buried gate valves shall be furnished with 2-inch square AWWA standard nut operators with a valve box and cover. Gate valves located above ground or inside structures shall be furnished with hand wheel operators and shall have a suitable indicator arrow to give valve position from fully open to fully closed.
   2. Where necessary due to location, size, or inaccessibility, chain wheel operators shall be furnished with the valves. Such operators shall be designed with adequate strength for the valves with which they are supplied and to provide for easy operation of the valve. Chains for valve operators shall be galvanized.
F. Valves Boxes for Buried Services Valves:
   1. Valve boxes shall be two (2) piece sliding type cast iron with extension shafts. Units shall be Mueller H-10364, Clow figure F-2452, or equal. Extension pipe shall be cast iron cut to fit finished grade. Coat buried cast iron pieces with coal tar epoxy.
   2. Where the depth of the valve is such that its centerline is more than four feet below grade, provide operating extension stems to bring the operating nut to a point of six inches below the surface of the ground and/or box cover. Extension stems shall be steel and shall be complete with a 2 inch operating nut.

PART 3 - EXECUTION

3.01 INSTALLATION

A. Install valves with stem position vertical unless shown otherwise required.
B. Install in accordance with Section 15100: Valves and Specialties - General.

END OF SECTION

SECTION 15117
PLUG VALVES

PART 1 - GENERAL
1.01 DESCRIPTION

A. This Specification outlines the requirements for plug valves installed within the Utility Service Area.
B. General Design: All valves shall be eccentric plug valves unless otherwise specified.

1.02 QUALITY ASSURANCE

A. Standards: Plug valves shall be tested in accordance with AWWA C504. Each valve shall be performance tested in accordance with Section 5.2 and shall be given a leakage test and hydrostatic test as described in Sections 5.3 and 5.4. The leakage test shall be applied to both faces of the plug.
B. Equipment Manufacturer: All plug valves of same type, style, and duty shall be of one (1) manufacturer:
   1. Mueller.
   2. DeZurik.

1.03 PRODUCT DELIVERY, STORAGE AND HANDLING (SEE VALVES AND SPECIALTIES - GENERAL: SECTION 15100)

PART 2 - PRODUCTS
2.01 GENERAL

A. Valves shall be installed complete with extension stems, operating nuts and wrenches, as required for normal operation.
B. Valves shall have the name of the manufacturer and the size of the valve cast or molded onto the valve body. Attach a permanent plate to the valve or operator indicating serial number, order number, accessories, operator model and manufacturer, etc.

2.02 VALVE CONSTRUCTION

A. Eccentric plug valves 4 inches and larger shall be of the non-lubricated type. Minimum pressure rating of valves 4 inches through 12 inches shall be 175 psi, valves 14 inches through 72 inches shall be 150 psi. Valve bodies shall be cast iron ASTM A 126, Class B, in compliance with AWWA Standard C507. Unless otherwise noted, port areas for all valves shall be 100 percent of full pipe area. Resilient plug facings shall be of Nitrile Butadiene rubber or Neoprene. Valve ends shall be screwed, flanged (or grooved end couplings) or mechanical joint. Valve body seats shall have a welded-in overlay of not less than 90 percent nickel. Packing shall be safely adjustable and replaceable without removing the valve from service, with the body pressurized to its full rated pressure. Bearings shall be permanently lubricated 316 stainless steel in both upper and lower journals in accordance with AWWA Standard C507. The valve supplied shall have drip tight shut off with flow in either direction at the full pressure rating of the valves. All exposed nuts, bolts, springs and washers on buried and on above ground outdoor service valves shall be 316 stainless steel.
B. All body, bonnet and flange thicknesses shall be designed and rated in accordance with the specified valve pressure rating and ANSI B16.1, per AWWA Standards C504 and C507. Mechanical joint ends shall be to the AWWA Standard C111-72. Bell ends shall be to the AWWA Standard C100-55 Class B. Screwed ends shall be to the NPT standard.
C. Valve shaft seals shall comply with AWWA Standard C507.

2.03 VALVE OPERATORS

A. Manual:
   1. Provide wrench operators having adjustable, open stop memory positions for exposed valves 4 inches and smaller.
   2. Provide handwheel operator for exposed valves 6 inches and larger.
   3. Provide 2 inch AWWA operating nuts for buried valves.
   4. For buried service, provide watertight shaft seals and actuator cover gaskets. Provide totally enclosed operators designed for buried service.
   5. Design operators on buried valves to produce the required torque on the operating nut with a maximum input of 150 foot-pounds.
   6. All buried plug valves shall have a remote position indicator in the valve box showing position of the valve. A centering and identification plate shall be provided showing open and close position and number of turns to open for each valve. The position indicator shall be stainless steel or other material protected from corrosion.

2.04 VALVE BOXES FOR BURIED SERVICE VALVES

A. Valve boxes shall be two (2) piece sliding type cast iron with extension shafts. Units shall be Mueller H-10364,or equal. Extension pipe shall be cast iron cut to fit finished grade. Coat buried cast iron pieces with coal tar epoxy.
B. Where the depth of the valve is such that its centerline is more than four feet below grade, provide operating extension stems to bring the operating nut to a point of six inches below the surface of the ground and/or box cover. Extension stems shall be steel and shall be complete with a 2 inch operating nut.

PART 3 - EXECUTION
3.01 JOINTS

A. Clean flanges by wire brushing before installing flanged valves. Clean flange bolts and nuts by wire brushing, lubricate threads with oil and graphite, tighten nuts uniformly and progressively. Joints shall be watertight.

3.02 VALVE FIELD TESTING

A. Operators shall operate from full open to full close through ten cycles without binding or sticking. If operators stick or bind or if pulling forces and torques are excessive, repair or replace the operator and repeat the tests. Operators shall be fully lubricated in accordance with the manufacturer's recommendations prior to operating.

3.03 ORIENTATION

A. Install valves in such a manner that plug rotates to top of the valve when opened and that plug faces into normal flow when valve is closed, unless otherwise shown or specified.

END OF SECTION

REVISIONS	COMMENTS	DATE
1		XX-XX-XXXX
2		
3		
4		
5		
6		
7		
8		

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
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PALM BAY
SPECIFICATIONS 05

THE RESERVE AT COUNTRY CLUB
LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD DATE:
FL. P.E. #83267 8/19/2021

SHEET
C-813

19-1025
PERMITTING SET

W:\19\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\Site\19-1025 COVER-DETAILS.dwg 8/19/2021 4:30 PM ANTHONY RELAFORD

GENERAL NOTES

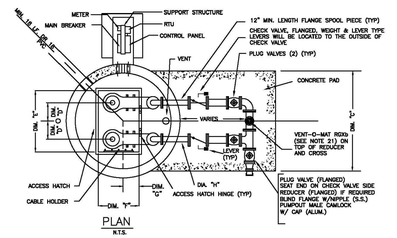
1. ALL EXPOSED METAL SHALL BE PRIMED WITH TWO COATS OF EXTERIOR ENAMEL PAINT.
2. WET WELL SHALL BE COATED WITH TWO COATS (8 MILS EACH) HIGH SOLIDS EPOXY. THE TWO COATS SHOULD BE ALTERNATING COLORS WITH THE FINAL COLOR BEING BLACK OR GRAY ON THE OUTSIDE AND GRAY ON THE INSIDE. THE INSTALLATION OF A LINER INSIDE OF THE WET WELL MUST BE APPROVED BY THE UTILITIES DEPARTMENT.
3. BASE AND FIRST RISER UNIT TO BE CAST MONOLITHIC.
4. ALL LOCATIONS WHERE PRESSURE PIPES ENTER OR LEAVE THE WET WELL SHALL BE MADE WATER-TIGHT WITH WALL SLEEVES AND SEALS.
5. THERE SHALL BE NO VALVES OR ELECTRICAL JUNCTION BOXES IN THE WET WELL.
6. WET WELL COVER SHALL BE ALUMINUM WITH 316 S.S. HARDWARE AND LOCK BRACKET. SIZE AS REQUIRED BY PUMP MANUFACTURER.
7. ALL HARDWARE IN WET WELL TO BE 316 S.S.
8. FLEXIBLE COUPLING SHALL BE SLEEVE TYPE.
9. REFER TO DETAIL S-2 FOR DROP CONNECTION DETAIL.
10. INSTALL LINK-SEAL BETWEEN PIPE AND CONCRETE.
11. CHECK VALVE, FLANGED, WEIGHT & LEVER TYPE LEVERS WILL BE LOCATED TO THE OUTSIDE OF CHECK VALVE
12. PIPE SHALL BE FLANGED DUCTILE IRON OR 316 S.S. PIPE.
13. CLEARANCE SHALL BE 18" MINIMUM, 24" MAXIMUM MEASURED FROM THE BOTTOM OF THE PIPE.
14. ALL INFLUENT LINES SHALL BE OF PVC OR PE MATERIAL AND USE A WATER TIGHT SEAL OR SLEEVE. INFLUENT LINE SHALL BE A MINIMUM OF 5' ABOVE THE FLOOR ELEVATION.
15. PIPE SHALL BE SUPPORTED PER THE SPECIFICATIONS OF THE PIPE MANUFACTURER. AT A MINIMUM, THE PIPE SHALL BE BRACED AND SUPPORTED AT 5' INTERVALS. ALL PIPE SUPPORT COMPONENTS SHALL BE 316 S.S.
16. PROVIDE 4" VENT WITH VENT CAP AND S.S. INSECT SCREEN WITH ¼" OPENINGS. SEAL AROUND CONCRETE TOP WITH NON-SHRINK GROUT. THE VENT AND VENT CAP SHALL EITHER BE EPOXY-COATED DUCTILE IRON OR S.S.
17. ALUMINUM ACCESS HATCH W/ LOCKSET AND RECESSED HANDLE. THE ACCESS DOOR SHALL HAVE THE HINGE ON THE SIDE WHERE THE CHECK VALVES ARE LOCATED. FOR TEMPORARY FALL PROTECTION, AN ALUMINUM GUARD RAIL RETAINING SYSTEM IS REQUIRED TO BE AN INTEGRAL COMPONENT OF THE HATCH FRAME.
18. THE PUMP MANUFACTURER'S SUBMERGENCE REQUIREMENTS SHALL BE MET AS A MINIMUM.
19. THE TOP ELEVATION OF THE WET WELL SHALL BE A MINIMUM OF 1' ABOVE THE 100-YEAR FLOOD ELEVATION.
20. MEET PUMP MANUFACTURER'S SPECIFICATION FOR THE DISTANCE BETWEEN THE FLOOR AND BOTTOM OF PUMP VOLUTE.
21. AIR RELEASE VALVE SHALL BE APPROPRIATELY SIZED PER THE MANUFACTURER'S SPECIFICATIONS

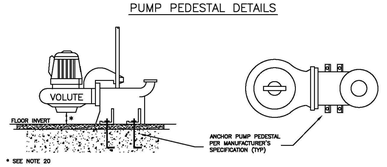
CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	PUMP STATION GENERAL NOTES	DWN.BY: E.K.R. REV.	DATE: 6-15-13 DWG. NO. LS-1A

PUMP STATION DATA TABLE

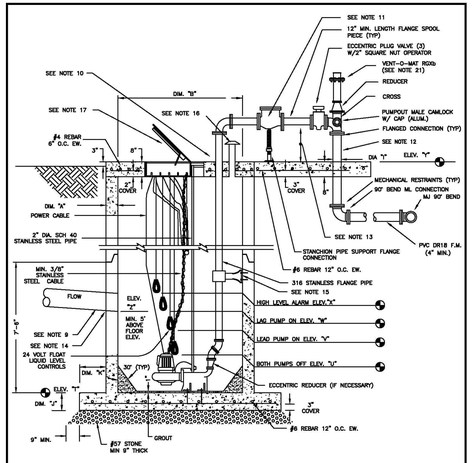
	DESCRIPTION	SYMBOL	VALUE
DATA	STATION NUMBER	---	LIFT STATION #4
	STATION LOCATION	---	COUNTRY CLUB ESTATES
	PUMP MANUFACTURER	---	SULZER
	PUMP MODEL	---	XFP 80E CB1
	IMPELLER	---	EN-GJL-250
	DIAMETER, mm	---	160
	SPEED, RPM	---	3,541 RPM
	DISCHARGE, IN.	---	3
	VOLTAGE, Hz	---	230
	PHASE	---	3P, 60 Hz
	HORSEPOWER	---	16.8
	FLOW, GPM	---	125
	TDH, FT.	---	106.8
	MIN. SOLID SIZE, IN.	---	1.77 IN (45 mm)
	CURVE NUMBER	---	XFP 80E CB1 60Hz (wet pit)
DIMENSIONS	WALL THICKNESS, 6" MIN.	DIM. "A"	6"
	INSIDE DIAMETER OF WET WELL, 6' MIN.	DIM. "B"	6'
	WIDTH OF CONCRETE PAD	DIM. "C"	6' 8"
	CENTER OFFSET OF PUMP	DIM. "D"	0
	LENGTH OF WET WELL ACCESS	DIM. "E"	41.34"
	WIDTH OF WET WELL ACCESS	DIM. "F"	59.84"
	CENTER OFFSET TO ACCESS HATCH	DIM. "G"	0
	DIAMETER OF FLANGED SPOOL PIPE	DIA. "H"	4"
	DIAMETER OF FORCE MAIN	DIA. "I"	4"
	BASE EXTENSION, 1'-8" MIN.	DIM. "J"	1'-6"
	THICKNESS OF BASE, 12" MIN.	DIM. "K"	12"
ELEVATIONS	TOP OF BASE	ELEV. "T"	8.03
	BOTH PUMPS OFF	ELEV. "U"	10.63
	LEAD PUMP ON	ELEV. "V"	12.53
	LAG PUMP ON	ELEV. "W"	13.53
	HIGH LEVEL ALARM	ELEV. "X"	14.53
	FINISHED GRADE	ELEV. "Y"	28.44
	GRAVITY PIPE INVERT	ELEV. "Z"	15.53

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	PUMP STATION DATA TABLE	DWN.BY: E.K.R. REV.	DATE: 6-14-11 DWG. NO. LS-1B

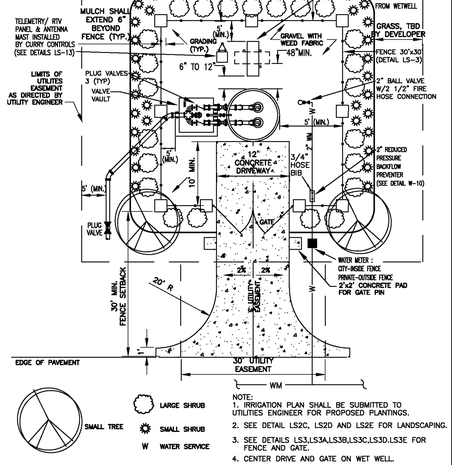




CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	PUMP STATION PLAN VIEW	DWN.BY: E.K.R. REV. E.K.R. 7-16-13	DATE: 6-14-11 DWG. NO. LS-1C

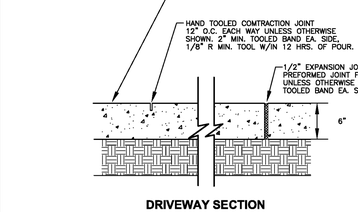


CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	PUMP STATION PROFILE VIEW	DWN.BY: E.K.R. REV. E.K.R. 7-16-13	DATE: 6-14-11 DWG. NO. LS-1D

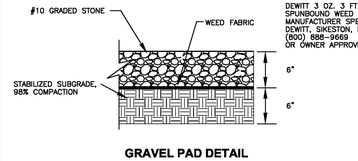


NOTE:
1. IRRIGATION PLAN SHALL BE SUBMITTED TO UTILITIES ENGINEER FOR PROPOSED PLANTINGS.
2. SEE DETAIL LS2C, LS2D AND LS2E FOR LANDSCAPING.
3. SEE DETAILS LS3,LS3A,LS3B,LS3C,LS3D,LS3E FOR FENCE AND GATE.
4. CENTER DRIVE AND GATE ON WET WELL.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	PUMP STATION (TYP) SITE PLAN DETAIL	DWN.BY: M.K.I. REV.	DATE: 1-1-08 DWG. NO. LS 2A

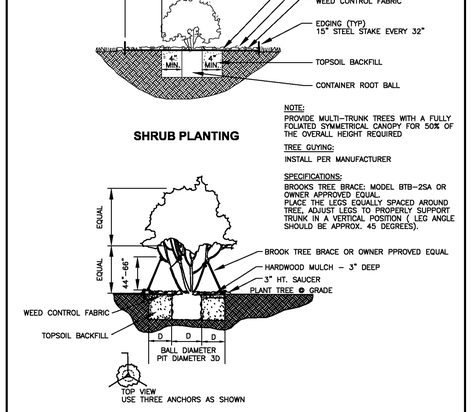


DRIVEWAY SECTION



GRAVEL PAD DETAIL

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	DRIVEWAY AND GRAVEL PAD DETAIL	DWN.BY: M.K.I. REV.	DATE: 1-1-08 DWG. NO. LS-2B



SHRUB PLANTING

NOTE:
PROVIDE MULTI-TRUNK TREES WITH A FULLY FOLIATED SYMMETRICAL CANOPY FOR 50% OF THE OVERALL HEIGHT REQUIRED

TREE GUYING:
INSTALL PER MANUFACTURER

SPECIFICATIONS:
BROOKS TREE BRACE: MODEL BTB-2SA OR OWNER APPROVED EQUAL.
PLACE THE LEGS EQUALLY SPACED AROUND TREE. ADJUST LEGS TO PROPERLY SUPPORT TRUNK IN A VERTICAL POSITION (LEG ANGLE SHOULD BE APPROX. 45 DEGREES).

MULTI-TRUNK TREE

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	SHRUB PLANTING AND MULTI-TRUNK TREE DETAIL	DWN.BY: M.K.I. REV.	DATE: 1-1-08 DWG. NO. LS-2C

BOTANICAL NAME COMMON NAME	SPECIFICATIONS
SMALL TREES	**CHOOSE ONE SPECIES**
LAGERSTROEMIA INDICA CRAPE MYRTLE	65 GALLON, 12'-14' OA x 6'-7' SPR
LIGUSTRUM LUCIDUM JAPANESE LIGUSTRUM TREE	65 GALLON, 8' OA x 8' SPR
VIBURNUM OBOVATUM WALTER'S VIBURNUM	45 GALLON, 10' OA x 5' SPR
LARGE SHRUB	**CHOOSE ONE SPECIES**
HAMELIA PATENS FIREBUSH	3 GALLON, 18" OA x 9" SPR, 48" O.C.
MYRICA CERIFERA WAX MYRTLE	3 GALLON, 18" OA x 9" SPR, 48" O.C.
FORESTIERA SEGREGATA FLORIDA PRIVET	3 GALLON, 15" OA x 10" SPR, 48" O.C.
MYRCIANTHES FRAGRANS SIMPSON'S STOPPER	3 GALLON, 18" OA x 9" SPR, 48" O.C.
VIBURNUM ODORATISSIMUM 'AWABUKI' AWABUKI VIBURNUM	3 GALLON, 18" OA x 9" SPR, 48" O.C.
SMALL SHRUBS/GRASSES	**CHOOSE ONE SPECIES**
CORTADERIA SELLOANA PAMPAS GRASS	3 GALLON, 24" OA x 12" SPR, 36" O.C.
SPARTINA BAKERI SAN CORSORNOS	3 GALLON, 18" OA x 10" SPR, 36" O.C.
NERIUM OLEANDER 'PETITE SALMON' DWARF PINK OLEANDER	3 GALLON, 15" OA x 10" SPR, 36" O.C.
TRIPSACUM DACTYLOIDES FAKAHATCHEE GRASS	3 GALLON, 24" OA x 12" SPR, 36" O.C.

NOTES:
1. SELECT ONE PLANT SPECIES FROM ALL 3 CATEGORIES FOR EACH LIFT STATION SITE.
2. ALL PLANT MATERIAL TO BE FLORIDA NO. 1 GRADE.
3. SEE LANDSCAPE SPECIFICATIONS FOR FURTHER REQUIREMENTS.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	PLANT SCHEDULE	DWN.BY: M.K.I. REV.	DATE: 1-1-08 DWG. NO. LS 2D

	DATE	DESCRIPTION
8		
7		
6		
5		
4		
3		
2		
1		COMMENTS
△	XX-XX-XXXX	**REVISIONS**

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD, SUITE H MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911 CA#7726
VERO: 772-569-0035 FT PIERCE: 772-468-9955 PALM CITY: 772-408-9999

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

LIFT STATION DETAILS 01

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

SHEET

C-814

19-1025

PERMITTING SET

W:\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\dwg\19-1025 COVER DETAILS.dwg 8/19/2021 4:20 PM ANTHONY FIELDFORD

LANDSCAPE SPECIFICATIONS

PART 1– GENERAL

1.01 DESCRIPTION OF WORK

A. GENERAL: WORK OF THIS SECTION CONSISTS OF FURNISHING ALL LABOR, MATERIAL, EQUIPMENT, TRANSPORTATION, ETC., TO COMPLETE ALL LANDSCAPING WORK AS SHOWN ON THE DRAWINGS, AS INCLUDED IN THE LANDSCAPE SCHEDULE AND AS HEREIN SPECIFIED. WORK SHALL INCLUDE ALL CONSTRUCTION, MAINTENANCE AND WATERING OF ALL PLANTING AREAS, INCLUDING SODDED AREA, OF THIS PROJECT UNTIL FINAL ACCEPTANCE BY THE OWNER'S REPRESENTATIVE AND CERTIFICATE OF OCCUPANCY. THE OWNER'S REPRESENTATIVE SHALL BE THE PERSON(S) DESIGNATED BY THE OWNER TO REPRESENT THEM DURING CONSTRUCTION.

B. RELATED DOCUMENTS: DRAWINGS AND THE GENERAL PROVISIONS OF CONTRACT, INCLUDING GENERAL AND SUPPLEMENTARY CONDITIONS, APPLY TO THE WORK OF THIS SECTION.

1.02 ADJUSTMENT

A. THE OWNERS REPRESENTATIVE RESERVES THE RIGHT TO ADJUST THE QUANTITY AND LOCATIONS OF ANY OF DESIGNATED PLANTINGS OR ELEMENTS TO BE USED IN ORDER TO PROVIDE FOR ANY UNANTICIPATED EFFECTS WHICH WERE NOT APPARENT DURING THE DESIGN PHASE, OR FOR OTHER CAUSES.

1.03 PROJECT CONDITIONS

A. PROTECTION OF EXISTING STRUCTURES: PROTECT EXISTING BUILDINGS, WALKS, WALLS, PAVING, PIPING (AND OTHER ITEMS OF CONSTRUCTION) AND PLANTINGS (TREES, SHRUBS, GROUNDCOVERS, ETC.) FROM DAMAGE. ANYTHING DAMAGED SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER'S REPRESENTATIVE.

B. PROTECTION OF EXISTING PLANT MATERIALS: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UNAUTHORIZED CUTTING OR DAMAGE TO EXISTING TREES, SHRUBS, AND GROUND COVERS CAUSED BY OPERATION OF EQUIPMENT, STOCKPILING OF MATERIALS, LABOR, ECT. THIS SHALL INCLUDE COMPACTION BY DRIVING OR PARKING INSIDE THE DRIP-LINES OF TREES OR THE SPILLING OF OIL, GASOLINE, OR OTHER DELETERIOUS MATERIALS WITHIN THE DRIP-LINE OF TREES.

C. NO MATERIALS SHALL BE BURNED. TREES KILLED OR DAMAGED (SO THAT THEY ARE MISSHAPEN AND UNSIGHTLY) SHALL BE REPLACED, AT A COST TO THE CONTRACTOR OF ONE HUNDRED DOLLARS ($100) PER CALIPER INCH ON AN ESCALATING SCALE WITH AN ADDITIONAL TWENTY (20) PERCENT PER INCH FOR TREES OVER FOUR (4) INCHES IN CALIPER AT TWELVE (12) INCHES ABOVE GROUND LEVEL.

1.04 SUBMITTALS

A. SAMPLES: SAMPLES OF ANY LANDSCAPE MATERIAL WILL BE REQUIRED FOR APPROVAL ON THE SITE OR AS OTHER WISE DETERMINED BY THE OWNERS REPRESENTATIVE. APPROVAL SAMPLES SHALL BE PLANTED IN PERMANENT POSITIONS, BUT LABELED AS SAMPLES.

PART II – PRODUCTS

2.01 MATERIALS

A. TOPSOIL BACKFILL: THE PLANTING SOIL SHALL BE 25% TOPSOIL, 25% COMPOST PEAT, 50% CLEAN SOIL FILL PER FDOT REQUIREMENTS FOR EMBANKMENT FILL. PLANTING SOIL AND TOPSOIL SHALL BE FERTILE, FRIABLE, WITHOUT MIXTURE OF SUBSOIL MATERIALS, AND OBTAINED FROM A WELL-DRAINED, ARABLE SITE. IT SHALL BE FREE FROM HEAVY CLAY, STONES, LUMPS, PLANTS, ROOTS OR OTHER FOREIGN MATERIALS, OR NOXIOUS GRASS (SUCH AS BERMUDA OR NUT GRASS) AND NOXIOUS WEEDS. IT SHALL NOT CONTAIN TOXIC SUBSTANCES WHICH MAY BE HARMFUL TO PLANT GROWTH. THE PH RANGE SHALL BE 5.0 TO 7.0 INCLUSIVE. THE CONTRACTOR MAY BE REQUIRED TO SUBMIT RESULTS OF SOIL TESTS FOR PLANTING SOIL PROPOSED FOR USE UNDER THIS CONTRACT FOR APPROVAL BY THE OWNER. IN NATIVE PLANTING AREAS SOIL PH SHALL A TOLERANCE BETWEEN 4.0–6.2. SOIL ADDITIVES SUCH AS ALUMINUM SULFATE SHALL BE ADDED TO

THE SOIL TO BRING THE PH TO DESIRED LEVELS. ALL COSTS PROJECTED TO BE INCURRED BY THE CONTRACTOR FOR SUCH PRODUCTS AND THEIR UTILIZATION SHOULD BE CONSIDERED AS INCLUDED IN THE TOP SOIL BACKFILL UNIT COST. ACCEPTABLE COMMERCIALLY PREPARED PLANTING SOIL MIXES (POTTING SOIL MIXES FROM HILARY PEAT COMPANY, FORESTRY RESOURCES OR EQUAL) APPROVED BY THE OWNER'S REPRESENTATIVE, WILL BE PERMITTED, IN LIEU PULVERIZED PEAT OR STERILIZED MANURE, IN THE PREPARED NATURAL TOPSOIL MIXTURE FOR USE AS BACKFILL MATERIAL.

B. WATER: ALL WATER NECESSARY FOR PLANTING AND MAINTENANCE SHALL BE OF SATISFACTORY QUALITY TO SUSTAIN ADEQUATE GROWTH OF PLANTS AND SHALL NOT CONTAIN HARMFUL NATURAL OR MANMADE ELEMENTS DETRIMENTAL TO PLANTS. WATER MEETING THE ABOVE STANDARD SHALL BE OBTAINED ON THE SITE FROM THE OWNER, IF AVAILABLE. MAKE ARRANGEMENTS FOR WATER USE BY TANKS, HOSES, SPRINKLERS, ETC. IF SUCH WATER IS NOT AVAILABLE AT THE SITE, PROVIDE SUCH SATISFACTORY WATER FROM SOURCES OFF THE SITE AT NO ADDITIONAL COST TO THE OWNER FOR INITIAL PLANT "WATERING-IN".

CONTAINER TREES SHALL BE PROPERLY WATERED TO THOROUGHLY SOAK THE ROOT BALL, ONCE A DAY FOR THE FIRST 30 DAYS AND THEN EVERY OTHER DAY FOR 3 MONTHS AND ONCE A WEEK FOR REMAINDER OF ESTABLISHMENT PERIOD.

C. FERTILIZER: FERTILIZER SHALL BE COMPLETE, UNIFORM IN COMPOSITION, DRY AND FREE FLOWING. FERTILIZER SHALL BE DELIVERED TO THE SITE IN THE ORIGINAL UNOPENED CONTAINERS, EACH BEARING THE MANUFACTURER'S STATEMENT OF ANALYSIS.

D. PEAT MOSS: PEAT SHALL BE HORTICULTURAL PEAT COMPOSED OF NOT LESS THAN 60% DECOMPOSED ORGANIC MATTER BY WEIGHT, ON AN OVEN DRIED BASIS. PEAT SHALL BE DELIVERED TO THE SITE IN A WORKABLE CONDITION FREE FROM LUMPS.

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LANDSCAPE SPECIFICATIONS

E. MULCH: MULCH SHALL BE AS SPECIFIED ON THE PLANS AND INSTALLED TO A DEPTH OF 3 INCHES. MEASUREMENT (OF DEPTH) TO BE MADE AFTER COMPACTION.

PROVIDE A SAMPLE OF MULCH FOR OWNER REPRESENTATIVE APPROVAL PRIOR TO ORDERING AND INSTALLATION. PROVIDE STERILE MULCH FREE FROM VIABLE SEED, NOXIOUS WEEDS, MOLD, MATERIALS DELETERIOUS TO PLANT GROWTH, STONES AND OTHER NON ORGANIC FOREIGN MATERIALS. MULCH SHALL HAVE A PH RANGE OF 5.5 TO 7.0. PROVIDE TOP QUALITY SHREDDED HARDWOOD MULCH FROM A RENEWABLE, EXOTIC SPECIES OR RECYCLED SOURCE. MULCH SHALL HAVE LONG SHREDDED FIBERS THAT HOLD TOGETHER SO AS NOT TO FLOAT. WOOD CHIP PIECES THAT DO NOT HOLD TOGETHER ARE NOT ACCEPTABLE. MULCH SHALL BE NATURAL COLOR WITHOUT ADDED DYES. MULCH SHALL BE SUFFICIENTLY SHREDDED TO PROVIDE A MAXIMUM OF 3 INCHES SIZE COMPONENTS.

F. EDGING. EDGING SHALL BE STEEL EDGING, 5.5" HIGH, WITH 15" STEEL STAKES EVERY 32" TO HOLD IN PLACE.

2.02 PLANT MATERIALS (TREES, SHRUBS, GROUND COVERS, AND VINES)

A. PLANT GRADING: PLANT SPECIES AND SIZE SHALL CONFORM TO THOSE INDICATED ON THE DRAWINGS. NOMENCLATURE SHALL CONFORM TO STANDARDIZED PLANT NAMES, BY THE AMERICAN JOINT COMMITTEE ON HORTICULTURAL NOMENCLATURE. ALL NURSERY STOCK SHALL BE IN ACCORDANCE WITH GRADES AND STANDARDS FOR NURSERY PLANTS, PARTS I AND II, LATEST EDITION PUBLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES. ALL PLANTS NOT OTHERWISE SPECIFIED AS BEING SPECIMEN, SHALL BE FLORIDA GRADE NUMBER 1 OR BETTER, AS DETERMINED BY THE FLORIDA DIVISION OF PLANT INDUSTRY. SPECIMEN MEANS AN EXCEPTIONALLY DENSE, SYMMETRICAL PLANT, SO TRAINED OR FAVORED IN ITS DEVELOPMENT THAT ITS APPEARANCE IS UNQUESTIONABLE AND OUTSTANDINGLY SUPERIOR IN FORM, NUMBER OF BRANCHES, COMPACTNESS AND SYMMETRY.

B. ALL PLANTS SHALL BE NURSERY STOCK EXCEPT WHERE SPECIFIED OTHERWISE, AND SHALL BE SOUND, HEALTHY, VIGOROUS, WELL BRANCHED AND FREE OF DISEASE AND INSECT EGGS AND LARVAE AND SHALL HAVE ADEQUATE ROOT SYSTEMS. TREES FOR PLANTING ROWS SHALL BE UNIFORM IN SIZE OR SHAPE. ALL MATERIALS SHALL BE SUBJECT TO APPROVAL BY THE OWNER. PLANTS SHALL BE OF SIZE AND VARIETY AS SPECIFIED ON THE PLANT LIST. WHERE ANY REQUIREMENTS ARE OMITTED FROM THE PLANT LIST, THE PLANTS FURNISHED SHALL BE NORMAL FOR THE VARIETY. PLANTS SHALL BE PRUNED PRIOR TO DELIVERY ONLY UPON THE PRIOR APPROVAL OF THE OWNERS' REPRESENTATIVE.

C. SUBSTITUTIONS OF PLANT MATERIAL SHALL BE PERMITTED ONLY WITH PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE. MOVEMENT OF THE NURSERY STOCK SHALL COMPLY WITH ALL FEDERAL AND STATE REGULATIONS AND INSPECTION CERTIFICATES WHEN REQUIRED SHALL ACCOMPANY EACH SHIPMENT AND SHALL BE FILED WITH THE OWNER.

2.03 PLANT MEASUREMENTS

A. SHADE TREES: HEIGHT SHALL BE MEASURED FROM GROUND TO THE AVERAGE HEIGHT OF CANOPY. SPREAD SHALL BE MEASURED TO THE END OF BRANCHING EQUALLY ACROSS THE CROWN WHICH IS SYMMETRICAL ABOVE THE MAIN TRUNK. MEASUREMENTS ARE NOT TO INCLUDE ANY TERMINAL GROWTH. SINGLE TRUNK TREES SHALL BE FREE OF LOW CROTCHES THAT COULD BE A POINT OF WEAK LIMB STRUCTURE OR DISEASE INFESTATION. CALIPER SHALL BE MEASURED PER CITY OF PALM BAY LANDSCAPE/TREE REPLACEMENT ORDINANCES AND REGULATIONS.

B. SHRUBS: HEIGHT SHALL BE MEASURED FROM THE GROUND TO THE AVERAGE POINT WHERE MATURE PLANT GROWTH STOPS. SPREAD SHALL BE MEASURED TO THE END OF BRANCHING EQUALLY ACROSS THE SHRUB MASS. MEASUREMENTS ARE NOT TO INCLUDE ANY TERMINAL GROWTH.

2.04 NURSERY INSPECTION

A. PLANTS MAY BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, OR UPON DELIVERY TO THE SITE, AS DETERMINED BY THE OWNER'S REPRESENTATIVE FOR QUALITY, SIZE AND VARIETY. SUCH APPROVAL SHALL NOT IMPAIR THE RIGHT OF INSPECTION AND/OR REJECTION AT THE SITE DURING PROGRESS OF THE WORK, OR AFTER COMPLETION, FOR SIZE AND CONDITION OF THE BALLS OR ROOTS, LATENT DEFECTS OR INJURIES.

1. REJECTED PLANTS SHALL BE REMOVED IMMEDIATELY FROM THE SITE. SUBMIT NOTICE IN WRITING AT LEAST ONE (1) WEEK PRIOR TO THE ANTICIPATED DATE OF INSPECTION.

2.05 DIGGING AND HANDLING

A. PROTECT ROOTS OR BALLS OF PLANTS AT ALL TIMES FROM THE SUN AND DRYING WINDS, EXCESS WATER AND FREEZING, AS NECESSARY UNTIL PLANTING.

B. BALLED AND ORGANIC BURLAPPED (B&B) PLANTS SHALL BE DUG WITH FIRM, NATURAL BALLS OF SOIL OF SUFFICIENT SIZE TO ENCOMPASS THE FIBEROUS AND FEEDING ROOTS OF THE PLANTS.
NO PLANTS MOVED WITH A ROOT BALL SHALL BE PLANTED IF THE BALL IS CRACKED OR BROKEN.

THE PLANTS SHALL BE SET WITH THE BURLAP COVER INTACT AND WITH THE BURLAP SHOWING UNTIL INSPECTION. AT FINAL INSPECTION THE BURLAP MAY BE CUT AWAY TO GROUND LEVEL AND THEN COMPLETELY COVERED WITH SOIL.

AS A SPECIFIC REQUIREMENT, B&B, 1 – 1/2 INCHES OR MORE IN CALIPER, SHALL BE ROOT-PRUNED AT LEAST 30-DAYS BEFORE BEING DUG AND SUCH FACT SHALL BE CERTIFIED ON ACCOMPANYING INVOICES. WHERE, IN THE OPINION OF THE OWNER'S REPRESENTATIVE FOLLOWING HIS INSPECTING OF THE GROWER'S STOCK, ADEQUATE ROOT PRUNING IS BEING OBTAINED BY THE GROWER'S GENERAL CULTIVATING PRACTICES, HE MAY CONSIDER SUCH FACT AS MEETING THIS REQUIREMENT.

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LANDSCAPE SPECIFICATIONS

2.06 COLLECTED STOCK

A. PLANTS COLLECTED FROM YARDS OR WILD AND NATIVE STANDS SHALL BE SUBJECT TO THE SAME CARE, HANDLING AND GUARANTEE AS NURSERY GROWN STOCK. ROOT PRUNING OF MATERIAL SHALL BE COMPLETED FOR AN ADEQUATE PERIOD COLLECTED PLANTS SHALL BE DUG WITH A ROOT SPREAD AT LEAST 1/3 GREATER THAN NURSERY-GROWN PLANTS OF THE SAME SPECIES AND SIZE PRIOR TO RELOCATION (6 MONTHS MAXIMUM) AND WITH A ROOT BALL LARGE ENOUGH TO SUSTAIN PLANT GROWTH. NO COLLECTED PLANTS SHALL BE PLANTED BEFORE THE OWNER'S REPRESENTATIVE INSPECTION AND ACCEPTANCE.

2.07 CONTAINER GROWN STOCK

A. ALL CONTAINER GROWN MATERIALS SHALL BE HEALTHY, VIGOROUS, WELL-ROOTED PLANTS AND ESTABLISHED IN THE CONTAINER SO THAT THE ROOT MASS WILL RETAIN ITS SHAPE AND HOLD TOGETHER WHEN REMOVED FROM THE CONTAINER. THE PLANTS SHALL HAVE TOPS WHICH ARE OF GOOD QUALITY AND ARE IN A HEALTHY GROWING CONDITION.

B. ROOT BOUND PLANTS OR PLANTS WITH RING ROOTS SHALL NOT BE ACCEPTED.

C. PLANTS SHALL NOT BE HANDLED BY THE FOLIAGE.

PART III –EXECUTION

3.01 PLANTING PROCEDURES

A. CLEANING UP BEFORE COMMENCING WORK: CLEAN UP WORK AND PLANTING AREAS OF RUBBISH OR OBJECTIONABLE MATTER. MORTAR, CONCRETE AND FOREIGN MATERIAL SHALL BE REMOVED FROM ALL PLANT BEDS. THESE MATERIALS SHALL NOT BE MIXED WITH THE SOIL. SHOULD THE CONTRACTOR FIND CONDITIONS BENEATH THE SOIL WHICH WILL IN ANY WAY ADVERSELY AFFECT THE PLANT GROWTH, IMMEDIATELY NOTIFY THE OWNER'S REPRESENTATIVE. FAILURE TO DO SO BEFORE PLANTING WILL MAKE THE CORRECTIVE MEASURES THE RESPONSIBILITY OF THE CONTRACTOR.

B. OBSTRUCTIONS BELOW GROUND: PRIOR TO THE PREPARATION OF THE PLANTING AREAS, THE CONTRACTOR SHALL ASCERTAIN THE LOCATION OF ALL UTILITIES, INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE AND ELECTRICAL SERVICES. THESE UTILITIES MAY NOT BE INDICATED ON THE LANDSCAPE PLANS. THE CONTRACTOR SHALL NOT DISRUPT OR DAMAGE THE ABOVE MENTIONED UTILITIES, IF DAMAGE OCCURS, THE CONTRACTOR SHALL BE RESPONSIBLE IN REPLACEMENT OR REPAIRING THE DAMAGED UTILITY PROMPTLY. ANY CONFLICTS BETWEEN THE PLANTING MATERIAL AND UTILITIES, DUE TO FIELD CONDITIONS, SHALL BE BROUGHT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE IMMEDIATELY. IF UNDERGROUND CONSTRUCTION, UTILITIES OR OBSTRUCTIONS ARE ENCOUNTERED DURING THE EXCAVATION OF PLANTING AREAS OR PITS, ALTERNATE LOCATIONS FOR THE PLANT MATERIAL SHALL BE SELECTED BY THE OWNER'S REPRESENTATIVE. SUCH CHANGES IN LOCATION SHALL BE MADE BY THE CONTRACTOR WITHOUT ADDITIONAL COMPENSATION.

