



AGENDA
PLANNING COMMISSION
CITY OF PORT ORANGE

Meeting Date: Thursday, February 22, 2024

Time: 5:30 PM

Location: Council Chambers, City Hall
1000 City Center Circle
Port Orange

A. CALL TO ORDER

1. Pledge of Allegiance
2. Roll Call

B. DISCUSSION/ACTION

3. Consideration of Minutes - January 25, 2024
4. APPLICATION: CONDITIONAL USE EXTENSION/Christ the King Community Church
CASE NO.: CUSE-24-0001
APPLICANT: Scott Kirschner, Christ the King Community Church
STAFF CONTACT: Suzette Cameron, Senior Planner (386) 506-5676

A request by the Applicant to extend a Conditional Use for Christ the King Community Church to hold outdoor church services and other church-related programs for an additional two years or until July 2026.

5. APPLICATION: Harbor Landings Subdivision Plat and Plans
CASE NO.: SUBD-23-0002
APPLICANT: Cody Bogart, P.E., Newkirk Engineering, Inc.
STAFF CONTACT: Penelope Cruz, Planning Manager (386) 506-5671

A request by the applicant for approval of the Harbor Landings Subdivision Plat and Plans.

C. OTHER BUSINESS

6. Commissioner Comments
7. Staff Comments

D. PUBLIC COMMENTS

E. ADJOURNMENT

NOTICES – PURSUANT TO SECTION 286.0105 OF THE FLORIDA STATUTES, IF ANY PERSON DECIDES TO APPEAL ANY DECISION MADE BY THE PLANNING COMMISSION WITH RESPECT TO ANY MATTER CONSIDERED AT THIS PUBLIC MEETING OR HEARING, SUCH PERSON WILL NEED A RECORD OF THE PROCEEDINGS, AND THAT, FOR SUCH PURPOSE, SUCH PERSON MAY NEED TO ENSURE THAT A VERBATIM RECORD OF THE PROCEEDINGS IS MADE, WHICH RECORD INCLUDES THE TESTIMONY AND EVIDENCE UPON WHICH THE APPEAL IS TO BE BASED. THE CITY DOES NOT PREPARE OR PROVIDE SUCH A RECORD.



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



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

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

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

REGULAR PLANNING COMMISSION MEETING MINUTES
COUNCIL CHAMBERS – CITY HALL
1000 CITY CENTER CIRCLE
PORT ORANGE, FLORIDA
JANUARY 25, 2024

THE REGULAR PLANNING COMMISSION MEETING of the City of Port Orange was called to order by Chair Maria Mills-Benat at 5:30 p.m.

Pledge of Allegiance

Roll Call

Present:

Stan Schmidt
Scott Steger
Mark Bowling
Maria Mills-Benat, Chair
Darrel "Bo" Bofamy
Lance Green
Thomas Jordan, Vice
Chair

Also Present:

Shannon Balmer,
Assistant City Attorney
Meghan Meyer,
Administrative Assistant

DISCUSSION/ACTION

3. Consideration of Minutes - December 14, 2023

Motion to approve the meeting minutes as presented from December 14, 2023 was made by Vice Chair Thomas Jordan and seconded by Commissioner Stan Schmidt. Motion carried unanimously by roll call vote.

Chair Maria Mills-Benat started off by announcing that Items #4 and #5 will be opened up for discussion together and Commissioners will make their motions at the end to be voted on separately.

4. APPLICATION: Large-Scale Comprehensive Plan

Amendment/Hammock Preserve

CASE NO.: CPAM-23-0001

LOCATION: North and south side of Madeline Avenue, east of Williamson Boulevard

APPLICANT: Mark Watts, Esq., Cobb Cole

STAFF CONTACT: Penelope Cruz, Planning Manager (386) 506-5671/pcruz@port-orange.org

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A request by the applicant to amend the Comprehensive Plan as follows:

1. Amend the Future Land Use (FLU) Map to change the FLU designation for ±5.2 acres of Parcel 1 (Parcel 6201-00-00-0010) from *Urban Medium Density Residential* (4-8 units/acre) to *Commercial*, and change the FLU designation of Parcel 2 (Parcel 6201-00-00-0012), consisting of ±32.4 acres, from *Suburban Residential* (0-2 units/acre) to ±29.9 acres of *Urban Medium Density Residential* (4-8 units/acre) and ±2.5 acres of *Commercial*.
2. Add a policy to the FLU Element to limit development on a 149.2-acre site to a maximum of 873 residential units and 40,000 square feet of commercial.

5. APPLICATION: PUD Rezoning and Hammock Preserve Planned Unit Development (PUD) Master Development Agreement and Conceptual Development Plan

CASE NO.: PRZA-23-0007

LOCATION: North and south side of Madeline Avenue, east of Williamson Boulevard

APPLICANT: Mark Watts, Esq., Cobb Cole

STAFF CONTACT: Penelope Cruz, Planning Manager (386) 506-5671/pcruz@port-orange.org

A request by the applicant to rezone 32.4 acres from R-8SF (single-family residential) to PUD (Planned Unit Development) and establish the Hammock Preserve Master Development Agreement and Conceptual Development Plan for a 149.2-acre site.

Penelope Cruz, Planning Manager, provided details of both requests and answered questions from the Commissioners.

Vice Chair Jordan asked if there can be any structure built on parcel 3 and how parcel 3 helps with the drainage on parcel 1 and 2. Ms. Cruz stated that there can not be anything built on parcel 3 due to it being for drainage and preservation. Ms. Cruz stated that everything connects with the B19 canal. Vice Chair Jordan asked about the 13 projects on how the peak traffic keeps changing. Ms. Cruz stated that the list of the 13 projects have not been finalized at this time and that if this is approved more detailed traffic analysis will be done at the time of site plan or subdivision plan submittal.

Mark Watts, Esq, Cobb Cole, on behalf of the Applicant, spoke about the history of the land and details of what is proposed to be built.

Jessica Gow, Esq, Cobb Cole, on behalf of the Applicant, spoke about the how the project would look once developed.

Kris Rowley, Zev Cohen and Associates, Inc., Civil Engineer, explained about the stormwater plan for each parcel of land.

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Dwight Durant, Zev Cohen and Associates, Inc., Engineer, addressed drainage improvements.

Sans Lassiter, PE, President and Founder of LTG, Inc explained the traffic analysis and the potential improvements that could help alleviate impacts.

Chair Mills-Benat opened up the floor for public comments.

Dennis Hoffman, resident in the neighboring community, spoke about how bad the traffic will be and the height of the buildings.

Robert Reinhegan, resident in the neighboring community, explained that there should be a reduced amount of units.

Lisa Hutchinson, resident in the neighboring community, stated that the traffic is going to increase and the amount and height of the buildings was excessive.

Barry Pitek, resident in the neighboring community, asked if nothing happens to the projects location what will be built instead. Chair Maria Mills-Benat stated that anything can be built that is already zoned and the applicant is trying to change the zoning to make it better.

Anita Norwood, resident in the neighboring community, stated that the traffic on Madeline will increase and is hoping for an expansion of the road.

Commissioner Bo Bofamy mentioned that even though the traffic will be bad, it is still a good plan to build in that area.

Commissioner Lance Green stated that the concept of the project is a good idea but hoping that Madeline Road will be expanded in the future.

Vice Chair Thomas Jordan agrees with the project being built but, it seems that the traffic will increase with all the projects happening.

Chair Maria Mills-Benat also agreed with the traffic and drainage issues but feels this project is looking more ahead than projects in the past decades.

Motion to approve Case No. CPAM -23-0001 including the policy recommendation to add the FLU element for density limits was made by Vice Chair Thomas Jordan and seconded by Commissioner Stan Schmidt. Motion carried 5 – 2 by roll call vote with Commissioner Lance Green and Vice Chair Thomas Jordan voting no.

Motion to approve Case No. PRZA-23-0007 was made by Vice Chair Thomas Jordan and seconded by Commissioner Scott Steger. Motion carried 5 – 2 by roll call vote with Commissioner Lance Green and Vice Chair Thomas Jordan voting no.

Ms. Cruz indicated that both of these items will be scheduled for the first reading at the City Council meeting on March 5, 2024.

OTHER BUSINESS

6. Commissioner Comments

Commissioner Scott Steger commented that the Planning Commission can only advocate for making changes when multi-agency roads are involved, including County and State roads.

Vice Chair Jordan pointed out that developers wouldn't make apartment complexes if they didn't feel there was a demand for them.

7. Staff Comments

There were none.

PUBLIC COMMENTS

Mr. Durant, speaking on a resident level, says that this projects impact fees will help to alleviate the problems and get the road expanded.

ADJOURNMENT - 7:35 p.m.

Chair Maria Mills-Benat



STAFF REPORT

CONDITIONAL USE EXTENSION/CHRIST THE KING COMMUNITY CHURCH

CASE NO. CUSE-24-0001

REQUEST:	Extend a Conditional Use for Christ the King Community Church to hold outdoor church services and other church-related programs for an additional two years or until July 2026.
APPLICANT:	Scott Kirschner, Christ the King Community Church
PROPERTY OWNER:	Christ the King Community Church Port Orange, Inc.
LOCATION:	6015 Spruce Creek Road (see Figure 1)
STAFF CONTACT:	Suzette Cameron, Senior Planner (386) 506-5676
STAFF RECOMMENDATION:	Approval
PLANNING COMMISSION:	February 22, 2024

INTRODUCTION

In July 2020, the City Council approved the initial request for a Conditional Use for the Christ the King Community Church to use their property over a two-year period to hold outdoor church services and activities while the church finalized design plans to construct its permanent facility on the subject property. The subject property is located at 6015 Spruce Creek Road, on the southeast corner of Central Park Boulevard and Spruce Creek Road.

In March 2022, the City Council approved an additional two-year extension to allow the church to continue using the site as the church constructed its permanent facility. The church had previously anticipated construction would begin in Fall 2022 and be completed by early 2024. The current Conditional Use expires on July 21, 2024. According to the church, finances and construction industry delays prevented construction from starting as previously anticipated (See Exhibit A). Therefore, the church is requesting an additional two-year extension of the Conditional Use to continue holding outdoor services and other church-related programs and meetings on the subject property until their permanent facility is completed. According to the church, construction is anticipated to start in the Summer of 2024 and be completed in the Summer of 2025.

Figure 1: Location Map



BACKGROUND

The current Conditional Use allows the property to be used for church service on Sunday and holidays, with church-related activities on evenings generally after 5 pm. As part of the approved Conditional Use, the applicant installed and maintains the following site improvements:

- A monument sign with landscaping around the sign base.
- Picnic tables, stage, exterior string lights, two wood-fenced storage areas for a trailer, trash receptacles, and other items for property use and maintenance.
- Set-up of a tent for church service during times with inclement weather.
- Designated parking areas on existing cleared grassed areas to accommodate up to 125 vehicles. Parking areas are required to be rotated periodically to keep grassed areas in good condition.
- A driveway apron within the right-of-way and ten feet beyond the right-of-way off Spruce Creek Road.
- Power into the site via an existing power pole on the west property line.
- Water to the site from an existing water service on Spruce Creek Road.
- Parking of a food truck/coffee vendor during worship services



Above: Subject Property Looking West Toward Spruce Creek Road



Above: Subject Property Looking East Toward Central Park Boulevard



Above: Looking Southeast Toward Subject Property with Installed Monument Sign

DEVELOPMENT PROPOSAL

The church had a site plan prepared by a licensed engineer and received site plan approval in December 2021 to construct a $\pm 9,100$ square-foot building, along with associated site improvements on the subject property (Case No. 21-80000004). The church initially anticipated construction of the permanent facility to start in Fall 2022. However, due to high construction costs and material shortages at that time, the church focused on paying off the mortgage for the subject property and revising the approved site plan to add an auditorium building and more parking in addition to the previously approved church building. The church now anticipates construction to start in Summer 2024.

Figure 2: Applicant's Proposed Site Plan



According to the Government/Public Use (GPU) zoning district, a house of worship is a permitted use in the GPU zoning district, so the proposed Conditional Use is consistent with the subject property's current zoning. Typically, the use of a site is associated with a developed permanent building; however, in this case, the use could occur outside and without a building. The church has been using the site for this use for the past four years, and there have not been any complaints.

REVIEW CRITERIA

When reviewing an application for a Conditional Use, the Planning Commission and City Council must consider the following requirements and criteria [Chapter 18, Section 1(d)(2) of the Land Development Code]. During the review of the 2020 Conditional Use request and the 2022 Extension, the Planning Commission and City Council found that the proposed use met these requirements and criteria.

- (a) Traffic generation and access for the proposed use shall not adversely impact adjoining properties and the general public safety.*

No adverse impacts to adjoining properties and the general public safety are anticipated with the approval of the Conditional Use extension. The property will be accessed through designated access points along Spruce Creek Road and Central Park Boulevard. According to the Code of Ordinances, vehicles are also allowed to park in the Central Park Boulevard parkage, the grass area between the private property line and the paved public street, subject to approval from the owner of the property abutting the public street.

According to the latest traffic counts for Central Park Boulevard, Hensel Road, and Spruce Creek Road, capacity exists on these roadways to accommodate the Conditional Use and future development of this property. The church would only use the site on weekends for worship and small group meetings on weekdays. Therefore, staff does not anticipate any adverse impacts to the safety of the general public. The church has been using the site for this use for the past four years, and there have not been any complaints about adjoining properties being adversely impacted.

- (b) 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.*

This criterion is met. Parking will be provided throughout the grassed site. The applicant does not plan to develop impervious parking areas as part of the Conditional Use. The intent is to have members of the church park throughout the site in designated grass parking areas. According to the church, the anticipated number of guests is between 200 to 250. Based on the parking requirements in the Land Development Code, 66 to 84 parking spaces would be needed. According to the applicant, there has been sufficient space for church members to park on the subject property over the past three and a half years.

The church has designated multiple areas for parking, so areas are not overutilized and become rutted, uneven, unable to drain properly, unsightly, or unmaintained. According to the Land Development Code, if grassed parking areas are utilized so as to become rutted, uneven, unable to drain properly, unsightly, or unmaintained, the city may require that the area be paved. In addition, parking within the parkage along Central Park Boulevard occurs occasionally and is permissible by the Code of Ordinances and the abutting property owner (Christ the King Community Church Port Orange, Inc.).

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

This criterion is met. The existing landscaping along the property lines and rights-of-way will remain and serve as the buffer. The applicant will be required to maintain the landscaping on-site during the duration of the Conditional Use. In addition, landscaping was installed around the base of the monument sign.

- (d) 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.*

This criterion will be addressed with the submittal of building permits for the permanent facility, consistent with the approved site plan. Items that will remain on-site to facilitate the use of the site as an outdoor church will be required to be screened, such as the equipment trailer, portable toilet, garbage cans, etc. The applicant is aware of these necessary improvements. As part of the 2020 Conditional Use approval, a permanent sign was installed with additional architectural and landscape treatment.

The applicant is aware that tents greater than 10' x 10' require a building permit to ensure proper installation and must be submitted to install a tent if there is pending inclement weather over a weekend so that service can occur. The applicant is also aware that the timeframe the tent could remain up would be limited. To date, the applicant has complied with this requirement.

- (e) Size, location, or number of conditional uses in an area shall be limited so as to maintain the overall character of the district as intended by this code.*

This criterion is met. The 2020 Conditional Use approval established the first use of this type in this area, and as an interim use, it will be removed once the permanent church is built. The conditional use is intended to establish a timeframe and parameters for the temporary use of the site for outdoor church service until their permanent building is constructed.

In granting a Conditional Use, the Planning Commission may recommend, and the City Council may prescribe, appropriate conditions and safeguards to ensure compliance with the requirements of the Land Development Code. Such conditions may include time limits for the duration of the Conditional Use, specific minimum or maximum limits to regular

code requirements, or any other conditions reasonably related to the requirements and criteria of this chapter.

RECOMMENDATION

Based on the findings of this report, Staff recommends **approval** of the Conditional Use extension to allow Christ the King Church to continue to hold outdoor church services and other church-related programs for an additional two years while site construction on the permanent facility is completed, subject to the following conditions:

1. The Conditional Use will expire on July 21, 2026.
2. No more than one food truck/coffee vendor for church services.
3. Site lighting may emit no more than 0.5 foot-candles at the property line and will not spill over onto adjacent properties and rights-of-way.
4. Sound or noise projecting from this shall not exceed a dBA of 60 between the hours of 7:00 am and 10:00 pm and a dBA of 50 between 10:00 pm and 7:00 am. The permit holder will be responsible for monitoring for noise violations.
5. The Conditional Use is only valid for Christ the King Church.
6. If other events are planned besides activities mentioned in the Conditional Use, a special event permit must be submitted and approved (e.g., Fall Festival).
7. The screening for equipment to remain on site, monument sign, and concrete driveway apron are required to be maintained in good condition.

ATTACHMENTS

Exhibit A – Letter of Request from Applicant

Exhibit B – Concept Plan

EXHIBIT A



RECEIVED

JAN 11 2024

CITY OF PORT ORANGE

January 11, 2024

Dear Port Orange Planning Team, Planning Board & City Council,

Our Christ the King family is requesting a 24-month extension on our approved Conditional Usage which expires summer of 2024.

We purchased the 7.5 acre lot located at 6015 Spruce Creek Road, Port Orange, FL 32127 in December of 2019. We have worked diligently to clear this property and make it beautiful for our church family to use and for our neighbors to enjoy! This location has served us well over the past 4 years. In addition to our regular weekend services, we have been able to have successful large community gatherings. These include Easter & Christmas Eve services, as well as Trunk or Treat and Church Birthday Picnics. Spruce Creek High School's Cross Country has also used it for their year end banquets over the past few years. Our neighbors often enjoy the beauty of our park like space. It has been a pleasure to offer our property to them!

To date, we have paid off the original mortgage on the property and have a total investment of approximately \$780,000 including cost of the property, improvements to the site and architectural and engineering services for our proposed 9,000 square foot multipurpose facility.

We have signed a contract with Covenant Development Group from Sanford, FL for the construction of our building and are entering the final approval phase of financing with Wesleyan Investment. We have had our initial pre-application meeting with the city and anticipate our site development and building to begin in early spring. We are hopeful that this project can be completed by the winter of 2024.


1 1-17-24

We are asking for a 24-month extension to our conditional usage to allow ample time and contingency for the unexpected in this building process.

Thank you for your consideration and understanding!

Sincerely,

A handwritten signature in dark ink, appearing to read 'Scott Kirschner', with a long horizontal flourish extending to the right.

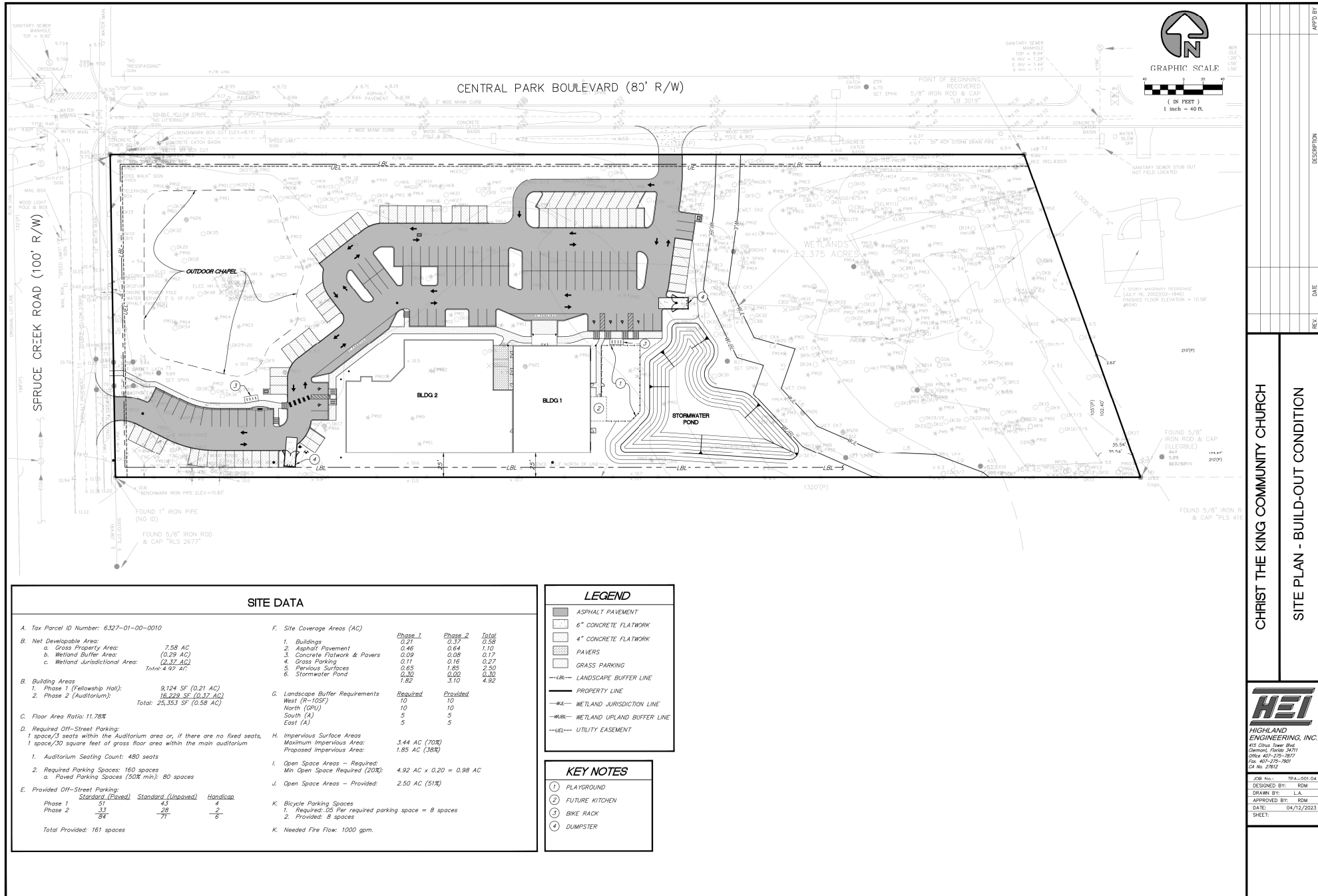
Scott Kirschner, Lead Pastor

(386) 986-8434

Christ the King Community Church Port Orange
Mailing Address: 1723 Creekwater Blvd., Port Orange, FL 32128
Physical Address: 6015 Spruce Creek Road, Port Orange, FL 32127
www.christthekingportorange.com

A handwritten signature in dark ink, appearing to read 'V.R.', with the date '1-17-24' written below it.

EXHIBIT B



SITE DATA

A. Tax Parcel ID Number: 6327-01-00-0010

B. Net Developable Area:

a. Gross Property Area: 7.58 AC
b. Wetland Buffer Area: (0.29 AC)
c. Wetland Jurisdictional Area: (2.17 AC)
Total: 4.92 AC

B. Building Areas

1. Phase 1 (Fellowship Hall): 9,124 SF (0.21 AC)
2. Phase 2 (Auditorium): 16,229 SF (0.37 AC)
Total: 25,353 SF (0.58 AC)

C. Floor Area Ratio: 11.78%

D. Required Off-Street Parking:

1 space/3 seats within the Auditorium area or, if there are no fixed seats,
1 space/30 square feet of gross floor area within the main auditorium

1. Auditorium Seating Count: 480 seats
2. Required Parking Spaces: 160 spaces
a. Paved Parking Spaces (50% min): 80 spaces

E. Provided Off-Street Parking:

	Standard (Paved)	Standard (Unpaved)	Handicap
Phase 1	51	43	4
Phase 2	33	28	2
	84	71	6

Total Provided: 161 spaces

F. Site Coverage Areas (AC)

	Phase 1	Phase 2	Total
1. Buildings	0.91	0.97	0.58
2. Asphalt Pavement	0.46	0.64	1.10
3. Concrete Flatwork & Pavers	0.09	0.08	0.17
4. Grass Parking	0.11	0.16	0.27
5. Pervious Surfaces	0.65	1.85	2.50
6. Stormwater Pond	0.30	0.00	0.30
	1.82	3.10	4.92

G. Landscape Buffer Requirements

	Required	Provided
West (R-10SF)	10	10
North (OPU)	10	10
South (A)	5	5
East (A)	5	5

H. Impervious Surface Areas

Maximum Impervious Area:	3.44 AC (70%)
Proposed Impervious Area:	1.85 AC (38%)

I. Open Space Areas - Required:

Min Open Space Required (20%):	4.92 AC x 0.20 = 0.98 AC
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J. Open Space Areas - Provided:

2.50 AC (51%)

K. Bicycle Parking Spaces

1. Required: 0.5 Per required parking space = 8 spaces
2. Provided: 8 spaces

L. Needed Fire Flow: 1000 gpm.

LEGEND

- ASPHALT PAVEMENT
- 6" CONCRETE FLATWORK
- 4" CONCRETE FLATWORK
- PAVERS
- GRASS PARKING
- LANDSCAPE BUFFER LINE
- PROPERTY LINE
- WETLAND JURISDICTION LINE
- WETLAND UPLAND BUFFER LINE
- UTILITY EASEMENT

KEY NOTES

1. PLAYGROUND
2. FUTURE KITCHEN
3. BIKE RACK
4. DUMPSTER

CHRIST THE KING COMMUNITY CHURCH

SITE PLAN - BUILD-OUT CONDITION

HEI
HIGHLAND
ENGINEERING, INC.

415 Citrus Tower Blvd.
Citrus, Florida 34711
Office: 407-275-7877
Fax: 407-275-7801
Cell: 407-275-7802

JOB No.: 104-001-04
DESIGNED BY: ROM
DRAWN BY: L.A.
APPROVED BY: ROM
DATE: 04/12/2013
SHEET: 1



STAFF REPORT

HARBOR LANDINGS PLAT & PLANS

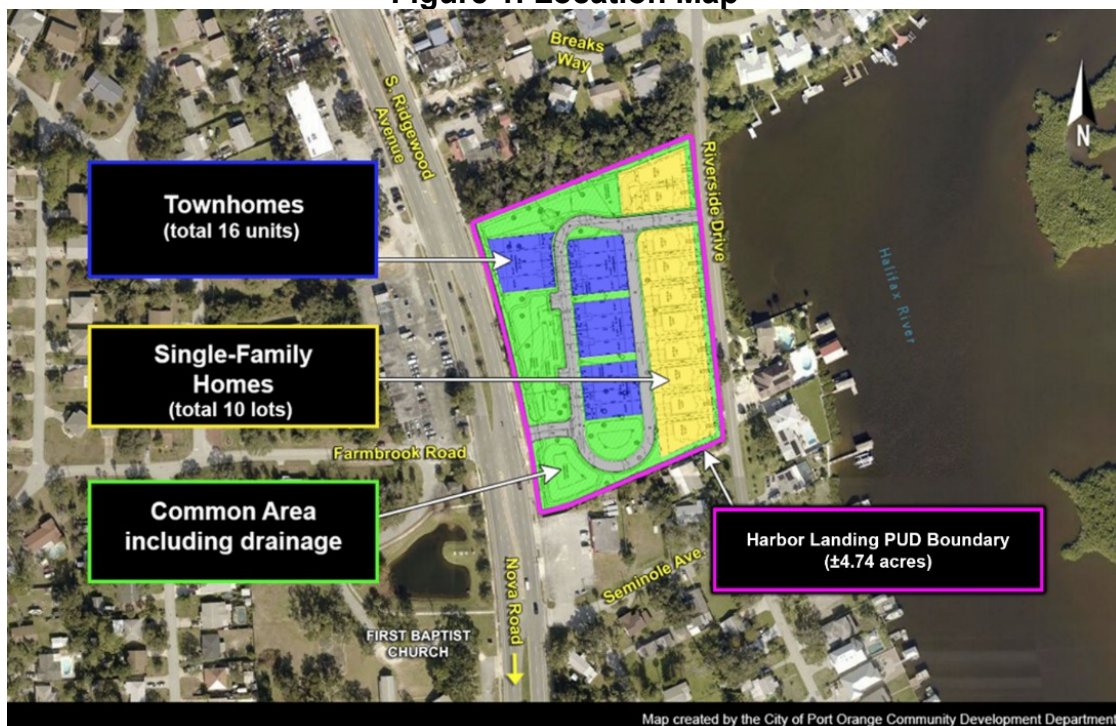
CASE NO. SUBD-23-0002

REQUEST:	Approval of the Harbor Landings Subdivision Plat and Plans
LOCATION:	Between Riverside Drive and Ridgewood Avenue, north of Seminole Avenue (Figure 1)
APPLICANT:	Cody Bogart, P.E., Newkirk Engineering, Inc.
OWNER:	Tylo Investments, LLC
STAFF CONTACT:	Penelope Cruz, Planning Manager (386) 506-5671
STAFF RECOMMENDATION:	Approval
PLANNING COMMISSION:	February 22, 2024

DEVELOPMENT PROPOSAL

The applicant requests approval of the Harbor Landings Subdivision Plat and Plans to subdivide a ± 4.74 -acre property into 10 single-family lots and 16 townhome lots, along with tracts for tree preservation and stormwater retention. The review of a subdivision plat is a ministerial review in that the approving body must only consider the technical criteria and lot dimensional requirements in the Harbor Landing Planned Unit Development (PUD) Master Development Agreement (MDA). The subject property is located between Riverside Drive and Ridgewood Avenue, north of Seminole Avenue.

Figure 1. Location Map

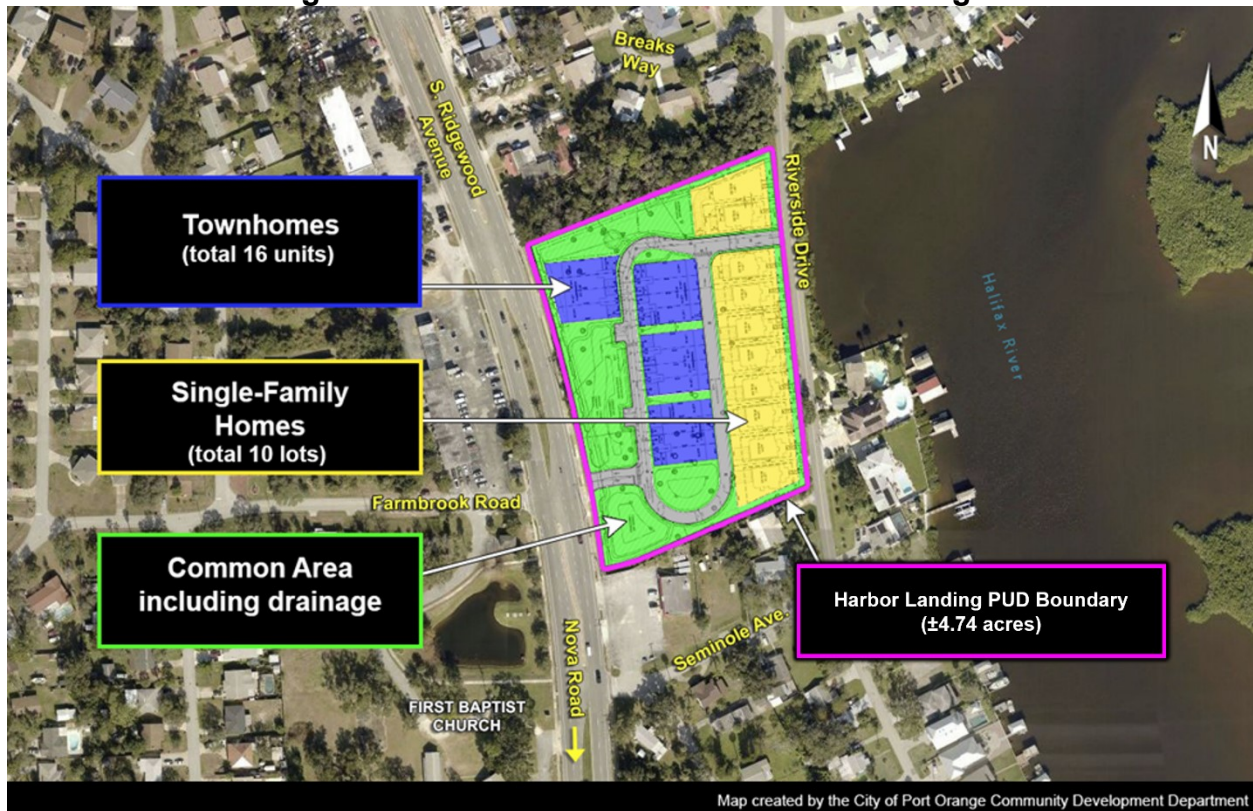


The subject property is currently vacant, zoned Planned Unit Development (PUD), and has a Future Land Use designation of *Urban Medium Density Residential (4-8 units/acre)*. In August 2019, the City Council approved the Harbor Landings PUD Master Development Agreement (MDA), which provides the framework for developing 10 single-family lots and 16 townhome lots subdivision.

The plat and subdivision plans have been designed according to the requirements of the Harbor Landing MDA and the City's Land Development Code (LDC). The proposed subdivision maintains the same layout shown on the approved Harbor Landings Conceptual Development Plan (CDP). The following subdivision improvements will be constructed:

- Ten 50-foot-wide lots along Riverside Drive and sixteen 40-foot-wide lots internal to the subdivision
- Private streets within the subdivision (travel lanes, 4-foot sidewalks internally, and streetlights)
- Two access points: 1) Riverside Drive and 2) Ridgewood Avenue
- A 5-foot sidewalk along Riverside Drive and Ridgewood Avenue
- Stormwater drainage infrastructure, including dry ponds
- Water, sewer, and irrigation infrastructure
- 20'-wide right-of-way landscape buffer along Ridgewood Avenue and a 10'-wide landscape buffer along Riverside Drive and the north and south boundary of the subdivision
- Open space and Common Areas with Tree Conservation Easements for the preservation of trees
- Common Open space and amenities for residents include a gazebo picnic area, internal sidewalk and trails around the retention areas and visitor parking for the townhomes
- 50% of all specimen trees on site will be preserved, including all 7 historic trees, and 15.2% overall tree preservation area
- \$21,720.96 in tree mitigation will be required to be paid into the City's Tree Bank before the issuance of a Development Order
- Compliance with all City, County, State, or Federal regulations that pertain to protected wildlife species and wetland protection and mitigation.

At this time, there are **no proposed** docks associated with the proposed subdivision. If the property owner establishes legal riparian rights adjacent to the subject property, an application for the development of docks may be allowed subject to the requirements outlined in the MDA, the LDC, and any applicable county, state, and federal law in place at the time of the application for dock permitting, and as otherwise required by law.

Figure 2. Subdivision Plan for Harbor Landings**CONCURRENCY REVIEW**

Public facilities and services such as roads, public infrastructure, schools, and recreational facilities are currently available to serve the proposed 10 single-family lots and 16 townhome lots (Table 1). The following discussion summarizes the impacts of the proposed development on these public facilities and services.

Table 1 - Infrastructure Impact Assessment

DEVELOPMENT VARIABLE	IMPACTS
Population ¹	62
A.M./P.M./Daily Peak Hour Trips ²	17 / 20 / 210 trips
Sanitary Sewer (gallons per day) ³	4,160 gallons
Potable Water (gallons per day) ⁴	4,680 gallons
Solid Waste (lbs. Per day) ⁵	199 pounds
Stormwater Drainage ⁶	See Note
Recreation & Open Space ⁷	0.4 acres

Notes:

1. Population: 2.39 persons per household (per 2020 Census)
2. Transportation: ITE Trip Generation Manual, 11th Edition – Land Use Code 210 and 215
3. Sanitary Sewer: 160 gallons per day per Equivalent Residential Unit
4. Potable Water: 180 gallons per day per Equivalent Residential Unit
5. Solid Waste: 3.21 pounds per person per day
6. Stormwater Drainage: LOS standard = 25-year, 24-hour event. The drainage system will be designed to meet the requirements of the Land Development Code.
7. Rec. & Open Space: 7 acres per 1,000 persons (0.007 acres/person)

Water and Sewer

The City has potable water and sanitary sewer capacity available to accommodate the proposed. All lots will be provided with stub-outs for utilities. Potable water and sanitary sewer lines will be installed in accordance with the approved utility plan for this project. Reclaimed water is not available in this area. A private well will be installed on-site to provide irrigation water for the subdivision.

Stormwater Drainage

The City's adopted level-of-service standard for stormwater drainage requires that all new retention/detention facilities be able to treat and convey the runoff from the 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 because 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 proposed subdivision design provides stormwater retention for the proposed development and complies with all current City stormwater design requirements and standard Construction details.

The drainage system for the Harbor Landings Subdivision consists of three dry retention ponds, interconnected by a series of pipes located under the proposed private road. The ponds will retain stormwater from the development before outfall to the Halifax River through a culvert under Riverside Drive.

Transportation

According to the Institute of Transportation Engineers (ITE) Trip Generation Manual, the trip generation rate for 10 single-family and 16 townhome lots is anticipated to generate 17 AM peak-hour trips, 20 PM peak-hour trips, and 210 daily trips. The roadways within the general area of the proposed subdivision are operating within the adopted level of service standards, and the traffic generated from the subdivision will not exceed the level of service standards for these roadways. Capacity exists for the estimated trips to be generated by the proposed subdivision.

The Institute of Transportation Engineers (ITE) Trip Generation Manual is nationally recognized by transportation professionals, including transportation engineers, transportation planners, consultants, educators, technologists, and researchers for conducting vehicle trip generation rate analysis studies, determining on-site circulation patterns, performing access management studies, and determining traffic signal timing.

Recreation and Open Space

According to the City's 2023 Concurrency Management Report, the City is not deficient in any recreational facilities categories and has sufficient facilities to support the additional population from the subdivision.

School Capacity

The Volusia County School District determined that the adopted level of service will be met, and capacity exists in the schools for the estimated 6 students that could be generated by the proposed subdivision (Exhibit A).

Architecture

The single-family residential units are proposed to be 3-story detached houses. The first floor will consist of garage and utility areas. The second and third floors will be the living area. According to the MDA, the townhomes are to be 2-story units with a garage and living area on the first floor and an additional living area on the second floor. The proposed single-family and townhome units will be designed to comply with the 35-foot maximum height in the Harbor landings MDA. The minimum Finished Floor Elevations (FFE) for all the structures in the subdivision will be required to comply with the City's Flood Plain Management requirements in the LDC.

Figure 3. Proposed Building Elevations for Single-Family Homes and Townhomes



CONSISTENCY WITH THE COMPREHENSIVE PLAN

The proposed subdivision is consistent with the Harbor Landings PUD Master Development Agreement and Conceptual Development Plan, which have already been determined to be consistent with the City's Comprehensive Plan. The subject property has a Future Land Use (FLU) designation of *Urban Medium Density Residential (4-8 units/acre)* on the City's Future Land Use Map. According to the Comprehensive Plan, the maximum gross residential density for the ± 4.74 -acre subject property is 35 units. The proposed development of 10 single-family lots and 16 townhome lots, or 5.549 units per acre on the ± 4.74 -acre subject property, is consistent with the allowable density for the current FLU designation on the subject property.

REMAINING COMMENTS TO BE ADDRESSED

The Harbor Landings Subdivision Plat and Plans have been reviewed by the Staff Development Review Committee (SDRC) and determined to be designed according to the requirements and dimensional standards in the Land Development Code (LDC) and the Harbor Landings MDA. There are minor formatting comments related to labeling on the subdivision plan that the applicant will need to address before this item is scheduled to be reviewed by the City Council.

RECOMMENDATION

A subdivision plat review is a ministerial review in that the approving body must consider the technical criteria of the Harbor Landings MDA and the LDC. The plat will be approved if the technical requirements are met. Staff recommends approval of the Harbor Landings

Subdivision Plat and Plans as all technical requirements in the Harbor Landings MDA and LDC are met.

ATTACHMENTS

Exhibit A – Volusia County School Board Letter

Exhibit B – Harbor Landings Subdivision Plat

Exhibit C – Harbor Landings Subdivision Plans



Carmen J. Balgobin, Ed.D
Superintendent of Schools

EXHIBIT A

School Board of Volusia County

Ms. Jamie M. Haynes, Chairman
Mrs. Anita Burnette, Vice Chairman
Mr. Ruben Colón
Mr. Carl Persis
Mrs. Jessie Thompson

School Concurrency Determination Concurrency Letter

September 13, 2023

Mr. Ty Lohman
TYLO Investments, LLC
850 John Anderson Dr
Ormond Beach, FL 32176

RE : Harbor Landings – City of Port Orange
School Concurrency Case # 23-08-21-002-R

Dear Mr. Lohman:

District staff reviewed the information regarding the residential project known as Harbor Landings associated with 4.74+/- acres of property. The property is located at or near the intersection of S Nova Rd and Ridgewood Ave within Port Orange city limits. Information provided in the school concurrency application indicates the development activity will consist of ten (10) single family homes and sixteen (16) multi-family townhome units.

The district uses a county wide Student Generation Rate (SGR) of (0.258) per single family dwelling unit and 0.137 per multi-family dwelling unit to calculate projected students. By applying the SGR to the use types in Table 1 below, the project could generate six (6) full time students.

Table 1

UNIT TYPE	SGR	UNIT COUNT	STUDENTS GENERATED
Single Family Dwelling Unit	0.258	10	3
Multi Family Dwelling Unit	0.137	16	3
Mobile/ Manufactured Home Dwelling Unit	0.052	0	0
Total		26	6

The Concurrency Analysis (Table 2, next page) adjusts for impacts to the Concurrency Service Areas (CSAs) by accounting for current school year enrollments, existing reservations at the impacted schools, and the projected students generated by the applicant. These factors give an associated utilization or Level of Service (LOS) percentage for each CSA.

The schools impacted by this development are Port Orange Elementary School, Silver Sands Middle School, and Spruce Creek High School.

Concurrency Analysis

FACILITIES SERVICES
3750 OLSON DRIVE ♦ DAYTONA BEACH, FL 32124
PHONE: (386) 947-8786 ♦ FAX (386) 506-5056

Table 2

Schools	Adopted LOS	SY 2022/23 Enrollment	Active Reservations	Existing LOS w/ Res	Students Generated by Request	Result LOS
Port Orange Elementary	115%	366	3	107%	2	107%
Silver Sands Middle	115%	1,171	41	104%	2	104%
Halifax CSA (Spruce Creek High)	120%	2,571	37	108%	2	108%
Other					6	

The adopted LOS standard for elementary and middle school is (115%) of permanent student stations, and (120%) for high school CSAs. This projected increase in students will not exceed the adopted LOS at any school level; therefore, the school district does not have an objection to the proposed site plan. Minimum planning considerations should include pedestrian and vehicular access, safety, connectivity, and buffering.

Please note that the School Board has the right to adjust the attendance boundaries to balance the student enrollment populations at these area schools. Therefore, students generated from this project may not attend the current assigned schools.

Should you need additional information, please contact me at (386) 947-8786, ext. 50806.

Sincerely,



Leineriza V. Divina
Coordinator, Planning

CC: Carmen J. Balgobin, Ed.D, Superintendent of Schools
Ron Young, Director of Planning & Construction
Penelope Cruz, AICP, AICP, City of Port Orange
James F. Roberts, VCSB Planning Services Project File



Certificate of School Concurrency

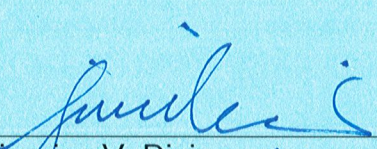
VOLUSIA COUNTY SCHOOL BOARD

Project Information	
Project Name	Harbor Landings
VCSB Project #	23-08-21-002-R
Jurisdiction Project #	
Parcel ID Numbers	6314-01-12-0010
Project Location	S Nova Rd and Ridgewood Ave
# of Residential Units	26
Residential Unit Type	10 Single Family Homes and 16 Mutli-Family Units
Property Owners	TYLO Investments, LLC
Applicant/Agent Name	Ty Lohman

This School Concurrency Certificate shall reserve student stations for the above referenced project and shall confirm that said project meets the School Concurrency requirements of the adopted Interlocal Agreement for Public School Facility Planning.

School Concurrency Analysis					
School Levels	Elementary	Middle	High	Other	Total Student Stations Reserved
Students Generated	2	2	2	0	6
<u>Comments:</u> This certificate is required to be included with the building permit submittal(s) as proof of school concurrency.					

This concurrency reservation shall expire two (2) years from the date of issuance of this certificate.


Leimerza V. Divina
Coordinator, Planning

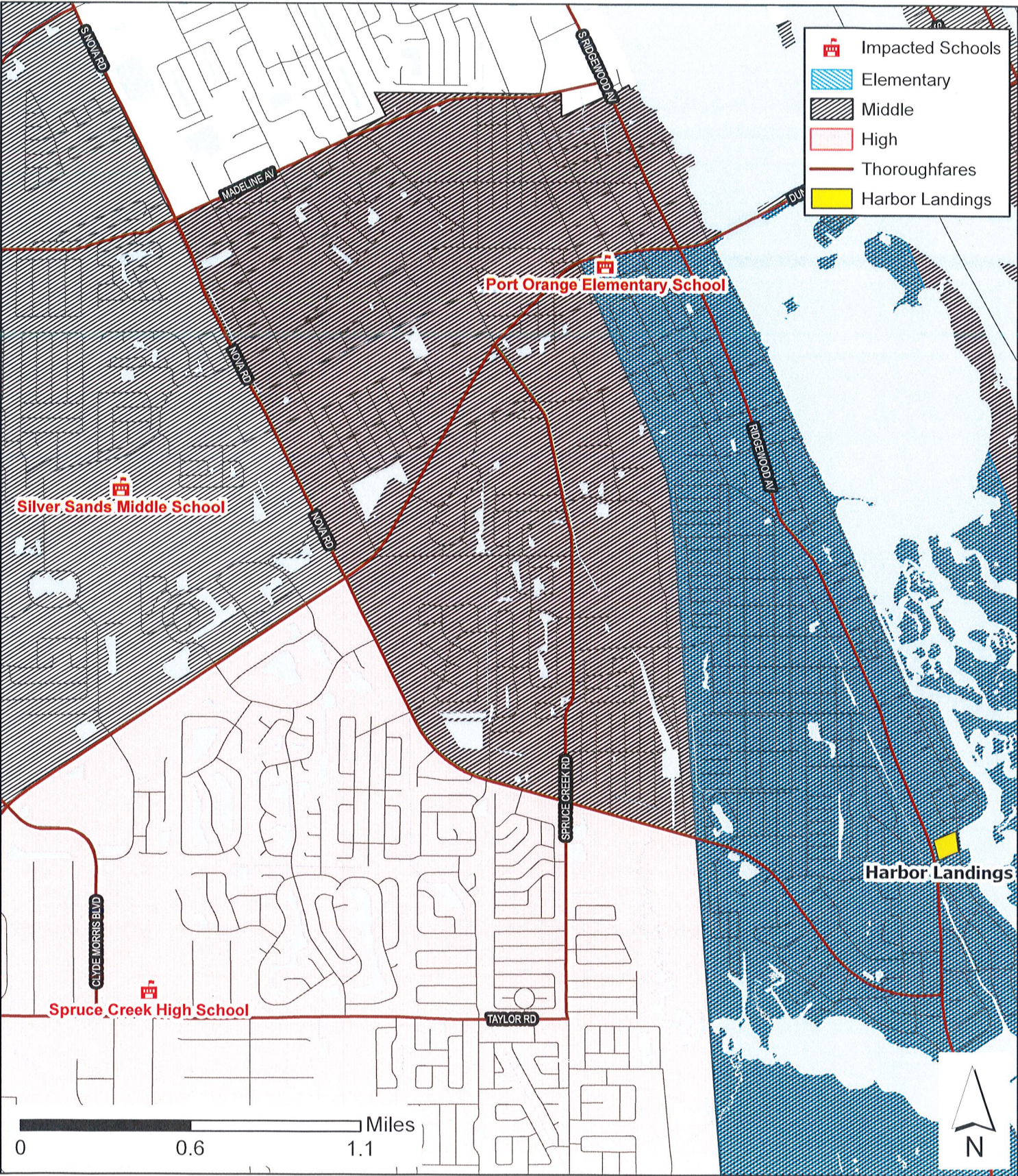
September 13, 2023
Issue Date

VCSB Schools Impacted by Development

School Concurrency Review - Harbor Landings



Created by Facilities Services
September 2023

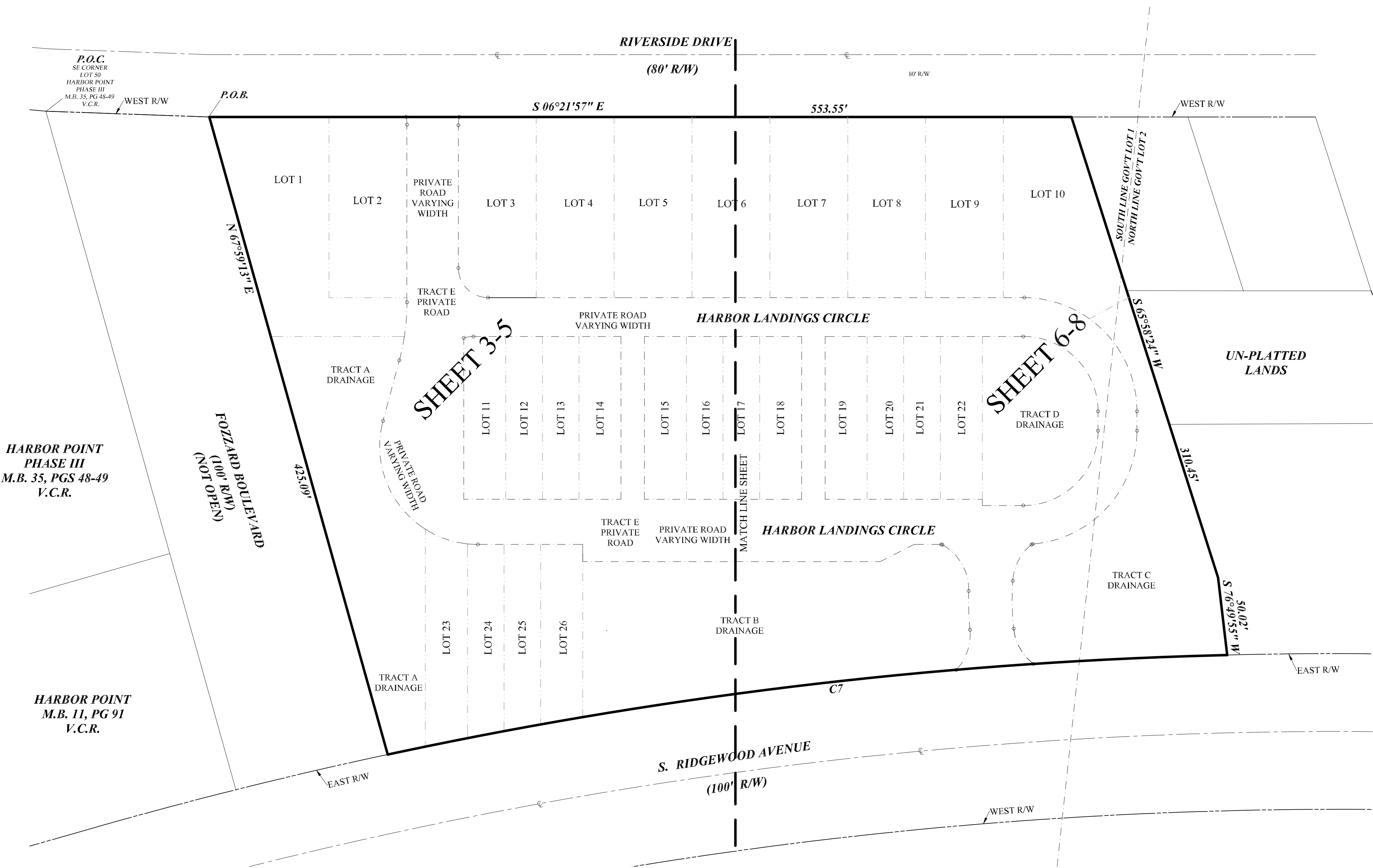
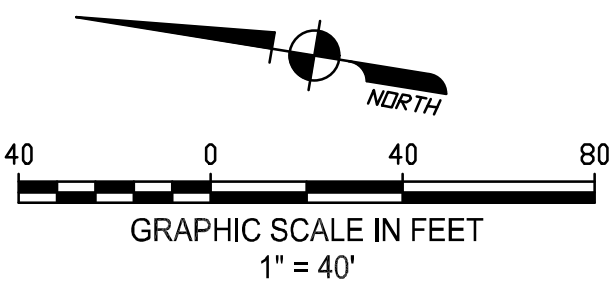


HARBOR LANDINGS

MAP
BOOK

PAGE

A PORTION OF GOVERNMENT LOT 2, SECTION 14, TOWNSHIP 16 SOUTH, RANGE 33 EAST, ALSO A RE-PLAT PORTION OF BLOCK 12, HARBOR POINT, AS PER MAP RECORDED IN MAP BOOK 11, PAGE 91, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, THE SAME BEING ALSO A PORTION OF THAT TRIANGULAR TRACT OF LAND AS SHOWN ON MAP RECORDED IN MAP BOOK 9, PAGE 199, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA



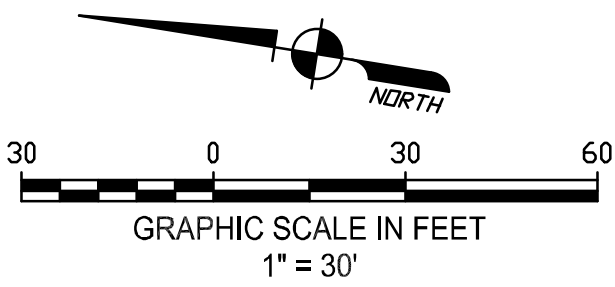
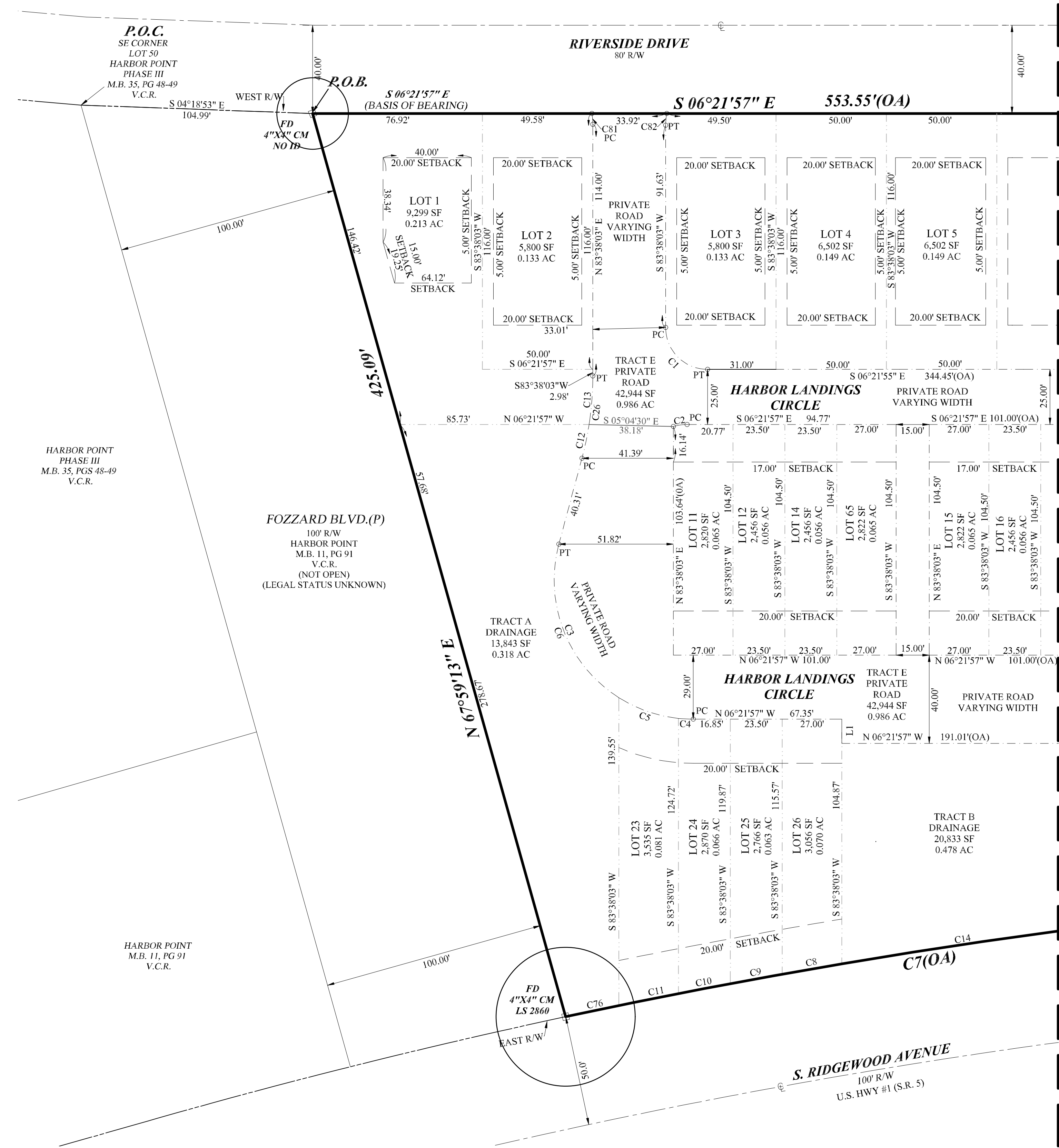
SHEET 2 OF 8

HARBOR LANDINGS

A PORTION OF GOVERNMENT LOT 2, SECTION 14, TOWNSHIP 16 SOUTH, RANGE 33 EAST, ALSO A RE-PLAT PORTION OF BLOCK 12, HARBOR POINT, AS PER MAP RECORDED IN MAP BOOK 11, PAGE 91, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, THE SAME BEING ALSO A PORTION OF THAT TRIANGULAR TRACT OF LAND AS SHOWN ON MAP RECORDED IN MAP BOOK 9, PAGE 199, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA

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LINE DATA:		
LINE	BEARING	DISTANCE
L1	N 83°38'03" E	111.00'

CURVE DATA:			
CURVE	DELTA ANGLE	RADIUS	ARC LENGTH
C1	90°00'00"	19.00'	29.85'
C2	15°43'13"	23.00'	6.31'
C3	72°42'36"	63.00'	79.95'
C4	06°03'49"	63.00'	6.67'
C5	26°13'55"	63.00'	28.84'
C6	72°42'36"	63.00'	79.95'
C7	10°41'03"	2914.93'	543.56'
C8	00°32'19"	2914.93'	27.41'
C9	00°28'10"	2914.93'	23.89'
C10	00°28'13"	2914.93'	23.93'
C11	00°33'29"	2914.93'	27.54'
C12	06°12'20"	144.00'	15.60'
C13	08°47'40"	144.00'	22.10'
C14	04°45'13"	2914.93'	241.84'
C26	15°00'00"	144.00'	37.70'
C76	00°29'04"	2914.93'	24.65'
C80	10°39'20"	29.00'	5.39'
C81	9°23'57"	30.49'	5.00'
C82	10°39'18"	29.00'	5.39'

SHEET 3 OF 8

Professional Surveyor

Phone: 386.238.9231
711 Pineland Trail, Ormond Beach, Florida 32174

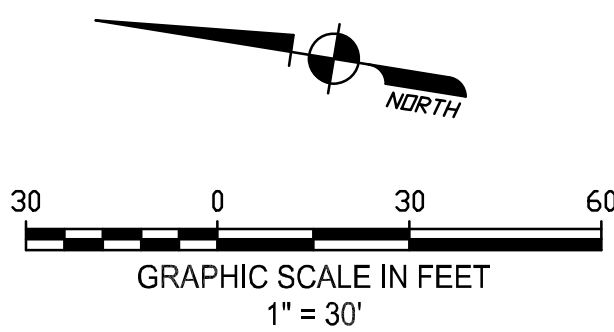
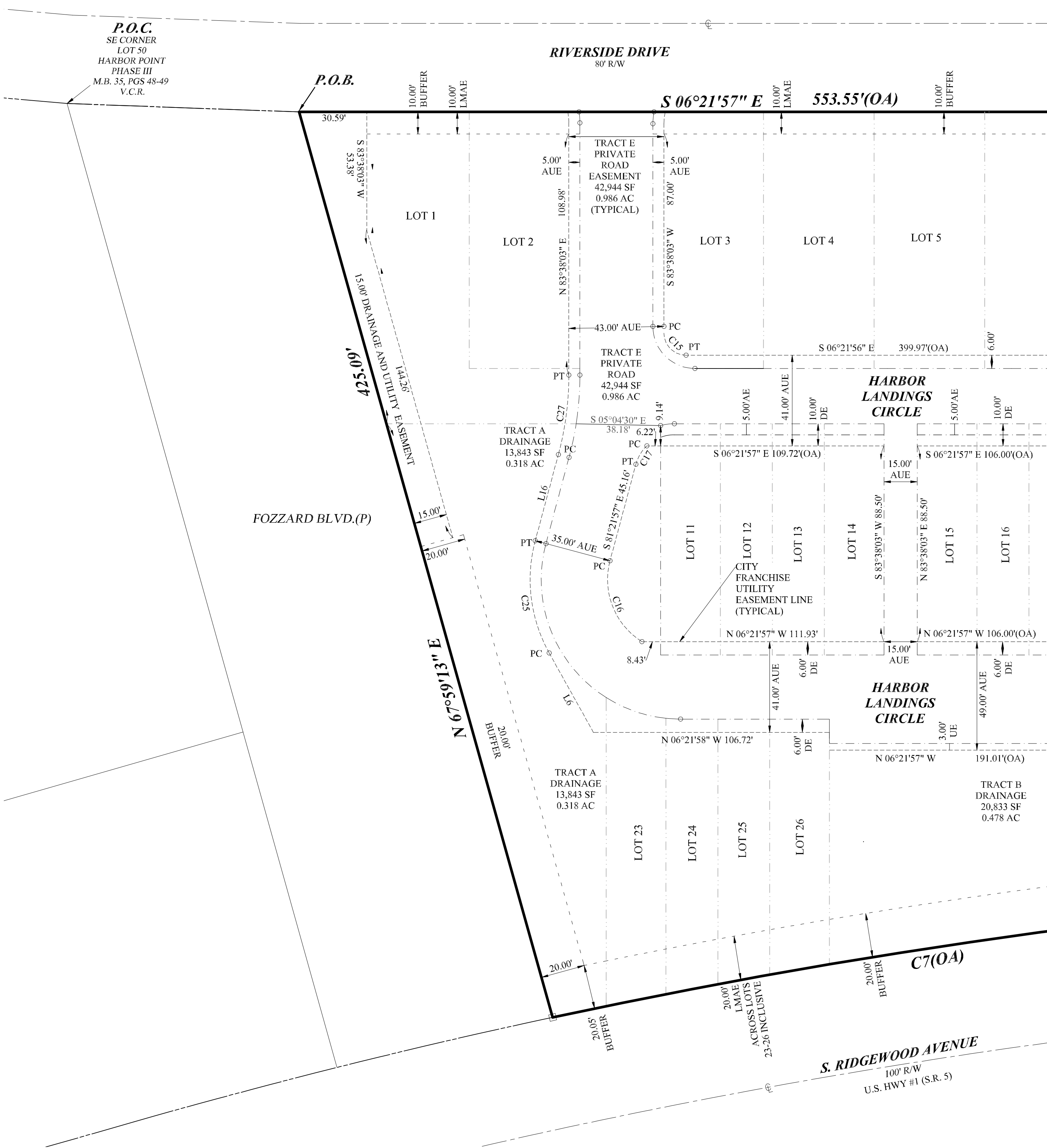
Residential Commercial Construction
LB 8205

HARBOR LANDINGS

A PORTION OF GOVERNMENT LOT 2, SECTION 14, TOWNSHIP 16 SOUTH, RANGE 33 EAST, ALSO A RE-PLAT PORTION OF BLOCK 12, HARBOR POINT, AS PER MAP RECORDED IN MAP BOOK 11, PAGE 91, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, THE SAME BEING ALSO A PORTION OF THAT TRIANGULAR TRACT OF LAND AS SHOWN ON MAP RECORDED IN MAP BOOK 9, PAGE 199, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA

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CURVE DATA:			
CURVE	DELTA ANGLE	RADIUS	ARC LENGTH
C7	10°41'03"	2914.93'	843.56'
C15	89°59'58"	10.00'	15.71'
C16	73°02'50"	33.00'	42.07'
C17	31°14'18"	18.00'	9.81'
C25	44°08'50"	68.00'	52.39'
C27	15°00'00"	139.00'	36.39'

LINE DATA:		
LINE	BEARING	DISTANCE
L6	N 54°29'13" E	41.08'
L16	S 81°21'57" E	40.31'

SHEET 4 OF 8

Professional Surveyor

Phone: 386.238.9231
711 Pineland Trail, Ormond Beach, Florida 32174

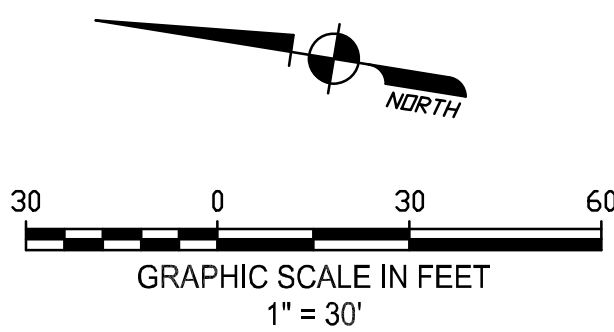
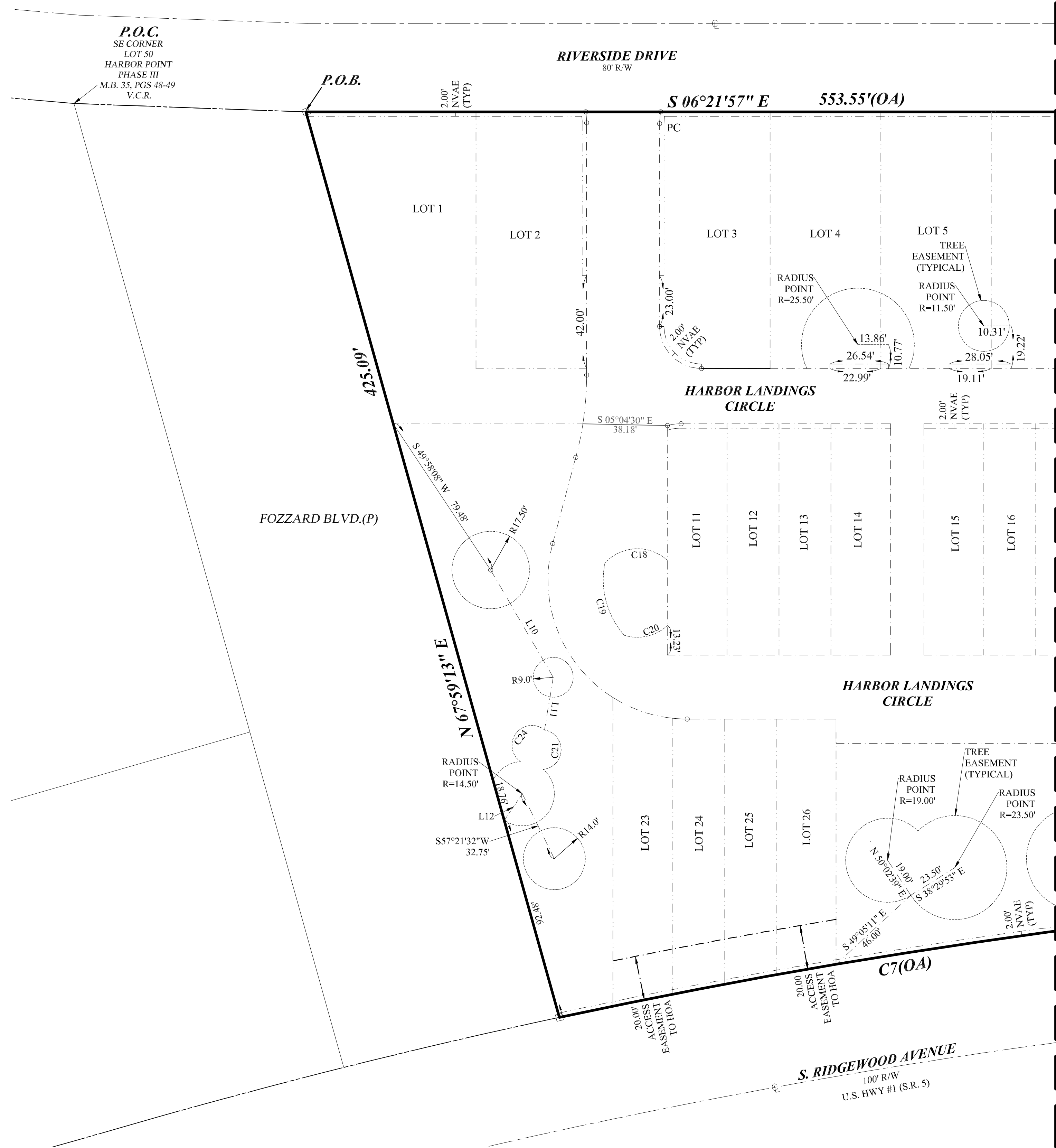
Residential Commercial Construction
LB 8205

HARBOR LANDINGS

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MAP
BOOK

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CURVE DATA:			
CURVE	DELTA ANGLE	RADIUS	ARC LENGTH
C7	10°41'03"	2914.93'	843.56'
C18	89°48'03"	20.00'	31.35'
C19	82°49'57"	38.00'	35.04'
C20	59°51'42"	20.00'	20.90'
C21	164°30'07"	9.00'	25.84'
C24	184°39'25"	9.00'	29.01'

LINE DATA:		
LINE	BEARING	DISTANCE
L10	S 53°22'58" W	56.13'
L11	N 86°58'57" W	24.14'
L12	S 62°19'50" E	14.50'

SHEET 5 OF 8



Professional Surveyor

Phone: 386.238.9231
711 Pineland Trail, Ormond Beach, Florida 32174

A1A

SURVEYING, INC.

Residential Commercial Construction
LB 8205

MAP	PAGE
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SHEET 6 OF 8



LINE DATA:

LINE	BEARING	DISTANCE
L19	S 83°37'59" W	12.50'
L20	S 83°37'59" W	12.50'
L21	N 06°21'57" W	26.24'
L22	N 83°38'03" E	4.00'

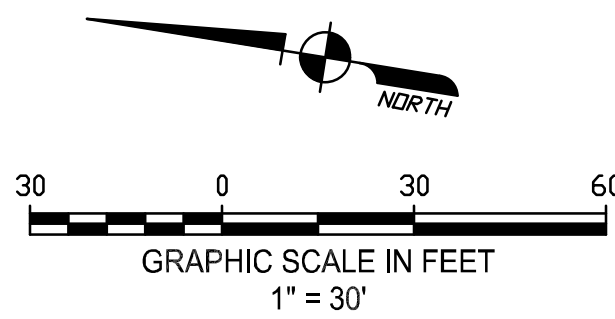
CURVE DATA:			
CURVE	DELTA ANGLE	RADIUS	ARC LENGTH
C7	10°41'03"	2914.93'	543.56'
C14	04°45'13"	2914.93'	241.84'
C30	89°25'20"	73.00'	113.93'
C31	85°13'31"	73.00'	108.58'
C32	24°38'26"	1.50'	0.31'
C33	46°42'49"	33.00'	26.91'
C34	09°52'20"	178.46'	30.75'
C35	46°20'43"	33.00'	26.69'
C36	10°52'11"	95.12'	95.12'
C40	00°58'55"	2914.93'	49.67'
C41	48°33'46"	33.00'	27.97'
C42	6°53'34"	207.62'	24.98'
C43	62°19'53"	33.00'	35.90'
C44	02°27'00"	1214.93'	124.04'
C49	29°11'20"	1.50'	0.76'

HARBOR LANDINGS

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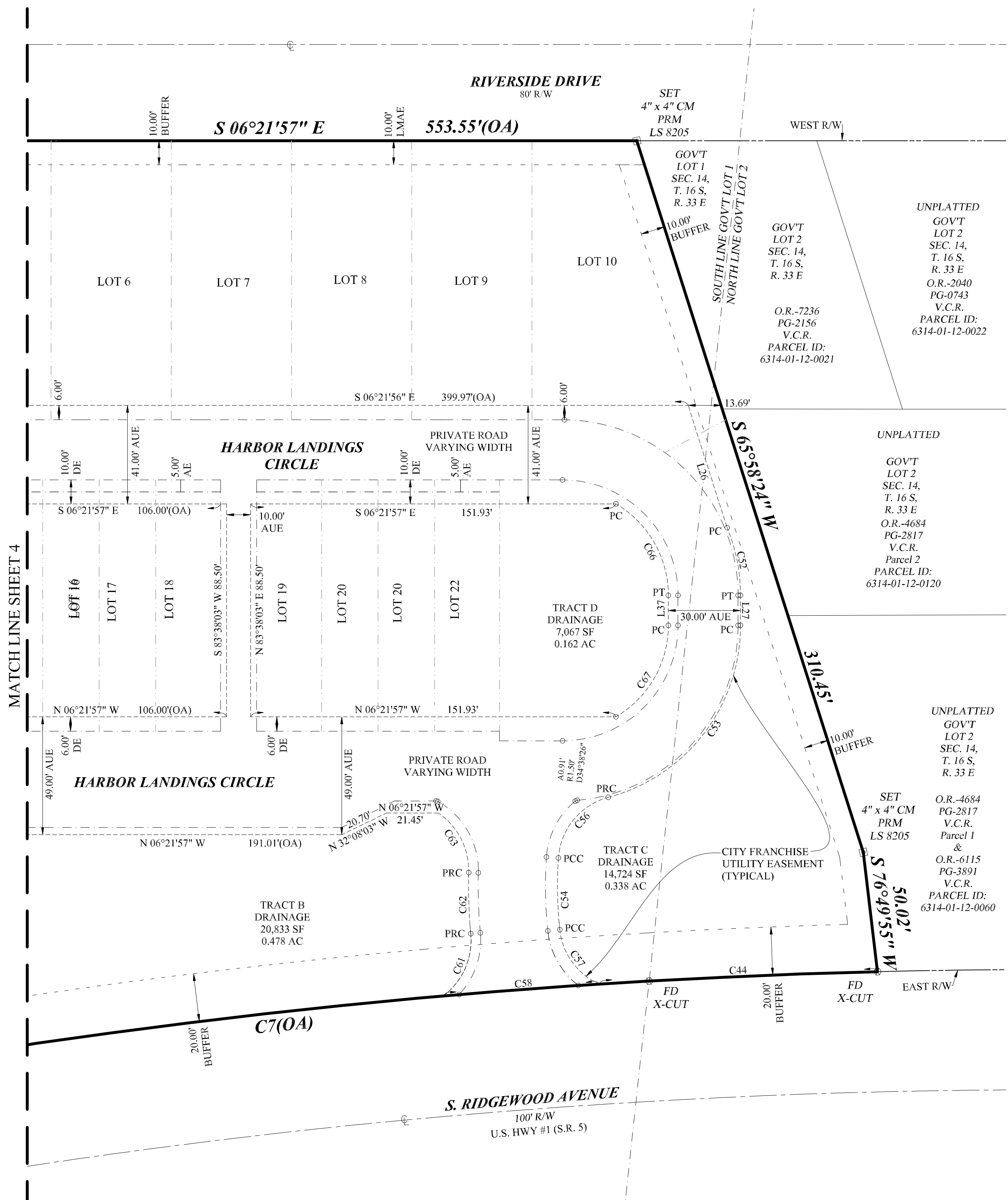


LINE DATA:

LINE	BEARING	DISTANCE
L26	S 65°58'24" W	53.40'
L27	S 83°37'59" W	12.50'
L37	S 83°37'59" W	12.50'

CURVE DATA:

CURVE	DELTA ANGLE	RADIUS	ARC LENGTH
C7	10°41'03"	2914.93'	543.56'
C44	2°27'00"	2914.93'	124.64'
C48	226°59'34"	11.50'	45.86'
C52	22°19'25"	74.00'	28.83'
C53	75°06'46"	73.95'	96.95'
C54	71°14'38"	28.00'	34.82'
C56	09°53'13"	173.19'	29.89'
C57	59°52'22"	28.00'	29.26'
C58	01°16'41"	2914.93'	65.03'
C61	58°20'43"	29.00'	29.53'
C62	06°41'22"	211.62'	24.71'
C63	57°22'19"	29.00'	29.04'
C66	59°43'35"	44.00'	45.87'
C67	59°43'35"	44.00'	45.87'



SHEET 7 OF 8

Professional Surveyor

S A 1 A

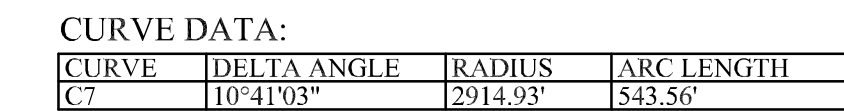
SURVEYING, INC.

Residential Commercial Construction

Phone: 386.238.9231
711 Pineland Trail, Ormond Beach, Florida 32174
LB 8205

MAP	PAGE
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GRAPHIC SCALE IN FEET
1" = 30'



 **A 1 A**
SURVEYING, INC.
Professional Surveyor
Residential Commercial Construction
Phone: 386.238.9231
711 Pineland Trail, Ormond Beach, Florida 32174
LB 8205

SUBDIVISION PLAN DRAWINGS FOR

HARBOR LANDINGS

SECTION 07, TOWNSHIP 16 S, RANGE 33 E

63-14-01-12-0010, 63-14-01-12-0020,

63-14-01-12-0040, 63-14-01-12-0050

5653 RIDGEWOOD AVENUE

PORT ORANGE, FL 32127

JANUARY 2023

REVISED DECEMBER 2023

PROJECT TEAM

PROPERTY OWNER / APPLICANT: TYLO INVESTMENTS LLC
PO BOX 730788
ORMOND BEACH, FL 32176
EMAIL: TLOHMAN@STARRPROP.COM

CIVIL ENGINEER/ LANDSCAPE ARCHITECT AGENT: NEWKIRK ENGINEERING, INC.
1230 NORTH US HIGHWAY 1, SUITE 3
ORMOND BEACH, FL 32174
PHONE: (386) 872-7794
EMAIL: CODY@NEWKIRK-ENGINEERING.COM

ARCHITECT: BPF DESIGN INCORPORATED.
207 FAIRVIEW AVENUE
DAYTONA BEACH, FL 32114
PHONE: (386) 257-0502
EMAIL: BPFDESIGN@CFL.RR.COM

SURVEYOR/PLAT: A1A SURVEYING, INC.
555 W GRANADA BLVD, SUITE D7
ORMOND BEACH, FL 32174
PHONE: (386) 216-5730
EMAIL: ALLEN@A1ASURVEYING.COM

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

CONTACT NUMBERS

PLANNING & BUILDING - CITY OF PORT ORANGE (386) 506-5602
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 / INTERNET - AT&T (386) 254-8550
TELEPHONE / CABLE / INTERNET - SPECTRUM (386) 760-9950

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Sheet Number	Sheet Title
01	COVER
02.1	SURVEY PLAN - SHEET 1
02.2	SURVEY PLAN - SHEET 2
02.3	SURVEY PLAN - SHEET 3
03	DEVELOPMENT INFORMATION AND CONSTRUCTION NOTES
04	DEVELOPMENT INFORMATION AND CONSTRUCTION NOTES
05	DEVELOPMENT INFORMATION AND CONSTRUCTION NOTES
06	DEMOLITION AND SWPPP PLAN
06.1	RIGHT-OF-WAY DEMOLITION AND SWPPP PLAN
07	SWPPP DETAILS
08	GEOMETRY AND PAVEMENT PLAN
09	STRIPING AND SIGNAGE PLAN
09.1	US 1 MEDIAN PLAN
10	OVERALL DRAINAGE
11	GRADING PLAN
11.1	RIGHT-OF-WAY GRADING PLAN
12	RETAINING WALL PLANS
13	RETAINING WALL DETAILS AND NOTES
14	CROSS SECTIONS
15	CROSS SECTIONS
16	OVERALL UTILITIES PLAN
17	UTILITY DETAILS, NOTES AND CONFLICT DETAILS
18	PLAN AND PROFILE - LANDINGS CIR._1
19	PLAN AND PROFILE - LANDINGS CIR._2
20	PLAN AND PROFILE - LANDINGS CIR._3
21	PLAN AND PROFILE - RIVERSIDE DRIVE
22	CITY DETAILS
23	CITY DETAILS
24	CITY DETAILS
25	MISCELLANEOUS DETAILS AND NOTES
26	FDOT DETAILS
27	FDOT DETAILS
28	FDOT DETAILS
29	FDOT DETAILS
30	FDOT DETAILS
31	FDOT DETAILS
32	FDOT DETAILS
33	FDOT DETAILS
34	FDOT DETAILS
35	MAINTENANCE OF TRAFFIC DETAILS
36	MAINTENANCE OF TRAFFIC DETAILS
37	COMMON OPEN SPACE PLAN
38	TREE PRESERVATION PLAN
39	EASEMENT PLAN
40	AUTOTURN PLAN
41	WETLAND IMPACT
TP1	TREE PROTECTION PLAN
L1	LANDSCAPE PLAN
L2	TOWNHOME LANDSCAPE PLAN
L3	LANDSCAPE DETAILS
L4	IRRIGATION PLAN
L5	IRRIGATION DETAILS



WARNING !!

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

LEGAL DESCRIPTION

SEE BOUNDARY AND TOPOGRAPHIC SURVEY, SHEETS 02.1, 02.2 AND 02.3.

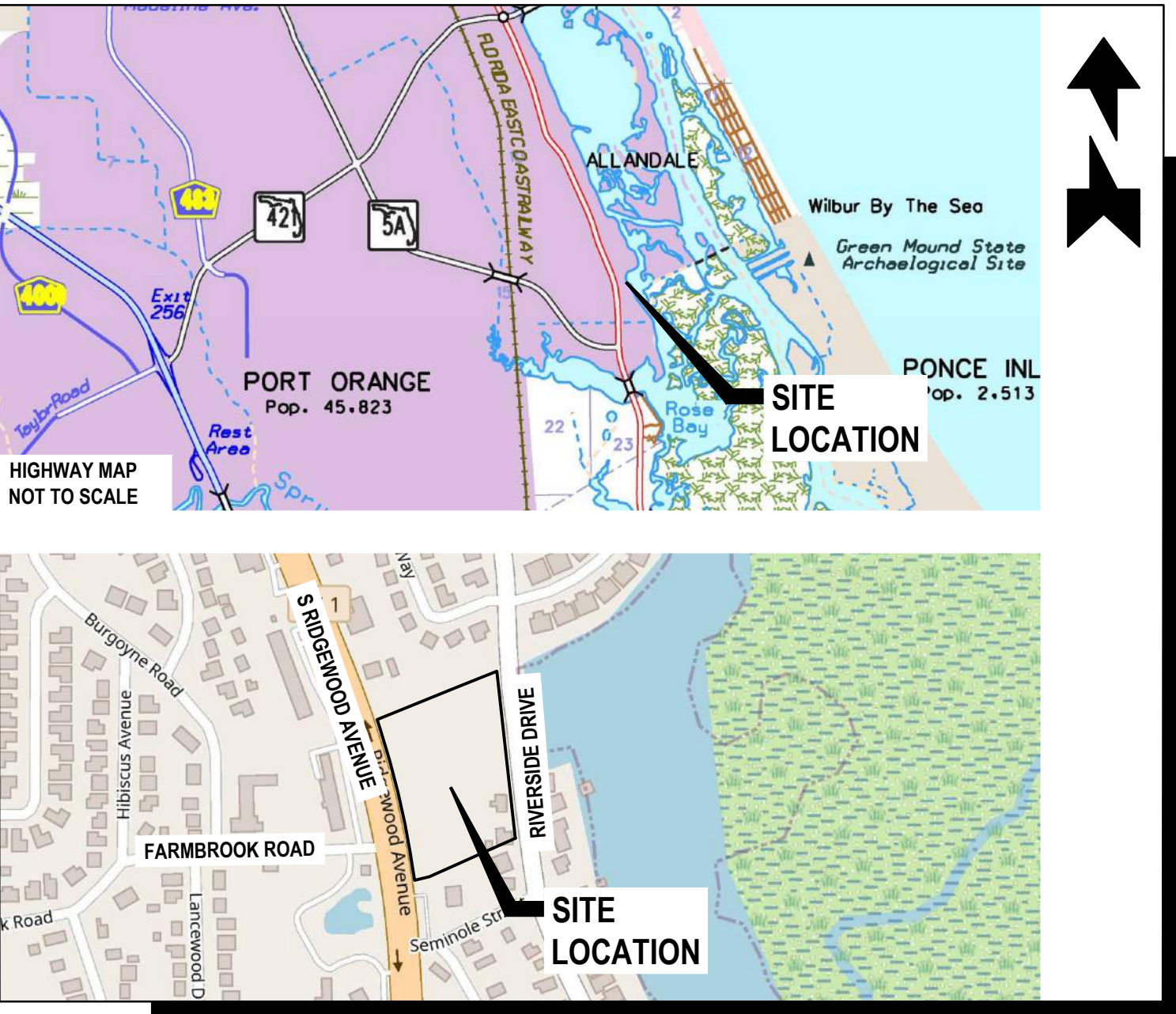
PROJECT STATEMENT

PROPOSE A PLANNED UNIT DEVELOPMENT TO BE KNOWN AS "HARBOR LANDINGS" CONSISTING OF 10 SINGLE FAMILY DETACHED DWELLING UNITS AND 16 TOWNHOME UNITS ON 4.74 ACRES ± (5.45 DWELLING UNITS PER ACRE). THE PUD WILL HAVE A TOTAL OF 2.528 ACRES OF IMPERVIOUS SURFACE. THE ROAD SYSTEM WILL BE PRIVATE WITH EASEMENTS FOR UTILITIES AND DRAINAGE.



AERIAL MAP

SCALE: 1" = 200'



LOCATION MAP

SCALE: 1" = 500'

CITY OF PORT ORANGE NOTE

ALL CONSTRUCTION SHALL COMPLY WITH THE STANDARD CONSTRUCTION DETAILS AS ADOPTED BY RESOLUTION OF THE CITY COUNCIL. ANY DEVIATION FROM 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

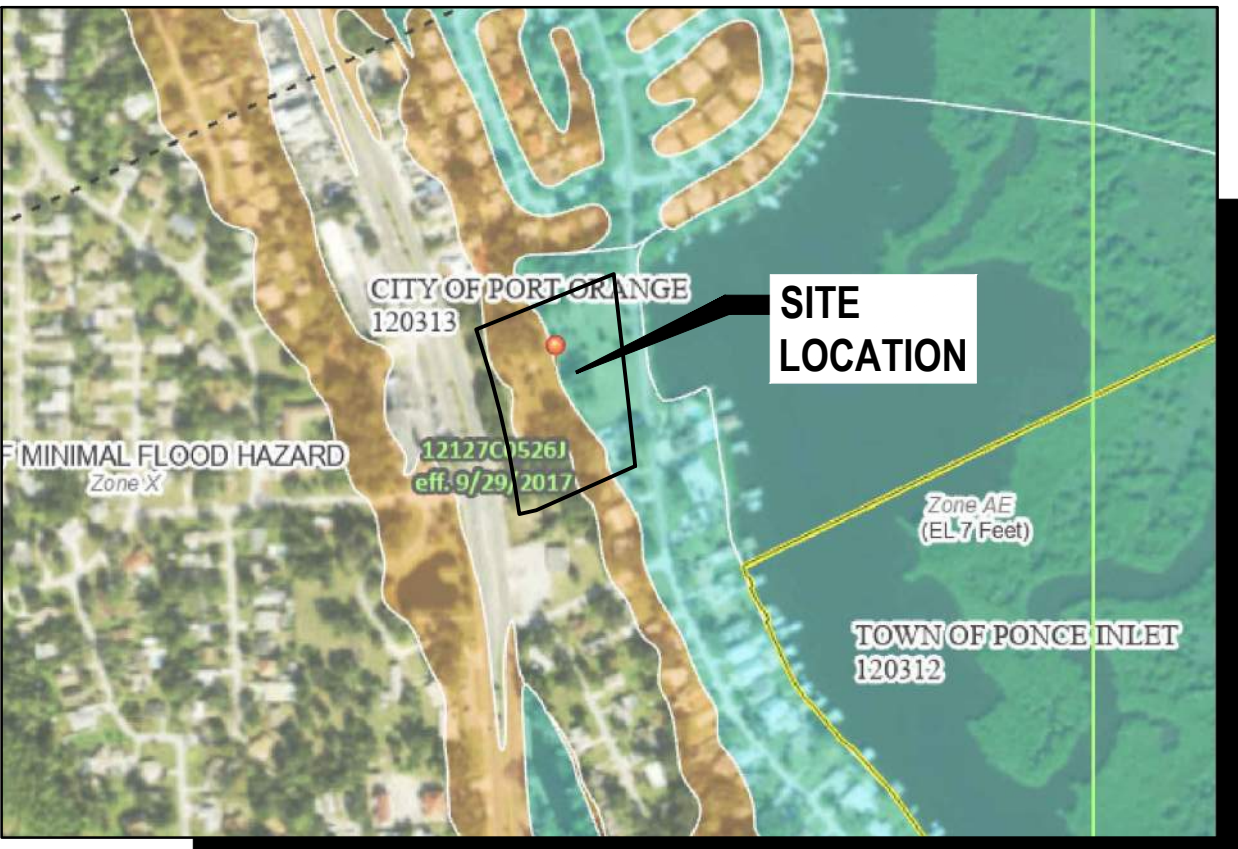
CITY OF PORT ORANGE (DEVELOPMENT ORDER)
FDEP (WASTEWATER)
FDEP (NPDES NOI)
FDOT (ACCESS)
FDOT (DRAINAGE)
FDOT (UTILITY)
SJRWMD (STORMWATER)
VOLUSIA COUNTY HEALTH DEPARTMENT (WATER)

PERMIT No.

SUBD-23-0002
PENDING
PENDING
2023-A-591-00008
2023-D-591-00010
PENDING CITY APPROVAL
197553-1
PENDING

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.

