

CIRCLE C BOAT & RV STORAGE

FINAL SITE PLAN

DAYTONA BEACH, FLORIDA

DEV 2022-020

GENERAL NOTES

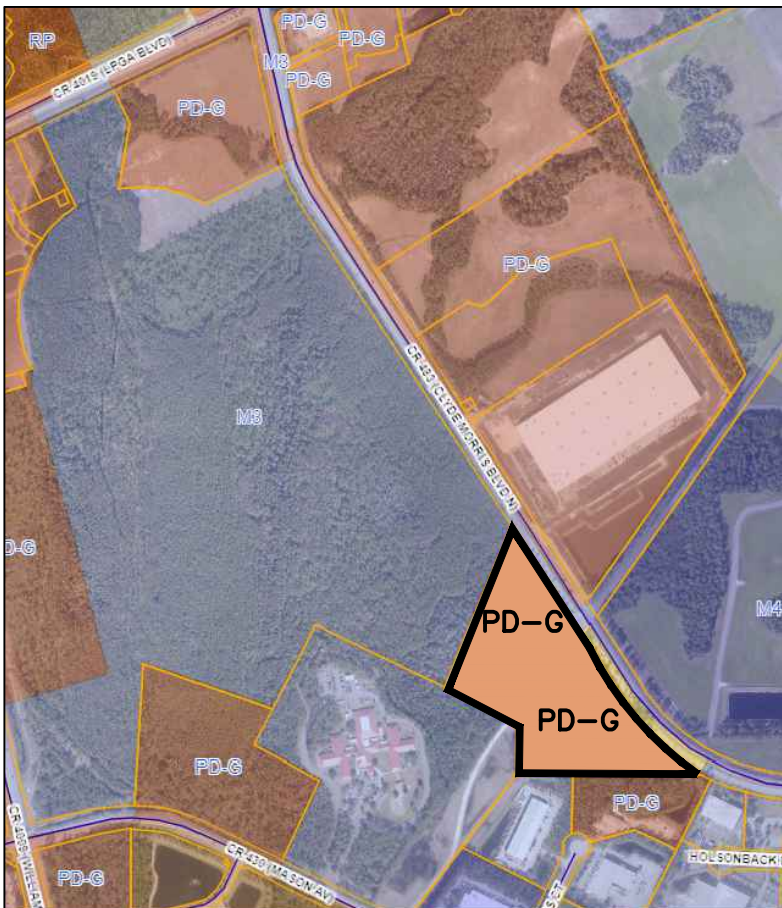
- UNDERGROUND UTILITY LOCATIONS AS FIELD MARKED BY THE FOLLOWING COMPANIES OR THEIR REPRESENTATIVES:
FLORIDA POWER & LIGHT COMPANY 300 SPRUCE CREEK ROAD
PORT ORANGE, FL 32129 (386) 322-3423
AT&T 900 N. NOVA ROAD
DAYTONA BEACH, FL 32117 1-800-432-4770
TIME WARNER 209 DUNLAWTON AVE.
PORT ORANGE, FL 32127 (386) 257-7950
TECO PEOPLES GAS 1722 RIDGEWOOD AVE.
HOLLY HILL, FL 32117 (386) 671-2238
BIGHOUSE NETWORK 1475 NOVA ROAD
DAYTONA BEACH, FL 32114 (386) 760-9941
- LOCATIONS OF EXISTING UTILITIES ARE SHOWN BASED ON AVAILABLE INFORMATION. IT IS THE CONTRACTORS RESPONSIBILITY TO DETERMINE THE EXACT LOCATION OF EXISTING UTILITIES AND TO DETERMINE IF OTHER UTILITIES WILL BE ENCOUNTERED DURING THE COURSE OF THE WORK AND TAKE WHATEVER STEPS NECESSARY TO PROVIDE FOR THEIR PROTECTION (I.E. SHEETING, DE-WATERING, ETC.). CONTRACTOR TO NOTIFY DESIGN ENGINEER OF ANY DISCREPANCIES OR CONFLICTS.
- CONTRACTOR TO COORDINATE DEMOLITION AND CONSTRUCTION WITH ALL PUBLIC AND PRIVATE UTILITY COMPANIES TO AVOID CONFLICTS AND/OR INTERRUPTIONS OF SERVICE.
- SEE IRRIGATION, AND ELECTRICAL SHEETS FOR UNDERGROUND LAYOUT OF IRRIGATION MAINS, IRRIGATION ELECTRICAL CONTROL WIRE, AND UNDERGROUND ELECTRICAL SERVICE LAYOUT.
- CONTRACTOR TO PROVIDE AS BUILT DRAWINGS OF ALL IMPROVEMENTS ON 24" X 36" MYLAR, SIGNED AND SEALED BY A FLORIDA REGISTERED LAND SURVEYOR.
- ALL PERMIT AND IMPACT FEES TO BE PAID BY DEVELOPER.
- CONTRACTOR WILL FOLLOW ALL OF THE CITY'S REQUIRED WASTE MANAGEMENT PRACTICES. ALL CONSTRUCTION, RENOVATION AND DEMOLITION ARE TO BE KEPT CLEAN AND FREE OF REFUSE, DEBRIS AND LITTER DURING THE CONSTRUCTION, RENOVATION OR DEMOLITION PROCESS. A CERTIFICATE OF OCCUPANCY FOR A NEWLY CONSTRUCTED OR RENOVATED BUILDING SHALL NOT BE ISSUED UNTIL ALL REFUSE AND LITTER CAUSED BY THE CONSTRUCTION OR REMODELING IS REMOVED FROM THE SITE AS PER THE CITY'S CODE OF ORDINANCES CHAPTER 28 SECTION 78-5 AND 78-8.
- THE CONTRACTOR SHALL HAVE AVAILABLE AT THE JOB SITE, AT ALL TIMES, ONE COPY OF PLANS, SPECIFICATIONS, AND COPIES OF ANY REQUIRED CONSTRUCTION PERMITS.
- CONTRACTOR IS RESPONSIBLE FOR CHECKING ACTUAL SITE CONDITIONS BEFORE COMMENCEMENT OF CONSTRUCTION.
- ANY DISCREPANCIES ON THE DRAWINGS SHALL BE BROUGHT TO THE ATTENTION OF THE ENGINEER BEFORE COMMENCEMENT OF CONSTRUCTION.
- NO FIELD CHANGES OR DEVIATIONS FROM DESIGN TO BE MADE WITHOUT PRIOR APPROVAL FROM THE ENGINEER.
- EXISTING SPOT GRADES, CONTOURS AND OTHER TOPOGRAPHIC FEATURES SHOWN WITHIN THIS SET OF CONSTRUCTION PLANS WERE TAKEN FROM SURVEYS PREPARED BY SLIGER AND ASSOCIATES.
- ALL CONSTRUCTION IN FDOT RIGHT OF WAY SHALL CONFORM TO THE LATEST EDITION OF DESIGN STANDARDS AND STANDARD SPECIFICATIONS AND THE UAM, UTILITIES ACCOMMODATION MANUAL.
- THERE SHALL BE NO CONSTRUCTION VEHICLE RELATED PARKING, CONSTRUCTION MATERIALS PLACEMENT OR STORAGE OF ANY KIND PERMITTED WITHIN THE COUNTY RIGHTS OF WAY IN ACCORDANCE WITH VOLUSIA COUNTY ORDINANCE ARTICLE 1, SECTION 94-1.
- ON CONSTRUCTION ON THE PROPOSED PORTIONS OF THIS PROJECT MAY COMMENCE UNTIL A MANDATORY PRE CONSTRUCTION MEETING IS HELD WITH THE CITY, AS STATED IN THE APPROVED DEVELOPMENT ORDER FROM THE CITY OF DAYTONA BEACH. ANY CESSATION OF CONTINUOUS ON-GOING CONSTRUCTION ON THIS PROJECT OF 90 DAYS OR MORE SHALL TRIGGER A REQUIREMENT FOR ANOTHER PRE CONSTRUCTION MEETING BE HELD WITH THE CITY PRIOR TO CONTINUATION OF THE CONTINUING CONSTRUCTION.
- THE STORMWATER MANAGEMENT SYSTEM HAS BEEN DESIGNED IN ACCORDANCE WITH THE CITY OF DAYTONA BEACH'S LAND DEVELOPMENT CODE (LDC), MORE SPECIFICALLY, SECTION 7.2.M.6 FOR STORMWATER MANAGEMENT. THE PROJECT COMPLIES WITH THE STORMWATER REQUIREMENTS OF SECTION 7.2.M.6, SPECIFICALLY, "THE PEAK RATE OF DISCHARGE FROM A SITE AFTER DEVELOPMENT OR REDEVELOPMENT SHALL APPROXIMATE THE PEAK RATE OF DISCHARGE FROM THE SITE PRIOR TO DEVELOPMENT OR REDEVELOPMENT AS COMPUTED FOR THE 25-YEAR AND/OR 100-YEAR 24 HOUR STORMS, WITH RUNOFF RATES IN EXCESS OF 110 PERCENT OF THE PREDEVELOPMENT RATE ACCOMMODATED IN AN APPROVED MANNER ON SITE.