C. PLANT MATERIAL LAYOUT: STAKE TREE OR PLANT LOCATIONS FROM THE LANDSCAPE PLANS FOR OWNER REPRESENTATIVE APPROVAL PRIOR TO DIGGING PITS, MAKING ANY NECESSARY ADJUSTMENTS. LARGE PLANTING AREAS SHALL BE SCALED FROM THE PLANS AND PLANTS SPACED ACCORDING TO SPECIFIED SPACING ON THE PLANT LIST.

D. EXCAVATION FOR PLANTING: SIDES OF PITS AND TRENCHES SHALL BE VERTICAL. ALL DEBRIS AND DELETERIOUS MATERIALS ENCOUNTERED IN THE EXCAVATION SHALL BE REMOVED FROM THE PLANTING AREA. THE PLANTING PITS SHALL BE EXCAVATED TO THE SIZE AND FORM AS SHOWN ON THE PLANTING DETAILS.

IN PLANTING AREAS WHERE SOILS HAVE BEEN COMPACTED TO A DENSITY WHICH IS DETRIMENTAL TO PLANT GROWTH, THE CONTRACTOR SHALL LOOSEN SOILS TO ALLOW ROOT PENETRATION BEYOND THE PLANTING PIT.

FILL EXCAVATIONS FOR TREES WITH WATER AND ALLOW TO PERCOLATE OUT JUST PRIOR TO PLANTING. IF POSITIVE DRAINAGE IS NOT ACHIEVED NOTIFY THE OWNER'S REPRESENTATIVE BEFORE CONTINUING WITH PLANTING OPERATIONS.

E. FERTILIZER: FERTILIZER SHALL BE COMPOSED OF THE APPROPRIATE PERCENT OF NITROGEN, PHOSPHORUS AND POTASSIUM AND CONTAIN ALL PRIMARY AND SECONDARY TRACE ELEMENTS. IT SHALL BE PER THE FOLLOWING DESCRIPTION AND APPLIED AT THE SPECIFIED RATES. NITROGEN TO BE 50% SLOW RELEASE ORGANIC FORM:

1. SODDING: APPLY 16-4-8 AT 12 LBS. PER 1000 S.F.

2. GROUNDCOVERS: APPLY 16-4-8 AT 12 LB. PER 1000 S.F.

3. TREES AND SHRUBS: AGRIFORM TABLETS CONTAINING TWENTY (20) PERCENT NITROGEN, TEN (10) PERCENT PHOSPHORUS AND FIVE (5) PERCENT POTASSIUM IN TWENTY-ONE (21) GRAM SIZES, WILL BE APPLIED ALONG WITH THE FERTILIZER AT THE FOLLOWING RATES:

4. 2 TABLETS PER 3 GALLON POT, 4 TABLETS PER 15 GALLON POT, 3 TABLETS PER 1" OF TREE TRUNK CALIPER. TABLETS ARE TO BE DISPERSED IN PLANTING HOLES SO AS NOT TO CONCENTRATE THE FERTILIZER.

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LANDSCAPE SPECIFICATIONS

G. MATERIAL PLACEMENT: TREES, SHRUBS AND GROUND COVER SHALL BE SET STRAIGHT AND AT SUCH A LEVEL, THAT AFTER SETTLEMENT, THE PLANT BALL WILL STAND FLUSH WITH SURROUNDING GRADE. EACH PLANT SHALL BE SET IN THE CENTER OF THE PLANTING PIT (SEE PLANTING DETAILS). PLANTING SOIL SHALL BE THOROUGHLY "WATERED-IN" TO REMOVE ALL AIR POCKETS AROUND THE ROOT BALL. ALL BURLAP, ROPE, WIRES, ETC SHALL BE LOOSENED FROM THE TOP AND SIDE OF THE BALL, BUT NO BURLAP SHALL BE PULLED FROM UNDERNEATH.

H. ROOTED CUTTINGS: ROOTED CUTTINGS (OR PLANT CELLS) SHALL BE PLANTED IN BEDS PREPARED BY THOROUGHLY WORKING 4" OF PLANTING SOIL INTO THE TOP 4" OF THE EXISTING SOIL. PLANTS SHALL BE EVENLY SPACED IN ACCORDANCE WITH THE DRAWINGS AND AS INDICATED ON THE PLANT LIST.

I. WATER SAUCER: A BASIN SHALL BE BUILT AROUND ALL PLANTS OR TREES WHICH STAND ALONE AND ARE NOT IN LARGER MULCHED BEDS. A WATER-HOLDING SOIL DAM SHALL BE BUILT ON THE OUTSIDE EDGE OF PLANTING PIT TO FORM A BASIN OF SUFFICIENT VOLUME TO "POND" WATER.

J. PRUNING: EACH TREE SHALL BE PRUNED TO PRESERVE THE NATURAL CHARACTER OF THE TREE IN A MANNER COMPLYING WITH BEST HORTICULTURAL PRACTICES. ALL SOFT WOOD (SUCKER GROWTH) AND ALL BROKEN OR BADLY DAMAGED BRANCHES SHALL BE REMOVED WITH A CLEAN CUT.

K. TREE GUYING AND BRACING: PROCEDURES SHALL BE IN ACCORDANCE WITH SOUND NURSERY PRACTICES AND BY THE APPROVAL OF THE OWNER'S REPRESENTATIVE TO INSURE STABILITY AND TO MAINTAIN PLANT IN AN UPRIGHT POSITION. SEE PLANTING DETAILS FOR SPECIFIC PROCEDURE FOR EACH PLANT'S REQUIREMENT.

L. MULCHING: PROVIDE A THREE (3) INCH MINIMUM LAYER OF SPECIFIED MULCH OVER THE ENTIRE AREA OF EACH SHRUB BED, GROUND COVER, VINE BED, AND TREE PIT, OR AS OTHERWISE SPECIFIED.
MULCH SHOULD NOT BE APPLIED DIRECTLY NEXT TO THE TRUNKS OF THE TREE AND/OR SHRUBS.

M. CLEAN-UP DURING AND AFTER WORK: THE CONTRACTOR SHALL CLEAN-UP CONTINUOUSLY DURING THE COURSE OF THE PROJECT, WITH EXCESS DEBRIS REMOVED PROMPTLY FROM THE SITE. MATERIALS AND EQUIPMENT SHALL BE STORED WHERE DIRECTED BY THE OWNER. PAVEMENTS AND WORK AREAS SHALL BE KEPT CLEAN.

3.02 HERBICIDE WEED CONTROL

A. ALL PLANTING AND LAWN AREAS SHALL BE FREE OF NUT GRASS, TORPEDO GRASS, AND OTHER NOXIOUS WEEDS. "ROUND-UP" OR APPROVED EQUAL SHALL BE APPLIED TO ALL PLANTING AREAS AS NEEDED AND DETERMINED ON-SITE BY THE OWNER'S REPRESENTATIVE AND THE CONTRACTOR FOR WEED CONTROL. A PRE-EMERGENT HERBICIDE RONSTAR OR APPROVED EQUAL SHALL BE APPLIED TO THE PLANTING AREAS AS PER MANUFACTURERS' INSTRUCTIONS AND APPLICATION RATES. CONTRACTOR WILL BE RESPONSIBLE FOR REMOVING WEEDS IN PLANTING AREAS DURING THE ESTABLISHMENT PERIOD, UNTIL CERTIFICATE OF OCCUPANCY AND OWNER'S ACCEPTANCE.

3.03 PLANT MATERIAL MAINTENANCE

A. ALL PLANTS AND PLANTING SHALL BE MAINTAINED BY WATERING, WEEDING, CULTIVATING, SPRAYING, AND ALL OTHER OPERATIONS NECESSARY TO ENSURE A HEALTHY CONDITION BY THE CONTRACTOR UNTIL SUBSTANTIAL COMPLETION AND ACCEPTANCE BY THE OWNER'S REPRESENTATIVE. PLANTS SHALL BE FLORIDA GRADE NO. 1 OR BETTER AT THE TIME OF THE SUBSTANTIAL COMPLETION INSPECTION OR SHALL BE REMOVED AND REPLACED WITH THE SPECIFIED GRADE OF MATERIAL.

B. IF A PLANTED AREA MUST BE REPLANTED DUE TO THE CONTRACTOR'S NEGLIGENCE, CARELESSNESS OR FAILURE TO PROVIDE ROUTINE MAINTENANCE OF SUCH AREA, REPLACEMENT SHALL BE AT THE CONTRACTOR'S EXPENSE.

3.04 GUARANTEE/WARRANTY

A. PLANT MATERIAL: THE LIFE AND SATISFACTORY CONDITION OF ALL PLANT MATERIAL PLANTED SHALL BE GUARANTEED BY THE CONTRACTOR, FOR A MINIMUM OF TWELVE (12) MONTHS BEGINNING AT SUBSTANTIAL COMPLETION (C/O) AND ACCEPTANCE BY THE OWNER'S REPRESENTATIVE. ANY PLANT OR GRASSING NOT FOUND IN HEALTHY GROWING CONDITION DURING OR AT THE END OF THE GUARANTEE PERIOD SHALL BE REMOVED FROM THE SITE AND REPLACED WITHIN 10 DAYS.

B. MATERIALS AND OPERATIONS: ALL PLANT REPLACEMENTS SHALL BE OF THE SAME SPECIES, QUALITY GRADE, AND SIZE AS SPECIFIED IN THE PLANT LIST. THEY SHALL BE FURNISHED, PLANTED, WATERED-IN AND MULCHED AS SPECIFIED UNDER PART II – "PRODUCTS" AND PART III – "EXECUTION" AT NO ADDITIONAL COST TO THE OWNER. REPLACEMENT MATERIAL SHALL BE COVERED BY THE SAME GUARANTEE CONDITIONS AS THE ORIGINAL MATERIALS.

C. EXCEPTIONS TO GUARANTEE: DAMAGE TO PLANT MATERIAL FROM OBVIOUS VANDALISM, THEFT OR ACTS OF PROVIDENCE (I.E., PROLONGED FLOODING, HURRICANE FORCE WINDS, ETC.) SHALL NOT BE COVERED UNDER THIS GUARANTEE.

3.05 FINAL INSPECTION AND ACCEPTANCE OF WORK

A FINAL INSPECTION AT THE END OF THE GUARANTEE PERIOD SHALL BE PERFORMED ON PLANTING, CONSTRUCTION AND ALL OTHER INCIDENTAL WORK PERTAINING TO THE LANDSCAPE WORK. ANY REPLACEMENT AT THIS TIME SHALL BE SUBJECT TO THE SAME GUARANTEE PERIOD AS THE ORIGINAL INSTALLATION(OR AS SPECIFIED BY THE OWNER IN WRITING) BEGINNING WITH THE TIME OF REPLACEMENT AND ENDING WITH THE SAME INSPECTION AND ACCEPTANCE HEREIN DESCRIBED.

CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER MAINTENANCE, (WEEDING, WATERING, FERTILIZATION, ETC.), OF THE PLANT MATERIAL UNTIL FINAL ACCEPTANCE OF THE OWNER AND CERTIFICATE OF OCCUPANCY (C/O). A ONE YEAR MAINTENANCE REQUIREMENT MAY BE A PART OF THE PROJECT.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	LANDSCAPE SPECIFICATIONS PAGE 4	DWN.BY: M.K.L. / REV.	DATE: 1-1-08 / DWG. NO. LS 2E

LANDSCAPE SPECIFICATIONS

SODDING NOTES

SOD SHALL BE FLORIDA PREMIUM GRADE AS DEFINED BY THE TURFGRASS PRODUCER'S ASSOCIATION OF FLORIDA.. PROVIDE SOD AS SPECIFIED. THE ROOTS SHALL BE VISIBLY HEALTHY AND WELL MATTED WITH SUFFICIENT SOIL ADHERING TO THE ROOTS FOR PROTECTION DURING HANDLING. SOD SHALL BE FREE OF WEEDS AND OTHER GRASSES. SOD SHALL BE PLANTED WITH IN 48 HOURS OF HARVESTING OR KEPT DAMP UNTIL PLANTED. SOD NOT MEETING THESE REQUIREMENTS WILL BE REJECTED AND REMOVED FROM SITE AND REPLACED PROMPTLY.

THE AREA OVER WHICH THE SOD IS TO BE PLACED SHALL BE SCARIFIED OR LOOSENED TO A SUITABLE DEPTH AND THEN RAKED SMOOTH AND FREE FROM ROCKS OR STONES.

THE FERTILIZER SHALL BE SPREAD UNIFORMLY OVER THE AREAS TO BE SODDED AT THE SPECIFIED RATE. IMMEDIATELY AFTER THE FERTILIZER IS SPREAD OVER THE AREA TO BE SODDED, IT SHALL BE MIXED INTO THE SOIL, TO A DEPTH OF APPROXIMATELY TWO INCHES.

THE SOD SHALL BE PLACED ON THE PREPARED SURFACE, WITH EDGES IN CLOSE CONTACT AND SHALL BE FIRMLY AND SMOOTHLY EMBEDDED BY LIGHT TAMPING WITH APPROPRIATE TOOLS. ALL JOINTS ARE TO BE TIGHT AND LEVEL. IF REPLACING SECTIONS OR STRIPS SOD IS TO BE LEVEL WITH EXISTING GRASS. ALL AREAS TO BE SODDED OR RESODDED MUST BE WEED FREE. ALL SOD IS TO BE ROLLED AFTER INSTALLATION. AFTER BEING PLACED, THE SOD SHALL BE KEPT IN A MOIST CONDITION TO THE FULL DEPTH OF THE ROOTING ZONE FOR AT LEAST TWO WEEKS. THEREAFTER, THE CONTRACTOR SHALL APPLY WATER AS NEEDED UNTIL THE SOD ROOTS STARTS TO GROW, UNTIL FINAL ACCEPTANCE AND CERTIFICATE OF OCCUPANCY (C/O).

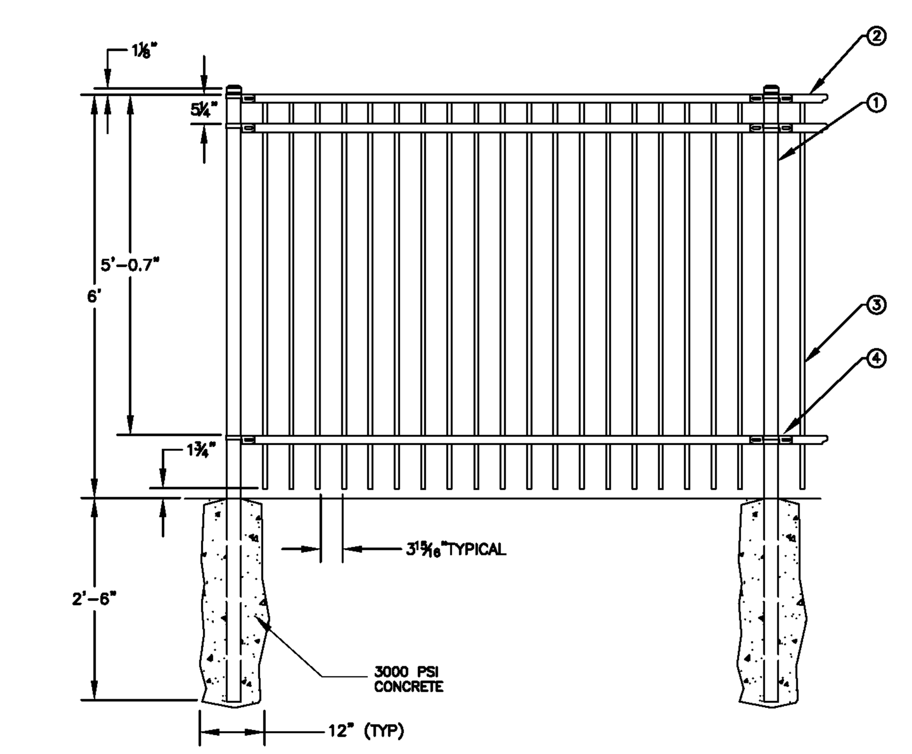
CONTRACTOR SHALL BE RESPONSIBLE FOR PROPER MAINTENANCE, (WEEDING, MOWING, WATERING, FERTILIZATION, ETC.), OF THE SOD UNTIL FINAL ACCEPTANCE BY THE OWNER AND CERTIFICATE OF OCCUPANCY (C/O).

BED PREPARATION NOTES

WHERE MULTIPLE PLANTINGS ARE TO BE MADE IN EXTENDED BEDDING AREAS, THE PLANTING BEDS SHALL BE PREPARED AS FOLLOWS:
DORMANT TURF – MECHANICALLY STRIP ALL VEGETATION FROM BED AND REMOVE FROM SITE.
NON-DORMANT TURF – EXISTING VEGETATION LOCATED WITHIN THE PLANT BED AREA SHALL RECEIVE A TREATMENT OF GLYPHOSATE-BASED SYSTEMIC HERBICIDE WITH AN ADDITIONAL TREATMENT TWO WEEKS LATER. OBSERVE MANUFACTURER RECOMMENDED WAITING PERIODS BEFORE PLANTING.
AN APPROVED PRE-EMERGENT HERBICIDE SHALL BE APPLIED TO ALL SHRUB BEDS AFTER PLANTING AND BEFORE MULCHING. THE CONTRACTOR SHALL NOTIFY THE OWNERS REPRESENTATIVE ONE WEEK PRIOR TO APPLYING ANY FOLIAR OR PRE-EMERGENT HERBICIDE. REFER TO MANUFACTURER'S SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.

A. WEED CONTROL FABRIC : PROVIDE NON-WOVEN POLYPROPYLENE OR POLYESTER WEED CONTROL FABRIC, 3 OZ. PER SQUARE YARD MINIMUM WEIGHT FOR AREAS AS AS SHOWN ON THE PLAN. TUCK 6 INCHES MINIMUM VERTICALLY IN TO THE GROUND CONTINUOUS AT THE PERIMETER OF THE FABRIC INSTALLATION TO PREVENT UPLIFTING AT THE EDGES.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	LANDSCAPE SPECIFICATIONS PAGE 5	DWN.BY: M.K.L. / REV.	DATE: 1-1-08 / DWG. NO. LS 2E



FENCE AS MANUFACTURED BY:

AMERISTAR
TULSA, OKLAHOMA. (800) 321-8724
AEGIS PLUS MAJESTIC 3 RAIL
4"GAP 6'H 8'W
FINISH: POWDER COAT
COLOR: BLACK
OR OWNER APPROVED EQUAL

1. 2½"ø x 12ga. POST
2. 1½" FORERUNNER™ RAIL
3. ¾"ø x 16ga PICKET
4. PANEL BRACKET

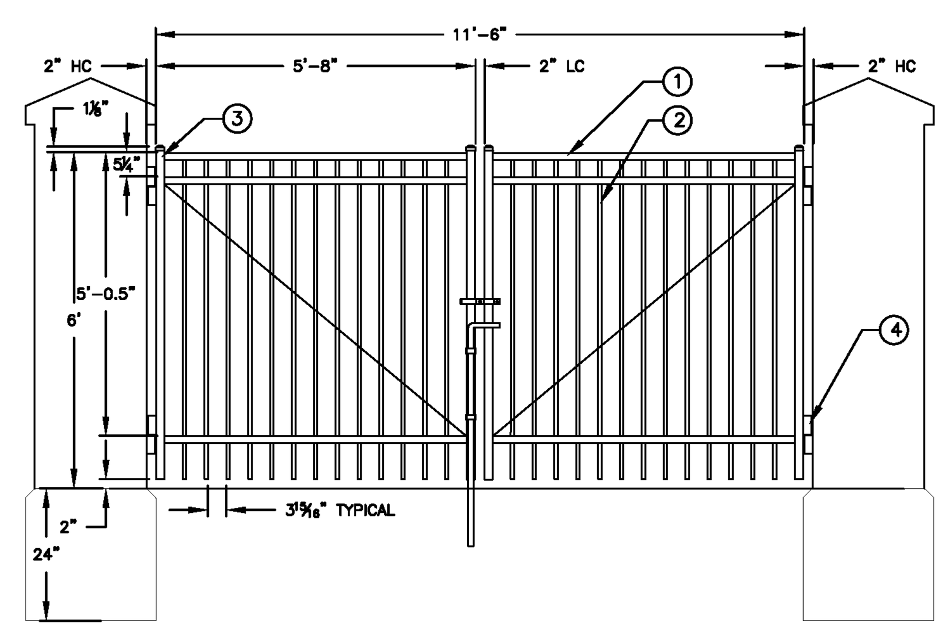
**NOTE: WHEN USING SWIVEL BRACKETS ON EITHER OR BOTH ENDS OF A PANEL INSTALLATION, CARE MUST BE TAKEN TO ENSURE THE SPACING BETWEEN POST AND ADJOINING PICKETS MEETS APPLICABLE CODES. THIS MAY REQUIRE TRIMMING ONE OR BOTH ENDS OF THE PANEL AS NEEDED.

FENCE MATERIAL SHALL BE ALUMINUM OR IRON.

POST NOTE: A ¼" DIAMETER HOLE SHOULD BE DRILLED IN THE POST APPROXIMATELY ½" ABOVE ELEVATION TO ALLOW FOR DRAINAGE OF BUILT-UP GROUND WATER. THE DRILLED HOLE MUST BE WIPED CLEAN AND DRY AND SPRAYED WITH AMERISTAR ZINC RICH PRIMER AND AMERISTAR COLOR MATCH FINISH OR OWNER APPROVED EQUAL.

*PANEL RACKING: DRAWING SHOWS FENCE PANEL AT LEVEL GROUND ELEVATION: FOR INSTALLATIONS THAT MUST BE RACKED TO FOLLOW SLOPING GRADES, THE POST SPACING DIMENSION SHOWN MUST BE MEASURED ALONG THE GRADE.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	FENCE DETAIL	DWN.BY: M.K.L. / REV. E.K.R. 9-19-11	DATE: 1-1-08 / DWG. NO. LS-3

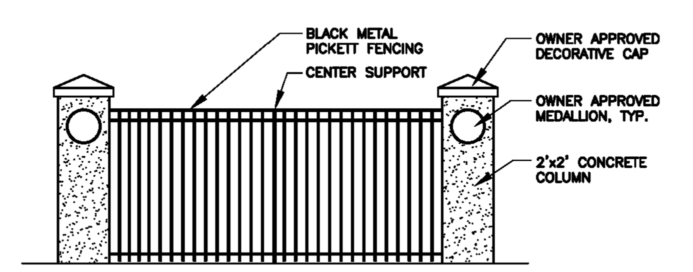


GATE AS MANUFACTURED BY:

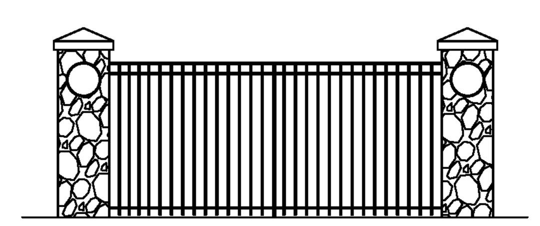
AMERISTAR
TULSA, OKLAHOMA. (800) 321-8724
AEGIS PLUS MAJESTIC 3 RAIL
6'H 12' OPENING
FINISH: POWDER COAT
COLOR: BLACK
OR OWNER APPROVED EQUAL

1. FORERUNNER RAIL™ 1½"ø x .160" EFF. WALL STEEL
2. ¾"ø x .062" WALL STEEL PICKET
3. GATE END 1¾" x .080" WALL STEEL
4. GATE HARDWARE KIT: SGBDX

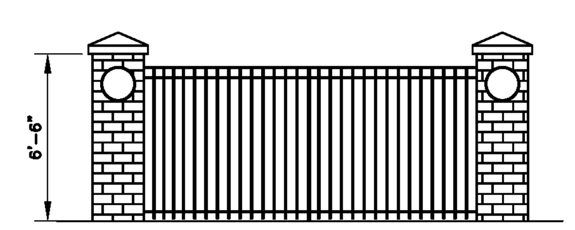
CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	GATE DETAIL	DWN.BY: M.K.L. / REV.	DATE: 1-1-08 / DWG. NO. LS-3A



ALT. 1: STUCCO FINISH



ALT. 2: STONE FINISH



ALT. 3: BRICK FINISH

NOTE:
SEE FENCING SPECIFICATIONS FOR FURTHER REQUIREMENTS.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	COLUMN ALTERNATIVES DETAIL	DWN.BY: M.K.L. / REV.	DATE: 1-1-08 / DWG. NO. LS-3B

8	
7	
6	
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4	
3	
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1	
COMMENTS	DATE
△ REVISIONS	XX-XX-XXXX

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOIA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD. SUITE H
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
ALSO WITH OFFICES IN:
VERO: 772-569-0035, FT PIERCE: 772-468-9055, PALM CITY: 772-426-9559

LIFT STATION DETAILS 02

THE RESERVE AT COUNTRY CLUB
LAKE ESTATES

CITY OF PALM BAY FLORIDA

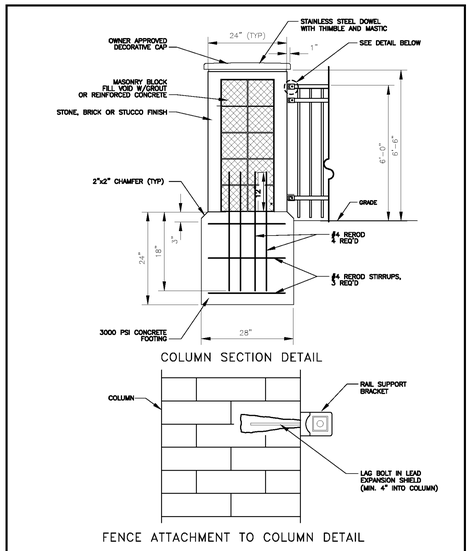
DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD
FL. P.E. #83267 DATE: 8/19/2021

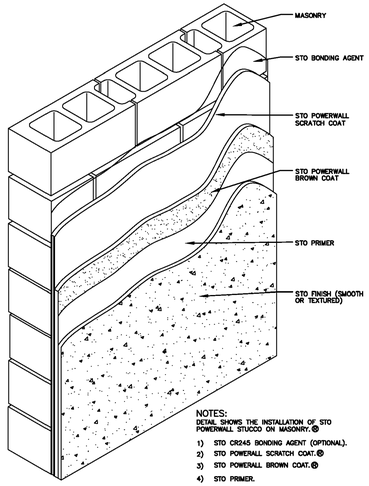
SHEET

C-815

19-1025
PERMITTING SET



CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	FENCE ATTACHMENT TO COLUMN DETAIL	DWN.BY: M.K.L. REV.	DATE: 1-1-08 DWG. NO. LS-3C

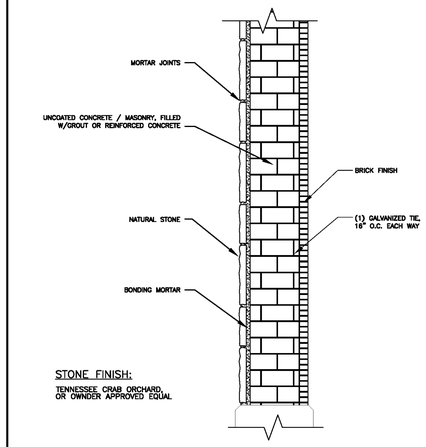


NOTES:
DETAIL SHOWS THE INSTALLATION OF STO POWERWALL STUCCO ON MASONRY.

1) STO CR245 BONDING AGENT (OPTIONAL).
2) STO POWERWALL SCRATCH COAT.
3) STO POWERWALL BROWN COAT.
4) STO PRIMER.
5) STO FINISH.

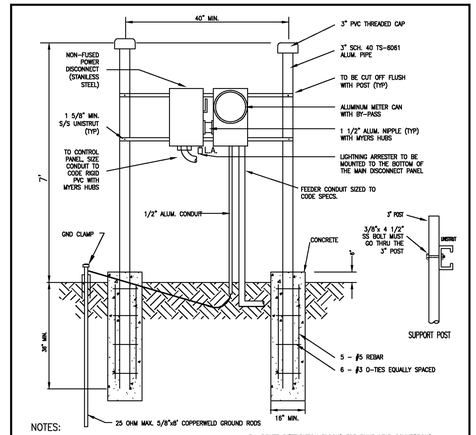
STUCCO: INSTALL PER MANUFACTURER SPECIFICATIONS
STO POWERWALL, ATLANTA, GA
(800) 221-2397
OR OWNER APPROVED EQUAL

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	STUCCO FINISH DETAIL	DWN.BY: M.K.L. REV.	DATE: 1-1-08 DWG. NO. LS-3D



STONE FINISH:
TENNESSEE CRAB ORCHARD,
OR OWNDER APPROVED EQUAL

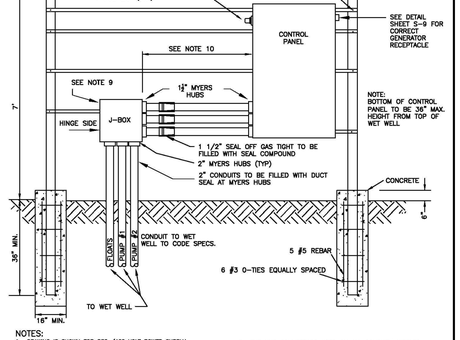
CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	STUCCO AND BRICK FINISH DETAIL	DWN.BY: M.K.L. REV.	DATE: 1-1-08 DWG. NO. LS-3E



NOTES:

1. DRAWING IS SHOWN FOR 230 /460 VOLT POWER SUPPLY.
2. WHEN TWO (2) SEPARATE CONDUCTOR-TYPE MOTORS ARE USED, CONDUIT SHALL BE INCREASED TO ACCORDINGLY.
3. POWER SUPPLY SHALL BE OVERHEAD ON THE LIFT STATION SITE AND SHALL BE 3 PHASE 4 WIRE FROM A 3 PHASE SOURCE ONLY.
4. A RADIOTELEMETERY SYSTEM IS REQUIRED BY THE CITY OF PALM BAY UTILITIES DEPARTMENT ON SELECTED LIFT STATIONS. EXACT REQUIREMENTS AND SPECIFICATIONS TO BE CONFIRMED BY THE CITY OF PALM BAY UTILITIES DEPARTMENT DURING DESIGN.
5. POWER DISTRIBUTION BLOCKS FOR PUMP LEAD CONNECTIONS SHALL BE ILSCO TYPE OR EQUAL. FLOAT SWITCH & CONNECTION TERMINAL BLOCK SHALL BE NSI TYPE OR EQUAL. (SEE PARTS LIST)
6. ALL UNI-STRUT SHALL BE STAINLESS STEEL BOLT THRU 3" POST.
7. THE HUB CONNECTORS USED ON ALL CONDUIT/NIPPLES GOING INTO METERCAN, DISCONNECT PANEL AND J-BOX SHALL BE PROVIDED BY THE SAME MANUFACTURER AS THE SELECTED SUBMERSIBLE PUMPS.
8. ALL MOUNTING BOLTS, NUTS, TO BE STAINLESS STEEL. SIZED TO FIT 3/8" MIN. WITH STAINLESS STEEL SPRING NUTS.
9. DO NOT USE UNISTRUT CLAMPS TO MOUNT UNISTRUT TO SUPPORT POST.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	METER AND DISCONNECT UNDERGROUND ELECTRICAL INSTALLATION DETAIL	DWN.BY: M.K.L. REV. E.K.R. 1-10-12	DATE: 1-1-08 DWG. NO. LS-4



NOTES:

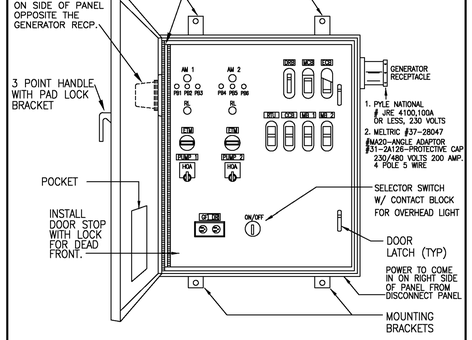
1. DRAWING IS SHOWN FOR 230 /460 VOLT POWER SUPPLY.
2. WHEN TWO (2) SEPARATE CONDUCTOR-TYPE MOTORS ARE USED, CONDUIT SHALL BE INCREASED TO ACCORDINGLY.
3. POWER SUPPLY SHALL BE UNDERGROUND ON THE LIFT STATION SITE AND SHALL BE 3 PHASE 4 WIRE FROM A 3 PHASE SOURCE ONLY.
4. A RADIOTELEMETERY SYSTEM IS REQUIRED BY THE CITY OF PALM BAY UTILITIES DEPARTMENT AT EACH LIFT STATION. THE CONTRACTOR SHALL COORDINATE THE SCADA CONNECTIONS WITH THE DEPARTMENT'S CURRENT SCADA CONSULTANT UNLESS NOTED OTHERWISE.
5. POWER DISTRIBUTION BLOCKS FOR PUMP LEAD CONNECTIONS SHALL BE ILSO TYPE, FLOAT SWITCH CONNECTIONS TERMINAL STRIP (12 CONNECTIONS)
6. ALL UNI-STRUT SHALL BE STAINLESS STEEL 1 5/8" BOLTED THRU ALUMINUM 3" POST
7. THE HUB CONNECTORS USED ON ALL CONDUIT/ NIPPLES GOING INTO METERCAN, DISCONNECT PANEL, AND J-BOX SHALL BE PROVIDED BY THE SAME MANUFACTURER AS THE SELECTED SUBMERSIBLE PUMPS.
8. ALL MOUNTING BOLTS, NUTS TO BE 3/8" MINIMUM STAINLESS STEEL, SIZED TO FIT. SPRING NUTS TO BE USED IN UNISTRUTS.
9. EXPLOSION-PROOF J-BOX, HINGED J-BOX: CONNECT MOTOR LOADS P.D.B. # PDB-11-210-3 (ILSCO) SEE NOTE # 5 (NO LESS THAN 18"x20"x10") POWER DISTRIBUTION BLOCKS FOR MOTOR LEADS SIZED TO MOTOR LEADS
10. THE MINIMUM SEPARATION DISTANCE IS 5 FT. THIS MAY BE REDUCED TO 3 FT. FOR LIFT STATIONS RECEIVING ONLY RESIDENTIAL WASTEWATER AND AS APPROVED BY THE UTILITIES ENGINEER. THE MINIMUM SEPARATION DISTANCE OF THE J-BOX TO THE WET WELL IS 10 FEET.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	PUMP STATION CONTROL PANEL INSTALLATION DETAIL	DWN.BY: M.K.L. REV. E.K.R. 11-1-13	DATE: 1-1-08 DWG. NO. LS-5

TYPICAL PARTS LIST FOR LIFT STATION CONTROL PANEL SUPPORT & J-BOX ASSEMBLY

	QUANTITY	DESCRIPTION
1.	2 EACH	10' x 3" DIA. ALUMINUM PIPES
2.	2 EACH	3" PVC CAPS (SLIP OR THREADED).
3.	1 EACH	NON-FUSE ABLE SAFETY SWITCH, STAINLESS STEEL
4.	1 EACH	ALUMINUM METER CAN WITH BYPASS
5.	1 EACH	1/4" COPPER GROUND WIRE, CUT TO LENGTH.
6.	1 EACH	10'L x 1/2"DIA.. ALUMINUM CONDUIT (FOR 1/4" COPPER GROUND WIRE).
7.	1 EACH	16"W x 20"H x 10"DIA. (MINIMUM SIZE) EXPLOSION-PROOF JUNCTION BOX, PANEL, SIDE HINGED FRONT WITH LOCKING ASSEMBLY. LARGER SIZE JUNCTION BOX MAY BE NEEDED FOR LARGER HORSEPOWER PUMPS. MUST BE APPROVED BY PBU
8.	6 EACH	1-1/2" DIA. MYERS TYPE HUBS.
9.	3 EACH	1-1/2" DIA. x 3"L DIA. ALUMINUM NIPPLES.
10.	3 EACH	2"DIA. MYERS TYPE HUBS.
11.	3 EACH	2"DIA. x 3"L ALUMINUM NIPPLES.
12.	3 EACH	2"DIA. MINIMUM (SIZE TO FIT PUMP CABLES) GAS TIGHT SEAL-OFFS. FILL WITH DUST SEAL AFTER WIRING IS COMPLETED TO CODE SPECS.
13.	3 EACH	2"DIA. CONDUIT, CUT TO LENGTH WITH THE REQUIRED SWEEPS. (TO CODE SPECS)
14.	1 EACH	1-5/8" x 8' COPPERWELD GROUND ROD WITH GROUND CLAMP.
15.	10 EACH	3/8" x 4-1/2" STAINLESS STEEL BOLTS, WASHERS AND NUTS.
16.	16 EACH	3/8" x 1" STAINLESS STEEL BOLTS AND SPRING NUTS.
17.	1 EACH	FLOAT TERMINAL STRIP WITH 12 NSI TYPE CONNECTORS.
18.	6 EACH	POWER DISTRIBUTION BLOCKS FOR PUMP LEADS (ILSCO TYPE PDC-11-2/0-1 & PDA-11-2/0-1 OR EQUAL).
19.	1 EACH	GROUNDING LUG FOR PUMP GROUND LEAD.
20.	SEE DETAIL	STAINLESS STEEL UNISTRUTS AND BOLTS/NUTS (SIZED TO FIT APPLICATION) WITH ALL REQUIRED MOUNTING HARDWARE.

