



AGENDA
PLANNING COMMISSION
CITY OF PORT ORANGE

Meeting Date: Thursday, April 27, 2017

Time: 5:30 PM

Type of Meeting: Regular

Location: Council Chambers
City Hall, 1000 City Center Circle

A. CALL TO ORDER

1. Pledge of Allegiance
2. Silent Invocation
3. Roll Call

B. DISCUSSION/ACTION

4. Consideration of Minutes
5. Case No. 17-70000001
SPECIAL EXCEPTION/MEDICAL MARIJUANA DISPENSARY IN CC DISTRICT
3510 Nova Road, Unit 116

A request by the applicant to approve a Special Exception to allow a medical marijuana dispensary within the Community Commercial (CC) zoning district.

Staff Contact: Penelope Cruz 506-5671/pcruz@port-orange.org

6. Case No: 17-65000001
REZONING/3813 S. NOVA ROAD

A request by the applicant to rezone +/- 7.64 acres from Planned Commercial Development (PCD) to Community Commercial (CC).

Staff Contact: Briana Conlan-King (386) 506-5676/brking@port-orange.org

7. Case No. 17-50000002
SUBDIVISION PLAT AND PLANS/CORNERSTONE GROVE
West side of Hidden Lakes Drive, north of Yorktowne Boulevard

A request by the applicant to subdivide +/- 13 acres into 64 duplex lots, along with associated subdivision improvements.

Staff Contact: Briana Conlan-King (386) 506-5676/brking@port-orange.org

C. OTHER BUSINESS

8. Commissioner Comments
9. Staff Comments

D. PUBLIC COMMENTS

E. ADJOURNMENT

ANY PERSON WHO DECIDES TO APPEAL ANY DECISION MADE BY THE **PLANNING COMMISSION** WILL NEED A RECORD OF THE PROCEEDINGS, AND FOR SUCH PURPOSE HE OR SHE MAY NEED TO ENSURE AT HIS OR HER OWN EXPENSE FOR THE TAKING AND PREPARATION OF A VERBATIM RECORD OF ALL TESTIMONY AND EVIDENCE OF THE PROCEEDINGS UPON WHICH THE APPEAL IS TO BE BASED. NOTE: IF YOU ARE A PERSON WITH A DISABILITY WHO NEEDS ANY ACCOMMODATION IN ORDER TO PARTICIPATE IN THIS PROCEEDING, YOU ARE ENTITLED, AT NO COST TO YOU, TO THE PROVISION OF CERTAIN ASSISTANCE. PLEASE CONTACT THE CITY CLERK FOR THE CITY OF PORT ORANGE, 1000 CITY CENTER CIRCLE, PORT ORANGE, FLORIDA 32129, TELEPHONE NUMBER 386-506-5563, WITHIN 2 WORKING DAYS OF YOUR RECEIPT OF THIS NOTICE OR 5 DAYS PRIOR TO THE MEETING DATE; IF YOU ARE HEARING OR VOICE IMPAIRED, CONTACT THE RELAY OPERATOR AT 1-800-955-8771.

PLANNING COMMISSION MEETING MINUTES
CITY OF PORT ORANGE
COUNCIL CHAMBERS
1000 CITY CENTER CIRCLE
MARCH 23, 2017

THE REGULAR MEETING OF THE PLANNING COMMISSION of the City of Port Orange was called to order by Chairman Lance Green at 5:30 p.m.

Pledge of Allegiance

Silent Invocation

ROLL CALL

PRESENT:	Lance Green, Chair Newton White, Vice Chair Thomas Jordan John Junco Maria Mills-Benat Mike Arminio
ABSENT:	Bo Bofamy
ALSO PRESENT:	Wayne Clark, Community Dev. Director Tim Burman, Planning Manager Penelope Cruz, Planner Matthew Jones, Deputy City Attorney Fran Gosnell, Sr. Administrative Assistant

DISCUSSION/ACTION

4. Consideration of Minutes – February 23, 2017

Motion to approve the minutes as presented was made by Commissioner Arminio and Seconded by Commissioner Junco. Motion carried unanimously by roll call vote.

5. Case No. 16-50000004

SUBDIVISION PLAT AND PLANS/KING'S LANDING - PHASE 1
East side of Hensel Road, between East Hensel Drive and Hills Boulevard

A proposal by the applicant to subdivide +/- 82.2 acres into 19 one-acre single-family lots, along with tracts of land for common area, storm water retention (+/- 9.2 acres), and future single-family lots (+45 acres).

Staff Contact: Tim Burman, Planner (386) 506-5675/tburman@port-orange.org

Tim Burman, Planning Manager, discussed the proposal to subdivide +/- 82.2 acres into 19 one-acre single-family lots, tracts of land for common area, storm water retention, and future single-family lots. Staff recommends approval of the final plat and plans for King's Landing Subdivision, subject to evidence being provided that the Murphy deeds and mineral rights have been resolved prior to this item being placed on a City Council agenda.

Mr. Burman responded to questions from Commissioners Arminio, Jordan and Junco regarding fencing, the retention pond, and straight zoning on one-acre lots stating that per Code, fencing is required only around the right-of way, the retention pond is included in Phase 1, and confirmed there is straight zoning on all one-acre lots.

Attorney Glen Storch spoke on behalf of the Development Team, and stated that the mineral rights have been taken care of and will be closing on that issue on March 31, 2017.

Mr. Steve Johnson, citizen, asked if anything can be done to improve the looks of a PVC fence. Mr. Burman responded that there is a landscaping requirement for certain shrubs and trees that comply with code.

Mr. Jack Goldey, citizen, stated he is not happy with the plan – it is still a scaled down version of the original. Mr. Goldey stated that St. Johns does not condone the pond – they just approve; and to present the pond as “required” is not truthful.

Motion to approve the request for approval as recommended by Staff was made by Commissioner Junco, and Seconded by Commissioner Mills-Benat. Motion carried unanimously by roll call vote.

Ms. Barbara Caruso, citizen, is concerned with a big pond and mosquitos, and the maintenance on the pond, as well as traffic and foreign investors.

Ms. Barbara Knight, citizen, asked if there was a cost established for the lots, who will be maintaining the pond, and if the PVC fence is permanent. Chairman Green stated the cost of the lots was the developer's responsibility, and that the fence is permanent.

6. Case No. 17-50000001

SUBDIVISION PLAT AND PLANS/WOODHAVEN SUBDIVISION PHASE 1
North side of Williamson Boulevard, between Ashton Lakes and Sterling Chase
Subdivisions and I-95

A proposal by the applicant to subdivide +/- 116 acres into 178 single-family lots and

93 townhome lots, along with associated subdivision improvements.

Staff Contact: Penelope Cruz, Planner (386) 506-5671/pcruz@port-orange.org

Penelope Cruz, Planner, discussed the subdivision being requested. Staff recommends approval of the final plat and plans for Woodhaven Phase I, subject to approval of the subdivision variance to waive the requirement to provide a trash compactor or dumpsters in the townhome portion of the development.

Commissioner Junco wants to see more on the vegetation buffers and how it affects the golf course, but knows it will be in future phases.

Commissioner Jordan requested background information on the traffic analysis for widening Williamson Boulevard. Ms. Cruz stated that the County has not issued certificate of concurrency yet; Williamson is a County road.

Commissioner Arminio asked if Pioneer Trail was in the budget. Andy Ames, P.E., Transportation Engineer for the Development Team, stated that it is part of 6-8 different studies for both Port Orange and New Smyrna Beach.

Chairman Green asked about the entrance ways. Ms. Cruz clarified where the entrances were located.

Bobby Ball, Zev Cohen & Associates provided a short overview and asked if the Board had any questions and stated that they worked hard to provide a good project. No questions were asked.

Motion to approve the request was made by Vice Chairman White, and Seconded by Commissioner Arminio. Motion carried unanimously by roll call vote.

Motion to amend to approve the request for approval to include Staff's recommendations was made by Commissioner Arminio, and Seconded by Commissioner Junco. Motion carried unanimously by roll call vote.

7. Case No. 16-50000005
SUBDIVISION REPLAT/CLARK PROFESSIONAL CENTER PHASE 2
5111 South Ridgewood Avenue

A proposal by the applicant to replat +/- 7.4 acres of the Clark Professional Center and Wedding Chapel PCD property into 6 lots as shown on the amended Clark Professional Center and Wedding Chapel Conceptual Development Plan (5th Amendment).

Staff Contact: Gwen Perney (386) 506-5673/gperney@port-orange.org

Mr. Burman discussed the subdivision replat of the Clark Professional Center and Wedding Chapel PCD Replat. Staff recommends approval subject to approval of the 5th Amendment to the MDA.

Motion to approve the request to replat as recommended by Staff was made by Commissioner Mills-Benat, and Seconded by Commissioner Arminio. Motion carried unanimously by roll call vote.

8. Case No. 17-25000001

LDC TEXT AMENDMENT/TATTOO ESTABLISHMENTS

Amendment to Chapters 2, 12, 16, 17, and 18 of the Land Development Code (LDC) related to Tattoo Establishments. The proposed amendments include adding the definition for tattoo establishment and updating the definition for personal service; adding a parking requirement for a tattoo establishment; adding tattoo establishment use to the list of prohibited home occupations; adding tattoo establishment as a permitted use in the Highway Commercial (HC), Ridgewood Development (RD), Interchange Commercial (ICD) zoning districts, and Planned Community-Agricultural (PC-A) zoning districts; removing tattoo parlor as a Special Exception use in the Highway Commercial and Ridgewood Development zoning districts; and removing Special Exception requirements for a tattoo parlor use.

Staff Contact: Tim Burman (386) 506-5675/tburman@port-orange.org

Mr. Burman discussed LDC Amendment/Chapters 2, 12, 16, 17 and 18 – Tattoo Establishments and outlined the criteria that must be met. Staff recommended approval of the amendments to Chapter 2, 12, 16, 17 and 18 of the Land Development Code regarding to uses related to tattoo establishments, based on the case law established in the December 2015 decision of the U.S. Court of Appeals for the Eleventh Circuit in the Key West case.

Chairman Green asked questions regarding zoning, existing properties and requirements for tattoo businesses.

Commissioner Arminio asked questions regarding distance requirements.

Commissioner Jordan asked questions regarding change of use, piercings with tattoos, and zoning.

Motion to approve the amendments to the Land Development Code regarding to uses related to tattoo establishments as recommended by Staff was made by Commissioner Arminio, and Seconded by Commissioner Mills-Benat. Motion carried unanimously by roll call vote.

9. Case No. 17-25000002

LDC TEXT AMENDMENT/ADULT ENTERTAINMENT ESTABLISHMENTS

Amendment to Chapters 12, 17, and 18 of the Land Development Code (LDC) related to Adult Entertainment Establishments. The proposed amendments include adding parking requirements for adult entertainment establishment uses; removing adult entertainment establishment as a Special Exception use in the Highway Commercial (HC) zoning district and adding adult entertainment establishment as a Special Exception use in the Commercial Industrial (CI) zoning district; removing the adult entertainment establishment Special Exception criteria for the Highway Commercial (HC) zoning district and adding the adult entertainment establishment Special Exception requirements for the Commercial Industrial (CI) zoning district; and updating the requirement for measuring the Special Exception separation distance between an adult entertainment use and a residentially-zoned property or parcel with a pre-existing adult entertainment use, pre-existing house of worship, school, park, child care center, or establishment dealing in alcoholic beverages.

Staff Contact: Tim Burman (386) 506-5675/tburman@port-orange.org

Mr. Burman discussed the amendment, Land Development Code definition of adult establishments, and the 12-month moratorium approved in June, 2016 for adult entertainment establishment uses. Staff recommends approval of the amendments to Chapter 12, 17 and 18 of the Land Development Code regarding to uses related to adult entertainment establishments, based on the case law established by the United States Supreme Court.

Discussion ensued regarding casinos, video poker, zoning and purchasing of alcohol relating to adult entertainment establishments. Matt Jones, Deputy City Attorney responded to the Board's concerns as they applied to legal issues.

Motion to approve the amendments to Chapter 12, 17 and 18 of the Land Development Code regarding to uses related to adult entertainment establishments as recommended by Staff was made by Commissioner Mills-Benat, and Seconded by Commissioner Junco. Motion carried unanimously by roll call vote.

10. Case No. 17-60000001

ADMINISTRATIVE REZONING/6080 DEERFEED TRAIL

A request to rezone +/- 0.77-acres from Floodplain-Conservation (F-C) to Rural Residential (RR).

Staff Contact: Penelope Cruz (386) 506-5671/pcruz@port-orange.org

Ms. Cruz discussed the proposed rezoning from Floodplain-Conservation to Rural Residential. Staff recommends approval of the request to rezone +/-0.77 acres located at 6080 Deerfeed Trail from Floodplain-Conservation to Rural Residential.

Motion to approve the proposed rezoning as recommended by Staff was made by Commissioner Junco, and Seconded by Commissioner Arminio. Motion carried unanimously by roll call vote.

OTHER BUSINESS

11. Commissioner Comments

Vice Chairman White discussed backed-up traffic on the Dunlawton Causeway, and suggested the problem appears to be more expansive.

Commissioner Arminio commented that Booth Bowery is almost down, and expressed concern about thrift stores continually placing things out on the weekends with no code enforcement. He would like to see a moratorium for 6 months so staff and legal can look at the situation.

Discussion ensued regarding what can be done to change the uses of the Ridgewood Corridor targeting the area around the flea markets and used car lots, including consolidation of lots, stormwater retention, set-backs, funding and parking requirements.

Commissioner Mills-Benat called the State to request a U-turn at Target.

Chairman Green discussed designated parking spaces in the BJ's parking lot and the Cumberland Farms sign blocking the view.

12. Staff Comments

Community Development Director Wayne Clark responded to the parking issues at BJ's, stating that there is nothing in the Master Development Agreement to prohibit the stores from placement of signs since it is a private parking lot if they meet ADA standards; there is not a law that says they cannot do that.

Mr. Clark provided an extensive review on what Staff has been working on that has not come before the Board regarding the Ridgewood Corridor including multiple tiered opportunities to waive some fees driven by staff-time charges that would make a difference in the costs to small businesses. Staff has a targeted list of businesses that they are reviewing, and there will be discussion regarding fee waivers and grant money during the upcoming budget meetings.

Mr. Clark updated the Board with the status of Riverwalk, stating that Staff is already seeing activity which is not required until 2019.

PUBLIC COMMENTS There were none.

ADJOURNMENT 7:15 p.m.

Lance Green, Chairman



STAFF REPORT

Special Exception for a Medical Marijuana Dispensary
in the Community Commercial Zoning District
CASE NO. 17-70000001

REQUEST:	To operate a medical marijuana dispensary at 3510 Nova Road Unit 116 in the Community Commercial (CC) zoning district.
PROPERTY OWNER:	AJADS Investment Group, LLC
APPLICANT:	Surterra Wellness
LOCATION:	3510 Nova Road, Unit 116 (Figure 1)
STAFF CONTACT:	Penelope Cruz, Principal Planner (386)506-5671
STAFF RECOMMENDATION:	Approval
PLANNING COMMISSION DATE:	April 27, 2017



Figure 1. Location Map – 3510 Nova Road, Unit 116

OVERVIEW

Surterra Wellness, applicant, has applied for a Special Exception to operate a medical marijuana dispensary within the Community Commercial (CC) zoning district. Surterra Wellness (aka, Surterra Therapeutics) is one of the seven approved dispensing organizations licensed by the Florida Department of Health (FDOH) to cultivate, process, and dispense low-THC cannabis and medical marijuana to individuals with an order from a registered physician from FDOH. The proposed location would only dispense low-THC cannabis and medical marijuana to individuals with an order from a registered physician through the DOH Compassionate Use Patient Registry system. The proposed use would be located at 3510 Nova Road, Unit 116, on the west side of Nova Road, south of Madeline Avenue, in the Tuscan Village Shoppes.

Medical marijuana dispensaries are permitted in the CC zoning district by Special Exception [Ch. 17, Sec. 21(c)(6) of the LDC]. According to the Land Development Code (LDC), “a special exception is a use that would not be appropriate without restriction, but which, if controlled as to number, area, location or relation to the surrounding area, would promote the public health, safety and general welfare.”

BACKGROUND

In October 2015, the City Council adopted Ordinance 2015-34 amending the Land Development Code (LDC) to create regulations to govern medical marijuana uses. The LDC amendment was prepared in anticipation of the Florida Right to Medical Marijuana Initiative Amendment (Amendment 2) passing in November 2016. The LDC amendment approved by Council added definitions related to medical marijuana, parking requirements, listed medical marijuana related uses as a prohibited home occupation, added medical marijuana dispensaries as a Special Exception use in the Community Commercial zoning district, medical marijuana cultivation and medical marijuana processing facilities as Special Exception uses in the Commercial Industrial and Light Industrial zoning districts, and added special requirements for these Special Exception uses.

In November 2016, Amendment 2 passed and allowed for the medical use of marijuana for individuals with debilitating diseases as determined by a licensed Florida physician. It created entities authorized to acquire, cultivate, possess, process (including development of related products such as food, tinctures, aerosols, oils, or ointments), transfer, transport, sell, distribute, dispense, or administer marijuana, products containing marijuana, related supplies, and educational materials to qualified patients or their personal caregivers who are registered by the FDOH. On January 3, 2017, Amendment 2 along with the qualifying medical conditions went into effect. According to State law it is the responsibility of the qualified ordering physician to follow Florida constitution and statute, diagnose patients and determine if medical marijuana is an appropriate treatment. For a patient to be qualified to receive an order for low-THC cannabis or medical cannabis the patient must:

- Be a permanent resident of Florida.
- Be entered into the Compassionate Use Registry by a qualified physician
- Be a patient of an ordering physician for at least 3 months
- Be diagnosed with a qualifying medical condition

SPECIAL EXCEPTION DEVELOPMENT STANDARDS

All Special Exception uses are required to meet a uniform list of development standards, encompassing traffic generation, landscaping and buffering, and others [Ch. 18, Sec. 2(d)(2) of the LDC]. The following are the development standards and how they apply to the request.

Standard Special Exception Development Standards:

1. *Traffic generation and access for the proposed use shall not adversely impact adjoining properties and the general public safety.*

In 2004, the site was approved for a 31,432 SF shopping center, with potential uses such as office, medical office, personal services, retail, restaurant, and health/fitness clubs. The traffic impact analysis done at the time the building was approved accounted for a mixture of uses. The daily number of trips for a shopping center like Tuscan Village Shoppes is estimated at 1,374¹. The traffic expected to be generated from the proposed use is consistent with the amount projected when the multi-tenant commercial building was developed.

Nova Road is currently operating at a Level-of-Service C with a volume/capacity ratio (V/C ratio) of 0.70. A V/C Ratio of less than 0.9 indicates there is adequate capacity for the traffic estimated to be generated by the tenants at this property (Table 2).

Table 2. Roadway Capacity

Roadway Segment	Maximum Capacity Vehicles Per Day	Current Vehicles Per Day*	Remaining Capacity Vehicle Per Day	Daily V/C Ratio**
Nova Rd. from Madeline Ave. to Dunlawton Ave.	39,800	28,000	11,800	0.70

*Source: Volusia County Traffic Engineering, 2015

**V/C Ratio (Volume-Demand-to-Capacity Ratio) compares roadway demand (vehicle volumes) with roadway supply (carrying capacity).

A sidewalk and driveway access exists to serve the site. There is a median in Nova Road that restricts access to right turn in and right turn out. The only vehicular access to the property is from the driveway entrance along Nova Road.

- 2. Off-street parking, loading and service areas shall be provided and located such that there is no adverse impact on adjoining properties, beyond that generally experienced in the district.*

The subject property was developed with 127 spaces, as required by the LDC for the shopping center of this size, which includes uses such as medical office, personal services, retail, restaurants, and health/exercise facilities. There is sufficient parking at the site to serve the proposed use.

- 3. Required yards, screening or buffering, and landscaping shall be consistent with the district in general and the specific needs of the abutting land uses.*

The site was developed with landscape buffers in accordance with the LDC for screening the surrounding properties from a multi-tenant shopping center. A minimum 5' landscape buffer was required along the south and north side and a minimum 20' landscape buffer and a 6' masonry wall was required along the rear property line. The building is set back 27' on the south side, 55' on the north side, and 138' from the rear lot line. The existing buffers meet the LDC requirements.

¹ ITE Code 826, ITE Trip Generation Manual, 9th edition

4. *Architectural and signage treatments shall comply with the general provisions applicable to permitted uses in the district, to the greatest extent possible, and be sensitive to surrounding development.*

The building was designed to meet the architectural regulations of the LDC. No exterior changes are proposed. Any proposed signage will have to meet the regulations set forth by the LDC.

In addition to the standard development requirements for all special exceptions, a medical marijuana dispensary in the CC zoning district must also comply with nine (9) additional development requirements [Ch. 18, Sec. 3(b)(9.8) of the LDC]. The following are the additional development requirements for a medical marijuana dispensary and how they apply to the request.

Specific Medical Marijuana Dispensary Development Requirements:

1. *Loitering. A medical marijuana dispensary shall provide adequate seating for its patients and business invitees and shall not allow patients or business invitees to stand, sit (including in a parked car), or gather or loiter outside of the building where the dispensary operates, including in any parking areas, sidewalks, right-of-way, or neighboring properties for any period of time longer than that reasonably required to arrive, transact business and depart. The medical marijuana dispensary shall post conspicuous signs on all exterior sides of the building or tenant space that no loitering is allowed on the property.*

According to the applicant, in their current location (Tampa) there is a short transaction time and there have not been any issues with customers or patients gathering in the parking lot or outside of the tenant space. The applicant also states that their stores (Tampa and Tallahassee – under construction) have been designed with an open floor plan for displays and seating areas for customers along with private consultation space for approved individuals picking up their order. If approved, the applicants would design and construct the Port Orange store similar to their other two locations.

Figure 2. Example of Interior of Surterra Wellness



Although the store would be open to the public, one cannot purchase medical cannabis based products without a pre-approved order from a registered physician that goes through the Florida Department of Health (DOH). An ordering physician

must enter an order of low-THC or medical cannabis for the named patient into the DOH Compassionate Use Patient Registry, and update the registry to reflect the contents of the order. The physician must update the registry within 7 days after any change is made to the original order and must deactivate the patient's registration when treatment is discontinued.

Qualified patients can only fill orders at an approved dispensing organization facility. The dispensing organization will verify the identity of the patient or legal representative, as well as the order, in the Compassionate Use Registry. A dispensing organization may not dispense more than a 45-day supply of low-THC or medical cannabis.

The posting of no loitering signs will be installed prior to staff issuing a Certificate of Occupancy and the store being open to the public.

2. *On-premises consumption. No marijuana or marijuana-based products shall be smoked, ingested, or otherwise consumed on the premises, unless administered by a licensed physician. The term "premises" includes the actual building, as well as any accessory structures, parking lot or parking area(s), sidewalks, landscape buffers or other immediate surroundings.*

In-store usage is prohibited by state law, and therefore not allowed. The Applicant is aware of the State and City requirement.

3. *Alcohol and controlled substances. No alcohol or other controlled substances (other than those types of marijuana approved for sale by the state department of health) shall be consumed, made available, sold, offered for sale, given, distributed, traded, or otherwise provided on the premises. The term "premises" includes the actual building, as well as any accessory structures, parking lot or parking area(s), sidewalks, landscape buffers or other immediate surroundings of the medical marijuana dispensary.*

According to the Applicant, only medical cannabis based products and general apparel (T-shirts, hats, etc.) is sold in Surterra Wellness stores.

4. *Separation distances. The proposed site shall be at least 1,000 feet from the nearest pre-existing school, house of worship, day care facility, public park, drug treatment facility, half-way house, medical marijuana cultivation center, medical marijuana processing facility, or another medical marijuana dispensary, measured lot line to building.*

The proposed location is not within 1,000 feet of any pre-existing school, house of worship, day care facility, public park, drug treatment facility, half-way house, medical marijuana cultivation center, medical marijuana processing facility, or another medical marijuana dispensary (see Exhibit B).

5. *Hours of operation. A medical marijuana dispensary may only operate Monday through Friday and only between the hours of 7:00 a.m. and 9:00 p.m.*

The Applicant has stated that the hours of operation are regulated by the State. State regulations require that a dispensing facility may, "Not dispense from its premises low-THC cannabis, medical cannabis, or a cannabis delivery device between the hours of 9 p.m. and 7 a.m., but may perform all other operations and deliver low-THC cannabis and medical cannabis to qualified patients 24 hours each day." The Applicant's Tampa location is currently open from 1 p.m. to 6 p.m. The Applicant is aware that the store can only be open Monday through Friday between the hours of 7:00 a.m. and 9:00 p.m.

6. *The proposed business shall not be located in any temporary or portable structure and there shall be no mobile facilities or delivery permitted to patients.*

There are no temporary or portable structures proposed. The proposed location is an existing tenant space in the Tuscan Village Shoppes. The restriction on deliveries is preempted by state law to the extent that it is inconsistent therewith. If needed, Staff will bring forward an LDC amendment to address any inconsistencies and redundancies with State law adopted in 2016 and pending rules under consideration by the DOH.

7. *Site lighting. The entire exterior grounds, including the parking lot and landscaped areas, shall be lighted in such a manner that all areas are clearly visible at all times during business hours.*

The subject property was developed with parking lot lighting as required by the LDC. The parking lot is lit at night when the shopping center is open which includes the business hours for the tenants.

8. *Display of state registration. Any medical marijuana dispensary shall be validly registered with the State of Florida, if required, and shall prominently display in a public area near its main entrance copies of all state licenses, city licenses, and local business tax receipt, and the name of the owner and designated physician responsible for compliance with state and city law.*

The Applicant has stated that per State and City code, Surterra Wellness will display all State licenses, City licenses, and local Business Tax receipt, and the name of the owner and designated physician responsible for compliance with State and City laws. Proof of State registration will be required prior to issuance of a City Business Tax receipt. Staff will verify display of required documents prior to issuance of Certificate of Occupancy.

9. *Compliance with other laws. All medical marijuana dispensaries shall at all times be in compliance with all federal, state and local laws and regulations.*

According to the Applicant, Surterra Wellness will maintain compliance with all State and local regulations including any State required compliance processes.

RECOMMENDATION

Staff recommends approval of the Special Exception to allow a medical marijuana dispensary to be developed and operated at 3510 Nova Road, Unit 116.

ATTACHMENTS

Exhibit A - Applicant's Letter Dated April 3, 2017

Exhibit B - Proximity to House of Worship, School, or Child Care Map

Exhibit C – Letter(s) of Opposition

TO WHOM IT MAY CONCERN.

April 3, 2017

Ms. Penelope Cruz, AICP
Principal Planner
City of Port Orange
Community Development
1000 City Center Circle

Surterra Holdings: Georgia

3340 Peachtree Rd. NE
Atlanta, GA 30326

RE: Surterra Wellness – Special Exception Letter

Surterra Holdings: Florida

1639 Village Square Blvd
Tallahassee, FL 32308

Dear Ms. Cruz,

During the due diligence period in which Surterra Wellness completed for Tuscany Village Shoppes Shopping Center, our findings resulted that the proposed location for Surterra Wellness will be over 1,000 linear feet from any pre-school, day care, house of worship, public parks, drug treatment facility, half-way homes, medical marijuana cultivation center or any other medical marijuana dispensary. In addition, State regulations restrict several of the requirements that are outlined in the CC zoning code which have been addressed as part of the license agreement between Surterra Wellness and the State of Florida:

Standard Special Exception Development Standards:

1. Landlord has provided more than adequate parking thus no changes to the traffic flow or pattern is expected. Landlord has also provided adequate site lighting. Landlord has provided adequate site lighting as defined in the CC zoning.
2. Loading and unloading is generally done in the rear of the building. Our average transaction time is generally less than 5 mins and our patients are coming to purchase specific products so we feel we are generating normal traffic. Landlord has provided more than adequate parking thus no changes to the traffic flow or pattern is expected. Landlord has also provided adequate site lighting. Landlord has provided adequate site lighting as defined in the CC zoning.
3. Our store is in an existing shopping center and is an inline space. We anticipate no changes to the landscaping beyond what is currently allowed there or already in existence.
4. Our store is of the highest quality and is a branded health and wellness concept. Similar to our responses in number 4, this is an inline space so the exterior conditions are pre existing.

Specific Medical Marijuana Dispensary Development Requirements:

1. Our wellness centers have plenty of seating and private consultation space. With our short transaction time as references above, our stores have no queue system.
2. In store usage is prohibited by state law, and therefore, it is not allowed.
3. Only medical cannabis based products, and general apparel is sold in our stores. Alcohol is not sold in any of our other stores.
4. Separation distances addressed above.
5. Hours of operation to be determined by state regulations and will be considered for

all local municipalities. Our Tampa location currently is open from 1pm-6pm.

6. The premises is located in a solid, structural building. We will follow all laws of the state.
7. Landlord has also provided adequate site lighting. Landlord has provided adequate site lighting as defined in the CC zoning.
8. Per state and municipal code, Surterra Wellness will display state registration at all times.
9. Surterra Wellness will maintain compliance with all state and local municipal regulations including any state required compliance processes.

Regards,

Nicholas Monette

Nicholas Monette
VP, Real Estate
Surtterra Holdings, Inc.

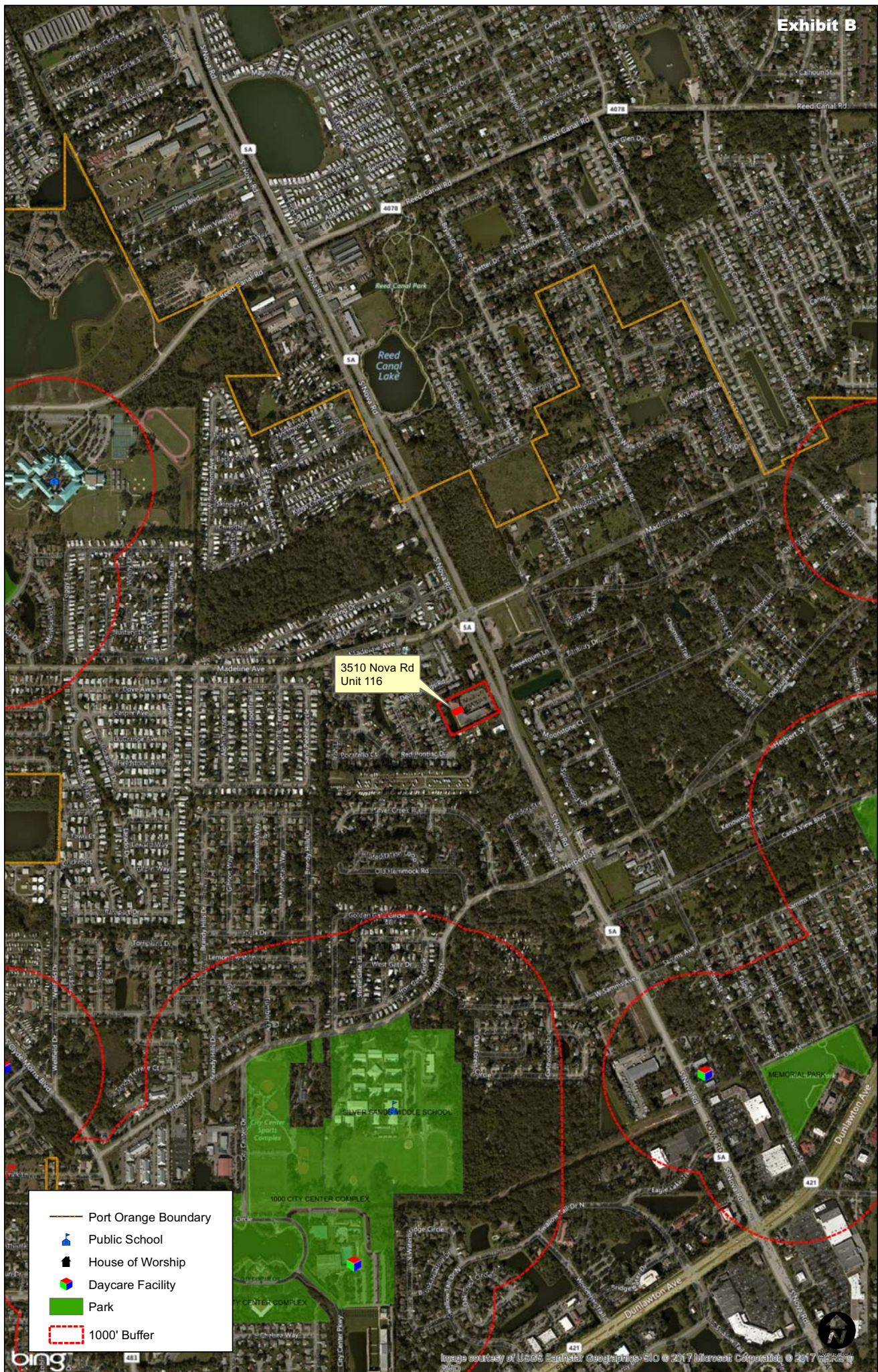


Exhibit C

April 17, 2017

3518 S. Nova Road
Port Orange, Fl.
32129

(386) 756-3518

Dear City Planning Commission,

With Regards to the "Special Exception"
medical marijuana dispensary operating
within unit 116 of Tuscon Village Shoppers
3510 S. Nova Road, Port Orange, Florida
or within any unit at that location, I
George A. Littlefield and I fear (Kusmer) Littlefield
are opposed.

Thank you, we appreciate your consideration in this
zoning matter.

Sincerely,
George Littlefield
Fear X. Littlefield
4-17-17



STAFF REPORT
CASE NO. 17-65000001
REZONING/3813 Nova Road

REQUEST: Rezone +/- 7.6 acres from Planned Commercial Development (PCD) to Community Commercial (CC)

OWNER: Dunlawton Nova Investors, LLC.

APPLICANT: Paul F. Holub, Jr.

LOCATION: 3813 Nova Road (Figure 1 – Location Map)

STAFF RECOMMENDATION: **Approval**

STAFF CONTACT: Briana Conlan-King, Planner (386) 506-5676

PLANNING COMMISSION DATE: April 27, 2017

DISCUSSION:

The subject property is currently zoned Planned Community Development (PCD). The applicant proposes to rezone the subject property from PCD to Community Commercial (CC) and remove this property from the Dunlawton Square Master Development Agreement. The rezoning request is a shift from the negotiated PCD zoning district to a conventional commercial zoning district that uses the Land Development Code (LDC) to provide specific development regulations.

Figure. 1 Location Map



The subject property was originally developed as a K-Mart in 1979 and zoned C-1 at that time. In 1994, the subject property, along with the Publix shopping center property, was rezoned to PCD and the Dunlawton Square MDA was adopted and allowed for general retail, offices, financial institutions, business services, restaurants, and health and racquet clubs. In 1999, the MDA was amended to allow the use of medical office and veterinary clinics as permitted uses. In 2011, the current owner of the subject property modified the exterior façade of the old K-mart building to match the new Publix, upgraded the landscaping and irrigation, and modified the interior of the old K-mart building to include T.G.I. Friday's and Bealls Outlet.

According to the applicant, the request to rezone the subject property to CC is to assist the redevelopment of the subject site. The applicant states that it is difficult to predict future redevelopment options on the subject property and if the property remains PCD, it is possible that ongoing amendments to the MDA could be necessary. The applicant believes that following the list of permitted uses in the CC zoning district and the development requirements in the LDC is a more efficient process to redevelop the site. In addition, the list of permitted uses in the CC zoning district is more current and flexible than the uses from the 1990's listed in the MDA. The CC zoning district permits typical community scale commercial uses commonly found at shopping centers and outparcels of this type such as; retail stores, restaurants, personal services (hair salon, barber shop, nail salon, retail dry cleaning, etc.) offices, breweries, child care centers, convenience store/gas station, banks, and similar uses.

The property owner intends to continue redeveloping the former K-Mart building. Currently, the building is occupied by TGI Friday's, Bealls Outlet, and Peach Valley Café (opening in spring 2017), but there is still space remaining for future tenants. The property owner may also construct another building on the subject property along Nova Road. The applicant does not anticipate deviating from the requirements in LDC, therefore, the applicant selected to use a standard zoning district and meet the requirements in the LDC.

The rezoning request was reviewed according to the criteria established in Chapter 3, Section 5 of the Land Development Code (LDC) in terms of consistency with the Comprehensive Plan and consistency with the surrounding land uses and zoning.

The proposed rezoning will not affect the existing cross access easements with the adjacent properties. Access to the property is available off Nova Road and Dunlawton Avenue. Water and sewer is available and serves the property. As part of any future site improvements, a site plan would be required and stormwater, traffic generation, landscaping and modifications to the parking lot will be addressed in accordance with the City standards in the LDC.

Compatibility with Surrounding Uses and Zoning

The proposed Community Commercial zoning district is appropriate for its location near the intersection of Nova Road and Dunlawton Avenue and surrounding properties. The table on Page 3 summarizes the land use and zoning of the adjacent properties and the Future Land Use and zoning maps are attached (Exhibit A and Exhibit B).

Surrounding Land Use & Zoning

Direction	Land Use	Zoning District
North	Dunlawton Ave. right-of-way & Commercial (Park Place Plaza)	Planned Commercial Development (PCD)
South	Commercial (Publix)	Planned Commercial Development (PCD)
East	Office (Jackson Street)	Planned Commercial Development (PCD)
West	Nova Road right-of-way & Commercial (Firestone, Burger King, and Countryside Mall)	Planned Commercial Development (PCD)

The PCD zoning district is intended to provide a flexible approach for unique and innovative land development proposals, which would otherwise not be permitted by this code. Because the property owner intends to develop the site in compliance with the LDC and does not anticipate deviating from the requirements in LDC, the property owner selected to use a standard zoning district and meet the requirements in the LDC. All future development plans (site plan or subdivision) submitted will require a detailed technical review by the Development Review Committee (DRC) to determine all requirements in the LDC are met.

Consistency with Comprehensive Plan

The subject property is designated Commercial on the City's Future Land Use Map. The City has planned for and designated commercial nodes at intersections of major roads in the Future Land Use Element of the Comprehensive Plan. In this case, the subject property is part of a Sub-Regional Commercial Node located around the intersection of Dunlawton Avenue and Nova Road. Sub-Regional Commercial Nodes are intended to support the City with a mix of general and specialized shopping needs of the general population and visitors within a +/- 4-mile radius.

Recommendation:

Staff recommends approval of the request to rezone +/- 7.6 acres located at 3813 Nova Road from Planned Community Development (PCD) to Community Commercial (CC).

ATTACHMENTS:

1. Exhibit A -- Future Land Use Map
2. Exhibit B – Current and Proposed Zoning Map

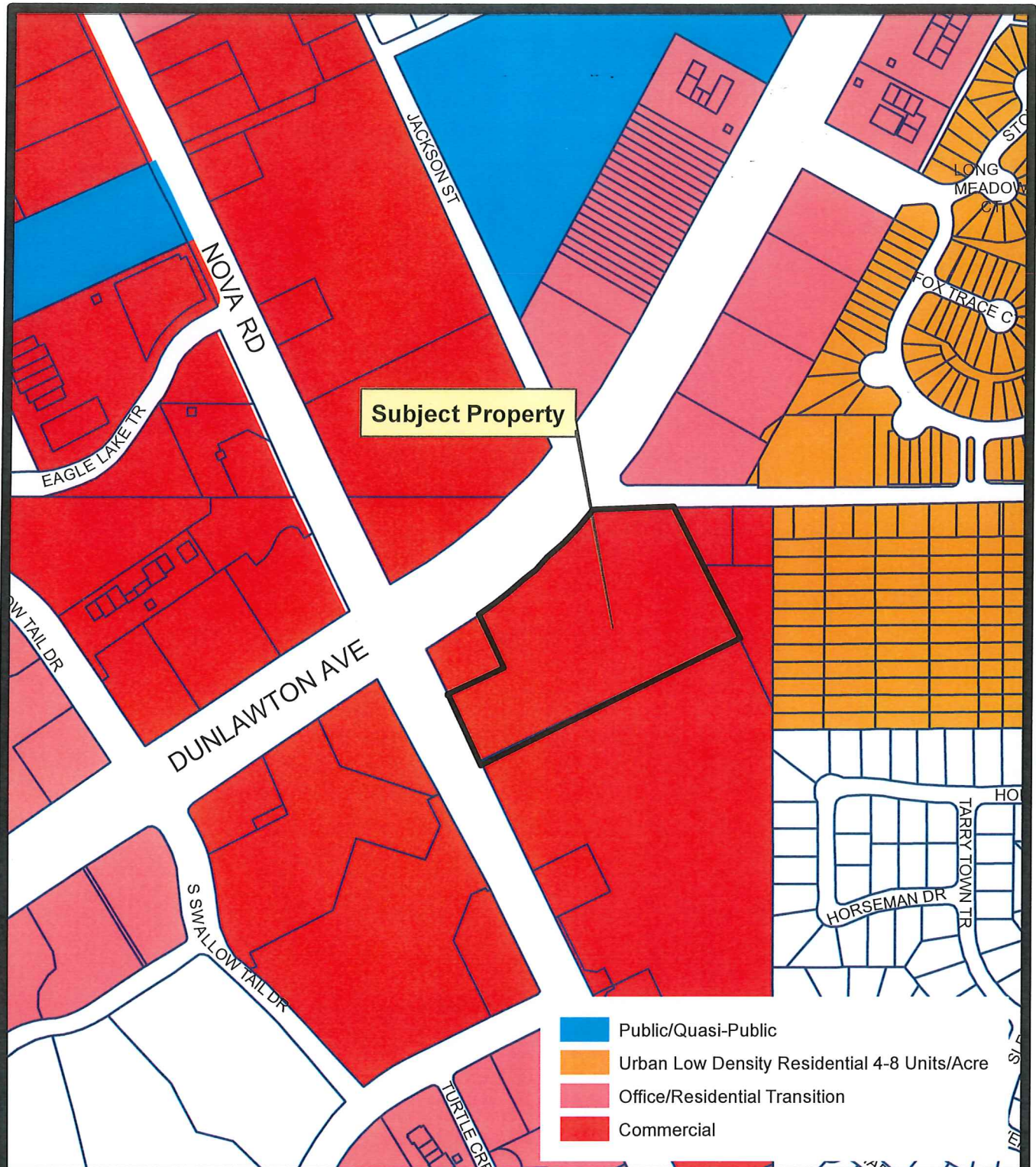


Exhibit A

Future Land Use

CITY OF PORT ORANGE

DEPARTMENT OF COMMUNITY DEVELOPMENT





STAFF REPORT

SUBDIVISION PLAT & PLANS / CORNERSTONE GROVE

CASE NO. 17-50000002

REQUEST:	Approval of the Cornerstone Grove Subdivision Plat and Plans.
LOCATION:	West side of Hidden Lake Drive & Horizon Elementary School, north of Yorktowne Boulevard
OWNER/APPLICANT:	Geosam Capital US (Venetian Bay) LP
STAFF CONTACT:	Briana Conlan-King, Planner (386) 506-5676
STAFF RECOMMENDATION:	Approval
PLANNING COMMISSION DATE:	April 27, 2017

DISCUSSION

The applicant requests approval of the Cornerstone Grove Subdivision Plat and Plans. If approved, the applicant proposes to subdivide ± 13 acres into a 64-lot duplex residential development, along with associated infrastructure and stormwater improvements (Exhibit A). The subject property is located at the west side of Hidden Lakes Drive, north of Yorktowne Boulevard (Figure 1 - Location Map).

Figure 1. Location Map



The subject property is currently undeveloped and zoned “PUD” (Planned Unit Development). It has been zoned PUD since 1998. The subject ±13-acre property’s Future Land Use designation is *Urban Medium Density Residential* (4-8 units/acre).

The subdivision plat and plans (Exhibit A and B) have been designed according to the requirements of the recently approved Cornerstone Grove PUD Master Development Agreement (MDA) and Conceptual Development Plan (CDP), and the City’s Land Development Code (LDC). The Cornerstone Grove PUD MDA and CDP were approved by the City Council at their March 28, 2017 meeting. The proposed subdivision will have access from Hidden Lake Drive and the future Yorktowne Boulevard. The following subdivision improvements will be constructed:

- Access onto Hidden Lake Drive and roadway stub-out to connect to the future Yorktowne Boulevard;
- Water and sewer infrastructure;
- Public local streets (Pham Drive, Amber Lane and Stowers Street) within the subdivision (travel lanes, sidewalks, and streetlights);
- Stormwater drainage infrastructure;
- 10'-wide landscape buffer with a 6-foot PVC fence along Yorktowne Boulevard and Hidden Lake Drive;
- 50-foot canal easement and a 6-foot PVC fence adjacent to proposed residential lots along the north boundary;
- Entry signage and landscaping at the entrance off Hidden Lake Drive;
- Crosswalk at the intersection of Hidden Lake Drive and Yorktowne Boulevard, and Hidden Lake Drive and Amber Lane;
- Grading onto the adjacent Yorktowne Boulevard right-of-way and
- Wetland preservation area of +/- 1.4 acres.

CONCURRENCY REVIEW

Public facilities and services, such as roads, public infrastructure, schools, and recreational facilities, are currently available to serve the proposed 64-lot duplex residential development. The following discussion and table summarizes the impacts that the proposed development is expected to have on public facilities and services.

Water and Sewer

The City has available sanitary sewer and potable water capacity to accommodate the proposed 64-lot duplex subdivision. All lots will be provided with stub-outs for utilities. The developer will construct potable water and sanitary sewer lines in accordance with the Land Development Code and the utility plan for this project.

Stormwater Drainage

The City’s adopted level-of-service standard for stormwater drainage requires that all new retention/detention facilities be able to treat the runoff from a 25-year, 24-hour storm event and convey the runoff from a 100-year, 24-hour storm event without causing flooding or pollution of receiving water bodies. In addition, there must be no net loss of stormwater retention function as a result of development; therefore, the subdivision property must have the same ability to store and discharge water after development as it does before development occurs.

The stormwater treatment system for the subdivision consists of one wet detention pond and one dry retention pond. The system ultimately discharges to Spruce Creek, a nutrient impaired and Outstanding Florida Waterbody (OFW). The applicant has demonstrated that the system is designed to meet the OFW and nutrient discharge criteria. The system is designed to attenuate the post-development peak rate of discharge to pre-development levels for the 25-year, 24-hour storm event.

Recreation and Open Space

The City's adopted level-of-service for recreational facilities includes acreage of parkland, and number of ball fields, basketball courts, multi-purpose fields, tennis courts, and neighborhood centers. According to the City's 2016 Concurrency Management Report, the City is not deficient in any of the recreational facilities categories, and there are sufficient facilities to support the anticipated additional population from this subdivision.

School Capacity

In 2016, The Volusia County School District determined that the adopted level-of-service will be met and capacity exists in the schools for the estimated students to be generated by the proposed development. However, the developer is still required to obtain concurrency certification from the Volusia County School District prior to the item going before City Council.

Transportation

According to the Institute of Transportation Engineers (ITE) Trip Generation Manual, 9th edition, a 64-lot duplex subdivision could generate an additional 372 daily trips (186 entering and 186 exiting). The ITE Trip Generation Manual is nationally recognized for conducting site impact studies, determining on-site circulation patterns, performing access management studies, and determining traffic signal timing. Capacity exists for the estimated trips to be generated by the proposed development. The future extension of Yorktowne Boulevard from Hidden Lakes Drive to Willow Run Boulevard will further improve capacity in this area.

CONSISTENCY WITH THE COMPREHENSIVE PLAN

The proposed subdivision is consistent with the Cornerstone Grove PUD Master Development Plan and Conceptual Development Plan that have already been determined to be consistent with the City's Comprehensive Plan. The overall Cornerstone Groves PUD allows for a maximum of 64 dwelling units.

REMAINING COMMENTS

The Staff Development Review Committee (SDRC) has reviewed this project and there some remaining comments that must be addressed prior to scheduling this item for City Council. These comments include minor adjustments to underground utility locations and other labeling and note revisions on the plat and plans. In addition, the applicant is also requesting a partial vacation of a harmonizing easement.

Harmonizing Easement: In 2010, the pervious property owner of the site granted the City an easement that allows the City to access the portion of the site along the Yorktowne Boulevard right-of-way and re-grade this area to accommodate the road. The easement was requested in case the road was built prior to the site being developed and re-grading between the road and undeveloped site was necessary. Because the site is being developed prior to the road being built and the grade of the site will be brought up to the grade of the future road, the applicant will be requesting the City Council to vacate a portion of the harmonizing easement to accommodate the subdivision layout.

RECOMMENDATION

Staff recommends approval of the final plat and plans for Cornerstone Grove, subject to the remaining comments being addressed prior to scheduling this item for City Council and approval of the harmonizing easement vacation by City Council.

ATTACHMENTS

- Exhibit A – Subdivision Plat for Cornerstone Grove
- Exhibit B – Subdivision Plans for Cornerstone Grove



CORNERSTONE GROVE

BEING A PORTION OF SECTION 18, TOWNSHIP 16 SOUTH, RANGE 33 EAST, VOLUSIA COUNTY, FLORIDA,

GENERAL NOTES:

- ☐ FD 4" X 4" CONCRETE MONUMENT (AS NOTED)

☒ SET 4" X 4" CONCRETE MONUMENT PRM LB 7967
- NOTICE: THIS PLAT, AS RECORDED IN ITS GRAPHIC FORM, IS THE OFFICIAL DEPICTION OF THE SUBDMDED LANDS DESCRIBED HEREIN AND WILL, IN NO CIRCUMSTANCES BE SUPPLANTED IN AUTHORITY BY ANY OTHER GRAPHIC OR DIGITAL FORM OF THE PLAT, WHETHER GRAPHIC OR DIGITAL. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.
- ALL MEASUREMENT DIMENSIONS ON THIS PLAT IS IN U.S. FOOT AND DECIMALS THEREOF.
- ALL MEASUREMENTS REFER TO HORIZONTAL PLANE IN ACCORDANCE WITH THE DEFINITION OF THE UNITED STATES SURVEY FOOT OR METER ADOPTED BY THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY. ALL MEASUREMENTS SHALL USE THE 39.37/12=3.28083333333 EQUATION FOR CONVERSION FROM A U.S. FOOT TO METERS.
- ACCURACY: THE BOUNDARY LINEAR ERROR OF CLOSURE DOES NOT EXCEED 1 : 10,000. THE BOUNDARY ANGULAR ERROR OF CLOSURE DOES NOT EXCEED 15 SECONDS MULTIPLIED BY THE SQUARE ROOT OF THE NUMBER OF ANGLES TURNED.
- ALL LOT LINES ARE RADIAL UNLESS SHOWN OTHERWISE. (NR) DENOTES NON-RADIAL LINES RELATIVE TO CURVES.
- BEARING STRUCTURE (N 56°25'25" E) ALONG THE EASTERLY RIGHT-OF-WAY LINE OF YORKTOWNE BOULEVARD (100' RIGHT-OF-WAY(NOT OPEN), FLORIDA, FOR ANGLE MEASUREMENT ONLY.
- THIS PLAT IS SUBJECT TO ALL EASEMENTS OF RECORD AND RESERVATIONS OF EASEMENTS, INCLUDING BUT NOT LIMITED TO DRAINAGE, MAINTENANCE, UTILITY AND ACCESS EASEMENTS DEDICATED OR GRANTED HEREON WHICH SHALL BE LOCATED AS FOLLOWS EXCEPT AS OTHERWISE NOTED ON THIS PLAT: FRONT LOT LINES (STREET FRONTAGE) 12.00 FEET WIDE. COMMON AREAS (STREET FRONTAGE) 12.00 FEET WIDE.
- UTILITIES INCLUDE BUT ARE NOT LIMITED TO SANITARY SEWER, POTABLE WATER, RECLAIMED WATER, STORM DRAINAGE, ELECTRIC, TELEPHONE, CABLE TELEVISION, SECURITY, TELECOMMUNICATIONS, FIBER OPTIC AND NATURAL GAS.
- UTILITY EASEMENTS PROVIDED ON THIS PLAT INCLUDE 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.
- THE COMMON AREAS GRANTED TO CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. BY THIS PLAT SHALL BE SUBJECT TO EASEMENTS AS SHOWN OR DESCRIBED HEREON OR GRANTED IN ACCORDANCE WITH CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. COVENANTS AND RESTRICTIONS. THE GRANTING OF SUCH COMMON AREAS IS NOT INTENDED TO GRANT ANT RIGHT TO THE GENERAL PUBLIC.
- CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. SHALL BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE DRAINAGE SYSTEM SERVING THE AREA WITHIN THE BOUNDARIES OF THE PLAT, AS DEPICTED ON THE STORMWATER MANAGEMENT PLAN APPROVED FOR THIS DEVELOPMENT BY THE CITY OF PORT ORANGE, FLORIDA. IN THE EVENT THE ASSOCIATION, ITS EMPLOYEES OR ASSIGNS FAILS TO PERFORM THE MAINTENANCE, REPAIR OR REPLACEMENT, AS NECESSARY, OF THE STORMWATER RETENTION AND DRAINAGE FACILITIES LOCATED WITHIN THE BOUNDARY OF THIS PLAT (PROPERTY), THE CITY OF PORT ORANGE SHALL HAVE THE RIGHT TO ENTER UPON THE COMMON AREAS AND DESIGNATED EASEMENT AREAS OF THE PROPERTY AND PROVIDE MAINTENANCE, REPAIR, OR REPLACEMENT OF THE STORMWATER DRAINAGE FACILITY AND SHALL HAVE THE RIGHT TO LIEN ALL OWNERS OF RECORD IN THE PROPERTY FOR THE COST OF SUCH MAINTENANCE, REPAIR, OR REPLACEMENT AS THE CITY MAY DEEM NECESSARY. IN THE EVENT OF TERMINATION, DISSOLUTION, OR FINAL LIQUIDATION OF THE ASSOCIATION, THE RESPONSIBILITY FOR THE OPERATION AND MAINTENANCE OF THE SURFACE WATER OR STORMWATER MANAGEMENT SYSTEM WILL BE TRANSFERRED TO AND ACCEPTED BY AN ENTITY WHICH COMPLIES WITH SECTION 40C-42.027, F.A.C. AND BE APPROVED BY THE SAINT JOHNS RIVER WATER MANAGEMENT DISTRICT PRIOR TO SUCH TERMINATION, DISSOLUTION, OR LIQUIDATION.
- THE ARTICLE OF INCORPORATION FOR THE CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. ARE RECORDED IN OFFICIAL RECORDS BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
- BUILDING SETBACK REQUIREMENTS:

FRONT - 13 FEET (FOR FRONT UNITS ONLY).

REAR - 0 FEET FOR ATTACHED UNITS, 15 FEET BETWEEN BUILDINGS.

SIDE - 0 FEET FOR ATTACHED UNITS, 15 FEET BETWEEN BUILDINGS.

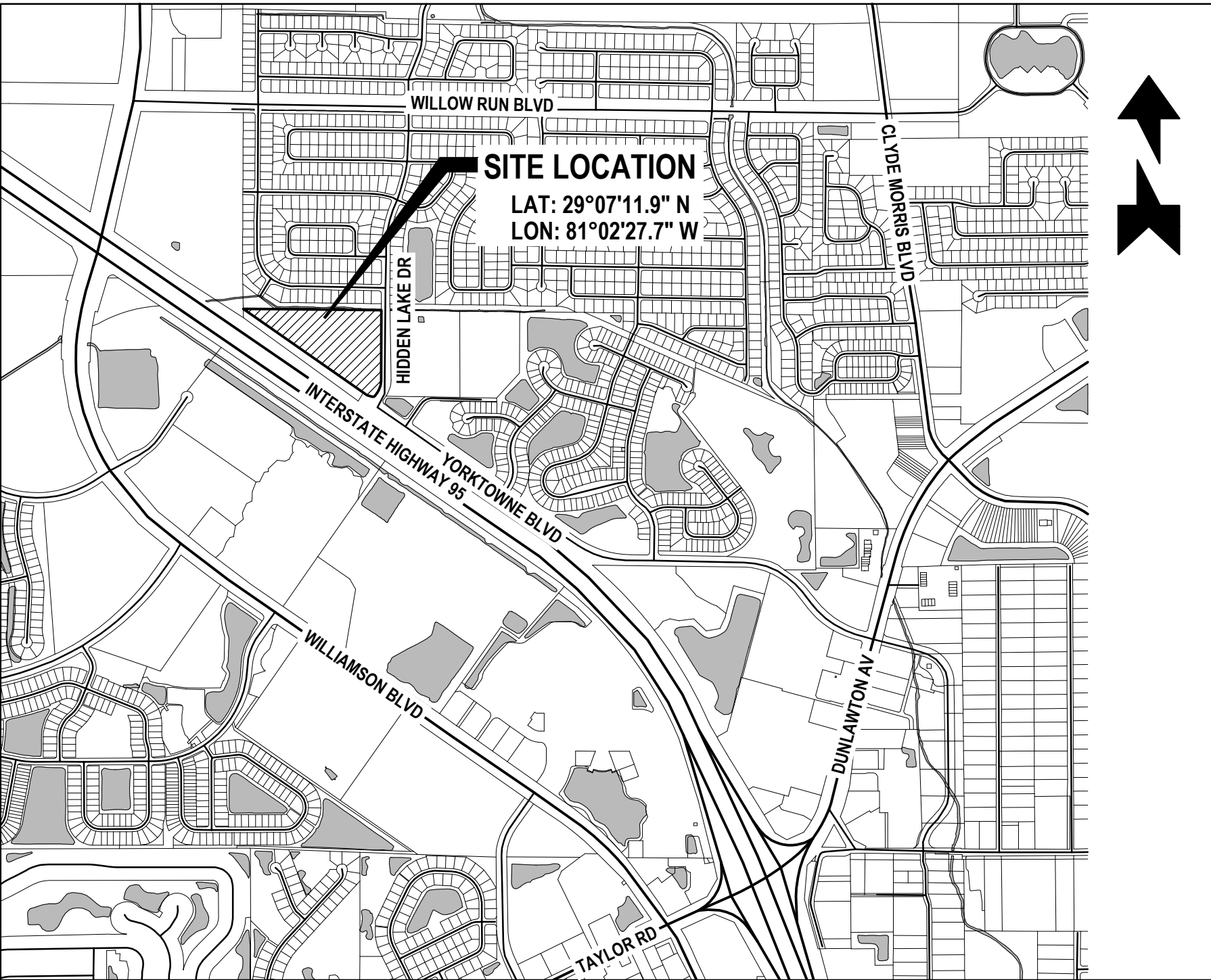
SIDE CORNER - EQUAL TO FRONT SETBACK.

MINIMUM COMMON OPEN SPACE = 60% MAXIMUM BUILDING LOT COVERAGE = 50% MAXIMUM BUILDING HEIGHT = 35'

LOT MINIMUM OPEN SPACE = 20% LOT MAXIMUM IMPERVIOUS AREA = 80%
- RETENTION AREAS / COMMON AREAS ARE GRANTED AS EASEMENTS TO THE CITY OF PORT ORANGE ALONG WITH THE RIGHT OF ACCESS, INGRESS AND EGRESS, TOGETHER WITH THE PERPETUAL RIGHT TO HARVEST EXCESS STORMWATER / GROUNDWATER AS DEEMED APPROPRIATE IN THE DISCRETION OF THE CITY.
- IN ADDITION TO THE USES AND PURPOSES OTHERWISE STATED ON THIS PLAT, ALL DRAINAGE EASEMENTS ARE GRANTED TO THE CITY OF PORT ORANGE FOR THE BENEFIT OF ACCOMMODATING ALL DRAINAGE AND STORMWATER FROM ADJOINING, OFF-SITE DEDICATED RIGHTS-OF-WAY.
- CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. SHALL OWN AND BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING, IRRIGATION, SIDEWALKS, BIKE PATHS, PEDESTRIAN WALKWAYS AND IMPROVEMENTS CONSTRUCTED WITHIN ALL COMMON AREAS AND THE MEDIAN IN AMBER LANE.
- THIS PLAT IS SUBJECT TO THE CORNERSTONE GROVE PLANNED UNIT DEVELOPMENT MASTER DEVELOPMENT AGREEMENT AS RECORDED IN OFFICIAL RECORDS BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
- THIS PLAT IS SUBJECT TO THE COVENANTS, CONDITIONS AND RESTRICTIONS OF THE CORNERSTONE GROVE HOMEOWNERS ASSOCIATION AS RECORDED IN O.R. BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.

LEGAL DESCRIPTION:

A PORTION OF SECTION 18, TOWNSHIP 16 SOUTH, RANGE 33 EAST, VOLUSIA COUNTY, FLORIDA, DESCRIBED AS FOLLOWS: FROM THE NORTHEAST CORNER OF SAID SECTION 18, RUN S01°43'30"E ALONG THE EAST LINE OF SAID SECTION 18, A DISTANCE OF 2640.02 FEET TO THE SOUTHEAST CORNER OF THE NORTHEAST ONE-QUARTER OF SAID SECTION 18; THENCE S89°41'53"W ALONG THE SOUTH LINE OF THE NORTHEAST ONE-QUARTER OF SAID SECTION 18, A DISTANCE OF 2055.18 FEET TO THE EASTERLY RIGHT OF WAY LINE OF INTERSTATE HIGHWAY 95 (A 350 FOOT WIDE RIGHT OF WAY) AND THE BEGINNING OF A NON TANGENT CURVE CONCAVE SOUTHWEST, HAVING A RADIUS OF 3994.83 FEET, A CENTRAL ANGLE OF 05°49'28" AND A CHORD BEARING OF N53°30'41"W; THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE AND ALONG SAID EASTERLY RIGHT OF WAY LINE, 406.11 FEET; THENCE CONTINUE ALONG SAID EASTERLY RIGHT OF WAY LINE N56°25'25"W, 2161.92 FEET; THENCE DEPART SAID EASTERLY RIGHT OF WAY LINE N33°34'35"E, 108.00 FEET TO A POINT ON THE EASTERLY RIGHT OF WAY LINE OF YORKTOWNE BOULEVARD (A 100 FOOT WIDE RIGHT OF WAY PER OFFICIAL RECORDS BOOK 3557, PAGE 1879 AND OFFICIAL RECORDS BOOK 3718, PAGE 1042, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA) AND THE POINT OF BEGINNING; THENCE ALONG SAID EASTERLY RIGHT OF WAY LINE N56°25'25"W, 1444.30 FEET TO A POINT ON THE WEST LINE OF SAID SECTION 18; THENCE N01°54'42"W ALONG SAID WEST SECTION LINE 16.36 FEET TO A POINT ON THE WESTERLY PROLONGATION OF THE SOUTH BOUNDARY LINE OF HIDDEN LAKE PHASE IV-B, AS RECORDED IN MAP BOOK 41, PAGE 55, SAID PUBLIC RECORDS; THENCE DEPART SAID WEST SECTION LINE N89°53'21"E ALONG SAID WESTERLY PROLONGATION AND SAID SOUTH BOUNDARY LINE AND THE SOUTH BOUNDARY LINE OF HIDDEN LAKE PHASE IV-A, AS RECORDED IN MAP BOOK 40, PAGES 86- 87, OF SAID PUBLIC RECORDS, 1279.44 FEET; THENCE DEPART SAID LINE S00°57'27"E, 671.61 FEET TO THE BEGINNING OF A TANGENT CURVE CONCAVE WESTERLY HAYING A RADIUS OF 190.00 FEET AND A CENTRAL ANGLE OF 34°32'02"; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, 114.52 FEET; THENCE S33°34'35"W, 37.00 FEET TO THE BEGINNING A TANGENT CURVE CONCAVE NORTHWESTERLY HAVING A RADIUS OF 25.00 FEET, A CENTRAL ANGLE OF 90°00'00" AND A CHORD BEARING OF S78°34'35"W; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, 39.27 FEET TO THE POINT OF BEGINNING.



LOCATION MAP

SCALE: 1" = 1,200'

INDEX OF SHEETS:

- SHEET 1 - COVER AND DEDICATIONS
- SHEET 2 - KEY MAP
- SHEET 3 - DETAIL SHEET
- SHEET 4 - DETAIL SHEET
- SHEET 5 - DETAIL SHEET
- SHEET 6 - DETAIL SHEET
- SHEET 7 - DETAIL SHEET
- SHEET 8 - EASEMENT DETAILS
- SHEET 9 - EASEMENT DETAILS

ABBREVIATIONS AND LEGEND:

CA	CENTRAL ANGLE (DELTA)	LB	LICENSED BUSINESS
CB	CHORD BEARING	LC	LICENSED CORPORATION
CH	CHORD	LLC	LIMITED LIABILITY COMPANY
CM	CONCRETE MONUMENT	LS	LICENSED SURVEYOR
D.M.A.E.	DRAINAGE/MAINTENANCE/ACCESS EASEMENT	NO	NUMBER
DWG	DRAWING	P.A.	PROFESSIONAL ASSOCIATION
FAX	FACSIMILE	PRM	PERMANENT REFERENCE MONUMENT
FD	FOUND	PSM	PROFESSIONAL SURVEYOR AND MAPPER
FL	FLORIDA	R	RADIUS
ID	IDENTIFICATION	R/W	RIGHT-OF-WAY
IRC	IRON ROD & CAP	S.J.R.W.M.D.	ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
L	LENGTH	CL	CENTERLINE RIGHT-OF-WAY

PLAT BOOK _____ PAGE _____

DEDICATION

KNOW BY ALL THESE PRESENTS, THAT GEOSAM CAPITAL US L.P. BEING THE OWNER IN FEE SIMPLE OF THE LANDS DESCRIBED IN THE FOREGOING CAPTION TO THIS PLAT "CORNERSTONE GROVE," LOCATED IN THE CITY OF PORT ORANGE, VOLUSIA COUNTY, FLORIDA, HEREBY DEDICATE SAID LANDS AND PLAT FOR THE USES AND PURPOSES THEREIN EXPRESSED. ALL STREETS, ROADS AND OTHER RIGHTS-OF-WAY SHOWN OR DESCRIBED ON THE PLAT ARE, UNLESS OTHERWISE INDICATED, DEDICATED TO THE CITY OF PORT ORANGE. ALL POTABLE WATER AND SANITARY SEWER MAINS CONSTRUCTED WITHIN THE AREA ENCOMPASSED WITHIN THE PLAT ARE DEDICATED TO THE CITY OF PORT ORANGE. ALL DRAINAGE, MAINTENANCE, ACCESS, UTILITY AND VEHICLE ACCESS CONTROL EASEMENTS SHOWN OR DESCRIBED ON THE PLAT ARE, UNLESS OTHERWISE INDICATED, GRANTED TO THE CITY OF PORT ORANGE. ALL DRAINAGE, MAINTENANCE AND ACCESS EASEMENTS SHOWN OR DESCRIBED ON THE PLAT, UNLESS OTHERWISE INDICATED, GRANTED TO THE CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. FOR THE PURPOSES DESCRIBED IN THE GENERAL NOTES. TRACTS "A", "B", "C", "D" AND "E" DEPICTED HEREON AS COMMON AREAS ARE HEREBY GRANTED TO CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. CONSERVATION EASEMENTS "1" AND "2" OVER S.J.R.W.M.D. CONSERVATION AREAS AS AS SHOWN HEREON ARE GRANTED TO THE CITY OF PORT ORANGE.

IN WITNESS WHEREOF, HAS CAUSED THESE PRESENTS TO BE SIGNED BY THE OFFICER NAMED BELOW AND ITS SEAL AFFIXED HERETO ON THIS _____ DAY OF _____, 2017.

OWNER: GEOSAM CAPITAL US LP

BY: _____

PRINT NAME: _____

TITLE: _____

SIGNED IN THE PRESENCE OF:

1) _____ 2) _____

PRINT NAME: _____ PRINT NAME: _____

STATE OF FLORIDA, COUNTY OF VOLUSIA

THIS IS TO CERTIFY, THAT ON THIS _____ DAY OF _____, 2017, BEFORE ME, AN OFFICER DULY AUTHORIZED TO TAKE ACKNOWLEDGMENTS IN THE STATE AND COUNTY AFORESAID, PERSONALLY APPEARED _____ AS _____ OF _____, WHO IS PERSONALLY KNOWN TO ME OR PRODUCED THE FOLLOWING IDENTIFICATION: _____ AND DID /DID NOT TAKE AN OATH THAT HE/SHE IS THE PERSON DESCRIBED IN AND WHO EXECUTED THE FOREGOING DEDICATION AND SEVERALLY ACKNOWLEDGES THE EXECUTION THEREOF TO BE HIS/HER FREE ACT AND DEED AS SUCH OFFICER THERETO DULY AUTHORIZED; THAT THE OFFICIAL SEAL OF SAID LIMITED LIABILITY COMPANY IS AFFIXED HERETO; AND THAT SAID DEDICATION IS THE ACT AND DEED OF SAID LIMITED LIABILITY COMPANY.

IN WITNESS WHEREOF, I HAVE HEREUNTO SET MY HAND AND SEAL ON THE ABOVE DATE.

NOTARY PUBLIC [NOTARY STAMP]

CERTIFICATE OF CLERK

THIS IS TO CERTIFY THAT I HAVE EXAMINED THE FOREGOING PLAT AND FOUND THAT IT COMPLIES IN FORM WITH ALL OF THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES, AND WAS FILED FOR RECORD ON THE _____ DAY OF _____, 2017,

AT _____, FILE # _____.

BY: _____
CLERK OF THE CIRCUIT COURT
IN AND FOR VOLUSIA COUNTY, FLORIDA.

REVIEW BY SURVEYOR AND MAPPER FOR THE CITY

I HEREBY CERTIFY , THAT I HAVE EXAMINED THE FORGOING PLAT ENTITLED "CORNERSTONE GROVE" FOR COMPLIANCE WITH THE REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES, AND THAT I HAVE PROVIDED BOTH THE CITY AND THE SURVEYOR MAPPER OF RECORD A LIST OF DEVIATIONS, IF ANY, FROM SUCH REQUIREMENTS.

SIGNATURE _____ DATE _____

PRINTED NAME: _____ P.L.S. / P.S.M. NUMBER _____

CERTIFICATE OF SURVEYOR AND MAPPER

KNOW BY ALL THESE PRESENTS, THAT THE UNDERSIGNED, BEING A PROFESSIONAL SURVEYOR AND SURVEYOR AND MAPPER, DOES HEREBY CERTIFY THAT THE PLAT SHOWN AND DESCRIBED HEREON, ENTITLED "CORNERSTONE GROVE" WAS PREPARED UNDER MY DIRECTION AND SUPERVISION, THAT THE PLAT COMPLIES WITH ALL OF THE SURVEY REQUIREMENTS OF CHAPTER 177, FLORIDA STATUTES AND THAT ALL MONUMENTATION SHOWN HEREON OR REQUIRED PER CHAPTER 177, FLORIDA STATUTES, HAS BEEN PROPERLY PLACED.

ANTHONY SANZONE _____ DATE _____
P.S.M. NUMBER 6309
A1A GEO, INC.
1366 N US HIGHWAY 1., STE 604, CERTIFICATE OF AUTHORIZATION No.
ORMOND BEACH FLORIDA 32174 (LB) LICENSED BUSINESS #7967

CITY COUNCIL CERTIFICATE OF APPROVAL

THIS STATEMENT HEREBY CERTIFIES THAT THE PLAT ENTITLED "CORNERSTONE GROVE" WAS APPROVED BY THE PORT ORANGE CITY COUNCIL ON THIS _____ DAY OF _____, 2017.

BY: _____ ATTEST: _____
MAYOR OF THE CITY OF PORT ORANGE CLERK OF THE CITY OF PORT ORANGE

PLANNING COMMISSION CERTIFICATE OF APPROVAL

THIS STATEMENT HEREBY CERTIFIES THAT THE PLAT ENTITLED "CORNERSTONE GROVE" WAS APPROVED BY THE PORT ORANGE PLANNING COMMISSION ON THIS _____ DAY OF _____, 2017.

BY: _____
CHAIRMAN OF THE PORT ORANGE PLANNING COMMISSION



1366 N US Highway 1., Ste 604, Ormond Beach Florida 32174
Voice: 386.672.3633 a1ageoinc@gmail.com
LB # 7967

CORNERSTONE GROVE

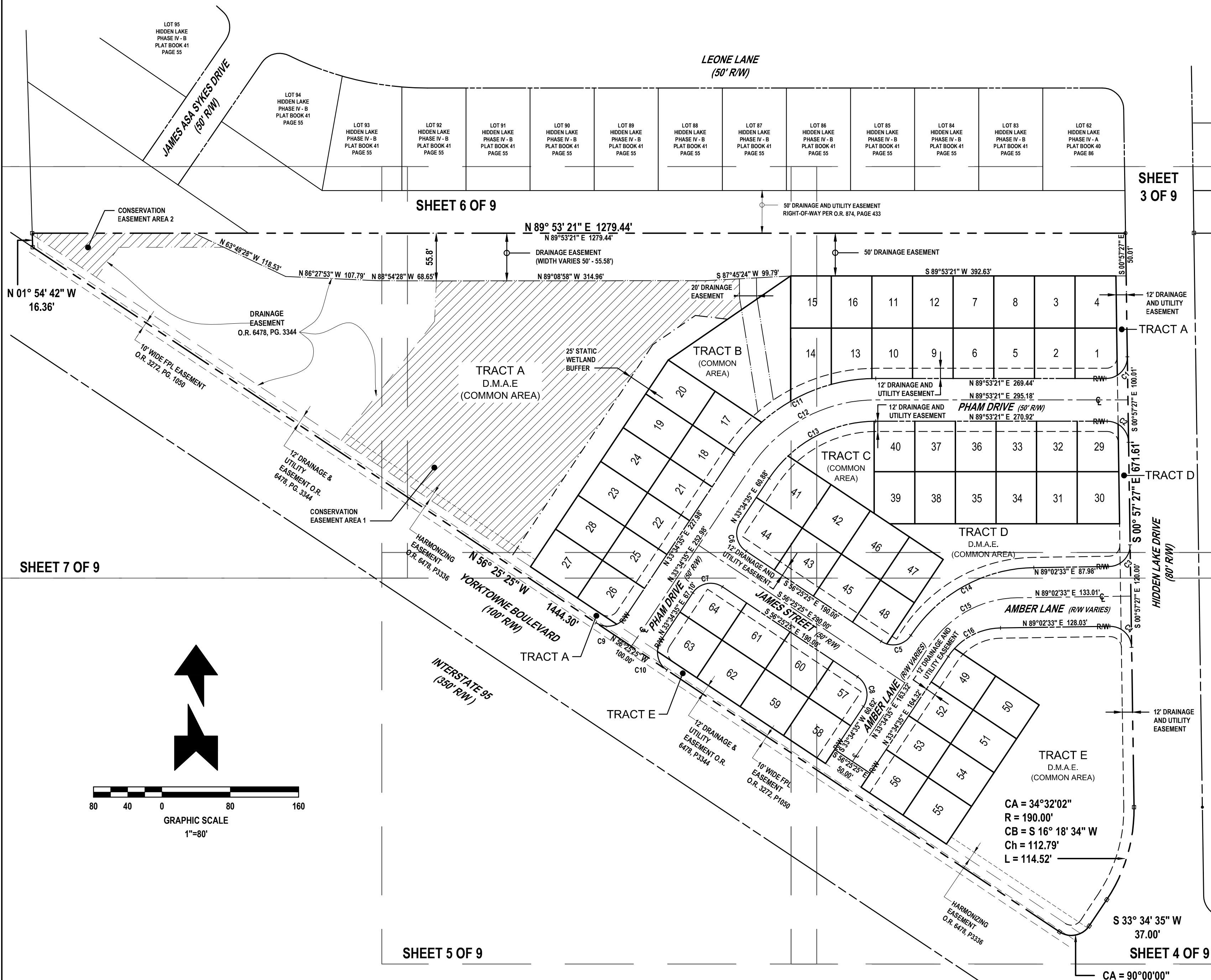
BEING A PORTION OF SECTION 18, TOWNSHIP 16 SOUTH, RANGE 33 EAST, VOLUSIA COUNTY, FLORIDA,

PLAT BOOK _____ PAGE _____

GENERAL NOTES:

- ☐ FD 4" X 4" CONCRETE MONUMENT (AS NOTED)
☒ SET 4" X 4" CONCRETE MONUMENT PRM LB 7967
- 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, WHETHER GRAPHIC OR DIGITAL. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.
- ALL MEASUREMENT DIMENSIONS ON THIS PLAT IS IN U.S. FOOT AND DECIMALS THEREOF.
- ALL MEASUREMENTS REFER TO HORIZONTAL PLANE IN ACCORDANCE WITH THE DEFINITION OF THE UNITED STATES SURVEY FOOT OR METER ADOPTED BY THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY. ALL MEASUREMENTS SHALL USE THE $39.37/12=3.2808333333$ EQUATION FOR CONVERSION FROM A U.S. FOOT TO METERS.
- ACCURACY: THE BOUNDARY LINEAR ERROR OF CLOSURE DOES NOT EXCEED $1 : 10,000$. THE BOUNDARY ANGULAR ERROR OF CLOSURE DOES NOT EXCEED 15 SECONDS MULTIPLIED BY THE SQUARE ROOT OF THE NUMBER OF ANGLES TURNED.
- ALL LOT LINES ARE RADIAL UNLESS SHOWN OTHERWISE. (NR) DENOTES NON-RADIAL LINES RELATIVE TO CURVES.
- BEARING STRUCTURE (N 56°25'25" E) ALONG THE EASTERLY RIGHT-OF-WAY LINE OF YORKTOWNE BOULEVARD (100' RIGHT-OF-WAY(NOT OPEN), FLORIDA, FOR ANGLE MEASUREMENT ONLY.
- THIS PLAT IS SUBJECT TO ALL EASEMENTS OF RECORD AND RESERVATIONS OF EASEMENTS, INCLUDING BUT NOT LIMITED TO DRAINAGE, MAINTENANCE, UTILITY AND ACCESS EASEMENTS DEDICATED OR GRANTED HEREON WHICH SHALL BE LOCATED AS FOLLOWS EXCEPT AS OTHERWISE NOTED ON THIS PLAT: FRONT LOT LINES (STREET FRONTAGE) 12.00 FEET WIDE. COMMON AREAS (STREET FRONTAGE) 12.00 FEET WIDE.
- UTILITIES INCLUDE BUT ARE NOT LIMITED TO SANITARY SEWER, POTABLE WATER, RECLAIMED WATER, STORM DRAINAGE, ELECTRIC, TELEPHONE, CABLE TELEVISION, SECURITY, TELECOMMUNICATIONS, FIBER OPTIC AND NATURAL GAS.
- UTILITY EASEMENTS PROVIDED ON THIS PLAT INCLUDE 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.
- THE COMMON AREAS GRANTED TO CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. BY THIS PLAT SHALL BE SUBJECT TO EASEMENTS AS SHOWN OR DESCRIBED HEREON OR GRANTED IN ACCORDANCE WITH CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. COVENANTS AND RESTRICTIONS. THE GRANTING OF SUCH COMMON AREAS IS NOT INTENDED TO GRANT ANY RIGHT TO THE GENERAL PUBLIC.
- CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. SHALL BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE DRAINAGE SYSTEM SERVING THE AREA WITHIN THE BOUNDARIES OF THE PLAT, AS DEPICTED ON THE STORMWATER MANAGEMENT PLAN APPROVED FOR THIS DEVELOPMENT BY THE CITY OF PORT ORANGE, FLORIDA. IN THE EVENT THE ASSOCIATION, ITS EMPLOYEES OR ASSIGNS FAILS TO PERFORM THE MAINTENANCE, REPAIR OR REPLACEMENT, AS NECESSARY, OF THE STORMWATER RETENTION AND DRAINAGE FACILITIES LOCATED WITHIN THE BOUNDARY OF THIS PLAT (PROPERTY), THE CITY OF PORT ORANGE SHALL HAVE THE RIGHT TO ENTER UPON THE COMMON AREAS AND DESIGNATED EASEMENT AREAS OF THE PROPERTY AND PROVIDE MAINTENANCE, REPAIR, OR REPLACEMENT OF THE STORMWATER DRAINAGE FACILITY AND SHALL HAVE THE RIGHT TO LIEN ALL OWNERS OF RECORD IN THE PROPERTY FOR THE COST OF SUCH MAINTENANCE, REPAIR, OR REPLACEMENT AS THE CITY MAY DEEM NECESSARY. IN THE EVENT OF TERMINATION, DISSOLUTION, OR FINAL LIQUIDATION OF THE ASSOCIATION, THE RESPONSIBILITY FOR THE OPERATION AND MAINTENANCE OF THE SURFACE WATER OR STORMWATER MANAGEMENT SYSTEM WILL BE TRANSFERRED TO AND ACCEPTED BY AN ENTITY WHICH COMPLIES WITH SECTION 40C-42.027, F.A.C. AND BE APPROVED BY THE SAINT JOHNS RIVER WATER MANAGEMENT DISTRICT PRIOR TO SUCH TERMINATION, DISSOLUTION, OR LIQUIDATION.
- THE ARTICLE OF INCORPORATION FOR THE CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. ARE RECORDED IN OFFICIAL RECORDS BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
- BUILDING SETBACK REQUIREMENTS:
FRONT - 13 FEET (FOR FRONT UNITS ONLY).
REAR - 0 FEET FOR ATTACHED UNITS, 15 FEET BETWEEN BUILDINGS.
SIDE - 0 FEET FOR ATTACHED UNITS, 15 FEET BETWEEN BUILDINGS.
SIDE CORNER - EQUAL TO FRONT SETBACK.