VOLUSIA COUNTY USE PERMIT NOTES

- NOTIFY VOLUSIA COUNTY DEVELOPMENT ENGINEERING DIVISION AT (386) 736-5926 A MINIMUM OF 24 HOURS PRIOR TO THE START OF CONSTRUCTION. FAILURE OF THE PERMITTEE TO OBTAIN THE APPROPRIATE INSPECTIONS PRIOR TO PROCEEDING WITH WORK SHALL NOT RELIEVE THE PERMITTEE FROM REEXCAVATION OR OTHER MEASURES NECESSARY FOR THE INSPECTION OF WORK.
- VOLUSIA COUNTY TRAFFIC ENGINEERING (386) 736-5968 IS NOT A MEMBER OF SUNSHINE ONE CALL. WHEN REQUESTING LOCATES, PLEASE PROVIDE A MINIMUM ADVANCED NOTIFICATION OF TWO (2) BUSINESS DAYS PRIOR TO PROPOSED WORK.
- COORDINATION WITH VOLUSIA COUNTY TRAFFIC OPERATIONS (386) 239-6535 IS REQUIRED WITH A MINIMUM ADVANCED NOTICE OF SEVEN (7) DAYS PRIOR TO ANY SIDEWALK, LAKE OR ROAD CLOSURE (INCLUDING FLAGGING OPERATIONS).
- OPERATIONS WITHIN THE COUNTY RIGHT-OF-WAY SHALL NORMALLY BE CONDUCTED 7:00 AM TO 7:00 PM, MONDAY THROUGH FRIDAY. ANY DEVIATION FROM THESE HOURS REQUIRES PRIOR APPROVAL FROM THE COUNTY DEVELOPMENT ENGINEER. EMERGENCY REPAIRS ARE EXCLUDED FROM THIS TIME RESTRICTION.
- ALL EXISTING SIDEWALKS WITHIN COUNTY RIGHT-OF-WAY SHALL EITHER REMAIN OPEN OR BE PROVIDED A TEMPORARY WALKWAY IN ACCORDANCE WITH THE CURRENT VERSION OF FLORIDA DEPARTMENT OF TRANSPORTATION STANDARD INDEX NO. 660. ANY DAMAGE TO SIDEWALKS SHALL BE REPAIRED AND/OR REPLACED IN LIKE KIND BY THE CONTRACTOR. NEW SIDEWALKS AND SECTIONS THROUGH DRIVEWAYS MUST BE AT A 1.5% CROSS SLOPE AND 2% MAXIMUM CROSS SLOPE PER ADA STANDARDS.
- DRIVING OR STAGING OF CONSTRUCTION VEHICLES OR MATERIALS IS NOT PERMITTED WITHIN THE COUNTY RIGHT-OF-WAY OR ON PEDESTRIAN WALKWAYS AND PATHS. THERE SHALL BE NO OVERNIGHT CONSTRUCTION VEHICLE RELATED PARKING, CONSTRUCTION MATERIAL PLACEMENT OR STORAGE OF ANY KIND PERMITTED WITHIN THE COUNTY RIGHT-OF-WAY.
- NO TRENCH OR EXCAVATION SHALL BE LEFT OPEN OR UNATTENDED OVERNIGHT, UNLESS APPROVED BY THE COUNTY DEVELOPMENT ENGINEERING INSPECTOR. EXCAVATIONS SHALL MEET THE DROP OFF PROTECTION REQUIREMENTS OF THE LATEST FDOT DESIGN STANDARD INDEX NO. 600.
- RESTORATION SHALL BE REQUIRED FOR ANY DAMAGE TO SIDEWALKS, CURBS, OR OTHER EXISTING STRUCTURES IN THE RIGHT-OF-WAY. ALL DISTURBED AREAS WITHIN THE COUNTY RIGHT OF WAY SHALL BE RE-GRADED AND SODDED. SEED AND MULCH IS NOT AN ACCEPTABLE ALTERNATIVE TO SODDING.

PROJECT DESCRIPTION:

DEVELOPMENT OF 18.85 ACRE BOAT & RV STORAGE.
2 PHASE DEVELOPMENT TO INCLUDE (2) BUILDINGS
13,541 SF AND 20,760 SF, PARKING AREAS,
DRIVEWAYS, SIGNAGE, LANDSCAPE, AND IRRIGATION
IMPROVEMENTS.



ZONING MAP

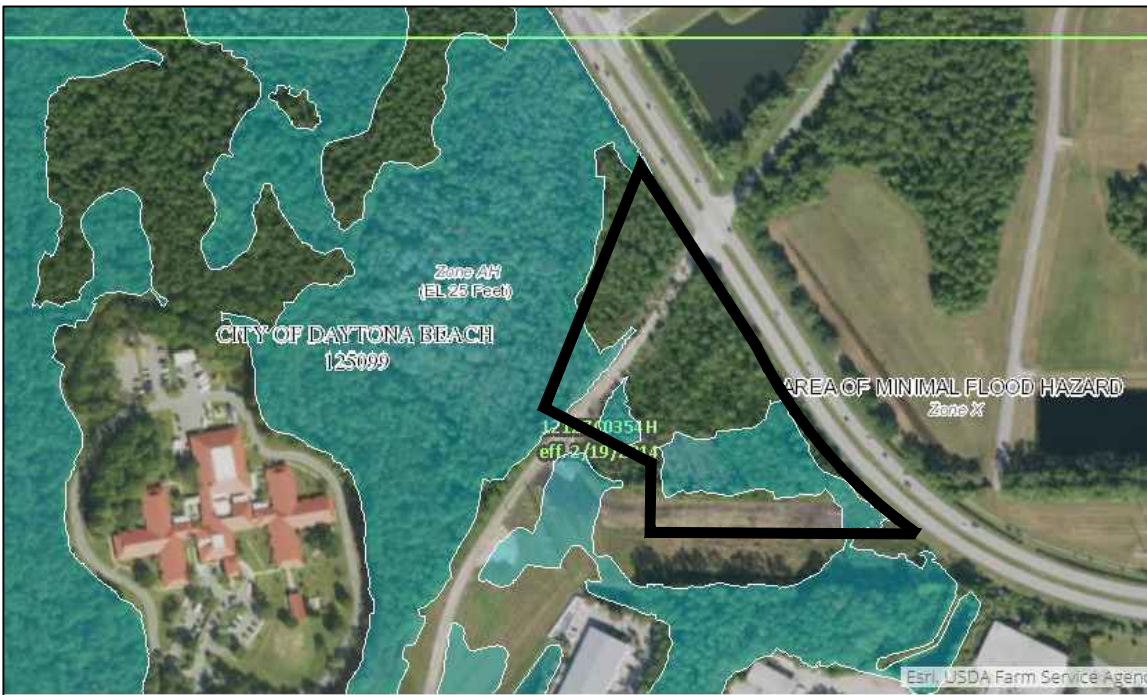
EXISTING ZONING: PD-G (CIRCLE C BOAT & RV STORAGE PLANNED DISTRICT).