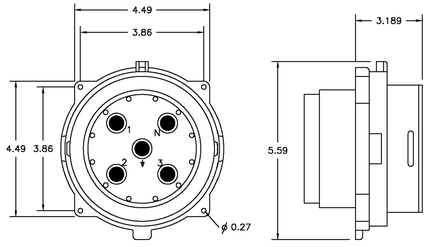
CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	PARTS LIST OF A TYPICAL LIFT STATION CONTROL PANEL SUPPORT AND J-BOX ASSEMBLY	DWN.BY: M.K.L. REV. E.K.R. 10-1-10	DATE: 1-1-08 DWG. NO. LS-6



NOTES:

1. OUTER BOX SIZE SHALL BE A MINIMUM OF 30"W X 36"H X 10"D OR AS APPROVED BY PBU.
2. FOR STATIONS WITH PUMPS RATED 20 HP OR GREATER, OUTER BOX SIZE SHALL BE 30"W X 42"H X 10"D OR AS APPROVED BY PBU.
3. DRAWINGS SHALL BE REVISED FOR STATIONS WITH PUMPS RATED GREATER THAN 47 HP AND SUBMITTED TO PBUC FOR APPROVAL.
4. 3/8" S.S. BOLTS AND SPRING NUTS FOR MOUNTING BRACKETS TO BE S.S. UNISTRUTS SIZED PROPERLY

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	DUPLEX CONTROL PANEL ENCLOSURE DEAD FRONT LAYOUT	DWN.BY: M.K.L. REV.	DATE: 1-1-08 DWG. NO. LS-7



CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	MELTRIC CORPORATION DS 200 AMP INLET DETAIL part no. 37-28047	DWN.BY: M.K.L. REV. E.K.R. 2-3-10	DATE: 1-1-08 DWG. NO. LS-7A

	DATE	COMMENTS
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1	XX-XX-XXXX	
	DATE	REVISIONS

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/19/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
CA#7728
1250 W. EAU GALLIE BLVD, SUITE H
MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911
VERO: 772-569-0035 FT PIERCE: 772-468-9055, PALM CITY: 772-408-9999

LIFT STATION DETAILS 03

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 83267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD FL. P.E. #83267 DATE: 8/19/2021

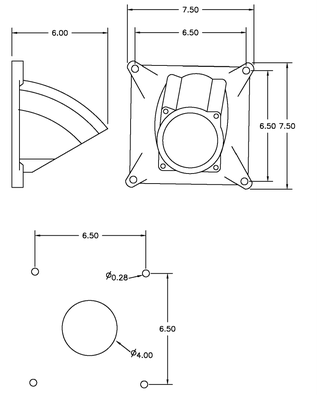
SHEET

C-816

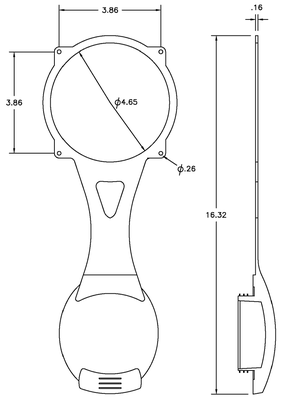
19-1025

PERMITTING SET

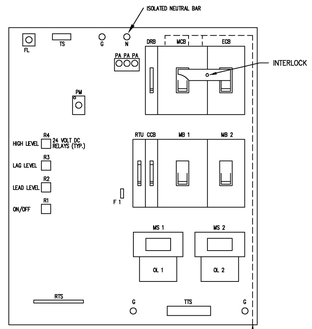
W:\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CAD\Sheets\19-1025 COVER DETAILS.dwg 8/19/2021 4:28 PM ANTHONY REILAFORD



CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	MELTRIC CORPORATION 200 AMP ANGLE ADAPTOR DETAIL part no. ma20a	DWN.BY: M.K.L. REV.	DATE: 1-1-08 DWG. NO. LS-7B



CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	MELTRIC CORPORATION 200A PLUG CAP DETAIL part no. 31-2A126	DWN.BY: M.K.L. REV.	DATE: 1-1-08 DWG. NO. LS-7C

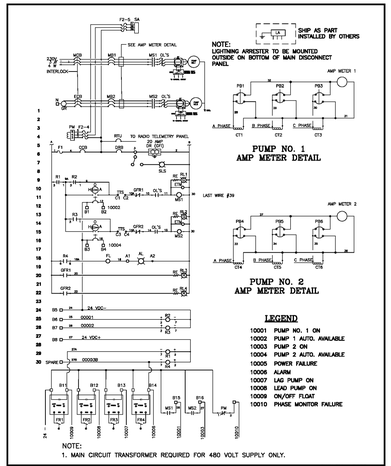


NOTES:
1. MAIN CIRCUIT TRANSFORMER REQUIRED FOR 480 VOLT SUPPLY ONLY.
2. MAIN POWER FROM DISCONNECT WILL BE BROUGHT IN ON THE RIGHT SIDE OF THE CONTROL PANEL TO MCB

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	DUPLEX CONTROL PANEL ENCLOSURE SUBPANEL LAYOUT	DWN.BY: M.K.L. REV.	DATE: 1-1-08 DWG. NO. LS-8

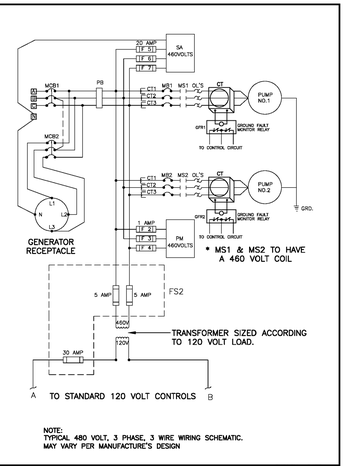
ABBREV.	ITEM DESCRIPTION
AL	ALARM LIGHT
AM	AMP METER
CCB	CONTROL CIRCUIT BREAKER SQUARE D
DR	DUPLEX RECEPTACLE / G.F.I.
DRB	DUPLEX RECEPTACLE BREAKER SQUARE D
ECB	EMERGENCY CIRCUIT BREAKER SQUARE D
ETM	ELAPSE TIME METER TO NO LESS THAN TENTHS OF A SECOND
F	FUSE
FL	FLASHER
FR	FLOAT REGULATOR ROTO FLOAT
G	GROUND
GR	GENERATOR RECEPTACLE (SEE DETAIL S-9)
HOA	HAND-OFF-AUTO-SELECTOR SQUARE D
MB	MOTOR BREAKER SQUARE D
MCB	MAIN CIRCUIT BREAKER SQUARE D
LA	LIGHTNING ARRESTOR (TO BE MOUNTED OUTSIDE OF DISCONNECT)
MS	MOTOR STARTER SQUARE D
N	NEUTRAL
OL	OVERLOAD HEATER SQUARE D
PA	POWER AVAILABLE LIGHT (3 REQUIRED, 1 EACH PHASE)
PB	PUSH BUTTON (1,2,3,4,5,8) AMP METERS 1&2
PM	PHASE MONITOR
RL	RUN INDICATOR
RLY	RELAY 24 VOLTS DC WITH TEST BUTTON
RTS	REGULATOR TERMINAL STRIP (TB CONNECTIONS)
RTU	RADIO TELEMETRY UNIT CIRCUIT BREAKER SQUARE D
SLS	SELECTOR SWITCH FOR OVERHEAD HPS DUSK DAWN LIGHT
TS	TERMINAL STRIP
TTS	THERMAL TERMINAL STRIP

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	PUMP STATION CONTROL PANEL LEDGER	DWN.BY: M.K.L. REV. E.K.R. 2-3-10	DATE: 1-1-08 DWG. NO. LS-9



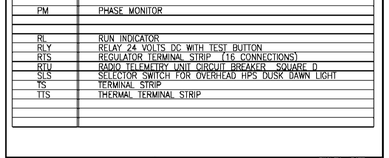
NOTE:
1. MAIN CIRCUIT TRANSFORMER REQUIRED FOR 480 VOLT SUPPLY ONLY.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	DUPLEX CONTROL 230 VOLT/3 PHASE 4 WIRE SCHEMATIC DRAWING	DWN.BY: M.K.L. REV.	DATE: 1-1-08 DWG. NO. LS-10A



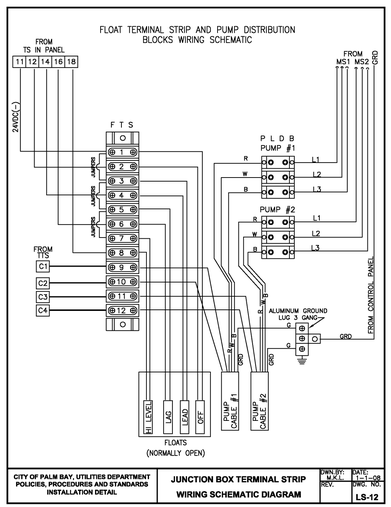
NOTE:
TYPICAL 480 VOLT, 3 PHASE, 3 WIRE WIRING SCHEMATIC.
MAY VARY PER MANUFACTURE'S DESIGN

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	DUPLEX CONTROL 460 VOLT/ 3 PHASE /4 WIRE SCHEMATIC DRAWING	DWN.BY: M.K.L. REV. E.K.R. 10-1-10	DATE: 1-1-08 DWG. NO. LS-10B

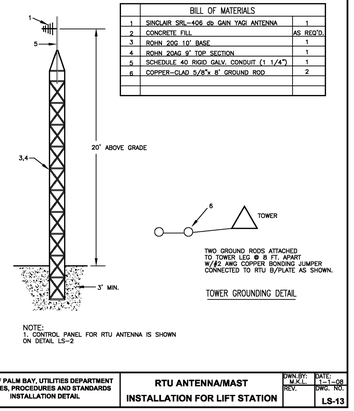


1. PUMP LEAD POWER DISTRIBUTION BLOCKS TO BE ILSCO TYPE PDB, OR BURNDY CAT NO. BDC-11-2/0-1 OR #4 TERMINAL STRIP TO BE INSTALLED ON VERTICAL AS SHOWN OR APPROVED EQUAL.
2. EXPLOSION-PROOF SINGLE DOOR, TYPE 7 ENCLOSURE WITH PANEL
3. FLOAT TERMINAL STRIP TO BE NSI TYPE 12 CONNECTOR OR EQUAL.

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	JUNCTION BOX TERMINAL STRIP MOUNTING PANEL	DWN.BY: M.K.L. REV. E.K.R. 10-1-10	DATE: 1-1-08 DWG. NO. LS-11



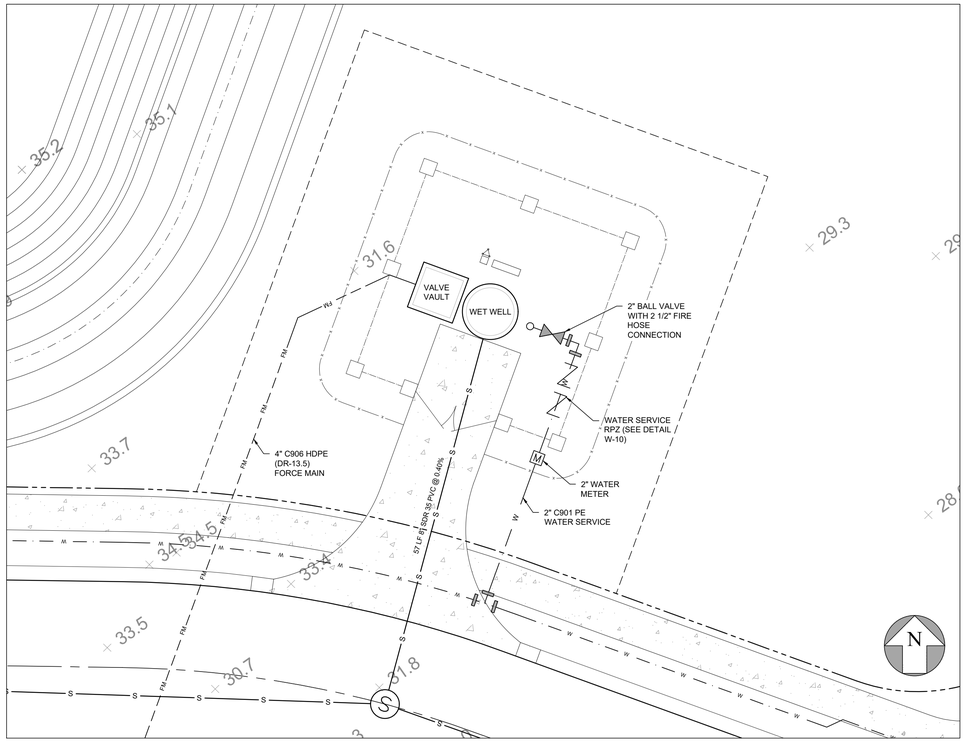
CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	JUNCTION BOX TERMINAL STRIP WIRING SCHEMATIC DIAGRAM	DWN.BY: M.K.L. REV.	DATE: 1-1-08 DWG. NO. LS-12



	BILL OF MATERIALS	
1	SINCLAIR SRL-406 6b GAIN YAGI ANTENNA	1
2	CONCRETE FILL	AS REQ'D.
3	ROHN 20G 10' BASE	1
4	ROHN 20AG 9' TOP SECTION	1
5	SCHEDULE 40 RIGID GALV. CONDUIT (1 1/4")	1
6	COPPER-CLAD 5/8"x 8' GROUND ROD	2

NOTE:
1. CONTROL PANEL FOR RTU ANTENNA IS SHOWN ON DETAIL LS-2

CITY OF PALM BAY, UTILITIES DEPARTMENT POLICIES, PROCEDURES AND STANDARDS INSTALLATION DETAIL	RTU ANTENNA/MAST INSTALLATION FOR LIFT STATION	DWN.BY: M.K.L. REV.	DATE: 1-1-08 DWG. NO. LS-13



LIFT STATION SITE DETAIL
N.T.S.

LIFT STATION NOTES:

1. CONTRACTOR SHALL PROVIDE A BYPASS PUMP TO THE CITY OF PALM BAY UTILITIES DEPARTMENT FOR EACH LIFT SUFFICIENT TO MAINTAIN ADEQUATE PUMPING CAPACITY SO AS NOT TO ALLOW A SEWER OVERFLOW DUE TO LOSS OF POWER.
2. BYPASS PUMP SHALL BE HL80M DRI-PRIME OR CITY APPROVED EQUIVALENT.

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1	COMMENTS	xx-xx-xxxx
△	REVISIONS	DATE

JOB NO.	19-1025
DESIGNED	DWB
DRAWN	AFR
DATE	03-23-2021
CHECKED	DWB
DATE ISSUED	8/20/2021

MBV ENGINEERING, INC.
MOJA BOWLES VILLAMIZAR & ASSOCIATES
CIVIL • STRUCTURAL • SURVEYING • ENVIRONMENTAL
1250 W. EAU GALLIE BLVD, SUITE E MELBOURNE, FLORIDA 32935
P: 321-253-1510 F: 321-253-0911 CA#3728
VERO: 772-569-0035 FT PIERCE: 772-468-9055 PALM CITY: 772-436-9999

LIFT STATION DETAILS 04

THE RESERVE AT COUNTRY CLUB LAKE ESTATES

CITY OF PALM BAY FLORIDA

DAVID W. BASSFORD LICENSE No. 63267 STATE OF FLORIDA PROFESSIONAL ENGINEER

DAVID W. BASSFORD DATE: FL P.E. #63267 8/20/2021

SHEET
C-817

19-1025

PERMITTING SET

W:\19-1025 COUNTRY CLUB LAKE ESTATES NORTH\CADD\dwg\19-1025 COVER-DETAILS.dwg 8/20/2021 7:19 AM DAVID BASSFORD

LAND DEVELOPMENT DIVISION
120 Malabar Road SE • Palm Bay, FL 32907 • Telephone: (321) 733-3042
Landdevelopmentweb@palmbayflorida.org

FINAL DEVELOPMENT PLAN APPLICATION

This application must be deemed complete and legible, and must be returned by the first day of the month during division office hours, with all enclosures referred to herein, to the Land Development Division, Palm Bay, Florida, to be processed for consideration the following month at the earliest by the Planning and Zoning Board**.** The application will then be referred by the Planning and Zoning Board for study and recommendation to the City Council. You or your representative are required to attend the meeting(s) and will be notified by mail of the date and time of the meeting(s). The Planning and Zoning Board holds their regular meeting the first Wednesday of every month at 7:00 p.m. in the City Hall Council Chambers, 120 Malabar Road SE, Palm Bay, Florida, unless otherwise stated.

APPLICATION AMENDMENT TYPE:

- [■] **PUD** - Planned Unit Development (Section 185.067)
- [ ] **PMU** - Parkway Mixed Use District (Final Design Plan) (Section 185.057(C))
- [ ] **PCRD** - Planned Community Redevelopment District (Section 185.055(L))
- [ ] **RAC** - Regional Activity Center District (Section 185.056(C))

PROPOSED DEVELOPMENT NAME:

The Reserve at Country Club Lakes Estates

PARCEL ID(S):

28-37-28-00-251, 28-37-28-00-253

TAX ACCOUNT NUMBER(S):

2836559, 2853362

LEGAL DESCRIPTION OF THE PROPERTY COVERED BY THIS APPLICATION: (attach additional sheets if necessary):

Legal Description Attached

SIZE OF AREA COVERED BY THIS APPLICATION (calculate acreage):

74.2

TOTAL LOTS PROPOSED (list by use):

46 MFR, 154 SFR

DEVELOPER Country Club Lakes Developers LLC

Full Address 4885 N. Wickham Road, Melbourne, FL 32940

Telephone 321-543-5732 **Email** pelandbuss@aol.com

ENGINEER MBV Engineering,Inc. - David Bassford

Full Address 1250 W. Eau Gallie Blvd, Suite H, Melbourne, FL 32935

Telephone 321-253-1510 **Email** davidb@mbveng.com

SURVEYOR William Mott Land Surveying, Inc.

Full Address 3159 Alzante Circle, Suite 103, Melbourne, FL 32940

Telephone 321-751-4444 **Email** john@wmlsi.com

FINAL DEVELOPMENT PLAN CRITERIA FOR SUBMITTAL:

1) Two (2) copies of the Final Development Plan and supporting documentation shall be attached to the application. The final plan and supporting documentation **must also be provided on memory drive.**

2) Layout of the development plan shall be in plat form that meets the requirements of Florida Statute Chapter 177.

3) The Final Development Plan shall contain the information required per the City of Palm Bay Land Development Code section for a PUD, PMU, PCRD, or RAC. **Additional conditions must be met and incorporated into the site plan for the specific type of development requested (PUD, PMU, PCRD, RAC).** The additional criteria is listed in the Code of Ordinances and available from staff.

THE FOLLOWING PROCEDURES AND ENCLOSURES ARE REQUIRED TO COMPLETE THIS FINAL DEVELOPMENT PLAN APPLICATION:

- [■] *A $1,500.00 application fee shall accompany the Final Development Plan application for the purposes of administration. Make Check payable to "City of Palm Bay."
- [■] Final Development Plan (see aforementioned Final Development Plan Criteria for Submittal).
- [■] Boundary Survey.
- [■] Site Sketch to scale with legal descriptions of properties covered by this application.
- [■] List of legal descriptions of all properties within a 500-foot radius of the boundaries of the property covered by this application, together with the names and mailing addresses (including zip codes) of all respective property owners within the above referenced area. (This should be obtained for a fee from the Brevard County Planning and Zoning Department at (321) 633-2060.)
- [■] Citizen Participation Plan. Required when a Preliminary Development Plan application was not submitted. Refer to Section 169.005 of the Land Development Code for guidelines.
- [■] School Board of Brevard County School Impact Analysis Application (if applicable). The application is obtained from the Planning and Project Management Department of the School Board of Brevard County at (321) 633-1000, extension 11418.
- [ ] Sign(s) posted on the subject property. Refer to Section 51.07(C) of the Legislative Code for guidelines. Staff will provide a sign template.
- [■] **Where the property owner is not the representative for the request**, a LETTER must be attached giving the notarized consent of the property owner(s) to a representative.

Name of Representative Brian Bussen and David Bassford

I, THE UNDERSIGNED UNDERSTAND THAT THIS APPLICATION MUST BE COMPLETE AND ACCURATE BEFORE CONSIDERATION BY THE PLANNING AND ZONING BOARD/LOCAL PLANNING AGENCY AND CERTIFY THAT ALL THE ANSWERS TO THE QUESTIONS IN SAID APPLICATION, AND ALL DATA AND MATTER ATTACHED TO AND MADE A PART OF SAID APPLICATION ARE HONEST AND TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

UNDER PENALTIES OF PERJURY, I DECLARE THAT I HAVE READ THE FOREGOING FINAL DEVELOPMENT PLAN APPLICATION AND THAT THE FACTS STATED IN IT ARE TRUE.

Owner Signature _____ **Date** 6/28/2021

Printed Name Mario Oliveira - Palm Bay Greens Inc.

Full Address 5205 N. Babcock Street, Palm Bay FL 32905

Telephone 321-725-5000 **Email** jspira@smblawyers.com

***NOTE: APPLICATION FEE IS NON-REFUNDABLE UPON PAYMENT TO THE CITY**

Sept 9 one

June 10, 20 21

Re: Letter of Authorization

As the property owner of the site legally described as:

Parcel ID 28-37-28-00-251, Tax ID 2836559
Parcel ID 28-37-28-00-253, Tax ID 2853362
(legal description attached)

I, Owner Name: Mario Oliveira - Palm Bay Greens, L.L.C.

Address: 5205 N. Babcock Street, Palm Bay, FL 32905

Telephone: 321-725-5000

Email: jspira@smblawyers.com

hereby authorize:

Representative: David Bassford (MBV Engineering) and Brian Bussen (CC Lakes Dev)

Address: MBV - 1250 W Eau Gallie Blvd, Melbourne, FL 32935
CC Lakes Dev - 4885 N Wickham Rd., Melbourne, FL 32940

Telephone: MBV - 321-253-1510 / CC Lakes Dev 321-543-5732

Email: davidb@mbveng.com / pelandbuss@aol.com

to represent the request(s) for:

Final Development Plan and all associated documentation / representation

C. Mario Oliveira

(Property Owner Signature)

STATE OF Florida

COUNTY OF BREVARD

The foregoing instrument was acknowledged before me by means of ☐ physical presence or ☐ online notarization, this 9th day of Sept, 20 21 by C. MARIO OLIVEIRA MGR OF, property owner.

JACK SPIRA
Commission # GG 266008
Expires January 9, 2024
Bonded Thru Troy Fain Insurance 800-385-7019

, Notary Public

☒ Personally Known or ☐ Produced the Following Type of Identification:

LEGAL DESCRIPTION: The Reserve at Country Club Lakes Estates

Part of lands described in O.R.B. 5330, Page 1263, together with lands described in O.R.B. 6300, Page 1668 of the Public Records of Brevard County, Florida, lying in Section 28, Township 28 South, Range 37 East, said Brevard County and being more particularly described as follows:

Beginning at the Northeast corner of Bimini Bay, according to the plat thereof, as recorded in Plat Book 50, Page's 46 through 47 of the said public records; thence run North 88°47'13" West, along the North line of said Bimini Bay, a distance of 228.32 feet to the East line of a 30 foot wide drainage right-of-way per Port Malabar Country Club Unit Seven, according to the plat thereof, as recorded in Plat Book 25, Page's 121 through 126 of the said public records; thence North 01°12'47" East, along said East line, a distance of 30.00 feet; thence North 88°47'13" West along the North line of said 30 foot wide drainage right-of-way, a distance of 125.00 feet to the East right-of-way line of Riviera Boulevard per said Port Malabar Country Club Unit Seven, said point being the point of curvature of a non-tangent circular curve, concave to the West, having a radius of 3,050.00 feet and a central angle of 01°58'25"; thence from a tangent bearing of North 01°12'47" East, run Northerly along said right-of-way line and the arc of said curve, an arc distance of 105.06 feet to the North line of said O.R.B. 6300, Page 1668; thence North 89°14'22" East, along said North line, a distance of 125.00 feet to the West line of said O.R.B. 5330, Page 126, said point being the point of curvature of a non-tangent circular curve, concave to the West, having a radius of 3,175.00 feet and a central angle of 03°56'47"; thence from a tangent bearing of North 00°45'38" West, run Northerly along the arc of said curve and said West line, an arc distance of 218.69 feet to a 4"x4" concrete monument "P.R.M." at the Southeast corner of Lot 12, Block 75, said Port Malabar Country Club Unit Seven; thence continue along the East line of said Port Malabar Country Club Unit Seven and the arc of said curve having a radius of 3175.00 feet and a central angle of 09°56'42", an arc distance of 551.09 feet to the point of reverse curvature with a circular curve concave to the East, having a radius of 825.00 feet and a central angle of 43°25'51"; thence Northerly along the said East line of Port Malabar Country Club Unit Seven and the arc of said curve, an arc distance of 625.36 feet to the South line of Port Malabar Country Club Unit Three, according to the plat thereof, as recorded in Plat Book 23, Page's 88 through 89 of the said public records; thence South 50°37'24" East, along the said South line, a distance of 49.00 feet to the point of curvature of a circular curve concave to the North, having a radius of 225.00 feet and a central angle of 39°22'36"; thence Easterly along the arc of said curve and said South line, an arc distance of 154.63 feet; thence East, along said South line, a distance of 74.04 feet to the point of curvature of a circular curve concave to the North, having a radius of 225.00 feet and a central angle of 28°38'52"; thence Easterly along the arc of said curve and said South line, an arc distance of 112.50 feet; thence North 61°00'47" East, along said South line a distance of 148.00 feet; thence South 20°01'40" East, along the Westerly line of said Port Malabar Country Club Unit Three, a distance

of 84.96 feet; thence South 87°56'45" East, along the said South line of Port Malabar Country Club Unit Three, a distance of 100.00 feet, to a 4”x4” concrete monument marked “PRM LS 2257” and the point of curvature of a non-tangent circular curve, concave to the West, having a radius of 1,650.00 feet and a central angle of 16°44'45"; thence from a tangent bearing of South 02°03'15" West, run Southerly along the arc of said curve and the said Westerly line of Port Malabar Country Club Unit Three, an arc distance of 482.25 feet; thence South 42°53'42" West, along said Westerly line, a distance of 61.24 feet to the point of curvature of a non-tangent circular curve, concave to the North, having a radius of 175.00 feet and a central angle of 180°00'00"; thence from a tangent bearing of South 18°48'00" West, run Easterly along the Southerly line of said Port Malabar Country Club Unit Three and arc of said curve, an arc distance of 549.78 feet; thence North 05°17'42" West, along the Easterly line of said Port Malabar Country Club Unit Three, a distance of 61.24 feet to the point of curvature of a non-tangent circular curve, concave to the West, having a radius of 1,950.00 feet and a central angle of 16°40'47"; thence from a tangent bearing of North 18°48'00" East, run Northerly along the arc of said curve and said Easterly line Port Malabar Country Club Unit Three, an arc distance of 567.68 feet; thence East, along the said South line of Port Malabar Country Club Unit Three, a distance of 59.05 feet; thence North 27°30'00" East, along the Easterly line of said Port Malabar Country Club Unit Three a distance of 105.93 feet to the South line of Port Malabar Country Club Unit Two, according to the plat thereof, as recorded in Plat Book 21, Page’s 134 through 136 of the said Public records; thence South 62°32'07" East, along said South line, a distance of 208.42 feet; thence North 89°57'53" East, along said South line, a distance of 236.10 feet to the point of curvature of a circular curve concave to the North, having a radius of 225.00 feet and a central angle of 25°18'12"; thence Easterly along the arc of said curve and said South line, an arc distance of 99.37 feet; thence North 64°39'41" East, along said South line, a distance of 31.50 feet to the point of curvature of a non-tangent circular curve, concave to the West, having a radius of 825.00 feet and a central angle of 43°54'02"; thence from a tangent bearing of South 25°20'19" East, run Southerly along the arc of said curve and the Westerly line of said Port Malabar Country Club Unit Two, an arc distance of 632.12 feet to the point of reverse curvature with a circular curve concave to the East, having a radius of 3,175.00 feet and a central angle of 08°08'27"; thence Southerly along the arc of said curve and said Westerly line, an arc distance of 451.12 feet; thence South 89°57'53" West along said Westerly line, a distance of 4.35 feet to the point of curvature of a circular curve concave to the Southeast, having a radius of 300.00 feet and a central angle of 45°00'00"; thence Southwesterly along the arc of said curve and said Westerly line, an arc distance of 235.62 feet; thence South 44°57'53" West, along said Westerly line, a distance of 353.55 feet to the point of curvature of a circular curve concave to the East, having a radius of 300.00 feet and a central angle of 90°00'00"; thence Southerly along the arc of said curve and said Westerly line, an arc distance of 471.24 feet; thence South 45°02'07" East, along said Westerly line, a distance of 353.55 feet to the point of curvature of a circular curve concave to the Northeast, having a

radius of 300.00 feet and a central angle of 44°04'03"; thence Southeasterly along the arc of said curve and said Westerly line, an arc distance of 230.74 feet to the point of curvature of a non-tangent circular curve, concave to the East, having a radius of 3,175.00 feet and a central angle of 05°37'31"; thence from a tangent bearing of South 09°31'48" East, run Southerly along the arc of said curve and said Westerly line, an arc distance of 311.72 feet to a point lying South 74°50’41” West a distance of 125.00 from a 4”x4” concrete monument ”P.R.M.” and the point of compound curvature with a circular curve concave to the Northeast, having a radius of 1,175.00 feet and a central angle of 23°27'34"; thence Southeasterly along the arc of said curve and said Westerly line of Port Malabar Country Club Unit Two, an arc distance of 481.10 feet; thence South 43°04'32" East, along said Westerly line, a distance of 19.71 feet to the North line of Raysteff Country Club Subdivision, according to the plat thereof, as recorded in Plat Book 32, Page 61 of the said public records and the point of curvature of a non-tangent circular curve, concave to the Northwest, having a radius of 100.00 feet and a central angle of 55°23'27"; thence from a tangent bearing of South 35°12'35" West, run Southwesterly along the arc of said curve and said North line, an arc distance of 96.68 feet; thence North 89°23'58" West, along said North line, a distance of 351.00 feet; thence North 00°36'02" East, along the East line of said Raysteff Country Club Subdivision, a distance of 35.00 feet to the point of curvature of a circular curve concave to the South, having a radius of 175.00 feet and a central angle of 180°00'00"; thence Westerly along the arc of said curve, and said North line, an arc distance of 549.78 feet; thence South 00°36'02" West, along the West line of said Raysteff Country Club Subdivision, a distance of 54.75 feet to the North line of Country Club Lakes Estates Phase One, according to the plat thereof, as recorded in Plat Book 66, Page’s 66 through 80 of the said public records; thence North 89°23'58" West, along said North line, a distance of 284.20 feet; thence South 00°36'02" West, along the West line of said Country Club Lakes Estates Phase One, a distance of 97.24 feet to the point of curvature of a non-tangent circular curve, concave to the South, having a radius of 75.00 feet and a central angle of 14°11'47"; thence from a tangent bearing of North 89°23'58" West, run Westerly along the arc of said curve and said North line, an arc distance of 18.58 feet; thence North 32°58'00" West, along said North Line, a distance of 20.24 feet to the point of curvature of a circular curve concave to the Southwest, having a radius of 125.00 feet and a central angle of 05°57'32"; thence Northwesterly along the arc of said curve, and said North line, an arc distance of 13.00 feet; thence South 51°04'29" West, along said North line, a distance of 50.00 feet to the point of curvature of a non-tangent circular curve, concave to the Southwest, having a radius of 75.00 feet and a central angle of 26°53'09"; thence from a tangent bearing of North 38°55'31" West, run Northwesterly along the arc of said curve and said North line, an arc distance of 35.19 feet; thence North 65°48'40" West, along said North line, a distance of 52.57 feet to the point of curvature of a circular curve concave to the South, having a radius of 125.00 feet and a central angle of 20°31'31"; thence Westerly along the arc of said curve and said North line, an arc distance of 44.78 feet; thence North 86°20'11" West, along said North line, a distance of 45.46 feet to

the point of curvature of a circular curve concave to the South, having a radius of 150.00 feet and a central angle of 08°35'34"; thence Westerly along the arc of said curve and said North line, an arc distance of 22.50 feet; thence South 85°04'15" West, along said North line, a distance of 171.00 feet to the point of curvature of a circular curve concave to the South, having a radius of 75.00 feet and a central angle of 13°15'31"; thence Westerly along the arc of said curve and said North line, an arc distance of 17.36 feet; thence South 71°48'44" West, along said North line, a distance of 7.32 feet to the East line of O.R.B. 7457, Page 2053 of the said public records; thence North 18°11'16" West, along said East line, a distance of 266.77 feet to the South line of said Bimini Bay; thence South 88°47'13" East, along said South line, a distance of 75.32 feet and the point of curvature of a circular curve concave to the Northwest, having a radius of 260.00 feet and a central angle of 90°00'00"; thence Northeasterly along the arc of said curve and said South line, an arc distance of 408.41 feet; thence North 01°12'47" East, along the East line of said Bimini Bay, a distance of 422.65 feet to the point of curvature of a non-tangent circular curve, concave to the Northeast, having a radius of 300.00 feet and a central angle of 86°56'52"; thence from a tangent bearing of North 85°44'05" West, run Northwesterly along the arc of said curve and the said East line, an arc distance of 455.26 feet; thence North 01°12'47" East, along said East line, a distance of 317.10 feet to the POINT OF BEGINNING.

Less and except Island Green Villas, as recorded in O.R.B. 2746, Page 0093 and O.R.B 2750, Page 2105 of the Public Records of Brevard County, Florida

Containing 74.240 acres of land, more or less.

The City of Palm Bay Florida

MEMORANDUM

TO: Planning and Zoning Board Members

FROM: Christopher Balter, Senior Planner

DATE: October 6, 2021

SUBJECT: **FD-41-2021 - Cypress Bay West Phase III - Benjamin E. Jefferies, Waterstone Farms, LLC (Jake Wise, P.E., Rochelle W. Lawandales, FAICP, and Chris Tyree, Forestar (USA) Real Estate Group, Reps.) - Final Development Plan to allow a proposed PUD for a 544-unit residential development called Cypress Bay West Phase III. Part of Tax Parcel 500 of Section 4, Township 30, Range 37, and Tracts 750, 752, and Part of 1 of San Sebastian Farms, Section 5, Township 30, Range 37, Brevard County, Florida, containing approximately 190.5 acres. In the vicinity west of Babcock Street and west of Mara Loma Boulevard SE

♣Quasi-Judicial Proceeding.

ATTACHMENTS:

Description

- **Case FD-41-2021 - Staff Report**
- **Case FD-41-2021 - Final Development Plan**
- **Case FD-41-2021 - Plat**
- **Case FD-41-2021 - Narrative**
- **FD-41-2021 - Application**

STAFF REPORT

LAND DEVELOPMENT DIVISION

120 Malabar Road SE • Palm Bay, FL 32907 • Telephone: (321) 733-3042
landdevelopmentweb@palmbayflorida.org

Prepared by
Christopher Balter, Senior Planner

CASE NUMBER	**PLANNING & ZONING BOARD HEARING DATE**
FD-41-2021	October 6, 2021

PROPERTY OWNER & APPLICANT	**PROPERTY LOCATION/ADDRESS**
Waterstone Farms, LLC (Jake Wise and Rochelle Lawandales Representing)	A portion of Tax Parcel Parcel 500 of Section 4, Township 30, Range 37, and Tracts 750, 752, and Part of Tax Parcel 1 of San Sebastian Farms, Section 5, Township 30, Range 37, Brevard County, Florida

SUMMARY OF REQUEST	Final Planned Unit Development approval for a 544-unit residential subdivision to be called Cypress Bay West Phase 3 PUD.
Existing Zoning	PUD, Planned Unit Development
Existing Land Use	Single-Family Residential Use and Multiple-Family Residential Use
Site Improvements	Vacant, Unimproved Land (Former Orange Groves)
Site Acreage	190.28 acres

SURROUNDING ZONING & USE OF LAND

North	PUD; Waterstone at Palm Bay; Undeveloped Lands
East	PUD; Cypress Bay West PUD; Undeveloped Lands
South	GU, General Use (Brevard County); Single-Family Home
West	PUD; Rolling Meadows Lakes (Brevard County); Undeveloped Lands

COMPREHENSIVE PLAN COMPATIBILITY

The development of a PUD is compliant with the Future Land Use designations of Single-Family Residential Use and Multiple Family Residential Use. The proposed density is 2.86 units per acre, which is below the maximum density defined in the City's Comprehensive Plan for Single-Family Residential Use up to (5 units per acre) and well below the 10 units per acre allowed by the Multiple Family Residential Use future land category.

BACKGROUND:

The subject property is located west of the current terminus of Mara Loma Boulevard SE, which is west of Babcock Street SE. Specifically, a portion of Tax Parcel 500 of Section 4, Township 30, Range 37, and Tracts 750, 752, and Part of Tax Parcel 1 of San Sebastian Farms, Section 5, Township 30, Range 37, Brevard County, Florida. This Final PUD request includes approximately 190.28 acres of land.

In 2004 the subject property was annexed into the City via Ordinance 2004-35, totaling 1,167 acres. The original Future Land Use amendment designated all the lands as Single-Family Residential Use via Ordinance 2004-52, which stated that 1,800 units could be placed on the lands of Waterstone (which includes Cypress Bay Preserve). Site-specific conditions were placed on the amendment via Ordinance 2004-48. Between 2005 and 2018, a series of 37 future land use map amendments were made, bringing the total units entitled to 2,596.

The total encumbered remaining units by the current pending Final Development Plans are as follows: 327 units on the west side of Babcock Street and 362 units on the east side of Babcock Street. (FD-30-2021, FD-33-2021, FD-41-2021)

ANALYSIS:

The applicant is requesting Final Development Plan (FDP) approval for a Planned Unit Development (PUD), to construct a single-family residential subdivision called Cypress Bay West Phase III PUD. The planned unit development is a concept that encourages and permits variation in residential developments by allowing deviation in lot size, bulk or type of dwellings, density, lot coverage, setbacks, and open space, from those elements required in any singular zoning classification found in the city's Zoning Code.

Specifically, this FDP proposes a 544-unit single-family development that will be constructed in multiple phases. Per the FDP, average lots within the residential development are 50' x 125' and 60' x 125'. The proposed minimum sized home is 1,600 square feet. There will be 2 access points off of the newly extended Mara Loma Boulevard into this phase. The development will consist of two recreation areas, a larger one being passive recreation, and a smaller tract as a proposed bocce ball court, stormwater management ponds, and private roadways. An open space tract (L-1) will be created that could allow for the extension of Journey Drive if needed in the future.

CONDITIONS:

In order to receive FDP approval, the proposal must meet the requirements of Section 185.067 of the City of Palm Bay's Code of Ordinances. Upon review, the request appears to conform with the applicable requirements of this section. The following items shall be addressed upon submission of the administrative construction plans:

- A preliminary subdivision plat and a title opinion.
- Deed restrictions establishing development standards.
- An updated traffic study including traffic counts for all three (3) phases of Cypress Bay West shall be provided. This is to facilitate the determination of the Proportionate Fair Share that may be due from the Developer towards the traffic impact improvements at associated segments along Babcock Street. These were previously recommended in the 2017 Waterstone Traffic Impact Study for the 2025 build-out.
- The technical comments generated by the Development Review Staff (attached) shall be observed and incorporated into the administrative construction plan review.

STAFF RECOMMENDATION:

Case FD-41-2021 is recommended for approval, subject to the staff comments contained in this report.

TECHNICAL COMMENTS

CASE FD-41-2021 – CYPRESS BAY WEST PHASE III PUD

PUBILC WORKS (Natalie Shaber, Engineer II; Joe Hale, City Surveyor):

Survey:

1. Please provide recorded Quit Claim Deed for Utility site once plat has been recorded.
2. Please revise spelling of Forstar to *Forestar*.
3. Please contact City Surveyor for correct organization of Certificate of Approval by Municipality.
4. All roads and ROWs to be private, no City responsibility without acce.
5. Please provide Drainage Easement to the City.
6. Please provide cross access Drainage Easements to all adjacent Subdivisions.

Driveway/ROW:

1. If an access connection is to be made to Malabar Rd.- Brevard County right of way use permit and traffic concurrency (Malabar Road).
2. S/W connection and extension to northern limits of project from the access point.
3. Pre -vs Post discharge rate (MTWCD permit for outfall to Tillman Canal).
4. Traffic study and improvements at Parkway and Malabar.

Please meet all design and performance standards and specifications of Ch. 174 Code of Ordinances including Ch174.073.

Provide the SJRWMD ERP modification prior to scheduling a pre-sitework meeting.

- Traffic Study is being prepared, so waiting on revised report.
- Traffic Study will include mitigation on Babcock Street for signals at Mara Loma, and Grant and left/right at Cogan.
- Assumption all internal streets are private.
- Drainage Easements shall be recorded across the entire master system allowing entry as needed by other HOAs for emergency maintenance.
- Provide the SJRWMD permit for this master system which has pre and post analysis.
- Provide a photometric light plan for the internal and entrance area.
- Site as a future recreation area, is this open to the public since it is located on Mara Loma?

UTILITIES (Christopher Little, Utilities Director):

1. The applicant/owner, at their expense, will be required to design, permit, install, inspect and test water & sewer systems of adequate size to accommodate the development and to connect to the City's water and sewer system [§ 200.11(d)(1) - On-site Facilities]. At this time the nearest point of connection to the mainline water distribution system is a 16" PVC pipe

on the South side of Mara Loma Blvd. The nearest point of connection to the mainline wastewater collection system force main is a 8" PVC pipe on the North side of Mara Loma Blvd. Note, this region has reached the sewer capacity limit and site plan approval will be contingent upon completion of various system upgrades.

2. The applicant/owner will be responsible for the property's hydraulic share for the new utilities. Oversizing of utilities at the request of the Utilities Department will be subject to a refunding agreement or refundable advance [§ 200.11(D) &(E)]. The City of Palm Bay's 2017 Wastewater Master Plan & 2017 Water Master Plan, both of which are available upon request, identify proposed mainline extensions with the current piping size requirements.

3. A City of Palm Bay "Utility Agreement" shall be executed between the Property Owner and the City. All Utility impact/connection charges noted in the "Utility Agreement" must be paid as outlined in the terms and conditions of the Utility Agreement. All fees are subject to change annually on October 1. The Property Owner shall submit a certified copy of the property deed as verification of ownership as part of the Utility Agreement.

4. All Utility construction, materials, and testing shall be in accordance with the latest revision of the Palm Bay Utilities Department Policies, Procedures, and Standards Handbook and the Standard Detail Drawings.

5. Prior to any construction, all required FDEP Permit applications for the Water and Sanitary Sewer Construction shall be processed through and copies of the Permits filed with the Utilities Department.

