

#### **DEVELOPMENT REVIEW BOARD**

Chair: Frank Chase
Peter Fleck
Jennifer Roper
Norma Sutton
Stephen Withers
Roger Heinz
Gregg Anderson

Council Liaison: Andy Williams

Agenda

June 20, 2023 6:30 PM

#### TOWN HALL 520 MAIN STREET WINDERMERE, FL 34786

#### PLEASE TURN OFF ALL CELL PHONES AND PAGERS

PLEASE NOTE: IN ACCORDANCE WITH F.S. 286.26: Person with disabilities needing assistance to participate in any such proceedings should contact the Office of the Clerk at least 48 hours beforehand at (407) 876-2563.

Pursuant to Resolution No. 2005-12 adopted on December 13, 2005, the following Civility Code shall govern all procedings before the Town of Windermere Development Review Board:

- 1. All electronic devices, including cell phones and pagers. shall be either turned off or otherwise silenced.
- 2. Prolonged conversation shall be conducted outside Council meeting hall.
- 3. Whistling, heckling, gesturing, loud conversations, or other disruptive behavior is prohibited.
- 4. Only those individuals who have signed the speaker list and/or/who have been recognized by the Mayor (or Chair) may address comments to the Council.
- 5. Comments at public hearings shall be limited to the subject being considered by the Council
- 6. Comments at Open Forums shall be directed to Town issues.

Agenda

- 7. All public comments shall avoid personal attacks and abusive language
- 8. No person attending a Development Review Board meeting is to harass, annoy, or otherwise disturb any other person in the room.

Any member of the public whose behavior is disruptive and violates the Town of Windermere Civility Code is subject to removal from the Development Review Board meeting by an officer and such other actions as may be appropriate. PLEASE NOTE: IN ACCORDANCE WITH F.S. 286.0105: Any person who desires to appeal any decision at this meeting will need a record of this proceeding. For this, such person may need to ensure that a verbatim record of such proceeding is made which includes the

#### **AGENDA**

- THE MEETING IS CALLED TO ORDER BY THE CHAIR
- 1. OPEN FORUM / PUBLIC COMMENT (3-Minute Limit)
- 2. OLD BUSINESS
  - a. General Items for Consideration
  - i. Z19-12 Windermere Downtown Properties, LLC Approval of Fina Development Plan/Major Development for Redevelopment to Retail/Office/Restaurant (Attachments Board Option)

#### 3. NEW BUSINESS

- a. Minutes
- i. Development Review Board Meeting Minutes: May 16, 2023 (Attachment Board Option)
- 4. ADJOURN

#### Town of Windermere

614 Main Street Windermere, FL 34786 Office: (407) 876-2563 Fax: (407) 876-0103

Mayor
JIM O'BRIEN



Town Manager ROBERT SMITH

Clerk DOROTHY BURKHALTER

#### Development Review Board June 20, 2023

1<sup>st</sup> Town Council July 11, 2023

2<sup>nd</sup> Town Council August 8, 2023

Case No.: Z19-12/Final Development Plan//Major Development

**Applicant/Representative:** V3 Capital – Trey Vick

**Property Owner:** Windermere Downtown Property, LLC

**Requested Action:** Approval of Fina Development Plan/Major Development for

Redevelopment to Retail/Office/Restaurant

**Property Address:** 517 Main St. (17-23-28-9336-02-430); 527 Main St. (17-23-28-

9336-02-470); 516 Oakdale St. (17-23-28-9336-02-510); 522 Oakdale St. (17-23-28-9336-02-500); 119 E 6<sup>th</sup> Ave. (17-23-28-9336-02-490) , Windermere, FL 34786; and parcel no. 17-23-28-

9336-02-520

**Legal Description:** PLAT OF WINDERMERE G/36 LOTS 244 (LESS N 24.50 FT) &

LOTS 245 & 246; PLAT OF WINDERMERE G/36 LOTS 247 & 248; PLAT OF WINDERMERE G/36 LOT 251; PLAT OF WINDERMERE G/36 LOT 250; PLAT OF WINDERMERE G/36

LOT 249; and PLAT OF WINDERMERE G/36 LOT 252

**Existing Future Land Use:** Commercial/Single-Family Residential with Town Center Overlay

**Existing Zoning:** Commercial/Single-Family Residential with Town Center Overlay

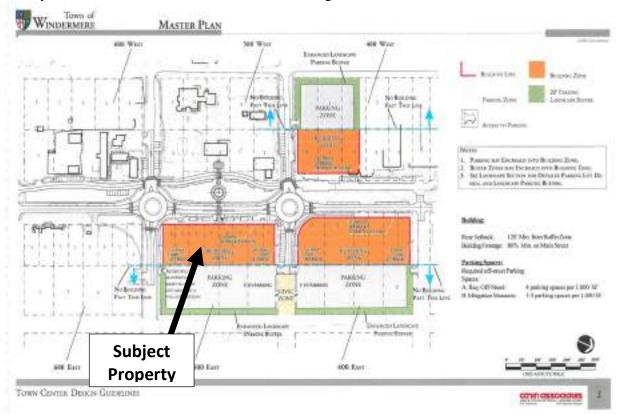
Existing Use: Commercial/Residential

1 of 6

#### **CASE SUMMARY:**

The subject property is located at the northeast corner of Main Street and E 6<sup>th</sup> Avenue in Downtown Windermere. The subject property is within the Town Center Overlay District as adopted in the Town's Comprehensive Plan and must adhere to the Town Center Design Guidelines. Development with the Town Center Overlay District requires approval through the Planned Unit Development (PUD) process.

The following image shows the subject property and its location relative to the Town Center Overlay District as shown in the Town Center Design Guidelines.



The PUD process involves three steps: concept plan, preliminary development plan, and final development plan.

The concept plan was completed in October 2020, with non-binding Development Review Board (DRB) comments provided to the applicant.

The preliminary development plan was approved by Town Council on Jun 8, 2021, with the adoption of Ordinance 2021-01. Ordinance 2021-01 rezoned the subject property to PUD, approved the preliminary development plan, and provided conditions for the development and approval of the final development plan.

With the first two steps complete of the PUD process, this request is for the approval of the final development plan for this proposed project. This final development plan also is the site plan for major development approval.

In summary, the proposed final development plan/major development plan proposes redevelopment of the subject property as follows:

1. 19,750 gross square feet of retail, restaurant, office within two - one-story buildings with a courtyard between the two buildings. The proposed new buildings are less than the maximum allowed height of 35 feet and are located consistent with the requirements of the Town Center Design Guidelines. The proposed buildings are located along Main Street with the back half of the property along Oakdale Street containing the parking and landscape buffer.

At this time, the only announced use for the proposed project is a boutique Ace Hardware store proposed for the building on the north end. A hardware store is a permitted use in the Town Center Overlay District. However, it is only permitted without any outdoor storage or displays. Policy 1.4.21 of the Future Land Use Element of the Town's Comprehensive Plan specifically states "hardware stores (no outdoor storage)" are the only type of hardware store allowed in the Town Center Design District. Because this limitation is within the Town's Comprehensive Plan, this prohibition on outdoor storage for hardware stores cannot be waived or deviated from within the approval of the final development plan and major development. To allow the outdoor storage for the hardware store requires an amendment to the Town's Comprehensive Plan to remove that prohibition. In addition, Ordinance 2021-01, which approved the PUD zoning for the subject property, and Section 8.01.00(11) of the Town's Land Development Code also prohibit outdoor storage or display of materials or merchandise unless displayed during Town sanctioned events subject to locational criteria.

- 2. There are 79 on-site parking spaces provided consistent with the required parking standard of the Town Center Design Guidelines of 4 parking spaces per 1,000 sf of gross building area. The parking within the Town Center Overlay District has its own parking standards. Section 3.04.03(2)f.3, LDC, states: "Parking ratios for all land uses within the Town Center District are hereby established at four spaces/1,000 gross square feet." Consequently, the parking standards of individual uses as applied to properties developed prior to the implementation of the Town Center Design Guidelines or not located within the boundary of the Town Center Overlay District are not applicable to this proposed project.
- 3. There is a 20-foot landscape buffer at the perimeter of the property along Oakdale Street and E 6<sup>th</sup> Avenue as required by the Town Center Design Guidelines. There is also a 6-foot screen wall along the Oakdale Street frontage with the landscaping on the exterior of the screen wall, The screen wall maintains the 6-foot height along the portion of the E 6<sup>th</sup> Avenue frontage that is across from the homes on Oakdale Street on the south of E 6<sup>th</sup> Avenue. However, as the screen wall approaches the right-in/right-out driveway connection for the project to the E 6<sup>th</sup> Avenue, the screen wall is reduced in height to 3-feet to provide for visual clearance at the driveway intersection. On April 19, 2023, the

- applicant met on site with Oakdale Street residents that live across the street from the project to discuss the proposed screen wall and landscape.
- 4. As required by the Town Center Design Guidelines and Ordinance 2021-01, the access to the project is from a right-in/right-out driveway connection to E 6<sup>th</sup> Avenue with a right-turn lane into the project from E 6<sup>th</sup> Avenue, as demonstrated as need by the traffic study provided for the project during the approval of the preliminary development plan. There will be an access on the north side of the project to E 5<sup>th</sup> Avenue. The applicant, as required by Ordinance No. 2021-01, will be providing a transportation mitigation payment of \$47,000 (\$20,000 for their proportionate share of the estimate cost of an improvement to the Main Street and 6<sup>th</sup> Ave round-a-bout and \$27,000 for the installation of a signalized pedestrian crossing on E 6<sup>th</sup> Avenue at Oakdale Street).
- 5. The project will connect to potable water services from Orange County Utilities and be served by an on-site septic system to be permitted by the Orange County Health Department. The Town has no financial obligation for the extension of any utility services to the project.
- 6. The project will meet the stormwater management requirements of the South Florida Water Management District to assure post-development impacts do not exceed pre-development impacts of the project. The project is exempt from permitting by the South Florida Water Management District due to the project is less than 10 acres in size with less than 2 acres of impervious area. However, the project must still meet the South Florida Water Management District stormwater standards.
- 7. After several meetings and site visits with the Windermere Tree Board, the applicant has a provided a tree impact, mitigation, and protection plan with their final development plan submission. Based on their May 5, 2023, plans submission, the applicant is required to mitigate 151 inches of trees being removed and not being replaced, as shown in the table in the plan sheets. The applicant has agreed to donate trees to the Town for planting in the town to replace the 151 inches in lieu of paying a mitigation fee. Section 5.01.13, Town LDC, requires that replacement trees must be a species that will attain an overall height of 15 feet at maturity and a diameter at breast height (DBH) of at least four inches, and at least 8 feet in height and DBH of 2 inches at time of planting. Also on May 18, 2023, the Windermere Tree Board held a meeting to review he May 5, 2023, plan submission and recommended to the DRB and the Town Council approve the project with further consideration the replacement of the existing landscaping at the front of the proposed building at the corner of Main Street and E 6<sup>th</sup> Avenue, and to use American Elms and On June 8, 2023, the applicant provided a response to the native Palatka Holly. Windermere Tree Board approval recommendation comments and confirmed that they will use American Elms and native Palatka Holly, and that their proposed final development plan through all of the previous reviews by the Town Council during the public workshops and the Windermere Tree Board.
- 8. The proposed building design has developed and changed over the past year with comments received during the four Town Council Public Workshops that occurred between

March 2022 and February 2023. The proposed building design appears to be generally compliant with the design intent of the Town Center Design Guidelines. If this final development plan/major development is approved, the proposed building elevations will be included as part of the approval conditions with a note that minor adjustments may be made to the proposed façade that maintain consistency with the design intent of the Town Center Design Guidelines and approved by the Town Manager, during the building permitting process for the structures.

9. Chief Sorenson, Ocoee Fire Department, reviewed the final development plan and approved the shown fire truck routing plan and only provide comment for the applicant to coordinate with him during the final building permitting for the proper location of the fire hydrant.

For the DRB's information, a requirement of Ordinance 2021-01 for this project was for the applicant to attend three public workshops with the Town Council during the development of the final development plan to provide the opportunity of early comments from the public and from the Town Council before the final development plan was submitted for the final hearings. The applicant participated in four public workshops with the Town Council. The dates for the four public workshops were:

- 1. March 3, 2022
- 2. September 7, 2022
- 3. January 24, 2023
- 4. February 28, 2023

At each of these Town Council public workshops there was significant input form the public and discussion by the Town Council. As the public workshops proceeded, changes occurred to the proposed plans. At the start of the process the applicant was requesting a deviation from the 4 parking spaces per 1,000 square feet parking requirement; there was significant uncertainty related to tree impacts and mitigation; there were concerns about the screen wall and landscape buffer; and concerns about the proposed building design. After the last Town Council public workshop and the submission of the plans for consideration by the DRB and the Town Council for final approval, the applicant now provides parking to meet the required 4 parking spaces per 1,000 square feet, the Windermere Tree Board recommends approval of the project with a few comments, the applicant met with the residents on Oakdale Street to review the proposed screen wall and landscaping, and the building design has changed materials to provide a brick façade with other improvements to the design of the building.

You may review the information and watch the Town Council public workshops at <a href="https://town.windermere.fl.us/downtown-redevelopment/">https://town.windermere.fl.us/downtown-redevelopment/</a>

The DRB is requested to review and provide a recommendation to the Town Council to either approve the proposed final development plan/major development as submitted, approve with conditions or changes, or denial.

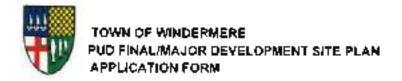
The DRB's recommendation will be provided to the Town Council at their first hearing on July 11, 2023. The Town Council will also hold a second hearing on August 8, 2023, to make the final decision on the approval of the final development plan/major development.

#### **PUBLIC NOTICE:**

The proposed final development plan/major development plans and supporting information has been available on the Town's website at <a href="https://town.windermere.fl.us/downtown-redevelopment/">https://town.windermere.fl.us/downtown-redevelopment/</a> for the past month. A newspaper notice for the DRB and Town Council meetings was published on June 8, 2023. Public notices were mailed to property owners within 500 feet of the subject property on June 9, 2023. Signs were posted at the property on June 10, 2023. As of June 12, 2023, no public responses from these notices have been received. Any responses received before the DRB meeting will be provided at the meeting.

During the Town Council public workshops, public comments were focused on four primary issues: number of parking spaces, tree protection /mitigation, buffering, and building design.

Please do not hesitate to contact me at 813-415-4952 or <u>bcornelius@wadetrim.com</u> with any questions.



#### TYPE or PRINT the following information:

Address 9259 Point Cypress Dr.	Address 496 S. Hunt Club Soulevard
City Oftendo	City Apopka
State <u>FL</u> Zip Code <u>32838</u>	State <u>FL</u> Zip Code <u>32703</u>
Phone (407_1670 8648	Phone   407   848-1663
(Çelli L) N/A	ICell) (321 ) 653-0454
(Fax) ( N/A	[Fax] () N/A
Email Address landminus@aol.com	Email Address TrewfbV3caorat.com
Project Name (if any) <u>Windermere Downtown Prope</u>	
applicant and the owner to pay the out-o its payment of the out-of-pocket costs, is	istitute the consent and agreement of the of-pocket costs, or to reimburse the fown for neutred by the fown directly in connection of town consultant fees, legal advertising, costs. (Article XIII, LDC)
Owner and Applicant Signatures Owner Patricial Equation	Applicant
Date 05/01/7013	Date 05/66/2023

Owner(s) Windermere Downtown Property LLC Applicant/Agent Trey Vick (V3 Capital Group)

## **AGENT AUTHORIZATION FORM**

I/WE, (PRINT PROPERTY	Windermere Downtown Pro	operty, LLC , AS THE OWNER(S) OF THE
REAL PROPERTY DESCR	BED AS FOLLOWS, Windermere Downto	wn Property , po
HEREBY AUTHORIZE TO A	CT AS MY/OUR AGENT (PRINT AGENT'S NAME	e), John C. Vick III (V3 Capital Group)
AND MORE SPECIFICALL	Y DESCRIBED AS FOLLOWS, PUD FINAL	AFFECT THE APPLICATION APPROVAL REQUESTED range County & D.O.H. Permitting & AND MAJOR DEVELOPMENT SITE PLAN, AND TO ISLATIVE BODY IN THE TOWN CONSIDERING THIS
	IN ALL RESPECTS AS OUR AGENT IN MATTERS	
Date: 5/4/2-3	Signature of Property Owner	Print Name Property Owner
Date:		
	Signature of Property Owner	Print Name Property Owner
Witness my hair notice your Notice you	foregoing instrument was acknowledged He/she is person as identification and did/did not take and and official seal in the county and rear 2022 Signature of No	an oath.  I state stated above on the 4th day of tary Public or the State of Florida
Legal Description(s) or Pa	rcel identification Number(s) are required:	
PARCEL ID #:		
17-23-28-9336-02-430 17-23-28-9336-02-510	: 17-23-28-9336-02-470; 17-23-28-9336 ; 17-23-28-9336-02-520	3-02-490; 17-23-28-9336-02-500;
LEGAL DESCRIPTION:		

That part of Section 33, Township 24 South, Range 27 East, Orange County, Florida, being more particularly described as follows:

Commence at the Southeast corner of said Section 33, Township 24 South, Range 27 East, Orange County, Florida; thence run

of 994.86 feet to a point on the Southerly projection of the East line of Shoppes of West 192, according to the plat thereof as recorded in Plat Book 93, Pages 127 and 128, Public Records of Orange County, Florida; thence run N00°14'00"E along said Southerly projection, a distance of 100.00 feet to a point on the North right of way line of said State Road 530 (U.S. Highway No. 192); thence continue N0014'00"E along the East line of said Shoppes of West 192 and along the East line of the lands described in

Official Records Book 5526, Page 1669, Public Records of Orange County, Florida, a distance of 1037.89 feet for the Point of Beginning; thence run S8946'00"E, a distance of 43.60 feet to a point on a non-tangent curve, concave to the East, having a radius of 91.00 feet; thence from a radial bearing of S8327'27"E run northeasterly along the arc of said curve through a central angle of 2347'55", an arc distance of 37.80 feet, having a chord bearing of N1826'30"E and a chord distance of 37.53 feet; thence run

distance of 18.93 feet; thence run N2647'29"E, a distance of 17.99 feet; thence run S8939'32"E, a distance of 227.45 feet; thence

N1826'28"E, a distance of 59.31 feet; thence run S8936'22"E, a distance of 269.13 feet; thence run N0011'30"E along the East line of said Southeast 1/4 of Section 33, a distance of 414.43 feet; thence run N8939'32"W along the South line of lands described in Official Records Book 5526, Page 1669, a distance of 993.64 feet; thence run S0014'00"W along the aforesaid East line of the lands

177.16 feet; thence run N3754'25"E, a distance of 53.22 feet; thence run S6656'12"E, a distance of 65.35 feet; thence run

described in Official Records Book 5526, Page 1669, a distance of 530.38 feet to the Point of Beginning.

S8956'28"W along the South line of said Section 33, also being the centerline of State Road 530 (U.S. Highway No. 192), a distance

LEGAL DESCRIPTION

Contains 2.17 acres, more or less

# CONSTRUCTION PLANS

FOR

# WINDERMERE DOWNTOWN PROPERTY

PARCEL ID #'s: 17-23-28-9336-02-430, 17-23-28-9336-02-470, 17-23-28-9336-02-490, 17-23-28-9336-02-500, 17-23-28-9336-02-510, 17-29-28-9336-02-520

# TOWN OF WINDERMERE, FL May 3, 2023



SECTION 17, TOWNSHIP 23S, RANGE 28E **LOCATION MAP** 

#### **PROJECT TEAM**

#### OWNER/DEVELOPER WINDERMERE DOWNTOWN PROPERTY, LLC 496 S. HUNT CLUB BOULEVARD

APOPKA, FL 32703 CONTACT: BRETT DARGIS PHONE: (407)848-1663 EMAIL: brett@v3capgroup.com

## **ENGINEER**

KIMLEY-HORN AND ASSOCIATES, INC. 189 S. ORANGE AVENUE, SUITE 1000 ORLANDO, FL 32801 CONTACT: JONATHAN A. MARTIN, P.E. PHONE: (407) 898-1511 EMAIL: jonathan.martin@kimley-horn.com

#### LANDSCAPE ARCHITECT: KIMLEY-HORN AND ASSOCIATES, INC. 189 S. ORANGE AVENUE, SUITE 100 ORLANDO, FL 32801

CONTACT: SCOTT MINGONET, PLA, AICP PHONE: (407) 898-1511 EMAIL: scott.mingonet@kimley-horn.com

#### SURVEYOR

ACCURIGHT SURVEYS OF ORLANDO, INC. 2012 E. ROBINSON STREET ORLANDO, FL 32803 CONTACT: PHONE: (407)894-6314 EMAIL: ACCU@ACCURIGHTSURVEYS.NET

## UTILITY PROVIDERS POWER:

WATER: ORANGE COUNTY UTILITIES 9150 CURRY FORD ROAD ORLANDO, FL 32802 CONTACT: DAVID SHORETTE

PHONE: (407) 836-5515

TELEPHONE:

ORLANDO, FL 32810

PHONE: (407) 532-8511

CABLE/INTERNET/

CHARTER COMMUNICATIONS

CONTACT: TRACEY DOMOSTOY

3767 ALL AMERICAN BLVD.

452 E CROWN POINT ROAD WINTER GARDEN, FL 34787 CONTACT: KENNETTA DOUGLAS EMAIL: DAVID.SHORETTE@OCFL.NET EMAIL: KENNETTA.DOUGLAS@DUKE-ENERGY.COM EMAIL: TB925X@ATT.COM PHONE: (407)905-3371

**DUKE ENERGY** 

LAKE APOPKA NATURAL GAS DISTRICT 1320 WINTER GARDEN-VINELAND ROAD WINTER GARDEN, FL 34787 CONTACT: EVERETT HOLMES EMAIL: EHOLMES@LANGD.ORG PHONE: (407) 410-7024

## INTERNET:

33 N. MAIN STREET WINTER GARDEN, FL 34787 CONTACT: EV'NS CENAFILS PHONE: (407) 814-5373

**AERIAL PHOTOGRAPH** 

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	C1.1	GENERAL NOTES
	C2.0	SWPP NOTES
	C2.1	EROSION CONTROL DETAIL
	C3.0	EXISTING CONDITIONS
	C4.0	SITE PLAN
	C5.0	GRADING AND DRAINAGE PLAN
	C6.0	UTILITY PLAN
	C7.0	TRUCK ROUTING PLAN
	C7.1	TRUCK ROUTING PLAN
	C8.0	GENERAL CONSTRUCTION DETAILS
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	C9.1	UTILITY DETAILS
	C9.2	UTILITY DETAILS
	C9.3	UTILITY DETAILS
	L0.50	TREE MITIGATION PLAN
	L0.51	TREE MITIGATION CHART
	L0.52	TREE MITIGATION NOTES
	L1.00	LANDSCAPE PLAN
TELEPHONE:	L1.01	LANDSCAPE SCHEDULE & NOTES
AT&T - SOUTHEAST 5100 STEYR	L1.50	LANDSCAPE DETAILS
ORLANDO, FL 32819 CONTACT: THAINEL BRASCHI	L1.51	LANDSCAPE SPECIFICATIONS
EMAIL: TB925X@ATT.COM PHONE: (407) 351-8190	L2.00	IRRIGATION PLAN
ERNET:	L2.50	IRRIGATION DETAILS
N	L2.51	IRRIGATION SPECIFICATIONS
MAIN STREET ER GARDEN, FL 34787	L3.01	HARDSCAPE PLAN
ACT: EV'NS CENAFILS E: (407) 814-5373	L3.50	HARDSCAPE DETAILS
I		UIABBAAABE BETAUA

HARDSCAPE DETAILS

L3.51

(C) 2023 KIMLEY-HORN AND ASSOCIATES, INC.

189 S. ORANGE AVENUE, SUITE 1000, ORLANDO, FL 32801 Phone: (407) 898-1511

WWW.KIMLEY-HORN.COM REGISTRY NO. 35106

Always call 811 two full business days before you dig to have underground utilities located and marked.

MARCUS I. GEIGER, P.E. FL. P.E. NO. 89199

SHEET NUMBER

C0.0

#### GENERAL

- 1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO BECOME FAMILIAR WITH THE PERMIT AND INSPECTION REQUIREMENTS SPECIFIED BY THE VARIOUS GOVERNMENTAL AGENCIES AND THE ENGINEER. THE CONTRACTOR SHALL OBTAIN ALL NECESSARY PERMITS, SUCH AS DEWATERING PERMITS, RIGHT OF WAY PERMIT(S), EXCAVATION/FILL PERMIT(S), FIRE PROTECTION PERMIT(S), OR UNDERGROUND UTILITY PERMIT(S), PRIOR TO START OF CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MEETING ALL INSPECTION CRITERIA OF APPLICABLE AGENCIES, SCHEDULING OF INSPECTIONS, AND OBTAINING REQUIRED INSPECTIONS FROM AGENCY.
- 2. LOCATIONS, ELEVATIONS, AND DIMENSIONS OF EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES ARE SHOWN ACCORDING TO THE BEST INFORMATION AVAILABLE AT THE TIME OF PREPARATION OF THESE PLANS. THE EXISTING UTILITY INFORMATION SHOWN IS BASED ON THE TOPOGRAPHIC SURVEY PROVIDED BY PEC SURVEYING AND MAPPING, LLC. THE CONTRACTOR SHALL VERIFY THE LOCATIONS, ELEVATIONS, AND DIMENSIONS OF ALL EXISTING UTILITIES, STRUCTURES AND OTHER FEATURES, AFFECTING THIS AREA PRIOR TO CONSTRUCTION WORK. THE ENGINEER ASSUMES NO RESPONSIBILITY FOR THEIR ACCURACY OF THE SURVEY. SHOULD A DISCREPANCY ARISE BETWEEN THESE PLANS AND ACTUAL FIELD CONDITIONS, WHICH WOULD APPRECIABLY AFFECT THE EXECUTION OF THESE PLANS, THE CONTRACTOR SHALL HALT CONSTRUCTION AND NOTIFY THE OWNER, ENGINEER, AND APPLICABLE GOVERNING AGENCY IMMEDIATELY.
- 3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING AND VERIFYING (HORIZONTALLY AND VERTICALLY) ALL EXISTING UTILITIES PRIOR TO START OF CONSTRUCTION AND FOR NOTIFYING THE VARIOUS UTILITY COMPANIES (DURING STANDARD BUSINESS HOURS) TO MAKE THE NECESSARY ARRANGEMENTS FOR ANY RELOCATION, TEMPORARY DISTRIBUTION SERVICE, OR CLARIFICATION OF ACTIVITY REGARDING SAID UTILITY. THE CONTRACTOR SHALL EXERCISE CAUTION WHEN CROSSING AN UNDERGROUND UTILITY, WHETHER SHOWN ON THESE PLANS OR FIELD LOCATED. THE CONTRACTOR SHALL COOPERATE WITH UTILITY COMPANY (DURING STANDARD BUSINESS HOURS) DURING RELOCATION OPERATIONS. ANY DELAY OR INCONVENIENCE OF THE VARIOUS UTILITIES SHALL BE INCIDENTAL TO THE CONTRACT AND NO EXTRA COMPENSATION WILL BE ALLOWED. CONTRACTOR SHALL CALL "SUNSHINE ONE" AT 811 TO HAVE EXISTING UTILITIES LOCATED AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.
- 4. ALL DISTURBED AREAS (ON-SITE AND/OR OFF-SITE) NOT DESIGNED OR NOTED TO BE LANDSCAPED OR SODDED, SHALL BE SODDED.
- 5. THE CONTRACTOR SHALL NOT EXCAVATE, REMOVE, OR OTHERWISE DISTURB ANY MATERIAL, STRUCTURE, OR PART OF A STRUCTURE WHICH IS LOCATED OUTSIDE THE LINES, GRADES, OR GRADING SECTIONS ESTABLISHED FOR THIS PROJECT, EXCEPT WHERE SUCH EXCAVATION OR REMOVAL IS PROVIDED FOR IN THE CONTRACT, PLANS, OR SPECIFICATIONS. THE CONTRACTOR IS RESPONSIBLE FOR REPAIRING ANY DAMAGE TO EXISTING FACILITIES, ABOVE OR BELOW GROUND, THAT MAY OCCUR AS A RESULT OF THE WORK PERFORMED, BY THE CONTRACTOR OR SUB-CONTRACTORS, AS CALLED FOR IN THESE CONTRACT DOCUMENTS.
- 6. ALL WORK AND MATERIALS FURNISHED SHALL BE IN CONFORMITY WITH THE LINES, GRADES, GRADING SECTIONS, CROSS SECTIONS, DIMENSIONS, MATERIAL REQUIREMENTS, AND TESTING REQUIREMENTS THAT ARE SPECIFIED IN THE CONTRACT PLANS OR SPECIFICATIONS.
- 7. ALL SPECIFICATIONS AND DOCUMENTS REFERENCED HEREIN SHALL BE OF THE LATEST REVISION, AS APPLICABLE AT THE TIME ALL PERMITS HAVE BEEN OBTAINED.
- 8. ALL UNDERGROUND UTILITIES MUST BE IN-PLACE, TESTED AND INSPECTED PRIOR TO BASE AND SURFACE CONSTRUCTION.
- 9. THE GRAPHIC INFORMATION DEPICTED ON THESE PLANS HAS BEEN COMPILED TO PROPORTION BY SCALE AS ACCURATELY AS POSSIBLE. HOWEVER, DUE TO REPRODUCTIVE DISTORTION, REDUCTION, AND/OR REVISIONS, INFORMATION CONTAINED HEREIN IS NOT INTENDED TO BE SCALED FOR CONSTRUCTION PURPOSES.
- 10. THE CONTRACTOR SHALL SUBMIT SHOP DRAWINGS ON ALL PRECAST AND MANUFACTURED ITEMS TO THE OWNER'S ENGINEER FOR REVIEW PRIOR TO ORDERING AND/OR INSTALLATION. FAILURE TO DO SO MAY RESULT IN REMOVAL AND REPLACEMENT AT THE CONTRACTOR'S EXPENSE.
- 11. CONTRACTOR TO COORDINATE WITH THE APPLICABLE ELECTRIC UTILITY SUPPLIER REGARDING ANY NECESSARY RELOCATION(S) OF UNDERGROUND AND/OR OVERHEAD ELECTRIC FACILITIES, AND FOR THE LOCATION AND INSTALLATION OF TRANSFORMER PAD(S) AND ASSOCIATED ELECTRIC FACILITIES.
- 12. THE CONTRACTOR SHALL RESTORE OFF-SITE CONSTRUCTION AREAS TO EQUAL AND/OR BETTER CONDITION THAN EXISTING PRIOR TO START OF CONSTRUCTION.
- 13. THE CONTRACTOR SHALL COMPLY WITH THE LEGAL LOAD RESTRICTIONS IN HAULING OF MATERIALS IN PUBLIC ROADS BEYOND THE LIMITS OF WORK. A SPECIAL PERMIT WILL NOT RELIEVE THE CONTRACTOR OF LIABILITY FOR THE DAMAGE WHICH MAY RESULT FROM THE MOVING OF MATERIAL AND EQUIPMENT.
- 14. SURVEY MONUMENTS OR BENCHMARKS, WHICH HAVE TO BE DISTURBED BY THIS WORK, SHALL BE REPLACED UPON COMPLETION OF WORK BY A LICENSED LAND SURVEYOR CURRENTLY REGISTERED IN THE STATE OF FLORIDA.
- 15. CONTRACTOR SHALL TRIM, TACK AND MATCH EXISTING PAVEMENT AT LOCATIONS WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT.

16. CURBING SHALL BE PLACED AT THE EDGES OF ALL PAVEMENT, UNLESS OTHERWISE NOTED. REFER TO THE THE LATEST EDITION OF

F.D.O.T. "DESIGN STANDARDS FOR DESIGN, CONSTRUCTION, MAINTENANCE, AND UTILITY OPERATIONS ON THE STATE HIGHWAY SYSTEM"

- (ED. 2014) FOR DETAILS AND SPECIFICATIONS OF ALL CURB AND GUTTERS CALLED FOR IN THESE PLANS WITHIN PUBLIC RIGHTS OF WAY.
- 17. WHERE ASPHALT PAVING MEETS CONCRETE PAVING SUCH AS AT CONCRETE CURBING, THE ASPHALT SHOULD BE FINISHED 1 TO 1 ABOVE THE CONCRETE SURFACE TO ALLOW FOR FURTHER TRAFFIC COMPACTION OF THE ASPHALT.
- 18. THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING APPLICABLE SOIL AND/OR PAVEMENT TESTING WITH THE GEOTECHNICAL ENGINEER. TESTS WILL BE REQUIRED PURSUANT WITH THE GEOTECHNICAL SOILS REPORT. UPON COMPLETION OF WORK, THE GEOTECHNICAL ENGINEER WILL SUBMIT CERTIFICATIONS TO THE OWNER AND OWNER'S ENGINEER STATING THAT ALL REQUIREMENTS HAVE BEEN MET.
- 19. CONTRACTOR IS TO ADJUST ANY UTILITY ELEMENT MEANT TO BE FLUSH WITH GRADE (CLEAN OUT MANHOLES, CATCH BASINS, INLETS, ETC.) THAT IS AFFECTED BY SITE WORK OR GRADE CHANGES, WHETHER SPECIFICALLY NOTED ON PLANS OR NOT.
- 20. SITEWORK SHALL COMPLY WITH 2012 FLORIDA BUILDING CODE AND FLORIDA ACCESSIBILITY CODE.
- 21. ANY EXISTING WELLS (I.E. ARTESIAN, IRRIGATION, DRINKING, ETC.) DISCOVERED ON-SITE MUST BE PLUGGED BY A LICENSED WELL DRILLING CONTRACTOR IN A MANNER APPROVED BY ALL APPLICABLE JURISDICTIONAL AGENCIES. CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ANY WELL ABANDONMENT PERMITS REQUIRED. ANY WELL DISCOVERED DURING EARTHWORK OR EXCAVATION SHALL BE REPORTED TO THE APPROPRIATE JURISDICTIONAL AGENCIES, OWNER, AND OWNER'S ENGINEER WITHIN 24 HOURS AFTER DISCOVERY IS MADE.

## SAFETY

- 1. ALL SUBSURFACE CONSTRUCTION SHALL COMPLY WITH THE "TRENCH SAFETY ACT". THE CONTRACTOR SHALL INSURE THAT THE METHOD OF TRENCH PROTECTION AND CONSTRUCTION IS IN COMPLIANCE WITH THE OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA) REGULATIONS. IT SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO COMPLY AND ENFORCE ALL APPLICABLE SAFETY REGULATIONS. THE ABOVE INFORMATION HAS BEEN PROVIDED FOR THE CONTRACTOR'S INFORMATION ONLY AND DOES NOT IMPLY THAT THE OWNER OR ENGINEER WILL INSPECT AND/OR ENFORCE SAFETY REGULATIONS.
- 2. DURING THE CONSTRUCTION AND/OR MAINTENANCE OF THIS PROJECT, ALL SAFETY REGULATIONS ARE TO BE ENFORCED. THE CONTRACTOR OR HIS REPRESENTATIVE SHALL BE RESPONSIBLE FOR THE CONTROL AND SAFETY OF THE TRAVELING PUBLIC AND THE SAFETY OF HIS/HER PERSONNEL. LABOR SAFETY REGULATIONS SHALL CONFORM TO THE PROVISIONS SET FORTH BY OSHA IN THE FEDERAL REGISTER OF THE DEPARTMENT OF TRANSPORTATION. THE MINIMUM STANDARDS AS SET FORTH IN THE CURRENT EDITION OF "THE STATE OF FLORIDA, MANUAL ON TRAFFIC CONTROL AND SAFE PRACTICES FOR STREET AND HIGHWAY CONSTRUCTION, MAINTENANCE AND UTILITY OPERATIONS" SHALL BE FOLLOWED IN THE DESIGN, APPLICATION, INSTALLATION, MAINTENANCE AND REMOVAL OF ALL TRAFFIC CONTROL DEVICES, WARNING DEVICES AND BARRIERS NECESSARY TO PROTECT THE PUBLIC AND CONSTRUCTION PERSONNEL FROM HAZARDS WITHIN THE PROJECT LIMITS. CONTRACTOR SHALL PROVIDE FOR THE SAFETY AND CONTROL OF LOCAL TRAFFIC DURING CONSTRUCTION. ADDITIONAL INFORMATION MAY BE REQUIRED IF LANE CLOSURE DURATIONS ARE LONGER THAN DAYTIME OPERATIONS.

#### TREES AND VEGETATION

- 1. THE CONTRACTOR IS TO MINIMIZE THE REMOVAL OF VEGETATION TO THE GREATEST EXTENT PRACTICAL. NO TREES SHALL BE REMOVED OR DAMAGED WITHOUT OWNER'S APPROVAL. TREES IN CLOSE PROXIMITY TO CONSTRUCTION SHALL BE PROTECTED BY ORANGE FENCING.
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE MAINTENANCE OF ALL LANDSCAPE BUFFERS AND RETENTION AND DETENTION FACILITIES UNTIL THE WORK HAS BEEN ACCEPTED BY THE OWNER. ALL DISTURBED AREAS SHALL BE RETURNED TO THEIR ORIGINAL CONDITION.
- 3. REFER TO TREE MITIGATION PLANS AND BIOTECH ENVIRONMENTAL ASSESSMENT FOR DETAILS REGARDING TREE REMOVAL AND TREE PRESERVATION.

#### EARTHWORK / GRADING / DEMUCKING PROCEDURES

- 1. A GEOTECHNICAL ENGINEERING INVESTIGATION REPORT HAS BEEN PREPARED, OF WHICH COPIES ARE AVAILABLE THROUGH THE OWNER OR THEIR SOIL TESTING COMPANY. A GEOTECHNICAL ENGINEER SHALL BE RETAINED BY THE CONTRACTOR TO PROVIDE ON—SITE INSPECTIONS DURING EXCAVATION/FILL OPERATIONS AND TESTING OF THE COMPACTED FILL (SITE WORK, PONDS, FRONTAGE ROAD, EVERGREEN WOODS TRAIL) SO THAT PROPER DOCUMENTATION OF THE REQUIRED COMPACTING CRITERIA CAN BE PROVIDED.
- 2. CONTRACTOR TO FOLLOW THE GUIDANCE OF THE REFERENCED GEOTECHNICAL ENGINEERING INVESTIGATION REPORT OR INDICATE WHETHER ON—SITE GEOTECHNICAL ENGINEER SHALL DETERMINE DEPTH OF DEMUCKING AND/OR REMOVAL OF UNSUITABLE FILL.
- 3. ALL EXISTING DEBRIS (ABOVE OR BELOW GROUND), CONSTRUCTION DEBRIS AND OTHER WASTE MATERIAL SHALL BE DISPOSED OF OFF-SITE BY THE CONTRACTOR, IN ACCORDANCE WITH APPLICABLE REGULATORY AGENCY REQUIREMENTS IN A LEGAL MANNER.
- 4. UNLESS OTHERWISE NOTED, GRADE TO MEET EXISTING ELEVATION AT PROPERTY LINES. FINAL GRADES SHOWN INCLUDE SOD HEIGHT. PROPOSED SPOT ELEVATIONS REPRESENT FINISHED PAVEMENT OR GROUND SURFACE GRADES, UNLESS OTHERWISE NOTED. IT MAY BE NECESSARY TO FIELD ADJUST PAVEMENT ELEVATIONS TO PRESERVE THE ROOT SYSTEMS OF TREES SHOWN TO BE SAVED. CONTRACTOR TO COORDINATE WITH OWNER'S ENGINEER PRIOR TO ANY ELEVATION CHANGES. ALL AREAS SHALL BE GRADED TO DRAIN AWAY FROM THE BUILDINGS.
- 5. ALL DELETERIOUS SUBSURFACE MATERIAL (I.E. MUCK, PEAT, BURIED DEBRIS) IS TO BE EXCAVATED AND REPLACED WITH SUITABLE/COMPACTED SOILS, AS DIRECTED BY THE OWNER OR THEIR SOILS TESTING COMPANY. DELETERIOUS MATERIAL IS TO BE STOCKPILED OR REMOVED FROM THE SITE AS DIRECTED BY THE OWNER. EXCAVATED AREAS ARE TO BE BACKFILLED WITH APPROVED MATERIALS AND COMPACTED AS SHOWN ON THESE PLANS. CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ANY PERMITS THAT ARE NECESSARY FOR REMOVING DELETERIOUS MATERIAL FROM THE SITE.
- 6. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXCAVATIONS AGAINST COLLAPSE AND WILL PROVIDE BRACING, SHEETING OR SHORING AS NECESSARY. DEWATERING METHODS SHALL BE USED AS REQUIRED TO KEEP TRENCHES DRY WHILE PIPE AND APPURTENANCES ARE BEING PLACED.
- 7. ALL NECESSARY FILL AND EMBANKMENT THAT IS PLACED DURING CONSTRUCTION SHALL CONSIST OF MATERIAL SPECIFIED BY THE OWNER'S SOILS TESTING COMPANY OR ENGINEER AND BE PLACED AND COMPACTED ACCORDING TO THESE PLANS.
- 8. THE CONTRACTOR SHALL INSURE THAT PROPER SOIL DENSITIES ARE ACHIEVED FOR PLACEMENT OF ALL HEADWALL/ENDWALL FOOTINGS, RETAINING WALL FOOTINGS, AND IN GENERAL, ANY FOOTING SUPPORT DESCRIBED ON THESE PLANS. IT WILL ALSO BE THE RESPONSIBILITY OF THE CONTRACTOR TO INSURE THAT SUFFICIENT SOILS TESTING HAS BEEN PERFORMED PRIOR TO FINAL INSTALLATION OF IMPROVEMENTS.
- 9. ANY UNSUITABLE ORGANIC SOIL SHALL BE EXCAVATED TO A MINIMUM MARGIN OF 6 FEET BEYOND ITS PERIPHERY EXCAVATED TO EXPOSE THE UNDERLYING NON-ORGANIC FINE SAND.
- 10. IF DETERMINED NECESSARY, DEWATERING DURING EXCAVATING/BACKFILLING OPERATIONS MAY BE ACCOMPLISHED BY DITCHING AND THE USE OF SUMP PUMPS AND/OR OTHER METHODS (WELL POINTS), AS NECESSARY. CONTRACTOR TO OBTAIN ALL REQUIRED PERMITS FOR DEWATERING ACTIVITIES THAT MAY BE REQUIRED.
- 11. UPON APPROVAL OF THE GEOTECHNICAL ENGINEER, THE EXCAVATED AREAS MAY BE BACKFILLED WITH CLEAN FINE SAND FREE OF UNSUITABLE OR DELETERIOUS MATERIAL. HOWEVER, THE FILL SHOULD NOT BE PLACED IN MORE THAN 6 INCHES OF STANDING WATER. ONCE THE FILL IS AT LEAST 2 FEET ABOVE THE DEWATERED LEVEL, BACKFILLING MAY PROCEED AS DIRECTED BY THE GEOTECHNICAL ENGINEER.
- 12. SEDIMENT CONTROL MEASURES SHOULD BE EMPLOYED DURING THE CONSTRUCTION PROCESS TO KEEP THE POND FROM RECEIVING SIGNIFICANT AMOUNTS OF STORMWATER RUNOFF FROM THE SURROUNDING CONSTRUCTION SITE. THIS RUNOFF IS LIKELY TO CONTAIN SUSPENDED FINE—GRAINED SOIL PARTICLES THAT CAN IMPEDE THE INFILTRATION CAPACITY OF THE PONDS IF ALLOWED TO SETTLE OUT ON THE POND BOTTOMS. IF DEWATERING EFFLUENT OR STORMWATER RUNOFF FROM THE ACTIVE CONSTRUCTION SITE IS DISCHARGED TO THE POND, CONTRACTOR SHALL SCRAPE AND REMOVE FINE—GRAINED SEDIMENTS THAT HAVE ACCUMULATED ON THE POND BOTTOM, AND REPLACE WITH SUITABLE SOIL TO THE PLAN SPECIFIED GRADE ELEVATIONS. REQUIRED DEPTH OF SCRAPE AND REMOVAL SHALL BE DETERMINED BY GEOTECHNICAL ENGINEER.

## **DEWATERING NOTES**

- 1. DURING THE EXCAVATION OF THE STORMWATER FACILITIES, AND IF GROUNDWATER IS ENCOUNTERED, THE CONTRACTOR SHALL CONSTRUCT A SEDIMENT BASIN TO PROVIDE A DISCHARGE POINT FOR DEWATERING. THE SEDIMENT BASIN CAN BE CELL IN THE PROPOSED EXCAVATION AREA OF A POND OR IT CAN BE A BERMED AREA ABOVE GROUND. ALL DEWATERING MUST BE HELD IN THE SEDIMENT AREA UNTIL THE WATER IS CLEAN SUCH THAT THERE WOULD BE NO TURBID DISCHARGE. AFTER THE WATER IN THE SEDIMENT BASIN IS CLEAN, THE WATER MAY BE RELEASED INTO THE ON—SITE POND PROVIDED THERE IS NO ADVERSE IMPACT TO THE EXISTING WATER QUALITY.
- 2. UNDER NO CIRCUMSTANCES WILL THE DISCHARGE FROM THE ON-SITE DEWATERING BE DIRECTLY DISCHARGED OFFSITE.
- 3. IF CONTRACTOR ENCOUNTERS SILTY/CLAY SAND, WHICH CAUSES THE WATER TO BECOME TURBID, HE/SHE SHALL TREAT THE SEDIMENT BASIN WITH CHEMICAL ADDITIVE SUCH AS ALLUM IN ORDER TO PROMOTE THE COAGULATION OF THE PARTICLES WHICH ALLOW THE TO SETTLE AND THE WATER TO BECOME LESS TURBID. IF TURBID WATER ENCOUNTERED DURING EXCAVATION OF THE PONDS, THE CONTRACTOR SHALL NOTIFY THE ENGINEER OF RECORD IMMEDIATELY TO DETERMINE THE COURSE OF ACTION THAT IS APPROPRIATE TO ELIMINATE THE TURBIDITY AND ALLOW DISCHARGE THAT MEETS WATER QUALITY STANDARDS.
- H. THE CONTRACTOR SHALL SEQUENCE THE EXCAVATION OF THE STORMWATER PONDS SUCH THAT A SEDIMENT BASIN WILL BE AVAILABLE AT ALL TIMES. THE SEDIMENT BASIN CAN BE RELOCATED AS NECESSARY SUBJECT TO THE WATER WITHIN THE SEDIMENT BASIN BEING NON—TURBID AND ACCEPTABLE FOR DISCHARGE OFF—SITE.

#### DEMOLITION

- 1. CONTRACTOR SHALL SUBMIT DEMOLITION SCHEDULE TO OWNER PRIOR TO PROCEEDING WITH DEMOLITION ACTIVITIES.
- 2. EXTENT OF SITE CLEARING IS SHOWN ON DRAWINGS.
- 3. CONTRACTOR SHALL CONDUCT SITE DEMOLITION OPERATIONS TO ENSURE MINIMUM INTERFERENCE WITH ROADS, STREETS, WALKS, AND OTHER ADJACENT OCCUPIED OR USED FACILITIES. DO NOT CLOSE OR OBSTRUCT STREETS, WALKS OR OTHER OCCUPIED OR USED FACILITIES WITHOUT PERMISSION FROM AUTHORITIES HAVING JURISDICTION.
- 4. CONTRACTOR SHALL PROVIDE PROTECTION NECESSARY TO PREVENT DAMAGE TO EXISTING IMPROVEMENTS INDICATED ON PLAN "EXISTING TO REMAIN".
- 5. CONTRACTOR SHALL RESTORE DAMAGED IMPROVEMENTS TO THEIR ORIGINAL CONDITION, AS ACCEPTABLE TO PARTIES HAVING JURISDICTION.
- 6. CONTRACTOR SHALL REMOVE WASTE MATERIALS AND UNSUITABLE AND EXCESS TOPSOIL FROM PROPERTY AND DISPOSE OF OFF-SITE IN A LEGAL MANNER.
- 7. CONTRACTOR SHALL DEMOLISH AND COMPLETELY REMOVE FROM SITE MATERIAL INDICATED ON PLAN OR NOTES "TO BE REMOVED".
- 8. CONTRACTOR SHALL PROTECT STRUCTURES, UTILITIES, SIDEWALKS, PAVEMENTS, AND OTHER FACILITIES FROM DAMAGE CAUSED BY SETTLEMENT, LATERAL MOVEMENT, UNDERMINING, WASHOUT AND OTHER HAZARDS CREATED BY THE DEMOLITION OPERATION.

#### STORM DRAINAGE SYSTEM

- 1. THE LATEST EDITION OF F.D.O.T. "STANDARD PLANS" (ED. 2019/2020) IS REFERRED TO FOR THE STRUCTURAL DESIGN OF DRAINAGE STRUCTURES SPECIFIED IN THESE PLANS, AS REFERENCED BY STANDARD INDEX. ALL SPECIALTY DRAINAGE STRUCTURES REQUIRE SEPARATE STRUCTURAL DESIGN, WHICH IS NOT INCLUDED IN THESE PLANS. STATION OFFSETS ARE TO THE CENTERLINE OF THE STRUCTURE TOP (I.E. DITCH BOTTOM INLET OR CURB INLET TOP), AS OPPOSED TO THE STRUCTURE BASE.
- 2. ALL STORM SEWER PIPE SHALL BE REINFORCED CONCRETE CLASS III (ASTM C-76) UNLESS OTHERWISE NOTED ON PLANS. ALL DRAINAGE STRUCTURES SHALL BE IN ACCORDANCE WITH F.D.O.T. ROADWAY AND TRAFFIC DESIGN STANDARDS UNLESS OTHERWISE NOTED ON PLANS.
- 3. PIPE LENGTHS SHOWN ARE APPROXIMATE AND TO CENTER OF DRAINAGE STRUCTURES, WITH THE EXCEPTION OF MITERED END AND FLARED END SECTIONS. LENGTHS OF PIPE SHOWN WHICH TERMINATE WITH MITERED END OR FLARED END SECTIONS ARE MEASURED TO THE DOWNSTREAM INVERT OF THE MITERED END OR FLARED END SECTION.
- 4. ALL DRAINAGE STRUCTURE GRATES AND COVERS, EITHER EXISTING OR PROPOSED SHALL BE TRAFFIC RATED FOR H-20 LOADINGS.
- 5. CONSTRUCTION OF THE STORM WATER MANAGEMENT SYSTEM MUST BE COMPLETE AND ALL DISTURBED AREAS STABILIZED IN ACCORDANCE WITH THE PERMITTED PLANS AND CONDITIONS PRIOR TO ANY OF THE FOLLOWING: ISSUANCE OF THE FIRST CERTIFICATE OF OCCUPANCY; INITIATION OF INTENDED USE OF THE INFRASTRUCTURE; OR TRANSFER OF RESPONSIBILITY FOR MAINTENANCE OF THE SYSTEM TO A LOCAL GOVERNMENT OR OTHER RESPONSIBLE ENTITY.
- 6. STORM WATER PIPES, STRUCTURES, MINIMUM COVER, AND INSTALLATION PROCEDURES TO BE IN ACCORDANCE WITH FDOT STANDARD PLANS AND SPECIFICATIONS (LATEST ED.) AND ORANGE COUNTY STANDARDS AND SPECIFICATIONS.
- 7. DURING CONSTRUCTION, NO DIRECT DISCHARGE OF WATER TO DOWNSTREAM RECEIVING WATERS WILL BE ALLOWED. THE CONTRACTOR IS RESPONSIBLE FOR MAINTAINING WATER QUALITY AND SHALL ROUTE DISCHARGE WATER IN SUCH A MANNER AS TO ADEQUATELY REMOVE SILT PRIOR TO RUNOFF FROM THE SITE.
- 8. ALL DRAINAGE PIPES SHALL BE FILTER FABRIC WRAPPED PER FDOT STANDARD PLANS (ED. 2019/2020) INDEX 430-001.
- 9. THE CONTRACTOR SHALL MAINTAIN AND PROTECT THE STORMWATER COLLECTION SYSTEM (INLETS, PIPES) FROM EXCESSIVE MUD, SILT, DIRT, DEBRIS, TRASH, ETC. UNTIL FINAL ACCEPTANCE OF THE PROJECT. THE STORM SYSTEM WILL BE INSPECTED BY THE OWNER'S ENGINEER PRIOR TO APPROVAL FOR CERTIFICATE OF OCCUPANCY PURPOSES. PRIOR TO FINAL ACCEPTANCE, THE CONTRACTOR SHALL CLEAN AND FLUSH STORM PIPES AND INLETS OF ALL EXCESSIVE SILT, DEBRIS, ETC.

#### PAVING, GRADING AND DRAINAGE

1. ALL DELETERIOUS SUBSURFACE MATERIAL (I.E. MUCK, PEAT, BURIED DEBRIS, ETC.) IS TO BE EXCAVATED AND REPLACED WITH SUITABLE/COMPACTED SOILS, AS DIRECTED BY THE GEOTECHNICAL ENGINEER OF RECORD OR THE OWNERS ENGINEERS. DELETERIOUS MATERIAL IS TO BE STOCKPILED OR REMOVED FROM THE SITE AS DIRECTED BY THE OWNER OR OWNER'S ENGINEER. EXCAVATED AREAS ARE TO BE BACKFILLED WITH APPROVED MATERIALS AND COMPACTED AS SHOWN ON THESE PLANS AND PER THE GEOTECHNICAL REPORT. CONTRACTOR IS RESPONSIBLE FOR ACQUIRING ANY PERMITS THAT ARE NECESSARY FOR REMOVING DELETERIOUS MATERIAL FROM THE SITE.

2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXCAVATIONS AGAINST COLLAPSE AND WILL PROVIDE BRACING, SHEETING OR SHORING AS NECESSARY. DEWATERING METHODS SHALL BE USED AS REQUIRED TO KEEP TRENCHES DRY WHILE PIPE AND APPURTENANCES ARE BEING PLACED.

3. ALL NECESSARY FILL AND EMBANKMENT THAT IS PLACED DURING CONSTRUCTION SHALL CONSIST OF MATERIAL SPECIFIED BY THE OWNER'S SOILS TESTING COMPANY OR ENGINEER AND BE PLACED AND COMPACTED ACCORDING TO THESE PLANS.

4. PROPOSED SPOT ELEVATIONS REPRESENT FINISHED PAVEMENT OR GROUND SURFACE GRADES, UNLESS OTHERWISE NOTED.

5. IT MAY BE NECESSARY TO FIELD ADJUST PAVEMENT ELEVATIONS TO PRESERVE THE ROOT SYSTEMS OF TREES SHOWN TO BE SAVED. CONTRACTOR TO COORDINATE WITH OWNER'S ENGINEER PRIOR TO ANY ELEVATION CHANGES.

6. CONTRACTOR SHALL TRIM, TACK AND MATCH EXISTING PAVEMENT AT LOCATIONS WHERE NEW PAVEMENT MEETS EXISTING PAVEMENT.

7. CURBING SHALL BE PLACED AT THE EDGES OF ALL PAVEMENT, UNLESS OTHERWISE NOTED. REFER TO THE 2015/2016 EDITION OF F.D.O.T. "ROADWAY AND TRAFFIC DESIGN STANDARDS" FOR DETAILS AND SPECIFICATIONS OF ALL F.D.O.T. TYPE CURB AND GUTTERS CALLED FOR IN THESE PLANS.

8. PRIOR TO CONSTRUCTING CONCRETE PAVEMENT, THE CONTRACTOR IS TO SUBMIT A PROPOSED JOINTING PATTERN TO THE SOILS ENGINEER FOR APPROVAL.

9. CONTRACTOR TO PROVIDE A 1/2" TO 1" BITUMINOUS EXPANSION JOINT MATERIAL WITH SEALER AT ABUTMENT OF CONCRETE AND OTHER MATERIALS (STRUCTURES, OTHER POURED)

10. ALL PAVEMENT MARKINGS SHALL BE MADE IN ACCORDANCE WITH F.D.O.T. STANDARD INDEX #711-001.

11. THE CONTRACTOR WILL STABILIZE BY SEED AND MULCH, SOD, OR OTHER APPROVED MATERIALS ANY DISTURBED AREAS WITHIN ONE WEEK FOLLOWING CONSTRUCTION OF THE UTILITY SYSTEMS AND PAVEMENT AREAS. CONTRACTOR SHALL MAINTAIN SUCH AREAS UNTIL FINAL ACCEPTANCE BY OWNER. CONTRACTOR TO COORDINATE WITH OWNER REGARDING TYPE OF MATERIAL, LANDSCAPING AND IRRIGATION REQUIREMENTS.

12. THE CONTRACTOR SHALL RESTORE OFF—SITE CONSTRUCTION AREAS TO EQUAL AND/OR BETTER CONDITION THAN EXISTING PRIOR TO START OF CONSTRUCTION.

13. UNLESS OTHERWISE NOTED, GRADE TO MEET EXISTING ELEVATION AT PROPERTY LINES.

16. LIME ROCK AS-BUILTS ARE TO BE APPROVED BY OWNER'S ENGINEER PRIOR TO PAVING.

14. SURVEY MONUMENTS OR BENCHMARKS, WHICH HAVE TO BE DISTURBED BY THIS WORK, SHALL BE REPLACED UPON COMPLETION OF WORK BY A REGISTERED LAND SURVEYOR AT CONTRACTORS EXPENSE.

15. FINAL GRADES SHOWN INCLUDE SOD HEIGHT. ALL AREAS SHALL BE GRADED TO DRAIN AWAY FROM THE BUILDINGS.

17. ALL WORK TO BE PERFORMED IN ACCORDANCE WITH ALL LOCAL, STATE AND JURISDICTIONAL PERMITTING AGENCIES.

18. ALL WORK SHALL COMPLY WITH THE GEOTECHNICAL REPORT BY TERRACON CONSULTANTS, INC. ON NOVEMBER 18, 2019.

#### **GRADING TESTING AND INSPECTION**

- THE CONTRACTOR IS RESPONSIBLE FOR COORDINATING APPLICABLE TESTING WITH THE SOILS ENGINEER. TESTS WILL BE REQUIRED PURSUANT WITH THE SOILS REPORT. UPON COMPLETION OF WORK THE SOILS ENGINEER WILL SUBMIT CERTIFICATIONS TO THE OWNER AND OWNER'S ENGINEER STATING THAT ALL REQUIREMENTS HAVE BEEN MET.
- 2. A QUALIFIED TESTING LABORATORY SHALL PERFORM ALL TESTING NECESSARY TO ASSURE COMPLIANCE OF THE IN-PLACE MATERIALS AS REQUIRED BY THESE PLANS AND GEOTECHNICAL REPORT, THE VARIOUS AGENCIES AND PERMIT CONDITIONS. SHOULD ANY RETESTING BE REQUIRED DUE TO THE FAILURE OF ANY TESTS TO MEET THESE REQUIREMENTS, THE CONTRACTOR WILL BEAR ALL COSTS OF SAID RETESTING.

Always call 811 two full business days before you dig to have underground utilities located and marked.



No. REVISIONS

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WWW.KIMLEY-HORN.COM REGISTRY No. 351

> MARCUS I. GEIGER, FL LICENSE NUMBER 89199

DATE DATE O2/09/2023 SCALE AS SHOWN DESIGNED BY MIG DRAWN BY CML

ERAL NOTES

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(7)

MINDERMERE DOWNTOWN

SHEET NUMBER
C1.0

12

# CONTRACTOR'S AS-BUILT 1. UPON COMPLETION OF CONSTRUCTION, THE CONTRACTOR SHALL FURNISH THE OWNER'S ENGINEER WITH COMPLETE "AS-BUILT" INFORMATION, CERTIFIED BY A LICENSED LAND SURVEYOR CURRENTLY REGISTERED IN THE STATE OF FLORIDA. COLLECTION SYSTEM, INCLUDING THE POND GRADES (TOP, BANK, BOTTOM), POND CONTROL STRUCTURE, & SWALES; ANY PLANE COORDINATE SYSTEM. NO ENGINEER'S CERTIFICATIONS OF COMPLETION OR REQUESTS FOR FINAL ACCEPTANCE WILL BE SUBMITTED UNTIL THIS INFORMATION HAS BEEN RECEIVED AND APPROVED BY THE OWNER'S ENGINEER.

- AT A MINIMUM, THIS "AS-BUILT" INFORMATION SHALL INCLUDE: TOP OF PIPE/INVERT ELEVATIONS AND HORIZONTAL LOCATIONS OF ALL WATER, SANITARY SEWER, AND RECLAIM WATER UTILITIES INSTALLED (AS APPLICABLE); PAVEMENT GRADE BREAK LOCATIONS AND SUFFICIENT ELEVATIONS OF FINISHED GRADE SURFACES WHICH ALLOW THE ENGINEER TO DETERMINE COMPLIANCE WITH THE PROPOSED DESIGN; TOP, GRATE, & INVERT ELEVATIONS OF THE STORMWATER IMPROVEMENTS WITHIN FDOT OR COUNTY RIGHT-OF-WAYS.
- 2. THE DIGITAL "AS-BUILT" FILE, PROVIDED IN AUTOCAD .DWG FORMAT, SHALL ALSO BE PROVIDED IN THE FLORIDA STATE

NOTES GENERAL

SHEET NUMBER C1.1

# STORMWATER POLLUTION PREVENTION PLAN

#### SITE DESCRIPTION

PROJECT NAME AND LOCATION WINDERMERE DOWNTOWN PROPERTY TAX PARCELS: 17-23-28-9336-02-430, 17-23-28-9336-02-470, 17-23-28-9336-02-490, 17-23-28-9336-02-500, 17-23-28-9336-02-510, 17-29-28-9336-520

\*SEE COVER SHEET FOR LOCATION MAP

DEVELOPER NAME AND ADDRESS WINDERMERE DOWNTOWN PROPERTY, LLC 496 S. HUNT CLUB BOULEVARD APOPKA, FL 32703 **CONTACT: BRETT DARGIS** PHONE: (407)848-1663 EMAIL: brett@v3capgroup.com

PROJECT DESCRIPTION

TOWN OF WINDERMERE, FL

THIS PROJECT CONSISTS OF PROPOSED COMMERCIAL BUILDINGS ON A 2.17 ACRE SITE.

THIS SITE IS LOCATED ON THE CORNER OF MAIN STREET AND 6TH AVENUE.

STORMWATER RUNOFF FORM THE PROPOSED SITE WILL BE MANAGED BY PERVIOUS PAVERS AND EXFILTRATION TRENCH TO PROVIDE THE REQUIRED TREATMENT (QUALITY) AND ATTENUATION (QUANTITY) VOLUMES. THE STORMWATER MANAGEMENT SYSTEM WAS DESIGNED TO MEET OR EXCEED ALL THE REQUIREMENTS OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT (SFWMD), TOWN OF WINDERMERE, AND ORANGE COUNTY.

PROJECT AREA: ±2.17 ACRES CONTRIBUTING DRAINAGE AREA: ±2.17 ACRES

CONTROL STRUCTURES: CS-A LONGITUDE: W 81° 32' 01.47" LATITUDE: N 28° 29' 41.33"

CONTROL STRUCTURES : CS-B LONGITUDE: W 81° 32' 03.73" LATITUDE: N 28° 29' 44.99"

ULTIMATE RECEIVING WATERS: LAKE BUTLER

ACTIVITIES THAT REQUIRE EROSION CONTROL

SITE CLEARING AND GRUBBING; PROVIDING A STABILIZED CONSTRUCTION ENTRANCE, PERIMETER, AND OTHER EROSION AND SEDIMENT CONTROLS; EXCAVATION FOR THE RETENTION POND; SITE GRADING; INSTALLATION OF STORM WATER, SANITARY SEWER, AND WATER STRUCTURES: CURB. ROADWAYS. AND PARKING FACILITIES.

\*SEE PLANS FOR THE LOCATION OF TEMPORARY SEDIMENT BARRIERS AND OTHER EROSION CONTROL METHODS.

**SOIL PARAMETERS** 

**SOIL TYPES:** 

SERIES NAME	HYDROLOGIC GROUP
POMELLO FINE SAND	Α
SANIBEL MUCK	D
IMMOKALEE FINE SAND	B/D
BASINGER FINE SAND	A/D
TAVARES FINE SAND	A

#### **SEQUENCE OF MAJOR ACTIVITIES**

THE ORDER OF CONSTRUCTION IS AS FOLLOWS:

1. PROVIDE STABILIZED CONSTRUCTION ENTRANCE

- 2. INSTALL SILT FENCES AND OTHER EROSION CONTROL METHODS
- 3. CLEAR AND GRUB FOR SEDIMENT BASIN AND EARTH DIKE
- 4. CONSTRUCT EARTH DIKE AND SEDIMENT BASIN
- 5. FINISH CLEARING AND GRUBBING
- REMOVE AND STORE TOPSOIL
- 7. PROVIDE INITIAL GRADING AS REQUIRED
- 8. STABILIZE ALL DISTURBED AREAS AS SOON AS POSSIBLE
- 9. INSTALL UTILITIES, STORM SEWER, CURB AND GUTTER
- 10. INSTALL BASE TO ROAD AND PARKING AREA
- 11. FINISH GRADING ENTIRE SITE
- 12. CONSTRUCT FINAL PAVING
- 13. REMOVE ACCUMULATED SEDIMENT
- 14. REMOVE ANY ITEMS THAT ARE NOT REQUIRED

#### TIMING OF CONTROL MEASURES

THE INSTALLATION OF SILT FENCE (AND OTHER EROSION CONTROL MEASURES), A STABILIZED ENTRANCE AND SEDIMENT BASIN SHALL OCCUR PRIOR TO CLEARING AND GRUBBING ACTIVITY. AFTER CONSTRUCTION IS COMPLETE, THE ACCUMULATED SEDIMENT SHALL BE REMOVED AND THE AREAS SHALL BE REGRADED AND PERMANENTLY STABILIZED AS SHOWN ON THE PLANS.

#### **EROSION AND SEDIMENT CONTROLS**

BEST MANAGEMENT PRACTICES SHALL BE USED FOR THIS PROJECT TO CONTROL EROSION AND TURBIDITY CAUSED BY STORM WATER RUN-OFF. THE LOCATION AND DETAILS OF EROSION CONTROL METHODS ARE SHOWN ON THE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR PLACING AND MAINTAINING THESE CONTROL METHODS AS SHOWN ON THE PLANS OR AS REQUIRED. HE/SHE SHALL ALSO PROVIDE THE REQUIRED EROSION PROTECTION AS REQUIRED BY LOCAL, STATE AND FEDERAL

#### STORM WATER MANAGEMENT

STORMWATER RUNOFF FORM THE PROPOSED SITE WILL BE MANAGED BY AN EXFILTRATION/PAVE DRAIN SYSTEM TO PROVIDE THE REQUIRED TREATMENT (QUALITY) AND ATTENUATION (QUANTITY) VOLUMES. THE STORMWATER MANAGEMENT SYSTEM WAS DESIGNED TO MEET OR EXCEED ALL THE REQUIREMENTS OF THE SOUTH FLORIDA WATER MANAGEMENT DISTRICT (SFWMD), TOWN OF WINDERMERE, AND ORANGE COUNTY.

STABILIZATION PRACTICES:

TEMPORARY STABILIZATION - TOPSOIL STOCK PILES AND DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITY TEMPORARILY OR PERMANENTLY CEASE, SHALL BE STABILIZED WITH TEMPORARY SEED AND MULCH WITHIN 7 DAYS OF THE LAST CONSTRUCTION ACTIVITY IN THAT AREA. THE TEMPORARY SEED REQUIRED CAN BE FOUND IN TABLE 1.65 A OF THE FLORIDA DEVELOPMENT MANUAL. PRIOR TO SEEDING, WHERE SOILS ARE ACIDIC 2 TONS OF PULVERIZED AGRICULTURAL LIMESTONE SHOULD BE ADDED PER ACRE AND 450 POUNDS OF 10-20-20 FERTILIZER SHALL BE APPLIED TO EACH ACRE. AFTER SEEDING, EACH AREA SHALL BE IMMEDIATELY MULCHED WITH STRAW OR EQUIVALENT EQUAL. AREAS OF THE SITE WHICH ARE TO BE PAVED SHALL BE TEMPORARILY STABILIZED BY APPLYING GEOTEXTILE AND STONE SUB-BASE UNTIL BITUMINOUS PAVEMENT CAN BE APPLIED.

