



CITY OF DELAND
REGULAR MEETING OF THE PLANNING BOARD
APRIL 19, 2023 AT 5:00 PM
CITY HALL, COMMISSION CHAMBERS
120 SOUTH FLORIDA AVENUE

AGENDA

CALL TO ORDER

PLEDGE OF ALLEGIANCE

ROLL CALL

VERBAL REPORT ON CITY COMMISSION MEETINGS

MINUTES

1. Approval of the March 15, 2023 meeting minutes.

VARIANCE OLD BUSINESS

VARIANCE NEW BUSINESS

1. [Withdrawn]
Applicant Name: Debra Pendleton
Project Number: V23-051 – Variance
Project Location: 431 W. Wisconsin Ave.
Project Description: Variance to reduce the side yard setback from 7.5' to 2', the rear yard setback from 7.5' to 6', and the minimum required space between buildings from 6' to 1', to allow for an accessory structure (carport) in the R-1B zoning district.
Staff Planner: Samuel Nelson
2. Applicant Name: Frank Rojas
Project Number: V23-053 – Variance
Project Location: 1699 N. Woodland Blvd.
Project Description: Variance to increase the maximum allowed building sign area from 150 square feet to 325 square feet
Staff Planner: Melissa Winsett

PUBLIC PARTICIPATION PROCEEDINGS

PLANNING - OLD BUSINESS

PLANNING - NEW BUSINESS

1. Applicant Name: Michael Radcliffe
Project Number: SP22-211 – Site Plan for Meadowlea Village Phases 4-5
Project Location: 22.11 acres located at 1004 Overlook Dr.
Project Description: Expand existing mobile home park in 2 phases, to develop 103 mobile home

spaces

Staff Planner: Belinda Williams-Collins

2. Applicant Name: Yedlin & Co LLC
Project Number: PSB23-030 - Preliminary Plat for The Canopy at Blue Lake Subdivision
Project Location: Northeast quadrant of Miller Rd. & E. Wisconsin Ave.
Project Description: A proposed 12-lot residential subdivision on 4.874 acres of property
Staff Planner: Kendall Story

OTHER BUSINESS

ADJOURNMENT



**CITY OF DELAND
PLANNING BOARD REGULAR MEETING
MINUTES
WEDNESDAY, MARCH 15, 2023 - 5:00 P.M.
CITY HALL**

CALL TO ORDER

The meeting began at 5:00 p.m.

PLEDGE OF ALLEGIANCE

Pledge of Allegiance – Ms. Comella, Chairperson

ROLL CALL

Harper Hill	Present
Nora Lewis	Absent
Don Liska	Present
Buz Nesbit	Absent
Albert Neumann	Absent
Jeremy Owens, <i>Vice Chairperson</i>	Present
Virginia Comella, <i>Chairperson</i>	Present

Quorum: Yes

Present – Rick Werbiskis, Community Development Director; Mike Holmes, Special Projects Director; Darren Elkind, City Attorney; Kendall Story, Senior Planner; Melissa Winsett, Senior Planner; Vivian Ford, Administrative Coordinator; applicants; and members of the public.

VERBAL REPORT ON CITY COMMISSION MEETINGS

Mr. Werbiskis provided a verbal report.

MINUTES

1. Mr. Liska moved to approve the February 15, 2022 Meeting Minutes. Mr. Hill seconded the motion. The motion passed unanimously.

VARIANCE OLD BUSINESS

None.

VARIANCE NEW BUSINESS

None.

PUBLIC PARTICIPATION PROCEEDINGS

Ms. Comella read the Public Participation procedures.

PLANNING – OLD BUSINESS

None.

PLANNING – NEW BUSINESS

1. Applicant Name: Michael Woods
Project Number: AN23-003 – Annexation for One Oak
Project Location: 230 E. International Speedway Blvd.
Project Description: Annex 0.76 acres

Public Participation: Nika Hosseini spoke on behalf of Applicant, Michael Woods, and answered questions from the board.

Mr. Hill moved to approve the request. Mr. Liska seconded the motion. The motion to approve passed unanimously.

2. Applicant Name: Michael Woods
Project Number: SMLU23-004 – Comprehensive Plan Amendment
Project Location: 230 E. International Speedway Blvd.
Project Description: Land use change for 0.76 acres from County Urban Medium Intensity to City Highway Commercial

Public Participation: Nika Hosseini spoke on behalf of Applicant, Michael Woods, and answered questions from the board.

Mr. Hill moved to approve the request. Mr. Liska seconded the motion. The motion to approve passed unanimously.

3. Applicant Name: Michael Woods
Project Number: Z23-005 – Rezoning for One Oak
Project Location: 210 & 230 E. International Speedway Blvd.
Project Description: Rezone 2.32 acres from Volusia County B-4CA and B-4 (General Commercial) to City of DeLand C-2 (General Commercial)

Public Participation: Nika Hosseini spoke on behalf of Applicant, Michael Woods, and answered questions from the board.

Mr. Hill moved to approve the request. Mr. Liska seconded the motion. The motion to approve passed unanimously.

OTHER BUSINESS

1. Mike Holmes addressed the board to announce his retirement.
2. Election of officers.

Mr. Liska nominates Mr. Owens to be Chairperson. Mr. Hill seconded the nomination. Mr. Owens accepted the nomination. All members agreed unanimously.

Mr. Hill volunteered to be Vice Chairperson. Mr. Liska nominated Mr. Hill. Mr. Owens seconded the nomination. All members agreed unanimously.

ADJOURNMENT

The meeting ended at 5:33 p.m.

CITY OF DELAND
Request for Commission Action
April 19, 2023

SUBJECT: [Withdrawn]
Applicant Name: Debra Pendleton
Project Number: V23-051 – Variance
Project Location: 431 W. Wisconsin Ave.
Project Description: Variance to reduce the side yard setback from 7.5’ to 2’, the rear yard setback from 7.5’ to 6’, and the minimum required space between buildings from 6’ to 1’, to allow for an accessory structure (carport) in the R-1B zoning district.
Staff Planner: Samuel Nelson

DEPARTMENT: Planning

PREPARED BY: Carol Kuhn, Deputy Planning Director

ATTACHMENTS:

APPROVED BY: ,

SUMMARY/HIGHLIGHT:

**PLANNING STAFF
REPORT TO
CITY OF DELAND PLANNING
BOARD**

April 19, 2023

A. APPLICATION NO: V23-053

APPLICANT: Frank Rojas (for Walmart, owner)

REQUEST: Increase the maximum allowed building sign area from 150 square-feet to 325 square-feet.

APPLICABLE ORDINANCES: **Sec. 33-75.04(b)(2).** *Permissible number, area, spacing and height of permanent accessory signs; Building signs.*

B. SITE FACTORS:

LOCATION: 1699 N. Woodland Blvd.

PARCEL SIZE: +/- 24.09 acres

EXISTING ZONING/USE: C-2, General Commercial

Minimum Lot Width: 75 feet

Minimum Lot Size: 9,000 square-feet

Impervious Limit: 70%

Landscape Buffer: 40 feet (street view) (Emerging Gateway)

Required Minimum Setbacks in Feet			
Front	Rear	Side	Side adjacent to street
20-ft	10-ft	10-ft	20-ft



	SURROUNDING USE:	SURROUNDING ZONING:
NORTH:	Commercial/Residential	B-4&B-4C (VC), General Commercial, Thoroughfare Overlay; A-3(3) (VC), Transitional Agriculture
SOUTH:	Commercial	C-2, General Commercial
EAST:	Industrial	PD, Planned Development
WEST:	Commercial/Banks	PD, Planned Development

DOES THE APPLICANT OWN PROPERTY WHICH IS ADJACENT TO THE PROPERTY FORWHICH HE OR SHE SEEKS A VARIANCE? Yes ☐ No ☒

C. LAND USE PLAN DESIGNATION: Highway Commercial

D. CHRONOLOGY: In 2001, prior to its store opening in 2003, Walmart submitted a variance application to increase its building signage square-footage (SF). The Walmart building had, and still has, approximately 615-feet of building frontage excluding the adjacent liquor store, which was built at a later date under a separate permit. At that time, the city's Land Development Regulations allowed 1 SF of building signage per linear foot of building frontage up to a maximum of 100 SF for buildings greater than 50 feet in length. On November 14, 2001, the Board of Adjustments approved a variance on the subject property to allow total building signage no greater than 350 SF to be dispersed among the following 5 signs:

189 SF	Walmart sign
39 SF	Supercenter sign
32 SF	Food Center sign
36 SF	Retail Center sign
51 SF	Tire & Lube Express sign
347 SF	TOTAL (Variance allowed maximum of 350 SF)

On August 18, 2010, the Planning Board approved a 2nd variance on the same property to replace the previously approved five building signs with the following two new ones and allow a maximum of 348 square feet:

298.0 SF	Walmart with “spark” logo sign
49.5 SF	Outdoor Living sign
347.5 SF	TOTAL (Variance allowed maximum of 348 SF)

The variance approval enabled Walmart to implement its updated trademarked Walmart with “spark” logo sign, which is 109 square-feet larger than the original Walmart sign. See Figure 1 below:

ANALYSIS: The Walmart building is approximately 615 feet in length. Per the Land Development Regulations, buildings 200-feet in length, and over, are permitted to have maximum building signage of 150 SF. The variance request is to increase the maximum building signage square-footage from 150 SF to 325 SF. The 2010 approved variance currently allows two signs that total 348 square-feet and the previously approved 2001 variance allowed five signs that totaled 350 square-feet. Although the applicant is requesting less building sign square-footage than what exists today, the proposed variance must be reviewed on its own merits rather than on the basis of previously approved variances per Florida Statute.

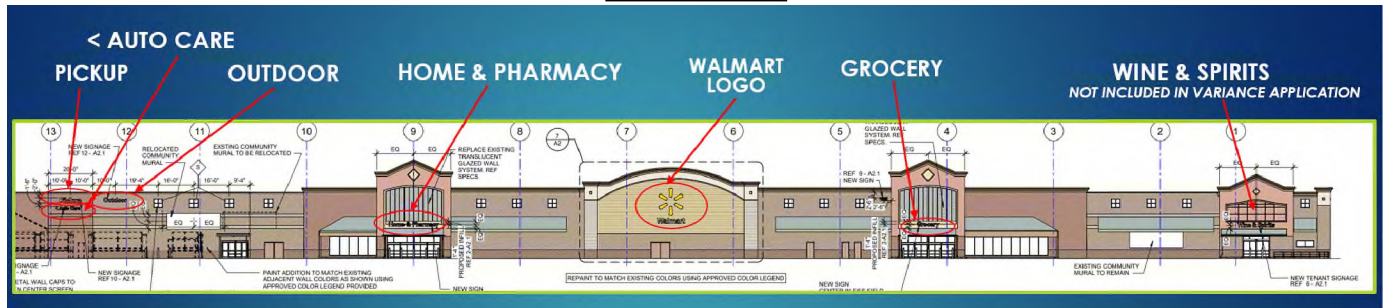


Figure 1

Walmart wishes to reduce the currently variance-approved building signage through the removal of the two 2010 variance-approved signs and replacement with the six new signs below and as demonstrated in Figure 2 on the next page. In lieu of the 317.54 SF needed for the proposed signs, staff proposes to adjust the maximum to 325 SF to allow the applicant minor flexibility.

158.41 SF	Walmart with “Spark” logo sign
32.37 SF	Pickup sign
26.27 SF	Grocery Sign
60.74 SF	Home & Pharmacy sign
20.50 SF	Outdoor sign
16.25 SF	Auto Care sign
317.54 SF*	PROPOSED TOTAL Building Sign Square-Footage

Figure 2



The applicant is seeking a variance to comply with his corporation's nationwide campaign to update the look of Walmart buildings. The building signage changes were first included in a current site plan application (still under staff review) that proposes to enlarge the current Pickup section of the store to 5,400 square-feet and relocate it toward the northern side the store. The existing murals on the building are not proposed to be changed or removed. The site plan also proposes parking lot changes associated with the identification of Pickup parking spaces. The current Pickup location is smaller and located on the south side of the building. City staff is supportive of moving the Pickup site toward the under-utilized north side of the building in hopes that more customers will alter their travel routes to use the northern right-in, right-out driveway, thereby reducing congestion at and near the south driveway. Also, through identifying the specific store section locations on the building, the proposed signage could potentially improve onsite wayfinding and direct customers where to park, which could further entice customers to alter their routes.

E. VARIANCE CRITERIA: Per Section 33-103.03, as amended, the Planning Board will consider the following criteria in making a determination concerning the granting or denial of the requested variance:

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

Section 33-75.04 of the Land Development Regulations pertains to Building Signs. Building structures fall within one of three categories. In summary, they are:

- *For buildings and each tenant store front 50 feet in length or less, the maximum sign area shall be determined by multiplying the front building linear footage (facing street) by 1.5 feet*
- *For buildings greater than 50 feet in length, but less than 200 feet, the maximum sign area for buildings shall be determined by multiplying the building front linear footage by 1 foot with a maximum of 100 SF*
- *For buildings greater than 200 ft in length, maximum building signage area is 150 feet. The maximum sign area cannot be exceeded regardless of which side of building the sign is displayed on.*

The city's Land Development Regulations do not allow extra building signage square-footage for "big box" stores. The store's 615 linear feet of building frontage and allowance of 150 SF of building signage equals 0.244 SF per foot. In comparison, per section 33-75.04, a 40-foot building can have 60 SF of building signage, which equals 1.5 SF per foot. Also, a 100-foot building can have 100 SF of building signage, equaling 1 SF per foot. Considering that Walmart not only has several different store sections and also houses several private businesses such as Dominos Pizza and Claire's, additional building square-footage is justifiable.

2. Granting the variance request will not confer the applicant any special privilege that is denied by the development code to other lands, building, or structures in the same zoning district.

Although this current variance request, as well as the previously approved variances, grants more sign area than would be allowed by code, the building is set back from the roadway by approximately 1,200 feet and is surrounded by mature landscaping making it more difficult to identify the business.

3. Literal interpretation and enforcement of the development code regulations would deprive the applicant of rights commonly enjoyed by other properties in the same zoning district under the terms of the development code, and would work unnecessary and undue hardship on the applicant such as natural site conditions, size or shape of lot, or existing structures(s).

Although not a "hardship", the request for additional signage is justifiable since the city's Land Development Regulations do not allow extra signage square-footage for Big Box stores. The Walmart site has many different sections and businesses within the building that sell different types of products. The building is large, but has architectural features; therefore, additional building signage would not look excessive or out of place. The additional signs could assist in the portrayal of a building with multiple store fronts.

4. The granting of the variance will be in harmony with the general intent and purpose of this code and the Comprehensive Plan, as amended, and will not be injurious to the surrounding properties or detrimental to the public welfare.

Approval of the variance would not be injurious to the surrounding properties or detrimental to the public welfare. The total building signage is proposed to be reduced from the existing signage by 23 square-feet. Additionally, the request for additional signage is reasonable since the city's Land Development Regulations do not allow extra building signage for Big Box stores. The Walmart site has many different sections that sell different types of products, and the additional signs could assist in the portrayal of a building with multiple store fronts.

5. The Variance, if granted, is the minimum variance necessary to make possible the reasonable use of the land, building or structure.

The applicant has requested reduced building signage. The current variance permits Walmart to have 23 more square-feet over what is proposed. Compared to other stores, its ratio of building frontage-to permitted building signage is drastically less than smaller stores. The proposed variance would still limit Walmart to 0.53 SF of building signage per linear foot of store frontage.

6. The special conditions or circumstances are not the result of actions of the applicant or owner.

The building site, which was approved by the city and opened in 2003, is located 1,200 feet from Woodland Blvd and has mature landscaping and a large parking lot in front of the site, making building signage difficult to see from Woodland Blvd. Even though the signage is being reduced, any building signage beyond 150 square-feet requires a variance.

- F. STAFF SUMMARY:** While the total proposed building signage is less than the square-footage previously approved by the Planning Board in 2010 and the Board of Adjustments in 2001, there is no obvious hardship in this case, as defined by the Land Development Regulations. Since the variance request must be evaluated on its own merits, the proposed signage would result in an additional 175 SF beyond that of which is allowed by the Land Development Regulations.

It is staff's opinion that the proposed variance is a minor change from the two earlier approved variances including the latest of which is in effect for the property. Although approval would increase the building signage by 175 SF, the increase is appropriate due to the 1) large setbacks and the difficulty to see the store, 2) permitted building sign area being much less compared to other multi-tenant commercial buildings and shopping centers, 3) city's lack of signage regulations for "big box stores," and, finally, 4) varying architectural features mimic the appearance of multiple store fronts, which would make the additional signage area less prominent.

L:\COMMDEV\PLANNING\SR\V23-053\2023



City of DeLand
PLANNING BOARD
V23-053
APRIL 19, 2023

(3)A

FLOWER DR

Woodland Village
PD

SUBJECT PROPERTY

B-4CA

A-3(3)A

VC:B-43A

VC:A-33A

B-4CA

US HWY 17 (WOODLAND BLVD N)

ROWA

C-2

B-4CA

C-2

B-4CA

VC:B-4C

I-1A

Legend:

- City Zoning
- County Zoning

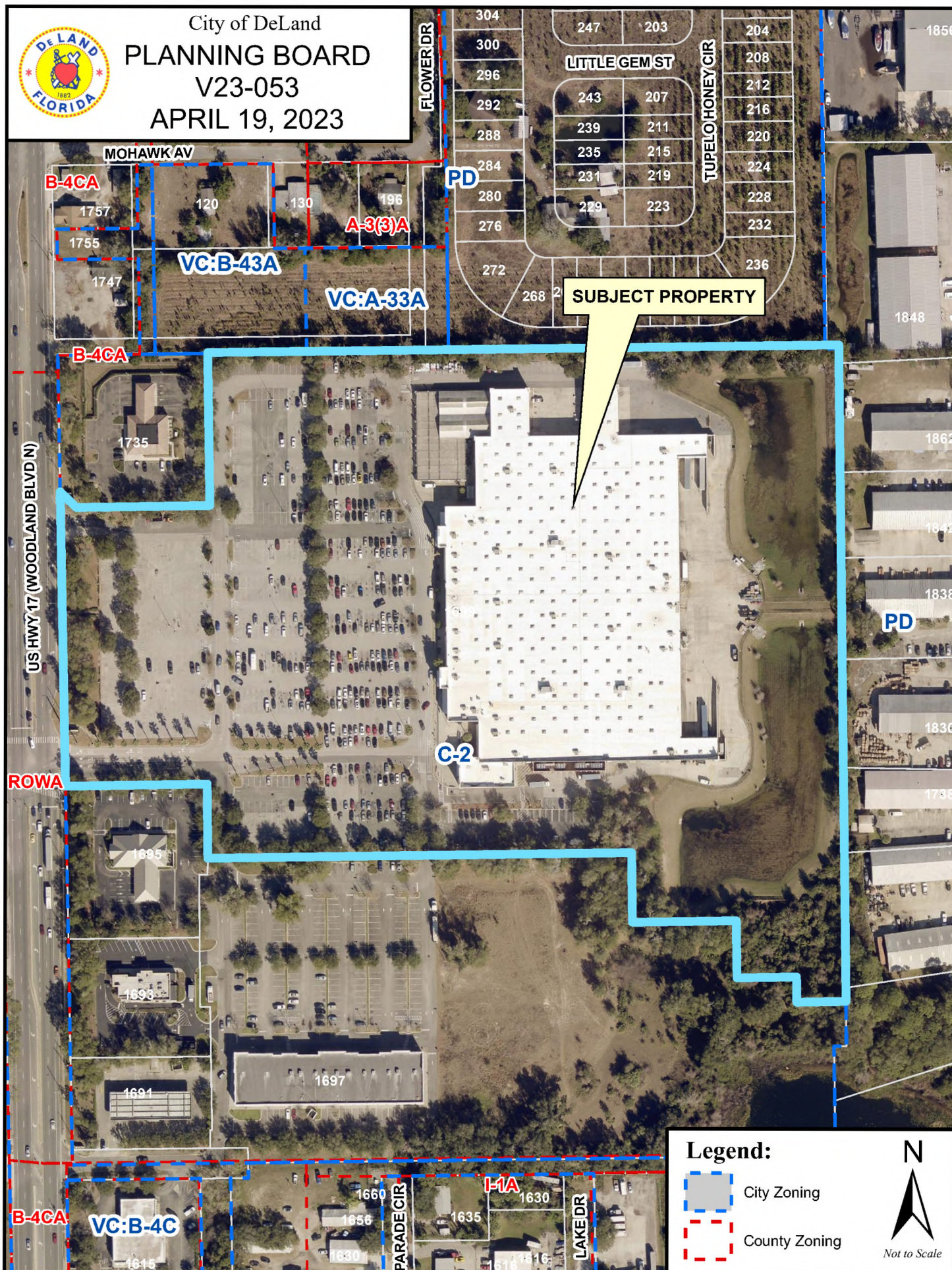
N



Not to Scale



City of DeLand
PLANNING BOARD
V23-053
APRIL 19, 2023





REMARKS:
 PAINT RESTRICTIONS: PAINT COLORS ARE RESTRICTED TO THE LIST OF APPROVED COLORS ON THE RIGHT SIDE OF THIS SHEET.
 ALL GRAY SIGNAGE: 378.0A SF
 EXISTING SIGNAGE: 378.0A SF
 EXISTING TENANT SIGNAGE: 15.5A SF
 PROPOSED SIGNAGE: 377.5A SF
 PROPOSED TENANT SIGNAGE: 44.2B SF
 VARIANCE: PROCESS

APPROVED COLOR LEGEND

PS	COLOR NAME
02100	GRASS COFFEE
02101	GRASS WHITE
02102	CARAMEL CAT
02103	SEPT ROAD
02104	EMERALD GREEN
02105	EMERALD GREEN
02106	EMERALD GREEN
02107	EMERALD GREEN
02108	EMERALD GREEN
02109	EMERALD GREEN
02110	EMERALD GREEN
02111	EMERALD GREEN
02112	EMERALD GREEN
02113	EMERALD GREEN
02114	EMERALD GREEN
02115	EMERALD GREEN
02116	EMERALD GREEN
02117	EMERALD GREEN
02118	EMERALD GREEN
02119	EMERALD GREEN
02120	EMERALD GREEN
02121	EMERALD GREEN
02122	EMERALD GREEN
02123	EMERALD GREEN
02124	EMERALD GREEN
02125	EMERALD GREEN
02126	EMERALD GREEN
02127	EMERALD GREEN
02128	EMERALD GREEN
02129	EMERALD GREEN
02130	EMERALD GREEN
02131	EMERALD GREEN
02132	EMERALD GREEN
02133	EMERALD GREEN
02134	EMERALD GREEN
02135	EMERALD GREEN
02136	EMERALD GREEN
02137	EMERALD GREEN
02138	EMERALD GREEN
02139	EMERALD GREEN
02140	EMERALD GREEN
02141	EMERALD GREEN
02142	EMERALD GREEN
02143	EMERALD GREEN
02144	EMERALD GREEN
02145	EMERALD GREEN
02146	EMERALD GREEN
02147	EMERALD GREEN
02148	EMERALD GREEN
02149	EMERALD GREEN
02150	EMERALD GREEN
02151	EMERALD GREEN
02152	EMERALD GREEN
02153	EMERALD GREEN
02154	EMERALD GREEN
02155	EMERALD GREEN
02156	EMERALD GREEN
02157	EMERALD GREEN
02158	EMERALD GREEN
02159	EMERALD GREEN
02160	EMERALD GREEN
02161	EMERALD GREEN
02162	EMERALD GREEN
02163	EMERALD GREEN
02164	EMERALD GREEN
02165	EMERALD GREEN
02166	EMERALD GREEN
02167	EMERALD GREEN
02168	EMERALD GREEN
02169	EMERALD GREEN
02170	EMERALD GREEN
02171	EMERALD GREEN
02172	EMERALD GREEN
02173	EMERALD GREEN
02174	EMERALD GREEN
02175	EMERALD GREEN
02176	EMERALD GREEN
02177	EMERALD GREEN
02178	EMERALD GREEN
02179	EMERALD GREEN
02180	EMERALD GREEN
02181	EMERALD GREEN
02182	EMERALD GREEN
02183	EMERALD GREEN
02184	EMERALD GREEN
02185	EMERALD GREEN
02186	EMERALD GREEN
02187	EMERALD GREEN
02188	EMERALD GREEN
02189	EMERALD GREEN
02190	EMERALD GREEN
02191	EMERALD GREEN
02192	EMERALD GREEN
02193	EMERALD GREEN
02194	EMERALD GREEN
02195	EMERALD GREEN
02196	EMERALD GREEN
02197	EMERALD GREEN
02198	EMERALD GREEN
02199	EMERALD GREEN
02200	EMERALD GREEN

7 ENLARGED ELEVATION
 1" = 16'-0"

8 VESTIBULE SIDE ELEVATION
 1" = 16'-0"

9 VESTIBULE SIDE ELEVATION
 1" = 16'-0"

4 SIDE ELEVATION
 1" = 20'-0"

6 SEASONAL SHOP REAR ELEVATION
 1" = 20'-0"

3 SIDE ELEVATION
 1" = 20'-0"

5 AUTOCARE FRONT ELEVATION
 1" = 20'-0"

2 REAR ELEVATION
 1" = 20'-0"

1 FRONT ELEVATION
 1" = 20'-0"

SHEET NOTES

1. PATCH AND REPAIR EXISTING WALLS, SIGNAGE, DAMAGED OR EXPLODED DUE TO REMOVAL OF BUILDING MOUNTED ITEMS, TO MATCH ADJACENT BUILDING.
2. REFER TO DETAILS ON SHEET A2.1 FOR SUBSTRATE AND FINISH REQUIREMENTS AT LOCATIONS OF BUILDING MOUNTED ITEMS.
3. REPAIR/REPLACE PARTING JOINTS WHERE SIGNAGE IS TO BE APPLIED.
4. AT WALLS WITH FLAT SURFACES SIGNAGE SHALL BE PAINTED AROUND SIGN CHARACTERISTICS.
5. HAND-CHARTING WALLS AS LOCATIONS ON ALL BUILDING SITES. COORDINATE SCOPE OF WORK WITH WILMART CO.
6. IF PAINTING ADJACENT WALLS, PAINT FRAMES AND DOWNSPROUTS EXISTING METAL FLASHING HANDRAILS AND EXPOSED MISCELLANEOUS STEEL TO MATCH PRIMARY ADJACENT BUILDING COLOR/TYPE.
7. PAINT ANY ROOFTOP GAC PIPING TO MATCH EXISTING COLOR, WHERE EXISTING WALL IS BEING PAINTED. GAC PIPING SIDE WALL TO GRADE SHALL MATCH ADJACENT BUILDING, DO NOT PAINT METAL OR VAPOR.
8. IF PAINTING ADJACENT WALLS, PAINT CANOPY STRUCTURAL STEEL AND FLASHINGS TO MATCH ADJACENT WALL, UNDO.
9. WHERE CANOPIES ARE VISIBLE TO AND ACCESSIBLE BY CUSTOMERS, PAINT UNDERSIDE OF CANOPY DECK, DO NOT PAINT CANOPY DECK IF NOT PREVIOUSLY PAINTED.
10. INSTALL UPRIGHT WALLS/BLINDS AT ALL ENTRANCE BUILDINGS, PAINT ALL BLINDS TO MATCH EXISTING TWO COLOR (USE LIST OF APPROVED COLORS) BELOW.
11. PAINT SECURITY WALL RICH SPONGE TO MATCH ADJACENT WALL, REMOVE PAINT OVERLAY FROM LENSES.
12. DO NOT PAINT LED WALL RICH SPONGE.
13. PAINT GARDEN CENTER FENCE STEEL DOORS AND FRAMES TO MATCH EXISTING COLOR USING COLOR FROM APPROVED LIST BELOW.
14. PAINT STEEL DOORS AND FRAMES TO MATCH ADJACENT BUILDING WALL, IF THERE ARE TWO COLORS AT ADJACENT WALL, USE BOTTOM COLOR FOR ENTIRE DOOR AND FRAME.
15. DO NOT PAINT RICH SPONGE, RICH SPONGE, FACE BRICK, UNPAINTED TILT-WALL, OR PRECAST PANELS.
16. ALL MASONRY LOCATIONS UPON SIGNAGE ARE BEING REPAIRED, REMOVE AND PAINT AREA BEHIND SIGN TO MATCH EXISTING COLOR, REF SPEC 02100.
17. PAINT AS GRAVE TO MATCH EXISTING COLORS.



CONSULTANTS FOR BUILDING
 1659 N. WOODLAND BLVD., DE LAND, FL 32729
 PHONE: 352.245.1234
 FAX: 352.245.1235
 EMAIL: info@ins-consultants.com
 WEBSITE: www.ins-consultants.com

ISSUE BLOCK

NO.	DATE	DESCRIPTION
1	01/11/22	ISSUED FOR PERMIT

Walmart
 DE LAND, FL
 1659 N. WOODLAND BLVD., DE LAND, FL 32729
 PHONE: 352.245.1234
 FAX: 352.245.1235
 EMAIL: info@ins-consultants.com
 WEBSITE: www.ins-consultants.com

ISSUE BLOCK

NO.	DATE	DESCRIPTION
1	01/11/22	ISSUED FOR PERMIT

DESIGNED BY: 02
 DRAWING BY: 010
 PHOTO CYCLE: 010/02
 DOCUMENT DATE: 01/11/22

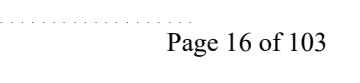
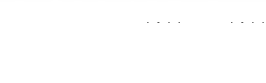
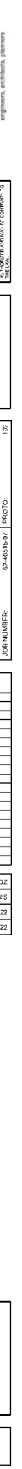
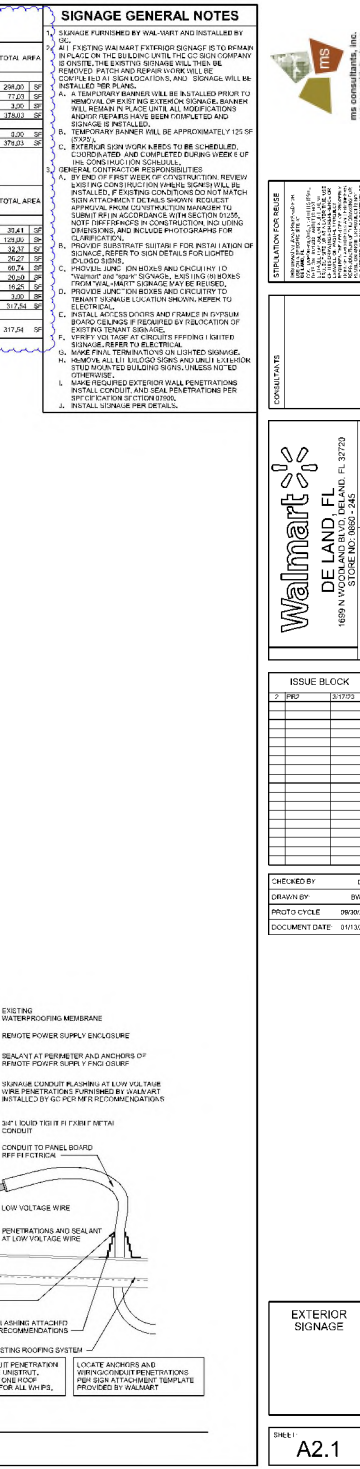
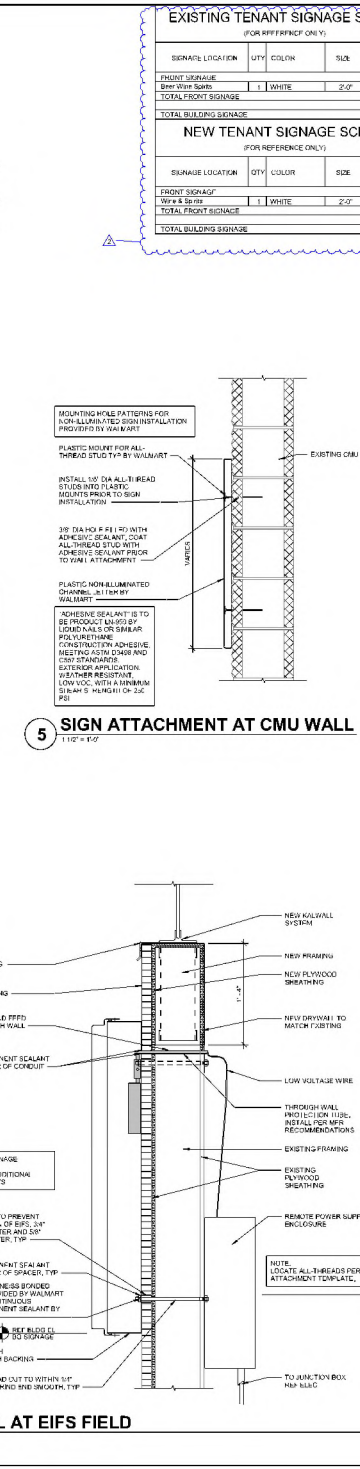
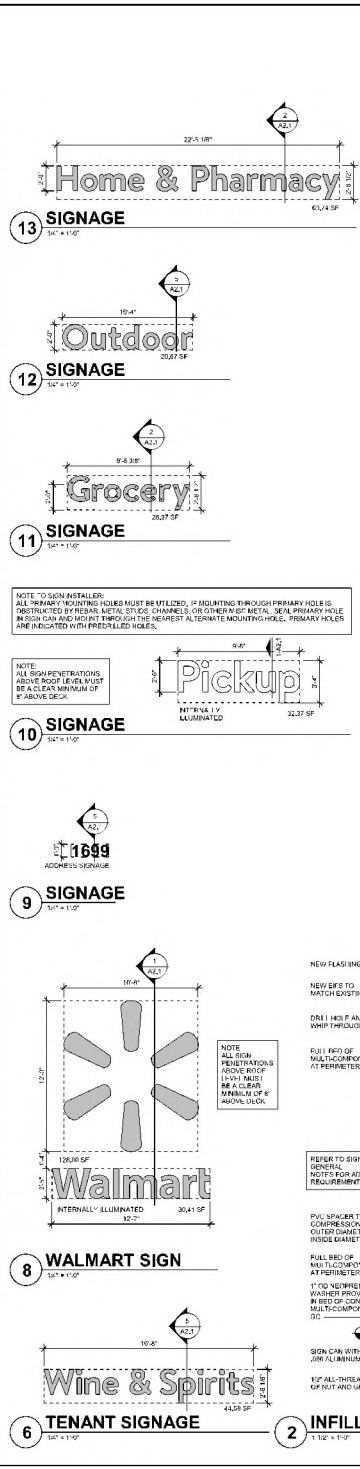
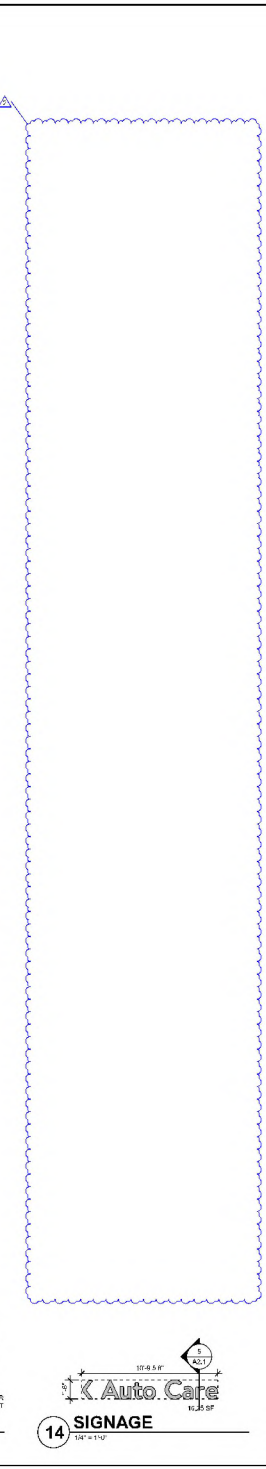
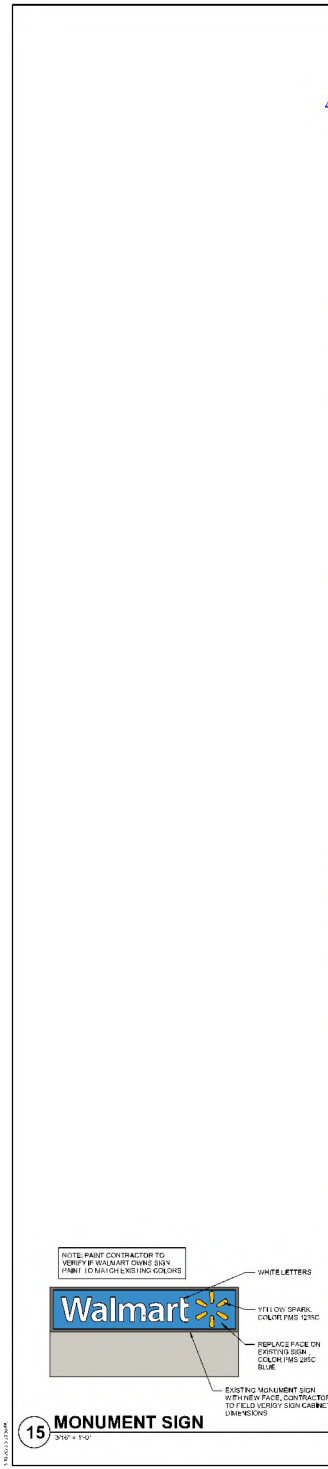
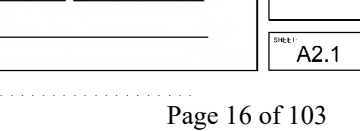
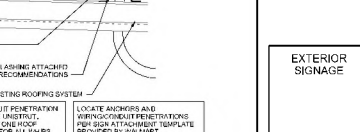
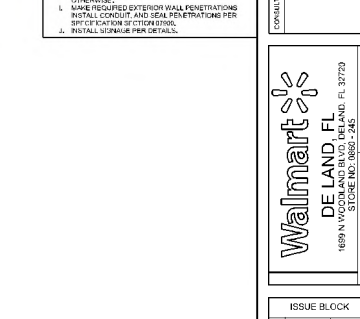
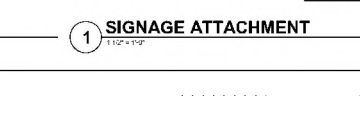
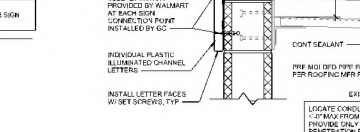
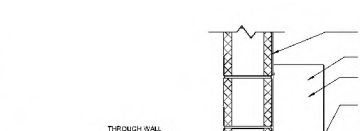
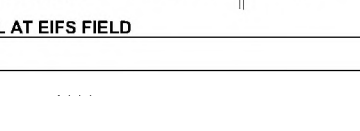
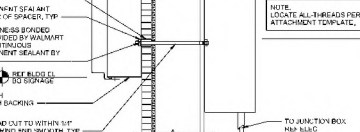
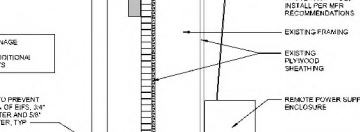
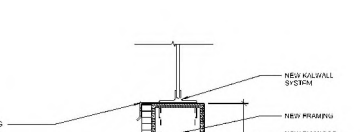
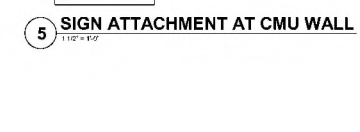
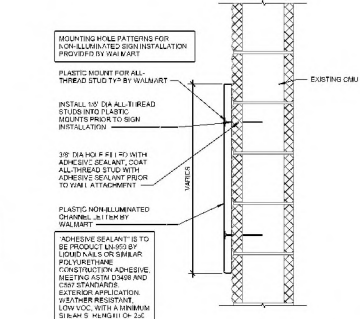
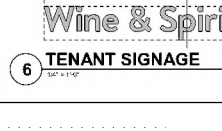
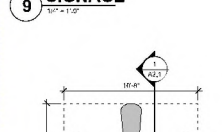
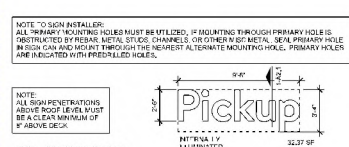
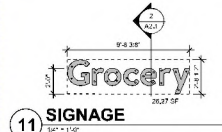
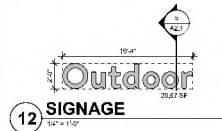
CHARLES M. BUSCH
 AR100155
 EXP. 2/28/2023

EXTERIOR ELEVATIONS

SHEET: A2

EXISTING TENANT SIGNAGE SCHEDULE						EXISTING SIGNAGE SCHEDULE					
(FOR REFERENCE ONLY)						(FOR REFERENCE ONLY)					
SIGNAGE LOCATION	QTY	COLOR	SIZE	INDIVIDUAL AREA	TOTAL AREA	SIGNAGE LOCATION	QTY	COLOR	SIZE	INDIVIDUAL AREA	TOTAL AREA
FRONT SIGNAGE						FRONT SIGNAGE					
Walmart Signage	1	WHITE	2'-0"	55.62 SF	55.62 SF	Walmart Signage	1	WHITE	5'-0"	188.09 SF	188.09 SF
TOTAL FRONT SIGNAGE				55.62 SF	55.62 SF	OUTDOOR SIGNAGE	1	WHITE	2'-0"	17.70 SF	17.70 SF
						Address Signage	1	WHITE	1'-0"	1.69 SF	1.69 SF
TOTAL BUILDING SIGNAGE				55.62 SF	55.62 SF	TOTAL FRONT SIGNAGE				206.48 SF	206.48 SF
NEW TENANT SIGNAGE SCHEDULE						NEW SIGNAGE SCHEDULE					
(FOR REFERENCE ONLY)						(FOR REFERENCE ONLY)					
SIGNAGE LOCATION	QTY	COLOR	SIZE	INDIVIDUAL AREA	TOTAL AREA	SIGNAGE LOCATION	QTY	COLOR	SIZE	INDIVIDUAL AREA	TOTAL AREA
FRONT SIGNAGE						FRONT SIGNAGE					
Walmart Signage	1	WHITE	2'-0"	55.62 SF	44.28 SF	Walmart Signage	1	WHITE	2'-0"	35.41 SF	35.41 SF
TOTAL FRONT SIGNAGE				44.28 SF	44.28 SF	OUTDOOR SIGNAGE	1	WHITE	2'-0"	17.70 SF	17.70 SF
TOTAL BUILDING SIGNAGE				44.28 SF	44.28 SF	Address Signage	1	WHITE	1'-0"	1.69 SF	1.69 SF
						TOTAL FRONT SIGNAGE				37.79 SF	37.79 SF
						TOTAL BUILDING SIGNAGE				37.79 SF	37.79 SF

- SIGNAGE GENERAL NOTES**
- REMARKS FURNISHED BY WALMART AND INSTALLED BY WALMART.
 - EXISTING WALMART EXTERIOR SIGNAGE IS TO REMAIN IN PLACE ON THE BUILDING UNTIL THE GC SIGN COMPANY OR OTHER THE EXISTING SIGNAGE HAS BEEN REMOVED. PATCH AND REPAIR WORK WILL BE COPIED AND IN SIGN LOCATIONS AND SIGNAGE WILL BE INSTALLED PER PLAN.
 - A TEMPORARY BANNER WILL BE INSTALLED PRIOR TO REMOVAL OF EXISTING EXTERIOR SIGNAGE. BANNER WILL REMAIN IN PLACE UNTIL ALL MODIFICATIONS AND/OR REPAIRS HAVE BEEN COMPLETED AND SIGNAGE IS INSTALLED.
 - TEMPORARY BANNER WILL BE APPROXIMATELY 125 SF (20'X6').
 - EXTERIOR SIGN WORK IS TO BE SCHEDULED COORDINATED AND COMPLETED DURING WEEK 4 OF THE CONSTRUCTION SCHEDULE.
 - GENERAL CONTRACTOR RESPONSIBILITIES
 - BY END OF FIRST WEEK OF CONSTRUCTION REVIEW SIGNING CONSTRUCTION VARIATIONS. SIGNAGE WILL BE INSTALLED. IF EXISTING CONDITIONS DO NOT MATCH SIGN ATTACHMENT DETAILS SHOWN, REQUEST APPROVAL FROM CONSTRUCTION SUPERVISOR TO SUBMIT RFI IN ACCORDANCE WITH SECTION 01.55. NOTIFY ARCHITECT IN CONSTRUCTION. NO USING DIFFERENCES AND INCLUDE PHOTOGRAPHS FOR CLARIFICATION.
 - PROVIDE SUBSTRATE SUITABLE FOR INSTALLATION OF SIGNAGE. REFER TO SIGN DETAILS FOR LIGHTED EXTERIOR SIGNS.
 - PROVIDE JUNCTION BOXES AND CIRCUITRY TO "WARRANT" AND "TEST" SIGNAGE, AND LING IN BOXES FROM WALMART SIGNAGE MAY BE REUSED.
 - PROVIDE JUNCTION BOXES AND CIRCUITRY TO "WARRANT" AND "TEST" SIGNAGE, AND LING IN BOXES FROM WALMART SIGNAGE MAY BE REUSED.
 - INSTALL ACCESS DOORS AND FRAMES IN PYTHIUM BOARD CEILING IF REQUIRED BY FULCATION OF EXISTING TENANT SIGNAGE.
 - VERIFY NO TAG AT CIRCUITRY OFFERING. EXTERIOR SIGNAGE, REFER TO ELEC. TRAIL.
 - REMOVE ALL EXISTING SIGNS AND UNLESS EXTERIOR SIGNAGE IS TO BE REUSED, REMOVE ALL EXISTING SIGNS UNLESS NOTED OTHERWISE.
 - MAKE REQUIRED EXTERIOR WALL PENETRATIONS. INSTALL CONDUIT AND SEAL PENETRATIONS PER SPECIFICATION SECTION 01.07.01.
 - INSTALL SIGNAGE PER DETAILS.



April 19, 2023

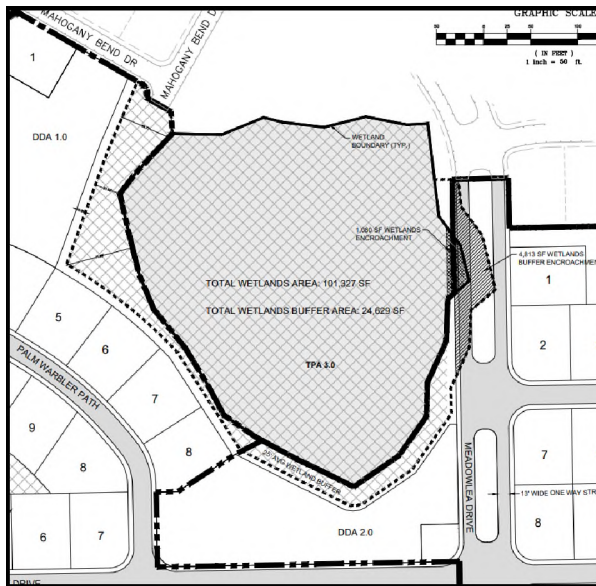
- ## B. SITE CONDITIONS:

Map of Volusia County, Florida, showing the location of the proposed site. The map highlights Deland, Lake Helen, and Orange City. A red star marks the 'Site' location in the northern part of Deland. Major roads like I-4 and SR 16 are shown. A scale bar indicates 0 to 1 mile.

[illegible]

C. LAND USE PLAN: In order to develop the property, the applicant is proposing the addition of utilities including water and sewer provided by the City of DeLand, creation of stormwater ponds and the addition of new roads to accommodate access to the new residential parcels.

The portion of this property in question for development is currently undeveloped, wooded and it is proposed to develop the lots surrounding a large wetland that is located in Phase 1 of the development. Per Section 33-58.08(l) of the Land Development Code, developments which require the issuance of a development order for a site plan or subdivision and have obtained a valid environmental resource permit from the St. Johns River Water Management District are exempt from the requirements of the provision of a protection and buffer zone. An application for a St. Johns River Water Management



District permit has been submitted for the wetland impact and is to be provided to the City upon issuance. The wetland totals approximately 101,327 square feet in area (2.32 acres) with a buffer area of 24,629 square feet. The buffer provided averages 25 feet in width, and the buffer encroachment area totals 4,813 square feet.

Typical lot size is 62' x 80 feet and includes the mobile home structure and a carport that accommodates space for 2 vehicles. The development will include a total of 32 on-street/visitor parking spaces, including 2 handicapped spaces.

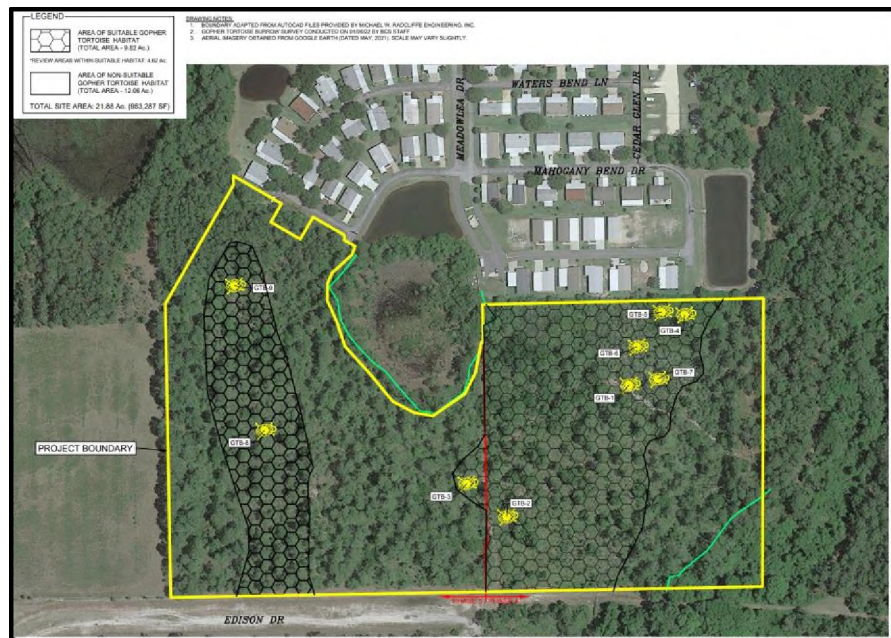
The mobile home park is not gated and access to the property is via County maintained Carter Road.

A traffic analysis indicates that there will be an increase of 31 peak hour trips to a total of 108 PM peak hour trips, however, no TIA will be required because the volume is low. (At total buildout, the anticipated number of trips is estimated to be only 113 trips.) A driveway upgrade may be necessary and a county use permit has been applied for.

D. ANALYSIS: The overall development will be accomplished in a total of 7 phases with the ultimate completion of 376 lots total broken down as follows:

Phase 1	167 lots
Phase 2	17 lots
Phase 3	73 lots
<u>Phase 4</u>	<u>45 lots</u>
<u>Phase 5</u>	<u>57 lots</u>
Phase 6	8 lots
Phase 7	9 lots
TOTAL	376

The Biological Survey Report indicated that in the survey conducted on January of 2022, a total of 9 gopher tortoise burrows were observed on-site and that 4 options were available to address the presence of tortoises.



1. Avoid developing in the area occupied by tortoises.
2. Develop as to avoid gopher tortoise burrows by avoiding concentrations of burrows altogether and/or staying at least 25 feet from entrances of individual burrows, provided that such activities do not harm gopher tortoise or violate rules protecting gopher tortoises
3. Relocate tortoises on-site (permit required); or

4. Relocate tortoises off-site (permit required)

The applicant stated that within 90 days of any site disturbance, a gopher tortoise burrow survey will be conducted, and the appropriate gopher relocation permit will be obtained from the Florida Fish and Wildlife Conservation Commission and any gopher tortoises found would be relocated.

- The zoning district (R-M) permits a maximum of 6 dwelling units per acre. The overall density once complete will be 4.29 units per acre (376 units/87.53 acres).
- Water and sewer services are provided by the City of DeLand.
- Parking is provided at a rate of 2 spaces/unit + .25/unit for visitors = 25.7 required. A total of 32 visitors spaces are provided.
- It is a requirement that 15% of the site be set aside for tree protection areas. These phases total 22.11 acres and the required TPA acreage would therefore be 3.31 acres. A total of 5.16 acres of TPA has been provided for these phases. Prior to approval of the final phases the applicant must verify that the eventual overall TPA area will meet or exceed the 15% for the entire development.
- Traffic generation/traffic impact - The additional units are expected to generate 31 pm peak hour trips. With the additional 103 units, Meadowlea will have a total of 360 units, and the trip generation will increase to 108 pm peak hour trips. The additional units don't require a TIA, per TPO TIA Guidelines, however, the additional volume at the driveway may warrant a driveway upgrade that will require a county use permit. A few years ago, the entrance taper was designed as large as possible without impacting the large concrete power pole at the entrance. Since then, the existing entrance has been functioning well. The County Use Permit is being submitted separately.
- School concurrency – Because this is a 55+ community, no School concurrency review is required.



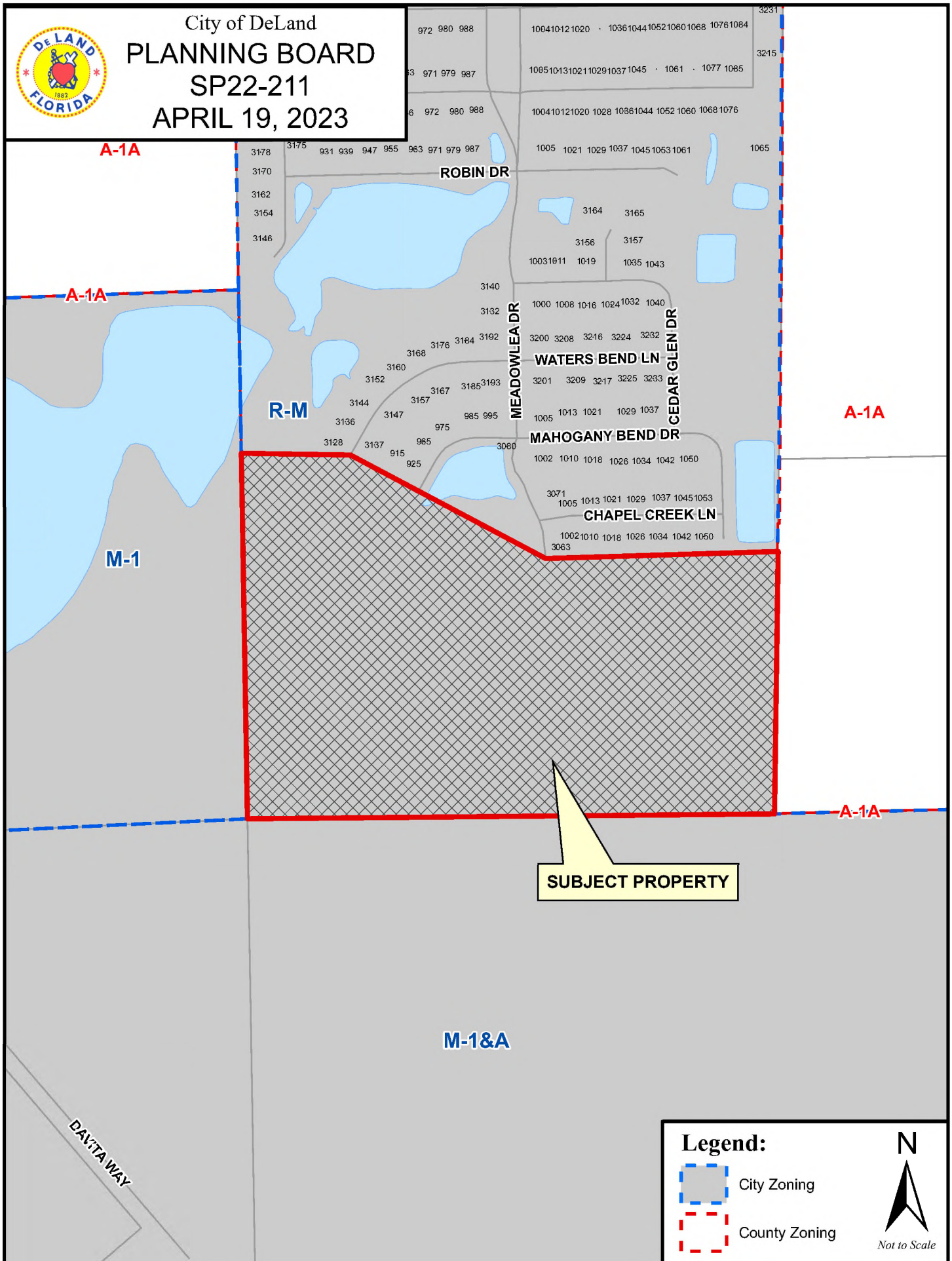
At the November 17, 2022 meeting of the Technical Review Committee (TRC) the applicant was advised to address all comments and resubmittal to the Planning Board.

E. STAFF RECOMMENDATION:

Staff recommends approval of the Class IV Site Plan for Meadowlea Village Because of the size of the development, the final decision on all Class IV developments is made by the City Commission. The City Commission will hear the application at the May 15, 2023 meeting.



City of DeLand
PLANNING BOARD
SP22-211
APRIL 19, 2023





City of DeLand
PLANNING BOARD
SP22-211
APRIL 19, 2023



General Notes:

1. THIS PROPERTY WAS ANNEXED INTO THE CIT OF DELAND ON 11/2/20
2. LAND USE = CMD (CITY MEDIUM DENSITY) ADOPTED ON 11/2/20 PER CITY OF DELAND PER LU20-088 TAX PARCEL #6027-00-00-0110
3. ZONING = R-M (RESIDENTIAL MOBILE HOME) ADOPTED ON 11/2/20 PER CITY OF DELAND PER Z20-089 TAX PARCEL #6027-00-00-0110
4. TOTAL PROPOSED PHASE 4 AREA = 11.10 ACRES
5. TOTAL PROPOSED PHASE 5 AREA = 11.20 ACRES
6. SURVEY INFORMATION PROVIDED BY ESP ASSOCIATES FL, INC. (SEE SEPARATE SURVEY SUPPLIED ALONG WITH THIS PLAN.) DATE OF SURVEY: MARCH 7, 2022.
7. UNLESS OTHERWISE SHOWN, UNDERGROUND IMPROVEMENTS NOT LOCATED. PUBLIC RECORDS NOT SEARCHED BY ESP ASSOCIATES FL, INC. ADDITIONS OR DELETIONS TO SURVEY MAPS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.
8. SUBJECT TO EASEMENTS, RIGHTS OF WAY, RESTRICTIONS, AND RESERVATIONS OF RECORD, ALL CONSTRUCTION COVERED BY THESE PLANS SHALL COMPLY WITH THE MATERIAL REQUIREMENTS AND QUALITY CONTROL STANDARDS CONTAINED IN THE CITY OF DELAND LAND DEVELOPMENT CODE. ALL CONSTRUCTION PERFORMED IN CITY OF DELAND RIGHT-OF-WAY REQUIRES A RIGHT-OF-WAY PERMIT. ALL CONSTRUCTION IN FDOT RIGHT-OF-WAY REQUIRES A PERMIT FROM FDOT.
9. ORIENTATION FOR THE IMPROVEMENTS SHOWN HEREON SHOULD NOT BE USED TO RECONSTRUCT BOUNDARY LINES, ADDITIONS OR DELETIONS TO SURVEY MAPS BY OTHER THAN THE SIGNING PARTY OR PARTIES IS PROHIBITED WITHOUT WRITTEN CONSENT OF THE SIGNING PARTY OR PARTIES.
10. REPRODUCTIONS OF THIS SKETCH ARE NOT VALID UNLESS SEALED WITH AN EMBOSSED ENGINEER'S SEAL.
11. SITE IS NOT LOCATED IN A HISTORIC PRESERVATION DISTRICT.
12. PROPERTY IS ZONED R-M; WITH MAX DENSITY OF 6 DWELLINGS PER ACRE
OVERALL PROJECT DENSITY = 377/87.53 AC = 4.31 UNITS/ACRE
13. IMPROVEMENTS WILL BE CONSTRUCTED IN PHASES.
14. BUILDING SETBACKS = FRONT - 10 FEET
REAR - 7.5 FEET
SIDE - 7.5 FEET (15 FEET BETWEEN UNITS)
15. TOTAL ACREAGE PER PHASE AS FOLLOWS:
- PHASE 1 = 1,682,152 SF (38.62 AC)
PHASE 2 = 166,445 SF (3.82 AC)
PHASE 3 = 911,014 SF (20.91 AC)
PHASE 4 = 483,516 SF (11.10 AC)
PHASE 5 = 487,872 SF (11.20 AC)
PHASE 6 = 38,352 SF (0.88 AC)
PHASE 7 = 43,198 SF (0.99 AC)
TOTAL = 3,812,910 SF (87.53 AC)
16. TOTAL SPACES AS FOLLOWS:
- PHASE 1 = 167 LOTS
PHASE 2 = 17 LOTS
PHASE 3 = 73 LOTS
PHASE 4 = 45 LOTS
PHASE 5 = 57 LOTS
PHASE 6 = 8 LOTS
PHASE 7 = 9 LOTS
TOTAL = 376 LOTS
17. TOTAL PHASE 4 DENSITY = $\frac{45 \text{ units}}{11.10 \text{ developed acres}} = 4.05 \text{ UNITS/ACRE}$
% BUILDING COVERAGE = $\frac{2.83 \text{ AC}}{11.10 \text{ AC}} \times 100 = 25.50 \%$
18. TOTAL PHASE 5 DENSITY = $\frac{57 \text{ units}}{11.20 \text{ developed acres}} = 5.14 \text{ UNITS/ACRE}$
BUILDING COVERAGE = $\frac{3.58 \text{ AC}}{11.20 \text{ AC}} \times 100 = 31.96 \%$
19. NOTE : TOTAL PROPOSED DENSITY (PH 4, 5) = 4.57
20. FIRE HYDRANTS ARE REQUIRED WITHIN 800 FEET OF THE EXTERIOR REMOTE PORTION OF ANY PROPOSED BUILDING. CLEARANCES SHALL BE MAINTAINED OF SEVEN AND ONE HALF FEET (7'-6") IN FRONT OF AND TO THE SIDES OF EVERY FIRE HYDRANT, WITH FOUR FEET (4'-0") CLEARANCE TO THE REAR OF THE HYDRANT.
21. NO FENCE WITH FOUNDATIONS WILL BE ALLOWED TO BE INSTALLED WITHIN SANITARY SEWER EASEMENTS.
22. EASEMENTS WILL BE RECORDED AS REQUIRED.
23. ALL CONSTRUCTION COVERED BY THESE PLANS SHALL COMPLY WITH THE MATERIAL REQUIREMENTS AND QUALITY CONTROL STANDARDS CONTAINED IN THE CITY OF DELAND LAND DEVELOPMENT REGULATIONS.
24. ALL UTILITY CONSTRUCTION SHALL CONFORM TO THE CITY OF DELAND STANDARD SPECIFICATIONS FOR WATER AND SEWER CONSTRUCTION, LATEST REVISION.
25. THE SITE CONTRACTOR IS RESPONSIBLE FOR CONSTRUCTION IN ACCORDANCE WITH THE APPROPRIATE LISTED CONSTRUCTION REFERENCES.
26. UTILITIES SHOWN HEREIN HAVE BEEN LOCATED BASED ON ABOVE GROUND EXISTENCE OF STRUCTURES. ACTUAL LOCATION OF UNDERGROUND UTILITIES IS UNKNOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION OF ALL EXISTING UTILITIES SHOWN OR NOT SHOWN THROUGH DIRECT CONTACT WITH THE APPROPRIATE UTILITY COMPANY. SUCH CONTACT SHALL BE MAINTAINED THROUGHOUT THE LIFE OF THE PROJECT. ANY UTILITIES OBSTRUCTIVE TO THE SITE CONTRACTORS OPERATION ARE TO BE RELOCATED BY THE APPROPRIATE UTILITY COMPANY.
27. ALL SECTION, BLOCK, AND PROPERTY CORNERS DISTURBED OR DESTROYED BY CONSTRUCTION OPERATIONS SHALL BE REPLACED BY A FLORIDA REGISTERED SURVEYOR AT THE CONTRACTOR'S EXPENSE.
28. COPIES OF THESE PLANS AS DESIGNED BY THE PROFESSIONAL ENGINEER OF RECORD HAVE BEEN RETAINED BY THE PROFESSIONAL ENGINEER AND THEY WILL NOT BE RESPONSIBLE FOR ANY SUBSEQUENT CHANGES TO THE REPRODUCIBLE ORIGINAL DOCUMENTS.
29. CONCURRENCY WILL BE MET IN ACCORDANCE WITH THE CITY REQUIREMENTS. ANY AMOUNTS DUE FOR CONCURRENCY REQUIREMENTS MUST BE PAID AT FINAL C.O. UNLESS ALL REQUIRED INFRASTRUCTURE IS INSTALLED PRIOR TO THE ISSUANCE OF THE FIRST BUILDING PERMIT.
30. FDEP CLEARANCES FOR WATER AND SEWER MUST BE SUBMITTED TO THE CITY OF DELAND PRIOR TO OBTAINING A CERTIFICATE OF OCCUPANCY.
31. AS-BUILT PLANS ARE REQUIRED TO BE SUBMITTED TO THE CITY OF DELAND AND SHALL MEET THE MINIMUM CITY STANDARD REQUIREMENTS FOR ALL WATER AND/OR SEWER CONSTRUCTION.
32. PRIOR TO THE START OF CONSTRUCTION, THE PROJECT ENGINEER SHALL SCHEDULE A PRE-CONSTRUCTION MEETING WITH THE CITY OF DELAND DEVELOPMENT COORDINATOR. THE MEETING WILL TAKE PLACE AT THE CITY GROWTH MANAGEMENT DEPARTMENT WITH THE ENGINEER, CONTRACTOR AND STAFF. NO SITE WORK SHALL COMMENCE PRIOR TO THIS MEETING TAKING PLACE.
33. ALL STORM WATER MANAGEMENT SYSTEMS SHALL BE SUBSTANTIALLY COMPLETED PRIOR TO THE CONSTRUCTION OF IMPERVIOUS AREAS.
34. CONTRACTOR SHALL PERIODICALLY SWEEP EXISTING ON-SITE PAVED SURFACES AS WELL AS ALL ADJUTING CITY STREETS, COUNTY ROADS AND STATE HIGHWAYS (AS APPROPRIATE FOR THE PARTICULAR PROJECT) TO KEEP THOSE SURFACES IN A SUBSTANTIALLY SEDIMENT-FREE CONDITION. SWEEPING SHALL BE DONE ON A PERIODIC, AS-NEEDED BASIS THROUGHOUT THE WORK WEEK INCLUDING, MOST IMPORTANTLY, AFTER EVERY RAIN EVENT AND EVERY FRIDAY AFTERNOON PRIOR TO CEASING WORK FOR THE WEEK.
35. CONTRACTOR SHALL DEVELOP AND IMPLEMENT A PLAN TO ASSURE THAT ALL WASTE, SUCH AS DISCARDED BUILDING MATERIALS, CONCRETE TRUCK WASH-OUT, CHEMICALS, LITTER AND SANITARY WASTE, ARE PROPERLY CONTROLLED WHILE ON-SITE AND TRANSPORTED AND DISPOSED OF (OFF-SITE) IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. NO WASTE MATERIALS OF ANY KIND ARE PERMITTED TO BE BURIED ON-SITE OR DISCHARGED TO SURFACE WATERS OF THE STATE OR TO THE MUNICIPAL STORM WATER SYSTEM.

Sanitary Sewer:

SANITARY SEWER TO BE PROVIDED BY CITY OF DELAND

ANTICIPATED SANITARY SEWER DEMANDS:
103 MOBILE HOMES x 260 G.P.D. x 0.667 (FOR 2 BR) = 17,862 G.P.D.

Potable Water:

POTABLE WATER TO BE PROVIDED BY CITY OF DELAND

ANTICIPATED DEMANDS:
103 MOBILE HOMES x 300 G.P.D. x 0.667 (FOR 2 BR) = 20,610 G.P.D.

Reclaimed Water:

CITY OF DELAND'S RECLAIMED WATER WILL BE USED FOR IRRIGATION.

Drainage Design Criteria:

ALL DRAINAGE STRUCTURE INVERTS SHALL BE GROUTED TO ELIMINATE SUMP CONDITIONS UNLESS OTHERWISE INDICATED. SEE SHEET 4 OF FDOT STANDARD PLAN 425-001 FOR REFERENCE.

ST. JOHNS RIVER WATER MANAGEMENT DISTRICT REQUIREMENTS FOR WET DETENTION WERE USED FOR THE DESIGN OF PHASE 4 & 5

DESIGN CRITERIA OF CHAPTER 40C-40 USED IN PHASE 4 & 5 ARE AS FOLLOWS:

1. DETENTION OF THE GREATER OF 1" OF RUNOFF WITHIN THE PROJECT'S DRAINAGE AREA OR 2.5" OF RUNOFF FROM ALL IMPERVIOUS AREA WITHIN A DRAINAGE AREA.
2. RECOVERY OF ONE-HALF OF THE REQUIRED VOLUME BETWEEN 24 AND 30 HOURS
3. A PERMANENT POOL VOLUME (PPV) TO PROVIDE A MINIMUM OF 21 DAYS RESIDENCE TIME, (SECTION 29.1; APPLICANT'S HANDBOOK). PONDS PROVIDING 21 DAYS (50% ABOVE MINIMUM) OR GREATER RESIDENCE TIME ARE NOT REQUIRED TO ESTABLISH AND MAINTAIN VEGETATIVE LITTORAL ZONES. (SEC. 14.7; APPLICANTS HANDBOOK)
4. MAXIMUM DEPTH OF 12 FEET.
5. MEAN DEPTH BETWEEN 2 AND 8 FEET (SEC. 29.3; APPLICANTS HANDBOOK)

THE WET DETENTION DRAINAGE SYSTEM FOR PHASES 4 & 5 MEET THESE CRITERIA.

CITY OF DELAND'S 25 YEAR/24 HOUR STORM REQUIREMENTS ARE ALSO MET.

SEE STORMWATER REPORT FOR CALCULATIONS.

Flood Certification:

THIS PROPERTY IS IN A ZONE "X" (AREA OF MINIMAL FLOODING) AND ZONE "A" PER FEMA PANEL 12127C0460H ACCORDING TO THE FEDERAL EMERGENCY MANAGEMENT ADMINISTRATION (FEMA).

ZONE "A" ESTIMATED AT ELEVATION 69.0

Soil Conditions:

HYDROLOGIC SOIL GROUPS CONSISTS OF:

CASSIA FINE SAND - "A" SOIL TYPE
SMYRNA-SMYRNA - "A/D" SOIL TYPE

Drainage Facility Maintenance:

OWNER WILL BE RESPONSIBLE FOR MAINTAINING ON-SITE DRAINAGE FACILITIES WHICH INCLUDES MOWING DRAINAGE SWALES/BERMS ON A REGULAR BASIS.

Fire Protection:

1. FIRE HYDRANTS WILL BE INSTALLED TO PROVIDE COVERAGE OF BUILDINGS. SEE PLANS FOR LOCATIONS.
2. FIRE HYDRANTS MAXIMUM DISTANCE TO CLOSEST POINT ON A BUILDING = 600'. MAXIMUM DISTANCE BETWEEN FIRE HYDRANTS = 800'.
3. MINIMUM 6" FIRE MAIN (SEE WATER-SEWER PLAN) TO PROVIDE FIRE FLOW TO HYDRANTS. FIRE DEPARTMENT CONNECTIONS AND BACK FLOW PREVENTION DEVICES TO BE INSTALLED AS REQUIRED BY FIRE MARSHALL.

Tree Protection Area (T.P.A.):

TPA IN EXISTING PHASES

TPA - A = 12,728 SF (0.29 AC)
TPA - B = 26,500 SF (0.61 AC)
TPA - C = 44,311 SF (1.02 AC)
TPA - D = 26,500 SF (0.61 AC)
TPA - E = 44,311 SF (1.02 AC)
TPA - F = 133,059 SF (3.05 AC)

EXISTING TPA AREA: 328,834 SF (13.45 AC)

EXISTING LAND AREA: 2,841,160 (65.22 AC)

328,834 SF (13.45 AC) / 2,841,160 (65.22 AC) = 11.57%

TPA IN PROPOSED PHASES

TPA - 1.0 = 69,213 SF (1.59 AC)
TPA - 2.0 = NOT USED
TPA - 3.0 = 119,843 SF (2.75 AC)
TPA - 4.0 = 4,517 SF (0.10 AC)
TPA - 5.0 = 31,916 SF (0.72 AC)

PROPOSED TPA AREA: 225,089 SF (5.17 AC)

PROPOSED LAND AREA: 971,388 SF (22.30 AC)

225,089 SF (5.17 AC) / 971,388 SF (22.30 AC) = 23.17%

TPA OVER TOTAL PROPERTY (87.33 AC)

TOTAL LAND AREA: 3,812,905 SF (87.53 AC)

TOTAL TPA: 553,923 SF (12.72 AC)

553,923 SF (12.72 AC) / 3,812,905 SF (87.53 AC) = 14.53%

ALTHOUGH NOT REQUIRED FOR THE EXISTING PHASES, PROPOSED EXCESS TPA INCREASES THE OVERALL PROPERTY TPA TO 14.53%



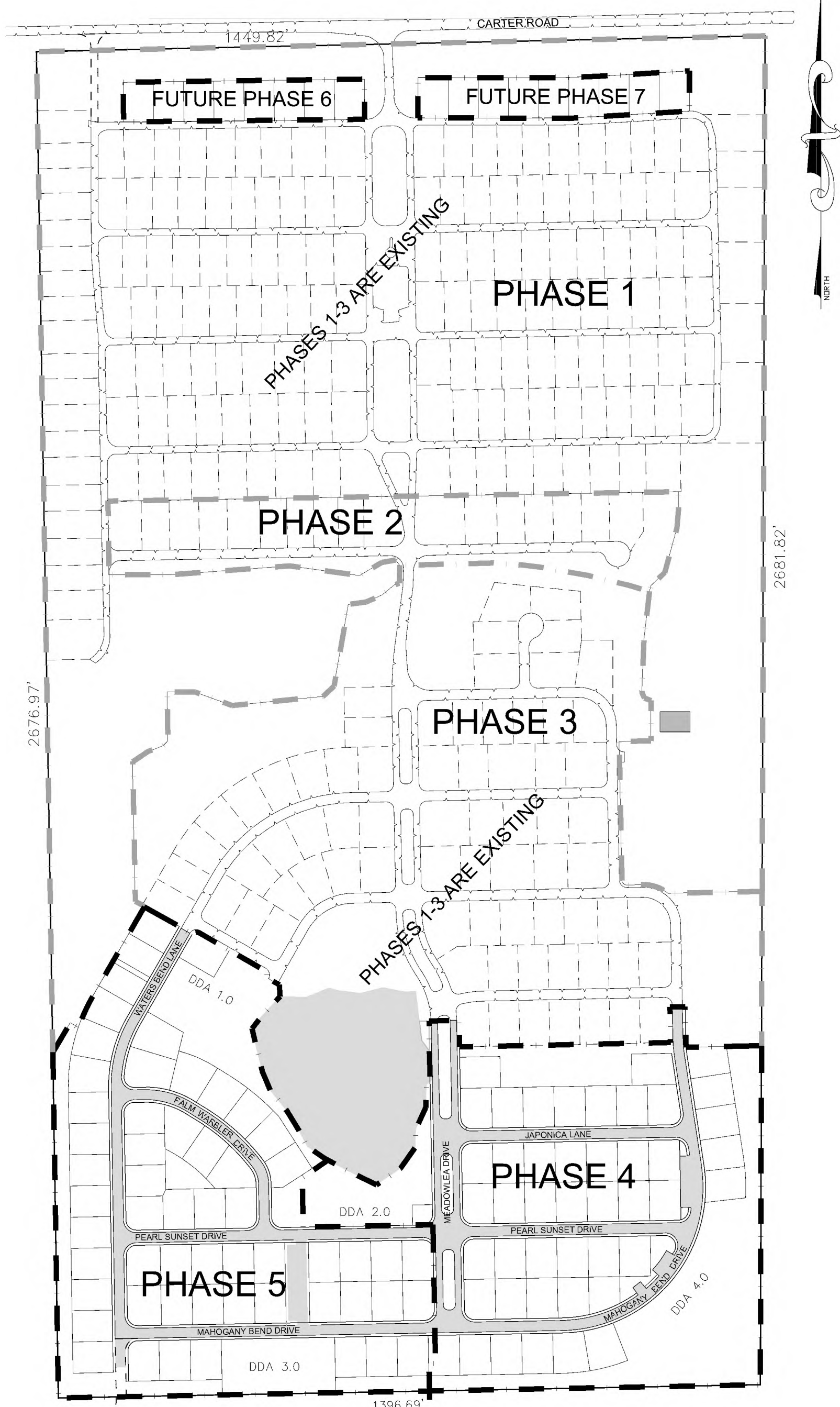
Meadowlea Village
A COVE COMMUNITY

MEADOWLEA MHP - PH. 4 & 5 SITE PLAN

CITY OF DELAND, FLORIDA

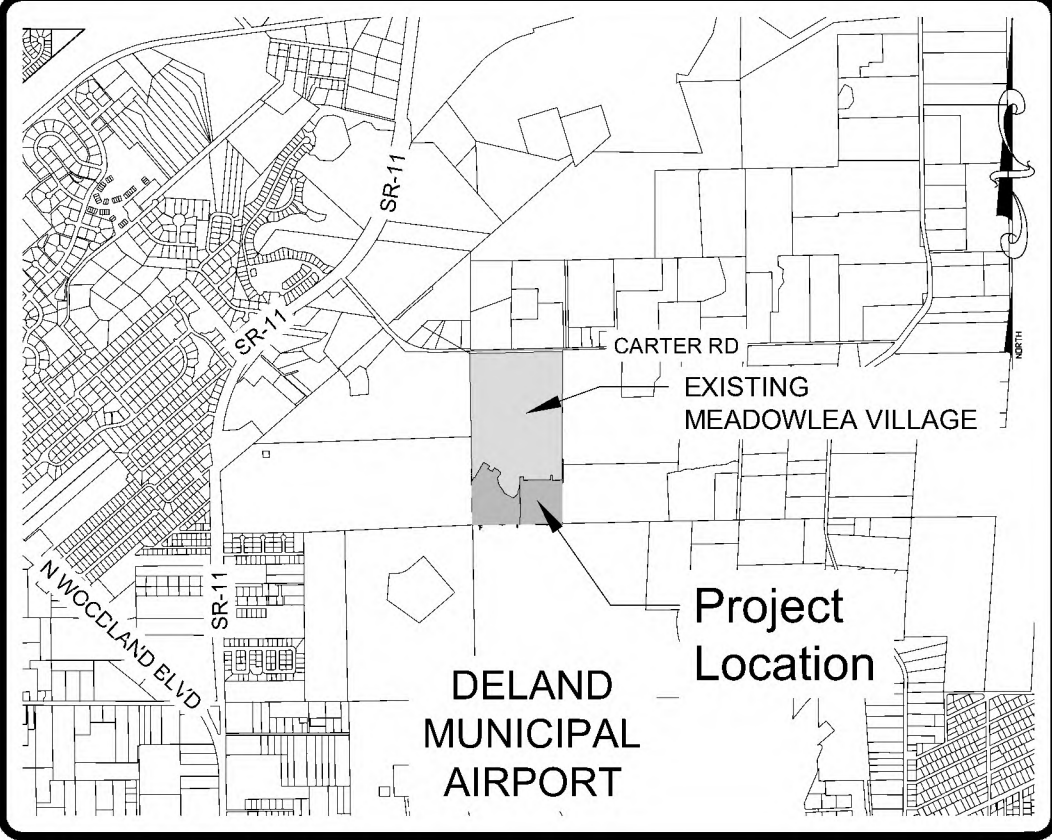
6027-00-00-0110

SECTION 27, TOWNSHIP 16 SOUTH, RANGE 30 EAST



Legal Description:

THE WEST 1/2 OF THE NORTHWEST 1/4 OF SECTION 27, TOWNSHIP 16 SOUTH, RANGE 30 EAST, VOLUSIA COUNTY, FLORIDA; LESS AND EXCEPT THAT PART LYING IN COUNTY ROAD.



LOCATION MAP

SCALE: 1" = 3000'
DELAND, FLORIDA
SECTION 27, TOWNSHIP 16 SOUTH, RANGE 30 EAST

Site Information:

PROJECT NAME: MEADOWLEA MASTER PLAN
PARCEL NUMBER: 6027-00-00-0110
PROJECT LOCATION: 1004 OVERLOOK DRIVE
DELAND FLORIDA 32724
PH. (904)736-1853
OWNER: MEADOWLEA VENTURE 1 LLC
CONTACT: GARY TIMMONS
TELEPHONE: (443) 497-7001
ADDRESS: 1901 SE 58TH AVE
OCALA FL, 34480
PROJECT ENGINEER: MICHAEL W RADCLIFFE ENGINEERING INC.
2611 SE LAKE WEIR AVE.
OCALA, FLORIDA 34471
CONTACT: CHRIS GWIN, P.E.
TELEPHONE: (352) 629-5500
TOTAL MEADOWLEA PARCEL AREA: 3,812,910 SF (87.53 AC)
TOTAL PROPOSED PH. 4 & 5 AREA: 971,749 SF (22.30 AC)
PH. 4 & 5 IMPERVIOUS AREA: 384,297 S.F. (8.82 AC.)
ZONING: R-M
MINIMUM MOBILE HOME LOT WIDTH: 30 FEET
MINIMUM MOBILE HOME LOT DEPTH: 80 FEET
LAND USE: RESIDENTIAL MOBILE HOME DISTRICT
SETBACKS: 10' FRONT SETBACK (FROM EOP)
15' SIDE SETBACKS
15' REAR SETBACK
40' BUILDING SETBACK (FROM ANY PROJECT PERIMETER PROPERTY LINE)
BUILDING(S) HEIGHT: 1 STORY

Statement of Intent:

INFRASTRUCTURE AND CONSTRUCTION FOR DEVELOPMENT OF 103 MOBILE HOME LOTS AND ACCESSORY AMENITY FACILITIES ADDED TO EXISTING MOBILE HOME PARK. MEADOWLEA VILLAGE IS AN ADULT 55+ COMMUNITY.

Index of Sheets:

C001	COVER SHEET
M001	MASTER PLAN
C002	DETAILS
C003	DRAINAGE PLAN
C004	DRAINAGE DETENTION AREAS
C005	GRADING PLAN
C006	SITE PLAN
C007	UTILITIES PLAN
C008	LANDSCAPE AND IRRIGATION
C009	TREE PLAN
C010	TREE CHART
C011	TREE DETAILS
C012-19	PLAN AND PROFILES
C020	SIGNAGE AND STRIPING
C021	SWPPP
S001-3	SURVEY
10 PAGES	CITY OF DELAND UTILITY DETAILS
# PAGES	FDOT STANDARD PLANS INDEX

Revisions	By:	Date:	Revised Per CIT OF DELAND COMMENTS
	BIL	3/27/23	

Scale	N/A
Project	2022-04
Date	10-14-2022
Drawn	NWR
Checked	NWR
File	Meadowlea Village Ph. 4-7.dwg

MICHAEL W. RADCLIFFE ENGINEERING, INC.
2611 S.E. Lake Weir Avenue, Ocala, FL 34471
(352) 629-5500 FAX (352) 629-1010
Certificate No. EB-5006198 • Michael W. Radcliffe P.E. #3170 • Christopher A. Gwin P.E. #6588
www.radcliffeengineering.com

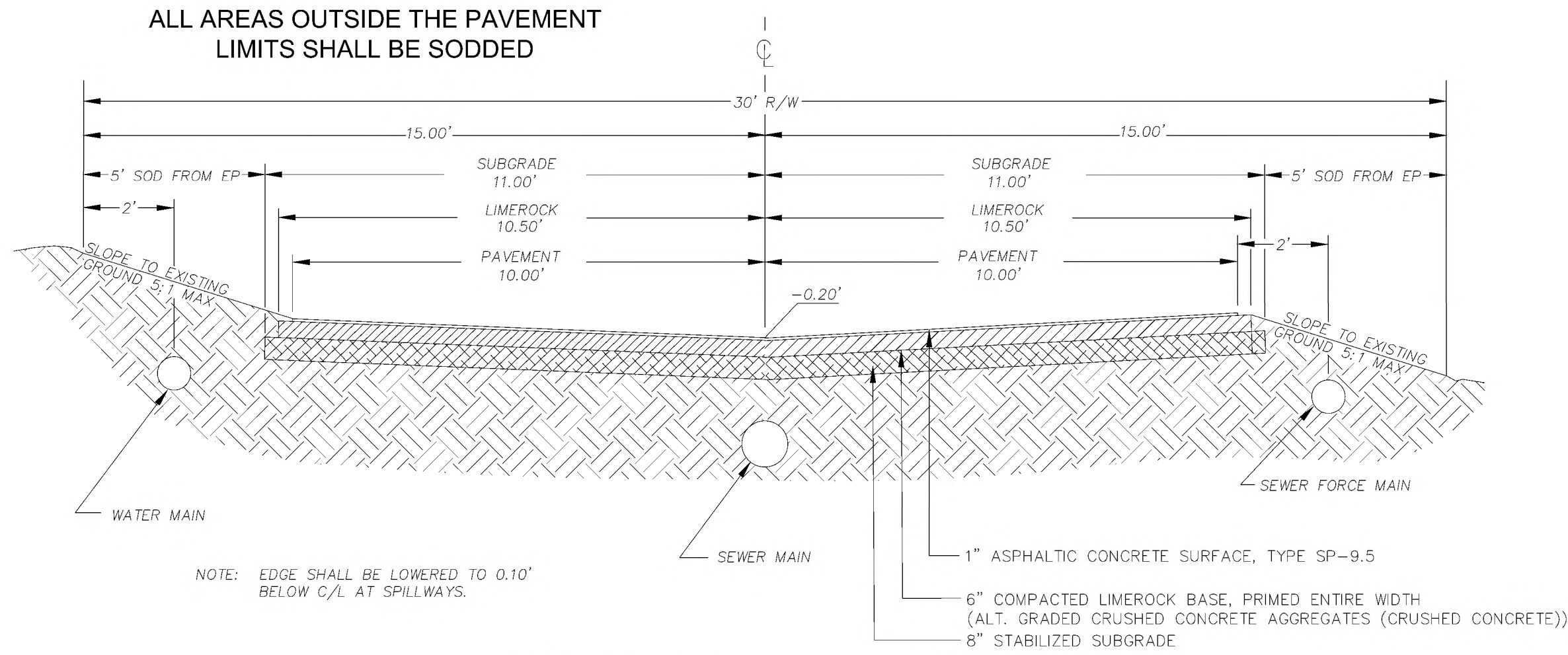
CONTRACT # 2023 Meadow W. Radcliffe Engineering, Inc. All Rights Reserved

Project Name	Meadowlea Village Ph. 4&5
Sheet Name	Cover Sheet

Revisions to Plan Set	9-27-23
THIS DATE INDICATES THE LATEST DATE AT WHICH ANY PART OF THIS PLAN SET WAS REVISED.	