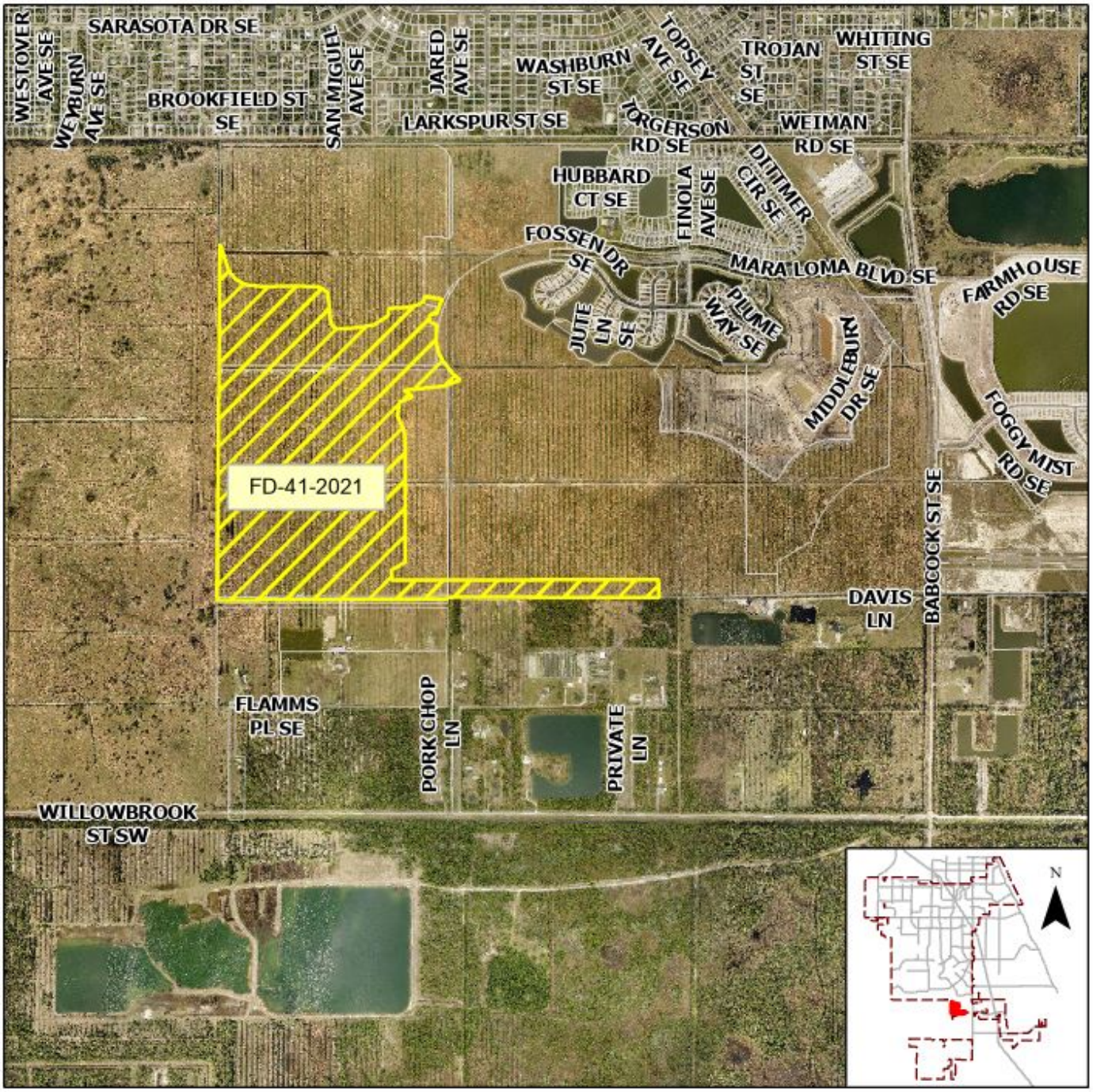
BUILDING-FIRE (Michael Bloom, Fire Plans Examiner):

Fire has no comments at this time.

BUILDING-FLOODZONE (James Williams, Flood Plain Administrator):

The entire site is in floodzone X, no floodplain permits, CLOMA or LOMR-F required.

Map is not to scale—for illustrative purposes only; not to be construed as binding or as a survey.

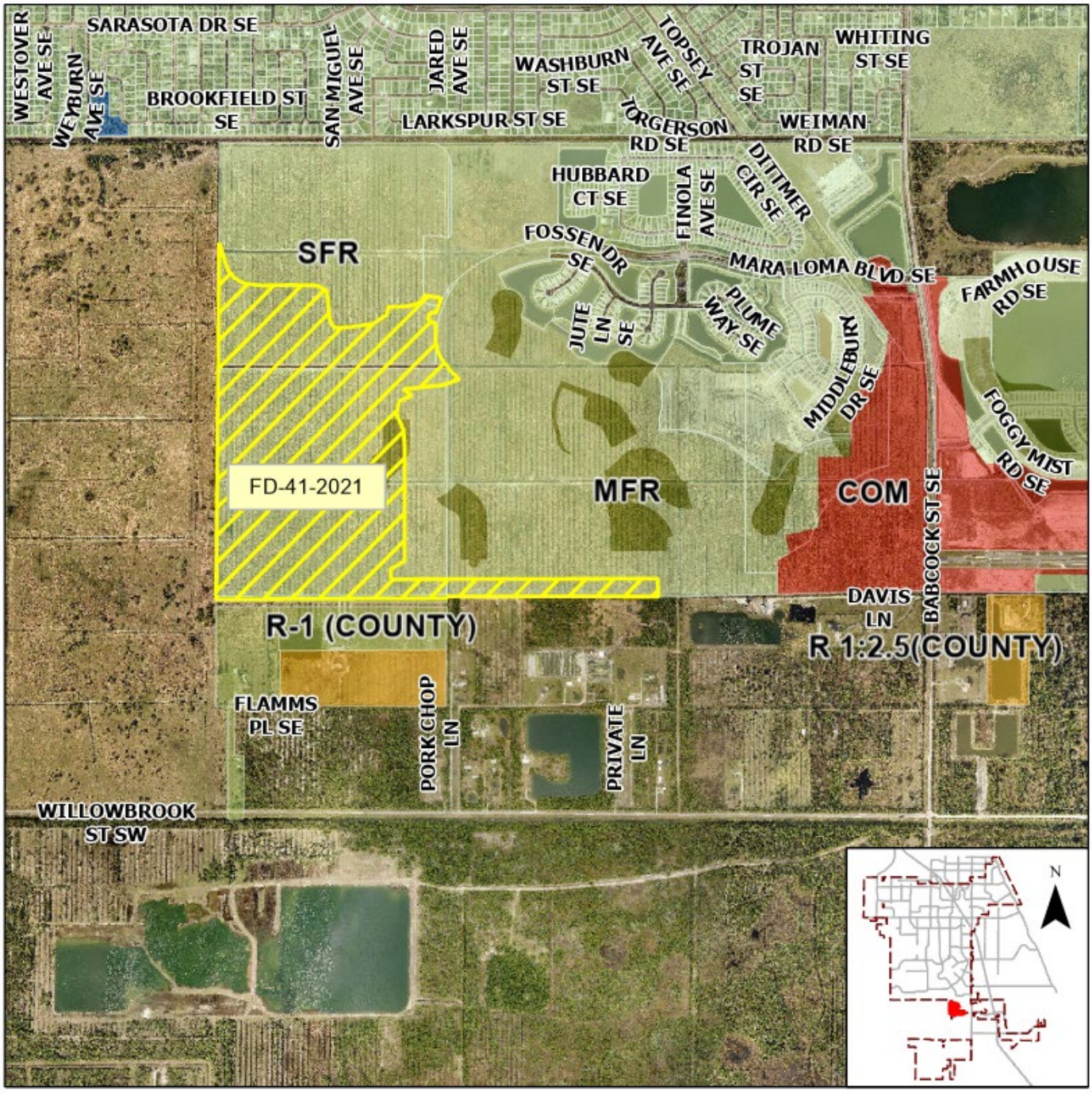


AERIAL LOCATION MAP CASE: FD-41-2021

Subject Property

In the vicinity west of Babcock Street and west of Mara Loma Boulevard SE

Map is not to scale—for illustrative purposes only; not to be construed as binding or as a survey.

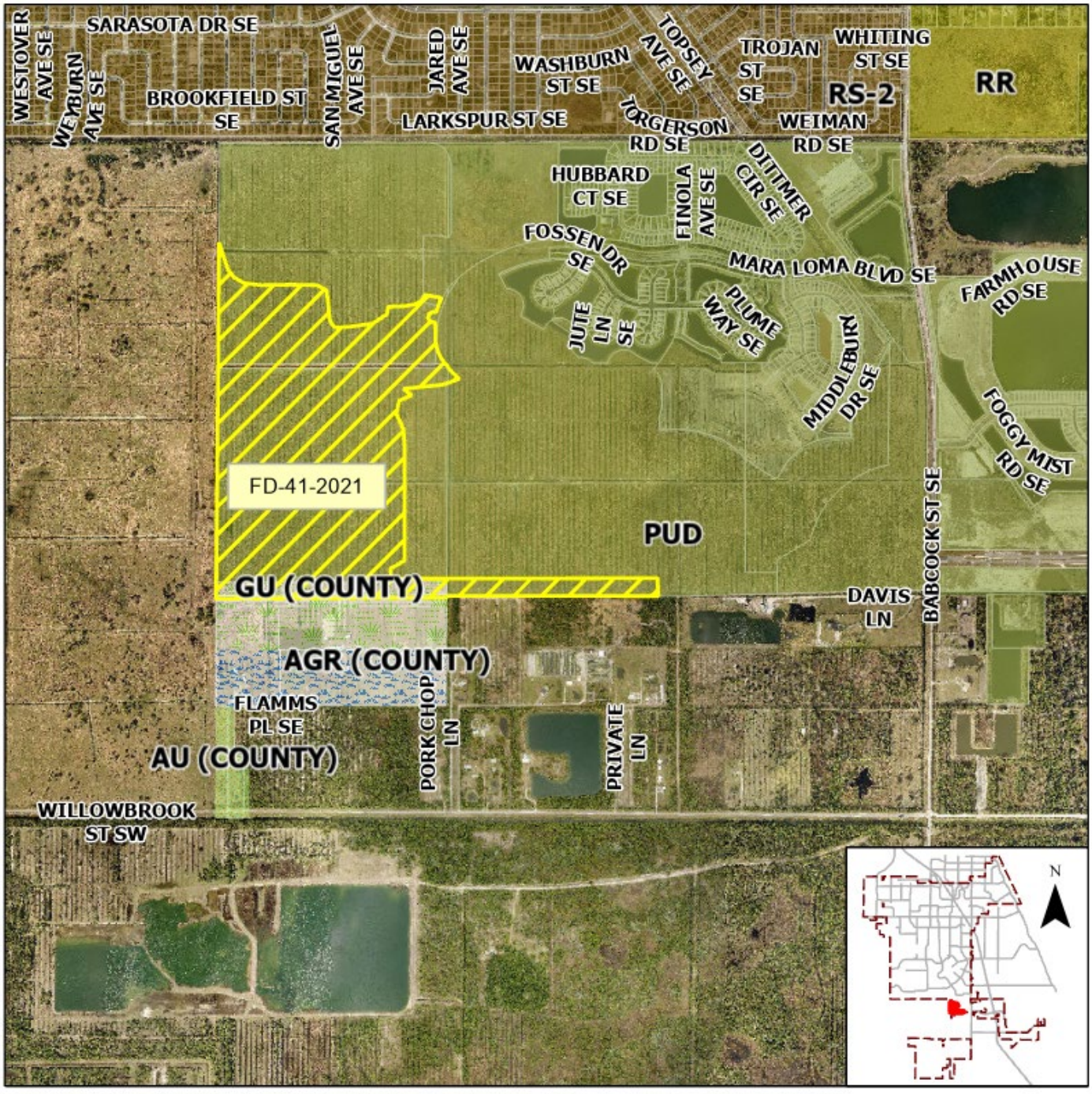


FUTURE LAND USE MAP CASE: FD-41-2021

Subject Property
In the vicinity west of Babcock Street and west of Mara Loma Boulevard SE

Future Land Use Classification
SFR – Single Family Residential Use

Map is not to scale—for illustrative purposes only; not to be construed as binding or as a survey.



ZONING MAP CASE: FD-41-2021

Subject Property
In the vicinity west of Babcock Street and west of Mara Loma Boulevard SE

Current Zoning Classification
PUD, GU (COUNTY) – Planned Unit Development District, General Use (COUNTY)

CYPRESS BAY WEST PHASE III
FINAL DEVELOPMENT PLAN

PALM BAY, FL

DATE:

JULY 27, 2021

PREPARED FOR:

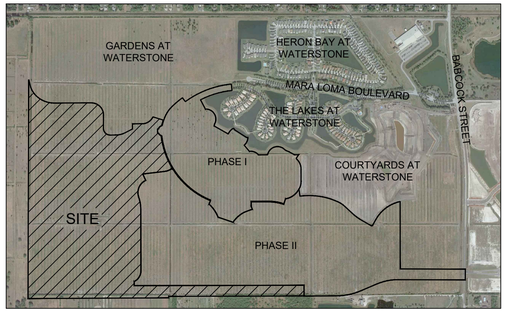
FORESTAR (USA) REAL ESTATE GROUP INC.

LEGAL DESCRIPTION:

A PARCEL OF LAND BEING A PORTION OF SECTION 4, TOWNSHIP 30 SOUTH, RANGE 37 EAST, BREVARD COUNTY, FLORIDA, AND A PORTION OF LOT 8, LOT 25 THROUGH LOT 34, ALL OF LOT 35 THROUGH LOT 39, A PORTION OF LOT 40 AND A PORTION OF LOT 57 THROUGH LOT 64 OF SAN-SEBASTIAN FARMS, SECTION 5, TOWNSHIP 30 SOUTH, RANGE 37 EAST, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 6, PAGE 77, OF THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHEAST CORNER OF SECTION 5, TOWNSHIP 30 SOUTH, RANGE 37 EAST, BREVARD COUNTY, FLORIDA; THENCE RUN N 00° 12' 44" E ALONG THE EAST LINE OF SAID SECTION 5 FOR A DISTANCE OF 98.91 FEET TO THE POINT OF BEGINNING OF THE HEREIN DESCRIBED PARCEL; THENCE RUN S 89° 44' 18" W ALONG THE APPROXIMATE CENTERLINE OF A DITCH FOR A DISTANCE OF 2617.10 FEET; THENCE RUN N 00° 13' 32" E FOR A DISTANCE OF 4069.14 FEET; THENCE RUN S 13° 40' 29" E FOR A DISTANCE OF 150.76 FEET TO A POINT OF INTERSECTION WITH A NON-TANGENT CURVE, CONCAVE NORTHEAST, HAVING A RADIUS OF 461.27 FEET, AND WHOSE CHORD BEARS S 56° 07' 45" E FOR A DISTANCE OF 515.79 FEET; THENCE RUN SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 67° 59' 16", FOR A DISTANCE OF 547.34 FEET TO A POINT OF TANGENCY; THENCE RUN N 89° 52' 37" E FOR A DISTANCE OF 700.04 FEET TO A POINT OF CURVATURE OF A CURVE, CONCAVE SOUTHWEST, HAVING A RADIUS OF 225.00 FEET, AND WHOSE CHORD BEARS S 44° 49' 10" E FOR A DISTANCE OF 319.88 FEET; THENCE RUN SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 90° 36' 27", FOR A DISTANCE OF 355.81 FEET TO A POINT OF TANGENCY; THENCE RUN S 00° 29' 04" W FOR A DISTANCE OF 244.67 FEET TO A POINT OF CURVATURE OF A CURVE, CONCAVE NORTHEAST, HAVING A RADIUS OF 125.00 FEET, AND WHOSE CHORD BEARS S 44° 49' 10" E FOR A DISTANCE OF 177.71 FEET; THENCE RUN SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 90° 36' 27", FOR A DISTANCE OF 197.67 FEET TO A POINT OF TANGENCY; THENCE RUN N 89° 52' 37" E FOR A DISTANCE OF 104.86 FEET TO A POINT OF CURVATURE OF A CURVE, CONCAVE NORTHWEST, HAVING A RADIUS OF 375.00 FEET, AND WHOSE CHORD BEARS N 76° 33' 44" E FOR A DISTANCE OF 172.73 FEET; THENCE RUN NORTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 26° 37' 46", FOR A DISTANCE OF 174.29 FEET TO A POINT OF TANGENCY; THENCE RUN N 63° 14' 51" E FOR A DISTANCE OF 158.48 FEET; THENCE RUN N 00° 00' 46" W FOR A DISTANCE OF 97.55 FEET; THENCE RUN N 89° 52' 37" E FOR A DISTANCE OF 178.45 FEET TO A POINT OF CURVATURE OF A CURVE, CONCAVE NORTHWEST, HAVING A RADIUS OF 225.00 FEET, AND WHOSE CHORD BEARS N 57° 39' 17" E FOR A DISTANCE OF 239.94 FEET; THENCE RUN NORTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 64° 26' 40", FOR A DISTANCE OF 253.07 FEET TO A POINT OF INTERSECTION WITH A NON-TANGENT LINE; THENCE RUN S 72° 30' 44" E FOR A DISTANCE OF 200.00 FEET; THENCE RUN S 17° 29' 16" W FOR A DISTANCE OF 99.80 FEET TO A POINT OF CURVATURE OF A CURVE, CONCAVE NORTHWEST, HAVING A RADIUS OF 25.00 FEET, AND WHOSE CHORD BEARS S 40° 16' 27" W FOR A DISTANCE OF 19.36 FEET; THENCE RUN SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 45° 34' 23", FOR A DISTANCE OF 19.88 FEET TO A POINT REVERSE CURVATURE OF A CURVE, CONCAVE SOUTHEAST, HAVING A RADIUS OF 100.00 FEET, AND WHOSE CHORD BEARS S 44° 35' 34" W FOR A DISTANCE OF 63.35 FEET; THENCE RUN SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 36° 56' 09", FOR A DISTANCE OF 64.47 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE, CONCAVE NORTHWEST, HAVING A RADIUS OF 25.00 FEET, AND WHOSE CHORD BEARS S 56° 07' 29" W FOR A DISTANCE OF 25.00 FEET; THENCE RUN SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 60° 00' 00", FOR A DISTANCE OF 26.18 FEET TO A POINT OF INTERSECTION WITH A NON-TANGENT LINE; THENCE RUN S 03° 52' 31" E FOR A DISTANCE OF 75.00 FEET TO A POINT OF INTERSECTION WITH A NON-TANGENT CURVE, CONCAVE SOUTHWEST, HAVING A RADIUS OF 25.00 FEET, AND WHOSE CHORD BEARS S 63° 52' 31" E FOR A DISTANCE OF 25.00 FEET; THENCE RUN SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 60° 00' 00", FOR A DISTANCE OF 26.18 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE, CONCAVE NORTHEAST, HAVING A RADIUS OF 100.00 FEET, AND WHOSE CHORD BEARS S 46° 08' 46" E FOR A DISTANCE OF 42.51 FEET; THENCE RUN SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 24° 32' 31", FOR A DISTANCE OF 42.83 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE, CONCAVE SOUTHWEST, HAVING A RADIUS OF 25.00 FEET, AND WHOSE CHORD BEARS S 32° 42' 19" E FOR A DISTANCE OF 21.69 FEET; THENCE RUN SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 51° 25' 25", FOR A DISTANCE OF 22.44 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE, CONCAVE NORTHEAST, HAVING A RADIUS OF 1487.50 FEET, AND WHOSE CHORD BEARS S 19° 13' 25" E FOR A DISTANCE OF 630.22 FEET; THENCE RUN SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 24° 27' 37", FOR A DISTANCE OF 635.03 FEET TO A POINT OF INTERSECTION WITH A NON-TANGENT LINE; THENCE RUN S 59° 59' 27" W FOR A DISTANCE OF 33.34 FEET TO A POINT OF CURVATURE OF A CURVE, CONCAVE NORTHWEST, HAVING A RADIUS OF 325.00 FEET, AND WHOSE CHORD BEARS S 71° 43' 01" W FOR A DISTANCE OF 132.10 FEET; THENCE RUN SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 23° 27' 08", FOR A DISTANCE OF 133.03 FEET TO A POINT OF TANGENCY; THENCE RUN S 83° 26' 35" W FOR A DISTANCE OF 377.34 FEET; THENCE RUN S 65° 07' 53" W FOR A DISTANCE OF 20.65 FEET; THENCE RUN S 24° 52' 07" E FOR A DISTANCE OF 125.00 FEET TO A POINT OF INTERSECTION WITH A NON-TANGENT CURVE, CONCAVE SOUTHEAST, HAVING A RADIUS OF 250.00 FEET AND WHOSE CHORD BEARS S 22° 47' 04" W FOR A DISTANCE OF 336.81 FEET; THENCE RUN SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 84° 41' 39", FOR A DISTANCE OF 369.55 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE, CONCAVE SOUTHWEST, HAVING A RADIUS OF 675.00 FEET AND WHOSE CHORD BEARS S 09° 50' 34" E FOR A DISTANCE OF 227.92 FEET; THENCE RUN SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 19° 26' 23", FOR A DISTANCE OF 229.02 FEET TO A POINT OF TANGENCY; THENCE RUN S 00° 07' 22" E FOR A DISTANCE OF 1143.70 FEET TO A POINT OF CURVATURE OF A CURVE, CONCAVE NORTHWEST, HAVING A RADIUS OF 225.00 FEET, AND WHOSE CHORD BEARS S 31° 44' 37" W FOR A DISTANCE OF 237.57 FEET; THENCE RUN SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 63° 43' 57", FOR A DISTANCE OF 250.28 FEET TO A POINT OF INTERSECTION WITH A NON-TANGENT LINE; THENCE RUN S 00° 07' 22" E FOR A DISTANCE OF 74.96 FEET; THENCE RUN N 89° 52' 38" E FOR A DISTANCE OF 3155.67 FEET; THENCE RUN S 00° 07' 22" E FOR A DISTANCE OF 200.00 FEET; THENCE RUN S 89° 52' 38" W FOR A DISTANCE OF 2514.25 FEET; THENCE RUN S 00° 13' 56" W FOR A DISTANCE OF 29.65 FEET TO THE POINT OF BEGINNING; CONTAINING 190.281 ACRES, MORE OR LESS.

CONSTRUCTION ENGINEERING GROUP
Consulting Engineers



LOCATION MAP
NTS

PROJECT DATA:

GENERAL STATEMENT:
THE PROPOSED PROJECT IS PHASE III OF CYPRESS BAY WEST AND CONSISTS OF INFRASTRUCTURE AND SITE IMPROVEMENTS TO ACCOMMODATE A 544 LOT SINGLE FAMILY RESIDENTIAL SUBDIVISION INCLUDING VEHICULAR ACCESS, SIDEWALKS, LANDSCAPING, WATER, SEWER AND STORMWATER SYSTEMS.

DEVELOPER:
FORESTAR (USA) REAL ESTATE GROUP
1064 GREENWOOD BLVD, SUITE 200
LAKE MARY, FL 32746
TEL: (407) 832-3164

SURVEYOR:
HORIZON SURVEYORS OF CENTRAL FLORIDA, INC.
390 POINCIANA DRIVE
MELBOURNE, FL 32935
TEL: (321) 254-8133
EMAIL: BOB@HORIZONSURVEYORS.COM

CIVIL ENGINEER/APPLICANT:
JAKE T. WISE, P.E.
2651 EAU GALLIE BLVD, SUITE A
MELBOURNE, FLORIDA 32935
TEL: (321) 610-1760
E-MAIL: JWISE@CEGENGINEERING.COM

LOCATION:
SECTION: 04, 05
TOWNSHIP: 30
RANGE: 37E
PARCEL ID: 30-37-04-00-500
30-37-05-HF-750
30-37-05-HF-1
30-37-05-HF-752
TAX ACCOUNT: 3000216, 3000217
3000219, 3010427

SETBACKS	PROPOSED:
FRONT:	25 FT
SIDE:	5 FT
REAR:	20 FT
SIDE CORNER:	15 FT

LOT COUNT:
50'x125' LOTS = 367
60'x125' LOTS = 177

MAXIMUM BUILDING HEIGHT:
2 STORY: 25 FT

MINIMUM WIDTHS:
SIDEWALKS: 5 FT
RIGHT-OF-WAY WIDTH: 50 FT

OPEN SPACE REQUIREMENTS:

OVERALL AREA (190.28 ACRES):	
ON-SITE PONDS	27.35 AC (40%)
OPEN SPACE:	36.42 AC (53%)
RECREATION AREA:	5.28 AC (7%)
PROVIDED:	69.05 AC (100%)
REQUIRED (25% OF OVERALL AREAS):	47.57 AC

CALCULATED STORMWATER BASIN COVERAGE:

IMPERVIOUS:	SF	ACRE	PERCENT
RESIDENTIAL (60%):	2,594,434	59.56	31
ROADWAYS/SIDEWALKS:	956,142	21.95	12
RECREATIONAL AREA (70%):	161,172	3.70	2
TOTAL IMPERVIOUS:	3,711,748	85.21	45
PERVIOUS:	2,990,394	68.65	36
POND:	1,586,485	36.42	19
TOTAL:	8,288,627	190.28	100

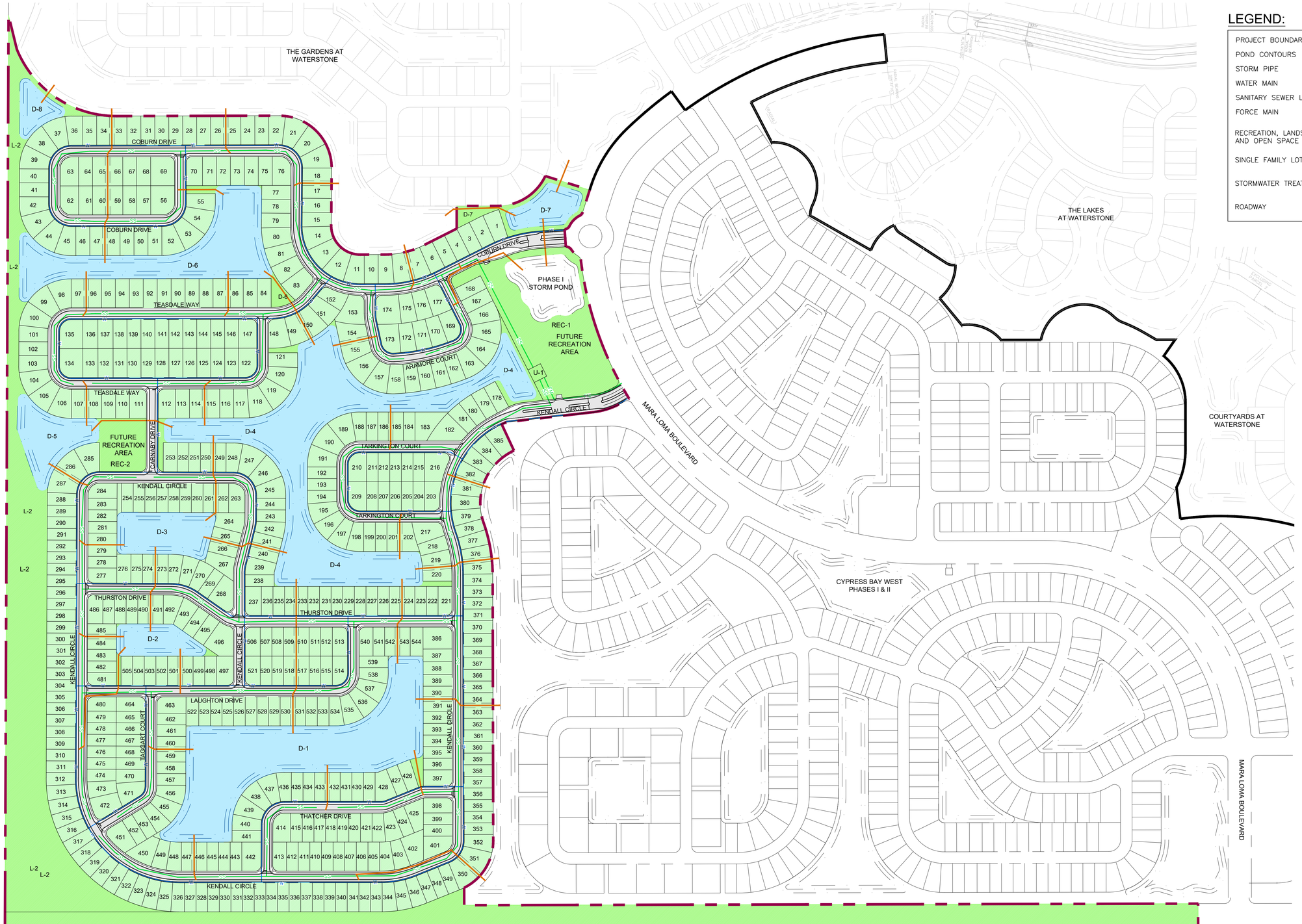
REVISION | DATE | REV#

CONSTRUCTION ENGINEERING GROUP
Consulting Engineers
2651 Eau Gallie Blvd., Suite A
Melbourne, FL 32935
Tel. 321.253.1221
www.cegengineering.com
COA #0008097

CYPRESS BAY WEST
PHASE III
D.R. HORTON
MARA LOMA BOULEVARD, PALM BAY, FLORIDA
DRAWING TITLE
FINAL DEVELOPMENT PLAN

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DATE: 7/27/21
SCALE: NTS
PROJ. NO. : 210120
DESIGNED BY: CCM
DRAWN BY: SMB
CHECKED BY: JTW
DRAWING NO. CBW3-1



FINAL DEVELOPMENT PLAN
1"=200'

200' 0' 200' 400'

REV#	DATE	REVISION

2451 Edu Cobb Blvd., Suite A
Melbourne, FL 32935
Tel. 321.253.1221
www.cegengineering.com
COA #0008097

CONSTRUCTION ENGINEERING GROUP
Consulting Engineers

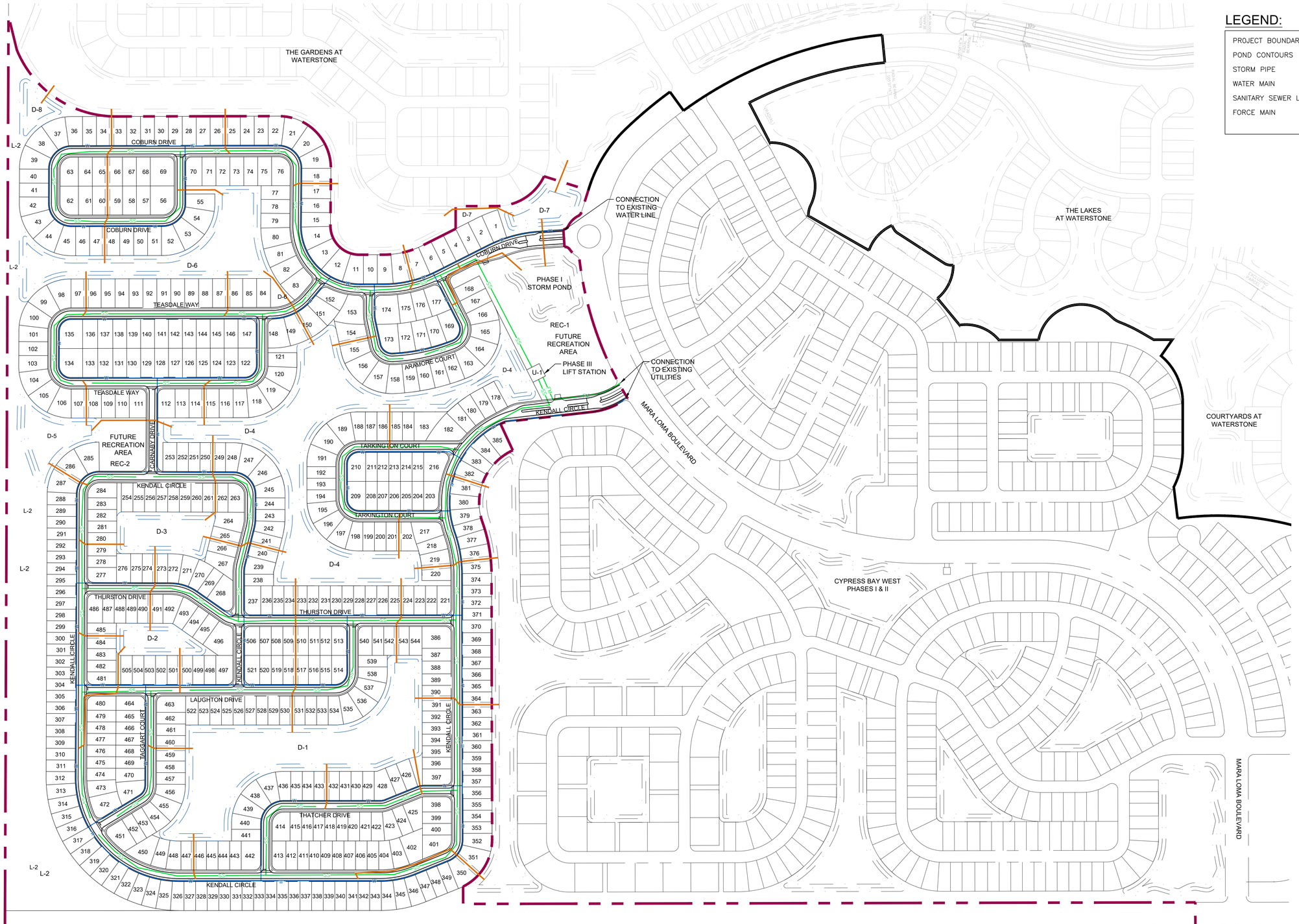
CYPRESS BAY WEST PHASE III

D.R. HORTON
MARA LOMA BOULEVARD, PALM BAY, FLORIDA

DRAWING TITLE
FINAL DEVELOPMENT PLAN

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DATE	7/27/21
SCALE	1"=200'
PROJ. NO. :	210120
DESIGNED BY:	CCM
DRAWN BY:	SMB
CHECKED BY:	JTW
DRAWING NO.	CBW3-2



LEGEND:

- PROJECT BOUNDARY
- POND CONTOURS
- STORM PIPE
- WATER MAIN (W)
- SANITARY SEWER LINE
- FORCE MAIN (SS / FM)

FINAL DEVELOPMENT UTILITY PLAN

1"=200'

200' 0' 200' 400'

REV#	DATE	REVISION

2451 Edu Cedia Blvd., Suite A
Melbourne, FL 32935
Tel. 321.253.1221
www.cegengineering.com
COA #0008097

CONSTRUCTION ENGINEERING GROUP
Consulting Engineers

CYPRESS BAY WEST PHASE III

D.R. HORTON
MARA LOMA BOULEVARD, PALM BAY, FLORIDA

DRAWING TITLE
FINAL DEVELOPMENT UTILITY PLAN

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SCALE	1"=200'
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DESIGNED BY:	CCM
DRAWN BY:	SMB
CHECKED BY:	JTW
DRAWING NO.	CBW3-3

NOTICE: THIS PLAT, AS RECORDED IN IT'S GRAPHIC FORM, IS THE OFFICIAL DEPICTION OF THE SUBDIVIDED LANDS DESCRIBED HEREIN AND WILL IN NO CIRCUMSTANCES BE SUPPLANTED IN AUTHORITY BY ANY OTHER GRAPHIC OR DIGITAL FORM OF PLAT.

NOTICE: THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA.

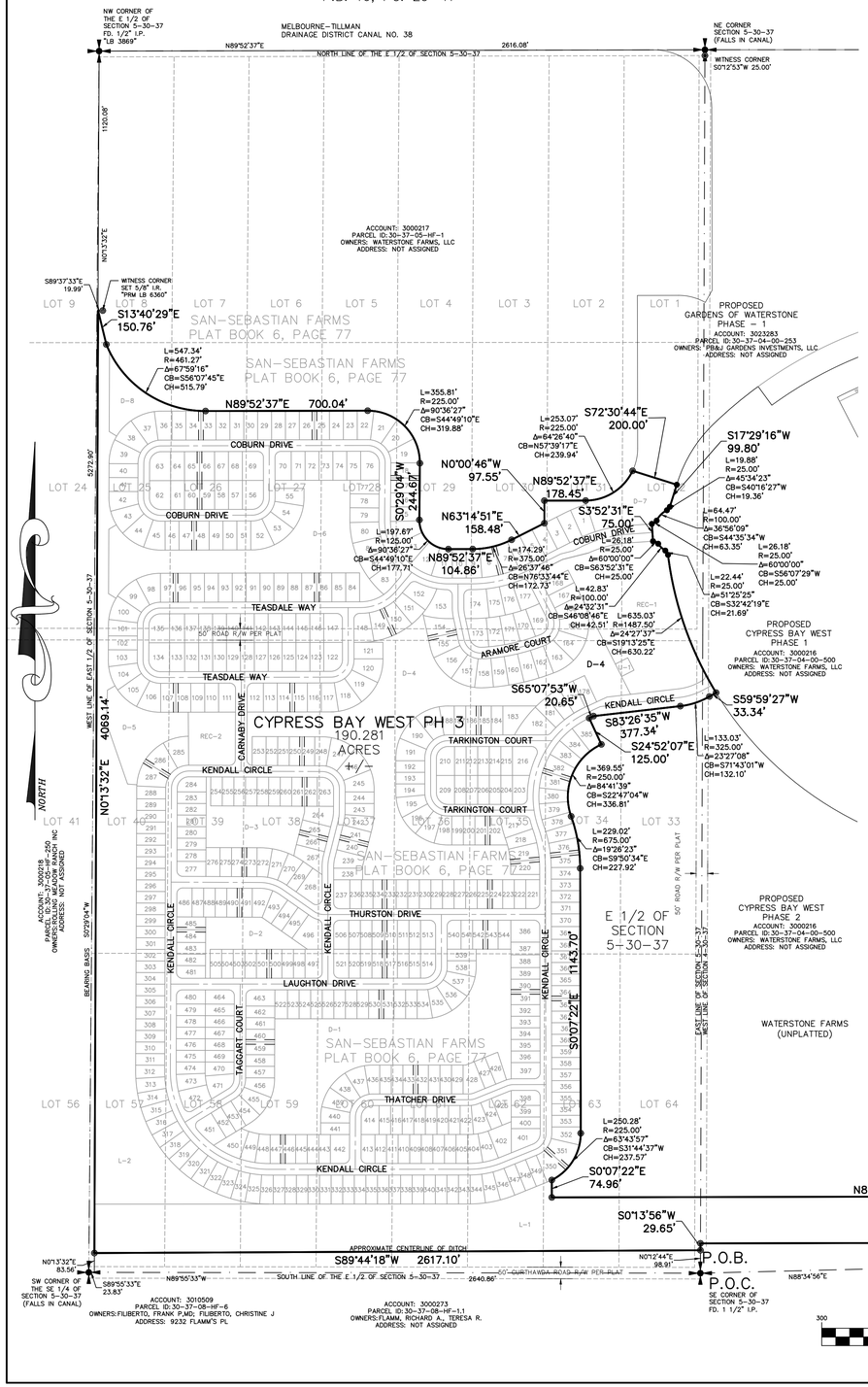
– PLAT PREPARED BY –
HORIZON SURVEYORS OF CENTRAL FLORIDA, INC.
390 POINCIANA DR.
MELBOURNE, FL 32935
(321) 254–8133

PORT MALABAR
UNIT TWENTY FOUR
P.B. 16, PG. 29–41

PRELIMINARY PLAT OF

CYPRESS BAY WEST PHASE 3

A SUBDIVISION LYING IN SECTIONS 4 & 5, TOWNSHIP 30 SOUTH, RANGE 37 EAST, BREVARD COUNTY, FLORIDA.
BEING A PORTION OF SECTION 4 AND A "REPLAT" OF A PORTION OF LOT 8, LOT 25 THROUGH LOT 34, ALL OF LOT 35 THROUGH LOT 39, A PORTION OF LOT 40 AND A PORTION OF LOT 57 THROUGH 64, SECTION 5, "SAN-SEBASTIAN FARMS", RECORDED IN PLAT BOOK 6, PAGE 77 OF THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA.