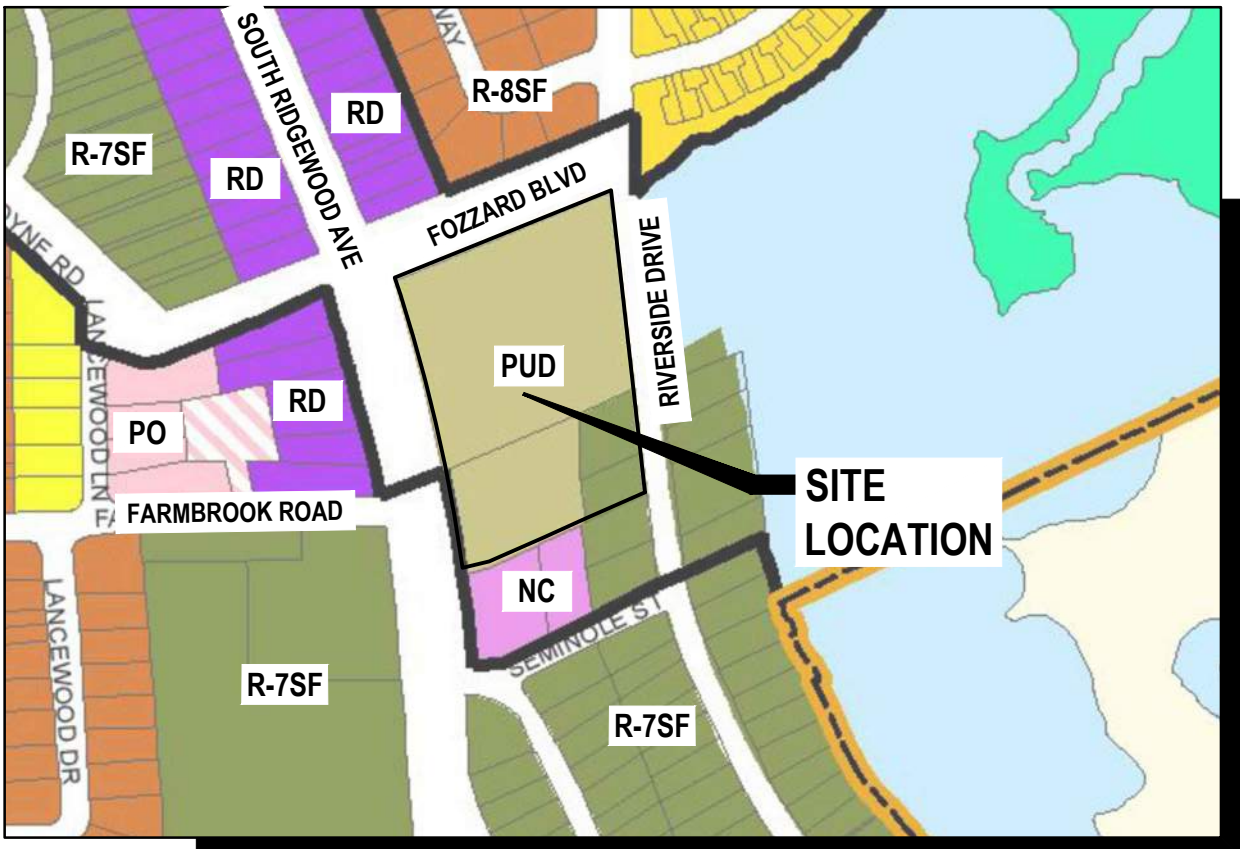
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FLOOD ZONE MAP

SCALE: 1" = 550'

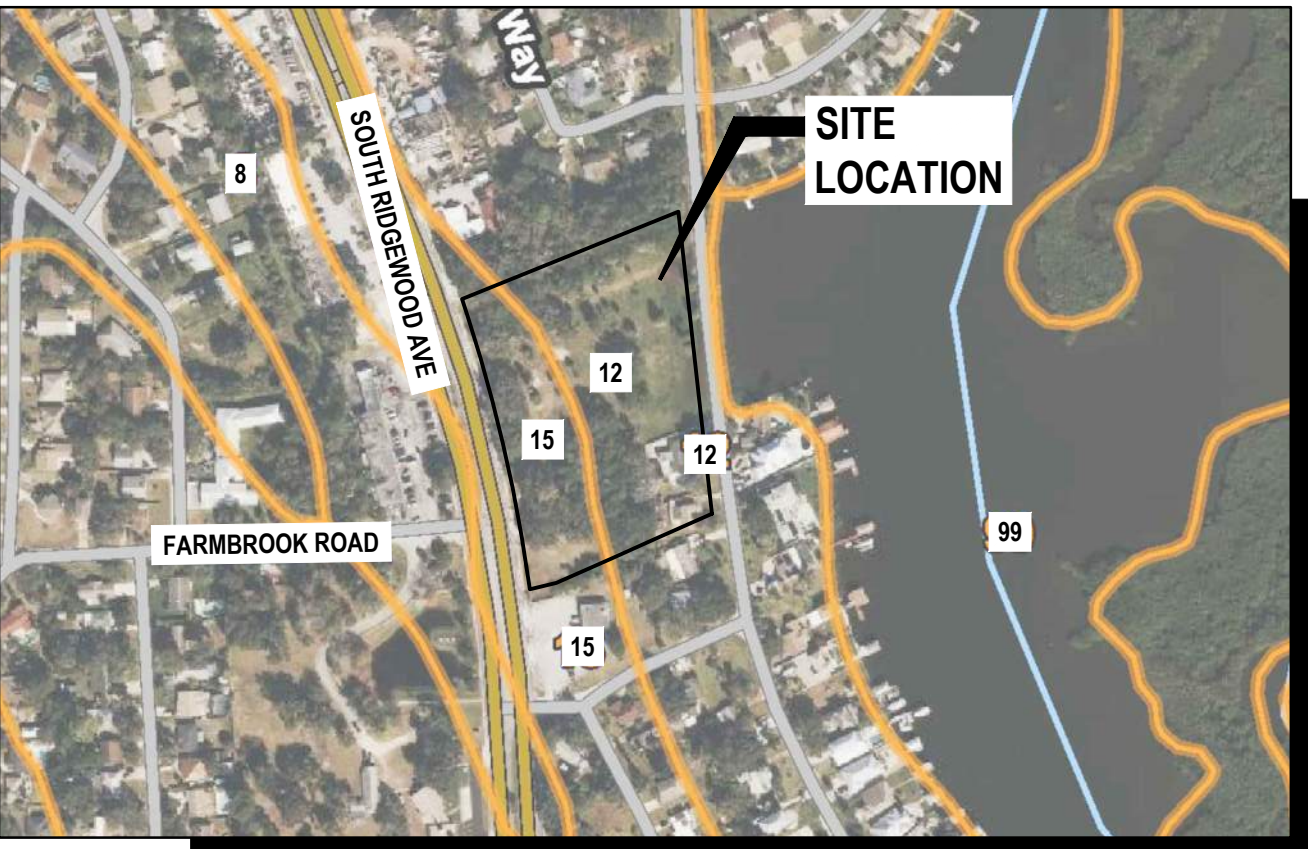
FLOOD ZONE "X", "AE6", "XSHADED"
PANEL No. 12127C0526 J,
DATED SEPTEMBER 29, 2017



ZONING MAP

SCALE: 1" = 300'

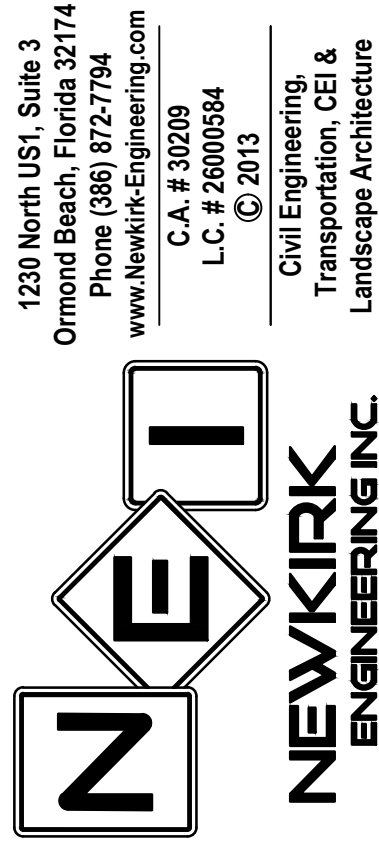
PROJECT ZONING DISTRICT:
PUD - PLANNED UNIT DEVELOPMENT



SOILS MAP

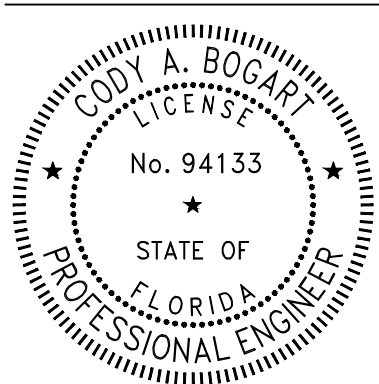
SCALE: 1" = 350'

SOIL TYPE:
(12) CANAVERAL SAND, 0 TO 5 PERCENT SLOPES
(15) COCOA SAND, 0 TO 5 PERCENT SLOPES



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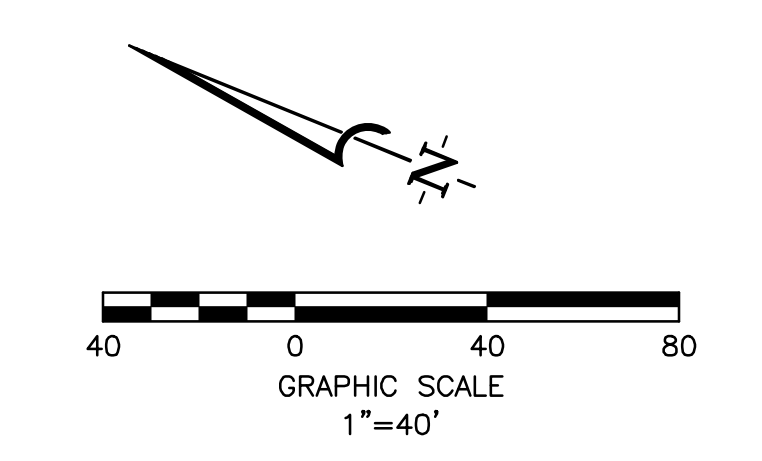
THIS ITEM HAS BEEN DIGITALLY SIGNED AND SEALED BY CODY A. BOGART, PE # 94133 ON



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DRAWING NUMBER

01



HARBOR LANDINGS

S. RIDGEWOOD AVENUE

PORT ORANGE, FLORIDA

CURVE TABLE:

C1	CA=10°41'03"
R	R=2914.93'
CB	CB=N14°18'23"W(M)
CH	CH=542.78(M)
L	L=543.56(M)

CERTIFIED TO:		TYPE OF SURVEY:	
SR 40		SR 40	
REVISIONS:		ADDED CLEAROUT AND INVERT	
ADDED ROAD WORK		10/04/23	
ADDED CITY UTILITY LINES		12/13/23	
SITE ADDRESS:		PROJECT:	
SR 40		17-1007	
Ormond Beach, Florida			

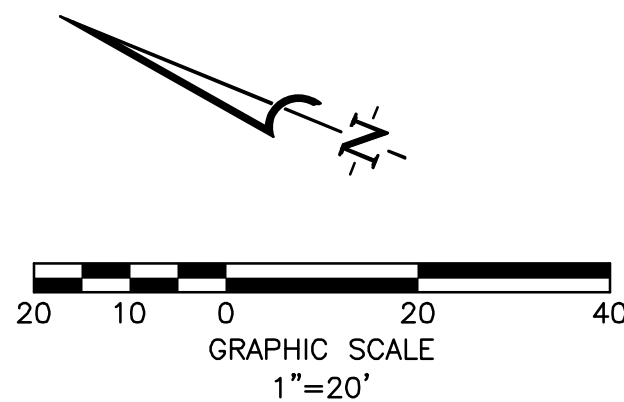
Professional Surveyor

Phone: 386.238.9231
555 W Granada Blvd., Suite D7, Ormond Beach, Florida 32174 LB 8205

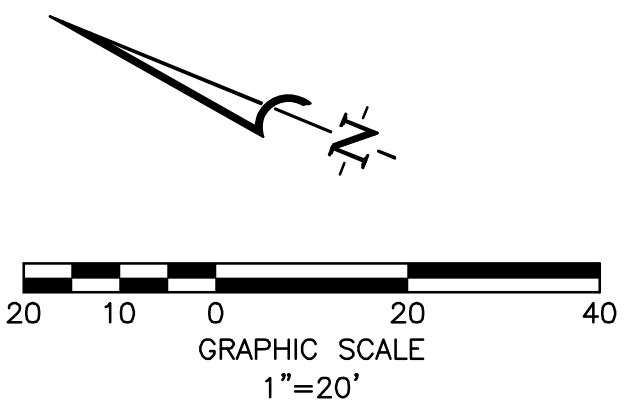
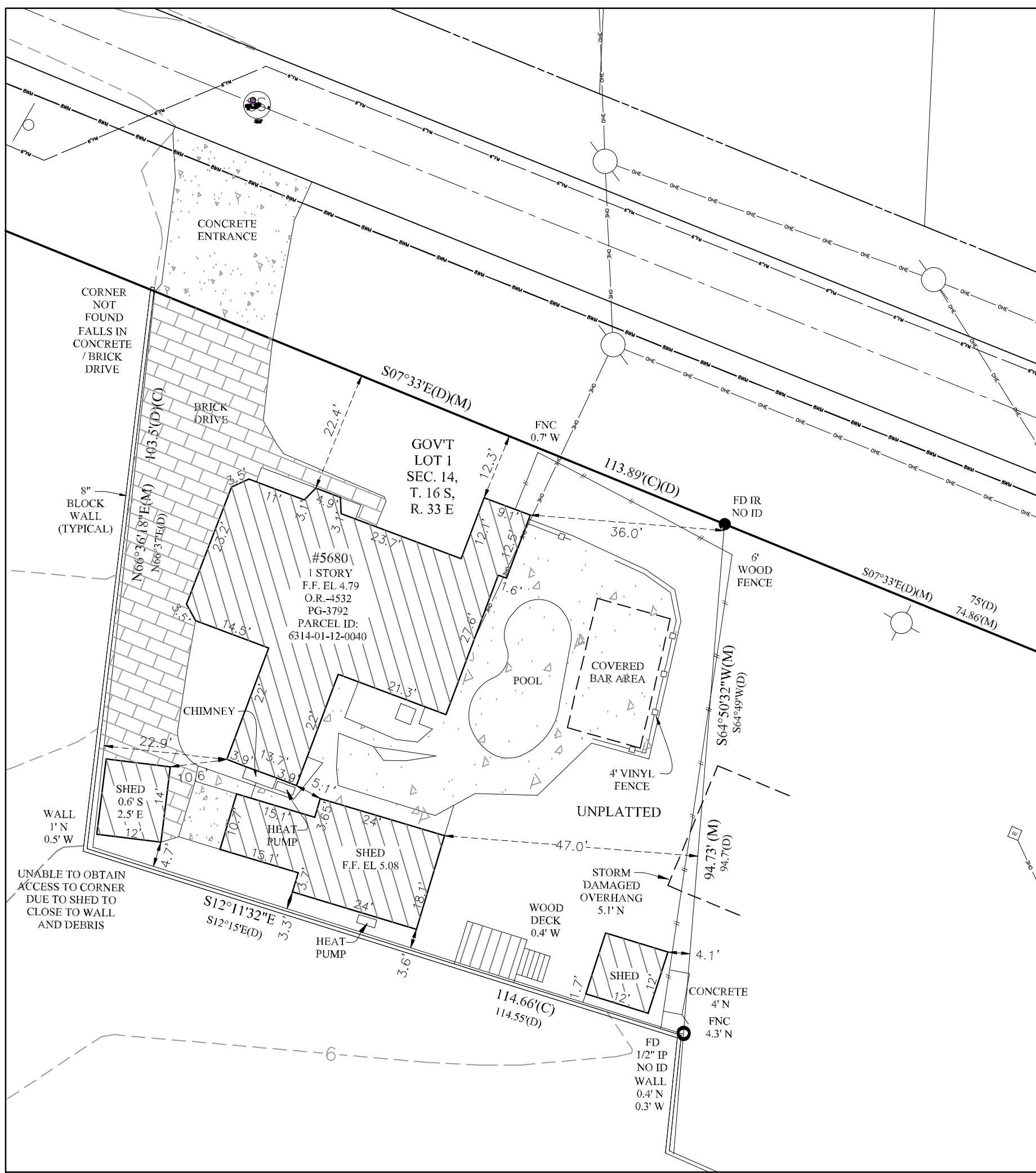
SHEET 1 OF 3

*SURVEY IS NOT VALID WITHOUT
SHEETS 1 THROUGH 3 TOGETHER
SEE SHEET 3 OF 3
FOR SURVEYOR'S SIGNATURE*

HARBOR LANDINGS
S. RIDGEWOOD AVENUE
PORT ORANGE, FLORIDA



DETAIL "A"
PARCEL 3



DETAIL "B"
PARCEL 4



SHEET 2 OF 3

CERTIFIED TO:		TYPE OF SURVEY:	
		SR 40	
		REVISIONS:	
		Added Cleanup AND Invert	
		Added Road Work	
		Added City Utility Lines	
Field Work by: SS Date: 05/10/18 Office Work by: BR Date: 05/15/18		SITE ADDRESS:	
Field Book: 13 Page: Scale: 1" = 40'		PROJECT:	
		Ormond Beach, Florida	
		17-1007	

Professional Surveyor

Phone: 386.238.9231

555 W Granada Blvd., Suite D7, Ormond Beach, Florida 32174 LB 8205

SURVEY IS NOT VALID WITHOUT
SHEETS 1 THROUGH 3 TOGETHER
SEE SHEET 3 OF 3
FOR SURVEYOR'S SIGNATURE

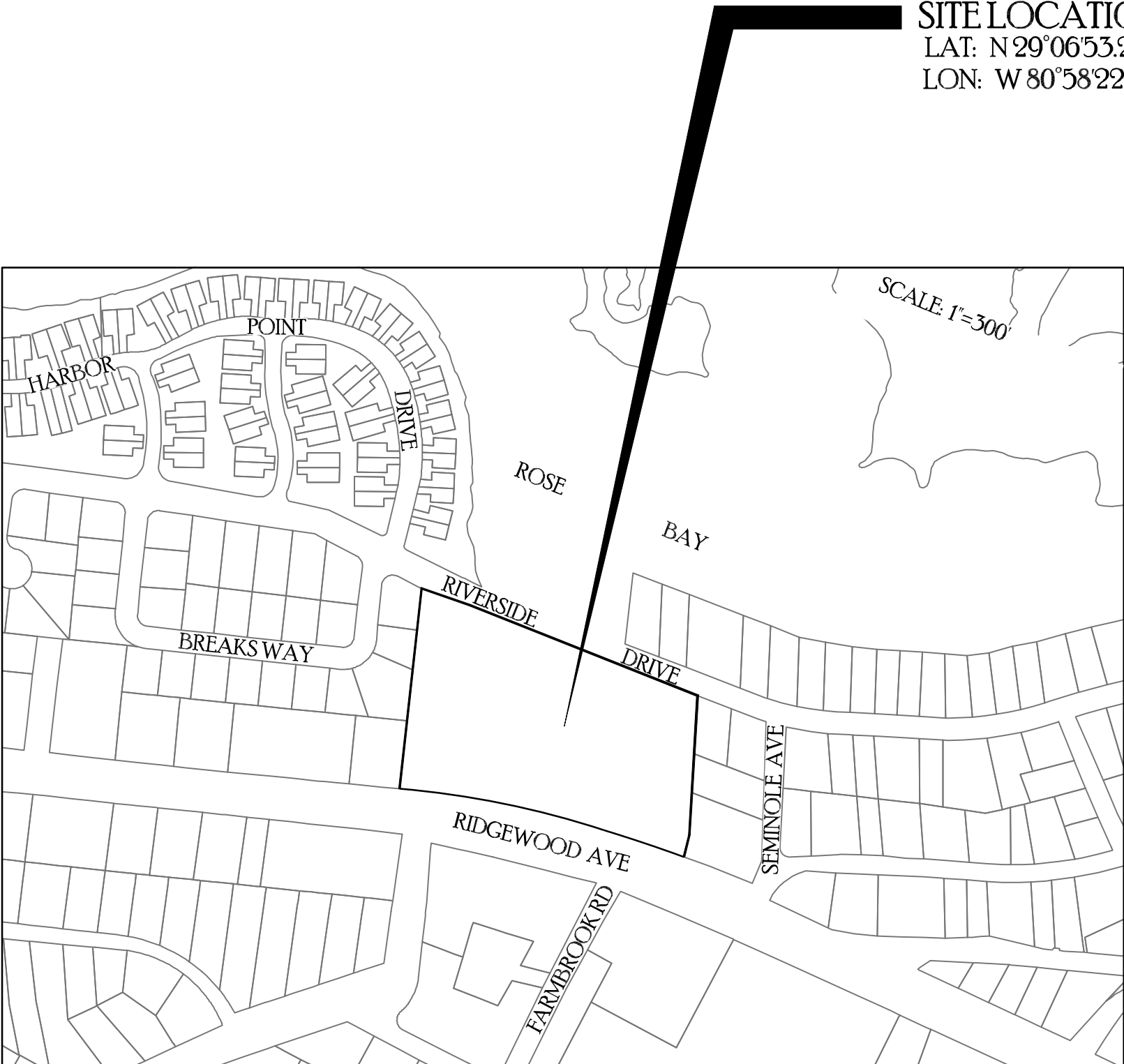
HARBOR LANDINGS
S. RIDGEWOOD AVENUE
PORT ORANGE, FLORIDA

LEGAL DESCRIPTION:

A PORTION OF GOVERNMENT LOT 2, SECTION 14, TOWNSHIP 16 SOUTH, RANGE 33 EAST, ALSO A PORTION OF BLOCK 12, HARBOR POINT, AS PER MAP RECORDED IN MAP BOOK 11, PAGE 91, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, THE SAME BEING ALSO A PORTION OF THAT TRIANGULAR TRACT OF LAND AS SHOWN ON MAP RECORDED IN MAP BOOK 9, PAGE 199, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS:

COMMENCE AT THE SOUTHEAST CORNER OF LOT 50, HARBOR POINT, PHASE III, MAP BOOK 35, PAGES 48 AND 49 OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, SAID POINT ALSO LYING ON THE WESTERLY RIGHT-OF-WAY LINE FOR RIVERSIDE DRIVE, 80 FOOT RIGHT-OF-WAY AS NOW LAID OUT; THENCE SOUTH 04 DEGREES 18 MINUTES 53 SECONDS EAST, A DISTANCE OF 104.99 FEET TO THE POINT OF BEGINNING OF DESCRIBED LAND; THENCE CONTINUE ALONG SAID RIGHT-OF-WAY SOUTH 06 DEGREES 21 MINUTES 57 SECONDS EAST, A DISTANCE OF 553.55 FEET; THENCE DEPARTING SAID WESTERLY RIGHT-OF-WAY LINE SOUTH 65 DEGREES 58 MINUTES 24 SECONDS WEST, A DISTANCE OF 310.45 FEET; THENCE SOUTH 76 DEGREES 49 MINUTES 55 SECONDS WEST, A DISTANCE OF 50.05 FEET TO A POINT LYING ON A CURVE ALSO BEING ON THE EASTERLY RIGHT-OF-WAY LINE OF RIDGEWOOD AVENUE, A 100 FOOT WIDE RIGHT-OF-WAY AS NOW LAID OUT; THENCE ALONG SAID RIGHT-OF-WAY LINE OF CURVE HAVING A RADIUS OF 2914.93 FEET, A ARC LENGTH OF 543.56 FEET, HAVING A DELTA ANGLE OF 10 DEGREES 41 MINUTES 03 SECONDS; THENCE DEPARTING SAID EASTERLY NORTH 67 DEGREES 59 MINUTES 13 SECONDS EAST, A DISTANCE OF 425.09 FEET TO THE POINT OF BEGINNING.

LAND LYING IN VOLUSIA COUNTY, FLORIDA CONTAINS 206,482 SQUARE FEET OR 4.74 ACRES MORE OR LESS.



SITE LOCATION
LAT: N 29°06'53.2"
LON: W 80°58'22.7"

GENERAL NOTES:

- BEARING STRUCTURE (N 06°21'57" W) ALONG THE WESTERLY RIGHT-OF-WAY LINE OF RIVERSIDE DRIVE. FOR ANGLE MEASUREMENT ONLY.
- LEGAL DESCRIPTION NEW PER AIA SURVEYING, INC.. NO TITLE INFORMATION PROVIDED TO THIS SURVEYOR.
- 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 0526.1, DATED: SEPTEMBER 29, 2017. THE PROPERTY IS IN FLOOD ZONES "X", "X" (0.2%), AND "AE" (EL 6 FEET). THE FLOOD ZONE LINE SHOWN IS SCALED FROM FIRMETTE.
- HISTORY REFERENCE TO PREVIOUS SURVEY OR HELPER SURVEYS, LINEAGE OF DATA HORIZONTAL DATA REFERENCES, DATE OF ORIGINAL PLAT.
A.) HARBOR POINT, AS RECORDED IN MAP BOOK 11, PAGES 91, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
B.) STATE OF FLORIDA, STATE ROAD DEPARTMENT RIGHT OF WAY MAP, SECTION NUMBER 7901-277, ROAD NUMBER 5, DATED JANUARY 27, 1956.
C.) HARBOR OAKS, UNIT NUMBER 1, AS RECORDED IN MAP BOOK 10, PAGE 145, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
D.) MAP OF ALLANDALE, AS RECORDED IN MAP BOOK 17, PAGE 166, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
E.) HARBOR POINT, PHASE III, AS RECORDED IN MAP BOOK 35, PAGE 49, PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA.
F.) SURVEY BY UPHAM, INC., FILE NUMBER: 3-77, DATED 09/05/1985.
G.) SURVEY BY PHILLIPS SURVEYING, INC., FILE NUMBER, G-785 ALSO 3-91H2, DATED 08/08/1991.
- UNDERGROUND UTILITIES NOT LOCATED EXCEPT AS SHOWN, PER FIELD VISIBLE LOCATION.
- LEGAL STATUS OF FOZZARD BLVD UNKNOWN TO THIS SURVEYOR.
- LEGAL STATUS OF RIGHTS TO LAND LYING EAST OF RIVERSIDE DRIVE UNKNOWN TO THIS SURVEYOR, NO RIGHT-OF-WAY INFO TO DETERMINE LAND LYING BETWEEN RIGHT-OF-WAY AND MEAN HIGH WATER EL 0.
- LIMITATIONS:
A.) WHEN SOME INSTRUMENTS OF RECORD REFLECTING EASEMENTS, RIGHT-OF-WAY AND OR OWNERSHIP ARE FURNISHED TO THIS SURVEYOR, EXCEPT AS SHOWN, THERE MAY BE ADDITIONAL RESTRICTIONS AND/OR OTHER MATTERS THAT ARE NOT SHOWN ON THIS 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, IS REQUIRED, THIS INFORMATION MUST BE FURNISHED TO THE SURVEYOR AND MAPPER. PER FLORIDA STATUTES RULE 5J-17.052(2)(d)(4), THIS SURVEYOR DOES NOT ACCEPT ANY RESPONSIBILITY AND / OR BE HELD NEGLIGENT FOR ANY ERRONEOUS ERRORS DUE TO POSSIBLE DOCUMENTATION, THAT MIGHT COME UP LATER, THIS SURVEYOR ALSO RETAINS THE RIGHT TO REVISE THIS SURVEY, BASED ON NEW EVIDENCE, BROUGHT FORWARD AS OTHER SURVEYS BY OTHERS AND / OR LEGALS NOT PROVIDED AT THE TIME OF THIS SURVEY.
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 5J-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 APPRAISERS INTERNET WEB PAGE AND MAY NOT BE THE MOST CURRENT.

LEGEND:

A/C	AIR CONDITION	○	IRON PIPE &/ OR CAP (AS NOTED)
(C)	CALCULATED	⊙	PARKER KALON NAIL & DISK (AS NOTED)
(D)	DESCRIPTION OR DEED	□	CONCRETE MONUMENT (AS NOTED)
DWG	DRAWING	●	CLEAN OUT
EP	EDGE OF PAVEMENT	●	IRON ROD &/ OR CAP (AS NOTED)
EL	ELEVATION	⚓	BENCHMARK
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION	⚓	WATER SERVICE
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY	⚓	WOOD POWER POLE
F.I.R.M	FLOOD INSURANCE RATE MAP	⚓	CONCRETE POWER POLE
F.F.	FINISH FLOOR ELEVATION	⚓	GUY ANCHOR
FL	FLORIDA	⚓	STORM MANHOLE
GOV'T	GOVERNMENT	⚓	SEWER MANHOLE
ID	IDENTIFICATION	⚓	WATER VALVE
IP	IRON PIPE (AS NOTED)	⚓	FIRE HYDRANT
IPC	IRON PIPE & CAP (AS NOTED)		
INV	INVERT		
LB	LICENSED BUSINESS		
LC	LICENSED CORPORATION		
LLC	LIMITED LIABILITY COMPANY		
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		
PG	PAGE		
P.A.	PROFESSIONAL ASSOCIATION		
PKD	PARKER KALON NAIL & DISK (AS NOTED)		
P.O.	POST OFFICE		
PRM	PERMANENT REFERENCE MONUMENT		
(R)	RECORD		
R/W	RIGHT-OF-WAY		
R.	RANGE		
SEC.	SECTION		
SSMH	SANITARY SERWER MANHOLE		
T.	TOWNSHIP		
WO#	WORK ORDER NUMBER		

CONCRETE HATCH

OVER HEAD ELECTRIC

8" WATER MAIN

6" FORCE MAIN

VICINITY MAP: SCALE 1" = 300'

CERTIFIED TO:	TYPE OF SURVEY: BOUNDARY
	REVISIONS: Added Cleanup AND Invert 05/16/22 Added Road Work 10/04/23 Added City Utility Lines 12/13/23
Field Work by: KM Date: 10/19/21 Office Work by: BR Date: 10/19/21	SITE ADDRESS: PROJECT:
Field Book: ?? Page: ?? Scale: 1"=200'	5653 S Ridgewood Ave. 21-148 Port Orange, Florida



Professional Surveyor

Phone: 386.238.9231
555 W Granada Blvd., Suite 100, Port Orange, Florida 32174 LB 8205

S A I A

SURVEYING, INC.

MEMBER: National Professional Surveyors Association
Commercial Construction
10/04/23

THE FOREGOING BOUNDARIES CERTIFIED TO BE TRUE AND CORRECT BY THE SIGNATURE AND SEAL OF THE SURVEYOR.

THE ORIGINAL UNSEALD SEAL

David McMillen
LS 5174
Date: 12.13.23
PSM #6378
David McMillen

SHEET 3 OF 3

GENERAL CONSTRUCTION NOTES

- GOVERNING SPECIFICATIONS: CITY OF PORT ORANGE LAND DEVELOPMENT CODE, CITY OF PORT ORANGE STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS, CURRENT EDITION, CITY OF PORT ORANGE STANDARD CONSTRUCTION DETAILS AND SPECIFICATIONS, CURRENT EDITION.
- ALL CONSTRUCTION WITHIN THE FOOT RIGHT-OF-WAY SHALL CONFORM TO THE 2022/2023 EDITION OF THE FOOT DESIGN STANDARD INDEXES, THE 2022 EDITION OF THE FOOT STANDARD SPECIFICATION FOR ROAD AND BRIDGE CONSTRUCTION AND THE 2017 EDITION OF THE FOOT UTILITY ACCOMMODATIONS MANUAL.
- 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 INSPECTORS.
- CONSTRUCTION SHALL BE IN ACCORDANCE WITH ALL REQUIRED PERMITS. THE CONTRACTOR SHALL MAINTAIN COPIES OF ALL PERMITS AVAILABLE ON THE JOB SITE AT ALL TIMES.
- THE CONTRACTOR SHALL MAINTAIN AT THE JOB SITE A RECORD COPY OF ALL CONSTRUCTION DRAWINGS AND SPECIFICATIONS ON WHICH ALL FIELD CHANGES ARE TO BE SHOWN. ALL CHANGES TO PLANS SHALL BE INCORPORATED IN THE "AS-BUILT" RECORD DRAWINGS SURVEY PROVIDED BY CONTRACTOR FOR REVIEW AND APPROVAL FROM ENGINEER OF RECORD.
- THE CITY OF PORT ORANGE WILL OWN AND MAINTAIN ALL WATER MAINS LOCATED WITHIN THE RIGHT-OF-WAY.
- THE CONTRACTOR SHALL PAY FOR AND OBTAIN A SITE ENGINEERING BUILDING PERMIT. THE ENGINEER WILL SCHEDULE THE PRE-CONSTRUCTION CONFERENCE BEFORE THE CONTRACTOR'S START OF WORK. THE CONTRACTOR SHALL CONTACT THE PO BUILDING DEPARTMENT AT (386) 506-5602 FOR INFORMATION ON ISSUANCE OF CITY PERMITS AND / OR OTHER REQUIREMENTS.
- SEPARATE BUILDING PERMIT APPLICATIONS ARE REQUIRED FOR: NEW BUILDINGS, CLUBHOUSE, TRASH COMPACTOR, RETAINING WALL, FENCE, SWIMMING POOL, GAZEBO, PLAYGROUND, LIGHT POLES AND SIGNS. CONTACT THE PORT ORANGE BUILDING DEPARTMENT AT (386) 506-5602..
- ALL WATER SERVICE CONSTRUCTION SHALL BE IN ACCORDANCE WITH CITY OF PORT ORANGE UTILITY SPECIFICATIONS AND STANDARD UTILITY DETAILS, CURRENT EDITION.
- ALL SANITARY SEWER CONSTRUCTION SHALL BE IN ACCORDANCE WITH "DESIGN AND CONSTRUCTION STANDARDS", CITY OF PORT ORANGE UTILITIES DEPARTMENT, CURRENT EDITION.
- ALL RECLAIMED WATER CONSTRUCTION SHALL BE IN ACCORDANCE WITH "DESIGN AND CONSTRUCTION STANDARDS", CITY OF PORT ORANGE UTILITIES DEPARTMENT, CURRENT EDITION.
- ALL ROADWAY SIGNAGE AND MARKINGS SHALL BE IN CONFORMANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES, CURRENT EDITION.
- THE CONTRACTOR SHALL CONTACT ALL CONCERNED UTILITIES AT LEAST FORTY-EIGHT (48) HOURS IN ADVANCE OF CONSTRUCTION OPERATIONS.
- LAND CLEARING OF THE PROJECT IS NOT ALLOWED UNTIL THE CITY ENGINEER AND/OR PLANNING DEPARTMENT ISSUES A LAND CLEARING PERMIT.
- SHOP DRAWINGS AND CERTIFICATIONS FOR ALL MATERIALS AND STRUCTURES ARE REQUIRED. THE CONTRACTOR SHALL REVIEW AND SIGN ALL SHOP DRAWINGS. THE CONTRACTOR TO SUBMIT REVIEWED SHOP DRAWINGS TO THE ENGINEER FOR APPROVAL PRIOR TO ORDERING THE MATERIALS REQUIRED FOR CONSTRUCTION.
- THE LOCATION OF EXISTING UTILITIES HAS BEEN OBTAINED FROM THE MOST RELIABLE INFORMATION AVAILABLE TO THE ENGINEER. THIS INFORMATION IS NOT GUARANTEED AND IT SHALL BE EACH CONTRACTOR'S RESPONSIBILITY TO DETERMINE THE EXACT NATURE OF ALL UTILITIES PRIOR TO COMMENCEMENT OF CONSTRUCTION AND TO NOTIFY NEWKIRK ENGINEERING, INC. AS TO DISCREPANCIES, IF ANY EXIST.
- ALL SURVEY AND TOPOGRAPHICAL INFORMATION BASED ON SURVEY INFORMATION PROVIDED BY A1A SURVEYING INC.; CONTRACTOR TO COORDINATE WITH SURVEYOR FOR ALL CONSTRUCTION REQUIREMENTS FOR INFORMATION.
- ALL SURVEY AND TOPOGRAPHICAL INFORMATION IS BASED ON THE NAVD 1988 DATUM. ALL PROPOSED CONSTRUCTION ELEVATIONS ARE BASED ON THE NAVD 1988 DATUM. ALL PROPOSED ELEVATIONS REFER TO FINISH GRADES.
- 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.
- 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.
- ANY CHANGES TO THE APPROVED PLANS REQUIRE COMPLETION OF THE CHANGE ORDER PROCESS.
- 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.
- 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.
- 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.
- THERE SHALL BE NO DEVIATIONS FROM THESE PLANS UNLESS APPROVED IN WRITING BY THE ENGINEER AND THE OWNER.
- ALL DISTURBED AREAS SHALL BE FULLY SODDED.
- 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 SLOTS, AND ALL CONCRETE STRUCTURES. WATER MAIN TESTING, SANITARY SEWER TESTING, RECLAIM MAIN TESTING, ETC.
- A MINIMUM OF 13'-6" OF VERTICAL CLEARANCE IS TO BE PROVIDED AND MAINTAINED FOR ALL ROADWAYS.
- ALL ROADWAYS MUST HAVE A MINIMUM 25-FEET INSIDE AND 50-FEET OUTSIDE TURNING RADII.
- WHERE NEW ASPHALT MEETS EXISTING ASPHALT, THE EXISTING ASPHALT SHALL BE SAW CUT TO PROVIDE A STRAIGHT EVEN LINE.
- PRIOR TO REMOVING CURB OR GUTTER, THE ADJACENT ASPHALT SHALL BE SAW CUT TO PROVIDE A STRAIGHT EVEN LINE.
- 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.
- 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).
- ROAD CLOSURES ARE SEPARATE FROM THE PERMIT AND REQUIRE PLAN REVIEW AND APPROVAL WITH 7 DAY ADVANCE NOTICE FROM THE OWNER OF THE AFFECTED RIGHT-OF-WAY PRIOR TO ANY ROAD CLOSURES. A MAINTENANCE OF TRAFFIC PLAN IS REQUIRED FOR ALL SITE CONSTRUCTION JOBS.
- DURING CONSTRUCTION, AN R-20 ROAD RATED ALL WEATHER ACCESSIBLE ROADWAY SHALL BE MAINTAINED AT ALL TIMES FOR FIRE ACCESS AND EMERGENCY SERVICES.
- ALL REQUIRED FIRE MAINS AND HYDRANTS SHALL BE INSTALLED AND OPERATIONAL PRIOR TO THE START OF VERTICAL BUILDING CONSTRUCTION.
- NO BURYING OF ANY ORGANIC MATERIALS ALLOWED.
- THERE WILL BE NO PROPOSED OVERHEAD UTILITY AND SERVICE LINES ASSOCIATED WITH THIS PROJECT. ALL UTILITY LINES AND SERVICES WILL BE INSTALLED UNDERGROUND.

EROSION CONTROL AND DEMOLITION CONSTRUCTION NOTES:

- CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING AT THE CITY PRIOR TO COMMENCE OF CONSTRUCTION.
- LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES. THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE SWPPP DURING CONSTRUCTION OPERATIONS.
- NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL EROSION CONTROL DEVICES HAVE BEEN INSTALLED.
- ALL REASONABLE EFFORT SHALL BE TAKEN DURING CONSTRUCTION TO CONTROL AND PREVENT EROSION AND TRANSPORT OF SEDIMENT MATERIAL TO INLETS, SURFACE DRAINS, WETLAND AND LAKE AREAS. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL RESTORATION EFFORTS THAT MAY BE REQUIRED.
- THE INSTALLATION OF TEMPORARY EROSION CONTROL BARRIERS SHALL BE COORDINATED WITH THE CONSTRUCTION OF THE PERMANENT EROSION CONTROL FEATURES TO THE EXTENT NECESSARY TO ASSURE ECONOMICAL, EFFECTIVE AND CONTINUOUS CONTROL OF EROSION AND WATER POLLUTION THROUGHOUT THE LIFE OF THE CONSTRUCTION PHASE.
- THE TYPE OF EROSION CONTROL BARRIERS USED SHALL BE GOVERNED BY THE NATURE OF THE CONSTRUCTION OPERATION AND SOIL TYPE THAT WILL BE EXPOSED. SILTY AND CLAYEY MATERIAL USUALLY REQUIRE SOLID SEDIMENT BARRIERS TO PREVENT TURBID WATER DISCHARGE, WHILE SANDY MATERIAL MAY NEED ONLY SILT SCREENS TO PREVENT EROSION. DIVERSION DITCHES OR SWALES MAY BE REQUIRED TO PREVENT TURBID STORMWATER RUNOFF FROM BEING DISCHARGED TO OTHER WATER BODIES. IT MAY BE NECESSARY TO EMPLOY A COMBINATION OF BARRIERS, DITCHES, AND OTHER EROSION/TURBIDITY CONTROL MEASURES IF CONDITIONS WARRANT.
- THE CONTRACTOR SHALL PROVIDE ROUTINE MAINTENANCE OF PERMANENT AND TEMPORARY EROSION CONTROL FEATURES UNTIL THE PROJECT IS COMPLETE AND ALL BARED SOIL STABILIZED. SILTATION ACCUMULATIONS GREATER THAN THE LESSER OF 12 INCHES OR ONE-HALF THE DEPTH OF THE SILTATION CONTROL BARRIER SHALL BE IMMEDIATELY REMOVED AND REPLACED IN UPLAND AREAS.
- THE CONTRACTOR SHALL SWEEP ALL ADJACENT ROADWAYS AND PARKING AREAS THAT ARE AFFECTED BY THE CONSTRUCTION PROCESS ON A DAILY BASIS OR AS REQUIRED.
- THE CONTRACTOR IS TO CONTROL ALL FUGITIVE DUST ORIGINATING ON THIS PROJECT BY WATERING OR OTHER METHODS AS REQUIRED.
- IT IS THE CONTRACTOR'S RESPONSIBILITY TO INSPECT AND MAINTAIN ALL EROSION CONTROL DEVICES AND KEEP THEM IN GOOD CONDITION. ANY IMPACTS DUE TO EROSION OR FAILURE OF ANY EROSION CONTROL DEVICES SHALL BE REPORTED TO THE ENGINEER OF RECORD IMMEDIATELY. CORRECTIVE MEASURES WILL BE THE CONTRACTOR'S RESPONSIBILITY.
- ANY DISCHARGE OF STORMWATER RUNOFF FROM THIS SITE SHALL BE THROUGH A CONTROL DEVICE TO CONTROL TURBIDITY AND SEDIMENT TRANSPORT. THIS INCLUDES THE DISCHARGE FROM ANY DEWATERING OPERATIONS.
- THE CONTRACTOR IS RESPONSIBLE FOR FOLLOWING ALL CRITERIA AS SET FORTH UNDER THE NPDES PERMITTING PROGRAM FOR CONSTRUCTION SITES OF THIS SIZE INCLUDING BUT NOT LIMITED TO THE ADHERENCE TO THE APPROVED POLLUTION PREVENTION CONTROL PLAN, TIMELY INSPECTIONS, PROJECT REPORTING AND DOCUMENTATION.
- NO DEBRIS SHALL BE ALLOWED TO ENTER THE EXISTING STORM OR SANITARY SEWER SYSTEMS.
- THE CONTRACTOR SHALL BECOME FAMILIAR WITH AND COMPLY WITH ALL REQUIREMENTS OF THE STATE PERMITS FOR THIS PROJECT. THE CONTRACTOR SHALL COMPLY WITH THE STORMWATER POLLUTION PREVENTION PLAN OF BOTH ON-SITE AND OFF-SITE IMPROVEMENTS. A SIGNED COPY OF THE STORMWATER POLLUTION PREVENTION PLAN IS TO BE KEPT ON THE PROJECT PREMISES AT ALL TIMES.
- NO WORK WITHIN THE CITY RIGHT-OF-WAY, VOLUSIA COUNTY OR FLORIDA DEPARTMENT OF TRANSPORTATION SHALL BE COMMENCED WITHOUT 48 HOURS ADVANCE NOTICE TO THE CITY, COUNTY OR FDOT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE CITY OF PORT ORANGE PUBLIC WORKS / UTILITY DEPARTMENT, "311" AND EMERGENCY SERVICES FOR RESPECTIVE UTILITY LOCATIONS AND "NOTICE" OF CONSTRUCTION ACTIVITY.
- THE CONTRACTOR SHALL POST "NO TRESPASSING" SIGNAGE AT ALL SITE ENTRANCES PRIOR TO CONSTRUCTION.
- THE CONTRACTOR SHALL OBTAIN A TREE REMOVAL PERMIT FROM THE LOCAL JURISDICTION PRIOR TO REMOVING ANY TREES FROM THIS PROJECT.
- ALL REMOVED MATERIAL SHALL BE HAULED OFF-SITE TO AN APPROVED LANDFILL. TREES MAY BE LOGGED OR MULCHED FOR OFF-SITE DISPOSAL AT THE CONTRACTOR'S DISCRETION.
- THE CONTRACTOR SHALL NOT ALLOW DEBRIS AND RUBBISH TO ACCUMULATE ON THE SITE.
- THE CONTRACTOR SHALL CLEAN UP THE JOB SITE IN AREAS WHERE NO WORK IS TO BE PERFORMED UNDER THIS CONTRACT FOLLOWING DEMOLITION. THE CONTRACTOR SHALL REMOVE ALL DEBRIS, RUBBISH, TEMPORARY FACILITIES, AND EQUIPMENT. THE CONTRACTOR SHALL LEVEL SURFACE IRREGULARITIES AND LEAVE THE WORK IN A NEAT AND PRESENTABLE CONDITION.
- CONTRACTOR SHALL ROUGH GRADE STORMWATER SWALES AND RETENTION PONDS PRIOR TO CONSTRUCTION OF SITE IMPROVEMENTS.
- SITE PREPARATION AND FILL PREPARATION SHALL BE IN ACCORDANCE WITH THE GEOTECHNICAL REPORT AND RECOMMENDATIONS.
- EXISTING STORM DRAINAGE TO REMAIN IN OPERATION AT ALL TIMES. CONTRACTOR TO MAINTAIN THE EXISTING, NEW OR TEMPORARY PIPING.
- RELOCATION OF UTILITY POLES AND LINES SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR. ALL WORK SHALL BE COORDINATED WITH THE APPROPRIATE UTILITY COMPANY AND SHALL BE INCLUDED AS PART OF THE PROJECT SCOPE AND COST.
- ALL ASPHALT PAVEMENT REMOVALS SHALL BE VERTICAL SAWCUT. ALL CONCRETE PAVEMENT REMOVALS SHALL BE EITHER AT EXISTING JOINTS OR VERTICAL SAWCUT. ACTIVE SERVICES SHALL BE SEVERED WITH PROPER NOTICE GIVEN TO LOCAL UTILITY COMPANIES HAVING JURISDICTION.
- THE CONTRACTOR SHALL PROVIDE THE ENGINEER, CITY A MOT PLAN AT THE PRECONSTRUCTION MEETING. TRAFFIC SHALL BE ALLOWED TO CONTINUE DURING WORK. PROVIDE MEASURES TO DETOUR TRAFFIC AROUND OPEN EXCAVATION WITH ADEQUATE BARRICADES, SIGNAGE AND FLAGPERSON TO DIRECT TRAFFIC. EMERGENCY SERVICES SHALL BE NOTIFIED 48 HOUR IN ADVANCE.
- IF ANY DEWATERING IS TO OCCUR DURING ANY PHASE OF CONSTRUCTION THEN DEWATERING ACTIVITY SHALL ADHERE TO CHAPTER 40C-22 FAC MORE SPECIFICALLY AS FOLLOWS. PER 40C-22.00(3) A "NOTICED GENERAL SHORT-TERM DEWATERING PERMIT" IS REQUIRED "ONLY IF" DEWATERING EXCEEDS 4 MILLION GALLONS PER DAY, EXCEPT DURING THE FIRST 120 HOURS OF DEWATERING WHEN THE DAILY AND INSTANTANEOUS PUMPAGE RATES SHALL NOT EXCEED 6 MILLION GALLONS PER DAY. AVERAGE DAILY WITHDRAWAL SHALL NOT EXCEED 2 MILLION GALLONS PER DAY FOR THE FIRST 60 DAYS OF THE DEWATERING ACTIVITY AND SHALL NOT EXCEED ONE MILLION GALLONS PER DAY OF A 180 DAY DURATION. EACH SPECIFIC DEWATERING PROJECT SHALL NOT EXCEED 180 DAYS. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE ANY DEWATERING ACTIVITY IS BELOW THE SPECIFIED THRESHOLD, OTHERWISE A PERMIT WILL BE REQUIRED AT THE EXPENSE OF THE CONTRACTOR. THE CONTRACTOR SHALL FAMILIARIZE ITSELF WITH CHAPTER 40C-22 FAC AND BE SOLELY RESPONSIBLE FOR OBTAINING AND SUBMITTING FORM RDS-30 TO SJRWMD A MINIMUM OF 10 DAYS PRIOR TO ANY DEWATERING ACTIVITY. SUBMITTAL OF FORM RDS-30 IS NOT REQUIRED IF DEWATERING IS 300,000 GALLONS PER DAY OR LESS AND WILL NOT EXCEED 30 DAYS IN DURATION.

SWPPP INSPECTIONS AND RECORD KEEPING:

INSPECTIONS ARE REQUIRED AT LEAST EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS FOLLOWING A RAINFALL EVENT OF ONE-HALF (½) OF AN INCH OF RAINFALL OR GREATER AND SHALL CONTINUE UNTIL THE SITE COMPLIES WITH FINAL STABILIZATION (NOTICE OF TERMINATION). INSPECTIONS MUST BE CONDUCTED BY A "QUALIFIED" INSPECTOR. "QUALIFIED" IS DEFINED AS A PERSON THAT A) HAS SUCCESSFULLY COMPLETED AND MET ALL REQUIREMENTS NECESSARY TO BE FULLY CERTIFIED THROUGH THE FDEP STORMWATER, EROSION AND SEDIMENTATION CONTROL INSPECTOR TRAINING PROGRAM; B) HAS SUCCESSFULLY COMPLETED AN EQUIVALENT FORMAL TRAINING PROGRAM; OR C) THAT IS QUALIFIED BY OTHER TRAINING OR PRACTICAL EXPERIENCE IN THE FIELD OF STORMWATER POLLUTION PREVENTION AND EROSION AND SEDIMENTATION CONTROL. EACH INSPECTION MUST BE FOLLOWED UP BY A REPORT DOCUMENTING THE INSPECTOR'S FINDINGS AND REQUEST THE REQUIRED MAINTENANCE AND/OR REPAIR FOR THE EROSION AND SEDIMENTATION CONTROL MEASURES. THESE RECORDS ARE USED TO PROVE THAT THE REQUIRED INSPECTION AND MAINTENANCE WERE PERFORMED AND SHALL BE PLACED IN THE SWPPP LEDGER. IN ADDITION TO INSPECTION AND MAINTENANCE RECORDS, RECORDS SHOULD BE KEPT OF CONSTRUCTION ACTIVITIES THAT OCCUR ON THE SITE. THE CONTRACTOR SHALL RETAIN COPIES OF THE SWPPP, ALL REPORTS AND DATA FOR A MINIMUM OF FIVE (5) YEARS AFTER THE PROJECT IS COMPLETE IN PAPER AND CD FORMAT.

SITE CLEARING AND GRADING CONSTRUCTION NOTES:

THE FOLLOWING MEASURES REPRESENT MINIMUM STANDARDS TO BE ADHERED TO BY THE CONTRACTOR THROUGHOUT THE CONSTRUCTION OF A PROJECT. THE CITY RESERVES THE RIGHT TO REQUIRE ADDITIONAL MEASURES TO BE EMPLOYED WHEN WARRANTED BY EXTREME CONDITIONS AND/OR THE FAILURE OF THE CONTRACTOR TO EMPLOY THE APPROPRIATE EROSION CONTROL BEST MANAGEMENT PRACTICES. FAILURE TO COMPLY WITH THESE PROVISIONS SHALL RESULT IN THE ISSUANCE OF A "STOP WORK ORDER".

- 6-FEET TALL SCREENED CONSTRUCTION FENCING TO BE INSTALLED ALONG NORTH TYMBER CREEK ROAD PRIOR TO SITE CLEARING.
- NO DISTURBANCE OF PROPOSED CONSERVATION EASEMENTS, NATURAL BUFFERS, OR WATER BODIES IS PERMITTED. THE CONTRACTOR SHALL LOCATE THESE AREAS ON SITE AND BARRICADE THEM TO AVOID ANY UNAUTHORIZED CLEARING, BARRICADES AND OTHER PROTECTIVE FENCING ARE TO BE LOCATED AT THE DRIP LINE OF EXISTING NATIVE TREES OR AT THE EDGE OF THE NATIVE UNDER-STORY HABITAT, WHICHEVER IS NEAREST TO THE CONSTRUCTION ACTIVITY.
- SPECIMEN AND HISTORIC TREES, CONSERVATION EASEMENTS, NATURAL VEGETATION BUFFERS, AND SIMILAR AREAS MUST BE PROTECTED BY BARRICADES OR FENCING PRIOR TO CLEARING. BARRICADES ARE TO BE SET AT THE DRIP LINE OF THE TREES AND MAINTAINED THROUGHOUT THE DURATION OF THE PROJECT. BARBED WIRE IS NOT PERMITTED AS A PROTECTIVE BARRIER.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO HAVE ALL PROTECTIVE VEGETATION BARRICADES AND EROSION CONTROL STRUCTURES AND MEASURES IN PLACE PRIOR TO THE COMMENCEMENT OF ANY EARTHWORK, INCLUDING PRELIMINARY GRUBBING. THESE MEASURES INCLUDE, BUT ARE NOT LIMITED TO, TEMPORARY CONSTRUCTION FENCES, SYNTHETIC JUTE BALES, SILT FENCES, FLOATING TURBIDITY BARRIERS AND OTHER APPROVED BEST MANAGEMENT PRACTICES (BMP'S). FURTHER, IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO MAINTAIN ALL EROSION CONTROL DEVICES THROUGHOUT THE DURATION OF THE ENTIRE PROJECT. MAINTENANCE SHALL INCLUDE PERIODIC INSPECTION AND REMOVAL OF DEBRIS ABUTTING EROSION CONTROL DEVICES.
- PRIOR TO THE INSTALLATION OF ANY FILL MATERIALS ON SUBJECT SITE, SILT FENCES SHALL BE INSTALLED (1) ALONG SUBJECT SITE BOUNDARY AND PROPERTY LINES, (2) AT THE EDGE OF CONSERVATION EASEMENTS AND WETLANDS, (3) ADJACENT TO NATURAL LANDSCAPE BUFFERS, (4) AROUND THE PERIMETER OF EXISTING STORM WATER TREATMENT FACILITIES. THESE CONDITIONS SHALL APPLY IN ALL INSTANCES WHERE FILL MATERIAL IS BEING INSTALLED WITHIN 25 FEET OF ANY OF THE AFOREMENTIONED LOCATIONS.
- WHERE FILL MATERIAL IS INTENDED TO BE INSTALLED ADJACENT TO EXISTING VEGETATION WHICH IS INTENDED TO REMAIN NATURAL, THE CONTRACTOR MAY INSTALL SILT FENCING AS A TREE PROTECTION MEASURE, IN LIEU OF INSTALLING EITHER WOOD BRACING OR ORANGE MESH FENCING. THIS PRACTICE IS ENCOURAGED BY THE CITY. IF THE SILT FENCE FAILS TO PROVIDE ADEQUATE PROTECTION FROM IMPACT DUE TO CONSTRUCTION, THEN ADDITIONAL CONSTRUCTION FENCING OR WOOD BRACING SHALL BE REQUIRED.
- AT A MINIMUM, THE CONTRACTOR SHALL SEED AND MULCH ALL DISTURBED AREAS. SUFFICIENT GRASS COVERAGE IS TO BE ESTABLISHED WITHIN TWO WEEKS.
- IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR THROUGH SCHEDULING, TO MINIMIZE THE DISTURBANCE OF SITE AREAS THAT HAVE BEEN BROUGHT TO THEIR PROPOSED FINAL GRADE. WITHIN SEVEN (7) DAYS OF BRINGING A SUBJECT AREA TO ITS FINAL GRADE OR INACTIVITY IN CONSTRUCTION, THE CONTRACTOR SHALL INSTALL SEED AND MULCH OR SOD, AS REQUIRED.
- ONCE AN AREA IS SEEDDED OR SODDED, IT MUST BE MAINTAINED BY THE CONTRACTOR TO ALLOW THE GRASS TO BECOME ESTABLISHED. IF THE GRASS IS NOT ESTABLISHED WITHIN TWO WEEKS THE CITY MAY REQUIRE THE CONTRACTOR TO RE-SEED OR A NON-VEGETATIVE OPTION MAY BE EMPLOYED.
- ABSOLUTELY NO BURYING OF CLEARED MATERIALS IS PERMITTED.
- THE REMOVAL OF ALL VEGETATION AND TOPSOIL ON THE FUTURE ROADWAY, PARKING AND BUILDING LOT AREAS IS REQUIRED TO BE COMPLETED PRIOR TO THE PLACEMENT OF FILL ON THOSE AREAS. THE TOPSOIL MAY BE TEMPORARILY STOCKPILED AND USED AS TOPSOIL OVER OTHER PROPOSED GREEN AREAS SUCH AS PLANT BEDS, SODDED AREAS, AND WHERE TREES ARE TO BE INSTALLED OR RELOCATED.
- A SIGNED, DATED, AND SEALED LETTER FROM A SOLS ENGINEER OR THE ENGINEER OF RECORD CERTIFYING THAT THE AREAS TO BE FILLED HAVE BEEN STRIPPED OF ORGANIC MATERIALS, MUST BE SUBMITTED TO THE CITY PRIOR TO FILLING.
- 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).
- IF ANY MUCK MATERIAL IS DISCOVERED, IT SHALL BE REQUIRED TO BE REMOVED AND REPLACED WITH A SUITABLE MATERIAL THAT IS PROPERLY BACKFILLED, COMPACTED AND TESTED USING AASHTO T-180 MODIFIED PROCTOR METHOD.
- STOCKPILING IS NOT GENERALLY PERMITTED BY THE CITY. WHEN ALLOWED, STOCKPILES SHALL NOT EXCEED SIX FEET IN HEIGHT MEASURED FROM THE ORIGINAL GRADE. AT A MINIMUM, STOCK PILES THAT WILL REMAIN IN PLACE IN EXCESS OF TWENTY DAYS SHOULD BE SEEDDED AND MULCHED IMMEDIATELY UPON PLACEMENT OF THE FINAL FILL.
- 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. ADEQUATE WATERING METHODS SHOULD BE EMPLOYED TO ALLOW DAILY COVERAGE OF THE ENTIRE LIMITS OF ALL AREAS THAT DO NOT HAVE AN ESTABLISHED VEGETATIVE COVER. METHODS TO BE EMPLOYED INCLUDE, BUT ARE NOT LIMITED TO, WATER TRUCKS, PERMANENT IRRIGATION SYSTEMS, TEMPORARY SPRINKLER SYSTEMS OPERATED BY PUMPING UNITS CONNECTED TO WET RETENTION Ponds, WATER CANNONS, TEMPORARY IRRIGATION SYSTEMS MOUNTED AT TOP STOCKPILE AREAS, AND OTHER METHODS AS DEEMED NECESSARY BY THE CITY.
- ALL FILL MATERIALS LOCATED BENEATH STRUCTURES AND PAVEMENT SHALL CONSIST OF CLEAN GRANULAR SAND FREE FROM ORGANICS AND SIMILAR MATERIAL THAT COULD DECOMPOSE.
- FILL TO BE PLACED IN LANDSCAPED AREAS SHALL HAVE A Ph RANGE BETWEEN 5.5 AND 7.5, BE ORGANIC IN NATURE, FREE OF ROCKS AND DEBRIS, OR MATCH NATIVE EXISTING SOILS.
- A 6" TALL CONSTRUCTION FENCING WITH FABRIC SCREEN TO BE INSTALLED ALONG MAJOR ROADWAYS (TYMBER CREEK ROAD), THE CONSTRUCTION FENCING NEEDS TO BE INSTALLED PRIOR TO SITE CLEARING.

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 SEEDDED AND WATERED. AREAS WHERE FINAL GRADING HAS BEEN COMPLETED FOR MORE THAN 7 DAYS SHALL BE TEMPORARILY SEEDDED. 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 -	PENSACOLA BAHIA (SCARIFIED)	90
OCTOBER 15	BERMUDA COMMON (50% HULLED)	25
OCTOBER 16 -	PENSACOLA BAHIA (SCARIFIED)	100
MARCH 14	BERMUDA COMMON (50% HULLED)	35
	ANNUAL RYE GRASS	10
	RYE GRAIN	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 HOMOGENEOUS 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.

FDOT GENERAL NOTES:

- MAINTENANCE OF TRAFFIC TO BE SUPERVISED BY A CERTIFIED PERSON (ON SITE).
- THE CONTRACTOR SHALL NOTIFY THE DEPARTMENT A MINIMUM OF 48 HOURS PRIOR TO BEGINNING ANY WORK WITH IN THE FDOT RW.
- ALL WORK PERFORMED WITH IN THE FDOT RW SHALL BE IN ACCORDANCE WITH THE 2022 EDITION OF THE FDOT DESIGN STANDARDS & SPECIFICATIONS FOR ROAD & BRIDGE CONSTRUCTION, 2017 EDITION OF THE FDOT UTILITY ACCOMMODATION MANUAL AND FDOT STANDARD PLANS FY 2022-23.
- IT IS THE RESPONSIBILITY OF THE PERMITTEE TO REPAIR ANY DAMAGE TO FDOT FACILITIES CAUSED BY THE CONSTRUCTION OF THIS PROJECT.
- ANY TEST RESULTS TAKEN DURING CONSTRUCTION OF THE PERMITTED WORK SHALL BE PROVIDED TO THE DEPARTMENT UPON REQUEST.
- ALL CONCRETE TO BE REMOVED SHALL BE SAW CUT TO NEAREST JOINT IN GOOD CONDITION, SO A CONNECTION THAT IS FREE OF CRACKS, DEFORMITIES OR VOIDS & IRREGULARITIES ARE NOT DEFECTIVE.
- ALL STRIPING WITHIN THE FDOT RIGHT-OF-WAY SHALL BE PREFORMED THERMOPLASTIC.
- ALL CONCRETE SHALL BE AN APPROVED FDOT MIX DESIGN OF 3,000 PSI.
- ALL MATERIALS INSTALLED INSIDE FDOT RW SHALL BE ON THE QUALIFIED PRODUCTS LIST OR APPROVED PRODUCTS LIST.
- ALL CONSTRUCTION SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEYOR UTILIZING GEODETIC TOTAL STATION. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR'S RISK.
- THE CONTRACTOR SHALL SUBMIT A MAINTENANCE OF TRAFFIC AND BARRICADE PLAN TO THE ENGINEER FOR APPROVAL WITH THE BID. INCLUDE THE MOT PLAN AT THE PRECONSTRUCTION MEETING.
- ALL TRAFFIC CONTROL DEVICES SHALL BE IN PLACE PRIOR TO CONSTRUCTION AND THE FDOT INSPECTOR NOTIFIED FOR APPROVAL.
- ALL BARRICADES AND POSTED SIGNAGE SHALL REMAIN IN PLACE UNTIL PAVING WORK IS COMPLETE. ALL BARRICADES SHALL BE VERIFIED IN PLACE BY THE CONTRACTOR AT THE END OF EACH WORK DAY.
- SOD ALL DISTURBED AREAS IN RIGHT-OF-WAY WITH BAHIA.
- THE CONTRACTOR SHALL ENSURE THAT ALL SIDEWALKS AND CROSSWALKS CONFORM TO THE CURRENT REQUIREMENTS OF THE AMERICANS WITH DISABILITY ACT (ADA).
- ALL SIGNS AND PAVEMENT MARKINGS THAT ARE REMOVED OR DAMAGED BY CONSTRUCTION ACTIVITIES RELATED TO THIS PROJECT ARE TO BE REPLACED TO THEIR PRECONSTRUCTION CONDITIONS.
- ALL SIGNAGE AND PAVEMENT MARKINGS SHALL CONFORM TO FDOT STANDARD INDEX NO. 711-001.
- IN THE EVENT PERMANENT VEHICLE DETECTION IS DISRUPTED, PROVIDE AN ALTERNATIVE MEANS OF DETECTION TO ALL LANES APPROACHING THE INTERSECTION, SEPARATING EACH MOVEMENT WHICH PREVIOUSLY HAD DETECTION. THE TYPE OF DETECTOR SHALL BE APPROVED BY THE ENGINEER PRIOR TO INSTALLATION. EQUIPMENT SHALL ONLY DETECT THE INTENDED MOVEMENT.
- THERE SHALL BE NO US 1 LANE CLOSURES DURING 7 A.M. TO 7 P.M. MONDAY TO SUNDAY.
- THERE SHALL BE NO WORK WITHIN THE VICINITY OF THE SIGNALIZED INTERSECTION DURING 7 A.M. TO 7 P.M. MONDAY TO SUNDAY.
- CONTRACTOR TO PROVIDE TEMPORARY VIDEO DETECTION FOR SIGNAL WHILE LOOPS ARE DISTURBED DURING MILLING AND RESURFACING.

FDEP WASTEWATER NOTES

- 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 MANREL FOR THE DEFLECTION TEST WITH A DIAMETER NOT LESS THAN 85% 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.
- 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-628 FOR CLAY PIPE, ASTM C-1242 FOR CONCRETE PIPE, ASTM F-1417 FOR PLASTIC PIPE, AND OTHER MATERIAL APPROPRIATE TEST PROCEDURES.
- 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.
- SUITABLE COUPLINGS COMPLYING WITH ASTM SPECIFICATIONS ARE REQUIRED FOR JOINING DISSIMILAR MATERIALS.
- 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.

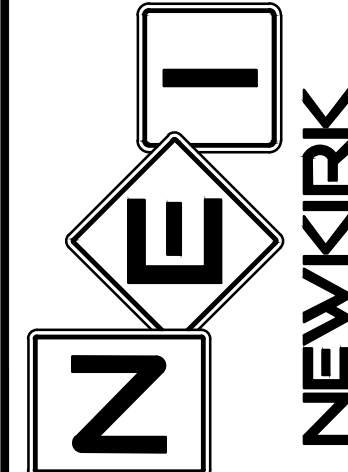
FDEP WATER NOTES

- 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.
- ALL PUBLIC WATER SYSTEM COMPONENTS, INCLUDING 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.
- 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.
- 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.
- ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT WILL BE LEAD FREE, AND ANY SOLDER OR FLUX USED IN THIS PROJECT WILL CONTAIN NO MORE THAN 0.2% LEAD.
- ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT WILL BE COLOR CODED OR MARKED IN ACCORDANCE WITH SUBPARAGRAPH 62-555.320(21)(B). 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 STRIPS 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.)
- POTABLE WATER PIPES MUST BE MANUFACTURED IN ACCORDANCE WITH THE FOLLOWING AWWA SPECIFICATIONS:
 - DUCTILE IRON PIPE (3 INCHES TO 54 INCHES) - AWWA C150 AND AWWA C151;
 - PVC PIPE
 - AWWA C900/ASTM 1784 (1 INCH TO 12 INCHES) WITH CL200 MINIMUM;
 - AWWA C905 (14 INCHES TO 48 INCHES);
- 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."
- 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.
- 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.
- ALL WATER MAIN TEES, BENDS, PLUGS, AND HYDRANTS INSTALLED UNDER THIS PROJECT WILL BE PROVIDED WITH THRUST BLOCKS OR RESTRAINED JOINTS TO PREVENT MOVEMENT.
- 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.
- 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 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 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."
- 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 SHALL 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.
- 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 62-10, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.
- 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:
 - PRECAUTIONARY BOIL WATER NOTICES MUST BE ISSUED IN CASES OF PLANNED DISTRIBUTION INTERRUPTIONS, WHICH ARE DEEMED AN IMMINENT PUBLIC HEALTH THREAT BY THE FDEP 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
 - 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.

REVISIONS

DATE	DESCRIPTION

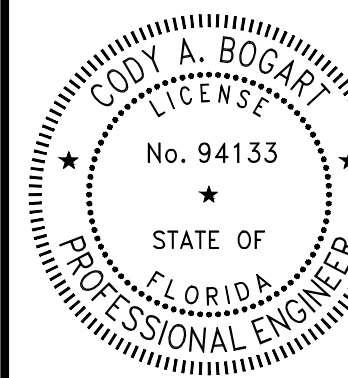
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DEVELOPMENT INFORMATION
AND CONSTRUCTION NOTES
HARBOR LANDINGS
5653 RIDGEWOOD AVENUE
PORT ORANGE, FL 32127

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DATE:	JANUARY 2023
DESIGN BY:	CAB
DRAWN BY:	CRA
CHECKED BY:	HHN
SCALE:	
DRAWING NUMBER	

03

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	■	FOUND 4" BY 4" CONCRETE MONUMENT L.B. #3724
B24	BORING ID	---	EXISTING EASEMENT
IV	EXISTING CABLE TV PEDESTAL	FOC	EXISTING UNDERGROUND FIBER OPTIC CABLE
⌈	EXISTING CAP OR PLUG	#M	EXISTING FORCE MAIN (# INDICATES SIZE)
⊙	EXISTING CLEAN OUT	GAS	EXISTING GAS MAIN
⊗	EXISTING CONDUIT RISER/ MARKER	OHE	EXISTING OVERHEAD ELECTRIC CABLES
E	EXISTING ELECTRIC METER	OHT	EXISTING OVERHEAD TRAFFIC SIGNAL CABLE
+11.7	EXISTING ELEVATION (SOFT)	RAW	EXISTING RAW WATER MAIN (# INDICATES SIZE)
0.0	PROPOSED ELEVATION (SOFT)	REC	EXISTING RECLAIM WATER MAIN (# INDICATES SIZE)
+11.75	EXISTING ELEVATION (HARD)	RSAN	PROPOSED SANITARY SEWER (# INDICATES SIZE)
0.00	PROPOSED ELEVATION (HARD)	WM	PROPOSED WATER MAIN (# INDICATES SIZE)
⊙	EXISTING FIRE HYDRANT	12	EXISTING CONTOUR
⊙	PROPOSED FIRE HYDRANT	10	PROPOSED CONTOUR (SOFT)
↶	EXISTING FLOW DIRECTION	10	PROPOSED CONTOUR (HARD)
↶	PROPOSED FLOW DIRECTION	UTEL	EXISTING UNDERGROUND TELEPHONE CABLE
⊗	EXISTING GAS METER	UTV	EXISTING UNDERGROUND TELEVISION CABLE
⊗	EXISTING GAS VALVE	UGE	EXISTING UNDERGROUND ELECTRICAL POWER CABLE
←	EXISTING GUY WIRE & ANCHOR PIN	---	JURISDICTIONAL WETLAND LINE
⌈	EXISTING MAIL BOX	RSAN	EXISTING SANITARY SEWER (# INDICATES SIZE)
○	EXISTING MANHOLE (UNKNOWN)	WM	EXISTING WATER MAIN (# INDICATES SIZE)
⊙	PROPOSED MANHOLE	---	EXISTING PIPE OR CONDUIT (TYPE SPECIFIED)
⊙	EXISTING SANITARY SEWER CLEANOUT	---	EXISTING SWALE OR CENTER OF DITCH
⊙	EXISTING SANITARY SEWER MANHOLE	---	PROPOSED SWALE OR CENTER OF DITCH
⊙	EXISTING ROAD SIGNS AND POSTS	---	EXISTING TOP OF DITCH BANK
⊙	PROPOSED SIGN AND POST	---	EXISTING BOTTOM OF DITCH BANK
⊙	EXISTING TEE	11	EXISTING WOOD FENCE
⊙	EXISTING UTILITY POLE	×	EXISTING WIRE OR CHAIN LINK FENCE
⊗	EXISTING VALVE IRRIGATION	×	PROPOSED WIRE OR CHAIN LINK FENCE
⊗	EXISTING VALVE WATER	---	PROPOSED SILT/SEDIMENT FENCE
⊗	PROPOSED WATER VALVE	~~~~~	PROPOSED COIR ROLL OR WATTLE
⊗	EXISTING WATER METER	○	PROPOSED FLOATING TURBIDITY BARRIER
⊗	EXISTING STORM SEWER WITH INLET	TP	PROPOSED TREE PROTECTION
⊗	PROPOSED STORM SEWER WITH INLET		
●	FOUND 1/2" CAPPED IRON ROD L.B. #3724		
⊗	FOUND 1/2" IRON ROD (NO I.D.)		

VOLUSIA COUNTY IRRIGATION NOTES:

1. AUTOMATIC IRRIGATION CONTROLLERS, WHEN UTILIZED, SHALL CONTAIN A FUNCTIONAL RAIN SENSOR DEVICE, CAPABLE OF BEING SET TO ONE MINUTE RUN TIMES, AND BATTERY BACKUP CAPABILITY TO RETAIN PROGRAMMING IN THE EVENT OF A POWER FAILURE.
2. A RAIN SENSOR PLACED ON A STATIONARY STRUCTURE, FREE AND CLEAR OF ANY OVERHEAD OBSTRUCTIONS AND ABOVE THE HEIGHT OF THE SPRINKLER COVERAGE.
3. EQUIPMENT WITH CHECK VALVES USED IN LOW-LYING AREAS TO PREVENT LOW HEAD DRAINAGE.
4. BACKFLOW PREVENTION METHODS AND OTHER PROVISIONS PRESCRIBED IN SECTION 74-42.
5. IRRIGATION DESIGN WITH THE APPROPRIATE UNIFORMITY FOR THE TYPE OF PLANT BEING GROWN AND FOR THE TYPE OF SOIL.
6. IRRIGATION SYSTEM EQUIPMENT INSTALLED AS DESIGNED.
7. IRRIGATION ZONES DIVIDED ACCORDING TO: AVAILABLE FLOW RATE, VEGETATED GROUPINGS (I.E., TURF, SHRUBS, NATIVE PLANTS, ETC.), SPRINKLER TYPES (I.E., SPRINKLERS WITH MATCHING PRECIPITATION RATES) AND SOIL CHARACTERISTICS.
8. SPRAY HEADS AND ROTORS NOT MIXED IN SAME ZONE.
9. DISTRIBUTION EQUIPMENT IN A GIVEN ZONE HAVING MATCHED PRECIPITATION RATES.
10. APPLICATION RATES THAT AVOID RUNOFF AND PERMIT UNIFORM WATER INFILTRATION INTO THE SOIL, CONSIDERING LAND SLOPE, SOIL HYDRAULIC PROPERTIES, VEGETATIVE GROUND COVER AND PREVAILING WINDS.
11. A MINIMUM SEPARATION OF FOUR INCHES BETWEEN DISTRIBUTION EQUIPMENT AND PAVEMENT.
12. A MINIMUM SEPARATION OF 12 INCHES BETWEEN DISTRIBUTION EQUIPMENT AND BUILDINGS AND OTHER VERTICAL STRUCTURES.
13. NO DIRECT SPRAY ONTO WALKWAYS, BUILDINGS, ROADWAYS AND DRIVES.
14. LAWN SPRAY PATTERNS PROVIDING HEAD TO HEAD COVERAGE.
15. WATER CONVEYANCE SYSTEMS WITH A FLOW VELOCITY OF FIVE FEET PER SECOND OR LESS.
16. PIPELINES DESIGNED TO PROVIDE THE SYSTEM WITH THE APPROPRIATE PRESSURE REQUIRED FOR MAXIMUM IRRIGATION UNIFORMITY.
17. PRESSURE REGULATING HEADS.
18. A MAINTENANCE CHECKLIST PROVIDED TO THE PROPERTY OWNER BY THE IRRIGATION CONTRACTOR ACCOMPANIED BY A RECOMMENDED MAINTENANCE SCHEDULE, PROPER IRRIGATION SYSTEM SETTINGS ACCORDING TO SEASON, RECOMMENDATIONS FOR CHECKING RAIN SENSOR DEVICE, FILTER CLEANING RECOMMENDATIONS AND INFORMATION ON THE CURRENT WATER RESTRICTIONS.
19. IRRIGATION SYSTEM DESIGN WILL BE PERMITTED THROUGH VOLUSIA COUNTY.

VOLUSIA COUNTY LANDSCAPE REQUIREMENTS:

1. A HIGH VOLUME IRRIGATION AREA SHALL NOT EXCEED 50 PERCENT OF THE LANDSCAPED AREA. LOW OR MEDIUM VOLUME IRRIGATION AREAS MAY BE UTILIZED IN LIEU OF ANY HIGH VOLUME IRRIGATION AREA.
2. A MEDIUM VOLUME IRRIGATION AREA SHALL NOT EXCEED 25 PERCENT OF THE LANDSCAPED AREA. HOWEVER, THE LANDSCAPED AREA MAY CONTAIN UP TO 75 PERCENT MEDIUM VOLUME IRRIGATION AREA, IF NO HIGH VOLUME IRRIGATION AREA IS UTILIZED ON SITE.
3. A LOW VOLUME IRRIGATION AREA MAY BE UTILIZED FOR AN ENTIRE LANDSCAPED AREA WITH THE EXCEPTION OF NATIVE VEGETATION AREAS REGULATED BY SECTION 50-373(b)(4).
4. IN THE ALTERNATIVE TO (1), (2), AND (3) ABOVE, IF 25 PERCENT OF THE PRE-EXISTING NATIVE VEGETATION IS RETAINED ON SITE, THE REMAINING 75 PERCENT OF THE LANDSCAPED AREA MAY BE A HIGH VOLUME IRRIGATION AREA. FOR ALL PRE-EXISTING NATIVE VEGETATION RETAINED ON A PARCEL:
 - NO SUPPLEMENTAL WATER SHALL BE APPLIED TO THE NATIVE VEGETATION AREA.
 - ONLY HAND PRUNING OF NATIVE VEGETATION IS ALLOWED.
 - MECHANICAL MOWING OR CLEARING IS PROHIBITED.

VOLUSIA COUNTY CONTRACTOR LICENSE REQUIREMENTS:

NO PERSON MAY INSTALL OR REPAIR AN IRRIGATION SYSTEM IN VOLUSIA COUNTY UNLESS THEY POSSESS A VALID IRRIGATION CERTIFICATE OF COMPETENCY FROM THE DEPARTMENT. THE FOLLOWING PERSONS ARE EXEMPTED FROM HAVING TO POSSESS A CERTIFICATE OF COMPETENCY:

- LICENSED FLORIDA WATER WELL CONTRACTORS AND FLORIDA STATE CERTIFIED PLUMBING CONTRACTORS.
- FLORIDA STATE REGISTERED PLUMBING CONTRACTORS.
- PROPERTY OWNERS WHO PERSONALLY PERFORM CONSTRUCTION, MAINTENANCE OR REPAIRS ON AN IRRIGATION SYSTEM THAT SERVES HIS OR HER OWNER-OCCUPIED SINGLE FAMILY RESIDENCE.

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION ROADWAY AND TRAFFIC DESIGN STANDARDS - 2022 / 2023 AND QUALIFIED PRODUCTS LIST

INDEX NO.	DESCRIPTION	INDEX NO.	DESCRIPTION
102	TEMPORARY EROSION AND SEDIMENT CONTROL	514	OPTIONAL BASE GROUP AND STRUCTURAL NUMBERS
425-010	STRUCTURE BOTTOMS - TYPES J AND P	330-001	TURNOUTS
205	PIPE BACKFILL	546	SIGHT DISTANCE AT INTERSECTIONS
425-021	CURB INLET TOPS - TYPES 5 & 6	102-600	GENERAL INFORMATION FOR TRAFFIC CONTROL
425-024	CURB INLET TOP - TYPE 9		THROUGH WORK ZONES
425-052	DITCH BOTTOM INLETS - TYPES C, D, E AND H	102-602	TWO-LANE, TWO-WAY, WORK ON SHOULDER
430-022	SIDE DRAIN MITERED END SECTION	102-603	TWO-LANE, TWO-WAY, WORK WITHIN THE TRAVEL WAY
520-001	CURB & CURB AND GUTTER	102-660	PEDESTRIAN CONTROL FOR CLOSURE OF SIDEWALKS
522-002	PUBLIC SIDEWALK CURB RAMPS	700-101	TYPICAL SECTIONS FOR PLACEMENT OF SINGLE & MULTIPLE-COLUMN SIGNS
350-001	CONCRETE PAVEMENT JOINTS		SPECIAL MARKING AREAS
522-001	CONCRETE SIDEWALK		
120-001	EMBANKMENT UTILIZATION	711-001	

ABBREVIATIONS

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

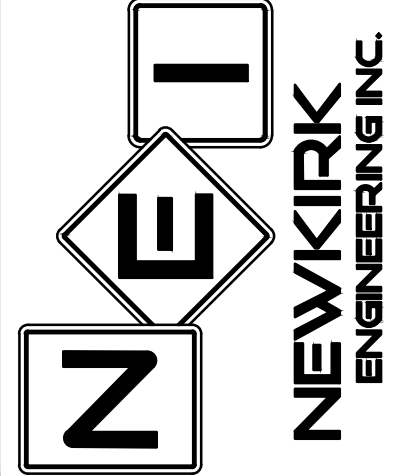
SITE AND GENERAL INFORMATION

1. THE PROPERTY AREA BOUNDARY CONSISTS OF 206,482 SF OR 4.740 ACRES. FOR BOUNDARY AND TOPOGRAPHIC SURVEY REFER TO THE SURVEY PERFORMED BY A1A SURVEYING, INC. JOB # 2018-052, DATED 12/12/2022
2. THE EXISTING ZONING IS PUD (PLANNED COMMERCIAL DEVELOPMENT).
3. THE FLUM IS URBAN MEDIUM DENSITY RESIDENTIAL (4-8 UNITS / ACRE).
4. THE TAX PARCEL NUMBERS ARE 63-14-01-12-0010, 63-14-01-12-0020, 63-14-01-12-0040, 63-14-01-12-0050.
5. THE EXISTING SITE CONDITION IS UNDEVELOPED. THE FLUCFCS LAND USE IS (191) UNDEVELOPED LAND WITHIN URBAN AREAS.
6. PER THE USDA NATURAL RESOURCES CONSERVATION SERVICE FOR VOLUSIA COUNTY, THE SCS SOILS MAP INDICATES THE SITE CONSISTS OF (12) CANAVERAL SAND, 0 TO 5 PERCENT SLOPES, (15) COCOA SAND, 0 TO 5 PERCENT SLOPES.
7. THE SITE IS LOCATED WITHIN ZONE "X", "AE6" & SHADED "X" PER FEMA MAP PANEL No. 12127C0526J, DATED. 9/29/2017.
8. ELECTRICAL UTILITY SERVICE WILL BE PROVIDED BY FLORIDA POWER & LIGHT. NATURAL GAS WILL BE PROVIDED BY TECO PEOPLES GAS COMPANY, AS REQUIRED. TELEPHONE, CABLE AND INTERNET SERVICE WILL BE PROVIDED BY AT&T. CABLE TV AND INTERNET CAN ALSO BE PROVIDED BY SPECTRUM.
9. SOLID WASTE WILL BE COLLECTED AND DISPOSED OF BY WASTE PRO, INC., USING INDIVIDUAL GARBAGE CANS
10. 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.
11. STORMWATER WILL BE PROVIDED BY INTERCONNECTED DRY RETENTION POND SYSTEM PER CITY AND SJRWMD REQUIREMENTS THAT WILL MATCH THE EXISTING SITE DISCHARGE LOCATION TO THE DITCH WITHIN FOZZARD BLVD.
12. POTABLE WATER AND WASTEWATER UTILITIES PROVIDED BY CITY OF PORT ORANGE. WATER MAIN CONNECTIONS WILL OCCUR AT EACH SITE ENTRANCE FOR A LOOPED CONNECTION. A GRAVITY SEWER SYSTEM IS PROPOSED TO TIE INTO THE SYSTEM WITHIN RIVERSIDE DRIVE.
13. IRRIGATION SERVICE WILL BE PROVIDED BY PRIVATE WELL AND IS TO BE CONTROLLED BY THE HOA.
14. ACCESS WILL BE PROVIDED FROM ENTRANCES ON RIVERSIDE DRIVE AND SOUTH RIDGEWOOD AVE (US-1).
15. ROADS ARE TO BE PRIVATELY OWNED AND MAINTAINED WHILE UTILITIES ARE TO BE OWNED AND MAINTAINED THEIR RESPECTIVE FRANCHISE UTILITY PROVIDERS.

REVISIONS

DATE	DESCRIPTION

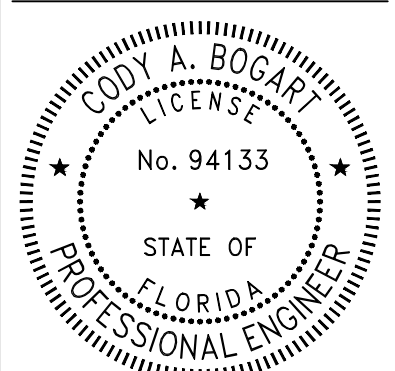
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DEVELOPMENT INFORMATION
AND CONSTRUCTION NOTES
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05

DEMOLITION AND SWPPP NOTES:

- ALL EROSION CONTROL DEVICES AND VISIBLE BARRICADES SHALL BE INSTALLED AND APPROVED BY THE ENGINEER PRIOR TO THE START OF CLEARING AND GRUBBING.
- THE CONTRACTOR SHALL SCHEDULE A PRECONSTRUCTION MEETING WITH THE CITY AS SPECIFIED PRIOR TO START OF CONSTRUCTION.
- THE SITE SHALL BE CLEARED AND GRUBBED OF ALL VEGETATION AND DEBRIS WITHIN THE APPROXIMATE LIMITS OF CLEARING AS INDICATED ON THE DRAWING.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE CITY OF PORT ORANGE UTILITY DEPARTMENT, FLORIDA SUNSHINE AND EMERGENCY SERVICES FOR RESPECTIVE UTILITY LOCATIONS AND "NOTICE" OF CONSTRUCTION ACTIVITY.
- ALL REMOVED MATERIAL SHALL BE HAULED OFF-SITE TO AN APPROVED LANDFILL. TREES MAY BE LOGGED OR MULCHED FOR OFF-SITE DISPOSAL AT THE CONTRACTOR'S DISCRETION.
- ALL EROSION CONTROL DEVICES SHALL BE PLACED PRIOR TO THE START OF WORK AND REMAIN IN PLACE UNTIL ALL WORK IS COMPLETE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PERIODIC INSPECTION AND REMOVAL OF DEBRIS AND SILT BEHIND EROSION CONTROL DEVICES.
- ALL INLETS AND PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY INLET PROTECTION MEASURES TO PREVENT SILTATION IN THE DRAINAGE SYSTEM (SEE DETAILS THIS DRAWING). THE ENTIRE DRAINAGE SYSTEM SHALL BE CLEANED OF ALL DEBRIS PRIOR TO FINAL ACCEPTANCE.
- ALL OFF-SITE AREAS DISTURBED DURING CONSTRUCTION ACTIVITY SHALL BE IMMEDIATELY RESTORED TO PRIOR CONDITION UPON COMPLETION OF WORK.
- SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION, BLOWING SAND AND THE IMPACT TO NEIGHBORING PROPERTIES.
- THE CONTRACTOR SHALL PROVIDE THE ENGINEER, CITY A MOT PLAN AT PRECONSTRUCTION MEETING. TRAFFIC SHALL BE ALLOWED TO CONTINUE DURING WORK. PROVIDE MEASURES TO DETOUR TRAFFIC AROUND OPEN EXCAVATION WITH ADEQUATE BARRICADES, SIGNAGE AND FLAGPERSON TO DIRECT TRAFFIC. EMERGENCY SERVICES SHALL BE NOTIFIED 48 HOUR IN ADVANCE.
- EXISTING DRIVEWAYS SHOWN ADJACENT TO OR OUTSIDE LIMITS OF CONSTRUCTION SHALL REMAIN IN-SERVICE. EXISTING UTILITIES AND DRIVEWAYS SHALL NOT BE REMOVED UNLESS OTHERWISE NOTED.
- IF ANY DEWATERING IS TO OCCUR DURING ANY PHASE OF CONSTRUCTION THEN DEWATERING ACTIVITY SHALL ADHERE TO CHAPTER 40C-22 FAC MORE SPECIFICALLY AS FOLLOWS. PER 40C-22.03(3) A "NOTICED GENERAL SHORT-TERM DEWATERING PERMIT" IS REQUIRED "ONLY IF" DEWATERING EXCEEDS 4 MILLION GALLONS PER DAY, EXCEPT DURING THE FIRST 120 HOURS OF DEWATERING WHEN THE DAILY AND INSTANTANEOUS PUMPAGE RATES SHALL NOT EXCEED 6 MILLION GALLONS PER DAY. AVERAGE DAILY WITHDRAWAL SHALL NOT EXCEED 2 MILLION GALLONS PER DAY FOR THE FIRST 60 DAYS OF THE DEWATERING ACTIVITY AND SHALL NOT EXCEED ONE MILLION GALLONS PER DAY OF A 180 DAY DURATION. EACH SPECIFIC DEWATERING PROJECT SHALL NOT EXCEED 180 DAYS. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE ANY DEWATERING ACTIVITY IS BELOW THE SPECIFIED THRESHOLD. OTHERWISE A PERMIT WILL BE REQUIRED AT THE EXPENSE OF THE CONTRACTOR. THE CONTRACTOR SHALL FAMILIARIZE ITSELF WITH CHAPTER 40C-22 FAC AND BE SOLELY RESPONSIBLE FOR OBTAINING AND SUBMITTING FORM RDS-50 TO SJRWMD A MINIMUM OF 10 DAYS PRIOR TO ANY DEWATERING ACTIVITY. SUBMITTAL OF FORM RDS-50 IS NOT REQUIRED IF DEWATERING IS 300,000 GALLONS PER DAY OR LESS AND WILL NOT EXCEED 30 DAYS IN DURATION.

SWPPP INSPECTIONS AND RECORD KEEPING:

INSPECTIONS ARE REQUIRED AT LEAST EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS FOLLOWING A RAINFALL EVENT OF ONE-HALF (1/2) OF AN INCH OF RAINFALL OR GREATER AND SHALL CONTINUE UNTIL THE SITE COMPLIES WITH FINAL STABILIZATION (NOTICE OF TERMINATION). INSPECTIONS MUST BE CONDUCTED BY A "QUALIFIED" INSPECTOR. "QUALIFIED" IS DEFINED AS A PERSON THAT A) HAS SUCCESSFULLY COMPLETED AND MET ALL REQUIREMENTS NECESSARY TO BE FULLY CERTIFIED THROUGH THE FDEP STORMWATER, EROSION AND SEDIMENTATION CONTROL INSPECTOR TRAINING PROGRAM; B) HAS SUCCESSFULLY COMPLETED AN EQUIVALENT FORMAL TRAINING PROGRAM; OR C) THAT IS QUALIFIED BY OTHER TRAINING OR PRACTICAL EXPERIENCE IN THE FIELD OF STORMWATER POLLUTION PREVENTION AND EROSION AND SEDIMENTATION CONTROL. EACH INSPECTION MUST BE FOLLOWED UP BY A REPORT DOCUMENTING THE INSPECTOR'S FINDINGS AND REQUEST THE REQUIRED MAINTENANCE AND/OR REPAIR FOR THE EROSION AND SEDIMENTATION CONTROL MEASURES. THESE RECORDS ARE USED TO PROVE THAT THE REQUIRED INSPECTION AND MAINTENANCE WERE PERFORMED AND SHALL BE PLACED IN THE SWPPP LEDGER. IN ADDITION TO INSPECTION AND MAINTENANCE REPORTS, RECORDS SHOULD BE KEPT OF CONSTRUCTION ACTIVITIES THAT OCCUR ON THE SITE. THE CONTRACTOR SHALL RETAIN COPIES OF THE SWPPP, ALL REPORTS AND DATA FOR A MINIMUM OF FIVE (5) YEARS AFTER THE PROJECT IS COMPLETE IN PAPER AND CD FORMAT.

LAND ALTERATION / TREE PRESERVATION NOTES:

- ALL TREES TO REMAIN MUST BE PROTECTED BY TREE PRESERVATION BARRICADES MEETING THE MINIMUM STANDARDS. PROTECTIVE BARRICADES SHALL REMAIN IN PLACE UNTIL LAND ALTERATION AND CONSTRUCTION ACTIVITIES ARE COMPLETED.
- ALL TRIMMING SHALL BE UNDERTAKEN ON A TREE PROTECTED BY THE PROVISIONS OF THE LAND DEVELOPMENT CODE SHALL BE IN ACCORDANCE WITH THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) A-300 PRUNING STANDARDS.
- OAK TREES LARGER THAN 36-INCHES AND ABOVE (HISTORIC) PRUNING SHALL BE PERFORMED BY AN ARBORIST CERTIFIED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE OR A REGISTERED CONSULTING ARBORIST WITH THE AMERICAN SOCIETY OF CONSULTING ARBORISTS. THE ARBORIST SHALL UNDERSTAND THAT THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) A300 PRUNING STANDARDS IS A STANDARD OF DIVISION 4.0.
- ALL TREE ROOTS EXISTING WITHIN APPROVED IMPROVEMENT AREAS AND ORIGINATING FROM A PROTECTED TREE, SHALL BE SEVERED CLEAN AT THE LIMITS OF THE PRESERVED AREA WHERE INDICATED ON THIS PLAN.
- SEE TREE PROTECTION DETAIL M-25, SHEET No. 7. FOR INITIAL CLEARING COORDINATE WITH CITY AND EOR FOR MODIFICATION TO TREE PROTECTION FOR CONSTRUCTION ACTIVITY.

NOTE:
TREES TO BE PROTECTED PER CITY DETAILS UPON INITIAL CLEARING. ADJUSTMENTS TO PROTECTION TO BE COORDINATED WITH CITY AND ENGINEER OF RECORD FOR FINAL GRADING OR NEEDED ENCROACHMENTS FOR IMPROVEMENTS.

EROSION CONTROL NOTES:

- LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES. THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE SWPPP DURING CONSTRUCTION OPERATIONS.
- NO LAND CLEARING OR GRADING SHALL BEGIN UNTIL ALL EROSION CONTROL DEVICES HAVE BEEN INSTALLED.
- THE CONTRACTOR SHALL POST "NO TRESPASSING" SIGNAGE AT ALL SITE ENTRANCES PRIOR TO CONSTRUCTION.
- MAINTAIN EROSION CONTROL MEASURES AFTER EACH RAIN AND AT LEAST ONCE A WEEK.
- THIS PLAN SHALL NOT BE CONSIDERED ALL INCLUSIVE AS THE GENERAL CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS TO PREVENT SOIL SEDIMENT FROM LEAVING THE SITE.
- GENERAL CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL ORDINANCES THAT APPLY.
- ADDITIONAL EROSION AND SEDIMENT CONTROL MEASURES WILL BE INSTALLED IF DEEMED NECESSARY BY ON SITE INSPECTION.
- NO TURBID WATER SHALL BE DISCHARGED OFF-SITE FROM THE DEWATERING OPERATION. CONTRACTOR SHALL TAKE MEASURES TO CONTROL TURBIDITY.
- IF INSTALLATION OF STORM DRAINAGE SYSTEM SHOULD BE INTERRUPTED BY WEATHER OF NIGHTFALL, THE PIPE ENDS SHALL BE COVERED WITH FILTER FABRIC.
- GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO TAKE WHATEVER MEANS NECESSARY TO ESTABLISH PERMANENT SOIL STABILIZATION.
- PROVIDE DUST CONTROL FOR ALL EARTHWORK OPERATIONS. COVER AREA WITH LIGHT COATING OF WATER OR OTHER APPROVED METHOD.

LEGEND:

- PROPOSED SILT FENCE (SEE CITY DETAIL M-23, SHEET No. 7)
- PROPOSED TREE BARRICADE (SEE CITY DETAIL M-25, SHEET No. 7)
- PROPOSED AGGREGATE
- ASPHALT/CONCRETE REMOVAL

BENCHMARK INFORMATION:

- #3 BENCHMARK #3 TOP OF 4X4 CONCRETE MONUMENT ELEVATION = 1.04
- #4 BENCHMARK #4 TOP OF SANITARY SEWER MANHOLE ELEVATION = 3.11

VERTICAL DATA ELEVATIONS REFER TO (N.A.V.D. 88) NORTH AMERICAN VERTICAL DATUM 1988, FEET AND DECIMAL PART THEREOF. BENCHMARK REFERENCE NAVD DATUM OF 1988. BENCHMARK DESIGNATION IS A NATIONAL GEODETIC SURVEY DESIGNATION V 404 PID AQ2698 ELEVATION = 3.11

SPECIMEN TREE LEGEND :

TYPE (ALL SPECIES)	EXISTING	REMOVED	REMAIN	REQUIRED
SPECIMEN	37	18	19	19
	37 (100.0%)	18 (48.7%)	19 (51.3%)	19 (50.0%)

* \$21,720.96 IS REQUIRED TO BE PAID TOWARD THE CITY'S TREE MITIGATION BANK

HISTORIC TREE LEGEND :

TYPE (ALL SPECIES)	EXISTING	REMOVED	REMAIN
HISTORIC	7	0	7
	7	0	7

EXISTING TREE LEGEND:

NAME	COUNT	REMOVE	REMAINING
12 CEDAR TREE	1	1	0
12 OAK TREE	45	26	19
11 PALM TREE	44	39	5
12 HACKBERRY TREE	5	4	1
10 HICKORY TREE	3	2	1
TOTALS	98	72	26



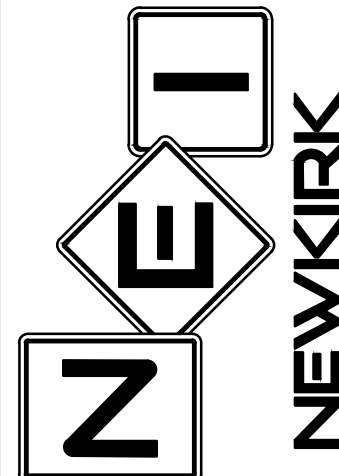
WARNING !!

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

REVISIONS

DATE	DESCRIPTION
5/5/23	CITY COMMENTS
10/23/23	CITY COMMENTS

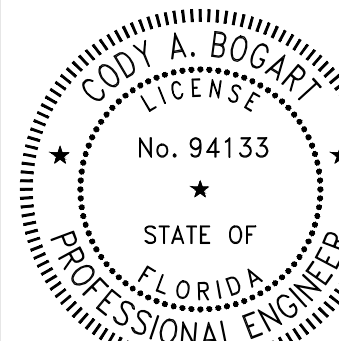
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Landscape Architecture



DEMOLITION AND SWPPP PLAN
HARBOR LANDINGS
5653 SOUTH RIDGEWOOD AVE
PORT ORANGE, FL 32127

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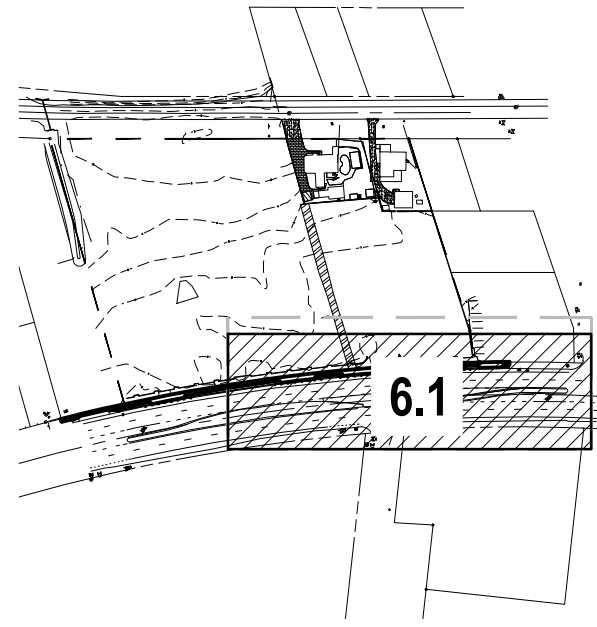
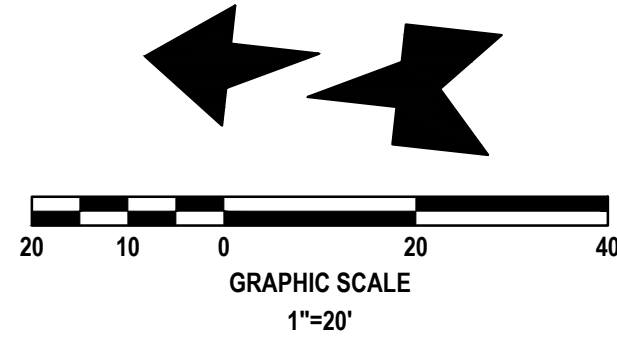
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PROJECT No:	2022-199
DATE:	JANUARY 2023
DESIGN BY:	CAB
DRAWN BY:	CRA
CHECKED BY:	HHN
SCALE:	1" = 30'
DRAWING NUMBER	

06



KEY MAP

NOT TO SCALE

LEGEND:

- PROPOSED SILT FENCE (SEE DETAIL, SHEET No. 9)
- PROPOSED TREE PROTECTION (SEE DETAIL, SHEET No. 9)
- PROPOSED AGGREGATE
- ASPHALT PAVEMENT REMOVAL
- PAVEMENT PREPARATION AREA
- CONCRETE REMOVAL AREA
- EXISTING TREE (No. INDICATES SIZE)
- TREE TO BE REMOVED
- SOIL BORING

BENCHMARK INFORMATION:

NO ELEVATION BENCHMARKS SHOWN ON SURVEY.