Sheet No.	C001 of C021
-----------	--------------

X:\MWR\Projects\MEADOWLEA MHP\2022-04 Meadowlea Village Ph. 4-7\Drawings\MEADOWLEA Village Ph. 4-7.dwg 3/28/2023 12:33 PM



TYPICAL PAVEMENT SECTION
INVERTED CROWN

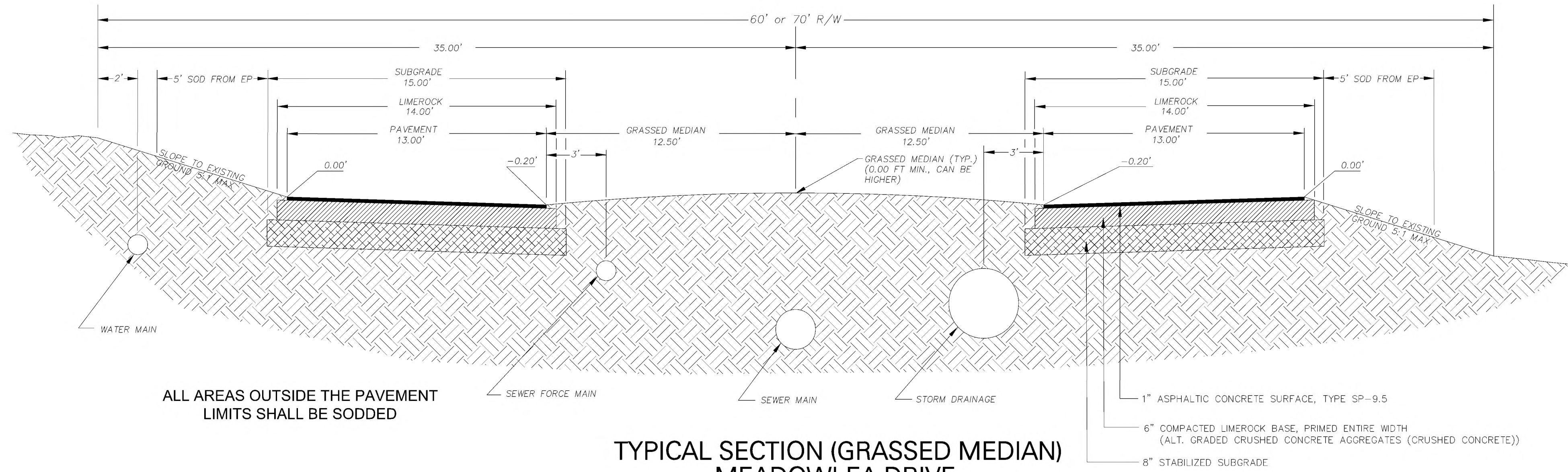
Not to Scale



Meadowlea Village

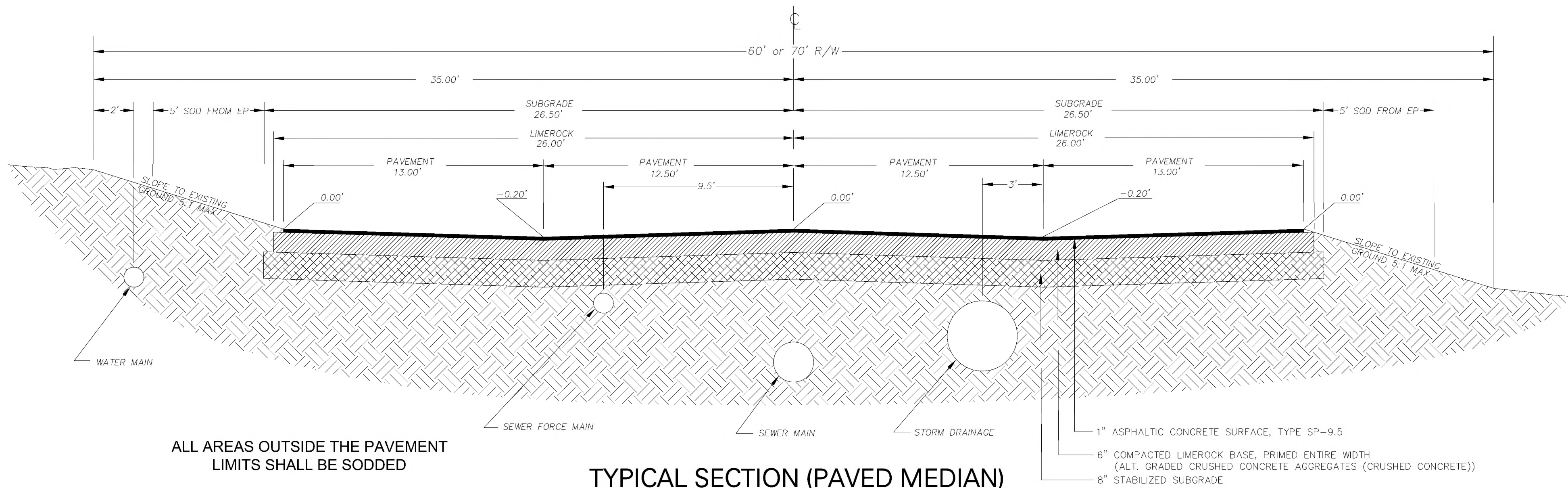
A COVE COMMUNITY

MEADOWLEA MHP - PH. 4-7 SITE PLAN
CITY OF DELAND, FLORIDA



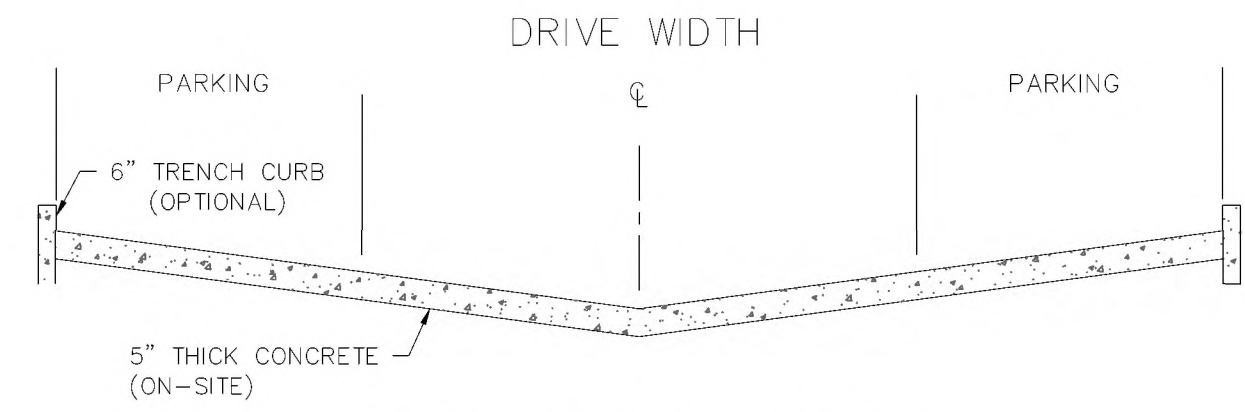
TYPICAL SECTION (GRASSED MEDIAN)
MEADOWLEA DRIVE

Not to Scale



TYPICAL SECTION (PAVED MEDIAN)
MEADOWLEA DRIVE

Not to Scale

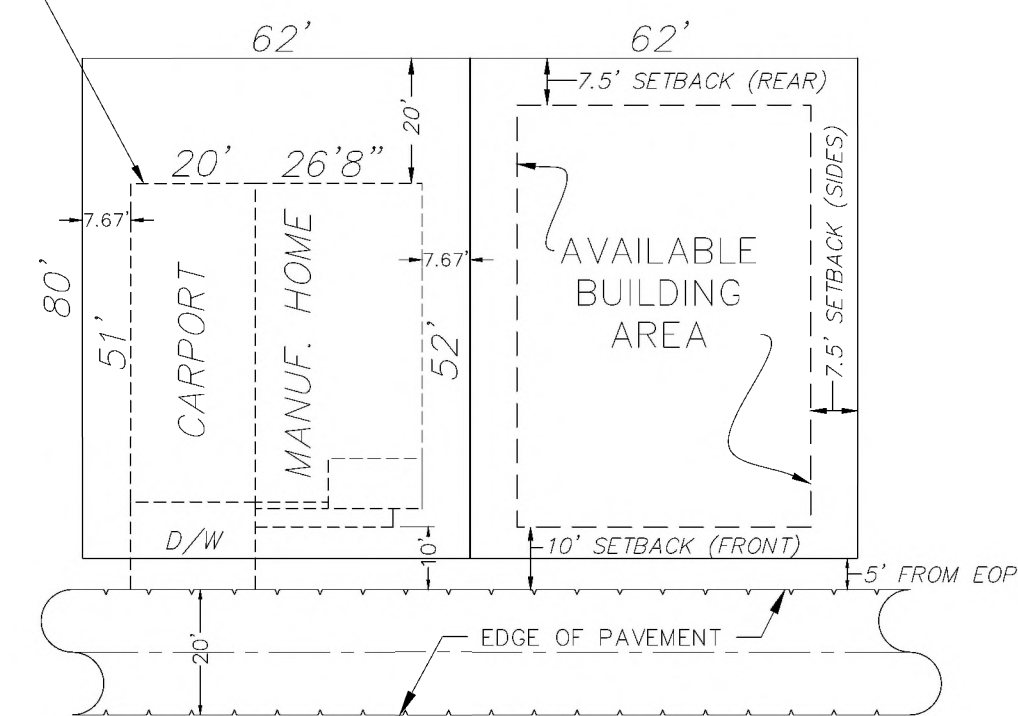


Concrete Drive Detail

Not To Scale

CONCRETE DRIVE CONSTRUCTION NOTE:
ALL CONCRETE TO BE 3,000 psi, 5" THICK WITH 6"x6" W/4"W/1.4 WWF OVER 6" STABILIZED SUBGRADE. (USE 6" THICK CONCRETE WITHIN RIGHT-OF-WAY)

CARPORT TO
ACCOMMODATE
2 VEHICLES



TYPICAL SPACE LAYOUT

Not To Scale

SETBACKS PER DELAND MUNICODE 33-17.11

SETBACKS FROM BOUNDARIES/BUILDING
SEPARATION/IMPERVIOUS SURFACE LIMITATIONS

ACCESSORY STRUCTURE SETBACKS:

NO MOBILE HOME ACCESSORY STRUCTURE
SHALL BE CLOSER THAN 7.5 FEET TO ANY
REAR OR SIDE MOBILE HOME LOT.

SETBACKS FROM INTERNAL STREETS:

TEN FEET FROM EDGE OF PAVEMENT.

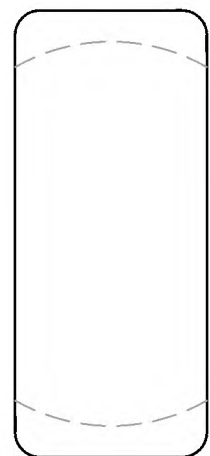
Revised:	
By:	
Date:	3/27/23
Drawn:	BIL
Checked:	
File:	

Scale:	N.T.S.
Project:	2022-04
Date:	10-14-2022
Drawn:	MWR
Checked:	
File:	Meadowlea Village Ph. 4-7.dwg

MICHAEL W. RADCLIFFE ENGINEERING, INC.
2811 S.E. Lake View Avenue
Ocala, FL 34471
Phone: (352) 629-5500
Fax: (352) 629-0100
Email: mradcliffe@radcliffeengineering.com
www.radcliffeengineering.com

CONTRACT # 2023 Meadow W. Radcliffe Engineering, Inc. All Rights Reserved

Project Name:	Meadowlea Village Ph. 4&5
Sheet Name:	Details

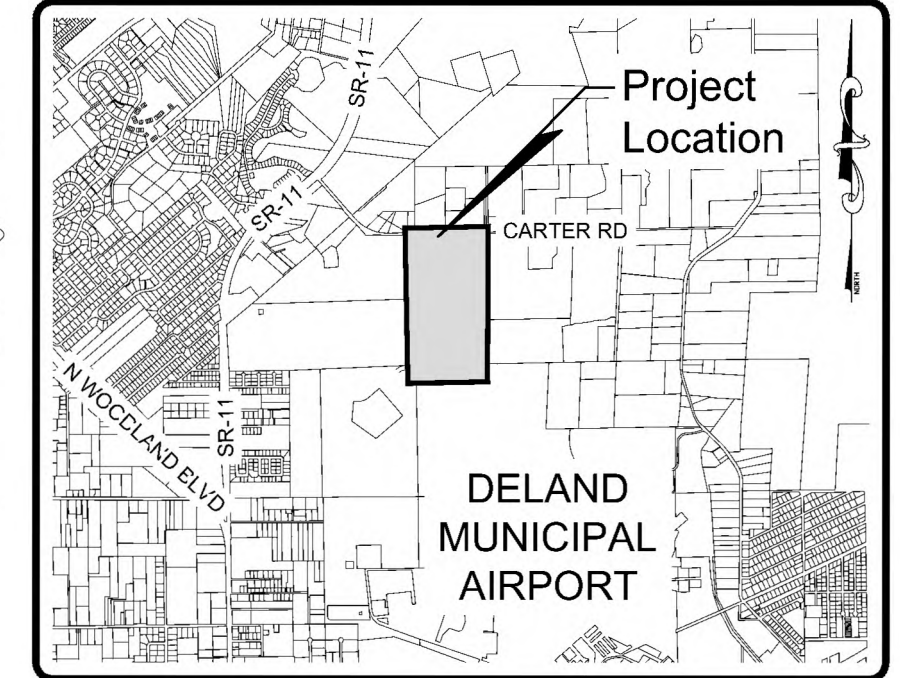
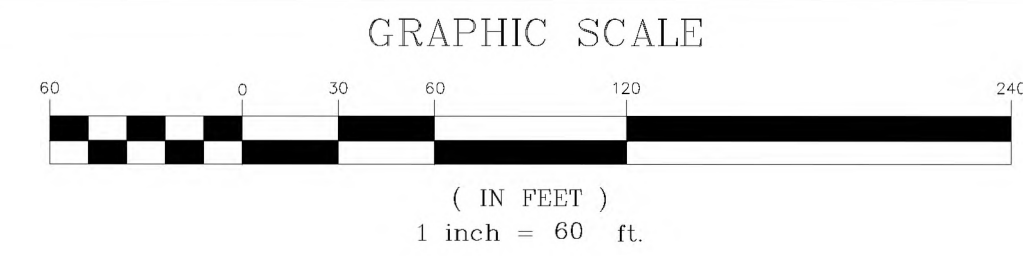


Sheet No.	C002
of	C021



MEADOWLEA MHP - PH. 4-7 SITE PLAN CITY OF DELAND, FLORIDA

DRA OVERFLOW STRUCTURES



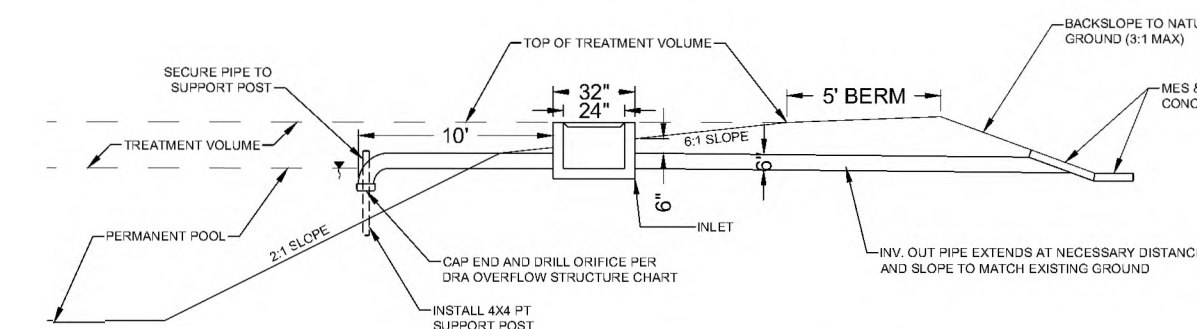
SCALE: 1" = 400'
DELAND, FLORIDA
SECTION 27, TOWNSHIP 16 SOUTH, RANGE 30 EAST

Legend:

- 65- = CONTOUR LABEL
- [Hatched Area] = FEMA ZONES
- [Solid Line] = WETLAND BOUNDARY
- [Dashed Line] = WETLAND BUFFER
- [Dotted Line] = EXISTING CONTOUR (MJR)
- [Long Dash Short Dash] = EXISTING CONTOUR (MNR)
- [Line with Triangles] = PROPOSED SILT FENCE
- [Thick Dashed Line] = DRAINAGE BASIN BOUNDARY
- [Thin Dashed Line] = SUB BASIN BOUNDARY
- [Circle with X] = PROP BLEED DOWN CLEANOUT
- [Long Dash Short Dash] = PHASE LINE
- [C-C] = D.D.A. CROSS SECTION LOCATION (SEE D.D.A. SECTIONS SHEET C004)

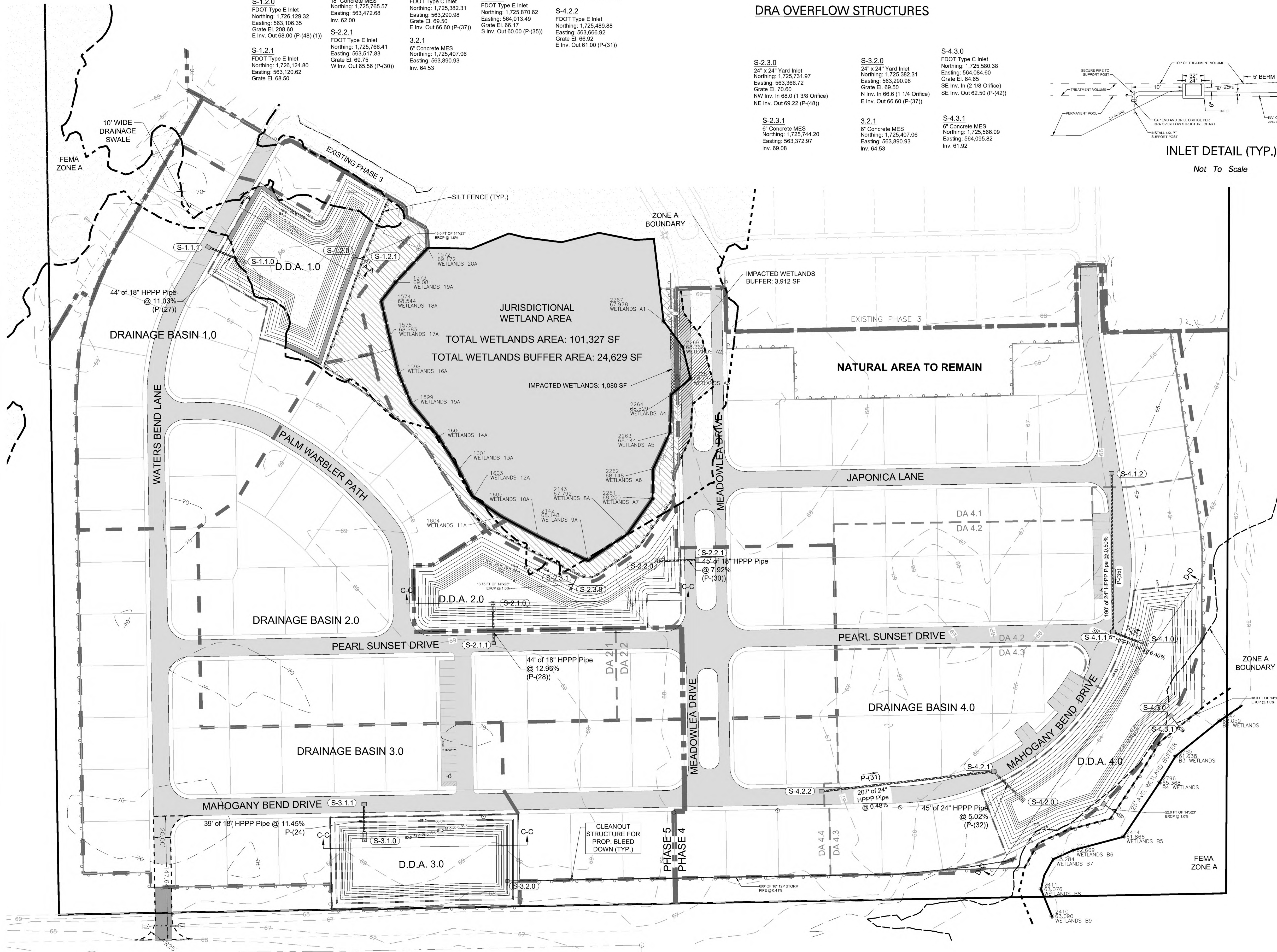
INLET DETAIL (TYP.)

Not To Scale



DRAINAGE SYSTEM STRUCTURES		
S-1.1.0 18" Concrete MES Northing: 1,726,123.96 Easting: 562,973.65 Inv. 62.00	S-2.1.0 18" Concrete MES Northing: 1,725,711.03 Easting: 563,273.58 Inv. 61.00	S-3.1.0 18" Concrete MES Northing: 1,725,434.89 Easting: 563,119.76 Inv. 60.00
S-1.1.1 FDOT Type E Inlet Northing: 1,726,140.63 Easting: 562,932.48 Grate El. 69.11 E Inv. Out 66.90 (P-(27))	S-2.1.1 FDOT Type E Inlet Northing: 1,725,667.06 Easting: 563,274.31 Grate El. 70.60 N Inv. Out 66.70 (P-(28))	S-3.1.1 FDOT Type E Inlet Northing: 1,725,474.19 Easting: 563,119.46 Grate El. 68.70 S Inv. Out 64.50 (P-(24))
S-1.2.0 FDOT Type E Inlet Northing: 1,726,129.32 Easting: 563,106.35 Grate El. 208.60 E Inv. Out 68.00 (P-(48) (1))	S-2.2.0 18" Concrete MES Northing: 1,725,766.57 Easting: 563,472.68 Inv. 62.00	S-3.2.0 FDOT Type C Inlet Northing: 1,725,382.31 Easting: 563,290.98 Grate El. 69.50 E Inv. Out 66.60 (P-(37))
S-1.2.1 FDOT Type E Inlet Northing: 1,726,124.80 Easting: 563,120.62 Grate El. 68.50	S-2.2.1 FDOT Type E Inlet Northing: 1,725,766.41 Easting: 563,517.83 Grate El. 69.75 W Inv. Out 65.56 (P-(30))	S-3.2.1 6" Concrete MES Northing: 1,725,407.06 Easting: 563,890.93 Inv. 64.53

S-2.3.0 24" x 24" Yard Inlet Northing: 1,725,731.97 Easting: 563,366.72 Grate El. 70.60 NW Inv. In 68.0 (1 3/8 Office) NE Inv. Out 69.22 (P-(48))	S-3.2.0 24" x 24" Yard Inlet Northing: 1,725,382.31 Easting: 563,290.98 Grate El. 69.50 N Inv. In 66.6 (1 1/4 Office) E Inv. Out 66.60 (P-(37))	S-4.3.0 FDOT Type C Inlet Northing: 1,725,580.38 Easting: 564,084.60 Grate El. 64.65 SE Inv. In (2 1/8 Office) SE Inv. Out 62.50 (P-(42))
S-2.3.1 6" Concrete MES Northing: 1,725,744.20 Easting: 563,372.97 Inv. 69.08	S-3.2.1 6" Concrete MES Northing: 1,725,407.06 Easting: 563,890.93 Inv. 64.53	S-4.3.1 6" Concrete MES Northing: 1,725,566.09 Easting: 564,095.82 Inv. 61.92



DRAINAGE BASIN 1.0

TOTAL AREA - 117,248 SF
TOTAL IMPERV. - 59,625 SF

DRAINAGE BASIN 2.1

TOTAL AREA - 131,865 SF
TOTAL IMPERV. - 68,530 SF

DRAINAGE BASIN 2.2

TOTAL AREA - 46,511 SF
TOTAL IMPERV. - 25,607 SF

DRAINAGE BASIN 3.0

TOTAL AREA - 140,086 SF
TOTAL IMPERV. - 66,033 SF

DRAINAGE BASIN 4.1

TOTAL AREA - 145,977 SF
TOTAL IMPERV. - 70,070 SF

DRAINAGE BASIN 4.2

TOTAL AREA - 66,753 SF
TOTAL IMPERV. - 40,205 SF

DRAINAGE BASIN 4.3

TOTAL AREA - 65,647 SF
TOTAL IMPERV. - 35,990 SF

DRAINAGE BASIN 4.4

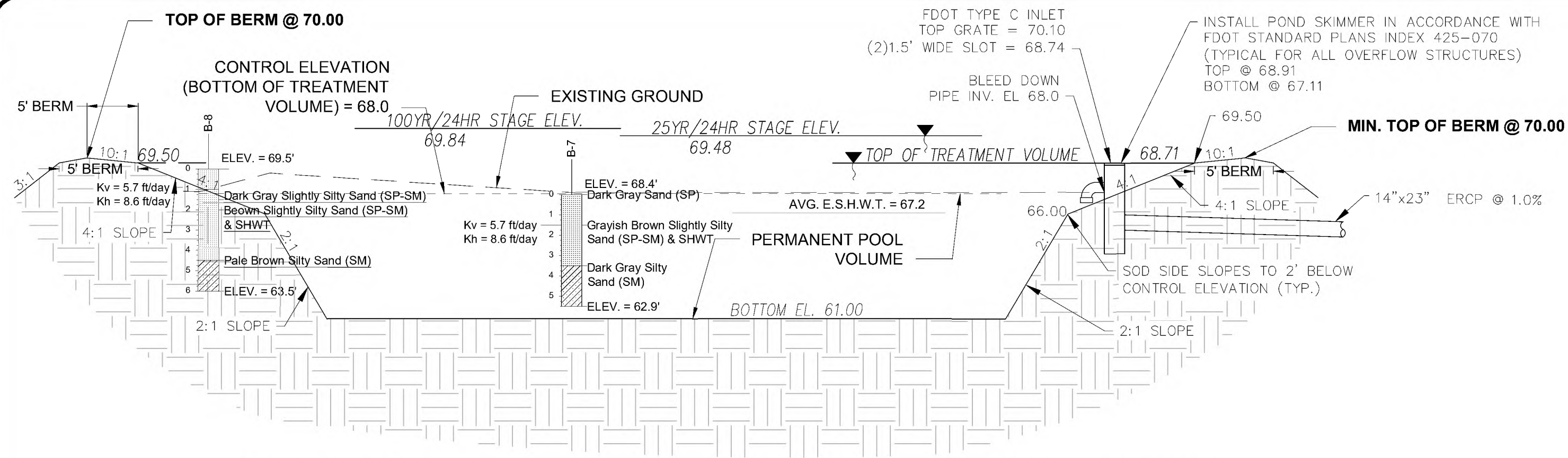
TOTAL AREA - 73,111 SF
TOTAL IMPERV. - 42,649 SF

Project Name: Meadowlea Village Ph. 4&5

Drainage Plan

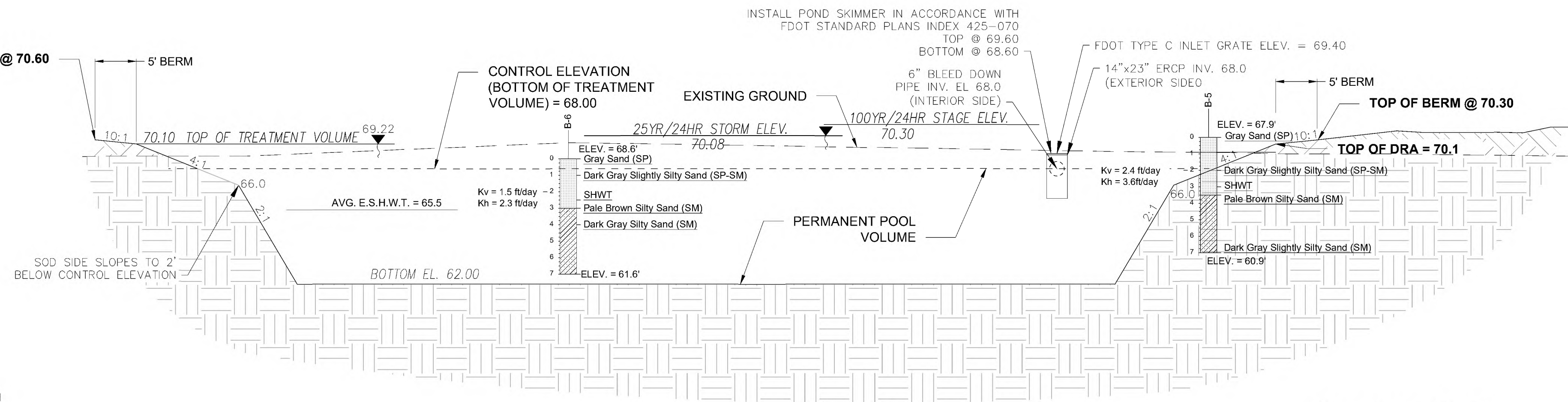
Sheet No.
C003
of
C018

MICHAEL W. RADCLIFFE ENGINEERING, INC.
2811 S.E. Lake Weir Avenue, Suite 100, Deland, FL 32725
Phone: 386-241-1111 • Fax: 386-241-1112
www.radcliffeengineering.com



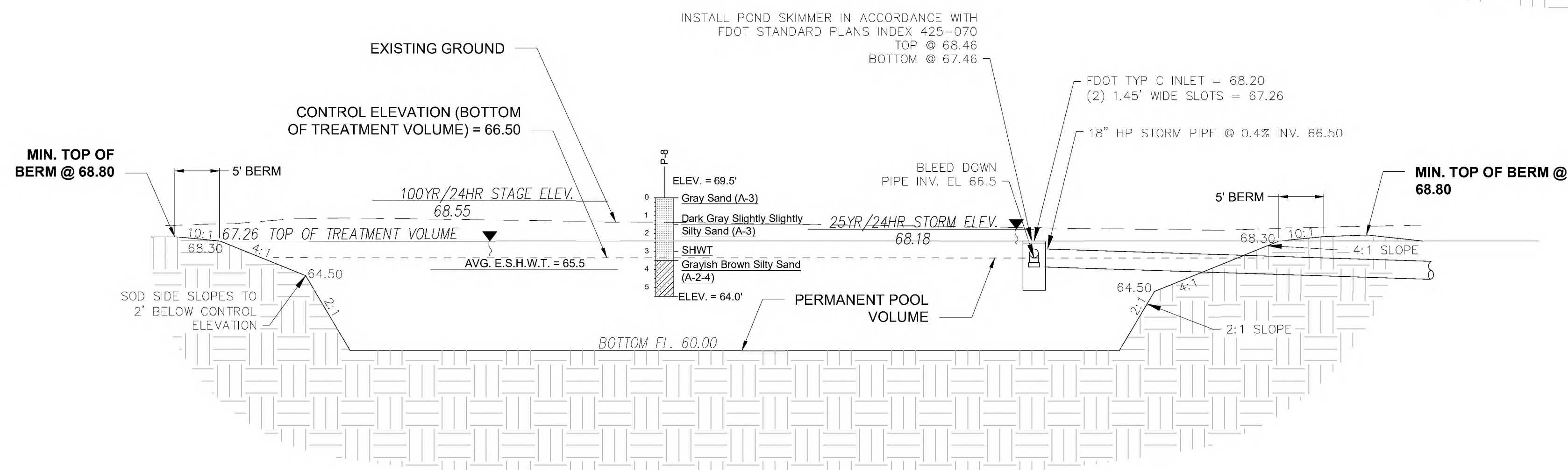
Section A-A
D.D.A. 1.0
Not To Scale

NOTE: SOD ALL SIDE SLOPES,
BERMS AND DRA BOTTOM.



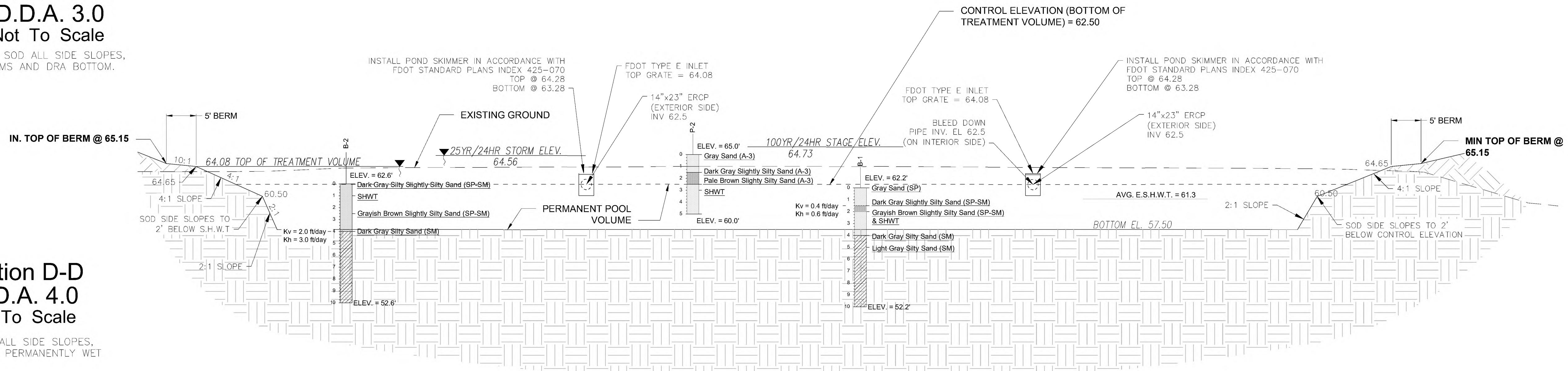
Section B-B
D.D.A. 2.0
Not To Scale

NOTE: SOD ALL SIDE SLOPES,
BERMS AND DRA BOTTOM.



Section C-C
D.D.A. 3.0
Not To Scale

NOTE: SOD ALL SIDE SLOPES,
BERMS AND DRA BOTTOM.



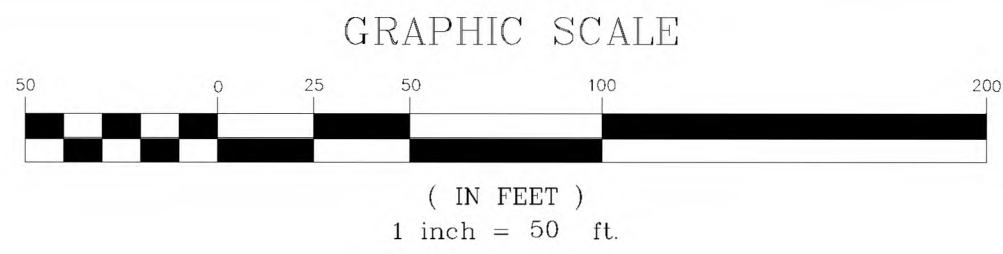
Section D-D
D.D.A. 4.0
Not To Scale

NOTE: SOD ALL SIDE SLOPES,
THIS WILL BE PERMANENTLY WET

Project Name	Meadowlee Village Ph. 4&5
Sheet Name	DDA Sections
Project No.	C004 of C021
Scale	1" = 10'
Project	2022-04
Date	10-14-2022
Drawn	NWR
Checked	NWR
File	Meadowlee Village Ph. 4-7.dwg
Revised	
By	BIL
Date	3/27/23
Revised Per	QIT OF DELAND COMMENTS

MICHAEL W. RADCLIFFE ENGINEERING, INC.
2811 S.E. Lake Weir Avenue
Ocala, FL 34471
(352) 629-5500 FAX (352) 629-1070
Certificate No. EB-0006198 • Michael W. Radcliffe P.E. #3170 • Christopher A. Cain P.E. #6588
www.radcliffeengineering.com

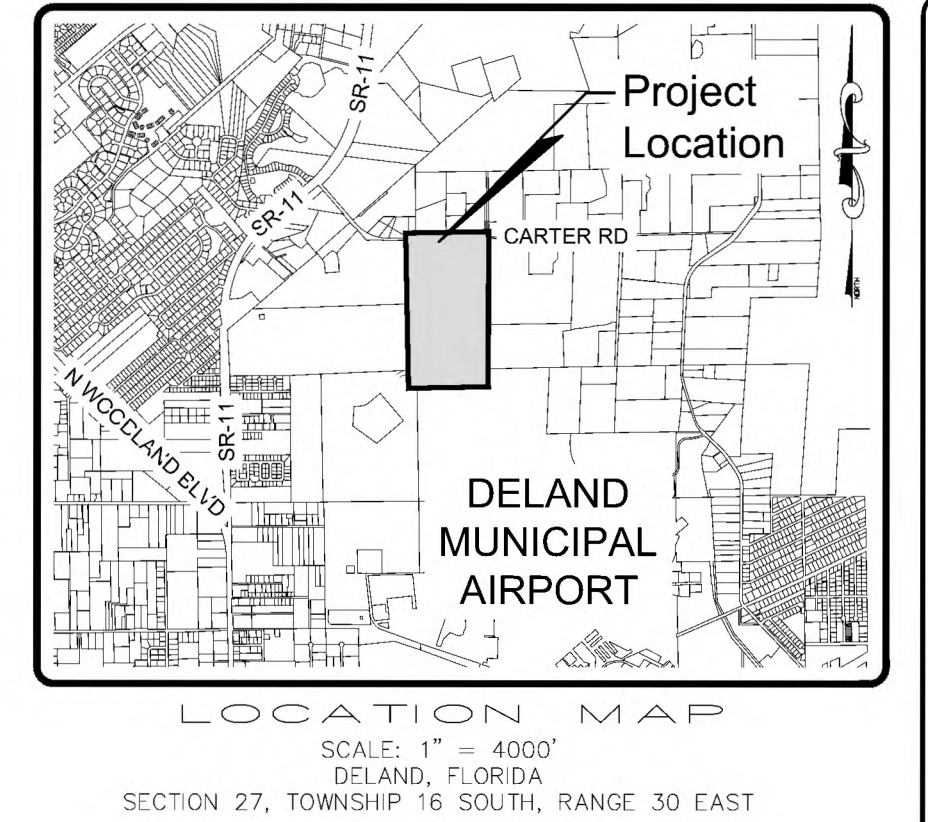
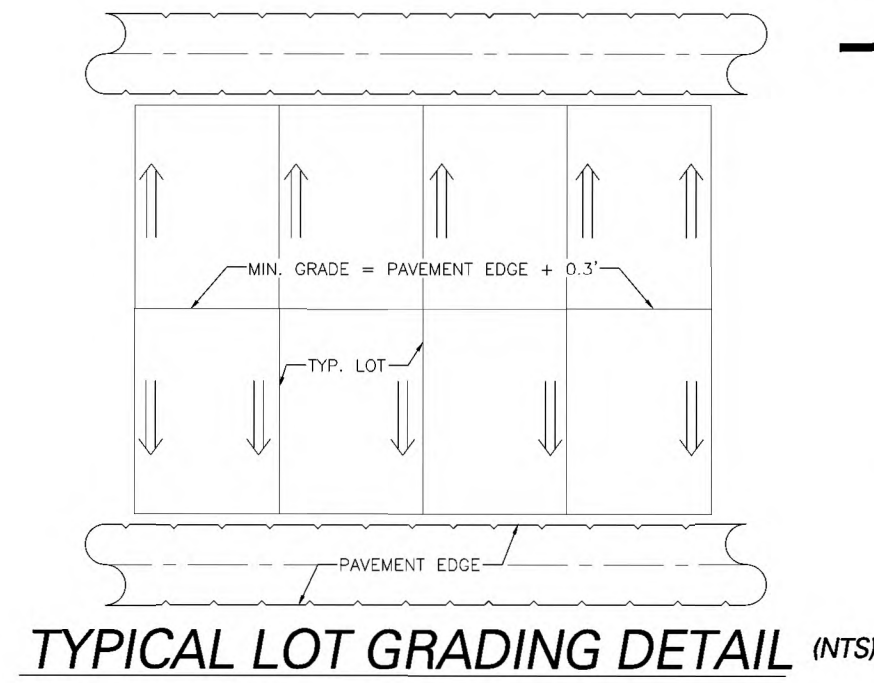
COPYRIGHT © 2023 Michael W. Radcliffe Engineering, Inc. All Rights Reserved.



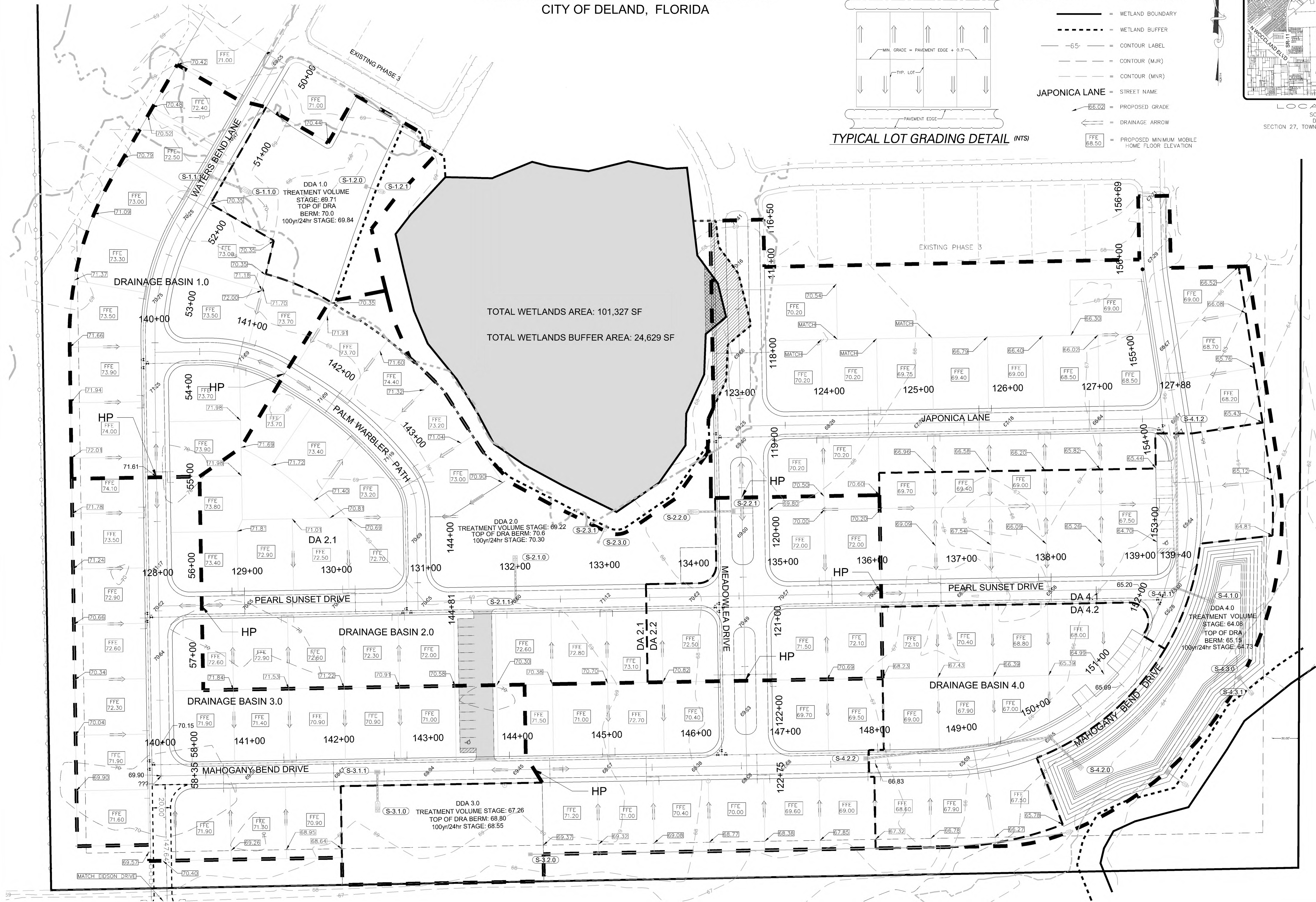
MEADOWLEA MHP - PH. 4-7 SITE PLAN
CITY OF DELAND, FLORIDA

Legend:

- = DRAINAGE BASIN BOUNDARY
- - - = SUB BASIN BOUNDARY
- - - = WETLAND BOUNDARY
- - - = WETLAND BUFFER
- - - = CONTOUR LABEL
- - - = CONTOUR (M/R)
- - - = CONTOUR (M/R)
- JAPONICA LANE = STREET NAME
- 66.02 = PROPOSED GRADE
- = DRAINAGE ARROW
- FFE 68.50 = PROPOSED MINIMUM MOBILE HOME FLOOR ELEVATION



TOTAL WETLANDS AREA: 101,327 SF
TOTAL WETLANDS BUFFER AREA: 24,629 SF



Project Name: Meadowlea Village Ph. 4&5

Sheet Name: Grading Plan

Sheet No. C005 of C021

Project: BIL

Drawn: MWR

Check: MWR

Scale: 1" = 50'

Project: 2022-04

Date: 10-14-2022

Revised: 3/27/23

By: BIL

Revised Per: QIT OF DELAND COMMENTS

Michael W. Radcliffe Engineering, Inc.

2811 S.E. Lake Weir Avenue, Ocala, FL 34747 (352) 829-5500 FAX (352) 829-1010

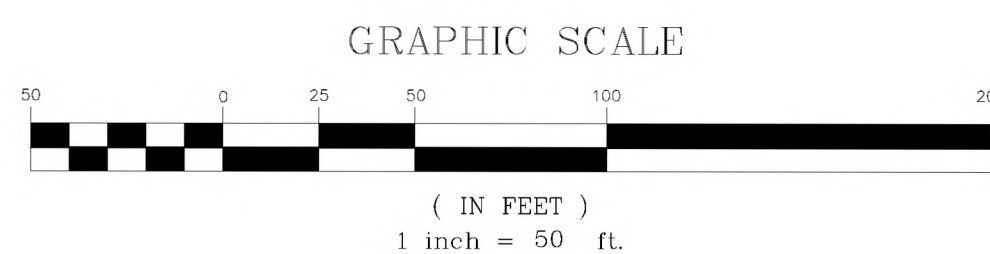
Michael W. Radcliffe, P.E. #9170 • Christopher A. Gawn, P.E. #8588

www.mradcliffeengineering.com

Copyright © 2023 Michael W. Radcliffe Engineering, Inc. All Rights Reserved.

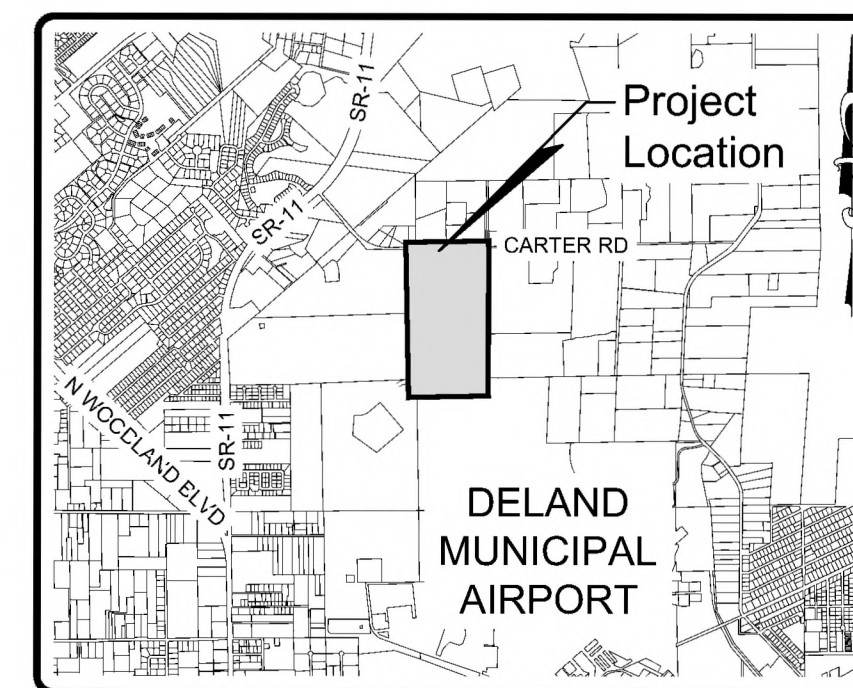
Meadowlea Village

A COVE COMMUNITY

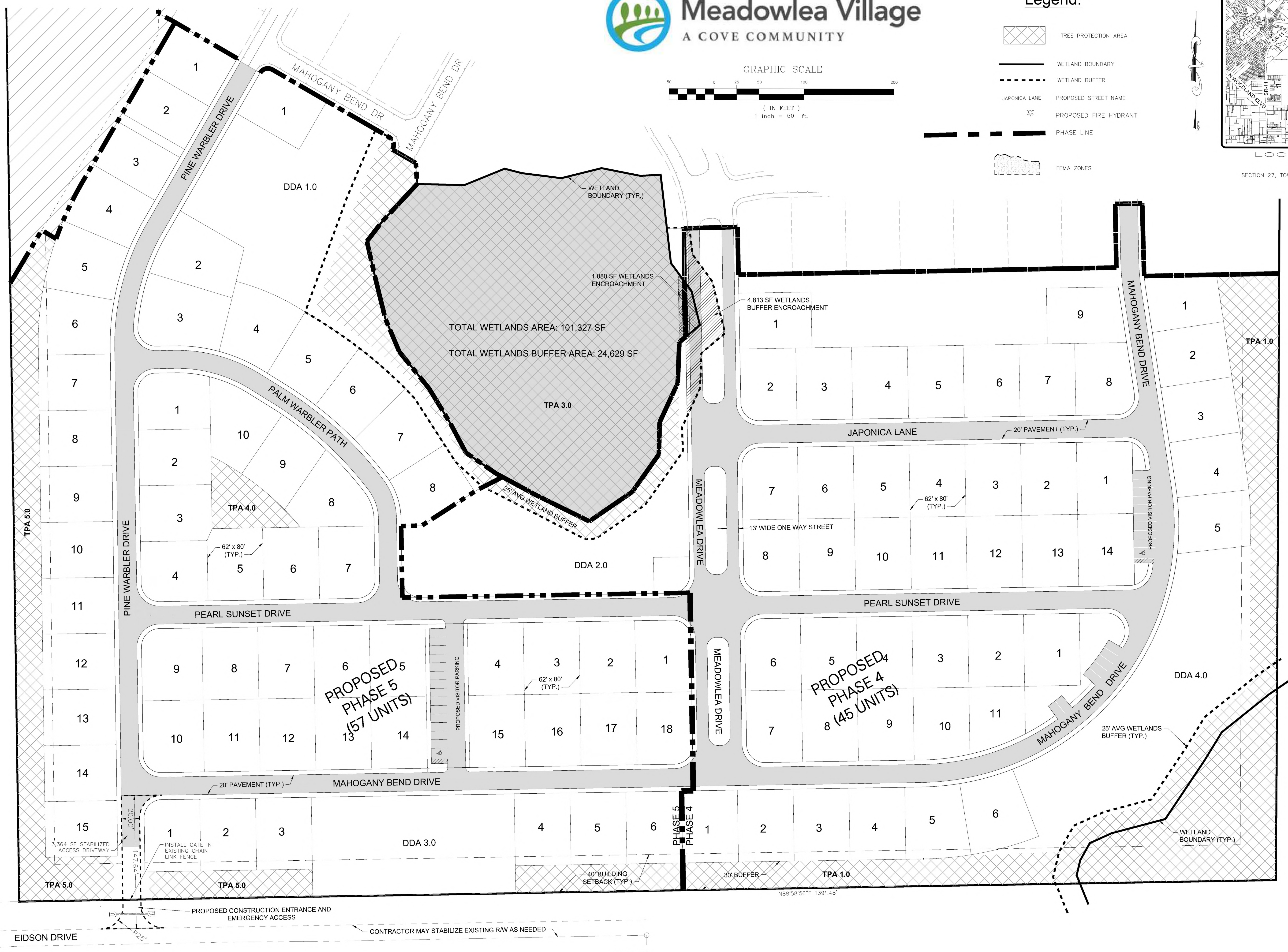


Legend:

- | | |
|---|-----------------------|
|  | TREE PROTECTION AREA |
|  | WETLAND BOUNDARY |
|  | WETLAND BUFFER |
| JAPONICA LANE | PROPOSED STREET NAME |
|  | PROPOSED FIRE HYDRANT |
|  | PHASE LINE |
|  | FEMA ZONES |



LOCATION MAP
SCALE: 1" = 4000'
DELAND, FLORIDA
SECTION 27, TOWNSHIP 16 SOUTH, RANGE 30 EAST



Date:	By:	Revisions:
3/27/23	BIL	REVISED PER CIT OF DELAND COMMENTS.

Designed:	MWR	Scale: 1" = 50'
Drawn:	BIL	Project: 2022-04
Checked:	MWR	Date: 10-14-2022

File: Meadows Villane Ph. 4-7.dwg

MWD MICHAEL W. RADCLIFFE ENGINEERING, INC.
2611 S.E. Lake Weir Avenue Ocala, FL 34471 (352) 629-5500 FAX (352) 629-1010
Certificate No. EB-0006198 • Michael W. Radcliffe P.E. #31170 • Christopher A. Cain P.E. #65568
www.radcliffeengineering.com

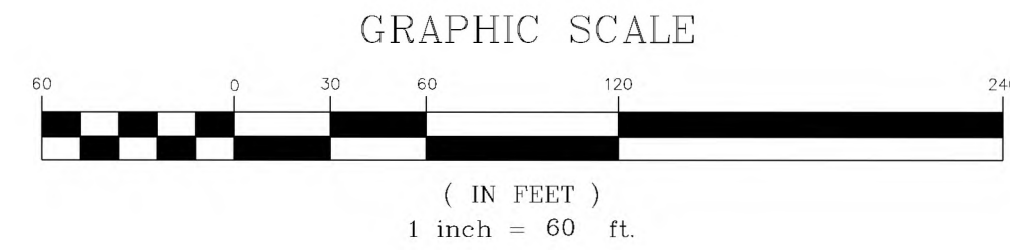
Project Name: Meadowlea Village Ph. 4&5
Sheet Name:

Sheet No. C006 of C021



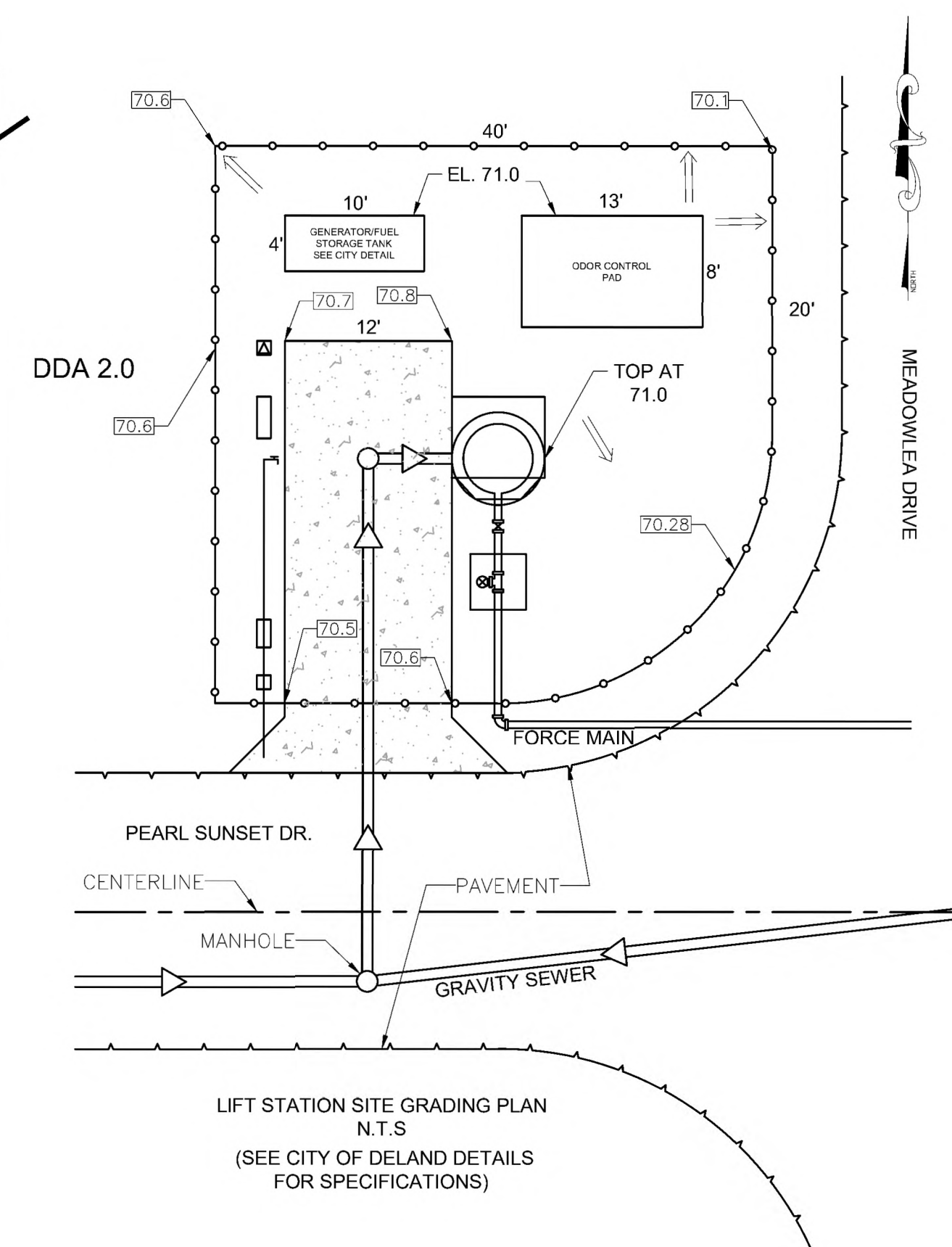
Meadowlea Village

A COVE COMMUNITY



Legend:

- 65- CONTOUR LABEL
- FEMA ZONES
- WETLAND BOUNDARY
- WETLAND BUFFER
- CONTOUR (M/R)
- CONTOUR (M/R)
- JAPONICA LANE PROPOSED STREET NAME
- PROPOSED FIRE HYDRANT
- PROPOSED MANHOLE
- PROPOSED DOUBLE SEWER SERVICES
- PROPOSED DOUBLE WATER SERVICES



Revised:	
By:	
Date:	3/27/23
BIL	REVISED PER QIT OF DELAND COMMENTS:

Scale:	1" = 60'
Project:	2022-04
Drawn:	BIL
Checked:	MWR
Date:	10-14-2022
File:	Meadowlea Village Ph. 4-7.dwg

MICHAEL W. RADCLIFFE ENGINEERING, INC.
2511 S.E. Lake View Avenue
Ocala, FL 34471
(352) 828-5500 FAX (352) 829-1018
Certificate No. 18-0008198 • Michael W. Radcliffe P.E. #31110 • Christopher A. Dean P.E. #35585

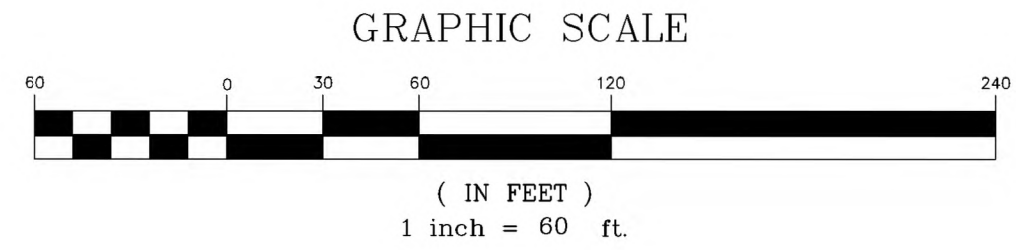
Project Name: Meadowlea Village Ph. 4&5
Sheet Name: Utility Plan

Sheet No.
C007
of
C021



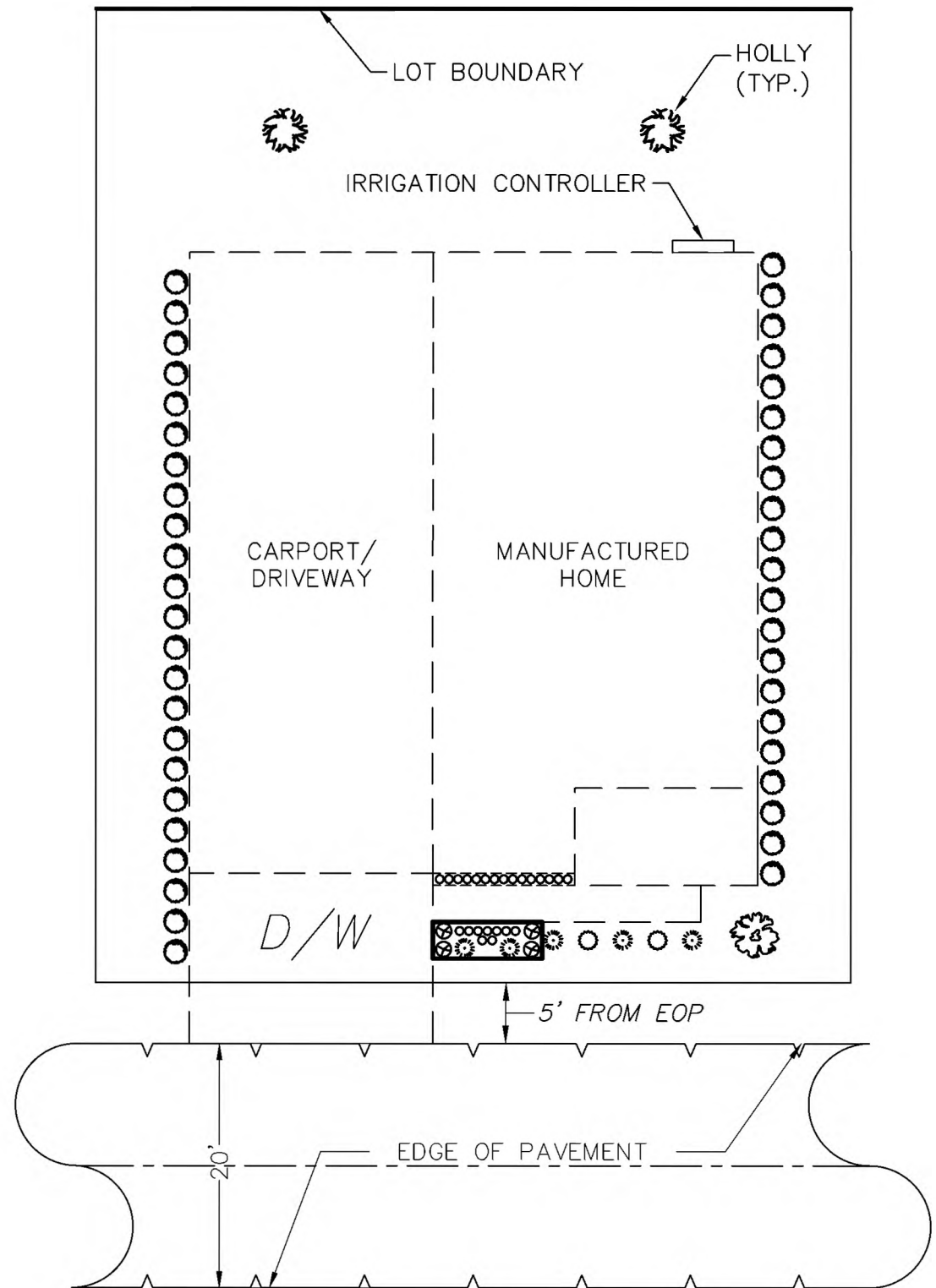
Meadowlea Village

A COVE COMMUNITY



Legend:

- WETLAND BOUNDARY
- WETLAND BUFFER
- JAPONICA LANE
- PROPOSED STREET NAME
- PROPOSED FIRE HYDRANT
- PROPOSED MANHOLE
- PROPOSED DOUBLE SEWER SERVICES
- PROPOSED DOUBLE WATER SERVICES
- PROPOSED DOUBLE RECLAIM SERVICES
- PROPOSED WATER VALVE



TYPICAL LOT LANDSCAPING

Not To Scale

MINIMUM TREE PLANTING SIZE PER CITY OF DELAND MUNICODE SEC.33-57.05(b)2

Landscape Notes:

- LANDSCAPE BED TO PROVIDE:
x4 CROTON PLANTS
x2 LANTANA OR BLUE DAZE
x8 FLOWERS
- MEADOWLEA VILLAGE IS A RENTAL MANUFACTURED HOME COMMUNITY WITH ALL LAND UNDER SINGLE OWNERSHIP.
- WATER/SEWER FOR EXISTING PHASES 1-3 IS PROVIDED BY MEADOWLEA VILLAGE

PLANT / TREE LEGEND	
LIVE OAK (x1)	
AMERICAN HOLLY (x2)	
FLOWERS (x24)	
LANTANA OR BLUE DAZE (x6)	
PODOCARPUS (x44)	
TY PLANT (x4)	
CROTON PLANT (x4)	

Revised:	By:	Date:	2/20/23	BIL	REVISED PER CIT OF DELAND COMMENTS
----------	-----	-------	---------	-----	------------------------------------

Scale:	1" = 60'
Project:	2022-04
Drawn:	BIL
Check:	MWR
File:	Meadowlea Village Ph. 4-7.dwg

MICHAEL W. RADCLIFFE ENGINEERING, INC.
2811 S.E. Lake View Avenue
Gotha, FL 32471
Phone: (352) 629-5500
Fax: (352) 629-1015
Certificate No. 13-0006189 • Michael W. Radcliffe P.E. #3170 • Christopher A. Gwin P.E. #4558

Project Name: Meadowlea Village Ph. 4&5
Sheet Name: Landscape/Irrigation Plan

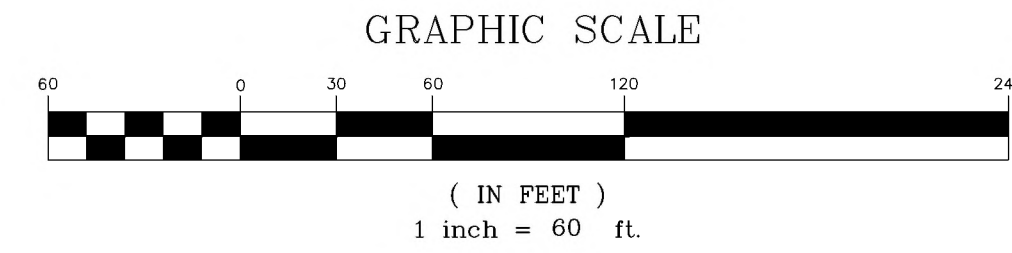
Sheet No.
C007
of
C020

X:\MWR Projects\Meadowlea MIP\2022-04 Meadowlea Village Ph. 4.dwg 3/28/2023 3:02 PM



Meadowlea Village

A COVE COMMUNITY

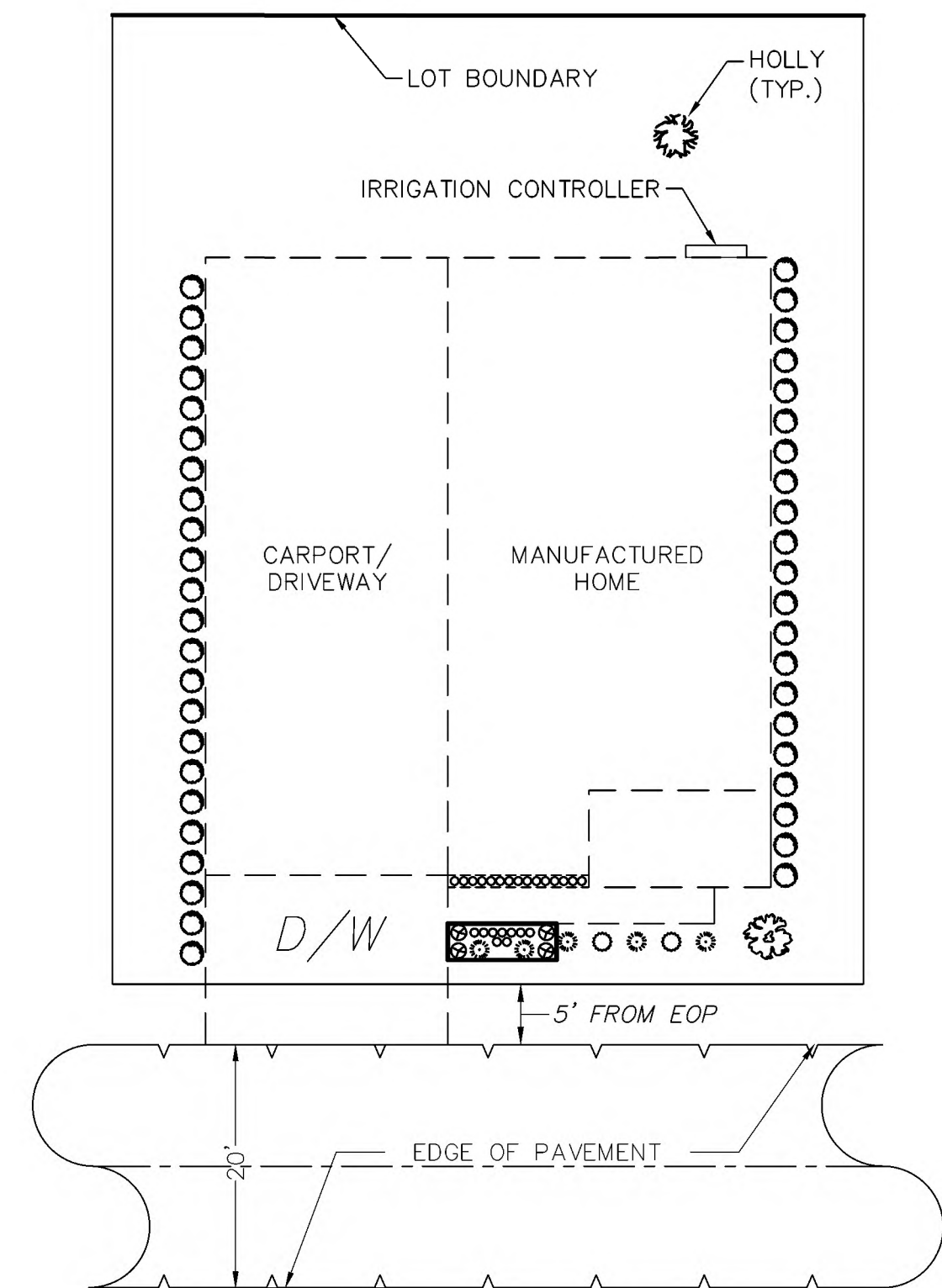


Legend:

- WETLAND BOUNDARY
- WETLAND BUFFER
- JAPONICA LANE
- PROPOSED STREET NAME
- PROPOSED FIRE HYDRANT
- PROPOSED MANHOLE
- PROPOSED DOUBLE SEWER SERVICES
- PROPOSED DOUBLE WATER SERVICES
- PROPOSED DOUBLE RECLAIM SERVICES
- PROPOSED WATER VALVE

Landscape Notes:

- LANDSCAPE BED TO PROVIDE:
x4 CROTON PLANTS
x2 LANTANA OR BLUE DAZE
x9 FLOWERS
- MEADOWLEA VILLAGE IS A RENTAL MANUFACTURED HOME COMMUNITY WITH ALL LAND UNDER SINGLE OWNERSHIP.
- TWO TREES TO BE PLANTED PER LOT: (102 LOTS X 2 TREES = 104 TREES)
- WATER/SEWER FOR EXISTING PHASES 1-3 IS PROVIDED BY MEADOWLEA VILLAGE.
- TREES TO BE PLANTED AT MINIMUM SIZE:
3" CALIPER, 8" HEIGHT, 4' SPREAD, 45 GALLON.



TYPICAL LOT LANDSCAPING

Not To Scale

MINIMUM TREE PLANTING SIZE PER CITY OF DELAND MUNICODE SEC.33-57.05(b)2

PLANT / TREE LEGEND	
LIVE OAK (x1)	○
AMERICAN HOLLY (x2)	●
FLOWERS (x9)	○
LANTANA OR BLUE DAZE (x8)	○
PODOCARPUS (x4)	○
TY PLANT (x4)	○
CROTON PLANT (x4)	○

Note:

MAINTAIN REQUIRED CLEARANCES BETWEEN POTABLE WATER AND RECLAIMED WATER SYSTEMS. SEE CITY DETAIL W420.

Revised:	
By:	BIL
Date:	3/27/23
Project:	2022-04
Checked:	MWR
Date:	10-14-2022
File:	Meadowlea Village Ph. 4-7.dwg

MICHAEL W. RADCLIFFE ENGINEERING, INC.
2811 S.E. Lake View Avenue, Ocala, FL 34471
(352) 628-5500 FAX (352) 628-1010
Certificate No. EB-0006198 • Michael W. Radcliffe P.E. #3170 • Christopher A. Gwin P.E. #6588

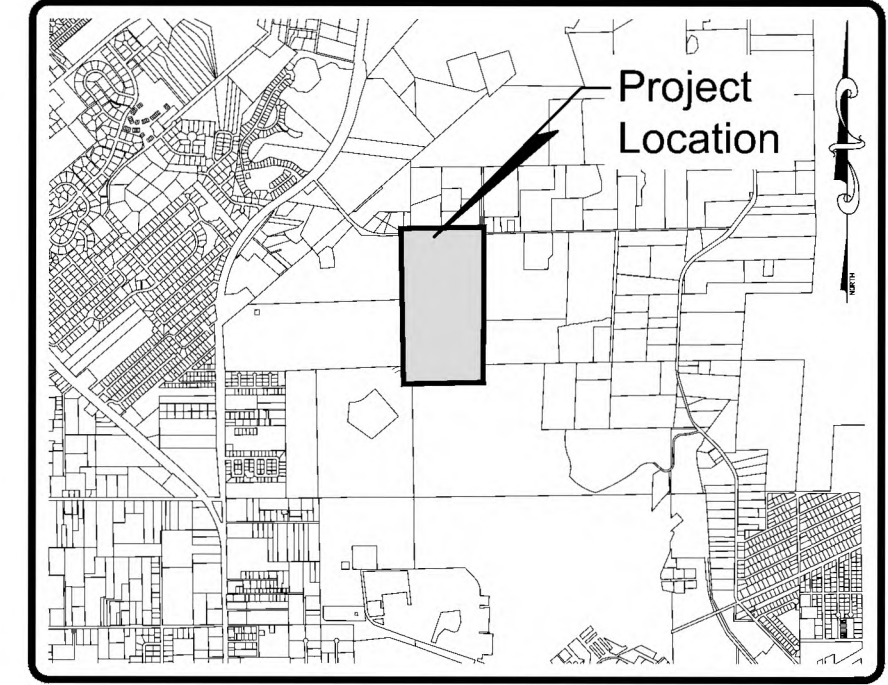
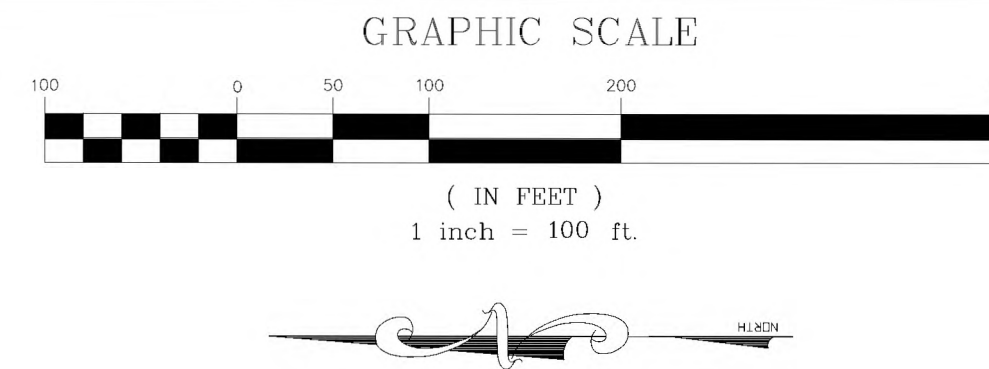
Project Name: Meadowlea Village Ph. 4&5
Sheet Name: Landscape/Irrigation Plan

Sheet No.
C007
of
C021



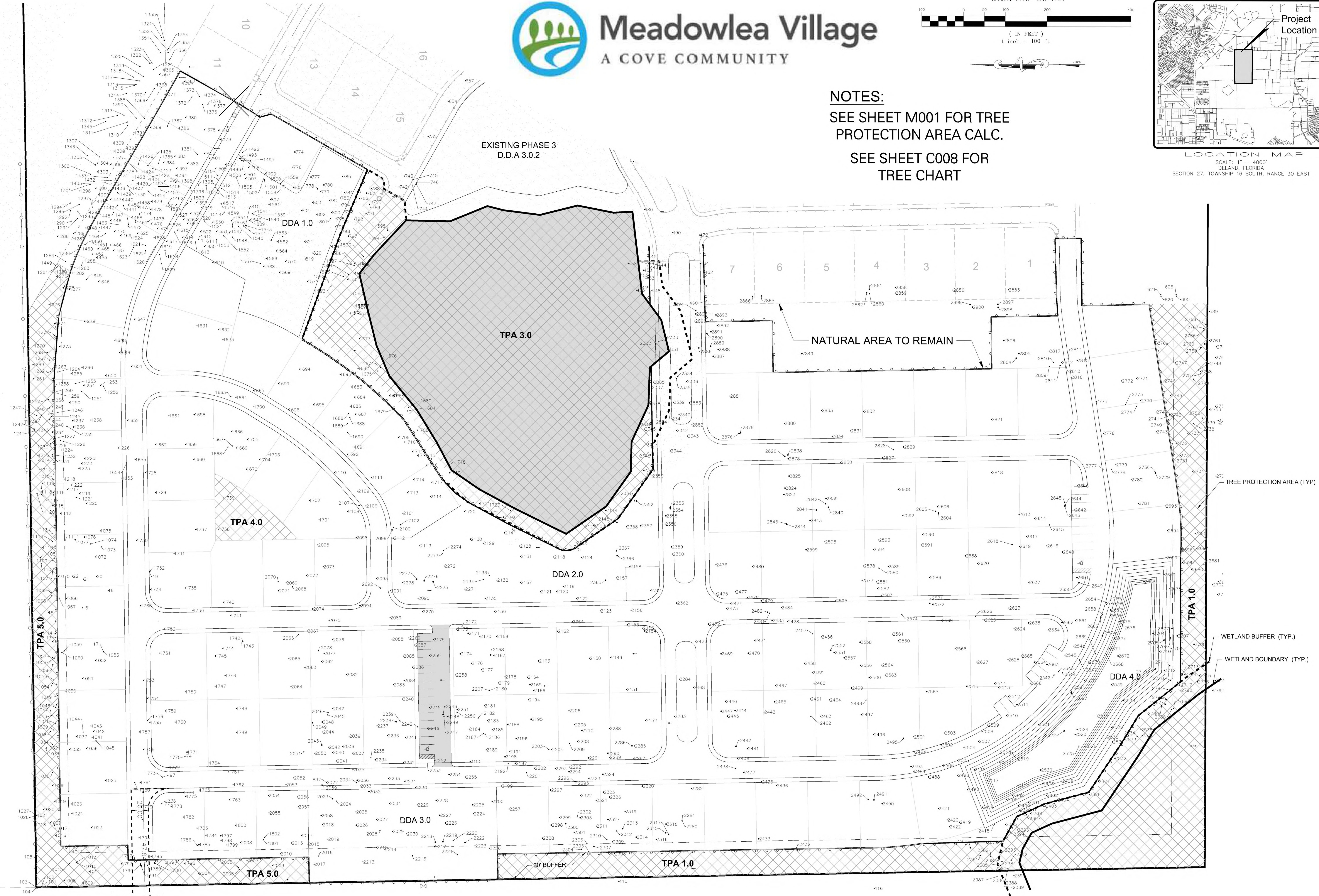
Meadowlea Village

A COVE COMMUNITY



LOCATION MAP
SCALE: 1" = 4000'
DELAND, FLORIDA
SECTION 27, TOWNSHIP 16 SOUTH, RANGE 30 EAST

NOTES:
SEE SHEET M001 FOR TREE
PROTECTION AREA CALC.
SEE SHEET C008 FOR
TREE CHART



Revised	By	Date
3/27/23	BIL	2022-04
3/27/23	MWR	2022-04
3/27/23	MWR	2022-04
3/27/23	MWR	2022-04

MWR MICHAEL W. RADCLIFFE ENGINEERING, INC.
3811 S.W. 14th Avenue, Suite 200, Fort Lauderdale, FL 33311
Phone: (954) 555-5555 Fax: (954) 555-0101
www.radcliffeengineering.com

Project Name: Meadowlea Village Ph. 4.6
Sheet Name: Tree Plan

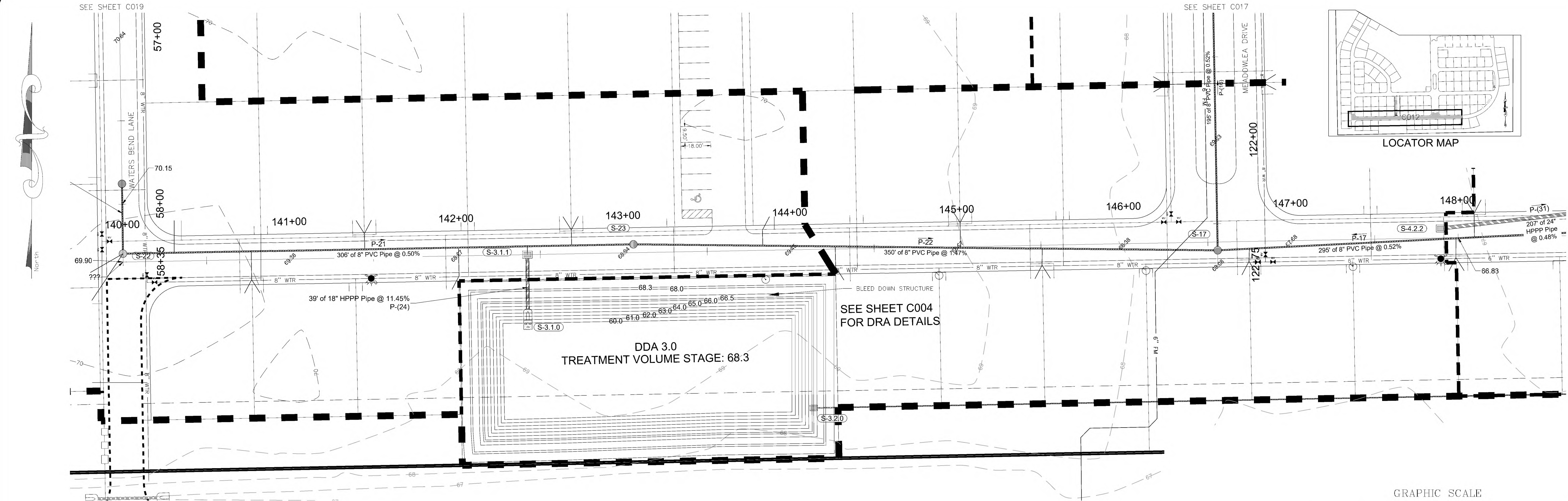
Sheet No.
C008
of
C021

SEE CITY OF DELAND TREE PROTECTION
AREA WORKSHEET FOR CALCULATIONS

Project Name: Meadowlea Village Ph. 4&5 Sheet Name: Tree Chart	 MICHAEL W. RADCLIFFE ENGINEERING, INC. 2611 S.E. Lake Weir Avenue Ocala, FL 34471 (352) 629-5500 FAX (352) 629-1010 Certificate No. EB-0006198 • Michael W. Radcliffe P.E. #31170 • Christopher A. Gwin P.E. #66568 www.radcliffeengineering.com	Designed: MWR Scale: N/A Drawn: BIL Project: 2022-04 Checked: MWR Date: 10-14-2022 File: Meadowlea Village Ph. 4-7.dwg	Date: 3/27/23 By: BIL Revisions: REVISED PER CIT OF DEL
---	---	--	---

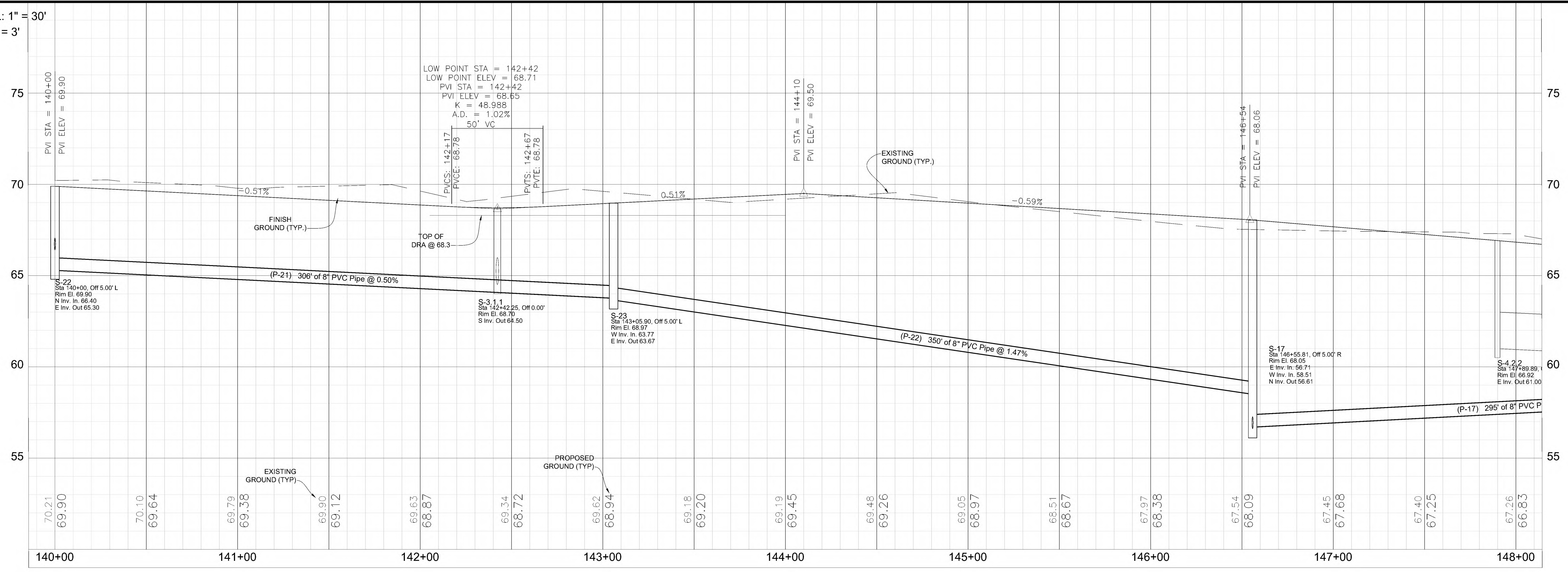


X:\MWR Projects\Mahogany Bend Drive\DWG\MAHOGANY BEND DRIVE.DWG, 4/27/2023 1:12 PM



MAHOGANY BEND DRIVE (30' WIDE R/W)

HORIZONTAL: 1" = 30'
VERTICAL: 1" = 3'



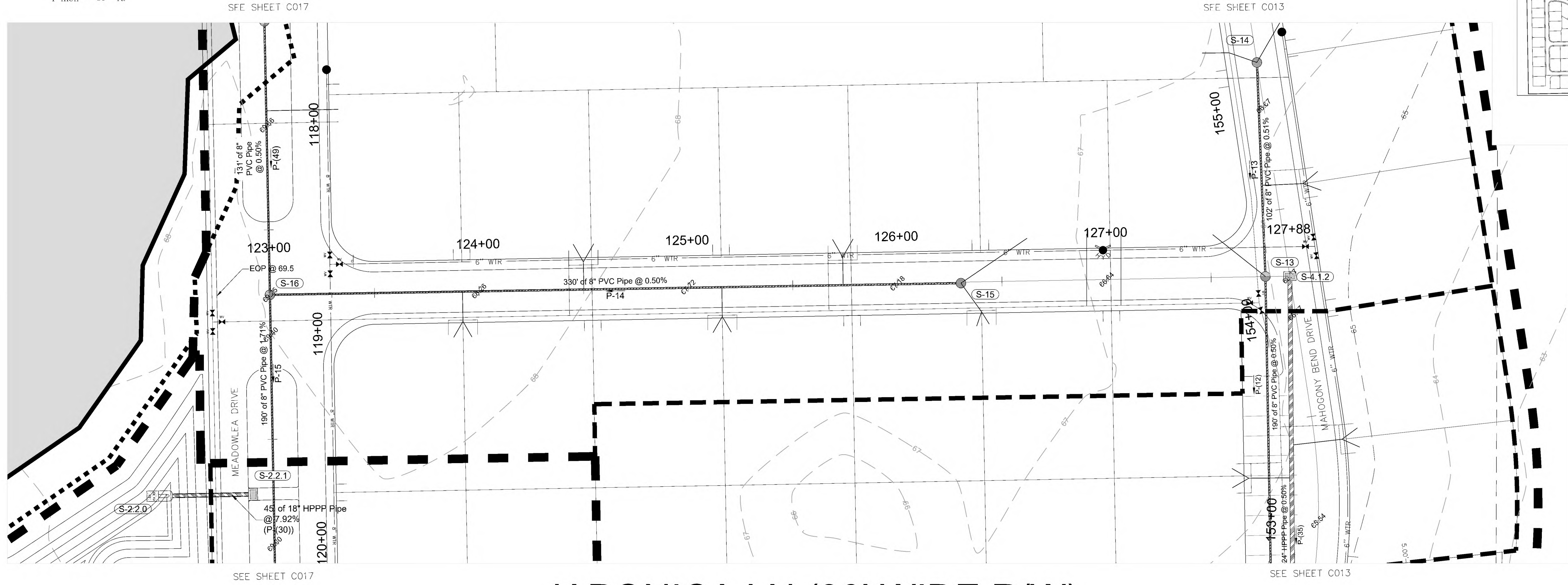
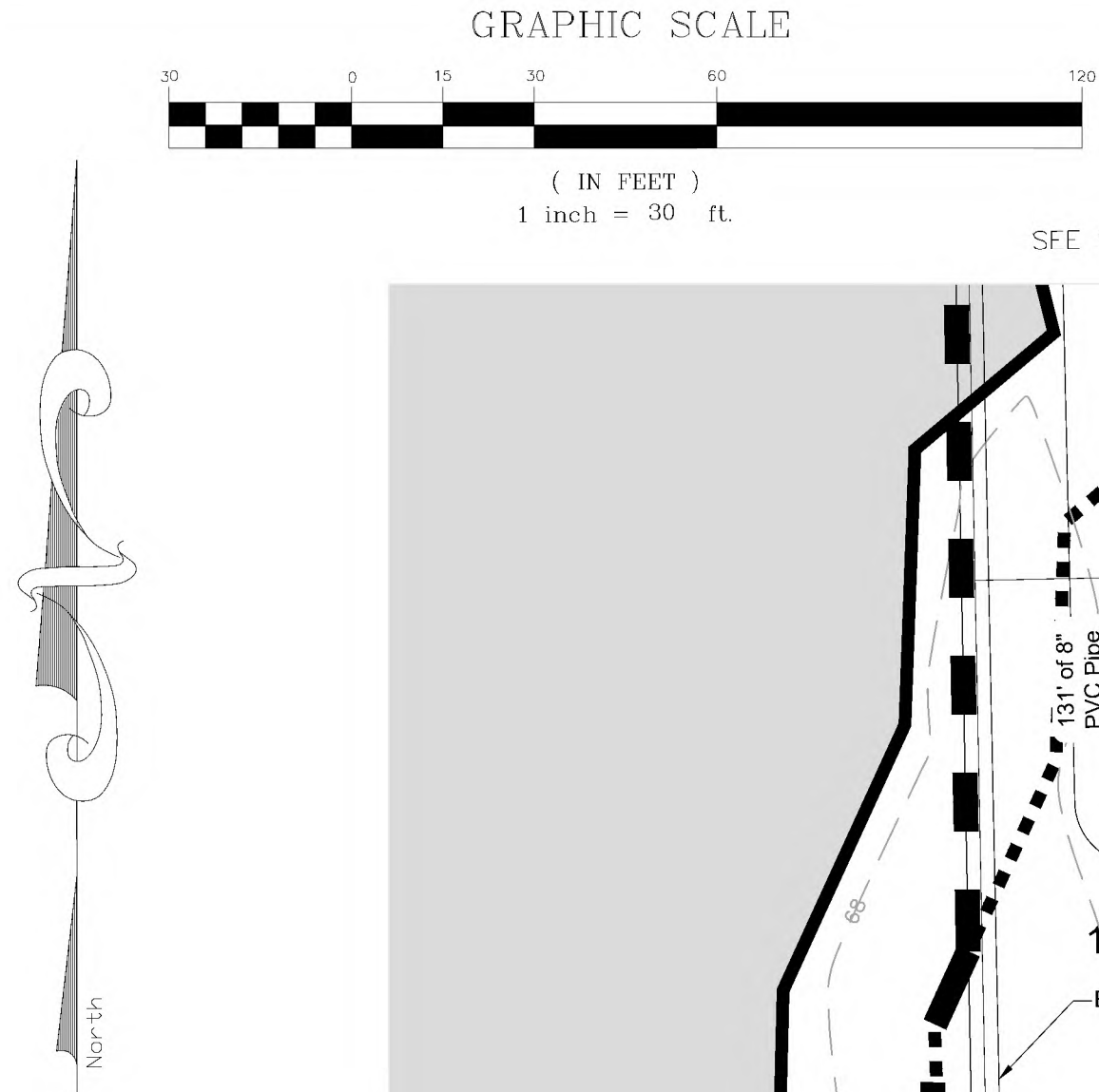
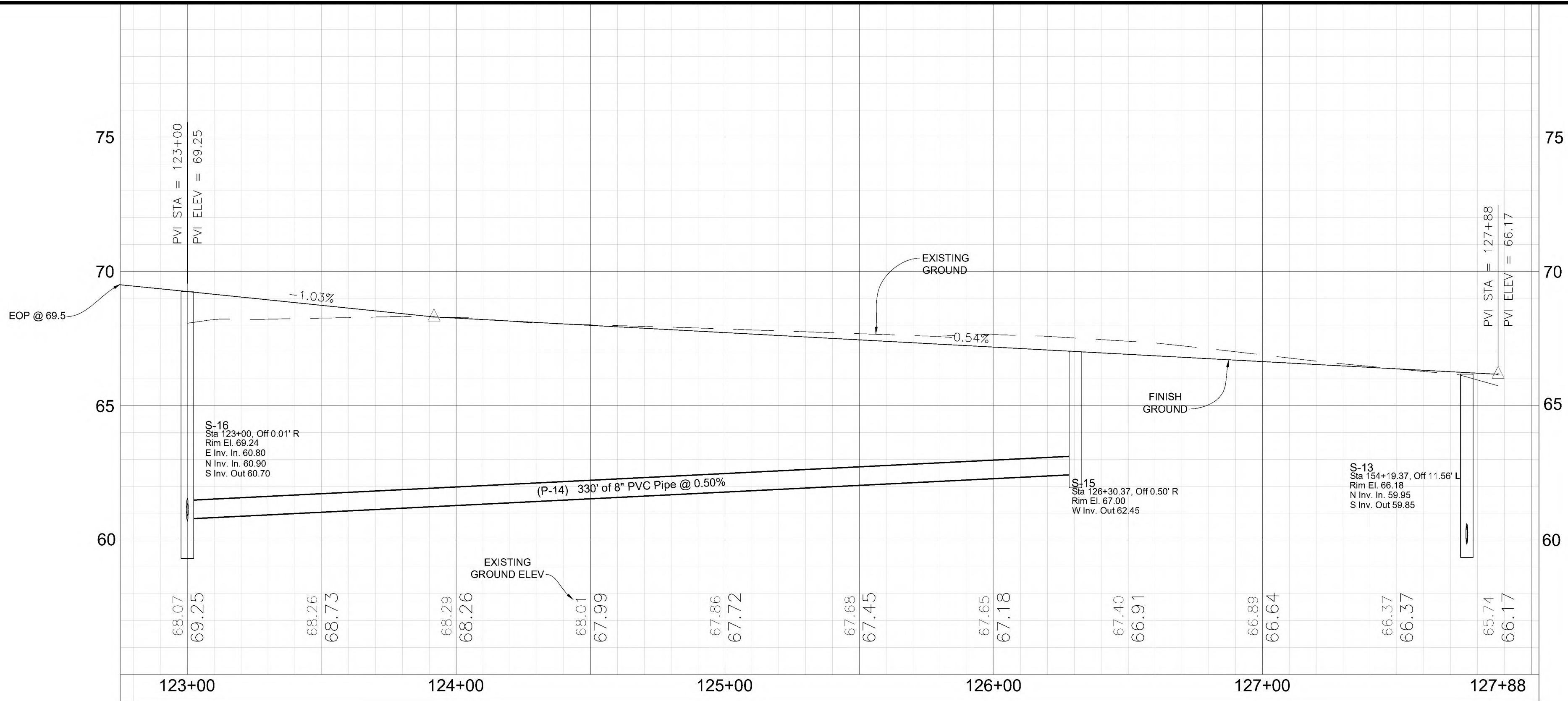
Project Name	Meadowlea Village Ph. 4&5
Sheet Name	Plan / Profile Mahogany Bend Drive
Sheet No.	C012 of C021
Design	MWR
Drawn	BIL
Checked	MWR
Date	3/27/23
Revised	REVISED PER CIT OF DELAND COMMENTS
Scale	1" = 30'
Project	2022-04
Date	10-14-2022
File	Meadowlea Village Ph. 4-7.dwg

MICHAEL W. RADCLIFFE ENGINEERING, INC.
2611 S.E. Lake View Avenue, Ocala, FL 34471 (352) 624-5000 FAX (352) 624-1010
Certificate No. EB-0000188 - Michael W. Radcliffe P.E. #31170 Christopher A. Cain P.E. #65588
www.mwradicliffeengineering.com

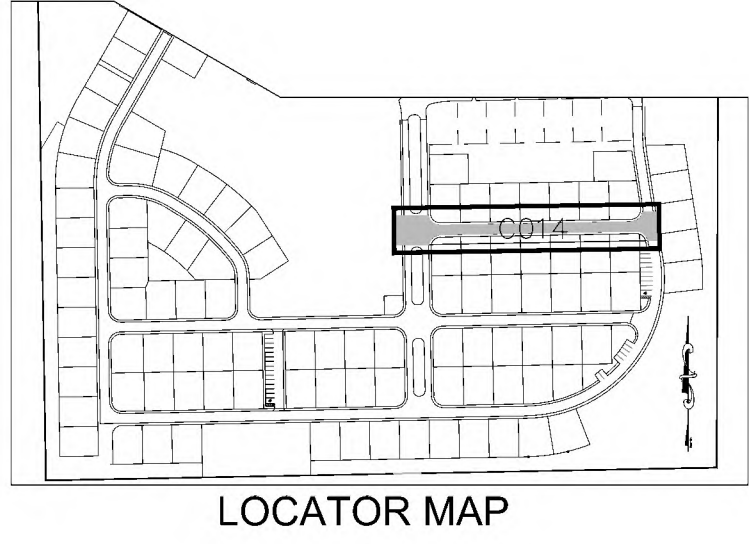
COPYRIGHT © 2023 Michael W. Radcliffe Engineering, Inc. All Rights Reserved.