GENERAL NOTES:

1. THE BEARING BASIS FOR THIS SURVEY IS THE EAST LINE OF THE SOUTHEAST 1/4 OF SECTION 4, TOWNSHIP 30 SOUTH, RANGE 37 EAST, PER WATERSTONE PLAT ONE, P.U.D. AS RECORDED IN PLAT BOOK 55, PAGE 37 THRU 57 OF THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA, WHICH BEARS S01°11'38"E, AND AS SHOWN HEREON.

2. A STRIP OF LAND 10 FEET IN WIDTH IS HEREBY DEDICATED WITHIN ALL LOTS AND TRACTS ALONG AND ADJACENT TO THE RIGHT OF WAYS FOR THE CONSTRUCTION, INSTALLATION AND MAINTENANCE OF PUBLIC UTILITIES AND DRAINAGE FACILITIES.

3. UNLESS OTHERWISE NOTED, A STRIP OF LAND 5 FEET IN WIDTH IS HEREBY DEDICATED ALONG ALL SIDE AND REAR LOT LINES FOR THE INSTALLATION AND MAINTENANCE OF PUBLIC UTILITIES AND DRAINAGE FACILITIES.

4. TRACTS "D-1", "D-2", "D-3", "D-4", "D-5" "D-6", "D-7" & "D-8" (OPEN SPACE, DRAINAGE AND LANDSCAPE) ARE HEREBY DEDICATED TO CYPRESS BAY WEST COMMUNITY DEVELOPMENT DISTRICT, MAINTENANCE AND OPERATION OF THESE TRACTS ARE THE RESPONSIBILITY OF CYPRESS BAY WEST COMMUNITY DEVELOPMENT DISTRICT.

5. TRACT "L-1" & "L-2" (LANDSCAPE, DRAINAGE & OPEN SPACE) ARE HEREBY DEDICATED TO CYPRESS BAY WEST PHASE 3 HOMEOWNERS ASSOCIATION, INC., ITS SUCCESSORS AND/OR ASSIGNS, MAINTENANCE AND OPERATION OF THESE TRACTS ARE THE RESPONSIBILITY OF CYPRESS BAY WEST PHASE 3 HOMEOWNERS ASSOCIATION, INC., ITS SUCCESSORS AND/OR ASSIGNS.

6. TRACT "REC-1" & "REC-2" (RECREATION) IS HEREBY DEDICATED TO CYPRESS BAY WEST PHASE 3 HOMEOWNERS ASSOCIATION, INC., ITS SUCCESSORS AND/OR ASSIGNS, MAINTENANCE AND OPERATION OF THIS TRACT IS THE RESPONSIBILITY OF CYPRESS BAY WEST PHASE 3 HOMEOWNERS ASSOCIATION, INC., ITS SUCCESSORS AND/OR ASSIGNS.

7. TRACT "RW-1" (PRIVATE RIGHT-OF-WAY) IS HEREBY DEDICATED TO THE CYPRESS BAY WEST PHASE 3 HOMEOWNERS ASSOCIATION, INC., MAINTENANCE AND OPERATION OF THIS RIGHT OF WAY IS THE RESPONSIBILITY OF CYPRESS BAY WEST PHASE 3 HOMEOWNERS ASSOCIATION, INC.

8. PUBLIC UTILITY EASEMENTS DEDICATED HEREON SHALL BE FOR THE INSTALLATION, CONSTRUCTION, MAINTENANCE AND OPERATION OF ELECTRIC POWER FACILITIES AND CABLE TELEVISION SERVICES; PROVIDED HOWEVER, NO SUCH CONSTRUCTION, INSTALLATION, MAINTENANCE AND OPERATION OF CABLE TELEVISION SERVICES SHALL INTERFERE WITH THE FACILITIES AND SERVICES OF AN ELECTRIC, TELEPHONE, GAS OR OTHER PUBLIC UTILITY. IN THE EVENT A CABLE TELEVISION COMPANY DAMAGES THE FACILITY OF A PUBLIC UTILITY, IT SHALL BE SOLELY RESPONSIBLE FOR DAMAGES.

9. UNLESS OTHERWISE SPECIFIED, UTILITY EASEMENTS ARE HEREBY DEDICATED TO THE PUBLIC AND DRAINAGE EASEMENTS ARE PRIVATE AND ARE HEREBY DEDICATED TO CYPRESS BAY WEST PHASE 2 HOMEOWNERS ASSOCIATION, INC., ITS SUCCESSORS AND/OR ASSIGNS.

10. AN EASEMENT IS HEREBY DEDICATED TO THE CITY OF PALM BAY ACROSS, OVER, INTO AND THROUGH TRACTS "D-1", "D-2", "D-3", "D-4", "D-5" "D-6", "D-7", "D-8", "L-1" & "L-2" FOR EMERGENCY ACCESS AND STORMWATER DRAINAGE.

11. THE LAND DESCRIBED HEREON COMPRISES A TOTAL AREA OF 190.281 ACRES +/-.

12. THE OWNER HAS THE RIGHT TO ASSIGN ITS RIGHTS AND RESPONSIBILITIES THEREUNDER TO HOMEOWNERS AND/OR OTHER PROPERTY OWNERS ASSOCIATION OR ASSOCIATIONS, AND/OR TO CONVEY ANY OR ALL OF THE TRACTS SET FORTH ON THE PLAT, AND IN SUCH EVENT, PREVIOUS OWNER SHALL BE RELEASED FROM SUCH ASSIGNED OBLIGATIONS.

13. ZONING IS PLANNED UNIT DEVELOPMENT (P.U.D.), LAND USE IS SINGLE FAMILY RESIDENTIAL (S.F.R.).

SITE DEVELOPMENT NOTES:

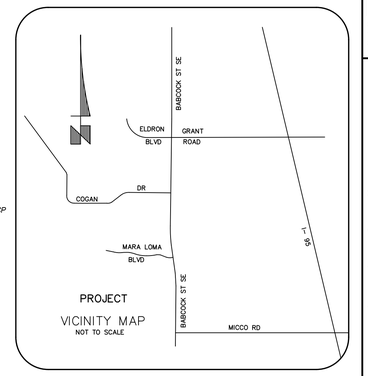
SETBACKS	PROPOSED:
FRONT:	25 FT
SIDE:	5 FT
REAR:	20 FT
SIDE CORNER:	15 FT

LOT COUNT:
50'x125' LOTS = 367
80'x125' LOTS = 177
MAXIMUM BUILDING HEIGHT:
2 STORY: 25 FT
MINIMUM WIDTHS:
SIDEWALKS: 5 FT
RIGHT-OF-WAY WIDTH: 50 FT

LEGAL DESCRIPTION: CYPRESS BAY WEST PHASE 3

A PARCEL OF LAND BEING A PORTION OF SECTION 4, TOWNSHIP 30 SOUTH, RANGE 37 EAST, BREVARD COUNTY, FLORIDA, AND A PORTION OF LOT 8, LOT 25 THROUGH LOT 34, ALL OF LOT 35 THROUGH LOT 39, A PORTION OF LOT 40 AND A PORTION OF LOT 57 THROUGH LOT 64 OF SAN–SEBASTIAN FARMS, SECTION 5, TOWNSHIP 30 SOUTH, RANGE 37 EAST, ACCORDING TO THE PLAT THEREOF, AS RECORDED IN PLAT BOOK 6, PAGE 77, OF THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHEAST CORNER OF SECTION 5, TOWNSHIP 30 SOUTH, RANGE 37 EAST, BREVARD COUNTY, FLORIDA; THENCE RUN N 00° 12' 44" E ALONG THE EAST LINE OF SAID SECTION 5 FOR A DISTANCE OF 98.91 FEET TO THE POINT OF BEGINNING OF THE HEREIN DESCRIBED PARCEL; THENCE RUN S 89° 44' 18" W ALONG THE APPROXIMATE CENTERLINE OF A DITCH FOR A DISTANCE OF 2617.10 FEET; THENCE RUN N 00° 13' 32" E FOR A DISTANCE OF 4069.14 FEET; THENCE RUN S 13° 40' 29" E FOR A DISTANCE OF 150.76 FEET TO A POINT OF INTERSECTION WITH A NON–TANGENT CURVE, CONCAVE NORTHEAST, HAVING A RADIUS OF 461.27 FEET, AND WHOSE CHORD BEARS S 56° 07' 45" E FOR A DISTANCE OF 515.79 FEET; THENCE RUN SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 67° 59' 16", FOR A DISTANCE OF 547.34 FEET TO A POINT OF TANGENCY; THENCE RUN N 89° 52' 37" E FOR A DISTANCE OF 700.04 FEET TO A POINT OF CURVATURE OF A CURVE, CONCAVE SOUTHWEST, HAVING A RADIUS OF 225.00 FEET, AND WHOSE CHORD BEARS S 44° 49' 10" E FOR A DISTANCE OF 319.88 FEET; THENCE RUN SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 90° 36' 27", FOR A DISTANCE OF 355.81 FEET TO A POINT OF TANGENCY; THENCE RUN S 00° 29' 04" W FOR A DISTANCE OF 244.67 FEET TO A POINT OF CURVATURE OF A CURVE, CONCAVE NORTHEAST, HAVING A RADIUS OF 125.00 FEET, AND WHOSE CHORD BEARS S 44° 49' 10" E FOR A DISTANCE OF 177.71 FEET; THENCE RUN SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 90° 36' 27", FOR A DISTANCE OF 197.67 FEET TO A POINT OF TANGENCY; THENCE RUN N 89° 52' 37" E FOR A DISTANCE OF 104.86 FEET TO A POINT OF CURVATURE OF A CURVE, CONCAVE NORTHWEST, HAVING A RADIUS OF 375.00 FEET, AND WHOSE CHORD BEARS N 76° 33' 44" E FOR A DISTANCE OF 172.73 FEET; THENCE RUN NORTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 26° 37' 46", FOR A DISTANCE OF 174.29 FEET TO A POINT OF TANGENCY; THENCE RUN N 63° 14' 51" E FOR A DISTANCE OF 158.48 FEET; THENCE RUN N 00° 00' 46" W FOR A DISTANCE OF 97.55 FEET; THENCE RUN N 89° 52' 37" E FOR A DISTANCE OF 178.45 FEET TO A POINT OF CURVATURE OF A CURVE, CONCAVE NORTHWEST, HAVING A RADIUS OF 225.00 FEET, AND WHOSE CHORD BEARS N 57° 39' 17" E FOR A DISTANCE OF 239.94 FEET; THENCE RUN NORTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 64° 26' 40", FOR A DISTANCE OF 253.07 FEET TO A POINT OF INTERSECTION WITH A NON–TANGENT LINE; THENCE RUN S 72° 30' 44" E FOR A DISTANCE OF 200.00 FEET; THENCE RUN S 17° 29' 16" W FOR A DISTANCE OF 99.80 FEET TO A POINT OF CURVATURE OF A CURVE, CONCAVE NORTHWEST, HAVING A RADIUS OF 25.00 FEET, AND WHOSE CHORD BEARS S 40° 16' 27" W FOR A DISTANCE OF 19.36 FEET; THENCE RUN SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 45° 34' 23", FOR A DISTANCE OF 19.88 FEET TO A POINT REVERSE CURVATURE OF A CURVE, CONCAVE SOUTHEAST, HAVING A RADIUS OF 100.00 FEET, AND WHOSE CHORD BEARS S 44° 35' 34" W FOR A DISTANCE OF 63.35 FEET; THENCE RUN SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 36° 56' 09", FOR A DISTANCE OF 64.47 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE, CONCAVE NORTHWEST, HAVING A RADIUS OF 25.00 FEET, AND WHOSE CHORD BEARS S 56° 07' 29" W FOR A DISTANCE OF 25.00 FEET; THENCE RUN SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 60° 00' 00", FOR A DISTANCE OF 26.18 FEET TO A POINT OF INTERSECTION WITH A NON–TANGENT LINE; THENCE RUN S 03° 52' 31" E FOR A DISTANCE OF 75.00 FEET TO A POINT OF INTERSECTION WITH A NON–TANGENT CURVE, CONCAVE SOUTHWEST, HAVING A RADIUS OF 25.00 FEET, AND WHOSE CHORD BEARS S 63° 52' 31" E FOR A DISTANCE OF 25.00 FEET; THENCE RUN SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 60° 00' 00", FOR A DISTANCE OF 26.18 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE, CONCAVE NORTHEAST, HAVING A RADIUS OF 100.00 FEET, AND WHOSE CHORD BEARS S 46° 08' 46" E FOR A DISTANCE OF 42.51 FEET; THENCE RUN SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 24° 32' 31", FOR A DISTANCE OF 42.83 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE, CONCAVE SOUTHWEST, HAVING A RADIUS OF 25.00 FEET, AND WHOSE CHORD BEARS S 32° 42' 19" E FOR A DISTANCE OF 21.69 FEET; THENCE RUN SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 51° 25' 25", FOR A DISTANCE OF 22.44 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE, CONCAVE NORTHEAST, HAVING A RADIUS OF 1487.50 FEET, AND WHOSE CHORD BEARS S 19° 13' 25" E FOR A DISTANCE OF 630.22 FEET; THENCE RUN SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 24° 27' 37", FOR A DISTANCE OF 635.03 FEET TO A POINT OF INTERSECTION WITH A NON–TANGENT LINE; THENCE RUN S 59° 59' 27" W FOR A DISTANCE OF 33.34 FEET TO A POINT OF CURVATURE OF A CURVE, CONCAVE NORTHWEST, HAVING A RADIUS OF 325.00 FEET, AND WHOSE CHORD BEARS S 71° 43' 01" W FOR A DISTANCE OF 132.10 FEET; THENCE RUN SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 23° 27' 08", FOR A DISTANCE OF 133.03 FEET TO A POINT OF TANGENCY; THENCE RUN S 83° 26' 35" W FOR A DISTANCE OF 377.34 FEET; THENCE RUN S 65° 07' 53" W FOR A DISTANCE OF 20.65 FEET; THENCE RUN S 24° 52' 07" E FOR A DISTANCE OF 125.00 FEET TO A POINT OF INTERSECTION WITH A NON–TANGENT CURVE, CONCAVE SOUTHEAST, HAVING A RADIUS OF 250.00 FEET AND WHOSE CHORD BEARS S 22° 47' 04" W FOR A DISTANCE OF 336.81 FEET; THENCE RUN SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 84° 41' 39", FOR A DISTANCE OF 369.55 FEET TO A POINT OF REVERSE CURVATURE OF A CURVE, CONCAVE SOUTHWEST, HAVING A RADIUS OF 675.00 FEET AND WHOSE CHORD BEARS S 09° 50' 34" E FOR A DISTANCE OF 227.92 FEET; THENCE RUN SOUTHEASTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 19° 26' 23", FOR A DISTANCE OF 229.02 FEET TO A POINT OF TANGENCY; THENCE RUN S 00° 07' 22" E FOR A DISTANCE OF 1143.70 FEET TO A POINT OF CURVATURE OF A CURVE, CONCAVE NORTHWEST, HAVING A RADIUS OF 225.00 FEET, AND WHOSE CHORD BEARS S 31° 44' 37" W FOR A DISTANCE OF 237.57 FEET; THENCE RUN SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, THROUGH A CENTRAL ANGLE OF 63° 43' 57", FOR A DISTANCE OF 250.28 FEET TO A POINT OF INTERSECTION WITH A NON–TANGENT LINE; THENCE RUN S 00° 07' 22" E FOR A DISTANCE OF 74.96 FEET; THENCE RUN N 89° 52' 38" E FOR A DISTANCE OF 3155.67 FEET; THENCE RUN S 00° 07' 22" E FOR A DISTANCE OF 200.00 FEET; THENCE RUN S 89° 52' 38" W FOR A DISTANCE OF 2514.25 FEET; THENCE RUN S 00° 13' 56" W FOR A DISTANCE OF 29.65 FEET TO THE POINT OF BEGINNING; CONTAINING 190.281 ACRES, MORE OR LESS.



SURVEYOR'S NOTES:

1. DENOTES MAG NAIL & DISK STAMPED: "PCP LB 6360".
2. DENOTES FD. 5/8" IRON ROD WITH CAP STAMPED "PRM LB 6360".
3. DENOTES SET 5/8" IRON ROD WITH CAP STAMPED "PRM LB 6360"
4. DENOTES THE POINTS OF CURVATURE, POINTS OF TANGENCY AND OTHER PERTINENT POINTS REQUIRING CLARITY OR DEFINITION.
5. ALL LOT LINES IN CURVILINEAR LOTS ARE RADIAL UNLESS DESIGNATED NR (NON–RADIAL).

TRACT TABLE

TRACT	ACRES +/-	TRACT USE	OWNERSHIP/MAINTENANCE
D-1	7.803	DRAINAGE, OPENSPACE & LANDSCAPE	CYPRESS BAY WEST COMMUNITY DEVELOPMENT DISTRICT
D-2	1.143	DRAINAGE, OPENSPACE & LANDSCAPE	CYPRESS BAY WEST COMMUNITY DEVELOPMENT DISTRICT
D-3	1.784	DRAINAGE, OPENSPACE & LANDSCAPE	CYPRESS BAY WEST COMMUNITY DEVELOPMENT DISTRICT
D-4	9.933	DRAINAGE, OPENSPACE & LANDSCAPE	CYPRESS BAY WEST COMMUNITY DEVELOPMENT DISTRICT
D-5	1.667	DRAINAGE, OPENSPACE & LANDSCAPE	CYPRESS BAY WEST COMMUNITY DEVELOPMENT DISTRICT
D-6	4.828	DRAINAGE, OPENSPACE & LANDSCAPE	CYPRESS BAY WEST COMMUNITY DEVELOPMENT DISTRICT
D-7	1.623	DRAINAGE, OPENSPACE & LANDSCAPE	CYPRESS BAY WEST COMMUNITY DEVELOPMENT DISTRICT
D-8	0.912	DRAINAGE, OPENSPACE & LANDSCAPE	CYPRESS BAY WEST COMMUNITY DEVELOPMENT DISTRICT
L-1	24.637	LANDSCAPE & OPENSPACE	CYPRESS BAY WEST PHASE 3 HOMEOWNERS ASSOCIATION, INC.
L-2	11.522	LANDSCAPE & OPENSPACE	CYPRESS BAY WEST PHASE 3 HOMEOWNERS ASSOCIATION, INC.
REC-1	5.619	RECREATION, OPENSPACE & LANDSCAPE	CYPRESS BAY WEST PHASE 3 HOMEOWNERS ASSOCIATION, INC.
REC-2	1.064	RECREATION, OPENSPACE & LANDSCAPE	CYPRESS BAY WEST PHASE 3 HOMEOWNERS ASSOCIATION, INC.
RW-1	24.269	PRIVATE RIGHT OF WAY	CYPRESS BAY WEST PHASE 3 HOMEOWNERS ASSOCIATION, INC.
U-1	0.083	LIFT STATION	CITY OF PALM BAY

LEGEND OF ABBREVIATIONS

BRG	=	BEARING
C	=	CURVE DESIGNATION
CH	=	CHORD
C.M.	=	CONCRETE MONUMENT
Δ	=	DELTA (CENTRAL ANGLE)
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FD.	=	FOUND
FPL	=	FLORIDA POWER & LIGHT COMPANY
I.R.	=	IRON ROD
L	=	LENGTH OF ARC
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TWP	=	TOWNSHIP

PLAT BOOK ____ PAGE ____

SHEET 1 OF 9
SECTIONS 4 & 5, 30 SOUTH, RNG 37 EAST

DEDICATION

KNOW ALL MEN BY THESE PRESENTS, THE LIMITED LIABILITY COMPANY NAMED BELOW, BEING THE OWNER IN FEE SIMPLE OF THE LANDS DESCRIBED IN:

CYPRESS BAY WEST PHASE 3

HEREBY DEDICATES SAID LANDS AND PLAT FOR THE USES AND PURPOSES THEREIN EXPRESSED AND DEDICATES ALL PUBLIC UTILITY EASEMENTS AS DESCRIBED HEREON TO THE CITY OF PALM BAY FOR THE PERPETUAL USE OF THE PUBLIC; AND DEDICATES AND CONVEYS TO THE CITY OF PALM BAY TRACT "U–1" AND HEREBY FURTHER DEDICATES TO THE CITY OF PALM BAY A PERPETUAL EASEMENT OVER AND ACROSS THE RIGHTS OF WAY OF ALL PRIVATE STREETS AND ROADS SHOWN HEREON (SUCH PRIVATE RIGHTS OF WAY BEING DESCRIBED HEREON AS TRACT "RW–1") FOR INGRESS AND EGRESS FOR PUBLIC SERVICE AND EMERGENCY VEHICLES. NO OTHER EASEMENTS ARE HEREBY DEDICATED OR GRANTED TO THE PUBLIC, IT BEING THE INTENTION OF THE UNDERSIGNED THAT OTHER EASEMENTS AND COMMON AREAS SHOWN HEREON BE PRIVATELY OWNED AND MAINTAINED AND THAT THE PUBLIC AND THE CITY OF PALM BAY HAVE NO RIGHT OR INTEREST THEREIN.

IN WITNESS WHEREOF, THE UNDERSIGNED HAS CAUSED THESE PRESENTS TO BE EXECUTED ON THE DATE SET FORTH BELOW

BY: _____
CHRIS TYREE
PRESIDENT

FORSTAR (USA) REAL ESTATE GROUP INC.
A DELAWARE CORPORATION
1064 GREENWOOD BLVD
LAKE MARY, FL 32746

Witness 1: _____

Witness 2: _____

Print: _____

Print: _____

STATE OF FLORIDA COUNTY OF BREVARD

THIS IS TO CERTIFY, THE FOREGOING INSTRUMENT WAS ACKNOWLEDGED BEFORE ME BY MEANS OF _ PHYSICAL PRESENCE OR _ ONLINE NOTARIZATION, THIS ____ DAY OF _____, 2021 BY CHRIS TYREE OF FORSTAR (USA) REAL ESTATE GROUP INC., A DELAWARE CORPORATION, ON BEHALF OF THE CORPORATION. HE/SHE IS PERSONALLY KNOWN TO ME OR HAS PRODUCED _____ AS IDENTIFICATION.

_____
Notary Public

My Commission Expires: _____

CERTIFICATE OF PLATTING SURVEYOR

KNOWN ALL MEN BY THESE PRESENTS, THAT THE UNDERSIGNED BEING A LICENSED AND REGISTERED LAND SURVEYOR AND MAPPER, DOES HEREBY CERTIFY THAT ON JUNE 11, 2021 HE COMPLETED THE BOUNDARY SURVEY OF THE LANDS AS SHOWN ON THE FOREGOING PLAT; THAT THE BOUNDARY LINES OF THE PLATTED PARCEL ARE A TRUE AND CORRECT REPRESENTATION OF SUCH LINES IN ACCORDANCE WITH SAID BOUNDARY SURVEY MADE UNDER MY RESPONSIBLE DIRECTION AND SUPERVISION; THAT SAID SURVEY IS ACCURATE TO THE BEST OF MY KNOWLEDGE AND BELIEF; THAT PERMANENT REFERENCE MONUMENTS (P.R.M.'S), PERMANENT CONTROL POINTS (P.C.P.'S), AND MONUMENTS ACCORDING TO SECTION 177.091(9), F.S., WILL BE SET UNDER THE GUARANTEES POSTED WITH THE CITY OF PALM BAY COMMISSIONERS FOR THE REQUIRED IMPROVEMENTS; AND, FURTHER, THAT THE SURVEY DATA COMPLIES WITH ALL THE REQUIREMENTS OF CHAPTER 177, PART 1, FLORIDA STATUTES, AS AMENDED.

DATE: AUGUST 27, 2021

_____
ROBERT R. DOERRER, JR., P.L.S. NO. 3982
HORIZON SURVEYORS OF CENTRAL FLORIDA, INC.
390 POINCIANA DRIVE MELBOURNE, FLORIDA 32935
CERTIFICATE OF AUTHORIZATION LB 6360

CERTIFICATE OF REVIEWING SURVEYOR

I HEREBY CERTIFY, THAT I HAVE REVIEWED THE FOREGOING PLAT AND FIND THAT IT IS IN CONFORMITY WITH CHAPTER 177, PART 1, FLORIDA STATUTES.

_____
JOSEPH N. HALE, LS 6366
REVIEWING SURVEYOR FOR THE CITY OF PALM BAY

CERTIFICATE OF APPROVAL BY MUNICIPALITY

ATTEST:
THIS IS TO CERTIFY, THAT ON _____
THE _____
APPROVED THE FOREGOING PLAT.

_____
MAYOR

_____
CITY CLERK

CERTIFICATE OF CLERK

I HEREBY CERTIFY, THAT I HAVE EXAMINED THE FOREGOING PLAT AND FIND THAT IT COMPLIES, IN FORM, WITH ALL THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES AND WAS FILED FOR RECORD ON,

_____ AT _____

FILE # _____

_____
CLERK OF CIRCUIT COURT
IN AND FOR BREVARD COUNTY, FLORIDA

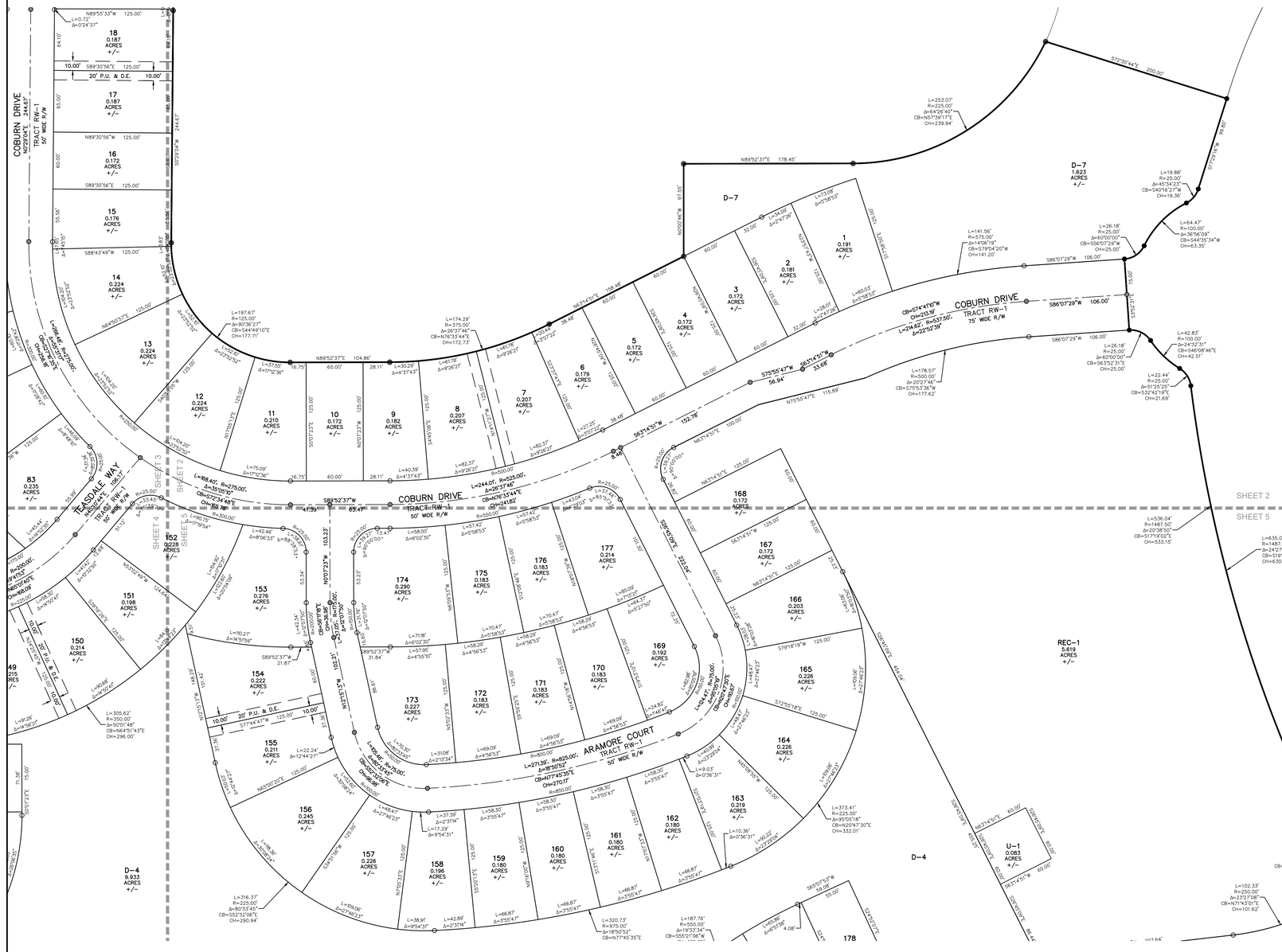
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PRELIMINARY PLAT OF

CYPRESS BAY WEST PHASE 3

A SUBDIVISION LYING IN SECTIONS 4 & 5, TOWNSHIP 30 SOUTH, RANGE 37 EAST, BREVARD COUNTY, FLORIDA.
BEING A PORTION OF SECTION 4 AND A "REPLAT" OF A PORTION OF LOT 8, LOT 25 THROUGH LOT 34, ALL OF LOT 35 THROUGH LOT 39, A PORTION OF LOT 40 AND A PORTION OF LOT 57 THROUGH 64, SECTION 5, "SAN-SEBASTIAN FARMS", RECORDED IN PLAT BOOK 6, PAGE 77 OF THE PUBLIC RECORDS OF BREVARD COUNTY, FLORIDA.

PLAT BOOK ____ PAGE ____
SHEET 2 OF 9
SECTIONS 4 & 5, 30 SOUTH, RNG 37 EAST



LEGEND OF ABBREVIATIONS

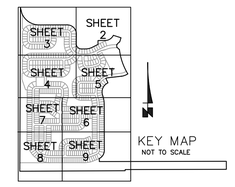
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C	=	CURVE DESIGNATION
CH	=	CHORD
C.M.	=	CONCRETE MONUMENT
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FPL	=	FLORIDA POWER & LIGHT COMPANY
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R/W	=	RIGHT OF WAY
SSMH	=	SANITARY SEWER MANHOLE
TWP	=	TOWNSHIP

NORTH

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.



SURVEYOR'S NOTES:

1. *DENOTES MAG NAIL & DISK STAMPED: "PCP LB 6360".*
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5. *ALL LOT LINES IN CURVILINEAR LOTS ARE RADIAL UNLESS DESIGNATED NR (NON-RADIAL).*

– PLAT PREPARED BY –
HORIZON SURVEYORS OF CENTRAL FLORIDA, INC.
390 POINCIANA DR.
MELBOURNE, FL 32935
(321) 254-8133

NOTICE: THIS PLAT, AS RECORDED IN IT'S GRAPHIC FORM, IS THE OFFICIAL DEPICTION OF THE SUBDIVIDED LANDS DESCRIBED HEREIN AND WILL IN NO CIRCUMSTANCES BE SUPPLANTED IN AUTHORITY BY ANY OTHER GRAPHIC OR DIGITAL FORM OF PLAT.

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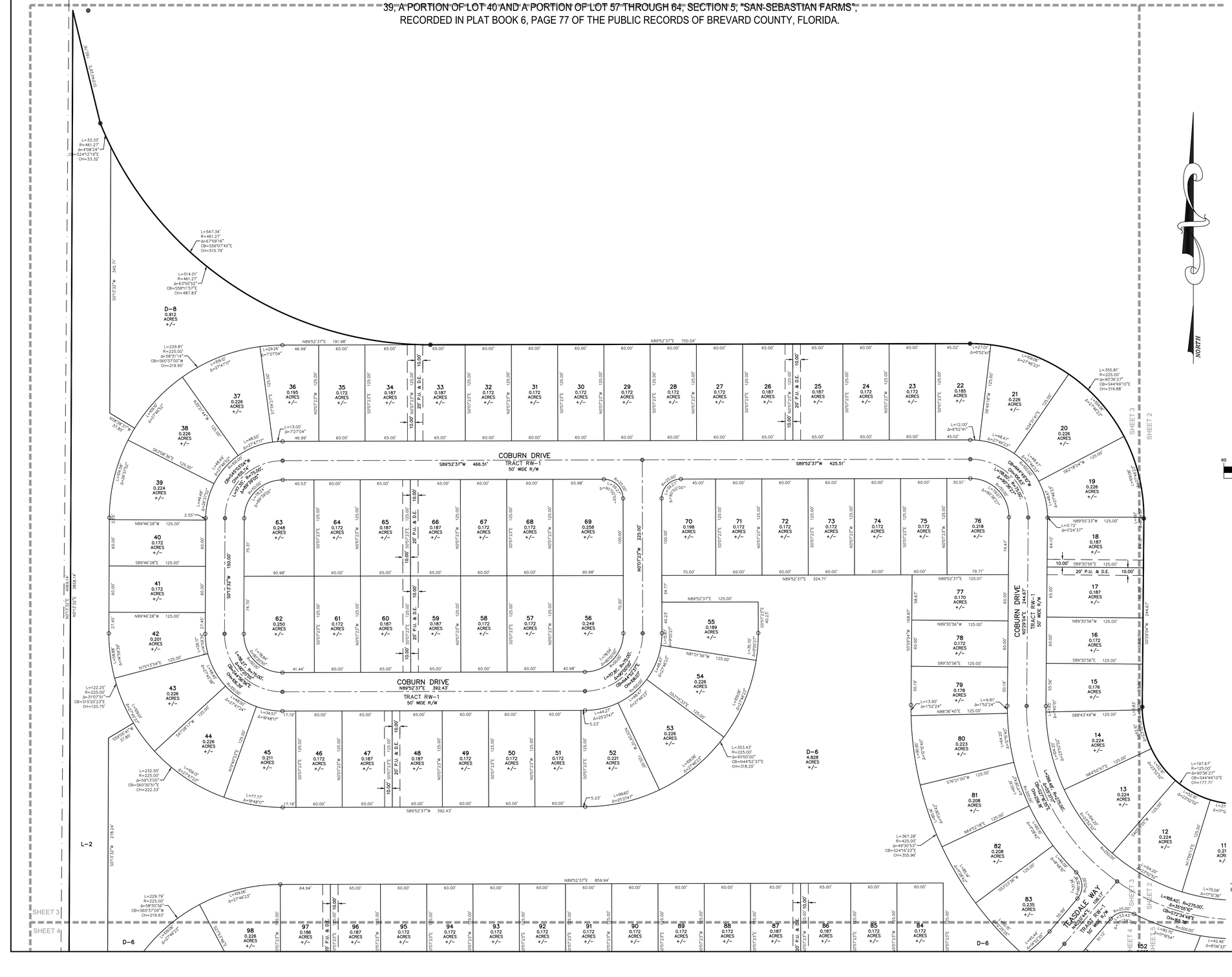
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PRELIMINARY PLAT OF

CYPRESS BAY WEST PHASE 3

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PLAT BOOK ____ PAGE ____
SHEET 3 OF 9
SECTIONS 4 & 5, 30 SOUTH, RNG 37 EAST



LEGEND OF ABBREVIATIONS

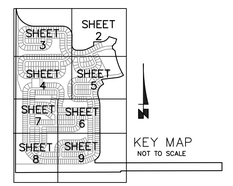
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NORTH

GRAPHIC SCALE

60 0 30 60 120 240

(IN FEET)
1 inch = 60 ft.