PERMANENT STABILIZATION - DISTURBED PORTIONS OF THE SITE WHERE CONSTRUCTION ACTIVITIES PERMANENTLY CEASE SHALL BE STABILIZED WITH PERMANENT SEED NO LATER THAN 7 DAYS AFTER THE LAST CONSTRUCTION ACTIVITY. THE APPROPRIATE PERMANENT SEED MIX CAN BE FOUND IN TABLES 1.66A, 1.66B AND 1.66C OF THE FLORIDA DEVELOPMENT MANUAL. PRIOR TO SEEDING, 2 TONS/ACRE OF FINELY GROUND AGRICULTURAL LIMESTONE AND THE PROPER FERTILIZER BASED ON THE TYPE OF SEEDING SHALL BE APPLIED TO EACH ACRE TO PROVIDE PLANT NUTRIENTS. AFTER SEEDING, EACH AREA SHALL BE MULCHED IMMEDIATELY. ALL RETENTION/DETENTION BASINS SHALL BE SODDED AT LEAST TO THE NORMAL WATER LINE. ALL EXPOSED AREAS WITHIN PUBLIC RIGHTS-OF-WAY SHALL BE SOLID SODDED, OTHER AREAS WITH SLOPES STEEPER THAN 4:1 SHALL BE SODDED.

#### STRUCTURAL PRACTICES:

EARTH DIKE - IF REQUIRED, AN EARTH DIKE SHALL BE CONSTRUCTED ALONG THE SITE PERIMETER. A PORTION OF THE DIKE SHALL DIVERT RUN-ON AROUND THE CONSTRUCTION SITE. THE REMAINING PORTION OF THE DIKE SHALL COLLECT RUNOFF FROM THE DISTURBED AREA AND DIRECT THE RUNOFF TO THE SEDIMENT BASIN.

SEDIMENT BASIN - A SEDIMENT BASIN SHALL BE CONSTRUCTED IN THE COMMON DRAINAGE AREA FOR THE SITE. ALL SEDIMENT COLLECTED IN THE BASIN MUST BE REMOVED FROM THE BASIN UPON COMPLETION OF CONSTRUCTION. SEDIMENT FROM THE BASIN MAY BE USED AS FILL ON THE SITE IF IT IS SUITABLE SOIL.

#### WASTE DISPOSAL

WASTE MATERIALS - ALL WASTE MATERIALS SHALL BE COLLECTED AND STORED IN A METAL DUMPSTER WITH A SECURE LID IN ACCORDANCE WITH ALL LOCAL AND STATE LAWS. ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE SHALL BE DEPOSITED IN THE DUMPSTER. THE SUPERINTENDENT SHALL COORDINATE WITH THE LOCAL UTILITIES TO HAVE THE DUMPSTER EMPTIED AT LEAST TWICE A WEEK AND THE WASTE TAKEN TO AN APPROPRIATE LANDFILL. NO CONSTRUCTION WASTE MATERIALS SHALL BE BURIED ON SITE. THE SUPERINTENDENT SHALL ORGANIZE TRAINING FOR THE EMPLOYEES IN THE PROPER PRACTICES WHEN DEALING WITH WASTE MATERIALS. THE SUPERINTENDENT SHALL BE RESPONSIBLE FOR POSTING AND ENFORCING WASTE MATERIAL PROCEDURES.

HAZARDOUS WASTE - HAZARDOUS WASTE MATERIALS SHALL BE DISPOSED OF IN ACCORDANCE WITH ALL LOCAL AND STATE LAWS OR AS DIRECTED BY THE MANUFACTURER. THE SUPERINTENDENT SHALL ORGANIZE THE PROPER TRAINING FOR EMPLOYEES IN THE PROPER PRACTICES WHEN DEALING WITH HAZARDOUS WASTE MATERIALS. THESE PROCEDURES SHALL BE POSTED ON THE SITE. THE PERSON WHO MANAGES THE SITE SHALL BE RESPONSIBLE FOR ENFORCING THE PROCEDURES.

SANITARY WASTE - SANITARY WASTE SHALL BE COLLECTED AND DISPOSED OF IN ACCORDANCE WITH ALL LOCAL AND STATE LAWS. THE SUPERINTENDENT SHALL COORDINATE WITH THE LOCAL UTILITY FOR COLLECTION OF THE SANITARY WASTE AT LEAST THREE TIMES A WEEK TO PREVENT SPILLAGE ONTO THE SITE.

#### OFF-SITE TRACKING

A STABILIZED CONSTRUCTION ENTRANCE SHALL BE PROVIDED TO REDUCE SEDIMENT TRACKING OFFSITE. THE CONTRACTOR SHALL PROMPTLY REMOVE ALL MUD, DIRT, OR OTHER MATERIALS TRACKED OR SPILLED ONTO EXISTING PUBLIC ROADS AND FACILITIES, DUE TO CONSTRUCTION. ALL TRUCKS HAULING MATERIALS OFFSITE SHALL BE COVERED WITH A TARPAULIN.

#### **DUST & DEBRIS CONTROL**

THE CONTRACTOR SHALL BE RESPONSIBLE FOR DUST CONTROL WITHIN THE CONSTRUCTION LIMITS AS WELL AS ALONG HAUL ROUTES AND ROADWAYS USED BY THE EQUIPMENT AND VEHICLES. THE CONTRACTOR SHALL ENSURE THAT EXCESSIVE DUST IS NOT TRANSPORTED BEYOND THE LIMITS OF CONSTRUCTION IN POPULATED AREAS. THE CONTRACTOR MAY CONTROL DUST FOR EMBANKMENTS OR OTHER CLEARED OR UNSURFACED AREAS BY APPLYING WATER. INSTALL MULCH, SEED, SOD, OR TEMPORARY PAVING AS EARLY AS PRACTICAL. CONTROL DUST DURING STORAGE AND HANDLING OF DUSTY MATERIALS BY WETTING, COVERING, OR OTHER MEANS AS APPROVED BY THE ENGINEER.

DEBRIS SHALL NOT BE ALLOWED TO ACCUMULATE ON THE PROJECT SITE.

#### ITEMS REQUIRING POLLUTION PREVENTION

THE FOLLOWING ITEMS ARE EXPECTED TO BE PRESENT ON THE PROJECT SITE:

-ASPHALT -CLEANING SUPPLIES -DETERGENTS -CONCRETE -FERTILIZERS -MASONARY BLOCK/BRICKS -METAL PIECES -PAINT -PETROLEUM BASED PRODUCTS -WOOD

THE FOLLOWING ARE NON-STORM WATER SOURCES THAT WILL BE ENCOUNTERED AT THE SITE AND SHOULD BE DIRECTED TO THE SEDIMENT BASIN PRIOR TO DISCHARGE:

-UNCONTAMINATED GROUNDWATER EXPOSED DURING EXCAVATION -WATER FROM WATER LINE FLUSHING -PAVEMENT WASH WATERS (WHERE NO SPILLS OR LEAKS OF TOXIC OR HAZARDOUS MATERIALS HAVE OCCURRED).

#### **SPILL PREVENTION AND CONTROL**

THE FOLLOWING ARE THE MATERIAL MANAGEMENT PRACTICES THAT WILL BE USED TO REDUCE THE RISK OF SPILLS OR OTHER ACCIDENTAL EXPOSURE OF MATERIALS AND SUBSTANCES TO STORM WATER RUNOFF.

#### GOOD HOUSEKEEPING

-SUPERINTENDENT SHALL INSPECT PROJECT AREA DAILY FOR PROPER STORAGE. USE, AND DISPOSAL OF CONSTRUCTION MATERIALS.

-STORE ONLY ENOUGH MATERIAL ON SITE FOR PROJECT COMPLETION.

-ALL SUBSTANCES SHOULD BE USED BEFORE DISPOSAL OF CONTAINER.

-ALL CONSTRUCTION MATERIALS STORED SHALL BE ORGANIZED AND IN THE PROPER CONTAINER AND IF POSSIBLE, STORED UNDER A ROOF OR PROTECTIVE

-PRODUCTS SHALL NOT BE MIXED UNLESS DIRECTED BY THE MANUFACTURER.

-ALL PRODUCTS SHALL BE USED AND DISPOSED OF ACCORDING TO THE MANUFACTURER'S RECOMMENDATIONS.

#### HAZARDOUS PRODUCTS

-MATERIALS SHOULD BE KEPT IN ORIGINAL CONTAINER WITH LABELS UNLESS THE ORIGINAL CONTAINERS CANNOT BE RESEALED. IF ORIGINAL CONTAINERS CANNOT BE USED, LABELS AND PRODUCT INFORMATION SHALL BE SAVED.

-PROPER DISPOSAL PRACTICES SHALL ALWAYS BE FOLLOWED IN ACCORDANCE WITH MANUFACTURER AND LOCAL/STATE REGULATIONS.

#### PRODUCT SPECIFIC PRACTICES

-PETROLEUM PRODUCTS MUST BE STORED IN PROPER CONTAINERS AND CLEARLY LABELED. VEHICLES CONTAINING PETROLEUM PRODUCTS SHALL BE PERIODICALLY INSPECTED FOR LEAKS. PRECAUTIONS SHALL BE TAKEN TO AVOID LEAKAGE OF PETROLEUM PRODUCTS ON SITE.

-THE MINIMUM AMOUNT OF FERTILIZER SHALL BE USED AND MIXED INTO THE SOIL IN ORDER TO LIMIT EXPOSURE TO STORM WATER. FERTILIZERS SHALL BE STORED IN A COVERED SHED. THE CONTENTS OF ANY PARTIALLY USED BAGS OF FERTILIZER SHALL BE TRANSFERRED TO A SEALABLE PLASTIC BIN TO AVOID SPILLS.

-PAINT CONTAINERS SHALL BE SEALED AND STORED WHEN NOT IN USE. EXCESS PAINT MUST BE DISPOSED OF IN AN APPROVED MANNER.

-CONCRETE TRUCKS SHALL NOT BE ALLOWED TO WASH OUT OR DISCHARGE SURPLUS CONCRETE OR DRUM WASH WATER ON THE SITE.

#### SPILL CONTROL PRACTICES

IN ADDITION TO THE GOOD HOUSEKEEPING AND MATERIAL MANAGEMENT PRACTICES DISCUSSED IN THE PREVIOUS SECTIONS OF THIS PLAN, THE FOLLOWING PRACTICES SHALL BE FOLLOWED FOR SPILL PREVENTION AND CLEANUP:

-SPILL CLEANUP INFORMATION SHALL BE POSTED ON SITE TO INFORM EMPLOYEES ABOUT CLEANUP PROCEDURES AND RESOURCES.

-THE FOLLOWING CLEAN-UP EQUIPMENT MUST BE KEPT ON-SITE NEAR THE MATERIAL STORAGE AREA: GLOVES, MOPS, RAGS, BROOMS, DUST PANS, SAND, SAWDUST, LIQUID ABSORBER, GOGGLES, AND TRASH CONTAINERS.

#### -ALL SPILLS SHALL BE CLEANED UP AS SOON AS POSSIBLE.

-WHEN CLEANING A SPILL, THE AREA SHOULD BE WELL VENTILATED AND THE EMPLOYEE SHALL WEAR PROPER PROTECTIVE COVERING TO PREVENT INJURY.

-TOXIC SPILLS MUST BE REPORTED TO THE PROPER AUTHORITY REGARDLESS OF THE SIZE OF THE SPILL.

-AFTER A SPILL, THE PREVENTION PLAN SHALL BE REVIEWED AND CHANGED TO PREVENT FURTHER SIMILAR SPILLS FROM OCCURRING. THE CAUSE OF THE SPILL, MEASURES TO PREVENT IT, AND HOW TO CLEAN THE SPILL UP SHALL BE RECORDED.

-THE SUPERINTENDENT SHALL BE THE SPILL PREVENTION AND CLEANUP COORDINATOR AND IS RESPONSIBLE FOR THE DAY TO DAY SITE OPERATIONS. THE SUPERINTENDENT ALSO OVERSEES THE SPILL PREVENTION PLAN AND SHALL BE RESPONSIBLE FOR EDUCATING THE EMPLOYEES ABOUT SPILL PREVENTION AND CLEANUP PROCEDURES.

#### **MAINTENANCE AND INSPECTION PRACTICES**

THE FOLLOWING ARE MAINTENANCE AND INSPECTION PRACTICES THAT SHALL BE COMPLETED BY THE CONTRACTOR:

-ALL SEDIMENT AND EROSION CONTROL METHODS SHALL BE CHECKED DAILY AND AFTER EACH 0.5 INCH OR GREATER RAINFALL BY THE SUPERINTENDENT OR SOMEONE UNDER HIS/HER DIRECT SUPERVISION.

-ALL SEDIMENT AND EROSION CONTROL METHODS SHALL BE KEPT IN GOOD CONDITION. REPAIRS MUST BE MADE WITHIN 24 HOURS OF REPORT.

-THE SILT FENCE SHALL BE INSPECTED PERIODICALLY FOR HEIGHT OF SEDIMENT AND CONDITION OF FENCE.

-THE SILT FENCE SHALL BE CLEARED OF SEDIMENT WHEN SEDIMENT MEASURES ONE-THIRD THE HEIGHT OF THE FENCE.

-THE SEDIMENT BASINS/DITCHES SHALL BE CHECKED MONTHLY FOR DEPTH OF SEDIMENT. THEY SHALL BE CLEANED WHEN SEDIMENT REACHES 10% OF TOTAL CAPACITY AND AFTER CONSTRUCTION IS COMPLETE

-DIVERSION DIKES SHALL BE INSPECTED MONTHLY. ANY BREACHES SHALL BE PROMPTLY REPAIRED.

-ALL SEEDING SHALL BE CHECKED FOR PROPER GROWTH AND UNIFORMITY. UNSTABALIZED AREAS SHALL BE RE-SODDED.

-A MAINTENANCE REPORT SHALL BE COMPLETED DAILY AFTER EACH INSPECTION OF THE SEDIMENT AND EROSION CONTROL METHODS. THE REPORTS SHALL BE FILED IN AN ORGANIZED MANNER AND RETAINED ON-SITE DURING CONSTRUCTION. AFTER CONSTRUCTION IS COMPLETED, THE REPORTS SHALL BE SAVED FOR AT LEAST THREE YEARS. THE REPORTS SHALL BE AVAILABLE FOR ANY AGENCY THAT HAS JURISDICTION OVER EROSION CONTROL.

-THE SUPERINTENDENT SHALL ORGANIZE THE TRAINING FOR INSPECTION PROCEDURES AND PROPER EROSION CONTROL METHODS FOR EMPLOYEES THAT COMPLETE INSPECTIONS AND REPORTS.

#### CONTRACTOR'S CERTIFICATION

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

SIGNATURE AND DATE	NAME AND TITLE, COMPANY / ADDRESS AND TELEPHONE NUMBER	RESPONSIBILITY

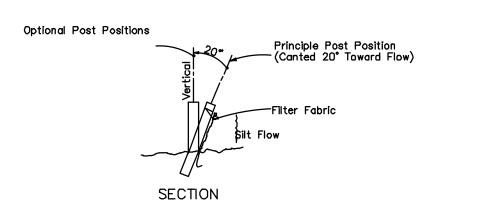
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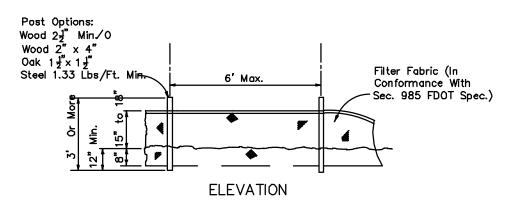
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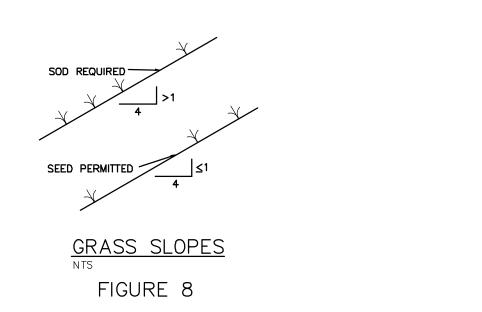
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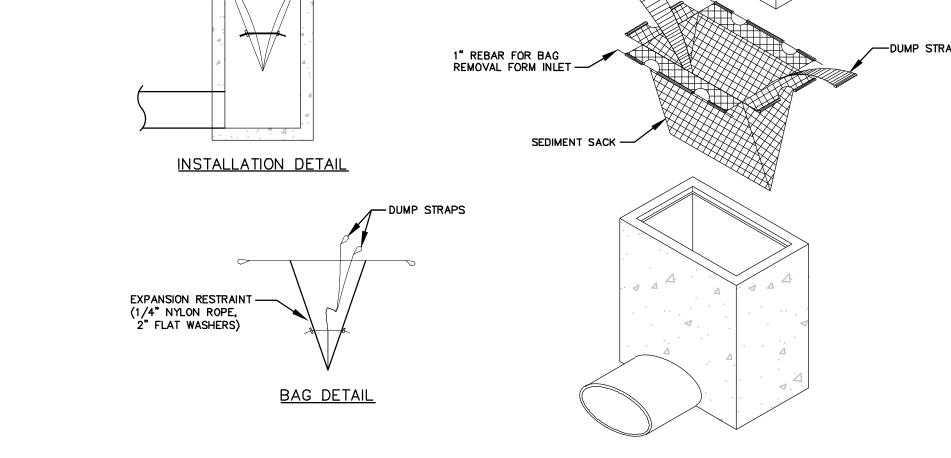
STABILIZED CONSTRUCTION ENTRANCE DETAIL

PLAN V**IE**W





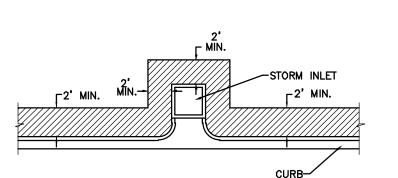




STANDARD INLET SEDIMENT CONTROL DEVICE

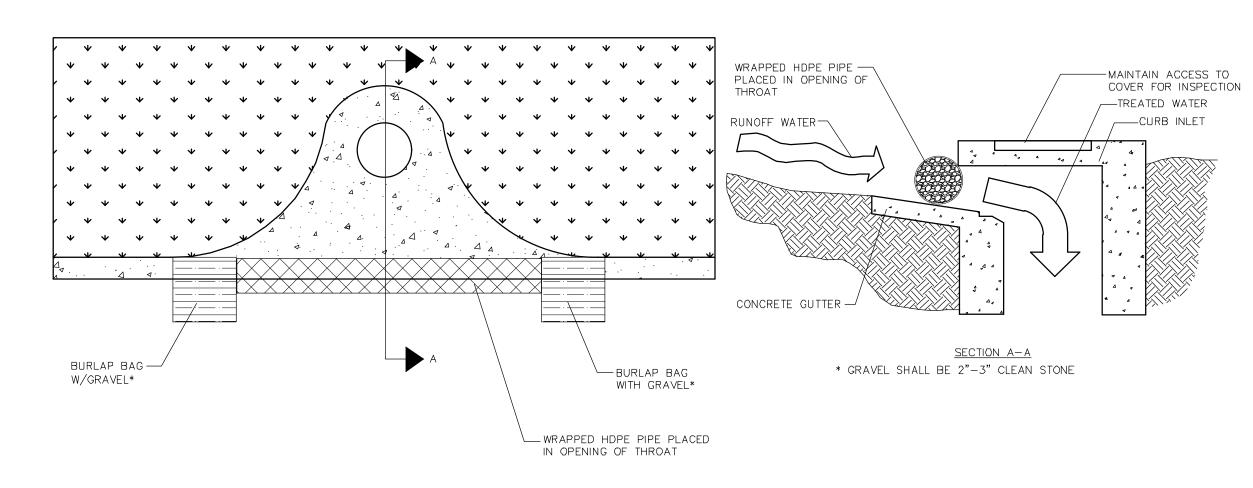
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

- 1) CONTRACTOR TO MAINTAIN DEBRIS ON-SITE, VEHICLES SHALL BE FREE OF EXCESS DEBRIS PRIOR TO ENTERING COUNTY RIGHT-OF-WAYS.
- 2) DURING ALL TIME OF CONSTRUCTION, THE CONTRACTOR MUST PROVIDE FILTER FABRIC AT ALL EXIST. OR PROP. CATCH BASIN TO PREVENT SYSTEM POLLUTION. 3) CONTRACTOR SHALL PROVIDE TRUCK WASH RACKS TO REMOVE CONSTRUCTION DEBRIS FROM VEHICLES PRIOR TO EGRESS.
- 4) DURING ALL TIME OF CONSTRUCTION, THE CONTRACTOR MUST PROVIDE SILT SCREENS AT CONSTRUCTION PERIMETER
- 5) UPON COMPLETION OF CONSTRUCTION, SYSTEM IS TO BE CLEANED BY "CAMELVAC" OR OTHER APPROVED SYSTEM TO THE SATISFACTION OF THE PROJECT ENGINEER AND COUNTY ENGINEER WHEN OR AFTER THE OVERALL SYSTEM IS CLEANED. 6) THE CONTRACTOR SHALL MAINTAIN THE FULL SET OF PLANS INCLUDING THESE POLLUTION PREVENTION REQUIREMENTS ON-SITE AT ALL TIMES.

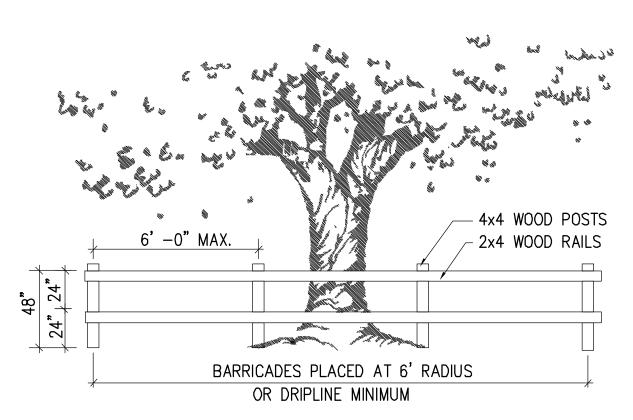


SOD ALONG CURB AND AROUND INLET

FIGURE 7

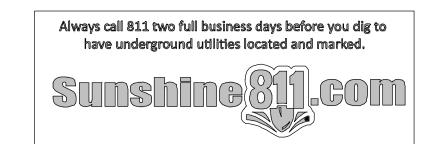


SOCK DRAIN INLET SEDIMENT FILTER



TREE PROTECTION DETAIL

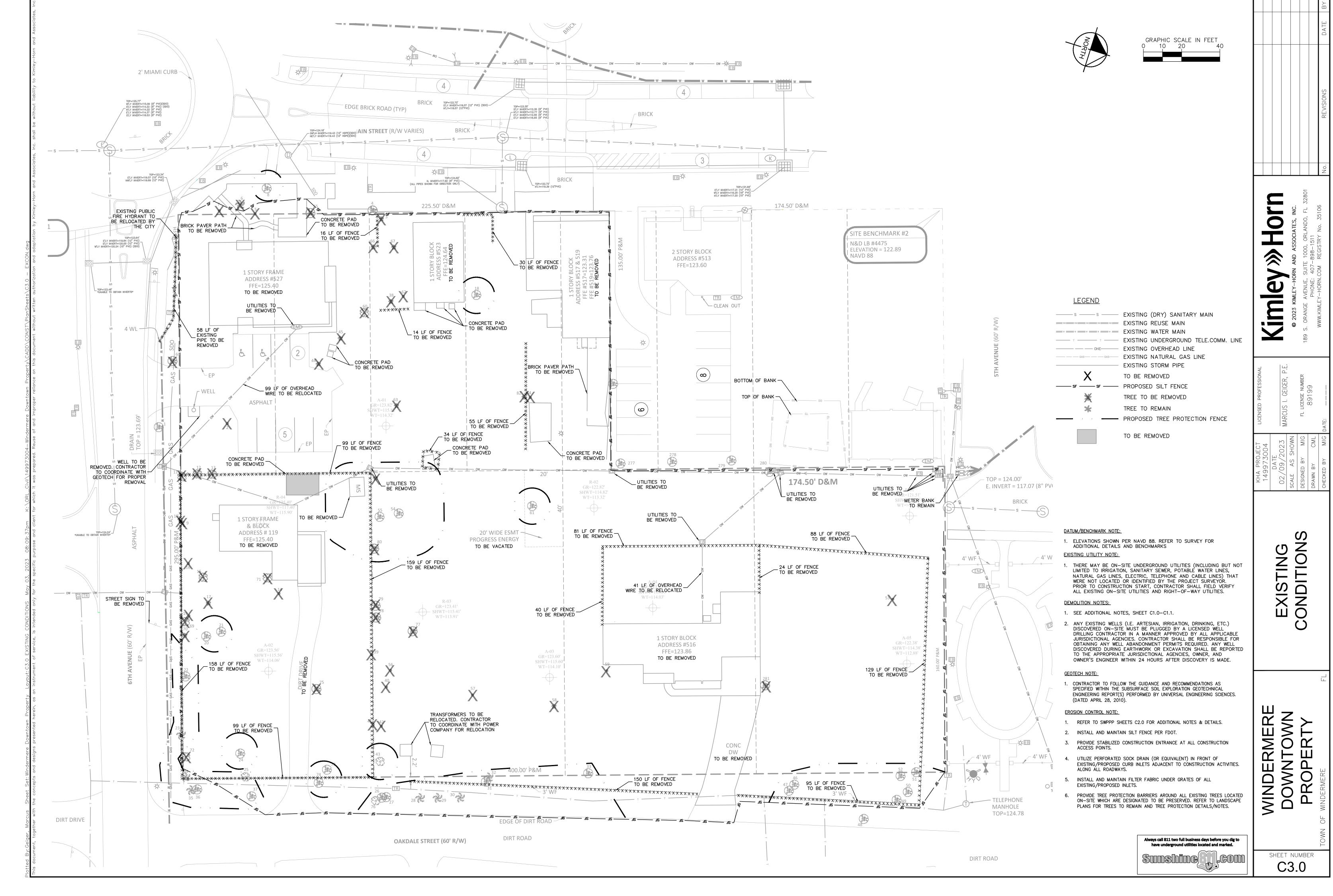
- 1. ORANGE CONSTRUCTION FENCING CAN BE USED IN LIEU OF WOOD FENCE PER ENGINEER'S REVIEW AND APPROVAL.
- 2. NO STOCKPILING OF MATERIAL, TRASH OR DEBRIS SHALL BE PERMITTED WITHIN THE BARRIER. CONTRACTOR SHALL ADJUST AND MAINTAIN BARRIER LIMITS AS NECESSARY TO ACCOMMODATE ADJACENT CONSTRUCTION AS DIRECTED BY OWNER. REMOVE PROTECTION AFTER OWNER'S FINAL ACCEPTANCE OF THE PROJECT.

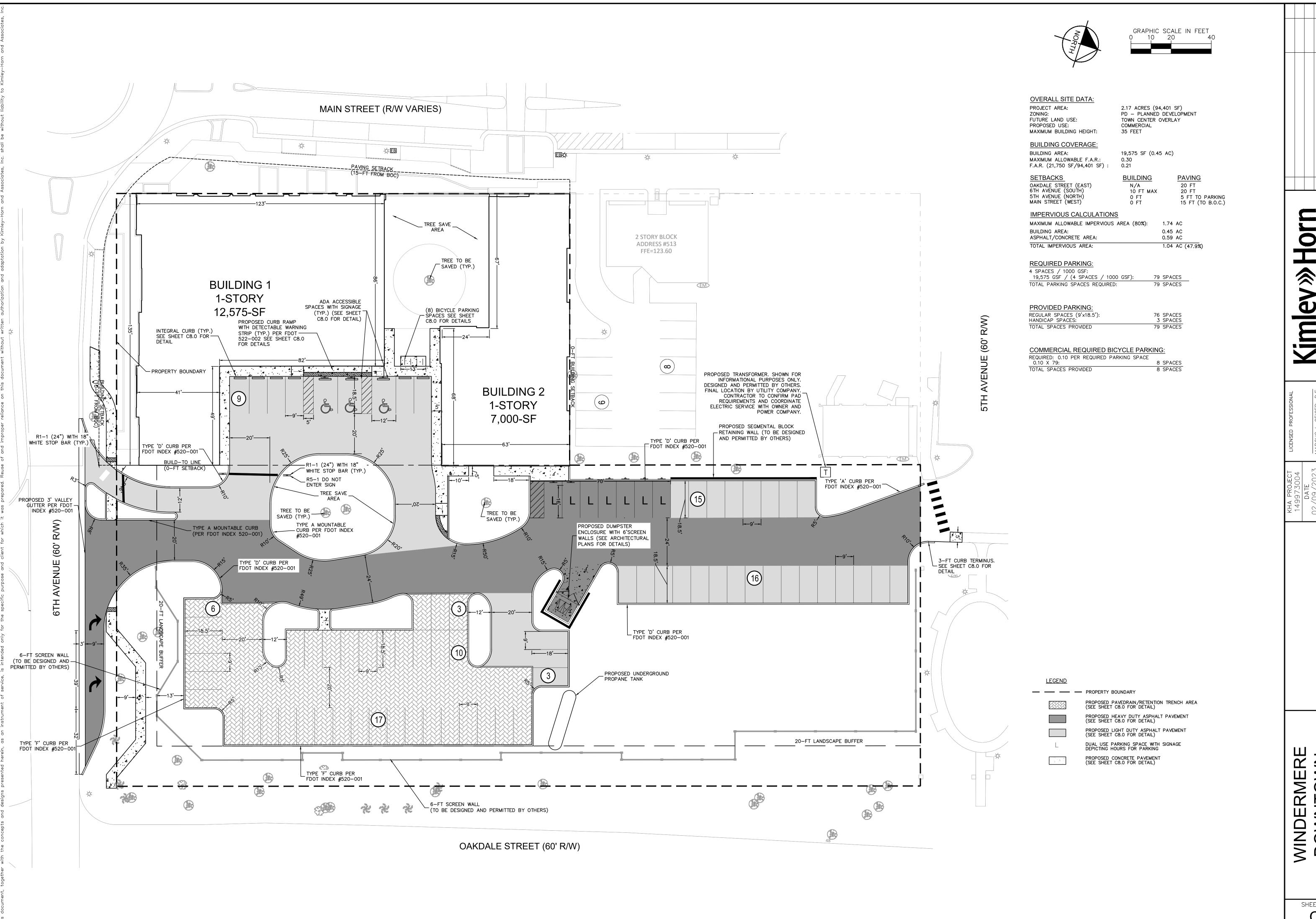


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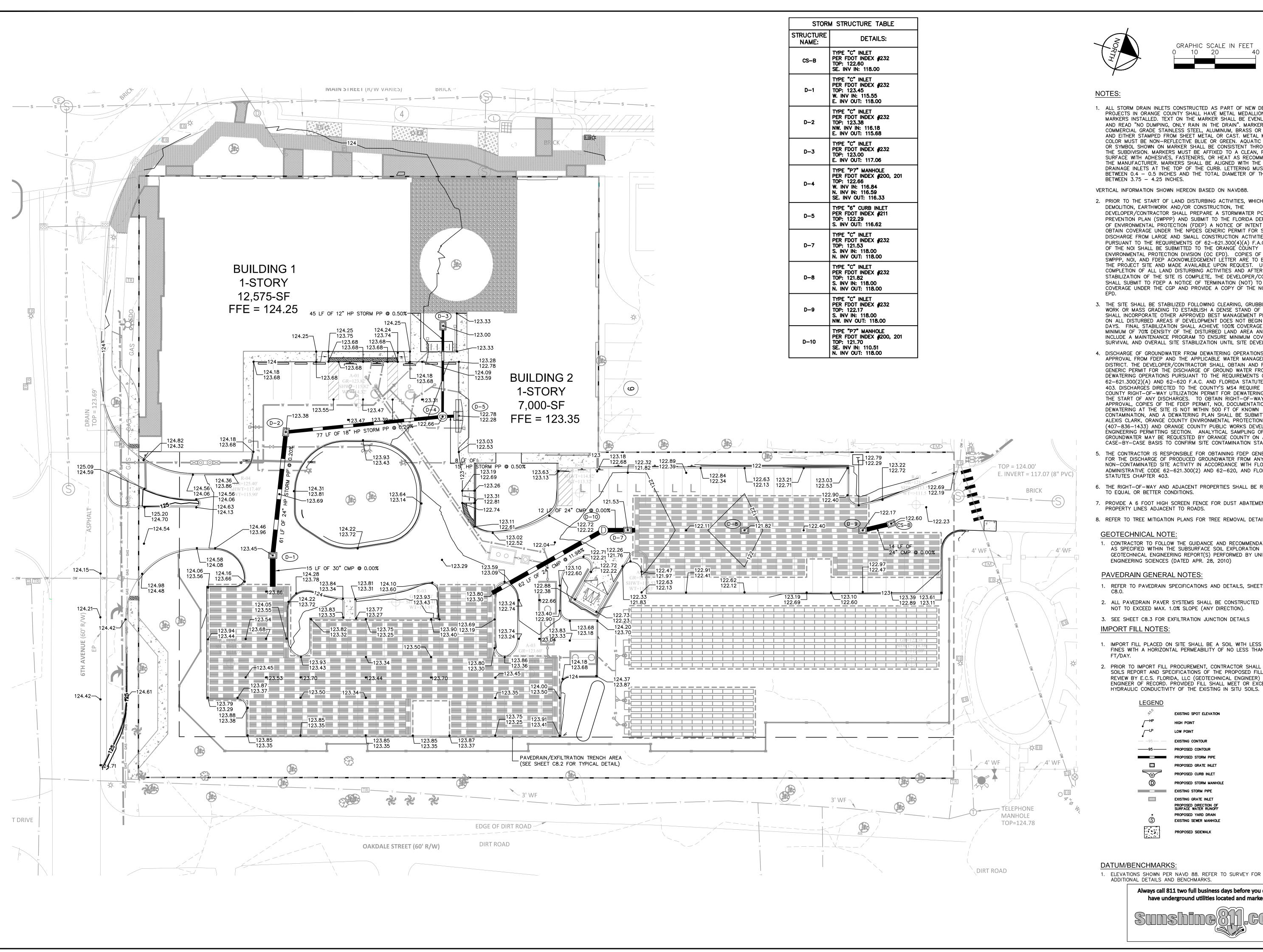




SITE

WINDERMERE DOWNTOWN PROPERTY

SHEET NUMBER C4.0



GRAPHIC SCALE IN FEET

1. ALL STORM DRAIN INLETS CONSTRUCTED AS PART OF NEW DEVELOPMENT PROJECTS IN ORANGE COUNTY SHALL HAVE METAL MEDALLION INLET MARKERS INSTALLED. TEXT ON THE MARKER SHALL BE EVENLY SPACED AND READ "NO DUMPING, ONLY RAIN IN THE DRAIN". MARKERS MUST BE COMMERCIAL GRADE STAINLESS STEEL, ALUMINUM, BRASS OR BRONZE AND EITHER STAMPED FROM SHEET METAL OR CAST. METAL MARKER COLOR MUST BE NON-REFLECTIVE BLUE OR GREEN. AQUATIC CREATURE OR SYMBOL SHOWN ON MARKER SHALL BE CONSISTENT THROUGHOUT THE SUBDIVISION. MARKERS MUST BE AFFIXED TO A CLEAN, PREPARED SURFACE WITH ADHESIVES, FASTENERS, OR HEAT AS RECOMMENDED BY THE MANUFACTURER. MARKERS SHALL BE ALIGNED WITH THE CENTER OF DRAINAGE INLETS AT THE TOP OF THE CURB. LETTERING MUST BE BETWEEN 0.4 - 0.5 INCHES AND THE TOTAL DIAMETER OF THE MARKER BETWEEN 3.75 - 4.25 INCHES.

#### VERTICAL INFORMATION SHOWN HEREON BASED ON NAVD88.

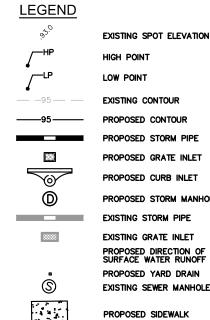
- 2. PRIOR TO THE START OF LAND DISTURBING ACTIVITIES, WHICH INCLUDES DEMOLITION, EARTHWORK AND/OR CONSTRUCTION, THE DEVELOPER/CONTRACTOR SHALL PREPARE A STORMWATER POLLUTION PREVENTION PLAN (SWPPP) AND SUBMIT TO THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION (FDEP) A NOTICE OF INTENT (NOI) TO OBTAIN COVERAGE UNDER THE NPDES GENERIC PERMIT FOR STORMWATER DISCHARGE FROM LARGE AND SMALL CONSTRUCTION ACTIVITIES (CGP) PURSUANT TO THE REQUIREMENTS OF 62-621.300(4)(A) F.A.C. A COPY OF THE NOI SHALL BE SUBMITTED TO THE ORANGE COUNTY ENVIRONMENTAL PROTECTION DIVISION (OC EPD). COPIES OF THE SWPPP. NOI. AND FDEP ACKNOWLEDGEMENT LETTER ARE TO BE KEPT ON THE PROJECT SITE AND MADE AVAILABLE UPON REQUEST. UPON COMPLETION OF ALL LAND DISTURBING ACTIVITIES AND AFTER FINAL STABILIZATION OF THE SITE IS COMPLETE, THE DEVELOPER/CONTRACT SHALL SUBMIT TO FDEP A NOTICE OF TERMINATION (NOT) TO END THEIR COVERAGE UNDER THE CGP AND PROVIDE A COPY OF THE NOT TO OC
- 3. THE SITE SHALL BE STABILIZED FOLLOWING CLEARING, GRUBBING, EARTH WORK OR MASS GRADING TO ESTABLISH A DENSE STAND OF GRASS, OR SHALL INCORPORATE OTHER APPROVED BEST MANAGEMENT PRACTICES, ON ALL DISTURBED AREAS IF DEVELOPMENT DOES NOT BEGIN WITHIN 7 DAYS. FINAL STABILIZATION SHALL ACHIEVE 100% COVERAGE AND A MINIMUM OF 70% DENSITY OF THE DISTURBED LAND AREA AND SHALL INCLUDE A MAINTENANCE PROGRAM TO ENSURE MINIMUM COVERAGE SURVIVAL AND OVERALL SITE STABILIZATION UNTIL SITE DEVELOPMENT.
- 4. DISCHARGE OF GROUNDWATER FROM DEWATERING OPERATIONS REQUIRES APPROVAL FROM FDEP AND THE APPLICABLE WATER MANAGEMENT DISTRICT. THE DEVELOPER/CONTRACTOR SHALL OBTAIN AND FDEP GENERIC PERMIT FOR THE DISCHARGE OF GROUND WATER FROM DEWATERING OPERATIONS PURSUANT TO THE REQUIREMENTS OF 62-621.300(2)(A) AND 62-620 F.A.C. AND FLORIDA STATUTES CHAPTER 403. DISCHARGES DIRECTED TO THE COUNTY'S MS4 REQUIRE AN ORANGE COUNTY RIGHT-OF-WAY UTILIZATION PERMIT FOR DEWATERING PRIOR TO THE START OF ANY DISCHARGES. TO OBTAIN RIGHT-OF-WAY APPROVAL, COPIES OF THE FDEP PERMIT, NOI, DOCUMENTATION SHOWING DEWATERING AT THE SITE IS NOT WITHIN 500 FT OF KNOWN CONTAMINATION, AND A DEWATERING PLAN SHALL BE SUBMITTED TO ALEXIS CLARK, ORANGE COUNTY ENVIRONMENTAL PROTECTION DIVISION (407-836-1433) AND ORANGE COUNTY PUBLIC WORKS DEVELOPMENT ENGINEERING PERMITTING SECTION. ANALYTICAL SAMPLING OF GROUNDWATER MAY BE REQUESTED BY ORANGE COUNTY ON A CASE-BY-CASE BASIS TO CONFIRM SITE CONTAMINATION STATUS
- 5. THE CONTRACTOR IS RESPONSIBLE FOR OBTAINING FDEP GENERIC PERMIT FOR THE DISCHARGE OF PRODUCED GROUNDWATER FROM ANY NON-CONTAMINATED SITE ACTIVITY IN ACCORDANCE WITH FLORIDA ADMINISTRATIVE CODE 62-621.300(2) AND 62-620, AND FLORIDA STATUTES CHAPTER 403.
- 6. THE RIGHT-OF-WAY AND ADJACENT PROPERTIES SHALL BE RESTORED TO EQUAL OR BETTER CONDITIONS.
- 7. PROVIDE A 6 FOOT HIGH SCREEN FENCE FOR DUST ABATEMENT ON ALL PROPERTY LINES ADJACENT TO ROADS.
- 8. REFER TO TREE MITIGATION PLANS FOR TREE REMOVAL DETAILS.

#### **GEOTECHNICAL NOTE:**

1. CONTRACTOR TO FOLLOW THE GUIDANCE AND RECOMMENDATIONS AS SPECIFIED WITHIN THE SUBSURFACE SOIL EXPLORATION GEOTECHNICAL ENGINEERING REPORT(S) PERFORMED BY UNIVERSAL ENGINEERING SCIENCES (DATED APR. 28, 2010)

#### **PAVEDRAIN GENERAL NOTES:**

- 1. REFER TO PAVEDRAIN SPECIFICATIONS AND DETAILS, SHEETS
- 2. ALL PAVEDRAIN PAVER SYSTEMS SHALL BE CONSTRUCTED NOT TO EXCEED MAX. 1.0% SLOPE (ANY DIRECTION).
- 3. SEE SHEET C8.3 FOR EXFILTRATION JUNCTION DETAILS
- IMPORT FILL PLACED ON SITE SHALL BE A SOIL WITH LESS THAN 5% FINES WITH A HORIZONTAL PERMEABILITY OF NO LESS THAN 20
- 2. PRIOR TO IMPORT FILL PROCUREMENT, CONTRACTOR SHALL PROVIDE SOILS REPORT AND SPECIFICATIONS OF THE PROPOSED FILL FOR REVIEW BY E.C.S. FLORIDA, LLC (GEOTECHNICAL ENGINEER) AND ENGINEER OF RECORD. PROVIDED FILL SHALL MEET OR EXCEED THE



#### DATUM/BENCHMARKS:

1. ELEVATIONS SHOWN PER NAVD 88. REFER TO SURVEY FOR

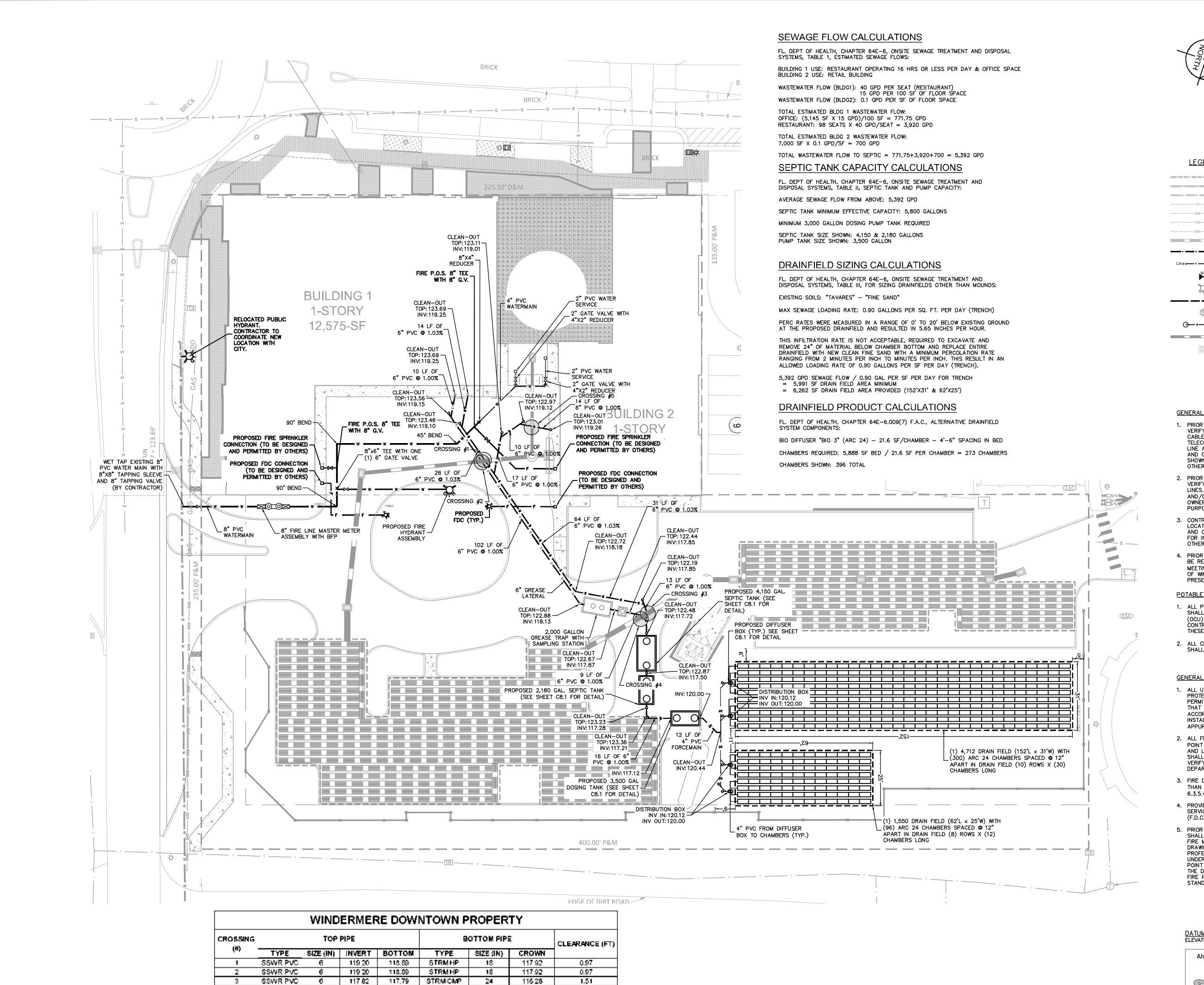


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SRAINAGE

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#### **LEGEND**

	EXISTING SANITARY MAIN
RW RW RW	EXISTING REUSE MAIN
	EXISTING WATER MAIN
UTUT	EXISTING UNDERGROUND TELE.COMM. L
OHE OHE	EXISTING OVERHEAD LINE
————FOC————FOC—	EXISTING FIBER OPTIC LINE
GAS GAS	EXISTING NATURAL GAS LINE
	EXISTING STORM PIPE
ww	PROPOSED WATER LINE
□N\	PROPOSED POTABLE WATER SERVICE
wv •	PROPOSED WATER VALVE
<b>X</b>	PROPOSED FIRE HYDRANT ASSEMBLY
——— s ——	PROPOSED SANITARY SEWER
\$	PROPOSED SANITARY MANHOLE
O-:-:-	PROPOSED SANITARY SERVICE
	PROPOSED STORM PIPE
	PROPOSED STORM INLET

#### **GENERAL UTILITY NOTES:**

- 1. PRIOR TO CONSTRUCTION START, CONTRACTOR TO FIELD VERIFY LOCATION AND DEPTH OF EXISTING FIBER OPTIC CABLES, UNDERGROUND ELECTRIC LINES, AND UNDERGROUND TELECOM LINES. CONTRACTOR TO COORDINATE SERVICE LINE ADJUSTMENTS WITH RESPECTIVE SERVICE PROVIDER AND OWNER. BOX ADJUSTMENTS AND SERVICE LINES SHOWN FOR INFORMATIONAL PURPOSES ONLY. DESIGNED BY
- 2. PRIOR TO CONSTRUCTION START, CONTRACTOR TO FIELD VERIFY LOCATION AND DEPTH OF EXISTING NATURAL GAS LINES. CONTRACTOR TO COORDINATE SERVICE LINE, VALVE, AND/OR BOX ADJUSTMENTS WITH SERVICE PROVIDER AND OWNER. SERVICE LINES SHOWN FOR INFORMATIONAL PURPOSES ONLY. DESIGNED BY OTHERS.
- 3. CONTRACTOR TO COORDINATE PROPOSED TRANSFORMER LOCATIONS AND ELECTRIC SERVICE WITH POWER COMPANY AND OWNER TRANSFORMERS AND SERVICE LINES SHOWN FOR INFORMATIONAL PURPOSES ONLY. DESIGNED BY
- 4. PRIOR TO CONSTRUCTION START, THE CONTRACTOR SHALL BE RESPONSIBLE TO SCHEDULE A PRE-CONSTRCUTION MEETING WITH ORANGE COUNTY UTILITIES (OCU) AND TOWN OF WINDERMERE. CIVIL ENGINEER OF RECORD TO BE PRESENT AT PRE-CON MEETING.

#### POTABLE WATER & SANITARY WASTEWATER UTILITY NOTES:

- 1. ALL POTABLE WATER AND SANITARY WASTEWATER UTILITIES SHALL BE IN ACCORDANCE WITH ORANGE COUNTY UTILITIES (OCU) STANDARDS, SPECIFICATIONS, AND DETAILS, 2017 ED. CONTRACTOR SHALL BE RESPONSIBLE TO BE FAMILIAR WITH THESE STANDARDS.
- 2. ALL CLEAN-OUTS WITHIN ASPHALT AND/OR CONCRETE AREAS SHALL BE H-20 TRAFFIC BEARING.

#### GENERAL FIRE SERVICE NOTES:

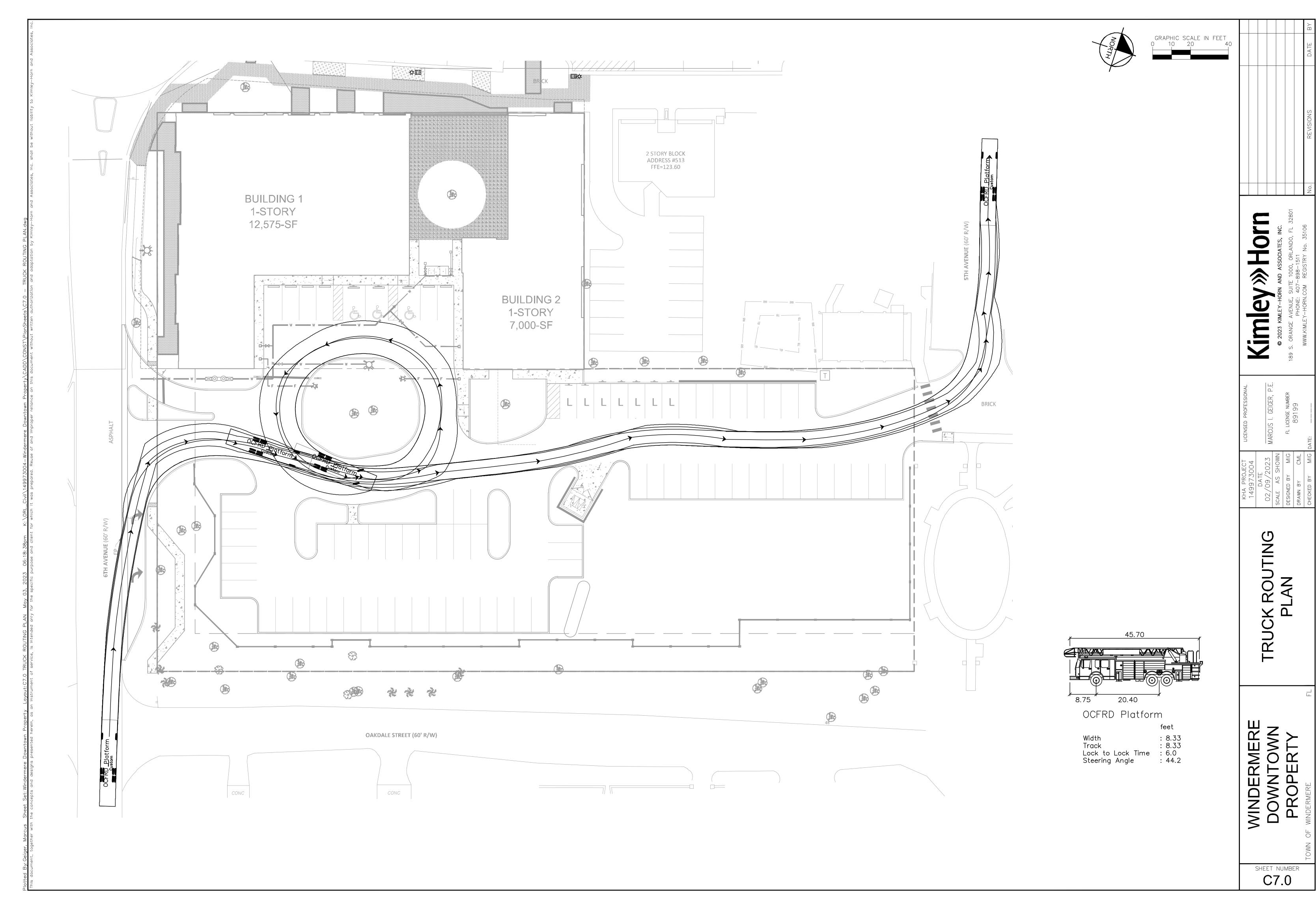
- 1. ALL UNDERGROUND MAINS SERVING FIRE HYDRANTS OR FIRE PROTECTION SPRINKLER SYSTEMS ON PRIVATE PROPERTY MUST BE PERMITTED PRIOR TO INSTALLATION. THE DRAWING SHALL INDICATE THAT ALL UNDERGROUND FIRE MAINS WILL BE INSTALLED IN ACCORDANCE WITH NFPA 24 (2013 EDITION, "STANDARD FOR THE INSTALLATION OF PRIVATE FIRE SERVICE MAINS AND THEIR APPURTENANCES". [F.A.C. 69A-60.005(2)]
- 2. ALL FIRE SERVICE MAIN LOCATED DOWNSTREAM OF THE FIRE POINT OF SERVICE (POS) SHALL BE INSTALLED BY A QUALIFIED AND LICENSED CONTRACTOR. CONSTRUCTION AND MATERIALS SHALL COMPLY WITH APPLICABLE FIRE CODE. CONTRACTOR TO VERIFY REQUIREMENTS WITH ORANGE COUNTY UTILITIES DEPARTMENT PRIOR TO SHOP DRAWING REVIEW.
- 3. FIRE DEPARTMENT CONNECTIONS SHALL BE LOCATED NOT MORE THAN 100 FT FROM THE NEAREST FIRE HYDRANT. [NFPA 14: 6.3.5.4]
- 4. PROVIDE SIGNAGE, INDICATING ITS LOCATION AND THE BUILDING IT SERVICES, FOR ALL PROPOSED FIRE DEPARTMENT CONNECTIONS
- 5. PRIOR TO FIRE INSTALLATION, THE FLORIDA LICENSED CONTRACTOR SHALL SUBMIT LAYOUT DESIGN DRAWINGS TO THE OFFICE OF THE FIRE MARSHAL. IF REQUIRED BY FLORIDA STATUE 553.79, DRAWINGS MUST BE SIGNED AND SEALED BY A FLORIDA LICENSED PROFESSIONAL ENGINEER. THE DRAWINGS MUST SHOW ALL UNDERGROUND FIRE LINES AND COMPONENTS STARTING FROM THE POINT OF SERVICE AS DEFINED UNDER FLORIDA STATUE 663.102. THE DESIGN SHALL BE IN ACCORDANCE TO THE CURRENT FLORIDA FIRE PREVENTION CODE AND ALL ADOPTED NFPA CODES AND

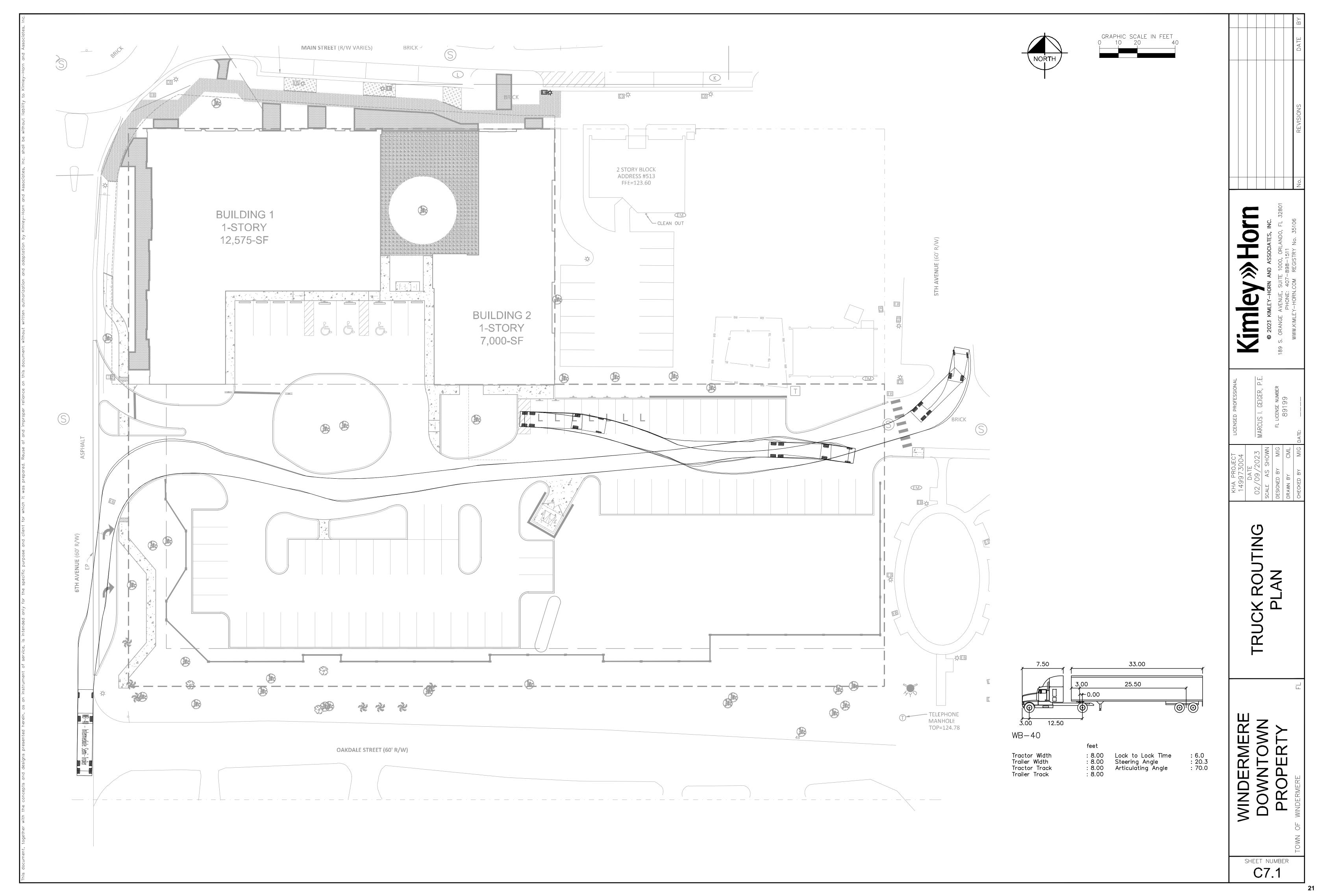
## <u>DATUM NOTE:</u> ELEVATIONS BASED ON NAVD 88 DATUM

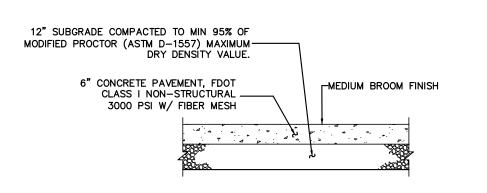
Always call 811 two full business days before you dig to have underground utilities located and marked.

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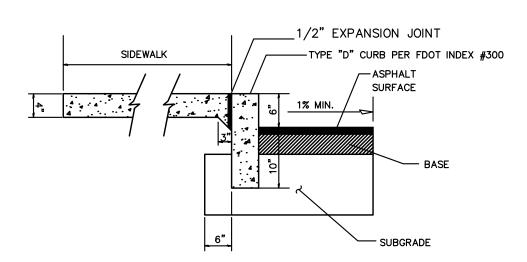
SHEET NUMBER C6.0



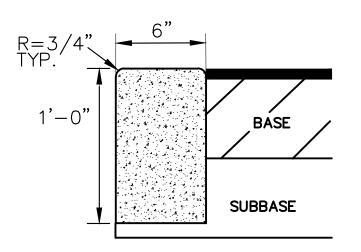




FDOT CONCRETE PAVEMENT DETAIL



SIDEWALK INTEGRAL CURB DETAIL

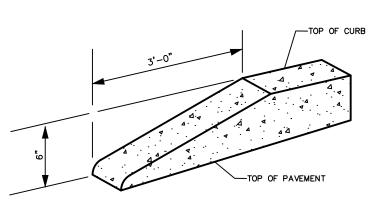


**RIBBON CURB** 

## ALL CURBS TO BE CONSTRUCTED OF 28 DAY, 3000 P.S.I. CONCRETE

- 1/2" PRE-MOLDED EXPANSION JOINT REQUIRED EVERY 500'. CONSTRUCTION JOINT REQUIRED EVERY 10' MAXIMUM (4' MINIMUM). 3. 6" SUBBASE TO BE COMPACTED AND TESTED TO 98% DENSITY BASED ON AASHTO T-180
- MODIFIED PROCTOR TEST AND SHALL BE STABILIZED TO A MINIMUM L.B.R. 40. 4. IN NO INSTANCE SHALL EXTRUDED CURBS (DEFINED AS HEADER-TYPE CURBS INSTALLED DIRECTLY ON TOP OF PAVEMENT) BE PERMITTED.

Conc. Pavt. <sub>2</sub>" Exp. Joint And Preformed Joint Filler TYPE D

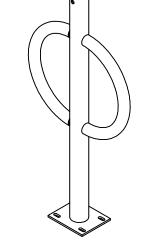


**CURB TERMINUS TRANSITION DETAIL** 

NOTE:
ALL CURBS TO HAVE STANDARD 3' TRANSITION FROM 6" HEIGHT
TO FLUSH (0" HEIGHT). A STANDARD TEMPLATE SHALL BE USED
AT ALL LOCATIONS TO PROVIDE UNIFORM CURB TRANSITION
THROUGHOUT THE PROJECT.

No. 4 Bars, 18" Long

WHEEL STOP FRONT VIEW

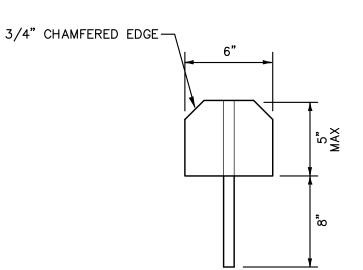


2" Min.

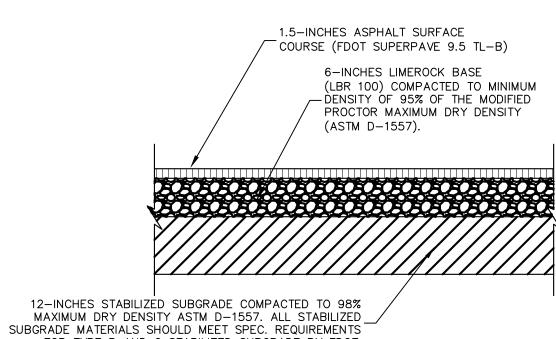
PRODUCT: DERO BIKE HITCH (OR EQUIVALENT) STAINLESS STEEL (OR OWNER APPROVED) FINISH: INSTALL PER MANUFACTURER'S SPECIFICATIONS NOTE:

WWW.DERO.COM 1-800-298-4915

STANDARD BICYCLE RACK DETAIL



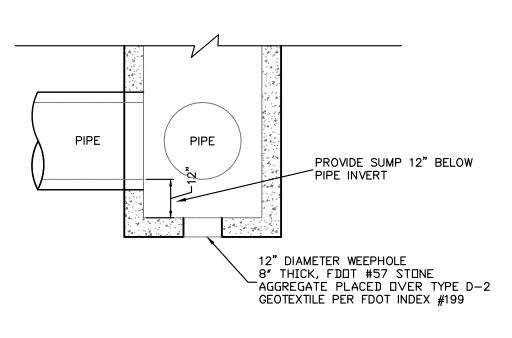
WHEEL STOP PROFILE (TYP.)



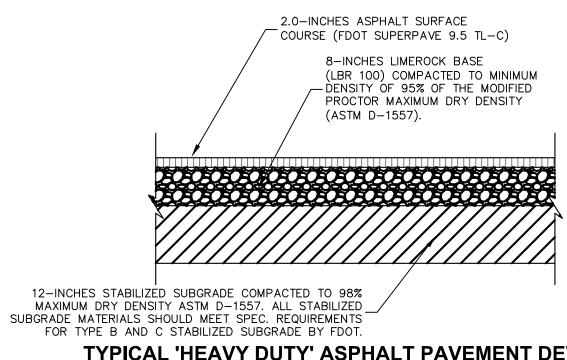
FOR TYPE B AND C STABILIZED SUBGRADE BY FDOT. TYPICAL 'STANDARD LIGHT DUTY' ASPHALT PAVEMENT DETAIL

USED FOR PARKING AREAS ONLY

1. ALTERNATIVE CRUSHED CONCRETE BASE MAY BE USED. 8-INCHES CRUSHED CONCRETE BASE SHALL MEET THE MATERIAL SPEC'S PER FDOT ROAD AND BRIDGE CONSTRUCTION SPECIFICATIONS (ED. 2022), SECTION 204 "GRADED AGGREGATE

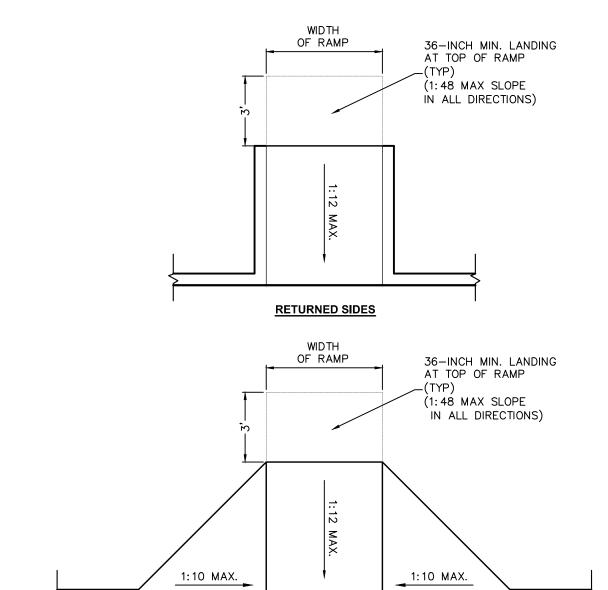


TYPICAL INLET SUMP DETAIL
PER F.D.O.T. INDEX NO. 232 N.T.S.