MAXIMUM BUILDING HEIGHT = 35'
MINIMUM COMMON OPEN SPACE = 60% MAXIMUM BUILDING LOT COVERAGE = 50%
LOT MINIMUM OPEN SPACE = 20% LOT MAXIMUM IMPERVIOUS AREA = 80%
- RETENTION AREAS / COMMON AREAS ARE GRANTED AS EASEMENTS TO THE CITY OF PORT ORANGE ALONG WITH THE RIGHT OF ACCESS, INGRESS AND EGRESS, TOGETHER WITH THE PERPETUAL RIGHT TO HARVEST EXCESS STORMWATER / GROUNDWATER AS DEEMED APPROPRIATE IN THE DISCRETION OF THE CITY.
- IN ADDITION TO THE USES AND PURPOSES OTHERWISE STATED ON THIS PLAT, ALL DRAINAGE EASEMENTS ARE GRANTED TO THE CITY OF PORT ORANGE FOR THE BENEFIT OF ACCOMMODATING ALL DRAINAGE AND STORMWATER FROM ADJOINING, OFF-SITE DEDICATED RIGHTS-OF-WAY.
- CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. SHALL OWN AND BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING, IRRIGATION, SIDEWALKS, BIKE PATHS, PEDESTRIAN WALKWAYS AND IMPROVEMENTS CONSTRUCTED WITHIN ALL COMMON AREAS AND THE MEDIAN IN AMBER LANE.
- THIS PLAT IS SUBJECT TO THE CORNERSTONE GROVE PLANNED UNIT DEVELOPMENT MASTER DEVELOPMENT AGREEMENT AS RECORDED IN OFFICIAL RECORDS BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
- THIS PLAT IS SUBJECT TO THE COVENANTS, CONDITIONS AND RESTRICTIONS OF THE CORNERSTONE GROVE HOMEOWNERS ASSOCIATION AS RECORDED IN O.R. BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.



LEGEND

CONSERVATION EASEMENT

A1A GEO
LAND SURVEYING CONSTRUCTION LAYOUT

11 Coolidge Ave., Ste J Ormond Beach Florida 32174
Voice: 386.405.6797 a1ageoinc@gmail.com
LB # 7967 LS # 6309

SHEET 2 OF 9

CURVE	CA	RADIUS	CH BEARING	CH LENGTH	LENGTH
C1	90°50'48"	25.00'	N 44°27'57" E	35.62'	39.64'
C2	89°09'12"	25.00'	N 45°32'03" W	35.09'	38.90'
C3	90°00'00"	25.00'	N 44°02'33" E	35.36'	39.27'
C4	90°00'00"	25.00'	N 45°57'27" W	35.36'	39.27'
C5	90°00'00"	25.00'	N 78°34'35" E	35.36'	39.27'
C6	90°00'00"	25.00'	S 11°25'25" E	35.36'	39.27'
C7	90°00'00"	25.00'	S 78°34'35" W	35.36'	39.27'
C8	90°00'00"	25.00'	N 11°25'25" W	35.36'	39.27'
C9	90°00'00"	25.00'	S 78°34'35" W	35.36'	39.27'
C10	90°00'00"	25.00'	N 11°25'25" W	35.36'	39.27'
C11	56°18'46"	200.00'	S 61°43'58" W	188.75'	196.57'
C12	56°18'46"	175.00'	S 61°43'58" W	165.16'	172.00'
C13	56°18'46"	150.00'	S 61°43'58" W	141.56'	147.43'
C14	55°27'58"	175.00'	S 61°18'34" W	162.87'	169.41'
C15	55°27'58"	125.00'	N 61°18'34" E	116.34'	121.01'
C16	55°27'58"	75.00'	S 61°18'34" W	69.80'	72.60'

ABBREVIATIONS AND LEGEND:

CA	CENTRAL ANGLE (DELTA)	LB	LICENSED BUSINESS
CB	CHORD BEARING	LC	LICENSED CORPORATION
CH	CHORD	LLC	LIMITED LIABILITY COMPANY
CM	CONCRETE MONUMENT	LS	LICENSED SURVEYOR
D.M.A.E.	DRAINAGE/MAINTENANCE/ACCESS EASEMENT	NO	NUMBER
DWG	DRAWING	P.A.	PROFESSIONAL ASSOCIATION
FAX	FACSIMILE	PRM	PERMANENT REFERENCE MONUMENT
FD	FOUND	PSM	PROFESSIONAL SURVEYOR AND MAPPER
FL	FLORIDA	R	RADIUS
ID	IDENTIFICATION	R/W	RIGHT-OF-WAY
IRC	IRON ROD & CAP	S.J.R.W.M.D.	ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
L	LENGTH	CL	CENTERLINE RIGHT-OF-WAY

CORNERSTONE GROVE

BEING A PORTION OF SECTION 18, TOWNSHIP 16 SOUTH, RANGE 33 EAST, VOLUSIA COUNTY, FLORIDA,

PLAT BOOK _____ PAGE _____

GENERAL NOTES:

- ☐ FD 4" X 4" CONCRETE MONUMENT (AS NOTED)
☒ SET 4" X 4" CONCRETE MONUMENT PRM LB 7967
- 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, WHETHER GRAPHIC OR DIGITAL. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.
- ALL MEASUREMENT DIMENSIONS ON THIS PLAT IS IN U.S. FOOT AND DECIMALS THEREOF.
- ALL MEASUREMENTS REFER TO HORIZONTAL PLANE IN ACCORDANCE WITH THE DEFINITION OF THE UNITED STATES SURVEY FOOT OR METER ADOPTED BY THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY. ALL MEASUREMENTS SHALL USE THE 39.37/12=3.2808333333 EQUATION FOR CONVERSION FROM A U.S. FOOT TO METERS.
- ACCURACY:
THE BOUNDARY LINEAR ERROR OF CLOSURE DOES NOT EXCEED 1 : 10,000. THE BOUNDARY ANGULAR ERROR OF CLOSURE DOES NOT EXCEED 15 SECONDS MULTIPLIED BY THE SQUARE ROOT OF THE NUMBER OF ANGLES TURNED.
- ALL LOT LINES ARE RADIAL UNLESS SHOWN OTHERWISE. (NR) DENOTES NON-RADIAL LINES RELATIVE TO CURVES.
- BEARING STRUCTURE (N 56°25'25" E) ALONG THE EASTERLY RIGHT-OF-WAY LINE OF YORKTOWNE BOULEVARD (100' RIGHT-OF-WAY(NOT OPEN), FLORIDA, FOR ANGLE MEASUREMENT ONLY.

- THIS PLAT IS SUBJECT TO ALL EASEMENTS OF RECORD AND RESERVATIONS OF EASEMENTS, INCLUDING BUT NOT LIMITED TO DRAINAGE, MAINTENANCE, UTILITY AND ACCESS EASEMENTS DEDICATED OR GRANTED HEREON WHICH SHALL BE LOCATED AS FOLLOWS EXCEPT AS OTHERWISE NOTED ON THIS PLAT: FRONT LOT LINES (STREET FRONTAGE) 12.00 FEET WIDE. COMMON AREAS (STREET FRONTAGE) 12.00 FEET WIDE.
- UTILITIES INCLUDE BUT ARE NOT LIMITED TO SANITARY SEWER, POTABLE WATER, RECLAIMED WATER, STORM DRAINAGE, ELECTRIC, TELEPHONE, CABLE TELEVISION, SECURITY, TELECOMMUNICATIONS, FIBER OPTIC AND NATURAL GAS.
- UTILITY EASEMENTS PROVIDED ON THIS PLAT INCLUDE 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.

- THE COMMON AREAS GRANTED TO CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. BY THIS PLAT SHALL BE SUBJECT TO EASEMENTS AS SHOWN OR DESCRIBED HEREON OR GRANTED IN ACCORDANCE WITH CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. COVENANTS AND RESTRICTIONS. THE GRANTING OF SUCH COMMON AREAS IS NOT INTENDED TO GRANT ANY RIGHT TO THE GENERAL PUBLIC.

- CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. SHALL BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE DRAINAGE SYSTEM SERVING THE AREA WITHIN THE BOUNDARIES OF THE PLAT, AS DEPICTED ON THE STORMWATER MANAGEMENT PLAN APPROVED FOR THIS DEVELOPMENT BY THE CITY OF PORT ORANGE, FLORIDA. IN THE EVENT THE ASSOCIATION, ITS EMPLOYEES OR ASSIGNS FAILS TO PERFORM THE MAINTENANCE, REPAIR OR REPLACEMENT, AS NECESSARY, OF THE STORMWATER RETENTION AND DRAINAGE FACILITIES LOCATED WITHIN THE BOUNDARY OF THIS PLAT (PROPERTY), THE CITY OF PORT ORANGE SHALL HAVE THE RIGHT TO ENTER UPON THE COMMON AREAS AND DESIGNATED EASEMENT AREAS OF THE PROPERTY AND PROVIDE MAINTENANCE, REPAIR, OR REPLACEMENT OF THE STORMWATER DRAINAGE FACILITY AND SHALL HAVE THE RIGHT TO LIEN ALL OWNERS OF RECORD IN THE PROPERTY FOR THE COST OF SUCH MAINTENANCE, REPAIR, OR REPLACEMENT AS THE CITY MAY DEEM NECESSARY. IN THE EVENT OF TERMINATION, DISSOLUTION, OR FINAL LIQUIDATION OF THE ASSOCIATION, THE RESPONSIBILITY FOR THE OPERATION AND MAINTENANCE OF THE SURFACE WATER OR STORMWATER MANAGEMENT SYSTEM WILL BE TRANSFERRED TO AND ACCEPTED BY AN ENTITY WHICH COMPLIES WITH SECTION 40C-42.027, F.A.C. AND BE APPROVED BY THE SAINT JOHNS RIVER WATER MANAGEMENT DISTRICT PRIOR TO SUCH TERMINATION, DISSOLUTION, OR LIQUIDATION.

- THE ARTICLE OF INCORPORATION FOR THE CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. ARE RECORDED IN OFFICIAL RECORDS BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.

- BUILDING SETBACK REQUIREMENTS:
FRONT - 13 FEET (FOR FRONT UNITS ONLY).
REAR - 0 FEET FOR ATTACHED UNITS, 15 FEET BETWEEN BUILDINGS.
SIDE - 0 FEET FOR ATTACHED UNITS, 15 FEET BETWEEN BUILDINGS.
SIDE CORNER - EQUAL TO FRONT SETBACK.

MAXIMUM BUILDING HEIGHT = 35'
MINIMUM COMMON OPEN SPACE = 60% MAXIMUM BUILDING LOT COVERAGE = 50%
LOT MINIMUM OPEN SPACE = 20% LOT MAXIMUM IMPERVIOUS AREA = 80%

- RETENTION AREAS / COMMON AREAS ARE GRANTED AS EASEMENTS TO THE CITY OF PORT ORANGE ALONG WITH THE RIGHT OF ACCESS, INGRESS AND EGRESS, TOGETHER WITH THE PERPETUAL RIGHT TO HARVEST EXCESS STORMWATER / GROUNDWATER AS DEEMED APPROPRIATE IN THE DISCRETION OF THE CITY.

- IN ADDITION TO THE USES AND PURPOSES OTHERWISE STATED ON THIS PLAT, ALL DRAINAGE EASEMENTS ARE GRANTED TO THE CITY OF PORT ORANGE FOR THE BENEFIT OF ACCOMMODATING ALL DRAINAGE AND STORMWATER FROM ADJOINING, OFF-SITE DEDICATED RIGHTS-OF-WAY.

- CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. SHALL OWN AND BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING, IRRIGATION, SIDEWALKS, BIKE PATHS, PEDESTRIAN WALKWAYS AND IMPROVEMENTS CONSTRUCTED WITHIN ALL COMMON AREAS AND THE MEDIAN IN AMBER LANE.

- THIS PLAT IS SUBJECT TO THE CORNERSTONE GROVE PLANNED UNIT DEVELOPMENT MASTER DEVELOPMENT AGREEMENT AS RECORDED IN OFFICIAL RECORDS BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.

- THIS PLAT IS SUBJECT TO THE COVENANTS, CONDITIONS AND RESTRICTIONS OF THE CORNERSTONE GROVE HOMEOWNERS ASSOCIATION AS RECORDED IN O.R. BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.

CURVE	CA	R	CH BEARING	CH	L
C1	90°50'48"	25.00'	N 44°27'57" E	35.62'	39.64'
C2	89°09'12"	25.00'	N 45°32'03" E	35.09'	38.90'
C3	90°00'00"	25.00'	N 44°02'33" E	35.36'	39.27'
C4	90°00'00"	25.00'	N 45°57'27" W	35.36'	39.27'
C5	90°00'00"	25.00'	N 78°34'35" E	35.36'	39.27'
C6	90°00'00"	25.00'	S 11°25'25" E	35.36'	39.27'
C7	90°00'00"	25.00'	S 78°34'35" W	35.36'	39.27'
C8	90°00'00"	25.00'	N 11°25'25" W	35.36'	39.27'
C9	90°00'00"	25.00'	S 78°34'35" W	35.36'	39.27'
C10	90°00'00"	25.00'	N 11°25'25" W	35.36'	39.27'
C11	58°40'04"	25.00'	S 28°22'55" W	24.49'	25.60'
C12	32°10'44"	25.00'	S 73°47'59" W	13.86'	14.04'
C13	1°17'14"	200.00'	S 89°14'44" W	4.49'	4.49'
C14	13°47'44"	200.00'	N 81°42'15" E	48.04'	48.16'
C15	14°46'57"	200.00'	N 67°24'55" E	51.46'	51.60'
C16	12°02'17"	200.00'	N 64°00'17" E	41.94'	42.02'
C17	13°46'24"	200.00'	N 41°05'57" E	47.96'	48.08'
C18	0°38'09"	200.00'	S 33°53'40" W	2.22'	2.22'
C19	31°19'56"	25.00'	S 49°14'33" W	13.50'	13.67'
C20	58°40'04"	25.00'	N 85°45'27" W	24.49'	25.60'
C21	58°40'04"	25.00'	S 27°05'23" E	24.49'	25.60'
C22	31°19'56"	25.00'	S 17°54'37" W	13.50'	13.67'
C23	13°08'52"	150.00'	N 40°09'01" E	34.35'	34.42'
C24	42°26'55"	150.00'	S 67°56'55" W	108.61'	111.13'
C25	0°42'58"	150.00'	S 89°31'52" W	1.88'	1.88'
C26	30°29'08"	25.00'	N 74°52'05" W	13.15'	13.30'
C27	58°40'04"	25.00'	S 30°17'29" E	24.49'	25.60'
C28	73°50'08"	25.00'	N 70°00'45" E	30.03'	32.22'
C29	16°39'48"	25.00'	S 64°45'19" E	7.25'	7.27'
C30	9°05'05"	75.00'	N 38°07'08" E	11.88'	11.89'
C31	46°22'52"	75.00'	S 65°51'07" W	59.07'	60.71'

TRACT A
D.M.A.E.
(COMMON AREA)

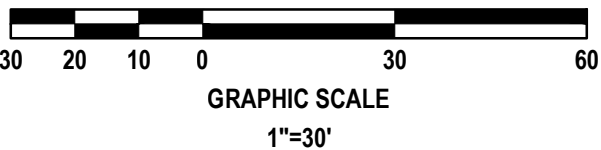
12' DRAINAGE AND
UTILITY EASEMENT

HIDDEN LAKE DRIVE
(80' R/W)

TRACT D
D.M.A.E.
(COMMON AREA)

12' DRAINAGE AND
UTILITY EASEMENT

MATCH LINE
SEE SHEET 4 OF 9



ABBREVIATIONS AND LEGEND:

CA	CENTRAL ANGLE (DELTA)	LB	LICENSED BUSINESS
CB	CHORD BEARING	LC	LICENSED CORPORATION
CH	CHORD	LLC	LIMITED LIABILITY COMPANY
CM	CONCRETE MONUMENT	LS	LICENSED SURVEYOR
D.M.A.E.	DRAINAGE/MAINTENANCE/ACCESS EASEMENT	NO	NUMBER
DWG	DRAWING	P.A.	PROFESSIONAL ASSOCIATION
FAX	FACSIMILE	PRM	PERMANENT REFERENCE MONUMENT
FL	FOUND	PSM	PROFESSIONAL SURVEYOR AND MAPPER
ID	IDENTIFICATION	R	RADIUS
IRC	IRON ROD & CAP	R/W	RIGHT-OF-WAY
L	LENGTH	S.J.R.W.M.D.	ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
		CL	CENTERLINE RIGHT-OF-WAY

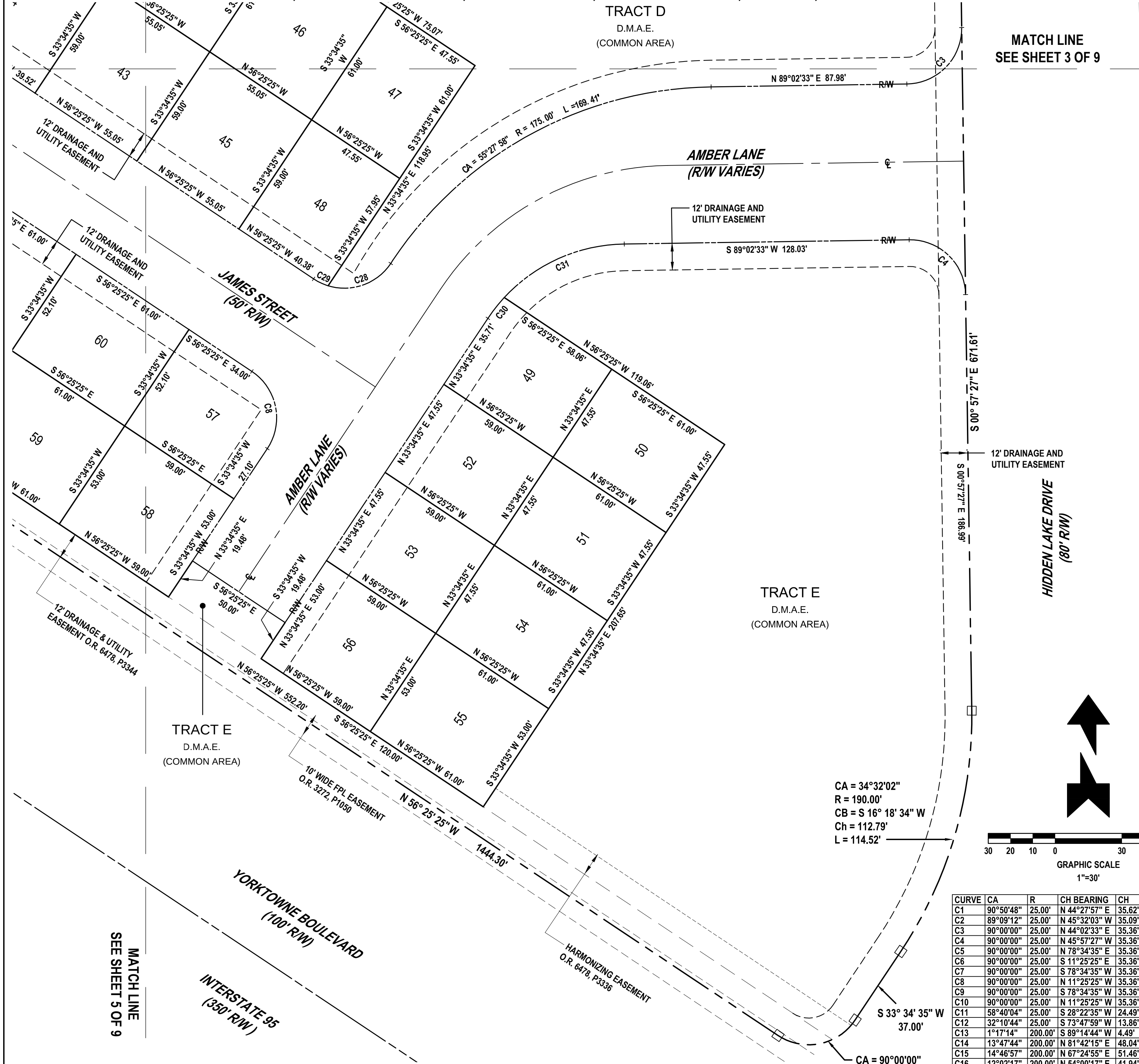
A1A GEO
LAND SURVEYING CONSTRUCTION LAYOUT

11 Coolidge Ave., Ste J Ormond Beach Florida 32174
Voice: 386.405.6797 a1ageoinc@gmail.com
LB # 7967 LS # 6309

SHEET 3 OF 9

CORNERSTONE GROVE

BEING A PORTION OF SECTION 18, TOWNSHIP 16 SOUTH, RANGE 33 EAST, VOLUSIA COUNTY, FLORIDA,



PLAT BOOK _____ PAGE _____

GENERAL NOTES:

- ☐ FD 4" X 4" CONCRETE MONUMENT (AS NOTED)
☒ SET 4" X 4" CONCRETE MONUMENT PRM LB 7967
 - 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, WHETHER GRAPHIC OR DIGITAL. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.
 - ALL MEASUREMENT DIMENSIONS ON THIS PLAT IS IN U.S. FOOT AND DECIMALS THEREOF.
 - ALL MEASUREMENTS REFER TO HORIZONTAL PLANE IN ACCORDANCE WITH THE DEFINITION OF THE UNITED STATES SURVEY FOOT OR METER ADOPTED BY THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY. ALL MEASUREMENTS SHALL USE THE $39.37/12 = 3.2808333333$ EQUATION FOR CONVERSION FROM A U.S. FOOT TO METERS.
 - ACCURACY: THE BOUNDARY LINEAR ERROR OF CLOSURE DOES NOT EXCEED $1 : 10,000$. THE BOUNDARY ANGULAR ERROR OF CLOSURE DOES NOT EXCEED 15 SECONDS MULTIPLIED BY THE SQUARE ROOT OF THE NUMBER OF ANGLES TURNED.
 - ALL LOT LINES ARE RADIAL UNLESS SHOWN OTHERWISE. (NR) DENOTES NON-RADIAL LINES RELATIVE TO CURVES.
 - BEARING STRUCTURE (N 56°25'25" E) ALONG THE EASTERLY RIGHT-OF-WAY LINE OF YORKTOWNE BOULEVARD (100' RIGHT-OF-WAY (NOT OPEN), FLORIDA, FOR ANGLE MEASUREMENT ONLY).
 - THIS PLAT IS SUBJECT TO ALL EASEMENTS OF RECORD AND RESERVATIONS OF EASEMENTS, INCLUDING BUT NOT LIMITED TO DRAINAGE, MAINTENANCE, UTILITY AND ACCESS EASEMENTS DEDICATED OR GRANTED HEREON WHICH SHALL BE LOCATED AS FOLLOWS EXCEPT AS OTHERWISE NOTED ON THIS PLAT: FRONT LOT LINES (STREET FRONTAGE) 12.00 FEET WIDE. COMMON AREAS (STREET FRONTAGE) 12.00 FEET WIDE.
 - UTILITIES INCLUDE BUT ARE NOT LIMITED TO SANITARY SEWER, POTABLE WATER, RECLAIMED WATER, STORM DRAINAGE, ELECTRIC, TELEPHONE, CABLE TELEVISION, SECURITY, TELECOMMUNICATIONS, FIBER OPTIC AND NATURAL GAS.
 - UTILITY EASEMENTS PROVIDED ON THIS PLAT INCLUDE 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.
 - THE COMMON AREAS GRANTED TO CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. BY THIS PLAT SHALL BE SUBJECT TO EASEMENTS AS SHOWN OR DESCRIBED HEREON OR GRANTED IN ACCORDANCE WITH CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. COVENANTS AND RESTRICTIONS. THE GRANTING OF SUCH COMMON AREAS IS NOT INTENDED TO GRANT ANY RIGHT TO THE GENERAL PUBLIC.
 - CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. SHALL BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE DRAINAGE SYSTEM SERVING THE AREA WITHIN THE BOUNDARIES OF THE PLAT, AS DEPICTED ON THE STORMWATER MANAGEMENT PLAN APPROVED FOR THIS DEVELOPMENT BY THE CITY OF PORT ORANGE, FLORIDA. IN THE EVENT THE ASSOCIATION, ITS EMPLOYEES OR ASSIGNS FAILS TO PERFORM THE MAINTENANCE, REPAIR OR REPLACEMENT, AS NECESSARY, OF THE STORMWATER RETENTION AND DRAINAGE FACILITIES LOCATED WITHIN THE BOUNDARY OF THIS PLAT (PROPERTY), THE CITY OF PORT ORANGE SHALL HAVE THE RIGHT TO ENTER UPON THE COMMON AREAS AND DESIGNATED EASEMENT AREAS OF THE PROPERTY AND PROVIDE MAINTENANCE, REPAIR, OR REPLACEMENT OF THE STORMWATER DRAINAGE FACILITY AND SHALL HAVE THE RIGHT TO LIEN ALL OWNERS OF RECORD IN THE PROPERTY FOR THE COST OF SUCH MAINTENANCE, REPAIR, OR REPLACEMENT AS THE CITY MAY DEEM NECESSARY. IN THE EVENT OF TERMINATION, DISSOLUTION, OR FINAL LIQUIDATION OF THE ASSOCIATION, THE RESPONSIBILITY FOR THE OPERATION AND MAINTENANCE OF THE SURFACE WATER OR STORMWATER MANAGEMENT SYSTEM WILL BE TRANSFERRED TO AND ACCEPTED BY AN ENTITY WHICH COMPLIES WITH SECTION 40C-42.027, F.A.C. AND BE APPROVED BY THE SAINT JOHNS RIVER WATER MANAGEMENT DISTRICT PRIOR TO SUCH TERMINATION, DISSOLUTION, OR LIQUIDATION.
 - THE ARTICLE OF INCORPORATION FOR THE CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. ARE RECORDED IN OFFICIAL RECORDS BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
- BUILDING SETBACK REQUIREMENTS:**
FRONT - 13 FEET (FOR FRONT UNITS ONLY).
REAR - 0 FEET FOR ATTACHED UNITS, 15 FEET BETWEEN BUILDINGS.
SIDE - 0 FEET FOR ATTACHED UNITS, 15 FEET BETWEEN BUILDINGS.
SIDE CORNER - EQUAL TO FRONT SETBACK.
- MAXIMUM BUILDING HEIGHT = 35'
MINIMUM COMMON OPEN SPACE = 60% MAXIMUM BUILDING LOT COVERAGE = 50%
LOT MINIMUM OPEN SPACE = 20% LOT MAXIMUM IMPERVIOUS AREA = 80%
- RETENTION AREAS / COMMON AREAS ARE GRANTED AS EASEMENTS TO THE CITY OF PORT ORANGE ALONG WITH THE RIGHT OF ACCESS, INGRESS AND EGRESS, TOGETHER WITH THE PERPETUAL RIGHT TO HARVEST EXCESS STORMWATER / GROUNDWATER AS DEEMED APPROPRIATE IN THE DISCRETION OF THE CITY.
 - IN ADDITION TO THE USES AND PURPOSES OTHERWISE STATED ON THIS PLAT, ALL DRAINAGE EASEMENTS ARE GRANTED TO THE CITY OF PORT ORANGE FOR THE BENEFIT OF ACCOMMODATING ALL DRAINAGE AND STORMWATER FROM ADJOINING, OFF-SITE DEDICATED RIGHTS-OF-WAY.
 - CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. SHALL OWN AND BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING, IRRIGATION, SIDEWALKS, BIKE PATHS, PEDESTRIAN WALKWAYS AND IMPROVEMENTS CONSTRUCTED WITHIN ALL COMMON AREAS AND THE MEDIAN IN AMBER LANE.
 - THIS PLAT IS SUBJECT TO THE CORNERSTONE GROVE PLANNED UNIT DEVELOPMENT MASTER DEVELOPMENT AGREEMENT AS RECORDED IN OFFICIAL RECORDS BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
 - THIS PLAT IS SUBJECT TO THE COVENANTS, CONDITIONS AND RESTRICTIONS OF THE CORNERSTONE GROVE HOMEOWNERS ASSOCIATION AS RECORDED IN O.R. BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.

ABBREVIATIONS AND LEGEND:

CA	CENTRAL ANGLE (DELTA)	LB	LICENSED BUSINESS
CB	CHORD BEARING	LC	LICENSED CORPORATION
CH	CHORD	LLC	LIMITED LIABILITY COMPANY
CM	CONCRETE MONUMENT	LS	LICENSED SURVEYOR
D.M.A.E.	DRAINAGE/MAINTENANCE/ACCESS EASEMENT	NO	NUMBER
DWG	DRAWING	P.A.	PROFESSIONAL ASSOCIATION
FAX	FACSIMILE	PRM	PERMANENT REFERENCE MONUMENT
FD	FOUND	PSM	PROFESSIONAL SURVEYOR AND MAPPER
FL	FLORIDA	R	RADIUS
ID	IDENTIFICATION	RW	RIGHT-OF-WAY
IRC	IRON ROD & CAP	S.J.R.W.M.D.	ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
L	LENGTH	CL	CENTERLINE RIGHT-OF-WAY

CURVE	CA	R	CH BEARING	CH	L
C1	90°50'48"	25.00'	N 44°27'57" E	35.62'	39.64'
C2	89°09'12"	25.00'	N 45°32'03" E	35.09'	38.90'
C3	90°00'00"	25.00'	N 44°02'33" E	35.36'	39.27'
C4	90°00'00"	25.00'	N 45°57'27" W	35.36'	39.27'
C5	90°00'00"	25.00'	N 78°34'35" E	35.36'	39.27'
C6	90°00'00"	25.00'	S 11°25'25" E	35.36'	39.27'
C7	90°00'00"	25.00'	S 78°34'35" W	35.36'	39.27'
C8	90°00'00"	25.00'	N 11°25'25" W	35.36'	39.27'
C9	90°00'00"	25.00'	S 78°34'35" W	35.36'	39.27'
C10	90°00'00"	25.00'	N 11°25'25" W	35.36'	39.27'
C11	58°40'04"	25.00'	S 28°22'35" W	24.49'	25.60'
C12	32°10'44"	25.00'	S 73°47'59" W	13.86'	14.04'
C13	11°17'14"	200.00'	S 89°14'44" W	4.49'	4.49'
C14	13°47'44"	200.00'	N 81°42'15" E	48.04'	48.16'
C15	14°46'57"	200.00'	N 67°24'55" E	51.46'	51.60'
C16	12°02'17"	200.00'	N 54°00'17" E	41.94'	42.02'
C17	13°46'24"	200.00'	N 41°05'57" E	47.96'	48.08'
C18	0°38'09"	200.00'	S 33°53'40" W	2.22'	2.22'
C19	31°19'56"	25.00'	S 49°14'33" W	13.50'	13.67'
C20	58°40'04"	25.00'	N 85°45'27" W	24.49'	25.60'
C21	58°40'04"	25.00'	S 27°05'23" E	24.49'	25.60'
C22	31°19'56"	25.00'	S 17°54'37" W	13.50'	13.67'
C23	13°00'52"	150.00'	N 40°09'01" E	34.35'	34.42'
C24	42°26'55"	150.00'	S 67°56'55" W	108.61'	111.13'
C25	0°42'58"	150.00'	S 89°31'52" W	1.88'	1.88'
C26	30°29'08"	25.00'	N 74°52'05" W	13.15'	13.30'
C27	58°40'04"	25.00'	S 30°17'29" E	24.49'	25.60'
C28	73°50'08"	25.00'	N 70°00'45" E	30.03'	32.22'
C29	18°39'48"	25.00'	S 64°45'19" E	7.25'	7.27'
C30	9°05'05"	75.00'	N 38°07'08" E	11.88'	11.89'
C31	46°22'52"	75.00'	S 65°51'07" W	59.07'	60.71'

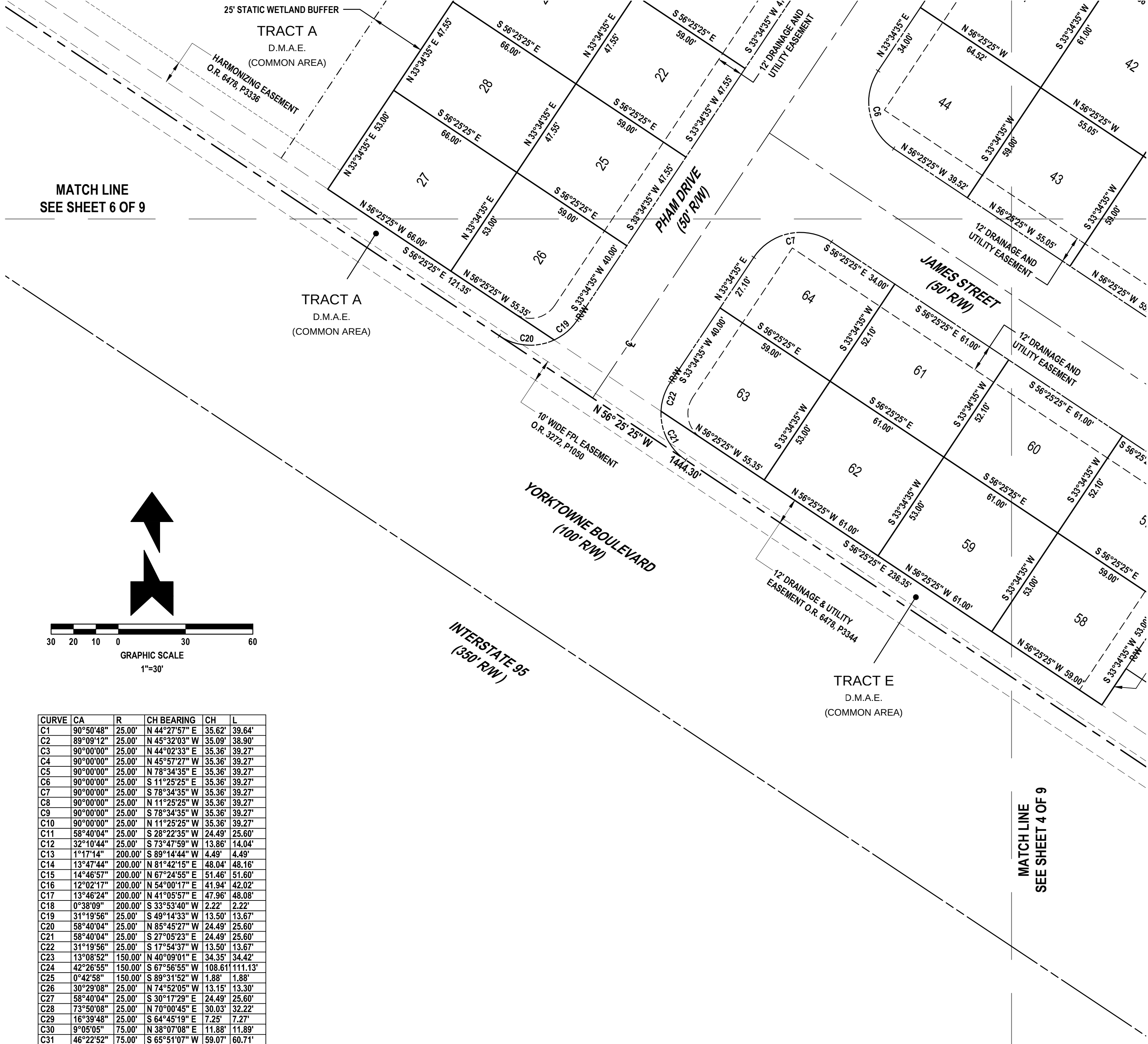


11 Coolidge Ave., Ste J Ormond Beach Florida 32174
Voice: 386.405.6797 a1ageoinc@gmail.com
LB # 7967 LS # 6309

SHEET 4 OF 9

CORNERSTONE GROVE

BEING A PORTION OF SECTION 18, TOWNSHIP 16 SOUTH, RANGE 33 EAST, VOLUSIA COUNTY, FLORIDA,



GENERAL NOTES:

- ☐ FD 4" X 4" CONCRETE MONUMENT (AS NOTED)
☒ SET 4" X 4" CONCRETE MONUMENT PRM LB 7967
- 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, WHETHER GRAPHIC OR DIGITAL. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.
- ALL MEASUREMENT DIMENSIONS ON THIS PLAT IS IN U.S. FOOT AND DECIMALS THEREOF.
- ALL MEASUREMENTS REFER TO HORIZONTAL PLANE IN ACCORDANCE WITH THE DEFINITION OF THE UNITED STATES SURVEY FOOT OR METER ADOPTED BY THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY. ALL MEASUREMENTS SHALL USE THE 39.37/12=3.2808333333 EQUATION FOR CONVERSION FROM A U.S. FOOT TO METERS.
- ACCURACY: THE BOUNDARY LINEAR ERROR OF CLOSURE DOES NOT EXCEED 1 : 10,000. THE BOUNDARY ANGULAR ERROR OF CLOSURE DOES NOT EXCEED 15 SECONDS MULTIPLIED BY THE SQUARE ROOT OF THE NUMBER OF ANGLES TURNED.
- ALL LOT LINES ARE RADIAL UNLESS SHOWN OTHERWISE. (NR) DENOTES NON-RADIAL LINES RELATIVE TO CURVES.
- BEARING STRUCTURE (N 56°25'25" E) ALONG THE EASTERLY RIGHT-OF-WAY LINE OF YORKTOWNE BOULEVARD (100' RIGHT-OF-WAY (NOT OPEN), FLORIDA, FOR ANGLE MEASUREMENT ONLY.
- THIS PLAT IS SUBJECT TO ALL EASEMENTS OF RECORD AND RESERVATIONS OF EASEMENTS, INCLUDING BUT NOT LIMITED TO DRAINAGE, MAINTENANCE, UTILITY AND ACCESS EASEMENTS DEDICATED OR GRANTED HEREON WHICH SHALL BE LOCATED AS FOLLOWS EXCEPT AS OTHERWISE NOTED ON THIS PLAT: FRONT LOT LINES (STREET FRONTAGE) 12.00 FEET WIDE. COMMON AREAS (STREET FRONTAGE) 12.00 FEET WIDE.
- UTILITIES INCLUDE BUT ARE NOT LIMITED TO SANITARY SEWER, POTABLE WATER, RECLAIMED WATER, STORM DRAINAGE, ELECTRIC, TELEPHONE, CABLE TELEVISION, SECURITY, TELECOMMUNICATIONS, FIBER OPTIC AND NATURAL GAS.
- UTILITY EASEMENTS PROVIDED ON THIS PLAT INCLUDE 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.
- THE COMMON AREAS GRANTED TO CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. BY THIS PLAT SHALL BE SUBJECT TO EASEMENTS AS SHOWN OR DESCRIBED HEREON OR GRANTED IN ACCORDANCE WITH CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. COVENANTS AND RESTRICTIONS. THE GRANTING OF SUCH COMMON AREAS IS NOT INTENDED TO GRANT ANT RIGHT TO THE GENERAL PUBLIC.
- CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. SHALL BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE DRAINAGE SYSTEM SERVING THE AREA WITHIN THE BOUNDARIES OF THE PLAT, AS DEPICTED ON THE STORMWATER MANAGEMENT PLAN APPROVED FOR THIS DEVELOPMENT BY THE CITY OF PORT ORANGE, FLORIDA. IN THE EVENT THE ASSOCIATION, ITS EMPLOYEES OR ASSIGNS FAILS TO PERFORM THE MAINTENANCE, REPAIR OR REPLACEMENT, AS NECESSARY, OF THE STORMWATER RETENTION AND DRAINAGE FACILITIES LOCATED WITHIN THE BOUNDARY OF THIS PLAT (PROPERTY), THE CITY OF PORT ORANGE SHALL HAVE THE RIGHT TO ENTER UPON THE COMMON AREAS AND DESIGNATED EASEMENT AREAS OF THE PROPERTY AND PROVIDE MAINTENANCE, REPAIR, OR REPLACEMENT OF THE STORMWATER DRAINAGE FACILITY AND SHALL HAVE THE RIGHT TO LIEN ALL OWNERS OF RECORD IN THE PROPERTY FOR THE COST OF SUCH MAINTENANCE, REPAIR, OR REPLACEMENT AS THE CITY MAY DEEM NECESSARY. IN THE EVENT OF TERMINATION, DISSOLUTION, OR FINAL LIQUIDATION OF THE ASSOCIATION, THE RESPONSIBILITY FOR THE OPERATION AND MAINTENANCE OF THE SURFACE WATER OR STORMWATER MANAGEMENT SYSTEM WILL BE TRANSFERRED TO AND ACCEPTED BY AN ENTITY WHICH COMPLIES WITH SECTION 40C-42.027, F.A.C. AND BE APPROVED BY THE SAINT JOHNS RIVER WATER MANAGEMENT DISTRICT PRIOR TO SUCH TERMINATION, DISSOLUTION, OR LIQUIDATION.
- THE ARTICLE OF INCORPORATION FOR THE CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. ARE RECORDED IN OFFICIAL RECORDS BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
- BUILDING SETBACK REQUIREMENTS:
FRONT - 13 FEET (FOR FRONT UNITS ONLY).
REAR - 0 FEET FOR ATTACHED UNITS, 15 FEET BETWEEN BUILDINGS.
SIDE - 0 FEET FOR ATTACHED UNITS, 15 FEET BETWEEN BUILDINGS.
SIDE CORNER - EQUAL TO FRONT SETBACK.

MAXIMUM BUILDING HEIGHT = 35'
MINIMUM COMMON OPEN SPACE = 60% MAXIMUM BUILDING LOT COVERAGE = 50%
LOT MINIMUM OPEN SPACE = 20% LOT MAXIMUM IMPERVIOUS AREA = 80%
- RETENTION AREAS / COMMON AREAS ARE GRANTED AS EASEMENTS TO THE CITY OF PORT ORANGE ALONG WITH THE RIGHT OF ACCESS, INGRESS AND EGRESS, TOGETHER WITH THE PERPETUAL RIGHT TO HARVEST EXCESS STORMWATER / GROUNDWATER AS DEEMED APPROPRIATE IN THE DISCRETION OF THE CITY.
- IN ADDITION TO THE USES AND PURPOSES OTHERWISE STATED ON THIS PLAT, ALL DRAINAGE EASEMENTS ARE GRANTED TO THE CITY OF PORT ORANGE FOR THE BENEFIT OF ACCOMMODATING ALL DRAINAGE AND STORMWATER FROM ADJOINING, OFF-SITE DEDICATED RIGHTS-OF-WAY.
- CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. SHALL OWN AND BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING, IRRIGATION, SIDEWALKS, BIKE PATHS, PEDESTRIAN WALKWAYS AND IMPROVEMENTS CONSTRUCTED WITHIN ALL COMMON AREAS AND THE MEDIAN IN AMBER LANE.
- THIS PLAT IS SUBJECT TO THE CORNERSTONE GROVE PLANNED UNIT DEVELOPMENT MASTER DEVELOPMENT AGREEMENT AS RECORDED IN OFFICIAL RECORDS BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
- THIS PLAT IS SUBJECT TO THE COVENANTS, CONDITIONS AND RESTRICTIONS OF THE CORNERSTONE GROVE HOMEOWNERS ASSOCIATION AS RECORDED IN O.R. BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.

ABBREVIATIONS AND LEGEND:

CA	CENTRAL ANGLE (DELTA)	LB	LICENSED BUSINESS
CB	CHORD BEARING	LC	LICENSED CORPORATION
CH	CHORD	LLC	LIMITED LIABILITY COMPANY
CM	CONCRETE MONUMENT	LS	LICENSED SURVEYOR
D.M.A.E.	DRAINAGE/MAINTENANCE/ACCESS EASEMENT	NO	NUMBER
DWG	DRAWING	P.A.	PROFESSIONAL ASSOCIATION
FAX	FACSIMILE	PRM	PERMANENT REFERENCE MONUMENT
FD	FOUND	PSM	PROFESSIONAL SURVEYOR AND MAPPER
FL	FLORIDA	R	RADIUS
ID	IDENTIFICATION	R/W	RIGHT-OF-WAY
IRC	IRON ROD & CAP	S.J.R.W.M.D.	ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
L	LENGTH	CL	CENTERLINE RIGHT-OF-WAY



11 Coolidge Ave., Ste J Ormond Beach Florida 32174
Voice: 386.405.6797 a1ageoinc@gmail.com
LB # 7967 LS # 6309

SHEET 5 OF 9

CORNERSTONE GROVE

BEING A PORTION OF SECTION 18, TOWNSHIP 16 SOUTH, RANGE 33 EAST, VOLUSIA COUNTY, FLORIDA,

HIDDEN LAKE PHASE IV - B
PLAT BOOK 41, PAGE 55

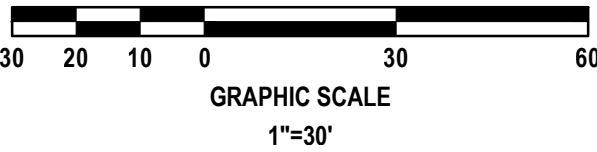
PLAT BOOK PAGE

GENERAL NOTES:

- ☐ FD 4" X 4" CONCRETE MONUMENT
(AS NOTED)
☒ SET 4" X 4" CONCRETE MONUMENT
PRM LB 7967
- 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, WHETHER GRAPHIC OR DIGITAL. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.
- ALL MEASUREMENT DIMENSIONS ON THIS PLAT IS IN U.S. FOOT AND DECIMALS THEREOF.
- ALL MEASUREMENTS REFER TO HORIZONTAL PLANE IN ACCORDANCE WITH THE DEFINITION OF THE UNITED STATES SURVEY FOOT OR METER ADOPTED BY THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY. ALL MEASUREMENTS SHALL USE THE $39.37/12=3.2808333333$ EQUATION FOR CONVERSION FROM A U.S. FOOT TO METERS.
- ACCURACY:
THE BOUNDARY LINEAR ERROR OF CLOSURE DOES NOT EXCEED $1 : 10,000$. THE BOUNDARY ANGULAR ERROR OF CLOSURE DOES NOT EXCEED 15 SECONDS MULTIPLIED BY THE SQUARE ROOT OF THE NUMBER OF ANGLES TURNED.
- ALL LOT LINES ARE RADIAL UNLESS SHOWN OTHERWISE. (NR) DENOTES NON-RADIAL LINES RELATIVE TO CURVES.
- BEARING STRUCTURE (N 56°25'25" E) ALONG THE EASTERLY RIGHT-OF-WAY LINE OF YORKTOWNE BOULEVARD (100' RIGHT-OF-WAY (NOT OPEN), FLORIDA, FOR ANGLE MEASUREMENT ONLY).
- THIS PLAT IS SUBJECT TO ALL EASEMENTS OF RECORD AND RESERVATIONS OF EASEMENTS, INCLUDING BUT NOT LIMITED TO DRAINAGE, MAINTENANCE, UTILITY AND ACCESS EASEMENTS DEDICATED OR GRANTED HEREON WHICH SHALL BE LOCATED AS FOLLOWS EXCEPT AS OTHERWISE NOTED ON THIS PLAT: FRONT LOT LINES (STREET FRONTAGE) 12.00 FEET WIDE. COMMON AREAS (STREET FRONTAGE) 12.00 FEET WIDE.
- UTILITIES INCLUDE BUT ARE NOT LIMITED TO SANITARY SEWER, POTABLE WATER, RECLAIMED WATER, STORM DRAINAGE, ELECTRIC, TELEPHONE, CABLE TELEVISION, SECURITY, TELECOMMUNICATIONS, FIBER OPTIC AND NATURAL GAS.
- UTILITY EASEMENTS PROVIDED ON THIS PLAT INCLUDE 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.
- THE COMMON AREAS GRANTED TO CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. BY THIS PLAT SHALL BE SUBJECT TO EASEMENTS AS SHOWN OR DESCRIBED HEREON OR GRANTED IN ACCORDANCE WITH CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. COVENANTS AND RESTRICTIONS. THE GRANTING OF SUCH COMMON AREAS IS NOT INTENDED TO GRANT ANY RIGHT TO THE GENERAL PUBLIC.
- CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. SHALL BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE DRAINAGE SYSTEM SERVING THE AREA WITHIN THE BOUNDARIES OF THE PLAT, AS DEPICTED ON THE STORMWATER MANAGEMENT PLAN APPROVED FOR THIS DEVELOPMENT BY THE CITY OF PORT ORANGE, FLORIDA. IN THE EVENT THE ASSOCIATION, ITS EMPLOYEES OR ASSIGNS FAILS TO PERFORM THE MAINTENANCE, REPAIR OR REPLACEMENT, AS NECESSARY, OF THE STORMWATER RETENTION AND DRAINAGE FACILITIES LOCATED WITHIN THE BOUNDARY OF THIS PLAT (PROPERTY), THE CITY OF PORT ORANGE SHALL HAVE THE RIGHT TO ENTER UPON THE COMMON AREAS AND DESIGNATED EASEMENT AREAS OF THE PROPERTY AND PROVIDE MAINTENANCE, REPAIR, OR REPLACEMENT OF THE STORMWATER DRAINAGE FACILITY AND SHALL HAVE THE RIGHT TO LIEN ALL OWNERS OF RECORD IN THE PROPERTY FOR THE COST OF SUCH MAINTENANCE, REPAIR, OR REPLACEMENT AS THE CITY MAY DEEM NECESSARY. IN THE EVENT OF TERMINATION, DISSOLUTION, OR FINAL LIQUIDATION OF THE ASSOCIATION, THE RESPONSIBILITY FOR THE OPERATION AND MAINTENANCE OF THE SURFACE WATER OR STORMWATER MANAGEMENT SYSTEM WILL BE TRANSFERRED TO AND ACCEPTED BY AN ENTITY WHICH COMPLIES WITH SECTION 40C-42.027, F.A.C. AND BE APPROVED BY THE SAINT JOHNS RIVER WATER MANAGEMENT DISTRICT PRIOR TO SUCH TERMINATION, DISSOLUTION, OR LIQUIDATION.
- THE ARTICLE OF INCORPORATION FOR THE CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. ARE RECORDED IN OFFICIAL RECORDS BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
- BUILDING SETBACK REQUIREMENTS:
FRONT - 13 FEET (FOR FRONT UNITS ONLY).
REAR - 0 FEET FOR ATTACHED UNITS, 15 FEET BETWEEN BUILDINGS.
SIDE - 0 FEET FOR ATTACHED UNITS, 15 FEET BETWEEN BUILDINGS.
SIDE CORNER - EQUAL TO FRONT SETBACK.

MAXIMUM BUILDING HEIGHT = 35'
MINIMUM COMMON OPEN SPACE = 60% MAXIMUM BUILDING LOT COVERAGE = 50%
LOT MINIMUM OPEN SPACE = 20% LOT MAXIMUM IMPERVIOUS AREA = 80%
- RETENTION AREAS / COMMON AREAS ARE GRANTED AS EASEMENTS TO THE CITY OF PORT ORANGE ALONG WITH THE RIGHT OF ACCESS, INGRESS AND EGRESS, TOGETHER WITH THE PERPETUAL RIGHT TO HARVEST EXCESS STORMWATER / GROUNDWATER AS DEEMED APPROPRIATE IN THE DISCRETION OF THE CITY.
- IN ADDITION TO THE USES AND PURPOSES OTHERWISE STATED ON THIS PLAT, ALL DRAINAGE EASEMENTS ARE GRANTED TO THE CITY OF PORT ORANGE FOR THE BENEFIT OF ACCOMMODATING ALL DRAINAGE AND STORMWATER FROM ADJOINING, OFF-SITE DEDICATED RIGHTS-OF-WAY.
- CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. SHALL OWN AND BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING, IRRIGATION, SIDEWALKS, BIKE PATHS, PEDESTRIAN WALKWAYS AND IMPROVEMENTS CONSTRUCTED WITHIN ALL COMMON AREAS AND THE MEDIAN IN AMBER LANE.
- THIS PLAT IS SUBJECT TO THE CORNERSTONE GROVE PLANNED UNIT DEVELOPMENT MASTER DEVELOPMENT AGREEMENT AS RECORDED IN OFFICIAL RECORDS BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
- THIS PLAT IS SUBJECT TO THE COVENANTS, CONDITIONS AND RESTRICTIONS OF THE CORNERSTONE GROVE HOMEOWNERS ASSOCIATION AS RECORDED IN O.R. BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.

CURVE	CA	R	CH BEARING	CH	L
C1	90°00'48"	25.00'	N 44°27'57" E	35.62'	39.64'
C2	89°09'12"	25.00'	N 45°32'03" W	35.09'	38.90'
C3	90°00'00"	25.00'	N 44°02'33" E	35.36'	39.27'
C4	90°00'00"	25.00'	N 45°57'27" W	35.36'	39.27'
C5	90°00'00"	25.00'	N 78°34'35" E	35.36'	39.27'
C6	90°00'00"	25.00'	S 11°25'25" E	35.36'	39.27'
C7	90°00'00"	25.00'	S 78°34'35" W	35.36'	39.27'
C8	90°00'00"	25.00'	N 11°25'25" W	35.36'	39.27'
C9	90°00'00"	25.00'	S 78°34'35" W	35.36'	39.27'
C10	90°00'00"	25.00'	N 11°25'25" W	35.36'	39.27'
C11	58°40'04"	25.00'	S 28°22'35" W	24.49'	25.60'
C12	32°10'44"	25.00'	S 73°47'59" W	13.86'	14.04'
C13	1°17'14"	200.00'	S 89°14'44" W	4.49'	4.49'
C14	13°47'44"	200.00'	N 81°42'15" E	48.04'	48.16'
C15	14°46'57"	200.00'	N 67°24'55" E	51.46'	51.60'
C16	12°02'17"	200.00'	N 54°00'17" E	41.94'	42.02'
C17	13°46'24"	200.00'	N 41°05'57" E	47.96'	48.08'
C18	0°38'09"	200.00'	S 33°53'40" W	2.22'	2.22'
C19	31°19'56"	25.00'	S 49°14'33" W	13.50'	13.67'
C20	58°40'04"	25.00'	N 85°45'27" W	24.49'	25.60'
C21	58°40'04"	25.00'	S 27°05'23" E	24.49'	25.60'
C22	31°19'56"	25.00'	S 17°54'37" W	13.50'	13.67'
C23	13°08'52"	150.00'	N 40°09'01" E	34.35'	34.42'
C24	42°26'55"	150.00'	S 67°56'55" W	108.61'	111.13'
C25	0°42'58"	150.00'	S 89°31'52" W	1.88'	1.88'
C26	30°29'08"	25.00'	N 74°52'05" W	13.15'	13.30'
C27	58°40'04"	25.00'	S 30°17'29" E	24.49'	25.60'
C28	73°30'08"	25.00'	N 70°00'45" E	30.03'	32.22'
C29	16°39'48"	25.00'	S 64°45'19" E	7.25'	7.27'
C30	9°05'05"	75.00'	N 38°07'08" E	11.88'	11.89'
C31	46°22'52"	75.00'	S 65°51'07" W	59.07'	60.71'



TRACT A
D.M.A.E.
(COMMON AREA)

CONSERVATION
EASEMENT AREA 1

25' STATIC
WETLAND
BUFFER

TRACT B
(COMMON AREA)

20' DRAINAGE
EASEMENT

20' DRAINAGE
EASEMENT

20' DRAINAGE
EASEMENT

20' DRAINAGE
EASEMENT

20' DRAINAGE
EASEMENT

20' DRAINAGE
EASEMENT

20' DRAINAGE
EASEMENT

20' DRAINAGE
EASEMENT

20' DRAINAGE
EASEMENT

20' DRAINAGE
EASEMENT

20' DRAINAGE
EASEMENT

20' DRAINAGE
EASEMENT

20' DRAINAGE
EASEMENT

20' DRAINAGE
EASEMENT

20' DRAINAGE
EASEMENT

20' DRAINAGE
EASEMENT

20' DRAINAGE
EASEMENT

20' DRAINAGE
EASEMENT

ABBREVIATIONS AND LEGEND:

CA	CENTRAL ANGLE (DELTA)	LB	LICENSED BUSINESS
CB	CHORD BEARING	LC	LICENSED CORPORATION
CH	CHORD	LLC	LIMITED LIABILITY COMPANY
CM	CONCRETE MONUMENT	LS	LICENSED SURVEYOR
D.M.A.E.	DRAINAGE/MAINTENANCE/ACCESS EASEMENT	NO	NUMBER
DWG	DRAWING	P.A.	PROFESSIONAL ASSOCIATION
FAX	FACSIMILE	PRM	PERMANENT REFERENCE MONUMENT
FD	FOUND	PSM	PROFESSIONAL SURVEYOR AND MAPPER
FL	FLORIDA	R	RADIUS
ID	IDENTIFICATION	R/W	RIGHT-OF-WAY
IRC	IRON ROD & CAP	S.J.R.W.M.D.	ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
L	LENGTH	CL	CENTERLINE RIGHT-OF-WAY

A1A GEO
LAND SURVEYING CONSTRUCTION LAYOUT

11 Coolidge Ave., Ste J Ormond Beach Florida 32174
Voice: 386.405.6797 a1ageoinc@gmail.com
LB # 7967 LS # 6309

SHEET 6 OF 9

CORNERSTONE GROVE

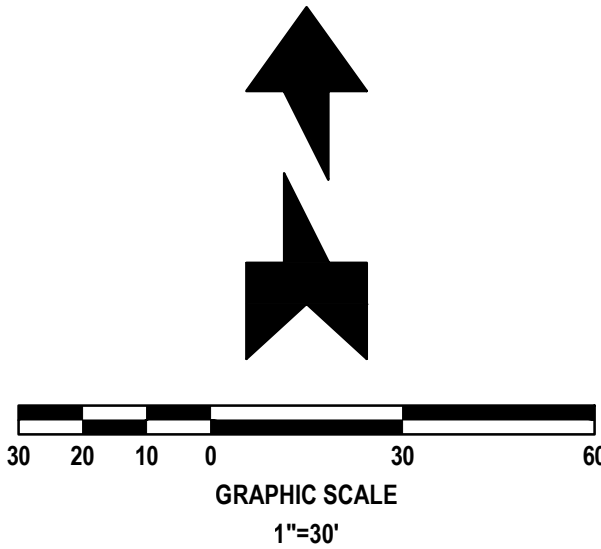
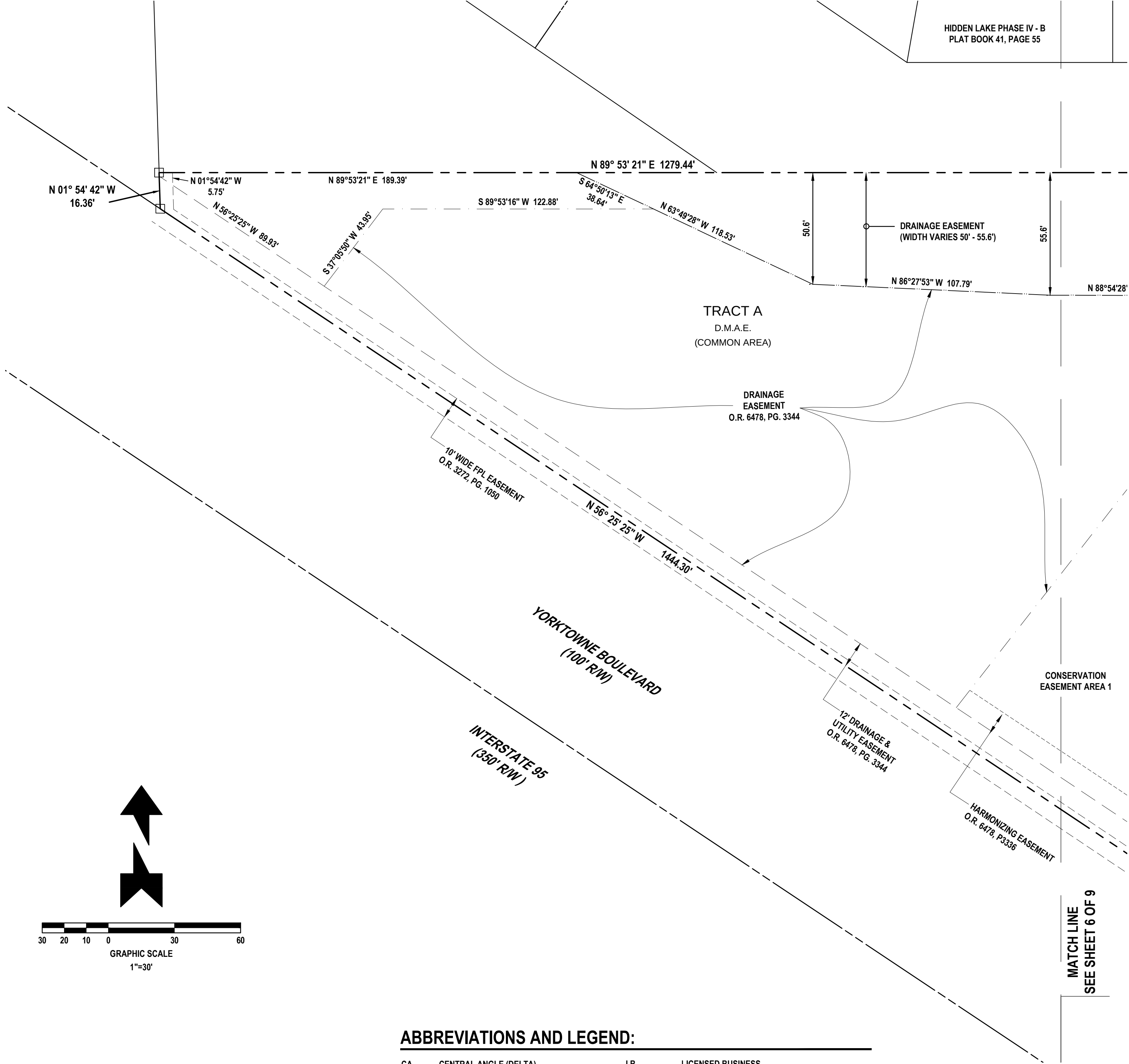
BEING A PORTION OF SECTION 18, TOWNSHIP 16 SOUTH, RANGE 33 EAST, VOLUSIA COUNTY, FLORIDA,

PLAT BOOK _____ PAGE _____

GENERAL NOTES:

- ☐ FD 4" X 4" CONCRETE MONUMENT
(AS NOTED)
☒ SET 4" X 4" CONCRETE MONUMENT
PRM LB 7967
- 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, WHETHER GRAPHIC OR DIGITAL. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.
- ALL MEASUREMENT DIMENSIONS ON THIS PLAT IS IN U.S. FOOT AND DECIMALS THEREOF.
- ALL MEASUREMENTS REFER TO HORIZONTAL PLANE IN ACCORDANCE WITH THE DEFINITION OF THE UNITED STATES SURVEY FOOT OR METER ADOPTED BY THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY. ALL MEASUREMENTS SHALL USE THE $39.37/12 = 3.2808333333$ EQUATION FOR CONVERSION FROM A U.S. FOOT TO METERS.
- ACCURACY:
THE BOUNDARY LINEAR ERROR OF CLOSURE DOES NOT EXCEED $1 : 10,000$. THE BOUNDARY ANGULAR ERROR OF CLOSURE DOES NOT EXCEED 15 SECONDS MULTIPLIED BY THE SQUARE ROOT OF THE NUMBER OF ANGLES TURNED.
- ALL LOT LINES ARE RADIAL UNLESS SHOWN OTHERWISE. (NR) DENOTES NON-RADIAL LINES RELATIVE TO CURVES.
- BEARING STRUCTURE (N 56°25'25" E) ALONG THE EASTERLY RIGHT-OF-WAY LINE OF YORKTOWNE BOULEVARD (100' RIGHT-OF-WAY (NOT OPEN), FLORIDA, FOR ANGLE MEASUREMENT ONLY).
- THIS PLAT IS SUBJECT TO ALL EASEMENTS OF RECORD AND RESERVATIONS OF EASEMENTS, INCLUDING BUT NOT LIMITED TO DRAINAGE, MAINTENANCE, UTILITY AND ACCESS EASEMENTS DEDICATED OR GRANTED HEREON WHICH SHALL BE LOCATED AS FOLLOWS EXCEPT AS OTHERWISE NOTED ON THIS PLAT: FRONT LOT LINES (STREET FRONTAGE) 12.00 FEET WIDE. COMMON AREAS (STREET FRONTAGE) 12.00 FEET WIDE.
- UTILITIES INCLUDE BUT ARE NOT LIMITED TO SANITARY SEWER, POTABLE WATER, RECLAIMED WATER, STORM DRAINAGE, ELECTRIC, TELEPHONE, CABLE TELEVISION, SECURITY, TELECOMMUNICATIONS, FIBER OPTIC AND NATURAL GAS.
- UTILITY EASEMENTS PROVIDED ON THIS PLAT INCLUDE 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.
- THE COMMON AREAS GRANTED TO CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. BY THIS PLAT SHALL BE SUBJECT TO EASEMENTS AS SHOWN OR DESCRIBED HEREON OR GRANTED IN ACCORDANCE WITH CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. COVENANTS AND RESTRICTIONS. THE GRANTING OF SUCH COMMON AREAS IS NOT INTENDED TO GRANT ANT RIGHT TO THE GENERAL PUBLIC.
- CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. SHALL BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE DRAINAGE SYSTEM SERVING THE AREA WITHIN THE BOUNDARIES OF THE PLAT, AS DEPICTED ON THE STORMWATER MANAGEMENT PLAN APPROVED FOR THIS DEVELOPMENT BY THE CITY OF PORT ORANGE, FLORIDA. IN THE EVENT THE ASSOCIATION, ITS EMPLOYEES OR ASSIGNS FAILS TO PERFORM THE MAINTENANCE, REPAIR OR REPLACEMENT, AS NECESSARY, OF THE STORMWATER RETENTION AND DRAINAGE FACILITIES LOCATED WITHIN THE BOUNDARY OF THIS PLAT (PROPERTY), THE CITY OF PORT ORANGE SHALL HAVE THE RIGHT TO ENTER UPON THE COMMON AREAS AND DESIGNATED EASEMENT AREAS OF THE PROPERTY AND PROVIDE MAINTENANCE, REPAIR, OR REPLACEMENT OF THE STORMWATER DRAINAGE FACILITY AND SHALL HAVE THE RIGHT TO LIEN ALL OWNERS OF RECORD IN THE PROPERTY FOR THE COST OF SUCH MAINTENANCE, REPAIR, OR REPLACEMENT AS THE CITY MAY DEEM NECESSARY. IN THE EVENT OF TERMINATION, DISSOLUTION, OR FINAL LIQUIDATION OF THE ASSOCIATION, THE RESPONSIBILITY FOR THE OPERATION AND MAINTENANCE OF THE SURFACE WATER OR STORMWATER MANAGEMENT SYSTEM WILL BE TRANSFERRED TO AND ACCEPTED BY AN ENTITY WHICH COMPLIES WITH SECTION 40C-42.027, F.A.C. AND BE APPROVED BY THE SAINT JOHNS RIVER WATER MANAGEMENT DISTRICT PRIOR TO SUCH TERMINATION, DISSOLUTION, OR LIQUIDATION.
- THE ARTICLE OF INCORPORATION FOR THE CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. ARE RECORDED IN OFFICIAL RECORDS BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
- BUILDING SETBACK REQUIREMENTS:
FRONT - 13 FEET (FOR FRONT UNITS ONLY).
REAR - 0 FEET FOR ATTACHED UNITS, 15 FEET BETWEEN BUILDINGS.
SIDE - 0 FEET FOR ATTACHED UNITS, 15 FEET BETWEEN BUILDINGS.
SIDE CORNER - EQUAL TO FRONT SETBACK.

MAXIMUM BUILDING HEIGHT = 35'
MINIMUM COMMON OPEN SPACE = 60% MAXIMUM BUILDING LOT COVERAGE = 50%
LOT MINIMUM OPEN SPACE = 20% LOT MAXIMUM IMPERVIOUS AREA = 80%
- RETENTION AREAS / COMMON AREAS ARE GRANTED AS EASEMENTS TO THE CITY OF PORT ORANGE ALONG WITH THE RIGHT OF ACCESS, INGRESS AND EGRESS, TOGETHER WITH THE PERPETUAL RIGHT TO HARVEST EXCESS STORMWATER / GROUNDWATER AS DEEMED APPROPRIATE IN THE DISCRETION OF THE CITY.
- IN ADDITION TO THE USES AND PURPOSES OTHERWISE STATED ON THIS PLAT, ALL DRAINAGE EASEMENTS ARE GRANTED TO THE CITY OF PORT ORANGE FOR THE BENEFIT OF ACCOMMODATING ALL DRAINAGE AND STORMWATER FROM ADJOINING, OFF-SITE DEDICATED RIGHTS-OF-WAY.
- CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. SHALL OWN AND BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING, IRRIGATION, SIDEWALKS, BIKE PATHS, PEDESTRIAN WALKWAYS AND IMPROVEMENTS CONSTRUCTED WITHIN ALL COMMON AREAS AND THE MEDIAN IN AMBER LANE.
- THIS PLAT IS SUBJECT TO THE CORNERSTONE GROVE PLANNED UNIT DEVELOPMENT MASTER DEVELOPMENT AGREEMENT AS RECORDED IN OFFICIAL RECORDS BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
- THIS PLAT IS SUBJECT TO THE COVENANTS, CONDITIONS AND RESTRICTIONS OF THE CORNERSTONE GROVE HOMEOWNERS ASSOCIATION AS RECORDED IN O.R. BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.



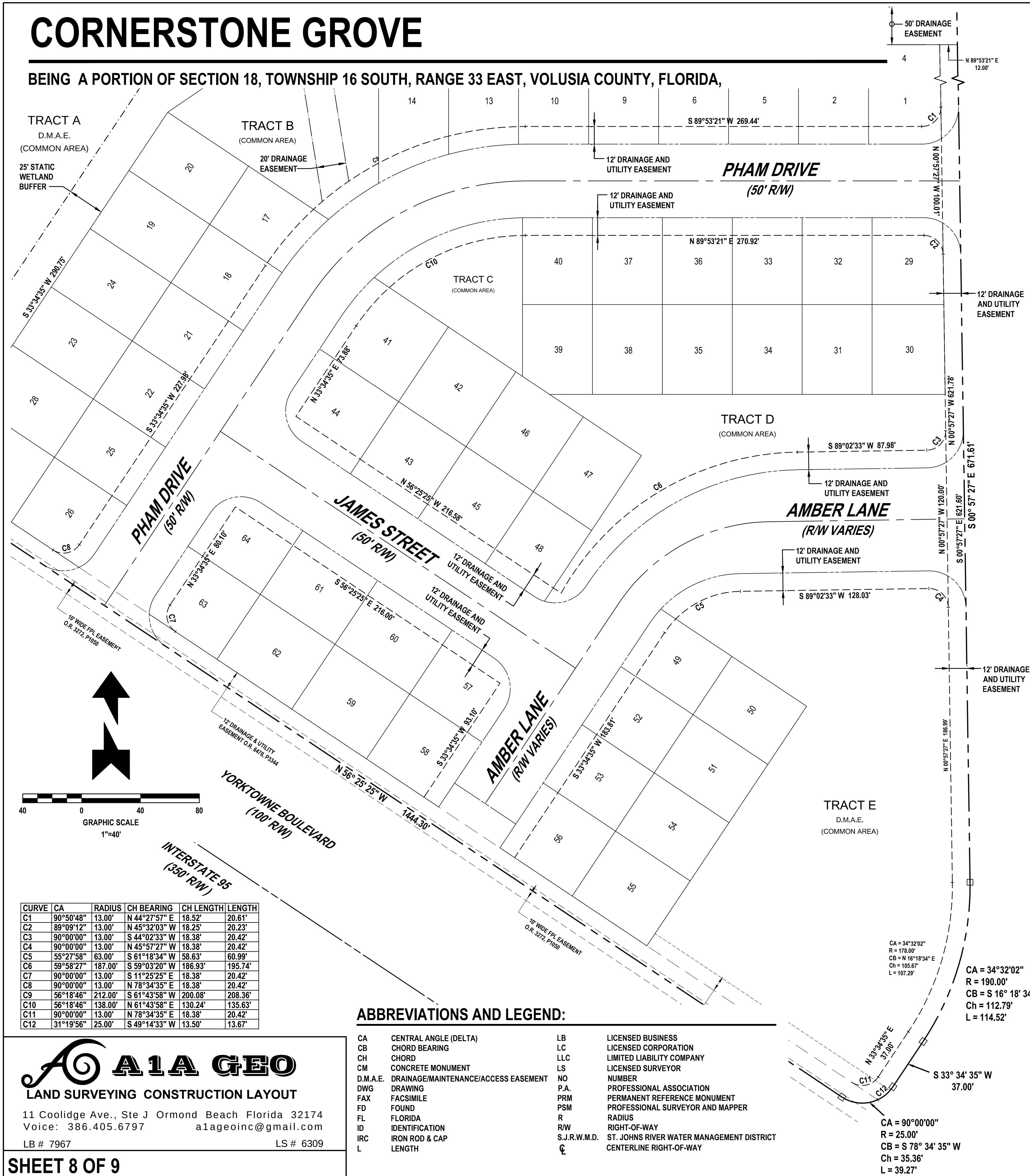
ABBREVIATIONS AND LEGEND:

CA	CENTRAL ANGLE (DELTA)	LB	LICENSED BUSINESS
CB	CHORD BEARING	LC	LICENSED CORPORATION
CH	CHORD	LLC	LIMITED LIABILITY COMPANY
CM	CONCRETE MONUMENT	LS	LICENSED SURVEYOR
D.M.A.E.	DRAINAGE/MAINTENANCE/ACCESS EASEMENT	NO	NUMBER
DWG	DRAWING	P.A.	PROFESSIONAL ASSOCIATION
FAX	FACSIMILE	PRM	PERMANENT REFERENCE MONUMENT
FD	FOUND	PSM	PROFESSIONAL SURVEYOR AND MAPPER
FL	FLORIDA	R	RADIUS
ID	IDENTIFICATION	R/W	RIGHT-OF-WAY
IRC	IRON ROD & CAP	S.J.R.W.M.D.	ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
L	LENGTH	CL	CENTERLINE RIGHT-OF-WAY

A1A GEO
LAND SURVEYING CONSTRUCTION LAYOUT

11 Coolidge Ave., Ste J Ormond Beach Florida 32174
Voice: 386.405.6797 a1ageoinc@gmail.com
LB # 7967 LS # 6309

BEING A PORTION OF SECTION 18, TOWNSHIP 16 SOUTH, RANGE 33 EAST, VOLUSIA COUNTY, FLORIDA,



UTILITY EASEMENT DETAIL

☐ FD 4" X 4" CONCRETE MONUMENT
(AS NOTED)

☒ SET 4" X 4" CONCRETE MONUMENT
PER LB 7967

2. 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. WHETHER GRAPHIC OR DIGITAL, THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.
3. ALL MEASUREMENT DIMENSIONS ON THIS PLAT IS IN U.S. FOOT AND DECIMALS THEREOF.
4. ALL MEASUREMENTS REFER TO HORIZONTAL PLANE IN ACCORDANCE WITH THE DEFINITION OF THE UNITED STATES SURVEY FOOT OR METER ADOPTED BY THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY. ALL MEASUREMENTS SHALL USE THE 39.3712=5.2808333333 EQUATION FOR CONVERSION FROM A U.S. FOOT TO METERS.
5. ACCURACY:
THE BOUNDARY LINEAR ERROR OF CLOSURE DOES NOT EXCEED 1 : 10,000. THE BOUNDARY ANGULAR ERROR OF CLOSURE DOES NOT EXCEED 15 SECONDS MULTIPLIED BY THE SQUARE ROOT OF THE NUMBER OF ANGLES TURNED.
6. ALL LOT LINES ARE RADIAL UNLESS SHOWN OTHERWISE. (NR) DENOTES NON-RADIAL LINES RELATIVE TO CURVES.
7. BEARING STRUCTURE (N 56°25'25" E) ALONG THE EASTERLY RIGHT-OF-WAY LINE OF YORKTOWN BOULEVARD (100' RIGHT-OF-WAY(NOT OPEN), FLORIDA, FOR ANGLE MEASUREMENT ONLY.
8. THIS PLAT IS SUBJECT TO ALL EASEMENTS OF RECORD AND RESERVATIONS OF EASEMENTS INCLUDING BUT NOT LIMITED TO DRAINAGE, MAINTENANCE, UTILITY AND ACCESS EASEMENTS DEDICATED OR GRANTED HEREON WHICH SHALL BE LOCATED AS FOLLOWS EXCEPT AS OTHERWISE NOTED ON THIS PLAT: FRONT LOT LINES (STREET FRONTAGE) 12.00 FEET WIDE COMMON AREAS (STREET FRONTAGE) 12.00 FEET WIDE.
9. UTILITIES INCLUDE BUT ARE NOT LIMITED TO SANITARY SEWER, POTABLE WATER, RECLAIMED WATER, STORM DRAINAGE, ELECTRIC, TELEPHONE, CABLE TELEVISION, SECURITY TELECOMMUNICATIONS, FIBER OPTIC AND NATURAL GAS.
10. UTILITY EASEMENTS PROVIDED ON THIS PLAT INCLUDE 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.
11. THE COMMON AREAS GRANTED TO CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. BY THIS PLAT SHALL BE SUBJECT TO EASEMENTS AS SHOWN OR DESCRIBED HEREON OR GRANTED IN ACCORDANCE WITH CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. COVENANTS AND RESTRICTIONS. THE GRANTING OF SUCH COMMON AREAS IS NOT INTENDED TO GRANT ANY RIGHT TO THE GENERAL PUBLIC.
12. CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. SHALL BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE DRAINAGE SYSTEM SERVING THE AREA WITHIN THE BOUNDARIES OF THE PLAT, AS DEPICTED ON THE STORMWATER MANAGEMENT PLAN APPROVED FOR THIS DEVELOPMENT BY THE CITY OF PORT ORANGE, FLORIDA. IN THE EVENT THE ASSOCIATION, ITS EMPLOYEES OR ASSIGNS FAILS TO PERFORM THE MAINTENANCE, REPAIR OR REPLACEMENT, AS NECESSARY, OF THE STORMWATER RETENTION AND DRAINAGE FACILITIES LOCATED WITHIN THE BOUNDARY OF THIS PLAT (PROPERTY), THE CITY OF PORT ORANGE SHALL HAVE THE RIGHT TO ENTER UPON THE COMMON AREAS AND DESIGNATED EASEMENT AREAS OF THE PROPERTY AND PROVIDE MAINTENANCE, REPAIR, OR REPLACEMENT OF THE STORMWATER DRAINAGE FACILITY AND SHALL HAVE THE RIGHT TO LIEN ALL OWNERS OF RECORD IN THE PROPERTY FOR THE COST OF SUCH MAINTENANCE, REPAIR, OR REPLACEMENT AS THE CITY MAY DEEM NECESSARY. IN THE EVENT OF TERMINATION, DISSOLUTION, OR FINAL LIQUIDATION OF THE ASSOCIATION, THE RESPONSIBILITY FOR THE OPERATION AND MAINTENANCE OF THE SURFACE WATER OR STORMWATER MANAGEMENT SYSTEM WILL BE TRANSFERRED TO AND ACCEPTED BY AN ENTITY WHICH COMPLIES WITH SECTION 406-402.027, F.A.C. AND BE APPROVED BY THE SAINT JOHNS RIVER WATER MANAGEMENT DISTRICT PRIOR TO SUCH TERMINATION, DISSOLUTION, OR LIQUIDATION.
13. THE ARTICLE OF INCORPORATION FOR THE CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. ARE RECORDED IN OFFICIAL RECORDS BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
14. BUILDING SETBACK REQUIREMENTS:
FRONT - 13 FEET (FOR FRONT UNITS ONLY).
REAR - 0 FEET FOR ATTACHED UNITS, 15 FEET BETWEEN BUILDINGS.
SIDE - 0 FEET FOR ATTACHED UNITS, 15 FEET BETWEEN BUILDINGS.
SIDE CORNER - EQUAL TO FRONT SETBACK.

MINIMUM OPEN SPACE = 60% BUILDING HEIGHT = 35'	MAXIMUM BUILDING COVERAGE = 50%	MAXIMUM
15. RETENTION AREAS / COMMON AREAS ARE GRANTED AS EASEMENTS TO THE CITY OF PORT ORANGE ALONG WITH THE RIGHT OF ACCESS, INGRESS AND EGRESS, TOGETHER WITH THE PERPETUAL RIGHT TO HARVEST EXCESS STORMWATER / GROUNDWATER AS DEEMED APPROPRIATE IN THE DISCRETION OF THE CITY.		
16. IN ADDITION TO THE USES AND PURPOSES OTHERWISE STATED ON THIS PLAT, ALL DRAINAGE EASEMENTS ARE GRANTED TO THE CITY OF PORT ORANGE FOR THE BENEFIT OF ACCOMMODATING ALL DRAINAGE AND STORMWATER FROM ADJOINING, OFF-SITE DEDICATED RIGHTS-OF-WAY.		
17. CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. SHALL OWN AND BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING, IRRIGATION, SIDEWALKS, BIKE PATHS, PEDESTRIAN WALKWAYS AND IMPROVEMENTS CONSTRUCTED WITHIN ALL COMMON AREAS AND THE MEDIAN IN AMBER LANE.		
18. THIS PLAT IS SUBJECT TO THE CORNERSTONE GROVE PLANNED UNIT DEVELOPMENT MASTER DEVELOPMENT AGREEMENT AS RECORDED IN OFFICIAL RECORDS BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.		
19. THIS PLAT IS SUBJECT TO THE COVENANTS, CONDITIONS AND RESTRICTIONS OF THE CORNERSTONE GROVE HOMEOWNERS ASSOCIATION AS RECORDED IN O.R. BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.		