KEY MAP
NOT TO SCALE

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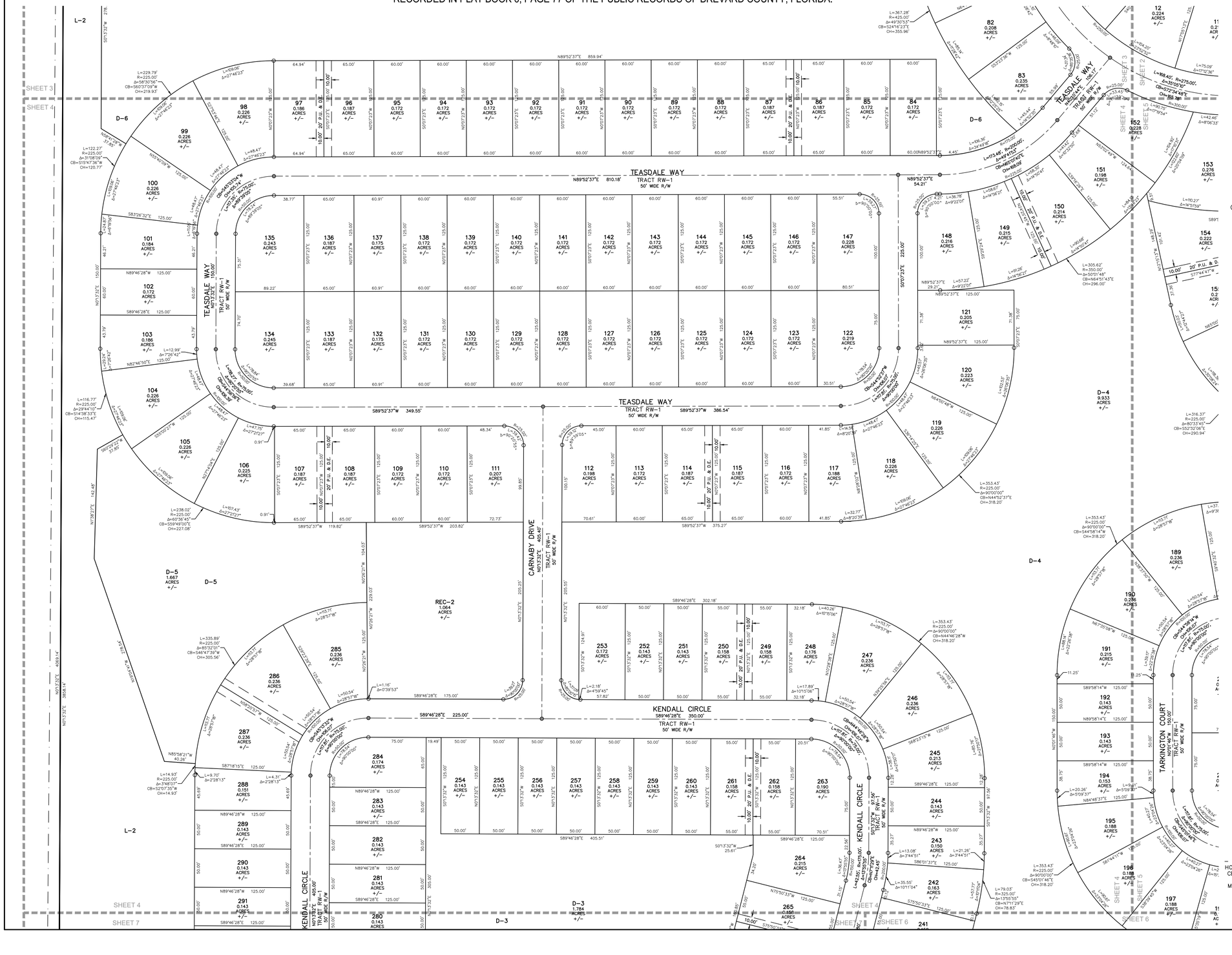
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PLAT BOOK ____ PAGE ____
SHEET 4 OF 9
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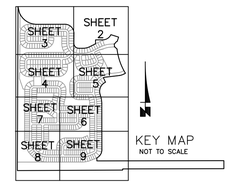


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GRAPHIC SCALE

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KEY MAP
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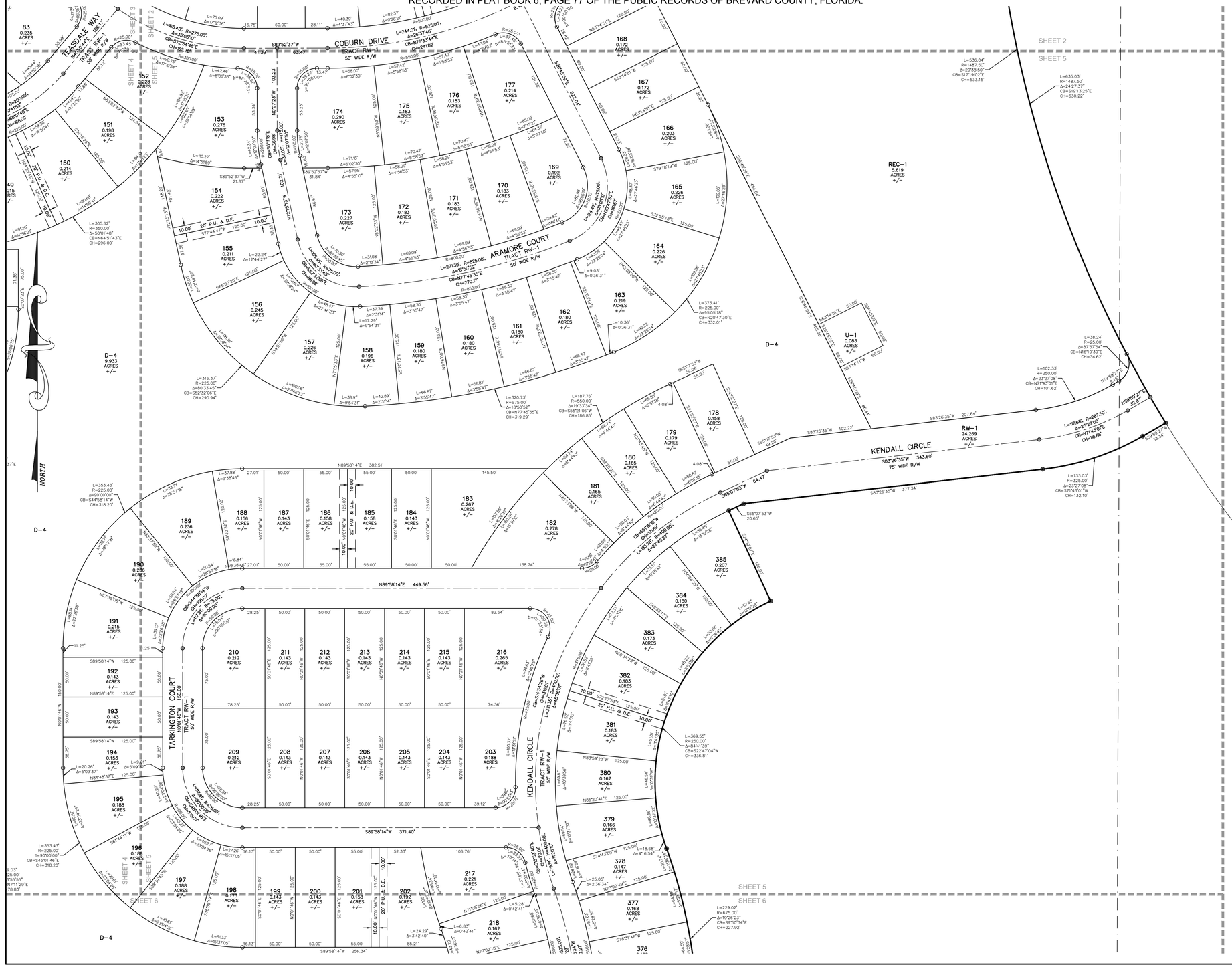
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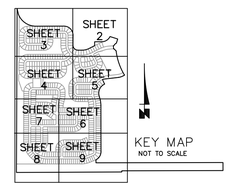
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PLAT BOOK ____ PAGE ____
SHEET 5 OF 9
SECTIONS 4 & 5, 30 SOUTH, RNG 37 EAST





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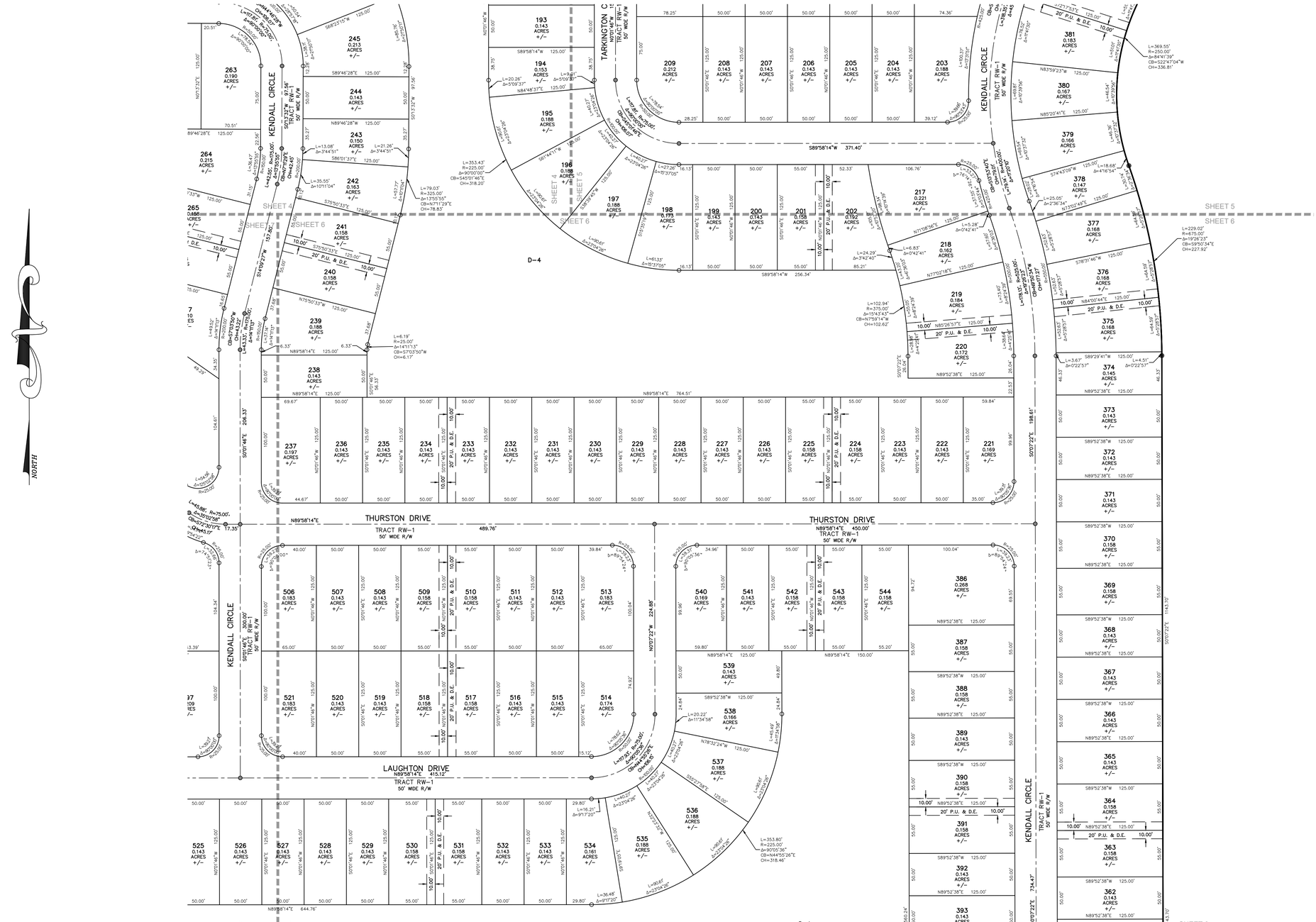
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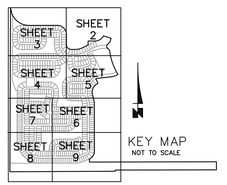
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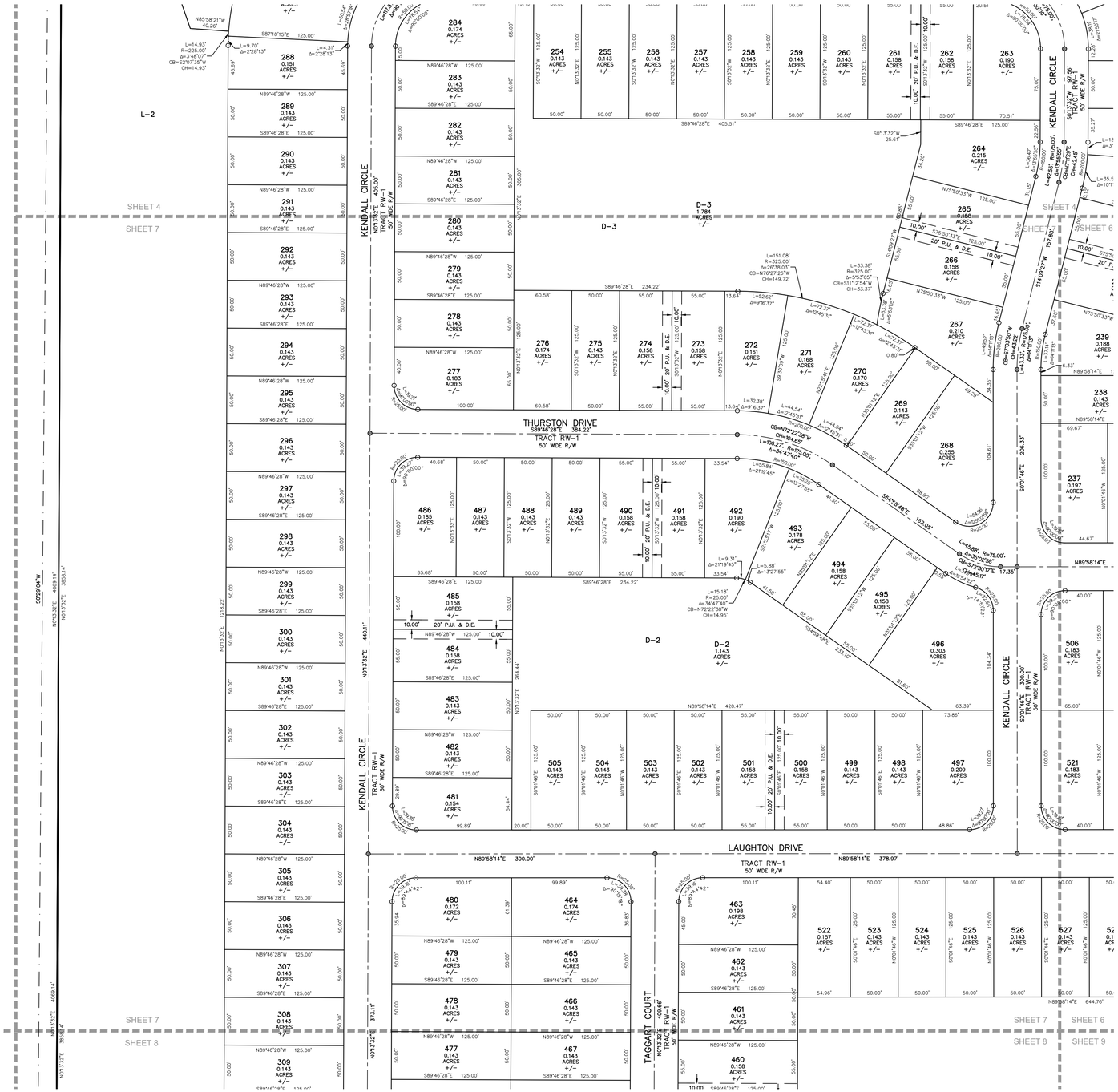
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SHEET 7 OF 9
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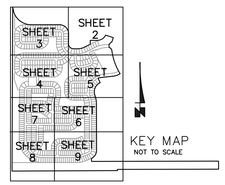
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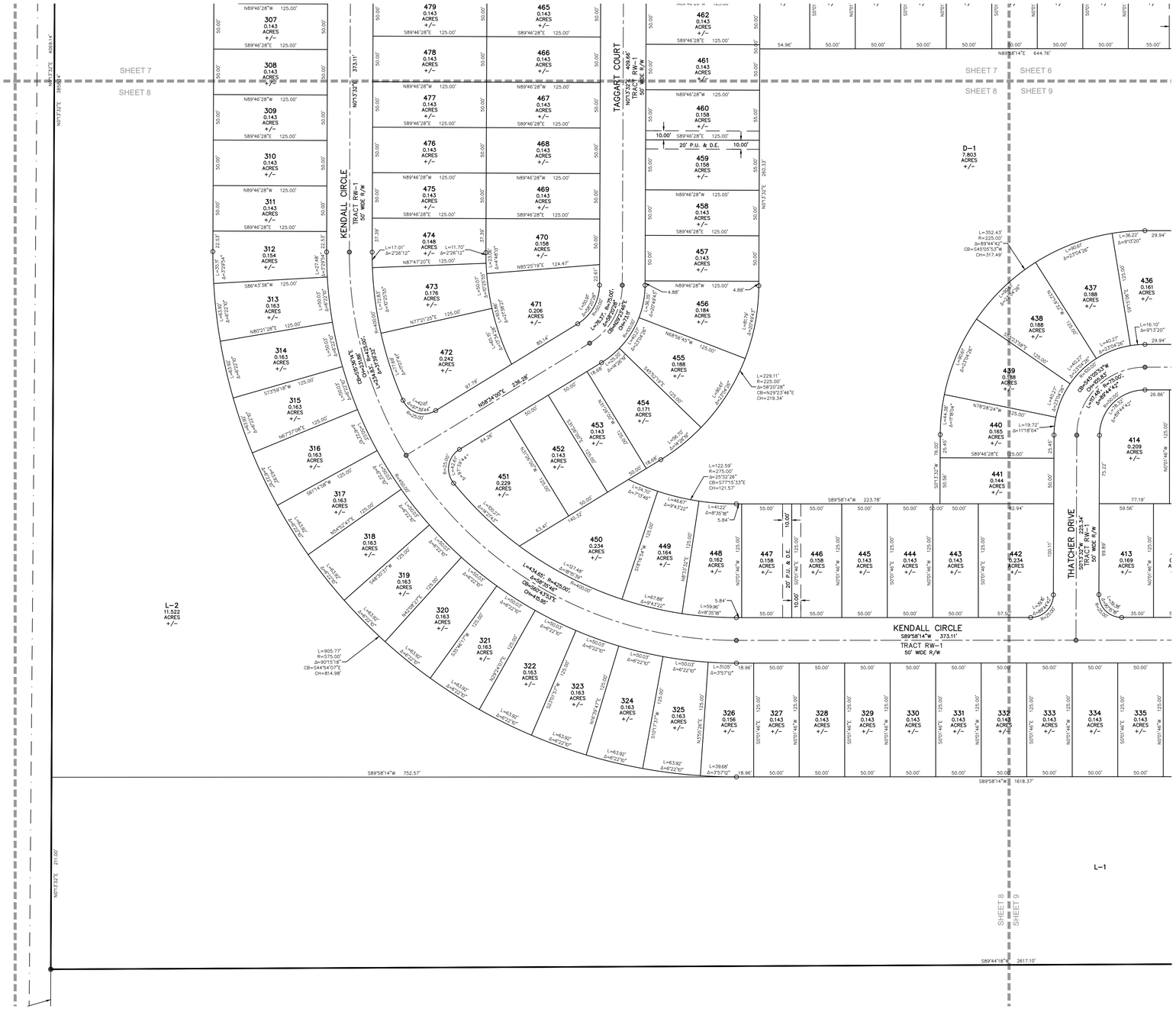
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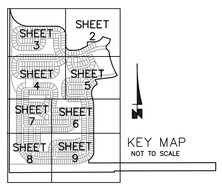
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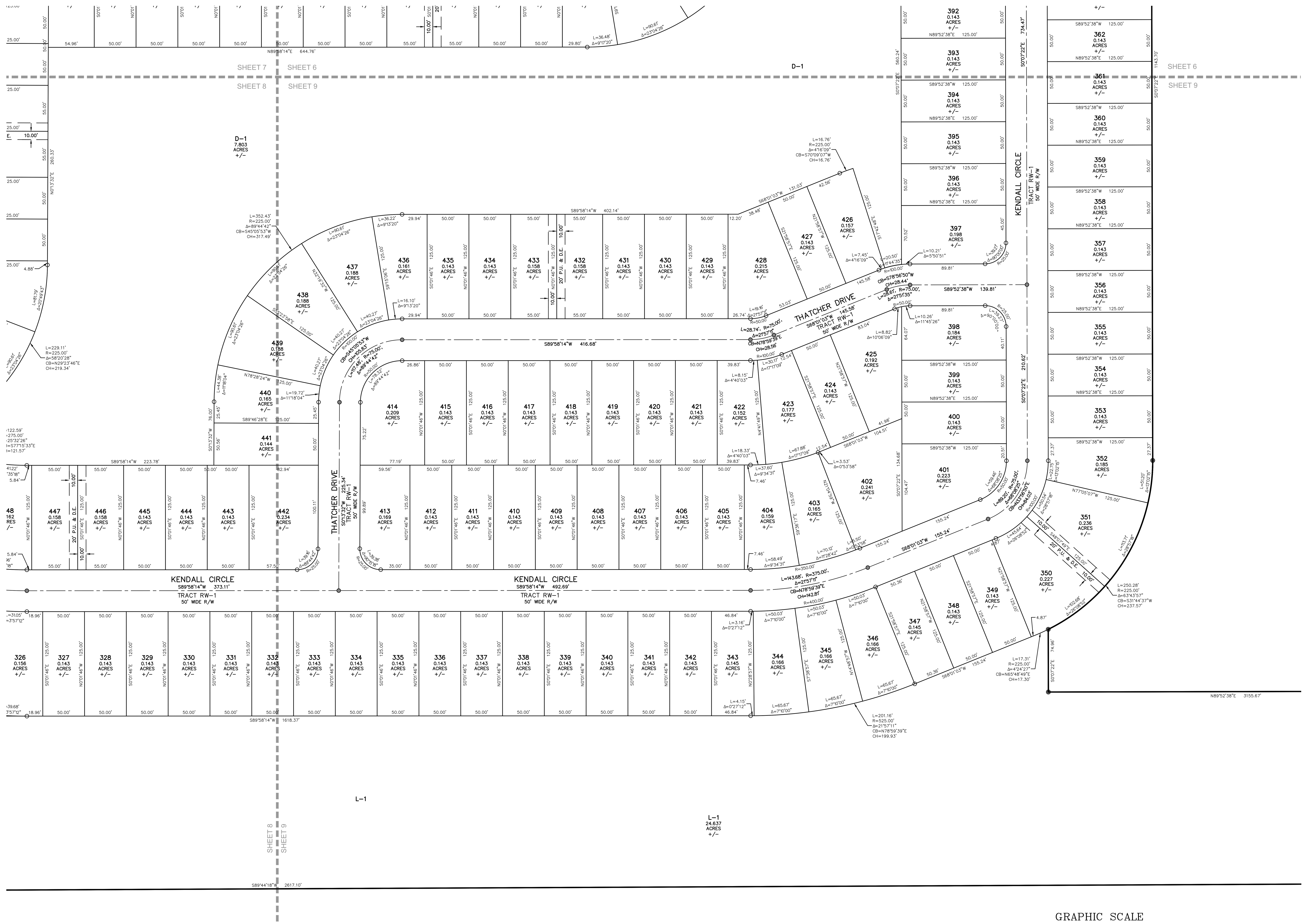
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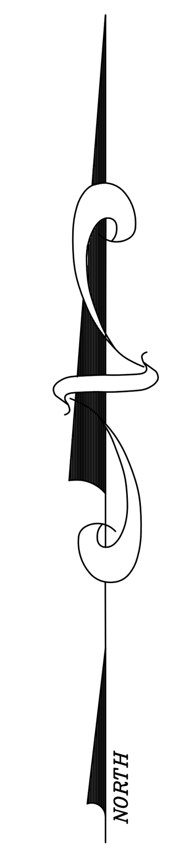
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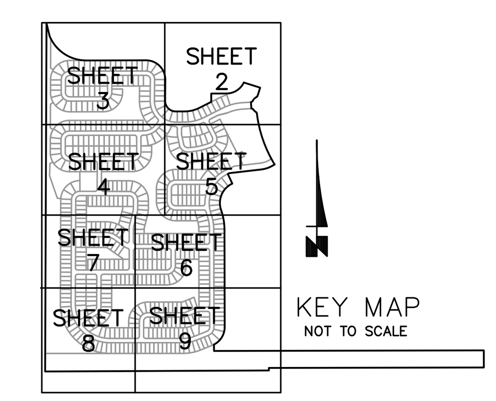
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Final Development Plan Application
Compliance and Justification Narrative Report

Prepared by:
Rochelle W. Lawandales, FAICP
Waterstone Development Company, LLC
for
Forestar (USA) Real Estate Group Inc.,
Applicant/Developer

August 25, 2021

PROJECT:

Cypress Bay West Phase 3 is a 190.28 acre +/- subdivision containing 367 – 50' (average) wide lots and 177 – 60' (average) wide lots for a total of 544 units, with supporting infrastructure and site improvements including vehicular access, sidewalks, pedestrian/exercise trails, landscaping, utilities, and stormwater to be located off of the extended Mara Loma Boulevard, southwest of Cypress Bay West Phase 1 and south of Gardens at Waterstone Phase 2. Map A shows the project location.

PROPERTY OWNER: Waterstone Farms, LLC

PROPERTY IDENTIFICATION #:

All or portions of the following properties are contained within the project:

- 30-37-04-00-500
- 30-37-04-00-1
- 30-37-05-HF-750
- 30-37-05-HF-1

APPLICANT: Forestar (USA) Real Estate Group, Inc.

EXISTING ZONING: Planned Unit Development

FUTURE LAND USE: Predominately Single Family Residential land use, with one small section of Multi-family land use. Single family homes, infrastructure, stormwater or other public facilities are allowed in either land use category.

REQUEST:

The applicant seeks approval for a Final Development Plan in on lands zoned PUD ning for a project to be called "Cypress Bay West Phase 3", which is a portion of the prior approved 2005 Waterstone Master development plan, for which construction started in 2006.

This document serves as the Compliance and Justification narrative for the Cypress Bay West Phase3 Final Development Plan (FDP) application. The applicant submits this as competent substantial evidence to support findings of facts for the Planning and Zoning Board and City Council to make in approving the application.

EXECUTIVE SUMMARY

Property owned by Wheeler Farms was annexed into the City in 2004 via Ordinance 2004-35 totaling 1167 acres. The original Future Land Use amendment designating all the lands single family residential was accomplished in 2004 via Ordinance 2004-52 and 1800 residential units could be placed on either Waterstone (west of Babcock Street) or the original acres owned by Wheeler on lands currently known as Cypress Bay Preserve (east of Babcock Street). Site specific conditions were placed on the

amendment in Ordinance 2004-48, in Policy FU 8.3 (G), adopted the same date as Ordinance 2004-52. Between 2005 and 2018, a series of 37 future land use map amendments have been made bringing the total units entitled for construction to be over 2,500. Table 1 below shows the current entitlements.

The Project underwent an ownership change and Pulte (Divosta Division) brought forth a Final Development Plan for the 1167 acres and obtained Final Development Plan approval and PUD zoning in 2005 (See Map B) and began to permit, develop and complete several phases, including Heron Bay and the Lakes of Waterstone, which included 296 units, an elementary school site, and recreational amenities which are built and sold out today. The approval also included concurrency for 900 units, water and sewer, and other infrastructure. Map C shows the original development plan, and the area now proposed for the subject property .

This new application petitions the City for approval of a Final Development Plan for a 544 total unit 190+/- acre single family subdivision to be known as Cypress Bay West Phase 3 (CBW3).

Construction would begin after approval of construction plans and the developer obtaining all permits.

Map E shows the design, layout, vehicular and pedestrian circulation, open space, utilities, and stormwater system to meet the code requirements.

Full sets of plan and a boundary sketch and legal are submitted under separate cover by the project engineer, CEG, Inc.

CYPRESS BAY WEST PHASE SUMMARY

CYPRESS BAY WEST ALL PHASES		
PHASE	**ACRES +/-**	**TOTAL UNITS***
1	**77**	**229**
2	**185**	**570**
3	**190**	**544**
TOTAL	**452**	**1343**
*** Includes 124 townhome units in Phase 2**		

This proposed project will complete the Cypress Bay West residential community. After this, there will be 327 remaining units for allocation in the lands west of Babcock Street comprising the Waterstone and Cypress Bay West project as detailed in Table 1.

Table 1

Current Residential Entitlements as of July, 2021

WATERSTONE AND CYPRESS BAY a/o July, 2021					
2018-2021 STARTING TOTALS:		**1538**			**1058**
		ADDITIONS	**REDUCTIONS**		
Cypress Bay Farms Residential PUD	(FD 18-2018/ Ord 2019-02 APPROVED JANUARY, 2019)				-396
Courtyards PD	(FD-19-2019/Ord 2019-69 APPROVED JANUARY 2, 2020)		-201	-201	
Waterstone Small Scale Amendments from SF to MF totalling 16.487 @ 10 units/ac	(CP-6-7-8 2018 approved by Ordinances 2018-20, 21, 22)	165		165	
Transfer of 300 to West Side per Original approval and David Watkins letter		300		300	-300
Gardens at Waterstone Phase 1	Resolution 2020-58 December 3, 2020/Ordinance 2021-02 Adopted January 21, 2021		-154	-154	
Cypress Bay West Phase 1	Ordinance 2021-27 May 21, 2021		-229	-229	
Cypress Bay West FLUM Amendment for Townhomes 9.5 acres at 20 units/ac	Completed July, 2021	190		95	
Cypress Bay West Phase 2	Pending Hearings August/September 2021		-566	-566	
Gardens at Waterstone Phase 2	Current Submittal		-172		
Cypress Bay West Phase 3	Current Submittal		-544		
Sub-total:		**2193**	**-1866**	**327**	**362**
GRAND TOTAL UNIT COUNTS AS OF JULY 2021:				**327**	**362**

*WESTSIDE refers to the area on the west side of Babcock Street known as Waterstone (including Waterstone Farms, LLC and Waterstone Holdings, LLC)

*EASTSIDE refers to the lands on the east side of Babcock Street referred to Cypress Bay owned by Cypress Bay Farms, LLC

**300 original units were able to go to west side. Total includes 454 multi--family units from CP 7-09

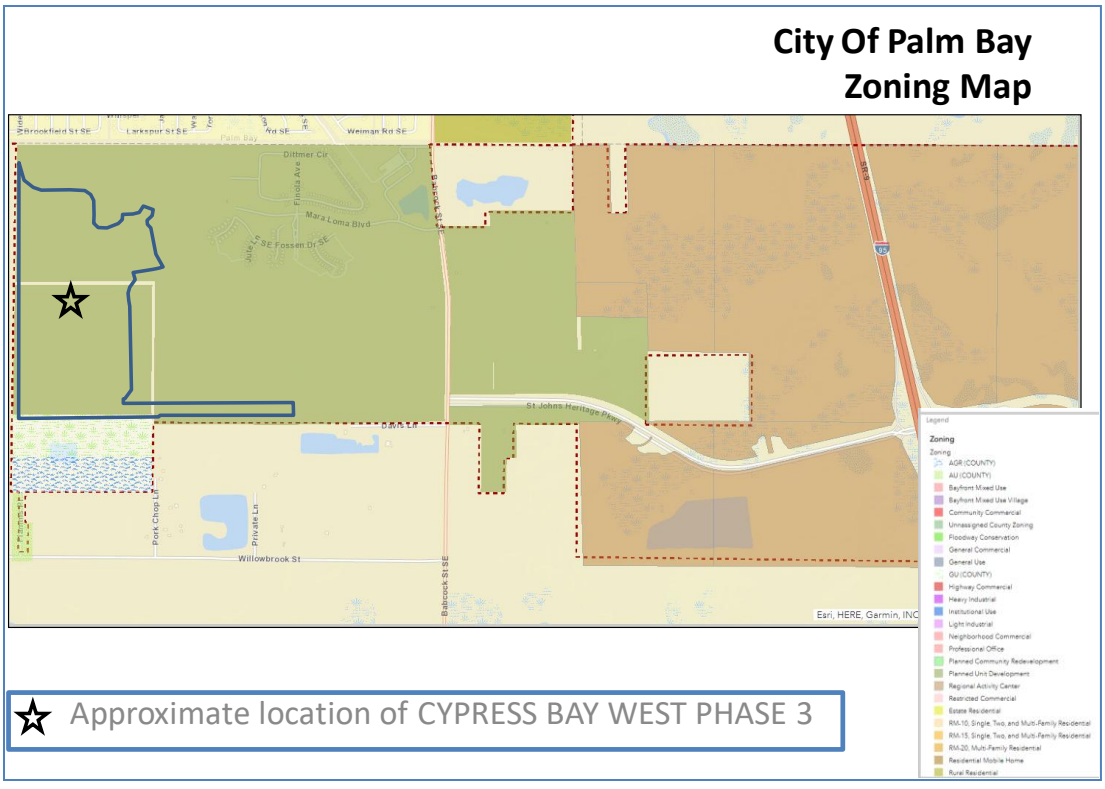
MAP A

LOCATION MAP



MAP B

CITY ZONING MAP



HISTORY OF WATERSTONE

During the period from 2006 to 2010, Pulte Homes and their subsidiary, DiVosta Homes, completed a wide variety of permits, agency approvals, traffic and engineering studies, environmental studies, comprehensive land use and zoning approvals for Waterstone. Pulte constructed a .6 mile long connector roadway off of Babcock Street called Mara Loma Boulevard, obtained County and City traffic concurrency for 900 units and provided for lands for an elementary school. Regional water and sewer mains were extended from just north of Valkaria Road to the western terminus of Mara Loma Boulevard. 296 Single family homes were constructed in the communities of Heron Bay and The Lakes at Waterstone. The Brevard County School Board constructed Sunrise Elementary School. Pulte Homes left the City of Palm Bay as a result of the financial crash in 2008. Pulte closed out Heron Bay and The Lakes at Waterstone communities by the end of 2010. The remaining PUD property was acquired by the applicants.

As required by the original land use approvals, Waterstone provides a mix of uses with the Waterstone Commercial Center with its significant frontage on the west side of Babcock Street. It will contain 133 acres, more or less, broken into lots and tracts sufficient in size for a variety of retail, office and related commercial uses to support the region. FDOT has completed the I-95 Interchange and the City has completed construction of the St. Johns Heritage Parkway (SJHP) from Babcock Street east to I-95. Numerous commercial developers and commercial project owners are ready to come into the City of Palm Bay, and with the roadway network now available and more residential units being planned and constructed, the demand for and support of commercial ventures will rise.

A three mile water and sewer main running along Babcock Street from Valkaria Road south to Mara Loma Boulevard was installed completely at the developer's expense for the Waterstone project. In addition, when Mara Loma Boulevard was extended west from Babcock Street approximately 2,600 feet, large force mains, water mains, and three sewer lift stations were installed. All totaled, over $10 million has been spent over the course of time on infrastructure improvements, including Mara Loma Blvd., 3 lift stations and utilities, permits, traffic/planning/environmental studies, stormwater management, environmental mitigation, and dedication of Rights-of-Way for the Parkway, among other items for the Waterstone project. The City has made commitments to assure future capacity through wastewater plant expansions.

Additionally, over the last 3 years, numerous meetings regarding the Waterstone/Cypress Bay master plans, transportation and infrastructure requirements and improvements, utility needs and extensions, have been held not only with Palm Bay officials and staff, but also with Brevard County, FDOT, Florida Power and Light, environmental regulatory agencies, and others to assure not only the highest quality product, but one that also will be a signature project for the City of Palm Bay.

The remaining land outside of the first phases developed by Pulte Homes(Heron Bay and Lakes of Waterstone) is under the ownership of Waterstone Farms, LLC, and Waterstone Holdings, LLC; Forestar;

and PB&J, LLC. Actions by the owners, predominately Waterstone Farms and Waterstone Holdings, over the last 10 years have included, but are not limited to the following:

1. Obtained environmental permits from the Army Corps of Engineers and conceptual SJRWMD for the proposed residential areas of Waterstone;
2. Submitted traffic studies to the City and County for the developments planned for Waterstone;
3. Performed a signal warrant study for the Babcock/St. Johns Heritage Parkway (SJHP) intersection; and submitted requests for County permits for driveways and an access management plan for Babcock Street;
4. Obtained Final SJRWMD permits for the Waterstone Commercial Center;
5. Obtained Final PUD approval for Waterstone (lands west of Babcock) in January, 2018;
6. Obtained Conceptual SJRWMD permits for 803 acres under a master stormwater system (on file with SJRWMD;)
7. Obtained Final PUD approval for a 283 lot subdivision called the Gardens Phase 1 at Waterstone on June 7, 2018;
8. Obtained Final SJRWMD permit for 101 acres, covering the Gardens Phase 1 at Waterstone, for a the stormwater system to serve the subdivision;
9. Obtained Final PUD approval for 201 lot subdivision called 'Courtyards at Waterstone' in January, 2020. That project is under construction.
10. Obtained Final Development Plan approval for Gardens Phase 1 at Waterstone' in December, 2020.
11. Obtained Final Development Plan approval for Cypress Bay West Phase 1, May, 2021.
12. Obtained approval for a Future Land Use Map amendment on July, 2021 to convert 7 acres +/- from single family to multi-family residential to allow for townhomes within the CBW 2 project under the City's Comprehensive Plan.
13. Submitted a request for Final Development Plan approval of a 172 lot single family subdivision on 52.21 acres +/- known as Gardens of Waterstone 2.
14. Submitted a Final Development Plan application for approval of Cypress Bay West 2, for 566 units on 185 acres +/-.

On January 18, 2018, Waterstone Holdings, LLC, Waterstone Farms, LLC and DR Horton, as co applicants, obtained approval of a revised Final Development Plan amending the 2005 Master Plan for the 763 +/- acres of undeveloped property on the west side of Babcock Street for a 1770 unit residential development. This approval included the Waterstone Commercial Center containing 133 acres fronting Babcock Street and Waterstone at Palm Bay consisting of 604 acres west of the commercial center, south and west of The Lakes at Waterstone and Heron Bay communities for a series of residential subdivisions.

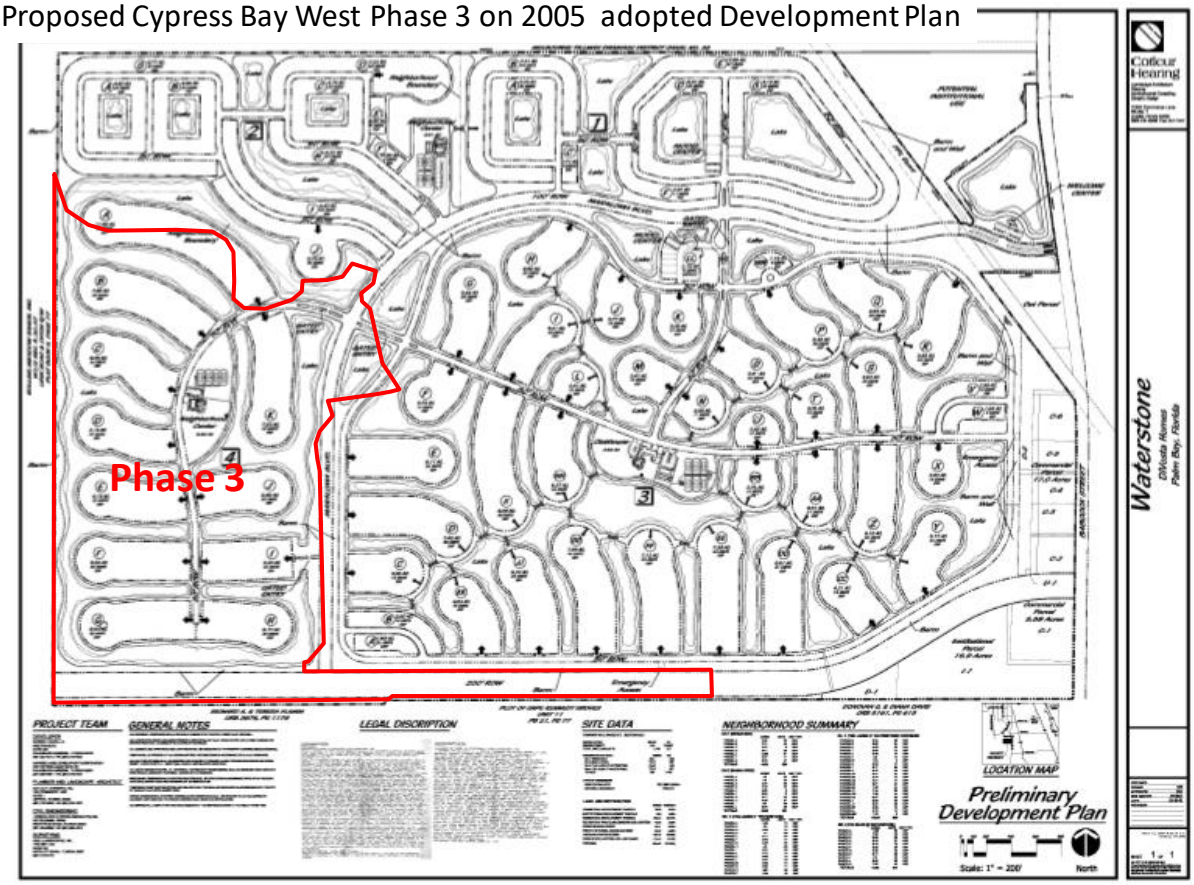
Final Development Plan/Preliminary Plat approval was granted by City Council action on June 7, 2018 for the ‘Gardens Phase 1 at Waterstone’, a phase of Waterstone in the northwest segment. That project was not adopted properly by the City and became void, rendering the 2018 revised Preliminary Development Plan, approved by Council in January, 2018 void and maintaining the 2005 adopted plan.

This proposed Final Development Plan will modify that original adopted plan for the specific area shown in the legal description for .

Map C shows the new proposed project overlaid on the existing approved 2005 Waterstone Final Development Plan.

MAP C
ORIGINAL FINAL DEVELOPMENT PLAN FOR WATERSTONE AT PALM BAY WITH APPROXIMATE LOCATION OF CYPRESS BAY WEST PHASE 3

Proposed Cypress Bay West Phase 3 on 2005 adopted Development Plan



***Approximate location. Not to scale. Graphic exhibit only.**

FINAL DEVELOPMENT PLAN FOR CYPRESS BAY WEST PHASE 3

This project is a 544 total lot subdivision, containing 367- on average 50' X 125' lots and 177- on average 60'X125' lots. Forestar intends to extend the existing public road called Mara Loma Boulevard through CBW Phase 2 to terminate at Journey Drive. CBW 3 will have 2 access points off of that extended Mara Loma Boulevard south of the new traffic circle.

Journey Drive is an east-west aligned roadway that runs along the southern border of the Cypress Bay West lands. It goes west from the "T" intersection of Babcock Street and the newly constructed SJHP which heads east to connect to I-95. Pursuant to the Cypress Bay West Phase 2 Final Development Plan, Journey will end at its intersection with the extension of Mara Loma Boulevard. There are a series of subdivision pods that will have connector roadways onto Mara Loma. There are utilities available to service the development.

The following discussion relates specifically to this proposed subdivision and application. Map E shows the proposed Final Development Plan. This is a graphic representation only, and the Final Development Plan large set, submitted by CEG, Inc., Engineers of Record for the project, stands as the official set for consideration by the City. I have reviewed those plans for conformance to the code and compliance with the Comprehensive Plan and City Land Development Code and this document provides findings of fact supporting their compliance.

The project data table shown on the Final Development Plan submitted by CEG, Inc., and as Table 2 herein, identifies the number and type of lots, percentages for categorical site areas and improvements, and open space, showing our compliance with the codes and including information that is required to be shown on the Final development plans per Chapter 185.066 (B)2.

Table 2
Project Data Summary

PROJECT DATA:

GENERAL STATEMENT:
THE PROPOSED PROJECT IS PHASE III OF CYPRESS BAY WEST AND CONSISTS OF INFRASTRUCTURE AND SITE IMPROVEMENTS TO ACCOMMODATE A 544 LOT SINGLE FAMILY RESIDENTIAL SUBDIVISION INCLUDING VEHICULAR ACCESS, SIDEWALKS, LANDSCAPING, WATER, SEWER AND STORMWATER SYSTEMS.