SOILS MAP

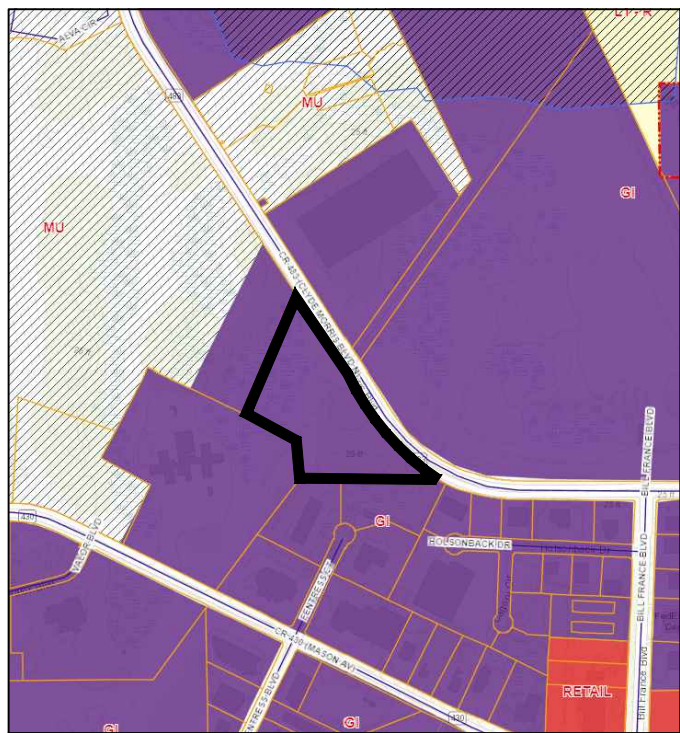
Map Unit Symbol	Map Unit Name	Acres in AOT	Percent of AOT
49	Pomona fine sand	7.4	36.6%
50	Pomona fine sand, depressional, 0 to 2 percent slopes	3.2	15.6%
51	Pomona-St. Johns complex	9.7	47.8%
Totals for Area of Interest		20.3	100.0%

SOILS KEY



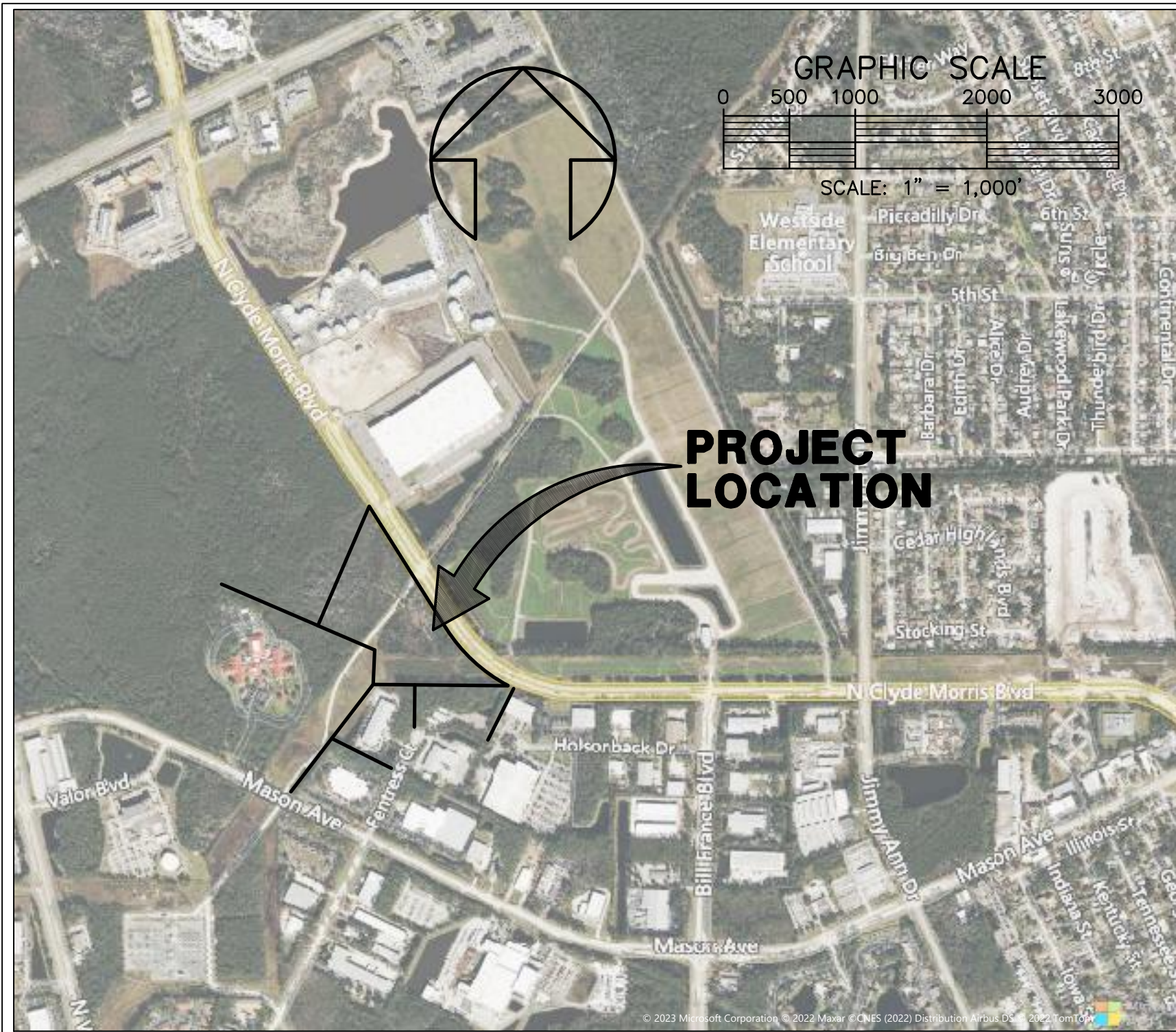
FEMA FLOOD MAP

AREA IS IN ZONE AH BFE, 25 FT & ZONE X MINIMAL FLOOD HAZARD
12127C0354H EFFECTIVE FEBRUARY, 19TH 2014



FUTURE LANDUSE MAP

EXISTING LANDUSE: GI (GENERAL INDUSTRIAL)



VICINITY MAP

INDEX TO DRAWINGS	
SHEET NO.	DESCRIPTION
1	COVER SHEET
31-35	BOUNDARY, TOPOGRAPHIC, AND WETLAND SURVEY
2	OVERALL PLAN
3	DEMOLITION/WETLAND IMPACT & EROSION CONTROL PLAN
4	SITE PLAN
5	CIVIL PLAN
6	UTILITY PLAN
7	LANDSCAPE PLAN
8	LANDSCAPE DETAILS
9	IRRIGATION PLAN
10	IRRIGATION DETAILS
11	CLYDE MORRIS BLVD IMPROVEMENT PLAN
12-16	PAVING AND DRAINAGE DETAILS
17-17A	MAINTENANCE OF TRAFFIC DETAILS
18-19	WATER DISTRIBUTION DETAILS
20-21	REUSE WATER DETAILS
22-23	SANITARY SEWER DETAILS
24	SEPTIC SYSTEM DETAIL
A2-A2	ARCHITECTURAL FLOOR PLAN
A3-A3	ARCHITECTURAL ELEVATIONS

PARKER MYNCHENBERG & ASSOCIATES, INC.

PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER 00003910

GENERAL INFORMATION:

PROJECT NAME:

CIRCLE C BOAT & RV STORAGE
FINAL SITE PLAN, PID: 5210-00-00-0023
EXISTING ZONING: (CIRCLE C BOAT & RV STORAGE PLANNED DISTRICT).
EXISTING FUTURE LANDUSE: GI (GENERAL INDUSTRIAL)

OWNER:

CIRCLE C BOAT & RV STORAGE, LLC.
CHRIS COOPER
287 BOYLSTON AVE.
DAYTONA BEACH, FL 32118
727-277-9864
CCOOPER37@ROCKETMAIL.COM

ENGINEER / LANDSCAPE ARCHITECT:

PARKER MYNCHENBERG & ASSOCIATES, INC.
PARKER MYNCHENBERG P.E. #32645
PARKER MYNCHENBERG L.A. #1553
CERTIFICATE OF AUTHORIZATION NUMBER: 00003910
1729 RIDGEWOOD AVENUE
HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114
EMAILS: info@parkermynchenberg.com
sbuwell@parkermynchenberg.com

SURVEYOR:

SLIGER & ASSOCIATES, INC.
JOSEPH E. ZAPERT, P.L.S., PRESIDENT
3921 NOVA ROAD
PORT ORANGE, FL 32127
(386) 761-5385 FAX (386) 760-0619
E-MAIL: sligerassociates.com

ENVIRONMENTAL CONSULTANT:

BIO-TECH CONSULTING INC.
MARK AUSLEY, PROJECT MANAGER
3025 EAST SOUTH STREET
ORLANDO, FL 32803
OFFICE: 407-894-5969
CELL: 407-760-9157
www.bio-techconsulting.com@BioTechConsult