X:\MWR Projects\Japonica Ln\2022-04 Meadowlea Village Ph. 4-7.dwg 3/28/2023 1:15 PM

HORIZONTAL: 1" = 30'
VERTICAL: 1" = 3'



JAPONICA LN (30' WIDE R/W)

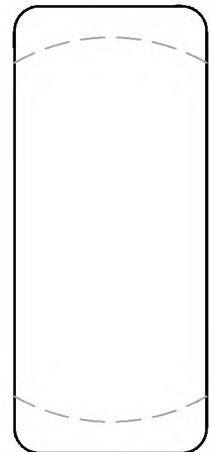


Revised:	
Date:	3/27/23
By:	BIL
Revised Per:	Q1 OF DELAND COMMENTS

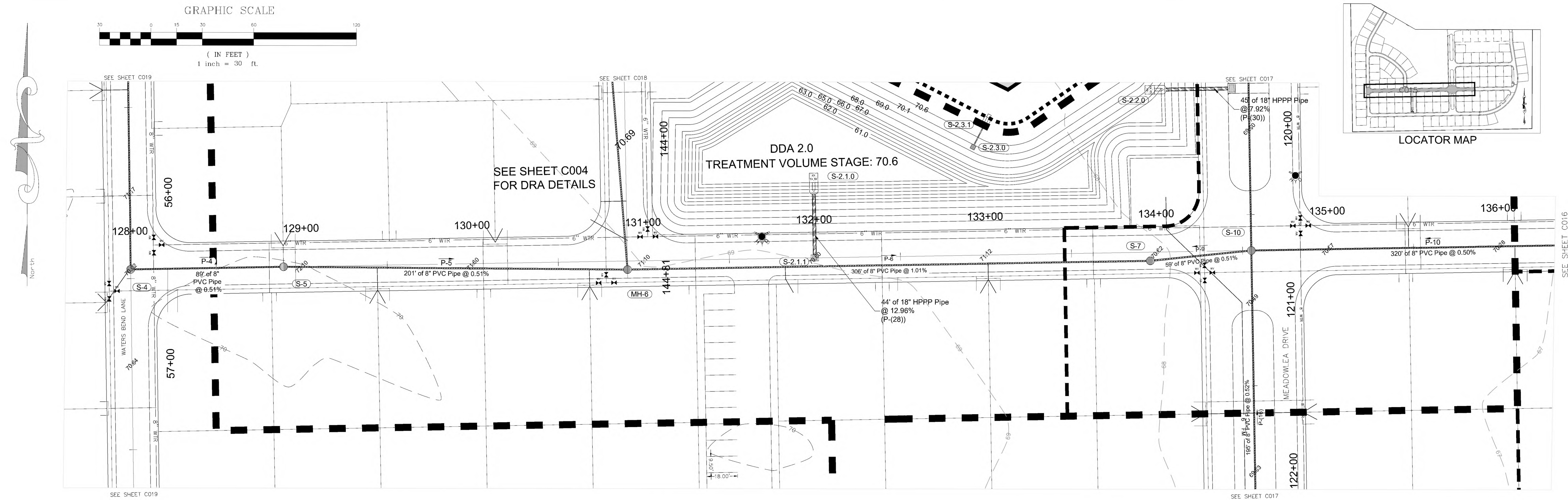
Scale:	1" = 30'
Project:	2022-04
Date:	10-14-2022
Check:	MWR
File:	Meadowlea Village Ph. 4-7.dwg

MICHAEL W. RADCLIFFE ENGINEERING, INC.
2611 S.E. Lake View Avenue, Ocala, FL 34471 (352) 624-5500 FAX (352) 624-1010
Certificate No. EB-0006188 · Michael W. Radcliffe P.E. #31170 Christopher A. Gwin P.E. #6558
www.mradcliffeengineering.com

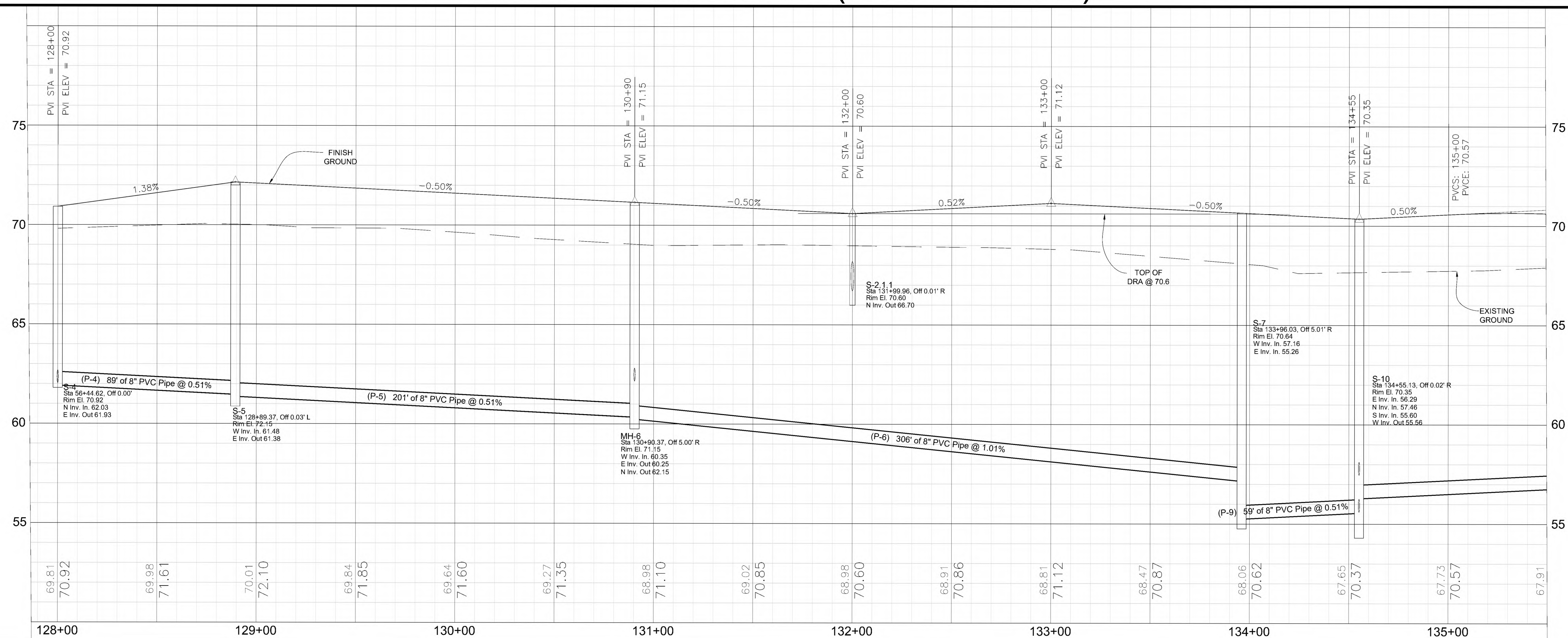
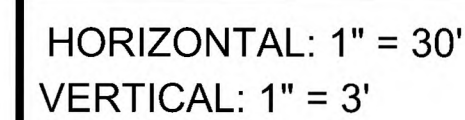
Project Name: Meadowlea Village Ph. 4&5
Sheet Name: Japonica Ln

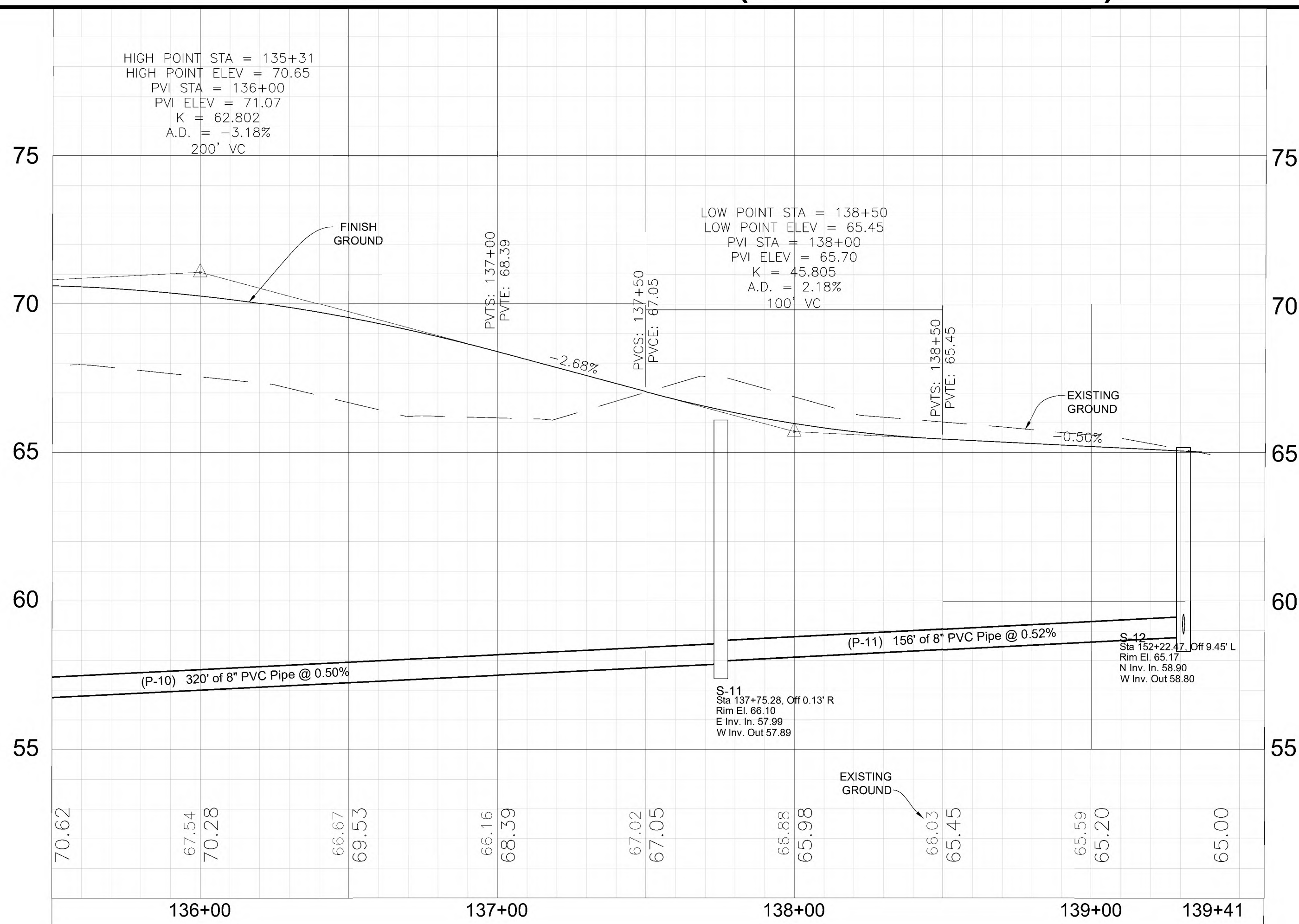
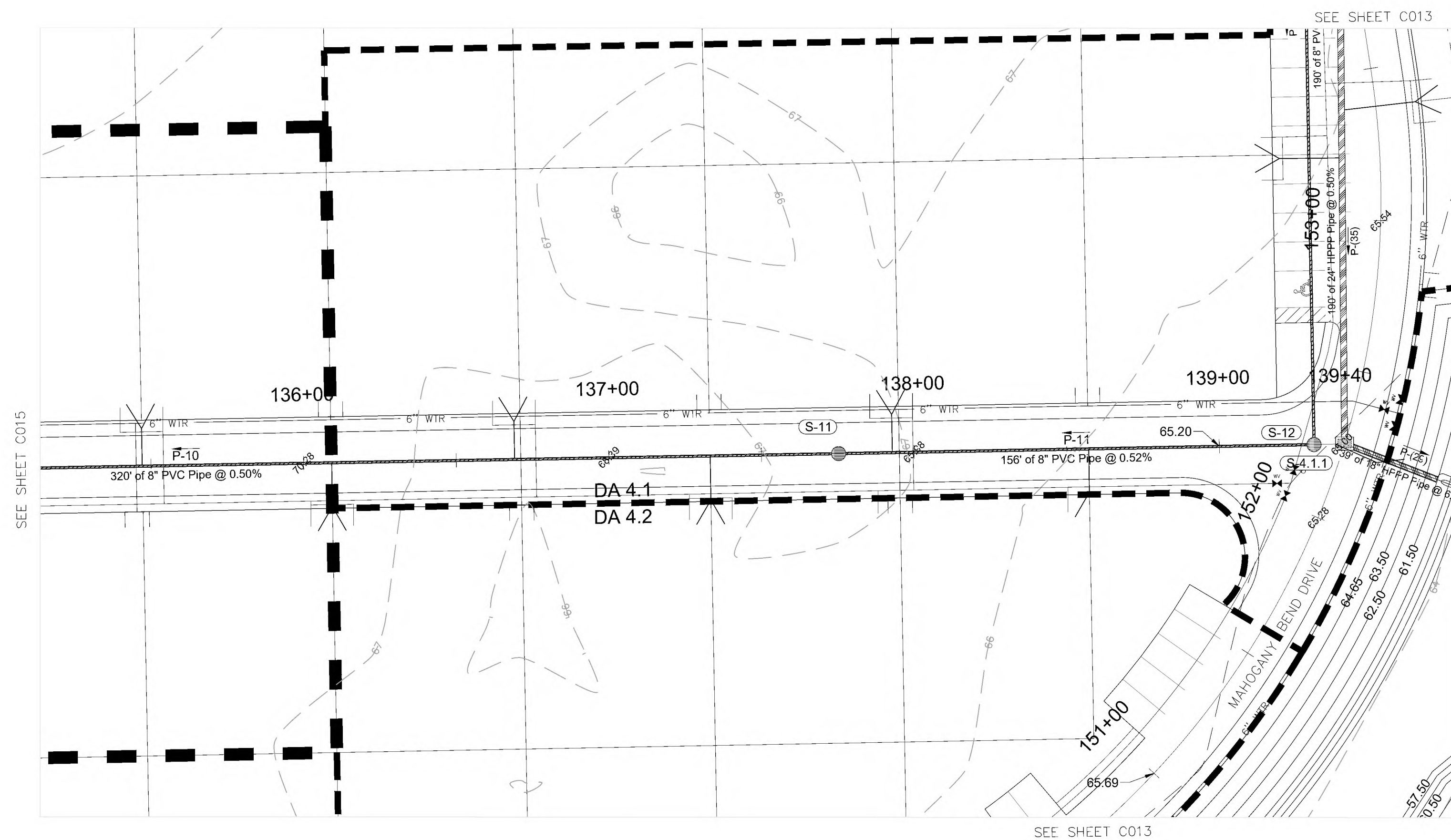
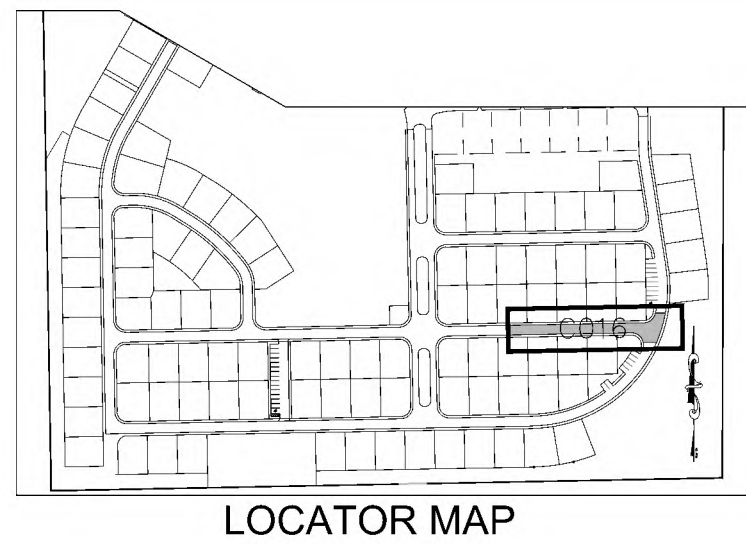


Sheet No.
C014
of
C021



PEARL SUNSET DRIVE (30' WIDE R/W)





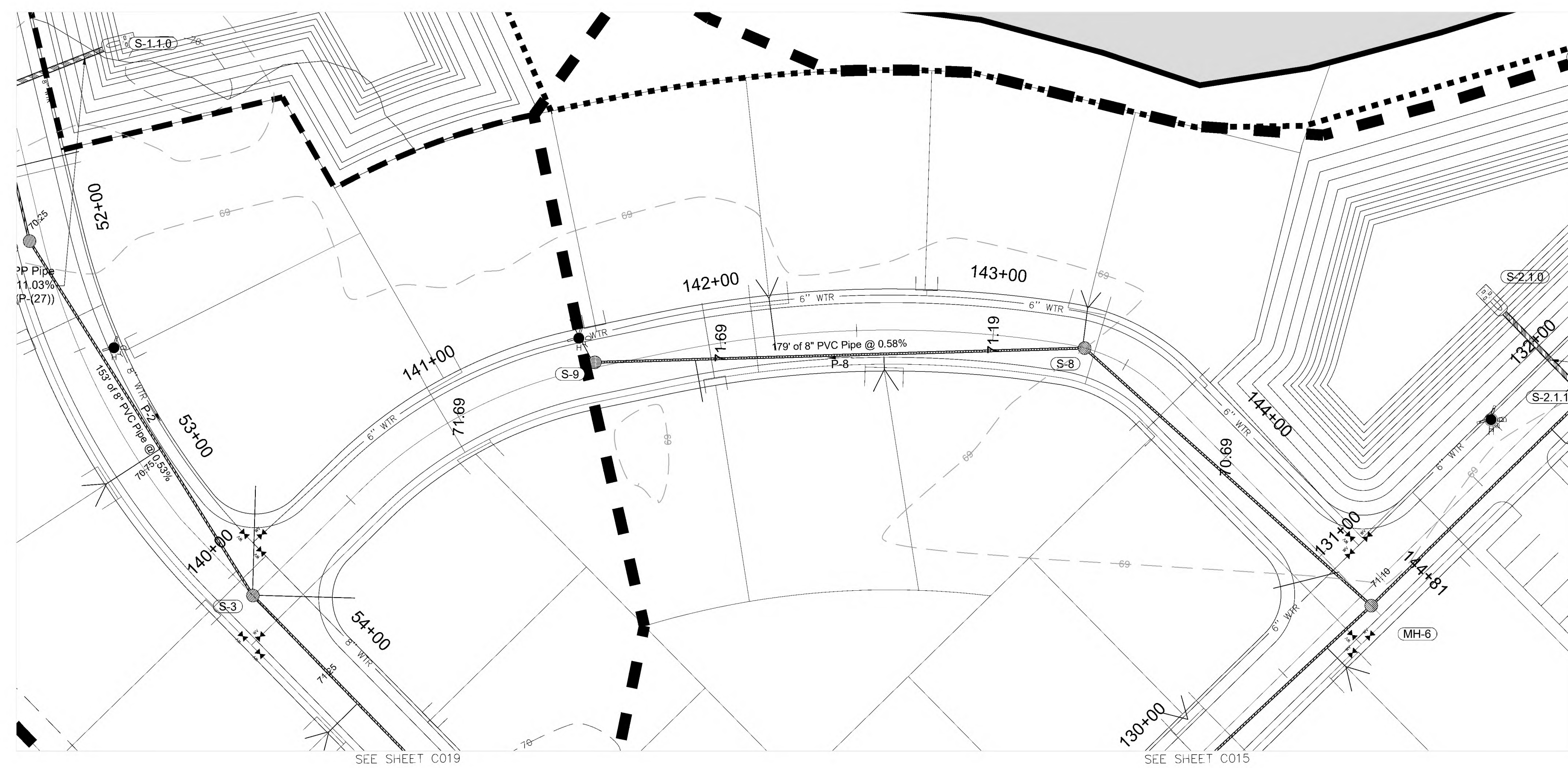
Date:	6/1	Revisions:
3/27/23	BIL	REVISED PER CIT OF DELAND COMMENTS.

Designed:	MWR	Scale: 1" = 30'
Drawn:	BIL	Project: 2022-04
Checked:	MWR	Date: 10-14-2022
File:	Meadowdale Village Ph. 4-7.dwg	

MICHAEL W. RADCLIFFE ENGINEERING, INC.
2611 S.E. Lake Noy Avenue Ocala, FL 34471 (352) 929-5500 FAX (352) 929-1010
Certificate No. ES-00006139 • Michael W. Radcliffe P.E. #31170 Christopher A. Owen P.E. #65568
www.radcliffeengineering.com

Project Name: Meadowlea Village Ph. 4&5
Sheet Name: Plan / Profile
Pearl Sunset Drive

Sheet No.
C016
of
C021



Profile View Data:

Station	Existing Ground (ft)	Finish Ground (ft)	Notes
140+00	69.67	71.05	PVI STA = 140+00
140+20	69.58	71.63	
140+40	69.35	72.21	
140+60	69.09	72.79	PVI STA = 141+50
140+80	69.11	72.54	
141+00	69.25	72.29	
141+20	69.24	72.03	
141+40	68.88	71.78	
141+60	68.91	71.53	
141+80	68.94	71.28	
142+00	69.08	71.15	PVI STA = 144+76

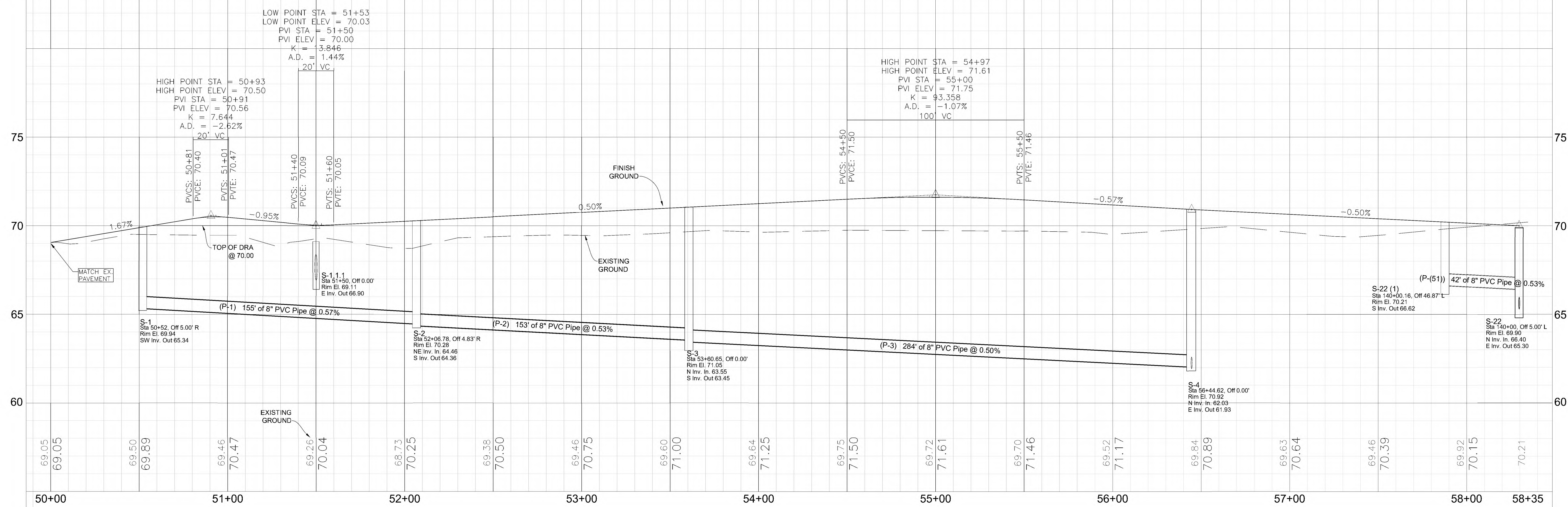
Manhole Details:

- S-3:** Sta 53+60.65, Off 0.00', Rim El. 71.05, N Inv. In. 63.55, S Inv. Out 63.45
- S-9:** Sta 141+53.58, Off 1.88' L, Rim El. 72.77, SE Inv. In. 66.81
- S-8:** Sta 143+33.84, Off 0.00', Rim El. 71.87, S Inv. In. 65.67, NW Inv. Out 65.77
- MH-8:** Sta 150+90.37, Off 5.00' R, Rim El. 71.15, W Inv. In. 60.35, E Inv. Out 60.25, N Inv. Out 62.15

Pipe Segments:

- (P-8):** 179' of 8" PVC Pipe @ -0.58%
- (P-7):** 141' of 8" PVC Pipe @ -2.50%





Date:	By:	Revisors:
3/27/23	BIL	REVISED PER CIT OF DELAND COMMENTS.

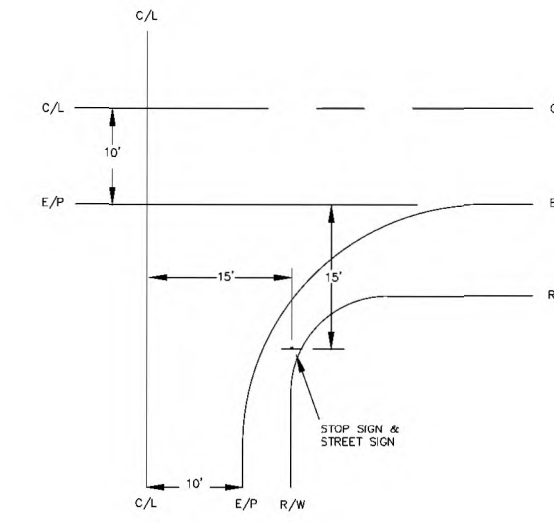
Designed:	MWR	Scale: 1" = 30'
Drawn:	BIL	Project: 2022-04
Checked:	MWR	Date: 10-14-2022
File:		

W. RADCLIFFE ENGINEERING, INC.
 Avenue Ocala, FL 34471 (352) 629-5500 FAX (352) 629-1010
 198 • Michael W. Radcliffe P.E. #31170 Christopher A. Gwin P.E. #66568
www.radcliffeengineering.com

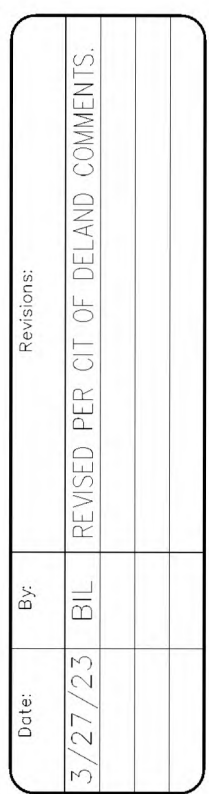
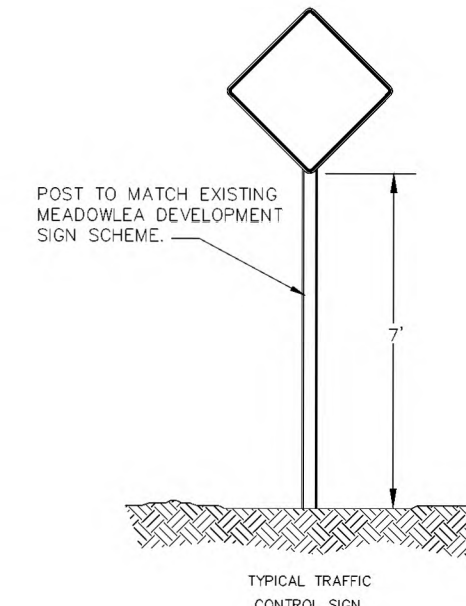
WARR MICHAEL
2611 S.E. Lake Weir Ave.
Certificate No. EB-0006

Project Name: Meadowlea Village Ph. 4&5
Sheet Name: Plan / Profile Waters Bend Lane

Sheet No. C019 of C021



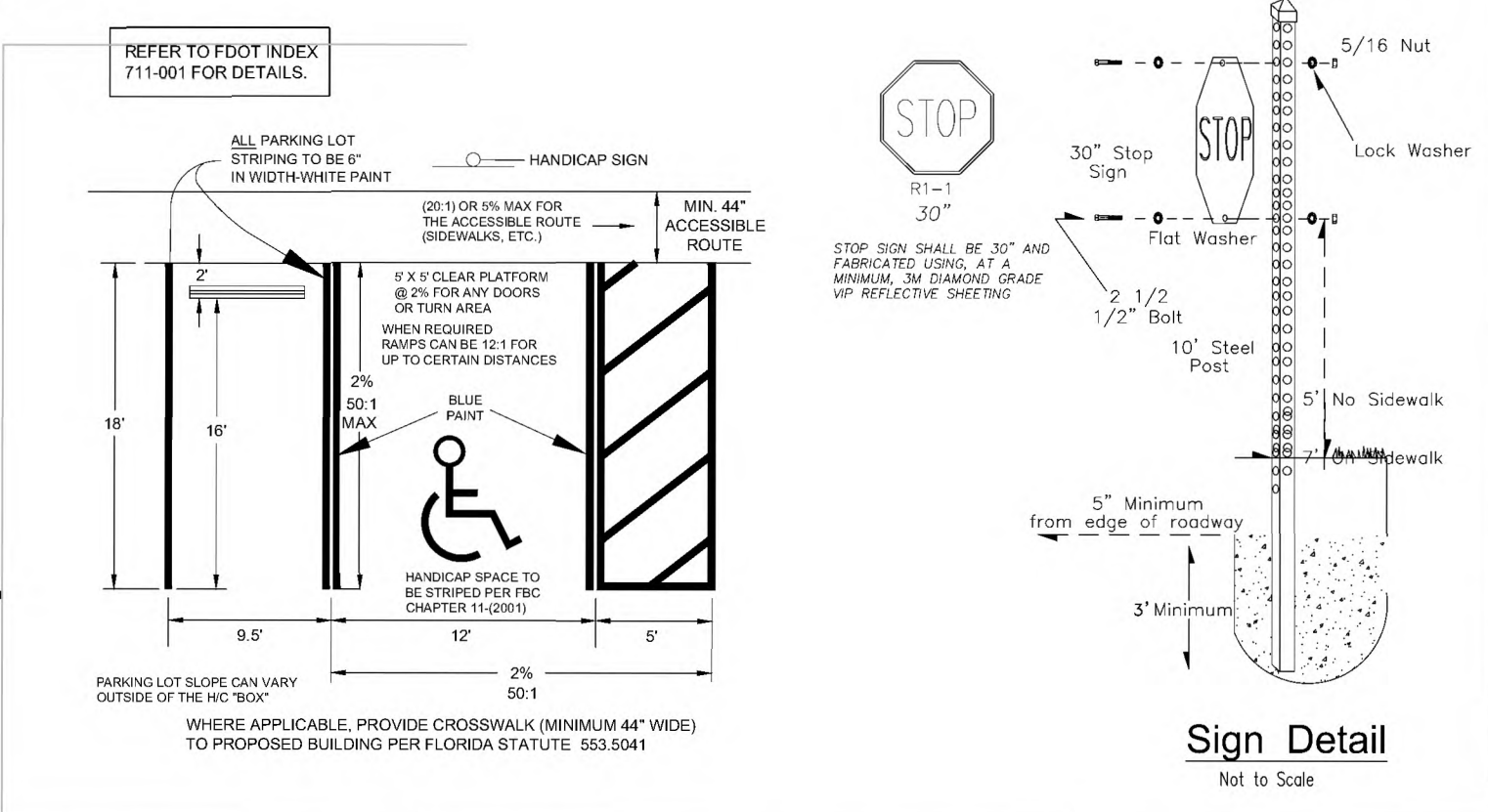
PAVEMENT ENDS



RADCLIFFE MICHAEL W. RADCLIFFE ENGINEERING, INC.
2611 S.E. Lake Meir Avenue Ocoke, FL 33471 (352) 629-5500 FAX (352) 629-1010
Certificate No. EB-0006198 • Michael W. Radcliffe P.E. #31170 • Christopher A. Gwin P.E. #65568
www.radcliffeengineering.com

Signage and Striping

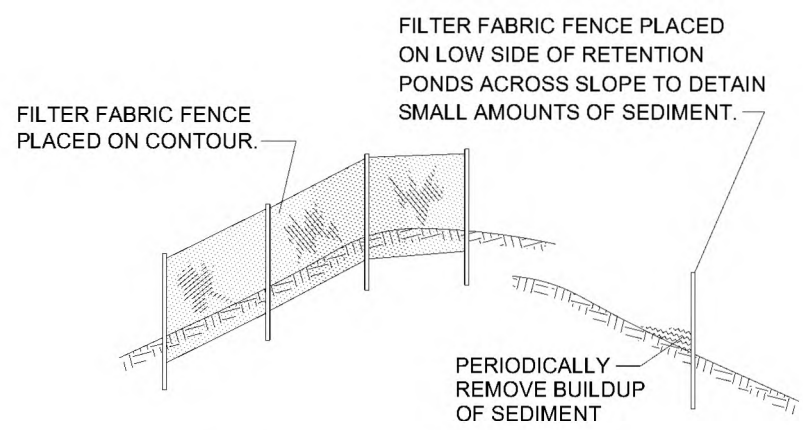
Sheet No.
C020
of
C021



X:\MWR\Projects\meadowlea mhp\2022-04 Meadowlea Village Ph. 4-7.dwg, 3/26/2023 3:25 PM

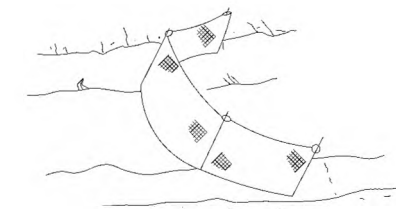
LEGEND:

- PROP D.D.A. 2.0 DRAINAGE RETENTION AREA
- SILT FENCE LOCATION
- INLET PROTECTION

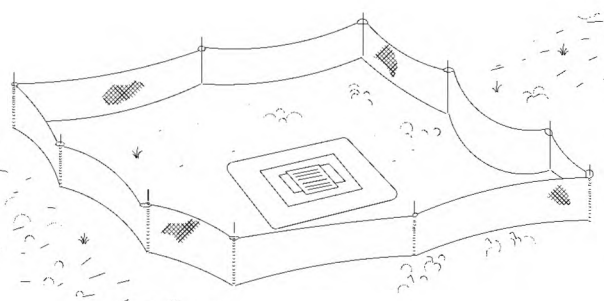


1. FILTER FABRIC FENCE SHALL BE EMBEDDED IN THE SOIL A MIN. OF 4".
2. INSPECTION SHALL BE FREQUENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.
3. FILTER FABRIC FENCE SHALL BE REMOVED WHEN IT HAS SERVED ITS USEFULNESS SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

SILT FENCE DETAIL Not to Scale



SILT FENCE PROTECTION IN DITCHES WITH INTERMITTENT FLOW Not to Scale



SILT FENCE PROTECTION IN DITCHES WITH INTERMITTENT FLOW Not to Scale

EROSION CONTROLS & BEST MANAGEMENT PRACTICES (BMP's)

General Notes:

1. A copy of the Notice of Intent (NOI) or letter from the Department of Environmental Protection (DEP) confirming coverage under this Generic Permit shall be posted at the construction site in a prominent place for public viewing (such as alongside a building permit).
2. The discharge of hazardous substances or oil in the stormwater discharge(s) from a facility or activity shall be prevented or minimized in accordance with the applicable stormwater pollution prevention plan for the facility or activity.
3. The permittee shall provide for compliance with the terms and schedule of this plan beginning with the initiation of construction activities.
4. Permittee shall adhere to the State of Florida DEP Generic Permit for Stormwater Discharge from Large and Small Construction Activities.
5. Preserve existing vegetation where attainable and stabilize disturbed portions of the site to prevent erosion. Stabilization measures include permanent seeding, sod, preservation of existing mature vegetation and protection of existing trees. Stabilization measures shall be initiated as soon as practicable, but in no case more than 7 days, in portions of the site where construction activities have temporarily or permanently ceased.
6. Each plan shall include a description of structural practices, to divert flows from exposed soils, store flows, retain sediment on-site, or otherwise limit runoff and the discharge of pollutants from exposed areas of the site. Such practices may include silt fences, swales, check dams, storm drain inlet protection, permanent sediment basins or Drainage Retention Areas (D.R.A.'s).
7. Construct temporary Sediment Control Basins at each point of discharge into D.R.A.'s.
 - (1) Waste Disposal. The plan shall assure that waste, such as discarded building materials, chemicals, litter, and sanitary waste are properly controlled in accordance with all applicable state, local, and federal regulations. This permit does not authorize the discharge of solid materials, including building materials, to surface waters of the State or an Municipal Separate Storm Sewer System (MS4).
 - (2) The plan shall assure that off-site vehicle tracking of sediments and the generation of dust is minimized.
 - (3) The plan shall be consistent with applicable State and local waste disposal, sanitary sewer or septic system regulations.
 - (4) The plan shall address the proper application rates and methods for the use of fertilizers, herbicides and pesticides at the construction site and set forth how these procedures will be implemented and enforced. Nutrients shall be applied only at rates necessary to establish and maintain vegetation.
 - (5) The plan shall ensure that the application, generation, and migration of toxic substances is limited and that toxic materials are properly stored and disposed.
8. Controls for Other Potential Pollutants.
 9. A qualified inspector (provided by the operator) shall inspect all points of discharge into surface waters of the State or a Municipal Separate Storm Sewer System (MS4); disturbed areas of the construction site that have not been finally stabilized; areas used for storage of materials that are exposed to precipitation; structural controls; and, locations where vehicles enter or exit the site, at least once every seven calendar days and within 24 hours of the end of a storm that is 0.50 inches or greater in accordance with the Generic Permit.
10. The permittee shall retain copies of stormwater pollution prevention plans and all reports required by this permit, and records of all data used to complete the NOI to be covered by this permit, for a period of at least three years from the date that the site is finally stabilized.
11. The permittee shall retain a copy of the stormwater pollution prevention plan and all reports, records and documentation required by this permit at the construction site, or an appropriate alternative location as specified in the NOI, from the date of project initiation to the date of final stabilization.
12. The permittee shall submit a completed Notice of Termination (NOT) (DEP Form 62-621.300(6)), signed in accordance with Part VII.C. of this permit, within 14 days of final stabilization of the site to terminate coverage under this permit.
13. A permittee shall submit a NOI to the following address:

NPDES Stormwater Notices Center, MS# 2510
Florida Department of Environmental Protection
2600 Blair Stone Road
Tallahassee, Florida 32399-2400
14. Projects that discharged stormwater associated with construction activity to a MS4 shall submit a copy of the NOI to the operator of the MS4.

Notes:

1. All existing storm water drainage patterns and channels outside the construction areas shown on these plans are to be maintained. The contractor shall notify the engineer if the work appears to interrupt an existing storm water drainage pattern. The contractor shall maintain a clear path for all surface water drainage structures and ditches during all phases of construction such that impact to construction and/or surrounding facilities is minimized. The contractor shall be responsible for any erosion, sediment transport, disturbed foundations, impact to structures, and any other damage caused during construction.
2. The contractor shall prevent the discharge of sediment due to construction operations. Approved erosion control devices shall be installed to prevent discharge of sediment into a dry or wet watercourse. Recommended erosion control shall consist of silt fence, or other erosion control methods as shown or approved by the project engineer. All new and existing drain pipes and structures shall be flushed clean after construction.
3. Provide erosion control blanket for all slopes 2:1 (horizontal to vertical) or steeper.
4. Swales and disturbed areas shall be sodded or seeded and mulched as soon as practical.
6. Should additional erosion and sedimentation controls be needed, then the contractor needs to prevent the discharge of turbid waters off the project site.
7. This plan provides reasonable assurance that the proposed construction activities will not result in erosion and sediment deposition in wetlands or off-site, adverse impacts to wetlands, off-site flooding or violation of water quality standards.

Project Information:

1. This plan is intended for use in conjunction with the Major Site Plan for this project.
2. The construction activities on this site consist of and will be performed in the following order: clearing and grubbing, excavation of the proposed roadway and drainage, construct improvements.
3. The estimated project area is 22.31 acres. The area to be disturbed by construction is 22.31 acres.
4. The topography of the area is gently sloping to sloping and naturally delineates the drainage basins as shown on the Predevelopment Plan and Drainage Plan. Existing soils are 100% Candler Sand, a type "A" hydrologic soil, which is well-drained to excessively drained sand according to the National Resource Conservation Service (NRCS) classification.

Stabilization Schedule:
(Required to be completed by Contractor)

Major Construction Activities:
Start Date _____
End Date _____

Cease Construction Activities:
Temporary Dates _____

Permanent Date _____

Date that Stabilization Measures
were Initiated: _____

Note: Install erosion control features prior
to any construction activities on this site.

Permittee's Certification:

The undersigned ensures that the surface water and stormwater management measures proposed in the plan will be effectively implemented until completion of the project or until the permanent surface water management system is operational.

Signature _____ Date _____
Print Name _____
Address _____
Phone Number _____

Contractor's Certification:

"I certify under penalty of law that I understand, and shall comply with, the terms and conditions of the State of Florida Generic Permit for Stormwater Discharge from Large and Small Construction Activities and this Stormwater Pollution Prevention Plan prepared thereunder."

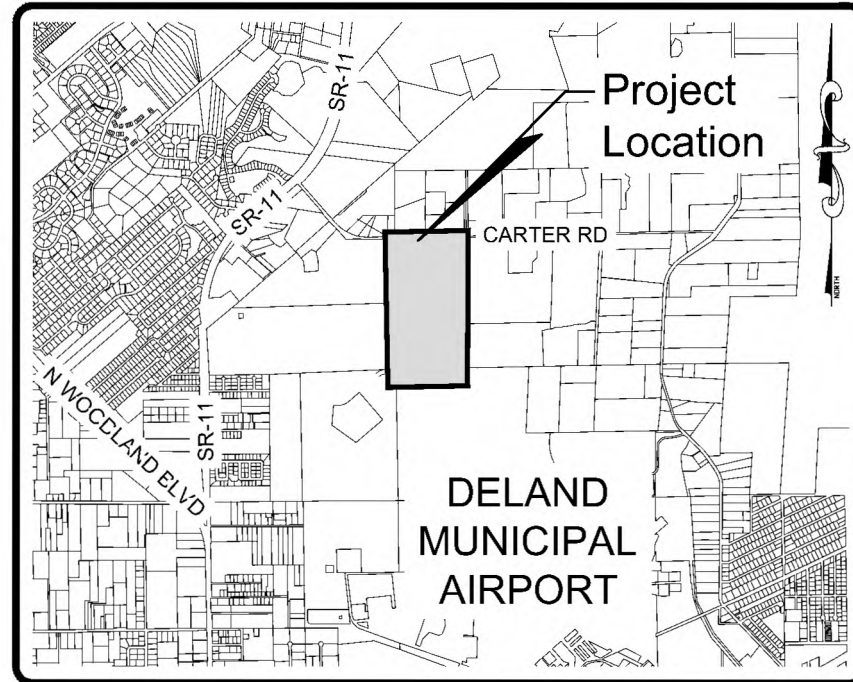
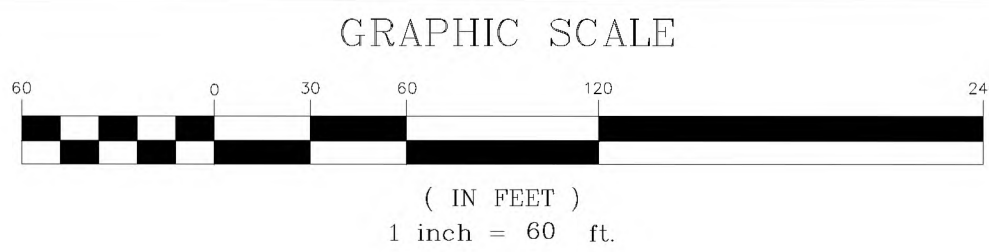
Signature _____ Date _____
Print Name _____
Address _____
Phone Number _____

INFORMATION FOR ELECTRONICALLY SIGNED AND SEALED DOCUMENTS
IF THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED IT USES A SHA-1 AUTHENTICATION CODE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SHA-1 AUTHENTICATION CODE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.
NOTWITHSTANDING, PRINTED COPIES ARE VALID IF PHYSICALLY SIGNED, DATED AND SEALED WITH THE ENGINEER'S EMBOSSED SEAL.

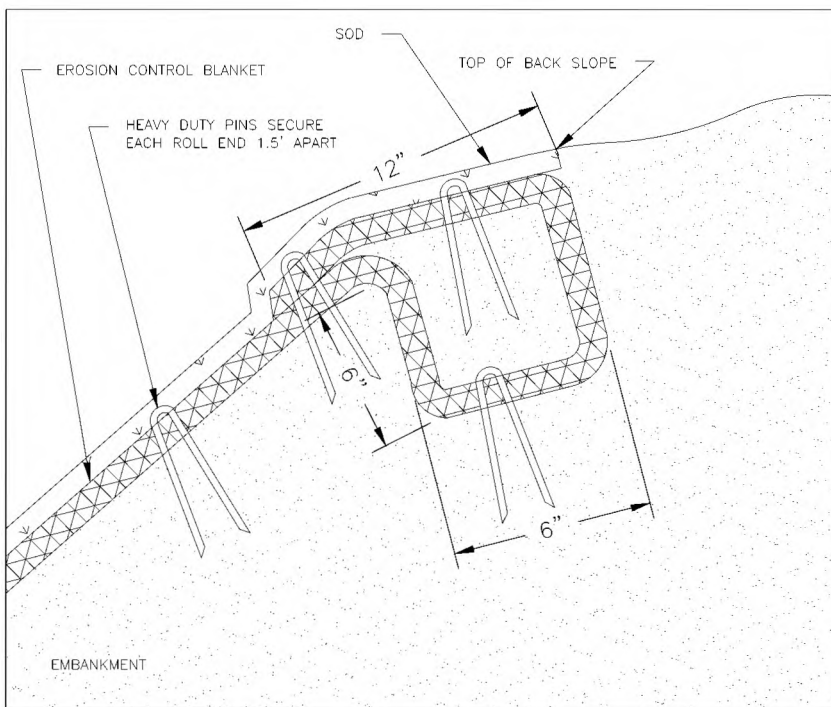
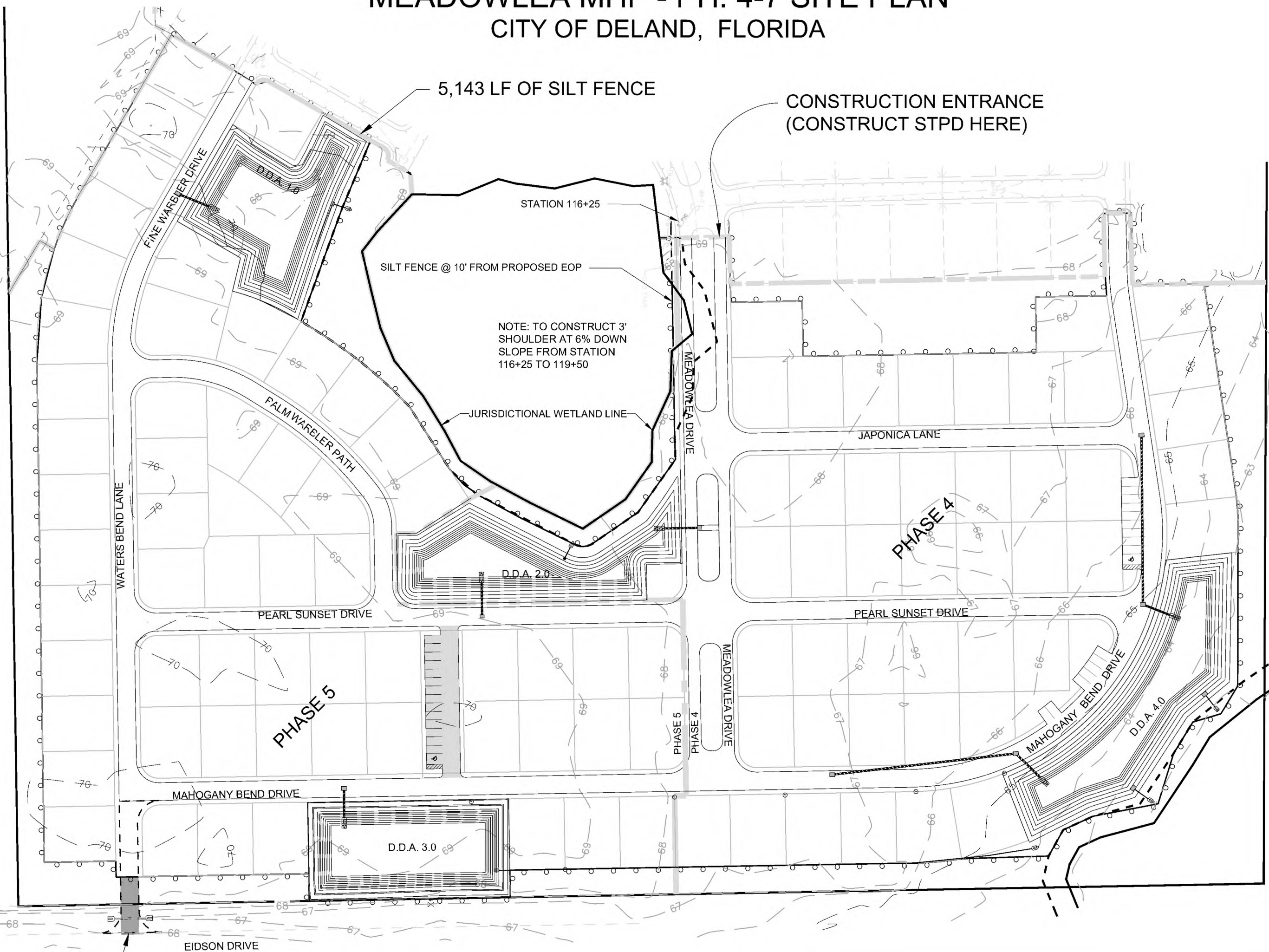


Meadowlea Village A COVE COMMUNITY

MEADOWLEA MHP - PH. 4-7 SITE PLAN CITY OF DELAND, FLORIDA



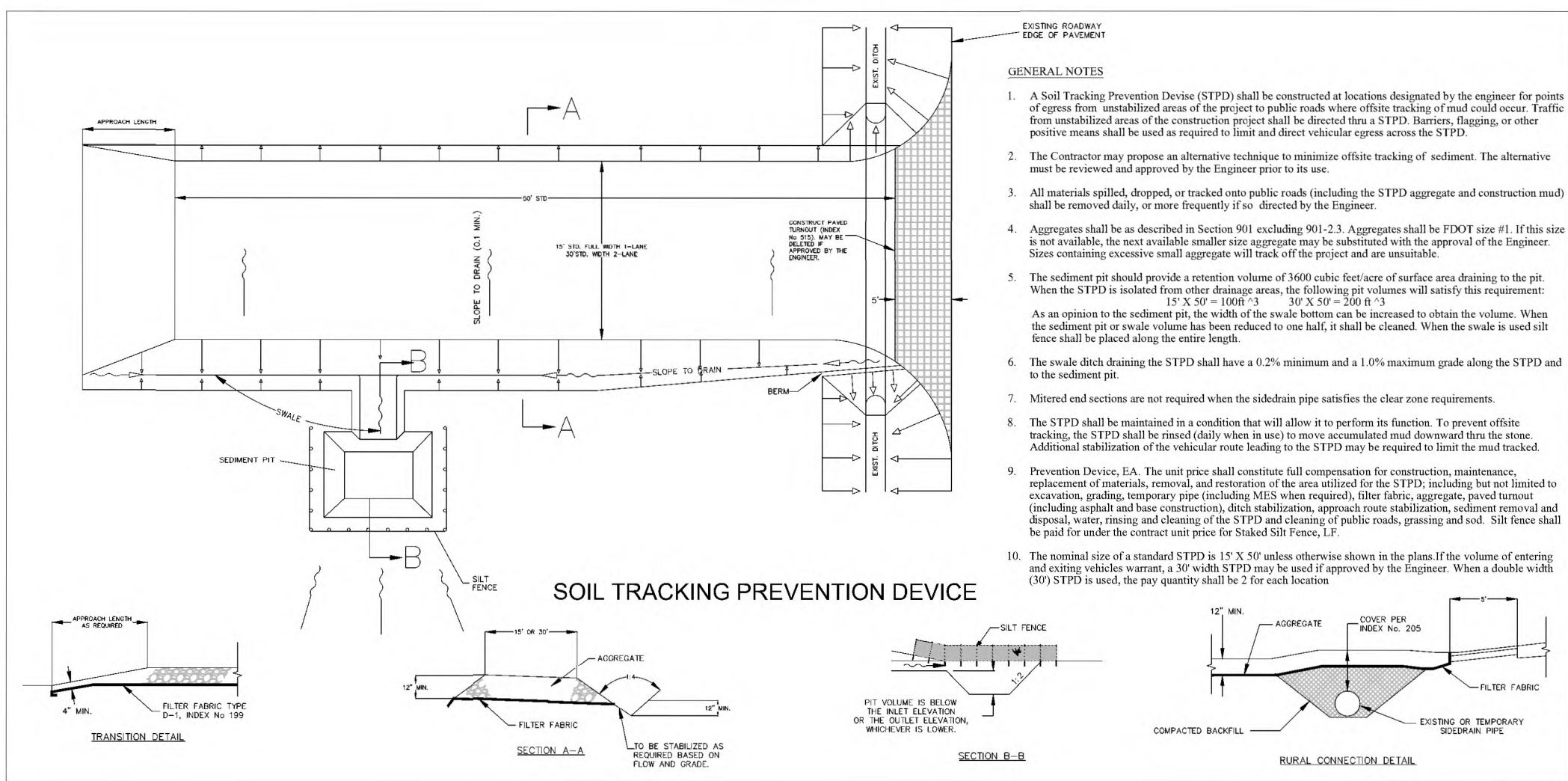
LOCATION MAP
SCALE: 1" = 4000'
DELAND, FLORIDA
SECTION 27, TOWNSHIP 16 SOUTH, RANGE 30 EAST



EROSION CONTROL BLANKET GROUND FASTENING DETAIL Not to Scale

INSTALL TOTAL OF 2,517 LF
FABRIC SILT FENCE

CITY OF DELAND PROJECT
No. SP22-211



Stabilization Schedule:
(Required to be completed by Contractor)

Major Construction Activities:
Start Date _____
End Date _____

Cease Construction Activities:
Temporary Dates _____

Permanent Date _____

Date that Stabilization Measures
were Initiated: _____

Note: Install erosion control features prior
to any construction activities on this site.

Permittee's Certification:

The undersigned ensures that the surface water and stormwater management measures proposed in the plan will be effectively implemented until completion of the project or until the permanent surface water management system is operational.

Signature _____ Date _____
Print Name _____
Address _____
Phone Number _____

Contractor's Certification:

"I certify under penalty of law that I understand, and shall comply with, the terms and conditions of the State of Florida Generic Permit for Stormwater Discharge from Large and Small Construction Activities and this Stormwater Pollution Prevention Plan prepared thereunder."

Signature _____ Date _____
Print Name _____
Address _____
Phone Number _____

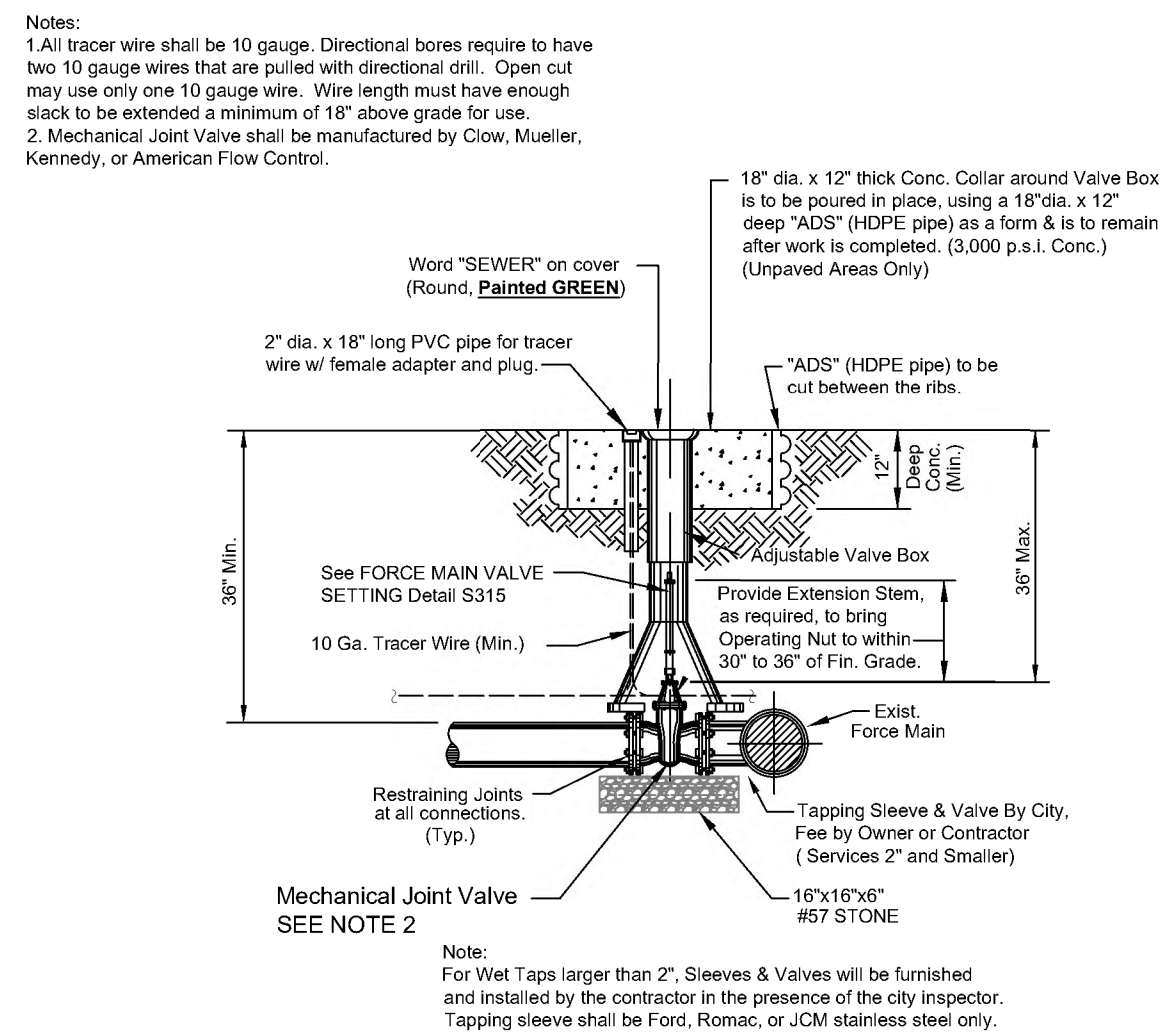
INFORMATION FOR ELECTRONICALLY SIGNED AND SEALED DOCUMENTS
IF THIS ITEM HAS BEEN ELECTRONICALLY SIGNED AND SEALED IT USES A SHA-1 AUTHENTICATION CODE. PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SHA-1 AUTHENTICATION CODE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.
NOTWITHSTANDING, PRINTED COPIES ARE VALID IF PHYSICALLY SIGNED, DATED AND SEALED WITH THE ENGINEER'S EMBOSSED SEAL.

Project Name: Meadowlea Village Ph. 4-7

Sheet Name: Drainage Plan

Sheet No.
C021
of
C021

MICHAEL W. RADCLIFFE ENGINEERING, INC.
2811 S.E. Lake Weir Avenue
Gotha, FL 32927 (352) 629-5500 FAX (352) 629-1018
Certificate No. EB-0006198 • Michael W. Radcliffe P.E. #3170 • Christopher A. Gwin P.E. #4588
www.radcliffeengineering.com



DATE: 11/05/2021	FORCE MAIN TAPPING SLEEVE & VALVE	S407
City of DeLand - Standard Details		

CITY OF DELAND, FLORIDA
1102 S. GARFIELD AVENUE, DELAND, FLORIDA 32724

DATE: 11/05/2021

CHECKED BY: NAME

SCALE: NOT TO SCALE

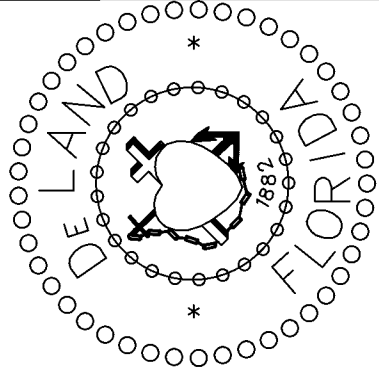
DRAWN BY: ERIC SAMPSON

SANITARY DETAILS

TITLE:

PAGE 1 OF 5

FILE: drive letter/details locations



City of DeLand, Engineering Services
1102 S. Garfield Avenue, DeLand, Florida 32724

DATE: 11/05/2021

CHECKED BY:

SCALE: NOT TO SCALE

DRAWN BY: ERIC SAMPSON

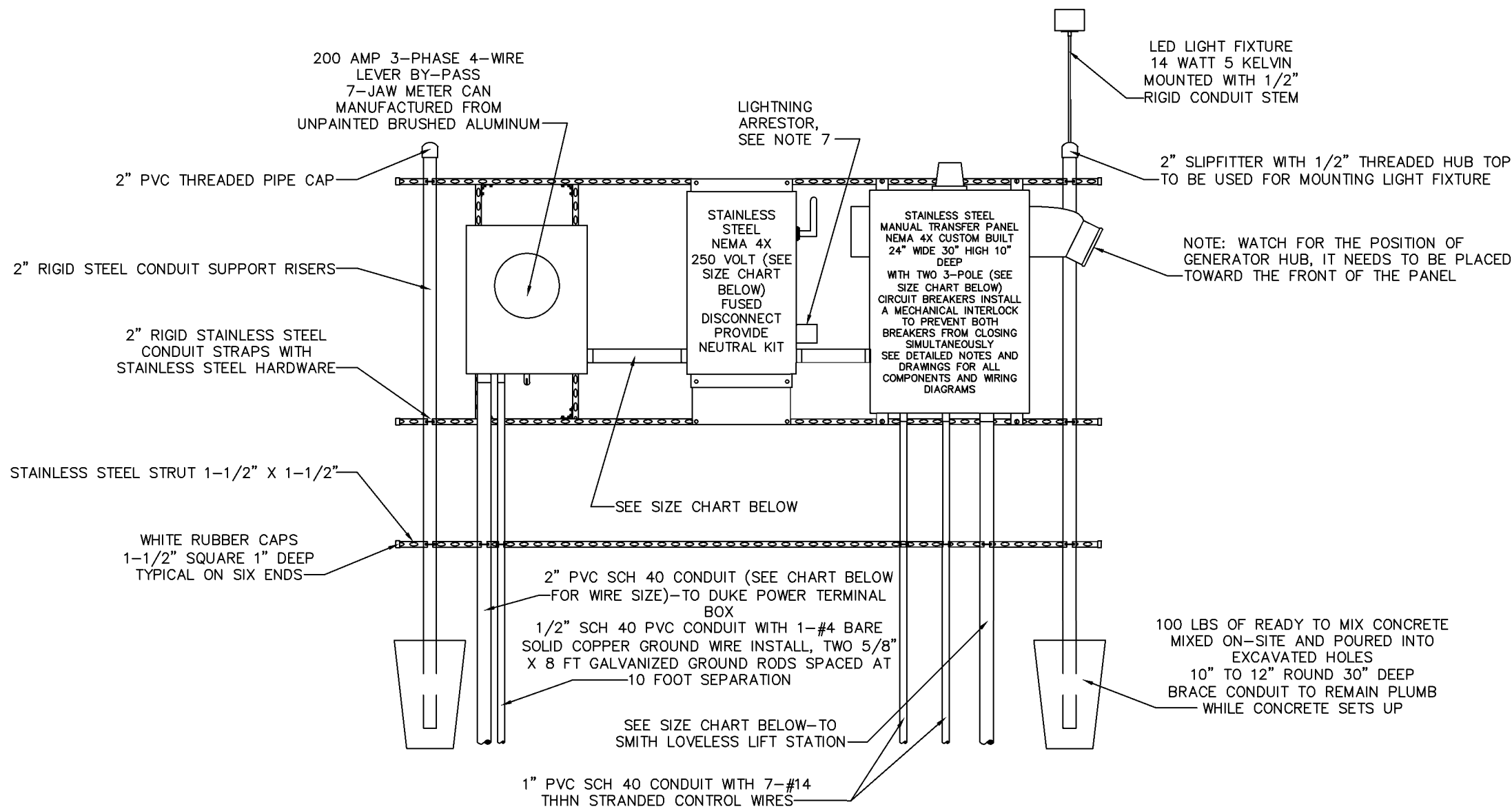
SANITARY LIFT STATION

TITLE:

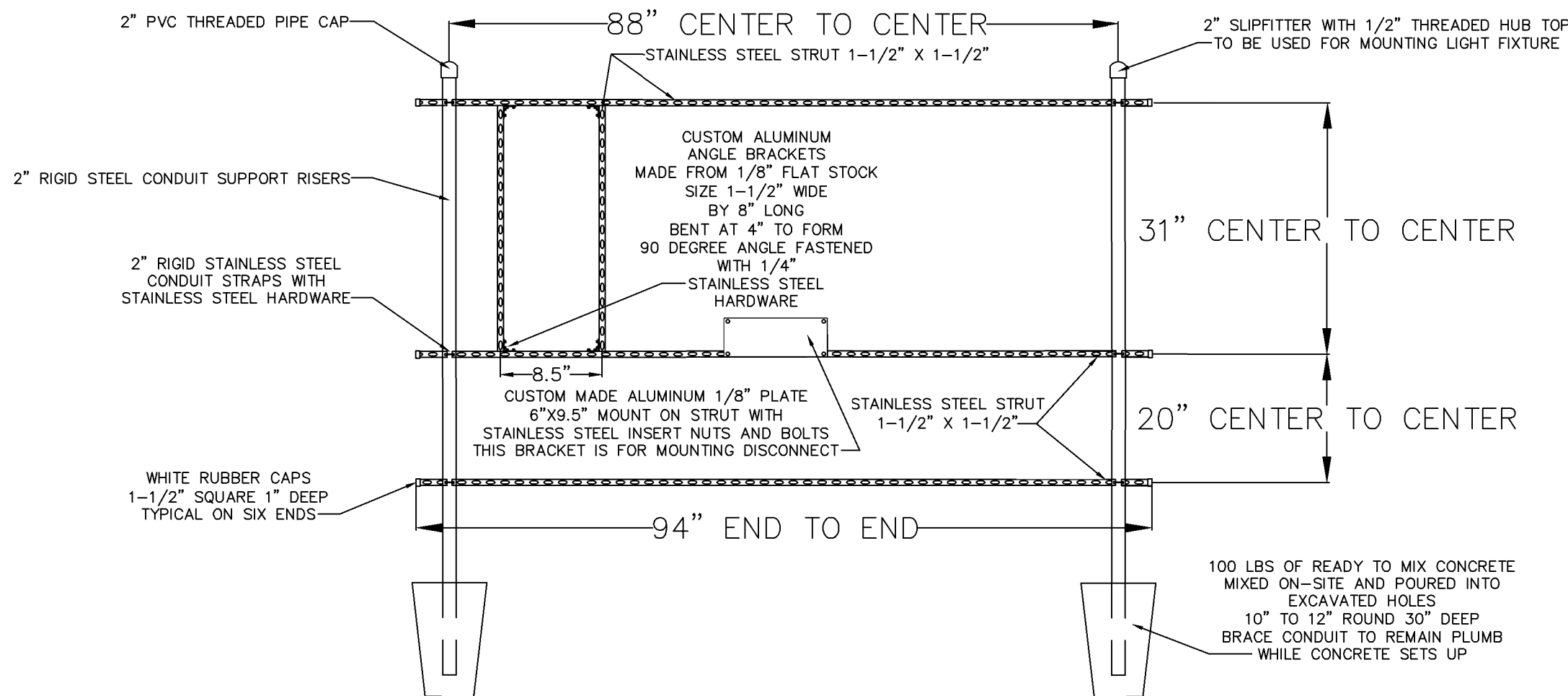
FILE: LIFT_STATION_DETAILS_A_B.dwg

PAGE 4 OF 5

DETAIL "A"



240 VOLT POWER RACK WITHOUT GENERATOR

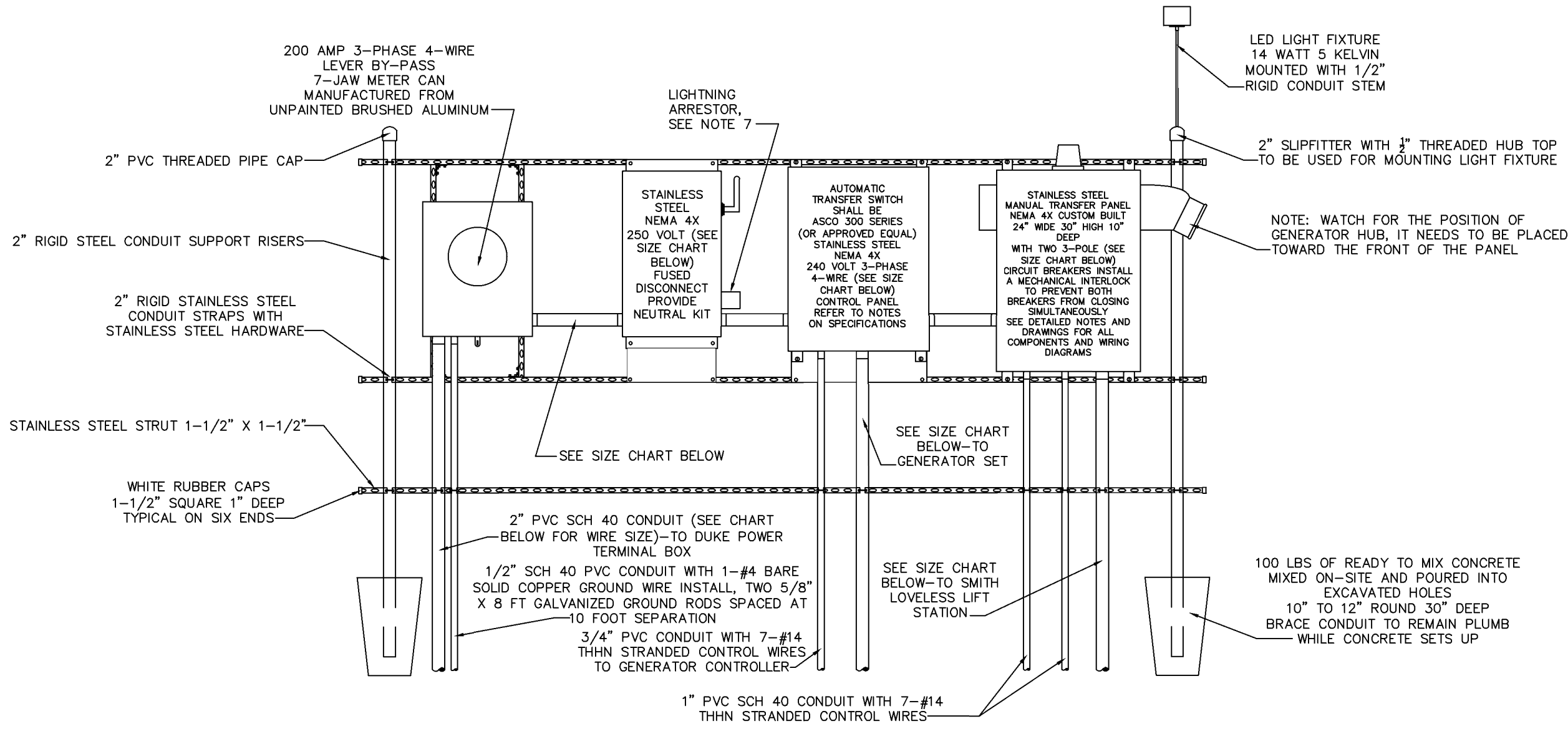


RACK FRAMING DETAILS
240 VOLT WITHOUT AUTOMATIC TRANSFER SWITCH

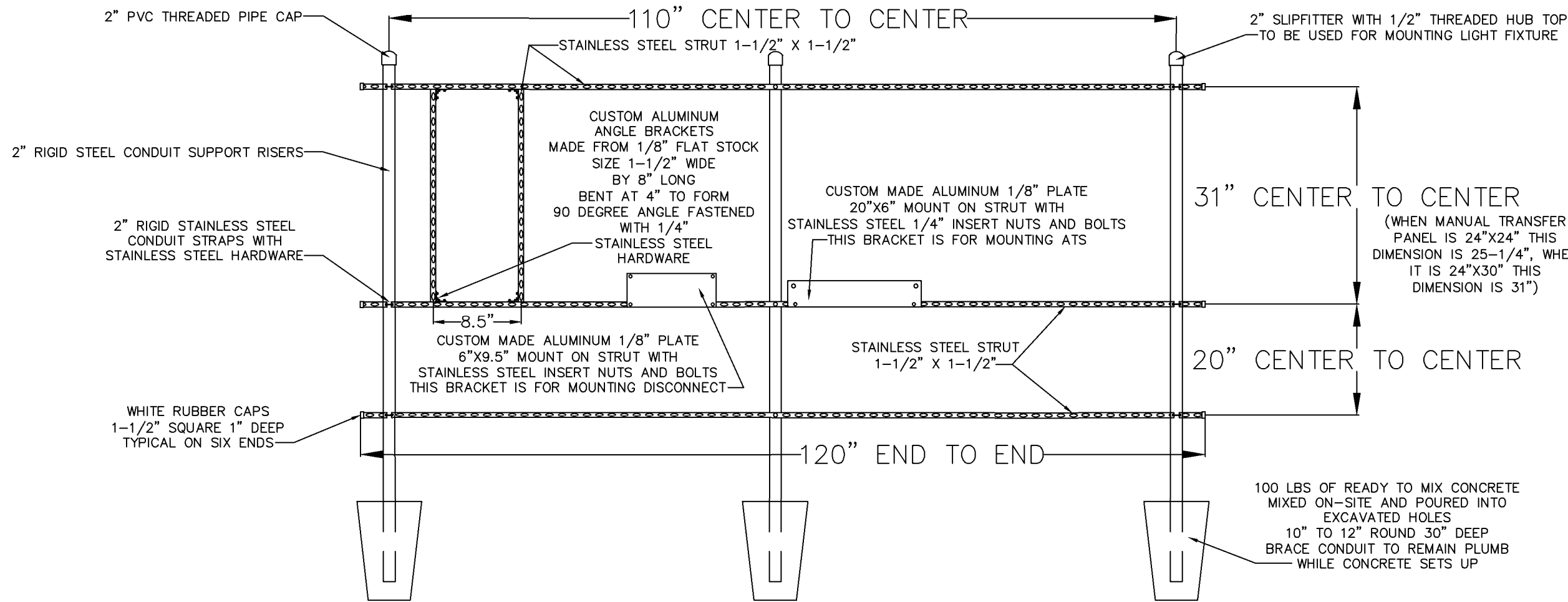
CONTROL GENERATOR RECEPTACLE PANEL

1. ENCLOSURE : NEMA 4X STAINLESS, 304 GRADE, 14 GAUGE, GASKETED, #4 BRUSHED FINISH, U.L. AND CSA APPROVED, HASP AND STAPLE FOR PADLOCKING, INSIDE PRINT POCKET, STAINLESS STEEL HINGE, MIN. SIZE 24" x 24" x 8" FOR UP TO 15 H.P.
2. MAIN BREAKER : SQUARE D HEAVY DUTY SIZED PROPERLY FOR FULL LOAD OF STATION PLUS 25%.
3. EMERGENCY BKR. : SQUARE D HEAVY DUTY SIZED PROPERLY FOR FULL LOAD OF STATION PLUS 25%.
4. MECH. INTERLOCK: ALL ALUMINUM AND STAINLESS STEEL W/ POSITIVE MEANS OF LOCKING OFF BREAKER NOT IN USE. THE BREAKERS WILL PROTRUDE THROUGH INNER DOOR.
5. RECEPTACLE: RUSSELL STOLL JRS1044FR (230 VOLT ONLY), MELTRIC PART #37-98047 (480 VOLT ONLY)
6. ANGLE ADAPTER: RUSSELL STOLL JAAB-10, 20 DEG. ADAPTER
7. LIGHTNING ARRESTOR: HEAVY DUTY, SQUARE D P/N SDSA3650
8. PHASE MONITOR: DIVERSIFIED P/N SLA-230-ASA, 8 PIN WITH N.O. AND N.C. CONTACTS WIRE TO TERMINAL FOR RTU EQUIPMENT.
9. HIGH WATER ALARM: RED, LEXAN, W/NO EXTERNAL SCREWS.
10. HWA RELAY: SQUARE D OR OMRON, 8 PIN DOUBLE POLE, DOUBLE THROW WIRED TO RTU TERMINAL.
11. ALARM HORN: RED, WHEELLOCK P/N 31T-115 MOUNTED TO RED WEATHER PROOF CAST BOX ON EXTERIOR OF ENCLOSURE.
12. ALARM RELAY: SQUARE D OR OMRON, 8 PIN DOUBLE POLE, DOUBLE THROW WIRED TO RTU TERMINAL.
13. ALARM RESET/SL: SQUARE D, WEATHER PROOF MOUNTED ON EXTERIOR OF ENCLOSURE.
14. ENCL. BACKPLATE: ALUMINUM, 12 GAUGE
15. TERMINAL STRIP: BUCHANON P/N 0625
16. GROUND LUG: BUCHANON P/N 824
17. NEUTRAL LUG: BUCHANON P/N 824
18. MAIN LOAD LUG: SQUARE D P/N U3
19. LABELS: ALL BREAKERS AND SWITCHES TO BE IDENTIFIED BY PERMANENTLY ATTACHED LABEL TO PANEL DOOR INTERIOR
20. MOUNTING SCREWS: STAINLESS STEEL 304
21. SCHEMATIC DWG.: PROTECTED BY PLASTIC COATING AND ATTACHED TO PANEL DOOR INTERIOR.
22. MANUFACTURER: STACON, EOS OR CITY OF DELAND APPROVAL
23. R.T.U.: (DATA FLOW MELBOURNE FLA. (R.T.U. 204) OR EQUAL TO BE INSTALLED BY CITY-DEVELOPER TO BEAR ALL COSTS.
24. PROVIDE SPARE PARTS - SEE SPARE PARTS LIST
25. WET WELL TO BE COATED INSIDE AND OUT WITH MIN. 24 MILS OF COAL/TAR EPOXY
26. EQUIVALENT PRODUCTS CAN ONLY BE APPROVED UPON RECEIPT OF WRITTEN AUTHORIZATION FROM THE CITY OF DELAND.

DETAIL "B"



240 VOLT POWER RACK WITH GENERATOR
AUTOMATIC TRANSFER SWITCH



RACK FRAMING DETAILS
240 VOLT WITH AUTOMATIC TRANSFER SWITCH

SIZE CHART

STEP #1: DETERMINE LIFT STATION SIZE & SPECIFICATIONS FROM THE UTILITY CONTRACTOR OR CITY OF DELAND ENGINEERING DEPT.

STEP #2: MAKE NOTE OF THE FOLLOWING: THE VOLTAGE FOR THE STATION, THE NUMBER OF PUMPS (2 OR 3) & THE HORSEPOWER OF PUMPS.

STEP #3: REFER TO THE ELECTRICAL SERVICE DATA CHARTS FOR THE STANDARD 2 PUMP OR 3 PUMP STATION (FOUND ON SHEET 3 OF 3).

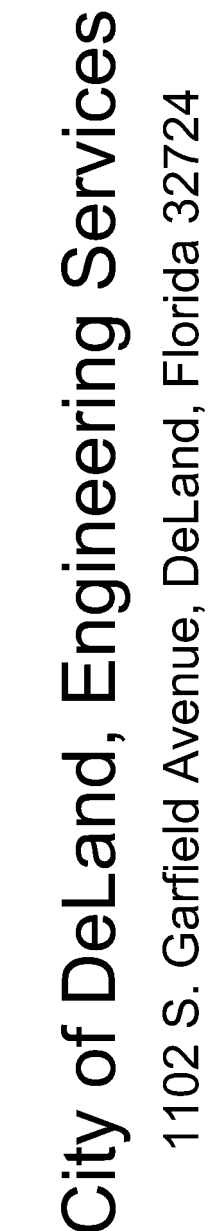
STEP #4: USE THE VOLTAGE COLUMN AND THE HORSEPOWER ROW TO FIND THE TOTAL STATION FULL LOAD AMPS.

STEP #5: UPON DETERMINING THE FULL LOAD AMPS OF THE STATION, THE SERVICE ENTRANCE SIZE SHALL NOT BE SMALLER THAN 100 AMPS.

STATIONS THAT REQUIRE A SERVICE SIZE LARGER THAN 100 AMPS SHALL BE SIZED CLOSEST TO THE STANDARD SIZES LISTED BELOW.