VERTICAL DATA:
ELEVATIONS SHOWN HEREON BASED ON THE FPRN
(FLORIDA PERMANENT REFERENCE NETWORK) NAVD83
DATUM (NORTH AMERICA VERTICAL DATUM 1988)

NOTE:
TREES TO BE PROTECTED PER
CITY DETAILS UPON INITIAL
CLEARING. ADJUSTMENTS TO
PROTECTION TO BE COORDINATED
WITH CITY AND ENGINEER OF
RECORD FOR FINAL GRADING OR
NEEDED ENCROACHMENTS FOR
IMPROVEMENTS.

SWPPP INSPECTIONS AND RECORD KEEPING:

INSPECTIONS ARE REQUIRED AT LEAST EVERY SEVEN (7) CALENDAR DAYS AND WITHIN 24 HOURS FOLLOWING A RAINFALL EVENT OF ONE-HALF (1/2) OF AN INCH OF RAINFALL OR GREATER AND SHALL CONTINUE UNTIL THE SITE COMPLIES WITH FINAL STABILIZATION (NOTICE OF TERMINATION). INSPECTIONS MUST BE CONDUCTED BY A "QUALIFIED" INSPECTOR. "QUALIFIED" IS DEFINED AS A PERSON THAT A). HAS SUCCESSFULLY COMPLETED AND MET ALL REQUIREMENTS NECESSARY TO BE FULLY CERTIFIED THROUGH THE FDEP STORMWATER, EROSION AND SEDIMENTATION CONTROL INSPECTOR TRAINING PROGRAM; B). HAS SUCCESSFULLY COMPLETED AN EQUIVALENT FORMAL TRAINING PROGRAM; OR C). THAT IS QUALIFIED BY OTHER TRAINING OR PRACTICAL EXPERIENCE IN THE FIELD OF STORMWATER POLLUTION PREVENTION AND EROSION AND SEDIMENTATION CONTROL. EACH INSPECTION MUST BE FOLLOWED UP BY A REPORT DOCUMENTING THE INSPECTOR'S FINDINGS AND REQUEST THE REQUIRED MAINTENANCE AND/OR REPAIR FOR THE EROSION AND SEDIMENTATION CONTROL MEASURES. THESE RECORDS ARE USED TO PROVE THAT THE REQUIRED INSPECTION AND MAINTENANCE WERE PERFORMED AND SHALL BE PLACED IN THE SWPPP LEDGER. IN ADDITION TO INSPECTION AND MAINTENANCE REPORTS, RECORDS SHOULD BE KEPT OF CONSTRUCTION ACTIVITIES THAT OCCUR ON THE SITE. THE CONTRACTOR SHALL RETAIN COPIES OF THE SWPPP, ALL REPORTS AND DATA FOR A MINIMUM OF FIVE (5) YEARS AFTER THE PROJECT IS COMPLETE IN PAPER AND CD FORMAT.

EROSION CONTROL NOTES:

- LAND DISTURBING ACTIVITIES SHALL NOT COMMENCE UNTIL APPROVAL TO DO SO HAS BEEN RECEIVED BY GOVERNING AUTHORITIES. THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE SWPPP DURING CONSTRUCTION OPERATIONS.
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DEMOLITION AND SWPPP NOTES:

- ALL EROSION CONTROL DEVICES AND VISIBLE BARRICADES SHALL BE INSTALLED AND APPROVED BY THE ENGINEER PRIOR TO THE START OF CLEARING AND GRUBBING.
- THE CONTRACTOR SHALL SCHEDULE A PRECONSTRUCTION MEETING WITH THE CITY AS SPECIFIED PRIOR TO START OF CONSTRUCTION.
- THE SITE SHALL BE CLEARED AND GRUBBED OF ALL VEGETATION AND DEBRIS WITHIN THE APPROXIMATE LIMITS OF CLEARING AS INDICATED ON THE DRAWING.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR CONTACTING THE CITY OF EDGEWATER UTILITY DEPARTMENT, FLORIDA SUNSHINE AND EMERGENCY SERVICES FOR RESPECTIVE UTILITY LOCATIONS AND "NOTICE" OF CONSTRUCTION ACTIVITY.
- ALL REMOVED MATERIAL SHALL BE HAULED OFF-SITE TO AN APPROVED LANDFILL. TREES MAY BE LOGGED OR MULCHED FOR OFF-SITE DISPOSAL AT THE CONTRACTOR'S DISCRETION.
- ALL EROSION CONTROL DEVICES SHALL BE PLACED PRIOR TO THE START OF WORK AND REMAIN IN PLACE UNTIL ALL WORK IS COMPLETE.
- CONTRACTOR SHALL BE RESPONSIBLE FOR PERIODIC INSPECTION AND REMOVAL OF DEBRIS AND SILT BEHIND EROSION CONTROL DEVICES.
- ALL INLETS AND PIPE SHALL BE PROTECTED DURING CONSTRUCTION BY INLET PROTECTION MEASURES TO PREVENT SILTATION IN THE DRAINAGE SYSTEM (SEE DETAILS THIS DRAWING). THE ENTIRE DRAINAGE SYSTEM SHALL BE CLEANED OF ALL DEBRIS PRIOR TO FINAL ACCEPTANCE.
- ALL OFF-SITE AREAS DISTURBED DURING CONSTRUCTION ACTIVITY SHALL BE IMMEDIATELY RESTORED TO PRIOR CONDITION UPON COMPLETION OF WORK.
- SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION. THIS IS INTENDED TO REDUCE SOIL EROSION, BLOWING SAND AND THE IMPACT TO NEIGHBORING PROPERTIES.
- THE CONTRACTOR SHALL PROVIDE THE ENGINEER, CITY A MOT PLAN AT PRECONSTRUCTION MEETING. TRAFFIC SHALL BE ALLOWED TO CONTINUE DURING WORK. PROVIDE MEASURES TO DETOUR TRAFFIC AROUND OPEN EXCAVATION WITH ADEQUATE BARRICADES, SIGNAGE AND FLAGPERSON TO DIRECT TRAFFIC. EMERGENCY SERVICES SHALL BE NOTIFIED 48 HOUR IN ADVANCE.
- EXISTING DRIVEWAYS SHOWN ADJACENT TO OR OUTSIDE LIMITS OF CONSTRUCTION SHALL REMAIN IN-SERVICE. EXISTING UTILITIES AND DRIVEWAYS SHALL NOT BE REMOVED UNLESS OTHERWISE NOTED.
- IF ANY DEWATERING IS TO OCCUR DURING ANY PHASE OF CONSTRUCTION THEN DEWATERING ACTIVITY SHALL ADHERE TO CHAPTER 40C-22 FAC MORE SPECIFICALLY AS FOLLOWS. PER 40C-22.030(3) A "NOTICED GENERAL SHORT-TERM DEWATERING PERMIT" IS REQUIRED "ONLY IF" DEWATERING EXCEEDS 4 MILLION GALLONS PER DAY, EXCEPT DURING THE FIRST 120 HOURS OF DEWATERING WHEN THE DAILY AND INSTANTANEOUS PUMPAGE RATES SHALL NOT EXCEED 6 MILLION GALLONS PER DAY. AVERAGE DAILY WITHDRAWAL SHALL NOT EXCEED 2 MILLION GALLONS PER DAY FOR THE FIRST 60 DAYS OF THE DEWATERING ACTIVITY AND SHALL NOT EXCEED ONE MILLION GALLONS PER DAY OF A 180 DAY DURATION. EACH SPECIFIC DEWATERING PROJECT SHALL NOT EXCEED 180 DAYS. THE CONTRACTOR SHALL BE RESPONSIBLE TO ENSURE ANY DEWATERING ACTIVITY IS BELOW THE SPECIFIED THRESHOLD. OTHERWISE A PERMIT WILL BE REQUIRED AT THE EXPENSE OF THE CONTRACTOR. THE CONTRACTOR SHALL FAMILIARIZE ITSELF WITH CHAPTER 40C-22 FAC AND BE SOLELY RESPONSIBLE FOR OBTAINING AND SUBMITTING FORM RDS-50 TO SJRWMD A MINIMUM OF 10 DAYS PRIOR TO ANY DEWATERING ACTIVITY. SUBMITTAL OF FORM RDS-50 IS NOT REQUIRED IF DEWATERING IS 300,000 GALLONS PER DAY OR LESS AND WILL NOT EXCEED 30 DAYS IN DURATION.

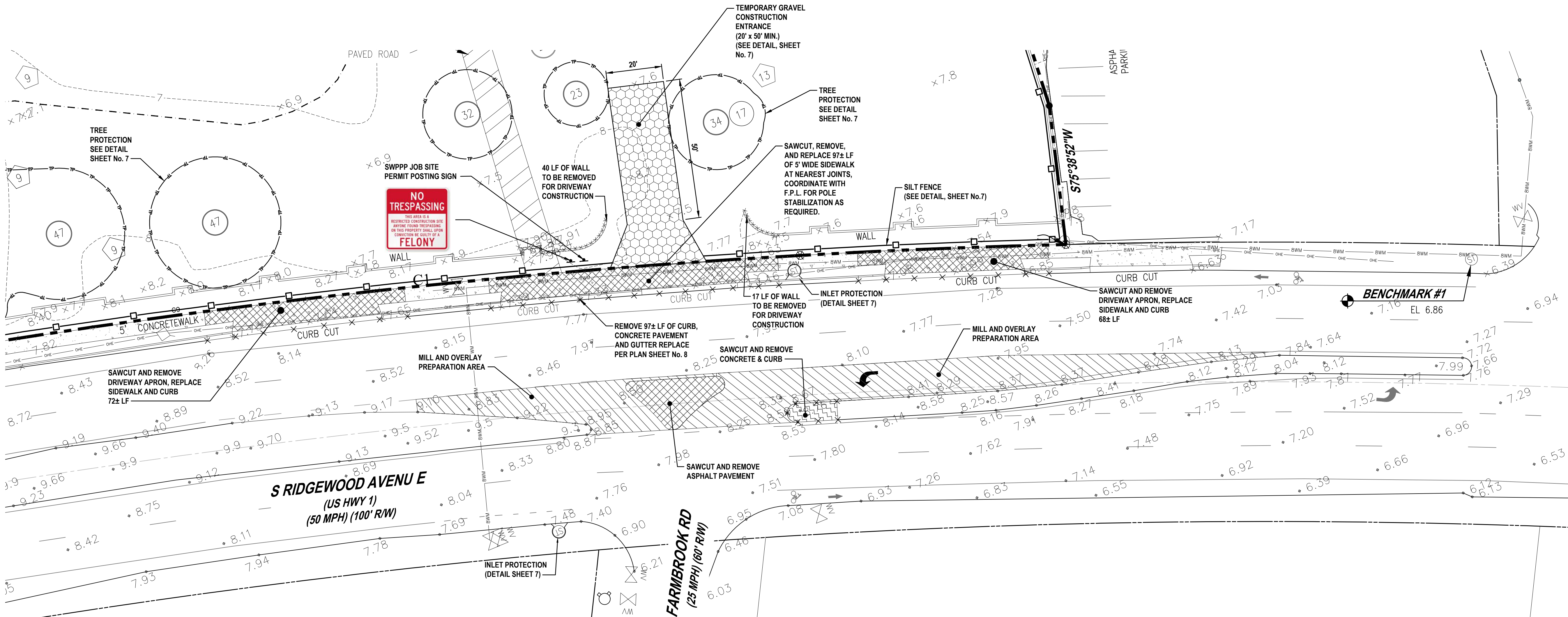
LAND ALTERATION / TREE PRESERVATION NOTES:

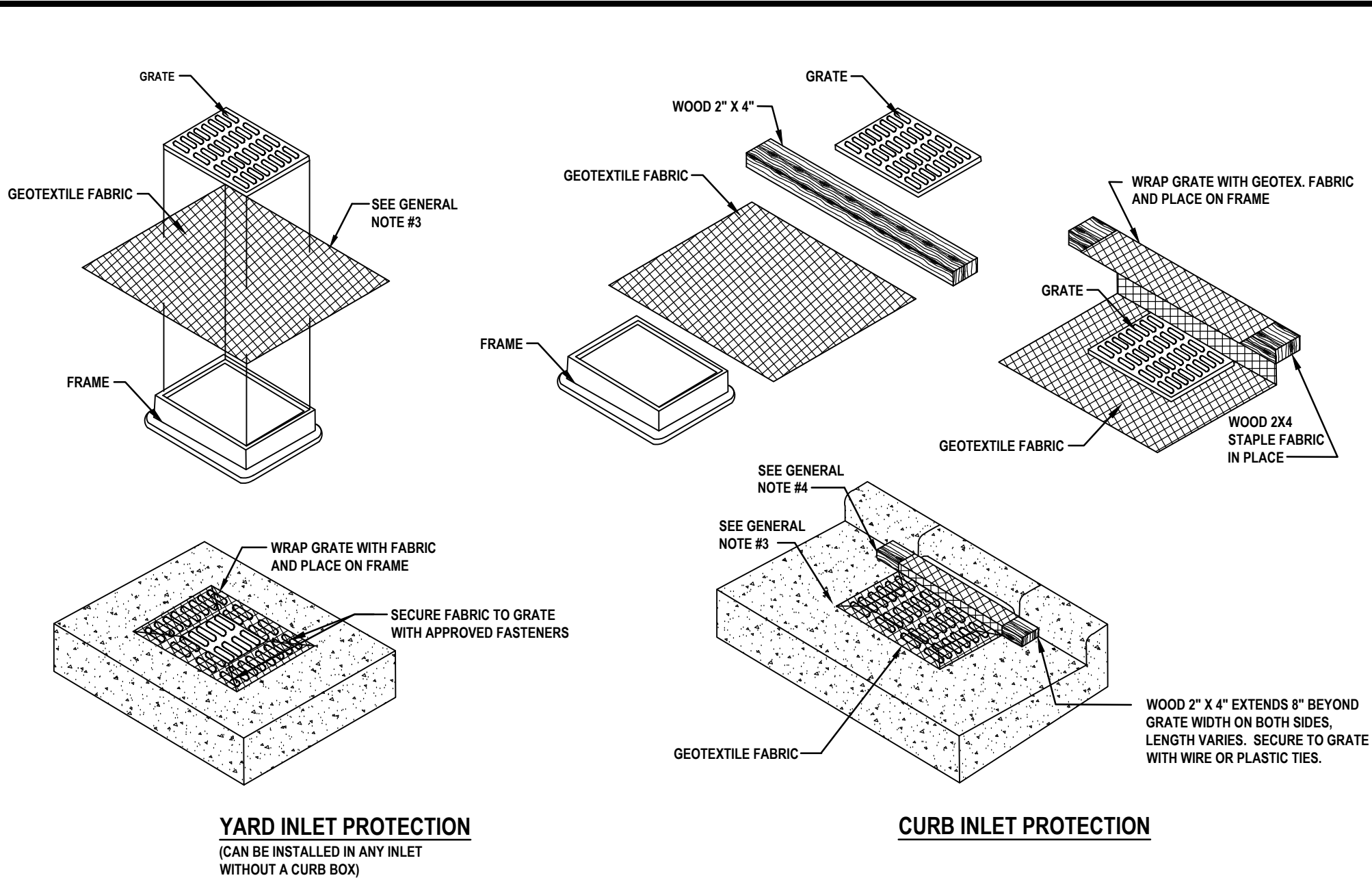
- ALL TREES TO REMAIN MUST BE PROTECTED BY TREE PRESERVATION BARRICADES MEETING THE MINIMUM STANDARDS. PROTECTIVE BARRICADES SHALL REMAIN IN PLACE UNTIL LAND ALTERATION AND CONSTRUCTION ACTIVITIES ARE COMPLETED.
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- SEE TREE PROTECTION DETAIL M-25, SHEET No. 7. FOR INITIAL CLEARING COORDINATE WITH CITY AND EOR FOR MODIFICATION TO TREE PROTECTION FOR CONSTRUCTION ACTIVITY.



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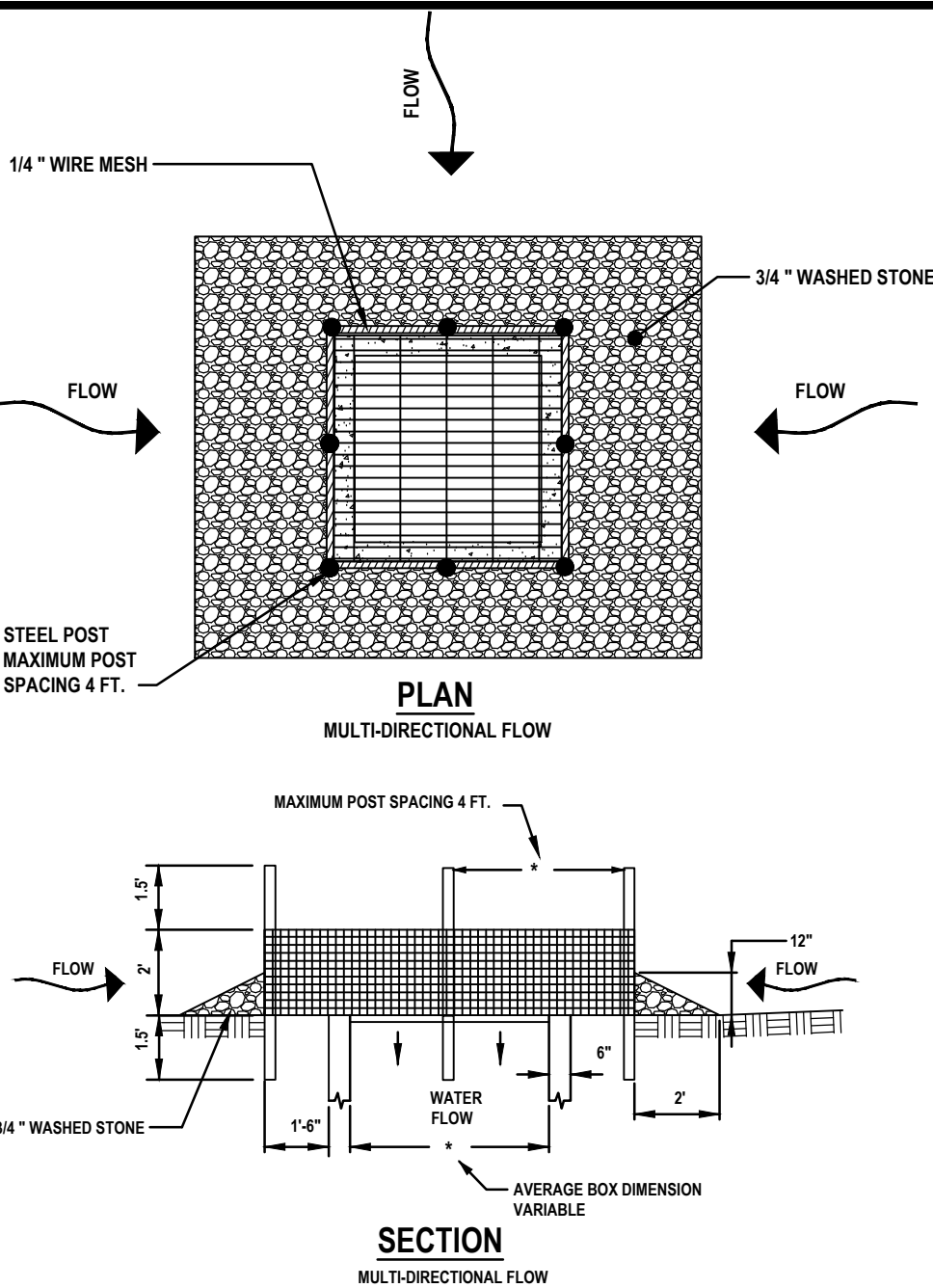
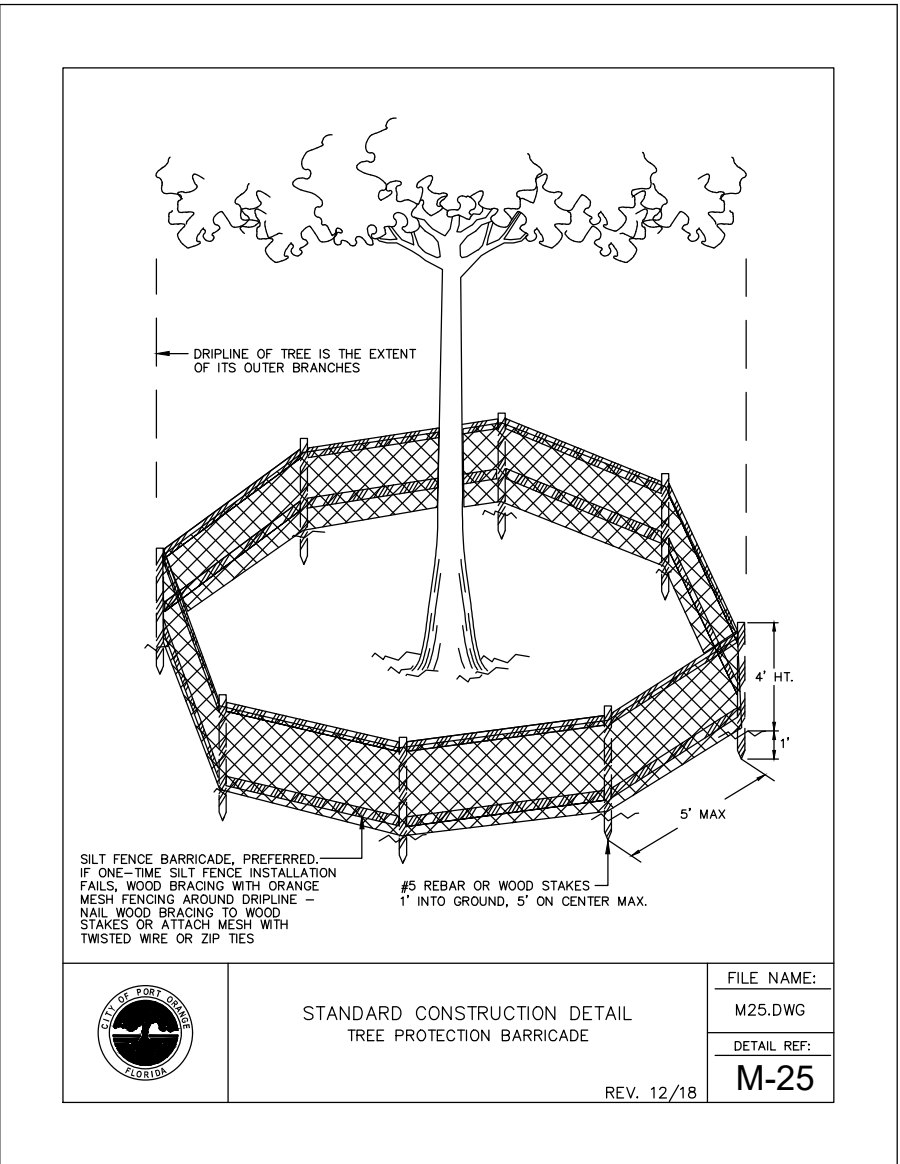
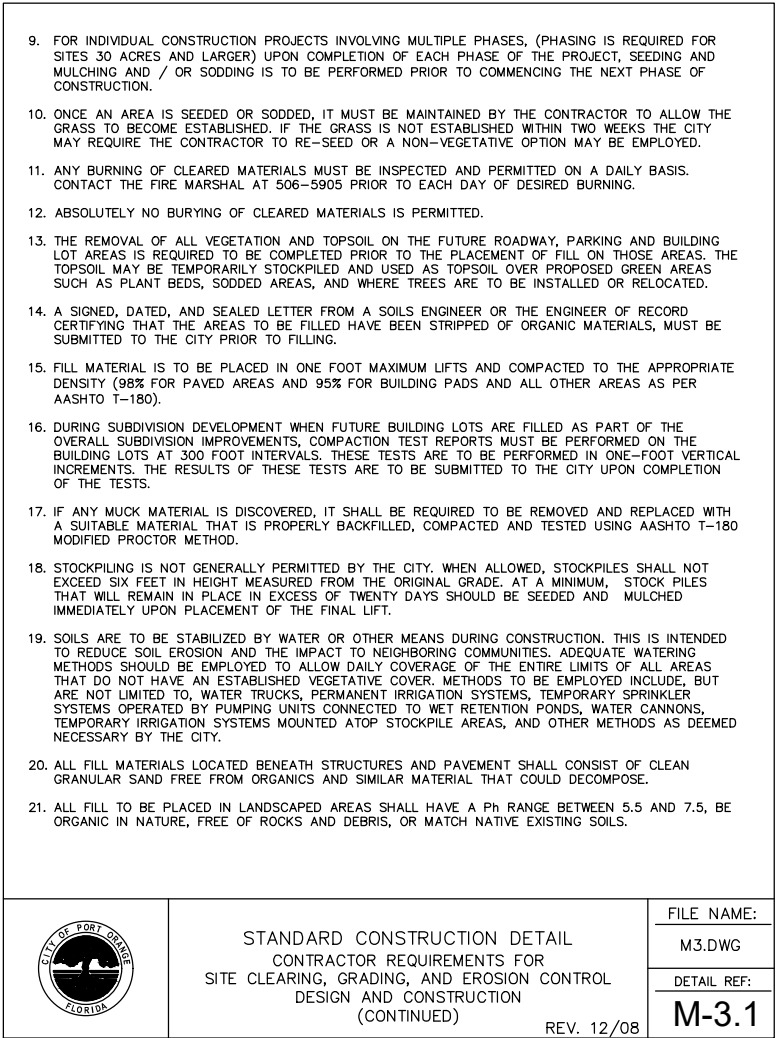
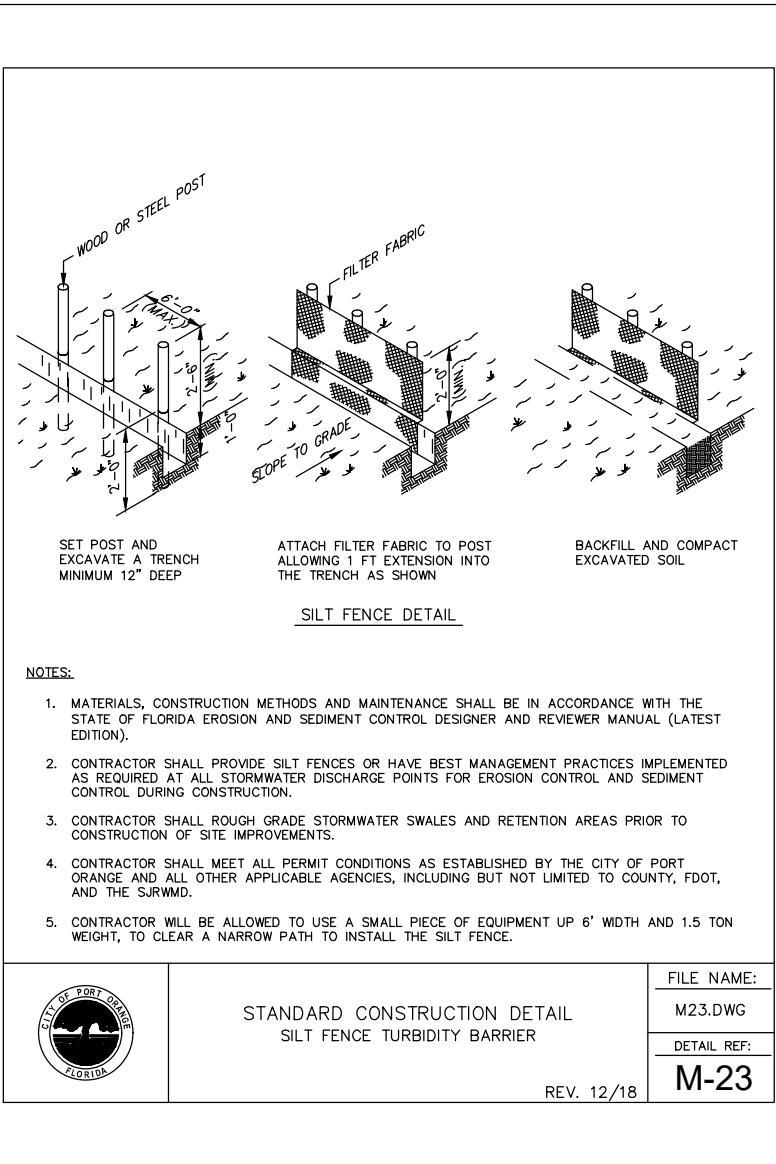
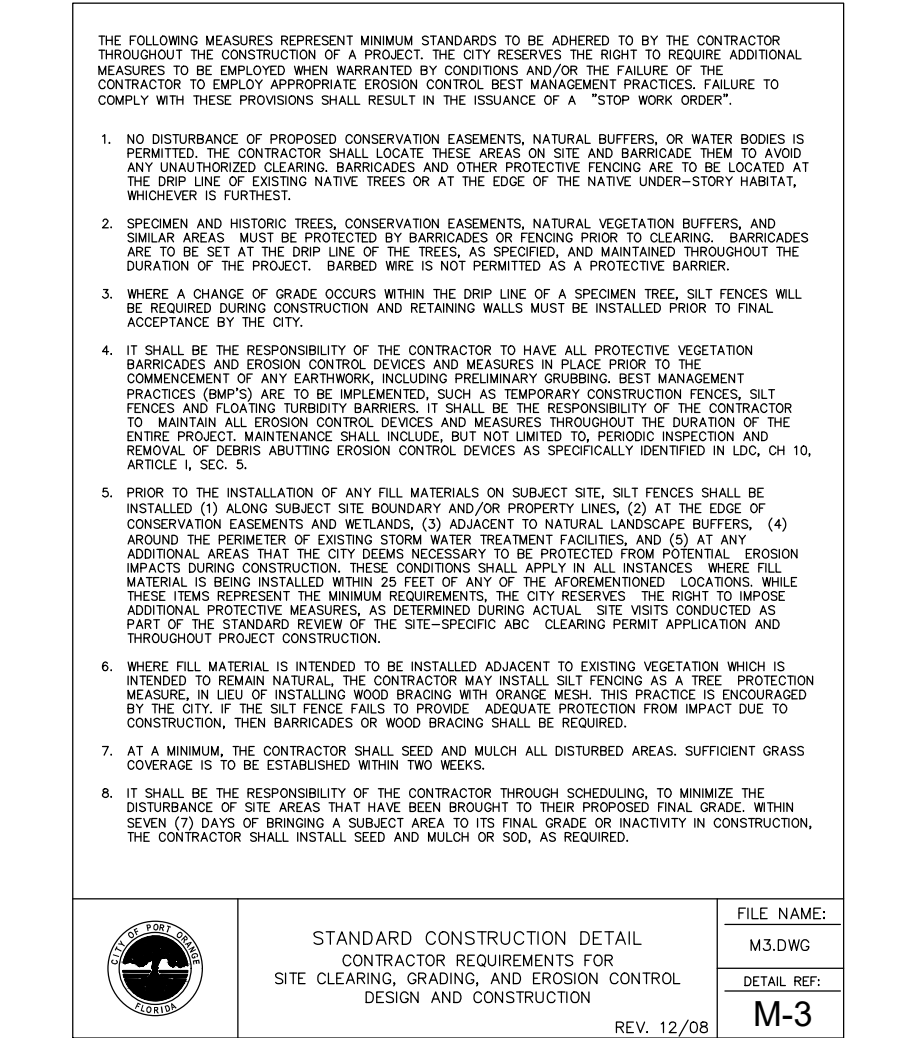
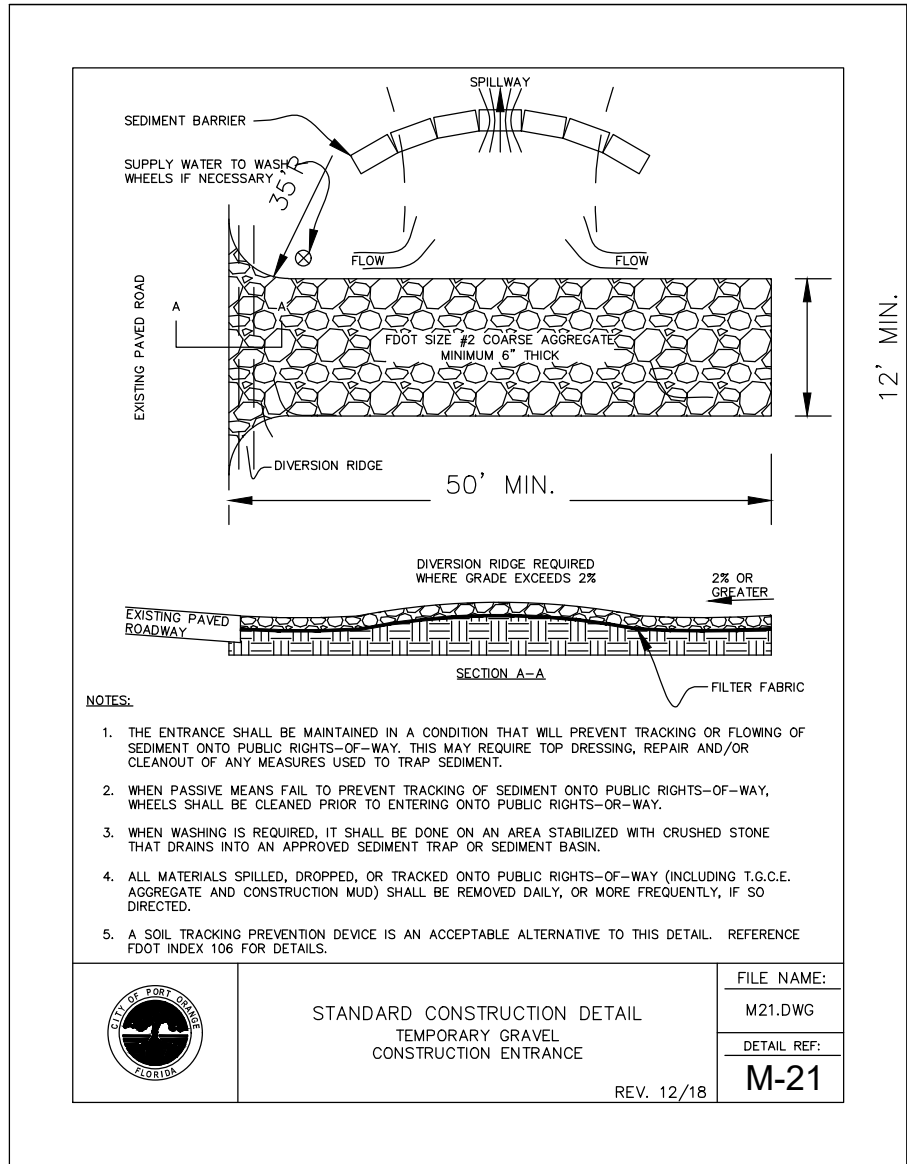




- GENERAL NOTES:**
1. GEOTEXTILE TO BE MIRAFI FILTERWEAVE 402 OR GEOTEX 111F. ALTERNATIVES INCLUDE APPROVED EQUAL ASTM D4491 OR 100 TO 150 GALLON PER MINUTE PER SQUARE FOOT.
 2. WHEN REMOVING OR MAINTAINING INLET PROTECTION, CARE SHALL BE TAKEN SO THAT THE SEDIMENT TRAPPED ON THE GEOTEXTILE FABRIC DOES NOT FALL INTO THE INLET. ANY MATERIAL FALLING INTO THE INLET SHALL BE REMOVED IMMEDIATELY.
 3. FINISHED SIZE, INCLUDING FLAP POCKETS WHERE REQUIRED, SHALL EXTEND A MINIMUM OF 10" AROUND THE PERIMETER TO FACILITATE MAINTENANCE OR REMOVAL.
 4. 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.
 5. TRIM EXCESS FABRIC IN THE FLOW LINE TO WITHIN 3" OF THE GRATE.
 6. 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

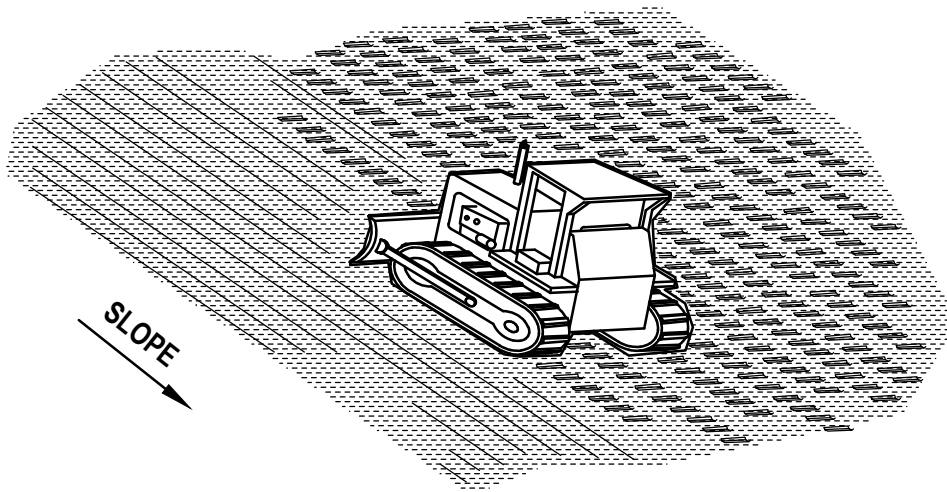
NOT TO SCALE



- NOTE:**
1. SEDIMENT CONTROL STONE SHALL BE 3/4" WASHED STONE.
 2. WIRE MESH SHALL BE HARDWARE CLOTH 23 GAUGE MIN. AND SHALL HAVE 1/4 INCH MESH
 3. TOP OF WIRE MESH SHALL BE A MINIMUM OF ONE FOOT BELOW THE SHOULDER OR ANY DIVERSION POINT.
 4. STEEL POST SHALL BE 5 FT. IN LENGTH, BE INSTALLED 1.5 FT. DEEP MINIMUM, AND BE OF THE SELF-FASTENER ANGLE STEEL TYPE.
 5. WOOD POST SHALL BE 5 FT. IN HEIGHT, BE INSTALLED TO 1.5 FT. DEEP MINIMUM, AND BE 3 INCHES IN DIAMETER.
 6. POST SPACING SHALL BE A MAXIMUM OF 4 FT.

HARDWARE CLOTH INLET PROTECTION

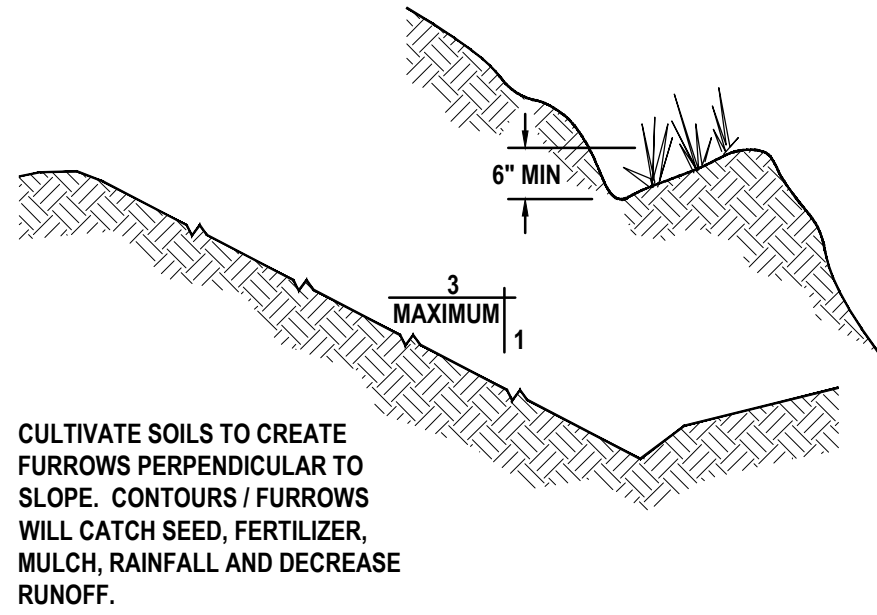
NOT TO SCALE



NOTE:
USE DOZER TRACKS TO CREATE GROOVES PERPENDICULAR TO THE SLOPE. GROOVES WILL CATCH SEED, FERTILIZER, MULCH, RAINFALL AND DECREASE SEDIMENT IN RUNOFF.

TRACKING DETAIL

NOT TO SCALE



CULTIVATE SOILS TO CREATE FURROWS PERPENDICULAR TO SLOPE. CONTOURS / FURROWS WILL CATCH SEED, FERTILIZER, MULCH, RAINFALL AND DECREASE RUNOFF.

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.

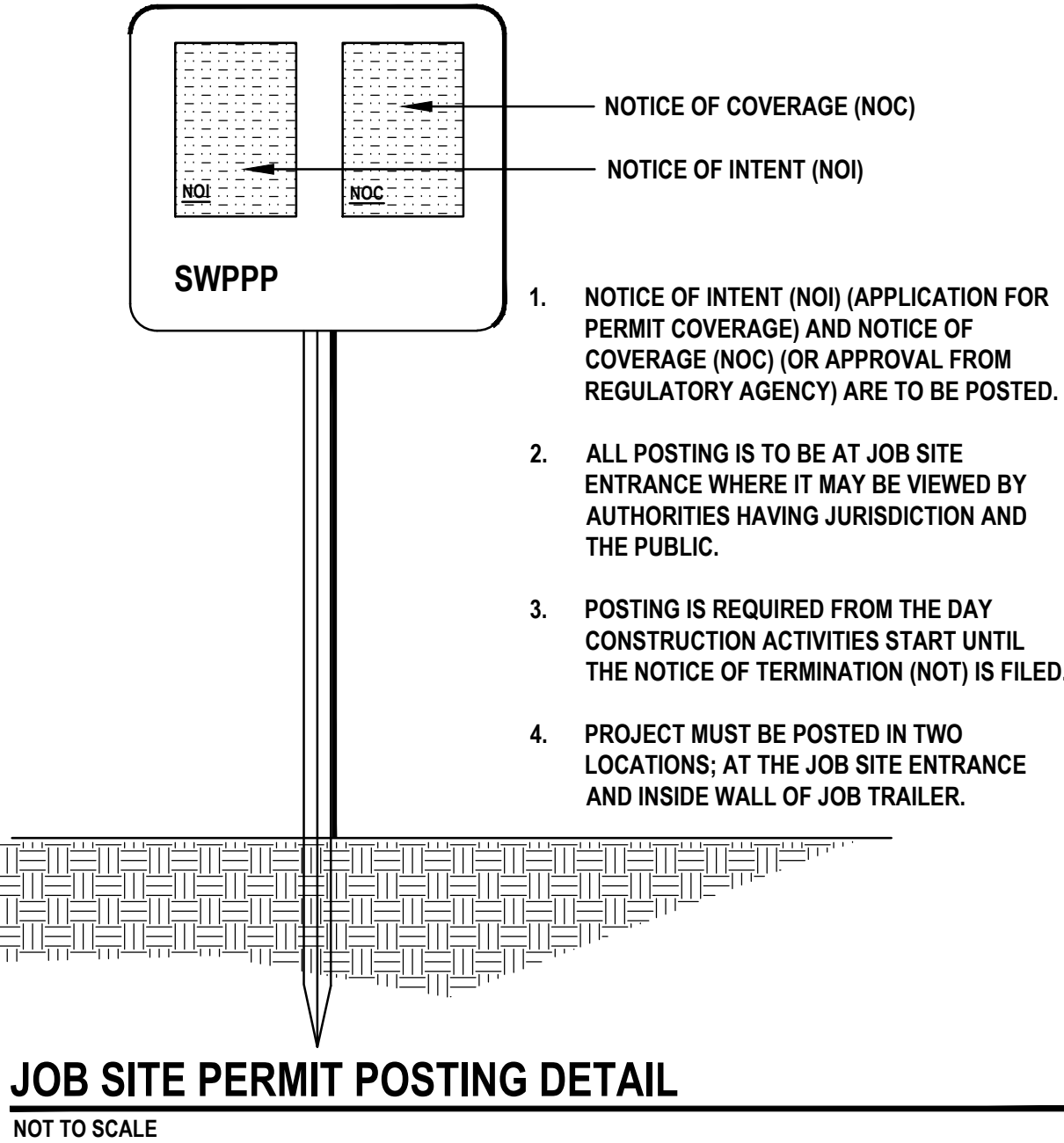
SEEDING MIXTURES
SEED MIXTURE SHALL BE BERMUDA COMMON 90 LB PURE LIVE SEED PER ACRE, FIBER 2000 LB PER ACRE, STABILIZER 120 LB PER ACRE AND FERTILIZER 300 LB PER ACRE.

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.



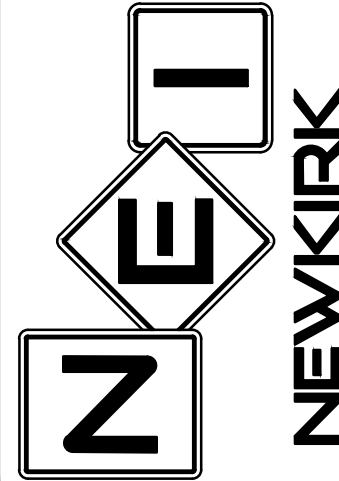
JOB SITE PERMIT POSTING DETAIL

NOT TO SCALE

REVISIONS

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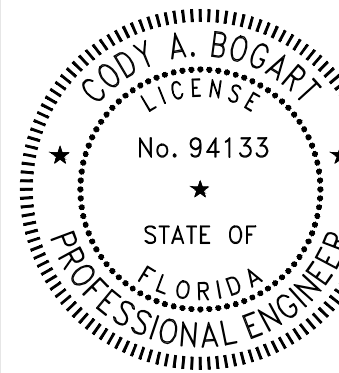
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L.C. # 2600584
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SWPPP DETAILS AND NOTES
HARBOR LANDINGS
5653 SOUTH RIDGEWOOD AVE
PORT ORANGE, FL 32127

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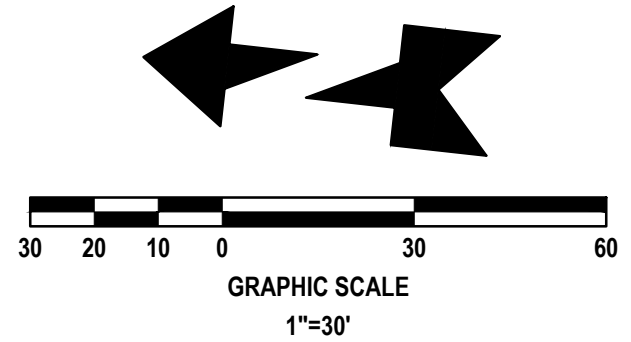
GENERAL NOTES:

- CITY OF PORT ORANGE BUILDING PERMITS ARE REQUIRED FOR BUILDING, DUMPSTER ENCLOSURE, LIGHT POLES, AND SIGNS. CONTRACTOR SHALL BE RESPONSIBLE FOR SUBMITTING APPROPRIATE INFORMATION (ENGINEERING, SPECIFICATIONS, ETC.) FOR LIGHT POLES AND FIXTURES AT TIME OF PERMIT.
- PERMITS ARE REQUIRED FOR: CONSTRUCTION OF NEW BUILDING; MONUMENT AND ART SIGNS; AND, DUMPSTER ENCLOSURE. CONTACT THE BUILDING DIVISION IF THERE ARE QUESTIONS OR CONCERNS ABOUT PERMIT REQUIREMENTS FOR WORK NOT SPECIFICALLY MENTIONED HEREIN.
- ALL SERVICE AREAS AND MECHANICAL EQUIPMENT (GROUND, WALL OR ROOF) INCLUDING, BUT NOT LIMITED TO AIR CONDITIONING CONDENSERS, HEATING UNITS, SATELLITE DISHES, IRRIGATION PUMPS, AND PROPANE TANKS, DISPLAYS AND REFILLING AREAS, SHALL BE SCREENED USING ARCHITECTURAL FEATURES CONSISTENT WITH THE STRUCTURE, OR LANDSCAPING OF SUFFICIENT DENSITY AND MATURITY AT PLANTING TO PROVIDE OPAQUE SCREENING.
- EXTERNAL DOWNSPOUTS VISIBLE FROM ANY RIGHTS-OF-WAY ARE NOT PERMITTED, UNLESS THEY ARE DECORATIVE. IN LOCATIONS THAT ARE CLEARLY VISIBLE FROM A PUBLIC RIGHT-OF-WAY, DOWNSPOUTS MAY BE INSTALLED EXTERNALLY ONLY IF THEY HAVE A HIGH-QUALITY, DECORATIVE DESIGN AND APPEARANCE OF COPPER, STEEL, TIN, OR SILVER OR SIMILAR NATURAL METALLIC MATERIAL. IN LOCATIONS THAT ARE MOSTLY OR COMPLETELY SCREENED FROM A PUBLIC RIGHT-OF-WAY, EXTERNAL DOWNSPOUTS ARE NOT REQUIRED TO BE DECORATIVE AS ABOVE BUT MUST BE PAINTED TO MATCH THE BUILDING EXTERIOR ON WHICH THEY ARE MOUNTED.
- 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 "F1" CURBING UNLESS OTHERWISE NOTED ON THESE PLANS.
 - ALL WALL-MOUNTED EQUIPMENT SUCH AS ELECTRICAL METERS, IRRIGATION METERS, PHONE/CABLE BOXES, EXTERNAL VENTS AND LOUVERS, ETC., SHALL BE PAINTED TO MATCH THE WALL ON WHICH IT IS MOUNTED OR OTHERWISE CONSISTENT WITH THE COLOR(S) OF THE BUILDING.
 - ALL MATERIALS, MACHINERY AND VEHICLES SHALL BE STORED ON-SITE IN AN ORDERLY ORGANIZED FASHION.
 - COMMERCIAL IMPACT FEE SHALL BE CALCULATED, DUE AND PAYABLE WITHIN 30 DAYS OF INITIATION OF PERMANENT ELECTRIC SERVICE.
 - CONTRACTOR TO PROVIDE PREMISE IDENTIFICATION FOR BUILDING DURING CONSTRUCTION.
 - SITE LIGHTING MUST NOT SHINE DIRECTLY UPON ANY ADJACENT RESIDENCE AND MUST NOT PRODUCE EXCESSIVE GLARE. GLARE GUARDS WILL BE INSTALLED IF NEEDED.

LEGEND

- MIAMI CURB
- TYPE "F" CURB
- TYPE "E" CURB
- SITE LIGHT POLES
- MAIL KIOSK
- TRANSITION FROM TYPE "F" CURB TO MIAMI CURB



HALIFAX RIVER

PAVING LEGEND

- ASPHALT PAVEMENT: 1.5" SP-9.5 (TL-C) WITH TACK COAT PER FDOT SPECIFICATIONS; 6" CRUSHED CONCRETE (LBR=130) MIN OF 98% MODIFIED PROCTOR MAX DENSITY PER AASHTO T-180 (4" MAX. LIFTS); 12" STABILIZED SUBBASE (BR 40) MIN OF 98% MODIFIED PROCTOR MAX DENSITY PER AASHTO T-180 (TYPE B STABILIZATION)
- * ALTERNATE 12" STABILIZED SUBBASE: 6" CRUSHED CONCRETE (LBR=130) MIN OF 98% MODIFIED PROCTOR MAX DENSITY PER AASHTO T-180 (4" MAX. LIFTS)
- * ALTERNATE PAVEMENT TO ASPHALT IS CONCRETE PAVEMENT SEE CITY DETAIL R-19, SHEET No. 22
- CONCRETE PAVEMENT: 6" CONCRETE (4,000 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) SEE CITY DETAIL R-14, SHEET No. 22
- CONCRETE SIDEWALK: 6" THICK CONCRETE (3,000 P.S.I. @ 28 DAYS), CLASS I, APPROVED FDOT DESIGN MIX (FDOT INDEX No. 522-001) No. 4 REBAR REQUIRED. SEE CITY DETAILS M-6, M-6.1 & M-7, SHEET No. 22
- FDOT CONCRETE APRON: 6" CONCRETE (3,000 P.S.I. @ 28 DAYS) 12" STABILIZED SUB-GRADE TO A 75 FBVILBR 40, COMPACTED TO A 98% MAXIMUM DRY DENSITY PER AASHTO T-180, CONSTRUCTED IN ONE LIFT (SEE DETAIL, SHEET No. 25)
- DRIVEWAY PAVERS: 3-1/8" SF-RIMA PERMEABLE PAVERS COLOR: BY OWNER POWER BASE PER MANUFACTURERS RECOMMENDATIONS (USED FOR LOT 1-10 DRIVEWAYS)

OVERALL SITE DEVELOPMENT USAGE

SITE COVERAGE - PROPOSED			
AREA TYPE	SF	ACRE	% OF SITE
ASPHALT & CONCRETE	37,101	0.852	18.0%
LOT IMPERVIOUS	73,024	1.676	35.4%
SITE PERVIOUS	62,305	1.430	30.2%
LOT PERVIOUS	34,052	0.782	16.5%
TOTAL SITE	206,482	4.740	100.0%
TOTAL IMPERVIOUS	110,125	2.528	53.3%
TOTAL OPEN SPACE	96,357	2.212	46.7%

- EXISTING: URBAN MEDIUM DENSITY RESIDENTIAL (4 TO 8 UNITS PER ACRE). PROPOSED: URBAN MEDIUM RESIDENTIAL (4 TO 8 UNITS PER ACRE)
- SITE CONSISTS OF: (12) CANAVERAL SAND, 0 TO 1 PERCENT SLOPES & (15) COCOA SAND, 0 TO 5 PERCENT SLOPES
- EXISTING ZONING: (PUD) PLANNED UNIT DEVELOPMENT
- PROPOSED ZONING: (PUD) PLANNED UNIT DEVELOPMENT
- COMPLIANCE WITH THE LAND DEVELOPMENT CODE MAY NECESSITATE MODIFICATION OF THE CONCEPTUAL PLAN (LDC, CH. 17, SEC. 17(h)(2)(K)).
- COMPLIANCE WITH THE ENVIRONMENTAL PRESERVATION CODE MAY NECESSITATE MODIFICATION OF THE CONCEPTUAL PLAN.
- DRIVEWAY SLOPES EXCEEDING A 7% CHANGE IN WILL REQUIRE AN ENGINEER'S SEAL WITH ITS RESPECTIVE BUILDING PERMIT.

EASEMENT LEGEND :

- DE - CITY DRAINAGE EASEMENT
- DUE - CITY DRAINAGE & UTILITY EASEMENT
- AUE - ACCESS AND UTILITY EASEMENT (FRANCHISE UTILITY AND CITY)
- HOA ACCESS AND MAINTENANCE EASEMENT (FOR LANDSCAPING AND WALLS)

SITE DEVELOPMENT USAGE

- SINGLE FAMILY LOT REQUIREMENTS (LOTS 1-10):
 - FRONT SETBACK: 20 FT
 - REAR SETBACK: 20 FT
 - SIDE SETBACK: 5 FT
 - SIDE CORNER SETBACK: 5 FT
 - MINIMUM LOT WIDTH: 50 FT
 - MINIMUM LOT DEPTH: 97 FT
 - MAXIMUM BUILDING HEIGHT: 35 FT
 - LOT MINIMUM OPEN SPACE: 40%
 - LOT MAXIMUM IMPERVIOUS AREA: 60%
 - MAXIMUM BUILDING COVERAGE: 40%
 - MINIMUM DRIVEWAY WIDTH: 20 FT
- TOWNHOME LOT REQUIREMENTS (LOTS 11-26):
 - FRONT SETBACK: 20 FT
 - REAR SETBACK: 17 FT
 - SIDE SETBACK: 0 FT
 - SIDE CORNER SETBACK: 10 FT
 - MINIMUM LOT WIDTH: 23 FT
 - MINIMUM LOT DEPTH: 102 FT
 - MAXIMUM BUILDING HEIGHT: 35 FT
 - LOT MINIMUM OPEN SPACE: 20%
 - LOT MAXIMUM IMPERVIOUS AREA: 80%
 - MAXIMUM BUILDING COVERAGE: 65%
- LANDSCAPE BUFFERS (OVERALL SITE):
 - NORTH PROPERTY LINE: 20 FEET
 - EAST PROPERTY LINE: 10 FEET
 - SOUTH PROPERTY LINE: 10 FEET
 - WEST PROPERTY LINE: 10 FEET

EASEMENT LEGEND :

- SPECIMEN TREE WITH REQUIRED EASEMENT (1" DIA FOR 1" CAL)
- ONLY SHOWN FOR TREES PROPOSED TO KEEP

- *SEE SHEET 39 FOR EASEMENT PLAN
- DE - CITY DRAINAGE EASEMENT
- AUE - ACCESS, UTILITY EASEMENT FOR CITY
- HOA - HOME OWNER'S EASEMENT & MAINTENANCE ACCESS
- HOA - HOME OWNER'S EASEMENT & MAINTENANCE ACCESS
- NVA - NON-VEHICULAR-ACCESS EASEMENT

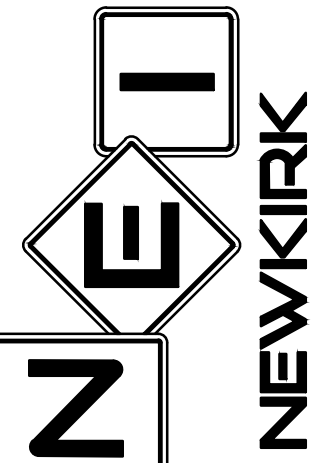
PARCEL AREAS CHART

PARCEL	LOT TYPE	AREA (SF)	AREA (AC)
LOT 1	SINGLE FAMILY LOT	9,299	0.213
LOT 2	SINGLE FAMILY LOT	5,799	0.133
LOT 3	SINGLE FAMILY LOT	5,722	0.131
LOT 4	SINGLE FAMILY LOT	5,800	0.133
LOT 5	SINGLE FAMILY LOT	5,800	0.133
LOT 6	SINGLE FAMILY LOT	5,800	0.133
LOT 7	SINGLE FAMILY LOT	5,800	0.133
LOT 8	SINGLE FAMILY LOT	5,800	0.133
LOT 9	SINGLE FAMILY LOT	5,800	0.133
LOT 10	SINGLE FAMILY LOT	7,562	0.174
LOT 11	TOWNHOME	2,822	0.065
LOT 12	TOWNHOME	2,456	0.056
LOT 13	TOWNHOME	2,456	0.056
LOT 14	TOWNHOME	2,822	0.065
LOT 15	TOWNHOME	2,822	0.065
LOT 16	TOWNHOME	2,456	0.056
LOT 17	TOWNHOME	2,456	0.056
LOT 18	TOWNHOME	2,822	0.065
LOT 19	TOWNHOME	2,822	0.065
LOT 20	TOWNHOME	2,456	0.056
LOT 21	TOWNHOME	2,456	0.056
LOT 22	TOWNHOME	2,822	0.065
LOT 23	TOWNHOME	3,535	0.081
LOT 24	TOWNHOME	2,870	0.066
LOT 25	TOWNHOME	2,766	0.063
LOT 26	TOWNHOME	3,056	0.070
TRACT A	DRAINAGE	13,843	0.318
TRACT B	DRAINAGE	20,787	0.477
TRACT C	DRAINAGE	14,724	0.338
TRACT D	DRAINAGE	7,067	0.162
TRACT E	PRIVATE ROAD	42,944	0.986
TOTALS		206,438	4.739
LOT TOTALS		107,074	2.458
TRACT TOTALS		99,365	2.281

REVISIONS

DATE	DESCRIPTION
5/5/23	CITY COMMENTS
10/23/23	CITY COMMENTS

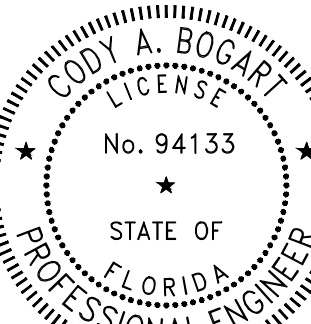
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GEOMETRY AND
PAVEMENT PLAN
HARBOR LANDINGS
5653 SOUTH RIDGEWOOD AVE
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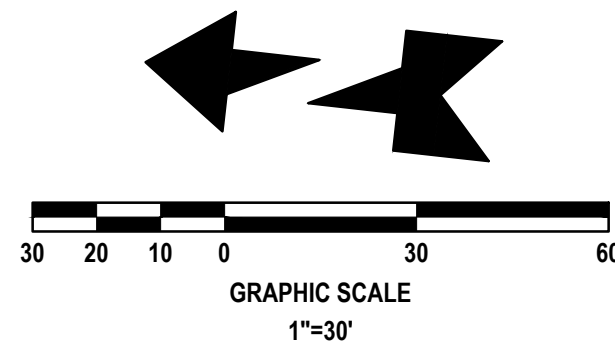
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PROJECT No: 2022-199
DATE: JANUARY 2023
DESIGN BY: CAB
DRAWN BY: CRA
CHECKED BY: HHN
SCALE: 1"=30'
DRAWING NUMBER

08



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



STRIPING KEYNOTES: (PER FDOT INDEX No. 711-001, ONLY THERMOPLASTIC IN R/W)

- | | | | |
|---|---|----|--|
| 1 | 6" SOLID WHITE LINE | 9 | 6" WHITE SKIP LINE (6' - 10') |
| 2 | 6" SOLID YELLOW LINE | 10 | 6" WHITE DOTTED LANE DROP LINE (3' - 9') |
| 3 | 6" SOLID DOUBLE YELLOW LINE | 11 | 18" YELLOW LINE @ 45° SPACED 5' ON CENTER |
| 4 | 24" WHITE STOP BAR | 12 | 18" WHITE LINE @ 45° SPACED 5' ON CENTER |
| 5 | WHITE DIRECTIONAL ARROW | 13 | 18" YELLOW LINE @ 45° SPACED 10' ON CENTER |
| 6 | STANDARD CROSSWALK | 14 | WHITE "SHARK-TOOTH" YIELD LINE |
| 7 | SPECIAL EMPHASIS CROSSWALK | 15 | 6" WHITE SKIP LINE (2' - 4') |
| 8 | 24" DETECTABLE WARNING MAT (PER FDOT INDEX No. 522-002) | 16 | 6" YELLOW SKIP LINE (6' - 10') |

SEE SHEET No. 32 FOR FDOT INDEX No. 711-001

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 STOP BARS SHALL BE THERMOPLASTIC.
- ALL REFLECTIVE PAVEMENT MARKERS ARE TO BE PLACED IN ACCORDANCE WITH FDOT 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. 700-010, 11863, 700-101, 17344 AND 706-001.
- 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 STOP 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".

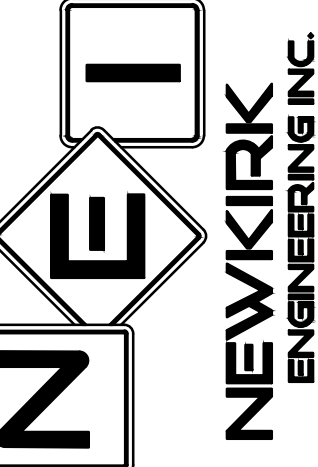
SIDEWALK RAMP KEYNOTES:

- CR-D SIDEWALK CURB RAMP CR-D (SEE DETAIL, SHEET No. 31)
- CR-E SIDEWALK CURB RAMP CR-E (SEE DETAIL, SHEET No. 31)
- CR-F SIDEWALK CURB RAMP CR-F (SEE DETAIL, SHEET No. 31)
- CR-G SIDEWALK CURB RAMP CR-G (SEE DETAIL, SHEET No. 31)
- D-8 RAMP FOR TYPE 8 INLET WITHIN SIDEWALK (SEE DETAIL, SHEET No. 27)

REVISIONS

DATE	DESCRIPTION
5/5/23	CITY COMMENTS
10/23/23	CITY COMMENTS

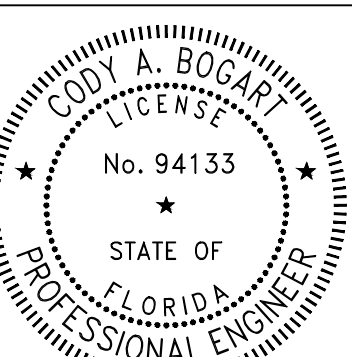
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STRIPING AND
SIGNAGE PLAN
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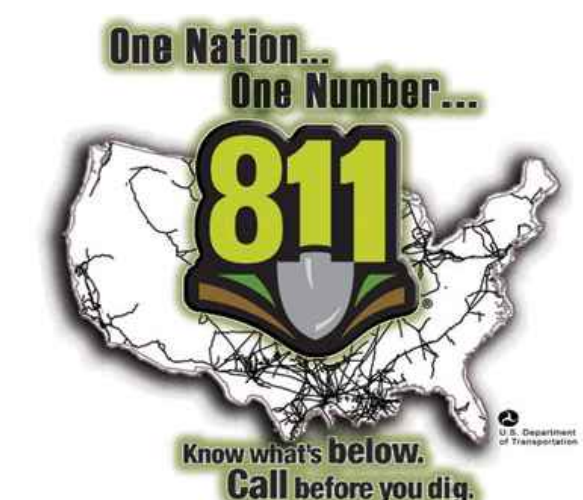
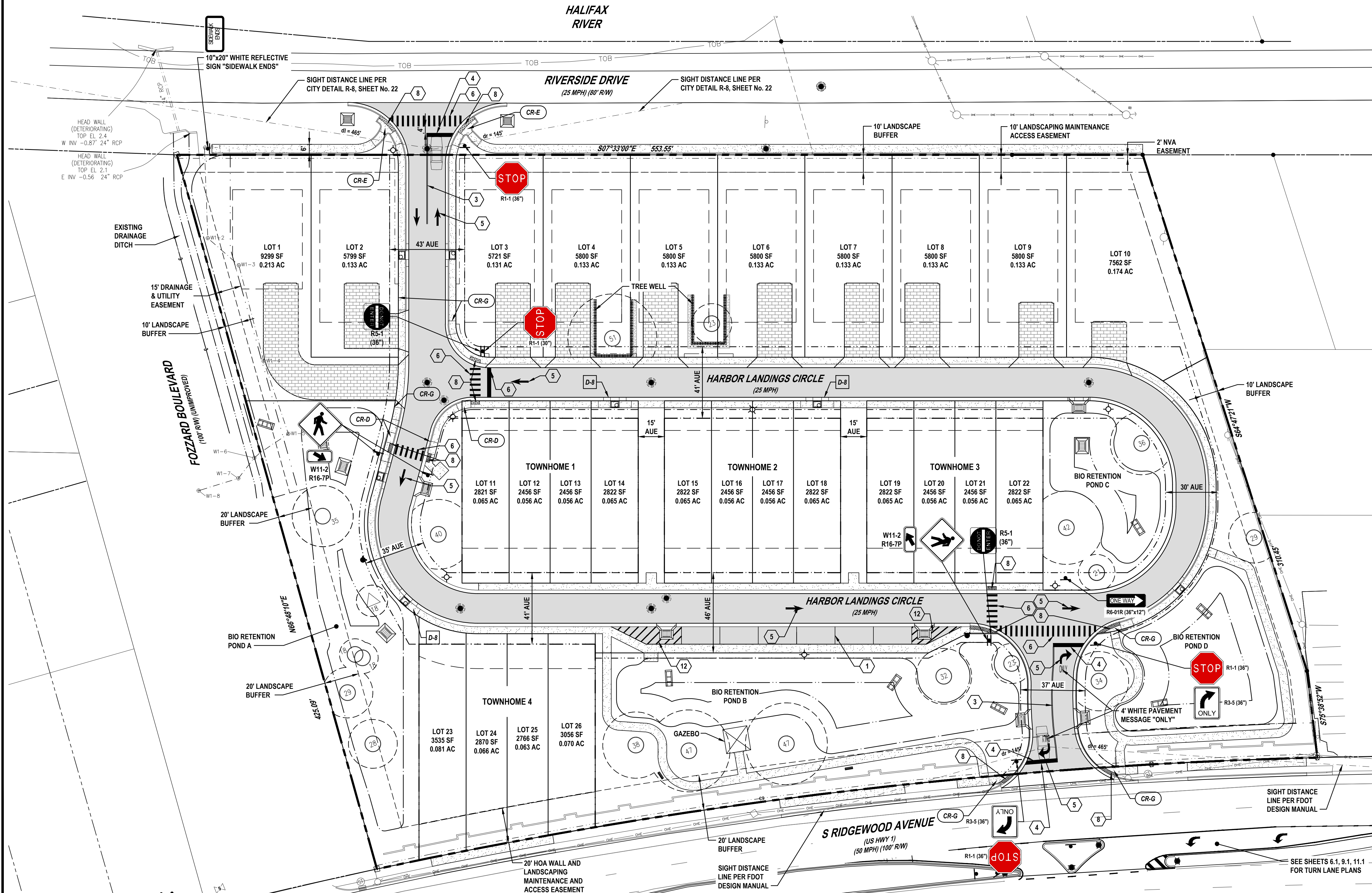
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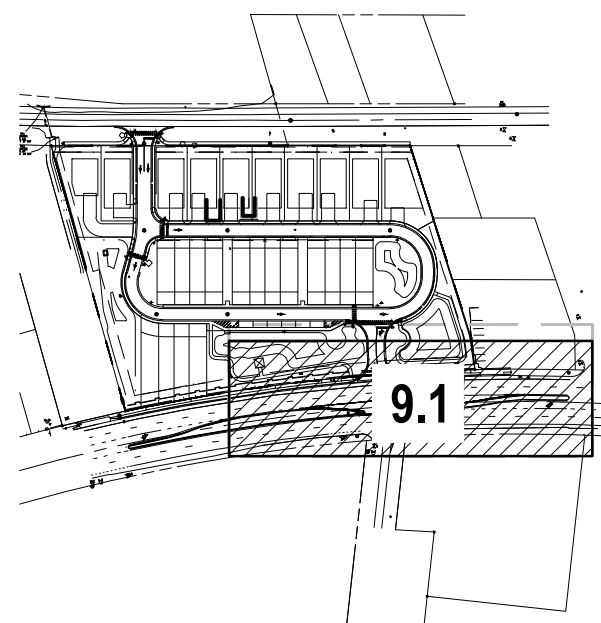
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PROJECT No: 2022-199
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CHECKED BY: HHN
SCALE: 1"=30'
DRAWING NUMBER

09



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



U.S. 1 ASPHALT PAVEMENT (TURN LANE) (SN = 3.28)	1" FC-5 OPEN GRAD FRICTION COURSE 2" SP-12.5 TL-C ASPHALT (FOOT SPECS) 8" RECYCLED CONCRETE AGGREGATE, LBR 150 12" STABILIZED SUB-GRADE (LBR-40)
1" ASPHALT MILL & OVERLAY	1" FC-9.5 TL-C ASPHALT @ MAC+X 20% RECYCLED 0" - 1.5" SP-9.5 TL-C OVERBUILD ASPHALT @ MAX 3 MATERIALS (AS NEEDED TO CORRECT LANE SLOPE)
CONCRETE SIDEWALK	CONCRETE SIDEWALK PER FDOT INDEX No. 522-001 SEE DETAIL SHEET No. 29

CR-D SIDEWALK CURB RAMP CR-D
(SEE DETAIL, SHEET No. 31)

CR-E SIDEWALK CURB RAMP CR-E
(SEE DETAIL, SHEET No. 31)

CR-F SIDEWALK CURB RAMP CR-F
(SEE DETAIL, SHEET No. 31)

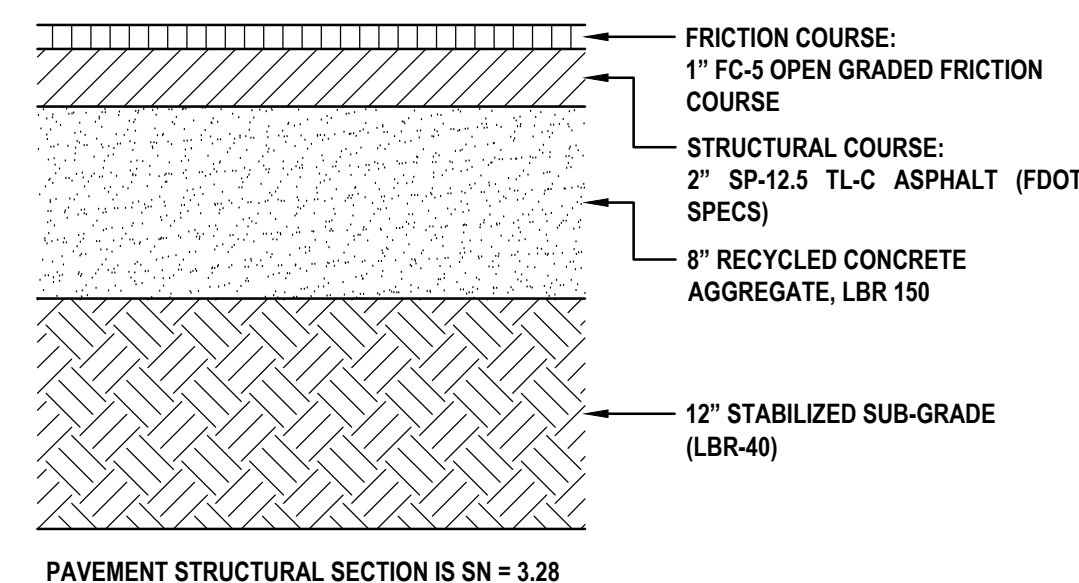
CR-G SIDEWALK CURB RAMP CR-G
(SEE DETAIL, SHEET No. 31)

D-8 RAMP FOR TYPE 8 INLET WITHIN
SIDEWALK (SEE DETAIL, SHEET No. 27)

1	6" SOLID WHITE LINE	9	6" WHITE SKIP LINE (6' - 10')
2	6" SOLID YELLOW LINE	10	6" WHITE DOTTED LANE DROP LINE (3' - 9')
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6	STANDARD CROSSWALK	14	WHITE "SHARK-TOOTH" YIELD LINE
7	SPECIAL EMPHASIS CROSSWALK	15	6" WHITE SKIP LINE (2' - 4')
8	24" DETECTABLE WARNING MAT (PER FOOT INDEX No. 522-002)	16	6" YELLOW SKIP LINE (6' - 10')

SEE SHEET No. 32 FOR FOOT INDEX No. 711-001

1. PAINTED PAVEMENT MARKINGS SHALL BE APPLIED AFTER PAVEMENT SURFACE HAS CURED. SURFACE SHALL BE FREE OF FINE SAND AND DEBRIS PRIOR TO APPLICATIONS.
2. APPLY PAINTED PAVEMENT MARKINGS AT LAST STAGE OF CONSTRUCTION AFTER LANDSCAPE PLANTINGS ARE INSTALLED.
3. PAINT SHALL BE SHERWIN WILLIAMS LOW-VOC ACRYLIC PRO PARK PAINT, APPLY PER MANUFACTURER'S RECOMMENDATIONS. REFER TO DRAWINGS FOR LOCATIONS OF SPECIFIC COLORS.
4. ALL STOP BARS SHALL BE THERMOPLASTIC.
5. ALL REFLECTIVE PAVEMENT MARKERS ARE TO BE PLACED IN ACCORDANCE WITH FDOT STANDARD INDEX NO. 17352.
6. ALL SIGN SHEET IS TO BE IN ACCORDANCE WITH INDEX NO. 17301 AND THE "MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES FOR STREETS AND HIGHWAYS".
7. LOCATION OF SIGNS IS APPROXIMATE ONLY AND IS SUBJECT TO CHANGE AS DIRECTED BY THE ENGINEER.
8. FOR ADDITIONAL DETAILS SEE INDEX NO. 700-010, 11863, 700-101, 17344 AND 706-001.
9. 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 STOP 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".



NOT TO SCALE



SCALE: 1" = 20'



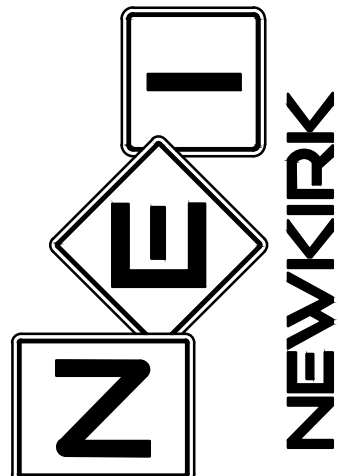
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DATE	DESCRIPTION
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10/23/23	CITY COMMENTS

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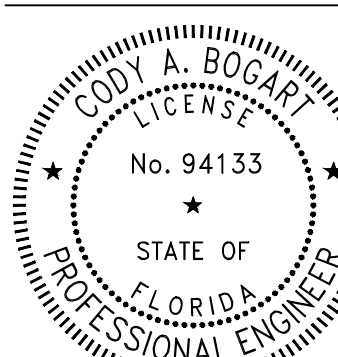
U.S. 1 MEDIAN STRIPING
AND SIGNAGE PLAN

HARBOR LANDINGS

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PROJECT No: 2022-1

DATE: JANUARY 20

DESIGN BY: C

DRAWN BY: C

CHECKED BY: H

SCALE: 1" =

DRAWING NUMBER

09.1

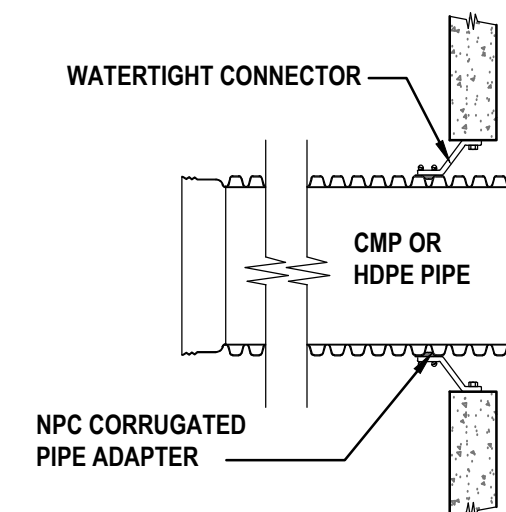
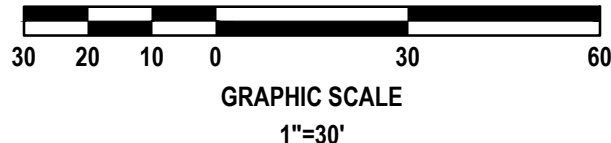


WARNING !!
CONTRACTOR SHALL TAKE ALL PRECAUTIONS
DURING CONSTRUCTION TO AVOID CONTACT
WITH EXISTING UNDERGROUND UTILITIES AND
OVERHEAD ELECTRIC IN THE RIGHT-OF-WAY.

GENERAL DRAINAGE NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO DRAINAGE SYSTEM AND SHALL RESTORE ANY DAMAGED STRUCTURES.
2. ALL PIPE FROM THE BUILDING DRAINS SHALL BE SMOOTH INTERIOR CORRUGATED EXTERIOR (SICE) HDPE OR PVC SCH 40.
3. ALL SOLID STORM PIPE SHALL BE CONSTRUCTED OF HDPE (SICE) PIPE WITH CERTIFIED WATERTIGHT JOINTS BY THE MANUFACTURER. ACCEPTABLE HDPE PIPE SHALL BE HANCOR SUR-LOK WT, ADS SERIES 35, ADS N-12 WITH WT JOINT OR EQUAL. ALL PIPE JOINTS SHALL BE WRAPPED PER FOOT DESIGN STANDARD INDEX NO. 280.
4. CONTRACTOR SHALL BE CERTIFIED TO INSTALL HDPE PIPE FROM MANUFACTURER.
5. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS OF ALL MATERIAL AND STRUCTURES TO THE ENGINEER (NEWKIRK ENGINEERING, INC.) FOR APPROVAL PRIOR TO THE PRECONSTRUCTION MEETING.
6. 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.
7. ALL EXISTING STRUCTURES, UNLESS OTHERWISE NOTED TO REMAIN. FENCING TREES, & ETC., WITHIN THE CONSTRUCTION AREA SHALL BE REMOVED AND DISPOSED OF OFFSITE.
8. ALL DRAINAGE STRUCTURES SHALL BE PRE-CAST PER FDOT SPECIFICATIONS.
9. 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.
10. ALL DRAINAGE STRUCTURES AND PIPES SHALL BE CLEANED OF SAND AT THE LAST STAGE OF CONSTRUCTION PRIOR TO THE FINAL INSPECTION.
11. ALL STORM INLET GRATES SHALL BE STEEL (TRAFFIC RATED).
12. ADJUST ALL CLEANOUTS TO FINISHED GRADE AND INSTALL 12"x12"x6" CONCRETE COLLARS (3,000 PSI).

DRAINAGE PIPE MINIMUM SLOPE REQUIREMENTS						
PIPE SIZE (IN)	SELF-CLEANSING VELOCITY (FPS)	MANNINGS (N)	RADIUS (FT)	CROSS-SECTIONAL AREA (FT)	WETTED PERIMETER (FT)	MINIMUM SLOPE (FT/FT)
15	3.0	0.012	0.625	1.227	FULL & 1/2 FULL	0.0028
18	3.0	0.012	0.8	1.76709	4.7123	0.0021
24	3.0	0.012	1.0	3.14150	6.2830	0.0015
30	3.0	0.012	1.3	4.90859	7.8538	0.0011

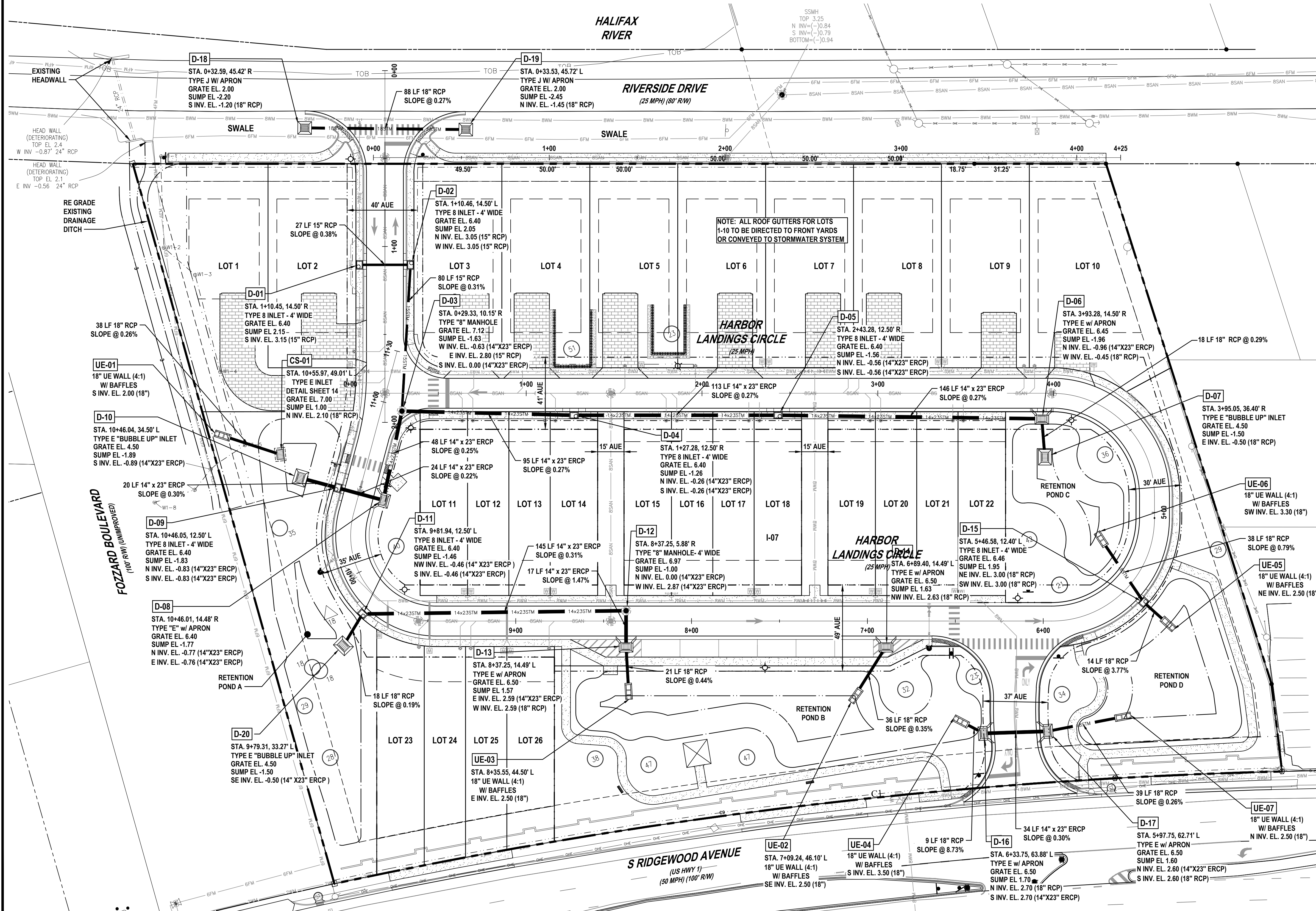


WATER-TIGHT PIPE TO MANHOLE CONNECTION DETAIL

NOT TO SCALE PRECAST HOLES REQUIRED

STORM STRUCTURE 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'.
4. INSTALL 12"x12" WEEP HOLE AT BOTTOM OF STRUCTURE WITH 24"x24"x12" THICK AGGREGATE BED WRAPPED WITH FILTER FABRIC.



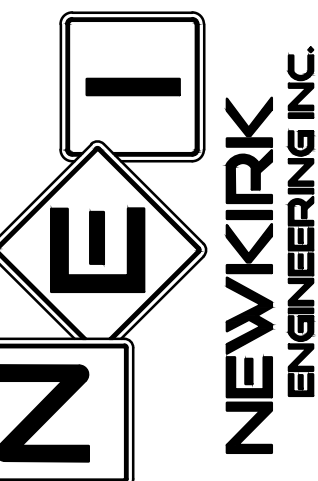
DRAINAGE STRUCTURE SCHEDULE						
I.D.	STA. OFF.	ROAD	STRUCTURE TYPE	TOP EL	SUMP EL	CONNECTIONS
CS-01	10+55.97 49.01' L	LANDINGS CIR	TYPE E INLET DETAIL SHEET 14	7.00	1.00	18" RCP - N INV 2.10
D-01	1+10.45 14.50' R	LANDINGS CIR. (ENTRANCE)	TYPE 8 INLET - 4' WIDE	6.40	2.15	15" RCP - S INV 3.15
D-02	1+10.46 14.50' L	LANDINGS CIR. (ENTRANCE)	TYPE 8 INLET - 4' WIDE	6.40	2.05	15" RCP - N INV 3.05 15" RCP - W INV 3.05
D-03	0+29.33 10.15' R	LANDINGS CIR	TYPE "8" MANHOLE	7.12	-1.63	14"X23" ERCP - W INV -0.63 14"X23" ERCP - S INV 0.00 15" RCP - E INV 2.80
D-04	1+27.28 12.50' R	LANDINGS CIR	TYPE 8 INLET - 4' WIDE	6.40	-1.26	14"X23" ERCP - S INV -0.26 14"X23" ERCP - N INV -0.26
D-05	2+43.28 12.50' R	LANDINGS CIR	TYPE 8 INLET - 4' WIDE	6.40	-1.56	14"X23" ERCP - N INV -0.56 14"X23" ERCP - S INV -0.56
D-06	3+93.28 14.50' R	LANDINGS CIR	TYPE E W/ APRON	6.45	-1.96	14"X23" ERCP - S INV -0.45 14"X23" ERCP - N INV -0.96
D-07	3+95.05 36.40' R	LANDINGS CIR	TYPE E "BUBBLE UP" INLET	4.50	-1.50	18" RCP - E INV -0.50
D-08	10+46.01 14.48' R	LANDINGS CIR	TYPE "E" W/ APRON	6.40	-1.77	14"X23" ERCP - N INV -0.77 14"X23" ERCP - E INV -0.76
D-09	10+46.05 12.50' L	LANDINGS CIR	TYPE 8 INLET - 4' WIDE	6.40	-1.83	14"X23" ERCP - S INV -0.83 14"X23" ERCP - N INV -0.83
D-10	10+46.04 34.50' L	LANDINGS CIR	TYPE E "BUBBLE UP" INLET	4.50	-1.89	14"X23" ERCP - S INV -0.89
D-11	9+81.94 12.50' L	LANDINGS CIR	TYPE 8 INLET - 4' WIDE	6.40	-1.46	14" X23" ERCP - NW INV -0.46 18" RCP - S INV -0.46
D-12	8+37.25 5.88' R	LANDINGS CIR	TYPE "8" MANHOLE - 4' WIDE	6.97	-1.00	14"X23" ERCP - N INV 0.00 14"X23" ERCP - W INV 2.87
D-13	8+37.25 14.49' L	LANDINGS CIR	TYPE E W/ APRON	6.50	1.57	14"X23" ERCP - E INV 2.59 18" RCP - W INV 2.59
D-14	6+89.40 14.49' L	LANDINGS CIR	TYPE E W/ APRON	6.50	1.63	18" RCP - NW INV 2.63
D-15	5+46.58 12.40' L	LANDINGS CIR	TYPE 8 INLET - 4' WIDE	6.46	1.95	18" RCP - NE INV 3.00 18" RCP - SW INV 3.00
D-16	6+33.75 63.88' L	LANDINGS CIR	TYPE E W/ APRON	6.50	1.70	14"X23" ERCP - S INV 2.70 18" RCP - N INV 2.70
D-17	5+97.75 62.71' L	LANDINGS CIR	TYPE E W/ APRON	6.50	1.60	18" RCP - S INV 2.60 14"X23" ERCP - N INV 2.60
D-18	0+32.59 45.42' R	LANDINGS CIR. (ENTRANCE)	TYPE J W/ APRON	2.00	-2.20	18" RCP - S INV -1.20
D-19	0+33.53 45.72' L	LANDINGS CIR. (ENTRANCE)	TYPE J W/ APRON	2.00	-2.45	18" RCP - N INV -1.45
D-20	9+79.31 33.27' L	LANDINGS CIR	TYPE E "BUBBLE UP" INLET	4.50	-1.50	14" X23" ERCP - SE INV -0.50

OUTFALL STRUCTURE SCHEDULE				
I.D.	STA. OFF.	ROAD	STRUCTURE TYPE	PIPES
UE-01		LANDINGS CIR	18" UE WALL (4:1) W/ BAFFLES	18" RCP - S INV 2.00
UE-02	7+09.24 46.10' L	LANDINGS CIR	18" UE WALL (4:1) W/ BAFFLES	18" RCP - SE INV 2.50
UE-03	8+35.55 44.50' L	LANDINGS CIR	18" UE WALL (4:1) W/ BAFFLES	18" RCP - E INV 2.50
UE-04	6+50.72 54.99' L	LANDINGS CIR	18" UE WALL (4:1) W/ BAFFLES	18" RCP - S INV 3.50
UE-05	5+46.43 35.50' L	LANDINGS CIR	18" UE WALL (4:1) W/ BAFFLES	18" RCP - NE INV 2.50
UE-06	5+21.28 31.50' R	LANDINGS CIR	18" UE WALL (4:1) W/ BAFFLES	18" RCP - SW INV 3.30
UE-07	5+72.84 62.30' L	LANDINGS CIR	18" UE WALL (4:1) W/ BAFFLES	18" RCP - N INV 2.50

REVISIONS

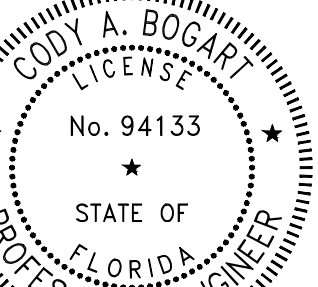
DATE	DESCRIPTION
5/5/23	CITY COMMENTS
10/23/23	CITY COMMENTS

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L.C. # 2600584
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OVERALL DRAINAGE PLAN
HARBOR LANDINGS
5653 RIDGEWOOD AVENUE
PORT ORANGE, FL 32127

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PROJECT No: 2022-199
DATE: JANUARY 2023
DESIGN BY: CAB
DRAWN BY: DAB
CHECKED BY: HHN
SCALE: 1"=30'

DRAWING NUMBER

GENERAL GRADING NOTES:

- 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).
- THE MAXIMUM ELEVATION CHANGE AT THE ENTRANCE DOOR MAY NOT EXCEED 1/2 INCH.
- ALL SIDEWALK LANDINGS SHALL HAVE SLOPES NO GREATER THAN 1/4 INCH / 1 FOOT IN MANEUVERING SPACES AT ALL DOORWAYS.
- ALL SIDEWALKS SHALL HAVE A 1.0% CROSS SLOPE (2.0% MAXIMUM).
- ALL CURB RAMPS SHALL COMPLY WITH SECTION 406 OF FACBC.
- 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.

DRY RETENTION POND CONSTRUCTION NOTES:

- INITIALLY CONSTRUCT THE RETENTION BASIN TO ROUGH GRADE BY UNDER-EXCAVATING THE BASIN BOTTOM AND SIDES BY APPROXIMATELY 12-INCHES.
- AFTER THE DRAINAGE AREA CONTRIBUTING TO THE BASIN HAS BEEN FULLY STABILIZED, THE INTERIOR SIDE SLOPES AND BASIN BOTTOM SHOULD BE EXCAVATED TO FINAL DESIGN SPECIFICATIONS. THE EXCESS SOIL AND UNDESIRABLE MATERIAL SHOULD BE CAREFULLY EXCAVATED AND REMOVED FROM THE POND SO THAT ALL ACCUMULATED SILTS, CLAY, ORGANICS AND OTHER FINE SEDIMENT MATERIAL HAS BEEN REMOVED FROM THE POND AREA. THE EXCAVATED MATERIAL SHOULD BE DISPOSED OF BEYOND THE LIMITS OF THE DRAINAGE AREA OF THE BASIN.
- ONCE THE BASIN HAS BEEN EXCAVATED TO FINAL GRADE, THE ENTIRE BASIN BOTTOM SHOULD BE DEEP RAKED AND LOOSENED FOR OPTIMAL INFILTRATION. EXCEPT WHERE TREES ARE SHOWN AS PROTECTED.
- FINALLY, THE BASIN SHOULD BE STABILIZED WITH "SAND GROWN" BAHIA.
- CONTRACTOR TO PROVIDE SHOP DRAWINGS TO ENGINEER OF RECORD FOR APPROVAL PRIOR TO CONSTRUCTION.
- WHERE TREES ARE SHOWN TO BE SAVED, DO NOT OVER EXCAVATE UNDER THE DRIPLINE. GENTLY CLEAR UNDESIRABLE VEGETATION (UNDERBRUSH) AS NEEDED.

GENERAL EARTHWORK NOTES:

- 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.
- 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.
- TEMPORARY FILL STOCKPILING IS NOT PERMITTED IN LIFTS GREATER THAN SIX FEET.
- 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.
- ONCE AN AREA IS SEEDED OR SODDED, IT MUST BE MAINTAINED TO ALLOW THE GRASS TO GROW.
- ALL NON-PAVED AREAS MUST BE PLANTED, GRASSED, OR MULCHED.