CURVE	CA	RADIUS	CH BEARING	CH LENGTH	LENGTH
C1	90°50'48"	13.00"	S 44°27'57"E	18.52'	20.61'
C2	89°09'12"	13.00"	S 45°32'03"W	18.25'	20.23'
C3	90°00'00"	13.00"	S 44°02'33"E	18.38'	20.42'
C4	90°00'00"	13.00"	S 45°57'27"W	18.38'	20.42'
C5	52°27'58"	63.00"	S 61°18'34"W	58.63'	60.99'
C6	59°52'27"	187.00"	S 59°03'20"W	186.93'	193.74'
C7	90°00'00"	13.00"	S 31°32'5"E	18.38'	20.42'
C8	90°00'00"	13.00"	S 31°32'5"E	18.38'	20.42'
C9	56°18'46"	212.00"	S 61°43'58"W	200.08'	208.36'
C10	56°18'46"	138.00"	N 61°43'58"E	130.24'	135.63'
C11	90°00'00"	13.00"	N 78°34'5"E	18.38'	20.42'
C12	31°19'56"	25.00"	S 49°14'33"W	13.50'	13.67'

ABBREVIATIONS AND LEGEND:

CA	CENTRAL ANGLE (DELTA)	LB	LICENSED BUSINESS
CB	CHORD BEARING	LC	LICENSED CORPORATION
CH	CHORD	LCL	LIMITED LIABILITY COMPANY
CM	CONCRETE MONUMENT	LS	LICENSED SURVEYOR
D.M.A.E.	DRAINAGE/MAINTENANCE/ACCESS EASEMENT	NO	NUMBER
DWG	DRAWING	P.A.	PROFESSIONAL ASSOCIATION
FAX	FACSIMILE	PRM	PERMANENT REFERENCE MONUMENT
FD	FOUND	PSM	PROFESSIONAL SURVEYOR AND MAPPER
FL	FLORIDA	R	RADIUS
ID	IDENTIFICATION	R/W	RIGHT-OF-WAY
IRC	IRON ROD & CAP	S.J.R.W.M.D.	ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
L	LENGTH	C	CENTERLINE RIGHT-OF-WAY

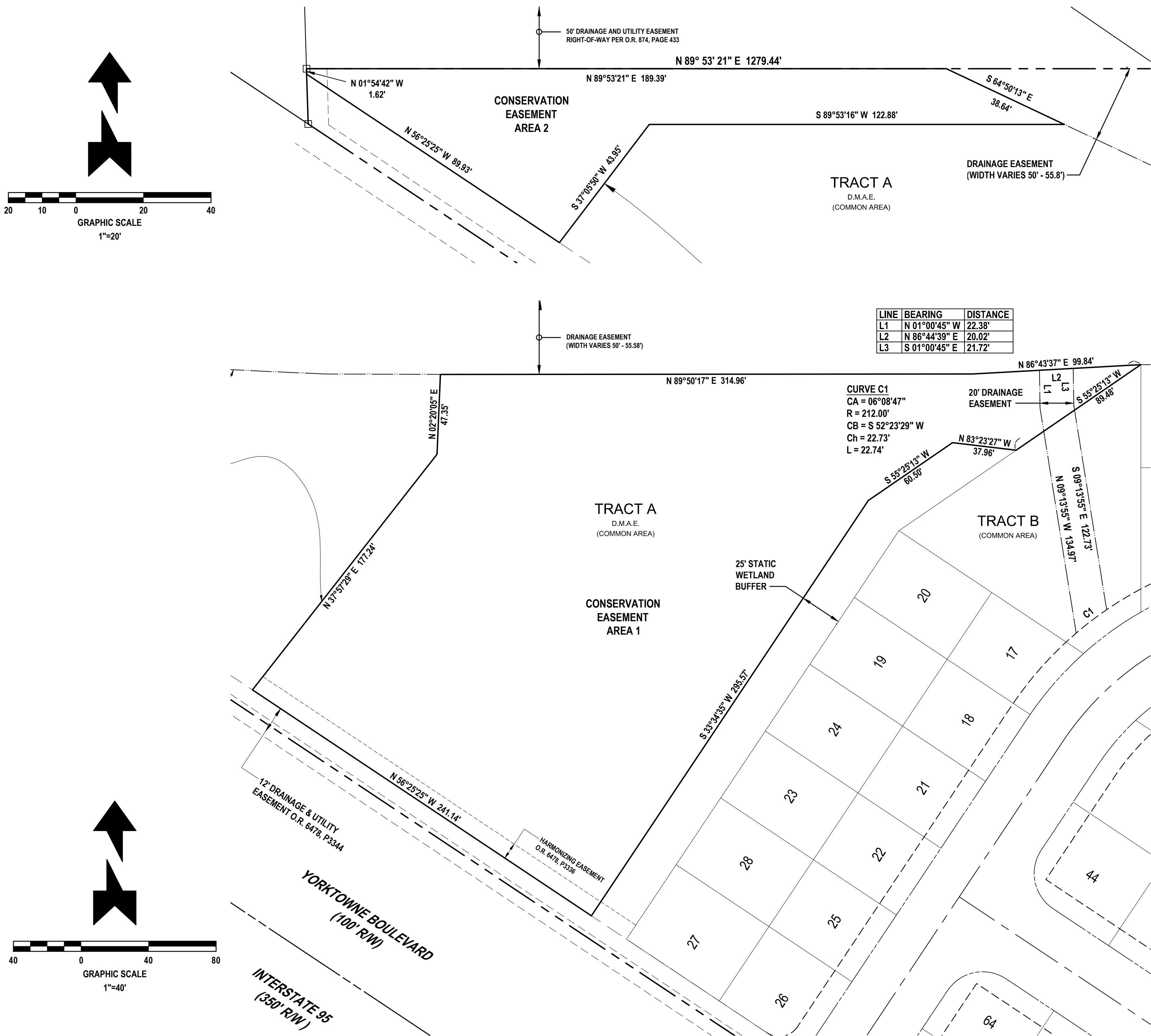
 **A1A GEO**
LAND SURVEYING CONSTRUCTION LAYOUT

11 Coolidge Ave., Ste J Ormond Beach Florida 32174
Voice: 386.405.6797 a1ageoinc@gmail.com

LB # 7967 LS # 6309

CORNERSTONE GROVE

BEING A PORTION OF SECTION 18, TOWNSHIP 16 SOUTH, RANGE 33 EAST, VOLUSIA COUNTY, FLORIDA,



ABBREVIATIONS AND LEGEND:

CA	CENTRAL ANGLE (DELTA)	LB	LICENSED BUSINESS
CB	CHORD BEARING	LC	LICENSED CORPORATION
CH	CHORD	LLC	LIMITED LIABILITY COMPANY
CM	CONCRETE MONUMENT	LS	LICENSED SURVEYOR
D.M.A.E.	DRAINAGE/MAINTENANCE/ACCESS EASEMENT	NO	NUMBER
DWG	DRAWING	P.A.	PROFESSIONAL ASSOCIATION
FAX	FACSIMILE	PRM	PERMANENT REFERENCE MONUMENT
FD	FOUND	PSM	PROFESSIONAL SURVEYOR AND MAPPER
FL	FLORIDA	R	RADIUS
ID	IDENTIFICATION	R/W	RIGHT-OF-WAY
IRC	IRON ROD & CAP	S.J.R.W.M.D.	ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
L	LENGTH	CL	CENTERLINE RIGHT-OF-WAY

PLAT BOOK _____ PAGE _____

CONSERVATION / DRAINAGE EASEMENT DETAILS

GENERAL NOTES:

- ☐ FD 4" X 4" CONCRETE MONUMENT
(AS NOTED)
☒ SET 4" X 4" CONCRETE MONUMENT
PRM LB 7967
- 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, WHETHER GRAPHIC OR DIGITAL. THERE MAY BE ADDITIONAL RESTRICTIONS THAT ARE NOT RECORDED ON THIS PLAT THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY.
- ALL MEASUREMENT DIMENSIONS ON THIS PLAT IS IN U.S. FOOT AND DECIMALS THEREOF.
- ALL MEASUREMENTS REFER TO HORIZONTAL PLANE IN ACCORDANCE WITH THE DEFINITION OF THE UNITED STATES SURVEY FOOT OR METER ADOPTED BY THE NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY. ALL MEASUREMENTS SHALL USE THE $39.37/12=3.2808333333$ EQUATION FOR CONVERSION FROM A U.S. FOOT TO METERS.
- ACCURACY:
THE BOUNDARY LINEAR ERROR OF CLOSURE DOES NOT EXCEED $1 : 10,000$. THE BOUNDARY ANGULAR ERROR OF CLOSURE DOES NOT EXCEED 15 SECONDS MULTIPLIED BY THE SQUARE ROOT OF THE NUMBER OF ANGLES TURNED.
- ALL LOT LINES ARE RADIAL UNLESS SHOWN OTHERWISE. (NR) DENOTES NON-RADIAL LINES RELATIVE TO CURVES.
- BEARING STRUCTURE (N 56°25'25" E) ALONG THE EASTERLY RIGHT-OF-WAY LINE OF YORKTOWNE BOULEVARD (100' RIGHT-OF-WAY (NOT OPEN), FLORIDA, FOR ANGLE MEASUREMENT ONLY).
- THIS PLAT IS SUBJECT TO ALL EASEMENTS OF RECORD AND RESERVATIONS OF EASEMENTS, INCLUDING BUT NOT LIMITED TO DRAINAGE, MAINTENANCE, UTILITY AND ACCESS EASEMENTS DEDICATED OR GRANTED HEREON WHICH SHALL BE LOCATED AS FOLLOWS EXCEPT AS OTHERWISE NOTED ON THIS PLAT: FRONT LOT LINES (STREET FRONTAGE) 12.00 FEET WIDE. COMMON AREAS (STREET FRONTAGE) 12.00 FEET WIDE.
- UTILITIES INCLUDE BUT ARE NOT LIMITED TO SANITARY SEWER, POTABLE WATER, RECLAIMED WATER, STORM DRAINAGE, ELECTRIC, TELEPHONE, CABLE TELEVISION, SECURITY, TELECOMMUNICATIONS, FIBER OPTIC AND NATURAL GAS.
- UTILITY EASEMENTS PROVIDED ON THIS PLAT INCLUDE 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.
- THE COMMON AREAS GRANTED TO CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. BY THIS PLAT SHALL BE SUBJECT TO EASEMENTS AS SHOWN OR DESCRIBED HEREON OR GRANTED IN ACCORDANCE WITH CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. COVENANTS AND RESTRICTIONS. THE GRANTING OF SUCH COMMON AREAS IS NOT INTENDED TO GRANT ANY RIGHT TO THE GENERAL PUBLIC.
- CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. SHALL BE RESPONSIBLE FOR THE OPERATION AND MAINTENANCE OF THE DRAINAGE SYSTEM SERVING THE AREA WITHIN THE BOUNDARIES OF THE PLAT, AS DEPICTED ON THE STORMWATER MANAGEMENT PLAN APPROVED FOR THIS DEVELOPMENT BY THE CITY OF PORT ORANGE, FLORIDA. IN THE EVENT THE ASSOCIATION, ITS EMPLOYEES OR ASSIGNS FAILS TO PERFORM THE MAINTENANCE, REPAIR OR REPLACEMENT, AS NECESSARY, OF THE STORMWATER RETENTION AND DRAINAGE FACILITIES LOCATED WITHIN THE BOUNDARY OF THIS PLAT (PROPERTY), THE CITY OF PORT ORANGE SHALL HAVE THE RIGHT TO ENTER UPON THE COMMON AREAS AND DESIGNATED EASEMENT AREAS OF THE PROPERTY AND PROVIDE MAINTENANCE, REPAIR, OR REPLACEMENT OF THE STORMWATER DRAINAGE FACILITY AND SHALL HAVE THE RIGHT TO LIEN ALL OWNERS OF RECORD IN THE PROPERTY FOR THE COST OF SUCH MAINTENANCE, REPAIR, OR REPLACEMENT AS THE CITY MAY DEEM NECESSARY. IN THE EVENT OF TERMINATION, DISSOLUTION, OR FINAL LIQUIDATION OF THE ASSOCIATION, THE RESPONSIBILITY FOR THE OPERATION AND MAINTENANCE OF THE SURFACE WATER OR STORMWATER MANAGEMENT SYSTEM WILL BE TRANSFERRED TO AND ACCEPTED BY AN ENTITY WHICH COMPLIES WITH SECTION 40C-42.027, F.A.C. AND BE APPROVED BY THE SAINT JOHNS RIVER WATER MANAGEMENT DISTRICT PRIOR TO SUCH TERMINATION, DISSOLUTION, OR LIQUIDATION.
- THE ARTICLE OF INCORPORATION FOR THE CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. ARE RECORDED IN OFFICIAL RECORDS BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
- BUILDING SETBACK REQUIREMENTS:
FRONT - 13 FEET (FOR FRONT UNITS ONLY).
REAR - 0 FEET FOR ATTACHED UNITS, 15 FEET BETWEEN BUILDINGS.
SIDE - 0 FEET FOR ATTACHED UNITS, 15 FEET BETWEEN BUILDINGS.
SIDE CORNER - EQUAL TO FRONT SETBACK.

MAXIMUM BUILDING HEIGHT = 35'
MINIMUM COMMON OPEN SPACE = 60% MAXIMUM BUILDING LOT COVERAGE = 50%
LOT MINIMUM OPEN SPACE = 20% LOT MAXIMUM IMPERVIOUS AREA = 80%
- RETENTION AREAS / COMMON AREAS ARE GRANTED AS EASEMENTS TO THE CITY OF PORT ORANGE ALONG WITH THE RIGHT OF ACCESS, INGRESS AND EGRESS, TOGETHER WITH THE PERPETUAL RIGHT TO HARVEST EXCESS STORMWATER / GROUNDWATER AS DEEMED APPROPRIATE IN THE DISCRETION OF THE CITY.
- IN ADDITION TO THE USES AND PURPOSES OTHERWISE STATED ON THIS PLAT, ALL DRAINAGE EASEMENTS ARE GRANTED TO THE CITY OF PORT ORANGE FOR THE BENEFIT OF ACCOMMODATING ALL DRAINAGE AND STORMWATER FROM ADJOINING, OFF-SITE DEDICATED RIGHTS-OF-WAY.
- CORNERSTONE GROVE HOMEOWNERS ASSOCIATION, INC. SHALL OWN AND BE RESPONSIBLE FOR MAINTAINING ALL LANDSCAPING, IRRIGATION, SIDEWALKS, BIKE PATHS, PEDESTRIAN WALKWAYS AND IMPROVEMENTS CONSTRUCTED WITHIN ALL COMMON AREAS AND THE MEDIAN IN AMBER LANE.
- THIS PLAT IS SUBJECT TO THE CORNERSTONE GROVE PLANNED UNIT DEVELOPMENT MASTER DEVELOPMENT AGREEMENT AS RECORDED IN OFFICIAL RECORDS BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
- THIS PLAT IS SUBJECT TO THE COVENANTS, CONDITIONS AND RESTRICTIONS OF THE CORNERSTONE GROVE HOMEOWNERS ASSOCIATION AS RECORDED IN O.R. BOOK _____, PAGE _____, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.

A1A GEO
LAND SURVEYING CONSTRUCTION LAYOUT

11 Coolidge Ave., Ste J Ormond Beach Florida 32174
Voice: 386.405.6797 a1ageoinc@gmail.com
LB # 7967 LS # 6309

SHEET 9 OF 9

INDEX OF SHEETS	
DWG.NO.	DESCRIPTION
1	COVER
SU-1, SU-2	BOUNDARY AND TOPOGRAPHIC SURVEY
3	DEVELOPMENT INFORMATION
4	DEMOLITION, TREE REMOVAL AND SWPPP PLAN
5	SWPPP DETAILS AND NOTES
6	OVERALL DEVELOPMENT PLAN
7	SITE LAYOUT PLAN
8	MASTER DRAINAGE PLAN
9	OVERALL GRADING PLAN
10	CROSS SECTIONS
11	CROSS SECTIONS
12	MASTER UTILITY PLAN
13	UTILITY DETAILS AND NOTES
14	PLAN AND PROFILE - PHAM DRIVE - 0+00 TO 4+00
15	PLAN AND PROFILE - PHAM DRIVE - 4+00 TO 5+50
16	PLAN AND PROFILE - AMBER LANE
17	PLAN AND PROFILE - JAMES STREET
18	MISCELLANEOUS DETAILS AND NOTES
19	CITY OF PORT ORANGE DETAILS AND NOTES
20	CITY OF PORT ORANGE DETAILS AND NOTES
21	CITY OF PORT ORANGE DETAILS AND NOTES
22	CITY OF PORT ORANGE DETAILS AND NOTES
23	MAINTENANCE OF TRAFFIC DETAILS
24	LANDSCAPE PLAN
25	IRRIGATION PLAN
26	LANDSCAPE AND IRRIGATION DETAILS
27	WETLAND IMPACT / PRESERVATION MAP

LEGAL DESCRIPTION

A PORTION OF SECTION 18, TOWNSHIP 16 SOUTH, RANGE 33 EAST, VOLUSIA COUNTY, FLORIDA, DESCRIBED AS FOLLOWS: FROM THE NORTHEAST CORNER OF SAID SECTION 18, RUN S01°43'30"E ALONG THE EAST LINE OF SAID SECTION 18, A DISTANCE OF 2640.02 FEET TO THE SOUTHEAST CORNER OF THE NORTHEAST ONE-QUARTER OF SAID SECTION 18; THENCE S89°41'53"W ALONG THE SOUTH LINE OF THE NORTHEAST ONE-QUARTER OF SAID SECTION 18, A DISTANCE OF 2055.18 FEET TO THE EASTERLY RIGHT OF WAY LINE OF INTERSTATE HIGHWAY 95 (A 350 FOOT WIDE RIGHT OF WAY) AND THE BEGINNING OF A NON TANGENT CURVE CONCAVE SOUTHWEST, HAVING A RADIUS OF 3994.83 FEET, A CENTRAL ANGLE OF 05°49'28" AND A CHORD BEARING OF N53°30'41"W; THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE AND ALONG SAID EASTERLY RIGHT OF WAY LINE, 406.11 FEET; THENCE CONTINUE ALONG SAID EASTERLY RIGHT OF WAY LINE N56°25'25"W, 2161.92 FEET; THENCE DEPART SAID EASTERLY RIGHT OF WAY LINE N33°34'35"E, 100.00 FEET TO A POINT ON THE EASTERLY RIGHT OF WAY LINE OF YORKTOWNE BOULEVARD (A 100 WIDE FOOT RIGHT OF WAY PER OFFICIAL RECORDS BOOK 3557, PAGE 1879 AND OFFICIAL RECORDS BOOK 3718, PAGE 1042, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA) AND THE POINT OF BEGINNING; THENCE ALONG SAID EASTERLY RIGHT OF WAY LINE N56°25'25"W, 1444.30 FEET TO A POINT ON THE WEST LINE OF SAID SECTION 18; THENCE N01°54'42"W ALONG SAID WEST SECTION LINE 16.36 FEET TO A POINT ON THE WESTERLY PROLONGATION OF THE SOUTH BOUNDARY LINE OF HIDDEN LAKE PHASE IV-B, AS RECORDED IN MAP BOOK 41, PAGE 55, SAID PUBLIC RECORDS; THENCE DEPART SAID WEST SECTION LINE N89°53'21"E ALONG SAID WESTERLY PROLONGATION AND SAID SOUTH BOUNDARY LINE AND THE SOUTH BOUNDARY LINE OF HIDDEN LAKE PHASE IV-A, AS RECORDED IN MAP BOOK 40, PAGES 86-87, OF SAID PUBLIC RECORDS, 1279.44 FEET; THENCE DEPART SAID LINE S00°57'27"E, 671.61 FEET TO THE BEGINNING OF A TANGENT CURVE CONCAVE WESTERLY HAVING A RADIUS HAVING A RADIUS OF 190.00 FEET AND A CENTRAL ANGLE OF 34°32'02"; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, 114.52 FEET; THENCE S33°34'35"W, 37.00 FEET TO THE BEGINNING OF A TANGENT CURVE CONCAVE NORTHWESTERLY HAVING A RADIUS OF 25.00 FEET, A CENTRAL ANGLE OF 90°00'00" AND A CHORD BEARING OF S78°34'35"W; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, 39.27 FEET TO THE POINT OF BEGINNING.

PROJECT STATEMENT

PROPOSE TO DEVELOP A VACANT 13.0 ACRE PARCEL FOR A 64 UNIT DUPLEX RESIDENTIAL DEVELOPMENT WITH ASSOCIATED SUBDIVISION IMPROVEMENTS.

CITY OF PORT ORANGE NOTE

ALL CONSTRUCTION SHALL COMPLY WITH THE STANDARD CONSTRUCTION DETAILS AS ADOPTED BY RESOLUTION OF THE CITY COUNCIL. ANY DEVIATION FFROM THE ADOPTED STANDARDS SHALL BE CLEARLY NOTED AS SUCH IN ALL PLANS AND SPECIFICATIONS. IF INADVERTENT DEVIATIONS IN PLANS ARE NOT SO NOTED, ADOPTED STANDARDS SHALL APPLY.

JURISDICTIONAL AGENCY

PERMIT No.

CITY OF PORT ORANGE (DEVELOPMENT ORDER) .
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (STORMWATER) .
FDEP (WASTEWATER) .
FDEP (NPDES NOI) .
VOLUSIA COUNTY HEALTH DEPARTMENT (WATER) .

THE GENERAL CONTRACTOR SHALL ENSURE THAT ANY SUBCONTRACTOR HAS A COMPLETE SET OF CONSTRUCTION DRAWINGS FOR ITS RESPECTIVE WORK. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR SUBCONTRACTORS ONLY UTILIZING INDIVIDUAL DRAWINGS FOR ITS WORK WHERE ADDITIONAL INFORMATION MAY BE CONTAINED ON OTHER DRAWINGS WITHIN THE SET.

THESE DRAWINGS ARE THE PROPERTY OF NEWKIRK ENGINEERING, INC.. ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING, INC. COPYRIGHT 2013 ALL RIGHTS RESERVED.

SITE PLAN DRAWINGS FOR CORNERSTONE GROVE PLANNED UNIT DEVELOPMENT

SECTION 18, TOWNSHIP 16 S, RANGE 33 E

18-16-33-00-00-0091

HIDDEN LAKES DRIVE
PORT ORANGE, FL 32129

MARCH 2017

Exhibit B



PROJECT TEAM

PROPERTY OWNER / APPLICANT: GEOSAM CAPITAL US LP
424 LUNA BELLA LANE, SUITE 122
NEW SMYRNA BEACH, FL 32168
PHONE: (386) 428-8448
EMAIL: PAFRICANO@GEOSAM.CA

CIVIL ENGINEER/ AGENT: NEWKIRK ENGINEERING, INC.
1370 NORTH US HIGHWAY 1, SUITE 204
ORMOND BEACH, FL 32174
PHONE: (386) 290-7599
EMAIL: HARRY@NEWKIRK-ENGINEERING.COM

ARCHITECT: THE EVANS GROUP
3025 EDGEWATER DRIVE
ORLANDO, FL 32804
PHONE: (407) 650-8770
EMAIL: MAIL@THEEVANSGROUP.COM

SURVEYOR: A1A GEO, INC.
1370 NORTH US HIGHWAY 1, SUITE 602
ORMOND BEACH, FL 32174
PHONE: (386) 405-6797
EMAIL: A1AGEOINC@GMAIL.COM

LANDSCAPE ARCHITECT: RICHARD L. POORE, LA
300 GATEWOOD COURT
ORMOND BEACH, FL 32174
PHONE: (386) 212-8491
EMAIL: THEPOORES@BELLSOUTH.NET

GEOTECHNICAL: UNIVERSAL ENGINEERING SCIENCES
911 BEVILLE ROAD, SUITE 3
SOUTH DAYTONA BEACH, FL 32119
PHONE: (386) 756-1105
FAX: (386) 760-4067
EMAIL: BFOHL@UNIVERSALENGINEERING.COM

ENVIRONMENTAL: ECOLOGICAL CONSULTING SOLUTIONS, INC.
235 HUNT CLUB BOULEVARD, SUITE 202
LONGWOOD, FL 32779
PHONE: (407) 869-9434
FAX: (407) 869-9434
EMAIL: BGRIFFY@ECSFL.CC

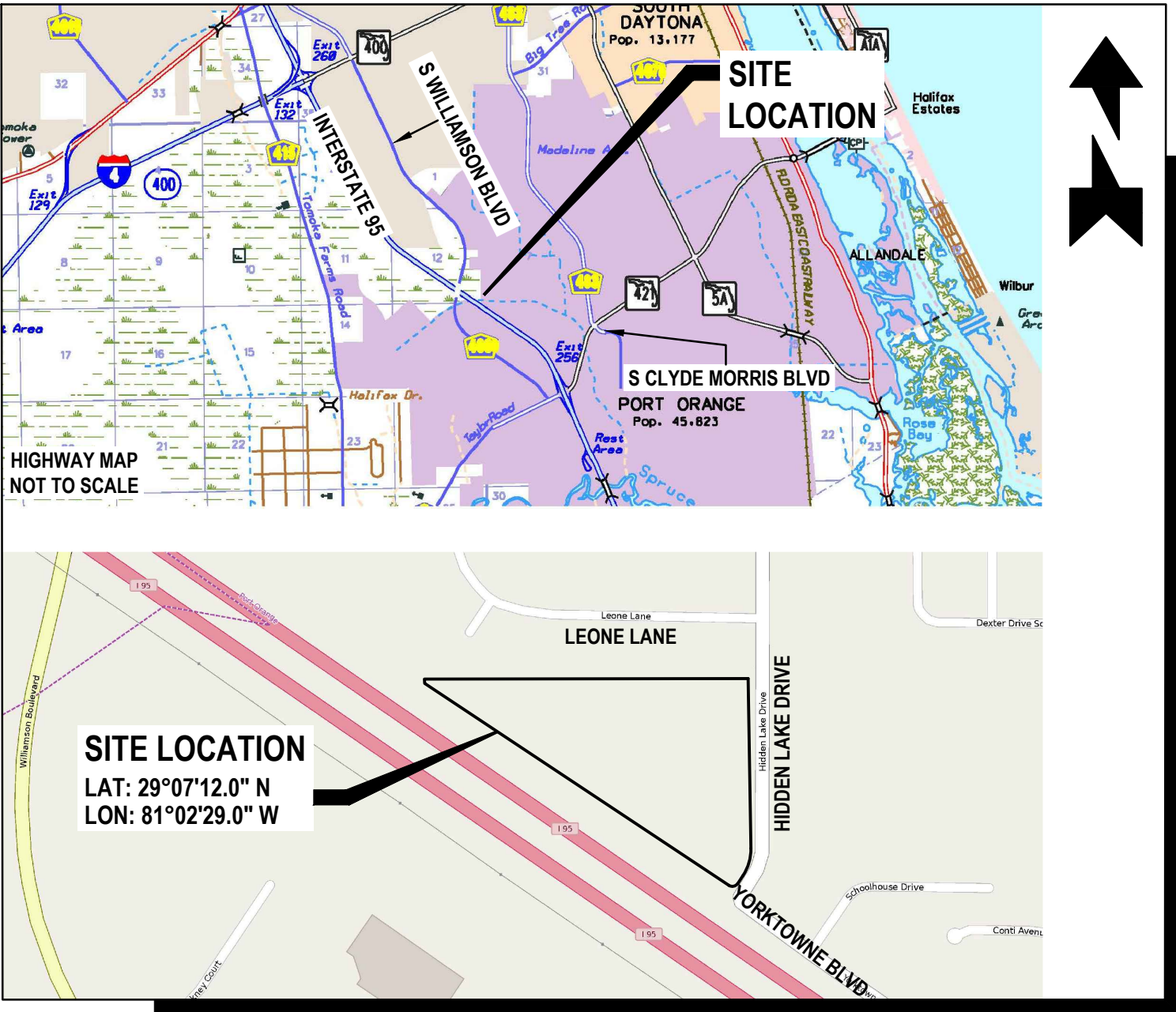
CONTACT NUMBERS

PLANNING & BUILDING - CITY OF PORT ORANGE (386) 506-5600
WATER - CITY OF PORT ORANGE UTILITY DEPARTMENT (386) 506-5754
WASTEWATER - CITY OF PORT ORANGE UTILITY DEPARTMENT (386) 506-5754
GAS - TECO PEOPLES GAS (386) 672-2232
ELECTRIC - FLORIDA POWER & LIGHT (386) 322-3420
TELEPHONE/CABLE - AT&T (386) 254-8550
TELEPHONE/CABLE - BRIGHTHOUSE NETWORKS (386) 760-9950



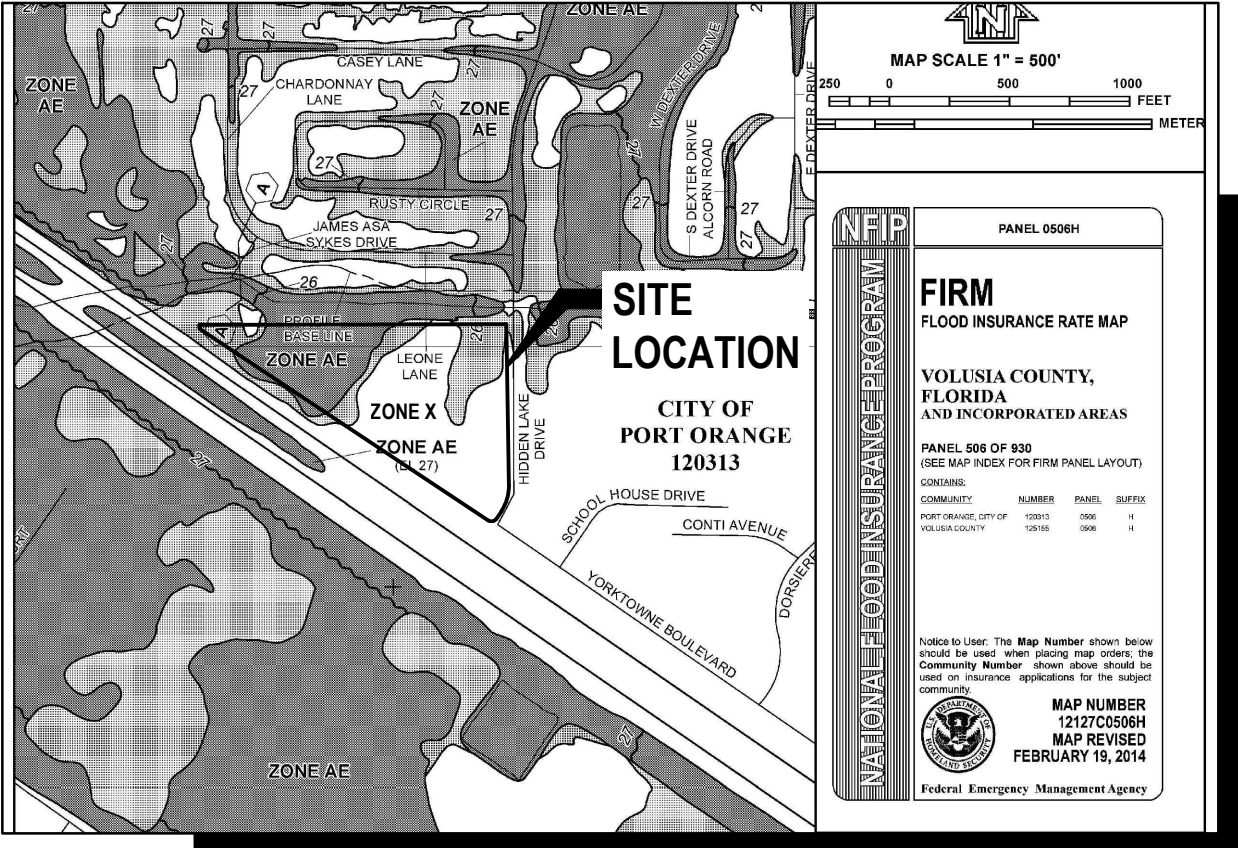
AERIAL MAP

SCALE: 1" = 300'



LOCATION MAP

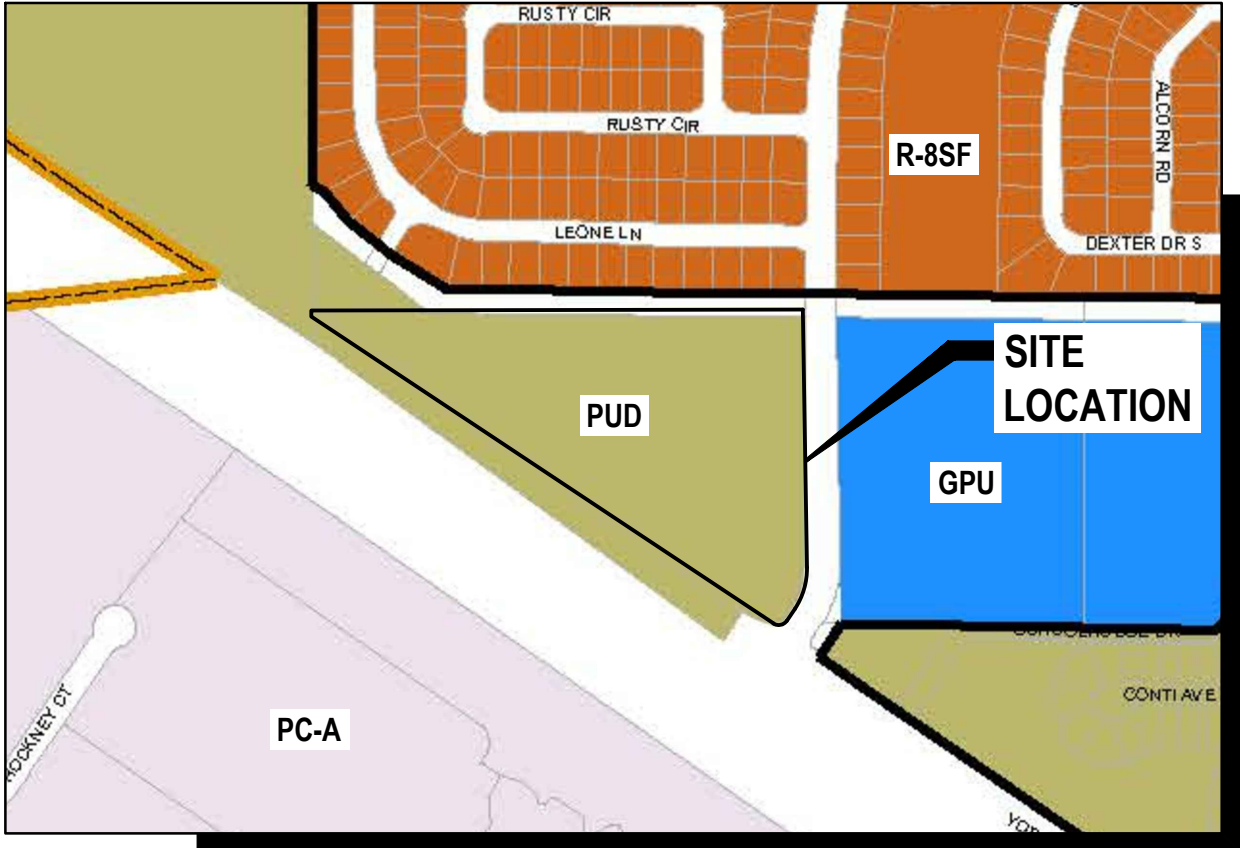
SCALE: 1" = 600'



FLOOD ZONE MAP

SCALE: 1" = 800'

FLOOD ZONE "AE" & "X"



ZONING MAP

SCALE: 1" = 500'

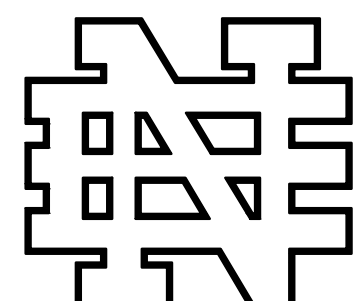
PROJECT ZONING DISTRICT:
PUD - PLANNED UNIT DEVELOPMENT



SOILS MAP

SCALE: 1" = 300'

SOIL TYPES:
(34) MYAKKA-ST. JOHNS COMPLEX (GROUP D)
(60) SMYRNA-SMYRNA, WET, FINE SAND, 0 TO 2 PERCENT SLOPES (GROUP B/D)

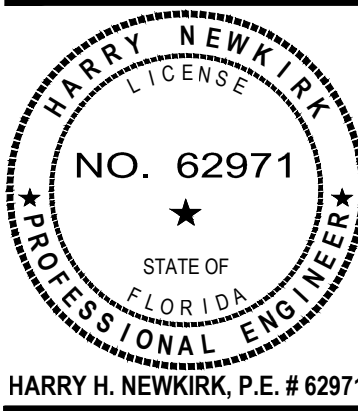


NEWKIRK ENGINEERING

1370 North US1, Suite 204
Ormond Beach, Florida 32174
Phone (386) 290-7599
Harry@NewKirk-Engineering.com

Certificate of Authorization
No. 30209
© 2013

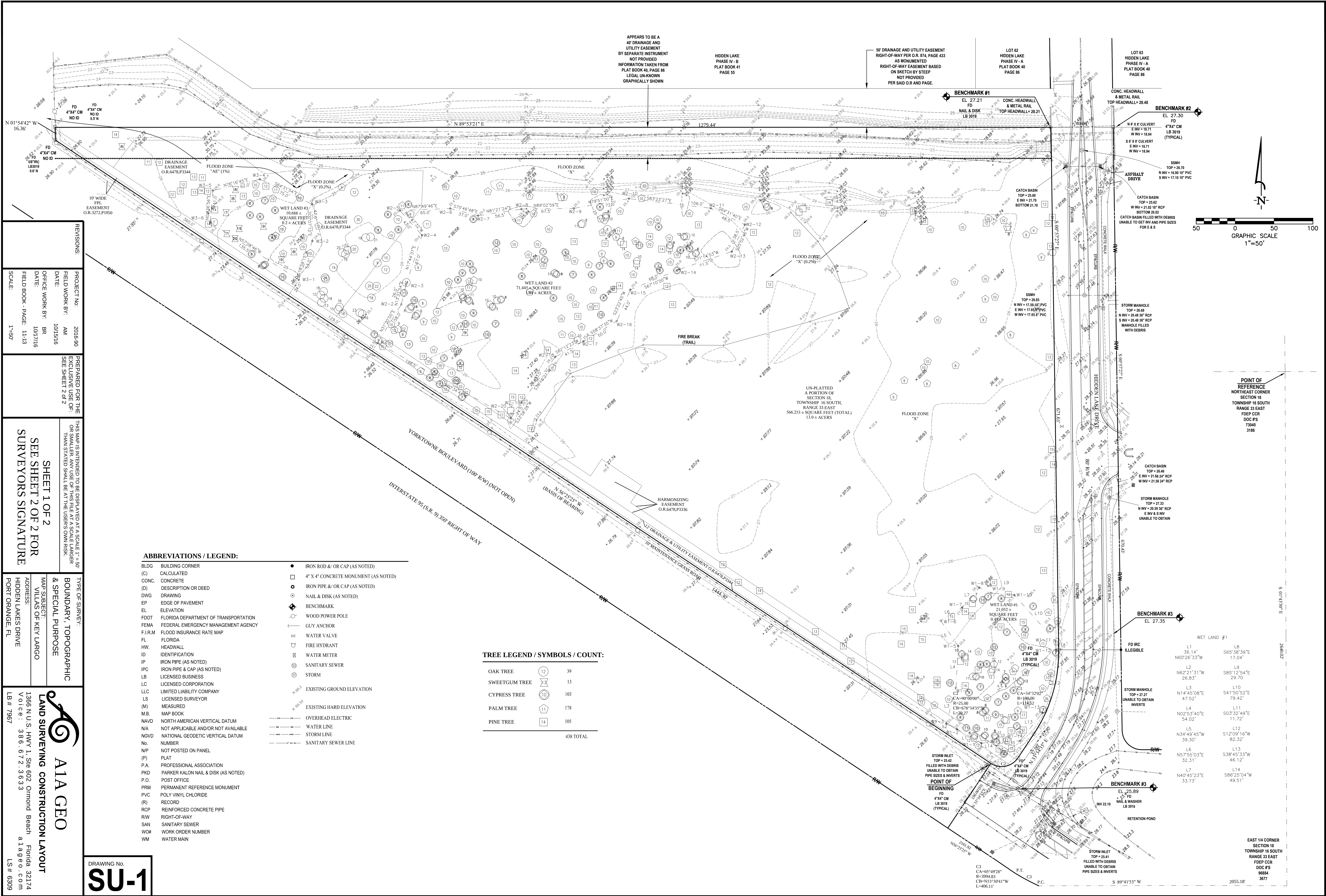
Civil Engineering
Transportation
Construction Engineering & Inspection



HARRY H. NEWKIRK, P.E. # 62971

DRAWING NUMBER

1



LEGAL DESCRIPTION:

A PORTION OF SECTION 18, TOWNSHIP 16 SOUTH, RANGE 33 EAST, VOLUSIA COUNTY, FLORIDA, DESCRIBED AS FOLLOWS: FROM THE NORTHEAST CORNER OF SAID SECTION 18, RUN S01°43'30"E ALONG THE EAST LINE OF SAID SECTION 18, A DISTANCE OF 2640.02 FEET TO THE SOUTHEAST CORNER OF THE NORTHEAST ONE-QUARTER OF SAID SECTION 18; THENCE S89°41'53"W ALONG THE SOUTH LINE OF THE NORTHEAST ONE-QUARTER OF SAID SECTION 18, A DISTANCE OF 2055.18 FEET TO THE EASTERLY RIGHT OF WAY LINE OF INTERSTATE HIGHWAY 95 (A 350 FOOT WIDE RIGHT OF WAY) AND THE BEGINNING OF A NON TANGENT CURVE CONCAVE SOUTHWEST, HAVING A RADIUS OF 394.83 FEET, A CENTRAL ANGLE OF 05°49'28" AND A CHORD BEARING OF N53°30'41"W, THENCE NORTHWESTERLY ALONG THE ARC OF SAID CURVE AND ALONG SAID EASTERLY RIGHT OF WAY LINE, 406.11 FEET; THENCE CONTINUE ALONG SAID EASTERLY RIGHT OF WAY LINE N56°25'25"W, 2161.92 FEET; THENCE DEPART SAID EASTERLY RIGHT OF WAY LINE N33°34'35"E, 100.00 FEET TO A POINT ON THE EASTERLY RIGHT OF WAY LINE OF YORKTOWNE BOULEVARD (A 100 FOOT WIDE RIGHT OF WAY PER OFFICIAL RECORDS BOOK 3557, PAGE 1679 AND OFFICIAL RECORDS BOOK 3718, PAGE 1042, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA) AND THE POINT OF BEGINNING; THENCE ALONG SAID EASTERLY RIGHT OF WAY LINE N56°25'25"W, 1444.30 FEET TO A POINT ON THE WEST LINE OF SAID SECTION 18; THENCE N01°54'42"W ALONG SAID WEST SECTION LINE, 16.36 FEET TO A POINT ON THE WESTERLY PROLONGATION OF THE SOUTH BOUNDARY LINE OF HIDDEN LAKE PHASE IV-B, AS RECORDED IN MAP BOOK 41, PAGE 55, SAID PUBLIC RECORDS; THENCE DEPART SAID WEST SECTION LINE N89°53'21"E ALONG SAID WESTERLY PROLONGATION AND SAID SOUTH BOUNDARY LINE AND THE SOUTH BOUNDARY LINE OF HIDDEN LAKE PHASE IV-A, AS RECORDED IN MAP BOOK 40, PAGES 86- 87, OF SAID PUBLIC RECORDS, 1279.44 FEET; THENCE DEPART SAID LINE S00°57'27"E, 671.61 FEET TO THE BEGINNING OF A TANGENT CURVE CONCAVE WESTERLY HAVING A RADIUS OF 190.00 FEET AND A CENTRAL ANGLE OF 34°32'02"; THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, 114.52 FEET; THENCE S33°34'33"W, 37.00 FEET TO THE BEGINNING A TANGENT CURVE CONCAVE NORTHWESTERLY HAVING A RADIUS OF 25.00 FEET, A CENTRAL ANGLE OF 90°00'00" AND A CHORD BEARING OF S78°34'35"W, THENCE SOUTHWESTERLY ALONG THE ARC OF SAID CURVE, 39.27 FEET TO THE POINT OF BEGINNING.

ABBREVIATIONS / LEGEND:

BLDG	BUILDING CORNER	●	IRON ROD &/ OR CAP (AS NOTED)
(C)	CALCULATED	□	4" X 4" CONCRETE MONUMENT (AS NOTED)
CONC.	CONCRETE	●	IRON PIPE &/ OR CAP (AS NOTED)
(D)	DESCRIPTION OR DEED	⊙	NAIL & DISK (AS NOTED)
DWG	DRAWING	⬢	BENCHMARK
EP	EDGE OF PAVEMENT	⊙	WOOD POWER POLE
EL	ELEVATION	←	GUY ANCHOR
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION	⊗	WATER VALVE
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY	⊗	FIRE HYDRANT
F.I.R.M	FLOOD INSURANCE RATE MAP	⊗	WATER METER
FL	FLORIDA	⊗	SANITARY SEWER
HW.	HEADWALL	⊗	STORM
ID	IDENTIFICATION	⊗	EXISTING GROUND ELEVATION
IP	IRON PIPE (AS NOTED)	⊗	EXISTING HARD ELEVATION
IPC	IRON PIPE & CAP (AS NOTED)	⊗	OVERHEAD ELECTRIC
LB	LICENSED BUSINESS	⊗	WATER LINE
LC	LICENSED CORPORATION	⊗	STORM LINE
LLC	LIMITED LIABILITY COMPANY	⊗	SANITARY SEWER LINE
LS	LICENSED SURVEYOR	⊗	
(M)	MEASURED	⊗	
M.B.	MAP BOOK	⊗	
NAVD	NORTH AMERICAN VERTICAL DATUM	⊗	
N/A	NOT APPLICABLE AND/OR NOT AVAILABLE	⊗	
NGVD	NATIONAL GEODETIC VERTICAL DATUM	⊗	
No.	NUMBER	⊗	
N/P	NOT POSTED ON PANEL	⊗	
(P)	PLAT	⊗	
P.A.	PROFESSIONAL ASSOCIATION	⊗	
PKD	PARKER KALON NAIL & DISK (AS NOTED)	⊗	
P.O.	POST OFFICE	⊗	
PRM	PERMANENT REFERENCE MONUMENT	⊗	
PVC	POLY VINYL CHLORIDE	⊗	
(R)	RECORD	⊗	
RCP	REINFORCED CONCRETE PIPE	⊗	
RW	RIGHT-OF-WAY	⊗	
SAN	SANITARY SEWER	⊗	
WO#	WORK ORDER NUMBER	⊗	
WM	WATER MAIN	⊗	

GENERAL NOTES AND SURVEY REPORT:

- BEARING STRUCTURE (N 56°25'25" E) ALONG THE EASTERLY RIGHT-OF-WAY LINE OF YORKTOWNE BOULEVARD (100' RIGHT-OF-WAY(NOT OPEN)), FLORIDA, FOR ANGLE MEASUREMENT ONLY.
- LEGAL DESCRIPTION PROVIDED PER OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY, POLICY No. OF6-8288947, DATED JUNE 17, 2015
- RECORD DIMENSIONS ARE SHOWN IN PARENTHESIS (), WHEN DIFFERS FROM MEASURED.
- FLOOD PLANE CERTIFICATION ACCORDING TO THE FEMA (FEDERAL EMERGENCY MANAGEMENT AGENCY) F.I.R.M (FEDERAL INSURANCE RATE MAP), COMMUNITY OF CITY OF PORT ORANGE, FLORIDA, NUMBER 120313, PANEL NUMBER 12127C 0506 H, DATED: FEBRUARY 19, 2014, THE PROPERTY IS IN FLOOD ZONE "X" THE BASE 100 YEAR FLOOD ELEVATION IS NONE AND FLOOD ZONE "AE" (1% ANNUAL) AND "X" (2% ANNUAL)
- ACCURACY STATEMENT: THE ACCURACY OF THE BOUNDARY CONTROL OF THE SUBJECT PROPERTY IS, COMMERCIAL/HIGH RISK LINEAR: THE CLOSURE IS 1 : 10,000
- DATA SOURCES:
ELEVATIONS REFER TO (NAVD) NORTH AMERICAN VERTICAL DATUM 1988, FEET AND DECIMAL PART THEREOF. BENCHMARK REFERENCE NAVD DATUM OF 1988. BENCHMARK, DESIGNATION IS A NATIONAL GEODETIC SURVEY DESIGNATION 195 71 AZZ RM 2 PID AQ1302 ELEVATION=26.95, CHECKED INTO RMM-51 ELEVATION 26.14 AND SOUTHEASTERN SURVEYING BENCHMARK 38B ELEVATION 24.68 FEET.
A.) BENCHMARK #1 FD NAIL & WASHER LB 3019 ELEVATION = 27.21 FEET
B.) BENCHMARK #2 4" CONCRETE MONUMENT LB 3019 ELEVATION = 27.30 FEET
C.) BENCHMARK #1 FD NAIL IN BACK OF WALK ELEVATION = 27.35 FEET
D.) BENCHMARK #2 PK NAIL LB 3019 IN CURB ELEVATION = 25.89 FEET
- HISTORY REFERENCE TO PREVIOUS SURVEY OR HELPER SURVEYS, LINEAGE OF DATA HORIZONTAL DATA REFERENCES, DATE OF ORIGINAL PLAT.
A.) HIDDEN LAKE PHASE IV-A ACCORDING TO THE PLAT THEREOF, RECORDED IN PLAT BOOK 40, PAGES 86-87, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
B.) SLIGER AND ASSOCIATES, BOUNDARY, TOPOGRAPHIC SURVEY.

B-1.) BOUNDARY SURVEY IS A RETRACEMENT OF SLIGER SURVEY
- UNDERGROUND UTILITIES NOT LOCATED EXCEPT AS SHOWN, PER FIELD VISIBLE LOCATION.
- TITLE INFORMATION PROVIDED BY OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY, POLICY No. OF6-8288947, DATED JUNE 17, 2015.
SCHEDULE B, SECTION 2:
ITEMS:
8.) O.R. 847, PAGE 433 APPEARS TO BE THE 50' WIDE CANAL AREA BETWEEN SUBJECT PARCEL AND HIDDEN LAKE SUBDIVISION AS SHOWN, NO LEGAL IN DEED, O.R. 3234, PAGE 192 IS HIDDEN LAKE DRIVE AND YORKTOWNE BOULEVARD RIGHT-OF-WAY IN FRONT OF SUBJECT PARCEL - PLOTTED AS SHOWN.
9.) ORDINANCE NUMBER 1987-31 AS RECORDED IN OFFICIAL RECORDS BOOK 3036, PAGE 1337,PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, NOT PROVIDED.
10.) EASEMENT TO FLORIDA POWER AND LIGHT COMPANY RECORDED IN OFFICIAL RECORDS BOOK 3272, PAGE 1059, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, APPEARS TO BE INTENDED TO BE 5' ON EACH SIDE OF EXISTING POWER LINE ALONG YORKTOWNE BOULEVARD - PLOTTED AS SHOWN.
11.) ASSIGNMENT OF PORT ORANGE RECREATION IMPACT FEE CREDITS RECORDED IN OFFICIAL RECORDS BOOK 496, PAGE 872, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, NOT PROVIDED.
12.) PORT ORANGE LANDINGS RESIDENTIAL P.U.D. MASTER DEVELOPMENT AGREEMENT RECORDED IN OFFICIAL RECORDS BOOK 5073, PAGE 902, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, NOT PROVIDED.
13.) SCHOOL PLANNING MITIGATION AGREEMENT RECORDED IN O.R. BOOK 6031, PAGE 3569, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, NOT PROVIDED.
14.) MASTER DEVELOPMENT AGREEMENT RECORDED IN O.R. BOOK 6055, PAGE 4288, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, NOT PROVIDED.
15.) HARMONIZING EASEMENT IN FAVOR OF THE CITY OF PORT ORANGE RECORDED IN O.R. BOOK 6478, PAGE 3336, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, PLOTTED AS SHOWN.
16.) ACCESS, DRAINAGE, AND UTILITIES EASEMENT IN FAVOR OF THE CITY OF PORT ORANGE RECORDED IN O.R. BOOK 6478, PAGE 3340, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, PLOTTED AS SHOWN
- LIMITATIONS:
A.) SOME INSTRUMENTS OF RECORD REFLECTING EASEMENTS, RIGHT-OF-WAY AND OR OWNERSHIP WERE FURNISHED TO THIS SURVEYOR, PER OLD REPUBLIC NATIONAL TITLE INSURANCE COMPANY, POLICY No. OF6-8288947, DATED JUNE 17, 2015, EXCEPT AS SHOWN, THERE MAY BE ADDITIONAL RESTRICTIONS AND/OR OTHER MATTERS THAT ARE NOT SHOWN ON THIS PLAT OF SURVEY THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY, NO UNDERGROUND INSTALLATIONS OR IMPROVEMENTS HAVE BEEN LOCATED EXCEPT AS SHOWN, IF LOCATION OF EASEMENTS OR RIGHT-OF-WAY OF RECORD, OTHER THAN THOSE ON RECORD PLATS, IS REQUIRED, THIS INFORMATION MUST BE FURNISHED TO THE SURVEYOR AND MAPPER, PER FLORIDA STATUTES RULE 51-17.052(2)(d)(4)

B.) IT IS UNDERSTOOD TO BE THE PROFESSIONAL OPINION OF THIS SURVEYOR AND THE FIRM, FROM WHICH IS FORMULATED ON HIS BEST KNOWLEDGE, INFORMATION AND BELIEF, AND AS SUCH, DOES NOT CONSTITUTE A GUARANTEE OR WARRANTY, EITHER EXPRESSED OR IMPLIED. FURTHERMORE, THIS SURVEYOR AND FIRM, DOES NOT ASSUME RESPONSIBILITY AND SHALL NOT BE LIABLE FOR CLAIMS ARISING FROM ERRONEOUS OR INCORRECT INFORMATION FURNISHED BY THE OWNER, LENDER, OR OWNER'S CONTRACTORS OR OTHERS, WHICH IS USED AS A BASIS TO FORMULATE THIS SURVEYOR'S OPINION.

C.) ADDITIONS OR DELETIONS TO SURVEY MAPS OR REPORTS BY OTHER THAN THE SIGNING PARTY IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE PARTY. PER FLORIDA STATUTES CHAPTER RULE 51-17.051(3)(b)(6)

D.) THE ACCEPTANCE OF THIS SURVEY AS CERTIFIED FOR THE EXCLUSIVE USE OF NAMES SHOWN HEREON SHALL CONSTITUTE FULFILLMENT OF MY CONTRACTUAL OBLIGATION. "ORIGINAL" AS DEFINED HEREON REFERS TO THE SIGNED AND SEALED GRAPHIC REPRESENTATION OF THE FIELD SURVEY. CAD FILES ARE NOT THE SURVEY AND THERE MAY BE A SURCHARGE FOR THEM.

E.) TAX PARCEL IDENTIFICATION NUMBERS, ADJACENT OWNERS NAMES AND ADDRESS WHEN SHOWN SHOWN IS EITHER SUPPLIED BY CLIENT AND/OR TAKEN FROM COUNTY APPRAISER'S INTERNET WEB PAGE AND MAY NOT BE THE MOST CURRENT.

F.) SPECIAL PURPOSE SURVEYS WHEN IDENTIFIED AS TYPE OF SURVEY:
1.) WHEN TREES AS SHOWN ON THE SURVEY IT IS FOR THE LOCATION OF THE HARD WOOD TREES 20" AND ABOVE,THE DIAMETER TAKEN APPROXIMATELY 4 TO 4-1/2 FEET ABOVE GROUND LEVEL TREE IDENTIFICATION OTHER THAN LOCATION AND SIZE, SEE AN ARBORIST. SITE CONSIST OF PINES SMALL CYPRRESS AND PALMS MOSTLY IN AND AROUND THE WETLANDS AS SHOWN ON SURVEY
2.) JURISDICTIONAL WETLANDS WHEN SHOWN WERE LOCATED FROM FLAGS/MARKS BY ECOLOGICAL CONSULTING SOLUTIONS, INC., PROJECT # 355.16.16, DATED 09/28/16 AND THE DETERMINATION OF WETLANDS ARE OUT OF THE EXPERTISE OF THIS SURVEYOR AND MAPPER.
3.) ARCHAEOLOGICAL FEATURES WHEN SHOWN WERE LOCATED FROM OBJECTS IDENTIFIED BY OTHERS AND THE DETERMINATION OF WHAT CONSTITUTES A ARCHAEOLOGICAL FEATURES IS OUT OF THE EXPERTISE OF THIS SURVEYOR AND MAPPER.
4.) WILDLIFE CORRIDORS OR HABITATS WHEN SHOWN WERE LOCATED FROM OBJECTS IDENTIFIED BY OTHERS AND THE DETERMINATION OF WHAT CONSTITUTES A WILDLIFE CORRIDORS OR HABITATS IS OUT OF THE EXPERTISE OF THIS SURVEYOR AND MAPPER.
5.) GEO-TECHNICAL BORINGS SHOWN AS MARKED AND FIELD LOCATED.

G.) AS-BUILT / RECORD SURVEYS WHEN IDENTIFIED AS TYPE OF SURVEY:
1.) WHEN UNDERGROUND UTILITIES, SUCH AS UNDERGROUND CABLES, GAS MAINS, WATER MAINS, SANITARY SEWER SYSTEMS AND STORM COLLECTIONS SYSTEMS ARE SHOWN, THE LIMITS OF THIS SURVEY INCLUDE VISIBLE STRUCTURES / IMPROVEMENTS IN COMBINATION WITH AS-BUILT / RECORD DRAWINGS SUPPLIED BY OTHERS.
2.) WHEN THE PERCENTAGE OF SLOPES ARE SHOWN IT IS BASED ON THE INVERTS BETWEEN VISIBLE STRUCTURES. THIS SURVEY DOES NOT INCLUDE VIDEO PIPELINE INSPECTIONS. VERIFICATION OF LINE OF SITE HAS NOT BEEN VERIFIED. THIS SURVEYOR SUGGESTS VIDEO PIPELINE INSPECTION BY A PROFESSIONALS PROVIDING SERVICE OF THAT SPECIALTY.
3.) THIS SURVEYOR SUGGEST VIDEO PIPELINE INSPECTION BY A PROFESSIONAL PROVIDING SERVICE OF THAT SPECIALTY.

H.) TOPOGRAPHIC SURVEY:
1.) CONTOURS ARE ON ONE FOOT INTERVALS, INTERPOLATED BETWEEN GRIDS, VISIBLE GRADE BREAKS, ALONG WITH RANDOM GROUND ELEVATIONS.
2.) OFFSITE TOPOGRAPHIC INFORMATION SHOWN IS BASED ON THE REQUEST BY THE CLIENT AND OR THE CLIENTS AGENT, BEING AN ARCHITECT OR ENGINEER.

SHEET 2 OF 2

REVISIONS:	PROJECT No:	2016-90	PREPARED FOR THE EXCLUSIVE USE OF: --- GEOSAM CAPITAL US LP --- CITY OF PORT ORANGE, FL	THIS MAP IS NEITHER FULL NOR COMPLETE WITHOUT SHEETS 1 AND 2 BEING TOGETHER	TYPE OF SURVEY:	A1A GEO LAND SURVEYING CONSTRUCTION LAYOUT 1366 N.U.S. HWY 1, Ste 602 Ormond Beach Florida 32174 Voice: 386.672.3633 a1ageo.com LB # 7967 LS # 6309
	FIELD WORK BY:	AM			BOUNDARY, TOPOGRAPHIC & SPECIAL PURPOSE	
	DATE:	10/15/16		THE FOREGOING PLAT IS CERTIFIED TO MEET THE STANDARDS OF PRACTICE SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL LAND SURVEYORS AS PER CHAPTER 5317-6, FLORIDA ADMINISTRATIVE CODE, AS PURSUANT TO SECTION 472.027, FLORIDA STATUTES. 10/17/2016	MAP SUBJECT:	
	OFFICE WORK BY:	BR			VILLAS OF KEY LARGO	
	DATE:	10/17/16			ADDRESS:	
	FIELD BOOK - PAGE:	11-13			HIDDEN LAKES DRIVE	
	SCALE:	1"=50'		NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER.	PORT ORANGE, FL	
				ANTHONY SANZONE		

DRAWING No.
SU-2

GENERAL CONSTRUCTION NOTES

1.

CITY GOVERNING SPECIFICATIONS: CITY OF PORT ORANGE LAND DEVELOPMENT CODE, CITY OF PORT ORANGE STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS, LATEST EDITION.
2.

ALL CONSTRUCTION WITHIN THE FDOT RIGHT-OF-WAY SHALL CONFORM TO THE 2016 / 2017 EDITION OF THE FDOT DESIGN STANDARD INDEXES, THE 2017 EDITION OF THE FDOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION AND THE 2010 EDITION OF THE FDOT UTILITY ACCOMMODATIONS MANUAL.
3.

ALL UTILITY MATERIAL, CONSTRUCTION AND TESTING COVERED BY THESE DRAWINGS SHALL COMPLY WITH THE CITY OF PORT ORANGE STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS, LATEST EDITION. ALL UTILITY WORK AND CONNECTIONS SHALL BE COORDINATED WITH THE CITY OF PORT ORANGE INSPECTOR.
4.

THE CONTRACTOR SHALL PAY FOR AND OBTAIN A BUILDING PERMIT. THE ENGINEER WILL SCHEDULE THE PRECONSTRUCTION CONFERENCE BEFORE THE CONTRACTOR'S START OF WORK. THE CONTRACTOR SHALL CONTACT THE BUILDING DEPARTMENT AT (386) 506-5600 FOR INFORMATION ON ISSUANCE OF CITY PERMITS AND / OR OTHER REQUIREMENTS.
5.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO NOTIFY THE ENGINEER OF ANY DEFICIENCIES OR DISCREPANCIES AMONG THE DIVISIONS OF THE DRAWING AND SPECIFICATIONS PRIOR TO THE BID DATE. NEITHER THE OWNER OR ENGINEER WILL BE RESPONSIBLE FOR ANY DEFICIENCIES OR DISCREPANCIES RAISED AFTER THE BID OPENING. ACCORDINGLY, IN LIGHT OF THESE OBLIGATIONS, THE ENGINEER IS OBLIGATED TO INTERPRET THE DRAWINGS AND SPECIFICATIONS IN A MANNER THAT WILL PROVIDE THE OWNER WITH A COMPLETE, FUNCTIONING FACILITY FOR THE BID PRICE.
6.

THESE DRAWINGS AND THE PROJECT MANUAL ARE COMPLEMENTARY, AND ANY REQUIREMENT OF ONE SHALL BE A REQUIREMENT OF THE OTHER. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CAREFULLY EXAMINE THE DRAWINGS AND SPECIFICATIONS AND TO COMPARE THE REQUIREMENTS OF EACH DIVISION AND ENSURE THAT EACH TRADE OR SUBCONTRACTOR IS MAKING THE ALLOWANCES NECESSARY TO PROVIDE THE OWNER A COMPLETE FACILITY, OPERATIONAL IN ALL RESPECTS, UNLESS OTHERWISE SPECIFICALLY STATED IN THE DRAWINGS.
7.

THE ENGINEER ASSUMES NO RESPONSIBILITY FOR INSTRUCTING THE CONTRACTOR IN THE METHODS OF CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE METHOD TO CONSTRUCT THE IMPROVEMENTS AS SHOWN ON THE PLANS.
8.

ONLY ONE TEMPORARY CONSTRUCTION SIGN IS PERMITTED, NOT TO EXCEED 32 SQUARE FEET IN SIGN AREA, MAXIMUM HEIGHT OF 8 FEET AND NO CLOSER THAN 10 FT FROM PUBLIC RIGHT-OF-WAY. THE CONTRACTOR SHALL APPLY FOR A TEMPORARY SIGN PERMIT AT THE PORT ORANGE BUILDING DEPARTMENT. THE SIGN MUST BE REMOVED UPON RECEIPT OF THE CERTIFICATE OF OCCUPANCY.
9.

LITTER CONTROL MEASURES TO PREVENT WIND-DRIVEN DEBRIS SHALL BE IMPLEMENTED THROUGHOUT THE DURATION OF CONSTRUCTION. ALL DEBRIS SHALL BE REMOVED AND THE PROJECT SITE CLEANED WITHIN 30 DAYS OF COMPLETION OF CONSTRUCTION.
10.

AT NO TIME SHALL EXCAVATIONS BE LEFT UNCOVERED AFTER WORKING HOURS. CONTRACTOR SHALL SECURE THE WORK AREA AT THE END OF EACH DAY'S WORK.
11.

AT ALL TIMES, THE CONTRACTOR SHALL TAKE PRECAUTIONS TO PROTECT UNDERGROUND UTILITIES, STRUCTURES AND OTHER ASSOCIATED FACILITIES FROM DAMAGE DURING CONSTRUCTION. IT IS THE CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE MEASURES OF PROTECTION. ANY DAMAGED FACILITIES SHALL BE REPAIRED OR REPLACED AS DIRECTED BY THE CITY OR ENGINEER AT THE CONTRACTORS EXPENSE.
12.

THERE SHALL BE NO DEVIATIONS FROM THESE PLANS UNLESS APPROVED IN WRITING BY THE ENGINEER AND THE OWNER.
13.

THE CONTRACTOR SHALL CONTACT ALL CONCERNED UTILITIES AT LEAST FORTY- EIGHT (48) HOURS IN ADVANCE OF CONSTRUCTION OPERATIONS.
14.

CONTRACTOR SHALL COORDINATE AND COMPLY WITH ALL UTILITY COMPANIES INVOLVED IN PROJECT AND PAY ALL REQUIRED FEES AND COST.
15.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING CERTIFIED MATERIAL TEST RESULTS TO THE ENGINEER OF THE RECORD PRIOR TO THE RELEASE OF FINAL CERTIFICATION BY THE ENGINEER, TEST RESULTS MUST INCLUDE, BUT MAY NOT BE LIMITED TO, DENSITIES FOR SUBGRADE AND BASE DENSITIES AT UTILITY CROSSINGS, MANHOLES, INLETS, STRUCTURES. TEST SHALL INCLUDE ASPHALT GRADATION REPORTS, CONCRETE CYLINDERS, ETC.
16.

WHERE NEW ASPHALT MEETS EXISTING ASPHALT, THE EXISTING ASPHALT SHALL BE SAW CUT TO PROVIDE A STRAIGHT EVEN LINE.
17.

PRIOR TO REMOVING CURB OR GUTTER, THE ADJACENT ASPHALT SHALL BE SAW CUT TO PROVIDE A STRAIGHT EVEN LINE.
18.

ALL PROPOSED ELEVATIONS REFER TO FINISHED GRADES.
19.

CONCRETE WALKS SHALL BE 4 INCHES THICK HAVING A 3,000 PSI STRENGTH, POURED OVER PROPERLY PREPARED SUBGRADE. ALL CONCRETE SIDEWALKS SHALL BE 8 INCHES THICK ACROSS DRIVEWAYS. 1/2 INCH EXPANSION JOINTS SHALL BE PLACED AT A MAXIMUM OF 50'. CRACK CONTROL JOINTS SHALL BE 5' ON CENTERS.
20.

CORE TESTS SHALL BE TAKEN TO VERIFY THICKNESS AND SUBSURFACE COMPACTION. PROVIDE FOR THREE SAMPLES, RANDOMLY LOCATED. TEST FOR EXTRACTION, GRADATION, LABORATORY DENSITY, AND MARSHALL'S STABILITY. PROVIDE A CERTIFICATE FROM THE TESTING AGENCY THAT MATERIALS AND INSTALLATION COMPLY WITH SPECIFICATIONS, SIGNED BY THE ASPHALTIC CONCRETE PRODUCER AND CONTRACTOR. ALL COSTS OF TESTS SHALL BE PAID BY THE CONTRACTOR. IF TESTS SHOW THE INSTALLATION DOES NOT MEET SPECIFICATIONS, THE PAVING SHALL BE REMOVED, REPLACED, AND RETESTED.
21.

IF ANY MUCK-LIKE MATERIAL IS DISCOVERED, IT WILL BE REQUIRED TO BE REMOVED, BACKFILLED WITH APPROPRIATE FILL, COMPACTED, AND TESTED USING AASHTO T-180 MODIFIED PROCTOR METHOD.
22.

FILL MATERIAL IS TO BE PLACED IN ONE FOOT LIFTS AND COMPACTED TO THE APPROPRIATE DENSITY (98% FOR PAVED AREAS AND 95% FOR BUILDING PADS AND ALL OTHER AREAS AS PER AASHTO T-180).
23.

NO BURYING OF ANY ORGANIC MATERIALS ALLOWED.
24.

THERE WILL BE NO PROPOSED OVERHEAD UTILITY AND SERVICE LINES ASSOCIATED WITH THIS PROJECT. ALL UTILITY LINES AND SERVICES WILL BE INSTALLED UNDERGROUND AT THE OWNER'S, DEVELOPER'S OR BUILDER'S EXPENSE.

SITE PREPARATION FOR PAVEMENT

1.

PRIOR TO CONSTRUCTION, THE LOCATION OF EXISTING UNDERGROUND UTILITY LINES WITHIN THE CONSTRUCTION AREA SHOULD BE ESTABLISHED. PROVISIONS SHOULD BE MADE TO RELOCATE INTERFERING UTILITIES TO APPROPRIATE LOCATIONS. IT SHOULD BE NOTED THAT IF UNDERGROUND PIPES ARE NOT PROPERLY REMOVED OR PLUGGED, THEY MAY SERVE AS CONDUITS FOR SUBSURFACE EROSION WHICH MAY SUBSEQUENTLY LEAD TO EXCESSIVE SETTLEMENT OF THE OVERLYING STRUCTURES.
2.

STRIP THE PROPOSED CONSTRUCTION LIMITS OF ALL GRASS, ROOTS, TOPSOIL AND OTHER DELETERIOUS MATERIALS WITHIN AND 3 FEET BEYOND THE PROPOSED PAVEMENT LIMITS. EXPECT INITIAL CLEARING AND GRUBBING TO DEPTHS OF APPROXIMATELY 6 TO 12-INCHES.
3.

PROOF-COMPACT THE EXPOSED SURFACE WITH LIGHT TO MEDIUM ROLLER UNTIL YOU MAINTAIN DENSITY OF AT LEAST 98 PERCENT SHOULD BE OBTAINED IN THE UPPER 12 INCHES BELOW BASE COURSE. THE COMPACTED SOILS SHALL EXHIBIT MOISTURE CONTENT WITHIN 2 PERCENT OF THE SOILS OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE MODIFIED PROCTOR TEST (ASTM D-1557). VIBRATORY EQUIPMENT SHOULD BE OPERATED IN STATIC MODE WITHIN 75 FEET OF ADJACENT STRUCTURES.
4.

SHOULD THE SOILS EXPERIENCE PUMPING AND SOIL STRENGTH LOSS DURING THE COMPACTION OPERATIONS, COMPACTION WORK SHOULD BE IMMEDIATELY TERMINATED AND (1) THE DISTURBED SOILS REMOVED AND BACKFILLED WITH DRY STRUCTURAL FILL SOILS WHICH ARE THEN COMPACTED, OR (2) THE EXCESS MOISTURE CONTENT WITHIN THE DISTURBED SOILS IS ALLOWED TO DISSIPATE BEFORE RECOMPACTING.
5.

TEST THE COMPACTED SURFACE FOR COMPLIANCE AT A MINIMUM OF ONE (1) LOCATION PER 10,000 SQUARE FEET WITHIN THE PAVEMENT AREA (MINIMUM 3 LOCATIONS).
6.

PLACE THE COMPACT BACKFILL MATERIAL AS REQUIRED. THE FILL SHALL CONSIST OF "CLEAN" FINE SAND WITH LESS THAN 5 PERCENT SOIL FINES. PLACE FILL IN UNIFORM 10 TO 12-INCH LOOSE LIFTS AND COMPACT EACH LIFT TO A MINIMUM DENSITY OF 95 PERCENT OF THE MODIFIED PROCTOR MAXIMUM DENSITY WITH THE EXCEPTION THAT DENSITIES OF AT LEAST 98 PERCENT PERCENT SHALL BE OBTAINED WITHIN THE UPPER ONE FOOT BELOW BASE COURSE. COMPACTED SOILS SHALL EXHIBIT MOISTURE CONTENT WITHIN 2 PERCENT OF THE SOILS OPTIMUM MOISTURE CONTENT AS DETERMINED BY THE MODIFIED PROCTOR TEST (ASTM D-1557). IF LIGHT EQUIPMENT IS USED, THEN THE LIFT THICKNESS SHALL BE REDUCED TO 8-INCH THICK LIFTS.
7.

PERFORM COMPLIANCE TESTS WITHIN EACH LIFT OR FILL AT A FREQUENCY OF NOT LESS THAN ONE TEST PER 10,000 SQUARE FEET OF PAVEMENT AREA (MINIMUM 3 LOCATIONS).

LEGEND

NOTE: NOT ALL SYMBOLS SHOWN HERE MAY BE APPLICABLE TO THESE DRAWINGS, ALSO THERE MAY BE ADDITIONAL SYMBOLS WITHIN PLANS NOT SHOWN HERE, SEE INDIVIDUAL DRAWING LEGEND WHERE APPLICABLE.

#3	BENCHMARK ID		
B24	BORING ID		FOUND 4" BY 4" CONCRETE MONUMENT L.B. #3724
	EXISTING CABLE TV PEDESTAL		EXISTING EASEMENT
E	EXISTING CAP OR PLUG		EXISTING UNDERGROUND FIBER OPTIC CABLE
	EXISTING CLEAN OUT		EXISTING FORCE MAIN (# INDICATES SIZE)
	EXISTING CONDUIT RISER/ MARKER		EXISTING GAS MAIN
	EXISTING ELECTRIC METER		EXISTING OVERHEAD ELECTRIC CABLES
	EXISTING ELEVATION (SOFT)		EXISTING OVERHEAD TRAFFIC SIGNAL CABLE
5.0±	PROPOSED ELEVATION (SOFT)		EXISTING RAW WATER MAIN (# INDICATES SIZE)
	EXISTING ELEVATION (HARD)		EXISTING RECLAIM WATER MAIN (# INDICATES SIZE)
5.00	PROPOSED ELEVATION (HARD)		PROPOSED SANITARY SEWER (# INDICATES SIZE)
	EXISTING FIRE HYDRANT		PROPOSED WATER MAIN (# INDICATES SIZE)
	PROPOSED FIRE HYDRANT		EXISTING CONTOUR
	EXISTING FLOW DIRECTION		PROPOSED CONTOUR (SOFT)
	PROPOSED FLOW DIRECTION		PROPOSED CONTOUR (HARD)
	EXISTING GAS METER		EXISTING UNDERGROUND TELEPHONE CABLE
	EXISTING GAS VALVE		EXISTING UNDERGROUND TELEVISION CABLE
	EXISTING GUY WIRE & ANCHOR PIN		EXISTING UNDERGROUND ELECTRICAL POWER CABLE
	EXISTING MAIL BOX		JURISDICTIONAL WETLAND LINE
	EXISTING MANHOLE (UNKNOWN)		EXISTING SANITARY SEWER (# INDICATES SIZE)
	PROPOSED MANHOLE		EXISTING WATER MAIN (# INDICATES SIZE)
	EXISTING SANITARY SEWER CLEANOUT		EXISTING PIPE OR CONDUIT (TYPE SPECIFIED)
	EXISTING SANITARY SEWER MANHOLE		EXISTING SWALE OR CENTER OF DITCH
	EXISTING ROAD SIGNS AND POSTS		PROPOSED SWALE OR CENTER OF DITCH
	PROPOSED SIGN AND POST		EXISTING TOP OF DITCH BANK
	EXISTING TEE		EXISTING BOTTOM OF DITCH BANK
	EXISTING UTILITY POLE		EXISTING WOOD FENCE
	EXISTING VALVE IRRIGATION		EXISTING WIRE OR CHAIN LINK FENCE
	EXISTING VALVE WATER		PROPOSED WIRE OR CHAIN LINK FENCE
	PROPOSED WATER VALVE		PROPOSED SILT/SEDIMENT FENCE
	EXISTING WATER METER		PROPOSED COIR ROLL OR WATTLE
	EXISTING STORM SEWER WITH INLET		PROPOSED FLOATING TURBIDITY BARRIER
	PROPOSED STORM SEWER WITH INLET		PROPOSED TREE PROTECTION
	FOUND 1/2" CAPPED IRON ROD L.B. #3724		
	FOUND 1/2" IRON ROD (NO I.D.)		

SITE DEVELOPMENT USAGE

1. SETBACK (DUPLEX UNITS FROM LOT LINES):

FRONT	13 FEET (FOR FRONT UNITS ONLY)
REAR	0 FEET FOR ATTACHED UNITS, 15 FEET BETWEEN BUILDINGS
SIDE	0 FEET FOR ATTACHED UNITS, 15 FEET BETWEEN BUILDINGS
SIDE (NORTH & SOUTH)	EQUAL TO FRONT SETBACK

2. LANDSCAPE BUFFERS (DEVELOPMENT PERIMETER):

HIDDEN LAKE DRIVE	10 FEET
YORKTOWNE BOULEVARD	10 FEET
NORTH PROPERTY LINE	50 FEET

3. PROPOSED SITE COVERAGE:

	SQ. FT	ACRE	%
ASPHALT PAVEMENT (RIGHT-OF-WAY)	33,678	0.773	5.9
ASPHALT PAVEMENT (PARKING LOT)	5,719	0.131	1.0
CONCRETE DRIVEWAY APRONS	3,387	0.078	0.6
CONCRETE SIDEWALKS	9,231	0.212	1.6
INTERIOR LANDSCAPE	491,926	11.293	86.9
EXTERIOR LANDSCAPE	22,252	0.511	3.9
TOTAL SITE	566,193	12.998	100.00
TOTAL IMPERVIOUS	52,015	1.194	9.2
TOTAL OPEN SPACE	514,178	11.804	90.8

4. PARKING PROVIDED

TOTAL PARKING PROVIDED	16 STANDARD SPACES
------------------------	--------------------

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS - 2016 / 2017 AND QUALIFIED PRODUCTS LIST

INDEX NO.	DESCRIPTION	INDEX NO.	DESCRIPTION
102	TEMPORARY EROSION AND SEDIMENT CONTROL	505	EMBANKMENT UTILIZATION
200	STRUCTURE BOTTOMS - TYPES J AND P	514	OPTIONAL BASE GROUP AND STRUCTURAL NUMBERS
205	PIPE BACKFILL	515	TURNOUTS
232	DITCH BOTTOM INLETS - TYPES C, D, E AND H	546	SIGHT DISTANCE AT INTERSECTIONS
261	U-TYPE CONCRETE ENDWALLS - BAFFLES AND AND GRATE OPTIONAL - 15" TO 30" PIPE	600	GENERAL INFORMATION FOR TRAFFIC CONTROL THROUGH WORK ZONES
272	CROSS DRAIN MITERED END SECTION	602	TWO-LANE, TWO-WAY, WORK ON SHOULDER
273	SIDE DRAIN MITERED END SECTION	603	TWO-LANE, TWO-WAY, WORK WITHIN THE TRAVEL WAY
281	DITCH PAVEMENT AND SODDING	17302	TYPICAL SECTIONS FOR PLACEMENT OF SINGLE & MULTIPLE-COLUMN SIGNS
300	CURB & CURB AND GUTTER	17346	SPECIAL MARKING AREAS
304	PUBLIC SIDEWALK CURB RAMPS		
305	CONCRETE PAVEMENT JOINTS		
310	CONCRETE SIDEWALK		

ABBREVIATIONS

AWWA	AMERICAN WATER ASSOCIATION	G	GAS	MARKER	
WORKS		GW	GROUND WATER	R/W	RIGHT-OF-WAY
CMP	CORRUGATED METAL PIPE	H/C	HANDICAP	SAN	SANITARY
		HDPE	HIGH DENSITY POLYETHYLENE	SH	SEASONAL HIGH
CPP	CORRUGATED PLASTIC PIPE	INV	INVERT	SJRWMD	ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
CTV	CABLE TELEVISION	K _H	HORIZONTAL PERMEABILITY	SMH	SANITARY MANHOLE
DIP	DUCTILE IRON PIPE			SS	SANITARY SEWER
D.M.A.E.	DRIANAGE/MAINTENANCE/ ACCESS EASEMENT	K _v	VERTICAL PERMEABILITY	SWPPP	STORMWATER POLLUTION PREVENTION PLAN
ESMT	EASEMENT	KO	KNOCK OUT		
EXIST	EXISTING	LF	LINEAL FEET	TSB	TEMPORARY SEDIMENT BASIN
FAC	FLORIDA ADMINISTRATIVE CODE	MB	MAP BOOK	TYP	TYPICAL
		MES	MITERED END SECTION	UGE	UNDERGROUND ELECTRIC
FACBC	FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION	N/A	MECHANICAL JOINT	UGT	UNDERGROUND TELEPHONE
		NIC	NOT IN CONTRACT	USACOE	UNITED STATES ARMY CORP OF ENGINEERS
FDEP	FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION	NGVD	NATIONAL GEODETIC VERTICAL DATUM	W	WATER (POTABLE)
		OHE	OVERHEAD ELECTRIC		
		OR	OFFICIAL RECORD		
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION	PG	PAGE		
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY	PSI	POUNDS PER SQUARE INCH		
FH	FIRE HYDRANT	PVC	POLYVINYL CHLORIDE		
FOC	FIBER OPTIC CABLE	PVMT	PAVEMENT		
FF EL	FINISH FLOOR ELEVATION	R	RADIUS		
FM	FORCE MAIN	RCP	REINFORCED CONCRETE PIPE		
FPD	FEET PER DAY	RPM	REFLECTIVE PAVEMENT		

SITE AND GENERAL INFORMATION

1.

THE PROPERTY AREA BOUNDARY CONSISTS OF 566,193 SF OR 12.998 ACRES. FOR BOUNDARY AND TOPOGRAPHIC SURVEY REFER TO THE SURVEY PERFORMED BY A1A GEO, INC., PROJECT NO. 2016-90.
2.

THE EXISTING AND PROPOSED ZONING IS PUD (PLANNED UNIT DEVELOPMENT).
3.

THE TAX PARCEL NUMBER IS 18-16-33-00-00-0091.
4.

THE EXISTING SITE CONDITION IS FORESTED AND UNDEVELOPED. THE FLUCFCS LAND USES ARE (411) PINE FLATWOODS, (425) TEMPERATE HARDWOODS AND (630) WETLAND FORESTED MIXED.
5.