SERVICE SIZE	CONDUIT SIZE	WIRE SIZE	BREAKER OR FUSE RATING
100 AMP	1-1/2"	#3 THHN CU	100 AMP
125 AMP	1-1/2"	#2 THHN CU	125 AMP
150 AMP	2"	#1 THHN CU	150 AMP
200 AMP	2"	3/0 THHN CU	200 AMP
225 AMP	2-1/2"	4/0 THHN CU	225 AMP

Index No.
30800
REVISED 11/05/21
SHEET 2 OF 3



SCALE: NOT TO SCALE

DRAWN BY: ERIC SAMPSON

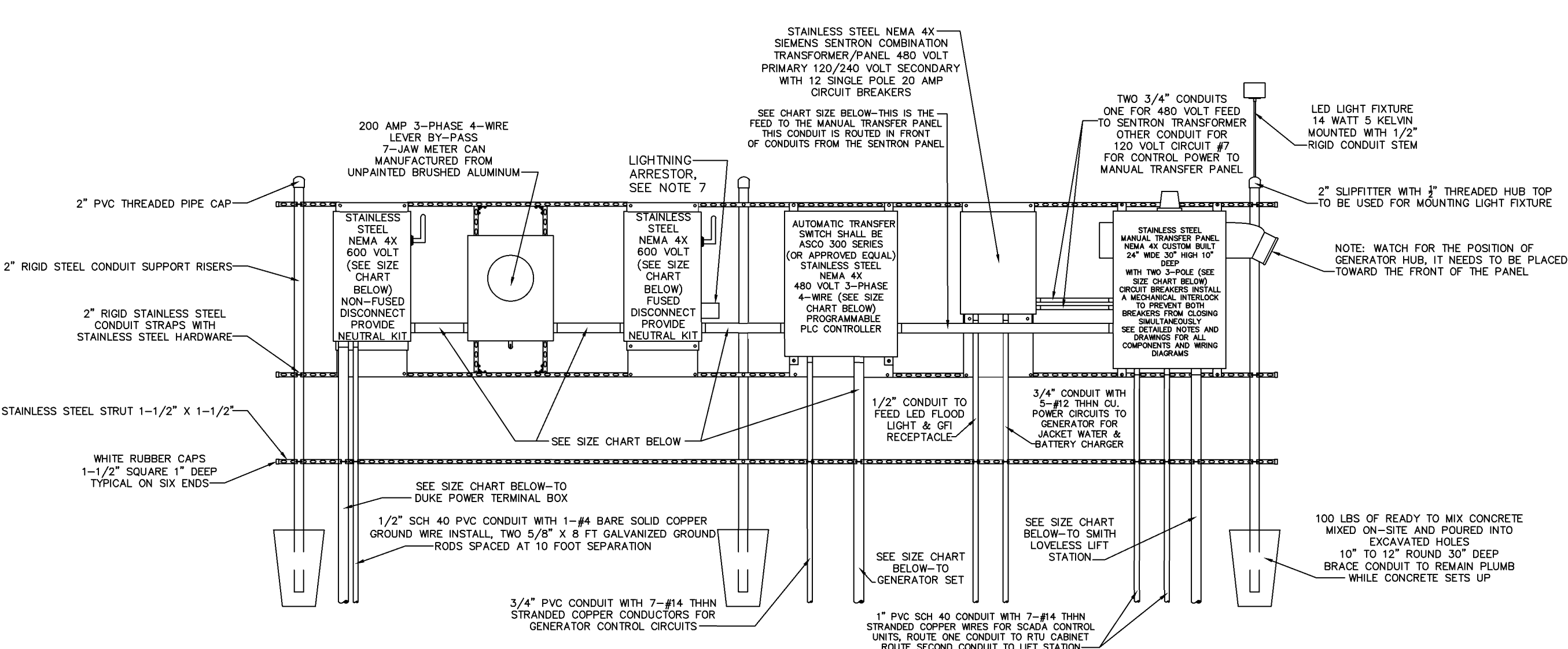
SANITARY LIFT STATION

TITLE:

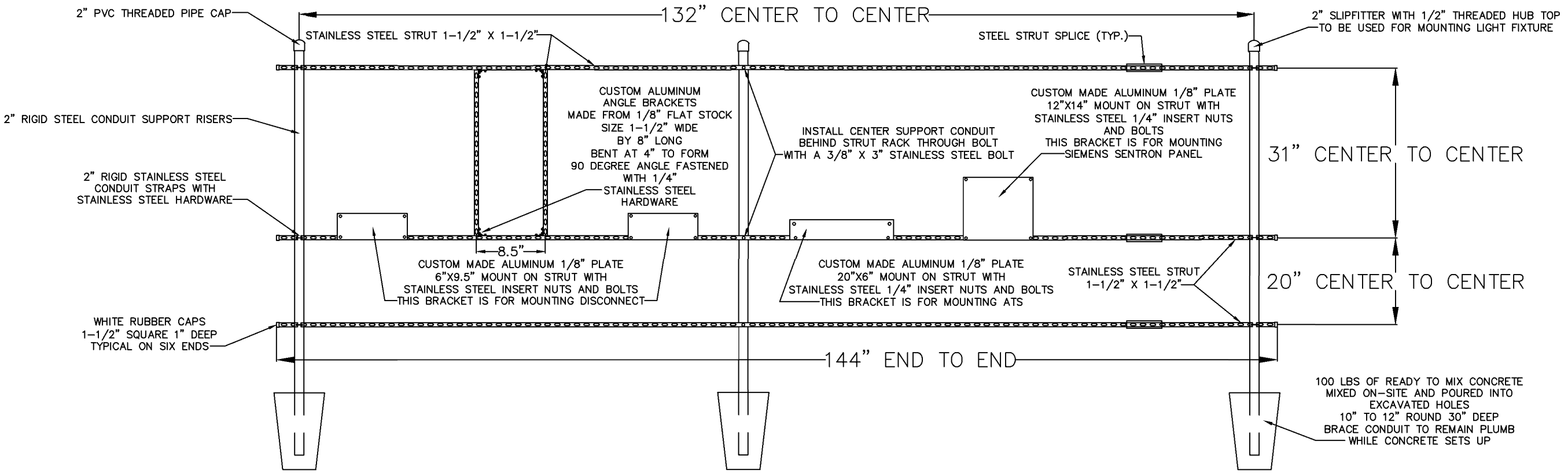
PAGE 5 OF 5

FILE: LIFT_STATION_DETAILS_C_D.dwg

DETAIL "D"



480 VOLT POWER RACK WITH GENERATOR WITH AUTOMATIC TRANSFER SWITCH



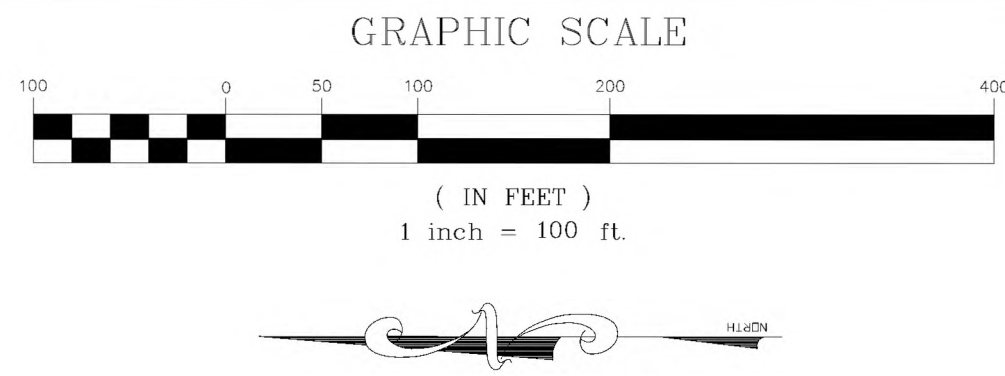
RACK FRAMING DETAILS
480 VOLT WITH AUTOMATIC TRANSFER SWITCH

ELECTRICAL SERVICE DATA
STANDARD 3-PUMP WET WELL MOUNTED PUMP STATION

MAIN PUMP MOTOR SIZE		TOTAL STATION FULL LOAD AMPS		
RATED HP EACH	208 VOLT	230 VOLT	460 VOLT	
1	27.3	23.7	11.9	
1-1/2	33.3	28.9	14.5	
2	39.3	34.1	17.1	
3	49.6	43.2	21.6	
5	70.6	61.4	30.7	
7-1/2	96.1	83.5	41.8	
10	118.5	103.0	51.5	
15	170.9	148.5	74.3	
20	215.7	187.5	93.8	
25	---	---	116.5	
30	---	---	136.0	
40	---	---	175.0	RE
50	---	---	217.3	

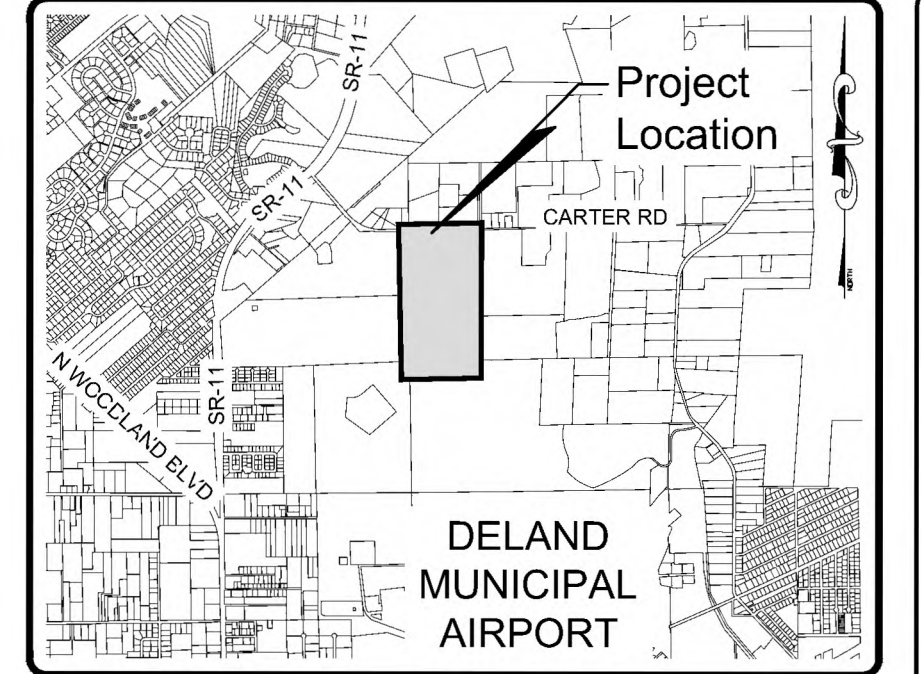
Index No.
30800
REVISED 11/05/21
SHEET 3 OF 3

SHEET 3 OF 3



Meadowlea Village

A COVE COMMUNITY



LOCATION MAP

SCALE: 1" = 400'

DELAND, FLORIDA

SECTION 27, TOWNSHIP 16 SOUTH, RANGE 30 EAST

Site Information:

PROJECT NAME: MEADOWLEA VILLAGE MASTER PLAN
PARCEL NUMBER: 6027-00-00-0110
PROJECT LOCATION: 1004 OVERLOOK DRIVE
DELAND, FLORIDA 32724
PH. (904)736-1853

OWNER: MEADOWLEA VENTURE I LLC
CONTACT: GARY TIMMONS
TELEPHONE: (443) 497-7001
ADDRESS: 1901 SE 58TH AVE
OCALA, FL 34480

PROJECT ENGINEER: MICHAEL W. RADCLIFFE ENGINEERING, INC.
2011 SE LAKE MEER AVE.
OCALA, FLORIDA 34471
TELEPHONE: (352) 629-5500

SITE AREA: 3,812,910 SF (87.53 ACS)
APPROX ACREAGE PER PHASE AS FOLLOWS:

PHASE 1 = 1,682,152 SF (36.62 AC)
PHASE 2 = 166,445 SF (3.82 AC)
PHASE 3 = 917,014 SF (20.91 AC)
PHASE 4 = 489,315 SF (11.23 AC)
PHASE 5 = 482,455 SF (11.07 AC)
PHASE 6 = 38,352 SF (0.88 AC)
PHASE 7 = 43,198 SF (0.99 AC)
TOTAL = 3,812,910 SF (87.53 AC)

ZONING: RM (RESIDENTIAL MOBILE HOME PARK)
LAND USE: MEDIUM DENSITY RESIDENTIAL

Notes:

- THIS PROPERTY WAS ANNEXED INTO THE CITY OF DELAND ON 11/2/2020 WITH 137 EXISTING HOME SPACES.
- MEADOWLEA VILLAGE IS A RENTAL MANUFACTURED HOME COMMUNITY WITH ALL LAND UNDER SINGLE OWNERSHIP.
- WATER/SEWER FOR EXISTING PHASES 1-3 IS PROVIDED BY MEADOWLEA VILLAGE.

Parking Requirements:

RESIDENTIAL PARKING: 2 SPACES PER UNIT
VISITOR PARKING: 0.25 SPACE PER UNIT
REQUIRED: 102 UNITS = 26 SPACES
REQUIRED 1 HANDICAP SPACE PER 25 REGULAR SPACES
REQUIRED SPACES: 102 x 0.25 = 25.5 ≈ 26 SPACES
PROVIDED SPACES: 36 SPACES
TOTAL: 34 VISITOR SPACES + 2 H.C. SPACES = 36 SPACES

Tree Protection Area (T.P.A.):

TPA IN EXISTING PHASES

TPA - A = 12,728 SF (0.29 AC)
TPA - B = 26,500 SF (0.61 AC)
TPA - C = 44,311 SF (1.02 AC)
TPA - D = 26,500 SF (0.61 AC)
TPA - E = 44,311 SF (1.02 AC)
TPA - F = 133,059 SF (3.05 AC)

EXISTING TPA AREA: 328,834 SF (13.45 AC)
EXISTING LAND AREA: 2,841,160 (65.22 AC) = 11.57%

TPA IN PROPOSED PHASES

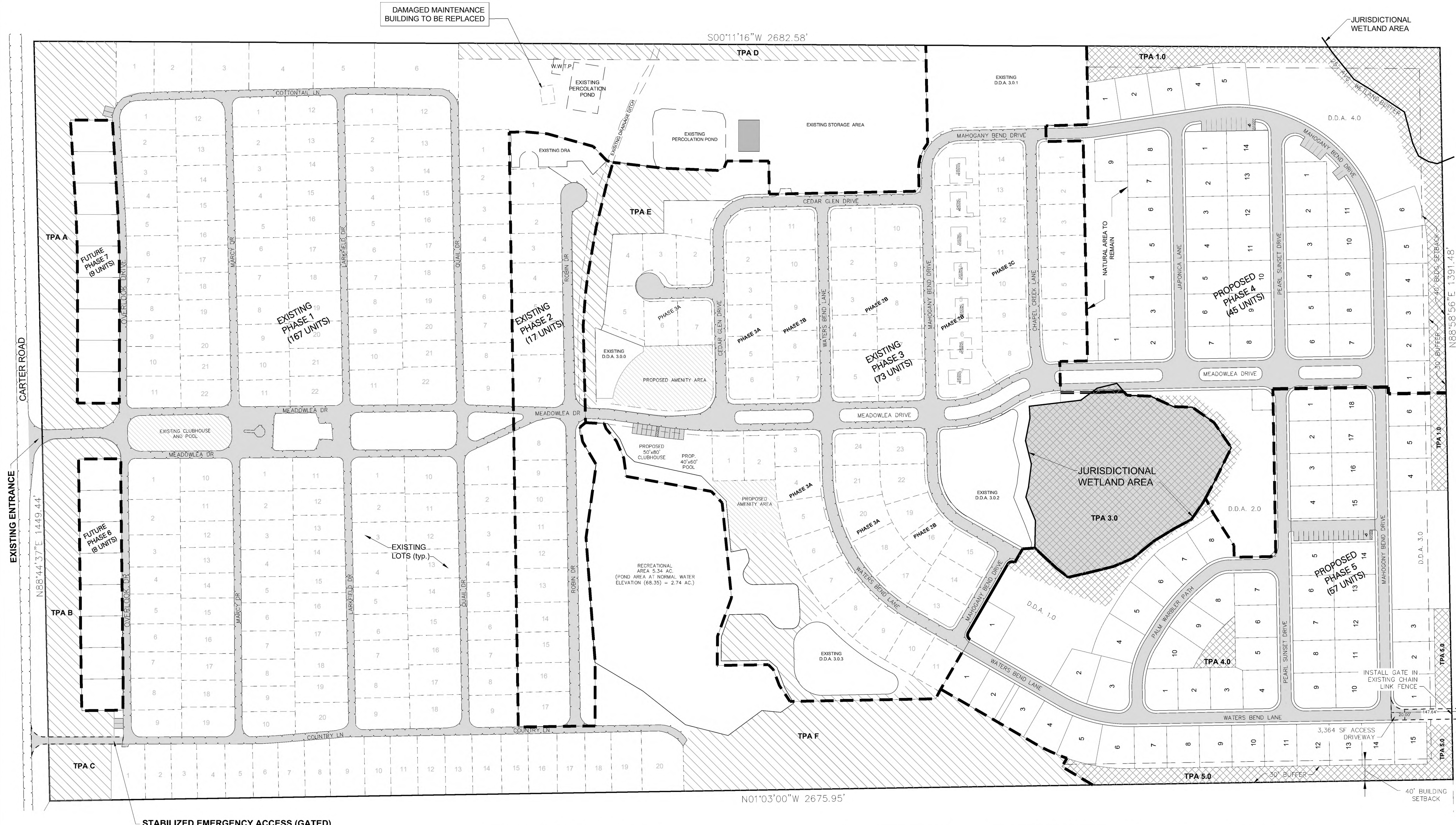
TPA - 1.0 = 69,213 SF (1.59 AC)
TPA - 2.0 = NOT USED
TPA - 3.0 = 120,708 SF (2.77 AC)
TPA - 4.0 = 4,517 SF (0.10 AC)
TPA - 5.0 = 31,516 SF (0.72 AC)

PROPOSED TPA AREA: 225,954 SF (5.19 AC)
PROPOSED LAND AREA: 971,388 SF (22.30 AC)
225,954 SF (5.17 AC) / 971,388 SF (22.30 AC) = 23.26%

TPA OVER TOTAL PROPERTY (87.33 AC)

TOTAL LAND AREA: 3,812,905 SF (87.53 AC)
TOTAL TPA: 554,788 SF (12.74 AC)
554,788 SF (12.74 AC) / 3,812,905 SF (87.53 AC) = 14.55%

ALTHOUGH NOT REQUIRED FOR THE EXISTING PHASES, PROPOSED EXCESS TPA INCREASES THE OVERALL PROPERTY TPA TO 14.55%



EXISTING PHASES	
PHASE #	YIELD
1	167 LOTS
2	17 LOTS
3	73 LOTS
TOTAL	257 LOTS

PROPOSED PHASES		
PHASE #	YIELD	ROAD LENGTH
4	45 LOTS	2,654 FT (.50 MILES)
5	57 LOTS	2,557 FT (.48 MILES)
6	8 LOTS	-0-
7	9 LOTS	-0-
TOTAL	119	5211 FT (0.98 MILES)

EXISTING + PROPOSED 257+119=376 TOTAL LOTS

ZONING = RM RESIDENTIAL MOBILE HOME	
MINIMUM WIDTH	30'
MINIMUM DEPTH	80'
SEPARATION FROM UNITS	15'
SEPARATION FROM ACCESSORY UNITS	10' FROM MOBILE HOMES
MAXIMUM IMPERVIOUS	50%
PERIMETER SETBACKS FOR MOBILE HOMES	40' FROM PROPERTY LINE
SETBACKS FOR MOBILE HOMES	15' FROM LOT LINES
ACCESSORY STRUCTURE SETBACKS	7.5' FROM LOT LINES



3M LOCATING MARKER BALLS PROGRAMMABLE AND NON-PROGRAMMABLE NOTES:

- Programmable and Non-Programmable Marking Balls will be used on all Sewer, Potable and Reclaim projects
- For information on the Programmable and Non-Programmable Balls that the City requires see spec sheet for details
- Programmable Balls will be placed at all fittings ie. Tees, Couplings, 90, 45, and 22.
- Information will be recorded on a spread sheet. For information that needs to be recorded see spec sheet for an example template for the 3M Marker Balls
- Non-Programmable Marking Balls will used as follow:

- Potable: End of Service Line when buried
- Wastewater: Ball will be placed at the curb line to mark lateral location prior to end of service.
- Reclaim: End of Service Line when buried

- Desired bury depth is 1.5 feet to 3 feet. Five foot is the maximum depth for these devices

1420-LOCATER FOR MARKER BALLS

3M™ Dynatel™ Electronic Marker System (EMS) Marker Locators 1420 series is microprocessor-based systems that quickly and efficiently locate underground markers—years after construction or maintenance. -

The 3M™ Dynatel™ 1420 Marker Locators are designed to be accurate, fast and integrated allowing you to accurately and easily:

- Locate, read and write to 3M iD markers
- Pinpoint the depth and location of all existing models of properly installed underground passive EMS markers
- Conduct direct depth reading of markers
- Locate two different marker frequencies simultaneously

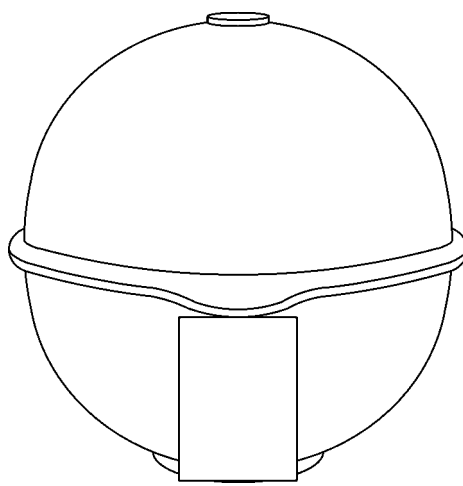
Specifications

2200RB Rechargeable Battery Not Included
Cable/Pipe Locate No
Carrying Bag Included No
Coupler Size No Coupler
Direct Connect Cable N/A
EMS Caution Tape Finding Capability No
Family 1420 Series
Fault Finding Capability No

2200RB Rechargeable Battery Not Included
Cable/Pipe Locate No
Carrying Bag Included No
Coupler Size No Coupler
Direct Connect Cable N/A
EMS Caution Tape Finding Capability No
Family 1420 Series
Fault Finding Capability No
Locator Type Marker

3M DYNATEL LOCATING AND MARKING ELECTRONIC MARKER SYSTEM:

1423-XR/ID-POTABLE



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

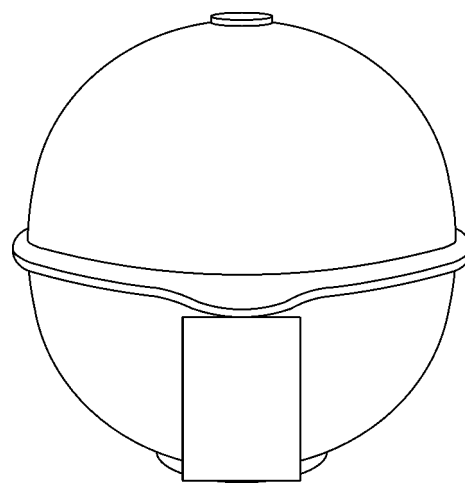
Featured Benefits

- Positive identification of underground water facilities
- iD Marker allows for programming of customer specific information
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR: BLUE
DIAMETER (METRIC): 10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY: N/A
MARKER DEPTH: 5 FEET (1.5M)
MARKER DIMENSION (INCH): 4 INCH DIAMETER
MARKER TYPE: BALL
PROGRAMMABLE/PASSIVE: PROGRAMMABLE
RANGE: 0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant: UNDETERMINED
RoHS EU Comments: CONTACT 3M FOR INFORMATION
Solution for: ACCESS NETWORK: FTTH/FTTB/CATV
ACCESS NETWORK: xDSL, LONG-HAUL/METRO
LOOP NETWORK: OUTDOOR
WIRELESS NETWORK: BACKHAUL

1424-XR/ID-SEWER



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

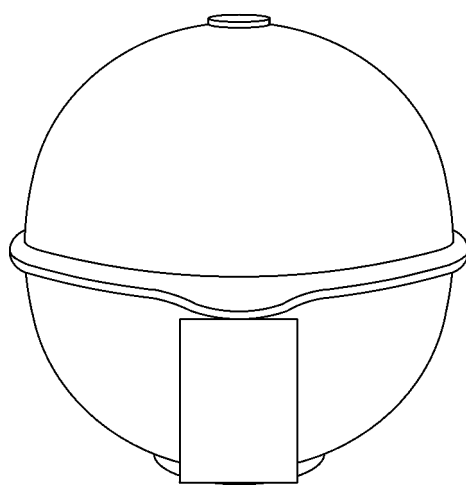
Featured Benefits

- Positive identification of underground wastewater facilities
- iD Marker allows for programming of customer specific information
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR: GREEN
DIAMETER (METRIC): 10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY: N/A
MARKER DEPTH: 5 FEET (1.5M)
MARKER DIMENSION (INCH): 4 INCH DIAMETER
MARKER TYPE: BALL
NUMBER OF FREQUENCIES: N/A
PROGRAMMABLE/PASSIVE: PROGRAMMABLE
RANGE: 0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant: UNDETERMINED
RoHS EU Comments: CONTACT 3M FOR INFORMATION
Solution for: ACCESS NETWORK: FTTH/FTTB/CATV
ACCESS NETWORK: xDSL, LONG-HAUL/METRO
LOOP NETWORK: OUTDOOR
WIRELESS NETWORK: BACKHAUL

1428-XR/ID-RECLAIMED



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

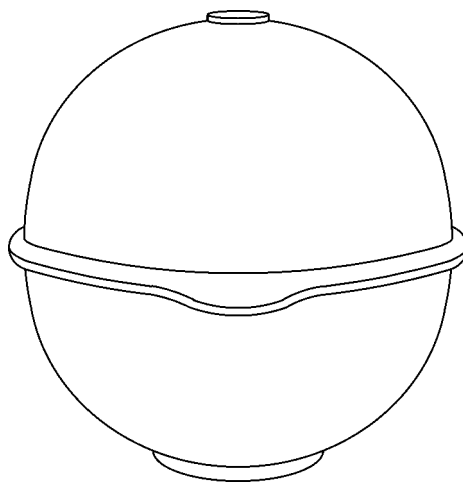
Featured Benefits

- Positive identification of underground general purpose / reclaimed water facilities
- iD Marker allows for programming of customer specific information
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR: PURPLE
DIAMETER (METRIC): 10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY: N/A
MARKER DEPTH: 5 FEET (1.5M)
MARKER DIMENSION (INCH): 4 INCH DIAMETER
MARKER TYPE: BALL
NUMBER OF FREQUENCIES: N/A
PROGRAMMABLE/PASSIVE: PROGRAMMABLE
RANGE: 0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant: UNDETERMINED
RoHS EU Comments: CONTACT 3M FOR INFORMATION
Solution for: ACCESS NETWORK: FTTH/FTTB/CATV
ACCESS NETWORK: xDSL, LONG-HAUL/METRO
LOOP NETWORK: OUTDOOR
WIRELESS NETWORK: BACKHAUL

1403-XR-POTABLE



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

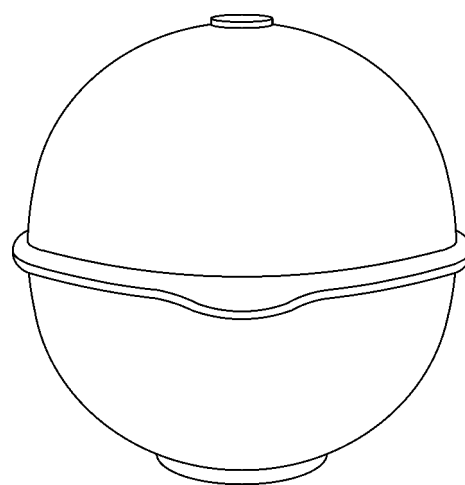
Featured Benefits

- Positive identification of underground water facilities
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR: BLUE
DIAMETER (METRIC): 10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY: N/A
MARKER DEPTH: 5 FEET (1.5M)
MARKER DIMENSION (INCH): 4 INCH DIAMETER
MARKER TYPE: BALL
NUMBER OF FREQUENCIES: N/A
PROGRAMMABLE/PASSIVE: PASSIVE
RANGE: 0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant: UNDETERMINED
RoHS EU Comments: CONTACT 3M FOR INFORMATION
Solution for: ACCESS NETWORK: FTTH/FTTB/CATV
ACCESS NETWORK: xDSL, LONG-HAUL/METRO
LOOP NETWORK: OUTDOOR
WIRELESS NETWORK: BACKHAUL

1404-XR-SEWER



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

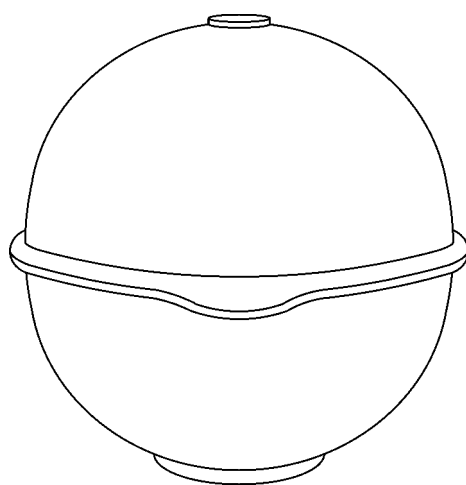
Featured Benefits

- Positive identification of underground wastewater facilities
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR: GREEN
DIAMETER (METRIC): 10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY: N/A
MARKER DEPTH: 5 FEET (1.5M)
MARKER DIMENSION (INCH): 4 INCH DIAMETER
MARKER TYPE: BALL
NUMBER OF FREQUENCIES: N/A
PROGRAMMABLE/PASSIVE: PASSIVE
RANGE: 0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant: UNDETERMINED
RoHS EU Comments: CONTACT 3M FOR INFORMATION
Solution for: ACCESS NETWORK: FTTH/FTTB/CATV
ACCESS NETWORK: xDSL, LONG-HAUL/METRO
LOOP NETWORK: OUTDOOR
WIRELESS NETWORK: BACKHAUL

1408-XR-RECLAIMED



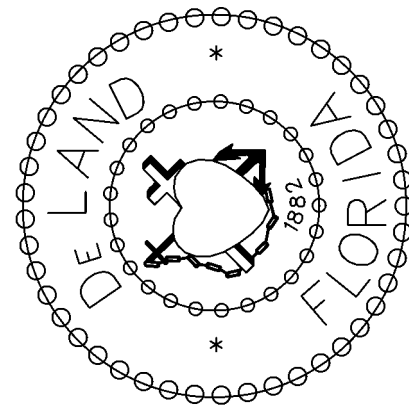
The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

Featured Benefits

- Positive identification of underground general purpose facilities
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR: PURPLE
DIAMETER (METRIC): 10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY: N/A
MARKER DEPTH: 5 FEET (1.5M)
MARKER DIMENSION (INCH): 4 INCH DIAMETER
MARKER TYPE: BALL
NUMBER OF FREQUENCIES: N/A
PROGRAMMABLE/PASSIVE: PASSIVE
RANGE: 0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant: UNDETERMINED
RoHS EU Comments: CONTACT 3M FOR INFORMATION
Solution for: ACCESS NETWORK: FTTH/FTTB/CATV
ACCESS NETWORK: xDSL, LONG-HAUL/METRO
LOOP NETWORK: OUTDOOR
WIRELESS NETWORK: BACKHAUL



CITY OF DELAND, FLORIDA
1102 S. GARFIELD AVENUE, DELAND, FLORIDA 32724

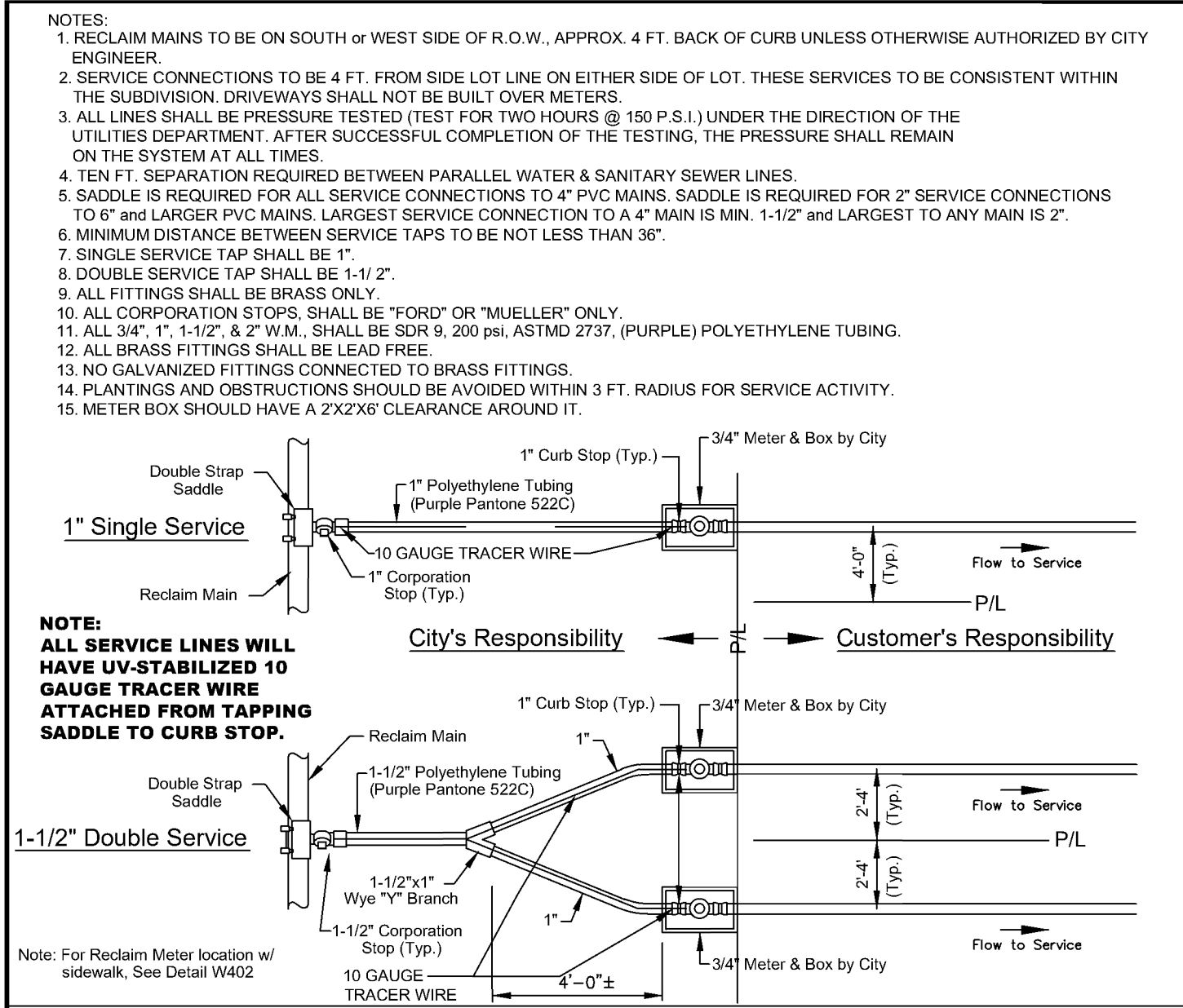
DATE: 11/05/2021
CHECKED BY: ERIC M. SAMPSON

SCALE: NOT TO SCALE
DRAWN BY: MARK LA GRECA

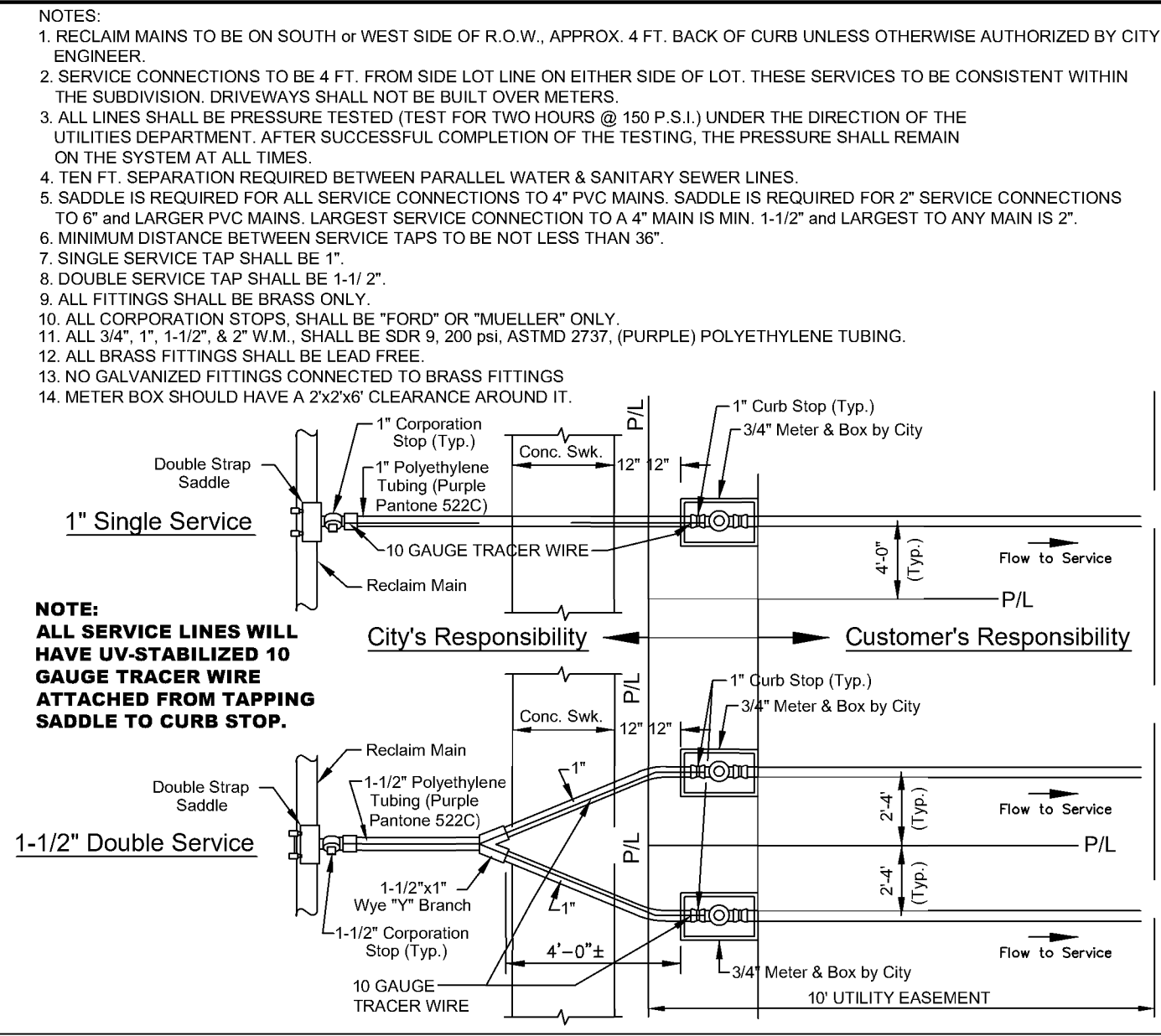
UTILITY MARKER BALL LOCATORS

TITLE:

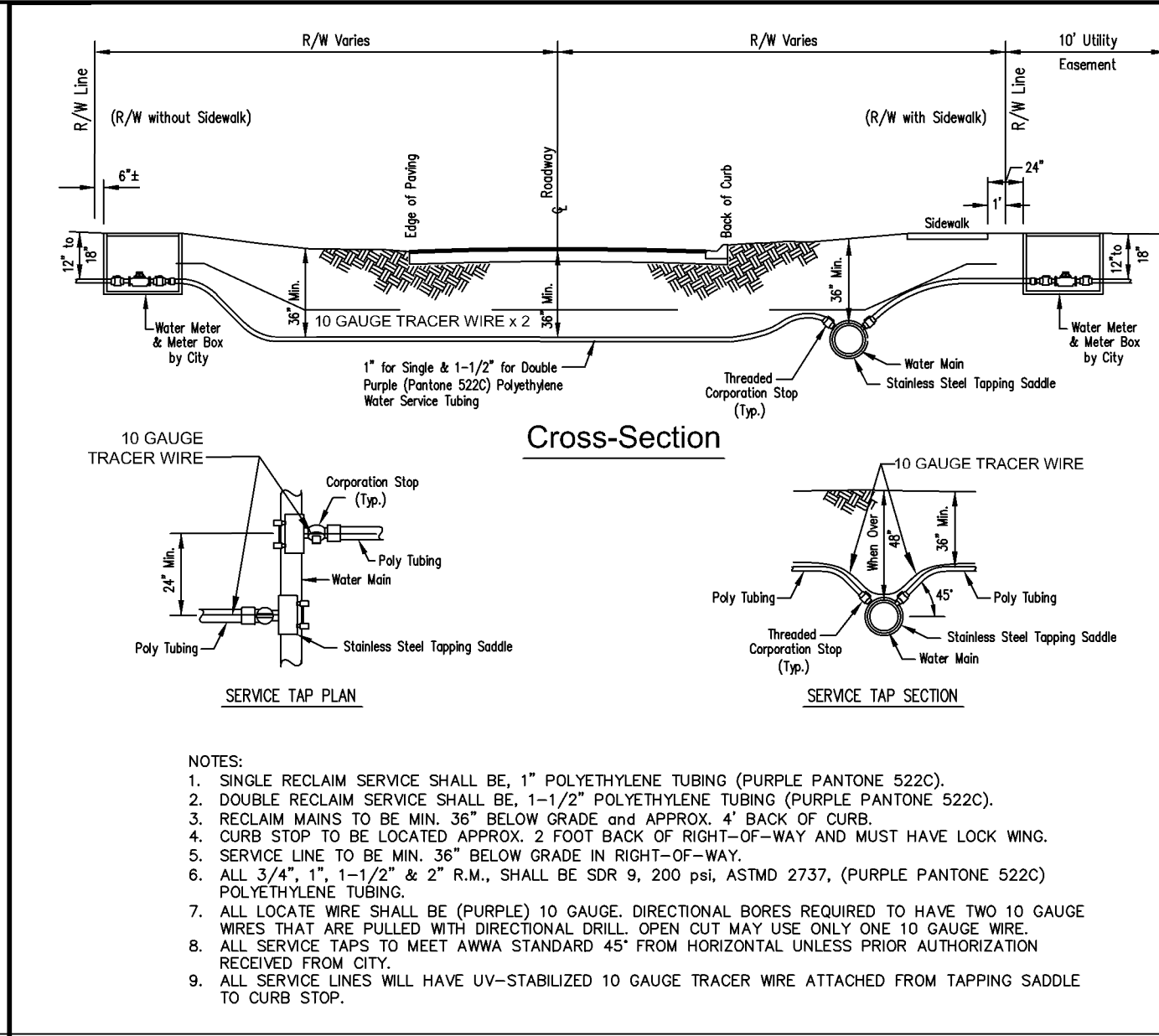
FILE: drive letter/details locations



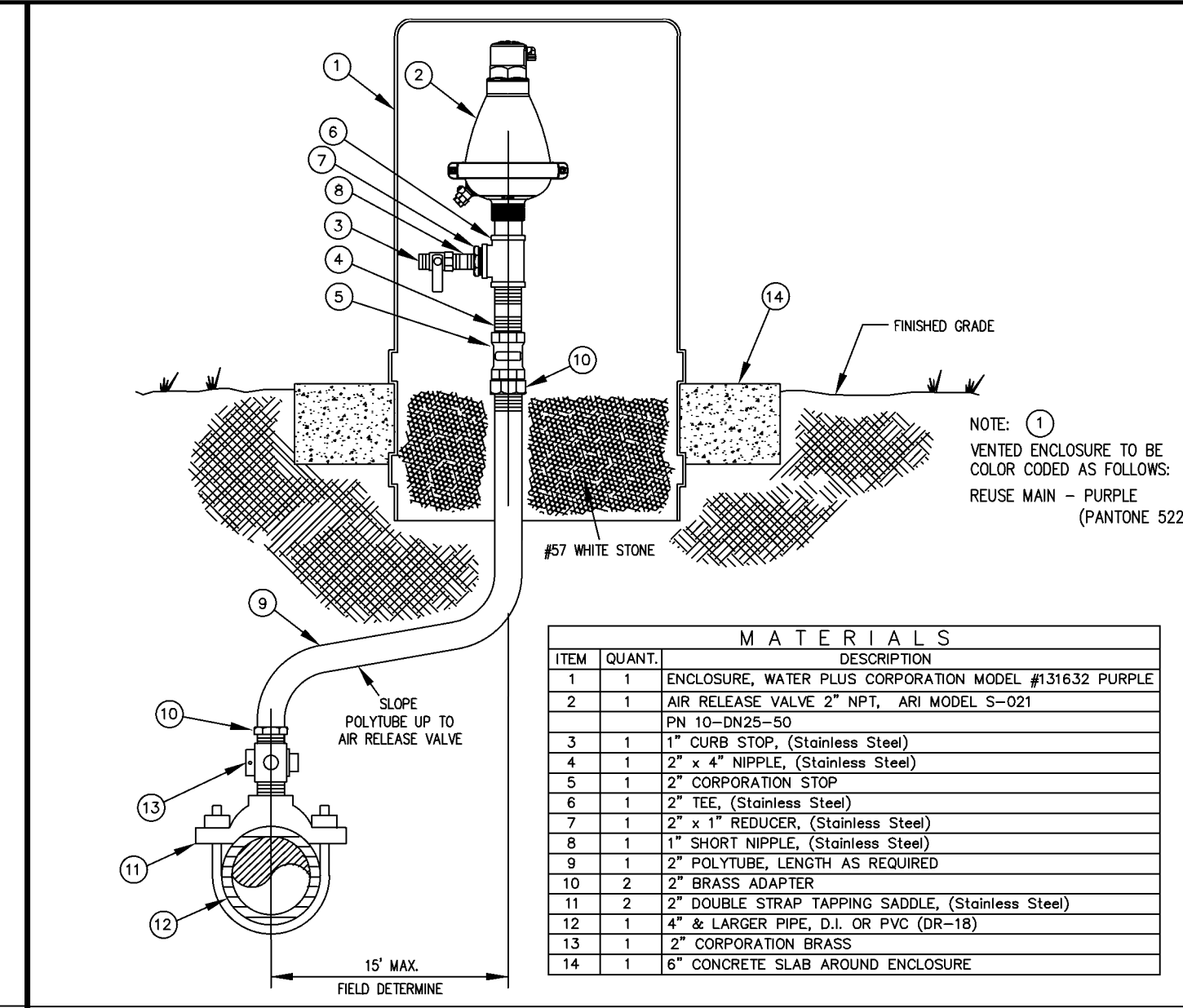
DATE: 11/05/2021 **RECLAIM MAIN SERVICE CONNECTION** **R401**
City of DeLand - Standard Details



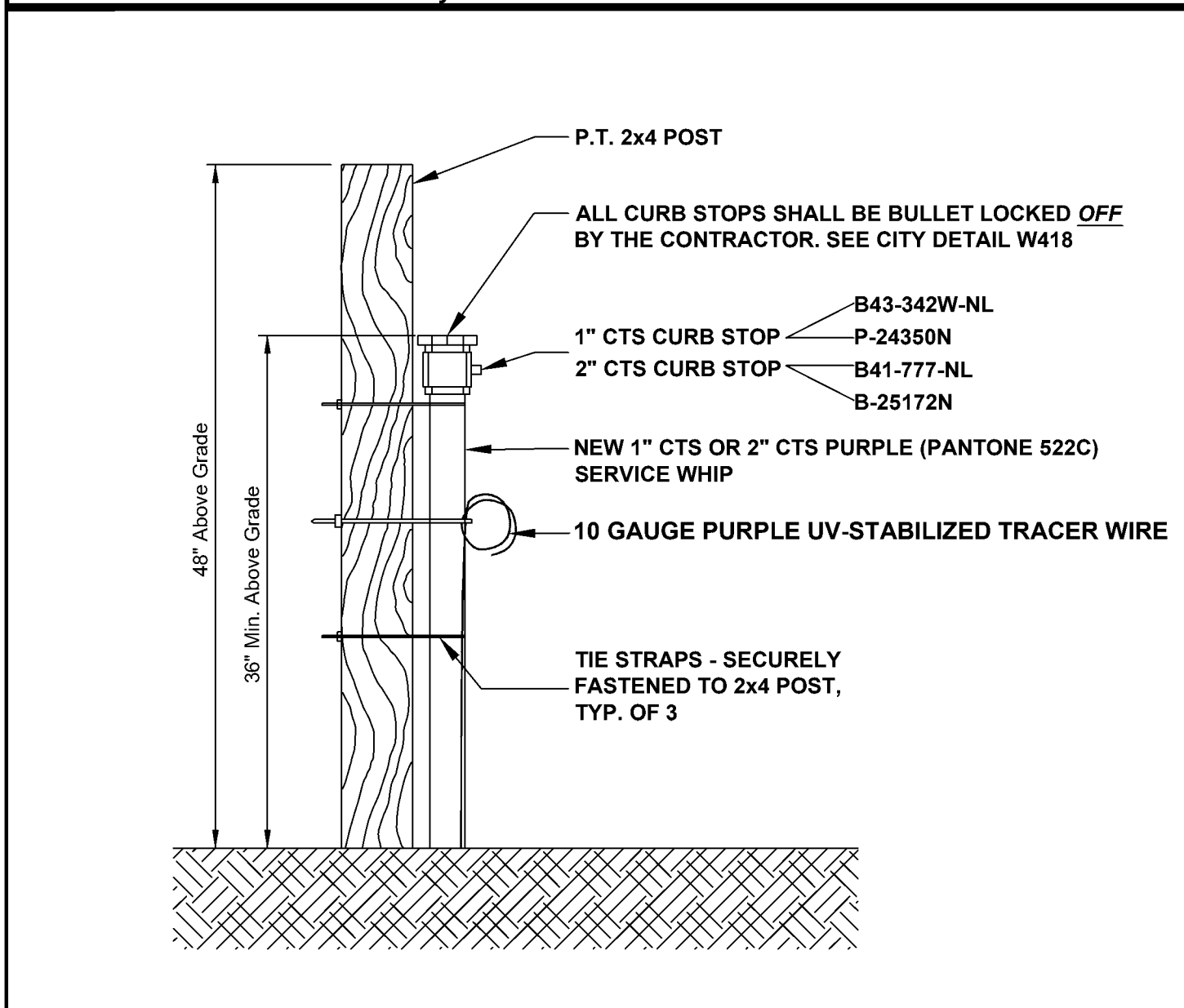
DATE: 11/05/2021 **RECLAIM MAIN SERVICE CONN. WITH SIDEWALK** **R402**
City of DeLand - Standard Details



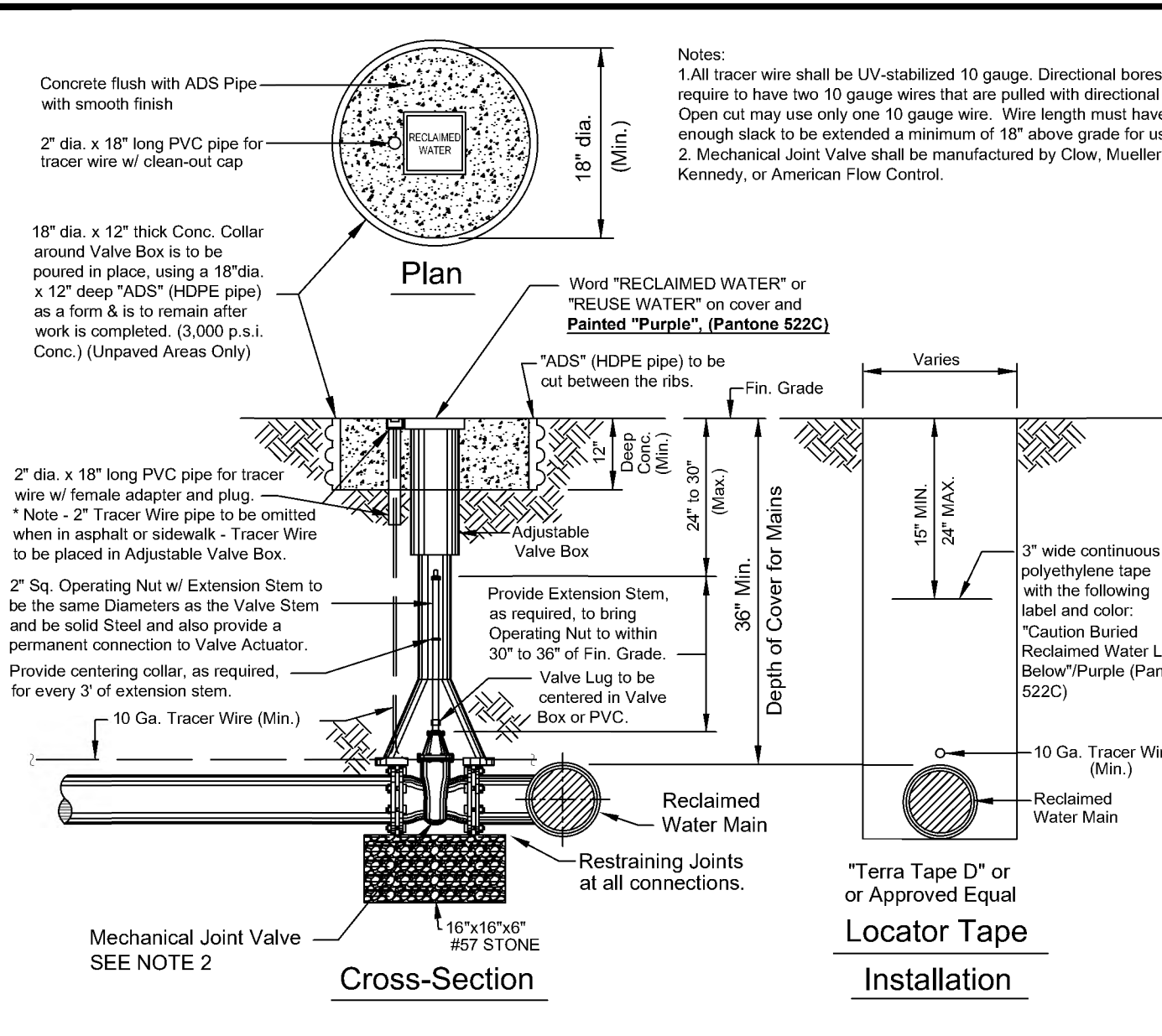
DATE: 11/05/2021 **RECLAIM MAIN SERVICE LINES** **R403**
City of DeLand - Standard Details



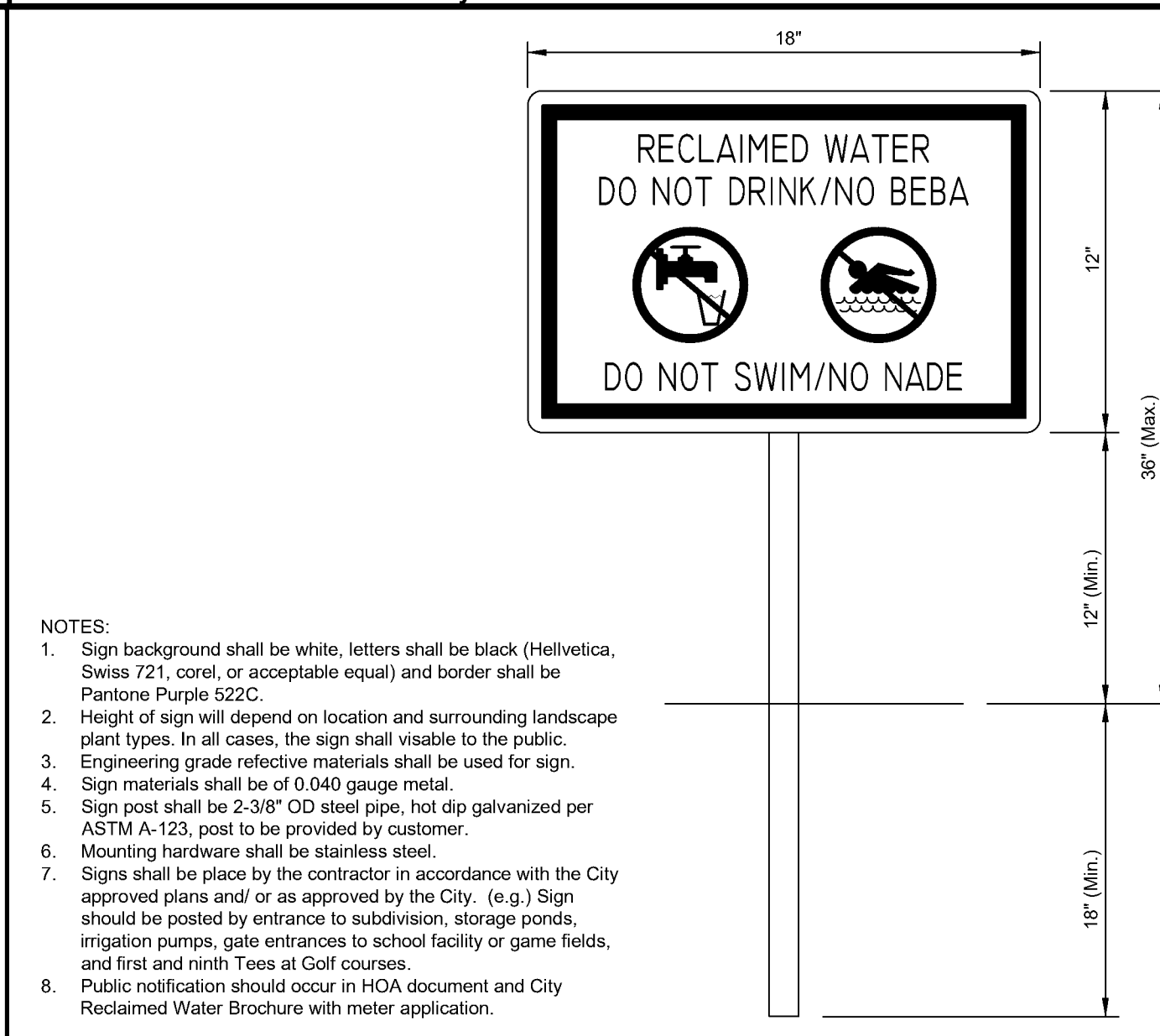
DATE: 11/05/2021 **OFFSET AIR RELEASE VALVE** **R421**
City of DeLand - Standard Details



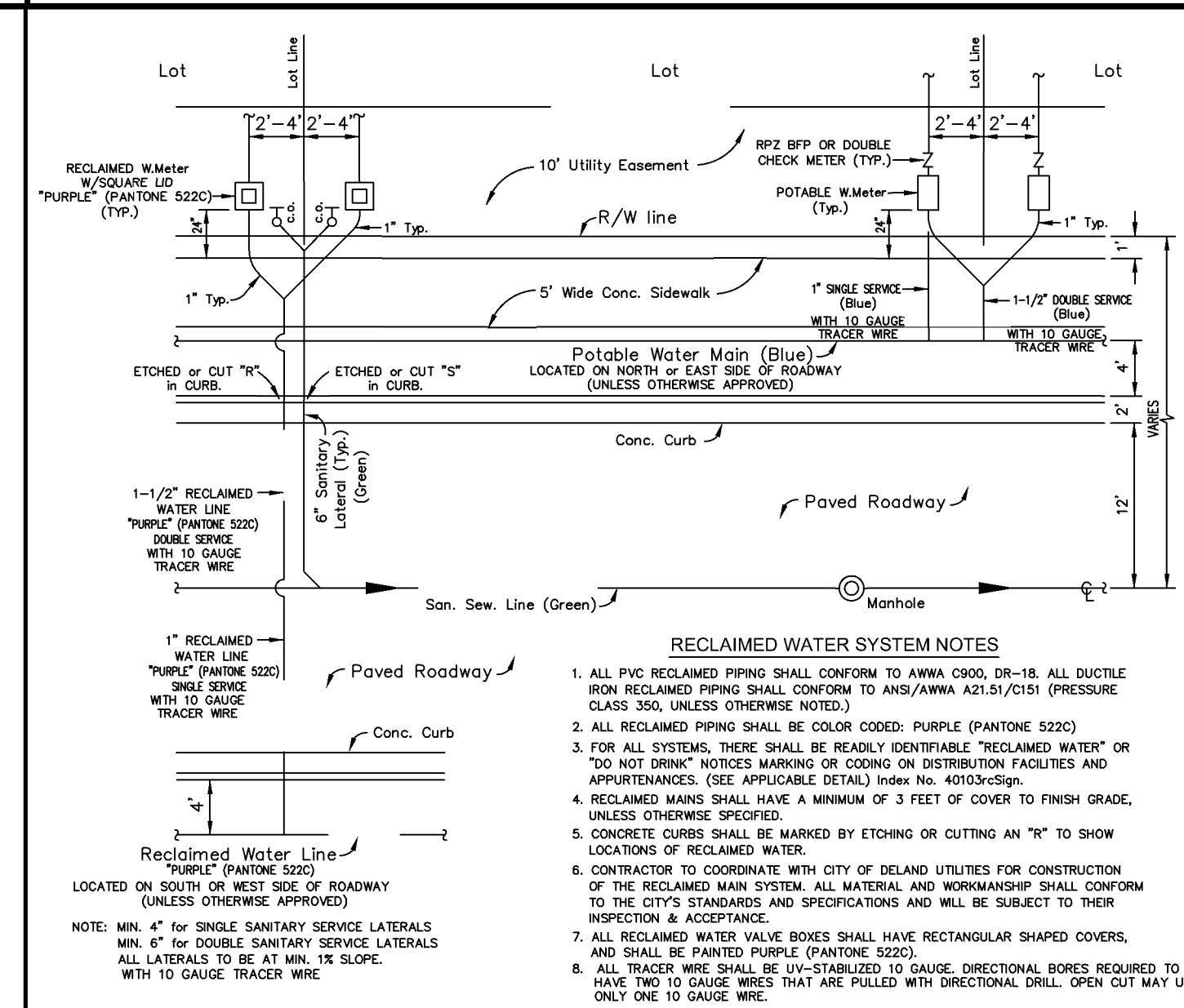
DATE: 11/05/2021 **NEW REUSE SERVICE WHIP** **R426**
City of DeLand - Standard Details



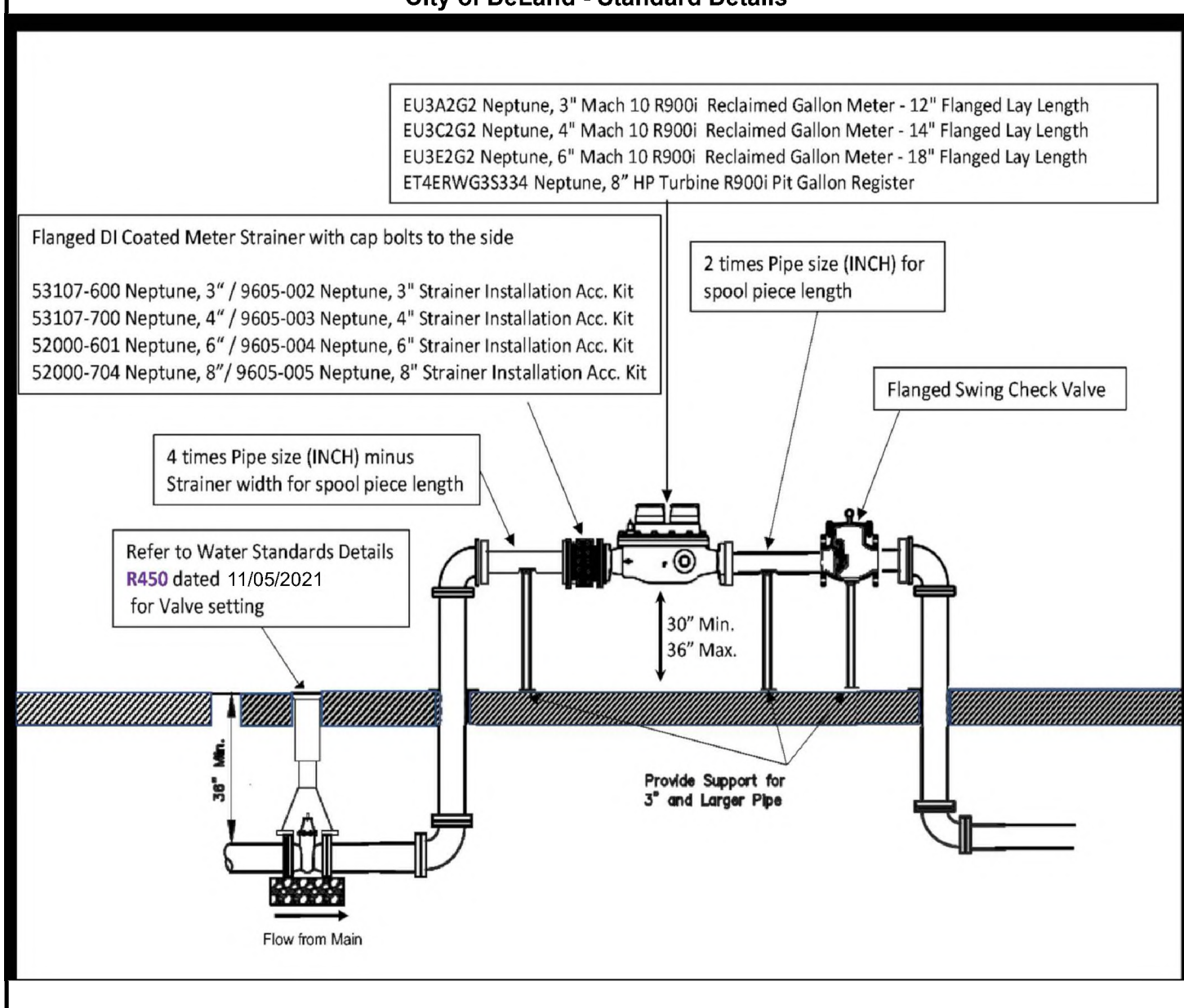
DATE: 11/05/2021 **RECLAIMED WATER VALVE SETTING** **R450**
City of DeLand - Standard Details



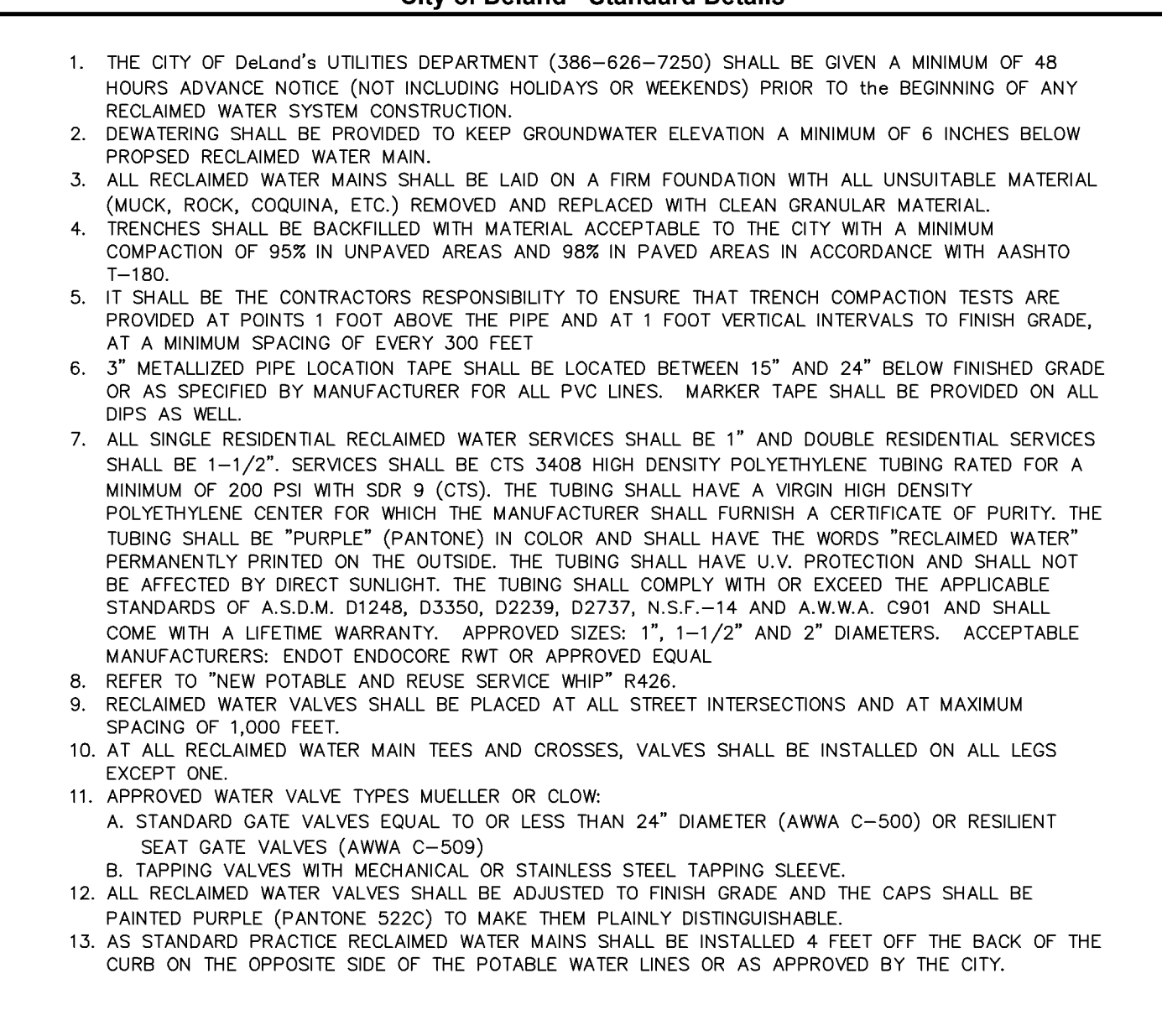
DATE: 11/05/2021 **RECLAIMED WATER SIGNAGE** **R451**
City of DeLand - Standard Details



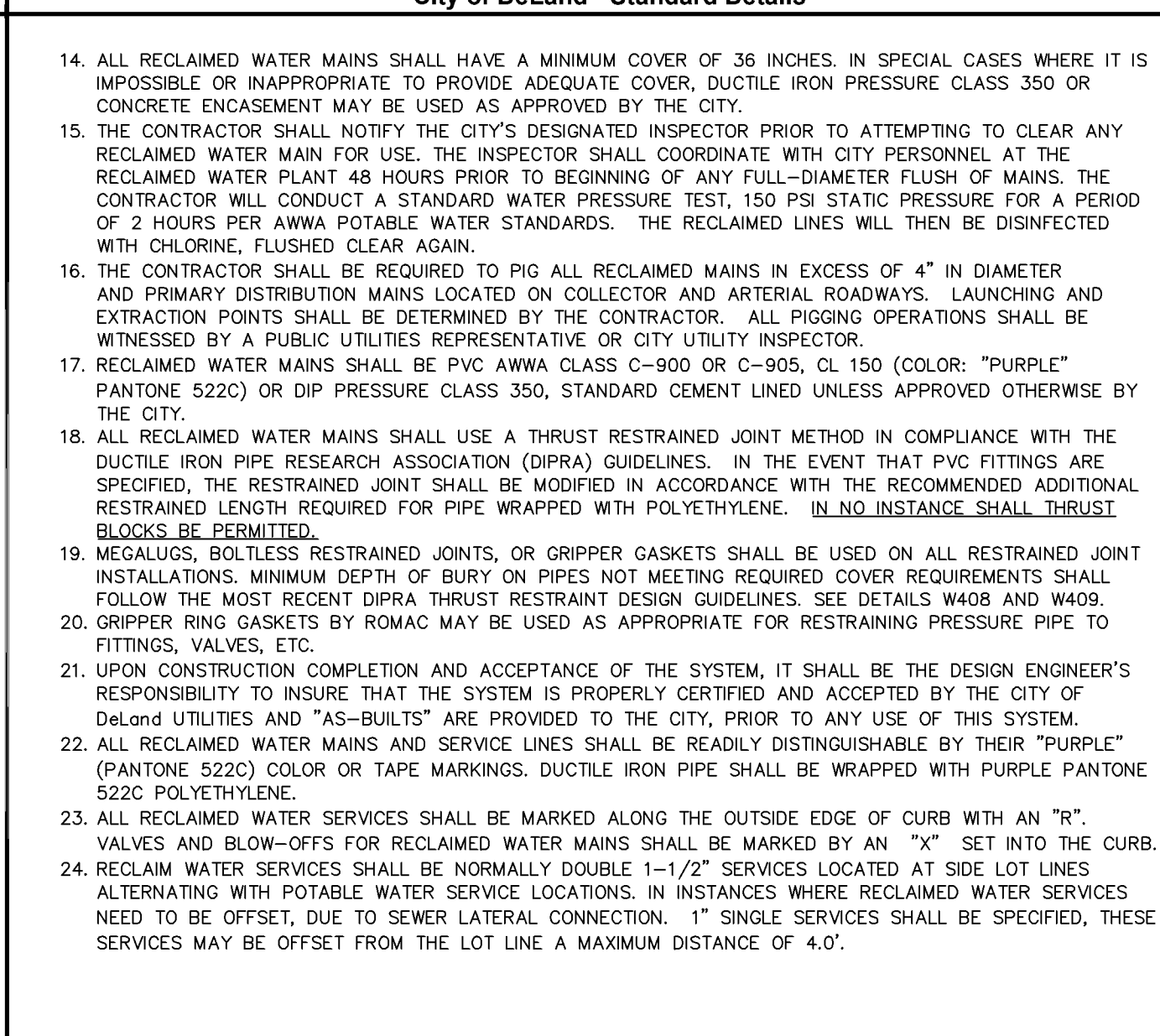
DATE: 11/05/2021 **RECLAIMED WATER SYSTEM LAYOUT** **R452**
City of DeLand - Standard Details



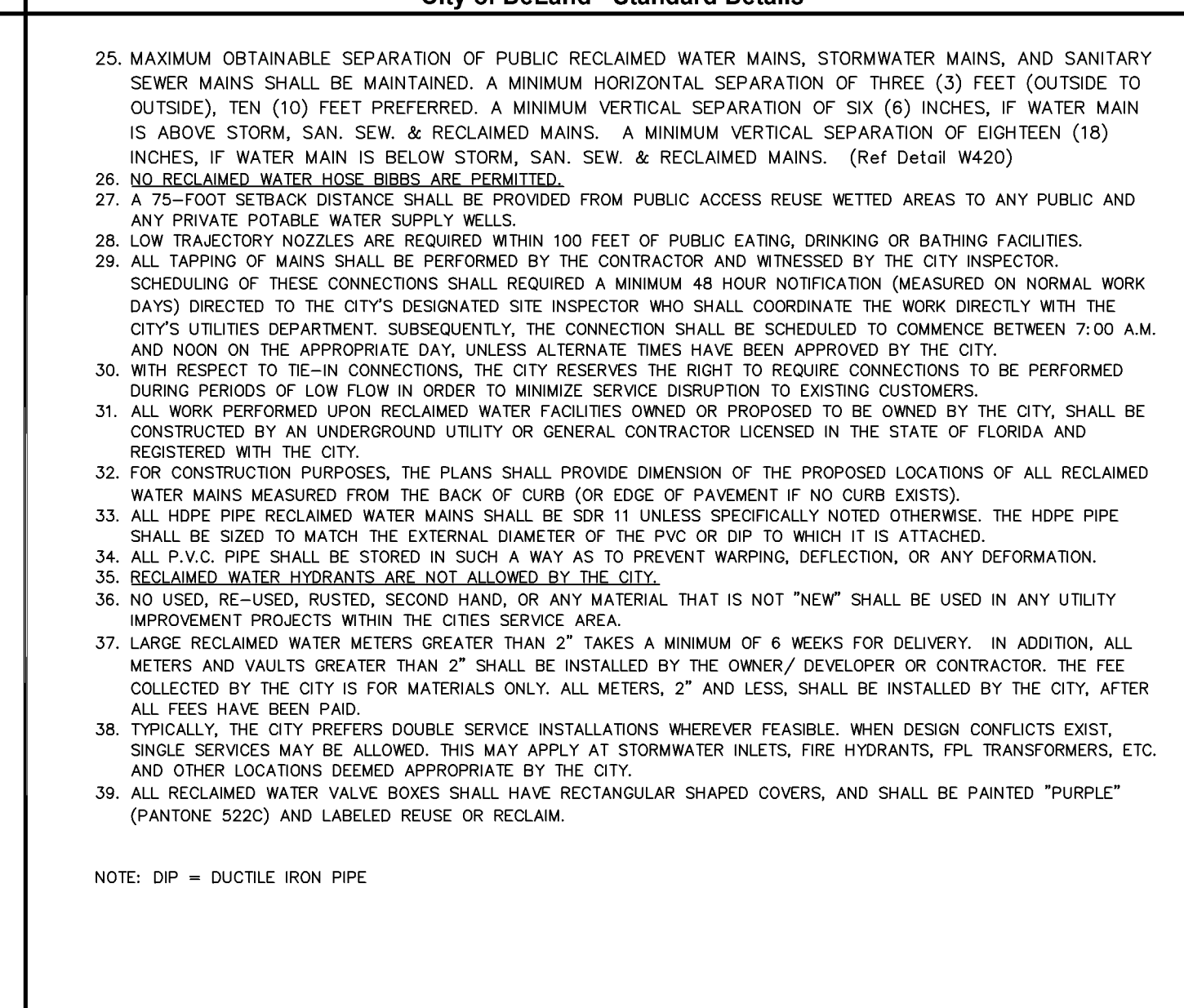
DATE: 11/05/2021 **3\"/>**



DATE: 11/05/2021 **RECLAIMED WATER NOTES - 1 OF 3** **R460**
City of DeLand - Standard Details



DATE: 11/05/2021 **RECLAIMED WATER NOTES - 2 OF 3** **R461**
City of DeLand - Standard Details



DATE: 11/05/2021 **RECLAIMED WATER NOTES - 3 OF 3** **R462**
City of DeLand - Standard Details

CITY OF DELAND, FLORIDA
1102 S. GARFIELD AVENUE, DELAND, FLORIDA 32724

TITLE:

drive letter/details locations

FILE:

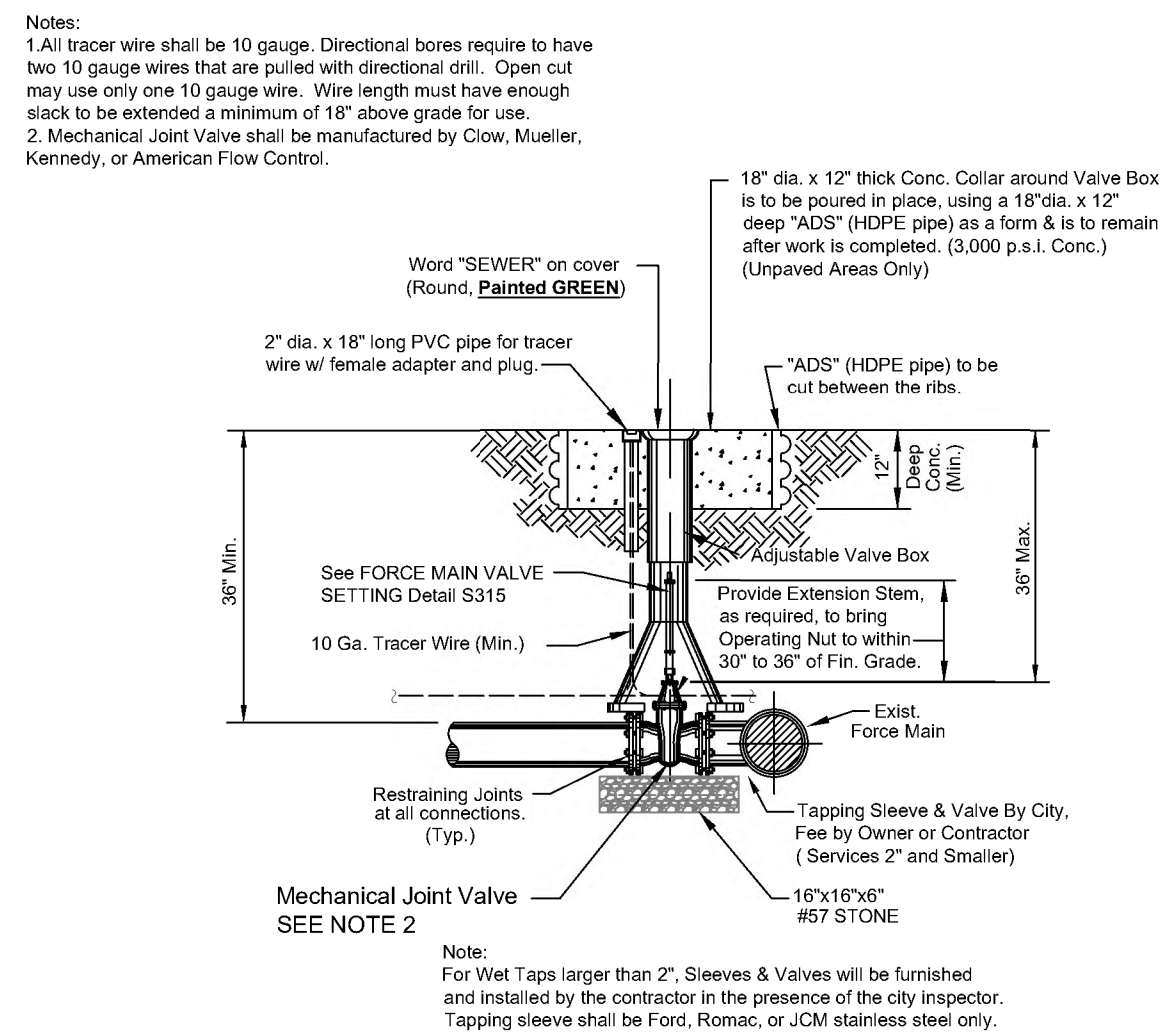
SCALE: NOT TO SCALE

DRAWN BY: ERIC SAMPSON

CHECKED BY: NAME

DATE: 11/05/2021

DATE: 11/05/2021



DATE: 11/05/2021	FORCE MAIN TAPPING SLEEVE & VALVE	S407
City of DeLand - Standard Details		

CITY OF DELAND, FLORIDA
1102 S. GARFIELD AVENUE, DELAND, FLORIDA 32724

DATE: 11/05/2021

CHECKED BY: NAME

SCALE: NOT TO SCALE

DRAWN BY: ERIC SAMPSON

SANITARY DETAILS

TITLE:

PAGE 1 OF 5

FILE: drive letter/details locations

5/8" Min. 4 Required		Minimum Weight 6" 150 lbs.		Minimum Weight 128 lbs.	
NOTE: Manufacturers model of storm ring and cover to be approved by City Engineer.					
DATE: 11/05/2021		SANITARY MANHOLE COVER - USF 170-E		S301	
City of DeLand - Standard Details					
CURB (SEE NOTE 4)		TEMP PLUG (TYP.) (SEE NOTES 2 AND 5)		TEMP PLUG (TYP.) (SEE NOTES 2 AND 5)	
NOTE: 1. INVERT OF SERVICE LATERAL MUST BE ABOVE SPRING LINE. 2. SERVICE LATERAL SHALL BE CAPPED BY THE CONTRACTOR. 3. WYE SHALL BE NO SHALLOWER THAN 3 FEET AND NO DEEPER THAN 5 FEET. 4. CUT OR CAST "S" IN CONCRETE CURB AT SEWER LATERAL LOCATION AND PAINT GREEN. 5. PLUMBER SHALL REMOVE PLUG, INSTALL CLEAN-OUT, AND CONNECT SERVICE LATERAL TO HOUSE.					
DATE: 11/05/2021		SANITARY SERVICE LATERALS		S305	
City of DeLand - Standard Details					
SEWER MAIN		SEWER MAIN		SEWER MAIN	
NOTE: 1. DOGHOUSE OPENING MAY ONLY BE USED WHEN PLACING A NEW MANHOLE OVER AN EXISTING LINE; OTHERWISE, THE OPENING MUST BE CAST. SIZE, LOCATION AND ANGLE OF ENTRY SHOULD BE AS REQUIRED BY THE PLANS. 2. OPENINGS IN PRE-CAST UNITS ARE TO BE 4" MINIMUM TO 8" MAXIMUM LARGER THAN THE OUTSIDE DIAMETER OF THE PROPOSED PIPE. 3. MANHOLE COVERS TYPICAL FOR ALL FRAME TYPES. 4. WRAPID SEAL MUST BE USED ON ALL JOINTS, CASTINGS AND RISER RINGS: ON ALL JOINTS ON ROUND AIR RELEASE AND ROUND MANHOLE STRUCTURES. 5. WRAPID SEAL MUST BE USED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. 6. MAX. MANHOLE DEPTH SHALL BE 15' TO LOWEST PIPE INVERT. 7. MANHOLES SHALL HAVE AN INTERIOR AND EXTERIOR COATING OF AT LEAST 15 MILS DRY THICKNESS PROLO EP214-351 EPOXI-MASTIC OR KOPPERS BITUMASTIC BLACK SOLUTION 300M. 8. POLYMER CONCRETE MANHOLES ARE ACCEPTED UPON REVIEW AND APPROVAL BY THE CITY OF DELAND ENGINEERING DEPT.					
DATE: 11/05/2021		DOGHOUSE MANHOLE		S309	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		FORCE MAIN TO GRAVITY SEWER CONNECTION		S306	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		FORCE MAIN VALVE SETTING		S315	
City of Deland - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		POLY PIG LAUNCHER		S310	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City of DeLand - Standard Details					
SEWER		SEWER		SEWER	
NOTE: 1. All tracer wire shall be 10 gauge. Directional bores require to have two 10 gauge wires that are pulled with directional drill. Open cut may use only one 10 gauge wire. Wire length must have enough slack to be extended a minimum of 18" above grade for use. 2. Mechanical Joint Valve shall be manufactured by Clow, Mueller, Kennedy, or American Flow Control.					
DATE: 11/05/2021		OFFSET AIR RELEASE VALVE		S311	
City					

SPARE PARTS

1. VACUUM PUMP AND FLOAT CHECK VALVE
2. CHECK VALVE
3. CW OR CCW IMPELLER
4. PARKER SOLENOID VALVE (25 PSI)
5. MECHANICAL SEAL
6. SONIC START VACUUM DOME HOUSING
7. SONIC START REPLACEMENT PRIME SENSOR