BENCHMARK INFORMATION:

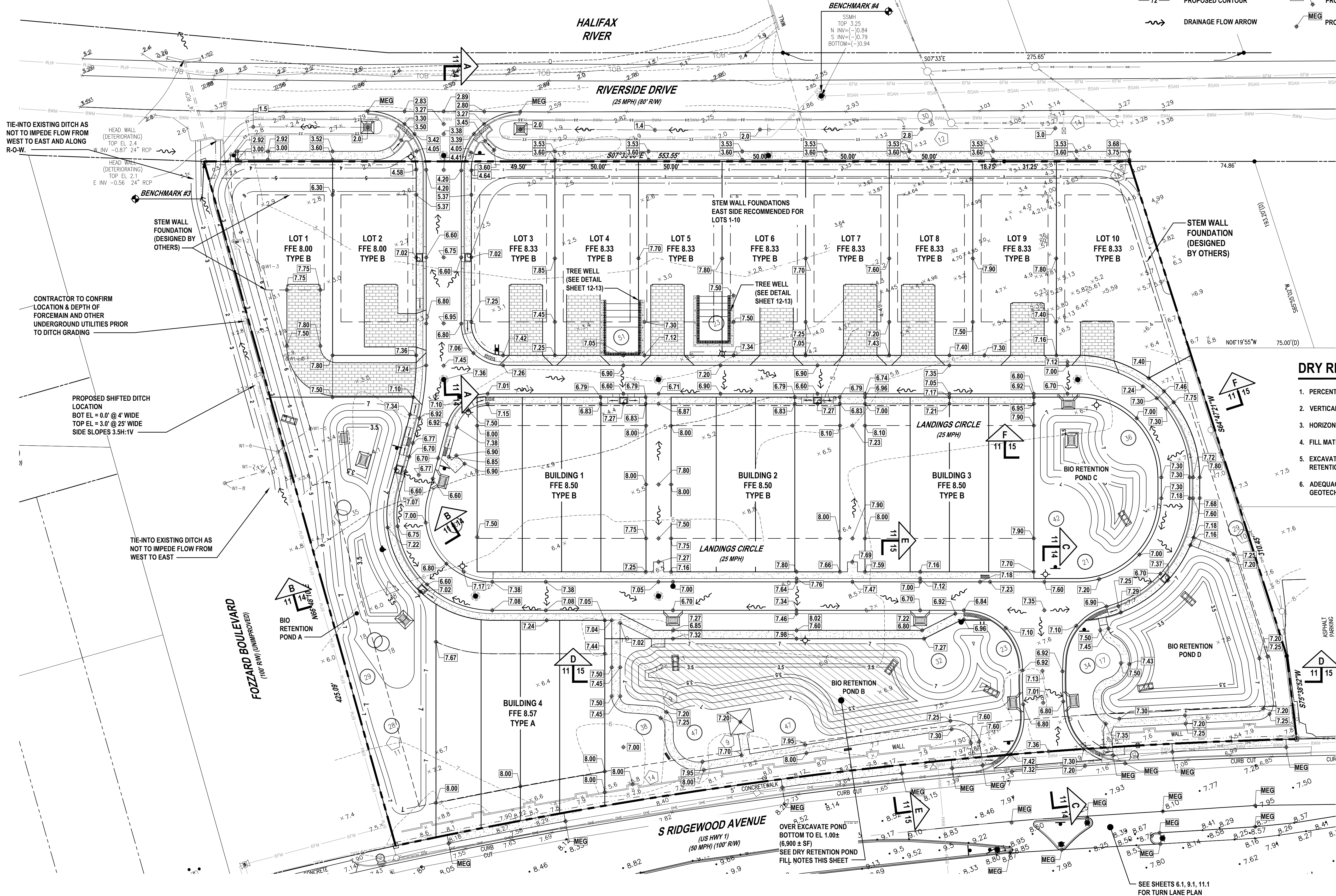
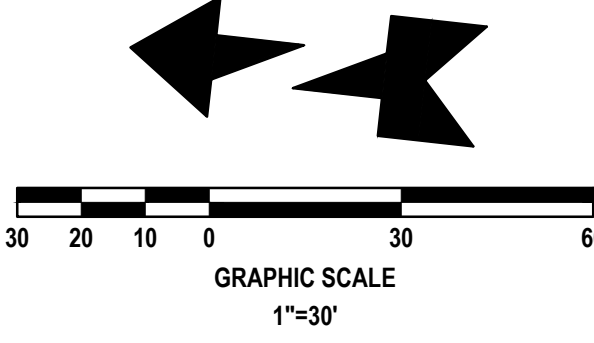
#3 BENCHMARK #3 TOP OF 4X4 CONCRETE MONUMENT ELEVATION = 1.04

#4 BENCHMARK #4 TOP OF SANITARY SEWER MANHOLE ELEVATION = 3.11

VERTICAL DATA
ELEVATIONS REFER TO (N.A.V.D. 88) NORTH AMERICAN VERTICAL DATUM 1988, FEET AND DECIMAL PART THEREOF. BENCHMARK REFERENCE NAVD DATUM OF 1988. BENCHMARK DESIGNATION IS A NATIONAL GEODETIC SURVEY DESIGNATION V 404 PID A02698 ELEVATION = 3.11

GRADING LEGEND:

- 65 — EXISTING CONTOUR
- 72 — PROPOSED CONTOUR
- DRAINAGE FLOW ARROW
- + 21.8 EXISTING SPOT ELEVATION
- 3.68 PROPOSED SPOT ELEVATION
- MEG PROPOSED SPOT ELEVATION



DRY RETENTION POND FILL NOTES:

- PERCENT FINE SAND PASSING THROUGH #200 SIEVE SHALL BE 8-10%.
- VERTICAL PERMEABILITY RATE OF FILL MATERIAL SHALL BE 5.0 FT/DAY.
- HORIZONTAL PERMEABILITY RATE OF THE FILL MATERIAL SHALL BE 10.0 FT/DAY.
- FILL MATERIAL MUST BE NATIVE SAND, NOT PROCESSED OR WASHED.
- EXCAVATION AND FILL MATERIALS SHALL INCLUDE THE ENTIRE FOOTPRINT OF THE DRY RETENTION POND.
- ADEQUACY OF FILL MATERIAL MUST BE APPROVED BY PROFESSIONAL ENGINEER OR GEOTECHNICAL ENGINEER AT TIME OF PLACEMENT.

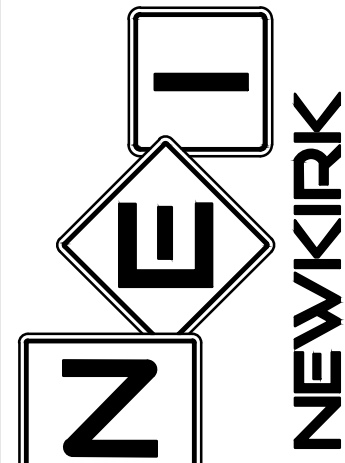
REVISIONS

DATE	DESCRIPTION
5/5/23	CITY COMMENTS
10/23/23	CITY COMMENTS

1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7794
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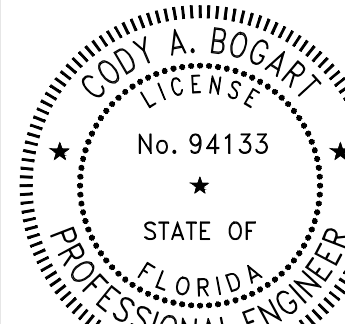
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GRADING PLAN
HARBOR LANDINGS
5653 RIDGEWOOD AVENUE
PORT ORANGE, FL 32127

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PROJECT No: 2022-199
DATE: JANUARY 2023
DESIGN BY: CAB
DRAWN BY: DAB
CHECKED BY: HHN
SCALE: 1" = 30'
DRAWING NUMBER

11

GENERAL GRADING NOTES:

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- ALL SIDEWALKS SHALL HAVE A 1.0% CROSS SLOPE (2.0% MAXIMUM).
- ALL CURB RAMPS SHALL COMPLY WITH SECTION 406 OF FACBC.
- 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.

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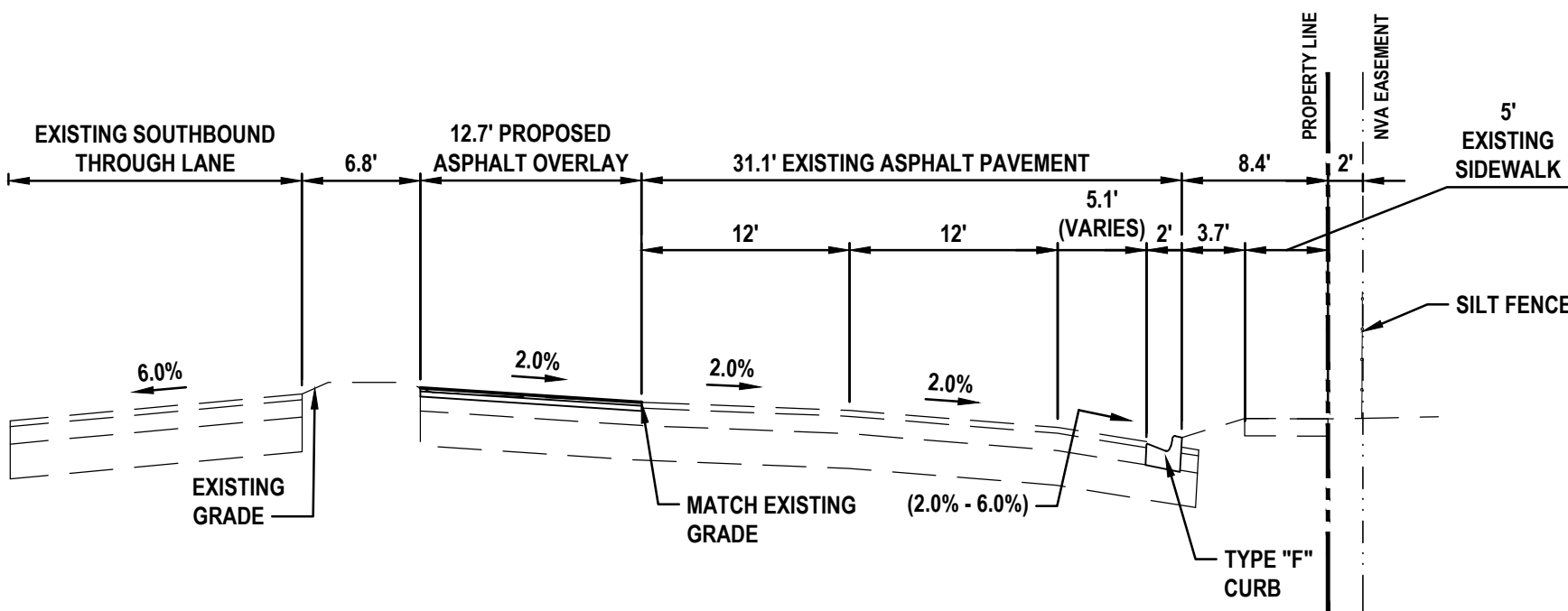
BENCHMARK INFORMATION:

- #3 BENCHMARK #3 TOP OF 4X4 CONCRETE MONUMENT
ELEVATION = 1.04
- #4 BENCHMARK #4 TOP OF SANITARY SEWER MANHOLE
ELEVATION = 3.11
- VERTICAL DATA
ELEVATIONS REFER TO (N.A.V.D. 88) NORTH AMERICAN VERTICAL DATUM 1988, FEET AND DECIMAL PART THEREOF. BENCHMARK REFERENCE NAVD DATUM OF 1988. BENCHMARK DESIGNATION IS A NATIONAL GEODETIC SURVEY DESIGNATION V 404 PID AQ2698 ELEVATION = 3.11

GRADING LEGEND:

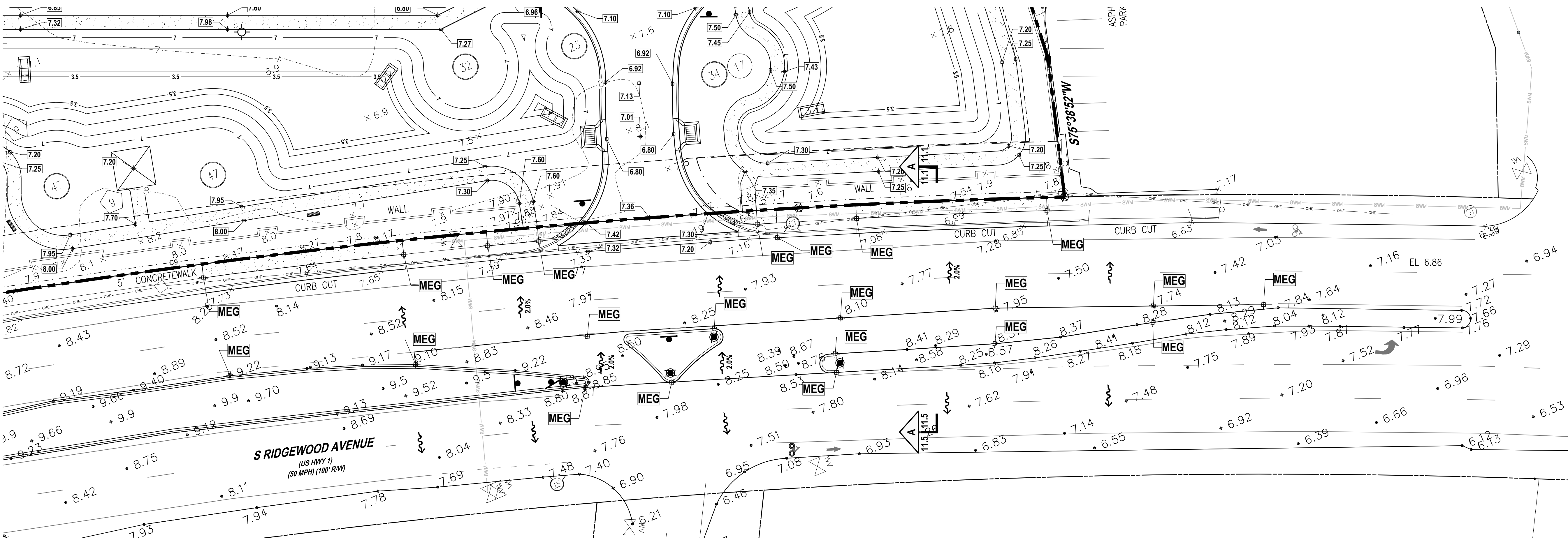
- 85--- EXISTING CONTOUR
- 72--- PROPOSED CONTOUR
- ~> DRAINAGE FLOW ARROW
- +210 EXISTING SPOT ELEVATION
- 3.68 PROPOSED SPOT ELEVATION
- MEG PROPOSED SPOT ELEVATION

NOTE: ALL ROOF GUTTERS FOR LOTS 1-10 TO BE DIRECTED TO FRONT YARDS OR CONVEYED TO STORMWATER SYSTEM



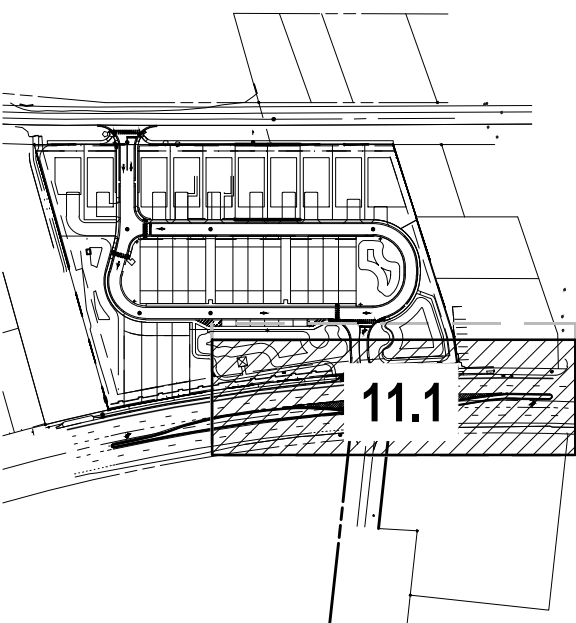
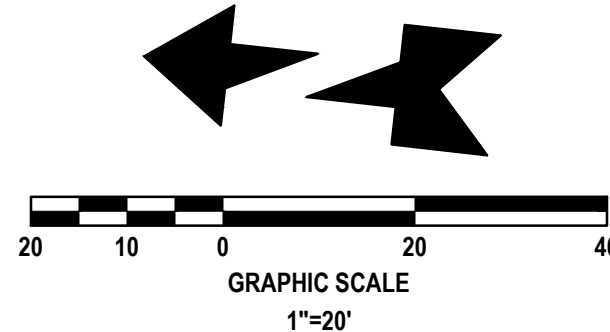
TYPICAL TURN LANE GRADING SECTION A

SCALE: 1" = 10'



S RIDGEWOOD AVENUE RIGHT-OF-WAY GRADING PLAN

SCALE: 1" = 20'



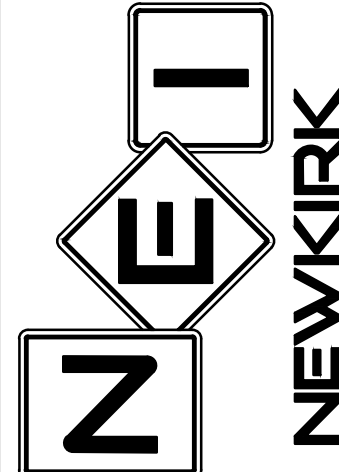
KEY MAP

NOT TO SCALE

REVISIONS

DATE	DESCRIPTION
5/5/22	CITY COMMENTS
10/23/23	CITY COMMENTS

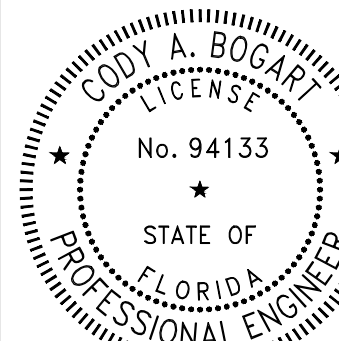
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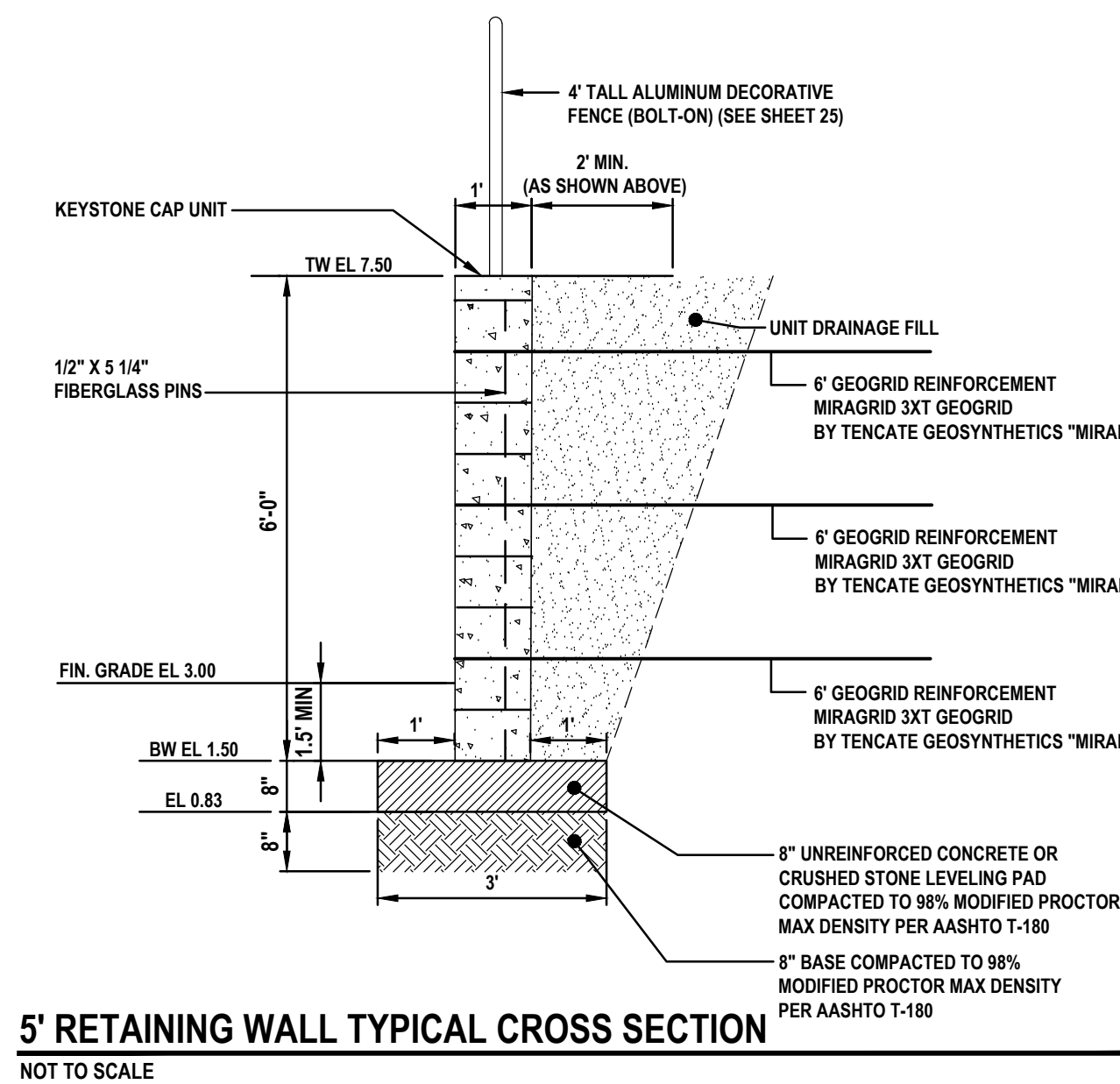
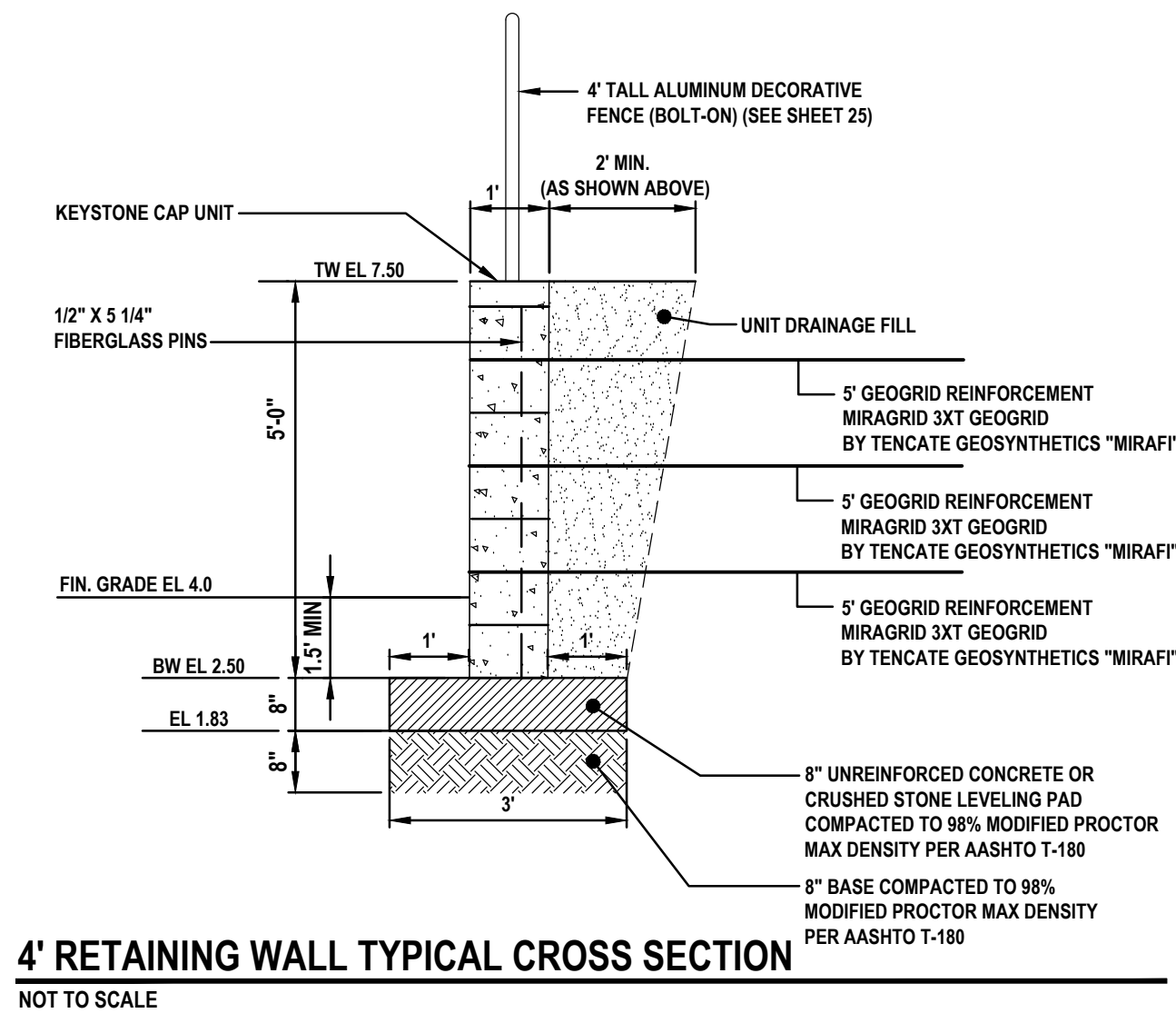
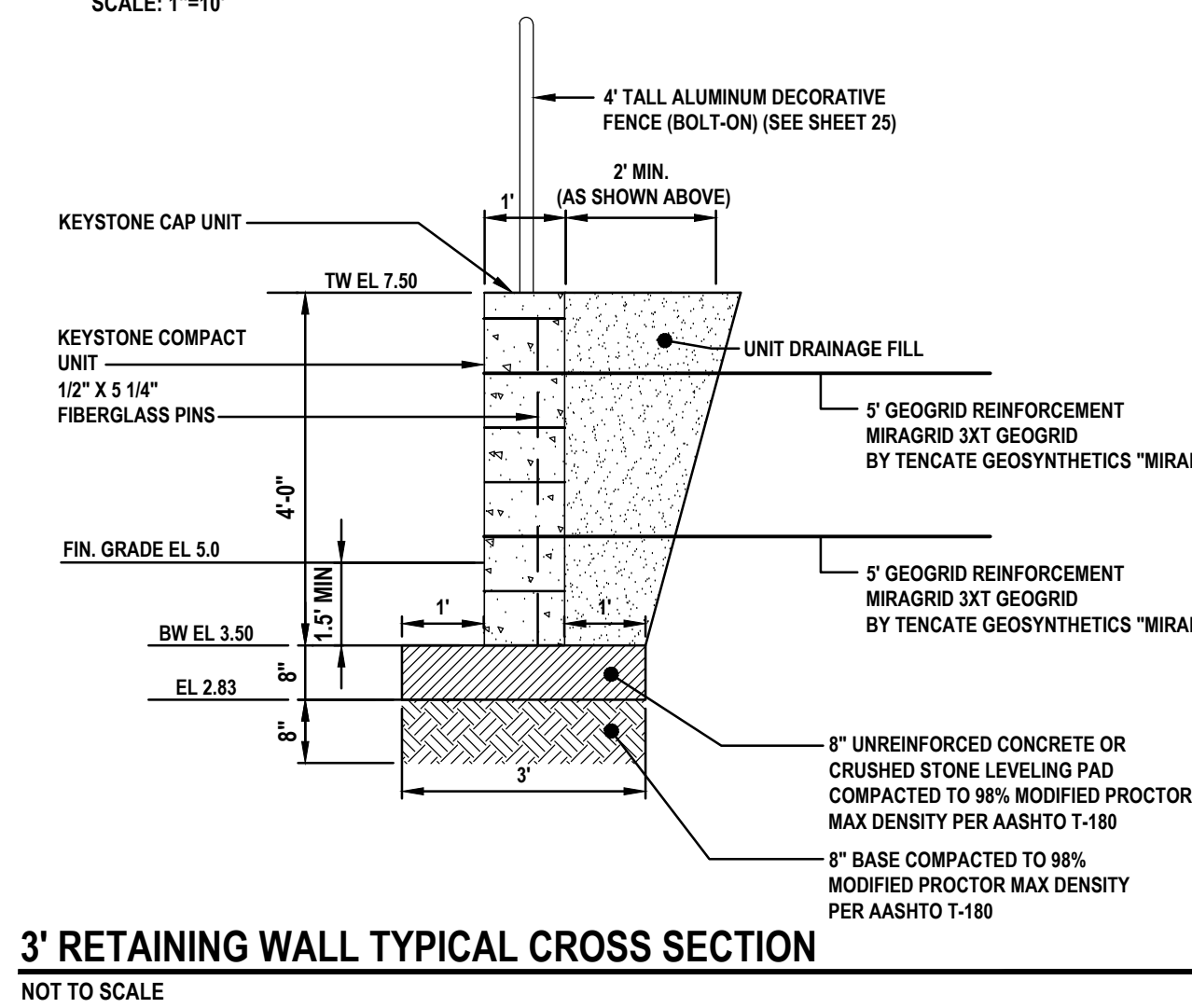
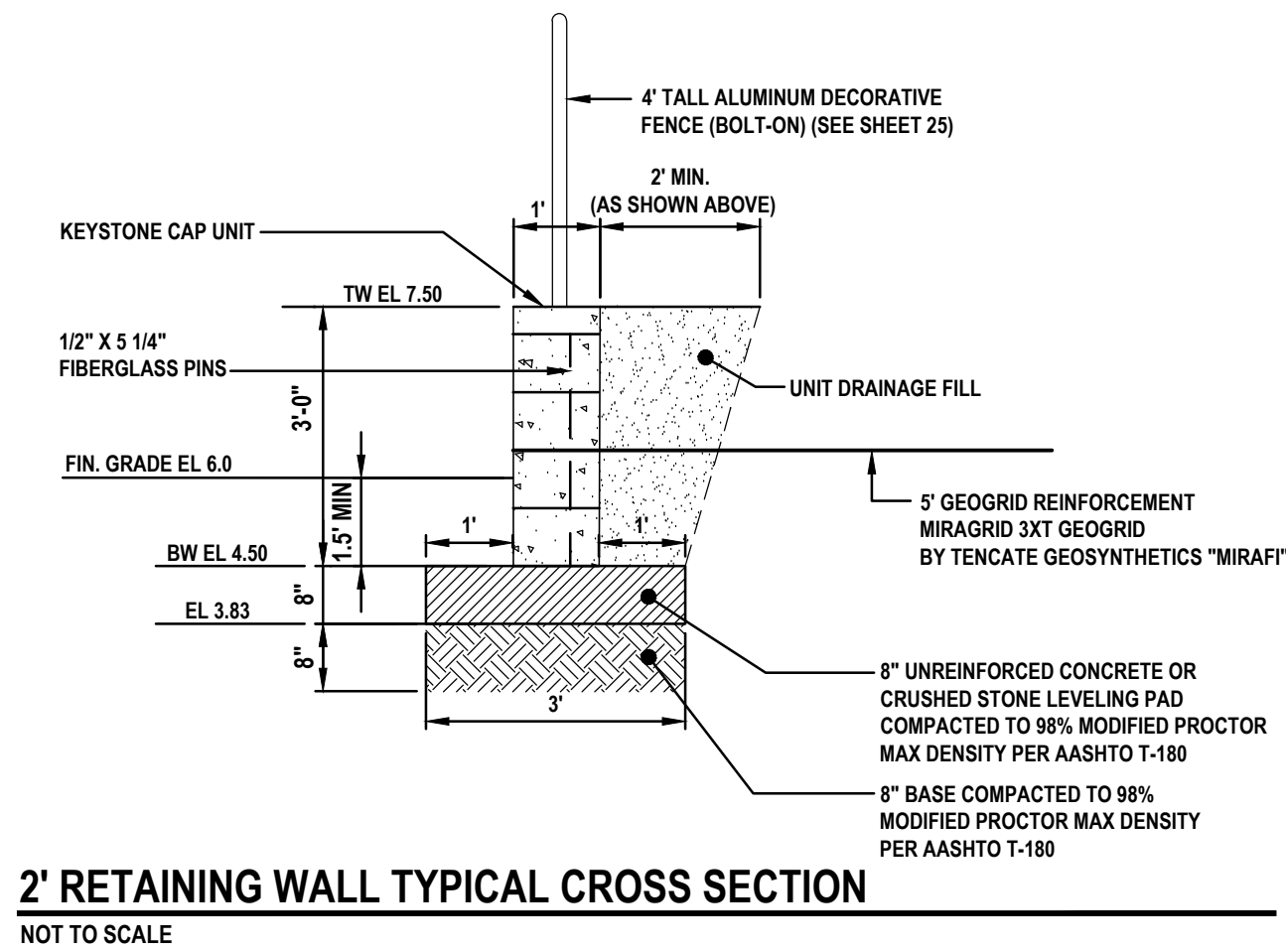
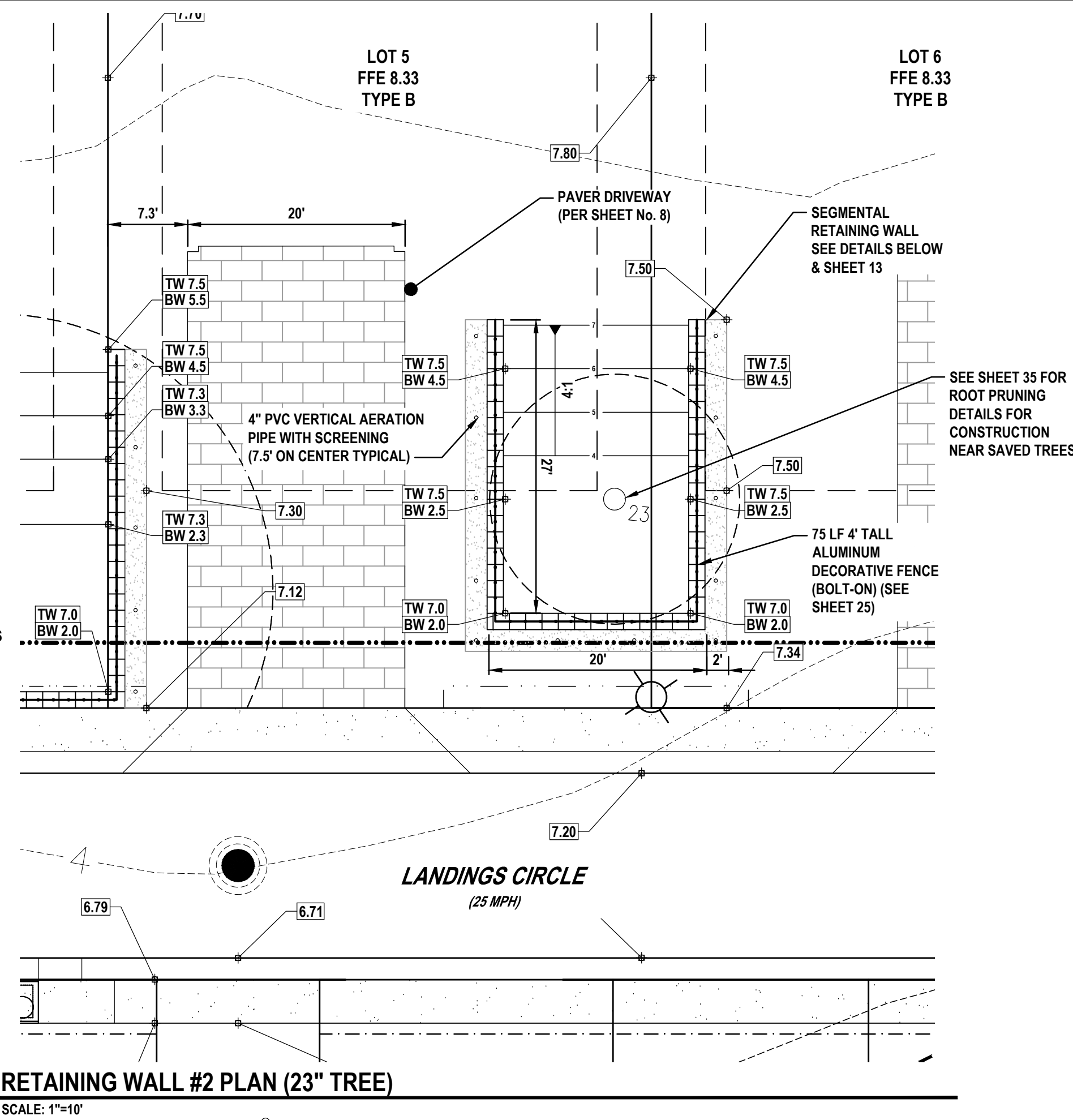
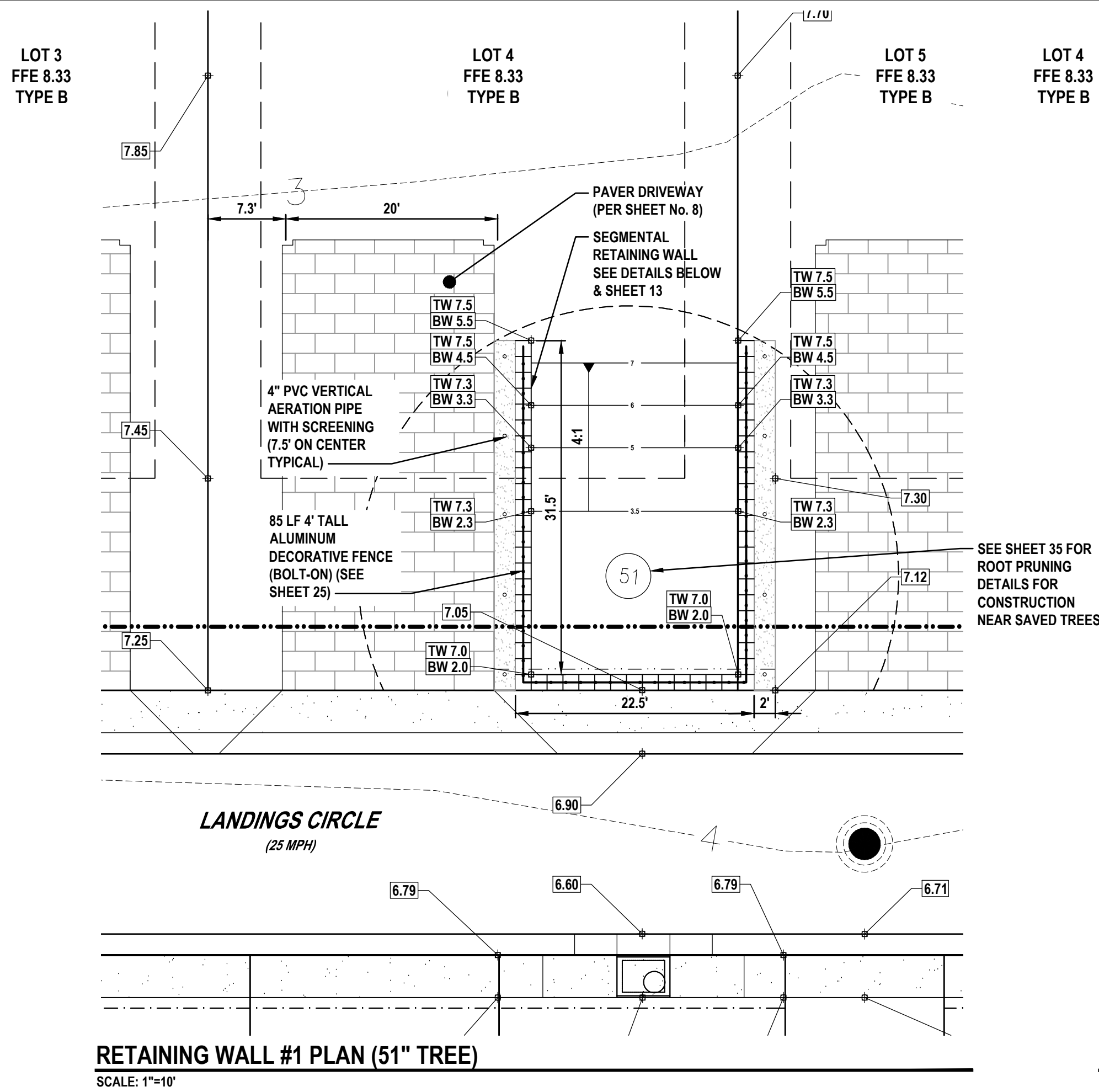


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PROJECT No:	2022-199
DATE:	JANUARY 2023
DESIGN BY:	CAB
DRAWN BY:	DAB
CHECKED BY:	HNN
SCALE:	1" = 20'

DRAWING NUMBER

11.1



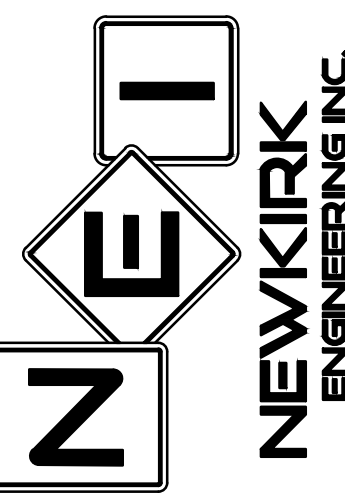
NOTE
AREA SURROUNDING TREE WELLS TO
BE GRADED AS TO NOT CONVEY WATER
INTO THE TREE WELL OR VERTICAL
AERATION PIPES

NOTE!
CERTIFIED ARBORIST TO BE ONSITE FOR
CONSTRUCTION OF THE TREE WELLS,
FOR ROOT PRUNING, AND TREE CROWN
TRIMMING, AS REQUIRED.

REVISIONS

DATE	DESCRIPTION
5/5/22	CITY COMMENTS

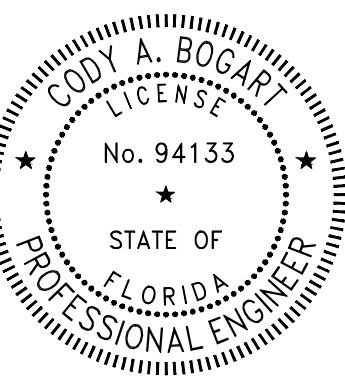
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RETAINING WALL PLANS
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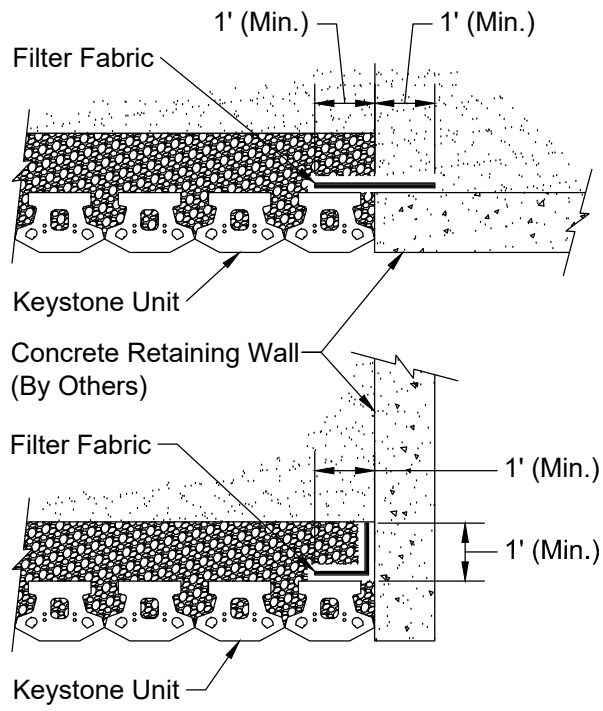


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SIGNATURE MUST BE VERIFIED ON
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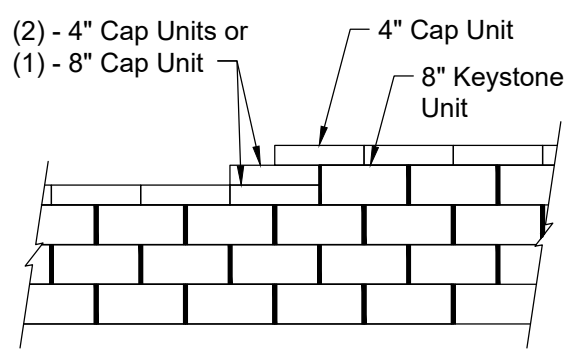
PROJECT No: 2022-199
DATE: JANUARY 2023
DESIGN BY: CAB
DRAWN BY: DAB
CHECKED BY: HHN
SCALE: AS SHOWN

DRAWING NUMBER

12

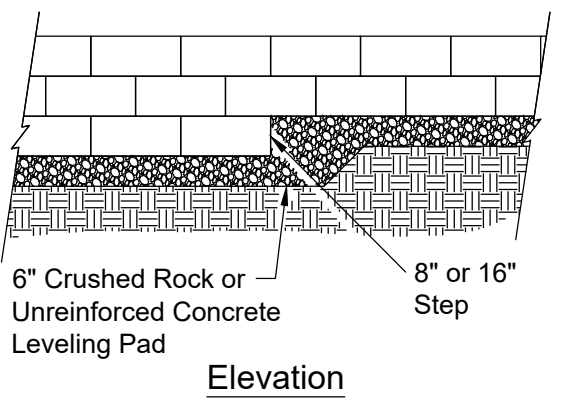


Connection Details
Compac Unit - Shown



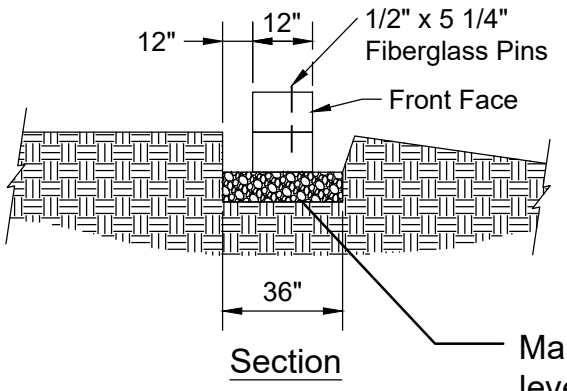
Note:
1. Secure all cap units with Keystone Kapseal or equal.

Top of Wall Steps



Elevation

Note:
1. The leveling pad is to be constructed of crushed stone or 2000 psi unreinforced concrete.

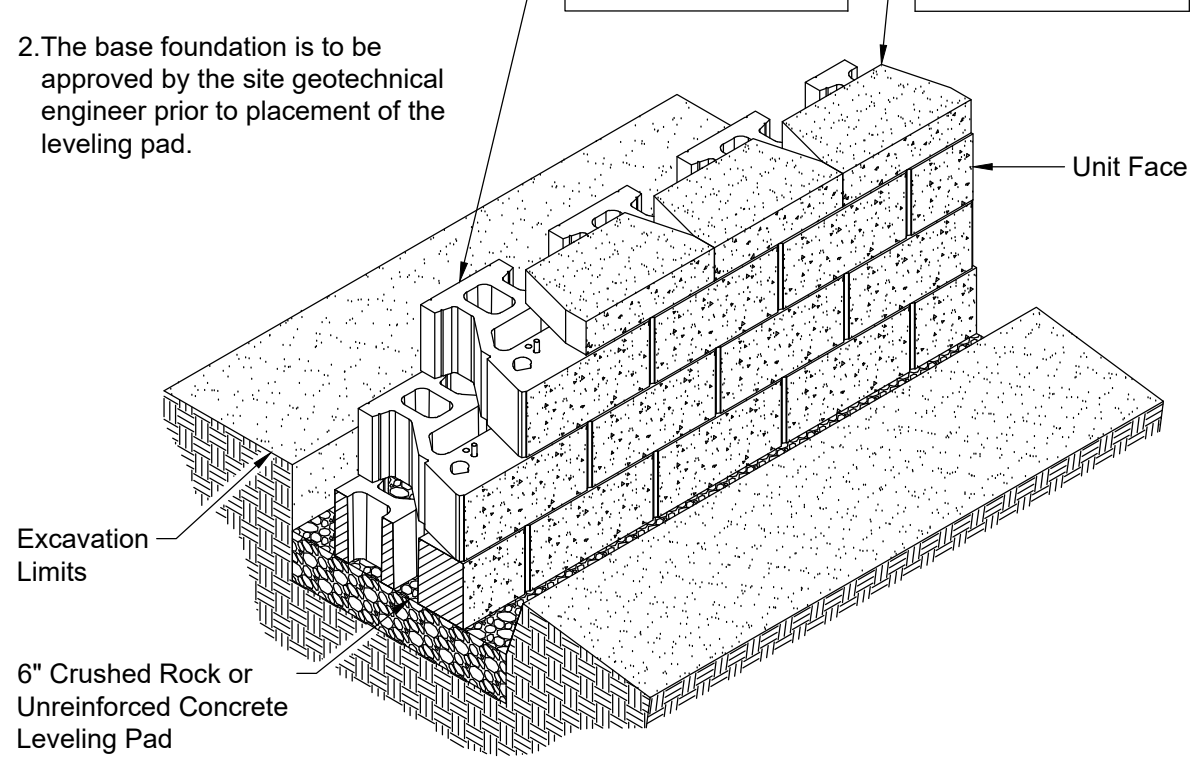


Leveling Pad Detail

Base Leveling Pad Notes:

- The leveling pad is to be constructed of crushed stone or 2,000 psi unreinforced concrete
- The base foundation is to be approved by the site geotechnical engineer prior to placement of the leveling pad.

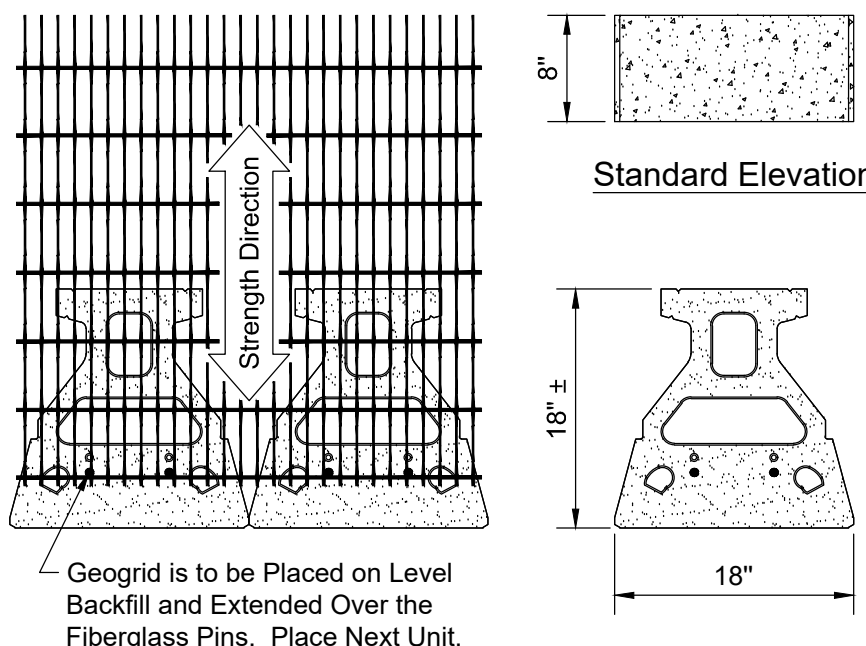
Standard Unit	Cap Unit
Width: 18"	Width: 18"
*Depth: 18"	*Depth: 10 1/2"
Height: 8"	Height: 4"
*Weight: 108 lbs	*Weight: 50 lbs



Standard Unit/Base Pad Isometric Section View
*Dimensions & Weight May Vary by Region



Control Joint Cut



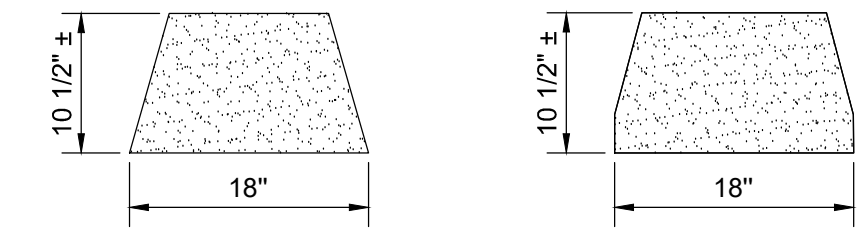
Grid & Pin Connection

*Dimensions May Vary by Region



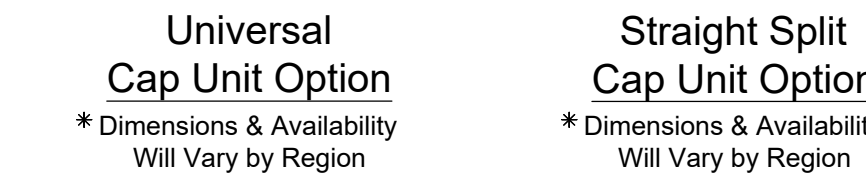
Cap Unit Elevation

Cap Unit Elevation



Cap Unit Plan

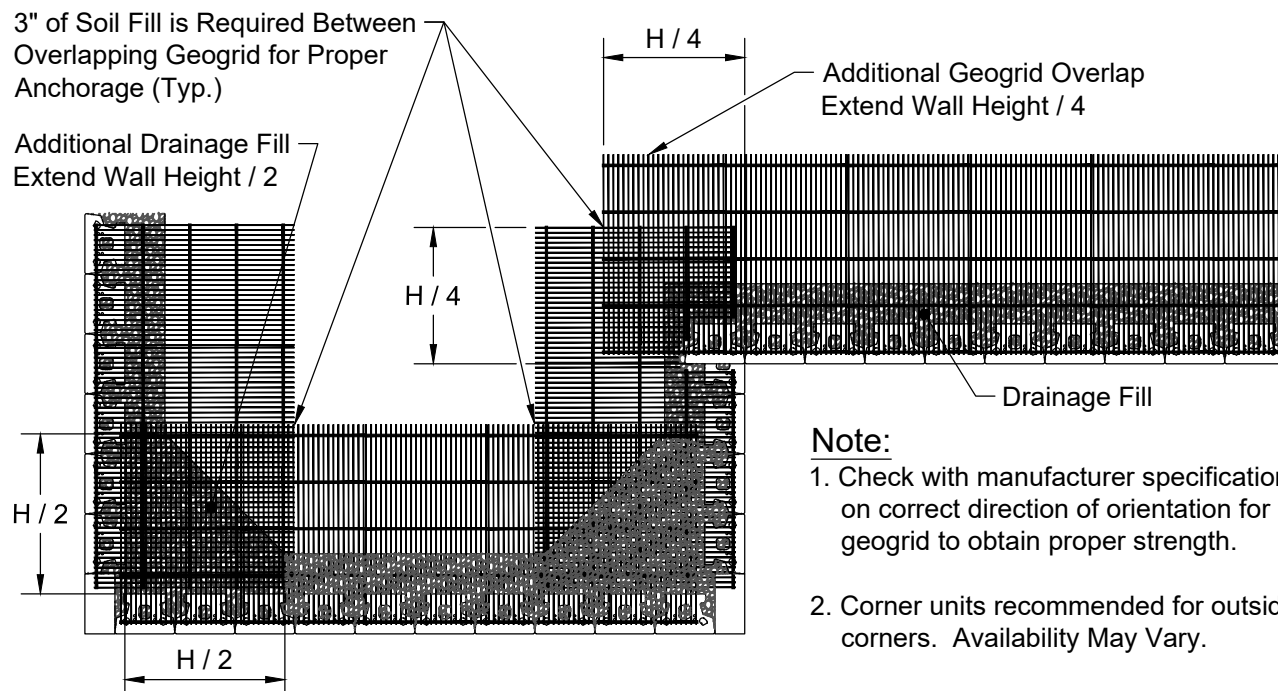
Cap Unit Plan



Universal Cap Unit Option

Straight Split Cap Unit Option

*Dimensions & Availability Will Vary by Region



Geogrid Installation at Corners

Note:
1. Check with manufacturer specifications on correct direction of orientation for geogrid to obtain proper strength.
2. Corner units recommended for outside corners. Availability May Vary.

SEGMENTAL RETAINING WALL SPECIFICATIONS:

PART 1: GENERAL

1.01 DESCRIPTION

- WORK SHALL CONSIST OF FURNISHING AND CONSTRUCTION OF A KEYSTONE COMPAC UNIT RETAINING WALL SYSTEM OR EQUAL IN ACCORDANCE WITH THESE SPECIFICATIONS AND IN REASONABLY CLOSE CONFORMITY WITH THE LINES, GRADES, DESIGN, AND DIMENSIONS SHOWN ON THE PLANS.
- WORK INCLUDES PREPARING FOUNDATION SOIL, FURNISHING AND INSTALLING LEVELING PAD, UNIT DRAINAGE FILL AND BACKFILL TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS.
- WORK INCLUDES FURNISHING AND INSTALLING GEOGRID SOIL REINFORCEMENT OF THE TYPE, SIZE, LOCATION, AND LENGTHS DESIGNATED ON THE CONSTRUCTION DRAWINGS.

1.02 RELATED SECTIONS

- SECTION 02300 (31 00 00) - EARTHWORK

1.03 REFERENCE DOCUMENTS

- AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

- ASTM C140 SAMPLING AND TESTING CONCRETE MASONRY UNITS
- ASTM C1372 SPECIFICATION FOR DRY-CAST SEGMENTAL RETAINING WALL UNITS
- ASTM D422 PARTICLE-SIZE ANALYSIS OF SOILS
- ASTM D698 LABORATORY COMPACTION CHARACTERISTICS OF SOIL - STANDARD EFFORT
- ASTM D1557 LABORATORY COMPACTION CHARACTERISTICS OF SOIL - MODIFIED EFFORT
- ASTM D3034 POLYVINYL CHLORIDE PIPE (PVC)
- ASTM D4318 LIQUID LIMIT, PLASTIC LIMIT AND PLASTICITY INDEX OF SOILS
- ASTM D4475 HORIZONTAL SHEAR STRENGTH OF PULTRUDED REINFORCED PLASTIC RODS
- ASTM D4476 FLEXURAL PROPERTIES OF FIBER REINFORCED PULTRUDED PLASTIC RODS
- ASTM D4595 TENSILE PROPERTIES OF GEOTEXTILES - WIDE WIDTH STRIP
- ASTM D5262 UNCONFINED TENSION CREEP BEHAVIOR OF GEOSYNTHETICS
- ASTM D5818 EVALUATE INSTALLATION DAMAGE OF GEOSYNTHETICS
- ASTM D6537 TENSILE PROPERTIES OF GEOGRIDS - SINGLE OR MULTI-RIB
- ASTM D6638 CONNECTION STRENGTH - REINFORCEMENT/SEGMENTAL UNITS
- ASTM D6706 GEOSYNTHETIC PULLOUT RESISTANCE IN SOIL
- ASTM D6916 SHEAR STRENGTH BETWEEN SEGMENTAL CONCRETE UNITS

- AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS (AASHTO)

- AASHTO M 252 CORRUGATED POLYETHYLENE DRAINAGE PIPE

- GEOTECHNICAL RESEARCH INSTITUTE (GRI)

- GRI-GG4 DETERMINATION OF LONG TERM DESIGN STRENGTH OF GEOGRIDS
- GRI-GG5 DETERMINATION OF GEOGRID (SOIL) PULLOUT

- NATIONAL CONCRETE MASONRY ASSOCIATION (NCMA)

- NCMA SRWU-1 TEST METHOD FOR DETERMINING CONNECTION STRENGTH OF SRW
- NCMA SRWU-2 TEST METHOD FOR DETERMINING SHEAR STRENGTH OF SRW

1.04 SUBMITTALS/CERTIFICATION

- CONTRACTOR SHALL SUBMIT A MANUFACTURER'S CERTIFICATION, PRIOR TO START OF WORK, THAT THE RETAINING WALL SYSTEM COMPONENTS MEET THE REQUIREMENTS OF THIS SPECIFICATION AND THE STRUCTURE DESIGN.
- CONTRACTOR SHALL SUBMIT CONSTRUCTION DRAWINGS AND DESIGN CALCULATIONS FOR THE RETAINING WALL SYSTEM PREPARED AND STAMPED BY A PROFESSIONAL ENGINEER REGISTERED IN THE STATE OF THE PROJECT. THE ENGINEERING DESIGNS, TECHNIQUES, AND MATERIAL EVALUATIONS SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S DESIGN MANUAL, NCMA DESIGN GUIDELINES FOR SEGMENTAL RETAINING WALLS, OR THE AASHTO STANDARD SPECIFICATIONS FOR HIGHWAY BRIDGES (WHICHEVER IS APPLICABLE TO DESIGNER).
- CONTRACTOR SHALL SUBMIT A TEST REPORT DOCUMENTING STRENGTH OF SPECIFIC MODULAR CONCRETE UNIT AND GEOGRID REINFORCEMENT CONNECTION. THE MAXIMUM DESIGN TENSILE LOAD OF THE GEOGRID SHALL BE EQUAL TO THE LABORATORY TESTED ULTIMATE STRENGTH OF GEOGRID / FACING UNIT CONNECTION AT A MAXIMUM NORMAL FORCE LIMITED BY THE "HINGE HEIGHT" OF THE STRUCTURE DIVIDED BY A SAFETY FACTOR OF 1.5. THE CONNECTION STRENGTH EVALUATION SHALL BE PERFORMED IN ACCORDANCE WITH ASTM D6638 (NCMA SRWU-1).

1.05 QUALITY ASSURANCE

- CONTRACTOR SHALL SUBMIT CERTIFICATION, PRIOR TO START OF WORK, THAT THE RETAINING WALL SYSTEM (MODULAR CONCRETE UNITS AND SPECIFIC GEOGRID):

- HAS BEEN SUCCESSFULLY UTILIZED ON A MINIMUM OF FIVE (5) SIMILAR PROJECTS, I.E., HEIGHT, SOIL FILL TYPES, ERECTION TOLERANCES, ETC.; AND
- HAS BEEN SUCCESSFULLY INSTALLED ON A MINIMUM OF 1 MILLION (1,000,000) SQUARE FEET OF RETAINING WALLS.

- CONTRACTOR SHALL SUBMIT A LIST OF FIVE (5) PREVIOUSLY CONSTRUCTED PROJECTS OF SIMILAR SIZE AND MAGNITUDE BY THE WALL INSTALLER WHERE THE SPECIFIC RETAINING WALL SYSTEM HAS BEEN CONSTRUCTED SUCCESSFULLY. CONTACT NAMES AND TELEPHONE NUMBERS SHALL BE LISTED FOR EACH PROJECT.

- CONTRACTOR SHALL PROVIDE EVIDENCE THAT THE DESIGN ENGINEER HAS A MINIMUM OF FIVE YEARS OF DOCUMENTAL EXPERIENCE IN THE DESIGN FOR REINFORCED SOIL STRUCTURES. THE DESIGN ENGINEER SHALL PROVIDE PROOF OF CURRENT PROFESSIONAL LIABILITY INSURANCE WITH AN AGGREGATE COVERAGE LIMIT OF NOT LESS THAN \$2,000,000.

- OWNER SHALL MAY PROVIDE SOIL TESTING AND QUALITY ASSURANCE INSPECTION DURING EARTHWORK AND WALL CONSTRUCTION OPERATIONS. CONTRACTOR SHALL PROVIDE ANY QUALITY CONTROL TESTING OR INSPECTION NOT PROVIDED BY THE OWNER. OWNER'S QUALITY ASSURANCE PROGRAM DOES NOT RELIEVE THE CONTRACTOR OF RESPONSIBILITY FOR QUALITY CONTROL AND WALL PERFORMANCE.

1.06 DELIVERY, STORAGE AND HANDLING

- CONTRACTOR SHALL CHECK ALL MATERIALS UPON DELIVERY TO ASSURE THAT THE PROPER TYPE, GRADE, COLOR, AND CERTIFICATION HAVE BEEN RECEIVED.
- CONTRACTOR SHALL PROTECT ALL MATERIALS FROM DAMAGE DUE TO JOBSITE CONDITIONS AND IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. DAMAGED MATERIALS SHALL NOT BE INCORPORATED INTO THE WORK.

PART 2: PRODUCTS

2.01 DEFINITIONS

- MODULAR UNIT - A CONCRETE RETAINING WALL ELEMENT MACHINE MADE FROM PORTLAND CEMENT, WATER, AND AGGREGATES.
- STRUCTURAL GEOGRID - A STRUCTURAL ELEMENT FORMED BY A REGULAR NETWORK OF INTEGRALLY CONNECTED TENSILE ELEMENTS WITH APERTURES OF SUFFICIENT SIZE TO ALLOW INTERLOCKING WITH SURROUNDING SOIL, ROCK, OR EARTH AND FUNCTION PRIMARILY AS REINFORCEMENT.
- UNIT DRAINAGE FILL - DRAINAGE AGGREGATE, WHICH IS PLACED WITHIN AND IMMEDIATELY BEHIND THE MODULAR CONCRETE UNITS.
- REINFORCED BACKFILL - COMPACTED SOIL, WHICH IS PLACED WITHIN THE REINFORCED SOIL VOLUME AS OUTLINED ON THE PLANS.

2.02 MODULAR CONCRETE RETAINING WALL UNITS

- MODULAR CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING ARCHITECTURAL REQUIREMENTS:

- FACE COLOR - CONCRETE GRAY, UNLESS OTHERWISE SPECIFIED, THE OWNER MAY SPECIFY STANDARD MANUFACTURER'S COLOR.
- FACE FINISH - SCULPTURED ROCK FACE IN ANGULAR TRI-PLANNER CONFIGURATION. OTHER FACE FINISHES WILL NOT BE ALLOWED WITHOUT WRITTEN APPROVAL OF OWNER.
- BOND CONFIGURATION - RUNNING WITH BONDS NOMINALLY LOCATED AT MIDPOINT VERTICALLY ADJACENT UNITS, IN BOTH STRAIGHT AND CURVED ALIGNMENTS.
- EXPOSED SURFACES OF UNITS SHALL BE FREE OF CHIPS, CRACKS OR OTHER IMPERFECTIONS WHEN VIEWED FROM A DISTANCE OF 10 FEET UNDER DIFFUSED LIGHTING.

- MODULAR CONCRETE MATERIALS SHALL CONFORM TO THE REQUIREMENTS OF ASTM C1372 - STANDARD SPECIFICATIONS FOR SEGMENTAL RETAINING WALL UNITS.

- MODULAR CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING STRUCTURAL AND GEOMETRIC REQUIREMENTS MEASURED IN ACCORDANCE WITH ASTM C140 SAMPLING AND TESTING CONCRETE MASONRY UNITS.

- COMPRESSIVE STRENGTH: 3000 PSI (21 MPa);
- ABSORPTION: 8 % (6% IN NORTHERN STATES) FOR STANDARD WEIGHT AGGREGATES;
- DIMENSIONAL TOLERANCES: $\pm 1/8"$ (3 MM) FROM NOMINAL UNIT DIMENSIONS NOT INCLUDING ROUGH SPLIT FACE, $\pm 1/16"$ (1.5 MM) UNIT HEIGHT - TOP AND BOTTOM PLANES;
- UNIT SIZE: 8" (203 MM) (H) X 18" (457 MM) (W) X 12" (304 MM) (D) MINIMUM;
- UNIT WEIGHT: 75-LS/UNIT (35 KG/UNIT) MINIMUM FOR STANDARD WEIGHT AGGREGATES.

- MODULAR CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING PERFORMANCE TESTING:

- INTER UNIT SHEAR STRENGTH IN ACCORDANCE WITH ASTM D6916 (NCMA SRWU-2); 600-PLF (8 KN/M) MINIMUM AT 2-PSI (13 KPA) NORMAL PRESSURE;
- GEOGRID/UNIT PEAK CONNECTION STRENGTH IN ACCORDANCE WITH ASTM D6638 (NCMA SRWU-1); 500-PLF (7 KN/M) MINIMUM AT 2-PSI (13 KPA) NORMAL FORCE.

- MODULAR CONCRETE UNITS SHALL CONFORM TO THE FOLLOWING CONSTRUCTABILITY REQUIREMENTS:

- VERTICAL SETBACK $\pm 1/8"$ (3 MM) PER COURSE (NEAR VERTICAL) OR 1" (25 MM) PER COURSE PER THE DESIGN;
- ALIGNMENT AND GRID POSITIONING MECHANISM - FIBERGLASS PINS, TWO PER UNIT MINIMUM;
- MAXIMUM HORIZONTAL GAP BETWEEN ERECTED UNITS SHALL BE 1/2 INCH (13 MM).

2.03 SHEAR CONNECTORS

- SHEAR CONNECTORS SHALL BE 1/2-INCH (12 MM) DIAMETER THERMOSET ISOPHTHALIC POLYESTER RESIN PULTRUDED FIBERGLASS REINFORCEMENT RODS OR EQUIVALENT TO PROVIDE CONNECTION BETWEEN VERTICALLY AND HORIZONTALLY ADJACENT UNITS WITH THE FOLLOWING REQUIREMENTS:

- FLEXURAL STRENGTH IN ACCORDANCE WITH ASTM D4476: 128,000 PSI (882 MPa) MINIMUM;
- SHORT BEAM SHEAR IN ACCORDANCE WITH ASTM D4475: 6,400 PSI (44 MPa) MINIMUM.

- SHEAR CONNECTORS SHALL BE CAPABLE OF HOLDING THE GEOGRID IN THE PROPER DESIGN POSITION DURING GRID PRE-TENSIONING AND BACKFILLING.

2.04 BASE LEVELING PAD MATERIAL

- MATERIAL SHALL CONSIST OF A COMPACTED CRUSHED STONE BASE OR NON-REINFORCED CONCRETE AS SHOWN ON THE CONSTRUCTION DRAWINGS.

2.05 UNIT DRAINAGE FILL

- UNIT DRAINAGE FILL SHALL CONSIST OF CLEAN 1" (25 MM) MINUS CRUSHED STONE OR CRUSHED GRAVEL MEETING THE FOLLOWING GRADATION TESTED IN ACCORDANCE WITH ASTM D-422:

SIEVE SIZE	PERCENT PASSING
1 INCH (25 MM)	100
3/4-INCH (19 MM)	75_100
NO. 4	0_10
NO. 50	0_5

- ONE CUBIC FOOT (0.028 M3), MINIMUM, OF DRAINAGE FILL SHALL BE USED FOR EACH SQUARE FOOT (0.093 M2) OF WALL FACE. DRAINAGE FILL SHALL BE PLACED WITHIN CORES OF, BETWEEN, AND BEHIND UNITS TO MEET THIS REQUIREMENT.

2.06 REINFORCED BACKFILL

- REINFORCED BACKFILL SHALL BE FREE OF DEBRIS AND MEET THE FOLLOWING GRADATION TESTED IN ACCORDANCE WITH ASTM D-422:

SIEVE SIZE	PERCENT PASSING
2-INCH (50 MM)	100
3/4-INCH (19 MM)	100_75
NO. 4	0_5
NO. 200	0_35

PLASTICITY INDEX (PI) <15 AND LIQUID LIMIT <40 PER ASTM D-4318.

- THE MAXIMUM AGGREGATE SIZE SHALL BE LIMITED TO 3/4 INCH (19 MM) UNLESS FIELD TESTS HAVE BEEN PERFORMED TO EVALUATE POTENTIAL STRENGTH REDUCTIONS TO THE GEOGRID DESIGN DUE TO DAMAGE DURING CONSTRUCTION.

- MATERIAL CAN BE SITE-EXCAVATED SOILS WHERE THE ABOVE REQUIREMENTS CAN BE MET. UNSUITABLE SOILS FOR BACKFILL (HIGH PLASTIC CLAYS OR ORGANIC SOILS) SHALL NOT BE USED IN THE BACKFILL OR IN THE REINFORCED SOIL MASS.

- CONTRACTOR SHALL SUBMIT REINFORCED FILL SAMPLE AND LABORATORY TEST RESULTS TO THE ARCHITECT/ENGINEER FOR APPROVAL PRIOR TO THE USE OF ANY PROPOSED REINFORCED FILL MATERIAL.

2.07 GEOGRID SOIL REINFORCEMENT

- GEOSYNTHETIC REINFORCEMENT SHALL CONSIST OF GEOGRIDS MANUFACTURED SPECIFICALLY FOR SOIL REINFORCEMENT APPLICATIONS AND SHALL BE MANUFACTURED FROM HIGH TENSILITY POLYESTER YARN OR HIGH-DENSITY POLYETHYLENE. POLYESTER GEOGRID SHALL BE KNITTED FROM HIGH TENSILITY POLYESTER FILAMENT YARN WITH A MOLECULAR WEIGHT EXCEEDING 25,000 GM AND A CARBOXYL END GROUP VALUES LESS THAN 30. POLYESTER GEOGRID SHALL BE COATED WITH AN IMPREGNATED PVC COATING THAT RESISTS PEELING, CRACKING, AND STRIPPING.

- TA LONG TERM ALLOWABLE TENSILE DESIGN LOAD, OF THE GEOGRID MATERIAL SHALL BE DETERMINED AS FOLLOWS:

TA = TULT / (RFCR/RFD/RD/FS)
TA SHALL BE EVALUATED BASED ON A 75-YEAR DESIGN LIFE.

- TULT, SHORT TERM ULTIMATE TENSILE STRENGTH SHALL BE DETERMINED IN ACCORDANCE WITH ASTM D4595 OR ASTM D6637.
TULT IS BASED ON THE MINIMUM AVERAGE ROLL VALUES (MARV).

- RFRC, REDUCTION FACTOR FOR LONG TERM TENSION CREEP
RFRC SHALL BE DETERMINED FROM 10,000-HOUR CREEP TESTING PERFORMED IN ACCORDANCE WITH ASTM D5262. REDUCTION VALUE = 1.45 MINIMUM.

- RFD, REDUCTION FACTOR FOR DURABILITY
RFD SHALL BE DETERMINED FROM POLYMER SPECIFIC DURABILITY TESTING COVERING THE RANGE OF EXPECTED SOIL ENVIRONMENTS. RFD = 1.10 MINIMUM.

- RFID, REDUCTION FACTOR FOR INSTALLATION DAMAGE
RFID SHALL BE DETERMINED FROM PRODUCT SPECIFIC CONSTRUCTION DAMAGE TESTING PERFORMED IN ACCORDANCE WITH ASTM D5818 (GRI GG4). TEST RESULTS SHALL BE PROVIDED FOR EACH PRODUCT TO BE USED WITH PROJECT SPECIFIC OR MORE SEVERE SOIL TYPE. RFID = 1.05 MINIMUM.

- FS, OVERALL DESIGN FACTOR OF SAFETY
FS SHALL BE 1.5 UNLESS OTHERWISE NOTED FOR THE MAXIMUM ALLOWABLE WORKING STRESS CALCULATION.

- THE MAXIMUM DESIGN TENSILE LOAD OF THE GEOGRID SHALL NOT EXCEED THE LABORATORY TESTED ULTIMATE STRENGTH OF THE GEOGRID/FACING UNIT CONNECTION AS LIMITED BY THE "HINGE HEIGHT" DIVIDED BY A FACTOR OF SAFETY OF 1.5. THE CONNECTION STRENGTH TESTING AND COMPUTATION PROCEDURES SHALL BE IN ACCORDANCE WITH ASTM D6638 CONNECTION STRENGTH BETWEEN GEOSYNTHETIC REINFORCEMENT AND SEGMENTAL CONCRETE UNITS (NCMA SRWU-1).

- SOIL INTERACTION COEFFICIENT, CI
CI VALUES SHALL BE DETERMINED PER ASTM D6706 (GRI-GG5) AT A MAXIMUM 0.75-INCH (19 MM) DISPLACEMENT.

- MANUFACTURING QUALITY CONTROL
THE GEOGRID MANUFACTURER SHALL HAVE A MANUFACTURING QUALITY CONTROL PROGRAM THAT INCLUDES QC TESTING BY AN INDEPENDENT LABORATORY.
THE QC TESTING SHALL INCLUDE:
TENSILE STRENGTH TESTING
MELT FLOW INDEX (HDPE)
MOLECULAR WEIGHT (POLYESTER)

2.08 DRAINAGE PIPE

- IF REQUIRED, THE DRAINAGE PIPE SHALL BE PERFORATED OR SLOTTED PVC PIPE MANUFACTURED IN ACCORDANCE WITH ASTM D-3034 OR CORRUGATED HDPE PIPE MANUFACTURED IN ACCORDANCE WITH AASHTO M252.

2.09 GEOTEXTILE FILTER FABRIC

- WHEN REQUIRED, GEOTEXTILE FILTER FABRIC SHALL BE 4.0 OZ/SY, POLYPROPYLENE, NEEDLEPUNCHED NONWOVEN FABRIC.

PART 3: EXECUTION

3.01 EXCAVATION

- CONTRACTOR SHALL EXCAVATE TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS. OWNER'S REPRESENTATIVE SHALL INSPECT THE EXCAVATION AND APPROVE PRIOR TO PLACEMENT OF LEVELING MATERIAL OR FILL SOILS. PROOF ROLL FOUNDATION AREA AS DIRECTED TO DETERMINE IF REMEDIAL WORK IS REQUIRED.

- OVER EXCAVATION AND REPLACEMENT OF UNSUITABLE FOUNDATION SOILS AND REPLACEMENT WITH APPROVED COMPACTED FILL WILL BE COMPENSATED AS AGREED UPON WITH THE OWNER.

3.02 BASE LEVELING PAD

- LEVELING PAD MATERIAL SHALL BE PLACED TO THE LINES AND GRADES SHOWN ON THE CONSTRUCTION DRAWINGS, TO A MINIMUM THICKNESS OF 6 INCHES (150 MM) AND EXTEND LATERALLY A MINIMUM OF 6" (150 MM) IN FRONT AND BEHIND THE MODULAR WALL UNIT.

- SOIL LEVELING PAD MATERIALS SHALL BE COMPACTED TO A MINIMUM OF 95 % STANDARD PROCTOR DENSITY PER ASTM D-698 OR 92% MODIFIED PROCTOR DENSITY PER ASTM D1557.

- LEVELING PAD SHALL BE PREPARED TO INSURE FULL CONTACT TO THE BASE SURFACE OF THE CONCRETE UNITS.

3.03 MODULAR UNIT INSTALLATION

- FIRST COURSE OF UNITS SHALL BE PLACED ON THE LEVELING PAD AT THE APPROPRIATE LINE AND GRADE. ALIGNMENT AND LEVEL SHALL BE CHECKED IN ALL DIRECTIONS AND INSURE THAT ALL UNITS ARE IN FULL CONTACT WITH THE BASE AND PROPERLY SEATED.

- PLACE THE FRONT OF UNITS SIDE-BY-SIDE. DO NOT LEAVE GAPS BETWEEN ADJACENT UNITS. LAYOUT OF CORNERS AND CURVES SHALL BE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

- INSTALL SHEAR/CONNECTING DEVICES PER MANUFACTURER'S RECOMMENDATIONS.

- PLACE AND COMPACT DRAINAGE FILL WITHIN AND BEHIND WALL UNITS. PLACE AND COMPACT BACKFILL SOIL BEHIND DRAINAGE FILL. FOLLOW WALL ERECTION AND DRAINAGE FILL CLOSELY WITH STRUCTURE BACKFILL.

- MAXIMUM STACKED VERTICAL HEIGHT OF WALL UNITS, PRIOR TO UNIT DRAINAGE FILL AND BACKFILL PLACEMENT AND COMPACTION, SHALL NOT EXCEED TWO COURSES.

3.04 STRUCTURAL GEOGRID INSTALLATION

- GEOGRID SHALL BE ORIENTED WITH THE HIGHEST STRENGTH AXIS PERPENDICULAR TO THE WALL ALIGNMENT.

- GEOGRID REINFORCEMENT SHALL BE PLACED AT THE STRENGTHS, LENGTHS, AND ELEVATIONS SHOWN ON THE CONSTRUCTION DESIGN DRAWINGS OR AS DIRECTED BY THE ENGINEER.

- THE GEOGRID SHALL BE LAID HORIZONTALLY ON COMPACTED BACKFILL AND ATTACHED TO THE MODULAR WALL UNITS. PLACE THE NEXT COURSE OF MODULAR CONCRETE UNITS OVER THE GEOGRID. THE GEOGRID SHALL BE PULLED TAUT, AND ANCHORED PRIOR TO BACKFILL PLACEMENT ON THE GEOGRID.

- GEOGRID REINFORCEMENTS SHALL BE CONTINUOUS THROUGHOUT THEIR EMBEDMENT LENGTHS AND PLACED SIDE-BY-SIDE TO PROVIDE 100% COVERAGE AT EACH LEVEL. SPICED CONNECTIONS BETWEEN SHORTER PIECES OF GEOGRID OR GAPS BETWEEN ADJACENT PIECES OF GEOGRID ARE NOT PERMITTED.

3.05 REINFORCED BACKFILL PLACEMENT

- REINFORCED BACKFILL SHALL BE PLACED, SPREAD, AND COMPACTED IN SUCH A MANNER THAT MINIMIZES THE DEVELOPMENT OF SLACK IN THE GEOGRID AND INSTALLATION DAMAGE.

- REINFORCED BACKFILL SHALL BE PLACED AND COMPACTED IN LIFTS NOT TO EXCEED 6 INCHES (150 MM) WHERE HAND COMPACTION IS USED, OR 8 - 10 INCHES (200 TO 250 MM) WHERE HEAVY COMPACTION EQUIPMENT IS USED. LIFT THICKNESS SHALL BE DECREASED TO ACHIEVE THE REQUIRED DENSITY AS REQUIRED.

- REINFORCED BACKFILL SHALL BE COMPACTED TO A MINIMUM OF 95 % STANDARD PROCTOR DENSITY PER ASTM D-698 OR 92% MODIFIED PROCTOR DENSITY PER ASTM D1557. THE MOISTURE CONTENT OF THE BACKFILL MATERIAL PRIOR TO AND DURING COMPACTION SHALL BE UNIFORMLY DISTRIBUTED THROUGHOUT EACH LAYER AND SHALL BE DRY OF OPTIMUM - 0% - 3%.

- ONLY LIGHTWEIGHT HAND OPERATED EQUIPMENT SHALL BE ALLOWED WITHIN 3 FEET (1 M) FROM THE TAIL OF THE MODULAR CONCRETE UNIT.

- TRACKED CONSTRUCTION EQUIPMENT SHALL NOT BE OPERATED DIRECTLY UPON THE GEOGRID REINFORCEMENT. A MINIMUM FILL THICKNESS OF 6 INCHES (150 MM) IS REQUIRED PRIOR TO OPERATION OF TRACKED VEHICLES OVER THE GEOGRID. TRACKED VEHICLE TURNING SHOULD BE KEPT TO A MINIMUM TO PREVENT TRACKS FROM DISPLACING THE FILL AND DAMAGING THE GEOGRID.

- RUBBER TIED EQUIPMENT MAY PASS OVER GEOGRID REINFORCEMENT AT SLOW SPEEDS, LESS THAN 10 MPH (15 KPH). SUDDEN BRAKING AND SHARP TURNING SHALL BE AVOIDED.

- AT THE END OF EACH DAY'S OPERATION, THE CONTRACTOR SHALL SLOPE THE LAST LIFT OF REINFORCED BACKFILL AWAY FROM THE WALL UNITS TO DIRECT RUNOFF AWAY FROM WALL FACE. THE CONTRACTOR SHALL NOT ALLOW SURFACE RUNOFF FROM ADJACENT AREAS TO ENTER THE WALL CONSTRUCTION SITE.

3.06 CAP INSTALLATION

- CAP UNITS SHALL BE GLUED TO UNDERLYING UNITS WITH AN ALL-WEATHER ADHESIVE RECOMMENDED BY THE MANUFACTURER.

3.07 AS-BUILT CONSTRUCTION TOLERANCES

- VERTICAL ALIGNMENT: $\pm 1.5"$ (40 MM) OVER ANY 10' (3 M) DISTANCE.

- WALL BATTER: WITHIN 2 DEGREES OF DESIGN BATTER.

- HORIZONTAL ALIGNMENT: $\pm 1.5"$ (40 MM) OVER ANY 10' (3 M) DISTANCE.
CORNERS, BENDS & CURVES: ± 1 FT (300 MM) TO THEORETICAL LOCATION.

- MAXIMUM HORIZONTAL GAP BETWEEN ERECTED UNITS SHALL BE 1/2 INCH (13 MM).

3.08 FIELD QUALITY CONTROL

- QUALITY ASSURANCE - THE OWNER SHALL MAY ENGAGE INSPECTION AND TESTING SERVICES, INCLUDING INDEPENDENT LABORATORIES, TO PROVIDE QUALITY ASSURANCE AND TESTING SERVICES DURING CONSTRUCTION. THIS DOES NOT RELIEVE THE CONTRACTOR FROM SECURING THE NECESSARY CONSTRUCTION QUALITY CONTROL TESTING.

- QUALITY ASSURANCE SHOULD INCLUDE FOUNDATION SOIL INSPECTION, VERIFICATION OF GEOTECHNICAL DESIGN PARAMETERS, AND VERIFICATION THAT THE CONTRACTOR'S QUALITY CONTROL TESTING IS ADEQUATE AS A MINIMUM. QUALITY ASSURANCE SHALL ALSO INCLUDE OBSERVATION OF CONSTRUCTION FOR GENERAL COMPLIANCE WITH DESIGN DRAWINGS AND PROJECT SPECIFICATIONS. (QUALITY ASSURANCE IS USUALLY BEST PERFORMED BY THE SITE GEOTECHNICAL ENGINEER.)

- QUALITY CONTROL - THE CONTRACTOR SHALL ENGAGE INSPECTION AND TESTING SERVICES TO PERFORM THE MINIMUM QUALITY CONTROL TESTING DESCRIBED IN THE RETAINING WALL DESIGN PLANS AND SPECIFICATIONS. ONLY QUALIFIED AND EXPERIENCED TECHNICIANS AND ENGINEERS SHALL PERFORM TESTING AND INSPECTION SERVICES.

- QUALITY CONTROL TESTING SHALL INCLUDE SOIL AND BACKFILL TESTING TO VERIFY SOIL TYPES AND COMPACTION AND VERIFICATION THAT THE RETAINING WALL IS BEING CONSTRUCTED IN ACCORDANCE WITH THE DESIGN PLANS AND PROJECT SPECIFICATIONS.



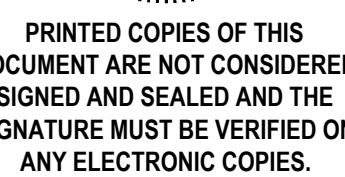
TYPICAL BUBBLE - UP STRUCTURE DETAIL (SEE INLET LABELS FOR INVERTS) (TYPICAL IN ALL DRY RETENTION PONDS)

[illegible]

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CROSS SECTIONS
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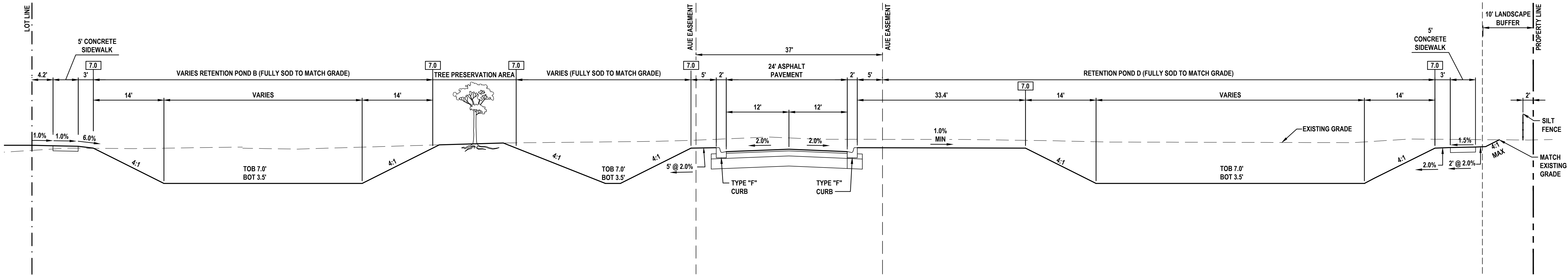
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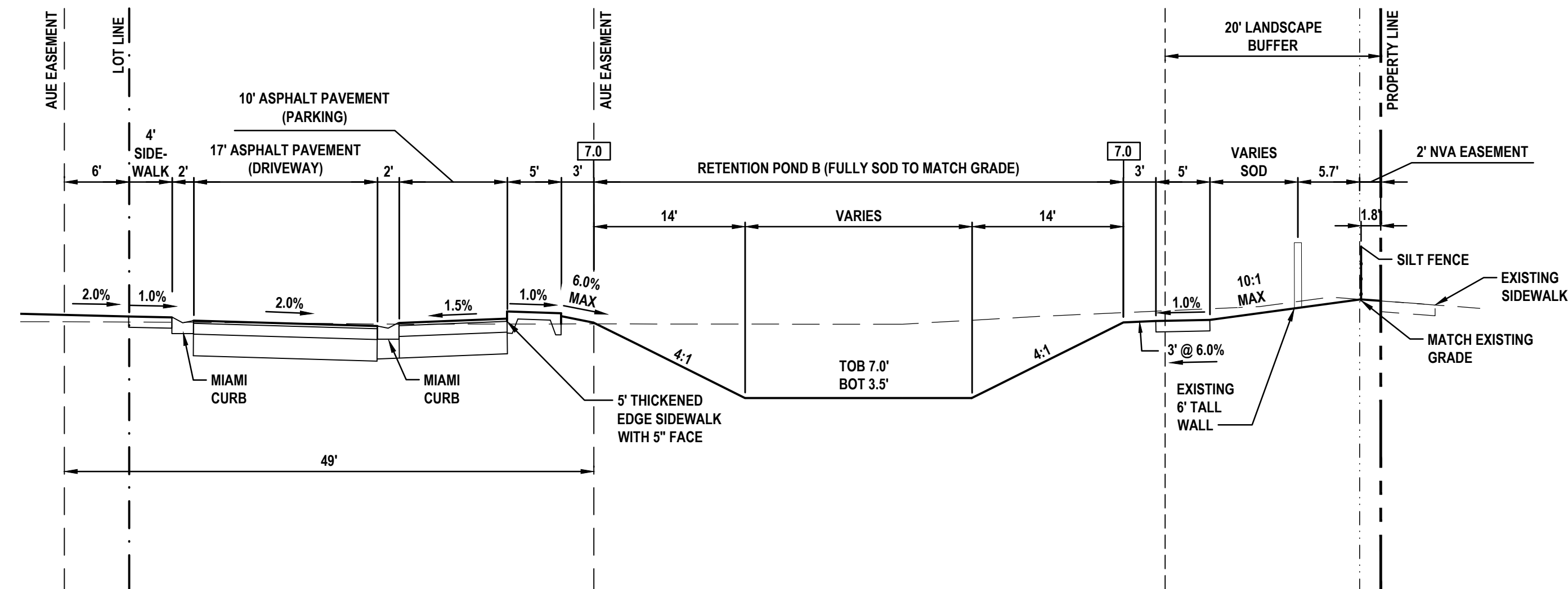
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DATE:	JANUARY 2023
DESIGN BY:	CAB
DRAWN BY:	DAB
CHECKED BY:	HHN
SCALE:	N.T.S.

DRAWING NUMBER

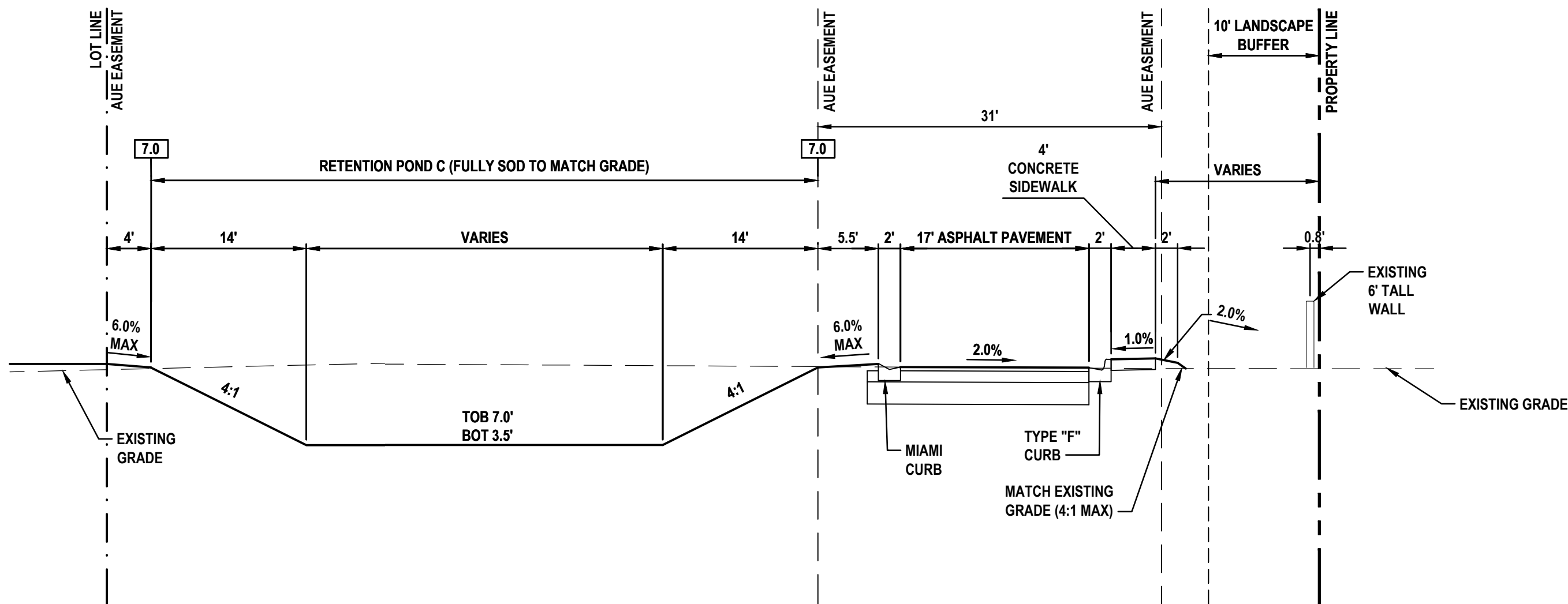
14



SECTION D
NOT TO SCALE



SECTION E
NOT TO SCALE



SECTION F
NOT TO SCALE

REVISIONS

DATE	DESCRIPTION
5/5/22	CITY COMMENTS
10/23/23	CITY COMMENTS

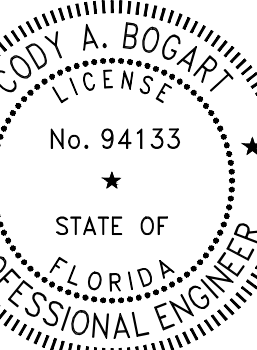
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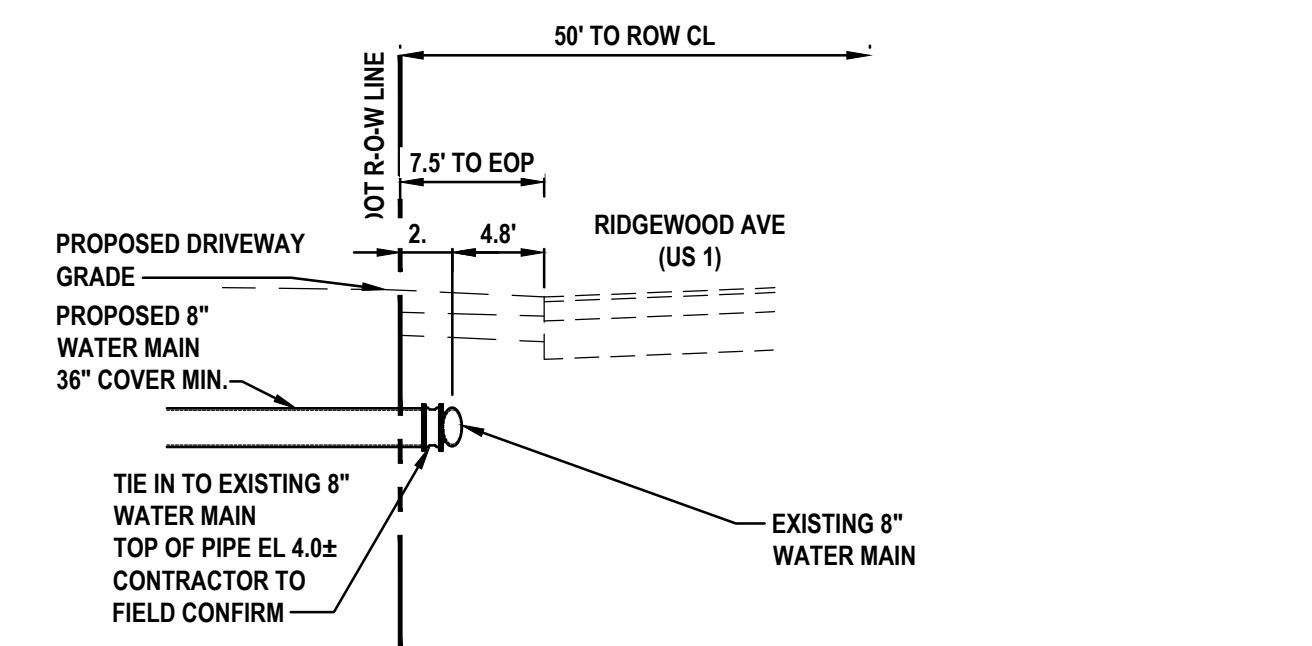
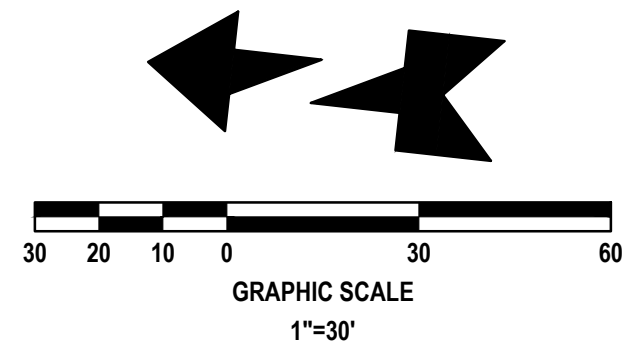


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15



UTILITY LEGEND

PROPOSED 11.25° BEND

PROPOSED 22.5° BEND

PROPOSED 45° BEND

PROPOSED 90° BEND

PROPOSED TEE

PROPOSED GATE VALVE

PROPOSED CAP AND 2" BLOW OFF ASSEMBLY

PROPOSED FIRE HYDRANT ASSEMBLY

PROPOSED SHORT SIDE WATER SERVICE (SINGLE)

PROPOSED SHORT SIDE WATER SERVICE (DOUBLE)

PROPOSED LONG SIDE WATER SERVICE (SINGLE)

PROPOSED LONG SIDE WATER SERVICE (DOUBLE)

PROPOSED 4" PVC SDR-26 SANITARY SEWER LATERAL (SLOPE @ 2.0% MIN.)