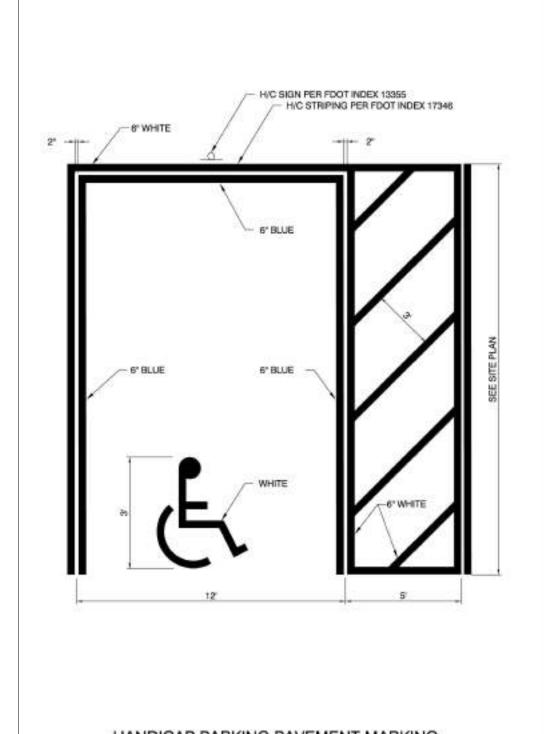
TYPICAL 'HEAVY DUTY' ASPHALT PAVEMENT DETAIL

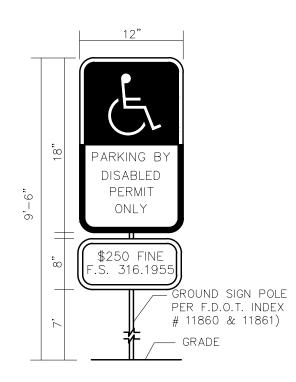
1. ALTERNATIVE CRUSHED CONCRETE BASE MAY BE USED. 8-INCHES CRUSHED CONCRETE BASE SHALL MEET THE MATERIAL SPEC'S PER FDOT ROAD AND BRIDGE CONSTRUCTION SPECIFICATIONS (ED. 2022), SECTION 204 "GRADED AGGREGATE



TYPICAL 'ONSITE' ACCESSIBLE CURB RAMPS CONSTRUCT PER F.A.C. 2012: CHAPTER 4, SECTION 406 REQUIREMENTS (DETECTABLE WARNING STRIPS TO MEET FDOT INDEX 522-002 REQUIREMENTS)

SIDE FLARES





1. ALL LETTERS ARE 1" SERIES "C" PER MUTCD. 2. TOP PORTION OF SIGN SHALL HAVE REFLECTORIZED (ENGINEERING GRADE) BLUE BACKGROUND WITH WHITE REFLECTORIZED LEGEND AND 3. BOTTOM PORTION OF SIGN SHALL HAVE A REFLECTORIZED (ENGINEERING GRADE) WHITE BACKGROUND WITH BLACK OPAQUE LEGEND AND BORDER. 4. FINE NOTIFICATION SIGN SHALL HAVE A REFLECTORIZED (ENGINEERING GRADE) WHITE BACKGROUND WITH BLACK OPAQUE LEGEND AND 5. ONE (1) SIGN REQUIRED FOR EACH PARKING 6. INSTALLATION HEIGHT OF SIGN SHALL BE IN ACCORDANCE WITH SECTION 24-23 OF THE MANUAL

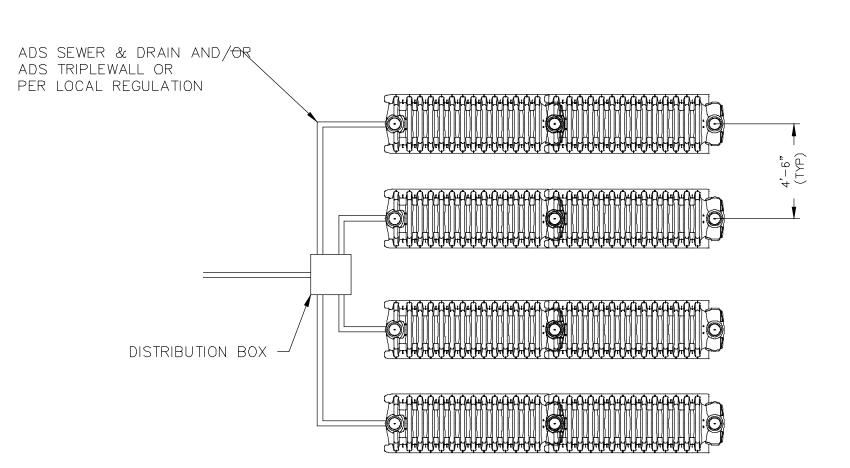
HANDICAP SIGN DETAIL

ON UNIFORM TRAFFIC CONTROL DEVICES (MUTCD).

GENERAL

SHEET NUMBER C8.0

HANDICAP PARKING PAVEMENT MARKING

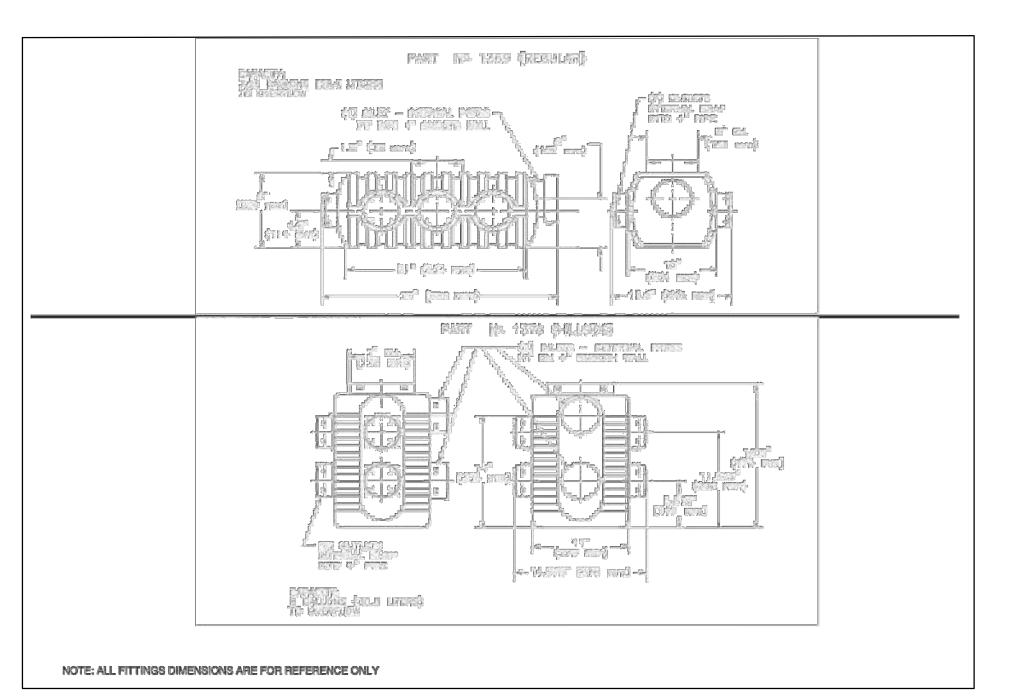


#### <u>NOTES:</u>

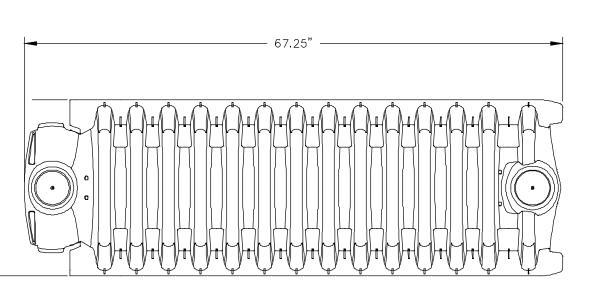
- 2. SMOOTH IRREGULARITIES IN THE EXCAVATION. A LEVEL, FLAT SURFACE IS REQUIRED.
- 3. INSTALL ARC LEACHING CHAMBERS IN ADJACENT ROWS TO COVER DESIRED AREA.
- 4. INSTALL UNIVERSAL END CAP AND SECURE IN PLACE WITH BACKFILL.
- 5. INSTALL 4" PIPE TO EACH ROW OF ARC UNIVERSAL END CAPS.
- 6. ENDS OF ROWS MAY BE CONNECTED WITH ARC 24 CLUSTER INSTALLATION

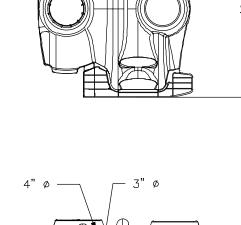
PIPING TO IMPROVE DISTRIBUTION.

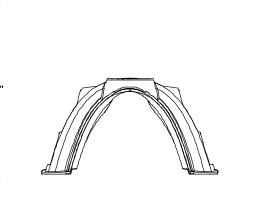
- 1. EXCAVATE AND LEVEL INSTALLATION AREAS. 7. FILL PERIMETER AND INTERIOR SIDEWALL AREAS TO TOP OF CHAMBERS AND WALK INTO PLACE. AVOID LARGE ROCKS OR DEBRIS IN COVER MATERIAL.
  - 8. COVER ARC LEACHING CHAMBERS TO A MINIMUM OF 12" OF GRANULAR OVER AFTER CONSOLIDATION FOR H-10 APPLICATIONS. AVOID LARGE ROCKS OR DEBRIS IN COVER MATERIAL. COVER HEIGHTS AND LIVE LOADING LIMITS ARE IMPACTED BY BOTH SOIL TYPE AND COMPACTION REQUIREMENTS. CONTACT ADS CHAMBER USING KNOCKOUTS PROVIDED IN THE WHEN POOR SOILS ARE ENCOUNTERED AND FOR MAXIMUM FILL HEIGHTS. LIVE LOAD CONDITIONS ARE NOT RECOMMENDED.



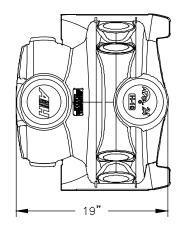
**DISTRIBUTION BOXES** 

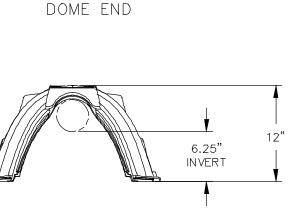


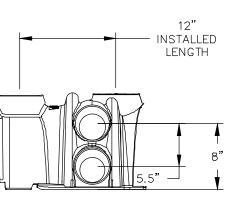


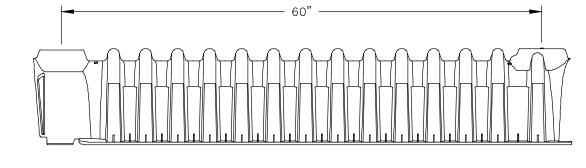


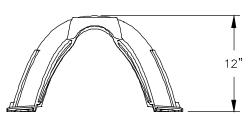
POST END

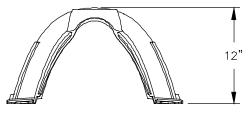




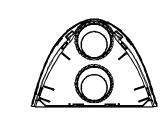








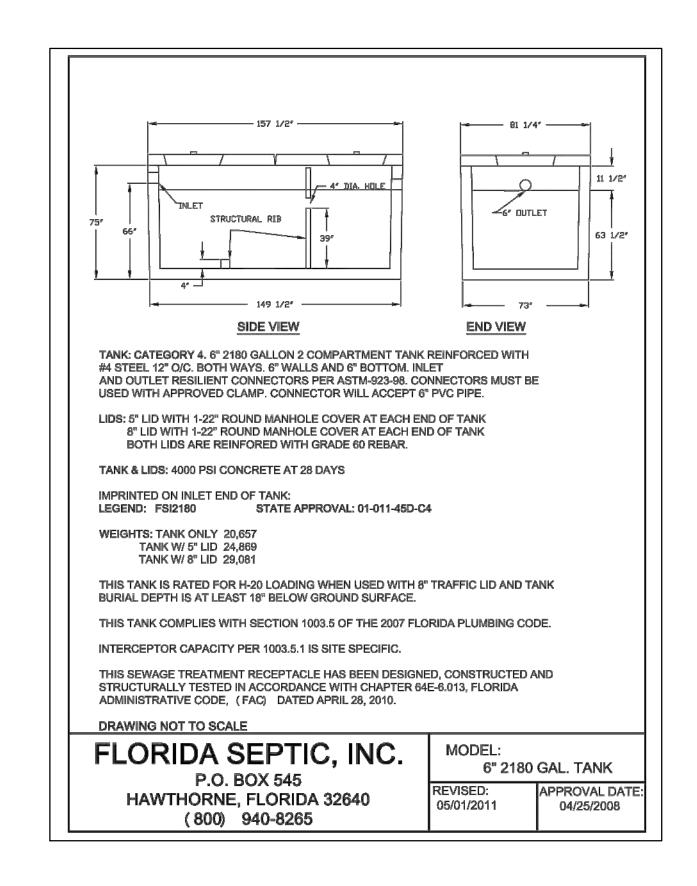


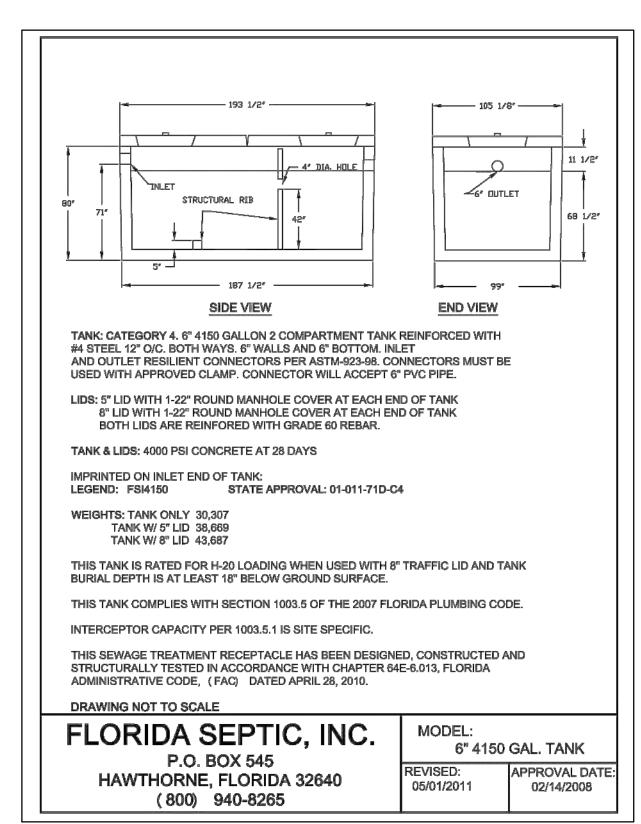


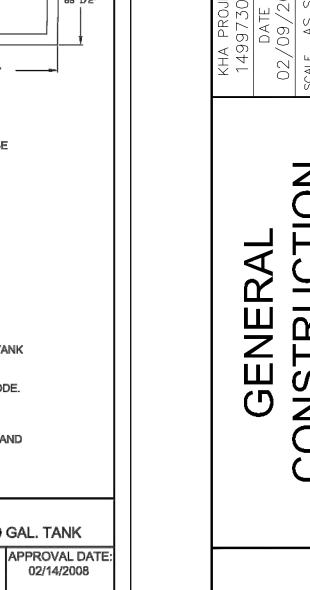
END CAPS

ARC 24 CHAMBER AND END CAP

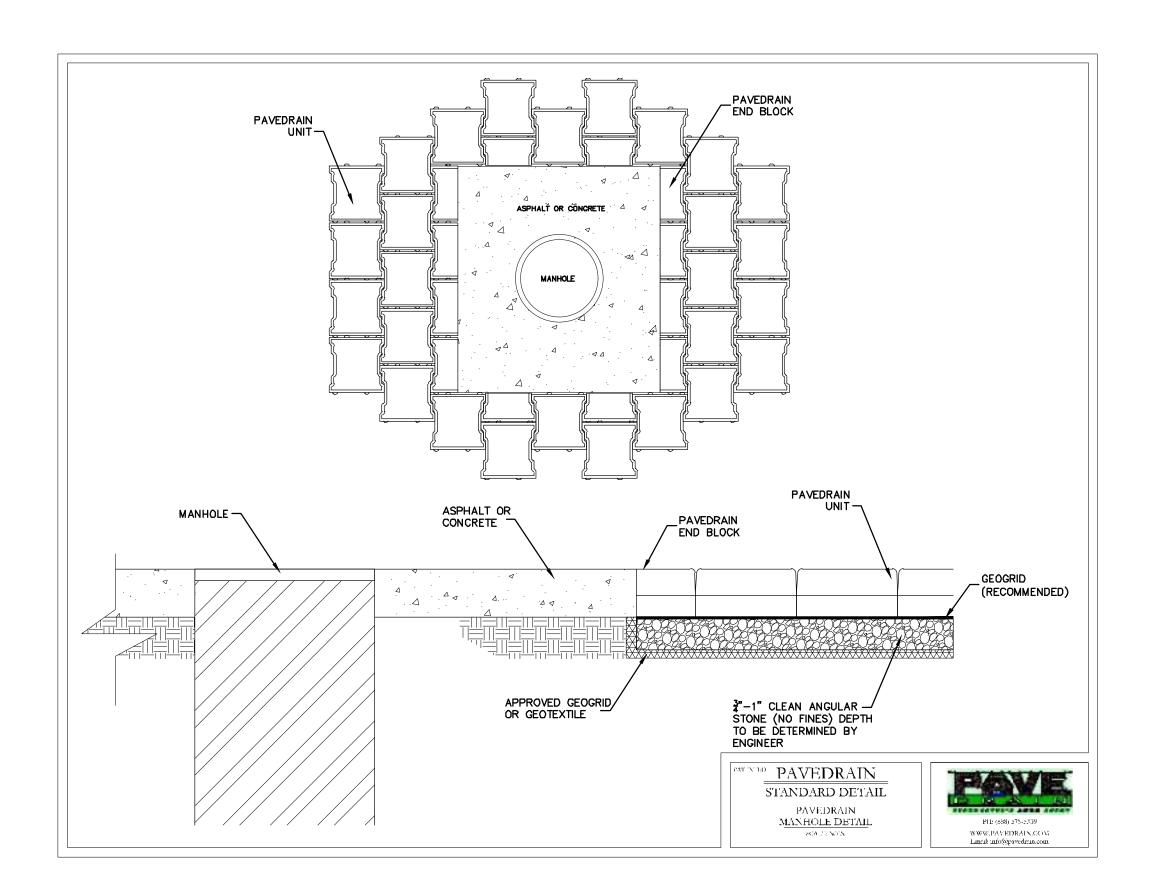


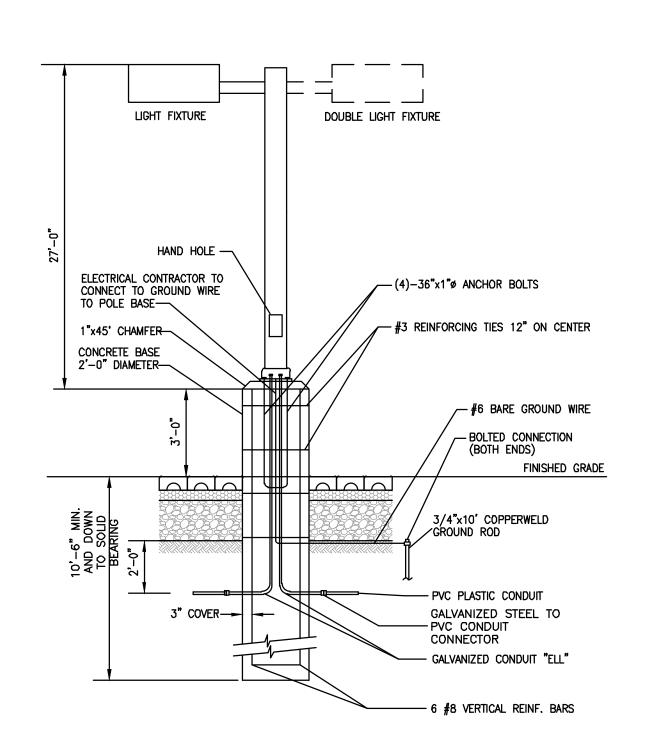




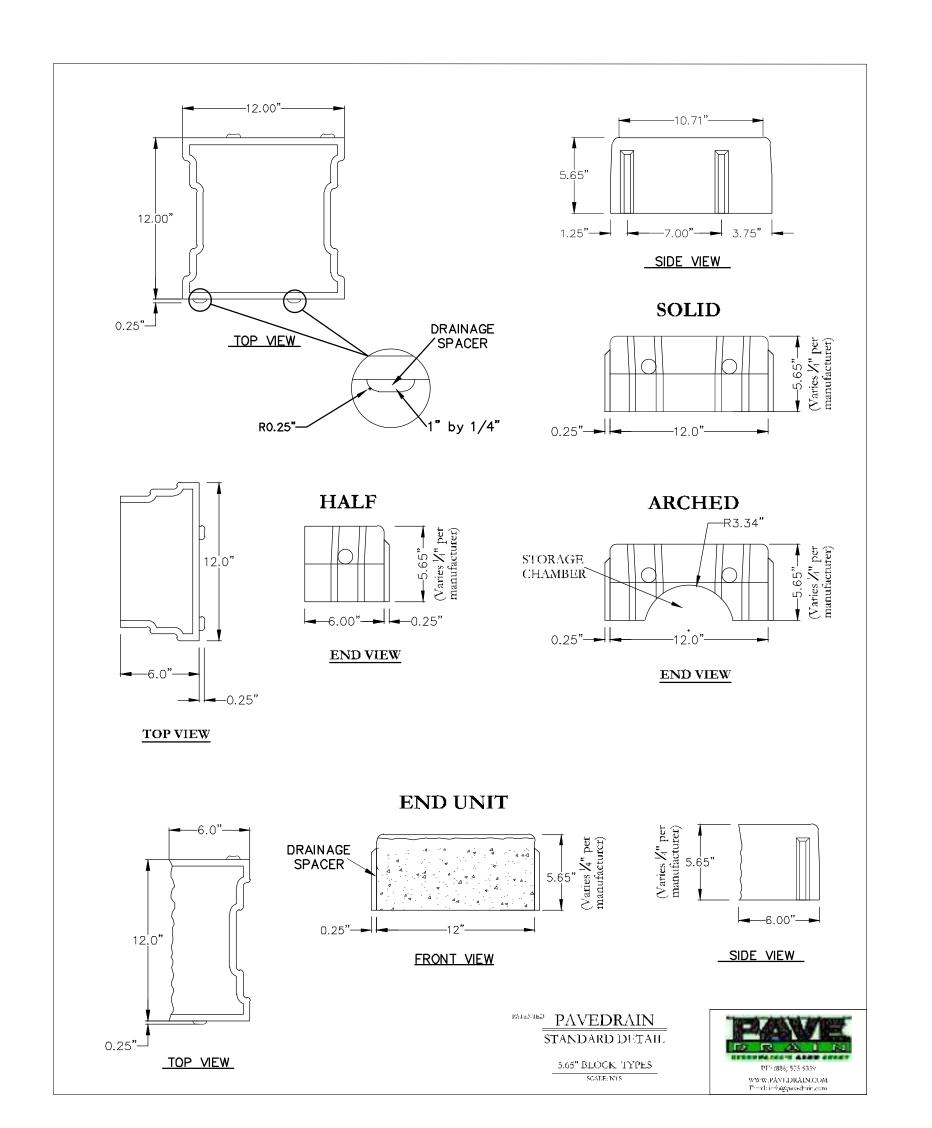


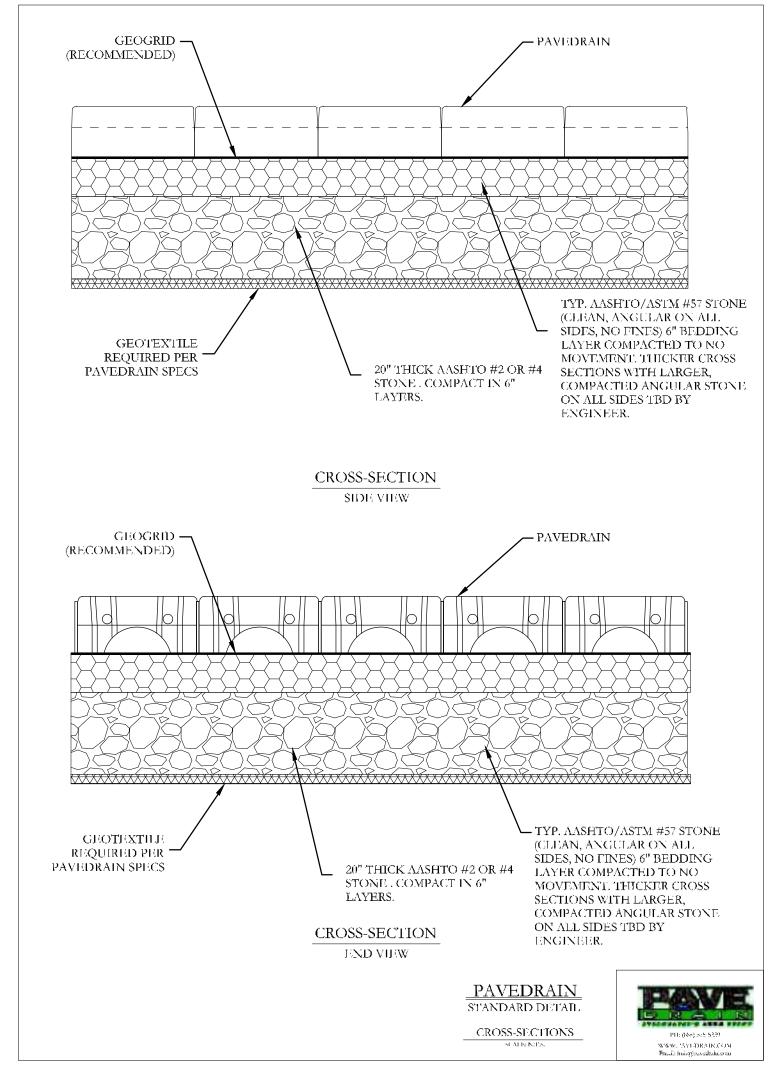
SHEET NUMBER C8.1

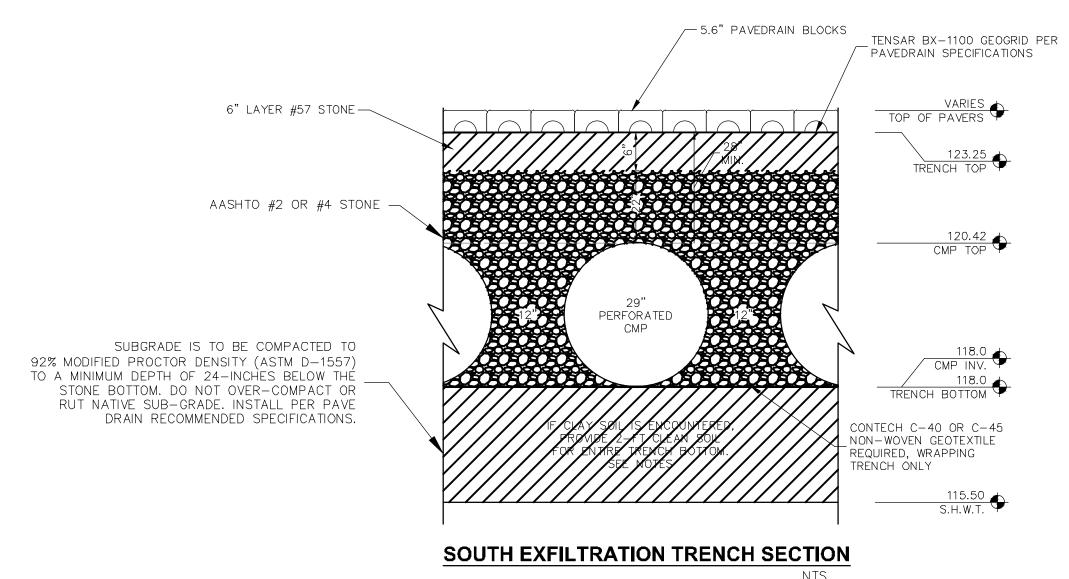




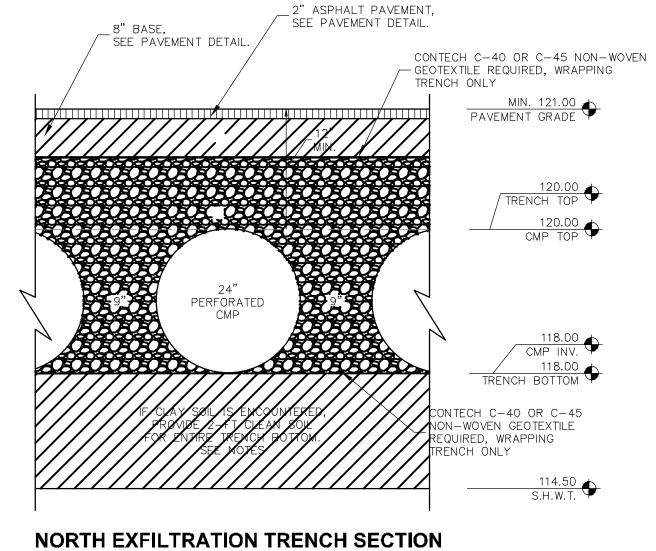
MODIFIED LIGHT POLE FOUNDATION LOCATED IN THE PAVEDRAIN SECTIONS NOT TO SCALE







1. TRENCH BOTTOM FILL SHALL BE CLEAN, INORGANIC, GRANULAR SOIL (FINE SAND) WITH A FINES CONTENT OF NO MORE THAN 5 PERCENT. CARE SHOULD BE TAKEN NOT TO OVER—COMPACT THE BOTTOM DURING EXCAVATION AND GRADING.



1. TRENCH BOTTOM FILL SHALL BE CLEAN, INORGANIC, GRANULAR SOIL (FINE SAND) WITH A FINES CONTENT

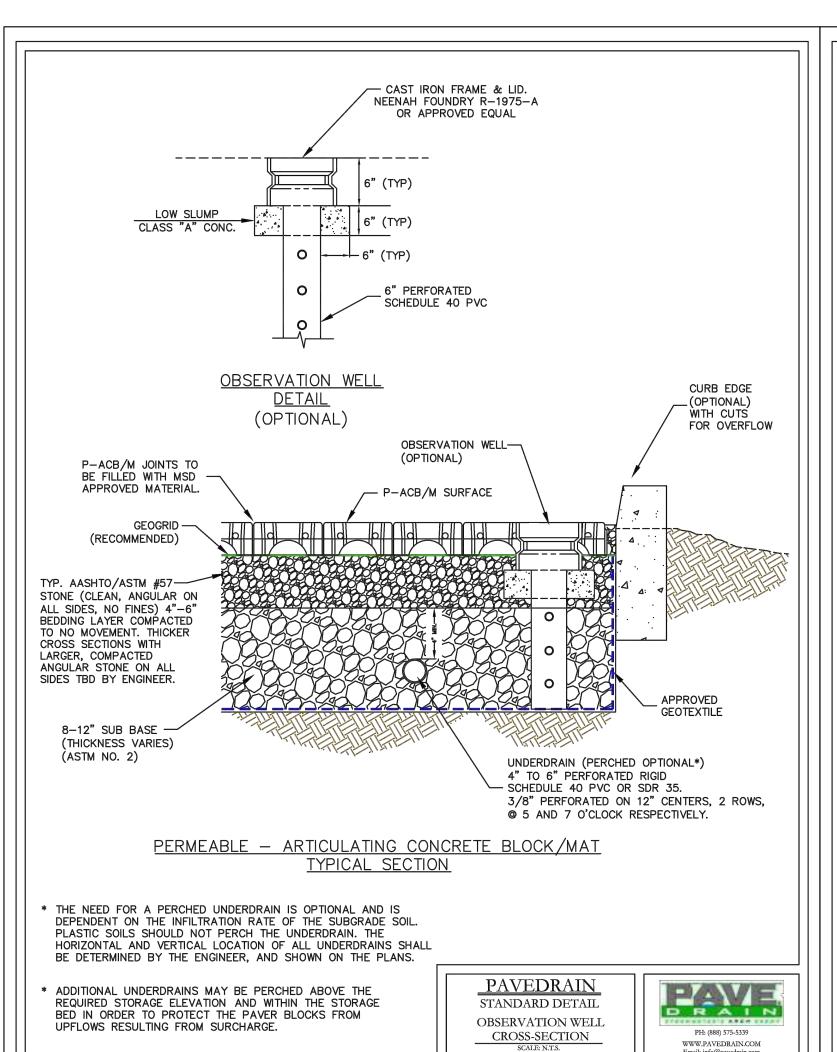
CONTRACTOR NOTE:

- 1. CONSTRUCTION AND INSTALLATION SHALL BE PERFORMED BY A CONTRACTOR CERTIFIED BY THE PRODUCT MANUFACTURER AND/OR FAMILIAR WITH AND FOLLOWING THE RECOMMENDATIONS AND PROCEDURES STATED WITHIN THE PAVEDRAIN INSTALLATION MANUAL (LATEST ED.) AND THE PAVEDRAIN NOTES CONTAINED WITHIN SHEET Ċ9.3.
- 2. WITHIN 2 WEEKS PRIOR TO THE INSTALLATION OF THE PAVEDRAIN P-ACB SYSTEM, CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH CONTRACTOR PERFORMING INSTALLATION, ENGINEER, SUPPLIER, AND ANY OTHER APPROPRIATE REPRESENTATIVE.

GENERAL 0

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SHEET NUMBER C8.2



FINAL BACKFILL

POUNDATION SHALL BE WELL CONSOLIDATED & STABLE, CAPABLE OF SUPPORTING FILL MATERIAL LOAD

CONSTRUCTION LOADS

ALUMINIZED TYPE 2 STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-274 OR ASTM A-92.

THE GALVANIZED STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-218 OR ASTM A-929.

THE POLYMER COATED STEEL COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF AASHTO M-246 OR ASTM A-742.

THE ALUMNUM COILS SHALL CONFORM TO THE APPLICABLE REQUIREMENTS OF ASSITTO M-197 OR ASTM B-744.

CONSTRUCTION LOADS
CONSTRUCTION LOADS MAY BE HIGHER THAN FINAL LOADS. FOLLOW THE MANUFACTURERS OR NOSPA GUIDELINES.

3 GRANULAR BEDDING MATERIAL SHALL BE A RELATIVELY LOOSE MATERIAL THAT IS ROUGHLY SHAPED TO FIT THE BOTTOM OF THE PIPE, 2" MIN DEPTH. THE BEDDING MATERIAL MAY BE SUITABLE FOUNDATION SOILS CONFORMING TO AASHTO SOIL CLASSIFCATIONS A1, A2, OR A3.

6a TOTAL HEIGHT OF COMPACTED COVER FOR CONVENTIONAL HIGHWAY LOADS IS MEASURED FROM TOP OF PIPE TO BOTTOM OF FLEXIBLE PAVEMENT OR TOP OF RIGID PAVEMENT.

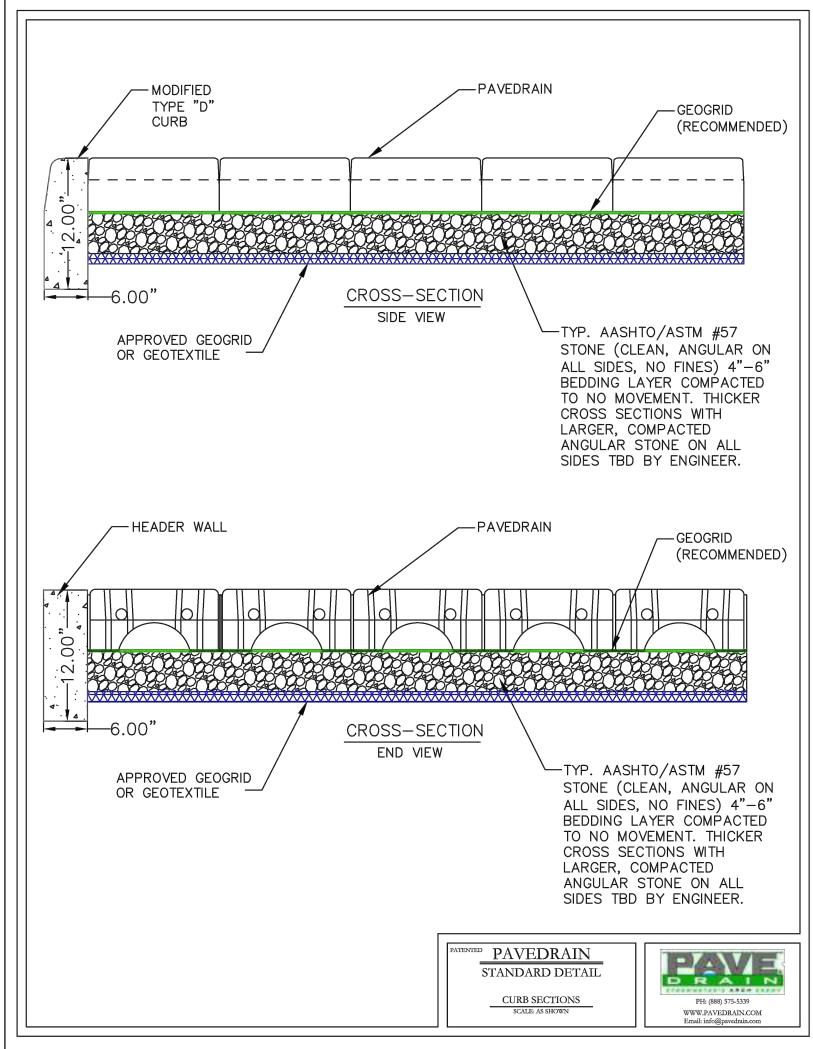
CONSTRUCTION LOADING DIAGRAM SCALE: N.T.S.

POLYMER COATED: AASHTO M-245 OR ASTM A-762

CONTECH CONTECH CMP DETENTION SYSTEMS

ALUMINUM: AASHTO M-196 OR ASTM B-745

7 FINAL BACKFILL MATERIAL SELECTION AND COMPACTION REQUIREMENTS SHALL FOLLOW THE PROJECT PLANS AND SPECIFICATIONS PER THE ENGINEER OF RECORD.



TYPICAL MANWAY DETAIL
SCALE: N.T.S.

COIL WIDTH
OPEN AREA = 3.76 SQ IN/SQ FT

SECTION VIEW

ROUND OPTION PLAN VIEW

3. EARTH COVER = 1' MAX.

4. CONCRETE STRENGTH = 3,500 psi
5. REINFORCING STEEL = ASTM A615, GRADE 60.

TYPICAL RISER DETAIL

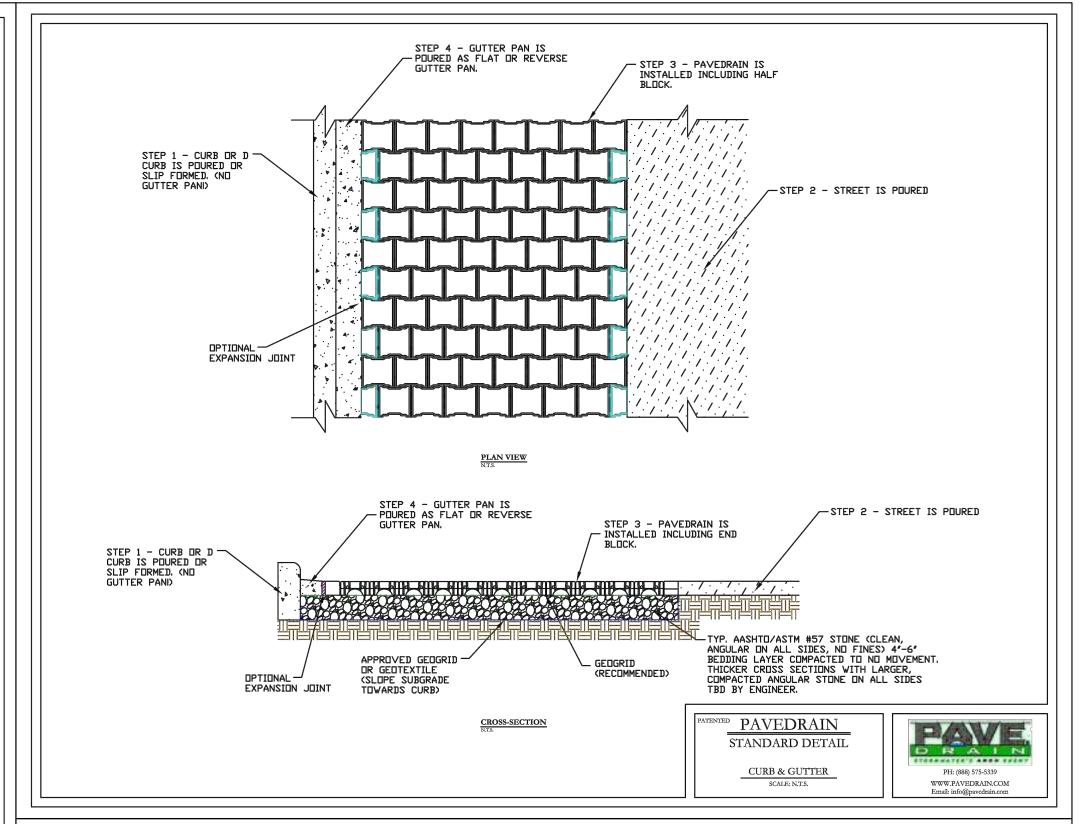
SCALE: N.T.S.

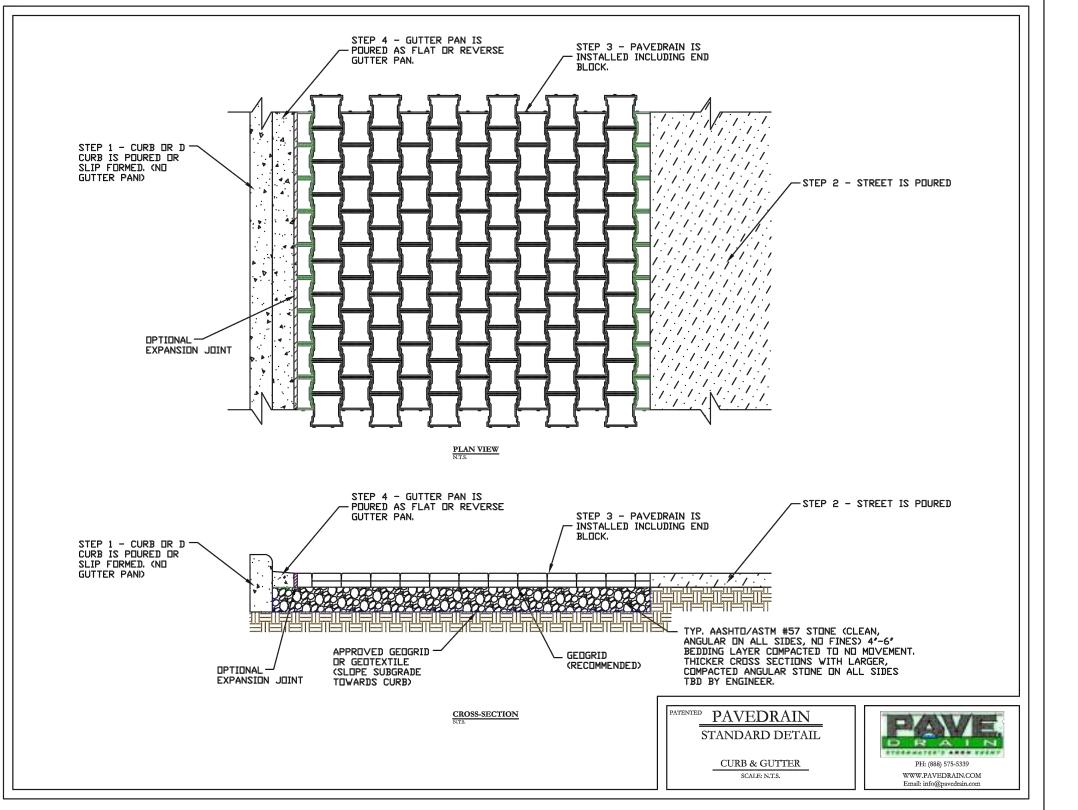
NOTE: LADDERS ARE OPTIONAL AND ARE NO REQUIRED FOR ALL SYSTEMS.

RIM OPENING WITH DIAGONAL #4 BARS, EXTEND BARS A MINIMUM OF 12" BEYOND OPENING, BEND BARS AS REQUIRED TO MAINTAIN BAR COVER.

 PROTECTION SLAB AND ALL MATERIALS TO BE PROVIDED AND INSTALLED BY CONTRACTOR.







CONTRACTOR NOTE:

1. CONSTRUCTION AND INSTALLATION SHALL BE PERFORMED BY A CONTRACTOR CERTIFIED BY THE PRODUCT MANUFACTURER AND/OR FAMILIAR WITH AND FOLLOWING THE RECOMMENDATIONS AND PROCEDURES STATED WITHIN THE PAVEDRAIN INSTALLATION MANUAL (LATEST ED.) AND THE PAVEDRAIN NOTES CONTAINED WITHIN SHEET C8.4.

2. WITHIN 2 WEEKS PRIOR TO THE INSTALLATION OF THE PAVEDRAIN P-ACB SYSTEM, CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH CONTRACTOR PERFORMING INSTALLATION, ENGINEER, SUPPLIER, AND ANY OTHER APPROPRIATE REPRESENTATIVE.

WINDERMERE DOWNTOWN PROPERTY

GENERAL

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SHEET NUMBER

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#### PAVEDRAIN SPECIFICATIONS PAVEDRAIN SPECIFICATIONS PAVEDRAIN SPECIFICATIONS B. ACCEPTABLE MANUFACTURERS AND DISTRIBUTION PARTNERS: 3.7 POST INSTALLATION CERTIFICATION A. REFER TO SECTION 01 33 00 - SUBMITTAL PROCEDURES 1. LOCAL — ACF ENVIRONMENTAL. (800) 448—3636, SALES@ACFENVIRONMENTAL.COM WWW.ACFENVIRONMENTAL.COM B. SHOP DRAWINGS: SUBMIT DESIGN DETAILS, UNIT DETAILS, CROSS—SECTIONS AND LAYOUTS AS PER CONTRACT INFILTRATION RATE AS PER TABLE 1 IN THIS SPECIFICATION. DOCUMENTS TO ENGINEER OF RECORD (EOR). 2. NATIONAL - PAVEDRAIN, LLC. (888) 575-5339, INFO@PAVEDRAIN.COM B. IF THE SYSTEM FAILS TO PERFORM AS REQUIRED IN TABLE 1 OF THIS SPECIFICATION, IT SHALL BE REMOVED AND

1. NATURAL GRAY: SUBMIT ONE (1) FULL—SIZED P—ACB SAMPLE.

2. COLOR: SUBMIT 4" X 4" SAMPLES REPRESENTATIVE OF COLOR(S) SELECTED WITHIN THIS SPECIFICATION OR NOTED ON CONTRACT DOCUMENTS 3. MINIMUM 3 LB. SAMPLES OF PROPOSED SUBBASE &/OR BASE AGGREGATE MATERIALS.

D. GEOSYNTHETIC: SUBMIT PRODUCT DATA SHEET(S) AND TEST REPORTS FOR GEOSYNTHETIC(S) PROPOSED FOR USE BY EOR WITHIN THIS SPECIFICATION OR ON CONTRACT DOCUMENTS.

E. SUBMIT TO THE EOR MANUFACTURERS' PRINTED INSTALLATION MANUAL, LITERATURE, LAYOUT DRAWINGS, AND PRODUCT SPECIFICATIONS.

F. CERTIFICATION OF COMPLIANCE

1.0 SUBMITTALS

C. SAMPLES:

1. TEST REPORTS — INDICATE COMPLIANCE WITH REQUIREMENTS OF CONTRACT DOCUMENTS INCLUDING:

- a. P—ACB UNIT COMPRESSIVE STRENGTH, MOISTURE CONTENT AND DENSITY ON LIKE UNITS, TESTED IN ACCORDANCE TO ASTM C140 BY INDEPENDENT LABORATORY PER UNIT REQUIREMENTS OF ASTM D6684,
- b. SIEVE ANALYSIS OF ALL AGGREGATE GRADES INDICATED IN CONTRACT DOCUMENTS, SAMPLED ACCORDING TO ASTM D75 AND TESTED IN ACCORDANCE TO ASTM C136.
- c. SPECIFIED STANDARD SIZES OF COARSE AGGREGATES SHALL COMPLY WITH SIZES GIVEN IN ACCORDANCE TO ASTM D448, TABLE 1.
- 2. PERFORMANCE COMPLIANCE INDICATE COMPLIANCE WITH REQUIREMENTS OF CONTRACT DOCUMENTS INCLUDING:
- a. INFILTRATION PERFORMANCE SUBMIT INDEPENDENT LABORATORY TEST REPORT INDICATING IN-PLACE INFILTRATION PERFORMANCE OF: AVERAGE OF THREE (3) TESTS OF ONE THOUSAND (1,000) INCHES PER HOUR (IN/HR.). TEST SHALL BE PERFORMED IN ACCORDANCE TO ASTM C1781 OR C1701 AND BASED ON AN OUTDOOR WORKING SURFACE WITH TYPICAL BASE MATERIAL AND INSTALLATION.
- b. STRUCTURAL PERFORMANCE DESIGN OF THE P—ACB SHALL BE CAPABLE OF SUPPORTING AASHTO H—20, HS-20 AND HS-25 TRUCK LOADING WITH PROPER SUBGRADE AND BASE INSTALLATION. THE P-ACB'S SHALL BE ANALYZED AS UNREINFORCED CONCRETE ARCHES SUPPORTING A UNIFORM TRUCK TIRE LOAD WITH IMPACT PER AASHTO STANDARDS AS TESTED BY AN INDEPENDENT LABORATORY.
- c. MAINTAINABILITY PROVIDE MAINTENANCE STUDY BASED ON AT LEAST 24 MONTHS BY AN INDEPENDENT OR THIRD PARTY REPRESENTATIVE WHICH INCLUDES PRE AND POST INFILTRATION TESTING DOCUMENTATION IN MULTIPLE LOCATIONS IN ACCORDANCE WITH ASTM C1781 OR C1701. THE STUDY SHALL SHOW THAT AFTER MANUFACTURERS' RECOMMENDED MAINTENANCE THAT THE ORIGINAL INFILTRATION PERFORMANCE OF THE PERMEABLE SYSTEM CAN EFFECTIVELY BE RESTORED TO 80% + /-10% OF INITIAL INFILTRATION RATES.
- G. SUBSTITUTIONS 1. NO MATERIAL SHALL BE CONSIDERED AS AN EQUIVALENT TO THE P-ACB SPECIFIED HEREIN UNLESS IT MEETS ALL AREAS OF THIS SPECIFICATION WITHOUT EXCEPTION.

2. MANUFACTURER'S REQUESTING TO SUBMIT MATERIALS AS EQUIVALENT MUST PROVIDE RECORDS, DATA, INDEPENDENT LABORATORY TEST RESULTS, SAMPLES, CERTIFICATIONS, AND DOCUMENTATION MEETING ALL AREAS OF THIS SPECIFICATION WITHOUT EXCEPTION. ANY REQUESTS MUST BE SUBMITTED TO EOR 15 DAYS PRIOR TO BID <u>DATE</u>.

#### 1.1 SCHEDULING

- A. CONTRACTOR SHALL CONTACT P-ACB MANUFACTURER TO DETERMINE NECESSARY LEAD TIME TO PRODUCE UNIT MATERIAL ORDER.
- B. SCHEDULE MANUFACTURE AND DELIVERY OF P-ACB'S TO COINCIDE WITH CONSTRUCTION SCHEDULE TO PREVENT STORAGE FOR EXTENDED PERIODS.
- C. APPROXIMATELY TWO (2) WEEKS PRIOR TO THE START OF THE INSTALLATION, A PRECONSTRUCTION MEETING SHALL OCCUR WITH REPRESENTATIVE(S) FROM THE DESIGN TEAM, GENERAL CONTRACTOR, SITE CONTRACTOR, INSTALLATION CONTRACTOR AND MANUFACTURERS' REPRESENTATIVE.

#### 1.2 DELIVERY, STORAGE AND HANDLING

- A. P-ACB INDIVIDUAL BLOCKS MUST BE DELIVERED ON WOODEN PALLETS AND MARKED ACCORDINGLY.
- B. ALL P—ACB'S SHALL BE SOUND AND FREE OF DEFECTS THAT WOULD INTERFERE WITH PROPER PLACEMENT OR THAT WOULD IMPAIR THE STRENGTH OF LONGEVITY OF THE INSTALLATION.
- C. MINOR CRACKS INCIDENTAL TO THE USUAL METHOD OF MANUFACTURE; SCUFFING OR CHIPPING THAT RESULTS FROM CUSTOMARY METHODS OF HANDLING IN SHIPPING, DELIVERY AND PLACEMENT SHALL NOT BE DEEMED GROUNDS FOR REJECTION.

#### PART 2 - PRODUCTS

- 2.1 MANUFACTURED PERMEABLE ARTICULATING CONCRETE BLOCK (P-ACB)
- A. PAVEDRAIN® P-ACB
- 1. COLOR(S): DARK GREY TO BE REVIEWED AND APPROVED BY THE OWNER AND EOR PRIOR TO FABRICATION. 2. TYPE: CLOSED-CELL PRE-MANUFACTURED INDIVIDUAL CONCRETE BLOCKS WITH AN ARCHED STORAGE CHAMBER FOR ADDITIONAL STORMWATER RUNOFF CAPACITIES AS PER SHOP DRAWINGS &/OR CONTRACT DOCUMENTS. BLOCKS MAY BE HAND-PLACED OR MECHANICALLY INSTALLED.
- 3. PHYSICAL AND PERFORMANCE REQUIREMENTS: AT THE TIME OF DELIVERY TO THE WORK SITE, THE UNITS SHALL CONFORM TO THE REQUIREMENTS PRESCRIBED IN TABLE 1 BELOW.

#### TABLE 1: PHYSICAL & PERFORMANCE CHARACTERISTICS

ltem	Description	Values
Dimensional Tolerance	Length x Width x Height ASTM D6684 Section 5.3.2	12" ×12" ×5.65" (+/-1/8")
Compressive Strength	ASTM D6684 / ASTM C140	Avg. of three units: 4,000 psi min. Individual units: 3,500 psi min.
Block UnitWeight		Arched Block: 45-50 lbs/sf Solid Block: 55-60 lbs/sf
Loading Capabilities	Truck Load Traffic Rating	AASHTO H-20,HS-20, HS-25
Joint Filler Between Blocks	Material Used	NONE Required
Percent Open Space		Surface: 7% Storage: 20%
Water Absorption (Max. %) Density (Min. lb/ft <sup>3</sup> )	ASTM D6684 Table 1/ASTM C140	Avg. of three units: 9.1% lb/ft <sup>3</sup> Individual units: 11.7% lb/ft <sup>3</sup> Avg. of three units: 130 lb/ft <sup>3</sup> Individual units: 125 lb/ft <sup>3</sup>
Storage Capacity	Above Aggregate Within Arch	0.0833 cf/block
Post-Installation, Verified Surface Infiltration Rates	ASTM C1781 Test Method	Avg of three tests 1,000 in/hr min.

WWW.PAVEDRAIN.COM

3. MANUFACTURER - TITAN AMERICA. CONTACT: GREG STRICKLAND 561-291-3459, GSTRICKLAND@TITANAMERICA.COM

#### 2.2 AGGREGATE MATERIALS

- A. OPEN-GRADED COARSE AGGREGATE: SELECT COARSE AGGREGATE SHALL BE CLEAN MATERIAL FREE FROM ORGANIC MATERIALS AND ANGULAR ON ALL SIDES. SELECT COARSE AGGREGATE SHALL MEET THE GRADATIONS THAT ARE LISTED IN TABLE 1 OF ASTM D448 AND BASED ON SIEVE ANALYSIS IN ACCORDANCE TO ASTM C136. RECYCLED AGGREGATE MATERIAL IS NOT ALLOWED WITHIN THE TOP 4-6" ELEVATION DIRECTLY CONTACTING THE BOTTOM OF THE PAVEDRAIN UNITS.
- 1. BASE COURSE AGGREGATE: ASTM GRADE #57 STONE SHALL BE USED AS THE FINISH (TOP) 4—6" LAYER OF STONE DIRECTLY UNDERNEATH THE PAVEDRAIN UNITS.
- 2. SECONDARY SUB-BASE AGGREGATE: ASTM GRADE #2, #3 OR #4 AS DETERMINED BY ENGINEER OF RECORD, THICKNESS AS INDICATED BY CROSS-SECTIONS ON THE SHOP DRAWINGS &/OR CONTRACT DOCUMENTS. CONTACT MANUFACTURER OR DISTRIBUTOR ABOUT LOCAL AVAILABILITY OF DIFFERENT AGGREGATE GRADES

#### 2.3 TRANSITION AND EDGE RETRAINTS

- A. TRANSITION: UTILIZE PAVEDRAIN END BLOCK, SOLID BLOCK AND HALF BLOCK SHAPES TO MAKE SMOOTH TRANSITIONS WITH CURBS AND OTHER RIGID SURFACES AS PER SHOP DRAWINGS &/OR CONTRACT DOCUMENTS.
- B. EDGE RESTRAINT: TYPE AND DIMENSIONS SHALL BE INDICATED BY EOR AS PER SHOP DRAWINGS &/OR CONTRACT DOCUMENTS.

#### 2.4 GEOSYNTHETIC MATERIALS

- A. GEOTEXTILE: ACF M200 (OR APPROVED EQUAL), A HIGH STRENGTH, HIGH WATER FLOW, WOVEN MONOFILAMENT OR MULTIFILAMENT GEOTEXTILE AS SPECIFIED BY EOR BASED ON NATIVE SOIL PROPERTIES.
- B. GEOGRID: TENSAR BX-1100 OR SYNTEEN STF-P11 (OR APPROVED EQUAL) AS SPECIFIED BY EOR BASED ON NATIVE SOIL PROPERTIES. REQUIREMENT OF GEOGRID SEPARATOR TO BE DETERMINED BY THE ENGINEER OF RECORD

#### PART 3 - EXECUTION

- 3.1 EXAMINATION AND INSPECTION
- A. THE CONTRACTOR SHALL VERIFY THAT THE SUBGRADE HAS BEEN EXCAVATED, SHAPED, STABILIZED AND COMPACTED IN ACCORDANCE TO SECTIONS 31 22 00, 31 23 00, 31 32 00 & 31 34 00 AND CONFORMS TO THE LINES, GRADES AND CROSS-SECTIONS SHOWN ON CONTRACT DOCUMENTS.
- B. VERIFY THAT NATIVE SUBGRADE HAS BEEN COMPACTED TO A MAXIMUM OF 95% MODIFIED PROCTOR IN ACCORDANCE TO ASTM D 1557. DO NOT OVER OVER-COMPACT OR RUT NATIVE SUBGRADE. OVER-COMPACTION OF THE NATIVE SOIL SUBGRADE COULD REDUCE THE INFILTRATION RATE OF THE NATIVE SOIL AND MUST BE MINIMIZED
- C. IMMEDIATELY PRIOR TO PLACING THE PAVEDRAIN UNITS, THE FINAL PREPARED SUB-BASE AGGREGATE SHALL BE INSPECTED BY THE EOR AND WITNESS TO A PROOF ROLL TEST BY A FULLY LOADED DUMP TRUCK. UNSATISFACTORY CONDITIONS MUST BE CORRECTED PRIOR TO INSTALLATION OF THE PAVEDRAIN UNITS.

#### 3.2 GEOSYNTHETIC INSTALLATION

- A. GEOTEXTILE: THE CONTRACTOR SHALL PLACE ACF M200 (OR APPROVED EQUAL) WOVEN MONOFILAMENT OR MULTIFILAMENT GEOTEXTILE FLAT ON SUBGRADE AND VERTICAL SECTIONS OF BASE AGGREGATE FREE OF WRINKLES AND OVERLAPPING A MINIMUM OF TWELVE (12) INCHES. BASED ON THE SOIL PROPERTIES OF THE SITE. THE GEOTECHNICAL ENGINEER SHALL DETERMINE WHAT STRENGTH GEOTEXTILE IS REQUIRED
- B. GEOGRID: INSTALL TENSAR BX-1100 OR SYNTEEN STF-P11 (OR APPROVED EQUAL) DIRECTLY ON TOP OF PROPERLY PREPARED AND LEVELED FINAL AGGREGATE BASE. REQUIREMENT OF GEOGRID SEPARATOR TO BE DETERMINED BY THE ENGINEER OF RECORD

#### 3.3 AGGREGATE SUB BASE INSTALLATION

- A. THE THICKNESS OF THE SUB-BASE, REQUIREMENT OF MULTIPLE GRADATIONS OF OPEN-GRADED COARSE AGGREGATE AND INTERMEDIATE GEOSYNTHETIC SHALL BE INDICATED BY THE EOR AND DETAILED ON THE CONTRACT DOCUMENTS. THE MINIMUM THICKNESS OF OPEN-GRADED COARSE AGGREGATE IS SIX (6) INCHES. IF MORE THAN SIX (6) INCHES OF BASE AGGREGATE IS REQUIRED, ONLY THE TOP FOUR TO SIX (4—6) INCHES SHALL BE ASTM
- B. ALL BASE AGGREGATES SHALL BE COMPACTED IN SIX TO EIGHT (6-8") INCH LIFTS WILL A ROLLER COMPACTOR AND FINAL GRADE LEVEL COMPACTED WITH A MINIMUM 10,000 LB. VIBRATORY PLATE COMPACTOR IN WITH AT LEAST TWO PASSES IN BOTH THE PERPENDICULAR AND PARALLEL DIRECTIONS. OPEN-GRADED BASE AGGREGATE INSTALLATION SHALL NOT DAMAGE OR DISLODGE THE GEOTEXTILE. 1. WHEN USING MULTIPLE AGGREGATE LAYERS INCLUDING ASTM #2, #3 OR #4, THE CONTRACTOR SHALL COMPACT
- A 2" LAYER OF ASTM #57 INTO THE ASTM #2, #3 OR #4. C. FINISHED GRADE SHALL BE A SMOOTH, PLANE SURFACE WITH NO SIGN OF MOVEMENT AND CONFORM TO THE LINES, GRADES AND CROSS-SECTIONS SHOWN ON CONTRACT DOCUMENTS.
- 3.4 PAVEDRAIN PERMEABLE ARTICULATING CONCRETE BLOCK INSTALLATION
- A. REFER TO: PAVEDRAIN INSTALLATION MANUAL (LATEST EDITION)
- B. HAND OR MECHANICAL PLACING PAVEDRAIN UNITS
- 1. THE CONTRACTOR SHALL DETERMINE THE BEST STARTING POINT OF THE PAVEDRAIN UNIT INSTALLATION TO CONFORM TO THE LINES, GRADES AND ELEVATIONS SHOWN ON THE CONTRACT DOCUMENTS. 2. PLACE PAVEDRAIN UNITS TIGHT TOGETHER IN RUNNING BOND PATTERN SUCH THAT ONE UNIT IS DIRECTLY IN CONTACT WITH ONE HALF OF THE TWO ADJACENT UNITS. PLACE UNITS IN SUCH A MANNER AS TO ENSURE THAT THE PATTERN REMAINS SQUARE TO CURBS, TRANSITIONS OR ADJACENT PAVEMENTS.
- 3. VERIFY THAT EACH PAVEDRAIN UNIT MAKES CONTACT WITH THE GEOGRID OR OPEN-GRADED AGGREGATE SUB-BASE AND IS TIGHTLY ENGAGED WITH ADJACENT UNITS. 4. WHEN NECESSARY, MAKE PARTIAL UNITS FROM SAW CUTTING SOLID, ARCH—LESS PAVEDRAIN UNITS.
- TRANSITIONS AGAINST CURBS AND OTHER RIGID PAVEMENTS SHOULD BE MADE WITH MAXIMUM ONE-HALF (1/2) INCH GAPS UTILIZING SOLID, END AND HALF PAVEDRAIN UNITS.
- C. ADJUSTMENTS 1. MINOR ADJUSTMENTS TO PROPERLY ENGAGE PAVEDRAIN UNITS SHALL BE MADE WITH A DEAD BLOW HAMMER OR
- RUBBER MALLET. 2. ONCE ALL PAVEDRAIN UNITS HAVE BEEN INSTALLED, MINOR DIFFERENTIAL HEIGHTS BETWEEN UNITS CAN BE CORRECTED WITH A SMALL NON-VIBRATORY SINGLE OR DOUBLE BARREL ROLLER COMPACTOR OR VIBRATORY PLATE COMPACTOR. WHEN USING PLATE COMPACTOR, PROTECT UNITS WITH NONWOVEN GEOTEXTILE OR MAT TO ELIMINATE SCUFFING.
- 3. INSPECT COMPLETED INSTALLATION AND REPLACE ANY CRACKED OR DAMAGED UNITS.

#### 3.5 TOLERANCES

- A. NO INDIVIDUAL PAVEDRAIN UNIT SHALL PROTRUDE MORE THAN ONE—QUARTER (1/4) INCH WITHIN THE PLANE OF FINAL PLACED UNITS/MATS.
- B. NO GAP BETWEEN THE INDIVIDUAL PAVEDRAIN UNITS SHALL EXCEED ONE—HALF (1/2) INCH.

#### 3.6 FINISHING

A. THE JOINTS BETWEEN THE PAVEDRAIN UNITS DO NOT REQUIRE BACKFILLING WITH SMALLER AGGREGATE JOINT MATERIAL OR SAND IN ORDER TO FUNCTION PROPERLY. THE JOINTS ARE DESIGNED TO BE LEFT OPEN; THIS INCLUDES FOLLOWING MAINTENANCE OF THE PAVEDRAIN SYSTEM.

- A. UPON COMPLETION OF THE PAVEDRAIN INSTALLATION, THE SURFACE INFILTRATION RATE OF THE PERMEABLE PAVEMENT AREA SHALL BE VERIFIED IN ACCORDANCE WITH ASTM C1781 OR C1701 TO CONFIRM THE REQUIRED
- REPLACED AT THE SUPPLIER'S EXPENSE.
- C. THE EXPENSES ASSOCIATED WITH THIS POST INSTALLATION INFILTRATION VERIFICATION ARE INCLUDED IN THE COST OF THE PERMEABLE SYSTEM AND PROVIDED BY THE SUPPLIER.

#### 3.8 INSPECTION AND MAINTENANCE OF P-ACB SYSTEM

- A. REFER TO: PAVEDRAIN MAINTENANCE MANUAL (LATEST EDITION)
- B. THE MANUFACTURER'S REPRESENTATIVE OF THE P—ACB SHALL PROVIDE A MINIMUM 36 MONTH MAINTENANCE PROGRAM; INCLUDING A VISUAL INSPECTION REPORT WITH PHOTOS AND A RECOMMENDED CLEANING SCHEDULE WITH A VACUUM TRUCK SUCH AS THE ELGIN® WHIRLWIND® OR MEGAWIND® OR WITH THE PAVEDRAIN® VAC HEAD AND ASSOCIATED COMBINATION SANITATION VAC TRUCK. REFER TO THE PAVEDRAIN VAC HEAD INSTRUCTION MANUAL (LATEST EDITION).
- C. MAINTENANCE SHALL BE REQUIRED WHEN <u>EITHER</u> OF THE FOLLOWING TWO CONDITIONS ARE MET: 1. THE SURFACE INFILTRATION RATES OF MORE THAN 75% OF THE TOTAL PERMEABLE SURFACE FALLS BELOW 10%
- OF THE RATE REQUIRED IN TABLE 1. 2. SURFACE PONDING REMAINS FOR 24 HOURS IN AN AREA GREATER THAN 10 SQUARE FEET OF THE PERMEABLE SURFACE.

## CONTRACTOR NOTE:

- 1. CONSTRUCTION AND INSTALLATION SHALL BE PERFORMED BY A CONTRACTOR CERTIFIED BY THE PRODUCT MANUFACTURER AND/OR FAMILIAR WITH AND FOLLOWING THE RECOMMENDATIONS AND PROCEDURES STATED WITHIN THE PAVEDRAIN INSTALLATION MANUAL (LATEST ED.) AND THE PAVEDRAIN NOTES CONTAINED WITHIN SHEET
- 2. WITHIN 2 WEEKS PRIOR TO THE INSTALLATION OF THE PAVEDRAIN P-ACB SYSTEM, CONTRACTOR SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH CONTRACTOR PERFORMING INSTALLATION, ENGINEER, SUPPLIER, AND ANY OTHER APPROPRIATE REPRESENTATIVE.