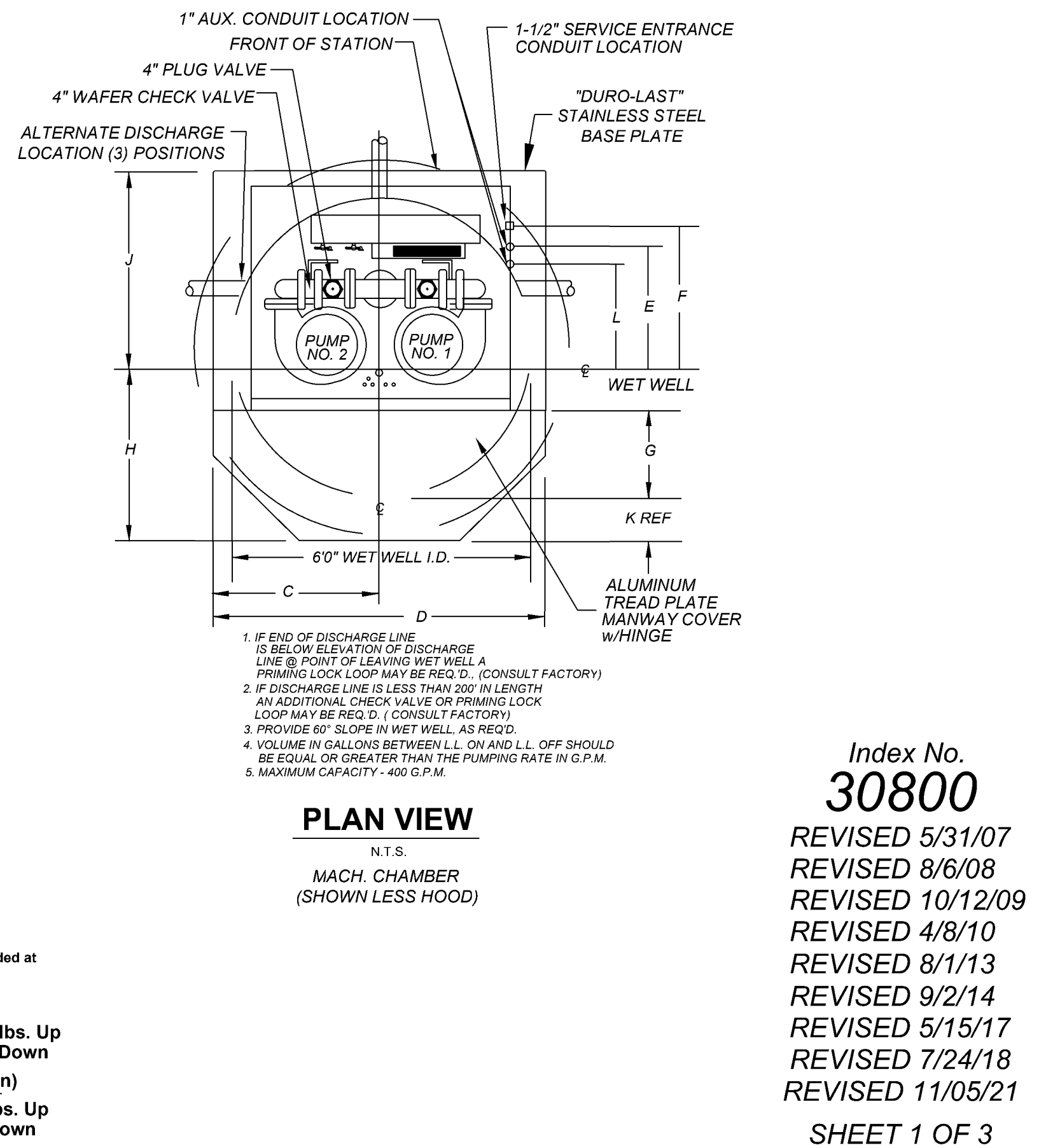
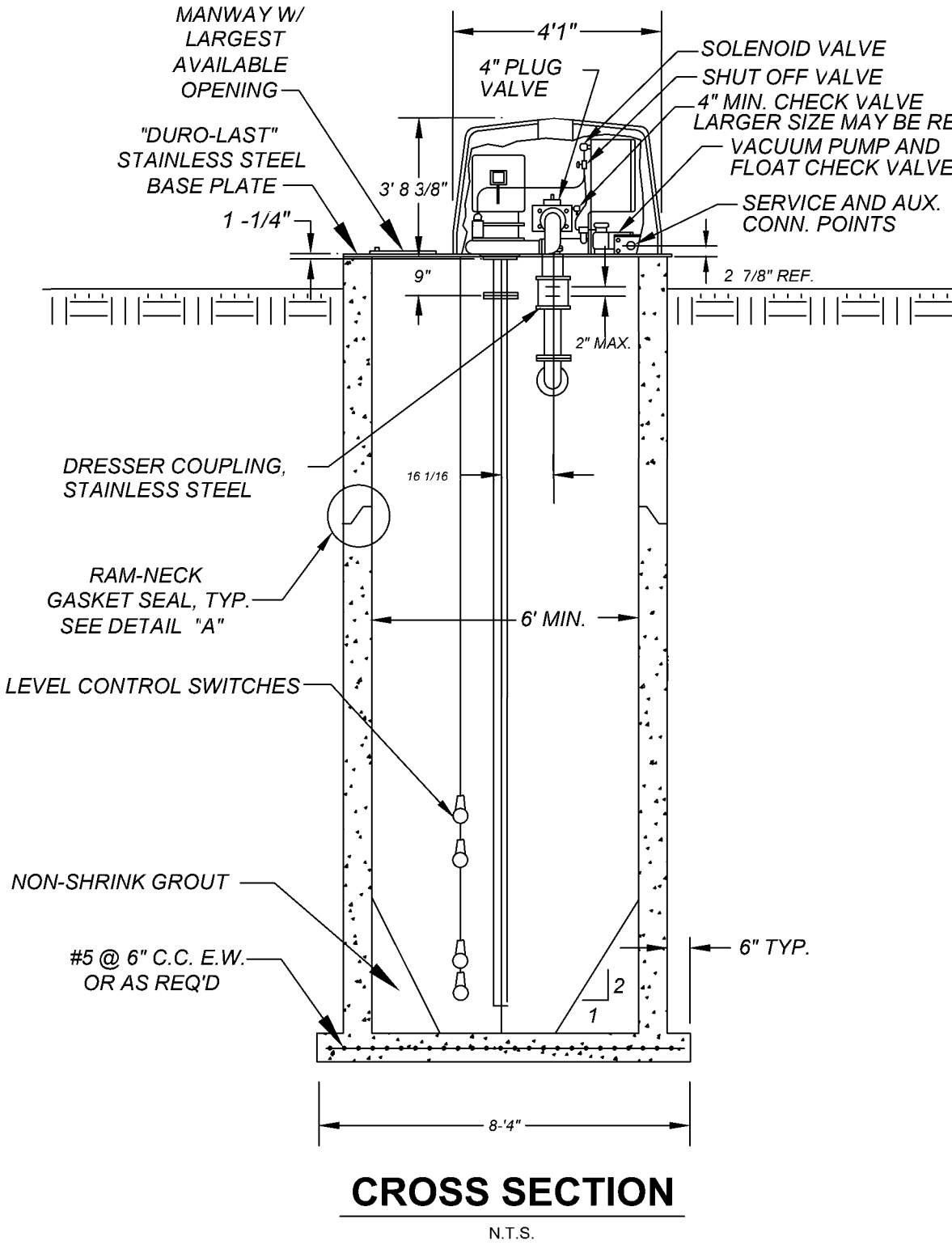
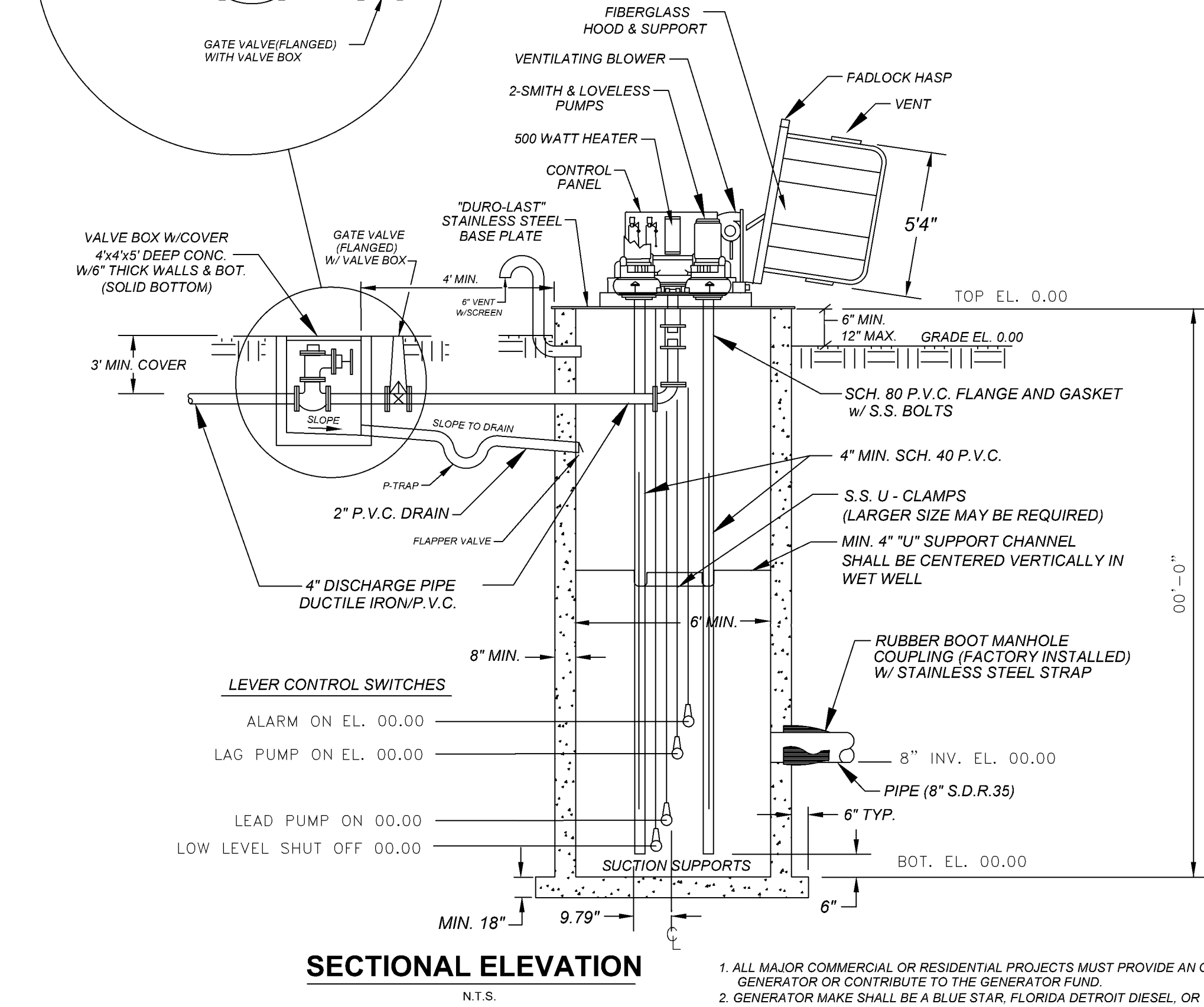
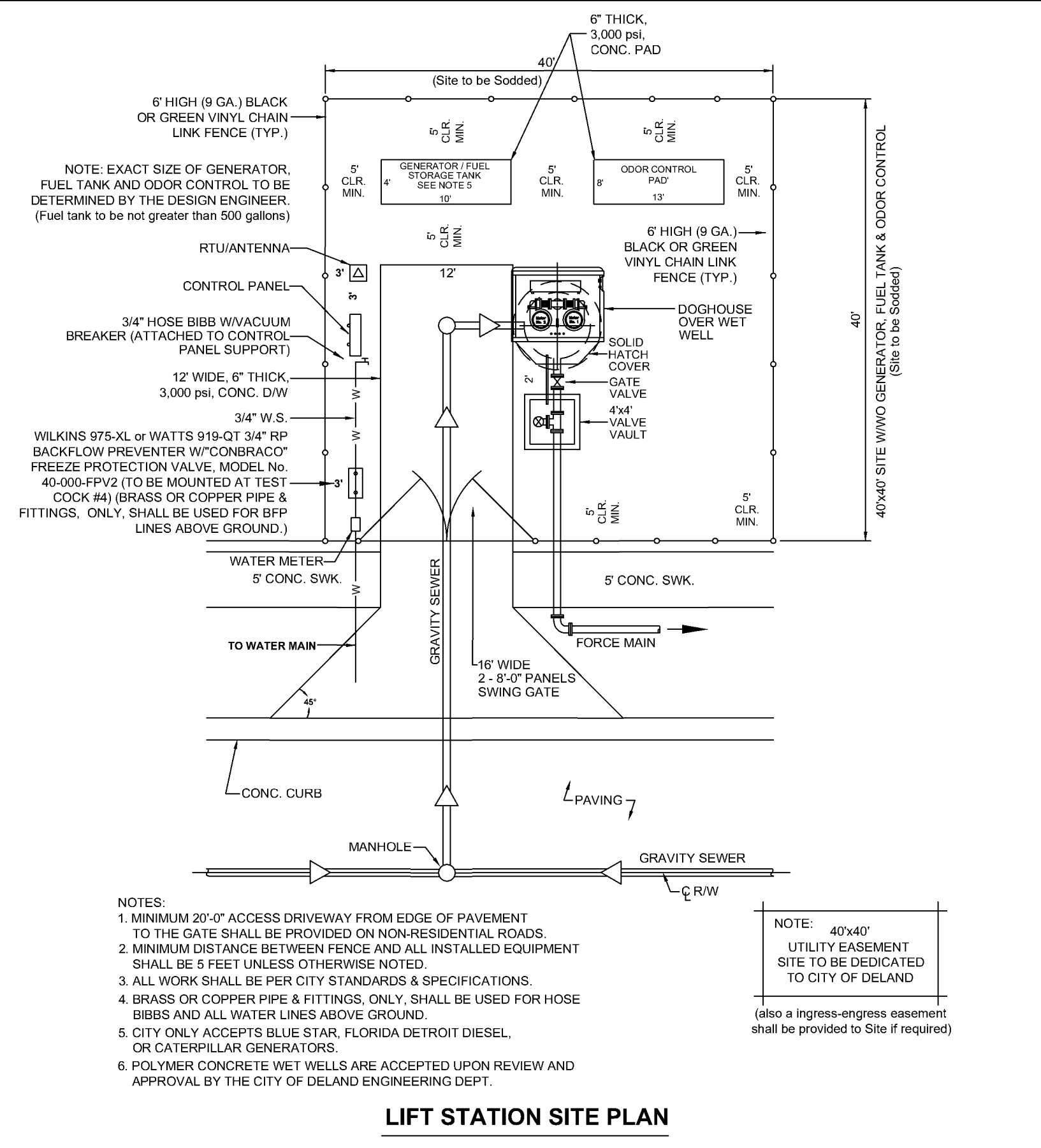
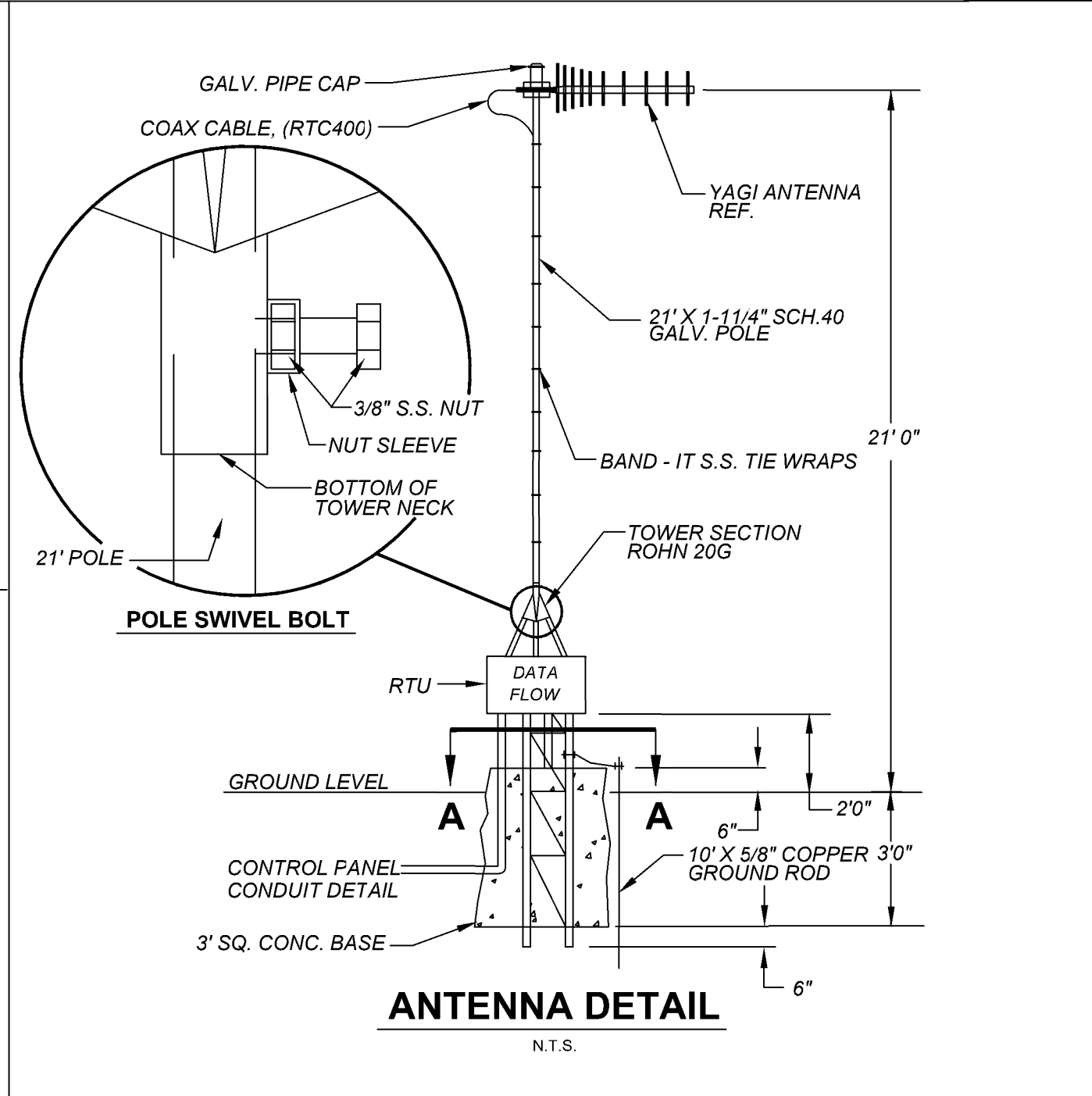
MOTORS:

THE PUMP MOTORS SHALL BE VERTICAL, SOLID SHAFT, NEMA B-FASE, SQUIRREL-CAGE INDUCTION TYPE, SUITABLE FOR 3 PHASE, 60 CYCLE, 480 VOLT ELECTRIC CURRENT. THEY SHALL HAVE CLASS F INSULATION. INSULATION TEMPERATURE SHALL, HOWEVER, BE LIMITED TO CLASS B. THE MOTORS SHALL HAVE NORMAL STARTING TORQUE AND LOW-STARTING CURRENT, AS SPECIFIED BY NEWMAN DESIGN B CHARACTERISTICS. THEY SHALL BE OPEN DRIP-PROOF DESIGN WITH FORCED AIR CIRCULATION BY INTEGRAL FAN. OPENINGS FOR VENTILATION SHALL BE UNIFORMLY SPACED AROUND THE FRAME. LEADS SHALL BE TERMINATED IN CAST CONNECTION BOX AND SHALL BE CLEARLY IDENTIFIED.

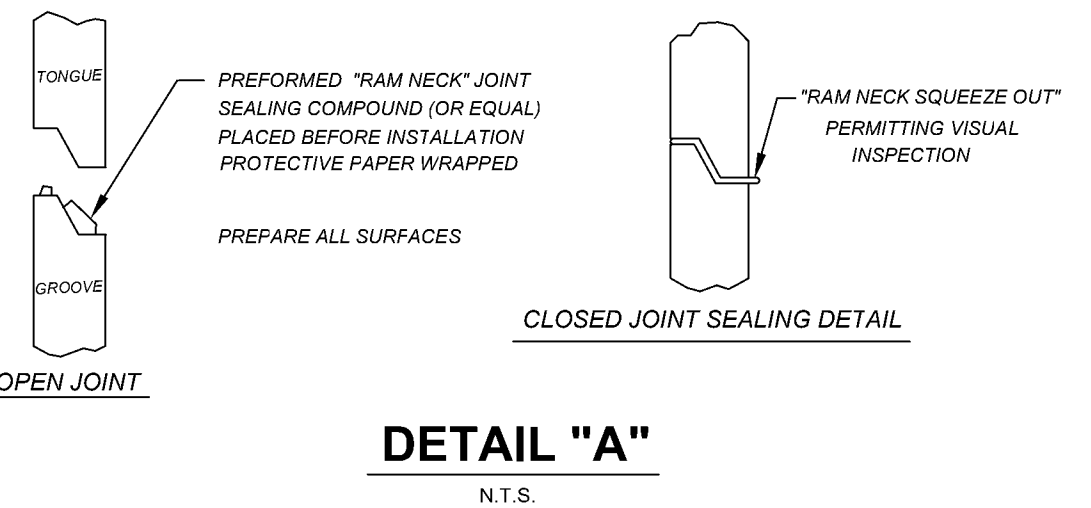
THE MOTORS SHALL HAVE 1.15 SERVICE FACTOR. THE SERVICE FACTOR SHALL BE RESERVED THE OWNER'S PROTECTION. THE MOTORS SHALL NOT BE OVERLOADED BEYOND THEIR NAMEPLATE RATING AT THE DESIGN CONDITIONS, NOR AT ANY HEAD IN THE OPERATING RANGE AS SPECIFIED UNDER OPERATING CONDITIONS.

THE MOTOR-PUMP SHAFT SHALL BE CENTERED, IN RELATION TO THE MOTOR BASE, WITHIN 0.005". THE SHAFT RIBOUT SHALL NOT EXCEED 0.003".

THE MOTORS SHAFT SHALL BE EQUAL OR EXCEED THE DIAMETER SPECIFIED UNDER MAIN PUMPS AT ALL POINTS FROM IMMEDIATELY BELOW THE TOP BEARING TO THE TOP OF THE IMPELLER HUB. A BEARING CAP SHALL BE PROVIDED TO HOLD THE BOTTOM MOTOR BEARING IN A FIXED POSITION WITHIN THE IMPELLER HUB. THE IMPELLER HUB SHALL BE PROVIDED WITH LUBRICATION AS WELL AS PURGING OIL LUBRICANT. THE MOTORS SHALL BE FITTED WITH HEAVY LIFTING EYES OR LUGS, EACH CAPABLE OF SUPPORTING THE ENTIRE WEIGHT OF THE PUMP AND MOTOR.



WET WELL DIA.	DIM "A"	DIM "B"	DIM "C"	DIM "D"	DIM "E"	DIM "F"	DIM "G"	DIM "H"	DIM "J"	DIM "K"	DIM "L"
6'-0"	2"	1'-1 13/16"	3'-4"	6'-8"	2'-1 3/8"	2'-5 7/8"	1'-8"	3'-10"	3'-5 1/2"	10"	1'-8 7/8"



Wet Well (Anti-Floation)
Displacement = XX,XXX lbs. Up
Structure = XX,XXX lbs. Down

Valve Vault (Anti-Floation)
Displacement = X,XXX lbs. Up
Structure = X,XXX lbs. Down

1. BACKFLOW PREVENTER SHALL BE, WILKINS 34" 975-LX RP OR WATTS 34" 919-QT RP, W/ "CONBRACO" FREEZE PROTECTION VALVE, MODEL NO. 40-000-FPV2, TO BE MOUNTED AT TEST COCK #4.
2. ALL 34" HOSE BIBBS SHALL ALSO HAVE A VACUUM BREAKER.
3. LIFT STATION SITE SHALL BE SODDED.
4. PRIOR TO ACCEPTANCE OF THIS LIFT STATION, CITY STAFF WILL OBSERVE THAT THIS STATION IS LIFTED DOWN TO THE CITY'S SPECIFIED CURB OR FLOW LEVEL UNDER THE CONDITIONS OF A FULL DISCHARGE PRESSURE SEWER, BEING PRESSURIZED W/ ALL OTHER PUMP STATIONS OPERATING, IF THERE EXISTS A MANIFOLD CONDITION. THE DEVELOPER WILL SUPPLY LABOR AND MATERIALS FOR THIS DEMONSTRATION.
5. NO NOISE TRAILERS OR OTHER EQUIPMENT WITHIN THE DESIGNATED EASEMENT THAT WILL IMPEDE MAINTENANCE ACTIVITIES OF THIS STATION.
6. ORIENTATE THE MANWAY TOWARD THE STREET SIDE FOR EASY ACCESS BY OPERATING & MAINTENANCE PERSONNEL.
7. PROVIDE ADEQUATE PAVING (CONC. OR ASPHALT) 12' WIDE DRIVE FROM STREET TO PUMP STATION FOR SAFE ACCESS OF EMERGENCY GENERATOR, SEWER CLEANER, AND OTHER MAINTENANCE VEHICLES.
8. FENCE WITH 6' HIGH COMMERCIAL GRADE CYCLONE FENCE, USING TWO 4' FOOT GATES. FENCE SHOULD BE LOCATED AT LEAST 4' AWAY AS NOT TO INTERFERE WITH ANY PANEL DOORS OR HATCH OPENINGS, AND GATE POSITIONED TO ALLOW EASY ACCESS TO GET WELL. (BLACK OR GREEN VINYL COATED), (REFER TO SITE PLAN FOR LOCATION).
9. A 40' X 40' TRACT SHALL BE DEDICATED TO THE CITY OF DELAND FOR THE LIFT STATION SITE.
10. PROVIDE "DURU-LAST" STAINLESS STEEL BASE PLATE ON LIFT STATION.
11. BRASS OR COPPER PIPE & FITTINGS, ONLY, SHALL BE USED FOR BFP & HOSE BIBBS AND TO BE LOCATED ABOVE GROUND.
12. ALL SEWER AIR RELEASE VALVES SHALL BE 2" A.R.I. MODEL D-025TP02.
13. MIN. 2'x2' AROUND AND 6' CLEARANCE ABOVE METER

CONTROLS:

THE CONTROL EQUIPMENT SHALL BE MOUNTED IN A NEMA TYPE 1 STEEL ENCLOSURE WITH A 1/2" MINIMUM CLEARANCE ABOVE THE CIRCUIT BREAKERS, STARTER RELEASER BUTTONS, AND CIRCUIT SWITCHES SHALL BE OPERABLE WITHOUT REMOVING THE ACCESS COVER, FOR DEADFRONT OPERATION.

A GFCI TYPE CONVENIENCE OUTLET SHALL BE PROVIDED ON THE SIDE OF THE CABINET FOR THE CONNECTION OF THE THERMAL MAGNETIC AIR CIRCUIT BREAKERS SHALL BE PROVIDED FOR BRANCH DISCONNECT SERVICE AND SHORT CIRCUIT PROTECTION OF ALL MOTOR CONTROL AND AUXILIARY CIRCUITS.

MAGNETIC ACROSS-THE-LINE STARTERS WITH UNDER-VOLTAGE RELEASE AND OVERLOAD PROTECTION SHALL BE PROVIDED FOR EACH PUMP MOTOR TO GIVE POSITIVE PROTECTION EACH SINGLE-PHASE AUXILIARY MOTOR SHALL BE EQUIPPED WITH AN OVER-CURRENT PROTECTION DEVICE IN ADDITION TO THE BRANCH CIRCUIT BREAKER, OR SHALL BE IMPEDANCE PROTECTED. ALL SWITCHES SHALL BE LABELED AND A CODED WIRING DIAGRAM SHALL BE PROVIDED.

TO CONTROL THE OPERATION OF THE PUMPS WITH VARIATIONS OF LIQUID LEVEL IN THE WET WELL, A MINIMUM OF FOUR (4) DISPLACEMENT SWITCHES SHALL BE PROVIDED. A 30°C CORD SHALL BE PROVIDED WITH EACH SWITCH. THE CORD SHALL HAVE A CORROSION-RESISTANT PLASTIC OR RUBBER COATING. A STARTER/STOP SWITCH SHALL BE PROVIDED FOR AN AUTOMATIC ALTERNATOR WITH MANUAL SWITCH SHALL BE PROVIDED TO CHANGE THE SEQUENCE OF OPERATION OF THE PUMPS EVERY EIGHT HOURS. ALTERNATING THE PUMPS AT LESS THAN EIGHT HOUR INTERVALS WILL NOT BE ACCEPTABLE. PROVISIONS SHALL ALSO BE MADE TO OPERATE THE PUMPS MANUALLY IN THE EVENT OF FAILURE OF THE WET WELL CONTINUE TO RISE ABOVE THE STARTING LEVEL FOR THE LAG PUMP.

City of DeLand, Engineering Services 1102 S. Garfield Avenue, DeLand, Florida 32724	SCALE: NOT TO SCALE	DATE: 11/05/2021
	DRAWN BY: ERIC SAMPSON	CHECKED BY:
		

SANITARY LIFT STATION

FILE: *LIFTSTATION.dwg*



DATE: 11/05/2021

CHECKED BY:

SCALE: NOT TO SCALE

DRAWN BY: *ERIC SAMPSON*

SANITARY LIFT STATION

TITLE:

FILE: LIFT STATION DETAILS A B.dwg

PAGE 4 OF 5

Diagram illustrating the components and assembly of a generator transfer panel, including labels for various parts and materials:

- 200 AMP 3-PHASE 4-WIRE LEVER BY-PASS 7-JAW METER CAN MANUFACTURED FROM UNPAINTED BRUSHED ALUMINUM
- 2" PVC THREADED PIPE CAP
- 2" RIGID STEEL CONDUIT SUPPORT RISERS
- 2" RIGID STAINLESS STEEL CONDUIT STRAPS WITH STAINLESS STEEL HARDWARE
- STAINLESS STEEL STRUT 1-1/2" X 1-1/2"
- WHITE RUBBER CAPS 1-1/2" SQUARE 1" DEEP TYPICAL ON SIX ENDS
- 2" PVC SCH 40 CONDUIT (SEE CHART BELOW FOR WIRE SIZE) - TO DUKE POWER TERMINAL BOX
- 1/2" SCH 40 PVC CONDUIT WITH 1-#4 BARE SOLID COPPER GROUND WIRE INSTALL TWO 5/8" X 8 FT GALVANIZED GROUND RODS SPACED AT 10 FOOT SEPARATION
- SEE SIZE CHART BELOW - TO SMITH LOVELESS LIFT STATION
- 1" PVC SCH 40 CONDUIT WITH 7-#14 THIN STRANDED CONTROL WIRES
- STAINLESS STEEL NEMA 4X 250 VOLT (SEE SIZE CHART BELOW) FUSED DISCONNECT PROVIDE NEUTRAL KIT
- STAINLESS STEEL MANUAL TRANSFER PANEL NEMA 4X CUSTOM BUILT 24" WIDE 30" HIGH 10" DEEP WITH TWO 3-POLE (SEE SIZE CHART BELOW) CIRCUIT BREAKERS INSTALL A MECHANICAL INTERLOCK TO PREVENT BOTH BREAKERS FROM CLOSING SIMULTANEOUSLY. SEE DETAILED NOTES AND DRAWINGS FOR ALL COMPONENTS AND WIRING DIAGRAMS
- LIGHTNING ARRESTOR, SEE NOTE 7
- LED LIGHT FIXTURE 14 WATT 5 KELVIN MOUNTED WITH 1/2" RIGID CONDUIT STEM
- 2" SUPPITER WITH 1/2" THREADED HUB TOP TO BE USED FOR MOUNTING LIGHT FIXTURE
- NOTE: WATCH FOR THE POSITION OF GENERATOR HUB, IT NEEDS TO BE PLACED TOWARD THE FRONT OF THE PANEL.
- 100 LBS OF READY TO MIX CONCRETE MIXED ON-SITE AND POURED INTO EXCAVATED HOLES 10" TO 12" ROUND 30" DEEP BRACE CONDUIT TO REMAIN PLUMB WHILE CONCRETE SETS UP

2" PVC THREADED PIPE CAP

2" RIGID STEEL CONDUIT SUPPORT RISERS

2" RIGID STAINLESS STEEL CONDUIT STRAPS WITH STAINLESS STEEL HARDWARE

WHITE RUBBER CAPS
1-1/2" SQUARE 1" DEEP
TYPICAL ON SIX ENDS

88" CENTER TO CENTER

STAINLESS STEEL STRUT 1-1/2" X 1-1/2"

CUSTOM ALUMINUM ANGLE BRACKETS
MADE FROM 1/8" FLAT STOCK
SIZE 1-1/2" WIDE
BY 8" LONG
BENT AT 4" TO FORM
90 DEGREE ANGLE FASTENED
WITH 1/4" STAINLESS STEEL HARDWARE

31" CENTER TO CENTER

20" CENTER TO CENTER

94" END TO END

2" SUPPLIFTER WITH 1/2" THREADED HUB TOP
TO BE USED FOR MOUNTING LIGHT FIXTURE

STAINLESS STEEL STRUT 1-1/2" X 1-1/2"

CUSTOM MADE ALUMINUM 1/8" PLATE
6"X9.5" MOUNT ON STRUT WITH
STAINLESS STEEL INSERT NUTS AND BOLTS
THIS BRACKET IS FOR MOUNTING DISCONNECT

100 LBS OF READY TO MIX CONCRETE
MIXED ON-SITE AND POURED INTO
EXCAVATED HOLES
10" TO 12" ROUND 30" DEEP
BRACE CONDUIT TO REMAIN PLUMB
WHILE CONCRETE SETS UP

CONTROL GENERATOR RECEPTACLE PANEL

- ENCLOSURE ; NEMA 4X STAINLESS, 304 GRADE, 1/4 GAUGE, GASKETED, #4 BRUSHED FINISH, U.L. AND CSA APPROVED, HASP AND STAPLE FOR PADLOCKING, INSIDE PRINT POCKET, STAINLESS STEEL HINGE, MIN. SIZE 24" x 24" x 8" FOR UP TO 15 H.P.
2. MAIN BREAKER: SQUARE D HEAVY DUTY SIZED PROPERLY FOR FULL LOAD OF STATION PLUS 25%.
3. EMERGENCY BKR: SQUARE D HEAVY DUTY SIZED PROPERLY FOR FULL LOAD OF STATION PLUS 25%.
4. MECH. INTERLOCK: ALL ALUMINUM AND STAINLESS STEEL W/POSITIVE MEANS OF LOCKING OFF BREAKER NOT IN USE. THE BREAKERS WILL PROTRUDE THROUGH INNER DOOR.
5. RECEPTACLE: RUSSELL STOLL JRS1044FR (230 VOLT ONLY), MELTRIC PART #37-98047 (480 VOLT ONLY)
6. ANGLE ADAPTER: RUSSELL STOLL JA-1A-10, 20 DEG. ADAPTER
7. LIGHTNING ARRESTOR: HEAVY DUTY, SQUARE D P/N SDSA3650
8. PHASE MONITOR: DIVERSIFIED P/N SLA-230-ASA, 8 PIN WITH N.O. AND N.C. CONTACTS WIRE TO TERMINAL FOR RTU EQUIPMENT.
9. HIGH WATER ALARM: RED, LEXAN, W/NO EXTERNAL SCREWS
10. HYVA RELAY: SQUARE D OR OMRON, 8 PIN DOUBLE POLE, DOUBLE THROW WIRED TO RTU TERMINAL.
11. ALARM HORN: RED, WHEELOCK P/N 31T-115 MOUNTED TO RED WEATHER PROOF CAST BOX ON EXTERIOR OF ENCLOSURE.
12. ALARM RELAY: SQUARE D OR OMRON, 8 PIN DOUBLE POLE, DOUBLE THROW WIRED TO RTU TERMINAL.
13. ALARM RESET: SIL. SQUARE D, WEATHER PROOF MOUNTED ON EXTERIOR OF ENCLOSURE.
14. ENCL. BACKPLATE: ALUMINUM 1/2 GAUGE
15. TERMINAL STRIP: BUCHANON P/N 0625
16. GROUND LUG: BUCHANON P/N 824
17. NEUTRAL LUG: BUCHANON P/N 824
18. MAIN LOAD LUG: SQUARE D P/N U3
19. LABELS: ALL BREAKERS AND SWITCHES TO BE IDENTIFIED BY PERMANENTLY ATTACHED LABEL TO PANEL DOOR INTERIOR
20. MOUNTING SCREWS: STAINLESS STEEL 304
21. CHEMICAL DVG: PROTECTED BY PLASTIC COATINGS AND ATTACHED TO PANEL DOOR INTERIOR.
22. MANUFACTURER: STACON, ECS OR CITY OF DELAND APPROVAL
23. R.T.U.: (DATA FLOW MELBOURNE FLA. (R.T.U. 204) OR EQUAL TO BE INSTALLED BY CITY- DEVELOPER TO BEAR ALL COSTS.
24. PROVIDE SPARE PARTS - SEE SPARE PARTS LIST
25. WE WILL BE COATED INSIDE AND OUT WITH MIN. 24 MILS OF COAL/TAR EPOXY
26. EQUIVARIANT PRODUCTS CAN ONLY BE APPROVED UPON RECEIPT OF WRITTEN AUTHORIZATION FROM THE CITY OF DELAND.

2" PVC THREADED PIPE CAP

110" CENTER TO CENTER

2" SUPPLIER WITH 1/2" THREADED HUB TOP TO BE USED FOR MOUNTING LIGHT FIXTURE

STAINLESS STEEL STRUT 1-1/2" X 1-1/2"

CUSTOM ALUMINUM ANGLE BRACKETS MADE FROM 1/8" PLAT STOCK SIZE 1-1/2" WIDE BY 6" LONG BENT AT 4" TO FORM 90 DEGREE ANGLE FASTENED WITH 1/4" STAINLESS STEEL HARDWARE

2" RIGID STEEL CONDUIT SUPPORT RISERS

2" RIGID STAINLESS STEEL CONDUIT STRAPS WITH STAINLESS STEEL HARDWARE

CUSTOM MADE ALUMINUM 1/8" PLATE 20"x6" MOUNT ON STRUT WITH STAINLESS STEEL 1/4" INSERT NUTS AND BOLTS THIS BRACKET IS FOR MOUNTING ATS

31" CENTER TO CENTER (WHEN MANUAL TRANSFER PANEL IS 24"x24" THIS DIMENSION IS 25-1/4", WHEN IT IS 24"x30" THIS DIMENSION IS 31")

20" CENTER TO CENTER

8.5"

CUSTOM MADE ALUMINUM 1/8" PLATE 6"x9.5" MOUNT ON STRUT WITH STAINLESS STEEL INSERT NUTS AND BOLTS THIS BRACKET IS FOR MOUNTING DISCONNECT

STAINLESS STEEL STRUT 1-1/2" X 1-1/2"

120" END TO END

WHITE RUBBER CAPS 1-1/2" SQUARE 1" DEEP TYPICAL ON SIX ENDS

100 LBS OF READY TO MIX CONCRETE MIXED ON-SITE AND POURED INTO EXCAVATED HOLES 10' TO 12' ROUND 30" DEEP BRACE CONDUIT TO REMAIN PLUMB WHILE CONCRETE SETS UP

SIZE CHART

STEP #1: DETERMINE LIFT STATION SIZE & SPECIFICATIONS FROM THE UTILITY CONTRACTOR OR CITY OF DELAND ENGINEERING DEPT.

STEP #2: MAKE NOTE OF THE FOLLOWING: THE VOLTAGE FOR THE STATION, THE NUMBER OF PUMPS (2 OR 3) & THE HORSEPOWER OF PUMPS

STEP #3: REFER TO THE ELECTRICAL SERVICE DATA CHARTS FOR THE STANDARD 2 PUMP OR 3 PUMP STATION (FOUND ON SHEET 3 OF 3).

STEP #4: USE THE VOLTAGE COLUMN AND THE HORSEPOWER ROW TO FIND THE TOTAL STATION FULL LOAD AMPS

STEP #5: UPON DETERMINING THE FULL LOAD AMPS OF THE STATION, THE SERVICE ENTRANCE SIZE SHALL NOT BE SMALLER THAN 100 AMPS.

STATIONS THAT REQUIRE A SERVICE SIZE LARGER THAN 100 AMPS SHALL BE SIZED CLOSEST TO THE STANDARD SIZES LISTED BELOW

SERVICE SIZE	CONDUIT SIZE	WIRE SIZE	BREAKER OR FUSE RATING
100 AMP	1-1/2"	#3 THHN CU	100 AMP
125 AMP	1-1/2"	#2 THHN CU	125 AMP
150 AMP	2"	#1 THHN CU	150 AMP
200 AMP	2"	3/0 THHN CU	200 AMP
225 AMP	2-1/2"	4/0 THHN CU	225 AMP

Index No.
30800
REVISED 11/05/21
SHEET 2 OF 3



CHECKED BY:

DRAWN BY: **ERIC SAMPSON**

SANITARY LIFT STATION

PAGE 5 OF 5

FILE: LIFT STATION DETAILS C D.dwg

[illegible]

2" PVC THREADED PIPE CAP

2" RIGID STEEL CONDUIT SUPPORT RISERS

2" RIGID STAINLESS STEEL CONDUIT STRAPS WITH STAINLESS STEEL HARDWARE

WHITE RUBBER CAPS
1-1/2" SQUARE 1" DEEP
TYPICAL ON SIX ENDS

110" CENTER TO CENTER

STAINLESS STEEL STRUT
1-1/2" X 1-1/2"

CUSTOM ALUMINUM
ANGLE BRACKETS
MADE FROM 1/8" FLAT STOCK
SIZE 1-1/2" WIDE
BY 8" LONG
BENT AT 4" TO FORM
90 DEGREE ANGLE FASTENED
WITH 1/4"
STAINLESS STEEL
HARDWARE

CUSTOM MADE ALUMINUM 1/8" PLATE
12"x14" MOUNT ON STRUT WITH
STAINLESS STEEL 1/4" INSERT NUTS
AND BOLTS
THIS BRACKET IS FOR MOUNTING
SIEMENS SENTRON PANEL

31" CENTER TO CENTER

20" CENTER TO CENTER

120" END TO END

100 LBS OF READY TO MIX CONCRETE
MIXED ON-SITE AND POURED INTO
EXCAVATED HOLES
10" TO 12" ROUND 30" DEEP
BRACE CONDUIT TO REMAIN PLUMB
WHILE CONCRETE SETS UP

1. ENCLOSURE : NEMA 4X STAINLESS STEEL, 304 GRADE, 14 GAUGE, GASKETED, 44 BRUSHED FINISH, U/L TO CSP APPROVED, HASP AND STAPLE FOR PADLOCKING, INSIDE POINT PROTECT, STAINLESS STEEL HINGE, MIN. SIZE 24" x 24" x 8" UP AND 15 I.P.P.
2. MOUNTING STRIP : SQUARE D HEAVY DUTY STAINLESS STEEL 304 SIZE 3/8" X 1/2" X 1/2" FOR FULL LOAD OF 250 LB.
3. EMERGENCY BKR : SQUARE D HEAVY DUTY USED PROPERLY FOR FULL LOAD OF STATION PLUS 25%.
4. MECH. INTERLOCK : ALL ALUMINUM AND STAINLESS STEEL W/ POSITIVE MEANS OF LOCKING OFF BREAKER NOT IN USE. THE BREAKERS WILL PROTRUDE THROUGH INNER DOOR.
5. RECEPTACLE RUSSELL : STOT 1R30A100 (230 VOLT ONLY), MELTRIC PART #37-98047 (480 VOLT ONLY)
6. ANGLE ADAPTER : RUSSELL STOT JAAB-10, 20 DEG. ADAPTER
7. LIGHTNING ARRESTOR : HEAVY DUTY, SQUARE D P/N SDASA3680, OR INTERMATIC AG503C 600V
8. HIGH WATER ALARM : INTERMATIC P/N SL-2000-3, 8 PIN WITH C & A, AND N.C. CONTACTS WIRE TO TERMINAL FOR RTU EQUIPMENT.
9. HIGH WATER ALARM : RED LEXAN, WHO EXTERNAL SERVO.
10. HVA RELAY : SQUARE D OR OMRON, 8 PIN DOUBLE POLE, DOUBLE THRO W WIRE TO RTU TERMINAL.
11. ALARM HORN : RED, WHEELCO P/N 31T-115 MOUNTED TO RED WEATHER PROOF CAST BOX ON EXTERIOR OF ENCLOSURE.
12. ALARM RELAY : SQUARE D OR OMRON, 8 PIN DOUBLE POLE, DOUBLE THRO W WIRE TO RTU TERMINAL.
13. ALARM RESET/SIL : SQUARE D, WEATHER PROOF MOUNTED ON EXTERIOR OF ENCLOSURE.
14. ENCL. BACKPLATE : ALUMINUM, 12 GAUGE
15. TERMINAL STRIP : BUCHANON P/N 0625
16. GROUND LUG : BUCHANON P/N 824
17. NEUTRAL LUG : BUCHANON P/N 824
18. MAIN LOAD LUG : SQUARE D P/N U3
19. LABELS : ALL BREAKERS AND SWITCHES TO BE IDENTIFIED BY PERMANENTLY ATTACHED LABEL, TO PANEL DOOR INTERIOR
20. MOUNTING SCREWS : STAINLESS STEEL 304
21. SCHEMATIC DWG. : PROTECTED BY PLASTIC COATING AND ATTACHED TO PANEL DOOR INTERIOR
22. LABELS : ALL STATION, ECS OR CITY OF DELAND APPROVAL
23. R.T.U. : (DATA FLOW MELBOURNE FIA, (R.T.U. 204) OR EQUAL, TO BE INSTALLED BY CITY-DEVELOPER TO BEAR ALL COSTS.
24. PROVIDE SPARE PARTS - SEE SPARE PARTS LIST
25. COATING : TO BE COATED INSIDE AND OUT WITH MIN. 24 MILS OF COAL TAR EPOXY
26. EQUIVALENT PRODUCTS CAN ONLY BE APPROVED UPON RECEIPT OF WRITTEN AUTHORIZATION FROM THE CITY OF DELAND.

200 AMP 3-PHASE 4-WIRE
LEVER BY-PASS
7-INCH METER CAN
MANUFACTURED FROM
UNPAINTED BRUSHED ALUMINUM

2" PVC THREADED PIPE CAP

2" RIGID STEEL CONDUIT SUPPORT RISERS

2" RIGID STAINLESS STEEL
CONDUIT STRAPS WITH
STAINLESS STEEL HARDWARE

STAINLESS STEEL STRUT 1-1/2" X 1-1/2"

WHITE RUBBER CAPS
1-1/2" SQUARE 1" DEEP
TYPICAL ON SIX ENDS

SEE SIZE CHART BELOW-TO
DUKE POWER TERMINAL BOX

1/2" SCH 40 PVC CONDUIT WITH 1-#4 BARE SOLID COPPER
GROUND WIRE INSTALL TWO 5/8" X 8 FT GALVANIZED GROUND
RODS SPACED AT 10 FOOT SEPARATION

3/4" PVC CONDUIT WITH 7-#14 THIN
STRANDED COPPER CONDUCTORS FOR
GENERATOR CONTROL CIRCUITS

1" PVC SCH 40 CONDUIT WITH 7-#14 THIN
STRANDED COPPER WIRES FOR SCADA CONTROL
UNITS. ROUTE ONE CONDUIT TO RTU CABINET
ROUTE SECOND CONDUIT TO LIFT STATION

STAINLESS STEEL NEMA 4X
600 VOLT
(SEE SIZE
CHART
BELOW)
NON-FUSED
DISCONNECT
PROVIDE
NEUTRAL KIT

STAINLESS STEEL
NEMA 4X
600 VOLT
(SEE SIZE
CHART
BELOW)
FUSED
DISCONNECT
PROVIDE
NEUTRAL KIT

SEE SIZE CHART BELOW

SEE SIZE CHART BELOW-THIS IS THE
FEED TO THE MANUAL TRANSFER PANEL
THIS CONDUIT IS ROUTED IN FRONT
OF CONDUITS FROM THE SENTRON PANEL

LIGHTNING
ARRESTOR
SEE NOTE 7

STAINLESS STEEL NEMA 4X
SIEMENS SENTRON COMBINATION
TRANSFORMER/PANEL 480 VOLT
PRIMARY 120/240 VOLT SECONDARY
WITH 12 SINGLE POLE 20 AMP
CIRCUIT BREAKERS

AUTOMATIC TRANSFER
SWITCH SHALL BE
ASCO, 300 SERIES
(OR APPROVED EQUAL)
STAINLESS STEEL
NEMA 4X
480 VOLT 3-PHASE
4-WIRE (SEE SIZE
CHART BELOW)
PROGRAMMABLE
PLC CONTROLLER

1/2" CONDUIT TO
FEED LED FLOOD
LIGHT & GFI
RECEPTACLE

3/4" CONDUIT WITH
5-#12 THIN CU
POWER CIRCUITS TO
GENERATOR FOR
JACKET WATER &
BATTERY CHARGER

SEE SIZE CHART
BELOW-TO SWITCH
LOVELESS LIFT
STATION

STAINLESS STEEL
MANUAL TRANSFER PANEL
NEMA 4X CUSTOM BUILT
24" WIDE 30" HIGH 10" DEEP
WITH TWO 3-PHASE DISCONNECTS
SEE SIZE CHART BELOW
FOR MOUNTING DETAILS
SEE DETAIL NOTES AND
DRAWINGS FOR ALL
COMPONENTS AND WIRING
DIAGRAMS

TWO 3/4" CONDUITS
ONE FOR 480 VOLT FEED
TO SENTRON TRANSFORMER
OTHER CONDUIT FOR
120 VOLT CIRCUIT #7
FOR CONTROL POWER TO
MANUAL TRANSFER PANEL

LED LIGHT FIXTURE
14 WATT 5 KELVIN
MOUNTED WITH 1/2"
RIGID CONDUIT STEM

2" SLIPFITTER WITH 1" THREADED HUB TOP
TO BE USED FOR MOUNTING LIGHT FIXTURE

NOTE: WATCH FOR THE POSITION OF
GENERATOR HUB, IT NEEDS TO BE PLACED
TOWARD THE FRONT OF THE PANEL

100 LBS OF READY MIX CONCRETE
MIXED ON-SITE AND POURED INTO
EXCAVATED HOLES
10" TO 12" ROUND 30" DEEP
BRACE CONDUIT TO REMAIN PLUMB
WHILE CONCRETE SETS UP

2" PVC THREADED PIPE CAP

STAINLESS STEEL STRUT 1-1/2" X 1-1/2"

132" CENTER TO CENTER

STEEL STRUT SPLICE (TYP.)

2" SUPRITTER WITH 1/2" THREADED HUB TOP TO BE USED FOR MOUNTING LIGHT FIXTURE

2" RIGID STEEL CONDUIT SUPPORT RISERS

CUSTOM ALUMINUM ANGLE BRACKETS MADE FROM 1/8" FLAT STOCK SIZE 1-1/2" WIDE BY 8" LONG BENT AT 4" TO FORM 90 DEGREE ANGLE FASTENED WITH 1/4" STAINLESS STEEL HARDWARE

INSTALL CENTER SUPPORT CONDUIT BEHIND STRUT RACK THROUGH BOLT WITH A 3/8" X 3" STAINLESS STEEL BOLT

CUSTOM MADE ALUMINUM 1/8" PLATE 12"x14" MOUNT ON STRUT WITH STAINLESS STEEL 1/4" INSERT NUTS AND BOLTS THIS BRACKET IS FOR MOUNTING SIEMENS SENTRON PANEL

31" CENTER TO CENTER

2" RIGID STAINLESS STEEL CONDUIT STRAPS WITH STAINLESS STEEL HARDWARE

8.5"

CUSTOM MADE ALUMINUM 1/8" PLATE 6"x9.5" MOUNT ON STRUT WITH STAINLESS STEEL INSERT NUTS AND BOLTS THIS BRACKET IS FOR MOUNTING DISCONNECT

CUSTOM MADE ALUMINUM 1/8" PLATE 20"x6" MOUNT ON STRUT WITH STAINLESS STEEL 1/4" INSERT NUTS AND BOLTS THIS BRACKET IS FOR MOUNTING ATS

20" CENTER TO CENTER

STAINLESS STEEL STRUT 1-1/2" X 1-1/2"

144" END TO END

WHITE RUBBER CAPS 1-1/2" SQUARE 1" DEEP TYPICAL ON SIX ENDS

100 LBS OF READY TO MIX CONCRETE MIXED ON-SITE AND POURED INTO EXCAVATED HOLES 10" TO 12" ROUND 30" DEEP BRACE CONDUIT TO REMAIN PLUMB WHILE CONCRETE SETS UP

MAIN PUMP MOTOR SIZE	TOTAL STATION FULL LOAD AMPS			
	RATED HP EACH	208 VOLT	230 VOLT	460 VOLT
1	27.3	23.7	11.9	RE
1-1/2	33.3	28.9	14.5	
2	39.3	34.1	17.1	
3	49.6	43.2	21.6	
5	70.6	61.4	30.7	
7-1/2	96.1	83.5	41.8	
10	118.5	103.0	51.5	
15	170.9	148.5	74.3	
20	215.7	187.5	93.8	
25	---	---	116.5	
30	---	---	136.0	
40	---	---	175.0	
50	---	---	217.3	

REVISED 11/05/21

SHEET 3 OF 3

3M LOCATING MARKER BALLS PROGRAMMABLE AND NON-PROGRAMMABLE NOTES:

- Programmable and Non-Programmable Marking Balls will be used on all Sewer, Potable and Reclaim projects
- For information on the Programmable and Non-Programmable Balls that the City requires see spec sheet for details
- Programmable Balls will be placed at all fittings ie. Tees, Couplings, 90, 45, and 22.
- Information will be recorded on a spread sheet. For information that needs to be recorded see spec sheet for an example template for the 3M Marker Balls
- Non-Programmable Marking Balls will used as follow:
- Potable: End of Service Line when buried
- Wastewater: Ball will be placed at the curb line to mark lateral location prior to end of service.
- Reclaim: End of Service Line when buried
- Desired bury depth is 1.5 feet to 3 feet. Five foot is the maximum depth for these devices

1420-LOCATER FOR MARKER BALLS

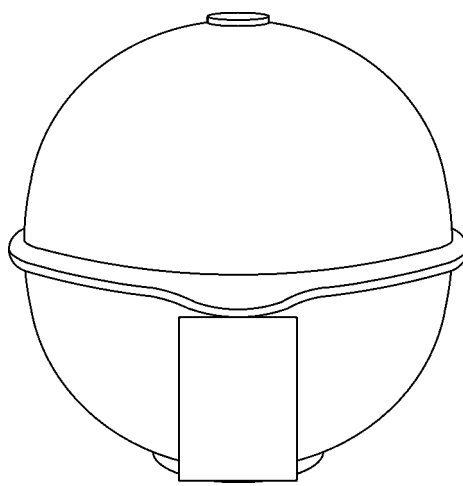
3M™ Dynatel™ Electronic Marker System (EMS) Marker Locators 1420 series is microprocessor-based systems that quickly and efficiently locate underground markers—years after construction or maintenance. -

- The 3M™ Dynatel™ 1420 Marker Locators are designed to be accurate, fast and integrated allowing you to accurately and easily:
- Locate, read and write to 3M iD markers
 - Pinpoint the depth and location of all existing models of properly installed underground passive EMS markers
 - Conduct direct depth reading of markers
 - Locate two different marker frequencies simultaneously

Specifications	2200RB Rechargeable Battery Not Included
Cable/Pipe Locate	No
Carrying Bag Included	No
Coupler Size	No Coupler
Direct Connect Cable	N/A
EMS Caution Tape Finding Capability	No
Family	1420 Series
Fault Finding Capability	No
Locator Type	Marker

3M DYNATEL LOCATING AND MARKING ELECTRONIC MARKER SYSTEM:

1423-XR/ID-POTABLE



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

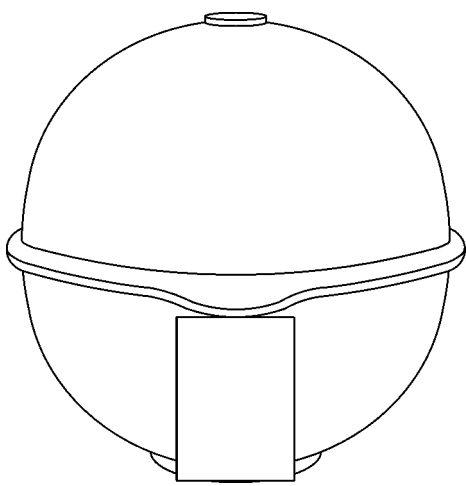
Featured Benefits

- Positive identification of underground water facilities
- iD Marker allows for programming of customer specific information
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR:	BLUE
DIAMETER (METRIC):	10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY:	N/A
MARKER DEPTH:	5 FEET (1.5M)
MARKER DIMENSION (INCH):	4 INCH DIAMETER
MARKER TYPE:	BALL
PROGRAMMABLE/PASSIVE:	PROGRAMMABLE
RANGE:	0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant:	UNDETERMINED
RoHS EU Comments:	CONTACT 3M FOR INFORMATION
Solution for:	ACCESS NETWORK: FTTH/FTTB/CATV
	ACCESS NETWORK: xDSL, LONG-HAUL/METRO
	LOOP NETWORK: OUTDOOR
	WIRELESS NETWORK: BACKHAUL

1424-XR/ID-SEWER



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

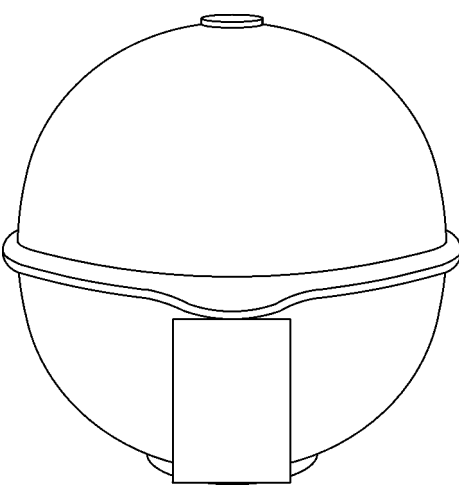
Featured Benefits

- Positive identification of underground wastewater facilities
- iD Marker allows for programming of customer specific information
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR:	GREEN
DIAMETER (METRIC):	10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY:	N/A
MARKER DEPTH:	5 FEET (1.5M)
MARKER DIMENSION (INCH):	4 INCH DIAMETER
MARKER TYPE:	BALL
NUMBER OF FREQUENCIES:	N/A
PROGRAMMABLE/PASSIVE:	PROGRAMMABLE
RANGE:	0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant:	UNDETERMINED
RoHS EU Comments:	CONTACT 3M FOR INFORMATION
Solution for:	ACCESS NETWORK: FTTH/FTTB/CATV
	ACCESS NETWORK: xDSL, LONG-HAUL/METRO
	LOOP NETWORK: OUTDOOR
	WIRELESS NETWORK: BACKHAUL

1428-XR/ID-RECLAIMED



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

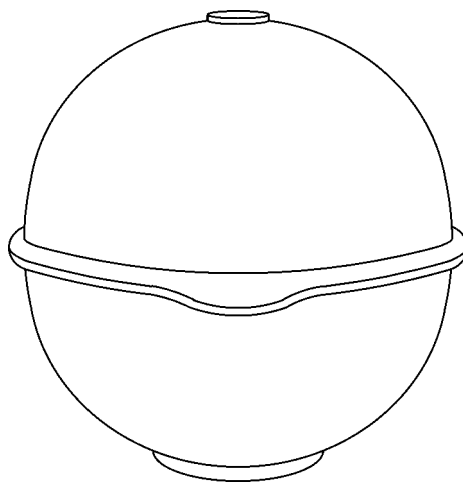
Featured Benefits

- Positive identification of underground general purpose / reclaimed water facilities
- iD Marker allows for programming of customer specific information
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR:	PURPLE
DIAMETER (METRIC):	10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY:	N/A
MARKER DEPTH:	5 FEET (1.5M)
MARKER DIMENSION (INCH):	4 INCH DIAMETER
MARKER TYPE:	BALL
NUMBER OF FREQUENCIES:	N/A
PROGRAMMABLE/PASSIVE:	PROGRAMMABLE
RANGE:	0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant:	UNDETERMINED
RoHS EU Comments:	CONTACT 3M FOR INFORMATION
Solution for:	ACCESS NETWORK: FTTH/FTTB/CATV
	ACCESS NETWORK: xDSL, LONG-HAUL/METRO
	LOOP NETWORK: OUTDOOR
	WIRELESS NETWORK: BACKHAUL

1403-XR-POTABLE



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

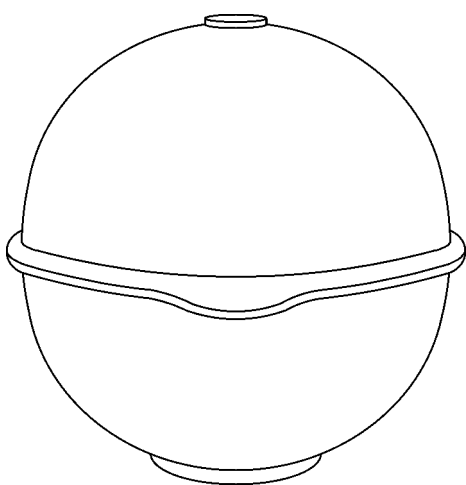
Featured Benefits

- Positive identification of underground water facilities
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR:	BLUE
DIAMETER (METRIC):	10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY:	N/A
MARKER DEPTH:	5 FEET (1.5M)
MARKER DIMENSION (INCH):	4 INCH DIAMETER
MARKER TYPE:	BALL
NUMBER OF FREQUENCIES:	N/A
PROGRAMMABLE/PASSIVE:	PASSIVE
RANGE:	0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant:	UNDETERMINED
RoHS EU Comments:	CONTACT 3M FOR INFORMATION
Solution for:	ACCESS NETWORK: FTTH/FTTB/CATV
	ACCESS NETWORK: xDSL, LONG-HAUL/METRO
	LOOP NETWORK: OUTDOOR
	WIRELESS NETWORK: BACKHAUL

1404-XR-SEWER



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

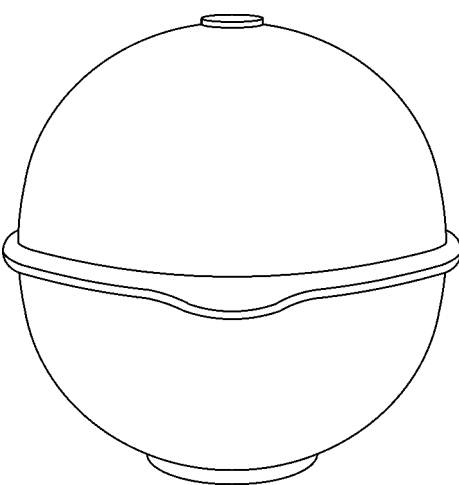
Featured Benefits

- Positive identification of underground wastewater facilities
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR:	GREEN
DIAMETER (METRIC):	10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY:	N/A
MARKER DEPTH:	5 FEET (1.5M)
MARKER DIMENSION (INCH):	4 INCH DIAMETER
MARKER TYPE:	BALL
NUMBER OF FREQUENCIES:	N/A
PROGRAMMABLE/PASSIVE:	PASSIVE
RANGE:	0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant:	UNDETERMINED
RoHS EU Comments:	CONTACT 3M FOR INFORMATION
Solution for:	ACCESS NETWORK: FTTH/FTTB/CATV
	ACCESS NETWORK: xDSL, LONG-HAUL/METRO
	LOOP NETWORK: OUTDOOR
	WIRELESS NETWORK: BACKHAUL

1408-XR-RECLAIMED



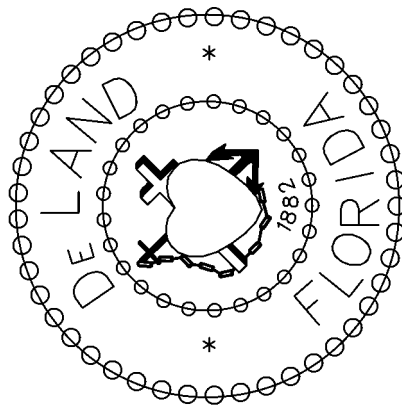
The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

Featured Benefits

- Positive identification of underground general purpose facilities
- Unique self leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR:	PURPLE
DIAMETER (METRIC):	10.4 CM
EMS CAUTION TAPE FINDING CAPABILITY:	N/A
MARKER DEPTH:	5 FEET (1.5M)
MARKER DIMENSION (INCH):	4 INCH DIAMETER
MARKER TYPE:	BALL
NUMBER OF FREQUENCIES:	N/A
PROGRAMMABLE/PASSIVE:	PASSIVE
RANGE:	0 TO 5 LINEAR FOOT
RoHS 2011/65/EU Compliant:	UNDETERMINED
RoHS EU Comments:	CONTACT 3M FOR INFORMATION
Solution for:	ACCESS NETWORK: FTTH/FTTB/CATV
	ACCESS NETWORK: xDSL, LONG-HAUL/METRO
	LOOP NETWORK: OUTDOOR
	WIRELESS NETWORK: BACKHAUL



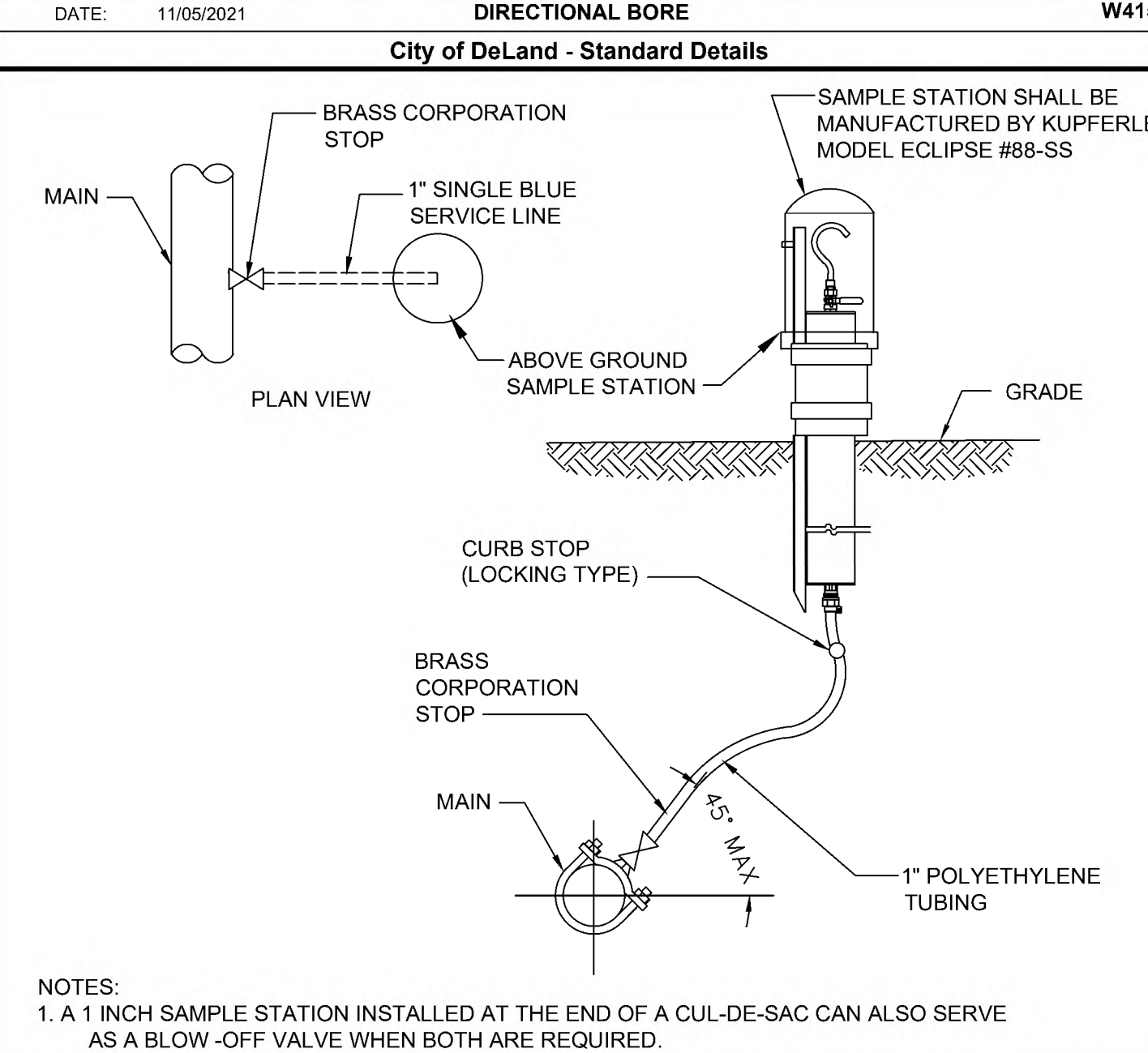
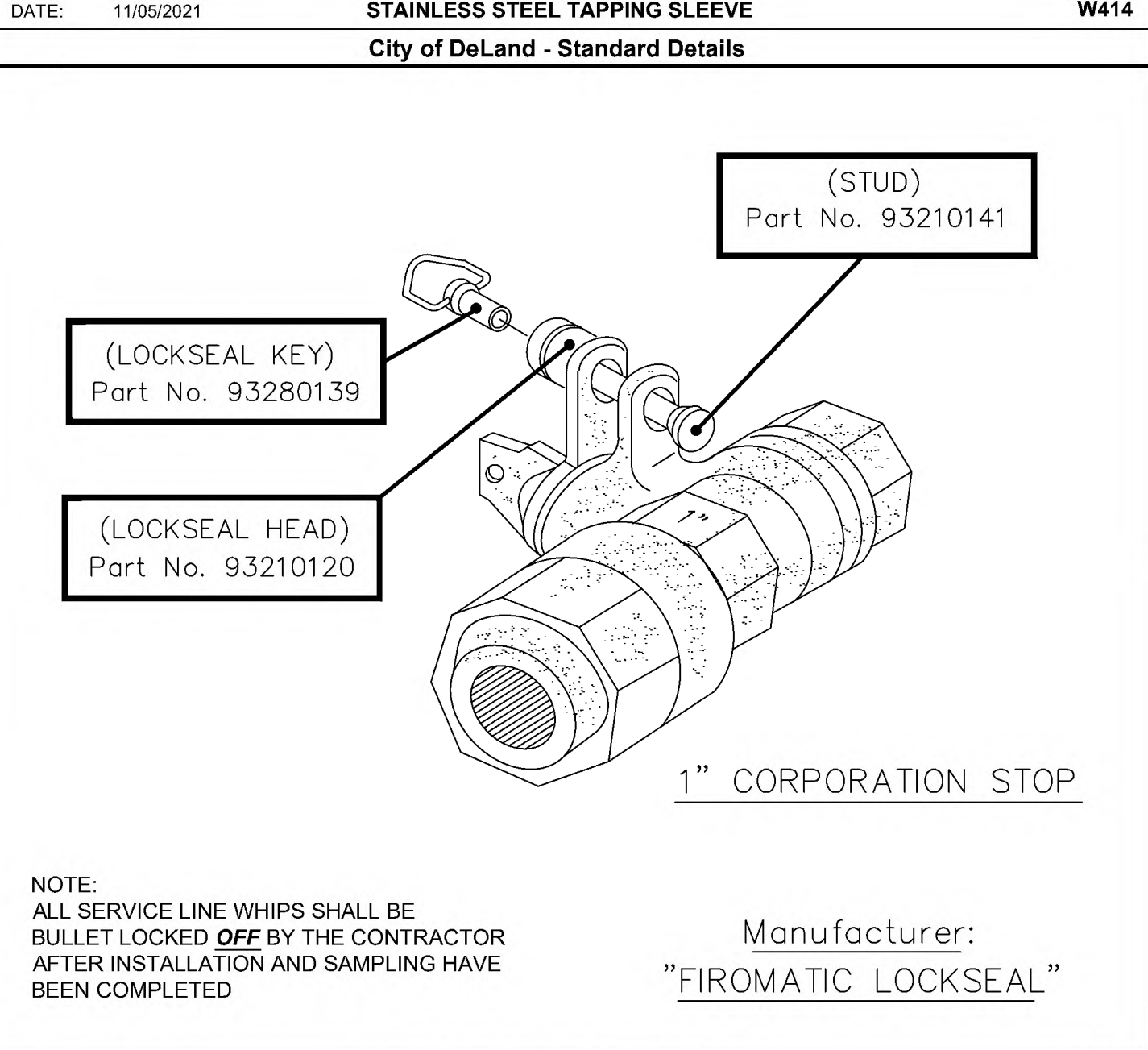
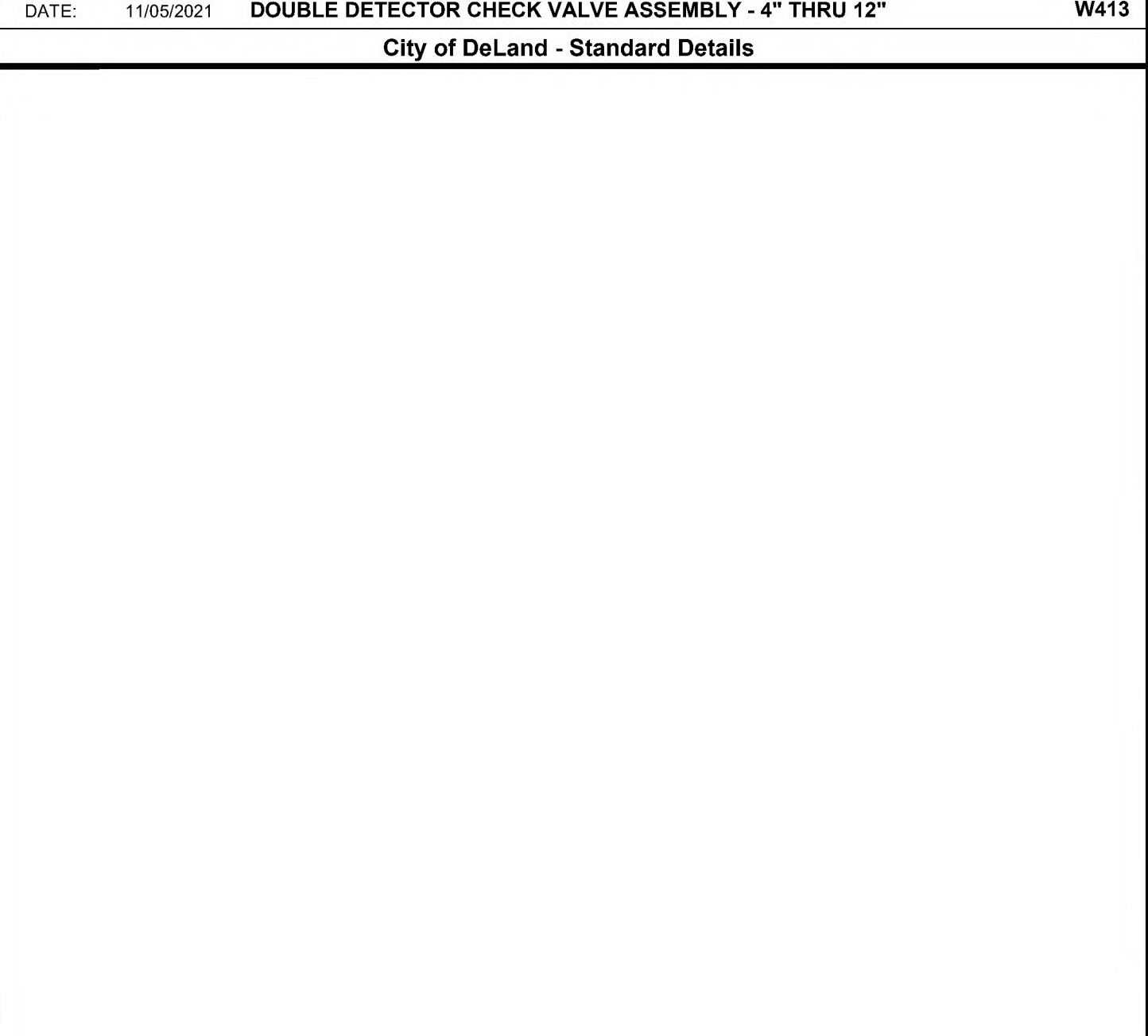
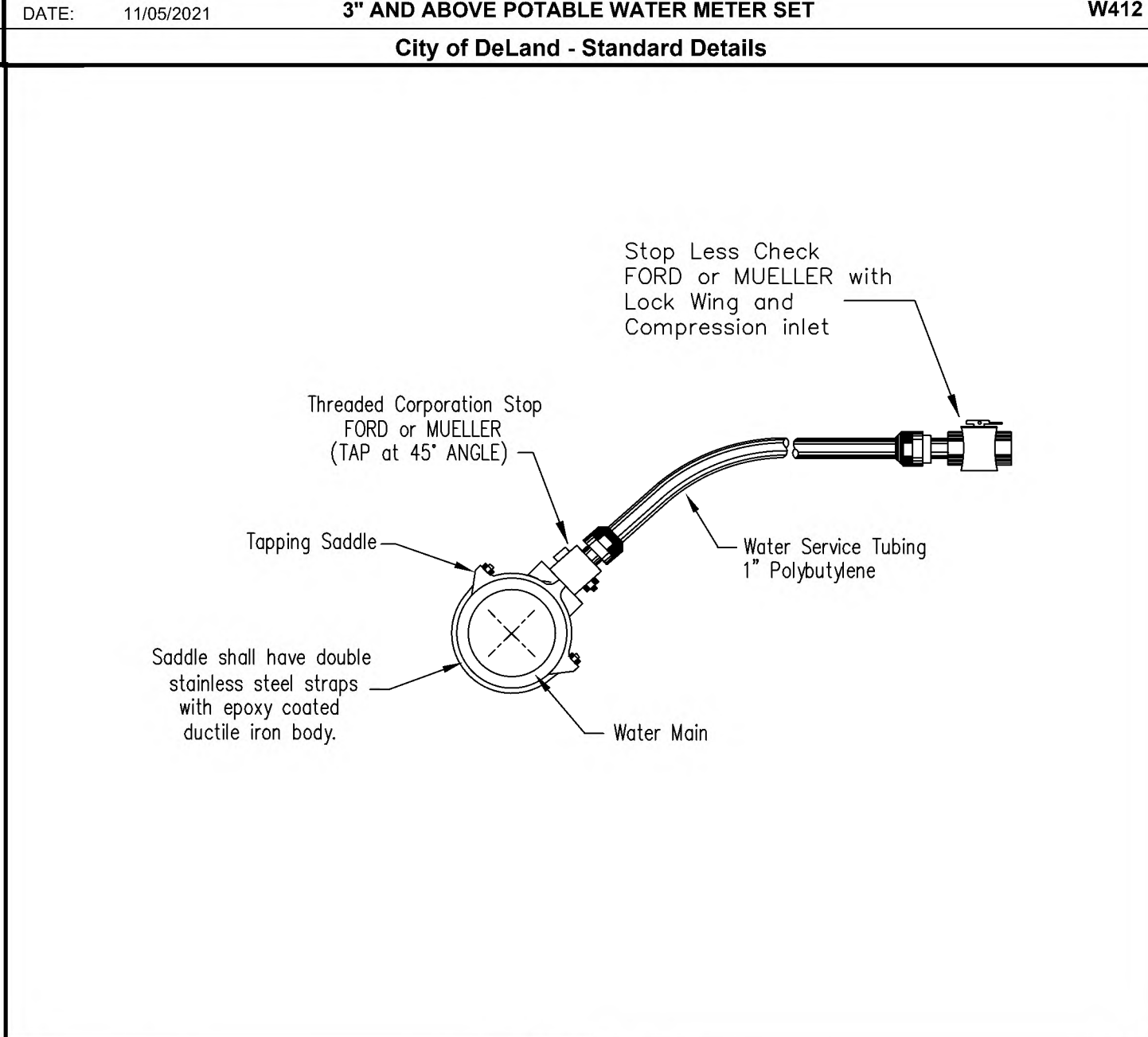
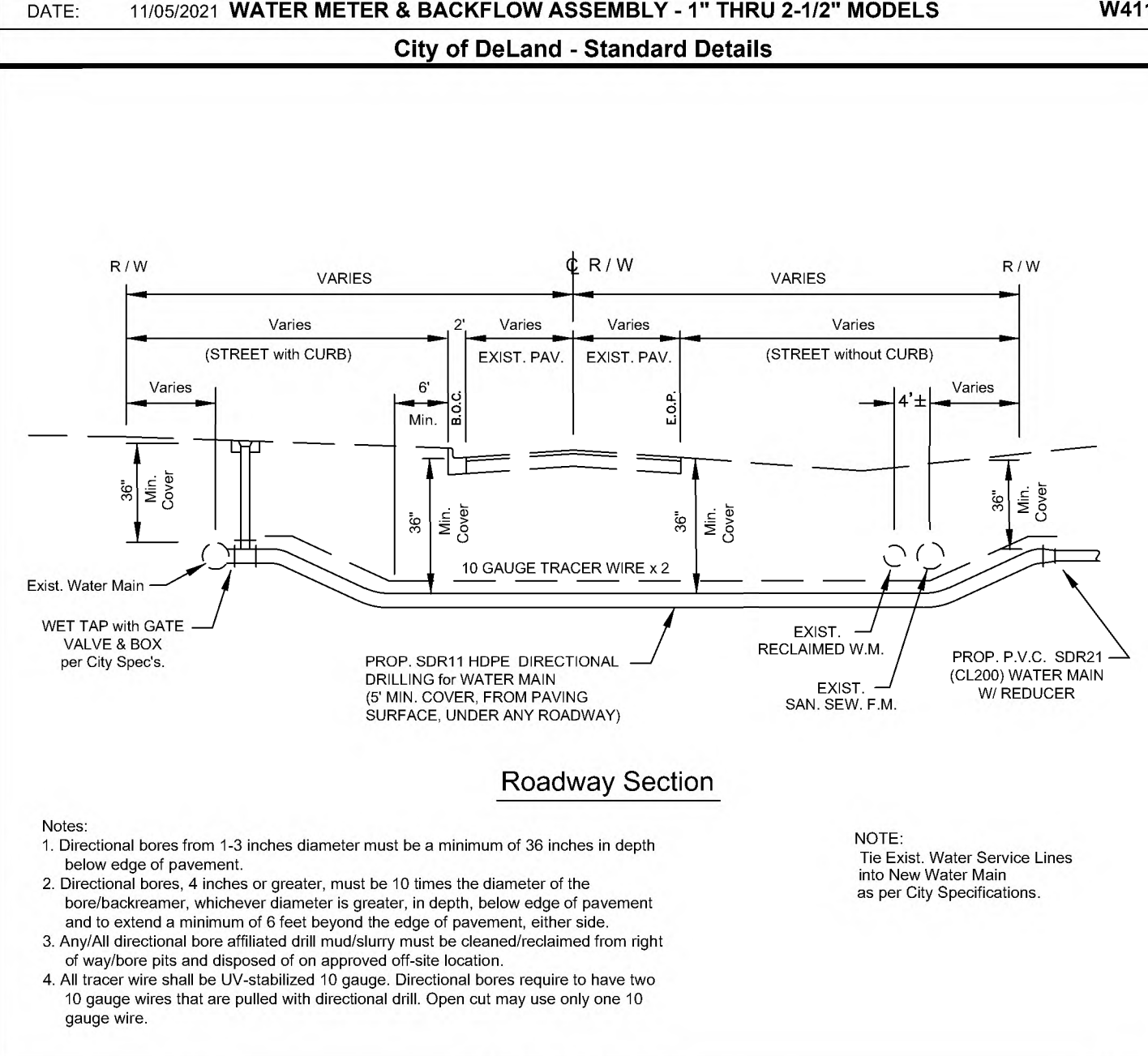
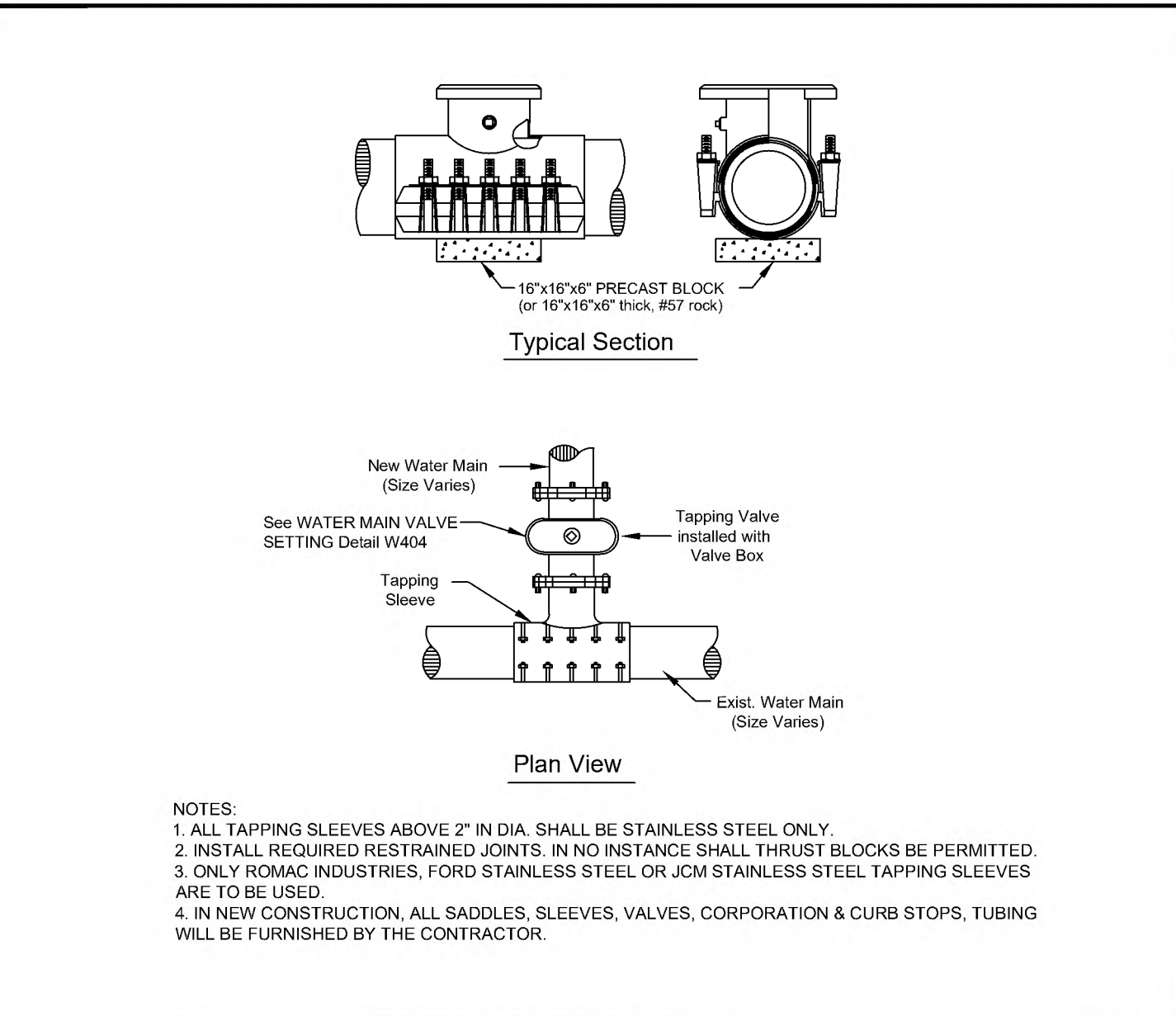
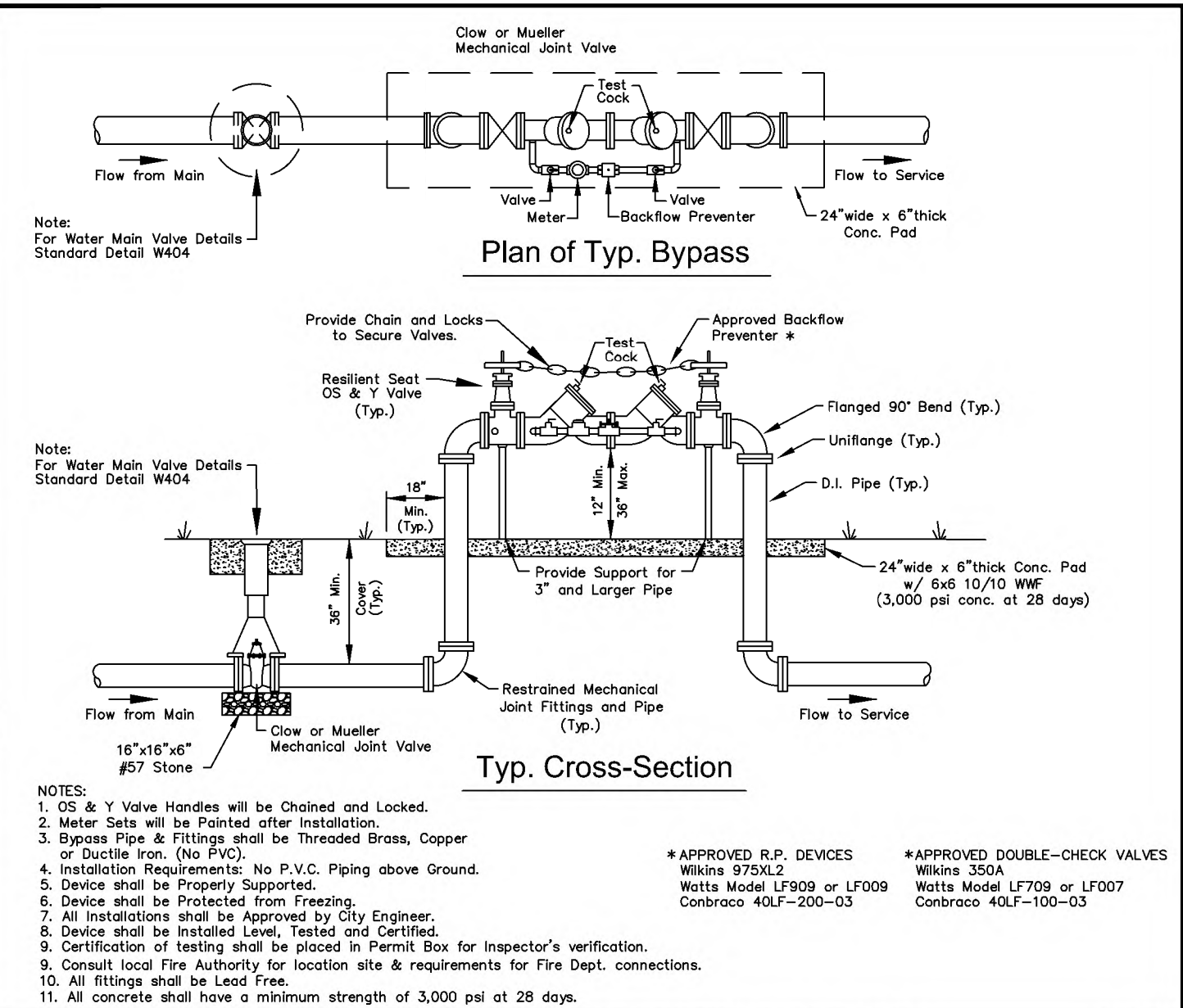
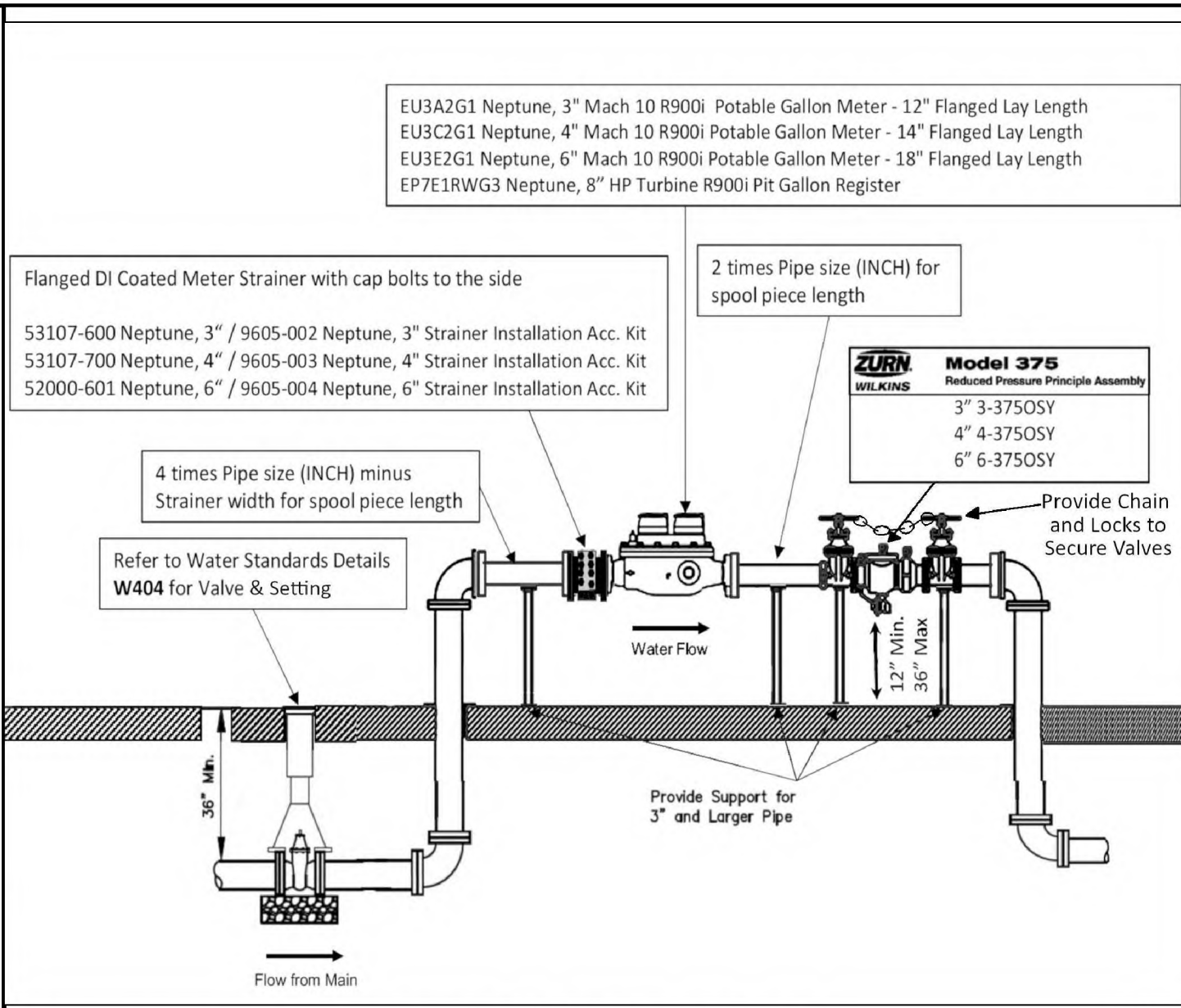
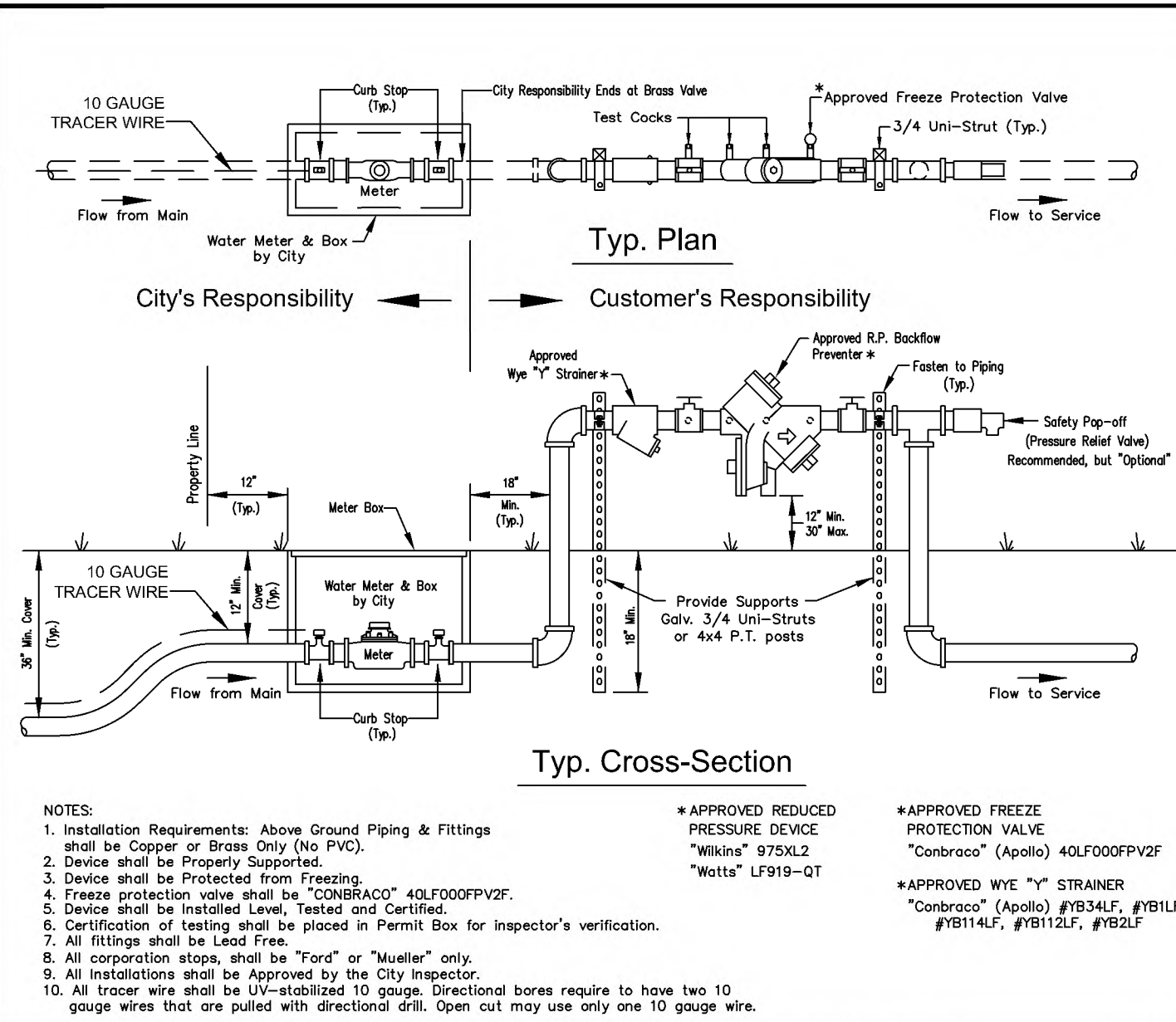
CITY OF DELAND, FLORIDA
1102 S. GARFIELD AVENUE, DELAND, FLORIDA 32724