PER THE USDA NATURAL RESOURCES CONSERVATION SERVICE FOR VOLUSIA COUNTY, THE SCS SOILS MAP INDICATES THE SITE CONSISTS OF (34) MYAKKA-ST. JOHNS COMPLEX (HYDROLOGIC GROUP D) AND (60) SMYRNA-SMYRNA, WET, FINE SAND, 0 TO 2 PERCENT SLOPES (HYDROLOGIC GROUP B/D).
6.

THE SITE IS LOCATED WITHIN ZONES "AE" EL 26.0 AND "X" PER FEMA MAP PANEL No. 12127C0506 H, DATED FEBRUARY 19, 2014. THE ENTIRE DEVELOPMENT (PROPOSED RIGHT-OF-WAY AND RESIDENTIAL LOTS) IS LOCATED IN ZONE "X".
7.

ELECTRICAL UTILITY SERVICE WILL BE PROVIDED BY FLORIDA POWER & LIGHT. NATURAL GAS WILL BE PROVIDED BY TECO PEOPLES GAS COMPANY. TELEPHONE, CABLE AND INTERNET SERVICE WILL BE PROVIDED BY AT&T. CABLE TV AND INTERNET CAN ALSO BE PROVIDED BY BRIGHTHOUSE NETWORKS.
8.

SOLID WASTE WILL BE COLLECTED AND DISPOSED OF BY WASTE PRO, INC.
9.

THE SITE IS NOT LOCATED WITHIN THE LIMITS OF A WELLHEAD PROTECTION ZONE AND THERE IS NO ORDINARY HIGH WATER (OHW) LINE WITHIN THE SITE.
10.

STORMWATER WILL BE PROVIDED BY AN ONSITE WET DETENTION POND SYSTEM.
11.

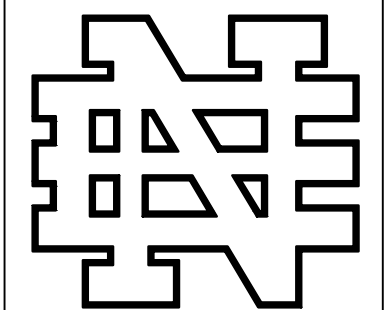
POTABLE WATER AND WASTEWATER UTILITIES PROVIDED BY CITY OF PORT ORANGE.
12.

IRRIGATION SERVICE WILL BE PROVIDED BY PRIVATE WELL.
13.

ALL ON-SITE WATER AND SEWER FACILITIES ARE OWNED AND MAINTAINED BY THE PROPERTY OWNER.

REVISIONS

DATE	DESCRIPTION

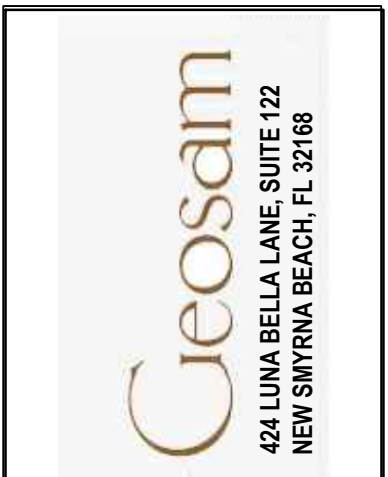


NEWKIRK ENGINEERING

1370 North US1, Suite 204
Ormond Beach, Florida 32174
Phone (386) 290-7599
Harry@Newkirk-Engineering.com

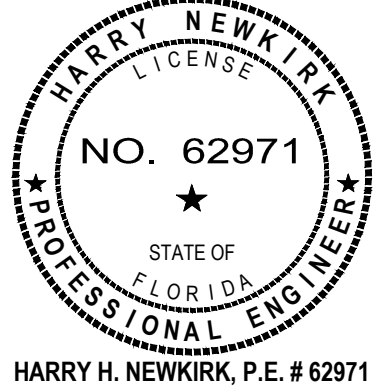
Certificate of Authorization
No. 30209
© 2013

Civil Engineering
Transportation
Construction Engineering & Inspection



THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING. ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING. COPYRIGHT 2014 ALL RIGHTS RESERVED.

DEVELOPMENT INFORMATION
CORNERSTONE GROVE PUD
HIDDEN LAKE DRIVE
PORT ORANGE, FL 32129



HARRY H. NEWKIRK, P.E. # 62971

PROJECT No: 2016-237

DATE: MARCH 2017

DESIGN BY: HHN

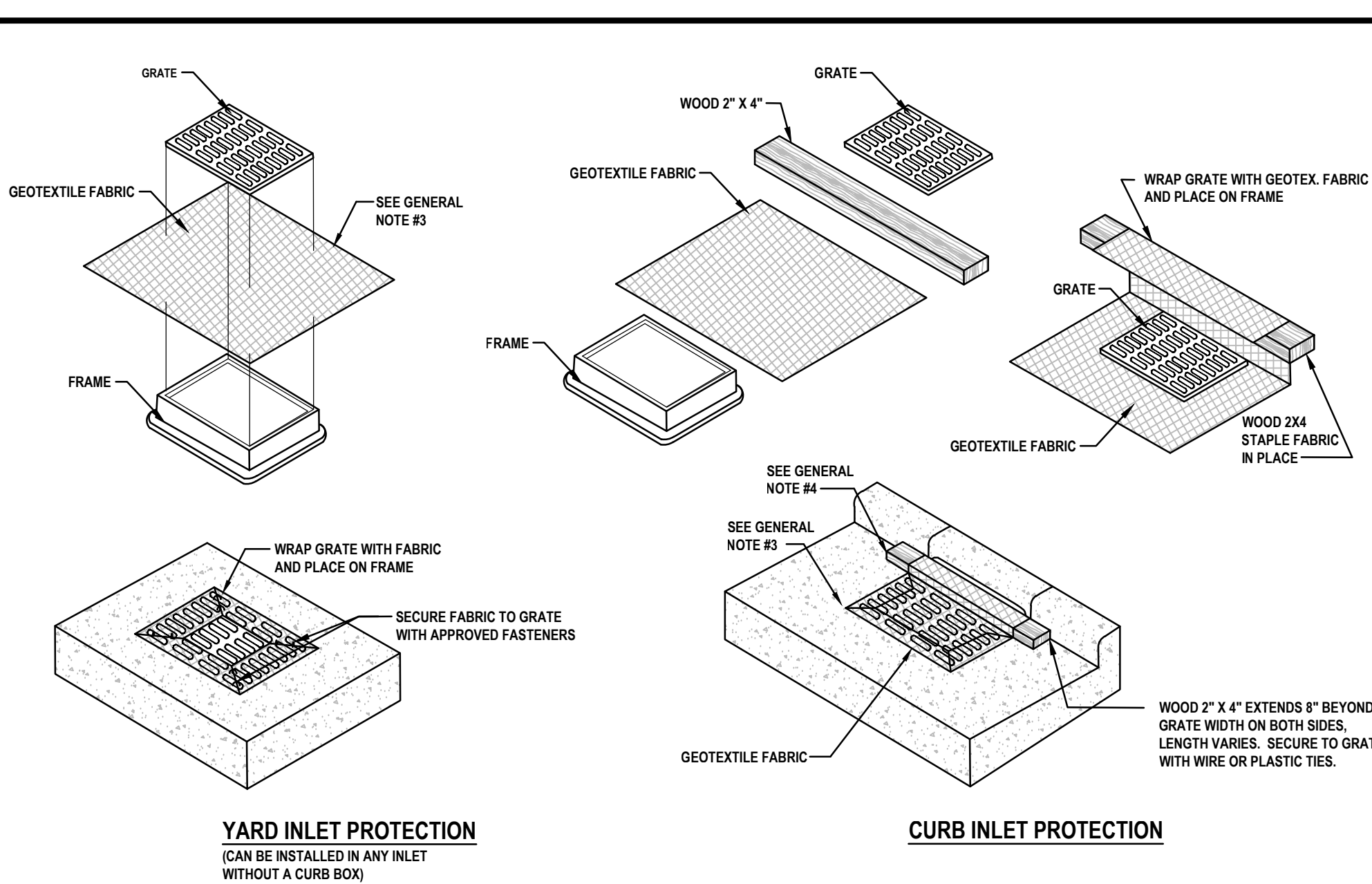
DRAWN BY: DAB

CHECKED BY: HHN

SCALE: 1" = 50'

DRAWING NUMBER

3

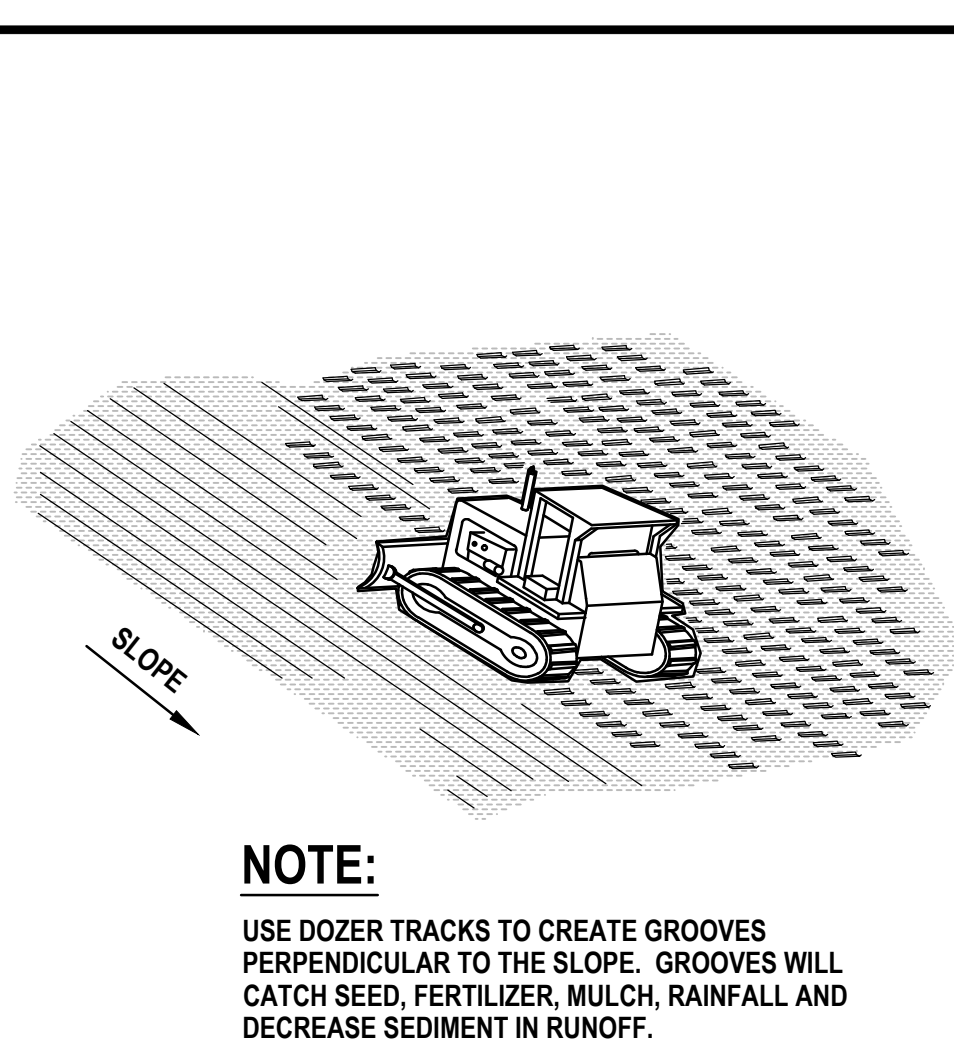
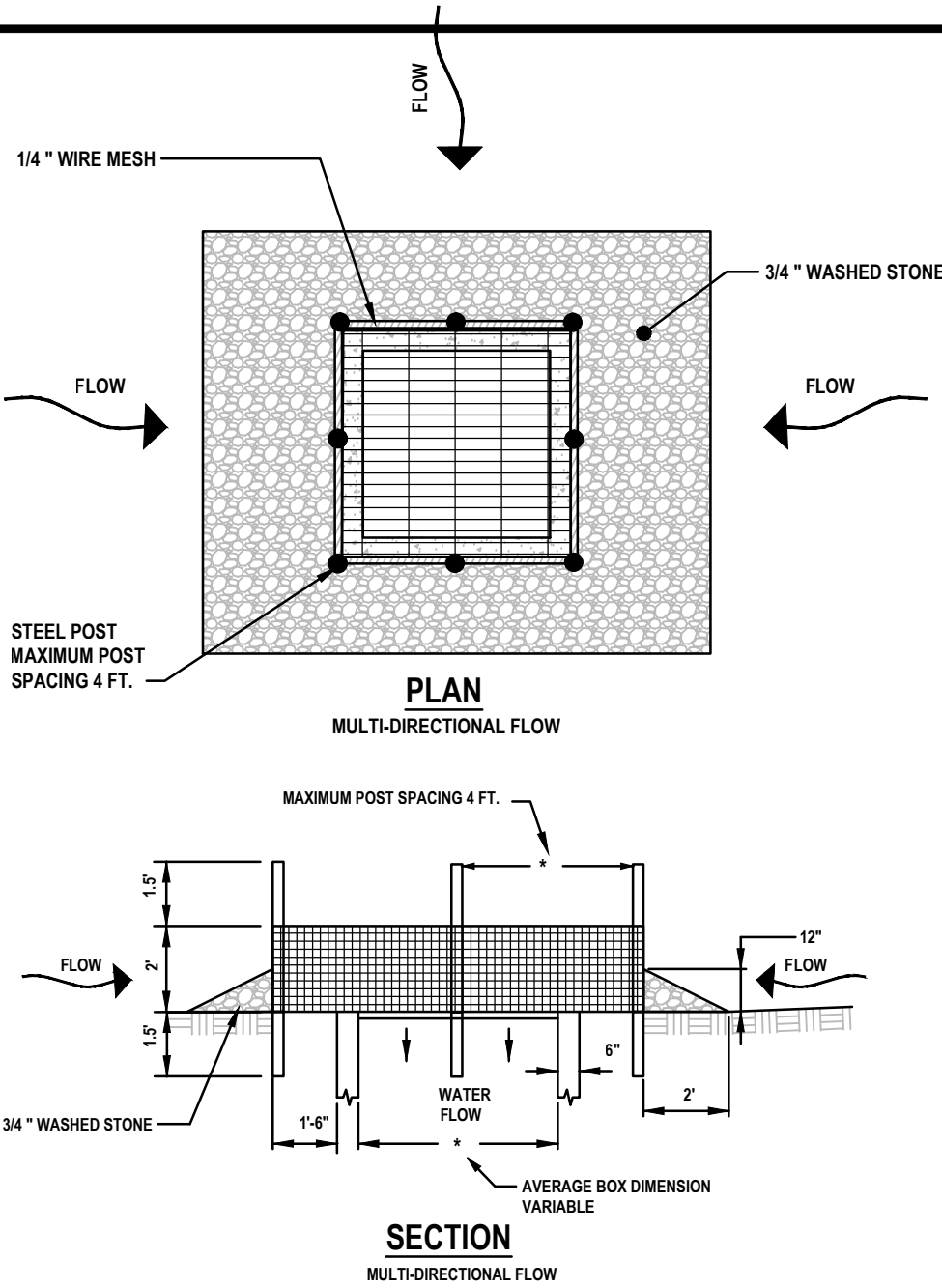
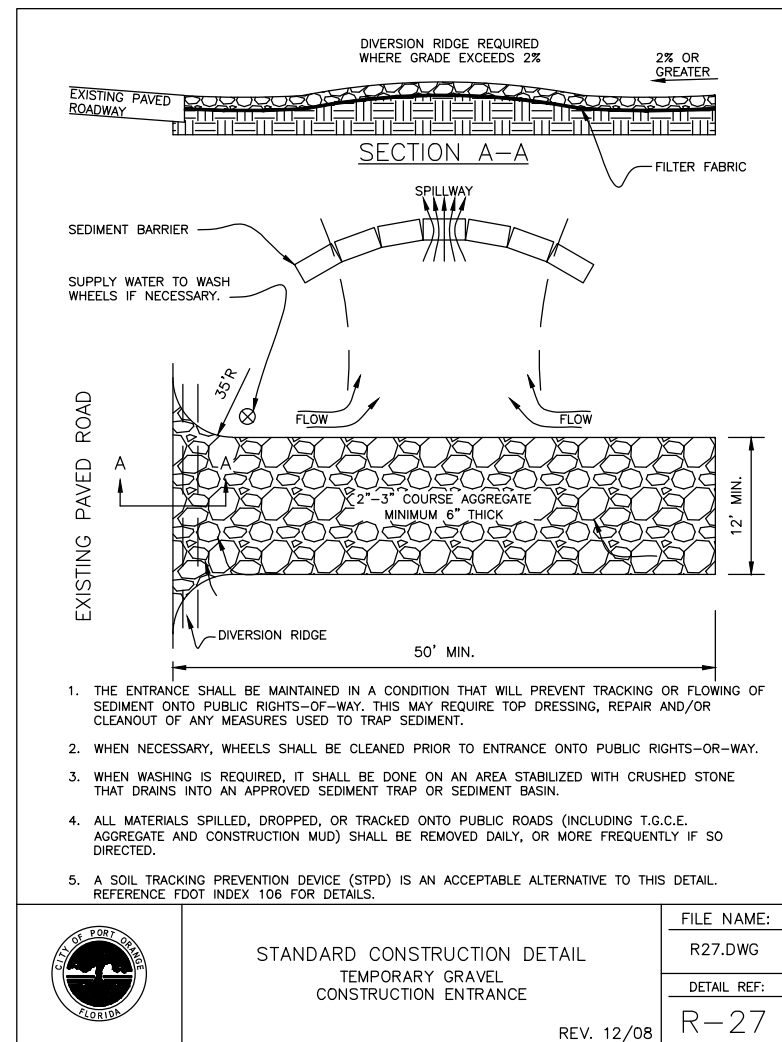
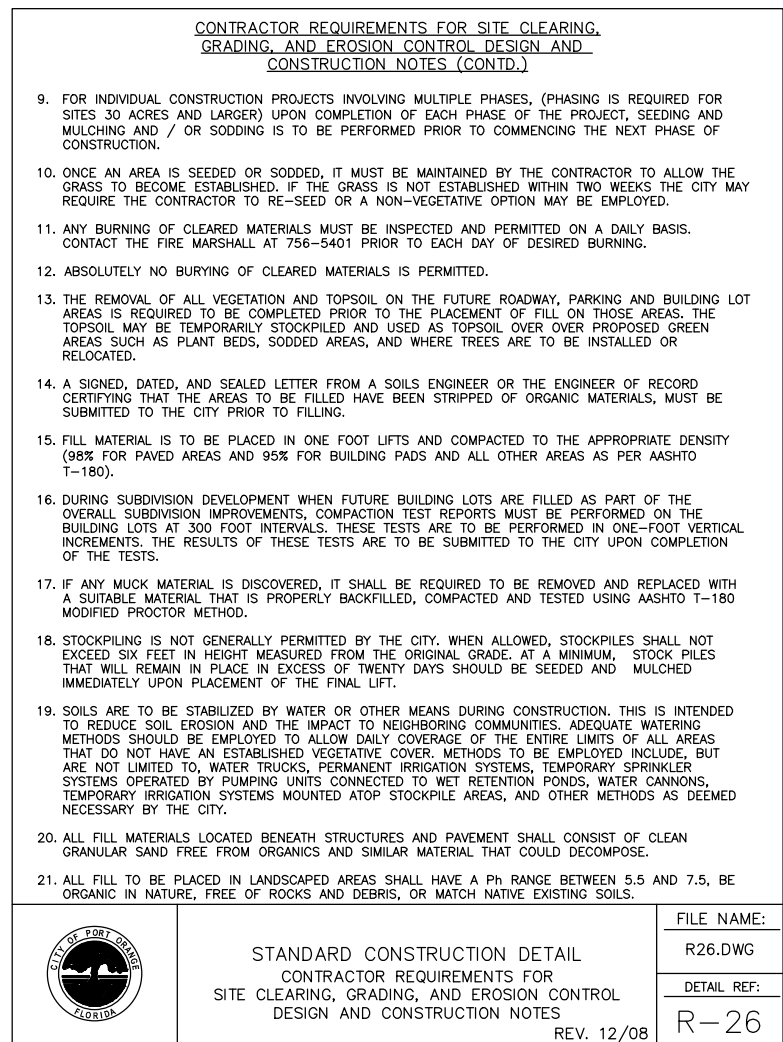
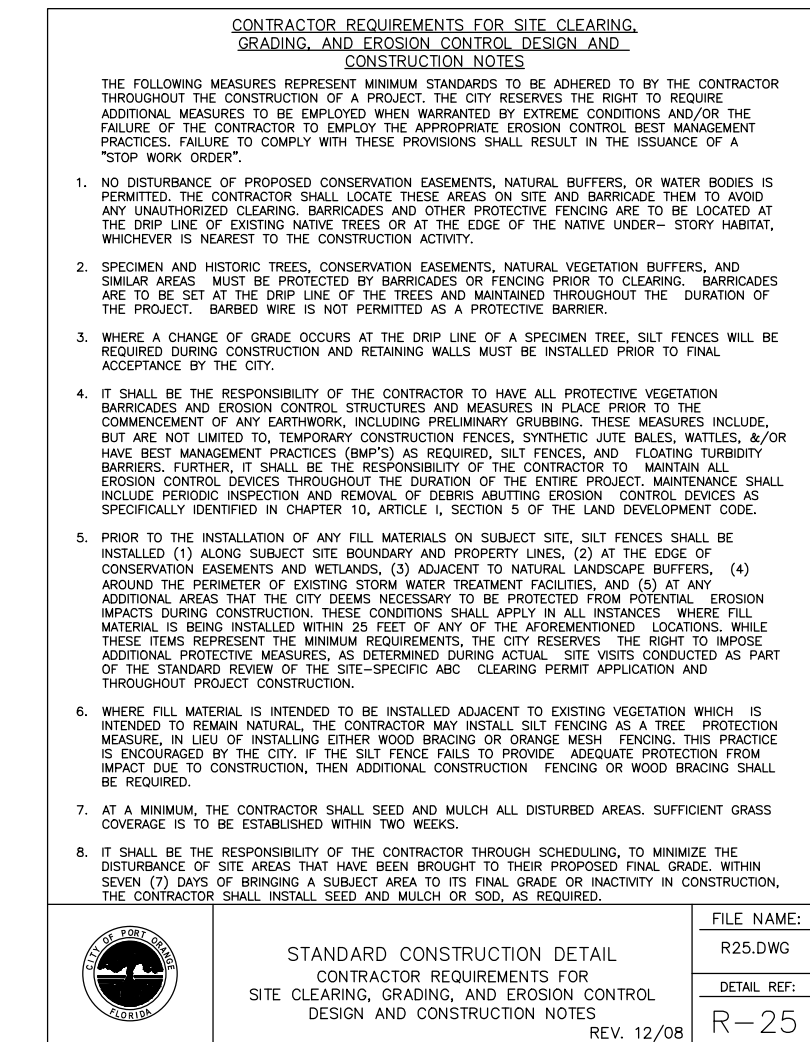
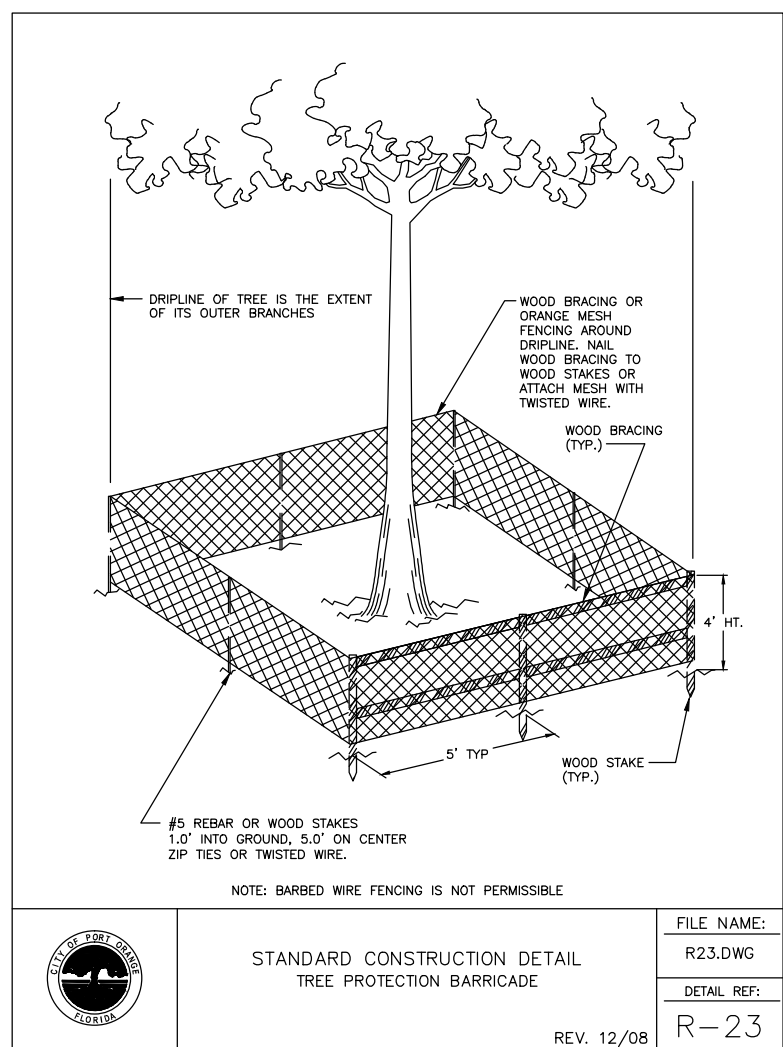
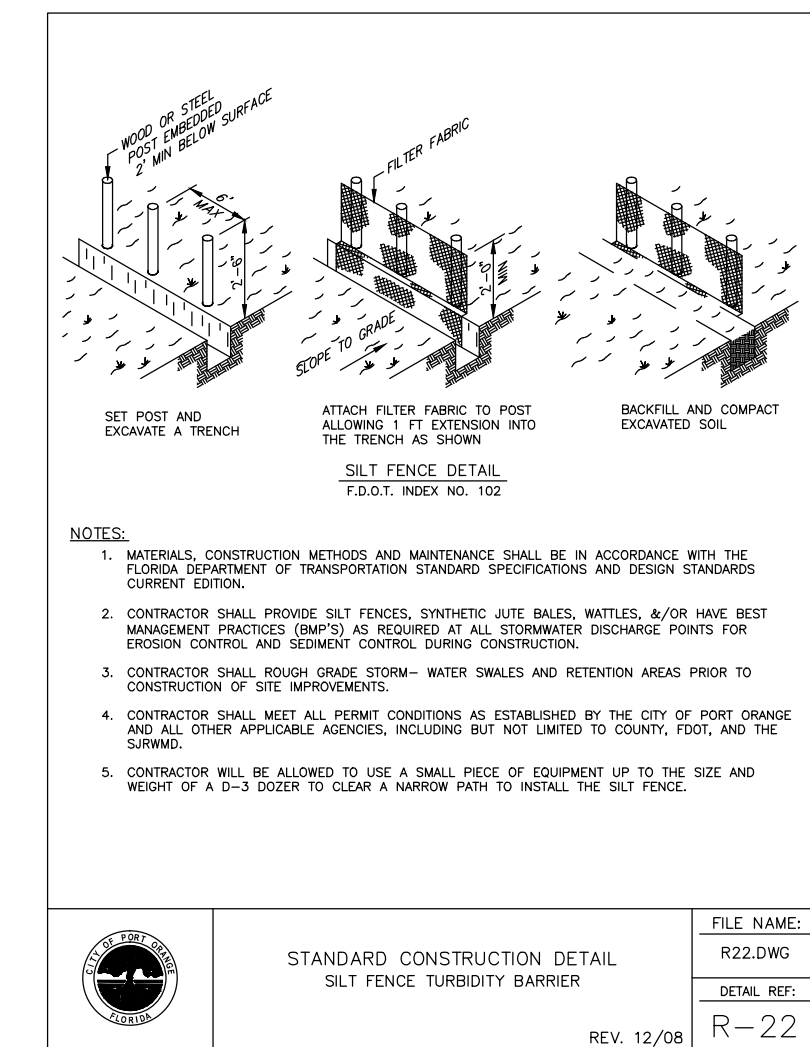


GENERAL NOTES:

- GEOTEXTILE TO BE MIRAFI FILTERWEAVE 402 OR GEOTEX 111F. ALTERNATIVES INCLUDE APPROVED EQUAL ASTM D4491 OR 100 TO 150 GALLON PER MINUTE PER SQUARE FOOT.
- WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.
- FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
- FOR CURB INLET PROTECTION AN ADDITIONAL 18" OF FABRIC IS WRAPPED AROUND THE WOOD AND SECURED WITH STAPLES. THE WOOD SHALL NOT BLOCK THE ENTIRE HEIGHT OF THE CURB BOX OPENING.
- TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.
- THE CONTRACTOR SHALL DEMONSTRATE A METHOD OF MAINTENANCE, USING A SEWN FLAP, HAND HOLDS, OR OTHER METHOD TO PREVENT ACCUMULATED SEDIMENT FROM ENTERING THE INLET.

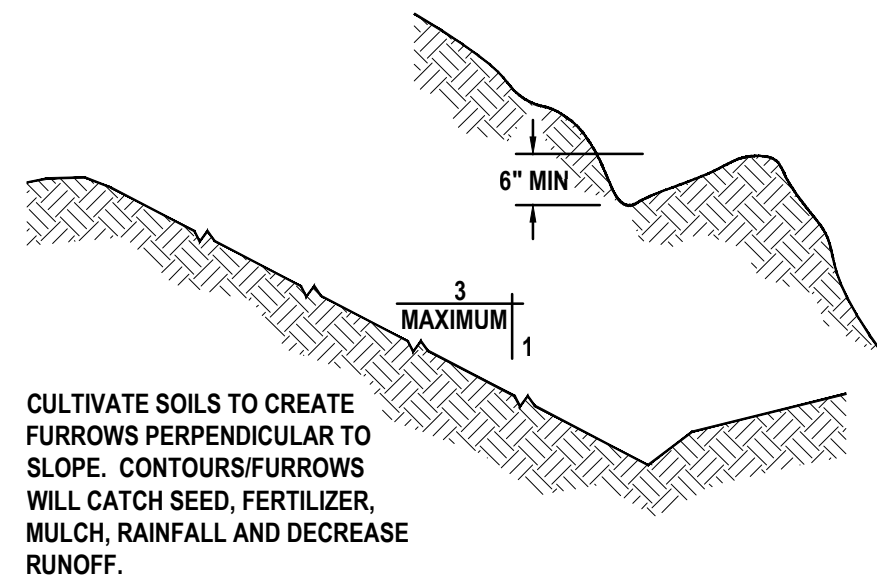
GEOTEXTILE FABRIC INLET PROTECTION

NOT TO SCALE



TRACKING DETAIL

NOT TO SCALE



SURFACE ROUGHENING

(NOT TO SCALE)

TEMPORARY SEEDING SPECIFICATION:

GENERAL

SEEDING CAN BE USED FOR TEMPORARY STABILIZATION. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS CEASED FOR MORE THAN 7 DAYS SHALL BE TEMPORARILY SEEDED AND WATERED. AREAS WHERE FINAL GRADING HAS BEEN COMPLETED FOR MORE THAN 7 DAYS SHALL BE TEMPORARILY SEEDED. TEMPORARY SEED MIXTURE IS SPECIFIED BELOW.

SEEDING MIXTURES

SEED MIXTURE SHALL BE BERMUDA COMMON 90 LB PURE LIVE SEED PER ACRE, FIBER 2000 LB PER ACRE, STABILIZER 120 LB PER ACRE AND FERTILIZER 300 LB PER ACRE.

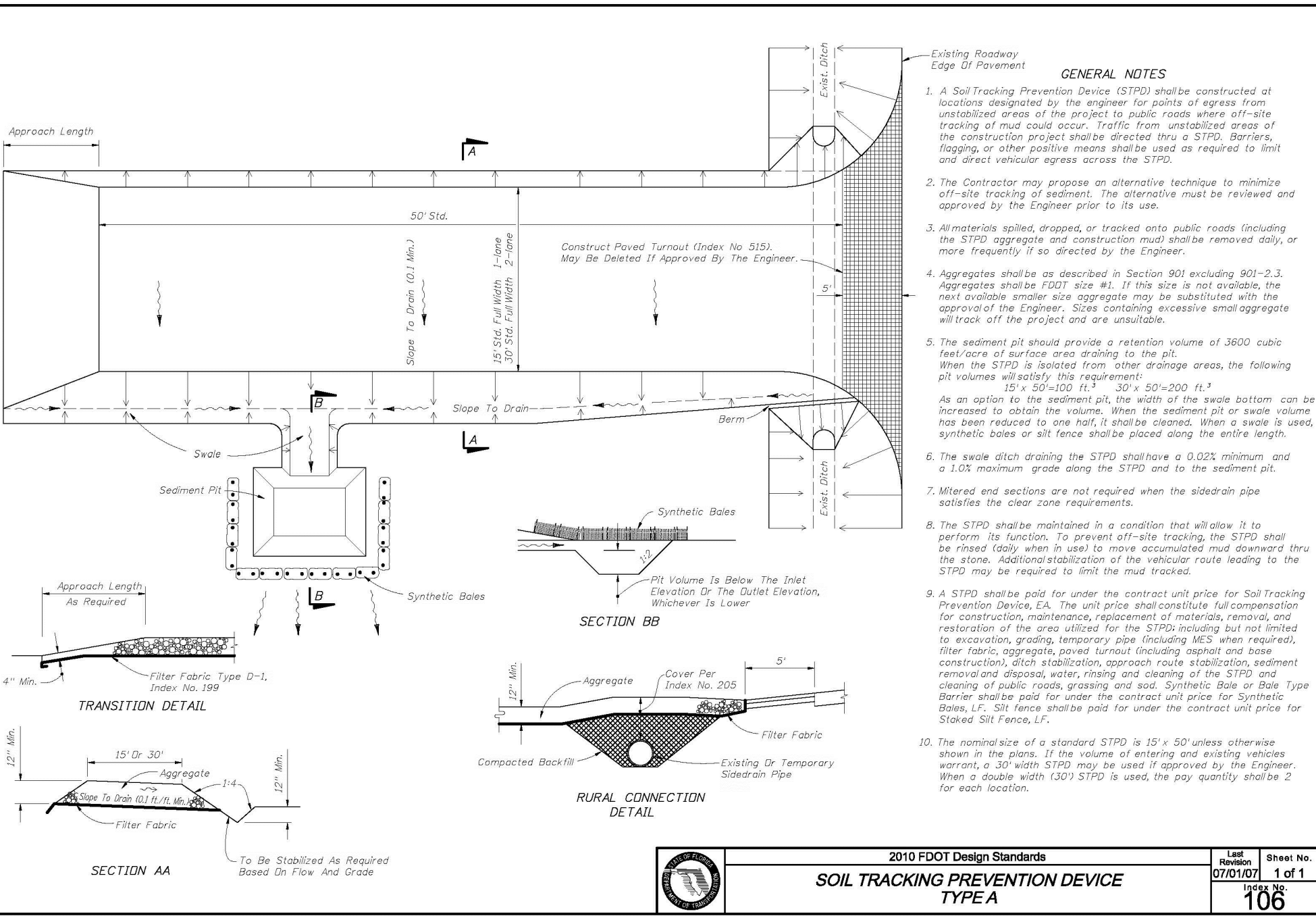
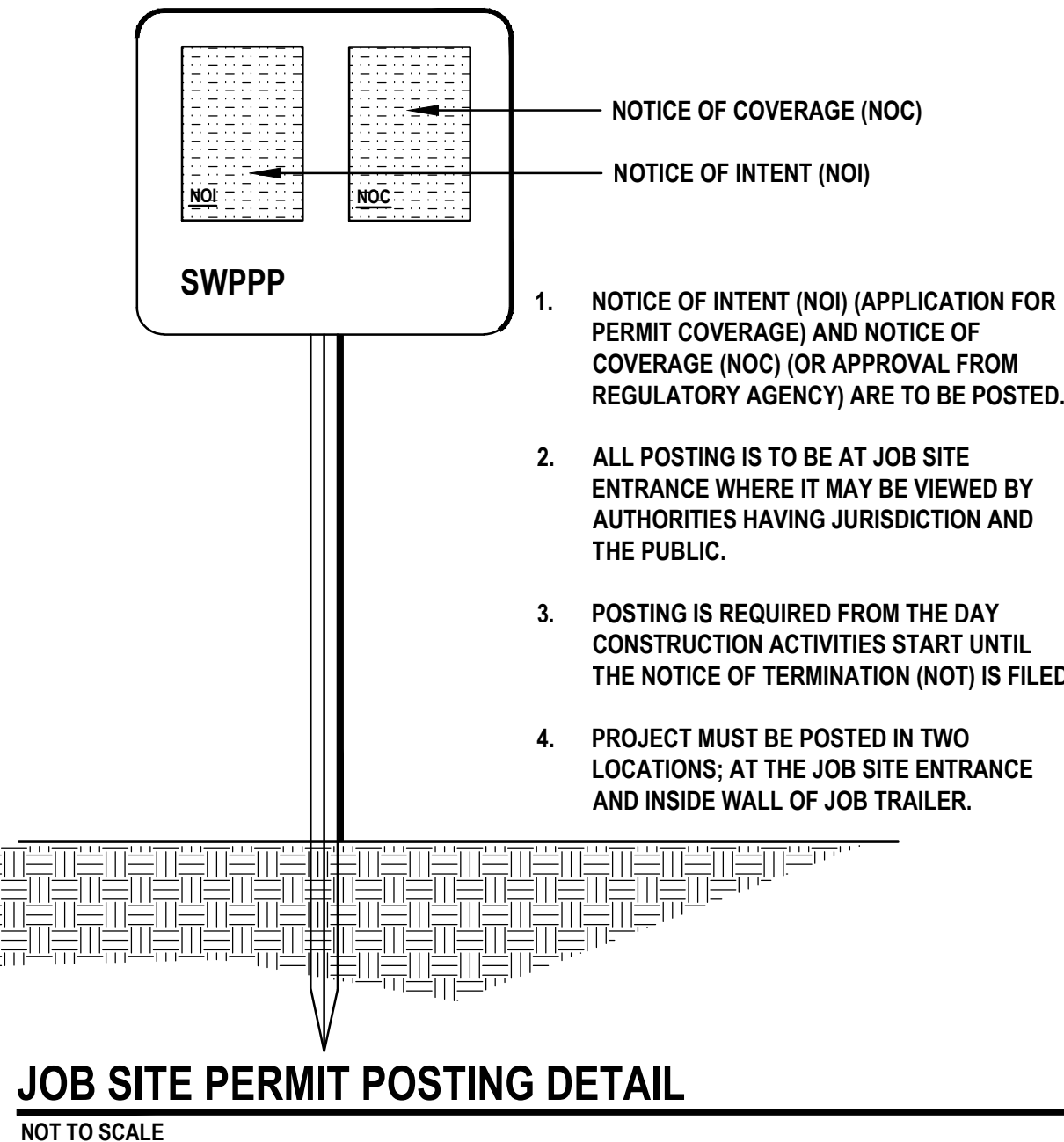
ALL SLOPES AND FLAT GRADE

APPLY 6:20:20 COMMERCIAL ORGANIC FERTILIZER AT A RATE OF 300 LB PER ACRE AND SEED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

TEMPORARY SEEDING PLANTING DATES	SEED VARIETY	APPLICATION RATE
MARCH 15 - OCTOBER 15	PENSACOLA BAHIA (SCARIFIED) BERMUDA COMMON (50% HULLED)	90 25
OCTOBER 16 - MARCH 14	PENSACOLA BAHIA (SCARIFIED) BERMUDA COMMON (50% HULLED) ANNUAL RYE GRASS RYE GRAIN	100 35 10 30

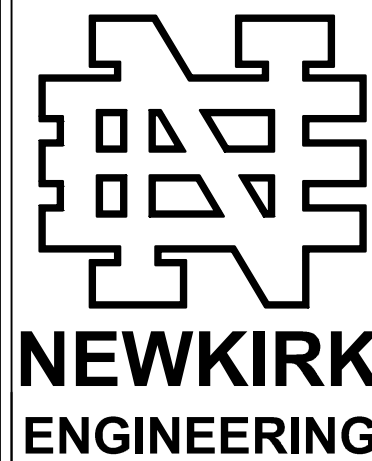
MULCH SEEDED AREA WITH 2 TONS PER ACRE CLEAN GRAIN STRAW. ANCHOR STRAW WITH HYDRAULIC WOOD FIBER MULCH AT THE RATE OF 1000 LB PER ACRE, OR 150-200 POUNDS OF ORGANIC MULCH TACKIFIER PER ACRE, OR USE NETTING.

HYDRO FIBER MULCH MIXTURE SHALL BE PERFORMED IN A TANK WITH A CONTINUOUS AGITATION AND RECIRCULATION SYSTEM WITH SUFFICIENT OPERATING CAPACITY TO PRODUCE A HOMOGENOUS SLURRY AND DISCHARGE SYSTEM WHICH WILL APPLY THE SLURRY AT A CONTINUOUS AND UNIFORM RATE. MIXTURE SHALL CONTAIN A GREEN FUGITIVE DYE AS AN APPLICATION INDICATOR.



REVISIONS

DATE	DESCRIPTION



1370 North US1, Suite 204
Orlando Beach, Florida 32174
Phone (386) 290-7599
Harry@Newkirk-Engineering.com

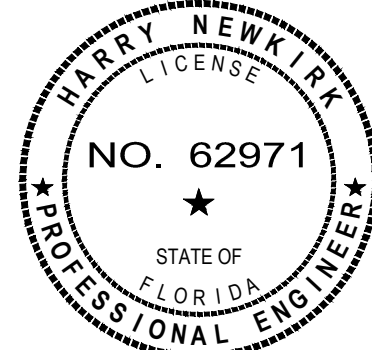
Certificate of Authorization
No. 30209
© 2013
Civil Engineering
Transportation
Construction Engineering & Inspection



424 LUNA BELLA LANE, SUITE 122
NEW SMYRNA BEACH, FL 32108

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING. ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING. COPYRIGHT 2014 ALL RIGHTS RESERVED.

SWPPP DETAILS AND NOTES
CORNERSTONE GROVE PUD
HIDDEN LAKE DRIVE
PORT ORANGE, FL 32129



HARRY H. NEWKIRK, P.E. # 62971

PROJECT No: 2016-237

DATE: MARCH 2017

DESIGN BY: HHN

DRAWN BY: DAB

CHECKED BY: HHN

SCALE: 1" = 50'

DRAWING NUMBER

5

PARCEL ID#: 12-16-32-00-00-0021
OWNER: SAM J OWENS JR
WLA HOLDINGS LLC
400 S PALMETTO AVE
DAYTONA BEACH, FL 32114
ZONING: PUD

PARCEL ID#: 18-16-33-00-00-0037
OWNER: IN LAND WE TRUST LLC & YRRAL REAL ESTATE COMPANY
PO BOX 265100
DAYTONA BEACH, FL 32126
ZONING: PUD (PLANNED UNIT DEVELOPMENT)

PARCEL ID#: 07-16-33-13-00-0940
OWNER: MICHAEL J & DAWN M MCGOWAN
1524 LEONE LANE
PORT ORANGE, FL 32119-4069
ZONING: PUD

PARCEL ID#: 07-16-33-13-00-0930
OWNER: DAVID M & LINDA L STAUB
1522 LEONE LANE
PORT ORANGE, FL 32119-4069
ZONING: R-8SF

PARCEL ID#: 07-16-33-13-00-0920
OWNER: JOHN HOLLEMAN
1520 LEONE LANE
PORT ORANGE, FL 32119-4069
ZONING: R-8SF

PARCEL ID#: 07-16-33-13-00-0910
OWNER: RYAN L JUSTICE
1518 LEONE LANE
PORT ORANGE, FL 32129
ZONING: R-8SF

PARCEL ID#: 07-16-33-13-00-0900
OWNER: JAMES J & KATHLEEN P MCMULLIN
1516 LEONE LANE
PORT ORANGE, FL 32119-4069
ZONING: R-8SF

PARCEL ID#: 07-16-33-13-00-0890
OWNER: LYNN WELLS
1514 LEONE LANE
PORT ORANGE, FL 32129
ZONING: R-8SF

PARCEL ID#: 07-16-33-13-00-0880
OWNER: DANIEL JR & CYNTHIA MCCLUSKEY
1512 LEONE LANE
PORT ORANGE, FL 32119-4069
ZONING: R-8SF

PARCEL ID#: 07-16-33-13-00-0870
OWNER: WILLIAM J & KATHY J EVANS
1510 LEONE LANE
PORT ORANGE, FL 32129
ZONING: R-8SF

PARCEL ID#: 07-16-33-13-00-0860
OWNER: KYLE LESLIE TR
2603 BERKLEY TERR
DAYTONA BEACH, FL 32118
ZONING: R-8SF

PARCEL ID#: 07-16-33-13-00-0850
OWNER: RONNIE M & JANET P SPENCER
1508 LEONE LANE
PORT ORANGE, FL 32129
ZONING: R-8SF

PARCEL ID#: 07-16-33-13-00-0840
OWNER: DAVID J EBNER
1504 LEONE LANE
PORT ORANGE, FL 32129
ZONING: R-8SF

PARCEL ID#: 07-16-33-13-00-0830
OWNER: JON A PAULO
1502 LEONE LANE
PORT ORANGE, FL 32129
ZONING: R-8SF

PARCEL ID#: 07-16-33-13-00-0820
OWNER: JERRY W & SYLVIA L CROWDER
PO BOX 291733
PORT ORANGE, FL 32129-1733
ZONING: R-8SF

PARCEL ID#: 07-16-33-12-00-0630
OWNER: PIETRO A & KIMBERLY A PALMERI
4735 HIDDEN LAKE DR
PORT ORANGE, FL 32129
ZONING: R-8SF

N 01° 54' 42" W
16.36'

DRAINAGE EASEMENT
O.R. 6478, P3344

W3-4

W3-3

W3-2

W3-1

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

W2-8

W2-9

W2-10

W2-5

W2-4

W2-3

W2-2

W2-1

W2-6

W2-7

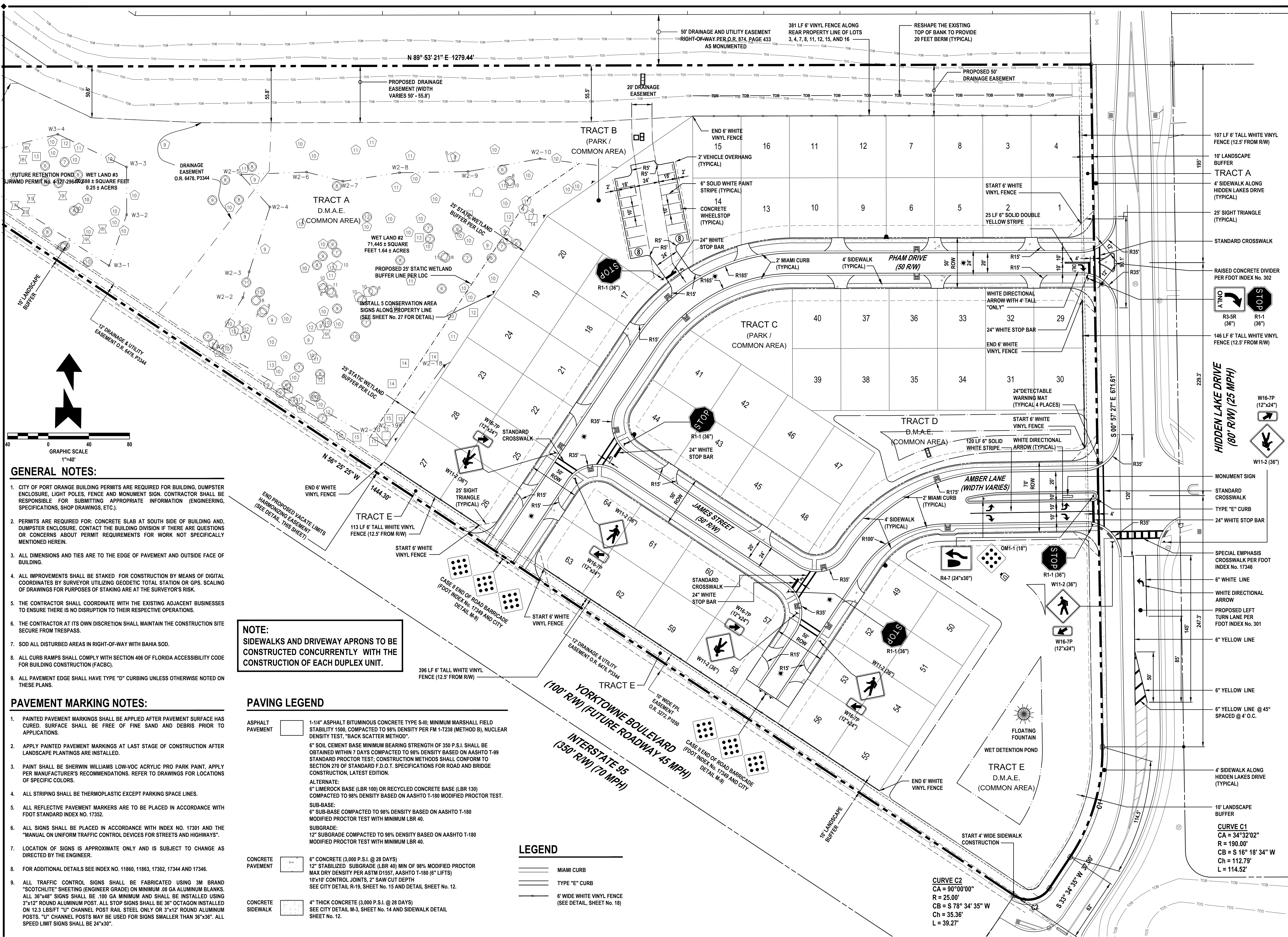
W2-8

W2-9

W2-10

W2-5

W2-4



GENERAL NOTES:

- CITY OF PORT ORANGE BUILDING PERMITS ARE REQUIRED FOR BUILDING, DUMPSTER ENCLOSURE, LIGHT POLES, FENCE AND MONUMENT SIGN. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING APPROPRIATE INFORMATION (ENGINEERING, SPECIFICATIONS, SHOP DRAWINGS, ETC.).
- PERMITS ARE REQUIRED FOR: CONCRETE SLAB AT SOUTH SIDE OF BUILDING AND DUMPSTER ENCLOSURE. CONTACT THE BUILDING DIVISION IF THERE ARE QUESTIONS OR CONCERNS ABOUT PERMIT REQUIREMENTS FOR WORK NOT SPECIFICALLY MENTIONED HEREIN.
- ALL DIMENSIONS AND TIES ARE TO THE EDGE OF PAVEMENT AND OUTSIDE FACE OF BUILDING.
- ALL IMPROVEMENTS SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEYOR UTILIZING GEODETIC TOTAL STATION OR GPS. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR'S RISK.
- THE CONTRACTOR SHALL COORDINATE WITH THE EXISTING ADJACENT BUSINESSES TO ENSURE THERE IS NO DISRUPTION TO THEIR RESPECTIVE OPERATIONS.
- THE CONTRACTOR AT ITS OWN DISCRETION SHALL MAINTAIN THE CONSTRUCTION SITE SECURE FROM TRESPASS.
- SOD ALL DISTURBED AREAS IN RIGHT-OF-WAY WITH BAHIA SOD.
- ALL CURB RAMPS SHALL COMPLY WITH SECTION 406 OF FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION (FACBC).
- ALL PAVEMENT EDGE SHALL HAVE TYPE "D" CURBING UNLESS OTHERWISE NOTED ON THESE PLANS.

PAVEMENT MARKING NOTES:

- PAINTED PAVEMENT MARKINGS SHALL BE APPLIED AFTER PAVEMENT SURFACE HAS CURED. SURFACE SHALL BE FREE OF FINE SAND AND DEBRIS PRIOR TO APPLICATIONS.
- APPLY PAINTED PAVEMENT MARKINGS AT LAST STAGE OF CONSTRUCTION AFTER LANDSCAPE PLANTINGS ARE INSTALLED.
- PAIN SHALL BE SHERWIN WILLIAMS LOW-VOC ACRYLIC PRO PARK PAINT, APPLY PER MANUFACTURER'S RECOMMENDATIONS. REFER TO DRAWINGS FOR LOCATIONS OF SPECIFIC COLORS.
- ALL STRIPING SHALL BE THERMOPLASTIC EXCEPT PARKING SPACE LINES.
- ALL REFLECTIVE PAVEMENT MARKERS ARE TO BE PLACED IN ACCORDANCE WITH FOOT STANDARD INDEX NO. 17352.
- ALL SIGNS SHALL BE PLACED IN ACCORDANCE WITH INDEX NO. 17301 AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
- LOCATION OF SIGNS IS APPROXIMATE ONLY AND IS SUBJECT TO CHANGE AS DIRECTED BY THE ENGINEER.
- FOR ADDITIONAL DETAILS SEE INDEX NO. 11860, 11863, 17302, 17344 AND 17346.
- ALL TRAFFIC CONTROL SIGNS SHALL BE FABRICATED USING 3M BRAND "SCOTCHLITE" SHEETING (ENGINEER GRADE) ON MINIMUM .08 GA ALUMINUM BLANKS. ALL 36"x48" SIGNS SHALL BE .100 GA MINIMUM AND SHALL BE INSTALLED USING 3"x12" ROUND ALUMINUM POST. ALL 60" SIGNS SHALL BE 36" OCTAGON INSTALLED ON 12.3 LBS/FT "U" CHANNEL POST RAIL STEEL ONLY OR 3"x12" ROUND ALUMINUM POSTS. "U" CHANNEL POSTS MAY BE USED FOR SIGNS SMALLER THAN 36"x36". ALL SPEED LIMIT SIGNS SHALL BE 24"x30".

NOTE:
SIDEWALKS AND DRIVEWAY APRONS TO BE
CONSTRUCTED CONCURRENTLY WITH THE
CONSTRUCTION OF EACH DUPLEX UNIT.

PAVING LEGEND

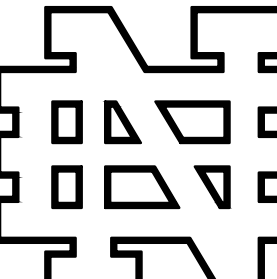
- | | |
|-------------------|---|
| ASPHALT PAVEMENT | 1-1/4" ASPHALT BITUMINOUS CONCRETE TYPE S-II; MINIMUM MARSHALL FIELD STABILITY 1500, COMPACTED TO 98% DENSITY PER FM 1-T238 (METHOD B), NUCLEAR DENSITY TEST, "BACK SCATTER METHOD". |
| | 6" SOIL CEMENT BASE MINIMUM BEARING STRENGTH OF 350 P.S.I. SHALL BE OBTAINED WITHIN 7 DAYS COMPACTED TO 98% DENSITY BASED ON AASHTO T-99 STANDARD PROCTOR TEST; CONSTRUCTION METHODS SHALL CONFORM TO SECTION 270 OF STANDARD F.O.C.T. SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION. |
| | ALTERNATE:
6" LIMESTONE BASE (LBR 100) OR RECYCLED CONCRETE BASE (LBR 130) COMPACTED TO 98% DENSITY BASED ON AASHTO T-180 MODIFIED PROCTOR TEST. |
| | SUB-BASE:
6" SUB-BASE COMPACTED TO 98% DENSITY BASED ON AASHTO T-180 MODIFIED PROCTOR TEST WITH MINIMUM LBR 40. |
| | SUBGRADE:
12" SUBGRADE COMPACTED TO 98% DENSITY BASED ON AASHTO T-180 MODIFIED PROCTOR TEST WITH MINIMUM LBR 40. |
| CONCRETE PAVEMENT | 6" CONCRETE (3,000 P.S.I. @ 28 DAYS)
12" STABILIZED SUBGRADE (LBR 40) MIN OF 98% MODIFIED PROCTOR
MAX DRY DENSITY PER ASTM D1557, AASHTO T-180 (6" LIFTS)
10"x10" CONTROL JOINTS, 2" SAW CUT DEPTH
SEE CITY DETAIL R-19, SHEET No. 15 AND DETAIL SHEET No. 12. |
| CONCRETE SIDEWALK | 4" THICK CONCRETE (3,000 P.S.I. @ 28 DAYS)
SEE CITY DETAIL M-3, SHEET No. 14 AND SIDEWALK DETAIL SHEET No. 12. |

LEGEND

- | |
|--|
| MIAMI CURB |
| TYPE "E" CURB |
| 6" WIDE WHITE VINYL FENCE (SEE DETAIL, SHEET No. 18) |

REVISIONS

DATE	DESCRIPTION

**NEWKIRK
ENGINEERING**

1370 North US1, Suite 204
Ormond Beach, Florida 32174
Phone (386) 290-7599
Harry@Newkirk-Engineering.com

Certificate of Authorization
No. 30209
© 2013

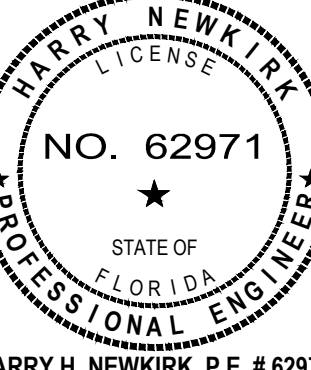
Civil Engineering
Transportation
Construction Engineering & Inspection

**Geosam**

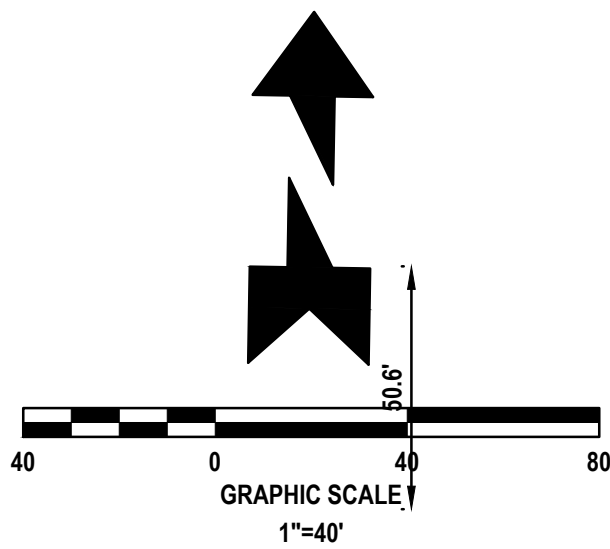
424 LUNA BELLA LANE, SUITE 122
NEW SMYRNA BEACH, FL 32108

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING. ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING. COPYRIGHT 2014 ALL RIGHTS RESERVED.

SITE LAYOUT PLAN
CORNERSTONE GROVE PUD
HIDDEN LAKE DRIVE
PORT ORANGE, FL 32129

**HARRY H. NEWKIRK**
LICENSE
NO. 62971
STATE OF FLORIDA
PROFESSIONAL ENGINEER

PROJECT No: 2016-237
DATE: MARCH 2017
DESIGN BY: HHN
DRAWN BY: DAB
CHECKED BY: HHN
SCALE: 1" = 40'
DRAWING NUMBER
7



GENERAL DRAINAGE NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO DRAINAGE SYSTEM AND SHALL RESTORE ANY DAMAGED STRUCTURES.
3. ALL STORM PIPE SHALL BE CONSTRUCTED OF REINFORCED CONCRETE PIPE (RCP). ALL PIPE JOINTS SHALL BE WRAPPED PER FOOT DESIGN STANDARD INDEX No. 280.
4. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL MATERIAL AND STRUCTURES TO THE ENGINEER (NEWKIRK ENGINEERING, INC.) FOR APPROVAL PRIOR TO THE PRECONSTRUCTION MEETING.
5. CONTRACTOR TO PLACE FILTER FABRIC BETWEEN DRAINAGE STRUCTURES AND TOPS TO PREVENT SOIL INTRUSION. THE FABRIC SHALL BE PERIODICALLY CLEANED OF SAND A DEBRIS FABRIC SHALL REMAIN IN PLACE UNTIL PAVING IS COMPLETE.
6. ALL EXISTING STRUCTURES, UNLESS OTHERWISE NOTED TO REMAIN. FENCING TREES, & ETC., WITHIN THE CONSTRUCTION AREA SHALL BE REMOVED AND DISPOSED OF OFFSITE.
7. ALL DRAINAGE STRUCTURES SHALL BE PRE-CAST PER FDOT SPECIFICATIONS.
8. ALL DRAINAGE STRUCTURES AND STORM SEWER PIPES SHALL MEET HEAVY DUTY TRAFFIC (H20) LOADING AND BE INSTALLED ACCORDINGLY PER FDOT STANDARD SPECIFICATIONS AND MANUFACTURES SPECIFICATIONS RESPECTIVELY.
9. ALL DRAINAGE STRUCTURES AND PIPES SHALL BE CLEANED OF SAND AT THE LAST STAGE OF CONSTRUCTION PRIOR TO THE FINAL INSPECTION.
10. ALL STORM INLET GRATES SHALL BE STEEL (TRAFFIC RATED).

STORM STRUCTURE SCHEDULE

I.D.	STATION	OFFSET	SIZE	TYPE BOT	TYPE TOP	TOP ELEV	BOT ELEV	N INV	S INV	E INV	W INV
I-01	6+45.44	14.35 RT	---	ALT B	C	25.80	21.80	22.30	---	---	---
I-02	6+45.44	14.35 LT	---	ALT B	C	25.80	21.53	---	22.03	---	22.03
I-03	3+99.06	14.31 LT	---	---	C	25.80	16.45	20.30	16.95	E 20.30 SE 22.03	---
I-04	3+99.05	14.37 RT	---	ALT B	C	25.80	21.80	---	---	---	22.30
I-05	2+65.51	23.41 RT	---	---	C	25.80	16.10	16.60	21.92	16.60	---
I-06	2+18.70	23.42 RT	---	ALT B	C	25.80	21.74	22.24	---	---	22.24
I-07	2+21.86	14.34 LT	---	ALT B	C	26.00	22.00	---	---	22.50	---
I-08	2+18.71	23.40 LT	---	ALT B	C	25.80	18.24	18.74	---	18.74	---
I-09	2+19.77	14.35 RT	---	ALT B	C	26.00	18.50	---	---	---	19.00
I-10	2+65.77	23.10 LT	---	---	C	25.80	15.50	---	18.41	16.00	16.00
I-11	3+91.90	26.00 RT	---	---	C	25.80	15.12	21.95	15.62	15.62	---
I-12	3+93.39	24.44 LT	---	ALT B	C	25.80	21.80	22.30	22.30	---	---

NOTES:

1. ROUND STRUCTURE BOTTOMS ARE FDOT ALTERNATE 'A'.
2. SQUARE/RECTANGULAR STRUCTURE BOTTOMS ARE FDOT ALTERNATE 'B'.
3. 4'-0" DIAMETER AND SMALLER AND 3'-6" SQUARE STANDARD STRUCTURE BOTTOMS ARE FDOT TYPE DESIGNATED 'P' LARGER STANDARD STRUCTURE BOTTOMS ARE DESIGNATED TYPE 'J'.

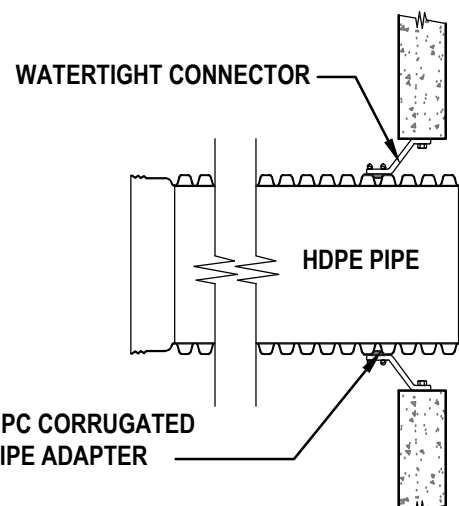
CONCRETE PIPE MINIMUM SLOPE REQUIREMENTS

PIPE SIZE (IN)	SELF-CLEANSING VELOCITY (FPS)	MANNINGS (N)	RADIUS (FT)	CROSS-SECTIONAL AREA (FT)	WETTED PERIMETER	MINIMUM SLOPE (FT / 100 FT)
15	3.0	0.012	0.625	1.227	FULL & $\frac{1}{2}$ FULL	0.0028
18	3.0	0.012	0.75	1.767	FULL & $\frac{1}{2}$ FULL	0.0022
24	3.0	0.012	1.00	3.142	FULL & $\frac{1}{2}$ FULL	0.0015
30	3.0	0.012	1.25	4.909	FULL & $\frac{1}{2}$ FULL	0.0011
36	3.0	0.012	1.50	7.069	FULL & $\frac{1}{2}$ FULL	0.0009

SUMMARY OF DRAINAGE:

THE MINIMUM WATER QUALITY TREATMENT VOLUME REQUIRED IS EQUAL TO 2.5-INCHES OVER THE IMPERVIOUS SURFACE RUNOFF OVER THE DRAINAGE BASIN. STORMWATER TREATMENT IS PROVIDED BY DRY RETENTION POND. THE TREATMENT SYSTEM IS DESIGNED SO THAT THE POST DEVELOPMENT DISCHARGE RATE AND VOLUME DOES NOT EXCEED THE PRE-DEVELOPMENT DISCHARGE RATE AND VOLUME FOR THE MEAN ANNUAL, 25 YEAR, 24 HOUR AND 100 YEAR, 24 HOUR STORM EVENTS.

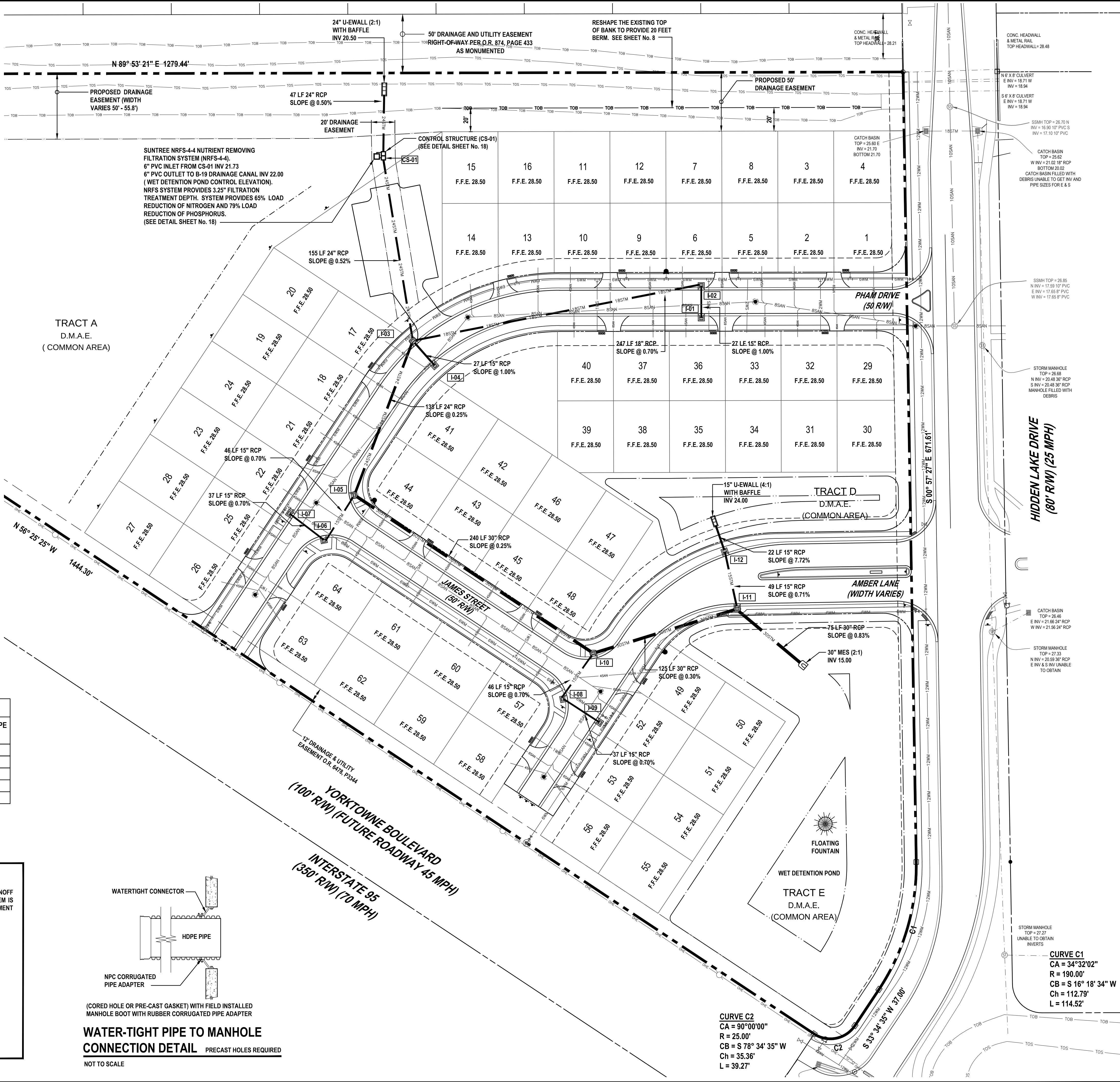
	OFFSITE		OFFSITE		POND PEAK STAGE (FT)
	RAINFALL (INCHES)	DISCHARGE RATE (CFS)	DISCHARGE VOLUME (CF)		
		PRE	POST	PRE	POST
MEAN ANNUAL, 24 HOUR	5.0	4.79	1.67	74,031	45,446
25 YEAR, 24 HOUR	9.0	11.55	11.52	178,617	160,355
100 YEAR, 24 HOUR	11.0	15.09	14.68	234,109	218,344
		TREATMENT VOLUME REQUIRED (CF)	TREATMENT VOLUME PROVIDED (CF)	TREATMENT VOLUME RECOVERY (HOURS)	
POND		68,063	69,696	27.0	



(CORED HOLE OR PRE-CAST GASKET) WITH FIELD INSTALLED MANHOLE BOOT WITH RUBBER CORRUGATED PIPE ADAPTER

WATER-TIGHT PIPE TO MANHOLE CONNECTION DETAIL

NOT TO SCALE



GENERAL EARTHWORK NOTES:

1. REMOVE ALL ORGANIC OR UNSUITABLE MATERIALS. IF ANY MUCK OR MUCK-LIKE MATERIAL IS DISCOVERED, IT WILL BE REQUIRED TO BE REMOVED, BACKFILLED WITH APPROPRIATE FILL, COMPACTED, AND TESTED USING AASHTO T-180 MODIFIED PROCTOR METHOD.
2. ALL FILLING IS TO BE PERFORMED IN ONE-FOOT LIFTS. THE COMPACTION REQUIREMENT IS 98% FOR PAVED AREAS AND 95% FOR UNPAVED AREAS PER AASHTO T-180 MODIFIED PROCTOR TEST.
3. TEMPORARY FILL STOCKPILING IS NOT PERMITTED IN LIFTS GREATER THAN SIX FEET.
4. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION AND THE IMPACT TO NEIGHBORING COMMUNITIES.
5. ONCE AN AREA IS SEEDED OR SODDED, IT MUST BE MAINTAINED TO ALLOW THE GRASS TO GROW.
6. ALL NON-PAVED AREAS MUST BE PLANTED, GRASSED, OR MULCHED.

GENERAL GRADING NOTES:

1. CROSS SLOPES OF ACCESSIBLE PARKING SPACES AND ACCESS AISLE SHALL NOT EXCEED 1:48 IN ACCORDANCE WITH SECTION 502.4 OF FLORIDA ACCESSIBILITY CODE FOR BUILDING CONSTRUCTION (FACBC).
2. THE MAXIMUM ELEVATION CHANGE AT THE ENTRANCE DOOR MAY NOT EXCEED 1/2 INCH.
3. ALL SIDEWALK LANDINGS SHALL HAVE SLOPES NO GREATER THAN 1/4 INCH / 1 FOOT IN MANEUVERING SPACES AT ALL DOORWAYS.
4. ALL SIDEWALKS SHALL HAVE A 1.0% CROSS SLOPE (2.0% MAXIMUM).
5. ALL CURB RAMPS SHALL COMPLY WITH SECTION 406 OF FACBC.
6. ALL IMPROVEMENTS SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEY OR UTILIZING GEODETIC TOTAL STATION. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR.

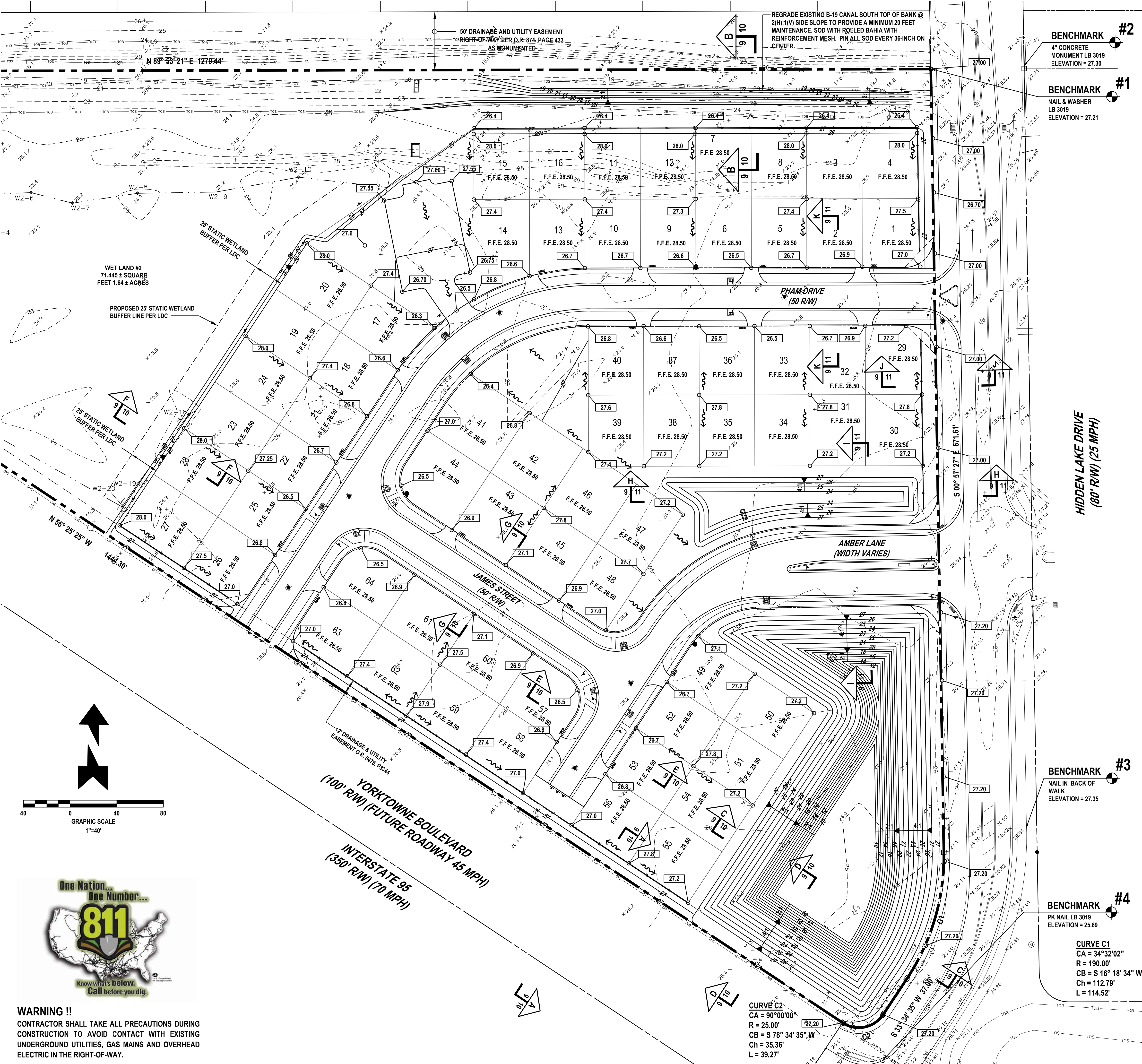
BENCHMARK INFORMATION:

- #1 NAIL AND WASHER LB 3019
ELEVATION = 27.21
- #2 4" CONCRETE MONUMENT LB 3019
ELEVATION = 27.30
- #3 NAIL IN BACK OF WALK
ELEVATION = 27.35
- #4 PK NAIL LB 3019
ELEVATION = 25.89

VERTICAL DATA
ELEVATIONS REFER TO (NAVD) NORTH AMERICAN
VERTICAL DATUM 1988. FEET AND DECIMAL PART
THEREOF. BENCHMARK REFERENCE NAVD DATUM OF
1988. BENCHMARK DESIGNATION IS A NATIONAL
GEODETIC SURVEY DESIGNATION 195 71 A22 RM 2 PID
AQ1302 ELEVATION=26.95.

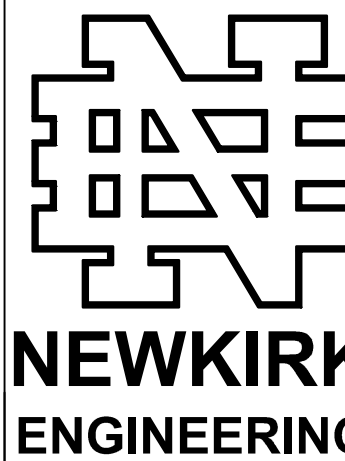
CONTOUR LEGEND:

- EXISTING CONTOUR
- PROPOSED CONTOUR
- DRAINAGE FLOW ARROW



REVISIONS

DATE	DESCRIPTION



1370 North US1, Suite 204
Ormond Beach, Florida 32174
Phone (386) 290-7599
Harry@Newkirk-Engineering.com

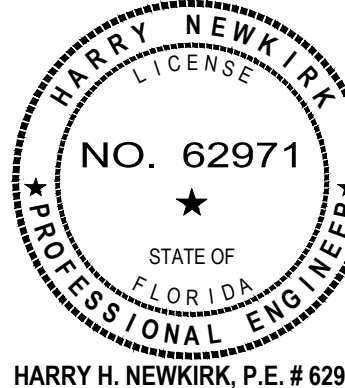
Certificate of Authorization
No. 30209
© 2013

Civil Engineering
Transportation
Construction Engineering &
Inspection



THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING. ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING. COPYRIGHT 2014 ALL RIGHTS RESERVED.