DEVELOPER:
FORESTAR (USA) REAL ESTATE GROUP
1064 GREENWOOD BLVD, SUITE 200
LAKE MARY, FL 32746
TEL: (407) 832-3164

SURVEYOR:
HORIZON SURVEYORS OF CENTRAL FLORIDA, INC.
390 POINCIANA DRIVE
MELBOURNE, FL 32935
TEL: (321) 254-8133
EMAIL: BOB@HORIZONSURVEYORS.COM

CIVIL ENGINEER/APPLICANT:
JAKE T. WISE, P.E.
2651 EAU GALLIE BLVD, SUITE A
MELBOURNE, FLORIDA 32935
TEL: (321) 610-1760
E-MAIL: JWISE@CEGENGINEERING.COM

LOCATION:
SECTION: 04, 05
TOWNSHIP: 30
RANGE: 37E
PARCEL ID: 30-37-04-00-500
30-37-05-HF-750
30-37-05-HF-1
30-37-05-HF-752
TAX ACCOUNT: 3000216, 3000217
3000219, 3010427

SETBACKS	PROPOSED:
FRONT:	25 FT
SIDE:	5 FT
REAR:	20 FT
SIDE CORNER:	15 FT

LOT COUNT:
50'x125' LOTS = 367
60'x125' LOTS = 177

MAXIMUM BUILDING HEIGHT:
2 STORY: 25 FT

MINIMUM WIDTHS:
SIDEWALKS: 5 FT
RIGHT-OF-WAY WIDTH: 50 FT

OPEN SPACE REQUIREMENTS:

OVERALL AREA (190.28 ACRES):	
ON-SITE PONDS	27.35 AC (40%)
OPEN SPACE:	36.42 AC (53%)
RECREATION AREA:	5.28 AC (7%)
PROVIDED:	69.05 AC (100%)
REQUIRED (25% OF OVERALL AREAS):	47.57 AC

CALCULATED STORMWATER BASIN COVERAGE:

IMPERVIOUS:	SF	ACRE	PERCENT
RESIDENTIAL (60%):	2,594,434	59.56	31
ROADWAYS/SIDEWALKS:	956,142	21.95	12
RECREATIONAL AREA (70%):	161,172	3.70	2
TOTAL IMPERVIOUS:	3,711,748	85.21	45
PERVIOUS:	2,990,394	68.65	36
POND:	1,586,485	36.42	19
TOTAL:	8,288,627	190.28	100

MAP D

PROPOSED FINAL DEVELOPMENT PLAN FOR CBW3 SUBDIVISION

(See large sheets submitted by CEG for official set of FDP Plans for City review)



PRELIMINARY PLAT

The application submittal includes a Preliminary Plat done by Horizon Surveyors. It shows all the lands, tracts, streets and parcels included in the project. A copy of the first sheet of the preliminary plat is included in the Appendices.

DEVELOPMENT PHASING

As it currently stands, the project is proposed to begin developing, upon receipt of all required permits, in 2023 starting with site development, infrastructure, stormwater, recreation, open space, and land development support systems. This will be followed by 'vertical' development items, including homes and recreational amenities/community facilities.

DEVELOPMENT SCHEDULE

The project will commence upon receipt of construction plan approval in 2023. It will take an estimated 4-5 years to build out with an anticipated take down of 95-125 units per year.

CONSISTENCY WITH THE COMPREHENSIVE PLAN and FUTURE LAND USE MAP

Based upon my knowledge of the City's Comprehensive Plan and its contents, the Final Development Plan is consistent with the Goals, Objectives and Policies of the Comprehensive Plan and the Future Land Use Map. The City received a compliance determination for the initial approved land uses and subsequent land use amendments on the property. Those documents are on public record with the City and State Department of Economic Opportunity.

LAND USE

Map E, from the City's GIS system, shows a mix of Single Family and Multi-family Residential land uses within the project area. Single family uses are allowed within multi-family land use categories, including ancillary infrastructure, stormwater management, open space and recreational amenities. Stormwater or lands devoted to infrastructure can be done in any category. Therefore, the project site and the proposed uses of single family uses are in conformance with the City's Comprehensive Plan, Future Land Use Map and Existing Zoning Map.

MAP E

FUTURE LAND USE MAP FROM CITY WEBSITE

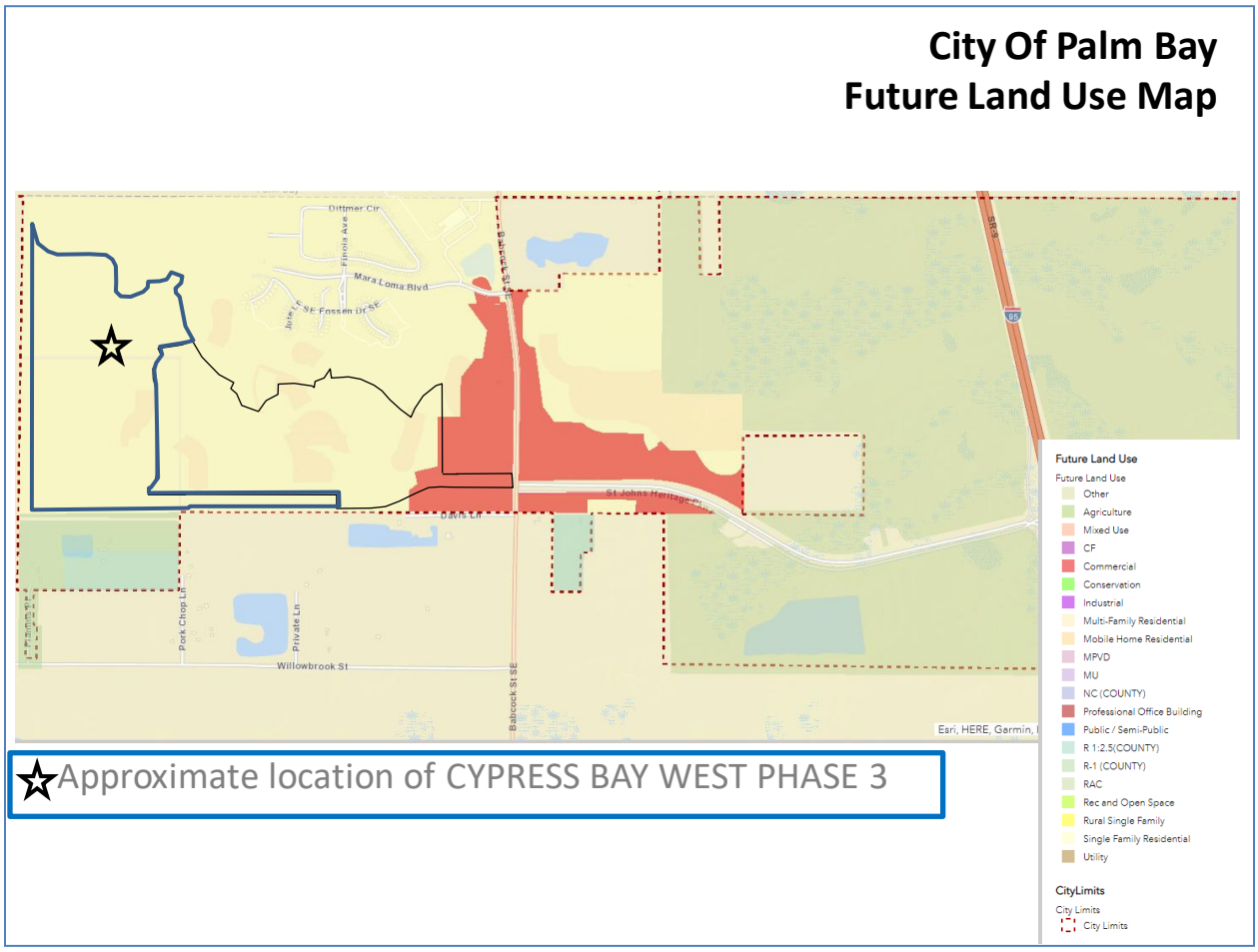


Figure 1 below also shows the land uses within the City's Study Area Boundary taken from the Comprehensive Plan in the City's website. Figure 2 shows the project is contained within the urban service boundary.

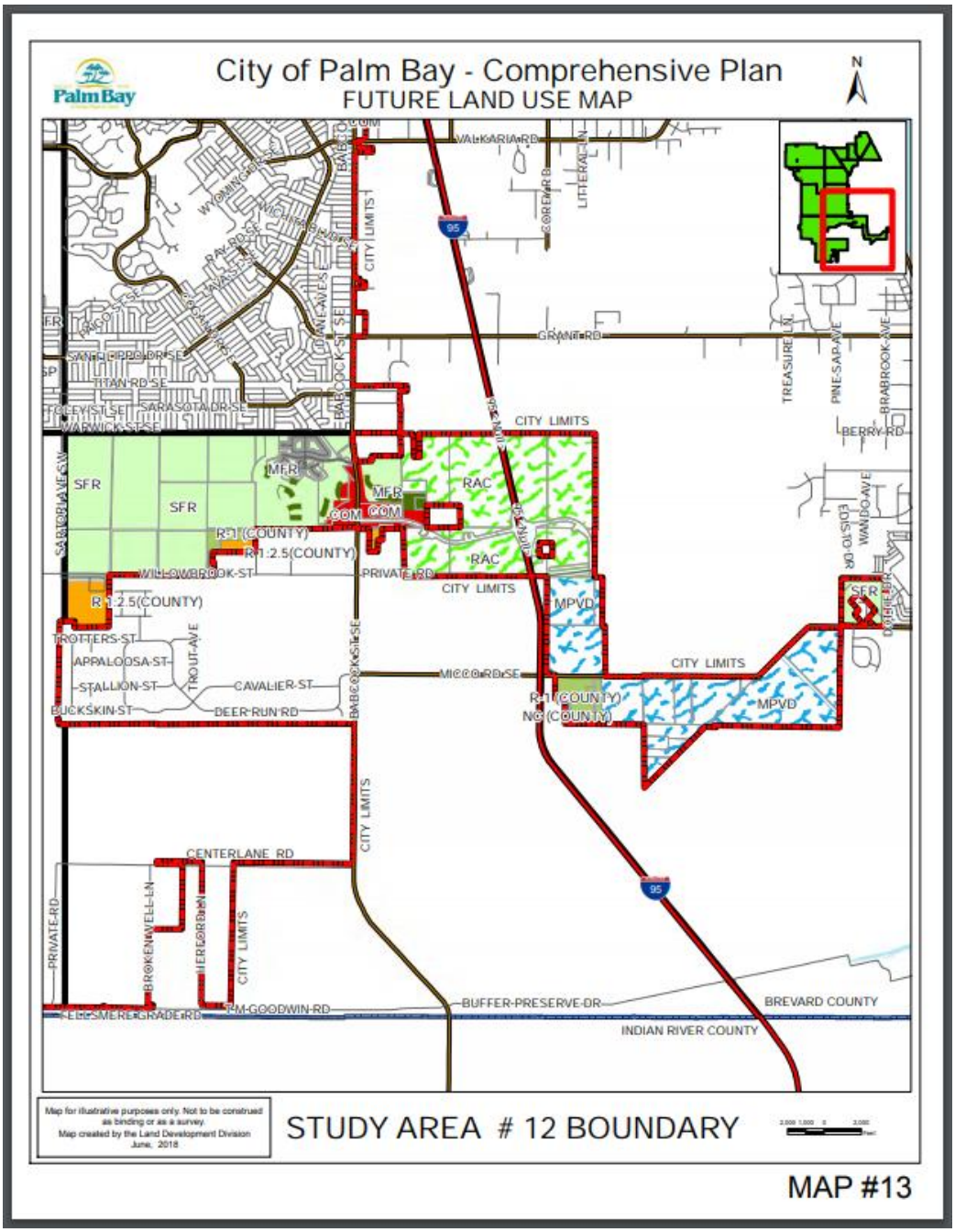


Figure 1: Future Land Use Map taken from the City's Comprehensive Plan on the City of Palm Bay Website, April, 2019

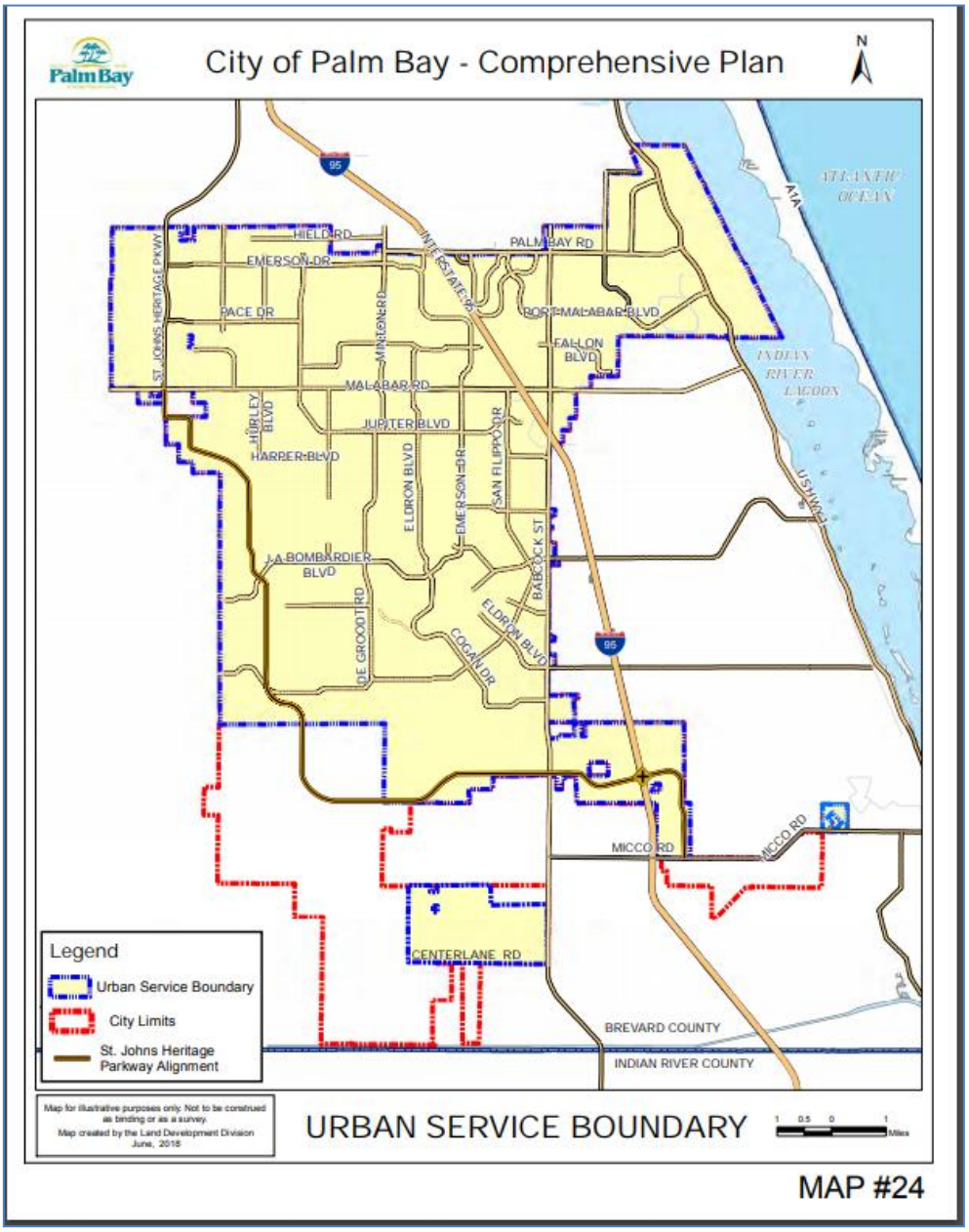


Figure 2 Urban Services Boundary Map adopted by the City in the EAR, October 2017; as shown on the City of Palm Bay website, April, 2019.

The following Objectives or Policies are implemented via this proposed development plan:

- OBJECTIVE FLU-1.3 Land Development Regulations shall provide for planned unit developments, planned commercial developments, planned industrial developments, planned residential developments, and mixed-use developments.

- POLICIES FLU-1.3A The City shall continue to implement Land Development Regulations for Planned Unit Developments.

- OBJECTIVE FLU-1.4 Establish an Urban Service Area to control urban sprawl.

    - POLICIES FLU-1.4A The Urban Service Area maps shall be adopted for the ten-year time frame of the Comprehensive Plan as depicted in the adopted Urban Service Boundary Map.

- OBJECTIVE FLU-2.1 By 2001, adopt land development regulations which create a full range of types and styles, including planned unit developments, multi- family housing, ranges of single family densities, and mixed use with residential/nonresidential consistent with the needs of all age groups, incomes and lifestyles.

    - POLICIES FLU-2.1A The Zoning Code shall be amended to provide for a variety of types and densities of residential development in conformance with this Element and the Future Land Use Map.

    - POLICIES FLU-2.1B Continue to utilize Planned Unit Development (PUD) techniques to protect environmentally sensitive areas, protect amenities, and mitigate flood hazards.

- OBJECTIVE FLU-2.2 Residential development which can be served by public and community services meeting all LOS standards.

    - POLICIES FLU-2.2A Base residential development decisions on the adopted LOS standards for community facilities and services, the Future Land Use Map, and the policies of the Comprehensive Plan.
    - (Original Wheeler) FLU-8.3G The following special conditions shall be applicable to Case No. CP-12-2003 adopted by City Council as Ordinance No. 2004-52.
        1. Maximum residential density is capped at 1,800 residential units. **(THIS HAS INCREASED OVER TIME DUE TO 37 LAND USE AMENDMENTS)**
        2. A future school site be designated on the property at a suitable location and of suitable size as determined by negotiation between the developer and the Brevard County School Board. **(SCHOOL SITE CONSTRUCTED-SUNRISE ELEMENTARY)**
        3. The developer is required to identify and apply for the necessary Future Land Use Map amendment to provide commercial and public/semipublic uses necessary to service the proposed development within 5 years or prior to development of 600 units, whichever occurs first. **(133+/- ACRES HAVE BEEN DESIGNATED FOR COMMERCIAL LAND USE)**

CITIZEN PARTICIPATION/COUNTY COORDINATION

A citizen's participation plan for holding a community meeting for this phase is submitted with the application package. Labels for notifying everyone within 500' are provided to the City for mailing the courtesy notice.

JOINT PLANNING AGREEMENT

The City's Growth Management staff regularly distributes the required courtesy copies of documents to the County planning staff pursuant to a 2016 Joint Planning Agreement.

UTILITIES

The development will connect to the City water and wastewater. A master lift station plan has been approved by the City along with master water distribution system. A proposed utility plan will be included in the Final Development Plan documents. Utilities are planned to be extended into the development from Mara Loma Boulevard. The City has long planned for an expansion to its wastewater plant, which is underway, and has made expansions to the water plant.

STORMWATER/DRAINAGE

The project will be required to meet all environmental resource and consumptive use permitting requirements in order to be constructed. All retention areas shall be owned and maintained by either the residential homeowner's association or CDD, and shall be permitted through the St. Johns River Water Management District(SJRWMD). During the construction plan review phase, plans will be submitted to show how the project will meet all pre and post development stormwater management as required by the various agencies and the City to obtain all required permits. There is a conceptual SJRWMD permit

SJRWMD Conceptual ERP 96251 - 22 for all of Waterstone and Cypress Bay West (Phase 3, subject, in blue) area included in Conceptual Permit.

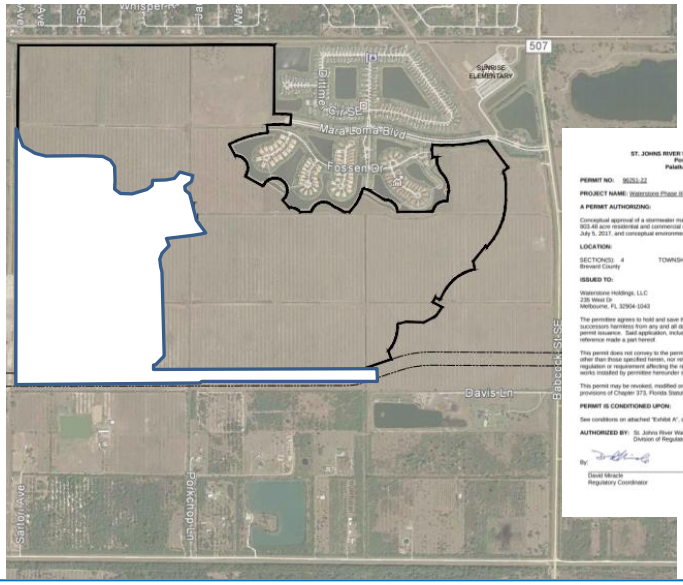


Figure 3 SJRWMD Conceptual permit for Waterstone and Cypress Bay West

currently in place for all of the residential areas.

ENVIRONMENTAL CONDITIONS

As a former grove, there are no trees or wetlands on the proposed subdivision's lands. The property was originally a citrus grove. It was later converted into the existing cattle pasture. The proposed project is designed to and will be consistent with the following Goals, Objectives and Policies of the City's Comprehensive Plan.

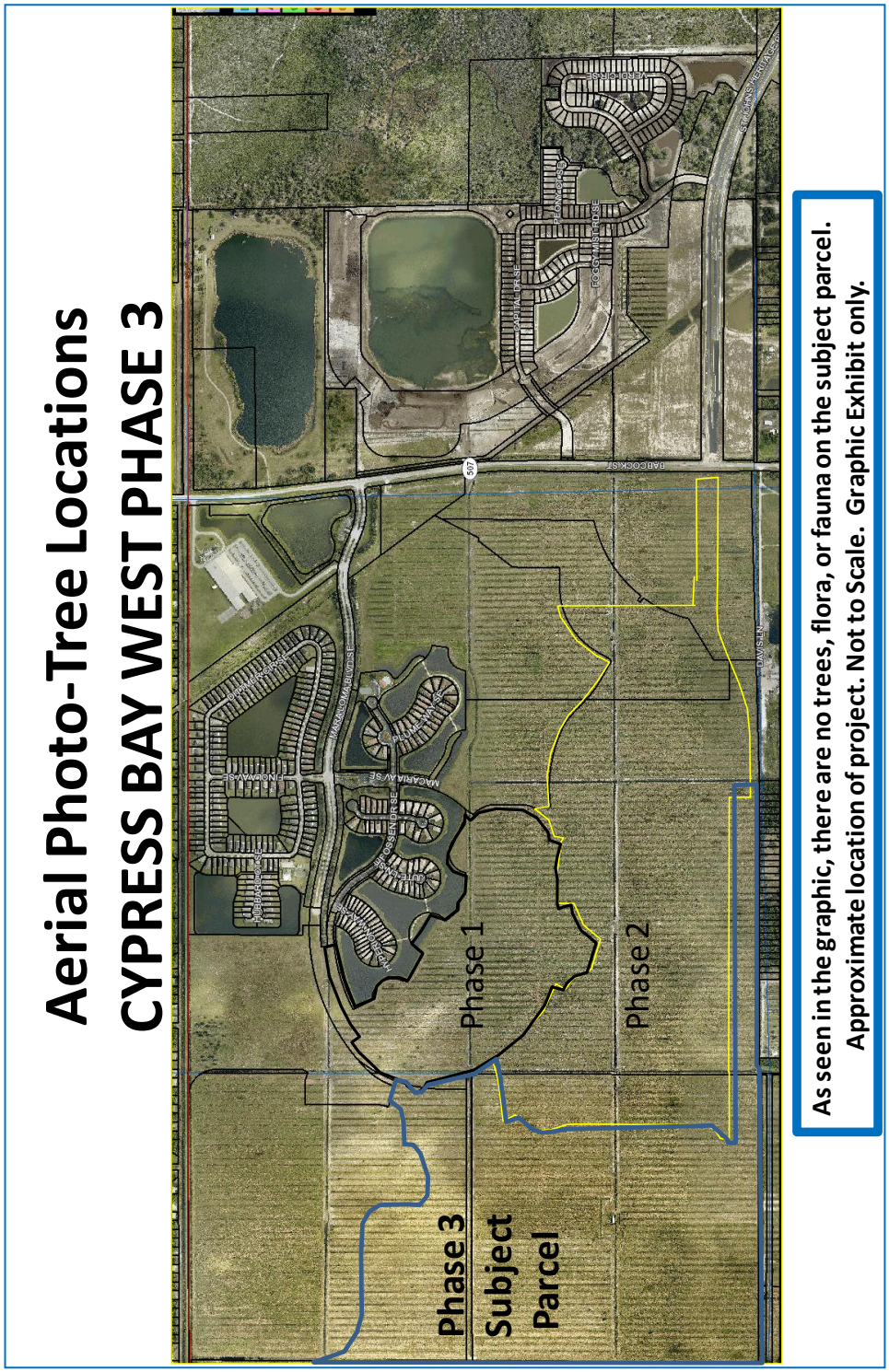
GOAL FLU-6 Wise and efficient use of the City's natural resources.

- OBJECTIVE FLU-6.1 An intensity and distribution of land use and development which minimizes the impact on the natural environment.
    - POLICIES FLU-6.1A Land use decisions shall be based upon the support capability of the natural environment as determined by conformance to the Floodplain Management Ordinance, the Stormwater Management and Conservation Ordinance, the Trees and Shrubbery Ordinance, and the Zoning Ordinance.

Map F, Environmental Conditions, shows via a recent aerial, the cleared land and current conditions of this project and shows there are no trees, flora, or fauna within the subject property.

Map F

ENVIRONMENTAL CONDITIONS



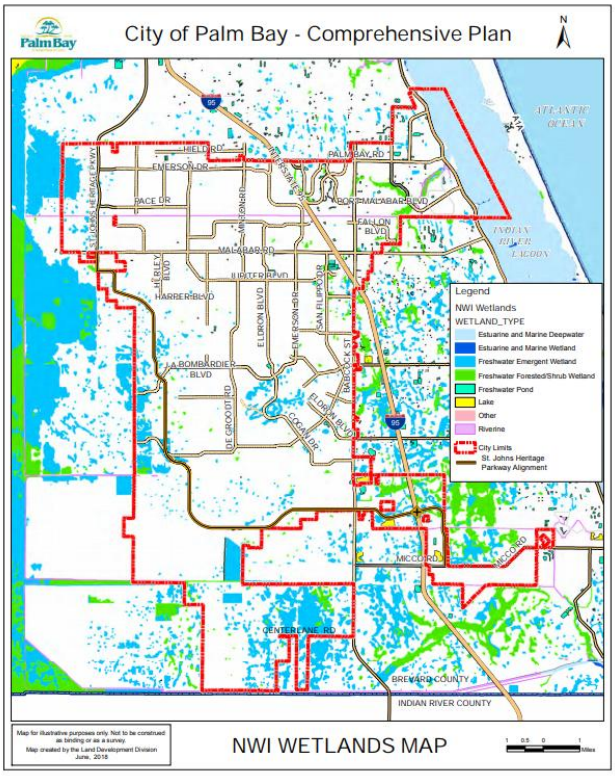


Figure 4 Comprehensive Plan Wetlands Map, dated June, 2018, taken from the City of Palm Bay's website, April, 2019

Figures 4 and 5 are taken from the City's Comprehensive Plan as found on the City's website. If the project is found to contain any wetlands, species or habitat, or be in a Flood Zone, the owner will comply with the various Fish and Wildlife, SJRWMD, FEMA or other agency requirements and obtain requisite permits.

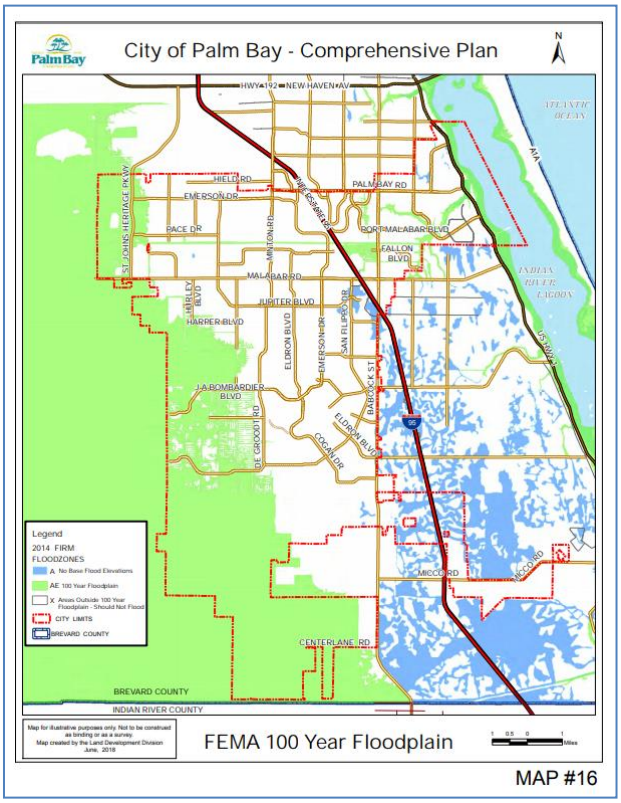


Figure 5 Comprehensive Plan FEMA 100 Year Floodplain Map,

TRANSPORTATION CONCURRENCY AND MOBILITY

In 2005, traffic concurrency was approved by the City and County for 900 residential units, Sunrise Elementary School, and the current intersection of Mara Loma and Babcock St. Of those approved 900 units, 296 units have been used for Heron Bay and the Lakes of Waterstone. Courtyards at Waterstone used 201 units. From that 403 available, Gardens at Waterstone Phase 1 used 154, and Cypress Bay West Phase 1 will use 229 units, leaving 20 units of the original 900. Table 3 provides a quick summary.

Table 3	
Concurrency Table	
Traffic Concurrency	
Original	900
Heron Bay/Lakes	-296
Courtyards	-201
Gardens 1	-154
CBW1	-229
Remaining before CBW 2	20
CBW2	-570
Current trip units*	-550

Recognizing that all the original approved trips have been used, the developers of Cypress Bay West Phase 3 will be making application for traffic concurrency to the City and County and to that end, they have been in several meetings negotiating a Development Agreement to define capacity and system improvements that will be made to serve the development and

community.

Street names have been approved by the Brevard County Address assignment office and are on file with the City's Planning Department.

The PD application requires a vehicular circulation plan, which is shown as part of the development plan. Owners of another nearby project called the Gardens at Waterstone Phase 1, PB & J Investments, LLC, are extending Mara Loma Boulevard from the current pavement west, to go west of and past their proposed subdivision at Granger Circle. Forestar will extend Mara Loma Boulevard past the intersection of their Cypress Bay West Phase 1 subdivision on Aberdeen Drive and construct a traffic circle for site branding and traffic calming. From there, Mara Loma will be brought south and east to connect with another new roadway entrance off the Babcock Street Intersection at the St. Johns Heritage Parkway to be called Journey Boulevard.

There will be 2 access points off of the extended Mara Loma Boulevard into Cypress Bay West 3. All streets within the project are to be private and amenities will be maintained by the Cypress Bay West 3 Homeowners Association, Inc. or a CDD.

Mara Loma, as a 2 lane collector, has capacity to serve the proposed and all future subdivisions. The existing section of Mara Loma has been dedicated to the City. Journey is anticipated to be the western entry for the remaining section of the St. Johns Heritage Parkway that will traverse the western sections of the City northward to Malabar Road. As such, Journey Drive will be a 4 lane divided arterial with a median until the first bi-directional opening, then is intended to be reduced to 2 lanes, with a divided median. All medians will be landscaped and irrigated.

There is an Alternative Corridor Evaluation Report (ACER) under study by the County to determine potential viable corridor routes for the western Parkway extension. If the future roadway fails to proceed to PD & E or is not ultimately constructed, Journey will still serve as a large collector for the almost 2000 homes being built in the Waterstone and Cypress Bay West lands west of Babcock and capture trips that would take Babcock Street to get to regional commercial areas from both inside and outside the Cypress Bay projects.

While Mara Loma and Journey are intended to be dedicated for public use/ownership to the City of Palm Bay, a Community Development District (CDD) will be formed to maintain the Mara Loma extension from the proposed traffic circle south to Journey Drive and a portion of Journey Drive, depending on the outcome of the ACER study and the future Parkway. If for any reason the developer fails to obtain City approval for a CDD, the Cypress Bay West Homeowner's Association will maintain these roadways.

The developer intends to allow golf carts to be used for internal transportation. This will also serve to reduce the trip count and be part of the internal capture for the commercial centers along Babcock.

Traffic studies by Lassiter Transportation Group have been submitted by the owner to the City and County for Waterstone for all projects since 2006 and as recent as 2017. Those studies are on record with the Growth Management Department of the City of Palm Bay and Brevard County Public Works. A memorandum from Lassiter Transportation Group (LTG) regarding the Waterstone projects' concurrency is on file with the City. More recently, LTG conducted a Signal Warrant Analysis and is in the design phase to create the signal for the intersection of Babcock Street and Mara Loma. The developers of the Gardens at Waterstone portion of the project will be responsible for obtaining approvals from the City and County for that signal. It will enhance the operations of the internal roadway and community functioning and should be constructed within the next year. Another copy of the 2017 Traffic Report by LTG is being submitted with this application.

SCHOOL CONCURRENCY

The owners worked with the School Board on land for an elementary school, and Sunrise Elementary is now open and serving the public. There are no other schools to be provided by Waterstone as a result of the proposed project. School Capacity and Concurrency applications have been completed by the applicant for this submittal. The City is responsible for submitting the application and required Local Determination form to the School Board.

OPEN SPACE/RECREATION/AMENITIES

Recreation amenities include approximately 70 acres of lands that will provide for active and passive recreation in the form of walking trails, sports fields, picnic and play areas, along with open gathering spaces for the Cypress Bay West communities. These will be all under the control of the Homeowners Association, Inc.

The recreation areas will be used by all homes in all of the Cypress Bay West community's development (Phase 1, 2, and 3). Part of the recreation area, 20 acres, was approved as part of Phase 1. Approximately 47 acres are dedicated to open space and recreation, including retention areas in Phase 2. There are approximately 70 acres in Phase 3, bringing 137 acres +/1 for use as recreation and leisure.

DEVELOPMENT STANDARDS AND GOVERNANCE

Section 185.061 '(A) The planned unit development is a concept which encourages and permits variation in residential developments by allowing deviation in lot size, bulk or type of dwellings, density, lot coverage, setbacks, open space, and other Land Development Regulations and open space from than required in any one (1) residential land use classification under the zoning regulations of the city. The purpose of a planned unit development is to encourage the development of planned residential neighborhoods and communities that provide a full range of residence types as well as commercial uses designed to serve the inhabitants of the planned unit development. It is recognized that only through ingenuity, imagination and flexibility can residential developments be produced which are in keeping with the intent of this subchapter, while departing from the strict application of conventional use and dimension requirements of other zoning districts and subdivision regulations." (Source: City Code, American Legal Publishing)

The project's zoning of Planned Unit Development gives the owner the ability to establish and restrict the allowable uses within the project and set the development standards. This will be done through Declaration of Covenants, Bylaws and Articles of Incorporation for the Homeowners Association that will be provided in the Final Development Plan application package submittal. There will also be areas that are dedicated to the public and governed by either a regulatory agency or local government (streets and utilities) or Community Development District. Subdivisions will be governed by the City and Chapter 177 Florida Statutes. Building permits and construction plan approval will be required by the City. The County may be involved in permitting driveway, signal, or roadway connections to Babcock Street.

Therefore, the original and currently planned overall PUD has been creatively designed to assure a diverse mix of uses, including: residential units and styles throughout the internal areas of the development with non-residential, institutional, and commercial uses located along the Babcock frontage under separate ownership that serve the community and region. The developer will further refine the draft Deed restrictions during construction plan permitting for specific uses, development standards, architectural and site design features, required landscaping/ lighting/ signage/ materials, architectural review boards, maintenance, and the like. The project has been designed to be consistent with the Comprehensive Plan and Land Development Codes, and compatible with the surrounding area.

The developer intends that a Homeowner's Association would be responsible for ownership and maintenance of all tracts to be dedicated on a final plat as recreation, open space, landscape, and private rights-of way. A Community Development District (CDD) will be established and provide for maintenance of all tracts on the plat designated for drainage, open space and landscape, and the publicly dedicated rights-of-way. In the event a CDD is not formed, an HOA will be responsible for all ownership and maintenance of tracts as shown on the preliminary plat that would have been under the governance of the CDD.

The following is a general overview of the proposed uses, as well as dimensional information.

GENERAL RESIDENTIAL USES

The proposed project is a subdivision within a planned unit development zoning district consisting solely of 544 single family homes on lots that are on average 50' X 125' or on average 60' X 125 lots, along with ancillary recreation, utilities, and infrastructure.

Single Family Minimum Yard requirements (Setbacks):

All single family:

Front Yard:	25 feet
Rear Yard:	20 feet
Side yard:	5 feet
Side Corner:	15 feet
Pool Setback:	5 feet

Single Family Height: 2 stories (25 feet)

Minimum Single Family Square Footage:

50 foot lots: 1600 sf, valued at today's estimates at approximately $275,000

60 foot lots: 2200-3300 sf, valued at today's estimates at approximately $375,000

COMPATIBILITY WITH SURROUNDING AREA

The project is being placed on former groves and is a phase of a Master Planned community approved and started in 2005. Heron Bay and the Lakes of Waterstone are 2 subdivisions that have been constructed containing 296 units. Courtyards at Waterstone (201 units) and Gardens 1(154) are under construction. Cypress Bay West Phase 1 is undergoing construction plan review and Phase 2 is in for Final Development Plan approval. Although different owners, all of these projects are similar in style, price, and lot sizes.

This project will be compatible in style, type, value, and amenities with its surrounding area, including the large scale planned Regional Activity Center 'Emerald Lakes; (approved in 2011 and 2016) and Cypress Bay Preserve (2018) to the east; the Gardens and Courtyards projects approved in 2019 and 2020. With almost 1000 units remaining to be developed in the Waterstone project, the developers will not build any product that will destroy the future potential of various planned subdivisions. Therefore, the development will be comparable to and compatible with the remaining subdivisions with the planned development in size, scale, character, intensity, and design as well.

COMFORMANCE WITH LAND DEVELOPMENT CODE (REVIEW CRITERIA)

All of the lands in Waterstone are zoned Planned Unit Development based upon the final development plans and construction of Heron Bay and Lakes of Waterstone starting in 2005. This document and narrative demonstrates how the project is consistent with the Comprehensive Plan, compliant with Land Development Code, and meets the review criteria in Chapter 185.066 of the City's Code, warranting approval. Since the project is zoned Planned Unit Development Zoning, a rezoning is not required.

The PUD submittal includes all the required documents and exhibits requested under the code.

To reiterate, the justification gives evidence and testimony for the Planning and Zoning Board and City Council to make findings of fact that the project deserves approval based upon the review criteria as follows:

(a) Degree of departure of proposed planned unit development from surrounding residential areas in terms of character and density.

JUSTIFICATION: Phase 3 is part of an approved project and plan that was given Planned Unit Development Zoning in 2005. The project is south of the built subdivisions of Heron Bay and

southwest of the Lakes of Waterstone, which were begun by Pulte/Divosta around 2006. Completed with 296 homes and an elementary school, utilities are permitted, sized and installed to serve the entire planned development in lines run from Valkaria Road to Mara Loma Blvd, and 2600' feet of Mara Loma Blvd is constructed and dedicated to the City. The homes in other approved phases east and west of Babcock contain the same type of amenities and design features in varying corporate products. Therefore, there is complete compatibility with the existing surrounding developments.

Land use entitlements exist on 1200+/- acres straddling both sides of south Babcock Street. The proposed project is one of several large scale developments stimulated and supported by the new I-95 interchange and Parkway. Therefore, there is little departure from the current or proposed residential areas by the proposed project, which is in complete conformance with the character, density, and intensity of development approved by the State and City for this area.

(b) Compatibility within the planned unit development and relationship with surrounding neighborhoods.

JUSTIFICATION: Projects on adjacent lands have received City and/or State approval for similar mixed use, large scale developments with commensurate land use and zoning. As an extension of the original planned development, CBW Phase 3 is compatible in size, scale, character, intensity, and design with both built subdivisions and future planned subdivisions.

(c) Prevention of erosion and degrading of surrounding area.

JUSTIFICATION: The proposed project will meet all required agency permitting processes and procedures and create no off-site drainage issues. A master conceptual stormwater permit has been issued by the St. John's River Water Management District. Final environmental local and state agency permits are required and will be filed with the City.

(d) Provision for future public education and recreation facilities, transportation, water supply, sewage disposal, surface drainage, flood control and soil conservation as shown in the Final development plan.