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> SHEET NUMBER C8.4

ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL

APPENDIX A

FIGURE GN

#### OCU GENERAL NOTES:

DATE: February 11, 2011

- 1. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION WHEN EXCAVATING IN PROXIMITY OF WATER MAINS, WASTEWATER FORCE MAINS, GRAVITY MAINS AND RECLAIMED WATER MAINS. MAIN LOCATIONS SHOWN ON PLANS MAY NOT BE EXACT. THE CONTRACTOR IS RESPONSIBLE FOR FIELD VERIFYING EXISTING UTILITY LOCATIONS.
- 2. SHOULD A PIPE EMERGENCY OCCUR, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE OCU DISPATCH OPERATOR (407-836-2777) AND THE OCU INSPECTOR.
- 3. THE CONTRACTOR SHALL NOTIFY THE OCU CONSTRUCTION DIVISION AT LEAST SEVEN DAYS PRIOR TO COMMENCEMENT OF THE CONSTRUCTION PROJECT BY CALLING (407)
- 4. THE CONTRACTOR SHALL NOTIFY THE OCU CONSTRUCTION DIVISION AT LEAST 48 HOURS PRIOR TO ANY UTILITIES CONSTRUCTION BY CALLING (407) 254-9798.
- 5. THE MATERIALS, PRODUCTS, AND CONSTRUCTION OF ALL UTILITIES CONNECTING TO THE OCU SYSTEM SHALL BE IN CONFORMANCE WITH THE ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL.
- 6. ALL OCU MAINS AND FACILITIES WITHIN THE LIMITS OF THE PROJECT SHALL BE SUPPORTED AND PROTECTED AGAINST DAMAGE DURING CONSTRUCTION.
- 7. THE CONTRACTOR, AT THE CONTRACTOR'S EXPENSE, SHALL IMMEDIATELY REPAIR ALL DAMAGES TO OCU MAINS AND FACILITIES. IF THE REPAIR IS NOT MADE IN A TIMELY MANNER, AS DETERMINED BY OCU, OCU MAY PERFORM REQUIRED REPAIRS AND CLEANUP. THE CONTRACTOR WILL BE CHARGED FOR ALL EXPENSES ASSOCIATED WITH THE REPAIR.
- 8. THE CONTRACTOR SHALL ADJUST ALL EXISTING OCU MAINS AND FACILITIES IN CONFLICT WITH NEW GRADE, NEW OR ALTERED ROADWAYS, SIDEWALKS, DRIVEWAYS, OR STORM WATER IMPROVEMENTS. OCU FACILITIES TO BE ADJUSTED INCLUDE, BUT ARE NOT LIMITED TO PIPELINES, PUMP STATIONS, VALVE BOXES, AIR RELEASE VALVES, FIRE HYDRANTS, MANHOLE COVERS, AND METERS.
- 9. ONLY OCU SHALL OPERATE OCU WATER, WASTEWATER, AND RECLAIMED WATER VALVES. THE CONTRACTOR SHALL COORDINATE VALVE OPERATION WITH THE OCU INSPECTOR. FOR OPERATION OF MAINS NOT OWNED BY OCU, IT IS THE CONTRACTOR'S RESPONSIBILITY TO COORDINATE WITH THE APPROPRIATE UTILITY REPRESENTATIVE.
- 10. CONSTRUCTION ACTIVITIES SHALL NOT CAUSE INTERRUPTIONS IN WATER, WASTEWATER, OR RECLAIMED WATER SERVICE. THE CONTRACTOR SHALL COORDINATE PRE-APPROVED INTERRUPTIONS OF SERVICE WITH THE OCU INSPECTOR 7 WORKING DAYS IN ADVANCE.

ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL

APPENDIX A	STANDARD DRAWINGS								GENERA		
DATE: February 11, 2011	RESTRAINED PIPE TABLE WATER AND RECLAIMED WATER MAINS							FIGURE A104-			
MINIMUM LENG	GTH (FT) TO E	BE RES	STRAII	NED O	N EAC	H SIDI	E OF F	ITTING	G(S)		
					PIPE	SIZE					
TYPE		PVC						DIP			
	4"	6"	8"	10"	12"	16"	20"	24"	30"	36"	
90° BEND	25	36	46	55	64	65	77	89	105	120	
45° BEND	10	15	19	23	26	27	32	37	44	50	
22-1/2° BEND	5	8	9	11	13	13	15	18	21	24	
11-1/4° BEND	3	4	5	6	8	7	8	9	10	12	
PLUG OR BRAN OF TEE	ICH 53	74	97	117	135	138	166	194	231	265	
VALVE	27	38	49	59	68	69	83	97	116	133	
	3.44	D. E. O. F	224 012								

REDUCER

FITTINGS SHALL HAVE RESTRAINED JOINTS UNLESS OTHERWISE INDICATED.

DESIGN ENGINEER.

- 2. INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO OR GREATER THAN LENGTH SHOWN IN THE TABLE.
- 3. WHERE TWO OR MORE FITTINGS ARE IN SERIES, SELECT FITTING RESTRAINT LENGTH THAT YIELDS THE LONGEST RESTRAINT DISTANCE.

VARIES BY SIZE; TO BE DETERMINED BY THE

- 4. ALL INLINE VALVES SHALL BE RESTRAINED.
- 5. WHERE INTERNAL RESTRAINED JOINTS ARE USED, THE ENTIRE BELL SHALL BE PAINTED RED.
- 6. LENGTHS SHOWN IN THE TABLE WERE CALCULATED IN ACCORDANCE WITH PROCEDURES OUTLINED IN "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" GUIDELINES PUBLISHED BY DIPRA, USING THE ASSUMPTIONS SHOWN BELOW:

WORKING PRESSURE: 150 PSI SOIL DESIGNATION: SM (SAND SILT) LAYING CONDITIONS: 3 DEPTH OF COVER: 3 FT SAFETY FACTOR: 1.5

CONVERSION FACTOR FOR PVC PIPE: 1.25

THE DESIGN ENGINEER SHALL INCREASE THE VALUES IN THE TABLE AS WARRANTED BY SITE-SPECIFIC SOIL DESIGNATIONS, LAYING CONDITIONS, PIPE MATERIAL, ETC. FOR DIP ENCASED IN POLYETHYLENE, INCREASE THE GIVEN VALUE BY A FACTOR OF

- 11. THE CONTRACTOR SHALL PROVIDE FOR BYPASSING AND/OR HAULING WASTEWATER DURING APPROVED INTERRUPTIONS OF WASTEWATER FLOWS AND CONNECTIONS. THE CONTRACTOR SHALL SUBMIT A BYPASS PLAN SIGNED AND SEALED BY A PROFESSIONAL ENGINEER TO OCU DEVELOPMENT ENGINEERING FOR APPROVAL PRIOR TO IMPLEMENTATION BY CONTRACTOR.
- 12. ALL VALVES INSTALLED AS PART OF THIS CONSTRUCTION PROJECT SHALL REMAIN CLOSED DURING CONSTRUCTION. KEEP VALVES ON ALL WET TAPS CLOSED UNTIL CLEARED BY FDEP. DO NOT CONNECT NEWLY CONSTRUCTED WATER MAINS TO ANY EXISTING WATER MAINS UNLESS CLEARED BY FDEP AND OCU.
- 13. THE CONTRACTOR SHALL PROVIDE A JUMPER ASSEMBLY WITH A BACKFLOW PREVENTER FOR MAKING TEMPORARY CONNECTIONS TO AN EXISTING POTABLE WATER SOURCE IN ORDER TO CHLORINATE AND FLUSH NEW WATER MAINS WITH POTABLE WATER. ANY TEMPORARY POTABLE WATER CONNECTIONS TO RECLAIMED WATER OR FORCEMAIN SHALL ALSO BE EQUIPPED WITH A BACKFLOW PREVENTER.
- 14. FOR PVC PIPE THAT WILL BE OWNED AND MAINTAINED BY OCU, NO PIPE BENDING IS ALLOWED. THE MAXIMUM ALLOWABLE TOLERANCE FOR JOINT DEFLECTION IS 0.75 DEGREES (3-INCHES PER JOINT PER 20 FT STICK OF PIPE.) ALIGNMENT CHANGE SHALL BE MADE ONLY WITH SLEEVES AND FITTINGS.
- 15. FOR NON-PVC PIPE THAT WILL BE OWNED AND MAINTAINED BY OCU, LONG RADIUS CURVES, EITHER HORIZONTAL OR VERTICAL, MAY BE INSTALLED WITH STANDARD PIPE BY DEFLECTIONS AT THE JOINTS. MAXIMUM DEFLECTIONS AT PIPE JOINTS, FITTINGS AND LAYING RADIUS FOR THE VARIOUS PIPE LENGTHS SHALL NOT EXCEED 75 PERCENT OF THE PIPE MANUFACTURER'S RECOMMENDATION.

ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL

DATE: Februa	ATE: February 11, 2011 <b>V</b>		TRAIN EWAT							FIGU	JRE A104
	MINIMUM LENGTH (F	T) TO E	BE RES	TRAIN	IED OI	N EAC	H SIDE	E OF F	ITTING	G(S)	
	TYPE				PV	'C PIF	E SIZ	E			
	1117	4"	6"	8"	10"	12"	16"	20"	24"	30"	36"
	90° BEND	18	24	31	38	43	55	65	75	88	100
	45° BEND	8	10	13	15	18	23	26	31	38	43
	22-1/2° BEND	4	5	6	8	9	11	13	15	18	20
	11-1/4° BEND	2	3	4	5	6	8	9	10	11	13
	PLUG OR BRANCH OF TEE	38	50	65	79	90	117	139	163	194	223
	VALVE	19	25	32	40	45	59	70	82	98	112
	REDUCER				Œ; TO		DETE	RMINE	ED BY	THE	

STANDARD DRAWINGS

APPENDIX A

- 1. FITTINGS SHALL HAVE RESTRAINED JOINTS UNLESS OTHERWISE INDICATED.
- 2. INSTALL FULL LENGTH JOINTS WITH TOTAL LENGTH EQUAL TO OR GREATER THAN LENGTH SHOWN IN THE TABLE.
- 3. WHERE TWO OR MORE FITTINGS ARE IN SERIES, SELECT FITTING RESTRAINT LENGTH
- THAT YIELDS THE LONGEST RESTRAINT DISTANCE. 4. ALL INLINE VALVES SHALL BE RESTRAINED.
- 5. WHERE INTERNAL RESTRAINED JOINTS ARE USED, THE ENTIRE BELL SHALL BE PAINTED RED.
- 6. LENGTHS SHOWN IN THE TABLE WERE CALCULATED IN ACCORDANCE WITH PROCEDURES OUTLINED IN "THRUST RESTRAINT DESIGN FOR DUCTILE IRON PIPE" GUIDELINES PUBLISHED BY DIPRA, USING THE ASSUMPTIONS SHOWN BELOW:

WORKING PRESSURE: 100 PSI SOIL DESIGNATION: SM (SAND SILT) LAYING CONDITIONS: 3 DEPTH OF COVER: 3 FT

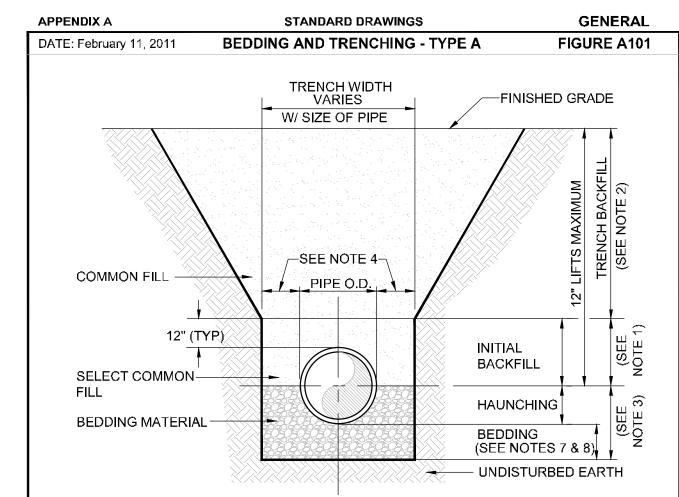
SAFETY FACTOR: 1.5

CONDITIONS.

CONVERSION FACTOR FOR PVC PIPE: 1.25 THE DESIGN ENGINEER SHALL INCREASE THE VALUES IN THE TABLE AS WARRANTED

BY SITE-SPECIFIC PARAMETERS, SUCH AS SOIL DESIGNATIONS AND LAYING

ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL

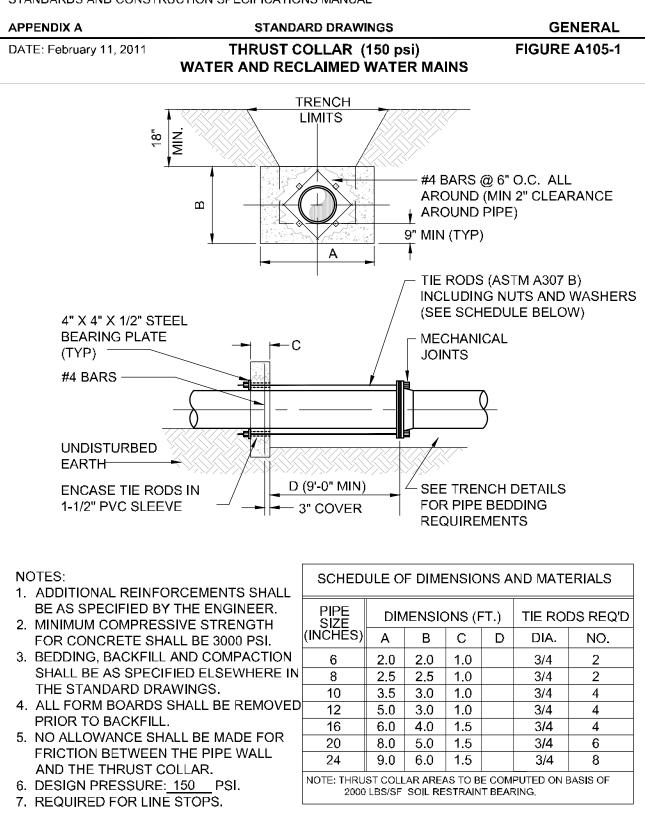


GENERAL

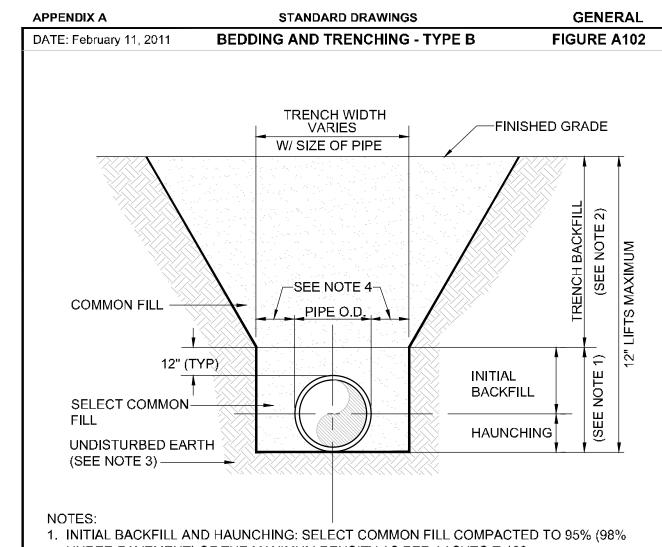
- . INITIAL BACKFILL: SELECT COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
- . TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
- 3. TYPE A BEDDING MATERIAL SHALL CONFORM TO FDOT NO. 57 AGGREGATE.
- 4. 15" MAX. (12" MIN.) FOR PIPE DIAMETER LESS THAN 24" AND 24" MAX (12" MIN) FOR PIPE DIAMETER 24" AND LARGER.
- 5. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION.
- 6. ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE
- BEDDING DEPTH SHALL BE 4" MINIMUM FOR PIPE DIAMETER UP TO 12" AND 6" MINIMUM FOR PIPE DIAMETER 16" AND LARGER.
- . DEPTH FOR REMOVAL OF UNSUITABLE MATERIAL SHALL GOVERN DEPTH OF BEDDING ROCK BELOW THE PIPE. UTILITIES SHALL DETERMINE IN THE FIELD REQUIRED REMOVAL OF
- UNSUITABLE MATERIAL TO REACH SUITABLE FOUNDATION. . FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN ORANGE COUNTY RIGHT-OF-WAY SHALL COMPLY WITH REQUIREMENTS OF R/W UTILIZATION

ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL

REGULATIONS AND ROAD CONSTRUCTION SPECIFICATIONS.



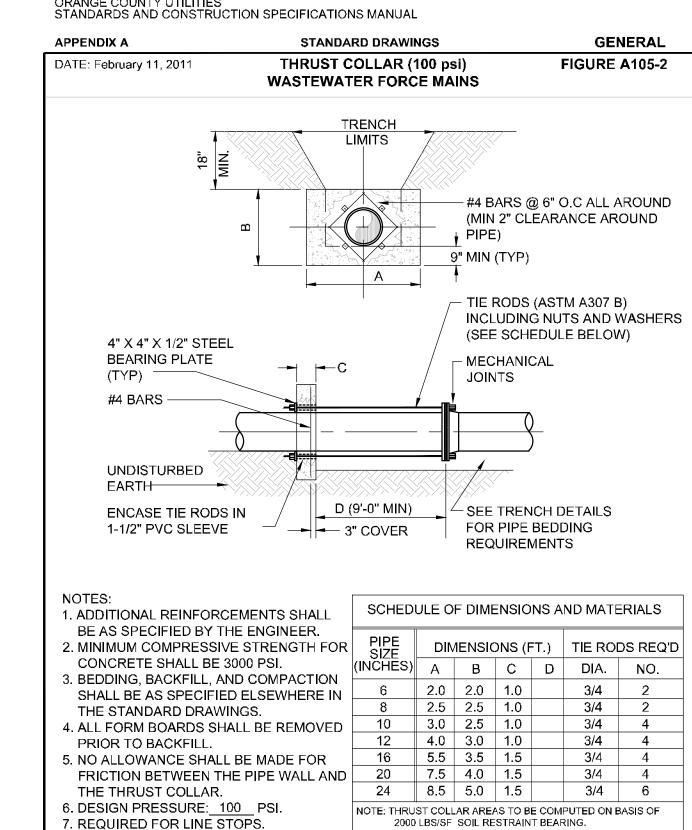
ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL



- UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180. 2. TRENCH BACKFILL: COMMON FILL COMPACTED TO 95% (98% UNDER PAVEMENT) OF THE MAXIMUM DENSITY AS PER AASHTO T-180.
- 3. PIPE BEDDING UTILIZING SELECT COMMON FILL OR BEDDING ROCK IN ACCORDANCE WITH TYPE A BEDDING AND TRENCHING DETAIL MAY BE REQUIRED AS DIRECTED BY
- 4. 15" MAX. (12" MIN.) FOR PIPE DIAMETER LESS THAN 24" AND 24" MAX (12" MIN) FOR PIPE DIAMETER 24" AND LARGER.
- 5. WATER SHALL NOT BE PERMITTED IN THE TRENCH DURING CONSTRUCTION. 6. ALL PIPE TO BE INSTALLED WITH BELL FACING UPSTREAM TO THE DIRECTION OF THE
- '. FINAL RESTORATION IN IMPROVED AREAS SHALL BE IN COMPLIANCE WITH ALL APPLICABLE REGULATIONS OF GOVERNING AGENCIES. SURFACE RESTORATION WITHIN ORANGE COUNTY RIGHT-OF-WAY SHALL COMPLY WITH REQUIREMENTS OF RIGHT-OF-WAY UTILIZATION REGULATIONS AND ROAD CONSTRUCTION

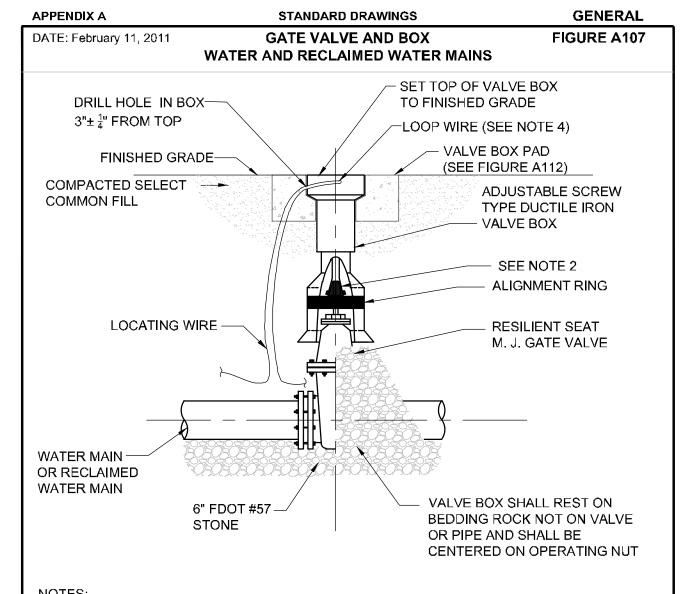
ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL

SPECIFICATIONS.



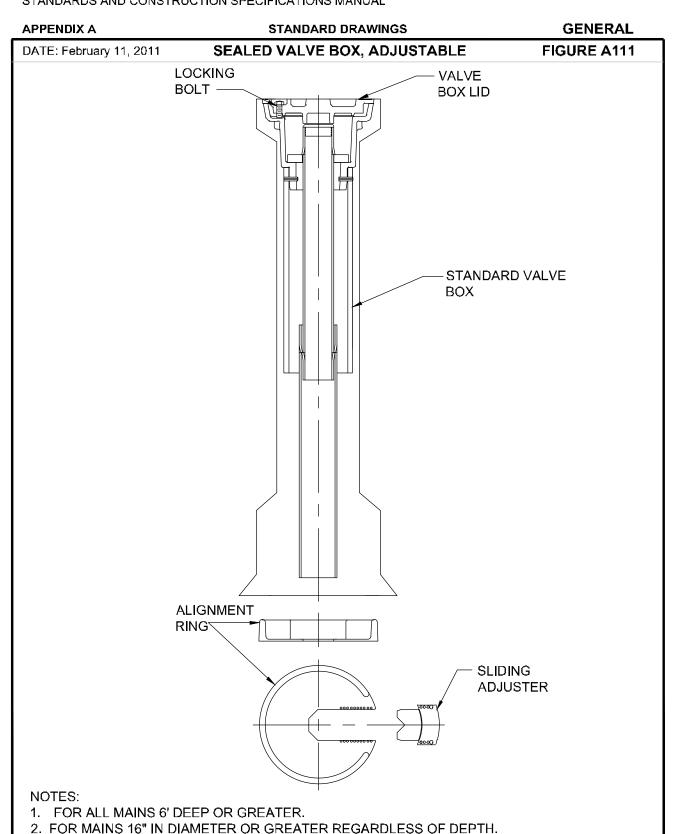
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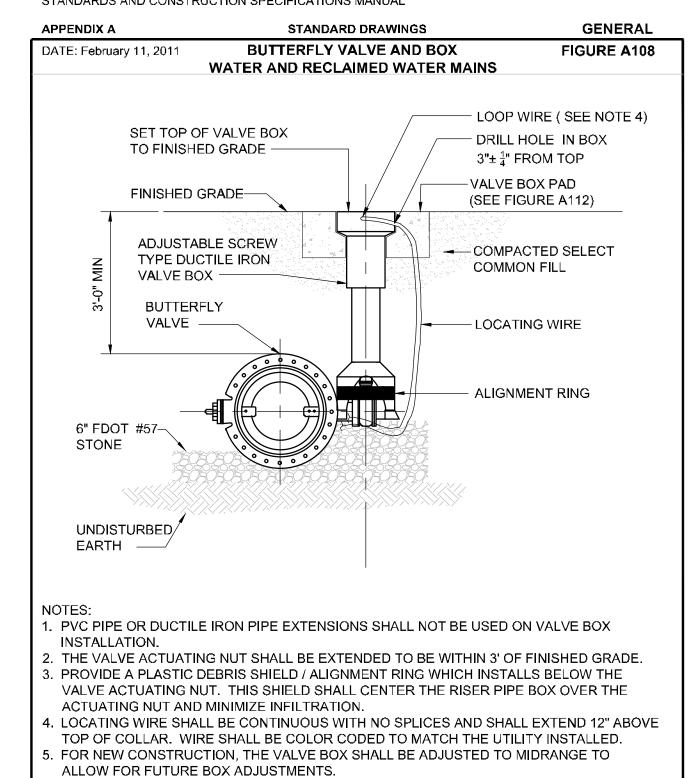


- 1. PVC PIPE OR DUCTILE IRON PIPE EXTENSIONS SHALL NOT BE USED ON VALVE BOX INSTALLATION.
- 2. THE VALVE ACTUATING NUT SHALL BE EXTENDED TO BE WITHIN 3' OF FINISHED GRADE 3. PROVIDE A PLASTIC DEBRIS SHIELD / ALIGNMENT RING WHICH INSTALLS BELOW THE VALVE ACTUATING NUT. THIS SHIELD SHALL CENTER THE RISER PIPE BOX OVER THE ACTUATING NUT AND MINIMIZE INFILTRATION.
- 4. LOCATING WIRE SHALL BE CONTINUOUS WITH NO SPLICES AND SHALL EXTEND 12" ABOVE TOP OF COLLAR. WIRE SHALL BE COLOR CODED TO MATCH THE UTILITY INSTALLED. 5. FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO
- ALLOW FOR FUTURE BOX ADJUSTMENTS. 6. REFER TO FIGURE A111 FOR INSTALLATIONS AT A DEPTH OF 6' OR GREATER.

#### ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL

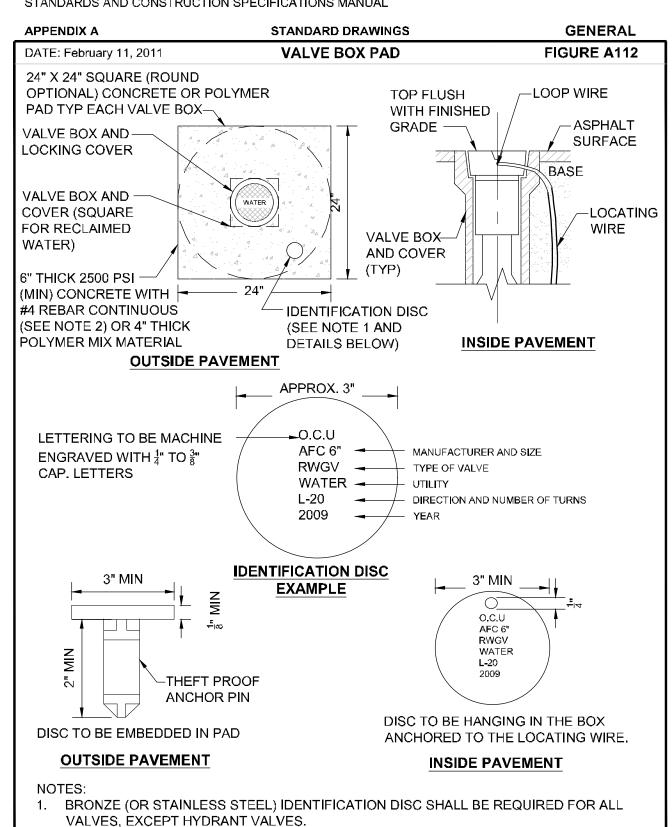


## ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL



#### ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL

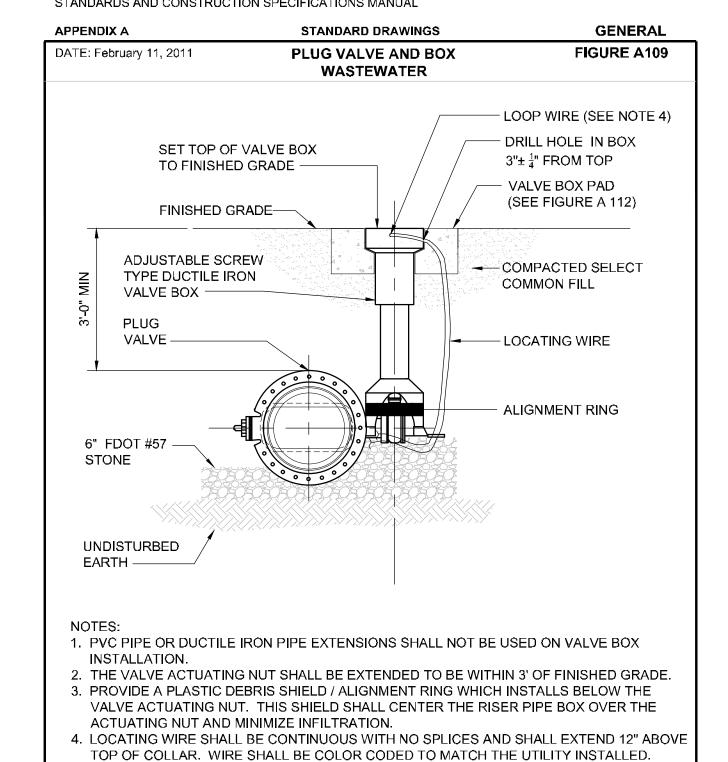
3. REFER TO FIGURE A111 FOR INSTALLATIONS AT A DEPTH OF 6' OR GREATER.



2. IN LIEU OF PRECAST CONCRETE PAD, A 6" THICK X 24" (ROUND OR SQUARE) POURED

CONCRETE PAD WITH TWO #4 REBAR AROUND PERIMETER MAY BE USED.

## ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL

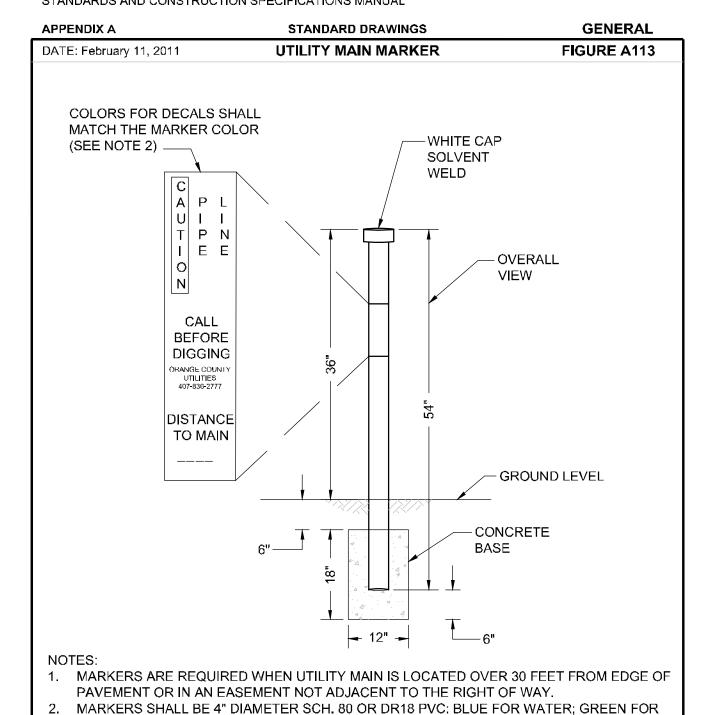


5. FOR NEW CONSTRUCTION, THE VALVE BOX SHALL BE ADJUSTED TO MIDRANGE TO

6. REFER TO FIGURE A111 FOR INSTALLATIONS AT A DEPTH OF 6' OR GREATER.

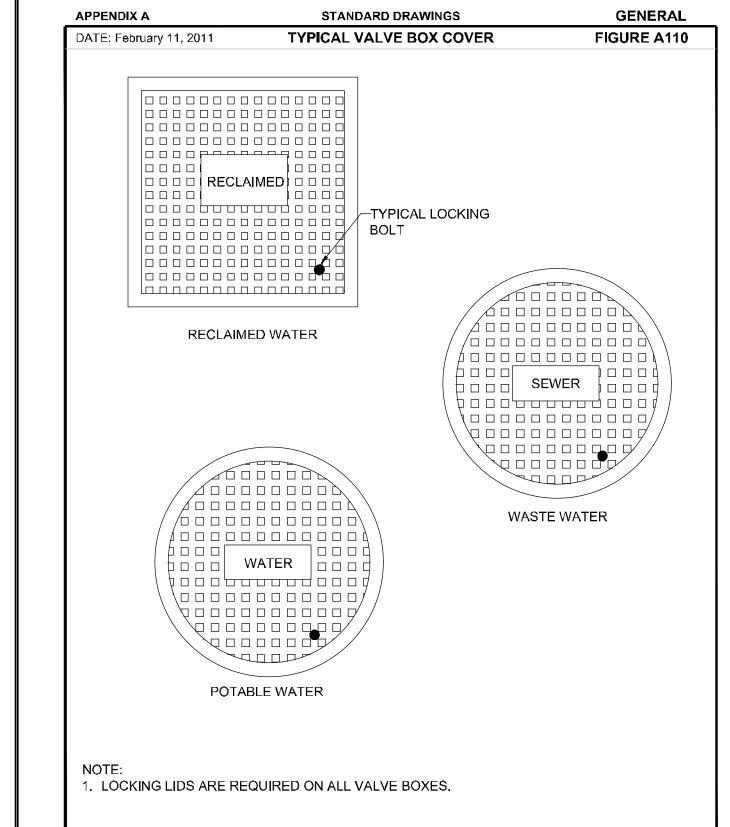
## ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL

ALLOW FOR FUTURE BOX ADJUSTMENTS.



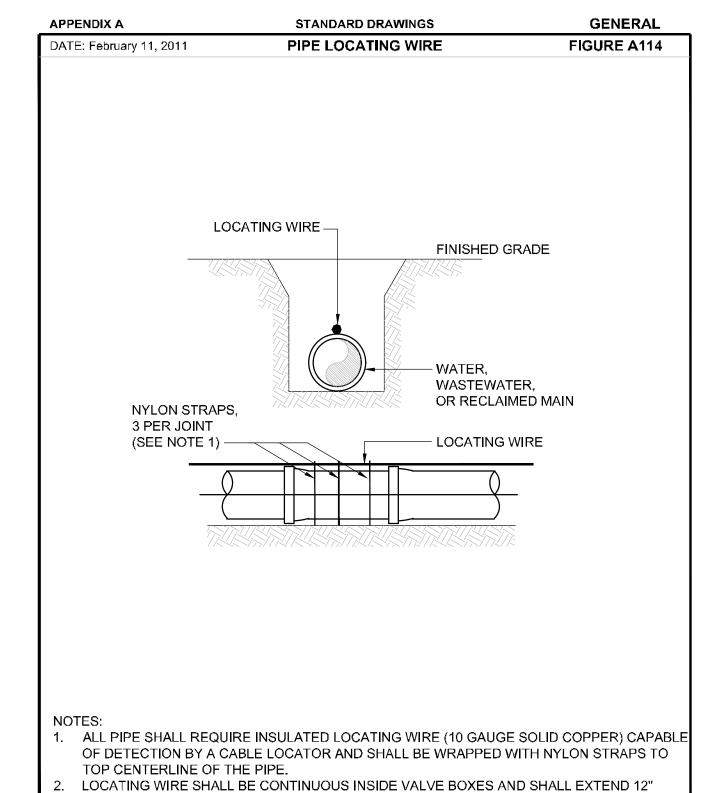
WASTEWATER; AND PANTONE PURPLE 522C FOR RECLAIMED WATER. MARKERS SHALL BE PLACED AT ALL DIRECTIONAL CHANGES AND AT ALL VALVES EXCEPT WATER VALVES NEAR FIRE HYDRANTS. ADDITIONAL MARKERS SHALL BE INSTALLED AS NEEDED SO THAT THE DISTANCE BETWEEN MARKERS DOES NOT EXCEED 1000 FEET.

## ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL



#### ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL

ABOVE TOP OF COLLAR.



WIRE INSULATION SHALL BE COLOR CODED FOR THE TYPE OF PIPE BEING INSTALLED.

SHEET NUMBER

C9.1

### ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL

VVA	ATER, WA	(STEW)	AIER AN	D REGI	-AIMED	WAIER	WAINS	
	HORIZON	NTAL & V	ERTICAL S	SEPARAT	ION REQU	JIREMENT	rs	
PROPOSED		TABLE RECLAIMED VATER WATER		WASTEWATER (GRAVITY & FM)		STORM SEWER		
UTILITY	HORIZ	VERT	HORIZ	VERT	HORIZ	VERT	HÓRIZ	VERT
POTABLE WATER	3' NOTE 1	12"	3' NOTE 1 & 3	12" NOTE 3	6' NOTE 3	12" NOTE 3	3' NOTE 1 & 3	12"/18" NOTE 2 & 3
RECLAIMED WATER	3' NOTE 1 & 3	12" NOTE 3	3' NOTE 1	12"	3' NOTE 1	12"	3' NOTE 1	12"/18" NOTE 2
WASTEWATER (GRAVITY AND FM)	6' NOTE 3	12" NOTE 3	3' NOTE 1	12"	3' NOTE 1	12"	3' NOTE 1	12"/18" NOTE 2
RIGHT OF WAY	3' NOTE 1	N/A	3' NOTE 1	N/A	3' NOTE 1	N/A	N/A	N/A

STANDARD DRAWINGS

GENERAL

#### NOTES:

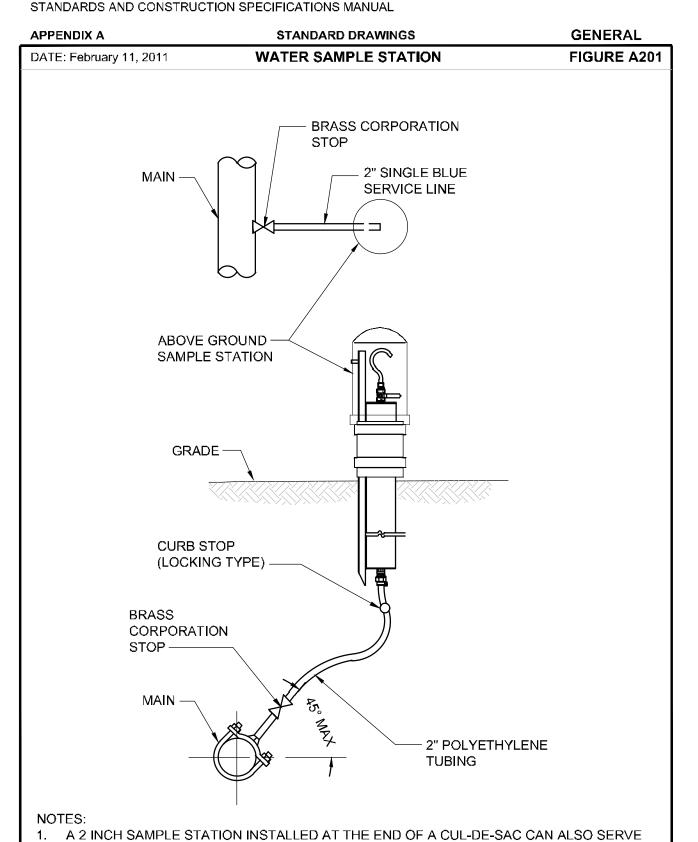
- THIS SEPARATION REQUIREMENT IS TO PROVIDE ACCESSIBILITY FOR CONSTRUCTION AND MAINTENANCE. THREE FEET OF HORIZONTAL SEPARATION IS THE MINIMUM FOR PIPES WITH THREE FEET OF COVER. FOR PIPES INSTALLED AT GREATER DEPTHS, PROVIDE AN ADDITIONAL FOOT OF SEPARATION FOR EACH ADDITIONAL FOOT OF DEPTH.
- THE 18-INCH SEPARATION REQUIREMENT APPLIES WHEN THE STORM PIPE CROSSES ABOVE THE OCU MAIN, AND WHEN THE STORM PIPE HAS A DIAMETER EQUAL TO OR GREATER THAN 24 INCHES. OTHERWISE, THE REQUIRED SEPARATION IS 12 INCHES. THIS SEPARATION REQUIREMENT COMPLIES WITH MINIMUM FDEP SEPARATION
- REQUIREMENTS OUTLINED IN 62-555.314, FAC. VARIANCES FROM THE FDEP REQUIREMENTS MUST COMPLY WITH 62-555.314(5), FAC AND MUST BE APPROVED INDIVIDUALLY BY BOTH FDEP AND OCU.

NO WATER PIPE SHALL PASS THROUGH OR COME IN CONTACT WITH ANY PART OF

DISTANCES GIVEN ARE FROM OUTSIDE OF PIPE TO OUTSIDE OF PIPE.

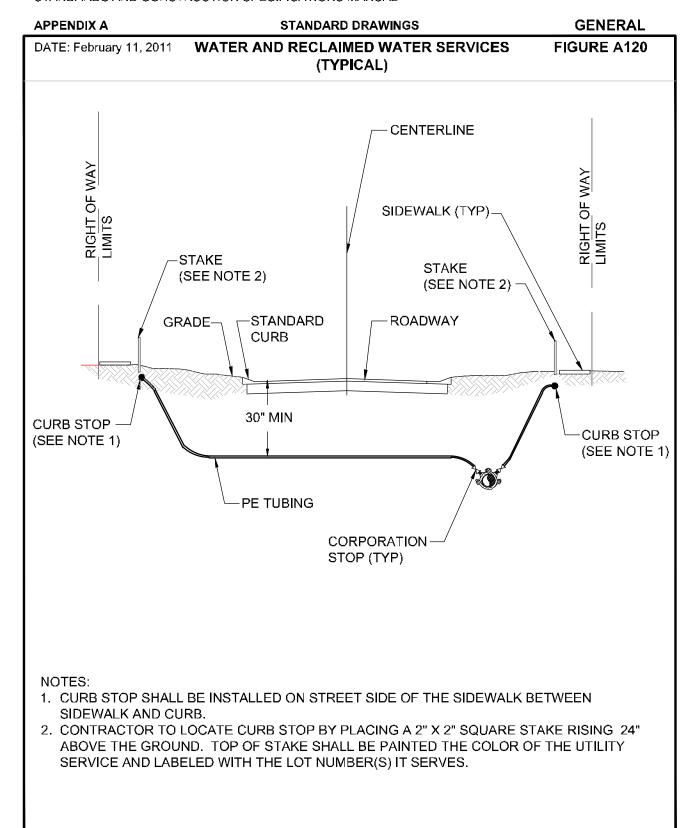
SANITARY OR STORM WATER MANHOLE OR STRUCTURE.

## ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL

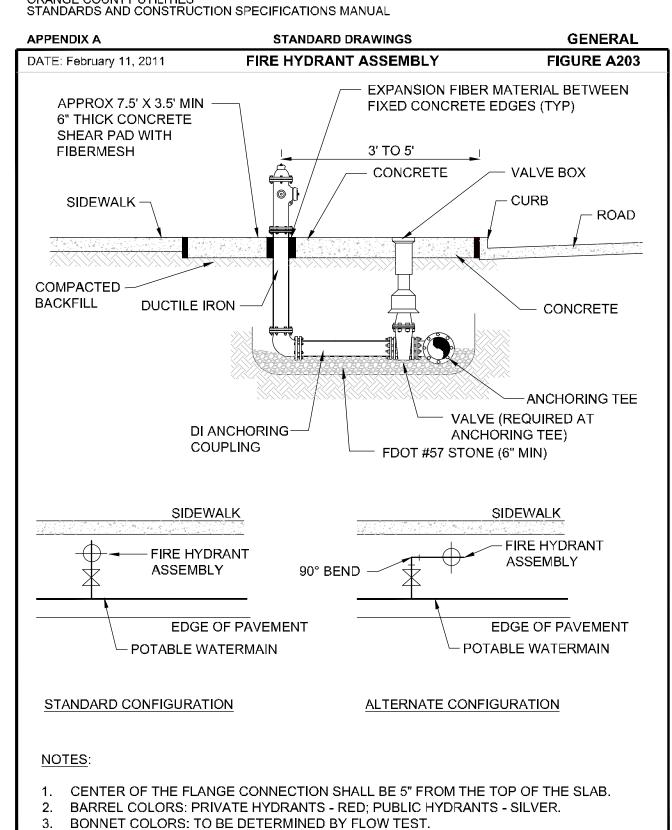


AS A BLOW -OFF VALVE WHEN BOTH ARE REQUIRED.

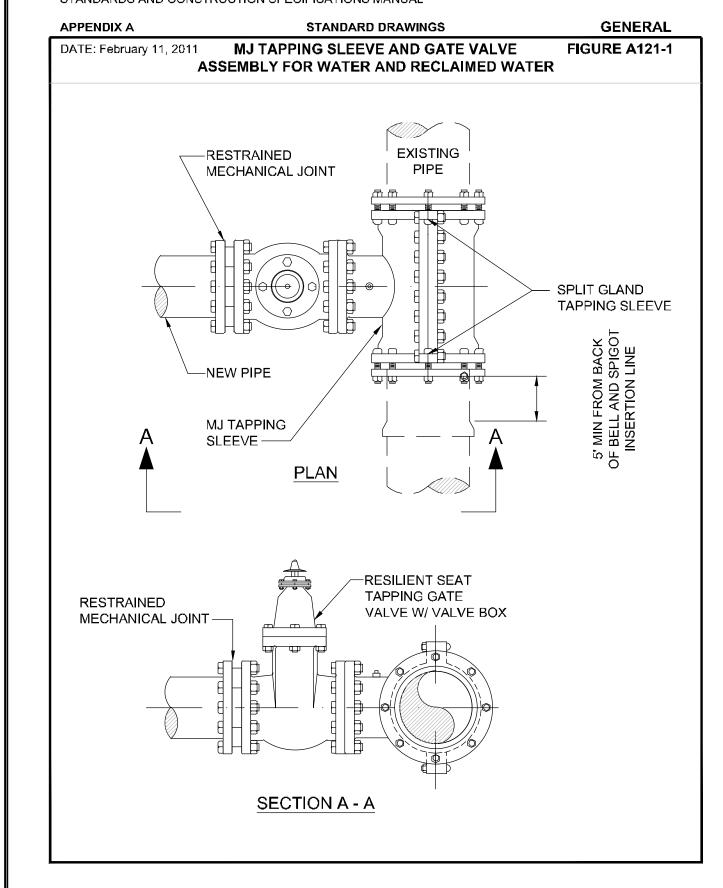
### ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL



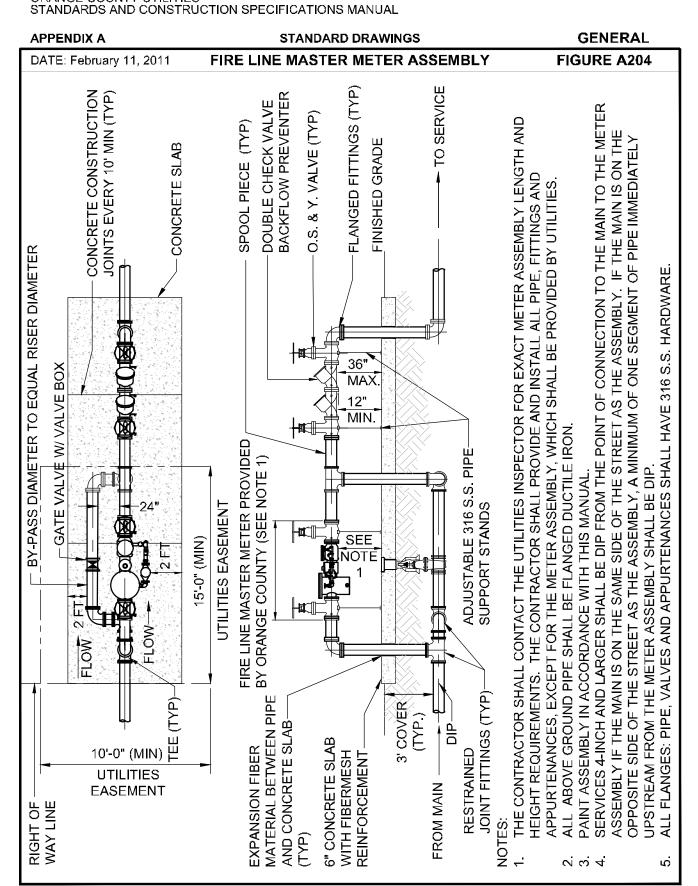
## ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL



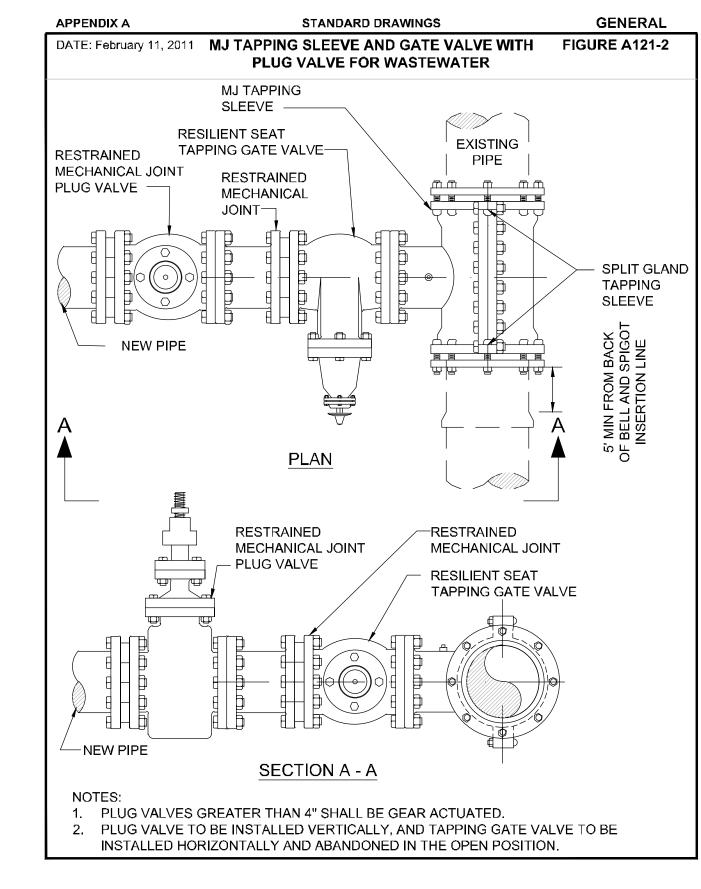
## ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL



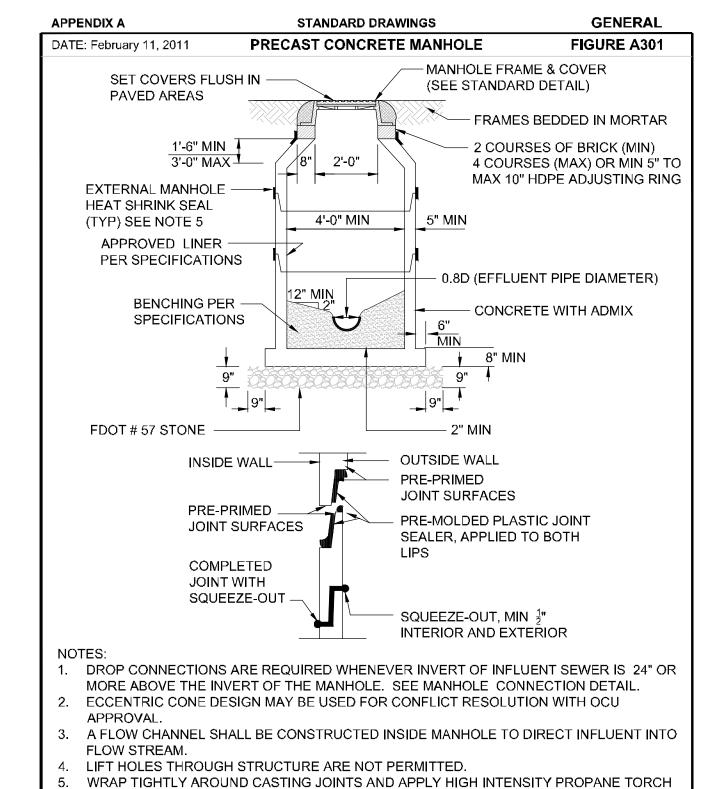
#### ORANGE COUNTY UTILITIES



#### ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL



#### STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL



TO EFFECTIVELY SEAL THEM FROM GROUND WATER INFILTRATION.

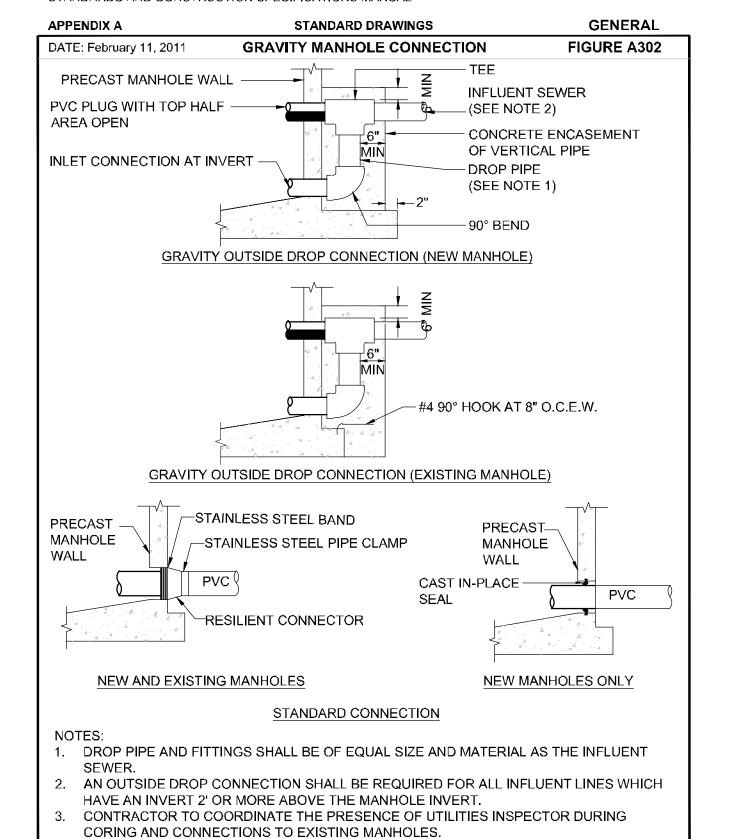
SECTION HEIGHTS VARY AS REQUIRED, AND AS AVAILABLE, FROM APPROVED

HDPE ADJUSTING RINGS MAY BE SUBSTITUTED FOR BRICK RISERS.

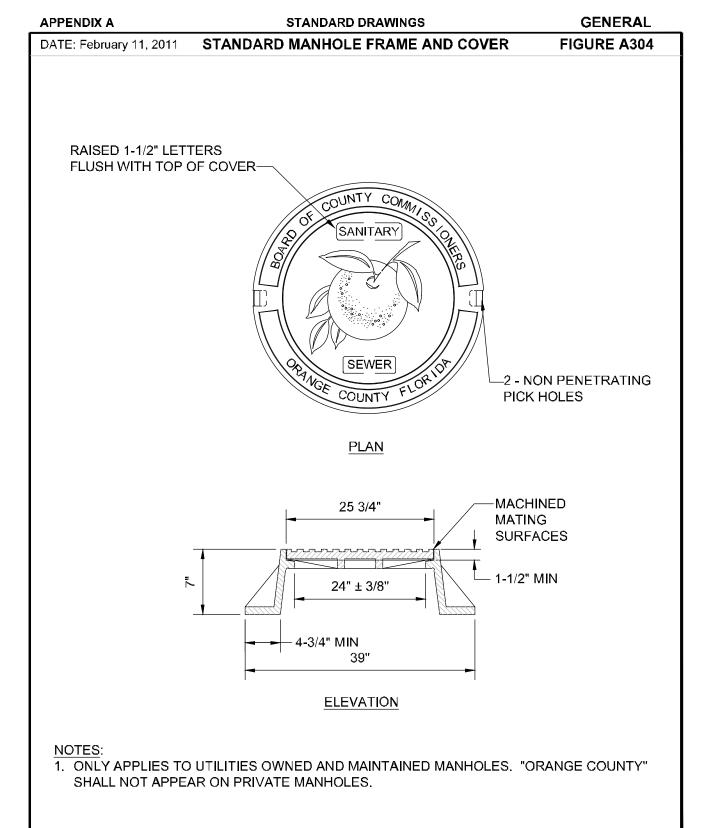
MANUFACTURERS LISTED IN APPENDIX D.

SHEET NUMBER C9.2

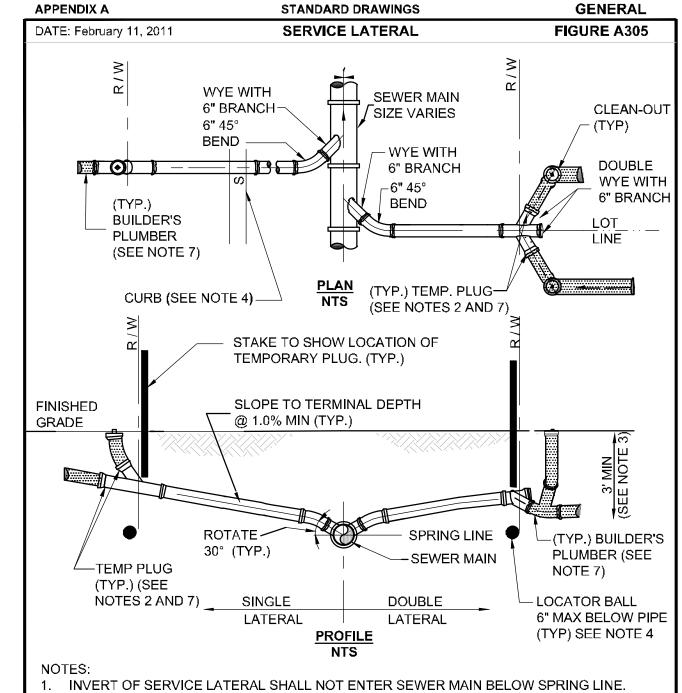
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ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL



ORANGE COUNTY UTILITIES STANDARDS AND CONSTRUCTION SPECIFICATIONS MANUAL STANDARD DRAWINGS APPENDIX A



APPENDIX A STANDARD DRAWING TRASH COMPACTOR DRAINAGE - COMPACTOR OUTLINE ENCLOSURE - COMPACTOR ENCLOSURE DOORS OIL-WATER SEPARATOR \*~~ INTERCEPTOR COMPACTOR CANOPY -PLAN VIEW - COMPACTOR **ENCLOSURE** - COMPACTOR ENCLOSURE TRASH COMPACTOR OIL-WATER -SEPARATOR / THE STATE OF THE PARTY OF THE P GRATED INLET 4 3" RAISED -CONC SLAB INTERCEPTOR PROFILE VIEW (SEE NOTE 1) 1. REFER TO DETAIL A308-1 FOR GREASE INTERCEPTOR REQUIREMENTS. 2. SMALLER SIZE GREASE INTERCEPTOR MAY BE APPROVED BY UTILITIES BASED ON VOLUME OF EDGE OF SLAB SHALL BE 1-FT ABOVE 100-YEAR FLOOD ELEVATION.
 DRAIN SHALL BE VISIBLE & ACCESSIBLE AT ALL TIMES FOR INSPECTION & MAINTENANCE. ORANGE COUNTY UTILITIES FIGURE A309-2 STANDARDS & CONSTRUCTION 04/25/2019 SPECIFICATIONS MANUAL

SERVICE LATERAL SHALL BE CAPPED BY DEVELOPER'S SITE-WORK CONTRACTOR. WYE TO BE NO SHALLOWER THAN 3-FEET AND NO DEEPER THAN 5-FEET.

4. LOCATOR BALLS TO BE INSTALLED BY DEVELOPER'S SITE-WORK CONTRACTOR, ONE PER SERVICE.

LATERAL TO HOUSE.

ALL FITTINGS SHOWN ARE TO BE INSTALLED.

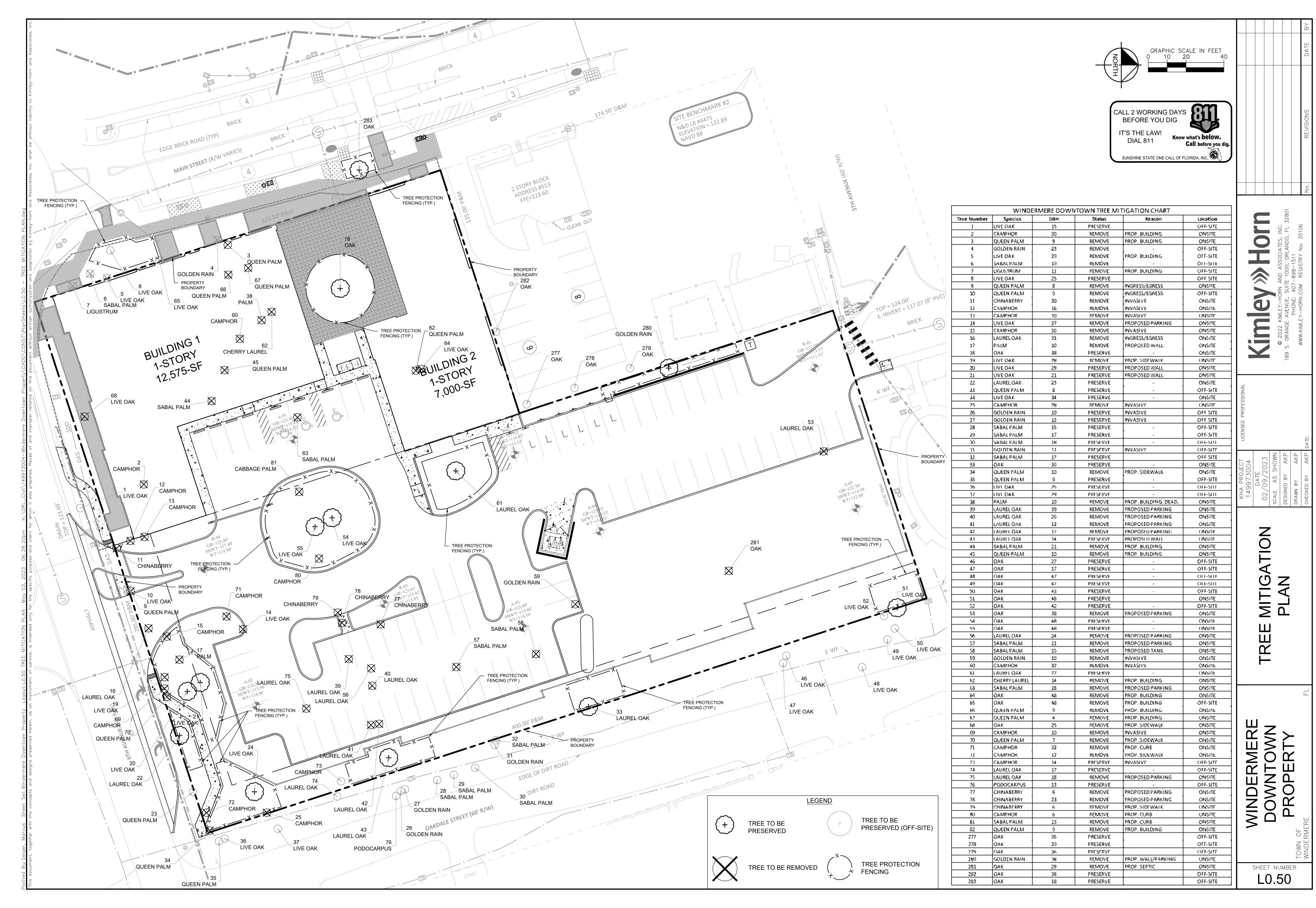
SERVICE CONNECTIONS SHALL BE PERMANENTLY MARKED BY CUTTING AN "S" IN THE CURB DIRECTLY OVER THE LATERAL.

BUILDER'S PLUMBER WILL REMOVE PLUG, INSTALL CLEANOUT, AND CONNECT SERVICE

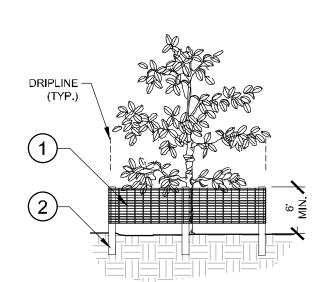
DETAIL

WINDERMERE DOWNTOWN PROPERTY

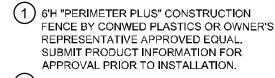
SHEET NUMBER C9.3



- ·· ·				TREE MITIGATION FUND CA		PERI / PERI PERI PERI PERI PERI PERI PERI PERI	
Tree Number	Species	DBH	Status	Reason	Location	REPLACEMENT STATUS	INCHES REQUIRED FOR PAYMENT
2	CAMPHOR	30	REMOVE	PROP. BUILDING	ONSITE	REPLACED	
3	QUEEN PALM	9	REMOVE	PROP. BUILDING	ONSITE	PAYMENT REQ'D	
9	QUEEN PALM	8	REMOVE	INGRESS/EGRESS	ONSITE	PAYMENT REQ'D	
14	LIVE OAK	37	REMOVE	PROPOSED PARKING	ONSITE	REPLACED	
16	LAURELOAK	31	REMOVE	INGRESS/EGRESS	ONSITE	REPLACED	
17	PALM	10	REMOVE	PROPOSED WALL	ONSITE	PAYMENT REQID	1
19	LIVE OAK	28	REMOVE	PROP. SIDEWALK	ONSITE	REPLACED	
20	LIVE OAK	29	REMOVE	PROPOSED WALL	ONSITE	REPLACED	
21	LIVE OAK	21	REMOVE	PROPOSED WALL	ONSITE	REPLACED	
34	QUEEN PALM	10	REMOVE	PROP SIDEWALK	ONSITE	PAYMENT REQID	1
38	PALM	10	REMOVE	PROP. BUILDING	ONSITE	PAYMENT REQID	1
39	LAUREL OAK	39	REMOVE	PROPOSED PARKING	ONSITE	REPLACED	
40	LAUREL OAK	26	REMOVE	PROPOSED PARKING	ONSITE	REPLACED	
41	LAUREL OAK	12	REMOVE	PROPOSED PARKING	ONSITE	PAYMENT REQID	1
42	LAUREL OAK	12	REMOVE	PROPOSED PARKING	ONSITE	PAYMENT REQID	1
43	LAUREL OAK	14	REMOVE	PROPOSED WALL	ONSITE	REPLACED	
44	SABAL PALM	21	REMOVE	PROP. BUILDING	ONSITE	REPLACED	
45	QUEEN PALM	10	REMOVE	PROP. BUILDING	ONSITE	PAYMENT REQID	1
<b>5</b> 8	OAK	38	REMOVE	PROPOSED PARKING	ONSITE	REPLACED	
56	LAUREL OAK	24	REMOVE	PROPOSED PARKING	ONSITE	REPLACED	
57	SABAL PALM	1 <b>1</b>	REMOVE	PROPOSED PARKING	ONSITE	PAYMENT REQID	1
58	SABAL PALM	15	REMOVE	PROPOSED TANK	ONSITE	REPLACED	
62	CHERRY LAUREL	14	REMOVE	PROP. BUILDING	ONSITE	REPLACED	
63	SABAL PALM	18	REMOVE	PROPOSED PARKING	ONSITE	REPLACED	
64	OAK	48	REMOVE	PROP. BUILDING	ONSITE	REPLACED	
66	QUEEN PALM	9	REMOVE	PROP. BUILDING	ONSITE	PAYMENT REQID	
67	QUEEN PALM	4	REMOVE	PROP. BUILDING	ONSITE	PAYMENT REQ'D	
68	OAK	25	REMOVE	PROP. SIDEWALK	ONSITE	REPLACED	
70	QUEEN PALM	7	REMOVE	PROP. SIDEWALK	ONSITE	PAYMENT REQ'D	
71	CAMPHOR	32	REMOVE	PROP. CURB	ONSITE	REPLACED	
72	CAMPHOR	12	REMOVE	PROP. SIDEWALK	ONSITE	PAYMENT REQID	1
75	LAUREL OAK	18	REMOVE	PROPOSED PARKING	ONSITE	REPLACED	
77	CHINABERRY	6	REMOVE	PROPOSED PARKING	ONSITE	PAYMENT REQ'D	
78	CHINABERRY	23	REMOVE	PROPOSED PARKING	ONSITE	REPLACED	
79	CHINABERRY	6	REMOVE	PROP. SIDEWALK	ONSITE	PAYMENT REQ'D	
80	CAMPHOR	6	REMOVE	PROP. CURB	ONSITE	PAYMENT REQ'D	
81	SABAL PALM	13	REMOVE	PROP. CURB	ONSITE	REPLACED	
<b>8</b> 2	QUEEN PALM	9	REMOVE	PROP. BUILDING	ONSITE	PAYMENT REQ'D	
280	GOLDEN RAIN	38	REMOVE	PROP. WALL/PARKING	ONSITE	REPLACED	
281	OAK	29	REMOVE	PROP. SEPTIC	ONSITE	REPLACED	

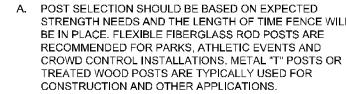


ELEVATION



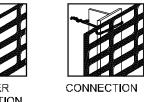
2) 8' TALL METAL "T" POSTS OR 2" x 2" X 8' PRESSURE TREATED WOOD POSTS WITH 24" BURIAL BELOW GRADE.