LAND USE ATTORNEY:

JOSEPH POSEY, ESQUIRE
GLENN D. STORCH, P.A.
420 S. NOVA ROAD
DAYTONA BEACH, FL 32114
PHONE: 386-238-8383
FAX: 386-238-0988
EMAIL: JOEY@STORCHLAWFIRM.COM

FIRE NOTES:

- A WATER SUPPLY FOR FIRE PROTECTION, EITHER TEMPORARY OR PERMANENT, SHALL BE MADE AVAILABLE AS SOON AS COMBUSTIBLE MATERIAL ACCUMULATES PER NFPA 1: 16.4.3.1.1.
 - WHERE UNDERGROUND WATER MAINS AND HYDRANTS ARE TO BE PROVIDED, THEY SHALL BE INSTALLED, COMPLETED, AND IN SERVICE PRIOR TO COMMENCING CONSTRUCTION WORK ON ANY STRUCTURE PER NFPA 1: 16.4.3.1.3.
 - CERTIFIED PORTABLE FIRE EXTINGUISHERS SHALL BE PRESENT AND POSITIONED AROUND THE CONSTRUCTION WORK SITE PER NFPA 1.
 - F.D. ACCESS ROADS PROVIDED IN ACCORDANCE WITH NFPA 1:18.2.3 SHALL BE PROVIDED AT THE START OF THE PROJECT AND SHALL BE MAINTAINED THROUGHOUT CONSTRUCTION PER NFPA 1: 16.1.4.
 - THE CONSTRUCTION SITE SHALL BE ACCESSIBLE TO THE FIRE DEPT. AT ALL TIMES IN THE CASE OF FIRE OR OTHER EMERGENCY. SHOULD REASONABLE F.D. APPARATUS SITE ACCESS NOT BE AVAILABLE AT ALL TIMES, THE FIRE MARSHAL MAY STIPULATE THAT ADDITIONAL SITE ACCESS/ROADWAY IMPROVEMENTS TAKE PLACE IMMEDIATELY.
 - POST A TEMPORARY ADDRESS OR PROJECT NAME CLEARLY VISIBLE FROM THE MAIN ACCESS ROAD, MARK EACH BUILDING WITH AN ADDRESS BUILDING NUMBER.
 - A SUITABLE LOCATION AT THE SITE SHALL BE DESIGNATED AS A COMMAND POST AND PROVIDED WITH PLANS, EMERGENCY INFORMATION, KEYS, COMMUNICATIONS, AND EQUIPMENT, AS NEEDED PER NFPA 1:16.3.4.1.
- SPECIFIC NOTES:**
- UPON BUILDING COMPLETION, THE BUILDINGS WILL BE IN COMPLIANCE WITH NFPA 1:11.10.1 (7TH EDITION) FL FIRE PREVENTION CODE OR FUTURE ADOPTED EDITION) IN REGARD TO F.D. TWO-WAY RADIO COMMUNICATION ENHANCEMENT SYSTEMS. THE POSSIBLE NEED FOR SUCH A SYSTEM WILL BE DETERMINED BASED UPON TESTING REQUIREMENTS APPROVED BY VOLUSIA COUNTY RADIO SERVICES AND PERFORMED BY AN AUTHORIZED COMMUNICATIONS CONTRACTOR UTILIZING RADIO SIGNAL STRENGTH GRID TESTING OF THE BUILDING IN ACCORDANCE WITH NFPA 72 (2016 OR FUTURE ADOPTED EDITION) AND NFPA 1221 (2016 OR FUTURE ADOPTED EDITION). THE REQUIRED RADIO SIGNAL STRENGTH GRID TESTING SHALL BE PERFORMED ONCE THE BUILDINGS ARE SUBSTANTIALLY CONSTRUCTED AND PRIOR TO BUILDING C.O.
 - SHOULD A TWO-WAY RADIO COMMUNICATION ENHANCEMENT SYSTEM BE DETERMINED TO BE REQUIRED BASED UPON THE TESTING REFERENCED ABOVE, IT SHALL BE INSTALLED PRIOR TO BUILDING C.O. SHOULD THE BUILDINGS RECEIVE A C.O. PRIOR TO THE TESTING AND/OR REQUIRED INSTALLATION OF SUCH A SYSTEM, THIS REQUIREMENT MAY BE RETROACTIVELY APPLIED AT A FUTURE DATE BY THE DAYTONA BEACH FIRE DEPARTMENT AND/OR VOLUSIA COUNTY RADIO SERVICES, AND AT THE BUILDING OWNER'S SOLE EXPENSE.

PROJECT ADDRESS:

1010 N. CLYDE MORRIS BLVD
DAYTONA BEACH, FL 32117

LAND USE TABULATION:

SITE AREA = 802,660 SF = 18.427 ACRE
BUILDING COVERAGE = 34,301 SF/802,660 SF
= 4.27% COVERAGE. MAX ALLOWED = 50.00%
BUILDING SQUARE FOOTAGE:
BUILDING #2.....20,760 SF
BUILDING #1.....13,541 SF
TOTAL.....34,301 SF

IMPERVIOUS AREA:

BUILDINGS.....34,301 SF
PAVEMENT.....100,618 SF
SIDEWALKS.....288 SF
TOTAL.....135,207 SF = 16.84%
LANDSCAPE/OPEN SPACE.....686,915 SF = 83.16%
TREE AREA REQUIRED = 15% X 18.43 ACRE = 2.7645 ACRES
TREE AREA PROVIDED = 6.66 ACRES = 36.14%

PD REQUIREMENTS:

- Maximum building height: 35 feet ("ft." or "'").
- Maximum individual building size: 20,760 square ("sq.") ft.
- Minimum perimeter building setbacks:
(a) Sides: 10'.
(b) Front/Clyde Morris Blvd: 50'.
(c) Rear: 20'.
(d) Minimum open space: 25 percent ("%").
- Maximum impervious surface area: 75%.
- Maximum Floor Area Ratio ("FAR"): 0.5.

PROVIDED:

BUILDING HEIGHT = 26'-8"
BUILDING SIZE = 20,760 SF
SIDES = 259 FT & 359 FT
FRONT = 69 FT
REAR = 417 FT
OPEN SPACE = 85.58%
IMPERVIOUS AREA = 14.42%
(FAR) = 0.00427

PARKING CALCULATION:

PARKING REQUIRED:
PHASE #1 OFFICE = 3.5 SPACES/1,000 SF
SELF-STORAGE = 1 SPACE PER 25 BAYS

PHASE #1:
OFFICE = 1,450 SF * 3.5/1,000 SF = 5.075 (5) SPACES
BUILDING 1 = 16 BAYS + 14 OUTSIDE SPACES = 37/25 = 1.20 (1) SPACES
PHASE #1 CUSTOMER PARKING REQUIRED = 6 SPACES
PHASE #2:
(NO OFFICE)
BUILDING 2 = 26 BAYS + 58 OUTSIDE SPACES = 84/25 = 3.36 (3) SPACES
PHASE #2 CUSTOMER PARKING REQUIRED = 3 SPACES

TOTAL PARKING REQUIRED = 9 SPACES

PARKING PROVIDED:

PHASE #1
CUSTOMER:
STANDARD = 5 SPACES
HANDICAP = 1 SPACE
TOTAL = 6 PHASE #1 PARKING PROVIDED

OUTSIDE = 14 SPACES
INSIDE = 16 SPACES

TOTAL PHASE #1 PARKING = 36 SPACES

PHASE #2
CUSTOMER:
STANDARD = 3 SPACES
TOTAL = 3 PHASE #2 PARKING PROVIDED

OUTSIDE = 58 SPACES
INSIDE = 26 SPACES

TOTAL PHASE #2 PARKING = 87 SPACES

TOTAL PARKING PROVIDED:
CUSTOMER PARKING = 9 SPACES
BOAT & RV PARKING (OUTSIDE) = 72 SPACES
COVERED PARKING (INSIDE) = 42 SPACES

LEGAL DESCRIPTION:

DESCRIPTION (O.R.B. 7963, PAGE 2482)
A PORTION OF PARCELS 1 (21) AND 2 (148) LYING IN SECTION 15, TOWNSHIP 15 SOUTH, RANGE 32 EAST, VOLUSIA COUNTY, FLORIDA, BEING MORE PARTICULARLY DESCRIBED AS FOLLOWS: BEGINNING AT THE NORTHWESTLY CORNER OF DAYTONA BUSINESS PARK UNIT #4, BEING ALSO THE NORTHWESTLY CORNER OF LOT 1, AS PER MAP RECORDED IN MAP BOOK 38, PAGES 7 AND 8, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA; THENCE RUN NORTH 01°54'26" EAST A DISTANCE OF 280.15 FEET TO A POINT IN THE NORTHERLY LINE OF A 260'-FOOT WIDE FLORIDA POWER & LIGHT COMPANY EASEMENT AS DESCRIBED IN OFFICIAL RECORDS BOOK 170, PAGES 379-349, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, SAID POINT ALSO LYING IN THE SOUTHERLY LINE OF A 100'-FOOT WIDE FLORIDA POWER & LIGHT COMPANY EASEMENT DESCRIBED IN OFFICIAL RECORDS BOOK 133, PAGES 401-409, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA; THENCE RUN NORTH 67°22'02" WEST, ALONG THE NORTH BOUNDARY LINE OF THE STATE NURSING HOME FOR VETERANS AS DESCRIBED IN OFFICIAL RECORDS BOOK 3797, PAGE 4818 OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, A DISTANCE OF 489.20 FEET; THENCE DEPARTING THE NORTH BOUNDARY OF SAID STATE NURSING HOME FOR VETERANS AND RUNNING NORTH 22°37'58" EAST ALONG THE SOUTHEASTERY BOUNDARY LINE OF THE HALIFAX HOSPITAL MEDICAL CENTER AS DESCRIBED IN OFFICIAL RECORDS BOOK 5223, PAGE 1486 OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA, A DISTANCE OF 987.48 FEET TO A POINT IN THE WESTERLY RIGHT-OF-WAY LINE OF CLYDE MORRIS BOULEVARD A 140 FOOT RIGHT-OF-WAY, AS DESCRIBED IN OFFICIAL RECORDS BOOK 2985, PAGE 712, OF THE PUBLIC RECORDS OF VOLUSIA COUNTY, FLORIDA; THENCE SOUTH 32°47'04" EAST ALONG THE WESTERLY RIGHT-OF-WAY OF SAID CLYDE MORRIS BOULEVARD A DISTANCE OF 1094.01 FEET TO A POINT OF CURVATURE OF A CURVE TO THE LEFT; THENCE RUN SOUTHEASTERLY ALONG SAID CURVE HAVING A RADIUS OF 1244.74 FEET, AN ARC LENGTH OF 649.17 FEET, A CENTRAL ANGLE OF 29°52'53" AND A CHORD BEARING SOUTH 47°43'30" EAST A DISTANCE OF 641.84 FEET TO A POINT; THENCE DEPARTING THE WESTERLY RIGHT-OF-WAY LINE OF SAID CLYDE MORRIS BOULEVARD SOUTH 89°58'24" WEST ALONG THE NORTH BOUNDARY LINE OF THE AFOREMENTIONED DAYTONA BUSINESS PARK UNIT #4 A DISTANCE OF 1022.83 FEET TO THE POINT OF BEGINNING.
THE ABOVE DESCRIBED PARCEL CONTAINS 18.427 ACRES OF LAND, MORE OR LESS

DEV 2022-020

CITY APPROVAL STAMP

MAG	REVISED PER CITY COMMENTS	REVISED PER COUNTY COMMENTS
7	10/27/2023	REVISED PER CITY COMMENTS
6	10/05/2023	REVISED PER CITY COMMENTS
5	09/19/2023	REVISED PER CITY COMMENTS
4	05/23/2023	REVISED PER CITY COMMENTS
3	02/08/2023	REVISED PER CITY COMMENTS
2	09/13/2022	REVISED PER CITY COMMENTS
1	04/26/2022	REVISED PER CITY COMMENTS
NO.	DATE	DESCRIPTION

PARKER MYNCHENBERG & ASSOCIATES, INC.

PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS

1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER 00003910

CIRCLE C BOAT & RV STORAGE

DAYTONA BEACH * FLORIDA

COVER SHEET

1
SHEET NO.

Drawn By: M. GRECO

Date: 09/30/2020

JOB # 20-42

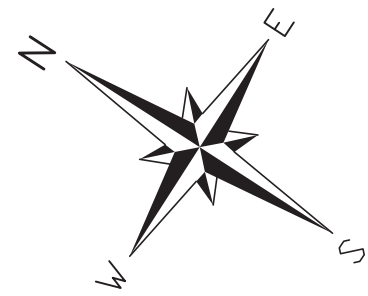
SCALE: NTS

SEAL



SURVEYORS NOTES

1. NOTICE: THERE MAY BE ADDITIONAL RESTRICTIONS AND/OR OTHER MATTERS THAT ARE NOT SHOWN ON THIS PLAT OF SURVEY THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY. THIS SURVEY PREPARED WITHOUT BENEFIT OF COMMITMENT FOR TITLE INSURANCE OR ABSTRACT.
2. DIMENSIONS ARE SHOWN IN FEET AND DECIMALS THEREOF.
3. BEARING STRUCTURE BASED ON PLAT OF DAYTONA BUSINESS PARK UNIT 4-A WITH THE BEARING ON THE NORTHERLY LINE OF SAID PLAT BEING S89°S8'24"W.
4. UNDERGROUND FOUNDATIONS, IF ANY, NOT LOCATED.
5. THIS PROPERTY IS LOCATED IN F.I.R.M. ZONE AH (BASE FLOOD =25') AND X, THIS LOCATION IS DETERMINED BY SCALING FROM F.I.R.M. COMMUNITY PANEL 121270354H, MAP EFFECTIVE DATE FEBRUARY 19, 2014, APPROXIMATE SCALE 1"=500 FEET.
6. ELEVATIONS REFER TO NAVD 1988 DATUM. BENCHMARK CITY OF DAYTONA BEACH GEODETIC CONTROL MONUMENT RMR-56, ELEVATION 26.397'
7. "NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER."
8. WETLANDS LOCATED BY SLIGER & ASSOCIATES, INC. WERE DELINEATED BY BIO-TECH CONSULTING INC. ON OR ABOUT MARCH 18, 2021 (PROJECT NO. 993-06) AND REVISED ON 2-28-2022.



SITE BENCHMARK
SET NAIL/DISC LB 3019
ELEVATION= 27.15' (NAVD 88)

MES 18" RCP
INV.=23.18'

MES 30" RCP
INV.=22.68'

CLYDE MORRIS BOULEVARD
(140' R/W) (ORB 2985, PG 0712)