SCALE: NOT TO SCALE	DATE: 11/05/2021
DRAWN BY: MARK LA GRECA	CHECKED BY: ERIC M. SAMPSON

UTILITY MARKER BALL LOCATORS

TITLE:

FILE: drive letter/details locations

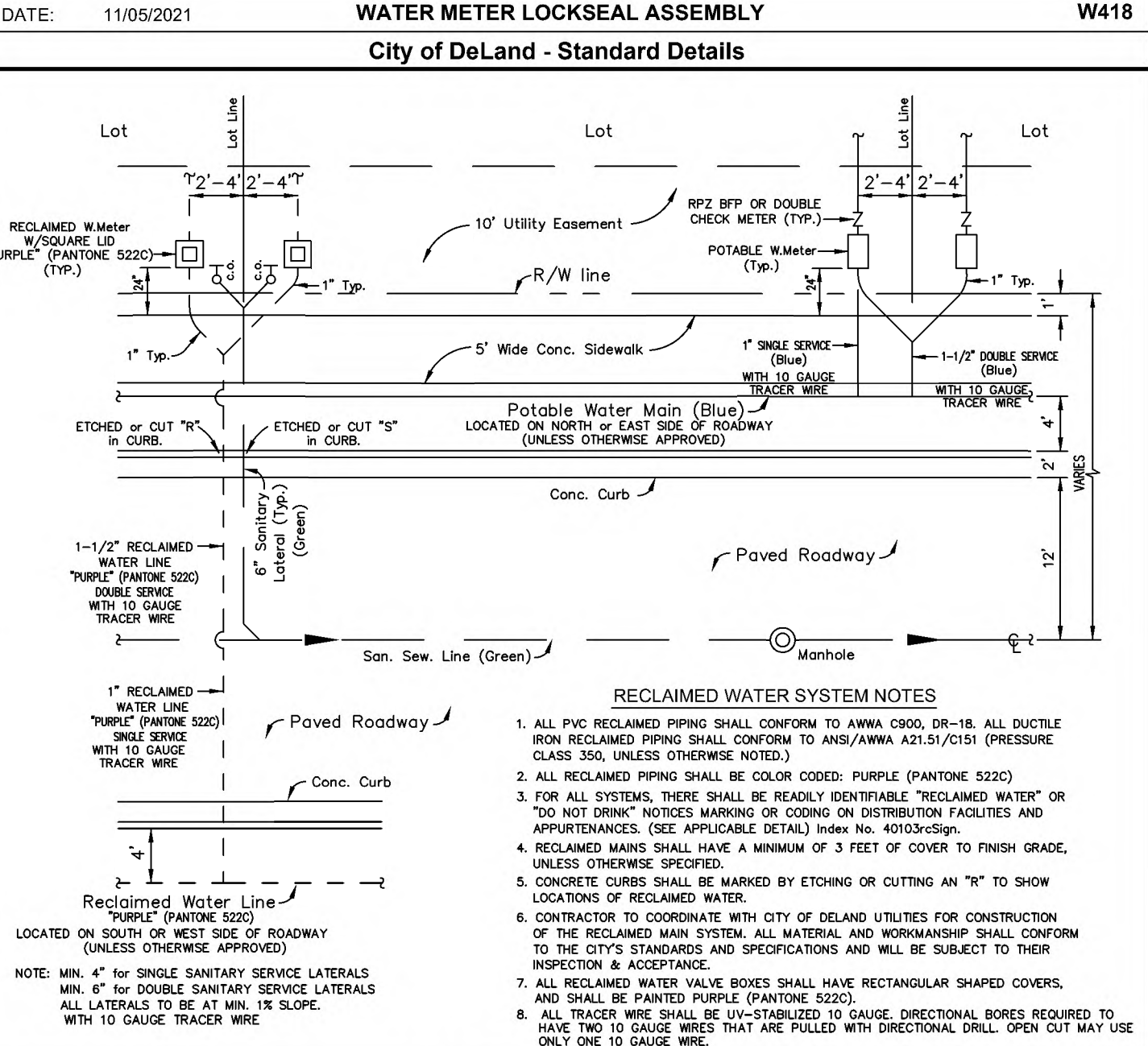


LOCATION OF PUBLIC WATER SYSTEM MAINS IN ACCORDANCE WITH F.A.C. RULE 62-555.314			
Other pipe	Horizontal Separation	Crossings (1)	Joint Spacing @ Crossing (Full Joint Centered)
Storm Sewer Stormwater Force Main, Reclaimed Water (2)	WATER MAIN 3 ft. minimum	WATER MAIN 12 inches is the minimum except for storm sewer, then 6 inches is the minimum and 12 inches is preferred	Alternate 3' ft. minimum WATER MAIN
Vacuum Sanitary Sewer	WATER MAIN 10 ft. preferred 3 ft. minimum	WATER MAIN 12 inches preferred 6 inches minimum	Alternate 3' ft. minimum WATER MAIN
Gravity Sewer Sanitary Sewer, Sanitary Sewer Force Main, Reclaimed Water (4)	WATER MAIN 10 ft. preferred 6 ft. minimum (3)	WATER MAIN 12 inches is the minimum except for gravity sewer, then 6 inches is the minimum and 12 inches is preferred	Alternate 6' ft. minimum WATER MAIN
On-Site Sewage Treatment & Disposal System(4)	10 ft minimum	---	---

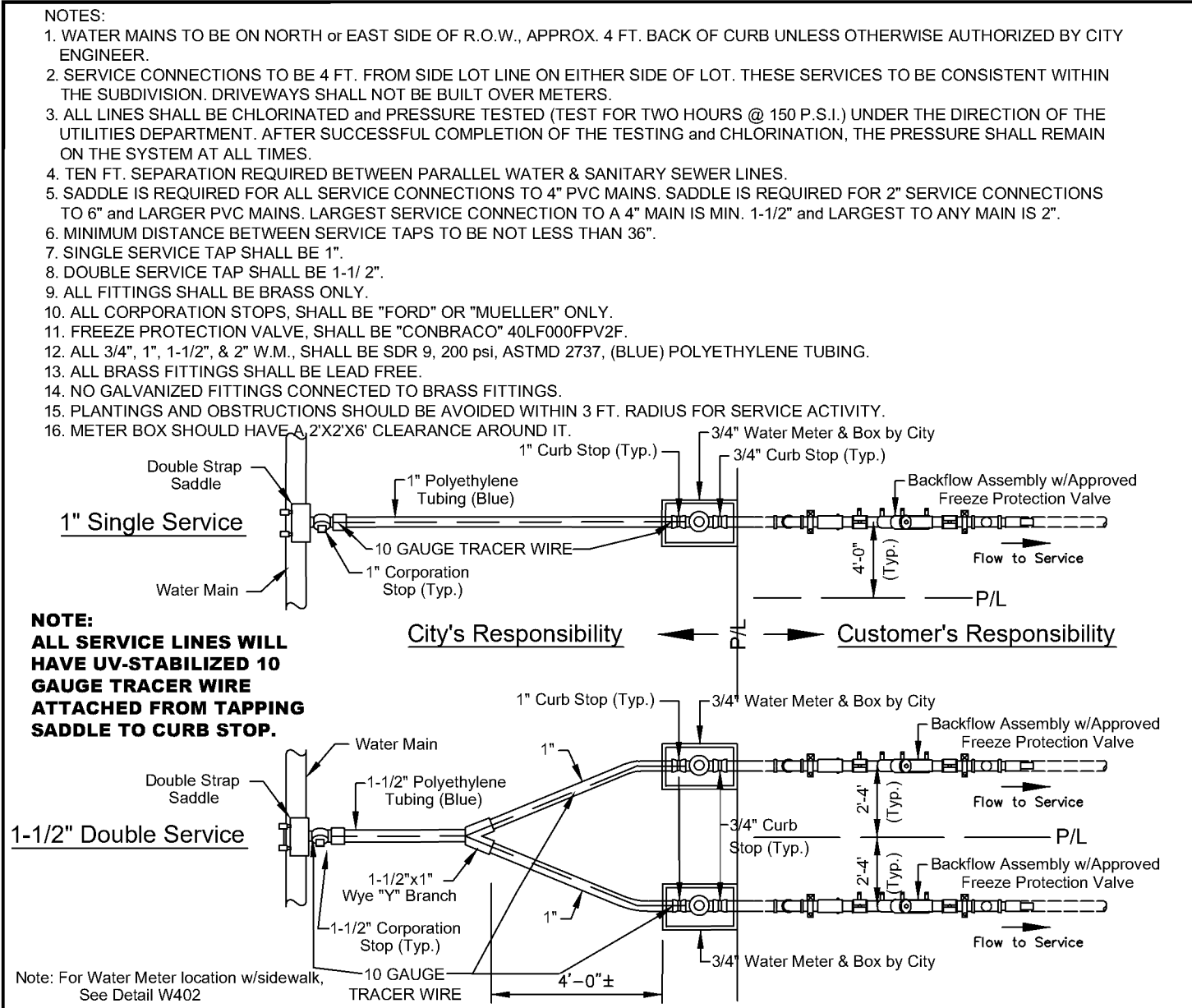
(1) Water Main Should Cross Above other pipe. When Water Main Must Be Below Other Pipe, the Minimum Separation is 12" inches.
(2) Reclaimed Water Regulated Under Part III of chapter 62-610, F.A.C.
(3) 3 ft. for Gravity Sanitary sewer where the Bottom of the Water Main is told at least 6 inches above the top of gravity sanitary sewer.
(4) Reclaimed water not regulated under Part III of Chapter 62-160, F.A.C.

NOTE: ①
VENTED ENCLOSURE TO BE
COLOR CODED AS FOLLOWS:
WATER MAIN - BLUE
FORCE MAIN - GREEN
REUSE MAIN - PURPLE
(PANTONE 522C)

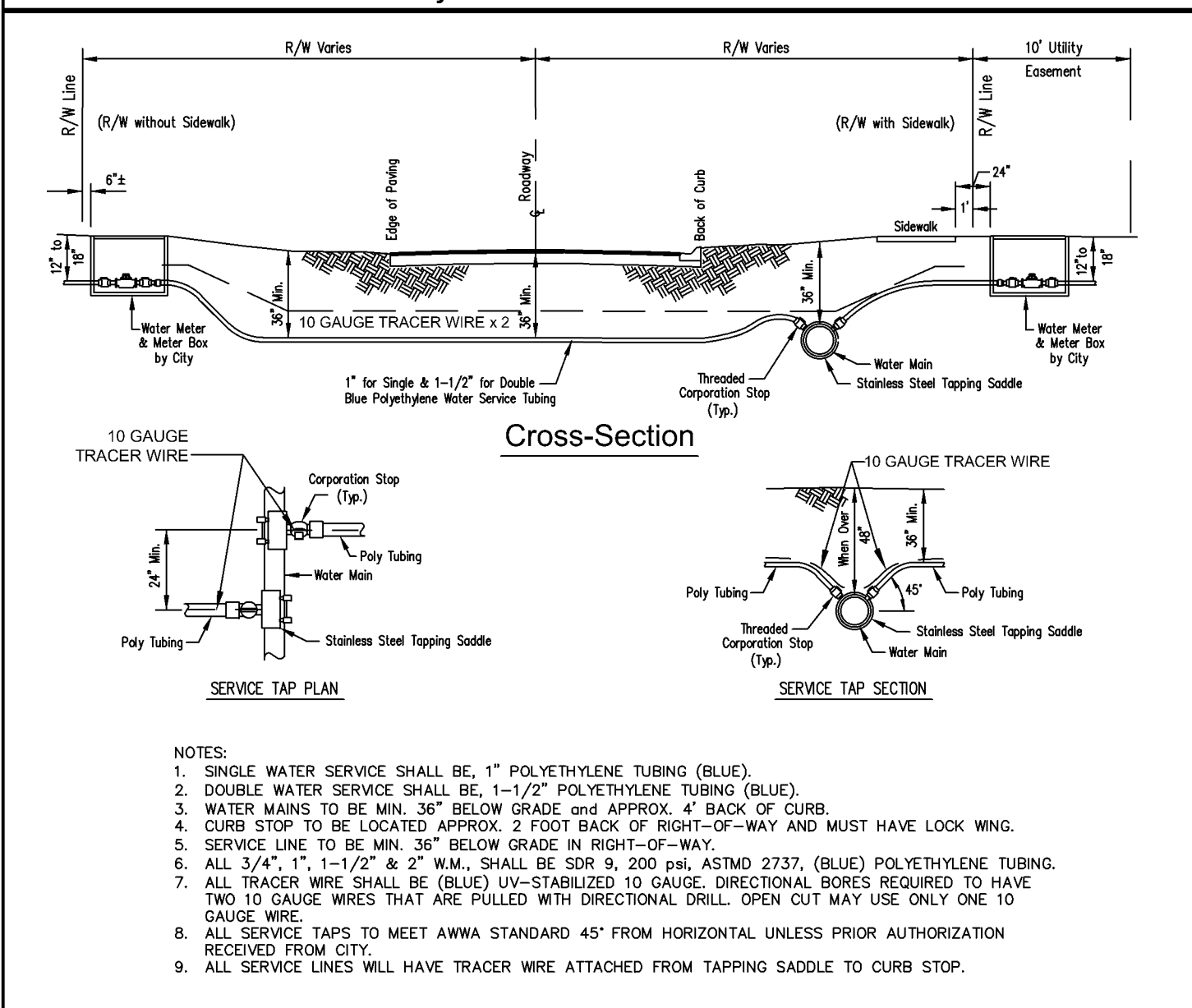
M A T E R I A L S		
ITEM	QUANT	DESCRIPTION
1	1	ENCLOSURE, WATER PLUS CORPORATION MODEL #316132
2	1	AIR RELEASE VALVE 2" NPT, ARI MODEL D-025 P
SEWER AIR RELEASE VALVES SHALL BE ARI MODEL D-025 P		
3	1	1" CURB STOP, (Stainless Steel)
4	1	2" x 4" NIPPLE, (Stainless Steel)
5	1	2" CORPORATION STOP
6	1	2" TEE, (Stainless Steel)
7	1	2" x 1" REDUCER, (Stainless Steel)
8	1	1" SHORT NIPPLE, (Stainless Steel)
9	1	2" POLYUBE, LENGTH AS REQUIRED
10	2	BRASS ADAPTER
11	2	DOUBLE STRAP TAPPING SADDLE, (Stainless Steel)
12	1	4" & LARGER PIPE, D.I. OR PVC (DR-18)
13	1	2" CORPORATION BRASS
14	2	1-1/2" PIPE, PVC, LENGTH AS REQUIRED
15	1	1-1/2" x 90° ELBOW, PVC
16	1	6" CONCRETE SLAB AROUND ENCLOSURE



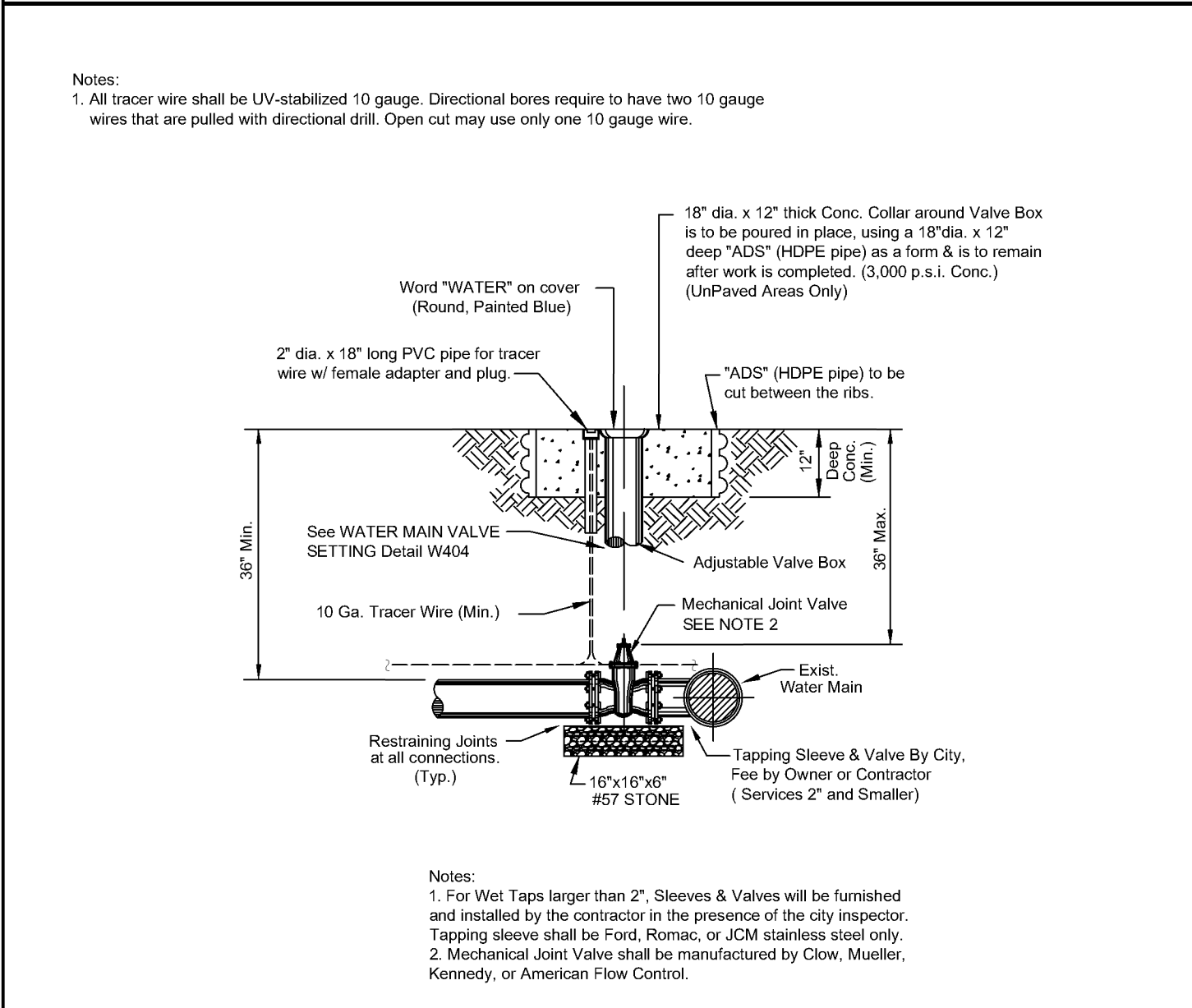




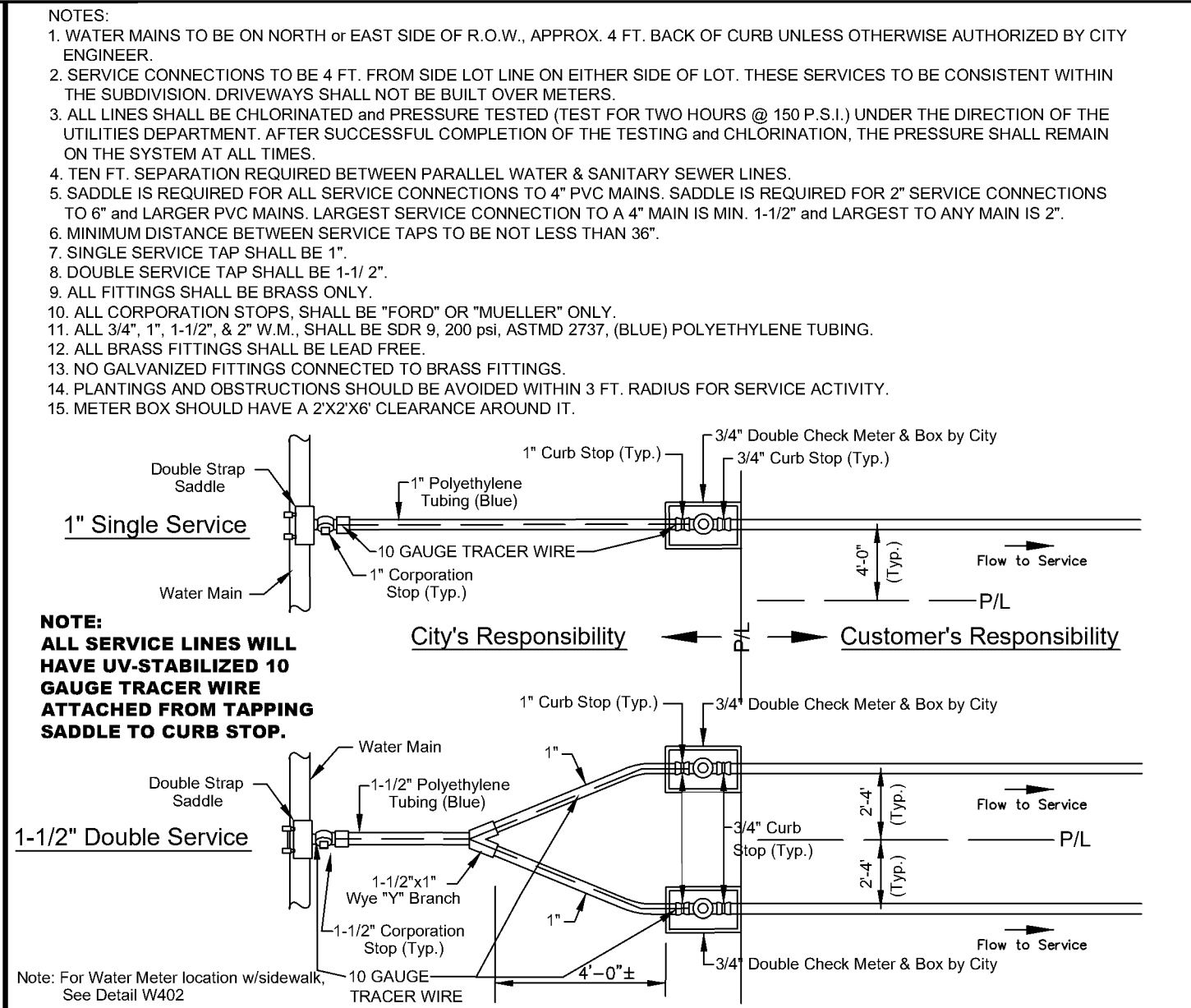
DATE: 11/05/2021 **WATER MAIN SERVICE CONNECTION (BACKFLOW)** **W401**
City of DeLand - Standard Details



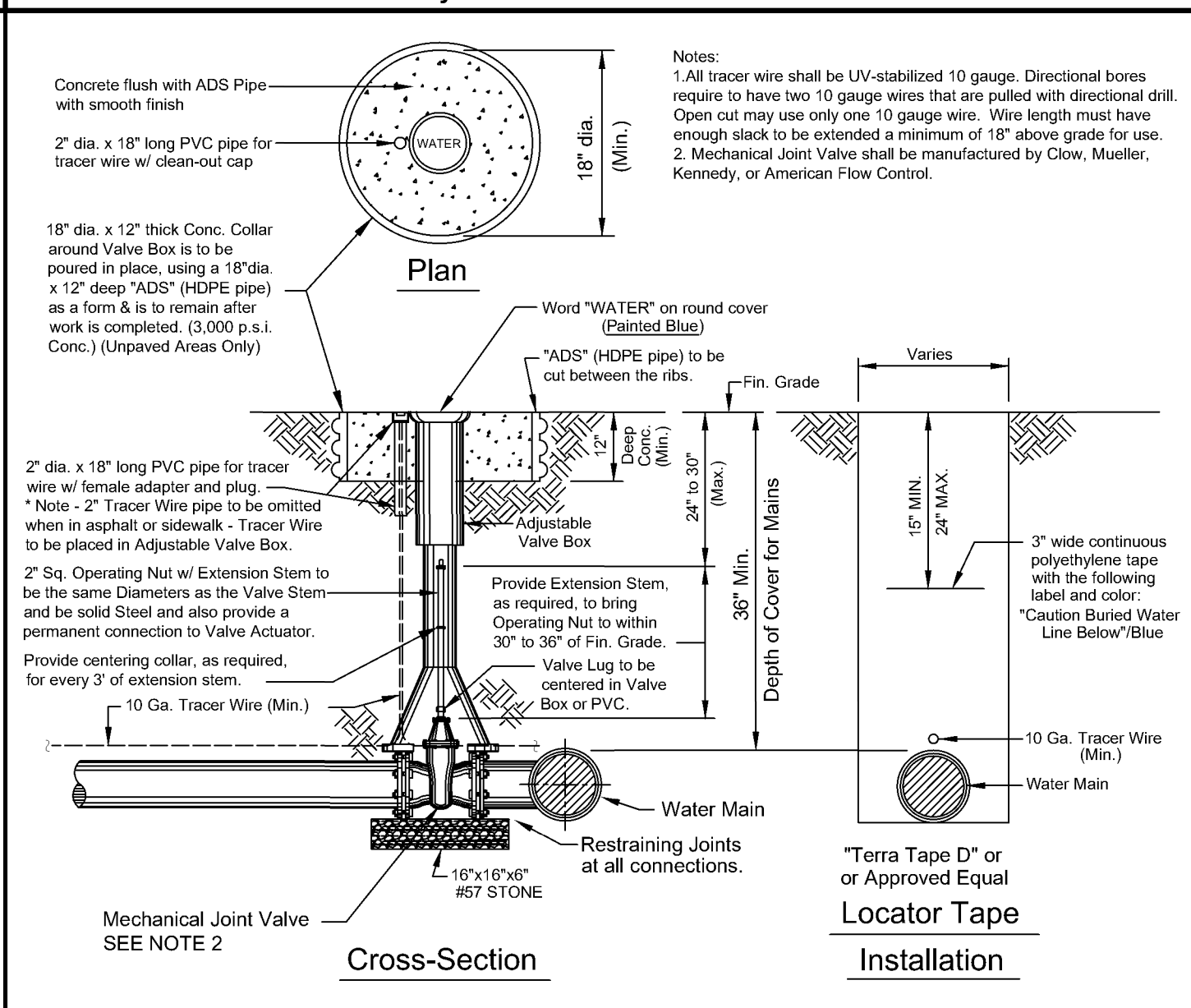
DATE: 11/05/2021 **WATER MAIN SERVICE LINES** **W403**
City of DeLand - Standard Details



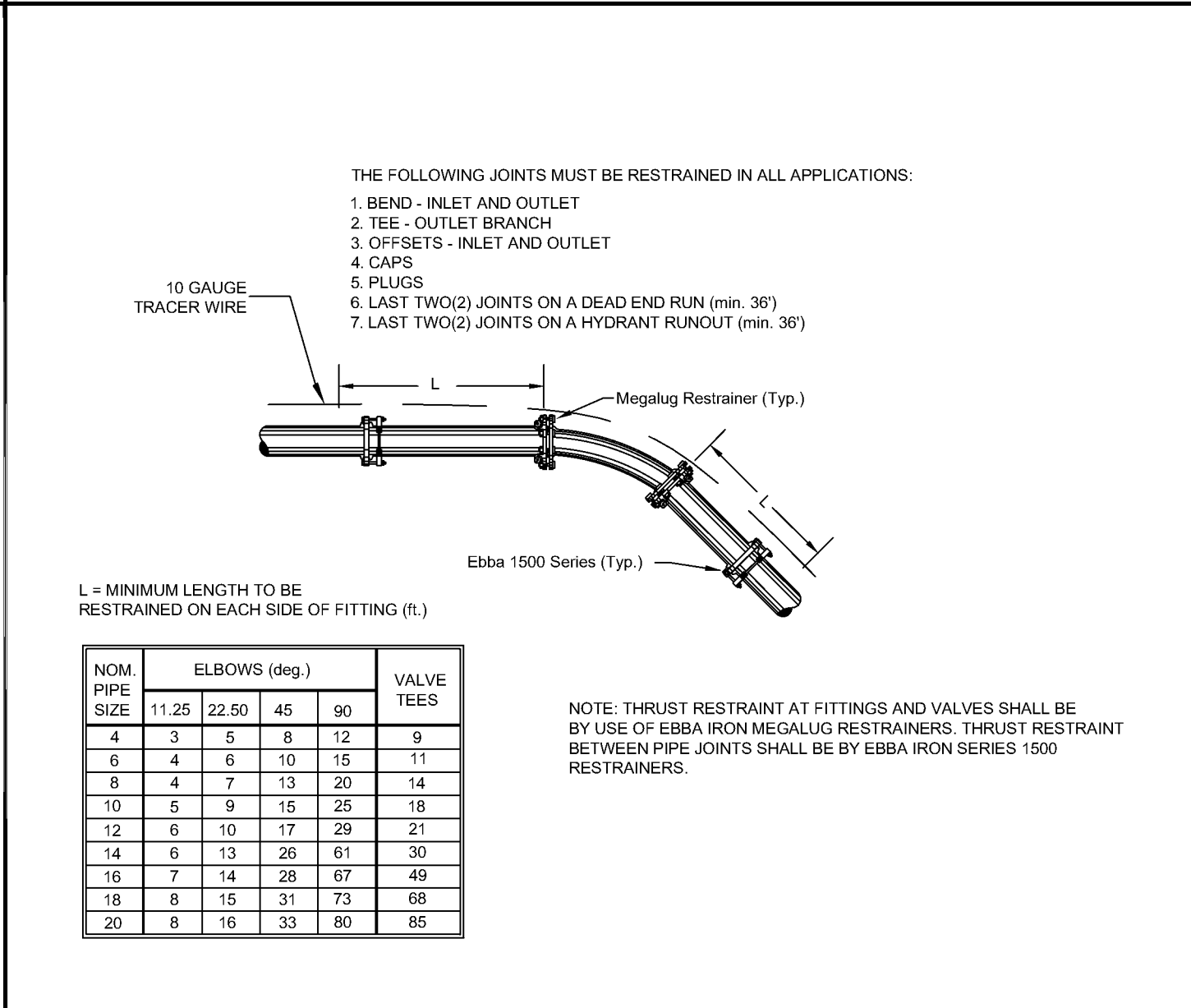
DATE: 11/05/2021 **TAPPING SLEEVE & VALVE** **W407**
City of DeLand - Standard Details



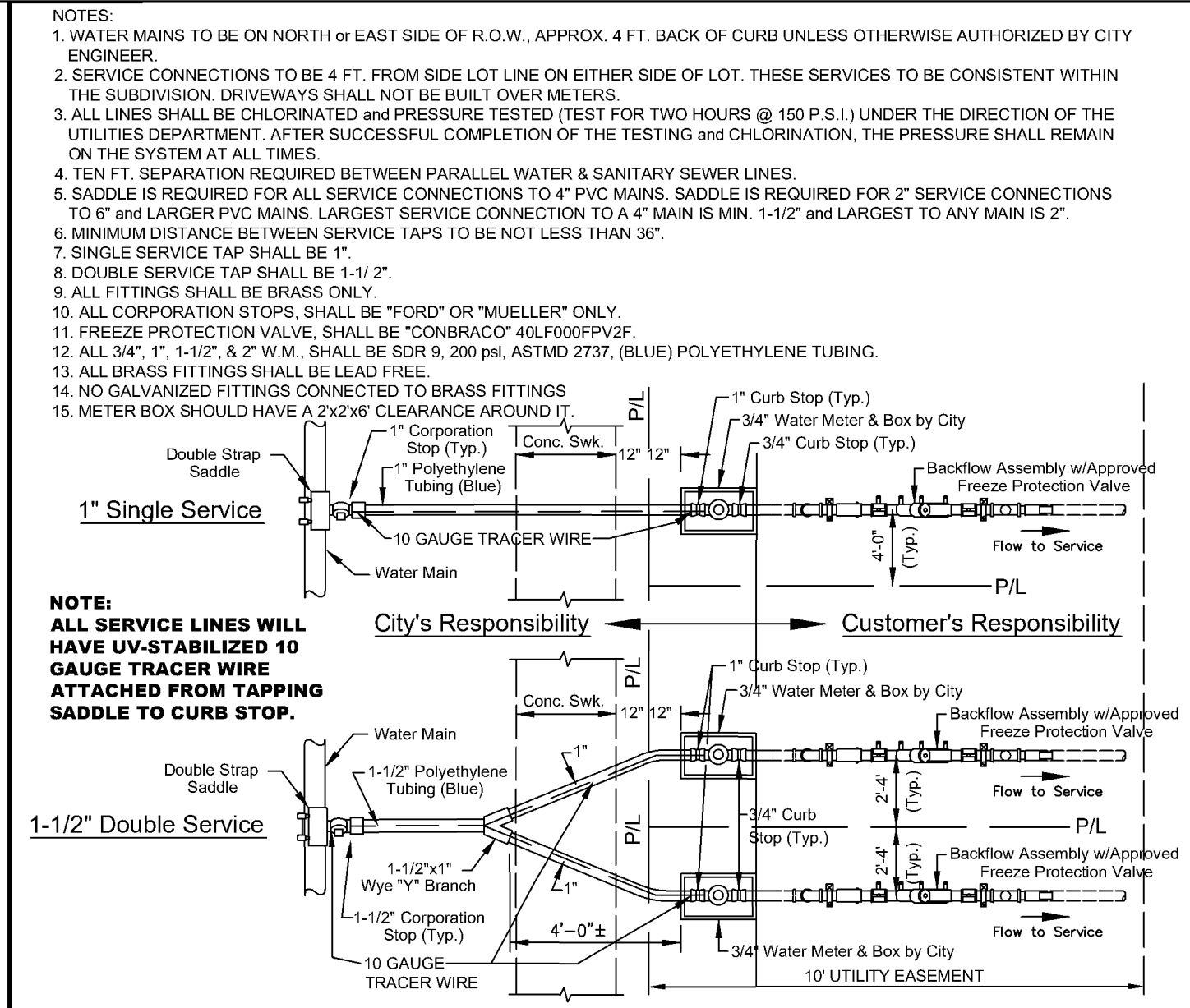
DATE: 11/05/2021 **WATER MAIN SERVICE CONNECTION (DOUBLE CHECK METER)** **W401A**
City of DeLand - Standard Details



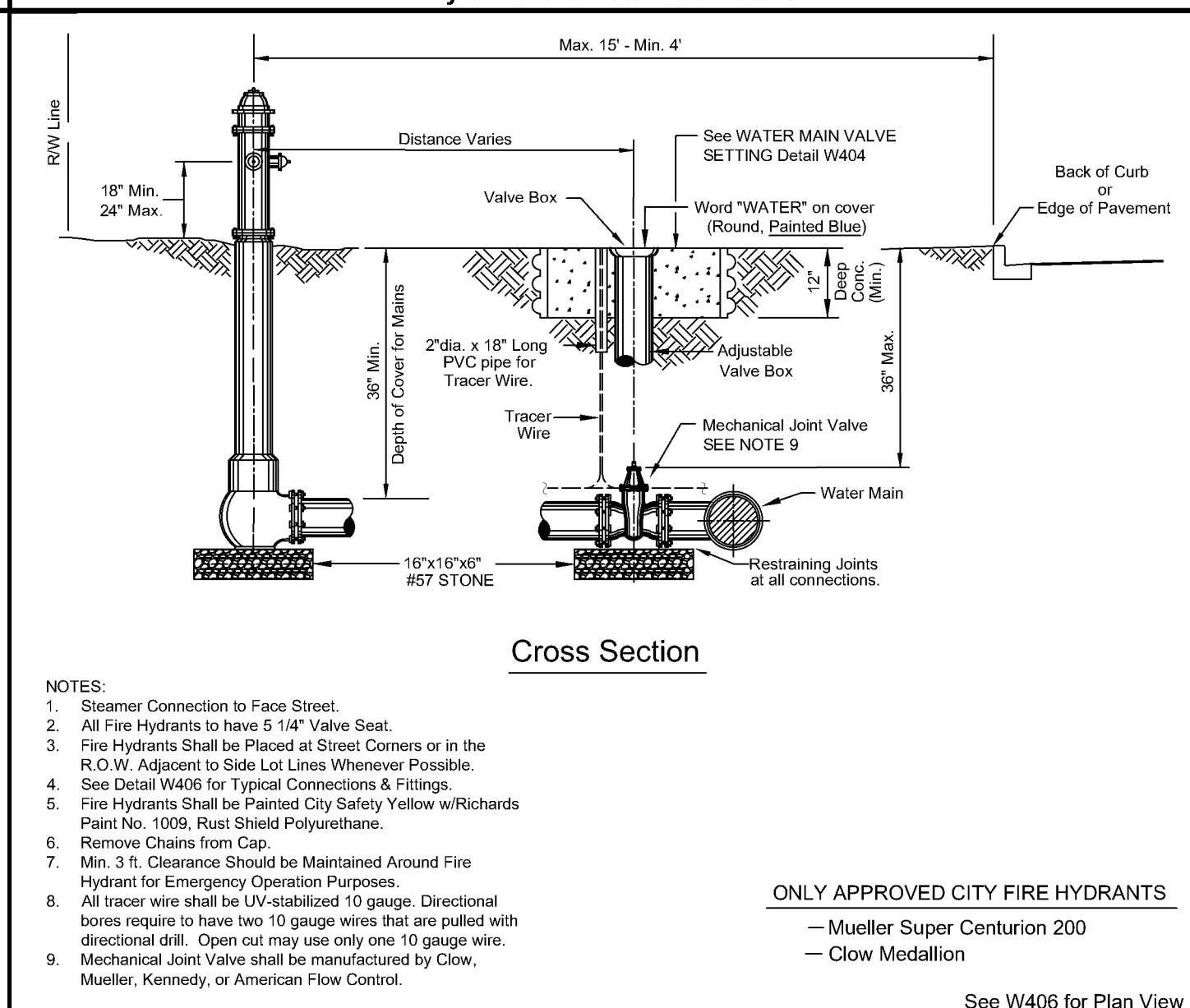
DATE: 11/05/2021 **WATER MAIN VALVE SETTING** **W404**
City of DeLand - Standard Details



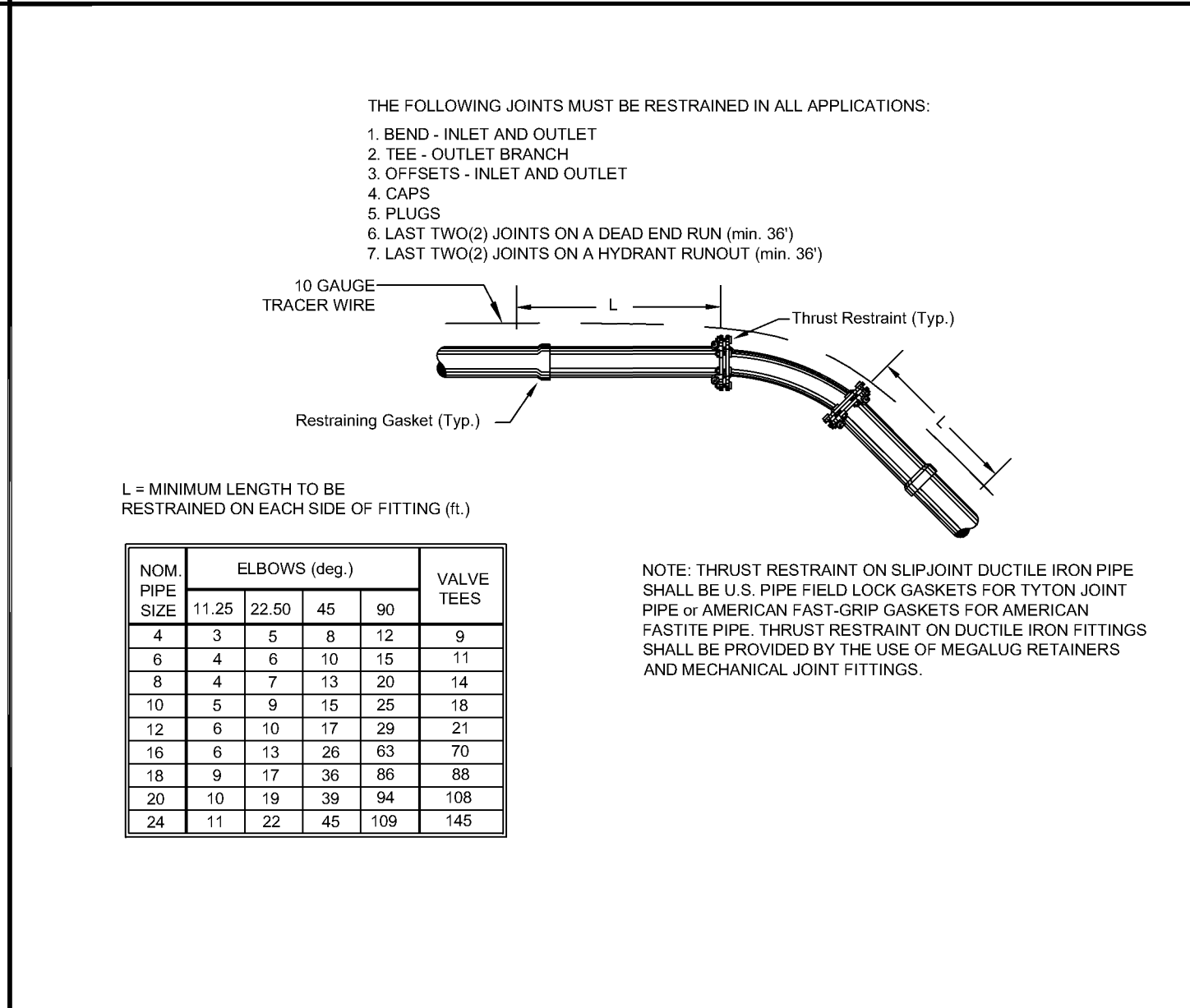
DATE: 11/05/2021 **THRUST RESTRAINING DETAIL FOR PVC PIPE** **W408**
City of DeLand - Standard Details



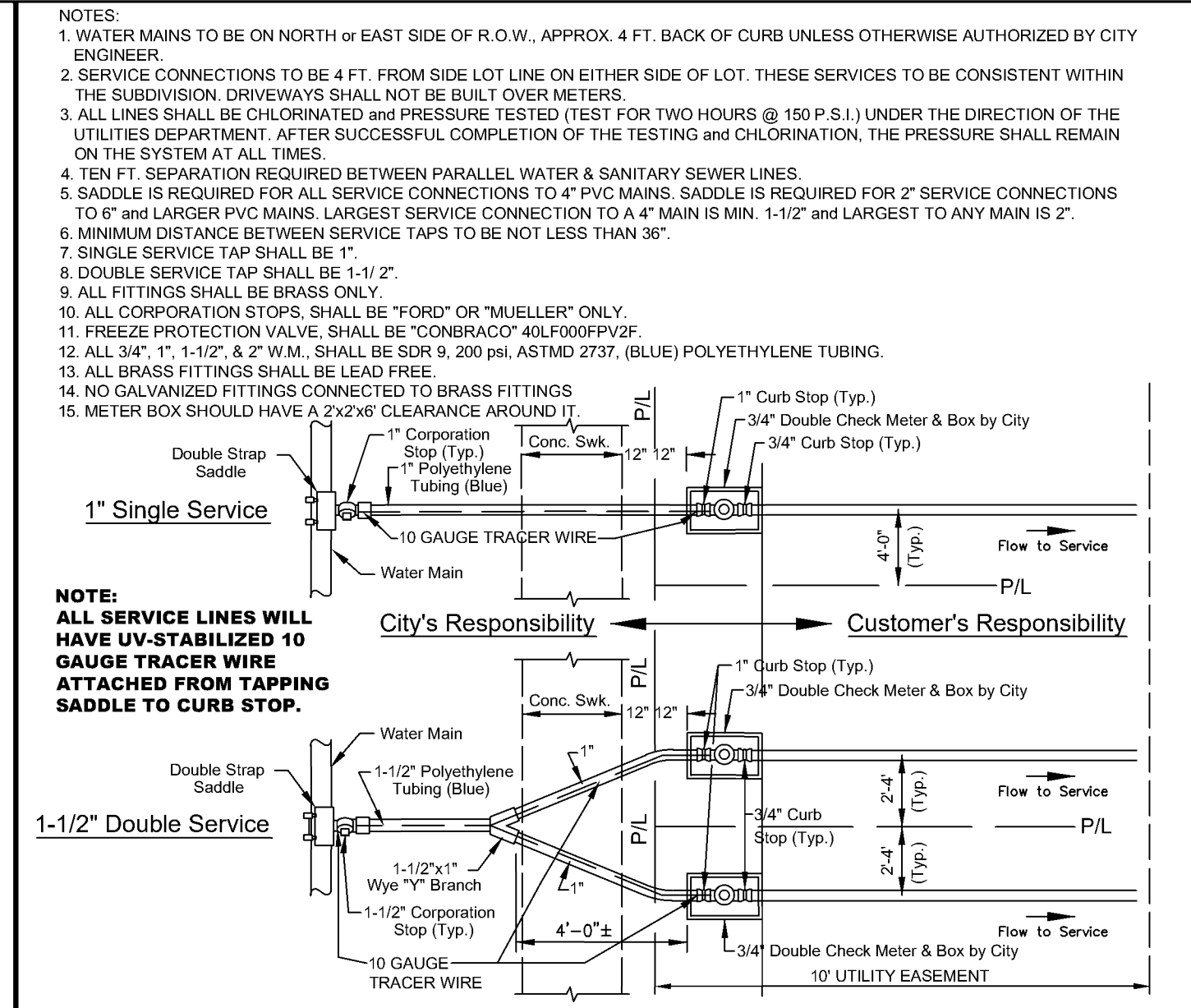
DATE: 11/05/2021 **WATER MAIN SERVICE CONNECTION WITH SIDEWALK (BACKFLOW)** **W402**
City of DeLand - Standard Details



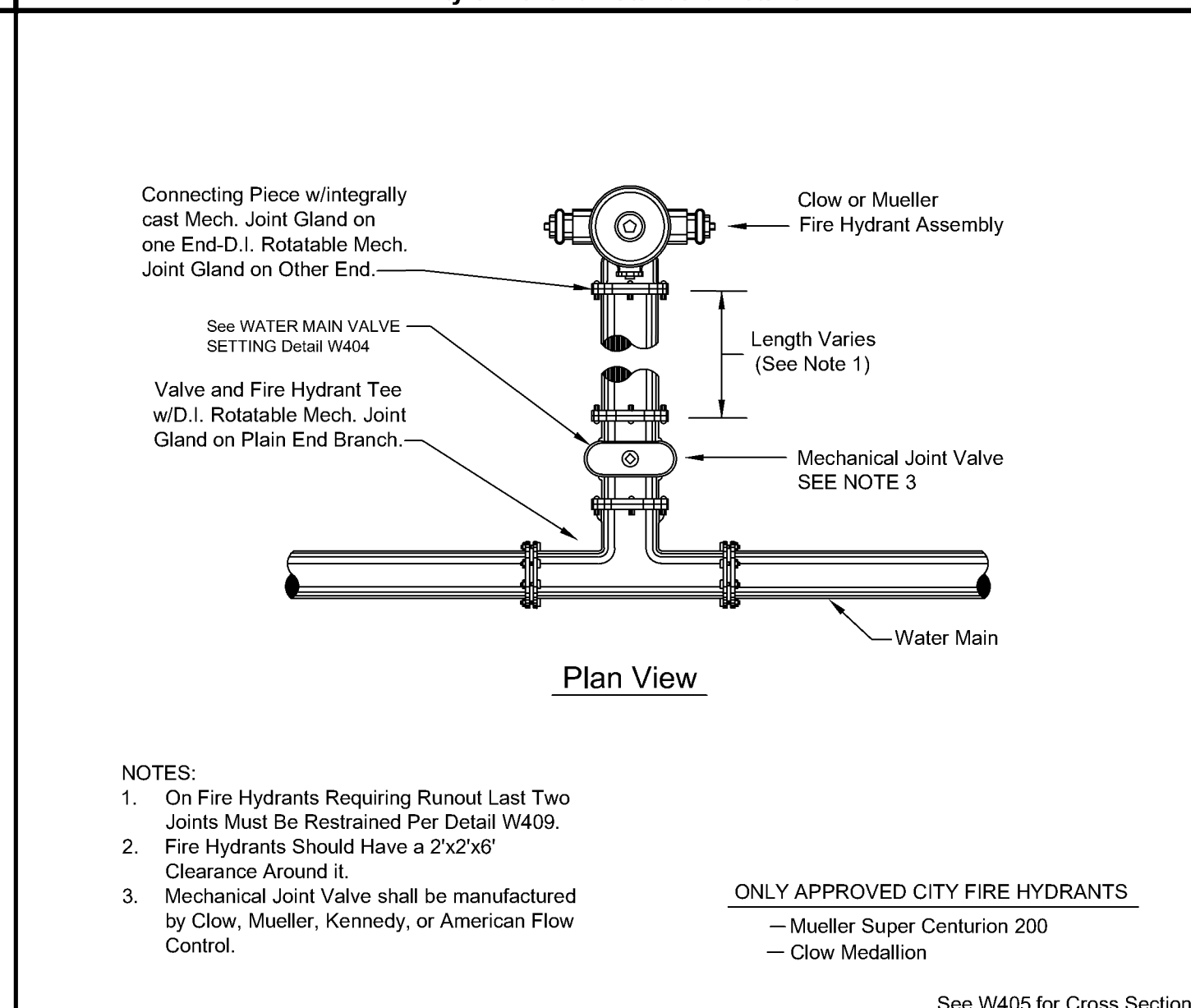
DATE: 11/05/2021 **FIRE HYDRANT SETTING SECTION** **W405**
City of DeLand - Standard Details



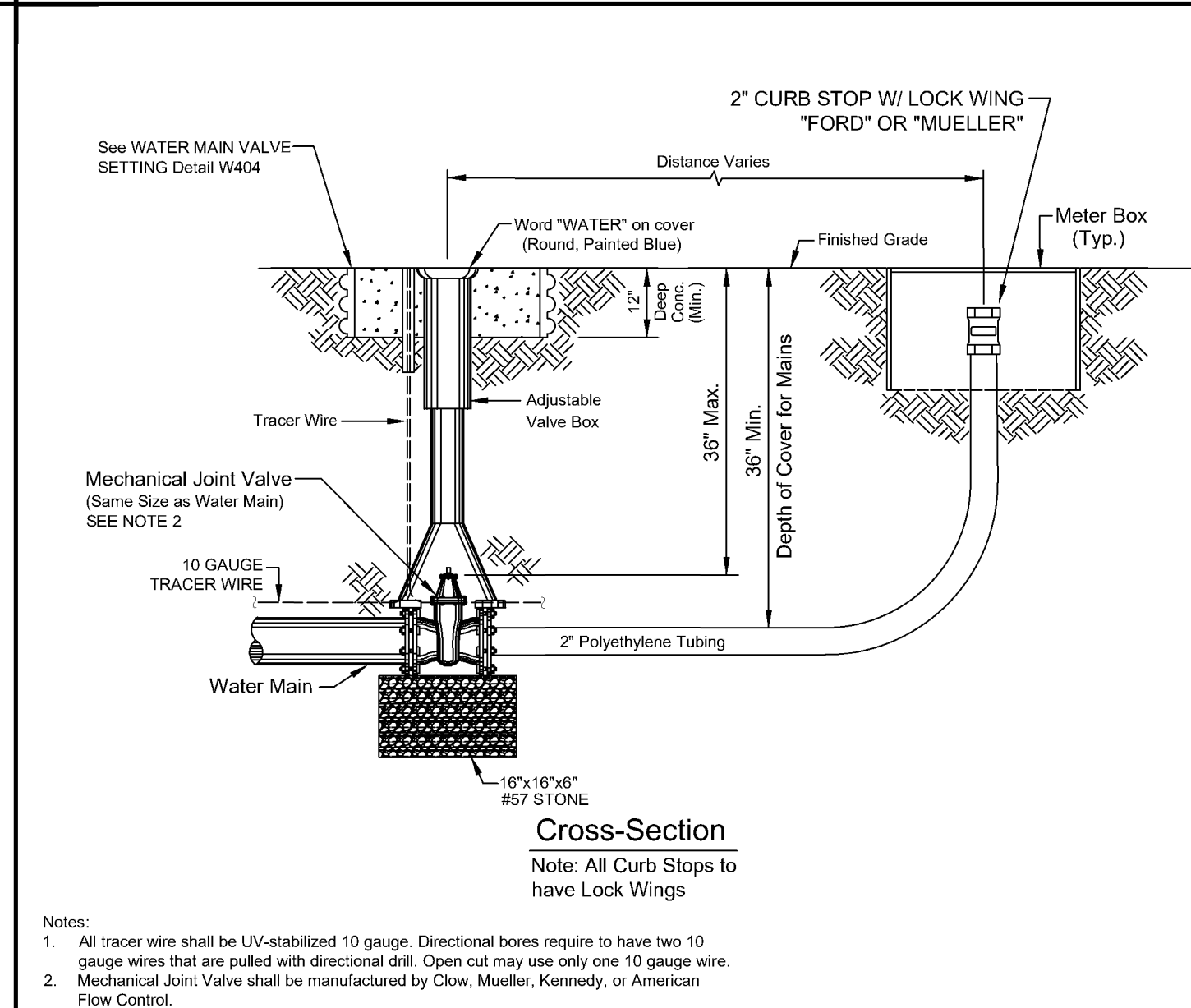
DATE: 11/05/2021 **THRUST RESTRAINING DETAIL FOR DUCTILE IRON PIPE** **W409**
City of DeLand - Standard Details



DATE: 11/05/2021 **WATER MAIN SERVICE CONN. WITH SIDEWALK (DBL. CHECK METER)** **W402A**
City of DeLand - Standard Details



DATE: 11/05/2021 **FIRE HYDRANT SETTING PLAN** **W406**
City of DeLand - Standard Details



DATE: 11/05/2021 **WATER MAIN BLOWOFF DETAIL** **W410**
City of DeLand - Standard Details

CITY OF DELAND, FLORIDA

1102 S. GARFIELD AVENUE, DELAND, FLORIDA 32724

TITLE:

drive letter/details locations

DATE: 11/05/2021

CHECKED BY: NAME

NOT TO SCALE

ERIC SAMPSON

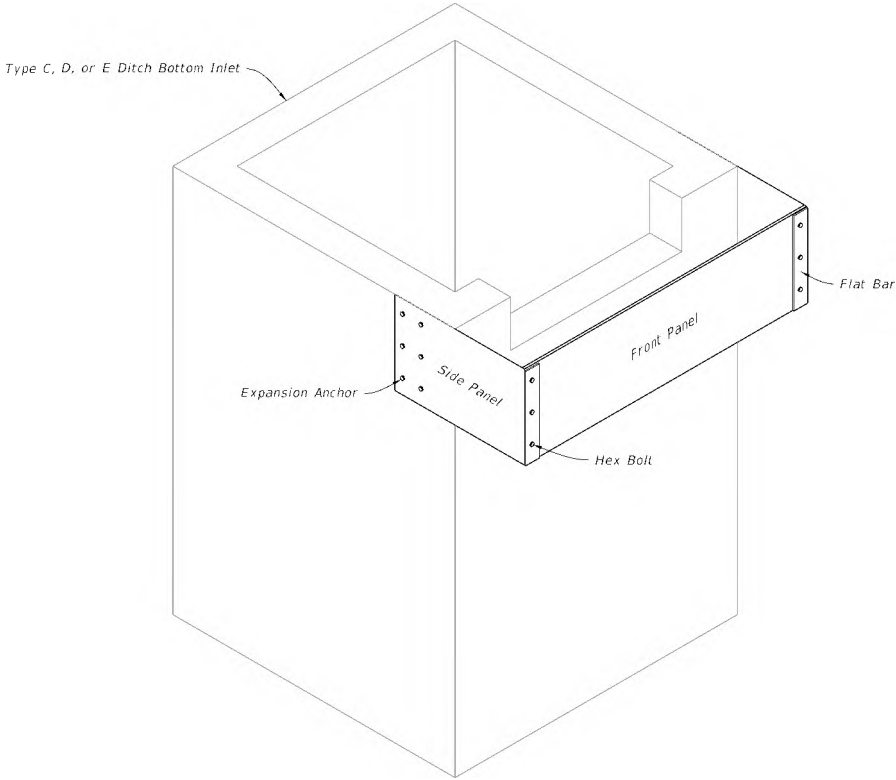
FILE:

10/06/2022 1:51:29 PM

GENERAL NOTES:

1. The side panels are dimensionally symmetric, and may be used on either side of the structure.
2. Two (2) skimmers may be installed on a single structure provided they are constructed on opposite ends.
3. The width of the front panel (dimension W) is equal to the same as the outside dimension across the front of the structure.
4. Hot dip galvanize the front panel, side panels, and flat bars after fabrication.
5. The location of the reinforcing steel in these structures must conform to the Index 425-052 to avoid conflict with the expansion anchors used to attach the skimmer.
6. Use grates on the inlets unless otherwise specified in the Plans.
7. A skimmer consists of two (2) side panels, one front panel, two (2) flat bars, and accessory hardware.

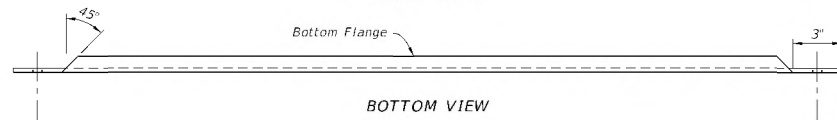
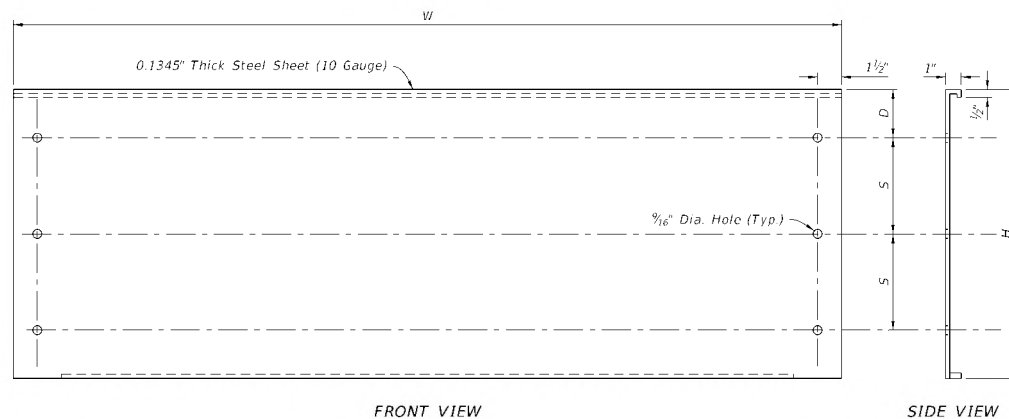
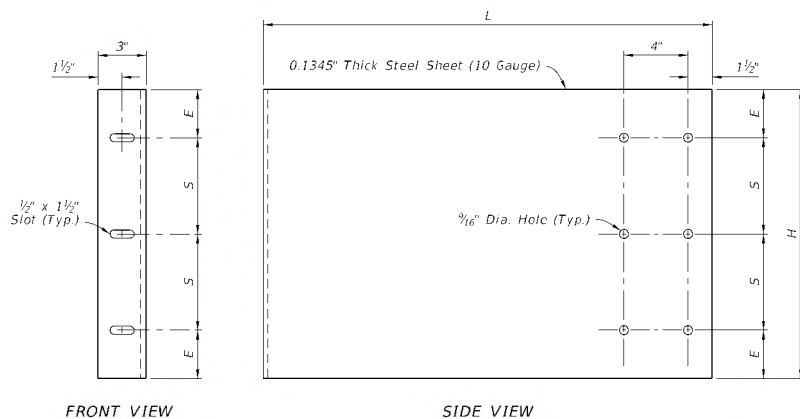
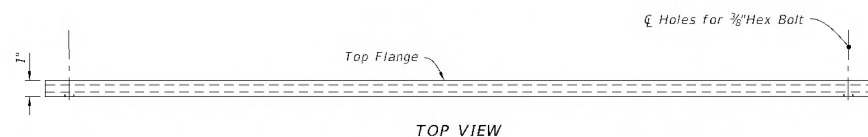
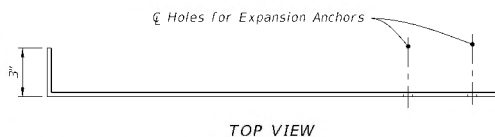
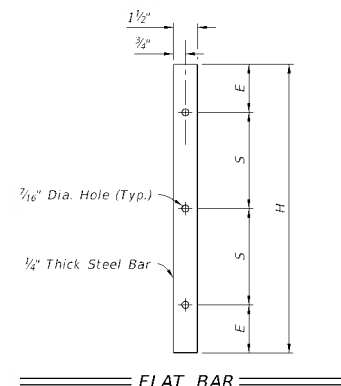
TABLE OF CONTENTS:	
Sheet	Description
1	General Notes and Contents
2	Panel and Flat Bar Details
3	Installation Details



SKIMMER

LAST REVISION	REVISION	DESCRIPTION:	 FY 2023-24 STANDARD PLANS	SKIMMER FOR OUTLET CONTROL STRUCTURES	INDEX 425-070	SHEET 1 of 3

DIMENSIONS				
Skimmer Height as Specified in the Plans				Bolt Spacing
H (in.)	D (in.)	E (in.)	L (in.)	S (in.)
12	3 $\frac{3}{16}$	3	28	3
14	3 $\frac{3}{16}$	3	28	4
16	3 $\frac{3}{16}$	3	28	5
18	3 $\frac{3}{16}$	3	28	6
20	4 $\frac{3}{16}$	4	31	6
22	4 $\frac{3}{16}$	4	31	7
24	4 $\frac{3}{16}$	4	31	8
26	4 $\frac{3}{16}$	4	31	9
28	4 $\frac{3}{16}$	4	31	10
30	5 $\frac{3}{16}$	5	31	10
32	5 $\frac{3}{16}$	5	31	11
34	5 $\frac{3}{16}$	5	31	12
36	6 $\frac{3}{16}$	6	31	12
38	6 $\frac{3}{16}$	6	31	13
40	6 $\frac{3}{16}$	6	31	14

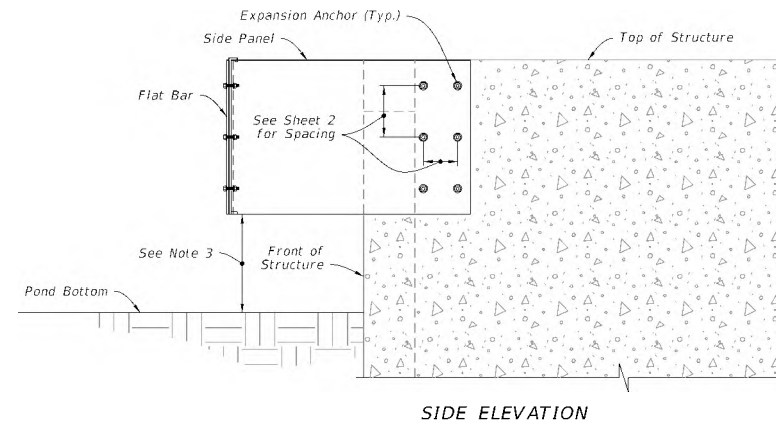
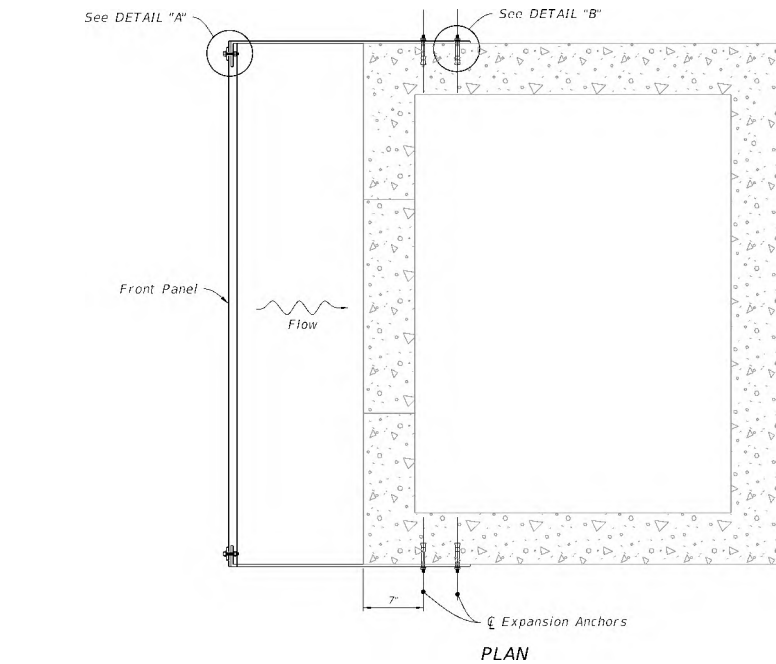
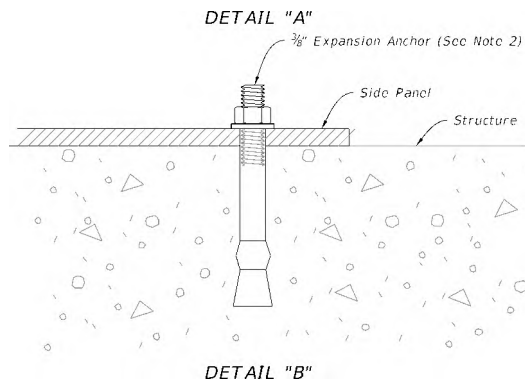
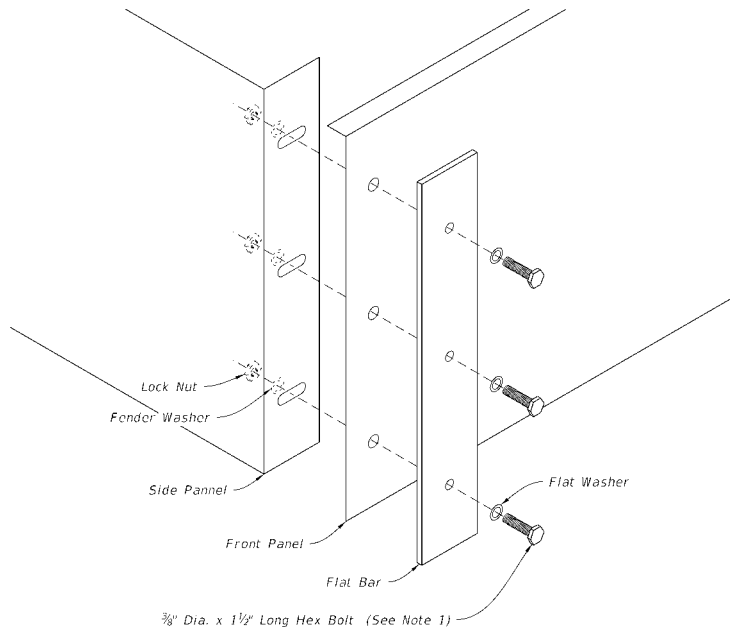


SIDE PANEL

FRONT PANEL

PANEL AND FLAT BAR DETAILS

LAST REVISION 10/01/20	DESCRIPTION:	FDOT FY 2023-24 STANDARD PLANS	SKIMMER FOR OUTLET CONTROL STRUCTURES	INDEX 425-070	SHEET 2 of 3
------------------------------	--------------	--------------------------------------	---------------------------------------	------------------	-----------------

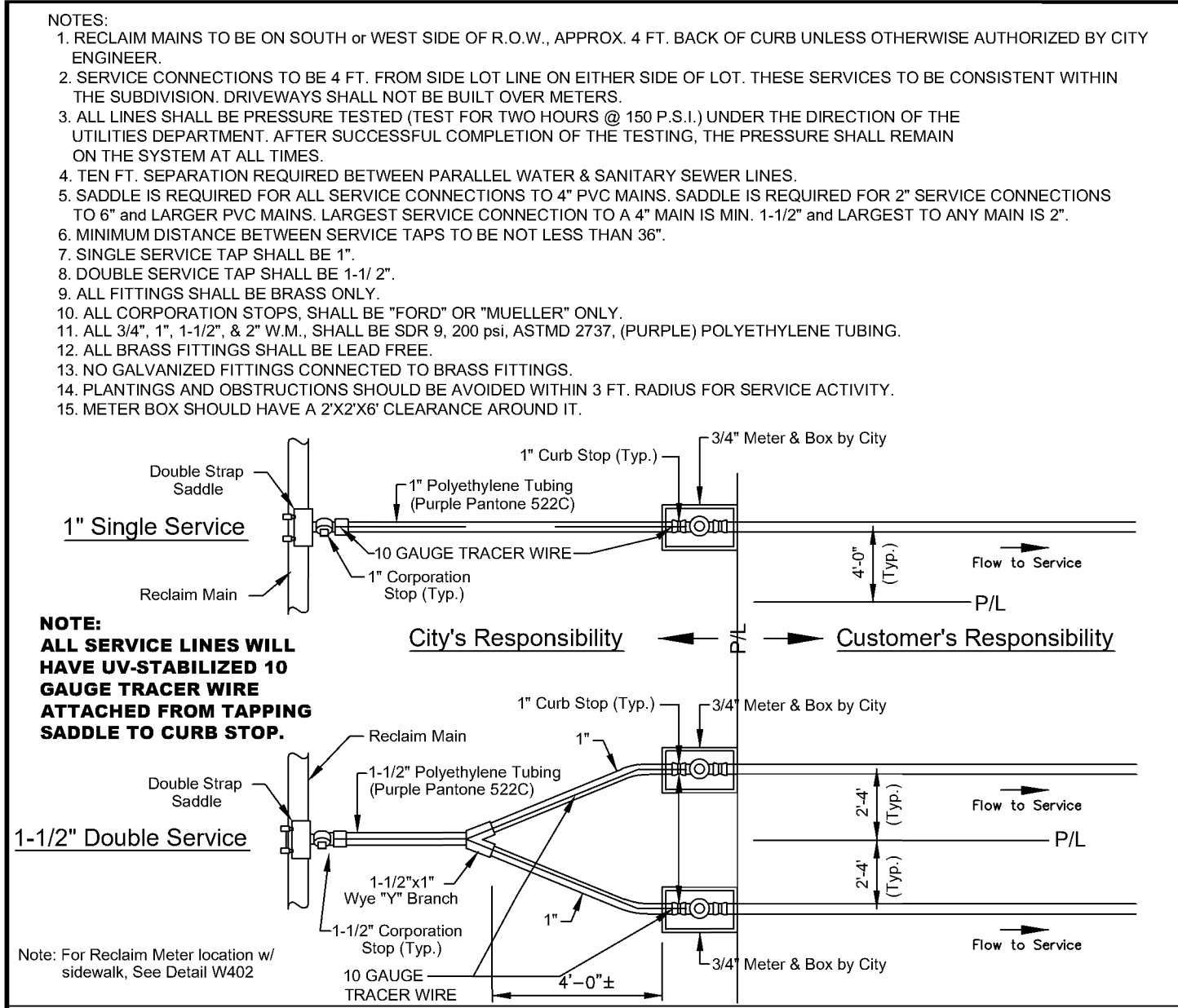


NOTES:

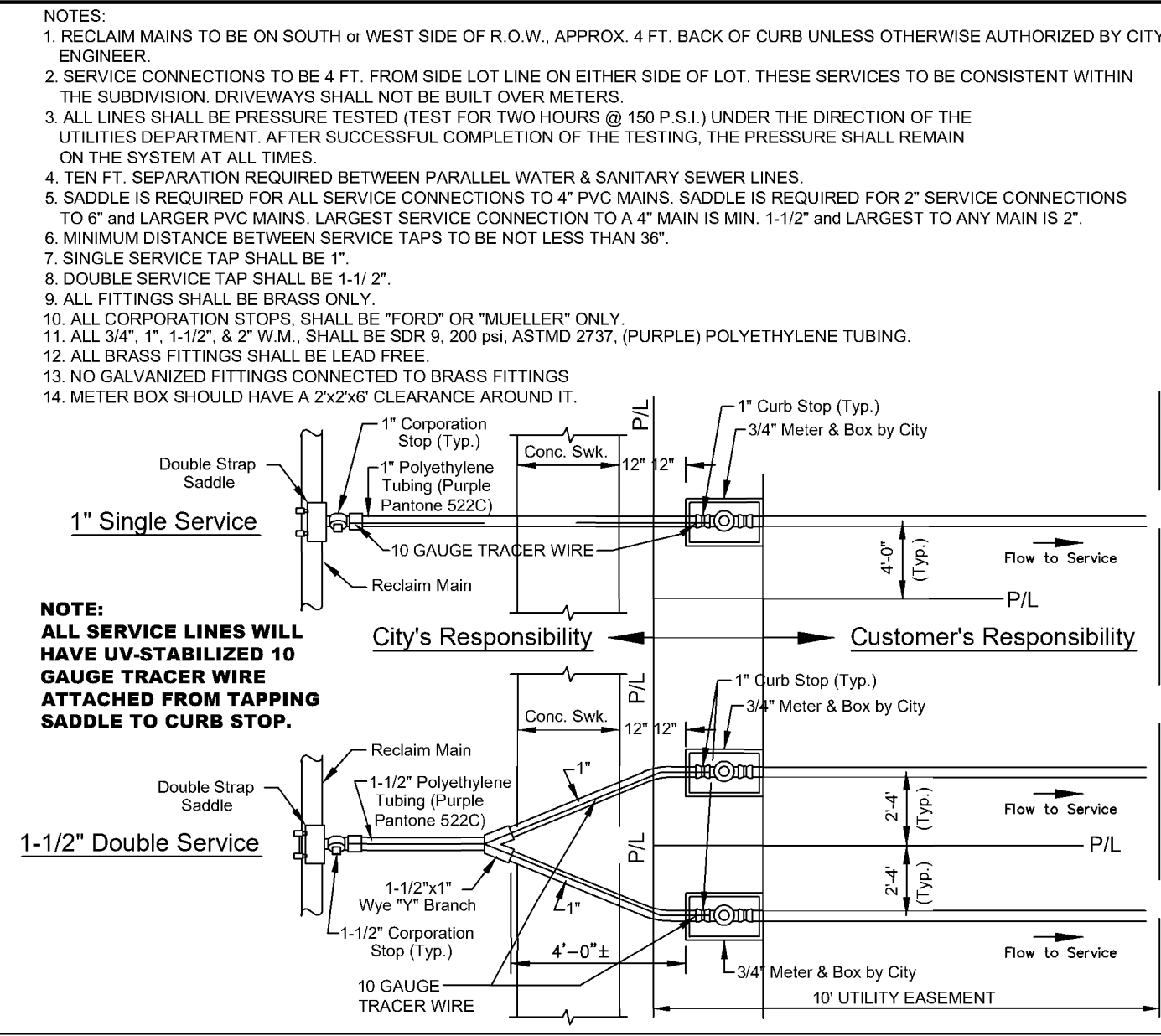
1. Hex Bolt, Flat Washer, Fender Washer, And Lock Nut, all Stainless Steel. (6 Required Per Skimmer)
2. Install a stainless steel stud type expansion anchor with nut and washer. Embedment depth = 2 1/2\"/>

INSTALLATION DETAILS

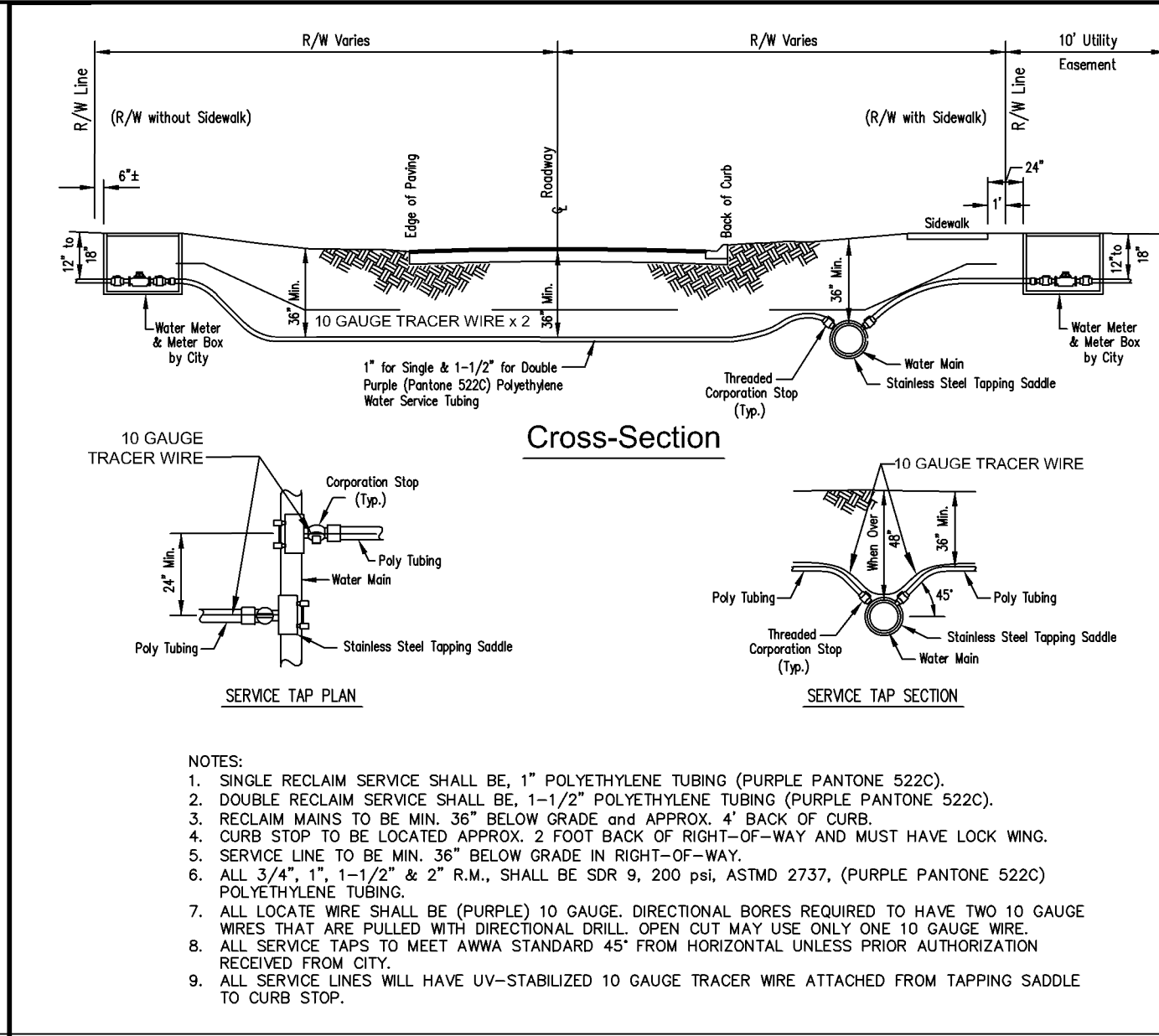
LAST REVISION 10/01/20	DESCRIPTION:  FY 2023-24 STANDARD PLANS	SKIMMER FOR OUTLET CONTROL STRUCTURES	INDEX 425-070	SHEET 3 of 3
------------------------------	--	---------------------------------------	------------------	-----------------



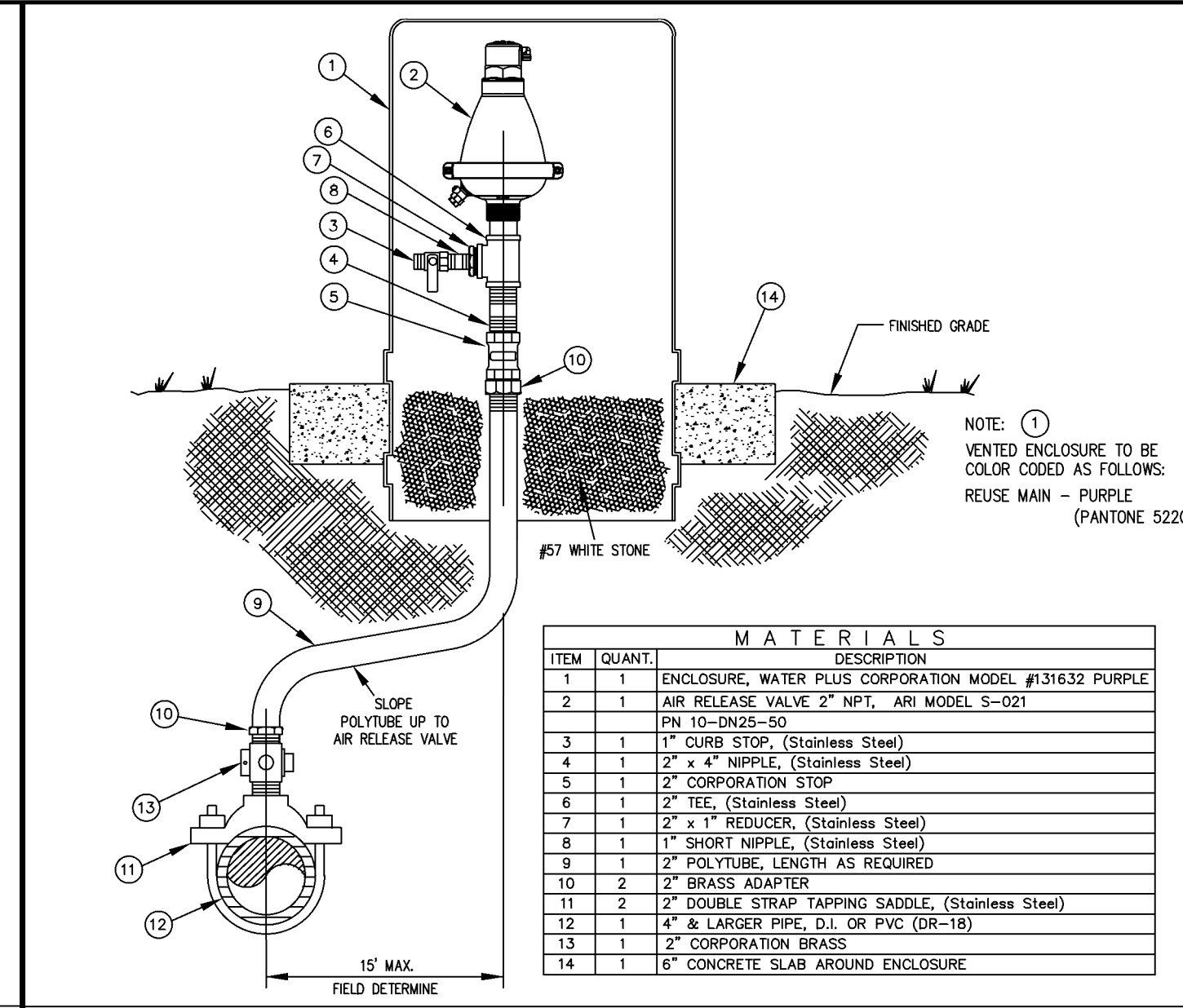
RECLAIM MAIN SERVICE CONNECTION R401
City of DeLand - Standard Details