JUSTIFICATION: The original Waterstone Development provided land for an elementary school, Sunrise Elementary, which is open and serving the public. There are no other schools to be provided by Waterstone. CBW 3 will have on site recreation amenities for use by its residents. All utilities will be planned for and installed by the developer(s), approved by the City, served by the City and permitted by the required Agencies. All required environmental permits will be obtained through the respective agencies. Currently, *ST. JOHN'S RIVER WATER MANAGEMENT DISTRICT PERMIT # 96251-22* gives conceptual approval to the master planned drainage system for the Cypress Bay West Phase 3 and surrounding 600 acres +/-. That permit is on public record and filed with the City.

(e) The nature, intent and compatibility of common open space, including the proposed method for the maintenance and conservation of the common open space.

JUSTIFICATION: The overall Waterstone and Cypress Bay West project's residential areas will ultimately provide approximately 180 acres +/- of recreational and open space amenities in both active and passive recreational areas, general open space, and landscaped areas. Cypress Bay West Phase 3 will build upon the Phase 1 and 2 amenities, via location of a large community center which may include a community pool, playgrounds, gathering spaces, event lawns, tot lots, passive areas, walking trails and similar pocket parks. A Homeowners Owner's Association, Inc.' (HOA) or CDD will be responsible for operation and maintenance of the recreational amenities within the residential areas.

(f) The feasibility and compatibility of the development plan to function as an independent development.

JUSTIFICATION: Each neighborhood within the Cypress Bay West projects will function on its own. Utilities provided by the owner/developer to serve the existing Cypress Bay West community will serve this project. The Cypress Bay West project will have a Community Development District (CDD) Deed restrictions, a Homeowner's Association, articles of incorporation and by-laws, permits, and a recorded plat.

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

JUSTIFICATION: Numerous Traffic Studies by Lassiter Transportation Group analyzing the roadway impacts and what improvements are necessary have been submitted over the years and are on file with the City and County. A recent traffic signal warrant study was submitted to the City and Brevard County. Brevard County is conducting a PDE for widening of the roadway. The new interchange and Parkway is open. The County is studying alternative corridor location for the extension of the SJHP westward around to Malabar road from Babcock Street. There is adequate roadways to support the project.

(h) The availability and adequacy of water and sewer service to support the proposed planned unit development.

JUSTIFICATION: Cypress Bay West Phase 3 will utilize the lines provided for the existing Waterstone Communities and tie into the City's water and wastewater system. The City has begun the long planned expansion to its wastewater plant and has made expansions to the water plant. The City will be the provider of the requisite services. The owner's engineer, CEG, working in concert with the City's Utilities department, has been advised that there is capacity available to serve this project.

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

JUSTIFICATION: Unlike using singular zoning districts and subdivision practices, Cypress Bay West Phase 3 is planned to be a quality, integrated, creative development similar in style and value to the existing Waterstone, Cypress Bay Preserve and Bayside Lakes Subdivisions. Landscaped roads, themed signage, entry features, underground utilities, and deed restrictions will dictate and govern the uses,

standards, character and quality of the development. In most cases, the requirements will be stricter than the City code. Because it's within the PUD district, there is greater control and quality than in a single development zone.

(j) The conformity and compatibility of the planned unit development within any adopted development plan of the city.

JUSTIFICATION: This project is in compliance with the Comprehensive Plan of the City.

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

JUSTIFICATION: This project includes active and passive recreational uses for common enjoyment by the residents. There are no commercial uses within the proposed Cypress Bay West Phase 3 development.

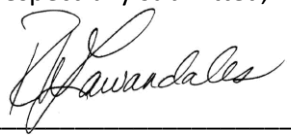
CONCLUSION

Several supporting documents are included in the Appendices and as part of the application. Exhibits required by the applications are under separate cover submitted by the Project Engineer of Record, Construction Engineering Group, Inc., Jake Wise, PD. Based upon my review of the documents, in my opinion, as a Fellow of the American Institute of Certified Planners, with 42 years of professional planning practice in the state of Florida, the proposed Cypress Bay West Phase 3 Final Development Plan is:

- **consistent with the Planned Unit Development Zoning Classification currently on the property,**
- **consistent with the Comprehensive Plan,**
- **compliant with the City's land development code, and,**
- **compatible with the surrounding community.**

This narrative report, to supplement the FDP application, is intended to serve as substantial competent evidence and testimony in all public hearings or proceedings related to the Cypress Bay West Phase 3 project.

Respectfully submitted,



Rochelle W. Lawandales, FAICP
Waterstone Development Company, LLC

MAPS AND FIGURES

MAPS

MAP A: **CYPRESS BAY WEST PHASE 3 LOCATION MAP**
MAP B: **CITY ZONING MAP**
MAP C: **ORIGINAL FINAL DEVELOPMENT PLAN FOR WATERSTONE AT PALM BAY WITH APPROXIMATE LOCATION OF CYPRESS BAY WEST PHASE 3**
MAP D: **CYPRESS BAY WEST PHASE 3 FINAL DEVELOPMENT PLAN**
MAP E: **CITY FUTURE LAND USE MAP**
MAP F: **TREE SURVEY AERIAL**

FIGURES

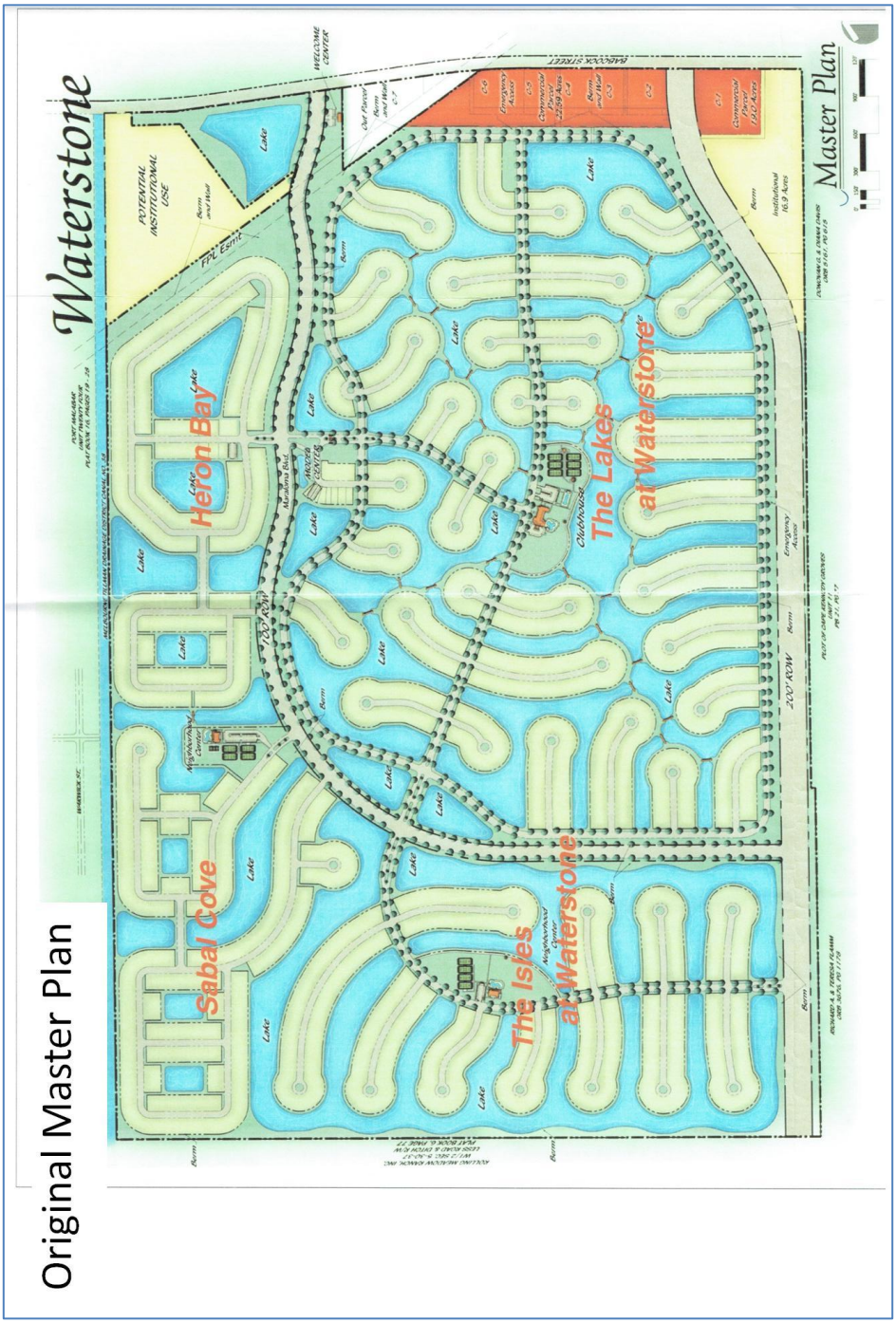
FIGURE 1 **Future Land Use Map taken from the City's Comprehensive Plan on the City of Palm Bay Website, April, 2019**
FIGURE 2 **Urban Services Boundary Map adopted by the City in the EAR, October 2017; as shown on the City of Palm Bay website, April, 2019.**
FIGURE 3 **Comprehensive Plan Wetlands Map, dated June, 2018, taken from the City of Palm Bay's website, April, 2019**
FIGURE 4 **Comprehensive Plan FEMA 100 Year Floodplain Map, taken from the City of Palm Bay's website, April, 2019**
FIGURE 5 **SJRWMD Conceptual permit for Waterstone and Cypress Bay West**

APPENDICES, included and by reference:

1. **APPROVED FINAL DEVELOPMENT PLAN 2005 ESTABLISHING ZONING**
2. **PRELIMINARY PLAT (FRONT SHEET ONLY/FULL SET UNDER SEPARATE COVER)**
3. **RESUME OF ROCHELLE W. LAWANDALES, FAICP**
4. **FULL SET OF CYPRESS BAY WEST PHASE 3 FINAL DEVELOPMENT PLAN, DATED June 1, 2001 BY REFERENCE**
5. **LASSITER TRANSPORTATION GROUP, AUGUST 2017 TRAFFIC STUDY AND TRAFFIC SIGNAL WARRANT STUDY FOR BABCOCK STREET AND MARA LOMA BY REFERENCE**

APPENDICES

1. APPROVED ORIGINAL MASTER PLAN ESTABLISHING PUD ZONING



May 15, 2005 FINAL PUD Approval

Palm Bay
A Perfect Place to Grow

May 18, 2005

Mr. Ben Jefferies
Bayside Lakes Development Corporation
3391 Bayside Lakes Boulevard, SE
Palm Bay, FL. 32909

Dear Mr. Jefferies:

This letter is to officially notify you that the City Council of the City of Palm Bay, at its Regular Council Meeting No. 2005-11, held on May 17, 2005, approved the final Planned Unit Development application for Waterstone.

The approval by Council is subject to all staff comments being addressed prior to the recording of the plat.

If you should have any questions or desire additional information, please contact Mr. Dave Watkins, Growth Management Director, at 733-3042.

Sincerely,

CITY OF PALM BAY

Alice Passmore, CMC
City Clerk

Enclosure: Land Development Division Staff Report

Case No. PUD-20-2005

Legislative Department
120 Malabar Road, SE • Palm Bay, F
Phone: 321.952.3400 • Fax: 321.953.9977 • ww

Palm Bay — CITY OF PALM BAY

DATE: May 4, 2005
CASE #: PUD-20-2005

LAND DEVELOPMENT DIVISION STAFF REPORT

APPLICATION

PROPOSAL: Final Planned Unit Development for Heron Bay at Waterstone, Phase One and Waterstone Commercial Center, Phase One PUD.

LOCATION: West of and adjacent to Babcock Street SE, south of and adjacent to Melbourne Tillman Water Control District Canal No. 38.

APPLICANT: DiVosta Homes, L.P. and Bayside Lakes Development Corporation.

SITE DATA

PRESENT ZONING: AU, Agricultural Use and PUD, Planned Unit Development.

ACREAGE: 924.93 acres ±

DENSITY: Maximum of 2.0 units per acre (overall).

ADJACENT ZONING & LAND USE:
N -- R-2, Single Family Residential District; homes and vacant land.
E -- GU, General Use District and AU, Agricultural Use (Brevard); borrow pit and houses.
S -- AU, Agricultural Use and GU, General Use District; road.
W -- GU, General Use District; mine.

WATER & SEWER: Required to be provided.

FLOOD ZONE: Flood Zone X, outside of 100-year flood zone, Flood Zone A and Flood Zone AE,

sched residential.

CASE NO. PUD-20-2005
May 4, 2005

PAGE 3

F. Comprehensive Plan Future Land Use Map amendments are necessary for all attached residential areas. The designation must be Multiple Family.

4. Construction plans must receive final approval prior to recording of the Final PUD.

5. The unnamed roadway west of Maraloma Boulevard that intersects with the proposed Parkway must be truncated such that it either creates a cul-de-sac or turns east and intersects with Maraloma Boulevard. The proposed street cannot access the Parkway directly.

6. A revised traffic study is required to determine any necessary offsite improvements.

7. There are several inconsistencies in the current plans that must be corrected prior to final PUD approval. For example, the table does not indicate which units are attached residential while the plan does, the Master Plan has the incorrect commercial acreage and similar minor issues.

STAFF RECOMMENDATION:

A motion to approve Case Number PUD-20-2005 subject to all staff comments being addressed during the final PUD process.

CASE NO. PUD-20-2005
May 4, 2005

PAGE 2

BACKGROUND:

1. Preliminary Planned Unit Development is requested for Waterstone PUD.

2. The property is located west of and adjacent to Babcock Street SE, south of and adjacent to Melbourne Tillman Water Control District Canal No. 38. This parcel contains 924.93 acres, more or less.

3. The current zoning is PUD, Planned Unit Development District and AU, Agricultural Use (Brevard County). Surrounding zoning is as follows:

North: RS-2, Single Family Residential District.

East: GU, General Use District and AU, Agricultural Use (Brevard).

South: GU, General Use District and AU, Agricultural Use (Brevard).

West: GU, General Use District (Brevard).

3. The applicant is DiVosta Homes, L.P. and Bayside Lakes Development Corporation.

ANALYSIS:

1. The proposed development consists of 1,700 total units, with 1,014 single family lots and 686 units proposed as duplexes. The applicant also proposes numerous retention tracts, buffer tracts, landscape tracts, community tracts and approximately 16.9 acres of institutional use and 22.59 acres of commercial tracts.

2. The internal streets, drainage and the common areas are to be maintained by the private property owners association. The section of the proposed Palm Bay Parkway is provided for along the southern boundary of the site.

3. In order to receive Preliminary Planned Unit Development approval, the proposal must meet the requirements of Section 185.066, Palm Bay Code of Ordinances. It appears that the request is in conformance with the applicable requirements of this section subject to the following:

A. Architectural schematics are required during Final PUD approval for all nonresidential structures proposed.

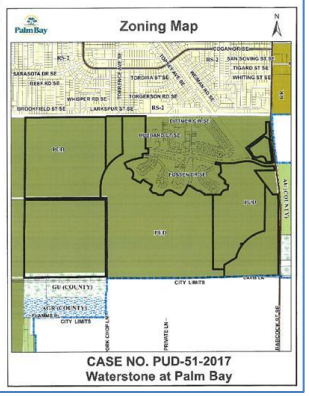
B. All tracts must be labeled with allowable usage and acre

C. Final deed restrictions must be submitted prior to recor

D. Street names must be provided on the Final PUD and re

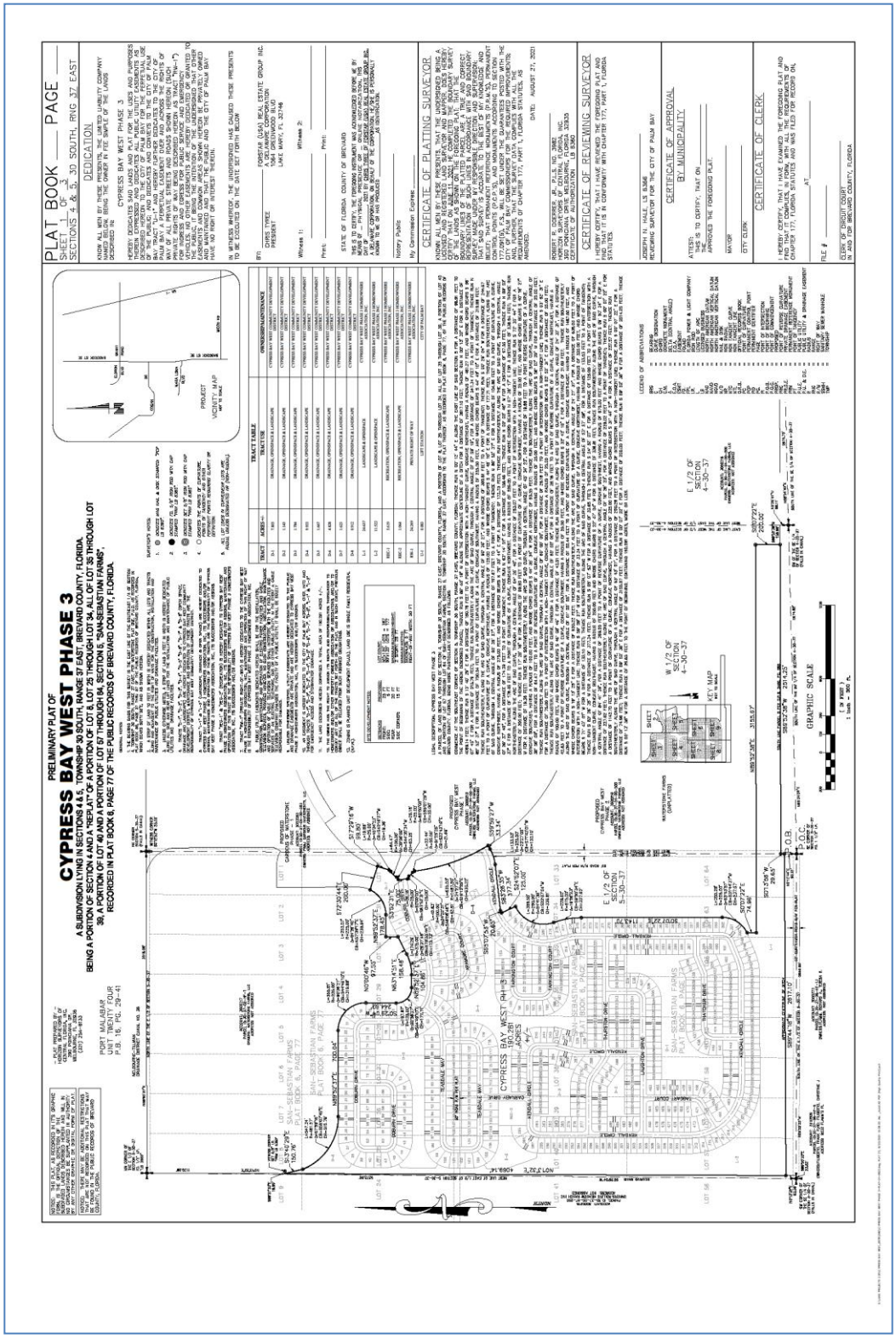
E. Title opinion must be provided prior to recording.

Resulted in PUD Zoning
Shown on City's GIS today



CASE NO. PUD-51-2017
Waterstone at Palm Bay

2. PRELIMINARY PLAT



3. RESUME OF ROCHELLE W. LAWANDALES, FAICP

PLANNING for COMMUNITY

EDUCATION

Graduate Degree: **MASTER OF CITY AND REGIONAL PLANNING**
CLEMSON UNIVERSITY, CLEMSON, S.C. 1979

Bachelor of Arts: **SOCIOLOGY/PSYCHOLOGY**
CLEMSON UNIVERSITY, CLEMSON, S.C. 1977

Other Studies: **ALLIANCE FRANÇAISE, PARIS, FRANCE (1976)**

Certifications: **American Institute of Certified Planners**

Honors: **Inducted into the College of Fellows by the American Planning Association/American Institute of Certified Planners, 2018**

EXPERIENCE

Private Consultation Service: Lawandales Planning Affiliates, Inc.,(LPA), owned by Rochelle W. Lawandales, AICP, has been serving communities and individuals with planning services since 1989, including, but not limited to:

- Local governments including, Palm Bay, Palm Shores, Melbourne Beach, Malabar, Melbourne, Fellsmere, Cocoa Beach, Satellite Beach, New Smyrna Beach, Tampa, Savannah, Georgia, South Daytona, Rockledge, Cocoa, Port Orange

- National and Local developers, including, but not limited to: American Tower Systems, a subsidiary of CBS, Inc.(site selection for telecommunication towers across Florida), Lennar Homes(zoning, land development), Mercedes Homes(zoning/land development approvals), Heritage Properties, St. Mary's Catholic Community Church(zoning/conditional use), Mattress Barn(comp plan and zoning), Boozer Properties, Plymel Realty, Charlie Boyd (zoning), FBC of Brevard(zoning), Richard Stottler d/b/a Cape Kennedy Shores, Inc., Ben Jefferies d/b/a Bayside Lakes Development Corporation, Waterstone Development Company, LLC; Mike Erdman, d/b/a as KEW, Inc., Roy Pence, Coy Clark, Centex Homes (zoning/land development), among others.

- Many noted Land Use/Real Estate Lawyers, individuals or developers who have needed expert planning services for development reviews and approvals, eminent domain, or expert witness testimony for quasi-judicial or legislative hearings. Ms. Lawandales has been certified as an expert witness in local government hearings, Circuit and District Courts in Florida, and Chapter 120 Administrative hearings.

Comprehensive and Neighborhood Planning experience includes:

- West Melbourne, Malabar, and Cocoa Comprehensive Plans
- Amendments for Melbourne Beach, Brevard County, Fellsmere, Palm Shores, South Daytona, Indian Harbor Beach, Cocoa, Palm Bay
- South Daytona Evaluation and Appraisal Report
- Neighborhood Strategic Plan for the City of Melbourne's North CDBG Target Area "Booker T. Washington Neighborhood
- Former City of Fellsmere Consulting Planner, Comprehensive Plan 2003 completion and several large scale Updates

Redevelopment, Urban Design and Historic Preservation experience includes:

- City of Titusville: Land Development Codes and Urban Design Manual with Kimley-Horn and Associates
- City of Port Orange: TDM/TSM Strategic Plan with Kimley-Horn and Associates

335 Sherwood Avenue
Satellite Beach, Florida 32937

- City of Rockledge: Community Redevelopment Area consulting Director, 2003-2010; CRA Plan Update 2009; Redevelopment Mixed Use District-Comprehensive Plan amendment, Land Development Code amendment, and Design Manual; Barton Boulevard Streetscape design;
- City of Fellsmere: Mixed-Use District Code and Urban Design/Streetscape Concepts; Findings of Necessity and established district with the Community Redevelopment Area Plan, 2005; City Hall Master Plan; Preparing Design Manual and Streetscape Plan for downtown;
- City of Palm Bay: Bayfront Redevelopment Area projects; Waterstreet Development Master Plan, Waterstreet Strategic Funding Plan, with Brad Smith Associates; Award winning Powell Subdivision Visioning, streetscape design; Palm Bay Road streetscape; Indian River Scenic By-ways establishment and Corridor Management Plan; Design Manual/Pattern Book for urban design in CRA district
- City of Cocoa: Redevelopment Area Streetscape/Urban Design Project; Heart of Cocoa, Delannoy Avenue, and Whitley Bay; in association with Baskerville-Donovan, Inc.
- City of Melbourne: Booker T. Washington Neighborhood Strategic Plan. Redevelopment, Urban Design and Streetscape concepts; *Eau Gallie Urban Infill and Community Redevelopment Plan, Streetscape, and Urban Design Concepts; CRA Expansion-Blight Study. This project won the 2003 National APA Community Initiative Award;* Blight Study for Downtown Melbourne Area Expansion; Downtown Blight Study and Evaluation/Audit of the CRA Redevelopment Plan; Babcock Street Blight Study and first Community Redevelopment Plan, with HDR, Inc and Brad Smith Associates.
- Town of Melbourne Beach: Ocean Avenue Redevelopment, Streetscape and Design Guidelines; Ocean Avenue Traffic Light, Pavers, Colors, and Lighting Design;TEA-21 Enhancement Project Design/Streetscape Elements; Melbourne Beach Municipal Complex with Rood and Zwick, Architects in Association and Brad Smith Associates;
- City of South Daytona: Assisted in creation of redevelopment district, Redevelopment Plan and Urban Design Concepts
- City of Indian Harbor Beach: Mixed Use District Code and Urban Design/Streetscape Concepts
- City of Satellite Beach: Blight Study, creation of redevelopment district, Community Redevelopment Plan and Urban design recommendation
- Town of Palm Shores: Community Redevelopment Blight Study and Urban Design recommendations
- Harris Corporation Master Plan-a micro-"urban design" project, with Brad Smith Associates
- Cocoa Beach Redevelopment Area-SR 520 Urban Design/Beautification Project, with Brad Smith Associates
- Blight Study, Redevelopment Plan, Comprehensive Plan amendment and Land Development Code amendments for the Merritt Island Redevelopment Agency area expansion
- Conceptual redevelopment plan for the Max Brewer Causeway, part of the Titusville Redevelopment Area
- Conceptual Master Plan, Sandpoint Park, Honeycutt and Associates, part of Titusville Redevelopment Area

Historic Preservation and Main Street

- Eau Gallie Arts District (EGAD) Economic Restructuring Plan, 2012
- Henegar Center for the Arts, Building Feasibility Study for use of 1920's High School, 2008
- Melbourne Main Street Strategic Plan
- Hamilton County Main Street Historic District Survey and Recommendations, Hamilton County, Florida
- Established an Historic District for the downtown area in Cocoa (Cocoa Village) and wrote Preservation and Development Guidelines
- Secured funding, assisted in the planning and supervised the $500,000 rehabilitation of the E.P. Porcher House, a National Register Property in Cocoa
- Drafted a Model Historic Preservation Ordinance for graduate school

Public Participation Workshop Facilitation and Visioning Processes

South Daytona, Melbourne, Melbourne Beach, Fellsmere, Zion Christian Church, Florida Air Academy, Eau Gallie, Satellite Beach, Cocoa, Palm Shores, Indian River Scenic Highway Coalition, Cocoa Beach, Rockledge,

335 Sherwood Avenue
Satellite Beach, Florida 32937

Palm Bay, Melbourne Main Street, Interstate Business Park, Le Centre, Savannah, Tampa Downtown Development Authority; New Smyrna Beach Redevelopment Agency

Land Development Regulations include:
Complete Land Development Regulations for West Melbourne, Malabar, South Daytona, Fellsmere and Cocoa; and updates or changes to LDR's for Titusville(Form Based Code), Rockledge, Palm Shores, Fellsmere, Melbourne, Cocoa, Melbourne Beach, Indian Harbor Beach, and Satellite Beach. Performance Standards Zoning Code for Cocoa Redevelopment Agency, with Frielich-Leitner, Esq. Architectural and Site Design Guidelines; Recreation Impact Fee Ordinances; Performance Standards Zoning Codes; Historic Preservation Districts and Historic Preservation Land Development Code; Downtown Redevelopment Codes; Mixed-Use District Codes

Grants experience:
Successes have included Historic Preservation, Florida Communities Trust, FRDAP, FIND, FCMP, Brownfields, Enterprise Zones/Foreign Trade zone designations, for a variety of programs, services and facilities; and overall obtaining over $5M for a variety of local or county public improvements.

Recreation projects:
Recreation master planning services have included Wabasso Causeway Park and Round Island Park with Brad Smith Associates for Indian River County; Melbourne Community Park Location and Design Study, Front Street Park, Sherwood Park and Carver Park for the City of Melbourne; City of Fellsmere Senior League, Little League Community Parks, and Grant Ave. Neighborhood Park; Waterstreet Redevelopment Plan with several Park Components for the City of Palm Bay; Westbrook Community Park for Lennar Homes; Indian River Lagoon Scenic Highway Program; Ryckman and Loggerhead Parks for the Town of Melbourne Beach; Palm Shores Shoreside Park; Sandpoint Park and Max Brewer Causeway, (Brevard County) with Honeycutt and Associates, Inc.

Public Service:
Ms. Lawandales' first 10 years of practice were spent serving the public sector:

- West Melbourne, Florida: Planning Director, 1979-1980
- Melbourne, Florida: Special Projects and Grants Administrator, 1980-1983
- Cocoa, Florida: Redevelopment Director 1986; Community Improvement Administrator, 1986-1989.

Other Employment
Since 2011, Ms. Lawandales has continued to serve as a sole proprietor planning consultant to the public and private sectors to provide expert testimony, planning consultation, code changes, and sustainability programs for various clients. In 2014, she was hired as the Professional Planner for Waterstone Development Company, LLC in Melbourne, Fl.

Miscellaneous talents and experience:

- Designing, Implementing, and Directing the We Care Program for the Brevard County Medical Society, Brevard County Health Unit, and area Hospitals, which brought private medical care to the indigent of Brevard County
- Counseling for troubled youth and their families as a caseworker for Devereux Outpatient Services
- Principal for religious schools for 4 years/teacher for 13
- Adjunct Professor, Planning and Urban Design, University of Central Florida, Fall, 2004
- Coldwater Creek, Retail Sales Associate, Part time, 2005-present

Prior Affiliations:

- Florida Redevelopment Association, President, 2009-2010; Legislative Policy Committee; Board member 2006-2011; Treasurer, 2007-2008
- Florida Chapter American Planning Association: Legislative Policy Committee (almost 20 years and currently)
- American Institute of Certified Planners/American Planning Association (current)
- Florida League of Cities: Legislative Policy Committee

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Satellite Beach, Florida 32937

- Florida Chambers, Six Pillars Committee
- Florida League of Cities: Keys to the Cities Task Force, 2010
- Brevard Tomorrow

Previous Community Service:

- Past Chair(13 years) and Member (16 years), Satellite Beach Planning and Zoning Board
- Past Chair (4 years), Satellite Beach Community Redevelopment Agency Advisory Board,
- Past service on Melbourne's Planning and Zoning Board and Architectural Review Board
- Junior League of South Brevard, Various Executive Board, Board positions and member 19 years
- Former Chair, State Public Affairs Committee for the Junior Leagues of Florida; established the Growth Management Task Force
- Former Committee Member, Land Use and Growth Management Subcommittee, Brevard Tomorrow, Tourist Development Council Signage Committee; Landscape and Tree Preservation Ordinance, Brevard County
- Leadership Brevard 1994 Graduate

PLANNING for COMMUNITY

335 Sherwood Avenue
Satellite Beach, Florida 32937

LAND DEVELOPMENT DIVISION
120 Malabar Road SE • Palm Bay, FL 32907 • Telephone: (321) 733-3042
Landdevelopmentweb@palmbayflorida.org

FINAL DEVELOPMENT PLAN APPLICATION

This application must be deemed complete and legible, and must be returned by the first day of the month during division office hours, with all enclosures referred to herein, to the Land Development Division, Palm Bay, Florida, to be processed for consideration the following month at the earliest by the Planning and Zoning Board**.** The application will then be referred by the Planning and Zoning Board for study and recommendation to the City Council. You or your representative are required to attend the meeting(s) and will be notified by mail of the date and time of the meeting(s). The Planning and Zoning Board holds their regular meeting the first Wednesday of every month at 7:00 p.m. in the City Hall Council Chambers, 120 Malabar Road SE, Palm Bay, Florida, unless otherwise stated.

APPLICATION AMENDMENT TYPE:

- [■] **PUD** - Planned Unit Development (Section 185.067)
- [ ] **PMU** - Parkway Mixed Use District (Final Design Plan) (Section 185.057(C))
- [ ] **PCRD** - Planned Community Redevelopment District (Section 185.055(L))
- [ ] **RAC** - Regional Activity Center District (Section 185.056(C))

PROPOSED DEVELOPMENT NAME:

Cypress Bay West Phase III

PARCEL ID(S):

30-37-04-00-500, 30-37-05-HF-750, 30-37-05-HF-1 & 30-37-05-HF-752

TAX ACCOUNT NUMBER(S):

3000216; 3000217, 3000219 & 3010427

LEGAL DESCRIPTION OF THE PROPERTY COVERED BY THIS APPLICATION: (attach additional sheets if necessary):

See Attached

SIZE OF AREA COVERED BY THIS APPLICATION (calculate acreage):

+/- 190.5 AC

TOTAL LOTS PROPOSED (list by use):

544 Single-Family Residential Units (177 - 60' width, 367 - 50' width)

DEVELOPER Forestar (USA) Real Estate Group (Contact: Chris Tyree as Division President)

Full Address 1064 Greenwood Blvd, Suite 200, Lake Mary, FL 32746

Telephone 407-832-3164 **Email** ChrisTyree@forestar.com

ENGINEER Jake Wise, PE- Construction Engineering Group, LLC

Full Address 2651 W Eau Gallie Blvd; Suite A; Melbourne, FL 32935

Telephone 321-610-1760 **Email** jwise@cegengineering.com

SURVEYOR Horizon Surveyors of Central Florida, Inc

Full Address 390 Poinicana Drive; Melbourne, FL 32935

Telephone 321-254-8133 **Email** bob@horizonsurveyors.com

FINAL DEVELOPMENT PLAN CRITERIA FOR SUBMITTAL:

1) Two (2) copies of the Final Development Plan and supporting documentation shall be attached to the application. The final plan and supporting documentation **must also be provided on memory drive.**

2) Layout of the development plan shall be in plat form that meets the requirements of Florida Statute Chapter 177.

3) The Final Development Plan shall contain the information required per the City of Palm Bay Land Development Code section for a PUD, PMU, PCRD, or RAC. **Additional conditions must be met and incorporated into the site plan for the specific type of development requested (PUD, PMU, PCRD, RAC).** The additional criteria is listed in the Code of Ordinances and available from staff.

THE FOLLOWING PROCEDURES AND ENCLOSURES ARE REQUIRED TO COMPLETE THIS FINAL DEVELOPMENT PLAN APPLICATION:

- ■ *A $1,500.00 application fee shall accompany the Final Development Plan application for the purposes of administration. Make Check payable to "City of Palm Bay."
- ■ Final Development Plan (see aforementioned Final Development Plan Criteria for Submittal).
- ■ Boundary Survey.
- ■ Site Sketch to scale with legal descriptions of properties covered by this application.
- ■ List of legal descriptions of all properties within a 500-foot radius of the boundaries of the property covered by this application, together with the names and mailing addresses (including zip codes) of all respective property owners within the above referenced area. (This should be obtained for a fee from the Brevard County Planning and Zoning Department at (321) 633-2060.)
- ■ Citizen Participation Plan. Required when a Preliminary Development Plan application was not submitted. Refer to Section 169.005 of the Land Development Code for guidelines.
- ■ School Board of Brevard County School Impact Analysis Application (if applicable). The application is obtained from the Planning and Project Management Department of the School Board of Brevard County at (321) 633-1000, extension 11418.
- ■ Sign(s) posted on the subject property. Refer to Section 51.07(C) of the Legislative Code for guidelines. Staff will provide a sign template.
- ■ **Where the property owner is not the representative for the request**, a LETTER must be attached giving the notarized consent of the property owner(s) to a representative.

Name of Representative Jake Wise, PE- Construction Engineering Group, LLC

I, THE UNDERSIGNED UNDERSTAND THAT THIS APPLICATION MUST BE COMPLETE AND ACCURATE BEFORE CONSIDERATION BY THE PLANNING AND ZONING BOARD/LOCAL PLANNING AGENCY AND CERTIFY THAT ALL THE ANSWERS TO THE QUESTIONS IN SAID APPLICATION, AND ALL DATA AND MATTER ATTACHED TO AND MADE A PART OF SAID APPLICATION ARE HONEST AND TRUE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

UNDER PENALTIES OF PERJURY, I DECLARE THAT I HAVE READ THE FOREGOING FINAL DEVELOPMENT PLAN APPLICATION AND THAT THE FACTS STATED IN IT ARE TRUE.

Owner Signature _____ **Date** 8/26/21

Printed Name Waterstone Farms, LLC - Benjamin E. Jefferies, Managing Member

Full Address 2040 Florida A1A #207; Indian Harbour Beach, FL 32937

Telephone 321-425-3878 **Email** ben@waterstonefla.com

***NOTE: APPLICATION FEE IS NON-REFUNDABLE UPON PAYMENT TO THE CITY**

_____, 20 _____

Re: Letter of Authorization

As the property owner of the site legally described as:

30-37-04-00-500, 30-37-05-HF-750, 30-37-05-HF-1 & 30-37-05-HF-752

I, Owner Name: Waterstone Farms, LLC- Benjamin E. Jefferies as Managing Member

Address: 2040 Florida A1A #207, Indian Harbour Beach, FL, 32937

Telephone: 321-425-3878

Email: Ben@waterstonefla.com

hereby authorize:

Representative: Jake Wise, PE- Construction Engineering Group, LLC

Address: 2651 W Eau Gallie Blvd; Suite A; Melbourne, FL 32935

Telephone: 321-610-1760

Email: jwise@cegengineering.com

to represent the request(s) for:

Final Development Plan Application and any/all related submittals

_____
(Property Owner Signature)

STATE OF Georgia

COUNTY OF Greene

The foregoing instrument was acknowledged before me by means of ☑ physical presence or ☐ online notarization, this 9 day of September, 20 21 by Benjamin Jeffries, property owner.

KEVON BROWN NOTARY PUBLIC GREENE CO., GEORGIA MY COMMISSION EXPIRES JULY 11 2025

_____, Notary Public

☐ Personally Known or ☑ Produced the Following Type of Identification:

drivers license

_____, 20 _____

Re: Letter of Authorization

As the property owner of the site legally described as:

30-37-04-00-500, 30-37-05-HF-750, 30-37-05-HF-1 & 30-37-05-HF-752

I, Owner Name: Waterstone Farms, LLC- Benjamin E. Jefferies as Managing Member

Address: 2040 Florida A1A #207, Indian Harbour Beach, FL, 32937

Telephone: 321-425-3878

Email: Ben@waterstonefla.com

hereby authorize:

Representative: Rochelle W. Lawandales, FAICP

Address: 335 Sherwood Ave, Satellite Beach, FL 32937

Telephone: 321-223-4664

Email: rochelle.lawandales@gmail.com

to represent the request(s) for:

Final Development Plan Application and any/all related submittals

_____
(Property Owner Signature)

STATE OF Georgia

COUNTY OF Greene

The foregoing instrument was acknowledged before me by means of ☑ physical presence or ☐ online notarization, this 9 day of September, 20 21 by Benjamin Jefferies, property owner.

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Notary Public

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I, Owner Name: Waterstone Farms, LLC- Benjamin E. Jefferies as Managing Member

Address: 2040 Florida A1A #207, Indian Harbour Beach, FL, 32937

Telephone: 321-425-3878

Email: Ben@waterstonefla.com

hereby authorize:

Representative: Chris Tyree - Forestar (USA) Real Estate Group

Address: 1064 Greenwood Blvd, Suite 200, Lake Mary, FL 32746

Telephone: 407-750-7723

Email: christyree@forestar.com

to represent the request(s) for:

Final Development Plan Application and any/all related submittals

_____
(Property Owner Signature)

STATE OF Georgia

COUNTY OF Greene

The foregoing instrument was acknowledged before me by means of ☑ physical presence or ☐ online notarization, this 9 day of September, 20 21 by Benjamin Jefferies, property owner.

KEVON BROWN NOTARY PUBLIC GREENE CO. GEORGIA MY COMMISSION EXPIRES JULY 11 2025

_____, Notary Public

☐ Personally Known or ☑ Produced the Following Type of Identification: driver license

The City of Palm Bay Florida

MEMORANDUM

TO: Planning and Zoning Board Members

FROM: Grayson Taylor, Planner

DATE: October 6, 2021

SUBJECT: **CU-43-2021 - WITHDRAWN - Randall and Kimberly Haire - Conditional Use to allow a proposed wedding venue in an RR, Rural Residential District. Tract 3.01, Block 8, Melbourne Poultry Colony Addition No. 1, Section 22, Township 28, Range 36, Brevard County, Florida, containing approximately 18.06 acres. South of and adjacent to Hield Road NW, in the vicinity between Studley Drive NW and Henley Road NW, specifically at 4236 Hield Road NW

Case CU-43-2021 has been withdrawn by the applicant (Randall and Kimberly Haire). Board action is not required to withdraw the case.

**Quasi-Judicial Proceeding.