ZONE X

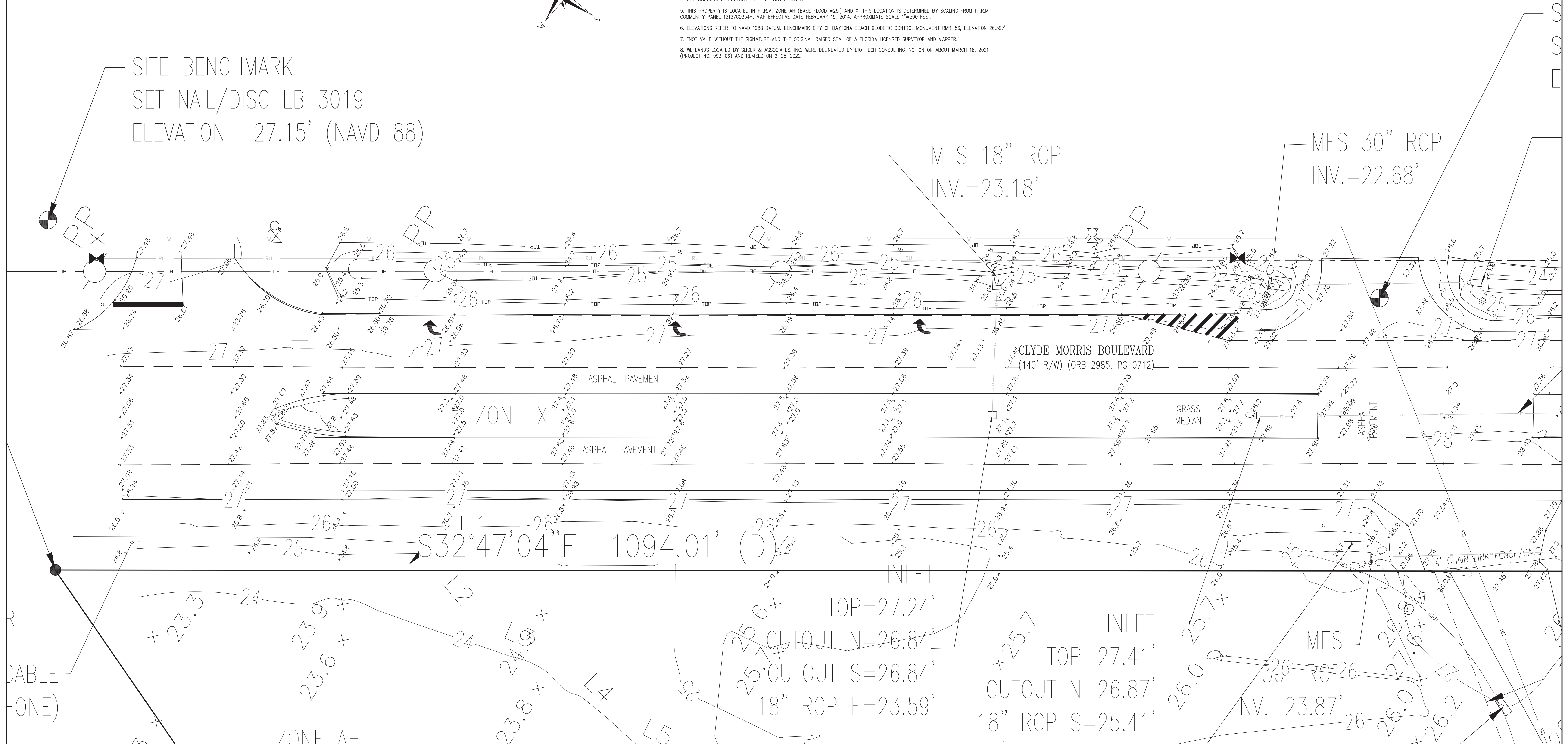
GRASS
MEDIAN

ASPHALT PAVEMENT

ASPHALT PAVEMENT

ASPHALT
PAVEMENT

4' CHAIN LINK FENCE/GATE



UTILITY STATEMENT:

THE INACCESSIBLE UNDERGROUND UTILITIES SHOWN ON THIS SURVEY HAVE BEEN LOCATED FROM ABOVE GROUND FIELD UTILITY LOCATIONS ON OR ABOUT 1-18-2021 (JOB #21-0074) AND/OR EXISTING AS-BUILTS DRAWINGS PROVIDED BY THE CLIENT. SLIGER AND ASSOCIATES, INC. (S&A) MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. LIKEWISE S&A DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. ONLY THAT S&A HAS LOCATED THE UTILITIES AS ACCURATELY AS POSSIBLE FROM SAID FIELD LOCATIONS AND/OR AS-BUILTS PROVIDED BY OTHERS. S&A HAS NOT PHYSICALLY LOCATED THE ACTUAL INACCESSIBLE UNDERGROUND UTILITIES, EXCEPT AS SPECIFICALLY NOTED AND DEPICTED ON THIS DRAWING.

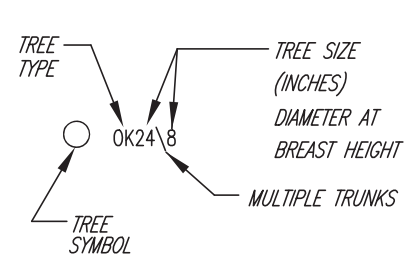
W/ WITH	TC TOP COVER	CONC D	CONCRETE	ABBREVIATIONS	RES RESIDENCE	IRC IRON ROD & CAP
CM CONCRETE MONUMENT	WV WATER VALVE	R	RADIUS	ILLER ILLEGIBLE	—TC— BURIED FIBER OPTIC CABLE	IPC IRON PIPE & CAP
TSD TOP OF BANK	TSB TRAFFIC SIGNAL BOX	D	DIMENSION	INV INVERT	—T— BURIED TELEPHONE LINE	MES MESSED END SECTION
TDE TOP OF SLOPE	FM FIRE HYDRANT	R	RADIUS	INV INVERT	—W— BURIED WATER LINE	RCP REINFORCED CONCRETE PIPE
CLS CENTERLINE OF SMILE	WM WATER METER	L	ARC LENGTH	SEC SECTION	—E— BURIED ELECTRIC LINE	CWP CORRUGATED METAL PIPE
STA STATION	CH CHORD BEARING	CH	CHORD DISTANCE	TWP TOWNSHIP	—G— BURIED GAS LINE	MB MANHOLE
CO CLEANTOUT	LP LIGHT POLE	CH	CHORD DISTANCE	RGE RANGE	—TV— BURIED TELEVISION LINE	IP IRON PIPE
SAI SANITARY	V IRRIGATION VALVE	FFAL CO	FLORIDA POWER & LIGHT COMPANY	R/W RIGHT OF WAY	—FM— BURIED FORCE MAIN	ORB OFFICIAL RECORDS BOOK
ES ELECTRIC SERVICE	GA GUY ANCHOR	NWD	NORTH WEST DITCH	EL ELEVATION	—(P)— PLATED DIMENSION	PG PAGE
HOPE HIGH DENSITY POLYETHYLENE PIPE	CPP CORRUGATED PLASTIC PIPE	USC & GS	UNITED STATES COAST AND GEODETIC SURVEY	(NR) NON RADIAL	—(M)— MEASURED DIMENSION	ID IDENTIFICATION
VCP VITREOUS CLAY PIPE	DP DUCTILE IRON PIPE	Q	QUANTITY	(R) RADIAL	—(C)— CALCULATED DIMENSION	(TYP) TYPICAL
CV CHECK VALVE	DM DRIVEWAY	Q	QUANTITY	NAD NAD	—(F)— FLORIDA DEPARTMENT OF TRANSPORTATION	REC RECOVERED

LEGEND

- IRON ROD WITH CAP
- IRON ROD
- IRON PIPE WITH CAP
- IRON PIPE
- TO 7'00' IN CONCRETE
- CONCRETE MONUMENT
- PERMANENT REFERENCE MONUMENT
- PERMANENT CONTROL POINT
- FORCE MAIN VALVE
- WATER VALVE
- WATER METER
- FIRE HYDRANT
- TELEPHONE BOX
- TRAFFIC SIGNAL BOX
- CABLE TELEVISION BOX
- MAIL BOX
- LIGHT POLE
- UTILITY POLE
- GUY ANCHOR
- CLEAN OUT
- SIGN
- TREE
- EXISTING ELEVATION
- EXISTING MANHOLE
- SANITARY MANHOLE
- STORM MANHOLE

ADDITIONAL ABBREVIATIONS-TREE LEGEND

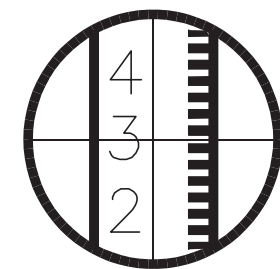
CP CAMPHOR TREE	SB SUGARBERRY TREE
MP MAPLE TREE	CD CEDAR TREE
SYC SYCAMORE TREE	EM ELM TREE
OK OAK TREE	OT CITRUS TREE
SG SWEET GUM TREE	PN PINE TREE
HK HICKORY TREE	PM PALM TREE
CB CHINA BERRY TREE	HY HOLLY



FOR: CIRCLE C BOAT & RV STORAGE

SCALE: 1"=20'

TYPE OF SURVEY	SURVEY DATE	JOB NUMBER	PARTY CHIEF	DRAWN BY	CHECKED BY
WETLAND SURVEY	5-12-22	22-0706	J PENFIELD	D HITCHCOCK	J ZAPERT
BOUNDARY SURVEY	5-12-22	22-0706	J PENFIELD	J ZAPERT	J ZAPERT
TOPOGRAPHIC SURVEY	5-12-22	22-0706	J PENFIELD	D HITCHCOCK	J ZAPERT
FOUNDATION LOCATION					
FINAL IMPROVEMENTS					
RECEIPTIFICATION					



SLIGER & ASSOCIATES, INC.
PROFESSIONAL LAND SURVEYORS

3921 NOVA ROAD
PORT ORANGE, FL 32127
(386) 761-5385
LICENSED BUSINESS CERTIFICATION NUMBER 3019
www.sligerassociates.com
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PLAT PREPARED FOR THE FOLLOWING: (ONLY THE LAST DATE IS CERTIFIED ON SEALED COPY)

THIS PLAT OF SURVEY IS CERTIFIED TO AND PREPARED FOR THE SOLE AND EXCLUSIVE BENEFIT OF THE ENTITIES AND OR INDIVIDUALS LISTED BELOW, ON THE MOST CURRENT DATE, AND SHALL NOT BE RELED UPON BY ANY OTHER ENTITY OR INDIVIDUAL WHOMSOEVER.