#### INSTALLATION NOTES:



- B. POSTS SHOULD BE DRIVEN INTO THE GROUND TO A DEPTH OF 1/3 OF THE HEIGHT OF THE POST. FOR EXAMPLE, A 6' POST SHOULD BE SET AT LEAST 2' INTO THE GROUND.
- C. SPACE POSTS EVERY 6' (MIN.) TO 8' (MAX.).
- D. SECURE FENCING TO POST WITH NYLON CABLE TIES (AVAILABLE FROM CONWED PLASTICS). WOOD STRIPS MAY BE ALSO BE USED TO PROVIDE ADDITIONAL SUPPORT AND PROTECTION BETWEEN TIES AND POSTS.





NOTE: IF WIRE TIES ARE USED, AVOID DIRECT CONTACT WITH FENCE, WIRE MAY DAMAGE FENCE OVER TIME.

1 TREE PROTECTION FENCING

L0.56 ELEVATION / PLAN

SEC. 5.01.17. - DEVELOPMENT SITE TREE PROTECTION STANDARDS.

(A)DURING CONSTRUCTION AND DEVELOPMENT, ALL REASONABLE STEPS NECESSARY TO PREVENT DESTRUCTION OR DAMAGE TO TREES AND NATIVE VEGETATION SHALL BE TAKEN. ALL TREE AND LANDSCAPE WORK SHALL BE GOVERNED BY THE AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI) A-300 SERIES AND THE BEST MANAGEMENT PRACTICES. UNLESS OTHERWISE AUTHORIZED BY A TREE REMOVAL PERMIT, TREES AND NATIVE VEGETATION DESTROYED OR RECEIVING MAJOR DAMAGE MUST BE REPLACED BY TREES AND VEGETATION OF EQUAL ENVIRONMENTAL VALUE, AS SPECIFIED BY THE TOWN MANAGER OR HIS DESIGNEE (PERMITTING AUTHORITY), BEFORE OCCUPANCY OR USE.

(B)APPROVED TREE REMOVAL PERMITS ARE TO BE POSTED ON SITE, LEGIBLE, AND VISIBLE FROM THE STREET PRIOR TO COMMENCEMENT AND THROUGHOUT COMPLETION OF THE WORK.

(C)DURING CONSTRUCTION, UNLESS OTHERWISE AUTHORIZED BY A TREE REMOVAL PERMIT, NO EXCESS SOIL, ADDITIONAL FILL, EQUIPMENT, LIQUIDS, OR CONSTRUCTION DEBRIS SHALL BE PLACED WITHIN THE DRIP LINE OF ANY TREE THAT IS REQUIRED TO BE PRESERVED IN ITS ORIGINAL LOCATION.

(D)NO ATTACHMENTS OR WIRES OTHER THAN THOSE OF A PROTECTIVE AND NON-DAMAGING NATURE SHALL BE ATTACHED TO ANY TREE DURING CONSTRUCTION OR DEVELOPMENT. (E)UNLESS OTHERWISE AUTHORIZED BY THE TREE REMOVAL PERMIT, NO SOIL SHALL BE REMOVED FROM WITHIN THE DRIP LINE OF ANY TREE THAT IS TO REMAIN IN ITS ORIGINAL LOCATION.(F)PRIOR TO CONSTRUCTION, THE PERMIT APPLICANT IS REQUIRED TO HAVE THE FOLLOWING PROTECTIVE BARRIERS AND MEASURES PUT IN PLACE:

(1)ALL PROTECTIVE BARRIERS SHALL BE INSTALLED AND MAINTAINED FOR THE PERIOD OF TIME BEGINNING WITH THE COMMENCEMENT OF ANY LAND CLEARING OR BUILDING OPERATIONS AND ENDING WITH THE COMPLETION OF THE PERMITTED CLEARING OR BUILDING CONSTRUCTION WORK ON THE SITE.

(2)THE APPLICANTS FOR A TREE REMOVAL PERMIT SHALL, AT THE TIME OF APPLICATION, DESIGNATE AN ON-SITE REPRESENTATIVE FOR THE INSTALLATION AND MAINTENANCE OF ALL TREE AND SHRUB PROTECTIVE BARRIERS.

(3)THE CIRCUMFERENCE OF AN AREA TO BE PRESERVED SHALL BE PROTECTED DURING LAND DEVELOPMENT AND CONSTRUCTION BY PLACING TWO-INCH BY TWO-INCH WOOD STAKES A MAXIMUM OF 20 FEET APART AROUND THE TREE PROTECTION ZONE AND BY TYING FLUORESCENT RIBBON, SURVEY FLAGGING, ETC., FROM STAKE TO STAKE ALONG THE PERIMETER OF THE AREAS TO BE PRESERVED.

(4)WHEN PROTECTION OF INDIVIDUAL TREES IS REQUIRED, A PROTECTIVE BARRIER SHALL BE PLACED AROUND THE PERIMETER OF THE BASE AT A DISTANCE NOT LESS THAN THE DRIP LINE.

(5)A TREE PROTECTION SIGN SHALL BE A MINIMUM OF TWO FEET WIDE BY THREE FEET HIGH CONSISTING OF DURABLE RIGID, PLASTIC OR METAL MATERIAL WITH NON FADING LETTERING, LEGIBLY PRINTED IN CHARACTERS A MINIMUM OF ONE AND ONE-HALF INCHES HIGH ON ITS FACE. TREE PROTECTION SIGNS AND BARRIERS ARE TO BE MAINTAINED THROUGH JOB COMPLETION OR AS OTHERWISE REQUIRED BY THE TOWN MANAGER OR HIS DESIGNEE. A MINIMUM OF ONE SIGN IS REQUIRED PER BARRIER. SIGN TEXT SHALL BE INCLUDE IN ENGLISH AND SPANISH AND SHALL READ:

#### TREE PROTECTION AREA

#### PROHIBITED WITHIN THIS AREA:

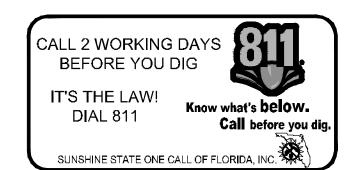
1.PARKING OF USE OF VEHICLES, EQUIPMENT OR MACHINERY. 2.STORAGE OR DUMPING OF ANY MATERIALS OR LIQUIDS. 3.CONSTRUCTION, EXCAVATION OR TRENCHING.

#### AREA DE PROTECTION DE ÁRBOLES

#### PROHIBIDO DENTRO DE ESTA AREA:

1.APARCAR O USO DE VEHICULO, EQUIPAMIENTO, O MAQUINARIA. 2.ALMACENAR O TIRAR DE LIQUIDOS O MATERIALES.

3.CONSTRUCCIÒN, EXCAVACIÒN O ZANJAS.(6)UNLESS PRIOR APPROVAL IS GRANTED BY THE TOWN MANAGER OR HIS DESIGNEE, THE FOLLOWING ACTIVITIES ARE PROHIBITED WITHIN THE DRIP-LINE OF A PROTECTED TREE OR WITHIN TEN FEET OF ITS TRUNK, WHICHEVER IS GREATER: (I) PARKING OR USE OF VEHICLES, EQUIPMENT OR MACHINERY, OR (II) STORING OR DUMPING ANY MATERIAL OF LIQUIDS, OR (III) CONSTRUCTION, EXCAVATION OR TRENCHING.



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MLEY-HORN AND ASSOCIATES, INC.
AVENUE, SUITE 1000, ORLANDO, FL 32801
PHONE: 407-898-1511
Y-HORN.COM REGISTRY No. 35106

DATE
02/09/2023
SALE AS SHOWN
SSIGNED BY AKP

E MITIGATION CHART

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INDERMERE OWNTOWN PROPERTY

> TOWN OF WINDERMER

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#### TREE MITIGATION SPECIFICATIONS

- CONTRACTOR SHALL ADHERE TO ALL TREE PROTECTION REQUIREMENTS LISTED IN THESE SPECIFICATIONS AND/OR THOSE LISTED IN THE CITY OR COUNTY ZONING CODE, TREE PROTECTION (LATEST EDITION). WHICHEVER IS MORE STRINGENT SHALL APPLY.
- 2. CONTRACTOR SHALL COORDINATE ALL CONSTRUCTION PROCEDURES WITH THE PROJECT ARBORIST PRIOR TO BEGINNING WORK.
- ANY AREAS SUBJECT TO EROSION MUST BE ADEQUATELY STABILIZED WITH VEGETATION MATERIAL THAT WILL, WITHIN A REASONABLE TIME FRAME, DETER SOIL DISTURBANCE.
- 4. NO SIGNS, BUILDING PERMITS, WIRES OR OTHER ATTACHMENTS OF ANY KIND SHALL BE ATTACHED TO ANY TREE OR PALM. GUY WIRES DESIGNED TO PROTECT TREES ARE EXCLUDED FROM THIS PROHIBITION.
- EXISTING TREE LOCATIONS AND SIZES ARE ESTIMATES AND ARE BASED ON A SURVEY PROVIDED BY THE OWNER SELECTED SURVEYOR.
- CONTRACTOR SHALL COORDINATE TREE REMOVAL WITH PERMITTING AGENCY AND PROJECT ARBORIST PRIOR TO CONSTRUCTION. NO PERSON MAY REMOVE OR CAUSE TO BE REMOVED ANY PROTECTED TREE OR PALM WITHOUT FIRST HAVING PROCURED A PERMIT AS PROVIDED BY THE APPROPRIATE PERMITTING AGENCY.
- 7. FOR PROTECTED TREES OR PALMS BEING REMOVED, THE CONTRACTOR MUST GIVE THE PERMITTING AGENCY REASONABLE OPPORTUNITY TO RELOCATE TREES DESIGNATED FOR REMOVAL TO ANOTHER SITE AT THE PERMITTING AGENCY'S EXPENSE.
- CONTRACTOR IS RESPONSIBLE FOR POSSESSING ALL REQUIRED APPLICATOR LICENSES, BUSINESS REGISTRATIONS AND INSURANCE, PESTICIDE LABELS, AND MATERIAL DATA SAFETY SHEETS. THE CONTRACTOR IS ALSO RESPONSIBLE FOR HAVING ALL SPILL CONTAINMENT MATERIALS AND REQUIRED PERSONAL PROTECTIVE EQUIPMENT FOR PESTICIDE APPLICATIONS AND ACCIDENTAL SPILLS ON SITE AT ALL TIMES. THE OWNER RESERVES THE RIGHT TO INSPECT EACH APPLICATOR AND HAVE THESE MATERIALS PRESENTED BEFORE AND DURING ANY PESTICIDE TREATMENT.
- WHERE TRAFFIC AREAS ARE PROPOSED WITHIN THE DRIP LINE OF PROTECTED TREES AND LESS THAN FOUR (4) INCHES OF GRADE CHANGE ARE PROPOSED, PERMEABLE SURFACES THAT ALLOW AIR AND WATER INTO THE SOIL SHOULD BE USED IN LIEU OF ASPHALT OR OTHER SUCH IMPERVIOUS SURFACES.
- TREE WELLS OF AN APPROVED DESIGN SHALL BE CONSTRUCTED AROUND ALL TREES TO BE PRESERVED WHEN MORE THAN FOUR INCHES OF FILL IS TO BE DEPOSITED WITHIN THE DRIP LINE AREA OF THOSE TREES. COORDINATE WITH PROJECT ARBORIST.
- THE SEQUENCE OF TREE MITIGATION AND PRESERVATION MEASURES IS IMPERATIVE TO THE HEALTH AND SURVIVABILITY OF THE SUBJECT TREES AND SHALL BE COORDINATED WITH THE OWNER SELECTED PROJECT ARBORIST. THE DESIRED SEQUENCE IS OUTLINED BELOW:
- a. TREE PROTECTION FENCING.
- b. ROOT PRUNING AND ROOT BARRIERS.
- c. CLEARING.
- d. TREE CANOPY PRUNING.
- e. **FERTILIZATION**.
- f. INSECTICIDE.
- g. IRRIGATIÓN.

#### B. TREE PROTECTION FENCING

- PRIOR TO THE ERECTION OF ANY TREE PROTECTION FENCING, ALL FOREIGN SURFACE MATERIAL, TRASH OR DEBRIS SHALL BE REMOVED FROM THE AREA TO BE ENCLOSED BY THE FENCING. AFTER ERECTION OF THE FENCING NO SUCH MATERIAL OR LITTER SHALL BE PERMITTED TO REMAIN WITHIN THE PROTECTED AREA.
- TREE PROTECTION FENCING SHALL BE PLACED AROUND ALL PROTECTED TREES TO CREATE A PROTECTIVE ROOT ZONE AND SHALL REMAIN IN PLACE UNTIL SITE CLEARING, LAND ALTERATION, AND CONSTRUCTION ACTIVITIES ARE COMPLETE.
- NATIVE GROUND COVER AND UNDERSTORY VEGETATION EXISTING WITHIN THE PROTECTED AREA SHALL REMAIN THROUGHOUT CONSTRUCTION, OTHER DESIGNATED VEGETATION AND INVASIVE PLANT SPECIES SHALL BE REMOVED ONLY BY MANUAL LABOR UTILIZING HAND TOOLS, OR BY OTHER METHODS APPROVED BY THE PROJECT ARBORIST.
- 4. TREE PROTECTION FENCING TYPES AND LOCATIONS SHALL BE ERECTED AS SHOWN ON THE TREE MITIGATION PLANS AND DETAILS,
- 5. FINAL LOCATIONS SHALL BE COORDINATED WITH AND APPROVED BY THE PROJECT ARBORIST.
- 6. NO MATERIALS, EQUIPMENT, SPOIL, WASTE OR WASHOUT WATER MAY BE DEPOSITED, STORED, OR PARKED WITHIN 20 FEET OF
- EROSION CONTROL DEVICES SUCH AS SILT FENCING, DEBRIS BASINS, AND WATER DIVERSION STRUCTURES SHALL BE INSTALLED TO PREVENT SILTATION AND/OR EROSION WITHIN THE TREE PROTECTION ZONE.
- CONSTRUCTION ACTIVITY SHALL NOT DESTROY OR IRREVERSIBLY HARM THE ROOT SYSTEM OF PROTECTED TREES. POST HOLES AND TRENCHES LOCATED CLOSE TO PROTECTED TREES SHALL BE ADJUSTED TO AVOID DAMAGE TO MAJOR ROOTS.
- DO NOT INSTALL CONDUIT, DRAIN OR IRRIGATION LINES, OR ANY UTILITY LINE WITHIN THE TREE PROTECTION ZONE WITHOUT THE APPROVAL OF THE PROJECT ARBORIST. IF LINES MUST TRAVERSE THE PROTECTION AREA, THEY SHALL BE TUNNELED OR BORED
- 10. CONTRACTOR'S ACCESS TO FENCED TREE PROTECTION AREAS WILL BE PERMITTED ONLY WITH APPROVAL OF THE PROJECT
- 11. EXCAVATION OR GRADING REQUIRED WITHIN THE PROTECTED AREA SHALL BE LIMITED TO THREE (3) INCHES OF CUT OR FILL. COORDINATE WITH PROJECT ARBORIST.
- STRUCTURES AND UNDERGROUND FEATURES TO BE REMOVED WITHIN THE TREE PROTECTION ZONE SHALL BE COORDINATED WITH THE PROJECT ARBORIST.
- TREE PROTECTION FENCING AROUND TREES TO BE RELOCATED SHALL BE ERECTED UNTIL THE TREE IS READY TO BE RELOCATED AND NEW FENCING SHALL BE ERECTED AT THE TREES NEW LOCATION AND WILL REMAIN IN PLACE UNTIL ALL CONSTRUCTION
- 14. IF ANY DAMAGE TO TREE PROTECTION FENCING SHOULD OCCUR BY ACCIDENT OR NEGLIGENCE, THE CONTRACTOR SHALL BE RESPONSIBLE FOR IMMEDIATE REPAIRS.
- IF TEMPORARY HAUL OR ACCESS ROADS MUST PASS OVER THE PROTECTED AREA OF TREES TO BE PRESERVED, A ROAD BED OF SIX (6) INCHES OF MULCH OR GRAVEL SHALL BE CREATED TO PROTECT THE SOIL. THE ROAD BED MATERIAL SHALL BE REPLENISHED AS NECESSARY TO MAINTAIN A SIX (6) INCH ROAD BED AT ALL TIMES. CONTRACTOR SHALL REMOVE ALL SUCH MATERIALS FROM THE SITE AS SOON AS TEMPORARY ACCESS IS NO LONGER NECESSARY.
- 16. CONTRACTOR SHALL COORDINATE WITH THE PROJECT ARBORIST PRIOR TO THE REMOVAL OF ALL TREE PROTECTION FENCING.

#### C. ROOT PRUNING/TRENCHING

- TRENCHING LOCATIONS SHALL BE APPROVED IN THE FIELD BY THE PROJECT ARBORIST.
- TRENCHING EQUIPMENT THAT WILL TURN AT HIGH RPM'S IS PREFERRED, AND SHALL BE APPROVED BY THE PROJECT ARBORIST. APPROVED EQUIPMENT WILL BE USED TO PERFORM ALL ROOT PRUNING OPERATIONS. A MINIMUM DEPTH OF THREE FEET IS
- 3. INSTALL ROOT BARRIER WHERE DESIGNATED. SEE TREE MITIGATION PLAN AND DETAIL SHEETS.
- 4. THE TRENCH SHALL BE BACKFILLED WITH PREVIOUSLY EXCAVATED SOIL AND COMPACTED IMMEDIATELY.
- TREES TO BE RELOCATED SHALL BE ROOT PRUNED A MINIMUM OF TWELVE (12) WEEKS PRIOR TO TREE RELOCATION. WHEN THE TREE ROOT ZONE WILL BE DISTURBED, AFFECTED ROOTS MUST BE SEVERED BY CLEAN PRUNING CUTS AT THE POINT
- WHERE CONSTRUCTION IMPACTS THE ROOTS.

- ANY BRUSH CLEARING REQUIRED WITHIN THE TREE PROTECTION ZONE SHALL BE ACCOMPLISHED WITH HAND-OPERATED
- CONTRACTOR SHALL CLEAR ALL TREE PROTECTION AREAS OF VINES, SHRUBS, GROUND COVERS, WEEDS, SAPLINGS, AND INVASIVES LISTED ON THE LATEST EDITION OF THE FLORIDA EXOTIC PEST PLANT COUNCIL'S LIST OF INVASIVE SPECIES.
- 3. PROJECT ARBORIST MUST APPROVE METHODS OTHER THAN HAND CLEARING.

- 4. A TWO (2) INCH LAYER OF MULCH SHALL BE APPLIED OVER THE SURFACE OF EXPOSED ROOTS OF PROTECTED TREES DURING THE SITE CLEARING PHASE
- TREE PRUNING SPECIFICATIONS SHALL BE DEFINED BASED ON SPECIFIC RECOMMENDATIONS OF THE PROJECT ARBORIST. INFORMATION PRESENTED BELOW SHOULD BE USED AS A GUIDELINE.
- 2. CONTRACTOR SHALL VISIT THE SITE WITH THE PROJECT ARBORIST TO VERIFY THE EXTENT OF REQUIRED PRUNING.
- ALL PRUNING SHALL BE PERFORMED IN ACCORDANCE WITH THE RECOMMENDATIONS OF A QUALIFIED INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA) CERTIFIED ARBORIST OR AN AMERICAN SOCIETY OF CONSULTING ARBORISTS (ASCA) REGISTERED
- 4. AT LEAST ONE MEMBER OF THE PRUNING CREW SHALL BE AN ISA CERTIFIED ARBORIST.
- WHILE IN THE TREE, THE ARBORIST SHALL PERFORM AN AERIAL INSPECTION TO IDENTIFY DEFECTS THAT REQUIRE TREATMENT. ANY ADDITIONAL WORK NEEDED SHALL BE REPORTED TO THE OWNER.
- PRUNING CUTS SHALL BE DONE IN ACCORDANCE WITH THE LATEST EDITION OF THE ANSI A300 PRUNING STANDARD (AMERICAN NATIONAL STANDARD FOR TREE CARE OPERATIONS) AND WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE LATEST EDITION OF ANSI Z133.1 SAFETY STANDARD. PRUNING SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF ISA'S "BEST MANAGEMENT PRACTICES: TREE PRUNING".
- WHERE TEMPORARY CLEARANCE IS NEEDED FOR ACCESS, BRANCHES SHALL BE TIED BACK TO HOLD THEM OUT OF THE
- 8. NO MORE THAN 20 PERCENT OF LIVE FOLIAGE SHALL BE REMOVED WITHIN ANY TREE.
- ALL TREES WITHIN THE PROJECT AREA SHALL BE PRUNED AS FOLLOWS:
  - a. LIVE BRANCH PRUNING SHOULD BE PERFORMED ONLY WHEN THE DANGER OF INSECT OR DISEASE INFESTATION IS NOT
- b. REMOVE STUBS, CUTTING OUTSIDE THE WOUND WOOD TISSUE THAT HAS FORMED AROUND THE BRANCH.
- c. CLEANING, FOR THE SELECTIVE REMOVAL OF DEAD, DISEASED, BROKEN, OR CROSSING BRANCHES DOWN TO ONE INCH IN DIAMETER OR AS DIRECTED BY THE PROJECT ARBORIST.
- d. PRUNING CUTS LARGER THAN 4 INCHES IN DIAMETER, EXCEPT FOR DEAD WOOD, SHALL BE AVOIDED.
- e. PRUNING CUTS THAT EXPOSE HEARTWOOD SHALL BE AVOIDED WHENEVER POSSIBLE.
- ALL TREES WITH CROWNS THAT PROJECT INTO PARKING LOT/ROADWAY AREAS SHALL BE RAISED TO 14 FEET ABOVE
- g. ALL TREES WITH CROWNS THAT PROJECT INTO SIDEWALK AREAS SHALL BE RAISED TO A HEIGHT OF 8 FEET ABOVE FINISHED
- 9. TREES, WHO'S ROOT SYSTEMS WILL BE IMPACTED SHALL RECEIVE THE FOLLOWING PRUNING TO COMPENSATE FOR ROOT LOSS:
- THE LOCATION AND SIZE OF BRANCHES FOR REDUCTION SHALL BE DEFINED BY THE PROJECT ARBORIST.
- REDUCTION, OR THE SELECTIVE PRUNING TO REDUCE TREE HEIGHT OR SPREAD.
- REDUCE END WEIGHT ON HEAVY, HORIZONTAL BRANCHES BY SELECTIVELY REMOVING SMALL DIAMETER BRANCHES, NO GREATER THAN 2 TO 3 INCHES, NEAR THE ENDS OF SCAFFOLD BRANCHES.
- RAISING SHALL CONSIST OF SELECTIVE PRUNING TO PROVIDE VERTICAL CLEARANCE.

#### PROPOSED/REPLACEMENT TREES

- 11. BRUSH SHALL BE CHIPPED AND SPREAD (ONLY WHEN DISEASE OR INSECT INFESTATION IS NOT PRESENT) UNDERNEATH TREES
- WITHIN THE TREE PROTECTION ZONE TO A MAXIMUM DEPTH OF THREE (3) INCHES, LEAVING THE TRUNK CLEAR OF MULCH. 12. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING ALL EXCESS DEBRIS ON A DAILY BASIS.

- CONTRACTOR SHALL COORDINATE FERTILIZATION PLAN, FOLLOWING BEST MANAGEMENT PRACTICES WITH THE PROJECT ARBORIST PRIOR TO COMMENCEMENT OF WORK.
- EVERY EFFORT SHALL BE MADE TO UTILIZE CHEMICALS OF AN ORGANIC OR BIODEGRADABLE NATURE IN ORDER TO OFFER THE LEAST IMPACT TO THE NATURAL ENVIRONMENT. CONTRACTOR IS RESPONSIBLE FOR MIXING, APPLYING, AND DISPOSAL OF ALL CHEMICALS IN ACCORDANCE WITH STRICT ADHERENCE TO MANUFACTURER'S SPECIFICATIONS. COORDINATE WITH PROJECT ARBORIST FOR FURTHER INSTRUCTION.
- 3. ONLY TREES AFFECTED BY CONSTRUCTION OR AS SHOWN ON THE TREE MITIGATION PLAN AND TREE INVENTORY SCHEDULE SHALL BE TREATED.
- 4. TREES SPECIFIED TO RECEIVE FERTILIZER SHALL BE TREATED AS FOLLOWS.
- a. MIX FERTILIZER ACCORDING TO MANUFACTURER'S SPECIFICATIONS INTO A TANK WITH AGITATION CAPABILITY.
- b. MIX WETTING AGENT ACCORDING TO MANUFACTURER'S SPECIFICATIONS INTO SAME TANK WITH FERTILIZER. AGITATE MIX.
- INJECT THE MIXTURE WITH A HYDRAULIC INJECTION SYSTEM INTO THE UPPER 6-12 INCHES OF SOIL WITH A SOIL PROBE. INJECT AT THE RATE OF ONE THIRD (1/3) GALLON AT EACH INJECTION SITE.
- d. THE CRITICAL ROOT ZONE AREA PLUS 2' BEYOND THE CRITICAL ROOT ZONE SHALL BE INJECTED, BUT NOT BEYOND ROOT PRUNING LOCATIONS.
- e. FERTILIZER SHALL BE INSTALLED PRIOR TO THE INSTALLATION OF ANY AERATION SYSTEMS.
- f. EMPTY PRODUCT CONTAINERS SHALL BE STOCKPILED FOR INSPECTION BY THE PROJECT ARBORIST PRIOR TO DISPOSAL.

#### G. INSECTICIDE

- 7. NOTIFY PROJECT ARBORIST IF ANY INFESTATION IS NOTICED.
- 8. FOLLOW PROJECT ARBORIST'S RECOMMENDED PROCEDURES.
- 9. FOLLOW ALL MANUFACTURERS' RECOMMENDATIONS CONCERNING APPLICATION. READ ALL WARNING LABELS.
- 10. ANY PETS, AS WELL AS, THE PETS FOOD AND WATER BOWLS SHOULD BE REMOVED FROM THE AREA AND ANY SWIMMING POOLS SHOULD BE COVERED. COORDINATE WITH PROJECT ARBORIST FOR FURTHER INSTRUCTION.
- 11. ENSURE COMPLETE COVERAGE AND REAPPLY 2-3 MONTHS AFTER INITIAL APPLICATION UTILIZING SAME PROCEDURE.

- EVERY EFFORT SHALL BE MADE TO WATER THE PRESERVED TREES AND TRANSPLANTS. CONTRACTOR SHALL IRRIGATE BY HAND OR BY TEMPORARY IRRIGATION.
- 2. IRRIGATE AS REQUIRED BY PROJECT ARBORIST UNTIL PERMANENT IRRIGATION IS INSTALLED AND OPERATING.
- 3. UNDERGROUND IRRIGATION SHALL NOT BE INSTALLED WITHIN THE DRIP LINES OF EXISTING TREES UNLESS ROOT PROTECTION MEASURES ARE PROVIDED AND APPROVED BY PROJECT ARBORIST.

- PRIOR TO AND DURING LAND CLEARING, INCLUDING GRUBBING, ALL TREES TO BE REMOVED SHALL BE CLEARLY MARKED BY PROJECT ARBORIST WITH RED SURVEY RIBBONS AT 36 INCHES MINIMUM ABOVE GRADE.
- 2. CONTRACTOR SHALL REMOVE ALL TREES AS SHOWN ON THE TREE MITIGATION PLANS AFTER THE TREE PROTECTION FENCING IS

3. ALL TREES SHOWN TO BE REMOVED SHALL BE FELLED WITH A CHAIN SAW AND STUMP GROUND 6" BELOW SURFACE. ANY TREE

4. ALL WOOD AND STUMPS FROM REMOVALS SHALL BE HAULED FROM THE SITE THE SAME DAY, EXCEPT FOR TOPS. ALL TOPS ARE TO BE MULCHED AND STOCKPILED OR HAULED DIRECTLY TO MULCHED AREAS FOR RELOCATED TREES IF SCHEDULING PERMITS. TOPS

SHOWN TO BE REMOVED THAT IS IN AN AREA WHERE COMPACTION IS CRITICAL SHALL BE FELLED WITH A CHAIN SAW AND STUMP

SHALL BE CHIPPED AND PLACED IN THE TREE PROTECTION ZONE TO A DEPTH OF THREE (3) INCHES. ALL EXCESS WOOD CHIPS SHOULD BE HAULED OFF SITE AFTER TRANSPLANTING IS COMPLETE.

- 5. ALL BURN PITS IF APPLICABLE MUST BE APPROVED BY THE PROJECT ARBORIST AND OWNER.
- TREES TO BE REMOVED THAT HAVE BRANCHES EXTENDING INTO THE CANOPY OF TREES TO REMAIN MUST BE REMOVED BY A QUALIFIED ISA CERTIFIED ARBORIST AND NOT BY DEMOLITION OR CONSTRUCTION CONTRACTORS. THE QUALIFIED ARBORIST SHALL REMOVE THE TREE IN A MANNER THAT CAUSES NO DAMAGE TO THE TREES AND UNDERSTORY VEGETATION TO REMAIN.
- TREES TO BE REMOVED LOCATED WITHIN THE TREE PROTECTION ZONE SHALL BE REMOVED BY A QUALIFIED ISA CERTIFIED ARBORIST. THE TREES SHALL BE CUT NEAR GROUND LEVEL AND THE STUMP GROUND OUT.

- 10. CONTRACTOR SHALL COORDINATE ALL EARTHWORK OPERATIONS WITHIN TREE PROTECTION AREAS WITH THE PROJECT ARBORIST PRIOR TO BEGINNING WORK.
- 11. ALL TOPSOIL SHALL BE NATURAL, FRIABLE, FERTILE, FINE LOAMY SOIL POSSESSING CHARACTERISTICS OF REPRESENTATIVE TOPSOIL IN THE VICINITY THAT PRODUCES HEAVY GROWTH.
- 12. TOPSOIL, PH RANGE OF 5.5 TO 7.0, 3-5 PERCENT ORGANIC MATERIAL MINIMUM, FREE FROM SUBSOIL, OBJECTIONABLE WEEDS, LITTER, SODS, STIFF CLAY, STONES LARGER THAN ONE (1) INCH IN DIAMETER, STUMPS, ROOTS, TRASH, TOXIC SUBSTANCES, OR ANY OTHER MATERIAL WHICH MAY BE HARMFUL TO PLANT GROWTH.
- 13. VERIFY AMOUNT STOCKPILED IF ANY, AND SUPPLY ADDITIONAL AS NEEDED FROM NATURALLY WELL-DRAINED SITES WHERE TOPSOIL OCCURS AT LEAST FOUR (4) INCHES DEEP. DO NOT OBTAIN TOPSOIL FROM BOGS OR MARSHES.
- 14. PROJECT ARBORIST SHALL APPROVE ALL TOPSOIL PRIOR TO PLACEMENT.

#### M. REPAIR OF DAMAGED TREES

- 1. IF DAMAGE TO ANY TREE SHOULD OCCUR BY ACCIDENT OR NEGLIGENCE DURING THE CONSTRUCTION PERIOD, THE PROJECT ARBORIST SHALL APPRAISE THE DAMAGE AND MAKE RECOMMENDATIONS TO THE OWNER FOR REPAIR BY THE CONTRACTOR.
- IF ANY TREE DESIGNATED TO BE SAVED IS REMOVED FROM THE SITE WITHOUT PERMISSION OF THE OWNER'S REPRESENTATIVE, THE PROJECT ARBORIST SHALL APPRAISE THE TREE AND MAKE RECOMMENDATIONS TO THE OWNER FOR REPLACEMENT BY THE CONTRACTOR. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPLACEMENT OF THE TREE AND ANY FEES THAT MAY BE ASSESSED TO THE OWNER BY THE GOVERNING AGENCY.

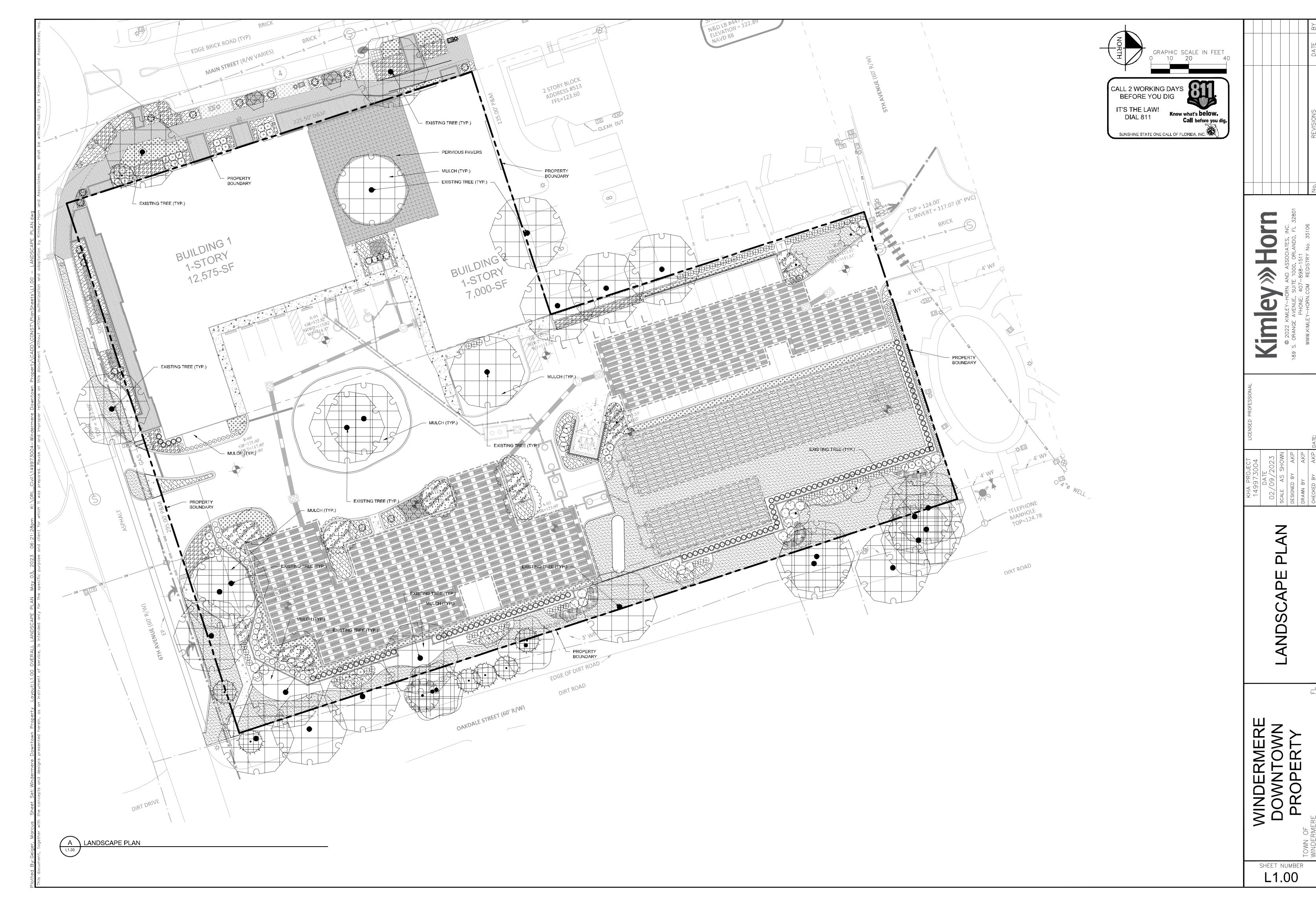
IT'S THE LAW! Know what's **below.** Call before you dig SUNSHINE STATE ONE CALL OF FLORIDA. INC

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SHEET NUMBER



TYPICAL TREE MITIGATION NOTES



PLANT SCHEE	ו
CANOPY TREE	<u>C</u>
2 + E	Q'
+ 3	UI
EXISTING TREES TO REMAIN	<u>C</u>
	KI

CANOPY TREE	CODE	<u>QTY</u>	BOTANICAL NAME	COMMON NAME	<u>CONT</u>	<u>CAL</u>	SIZE	DROUGHT TOL.	NATIVE
4 + 3	QVC	2	QUERCUS VIRGINIANA 'CATHEDRAL' SINGLE, STRAIGHT TRUNK, FULL, FLORIDA #1	CATHEDRAL LIVE OAK	100 GAL	3.5" CAL MIN	14` HT., 16` SPR.	YES	YES
+ 3	UPA	4	ULMUS PARVIFOLIA 'ALLEE TM' SINGLE, STRIGHT TRUNK, FULL, FLORIDA #1	ALLEE LACEBARK ELM	65 GAL	3" CAL. TOT.	14` HT., 10` SPR.	YES	YEŞ
EXISTING TREES TO REMAIN	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	<u>CAL</u>	SIZE	DROUGHT TOL.	NATIVE
,,,,,,	KPE	3	EXISTING GOLDEN RAIN TREE CONTRACTOR LIABLE FOR DAMAGES	TO REMAIN	EXISTING	-	-		
	PAE	7	EXISTING PALM CONTRACTOR LIABLE FOR DAMAGES	TO REMAIN	EXISTING	-	-		
	PME	1	EXISTING PODOCARPUS TREE CONTRACTOR LIABLE FOR DAMAGES	TO REMAIN	EXISTING	-	-		
	QVE	27	EXISTING LIVE OAK CONTRACTOR LIABLE FOR DAMAGES	TO REMAIN	EXISTING	-	-		
UNDERSTORY TREES	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	CAL	<u>SIZE</u>	DROUGHT TOL.	NATIVE
	IAE	3	ILEX X ATTENUATA 'EAST PALATKA' SINGLE, STRAIGHT TRUNK, FULL, FLORIDA #1	EAST PALATKA HOLLY	FG	3" CAL MIN	12` HT., 6` SPR.	YES	YES
	LIN	3	LAGERSTROEMIA INDICA X FAURIEI 'NATCHEZ' STANDARD, SINGLE, STRAIGHT TRUNK, FULL, FLORIDA #1	NATCHEZ CRAPE MYRTLE MULTI-TRUNK	65 GAL	5" CAL. TOT.	12` HT., 7` SPR.	YES	NO
+	LJ	9	LIGUSTRUM JAPONICUM MULTI-TRUNK, 4 TRUNKS, FULL, FLORIDA #1	JAPANESE PRIVET	100 GAL	4" CAL. TOT.	8` HT., 8` SPR.	YES	NO
SHRUBS	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	<u>SPACING</u>	SIZE	DROUGHT TOL.	NATIVE
	AGE	28	ABELIA X GRANDIFLORA 'EDWARD GOUCHER' FULL	EDWARD GOUCHER GLOSSY ABELIA	3 GAL	36" OC	24" HT MIN	YE\$	YEŞ
A Constant	GM	21	GARDENIA AUGUSTA 'MIAMI SUPREME' STANDARD, FULL	MIAMI SUPREME GARDENIA	7 GAL	SEE PLAN	48" HT MIN	NO	NO
and the second s	IF	120	ILLICIUM FLORIDANUM FULL	FLORIDA ANISE	3 GAL	36" OC	20" HT MIN	YE\$	YEŞ
+	PM	101	PODOCARPUS MACROPHYLLUS FULL TO BASE, CLOSELY MATCHING	PODOCARPUS	3 GAL	24" OC	36" HT MIN	YES	NO
	RF	41	RHODODENDRON X 'FASHION' FULL	FASHION GLENN DALE AZALEA	7 GAL	SEE PLAN	30" HT MIN	YE\$	NO
	RG	22	RHODODENDRON X `MRS. G. G. GERBING' FULL	LARGE WHITE AZALEA	7 GAL	SEE PLAN	36" HT MIN	NO	NO
	RR	6	RHODODENDRON X 'FORMOSA' FULL	FORMOSA AZALEA	7 GAL	SEE PLAN	36" HT MIN	YES	YES
$\bigoplus$	VS	73	VIBURNUM SUSPENSUM FULL	SANDANKWA VIBURNUM	3 GAL	36" OC	36" HT MIN	YES	NO
SHRUB AREAS	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	SIZE	<u>SPACING</u>	DROUGHT TOLERANCE	NATIVE
	ВТ	35	BOUGAINVILLEA X 'MISS ALICE' THORNLESS FULL	MISS ALICE BOUGAINVILLEA	3 GAL	12" HT MIN	36" OC	YES	NÖ
	JM	19	JASMINUM MULTIFLORUM FULL	DOWNEY JASMINE	3 GAL	14" HT MIN	30" OC	YES	NO
	NF	41	NEPHROLEPIS FALCATA FULL	MACHO FERN	3 GAL	12" HT MIN	30" OC	YES	NO
00000	PA	177	PLUMBAGO AURICULATA FULL	BLUE PLUMBAGO	3 GAL	12" HT MIN	36" OC	YES	NO
\$988 \$4696 \$4696 \$4696	RA	198	RHAPHIOLEPIS INDICA 'ALBA' FULL	WHITE INDIAN HAWTHORN	3 GAL	18" HT MIN	30" OC	YES	NO
GROUND COVERS	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	<u>SIZE</u>	<u>SPACING</u>	DROUGHT TOL.	NATIVE
	AE	105	ASPIDISTRA ELATIOR FULL	CAST IRON PLANT	1 GAL	20" HT. MIN	18" OC	YES	NO
	LMS	904	LIRIOPE MUSCARI 'BIG BLUE' FULL	BIG BLUE LILYTURF	1 GAL	12" FULL	18" OC	YES	NO
	ТМ	2,121	TRACHELOSPERMUM ASIATICUM 'MINIMA' FULL	MINIMA ASIATIC JASMINE	1 GAL	8" SPRD MIN	14" OC	YES	NO
SOD	CODE	QTY	BOTANICAL NAME	COMMON NAME	CONT	<u>SIZE</u>	<u>SPACING</u>	DROUGHT TOL.	<u>NATIVE</u>
	SOD A	16,96 <b>1</b> SF	STENOTAPHRUM SECUNDATUM `FLORITAM` 100% INSECT/DIEASE FREE, LAID TIGHT, ROLLED	FLORITAM ST. AUGUSTINE SOD	SOD	-	-	NO	NO

#### LANDSCAPE NOTES:

- 1. ALL LANDSCAPE MATERIAL TO BE FLORIDA GRADE #1 OR BETTER QUALITY
- 2. ALL LANDSCAPED AREAS ARE TO RECEIVE A MINIMUM OF 4" OF TOPSOIL.
- 3. ALL PLANT MATERIAL SHALL BE HEALTHY, VIGOROUS, AND FREE OF PESTS AND DISEASE.
- 4. ALL MATERIALS ARE SUBJECT TO THE APPROVAL OF THE LANDSCAPE ARCHITECT BEFORE,
- 5. ALL TREES MUST BE GUYED OR STAKED AS SHOWN IN THE DETAILS.
- 6. ALL PLANTING AREAS SHALL BE COMPLETELY MULCHED AS SPECIFIED.
- 7. PRIOR TO CONSTRUCTION, THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UNDERGROUND UTILITIES AND SHALL AVOID DAMAGE TO ALL UTILITIES DURING THE COURSE OF THE WORK. LOCATIONS OF EXISTING BURIED UTILITY LINES SHOWN ON THE PLANS ARE BASED UPON BEST AVAILABLE INFORMATION AND ARE TO BE CONSIDERED APPROXIMATE. IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR 1) TO VERIFY THE LOCATIONS OF UTILITY LINES ADJACENT TO THE WORK AREA 2) TO PROTECT ALL UTILITY LINES DURING THE CONSTRUCTION PERIOD 3) TO REPAIR ANY AND ALL DAMAGE TO UTILITIES, STRUCTURES, SITE APPURTENANCES, ETC. WHICH OCCURS AS A RESULT OF THE CONSTRUCTION.
- 8. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING ALL QUANTITIES SHOWN ON THESE PLANS BEFORE PRICING THE WORK.
- 9. CONTRACTOR SHALL BE RESPONSIBLE FOR DELIVERY SCHEDULE AND PROTECTION BETWEEN DELIVERY AND PLANTING TO MAINTAIN HEALTHY PLANT CONDITIONS.
- 10. THE CONTRACTOR SHALL BE RESPONSIBLE FOR FULLY MAINTAINING (INCLUDING BUT NOT LIMITED TO: WATERING, SPRAYING, MULCHING, FERTILIZING, ETC.) ALL OF THE PLANT MATERIALS AND LAWN FOR THE WARRANTY PERIOD.
- 11. ANY PLANT MATERIAL WHICH IS DISEASED, DISTRESSED, DEAD, OR REJECTED (PRIOR TO SUBSTANTIAL COMPLETION) SHALL BE PROMPTLY REMOVED FROM THE SITE AND REPLACED WITH MATERIAL OF THE SAME SPECIES, QUANTITY, AND SIZE AND MEETING ALL PLANT LIST SPECIFICATIONS.
- 12. THE CONTRACTOR SHALL COMPLETELY GUARANTEE ALL PLANT MATERIAL FOR WARRANTY PERIOD. THE CONTRACTOR SHALL PROMPTLY MAKE ALL REPLACEMENTS DURING THE NORMAL PLANTING SEASON.
- 13. STANDARDS SET FORTH IN "AMERICAN STANDARD FOR NURSERY STOCK" REPRESENT GUIDELINE SPECIFICATIONS ONLY AND SHALL CONSTITUTE MINIMUM QUALITY REQUIREMENTS FOR PLANT MATERIAL.
- 14. ALL LANDSCAPING SHALL BE INSTALLED ACCORDING TO SOUND NURSERY PRACTICES, AND SHALL BE FLORIDA NO. 1 OR BETTER AS GIVEN IN "GRADES AND STANDARDS FOR NURSERY PLANTS, PARTS I AND II," STATE OF FLORIDA, DEPARTMENT OF AGRICULTURE.
- 15. ALL INVASIVE / EXOTIC SPECIES AND PROHIBITED TREE SPECIES SHALL BE REMOVED FROM SITE, INCLUDING ROOT BALLS TO THE EXTENT POSSIBLE WITH NO DAMAGE TO ADJACENT
- 16. ALL LANDSCAPE AREAS WILL BE PROVIDED WITH PERMANENT AUTOMATIC IRRIGATION
- 17. TREE SUPPORT MATERIALS ARE TO BE REMOVED FROM EACH TREE ONCE IT IS "ESTABLISHED" (AS APPROVED BY THE LANDSCAPE ARCHITECT).
- 18. ALL PLANT SPECIFICATIONS IN THE PLANT SCHEDULE SHALL BE CONSIDERED THE MINIMUM ALLOWABLE SPECIFICATIONS. CONTRACTOR SHALL PROCURE PLANT MATERIALS AND UPSIZE AS NECESSARY TO MEET THE MOST STRINGENT SPECIFICATION.



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ANDSC SCHEDULE

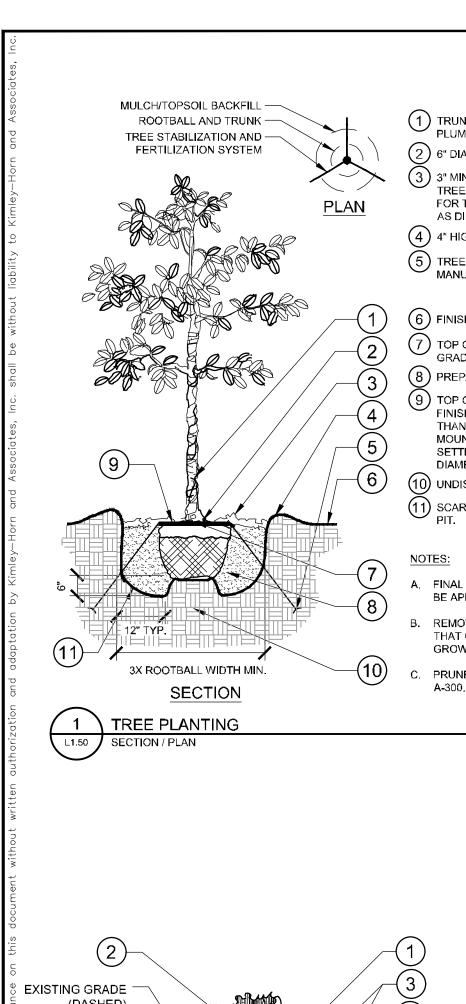
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DIAL 811

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(1) TRUNK/ROOT BALL TO BE CENTERED AND PLUMB/LEVEL IN PLANTING PIT.

2) 6" DIA. CLEAR OF MULCH AT TRUNK FLARE. 3" MINIMUM MULCH AS SPECIFIED. WHERE TREES ARE PLACED IN SOD, MULCH RING FOR TREES SHALL BE 6' DIAMETER (MIN.) OR AS DIRECTED BY OWNER'S REPRESENTATIVE.

(4) 4" HIGH BERM, FIRMLY COMPACTED. 5)TREE FROG ANCHOR SYSTEM INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

6) FINISHED GRADE. (SEE GRADING PLAN) 7) TOP OF ROOTBALL MIN. 1" ABOVE FINISHED

8) PREPARED PLANTING SOIL AS SPECIFIED. 9) TOP OF ROOTBALL SHALL BE 1" ABOVE FINISHED GRADE, ROOTBALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO PREVENT SETTLING. ROOTBALLS SMALLER THAN 24" IN DIAMETER MAY SIT ON COMPACTED EARTH.

10) UNDISTURBED NATIVE SOIL. 11) SCARIFY BOTTOM AND SIDES OF PLANTING

FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

REMOVE BURLAP, WIRE AND STRAPS (ANYTHING THAT COULD GIRDLE TREE OR RESTRICT ROOT GROWTH) ON UPPER 1/3 OF ROOTBALL.

PRUNE ALL TREES IN ACCORDANCE WITH ANSI

MULCH/TOPSOIL BACKFILL -ROOTBALL AND TRUNK — TREE STABILIZATION AND -FERTILIZATION SYSTEM 3X ROOTBALL WIDTH MIN. TREE PLANTING ON A SLOPE (1) TRUNK/ROOT BALL TO BE CENTERED AND PLUMB/LEVEL IN PLANTING PIT. ig(2ig) 6" DIA. CLEAR OF MULCH AT TRUNK FLARE.

(3) 3.4" HIGH BERM, FIRMLY COMPACTED. 3" MINIMUM OF HARDWOOD BARK MULCH AS SPECIFIED. WHERE TREES ARE PLACED IN SOD, MULCH RING FOR TREES SHALL BE 6' DIAMETER (MIN.) OR AS DIRECTED BY

OWNER'S REPRESENTATIVE. (5) TREE FROG ANCHOR SYSTEM INSTALLED PER MANUFACTURER'S RECOMMENDATIONS.

(6) 4" MIN. OF TOPSOIL TO BRING TO FINISHED GRADE. (SEE GRADING PLAN) 7 TOP OF ROOTBALL MIN. 1" ABOVE FINISHED

8) PREPARED PLANTING SOIL AS SPECIFIED. 9) ROOTBALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO PREVENT SETTLING.

DIAMETER MAY SIT ON COMPACTED EARTH. (10) UNDISTURBED NATIVE SOIL. (11) SCARIFY BOTTOM AND SIDES OF PLANTING

ROOTBALLS SMALLER THAN 24" IN

(12) CUT BACK SLOPE TO PROVIDE A FLAT SURFACE FOR PLANTING.

FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

REMOVE BURLAP, WIRE AND STRAPS (ANYTHING THAT COULD GIRDLE TREE OR RESTRICT ROOT GROWTH) ON UPPER 1/3 OF ROOTBALL.

C. PRUNE ALL TREES IN ACCORDANCE WITH ANSI

BEST FACE OF SHRUB/ **GROUNDCOVER TO FACE** FRONT OF PLANTING BED. REFER TO PLANT SCHEDULE FOR SPACING. MAINTAIN 12" DEAD ZONE AT BED EDGE.

PLAN

(1) TOP OF SHRUB ROOTBALLS TO BE PLANTED 1" - 2" HIGH WITH SOIL MOUNDING UP TO THE TOP OF ROOTBALL.

2 ) PRUNE ALL SHRUBS TO ACHIEVE A UNIFORM MASS/HEIGHT.

(3) 3" MULCH LAYER AS SPECIFIED. (4) EXCAVATE ENTIRE BED SPECIFIED FOR GROUNDCOVER

(5) FINISHED GRADE (SEE GRADING PLAN).

6) PREPARED PLANTING SOIL AS SPECIFIED. (SEE LANDSCAPE NOTES) NOTE: WHEN GROUND-COVERS AND SHRUBS USED IN MASSES, ENTIRE BED TO BE AMENDED WITH PLANTING SOIL MIX AS SPECIFIED. (7) SCARIFY OF PLANTING PIT

SIDES AND BOTTOM. (8) 4" HIGH BERM FIRMLY COMPACTED.

(9) UNDISTURBED NATIVE SOIL. (10) FERTILIZER TABLETS (MAX 3"

## SECTION

3X ROOT BALL WIDTH

MINIMUM

A. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION.

B. WHEN SHRUBS ARE PRUNED IN MASSES, PRUNE ALL SHRUBS TO ACHIEVE UNIFORM MASS / HEIGHT.

C. ALL SHRUBS AND GROUNDCOVERS SHALL BE PLUMB VERTICALLY, UNLESS OTHERWISE DIRECTED BY OWNERS REPRESENTATIVE.

SHRUB/GROUNDCOVER PLANTING

WIDTH VARIES - SEE PLANS

(1) CROWN ISLANDS @ 5:1 SLOPES (OR AS SPECIFIED ON THE LANDSCAPE PLANS).

(2) CLEAR ZONE: 36" MIN. FROM BACK OF CURB TO CENTER OF NEAREST SHRUB. CLEAR ZONE SHALL CONTAIN 3" CONTINUOUS MULCH OR TURF, SEE PLANS.

(3) 2" MIN VERTICAL CLEARANCE, TOP OF CURB TO TOP OF MULCH.

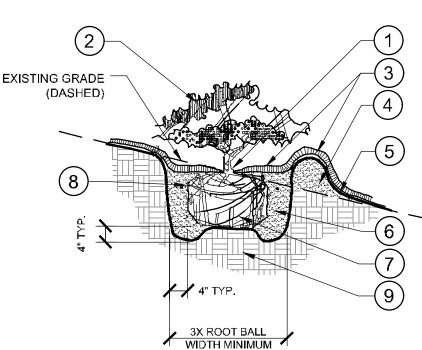
A. EXCAVATE A CONTINUOUS 24" DEEP PIT (FROM TOP OF CURB) FOR ENTIRE LENGTH AND WIDTH OF ISLAND & BACKFILL WITH APPROVED PLANTING MIX.

B. PROTECT AND RETAIN ALL CURBS AND BASE. COMPACTED SUBGRADE TO REMAIN FOR STRUCTURAL SUPPORT OF CURB SYSTEM (TYP).

C. ALL ISLANDS SHALL UTILIZE POOR DRAINAGE DETAIL WHEN PERCOLATION RATES ARE 2" PER HOUR

PLANTED PARKING LOT ISLANDS/MEDIANS

MIN. 3 MATURE SHRŪB WIDTH



A. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING

VERTICALLY, UNLESS OTHERWISE DIRECTED BY OWNERS

5 \ SHRUB/GROUNDCOVER PLANTING ON A SLOPE

PITS PRIOR TO INSTALLATION.

REPRESENTATIVE.

ACHIEVE UNIFORM MASS / HEIGHT.

C. ALL SHRUBS AND GROUNDCOVERS SHALL BE PLUMB

SPECIFIED. WHERE SHRUBS ARE PLACED IN MASSES, MULCH SHALL BE SPREAD IN A CONTINUOUS BED.

) SOIL BERM TO HOLD WATER, TOP OF PLANTING PIT 'BERM' TO BE LEVEL ACROSS PIT. SLOPE DOWNHILL PORTION OF BERM AS REQUIRED TO MEET EXISTING GRADE MULCH OVER EXPOSED

1) TOP OF SHRUB ROOTBALLS TO BE

MOUNDING UP TO THE TOP OF

) PRUNE SHRUBS AS DIRECTED BY OWNER'S REPRESENTATIVE.

3 ) 3" MINIMUM OF MULCH AS

PLANTED 1" - 2" HIGH WITH SOIL

(5) FINISHED GRADE (SEE GRADING

(6) PREPARED PLANTING SOIL AS SPECIFIED. (SEE LANDSCAPE

(7) SCARIFY SIDES AND BOTTOM OF PLANTING PIT. 8 FERTILIZER TABLETS (MAX 3"

B. WHEN SHRUBS ARE PRUNED IN MASSES, PRUNE ALL SHRUBS TO (9) UNDISTURBED NATIVE SOIL

1. CLEAR ZONE: 36" MIN. FROM BUILDING TO CENTER OF NEAREST SHRUB.

2. INSTALL SPECIFIED MULCH: 24" MIN. FROM BUILDING. SPECIFIED MULCH TO BE INSTALLED AT A DEPTH OF 3" (MIN.)

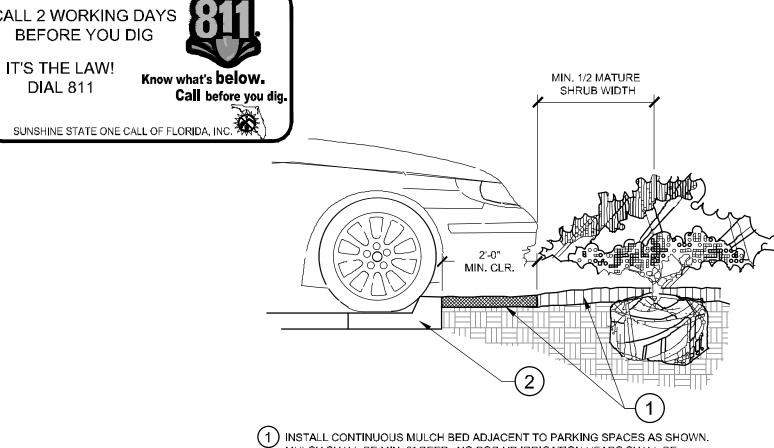
MIN. 1/2

SHRUB WIDTH

24" MIN. CLEAR

MULCH

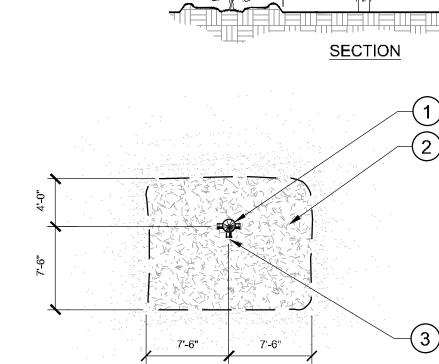
PLANTINGS ADJACENT TO BUILDINGS



MULCH SHALL BE MIN. 3" DEEP. NO POP-UP IRRIGATION HEADS SHALL BE LOCATED WITHIN 24" OF A PARKING SPACE ON ANY SIDE.

(2) CURB / PARKING LOT EDGE.

PARKING SPACE/CURB PLANTING



<u>PLAN</u>

2) NO PLANT EXCEEDING 12" MATURE HEIGHT MATERIAL SHALL BE PLACED WITHIN SHOWN RADIUS OF ALL PROPOSED OR EXISTING FIRE HYDRANTS. CONTRACTOR SHALL ADJUST PLANT MATERIAL SO THAT NO CONFLICTS WITH FIRE HYDRANTS OCCUR ON (3) FRONT OF HYDRANT

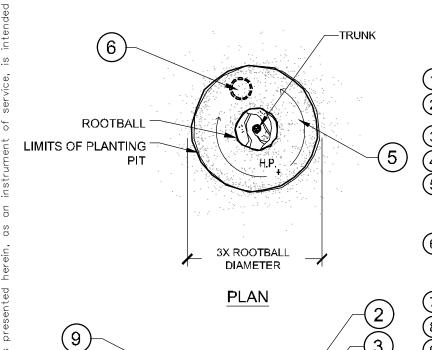
(1) FIRE HYDRANT.

- FIRE HYDRANT

SHRUB WIDTH

(TOWARD CURB)

SHRUB PLANTING AT FIRE HYDRANT



**SECTION** 

9 \ POOR DRAINAGE CONDITION

L1.50 SECTION / PLAN

**1)** FINISH GRADE (SEE GRADING PLANS). ) BACKFILL WITH PREPARED PLANTING SOIL MIX AS SPECIFIED. (3) FILTER CLOTH, MIRAFI 500X OR BETTER.

(4) SLOPE BOTTOM TO DRAIN. (5) AUGURED HOLE Ø ±18" PENETRATE THROUGH OCCLUDING LAYER TO WATER TABLE OR TO A DEPTH OF 7' TO ASSURE PROPER PERCOLATION. (6) BACKFILL WITH 1/2" - 3/4" GRAVEL TO

REQUIRED DEPTH THROUGH OCCLUDING LAYER TO ASSURE PROPER PERCOLATION. (7) WATER TABLE. (DEPTH VARIES)

3 ) UNDISTURBED NATIVE SOIL. SET ROOTBALL ON UNDISTURBED STABLE SUBSOIL SO THAT TOP OF ROOT BALL IS " ABOVE FINISHED GRADE.

A. THIS DETAIL SHALL BE IMPLEMENTED WHERE PERCOLATION RATES ARE 2" PER HOUR OR

B. CONTRACTOR TO PERFORM PERCOLATION TEST AS REQUIRED. AND NOTIFY OWNER/LANDSCAPE

C. SEE TYPICAL TREE PLANTING DETAIL THIS SHEET FOR PLANT STAKING.

**ELEVATION** 

<u>PLAN</u>

10 TREE PROTECTION FENCING

CONNECTION

CORNER

CONNECTION

L1.50 / ELEVATION / PLAN

1) 6'H "PERIMETER PLUS" CONSTRUCTION FENCE BY CONWED PLASTICS OR OWNER'S REPRESENTATIVE APPROVED EQUAL. SUBMIT PRODUCT INFORMATION FOR APPROVAL PRIOR TO INSTALLATION.

(2) 8' TALL METAL "T" POSTS OR 2"  $\times$  2"  $\times$  8' PRESSURE TREATED WOOD POSTS WITH 24" BURIAL BELOW GRADE.

#### INSTALLATION NOTES:

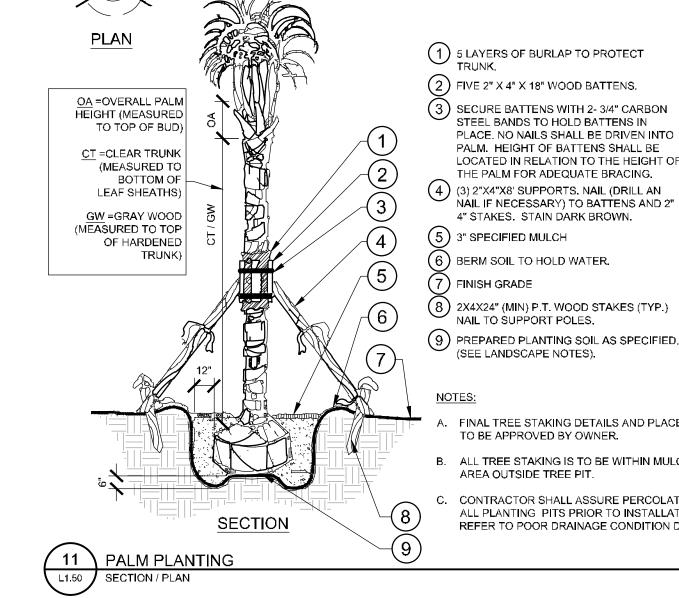
A. POST SELECTION SHOULD BE BASED ON EXPECTED STRENGTH NEEDS AND THE LENGTH OF TIME FENCE WILL BE IN PLACE. FLEXIBLE FIBERGLASS ROD POSTS ARE RECOMMENDED FOR PARKS, ATHLETIC EVENTS AND CROWD CONTROL INSTALLATIONS, METAL "T" POSTS OR TREATED WOOD POSTS ARE TYPICALLY USED FOR CONSTRUCTION AND OTHER APPLICATIONS.

B. POSTS SHOULD BE DRIVEN INTO THE GROUND TO A DEPTH OF 1/3 OF THE HEIGHT OF THE POST. FOR EXAMPLE, A 6' POST SHOULD BE SET AT LEAST 2' INTO THE GROUND.

C. SPACE POSTS EVERY 6' (MIN.) TO 8' (MAX.).

D. SECURE FENCING TO POST WITH NYLON CABLE TIES (AVAILABLE FROM CONWED PLASTICS). WOOD STRIPS MAY BE ALSO BE USED TO PROVIDE ADDITIONAL SUPPORT AND PROTECTION BETWEEN TIES AND POSTS.

NOTE: IF WIRE TIES ARE USED, AVOID DIRECT CONTACT WITH FENCE. WIRE MAY DAMAGE FENCE OVER TIME.



1) 5 LAYERS OF BURLAP TO PROTECT

2) FIVE 2" X 4" X 18" WOOD BATTENS. (3) SECURE BATTENS WITH 2- 3/4" CARBON STEEL BANDS TO HOLD BATTENS IN PLACE. NO NAILS SHALL BE DRIVEN INTO PALM. HEIGHT OF BATTENS SHALL BE LOCATED IN RELATION TO THE HEIGHT OF THE PALM FOR ADEQUATE BRACING. (4) (3) 2"X4"X8' SUPPORTS. NAIL (DRILL AN NAIL IF NECESSARY) TO BATTENS AND 2"

4" STAKES. STAIN DARK BROWN. (5) 3" SPECIFIED MULCH (6) BERM SOIL TO HOLD WATER.

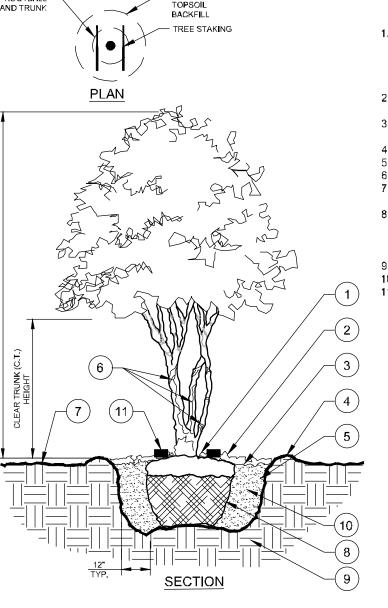
7) FINISH GRADE (8) 2X4X24" (MIN) P.T. WOOD STAKES (TYP.) NAIL TO SUPPORT POLES.