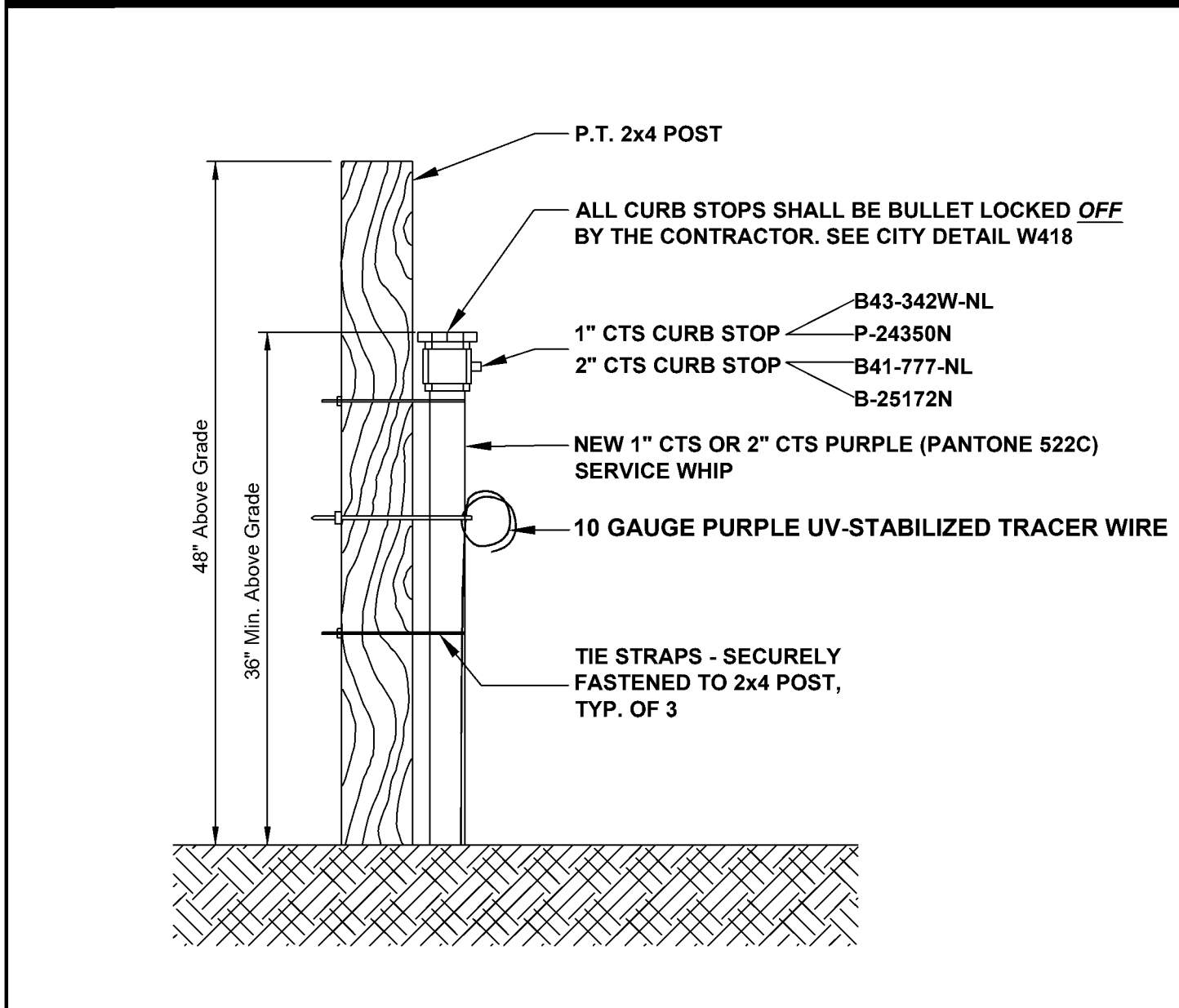
RECLAIM MAIN SERVICE CONN. WITH SIDEWALK R402
City of DeLand - Standard Details



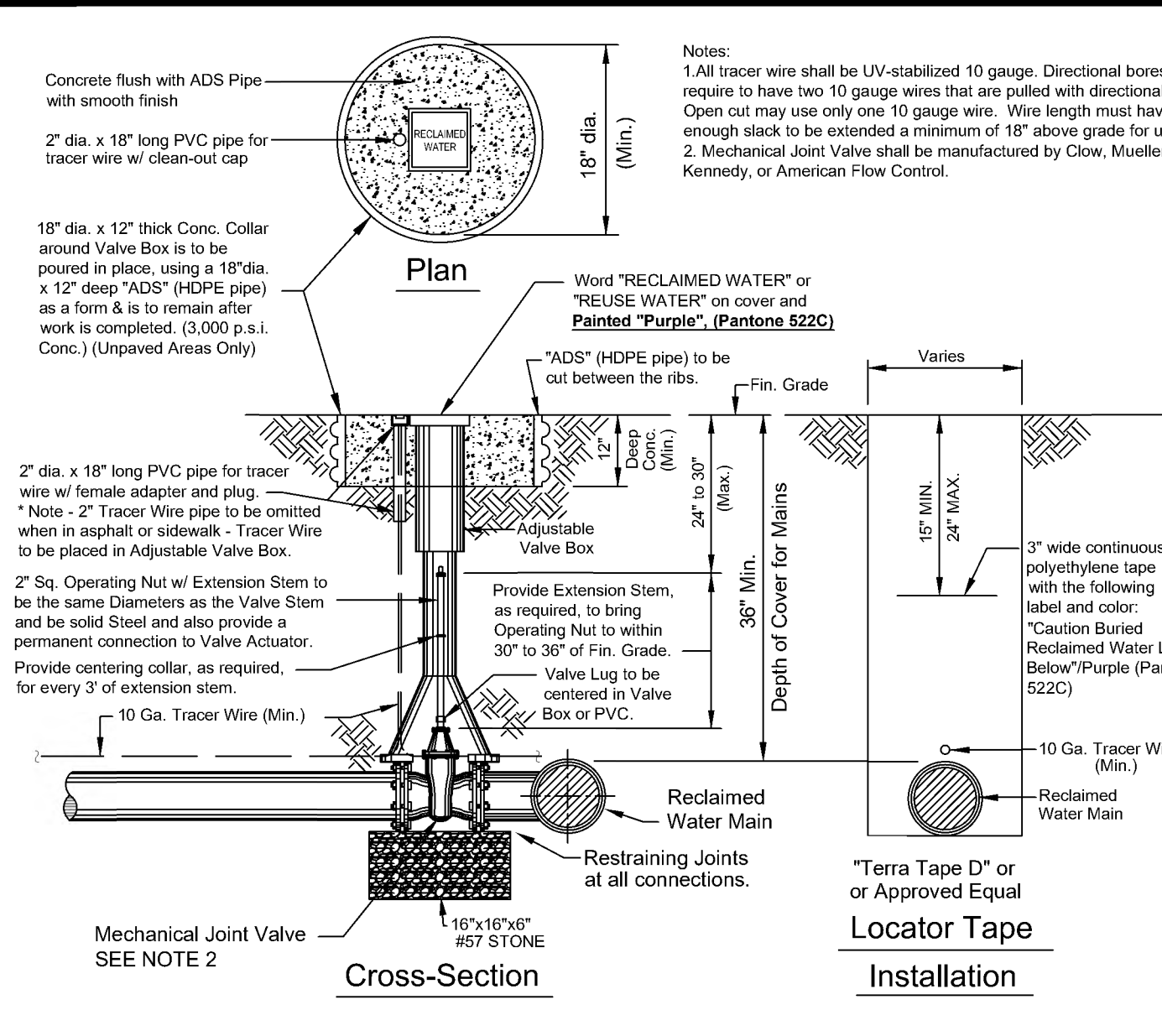
RECLAIM MAIN SERVICE LINES R403
City of DeLand - Standard Details



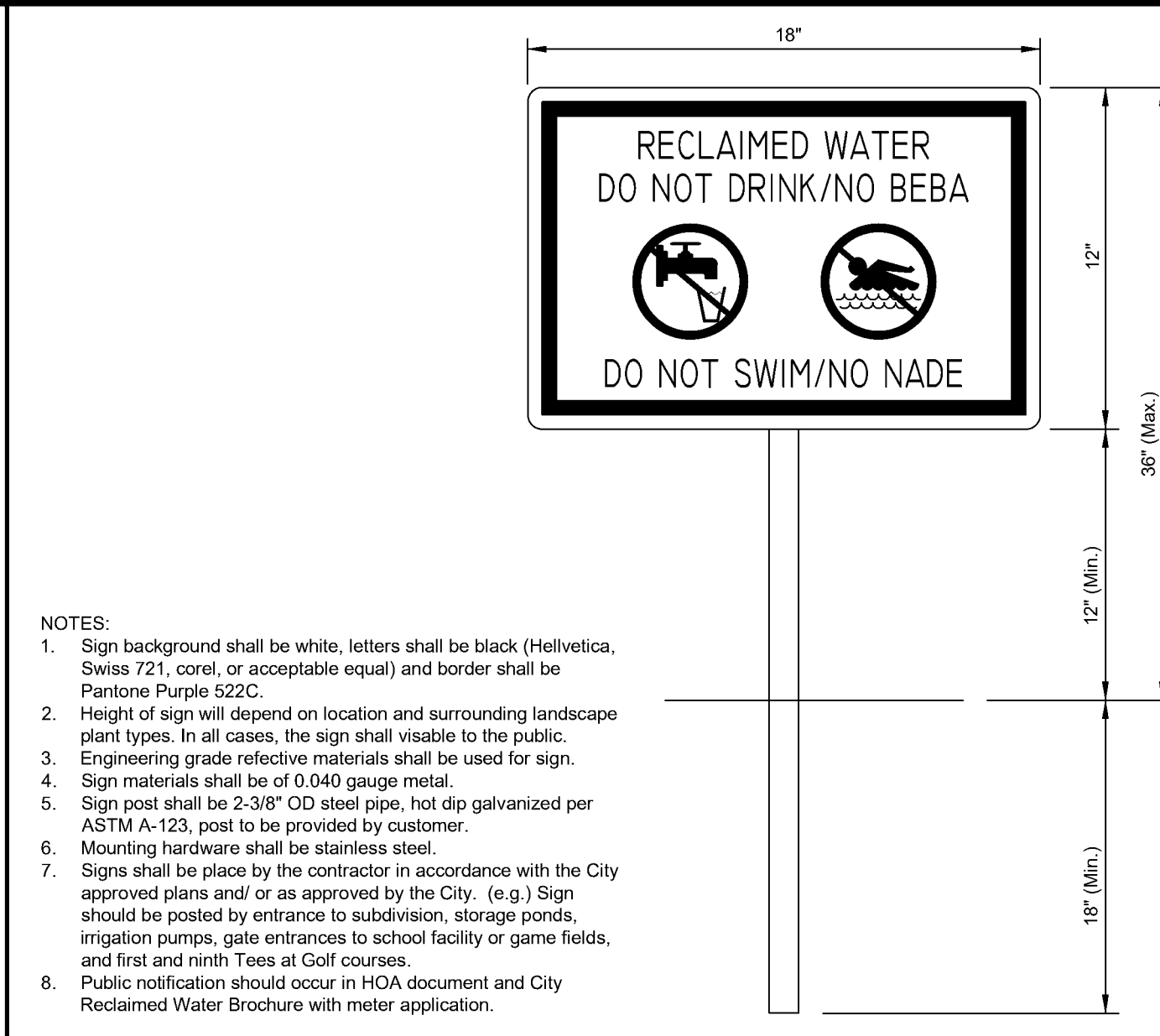
OFFSET AIR RELEASE VALVE R421
City of DeLand - Standard Details



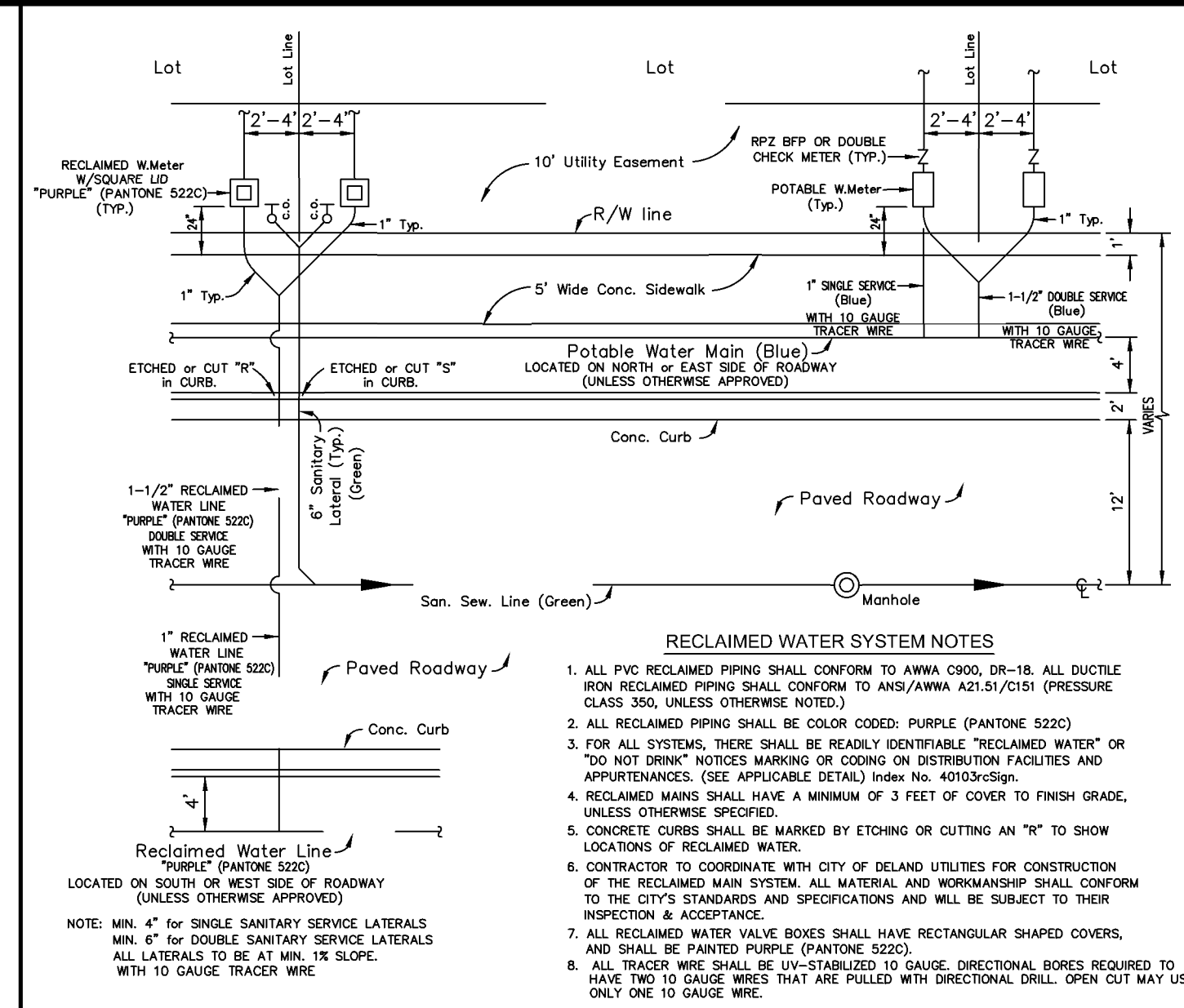
NEW REUSE SERVICE WHIP R426
City of DeLand - Standard Details



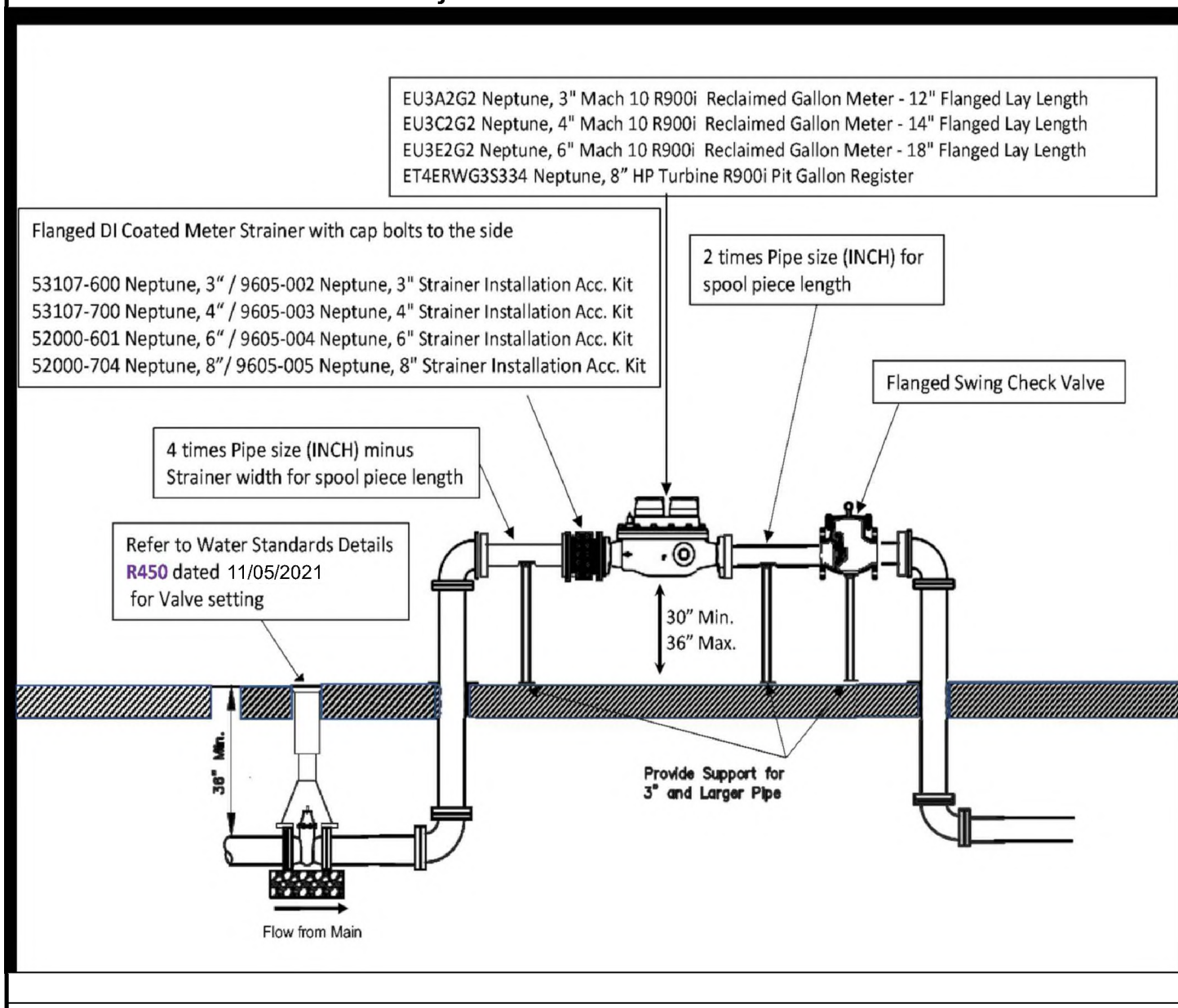
RECLAIMED WATER VALVE SETTING R450
City of DeLand - Standard Details



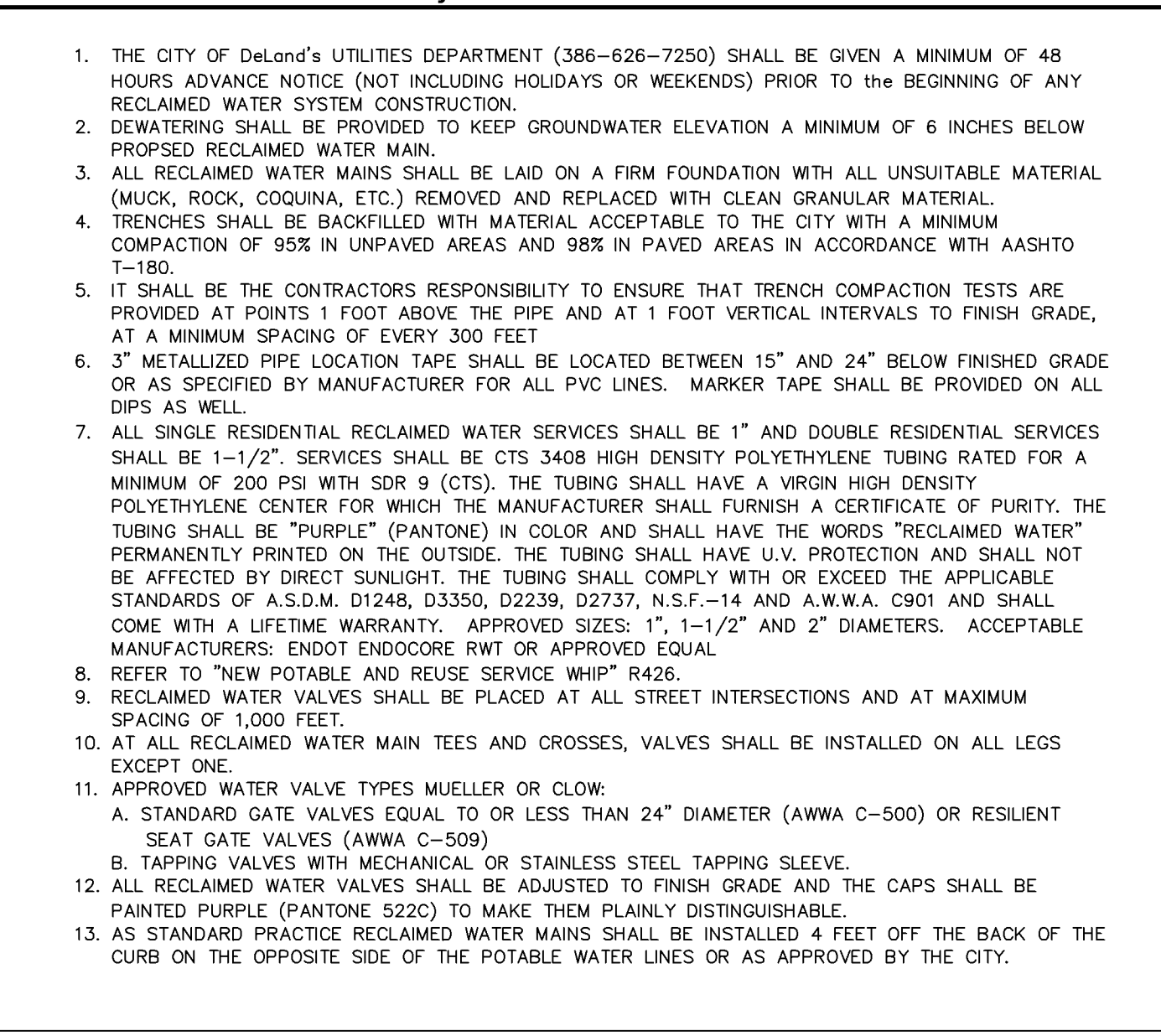
RECLAIMED WATER SIGNAGE R451
City of DeLand - Standard Details



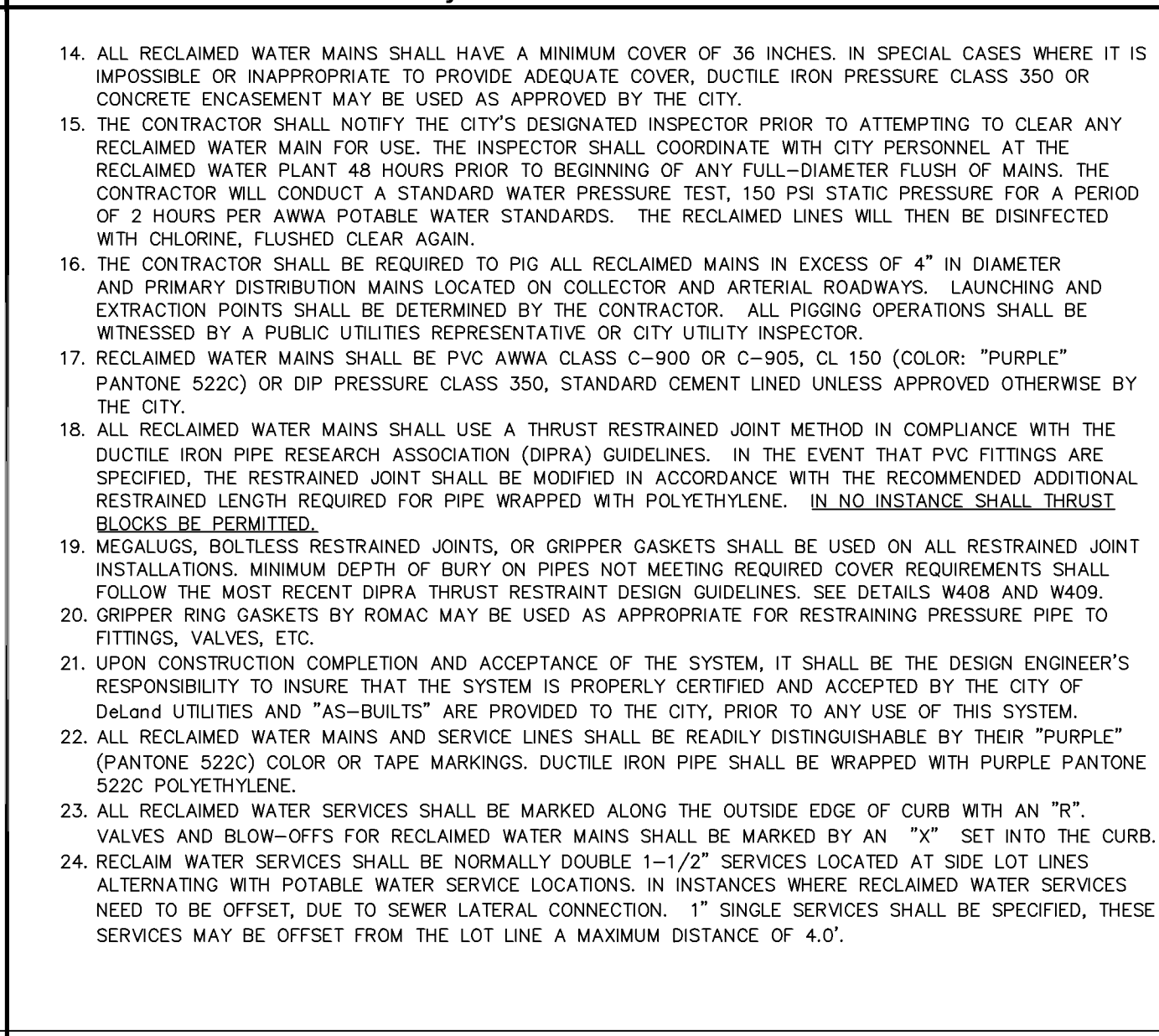
RECLAIMED WATER SYSTEM LAYOUT R452
City of DeLand - Standard Details



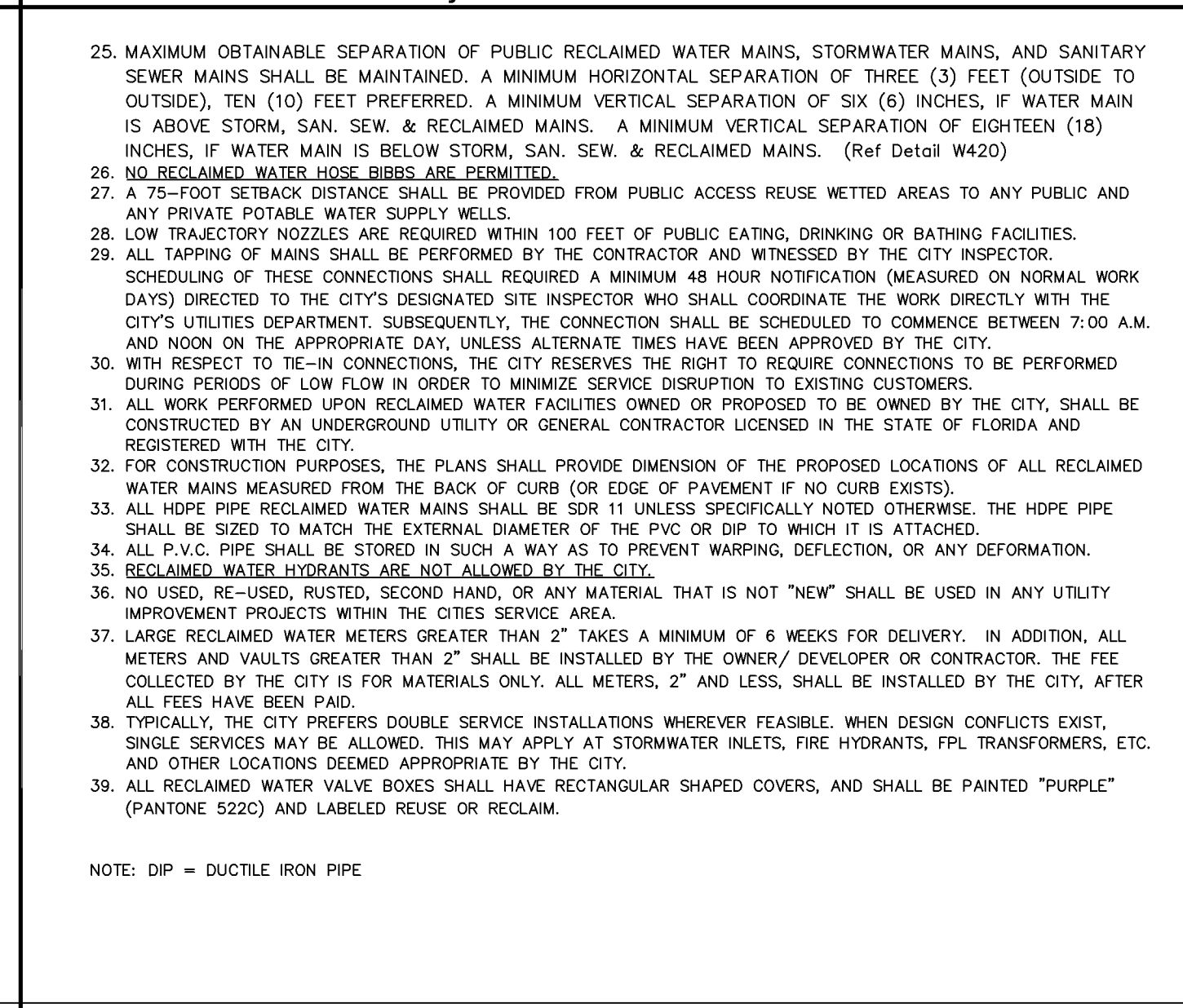
3" AND ABOVE RECLAIMED METER SET R453
City of DeLand - Standard Details



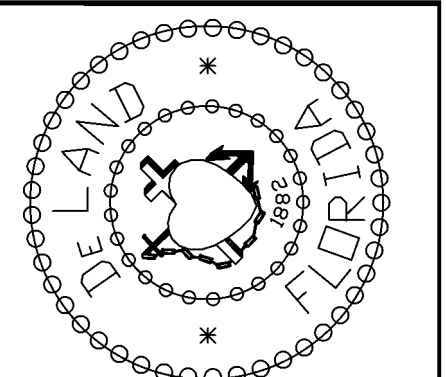
RECLAIMED WATER NOTES - 1 OF 3 R460
City of DeLand - Standard Details



RECLAIMED WATER NOTES - 2 OF 3 R461
City of DeLand - Standard Details



RECLAIMED WATER NOTES - 3 OF 3 R462
City of DeLand - Standard Details



CITY OF DELAND, FLORIDA

1102 S. GARFIELD AVENUE, DELAND, FLORIDA 32724

TITLE:

drive letter/details locations

FILE:

SCALE: NOT TO SCALE

DRAWN BY: ERIC SAMPSON

CHECKED BY: NAME

DATE: 11/05/2021

DATE: 11/05/2021

**PLANNING STAFF REPORT
To
PLANNING BOARD**

April 19, 2023

APPLICATION: PSB23-030

SUBJECT: Preliminary Plat for The Canopy at Blue Lake PD

1. Location: On the north side of E. Wisconsin Ave., west of N. Blue Lake Ave.

2. Applicant: Yedlin & Co. LLC

3. Size: ± 4.874 acres, Parcel ID 701000000300

4. Existing Zoning & Land Use:

Land Use: Urban Low Intensity (ULI)
Zoning: The Canopy at Blue Lake PD

5. Surrounding Conditions:

	SURROUNDING USE:	SURROUNDING ZONING:
North:	Low Density Residential	R-1A
South:	Education	E-1
East:	VC Urban Low Intensity	VC: R-3A
West:	Medium Density Residential	R-12

6. Applicable Regulations:

Sec. 33-146.05. *Subdivision of Land.*

The Canopy at Blue Lake Planned Development Agreement

7. Physical Characteristics:

The subject property is located On the north side of E. Wisconsin Ave. and west of N. Blue Lake Ave. The property is entirely wooded with some mature trees and vegetation. The property lies outside of the 100-year floodplain, and no wetlands are indicated.

The proposed development abuts single-family residential to the north and the single-story apartment units, known as Ashton Place, to the west. To the east is sparsely developed with larger residential acre lots.

8. Public Utilities and Service:

Water: The proposed development will be served by City potable water facilities.

Sewer: The proposed development will be served by City sanitary sewer facilities.

9. Type of Development:

The applicant seeks to develop the subject property into a 12-lot single-family residential subdivision. The adopted PD agreement allows for single-family homes only, and complies with the development standards outlined in the PD. The perimeter landscape buffers adhere to Sec. 33-92 of the code, providing a 25' wide buffer to the north, a 20' wide buffer to the south along E. Wisconsin Ave., a 15' wide buffer to the east and a 20' wide buffer to the west.



10. Analysis:

The proposed subdivision is located on the north side of E. Wisconsin Ave., between N. Blue Lake Ave. (to the east) and N. Hill Ave. (to the west). Access will be provided via a single driveway connection to E. Wisconsin Ave. The applicant will need to apply for a Use Permit from Volusia County.

An environmental report dated November 11, 2022 was submitted as part of the application. Per the report, no listed species of flora or fauna were observed.

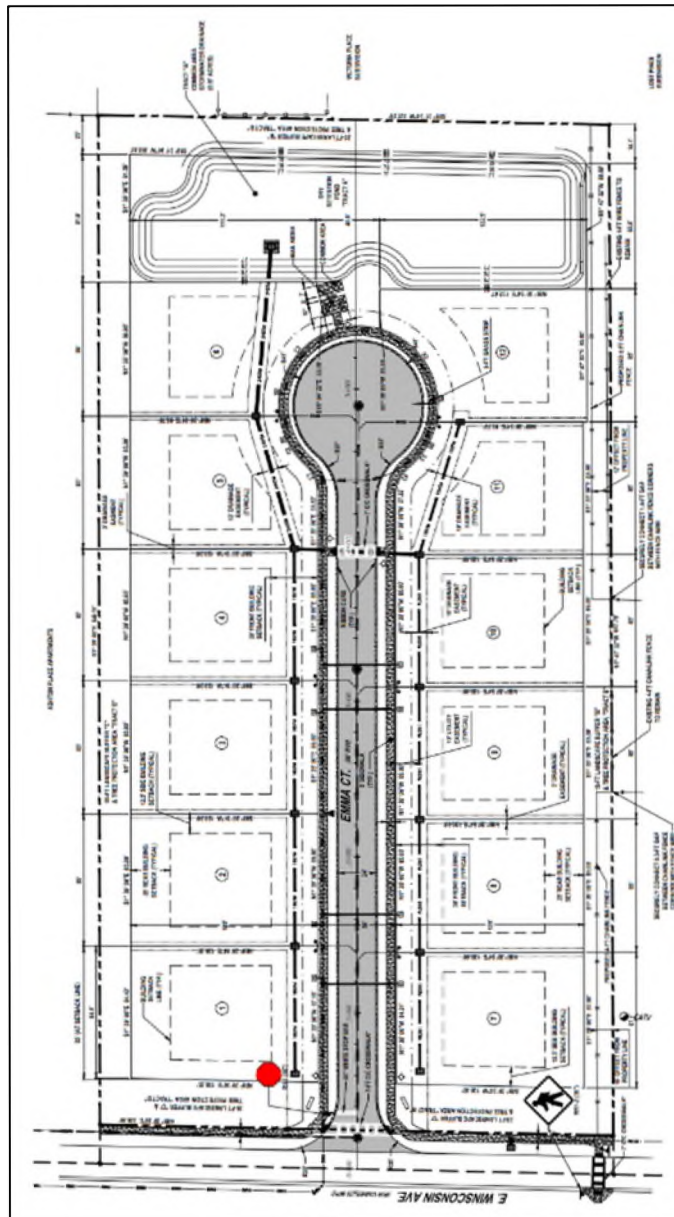
City Commission approved the request for rezoning of the subject property to The Canopy at Blue Lake PD on December 19, 2022.

The proposed preliminary plat includes the approved civil construction plans and is consistent with the adopted PD agreement, concept plan, and applicable land development regulations. Prior to construction, a separate site plan must be submitted for any model homes or temporary offices being permitted.

At the August 18, 2022 Technical Review Committee meeting, members recommended the Preliminary Plat be forwarded on to the Planning Board, subject to the addressing the remaining staff comments, as attached.

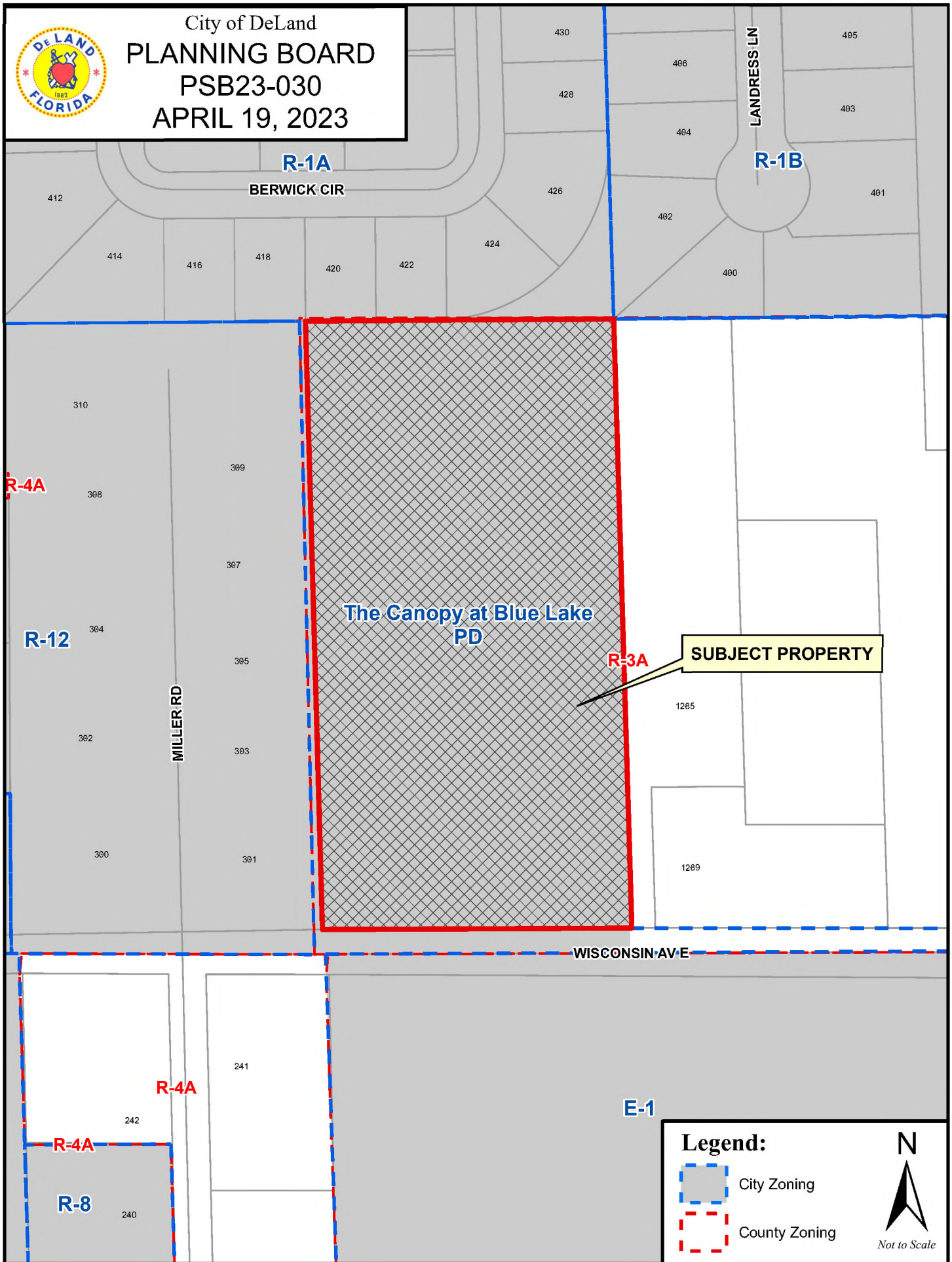
11. Recommendation:

Staff recommends approval of the preliminary plat by the Planning Board, subject to all comments being met and addressed prior to the plans being forwarded to City Commission for their approval.



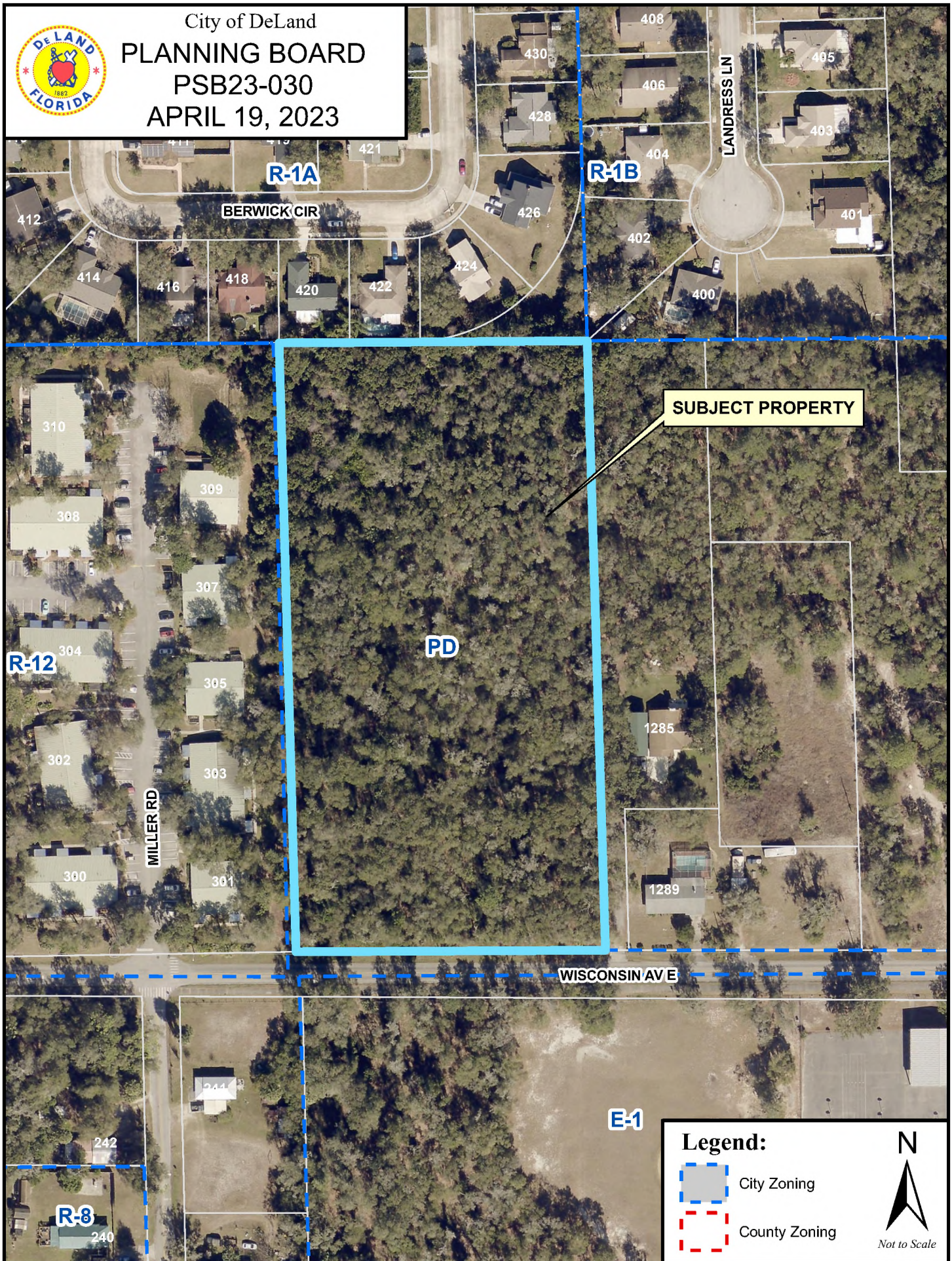


City of DeLand
PLANNING BOARD
PSB23-030
APRIL 19, 2023





City of DeLand
PLANNING BOARD
PSB23-030
APRIL 19, 2023



SUBJECT PROPERTY

Legend:

-  City Zoning
-  County Zoning



Issues for record PSB23-030

Job Address: 1 E Wisconsin AV, Deland Florida 32724

Job Description: Propose a 12-unit Single Family home residential subdivision on an existing undeveloped 4.87-acre site to be known as "The Canopy at Blue Lake".

Discipline	Status	Details	Attached To	Created By	Last Updated By	Modifications Required
Tree Replacement Reserve Account						
Forestry	Open	If your plan provides 222" DBH and your replacement requirement is 1,128" DBH, you would be 906" DBH deficient in tree replacement. You will need to increase the size or number of trees or contribute \$75 per inch not planted into the Tree Replacement Reserve Account. If no changes are made, your contribution would be \$67,950.	L1	Mariellen Calabro	Deborah Glick	Yes
Turkey Oak						
Forestry	Open	Turkey Oak is not on your tree legend.	L1	Mariellen Calabro	Deborah Glick	Yes
Tree Barricade Detail						
Forestry	Open	Replace with 2023 version of Tree Barricade Detail Last comment from reviewer: Sorry for the missing information on the website. I will add it to the document section.	7	Mariellen Calabro	Deborah Glick	Yes
Emory Oak						
Forestry	Open	Emory Oak is a west coast species. Replace label with correct species. Last comment from reviewer: If it looks like Quercus alba, it's probably Shumard or Turkey Oak. Based on the way you have it labeled, it appears to be laurel oak. Please revise plan once actual species has been determined.	6	Mariellen Calabro	Deborah Glick	Yes
Site Data						
Forestry	Open	If the project area is 212,320 sf, the minimum coverage requirement would be 510" DBH. Without additional information, I cannot determine whether minimum coverage requirements have been met. Last comment from reviewer: Please provide data on trees to remain on site.	5	Mariellen Calabro	Deborah Glick	Yes

Discipline	Status	Details	Attached To	Created By	Last Updated By	Modifications Required
Root ball placement						
Forestry	Open	The bottom of the root ball should be on existing or recompact soil on the Staking Details.	L2	Mariellen Calabro	Deborah Glick	Yes
Last comment from reviewer: Top two details have not been modified.						
Tree Worksheets						
Forestry	Open	Please include tree replacement, specimen tree, tree protection area and minimum tree coverage worksheets with next submission.	L1	Mariellen Calabro	Deborah Glick	Yes
Irrigation Plan						
Forestry	Open	Please provide irrigation plan for the project.	L1	Mariellen Calabro	Deborah Glick	Yes
Last comment from reviewer: Please add irrigation plans and details to the plan room.						
Front Yard Trees						
Forestry	Open	Provide specifications and species for front yard trees if they have not already been included in the Plant Schedule.	L1	Mariellen Calabro	Deborah Glick	Yes
Last comment from reviewer: On Note 1, specify that front yard trees will be installed five to fifteen feet back from the ROW per Code.						
Camphor						
Forestry	Open	Fix spelling of camphor in the tree legend. Camphor cannot be used toward minimum coverage requirements. Removal of camphor does not require replacement.	6	Mariellen Calabro	Deborah Glick	Yes
Repalcement Provided						
Forestry	Open	If you replace the River Birch with another species, your plan would provide 144" DBH in canopy trees and 46" DBH in understory trees for a total of 190" DBH. Without additional information, I cannot determine whether sufficient replacement has been provided.	L1	Mariellen Calabro	Deborah Glick	Yes
Last comment from reviewer: Your revised plan would provide 140" DBH in canopy trees and 82" DBH in understory trees for a total of 222" DBH. Without additional information, I cannot determine whether sufficient replacement has been provided.						

Discipline	Status	Details	Attached To	Created By	Last Updated By	Modifications Required
Plant Schedule Specifications						
Forestry	Open	Add height, spread, and container size to specifications per Florida Grades and Standards requirements. Last comment from reviewer: Add 45-gallon container size to plant schedule and increase minimum height of crape myrtle to 8' to meet Code minimum size requirements.	L1	Mariellen Calabro	Deborah Glick	Yes
Tree Barricade						
Forestry	Open	Tree barricade needs to be placed around all trees to be preserved. As an alternative to barricading each tree, you can run the tree barricade along the silt fence. Last comment from reviewer: Please add tree barricade and silt fence to the legend on this page.	L1	Mariellen Calabro	Deborah Glick	Yes
Emory Oak						
Forestry	Open	Emory Oak is a west coast species. Please provide correct identification. Last comment from reviewer: This species has not been added to the plan. Based on the circle use, it appears to be Laurel Oak. Please remove text to avoid confusion. If it looks like Quercus alba, it may be Shumard or Turkey Oak. Please update legend if there is actually a third species of oak or remove text if it is Laurel Oak.	L1	Mariellen Calabro	Deborah Glick	Yes
Trees Removed and Preserved						
Forestry	Open	Provide a spreadsheet showing trees to be removed and preserved. Last comment from reviewer: The summary provided on Sheet L1 is not sufficient. Please provide the requested spreadsheet.	L1	Mariellen Calabro	Deborah Glick	Yes
site lighting						
Planning	Open	Will there be any on street lighting? What about around the mail kiosk and common area? Bicycle parking? If any site lighting is proposed, please include a photometric plan that includes the lighting for the common areas. Last comment from reviewer: Awaiting the photometric plan	8	Kendall Story	Deborah Glick	Yes

INDEX OF SHEETS	
DWG.NO.	DESCRIPTION
1	COVER
SU-1	BOUNDARY AND TOPOGRAPHIC SURVEY
3	CONSTRUCTION NOTES AND SPECIFICATIONS (SHT. 1 OF 3)
4	CONSTRUCTION NOTES AND SPECIFICATIONS (SHT. 2 OF 3)
5	CONSTRUCTION NOTES AND SPECIFICATIONS (SHT. 3 OF 3)
6	DEMOLITION AND SWPPP PLAN
7	SWPPP DETAILS AND NOTES
8	SITE LAYOUT PLAN
8.1	SUBDIVISION PLAN
9	GRADING PLAN
10	POND PLAN
11	DRAINAGE PLAN
12	UTILITIES PLAN
13	UTILITY DETAILS
14	PLAN AND PROFILE
15	CITY OF DELAND WATER SYSTEM DETAILS
16	CITY OF DELAND WATER SYSTEM DETAILS
17	CITY OF DELAND WATER SYSTEM DETAILS
18	CITY OF DELAND SANITARY DETAILS
19	CITY OF DELAND MARKER BALL DETAILS
20	CITY OF DELAND MARKER BALL DETAILS
21	MISCELLANEOUS DETAILS AND NOTES
22	FDOT STANDARD DETAILS
23	FDOT STANDARD DETAILS
24	FDOT STANDARD DETAILS
25	FDOT STANDARD DETAILS
26	FDOT STANDARD DETAILS
27	FDOT MAINTENANCE OF TRAFFIC
28	FDOT MAINTENANCE OF TRAFFIC
L-1	LANDSCAPE PLAN
L-2	LANDSCAPE DETAILS

SITE PLAN DRAWINGS FOR

THE CANOPY AT BLUE LAKE

SECTION 10, TOWNSHIP 17 S, RANGE 30 E
TAX PARCEL ID # 701000000300
WISCONSIN AVE
DELAND, FL 32724
FEBRUARY 2023

PROJECT TEAM

APPLICANT/ PROPERTY OWNER:	YEDLIN & CO. LLC 5200 OLD WINTER GARDEN ROAD ORLANDO, FLORIDA 32811 PHONE: (416) 465-4767 EMAIL: SLAVA@YEDLIN.CA
CIVIL ENGINEER / PROJECT MANAGER / LANDSCAPE ARCHITECT:	NEWKIRK ENGINEERING, INC. 1230 NORTH US HIGHWAY 1, SUITE 204 ORMOND BEACH, FL 32174 PHONE: (386) 872-7794 EMAIL: TYLERM@NEWKIRK-ENGINEERING.COM
GEOTECHNICAL:	BECHTOL ENGINEERING AND TESTING, INC. 665 W NEW YORK AVENUE DELAND, FL 32704-5243 PHONE: (386) 734-8444 FAX: (386) 734-8341 EMAIL: LOVE@BECHTOL.COM
SURVEYOR:	BLACKWELL & ASSOCIATES LAND SURVEYORS, INC. 995 W VOLUSIA AVENUE DELAND, FL 32720-5243 PHONE: (386) 734-8050 FAX: (386) 734-7666
ENVIRONMENTAL:	ECOLOGICAL CONSULTING SOLUTIONS, INC. 235 HUNT CLUB BOULEVARD, SUITE 202 LONGWOOD, FL 32779 PHONE: (407) 868-9454 EMAIL: BGRIFY@ECSFL.CC

CONTACT NUMBERS

PLANNING - CITY OF DELAND PLANNING DIVISION (386) 626-7016
BUILDING - CITY OF DELAND BUILDING DEPARTMENT (386) 626-7135
WATER - CITY OF DELAND UTILITIES DIVISION (386) 626-7250
WASTEWATER - CITY OF DELAND UTILITIES DIVISION (386) 626-7250
SOLID WASTE - WCA WASTE CORPORATION 1-855-283-4255
GAS - FLORIDA PUBLIC UTILITIES (386) 968-2690
ELECTRIC - DUKE ENERGY (800) 700-8744
TELEPHONE - AT&T (386) 254-6550
CABLE - SPECTRUM (386) 766-9950

CONTACT NUMBERS

PLANNING & BUILDING - CITY OF DELAND (386) 626-7016
WATER - CITY OF DELAND UTILITIES DIVISION (386) 626-7250
WASTEWATER - CITY OF DELAND UTILITIES DIVISION (386) 626-7250
GAS - FLORIDA PUBLIC UTILITIES (386) 968-2690
ELECTRIC - DUKE ENERGY (800) 700-8744
TELECOMMUNICATIONS - AT&T (386) 254-6550
TELECOMMUNICATIONS - SPECTRUM NETWORKS (386) 766-9950

JURISDICTIONAL AGENCY

PERMIT No.

CITY OF DELAND (SUBDIVISION)
FDOP (NPDES NOI)
FDOP (WASTEWATER)
ST. JOHNS RIVER WATER MANAGEMENT DISTRICT (STORMWATER)
VOLUSIA COUNTY HEALTH DEPARTMENT (WATER)
VOLUSIA COUNTY USE PERMIT (RIGHT-OF-WAY)

PROJECT STATEMENT

PROPOSE A 12-UNIT SINGLE FAMILY HOME RESIDENTIAL SUBDIVISION ON AN EXISTING UNDEVELOPED 4.87-ACRE SITE TO BE KNOWN AS "THE CANOPY AT BLUE LAKE."

LEGAL DESCRIPTION

SEE SURVEY BY BLACKWELL & ASSOCIATES LAND SURVEYORS, INC. PROJECT NUMBER 23-19-22 INCLUDED AS THE SECOND SHEET OF THIS PLAN SET.

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

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



AERIAL MAP

SCALE: 1" = 200'

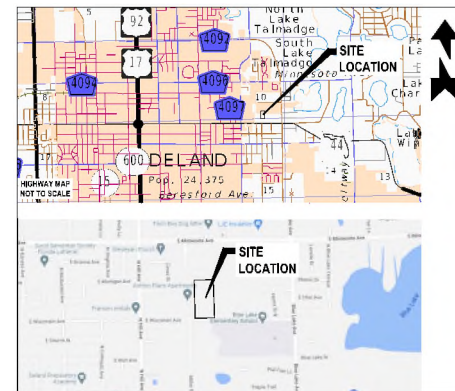
SOURCE: GOOGLE EARTH



FLOOD ZONE MAP

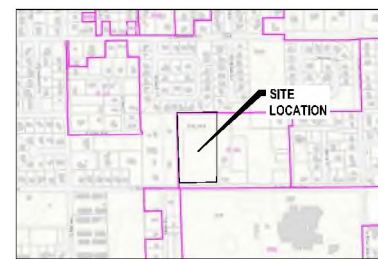
SCALE: 1" = 500'

FLOOD ZONE "X"



LOCATION MAP

SCALE: 1" = 1000'



ZONING MAP

SCALE: 1" = 500'

ZONING: R-3A



SOILS MAP

SCALE: 1" = 500'

SOIL TYPES: (4) ASTATULA FINE SAND, 0 TO 8 PERCENT SLOPES
(37) ORSINO FINE SAND, 0 TO 5 PERCENT SLOPES

THE CANOPY AT BLUE LAKE



THIS ITEM HAS BEEN DIGITALLY
SIGNED AND SEALED BY:
TYLER M. MALONE, P.E. #75630 OR



PRINTED COPIES OF THIS
DOCUMENT ARE NOT CONSIDERED
SIGNED AND SEALED AND THE
SIGNATURE MUST BE VERIFIED ON
ANY ELECTRONIC COPIES.

DRAWING NUMBER

1

PROJECT No. 2301-02

[illegible][illegible]

INSPECTIONS ARE REQUIRED AT LEAST EVERY NINE (9) MONTHS AND WITHIN 24 HOURS FOLLOWING A RAINFALL EVENT OF ONE-INCH OR GREATER OR CONTINUE UNTIL THE SITE COMPLETES FINAL STABILIZATION NOTICES OF TERMINATION. NOTICES MUST BE CONDUCTED BY A PERSON WHO IS NOT EMPLOYED AS A PERSON THAT IS A SUCCESSFULLY COMPLETED AND MET ALL REQUIREMENTS NECESSARY TO BE FULLY CREDITED THROUGH THE TOPO SOILSTORM, EROSION AND SEDIMENTATION CONTROL INSPECTION TRAINING PROGRAM B, HAS SUCCESSFULLY COMPLETED AN EQUIVALENT FORMAL TRAINING PROGRAM OR C), THAT IS QUALIFIED BY OTHER TRAINING OR PRACTICAL EXPERIENCE IN THE FIELD OF SOILSTORM POLLUTION PREVENTION AND EROSION AND SEDIMENTATION CONTROL. EACH INSPECTION MUST BE FOLLOWED UP BY A REPORT DOCUMENTING THE INSPECTOR'S FINDINGS AND RECOMMEND THE REQUIRED MAINTENANCE AND/OR REPAIR FOR THE EROSION AND SEDIMENTATION CONTROL MEASURES. THESE RECORDS ARE USED TO PROVE THE EFFECTIVE INSPECTION PROGRAM WANCE HAS BEEN PERFORMED AND SHALL BE PLACED IN THE SUPPLY LOGS. IN ADDITION TO INSPECTION AND MAINTENANCE RECORDS, RESIDENTS SHOULD BE KEPT ADVISED OF THE INSPECTION ACTIVITY. THE CONTRACTOR SHALL TURN COPIES OF THE INSPECTION AND MAINTENANCE RECORDS TO THE CITY OF ALBUQUERQUE FOR A MINIMUM OF FIVE (5) YEARS AFTER THE PROJECT IS COMPLETED IN PAPER AND CD FORMAT.

[illegible][illegible]

SEEDING CAN BE USED FOR TEMPORARY STABILIZATION. DISTURBED AREAS OF THE SITE WHERE CONSTRUCTION ACTIVITY HAS CEASED FOR MORE THAN 7 DAYS SHALL BE RESEEDED WITH GRASS AND WATERED. AREAS WHERE FILL GRADING HAS BEEN COMPLETED FOR MORE THAN 7 DAYS SHALL BE TEMPORARILY SEEDED. TEMPORARY SEED MIXTURES SHALL BE USED FOR ALL AREAS.

TEMPORARY SEEDS

SEEDING SHALL BE 100% BERMUDA COMMON GRASS 10 LBS PER LB. SEED PER ACRE. FIBER OPTIC 100 LBS PER ACRE. STARR STER 100 LBS PER ACRE AND HYPER TEE 200 LBS PER ACRE. SEED SHALL BE 100% CRYSTAL ORGANICAL FERTILIZER AT A RATE OF 100 LBS PER ACRE AND USED IN ACCORDANCE WITH THE FOLLOWING SCHEDULE:

PLANTING DATES	SEED VARIETY	APPLICATION RATE
NATURAL 15 - OCTOBER 15	PENASCO LA RANA (SCAFFOLD) BERMUDA COMMON (50% MULLED)	25
OCTOBER 16 - NATURAL 14	PENASCO LA RANA (SCAFFOLD) BERMUDA COMMON (50% MULLED)	130
NATURAL 14	BERMUDA COMMON (50% MULLED)	13
	ANNUAL RYE GRASS	19
	RYE GRASS	38

MULCH: SEEDED AREA WITH 1 TONS PER ACRE CLEAN GRASS STRAW. ANCHOR STRAW WITH HYDRAULIC WOOD FIBER MULCH AT THE RATE OF 1000 LBS PER ACRE. OR 150-200 POUNDS OF MULCH PER 1000 SQUARED FEET OF AREA.

ANCHOR STRAW: SEEDED MULCH MIXTURE SHALL BE PERFORMED IN A TANK WITH A CONTINUOUS AGITATOR AND RECIRCULATION SYSTEM WITH SUFFICIENT CAPACITY TO PRODUCE A CONSISTENTLY SLURRY AND DISCHARGE SYSTEM WHICH WILL APPLY THE SLURRY AT A CONTINUOUS AND UNIFORM RATE. MULCH SHALL COVER A GREEN FUTURE RYE AS AN

[illegible]

[illegible]

NOTIFY VOLUNTIA COUNTY DEVELOPMENT ENGINEERING DIVISION AT 381575-2124 A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION, FAILURE OF THE PERMITTEE TO OBTAIN THE REQUIRED PERMITS PRIOR TO PROCEEDING WITH WORK SHALL NOT RELIEVE THE PERMITTEE FROM PENALTIES OR CONSEQUENCES NECESSARY FOR THE PROTECTION OF WORK.

2. VOLUNTIA COUNTY FACILITY ENGINEERING (381735-00) IS NOT A MEMBER OF SUPPLEMENT ONE (ONE), WHEN REQUESTING LOCATES, PLEASE PROVIDE A MINIMUM ADVANCED NOTIFICATION OF TWO (2) BUSINESS DAYS PRIOR TO PROPOSED WORK.

3. COORDINATION WITH VOLUNTIA COUNTY FACILITY OPERATIONS (381235-03) IS REQUIRED WITHIN A MINIMUM ADVANCED NOTICE OF SEVEN (7) DAYS PRIOR TO THESE IDEALS. LEASE OR PERMIT APPROVAL FROM VOLUNTIA COUNTY FACILITY OPERATIONS (381235-03) IS REQUIRED WITHIN A MINIMUM ADVANCED NOTICE OF SEVEN (7) DAYS PRIOR TO THESE IDEALS. LEASE OR PERMIT APPROVAL FROM THE COUNTY FACILITY-LEASED SHALL NORMALLY BE COMPLETED 30 AM TO 10 PM, MONDAY THROUGH FRIDAY, ANY DELAYATION FROM THIS SCHEDULE MAY REQUIRE PRIOR APPROVAL FROM THE COUNTY DEVELOPMENT ENGINEERING/EMERGENCY REPAIRS ARE EXCLUDED FROM THE RESTRICTION.

4. ALL EXISTING IDEALS WITHIN COUNTY RIGHT-OF-WAY SHALL EITHER REMAIN OPEN OR PROVIDE A TEMPORARY WALLPAPER IN ACCORDANCE WITH THE CURRENT VERSION OF FLORIDA DEPARTMENT OF TRANSPORTATION STANDARDS AND SPECIFICATIONS, ANY DAMAGE TO SIDEWALKS SHALL BE REPAIRED AND/OR REPLACED IN KIND BY THE CONTRACTOR, NEW SIDEWALKS SHALL BE REPAIRED AND/OR REPLACED IN KIND BY THE CONTRACTOR AND BE SUBJECT TO THE SAME STANDARDS AND SPECIFICATIONS AS EXISTING SIDEWALKS.

5. DRIVING OR STAGING OF CONSTRUCTION VEHICLES OR MATERIALS IS NOT PERMITTED WITHIN THE COUNTY RIGHT-OF-WAY OR ON POSSESSIONS/ALLEYS AND PATHS, THERE SHALL BE NO OBSTRUCTION CONSTRUCTION VEHICLE RELATED PARKING, CONSTRUCTION MATERIAL, PLACEMENT OR STORAGE OF ANY KIND PERMITTED WITHIN THE COUNTY RIGHT-OF-WAY.

6. NO TRENCH OR EXCAVATION SHALL BE LEFT OPEN OR UNATTENDED OVERNIGHT, UNLESS APPROVED BY THE COUNTY DEVELOPMENT ENGINEERING INSPECTOR, EXCAVATIONS SHALL NOT BE DROPPED OFF PROTECTION REQUIREMENTS OF THE LATEST FDOT DESIGN CRITERIA, CRASH TESTS AND OTHER EXISTING STRUCTURES IN THE COUNTY RIGHT-OF-WAY SHALL BE RE-CAULKED AND COVERED WITHIN ONE (1) BUSINESS DAY.

7. RESTORATION SHALL BE REQUIRED FOR ANY DAMAGE TO SIDEWALKS, CURBS OR OTHER EXISTING STRUCTURES IN THE COUNTY RIGHT-OF-WAY. ALL DISTURBED AREAS SHALL BE RESTORED TO ORIGINAL OR BETTER CONDITION.

1. IRRIGATION SHALL BE INSTALLED IN ACCORDANCE WITH VOLUSIA COUNTY WATERWISE ORDINANCE REQUIREMENTS.
2. IRRIGATION SYSTEM WILL BE PERMITTED THROUGH VOLUSIA COUNTY HEALTH DEPARTMENT.
3. AUTOMATIC IRRIGATION CONTROLLERS, WHEN UTILIZED, SHALL CONTAIN A FUNCTIONAL RAIN SENSOR DEVICE, CAPABLE OF BEING SET TO THE MINUTE RUN TIMES, AND BATTERY BACKUP CAPABILITY TO RETAIN PROGRAMMING IN THE EVENT OF A POWER FAILURE.
4. A RAIN SENSOR PLACED ON A STATIONARY STRUCTURE, FREE AND CLEAR OF ANY OVERHEAD OBSTRUCTIONS AND ABOVE THE HEIGHT OF THE SPRINKLER COVERAGE.
5. EQUIPMENT WITH CHECK VALVES USED IN LOW-LYING AREAS TO PREVENT LOW HEAD DRAINAGE.
6. BACKFLOW PREVENTION METHODS AND OTHER PROVISIONS PRESCRIBED IN SECTION 744.2.
7. IRRIGATION DESIGN WITH THE APPROPRIATE UNIFORMITY FOR THE TYPE OF PLANT BEING GROWN AND FOR THE TYPE OF SOIL.
8. IRRIGATION SYSTEM EQUIPMENT INSTALLED AS DESIGNED.
9. IRRIGATION ZONES DIVIDED ACCORDING TO AVAILABLE FLOW RATE, VEGETATED GROUPINGS (E.G., TURF, SHRUBS, NATIVE PLANTS, ETC.), SPRINKLER TYPES (E.G., SPRINKLERS WITH MATCHING PRECIPITATION RATES) AND SOIL CHARACTERISTICS.
10. SPRAY HEADS AND ROTORS NOT MIXED IN SAME ZONE.
11. DISTRIBUTION EQUIPMENT IN A GIVEN ZONE HAVING MATCHED PRECIPITATION RATES.
12. APPLICATION RATE THAT AVOIDS RUNOFF AND PERMITS UNIFORM WATER INFILTRATION INTO THE SOIL, CONSIDERING LAND SLOPE, SOIL HYDRAULIC PROPERTIES, VEGETATIVE GROUND COVER AND PREVAILING WINDS.
13. A MINIMUM SEPARATION OF FOUR INCHES BETWEEN DISTRIBUTION EQUIPMENT AND PAVEMENT.
14. A MINIMUM SEPARATION OF 12 INCHES BETWEEN DISTRIBUTION EQUIPMENT AND BUILDINGS AND OTHER VERTICAL STRUCTURES.
15. NO DIRECT SPRAY ON WALKWAYS, BUILDINGS, ROADWAYS AND DRENCHES.
16. LAWN SPRAY PATTERNS PROVIDING HEAD TO HEAD COVERAGE.
17. WATER CONVEYANCE SYSTEMS WITH A FLOW VELOCITY OF FIVE FEET PER SECOND OR LESS.
18. PIPING DESIGNED TO PROVIDE THE SYSTEM WITH THE APPROPRIATE PRESSURE REQUIRED FOR MAXIMUM IRRIGATION UNIFORMITY.
19. PRESSURE REGULATING HEADS.
20. A MAINTENANCE CHECKLIST PROVIDED TO THE PROPERTY OWNER BY THE IRRIGATION CONTRACTOR ACCOMPANIED BY A RECOMMENDED MAINTENANCE SCHEDULE. PROPER IRRIGATION SYSTEM SETTINGS ACCORDING TO SEASON, RECOMMENDATIONS FOR CHECKING RAIN SENSOR DEVICE, FILTER CLEANING RECOMMENDATIONS AND INFORMATION ON THE CURRENT WATER RESTRICTIONS.
21. A HIGH VOLUME IRRIGATION AREA SHALL NOT EXCEED 10 PERCENT OF THE LANDSCAPED AREA. LOW OR MEDIUM VOLUME IRRIGATION AREAS MAY BE UTILIZED IN LIEU OF ANY HIGH VOLUME IRRIGATION AREA.
22. A MEDIUM VOLUME IRRIGATION AREA SHALL NOT EXCEED 20 PERCENT OF THE LANDSCAPED AREA. HOWEVER, THE LANDSCAPED AREA MAY CONTAIN UP TO 15 PERCENT MEDIUM VOLUME IRRIGATION AREA, IF NO HIGH VOLUME IRRIGATION AREA IS UTILIZED ON SITE.
23. A LOW VOLUME IRRIGATION AREA MAY BE UTILIZED FOR AN ENTIRE LANDSCAPED AREA WITH THE EXCEPTION OF NATIVE VEGETATION AREAS REGULATED BY SECTION 20-377(J)(4).
24. IN THE ALTERNATIVE TO (1), (2), AND (3) ABOVE, IF 25 PERCENT OF THE PRE-EXISTING NATIVE VEGETATION IS RETAINED ON SITE, THE REMAINING 75 PERCENT OF THE LANDSCAPED AREA MAY BE A HIGH VOLUME IRRIGATION AREA, FOR ALL PRE-EXISTING NATIVE VEGETATION RETAINED ON A PARCEL.
 - NO SUPPLEMENTAL WATER SHALL BE APPLIED TO THE NATIVE VEGETATION AREA,
 - ONLY HAND PRUNING OF NATIVE VEGETATION IS ALLOWED,
 - MECHANICAL MOWING OR CLEARING IS PROHIBITED,

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

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

THE CONTRACTOR SHALL NOTIFY SUNSHINE LOCATORS FORTY-EIGHT (48) HOURS PRIOR TO BEGINNING CONSTRUCTION AT 811 OR 1-844-432-4779, MONDAY THROUGH FRIDAY, 7:00 AM TO 4:30 PM. CHAPTER 552.431 OF THE FLORIDA STATUTES REQUIRES THAT AN EXCAVATOR NOTIFY ALL GAS UTILITIES A MINIMUM OF TWO (2) WORKING DAYS PRIOR TO EXCAVATING. THE DRAWINGS SHOW ONLY THE GAS MAINS (IF ANY) AND DO NOT SHOW GAS SERVICE LINES.

AWWA	AMERICAN WATER WORKS ASSOCIATION	FM	FORCE MAIN	R	RADIUS
CMP	CORRUGATED METAL PIPE	FD	FEET PER DAY	RCP	REINFORCED CONCRETE
CMP	CORRUGATED METAL PIPE	G	GAS		PIPE
CMP	CORRUGATED PLASTIC PIPE	HC	GROUND WATER	RPM	REFLECTIVE PAVEMENT
		HN	HANDICAP		MARKER
		HD	HIGH DENSITY	RW	RIGHT-OF-WAY
CTV	CABLE TELEVISION	NP	POLYETHYLENE	SH	SANITARY
DIP	DUCTILE IRON PIPE	INVE	INVERT	SH	SEASONAL HIGH
D.M.A.E.	DRAINAGE/MAINTENANCE/ACCESS EASEMENT	K	HORIZONTAL	SHWD	ST. JOHNS RIVER WATER MANAGEMENT DISTRICT
ESMT	EXISTING	K _u	PERMEABILITY	SJMS	SANITARY MANHOLE
EXIST	EXISTING	K _o	VERTICAL PERMEABILITY	SS	SANITARY SEWER
FAC	FLORIDA ADMINISTRATIVE CODE	LF	KNOCK OUT	SWPP	STORMWATER POLLUTION PREVENTION PLAN
FACBC	FLORIDA ACCESSIBILITY CODE FOR BUILDING	MB	LINEAL FEET		
	CONSTRUCTION	MS	MAF ROOM	TSB	TRUNK
FDEP	FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION	NEJ	NEEDED END SECTION		BASIN
		NA	NOT APPLICABLE	TYP	TYPICAL
		NP	NON COHESIVE	UGT	UNDERGROUND ELECTRIC
		NGD	NATURAL GEODETIC		UNDERGROUND
			OVERHEAD ELECTRIC		TELEPHONE
FDOT	FLORIDA DEPARTMENT OF TRANSPORTATION	ONE	VERTICAL DATUM	USACE	UNITED STATES ARMY
		OR	OFFICIAL RECORD		CORP OF ENGINEERS
FEMA	FEDERAL EMERGENCY MANAGEMENT AGENCY	P	PAGE	W	WATER (POTABLE)
		PS	POUNDS PER SQUARE		
FM	FIRE HYDRANT	PVC	POLYVINYL CHLORIDE		
FOC	FIBER OPTIC CABLE	PWT	PAVEMENT		
FF EL	FRESH FISH ELEVATION				

DATE	DESCRIPTION
2/2/23	PER CITY COMMENTS

12500 US Highway 1, Suite 3
Orlando Beach, Florida 32174
Phone (386) 872-7794
www.knapack-engineering.com

C.A. # 30209
L.C. # 24090594
(C) 2013

Civil Engineering,
Transportation, CEI &
Landscape Architecture



CONSTRUCTION NOTES AND SPECIFICATIONS (SHT. 3 OF 3)

THIS ITEM HAS BEEN DIGITALLY
SIGNED AND SEALED BY
TYLER MALMBORG, PE # 75630 ON



PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES

PROJECT No: 2022-1100

DATE: FEBRUARY 2023

DESIGN BY: TJM

RAWN BY. TJM

HECKED BY: TJM

NAME: _____

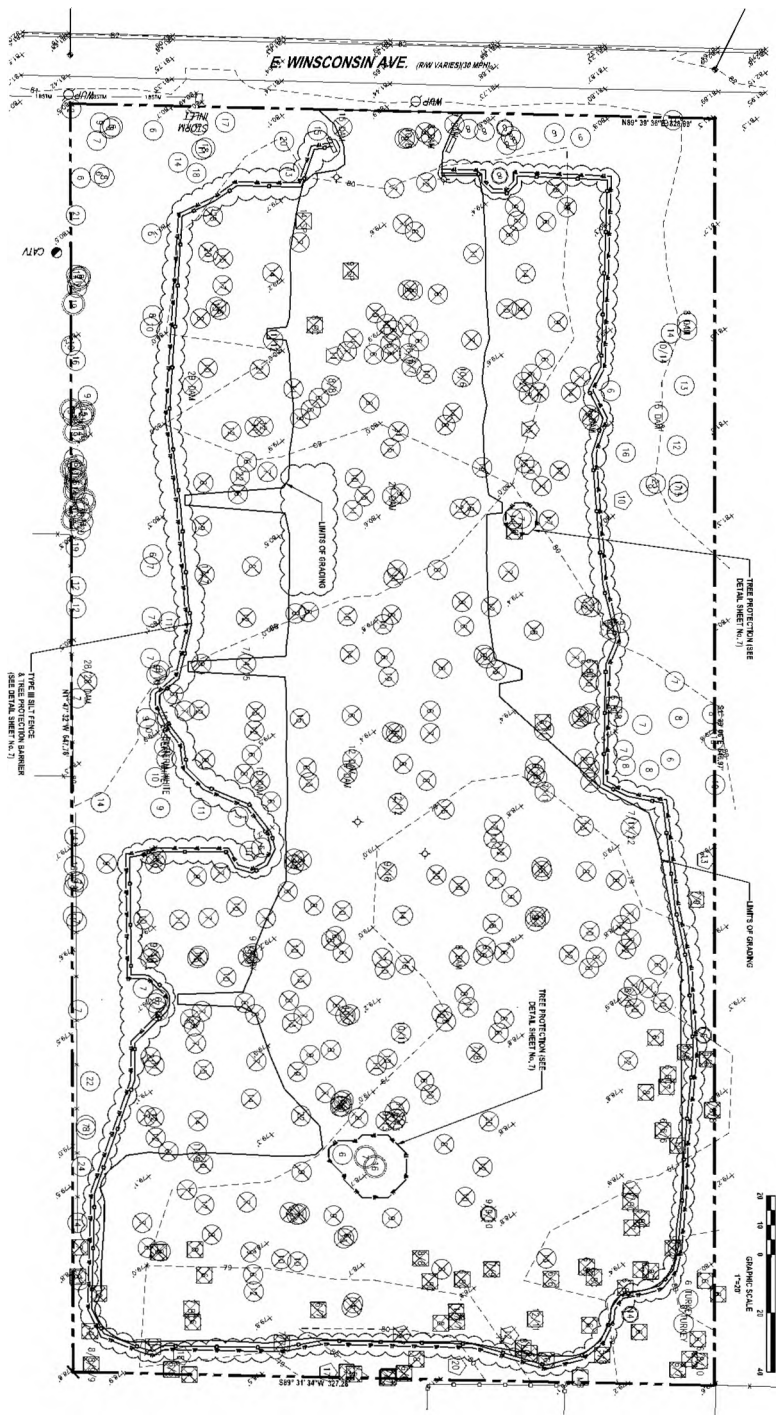
[illegible]

5

100

70 6102

79 01 103



DEMOLITION AND SWPPP NOTES:

1. ALL EROSION CONTROL DEVICES AND VISIBLE BARRICADES SHALL BE INSTALLED AND APPROVED BY THE ENGINEER PRIOR TO THE START OF CLEARING AND CONSTRUCTION.

REVISIONS

DATE	DESCRIPTION
3/26/23	PER CITY COMMENTS

1230 US Highway 1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7794
www.NewKirk-Engineering.com
C.A. # 30209
L.C. # 2600554
© 2013
Civil Engineering,
Transportation, CEI &
Landscape Architecture



NEWKIRK
ENGINEERING INC.

EROSION CONTROL NOTES

1. LIAISON ACTIVITIES SHALL BE CONDUCTED WITH APPROVAL OF 10 TO 20 AND 30 MINUTE SCHEDULES. SCHEDULING AUTHORITY: THE GENERAL CONTRACTOR SHALL STRICTLY ADHERE TO THE SCHEDULE DURING CONSTRUCTION.
2. NO LIAISON CLIPPING OR SHOOTING SHALL BEGIN UNTIL ALL DESIGN CONTROL SERVICES HAVE BEEN INITIATED.
3. THE CONTRACTOR SHALL POST NO REENTRYING SCHEDULE AT ALL SITE ENTRANCES PRIOR TO CONSTRUCTION.
4. MAINTAIN PERSONAL CONTACT MAINTAIN WITH THE TEAM AND ALL STAKEHOLDERS.
5. THE PLAN SHALL BE CONSIDERED AS AN INSTRUMENT OF THE GENERAL CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT THE RE-ENTRY OF PERSONNEL INTO THE SITE.
6. GENERAL CONTRACTOR SHALL COMPLY WITH ALL STATE AND LOCAL COMMUNITY LAWS AND ORDINANCES.
7. PERSONAL CONTACT AND SECURITY CONTROL MAINTAINANCE WILL BE ESTABLISHED BY THE GENERAL CONTRACTOR.
8. NO SIGNATURE SHALL BE PROVIDED ON ANY FROM THE GENERAL CONTRACTOR. CONTRACTOR SHALL TAKE NECESSARY PRECAUTIONS TO PREVENT THE RE-ENTRY OF PERSONNEL INTO THE SITE.
9. IF A SITUATION OF PERSONAL CONTACT WITHIN WOULD BE REENTRYING BY A MEMBER OF THE TEAM, THE GENERAL CONTRACTOR SHALL BE CONSIDERED AS AN INSTRUMENT OF THE GENERAL CONTRACTOR.
10. DESIGN, CONTRACTOR SHALL BE RESPONSIBLE TO THE WHATEVER MEANS NECESSARY TO ESTABLISH PERSONAL CONTACT WITHIN WOULD BE REENTRYING BY A MEMBER OF THE TEAM.
11. PERSONS WHO CONTROL THE LAUNCHING OPERATIONS, COVER AREA WITHIN CONTROL OF WATER OF THE LAUNCHING OPERATIONS.

SWPPP INSPECTIONS AND RECORD KEEPING

[illegible]

NOTIFICATION:
THE OWNED / AGENT IS AWARE OF AND

THE OWNER / AGENT IS AWARE OF AND MUST ASSURE MAINTENANCE OF THE EROSION PROTECTION DEVICES AND MEASURES ASSOCIATED WITH THIS PROJECT DURING CONSTRUCTION.

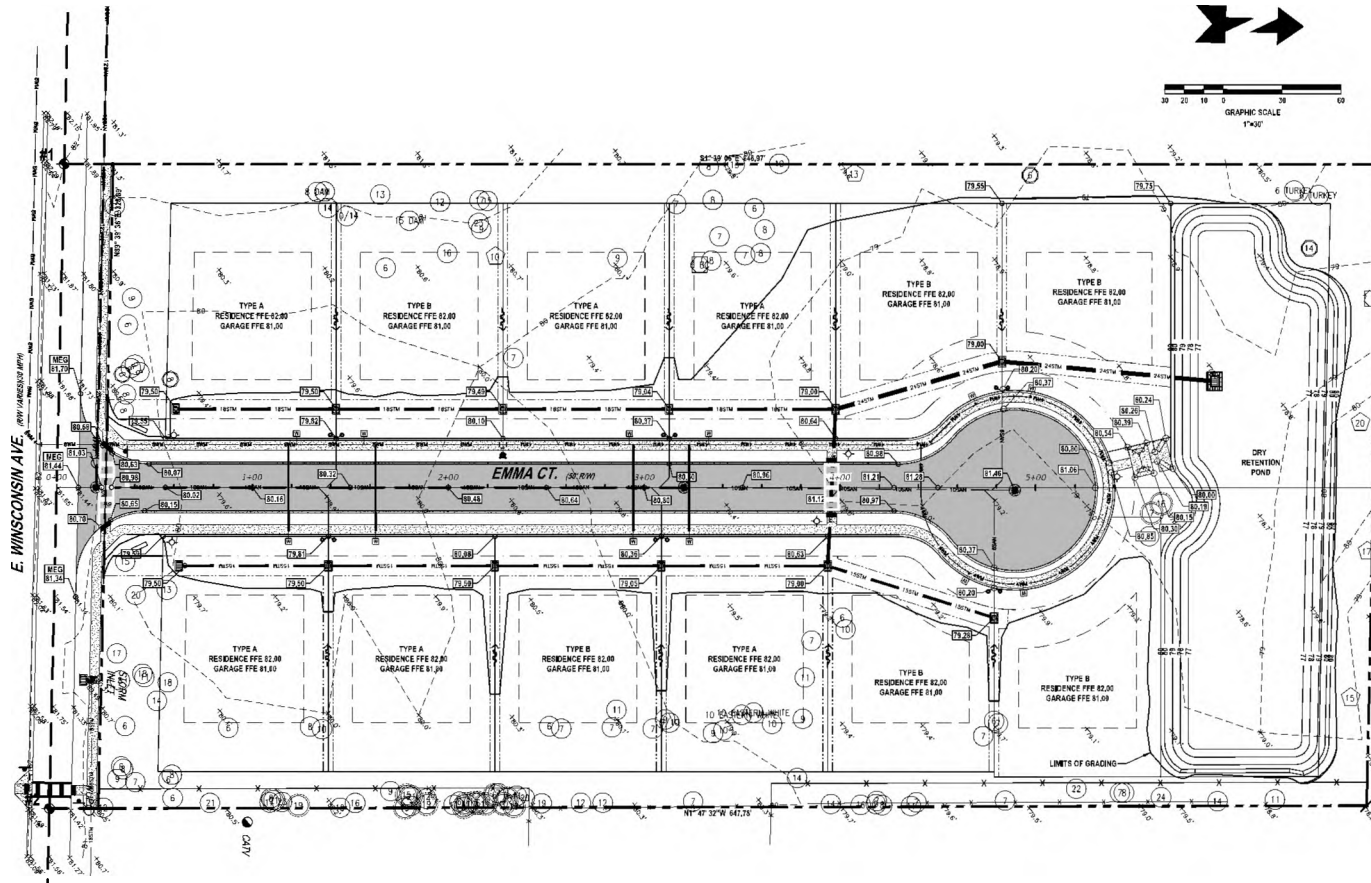
WARNING !!
CONTRACTOR'S SIGNATURE

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

DRAWING NUMBER

C

DEMOLITION AND
SWPPP PLAN
THE CANOPY AT BLUE LAKE
E. WISCONSIN AVE.
DELAND, FL 32724



GENERAL GRADING NOTES:

1. THE MAXIMUM ELEVATION CHANGE AT THE ENTRANCE DOOR MAY NOT EXCEED 10 INCH.
2. ALL SIDEWALK LANDINGS SHALL HAVE SLOPES NO GREATER THAN 1/4 INCH : 1 FOOT IN MANEUVERING SPACES AT ALL DOORWAYS.
3. ALL SIDEWALKS SHALL HAVE A 2% CROSS SLOPE (2.0% MAXIMUM).
4. ALL CURB RAMPS SHALL COMPLY WITH SECTION 406 OF FACD.
5. ALL IMPROVEMENTS SHALL BE STAKED FOR CONSTRUCTION BY MEANS OF DIGITAL COORDINATES BY SURVEY OR USING GEODETIC TOTAL STATION. SCALING OF DRAWINGS FOR PURPOSES OF STAKING ARE AT THE SURVEYOR.

GENERAL EARTHWORK NOTES:

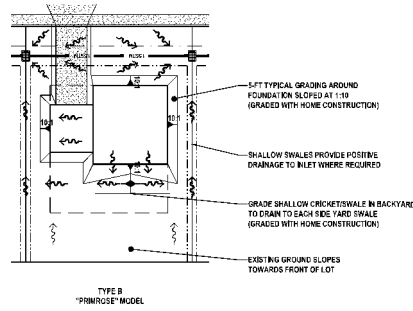
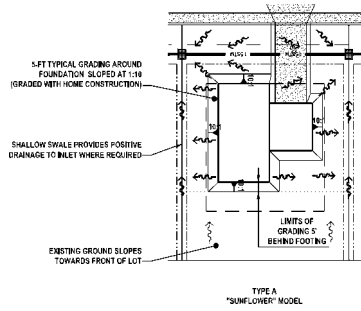
1. IF ANY MUCK OR MUCK-LIKE MATERIAL IS DISCOVERED, IT WILL BE REQUIRED TO BE REMOVED, BACKFILLED WITH APPROPRIATE FILL, COMPACTED, AND TESTED USING AASHTO T-158 MODIFIED PROCTOR METHOD.
2. ALL FILLING IS TO BE PERFORMED IN ONE-FOOT LIFTS, THE COMPACTION REQUIREMENTS 95% FOR PAVED AREAS AND 95% FOR UNPAVED AREAS PER AASHTO T-158 MODIFIED PROCTOR TEST.
3. TEMPORARY FILL STOCKPILING IS NOT PERMITTED IN LIFTS GREATER THAN SIX FEET.
4. SOILS ARE TO BE STABILIZED BY WATER OR OTHER MEANS DURING CONSTRUCTION, THIS IS INTENDED TO REDUCE SOIL EROSION AND THE IMPACT TO NEIGHBORING COMMUNITIES.
5. ONCE AN AREA IS SEEDED OR SOODED, IT MUST BE MAINTAINED TO ALLOW THE GRASS TO GROW.
6. ALL NON-PAVED AREAS MUST BE PLANTED, GRASSED, OR MULCHED.

GRADING LEGEND:

- 60 — EXISTING CONTOUR
- 72 — PROPOSED CONTOUR
- DRAINAGE FLOW ARROW
- EXISTING SPOT ELEVATION
- PROPOSED SPOT ELEVATION
- LIMITS OF SITE GRADING

WARNING !!