PROPOSED SANITARY SEWER MANHOLE

PROPOSED 8" PVC DR-18 WATER MAIN (36" MIN. COVER)

PROPOSED 8" PVC SDR-26 (SLOPE PER PLAN WITH 36" MIN. COVER)
8" PVC C-900 UNDER GRASS

AUE

BSP

PIPE FLOW DIRECTION

#A

UTILITY NOTES:

1. CITY OF PORT ORANGE UTILITIES DEPARTMENT SHALL BE NOTIFIED PRIOR TO BEGINNING ANY WATER, SEWER AND REUSE SYSTEM CONSTRUCTION.

2. ALL WATER, SEWER AND REUSE CONSTRUCTION SHALL BE IN ACCORDANCE WITH FDP REGULATIONS AND THE CITY OF PORT ORANGE STANDARD UTILITY DETAILS AND SPECIFICATIONS (LATEST EDITION).

3. ALL WATER SERVICES SHALL BE CONSTRUCTED PER CITY DETAIL W-5 (SEE SHEET 23).

4. ALL SANITARY SERVICES SHALL BE CONSTRUCTED PER CITY DETAIL S-11 (SEE SHEET 23).

5. ALL FIRE HYDRANT ASSEMBLIES SHALL BE CONSTRUCTED PER CITY DETAILS W-20 (SEE SHEET 23).

6. CONTRACTOR TO CONFIRM FIELD CONFIRM UTILITY LOCATIONS AND ELEVATIONS PRIOR TO BEGINNING OF CONSTRUCTION.

REVISIONS

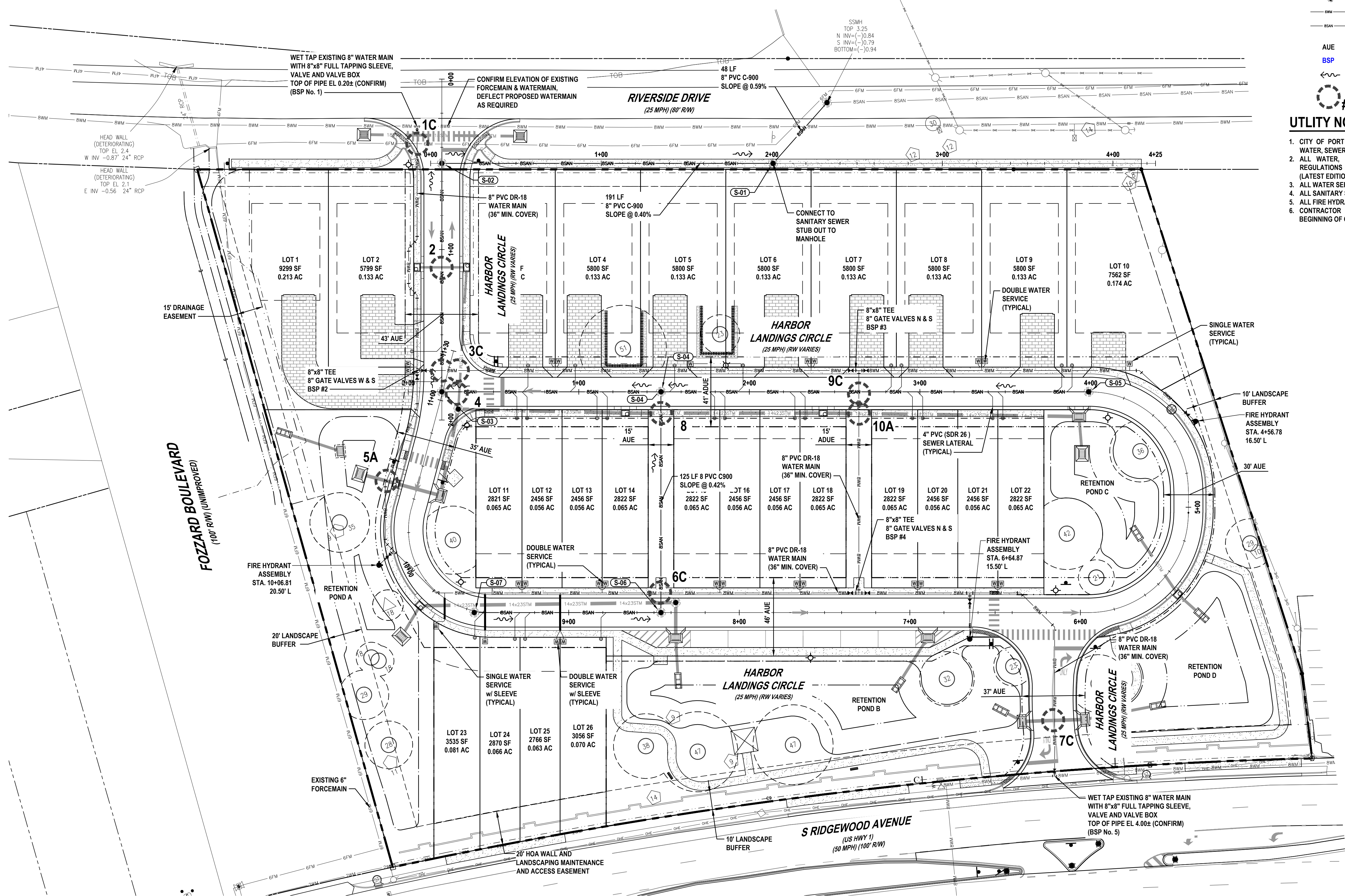
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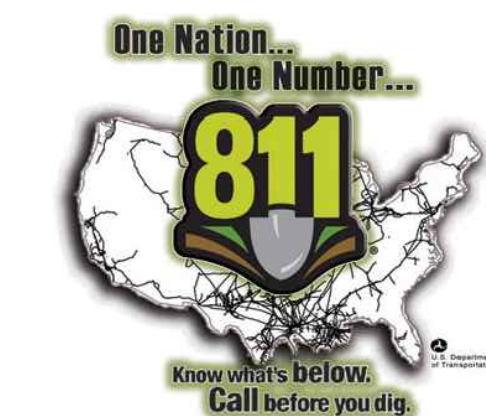
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GRAVITY SEWER STRUCTURE TABLE		
NAME:	DETAILS:	INVERTS
S-01*	60" DIA RIM = 3.63	8" N INV EL = -0.55 8" SE INV EL = -0.65
S-02*	60" DIA RIM = 3.92	8" W INV EL = 0.31 8" S INV EL = 0.21
S-03	48" DIA RIM = 7.36	8" S INV EL = 0.94 8" E INV EL = 0.84
S-04*	60" DIA RIM = 6.85	8" W INV EL = 1.90 8" S INV EL = 1.90 8" N INV EL = 1.80
S-05*	60" DIA RIM = 6.87	8" N INV EL = 2.90
S-06*	60" DIA RIM = 6.89	8" N INV EL = 2.55 8" E INV EL = 2.45
S-07*	60" DIA RIM = 6.90	8" S INV EL = 3.00

* SHALLOW MANHOLE PER CITY DETAIL S-7, SHEET 23.



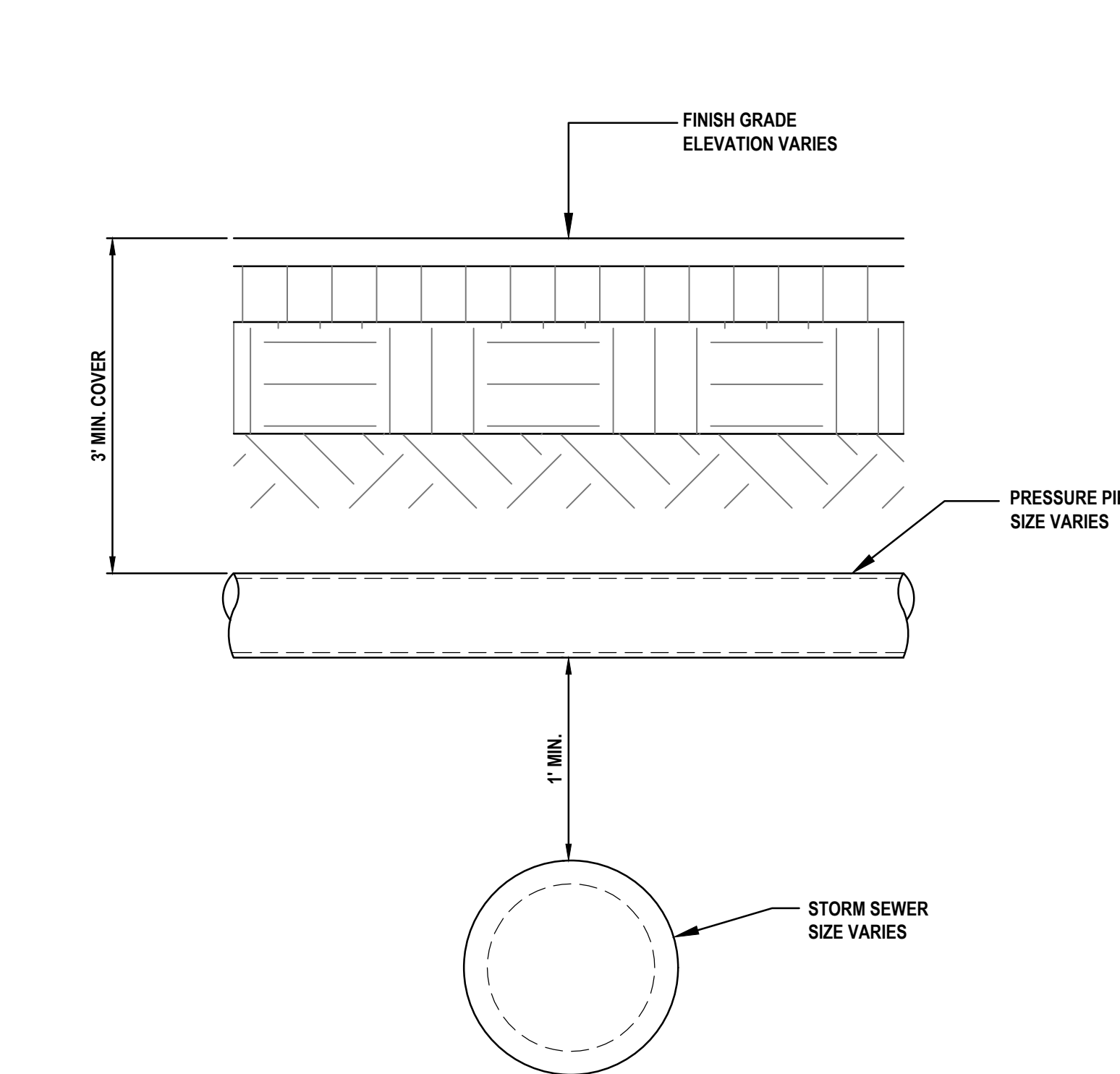
WARNING !!
CONTRACTOR SHALL TAKE ALL PRECAUTIONS DURING CONSTRUCTION TO AVOID CONTACT WITH EXISTING UNDERGROUND UTILITIES, GAS MAINS, UNDERGROUND ELECTRIC AND FIBER OPTIC LINES IN THE RIGHT-OF-WAY.

OVERALL UTILITY PLAN
HARBOR LANDINGS
5653 RIDGEWOOD AVENUE
PORT ORANGE, FL 32127

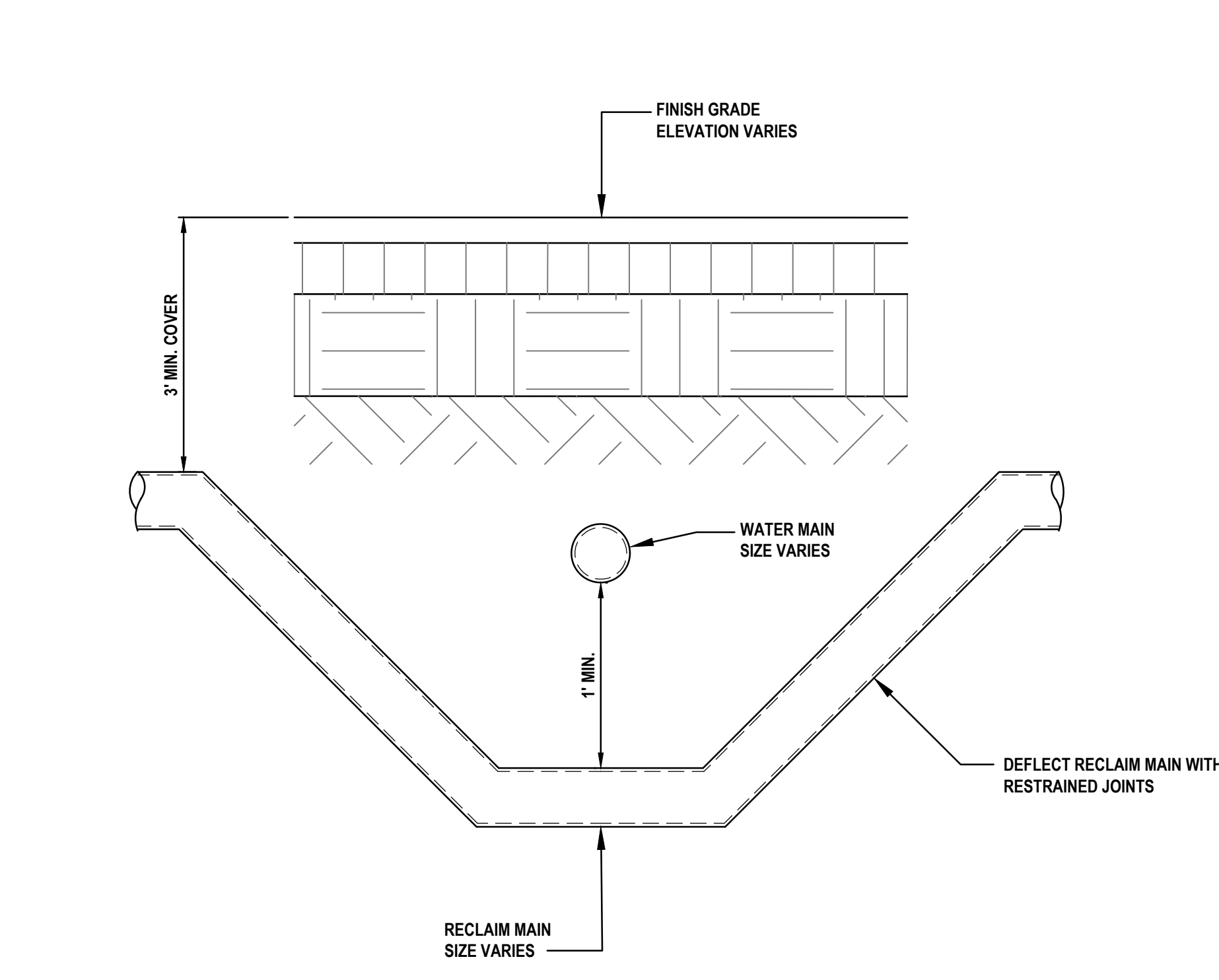
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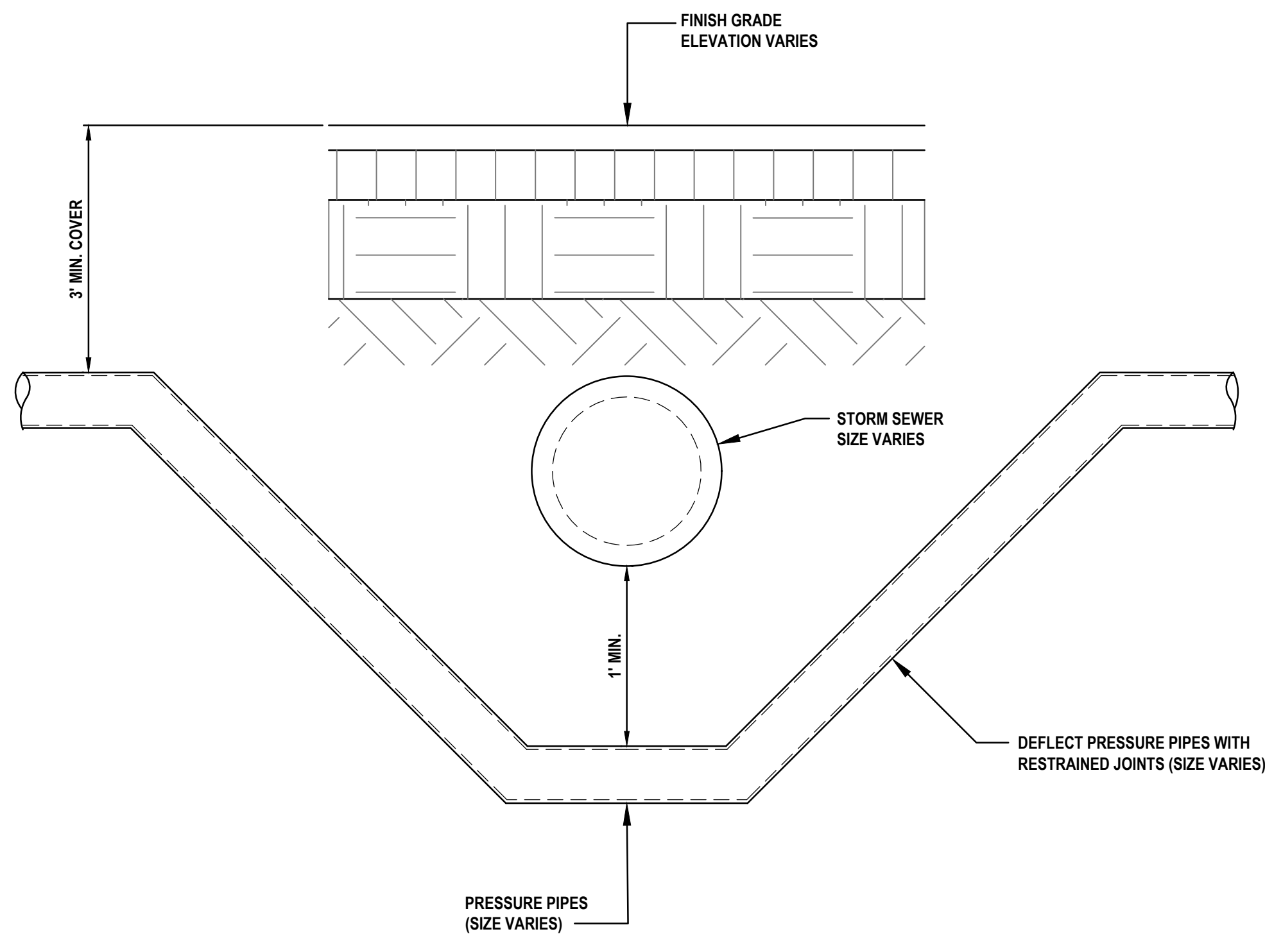
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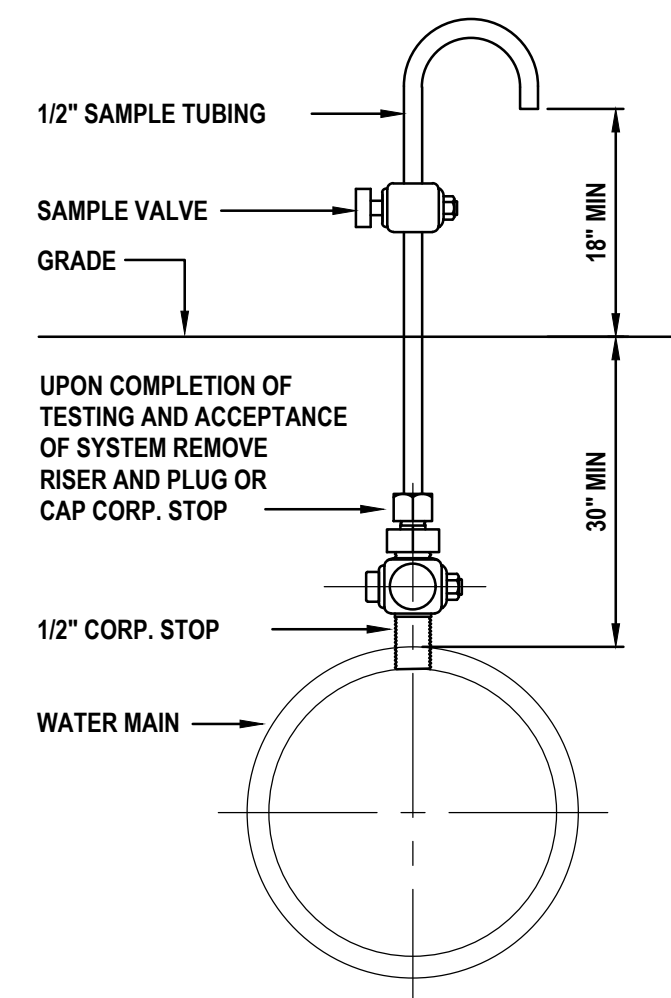
TYPE A UTILITY CONFLICT DETAIL
NOT TO SCALE



TYPE B UTILITY CONFLICT DETAIL
NOT TO SCALE



TYPE C UTILITY CONFLICT DETAIL
NOT TO SCALE



BACTERIOLOGICAL SAMPLE POINT DETAIL
NOT TO SCALE

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.

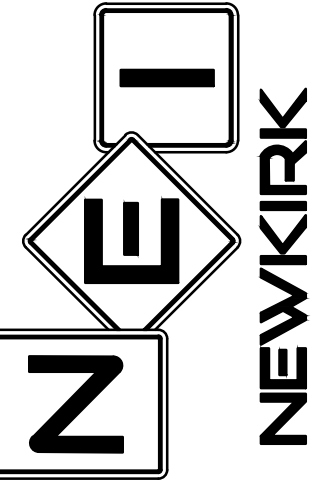
TABLE 1: CLASSES OF EMBEDMENT AND BACKFILL MATERIALS

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			<7 OR >"A" LINE			
	SM			>4 OR <"A" LINE			
	SC			>7 OR >"A" LINE			
IV-A	ML	FINE-GRAINED SOILS	100%	100%	>50%	<50	<4 OR <"A" LINE
	CL						>7 OR >"A" LINE

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DATE	DESCRIPTION

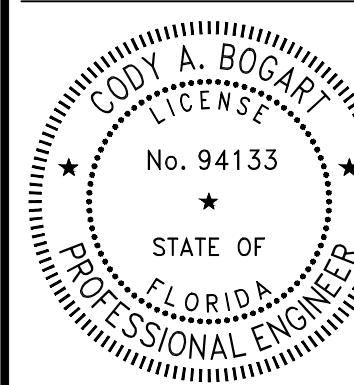
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**UTILITY DETAILS, NOTES
AND CONFLICT DETAILS**
HARBOR LANDINGS
5653 RIDGEWOOD AVENUE
PORT ORANGE, FL 32127

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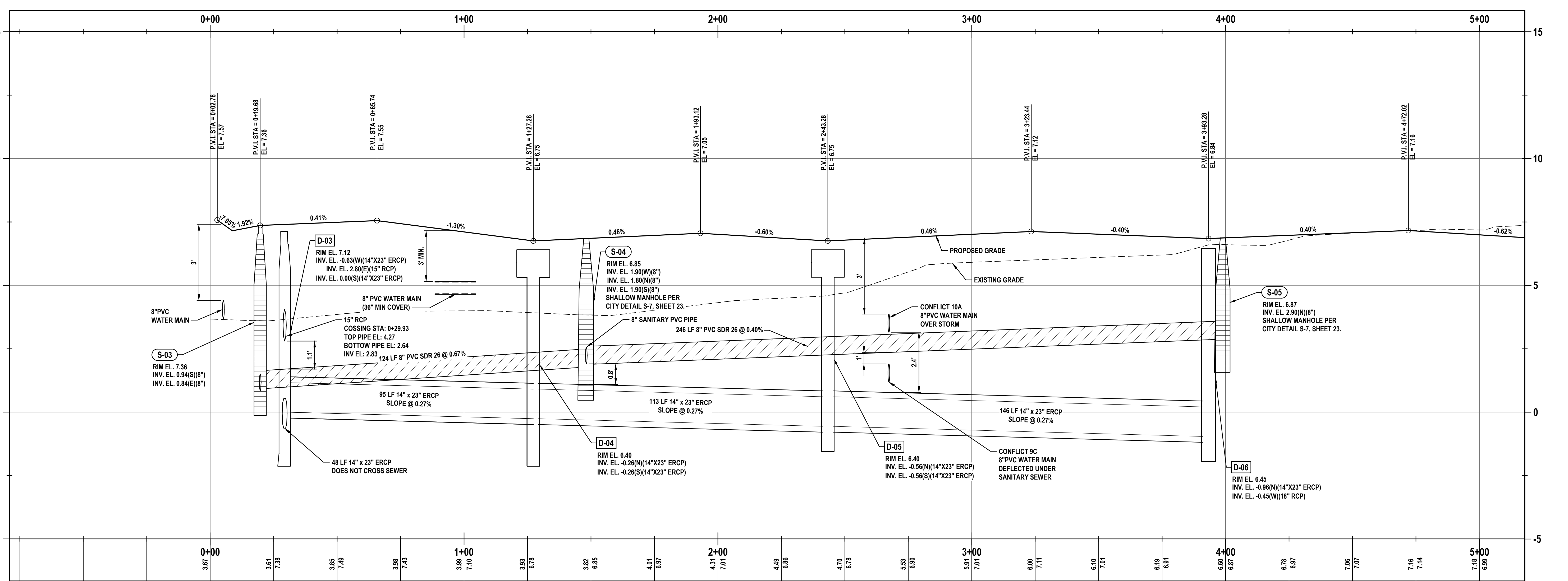
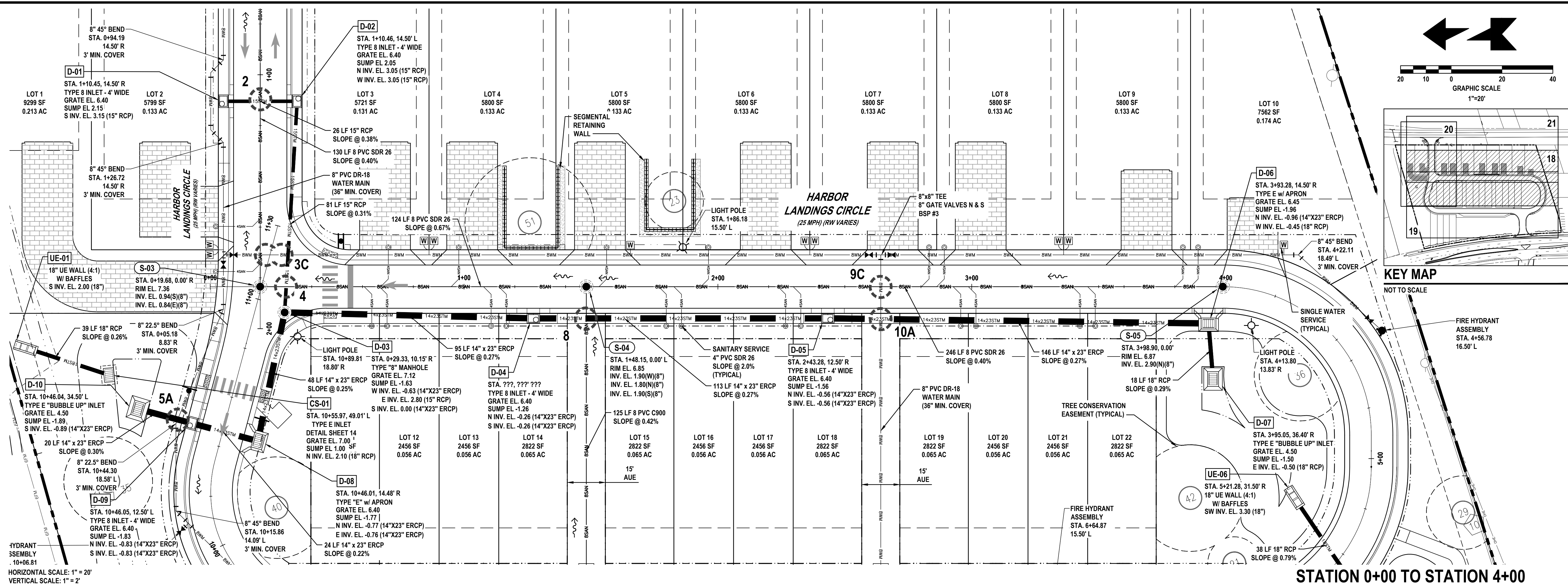
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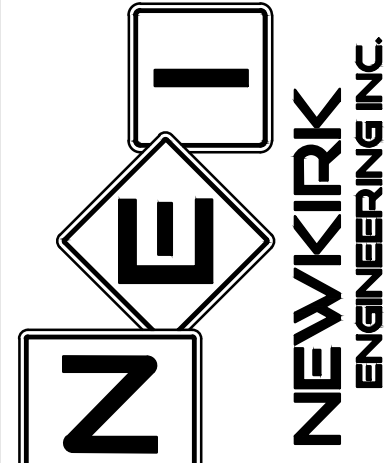
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10/23/23	CITY COMMENTS

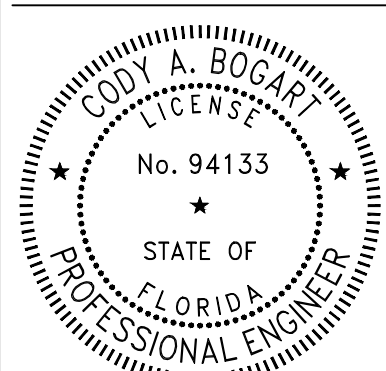
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PLAN / PROFILE - LANDINGS CIR
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HARBOR LANDINGS
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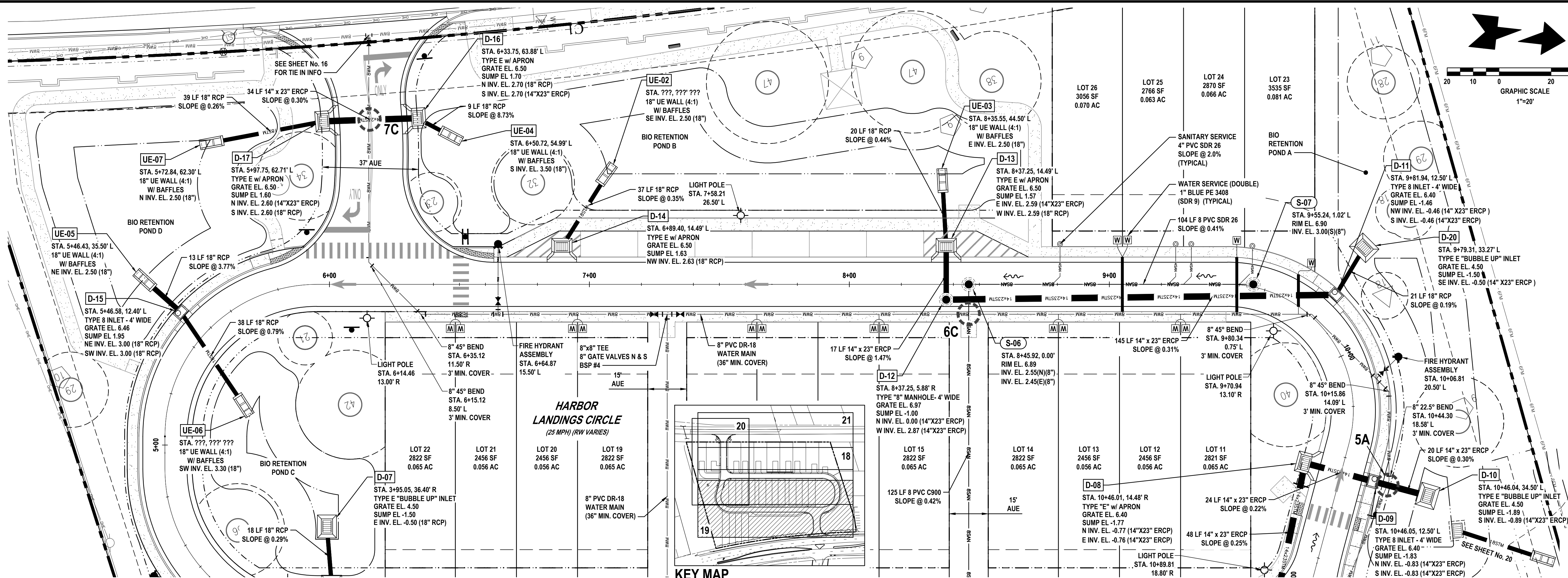
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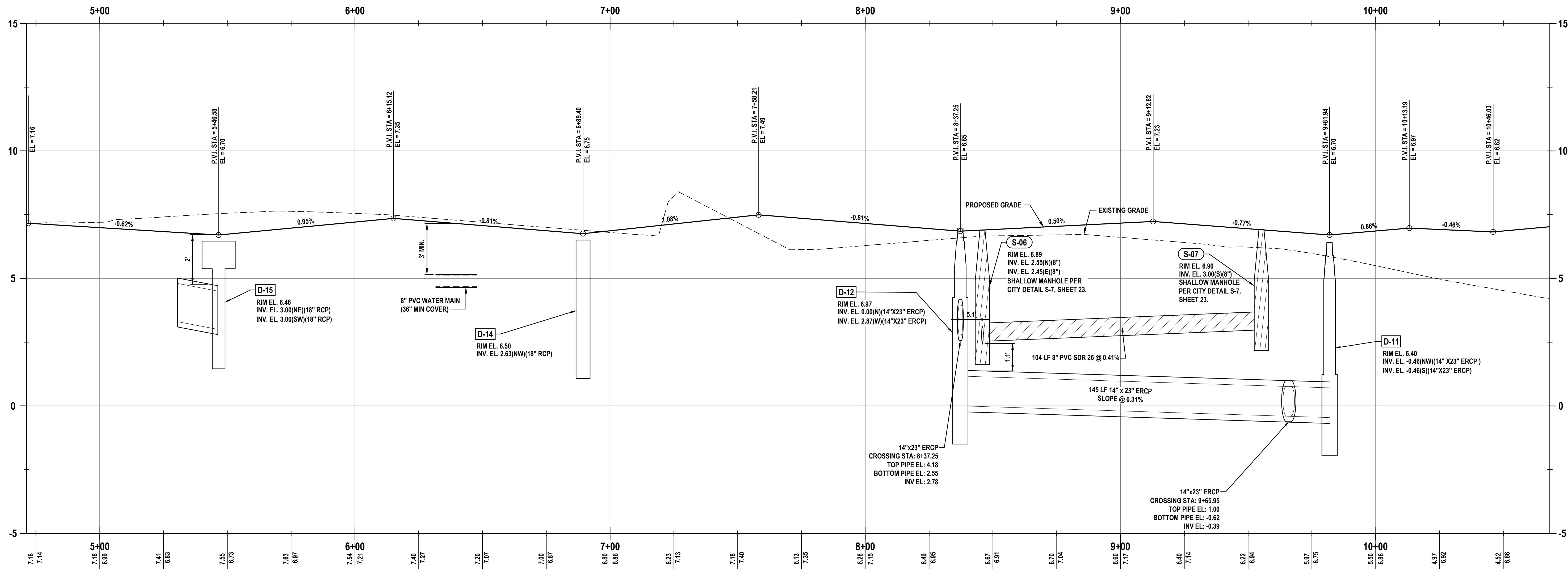
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HORIZONTAL SCALE: 1" = 20'
VERTICAL SCALE: 1" = 2'



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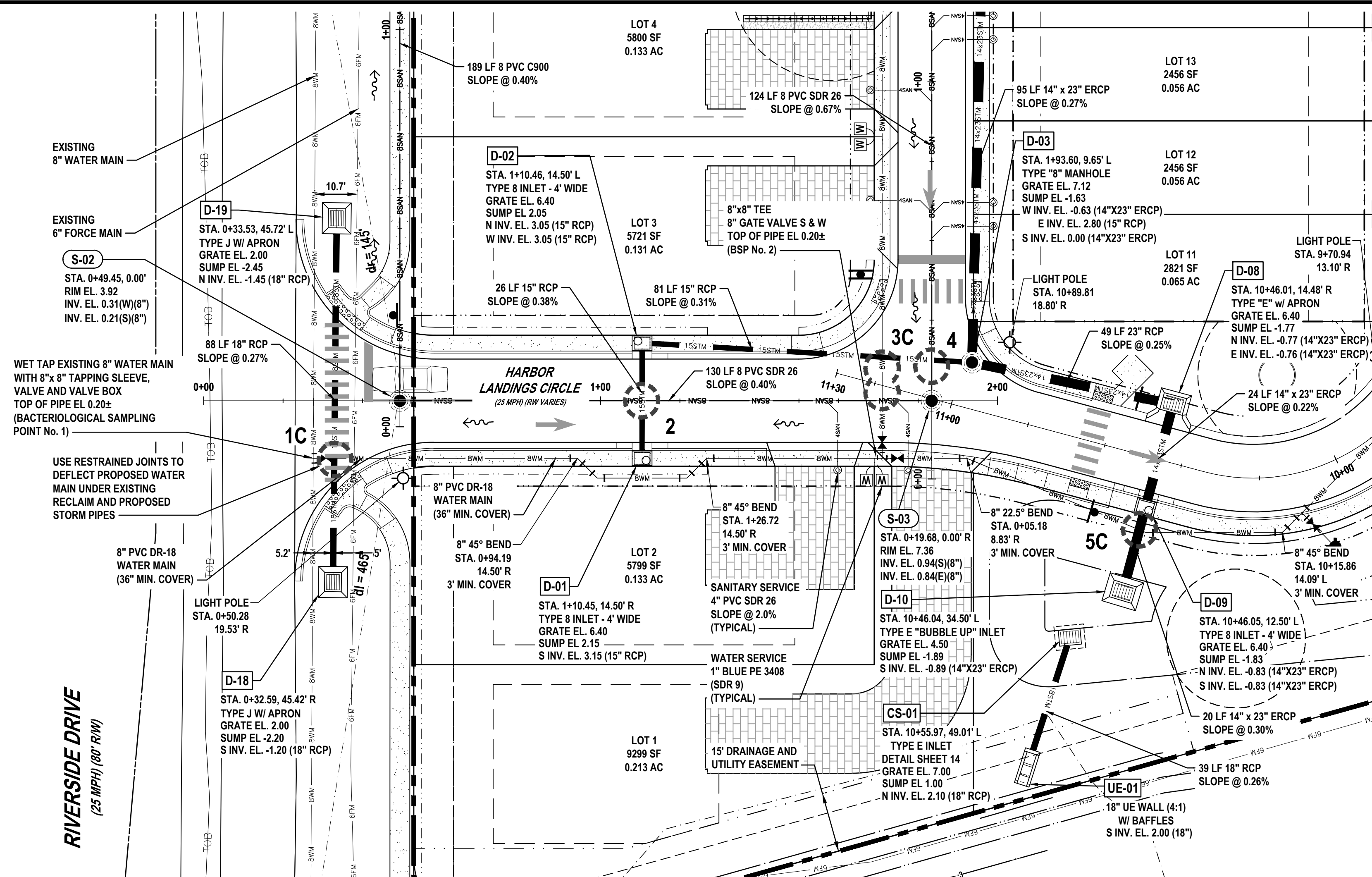
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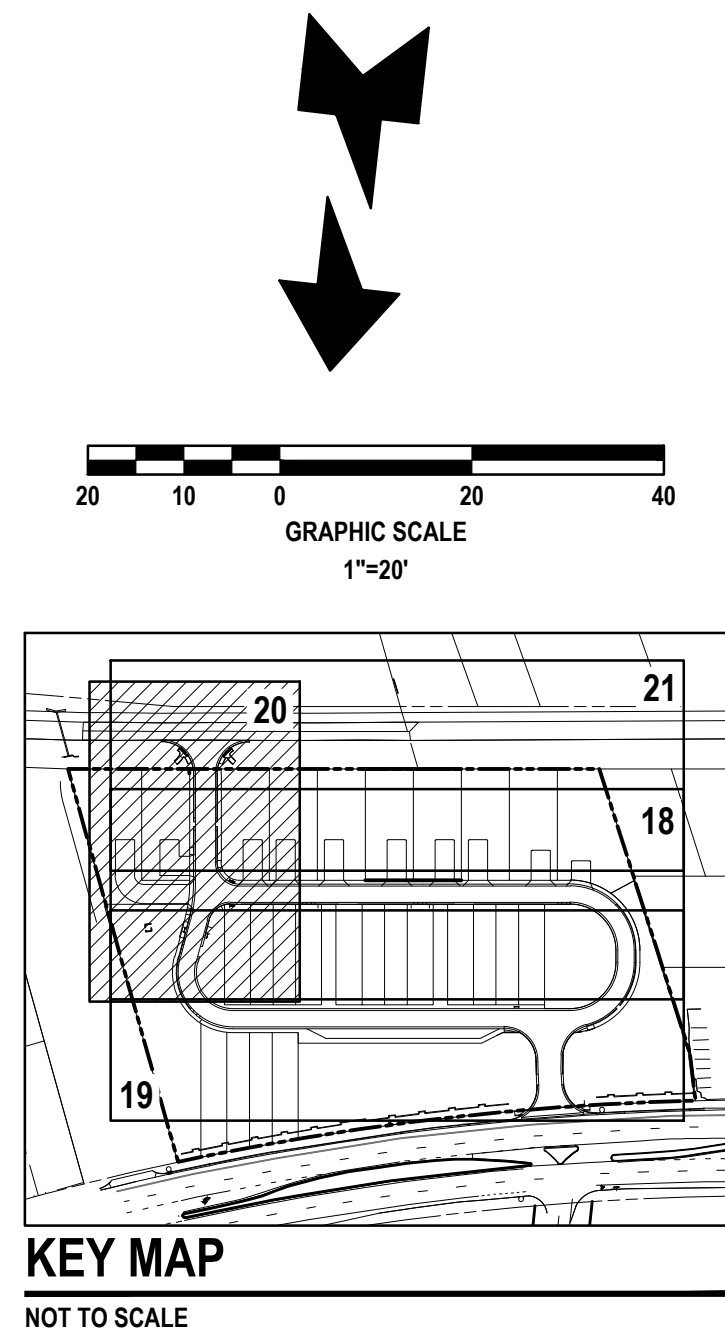
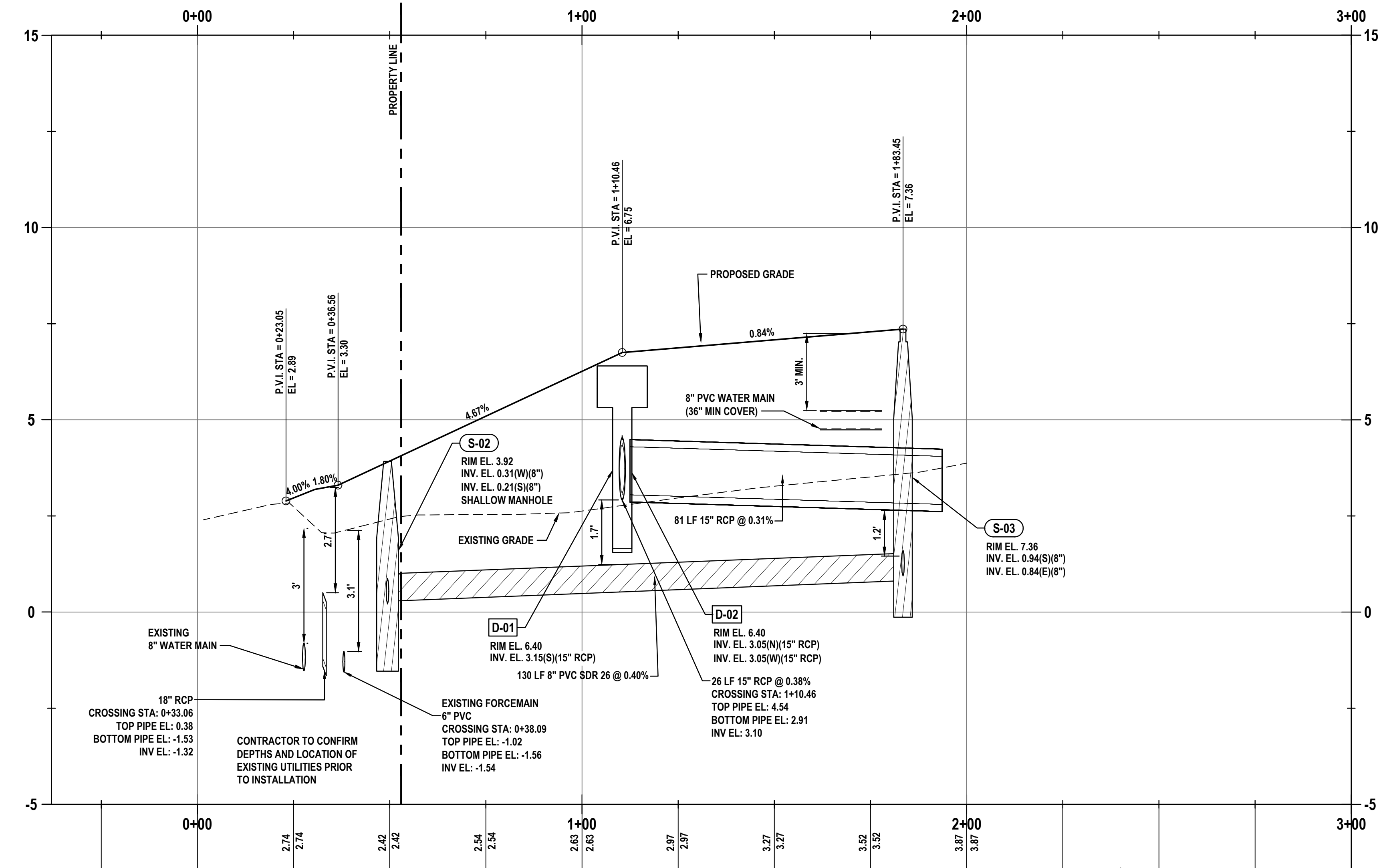
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STATION 0+00 TO STATION 2+2.20



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PLAN / PROFILE ALIGNMENT 2
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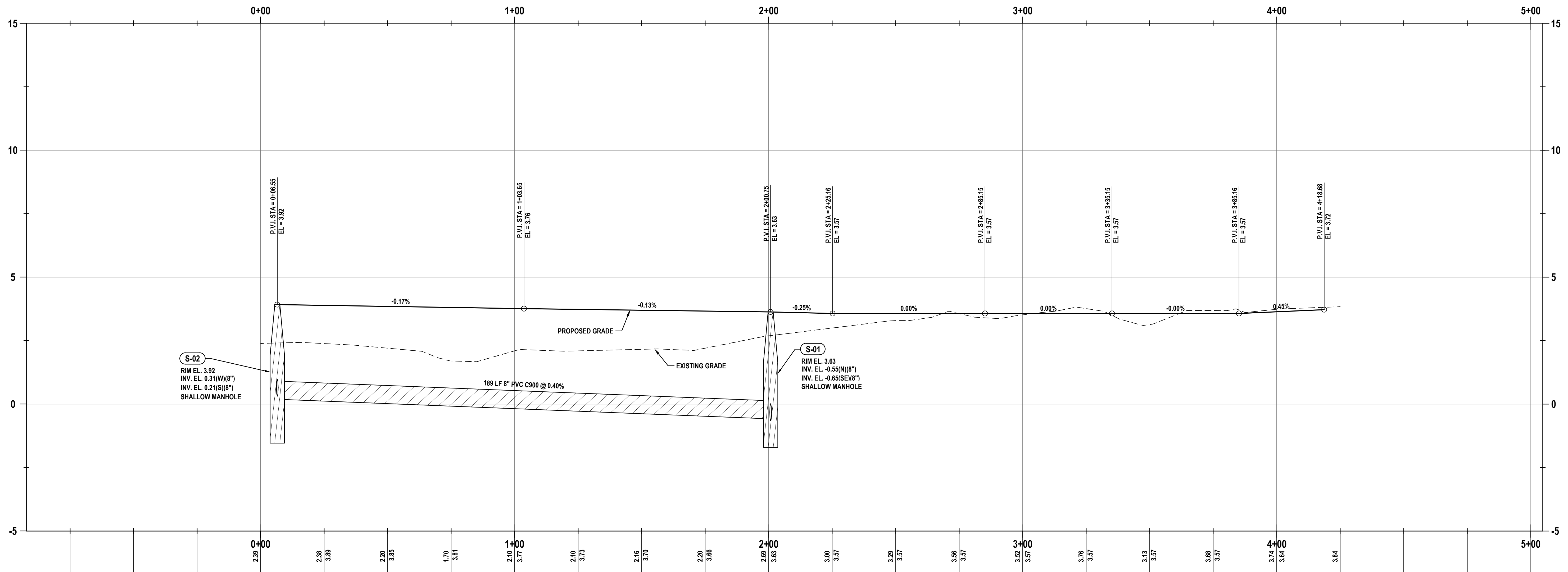
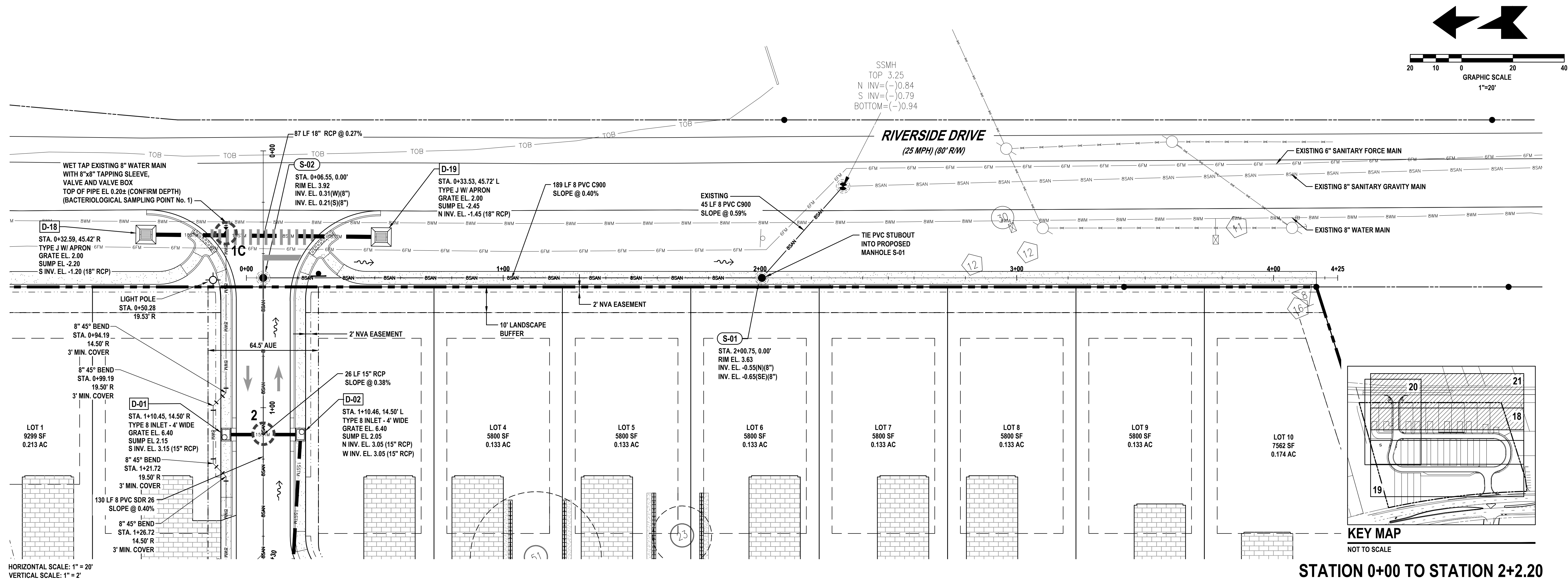
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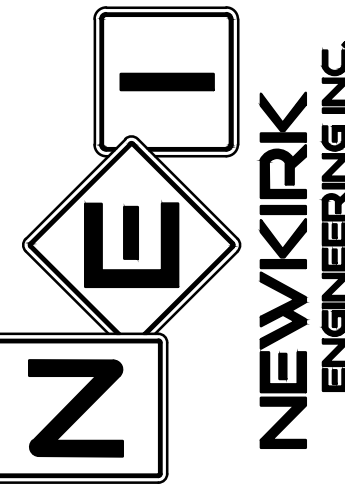
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DATE	DESCRIPTION
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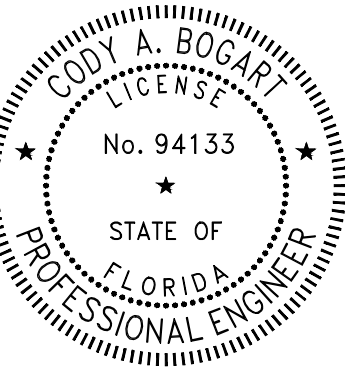
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PLAN / PROFILE - RIVERSIDE DR
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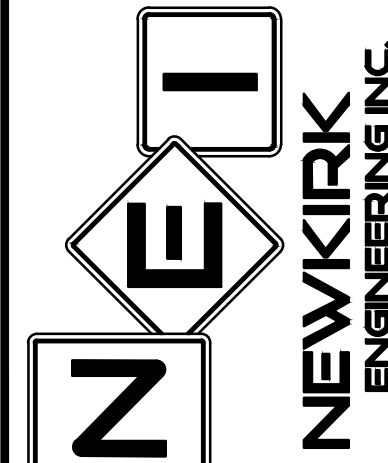
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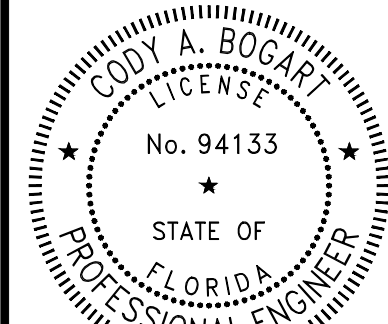
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CITY OF PORT ORANGE
DETAILS AND NOTES
HARBOR LANDINGS
3653 RIDEGWOOD AVENUE
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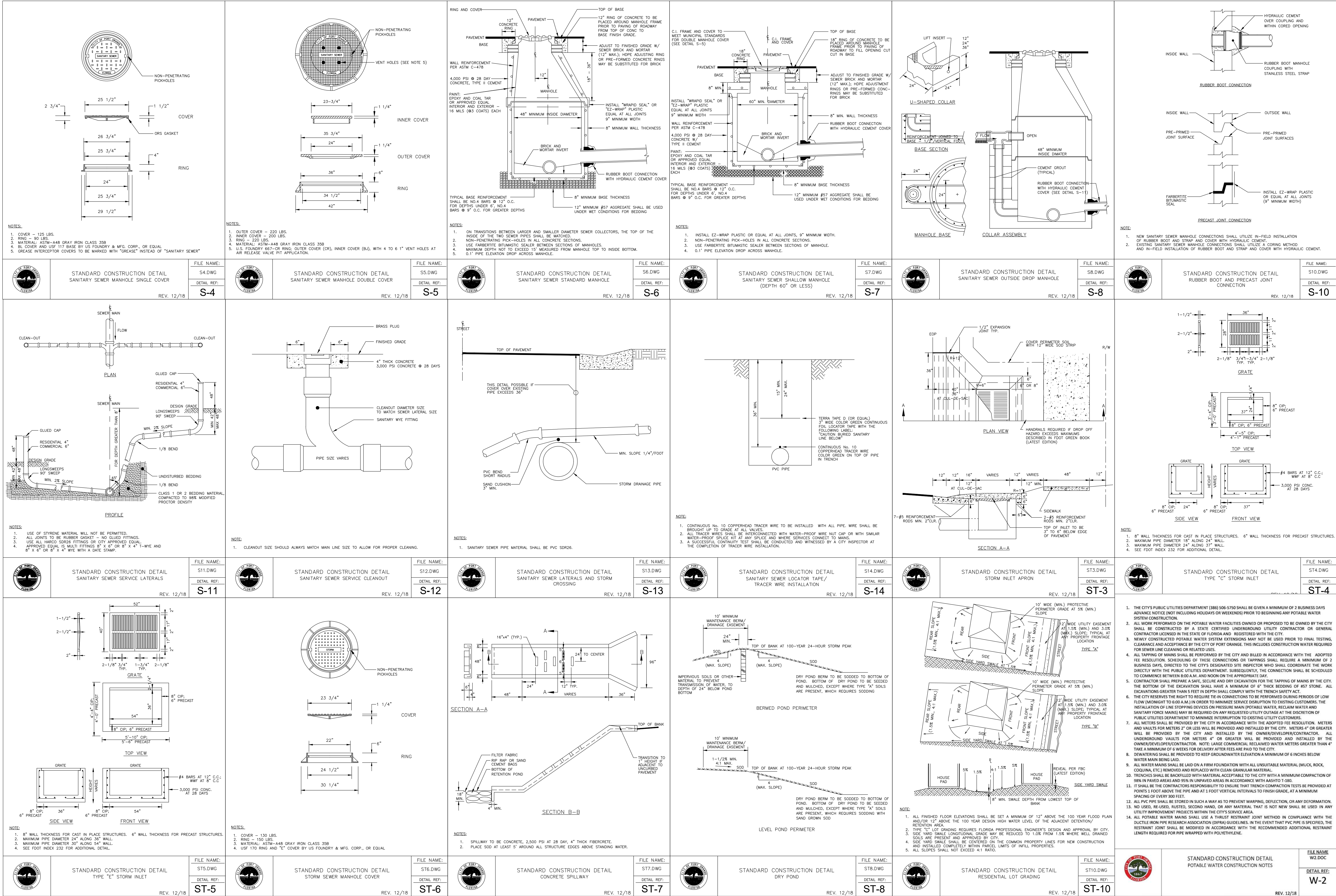
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MATERIALS THE INSPECTION AND TESTING OF MATERIALS AND FINISHED AREAS TO BE INCORPORATED IN THE WORK SHALL BE MADE BY BUREAUS, LABORATORIES, OR AGENCIES APPROVED BY THE ENGINEER OF RECORD. THE CONTRACTOR SHALL SUBMIT SUCH SAMPLES, OR SUCH SPECIMENS, OR TEST PIECES OF MATERIALS AS THE ENGINEER OF RECORD MAY REQUIRE. THE CONTRACTOR SHALL NOT INCORPORATE ANY MATERIAL, OR FINISHED ARTICLE INTO THE WORK UNTIL THE RESULTS OF THE INSPECTION OR TESTS ARE KNOWN AND THE CONTRACTOR HAS BEEN NOTIFIED BY THE ENGINEER OF RECORD THAT THE MATERIAL OR FINISHED ARTICLE IS ACCEPTED. ALL MATERIALS MUST BE OF THE SPECIFIED QUALITY AND BE SUBMITTED TO THE CITY'S DESIGNATED SITE INSPECTOR AS WELL AS TO THE CITY'S DESIGNATED SITE INSPECTOR. THE CITY'S DESIGNATED SITE INSPECTOR MUST RECEIVE COPIES OF ALL TESTING REPORTS AND CERTIFICATES PRIOR TO THE ENGINEER OF RECORD REQUESTING A FINAL PROJECT INSPECTION FROM THE CITY. 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ADDITIONAL TESTS THAT MAY BE REQUIRED BY EITHER THE ENGINEER OF RECORD OR THE CITY SHALL ALSO BE PROVIDED BY THE CONTRACTOR AND THE CONTRACTOR SHALL NOT BE TAKEN AS A COMPLETE AND EXHAUSTIVE LIST OF THE CONTRACTOR'S TESTING RESPONSIBILITIES. - SOL ANALYSIS FOR STRUCTURAL FILL MATERIAL PRIOR TO INSTALLATION. - PROCTOR DENSITIES, MOISTURE CONTENT, COMPACTED FILL DENSITIES, AND ATTERBERG LIMITS. - ANALYSIS OF RECYCLED CONCRETE BASE MATERIAL, PRIOR TO INSTALLATION. - ASPHALT MIX DESIGN, BITUMEN CONTENT, SIEVE ANALYSIS, HUBBARD FIELD STABILITY TESTS. - CHLORINE RESIDUAL AND BACTERIOLOGICAL, TESTING OF WATER MAINS. - CHLORINE RESIDUAL AND BACTERIOLOGICAL, TESTING OF WATER MAINS. - PRESSURED LEAK TESTING OF WATER MAINS, FORCE MAINS, AND RECLAIMED WATER MAINS. SEED SEED SHALL BE PRE-MIXED BY A SEED COMPANY TO THE PERCENTAGES DESCRIBED BELOW, WITH CERTIFICATION FROM THE SUPPLIER PROVIDED TO THE CITY'S DESIGNATED LANDSCAPE INSPECTOR PRIOR TO USE. THE GRASS SEED MIXTURE SHALL BE: SEED OF WORK FURNISH AND INSTALL SOO, OR SOO AND MULCH, THE LIMITS CALLED FOR ON THE CONSTRUCTION DRAWINGS. AT A MINIMUM, ALL WORK SHALL MEET THE MINIMUM STANDARDS OF SECTION 570 OF FOOT STANDARD SPECIFICATIONS FOR ROAD AND BRIDGE CONSTRUCTION, LATEST EDITION, AND MINIMUM REQUIREMENTS OF THE CITY, AS OUTLINED BELOW. NOTES NOTE: IN THE FALL AND WINTER MONTHS, AND WITH THE APPROVAL OF THE CITY, ANNUAL RYE GRASS SEED SHALL BE SUBSTITUTED IN EQUAL AMOUNTS FOR THE BROWN TOP MULCH. MULCH STRAW OR HAY CONSISTING OF OATS, RYE, OR WHEAT STRAW, OR OF PANGOLA, PEANUT, OR BERMUDA BERMUDA GRASS, MULCH SHALL BE FREE FROM WEED OTHER UNDESIRABLE GRASS. APPROXIMATELY ONE INCH (1") LOOSE THICKNESS OF MULCH MATERIAL SHALL BE APPLIED UNIFORMLY OVER THE SEED AREAS (APPROXIMATELY ONE AND ONE-HALF (1 1/2) BALES PER 1000 SQUARE FEET). THE MULCH MATERIAL SHALL BE CUT INTO THE SIZE WITH A DISC HAYROR OR OTHERWISE ANCHORED UNDER PROPER CIRCUMSTANCES. 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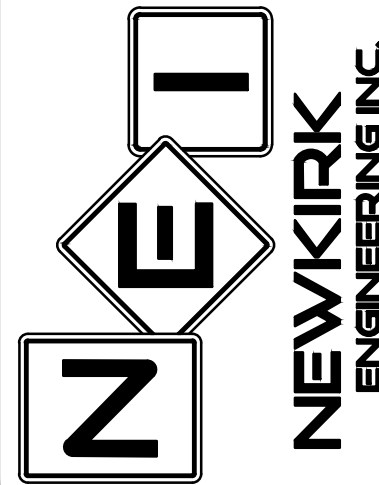
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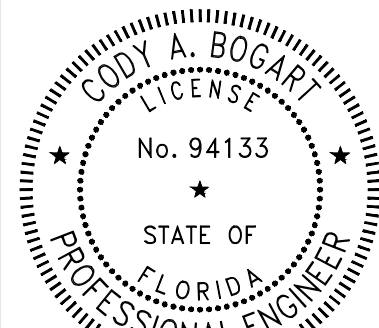


CITY OF PORT ORANGE
DETAILS AND NOTES
HARBOR LANDINGS

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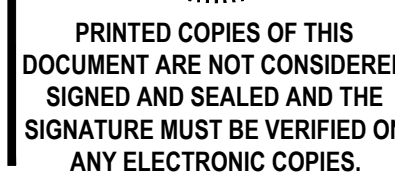
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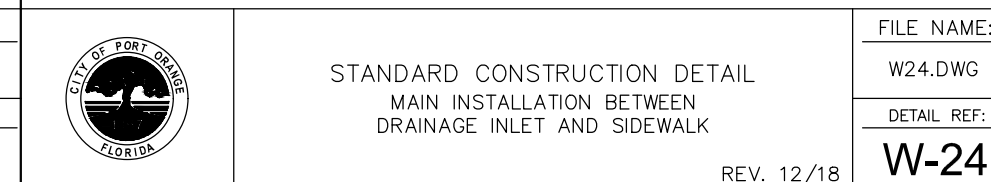
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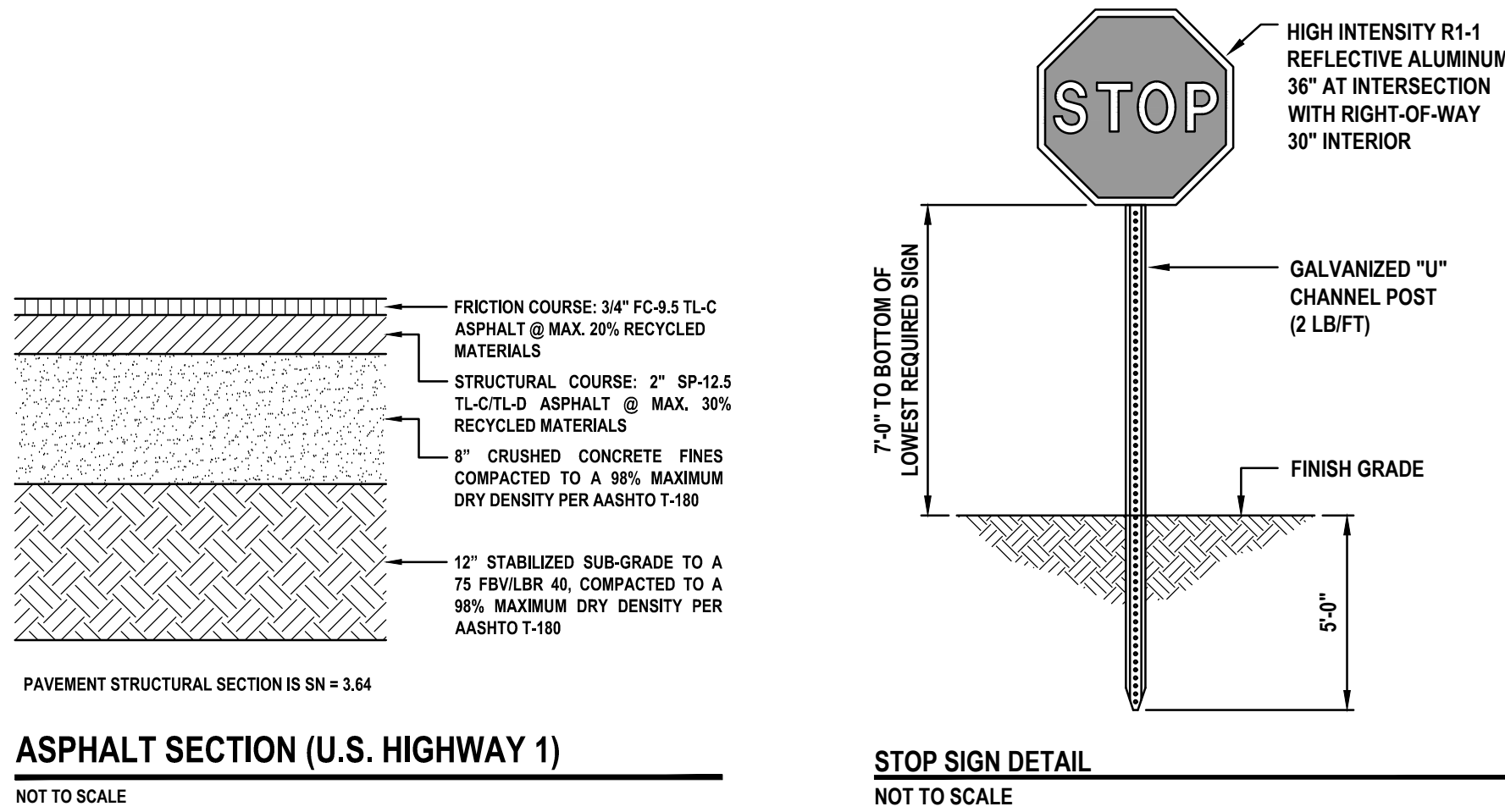
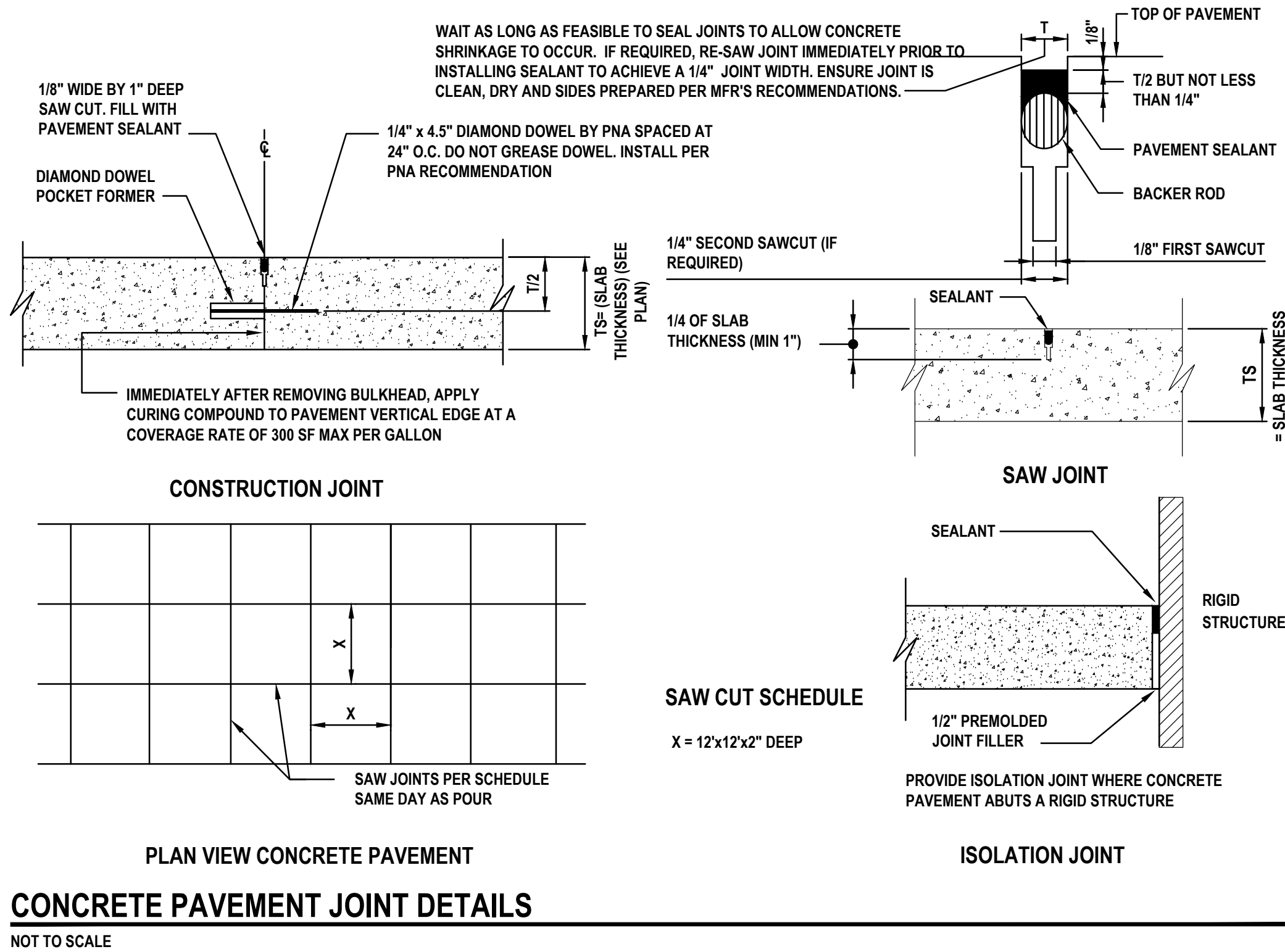
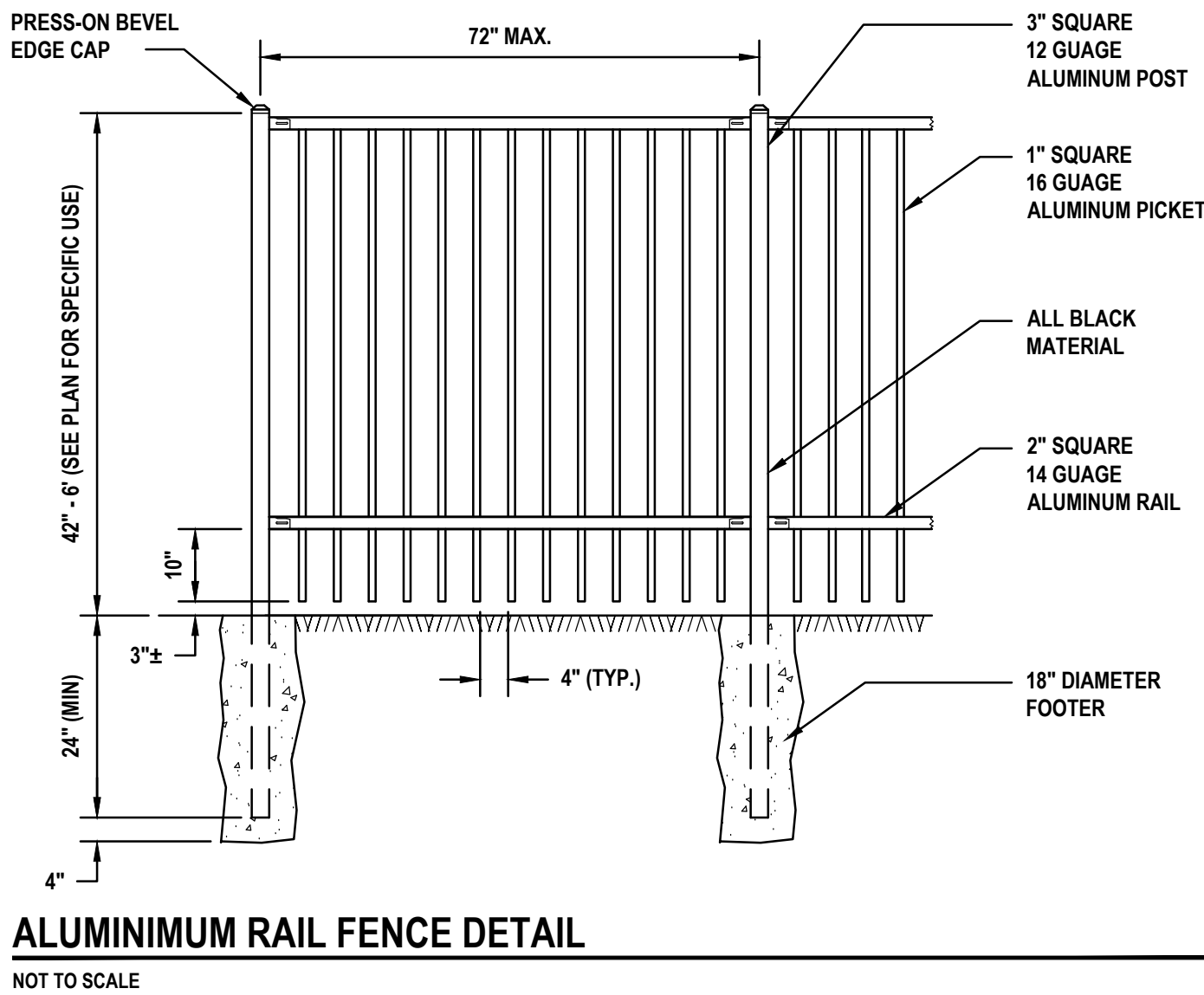
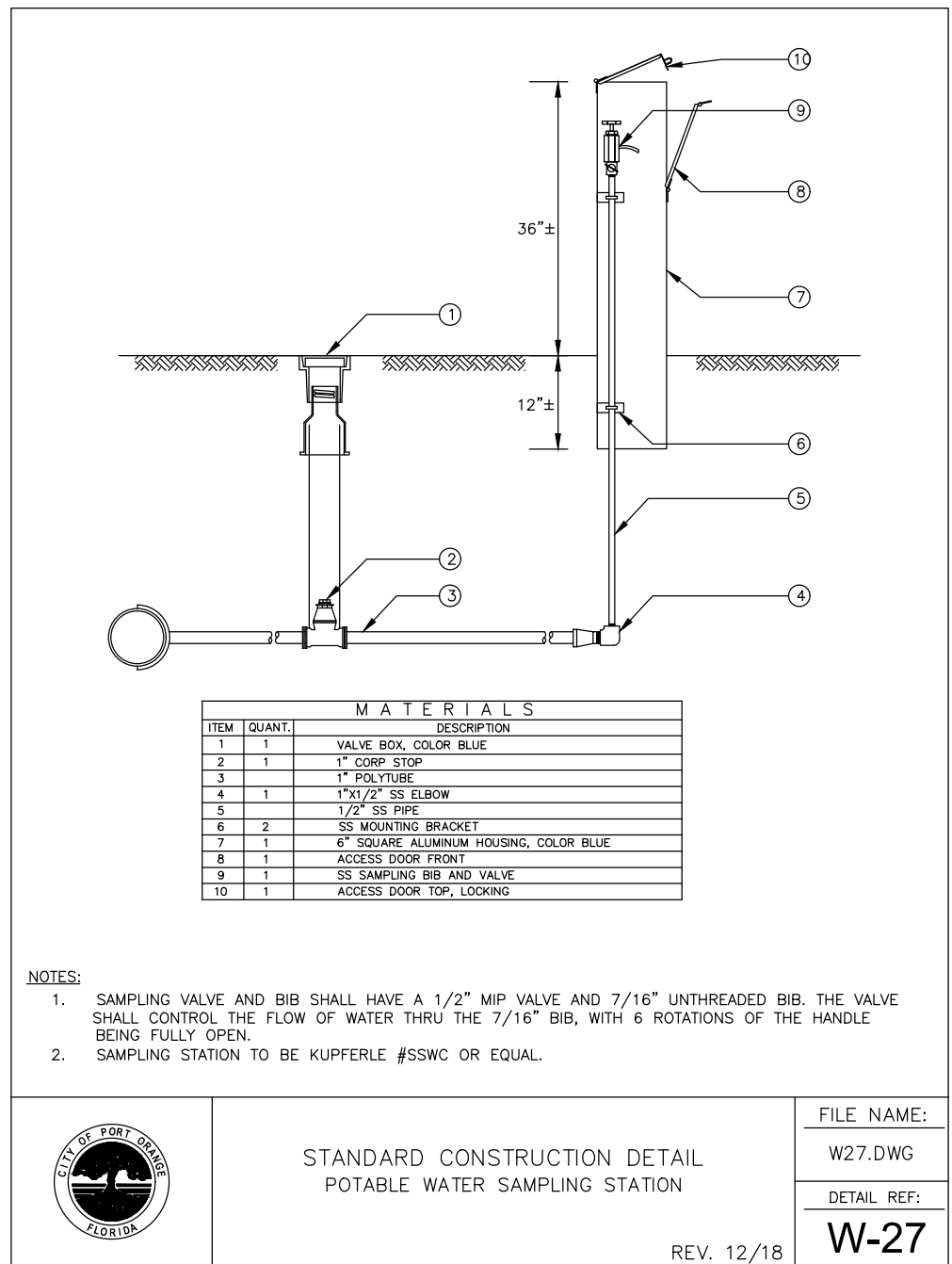
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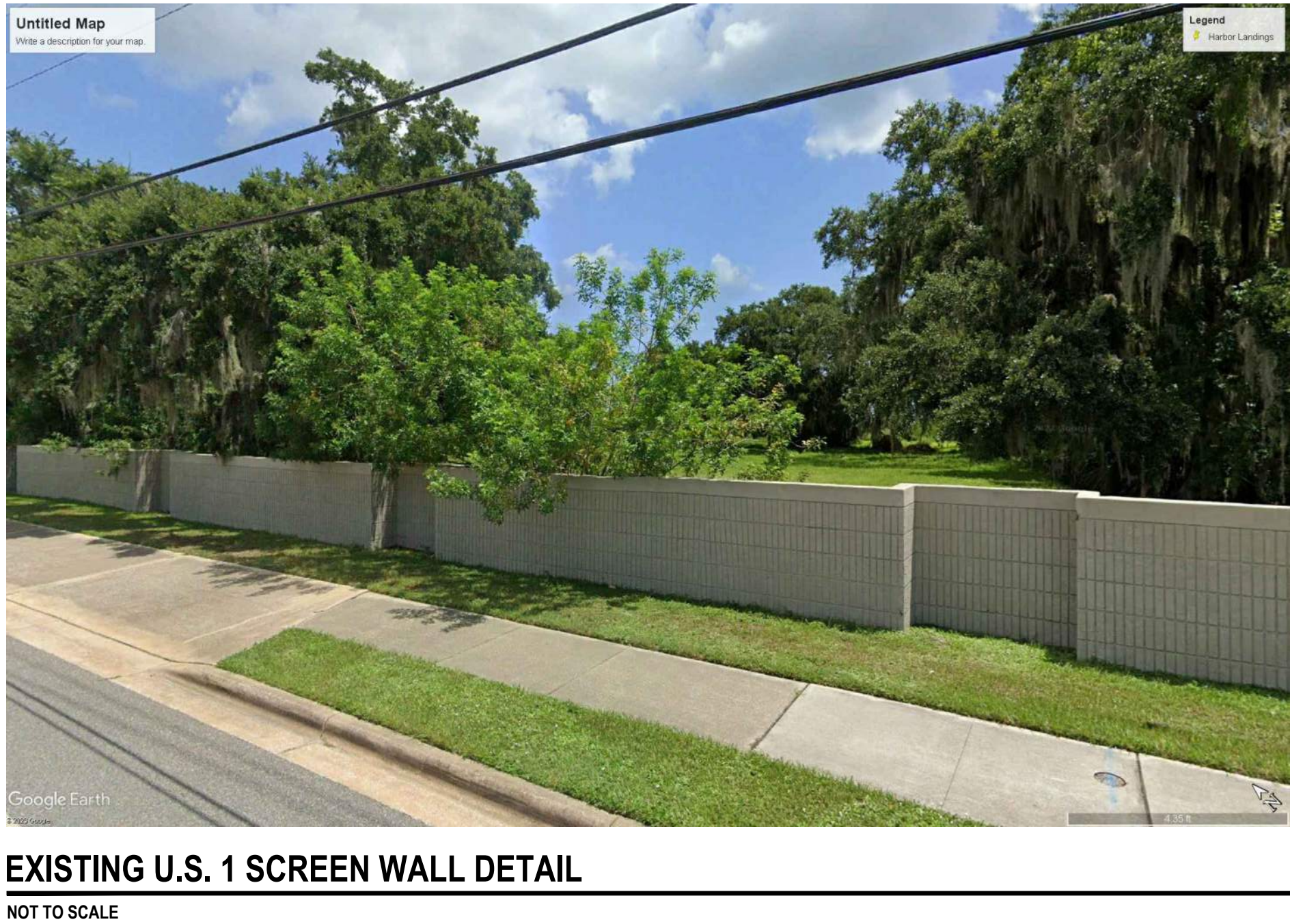


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WALL IS A SPLIT FACE BLOCK CONSTRUCTION THAT CAN BE REPAIRED TO MATCH REST OF WALL AND PAINTED A PASTEL COLOR IN A THEME WITH PROJECT.

EXISTING 6' TALL CMU WALL WITH BEIGE STUCCO FINISH. ANY DAMAGE TO BE REPAIRED PRIOR TO END OF CONSTRUCTION.

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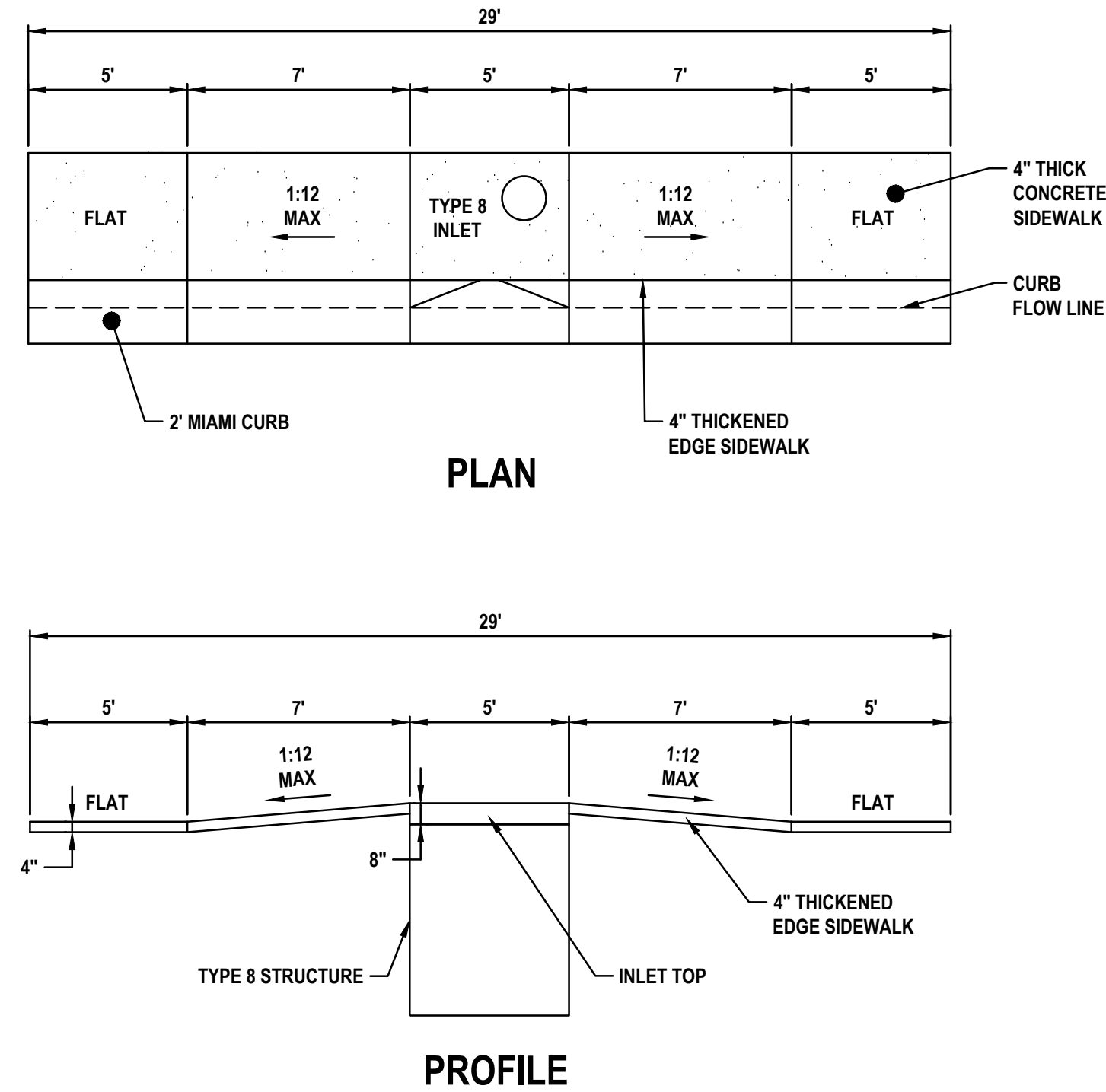
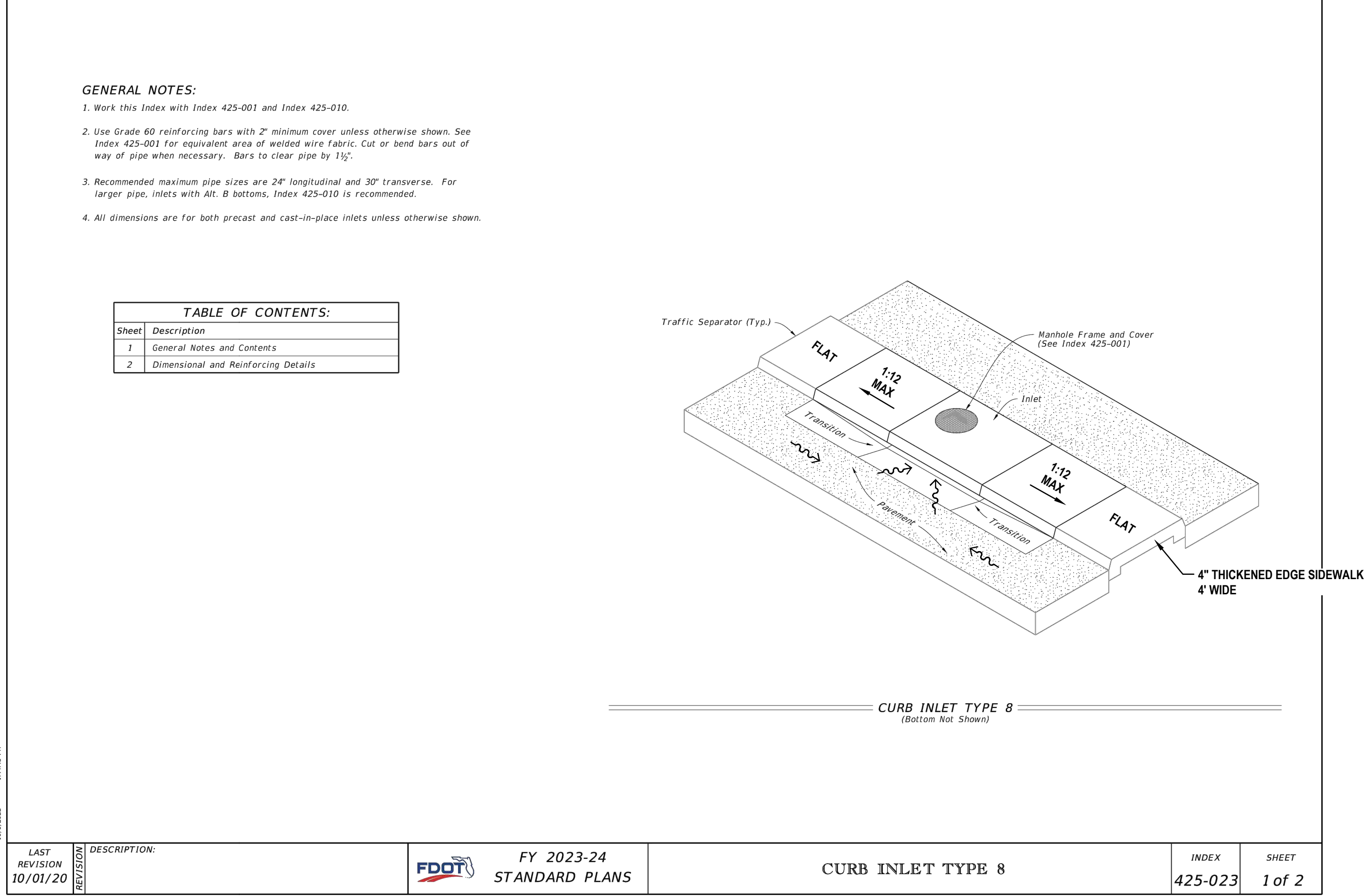
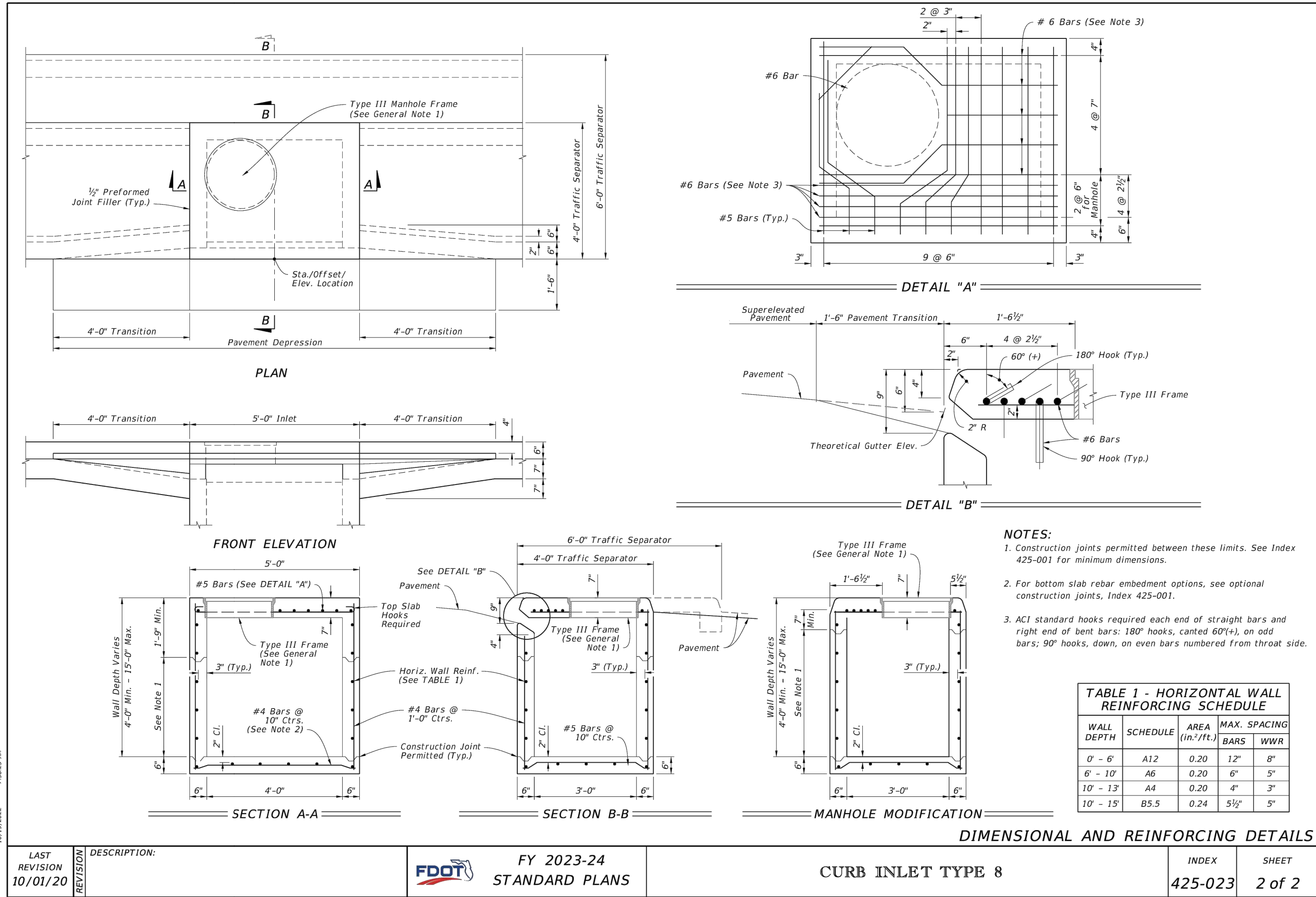
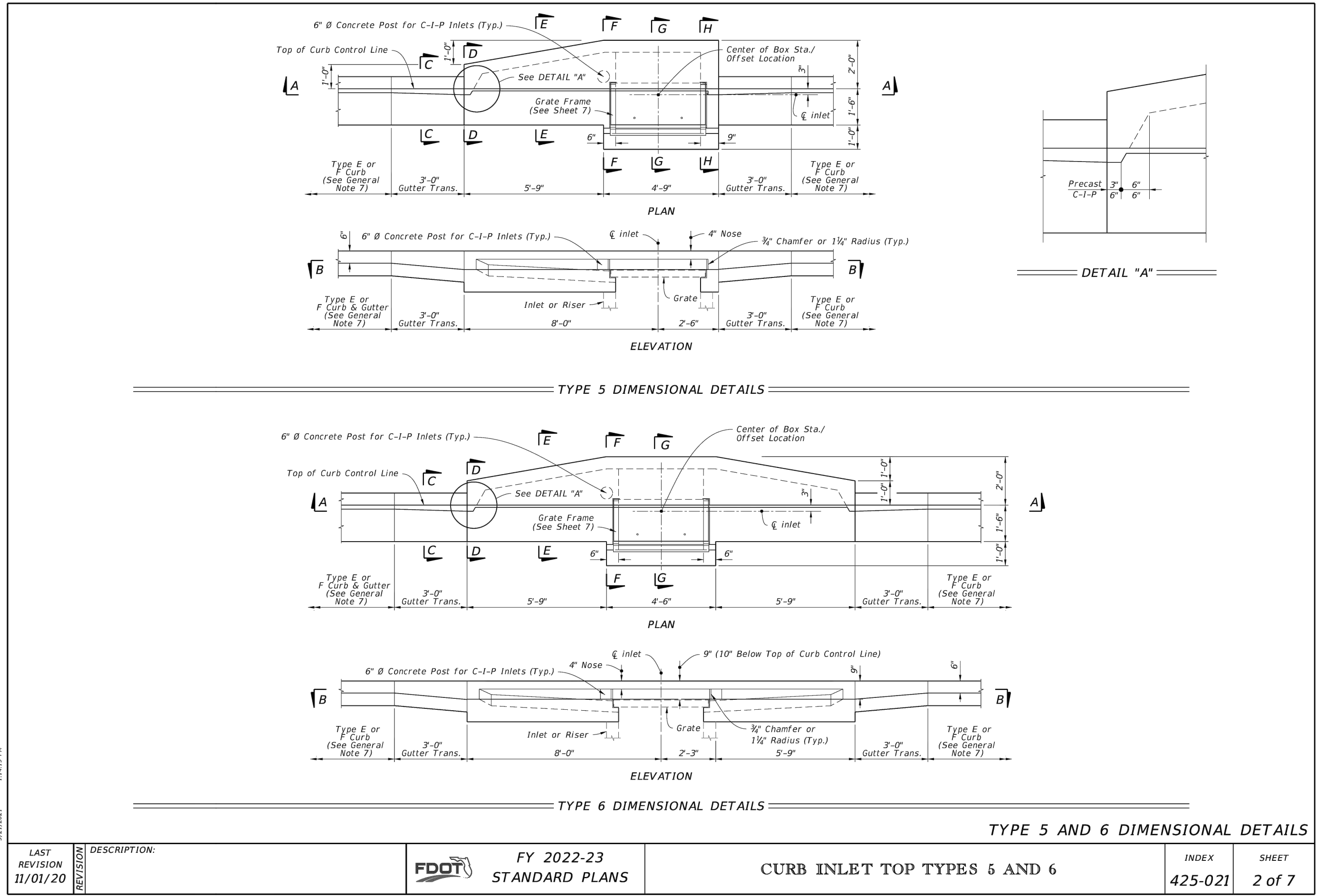
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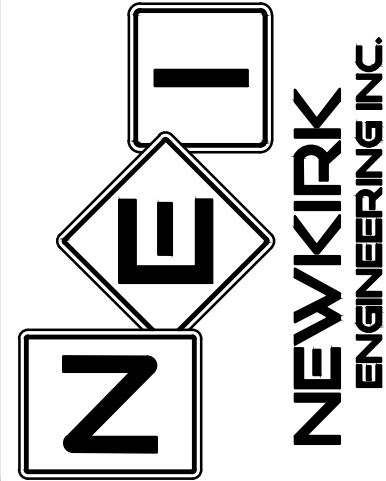
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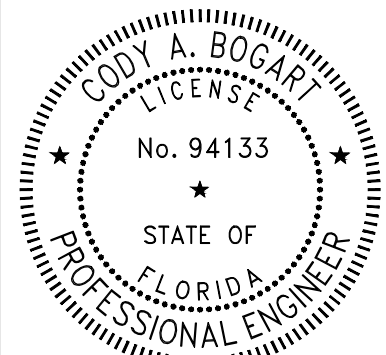
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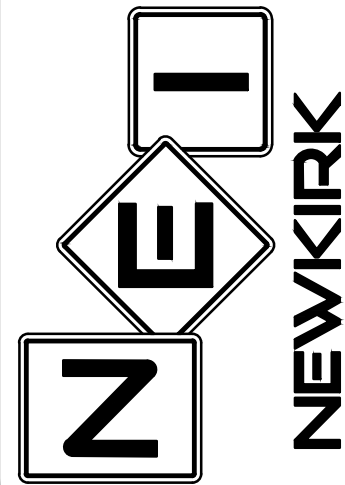
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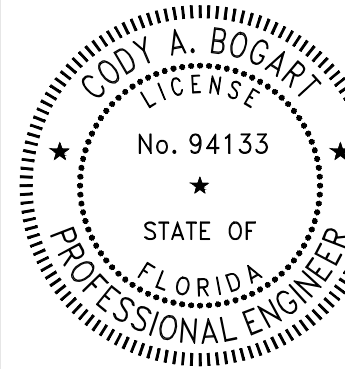
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- GENERAL NOTES:**
1. Work this Index with Index 425-001 and Index 425-010.
 2. Chamfer all exposed edges and corners $\frac{3}{4}$ " chamfer or tooled to $\frac{1}{4}$ " radius.
 3. All reinforcing is Grade 60 bars with 2" minimum cover unless otherwise noted. Cut or bend bars for 1 $\frac{1}{2}$ " clearance around pipe opening. Provide one additional #4 bar above and at each side of pipe opening.
 4. Use Concrete Apron on inlets without slots and inlets with non-traversable slots only when called for in the Plans.
 5. Quantities are for informational and estimating purposes only.