(SEE LANDSCAPE NOTES).

#### FINAL TREE STAKING DETAILS AND PLACEMENT TO BE APPROVED BY OWNER.

B. ALL TREE STAKING IS TO BE WITHIN MULCH BED AREA OUTSIDE TREE PIT.

C. CONTRACTOR SHALL ASSURE PERCOLATION OF ALL PLANTING PITS PRIOR TO INSTALLATION -REFER TO POOR DRAINAGE CONDITION DETAIL.



MULTI-TRUNK TREE PLANTING

1. BASE OF TREE SHALL BE PLANTED SLIGHTLY ABOVE (1" MIN.) ADJACENT FINISH GRADE. REMOVE ALL TWINE & STRAPS & CUT BURLAP FROM TOP 1/3 OF ROOT BALL. NO SYNTHETIC BURLAP WILL BE ACCEPTED.

2. 4" SHREDDED HARDWOOD MULCH OR APPROVED 3. DIAMETER OF TREE PIT TO BE TWICE THE DIAMETER

OF ROOT BALL-ROUGHEN SIDES OF TREE PIT. 4. 3" HIGH SOIL BERM TO HOLD WATER. 5. TOPSOIL MIX BACKFILL. TREE WRAP.

7. 4" MIN. OF TOPSOIL TO BRING TO FINISHED GRADE (SEE GRADING PLAN). 8. ROOT BALLS GREATER THAN 24" DIAMETER SHALL BE PLACED ON MOUND OF UNDISTURBED SOIL TO

PREVENT SETTLING ROOT BALLS SMALLER THAN 24" IN DIA. MAY SIT ON COMPACTED EARTH. UNDISTURBED SUBSOIL 10. PREPARE PLANTING SOIL AS SPECIFIED. 11. Tree Frog® RBK40pt FOR UP TO 4" TREE CALIPER OR Tree Frog® RBK60pt FOR GREATER THAN 4" AND UP TO 6" TREE CALIPER. REFER TO SITEWORK SPECIFICATIONS FOR APPROVED MATERIALS AND INSTALLATION REQUIREMENTS.

A. FINAL TREE STAKING DETAILS AND PLACEMENT TO BE B. SET TREE AT ORIGINAL DEPTH. REMOVE BURLAP, WIRE AND STRAPS (ANYTHING THAT COULD GIRDLE TREE OR RESTRICT ROOT GROWTH) ON UPPER 1/3 OF ROOTBALL.

SEE LANDSCAPE NOTES FOR THE TYPE OF MULCH MATERIAL TO LISE D. PRUNE TREE AS DIRECTED BY LANDSCAPE ARCHITECT F. ASSURE PERCOLATION OF ALL PLANTING PITS

SHEET NUMBER L1.50

#### A. SCOPE OF WORK

- 1. THE WORK CONSISTS OF: FURNISHING ALL LABOR, MATERIALS, EQUIPMENT, TOOLS, TRANSPORTATION, AND ANY OTHER APPURTENANCES NECESSARY FOR THE COMPLETION OF THIS PROJECT AS SHOWN ON THE DRAWINGS, AS INCLUDED IN THE PLANT LIST, AND AS SPECIFIED HEREIN
- 2. WORK SHALL INCLUDE MAINTENANCE AND WATERING OF ALL CONTRACT PLANTING AREAS UNTIL CERTIFICATION OF ACCEPTANCE BY THE

#### B. PROTECTION OF EXISTING STRUCTURES

- 1. ALL EXISTING BUILDINGS, WALKS, WALLS, PAVING, PIPING, OTHER SITE CONSTRUCTION ITEMS, AND PLANTING ALREADY COMPLETED OR ESTABLISHED AND DESIGNATED TO REMAIN SHALL BE PROTECTED FROM DAMAGE BY THE CONTRACTOR UNLESS OTHERWISE SPECIFIED. ALL DAMAGE RESULTING FROM NEGLIGENCE SHALL BE REPAIRED OR REPLACED TO THE SATISFACTION OF THE OWNER, AT NO COST TO THE
- 2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING ALL NECESSARY BMP DEVICES ACCORDING TO ALL REGULATORY AGENCY'S STANDARDS THROUGH THE DURATION OF ALL CONSTRUCTION ACTIVITIES.
- 3. THE CONTRACTOR SHALL SUBMIT A DETAILED PROJECT SPECIFIC WORK ZONE TRAFFIC CONTROL PLAN UNLESS THE WORK REQUIRES NOTHING MORE THAN A DIRECT APPLICATION OF FDOT DESIGN STANDARDS, INDEX 600. IF A DIRECT APPLICATION OF INDEX 600 IS PROPOSED, THE CONTRACTOR SHALL SUBMIT IN WRITING A STATEMENT INDICATING THE STANDARD INDEX AND PAGE NUMBER NO LESS THAN 10 BUSINESS DAYS PRIOR TO START OF CONSTRUCTION. WHEN A DIRECT APPLICATION OF FDOT STANDARD INDEX 600 IS NOT ACCEPTABLE A PROJECT SPECIFIC WORK ZONE TRAFFIC CONTROL PLAN SHALL BE PREPARED BY A FLORIDA PROFESSIONAL ENGINEER WHO HAS SUCCESSFULLY COMPLETED ADVANCED TRAINING IN MAINTENANCE OF TRAFFIC, AS DEFINED BY FDOT FOR APPROVAL BY THE COUNTY ENGINEER'S
- 4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR LOCATING ALL UTILITIES, WHETHER PUBLIC OR PRIVATE, PRIOR TO EXCAVATION. THE INFORMATION AND DATA SHOWN WITH RESPECT TO EXISTING UNDERGROUND FACILITIES AT OR CONTIGUOUS TO THE SITE IS APPROXIMATE AND BASED ON INFORMATION FURNISHED BY THE OWNER OF SUCH UNDERGROUND FACILITIES OR ON PHYSICAL APPURTENANCES OBSERVED IN THE FIELD. THE OWNER AND DESIGN PROFESSIONAL SHALL NOT BE RESPONSIBLE FOR THE ACCURACY AND COMPLETENESS OF ANY SUCH INFORMATION OR DATA. THE CONTRACTOR SHALL HAVE FULL RESPONSIBILITY FOR; REVIEWING AND CHECKING ALL SUCH INFORMATION AND DATA; LOCATING ALL UNDERGROUND FACILITIES DURING CONSTRUCTION; THE SAFETY AND PROTECTION THEREOF; REPAIRING ANY DAMAGE THERETO RESULTING FROM THE WORK. THE COST OF ALL WILL BE CONSIDERED AS HAVING BEEN INCLUDED IN THE CONTRACT PRICE. THE CONTRACTOR SHALL NOTIFY ANY AFFECTED UTILITY COMPANIES OR AGENCIES IN WRITING AT LEAST 48 HOURS PRIOR TO BEGINNING CONSTRUCTION.

### C. PROTECTION OF EXISTING PLANT MATERIALS

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL UNAUTHORIZED CUTTING OR DAMAGE TO TREES AND SHRUBS EXISTING OR OTHERWISE, CAUSED BY CARELESS EQUIPMENT OPERATION, MATERIAL STOCKPILING, ETC... THIS SHALL INCLUDE COMPACTION BY DRIVING OR PARKING INSIDE THE DRIP-LINE AND SPILLING OIL, GASOLINE, OR OTHER DELETERIOUS MATERIALS WITHIN THE DRIP-LINE. NO MATERIALS SHALL BE BURNED ON SITE. EXISTING TREES KILLED OR DAMAGED SO THAT THEY ARE MISSHAPEN AND/OR UNSIGHTLY SHALL BE REPLACED AT THE COST TO THE CONTRACTOR OF THREE HUNDRED DOLLARS (\$300) PER CALIPER INCH ON AN ESCALATING SCALE WHICH ADDS AN ADDITIONAL TWENTY (20) PERCENT PER INCH OVER FOUR (4) INCHES CALIPER AS FIXED AND AGREED LIQUIDATED DAMAGES. CALIPER SHALL BE MEASURED SIX (6) INCHES ABOVE GROUND LEVEL FOR TREES UP TO AND INCLUDING FOUR (4) INCHES IN CALIPER AND TWELVE (12) INCHES ABOVE GROUND LEVEL FOR TREES OVER FOUR (4) INCHES IN CALIPER.

2. SEE TREE MITIGATION PLAN AND NOTES, IF APPLICABLE

### D. MATERIALS

#### 1. GENERA

MATERIAL SAMPLES LISTED BELOW SHALL BE SUBMITTED FOR APPROVAL, ON SITE OR AS DETERMINED BY THE OWNER. UPON APPROVAL, DELIVERY OF MATERIALS MAY COMMENCE.

MATER <b>IA</b> L	SAMPLE SIZE
MULCH	ONE (1) CUBIC FOOT
TOPSOIL MIX	ONE (1) CUBIC FOOT
PLANTS	ONE (1) OF EACH VARIETY (OR TAGGED IN NUR

### 2. PLANT MATERIALS

- a. PLANT SPECIES AND SIZE SHALL CONFORM TO THOSE INDICATED ON THE DRAWINGS. ALL NURSERY STOCK SHALL BE IN ACCORDANCE WITH GRADES AND STANDARDS FOR NURSERY PLANTS, LATEST EDITION, PUBLISHED BY THE FLORIDA DEPARTMENT OF AGRICULTURE AND CONSUMER SERVICES. ALL PLANTS SHALL BE FLORIDA GRADE NO. 1 OR BETTER AS DETERMINED BY THE FLORIDA DIVISION OF PLANT INDUSTRY. ALL PLANTS SHALL BE HEALTHY, VIGOROUS, SOUND, WELL-BRANCHED, AND FREE OF DISEASE AND INSECTS, INSECT EGGS AND LARVAE AND SHALL HAVE ADEQUATE ROOT SYSTEMS. TREES FOR PLANTING IN ROWS SHALL BE UNIFORM IN SIZE AND SHAPE. ALL MATERIALS SHALL BE SUBJECT TO APPROVAL BY THE OWNER. WHERE ANY REQUIREMENTS ARE OMITTED FROM THE PLANT LIST, THE PLANTS FURNISHED SHALL BE NORMAL FOR THE VARIETY. PLANTS SHALL BE PRUNED PRIOR TO DELIVERY ONLY WITH APPROVAL FROM OWNER OR OWNER'S REPRESENTATIVE. NO SUBSTITUTIONS SHALL BE MADE WITHOUT WRITTEN PERMISSION FROM THE OWNER'S REPRESENTATIVE.
- b. MEASUREMENTS: THE HEIGHT AND/OR WIDTH OF TREES SHALL BE MEASURED FROM THE GROUND OR ACROSS THE NORMAL SPREAD OF BRANCHES WITH THE PLANTS IN THEIR NORMAL POSITION. THIS MEASUREMENT SHALL NOT INCLUDE THE IMMEDIATE TERMINAL GROWTH. PLANTS LARGER IN SIZE THAN THOSE SPECIFIED IN THE PLANT LIST MAY BE USED IF APPROVED BY THE OWNER. IF THE USE OF LARGER PLANTS IS APPROVED, THE BALL OF EARTH OR SPREAD OF ROOTS SHALL BE INCREASED IN PROPORTION TO THE SIZE OF THE PLANT.
- c. INSPECTION: PLANTS SHALL BE SUBJECT TO INSPECTION AND APPROVAL AT THE PLACE OF GROWTH, OR UPON DELIVERY TO THE SITE, AS DETERMINED BY THE OWNER, FOR QUALITY, SIZE, AND VARIETY. SUCH APPROVAL SHALL NOT IMPAIR THE RIGHT OF INSPECTION AND REJECTION AT THE SITE DURING PROGRESS OF THE WORK OR AFTER COMPLETION FOR SIZE AND CONDITION OF ROOT BALLS OR ROOTS, LATENT DEFECTS OR INJURIES. REJECTED PLANTS SHALL BE REMOVED IMMEDIATELY FROM THE SITE. NOTICE REQUESTING INSPECTION SHALL BE SUBMITTED IN WRITING BY THE CONTRACTOR AT LEAST ONE (1) WEEK PRIOR TO ANTICIPATED DATE.

# E. SOIL MIXTURE (PLANTING MEDIUM, PLANTING MIX, TOPSOIL MIX)

- 1. CONTRACTOR SHALL TEST EXISTING SOIL AND AMEND AS NECESSARY IN ACCORDANCE WITH THE GUIDELINES BELOW:
- SOIL MIXTURE (PLANTING MEDIUM FOR PLANT PITS) SHALL CONSIST OF TWO PARTS OF TOPSOIL AND ONE PART SAND, AS DESCRIBED BELOW. CONTRACTOR TO SUBMIT SAMPLES AND PH TESTING RESULTS OF SOIL MIXTURE FOR OWNER'S REPRESENTATIVE APPROVAL PRIOR TO PLANT INSTALLATION OPERATIONS COMMENCE.
- a. TOPSOIL FOR USE IN PREPARING SOIL MIXTURE FOR BACKFILLING PLANT PITS SHALL BE FERTILE, FRIABLE, AND OF A LOAMY CHARACTER; REASONABLY FREE OF SUBSOIL, CLAY LUMPS, BRUSH WEEDS AND OTHER LITTER; FREE OF ROOTS, STUMPS, STONES LARGER THAN 2" IN ANY DIRECTION, AND OTHER EXTRANEOUS OR TOXIC MATTER HARMFUL TO PLANT GROWTH. IT SHALL CONTAIN THREE (3) TO FIVE (5) PERCENT DECOMPOSED ORGANIC MATTER AND HAVE A PH BETWEEN 5.5 AND 7.0.
- b. SAND SHALL BE COARSE, CLEAN, WELL-DRAINING, NATIVE SAND.
- 2. TREES SHALL BE PLANTED IN THE EXISTING NATIVE SOIL ON SITE, UNLESS DETERMINED TO BE UNSUITABLE AT WHICH POINT THE CONTRACTOR SHALL CONTACT OWNER'S REPRESENTATIVE TO DISCUSS ALTERNATE RECOMMENDATION PRIOR TO PLANTING.

# F. WATER

1. WATER NECESSARY FOR PLANTING AND MAINTENANCE SHALL BE OF SATISFACTORY QUALITY TO SUSTAIN ADEQUATE PLANT GROWTH AND SHALL NOT CONTAIN HARMFUL, NATURAL OR MAN-MADE ELEMENTS DETRIMENTAL TO PLANTS. WATER MEETING THE ABOVE STANDARD SHALL BE OBTAINED ON THE SITE FROM THE OWNER, IF AVAILABLE, AND THE CONTRACTOR SHALL BE RESPONSIBLE TO MAKE ARRANGEMENTS FOR ITS USE BY HIS TANKS, HOSES, SPRINKLERS, ETC.... IF SUCH WATER IS NOT AVAILABLE AT THE SITE, THE CONTRACTOR SHALL PROVIDE SATISFACTORY WATER FROM SOURCES OFF THE SITE AT NO ADDITIONAL COST TO THE OWNER.

 $^st$  WATERING/IRRIGATION RESTRICTIONS MAY APPLY - REFER TO PROPERTY'S JURISDICTIONAL AUTHORITY.

# G. FERTILIZER

CONTRACTOR SHALL PROVIDE FERTILIZER APPLICATION SCHEDULE TO OWNER, AS APPLICABLE TO SOIL TYPE, PLANT INSTALLATION TYPE, AND SITE'S PROPOSED USE. SUGGESTED FERTILIZER TYPES SHALL BE ORGANIC OR OTHERWISE NATURALLY-DERIVED.

\* FERTILIZER RESTRICTIONS MAY APPLY - REFER TO PROPERTY'S JURISDICTIONAL AUTHORITY.

# H. MULCH

- 1. MULCH MATERIAL SHALL BE MOISTENED AT THE TIME OF APPLICATION TO PREVENT WIND DISPLACEMENT, AND APPLIED AT A DEPTH OF THREE (3) INCHES. CLEAR MULCH FROM EACH PLANT'S CROWN (BASE). MULCH SHALL BE "FLORIMULCH," EUCALYPTUS MULCH, OR SIMILAR SUSTAINABLY HARVESTED MULCH UNLESS SPECIFIED OTHERWISE.
- 2. PROVIDE A THREE (3) INCH MINIMUM LAYER OF SPECIFIED MULCH OVER THE ENTIRE AREA OF EACH SHRUB BED, GROUND COVER, VINE BED, AND TREE PIT (6' MINIMUM) PLANTED UNDER THIS CONTRACT.

# I. DIGGING AND HANDLING

- 1. PROTECT ROOTS OR ROOT BALLS OF PLANTS AT ALL TIMES FROM SUN, DRYING WINDS, WATER AND FREEZING, AS NECESSARY UNTIL PLANTING. PLANT MATERIALS SHALL BE ADEQUATELY PACKED TO PREVENT DAMAGE DURING TRANSIT. TREES TRANSPORTED MORE THAN TEN (10) MILES OR WHICH ARE NOT PLANTED WITHIN THREE (3) DAYS OF DELIVERY TO THE SITE SHALL BE SPRAYED WITH AN ANTITRANSPIRANT PRODUCT ("WILTPRUF" OR EQUAL) TO MINIMIZE TRANSPIRATIONAL WATER LOSS.
- 2. BALLED AND BURLAPPED (B&B), AND FIELD GROWN (FG) PLANTS SHALL BE DUG WITH FIRM, NATURAL BALLS OF SOIL OF SUFFICIENT SIZE TO ENCOMPASS THE FIBROUS AND FEEDING ROOTS OF THE PLANTS. NO PLANTS MOVED WITH A ROOT BALL SHALL BE PLANTED IF THE BALL IS CRACKED OR BROKEN. PLANTS SHALL NOT BE HANDLED BY STEMS.

- 3. PLANTS MARKED "BR" IN THE PLANT LIST SHALL BE DUG WITH BARE ROOTS. CARE SHALL BE EXERCISED THAT THE ROOTS DO NOT DRY OUT DURING TRANSPORTATION AND PRIOR TO PLANTING.
- 4. PROTECTION OF PALMS: ONLY A MINIMUM OF FRONDS SHALL BE REMOVED FROM THE CROWN OF THE PALM TREES TO FACILITATE MOVING AND HANDLING. CLEAR TRUNK (CT) SHALL BE AS SPECIFIED AFTER THE MINIMUM OF FRONDS HAVE BEEN REMOVED. ALL PALMS SHALL BE BRACED PER PALM PLANTING DETAIL.
- EXCAVATION OF TREE PITS SHALL BE PERFORMED USING EXTREME CARE TO AVOID DAMAGE TO SURFACE AND SUBSURFACE ELEMENTS SUCH AS UTILITIES OR HARDSCAPE ELEMENTS, FOOTERS AND PREPARED SUB-BASES.

#### CONTAINER GROWN STOCK

- ALL CONTAINER GROWN MATERIAL SHALL BE HEALTHY, VIGOROUS, WELL-ROOTED PLANTS ESTABLISHED IN THE CONTAINER IN WHICH THEY ARE SOLD. THE PLANTS SHALL HAVE TOPS WHICH ARE OF GOOD QUALITY AND ARE IN A HEALTHY GROWING CONDITION.
- 2. AN ESTABLISHED CONTAINER GRÖWN PLANT SHALL BE TRANSPLANTED INTO A CONTAINER AND GRÖWN IN THAT CONTAINER SUFFICIENTLY LONG ENOUGH FOR THE NEW FIBROUS ROOTS TO HAVE DEVELOPED SO THAT THE ROOT MASS WILL RETAIN ITS SHAPE AND HOLD TOGETHER WHEN REMOVED FROM THE CONTAINER. CONTAINER GROWN STOCK SHALL NOT BE HANDLED BY THEIR STEMS.
- 3. ROOT BOUND PLANTS ARE NOT ACCEPTABLE AND WILL BE REJECTED.
- 4. RPG= "ROOTS PLUS GROWER" CONTAINER PRODUCTS SHALL BE USED WHERE SPECIFIED.

#### K. COLLECTED STOCK

WHEN THE USE OF COLLECTED STOCK IS PERMITTED AS INDICATED BY THE OWNER OR OWNER'S REPRESENTATIVE, THE MINIMUM SIZES OF ROOTBALLS SHALL BE EQUAL TO THAT SPECIFIED FOR THE NEXT LARGER SIZE OF NURSERY GROWN STOCK OF THE SAME VARIETY.

#### L. NATIVE STOCK

PLANTS COLLECTED FROM WILD OR NATIVE STANDS SHALL BE CONSIDERED NURSERY GROWN WHEN THEY HAVE BEEN SUCCESSFULLY RE-ESTABLISHED IN A NURSERY ROW AND GROWN UNDER REGULAR NURSERY CULTURAL PRACTICES FOR A MINIMUM OF TWO (2) GROWING SEASONS AND HAVE ATTAINED ADEQUATE ROOT AND TOP GROWTH TO INDICATE FULL RECOVERY FROM TRANSPLANTING INTO THE NURSERY ROW.

#### M. MATERIALS LIST

QUANTITIES NECESSARY TO COMPLETE THE WORK ON THE DRAWINGS SHALL BE FURNISHED BY THE CONTRACTOR. QUANTITY ESTIMATES HAVE BEEN MADE CAREFULLY, BUT THE LANDSCAPE ARCHITECT OR OWNER ASSUMES NO LIABILITY FOR OMISSIONS OR ERRORS. SHOULD A DISCREPANCY OCCUR BETWEEN THE PLANS AND THE PLANT LIST QUANTITY, THE OWNER'S REPRESENTATIVE SHALL BE NOTIFIED FOR CLARIFICATION PRIOR TO BIDDING OR INSTALLATION. ALL DIMENSIONS AND/OR SIZES SPECIFIED SHALL BE THE MINIMUM ACCEPTABLE SIZE.

#### I. FINE GRADI

- FINE GRADING UNDER THIS CONTRACT SHALL CONSIST OF FINAL FINISHED GRADING OF LAWN AND PLANTING AREAS THAT HAVE BEEN ROUGH GRADED BY OTHERS. BERMING AS SHOWN ON THE DRAWINGS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR, UNLESS OTHERWISE
- 2. THE CONTRACTOR SHALL FINE GRADE THE LAWN AND PLANTING AREAS TO BRING THE ROUGH GRADE UP TO FINAL FINISHED GRADE ALLOWING FOR THICKNESS OF SOD AND/OR MULCH DEPTH. CONTRACTOR SHALL FINE GRADE BY HAND AND/OR WITH ALL EQUIPMENT NECESSARY

INCLUDING A GRADING TRACTOR WITH FRONT-END LOADER FOR TRANSPORTING SOIL WITHIN THE SITE.

3. ALL PLANTING AREAS SHALL BE GRADED AND MAINTAINED FOR POSITIVE DRAINAGE TO SURFACE/SUBSURFACE STORM DRAIN SYSTEMS. AREAS ADJACENT TO BUILDINGS SHALL SLOPE AWAY FROM THE BUILDINGS. REFER TO CIVIL ENGINEER'S PLANS FOR FINAL GRADES, IF APPLICABLE.

#### PLANTING PROCEDURES

- 1. CLEANING UP BEFORE COMMENCING WORK: THE CONTRACTOR SHALL CLEAN WORK AND SURROUNDING AREAS OF ALL RUBBISH OR OBJECTIONABLE MATTER DAILY. ALL MORTAR, CEMENT, AND TOXIC MATERIAL SHALL BE REMOVED FROM THE SURFACE OF ALL PLANT BEDS. THESE MATERIALS SHALL NOT BE MIXED WITH THE SOIL. SHOULD THE CONTRACTOR FIND SUCH SOIL CONDITIONS BENEATH THE SOIL WHICH WILL IN ANY WAY ADVERSELY AFFECT THE PLANT GROWTH, HE SHALL IMMEDIATELY CALL IT TO THE ATTENTION OF THE OWNER'S REPRESENTATIVE. FAILURE TO DO SO BEFORE PLANTING SHALL MAKE THE CORRECTIVE MEASURES THE RESPONSIBILITY OF THE CONTRACTOR.
- 2. VERIFY LOCATIONS OF ALL UTILITIES, CONDUITS, SUPPLY LINES AND CABLES, INCLUDING BUT NOT LIMITED TO: ELECTRIC, GAS (LINES AND TANKS), WATER, SANITARY SEWER, STORMWATER SYSTEMS, CABLE, AND TELEPHONE. PROPERLY MAINTAIN AND PROTECT EXISTING UTILITIES. CALL SUNSHINE STATE ONE CALL OF FLORIDA, INC. (811) TO LOCATE UTILITIES AT LEAST 48 HOURS PRIOR TO CONSTRUCTION.
- 3. SUBGRADE EXCAVATION: CONTRACTOR IS RESPONSIBLE TO REMOVE ALL EXISTING AND IMPORTED LIMEROCK AND LIMEROCK SUB-BASE FROM ALL LANDSCAPE PLANTING AREAS TO A MINIMUM DEPTH OF 36" OR TO NATIVE SOIL. CONTRACTOR IS RESPONSIBLE TO BACKFILL THESE PLANTING AREAS TO ROUGH FINISHED GRADE WITH CLEAN TOPSOIL FROM AN ON-SITE SOURCE OR AN IMPORTED SOURCE. IF LIMEROCK OR OTHER ADVERSE CONDITIONS OCCUR IN PLANTED AREAS AFTER 36" DEEP EXCAVATION BY THE CONTRACTOR, AND POSITIVE DRAINAGE CAN NOT BE ACHIEVED, CONTRACTOR SHALL UTILIZE POOR DRAINAGE CONDITION PLANTING DETAIL.
- FURNISH NURSERY'S CERTIFICATE OF COMPLIANCE WITH ALL REQUIREMENTS AS SPECIFIED HEREIN. INSPECT AND SELECT PLANT MATERIALS
  BEFORE PLANTS ARE DUG AT NURSERY OR GROWING SITE.
- COMPLY WITH APPLICABLE FEDERAL, STATE, COUNTY, AND LOCAL REGULATIONS GOVERNING LANDSCAPE MATERIALS AND WORK. CONFORM TO ACCEPTED HORTICULTURAL PRACTICES AS USED IN THE TRADE. UPON ARRIVAL AT THE SITE, PLANTS SHALL BE THOROUGHLY WATERED AND PROPERLY MAINTAINED UNTIL PLANTED. PLANTS STORED ONSITE SHALL NOT REMAIN UNPLANTED OR APPROPRIATELY HEALED IN FOR A PERIOD EXCEEDING TWENTY-FOUR (24) HOURS. AT ALL TIMES WORKMANLIKE METHODS CUSTOMARY IN GOOD HORTICULTURAL PRACTICES SHALL BE EXERCISED.
- 6. THE WORK SHALL BE COORDINATED WITH OTHER TRADES TO PREVENT CONFLICTS. COORDINATE PLANTING WITH IRRIGATION WORK TO ASSURE AVAILABILITY OF WATER AND PROPER LOCATION OF IRRIGATION APPURTENANCES AND PLANTS.
- ALL PLANTING PITS SHALL BE EXCAVATED TO SIZE AND DEPTH IN ACCORDANCE WITH THE USA STANDARD FOR NURSERY STOCK 260.1, UNLESS SHOWN OTHERWISE ON THE DRAWINGS, AND BACK FILLED WITH THE PREPARED PLANTING SOIL MIXTURE AS SPECIFIED IN SECTION E. TEST ALL TREE PITS WITH WATER BEFORE PLANTING TO ASSURE PROPER DRAINAGE PERCOLATION IS AVAILABLE. NO ALLOWANCE WILL BE MADE FOR LOST PLANTS DUE TO IMPROPER DRAINAGE. IF POOR DRAINAGE EXISTS, UTILIZE "POOR DRAINAGE CONDITION" PLANTING DETAIL. TREES SHALL BE SET PLUMB AND HELD IN POSITION UNTIL THE PLANTING MIXTURE HAS BEEN FLUSHED INTO PLACE WITH A SLOW, FULL HOSE STREAM. ALL PLANTING SHALL BE PERFORMED BY PERSONNEL FAMILIAR WITH PLANTING PROCEDURES AND UNDER THE SUPERVISION OF A QUALIFIED LANDSCAPE FOREMAN. PROPER "JETTING IN" SHALL BE ASSURED TO ELIMINATE AIR POCKETS AROUND THE ROOTS. "JET STICK" OR EQUAL IS RECOMMENDED.
- 8. TAKE ALL NECESSARY PRECAUTIONS TO AVOID DAMAGE TO BUILDINGS AND BUILDING STRUCTURES WHILE INSTALLING TREES.
- 9. SOIL MIXTURE SHALL BE AS SPECIFIED IN SECTION E OF THESE SPECIFICATIONS.
- 10. TREES AND SHRUBS SHALL BE SET STRAIGHT AT AN ELEVATION THAT, AFTER SETTLEMENT, THE PLANT CROWN WILL STAND ONE (1) TO TWO (2) INCHES ABOVE GRADE. EACH PLANT SHALL BE SET IN THE CENTER OF THE PIT. PLANTING SOIL MIXTURE SHALL BE BACK FILLED, THOROUGHLY TAMPED AROUND THE BALL, AND SETTLED BY WATER (AFTER TAMPING).
- 11. AMEND PINE AND OAK PLANT PITS WITH ECTOMYCORRHIZAL SOIL APPLICATION PER MANUFACTURER'S RECOMMENDATION. ALL OTHER PLANT PITS SHALL BE AMENDED WITH ENDOMYCORRHIZAL SOIL APPLICATION PER MANUFACTURER'S RECOMMENDATION. PROVIDE PRODUCT INFORMATION SUBMITTAL PRIOR TO INOCULATION.
- 12. FILL HOLE WITH SOIL MIXTURE, MAKING CERTAIN ALL SOIL IS SATURATED. TO DO THIS, FILL HOLE WITH WATER AND ALLOW TO SOAK MINIMUM TWENTY (20) MINUTES, STIRRING IF NECESSARY TO GET SOIL THOROUGHLY WET. PACK LIGHTLY WITH FEET, ADD MORE WET SOIL MIXTURE. DO NOT COVER TOP OF BALL WITH SOIL MIXTURE. ALL BURLAP, ROPE, WIRES, BASKETS, ETC.., SHALL BE REMOVED FROM THE SIDES AND TOPS OF BALLS, BUT NO BURLAP SHALL BE PULLED FROM UNDERNEATH.
- 13. TREES SHALL BE PRUNED, AT THE DIRECTION OF THE OWNER OR OWNER'S REPRESENTATIVE, TO PRESERVE THE NATURAL CHARACTER OF THE PLANT. ALL SOFT WOOD OR SUCKER GROWTH AND ALL BROKEN OR BADLY DAMAGED BRANCHES SHALL BE REMOVED WITH A CLEAN CUT. ALL PRUNING TO BE PERFORMED BY CERTIFIED ARBORIST, IN ACCORDANCE WITH ANSI A-300.
- 14. SHRUBS AND GROUND COVER PLANTS SHALL BE EVENLY SPACED IN ACCORDANCE WITH THE DRAWINGS AND AS INDICATED ON THE PLANT LIST. MATERIALS INSTALLED SHALL MEET MINIMUM SPECIMEN REQUIREMENTS OR QUANTITIES SHOW ON PLANS, WHICHEVER IS GREATER. CULTIVATE ALL PLANTING AREAS TO A MINIMUM DEPTH OF 6", REMOVE AND DISPOSE ALL DEBRIS. MIX TOP 4" THE PLANTING SOIL MIXTURE AS SPECIFIED IN SECTION E. THOROUGHLY WATER ALL PLANTS AFTER INSTALLATION.
   15. TREE GUYING AND BRACING SHALL BE INSTALLED BY THE CONTRACTOR IN ACCORDANCE WITH THE PLANS TO INSURE STABILITY AND MAINTAIN
- TREES IN AN UPRIGHT POSITION. IF THE CONTRACTOR AND OWNER DECIDE TO WAIVE THE TREE GUYING AND BRACING, THE OWNER SHALL NOTIFY THE PROJECT LANDSCAPE ARCHITECT IN WRITING AND AGREE TO INDEMNIFY AND HOLD HARMLESS THE PROJECT LANDSCAPE ARCHITECT IN THE EVENT UNSUPPORTED TREES PLANTED UNDER THIS CONTRACT FALL AND DAMAGE PERSON OR PROPERTY.
- 16. ALL PLANT BEDS SHALL BE KEPT FREE OF NOXIOUS WEEDS UNTIL FINAL ACCEPTANCE OF WORK. IF DIRECTED BY THE OWNER, "ROUND-UP" SHALL BE APPLIED FOR WEED CONTROL BY QUALIFIED PERSONNEL TO ALL PLANTING AREAS IN SPOT APPLICATIONS PER MANUFACTURER'S PRECAUTIONS AND SPECIFICATIONS. PRIOR TO FINAL INSPECTION, TREAT ALL PLANTING BEDS WITH AN APPROVED PRE-EMERGENT HERBICIDE AT AN APPLICATION RATE RECOMMENDED BY THE MANUFACTURER. (AS ALLOWED BY JURISDICTIONAL AUTHORITY)

# P. LAWN SODDING

- THE WORK CONSISTS OF LAWN BED PREPARATION, SOIL PREPARATION, AND SODDING COMPLETE, IN STRICT ACCORDANCE WITH THE SPECIFICATIONS AND THE APPLICABLE DRAWINGS TO PRODUCE A TURF GRASS LAWN ACCEPTABLE TO THE OWNER.
- 2. ALL AREAS THAT ARE TO BE SODDED SHALL BE CLEARED OF ANY ROUGH GRASS, WEEDS, AND DEBRIS BY MEANS OF A SOD CUTTER TO A DEPTH OF THREE (3) INCHES, AND THE GROUND BROUGHT TO AN EVEN GRADE. THE ENTIRE SURFACE SHALL BE ROLLED WITH A ROLLER WEIGHING NOT MORE THAN ONE-HUNDRED (100) POUNDS PER FOOT OF WIDTH. DURING THE ROLLING, ALL DEPRESSIONS CAUSED BY SETTLEMENT SHALL BE FILLED WITH ADDITIONAL SOIL, AND THE SURFACE SHALL BE REGRADED AND ROLLED UNTIL PRESENTING A SMOOTH AND EVEN FINISH TO THE REQUIRED GRADE.

3. PREPARE LOOSE BED FOUR (4) INCHES DEEP, HAND RAKE UNTIL ALL BUMPS AND DEPRESSIONS ARE REMOVED. WET PREPARED AREA THOROUGHLY.

#### 4 SODDING

- a. THE CONTRACTOR SHALL SOD ALL AREAS THAT ARE NOT PAVED OR PLANTED AS DESIGNATED ON THE DRAWINGS WITHIN THE CONTRACT LIMITS, UNLESS SPECIFICALLY NOTED OTHERWISE.
- b. THE SOD SHALL BE CERTIFIED TO MEET FLORIDA STATE PLANT BOARD SPECIFICATIONS, ABSOLUTELY TRUE TO VARIETAL TYPE, AND FREE FROM WEEDS, FUNGUS, INSECTS AND DISEASE OF ANY KIND.
- c. SOD PANELS SHALL BE LAID TIGHTLY TOGETHER SO AS TO MAKE A SOLID SODDED LAWN AREA. SOD SHALL BE LAID UNIFORMLY AGAINST THE EDGES OF ALL CURBS AND OTHER HARDSCAPE ELEMENTS, PAVED AND PLANTED AREAS. ADJACENT TO BUILDINGS, A 24 INCH STONE MULCH STRIP SHALL BE PROVIDED. IMMEDIATELY FOLLOWING SOD LAYING, THE LAWN AREAS SHALL BE ROLLED WITH A LAWN ROLLER CUSTOMARILY USED FOR SUCH PURPOSES, AND THEN THOROUGHLY IRRIGATED. IF, IN THE OPINION OF THE OWNER, TOP-DRESSING IS NECESSARY AFTER ROLLING TO FILL THE VOIDS BETWEEN THE SOD PANELS AND TO EVEN OUT INCONSISTENCIES IN THE SOD, CLEAN SAND, AS APPROVED BY THE OWNER'S REPRESENTATIVE, SHALL BE UNIFORMLY SPREAD OVER THE ENTIRE SURFACE OF THE SOD AND THOROUGHLY WATERED IN. FERTILIZE INSTALLED SOD AS ALLOWED BY PROPERTY'S JURISDICTIONAL AUTHORITY.
- 5. DURING DELIVERY, PRIOR TO, AND DURING THE PLANTING OF THE LAWN AREAS, THE SOD PANELS SHALL AT ALL TIMES BE PROTECTED FROM EXCESSIVE DRYING AND UNNECESSARY EXPOSURE OF THE ROOTS TO THE SUN. ALL SOD SHALL BE STACKED SO AS NOT TO BE DAMAGED BY SWEATING OR EXCESSIVE HEAT AND MOISTURE.

### 6. LAWN MAINTENANCE

- a. WITHIN THE CONTRACT LIMITS, THE CONTRACTOR SHALL PRODUCE A DENSE, WELL ESTABLISHED LAWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE REPAIR AND RE-SODDING OF ALL ERODED, SUNKEN OR BARE SPOTS (LARGER THAN 12"X12") UNTIL CERTIFICATION OF ACCEPTANCE BY THE OWNER'S REPRESENTATIVE. REPAIRED SODDING SHALL BE ACCOMPLISHED AS IN THE ORIGINAL WORK (INCLUDING REGRADING IF NECESSARY).
- b. CONTRACTOR RESPONSIBLE FOR ESTABLISHING AND MAINTAINING SOD/LAWN UNTIL ACCEPTANCE BY THE OWNER'S REPRESENTATIVE. PRIOR TO AND UPON ACCEPTANCE, CONTRACTOR TO PROVIDE WATERING/IRRIGATION SCHEDULE TO OWNER. OBSERVE ALL APPLICABLE WATERING RESTRICTIONS AS SET FORTH BY THE PROPERTY'S JURISDICTIONAL AUTHORITY.

#### O CLEANUR

UPON COMPLETION OF ALL PLANTING WORK AND BEFORE FINAL ACCEPTANCE, THE CONTRACTOR SHALL REMOVE ALL MATERIAL, EQUIPMENT, AND DEBRIS RESULTING FROM HIS WORK. ALL PAVED AREAS SHALL BE CLEANED AND THE SITE LEFT IN A NEAT AND ACCEPTABLE CONDITION AS APPROVED BY THE OWNER'S REPRESENTATIVE.

### R. PLANT MATERIAL MAINTENANCE

ALL PLANTS AND PLANTING INCLUDED UNDER THIS CONTRACT SHALL BE MAINTAINED BY WATERING, CULTIVATING, SPRAYING, AND ALL OTHER OPERATIONS (SUCH AS RE-STAKING OR REPAIRING GUY SUPPORTS) NECESSARY TO INSURE A HEALTHY PLANT CONDITION BY THE CONTRACTOR UNTIL CERTIFICATION OF ACCEPTANCE BY THE OWNER'S REPRESENTATIVE.

#### S. FINAL INSPECTION AND ACCEPTANCE OF WORK

FINAL INSPECTION AT THE END OF THE WARRANTY PERIOD SHALL BE ON PLANTING, CONSTRUCTION AND ALL OTHER INCIDENTAL WORK PERTAINING TO THIS CONTRACT. ANY REPLACEMENT AT THIS TIME SHALL BE SUBJECT TO THE SAME ONE (1) YEAR WARRANTY (OR AS SPECIFIED BY THE LANDSCAPE ARCHITECT OR OWNER IN WRITING) BEGINNING WITH THE TIME OF REPLACEMENT AND ENDING WITH THE SAME INSPECTION AND ACCEPTANCE HEREIN DESCRIBED.

#### WARRANTY

- 1. THE LIFE AND SATISFACTORY CONDITION OF ALL PLANT MATERIAL INSTALLED (INCLUDING SOD) BY THE LANDSCAPE CONTRACTOR SHALL BE WARRANTED BY THE CONTRACTOR FOR A MINIMUM OF ONE (1) CALENDAR YEAR COMMENCING AT THE TIME OF CERTIFICATION OF ACCEPTANCE BY THE OWNER'S REPRESENTATIVE.
- 2. ANY PLANT NOT FOUND IN A HEALTHY GROWING CONDITION AT THE END OF THE WARRANTY PERIOD SHALL BE REMOVED FROM THE SITE AND REPLACED AS SOON AS WEATHER CONDITIONS PERMIT. ALL REPLACEMENTS SHALL BE PLANTS OF THE SAME KIND AND SIZE AS SPECIFIED IN THE PLANT LIST. THEY SHALL BE FURNISHED PLANTED AND MULCHED AS SPECIFIED AT NO ADDITIONAL COST TO THE OWNER.
- 3. IN THE EVENT THE OWNER DOES NOT CONTRACT WITH THE CONTRACTOR FOR LANDSCAPE AND IRRIGATION MAINTENANCE, THE CONTRACTOR SHOULD VISIT THE PROJECT SITE PERIODICALLY DURING THE ONE (1) YEAR WARRANTY PERIOD TO EVALUATE MAINTENANCE PROCEDURES BEING PERFORMED BY THE OWNER. CONTRACTOR SHALL NOTIFY THE OWNER IN WRITING OF MAINTENANCE PROCEDURES OR CONDITIONS WHICH THREATEN VIGOROUS AND HEALTHY PLANT GROWTH. SITE VISITS SHALL BE CONDUCTED A MINIMUM OF ONCE PER MONTH FOR A PERIOD OF TWELVE (12) MONTHS FROM THE DATE OF ACCEPTANCE.

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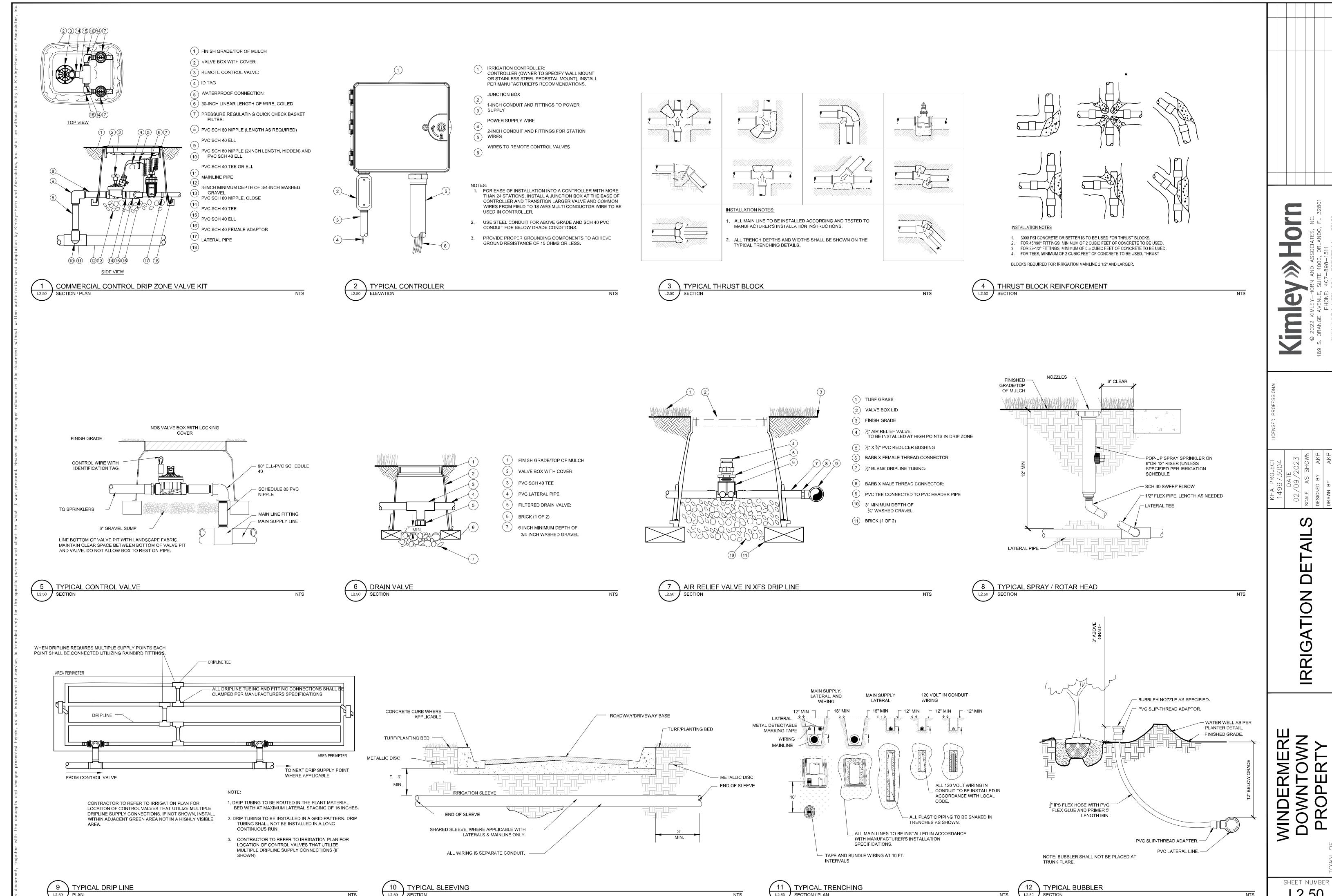
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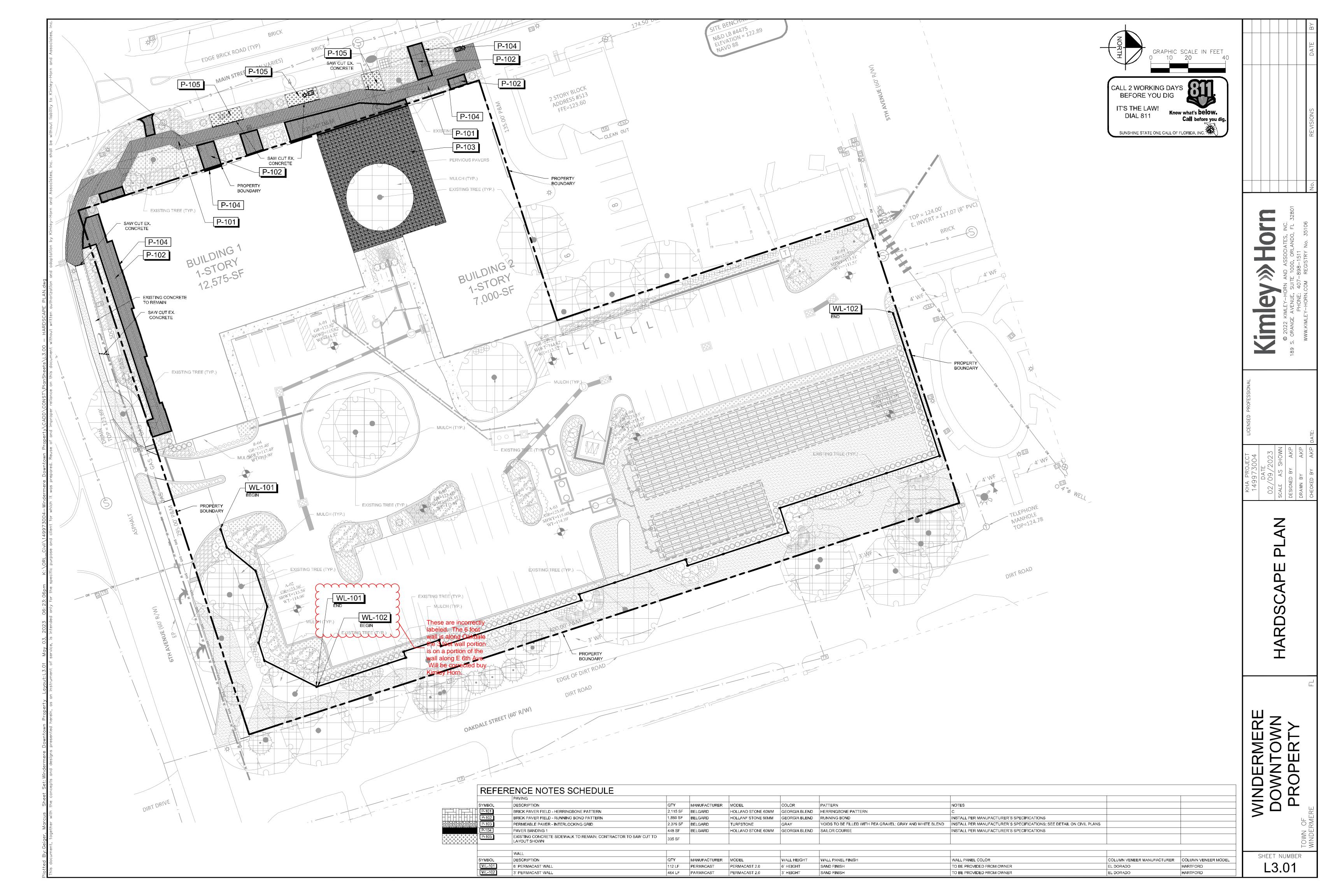
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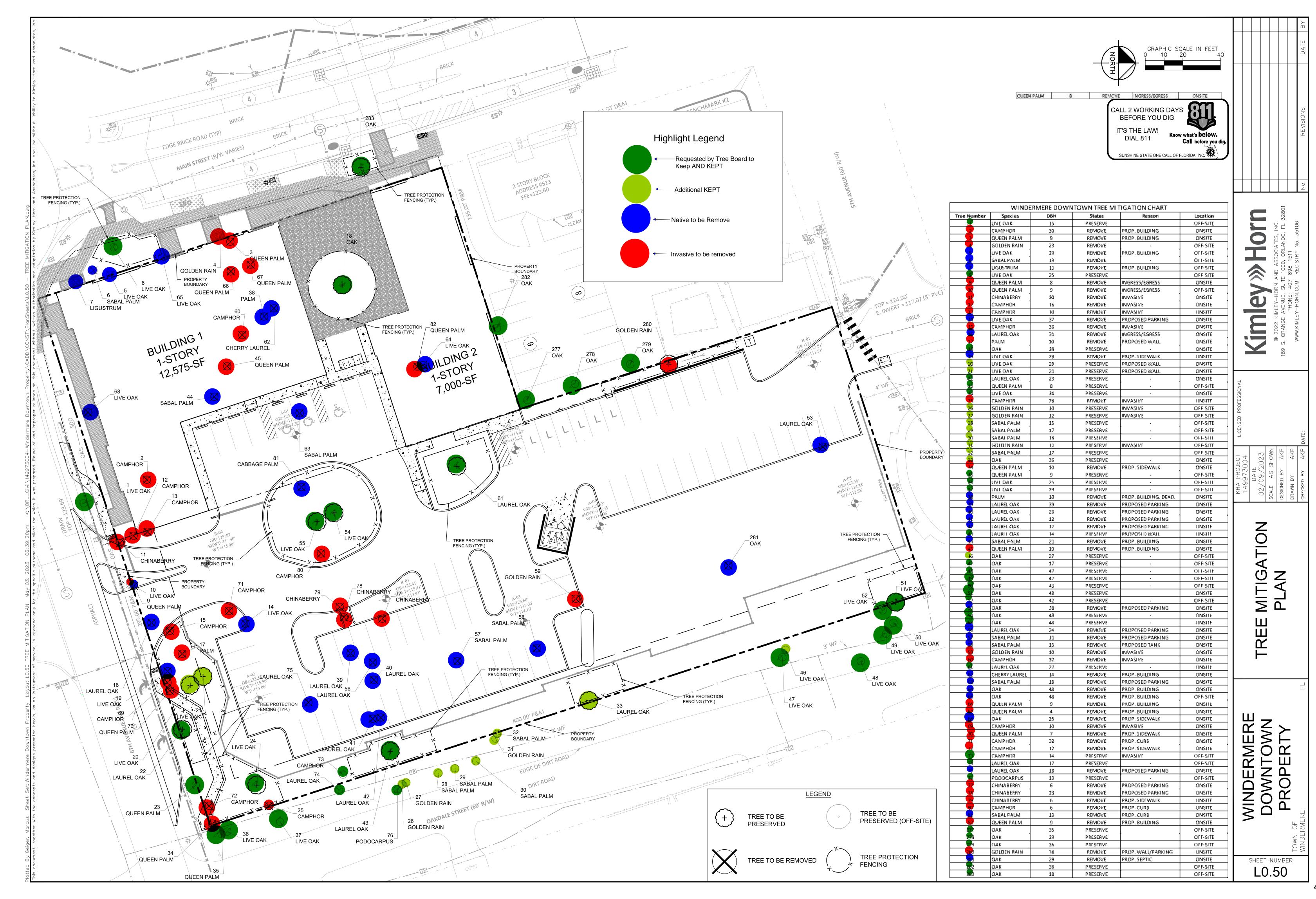
# IRRIGATION SYSTEM NOTES:

- 1. THE IRRIGATION MAINLINE LAYOUT IS DIAGRAMMATIC. ANY CHANGES MADE IN THE IRRIGATION MAINLINE DUE TO FIELD CONDITIONS OR CONTRACTOR'S SUBMITTED DESIGN SHALL BE IN ACCORDANCE WITH THESE STANDARDS.
- 2. SET SPRAY HEADS 6" AND ROTORS 12" IN FROM BACK OF CURB OR 24" IF PAVEMENT HAS NO CURB.
- IRRIGATION CONTRACTOR IS RESPONSIBLE FOR PERFORMING ALL NECESSARY MODIFICATIONS REQUIRED TO MEET THE SYSTEM AND IT SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR TO ZONE THE SYSTEM ACCORDINGLY BASED ON FLOW AND PRESSURE AVAILABLE. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE FOLLOWING BUT NOT LIMITED TO AVAILABLE FLOW, AVAILABLE PRESSURE, CONNECTION ASSEMBLY, CAPACITY OF THE SYSTEM.
- 4. CONTRACTOR TO PROVIDE NEW AUTOMATIC CONTROLLER FOR PROPOSED SYSTEM (NO BATTERY OPERATED CONTROLLERS ALLOWED). COORDINATE LOCATION WITH OWNER.
- 5. CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING AUTOMATIC RAIN SENSOR. COORDINATE LOCATION W/ OWNER.
- 6. IRRIGATION SHALL NOT BE COMBINED ON A SINGLE ZONE AND SHALL BE ZONED ACCORDING TO IRRIGATION TYPE, PRECIPITATION RATE, AND THE SYSTEM'S AVAILABLE WATER / PRESSURE. CONTRACTOR TO SUBMIT SHOP DRAWINGS TO OWNER FOR REVIEW PRIOR TO INSTALLATION.
- 7. VERIFY LOCATIONS OF ALL UNDERGROUND UTILITIES PRIOR TO INSTALLATION OF IRRIGATION SYSTEM. ALL UTILITIES AND STRUCTURES MAY NOT BE SHOWN ON THESE PLANS-CONTRACTOR SHALL FIELD VERIFY.
- 8. CONTRACTOR TO FIELD VERIFY ALL POINT OF CONNECTION SOURCE INFORMATION INCLUDING PSI AND GPM PRIOR TO CONSTRUCTION.
- 9. INSTALLATION OF WORK SHALL BE COORDINATED WITH OTHER CONTRACTORS IN SUCH A MANNER AS TO ALLOW FOR A SPEEDY AND ORDERLY COMPLETION OF ALL WORK ON-SITE.
- 10. CONTRACTOR SHALL COORDINATE WITH THE PLANTING PLAN FOR PLANTER BED AND TREE LOCATIONS TO ENSURE ALL PLANT MATERIAL IS COVERED BY 100% HEAD-TO-HEAD IRRIGATION.
- 11. CONTRACTOR SHALL PROVIDE "AS-BUILT" DRAWINGS OF THE FINAL INSTALLATION TO OWNER AT SUBSTANTIAL COMPLETION BEFORE RECEIVING FINAL PAYMENT.
- 12. PRODUCTS SHALL BE AS SPECIFIED OR APPROVED EQUAL.

# PRE-APPROVED MANUFACTURERS: 1. TORO

- 2. HUNTER RAINBIRD
- 13. IRRIGATION CONTRACTOR SHALL SECURE ANY AND ALL NECESSARY PERMITS FOR THE WORK PRIOR TO COMMENCEMENT OF HIS OPERATIONS ON-SITE. COPIES OF THE PERMITS SHALL BE SENT TO THE OWNER/GENERAL CONTRACTOR. WORK IN THE R.O.W. SHALL CONFORM TO THE STANDARDS AND SPECIFICATIONS OF LOCAL AND/OR STATE
- 14. LOCATE ALL IRRIGATION LINES WITHIN LANDSCAPED AREAS WHENEVER POSSIBLE. ALL LINES UNDER PAVEMENT MUST BE SLEEVED WITHIN SCH. 40 PVC 2x SIZE OF PIPE AND FREE OF STONES/DEBRIS. ALL VALVES SHALL BE LOCATED WITHIN LANDSCAPED AREAS.
- 15. MAINLINE SHALL NOT BE LOCATED WITHOUT PRIOR APPROVAL OF THE OWNER'S REPRESENTATIVE.
- 16. THE IRRIGATION CONTRACTOR SHALL BE DIRECTLY RESPONSIBLE FOR SLEEVING AND DIRECTIONAL BORES.
- 17. ALL SLEEVES UTILIZED BY THE IRRIGATION CONTRACTOR WHETHER INSTALLED BY HIM OR NOT, SHALL BE LOCATED ON THE "AS-BUILT" DRAWINGS. THE DEPTH BELOW FINISH GRADE, TO THE NEAREST FOOT OF EACH END OF THE SLEEVE SHALL BE NOTED AT EACH SLEEVE LOCATION ON THE "AS-BUILT" DRAWINGS. ALL SLEEVES ON PLAN FOR WALL PENETRATIONS AND UNDER SIDEWALKS SHALL BE SIZED TWO PIPE SIZES GREATER THAN THE PIPE IT CARRIES.
- 18. ALL PRESSURIZED MAINLINES AND LATERALS UNDER PAVEMENT SHALL BE WITHIN SCH. 40 PVC SLEEVES. WHERE ELECTRIC OR HYDRAULIC VALVE CONTROL LINES PASS THROUGH A SLEEVE WITH OTHER MAIN OR LATERAL LINES THEY SHALL BE CONTAINED WITHIN A SEPARATE, SMALLER CONDUIT.
- 19. NUMBER THE TOP OF ALL VALVE BOX LIDS WITH MINIMUM 1" HEIGHT BLACK LETTERS TO CORRESPOND TO AUTOMATIC AND GATE VALVE BOXES SHALL BE LABELED IN A SIMILAR MANNER WITH THE DESIGNATION "HB". LETTER OUTSIDE OF TIME CLOCK CABINETS TO CORRESPOND WITH IRRIGATION CLOCK
- 20. THE IRRIGATION CONTRACTOR SHALL INSTALL A COLOR CODED METAL DETECTABLE MARKING TAPE WHICH CLEARLY NOTES: "CAUTION: IRRIGATION LINE BURIED BELOW." THE TAPE SHALL BE INSTALLED THE FULL LENGTH OF THE IRRIGATION MAINLINE.
- 21. ELECTRIC SERVICE TO THE CONTROLLER SHALL BE PROVIDED BY THE GENERAL CONTRACTOR.
- 22. ALL 24 VAC WIRING FROM DECODER TO VALVE SHALL BE OF DIRECT BURIAL COPPER WIRE. MAXIMUM LENGTH OF WIRE FROM DECODER TO VALVE SHALL NOT EXCEED 400 FEET. AS FOLLOWS: CONTROL WIRES - #14
- 23. ALL VALVES, SPLICES WITHIN CONTROL LINES, AND QUICK COUPLERS SHALL BE LOCATED WITHIN NDS VALVE BOXES AS FOLLOWS: -RECTANGULAR 12"X17" HEAVY DUTY BOX. (PURPLE COVER FOR REUSE TO BE PROVIDED WHERE APPROPRIATE).
- 24. ALL IRRIGATION HEADS/DRIP TUBING SHALL BE LOCATED ONE (1) FOOT FROM BACK OF CURB WHEN NEXT TO A ROADWAY. (THIS SHALL NOT INCLUDE PARKING AREAS OR DRIVE AISLES)
- 25. HEADS, LATERALS, EMITTERS, AND VALVES ARE NOT SHOWN, BUT ARE NECESSARY FOR A FULLY FUNCTIONING IRRIGATION SYSTEM.
- 26. LOCATE ALL VALVES IN PLANTING BEDS WITH A MINIMUM OF 3'-0" FROM BACK OF CURB OR EDGE OF PAVEMENT, UNLESS OTHERWISE NOTED. PIPE SIZE CONNECTING MAINLINE TO SECTION LATERAL SHALL BE ONE (1) PIPE SIZE LARGER THAN VALVE SIZE. WHERE MAINLINES RUN PARALLEL TO PAVEMENT
- 27. IRRIGATION ZONES SHALL BE SEPARATED FOR HIGH AND LOW WATER USE REQUIREMENTS AND OPERATED ON DIFFERENT VALVES. AT NO TIME SHALL MULTIPLE IRRIGATION HEAD TYPES BE LOCATED ON THE SAME VALVE.
- 28. ALL DRIP ZONES SHALL BE INSTALLED WITH A FLUSH VALVE AND AIR RELIEF VALVE. IN THE EVENT THAT A DRIP ZONE HAS MORE THAN ONE HIGH OR LOW POINT, MORE THAN ONE AIR RELIEF VALVE OR FLUSH VALVE WILL BE REQUIRED FOR THAT ZONE. DRIPLINE SHALL PROVIDE 0.9 GPH EMITTERS, 12" O.C. WITH 12" LINE SPACING AT A MINIMUM.
- 29. ALL WIRING FOR CONNECTION OF THE VALVES TO THE CONTROLLER SHALL BE TWISTED PAIR 18 AWG. ELECTRIC CONTROL LINES FROM THE DECODER TO THE SOLENOID VALVES SHALL BE TWISTED PAIR 18 AWG. ALL DECODERS SHALL BE GROUNDED EVERY 1,000 L.F. OR EVERY 10 DEVICES. ALL WIRE SHALL BE FURNISHED IN MINIMUM 2,500' REELS AND SPLICING SHALL BE MINIMIZED. BURY SPLICE KIT. ALL 24 VOLT WIRING SHALL BE MINIMIZED. BURY SPLICE KIT. ALL 24 VOLT WIRING SHALL BE MINIMIZED. BURY SPLICE KIT. ALL 24 VOLT WIRING SHALL BE MINIMIZED. BURY SPLICE KIT. ALL 24 VOLT WIRING SHALL BE MINIMIZED. BURY SPLICE KIT. ALL 24 VOLT WIRING SHALL BE MINIMIZED. BURY SPLICE KIT. ALL 24 VOLT WIRING SHALL BE IN VALVE BOXES OR CONTROLLERS ONLY. IRRIGATION SYSTEM SHALL BE TWO WIRE PATH. CONTRACTOR SHALL FOLLOW ALL MANUFACTURER'S REQUIREMENTS FOR THIS INSTALLATION. TWO WIRE SYSTEM SHALL HAVE 2-WAY COMMUNICATIONS FIELD PROGRAMMABILITY, STATION SPECIFICATIONS AND INTEGRATED SURGE PROTECTION.
- 30. ALL CONTROL WIRE SHALL BE INSTALLED IN A 1 4" ELECTRICAL CONDUIT.
- 31. SMALLEST DIAMETER LATERAL PIPE SHALL BE 3/4".
- 32. IRRIGATION SYSTEM SHALL BE CAPABLE OF SUPPLYING AN AVERAGE OF 1.05" OF WATER PER WEEK WITHIN WATERING RESTRICTIONS AS APPLICABLE.
- 33. IRRIGATION SYSTEM SHALL NOT BE INSTALLED THROUGH EXISTING, OR PRESERVED PLANT COMMUNITIES. DO NOT TRENCH THROUGH EXISTING ROOT SYSTEMS OF ANY VEGETATION INTENDED TO BE PRESERVED.
- 34. CONTRACTOR TO MINIMIZE IRRIGATION OVERTHROW TO IMPERVIOUS AND NATURAL AREAS THROUGH FIELD ADJUSTMENTS TO INDIVIDUAL HEADS.
- 35. ALL AREAS DISTURBED DURING CONSTRUCTION SHALL BE RESTORED BY THE CONTRACTOR TO THE CONDITION DENOTED ON THE LANDSCAPE PLAN.
- 36. IRRIGATION PIPING INSTALLED UNDER ROADS AND SIDEWALKS SHALL BE IN SCHEDULE 40 PVC SLEEVING AT 2X THE PIPE SIZE. ALL SLEEVING SHALL BE FREE OF STONES AND DEBRIS.
- 37. IRRIGATION SOURCE TO BE EITHER WELL, POTABLE, OR NON-POTABLE WATER. IRRIGATION CONTRACTOR TO VERIFY SOURCE PRIOR TO DESIGN.
- 38. POINT OF CONNECTION TO BE DETERMINED BY OWNER. IRRIGATION SYSTEM CONNECTIONS TO THE LOCAL JURISDICTION SERVICE SHALL COMPLY WITH ALL APPLICABLE CODES.
- 39. IRRIGATION CONNECTION MAY REQUIRE BACKFLOW PREVENTION, VERIFY WITH LOCAL JURISDICTION.
- 40. IRRIGATION SYSTEM SHALL COMPLY WITH THE LOCAL JURISDICTION LAND DEVELOPMENT CODE.



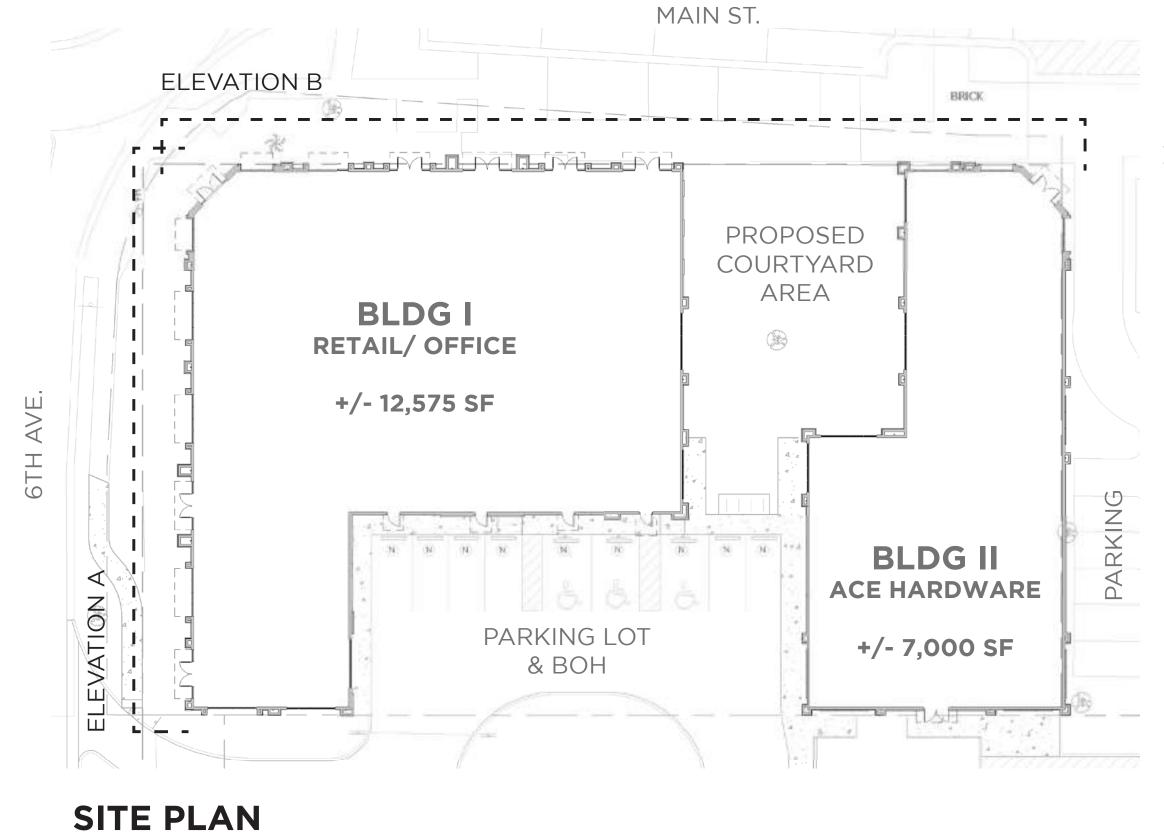








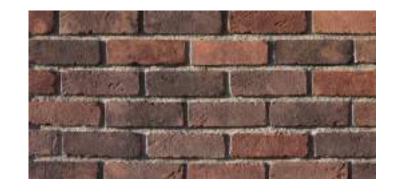
**ELEVATION B - BLDG I - FROM 6TH AVE.** 





**ELEVATION A - BLDG I & II - FROM MAIN ST.** 

- SW 7005 **PURE WHITE** MAIN PAINT COLOR
- SW 7672 **KNITTING NEEDLES** ACCENT COLOR
- **EL DORADO HARTFORD** BRICK VENEER



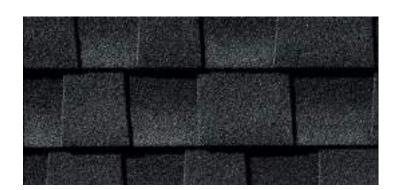
**EL DORADO DOVETAIL** STONE VENEER



**SUNBRELLA BLACK** AWNING FABRIC



**GAF TIMBERLINE HDZ CHARCOAL** ROOF SHINGLES



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Drawn By:

DRC-02 **2023** . **MAY** . **(42** 



# BLDG I & II - NORT-EAST ELEVATION SHOWING BOH - FROM PARKING LOT



BLDG | RETAIL/ OFFICE - NORTH-WEST ELEVATION - FROM COURTYARD AREA



BLDG II ACE HARDWARE - NORTH-WEST ELEVATION FROM PARKING LOT



BLDG II ACE HARDWARE - SOUTH-EAST ELEVATION - FROM COURTYARD AREA

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Drawn By: PG, RB, SC

Reviewed By: RB, LC

DRC-03 2023 . MAY . (43



SOUTH CORNER 3D PERSPECTIVE VIEW - FROM CORNER OF MAIN ST. AND 6TH AVE.