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



REVISIONS

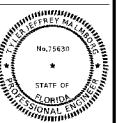
DATE	DESCRIPTION
2/20/23	PER CITY COMMENTS

1233 US Highway 1, Suite 3
Orrville Beach, Florida 32174
www.newkirk-engineering.com
C.A. # 30208
L.C. # 20001
CIVIL ENGINEERING
TRANSPORTATION, CEE &
LANDSCAPE ARCHITECTURE



GRADING PLAN
THE CANOPY AT BLUE LAKE
E. WISCONSIN AVE.
DELAND, FL 32724

THIS ITEM HAS BEEN DIGITALLY
SIGNED AND SEALED BY
THOMAS WILSON, P.E. # 15630 OR

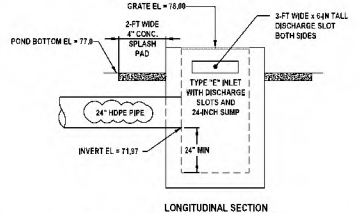
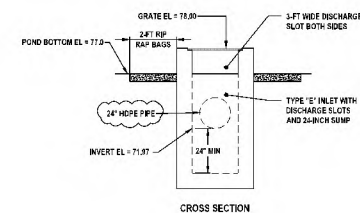
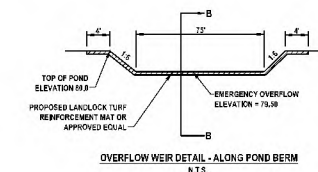
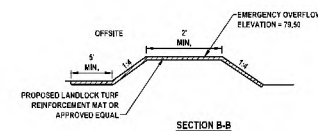
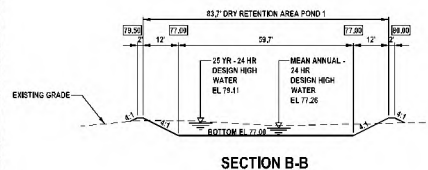
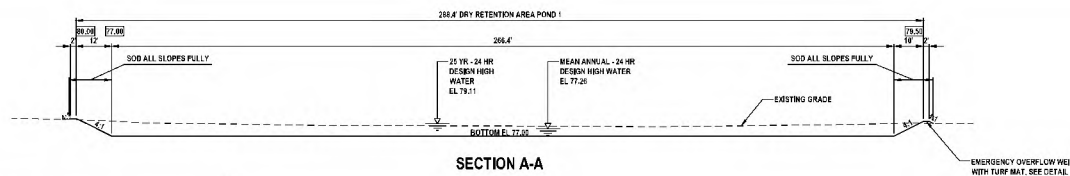


PRINTED COPIES OF THIS
DOCUMENT ARE NOT CONSIDERED
SIGNED AND SEALED AND THE
SIGNATURE MUST BE VERIFIED ON
ANY ELECTRONIC COPIES

PROJECT No. 2022-1100
DATE FEBRUARY 2023
DESIGN BY: TJM
DRAWN BY: TJM
CHECKED BY: TJM
SCALE 1" = 30'
DRAWING NUMBER

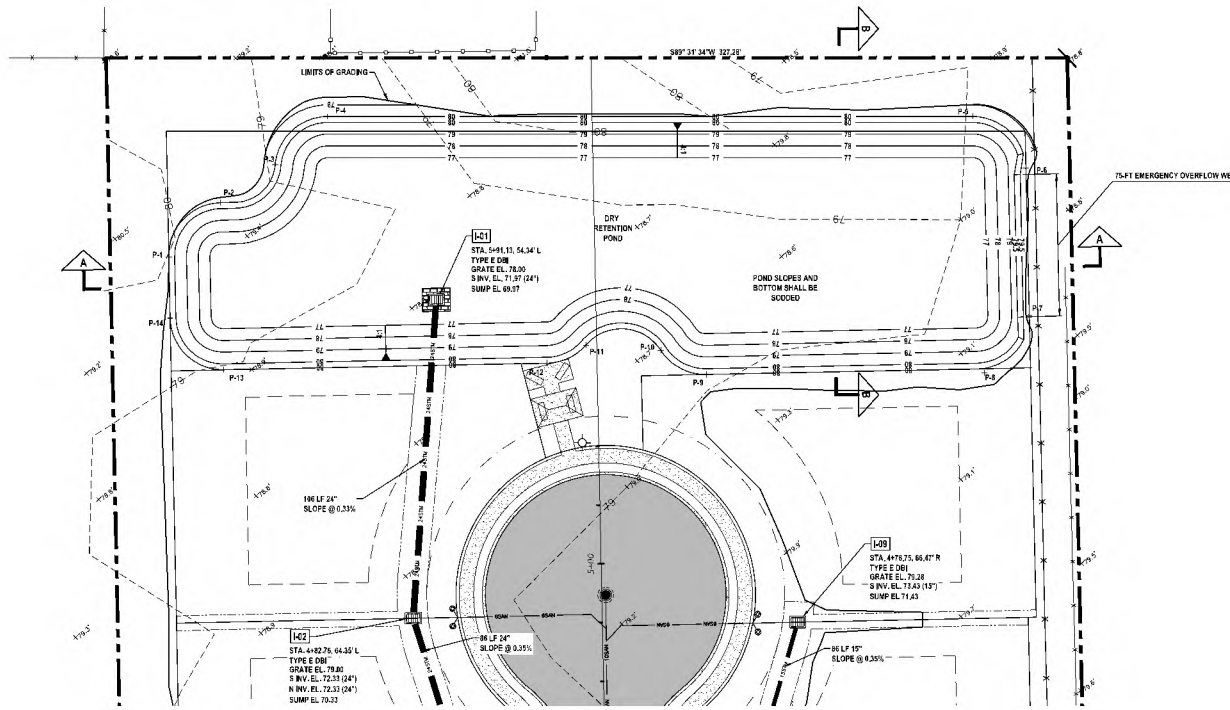
9

POND GEOMETRY						
POINT NAME	ALIGNMENT	STATION	OFFSET	SIDE	NORTHING (Y)	EASTING (X)
P-1	ENMA COURT	6+07.61	145.00'	LT	1708607.798	566780.4652
P-2	ENMA COURT	6+25.61	127.00'	LT	1708626.31	566797.9389
P-3	ENMA COURT	6+38.12	108.16'	LT	1708639.357	566816.1111
P-4	ENMA COURT	6+54.71	89.69'	LT	1708655.964	566834.7086
P-5	ENMA COURT	6+49.70	120.67'	RT	1708657.781	567053.8093
P-6	ENMA COURT	6+31.74	147.30'	RT	1708640.343	567071.9494
P-7	ENMA COURT	5+81.80	147.13'	RT	1708590.426	567073.5133
P-8	ENMA COURT	5+63.75	129.43'	RT	1708571.87	567056.041
P-9	ENMA COURT	5+63.75	37.16'	RT	1708569.21	566963.8114
P-10	ENMA COURT	5+72.33	218.7'	RT	1708577.333	566948.738
P-11	ENMA COURT	5+74.68	3.67'	LT	1708578.956	566927.6899
P-12	ENMA COURT	5+68.76	17.01'	LT	1708572.654	566909.5217
P-13	ENMA COURT	5+68.76	127.00'	LT	1708569.481	566789.5115
P-14	ENMA COURT	5+86.76	145.00'	LT	1708586.957	566781.0662



BUBBLE UP STRUCTURE DETAIL

NOT TO SCALE



REVISIONS

DATE	DESCRIPTION
3/20/23	PER CITY COMMENTS

1333 US Highway 1, Suite 3
Ormond Beach, Florida 32174
www.newkirk-engineering.com
C.A. # 20208
L.C. # 20084
CIVIL ENGINEERING
TRANSPORTATION, CEE &
LANDSCAPE ARCHITECTURE



POND PLAN
THE CANOPY AT BLUE LAKE
E. WISCONSIN AVE.
DELAND, FL 32724

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING, INC. AND IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF NEWKIRK ENGINEERING, INC.

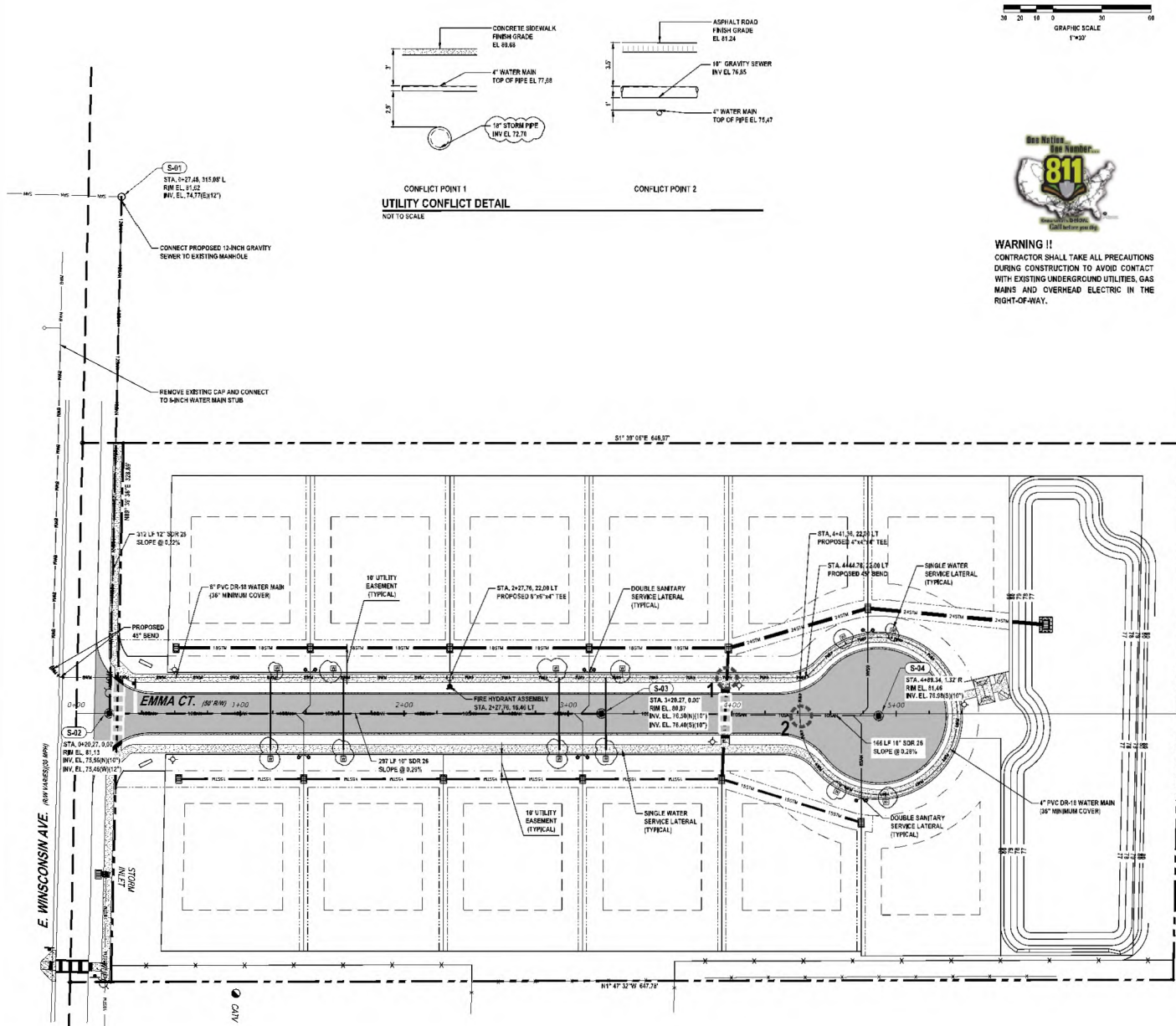
THIS DRAWING HAS BEEN ORIGINALLY SIGNED AND SEALED BY TYLER MALINSKI, PE #17030 ON 03/20/23.



PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No.: 2022-1100
DATE: FEBRUARY 2023
DESIGN BY: TJM
DRAWN BY: TJM
CHECKED BY: TJM
SCALE: 1" = 20'
DRAWING NUMBER

10



GENERAL SEWER NOTES:

1. CITY OF DELAND SHALL BE NOTIFIED PRIOR TO ANY SEWER CONSTRUCTION.
2. ALL SEWER CONSTRUCTION MUST COMPLY WITH FDEP REGULATIONS AND THE CITY OF DELAND UTILITY DETAILS AND SPECIFICATIONS (LATEST EDITION).
3. ALL SANITARY SEWER LINES SHALL BE PVC SDR 26 DUE TO THE MINIMUM AMOUNT OF COVER, WATER LINES, RECLAIMED LINES AND STORM DRAINAGE CROSSINGS SHALL FOLLOW THE 24" OR CONCRETE ENCASUREMENT REQUIREMENT PER THESE STANDARDS AND AS FDEP REQUIREMENTS, STANDARDS AND AS PER FDEP REQUIREMENTS.
4. SEWER LINE CONSTRUCTION SHALL BE ACCOMPLISHED BY THE USE OF A LASER INSTRUMENT UNLESS ANOTHER METHOD IS PREVIOUSLY APPROVED BY CITY.
5. THE CONTRACTOR SHALL AT ALL TIMES, DURING PIPE LAYING, DEWATER THE TRENCH SUFFICIENTLY TO KEEP THE GROUNDWATER ELEVATION A MINIMUM OF 4" BELOW THE PIPE BEING Laid WITHIN THE AREA OF THE TRENCH.
6. ALL PIPES SHALL BE Laid ON A FIRM FOUNDATION, SOFT OR SPONGY BEDDING FOR PIPES WILL NOT BE ACCEPTED, ANY UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH A DRY, COMPACTED, GRANULAR MATERIAL SATISFACTORY TO THE CITY.
7. SANITARY SEWER PIPE SHALL BE PVC SDR 26.
8. EXCAVATION AND BACKFILL: THE CONTRACTOR SHALL PROVIDE ADEQUATE SHEETING AND BRACING OF EXCAVATION WORK IN ORDER TO PROVIDE FOR THE SAFETY OF WORKMEN AS WELL AS REPRESENTATIVES OF THE CITY OF DELAND, THE DESIGN ENGINEER, AND THE DEVELOPER.
9. ALL TRENCHES SHALL BE BACKFILLED WITH ACCEPTABLE MATERIAL AND COMPACTED TO MINIMUM COMPACTION OF (95) PERCENT OF THE OPTIMUM DENSITY OF THAT MATERIAL BASED ON THE ASTM T-140 MODIFIED PROCTOR TEST.
10. ALL TESTING REQUIRED BY THE CITY SHALL BE PAID FOR BY THE CONTRACTOR.
11. SEWER CLEANOUT LOCATED ON PAVEMENT AND SIDEWALK AREA SHALL BE TRAFFIC BEARING FLAT TOP BRASS CAP.

GENERAL WATER NOTES:

1. THE CITY OF DELAND WATER UTILITY DEPARTMENT SHALL BE NOTIFIED PRIOR TO BEGINNING ANY WATER SYSTEM CONSTRUCTION.
2. ALL WATER DISTRIBUTION CONSTRUCTION SHALL BE IN ACCORDANCE WITH FDEP REGULATIONS AND THE CITY OF DELAND UTILITY DETAILS AND SPECIFICATIONS (LATEST EDITION).
3. CONTRACTOR IS TO VERIFY THE LOCATION (HORIZONTAL AND VERTICAL) OF ALL EXISTING UTILITIES (UNDERGROUND AND OVERHEAD) PRIOR TO COMMENCEMENT OF CONSTRUCTION, ANY CONFLICTS SHALL BE REPORTED TO THE ENGINEER.
4. CONTRACTOR IS RESPONSIBLE FOR RESTORATION OF ANY EXISTING PAVEMENT, SIDEWALK, CURBING, UTILITIES AND DRAINAGE SYSTEMS DAMAGED DURING CONSTRUCTION. ALL DAMAGED AREAS TO BE RESTORED TO ORIGINAL CONDITION OR BETTER.
5. LOCATION OF TELEPHONE, TV, CABLE AND ELECTRICAL SERVICE CONNECTIONS TO BE DETERMINED BY APPROPRIATE UTILITIES PERSONNEL IN COOPERATION WITH CONTRACTOR.
6. ALL WATER MARKS SHALL BE Laid ON A FIRM FOUNDATION WITH ALL UNSUITABLE MATERIAL (MUCK, ROCK, COBBLER, ETC.) REMOVED AND REPLACED WITH CLEAN GRANULAR MATERIAL.
7. TRENCHES SHALL BE BACKFILLED WITH MATERIAL ACCEPTABLE TO THE CITY WITH A MINIMUM COMPACTION OF 95 PERCENT (ASTM T-140).
8. WATER SERVICES FROM 3/4" TO 2" POLYETHYLENE (ENDOT ENCLOSURE) WITH 30" MINIMUM COVER.
9. WATER MAIN FROM 4" TO 12" SHALL BE PVC CLASS 150 (OR 18) WITH 36" MINIMUM COVER.
10. ALL WATER AND FIRE SERVICES ARE REQUIRED TO HAVE A HAND SHUT OFF VALVE OFF THE MAIN LINE.
11. ALL VALVES SHALL BE BOLTED TO TEES.
12. ALL POTABLE WATER PIPE SHALL HAVE "NOT POTABLE WATER" IMPRINTED ON THE PIPE.
13. A TAPPING CONTRACTOR ACCEPTABLE TO THE CITY OF DELAND WILL BE REQUIRED FOR TAPS.
14. THE CONTRACTOR SHALL MAKE ALL ATTEMPTS TO LOCATE BURIED UTILITIES AND NOTIFY THE UTILITY COMPANIES 48 HRS. PRIOR TO CONSTRUCTION.
15. UTILITY TRENCH CONSTRUCTION SHALL CONFORM TO CITY OF DELAND AND OSHA REQUIREMENTS.
16. IN THE CASE WHERE SOLVENT CONTAMINATION IS FOUND IN THE TRENCH, WORK WILL BE STOPPED AND THE PROPER AUTHORITIES NOTIFIED. WITH THE APPROVAL OF THE CITY OF DELAND UTILITY DEPARTMENT, DUCTILE IRON PIPE, FITTINGS AND APPROVED SOLVENT RESISTANT CASSET MATERIAL SHALL BE USED IN THE CONTAMINATED AREA. THE DUCTILE IRON PIPE WILL EXTEND AT LEAST 100 FEET BEYOND ANY DISCOVERED SOLVENT.
17. BACKFLOW PREVENTERS TO BE TESTED BY A CERTIFIED TESTER WITH RESULTS TO BE SENT TO THE CITY OF DELAND WATER DEPARTMENT (FAX NO. (321) 328-1247).

UTILITY LEGEND

- PROPOSED 45° BEND
- PROPOSED TEE
- PROPOSED GATE VALVE
- PROPOSED CAP AND 3" BLOW OFF ASSEMBLY
- PROPOSED FIRE HYDRANT ASSEMBLY
- PROPOSED SHORT SIDE WATER SERVICE
- PROPOSED LONG SIDE WATER SERVICE
- PROPOSED 4" PVC SDR-26 SANITARY SEWER LATERAL (SLOPE @ 2.0% MIN)
- PROPOSED SANITARY SEWER MANHOLE
- PROPOSED 4" OR 6" PVC DR-18 WATER MAIN (36" MIN. COVER)
- PROPOSED 8" OR 12" PVC SDR 26 (SLOPE PER PLAN)
- BACTERIOLOGICAL SAMPLING POINT
- UTILITY CONFLICT (SEE DETAILS THIS SHEET)

UTILITY NOTES:

1. THE CITY OF DELAND PUBLIC WORKS / UTILITIES DEPARTMENT SHALL BE NOTIFIED PRIOR TO BEGINNING ANY WATER, SEWER AND REUSE SYSTEM CONSTRUCTION.
2. ALL WATER, SEWER AND REUSE CONSTRUCTION SHALL BE IN ACCORDANCE WITH FDEP REGULATIONS AND CITY OF DELAND STANDARD UTILITY DETAILS AND SPECIFICATIONS (LATEST EDITION).
3. ALL WATER SERVICES SHALL BE CONSTRUCTED PER CITY DETAILS, SHEET 16, 17 AND 18.
4. ALL SANITARY SERVICES SHALL BE CONSTRUCTED PER CITY DETAILS, SHEET 16.
5. ALL FIRE HYDRANT ASSEMBLIES SHALL BE CONSTRUCTED PER CITY DETAILS, SHEET 16.
6. THERE SHALL BE A MINIMUM DISTANCE OF TEN FEET BETWEEN ALL SANITARY, WATER AND RECLAIM SERVICES TO PROVIDE ADEQUATE ROOM FOR ELECTRIC AND OTHER UTILITIES TO AVOID CONFLICTS.

REVISIONS

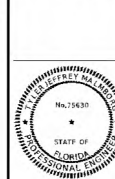
DATE	DESCRIPTION
2/2023	PER CITY COMMENTS

1233 US Highway 1, Suite 3
Orem Beach, Florida 32714
www.newkirk-engineering.com
C.A. # 20208
L.C. # 27003
Civil Engineering
Transmission, CEI &
Landscaping Architecture



UTILITY PLAN
THE CANOPY AT BLUE LAKE
E. WISCONSIN AVE.
DELAND, FL 32724

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING, INC. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON. IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF NEWKIRK ENGINEERING, INC.

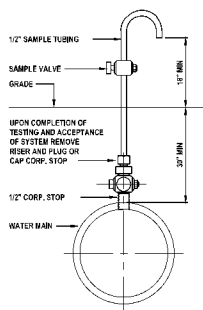


PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED BIDDING AND TRADING AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES

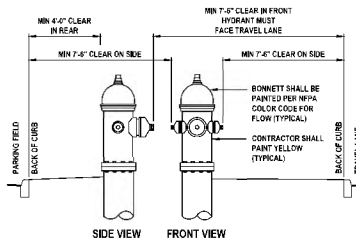
PROJECT No.: 2022-1100
DATE: FEBRUARY 2023
DESIGN BY: TJM
DRAWN BY: TJM
CHECKED BY: TJM
SCALE: 1" = 30'
DRAWING NUMBER

12

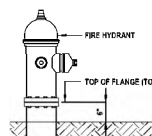
- ALL PIPE, PIPE FITTINGS, JOINT PACKING AND JOINING MATERIALS, VALVES, FIVE HYDRANTS, AND METERS INSTALLED UNDER CONTRACT SHALL CONFORM TO APPLICABLE AMERICAN WATER WORKS ASSOCIATION (AWWA) STANDARDS.
- ALL PUBLIC WATER SYSTEM COMPONENTS, EXCLUDING FIVE HYDRANTS, THAT WILL BE INSTALLED UNDER THIS PROJECT AND THAT WILL COME INTO CONTACT WITH DRINKING WATER WILL CONFORM TO THE FOLLOWING STANDARDS:
 - A. ALL PROPOSED WATER MAINS SHALL BE FLUSHED, DISINFECTED AND TESTED IN ACCORDANCE WITH THE REQUIREMENTS OF AWWA SPECIFICATIONS C401 AND THE DEPT PROTECTION REQUIREMENTS.
 - B. POTABLE WATER PIPES SHALL BE HYDROSTATICALLY TESTED FOR PRESSURE AND LEAKAGE IN ACCORDANCE WITH AWWA STANDARD C900. ALL OTHER PIPES SHALL BE TESTED IN ACCORDANCE WITH AWWA SPECIFICATIONS C451 AND THE DEPT PROTECTION REQUIREMENTS.
 - C. ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT WILL BE LEAD FREE. MORE THAN ONE SOLDER OR FLUX USED IN THIS PROJECT WILL CONTAIN NO MORE THAN 0.2% LEAD.
 - D. ALL PIPE AND PIPE FITTINGS INSTALLED UNDER THIS PROJECT WILL BE COLOR CODED IN ACCORDANCE WITH SUBPARAGRAPH C-625(3)(2)(B)(I), F.A.C., USING BLUE AS A PREDOMINANT COLOR. UNDERGROUND PLASTIC PIPE WILL BE IDENTIFIED BY MARKINGS ON THE PIPE WALL WHICH ARE EASILY OBSERVABLE. UNLESS OTHERWISE NOTED, ALL NEW 8-INCH OR SMALLER DIAMETER PIPE SHALL BE WHITE OR BLACK PIPE WITH BLUE STRIPS INCORPORATED INTO, OR APPLIED TO, THE PIPE WALL; AND ALL NEW 10-INCH THROUGH 36-INCH DIAMETER PIPE SHALL BE BLACK PIPE WITH BLUE STRIPS APPLIED TO THE PIPE WALL. PIPE STIPRED DURING MANUFACTURING OF THE PIPE WILL HAVE CONTINUOUS STRIPS THAT RUN PARALLEL TO THE PIPE AXIS. IF THE PIPE IS STIPRED AFTER IT IS MANUFACTURED, THE STRIPS SHALL BE AT 90-DEGREE INTERVALS AROUND THE PIPE, AND THAT WILL REMAIN INTACT DURING AND AFTER INSTALLATION OF THE PIPE. IF TAPE OR WRAP IS USED TO REPAIR STRIPS, THE STRIPS MUST BE REPAIRED TO THE TAPE OR PART WILL BE APPLIED IN A CONTINUOUS LINE LONG ENOUGH PARALLEL TO THE PIPE AXIS TO COVER THE STRIP THAT IS LOCATED ALONG THE TOP OF THE PIPE. FOR PIPE WITH AN INTERNAL DIAMETER OF 24 INCHES OR GREATER, TAPE OR PART WILL BE APPLIED IN TWO CONTINUOUS STRIPS ALONG EACH SIDE OF THE PIPE AS WELL AS ALONG THE TOP OF THE PIPE. ABOVEGROUND PIPE WILL BE PAINTED BLUE OR WILL BE COLOR CODED OR MARKED LIKE UNDERGROUND PIPE).
- POTABLE WATER PIPES MUST BE MANUFACTURED IN ACCORDANCE WITH THE FOLLOWING AWWA SPECIFICATIONS:
 - A. DUCTILE IRON PIPE (3 INCHES TO 54 INCHES) - AWWA C150 AND AWWA C451;
 - B. STEEL PIPE;
 - (1) AWWA C600/ASTM 1784 (18 INCH TO 12 INCHES)
 - (2) AWWA C125
 - (3) AWWA C125/ASTM 1784 (18 INCH TO 48 INCHES);



NOT TO SCALE



TYPICAL FIRE HYDRANT CLEARANCE REQUIREMENT



TOP OF FLANGE
REFERENCE POINT DETAIL

7. ALL FILL HYDROMATS THAT WILL BE INSTALLED UNDER THIS PROJECT AND THAT WILL HAVE UNPLUGGED UNDERGROUND DRAINS WILL BE INSTALLED IN ACCORDANCE WITH APPLICABLE AWWA STANDARDS OR PROCEDURES.
8. NEW OR ALTERED WATER MAINS WILL BE PROVIDED WITH THRUST BLOCKS OR RESTRAINTS TO PREVENT MOVEMENT.
9. NEW OR ALTERED WATER MAINS INCLUDED IN THIS PROJECT WILL BE INSTALLED IN ACCORDANCE WITH APPLICABLE AWWA STANDARDS OR PROCEDURES.
10. A CONTINUOUS AND UNIFORM BEDDING WILL BE PROVIDED IN TRENCHES FOR UNDERGROUND PIPE INSTALLED UNDER THIS PROJECT. THE BEDDING SHALL BE A MINIMUM OF 12 INCHES AND SHALL BE UNDERGROUND PIPE INSTALLED UNDER THIS PROJECT AND TO A SUFFICIENT HEIGHT ABOVE THE PIPE TO ADEQUATELY SUPPORT AND PROTECT THE PIPE FROM EXCESSIVE LOADS AND EXCESSIVE DEFLECTIONS IN APPLICABLE AWWA STANDARDS OR MANUFACTURER'S RECOMMENDED INSTALLATION PROCEDURES. POULD IN TRENCHES SHALL BE OF CHAPTER 6201 F.C. AND AT LEAST TEN FEET FROM THE BOTTOM OF UNDERGROUND PIPE INSTALLED UNDER THIS PROJECT.
11. ALL WATER MAIN TIES, BENDS, ELBOWS AND HYDANTS INSTALLED UNDER THIS PROJECT WILL BE PROVIDED WITH THRUST BLOCKS OR RESTRAINTS TO PREVENT MOVEMENT.
12. NEW OR ALTERED WATER MAINS THAT ARE INCLUDED IN THIS PROJECT AND THAT MAY BE CONSTRUCTED OF ASBESTOSCEMENT, OR POLYVINYL CHLORIDE PIPE WILL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH AWWA STANDARD C400 OR C405. ALL EXISTING WATER MAINS, SANITARY SEWER, STORM SEWER, SCUMMATER, WATER MAIN AND THE CUTSIDE OF ANY EXISTING OR PROPOSED GRAVITY-TYPE SANITARY SEWER, STORM SEWER, SCUMMATER, WATER MAIN, OR PIPELINE CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 6-0140, F.A.C., SHALL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH AWWA STANDARD C400.
13. NEW OR RELOCATED UNDERGROUND WATER MAINS INCLUDED IN THIS PROJECT SHALL BE PRESSURE AND LEAKAGE TESTED IN ACCORDANCE WITH AWWA STANDARD C400.

A HORIZONTAL DISTANCE OF AT LEAST SIX FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND THE OUTSIDE OF ANY EXISTING OR PROPOSED PRESSURE-TYPE SANITARY SEWER, WASTEWATER FORCE MAIN, OR PIPELINE CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART II OF CHAPTER 62-410, F.A.C.; AND A HORIZONTAL DISTANCE OF AT LEAST TEN FEET BETWEEN THE OUTSIDE OF THE WATER MAIN AND ALL PARTS OF ANY EXISTING OR PROPOSED "ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM."

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

15. AT THE UTILITY CROSSINGS DESCRIBED ABOVE, ONE FULL LENGTH OF WATER MAIN SHALL BE CENTERED ABOVE OR BELOW THE OTHER PIPELINE SO THE WATER MAIN JOINTS ARE AS FAR AS POSSIBLE FROM THE OTHER PIPELINE OR THE PIPES WILL BE ARRANGED SO THAT ALL WATER MAIN JOINTS ARE AT LEAST THREE FEET FROM ALL JOINTS IN VACUUM-TYPE SANITARY SEWERS, STORM SEWERS, STORMWATER FORCE MAINS OR PIPELINES CONVEYING RECLAIMED WATER REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C., AND AT LEAST SIX FEET FROM ALL JOINTS IN GRAVITY- OR PRESSURE-TYPE SANITARY SEWERS, WASTEWATER FORCE MAINS, OR PIPELINES CONVEYING RECLAIMED WATER NOT REGULATED UNDER PART III OF CHAPTER 62-610, F.A.C.

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

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

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

APPROPRIATE DEFLECTION TEST ARE SPECIFIED FOR ALL FLEXIBLE PIPE. TESTING IS REQUIRED AFTER THE FINAL BACKFILL HAS BEEN IN PLACE AT LEAST 30 DAYS TO PERMIT STABILIZATION OF THE BACKFILL. TESTING SHALL BE PERFORMED IN ACCORDANCE WITH THE FOLLOWING: 1) THE PIPE SHALL EXCEED A DEFLECTION OF 0% BY USING ROAD BALL OR MANHOLE FOR THE DEFLECTION TEST WITH A DIAMETER NOT LESS THAN 1/2 THE BASE DIAMETER OF THE PIPE. 2) THE DEFLECTION OF THE DIAMETER OF THE PIPE, DEPENDING ON WHICH IS SPECIFIED IN THE ASIN SPECIFICATIONS, INCLUDING THE APPENDIX, TO WHICH THE PIPE IS BEING PERFORMING THE TEST WITHOUT MECHANICAL PULVING DEVICES.

2. LEAKAGE TEST ARE SPECIFIED REQUIRING THAT: 1) THE LEAKAGE, EXPIRATION OR INFILTRATION DOES NOT EXCEED 20 GALLONS PER LINEAL FOOT OF PIPE PER HOUR. 2) IF REQUIRED, NO PIPE IN THE SYSTEM IS TO BE EXPOSED TO INFILTRATION TEST. BE PERFORMED WITH A MINIMUM POSITIVE HEAD OF 2 FEET; AND 3) AIR OR WATER IN AN ANNUAL CONTRACT SHALL BE PERFORMED AS DESCRIBED IN ASTM C428 FOR CLAY PIPE, ASTM C 924 FOR CONCRETE PIPE, ASTM E4417 FOR PLASTIC PIPE, AND OTHER MANHOLE APPROPRIATE TEST PROCEDURES.

MANHOLE INSPECTION AND TESTING FOR WATERTIGHTNESS OR DAMAGED TO BE PLACED TO PLACE. IF THE MANHOLE IS TESTING SPECIFIED FOR CONCRETE SEWER MANHOLES, SHALL CONFORM TO THE TEST PROCEDURES DESCRIBED IN ASTM C-1244.

4. SUITABLE COUPLINGS COMPLYING WITH ASTM SPECIFICATIONS ARE REQUIRED FOR JOINTS DISMISSED MATERIALS.

5. CONCRETE MANHOLES SHALL HAVE THE FOLLOWING: 1) MANHOLE LIFT HOLES AND GRADE ADJUSTMENT RINGS SEALED WITH AN APPROPRIATE JOINT SEALANT. 2) THE MANHOLE TOPS AND OUTLET PIPES BE JOINED TO THE MANHOLE WITH A GASKETED FLEXIBLE WATERTIGHT CONNECTION OR ANOTHER WATERTIGHT CONNECTION. 3) MANHOLES SHALL BE PROTECTED FROM SETTLEMENT OF THE PIPE AND MANHOLE WALL; 3) WATERTIGHT MANHOLE COVERS BE USED WHEREVER THE TOPS MAY BE FLOODED OR EXPOSED TO OTHER DAMAGE.

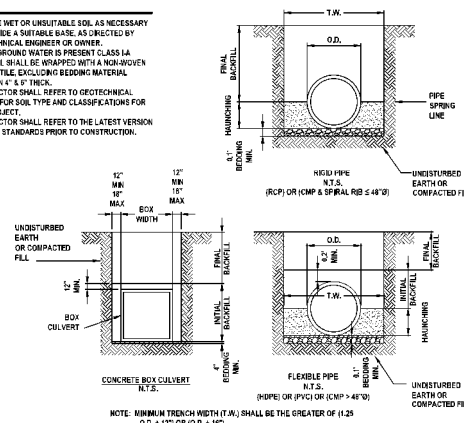
OTHER PIPE	HORIZONTAL SEPARATION	CROSSINGS (1)	JOINT SPACING AT CROSSINGS (FULL JOINT CENTERED)
STORM SEWER, STORMWATER FORCE MAIN, RECLAIMED WATER (7)	WATER MAIN 3 FT MINIMUM	WATER MAIN 12 INCHES IS THE MINIMUM EXCEPT FOR STORM SEWERS, THEN 8 INCHES IS THE MINIMUM AND 12 INCHES IS PREFERRED	WATER MAIN ALTERNATE 1 FT MINIMUM
VACUUM SANITARY SEWER	WATER MAIN 10 FT PREFERRED 3 FT MINIMUM	WATER MAIN 12 INCHES PREFERRED 6 INCHES MINIMUM	WATER MAIN ALTERNATE 1 FT MINIMUM
GRAVITY OR PRESSURE SANITARY SEWER, SANITARY SEWER FORCE MAIN, RECLAIMED WATER (4)	WATER MAIN 10 FT PREFERRED 3 FT MINIMUM	WATER MAIN 12 INCHES IS THE MINIMUM EXCEPT FOR STORM SEWERS, THEN 8 INCHES IS THE MINIMUM AND 12 INCHES IS PREFERRED	WATER MAIN ALTERNATE 1 FT MINIMUM
ON-SITE SEWAGE TREATMENT AND DISPOSAL SYSTEM	WATER MAIN 10 FT MINIMUM (2)		

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

ASTM D 2321 MATERIAL CLASS	ASTM D 2467 USCS SOIL GROUP	MATERIAL TYPE	% PASSING			ATTERBERG LIMITS	
			1 1/2 IN.	NO. 4	NO. 200	LL	PI
IA	NONE	MANUFACTURED OPEN GRADED AGGREGATES	100%	≤10%	≤3%	NON PLASTIC	
IB	NONE	MANUFACTURED DENSE GRADED AGGREGATES	100%	≤5%	≤3%	NON PLASTIC	
I	GW	COARSE-GRAINED SOILS, CLEAN	100%	<5% OF "COARSE FRACTION"	≤3%	NON PLASTIC	
	GP						
	SW						
	SP						
II	GM	COARSE-GRAINED SOILS W/ FINES	100%	<5% OF "COARSE FRACTION"	12% TO 50%	<4 OR <"A" LINE	
	GC			<7 OR <"A" LINE			
	SM			<4 OR <"A" LINE			
	SC			>7 OR >"A" LINE			
IV-A	ML	FINE-GRAINED SOILS	100%	100%	>50%	≤50	<4 OR <"A" LINE
	CL						>7 OR >"A" LINE

GENERAL NOTES

- [illegible]



NOTE: MINIMUM TRENCH WIDTH
O.D. + 12" OR (O.D. + 16"

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

909 US Highway 1, Suite 3
Grand Beach, Florida 32174
phone (386) 872-7794
Newark-Engineering.com

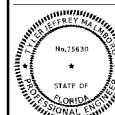
C.A. # 30209
L.C. # 26900564
© 2013

Civil Engineering,
Transportation, CEI &



UTILITY DETAILS

THIS ITEM HAS BEEN DIGITALLY
SIGNED AND SEALED BY
TYLER MALMBERG, PE # 15630



PRINTED COPIES OF THIS DOCUMENT ARE NOT CONSIDERED SIGNED AND SEALED AND THE SIGNATURE MUST BE VERIFIED ON ANY ELECTRONIC COPIES.

PROJECT No: 2022-11

DATE: FEBRUARY 20

DESIGN BY: T

DRAWN BY: T

CHECKED BY: _____ T

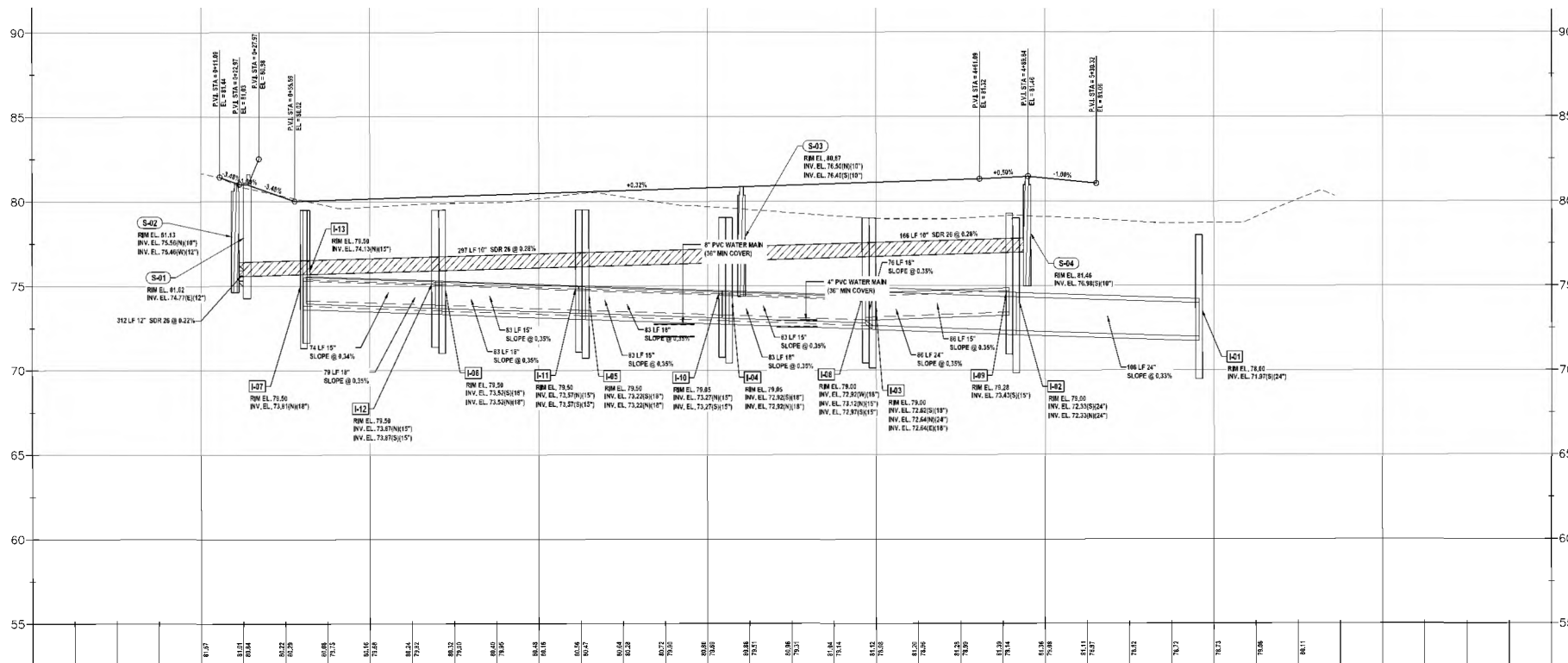
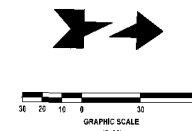
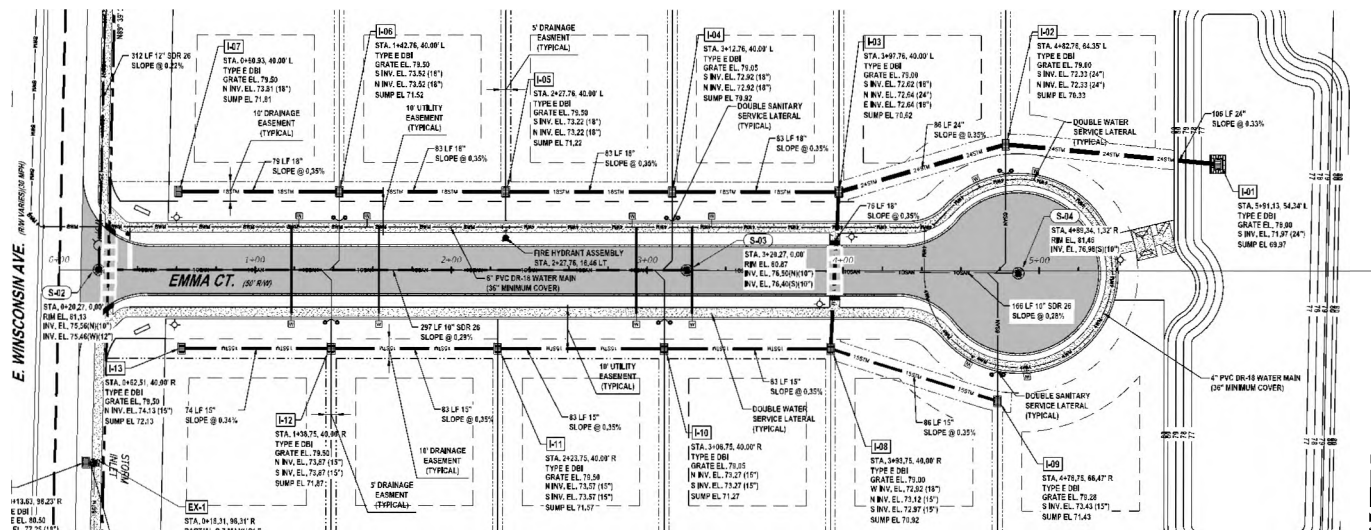
SCALE: 1" =

DRAWING NUMBER

10

13

1



REVISIONS

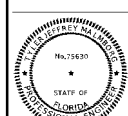
DATE	DESCRIPTION

123315 Highway 1, Suite 3
Orem Beach, Florida 32714
C.E. # 2008
www.newkirk-engineering.com
C.E. # 2003
C.E. # 2003
Civil Engineering
Transposition, CEI &
Landscape Architecture

**PLAN AND PROFILE
THE CANOPY AT BLUE LAKE**
E. WISCONSIN AVE.
DELAND, FL 32724

THIS DRAWING IS THE PROPERTY OF NEWKIRK ENGINEERING. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREON. IT IS NOT TO BE REPRODUCED, COPIED, OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, WITHOUT THE WRITTEN PERMISSION OF NEWKIRK ENGINEERING.

THIS ITEM HAS BEEN ORIGINALLY
SIGNED AND SEALED BY
TYLER HOLMES, PE #7580 ON



PRINTED COPIES OF THIS
DOCUMENT ARE NOT CONSIDERED
SIGNED AND SEALED AND THE
SIGNATURE MUST BE VERIFIED ON
ANY ELECTRONIC COPIES

PROJECT No. 2022-1190
DATE: FEBRUARY 2023
DESIGN BY: TJM
DRAWN BY: TJM
CHECKED BY: TJM
SCALE: 1" = 30'
DRAWING NUMBER

14

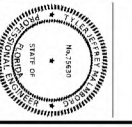


DATE	DESCRIPTION
11/07/2022	PROJECT COMPLETION

1230 US Highway 1, Suite 3
Orlando, Florida 32814
TEL: 407.474.7744
www.newkirk-engineering.com
C.A. # 30209
L.C. # 2408954
Civil Engineering,
Transportation, CEI &
Landscape Architecture



CITY OF DELAND
WATER SYSTEM DETAILS
THE CANOPY AT BLUE LAKE
E. WISCONSIN AVE.
DELAND, FL 32724



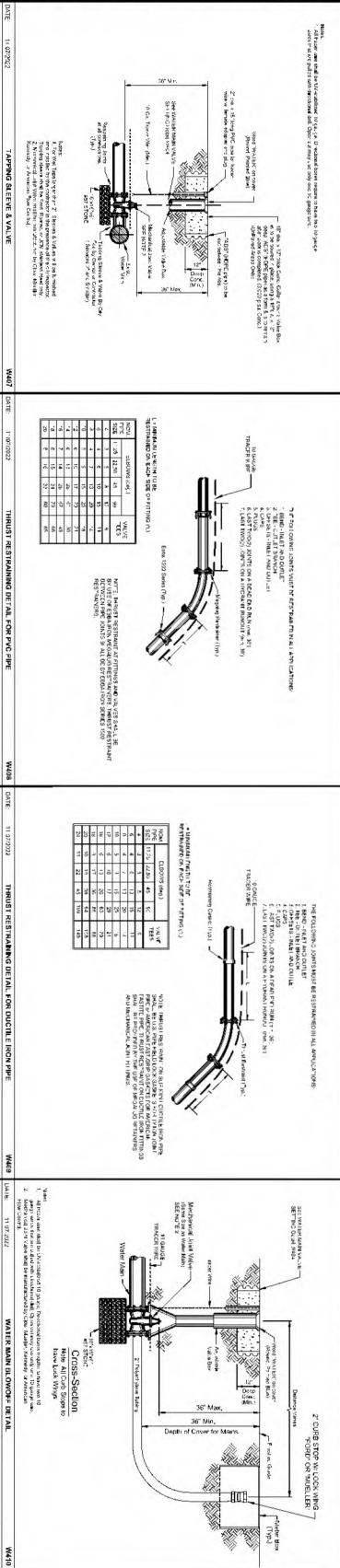
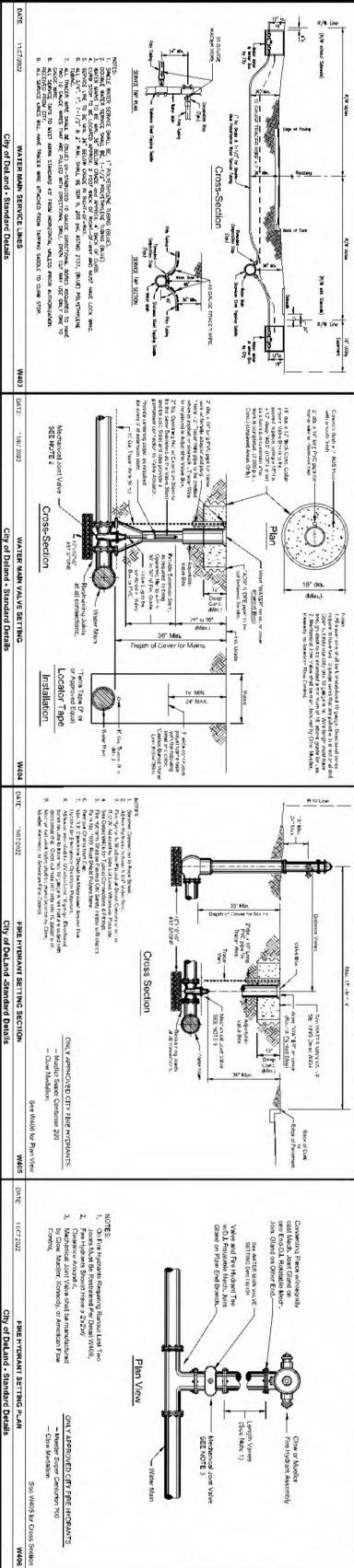
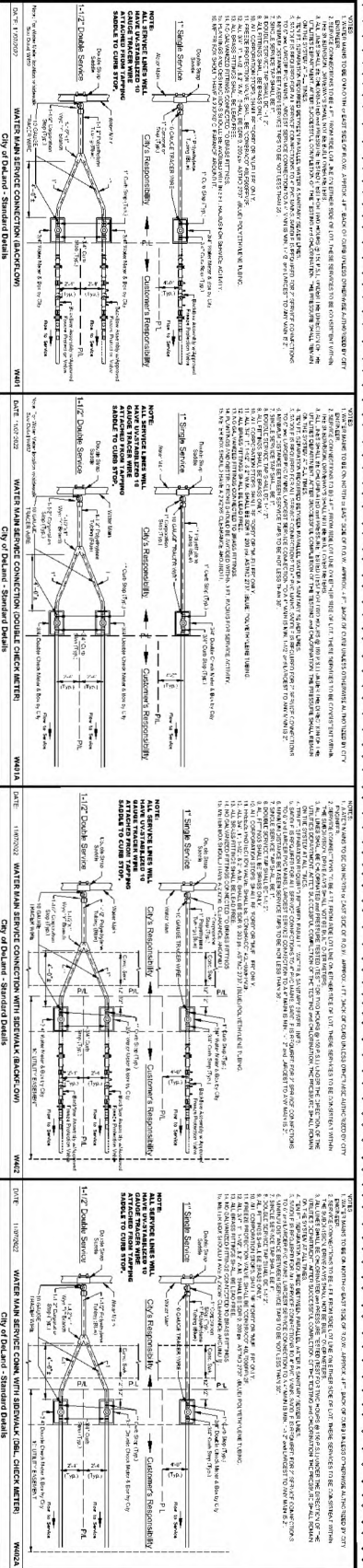
PROJECT NO. 2022-1190
DESIGN BY TJM
DRAWN BY TJM
CHECKED BY TJM
SCALE
DRAWING NUMBER
15

CITY OF DELAND, FLORIDA
1102 S. GARFIELD AVENUE, DELAND, FLORIDA 32724

NOT TO SCALE
ERIC SAMPSON
DATE: 11/07/2022
CHECKED BY: NAME

WATER SYSTEM DETAILS (Sheet 1)

FILE: drive letter/details locations





CITY OF DELAND, FLORIDA
1102 S. GARFIELD AVENUE, DELAND, FLORIDA 32724

SCALE: NOT TO SCALE
DATE: 11/07/2022
DRAWN BY: ERIC SAMPSON
CHECKED BY: NAME



1230 US Highway 1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 472-7784
www.newkirk-engineering.com
C.A. # 30209
L.C. # 2008954
Civil Engineering
Transportation, CEI &
Landscape Architecture

CITY OF DELAND
WATER SYSTEM DETAILS
THE CANOPY AT BLUE LAKE
E. WISCONSIN AVE.
DELAND, FL 32724

THE CITY ENGINEER SHALL REVIEW AND APPROVE ALL WATER MAINS, SANITARY SEWERS, AND STORM SEWERS FOR CONFORMANCE WITH THE CITY OF DELAND WATER MAINS, SANITARY SEWERS, AND STORM SEWERS SPECIFICATIONS.

PROJECT NO. 2022-1190
DESIGN BY: TAW
CHECKED BY: TAW
DATE: FEBRUARY 2023

16

W11 DATE: 11/07/2022 **CITY OF DELAND - Standard Details**

Typ. Plan

Typ. Cross-Section

W12 DATE: 11/07/2022 **CITY OF DELAND - Standard Details**

Typ. Cross-Section

W13 DATE: 11/07/2022 **CITY OF DELAND - Standard Details**

Typ. Cross-Section

W14 DATE: 11/07/2022 **CITY OF DELAND - Standard Details**

Typ. Cross-Section

W15 DATE: 11/07/2022 **CITY OF DELAND - Standard Details**

Typ. Cross-Section

W16 DATE: 11/07/2022 **CITY OF DELAND - Standard Details**

Typ. Cross-Section

W17 DATE: 11/07/2022 **CITY OF DELAND - Standard Details**

Typ. Cross-Section

W18 DATE: 11/07/2022 **CITY OF DELAND - Standard Details**

Typ. Cross-Section

W19 DATE: 11/07/2022 **CITY OF DELAND - Standard Details**

Typ. Cross-Section

W20 DATE: 11/07/2022 **CITY OF DELAND - Standard Details**

Typ. Cross-Section

W21 DATE: 11/07/2022 **CITY OF DELAND - Standard Details**

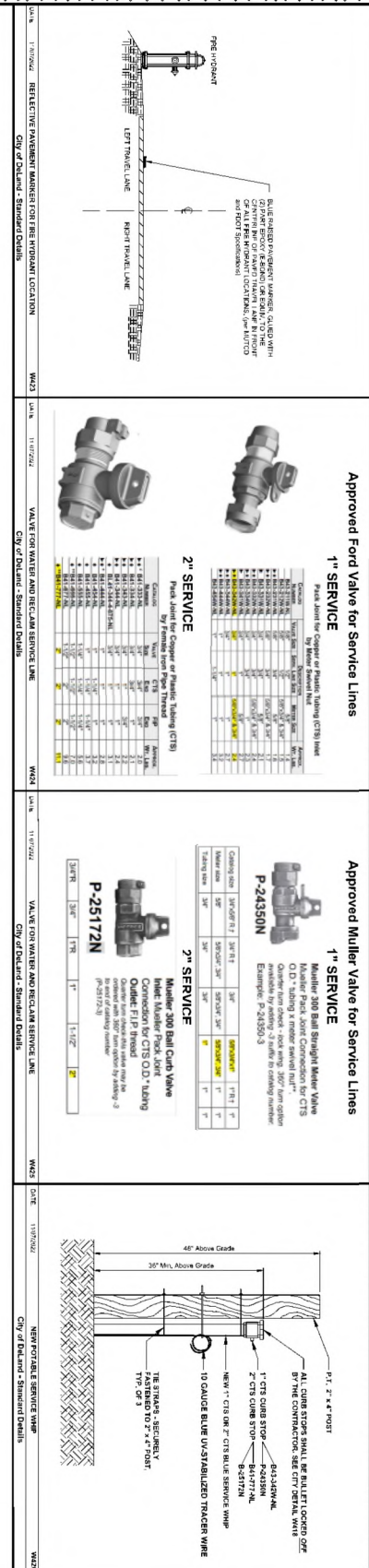
Typ. Cross-Section

W22 DATE: 11/07/2022 **CITY OF DELAND - Standard Details**

Typ. Cross-Section

TITLE: **WATER SYSTEM DETAILS (Sheet 2)**

FILE: drive letter/details locations



TITLE:

WATER SYSTEM DETAILS (Sheet 3)

CITY OF DELAND, FLORIDA
1102 S. GARFIELD AVENUE, DELAND, FLORIDA 32724



SCALE: NOT TO SCALE

DRAWN BY: ERIC SAMI

DATE: 11/07/2022

CHECKED BY: NAME

FILE. *drive letter/details locations*

SCALE: _____

17

CITY OF DELAND
WATER SYSTEM DETAILS
THE CANOPY AT BLUE LAKE
E. WISCONSIN AVE.
DELAND, FL 32724



1230 US Highway 1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 872-7794
www.Newkirk-Engineering.com
C.A. # 30209
L.C. # 26000584
© 2013
Civil Engineering,
Transportation, CEI &
Landscape Architecture

REVISIONS	
DATE	DESCRIPTION
3/26/23	PER CITY COMMENTS



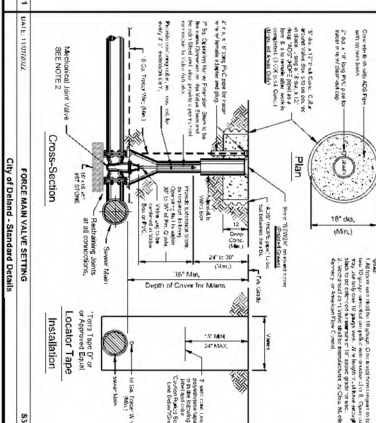
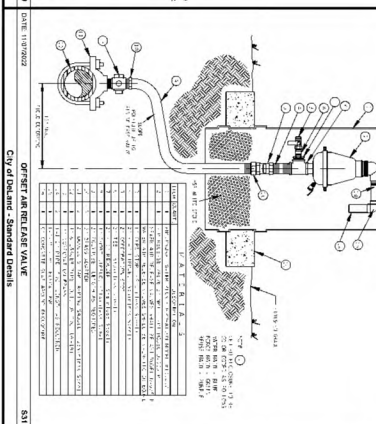
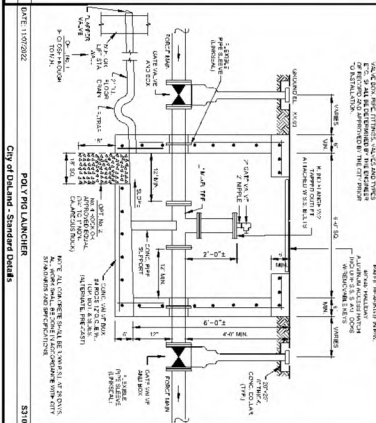
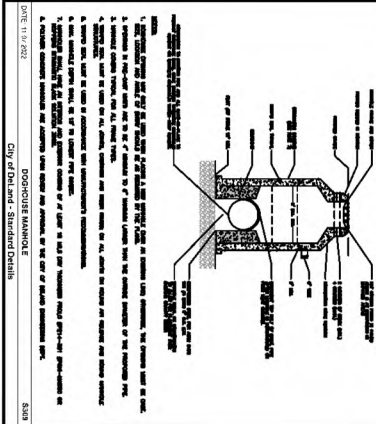
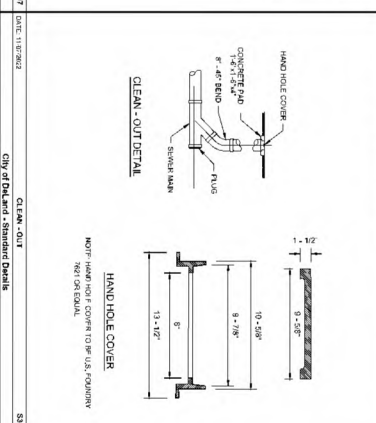
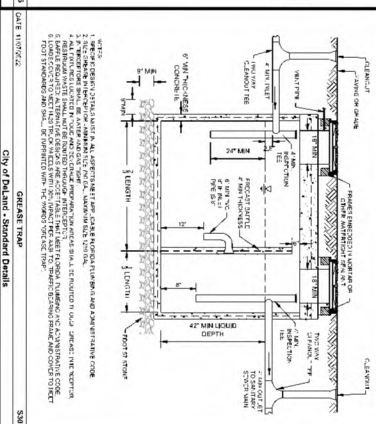
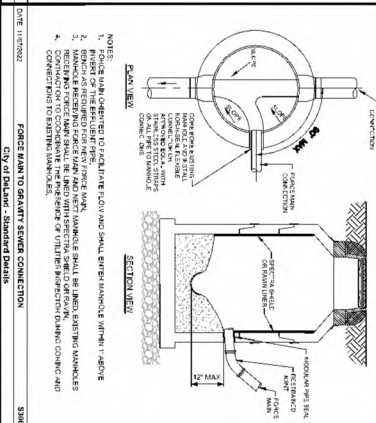
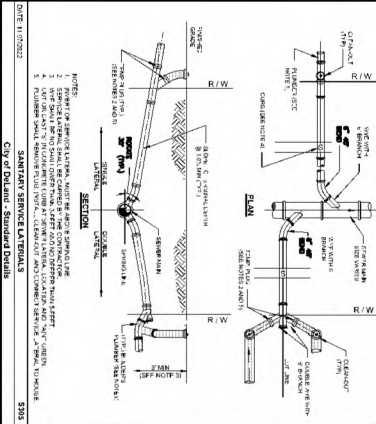
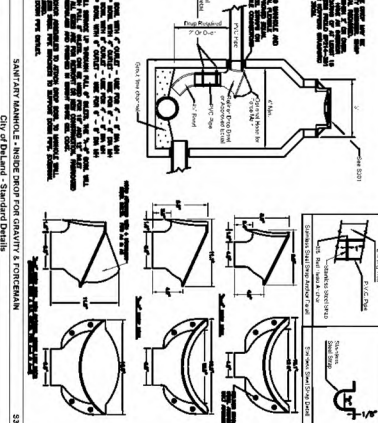
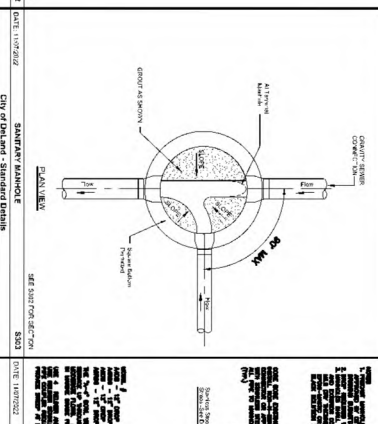
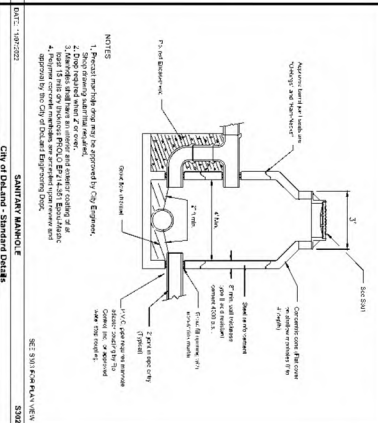
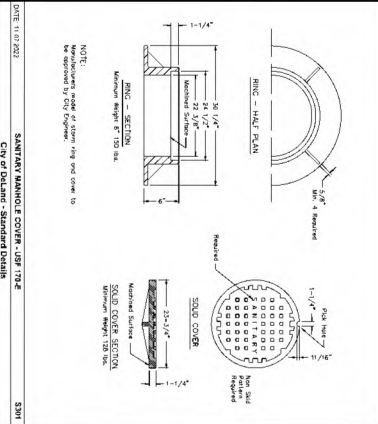
CITY OF DELAND, FLORIDA
 1102 S. GARFIELD AVENUE, DELAND, FLORIDA 32724

SCALE: NOT TO SCALE
 DATE: 11/07/2022
 DRAWN BY: ERIC SAMPSON
 CHECKED BY: NAME

SANITARY DETAILS

TITLE: drive letter/details locations

PAGE 2 OF 5



3M LOCATING MARKER BALLS PROGRAMMABLE AND NON-PROGRAMMABLE NOTES:

- Programmable and Non-Programmable Marker Balls will be used on all Sewer, Potable and Reclaim projects.
- For information on the Programmable and Non-Programmable Balls that the City requires see spec sheet for details.
- Programmable Balls will be placed at all fittings, Tees, Couplings, 90, 45 and 22.
- Information will be recorded on a spec sheet, for information that needs to be recorded see spec sheet for an example template for the 3M Marker Balls.
- Non-Programmable Marker Balls will be used as follows:
 - Potable: End of Service Line when bored.
 - Wastewater: Ball will be placed at the curb line to mark lateral location prior to end of service.
 - Reclaim: End of Service Line when bored.
- Bored hole depth is 1.5 feet to 3 feet. Five foot is the minimum depth for these devices.

1420-LOCATER FOR MARKER BALLS

3M™ Dynatel™ Electronic Marker System (EMS) Marker Locators 1420 series is microprocessor-based systems that quickly and efficiently locate underground markers—years after construction or maintenance.

The 3M™ Dynatel™ 1420 Marker Locators are designed to be accurate, fast and integrated allowing you to accurately find easily:

- Locates, read and write to 3M ID markers
- Pinpoint the depth and location of all existing models of properly installed underground passive EMS markers
- Conduct direct depth reading of markers
- Locate two different marker frequencies simultaneously

Specifications

2200RB Rechargeable Battery: Not Included
Cable/Pipe Locator: No
Carrying Bag Included: No
Coupler Size: No Coupler
Direct Connect Cable: N/A
EMS Caution Tape Finding Capability: No
Family: 1420 Series
Fault Finding Capability: No

2200RB Rechargeable Battery: Not Included
Cable/Pipe Locator: No
Carrying Bag Included: No
Coupler Size: No Coupler
Direct Connect Cable: N/A
EMS Caution Tape Finding Capability: No
Family: 1420 Series
Fault Finding Capability: No
Locator Type: Marker

3M DYNATEL LOCATING AND MARKING ELECTRONIC MARKER SYSTEM:

1423-XR/ID-POTABLE



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

Features:

- Positive identification of underground water facilities
- ID Marker allows for programming of customer specific information
- Unique self-leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR: BLUE
DIAMETER (METRIC): 10.4 CM
DIAMETER (INCH): 4 INCH
MARKER DEPTH: 5 FEET (1.5M)
MARKER DIMENSION (INCH): 4 INCH DIAMETER
MARKER TYPE: BALL
PROGRAMMABLE/PASSIVE: PROGRAMMABLE
RANGE: 0 TO 5 LINEAR FOOT
RHS EU Comments: UNDETERMINED
Solution for: CONTACT 3M FOR INFORMATION

ACCESS NETWORK: FTTHTTB/CATV
ACCESS NETWORK: XDSL, LONG-HAUL/METRO
LOOP NETWORK: OUTDOOR
WIRELESS NETWORK: BACKHAUL

1424-XR/ID-SEWER



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

Features:

- Positive identification of underground wastewater facilities
- ID Marker allows for programming of customer specific information
- Unique self-leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR: GREEN
DIAMETER (METRIC): 10.4 CM
DIAMETER (INCH): 4 INCH
MARKER DEPTH: 5 FEET (1.5M)
MARKER DIMENSION (INCH): 4 INCH DIAMETER
MARKER TYPE: BALL
PROGRAMMABLE/PASSIVE: PROGRAMMABLE
RANGE: 0 TO 5 LINEAR FOOT
RHS EU Comments: UNDETERMINED
Solution for: CONTACT 3M FOR INFORMATION

ACCESS NETWORK: FTTHTTB/CATV
ACCESS NETWORK: XDSL, LONG-HAUL/METRO
LOOP NETWORK: OUTDOOR
WIRELESS NETWORK: BACKHAUL

1428-XR/ID-RECLAIMED



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

Features:

- Positive identification of underground general purpose/reclaimed water facilities
- ID Marker allows for programming of customer specific information
- Unique self-leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR: PURPLE
DIAMETER (METRIC): 10.4 CM
DIAMETER (INCH): 4 INCH
MARKER DEPTH: 5 FEET (1.5M)
MARKER DIMENSION (INCH): 4 INCH DIAMETER
MARKER TYPE: BALL
PROGRAMMABLE/PASSIVE: PROGRAMMABLE
RANGE: 0 TO 5 LINEAR FOOT
RHS EU Comments: UNDETERMINED
Solution for: CONTACT 3M FOR INFORMATION

ACCESS NETWORK: FTTHTTB/CATV
ACCESS NETWORK: XDSL, LONG-HAUL/METRO
LOOP NETWORK: OUTDOOR
WIRELESS NETWORK: BACKHAUL

1403-XR-POTABLE



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

Features:

- Positive identification of underground water facilities
- Unique self-leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR: BLUE
DIAMETER (METRIC): 10.4 CM
DIAMETER (INCH): 4 INCH
MARKER DEPTH: 5 FEET (1.5M)
MARKER DIMENSION (INCH): 4 INCH DIAMETER
MARKER TYPE: BALL
PROGRAMMABLE/PASSIVE: PASSIVE
RANGE: 0 TO 5 LINEAR FOOT
RHS EU Comments: UNDETERMINED
Solution for: CONTACT 3M FOR INFORMATION

ACCESS NETWORK: FTTHTTB/CATV
ACCESS NETWORK: XDSL, LONG-HAUL/METRO
LOOP NETWORK: OUTDOOR
WIRELESS NETWORK: BACKHAUL

1404-XR-SEWER



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

Features:

- Positive identification of underground wastewater facilities
- Unique self-leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR: GREEN
DIAMETER (METRIC): 10.4 CM
DIAMETER (INCH): 4 INCH
MARKER DEPTH: 5 FEET (1.5M)
MARKER DIMENSION (INCH): 4 INCH DIAMETER
MARKER TYPE: BALL
PROGRAMMABLE/PASSIVE: PASSIVE
RANGE: 0 TO 5 LINEAR FOOT
RHS EU Comments: UNDETERMINED
Solution for: CONTACT 3M FOR INFORMATION

ACCESS NETWORK: FTTHTTB/CATV
ACCESS NETWORK: XDSL, LONG-HAUL/METRO
LOOP NETWORK: OUTDOOR
WIRELESS NETWORK: BACKHAUL

1408-XR-RECLAIMED



The 3M™ EMS Extended-Range Ball Markers have a self-leveling design providing accurate, horizontal position regardless of how it is placed in the ground, making the job of precisely locating underground facilities easier.

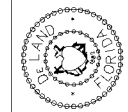
Features:

- Positive identification of underground general purpose facilities
- Unique self-leveling design simplifies installation
- No external power source needed
- Resistant to elements
- 5 foot (1.5 meter) detection distance
- Color conforms to APWA standards

SPECIFICATIONS:

COLOR: PURPLE
DIAMETER (METRIC): 10.4 CM
DIAMETER (INCH): 4 INCH
MARKER DEPTH: 5 FEET (1.5M)
MARKER DIMENSION (INCH): 4 INCH DIAMETER
MARKER TYPE: BALL
PROGRAMMABLE/PASSIVE: PASSIVE
RANGE: 0 TO 5 LINEAR FOOT
RHS EU Comments: UNDETERMINED
Solution for: CONTACT 3M FOR INFORMATION

ACCESS NETWORK: FTTHTTB/CATV
ACCESS NETWORK: XDSL, LONG-HAUL/METRO
LOOP NETWORK: OUTDOOR
WIRELESS NETWORK: BACKHAUL



CITY OF DELAND, FLORIDA
1102 S. GARFIELD AVENUE, DELAND, FLORIDA 32724

DATE: 1/10/2022
CHECKED BY: ERIC M. SAMPSON

SCALE: NOT TO SCALE
DRAWN BY: MARK LA GRECA

UTILITY MARKER BALL LOCATORS

FILE: drive letter details locations

REVISIONS

DATE	DESCRIPTION

1330 US Highway 1, Suite 3
Orlando Beach, Florida 32714
www.newkirk-engineering.com
C.A. # 20204
L.C. 2003
NEWKIRK ENGINEERING INC.
Civil Engineering, C.E. &
Landscape Architecture



CITY OF DELAND
MARKER BALL DETAILS
THE CANOPY AT BLUE LAKE
E. WISCONSIN AVE.
DELAND, FL 32724

THIS DOCUMENT IS THE PROPERTY OF NEWKIRK ENGINEERING. IT IS TO BE USED ONLY FOR THE PROJECT AND SITE SPECIFICALLY IDENTIFIED HEREIN. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF NEWKIRK ENGINEERING.

THIS ITEM HAS BEEN DIGITALLY
SIGNED AND SEALED BY
TYLER BALANIS, PE #17530 ON



PRINTED COPIES OF THIS
DOCUMENT ARE NOT CONSIDERED
VALID UNLESS THEY HAVE THE
SIGNATURE AND SEAL OF THE
ENGINEER ON ANY ELECTRONIC COPIES

PROJECT No.: 2022-1100
DATE: FEBRUARY 2021
DESIGN BY: TJM
DRAWN BY: TJM
CHECKED BY: TJM
SCALE: AS SHOWN

DRAWING NUMBER

19

Project:	THE CANOPY AT BLUE LAKE									
	Items to be inputted on Smart Ball									
SMART Ball	Project	Project	Type of	Nearest Physical	GIS Location of Smart Ball			Pipe Material and Size		Depth
Serial Number	Name	Number	Main	Address to Smart Ball Placement	Station	Lat	Long	Pipe Material 1	Pipe Size 1	to Main (ft)
			W- Water S- Sewer R- Redclaim					C900 HDPE Ductile	4", 6", 8", 10", 12"	
1	The Canopy at Blue Lake	2022-1101	W	Emma Court	0+55.98	29.03225	81.27915	PE	1.5"	
2	The Canopy at Blue Lake	2022-1101	W	Emma Court	0+60.00	29.03226	81.27929	PE	1.5"	
3	The Canopy at Blue Lake	2022-1101	W	Emma Court	0+94.49	29.03285	81.27929	PE	1.5"	
4	The Canopy at Blue Lake	2022-1101	W	Emma Court	1+00.48	29.03237	81.27915	PE	1.5"	
5	The Canopy at Blue Lake	2022-1101	W	Emma Court	2+30.00	29.03272	81.27931	PE	1.5"	
6	The Canopy at Blue Lake	2022-1101	W	Emma Court	2+31.98	29.03273	81.27917	PE	1.5"	
7	The Canopy at Blue Lake	2022-1101	W	Emma Court	2+70.49	29.03283	81.27931	PE	1.5"	
8	The Canopy at Blue Lake	2022-1101	W	Emma Court	2+70.49	29.03284	81.27917	PE	1.5"	
9	The Canopy at Blue Lake	2022-1101	W	Emma Court	3+58.25	29.03313	81.27932	PE	1.5"	
10	The Canopy at Blue Lake	2022-1101	W	Emma Court	3+78.54	29.03321	81.27939	PE	1.5"	
11	The Canopy at Blue Lake	2022-1101	W	Emma Court	4+01.16	29.0332	81.27912	PE	1.5"	
12	The Canopy at Blue Lake	2022-1101	W	Emma Court	4+04.40	29.03328	81.2794	PE	1.5"	
13	The Canopy at Blue Lake	2022-1101	W	Emma Court	4+93.56	29.03328	81.2791	PE	1.5"	
14	The Canopy at Blue Lake	2022-1101	S	Emma Court	0+76.24	29.0323	81.27918	SDR	4"	
15	The Canopy at Blue Lake	2022-1101	S	Emma Court	0+80.25	29.03291	81.27926	SDR	4"	
16	The Canopy at Blue Lake	2022-1101	S	Emma Court	2+46.24	29.03277	81.2792	SDR	4"	
17	The Canopy at Blue Lake	2022-1101	S	Emma Court	2+50.25	29.03278	81.27928	SDR	4"	
18	The Canopy at Blue Lake	2022-1101	S	Emma Court	3+92.69	29.03324	81.27938	SDR	4"	
19	The Canopy at Blue Lake	2022-1101	S	Emma Court	4+12.67	29.03324	81.27913	SDR	4"	

REVISIONS

DATE	DESCRIPTION

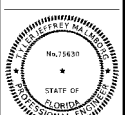
1203 US Highway 1, Suite 3
Orem Beach, Florida 32174
www.newkirk-engineering.com
C.A. # 20089
L.C. # 21003
Civil Engineering,
Transmission, CEI &
Landscaping Architecture



CITY OF DELAND
MARKER BALL DETAILS
THE CANOPY AT BLUE LAKE
E. WISCONSIN AVE.
DELAND, FL 32724

THIS DOCUMENT IS THE PROPERTY OF NEWKIRK ENGINEERING. IT IS TO BE USED ONLY FOR THE PROJECT AND FOR THE CITY OF DELAND. IT IS NOT TO BE REPRODUCED OR TRANSMITTED IN ANY FORM OR BY ANY MEANS, ELECTRONIC OR MECHANICAL, INCLUDING PHOTOCOPYING, RECORDING, OR BY ANY INFORMATION STORAGE AND RETRIEVAL SYSTEM, WITHOUT THE WRITTEN PERMISSION OF NEWKIRK ENGINEERING.

THIS ITEM HAS BEEN DIGITALLY
SIGNED AND SEALED BY:
THOMAS HILMANN, PE # 17530 OR

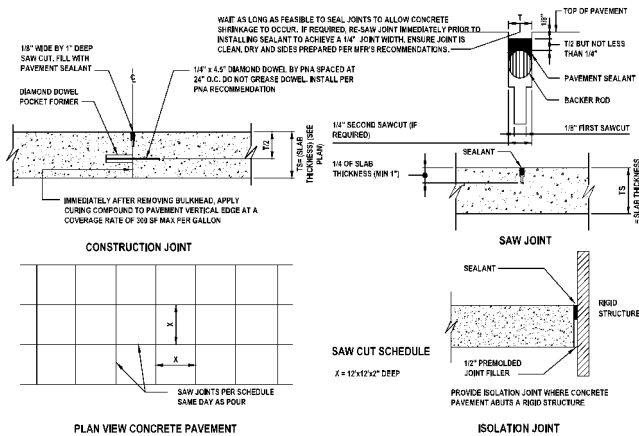


PRINTED COPIES OF THIS
DOCUMENT ARE NOT CONSIDERED
SIGNED AND SEALED AND THE
SIGNATURE MUST BE VERIFIED ON
ANY ELECTRONIC COPIES

PROJECT No. 2022-1100
DATE FEBRUARY 2023
DESIGN BY: TJM
DRAWN BY: TJM
CHECKED BY: TJM

SCALE
DRAWING NUMBER

20

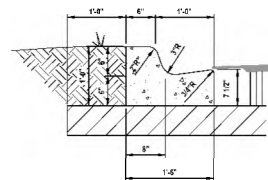


CONCRETE PAVEMENT JOINT DETAILS

NOT TO SCALE

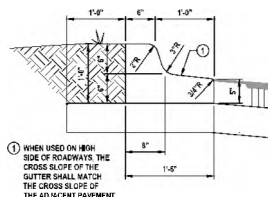
CURB CONSTRUCTION NOTES

- ALL CURBS TO BE CONSTRUCTED OF 18 DAY, 3000 P.S.I. CONCRETE.
- 1/2" PREMOLOD EXPANSION JOINT REQUIRED EVERY 50' CONSTRUCTION JOINT REQUIRED EVERY 12' MAXIMUM (4' MINIMUM).
- 1/2" PREMOLOD EXPANSION JOINT REQUIRED AT EACH SIDE OF ALL STORM INLET STRUCTURES AND AT ALL RADIUS POINTS.
- 1" SUBBASE TO BE COMPACTED AND TESTED TO 95% DENSITY BASED ON AASHTO T-99 MODIFIED PROCTOR TEST AND SHALL BE STABILIZED TO A MINIMUM LLR 40.
- EXPANSION JOINT MATERIAL MUST COVER ENTIRE CROSS SECTION OF CURB.
- IN NO INSTANCE SHALL EXTENDED CURBS (DEFINED AS HEADER-TYPE CURBS) BE INSTALLED DIRECTLY ON TOP OF PAVEMENT IF PERMITTED.



TYPE "F1" SPILLOUT CURB DETAIL

NOT TO SCALE

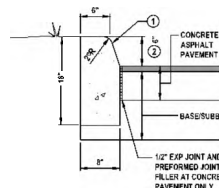


TYPE "F1" SPILLOUT CURB DETAIL

NOT TO SCALE

TYPE "F" AND "D" CURB INTERFACE DETAIL

NOT TO SCALE



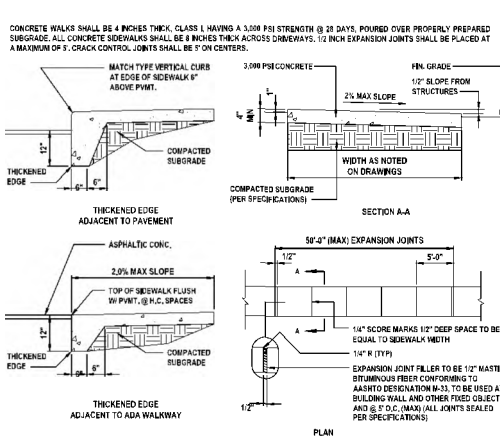
TYPE "D" CURB DETAIL

NOT TO SCALE

1. WHEN USED ON HIGH SIDE OF ROADWAYS THE CROSS SLOPE OF THE GUTTER SHALL MATCH THE CROSS SLOPE OF THE ADJACENT PAVEMENT.

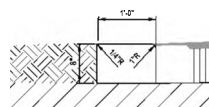
2. PROVIDE CONTRACTION JOINTS @ 12' O.C. AND EXPANSION JOINTS @ 50' O.C. ALL JOINTS SEALED PER SPECIFICATIONS

3. 8" HEIGHT SHALL BE UNIFORM, IF HEIGHT VARIES ± 1/2" THEN CURB WILL BE REPLACED AT THE DISCRETION OF THE ENGINEER AT THE CONTRACTOR'S EXPENSE.



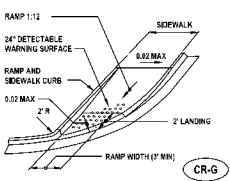
SIDEWALK DETAILS

NOT TO SCALE



RIBBON CURB DETAIL

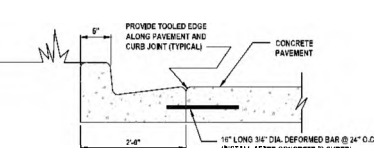
NOT TO SCALE



SEE FDOT INDEX No. 304 FOR ADDITIONAL INFORMATION

SIDEWALK CURB RAMP DETAIL

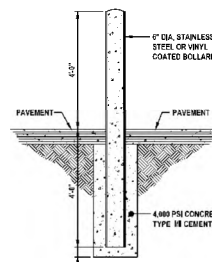
NOT TO SCALE



NOTE: DOWELS NOT REQUIRED IF MONOLITHIC POUR

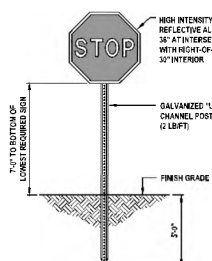
CONCRETE CURB AND GUTTER DOWELED JOINT DETAIL

NOT TO SCALE



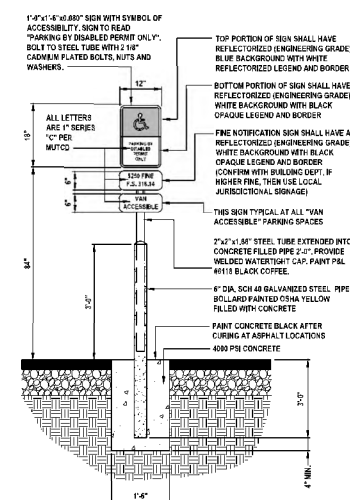
DECORATIVE BOLLARD DETAIL

NOT TO SCALE



STOP SIGN DETAIL

NOT TO SCALE



- NOTE**
- PARKING SPACE IDENTIFICATION SIGN SHALL CONFORM WITH CURRENT STATE, LOCAL AND FEDERAL CODES AND REGULATIONS.
 - ALL SIGNS SHALL BE DESIGNED TO WITHSTAND 130 MPH WIND SPEED.

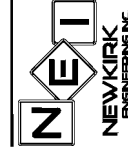
HANDICAP PARKING SIGN

NOT TO SCALE

REVISIONS

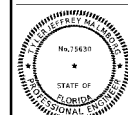
DATE	DESCRIPTION

1233 US Highway 1, Suite 3
Ormond Beach, Florida 32174
www.newkirk-engineering.com
C.A. # 30384
L.C. # 2003
Civil Engineering
Transportation, CEI &
Landscape Architecture



MISCELLANEOUS DETAILS
AND NOTES
THE CANOPY AT BLUE LAKE
E. WISCONSIN AVE.
DELAND, FL 32724

THIS ITEM HAS BEEN ORIGINALLY
DESIGNED AND DRAWN BY
THOMAS WILSON, P.E. # 15333 ON



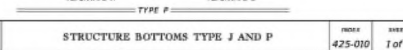
PRINTED COPIES OF THIS
DOCUMENT ARE NOT CONSIDERED
SIGNED AND SEALED AND THE
SIGNATURE MUST BE VERIFIED ON
ANY ELECTRONIC COPIES

PROJECT No. 2022-1100
DATE FEBRUARY 2023
DESIGN BY TJM
DRAWN BY TJM
CHECKED BY TJM
SCALE
DRAWING NUMBER

21



LAST REVISION 11/01/20	SEPC/PT100	 FY STAND
------------------------------	------------	---



1230 US Highway 1, Suite 3
Ormond Beach, Florida 32174
Phone (386) 478-7794
www.newkirk-engineering.com
C.A. #30289
L.C. #20098564
C.E. 2011
Civil Engineering,
Transportation, CEI &
Landscape Architecture



FDOT STANDARD DETAILS
THE CANOPY AT BLUE LAKE
E. WISCONSIN AVE.
DELAND, FL 32724

THIS STANDARD DETAIL IS SUBJECT TO THE FOLLOWING NOTES:
1. THIS STANDARD DETAIL IS NOT TO BE USED FOR ANY OTHER PROJECTS WITHOUT THE WRITTEN PERMISSION OF NEWKIRK ENGINEERING, INC.
2. THE USER OF THIS STANDARD DETAIL SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.
3. THE USER OF THIS STANDARD DETAIL SHALL BE RESPONSIBLE FOR OBTAINING ALL NECESSARY PERMITS AND APPROVALS FROM THE APPROPRIATE AGENCIES.



PROJECT NO. 2022-1160
DATE: FEBRUARY 2023
DESIGN BY: TAT
DRAWN BY: TAT
CHECKED BY: TAT
SCALE: DRAWING NUMBER

25

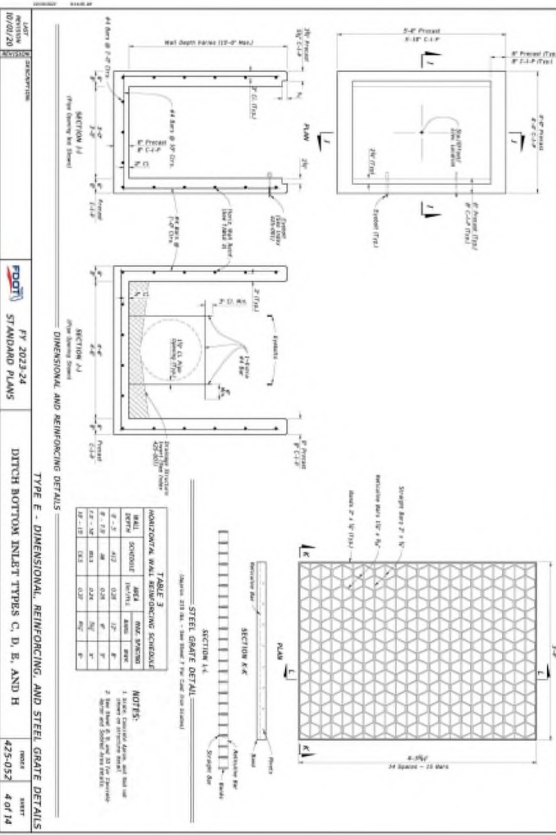


TABLE 6 - SLAB DESIGNS
ROUND STRUCTURES

SECTION	SLAB TYPE	SLAB THICKNESS	SLAB DIAMETER	SLAB AREA	SLAB VOLUME	SLAB WEIGHT	SLAB COST	
TYPE C	SQUARE	8"	4'-0"	16.00	1.33	10.40	\$1,040.00	
			6'-0"	36.00	3.00	23.76	\$2,376.00	
			8'-0"	64.00	5.33	41.82	\$4,182.00	
			10'-0"	100.00	8.33	65.25	\$6,525.00	
TYPE D	RECTANGULAR	8"	4'-0"	6'-0"	24.00	2.00	15.84	\$1,584.00
			6'-0"	8'-0"	48.00	4.00	31.68	\$3,168.00
			8'-0"	10'-0"	80.00	6.67	53.44	\$5,344.00
			10'-0"	12'-0"	120.00	10.00	80.00	\$8,000.00
TYPE E	RECTANGULAR	8"	4'-0"	8'-0"	32.00	2.67	21.09	\$2,109.00
			6'-0"	10'-0"	60.00	5.00	39.60	\$3,960.00
			8'-0"	12'-0"	96.00	7.33	59.04	\$5,904.00
			10'-0"	14'-0"	140.00	10.00	85.80	\$8,580.00
TYPE H	RECTANGULAR	8"	4'-0"	12'-0"	48.00	4.00	31.68	\$3,168.00
			6'-0"	16'-0"	96.00	6.67	53.44	\$5,344.00
			8'-0"	20'-0"	160.00	10.00	80.00	\$8,000.00
			10'-0"	24'-0"	240.00	13.33	118.80	\$11,880.00

SECTION	SLAB TYPE	SLAB THICKNESS	SLAB DIAMETER	SLAB AREA	SLAB VOLUME	SLAB WEIGHT	SLAB COST	
TYPE C	SQUARE	8"	4'-0"	16.00	1.33	10.40	\$1,040.00	
			6'-0"	36.00	3.00	23.76	\$2,376.00	
			8'-0"	64.00	5.33	41.82	\$4,182.00	
			10'-0"	100.00	8.33	65.25	\$6,525.00	
TYPE D	RECTANGULAR	8"	4'-0"	6'-0"	24.00	2.00	15.84	\$1,584.00
			6'-0"	8'-0"	48.00	4.00	31.68	\$3,168.00
			8'-0"	10'-0"	80.00	6.67	53.44	\$5,344.00
			10'-0"	12'-0"	120.00	10.00	80.00	\$8,000.00
TYPE E	RECTANGULAR	8"	4'-0"	8'-0"	32.00	2.67	21.09	\$2,109.00
			6'-0"	10'-0"	60.00	5.00	39.60	\$3,960.00
			8'-0"	12'-0"	96.00	7.33	59.04	\$5,904.00
			10'-0"	14'-0"	140.00	10.00	85.80	\$8,580.00
TYPE H	RECTANGULAR	8"	4'-0"	12'-0"	48.00	4.00	31.68	\$3,168.00
			6'-0"	16'-0"	96.00	6.67	53.44	\$5,344.00
			8'-0"	20'-0"	160.00	10.00	80.00	\$8,000.00
			10'-0"	24'-0"	240.00	13.33	118.80	\$11,880.00

SLAB AND WALL DESIGN TABLE NOTES

1. See the main description of the section.
2. All dimensions are in feet and inches.
3. All dimensions are in feet and inches.
4. All dimensions are in feet and inches.
5. All dimensions are in feet and inches.
6. All dimensions are in feet and inches.
7. All dimensions are in feet and inches.
8. All dimensions are in feet and inches.
9. All dimensions are in feet and inches.
10. All dimensions are in feet and inches.

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

TABLE 3 AND