OVERALL GRADING PLAN
CORNERSTONE GROVE PUD
HIDDEN LAKE DRIVE
PORT ORANGE, FL 32129



PROJECT No: 2016-237

DATE: MARCH 2017

DESIGN BY: HHN

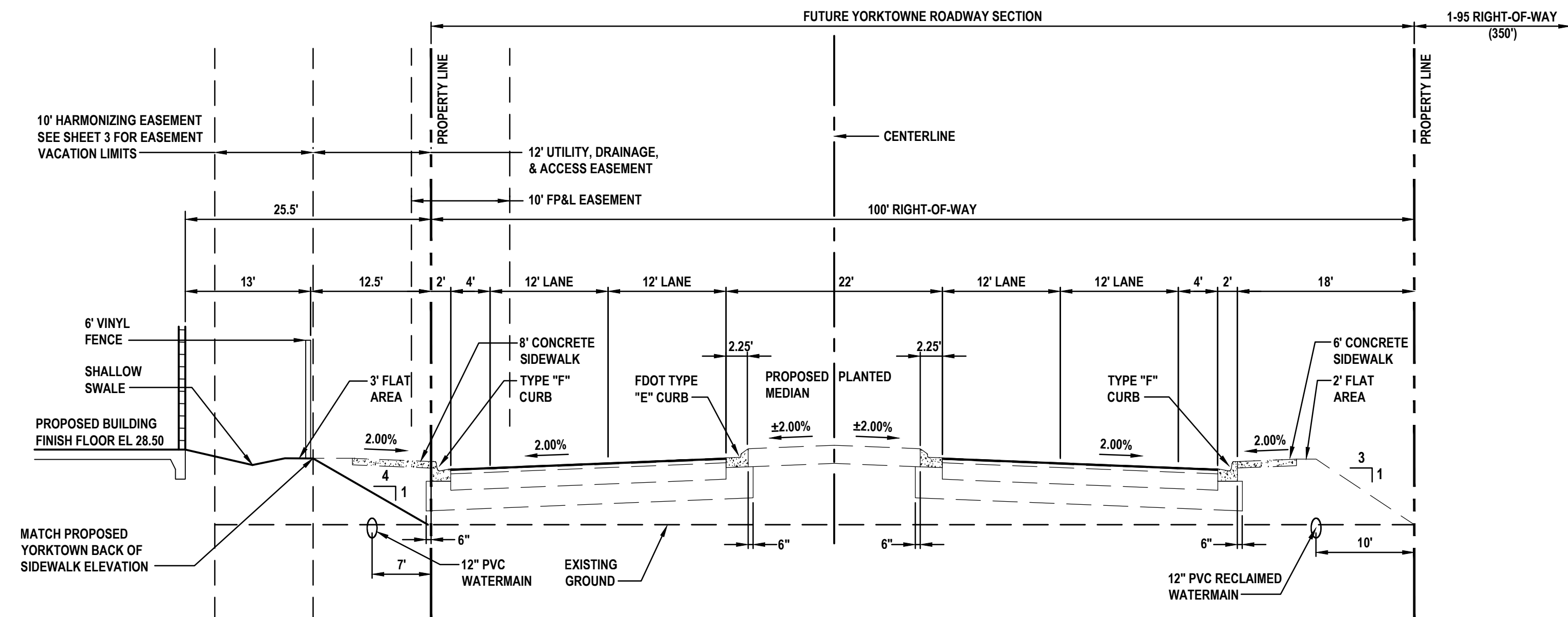
DRAWN BY: DAB

CHECKED BY: HHN

SCALE: 1" = 40'

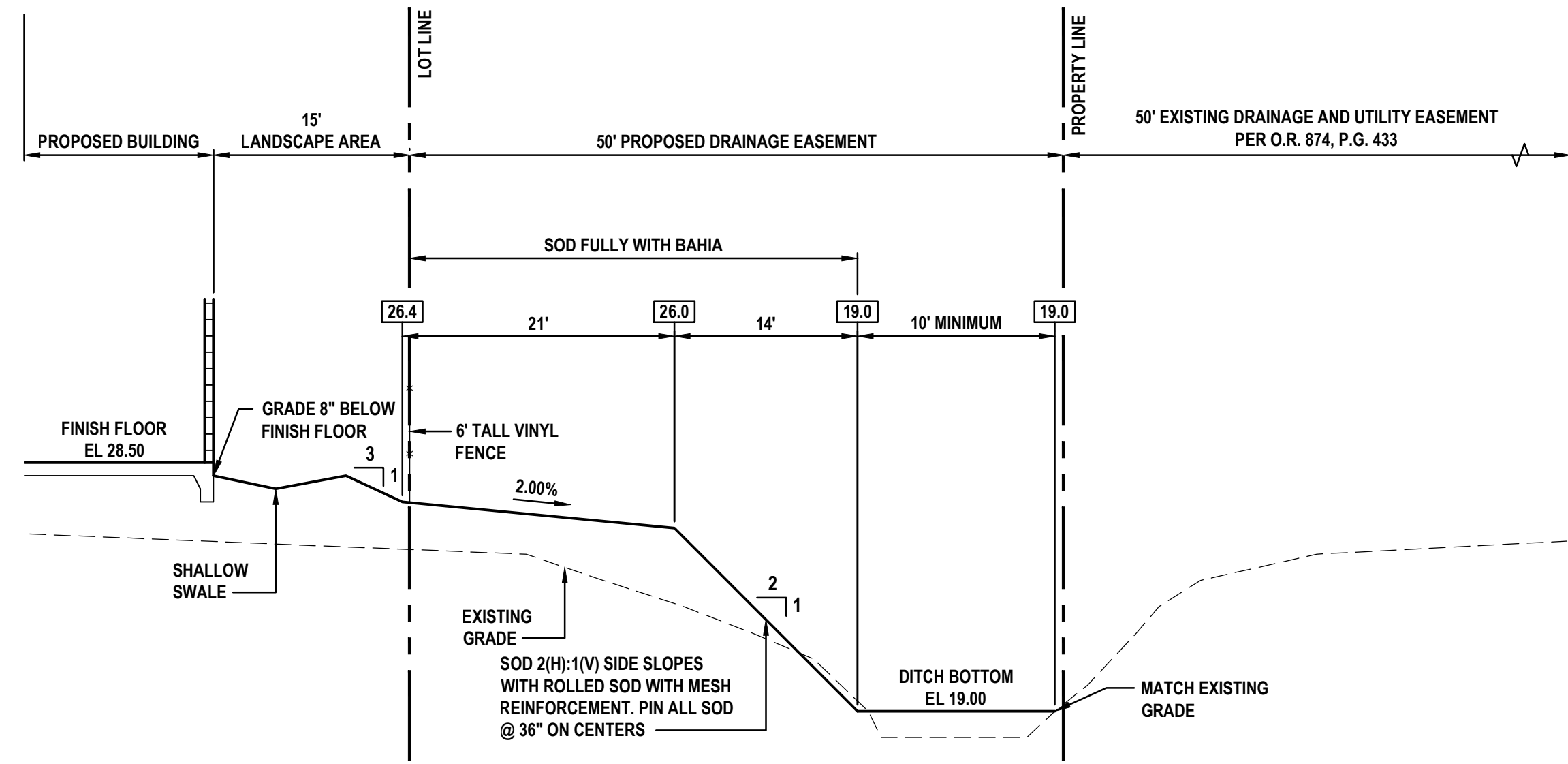
DRAWING NUMBER

9



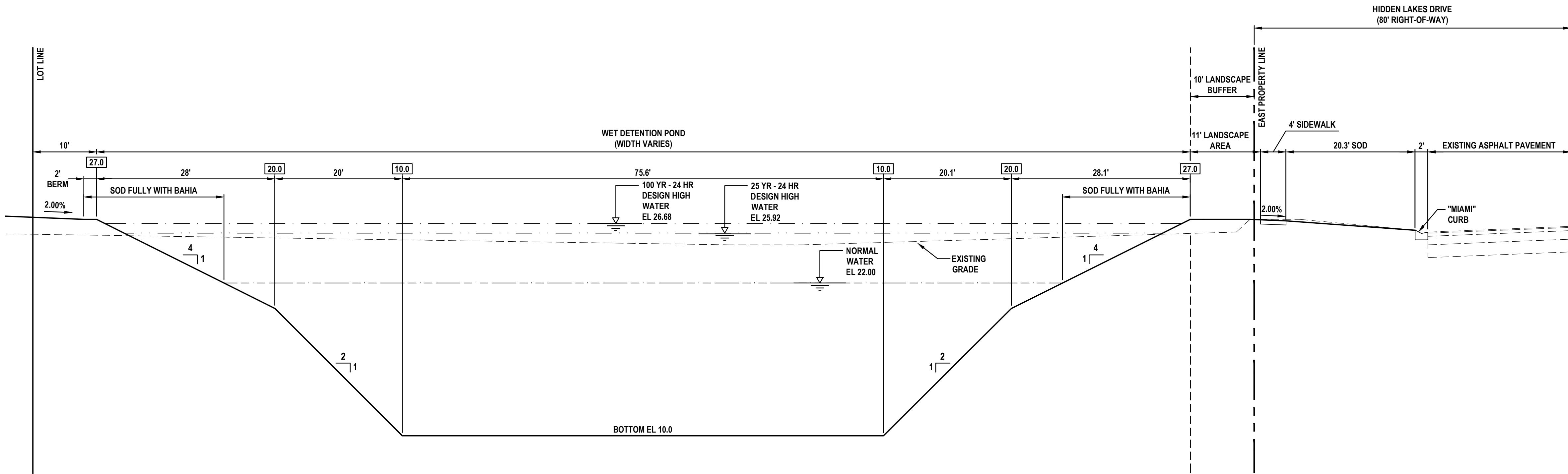
SECTION A
(TYPICAL FUTURE PAVEMENT SECTION)

NOT TO SCALE



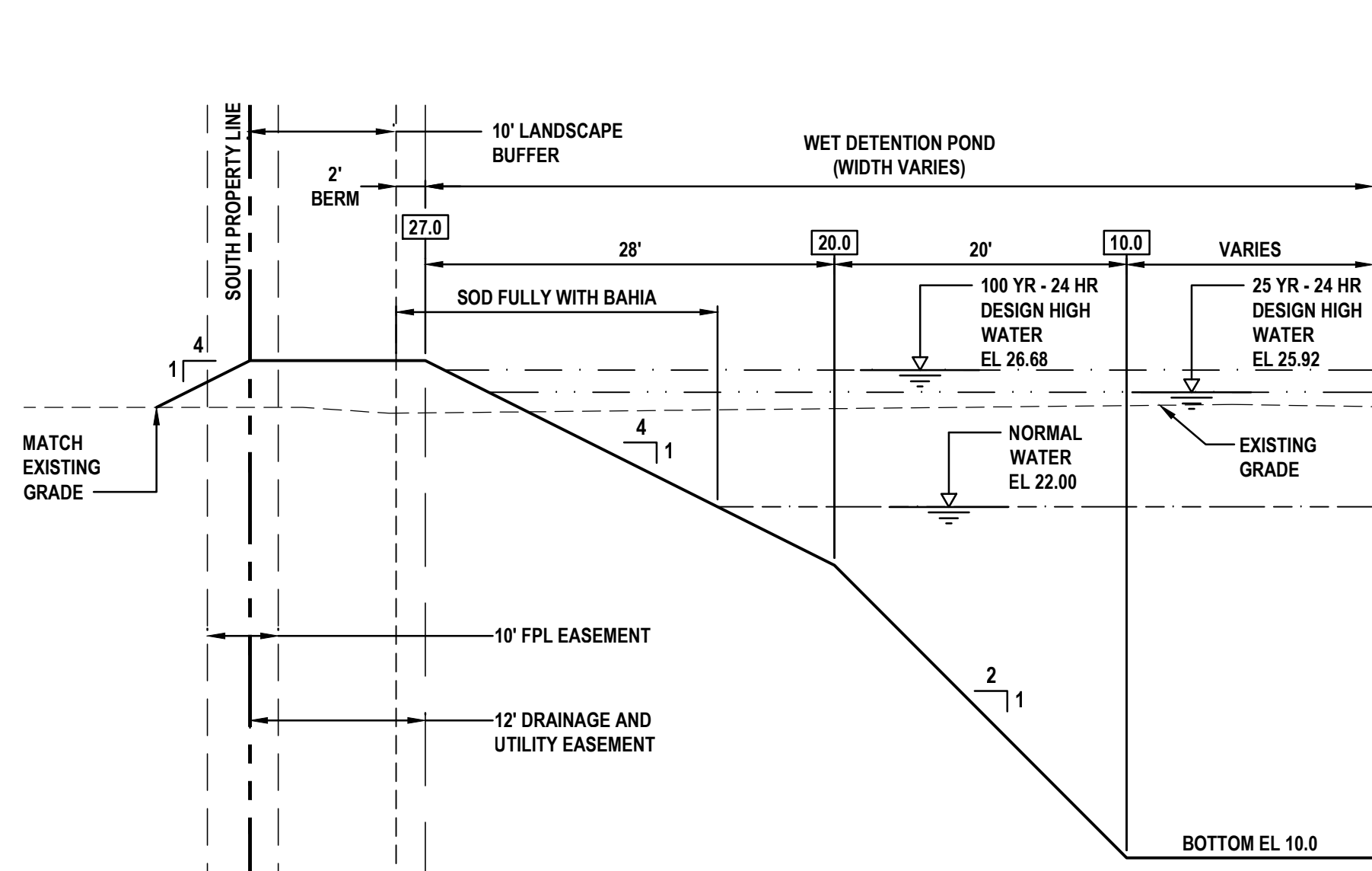
SECTION B

NOT TO SCALE



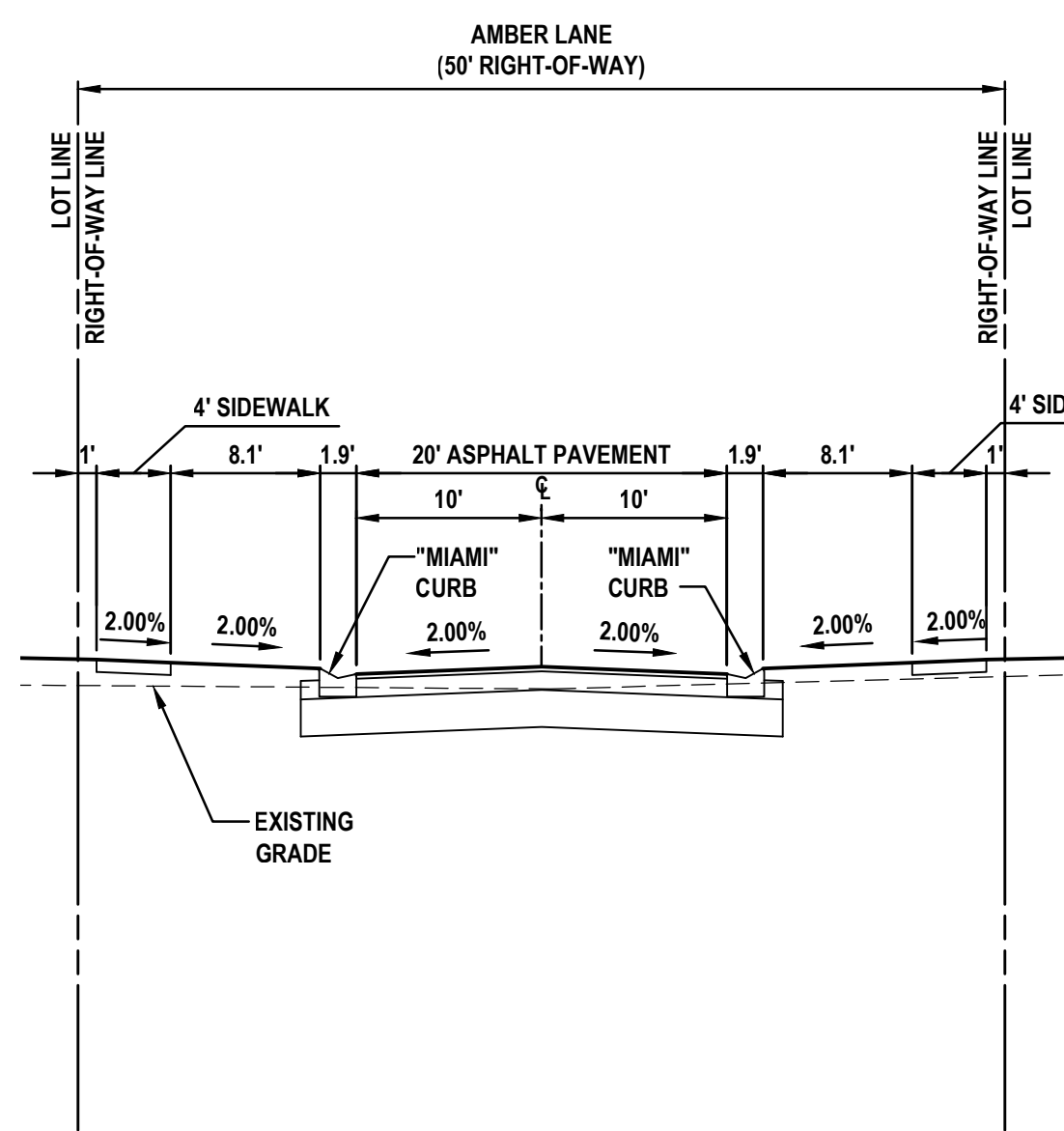
SECTION C

NOT TO SCALE



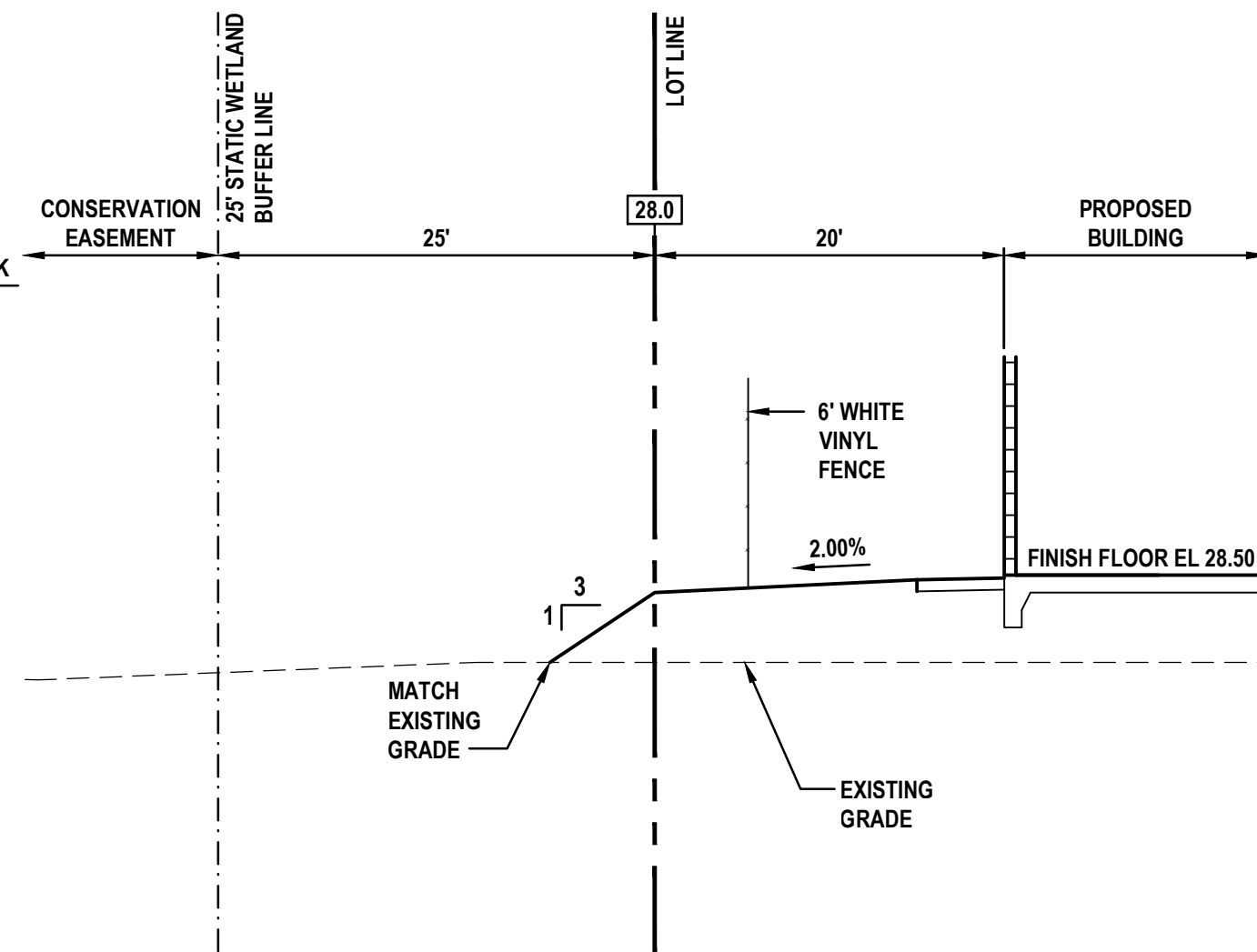
SECTION D

NOT TO SCALE



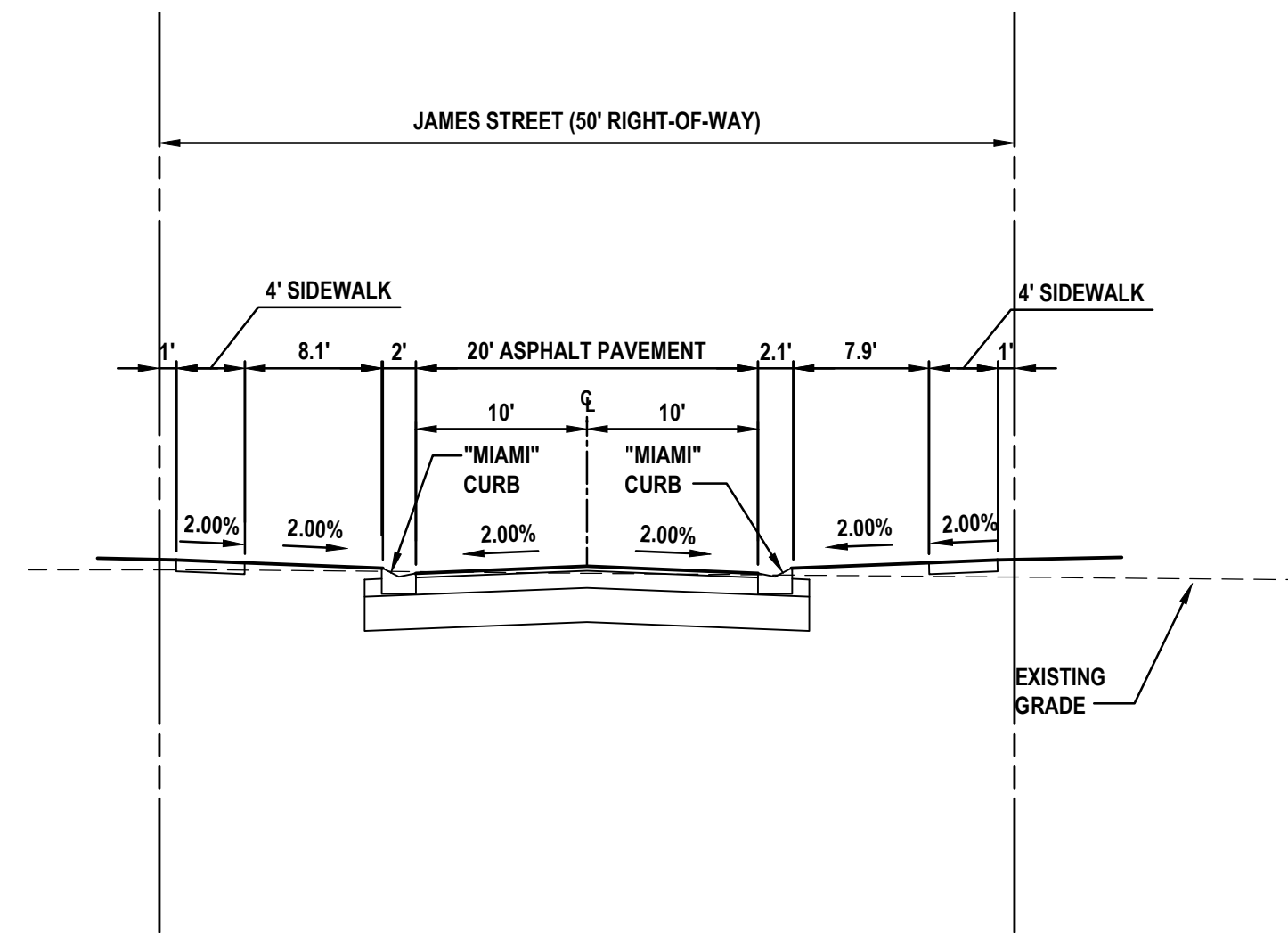
SECTION E

NOT TO SCALE



SECTION F

NOT TO SCALE

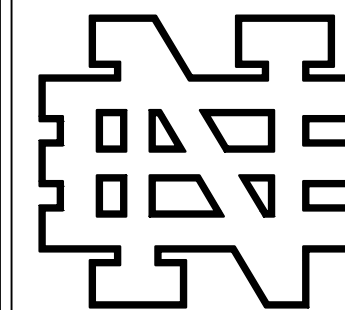


SECTION G

NOT TO SCALE

REVISIONS

DATE	DESCRIPTION



**NEWKIRK
ENGINEERING**

1370 North US1, Suite 204
Ormond Beach, Florida 32174
Phone (386) 290-7599
Harry@Newkirk-Engineering.com

Certificate of Authorization
No. 30209
© 2013

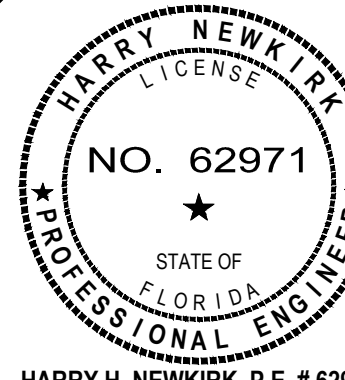
Civil Engineering
Transportation
Construction Engineering &
Inspection



424 LUNA BELLA LANE, SUITE 122
NEW SMYRNA BEACH, FL 32108

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING. ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING. COPYRIGHT 2014 ALL RIGHTS RESERVED.

AS SHOWN
CROSS SECTIONS
CORNERSTONE GROVE PUD
HIDDEN LAKE DRIVE
PORT ORANGE, FL 32129

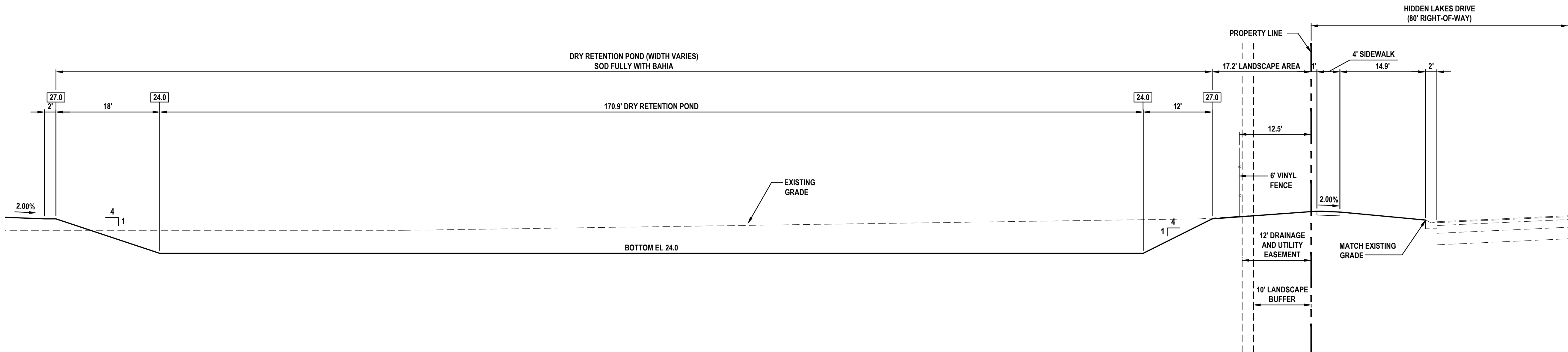


HARRY H. NEWKIRK, P.E. # 62971

PROJECT No: 2016-237
DATE: MARCH 2017
DESIGN BY: HHN
DRAWN BY: DAB
CHECKED BY: HHN
SCALE: AS SHOWN

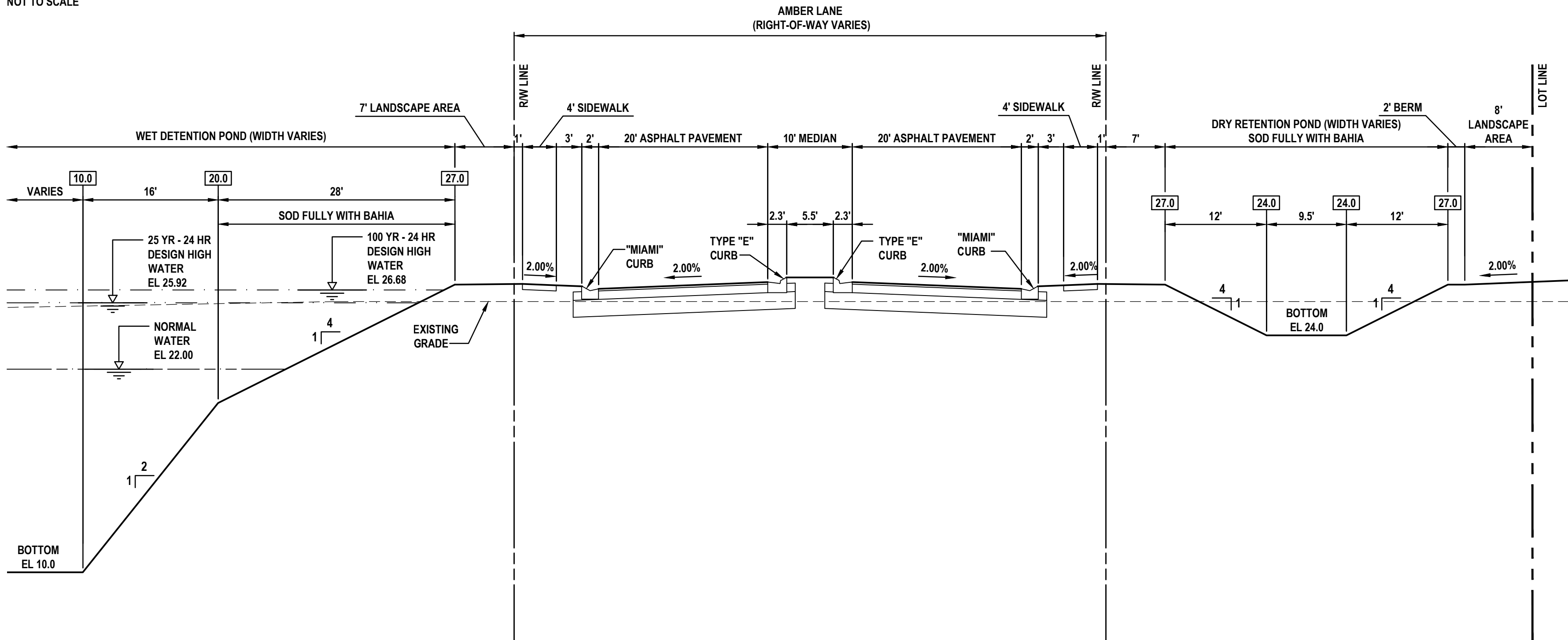
DRAWING NUMBER

10



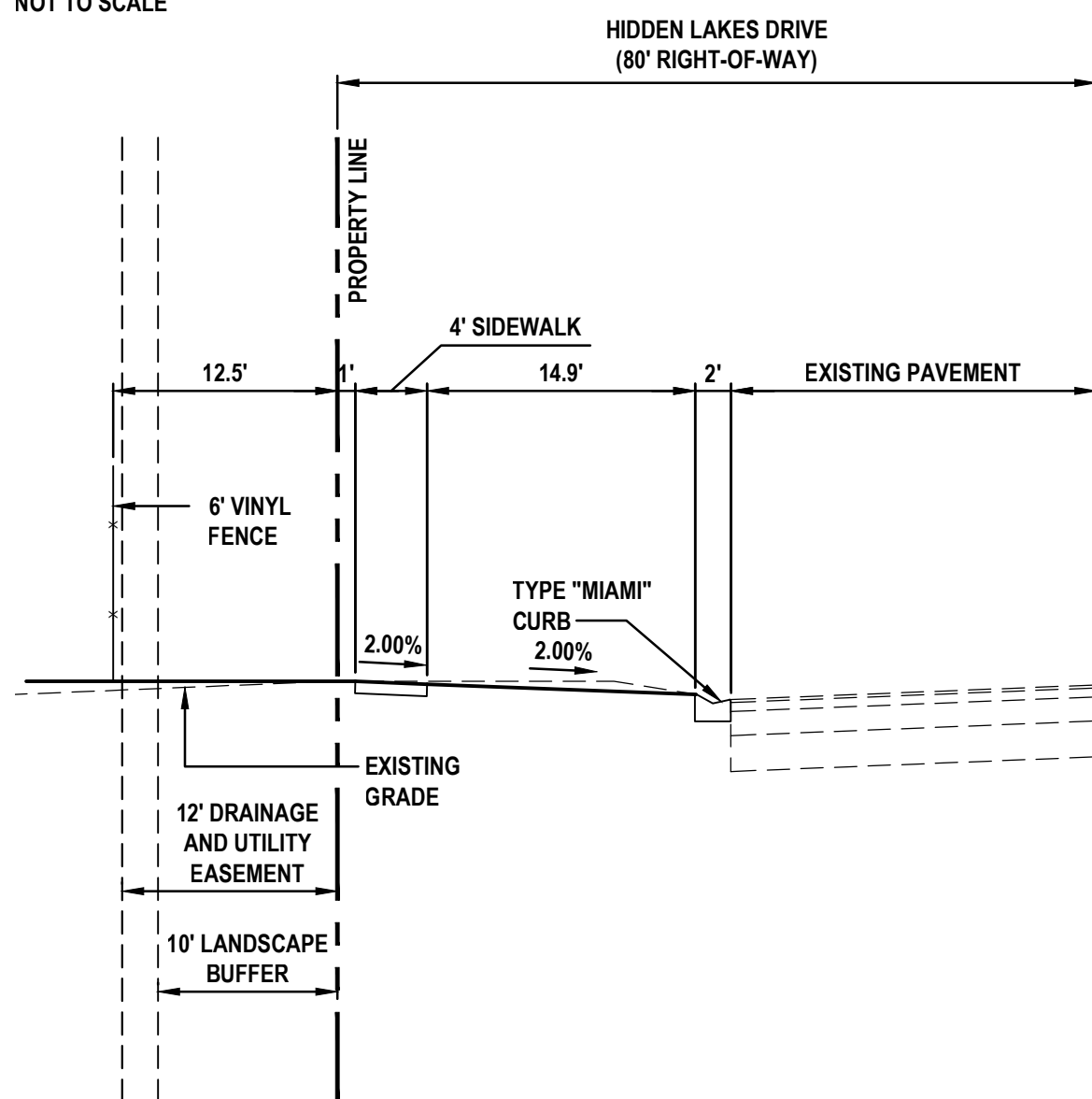
SECTION H

NOT TO SCALE



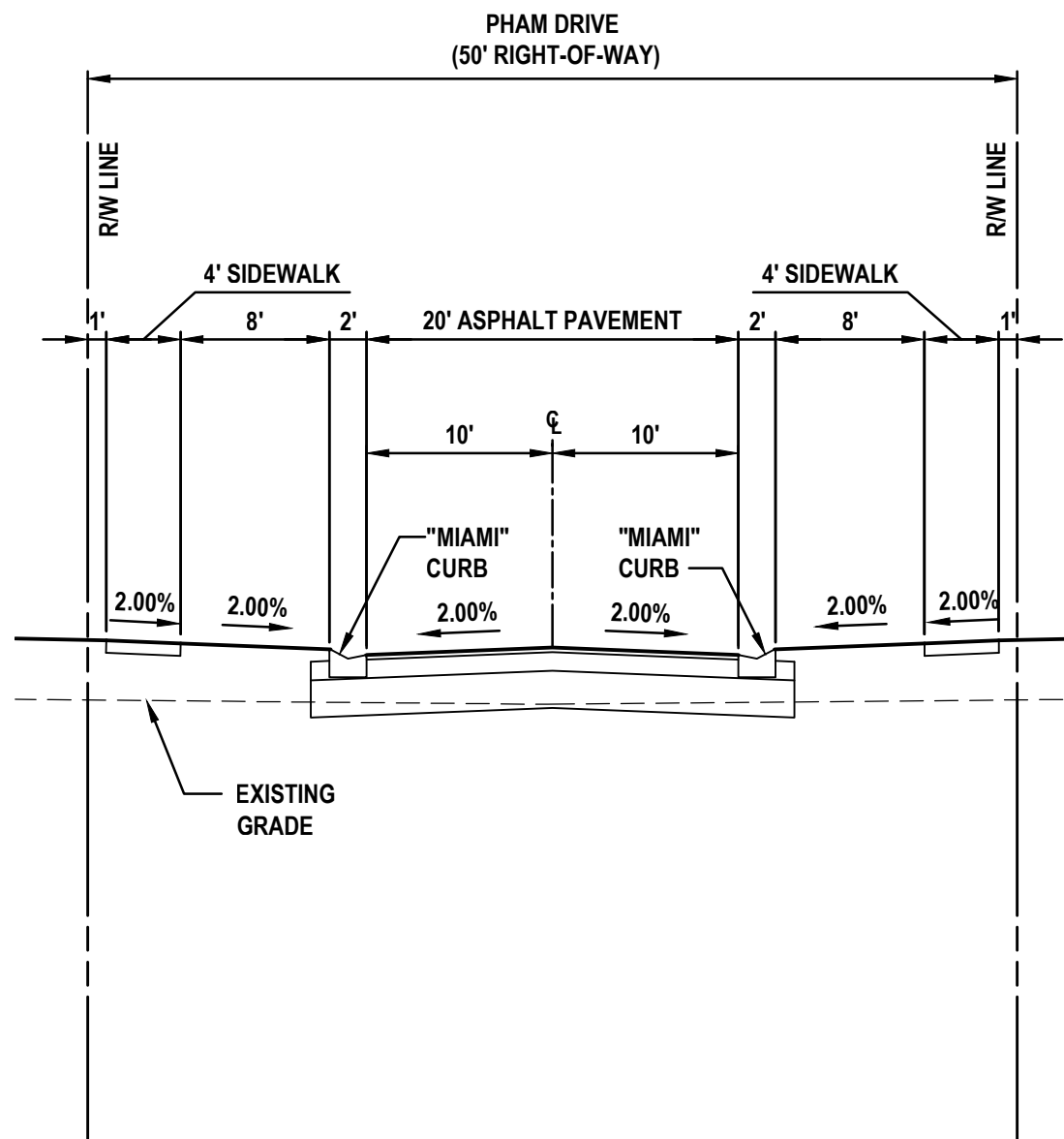
SECTION I

NOT TO SCALE



SECTION J

NOT TO SCALE

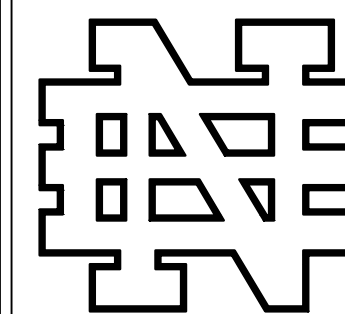


SECTION K

NOT TO SCALE

REVISIONS

DATE	DESCRIPTION



NEWKIRK ENGINEERING

1370 North US1, Suite 204
Ormond Beach, Florida 32174
Phone (386) 290-7599
Harry@Newkirk-Engineering.com

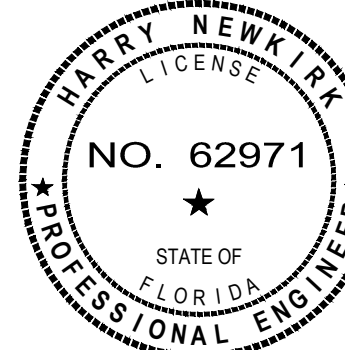
Certificate of Authorization
No. 30209
© 2013

Civil Engineering
Transportation
Construction Engineering &
Inspection



THIS DRAWING IS THE PROPERTY OF NEWKIRK
ENGINEERING. ANY USE OR REPRODUCTION IN
WHOLE OR PART IS PROHIBITED WITHOUT THE
EXPRESSED WRITTEN CONSENT OF NEWKIRK
ENGINEERING. COPYRIGHT 2014 ALL RIGHTS
RESERVED.

CROSS SECTIONS
CORNERSTONE GROVE PUD
HIDDEN LAKE DRIVE
PORT ORANGE, FL 32129



HARRY H. NEWKIRK, P.E. # 62971

PROJECT No: 2016-237

DATE: MARCH 2017

DESIGN BY: HHN

DRAWN BY: DAB

CHECKED BY: HHN

SCALE: AS SHOWN

DRAWING NUMBER

11

GENERAL WATER NOTES:

1. THE CITY OF PORT ORANGE WATER UTILITY DEPARTMENT SHALL BE NOTIFIED PRIOR TO BEGINNING ANY WATER SYSTEM CONSTRUCTION.
2. ALL WATER DISTRIBUTION CONSTRUCTION SHALL BE IN ACCORDANCE WITH FDEP REGULATIONS AND THE CITY OF PORT ORANGE UTILITY DETAILS AND SPECIFICATIONS (LATEST EDITION).
3. CONTRACTOR IS TO VERIFY THE LOCATION (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES (UNDERGROUND AND OVERHEAD) PRIOR TO COMMENCEMENT OF CONSTRUCTION. ANY CONFLICTS SHALL BE REPORTED TO THE ENGINEER.
4. CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF ANY EXISTING PAVEMENT, SIDEWALK, CURBING, UTILITIES AND DRAINAGE SYSTEMS DAMAGED DURING CONSTRUCTION. ALL DAMAGED AREAS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER.
5. LOCATION OF TELEPHONE, TV, CABLE AND ELECTRICAL SERVICE CONNECTIONS TO BE DETERMINED BY APPROPRIATE UTILITIES PERSONNEL IN COOPERATION WITH CONTRACTOR.
6. ALL WATER MAINS SHALL BE LAID ON A FIRM FOUNDATION WITH ALL UNSUITABLE MATERIAL (MUCK, ROCK, COQUINA, ETC.) REMOVED AND REPLACED WITH CLEAN GRANULAR MATERIAL.
7. TRENCHES SHALL BE BACKFILLED WITH MATERIAL ACCEPTABLE TO THE CITY WITH A MINIMUM COMPACTION OF 95 PERCENT (AASHTO-T180).
8. WATER SERVICES FROM 3/4" TO 2" POLYETHYLENE (ENDOT ENDOPURE) WITH 30" MINIMUM COVER.
9. WATER MAIN FROM 4" TO 12" SHALL BE PVC CLASS 150 (DR 18) WITH 36" MINIMUM COVER.
10. ALL WATER AND FIRE SERVICES ARE REQUIRED TO HAVE A HARD BODY GATE VALVE OFF THE MAIN LINE.
11. ALL VALVES SHALL BE BOLTED TO TEES.
12. ALL POTABLE WATER PIPE SHALL HAVE "NSF POTABLE WATER" IMPRINTED ON THE PIPE.
13. A TAPPING CONTRACTOR ACCEPTABLE TO THE CITY OF PORT ORANGE WILL BE REQUIRED FOR TAPS.
14. THE CONTRACTOR SHALL MAKE ALL ATTEMPTS TO LOCATE BURIED UTILITIES AND NOTIFY THE UTILITY COMPANIES 48 HR. PRIOR TO CONSTRUCTION.
15. UTILITY TRENCH CONSTRUCTION SHALL CONFORM TO CITY OF PORT ORANGE AND OSHA REQUIREMENTS.
16. IN THE CASE WHERE SOLVENT CONTAMINATION IS FOUND IN THE TRENCH, WORK WILL BE STOPPED AND THE PROPER AUTHORITIES NOTIFIED. WITH THE APPROVAL OF THE CITY OF PORT ORANGE UTILITY DEPARTMENT, DUCTILE IRON PIPE, FITTINGS AND APPROVED SOLVENT RESISTANT GASKET MATERIAL SHALL BE USED IN THE CONTAMINATED AREA. THE DUCTILE IRON PIPE WILL EXTEND AT LEAST 100 FEET BEYOND ANY DISCOVERED SOLVENT.

GENERAL SEWER NOTES:

1. CITY OF PORT ORANGE SHALL BE NOTIFIED PRIOR TO ANY SEWER CONSTRUCTION.
2. ALL SEWER CONSTRUCTION MUST COMPLY WITH FDEP REGULATIONS AND THE CITY OF PORT ORANGE UTILITY DETAILS AND SPECIFICATIONS (LATEST EDITION).
3. ALL SANITARY SEWER LINES SHALL BE PVC SDR 26 DUE TO THE MINIMUM AMOUNT OF COVER. WATER LINES, RECLAIMED LINES AND STORM DRAINAGE CROSSINGS SHALL FOLLOW THE C-900 OR CONCRETE ENCASEMENT REQUIREMENT PER THESE STANDARDS AND AS FDEP REQUIREMENTS. STANDARDS AND AS PER FDEP REQUIREMENTS.
4. SEWER LINE CONSTRUCTION SHALL BE ACCOMPLISHED BY THE USE OF A LASER INSTRUMENT UNLESS ANOTHER METHOD IS PREVIOUSLY APPROVED BY CITY OF PORT ORANGE.
5. THE CONTRACTOR SHALL AT ALL TIMES, DURING PIPE LAYING, DEWATER THE GROUND SUFFICIENTLY TO KEEP THE GROUNDWATER ELEVATION A MINIMUM OF 6" BELOW THE PIPE BEING LAID WITHIN THE AREA OF THE TRENCH.
6. ALL PIPES SHALL BE LAID ON A FIRM FOUNDATION. SOFT OR SPONGY BEDDING FOR PIPES WILL NOT BE ACCEPTED. ANY UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH A DRY, COMPACTED, GRANULAR MATERIAL SATISFACTORY TO THE CITY OF PORT ORANGE.
7. SANITARY SEWER PIPE SHALL BE PVC SDR 26.
8. EXCAVATION AND BACKFILL: THE CONTRACTOR SHALL PROVIDE ADEQUATE SHEETING AND BRACING OF EXCAVATION WORK IN ORDER TO PROVIDE FOR THE SAFETY OF WORKMEN, AS WELL AS REPRESENTATIVES OF THE CITY OF PORT ORANGE, THE DESIGN ENGINEER, AND THE DEVELOPER.
9. ALL TRENCHES SHALL BE BACKFILLED WITH ACCEPTABLE MATERIAL AND COMPACTED TO MINIMUM COMPACTION OF (95) PERCENT OF THE OPTIMUM DENSITY OF THAT MATERIAL BASED ON THE AASHTO-T-190 MODIFIED PROCTOR TEST.
10. ALL TESTING REQUIRED BY THE CITY SHALL BE PAID FOR BY THE CONTRACTOR.
11. GRAVITY MAINS MUST HAVE A TELEVIEWED INSPECTION. A VIDEO INSPECTION FORM MUST BE FAXED TO THE CITY OF PORT ORANGE WASTEWATER COLLECTION DEPARTMENT 48 HOURS PRIOR TO VIDEO INSPECTION. A CITY INSPECTOR MUST BE PRESENT.
12. SEWER CLEANOUT LOCATED ON PAVEMENT AND SIDEWALK AREA SHALL BE TRAFFIC BEARING FLAT TOP BRASS CAP.

PROPOSED UTILITY LEGEND

- FM — FORCE MAIN (# INDICATES SIZE)
— SS — SANITARY SEWER (# INDICATES SIZE)
— PWS — POLYETHYLENE WATER SERVICE (# INDICATES SIZE)
— PM — WATER MAIN (# INDICATES SIZE)
— REC — RECLAIM SERVICE (# INDICATES SIZE)
— GAS — GAS SERVICE (# INDICATES SIZE)
— EUC — UNDERGROUND ELECTRICAL CONDUIT (# INDICATES SIZE)



UTILITY CONFLICT (SEE DETAILS THIS SHEET)

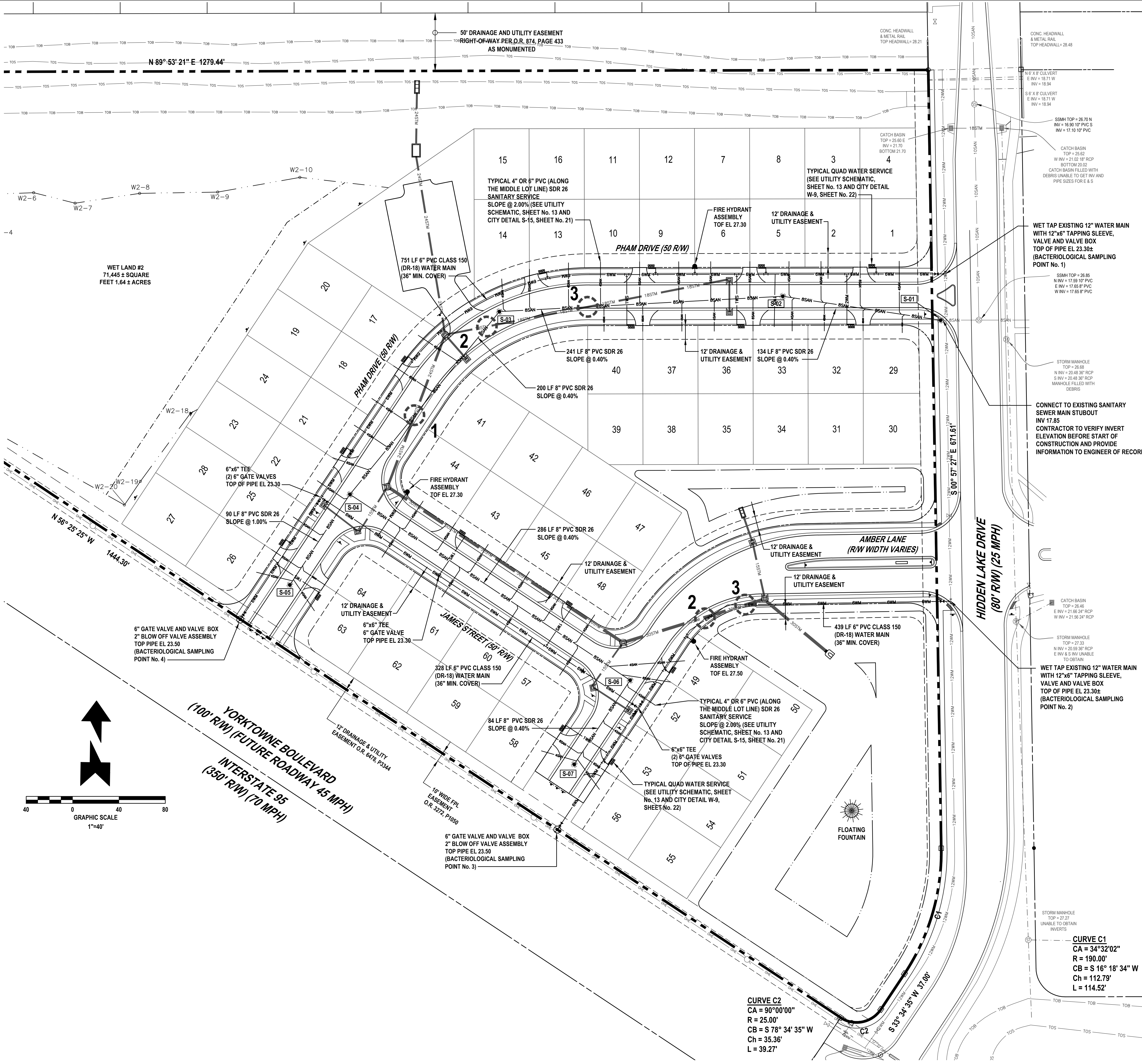
SANITARY STRUCTURE SCHEDULE

STRUCTURE	STATION	OFFSET	TOP	NORTH INV	SOUTH INV	EAST INV	WEST INV
S-01	8+27.49	20.93' RT	26.80	----	----	17.85	17.95
S-02	6+91.46	0' RT	26.51	----	----	18.49	18.59
S-03	4+46.56	5.0' LT	26.36	----	19.66	19.56	----
S-04	2+42.10	0' RT	26.57	20.46	20.56	20.56	----
S-05	1+48.31	0' RT	26.74	21.46	----	----	----
S-06	2+42.10	0' RT	26.57	----	21.81	----	21.71
S-07	1+54.97	0' RT	26.71	22.15	----	----	----



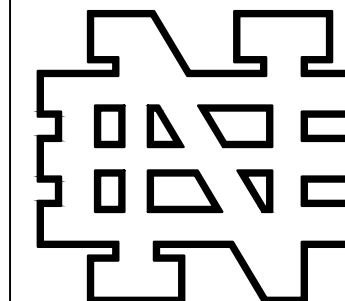
WARNING !!

CONTRACTOR SHALL TAKE ALL PRECAUTIONS DURING CONSTRUCTION TO AVOID CONTACT WITH EXISTING UNDERGROUND UTILITIES, GAS MAINS AND OVERHEAD ELECTRIC IN THE RIGHT-OF-WAY.



REVISIONS

DATE	DESCRIPTION



NEWKIRK ENGINEERING

1370 North US1, Suite 204
Ormond Beach, Florida 32174
Phone (386) 290-7599
Harry@Newkirk-Engineering.com

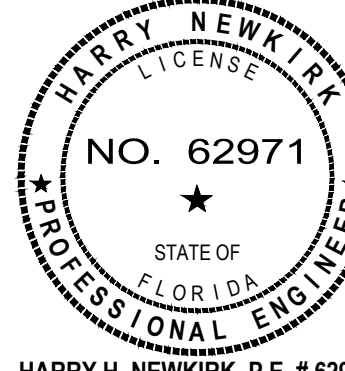
Certificate of Authorization
No. 30209
© 2013

Civil Engineering
Transportation
Construction Engineering & Inspection



THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING. ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING. COPYRIGHT 2014 ALL RIGHTS RESERVED.

MASTER UTILITY PLAN
CORNERSTONE GROVE PUD
HIDDEN LAKE DRIVE
PORT ORANGE, FL 32129



PROJECT No: 2016-237

DATE: MARCH 2017

DESIGN BY: HHN

DRAWN BY: DAB

CHECKED BY: HHN

SCALE: 1" = 40'

DRAWING NUMBER

12

FDEP WATER NOTES

1.

ALL PIPE, PIPE FITTINGS, PIPE JOINT PACKING AND JOINTING MATERIALS, VALVES, FIRE HYDRANTS, AND METERS INSTALLED UNDER THIS PROJECT WILL CONFORM TO APPLICABLE AMERICAN WATER WORKS ASSOCIATION (AWWA) STANDARDS.
2.

ALL PUBLIC WATER SYSTEM COMPONENTS, EXCLUDING FIRE HYDRANTS, THAT WILL BE INSTALLED UNDER THIS PROJECT AND THAT WILL COME INTO CONTACT WITH DRINKING WATER WILL CONFORM TO NSF INTERNATIONAL STANDARD 61.
3.

ALL PROPOSED WATER MAINS SHALL BE FLUSHED, DISINFECTED AND BACTERIOLOGICALLY CLEARED FOR SERVICE IN ACCORDANCE WITH AWWA SPECIFICATIONS C-651 AND THE FDEP PROTECTION REQUIREMENTS.
4.

POTABLE WATER PIPES SHALL BE HYDROSTATICALLY TESTED FOR PRESSURE AND LEAKAGE IN ACCORDANCE WITH AWWA STANDARD C600 FOR DUCTILE IRON PIPES AND C605 FOR PVC PIPES, RESPECTIVELY.
5.

ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT WILL CONTAIN NO LEAD, AND ANY SOLDER OR FLUX USED IN THIS PROJECT WILL CONTAIN NO MORE THAN 0.2% LEAD.
6.

ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT WILL BE COLOR CODED OR MARKED IN ACCORDANCE WITH SUBPARAGRAPH 62-555.320(21)(B)3, F.A.C., USING BLUE AS A PREDOMINANT COLOR. (UNDERGROUND PLASTIC PIPE WILL BE SOLID-WALL BLUE PIPE, WILL HAVE A CO-EXTRUDED BLUE EXTERNAL SKIN, OR WILL BE WHITE OR BLACK PIPE WITH BLUE STRIPES INCORPORATED INTO, OR APPLIED TO, THE PIPE WALL; AND UNDERGROUND METAL OR CONCRETE PIPE WILL HAVE BLUE STRIPES APPLIED TO THE PIPE WALL. PIPE STRIPED DURING MANUFACTURING OF THE PIPE WILL 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. IF TAPE OR PAINT IS USED TO STRIPE PIPE DURING INSTALLATION OF THE PIPE, THE TAPE OR PAINT WILL 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 PIPE WITH AN INTERNAL DIAMETER OF 24 INCHES OR GREATER, TAPE OR PAINT WILL BE APPLIED IN CONTINUOUS LINES ALONG EACH SIDE OF THE PIPE AS WELL AS ALONG THE TOP OF THE PIPE. ABOVEGROUND PIPE WILL BE PAINTED BLUE OR WILL BE COLOR CODED OR MARKED LIKE UNDERGROUND PIPE.)
7.

POTABLE WATER PIPES MUST BE MANUFACTURED IN ACCORDANCE WITH THE FOLLOWING AWWA SPECIFICATIONS:

A.

DUCTILE IRON PIPE (3 INCHES TO 54 INCHES) - AWWA C150 AND AWWA C151;

B.

PVC PIPE

1.)

AWWA C900/ASTM 1784 (1 INCH TO 12 INCHES) WITH CL200 MINIMUM;

2.)

AWWA C905 (14 INCHES TO 48 INCHES);
8.

ALL FIRE HYDRANTS THAT WILL BE INSTALLED UNDER THIS PROJECT AND THAT WILL HAVE UNPLUGGED, UNDERGROUND DRAINS WILL BE LOCATED AT LEAST THREE FEET FROM ANY EXISTING OR PROPOSED STORM SEWER, STORMWATER FORCE MAIN, PIPELINE CONVEYING RECLAIMED WATER OR VACUUM-TYPE SANITARY SEWER; AT LEAST SIX 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 62-10, F.A.C.; AND AT LEAST TEN FEET FROM ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM."
9.

NEW OR ALTERED WATER MAINS INCLUDED IN THIS PROJECT WILL BE INSTALLED IN ACCORDANCE WITH APPLICABLE AWWA STANDARDS OR IN ACCORDANCE WITH MANUFACTURERS' RECOMMENDED PROCEDURES.
10.

A CONTINUOUS AND UNIFORM BEDDING WILL BE PROVIDED IN TRENCHES FOR UNDERGROUND PIPE INSTALLED UNDER THIS PROJECT; BACKFILL MATERIAL WILL BE TAMPED IN LAYERS AROUND UNDERGROUND PIPE INSTALLED UNDER THIS PROJECT AND TO A SUFFICIENT HEIGHT ABOVE THE PIPE TO ADEQUATELY SUPPORT AND PROTECT THE PIPE; AND UNSUITABLY SIZED STONES (AS DESCRIBED IN APPLICABLE AWWA STANDARDS OR MANUFACTURERS' RECOMMENDED INSTALLATION PROCEDURES) FOUND IN TRENCHES WILL BE REMOVED FOR A DEPTH OF AT LEAST SIX INCHES BELOW THE BOTTOM OF UNDERGROUND PIPE INSTALLED UNDER THIS PROJECT.
11.

ALL WATER MAIN TEES, BENDS, PLUGS, AND HYDRANTS INSTALLED UNDER THIS PROJECT WILL BE PROVIDED WITH THRUST BLOCKS OR RESTRAINED JOINTS TO PREVENT MOVEMENT.
12.

NEW OR ALTERED WATER MAINS THAT ARE INCLUDED IN THIS PROJECT AND THAT WILL BE CONSTRUCTED OF ASBESTOS-CEMENT OR POLYVINYL CHLORIDE PIPE WILL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH AWWA STANDARD C603 OR C605, RESPECTIVELY, AND ALL OTHER NEW OR ALTERED WATER MAINS INCLUDED IN THIS PROJECT WILL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH AWWA STANDARD C600.
13.

NEW OR RELOCATED, UNDERGROUND WATER MAINS INCLUDED IN THIS PROJECT WILL 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 VACUUM-TYPE SANITARY SEWER, STORM SEWER, STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.; A HORIZONTAL DISTANCE OF AT LEAST SIX FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY-TYPE SANITARY SEWER (OR A HORIZONTAL DISTANCE OF AT LEAST THREE FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY-TYPE SANITARY SEWER IF THE BOTTOM OF THE WATER MAIN WILL BE LAID AT LEAST SIX INCHES ABOVE THE TOP OF THE SEWER);

A HORIZONTAL DISTANCE OF AT LEAST SIX FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED 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 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."

14.

NEW OR RELOCATED, UNDERGROUND WATER MAINS THAT ARE INCLUDED IN THIS PROJECT AND THAT WILL CROSS ANY EXISTING OR PROPOSED GRAVITY- OR VACUUM-TYPE SANITARY SEWER OR STORM SEWER WILL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST SIX INCHES ABOVE THE OTHER PIPELINE OR AT LEAST 12 INCHES BELOW THE OTHER PIPELINE; AND NEW OR RELOCATED, UNDERGROUND WATER MAINS THAT ARE INCLUDED IN THIS PROJECT AND THAT WILL CROSS ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER OR STORMWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER WILL BE LAID SO THE OUTSIDE OF THE WATER MAIN IS AT LEAST 12 INCHES ABOVE OR BELOW THE OTHER PIPELINE.
15.

AT THE UTILITY CROSSINGS DESCRIBED ABOVE, ONE FULL LENGTH OF WATER MAIN PIPE WILL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS WILL BE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE OR THE PIPES WILL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER 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 II OF CHAPTER 62-610, F.A.C.

16.

IF CONNECTION OF THE PROPOSED ACTIVITY TO THE WATER MAIN WILL RESULT IN A DEPRESSURIZATION OF THE EXISTING SYSTEM BELOW 20 POUNDS PER SQUARE INCH, ONE OF THE FOLLOWING MUST OCCUR;

A.

PRECAUTIONARY BOIL WATER NOTICES MUST BE ISSUED IN CASES OF PLANNED DISTRIBUTION INTERRUPTIONS, WHICH ARE DEEMED AN IMMINENT PUBLIC HEALTH THREAT BY THE DEP CENTRAL DISTRICT OR WILL AFFECT THE BACTERIOLOGICAL QUALITY OF THE DRINKING WATER UNLESS THE PUBLIC WATER SYSTEM CAN DEMONSTRATE, BY SOUND ENGINEERING JUDGMENT, THAT THE INTEGRITY OF THE WATER SYSTEM HAS BEEN MAINTAINED; OR

B.

IN CASE OF BRIEF INTERRUPTION IN SERVICE, ADVISORIES (NOT BOIL WATER NOTICES) SHOULD BE ISSUED IF TEMPORARY CHANGES IN WATER QUALITY ARE EXPECTED TO OCCUR AND NOT DEEMED AN IMMINENT PUBLIC HEALTH RISK.

FDEP WASTEWATER NOTES

1.

APPROPRIATE DEFLECTION TEST ARE SPECIFIED FOR ALL FLEXIBLE PIPE. TESTING IS REQUIRED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS TO PERMIT STABILIZATION OF THE SOIL-PIPE SYSTEM. TESTING REQUIREMENTS SPECIFY: 1) NO PIPE SHALL EXCEED A DEFLECTION OF 5%; 2) USING RIGID BALL OR MANDREL FOR THE DEFLECTION TEST WITH A DIAMETER NOT LESS THAN 95% OF THE BASE INSIDE DIAMETER OR AVERAGE INSIDE DIAMETER OF THE PIPE, DEPENDING ON WHICH IS SPECIFIED IN THE ASTM SPECIFICATIONS, INCLUDING THE APPENDIX, TO WHICH THE PIPE IS MANUFACTURE; AND 3) PERFORMING THE TEST WITHOUT MECHANICAL PULLING DEVICES.
2.

LEAKAGE TEST ARE SPECIFIED REQUIRING THAT: 1) THE LEAKAGE EXFILTRATION OR INFILTRATION DOES NOT EXCEED 200 GALLONS PER INCH OF PIPE DIAMETER PER MILE PER DAY FOR ANY SECTION OF THE SYSTEM; 2) EXFILTRATION OR INFILTRATION TEST BE PERFORMED WITH A MINIMUM POSITIVE HEAD OF 2 FEET; AND 3) AIR TEST, AS A MINIMUM, CONFORM TO THE TEST PROCEDURE DESCRIBED IN ASTM C-828 FOR CLAY PIPE, ASTM C 924 FOR CONCRETE PIPE, ASTM F-1417 FOR PLASTIC PIPE, AND OTHER MATERIAL APPROPRIATE TEST PROCEDURES.
3.

MANHOLE INSPECTION AND TESTING FOR WATERTIGHTNESS OR DAMAGE PRIOR TO PLACING INTO SERVICE ARE REQUIRED, AIR TESTING SPECIFIED FOR CONCRETE SEWER MANHOLES, SHALL CONFORM TO THE TEST PROCEDURES DESCRIBED IN ASTM C-1244.
4.

SUITABLE COUPLINGS COMPLYING WITH ASTM SPECIFICATIONS ARE REQUIRED FOR JOINING DISSIMILAR MATERIALS.
5.

CONCRETE MANHOLES SHALL HAVE THE FOLLOWING: 1) MANHOLE LIFT HOLES AND GRADE ADJUSTMENT RINGS SEALED WITH NON-SHRINK MORTAR OR OTHER APPROPRIATE MATERIAL; 2) INLET AND OUTLET PIPES BE JOINED TO THE MANHOLE WITH A GASKETED FLEXIBLE WATERTIGHT CONNECTION OR ANOTHER WATERTIGHT CONNECTION ARRANGEMENT THAT ALLOWS DIFFERENTIAL SETTLEMENT OF THE PIPE AND MANHOLE WALL; 3) WATERTIGHT MANHOLE COVERS BE USED WHEREVER THE TOPS MAY BE FLOODED BY STREET RUNOFF OR HIGH WATER.

LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314

OTHER PIPE	HORIZONTAL SEPARATION	CROSSINGS (1)	JOINT SPACING AT CROSSINGS (FULL JOINT CENTERED)
STORM SEWER, STORMWATER FORCE MAIN, RECLAIMED WATER (2)			
VACUUM SANITARY SEWER			
GRAVITY OR PRESSURE SANITARY SEWER, SANITARY SEWER FORCE MAIN, RECLAIMED WATER (4)			
ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM	10 FT MINIMUM (3)	—	—

- 1)

WATER MAIN SHOULD CROSS ABOVE OTHER PIPE. WHEN WATER MAIN MUST BE BELOW OTHER PIPE, THE MINIMUM SEPARATION IS 12 INCHES.
- 2)

RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
- 3)

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.
- 4)

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

TABLE 1: CLASSES OF EMBEDMENT AND BACKFILL MATERIALS

ASTM D 2321 MATERIAL CLASS	ASTM D 2487 USCS SOIL GROUP	MATERIAL TYPE	% PASSING			ATTERBERG LIMITS	
			1 1/2 IN.	NO. 4	NO. 200	LL	PI
IA	NONE	MANUFACTURED OPEN GRADED AGGREGATES	100%	≤10%	<5%	NON PLASTIC	
IB	NONE	MANUFACTURED DENSE GRADED AGGREGATES	100%	≤50%	<5%	NON PLASTIC	
II	GW	COARSE-GRAINED SOILS, CLEAN	100%	<50% OF "COARSE FRACTION"	<5%	NON PLASTIC	
	GP			>50% OF "COARSE FRACTION"			
	SW						
	SP						
III	GM	COARSE-GRAINED SOILS W/ FINES	100%	<50% OF "COARSE FRACTION"	12% TO 50%	<4 OR <"A" LINE	
	GC			>50% OF "COARSE FRACTION"		<7 OR >"A" LINE	
	SM					>4 OR <"A" LINE	
	SC					>7 OR >"A" LINE	
IV-A	ML	FINE-GRAINED SOILS	100%	100%	>50%	<4 OR <"A" LINE	
	CL					>7 OR >"A" LINE	

TRENCH AND BEDDING DETAILS

GENERAL NOTES

1.

BEDDING SHALL BE DUMPED CLASS I-A WORKED BY HAND, OR CLASS I-B COMPACTED TO 85% STANDARD PROCTOR. LOCAL CODE PERMITTING WITH GEOTECHNICAL ENGINEER AND OWNER APPROVAL, NATIVE SOIL MAY BE USED FOR BEDDING PROVIDED IT MEETS THE EMBEDMENT AND BACKFILL MATERIALS IN TABLE 1 EXCLUDING CLASS IV-A.
2.

HAUNCHING SHALL BE WORKED AROUND THE PIPE BY HAND TO ELIMINATE VOIDS AND SHALL BE CLASS I-A, OR CLASS I-B OR CLASS II COMPACTED TO 95% STANDARD PROCTOR. PEA GRAVEL SHALL NOT BE USED AS A HAUNCHING MATERIAL. CLASS III MATERIAL SHALL BE ALLOWED FOR RIGID PIPE COMPACTED AT 95% STANDARD PROCTOR.
3.

INITIAL BACKFILL SHALL BE CLASS I-B WORKED BY HAND, OR CLASS I-B OR CLASS II COMPACTED TO 90% STANDARD PROCTOR, OR CLASS III COMPACTED 95% STANDARD PROCTOR. CLASS I & II MATERIAL SHALL BE USED FOR FLEXIBLE PIPE WHEN FILL HEIGHTS EXCEED 8".
4.

FINAL BACKFILL SHALL BE CLASS I-A WORKED BY HAND, OR CLASS I-B OR CLASS II COMPACTED TO 90% STANDARD PROCTOR, OR CLASS III COMPACTED TO 95% STANDARD PROCTOR.
5.

FINAL BACKFILL NOT UNDER PAVED AREAS CAN BE CLASS IV-A COMPACTED TO 95% STANDARD PROCTOR.
6.

ALL MATERIALS ARE CLASSIFIED IN ACCORDANCE WITH ASTM D 2321. (SEE TABLE 1)
7.

ALL MATERIALS SHALL BE INSTALLED IN MAXIMUM 8" LOOSE LIFTS IN ACCORDANCE WITH ASTM D 698. CLASS III AND IV-A MATERIALS SHALL BE COMPACTED NEAR OPTIMUM MOISTURE CONTENT.
8.

FILL SALVAGED FROM EXCAVATION SHALL BE FREE OF DEBRIS, ORGANICS AND ROCKS LARGER THAN 3".
9.

ALL TRENCH EXCAVATIONS SHALL BE SLOPED, SHORED, SHEETED, BRACED, OR OTHERWISE SUPPORTED IN COMPLIANCE WITH OSHA REGULATIONS AND LOCAL ORDINANCES.
10.

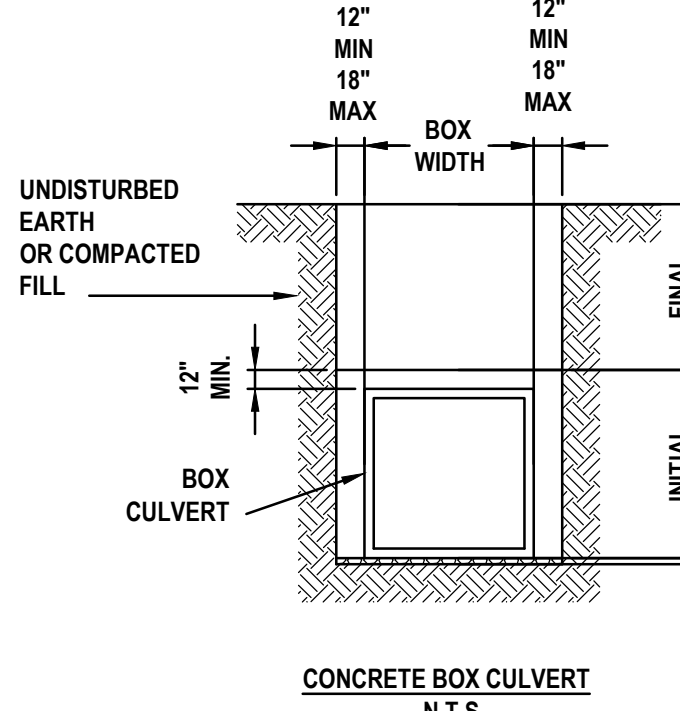
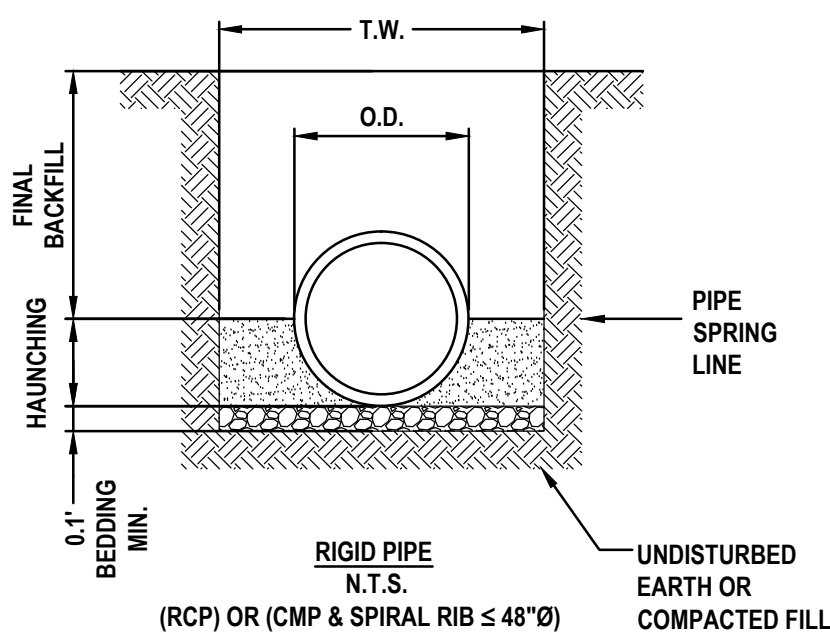
DESIGN ENGINEER SHALL DESIGNATE ON THE PLANS WHERE WATERTIGHT JOINTS ARE TO BE REQUIRED.
11.

REPLACE WET OR UNSUITABLE SOIL AS NECESSARY TO PROVIDE A SUITABLE BASE, AS DIRECTED BY GEOTECHNICAL ENGINEER OR OWNER.
12.

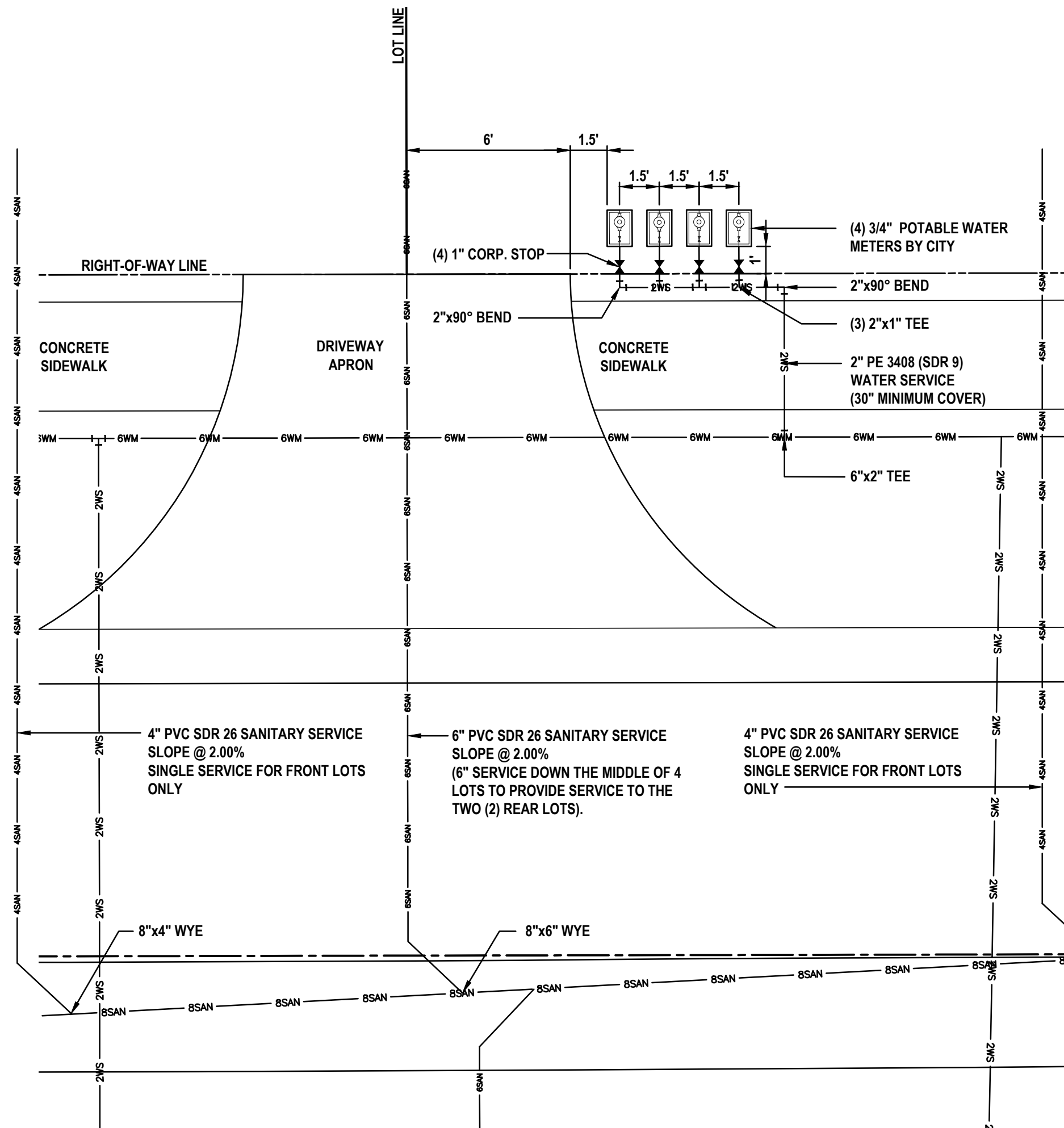
WHERE GROUND WATER IS PRESENT CLASS I-A MATERIAL SHALL BE WRAPPED WITH A NON-WOVEN GEO-TEXTILE, EXCLUDING BEDDING MATERIAL BETWEEN 4" & 6" THICK.
13.

CONTRACTOR SHALL REFER TO GEOTECHNICAL REPORT FOR SOIL TYPE AND CLASSIFICATIONS FOR THIS PROJECT.
14.

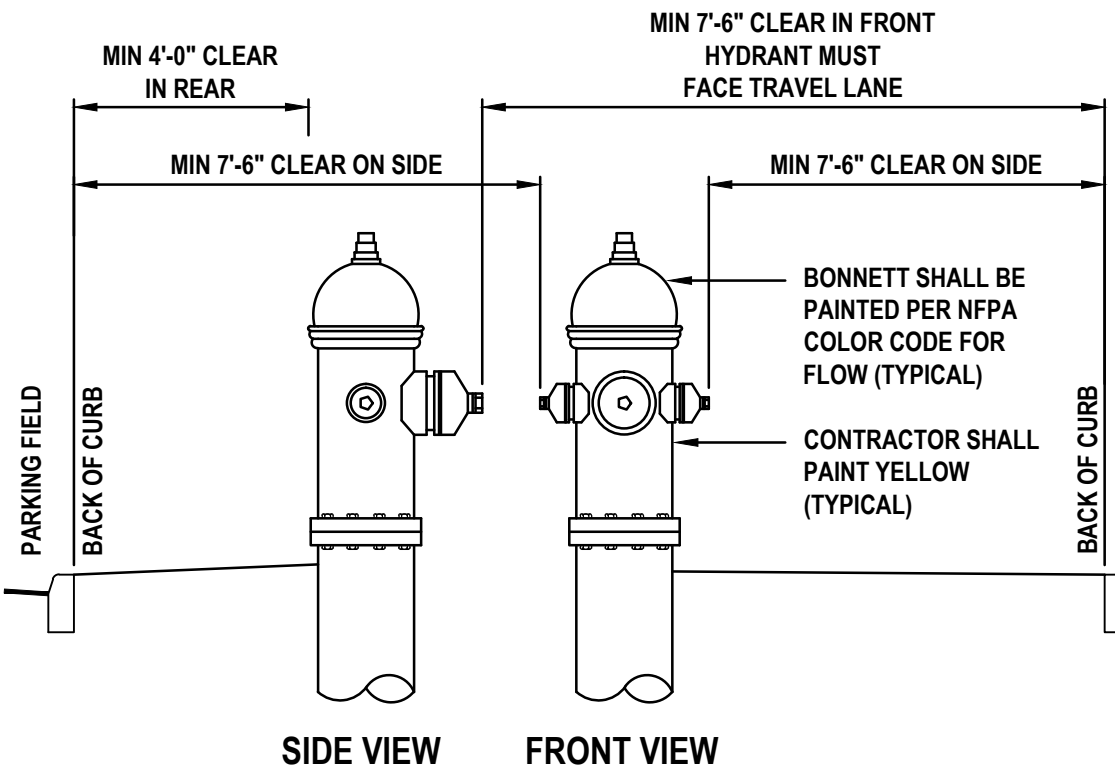
CONTRACTOR SHALL REFER TO THE LATEST VERSION OF ASTM STANDARDS PRIOR TO CONSTRUCTION.



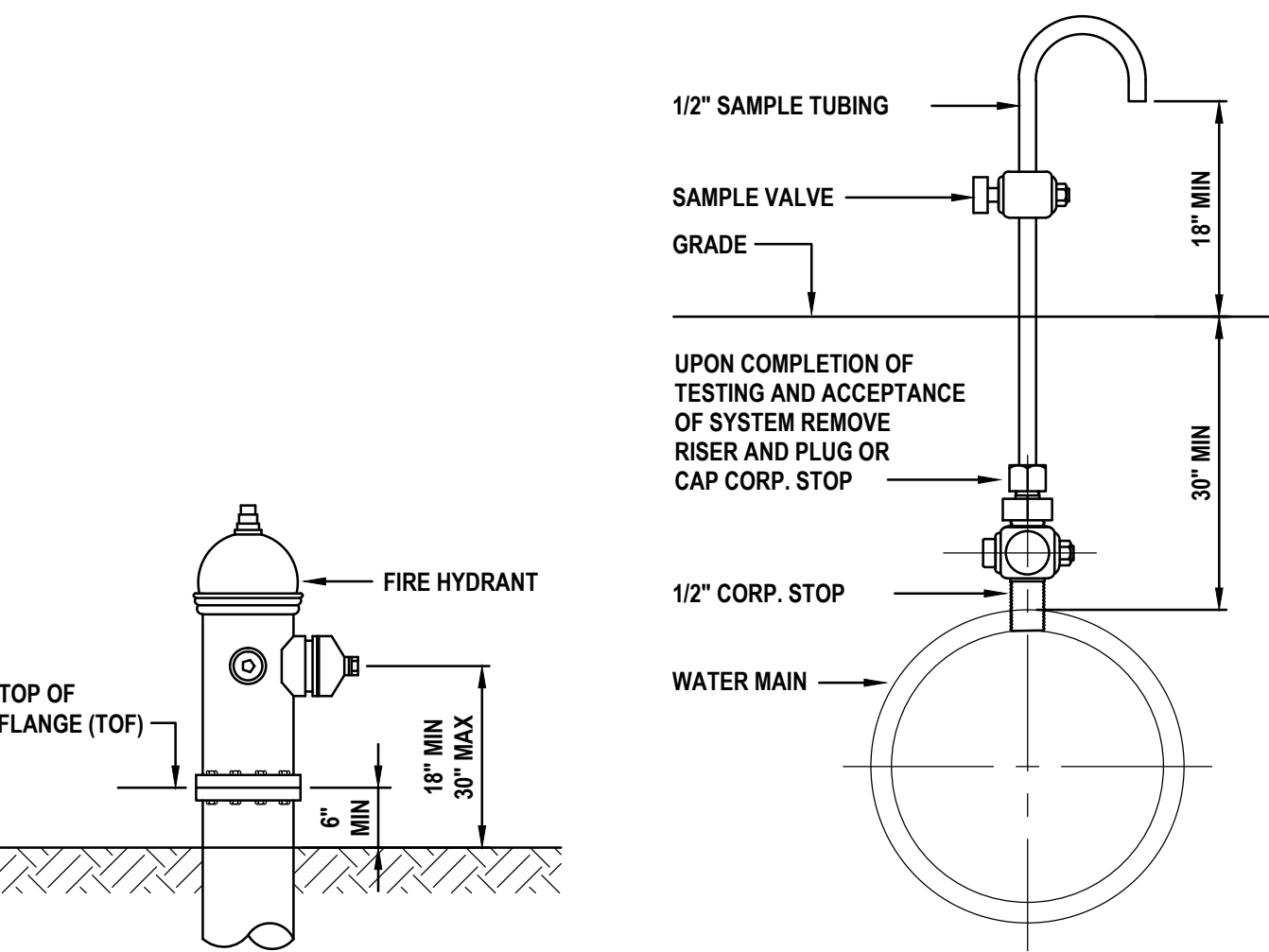
NOTE: MINIMUM TRENCH WIDTH (T.W.) SHALL BE THE GREATER OF (1.25 O.D. + 12") OR (O.D. + 16")



TYPICAL WATER / SANITARY SERVICE SCHEMATIC
NOT TO SCALE



TYPICAL FIRE HYDRANT CLEARANCE REQUIREMENT
NOT TO SCALE

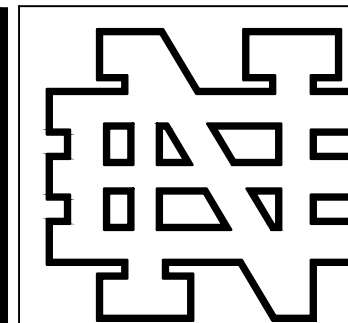


TOP OF FLANGE REFERENCE POINT DETAIL
NOT TO SCALE

BACTERIOLOGICAL SAMPLE POINT DETAIL
NOT TO SCALE

REVISIONS

DATE	DESCRIPTION



NEWKIRK
ENGINEERING

1370 North US1, Suite 204
Ormond Beach, Florida 32174
Phone (386) 290-7599
Harry@Newkirk-Engineering.com

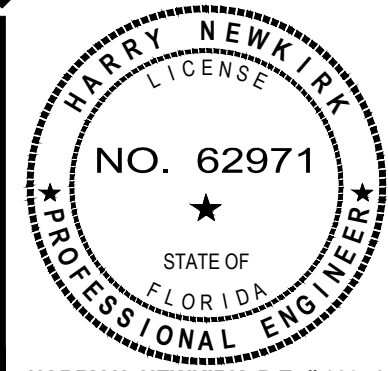
Certificate of Authorization
No. 30209
© 2013

Civil Engineering
Transportation
Construction Engineering & Inspection



THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING. ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING. COPYRIGHT 2014 ALL RIGHTS RESERVED.