TYPE OF SURVEY	CERTIFIED TO	SURVEY DATE	JOB NUMBER
BOUNDARY	CIRCLE C BOAT & RV STORAGE	5-12-22	22-0706

CLYDE MORRIS BOAT/RV STORAGE
DAYTONA BEACH, FLORIDA

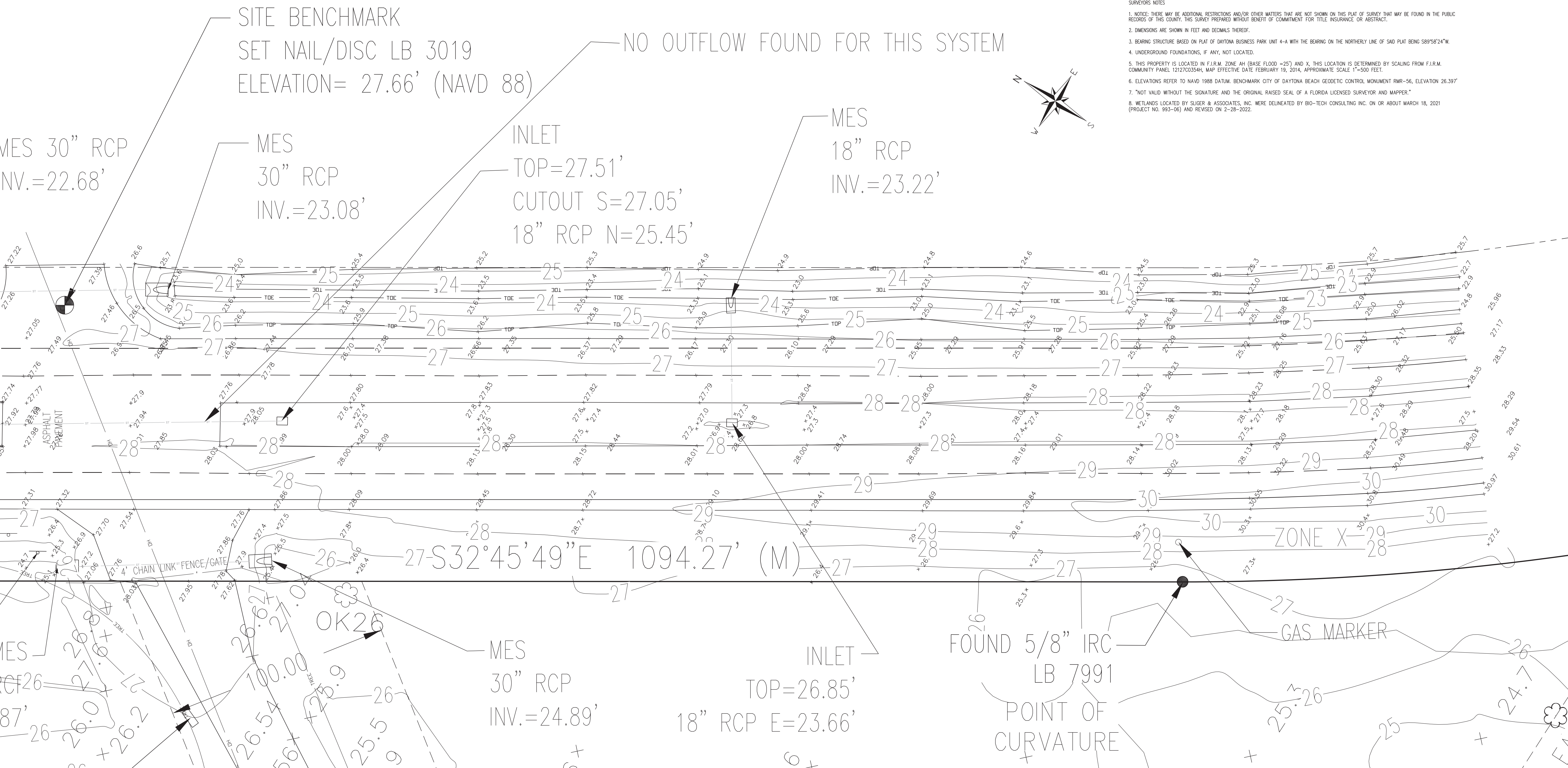
FOR: CIRCLE C BOAT & RV STORAGE

JOB NO.
22-0706

BOUNDARY/
TOPOGRAPHIC/
WETLAND
SURVEY

I HEREBY CERTIFY THAT THIS PLAT MEETS THE STANDARDS OF PRACTICE SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 54-17.05, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

SEE SHEET 1 OF 4 FOR SIGNATURE/SEAL
J.E. ZAPERT, P.L.S. NO. 4046
JEFF BARNES, PSM NO. 5576
C.O. VAN KLEECK JR., P.S.M. NO. 6149
MICHAEL S. MURPHY, P.S.M. NO. 6208



SURVEYOR'S NOTES

1. NOTICE: THERE MAY BE ADDITIONAL RESTRICTIONS AND/OR OTHER MATTERS THAT ARE NOT SHOWN ON THIS PLAT OF SURVEY THAT MAY BE FOUND IN THE PUBLIC RECORDS OF THIS COUNTY. THIS SURVEY PREPARED WITHOUT BENEFIT OF COMMITMENT FOR TITLE INSURANCE OR ABSTRACT.

2. DIMENSIONS ARE SHOWN IN FEET AND DECIMALS THEREOF.

3. BEARING STRUCTURE BASED ON PLAT OF DAYTONA BUSINESS PARK UNIT 4-A WITH THE BEARING ON THE NORTHERLY LINE OF SAID PLAT BEING S89°58'24"W.

4. UNDERGROUND FOUNDATIONS, IF ANY, NOT LOCATED.

5. THIS PROPERTY IS LOCATED IN F.L.R.M. ZONE AH (BASE FLOOD =25') AND X. THIS LOCATION IS DETERMINED BY SCALING FROM F.L.R.M. COMMUNITY PANEL 12127C0354H, MAP EFFECTIVE DATE FEBRUARY 19, 2014, APPROXIMATE SCALE 1"=500 FEET.

6. ELEVATIONS REFER TO NAVD 1988 DATUM. BENCHMARK CITY OF DAYTONA BEACH GEODETIC CONTROL MONUMENT RMR-56, ELEVATION 26.397

7. "NOT VALID WITHOUT THE SIGNATURE AND THE ORIGINAL RAISED SEAL OF A FLORIDA LICENSED SURVEYOR AND MAPPER."

8. WETLANDS LOCATED BY SLIGER & ASSOCIATES, INC. WERE DELINEATED BY BIO-TECH CONSULTING INC. ON OR ABOUT MARCH 18, 2021 (PROJECT NO. 993-06) AND REVISED ON 2-28-2022.

UTILITY STATEMENT:

THE INACCESSIBLE UNDERGROUND UTILITIES SHOWN ON THIS SURVEY HAVE BEEN LOCATED FROM ABOVE GROUND FIELD UTILITY LOCATIONS ON OR ABOUT 1-18-2021 (JOB #21-0074) AND/OR EXISTING AS-BUILTS DRAWINGS PROVIDED BY THE CLIENT. SLIGER AND ASSOCIATES, INC. (S&A) MAKES NO GUARANTEES THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN-SERVICE OR ABANDONED. LIKEWISE S&A DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED. ONLY THAT S&A HAS LOCATED THE UTILITIES AS ACCURATELY AS POSSIBLE FROM SAID FIELD LOCATIONS AND/OR AS-BUILTS PROVIDED BY OTHERS. S&A HAS NOT PHYSICALLY LOCATED THE ACTUAL INACCESSIBLE UNDERGROUND UTILITIES, EXCEPT AS SPECIFICALLY NOTED AND DEPICTED ON THIS DRAWING.