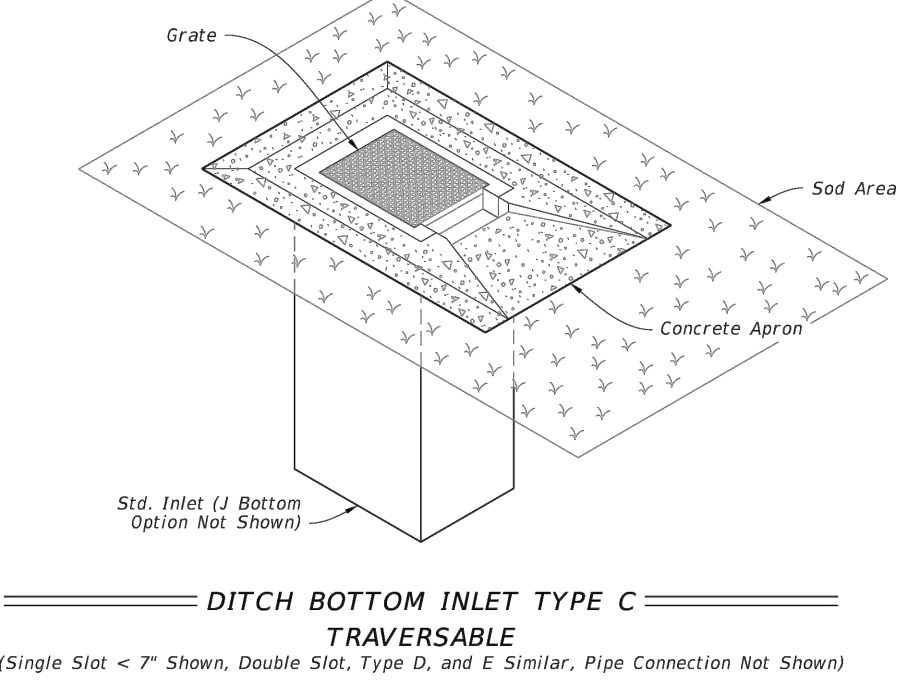
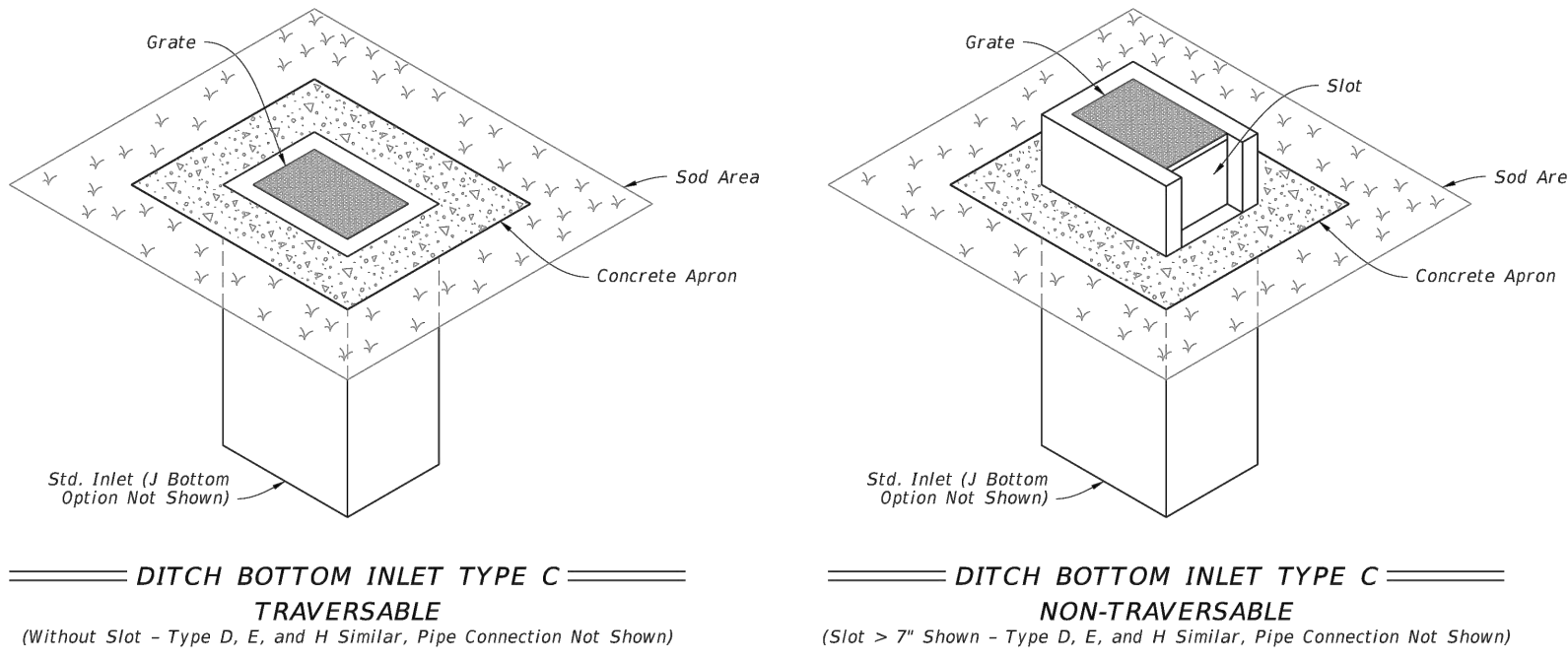


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2	Type C - Dimensional, Reinforcing, and Grate Details
3	Type D - Dimensional, Reinforcing, and Grate Details
4	Type E - Dimensional, Reinforcing, and Grate Details
5	Type H (2 & 3 Grate) - Dimensional, Reinforcing, and Steel Grate Details
6	Type H (4 Grate) - Dimensional, Reinforcing, and Steel Grate Details
7	Cast Iron Grate Details
8	Non-Traversable Inlet Details
9	Traversable Inlet Without Slot Details
10	Traversable Inlet With Slot Details
11	Case 1 - Add Traversable Slots to Existing Inlets
12	Case 2 - Add Traversable Slots (Partial) to Existing Inlets
13	Case 3 - Add Traversable Slots (Partial) to Existing Inlets and Ditch Block
14	Alternate A Structure Bottom - Top Slab Details

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LAST REVISION	DESCRIPTION:	FDOT	FY 2022-23	DITCH BOTTOM INLET TYPE C, D, E, AND H	INDEX	SHEET
11/01/20			STANDARD PLANS		425-052	1 of 14

- GENERAL NOTES:**
1. Use Class II concrete.
 2. Construct Baffles only when called for in Plans.
 3. See Sheet 5 when steel grating is required on endwall.
 4. All reinforcing #4 bars with 2" clearance except as noted.
 5. Channel section C 3x6 may be substituted for C 4x5.4 channel.
 6. Endwall may be cast in place or precast concrete. Construct precast units to dimensions shown, or as shown in approved shop drawings. Submit requests for shop drawing approvals to the Engineer. Use Index 425-001 for opening and grouting details.
 7. Quantities shown are for estimating purposes only.

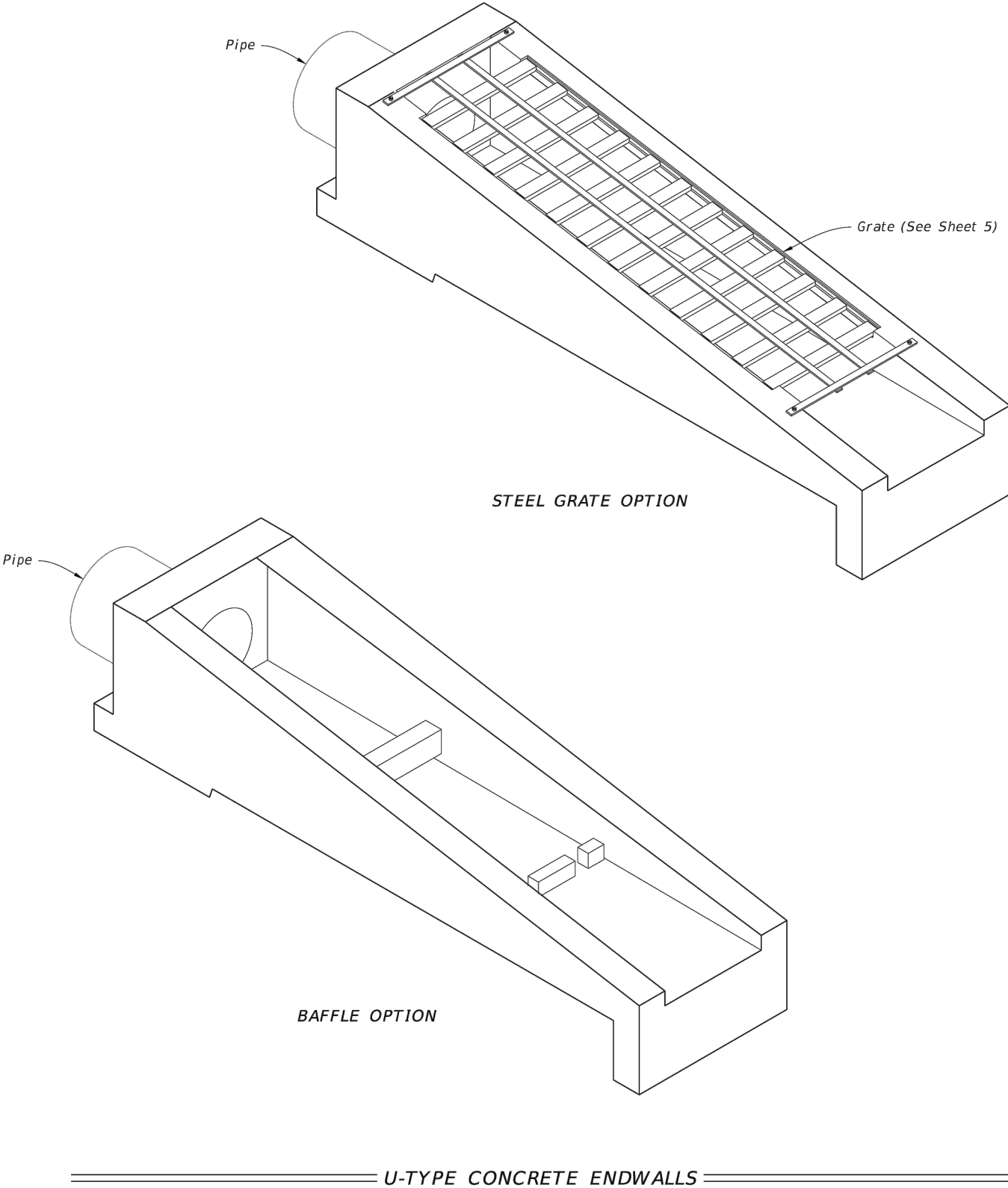


TABLE OF CONTENTS:	
Sheet	Description
1	General Notes and Contents
2	Endwalls for 1:2 Slopes With Baffles
3	Endwalls for 1:2 Slopes Without Baffles and Bending Bar Diagram
4	Endwalls for 1:3, 1:4, and 1:6 Slopes
5	Steel Grate Option

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LAST REVISION	DESCRIPTION:	FDOT	FY 2022-23	U-TYPE CONCRETE ENDWALLS BAFFLES & GRATE OPTIONAL 15" TO 30" PIPE	INDEX	SHEET
11/01/21			STANDARD PLANS		430-011	1 of 5

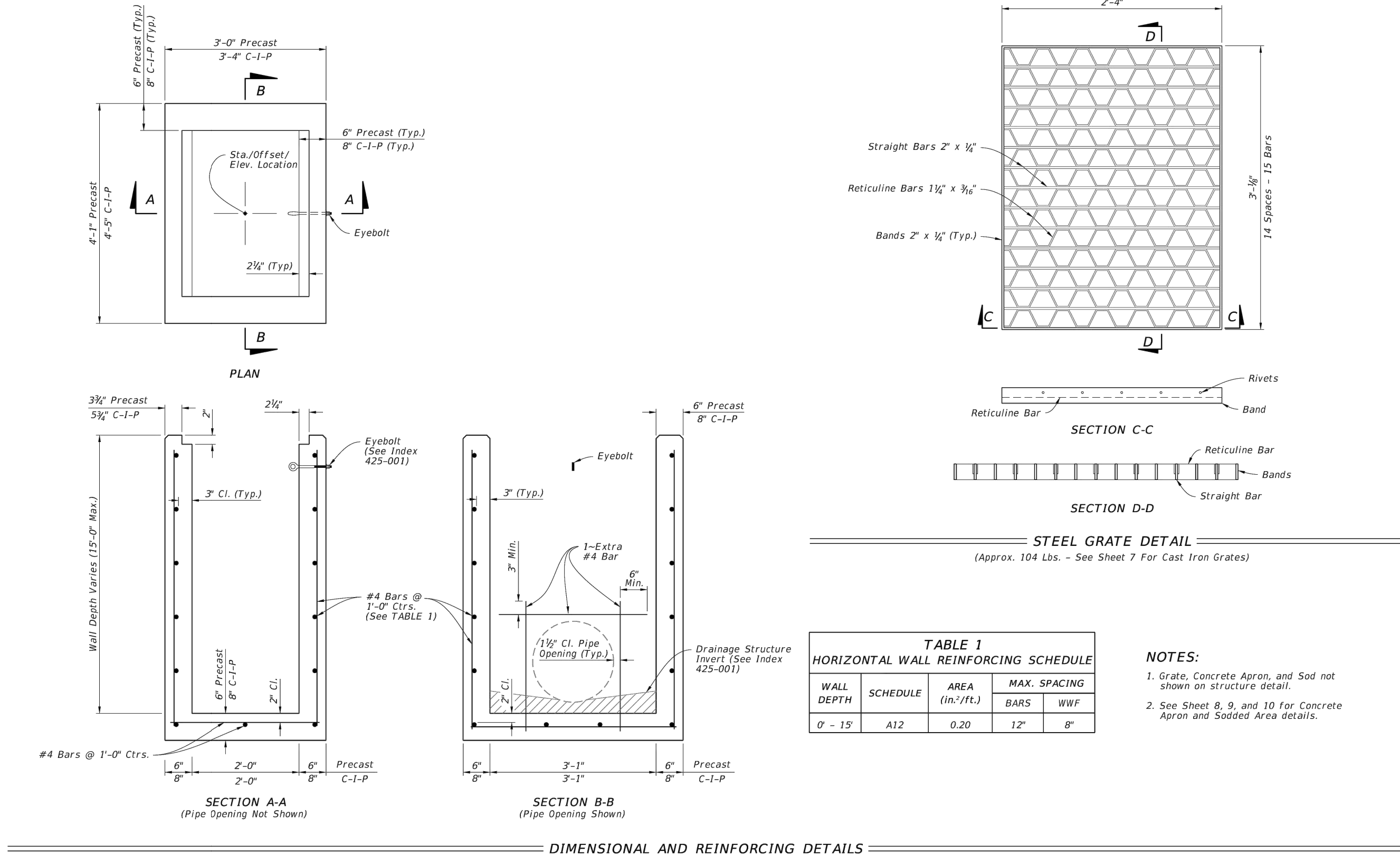


TABLE 1 HORIZONTAL WALL REINFORCING SCHEDULE				
WALL DEPTH	SCHEDULE	AREA (in ² /ft.)	MAX. SPACING	WVF
0' - 15'	A12	0.20	12"	8"

- NOTES:**
1. Grate, Concrete Apron, and Sod not shown on structure detail.
 2. See Sheet 8, 9, and 10 for Concrete Apron and Sodded Area details.

5/21/2021 12:23:31 PM

LAST REVISION	DESCRIPTION:	FDOT	FY 2022-23	DITCH BOTTOM INLET TYPE C, D, E, AND H	INDEX	SHEET
11/01/20			STANDARD PLANS		425-052	2 of 14

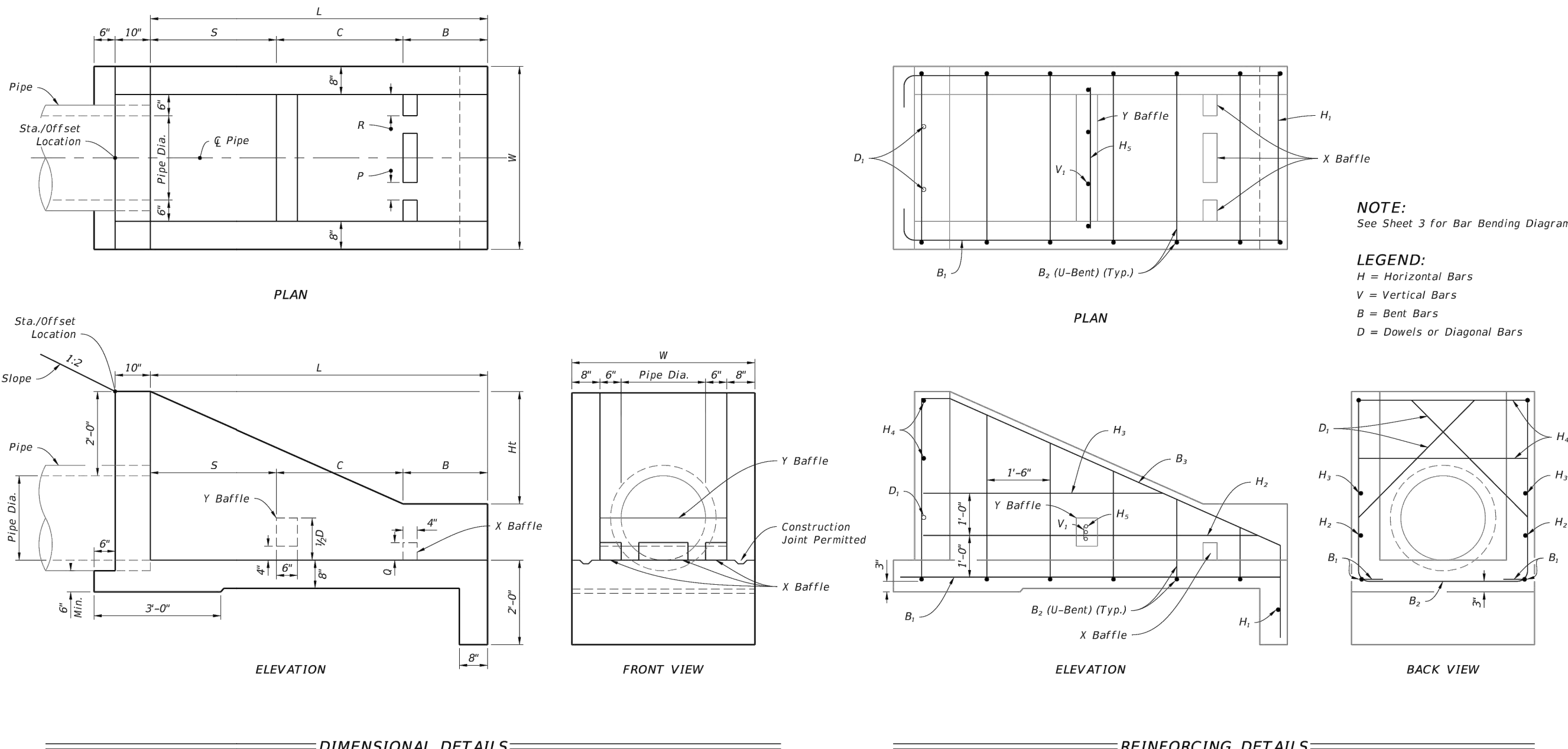
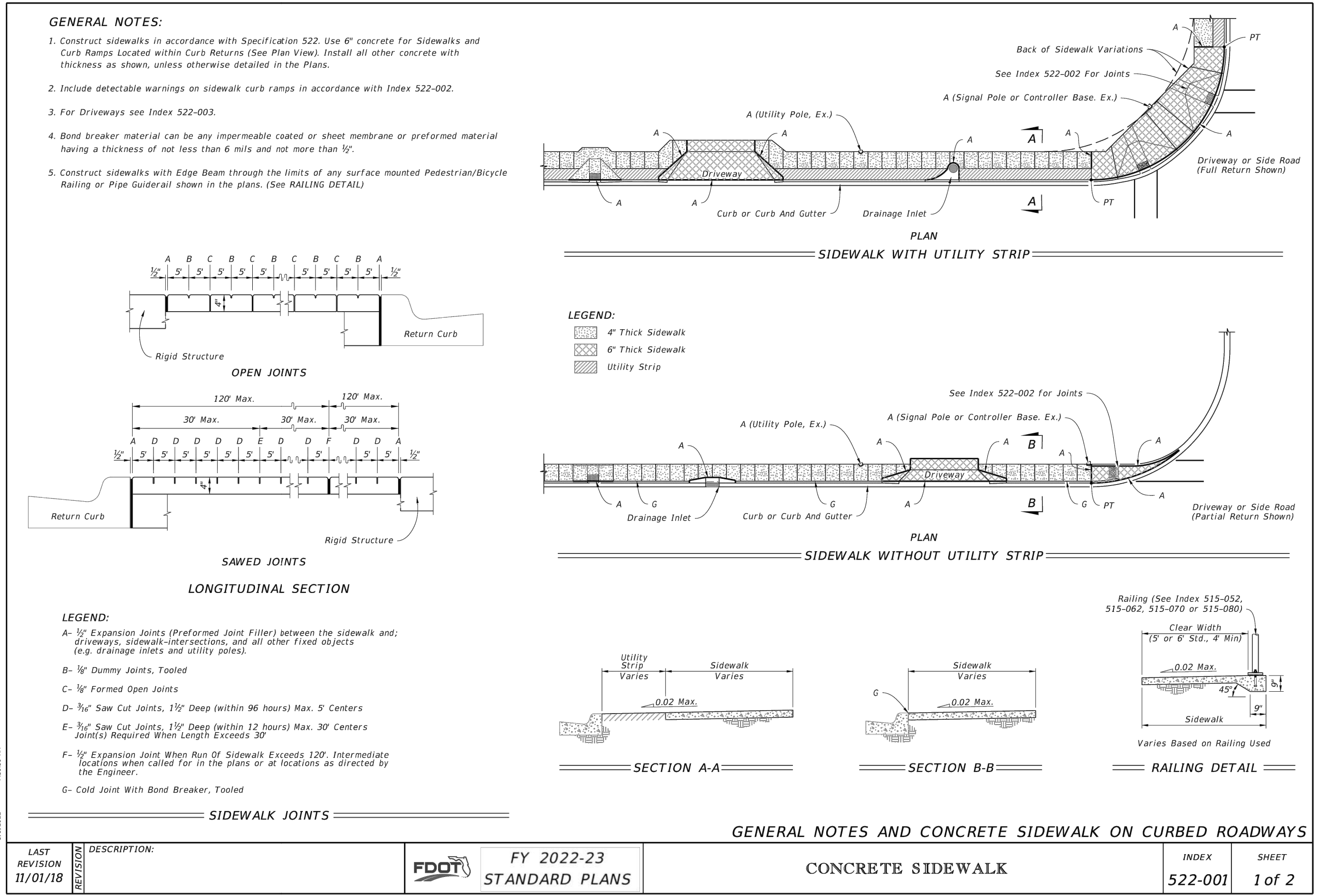
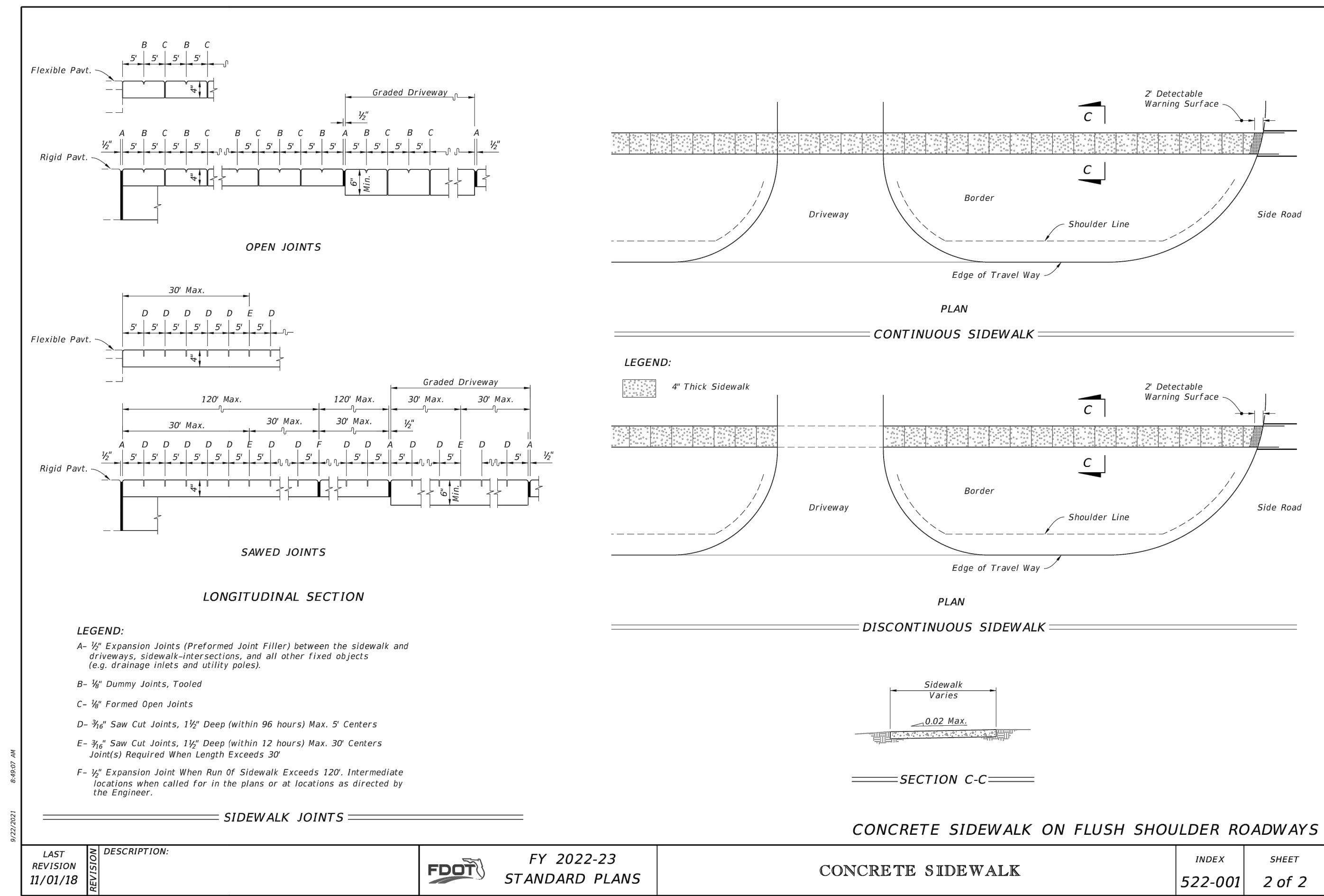
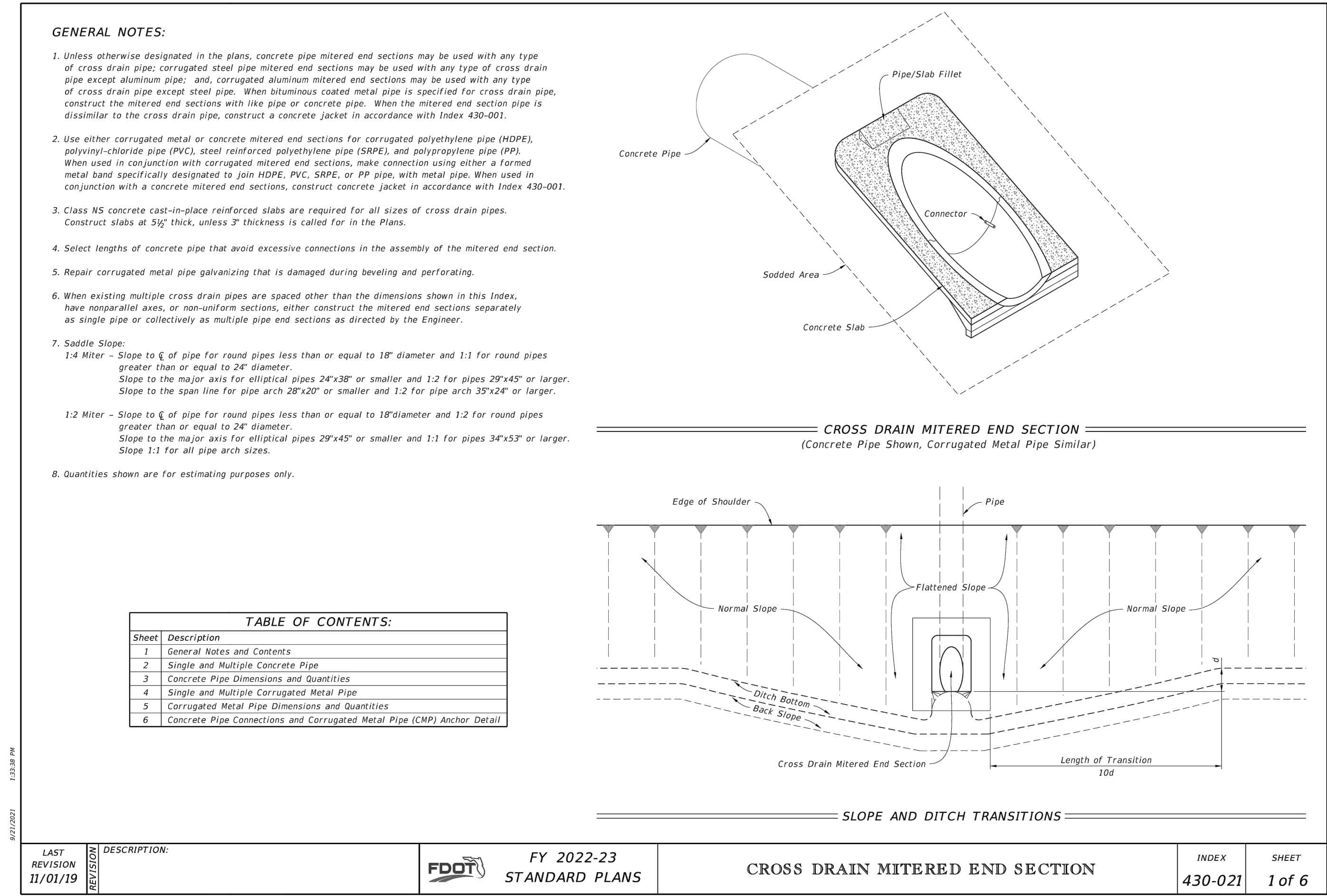


TABLE-1 DIMENSIONS AND QUANTITIES FOR ONE U-ENDWALL													
Pipe Dia.	Area Sq. Ft.	L	Ht	W	S	B	C	X Baffle P	Y Baffle Q	Reinf. Steel Bars V ₁	Steel Bars V ₂	Class II Conc. Cu. Yd.	Reinf. Steel lbs.
15"	1.23	9'-0"	2'-3 3/4"	3'-7"	2'-3"	1'-3"	2'-3"	4"	4"	2 #4	1 #4	1.61	72
18"	1.77	6'-6"	2'-5"	3'-10"	2'-6"	1'-6"	2'-6"	4"	4"	3 #4	2 #4	1.89	86
24"	3.14	8'-0"	2'-8"	4'-4"	3'-0"	2'-0"	3'-0"	5"	5"	6"	4 #4	2.52	108
30"	4.91	9'-6"	2'-11"	4'-10"	3'-6"	2'-6"	3'-6"	5"	5"	7"	4 #4	3.34	131

ENDWALLS FOR 1:2 SLOPES WITH BAFFLES

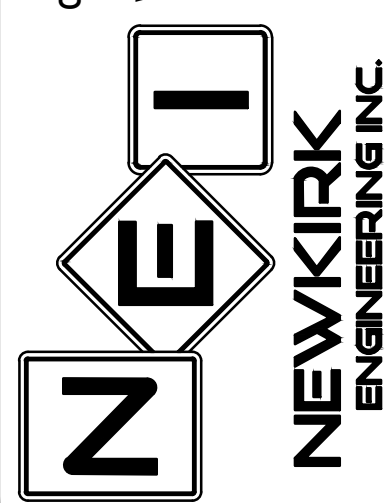
LAST REVISION	DESCRIPTION:	FDOT	FY 2022-23	U-TYPE CONCRETE ENDWALLS BAFFLES & GRATE OPTIONAL 15" TO 30" PIPE	INDEX	SHEET
11/01/21			STANDARD PLANS		430-011	2 of 5



REVISIONS

DATE	DESCRIPTION

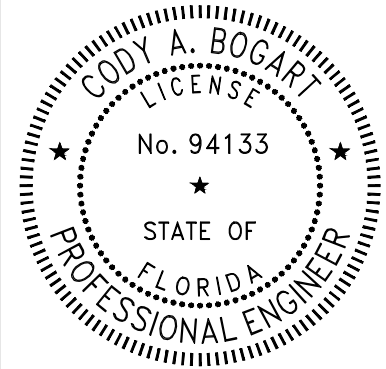
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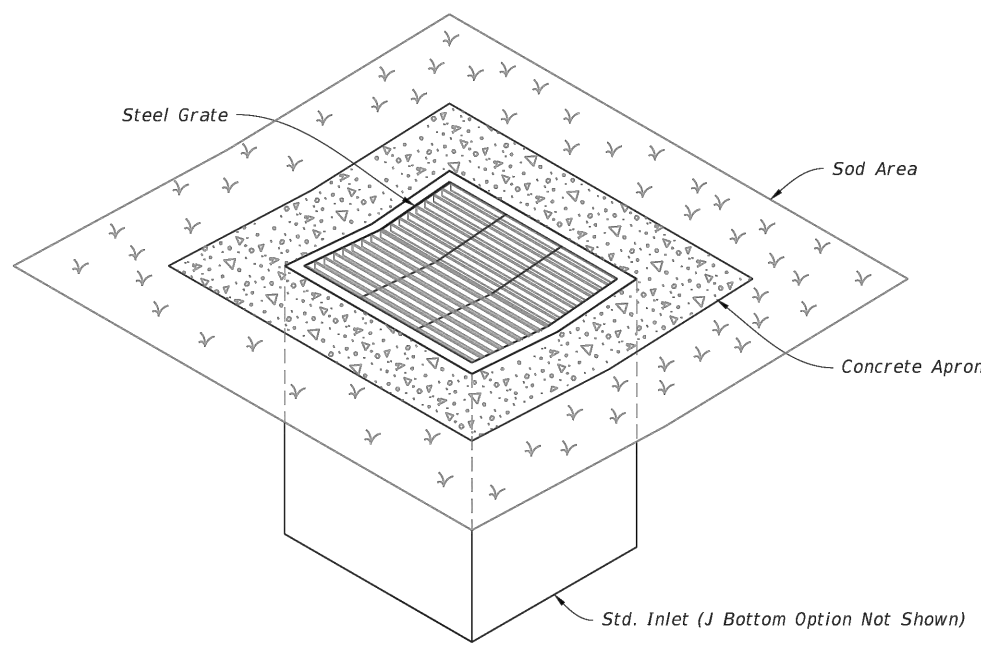
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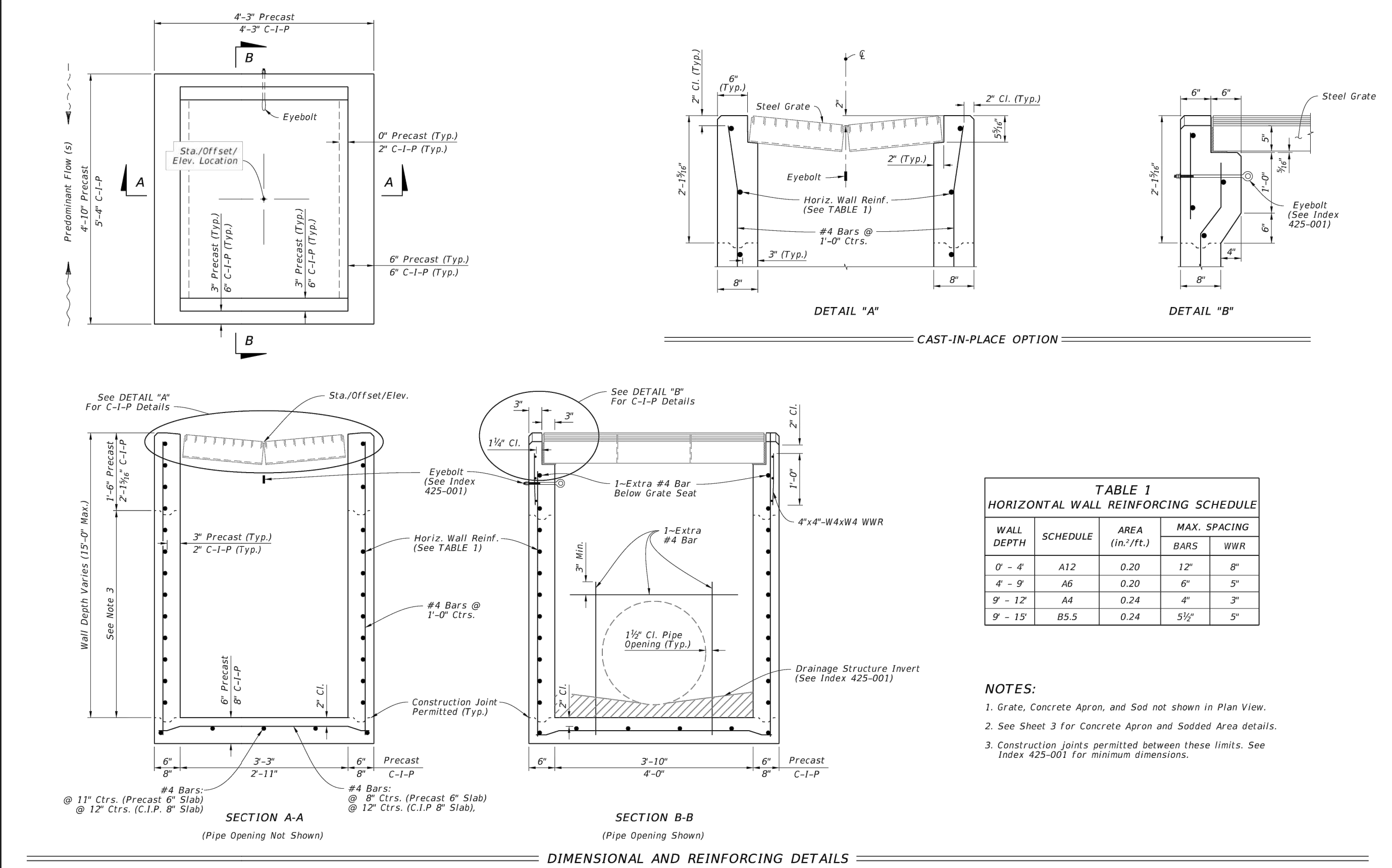
- GENERAL NOTES:**
1. Work this Index with Index 425-001 and Index 425-010.
 2. Reinforcing bars are Grade 60 bars with 2" minimum cover unless otherwise noted. See Index 425-001 for equivalent area of welded wire fabric. Cut or bend bars out of way of pipe when necessary; bars to clear pipe by 1½".
 3. Chamfer all exposed edges and corners ¼" or tool to ¼" radius.
 4. Dimensions are for both precast and cast-in-place inlets unless otherwise noted.
 5. Quantities are for informational and estimating purposes only.

TABLE OF CONTENTS:	
Sheet	Description
1	General Notes and Contents
2	Dimensional and Reinforcing Details
3	Grate, Concrete Apron, and Sodded Area Details
4	Alternate A Structure Bottom - Top Slab Details

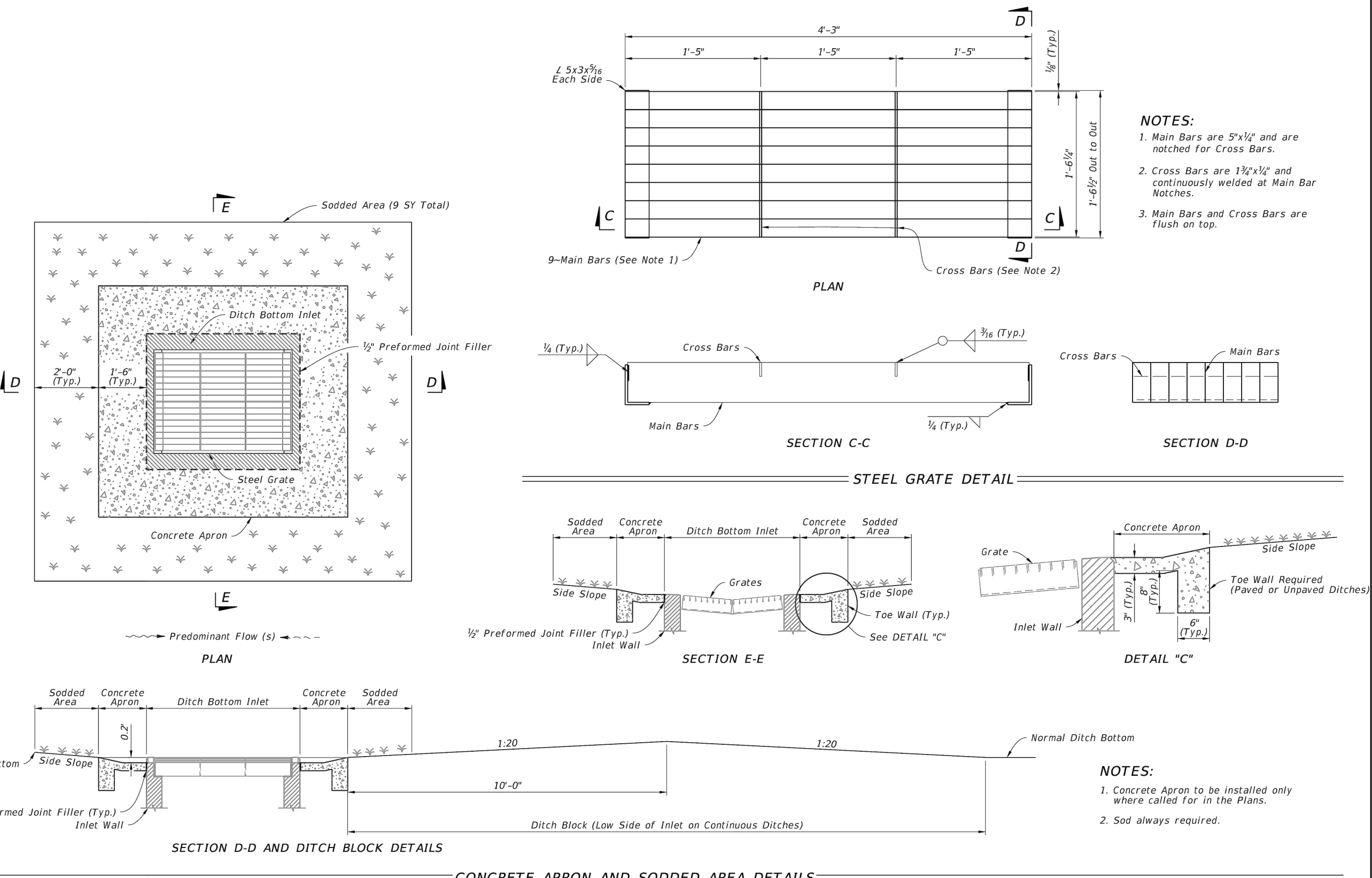


DITCH BOTTOM INLET TYPE J
(Pipe Connection Not Shown)

LAST REVISION	DESCRIPTION:	FY 2023-24 STANDARD PLANS	INDEX	SHEET
10/01/20			425-054	1 of 4



LAST REVISION	DESCRIPTION:	FY 2023-24 STANDARD PLANS	INDEX	SHEET
10/01/20			425-054	2 of 4



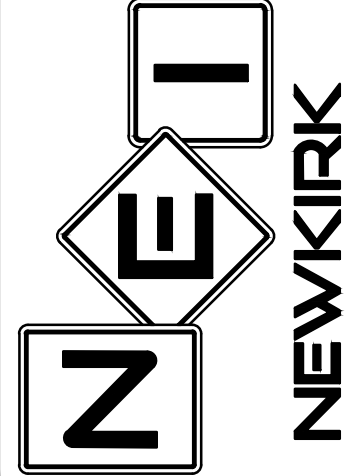
GRATE, CONCRETE APRON, AND SODDED AREA DETAILS

LAST REVISION	DESCRIPTION:	FY 2023-24 STANDARD PLANS	INDEX	SHEET
10/01/20			425-054	3 of 4

REVISIONS

DATE	DESCRIPTION

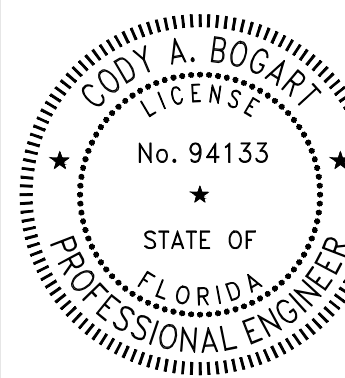
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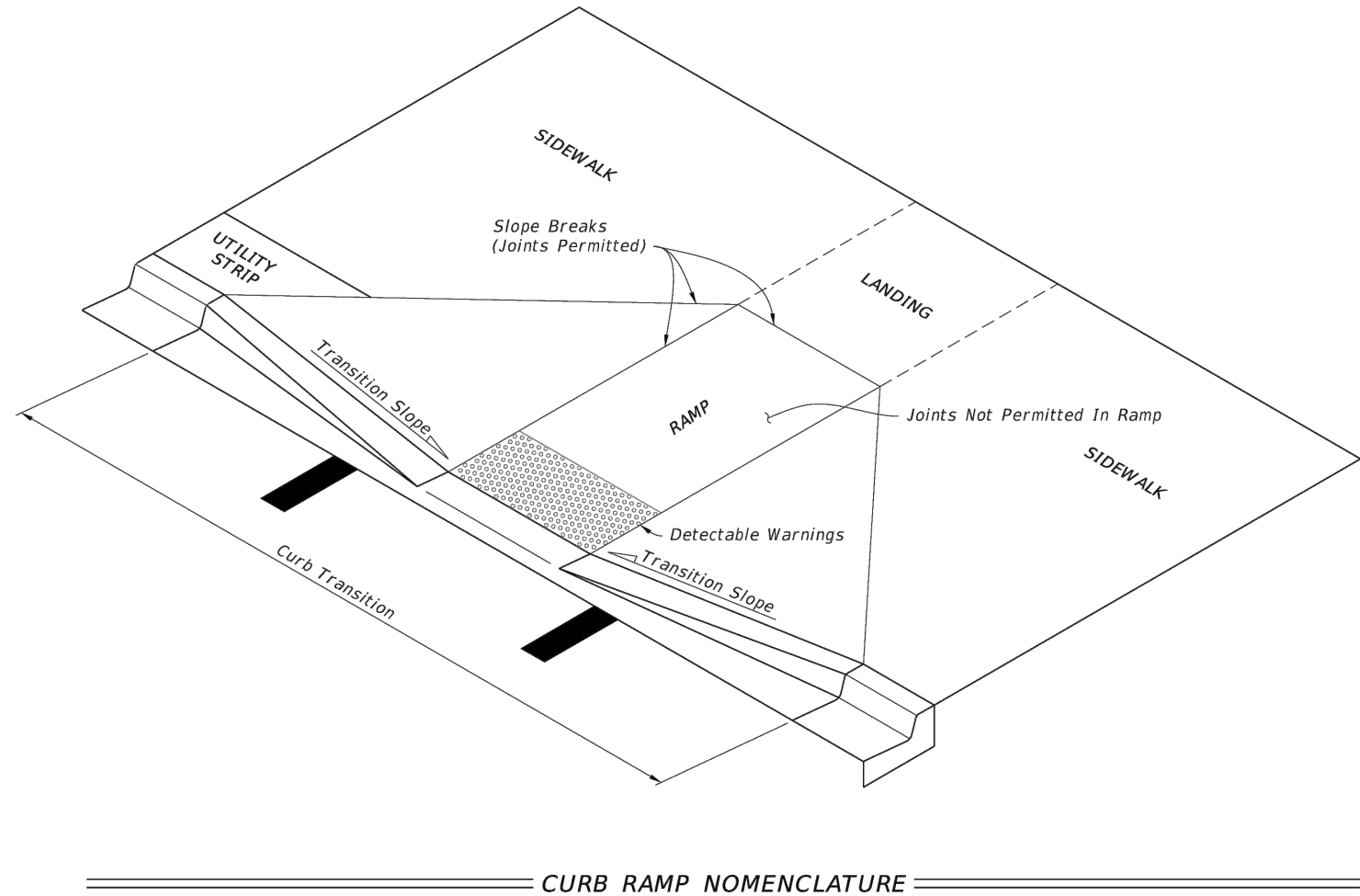
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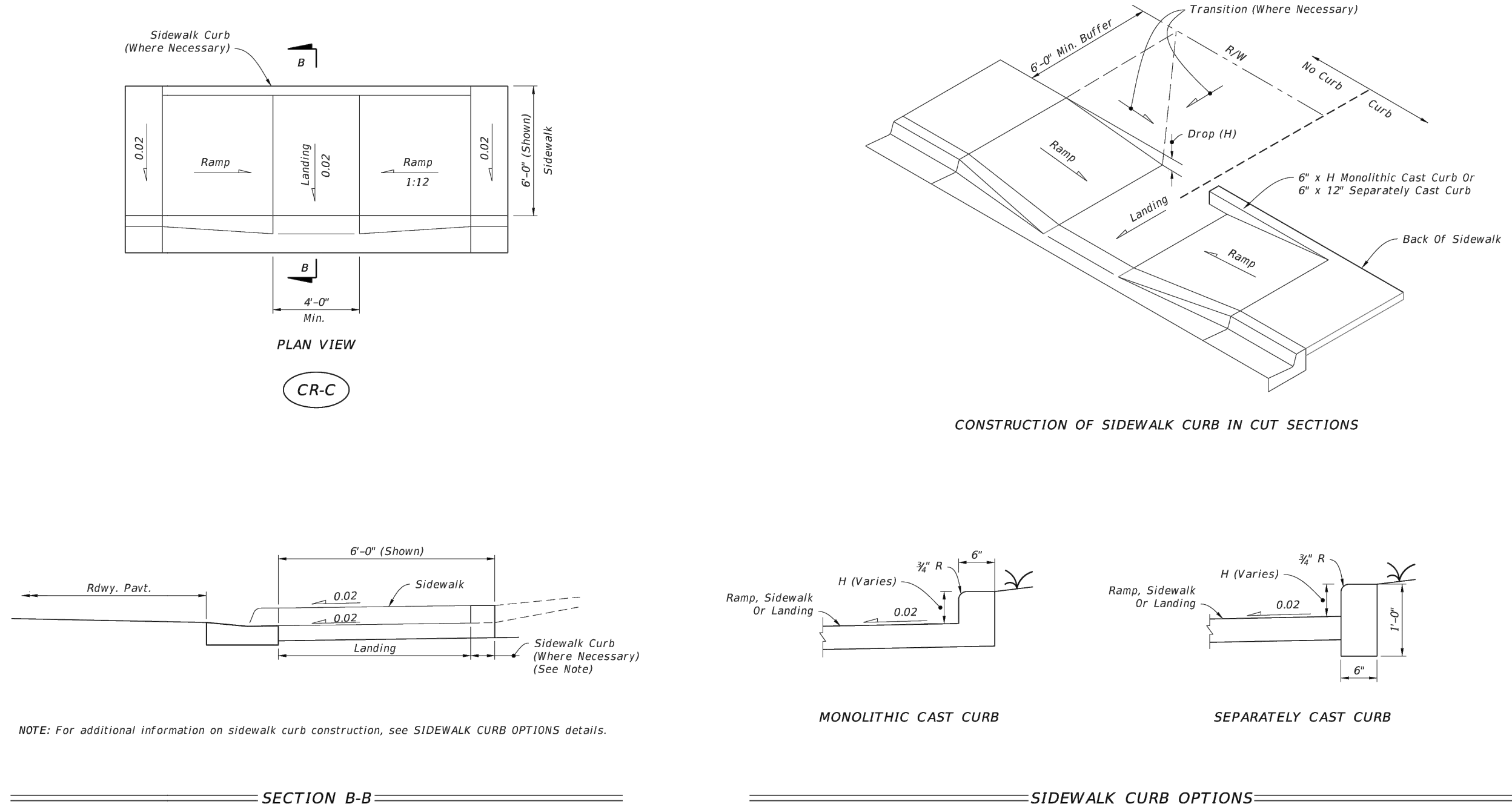
GENERAL NOTES:

1. Cross Slopes and Grades:
- A. Sidewalk, ramp, and landing slopes (i.e. 0.02, 0.05, and 1:12) shown in this Index are maximums. With approval of the Engineer, provide the minimum feasible slope where the requirements cannot be met.
- B. Landings must have cross-slopes less than or equal to 0.02 in any direction. Ramp slopes are not required to exceed 15 feet in length.
- D. Joints permitted at the location of Slope Breaks. Otherwise locate joints in accordance with Index 522-001. No joints are permitted within the ramp portion of the Curb Ramp.
2. Curb, Curb and Gutter and/or Sidewalk:
- A. Refer to Index 522-001 for concrete thickness and sidewalk details.
- B. Remove any existing curb, curb and gutter, or sidewalk to the nearest joint beyond the curb transition or to the extent that no remaining section is less than 5 feet long.
- C. Width of Curb Ramp is 4'-0" minimum. Match sidewalk or Shared Use Path width as shown in the Plans.
3. Curb Ramp Alpha-Identification:
- A. Sidewalk curb ramp alpha-identifications (e.g. CR-A) are provided for reference purposes in the Plans.
- B. Alpha-identifications CR-I and CR-J are intentionally omitted.
4. Detectable Warnings:
- A. Install detectable warnings in accordance with Specification 527.
- B. Place detectable warnings across the full width of the ramp or landing, to a minimum depth of 2 feet measured perpendicular to the curb line and no greater than 5 feet from the back of the curb or edge of pavement.
- C. If detectable warnings are shown in the Plans on slopes greater than 5%, align the truncated domes with the centerline of the ramp; otherwise, the truncated domes are not required to be aligned.



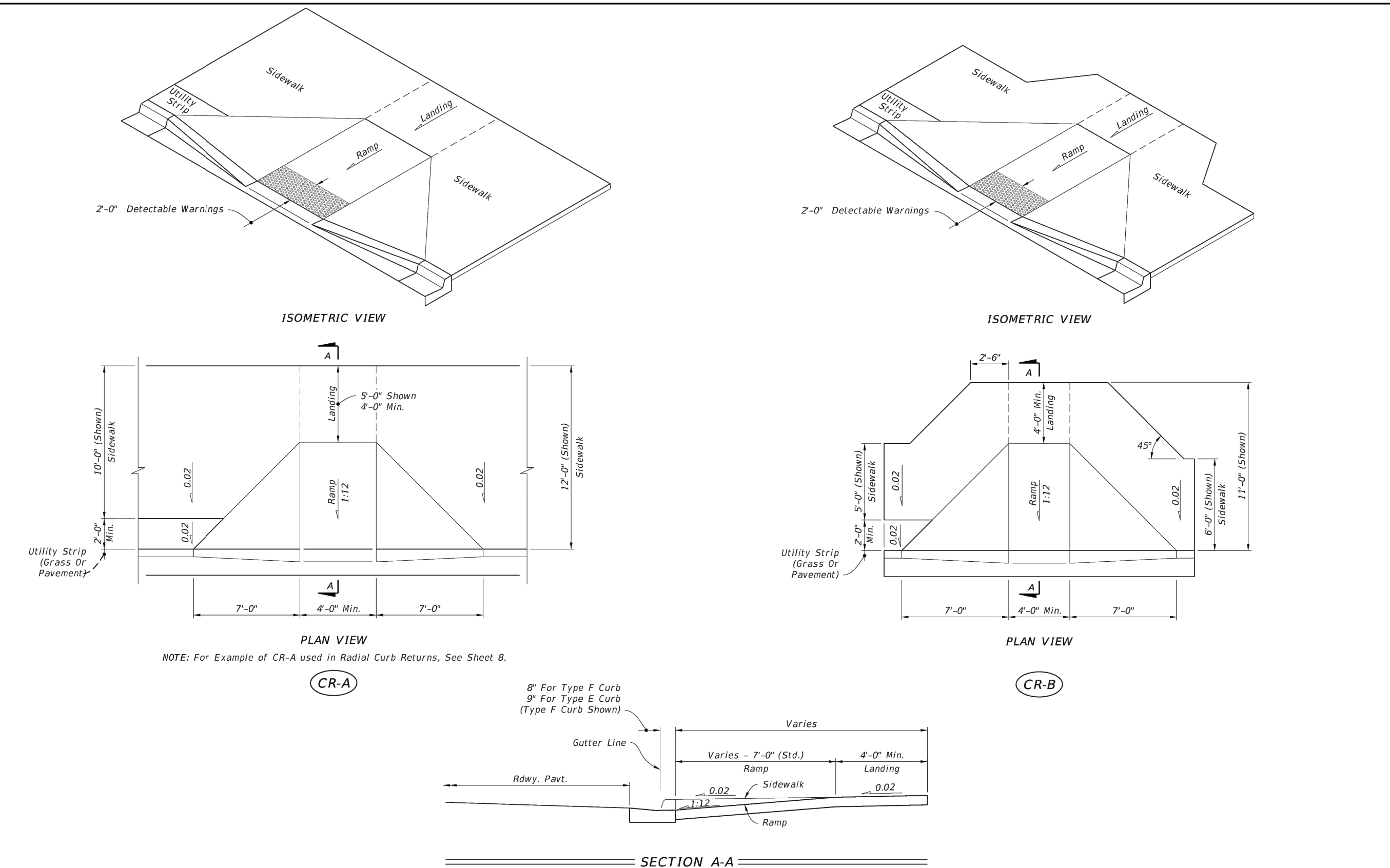
CURB RAMP NOMENCLATURE

LAST REVISION	DESCRIPTION:	FDOT	FY 2022-23	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	INDEX	SHEET
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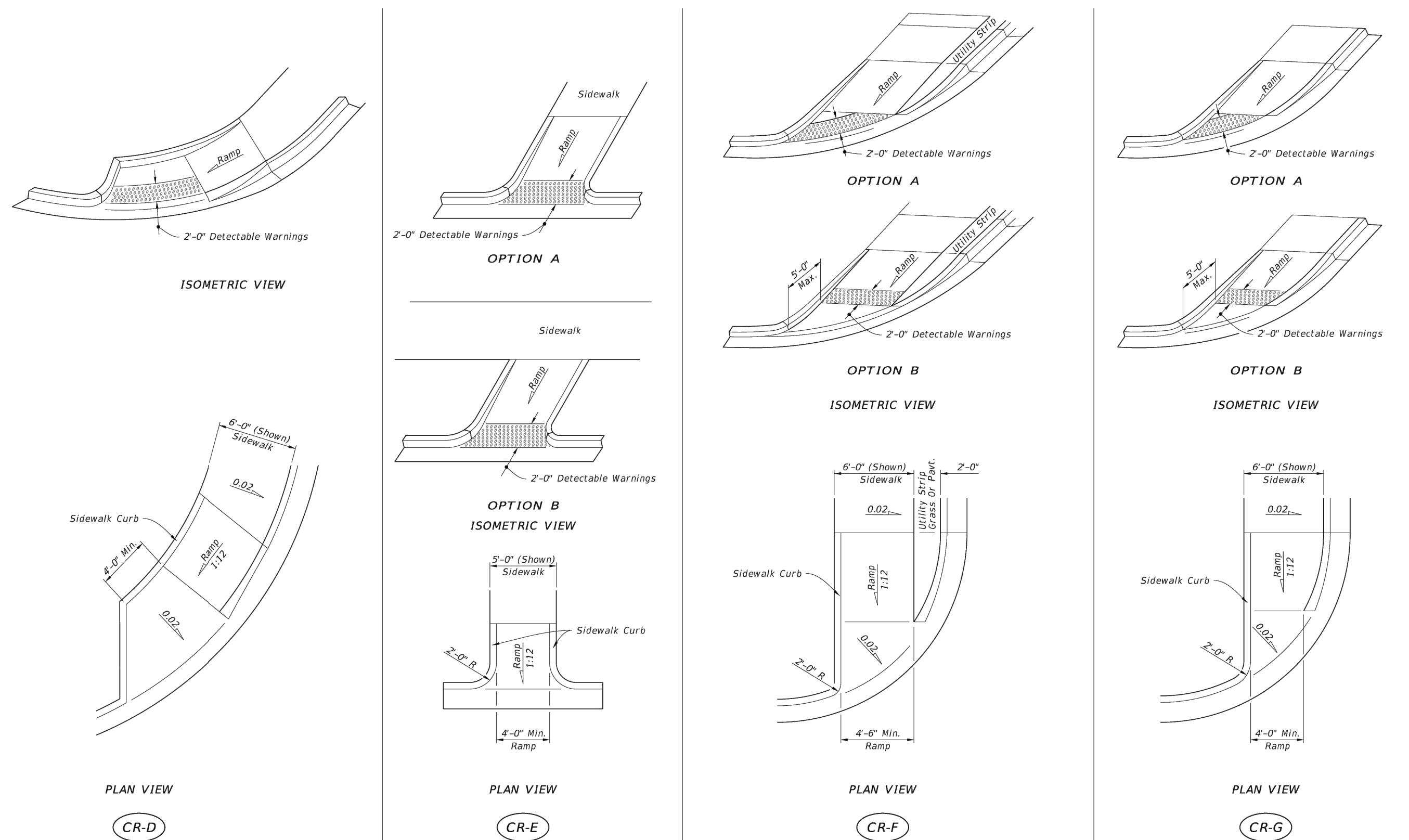
SIDEWALK CURB RAMPS CR-C AND SIDEWALK CURB

LAST REVISION	DESCRIPTION:	FDOT	FY 2022-23	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	INDEX	SHEET
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SIDEWALK CURB RAMPS CR-A AND CR-B

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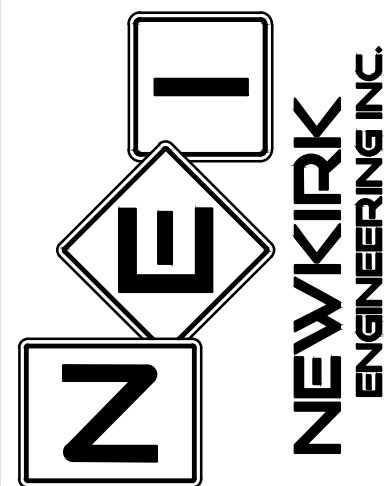
SIDEWALK CURB RAMPS CR-D, CR-E, CR-F & CR-G

LAST REVISION	DESCRIPTION:	FDOT	FY 2022-23	DETECTABLE WARNINGS AND SIDEWALK CURB RAMPS	INDEX	SHEET
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REVISIONS

DATE	DESCRIPTION

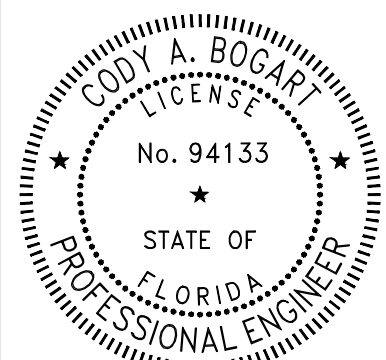
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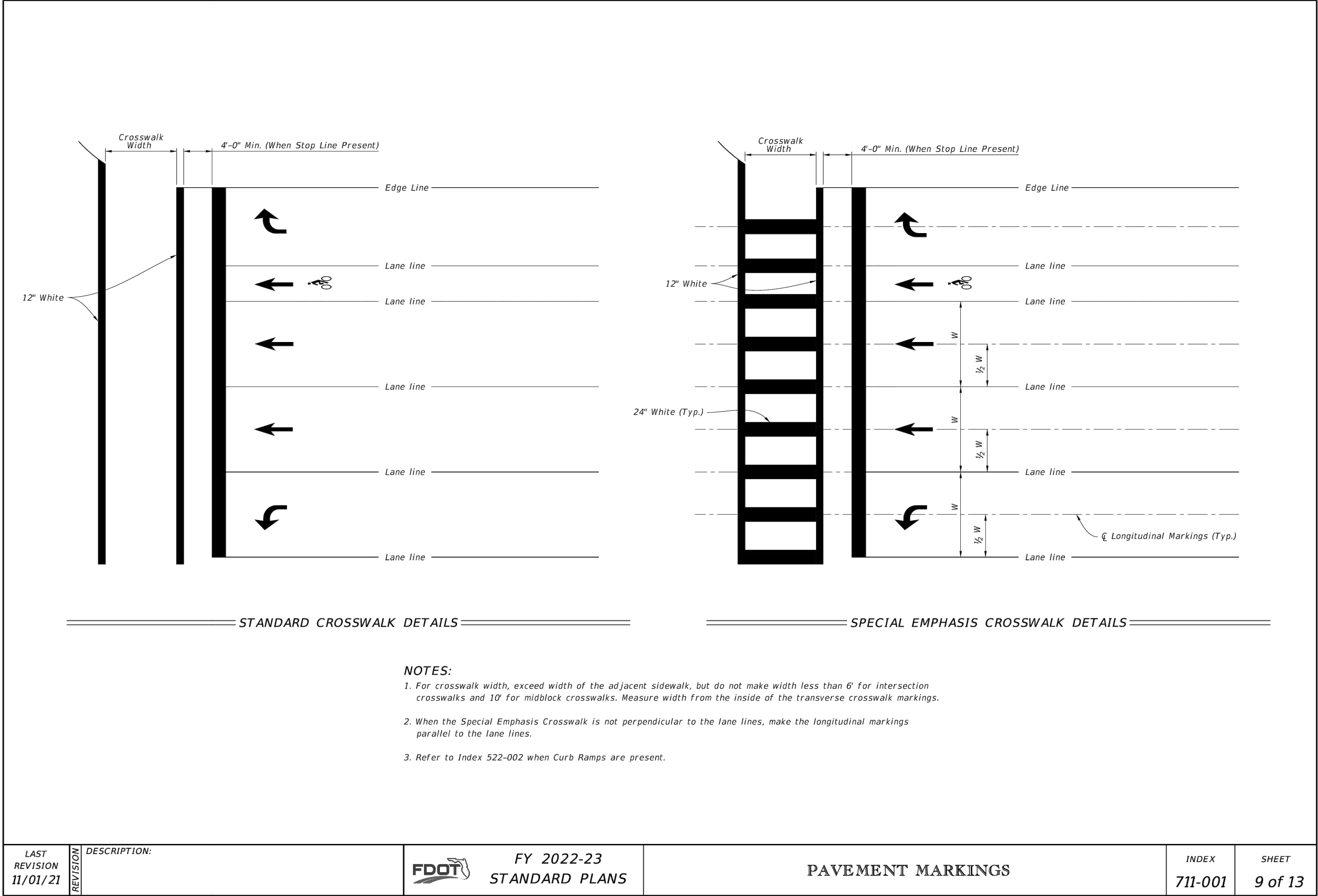
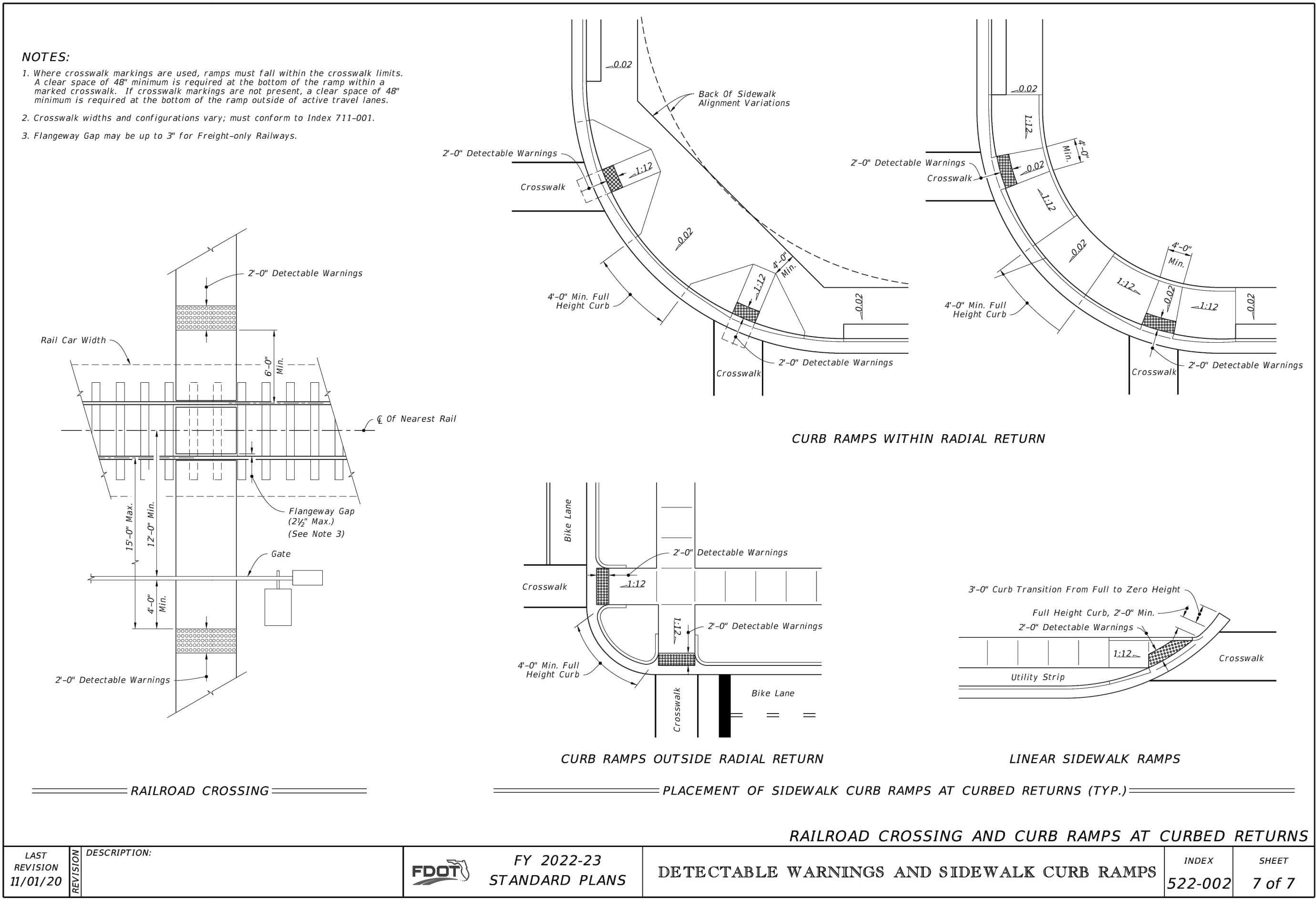
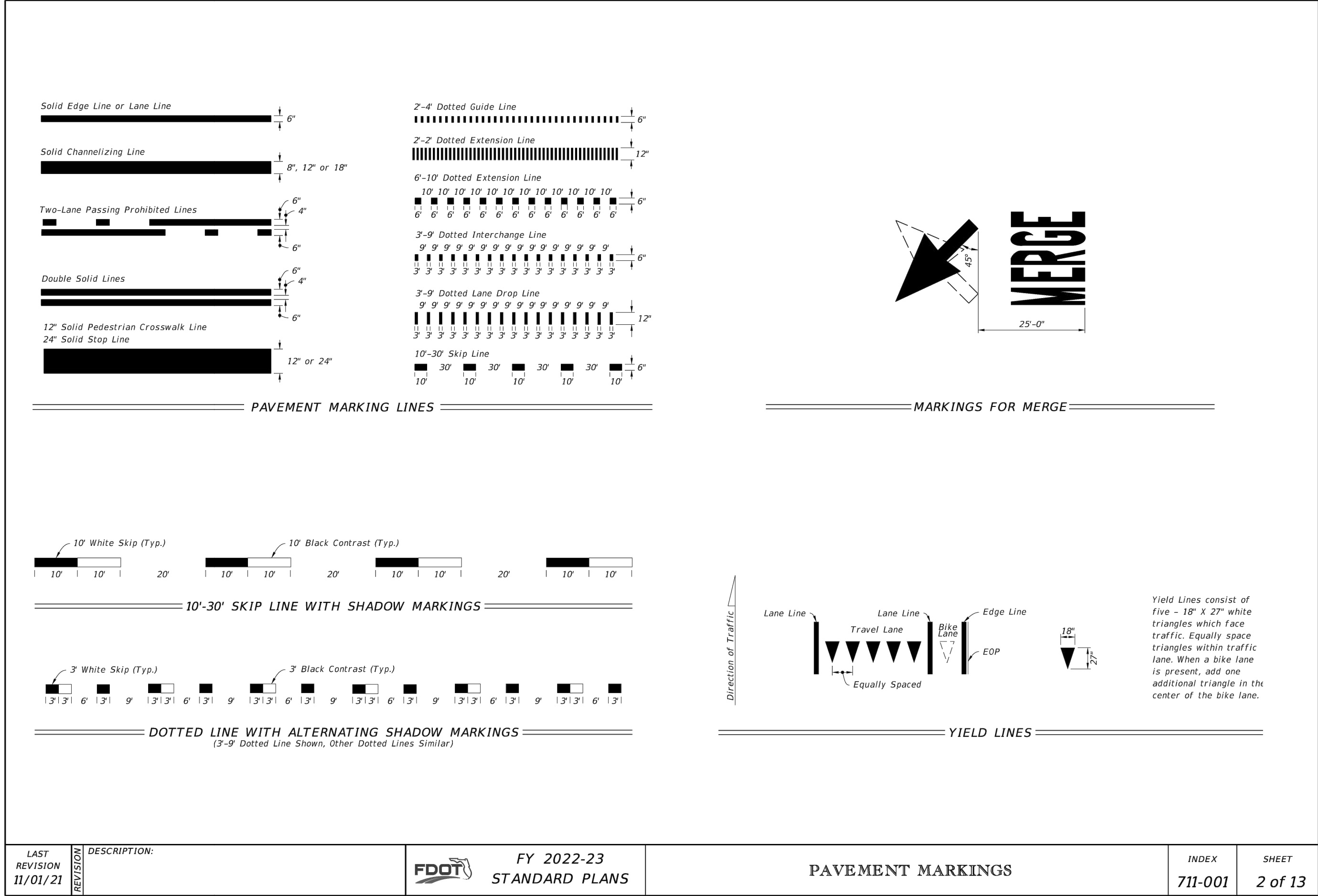
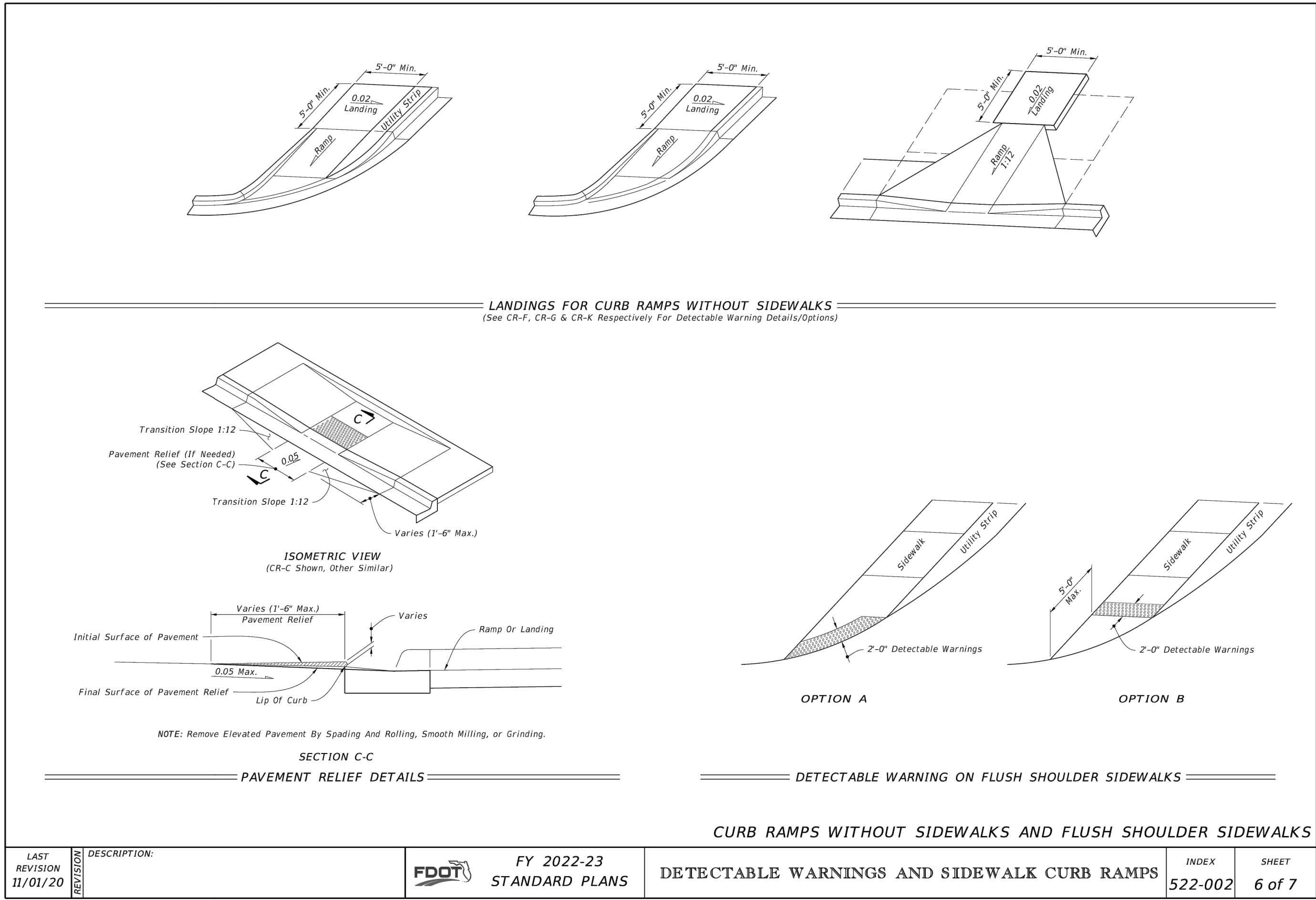
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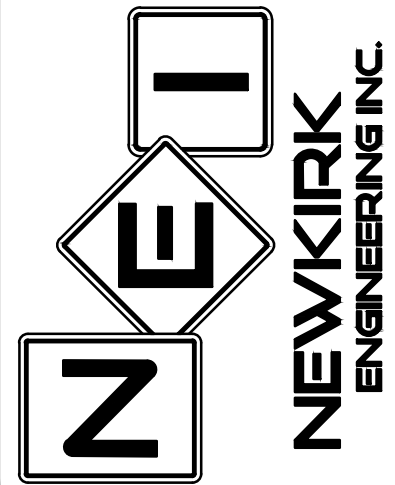
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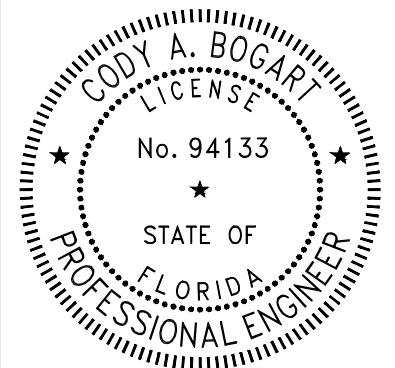
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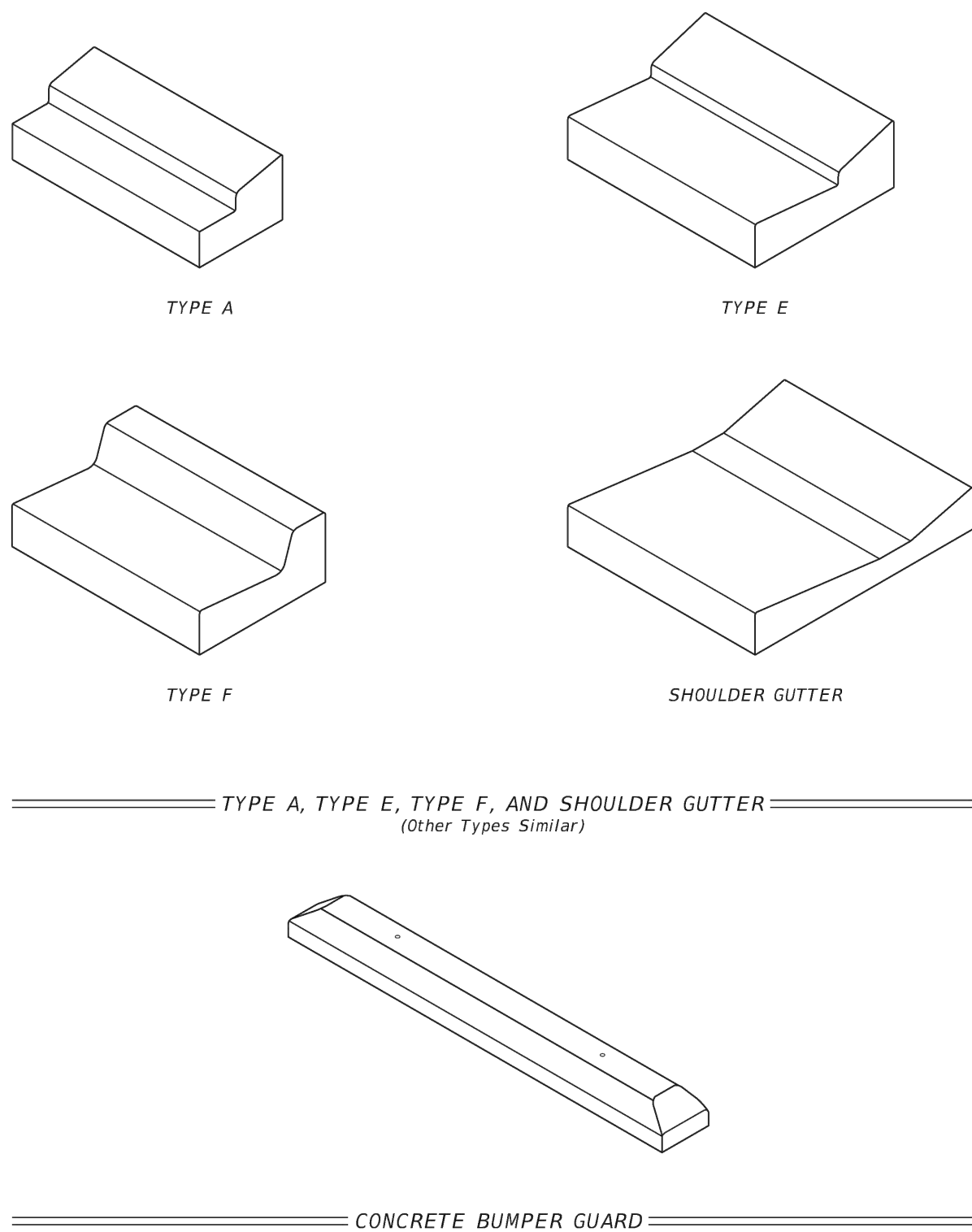
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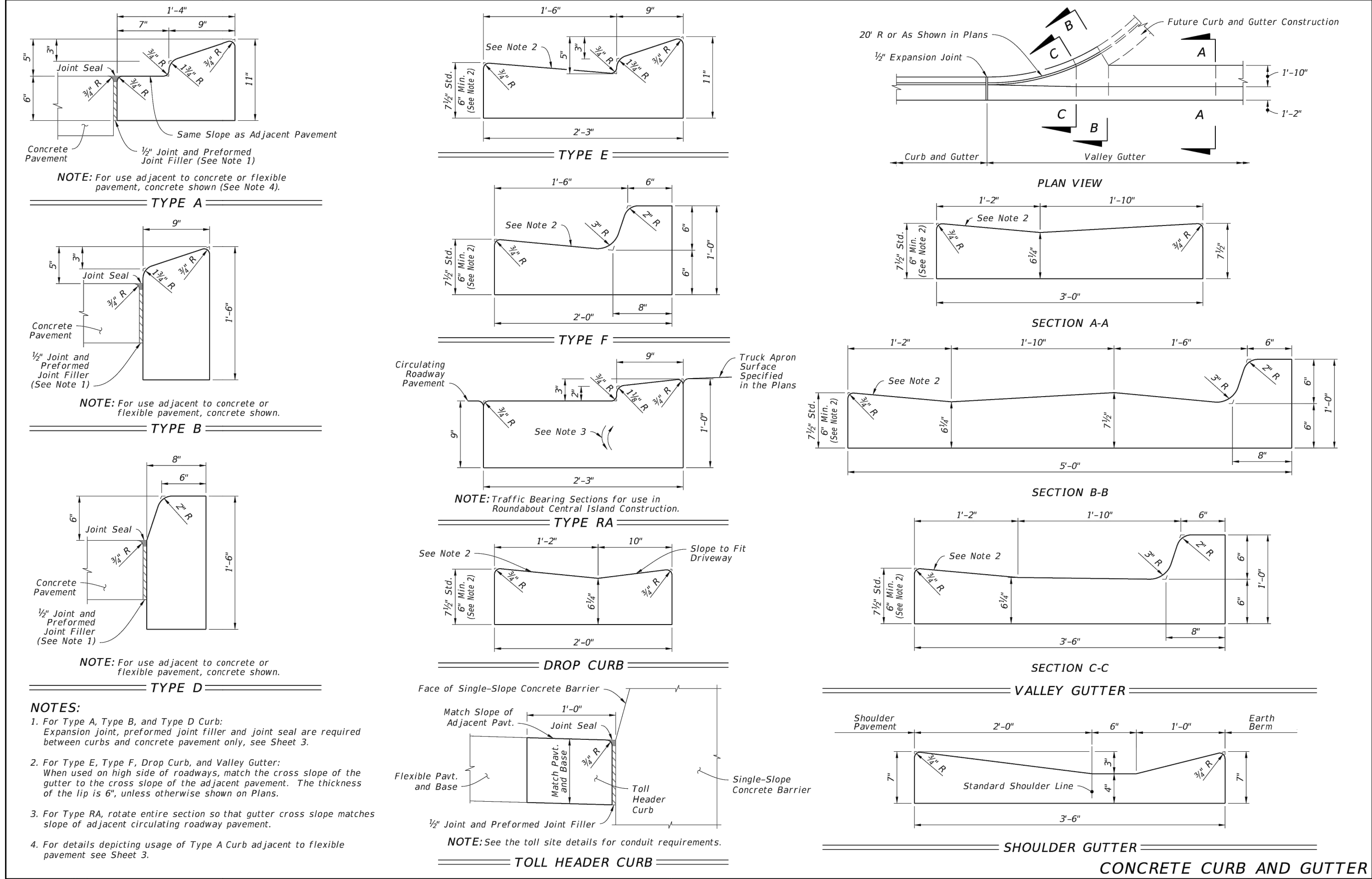
32

GENERAL NOTES:
1. For curb, gutter and curb & gutter provide $\frac{1}{8}$ " - $\frac{1}{4}$ " contraction joints at 10' centers (max.). Contraction joints adjacent to concrete pavement on tangents and flat curves are to match the pavement joints, with intermediate joints not to exceed 10' centers.
2. Locate expansion joints for curb, gutter and curb & gutter in accordance with Specification 520.