WEST CORNER 3D PERSPECTIVE VIEW - FROM MAIN ST.

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DRC-04 **2023** . **MAY** . **(44** 





EAST CORNER 3D PERSPECTIVE VIEW - FROM 6TH AVE.



NORTH CORNER 3D PERSPECTIVE VIEW - FROM PARKING LOT

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COURTYARD 3D PERSPECTIVE VIEW - FROM MAIN ST.

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# **CONCEPT IMAGES**



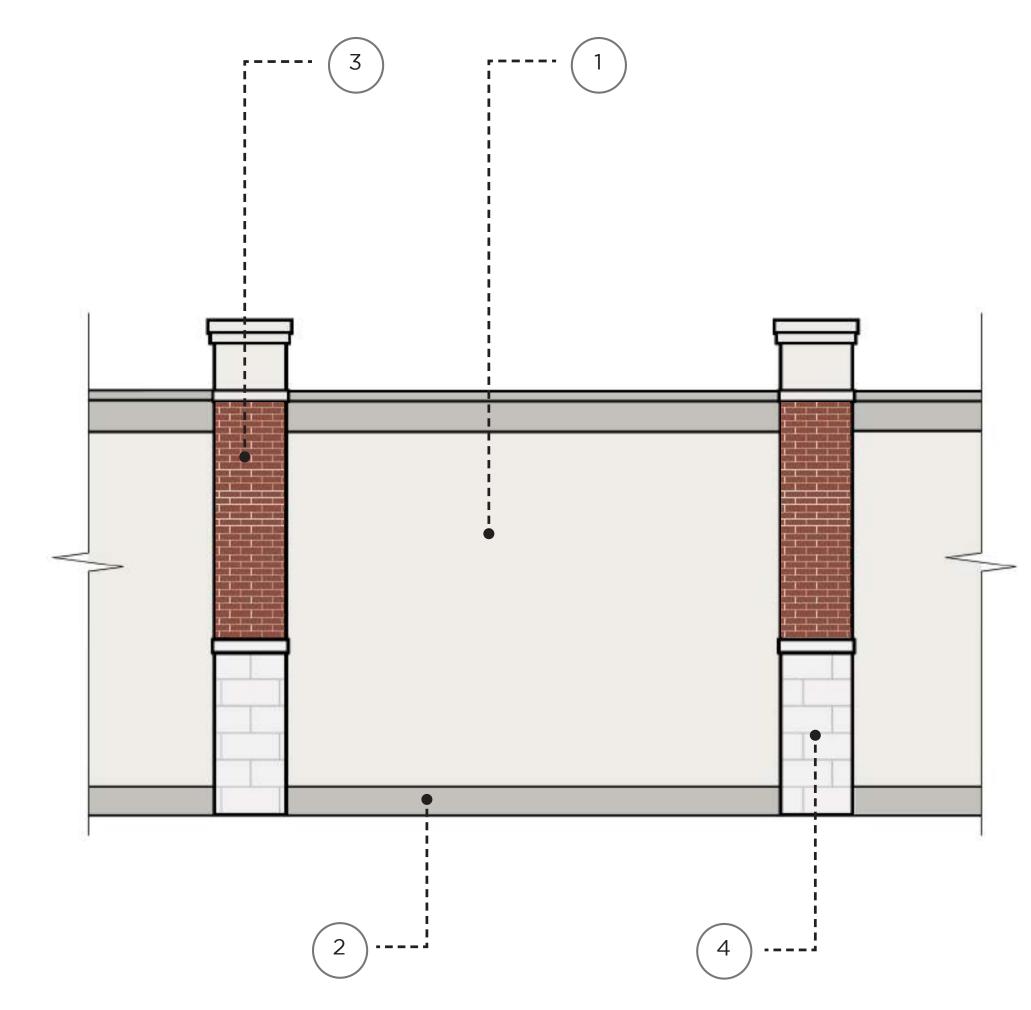
MATERIAL CHOICES AND ARCHITECTURAL ELEMENTS PER DESIGN GUIDELINES (ELEVATION 'B' SHOWN FOR REFERENCE)

517-527 MAIN ST, WINDERMERE, FL 34786 SCOTT + CORMIA Architecture and Interiors, LLC

DRC-07 **2023** . **MAY** . **(47** 



**ENLARGED BUILDING ELEVATION - CORNER DESIGN AND MATERIALS** 

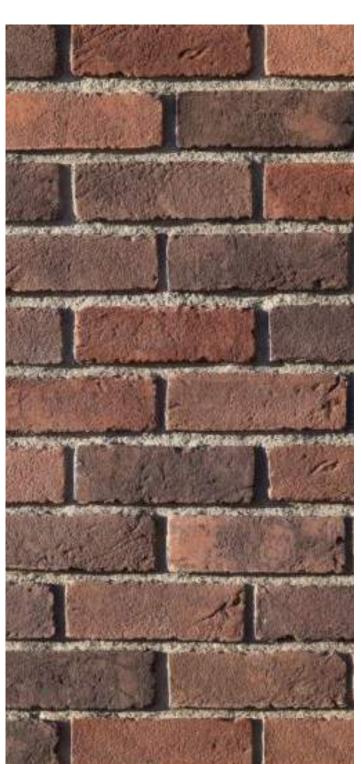


SITE WALL ELEVATION - FOR ILLUSTRATIVE PURPOSES





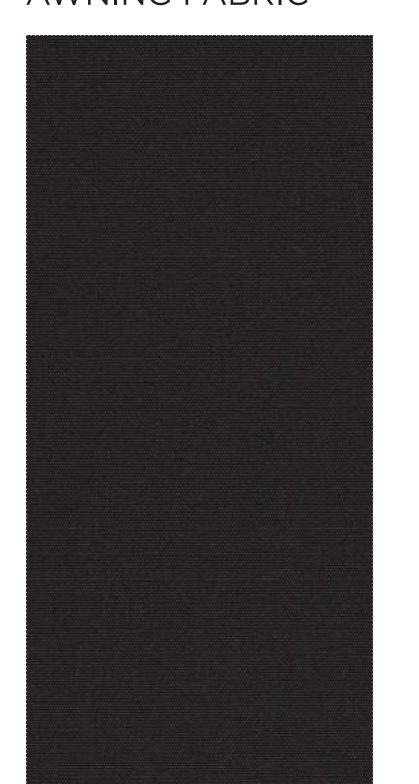




4 EL DORADO DOVETAIL STONE VENEER



5 SUNBRELLA BLACK AWNING FABRIC

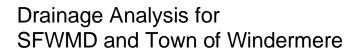


6 GAF TIMBERLINE HDZ CHARCOAL ROOF SHINGLES



517-527 MAIN ST, WINDERMERE, FL 34786 SCOTT + CORMIA Architecture and Interiors, LLC FL#: AA26002980 429 South Keller Road Ste 200 Orlando, Florida 32810 407.660.2766 scottcormia.com

Drawn By: PG, RB, S
Reviewed By: RB, Lo



# Windermere Downtown Property

Town of Windermere, FL

Prepared by:

Kimley-Horn and Associates, Inc. Orlando, Florida

K-H Project No. 149973004

February 2023



# Drainage Analysis for SFWMD and Town of Windermere

# Windermere Downtown Property

Town of Windermere, FL

Prepared for:

Windermere Downtown Property, LLC

Prepared by:

**Kimley-Horn and Associates, Inc. Orlando, Florida** 

K-H Project No. 149973004

February 2023

Marcus I. Geiger, P.E. FL P.E. # 89199

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#### 1 SUMMARY

The Windermere Downtown Property project proposes the development of a 2.17-acre property for commercial purposes. The proposed project is located at the northeast corner of East 6<sup>th</sup> Avenue and Main Street in the Town of Windermere, Florida. In **Appendix A**, the limits of the project have been superimposed on a general location map, an aerial photograph, the USGS Quad map, and the FEMA Flood Insurance Rate Map (FIRM).

Stormwater runoff from the proposed development will be managed by an underground exfiltration system located within the parking lot and drive aisles of the site. The BMPs will provide treatment (quality) volume and attenuation (quantity) volume for the proposed development.

The proposed stormwater management system has been designed to meet or exceed all the requirements of South Florida Water Management District (SFWMD) and the Town of Windermere, FL.

#### **2 EXISTING CONDITIONS**

The existing property has minimal development with three (3) existing buildings along Main St. and two (2) single family homes along Oakdale. No wetlands exist on site. No existing stormwater treatment is provided on site.

Based on the topographic survey, the site slopes northwest. Elevations vary between ±124.63-ft along E. 6<sup>th</sup> Ave. and 121.30-ft (NAVD88) near the northwest property limits. Per the FEMA FIRM (Map Number 12095C0385F dated Sept. 25, 2009) located in Appendix A, the site is located in 'Zone X,' "Areas determined to be outside the 0.2% (500-year) annual chance floodplain".

#### 2.1 SOILS

ECS Florida, LLC (ECS) performed a subsurface exploration and geotechnical engineering report for the proposed site. Please refer to the Geotechnical Engineering Report(s) prepared by ECS, dated May 27, 2022. Additionally, the SCS Soil Survey for the proposed site can be found in **Appendix A**.

#### 2.2 GROUNDWATER

The groundwater levels were investigated and determined by Terracon and were included as part of their Geotechnical Engineering Report(s). Please refer to the Geotechnical Engineering Report(s) prepared by Terracon, dated May 27,2022.

Stormwater Management Area	Boring Label	Existing Conditions Natural Ground (ft.) (NAVD)	Measured Groundwater Approx. Elevation (ft.) (NAVD)	Estimated SHWT (ft.) (NAVD)	Control Elevation Used (ft.) (NAVD)
	A-02	123.56	114.06	115.56	
Basin A	A-03	123.60	114.10	115.60	115.50
	R-03	123.41	113.91	115.41	
	R-01	121.51	>111.51	113.51	
Basin B	A-04	123.53	114.03	115.53	114.50
	R-02	122.82	113.32	114.82	

#### 2.3 EXISTING DRAINAGE

The existing undeveloped property contains no stormwater BMPs for onsite stormwater. The site is broken up into two (2) basins. Basin A (0.17-acres) is located at the southern edge of the site along E 6<sup>th</sup> Ave. and drains directly offsite into drainage inlets along E. 6<sup>th</sup> Avenue. Basin B (2.0-acres) is the majority of the site and drains northwest towards 5<sup>th</sup> Avenue. Runoff from Basin B is collected in drainage inlets along E. 5<sup>th</sup> Avenue. Site discharges from the property entering the inlets along E. 6<sup>th</sup> Ave. and E. 5<sup>th</sup> Ave. will enter the master drainage system originally permitted under SFWMD Permit No. 040701-24.

Please also refer to the USGS Quad Map in Appendix A and the Pre-Development Basin Map located in **Appendix B**.

#### **2.3.1 BASINS**

Existing site conditions consist of two (2) basin. Basin-A is a 0.17 acre basin at the south side of the site along E. 6<sup>th</sup> Avenue. Basin-B is a 2.0 acre basin that drains northwest to E. 5<sup>th</sup> Avenue. The table below provides the existing basin characteristics used to model existing conditions. Please refer to **Appendix A** for an exhibit showing location of basins under existing conditions.

	Basin A	Basin B
Drainage Basin Area (acres)	0.17	2.00
Time of Conc., TC (min.)	10	31
Composite Curve Number, CN	63.6	49.3
Node	South Outfall	North Outfall

Table 1:Existing Pre-Development Basin Summary Table

#### 2.3.2 CN CALCULATIONS

CN values for the proposed property are based on the USGS values associated with the existing condition soils. See **Appendix B** for the associated drainage calculations and **Appendix D** for the modeling.

#### 2.3.3 TIME OF CONCENTRATION

Time of concentration for Basin B has been calculated and included in

**Appendix B.** Due to the small size of Basin A, the time of concentration for this basin has been assumed to be the minimum 10-minute value based on TR-55 guidance.

#### 2.3.4 TAILWATER CONDITION

The tailwater conditions for the boundary outfalls are based on the existing grades in the area the site ultimately outfalls. The associated tailwater grades are based on the topographic survey grades provided by Accuright Surveys of Orlando, Inc. dated March 17, 2021.

#### 2.3.5 EXISTING DEVELOPMENT RUNOFF

The stormwater runoff from the pre-development basins was determined using Advanced Interconnected Channel & Pond Routing (ICPR v4.07.08) by Streamline Technologies, Inc. Please refer to **Appendix D** for the ICPR predevelopment input data and drainage analysis results.

#### 3 PROPOSED DEVELOPMENT

The Windermere Downtown Property project proposes the development of a 2.17-acre property for commercial purposes. Stormwater runoff from the proposed development will be managed by an underground exfiltration system located within the parking lot and drive aisles of the site. The BMPs will provide treatment (quality) volume and attenuation (quantity) volume for the proposed development. The proposed stormwater management system has been designed to meet or exceed all the requirements of South Florida Water Management District (SFWMD) and the Town of Windermere, FL.

#### 3.1 STORMWATER MANAGEMENT

The proposed site is broken into two (2) basins, "Basin-A" and "Basin-B". All stormwater within Basin-A drains into the Basin-A exfiltration trench system. All stormwater within Basin-B drains into the Basin-B exfiltration trench system. Exfiltration trenches A and B are interconnected to provide a combined treatment and attenuation volume.

The tables below summarize the parameters of the proposed exfiltration trenches and the control structure utilized in the stormwater design.

#### **3.1.1 BASINS**

The post-development drainage conditions were analyzed with multiple drainage basins. Please refer to *Table 2* below for the post-development contributing basin summary, and the Post-Development Drainage Basin Map located in **Appendix C** for details.

	Basin-A	Basin-B
Drainage Basin Area (acres)	1.738	0.694
Total Impervious Area (acres)	1.029	0.265
% Impervious	59.2%	38.2%
Time of Conc., TC (min.)	10	10
Composite Curve Number, CN	73.9	61.5
Node	Basin-A	Basin-B

Table 2: Proposed POST-Development Basin Summary Table

#### 3.1.2 CN CALCULATIONS

A summary of the basin areas and associated CN numbers can be found in *Table 2* above. The CN calculations for the post-development conditions can be seen in **Appendix C**.

#### 3.1.3 TIME OF CONCENTRATION

The time of concentration ('Tc') for the improved post-development drainage basins were established at 10 minutes. Please refer to the Post-Development Drainage Basin Map in **Appendix C**.

#### 3.1.4 TAILWATER CONDITIONS

The tailwater conditions for the post-development condition are the same as the pre-development condition. Please refer to Section 2.3.4.

#### 3.1.5 WATER QUALITY (TREATMENT) VOLUME (PER SFWMD)

Multiple stormwater systems will be utilized for the Best Management Practice (BMP) to reduce the discharge of pollutants associated with stormwater runoff from the development. The following standards are the water quality volume requirements per SFWMD ERP Applicants Handbook, Volume II, Section 4.2.1:

The Greater of:

0.5" of runoff over the Basin

1.25" times the percentage of Impervious Area

#### **PLUS**

Additional 50% water quality treatment volume (for Impaired water body)

See *Table 3* below for a summary of the required and provided retention water quality (treatment) volumes. Please see **Appendix D** for water quality volume calculations.

Table 3: Required Wet Pond Treatment Volumes

		Imp. Area	Required Water Quality Volume			е	***Provided
Drainage Area	Drainage Area (acres)	for Water Quality (acres)	0.5" Over Site	1.25" Over Impervious Area	50% Add. Impaired	Total Required	Water Quality Volume
BASIN-A	1.738	0.709	0.07 ac-ft	0.10 ac-ft	0.05 ac-ft	0.15 ac-ft	0.56 ac-ft
BASIN-B	0.694	0.265	0.03 ac-ft	0.03 ac-ft	0.01 ac-ft	0.04 ac-ft	0.17 ac-ft

#### 3.1.6 WATER QUALITY VOLUME RECOVERY

Per SFWMD criteria, the exfiltration trenches are required to recover the treatment volume within 72 hours (3 days) following a storm event.

*Table 4* below provides the Kh and Kv values used to model the recovery within the exfiltration trenches. A safety factor of 2.0 has been applied to the  $K_h$  &  $K_v$  rates. Any fill used to bring the system to the design elevation will be required to have these permeability rates.

Table 4: Permeability Rates

Node Name	K (Horizontal)*	K (Vertical)*					
	ft/day	ft/day					
Basin A	10.65	7.1					
Basin B	10.65	7.1					

<sup>\*</sup>Value includes safety factor of 2

Recovery was determined utilizing ICPR (v4.07.08). As designed, the exfiltration trenches drawdown the required volume in less than 72 hours. Please see **Appendix E** for supporting recovery analysis and results.

#### 3.1.7 PROPOSED DEVELOPMENT RUNOFF

The stormwater runoff from the post-development basins was determined using ICPR (v4.07.08) by Streamline Technologies, Inc. Please refer to **Appendix C** for the post-development drainage analysis results, input data, and nodal diagram. Please refer to *Table 5* below for a summary of the pre- vs. post- development peak discharge rates (Q).

Table 5: Peak Discharge Summary

	Pre-Development North Outfall Q <sub>max</sub> (CFS)	Post-Development North Outfall Q <sub>max</sub> (CFS)
25yr-72hr Storm Event	2.89	2.64

Table 6: Pond Maximum Stage Summary

Storm Event	Basin A Max Stage (ft.) (NAVD)	Basin B Max Stage (ft.) (NAVD)
10yr-24hr	121.51	121.51
25yr-72hr	122.79	122.76
100yr-72hr	123.33	123.01
Top of Trench/Pavers	123.25	120.00

#### 3.1 CONCLUSION

This Drainage Analysis demonstrates the proposed improvements and design of the proposed stormwater management system meet or exceeds all the requirements of the South Florida Water Management District (SFWMD) and the Town of Windermere.

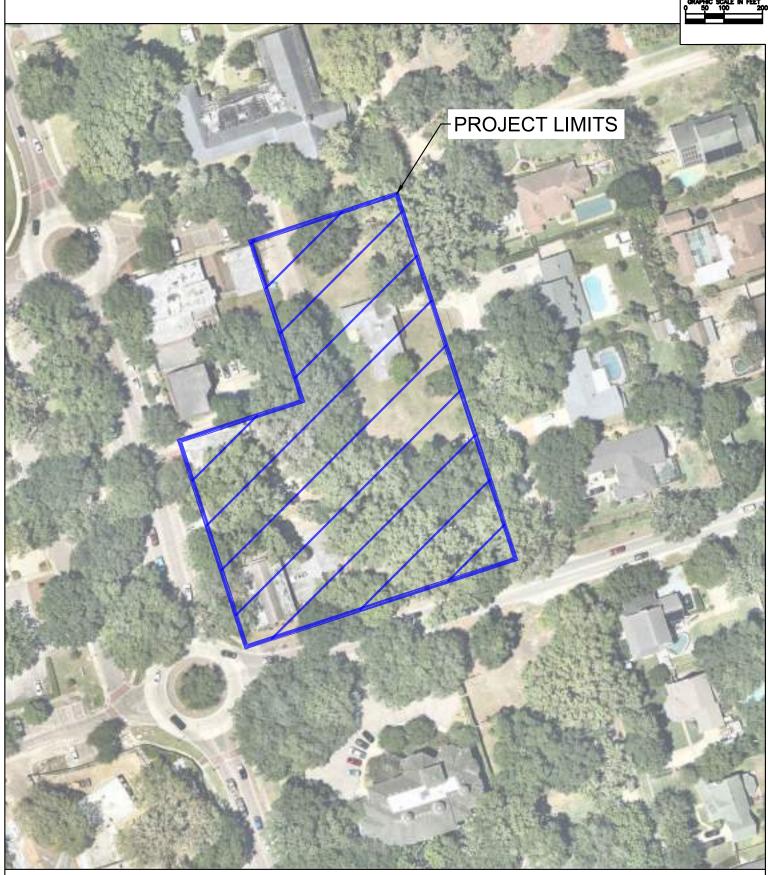
### **APPENDICES**

VICINITY MAPS	APPENDIX A
General Location Map Aerial Photograph USGS Quad Map FEMA F.I.R.M. SCS SOIL SURVEY	
PRE - DEVELOPMENT DRAINAGE BASIN MAP & CALCULATIONS	APPENDIX E
POST - DEVELOPMENT DRAINAGE BASIN MAP & CALCULATIONS	APPENDIX C
DRAINAGE ANALYSIS per ICPR	APPENDIX D
PRE-DEVELOPMENT POST-DEVELOPMENT	
DRAWDOWN (RECOVERY) ANALYSIS per PONDS	APPENDIX E

# **APPENDIX A**

# **PROJECT MAPS**

- General Location Map
- Aerial Photograph
- USGS Quad Map
- FEMA F.I.R.M.
- SCS SOIL MAP



EX-1

WINDERMERE DOWNTOWN PROPERTY

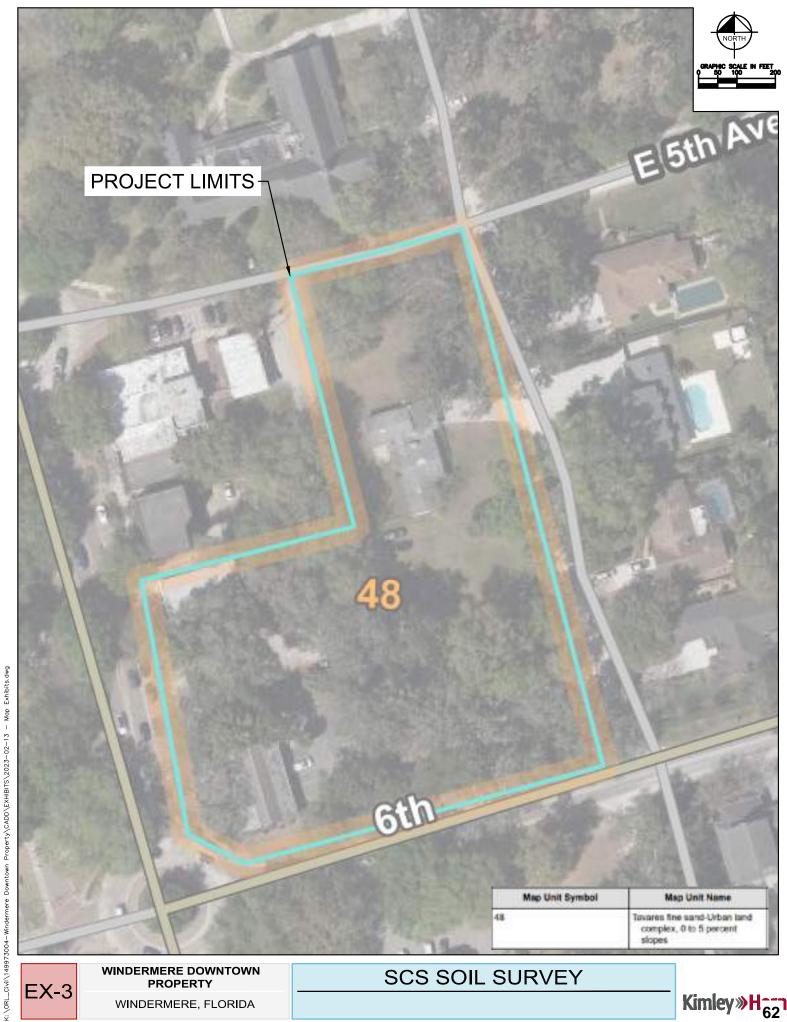
**AERIAL MAP** 



EX-2

WINDERMERE, FLORIDA



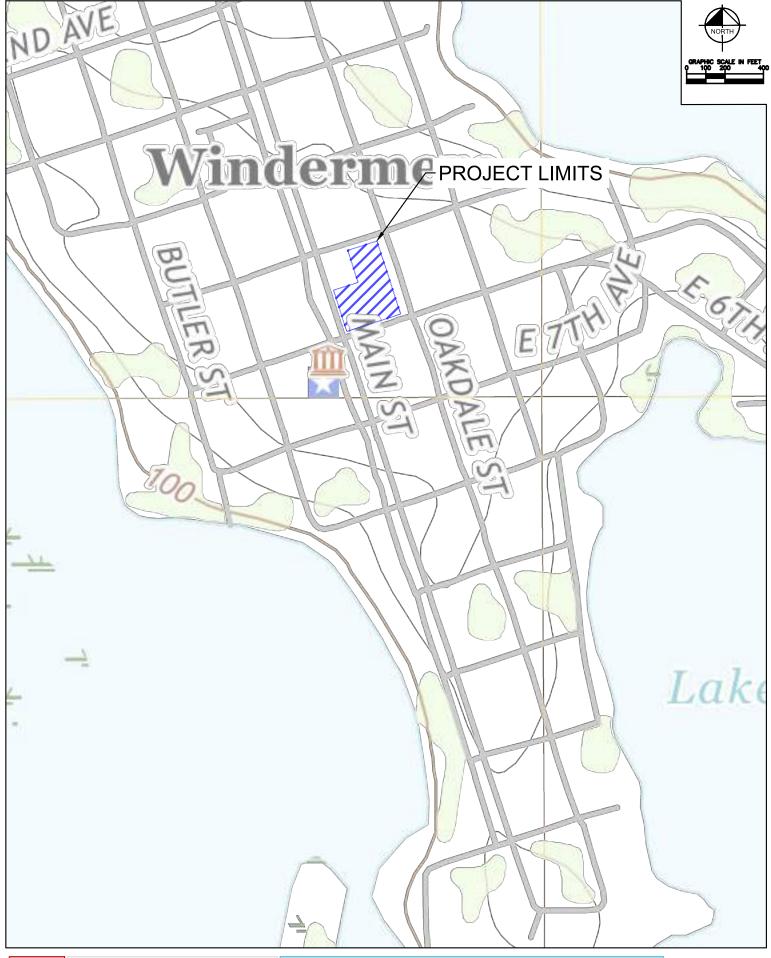


WINDERMERE DOWNTOWN **PROPERTY** 

WINDERMERE, FLORIDA

SCS SOIL SURVEY





EX-4

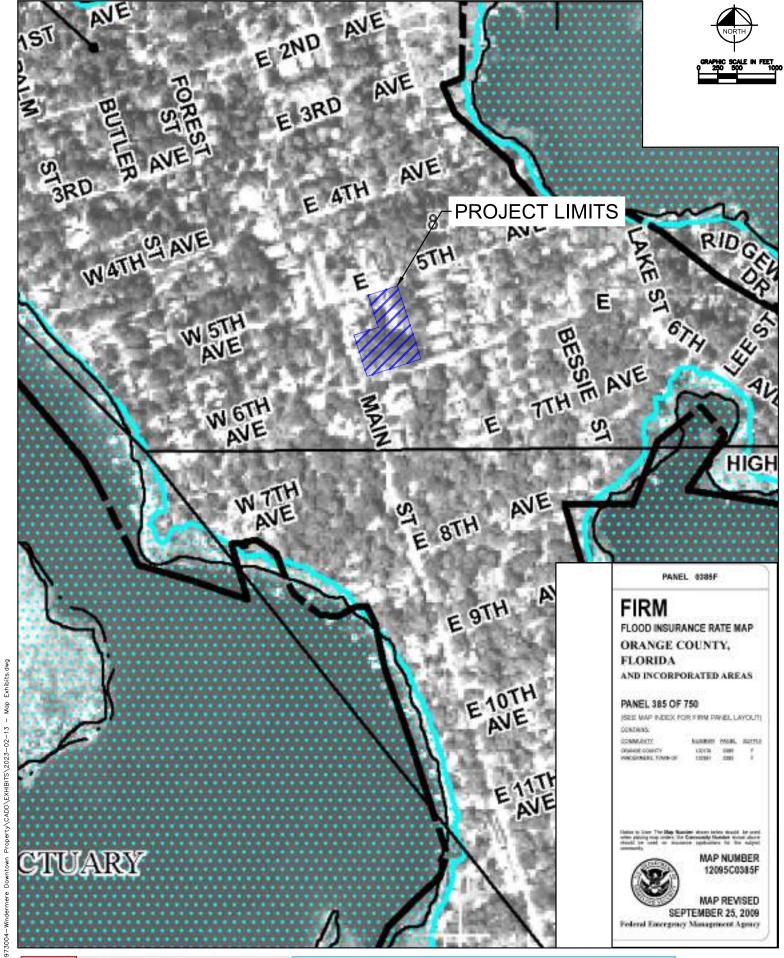
WINDERMERE DOWNTOWN PROPERTY

WINDERMERE, FLORIDA

**USGS QUAD MAP** 

Kimley»H<sub>63</sub>

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EX-5

WINDERMERE DOWNTOWN PROPERTY

WINDERMERE, FLORIDA

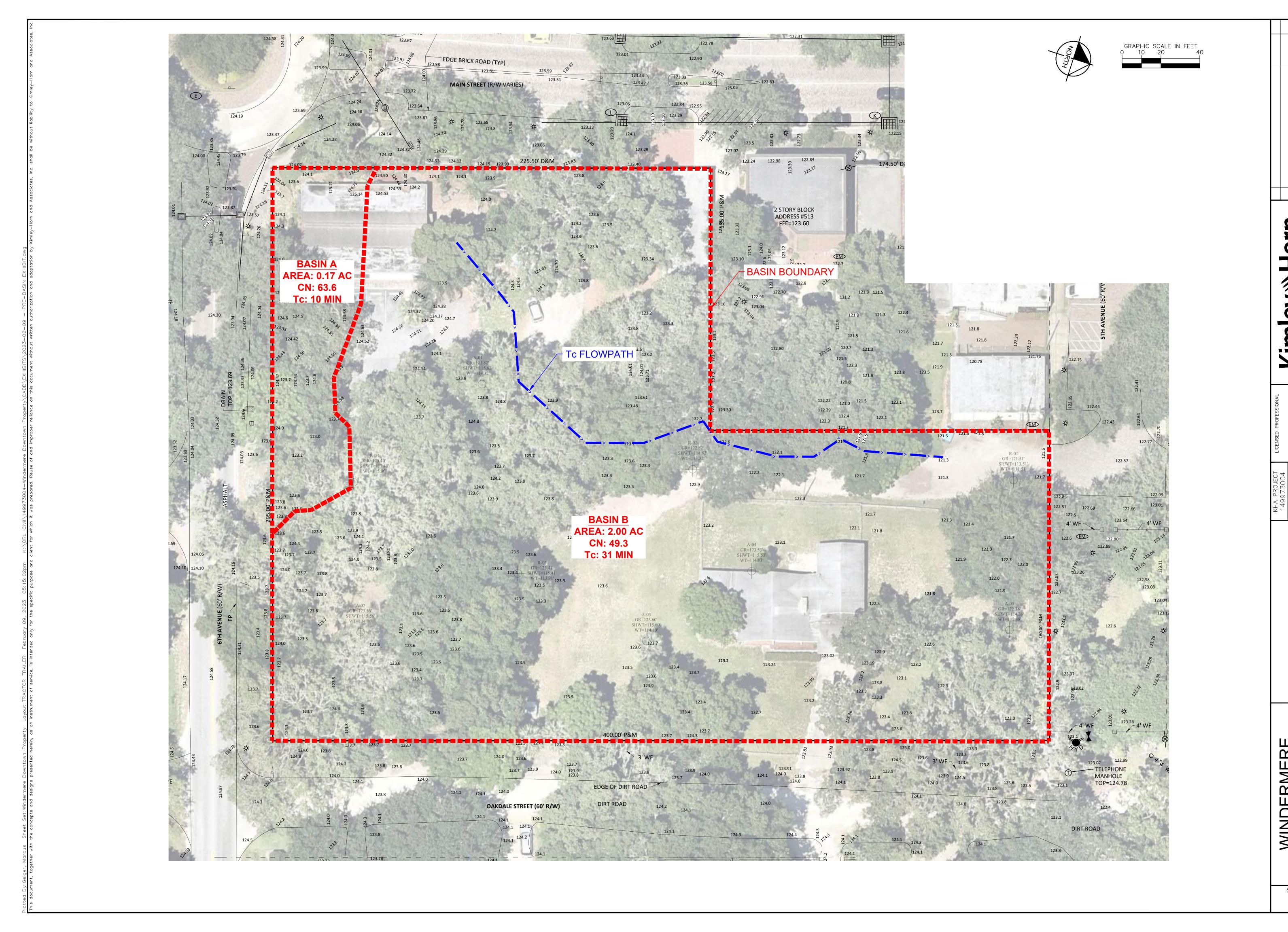
FEMA F.I.R.M. MAP



# **APPENDIX B**

# **PRE - DEVELOPMENT**

- DRAINAGE BASIN MAP
- Tc CALCULATION
- CN CALCULATION



SHEET NUMBER PRE-01

# Worksheet 3 : Time of Concentration ( $T_c$ ) or travel time ( $T_t$ )

Project Location	WINDERMERE DOWNTOWN PROPERTY WINDERMERE, FL	By Checked Pre	MIG JAM <b>X</b>	Date Date Post	2/24/2022 2/24/2022		
		T <sub>c</sub>	Х	$T_t$			
	Basin	[	PRE-A	PRE-B			
Sheet flov	w (Applicable to Tc only)						
	So	gment ID		Overland			
1.	Surface Description (Table 3-1)	gillelit ib		Short Grass			
2.	Manning's Roughness coeff., n (Table 3-1)			0.20			
3.	Flow Length, L (total L $\leq$ 300 ft)	ft		300			
4.	2-Yr 24-Hr rainfall, P <sub>2</sub>	in		4.5			
5.	Land slope, s	ft/ft		0.012			
6.	$T_t = 0.007 (nL)^{0.8} / P_2^{0.5} s^{0.4}$	hr		0.515			
		L		l l			
Shallow (	Concentrated Flow						
		<b>.</b>					
7		gment ID		Overland			
7. °	Surface Description (Paved or Unpaved) Flow Length, L	£4.		Unpaved 25.8			
8. 9.	Watercourse slope, s	ft ft/ft		0.002			
9. 10.	Average Velocity, V (figure 3-1)	ft/s		1.75			
11.	$T_t = L / 3600V$	hr		0.004			
		[		0.001			
Channel	Flow						
40		gment ID					
12.	Cross sectional flow area, a	ft <sup>2</sup>					
13.	Wetted perimeter, p <sub>w</sub>	ft					
14.	Hydraulic Radius, r = a / p <sub>w</sub>	ft					
15.	Channel Slope, s	ft/ft					
16.	Manning's Roughness coeff., n						
17.	$V = 1.49 r^{2/3} s^{1/2} / n$	ft/s					
18.	Flow Length, L	ft					
19.	$T_t =$	hr					
	Watershad or subgree T or T (Addisor T in	Γ					
20	Watershed or subarea $T_c$ or $T_t$ (Adding $T_t$ in Steps 6,11,and 19)	h		0.50	0.00	0.00	0.00
20.	or	hr		0.52	0.00	0.00	0.00

(210-VI-TR-55, Second Ed., June 1986)

#### **CURVE NUMBER WORKSHEET**

PRE-DEVELOPMENT FOR BASIN-A

I	Basin Area =	0.17 acres			
AREA	SCS SOIL TYPE		COVER TYPE AND CONDITIONS	CURVE NUMBER	SUB TOTAL
			Grass (Lawns, Parks, Golf Courses, etc.)		
	A		Cover < 50%	68	0.0
	A		Cover 50% to 75%	49	0.0
0.10	A		Cover > 75%	39	3.8
			Grass (Lawns, Parks, Golf Courses, etc.)		
	В		Cover < 50%	79	0.0
	В		Cover 50% to 75%	69	0.0
	В		Cover > 75%	61	0.0
			Grass (Lawns, Parks, Golf Courses, etc.)		
	C		Cover < 50%	86	0.0
	C		Cover 50% to 75%	79	0.0
	C		Cover > 75%	74	0.0
			Grass (Lawns, Parks, Golf Courses, etc.)		
	D		Cover < 50%	89	0.0
	D		Cover 50% to 75%	84	0.0
	D		Cover > 75%	80	0.0
			Woods(Forest, Orchard)		
	A		Cover < 50%	45	0.0
	A		Cover 50% to 75%	35	0.0
	A		Cover > 75%	25	0.0
			Woods(Forest, Orchard)		
	В		Cover < 50%	66	0.0
	В		Cover 50% to 75%	60	0.0
	В		Cover > 75%	55	0.0
			Woods(Forest, Orchard)		
	С		Cover < 50%	77	0.0
	C		Cover 50% to 75%	74	0.0
	C		Cover > 75%	70	0.0
			Woods(Forest, Orchard)		
	_		oods(2 ords), ordinad,		

Cover < 50%

Cover 50% to 75%

Cover > 75%

Impervious (Pavement, Concrete, Surface Waters)

WEIGHTED CURVE NUMBER = 63.6

83

80

77

0.0

0.0

0.0

6.9

 $WEIGHTED\ CURVE\ NUMBER = SUM\ (CN*AREA)\ /\ TOTAL\ AREA$ 

D

D

D

0.070 A,B,C,D

### **CURVE NUMBER WORKSHEET**

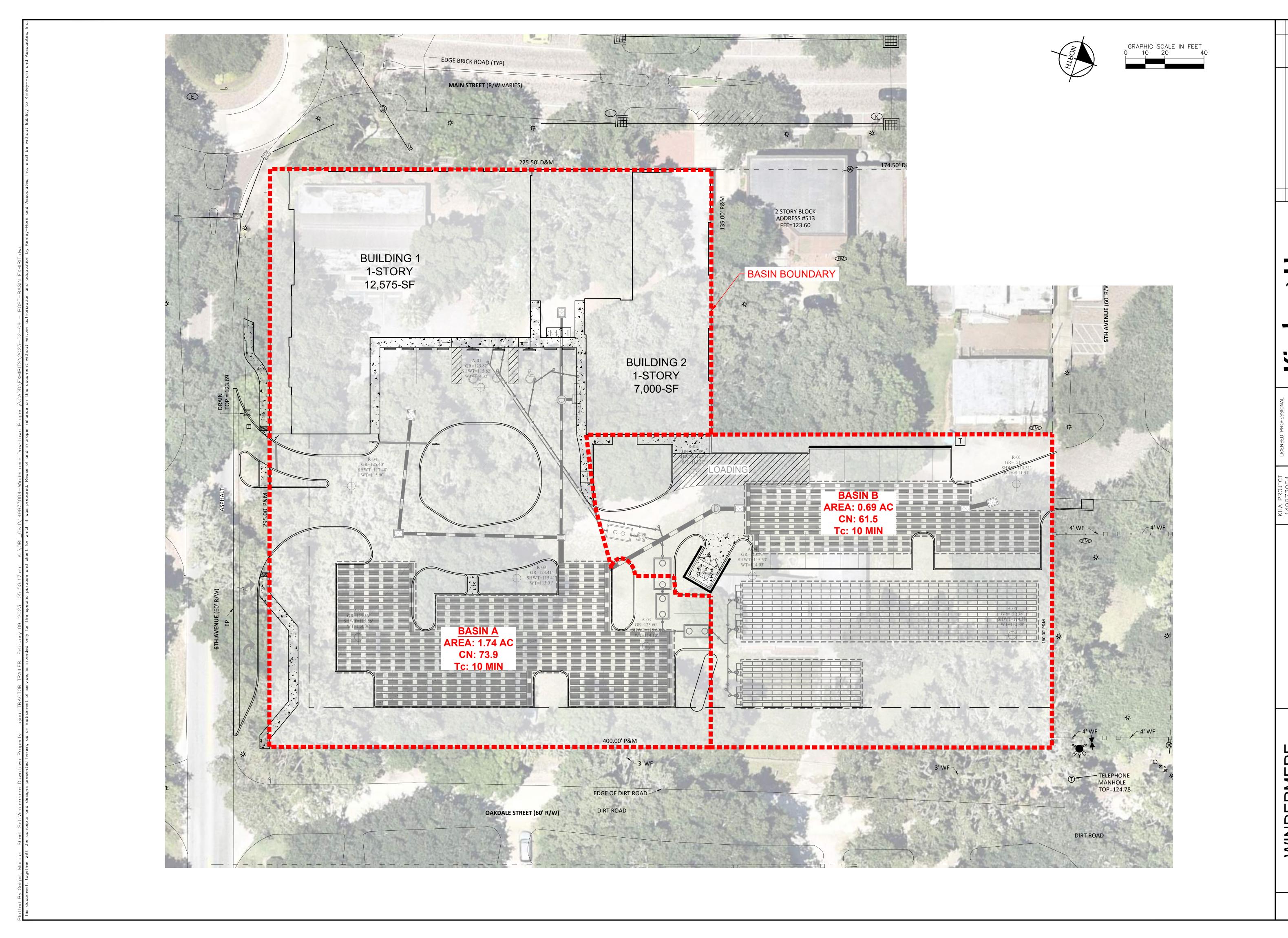
PRE-DEVELOPMENT FOR BASIN-B

E	Basin Area =	2.00 acres		
AREA	SCS SOIL TYPE	COVER TYPE AND CONDITIONS	CURVE NUMBER	SUB TOTAL
		Grass (Lawns, Parks, Golf Courses, etc.)		
	A	Cover < 50%	68	0.0
	A	Cover 50% to 75%	49	0.0
1.65	A	Cover > 75%	39	64.3
		Grass (Lawns, Parks, Golf Courses, etc.)		
	В	Cover < 50%	79	0.0
	В	Cover 50% to 75%	69	0.0
	В	Cover > 75%	61	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	C	Cover < 50%	86	0.0
	C	Cover 50% to 75%	79	0.0
	C	Cover > 75%	74	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	D	Cover < 50%	89	0.0
	D	Cover 50% to 75%	84	0.0
	D	Cover > 75%	80	0.0
		Woods(Forest, Orchard)		
	A	Cover < 50%	45	0.0
	A	Cover 50% to 75%	35	0.0
	A	Cover > 75%	25	0.0
		Woods(Forest, Orchard)		
	В	Cover < 50%	66	0.0
	В	Cover 50% to 75%	60	0.0
	В	Cover > 75%	55	0.0
		Woods(Forest, Orchard)		
	C	Cover < 50%	77	0.0
	C	Cover 50% to 75%	74	0.0
	C	Cover > 75%	70	0.0
		Woods(Forest, Orchard)		
	D	Cover < 50%	83	0.0
	D	Cover 50% to 75%	80	0.0
	D	Cover > 75%	77	0.0
0.348	A,B,C,D	Impervious (Pavement, Concrete, Surface Waters)	98	34.1
		WEIGHTED CV	URVE NUMBER =	49.3

 $WEIGHTED\ CURVE\ NUMBER = SUM\ (CN*AREA)\ /\ TOTAL\ AREA$ 

# APPENDIX C POST - DEVELOPMENT

- DRAINAGE BASIN MAP
- CN CALCULATION
- TREATMENT VOLUME CALC & STAGE/STORAGE



SHEET NUMBER POST-01

#### **CURVE NUMBER WORKSHEET**

POST-DEVELOPMENT BASIN A

AREA	SCS SOIL TYPE	COVER TYPE AND CONDITIONS	CURVE NUMBER	SUB TOTAI
	_	Grass (Lawns, Parks, Golf Courses, etc.)		
	A	Cover < 50%	68	0.0
	A	Cover 50% to 75%	49	0.0
0.579	A	Cover > 75%	39	22.6
		Grass (Lawns, Parks, Golf Courses, etc.)		
	В	Cover < 50%	79	0.0
	В	Cover 50% to 75%	69	0.0
	В	Cover > 75%	61	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	C	Cover < 50%	86	0.0
	C	Cover 50% to 75%	79	0.0
	С	Cover > 75%	74	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	D	Cover < 50%	89	0.0
	D	Cover 50% to 75%	84	0.0
	D	Cover > 75%	80	0.0
		Woods(Forest, Orchard)		
	A	Cover < 50%	45	0.0
	A	Cover 50% to 75%	35	0.0
	A	Cover > 75%	25	0.0
		Woods(Forest, Orchard)		
	В	Cover < 50%	66	0.0
	В	Cover 50% to 75%	60	0.0
	В	Cover > 75%	55	0.0
		Woods(Forest, Orchard)		
	C	Cover < 50%	77	0.0
	C	Cover 50% to 75%	74	0.0
	С	Cover > 75%	70	0.0
		Woods(Forest, Orchard)		
	D	Cover < 50%	83	0.0
	D	Cover 50% to 75%	80	0.0
	D	Cover > 75%	77	0.0
0.130	A,B,C,D	PAVEDRAIN	39	5.1
0.579	A,B,C,D	Impervious (Pavement, Concrete)	98	56.8
	,-,-,-		, 0	20.0

Impervious (Building/Roof Area) WEIGHTED CURVE NUMBER = 73.9

98

44.1

WEIGHTED CURVE NUMBER = SUM (CN\*AREA) / TOTAL AREA

0.450

A,B,C,D

# SFWMD - WATER QUALITY CRITERIA DRY RETENTION A

DIVI NETERIO	MA	
Basin Area =	1.74	acres
Pervious Area =	0.58	acres
Water surface area = Roof Area =	0.00 0.45	acres acres
Impervious Area (Excluding water surface/roof area) =	0.709	acres

1. Compute the first 1-inch of runoff from the developed project:

```
= 1 inch x 1.74 ac. x (1ft/12in) x 50\%
= 0.07 ac-ft. for the first inch of runoff
```

- 2. Compute 2.5-inches times the percentage of imperviousness:
  - a. Site area for water quality pervious/impervious calculations only:

```
= Total project - (water surface + roof)
= 1.74 ac. - (0.00 ac. + 0.45 ac.)
= 1.74 ac. - 0.45 ac.
= 1.29 acres of site area for water quality pervious/impervious
```

- b. Impervious area for water quality pervious/impervious calculations only:
  - = (Site area for water quality pervious/impervious) pervious area
     = 1.29 ac. 0.58 ac.
     = 0.71 acres of impervious area for water quality pervious/impervious
- c. Percentage of impervious for water quality:

```
= (Impervious area for water quality/Site area for water quality) x 100%
= (0.71 ac. / 1.29 ac.) x 100%
= 55.0% impervious
```

d. For 2.5 inches times the percentage impervious:

```
= 2.5 in. x 0.55
= 1.38 inches to be treated
```

e. Compute volume required for water quality Dry Retention:

```
= inches to be treated x (total site - lakes) x 50%

= 1.38 " x (1.74 ac. - 0.00 ac.) x (1ft/12in) x 50%

= 0.10 acre-ft. required dry retention storage
```

3. Provide additional 50% water quality treatment volume (per FDEP impaired water-body):

```
= 0.10 acre-ft. x 1.5
= 0.15 acre-ft.
```

```
REQUIRED DRY RETENTION VOLUME = 0.149 ACRE-FT. = 6,511 CF

PROVIDED DRY RETENTION VOLUME = 0.563 ACRE-FT. = 24,542 CF
```



# STAGE VERSUS STORAGE RELATIONSHIP

Windermere Downtown Property
Town of Windermere, FL

Overall System Footprint = 9,643 sf
Pipe Diameter = 29 in
Pipe Invert = 118.00 ft
Total Pipe Length = 2,659 ft
Stone Porosity = 40 %
Stone Above Pipe = 0 in
Stone Below Invert = 0 in

					PIPE		STONE		SYSTEM	
		System	Section	Section	Incr.	Incr.	Incr.	Incr.	Cummulative	Cummulative
	Elevation	Depth	Depth	Area	Area	Volume	Volume	Volume	Volume	Volume
	(ft)	(ft)	(ft)	(sf)	(cf)	(cf)	(cf)	(cf)	(cf)	(ac-ft)
STONE	120.42	2.42	2.42	4.59	0.00	0.0	0.0	0.0	16,639.1	
STONE	120.42	2.42	2.42	4.59	0.00	0.0	0.0	0.0	16,639.1	
	120.42	2.42	2.42	4.59	0.05	131.2	268.9	400.1	16,639.1	0.38198
	120.33	2.33	2.33	4.54	0.09	235.9	227.1	463.0	16,239.0	0.37280
	120.25	2.25	2.25	4.45	0.11	300.0	201.4	501.4	15,776.0	0.36217
	120.17	2.17	2.17	4.34	0.13	348.5	182.0	530.5	15,274.6	0.35066
	120.08	2.08	2.08	4.20	0.15	387.5	166.4	553.9	14,744.0	0.33848
	120.00	2.00	2.00	4.06	0.16	419.6	153.6	573.2	14,190.1	0.32576
	119.92	1.92	1.92	3.90	0.17	446.4	142.9	589.3	13,616.9	0.31260
	119.83	1.83	1.83	3.73	0.18	468.8	133.9	602.7	13,027.6	0.29907
	119.75	1.75	1.75	3.56	0.18	487.3	126.5	613.8	12,424.9	0.28524
	119.67	1.67	1.67	3.37	0.19	502.5	120.4	622.9	11,811.1	0.27115
	119.58	1.58	1.58	3.18	0.19	514.6	115.6	630.2	11,188.2	0.25685
	119.50	1.50	1.50	2.99	0.20	523.8	111.9	635.7	10,558.0	0.24238
	119.42	1.42	1.42	2.79	0.20	530.2	109.3	639.6	9,922.3	0.22779
	119.33	1.33	1.33	2.60	0.20	534.1	107.8	641.9	9,282.8	0.21310
PIPE	119.25	1.25	1.25	2.39	0.20	535.3	107.3	642.6	8,640.9	0.19837
FIFL	119.17	1.17	1.17	2.19	0.20	534.1	107.8	641.9	7,998.2	0.18361
	119.08	1.08	1.08	1.99	0.20	530.2	109.3	639.6	7,356.4	0.16888
	119.00	1.00	1.00	1.79	0.20	523.8	111.9	635.7	6,716.8	0.15420
	118.92	0.92	0.92	1.60	0.19	514.6	115.6	630.2	6,081.1	0.13960
	118.83	0.83	0.83	1.40	0.19	502.5	120.4	622.9	5,450.9	0.12514
	118.75	0.75	0.75	1.21	0.18	487.3	126.5	613.8	4,828.0	0.11084
	118.67	0.67	0.67	1.03	0.18	468.8	133.9	602.7	4,214.2	0.09674
	118.58	0.58	0.58	0.85	0.17	446.4	142.9	589.3	3,611.5	0.08291
	118.50	0.50	0.50	0.69	0.16	419.6	153.6	573.2	3,022.2	0.06938
	118.42	0.42	0.42	0.53	0.15	387.5	166.4	553.9	2,449.0	0.05622
	118.33	0.33	0.33	0.38	0.13	348.5	182.0	530.5	1,895.1	0.04351
	118.25	0.25	0.25	0.25	0.11	300.0	201.4	501.4	1,364.6	0.03133
	118.17	0.17	0.17	0.14	0.09	235.9	227.1	463.0	863.1	0.01982
	118.08	0.08	0.08	0.05	0.05	131.2	269.0	400.2	400.2	0.00919
	118.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.00000
STONE	118.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	
- STONE	118.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	

	Elevation	Feet	Area	Area	Avg. Area	Volume	Volume Sum	Volume Sum
	(FT)		(SF)	(AC)	(SF)	(CF)	(CF)	(Ac-Ft)
1-IN ABOVE STRUCTURE	123.42	3.00	9,643	0.221		804	27,514	0.6316
					9,643			
TOP OF STRUCTURE (1-IN)	123.33	2.91	9,643	0.221		804	26,710	0.6132
					9,643			
TOP OF PAVERS	123.25	2.83	9,643	0.221		1,004	25,907	0.5947
					9,643			
TOP OF #57 STONE/BOTTOM OF PAVERS	122.75	2.33	9,643	0.221		1,205	24,903	0.5717
					9,643			
TOP OF #4 STONE	122.25	1.83	9,643	0.221		7,059	23,698	0.5440
					9,643			
BOTTOM OF STONE	120.42	0	9,643	0.221		0	16,639	0.3820

NOTE: VOID RATIO OF 0.25 USED FOR THE TOP 6-INCH LAYER OF #57 STONE AND 0.40 FOR THE 22-INCH LAYER OF #4 STONE.

# **CURVE NUMBER WORKSHEET**

POST-DEVELOPMENT BASIN B

Е	Basin Area =	0.694 acres		
AREA	SCS SOIL TYPE	COVER TYPE AND CONDITIONS	CURVE NUMBER	SUB TOTAL
		Grass (Lawns, Parks, Golf Courses, etc.)		
	A	Cover < 50%	68	0.0
	A	Cover 50% to 75%	49	0.0
0.429	A	Cover > 75%	39	16.7
		Grass (Lawns, Parks, Golf Courses, etc.)		
	В	Cover < 50%	79	0.0
	В	Cover 50% to 75%	69	0.0
	В	Cover > 75%	61	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	C	Cover < 50%	86	0.0
	C	Cover 50% to 75%	79	0.0
	C	Cover > 75%	74	0.0
		Grass (Lawns, Parks, Golf Courses, etc.)		
	D	Cover < 50%	89	0.0
	D	Cover 50% to 75%	84	0.0
	D	Cover > 75%	80	0.0
		Woods(Forest, Orchard)		
	A	Cover < 50%	45	0.0
	A	Cover 50% to 75%	35	0.0
	A	Cover > 75%	25	0.0
		Woods(Forest, Orchard)		
	В	Cover < 50%	66	0.0
	В	Cover 50% to 75%	60	0.0
	В	Cover > 75%	55	0.0
		Woods(Forest, Orchard)		
	С	Cover < 50%	77	0.0
	C	Cover 50% to 75%	74	0.0
	C	Cover > 75%	70	0.0
		Woods(Forest, Orchard)		
	D	Cover < 50%	83	0.0
	D	Cover 50% to 75%	80	0.0
	D	Cover > 75%	77	0.0
0.265	A,B,C,D	Impervious (Pavement, Concrete, Surface Waters)	98	26.0

 $WEIGHTED \ CURVE \ NUMBER = SUM \ (CN*AREA) \ / \ TOTAL \ AREA$ 

WEIGHTED CURVE NUMBER =

# <u>SFWMD - WATER QUALITY CRITERIA</u>

# **DRY RETENTION B**

Basin Area = 0.694 acres

Pervious Area = 0.429 acres

Water surface area = 0.00 acres

Roof Area = 0.00 acres

Impervious Area (Excluding water surface/roof area) = 0.265 acres

- 1. Compute the first 1-inch of runoff from the developed project:
  - = 1 inch x 0.69 ac. x (1ft/12in) x 50%
  - = **0.03** ac-ft. for the first inch of runoff
- 2. Compute 2.5-inches times the percentage of imperviousness:
  - a. Site area for water quality pervious/impervious calculations only:
    - = Total project (water surface + roof)
    - = 0.69 ac. (0.00 ac. + 0.00 ac.)
    - = 0.69 ac. 0.00 ac.
    - = **0.69** acres of site area for water quality pervious/impervious
  - b. Impervious area for water quality pervious/impervious calculations only:
    - = (Site area for water quality pervious/impervious) pervious area
    - = 0.69 ac. 0.43 ac.
    - = **0.27** acres of impervious area for water quality pervious/impervious
  - c. Percentage of impervious for water quality:
    - = (Impervious area for water quality/Site area for water quality) x 100%
    - $= (0.27 \text{ ac.} / 0.69 \text{ ac.}) \times 100\%$
    - = 38.2% impervious
  - d. For 2.5 inches times the percentage impervious:
    - = 2.5 in. x 0.38
    - = **0.95** inches to be treated
  - e. Compute volume required for water quality Dry Retention:
    - = inches to be treated x (total site lakes) x 50%
    - = 0.95" x (0.69 ac. 0.00 ac.) x (1ft/12in) x 50%
    - = **0.03** acre-ft. required dry retention storage
- 3. Provide additional 50% water quality treatment volume (per FDEP impaired water-body):
  - = 0.03 acre-ft.  $\times 1.5$
  - = 0.04 acre-ft.

REQUIRED DRY RETENTION VOLUME = 0.043 ACRE-FT. = 1,890 CF

PROVIDED DRY RETENTION VOLUME = 0.169 ACRE-FT. = 7,377 CF



# STAGE VERSUS STORAGE RELATIONSHIP

Windermere Downtown Property Town of Windermere, FL

Overall System Footprint = 5,264 sf
Pipe Diameter = 24 in
Pipe Invert = 118.00 ft
Total Pipe Length = 1,680 ft
Stone Porosity = 40 %
Stone Above Pipe = 0 in
Stone Below Invert = 0 in

					PIPE		STONE		SYSTEM	
		System	Section	Section	Incr.	Incr.	Incr.	Incr.	Cummulative	Cummulative
	Elevation	Depth	Depth	Area	Area	Volume	Volume	Volume	Volume	Volume
	(ft)	(ft)	(ft)	(sf)	(cf)	(cf)	(cf)	(cf)	(cf)	(ac-ft)
STONE	120.00	2.00	2.00	3.14	0.00	0.0	0.0	0.0	7,377.3	
STONE	120.00	2.00	2.00	3.14	0.00	0.0	0.0	0.0	7,377.3	
	120.00	2.00	2.00	3.14	0.04	75.2	145.4	220.6	7,377.3	0.1694
	119.92	1.92	1.92	3.10	0.08	134.8	121.5	256.3	7,156.7	0.1643
	119.83	1.83	1.83	3.02	0.10	170.7	107.2	277.9	6,900.3	0.1584
	119.75	1.75	1.75	2.91	0.12	197.4	96.5	293.9	6,622.5	0.1520
	119.67	1.67	1.67	2.80	0.13	218.4	88.1	306.5	6,328.6	0.1453
	119.58	1.58	1.58	2.67	0.14	235.2	81.4	316.6	6,022.1	0.1382
	119.50	1.50	1.50	2.53	0.15	248.7	76.0	324.7	5,705.5	0.1310
	119.42	1.42	1.42	2.38	0.15	259.4	71.7	331.1	5,380.8	0.1235
	119.33	1.33	1.33	2.22	0.16	267.7	68.4	336.1	5,049.7	0.1159
	119.25	1.25	1.25	2.07	0.16	273.7	66.0	339.7	4,713.6	0.1082
	119.17	1.17	1.17	1.90	0.17	277.7	64.4	342.1	4,373.9	0.1004
	119.08	1.08	1.08	1.74	0.17	279.6	63.6	343.2	4,031.9	0.0926
PIPE	119.00	1.00	1.00	1.57	0.17	279.6	63.6	343.2	3,688.6	0.0847
	118.92	0.92	0.92	1.40	0.17	277.7	64.4	342.1	3,345.4	0.0768
	118.83	0.83	0.83	1.24	0.16	273.7	66.0	339.7	3,003.3	0.0689
	118.75	0.75	0.75	1.08	0.16	267.7	68.4	336.1	2,663.6	0.0611
	118.67	0.67	0.67	0.92	0.15	259.4	71.7	331.1	2,327.6	0.0534
	118.58	0.58	0.58	0.76	0.15	248.7	76.0	324.7	1,996.5	0.0458
	118.50	0.50	0.50	0.61	0.14	235.2	81.4	316.6	1,671.8	0.0384
	118.42	0.42	0.42	0.47	0.13	218.4	88.1	306.5	1,355.2	0.0311
	118.33	0.33	0.33	0.34	0.12	197.4	96.5	293.9	1,048.7	0.0241
	118.25	0.25	0.25	0.23	0.10	170.7	107.2	277.9	754.8	0.0173
	118.17	0.17	0.17	0.13	0.08	134.8	121.5	256.3	477.0	0.0109
	118.08	0.08	0.08	0.04	0.04	75.2	145.4	220.6	220.6	0.0051
	118.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	0.0000
STONE	118.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	
STONE	118.00	0.00	0.00	0.00	0.00	0.0	0.0	0.0	0.0	

# APPENDIX D DRAINAGE ANALYSIS Per ICPR

# PRE-DEVELOPMENT DRAINAGE ANALYSIS

Pre-Condition Basin Report

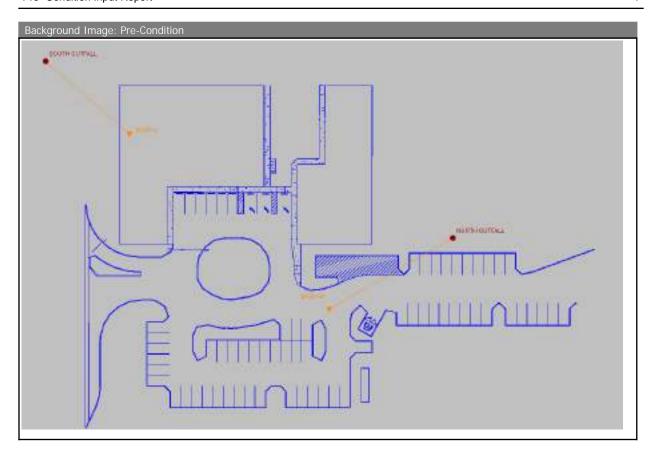
Simple Basin Runoff Summary [PRE-CONDITIONS]

Basin Name	Sim Name	Max Flow [cfs]	Time to Max	Total Rainfall	Total Runoff	Area [ac]	Equivalent	% Imperv	% DCIA
			Flow [hrs]	[in]	[in]		Curve Number		
BASIN-A	100YR-72HR	0.83	60.0167	13.60	8.52	0.1700	63.6	0.00	0.00
BASIN-B	100YR-72HR	4.52	60.2167	13.60	6.10	2.0000	49.3	0.00	0.00
BASIN-A	10YR-24HR	0.43	12.0500	7.90	3.65	0.1700	63.6	0.00	0.00
BASIN-B	10YR-24HR	1.50	12.4167	7.90	2.12	2.0000	49.3	0.00	0.00
BASIN-A	25YR-72HR	0.59	60.0167	10.50	5.80	0.1700	63.6	0.00	0.00
BASIN-B	25YR-72HR	2.89	60.2333	10.50	3.81	2.0000	49.3	0.00	0.00

Pre Condition Node Max Report

# Node Max Conditions [PRE-CONDITIONS]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta	Max Total Inflow	Max Total Outflow	Max Surface Area
				Stage [ft]	[cfs]	[cfs]	[ft2]
NORTH OUTFALL	100YR-72HR	121.50	121.50	0.0000	4.52	0.00	0
SOUTH OUTFALL	100YR-72HR	123.34	123.34	0.0000	0.83	0.00	0
NORTH OUTFALL	10YR-24HR	121.50	121.50	0.0000	1.50	0.00	0
SOUTH OUTFALL	10YR-24HR	123.34	123.34	0.0000	0.43	0.00	0
NORTH OUTFALL	25YR-72HR	121.50	121.50	0.0000	2.89	0.00	0
SOUTH OUTFALL	25YR-72HR	123.34	123.34	0.0000	0.59	0.00	0



# Simple Basin: BASIN-A

Scenario: PRE-CONDITIONS

Node: SOUTH OUTFALL

Hydrograph Method: NRCS Unit Hydrograph

Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 999999.00 cfs
Time Shift: 0.0000 hr

Unit Hydrograph: UH256
Peaking Factor: 256.0

Area: 0.1700 ac

Curve Number: 63.6

% Impervious: 0.00

% DCIA: 0.00

% Direct: 0.00

Rainfall Name:

# Simple Basin: BASIN-B

Scenario: PRE-CONDITIONS

Node: NORTH OUTFALL

Hydrograph Method: NRCS Unit Hydrograph

Infiltration Method: Curve Number
Time of Concentration: 31.0000 min
Max Allowable Q: 99999999.00 cfs

Time Shift: 0.0000 hr Unit Hydrograph: UH256 Peaking Factor: 256.0

Area: 2.0000 ac

Curve Number: 49.3
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

#### Node: NORTH OUTFALL

Scenario: PRE-CONDITIONS
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 121.50 ft
Warning Stage: 121.50 ft

Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	121.50
0	0	0	96.0000	121.50

Comment:

#### Node: SOUTH OUTFALL

Scenario: PRE-CONDITIONS
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 123.34 ft
Warning Stage: 123.34 ft

Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	123.34
0	0	0	96.0000	123.34

Comment: Top of inlet along 6th Ave

Simulation: 100YR-72HR

Min Calculation Time:

Scenario: PRE-CONDITIONS
Run Date/Time: 3/2/2022 5:25:41 PM
Program Version: ICPR4 4.07.08

General

Run Mode: Normal

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	77.0000

 Hydrology [sec]
 Surface Hydraulics
 Groundwater [sec]

 [sec]
 60.0000
 900.0000

Max Calculation Time: 60.0000

#### Output Time Increments

# Hydrology

l	Year	Month	Day	Hour [hr]	Time Increment [min]
	0	0	0	0.0000	15.0000

#### Surface Hydraulics

I	Year	Month	Day	Hour [hr]	Time Increment [min]
I	0	0	0	0.0000	15.0000

# Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

#### Resources & Lookup Table

Resources

Rainfall Folder: Reference ET Folder: Unit Hydrograph Folder: Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: SITE

Green-Ampt Set:

Vertical Layers Set:

Impervious Set: SITE

Roughness Set:

Crop Coef Set:

Fillable Porosity Set:

Conductivity Set:

Leakage Set:

Time Marching: SAOR IA Recovery Time: 24.0000 hr Max Iterations: 6 ET for Manual Basins: False

Over-Relax Weight 0.5 dec

Fact:

Link Optimizer Tol: 0.0001 ft

Edge Length Option: Automatic

(2D):

dZ Tolerance: 0.0010 ft Smp/Man Basin Rain Global

Opt:

Max dZ: 1.0000 ft OF Region Rain Opt: Global

> Rainfall Name: ~SFWMD-72

Rainfall Amount: 13.60 in Storm Duration: 72.0000 hr

Dflt Damping (2D): 0.0050 ft Dflt Damping (1D): 0.0050 ft Min Node Srf Area 100 ft2

Min Node Srf Area 100 ft2

(1D):

Energy Switch (2D): Energy Energy Switch (1D): Energy

Comment: SFWMD 100 yr / 72 hr

Scenario: PRE-CONDITIONS Run Date/Time: 3/2/2022 5:25:55 PM Program Version: ICPR4 4.07.08