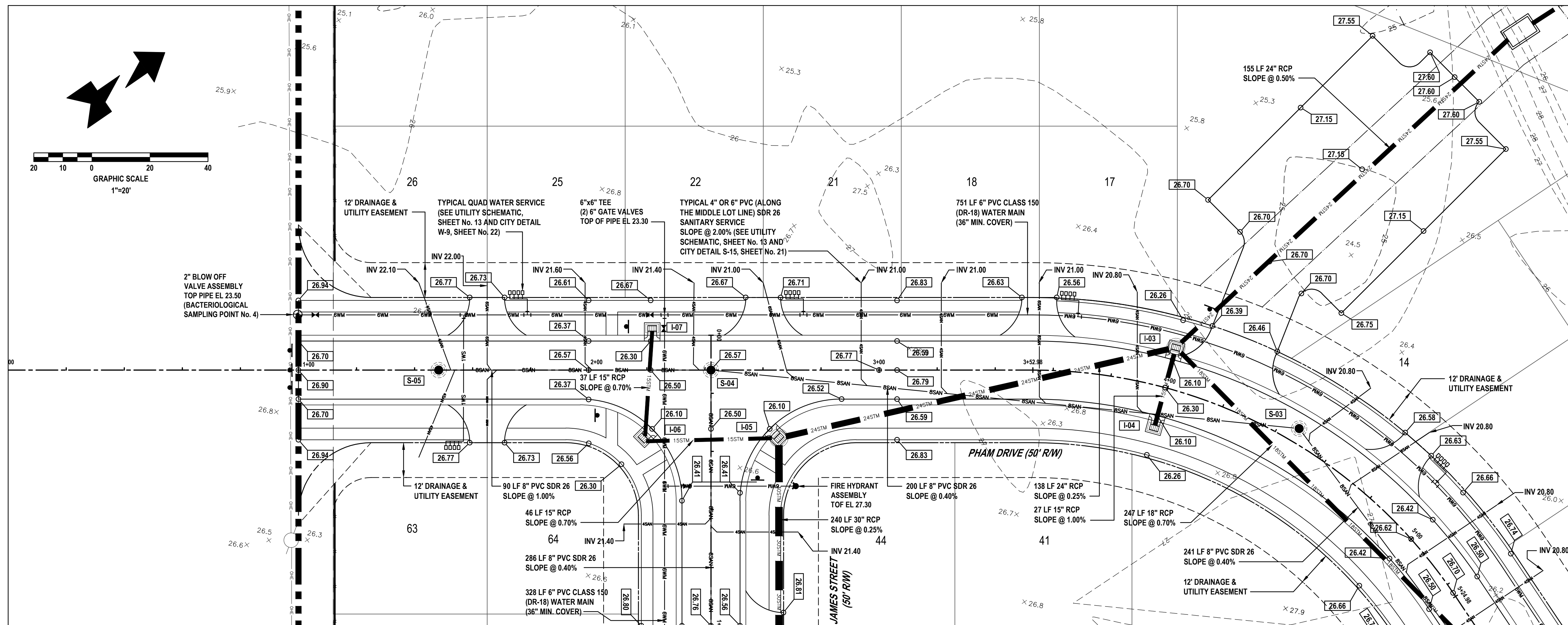
UTILITY DETAILS AND NOTES
CORNERSTONE GROVE PUD
HIDDEN LAKE DRIVE
PORT ORANGE, FL 32129



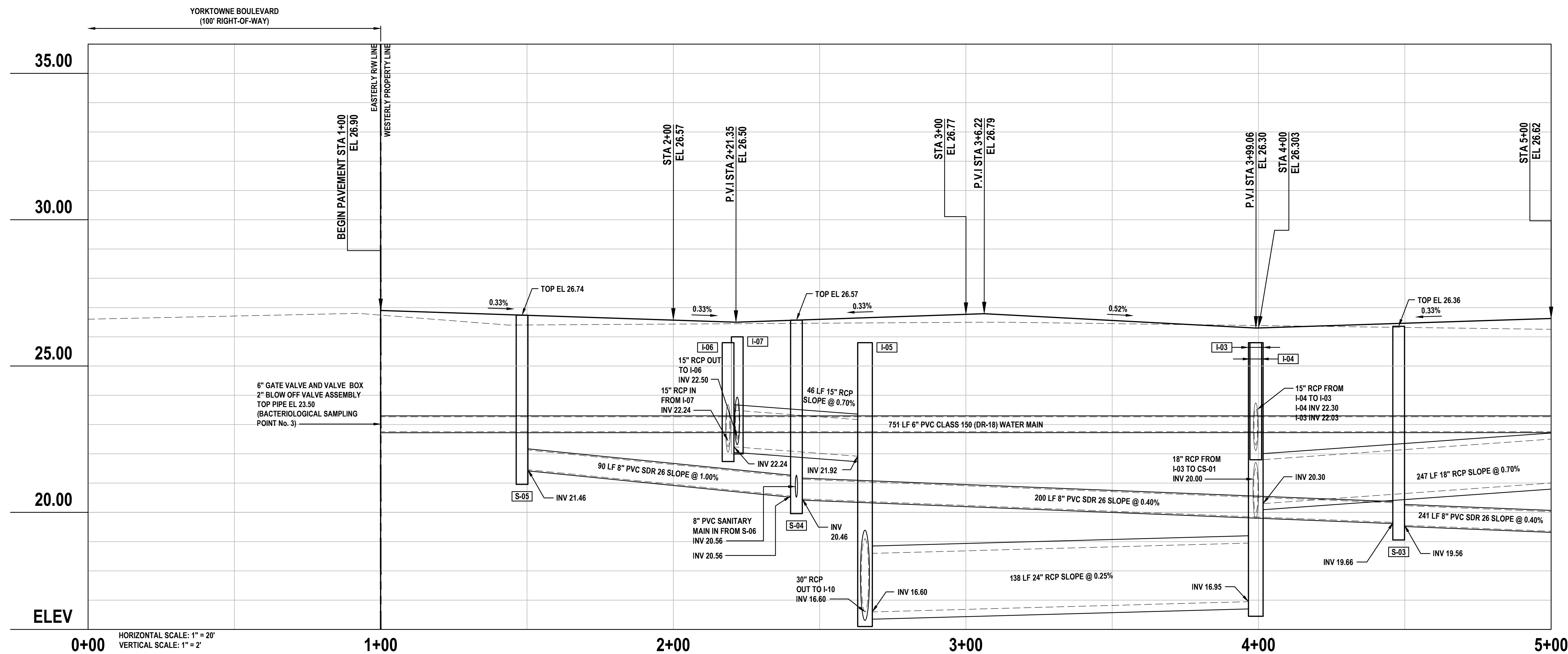
PROJECT No: 2016-237
DATE: MARCH 2017
DESIGN BY: HHN
DRAWN BY: DAB
CHECKED BY: HHN
SCALE: 1" = 50'

DRAWING NUMBER

13

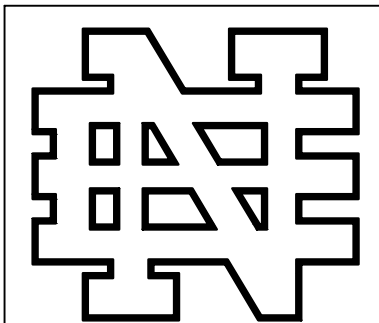


STATION 0+00 TO 5+00



REVISIONS

DATE	DESCRIPTION



NEWKIRK
ENGINEERING

1370 North US1, Suite 204
Ormond Beach, Florida 32174
Phone (386) 290-7599
Harry@Newkirk-Engineering.com

Certificate of Authorization
No. 30209
© 2013

Civil Engineering
Transportation
Construction Engineering & Inspection



424 LUNA BELLA LANE, SUITE 122
NEW SMYRNA BEACH, FL 32108

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING. ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING. COPYRIGHT 2014 ALL RIGHTS RESERVED.

PLAN AND PROFILE

PHAM DRIVE, 0+00 - 5+00

CORNERSTONE GROVE PUD

HIDDEN LAKE DRIVE

PORT ORANGE, FL 32129



HARRY H. NEWKIRK, P.E. # 62971

PROJECT No: 2016-237

DATE: MARCH 2017

DESIGN BY: HHN

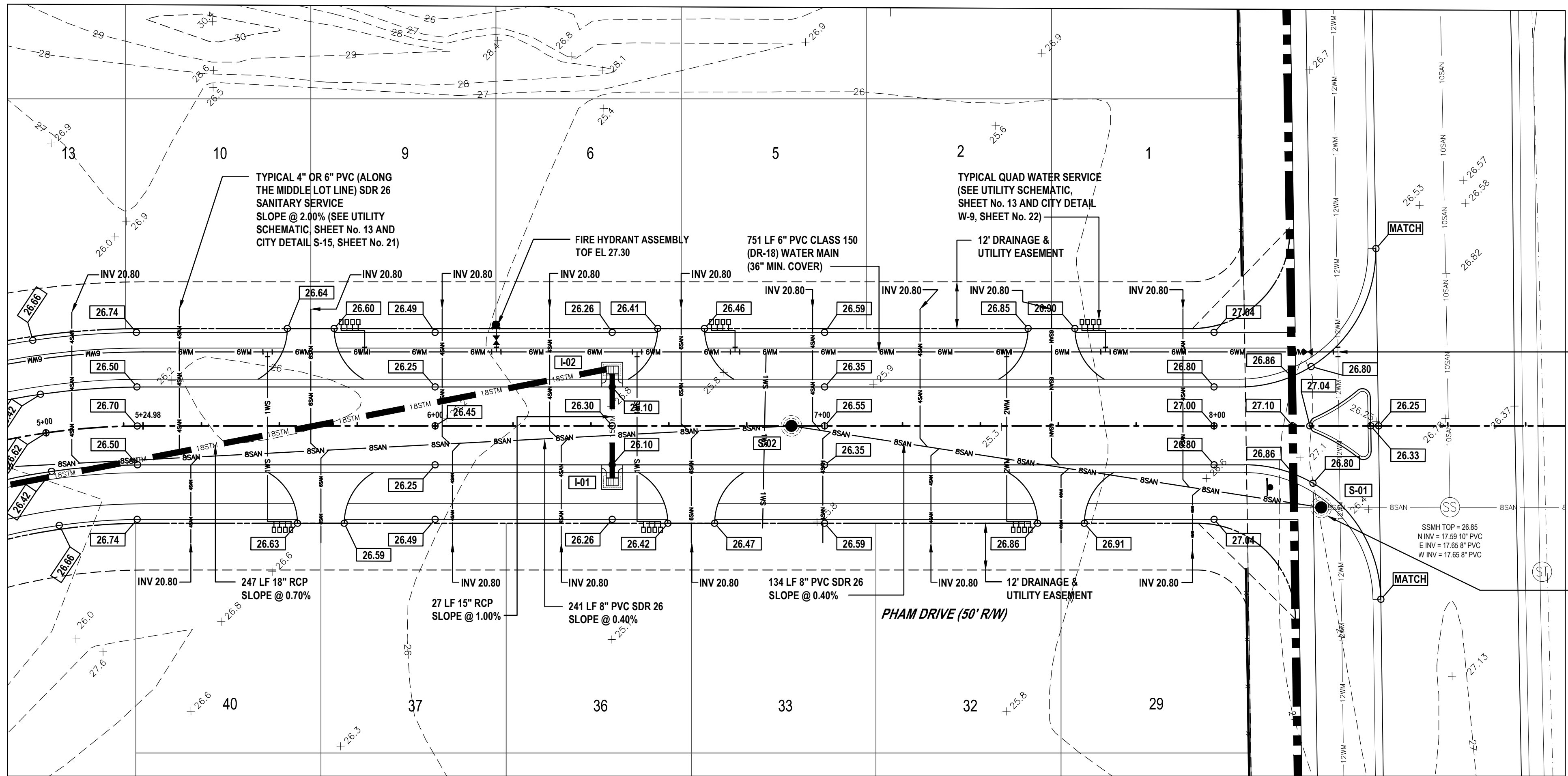
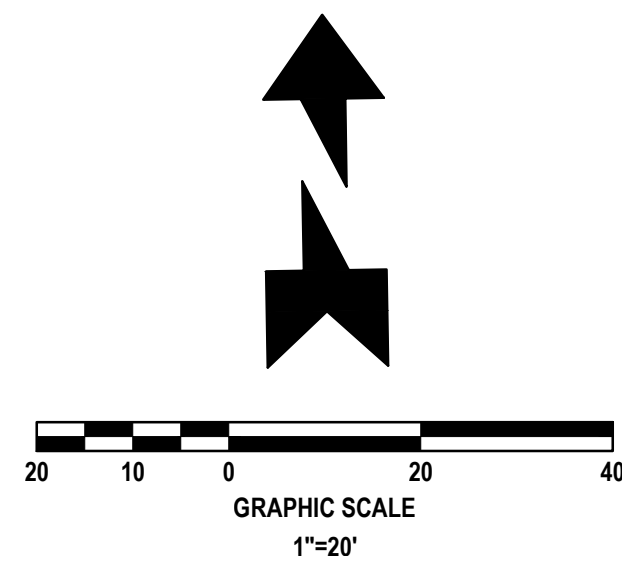
DRAWN BY: DAB

CHECKED BY: HHN

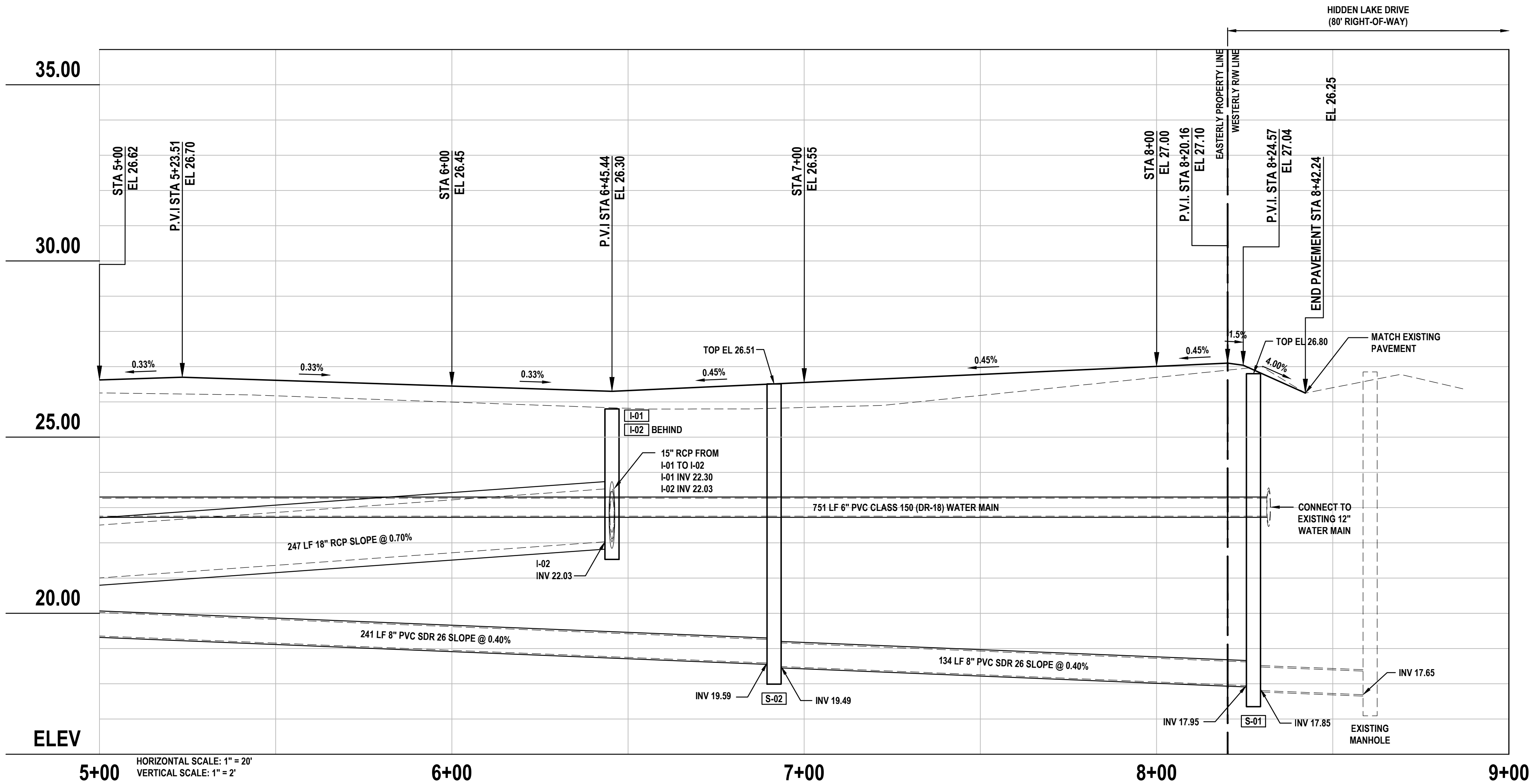
SCALE: AS SHOWN

DRAWING NUMBER

14

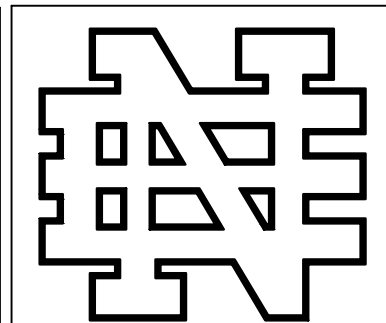


STATION 5+00 TO 9+00



REVISIONS

DATE	DESCRIPTION



NEWKIRK
ENGINEERING

1370 North US1, Suite 204
Ormond Beach, Florida 32174
Phone (386) 290-7599
Harry@Newkirk-Engineering.com

Certificate of Authorization
No. 30209
© 2013

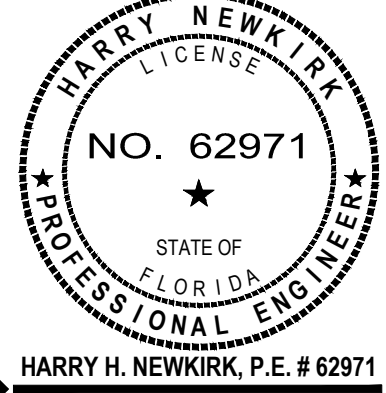
Civil Engineering
Transportation
Construction Engineering &
Inspection



424 LUNA BELLA LANE, SUITE 122
NEW SMYRNA BEACH, FL 32108

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING. ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING. COPYRIGHT 2014 ALL RIGHTS RESERVED.

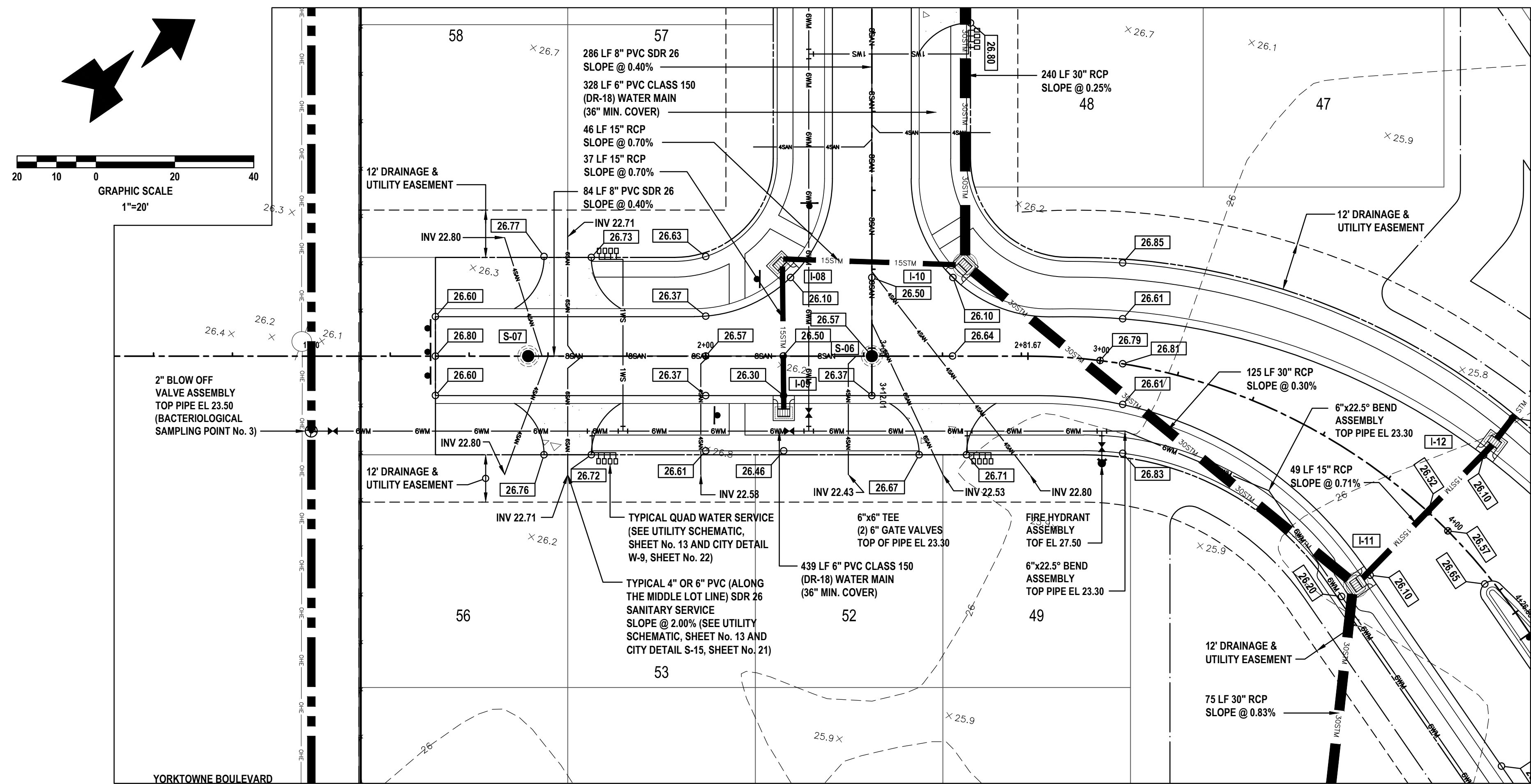
PLAN AND PROFILE
PHAM DRIVE, 5+00 - 9+00
CORNERSTONE GROVE PUD
HIDDEN LAKE DRIVE
PORT ORANGE, FL 32129



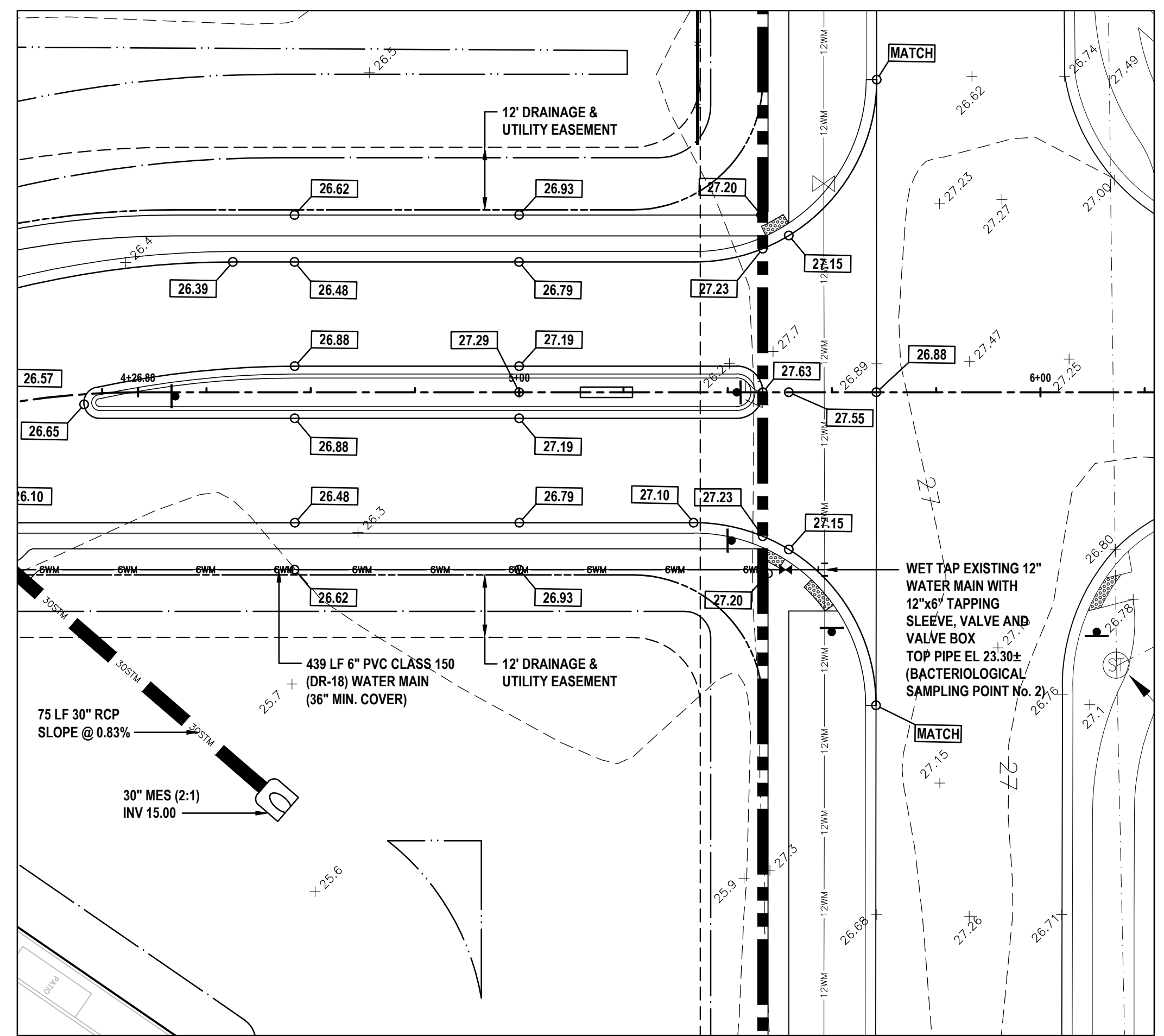
PROJECT No: 2016-237
DATE: MARCH 2017
DESIGN BY: HHN
DRAWN BY: DAB
CHECKED BY: HHN
SCALE: AS SHOWN

DRAWING NUMBER

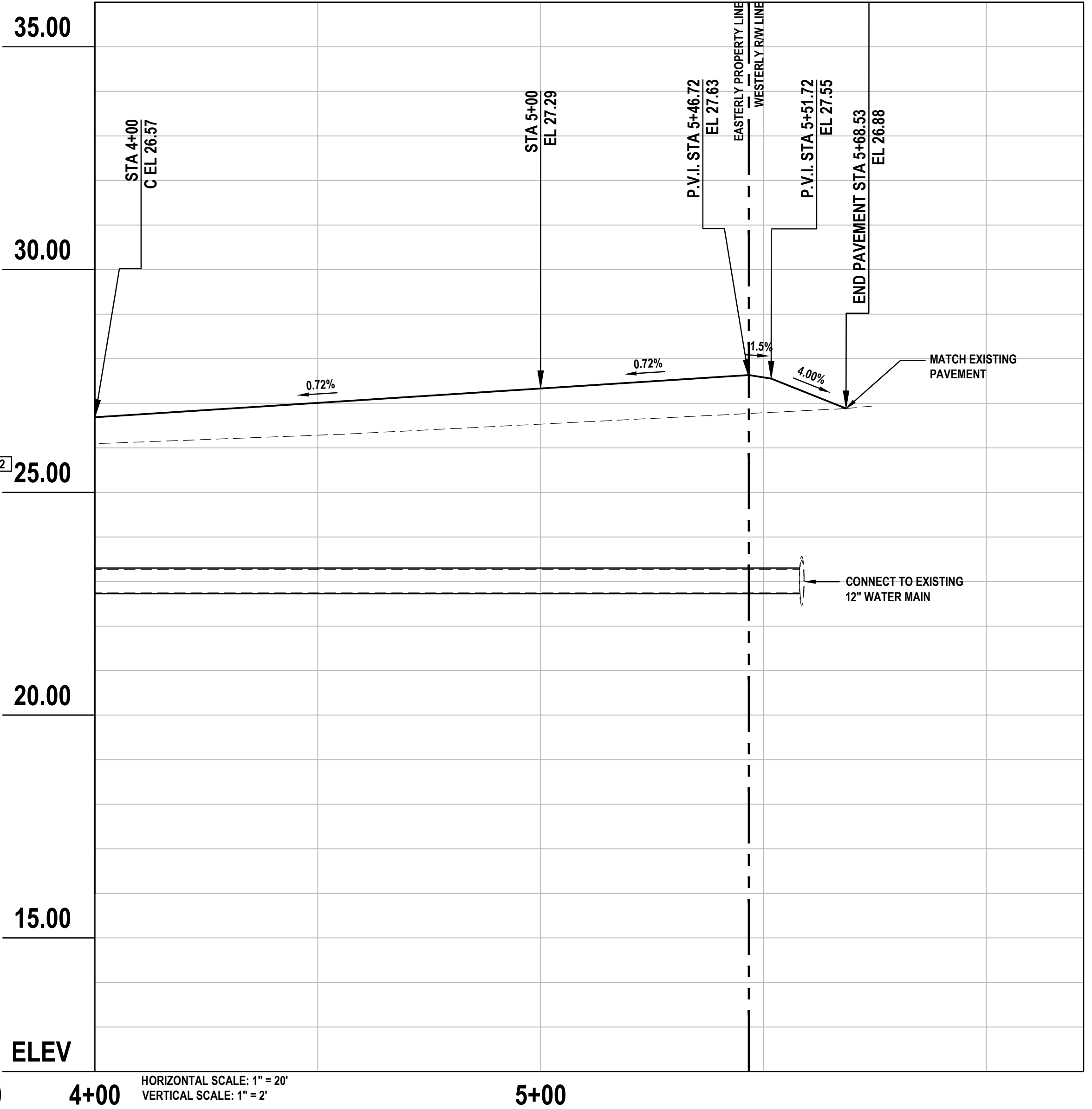
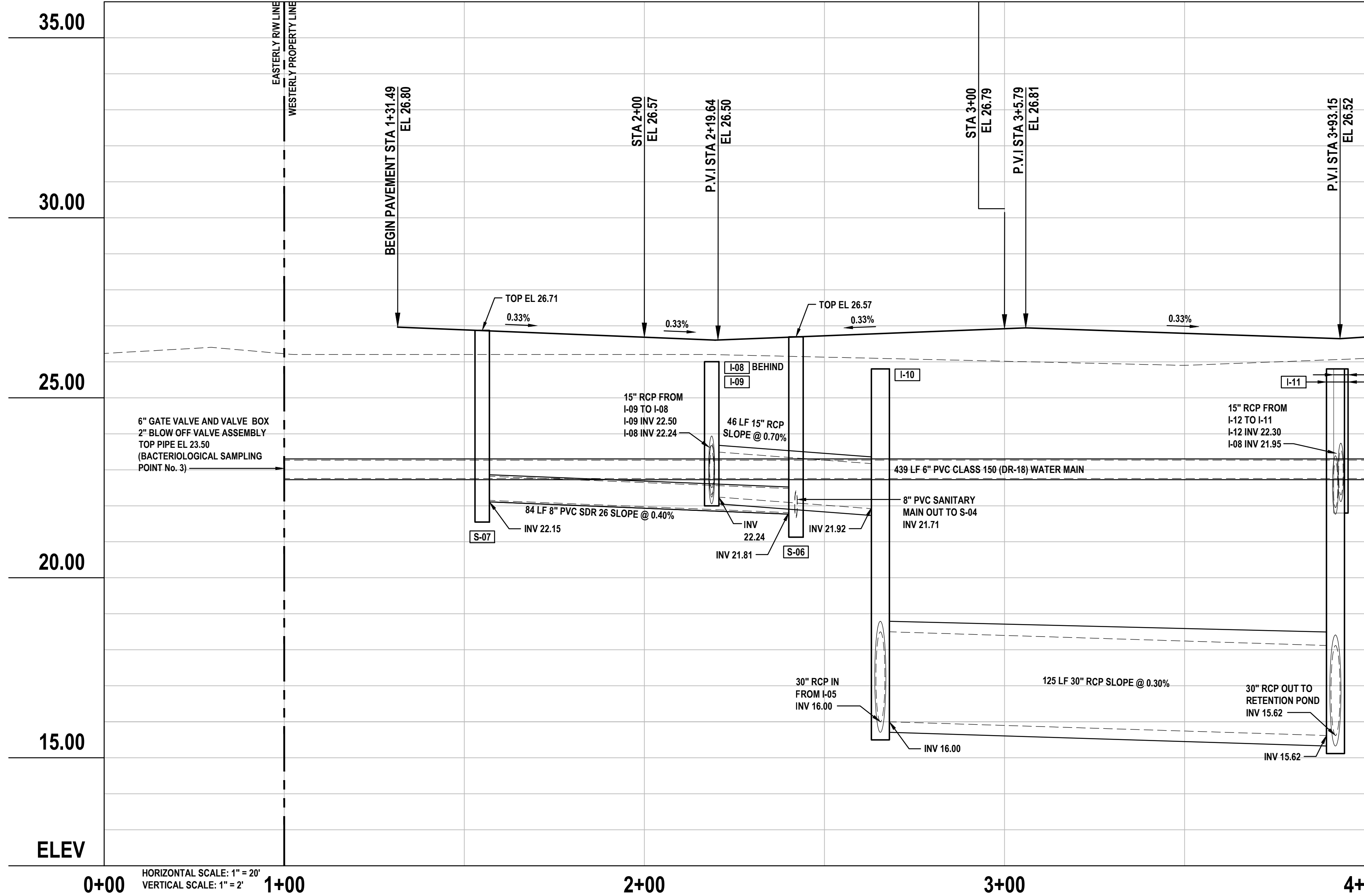
15



STATION 0+00 TO 4+00

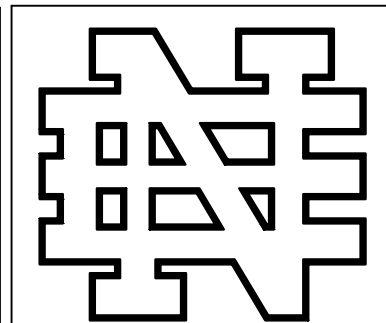


STATION 4+00 TO 5+50



REVISIONS

DATE	DESCRIPTION



NEWKIRK ENGINEERING

1370 North US1, Suite 204
Ormond Beach, Florida 32174
Phone (386) 290-7599
Harry@Newkirk-Engineering.com

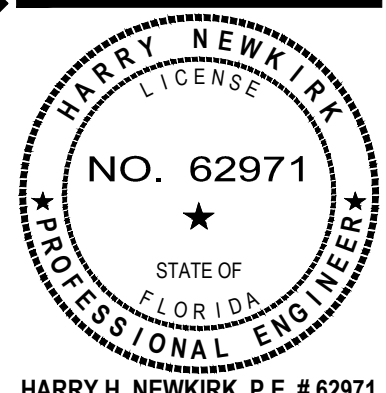
Certificate of Authorization
No. 30209
© 2013

Civil Engineering
Transportation
Construction Engineering & Inspection



THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING. ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING. COPYRIGHT 2014 ALL RIGHTS RESERVED.

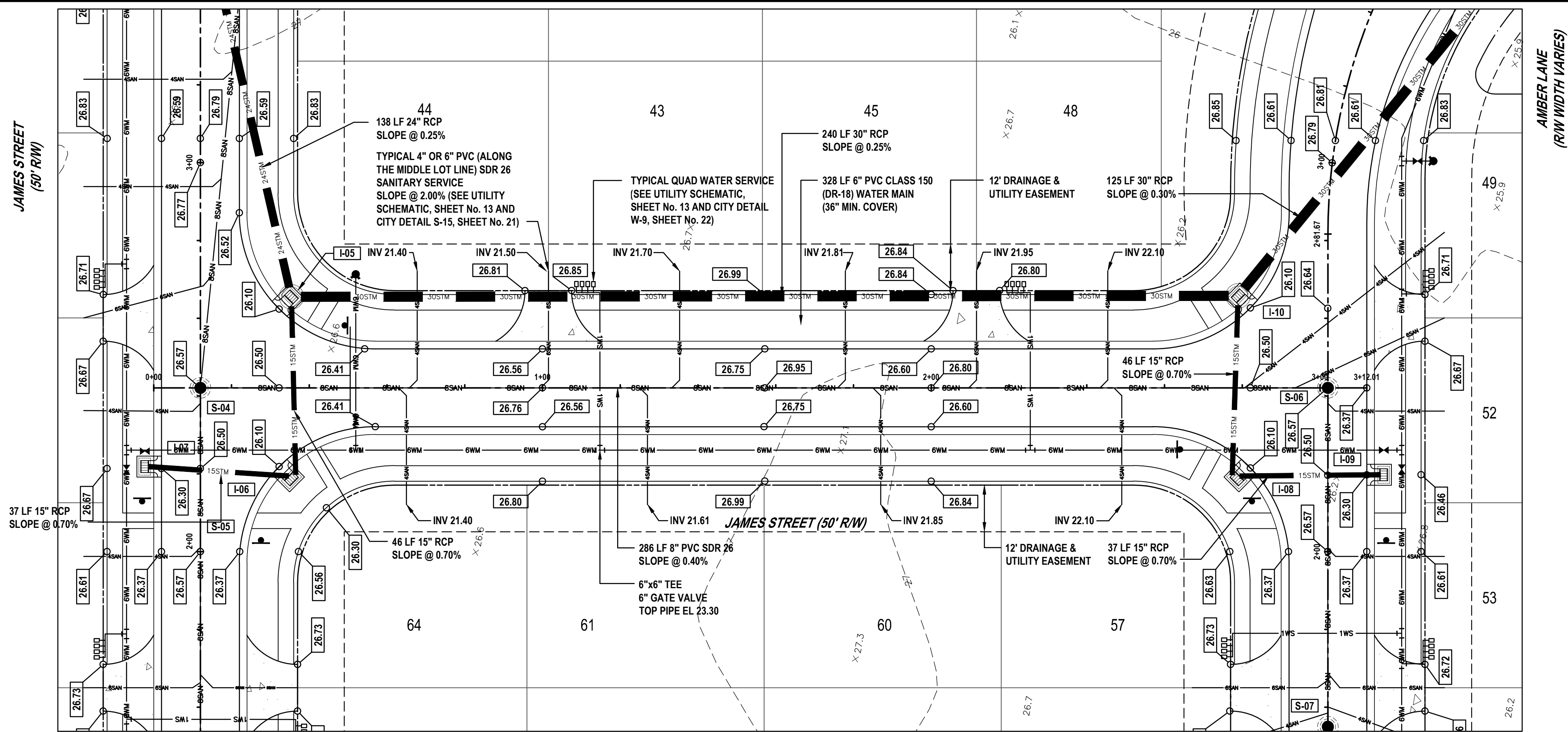
PLAN AND PROFILE AMBER LANE CORNERSTONE GROVE PUD HIDDEN LAKE DRIVE PORT ORANGE, FL 32129



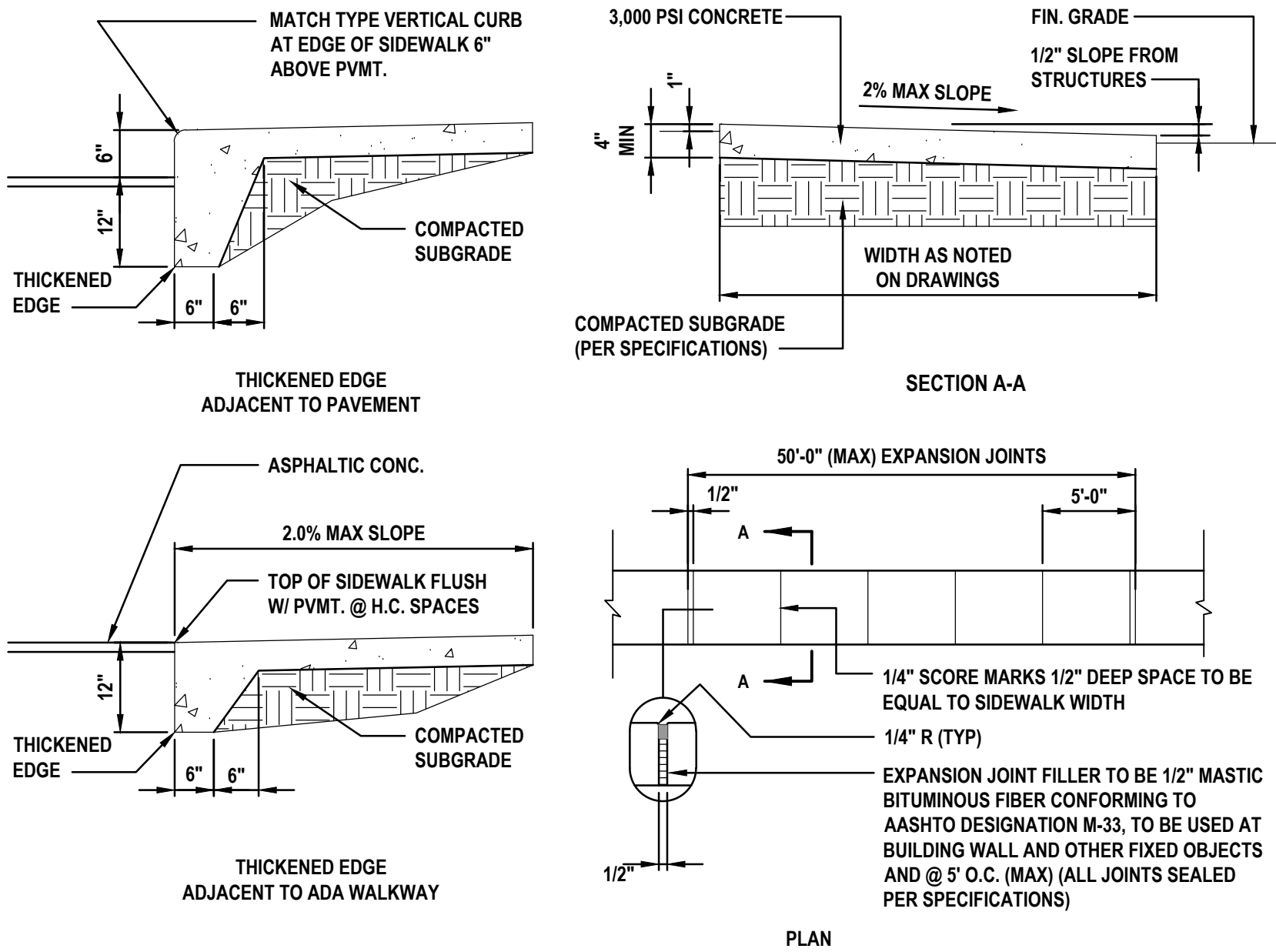
PROJECT No: 2016-237
DATE: MARCH 2017
DESIGN BY: HHN
DRAWN BY: DAB
CHECKED BY: HHN
SCALE: AS SHOWN

DRAWING NUMBER

16

17

CONCRETE WALKS SHALL BE 4 INCHES THICK, CLASS I, HAVING A 3,000 PSI STRENGTH @ 28 DAYS, POURED OVER PROPERLY PREPARED SUBGRADE. ALL CONCRETE SIDEWALKS SHALL BE 8 INCHES THICK ACROSS DRIVEWAYS. 1/2 INCH EXPANSION JOINTS SHALL BE PLACED AT A MAXIMUM OF 5'. CRACK CONTROL JOINTS SHALL BE 5' ON CENTERS.

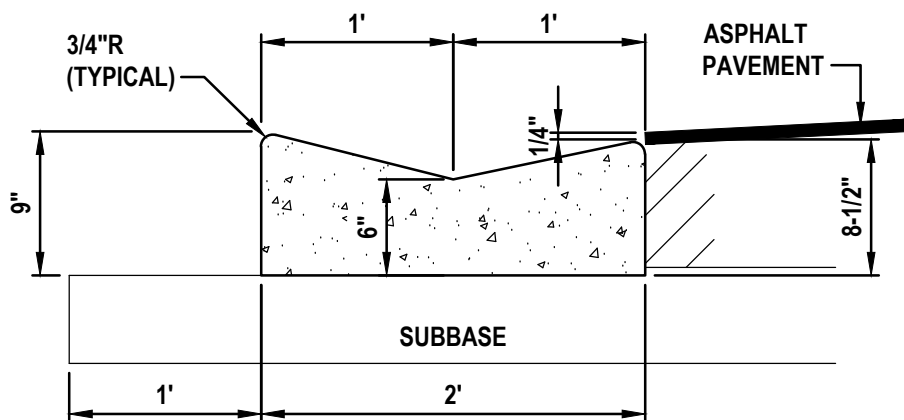


SIDEWALK DETAILS

NOT TO SCALE

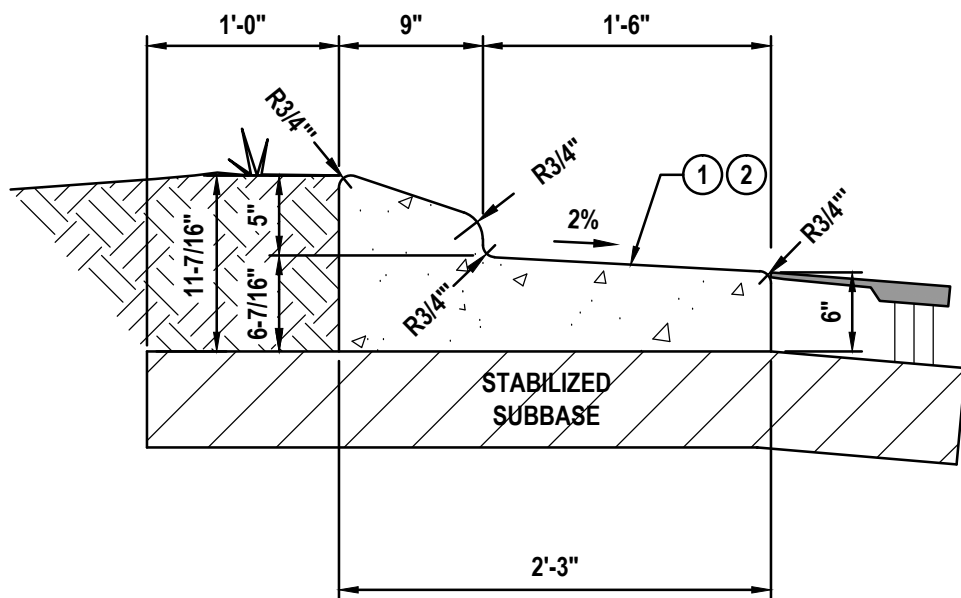
CURB CONSTRUCTION NOTES

1. ALL CURBS TO BE CONSTRUCTED OF 28 DAY, 3000 P.S.I. CONCRETE.
2. 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED EVERY 50', CONSTRUCTION JOINT REQUIRED EVERY 10' MAXIMUM (4' MINIMUM).
3. 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED AT EACH SIDE OF ALL STORM INLET STRUCTURES AND AT ALL RADII POINTS.
4. 6" SUBBASE TO BE COMPACTED AND TESTED TO 98% DENSITY BASED ON AASHTO T-180 MODIFIED PROCTOR TEST AND SHALL BE STABILIZED TO A MINIMUM L.B.R. 40.
5. EXPANSION JOINT MATERIAL MUST COVER ENTIRE CROSS SECTION OF CURB.
6. IN NO INSTANCE SHALL EXTRUDED CURBS (DEFINED AS HEADER-TYPE CURBS INSTALLED DIRECTLY ON TOP OF PAVEMENT) BE PERMITTED.



MIAMI CURB

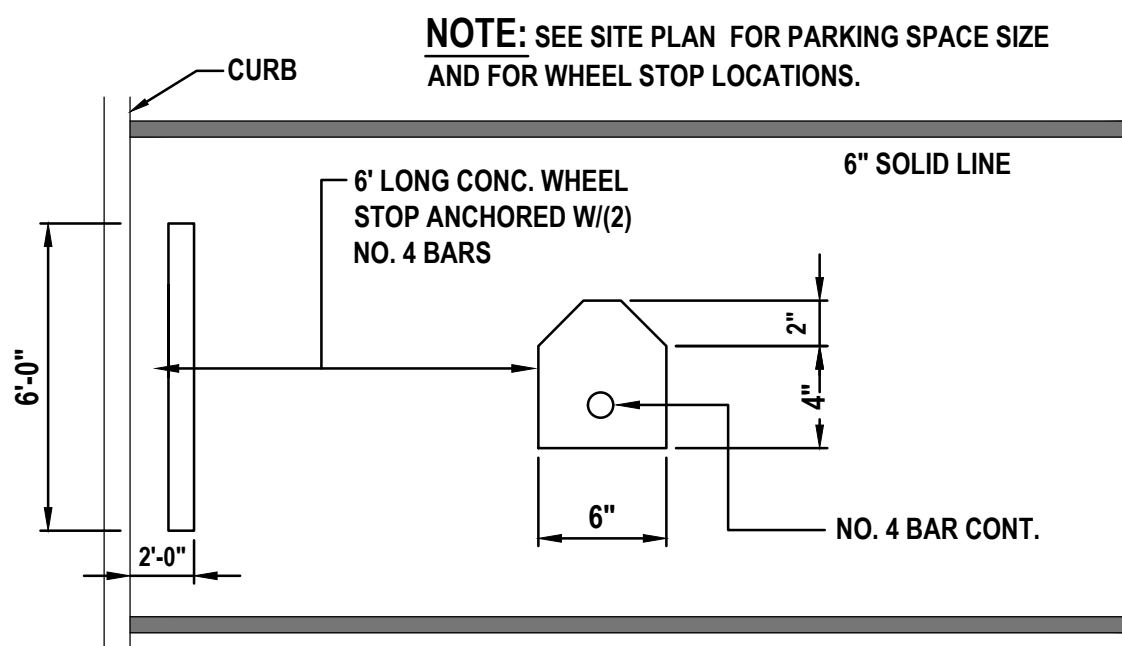
NOT TO SCALE



- ① WHEN USED ON HIGH SIDE OF ROADWAYS, THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT.
- ② PROVIDE CONTRACTION JOINTS @ 10' O.C. AND EXPANSION JOINTS @ 100' O.C. ALL JOINTS SEALED PER SPECIFICATIONS

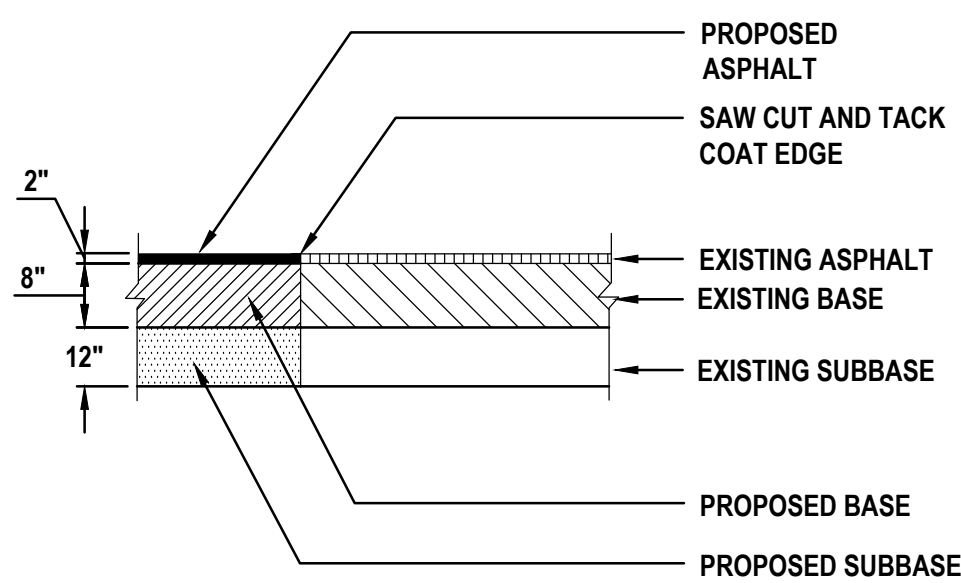
TYPE "E" SPILLOUT CURB DETAIL

NOT TO SCALE



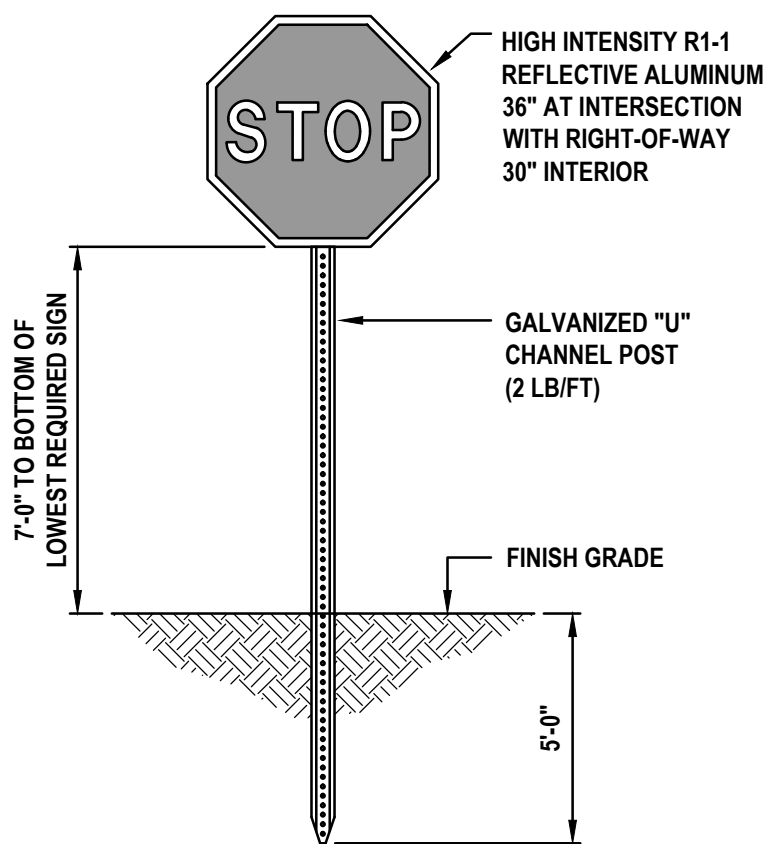
CONCRETE WHEEL STOP DETAIL

NOT TO SCALE



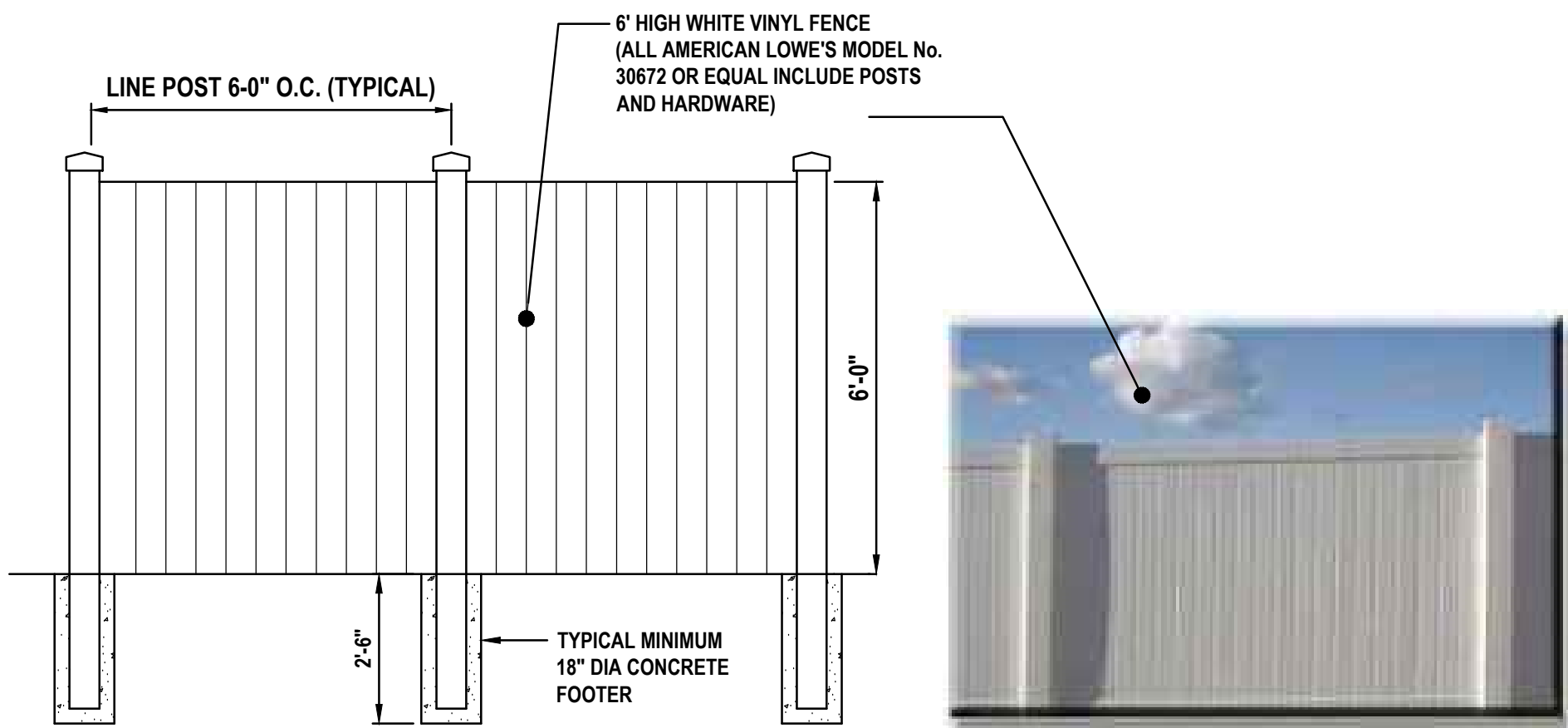
PAVEMENT BUTT JOINT DETAIL

NOT TO SCALE



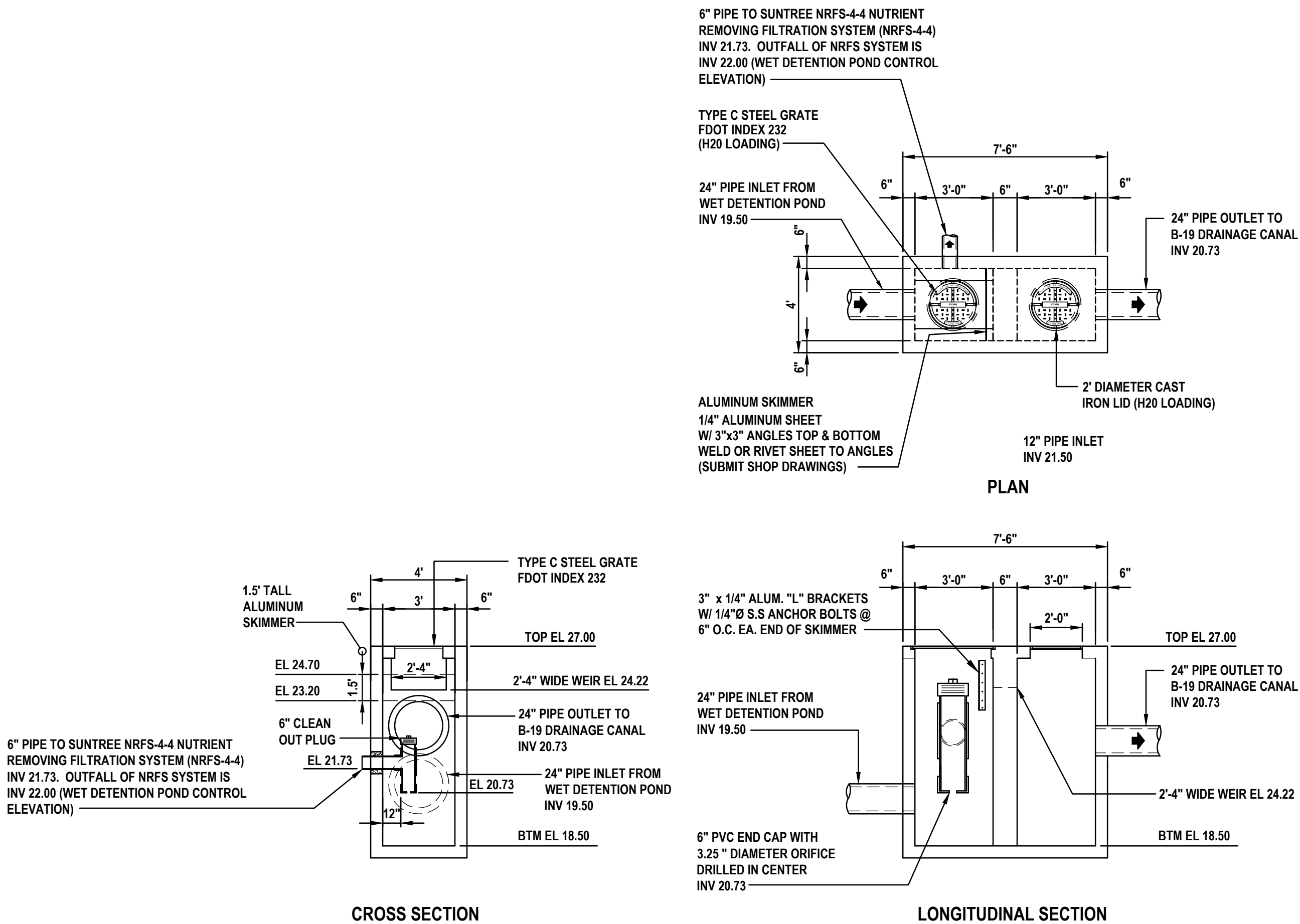
STOP SIGN DETAIL

NOT TO SCALE



VINYL FENCE DETAIL

NOT TO SCALE

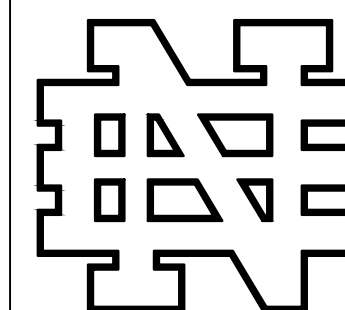


CONTROL STRUCTURE (CS-01) DETAIL

NOT TO SCALE

REVISIONS

DATE	DESCRIPTION



NEWKIRK ENGINEERING

1370 North US1, Suite 204
Ormond Beach, Florida 32174
Phone (386) 290-7599
Harry@Newkirk-Engineering.com

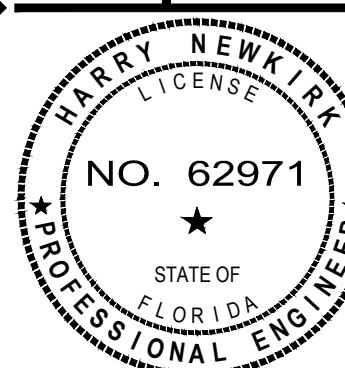
Certificate of Authorization
No. 30209
© 2013

Civil Engineering
Transportation
Construction Engineering & Inspection



THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING. ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING. COPYRIGHT 2014 ALL RIGHTS RESERVED.

MISCELLAENEOUS DETAILS
AND NOTES
CORNERSTONE GROVE PUD
HIDDEN LAKE DRIVE
PORT ORANGE, FL 32129



PROJECT No: 2016-237

DATE: MARCH 2017

DESIGN BY: HHN

DRAWN BY: DAB

CHECKED BY: HHN

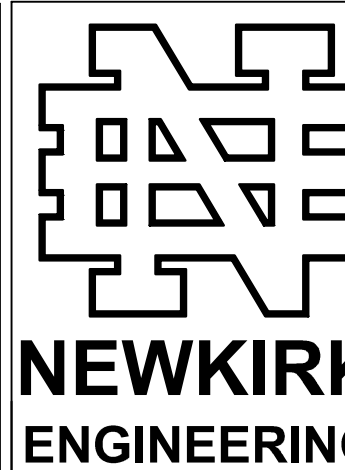
SCALE:

DRAWING NUMBER

18

REVISIONS

DATE	DESCRIPTION
------	-------------



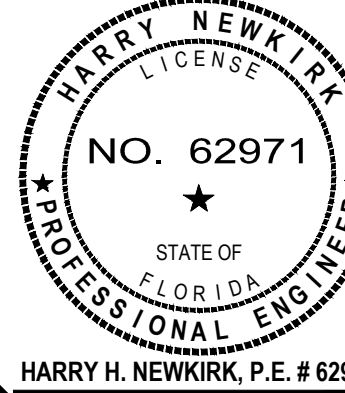
**NEWKIRK
ENGINEERING**

1370 North US1, Suite 204
Ormond Beach, Florida 32174
Phone (386) 290-7599
Harry@Newkirk-Engineering.com
Certificate of Authorization
No. 30209
© 2013
Civil Engineering
Transportation
Construction Engineering & Inspection



THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING. ANY USE OR REPRODUCTION IN WHOLE OR IN PART WITHOUT THE EXPRESS WRITTEN CONSENT OF NEWKIRK ENGINEERING CONSTITUTES A VIOLATION OF ALL RIGHTS RESERVED.

**CITY OF PORT ORANGE
DETAILS AND NOTES**
CORNERSTONE GROVE PUD
HIDDEN LAKE DRIVE
PORT ORANGE, FL 32129



PROJECT No: 2016-237
DATE: MARCH 2017
DESIGN BY: HHN
DRAWN BY: DAB
CHECKED BY: HHN
SCALE:

DRAWING NUMBER

19

REQUIREMENTS FOR AS-BUILT DRAWINGS

IN ORDER TO ENSURE THAT NEW SUBDIVISIONS AND SITE PLANS ARE CONSTRUCTED SUBSTANTIALLY IN ACCORDANCE WITH CITY REGULATIONS AND THE APPROVED DRAWINGS, THE FOLLOWING INFORMATION IS REQUIRED ON ALL SUBDIVISION AS-BUILT DRAWINGS.

- INDIVIDUAL PLAN AND PROFILE SHEETS FOR ALL ROADS AND SANITARY SEWER LINES, SHOWING MANHOLES, INLETS, AND PIPE CROSSINGS. PLAN AND PROFILE SHEETS SHALL SHOW SANITARY LINES AND ALL OTHER BURIED UTILITIES THAT CROSS SEWER LINES, AND ANY THAT PARALLEL AND ARE WITHIN TEN FEET OF SANITARY SEWER LINES. PLAN VIEWS SHALL BE DRAWN AT A SCALE OF ONE (1) INCH EQUAL TO FORTY (40) FEET HORIZONTAL. PROFILES SHALL BE DRAWN AT ONE (1) INCH EQUAL TO FOUR (4) FEET VERTICAL.
- PAYMENT AND CURB WIDTHS SHALL BE VERIFIED AND DIMENSIONED FOR EACH STREET AT EACH BLOCK. (FOR SUBDIVISIONS AND AS APPROPRIATE TO CONFORM TO CITY LIMITS ON SITE PLANS).
- ALL RAMP AT INTERSECTIONS SHALL BE VERIFIED AND DIMENSIONED. THIS INFORMATION IS TO BE CLEARLY INDICATED ON THE AS-BUILT.
- ROADWAY ELEVATIONS SHALL BE RECORDED AT ALL GRADE CHANGES, 100' INTERVALS LONG ROADWAY, AND OTHER INTERVALS AS NEEDED ALONG ALL STREETS. STREET CENTERLINE AND CURB INVERT ELEVATIONS SHALL BE RECORDED AS NOTED. THE AS-BUILT CENTERLINE PROFILE OF ALL STREETS SHALL ALSO BE SHOWN ON THE PLAN AND PROFILES SO IT MAY BE COMPARED TO THE DESIGN PROFILE GRADE LINES. IN THE EVENT THAT THE AS-BUILT CENTERLINE LONGITUDINAL GRADE DOES NOT MEET THE CITY MINIMUM STANDARDS, ADDITIONAL LONGITUDINAL GRADES OF THE ADJACENT CURBING AND SIMILAR ROADWAY CROSS-SECTION SURVEYS TO VERIFY THE CORRECT CROSS-SECTION, SHALL BE REQUIRED TO VERIFY THAT THE SYSTEM WILL FUNCTION AS ORIGINALLY DESIGNED.
- STORM DRAINAGE STRUCTURES SHALL BE LOCATED AND/OR DIMENSIONED FROM CENTERLINES OR LOT LINES AS APPROPRIATE.
- STORM DRAINAGE PIPE INVERT AND INLET ELEVATIONS SHALL BE RECORDED AND CLEARLY DENOTED AS AS-BUILT INFORMATION. INVERT ELEVATIONS SHALL BE CROSS-OUT AND AS-BUILT INFORMATION WRITTEN NEXT TO IT.
- STORM DRAINAGE PIPE MATERIAL, LENGTH AND SIZE SHALL BE MEASURED AND/OR VERIFIED. THIS INFORMATION IS TO BE CLEARLY INDICATED AS AS-BUILT INFORMATION.
- ALL APPLICABLE TOPOGRAPHIC INFORMATION PERTINENT TO THE ON-SITE DRAINAGE SYSTEM, SUCH AS DITCHES, SWALES, LAKES, CANALS, ETC., THAT ARE DEEMED NECESSARY BY THE CITY TO VERIFY THE FUNCTIONAL PERFORMANCE OF THE STORMWATER SYSTEM SHALL BE NOTED, NORMALLY RECORDING ELEVATIONS EVERY 100 FEET AT THE TOP OF BANK AND TOE OF SLOPE WILL BE REQUIRED. MEASUREMENTS SHALL BE TAKEN AND RECORDED IN ORDER TO ACCURATELY TIE DOWN THESE FEATURES TO THE ROADWAY CENTERLINES AND TO PLAT LINES WHENEVER POSSIBLE. CENTER LINES SHALL BE UTILIZED TO GRAPHICALLY DESCRIBE THESE TOPOGRAPHIC FEATURES.
- RETENTION AREAS SHALL HAVE THEIR TOP AND BOTTOM ELEVATIONS RECORDED. ACTUAL MEASUREMENTS SHALL BE TAKEN AND DIMENSIONS RECORDED OF THE SIZE OF ALL RETENTION AREAS. MEASUREMENTS SHALL BE DONE FROM TOP-OF-BANK TO TOP-OF-BANK WITH SIDE SLOPES INDICATED. SEPARATE CALCULATIONS SHALL BE SUBMITTED TO INDICATE REQUIRED AND PROVIDED RETENTION VOLUMES.
- ACTUAL MATERIALS USED AND ELEVATIONS AND DIMENSIONS OF OVERFLOW WEIR STRUCTURES AND SKIMMERS SHALL BE NOTED ON THE AS-BUILT.
- STORM DRAINAGE SWALE CENTERLINES SHALL BE LOCATED AND ELEVATIONS OF FLOW LINE AND TOP OF BANK SHALL BE RECORDED EVERY 100 FEET. SIDE SLOPES SHALL ALSO BE INDICATED.

STANDARD CONSTRUCTION DETAIL
REQUIREMENTS FOR AS-BUILT DRAWINGS

REV. 12/08

FILE NAME:
M1.DWG

DETAIL REF:
M-1

REQUIREMENTS FOR AS-BUILT DRAWINGS (CONT'D)

IN ORDER TO ENSURE THAT NEW SUBDIVISIONS AND SITE PLANS ARE CONSTRUCTED SUBSTANTIALLY IN ACCORDANCE WITH CITY REGULATIONS AND THE APPROVED DRAWINGS, THE FOLLOWING INFORMATION IS REQUIRED ON ALL SUBDIVISION AS-BUILT DRAWINGS.

- SANITARY SEWER MANHOLES SHALL BE VERIFIED AND DIMENSIONED FROM STREET CENTERLINES OR LOT LINES AS APPROPRIATE. ALL RIM AND INVERT ELEVATIONS SHALL BE VERIFIED AND RECORDED. THIS INFORMATION SHALL BE CLEARLY INDICATED AS AS-BUILT INFORMATION. DESIGN ELEVATIONS SHALL BE CROSS-OUT AND AS-BUILT INFORMATION WRITTEN NEXT TO IT.
- FOR SUBDIVISIONS, PROPOSED DESIGN FINISHED FLOOR ELEVATIONS SHALL APPEAR ON ALL SUBDIVISION LOTS ON THE APPROPRIATE PLAN AND PROFILE SHEET AS WELL AS ON THE MASTER DRAINAGE PLAN. SANITARY SEWER LINE LENGTHS, SIZES, MATERIAL, ETC., SHALL BE VERIFIED AND RECORDED. THIS INFORMATION IS TO BE CLEARLY INDICATED AS AS-BUILT INFORMATION.
- SEWER LATERALS SHALL BE VERIFIED AND RECORDED AT THEIR CLEAN-OUT LOCATIONS. STATIONING AND OFFSET DISTANCES SHALL BE MEASURED FROM DOWNSTREAM MANHOLES TOWARDS UPSTREAM MANHOLES.
- LEFT STATIONS AND FORCE MAINS SHALL BE VERIFIED AND DIMENSIONED FROM STREET CENTERLINES OR LOT LINES AS APPROPRIATE. FORCE MAIN DEPTH AND LOCATION INCLUDING VALVES WILL BE PROVIDED AND TIED TO PERMANENT ABOVE GRADE FEATURES. DIMENSIONAL AND ELEVATION INFORMATION INDICATED ON THE APPROVED PLAN SHALL BE VERIFIED AND RECORDED. THIS INFORMATION SHALL BE CLEARLY INDICATED AS AS-BUILT INFORMATION. BURIED ELECTRICAL SERVICE LINE SHALL BE CLEARLY DIMENSIONED, LOCATED, AND LABELED.
- CURB CUTS OR METAL TABS, USED TO MARK SEWER LATERALS, WATER SERVICES AND WATER VALVES, SHALL BE VERIFIED FOR PRESENCE AND ACCURACY OF LOCATION.
- POTABLE AND RECLAIMED WATER MAIN LINES SHALL BE DIMENSIONED OFF THE BACK OF CURB, OR EDGE OF PAVEMENT IF NO CURB IS PRESENT. WATER MAIN LINE MATERIAL SIZE, LENGTH AND DEPTH PLACED SHALL ALSO BE NOTED. LOCATIONS OF VALVES, TEES AND CROSSES SHALL BE TIED TO (3) THREE' PERMANENT ABOVE GRADE FEATURES. THIS INFORMATION SHALL BE CLEARLY INDICATED AS AS-BUILT INFORMATION.
- POTABLE AND RECLAIMED WATER VALVES, TEES, BENDS, ALL SERVICES, AND FIRE HYDRANTS SHALL BE LOCATED BY TYPING THEM TO SANITARY SEWER MANHOLES. SIMILARLY, FORCE MAIN VALVES, TEES, AND BENDS SHALL BE LOCATED AT THE SAME MANNER. STATIONING AND OFFSET DISTANCES SHALL BE MEASURED FROM DOWNSTREAM MANHOLES TO UPSTREAM MANHOLES.
- FOR PERPENDICULAR CROSSINGS OF STORMWATER, SANITARY SEWER, POTABLE WATER, OR RECLAIMED WATER, THE AS-BUILT PLANS SHALL CLEARLY INDICATE WHICH UTILITIES ARE LOCATED OVER OR UNDER OTHER UTILITIES, AS NECESSARY.
- ANY SPECIAL FEATURES SUCH AS, CONCRETE FUMES, LAKE BANKS, WALLS, FENCING, ETC., WHICH WERE A PART OF THE APPROVED CONSTRUCTION DRAWINGS SHOULD ALSO BE LOCATED AND DIMENSIONED.
- IF AN APPROVED SUBDIVISION PLAT OR SITE PLAN SHOWS A CONSERVATION EASEMENT, THE PROJECT SURVEYOR SHALL PROVIDE THE EXACT LOCATION OF THE EASEMENT (TREES) FROM THE RIGHT-OF-WAY OR PROPERTY LINES AND PROPOSED EASEMENT BOUNDARIES ON THE AS-BUILT DRAWING. THE AS-BUILT LOCATION OF THESE TREES WILL HELP VERIFY THE SUFFICIENCY OF THE CONSERVATION EASEMENT PRIOR TO PLAT RECORDING OR CERTIFICATE OF OCCUPANCY.

STANDARD CONSTRUCTION DETAIL
REQUIREMENTS FOR AS-BUILT DRAWINGS

REV. 12/08

FILE NAME:
M1.DWG

DETAIL REF:
M-1

REQUIREMENTS FOR AS-BUILT DRAWINGS

IN ORDER TO ENSURE THAT NEW SUBDIVISIONS AND SITE PLANS ARE CONSTRUCTED SUBSTANTIALLY IN ACCORDANCE WITH CITY REGULATIONS AND THE APPROVED DRAWINGS, THE FOLLOWING INFORMATION IS REQUIRED ON ALL SUBDIVISION AS-BUILT DRAWINGS.

- ALL CONCRETE SIDEWALKS & BIKE PATHS IN PUBLIC RIGHT-OF-WAY, PRIVATE RIGHT-OF-WAY AND ON NON-RESIDENTIAL SITES SHALL CONTAIN FIBERGLASS REINFORCEMENT EXCEPT REPAIRS TO NON-REINFORCED EXISTING SIDEWALKS. FIBERGLASS REINFORCEMENT SHALL NOT BE REQUIRED ON PRIVATE RESIDENTIAL SIDEWALKS, BIKEPATHS, DRIVEWAYS AND DRIVEWAY APRONS SHALL BE CONSTRUCTED OF PORTLAND CEMENT CONCRETE WITH FIBERGLASS REINFORCEMENT, HAVING A MAXIMUM SLUMP OF 3 INCHES, A MINIMUM DEVELOPED COMPRESSIVE STRENGTH OF 3000 P.S.I. IN 28 DAYS, AND A MINIMUM UNIFORM THICKNESS OF 4 INCHES WHERE INTENDED SOLELY FOR PEDESTRIAN TRAFFIC, AND 6 INCHES THICK WHERE MOTOR VEHICLES ARE SUITABLE TO CROSS.
- 2-#4 CONTINUOUS FIBERGLASS BARS (6" OVERLAP REQUIRED) SHALL BE INSTALLED LONGITUDINALLY, 3" FROM THE EDGE OF ALL BIKEPATHS AND SIDEWALKS TO CONTROL DIFFERENTIAL MOVEMENT AT JOINTS. SIDEWALKS AND BIKEPATHS SHALL BE PLACED PARALLEL TO, AND ONE FOOT WITHIN THE RIGHT-OF-WAY LINE EXCEPT WHERE THE CITY MAY APPROVE DEVIATIONS TO THIS SPECIFICATION PROVIDED THAT THE SIDEWALK REMAINS WITHIN THE RIGHT-OF-WAY OR AN APPROVED SIDEWALK EASEMENT ADJUTING THE RIGHT OF WAY. SIDEWALKS AND BIKE PATHS SHALL BE LOCATED AT LEAST 4 FEET FROM THE EDGE OF THE STREET. PAYMENT UNLESS OTHERWISE APPROVED BY THE CITY.
- THE TOP OF THE CONCRETE SHALL BE AT AN ELEVATION NO LOWER THAN THE CROWN OF THE ADJACENT ROADWAY, AND NO HIGHER THAN 6 INCHES ABOVE THE CROWN UNLESS APPROVED BY THE CITY TO MAKE A MORE NATURAL TRANSITION WITH THE ADJACENT LAND.
- ISOLATION JOINTS (TYPE A JOINTS) SHALL BE PROVIDED BETWEEN EXISTING SLABS OR STRUCTURES AND FRESH CONCRETE, TO SEPARATE PEDESTRIAN SECTIONS FROM SECTIONS WHICH WILL ENCOUNTER VEHICLE TRAFFIC, TO SEPARATE FRESH PLACEMENT FROM CONCRETE WHICH HAS SET FOR MORE THAN 60 MINUTES, AND NO FARTHER APART THAN 100 FEET IN SIDEWALKS AND BIKEPATHS. JOINT MATERIAL SHALL BE PREFORMED JOINT FILLER MEETING F.O.D.T. SPECIFICATIONS.
- CONTROL JOINTS (TYPE B JOINTS) SHALL BE TOOK INTO THE FRESH CONCRETE TO A DEPTH EQUAL TO 1/4" THE SLAB THICKNESS AND SPACED APART A DISTANCE EQUAL TO THE WIDTH OF THE SLAB OR 4 FEET WHICHEVER IS GREATER.
- THE SLAB SURFACE SHALL BE BROOM FINISHED TO BE SLIP RESISTANT, AND SHALL MATCH AS CLOSELY AS POSSIBLE THE FINISH OF EXISTING ADJACENT SLABS AND ALL EDGES SHALL BE TOoled TO ELIMINATE CURB CORNERS.
- THE BEARING SUBSURFACE SHALL HAVE ALL ORGANIC, LOOSE, AND DELECTERIOUS WATER REMOVED, AND THE REMAINING CLEAN SOIL SHALL BE SMOOTH, SOUND AND SOLID. ANY FILL MATERIAL SHALL BE COMPACTED TO A MINIMUM PROCTOR FIELD DENSITY OF 90 PERCENT.
- ALL CLEAN WORK IN THE RIGHT-OF-WAY SHALL BE INSPECTED BY THE CITY AFTER THE SUBSOIL IS PREPARED AND THE FORMS ARE SET, BUT BEFORE THE CONCRETE PLACEMENT BEGINS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING THE FINISHED SLAB FROM ALL DAMAGE AND VANDALISM UNTIL THE CITY ACCEPTS OR APPROVES THE SLAB, AFTER WHICH TIME THE OWNER OF THE ADJUTING LAND SHALL BE RESPONSIBLE FOR THE SLAB IN ACCORDANCE WITH THE CITY CODE. ANY SLAB SECTION DAMAGED OR UNDAUNTED PRIOR TO ACCEPTANCE OF APPROVAL, SHALL BE CUT OUT BETWEEN JOINTS AND REPLACED. REPAIRS ARE NOT ACCEPTABLE.
- SIDEWALKS LOCATED WITHIN THE RIGHT-OF-WAY SHALL NOT BE TINTED, STAINED, COLORED, OR COATED.
- ALL FORMS SHALL BE REMOVED PRIOR TO ACCEPTANCE OR APPROVAL, AND THE DISTURBED GROUND SHALL BE BACKFILLED, RESEDED, AND SLOPED SO THAT THE WEAR SURFACE OF THE CONCRETE IS REASONABLY FLUSH WITH THE ADJACENT GRADE.