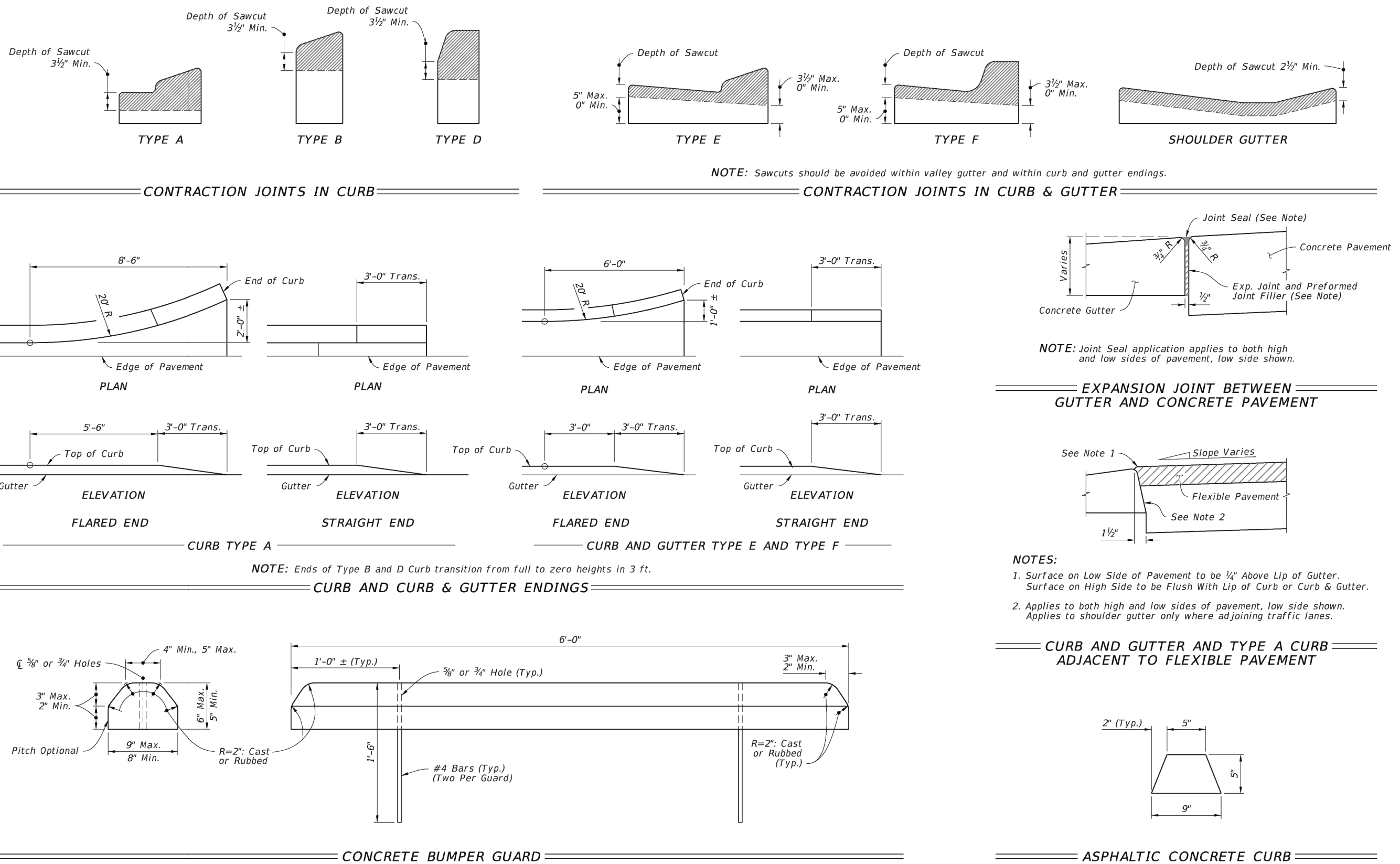
TABLE OF CONTENTS:	
Sheet	Description
1	General Notes and Contents
2	Concrete Curb and Gutter
3	Curb and Gutter Joints and Endings, Concrete Bumper Guard, and Asphaltic Concrete Curb



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11/01/21		STANDARD PLANS	520-001	2 of 3

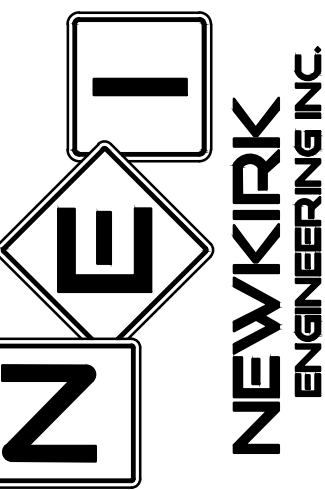


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REVISIONS

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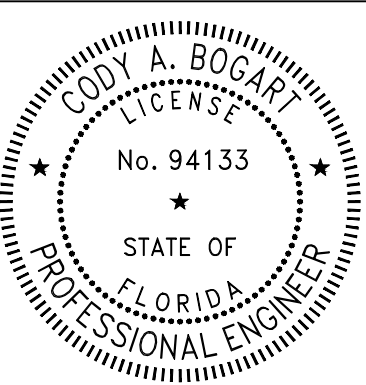
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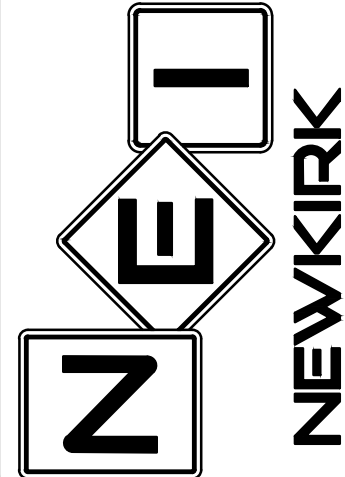
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DATE	DESCRIPTION

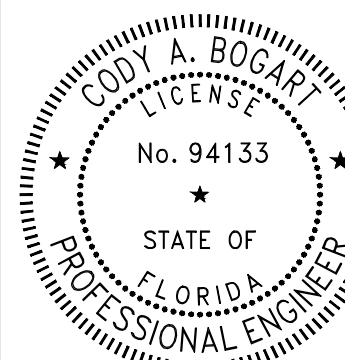
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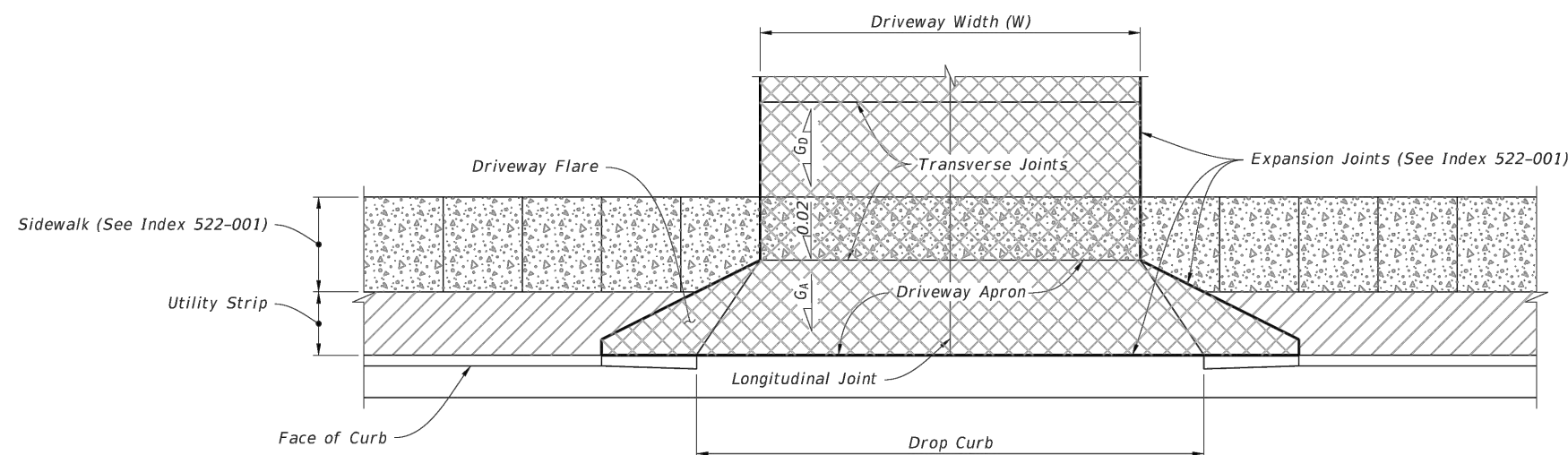
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GENERAL NOTES:

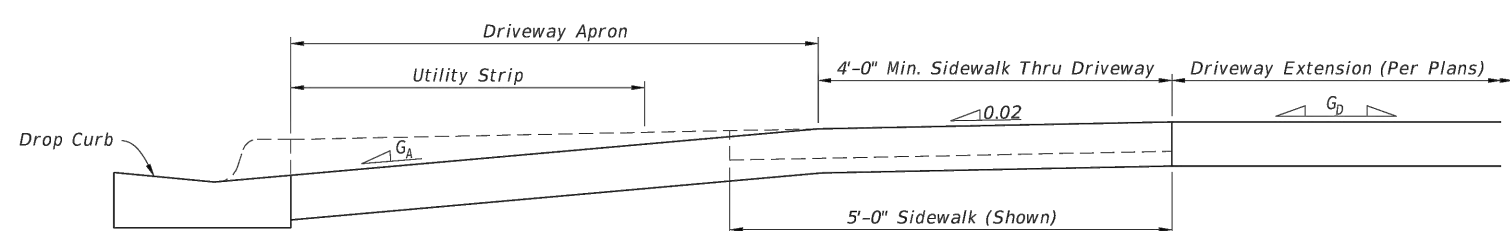
1. Work this Index with Specification 522.
2. Refer to Index 520-001 for drop curb details and Index 522-001 for joints between driveway, sidewalks, and curb.
3. Existing Curb and Gutter:
Remove existing curb and gutter to either the nearest joint beyond the flared point or to where no remaining section is less than 5 feet long.
4. Grades and cross slopes shown are maximums.
5. Longitudinal Joints:
Construct 1/2" open joints placed at equal (20' max.) intervals for driveways over 20' wide. Match joints in curb and gutter to match joints in driveways.
6. Transverse Joints:
Construct 1/2" open joints @ 10' Centers and 1/2" expansion joints with preformed joint filler every 5th joint.
7. Construct driveways (6" thick concrete) to a uniform width (W) to the R/W line or the extent shown in the Plans.
8. Width of Sidewalk Thru Driveway is 4'-0" minimum. Match sidewalk width when shown in Plans or when utility strip width is equal to or greater than the depth of the Driveway Apron.
9. Alpha-Numeric Identification:
Concrete Flared Driveway Alpha-Numeric Identifications (e.g. G4) are provided for reference purposes in the Plans.

LEGEND:

- Sidewalk
- Flared Driveway (6" Thick Concrete)
- Sidewalk Thru Driveway (6" Thick Concrete)
- Utility Strip
- G₁ Grade of Apron
- G₂ Grade of Driveway (Per Plans)



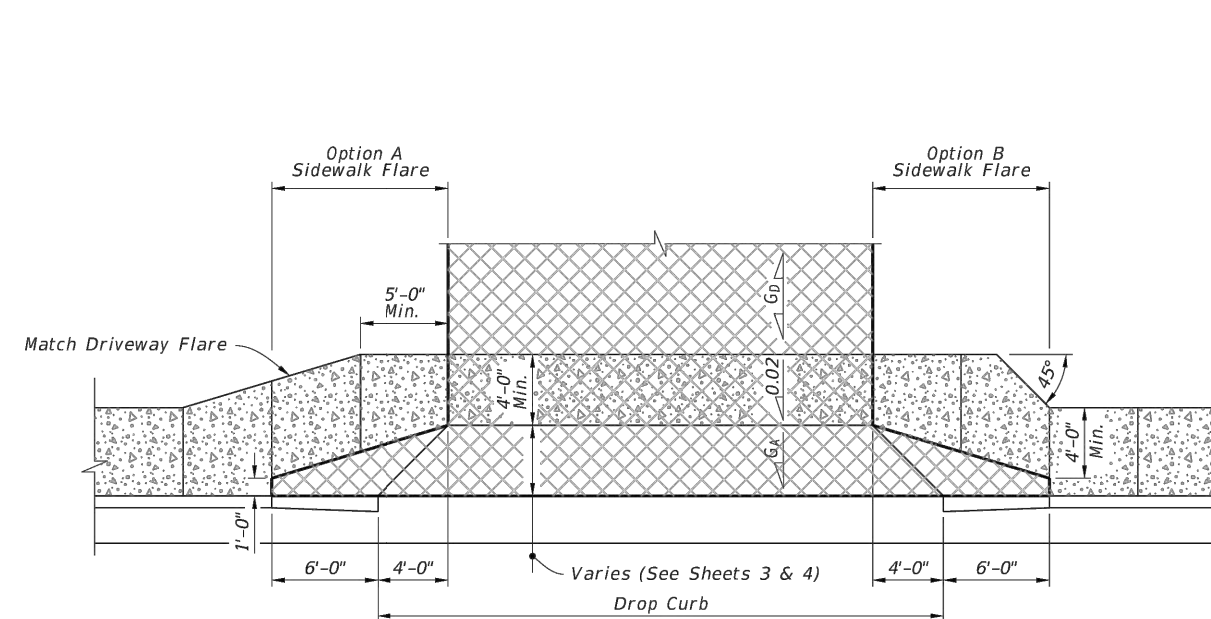
PLAN



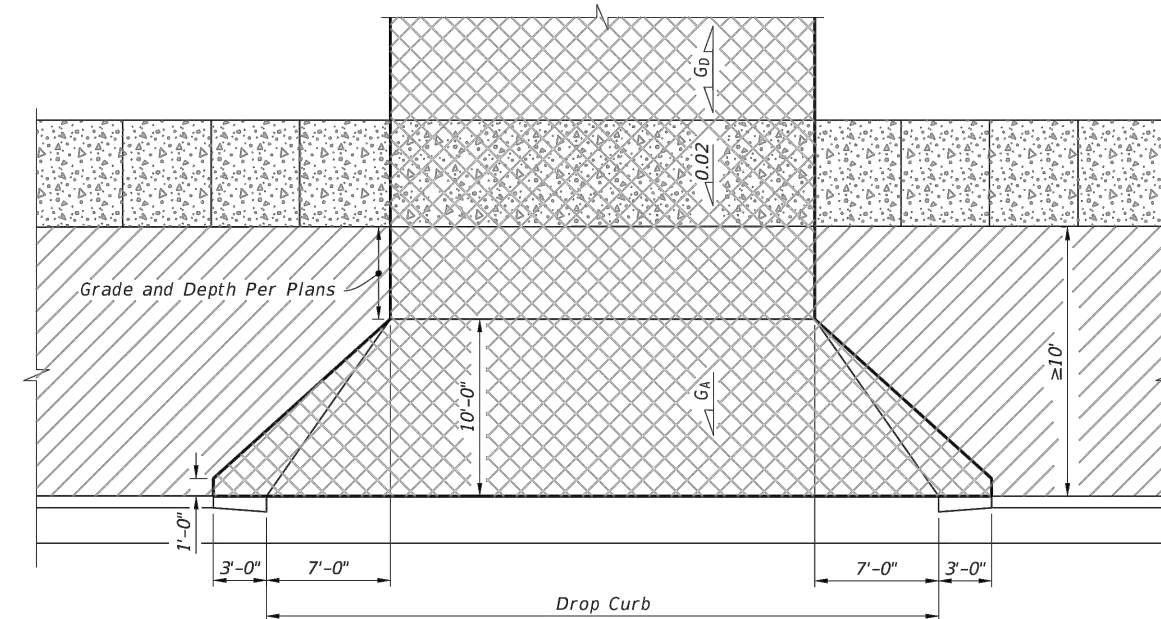
ELEVATION

CONCRETE FLARED DRIVEWAY NOMENCLATURE

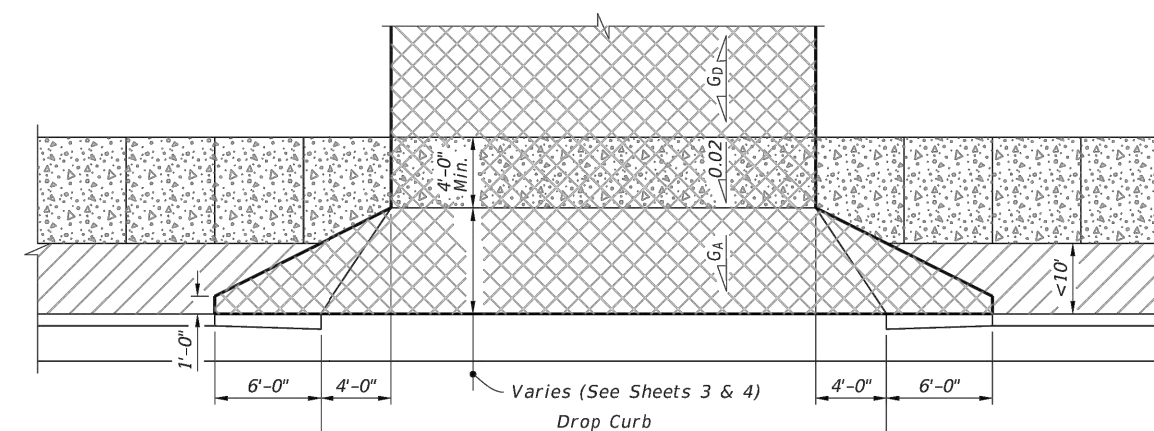
LAST REVISION	DESCRIPTION:	FDOT	FY 2023-24	CONCRETE FLARED DRIVEWAYS	INDEX	SHEET
11/01/18			STANDARD PLANS		522-003	1 of 4



SIDEWALK WITHOUT UTILITY STRIP



WITHOUT SIDEWALK OR UTILITY STRIP ≥ 10' WIDE

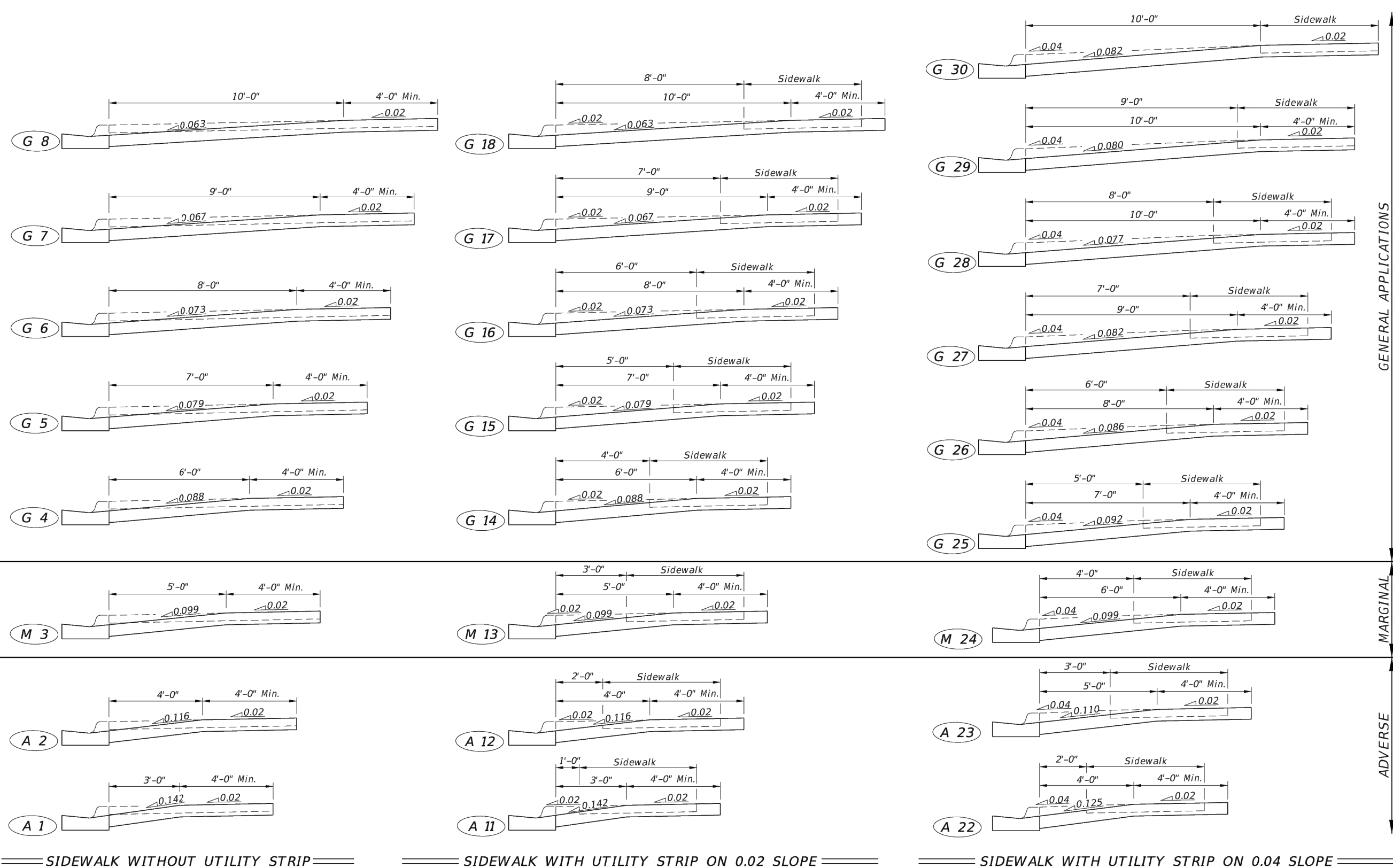


UTILITY STRIP < 10' WIDE

LEGEND:

- Sidewalk
- Flared Driveway (6" Thick Concrete)
- Sidewalk Thru Driveway (6" Thick Concrete)
- Utility Strip

LAST REVISION	DESCRIPTION:	FDOT	FY 2023-24	CONCRETE FLARED DRIVEWAYS	INDEX	SHEET
11/01/18			STANDARD PLANS		522-003	2 of 4



GENERAL APPLICATIONS

MARGINAL

ADVERSE

NOTE:
5' sidewalks shown.

DRIVEWAY SECTIONS ON CURBED FACILITIES WITH SIDEWALKS

LAST REVISION	DESCRIPTION:	FDOT	FY 2023-24	CONCRETE FLARED DRIVEWAYS	INDEX	SHEET
11/01/18			STANDARD PLANS		522-003	3 of 4



GENERAL APPLICATIONS

MARGINAL

NOTE:
5' sidewalks shown.

DRIVEWAY SECTIONS ON CURBED FACILITIES WITH SIDEWALKS

LAST REVISION	DESCRIPTION:	FDOT	FY 2023-24	CONCRETE FLARED DRIVEWAYS	INDEX	SHEET
11/01/18			STANDARD PLANS		522-003	4 of 4

8/22/2021 2:46:08 PM

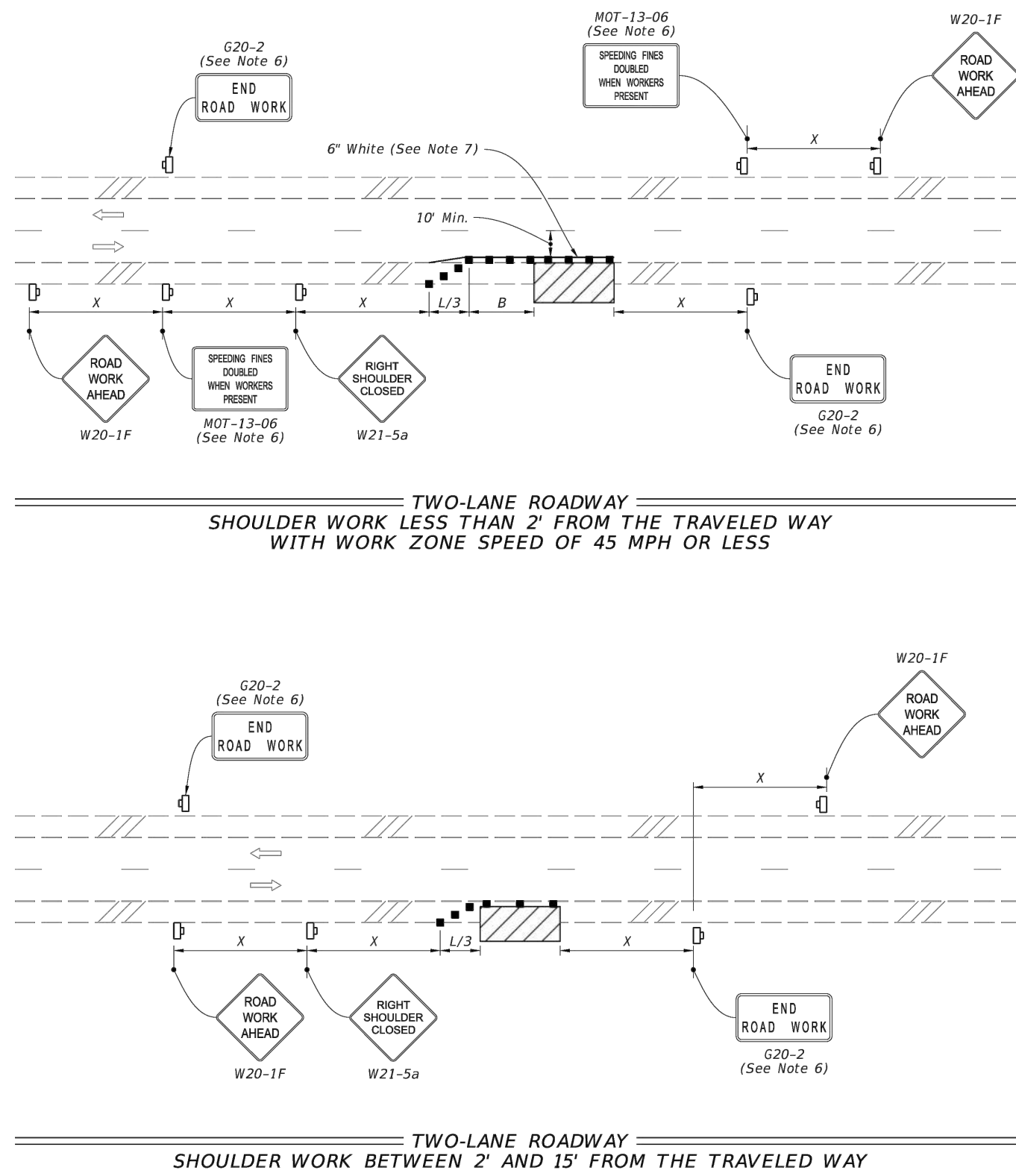
7/13/2022 7:58:37 AM

NOTE:

1. This Index applies to Two-Lane, Two-Way and Multilane Roadways, including Medians of divided roadways, with work on the shoulder.
2. L = Taper Length
 X = Work Zone Sign Spacing
 B = Buffer Length
See Index 102-600 for "L", "X", "B", and channelizing device spacing values.
3. Where work activities are between 2' and 15' from the edge of traveled way, the Engineer may omit signs and channelizing devices for work operations 60 minutes or less.
4. When four or more work vehicles enter the through traffic lanes in a one hour period (excluding establishing and terminating the work area), use a flagger or lane closure to accommodate work vehicle ingress and egress.
5. For work less than 2' from the traveled way and work zone speed is greater than 45 MPH, use a lane closure.
6. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" Signs (G20-2) along with the associated work zone sign spacing distances may be omitted when the work operation is in place for 24 hours or less.
7. Temporary pavement markings may be omitted when the work operation is in place for 3 days or less.
8. Omit "Shoulder Closed" signs (W21-5a) along with associated work zone sign spacing distances for work on the median.
9. When there is no paved shoulder, the "Worker" sign (W21-1) may be used instead of the "Shoulder Closed" sign (W21-5a).

SYMBOLS:

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



LAST REVISION	DESCRIPTION:	FY 2022-23 STANDARD PLANS	TWO-LANE AND MULTILANE, WORK ON SHOULDER	INDEX	SHEET
11/01/21				102-602	1 of 2

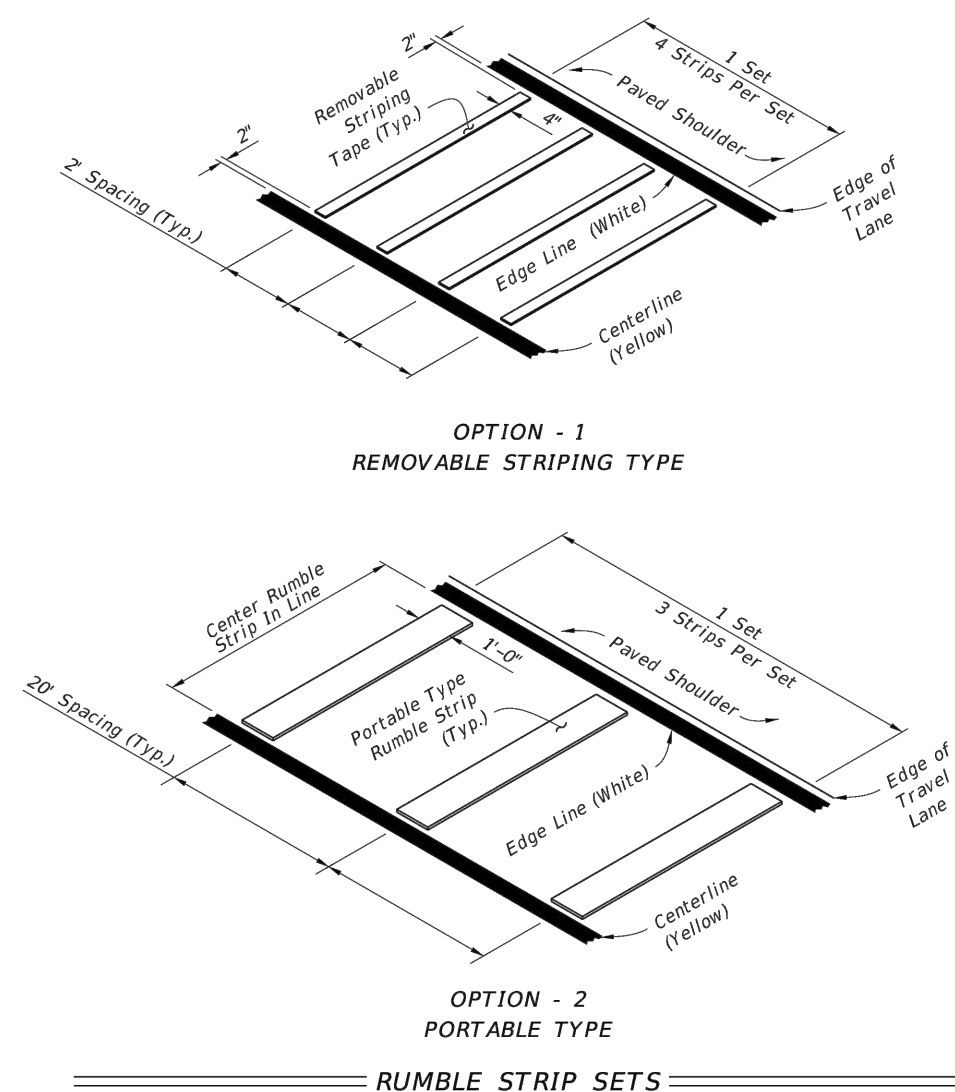
NOTES:

1. This Index applies to Two-Lane, Two-Way Roadways with work within the traveled way.
2. L = Taper Length
 B = Buffer Length
 X = Work Zone Sign Spacing
See Index 102-600 for "L", "B", "X" and channelizing device spacing values.
3. Optionally, use "Flagger Ahead" sign with symbol (W20-7) instead of "Flagger Ahead" sign with text (W20-7A).
4. Use temporary raised rumble strips when the existing posted speed is 55 mph or greater and the work duration is greater than 60 minutes. If temporary raised rumble strips are not used, omit "Rumble Strips Ahead" signs (MOT-18-10) and associated work zone sign spacing.
5. Additional one-way control may be provided by the following means:
 - a. Flag-carrying vehicle
 - b. Official vehicle
 - c. Pilot vehicles
 - d. Traffic signals
6. The "Speeding Fines Doubled When Workers Present" signs (MOT-13-06) and "End Road Work" signs (G20-2), along with associated work zone sign spacing, may be omitted when the work operation will be in place for 24 hours or less.
7. Automated Flagger Assistance Devices (AFADs) may be used in accordance with Specification Sections 102, 990 and the APL vendor drawings.
8. Railroad Crossings:
 - a. If an active railroad crossing is located closer to the Work Area than the queue length plus 300 feet, extend the Buffer Space as shown on Sheet 2.
 - b. If the queuing of vehicles across an active railroad crossing cannot be avoided, provide a uniformed traffic control officer or flagger at the highway-rail grade crossing to prevent vehicles from stopping within the highway-rail grade crossing, even if automatic train warning devices are in place.

SYMBOLS:

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

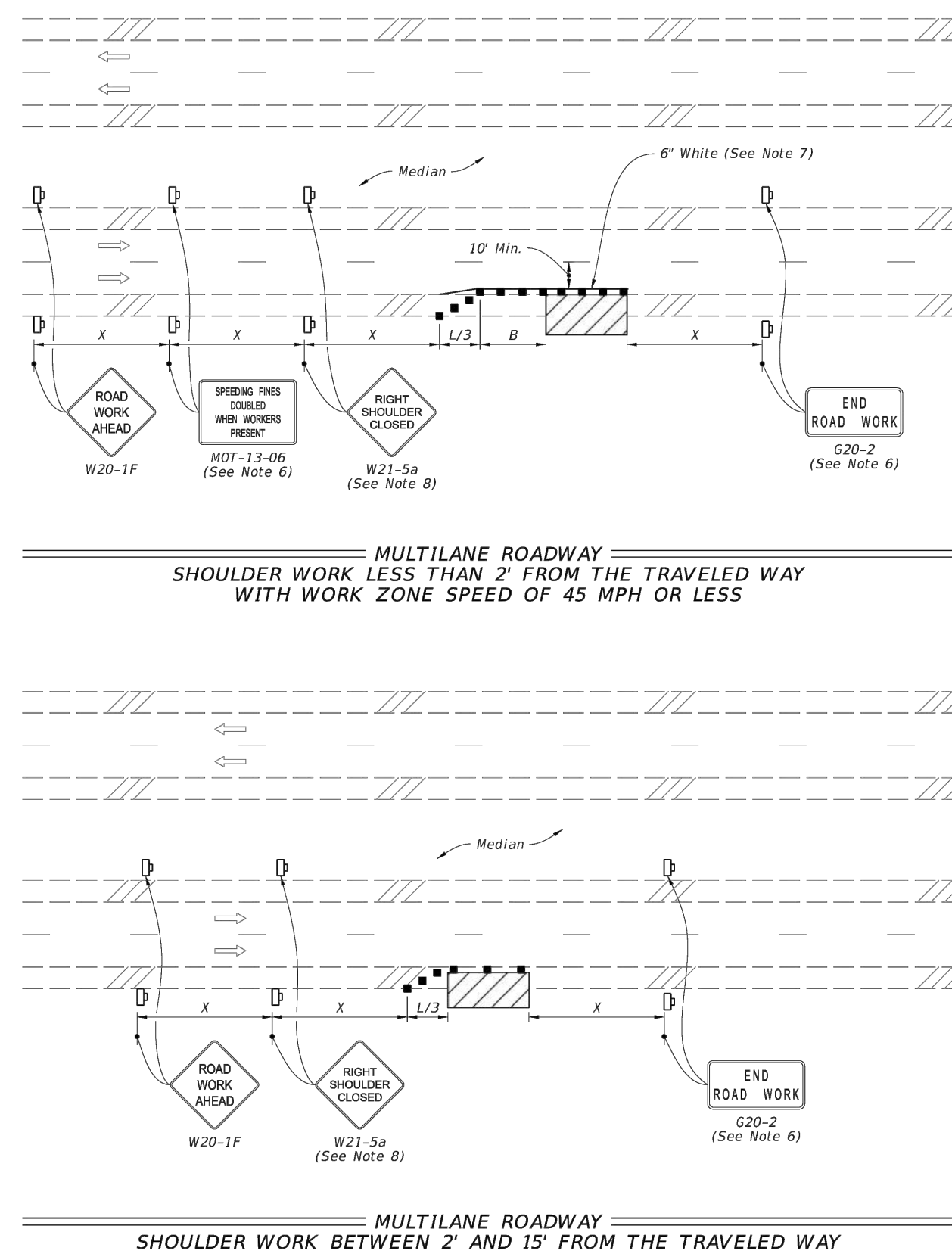
When flaggers are the sole means of one-way control, the flaggers must be in sight of each other or in direct communication at all times.



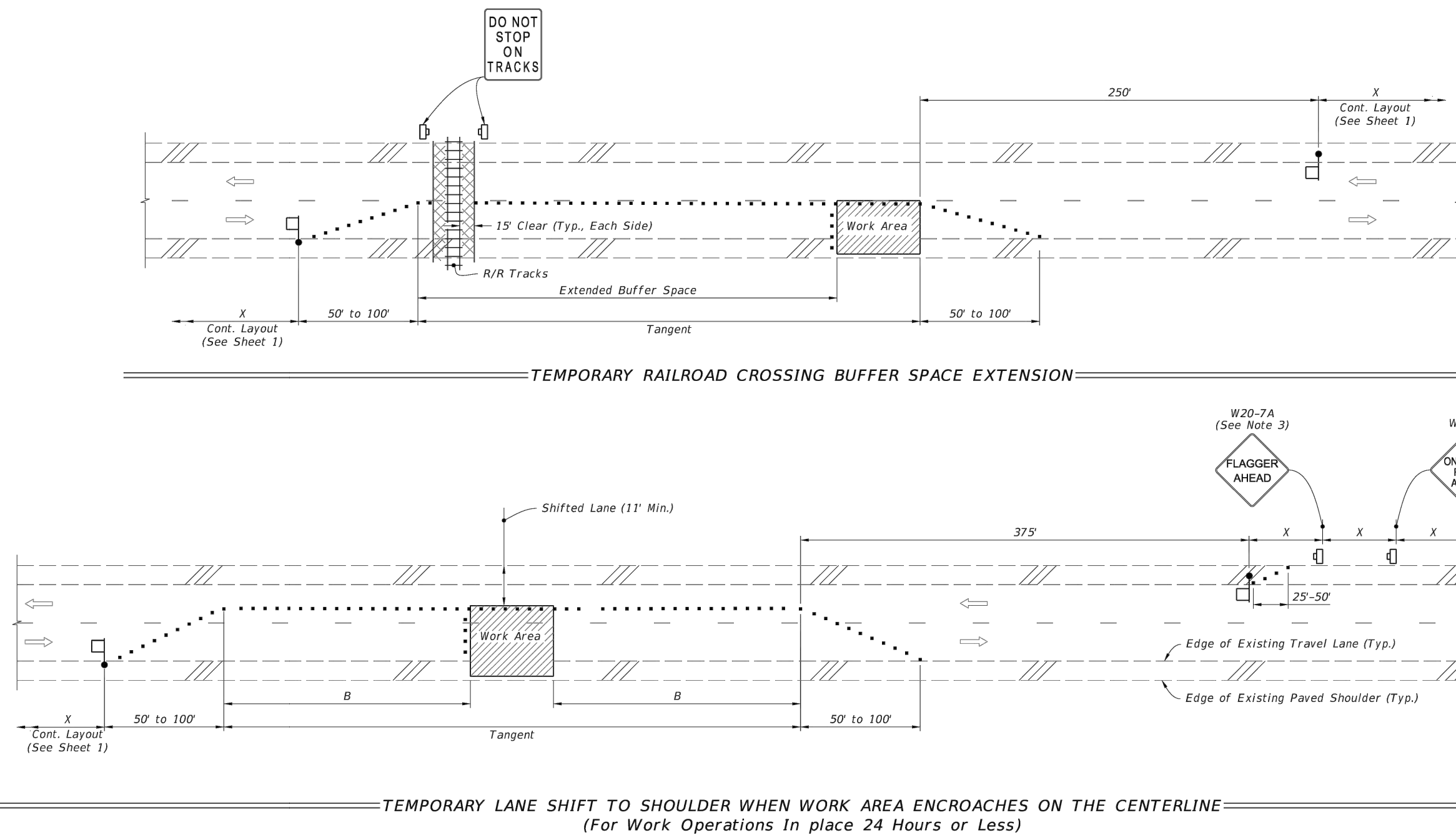
LAST REVISION	DESCRIPTION:	FY 2022-23 STANDARD PLANS	TWO-LANE, TWO-WAY WORK WITHIN THE TRAVEL WAY	INDEX	SHEET
11/01/21				102-603	1 of 2

SYMBOLS:

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



LAST REVISION	DESCRIPTION:	FY 2022-23 STANDARD PLANS	TWO-LANE AND MULTILANE, WORK ON SHOULDER	INDEX	SHEET
11/01/21				102-602	2 of 2



SYMBOLS:

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

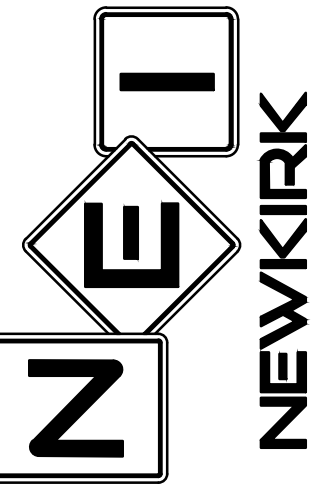
SPECIAL CONDITIONS

LAST REVISION	DESCRIPTION:	FY 2022-23 STANDARD PLANS	TWO-LANE, TWO-WAY WORK WITHIN THE TRAVEL WAY	INDEX	SHEET
11/01/21				102-603	2 of 2

REVISIONS

DATE	DESCRIPTION

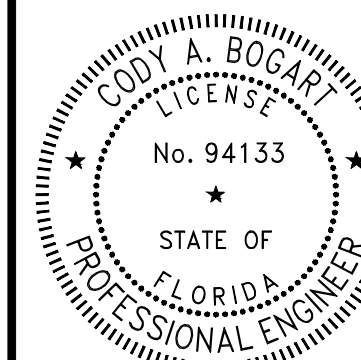
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MAINTENANCE OF TRAFFIC
HARBOR LANDINGS
5653 RIDGEWOOD AVENUE
PORT ORANGE, FL 32127

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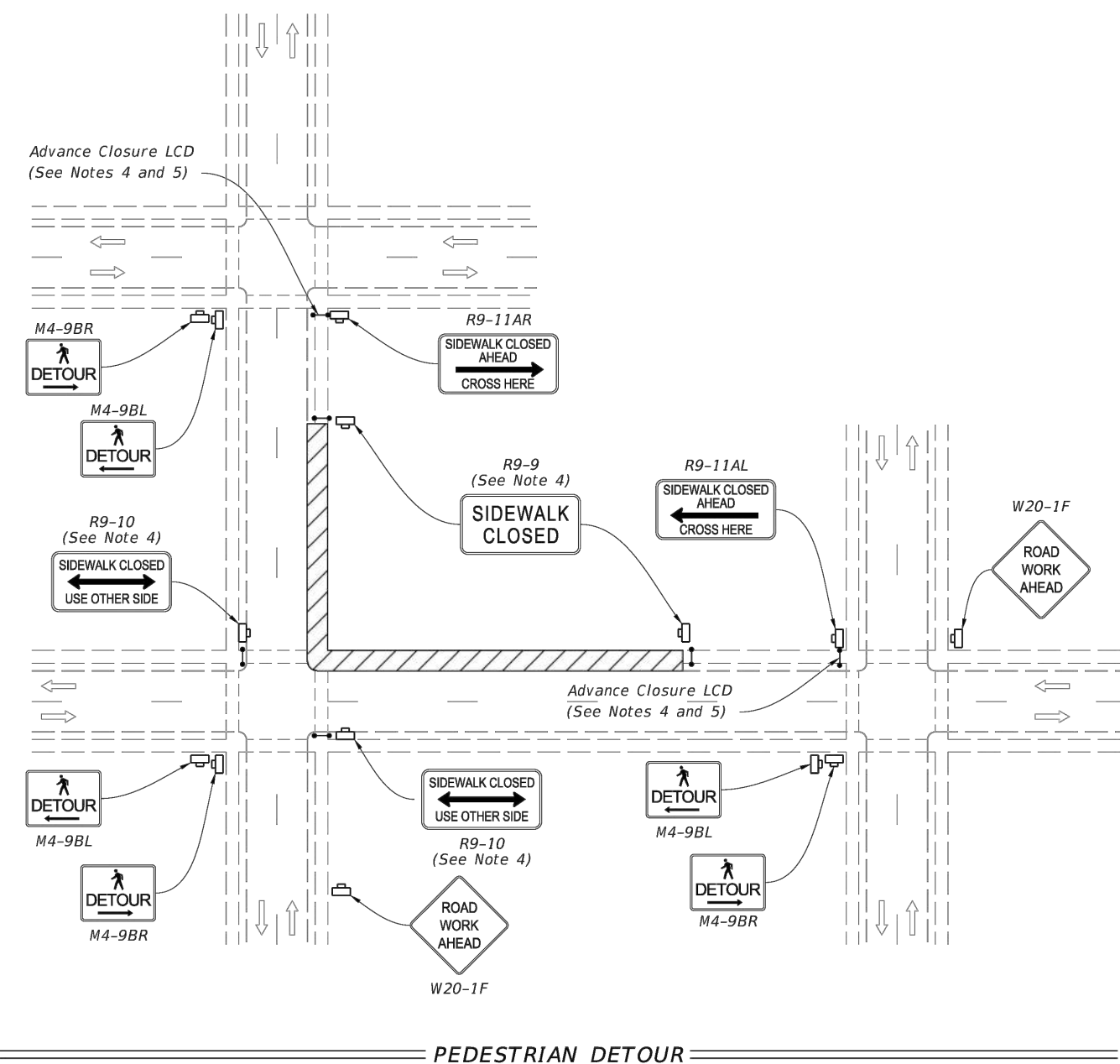
PROJECT No: 2022-199
DATE: JANUARY 2023
DESIGN BY: CAB
DRAWN BY: CRA
CHECKED BY: HHN
SCALE:
DRAWING NUMBER

35

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

SYMBOLS:

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



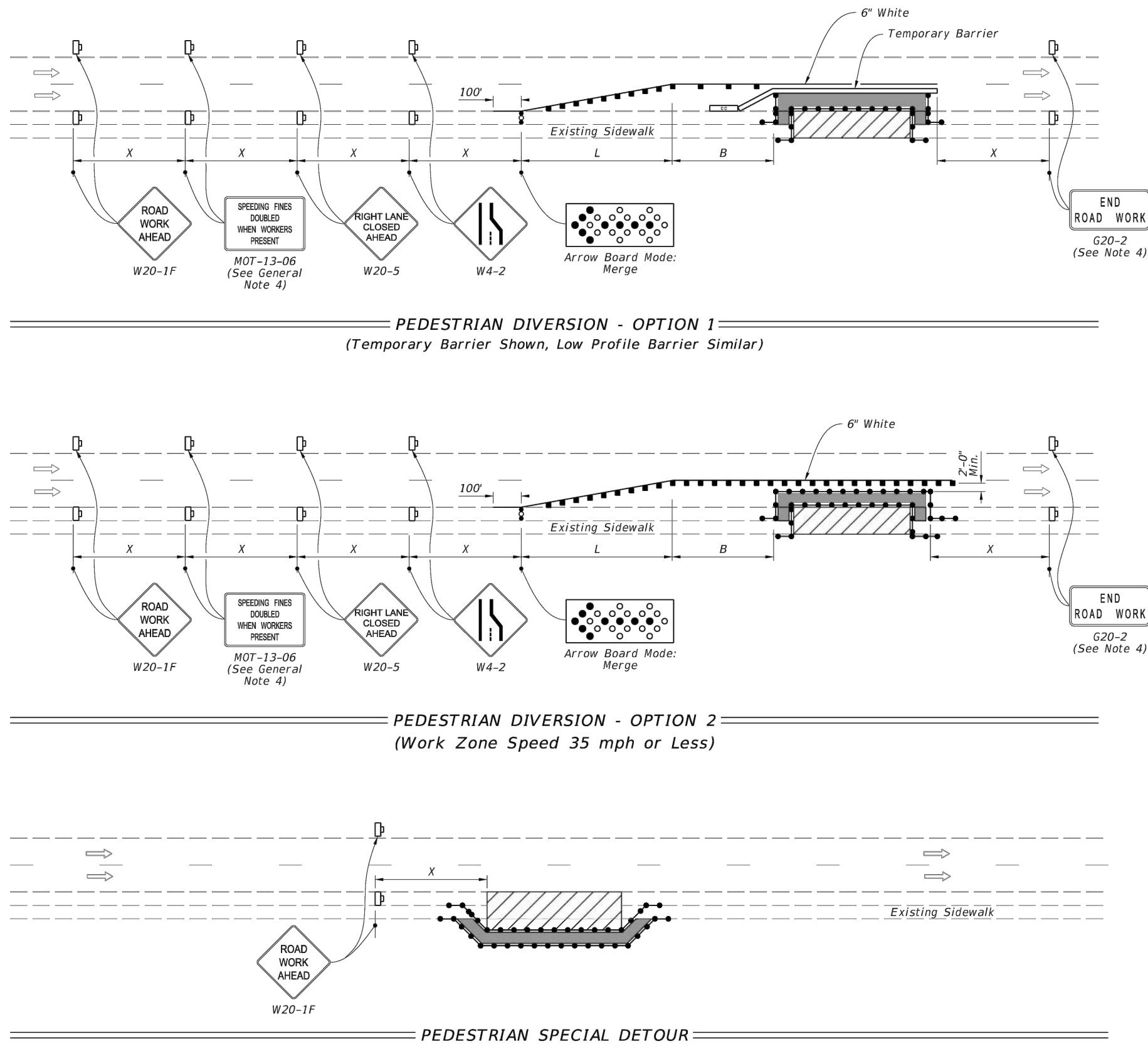
9/21/2021 12:26:54 PM

LAST REVISION	DESCRIPTION:	FDOT	FY 2022-23 STANDARD PLANS	INDEX	SHEET
11/01/20				102-660	1 of 2

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

SYMBOLS:

- Work Area
- Temporary Pedestrian Way
- Channelizing Device (See Index 102-600)
- Pedestrian Longitudinal Channelizing Device (LCD)
- Work Zone Sign
- Arrow Board
- Crash Cushion
- Lane Identification and Direction of Traffic



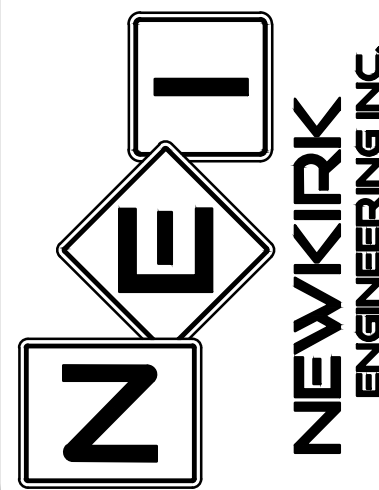
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LAST REVISION	DESCRIPTION:	FDOT	FY 2022-23 STANDARD PLANS	INDEX	SHEET
11/01/21				102-660	2 of 2

REVISIONS

DATE	DESCRIPTION

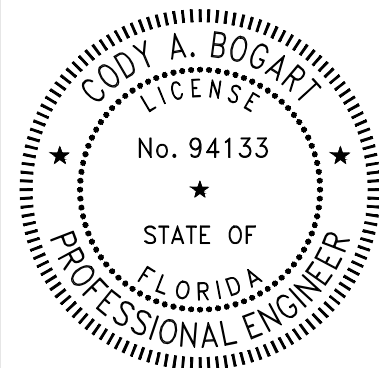
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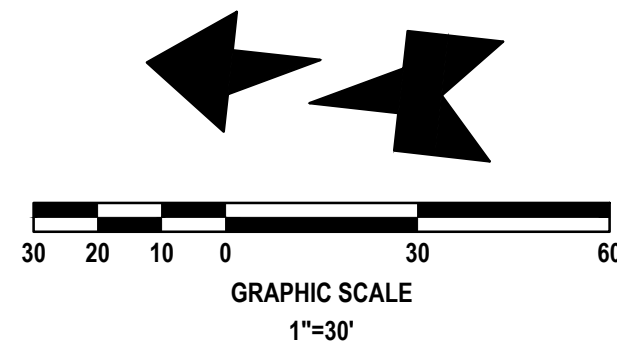


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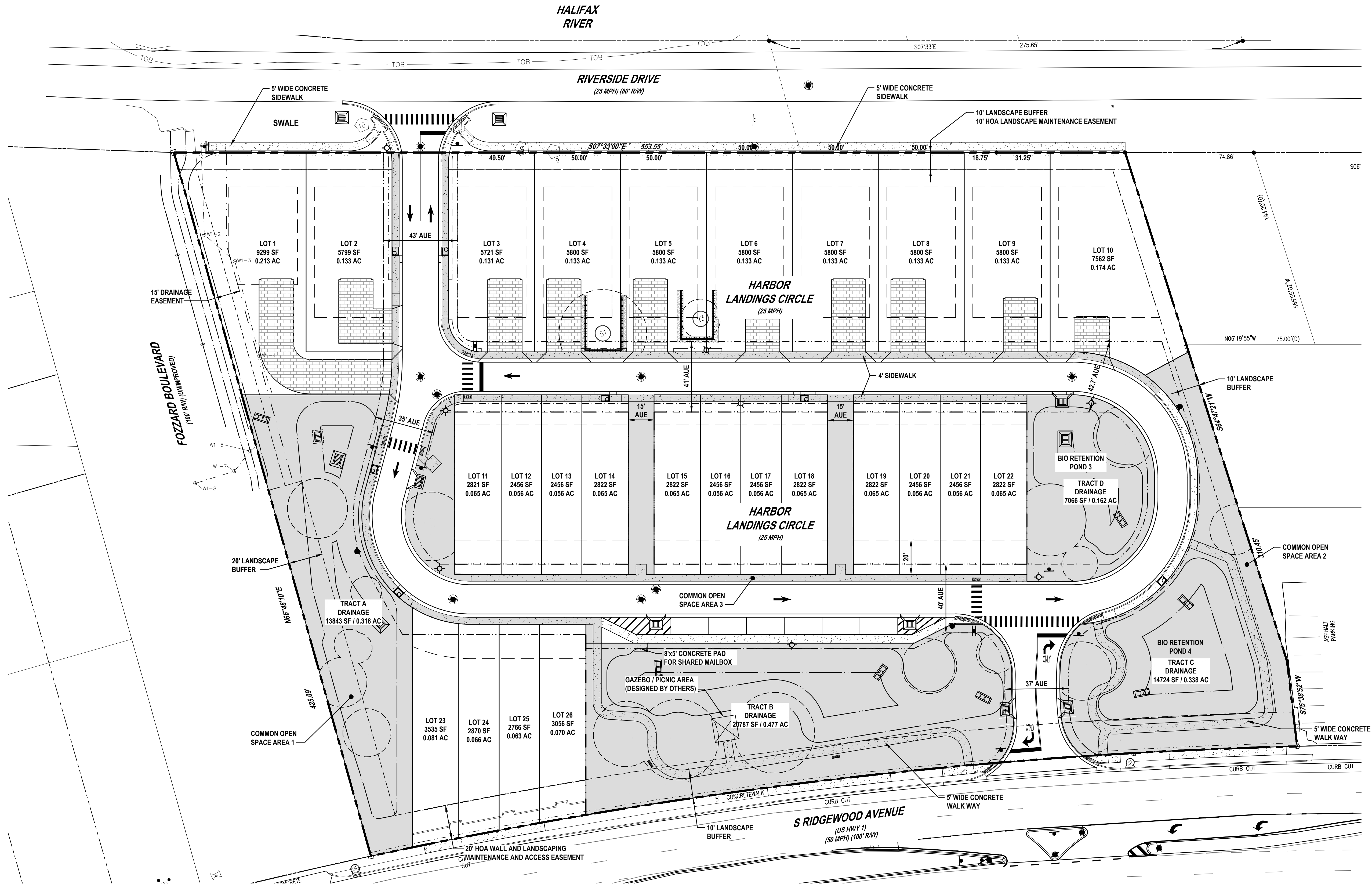


LEGEND

COMMON OPEN SPACE
(68,032 SF / 1.562 ACRES)
68,032 SF / 206,482 SF X 100% = 33.0%

COMMON OPEN SPACE AREAS

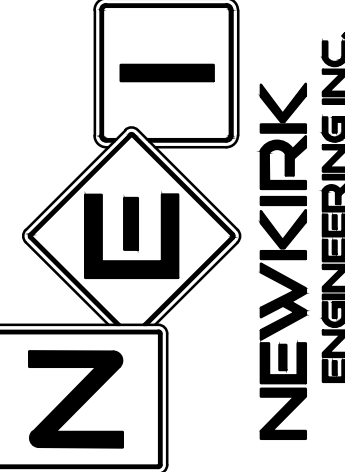
AREA #	AREA (SF)	AREA (AC)
1	36,269	0.833
2	16,837	0.387
3	14,925	0.343
TOTALS	68,032	1.562



REVISIONS

DATE	DESCRIPTION
5/5/23	CITY COMMENTS
10/23/23	CITY COMMENTS

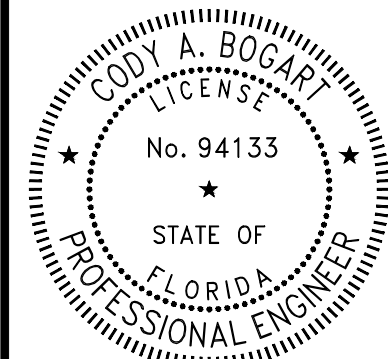
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COMMON OPEN SPACE EXHIBIT
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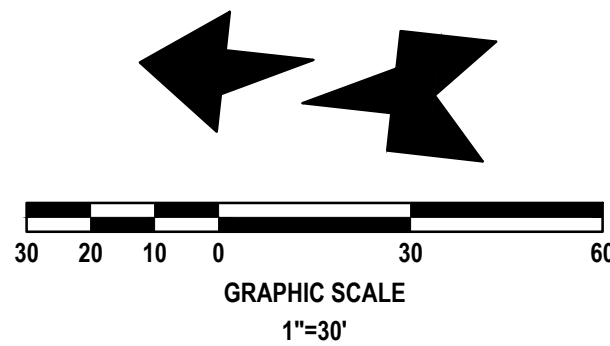


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CHECKED BY: HHN
SCALE: 1"=30'

DRAWING NUMBER

37



TREE PRESERVATION SUMMARY CHART

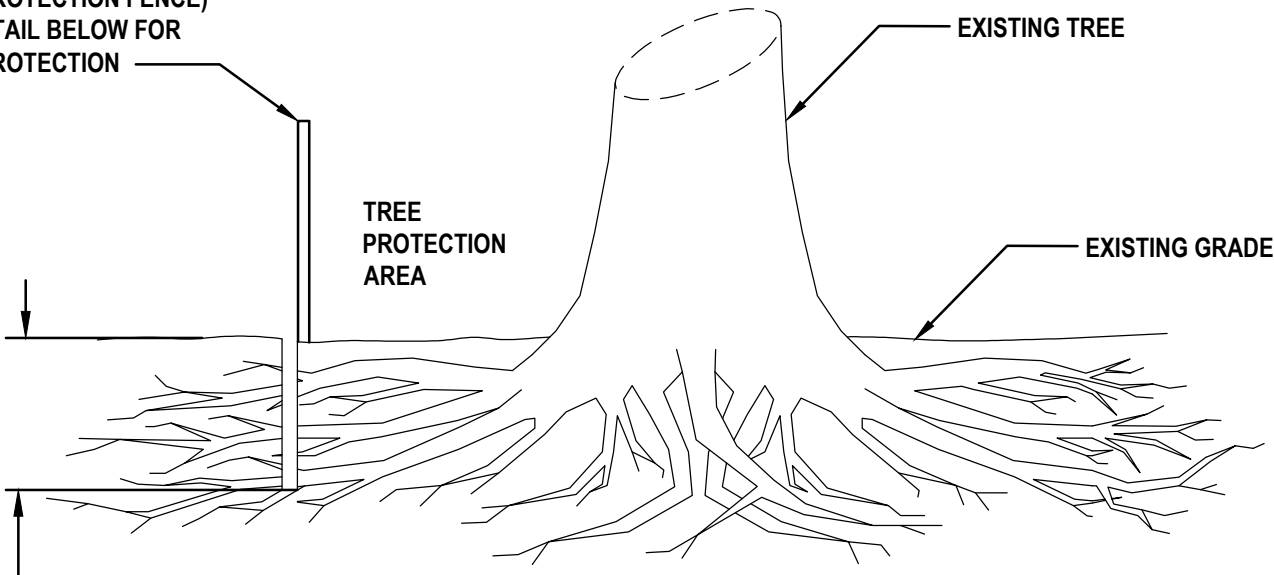
TREE PRESERVATION AREA REQUIRED (15%) = 206,482 SF x 0.15 = 30,972
TREE PRESERVATION AREA PROVIDED

TREE AREA	SF	AC	%
1	11,980	0.28	5.80%
2	254	0.01	0.12%
3	993	0.02	0.48%
4	3,443	0.08	1.67%
5	1,772	0.04	0.86%
6	804	0.02	0.39%
7	335	0.01	0.16%
8	895	0.02	0.43%
9	1,451	0.03	0.70%
10	3,845	0.09	1.86%
11	806	0.02	0.39%
12	1,558	0.04	0.75%
13	428	0.01	0.21%
14	1,554	0.04	0.75%
15	1,183	0.03	0.57%
TOTAL TREE AREA	31,302	0.72	15.2%
TOTAL SITE AREA	206,482	4.74	100%

LEGEND

- TREE PRESERVATION AREA
- PROJECT AREA BOUNDARY
(206,482 SF / 4.74 AC)

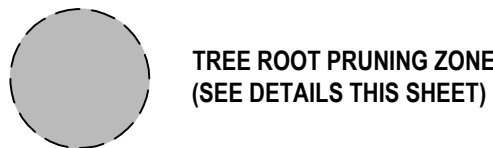
TREE PROTECTION FENCE
(ROOT PRUNING MUST
NOT EXTEND BEYOND THE
TREE PROTECTION FENCE)
SEE DETAIL BELOW FOR
TREE PROTECTION



1. INSTALL ALL TREE PROTECTION BARRIERS PRIOR TO CONSTRUCTION. LOCATION OF ALL TREE PROTECTION MUST BE APPROVED BY ISA CERTIFIED ARBORIST AND CITY OF NEW SMYRNA BEACH PRIOR TO CONSTRUCTION.
2. ROOT PRUNING METHODS AND MEANS MUST BE IN ACCORDANCE WITH ANSI A300.
3. ROOT PRUNING SHALL BE CONDUCTED WITH THE SUPERVISION OF AN ISA CERTIFIED ARBORIST.
4. ALL ROOT PRUNING MUST BE MADE CLEANLY WITH A SHARP ROOT PRUNING TOOL (SUCH AS A DOSKO OR VERMEER ROOT MECHANICAL ROOT PRUNER EQUIPMENT).
5. ROOTS OVER 1.5" DIAMETER SHALL HAVE A CLEAN CUT MADE BY A CLEAN SAW ON THE SURFACE OF THE ROOT, WHICH IS STILL ATTACHED TO THE TREE. DO NOT PAINT THE CUT ROOT END. IF EXCAVATION IS FOR INSTALLATION OF UNDERGROUND UTILITIES AND DRAINAGE AND ROOTS ARE BROKEN OR CHOPPED; THEN ALL ROOTS SHALL BE CLEANED SAW AT CHOPPED OR BROKEN POINT.

ROOT PRUNING DETAIL
NOT TO SCALE

ROOT PRUNING LEGEND



NOTE:
ALL ROOTS THAT ARE BROKEN OR CHOPPED DURING EXCAVATION FOR WATER MAIN & SERVICES, DRAINAGE PIPE & STRUCTURES, SEWER MAIN & MANHOLES, FORCE MAIN AND RECLAIM MAIN & SERVICES WITHIN TREE CONSERVATION EASEMENT SHALL BE SAW CUT CLEANLY WITH A SHARP SAW (DO NOT PAINT CUT ROOT END).



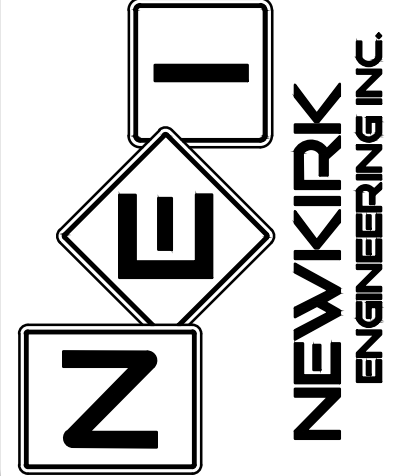
CONTRACTOR TO USE DOSKO OR VERMEER MECHANICAL ROOT PRUNER EQUIPMENT WHEN WITHIN CRITICAL ROOT ZONE OR TREE PROTECTION AREA FOR INSTALLATION OF 4" CONDUITS FOR ELECTRICAL, CABLE, TELECOMMUNICATIONS AND IRRIGATION SERVICES

MECHANICAL ROOT PRUNER EQUIPMENT DETAIL
NOT TO SCALE

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DATE	DESCRIPTION
5/5/23	CITY COMMENTS
10/23/23	CITY COMMENTS

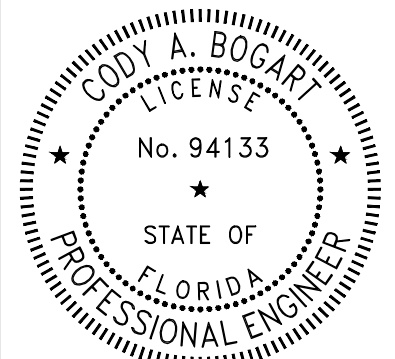
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**TREE PRESERVATION PLAN
HARBOR LANDINGS**
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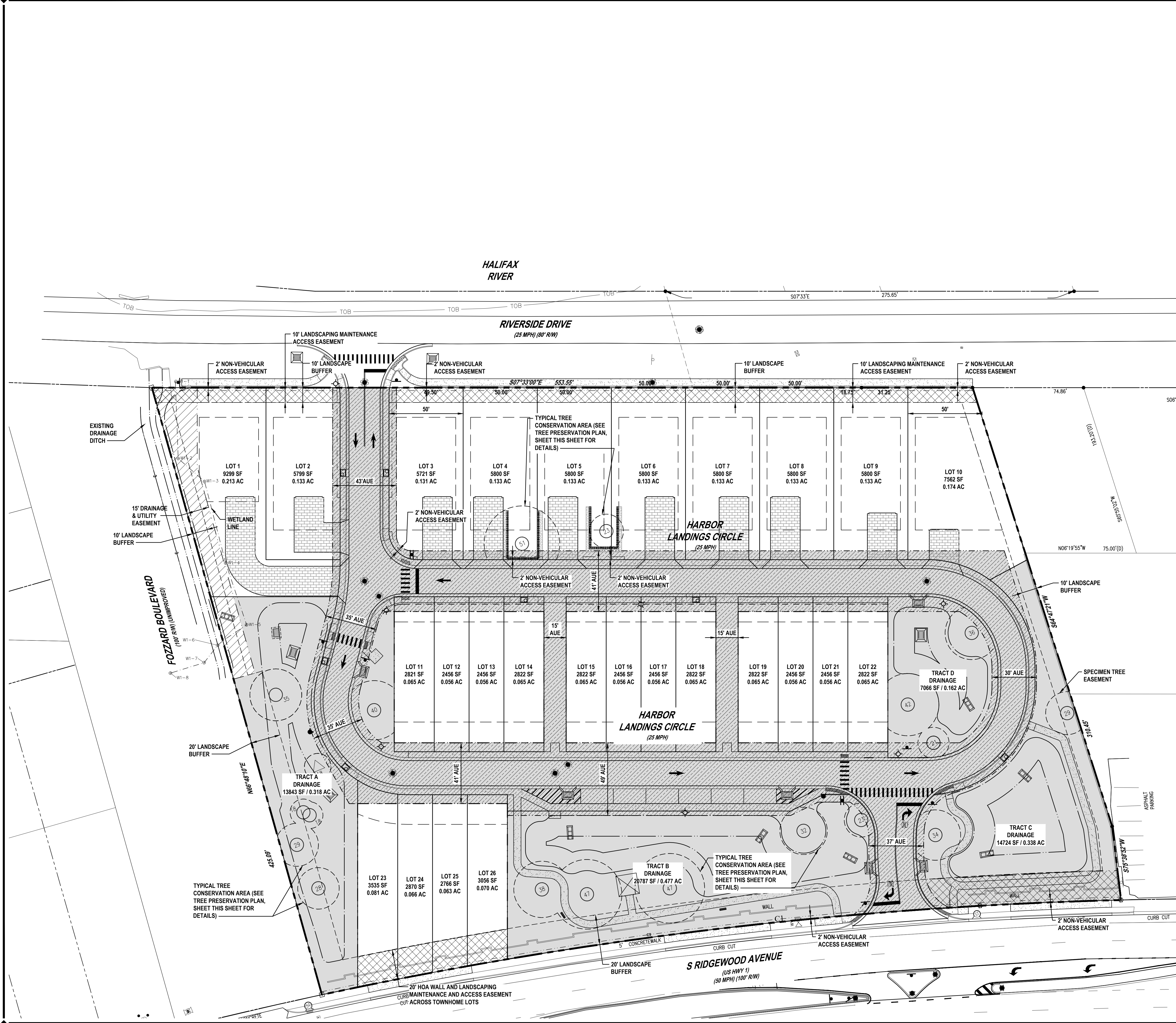
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CHECKED BY: HHN
SCALE: 1"=30'
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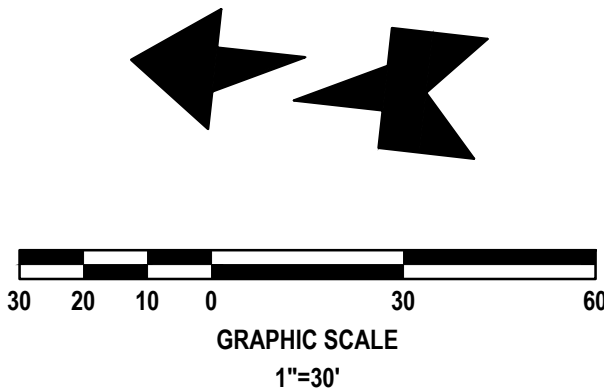
38



EASEMENT LEGEND :

- SPECIMEN TREE WITH REQUIRED EASEMENT (1" DIA FOR 1" CAL) ONLY SHOWN FOR TREES TO REMAIN
- DE - CITY DRAINAGE EASEMENT
- DUE - CITY DRAINAGE & UTILITY EASEMENT
- AUE - ACCESS AND UTILITY EASEMENT (FRANCHISE UTILITY AND CITY)
- HOA ACCESS AND MAINTENANCE EASEMENT (FOR LANDSCAPING AND WALLS)
- LANDSCAPE BUFFER
- BUILDING SETBACK
- (NVA) 2' NON-VEHICULAR ACCESS EASEMENT

*ON-SITE ROADS TO BE PRIVATELY OWNED AND MAINTAINED BY HOA. CITY SHALL OWN AND MAINTAIN UTILITIES UP TO THE INDIVIDUAL METERS.

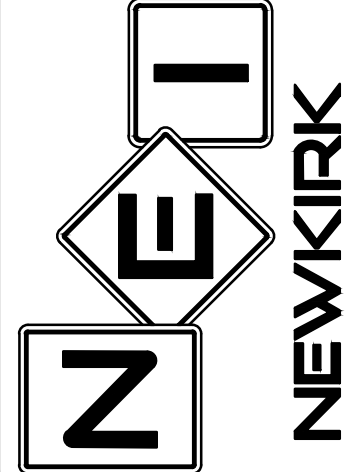


WARNING !!
CONTRACTOR SHALL TAKE ALL PRECAUTIONS DURING CONSTRUCTION TO AVOID CONTACT WITH EXISTING UNDERGROUND UTILITIES AND OVERHEAD ELECTRIC IN THE RIGHT-OF-WAY.

REVISIONS

DATE	DESCRIPTION
5/5/23	CITY COMMENTS
10/23/23	CITY COMMENTS

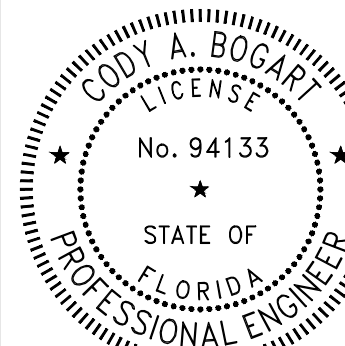
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EASEMENT PLAN
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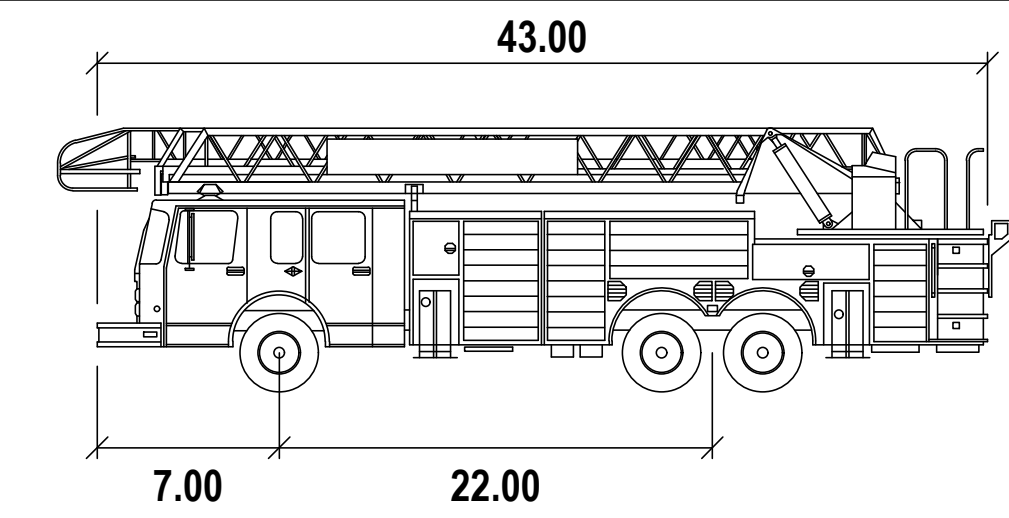
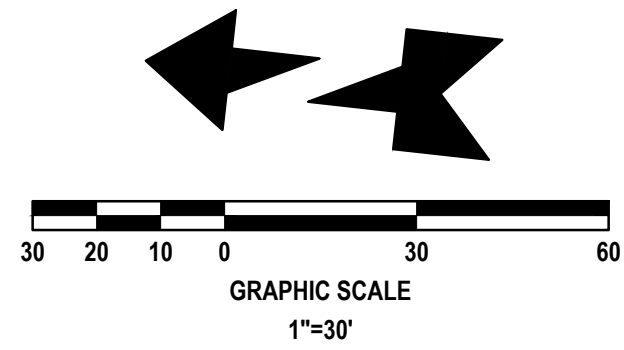
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39



Aerial Fire Truck

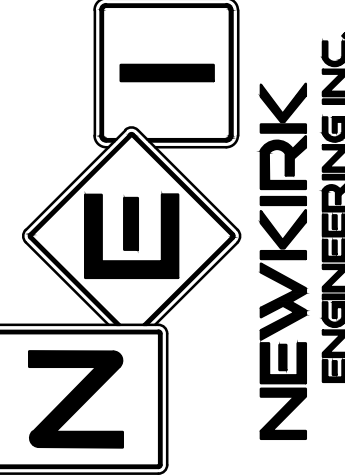
Width
Track
Lock to Lock Time
Steering Angle

feet
: 8.50
: 8.50
: 6.0
: 33.3

REVISIONS

DATE	DESCRIPTION
5/5/23	CITY COMMENTS
10/23/23	CITY COMMENTS

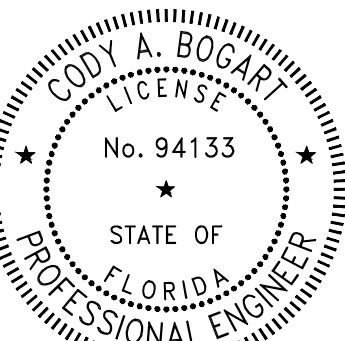
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AUTOTURN PLAN
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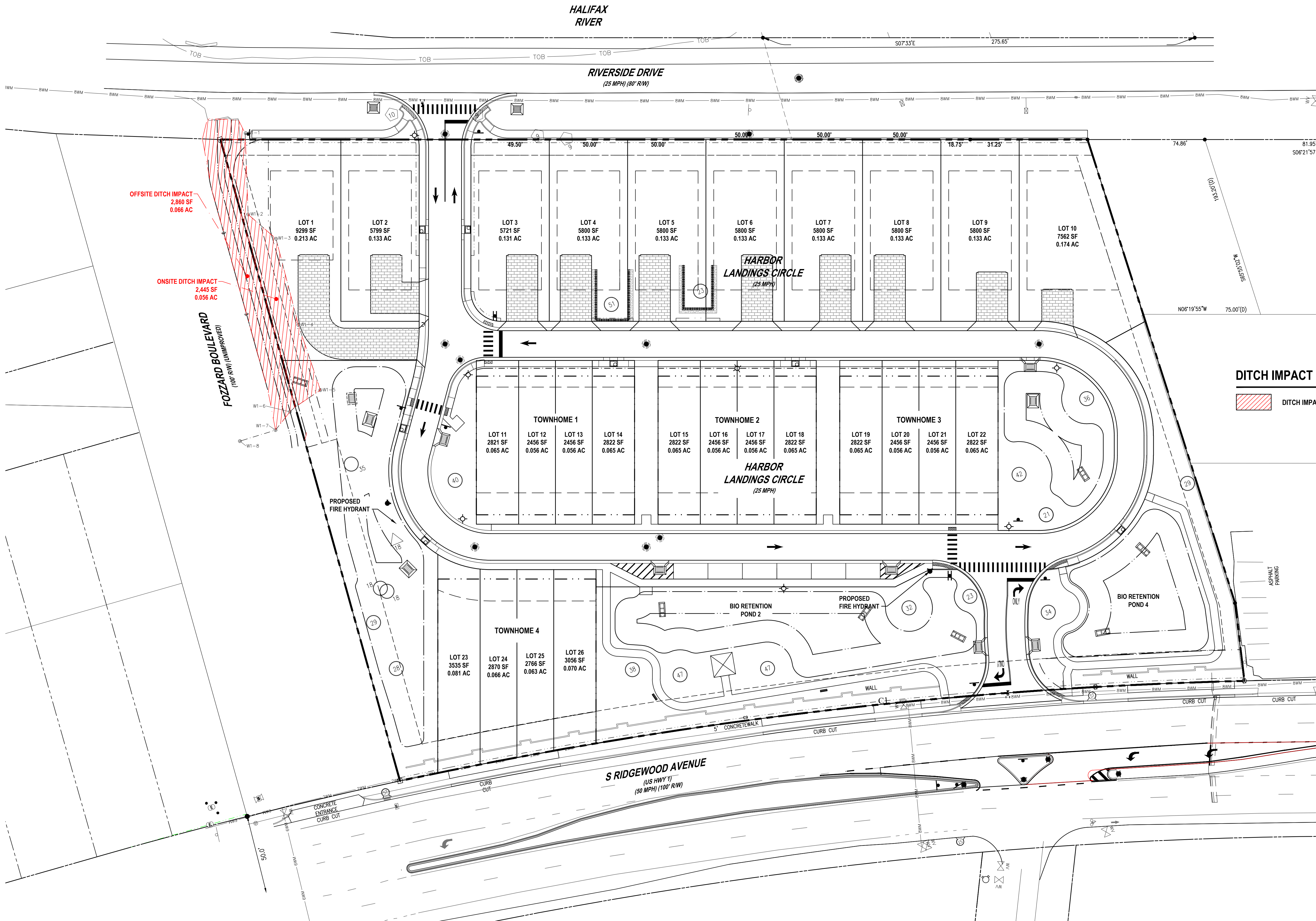
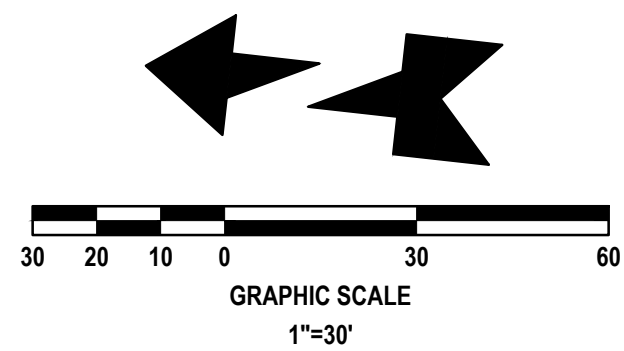


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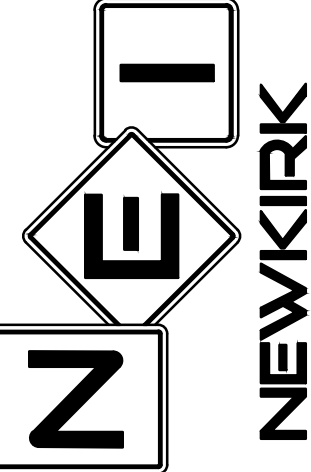
40



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DATE	DESCRIPTION
5/5/23	CITY COMMENTS
10/23/23	CITY COMMENTS

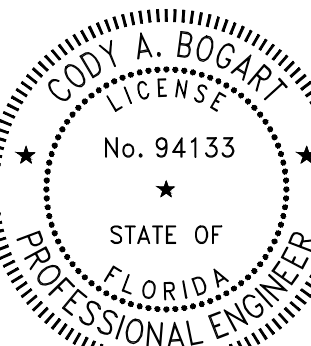
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WETLAND IMPACT PLAN HARBOR LANDINGS

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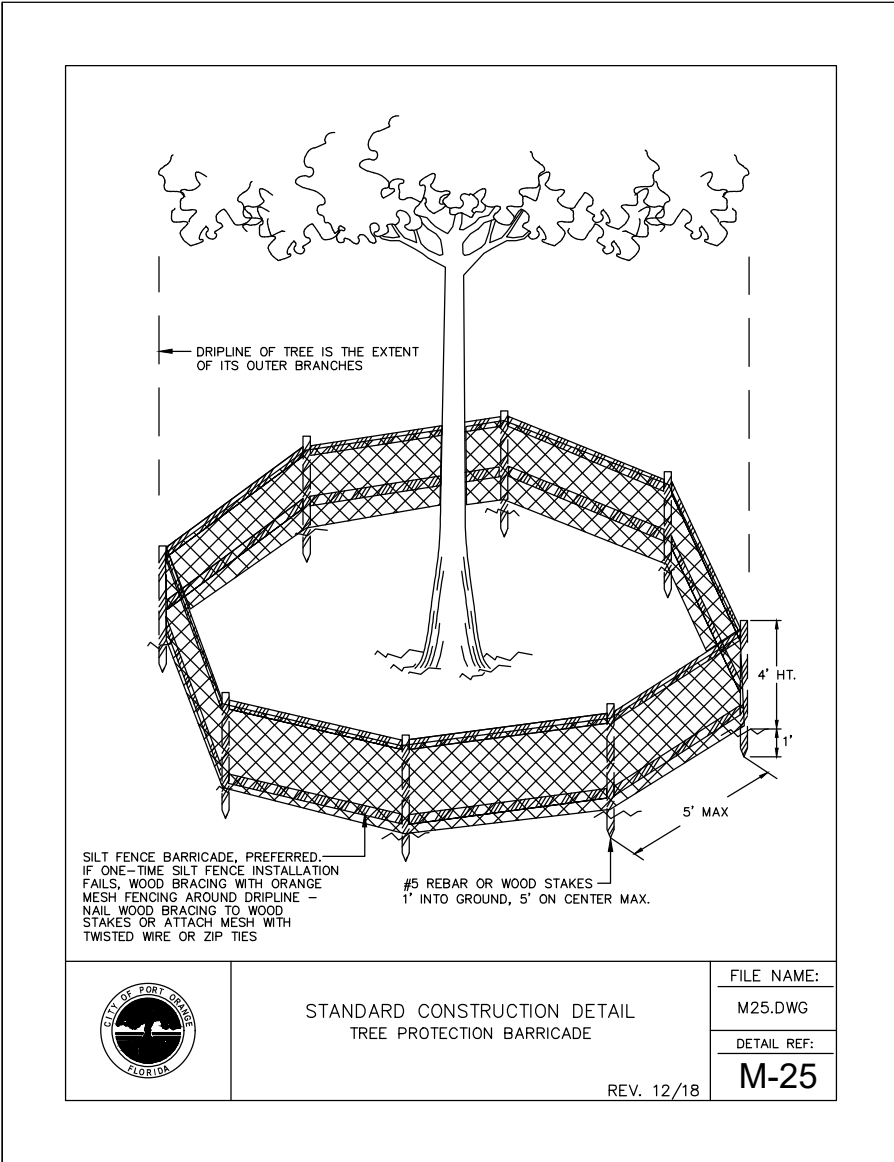
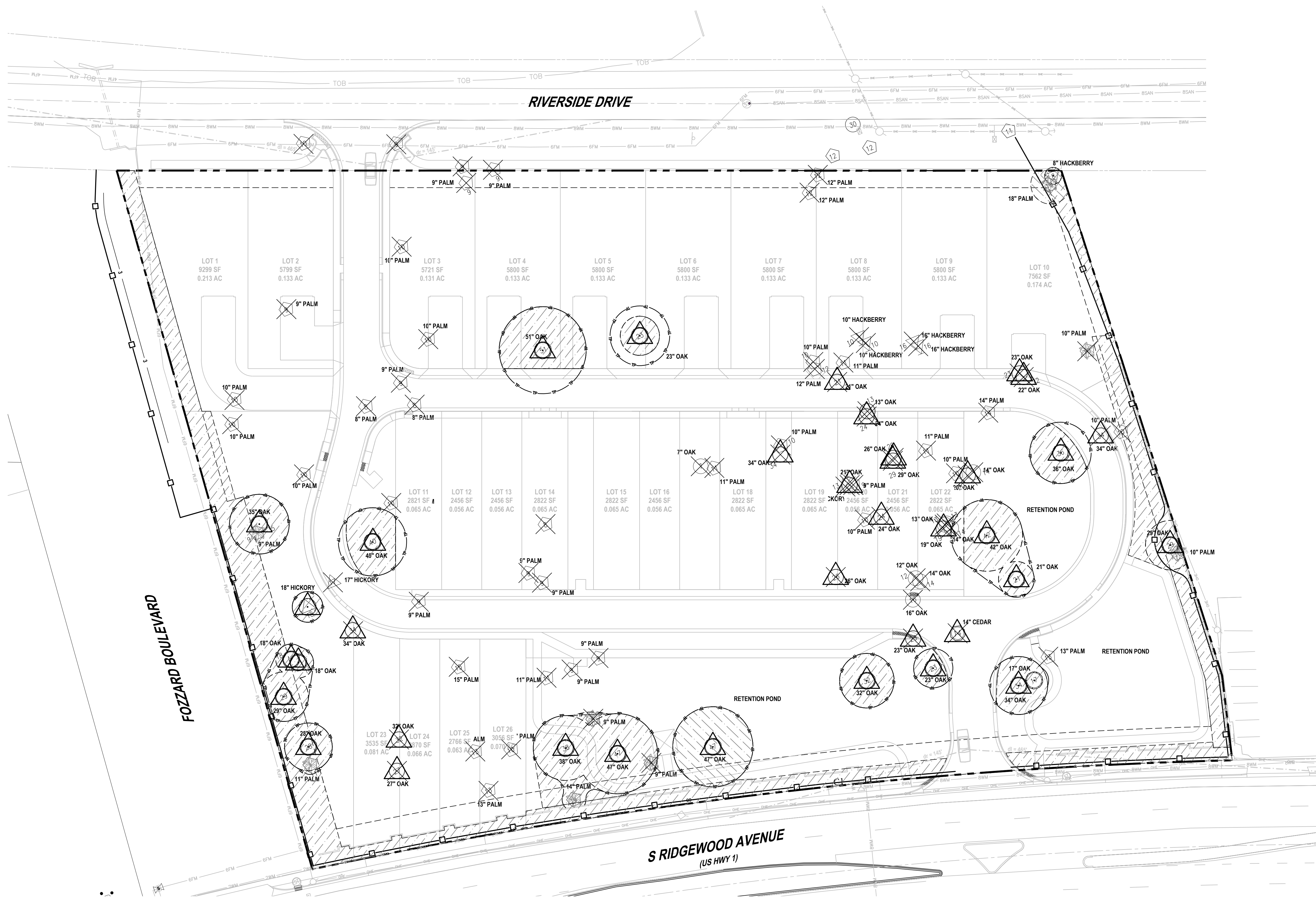


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DRAWN BY: CRA
CHECKED BY: HHN
SCALE: 1"=30'

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41

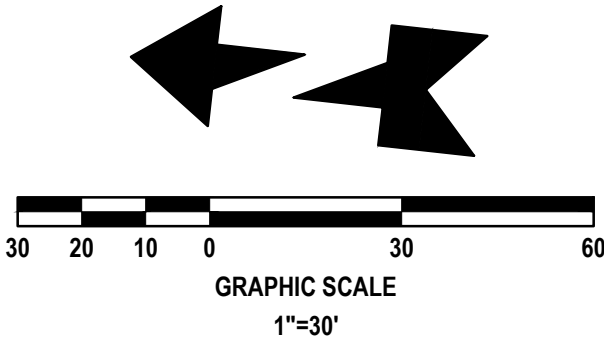


LEGEND

- TREE TO REMAIN
- TREE TO BE REMOVED
- SPECIMEN TREE
- TREE PROTECTION BARRIER
- TREE PROTECTION AREA

AREA TREE PROTECTION REQUIREMENTS	
SITE AREA (206,482 S.F.)	4.74 AC
REQUIRED TREE PROTECTION AREA (15%)	30,972
PROVIDED TREE PROTECTION AREA (15.1%)	31,172

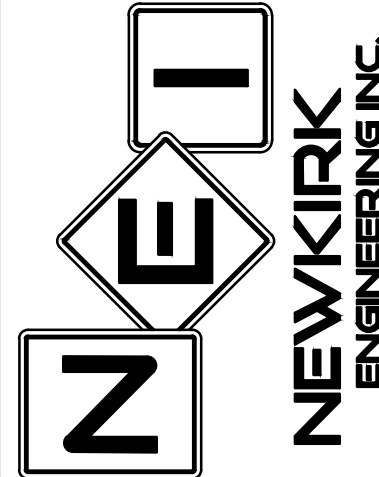
REQUIRED SPECIMEN TREE PROTECTION	
SITE AREA (206,482 S.F.)	4.74 AC
TOTAL SPECIMEN TREES	37
SPECIMEN TREES PER ACRE	7.8
REQUIRED PROTECTED SPECIMEN TREES	19
SPECIMEN TREES PROTECTED	19



REVISIONS

DATE	DESCRIPTION
4/28/23	CITY COMMENTS

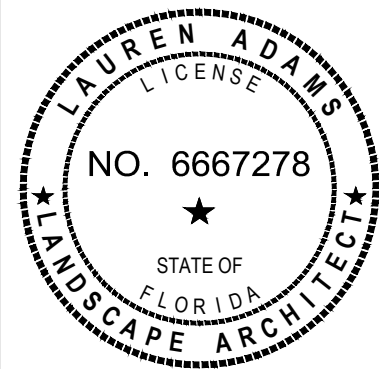
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TREE PROTECTION PLAN
HARBOR LANDINGS
5653 SOUTH RIDGEWOOD AVE
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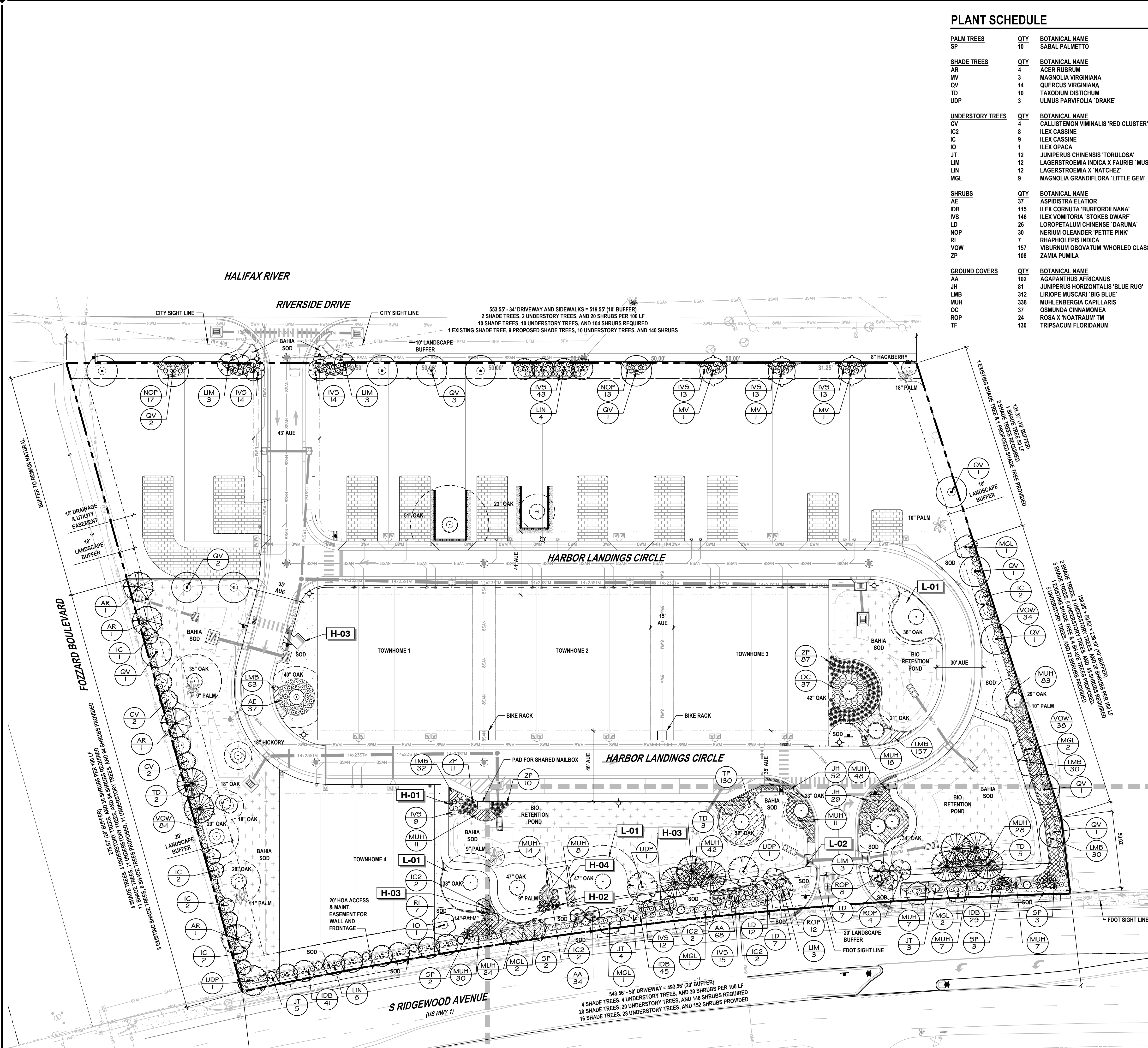
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PLANT SCHEDULE

PALM TREES		QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
SP		10	SABAL PALMETTO	CABBAGE PALMETTO	10', 14', 18' HT.	STAGGERED HEIGHTS
SHADE TREES		QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
AR		4	ACER RUBRUM	RED MAPLE	2.5" CAL., 10' HT.	
MV		3	MAGNOLIA VIRGINIANA	SWEET BAY MAGNOLIA	2.5" CAL., 10' HT.	
QV		14	QUERCUS VIRGINIANA	SOUTHERN LIVE OAK	2.5" CAL., 10' HT.	
TD		10	TAXODIUM DISTICHUM	BALD CYPRESS	2.5" CAL., 10' HT.	
UDP		3	ULMUS PARVIFOLIA 'DRAKE'	DRAKE CHINESE ELM	2.5" CAL., 10' HT.	
UNDERSTORY TREES		QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
CV		4	CALLISTEMON VIMINALIS 'RED CLUSTER'	RED CLUSTER WEEPING BOTTLEBRUSH	1.5" CAL., 8' HT.	
IC2		8	ILEX CASSINE	DAHOON HOLLY	1.5" CAL., 8' HT.	4' C.T.
IC		9	ILEX CASSINE	DAHOON HOLLY	2" CAL., 6' HT.	
IO		1	ILEX OPACA	AMERICAN HOLLY	1.5" CAL., 8' HT.	
JT		12	JUNIPERUS CHINENSIS 'TORULOSA'	HOLLYWOOD JUNIPER	15 GAL.	4-5' HT.
LIM		12	LAGERSTROEMIA INDICA X FAURIEI 'MUSKOGEE'	MUSKOGEE GRAPE MYRTLE	30 GAL., 1.5" CAL., 10' HT	M.T. LILAC
LIN		12	LAGERSTROEMIA X 'NATCHEZ'	WHITE CRAPE MYRTLE	1.5" CAL., 8' HT.	M.T.
MGL		9	MAGNOLIA GRANDIFLORA 'LITTLE GEM'	DWARF SOUTHERN MAGNOLIA	1.5" CAL., 8' HT.	
SHRUBS		QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
AE		37	ASPIDISTRA ELATIOR	CAST IRON PLANT	3 GAL.	36" O.C.
IDB		115	ILEX CORNUTA 'BURFORDII NANA'	DWARF BURFORD HOLLY	3 GAL., 24" HT. X 18" SPRD.	36" O.C.
IVS		146	ILEX VOMITORIA 'STOKES DWARF'	STOKES DWARF YAUPOIN HOLLY	3 GAL., 12" HT. X 18" SPRD.	36" O.C.
LD		26	LOROPETALUM CHINENSE 'DARUMA'	DARUMA DWARF LOROPETALUM	3 GAL., 24" HT. X 12" SPRD	30" O.C.
NOP		30	NERIUM OLEANDER 'PETITE PINK'	PETITE PINK OLEANDER	3 GAL.	36" O.C.
RI		7	RHAPHIOLEPIS INDICA	INDIAN HAWTHORN	3 GAL., 15" HT. X 15" SPRD.	36" O.C.
VOW		157	VIBURNUM OBOVATUM 'WHORLED CLASS'	WHORLED CLASS DWARF WALTER'S VIBURNUM	3 GAL., 18" HT. X 9" SPRD.	36" O.C.
ZP		108	ZAMIA PUMILA	COONTIE CYCAD	3 GAL.	36" O.C.
GROUND COVERS		QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
AA		102	AGAPANTHUS AFRICANUS	AFRICAN LILY	1 GAL.	12" O.C.
JH		81	JUNIPERUS HORIZONTALIS 'BLUE RUG'	BLUE RUG JUNIPER	3 GAL.	36" O.C.
LMB		312	LIRIOPE MUSCARI 'BIG BLUE'	BIG BLUE LILYTURF	1 GAL.	12" O.C.
MUH		338	MUHLENBERGIA CAPILLARIS	PINK MUHLY GRASS	3 GAL.	36" O.C.
OC		37	OSMUNDA CINNAMOMEA	CINNAMON FERN	1 GAL.	36" O.C.
ROP		24	ROSA X NOATRAUM TM	FLOWER CARPET PINK ROSE	1 GAL.	30" O.C.
TF		130	TRIPSACUM FLORIDANUM	FLORIDA GAMAGRASS	1 GAL.	24" O.C.