Run Mode: Normal

_	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	30.0000

	Hydrology [sec]	Surface Hydraulics	Groundwater [sec]
		[sec]	
Min Calculation Time:	60.0000	0.1000	900.0000
Max Calculation Time:		60.0000	

### Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.000	15.0000
0	0	0	8.000	5.0000
0	0	0	14.000	15.0000

# Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000
0	0	0	8.0000	5.0000
0	0	0	14.0000	15.0000

# Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

# Restart File

Save Restart: False

#### Resources & Lookup Tables

# Resources

Reference ET Folder: Unit Hydrograph Folder:

Rainfall Folder:

# Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: SITE

Green-Ampt Set:
Vertical Layers Set:
Impervious Set: SITE
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

# Tolerances & Options

Time Marching: SAOR IA Recovery Time: 24.0000 hr
Max Iterations: 6 ET for Manual Basins: False

Over-Relax Weight 0.5 dec

Fact:

dZ Tolerance: 0.0010 ft Smp/Man Basin Rain Global

Opt:

Max dZ: 1.0000 ft
Link Optimizer Tol: 0.0001 ft
Rainfall Name: ~FLMOD
Rainfall Amount: 7.90 in

Edge Length Option: Automatic Storm Duration: 24.0000 hr

(1D):

Dflt Damping (2D): 0.0050 ft
Min Node Srf Area 100 ft2

Dflt Damping (1D): 0.0050 ft
Min Node Srf Area 100 ft2

(2D):

Energy Switch (2D): Energy Energy Switch (1D): Energy

Comment: 10 yr / 24 hr

# Simulation: 25YR-72HR

Scenario: PRE-CONDITIONS
Run Date/Time: 3/2/2022 5:26:36 PM
Program Version: ICPR4 4.07.08

#### Genera

Run Mode: Normal

_	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	77.0000

# Output Time Increments

#### Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

# Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

# Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

# Restart File

Save Restart: False

#### Resources & Lookup Tables

Resources

Rainfall Folder: Reference ET Folder: Unit Hydrograph Folder: Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: SITE

Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:

Leakage Set:

Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight 0.5 dec

ET for Manual Basins: False

IA Recovery Time:

nn/Man Basin Bain (

OF Region Rain Opt:

Fact:

dZ Tolerance: 0.0010 ft

Smp/Man Basin Rain Global

Opt:

24.0000 hr

Global

 $\begin{array}{cc} \text{Max dZ:} & \text{1.0000 ft} \\ \text{Link Optimizer Tol:} & \text{0.0001 ft} \end{array}$ 

Rainfall Name: ~SFWMD-72
Rainfall Amount: 10.50 in
Storm Duration: 72.0000 hr

Edge Length Option: Automatic

Dflt Damping (1D): 0.0050 ft

Dflt Damping (2D): 0.0050 ft Min Node Srf Area 100 ft2

Min Node Srf Area 100 ft2

(2D):

(1D):

Energy Switch (2D): Energy

Energy Switch (1D): Energy

Comment: SFWMD 25 yr / 72 hr

Simulation: recovery

Scenario: RECOVERY

Run Date/Time: 2/9/2023 1:40:10 PM Program Version: ICPR4 4.07.08

General

Run Mode: Normal

_	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	72.0000
<u>-</u>	Hydrology [sec]	Surface Hydraulics	Groundwater [sec]	<u>-</u>

[sec]

Min Calculation Time: 60.0000 0.1000 900.0000

Max Calculation Time: 60.0000

#### **Output Time Increments**

#### Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000
0	0	0	8.0000	5.0000
0	0	0	14.0000	15.0000

#### Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000
0	0	0	8.0000	5.0000
0	0	0	14.0000	15.0000

#### Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

# Restart File

Save Restart: False

#### Resources & Lookup Table:

Resources

Rainfall Folder: Reference ET Folder: Unit Hydrograph Folder: Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: SITE

Green-Ampt Set:
Vertical Layers Set:
Impervious Set:
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:

Leakage Set:

#### Tolerances & Options

Time Marching: SAOR
Max Iterations: 6
Over-Relax Weight 0.5 dec

Fact:

IA Recovery Time: 24.0000 hr ET for Manual Basins: False dZ Tolerance: 0.0010 ft Smp/Man Basin Rain No Rainfall

Opt:

Max dZ: 1.0000 ft OF Region Rain Opt: No Rainfall

Link Optimizer Tol: 0.0001 ft

Edge Length Option: Automatic

Dflt Damping (2D): 0.0050 ft
Min Node Srf Area 100 ft2

Dflt Damping (1D): 0.0050 ft
Min Node Srf Area 100 ft2

(2D): (1D):

Energy Switch (2D): Energy Energy Switch (1D): Energy

Comment: RECOVERY

# POST-DEVELOPMENT DRAINAGE ANALYSIS

Post Conditions Basin Report

# Simple Basin Runoff Summary [POST-CONDITIONS]

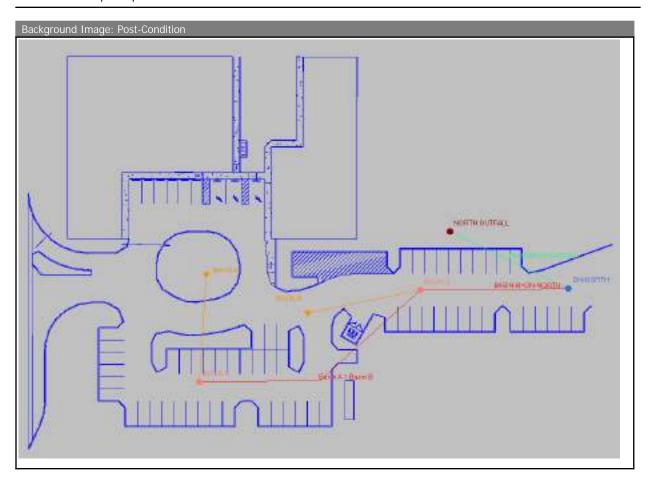
Basin Name	Sim Name	Max Flow [cfs]	Time to Max	Total Rainfall	Total Runoff	Area [ac]	Equivalent	% Imperv	% DCIA
			Flow [hrs]	[in]	[in]		Curve Number		
BASIN-A	100YR-72HR	9.48	60.0167	13.60	10.11	1.7380	73.9	0.00	0.00
BASIN-B	100YR-72HR	3.31	60.0167	13.60	8.18	0.6940	61.5	0.00	0.00
BASIN-A	10YR-24HR	5.91	12.0500	7.90	4.82	1.7380	73.9	0.00	0.00
BASIN-B	10YR-24HR	1.65	12.0667	7.90	3.42	0.6940	61.5	0.00	0.00
BASIN-A	25YR-72HR	6.97	60.0167	10.50	7.19	1.7380	73.9	0.00	0.00
BASIN-B	25YR-72HR	2.31	60.0167	10.50	5.51	0.6940	61.5	0.00	0.00

Post Condition Node Max Report

# Node Max Conditions [POST-CONDITIONS]

Node Name	Sim Name	Warning Stage [ft]	Max Stage [ft]	Min/Max Delta	Max Total Inflow	Max Total Outflow	Max Surface Area
				Stage [ft]	[cfs]	[cfs]	[ft2]
BASIN-A	100YR-72HR	123.25	123.33	0.0010	9.48	6.71	14014
BASIN-B	100YR-72HR	122.60	123.01	0.0010	9.41	9.55	4184
DN-NORTH	100YR-72HR	122.60	122.98	0.0011	9.55	9.35	100
NORTH OUTFALL	100YR-72HR	121.50	121.50	0.0000	9.35	0.00	0
BASIN-A	10YR-24HR	123.25	122.51	0.0010	5.91	1.29	7755
BASIN-B	10YR-24HR	122.60	122.51	0.0010	2.94	0.07	4184
DN-NORTH	10YR-24HR	122.60	122.51	0.0010	0.07	0.02	100
NORTH OUTFALL	10YR-24HR	121.50	121.50	0.0000	0.00	0.00	0
BASIN-A	25YR-72HR	123.25	122.79	0.0010	6.97	1.96	7755
BASIN-B	25YR-72HR	122.60	122.76	0.0010	3.84	3.60	4184
DN-NORTH	25YR-72HR	122.60	122.76	0.0011	3.60	2.64	100
NORTH OUTFALL	25YR-72HR	121.50	121.50	0.0000	2.64	0.00	0

Post Condition Input Report



# Simple Basin: BASIN-A

Scenario: POST-CONDITIONS

Node: BASIN-A

Hydrograph Method: NRCS Unit Hydrograph

Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 999999.00 cfs
Time Shift: 0.0000 hr

Unit Hydrograph: UH256 Peaking Factor: 256.0

Area: 1.7380 ac

Curve Number: 73.9 % Impervious: 0.00 % DCIA: 0.00 % Direct: 0.00

Rainfall Name:

Post Condition Input Report 2

#### Simple Basin: BASIN-B

Scenario: POST-CONDITIONS

Node: BASIN-B

Hydrograph Method: NRCS Unit Hydrograph

Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 999999999.00 cfs

Time Shift: 0.0000 hr Unit Hydrograph: UH256 Peaking Factor: 256.0

Area: 0.6940 ac

Curve Number: 61.5
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

#### Node: BASIN-A

Scenario: POST-CONDITIONS
Type: Stage/Volume
Base Flow: 0.00 cfs
Initial Stage: 118.00 ft
Warning Stage: 123.25 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
123.33	0.61	26711
123.25	0.59	25905
122.75	0.57	24903
122.25	0.54	23697
120.42	0.38	16639
120.25	0.36	15776
120.00	0.33	14190
119.75	0.29	12425
119.50	0.24	10558
119.25	0.20	8641
119.00	0.15	6717
118.75	0.11	4828
118.50	0.07	3022
118.25	0.03	1365
118.00	0.00	0

# Node: BASIN-B

Scenario: POST-CONDITIONS
Type: Stage/Volume
Base Flow: 0.00 cfs
Initial Stage: 118.00 ft
Warning Stage: 122.60 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
120.00	0.17	7379
119.75	0.15	6621
119.50	0.13	5706
119.25	0.11	4713
119.00	0.08	3690
118.75	0.06	2662
118.50	0.04	1673
118.25	0.02	754
118.00	0.00	0

Comment:

#### Node: DN-NORTH

Scenario: POST-CONDITIONS
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 118.00 ft

Warning Stage: 122.60 ft

Comment:

# Node: NORTH OUTFALL

Scenario: POST-CONDITIONS
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 121.50 ft

Warning Stage: 121.50 ft

Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	121.50
0	0	0	96.0000	121.50

Pipe Link: BASIN-B>	DN-NORTH	Upst	ream	Dowr	stream
Scenario:	POST-CONDITION	Invert:	118.00 ft	Invert:	118.00 ft
	S	Manning's N:	0.0220	Manning's N:	0.0220
From Node:	BASIN-B	Geometry	y: Circular	Geometr	y: Circular
To Node:	DN-NORTH	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1			Bottom Clip	
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	6.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	0.00			Top Clip	
Exit Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Pipe Link: Basin A >	Basin B	Upst	ream	Dowr	nstream
Scenario:	POST-CONDITION	Invert:	118.00 ft	Invert:	118.00 ft
	S	Manning's N:	0.0220	Manning's N:	0.0220
From Node:	BASIN-A	Geometry	y: Circular	Geometr	y: Circular
To Node:	BASIN-B	Max Depth:	2.00 ft	Max Depth:	2.00 ft
Link Count:	1			Bottom Clip	
Flow Direction:	Both	Default:	0.00 ft	Default:	0.00 ft
Damping:	0.0000 ft	Op Table:		Op Table:	
Length:	75.00 ft	Ref Node:		Ref Node:	
FHWA Code:	1	Manning's N:	0.0000	Manning's N:	0.0000
Entr Loss Coef:	1.00			Top Clip	
Exit Loss Coef:	1.00	Default:	0.00 ft	Default:	0.00 ft
Bend Loss Coef:	0.00	Op Table:		Op Table:	
Bend Location:	0.00 dec	Ref Node:		Ref Node:	
Energy Switch:	Energy	Manning's N:	0.0000	Manning's N:	0.0000
Comment:					

Weir Link: DN-NORTH>OUTFALL						
Scenario:	POST-CONDITIONS	Bottom Clip				
From Node:	DN-NORTH	Default: 0.00 ft				
To Node:	NORTH OUTFALL	Op Table:				
Link Count:	1	Ref Node:				
Flow Direction:	Both	Top Clip				
Damping:	0.0000 ft	Default: 0.00 ft				
Weir Type:	Horizontal	Op Table:				
Geometry Type:	Rectangular	Ref Node:				
Invert:	122.60 ft	Discharge Coefficients				
Control Elevation:	122.60 ft	Weir Default: 2.800				

Max Depth: 3.08 ft

Max Width: 4.08 ft Fillet: 0.00 ft Weir Table:
Orifice Default: 0.600

Orifice Table:

Comment:

Simulation: 100VP 72HP

Min Calculation Time:

Scenario: POST-CONDITIONS
Run Date/Time: 2/9/2023 6:33:26 PM
Program Version: ICPR4 4.07.08

Genera

Run Mode: Normal

 Year
 Month
 Day
 Hour [hr]

 Start Time:
 0
 0
 0.0000

 End Time:
 0
 0
 0
 77.0000

 Hydrology [sec]
 Surface Hydraulics [sec]
 Groundwater [sec]

 [sec]
 60.0000
 0.1000
 900.0000

Max Calculation Time: 60.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Restart File

Save Restart: False

Resources & Lookup Tables

Resources

Lookup Tables
Boundary Stage Set:

Rainfall Folder:

C:\\_ICPR Models\Windermere Downtown Property\

2/10/2023 08:49

Extern Hydrograph Set: Reference ET Folder:

Unit Hydrograph Curve Number Set: SITE

Folder:

Green-Ampt Set: Vertical Layers Set: Impervious Set: SITE Roughness Set: Crop Coef Set: Fillable Porosity Set: Conductivity Set:

Leakage Set:

Time Marching: SAOR IA Recovery Time: 24.0000 hr

Max Iterations: ET for Manual Basins: False

Over-Relax Weight 0.5 dec

Fact:

dZ Tolerance: 0.0010 ft Smp/Man Basin Rain Global

Opt:

OF Region Rain Opt: Max dZ: 1.0000 ft Global

Link Optimizer Tol: 0.0001 ft ~SFWMD-72 Rainfall Name:

Rainfall Amount: 13.60 in Storm Duration: 72.0000 hr

Edge Length Option: Automatic

Dflt Damping (2D): 0.0050 ft Dflt Damping (1D): 0.0050 ft Min Node Srf Area 100 ft2 Min Node Srf Area 100 ft2

(2D):

(1D):

Energy Switch (2D): Energy Energy Switch (1D): Energy

Comment: SFWMD 100 yr / 72 hr

Scenario: POST-CONDITIONS Run Date/Time: 2/9/2023 6:33:56 PM

Program Version: ICPR4 4.07.08

Run Mode: Normal

Year Month Day Hour [hr] Start Time: 0 0 0.0000 0 End Time: 0 0 30.0000 0

Hydrology [sec] Surface Hydraulics Groundwater [sec] [sec] Min Calculation Time: 60.0000 0.1000 900.0000

Post Condition Input Report 7

Max Calculation Time:

60.0000

#### **Output Time Increments**

#### Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000
0	0	0	8.0000	5.0000
0	0	0	14.0000	15.0000

# Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000
0	0	0	8.0000	5.0000
0	0	0	14.0000	15.0000

# Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

# Restart File

Save Restart: False

#### Resources & Lookup Tables

# Resources

Rainfall Folder: Reference ET Folder: Unit Hydrograph Folder:

# Lookup Tables

Boundary Stage Set:
Extern Hydrograph Set:
Curve Number Set: SITE

Green-Ampt Set:
Vertical Layers Set:
Impervious Set: SITE
Roughness Set:
Crop Coef Set:
Fillable Porosity Set:
Conductivity Set:
Leakage Set:

#### Tolerances & Options

Time Marching: SAOR IA Recovery Time: 24.0000 hr
Max Iterations: 6 ET for Manual Basins: False

Over-Relax Weight 0.5 dec

Fact:

dZ Tolerance: 0.0010 ft

Smp/Man Basin Rain Global

Opt:

Max dZ: 1.0000 ft OF Region Rain Opt: Global

Link Optimizer Tol: 0.0001 ft Rainfall Name: ~FLMOD

Rainfall Amount: 7.90 in

Edge Length Option: Automatic Storm Duration: 24.0000 hr

Dflt Damping (2D): 0.0050 ft
Min Node Srf Area 100 ft2

Dflt Damping (1D): 0.0050 ft
Min Node Srf Area 100 ft2

(1D):

Energy Switch (2D): Energy Energy Switch (1D): Energy

Comment: 10 yr / 24 hr

#### Simulation: 25YR-72HR

Scenario: POST-CONDITIONS
Run Date/Time: 2/9/2023 6:35:11 PM
Program Version: ICPR4 4.07.08

#### Genera

Run Mode: Normal

(2D):

	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	77.0000

Max Calculation Time: 60.0000

#### Output Time Increments

#### Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

#### Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000

# Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

#### Restart File

Save Restart: False

Reference ET Folder: Unit Hydrograph

Folder:

Rainfall Folder:

Lookup Tables

Boundary Stage Set:

Extern Hydrograph Set: Curve Number Set: SITE

Green-Ampt Set:

Vertical Layers Set:

Impervious Set: SITE

Roughness Set:

Crop Coef Set:

Fillable Porosity Set:

Conductivity Set:

Leakage Set:

# Tolerances & Options

Time Marching: SAOR IA Recovery Time: 24.0000 hr ET for Manual Basins: False Max Iterations: 6

Over-Relax Weight 0.5 dec

Fact:

Smp/Man Basin Rain Global dZ Tolerance: 0.0010 ft

Opt:

Max dZ: 1.0000 ft OF Region Rain Opt: Global

~SFWMD-72 Link Optimizer Tol: 0.0001 ft Rainfall Name: Rainfall Amount: 10.50 in

Edge Length Option: Automatic Storm Duration: 72.0000 hr

Dflt Damping (2D): 0.0050 ft Dflt Damping (1D): 0.0050 ft Min Node Srf Area 100 ft2

Min Node Srf Area 100 ft2

(2D):

Energy Switch (2D): Energy

(1D):

Energy Switch (1D): Energy

Comment: SFWMD 25 yr / 72 hr

# APPENDIX E DRAWDOWN (RECOVERY) ANALYSIS

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-A	0.0000	123.33	0.00	0.00
RECOVERY	recovery	BASIN-A	0.2504	120.91	0.00	0.21
RECOVERY	recovery	BASIN-A	0.5005	120.53	0.01	0.25
RECOVERY	recovery	BASIN-A	0.7506	120.24	0.01	0.28
RECOVERY	recovery	BASIN-A	1.0001	120.02	0.01	0.32
RECOVERY	recovery	BASIN-A	1.2502	119.86	0.01	0.34
RECOVERY	recovery	BASIN-A	1.5006	119.74	0.01	0.36
RECOVERY	recovery	BASIN-A	1.7502	119.64	0.01	0.38
RECOVERY	recovery	BASIN-A	2.0016	119.55	0.01	0.39
RECOVERY	recovery	BASIN-A	2.2501	119.47	0.01	0.41
RECOVERY	recovery	BASIN-A	2.5013	119.40	0.01	0.42
RECOVERY	recovery	BASIN-A	2.7513	119.33	0.01	0.43
RECOVERY	recovery	BASIN-A	3.0007	119.27	0.01	0.44
RECOVERY	recovery	BASIN-A	3.2511	119.22	0.01	0.45
RECOVERY	recovery	BASIN-A	3.5003	119.18	0.01	0.46
RECOVERY	recovery	BASIN-A	3.7500	119.14	0.01	0.47
RECOVERY	recovery	BASIN-A	4.0044	119.10	0.01	0.47
RECOVERY	recovery	BASIN-A	4.2500	119.06	0.01	0.48
RECOVERY	recovery	BASIN-A	4.5005	119.03	0.01	0.49
RECOVERY	recovery	BASIN-A	4.7521	119.00	0.01	0.49
RECOVERY	recovery	BASIN-A	5.0020	118.97	0.01	0.50
RECOVERY	recovery	BASIN-A	5.2519	118.94	0.01	0.50
RECOVERY	recovery	BASIN-A	5.5030	118.91	0.01	0.51
RECOVERY	recovery	BASIN-A	5.7515	118.88	0.01	0.51
RECOVERY	recovery	BASIN-A	6.0020	118.86	0.01	0.52
RECOVERY	recovery	BASIN-A	6.2516	118.83	0.01	0.52
RECOVERY	recovery	BASIN-A	6.5035	118.81	0.01	0.52
RECOVERY	recovery	BASIN-A	6.7509	118.78	0.01	0.53
RECOVERY	recovery	BASIN-A	7.0024	118.76	0.01	0.53

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-A	7.2501	118.74	0.01	0.54
RECOVERY	recovery	BASIN-A	7.5040	118.72	0.01	0.54
RECOVERY	recovery	BASIN-A	7.7532	118.70	0.01	0.54
RECOVERY	recovery	BASIN-A	8.0038	118.68	0.01	0.55
RECOVERY	recovery	BASIN-A	8.0855	118.67	0.01	0.55
RECOVERY	recovery	BASIN-A	8.1677	118.67	0.01	0.55
RECOVERY	recovery	BASIN-A	8.2562	118.66	0.01	0.55
RECOVERY	recovery	BASIN-A	8.3343	118.65	0.01	0.55
RECOVERY	recovery	BASIN-A	8.4221	118.65	0.01	0.55
RECOVERY	recovery	BASIN-A	8.5061	118.64	0.01	0.55
RECOVERY	recovery	BASIN-A	8.5895	118.63	0.01	0.55
RECOVERY	recovery	BASIN-A	8.6686	118.63	0.01	0.55
RECOVERY	recovery	BASIN-A	8.7575	118.62	0.01	0.56
RECOVERY	recovery	BASIN-A	8.8409	118.61	0.01	0.56
RECOVERY	recovery	BASIN-A	8.9184	118.61	0.01	0.56
RECOVERY	recovery	BASIN-A	9.0044	118.60	0.01	0.56
RECOVERY	recovery	BASIN-A	9.0871	118.60	0.01	0.56
RECOVERY	recovery	BASIN-A	9.1688	118.59	0.01	0.56
RECOVERY	recovery	BASIN-A	9.2594	118.58	0.01	0.56
RECOVERY	recovery	BASIN-A	9.3410	118.58	0.01	0.56
RECOVERY	recovery	BASIN-A	9.4248	118.57	0.01	0.56
RECOVERY	recovery	BASIN-A	9.5069	118.57	0.01	0.56
RECOVERY	recovery	BASIN-A	9.5852	118.56	0.01	0.57
RECOVERY	recovery	BASIN-A	9.6722	118.55	0.01	0.57
RECOVERY	recovery	BASIN-A	9.7578	118.55	0.01	0.57
RECOVERY	recovery	BASIN-A	9.8415	118.54	0.01	0.57
RECOVERY	recovery	BASIN-A	9.9174	118.54	0.01	0.57
RECOVERY	recovery	BASIN-A	10.0004	118.53	0.01	0.57
RECOVERY	recovery	BASIN-A	10.0884	118.53	0.01	0.57

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-A	10.1687	118.52	0.01	0.57
RECOVERY	recovery	BASIN-A	10.2577	118.51	0.01	0.57
RECOVERY	recovery	BASIN-A	10.3423	118.51	0.01	0.57
RECOVERY	recovery	BASIN-A	10.4274	118.50	0.01	0.57
RECOVERY	recovery	BASIN-A	10.5074	118.50	0.01	0.58
RECOVERY	recovery	BASIN-A	10.5896	118.49	0.01	0.58
RECOVERY	recovery	BASIN-A	10.6680	118.49	0.01	0.58
RECOVERY	recovery	BASIN-A	10.7519	118.48	0.01	0.58
RECOVERY	recovery	BASIN-A	10.8352	118.48	0.01	0.58
RECOVERY	recovery	BASIN-A	10.9263	118.47	0.01	0.58
RECOVERY	recovery	BASIN-A	11.0048	118.47	0.01	0.58
RECOVERY	recovery	BASIN-A	11.0904	118.46	0.01	0.58
RECOVERY	recovery	BASIN-A	11.1735	118.46	0.01	0.58
RECOVERY	recovery	BASIN-A	11.2559	118.45	0.01	0.58
RECOVERY	recovery	BASIN-A	11.3426	118.44	0.01	0.58
RECOVERY	recovery	BASIN-A	11.4267	118.44	0.01	0.58
RECOVERY	recovery	BASIN-A	11.5047	118.43	0.01	0.59
RECOVERY	recovery	BASIN-A	11.5912	118.43	0.01	0.59
RECOVERY	recovery	BASIN-A	11.6736	118.42	0.01	0.59
RECOVERY	recovery	BASIN-A	11.7617	118.42	0.01	0.59
RECOVERY	recovery	BASIN-A	11.8438	118.41	0.01	0.59
RECOVERY	recovery	BASIN-A	11.9204	118.41	0.01	0.59
RECOVERY	recovery	BASIN-A	12.0024	118.40	0.01	0.59
RECOVERY	recovery	BASIN-A	12.0901	118.40	0.01	0.59
RECOVERY	recovery	BASIN-A	12.1732	118.39	0.01	0.59
RECOVERY	recovery	BASIN-A	12.2522	118.39	0.01	0.59
RECOVERY	recovery	BASIN-A	12.3394	118.38	0.01	0.59
RECOVERY	recovery	BASIN-A	12.4235	118.38	0.01	0.59
RECOVERY	recovery	BASIN-A	12.5049	118.37	0.01	0.59

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-A	12.5932	118.37	0.01	0.60
RECOVERY	recovery	BASIN-A	12.6768	118.36	0.01	0.60
RECOVERY	recovery	BASIN-A	12.7606	118.36	0.01	0.60
RECOVERY	recovery	BASIN-A	12.8372	118.35	0.01	0.60
RECOVERY	recovery	BASIN-A	12.9187	118.35	0.01	0.60
RECOVERY	recovery	BASIN-A	13.0049	118.35	0.01	0.60
RECOVERY	recovery	BASIN-A	13.0840	118.34	0.01	0.60
RECOVERY	recovery	BASIN-A	13.1778	118.34	0.01	0.60
RECOVERY	recovery	BASIN-A	13.2506	118.33	0.01	0.60
RECOVERY	recovery	BASIN-A	13.3433	118.33	0.01	0.60
RECOVERY	recovery	BASIN-A	13.4187	118.32	0.01	0.60
RECOVERY	recovery	BASIN-A	13.5104	118.32	0.01	0.60
RECOVERY	recovery	BASIN-A	13.5971	118.31	0.01	0.60
RECOVERY	recovery	BASIN-A	13.6708	118.31	0.01	0.60
RECOVERY	recovery	BASIN-A	13.7537	118.30	0.01	0.61
RECOVERY	recovery	BASIN-A	13.8366	118.30	0.01	0.61
RECOVERY	recovery	BASIN-A	13.9199	118.29	0.01	0.61
RECOVERY	recovery	BASIN-A	14.0033	118.29	0.01	0.61
RECOVERY	recovery	BASIN-A	14.2533	118.28	0.01	0.61
RECOVERY	recovery	BASIN-A	14.5033	118.26	0.01	0.61
RECOVERY	recovery	BASIN-A	14.7533	118.25	0.01	0.61
RECOVERY	recovery	BASIN-A	15.0033	118.23	0.01	0.61
RECOVERY	recovery	BASIN-A	15.2533	118.22	0.01	0.62
RECOVERY	recovery	BASIN-A	15.5033	118.21	0.01	0.62
RECOVERY	recovery	BASIN-A	15.7533	118.20	0.01	0.62
RECOVERY	recovery	BASIN-A	16.0033	118.18	0.01	0.62
RECOVERY	recovery	BASIN-A	16.2533	118.17	0.01	0.62
RECOVERY	recovery	BASIN-A	16.5033	118.16	0.01	0.63
RECOVERY	recovery	BASIN-A	16.7533	118.15	0.01	0.63

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-A	17.0033	118.14	0.01	0.63
RECOVERY	recovery	BASIN-A	17.2599	118.12	0.01	0.63
RECOVERY	recovery	BASIN-A	17.5033	118.11	0.01	0.63
RECOVERY	recovery	BASIN-A	17.7566	118.10	0.01	0.63
RECOVERY	recovery	BASIN-A	18.0099	118.09	0.01	0.63
RECOVERY	recovery	BASIN-A	18.2633	118.08	0.01	0.63
RECOVERY	recovery	BASIN-A	18.5108	118.07	0.01	0.64
RECOVERY	recovery	BASIN-A	18.7544	118.06	0.01	0.64
RECOVERY	recovery	BASIN-A	19.0069	118.05	0.01	0.64
RECOVERY	recovery	BASIN-A	19.2569	118.04	0.01	0.64
RECOVERY	recovery	BASIN-A	19.5069	118.04	0.01	0.64
RECOVERY	recovery	BASIN-A	19.7569	118.03	0.01	0.64
RECOVERY	recovery	BASIN-A	20.0069	118.02	0.01	0.64
RECOVERY	recovery	BASIN-A	20.2569	118.01	0.01	0.64
RECOVERY	recovery	BASIN-A	20.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	20.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	21.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	21.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	21.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	21.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	22.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	22.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	22.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	22.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	23.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	23.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	23.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	23.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	24.0069	118.00	0.01	0.64

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-A	24.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	24.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	24.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	25.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	25.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	25.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	25.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	26.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	26.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	26.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	26.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	27.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	27.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	27.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	27.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	28.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	28.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	28.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	28.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	29.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	29.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	29.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	29.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	30.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	30.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	30.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	30.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	31.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	31.2569	118.00	0.01	0.64

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-A	31.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	31.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	32.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	32.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	32.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	32.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	33.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	33.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	33.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	33.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	34.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	34.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	34.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	34.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	35.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	35.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	35.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	35.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	36.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	36.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	36.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	36.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	37.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	37.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	37.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	37.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	38.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	38.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	38.5069	118.00	0.01	0.64

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-A	38.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	39.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	39.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	39.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	39.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	40.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	40.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	40.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	40.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	41.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	41.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	41.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	41.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	42.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	42.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	42.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	42.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	43.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	43.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	43.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	43.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	44.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	44.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	44.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	44.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	45.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	45.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	45.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	45.7569	118.00	0.01	0.64

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-A	46.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	46.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	46.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	46.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	47.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	47.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	47.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	47.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	48.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	48.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	48.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	48.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	49.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	49.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	49.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	49.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	50.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	50.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	50.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	50.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	51.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	51.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	51.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	51.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	52.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	52.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	52.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	52.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	53.0069	118.00	0.01	0.64

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-A	53.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	53.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	53.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	54.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	54.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	54.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	54.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	55.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	55.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	55.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	55.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	56.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	56.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	56.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	56.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	57.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	57.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	57.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	57.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	58.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	58.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	58.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	58.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	59.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	59.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	59.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	59.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	60.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	60.2569	118.00	0.01	0.64

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-A	60.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	60.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	61.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	61.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	61.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	61.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	62.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	62.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	62.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	62.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	63.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	63.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	63.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	63.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	64.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	64.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	64.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	64.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	65.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	65.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	65.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	65.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	66.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	66.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	66.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	66.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	67.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	67.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	67.5069	118.00	0.01	0.64

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-A	67.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	68.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	68.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	68.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	68.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	69.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	69.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	69.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	69.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	70.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	70.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	70.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	70.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	71.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	71.2569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	71.5069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	71.7569	118.00	0.01	0.64
RECOVERY	recovery	BASIN-A	72.0069	118.00	0.01	0.64
RECOVERY	recovery	BASIN-B	0.0000	120.00	0.00	0.00
RECOVERY	recovery	BASIN-B	0.2504	120.92	0.11	0.06
RECOVERY	recovery	BASIN-B	0.5005	120.53	0.11	0.08
RECOVERY	recovery	BASIN-B	0.7506	120.24	0.11	0.10
RECOVERY	recovery	BASIN-B	1.0001	120.02	0.12	0.11
RECOVERY	recovery	BASIN-B	1.2502	119.86	0.12	0.13
RECOVERY	recovery	BASIN-B	1.5006	119.74	0.12	0.14
RECOVERY	recovery	BASIN-B	1.7502	119.64	0.13	0.15
RECOVERY	recovery	BASIN-B	2.0016	119.55	0.13	0.16
RECOVERY	recovery	BASIN-B	2.2501	119.47	0.14	0.18
RECOVERY	recovery	BASIN-B	2.5013	119.40	0.14	0.19

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-B	2.7513	119.33	0.15	0.20
RECOVERY	recovery	BASIN-B	3.0007	119.27	0.15	0.21
RECOVERY	recovery	BASIN-B	3.2511	119.22	0.15	0.22
RECOVERY	recovery	BASIN-B	3.5003	119.18	0.16	0.22
RECOVERY	recovery	BASIN-B	3.7500	119.13	0.16	0.23
RECOVERY	recovery	BASIN-B	4.0044	119.09	0.16	0.24
RECOVERY	recovery	BASIN-B	4.2500	119.06	0.16	0.24
RECOVERY	recovery	BASIN-B	4.5005	119.03	0.16	0.25
RECOVERY	recovery	BASIN-B	4.7521	118.99	0.17	0.25
RECOVERY	recovery	BASIN-B	5.0020	118.96	0.17	0.26
RECOVERY	recovery	BASIN-B	5.2519	118.93	0.17	0.26
RECOVERY	recovery	BASIN-B	5.5030	118.91	0.17	0.26
RECOVERY	recovery	BASIN-B	5.7515	118.88	0.17	0.27
RECOVERY	recovery	BASIN-B	6.0020	118.85	0.17	0.27
RECOVERY	recovery	BASIN-B	6.2516	118.83	0.17	0.28
RECOVERY	recovery	BASIN-B	6.5035	118.81	0.18	0.28
RECOVERY	recovery	BASIN-B	6.7509	118.78	0.18	0.28
RECOVERY	recovery	BASIN-B	7.0024	118.76	0.18	0.29
RECOVERY	recovery	BASIN-B	7.2501	118.74	0.18	0.29
RECOVERY	recovery	BASIN-B	7.5040	118.72	0.18	0.29
RECOVERY	recovery	BASIN-B	7.7532	118.70	0.18	0.30
RECOVERY	recovery	BASIN-B	8.0038	118.68	0.18	0.30
RECOVERY	recovery	BASIN-B	8.0855	118.67	0.18	0.30
RECOVERY	recovery	BASIN-B	8.1677	118.66	0.18	0.30
RECOVERY	recovery	BASIN-B	8.2562	118.66	0.18	0.30
RECOVERY	recovery	BASIN-B	8.3343	118.65	0.18	0.30
RECOVERY	recovery	BASIN-B	8.4221	118.64	0.18	0.30
RECOVERY	recovery	BASIN-B	8.5061	118.64	0.18	0.30
RECOVERY	recovery	BASIN-B	8.5895	118.63	0.18	0.30

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-B	8.6686	118.62	0.18	0.31
RECOVERY	recovery	BASIN-B	8.7575	118.62	0.18	0.31
RECOVERY	recovery	BASIN-B	8.8409	118.61	0.19	0.31
RECOVERY	recovery	BASIN-B	8.9184	118.61	0.19	0.31
RECOVERY	recovery	BASIN-B	9.0044	118.60	0.19	0.31
RECOVERY	recovery	BASIN-B	9.0871	118.59	0.19	0.31
RECOVERY	recovery	BASIN-B	9.1688	118.59	0.19	0.31
RECOVERY	recovery	BASIN-B	9.2594	118.58	0.19	0.31
RECOVERY	recovery	BASIN-B	9.3410	118.58	0.19	0.31
RECOVERY	recovery	BASIN-B	9.4248	118.57	0.19	0.31
RECOVERY	recovery	BASIN-B	9.5069	118.56	0.19	0.31
RECOVERY	recovery	BASIN-B	9.5852	118.56	0.19	0.31
RECOVERY	recovery	BASIN-B	9.6722	118.55	0.19	0.32
RECOVERY	recovery	BASIN-B	9.7578	118.55	0.19	0.32
RECOVERY	recovery	BASIN-B	9.8415	118.54	0.19	0.32
RECOVERY	recovery	BASIN-B	9.9174	118.54	0.19	0.32
RECOVERY	recovery	BASIN-B	10.0004	118.53	0.19	0.32
RECOVERY	recovery	BASIN-B	10.0884	118.52	0.19	0.32
RECOVERY	recovery	BASIN-B	10.1687	118.52	0.19	0.32
RECOVERY	recovery	BASIN-B	10.2577	118.51	0.19	0.32
RECOVERY	recovery	BASIN-B	10.3423	118.51	0.19	0.32
RECOVERY	recovery	BASIN-B	10.4274	118.50	0.19	0.32
RECOVERY	recovery	BASIN-B	10.5074	118.50	0.19	0.32
RECOVERY	recovery	BASIN-B	10.5896	118.49	0.19	0.32
RECOVERY	recovery	BASIN-B	10.6680	118.49	0.19	0.32
RECOVERY	recovery	BASIN-B	10.7519	118.48	0.19	0.32
RECOVERY	recovery	BASIN-B	10.8352	118.47	0.19	0.33
RECOVERY	recovery	BASIN-B	10.9263	118.47	0.19	0.33
RECOVERY	recovery	BASIN-B	11.0048	118.46	0.19	0.33

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-B	11.0904	118.46	0.19	0.33
RECOVERY	recovery	BASIN-B	11.1735	118.45	0.19	0.33
RECOVERY	recovery	BASIN-B	11.2559	118.45	0.19	0.33
RECOVERY	recovery	BASIN-B	11.3426	118.44	0.19	0.33
RECOVERY	recovery	BASIN-B	11.4267	118.44	0.19	0.33
RECOVERY	recovery	BASIN-B	11.5047	118.43	0.19	0.33
RECOVERY	recovery	BASIN-B	11.5912	118.43	0.19	0.33
RECOVERY	recovery	BASIN-B	11.6736	118.42	0.19	0.33
RECOVERY	recovery	BASIN-B	11.7617	118.42	0.19	0.33
RECOVERY	recovery	BASIN-B	11.8438	118.41	0.19	0.33
RECOVERY	recovery	BASIN-B	11.9204	118.41	0.19	0.33
RECOVERY	recovery	BASIN-B	12.0024	118.40	0.19	0.33
RECOVERY	recovery	BASIN-B	12.0901	118.40	0.19	0.34
RECOVERY	recovery	BASIN-B	12.1732	118.39	0.20	0.34
RECOVERY	recovery	BASIN-B	12.2522	118.39	0.20	0.34
RECOVERY	recovery	BASIN-B	12.3394	118.38	0.20	0.34
RECOVERY	recovery	BASIN-B	12.4235	118.38	0.20	0.34
RECOVERY	recovery	BASIN-B	12.5049	118.37	0.20	0.34
RECOVERY	recovery	BASIN-B	12.5932	118.37	0.20	0.34
RECOVERY	recovery	BASIN-B	12.6768	118.36	0.20	0.34
RECOVERY	recovery	BASIN-B	12.7606	118.36	0.20	0.34
RECOVERY	recovery	BASIN-B	12.8372	118.35	0.20	0.34
RECOVERY	recovery	BASIN-B	12.9187	118.35	0.20	0.34
RECOVERY	recovery	BASIN-B	13.0049	118.34	0.20	0.34
RECOVERY	recovery	BASIN-B	13.0840	118.34	0.20	0.34
RECOVERY	recovery	BASIN-B	13.1778	118.33	0.20	0.34
RECOVERY	recovery	BASIN-B	13.2506	118.33	0.20	0.34
RECOVERY	recovery	BASIN-B	13.3433	118.32	0.20	0.34
RECOVERY	recovery	BASIN-B	13.4187	118.32	0.20	0.35

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-B	13.5104	118.31	0.20	0.35
RECOVERY	recovery	BASIN-B	13.5971	118.31	0.20	0.35
RECOVERY	recovery	BASIN-B	13.6708	118.30	0.20	0.35
RECOVERY	recovery	BASIN-B	13.7537	118.30	0.20	0.35
RECOVERY	recovery	BASIN-B	13.8366	118.29	0.20	0.35
RECOVERY	recovery	BASIN-B	13.9199	118.29	0.20	0.35
RECOVERY	recovery	BASIN-B	14.0033	118.29	0.20	0.35
RECOVERY	recovery	BASIN-B	14.2533	118.27	0.20	0.35
RECOVERY	recovery	BASIN-B	14.5033	118.26	0.20	0.35
RECOVERY	recovery	BASIN-B	14.7533	118.24	0.20	0.35
RECOVERY	recovery	BASIN-B	15.0033	118.23	0.20	0.36
RECOVERY	recovery	BASIN-B	15.2533	118.22	0.20	0.36
RECOVERY	recovery	BASIN-B	15.5033	118.20	0.20	0.36
RECOVERY	recovery	BASIN-B	15.7533	118.19	0.20	0.36
RECOVERY	recovery	BASIN-B	16.0033	118.18	0.20	0.36
RECOVERY	recovery	BASIN-B	16.2533	118.16	0.20	0.36
RECOVERY	recovery	BASIN-B	16.5033	118.15	0.20	0.37
RECOVERY	recovery	BASIN-B	16.7533	118.13	0.21	0.37
RECOVERY	recovery	BASIN-B	17.0033	118.12	0.21	0.37
RECOVERY	recovery	BASIN-B	17.2599	118.10	0.21	0.37
RECOVERY	recovery	BASIN-B	17.5033	118.09	0.21	0.37
RECOVERY	recovery	BASIN-B	17.7566	118.07	0.21	0.37
RECOVERY	recovery	BASIN-B	18.0099	118.06	0.21	0.37
RECOVERY	recovery	BASIN-B	18.2633	118.04	0.21	0.37
RECOVERY	recovery	BASIN-B	18.5108	118.02	0.21	0.38
RECOVERY	recovery	BASIN-B	18.7544	118.01	0.21	0.38
RECOVERY	recovery	BASIN-B	19.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	19.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	19.5069	118.00	0.21	0.38

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-B	19.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	20.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	20.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	20.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	20.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	21.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	21.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	21.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	21.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	22.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	22.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	22.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	22.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	23.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	23.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	23.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	23.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	24.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	24.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	24.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	24.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	25.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	25.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	25.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	25.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	26.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	26.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	26.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	26.7569	118.00	0.21	0.38

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-B	27.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	27.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	27.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	27.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	28.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	28.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	28.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	28.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	29.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	29.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	29.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	29.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	30.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	30.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	30.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	30.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	31.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	31.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	31.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	31.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	32.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	32.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	32.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	32.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	33.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	33.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	33.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	33.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	34.0069	118.00	0.21	0.38

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-B	34.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	34.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	34.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	35.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	35.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	35.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	35.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	36.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	36.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	36.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	36.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	37.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	37.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	37.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	37.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	38.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	38.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	38.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	38.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	39.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	39.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	39.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	39.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	40.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	40.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	40.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	40.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	41.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	41.2569	118.00	0.21	0.38

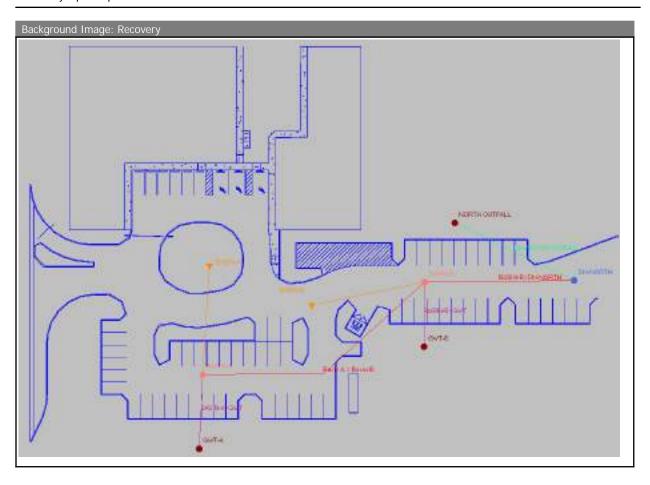
Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-B	41.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	41.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	42.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	42.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	42.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	42.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	43.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	43.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	43.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	43.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	44.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	44.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	44.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	44.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	45.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	45.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	45.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	45.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	46.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	46.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	46.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	46.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	47.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	47.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	47.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	47.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	48.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	48.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	48.5069	118.00	0.21	0.38

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-B	48.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	49.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	49.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	49.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	49.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	50.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	50.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	50.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	50.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	51.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	51.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	51.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	51.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	52.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	52.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	52.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	52.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	53.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	53.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	53.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	53.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	54.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	54.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	54.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	54.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	55.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	55.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	55.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	55.7569	118.00	0.21	0.38

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-B	56.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	56.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	56.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	56.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	57.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	57.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	57.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	57.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	58.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	58.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	58.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	58.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	59.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	59.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	59.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	59.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	60.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	60.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	60.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	60.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	61.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	61.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	61.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	61.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	62.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	62.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	62.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	62.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	63.0069	118.00	0.21	0.38

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-B	63.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	63.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	63.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	64.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	64.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	64.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	64.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	65.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	65.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	65.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	65.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	66.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	66.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	66.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	66.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	67.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	67.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	67.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	67.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	68.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	68.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	68.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	68.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	69.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	69.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	69.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	69.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	70.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	70.2569	118.00	0.21	0.38

Scenario	Sim	Node Name	Relative Time [hrs]	Stage [ft]	Total Inflow Volume [ac_ft]	Total Outflow Volume [ac_ft]
RECOVERY	recovery	BASIN-B	70.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	70.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	71.0069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	71.2569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	71.5069	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	71.7569	118.00	0.21	0.38
RECOVERY	recovery	BASIN-B	72.0069	118.00	0.21	0.38



## Simple Basin: BASIN-A

Scenario: RECOVERY

Node: BASIN-A

Hydrograph Method: NRCS Unit Hydrograph

Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 999999.00 cfs
Time Shift: 0.0000 hr

Unit Hydrograph: UH323 Peaking Factor: 323.0

Area: 1.7380 ac

Curve Number: 73.9
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

#### Simple Basin: BASIN-B

Scenario: RECOVERY

Node: BASIN-B

Hydrograph Method: NRCS Unit Hydrograph

Infiltration Method: Curve Number
Time of Concentration: 10.0000 min
Max Allowable Q: 99999999.00 cfs

Time Shift: 0.0000 hr
Unit Hydrograph: UH256
Peaking Factor: 256.0

Area: 0.6940 ac

Curve Number: 61.5
% Impervious: 0.00
% DCIA: 0.00
% Direct: 0.00
Rainfall Name:

Comment:

#### Node: BASIN-A

Scenario: RECOVERY
Type: Stage/Volume
Base Flow: 0.00 cfs
Initial Stage: 123.33 ft
Warning Stage: 123.25 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
123.33	0.61	26711
123.25	0.59	25905
122.75	0.57	24903
122.25	0.54	23697
120.42	0.38	16639
120.25	0.36	15776
120.00	0.33	14190
119.75	0.29	12425
119.50	0.24	10558
119.25	0.20	8641
119.00	0.15	6717
118.75	0.11	4828
118.50	0.07	3022
118.25	0.03	1365
118.00	0.00	0

Comment:

#### Node: BASIN-B

Scenario: RECOVERY
Type: Stage/Volume
Base Flow: 0.00 cfs
Initial Stage: 120.00 ft
Warning Stage: 122.60 ft

Stage [ft]	Volume [ac-ft]	Volume [ft3]
120.00	0.17	7379
119.75	0.15	6621
119.50	0.13	5706
119.25	0.11	4713
119.00	0.08	3690
118.75	0.06	2662
118.50	0.04	1673
118.25	0.02	754
118.00	0.00	0

Comment:

Node: DN-NORTH

Scenario: RECOVERY
Type: Stage/Area
Base Flow: 0.00 cfs
Initial Stage: 118.00 ft
Warning Stage: 122.60 ft

Comment:

Node: GWT-

Scenario: RECOVERY
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 115.50 ft
Warning Stage: 115.50 ft

Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	115.50
0	0	0	96.0000	115.50

Comment:

#### Node: GWT-F

Scenario: RECOVERY
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 114.50 ft
Warning Stage: 114.50 ft

Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	114.50
0	0	0	96.0000	114.50

Comment:

#### Node: NORTH OUTFALL

Scenario: RECOVERY
Type: Time/Stage
Base Flow: 0.00 cfs
Initial Stage: 121.50 ft
Warning Stage: 121.50 ft

Boundary Stage:

Year	Month	Day	Hour	Stage [ft]
0	0	0	0.0000	121.50
0	0	0	96.0000	121.50

Comment:

#### Percolation Link: BASIN-A>GWT

Scenario:RECOVERYSurface Area Option:User SpecifiedFrom Node:BASIN-ABottom Elevation:118.00 ftTo Node:GWT-ASurface Area:0.2214 ac

Link Count: 1 Vertical Flow Termination: Horizontal Flow Algorithm

Flow Direction: Both Perimeter 1: 599.00 ft Aquifer Base Elevation: 103.50 ft Perimeter 2: 669.00 ft Water Table Elevation: 115.50 ft Perimeter 3: 2038.00 ft Annual Recharge Rate: 0 ipy Distance P1 to P2: 50.00 ft Horizontal Conductivity: 10.650 fpd Distance P2 to P3: 450.00 ft Vertical Conductivity: 7.100 fpd # of Cells P1 to P2: 10 Fillable Porosity: 0.300 # of Cells P2 to P3: 45

Layer Thickness: 2.50 ft Comment:

C:\\_ICPR Models\Windermere Downtown Property\

Pipe Link: BASIN-B>	DN-NORTH	Upst	ream	Down	stream			
Scenario:	RECOVERY	Invert:	118.00 ft	Invert:	118.00 ft			
From Node:	BASIN-B	Manning's N:	0.0220	Manning's N:	0.0220			
To Node:	DN-NORTH	Geometry	y: Circular	Geometr	y: Circular			
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft			
Flow Direction:	Both			Bottom Clip				
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft			
Length:	6.00 ft	Op Table:		Op Table:				
FHWA Code:	1	Ref Node:		Ref Node:				
Entr Loss Coef:	0.00	Manning's N:	0.0000	Manning's N:	0.0000			
Exit Loss Coef:	0.00			Top Clip				
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft			
Bend Location:	0.00 dec	Op Table:		Op Table:				
Energy Switch:	Energy	Ref Node:		Ref Node:				
		Manning's N:	0.0000	Manning's N:	0.0000			
Comment:	Comment:							

Percolation Link: BASIN-B>GWT									
Scenario:	RECOVERY	Surface Area Option:	User Specified						
From Node:	BASIN-B	Bottom Elevation:	118.00 ft						
To Node:	GWT-B	Surface Area:	0.1129 ac						
Link Count:	1	Vertical Flow Termination:	Horizontal Flow Algorithm						
Flow Direction:	Both	Perimeter 1:	394.00 ft						
Aquifer Base Elevation:	102.50 ft	Perimeter 2:	553.00 ft						
Water Table Elevation:	114.50 ft	Perimeter 3:	1939.00 ft						
Annual Recharge Rate:	0 ipy	Distance P1 to P2:	50.00 ft						
Horizontal Conductivity:	10.650 fpd	Distance P2 to P3:	450.00 ft						
Vertical Conductivity:	7.100 fpd	# of Cells P1 to P2:	10						
Fillable Porosity:	0.300	# of Cells P2 to P3:	45						
Layer Thickness:	3.50 ft								
Comment:									

Pipe Link: Basin A >	Basin B	Upst	ream	Dowr	Downstream		
Scenario:	RECOVERY	Invert:	118.00 ft	Invert:	118.00 ft		
From Node:	BASIN-A	Manning's N:	0.0220	Manning's N:	0.0220		
To Node:	BASIN-B	Geometry	y: Circular	Geometr	y: Circular		
Link Count:	1	Max Depth:	2.00 ft	Max Depth:	2.00 ft		
Flow Direction:	Both			Bottom Clip			
Damping:	0.0000 ft	Default:	0.00 ft	Default:	0.00 ft		
Length:	75.00 ft	Op Table:		Op Table:			
FHWA Code:	1	Ref Node:		Ref Node:			
Entr Loss Coef:	1.00	Manning's N:	0.0000	Manning's N:	0.0000		
Exit Loss Coef:	1.00			Top Clip			
Bend Loss Coef:	0.00	Default:	0.00 ft	Default:	0.00 ft		
Bend Location:	0.00 dec	Op Table:		Op Table:			

Energy Switch: Energy Ref Node: Ref Node:

Manning's N: 0.0000 Manning's N: 0.0000

Default: 0.00 ft

Discharge Coefficients

0.00 ft

2.800

Op Table:

Ref Node:

Default:

Op Table: Ref Node:

Weir Default:

Orifice Table:

Weir Table:

Orifice Default: 0.600

Comment:

Weir Link: DN-NORTH>OUTFALI

Scenario: RECOVERY
From Node: DN-NORTH
To Node: NORTH OUTFALL

Link Count: 1
Flow Direction: None
Damping: 0.0000 ft
Weir Type: Horizontal
Geometry Type: Rectangular

Invert: 122.60 ft
Control Elevation: 122.60 ft
Max Depth: 3.08 ft

Max Width: 4.08 ft Fillet: 0.00 ft

Comment:

Simulation: recovery

Min Calculation Time:

Scenario: RECOVERY

Run Date/Time: 2/10/2023 8:54:19 AM Program Version: ICPR4 4.07.08

Genera

Run Mode: Normal

_	Year	Month	Day	Hour [hr]
Start Time:	0	0	0	0.0000
End Time:	0	0	0	72.0000

 Hydrology [sec]
 Surface Hydraulics [sec]
 Groundwater [sec]

 60.0000
 0.1000
 900.0000

Max Calculation Time: 60.0000

Output Time Increments

Hydrology

Year	Month	Day	Hour [hr]	Time Increment [min]	
0	0	0	0.0000	15.0000	
0	0	0	8.0000	5.0000	
0	0	0	14.0000	15.0000	

#### Surface Hydraulics

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	15.0000
0	0	0	8.0000	5.0000
0	0	0	14.0000	15.0000

#### Groundwater

Year	Month	Day	Hour [hr]	Time Increment [min]
0	0	0	0.0000	360.0000

Save Restart: False

Resources

Rainfall Folder: Reference ET Folder: Unit Hydrograph Folder:

Lookup Tables

Boundary Stage Set: Extern Hydrograph Set:

Curve Number Set: SITE

Green-Ampt Set: Vertical Layers Set: Impervious Set: SITE

Roughness Set: Crop Coef Set: Fillable Porosity Set: Conductivity Set: Leakage Set:

#### Tolerances & Options

Time Marching: SAOR IA Recovery Time: 24.0000 hr Max Iterations: 6 ET for Manual Basins: False

Over-Relax Weight 0.5 dec

Fact:

dZ Tolerance: 0.0010 ft Smp/Man Basin Rain No Rainfall

Opt:

OF Region Rain Opt: No Rainfall

Link Optimizer Tol: 0.0001 ft

Max dZ: 1.0000 ft

Edge Length Option: Automatic

Dflt Damping (2D): 0.0050 ft Dflt Damping (1D): 0.0050 ft Min Node Srf Area 100 ft2 Min Node Srf Area 100 ft2 (2D):

(1D):

Energy Switch (2D): Energy Energy Switch (1D): Energy

Comment: RECOVERY

# APPENDIX F Stormwater Hydraulics

# FlexTable: Catchment Table

Label	Outflow Element	Runoff Coefficient (Rational)	Time of Concentration (min)	Flow (Total Out) (cfs)	Area (User Defined) (acres)
CM-1	D-3	0.900	10.0	0.86	
CM-2	D-2	0.900	10.0	2.69	
CM-3	D-5	0.900	10.0	1.51	
CM-4	D-2	0.850	10.0	0.67	
CM-5	D-1	0.900	10.0	0.66	
CM-6	D-5	0.800	10.0	1.60	

## FlexTable: Catch Basin Table

Label	Elevation (Rim) (ft)	Elevation (Invert) (ft)	Flow (Captured) (cfs)	Hydraulic Grade Line (In) (ft)	Energy Grade Line (Out) (ft)	Flow (Total Out) (cfs)	Inlet Type	Spread / Top Width (ft)
D-1	123.45	115.55	0.66	121.53	121.57	7.98	Catalog Inlet	10.5
D-2	123.45	115.68	3.36	121.57	121.65	7.32	Catalog Inlet	25.1
D-3	123.00	117.06	0.86	121.65	121.67	0.86	Catalog Inlet	11.9
D-5	122.78	116.62	3.11	121.64	121.74	3.11	Catalog Inlet	11.9

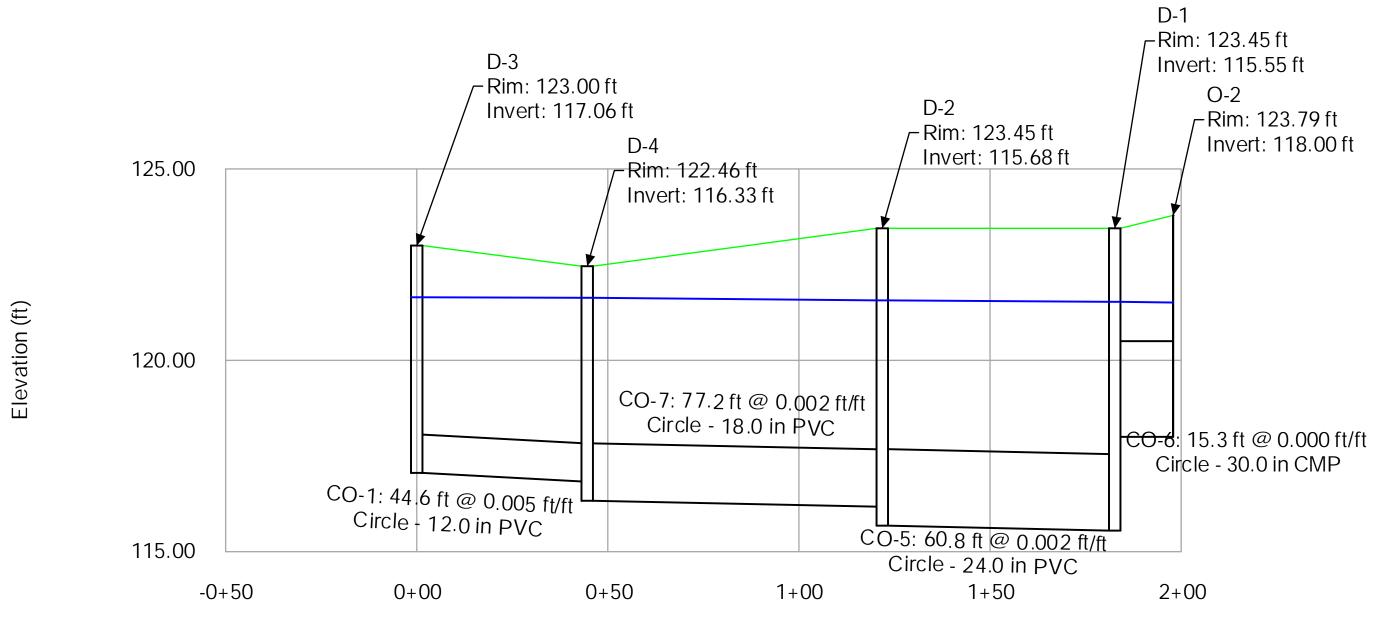
## FlexTable: Conduit Table

Label	Start Node	Invert (Start) (ft)	Stop Node	Invert (Stop) (ft)	Slope (Calculated) (ft/ft)	Diameter (in)	Manning's n	Flow (cfs)	Velocity (ft/s)	Flow / Capacity (Design) (%)
CO-1	D-3	117.06	D-4	116.84	0.005	12.0	0.010	0.86	1.10	26.4
CO-6	D-1	118.00	0-2	118.00	0.000	30.0	0.024	7.98	1.63	3,593.5
CO-7	D-4	116.33	D-2	116.18	0.002	18.0	0.010	3.97	2.25	65.1
CO-5	D-2	115.68	D-1	115.55	0.002	24.0	0.010	7.32	2.33	55.6
CO-4	D-5	116.62	D-4	116.59	0.005	15.0	0.010	3.11	2.53	52.8

# Conduit FlexTable: Combined Pipe/Node Report

Label	Start Node	Stop Node	Length (Unified) (ft)	System Intensity (in/h)	System CA (acres)	System Intensity (in/h)	System Rational Flow (cfs)	Rise (Unified) (ft)	Velocity (ft/s)	Invert (Start) (ft)	Invert (Stop) (ft)	Slope (Calculated) (ft/ft)
CO-1	D-3	D-4	44.6	10.350	0.083	10.350	0.86	1.00	1.10	117.06	116.84	0.005
CO-4	D-5	D-4	7.7	10.350	0.298	10.350	3.11	1.25	2.53	116.62	116.59	0.005
CO-5	D-2	D-1	60.8	10.344	0.702	10.344	7.32	2.00	2.33	115.68	115.55	0.002
CO-6	D-1	0-2	15.3	10.342	0.766	10.342	7.98	2.50	1.63	118.00	118.00	0.000
CO-7	D-4	D-2	77.2	10.347	0.381	10.347	3.97	1.50	2.25	116.33	116.18	0.002

Profile Report
Engineering Profile - Profile - 1 (2023-02-12 - WDP - SW Hydraulics.stsw)

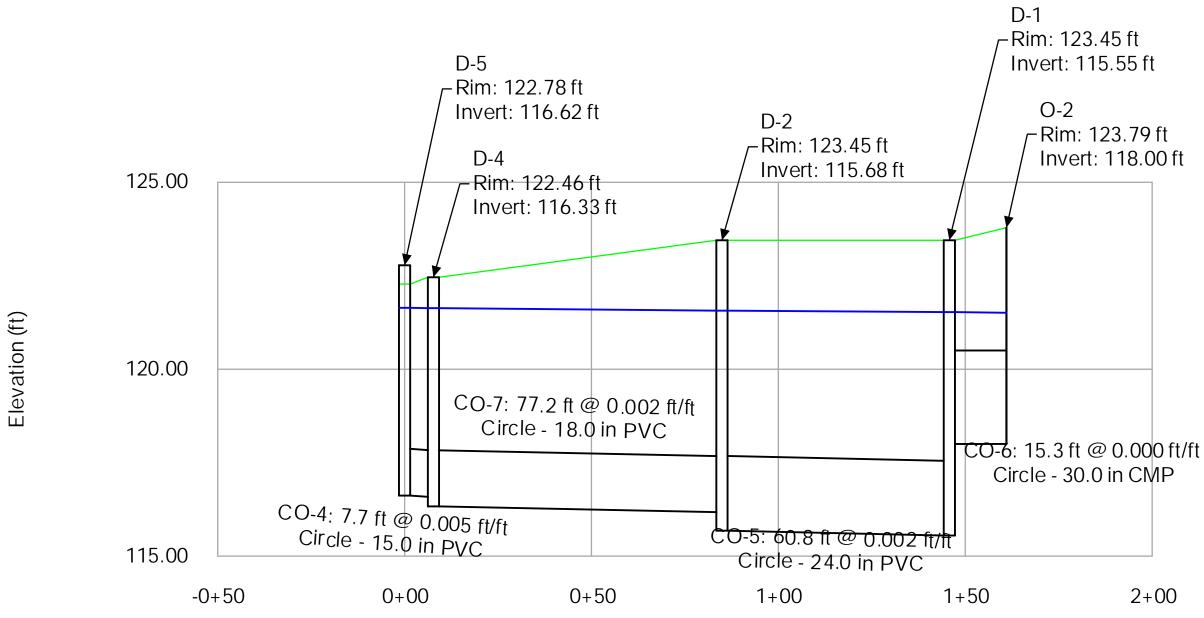


Station (ft)

Bentley Systems, Inc. Haestad Methods Solution Center 27 Siemon Company Drive Suite 200 W Watertown, CT 06795 USA +1-203-755-1666

StormCAD [10.02.03.03] Page 1 of 1

Profile Report
Engineering Profile - Profile - 2 (2023-02-12 - WDP - SW Hydraulics.stsw)



Station (ft)

StormCAD [10.02.03.03] Page 1 of 1

#### TOWN OF WINDERMERE

# **Development Review Board Meeting Minutes**

May 16, 2023

Present were Chair Frank Chase, Board Members Norma Sutton, Roger Heinz, Stephen Withers, Gregg Anderson, and Peter Fleck. Town Council Liaison Andy Williams, Town Planner Brad Cornelius, and Town Manager Robert Smith were present via the phone. Clerk Dorothy Burkhalter and Member Jennifer Roper were absent.

Chair Chase called the meeting to order at 6:30pm. He then led everyone in the Pledge of Allegiance.

### 1. **OPEN FORUM/PUBLIC COMMENTS:**

**NONE** 

#### 2. <u>NEW BUSINESS:</u>

#### a. MINUTES:

i. April 18, 2023, Meeting Minutes

Member Sutton made a motion to approve the minutes. Member Fleck seconded the motion. All were in favor.

#### b. General Items for Consideration:

i. Z23-02: Maika & Courtney Maile – 803 Main Street – Variance for an additional of greater than 10% of a non-conforming home and encroachment into rear setback for a proposed home addition

Chair Chase turned the floor over to Mr. Brad Cornelius. Mr. Cornelius explained that the variance is needed for a small addition to the rear of a non-conforming home which is approximately 30.5% expansion. He then stated that the second variance request would be to allow the proposed addition to have a rear setback of 25.4' instead of the 35' required by code. Mr. Cornelius commented that the hardship is due to the original platting of the lot. He then stated that notices were sent out with thirteen received in support and zero received in opposition. Some discussion followed regarding nonconforming lots. Mr. Maika Maile, owner of the property, introduced himself. He then commented that the need is due to the growth of the family. Member Withers commented on concerns with the hardship. Discussion was made regarding the lot size (some inaudible), renderings, and hardship. Mr. Keith Neil of Next Generation Contractor introduced himself. He then stated that the architecture will match the existing home. Discussion was made regarding rear setback, contiguous/non-contiguous setbacks, proposed addition and FAR, parking of cars, and the addition. Member Sutton made a motion to recommend approval for the variance request. Member Heinz seconded the motion. Member Withers stated he did not see a hardship. Roll call vote was as follows: Sutton – aye, Heinz – aye, Withers – nay, Chase – aye, Anderson – nay, and Fleck – aye. Motion carried 4-2.

#### TOWN OF WINDERMERE

# **Development Review Board Meeting Minutes**

May 16, 2023

ii. Z23-10: Marcelino Hoyo – 507 Main Street – Conditional Use for Sale and On-Site Consumption of Beer and Wine at Paloma Coffee

Chair Chase turned the floor over to Mr. Cornelius. Mr. Cornelius explained the conditional use request is to sell and consume beer and wine. He stated that Mr. Hoyo is less than 1,000 feet from a church/school and less than 1,000 feet from another establishment, which is required by code. Mr. Cornelius stated that the request also includes outdoor consumption. He stated that fencing is being requested for shielding. Mr. Cornelius stated that notices were mailed out with four in approval, one approval with the fence request and one in opposition were received. After discussion was made, Member Sutton made a motion to recommend approval of the request. Member Fleck seconded the motion. All were in favor.

iii. Ordinance 2023-01 – Proposed LDC Change to 10% Limitation for Additions to nonconforming structures. Town Council at First Reading on May 9, 2023, made one change to keep the existing requirement that structures that are damaged more than 50% of its fair market value from fire or other calamity must be repaired or replaced only in conformance with current zoning requirements.

Mr. Cornelius commented on the proposed changes to Ordinance 2023-01. Some discussion ensued. Member Withers made a motion to approve proposed Ordinance 2023-01 with the revisions. All were in favor.

Mr. Cornelius gave an update on the 500 Block submission.

#### 4. ADJOURN:

favor.	Member Withers made a motion to adjourn.	Member Sutton seconded the motion	. All were in
	The meeting adjourned at 7:08pm.		
Dorothy Burkhalter, Town Clerk		Frank Chase, Chair	