STANDARD CONSTRUCTION DETAIL
SIDEWALK CONSTRUCTION REQUIREMENTS

REV. 12/08

FILE NAME:
M3.DWG

DETAIL REF:
M-3

REQUIREMENTS FOR AS-BUILT DRAWINGS

IN ORDER TO ENSURE THAT NEW SUBDIVISIONS AND SITE PLANS ARE CONSTRUCTED SUBSTANTIALLY IN ACCORDANCE WITH CITY REGULATIONS AND THE APPROVED DRAWINGS, THE FOLLOWING INFORMATION IS REQUIRED ON ALL SUBDIVISION AS-BUILT DRAWINGS.

- RAMP LOCATIONS ARE TO BE COORDINATED WITH AND IN CONFORMANCE WITH CROSSWALK MARKING DESIGNS SHOWN IN THE PLANS.
- CURBED RAMPS SHALL HAVE FLARED SIDES WITH A MAXIMUM SLOPE OF 1:21.
- NO CURB TRANSITION IS NEEDED FOR MAM CURBS.
- ALL RAMPS SHALL BE CONSTRUCTED IN ACCORDANCE WITH FDOT INDEX NO. 304 AND ACCESSIBILITY REQUIREMENTS IN ACCORDANCE WITH THE AMERICAN DISABILITIES ACT.
- CURB RAMPS SUBJECT TO THE DEPARTMENT OF TRANSPORTATION REGULATION CFR 37.21 SHALL HAVE A DETECTABLE WARNING.

STANDARD CONSTRUCTION DETAIL
SIDEWALK AND BIKEPATH RAMP
(WITHIN RIGHT-OF-WAY)

REV. 2/13

FILE NAME:
M4.DWG

DETAIL REF:
M-4

REQUIREMENTS FOR AS-BUILT DRAWINGS

IN ORDER TO ENSURE THAT NEW SUBDIVISIONS AND SITE PLANS ARE CONSTRUCTED SUBSTANTIALLY IN ACCORDANCE WITH CITY REGULATIONS AND THE APPROVED DRAWINGS, THE FOLLOWING INFORMATION IS REQUIRED ON ALL SUBDIVISION AS-BUILT DRAWINGS.

- ON RAMPS THAT ARE PERPENDICULAR WITH THE CURB LINE, THE DOME PATTERN SHALL BE IN-LINE WITH THE DIRECTION OF TRAVEL, AND CURBS ON A RADIUS, THE DOME PATTERN SHALL BE IN-LINE WITH THE DIRECTION OF TRAVEL TO THE EXTENT PRACTICABLE.
- CURB RAMPS SUBJECT TO THE DEPARTMENT OF TRANSPORTATION REGULATION CFR 37.21 SHALL HAVE A DETECTABLE WARNING.

STANDARD CONSTRUCTION DETAIL
SIDEWALK AND BIKEPATH RAMP

REV. 2/13

FILE NAME:
M5.DWG

DETAIL REF:
M-5

REQUIREMENTS FOR AS-BUILT DRAWINGS

IN ORDER TO ENSURE THAT NEW SUBDIVISIONS AND SITE PLANS ARE CONSTRUCTED SUBSTANTIALLY IN ACCORDANCE WITH CITY REGULATIONS AND THE APPROVED DRAWINGS, THE FOLLOWING INFORMATION IS REQUIRED ON ALL SUBDIVISION AS-BUILT DRAWINGS.

- 18" x 18" RED REFLECTIVE SON WITH (3) 3" REFLECTORS
- 30" STOP SIGN
- 12" MIN. WIDE
- 6" RED & WHITE REFLECTIVE TAPE
- PAVEMENT CENTERLINE
- 3" DIAMETER GALVANIZED PIPE OR 4" x 4" PRESSURE TREATED POST

STANDARD CONSTRUCTION DETAIL
ROAD BARRICADE

REV. 12/08

FILE NAME:
M9.DWG

DETAIL REF:
M-9

REQUIREMENTS FOR AS-BUILT DRAWINGS

IN ORDER TO ENSURE THAT NEW SUBDIVISIONS AND SITE PLANS ARE CONSTRUCTED SUBSTANTIALLY IN ACCORDANCE WITH CITY REGULATIONS AND THE APPROVED DRAWINGS, THE FOLLOWING INFORMATION IS REQUIRED ON ALL SUBDIVISION AS-BUILT DRAWINGS.

- 24" WHITE THERMOPLASTIC STOP BAR (TYP.)
- 2" CONCRETE CURB (TYP.)
- 4" CONCRETE SIDEWALK (TYP.)
- STOP SIGN (TYP.)

STANDARD CONSTRUCTION DETAIL
SIDEWALK CONSTRUCTION AT INTERSECTIONS

REV. 12/08

FILE NAME:
M18.DWG

DETAIL REF:
M-18

REQUIREMENTS FOR AS-BUILT DRAWINGS

IN ORDER TO ENSURE THAT NEW SUBDIVISIONS AND SITE PLANS ARE CONSTRUCTED SUBSTANTIALLY IN ACCORDANCE WITH CITY REGULATIONS AND THE APPROVED DRAWINGS, THE FOLLOWING INFORMATION IS REQUIRED ON ALL SUBDIVISION AS-BUILT DRAWINGS.

- 24" WHITE THERMOPLASTIC STOP BAR (TYP.)
- 4" CONCRETE SIDEWALK (TYP.)
- 2" CONCRETE CURB (TYP.)
- STOP SIGN (TYP.)

STANDARD CONSTRUCTION DETAIL
SIDEWALK CONSTRUCTION AT INTERSECTIONS

REV. 12/08

FILE NAME:
M19.DWG

DETAIL REF:
M-19

REQUIREMENTS FOR AS-BUILT DRAWINGS

IN ORDER TO ENSURE THAT NEW SUBDIVISIONS AND SITE PLANS ARE CONSTRUCTED SUBSTANTIALLY IN ACCORDANCE WITH CITY REGULATIONS AND THE APPROVED DRAWINGS, THE FOLLOWING INFORMATION IS REQUIRED ON ALL SUBDIVISION AS-BUILT DRAWINGS.

- ALL FINISHED FLOOR ELEVATIONS SHALL BE SET A MINIMUM OF 16 INCHES ABOVE THE CENTERLINE OF THE ADJACENT ROADWAY.
- ALL FINISHED FLOOR ELEVATIONS ARE A MINIMUM OF 1 FOOT ABOVE THE LIMITS OF THE 100 YEAR FLOOD PLAIN AND/OR 1 FOOT ABOVE THE 100-YEAR DESIGN HIGH WATER LEVEL OF THE ADJACENT DETENTION/RETENTION AREA.
- IN CASES WHERE THE ABOVE CONDITIONS CONFLICT, NOTE #2 SHALL TAKE PRECEDENCE.
- SIDE YARD SWALE SHALL BE CENTERED ON THE COMMON PROPERTY LINE.

STANDARD CONSTRUCTION DETAIL
RESIDENTIAL GRADING

REV. 12/08

FILE NAME:
M23.DWG

DETAIL REF:
M-23

REQUIREMENTS FOR AS-BUILT DRAWINGS

IN ORDER TO ENSURE THAT NEW SUBDIVISIONS AND SITE PLANS ARE CONSTRUCTED SUBSTANTIALLY IN ACCORDANCE WITH CITY REGULATIONS AND THE APPROVED DRAWINGS, THE FOLLOWING INFORMATION IS REQUIRED ON ALL SUBDIVISION AS-BUILT DRAWINGS.

- 4'-6" WIDE CONCRETE SIDEWALK
- 4" THICK, 3000 P.S.I.
- 3" MINIMUM ABOVE TOP OF CURB
- 50% OR 57% AS APPLICABLE
- CONCRETE MAM CURB, 3000 P.S.I.
- ASPHALT PAVEMENT: 1-1/2" ASPHALT BITUMINOUS CONCRETE TYPE S-H, MINIMUM MARSHALL FIELD STABILITY 1500, COMPACTED TO 98% DENSITY PER FM 1-1238 (METHOD B), NUCLEAR DENSITY TEST, "BACK SCATTER METHOD".
- BASE: 6" SOL. CEMENT BASE MINIMUM BEARING STRENGTH OF 350 P.S.I. SHALL BE OBTAINED WITHIN 7 DAYS COMPLETED TO 98% DENSITY BASED ON ASHTO T-99 STANDARD PROCTOR TEST; CONSTRUCTION METHODS SHALL CONFORM TO SECTION 270 OF STANDARD SPECIFICATIONS FOR THE ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION.
- ALTERNATE: 6" LIMELOCK BASE (BR 100) OR RECYCLED CONCRETE BASE (BR 130) COMPACTED TO 98% DENSITY BASED ON ASHTO T-180 MODIFIED PROCTOR TEST.
- SUB-BASE: 6" SUB-BASE COMPACTED TO 98% DENSITY BASED ON ASHTO T-180 MODIFIED PROCTOR TEST WITH MINIMUM LBR 40.
- SUBGRADE: 6" SUBGRADE COMPACTED TO 98% DENSITY BASED ON ASHTO T-180 MODIFIED PROCTOR TEST WITH MINIMUM LBR 40.

STANDARD CONSTRUCTION DETAIL
50' or 60' R/W ROAD SECTION

REV. 12/08

FILE NAME:
R1.DWG

DETAIL REF:
R-1

REQUIREMENTS FOR AS-BUILT DRAWINGS

IN ORDER TO ENSURE THAT NEW SUBDIVISIONS AND SITE PLANS ARE CONSTRUCTED SUBSTANTIALLY IN ACCORDANCE WITH CITY REGULATIONS AND THE APPROVED DRAWINGS, THE FOLLOWING INFORMATION IS REQUIRED ON ALL SUBDIVISION AS-BUILT DRAWINGS.

- ALL ROADWAY DESIGN SHALL MEET THE MINIMUM REQUIREMENTS OF THE MANUAL OF UNIFORM MINIMUM STANDARDS FOR DESIGN, CONSTRUCTION AND MAINTENANCE FOR STREETS AND HIGHWAYS (LATEST EDITION), AS PUBLISHED BY THE FLORIDA DEPARTMENT OF TRANSPORTATION.
- PAVEMENT WIDTHS FOR INDUSTRIAL AND COMMERCIAL ROADS SHALL BE INCREASED BY A MINIMUM OF ONE (1) FOOT.
- AS A RULE, ALL INTERSECTIONS SHALL BE DESIGNED AT 90 DEGREE ANGLES. DEVIATION FROM THIS SHALL BE CONSIDERED STRICTLY ON A CASE BY CASE BASIS, IN THE EVENT THAT ANY DEVIATION IS PERMITTED, WHEN IN NO CASE SHALL INTERSECTION ANGLES BE LESS THAN 75 DEGREES. INTERSECTIONS WITH ARTERIAL ROADWAYS EXCEPT ON LOCAL AND COLLECTOR ROADWAYS WHICH SHALL NOT BE LESS THAN 60 DEGREES. INTERSECTIONS WITH COUNTY AND STATE ROADS SHALL BE 90 DEGREES.
- ALL INTERSECTIONS AND ACCESS POINTS SHALL HAVE ADEQUATE LINE OF SIGHT BASED ON AN EYE LEVEL OF 3.5' ABOVE THE GROUND AND AN OBJECT 10' ABOVE THE LOWEST ROADWAY FOR PURPOSES OF THIS STANDARD. THE EYE LEVEL SHALL BE MEASURED 8' IN BACK OF THE STOP BAR AT ENTRANCES. THE FOLLOWING SIGHT DISTANCES SHALL BE PROVIDED:

DESIGN SPEED (MPH)	20	25	30	35	40	45	50	55
SIGHT DISTANCE (FT) (MINIMUM)	200	250	300	350	400	450	500	550

STANDARD CONSTRUCTION DETAIL
ROADWAY GEOMETRY

REV. 12/08

FILE NAME:
R9.DWG

DETAIL REF:
R-9

REQUIREMENTS FOR AS-BUILT DRAWINGS

IN ORDER TO ENSURE THAT NEW SUBDIVISIONS AND SITE PLANS ARE CONSTRUCTED SUBSTANTIALLY IN ACCORDANCE WITH CITY REGULATIONS AND THE APPROVED DRAWINGS, THE FOLLOWING INFORMATION IS REQUIRED ON ALL SUBDIVISION AS-BUILT DRAWINGS.

- ALL CURBS TO BE CONSTRUCTED OF 28 DAY, 3000 P.S.I. CONCRETE
- 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED EVERY 200'
- CONSTRUCTION JOINT REQUIRED EVERY 10' MAXIMUM (4' MINIMUM)
- 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED AT EACH SIDE OF ALL STORM INLET STRUCTURES AND AT ALL RADIUS POINTS.
- 6" SUBGRADE TO BE COMPACTED AND TESTED TO 98% DENSITY BASED ON ASHTO T-180 MODIFIED PROCTOR TEST AND SHALL BE STABILIZED TO A MINIMUM LBR 40.
- EXPANSION JOINT MATERIAL MUST COVER THE ENTIRE CROSS SECTION OF CURB.
- IN NO INSTANCE SHALL EXTENDED CURBS (DEFINED AS HEADER-TYPE CURBS INSTALLED DIRECTLY ON TOP OF PAVEMENT) BE PERMITTED.
- ALL ASPHALT AND/OR PAVEMENT DRIVEWAY APRONS LOCATED IN PUBLIC RIGHTS-OF-WAY, SHALL INCLUDE CURBING.

STANDARD CONSTRUCTION DETAIL
STANDARD CURB CONSTRUCTION

REV. 12/08

FILE NAME:
R9.DWG

DETAIL REF:
R-9

REQUIREMENTS FOR AS-BUILT DRAWINGS

IN ORDER TO ENSURE THAT NEW SUBDIVISIONS AND SITE PLANS ARE CONSTRUCTED SUBSTANTIALLY IN ACCORDANCE WITH CITY REGULATIONS AND THE APPROVED DRAWINGS, THE FOLLOWING INFORMATION IS REQUIRED ON ALL SUBDIVISION AS-BUILT DRAWINGS.

- PROPOSED TYPE S-H ASPHALT
- 2'-0" SAW CUT AND TACK COAT EDGE
- EXISTING ASPHALT
- EXISTING SUBBASE

STANDARD CONSTRUCTION DETAIL
PAVEMENT BUTT JOINT

REV. 12/08

FILE NAME:
R11.DWG

DETAIL REF:
R-11

REQUIREMENTS FOR AS-BUILT DRAWINGS

IN ORDER TO ENSURE THAT NEW SUBDIVISIONS AND SITE PLANS ARE CONSTRUCTED SUBSTANTIALLY IN ACCORDANCE WITH CITY REGULATIONS AND THE APPROVED DRAWINGS, THE FOLLOWING INFORMATION IS REQUIRED ON ALL SUBDIVISION AS-BUILT DRAWINGS.

- ROADWAY AND PARKING AREA DESIGN AND CONSTRUCTION NOTES
- ALL MATERIALS AND INSTALLATION METHODS USED FOR LAND DEVELOPMENT CODE REQUIRED IMPROVEMENTS FOR SUBDIVISIONS AND SITE PLANS SHALL BE IN CONFORMANCE WITH THE CITY, FDOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION), AND THE FDOT ROADWAY AND TRAFFIC DESIGN STANDARDS (LATEST EDITION).
- ALL RIGHT-OF-WAY OTHER THAN ROADWAY AREAS SHALL BE GRASSSED AND MULCHED OR SOLOD. ALL SLOPES STEEPER THAN 6:1 SHALL REQUIRE SOLODING. THE CITY PRESERVES THE RIGHT TO REQUIRE SOLODING IN SPECIAL AREAS WHERE EROSION IS A CONCERN.
- THE FOLLOWING WILL BE THE STANDARD PROTECTION FOR DITCHES UNLESS DRAINAGE CALCULATIONS INDICATE OTHERWISE:
- SWALE PROFILE GRADES: 0.2% - 1.0% GRASSING AND MULCHING 1.0% - 4.0% SOLODING 4.0% AND GREATER DITCH PAVING
- THE PAVEMENT, BASE, AND SUBBASE THICKNESS PRESENTED ON DETAILS REPRESENTS THE MINIMUM REQUIREMENTS FOR LOCAL PUBLIC STREETS AND PRIVATE PARKING LOTS. THE CITY RESERVES THE RIGHT AT ITS DISCRETION TO INCREASE THESE REQUIREMENTS FOR THE COLLECTOR AND ARTERIAL ROADWAYS AND PRIVATE PARKING LOTS SUBJECTED TO HEAVY VEHICULAR COMMERCIAL TRAFFIC.
- THE DEVELOPER SHALL PROVIDE AT THEIR OWN EXPENSE A CERTIFIED SOILS ENGINEERING LABORATORY TO PERFORM ALL FIELD AND LABORATORY TESTING REQUIRED TO VERIFY THAT THE CONSTRUCTION IS IN COMPLIANCE WITH THE CITY'S MINIMUM STANDARDS. IT IS THE RESPONSIBILITY OF THE DEVELOPER TO ENSURE THAT COPIES OF ALL TEST REPORTS ARE PROVIDED TO THE CITY'S DESIGNATED SITE INSPECTOR PRIOR TO THE PROJECT FINAL INSPECTION IN ORDER TO ALLOW PROJECT ACCEPTANCE BY THE CITY.
- THE LIMITS OF STABILIZED SUBBASE SHALL EXTEND TO A DEPTH OF SIX INCHES (6") BELOW THE BOTTOM OF THE BASE AND OUTWARD TO TWELVE INCHES (12") BEYOND THE CURB.
- THE STABILIZED MATERIAL, IF REQUIRED, SHOULD BE A HIGH BEARING VALUE SOIL SAND-CLAY, LIMELOCK, RECYCLED CONCRETE, SHELL, OR OTHER MATERIAL AS APPROVED BY THE CITY'S DESIGNATED SITE INSPECTOR AND A LICENSED SOILS ENGINEER.
- THE SUBBASE SHALL BE STABILIZED NOT LESS THAN FORTY (40) POUNDS LIMELOCK BEARING RATIO (LBR) TO A 6" MINIMUM DEPTH. A COMPACTION OF NO LESS THAN SEVENTY-EIGHT (78%) PERCENT DENSITY BASED ON ASHTO T-180 SHALL BE REQUIRED.
- FOR ROADWAYS, TESTS FOR SUBBASE BEARING CAPACITY AND COMPACTION SHALL BE DONE AT A MINIMUM OF EVERY 300 FEET AND SHALL BE STAGGERED TO THE LEFT, RIGHT, AND AT CENTER LINE OF THE ROADWAY. FOR SITE PLANS, TESTS SHALL BE PERFORMED FOR EVERY 600 SQUARE YARDS OF STABILIZED AREA, OR PORTIONS THEREOF.
- BASES FOR ALL STREETS SHALL HAVE A MINIMUM SIX INCH (6") DEPTH. SOIL CEMENT BASES SHALL HAVE A STRENGTH OF 350 POUNDS PER SQUARE INCH AT 7 DAYS COMPACTED TO 98% DENSITY PER ASHTO T-180 STANDARD PROCTOR TEST. IN CONFORMANCE WITH SECTION 270 OF STANDARD F.O.D.T. SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION (LATEST EDITION), THE SUBBASE SHALL BE STABILIZED TO 98% MAXIMUM DENSITY BASED ON ASHTO T-180 MODIFIED PROCTOR TEST.

STANDARD CONSTRUCTION DETAIL
ROADWAY AND PARKING AREA DESIGN AND CONSTRUCTION NOTES

REV. 12/08

FILE NAME:
R12.DWG

DETAIL REF:
R-12

REQUIREMENTS FOR AS-BUILT DRAWINGS

IN ORDER TO ENSURE THAT NEW SUBDIVISIONS AND SITE PLANS ARE CONSTRUCTED SUBSTANTIALLY IN ACCORDANCE WITH CITY REGULATIONS AND THE APPROVED DRAWINGS, THE FOLLOWING INFORMATION IS REQUIRED ON ALL SUBDIVISION AS-BUILT DRAWINGS.

- SOIL CEMENT AND RECYCLED CONCRETE MIX DESIGNS SHALL BE SUBMITTED BY A LICENSED SOILS ENGINEER TO THE CITY'S DESIGNATED SITE INSPECTOR PRIOR TO THE START OF SUBBASE PREPARATION. ALL MIX DESIGNS SHALL BE SUBJECT TO THE APPROVAL OF THE CITY.
- CEMENT DELIVERY TICKETS SHALL BE PROVIDED TO THE CITY'S DESIGNATED SITE INSPECTOR AT THE TIME OF PLACEMENT. IF THE INSPECTOR IS NOT ON SITE THROUGHOUT THE ENTIRE INSTALLATION, ACCUMULATED DELIVERY TICKETS CAN BE PROVIDED TO THE INSPECTOR BY THE CONTRACTOR ON THE FOLLOWING DAY.
- TESTING OF THE IN-PLACE BASE SHALL BE DONE AT INTERVALS EQUIVALENT TO SUBBASE TESTING AND SHALL CONSIST OF, AS A MINIMUM, A MOISTURE CONTENT AND COMPACTION TEST.
- PORTLAND CEMENT CONCRETE, LIMELOCK, RECYCLED CONCRETE, OR FULL DEPTH ASPHALT PAVEMENT MAY BE USED IN PLACE OF SOIL CEMENT BASE. ALL BASE AND ROADWAY DESIGNS SHALL BE SUBJECT TO THE APPROVAL OF THE CITY.
- SOIL CEMENT BASE MATERIAL CONSTRUCTION SHALL BE CONTINUOUSLY SUPERVISED BY A SOILS TESTING LABORATORY AT THE DEVELOPER'S EXPENSE. THE TESTING LABORATORY SHALL PROVIDE AN ON-SITE TECHNICIAN CERTIFIED IN THE INSTALLATION OF SOIL CEMENT WITH THE CERTIFICATION RECOGNIZED BY F.O.D.T.
- SOIL CEMENT PAVEMENT BASES WITH THE CURE COAT APPLIED SHALL BE ALLOWED TO CURE A MINIMUM OF SEVEN (7) DAYS UNDER NO TRAFFIC PRIOR TO PLACING ANY ASPHALT SURFACE. TEST REPORTS ARE REQUIRED TO BE DELIVERED TO THE CITY'S DESIGNATED SITE INSPECTOR PRIOR TO TRAFFIC USAGE.
- RECYCLED CONCRETE CAN BE USED AS AN ALTERNATIVE BASE MATERIAL PROVIDED THE MATERIAL IS A MINIMUM OF 60% CARBONATE OF CALCIUM AND MAGNESIUM. THE MATERIAL SHALL BE LIMITED TO MAXIMUM OF 3% OF WATER SENSITIVE CLAY MATERIAL. LIQUID LIMIT SHALL NOT EXCEED 55 AND BE NON-PLASTIC AND THE PLASTICITY INDEX SHALL NOT EXCEED 10. THE MATERIAL SHALL NOT CONTAIN ORGANIC MATERIAL, CHERT OR OTHER EXTREMELY HARD PIECES, LUMPS, BALLS OR ROCKS OF SAND SIZE MATERIAL OF A QUANTITY AS TO BE DETRIMENTAL TO THE PROPER BONDING, WEAR, OR STRENGTH OF THE RECYCLED CONCRETE BASE. FOR BASE APPLICATIONS, AT LEAST 97% (BY WEIGHT) OF THE MATERIAL SHALL PASS A 1" SIEVE AND FOR SUBBASE APPLICATIONS, AT LEAST 97% (BY WEIGHT) OF THE MATERIAL SHALL PASS A 1-1/2" SIEVE. FOR BOTH APPLICATIONS, THE MATERIAL SHALL BE GRADED UNIFORMITY OF 45% OR LESS PER LOS ANGELES ABRASION TEST. ALL MATERIALS SHALL BE WELL GRADED IN ACCORDANCE WITH REQUIREMENTS SET FORTH IN SECTION 204, F.O.D.T. STANDARD SPEC. FOR ROAD AND BRIDGE CONSTRUCTION, (LATEST EDITION).
- RECYCLED CONCRETE OR LIMELOCK FOR BASE OR SUBBASE APPLICATIONS SHALL BE ALLOWED ON CITY ROADWAYS ONLY WHERE THE LOWEST ELEVATION OF THE ROADWAY SURFACE IS AT LEAST 10' ABOVE THE 100-YEAR FLOOD PLAIN. ANY ROADWAY THAT IS CERTIFIED BY A FLORIDA LICENSED PROFESSIONAL SOILS ENGINEER AND SUBSEQUENTLY APPROVED BY THE CITY'S DESIGNATED SITE INSPECTOR SHALL BE ALLOWED. STANDARD A SOIL CEMENT BASE WILL BE REQUIRED. ALL CRUSHING OF RECYCLED CONCRETE SHALL BE DONE PRIOR TO THE MATERIAL BEING PLACED IN THE ROADWAY. TESTING SHALL HAVE THE SAME REQUIREMENTS AND BE PERFORMED AT THE SAME LOCATION AND INTERVALS AS REQUIRED FOR LIMELOCK.

STANDARD CONSTRUCTION DETAIL
ROADWAY AND PARKING AREA DESIGN AND CONSTRUCTION NOTES

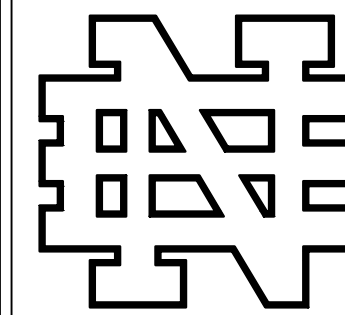
REV. 12/08

FILE NAME:
R13.DWG

DETAIL REF:
R-13

REVISIONS

DATE	DESCRIPTION



NEWKIRK ENGINEERING

1370 North US1, Suite 204
Ormond Beach, Florida 32174
Phone (386) 290-7599
Harry@Newkirk-Engineering.com

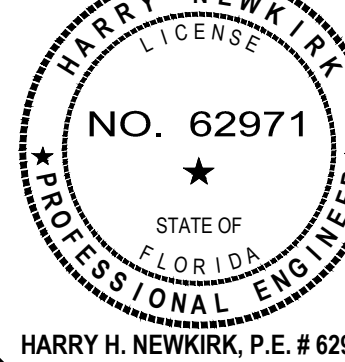
Certificate of Authorization
No. 30209
© 2013

Civil Engineering
Transportation
Construction Engineering & Inspection



THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING. ANY USE OR REPRODUCTION IN WHOLE OR IN PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING. COPYRIGHT 2014 ALL RIGHTS RESERVED.

CITY OF PORT ORANGE
DETAILS AND NOTES
CORNERSTONE GROVE PUD
HIDDEN LAKE DRIVE
PORT ORANGE, FL 32129



PROJECT No: 2016-237

DATE: MARCH 2017

DESIGN BY: HHN

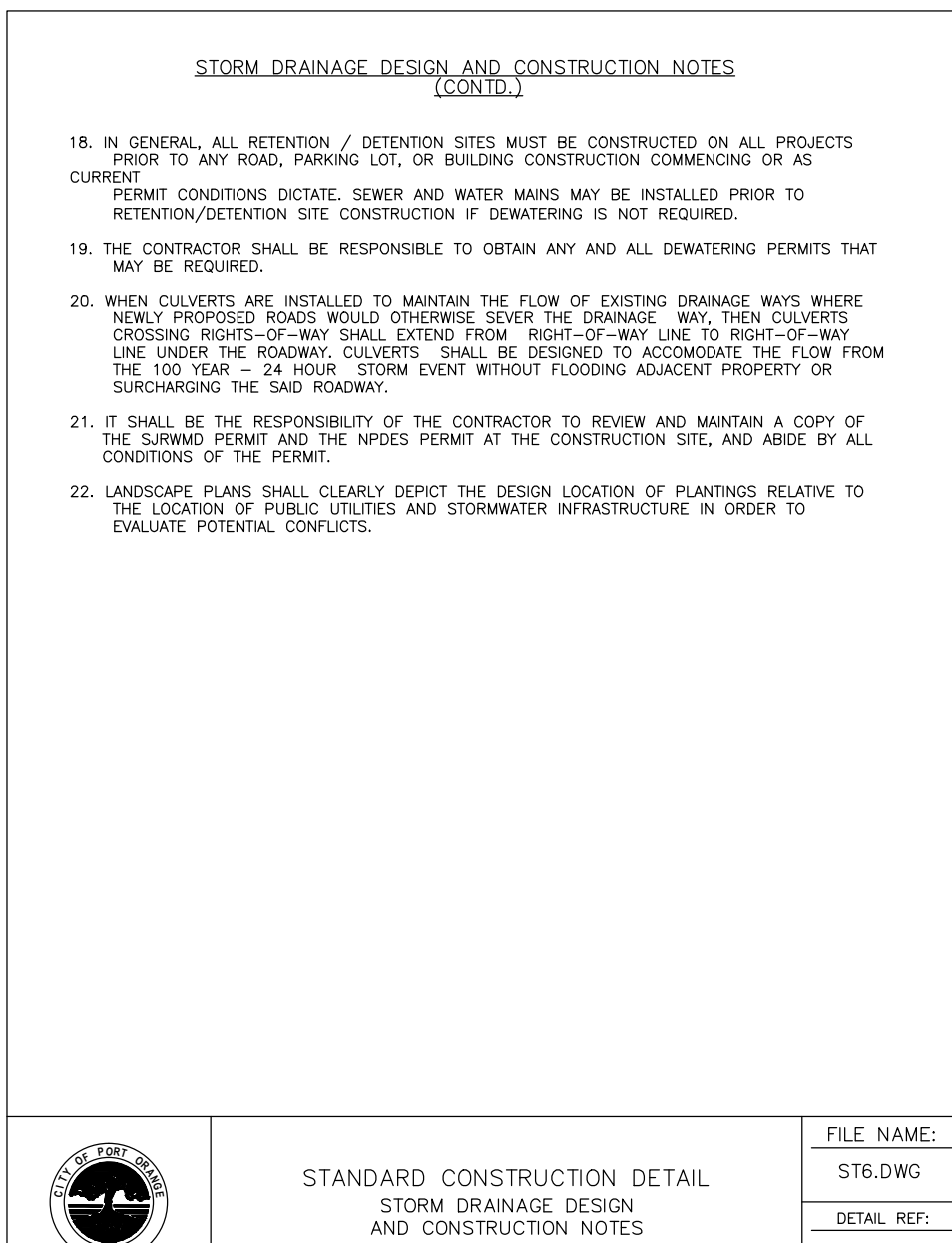
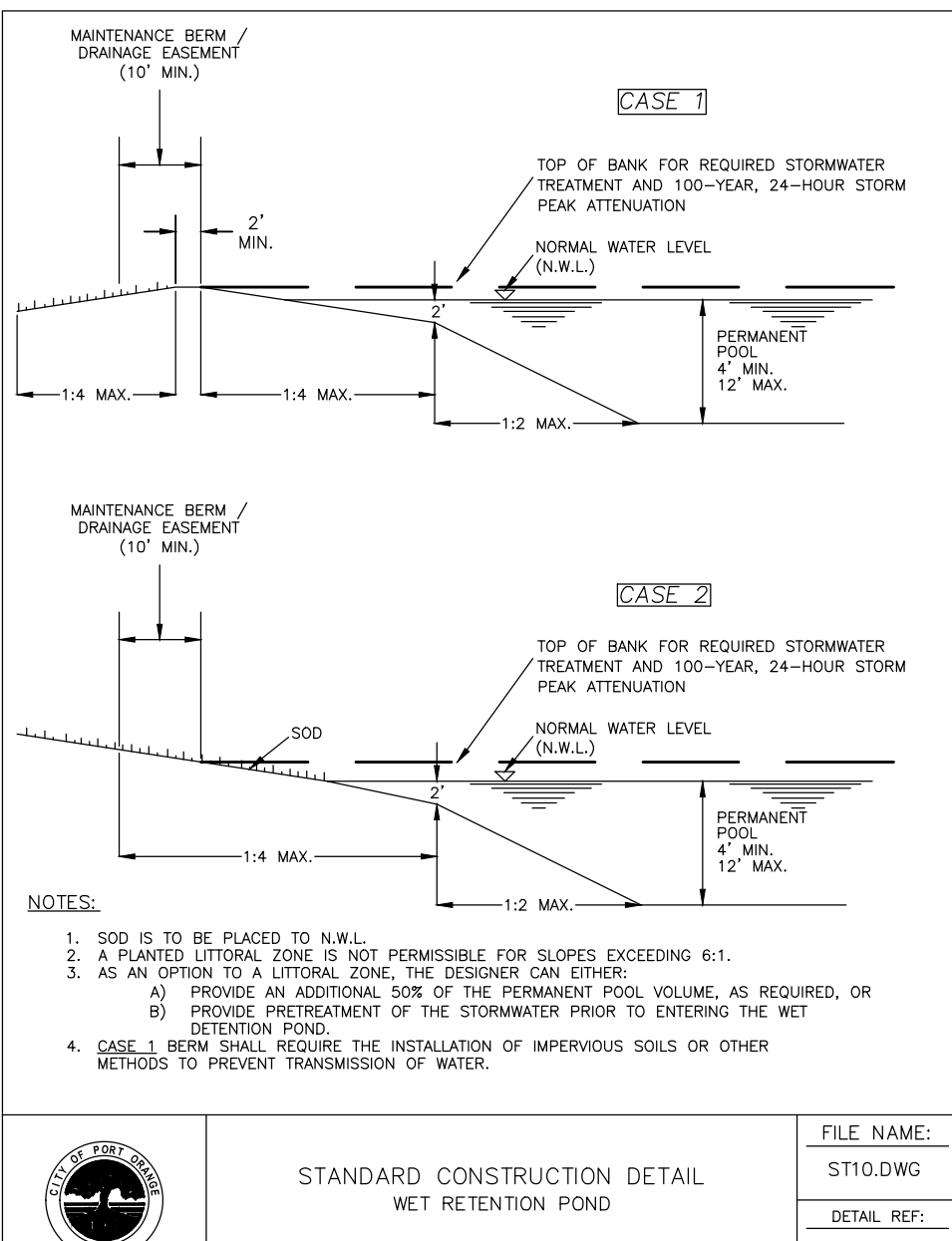
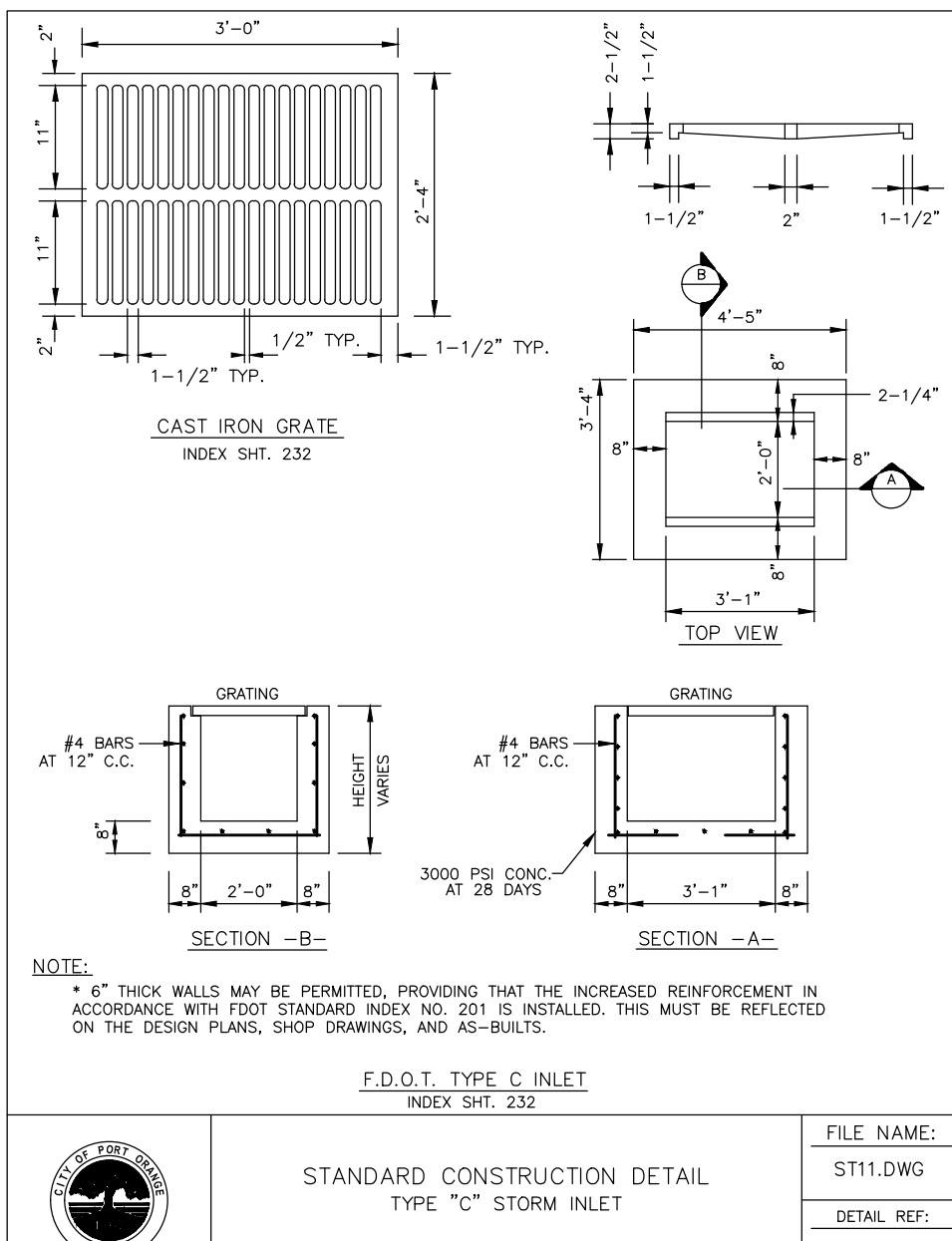
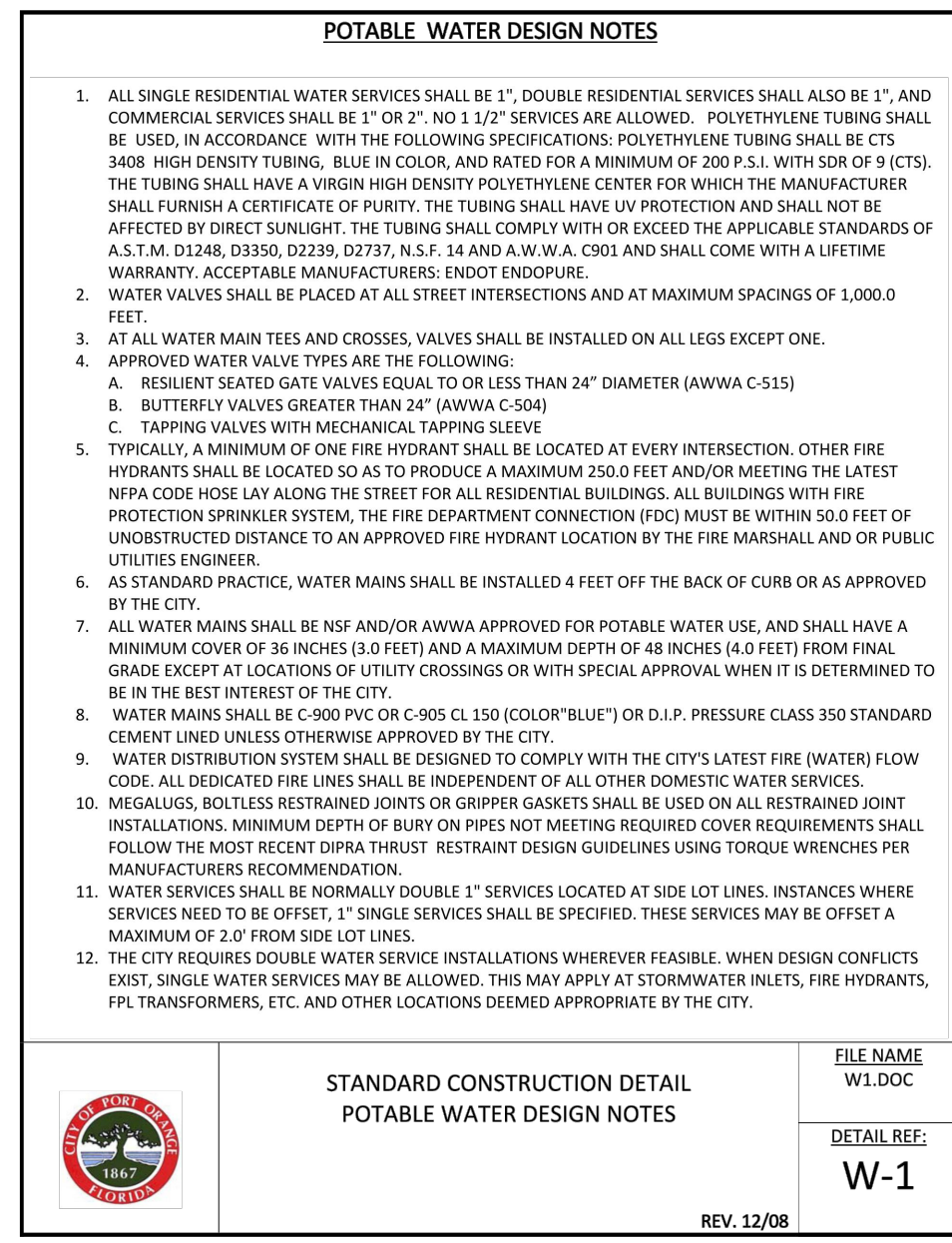
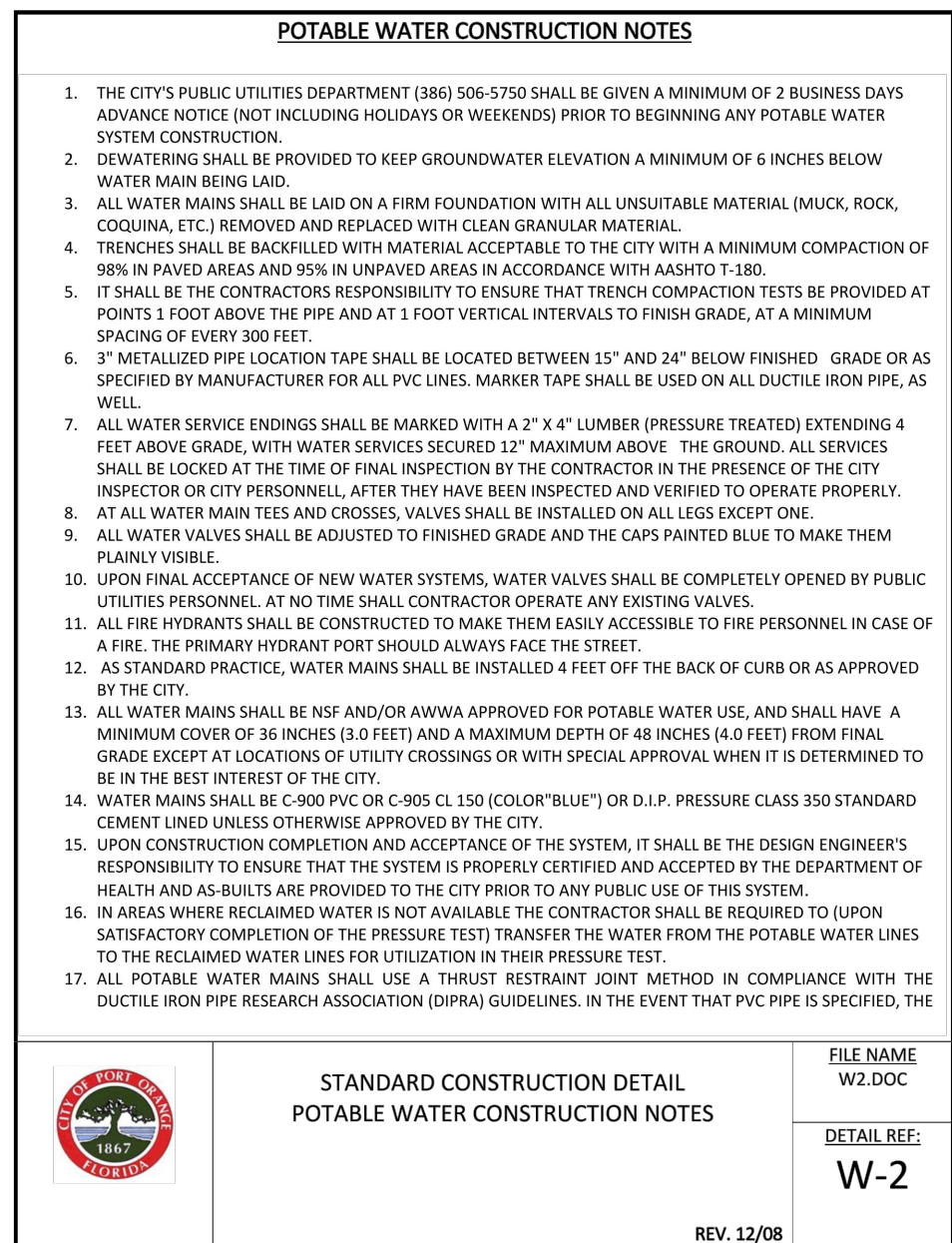
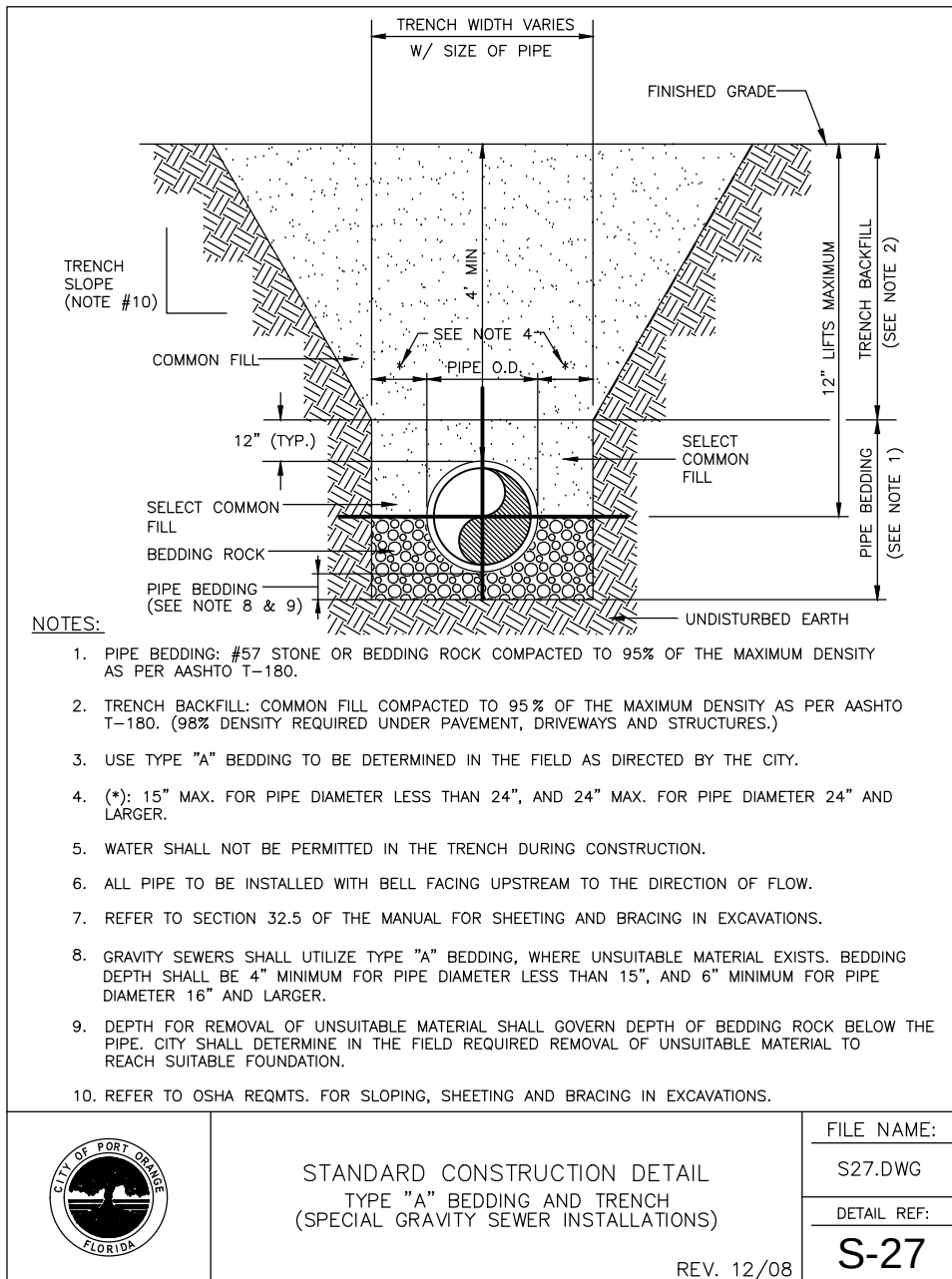
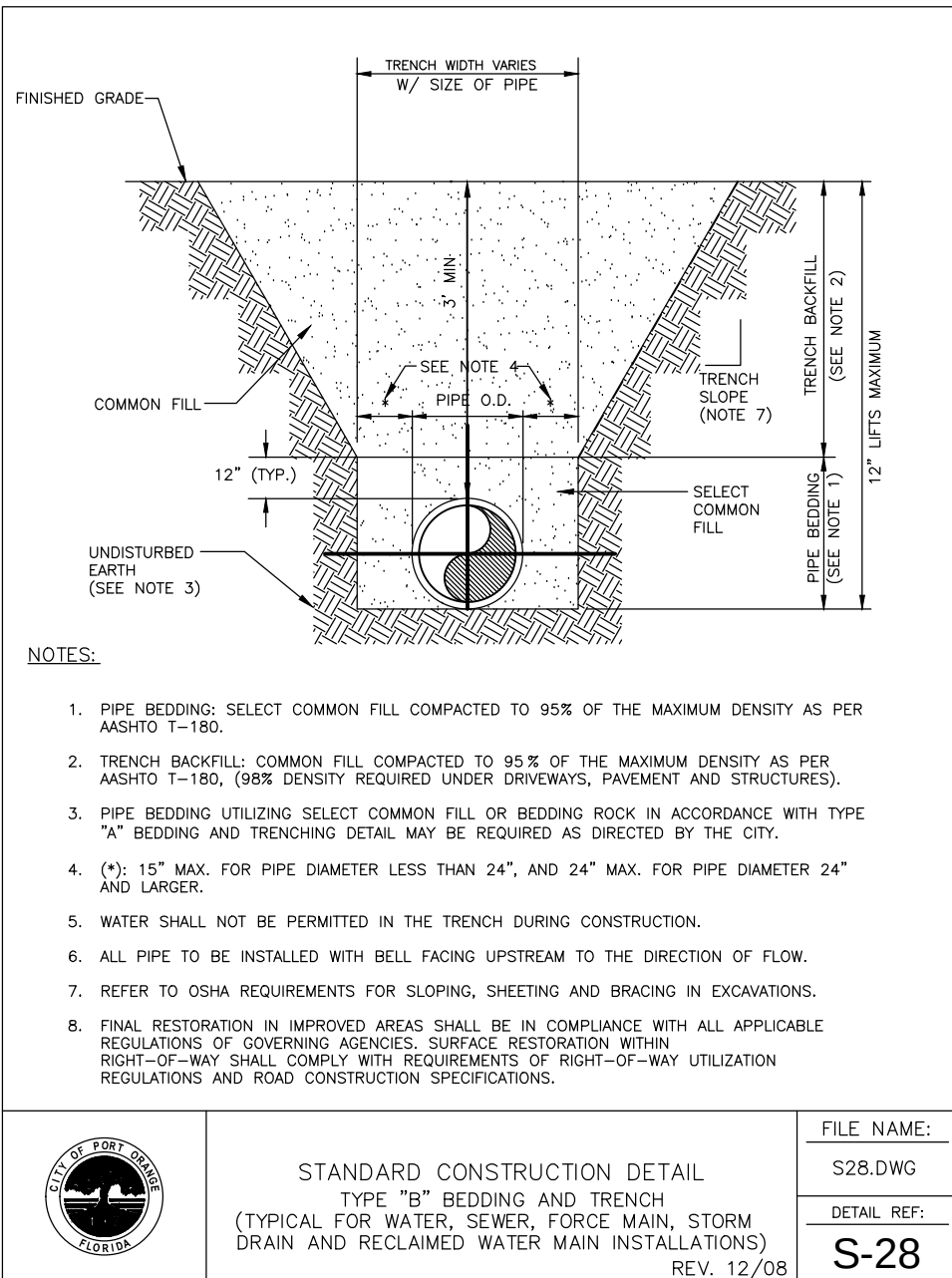
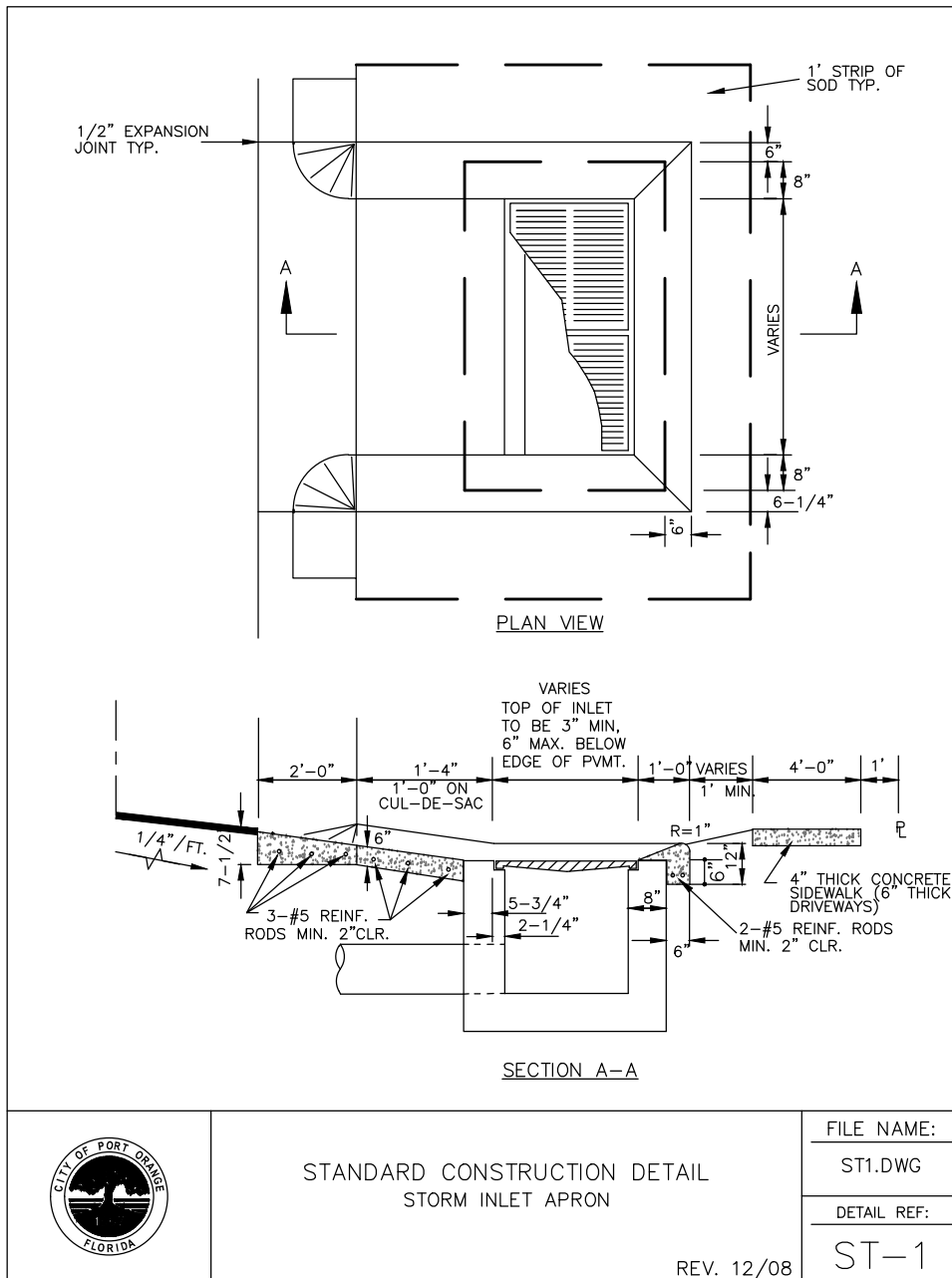
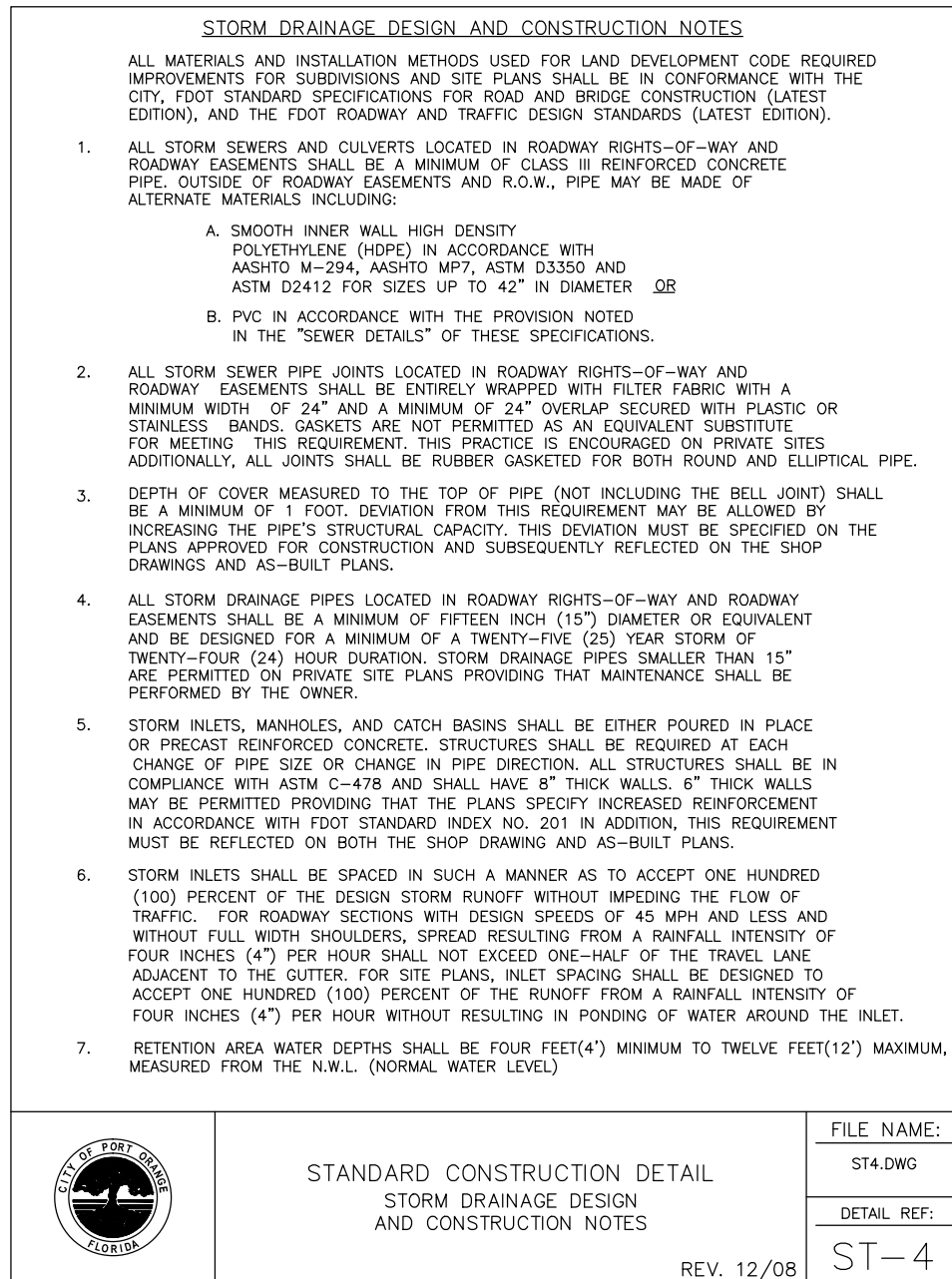
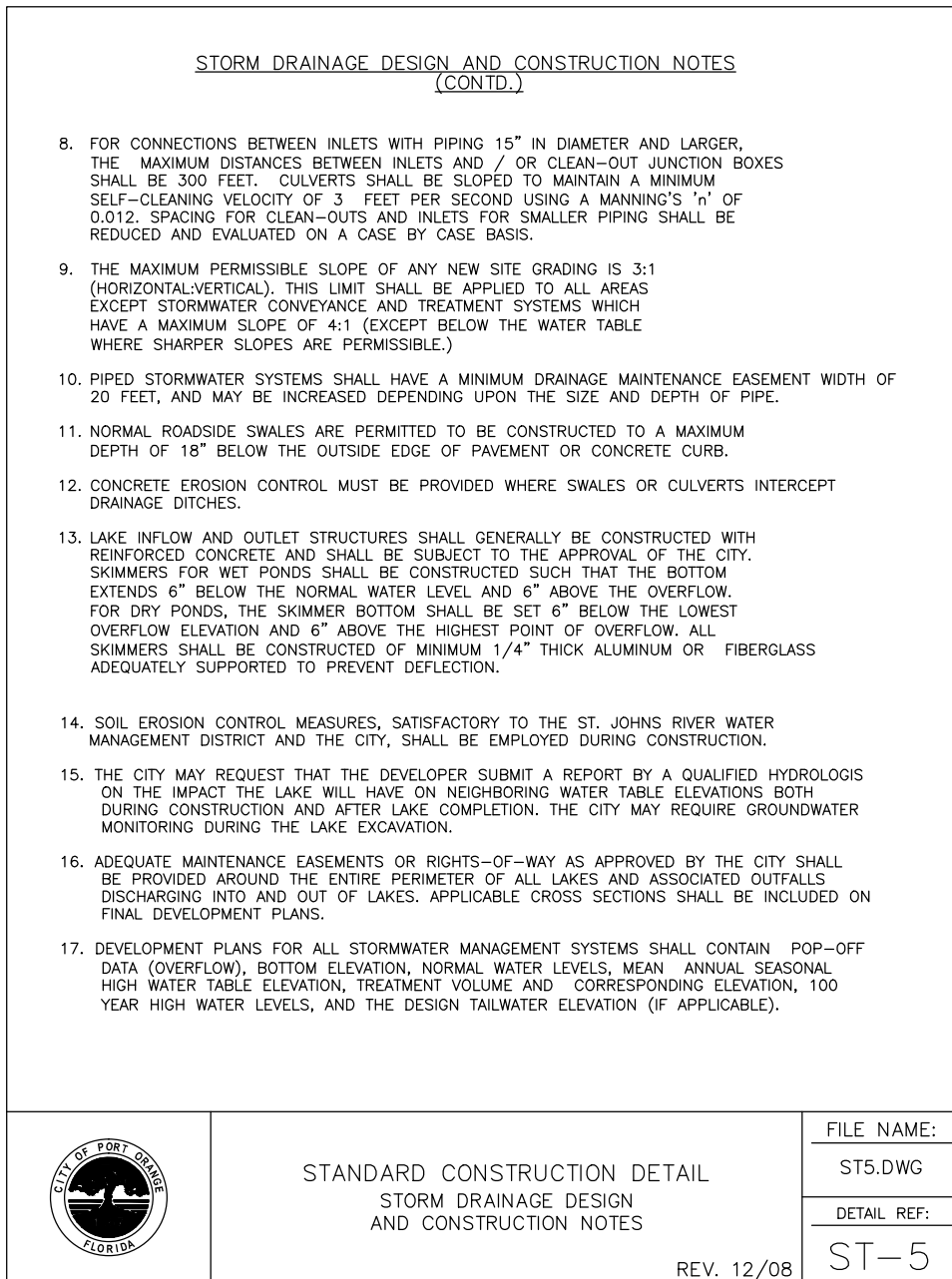
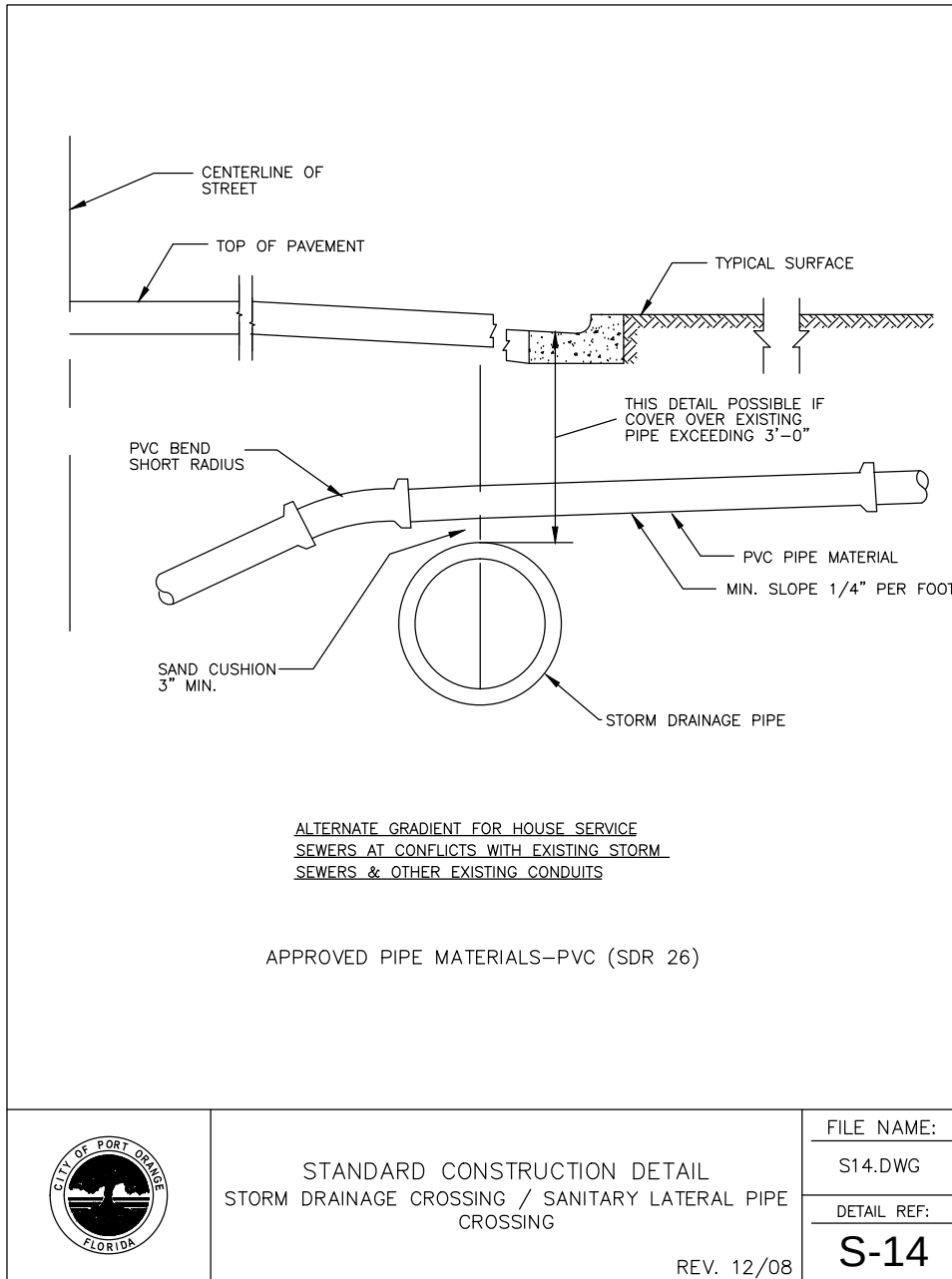
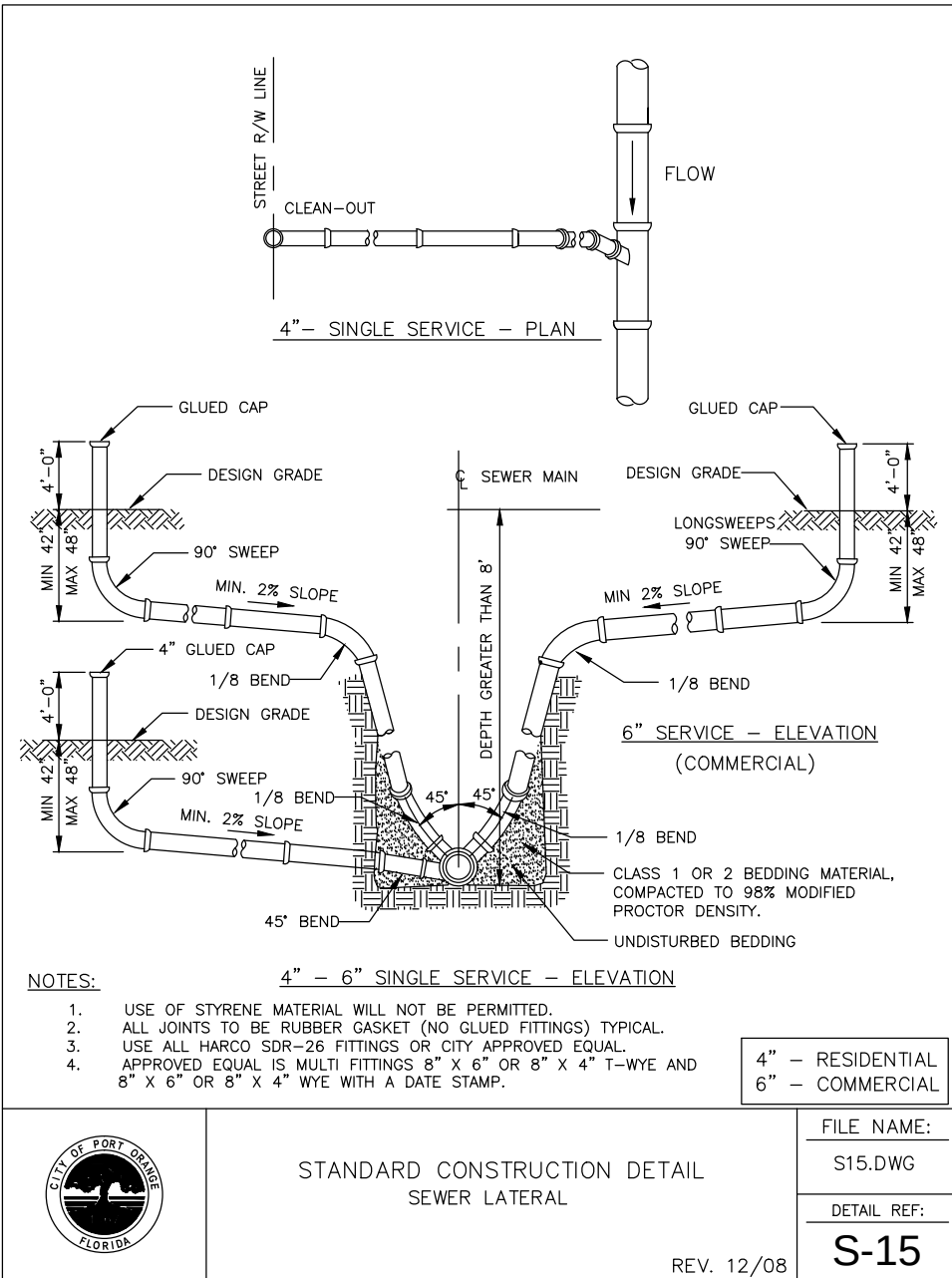
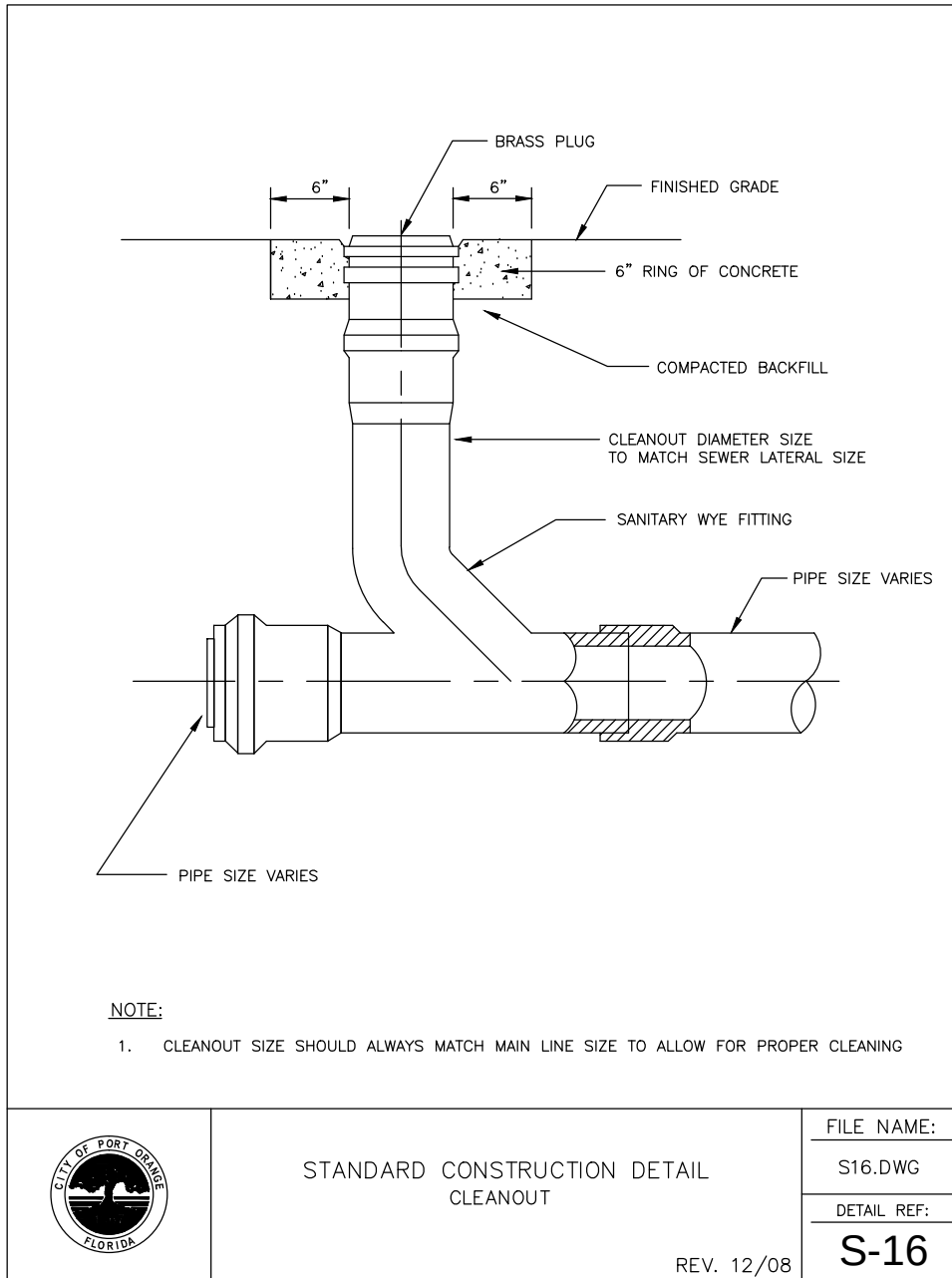
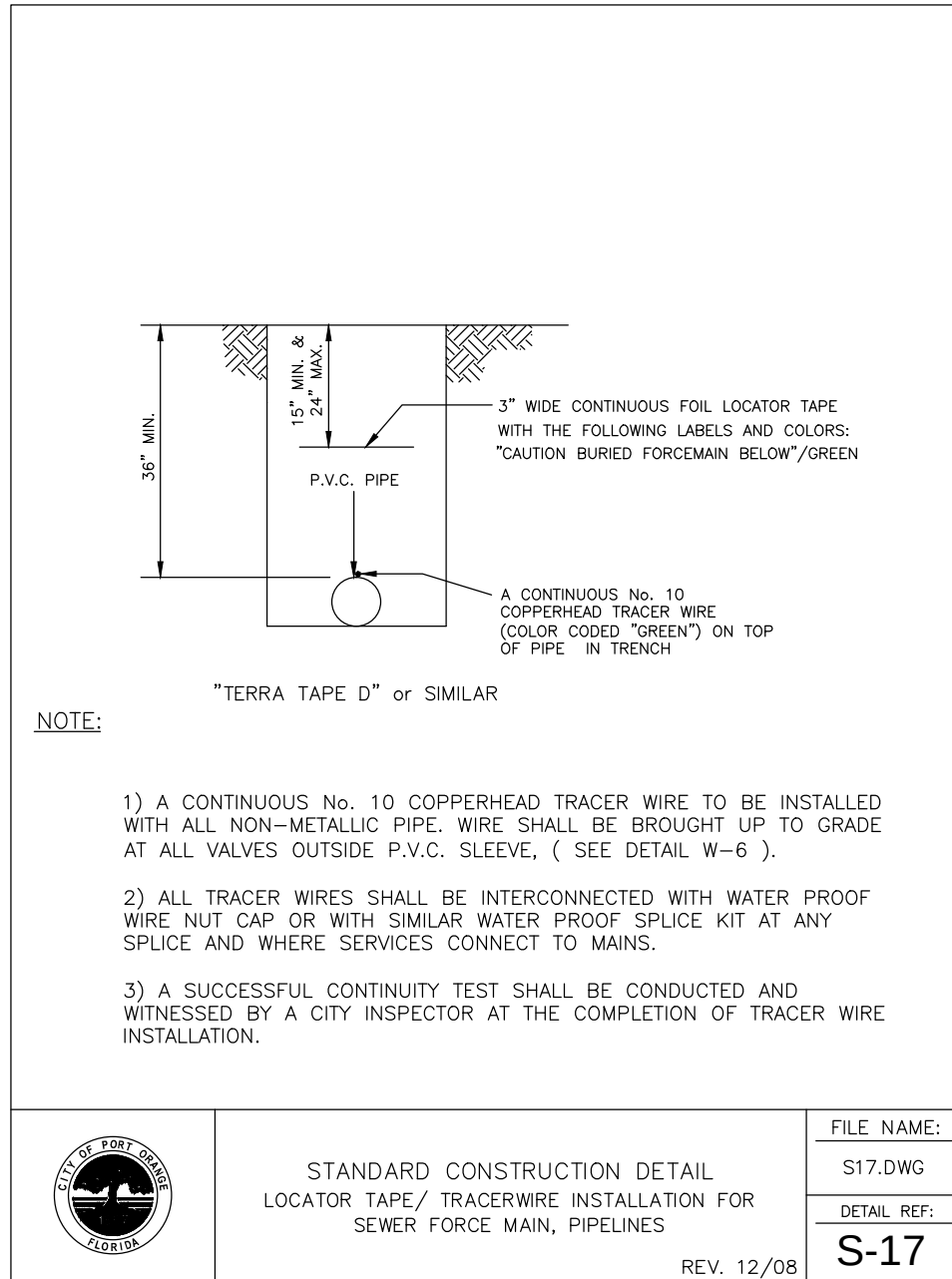
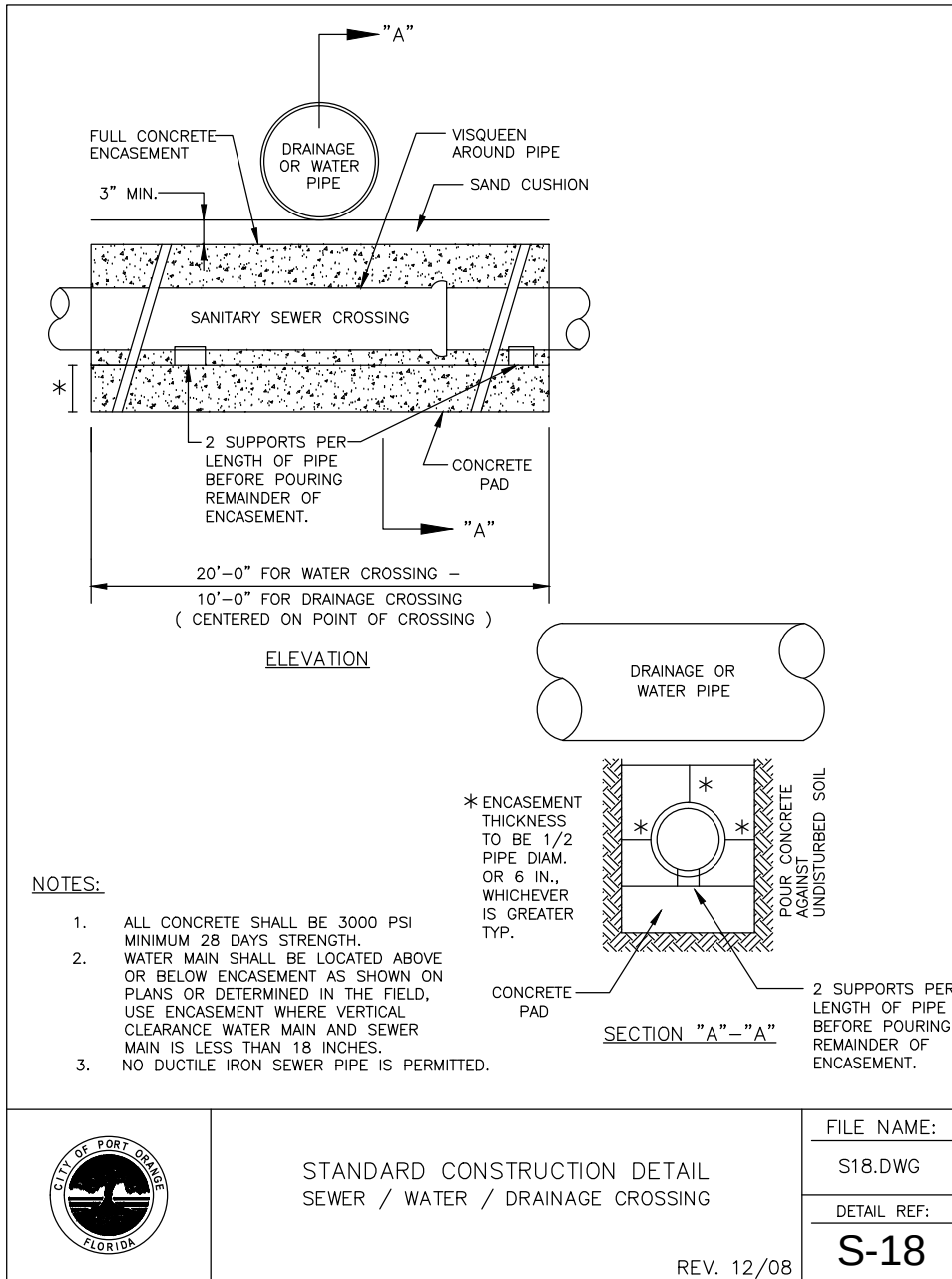
DRAWN BY: DAB

CHECKED BY: HHN

SCALE:

DRAWING NUMBER

21



LANDSCAPE NOTES:

- ALL PLANT MATERIAL SHALL CONFORM TO THE STANDARDS FOR FLORIDA #1 OR BETTER AS DESCRIBED IN THE CURRENT "GRADES AND STANDARDS FOR NURSERY PLANTS", STATE OF FLORIDA, DEPARTMENT OF AGRICULTURE, TALLAHASSEE, OR THEIR EQUAL AS DETERMINED BY THE LANDSCAPE ARCHITECT.
- ALL MULCH SHALL BE ALL NATURAL WOOD (NO CYPRESS).
- SOD SPECIFIED AS ST. AUGUSTINE "FLORITAM" SHALL BE 95% WEED-FREE. SOD SPECIFIED AS BAHIA SHALL BE 85% WEED-FREE. ALL SOD SHALL BE INSTALLED WITH TIGHT JOINTS, ROLLED AND FERTILIZED.
- SEED, IF ANY, TO MEET SOUTHERN SEED CERTIFICATION ASSOCIATION.
- ALL DIMENSIONS SHALL BE FIELD-CHECKED BY THE LANDSCAPE CONTRACTOR PRIOR TO CONSTRUCTION, WITH ANY DISCREPANCIES REPORTED IMMEDIATELY TO THE LANDSCAPE ARCHITECT.
- THE PLANT MATERIALS SCHEDULE IS PROVIDED FOR THE CONVENIENCE OF THE LANDSCAPE CONTRACTOR; SHOULD THERE BE ANY DISCREPANCY BETWEEN THE PLAN AND THE PLANT LIST, THE PLAN WILL PREVAIL.
- ALL MATERIALS MUST BE AS SPECIFIED ON THE LANDSCAPE PLAN. IF MATERIALS OR LABOR DO NOT ADHERE TO THE SPECIFICATIONS, THEY WILL BE REJECTED AT NO ADDITIONAL COST TO THE OWNER.
- ALL PLANTING BEDS SHALL BE TREATED WITH 'ROUND-UP' AND 'RONSTAR'. USE AS DIRECTED BY MANUFACTURERS.
- NO SUBSTITUTIONS OR CHANGES OF ANY KIND WILL BE ALLOWED AT THE TIME OF BIDDING SO AS TO PROVIDE FOR FAIR COMPARISON.
- EXISTING IRRIGATION SYSTEM SHALL BE REVAMPED TO PROVIDE 100% COVERAGE.
- THE CONTRACTOR SHALL VERIFY EXISTENCE AND LOCATION OF ALL EXISTING UTILITIES AND UNDERGROUND CONDITIONS PRIOR TO HIS COMMENCEMENT OF THE ANY WORK.
- ALL BUILDING MATERIALS AND LABOR SHALL CONFORM TO THE SOUTHERN BUILDING CODE AND ALSO TO ALL LOCAL CODES THAT HAVE JURISDICTION.
- ALL PERMIT AND VARIANCE APPLICATIONS SHALL BE MADE BY THE CONTRACTOR.
- PRIOR TO CONSTRUCTION OF PLANTING BEDS, ALL AREAS ARE TO HAVE SOIL TESTS CONDUCTED TO DETERMINE pH AND SOIL FERTILITY. IT IS THE RESPONSIBILITY OF THE LANDSCAPE CONTRACTOR TO AMEND THE SOIL TO MEET ADEQUATE FERTILITY AND pH FOR CORRESPONDING PLANT MATERIAL. ALL TEST RESULTS SHALL BE REPORTED TO THE LANDSCAPE ARCHITECT.
- EQUIPMENT SHALL BE OPERATED IN A MANNER AS NOT TO INJURE OR DESTROY ANY TREES SHOWN TO REMAIN. CONTRACTOR SHALL NOT CAUSE OR ALLOW THE CLEANING OF EQUIPMENT OR MATERIAL WITHIN THE DRIP LINE OF ANY TREE OR GROUPS OF TREES TO BE RETAINED OR THOSE PROPOSED. NOR SHALL THE CONTRACTOR ALLOW THE DISPOSAL OF WASTE MATERIAL, SUCH AS PAINT, OIL SOLVENTS, ASPHALT, CONCRETE, MORTAR OR ANY OTHER MATERIAL HARMFUL TO THE LIFE OF A TREE WITHIN THE DRIP LINE OF ANY TREE OR GROUP OF TREES. NO ATTACHMENT, WIRES (OTHER THAN PROTECTIVE GUY WIRES), SIGNS, OR PERMITS MAY BE FASTENED TO A TREE.
- ANY EXISTING TREES CREDITED TOWARDS REQUIRED BUFFERS OR LANDSCAPE REQUIREMENTS REMOVED FOR ANY REASON SHALL BE REPLACED WITH TREES MEETING CITY APPROVAL WITH REGARDS TO SPECIES AND SIZE.
- ALL QUESTIONS CONCERNING THE PLAN AND/OR SPECIFICATIONS SHALL BE DIRECTED TO THE LANDSCAPE ARCHITECT (386) 672-9515.
- ALL SHADE TREES AND SINGLE TRUNK UNDERSTORY TREES SHALL BE STAKED USING ARBORGUY STAKING SYSTEM FOR SINGLE STEM TREE AND ALL MULTI-TRUNK UNDERSTORY TREES SHALL BE STAKED WITH ARBORGUY MULTI-TRUNK SYSTEM.
- ANY CHANGE IN STAKING SYSTEM MUST BE APPROVED IN WRITING BY THE LANDSCAPE ARCHITECT BEFORE BEING INSTALLED.
- ALL UNIMPROVED AREA NOT OTHERWISE PLANTED OR MULCHED SHALL BE SODDED WITH ST. AUGUSTINE FLORITAM UNLESS OTHERWISE NOTED ON THE LANDSCAPE PLAN.
- PLANT MATERIAL SHALL BE CLEARLY IDENTIFIED AS FLORIDA #1 OR BETTER ON EITHER LABELS OR INVOICES.
- ALL PLANT MATERIAL SHALL BE GUARANTEED ONE YEAR AFTER ACCEPTANCE BY OWNER.
- ALL TREES IN SOD TO BE IN A (4) FOOT MINIMUM-MULCHED RING AROUND.
- TREES SHALL BE PLANTED SO THAT THE TRUNK FLARE IS EXPOSED AND TOPMOST ROOT IN THE ROOTBALL ORIGINATING FROM THE TRUNK IS AT SOIL SURFACE OR WITHIN THE TOP INCH OF SOIL ON THE ROOTBALL.
- ALL PLANT SPECIFICATIONS MUST BE MET OR EXCEEDED.
- PLANT TREE SO THAT ROOTBALL IS 1"-2" ABOVE FINISH GRADE.
- REMOVAL OF ALL CONSTRUCTION DEBRIS, LIMEROCK, EXCESS OF BUILDERS SAND, CONCRETE AND MORTAR DEBRIS, EXISTING WEEDS AND GRASS, AND ALL FOREIGN MATERIALS IN THE PLANTING BED AND SOD AREAS SHALL BE REMOVED AND A MINIMUM OF 3' OF CLEAN SAND WITH A pH 5.5-6.5 SHALL BE INSTALLED PRIOR TO ANY INSTALLATION OF PLANTS OR TREES.
- FOR ALL NEW DEVELOPMENT, OR REDEVELOPMENT OF EXISTING PROPERTY, THE APPLICANT SHALL BE REQUIRED TO REMOVE ALL INVASIVE NONNATIVE PLANT SPECIES FROM THE PROPERTY PRIOR TO ISSUANCE OF THE CERTIFICATE OF OCCUPANCY.
- ALL EXISTING TREES AND PALMS WILL BE PROPERLY PRUNED AND CLEANED OF DEADWOOD, BROKEN BRANCHES, DEAD FROND AND VINES AS NEEDED.