HARDSCAPE SCHEDULE

SYMBOL	HARDSCAPE DESCRIPTION	QTY
H-01	TRASH CAN MODEL: YAHARA WITH COVERED SQUARE LID MANUFACTURER: THOMAS STEELE MATERIAL: RECYCLED PLASTIC WALNUT/BLACK POWDER COAT FINISH METAL FRAME	1
H-02	COMPLETE PET WASTE STATION MODEL: 3278 ET&T DISTRIBUTORS, INC.	1
H-03	BENCH WITH BACK MODEL: 6' YAHARA (YHB-6) MANUFACTURER: THOMAS STEELE MATERIAL: RECYCLED WALNUT WITH BLACK POWDER COAT METAL FRAME	3
H-04	SHADE STRUCTURE DESIGN BY OTHERS	

LANDSCAPE NOTES

SYMBOL	DESCRIPTION
L-01	MULCH AREA
L-02	CHANGE IN SOD TYPE FROM ST. AUGUSTINE SOD TO BAHIA SOD

LEGEND

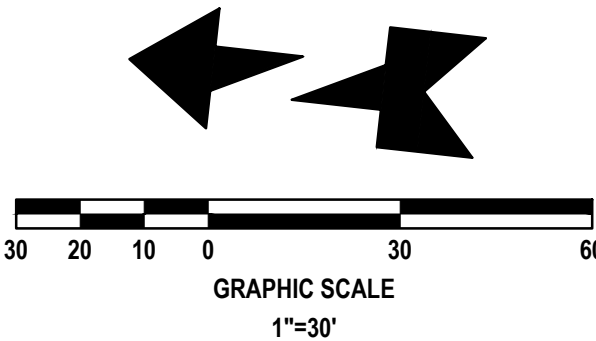
- TREE TO REMAIN
- PALM TO REMAIN
- OFF SITE TREES
- ST. AUGUSTINE SOD
- BAHIA SOD

MINIMUM TREE COVERAGE REQUIREMENTS	
SITE AREA (S.F.)	206,482
TREES REQUIRED (1/2,500 S.F.)	83
EXISTING TREES TO BE PRESERVED	24
TREES PROPOSED	104
TOTAL TREES	128

*NOTE: THIS CALCULATION DOES NOT INCLUDE SINGLE FAMILY OR TOWNHOME LOTS.

BUFFER NOTES

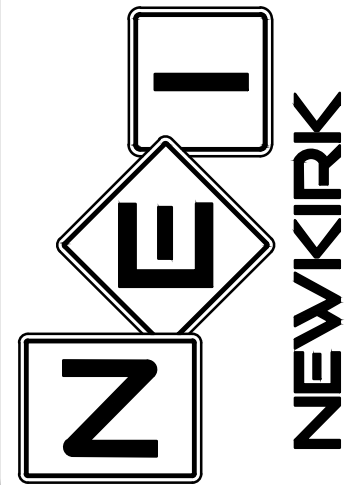
- PER PUD: ALL OF THE PERIMETER BUFFERS ARE REQUIRED TO BE PLANTED EXCEPT THE RIVERSIDE BUFFER AND WHERE ADJACENT TO LOTS 1-10.
- PER PUD: ALL BUFFERS IMMEDIATELY ADJACENT TO LOTS SHALL BE INSTALLED AT TIME OF LOT BUILD OUT.
- WHERE OVERHEAD UTILITIES CREATE A CONFLICT, SHADE TREES HAVE BEEN MOVED BEHIND BUFFER OR UNDERSTORY TREES HAVE BEEN SUBSTITUTED.



REVISIONS

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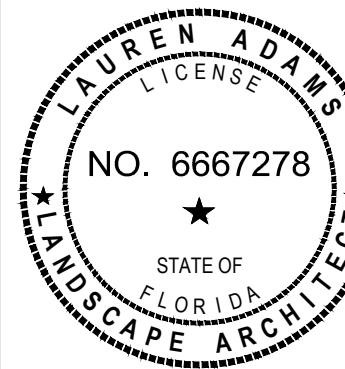
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LANDSCAPE PLAN
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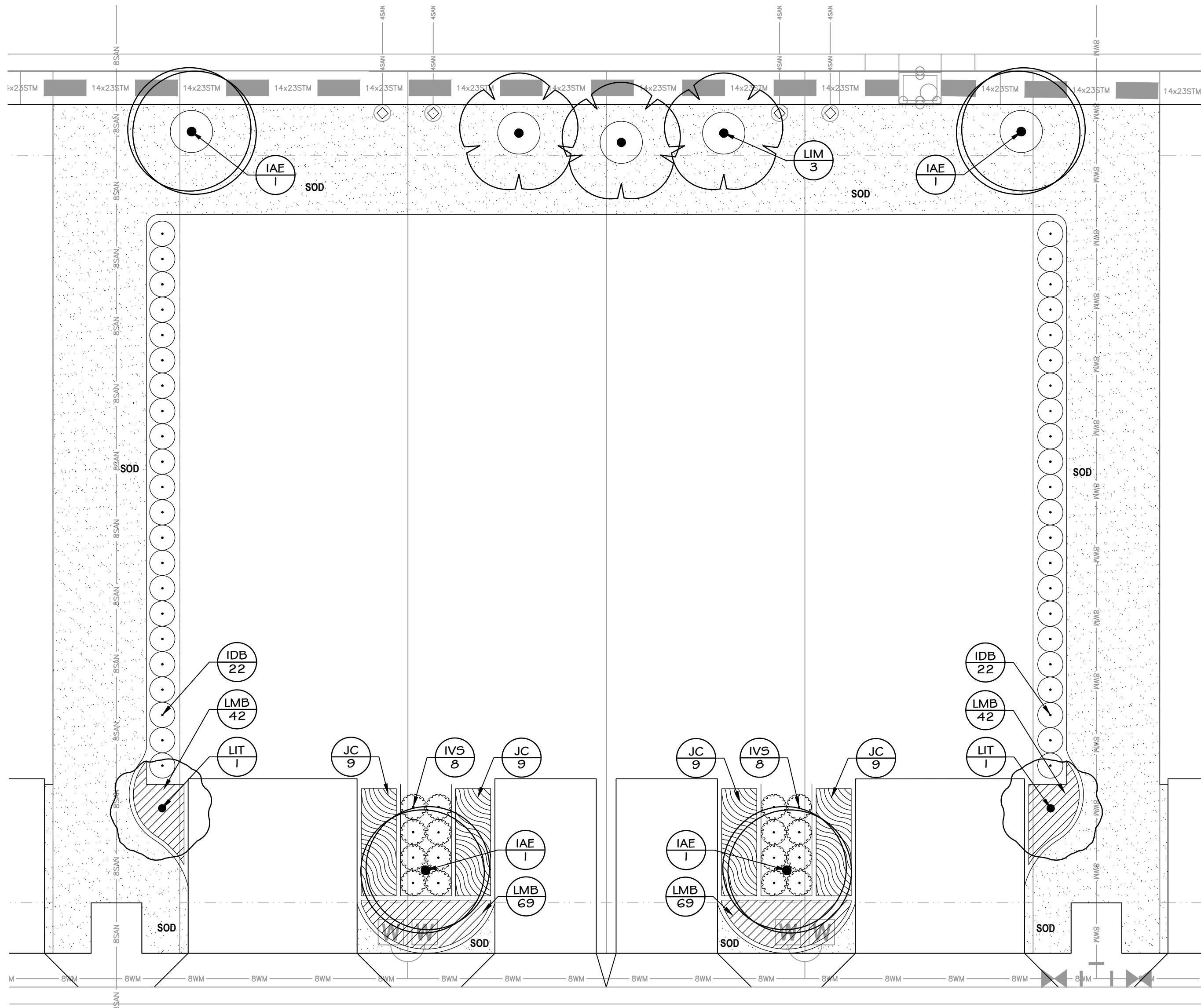
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L1



PLANT SCHEDULE TOWNHOME

CODE	QTY	BOTANICAL NAME	COMMON NAME	SIZE	REMARKS
UNDERSTORY TREES					
IAE	4	ILEX X ATTENUATA 'EAGLESTON'	EAGLESTON HOLLY	2.5" CAL., 10' HT.	
LIM	3	LAGERSTROEMIA INDICA X FAURIEI 'MUSKOGEE'	MUSKOGEE CRAPE MYRTLE	30 GAL., 1.5" CAL., 10' HT	M.T. LILAC
LIT	2	LAGERSTROEMIA INDICA X FAURIEI 'TONTO'	TONTO CRAPE MYRTLE	1" CAL., 8' HT.	
SHRUBS					
IDB	44	ILEX CORNUTA 'BURFORDII NANA'	DWARF BURFORD HOLLY	3 GAL., 24" HT. X 18" SPRD.	36" O.C.
IVS	16	ILEX VOMITORIA 'STOKES DWARF'	STOKES DWARF YAUPOH HOLLY	3 GAL., 12" HT. X 18" SPRD.	36" O.C.
GROUND COVERS					
JC	36	JUNIPERUS CONFERTA	SHORE JUNIPER	1 GAL.	30" O.C.
LMB	222	LIRIOPE MUSCARI 'BIG BLUE'	BIG BLUE LILYTURF	1 GAL.	12" O.C.

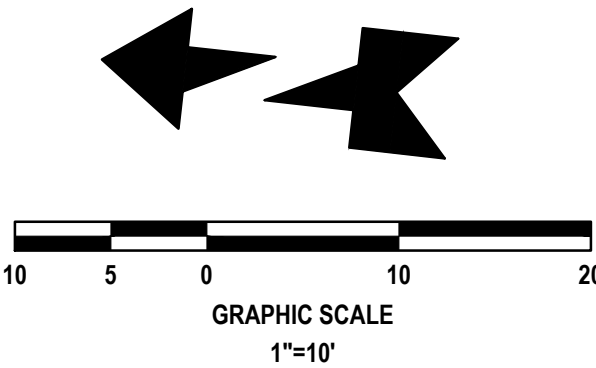
FOUNDATION PLANTING	
1 PLANT PER 1 BUILDING FOOT	271 FT
REQUIRED PLANTS (271 x 1)	271
PROVIDED PLANTS	318
REQUIRED UNDERSTORY TREES (271/30)	9
PROVIDED UNDERSTORY TREES	9

BUILDING LANDSCAPE NOTES

- EACH SINGLE-FAMILY LOT WILL BE REQUIRED TO PLANT THE MINIMUM NUMBER OF SHADE TREES AND SHRUBS BASED ON THE SQUARE FOOTAGE OF THE LOT PER CHAPTER 13, SECTION 5.5, LDC PRIOR TO C.O. FOR EACH HOUSE.
- TOWNHOME BUILDING LANDSCAPE TO BE INSTALLED AT THE TIME OF BUILDING CONSTRUCTION.

LEGEND

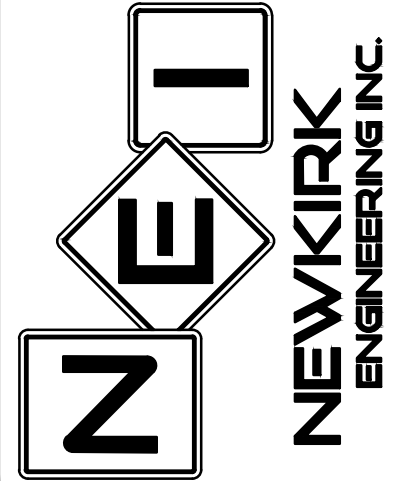
ST. AUGUSTINE SOD



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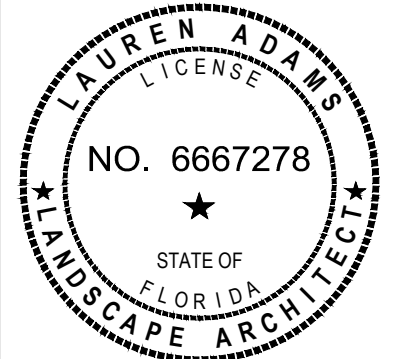
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TYPICAL TOWNHOME
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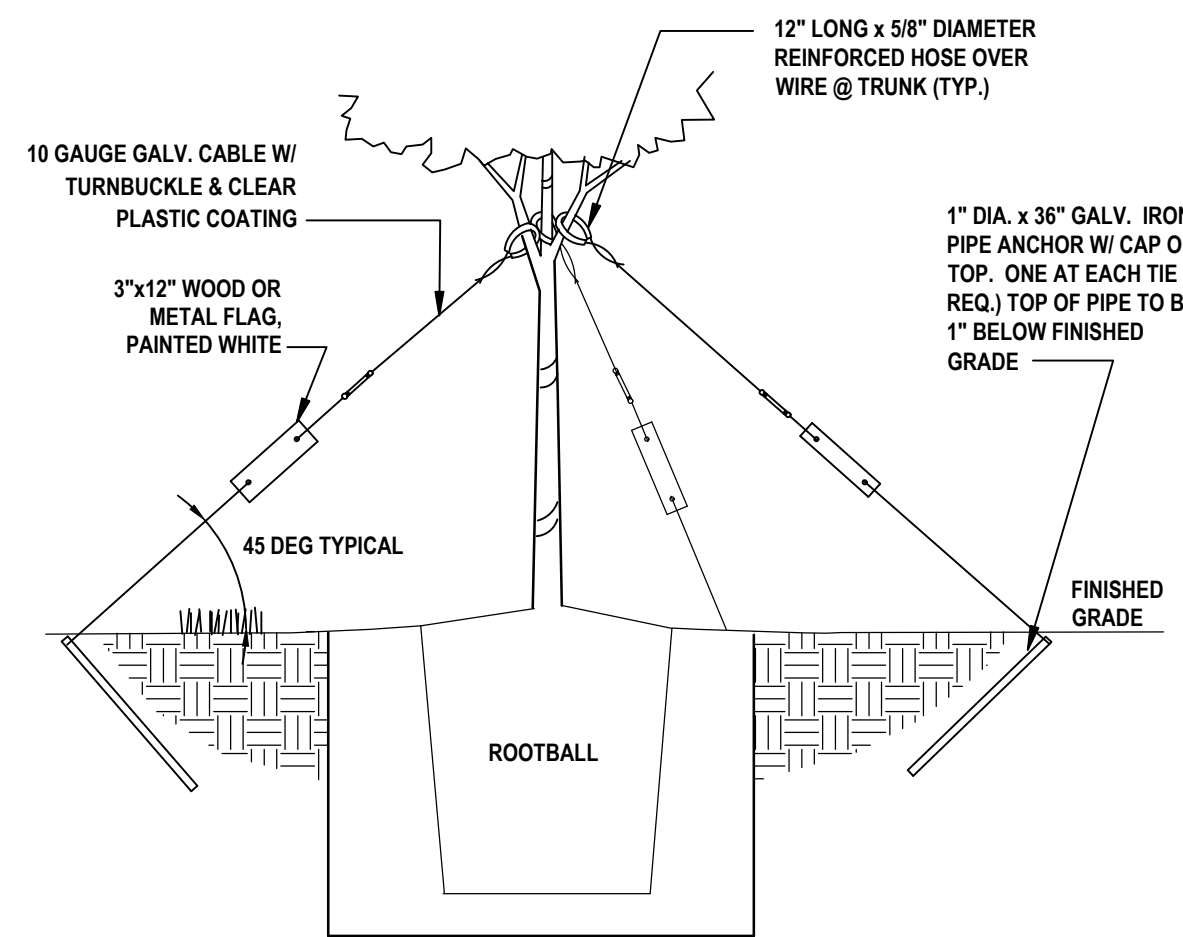


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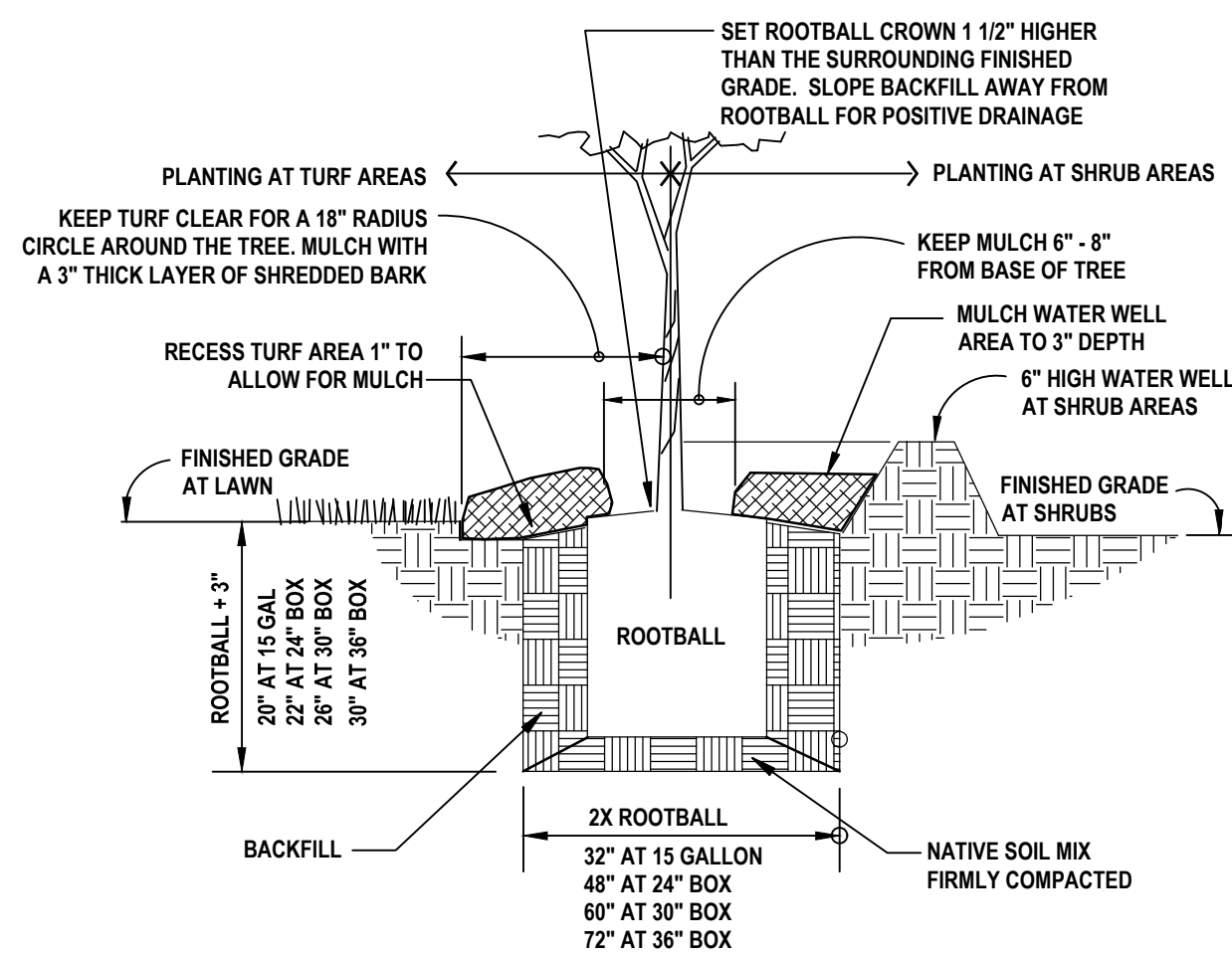
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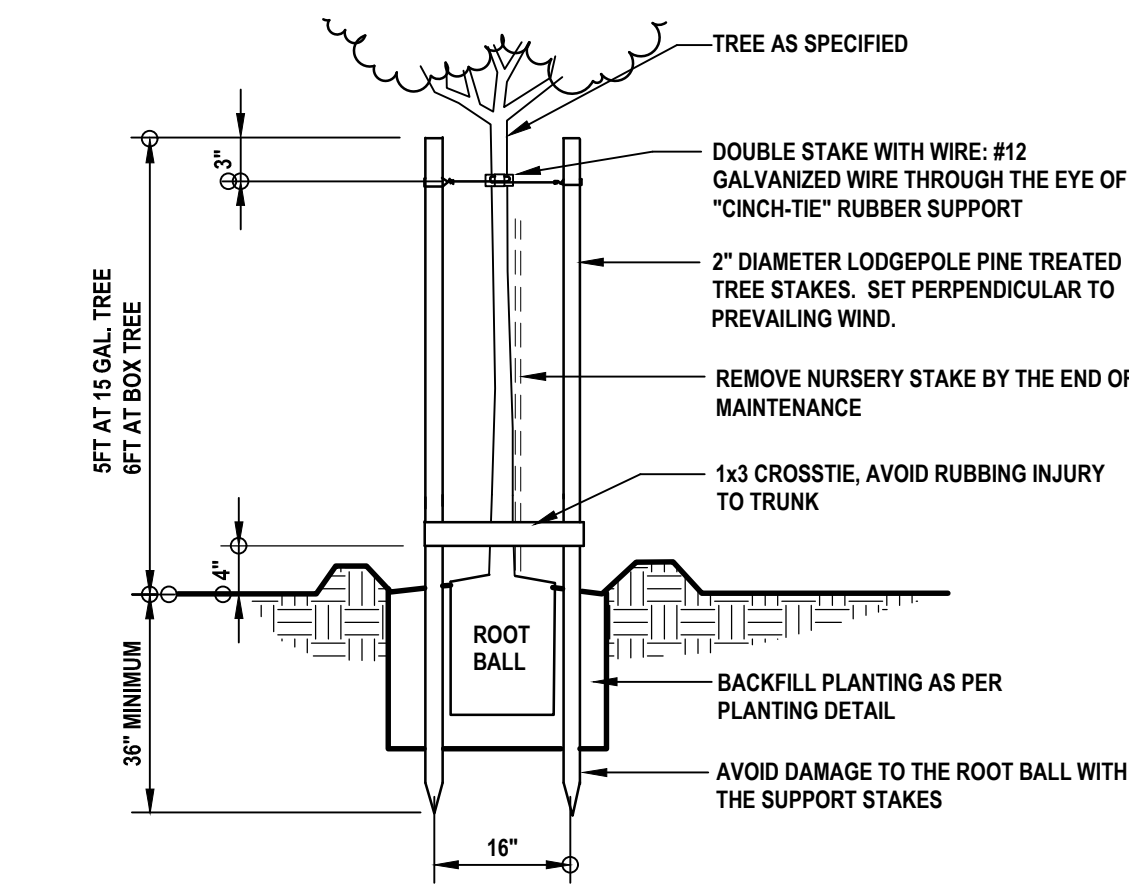
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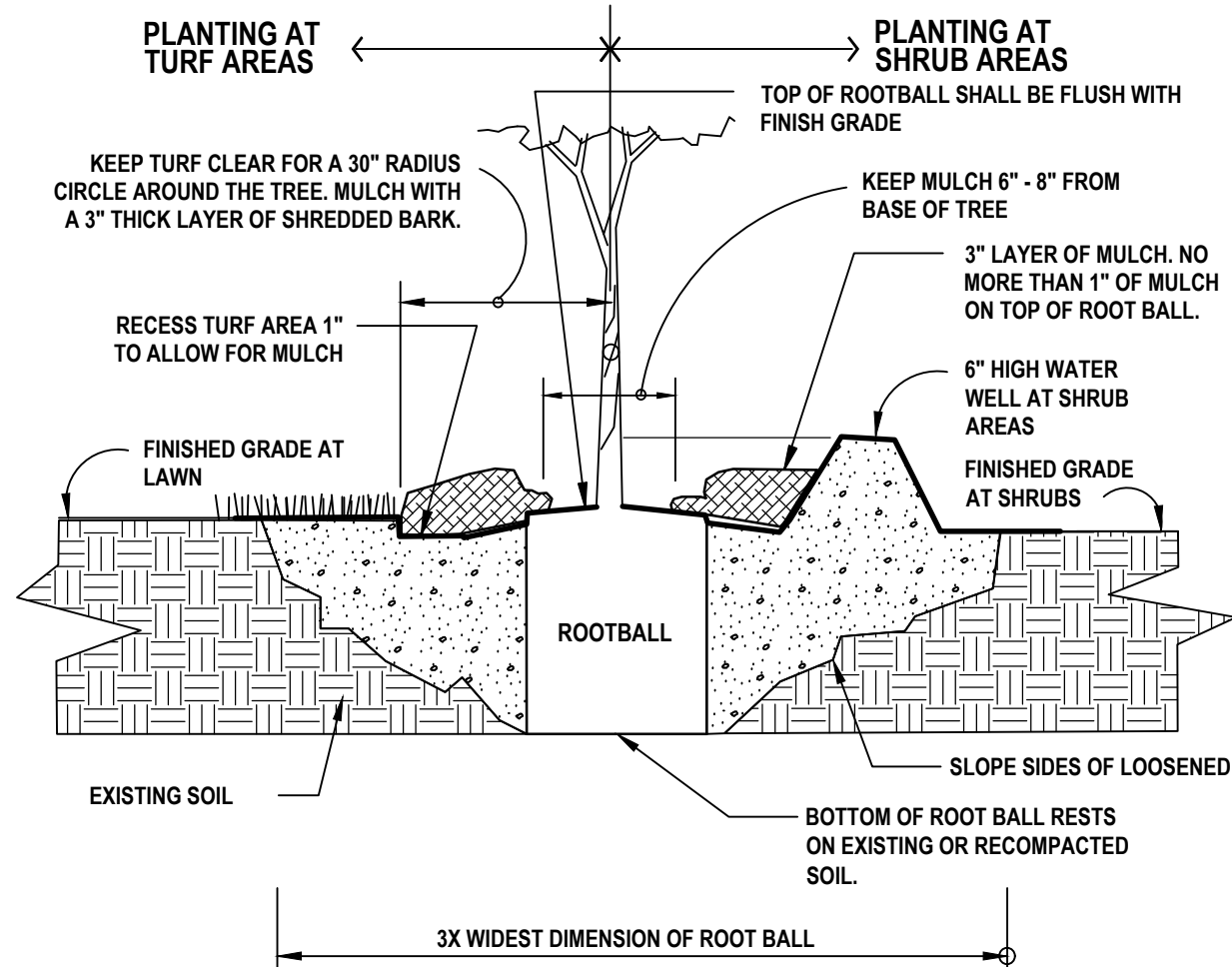
STAKING DETAIL



PLANT PIT DETAIL



STAKING DETAIL

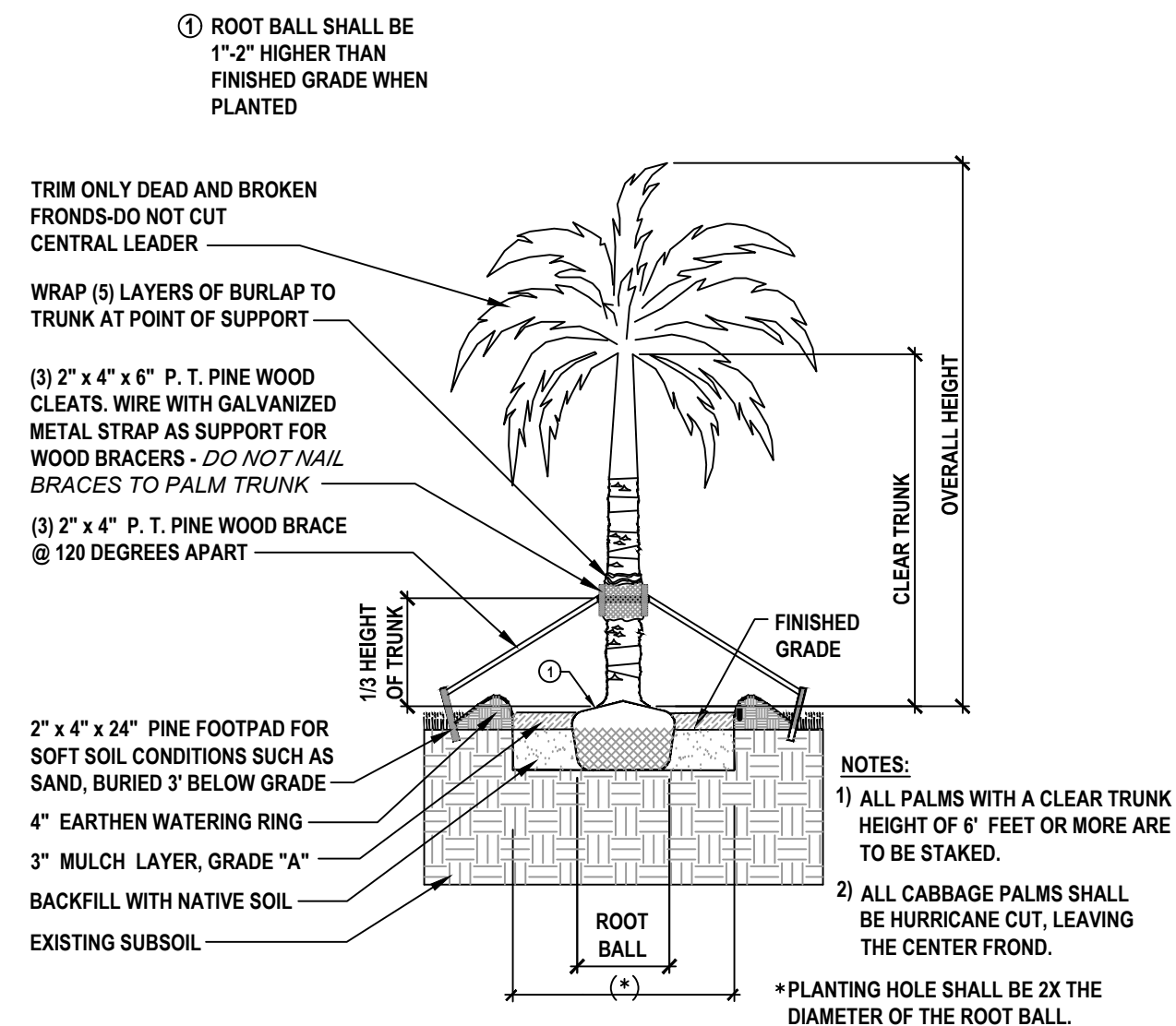


PLANT PIT DETAIL

1 TREE PLANTING DETAIL

1" = 1'-0"

P-CO-2021-225-01



3 STRAIGHT TRUNK PALM PLANTING DETAIL

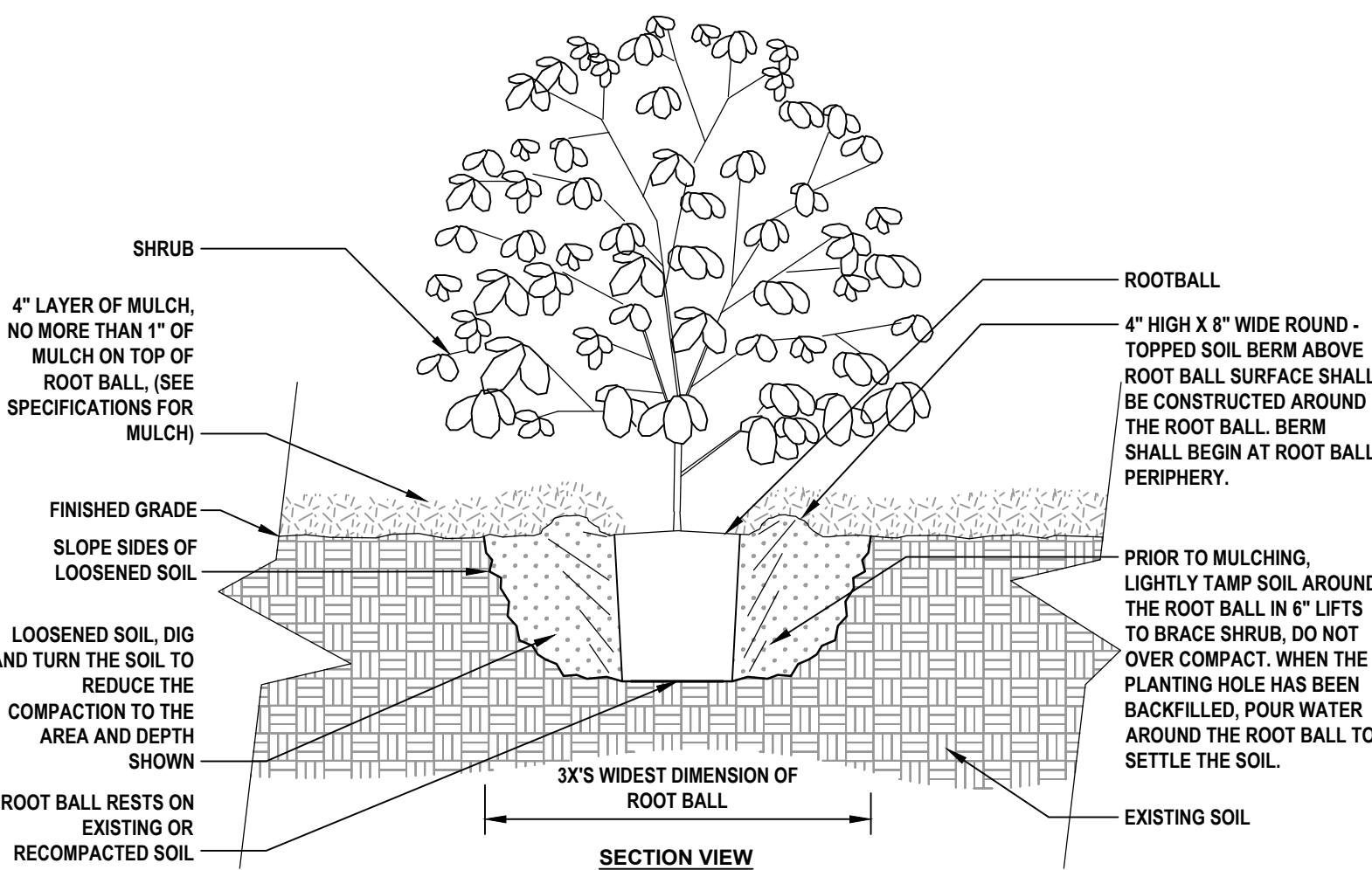
NTS

P-CO-2021-225-12

2 SMALL TREE PLANTING DETAIL

1" = 1'-0"

P-CO-2021-225-03



- NOTES:
- SHRUBS SHALL BE OF QUALITY PRESCRIBED IN THE ROOT OBSERVATIONS DETAIL AND SPECIFICATIONS.
 - SEE SPECIFICATIONS FOR FURTHER REQUIREMENTS RELATED TO THIS DETAIL.

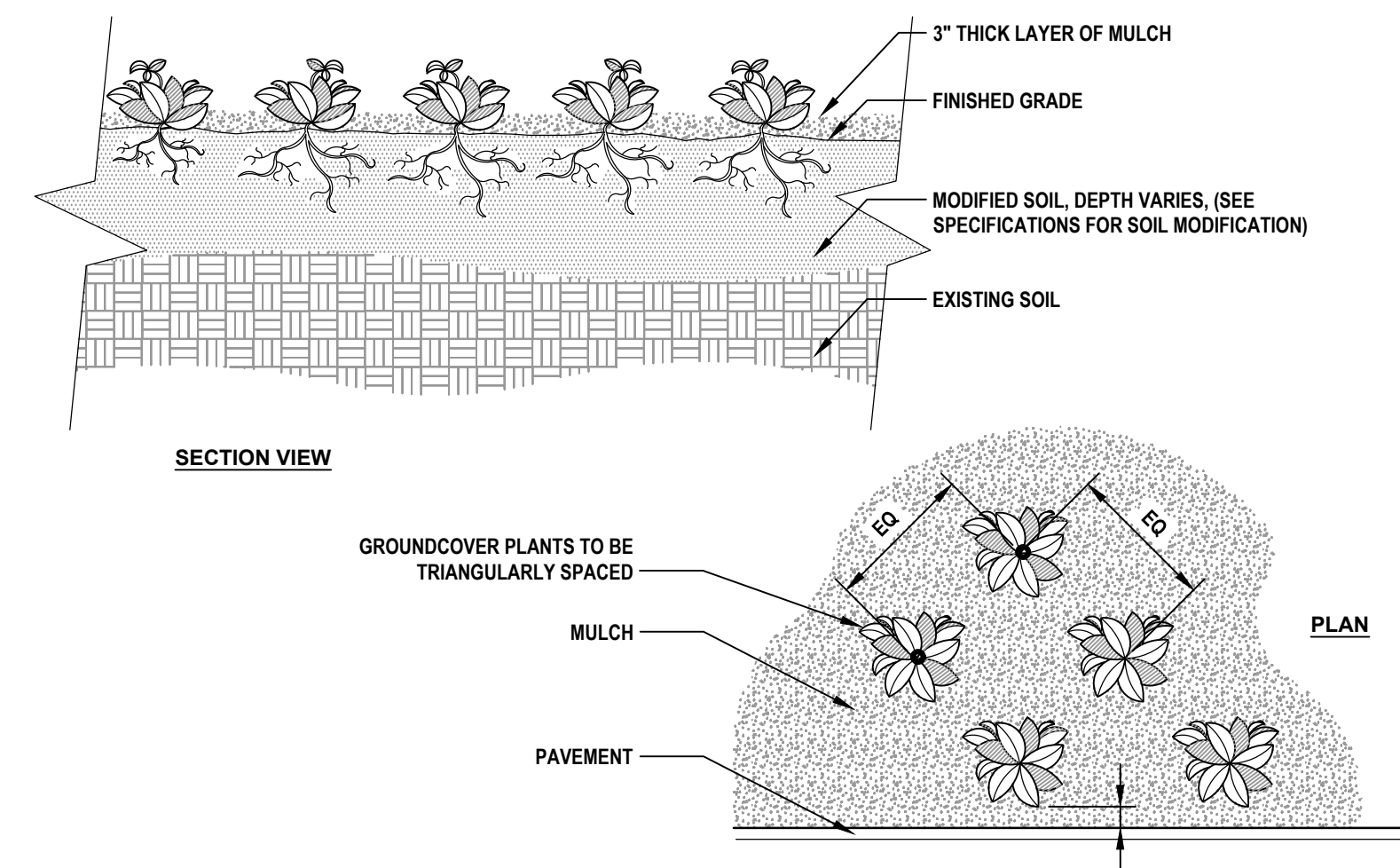
4 SHRUB PLANTING DETAIL

NTS

NEI-PL-04

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. PLANT MATERIAL SHALL BE CLEARLY IDENTIFIED AS FLORIDA #1 OR BETTER ON EITHER LABELS OR INVOICES.
- ALL PLANT SPECIFICATIONS MUST BE MET OR EXCEEDED. SIZES IN PLANT SCHEDULE ARE MINIMUMS AND EACH MUST BE MET. CONTAINERS MAY NEED TO BE UPSIZED TO MEET ALL SPECIFICATIONS.
- ALL MULCH SHALL BE PINE BARK AND INSTALLED 3" DEEP. TREES IN SOD TO BE IN A 5' MINIMUM-MULCHED RING. ALL PALMS TO BE IN A 3' MULCH RING. MULCH TO BE INSTALLED 6" FROM TRUNK.
- SOD SHALL BE ST. AUGUSTINE "FLORITAM" UNLESS OTHERWISE NOTED ON THE PLAN AND SHALL BE 95% WEED-FREE. WHERE SPECIFIED, BAHIA SOD SHALL BE 85% WEED-FREE. ALL SOD SHALL BE INSTALLED WITH TIGHT JOINTS, ROLLED AND FERTILIZED.
- 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. PLANTING BEDS MAY BE TREATED WITH CHEMICAL HERBICIDE AS NEEDED. 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.
- 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 FLORIDA 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.
- WHERE AZALEAS, ROSES OR LOROPETALUMS ARE TO BE PLANTED, THE SOIL SHALL BE AMENDED BY REMOVING SOME OF THE NATIVE SOIL AND REPLACING WITH SOIL WITH A PH RANGE OF BETWEEN 5.5 - 6.5.
- 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) 872-7794.
- ALL TREES AND PALMS MUST BE STAKED USING THE DETAILS PROVIDED OR ARBORGUY STAKING SYSTEMS. ANY STAKING SYSTEM NOT INCLUDED MUST BE APPROVED IN WRITING BY THE LANDSCAPE ARCHITECT.
- ALL UNIMPROVED AREA NOT OTHERWISE PLANTED OR MULCHED SHALL BE SODDED WITH BAHIA UNLESS OTHERWISE NOTED ON THE LANDSCAPE PLAN.
- THE CONTRACTOR SHALL GUARANTEE ALL INSTALLED PLANT MATERIAL FOR A PERIOD OF ONE (1) YEAR AFTER ACCEPTANCE IN WRITING BY OWNER OR OWNER'S REPRESENTATIVE. ALL PLANT MATERIAL SHALL BE WATERED REGULARLY AS NEEDED UNTIL ESTABLISHED. FOR TREES, UP TO ONE YEAR AND FOR SHRUBS/GROUNDCOVER, GENERALLY 2-3 MONTHS.
- 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.
- ALL EXISTING TREES AND PALMS WILL BE PROPERLY PRUNED AND CLEANED OF DEADWOOD, BROKEN BRANCHES, DEAD FROND AND VINES AS NEEDED. ALL STRUCTURAL PRUNING OF HARDWOOD TREES SHALL BE PERFORMED UNDER THE DIRECTION OF A CERTIFIED ARBORIST.
- ALL NOXIOUS OR EXOTIC VEGETATION THAT DETRACTS FROM THE APPEARANCE OF THE EXISTING OR PLANTED VEGETATION WITHIN THE TREE PROTECTION AREA OR BUFFERS SHALL BE REMOVED. THE EDGE OF THE AREAS TO REMAIN NATURAL SHALL BE MULCHED 5' IN AND A CURVILINEAR BED LINE SHALL BE CREATED ADJACENT TO SODDED AREAS.



- NOTES:
- SEE PLANTING LEGEND FOR GROUNDCOVER SPECIES, SIZE, AND SPACING DIMENSION.
 - SMALL ROOTS (1/2" OR LESS) THAT GROW AROUND, UP, OR DOWN THE ROOT BALL PERIPHERY ARE CONSIDERED A NORMAL CONDITION IN CONTAINER PRODUCTION AND ARE ACCEPTABLE HOWEVER THEY SHOULD BE ELIMINATED AT THE TIME OF PLANTING. ROOTS ON THE PERIPHERY CAN BE REMOVED AT THE TIME OF PLANTING. (SEE ROOT BALL SHAVING CONTAINER DETAIL).
 - SETTLE SOIL AROUND ROOT BALL OF EACH GROUNDCOVER PRIOR TO MULCHING.

5 GROUNDCOVER LAYOUT

1/16" = 1'-0"

NEI-PL-02

LANDSCAPE SOIL SPECIFICATIONS

- CONTRACTOR WILL BE RESPONSIBLE FOR ANY REQUIRED EXCAVATION AND FOR RAKING AND SMOOTHING OF GRADE. IT IS RECOMMENDED THAT LANDSCAPE CONTRACTOR COORDINATE WITH GRADING CONTRACTOR TO ESTABLISH SUBGRADES FOR PLANTING AREAS AS REQUIRED BELOW.
- LANDSCAPE SOIL REFERS TO STOCKPILED TOPSOIL OR THE PLANTING MIXTURE AS SPECIFIED BELOW. STRUCTURAL SOIL OR FILL DIRT SHALL NOT BE USED IN PLANTED AREAS.
- TOPSOIL SHALL BE STOCKPILED IF THE SITE CONSISTS OF NATIVE PLANT COMMUNITIES. IF NOXIOUS AND/OR INVASIVE PLANT SPECIES ARE PRESENT, TOPSOIL SHALL NOT BE STOCKPILED AND THE PLANTING MIXTURE BELOW SHALL BE USED.
- IF STOCKPILED, THE TOPSOIL SHALL BE SALVAGED TO A DEPTH OF 4 TO 6 INCHES AND STOCKPILED NO HIGHER THAN 3 FEET IN HEIGHT.
- TOPSOIL SHALL BE STORED FOR AS SHORT A DURATION AS POSSIBLE TO ENSURE SURVIVAL OF SEEDS AND SOIL ORGANISMS.
- IF TOPSOIL HAS NOT BEEN STOCKPILED, PLANTING MIXTURE FOR TREES AND SHRUBS SHALL CONSIST OF 1/3 "COMPOST", 1/3 COARSE SAND, AND 1/3 EXISTING SOIL, THOROUGHLY MIXED. IF THE EXISTING SOIL IS NOT NATIVE AND FREE OF INVASIVES, THEN TOPSOIL SHALL BE IMPORTED FOR THIS COMPONENT.
- MIXTURE FOR PALMS SHALL BE 50 PERCENT COARSE SAND AND 50 PERCENT EXISTING SOIL. MIX THOROUGHLY WITH EXISTING SOIL.
- LANDSCAPE SOIL SHALL BE USED IN ALL PLANT BEDS CONSISTING OF SHRUBS AND GROUNDCOVER TO A DEPTH OF 6" AND MULCH TO A DEPTH OF 3".
- LANDSCAPE SOIL SHALL BE FREE OF DEBRIS, WEEDS, PARTICLES LARGER THAN 0.50 INCHES AND RINSATE CONTAINING LIME OR TOXIC MATERIALS.
- EXISTING SOIL SHOULD NOT BE CONTINUOUSLY EXCAVATED BENEATH THE DRIP LINE OF EXISTING TREES. IN THIS CASE, IF SHRUBS OR GROUNDCOVER ARE PROPOSED, THEY SHOULD BE PLANTED IN NATIVE SOIL WITHOUT AMENDMENT.

REFER TO LANDSCAPE DETAILS FOR MINIMUM PLANTING PIT DIMENSIONS.

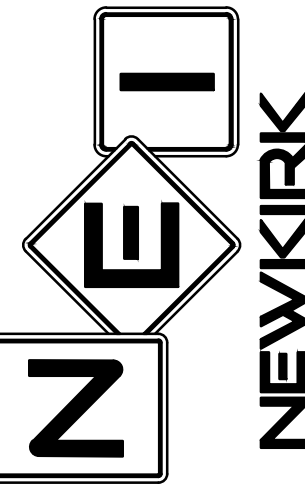
EXISTING TREE NOTES

- PRUNE ALL TREES TO REMAIN IN ACCORDANCE WITH ANSI A 300 PRUNING STANDARDS AS PERFORMED BY AN ARBORIST CERTIFIED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA) OR A REGISTERED CONSULTING ARBORIST WITH THE AMERICAN SOCIETY OF CONSULTING ARBORISTS (ASCA).
- REMOVE ALL EXISTING MULCH AND ENSURE ONE OR TWO LARGE ROOTS ARE EXPOSED. ADD NEW MULCH TO A DEPTH OF 3" TO BED SURROUNDING TREES. KEEP MULCH 6" FROM TRUNK. DO NOT PILE MULCH AGAINST TRUNK.

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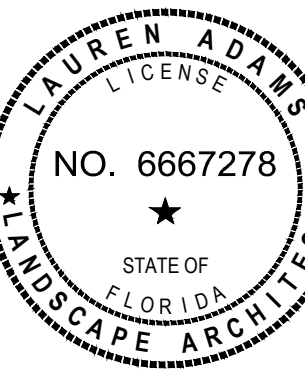
1230 North US1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7794
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LANDSCAPE DETAILS
AND NOTES
HARBOR LANDINGS
5653 SOUTH RIDGEWOOD AVE
PORT ORANGE, FL 32127

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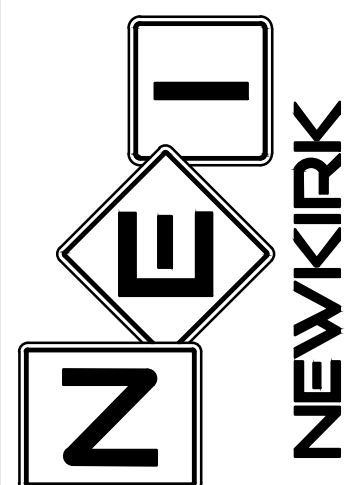
PROJECT No:	2022-199
DATE:	JANUARY 2023
DESIGN BY:	LAA
DRAWN BY:	BVV
CHECKED BY:	LAA
SCALE:	AS SHOWN
DRAWING NUMBER	

L3

REVISIONS

DATE	DESCRIPTION
4/28/23	CITY COMMENTS

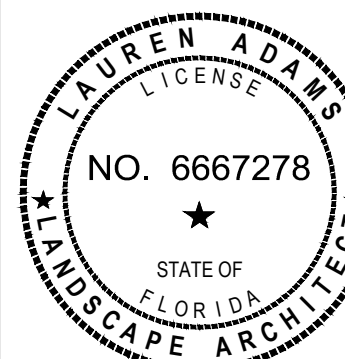
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IRRIGATION PLAN
HARBOR LANDINGS
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DRAWN BY: BWV
CHECKED BY: LAA
SCALE: 1" = 30'

DRAWING NUMBER

L4

IRRIGATION SCHEDULE

SYMBOL	MANUFACTURER/MODEL	QTY	PSI
	HUNTER PROS-06-PRS30-CV-F 5' STRIP SPRAY	47	30
	HUNTER PROS-06-PRS30-CV-F 10' RADIUS	3	30
	HUNTER PROS-06-PRS30-CV-F 12' RADIUS	2	30
	HUNTER PROS-06-PRS30-CV-F 15' RADIUS	2	30
	HUNTER PROS-06-PRS30-CV-F ADJUSTABLE ARC	76	30
	HUNTER PROS-12-PRS30-CV-F SHORT RADIUS NOZZLES	4	30
	HUNTER PROS-12-PRS30-CV-F 5' STRIP SPRAY	38	30
	HUNTER PROS-12-PRS30-CV-F 8' RADIUS	4	30
	HUNTER PROS-12-PRS30-CV-F 9' SIDE STRIP SPRAY	13	30
	HUNTER PROS-12-PRS30-CV-F 10' RADIUS	7	30
	HUNTER PROS-12-PRS30-CV-F ADJUSTABLE ARC	132	30
	HUNTER PCB 10	64	30

SYMBOL	MANUFACTURER/MODEL	QTY	PSI
	HUNTER PGP-04-PRB 1.5	27	35
	HUNTER PGP-04-PRB 2.0	6	35
	HUNTER PGP-04-PRB 2.5	2	35
	HUNTER PGP-04-PRB 6.0	3	35
	HUNTER SRM-04 2.0	2	30

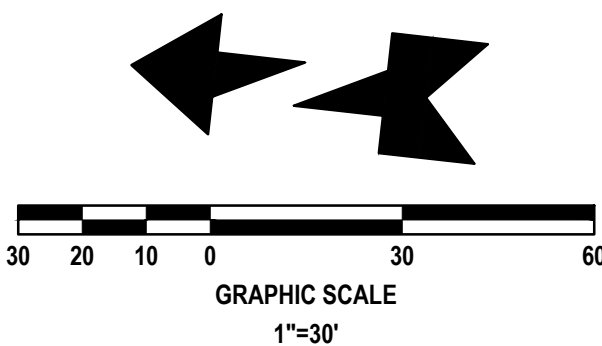
SYMBOL	MANUFACTURER/MODEL	QTY	PSI
	HUNTER HE-B 10HE-B	70	
	AREA TO RECEIVE DRIPLINE HUNTER HDL-06-12-CV	3,106 L.F.	

SYMBOL	MANUFACTURER/MODEL/DESCRIPTION	QTY
	HUNTER ICV-G-FS 1", 1-1/2", 2", AND 3" PLASTIC ELECTRIC REMOTE CONTROL VALVES, GLOBE CONFIGURATION, WITH NPT THREADED INLET/OUTLET, FOR COMMERCIAL/MUNICIPAL USE. WITH FILTER SENTRY.	18
	ZURN 350XL 1-1/2" DOUBLE CHECK VALVE ASSEMBLY W/ EZSWAP INSERT.	1
	HUNTER I2C-2400-MICC-PED-SS 24 STATION OUTDOOR MODULAR CONTROLLER. WITH TWO ICM-800 MODULE. COMMERCIAL USE. STAINLESS STEEL PEDESTAL.	1
	HUNTER SOLAR-SYNC SOLAR, RAIN FREEZE SENSOR WITH OUTDOOR INTERFACE. CONNECTS TO HUNTER PCC, PRO-C, AND I-CORE CONTROLLERS, INSTALL AS NOTED. INCLUDES 10 YEAR LITHIUM BATTERY AND RUBBER MODULE COVER, AND GUTTER MOUNT BRACKET. WIRED.	1
	CAP FOR FUTURE USE CAP AT THE MAINLINE OR LATERAL LINE FOR FUTURE USE. THE PRESSURE AND FLOW PROVIDED TO THAT LOCATION ARE INDICATED NEXT TO THE CAP SYMBOL.	14
	POINT OF CONNECTION 4" WELL WITH SUBMERSIBLE PUMP, SEE WELL NOTES SHEET L4	1
	IRRIGATION LATERAL LINE: PVC CLASS 160 SDR 26	6,028 L.F.
	IRRIGATION MAINLINE: PVC CLASS 200 SDR 21	1,861 L.F.
	PIPE SLEEVE: PVC SCHEDULE 40	484.9 L.F.

	Valve Callout
	Valve Number
	Valve Flow
	Valve Size

IRRIGATION SCHEDULE

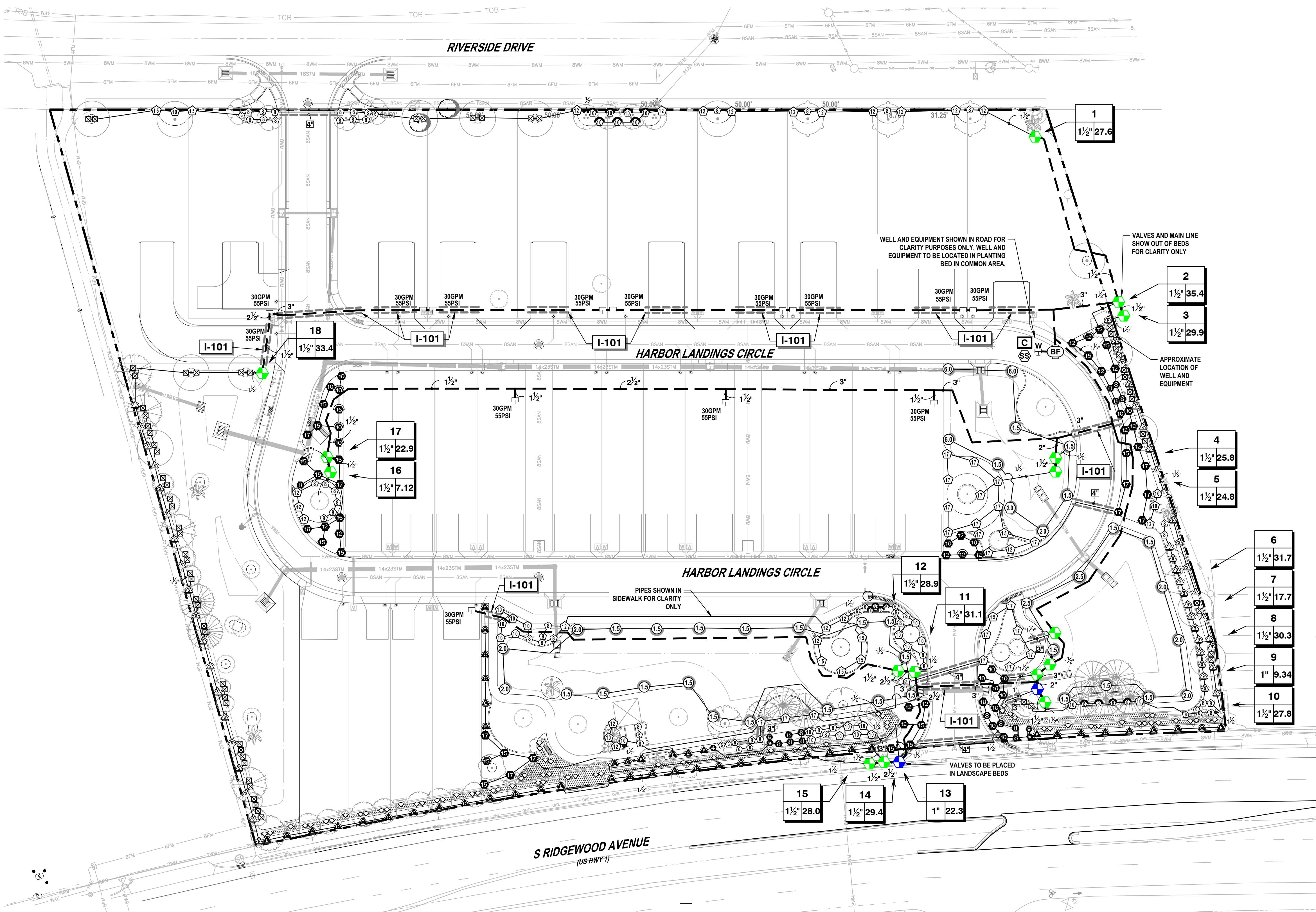
SYMBOL	DESCRIPTION
	4" SLEEVE WATER 2" SLEEVE WIRE

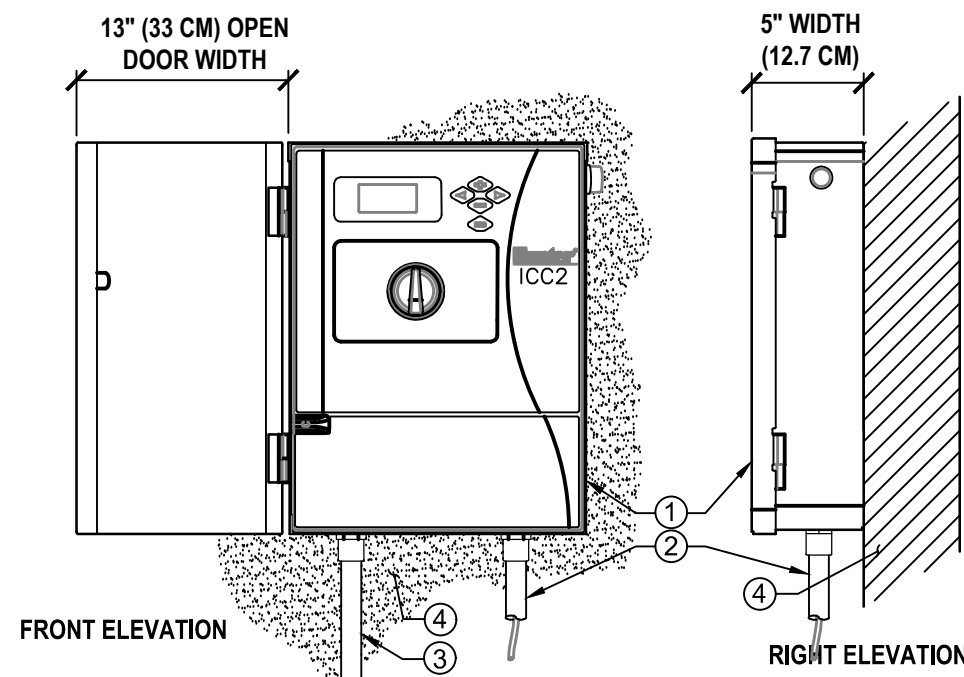


WATERING SCHEDULE

NUMBER	MODEL	TYPE	PRECIP	SUN	MON	TUE	WED	THU	FRI	SAT	IN./WEEK	MIN./WEEK	GAL./WEEK	GAL./DAY
1	HUNTER ICV-G-FS	SHRUB SPRAY	1.47 in/h			16 min			16 min		0.75	31	856	428
2	HUNTER ICV-G-FS	TURF SPRAY	1.65 in/h			28 min			28 min		1.5	55	1,946	973
3	HUNTER ICV-G-FS	SHRUB SPRAY	2.14 in/h			11 min			11 min		0.75	22	659	329
4	HUNTER ICV-G-FS	TURF ROTOR	0.65 in/h			24 min			24 min		0.5	47	1,213	606
5	HUNTER ICV-G-FS	SHRUB SPRAY	1.32 in/h			18 min			18 min		0.75	35	869	435
6	HUNTER ICV-G-FS	SHRUB SPRAY	1.32 in/h			18 min			18 min		0.75	35	1,109	554
7	HUNTER ICV-G-FS	TURF ROTOR	0.52 in/h			30 min			30 min		0.5	59	1,044	522
8	HUNTER ICV-G-FS	TURF SPRAY	1.75 in/h			26 min			26 min		1.5	52	1,576	788
9	HUNTER ICV-G-FS	AREA FOR DRIPLINE	1.8 in/h			13 min			13 min		0.75	26	243	121
10	HUNTER ICV-G-FS	BUBBLER	2.2 in/h			11 min			11 min		0.75	21	583	292
11	HUNTER ICV-G-FS	SHRUB SPRAY	1.45 in/h			16 min			16 min		0.75	31	963	482
12	HUNTER ICV-G-FS	TURF ROTOR	0.71 in/h			22 min			22 min		0.5	43	1,243	621
13	HUNTER ICV-G-FS	AREA FOR DRIPLINE	1.54 in/h			15 min			15 min		0.75	30	669	334
14	HUNTER ICV-G-FS	TURF SPRAY	1.69 in/h			27 min			27 min		1.5	54	1,586	794
15	HUNTER ICV-G-FS	TURF SPRAY	1.87 in/h			25 min			25 min		1.5	49	1,370	685
16	HUNTER ICV-G-FS	SHRUB SPRAY	1.39 in/h			17 min			17 min		0.75	33	235	118
17	HUNTER ICV-G-FS	TURF SPRAY	1.39 in/h			33 min			33 min		1.5	65	1,487	743
18	HUNTER ICV-G-FS	BUBBLER	1.55 in/h			15 min			15 min		0.75	30	1,002	501

HALIFAX RIVER

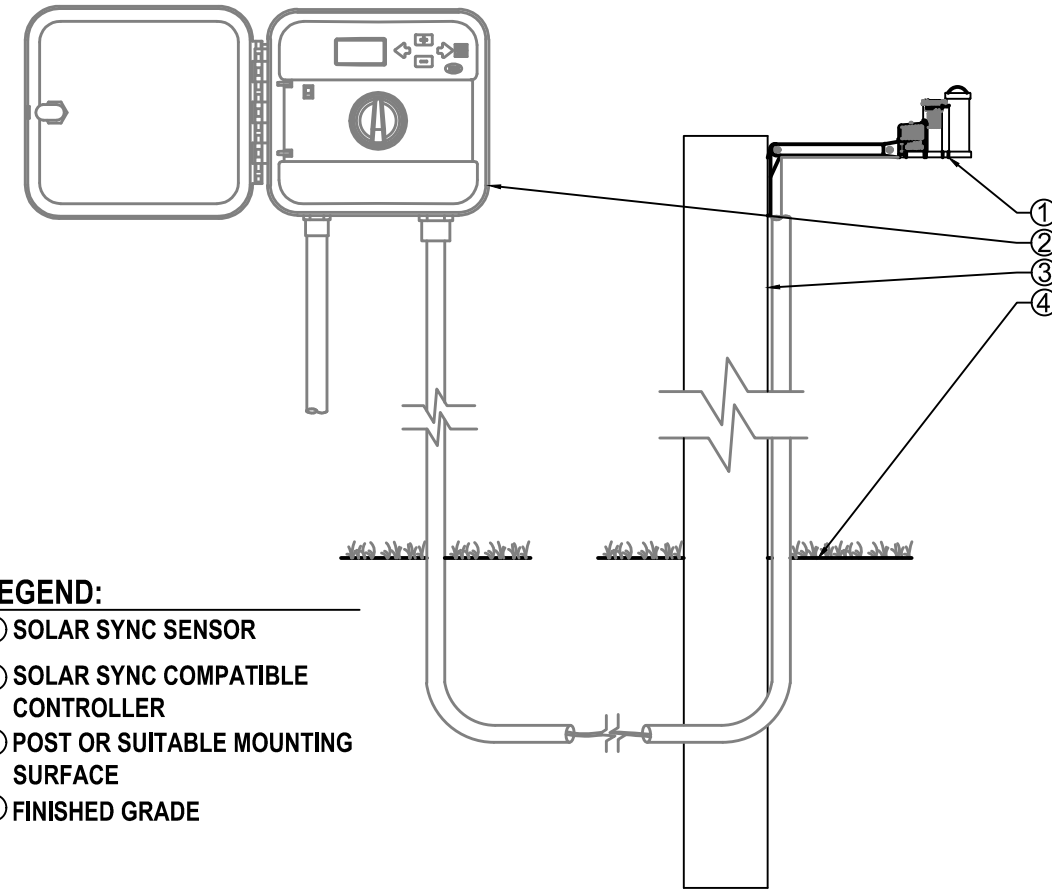




NOTE:
MOUNT CONTROLLER LCD SCREEN AT EYE
LEVEL. CONTROLLER SHALL BE
HARD-WIRED TO GROUNDED 110 VAC
POWER SOURCE

LEGEND:

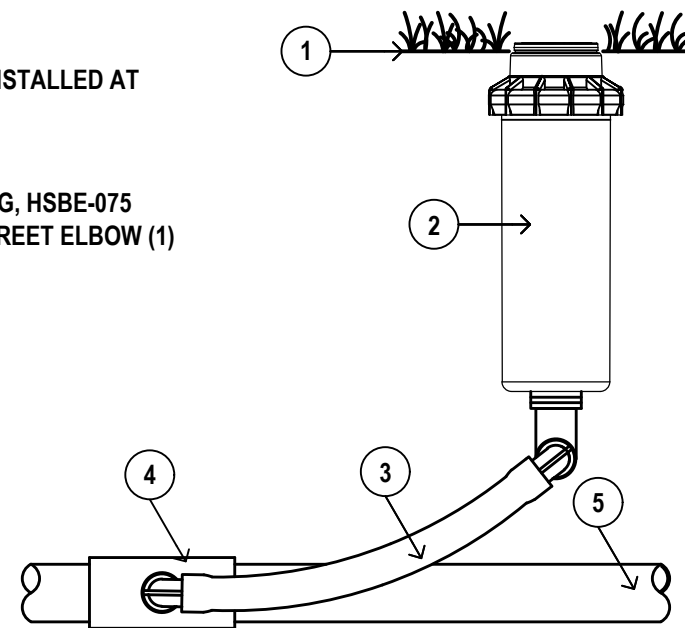
- 1 IRRIGATION CONTROLLER (12C-800-M) PER PLAN
- 2 IRRIGATION CONTROL WIRE IN CONDUIT SIZE AND TYPE PER LOCAL CODES
- 3 ELECTRICAL SUPPLY CONDUIT CONNECT TO POWER SOURCE, J-BOX INSIDE CONTROLLER
- 4 ADJACENT SURFACE TO MOUNT CONTROLLER PER PLAN



LEGEND:

- 1 SOLAR SYNC SENSOR
- 2 SOLAR SYNC COMPATIBLE CONTROLLER
- 3 POST OR SUITABLE MOUNTING SURFACE
- 4 FINISHED GRADE

- 1 FINISH GRADE
- 2 SPRAY OR ROTOR HEAD INSTALLED AT FINISH GRADE
- 3 SWING JOINT:
HUNTER 'PRO-FLEX' TUBING, HSBF-075
ELBOWS (2), & MARLEX STREET ELBOW (1)
- 4 LATERAL TEE OR ELL
- 5 LATERAL PIPE



1 HUNTER ICC2 CONTROLLER

1/8" = 1'-0"

P-CO-2021-225-21

2 HUNTER SOLAR SYNC SENSOR

1/8" = 1'-0"

P-CO-2021-225-22

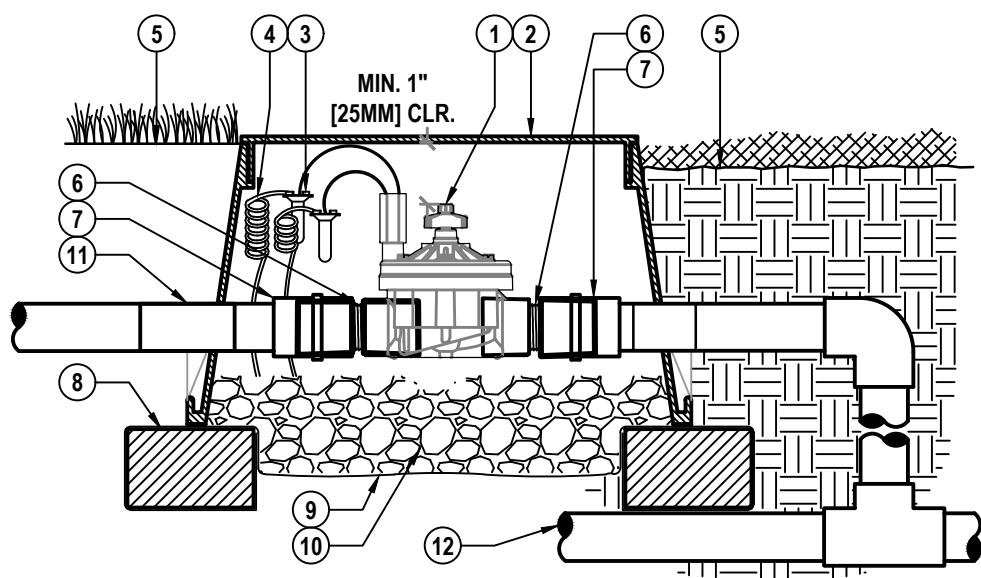
3 SPRAY HEAD AND ROTOR DETAIL

1/4" = 1'-0"

P-CO-2021-225-17

LEGEND

- 1 HUNTER REMOTE CONTROL VALVE (ICV) WITH FLOW CONTROL
- 2 IRRIGATION VALVE BOX: HEAT STAMP LID WITH 'RCV' IN 2" LETTERS
- 3 WATERPROOF CONNECTORS (2)
- 4 18"-24" COILED WIRE TO CONTROLLER
- 5 FINISH GRADE AT ADJACENT SURFACE (TURF OR MULCH)
- 6 SCH. 80 CLOSE NIPPLE, SIZE PER RCV
- 7 PVC SLIP X FPT ADAPTOR
- 8 BRICK SUPPORTS (4)
- 9 FILTER FABRIC - WRAP TWICE AROUND BRICK SUPPORTS
- 10 3/4" WASHED GRAVEL - 4" MIN. DEPTH
- 11 IRRIGATION LATERAL
- 12 MAINLINE AND FITTINGS



4 HUNTER REMOTE CONTROL VALVE (ICV)

1 1/2" = 1'-0"

P-CO-2021-225-20

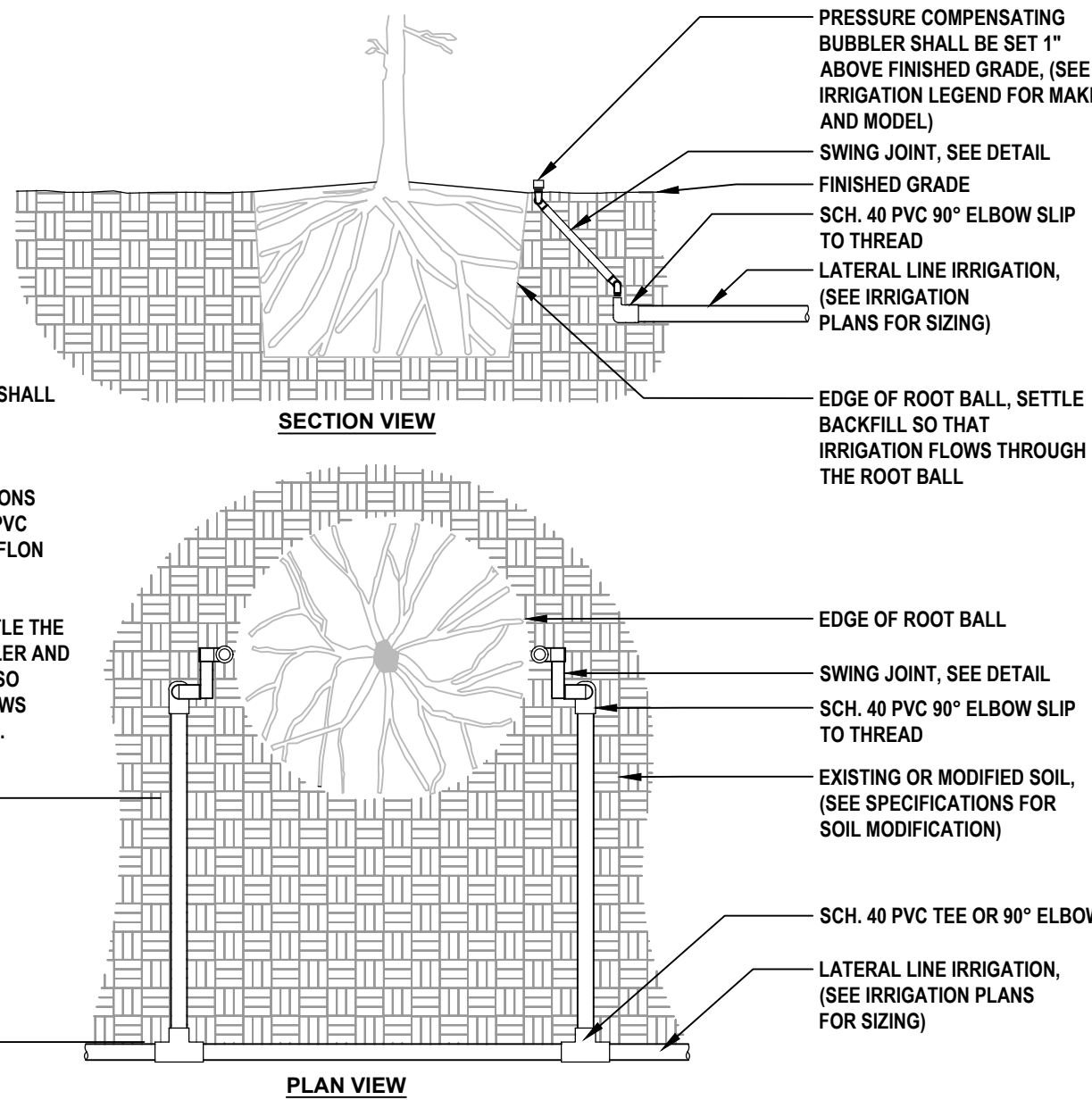
5 IRRIGATION BUBBLER (2) W/ LAYOUT

3/4" = 1'-0"

P-CO-2021-225-02

NOTES:

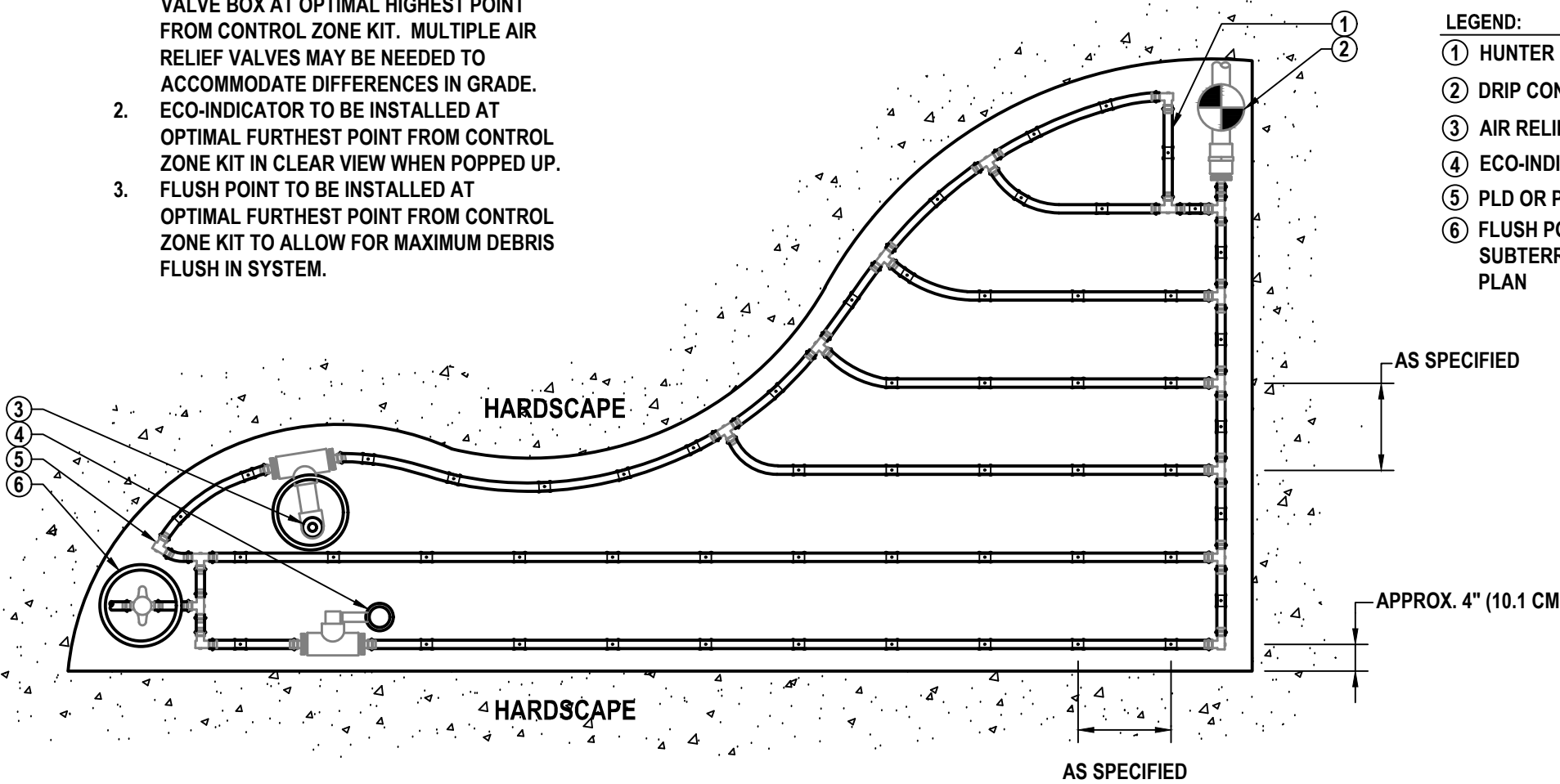
1. ALL IRRIGATION FITTINGS SHALL BE SCH. 40 PVC UNLESS SPECIFIED OTHERWISE.
2. ALL THREADED CONNECTIONS FROM SCH. 40 TO SCH. 80 PVC SHALL BE MADE USING TEFLON TAPE.
3. CONTRACTOR SHALL SETTLE THE AREA AROUND THE BUBBLER AND EDGE OF THE ROOT BALL SO THAT ALL IRRIGATION FLOWS THROUGH THE ROOT BALL.



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NOTES:

1. AIR RELIEF VALVE (PLD-AVR) INSTALLED IN VALVE BOX AT OPTIMAL HIGHEST POINT FROM CONTROL ZONE KIT. MULTIPLE AIR RELIEF VALVES MAY BE NEEDED TO ACCOMMODATE DIFFERENCES IN GRADE. ECO-INDICATOR TO BE INSTALLED AT OPTIMAL FURTHEST POINT FROM CONTROL ZONE KIT IN CLEAR VIEW WHEN POPPED UP.
2. FLUSH POINT TO BE INSTALLED AT OPTIMAL FURTHEST POINT FROM CONTROL ZONE KIT TO ALLOW FOR MAXIMUM DEBRIS FLUSH IN SYSTEM.



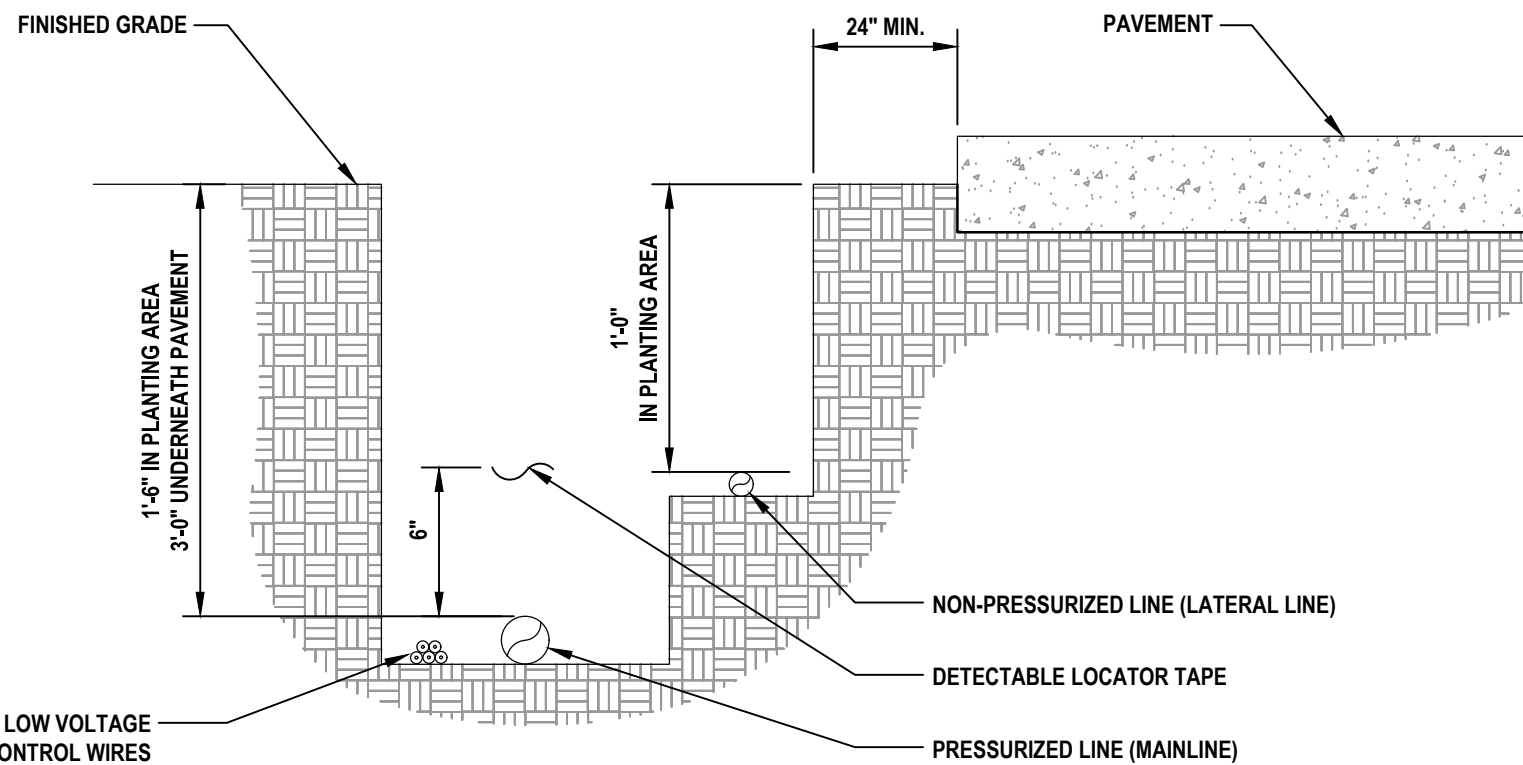
6 DRIPLINE FOR IRREGULAR BED

1 1/2" = 1'-0"

P-CO-2021-225-11

LEGEND:

- 1 HUNTER DRIPLINE PER PLAN
- 2 DRIP CONTROL ZONE KIT PER PLAN
- 3 AIR RELIEF VALVE IN VALVE BOX
- 4 ECO-INDICATOR ON SWING ARM
- 5 PLD OR PLD-LOCK FITTING (TYP.)
- 6 FLUSH POINT (PLD-BV) IN SUBTERRANEAN BOX PER PLAN



NOTES:

1. SEE IRRIGATION LEGEND FOR MAINLINE AND LATERAL LINE PIPE SIZE AND TYPE.
2. DIRECT BURIAL CONTROL WIRES SHALL BE INSTALLED IN SCH. 40 PVC ELECTRICAL CONDUIT IF REQUIRED.
3. 2-WIRE IRRIGATION WIRE SHALL BE INSTALLED IN SCH. 40 PVC ELECTRICAL CONDUIT.
4. DETECTABLE LOCATOR TAPE SHALL BE LOCATED SIX INCHES (6") ABOVE THE ENTIRE MAINLINE RUN.

7 IRRIGATION TRENCHING

1 1/2" = 1'-0"

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IRRIGATION NOTES

1. THE CONTRACTOR SHALL VERIFY THE EXISTENCE AND LOCATION OF ALL EXISTING UTILITIES AND CONDITIONS PRIOR TO COMMENCEMENT OF WORK.
2. **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.**
3. THE PLAN IS SCHEMATIC ONLY. THE CONTRACTOR SHALL INSTALL PIPING IN A MINIMUM NUMBER OF TRENCHES AND SHALL INSTALL PIPE IN A MINIMUM LENGTH.
4. IRRIGATION LINES ARE SHOWN DIAGRAMMATICALLY AND ARE INTENDED TO SHOW DISTRIBUTION ZONES ONLY. LINES LOCATED UNDER PAVEMENT SHALL BE KEPT TO A MINIMUM AND ALL PIPING UNDER PAVED AREAS SHALL BE SLEEVED.
5. 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.)
6. QUANTITIES FOR IRRIGATION MATERIALS MAY BE ESTIMATES. CONTRACTOR SHALL DO THEIR OWN TAKEOFF.
7. 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.
8. ALL LATERAL PIPE SHALL BE INSTALLED A MINIMUM OF 12" BELOW GRADE.
9. 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.
10. LOCATE ALL VALVES AND OTHER IRRIGATION EQUIPMENT IN PLANT BED AREAS WITHIN THE PROJECT LIMITS FOR CONCEALMENT PURPOSES.
11. RISERS ARE TO BE HIDDEN COMPLETELY IN SHRUBBERY OR PAINTED BLACK AND IN NO CASE BE HIGHER THAN THE SHRUBBERY INSTALLED.
12. ALL VALVES SHALL BE INSTALLED IN VALVE BOXES. PROVIDE A 6" GRAVEL SUMP AT THE BOTTOM OF A VALVE BOXES AND INSTALL 1/2" TO 1" DIAMETER GRAVEL AT THE BOTTOM OF THE VALVE PIT.
13. IRRIGATION SHALL MEET ALL APPLICABLE CURRENT MUNICIPAL, COUNTY, STATE OR FEDERAL CODES, ORDINANCES AND REGULATIONS THAT HAVE JURISDICTION.
14. THERE SHALL BE A MINIMUM OF FOUR (4) INCHES BETWEEN THE IRRIGATION EQUIPMENT AND PAVEMENT.
15. THERE SHALL BE A MINIMUM OF TWELVE (12) INCHES BETWEEN THE IRRIGATION EQUIPMENT AND STRUCTURES.
16. THERE SHALL BE NO DIRECT SPRAY ON WALKWAYS, BUILDINGS, DRIVES OR ROADWAYS.
17. ALL TURF IRRIGATION HEADS SHALL PROVIDE 100% HEAD TO HEAD COVERAGE.
18. ALL FITTINGS SHALL BE SCHEDULE 40 PVC.
19. 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 HUNTER GREEN.
20. ALL DRIP ZONES SHALL INCLUDE AN AIR RELIEF VALVE INSTALLED IN A VALVE BOX AT OPTIMAL HIGHEST POINT FROM THE CONTROL ZONE KIT. MULTIPLE AIR RELIEF VALVES MAY BE NEEDED TO ACCOMMODATE DIFFERENCES IN GRADE. ECO-INDICATOR TO BE INSTALLED AT OPTIMAL FURTHEST POINT FROM CONTROL ZONE KIT IN CLEAR VIEW WHEN POPPED UP. FLUSH POINT TO BE INSTALLED AT OPTIMAL FURTHEST POINT FROM CONTROL ZONE KIT TO ALLOW FOR MAXIMUM DEBRIS FLUSH IN SYSTEM.
21. ALL DRIP ROWS SHALL BE SPACED A MINIMUM OF 12" APART AND A MAXIMUM OF 18" APART.
22. ELECTRICAL TO CONTROLLER SHALL BE SUPPLIED BY ELECTRICAL CONTRACTOR (NOT IRRIGATION CONTRACTOR).
23. TREE PROTECTION AREA. HAND TRENCH ALL PIPING IN THESE AREAS TO AVOID IMPACTING THE CRITICAL PROTECTION ZONE OF THE EXISTING TREES TO REMAIN (TYP).
24. CONTRACTOR TO PROVIDE CONTROLLER HANDBOOK AND OPERATION INSTRUCTIONS, AS-BUILT ZONE DIAGRAM, INCLUDING LOCATIONS AND SIZE OF COMPONENTS, AND SOLID MOISTURE SENSOR PROBE LOCATION IF APPLICABLE, PRECIPITATION RATES FOR EACH ZONE, AND SCHEDULE RUN TIMES, WINTER AND SUMMER TO THE OWNER.

WELL & PUMP NOTE

1. PUMP SPECIFICATIONS:

PUMP MUST PROVIDE A MINIMUM OF 100 GALLONS PER MINUTE @ 100 PSI AT HEAD.

2. THE WELL SHALL BE CAPABLE OF PROVIDING REQUIRED WATER QUANTITY WITH FOLLOWING WATER QUALITY:
 - A. AT THE REQUIRED FLOW WATER SHALL BE CLEAR AND FREE OF SAND AND OTHER DEBRIS LARGER THAN .030" IN DIAMETER.
 - B. WATER SHALL BE CONSIDERED SAND FREE WHEN NO SAMPLE, TAKEN DURING TEST PUMPING, CONTAINS MORE THAN 2 PARTS PER MILLION OF SUSPENDED SOLID WEIGHT.
 - C. MAXIMUM IRON ALLOWED IN THE WELL WATER SHALL BE LESS THAN 0.3 PARTS PER MILLION.
 - D. MAXIMUM SALT CONTENT SHALL BE LESS THAN 300 PARTS PER MILLION.

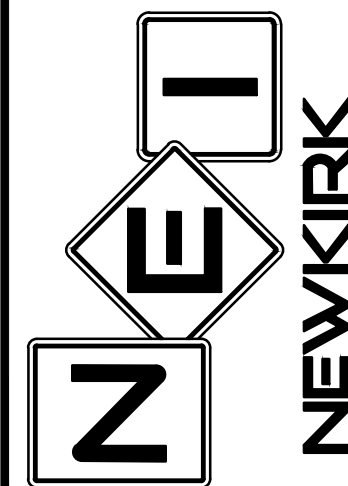
PLANT ESTABLISHMENT

1. IRRIGATE EVERY DAY FOR ONE MONTH.
2. IRRIGATE EVERY OTHER DAY FOR ONE ADDITIONAL MONTH.
3. IRRIGATE TWICE A WEEK THEREAFTER OR MORE OFTEN DURING DRY PERIODS IF PLANTS ARE SHOWING SIGNS OF DISTRESS SUCH AS WILTING OR BROWNING.
4. ENSURE RAIN SENSOR IS OPERATING CORRECTLY AND SYSTEM IS NOT WATERING ON DAYS WHEN IT RAINS.

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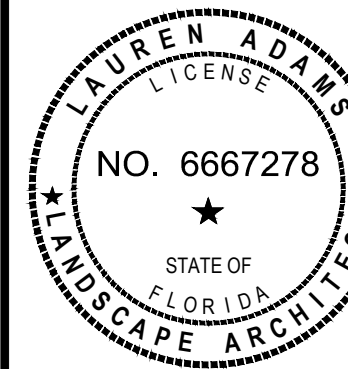
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