BUFFER CALCULATIONS:

HIDDEN LAKE DR. (EAST PROPERTY LINE)

10' WIDE LANDSCAPE BUFFER REQUIRED (837' - 166' = 671')

(2) SHADE + (2) UNDERSTORY TREES + 20 SHRUBS PER 100 LF

671 LF / 100 = 6.71 X 4 = 26.84 14 SHADE TREES + 14 UNDERSTORY TREES + 135 SHRUBS
14 PROVIDED 14 PROVIDED 177 PROVIDED

YORKTOWNE BOULEVARD (SOUTH PROPERTY LINE)

10' WIDE LANDSCAPE BUFFER REQUIRED (767' - 60' = 707')

(2) SHADE + (2) UNDERSTORY TREES + 20 SHRUBS PER 100 LF

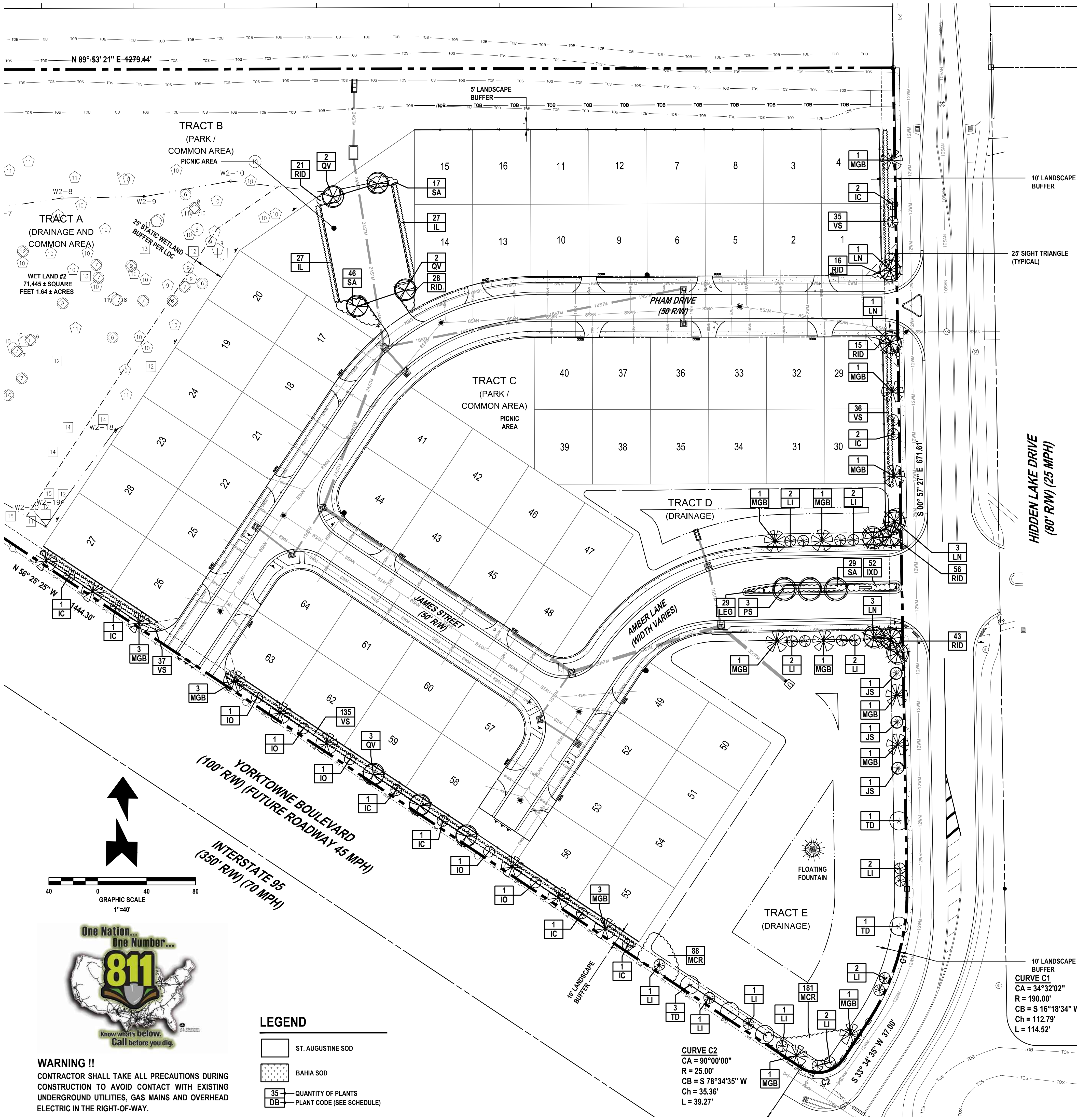
767 LF / 100 = 7.67 X 4 = 28.28 16 SHADE TREES + 16 UNDERSTORY TREES + 154 SHRUBS
16 PROVIDED 16 PROVIDED 222 PROVIDED

PLANT LIST

CODE	NO.	SCIENTIFIC NAME	COMMON NAME	SIZE REQUIREMENTS
CANOPY TREES				
LN	8	LIVISTONA NITIDA	LIVISTONA PALM	8' CT. FULL
MGB	20	MAGNOLIA GRANDIFOLIA	BRACKEN'S BROWN MAGNOLIA	10' - 12' HGT., 2.5" CAL. @ 6"
PS	3	PHOENIX SYLVESTRIS	SILVER DATE PALM	10' CT. FULL
QV	7	QUERCUS VIRGINIANA	LIVE OAK	10' - 12' HGT., FULL, 2.5" CAL. @ 6"
TD	5	TAXODIUM DISTICHUM	BALD CYPRESS	10' - 12' HGT., 2.5" CAL. @ 6"
SUBTOTAL	43			
UNDERSTORY TREES				
IC	10	ILEX CASSINE	DAHON HOLLY	8' - 10' HGT., FULL, 1.5" CAL. @ 6"
IO	5	ILEX ATTENUATA	EAST PALATKA HOLLY	8' - 10' HGT., FULL, 1.5" CAL. @ 6"
JS	3	JUNIPERUS VIRGINIANA	SOUTHERN RED CEDAR	8' - 10' HGT., FULL, 1.5" CAL. @ 6"
LI	18	LAGERSTROEMIA INDICA	CRAPE MYRTLE (PURPLE) STD.	8' - 10' HGT., FULL, 1.5" CAL. @ 6"
SUBTOTAL	36			
SHRUBS				
IL	54	ILICUM PARVIFLORUM	YELLOW ANISE	3 GAL., 24" HGT., FULL, 36" O.C.
IXD	52	IXORA SSP	NORA GRANT	3 GAL., 20" HGT., FULL, 36" O.C.
LEG	29	LIRIOPE MUSCARI	EVERGREEN GIANT	3 GAL., 20" HGT., FULL, 36" O.C.
MCR	269	MUHLBERGIA CAPILLARIS	PINK MUHLY GRASS	3 GAL., 20" HGT., FULL, 36" O.C.
RID	179	RAPHIOLEPIS INDICA	INDIAN HAWTHORNE YEDDA	3 GAL., 18" HGT., FULL, 36" O.C.
SA	92	SCHAEFFLERA ARBORICOLA	GOLD CAPELLA	3 GAL., 24" HGT., 36" O.C.
VS	243	VIBURNUM SUSPENSUM	SANDANKWA	3 GAL., 24" HGT., 36" O.C.
SUBTOTAL	918			
TOTAL	997			

NOTE:

- ALL TREES (NEW AND EXISTING) ARE TO HAVE A 3" DIAMETER MULCHED CIRCLE AROUND THE BASE UNLESS IT IS IN A PLANTING BED.



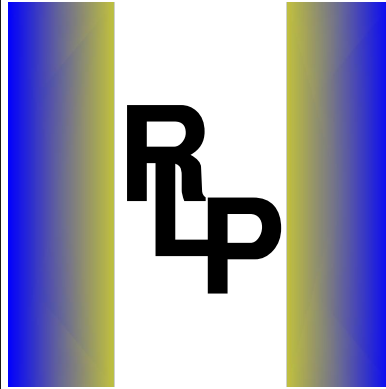
WARNING !!
CONTRACTOR SHALL TAKE ALL PRECAUTIONS DURING CONSTRUCTION TO AVOID CONTACT WITH EXISTING UNDERGROUND UTILITIES, GAS MAINS AND OVERHEAD ELECTRIC IN THE RIGHT-OF-WAY.

LEGEND

- ST. AUGUSTINE SOD
- BAHIA SOD
- 35 - QUANTITY OF PLANTS
- DB - PLANT CODE (SEE SCHEDULE)

REVISIONS

DATE	DESCRIPTION



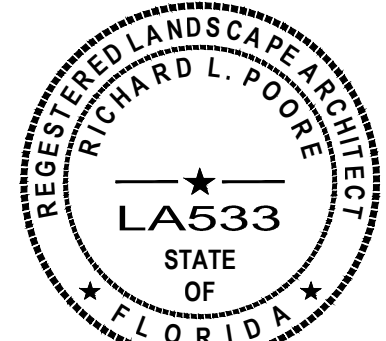
RICHARD L. POORE, LA
PLANNER & LANDSCAPE ARCHITECT
301 GATEWOOD COURT • ORLANDO BEACH, FLORIDA 32714
CELL: (386)212-8491 • RLA# 0000533
© 2001



Geosam
424 LUNA BELLA LANE, SUITE 122
NEW SMYRNA BEACH, FL 32108

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING. ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING. COPYRIGHT 2014 ALL RIGHTS RESERVED.

LANDSCAPE PLAN
CORNERSTONE GROVE PUD
HIDDEN LAKE DRIVE
PORT ORANGE, FL 32129



RICHARD L. POORE, LA #LA533

PROJECT No: 2016-237
DATE: MARCH 2017
DESIGN BY: RLP
DRAWN BY: DAB
CHECKED BY: HHN
SCALE: 1" = 40'
DRAWING NUMBER

IRRIGATION NOTES:

- THE CONTRACTOR SHALL VERIFY THE EXISTENCE AND LOCATION OF ALL EXISTING UTILITIES AND CONDITIONS PRIOR TO ITS COMMENCEMENT OF THE IRRIGATION WORK.
- CHECK PRESSURE AND GPM OF WATER SUPPLY BEFORE BEGINNING JOB AND REPORT FINDING TO LANDSCAPE ARCHITECT. LANDSCAPE ARCHITECT WILL MAKE ANY ADJUSTMENT NECESSARY TO MAKE SYSTEM WORK AT ITS BEST.
- THE PLAN IS SCHEMATIC ONLY. THE CONTRACTOR SHALL INSTALL PIPING IN A MINIMUM NUMBER OF TRENCHES AND SHALL INSTALL PIPE IN A MINIMUM LENGTH.
- QUANTITIES FOR IRRIGATION MATERIALS ARE NOT GIVEN. THE CONTRACTOR SHALL DETERMINE THIS FROM THE PLAN.
- INSTALL SLEEVE PIPING WHERE SHOWN ON THE DRAWINGS AT THE PROPER DEPTH.
- ALL SLEEVE PIPE SHALL BE SCHEDULE 40 PVC PIPE INSTALLED A MINIMUM OF 20" BELOW FINISHED PAVING GRADES.
- ALL SLEEVES WHEN PLACED IN FIELD ARE TO BE LOCATED BY A METAL PIPE AT EACH END AND LOCATED FROM TWO STATIONARY POINTS BY TAPE MEASUREMENTS.
- ALL PIPE SHALL BE INSTALLED A MINIMUM OF 20" BELOW GRADE.
- ALL TRENCHING SHALL BE KEPT OUT OF THE DRIP LINE AREA OF ALL EXISTING TREES. USE RADIAL LINES OR TUNNELING WHEN NECESSARY TO ENCR OACH INTO THE DRIP LINE AREA OF TREES.
- LOCATE ALL VALVES AND OTHER IRRIGATION EQUIPMENT IN PLANT BED AREAS WITHIN THE PROJECT LIMITS FOR CONCEALMENT PURPOSES.
- RISERS ARE TO BE HIDDEN COMPLETELY IN SHRUBBERY OR PAINTED BLACK AND IN NO CASE BE HIGHER THAN THE SHRUBBERY INSTALLED.
- ALL PIPE EXPOSED ABOVE GRADE AND TO VIEW SHALL BE SCHEDULE 40 GALVANIZED STEEL PIPE OF THE NOTED SIZE.
- ALL IRRIGATION EQUIPMENT (PUMP, CONTROLLER, ETC.) SHALL BE PLACED WITHIN FENCED ENCLOSURE.
- ALL VALVES SHALL BE INSTALLED IN METER TYPE SIZE BOXES EQUAL TO AMETEK POLY-IRON.
- PROVIDE A 6" GRAVEL SUMP AT THE BOTTOM OF ALL METER BOXES AND INSTALL 1/2" TO 1" DIAMETER GRAVEL AT THE BOTTOM OF THE VALVE PIT.
- IRRIGATION SHALL MEET ALL APPLICABLE CURRENT MUNICIPAL, COUNTY, STATE OR FEDERAL CODES, ORDINANCES AND REGULATIONS THAT HAVE JURISDICTION.
- ALL PIPE 1/2" TO 2 1/2" IN SIZE SHALL BE PRESSURE RATED 160 PVC (EXCEPT MAIN).
- ALL FITTINGS SHALL BE SCHEDULE 40 PVC.
- ALL SPRAY HEADS ARE TO BE A MINIMUM OF 6" POP-UP AND ALL HEADS IN PLANTING AREAS TO BE 12" POP-UP OR RISERS. RISERS SHALL BE PAINTED GREEN OR BLACK.
- ELECTRICAL TO CONTROLLER SHALL BE SUPPLIED BY ELECTRICAL CONTRACTOR (NOT IRRIGATION CONTRACTOR).
- PURPLE IRRIGATION EQUIPMENT MUST BE USED FOR ALL IRRIGATION IF REUSE WATER IS BEING USED.

GENERAL NOTES:

- THE IRRIGATION CONTRACTOR SHALL BE RESPONSIBLE TO COMPLY WITH THE CITY AND COUNTY WATER WISE ORDINANCE REQUIREMENTS. THE IRRIGATION CONTRACTOR SHALL NOTIFY THE LANDSCAPE ARCHITECT IF THERE ARE ANY DEVIATIONS TO THE DRAWING.
- IRRIGATION LINES ARE SHOWN DIAGRAMMATICALLY AND ARE INTENDED TO SHOW DISTRIBUTION ZONES ONLY. ALL VALVES SHALL BE LOCATED WITHIN PLANTING AREAS (NOT WITHIN PAVEMENT). LINES LOCATED UNDER PAVEMENT SHALL BE KEPT TO A MINIMUM AND ALL PIPING UNDER PAVED AREAS SHALL BE SLEEVED.
- WHEN INSTALLING IRRIGATION PIPING IN ISLAND AND OTHER NARROW PLANTING AREAS RUN PIPING CLOSE TO CURB AND NOT DOWN THE MIDDLE OF THE PLANTING AREA. (BEFORE DOING IRRIGATION GET A COPY OF THE LANDSCAPE PLAN AND KEEP IRRIGATION LINES OUT OF PLANTING AREAS WHERE POSSIBLE.)
- NO SIGNIFICANT IRRIGATION OVERTHROW SHALL BE ALLOWED ONTO IMPERVIOUS SURFACES.
- 25% OF IRRIGATION IS LOW VOLUME.

IRRIGATION LEGEND

(USE THE FOLLOWING IRRIGATION EQUIPMENT OR EQUAL)

15 SERIES MPR	FLOW RATE (GPM)	FLOW RATE (GPM)
⊙ ADJUSTABLE 15" RADIUS QUARTER	VARIES 0.92	PGP - HUNTER GEAR DRIVE
⊙ HALF	1.85	⊖ NOZZLE SIZE 2.7
⊙ THREE QUARTER	2.78	⊖ NOZZLE SIZE 3.4
⊙ FULL	3.70	⊖ NOZZLE SIZE 3.9
⊙ TREE BUBBLER	1.00	⊖ NOZZLE SIZE 5.2
		⊖ NOZZLE SIZE 6.0

ZONE NUMBER
2 15 35±
NUMBER OF HEADS
(* DENOTES NETAFIM)
APPROX. GALLONS PER MINUTE

WELL NOTES:

- PUMP SPECIFICATIONS:
4" DIA DEEP WELL STA-RITE PUMP
* PUMP MUST PROVIDE A MINIMUM OF 50 GALLONS PER MINUTE @ 50 PSI AT HEAD
- CONTRACTOR SHALL DRILL NEW WELL TO A DEPTH OF GROUNDWATER TO ACHIEVE SPECIFIED FLOW.
- GROUNDWATER SOURCE SHALL BE FREE OF STAIN PRODUCING IRON MINERALS.
- COVER WELL AND BACKFLOW PREVENTER WITH ARTIFICIAL STONE WELL COVER.

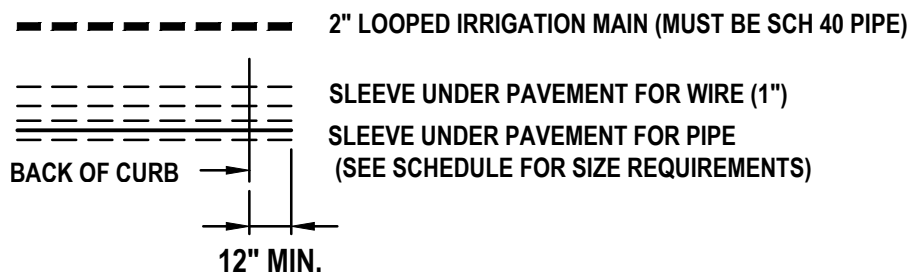
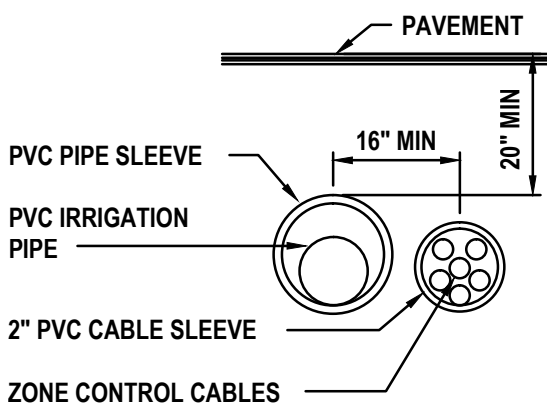
PIPE SIZING INFORMATION

GALLONS PER MINUTE (GPM)	PIPE SIZE
0-6	1/2"
7-10	3/4"
11-16	1"
17-28	1 1/4"
29-35	1 1/2"
35-55	2"

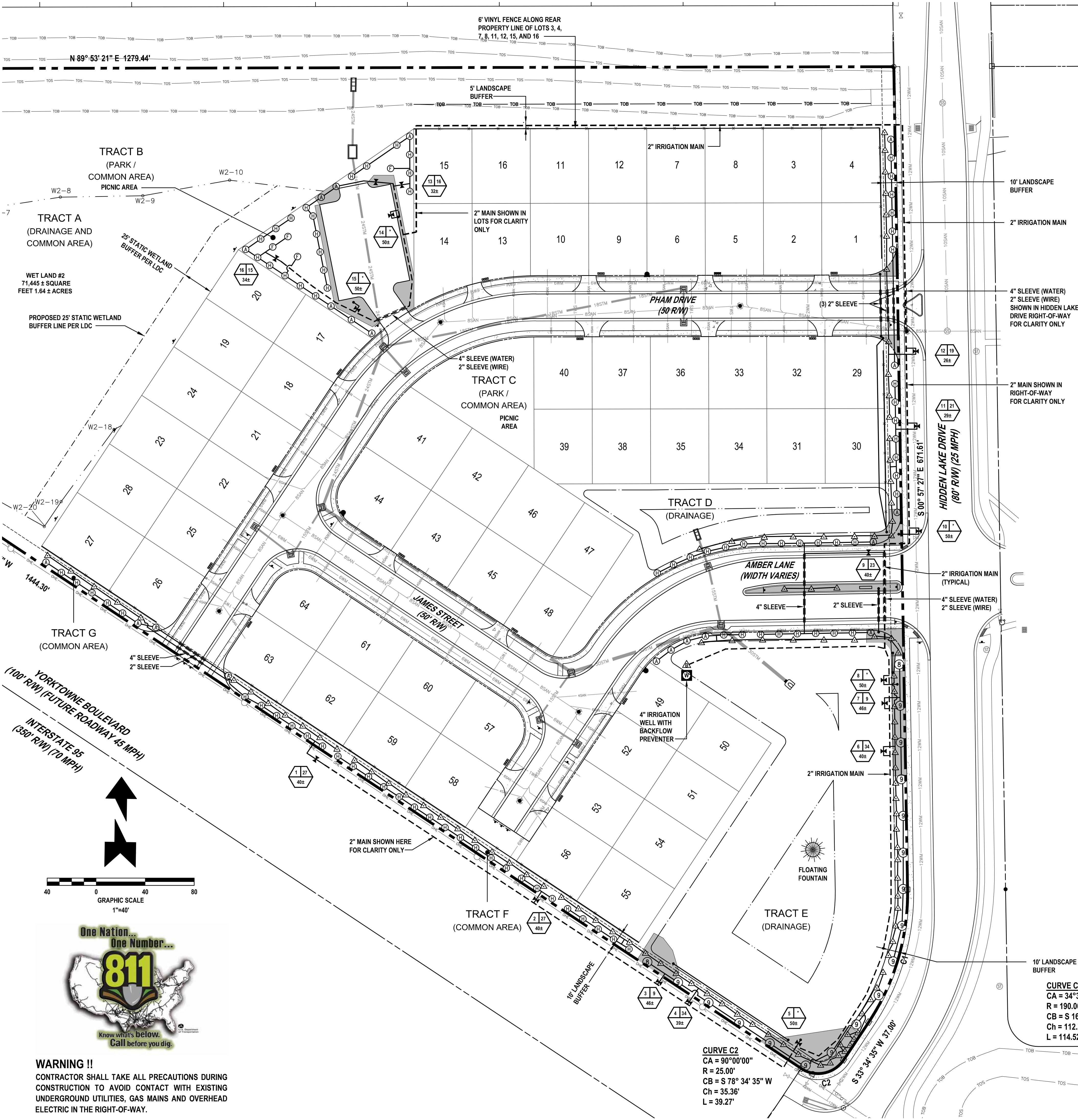
PIPE SLEEVE SCHEDULE

PIPE SIZE	SLEEVE SIZE
2 1/2"	6"
1" THRU 2"	4"
1/2" AND 3/4"	3"

NOTE:
AT THE DISCRETION OF THE IRRIGATION CONTRACTOR, THE DIAMETER OF THE SLEEVE PIPE MAY BE REDUCED.



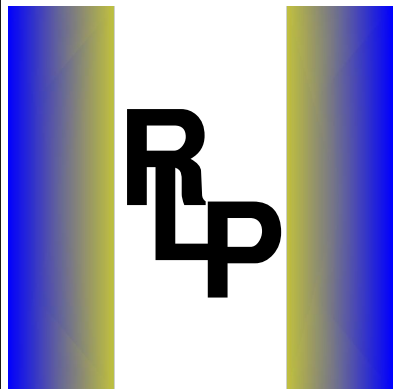
- BACKFLOW PREVENTER (2" REDUCED PRESSURE ZONE)
- CONTROLLER - RACHIO SMART IRRIGATION CONTROLLER (16 STATION)
- RAIN SENSOR SHUTOFF (ON TOP OF CONTROL BOX OR PEDESTAL MOUNT)
- 4" DIA DEEP WELL TO PRODUCE 60 GRAM @ 60 PSI @ HEAD
- ZONE CONTROL VALVE (HARDIE 216B) (1-2" ANGLE- PRESSURE REDUCING)



WARNING !!
CONTRACTOR SHALL TAKE ALL PRECAUTIONS DURING CONSTRUCTION TO AVOID CONTACT WITH EXISTING UNDERGROUND UTILITIES, GAS MAINS AND OVERHEAD ELECTRIC IN THE RIGHT-OF-WAY.

REVISIONS

DATE	DESCRIPTION



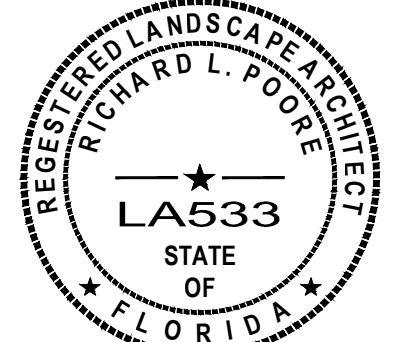
RICHARD L. POORE, LA
PLANNER & LANDSCAPE ARCHITECT
301 GATEWOOD COURT • ORMOND BEACH, FLORIDA 32174
CELL: (386)212-8491 • RLA# 0000533
© 2001



Geosam
424 LUNA BELLA LANE, SUITE 122
NEW SMYRNA BEACH, FL 32108

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING. ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING. COPYRIGHT 2014 ALL RIGHTS RESERVED.

IRRIGATION PLAN
CORNERSTONE GROVE PUD
HIDDEN LAKE DRIVE
PORT ORANGE, FL 32129

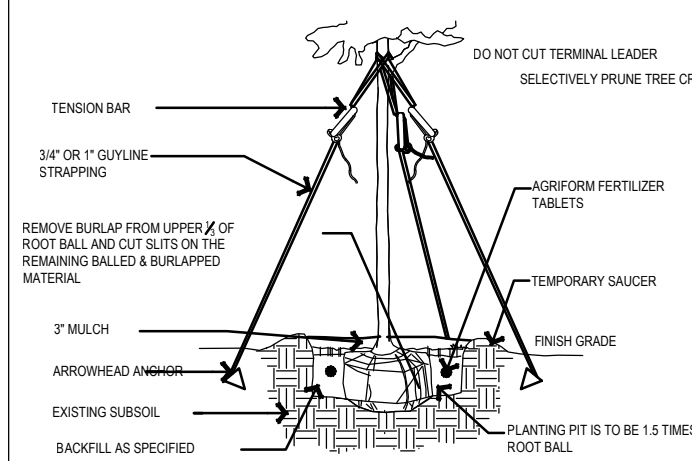


RICHARD L. POORE, LA. # LA533

PROJECT No: 2016-237
DATE: MARCH 2017
DESIGN BY: RLP
DRAWN BY: DAB
CHECKED BY: HHN
SCALE: 1" = 40'
DRAWING NUMBER

25

Tree Frog Environmental Products®
(formerly Arborguy®)
PRO20/PRO40/PRO60/PRO80STAKING DETAIL



Adjustable Guying Method Using a Tension Bar

The anchors for each kit are best installed using the Integrated Tool Assembly (ITA) from the manufacturer.

1. Once the arrowhead anchor has been driven into the ground and set (secured), the guyline should be passed through Hole #1 on the tension bar, then wrapped around the tree trunk just above the lowest established branch. Then, the guyline should be passed through Hole #2 in the tension bar just below the first established branch. After pulling taut any slack, a stop knot is established immediately below Hole #2 in the guyline. (See Figure 1)
2. The tension bar is then pulled downward until the tree is straight and the guyline is SNUG (NOT TIGHT). (See Figure 2)
3. The tension bar is locked into place by tying the loose end of the guyline itself just above Hole #2. (See Figure 3)

This tensioning method allows the guylines to be readjusted, if necessary, in order to keep the guylines snug until the tree root system is established and the staking material is removed.

- *Specify Anchor
1. Biodegradable (soft or hard soil)
 2. Nylon (soft soil)
 3. Heavy Duty (hard soil)

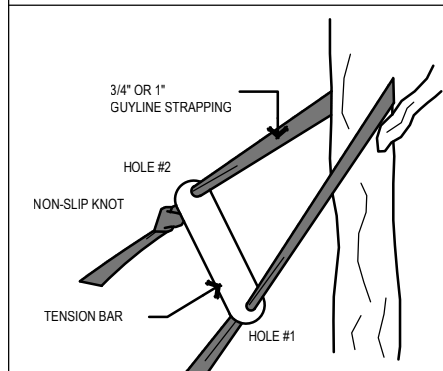


FIGURE 1

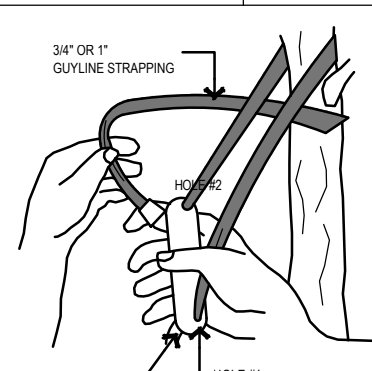


FIGURE 2

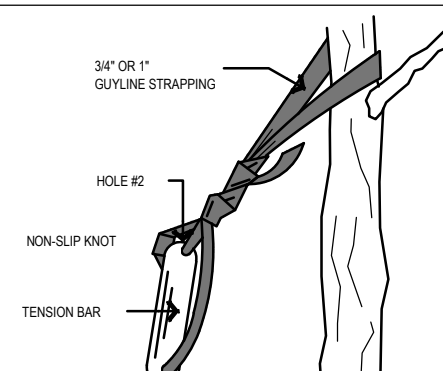


FIGURE 3

Tree Frog® PRO20 SYSTEM

PRO20:
For up to 2" Caliper Trees
(3) ARBORGLY™ Guylines 3/4" x 12' = 600 lb test Black or Green, UV resistant, polypropylene strapping
(3) "Tool-Free" Tension Bars™
(3) Arrowhead ® Anchors (4" x 3-3/4")

Tree Frog® PRO40 SYSTEM

PRO40:
For up to 4" Caliper Trees
(4) ARBORGLY™ Guylines 1" x 12' = 600 lb test Black or Green, UV resistant, polypropylene strapping
(3) "Tool-Free" Tension Bars™
(4) Arrowhead ® Anchors (4 3/4" x 4 1/2")

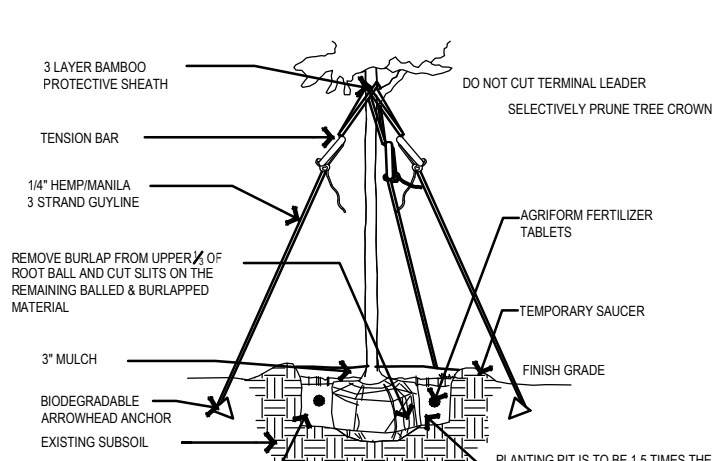
Tree Frog® PRO60 SYSTEM

PRO60:
For up to 6" Caliper Trees
(4) ARBORGLY™ Guylines 1" x 15' = 2400 lb break strength polyester black strapping
(3) "Tool-Free" Tension Bars™
(3) Arrowhead ® Anchors (4 3/4" x 4 1/2")

Tree Frog® PRO80 SYSTEM

PRO80:
For up to 8" Caliper Trees
(4) ARBORGLY™ Guylines 1" x 15' = 2400 lb break strength black polyester strapping
(4) Steel Cable leaders attached to anchors (optional)
(4) "Tool-Free" Tension Bars™
(4) Arrowhead ® Anchors (4 3/4" x 4 1/2")

Tree Frog Environmental Products®
(formerly Arborguy®)
BIODEGRADABLE TREE GUYING DETAIL



Biodegradable Adjustable Guying Method Using a Tension Bar

The anchors for each kit are best installed using the Integrated Tool Assembly (ITA) from the manufacturer.

1. Once the Biodegradable arrowhead anchor has been driven into the ground and set (secured), the guyline should be passed through Hole #1 on the tension bar, then wrapped around the tree trunk just above the lowest established branch. Then, the guyline should be passed through Hole #2 in the tension bar just below the first established branch. After pulling taut any slack, a stop knot is established immediately below Hole #2 in the guyline. (See Figure 1)
2. The tension bar is then pulled downward until the tree is straight and the guyline is SNUG (NOT TIGHT). (See Figure 2)
3. The tension bar is locked into place by tying the loose end of the guyline itself just above Hole #2. (See Figure 3)

This tensioning method allows the guylines to be readjusted, if necessary, in order to keep the guylines snug until the tree root system is established and the staking material is removed.

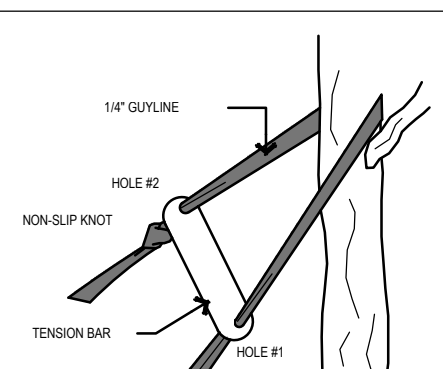


FIGURE 1

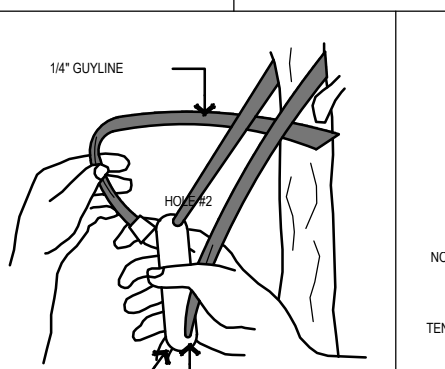


FIGURE 2

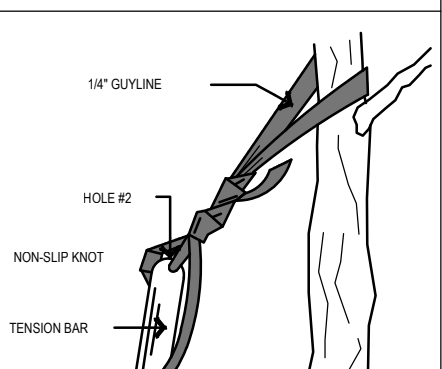
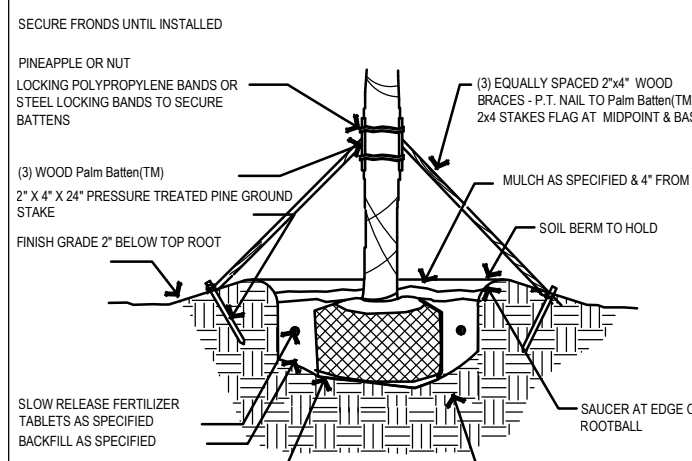
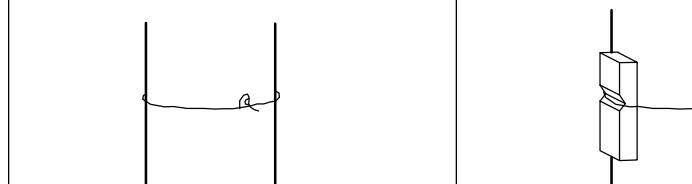


FIGURE 3

Tree Frog Environmental Products®
(formerly Arborguy®)
Palm Batten Detail

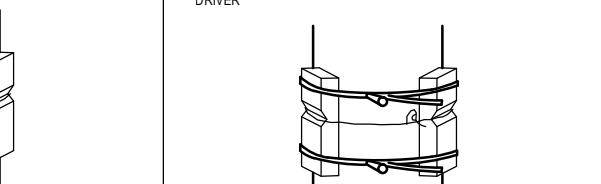


PBKM Installation

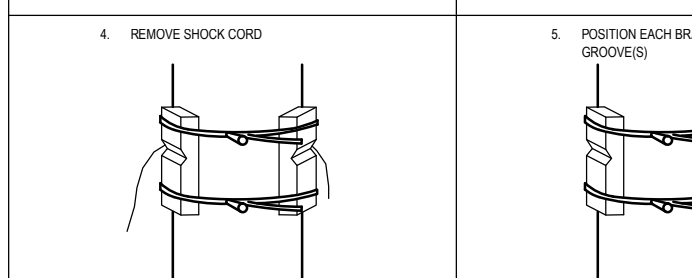


1

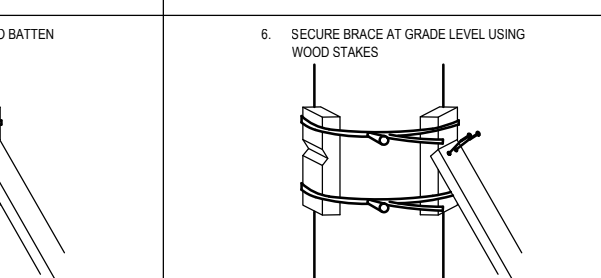
2. POSITION BATTENS ON PALM TRUNK. USE BUCKLE OR SNAP TO HOLD IN PLACE.



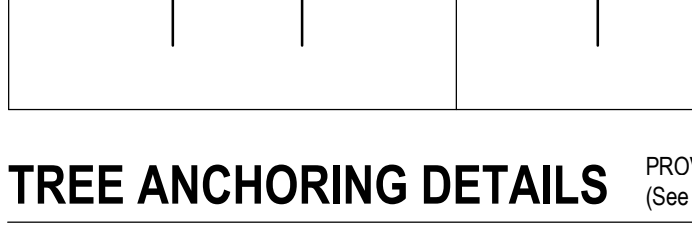
2



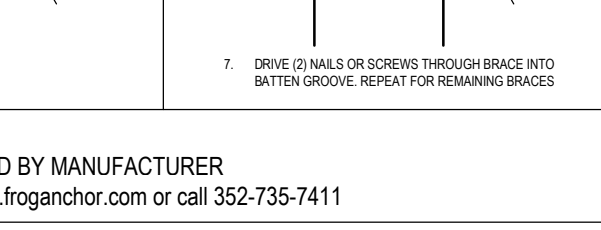
3



4



5



6

7. DRIVE (2) NAILS OR SCREWS THROUGH BRACE INTO BATTEN GROOVE. REPEAT FOR REMAINING BRACES.



7

TREE ANCHORING DETAILS

PROVIDED BY MANUFACTURER
(See www.froganchor.com or call 352-735-7411)

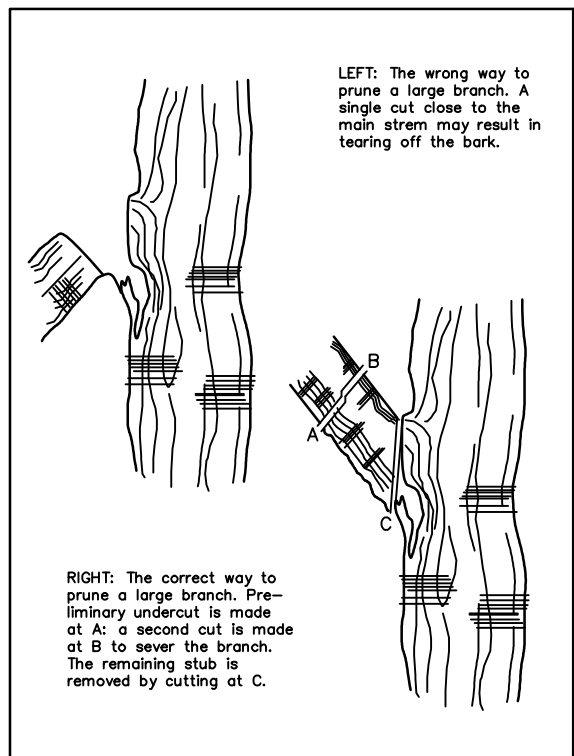
NOT TO SCALE

PRUNING

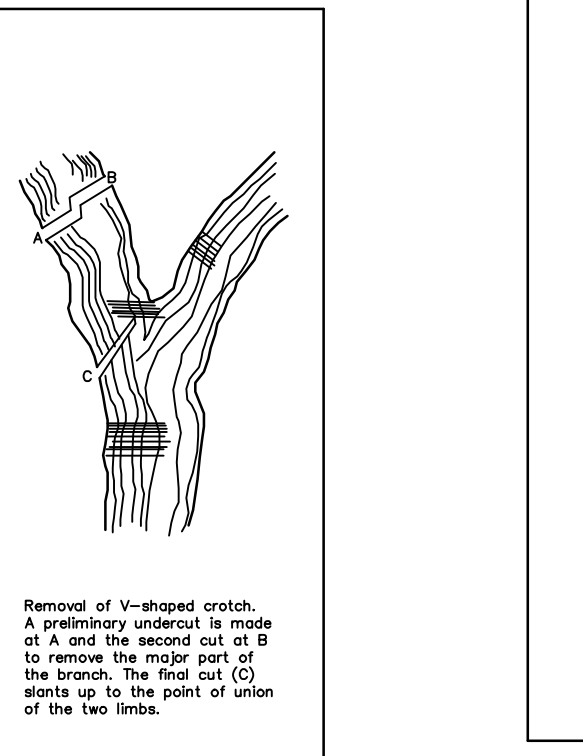
Most trees require some pruning to control growth and adapt them to particular landscape uses. Proper pruning will control branch height, symmetry of the crown, crowding of main branches, and will eliminate weak crotches. Trees are also pruned to prevent property damage. During construction work the primary purpose of pruning is to preserve the health and vigor of the tree. In most cases damage to the roots can be offset by careful pruning of the crown. During pruning, appearance should also be considered.

In compensating for root damage the aim is to leave a vigorous dense crown, decreased only in overall size. Approximately half as much crown should be removed as root system damaged. For example, if 1/2 the root system is damaged, approximately 1/4 of the crown should be removed.

EXCEPTION:
Pines should not be pruned other than to remove dead, diseased, or hazardous branches.



PRUNING OF LARGE BRANCH



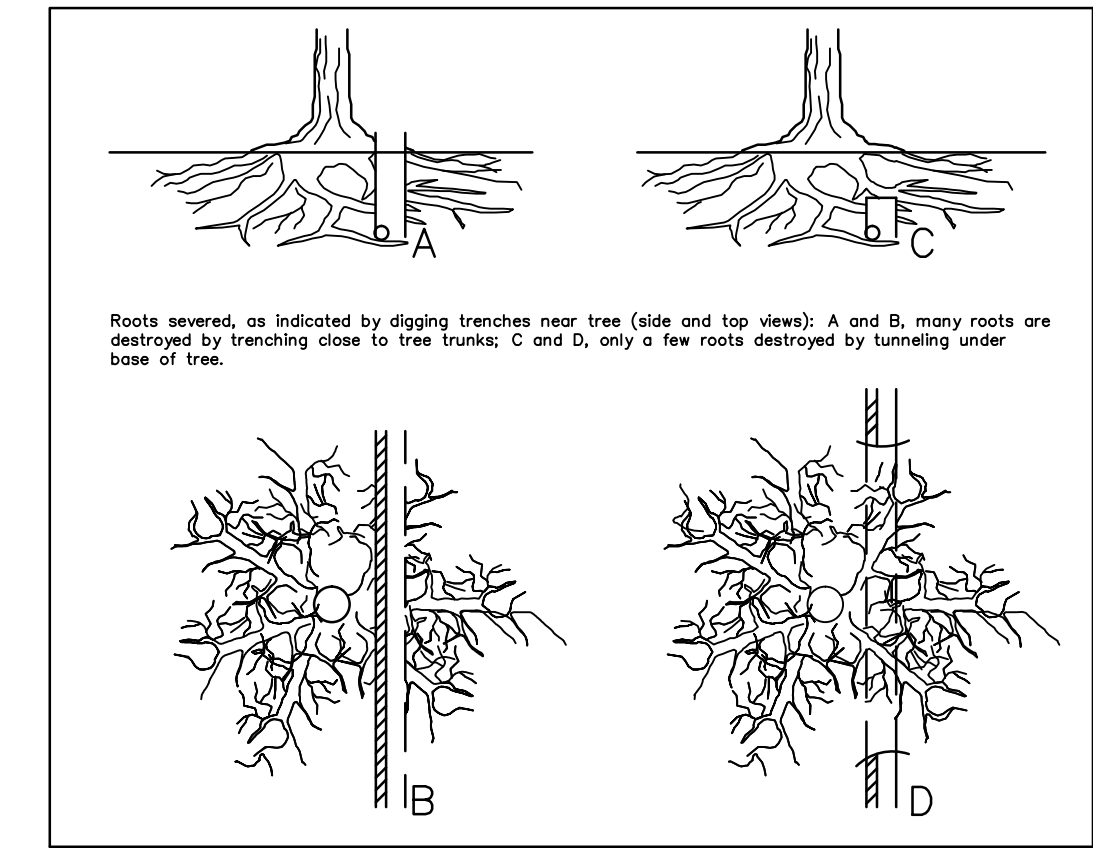
REMOVAL OF V-SHAPED CROTCH

EXCAVATIONS

When deep soil cuts are made over the entire area occupied by the roots, it is difficult to maintain the health of trees. Lowering the grade 6-8 inches will remove a major portion of the top soil and most of the feeder roots. A loss of 1/2 to 1/3 of these surface roots will kill the tree.

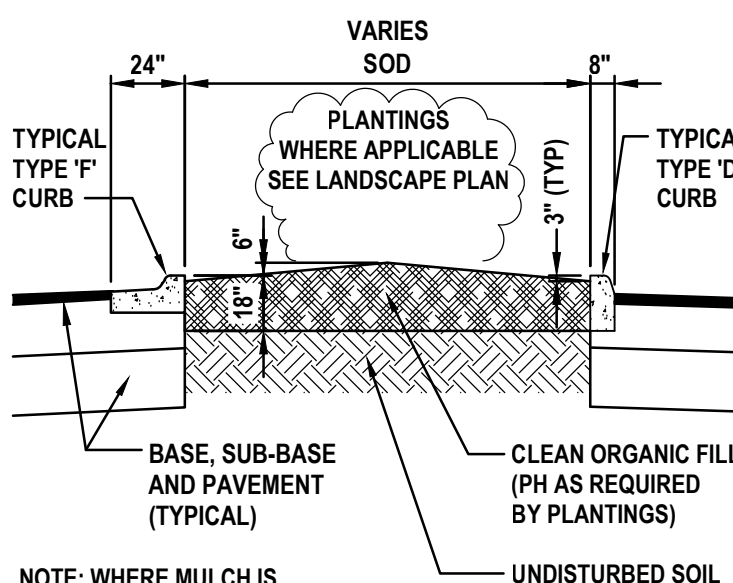
To preserve the tree and avoid root damage when cutting a grade, curve or zig-zag around the roots as much as possible. The area of the dripline should be sufficient. Top soil is an extremely important factor in the survival of a tree.

Roots should be cut cleanly. Large roots should be promptly treated with a wound dressing.



Trees can be protected when excavation for water and sewer lines is performed. Start by considering the location of the trenches. If the trenches cannot be routed around the trees and outside the dripline, the next best thing is to tunnel under them.

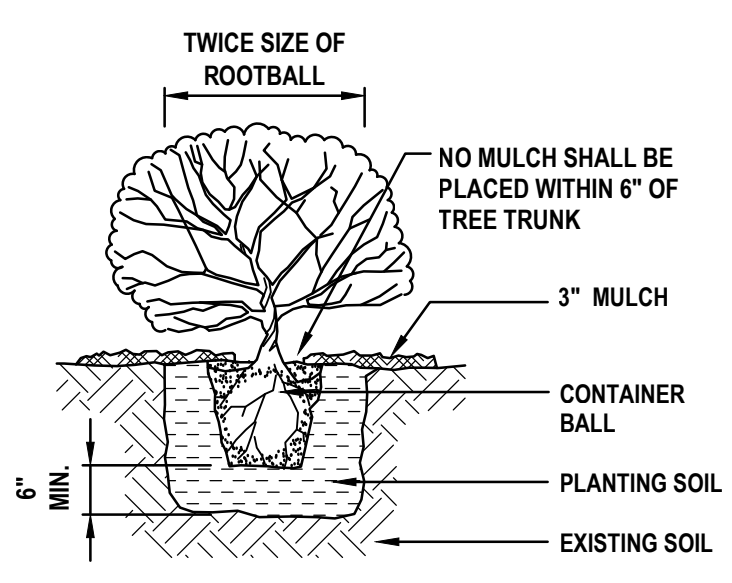
Power-driven soil augers are often used for this purpose. Tunneling under the trees has been shown to minimize root kill. Tunneling should be offset to one side of the trunk to prevent damage to the main tap roots.



NOTE: WHERE MULCH IS USED IN LANDSCAPE ISLAND KEEP MULCH BELOW TOP OF CURBS

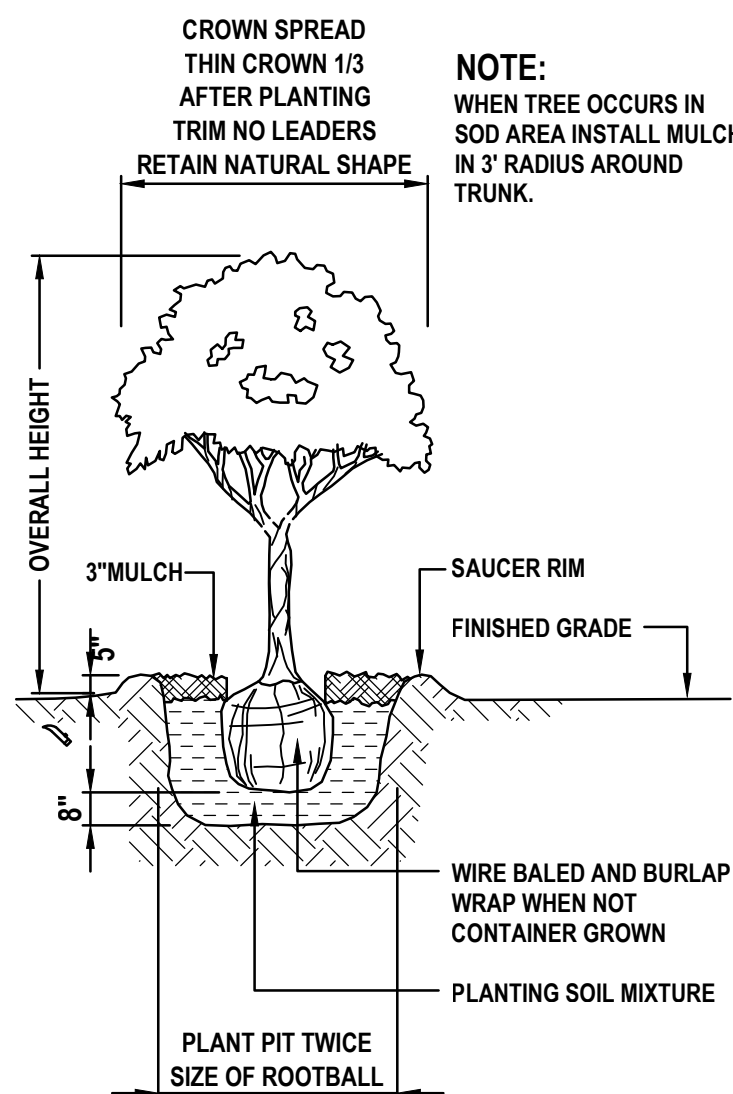
ISLAND PLANTING DETAIL

NOT TO SCALE



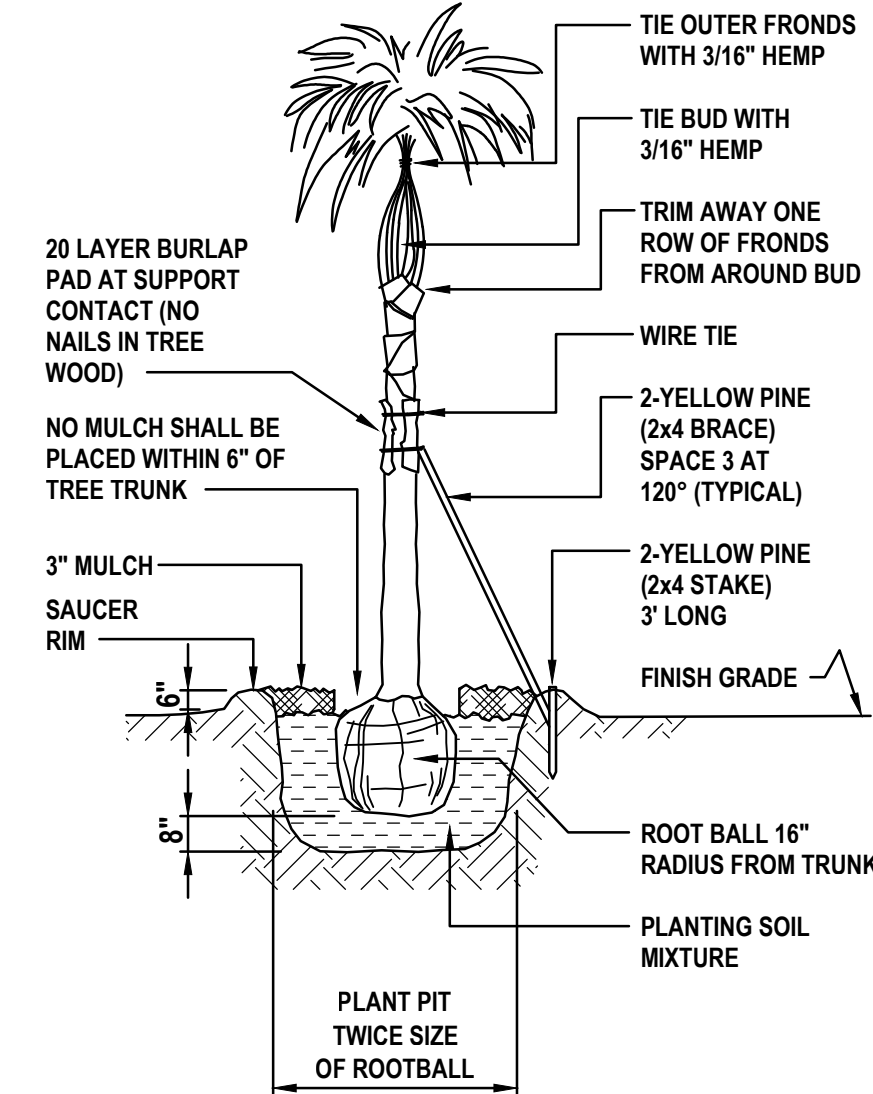
SHRUB PLANTING DETAIL

NOT TO SCALE



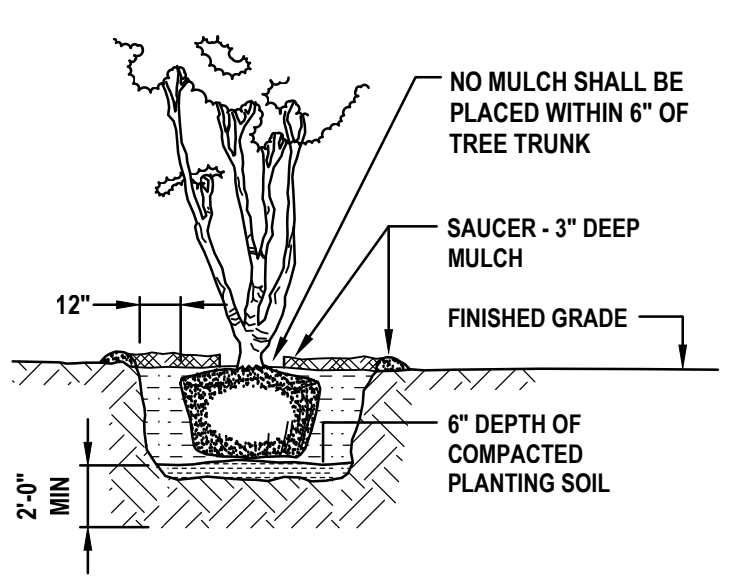
TREE PLANTING DETAIL

NOT TO SCALE



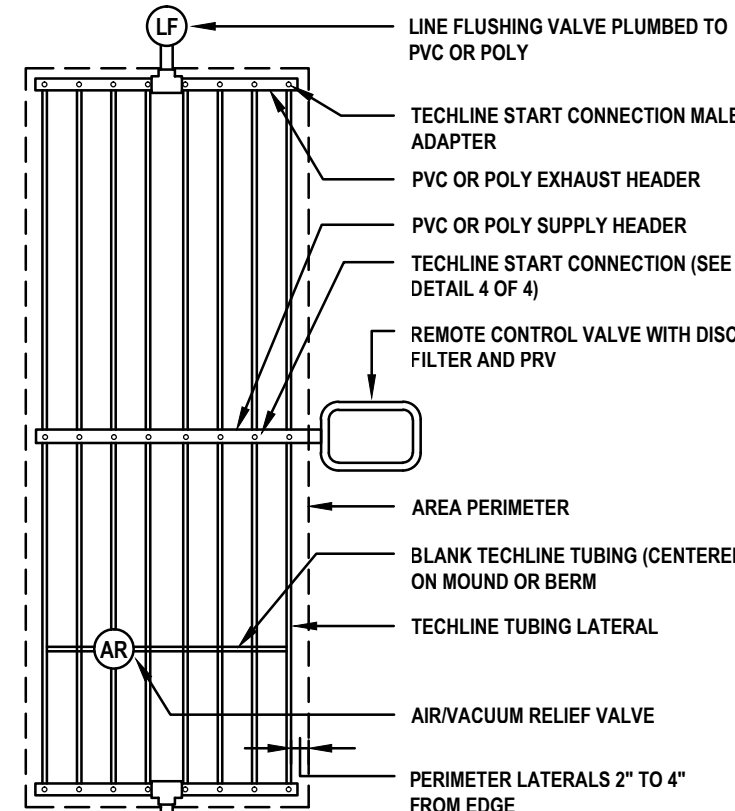
PALM TREE PLANTING DETAIL

NOT TO SCALE

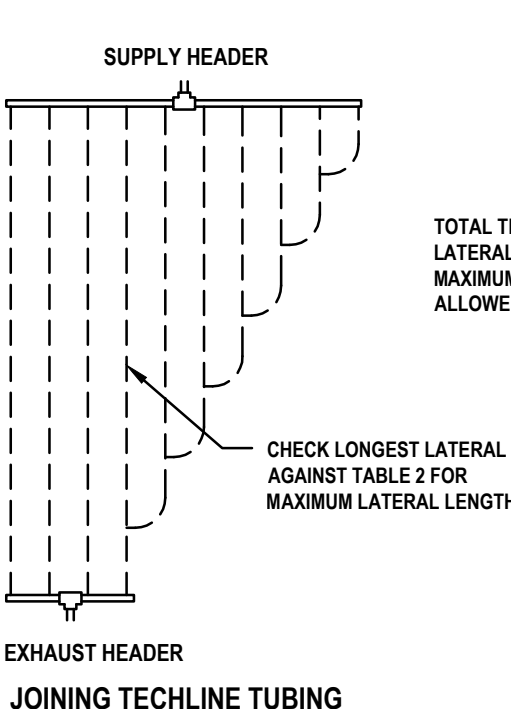


MULTI-TRUNK PLANTING DETAIL

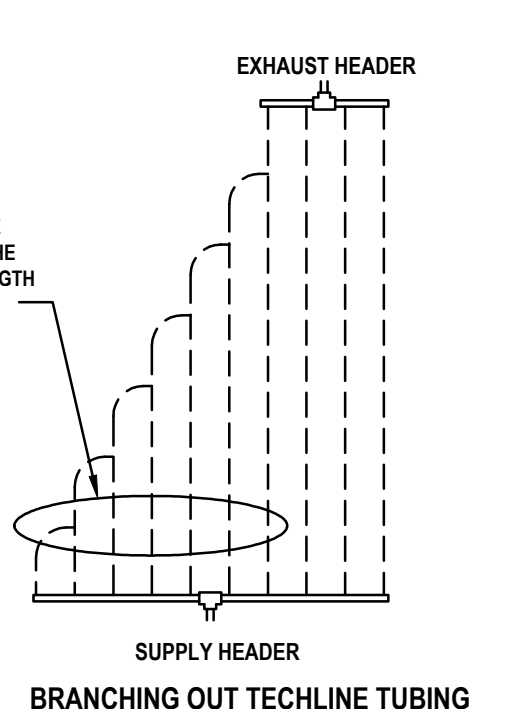
NOT TO SCALE



TECHLINE CENTER FEED LAYOUT



JOINING TECHLINE TUBING



BRANCHING OUT TECHLINE TUBING

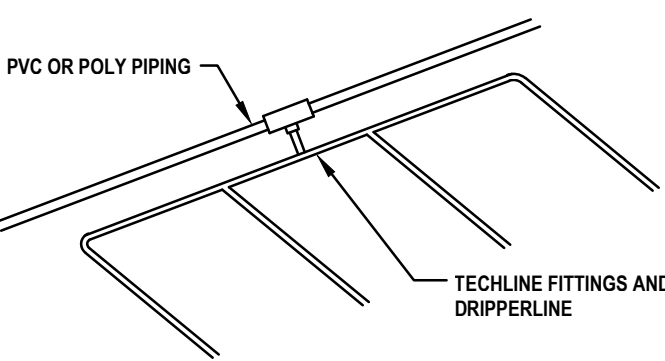
CENTER FEED LAYOUTS:
• WHERE LAYOUT FLEXIBILITY EXISTS, IT IS RECOMMENDED THAT CENTER FEED LAYOUTS BE USED. THIS ALLOWS FOR THE MOST EVEN FLOW OF WATER THROUGHOUT THE ZONE.

• CENTER FEED LAYOUTS ALSO ALLOW YOU TO MAXIMIZE THE LENGTHS OF TECHLINE THAT CAN BE RUN.

OTHER PIPING LAYOUTS:
• WHEN BRANCHING OUT, OR JOINING TECHLINE, ONE OF TWO RULES APPLY, RULE 1 - WHEN BRANCHING OUT TECHLINE FROM THE SUPPLY HEADER, TOTAL ALL "BRANCHED OUT" DRIPPERLINE AND CHECK THE SUM AGAINST THE MAXIMUM LATERAL LENGTH IN TABLE 2. RULE 2 - WHEN JOINING DRIPPERLINE LATERALS FROM THE SUPPLY HEADER, CHECK ONLY THE LONGEST LATERAL AGAINST THE MAXIMUM ALLOWABLE IN TABLE 2.

• TO REDUCE THE NUMBER OF GLUE JOINTS, SADDLES OR INSERT FITTINGS IN A HEADER, TRANSITION TO TECHLINE AND TECHLINE FITTINGS TO MAKE UP SUB-HEADERS. MAKING SURE TO FOLLOW THE GUIDELINE OF A MAXIMUM OF 0.5 GPM IN THE "SUB-HEADER" ZONE.

ZONE WATER REQUIREMENTS:
ONCE YOU HAVE LAID OUT THE TECHLINE, YOU NEED TO IDENTIFY HOW MANY DRIPPERS THERE ARE, AND THEIR TOTAL OUTPUT. THIS WILL HELP YOU DETERMINE MAINLINE, SUBMAIN AND SUPPLY/EXHAUST HEADER SIZING, VALVE, FILTER, AND REGULATOR SELECTION.



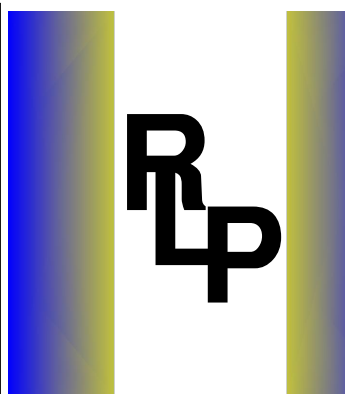
CREATING SUB-HEADERS TO REDUCE GLUE/SADDLE JOINTS

NETAFIM DETAIL

NOT TO SCALE

REVISIONS

DATE	DESCRIPTION



RICHARD L. POORE, LA

PLANNER & LANDSCAPE ARCHITECT

300 GATEWOOD COURT • ORLANDO BEACH, FLORIDA 32714
CELL: (386)212-8491 • RLA# 0000533

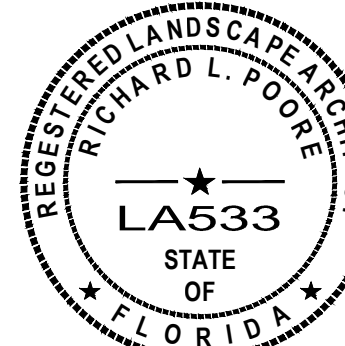
© 2001



424 LUNA BELLA LANE, SUITE 122
NEW SMYRNA BEACH, FL 32108

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING. ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING. COPYRIGHT 2014 ALL RIGHTS RESERVED.

LANDSCAPE AND IRRIGATION
DETAILS AND NOTES
CORNERSTONE GROVE PUD
HIDDEN LAKE DRIVE
PORT ORANGE, FL 32129



RICHARD L. POORE, L.A. # LA533

PROJECT No: 2016-237

DATE: MARCH 2017

DESIGN BY: RLP

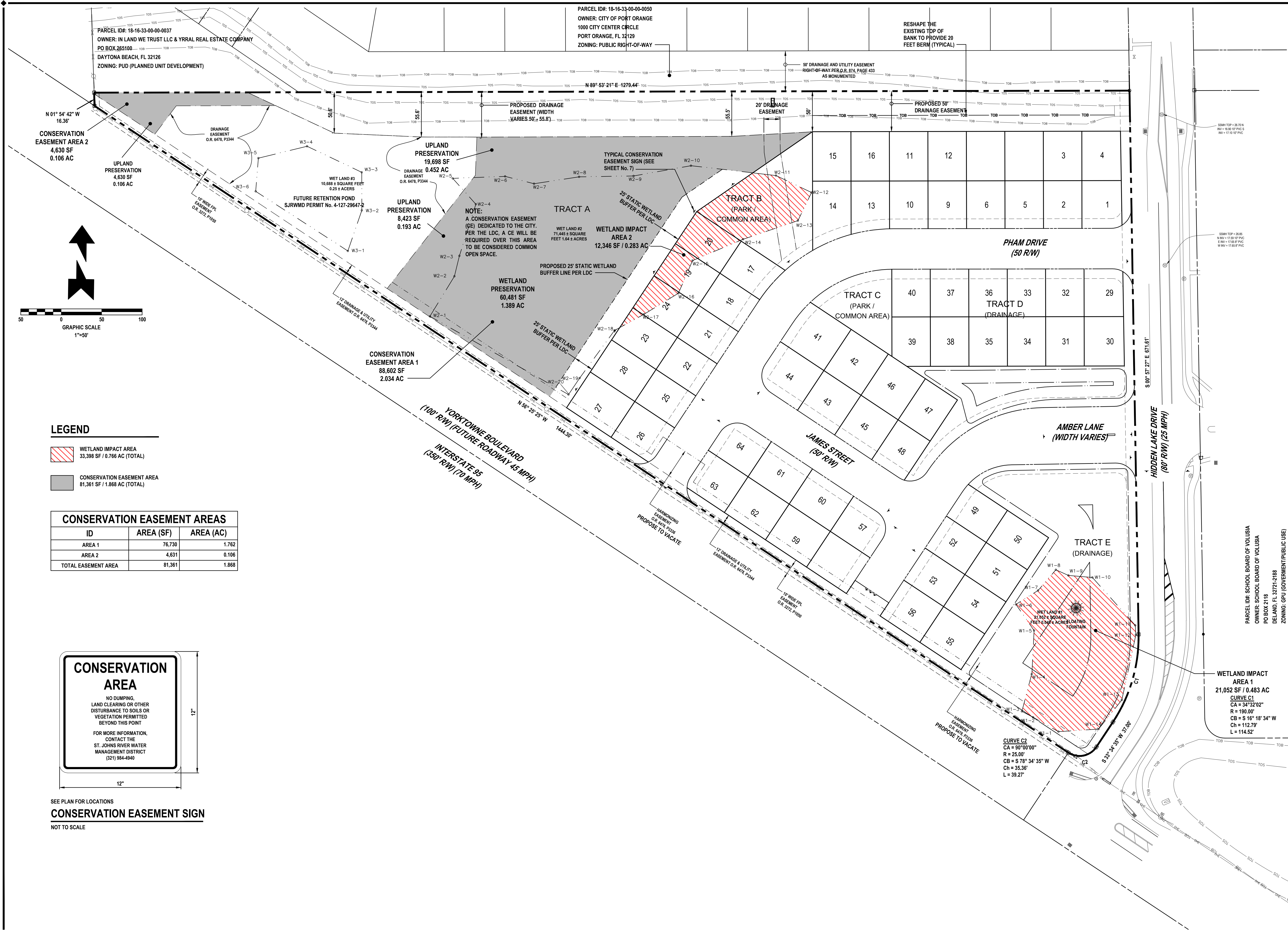
DRAWN BY: DAB

CHECKED BY: HHN

SCALE: 1" = 40'

DRAWING NUMBER

26



REVISIONS

DATE	DESCRIPTION

**NEWKIRK
ENGINEERING**

1370 North US1, Suite 204
Ormond Beach, Florida 32174
Phone (386) 290-7599
Harry@Newkirk-Engineering.com

Certificate of Authorization
No. 30209
© 2013

Civil Engineering
Transportation
Construction Engineering & Inspection

424 LUNA BELLA LANE, SUITE 122
NEW SMYRNA BEACH, FL 32108

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING. ANY USE OR REPRODUCTION IN WHOLE OR PART IS PROHIBITED WITHOUT THE EXPRESSED WRITTEN CONSENT OF NEWKIRK ENGINEERING. COPYRIGHT 2014 ALL RIGHTS RESERVED.

WETLAND IMPACT /
PRESERVATION MAP
CORNERSTONE GROVE PUD
HIDDEN LAKE DRIVE
PORT ORANGE, FL 32129

HARRY H. NEWKIRK, P.E. # 62971

PROJECT No: 2016-237

DATE: MARCH 2017

DESIGN BY: HHN

DRAWN BY: DAB

CHECKED BY: HHN

SCALE: 1" = 50'

DRAWING NUMBER

27

LEGEND

- WETLAND IMPACT AREA
33,398 SF / 0.766 AC (TOTAL)
- CONSERVATION EASEMENT AREA
81,361 SF / 1.868 AC (TOTAL)

CONSERVATION EASEMENT AREAS			
ID	AREA (SF)	AREA (AC)	
AREA 1	76,730	1.762	
AREA 2	4,631	0.106	
TOTAL EASEMENT AREA	81,361	1.868	

SEE PLAN FOR LOCATIONS
CONSERVATION EASEMENT SIGN
NOT TO SCALE