LEGEND

●

IRON ROD WITH CAP

○

IRON ROD

○

IRON PIPE WITH CAP

○

IRON PIPE

□

TO "X" CUT IN CONCRETE

□

CONCRETE MONUMENT

■

PERMANENT REFERENCE MONUMENT

■

PERMANENT CONTROL POINT

■

FORC MAIN VALVE

■

WATER VALVE

■

WATER METER

■

FIRE HYDRANT

■

TELEPHONE BOX

■

TRAFFIC SIGNAL BOX

■

ELECTRIC BOX

■

CABLE TELEVISION BOX

■

MAIL BOX

■

LIGHT POLE

■

UTILITY POLE

■

BOY ANCHOR

■

CLEAN OUT

■

SIGN

■

TREE

■

EXISTING ELEVATION

■

EXISTING MANHOLE

■

SANITARY MANHOLE

■

STORM MANHOLE

—FC—

BURIED FIBER OPTIC CABLE

—TW—

BURIED TELEPHONE LINE

—W—

BURIED WATER LINE

—E—

BURIED ELECTRIC LINE

—C—

BURIED GAS LINE

—TV—

BURIED TELEVISION LINE

—FM—

BURIED FORCE MAIN

—CH—

SEWER UTILITY LINE

—PL—

PLATED DIMENSION

—B—

BEEDED DIMENSION

—ID—

MEASURED DIMENSION

—(C)—

CALCULATED DIMENSION

—(TYP)—

TYPICAL

—NAD—

NAIL AND DISK

—RV—

REUSE VALVE

—FDOT—

FLORIDA DEPARTMENT OF TRANSPORTATION

IRC

IRON ROD & CAP

MES

IRON PIPE & CAP

WES

WATERED END SECTION

CWP

CORROGATED CONCRETE PIPE

CMP

CORROGATED METAL PIPE

MH

MANHOLE

MB

MAN BOOK

IP

IRON PIPE

ORB

OFFICIAL RECORDS BOOK

PG

PAGE

ID

IDENTIFICATION

(TYP)

TYPICAL

REC

RECOVERED

CP

CAMPYROR TREE

MP

MAPLE TREE

SYC

SYCAMORE TREE

OK

OAK TREE

SG

SWEET GUM TREE

HK

HICKORY TREE

CB

CHINA BERRY TREE

SB

SUGARBERRY TREE

CD

CEDAR TREE

EM

ELM TREE

CT

CITRUS TREE

PN

PINE TREE

PM

PALM TREE

HY

HOLLY

○

TREE TYPE

○

TREE SIZE (INCHES)

○

DIAMETER AT BREAST HEIGHT

○

MULTIPLE TRUNKS

FOR: CIRCLE C BOAT & RV STORAGE

SCALE: 1"=20'

TYPE OF SURVEY	SURVEY DATE	JOB NUMBER	PARTY CHIEF	DRAWN BY	CHECKED BY
WETLAND SURVEY	5-12-22	22-0706	J PENFIELD	D HITCHCOCK	J ZAPERT
BOUNDARY SURVEY	5-12-22	22-0706	J PENFIELD	D HITCHCOCK	J ZAPERT
TOPOGRAPHIC SURVEY	5-12-22	22-0706	J PENFIELD	D HITCHCOCK	J ZAPERT
FOUNDATION LOCATION	-	-	-	-	-
FINAL IMPROVEMENTS	-	-	-	-	-
RE-CERTIFICATION	-	-	-	-	-

4

3

2

SLIGER & ASSOCIATES, INC.

PROFESSIONAL LAND SURVEYORS

LICENSED BUSINESS CERTIFICATION NUMBER 3019

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CLYDE MORRIS BOAT/RV STORAGE
DAYTONA BEACH, FLORIDA

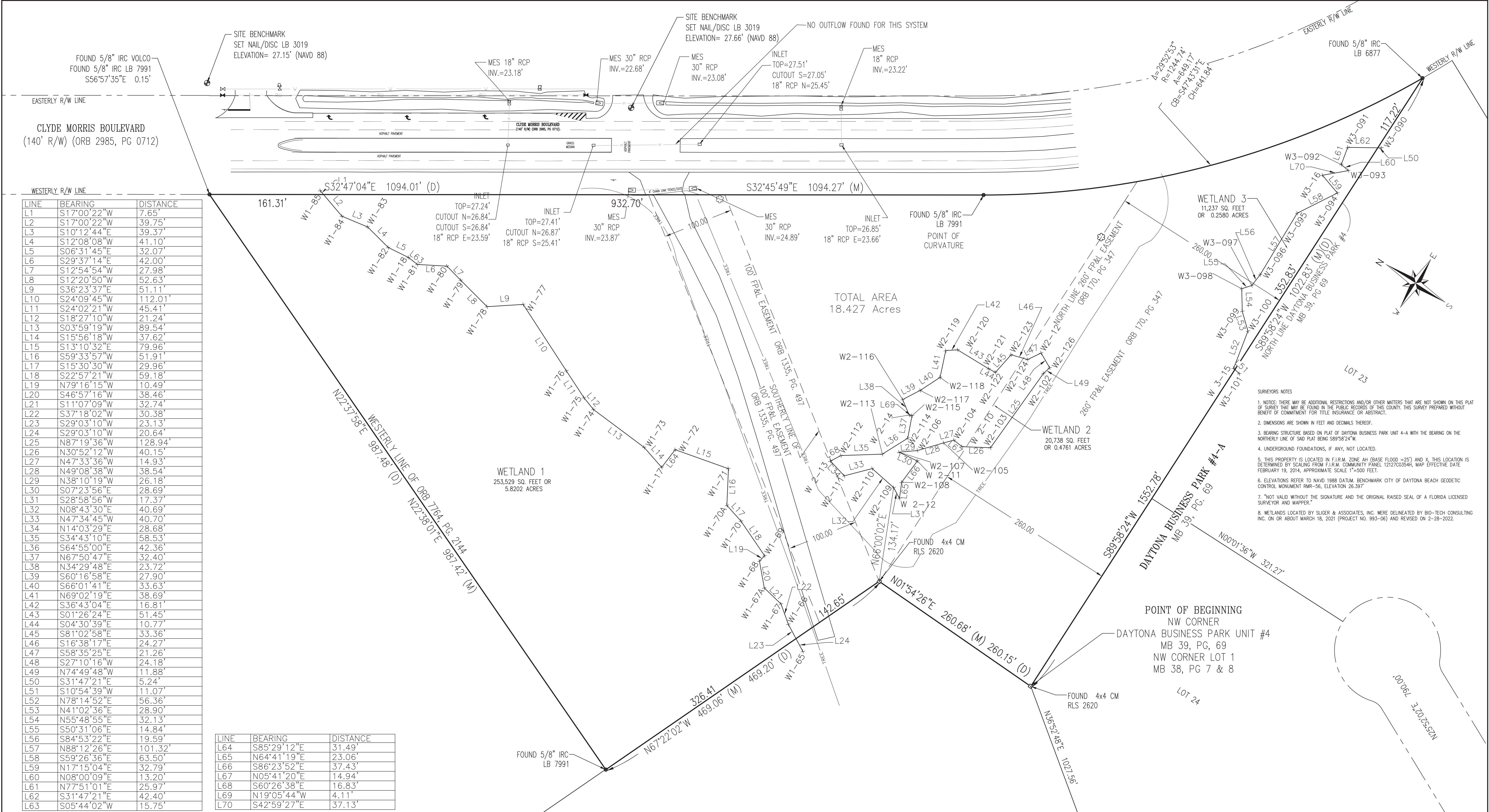
FOR: CIRCLE C BOAT & RV STORAGE

JOB NO. 22-0706

BOUNDARY/
TOPOGRAPHIC/
WETLAND
SURVEY

I HEREBY CERTIFY THAT THIS PLAT MEETS THE STANDARDS OF PRACTICE SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 54-17.05, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

SEE SHEET 1 OF 4 FOR SIGNATURE/SEAL
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JEFF BARNES, P.S.M. NO. 5576
C.O. VAN KLEECK JR., P.S.M. NO. 6149
MICHAEL S. MURPHY, P.S.M. NO. 6208



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W/ WITH	TO TOP COVER	CONC	CONCRETE	ABBREVIATIONS	RES	RESIDENCE	IRC	IRON ROD & CAP
OW	CONCRETE MONUMENT	W	WATER VALVE	D	—T—	BURIED FIBER OPTIC CABLE	PC	IRON PIPE & CAP
TOP	TOP OF DRAIN	TSB	TRAFFIC SIGNAL BOX	R	—T—	BURIED TELEPHONE LINE	WES	WATERED END SECTION
TCE	TOP OF SLOPE	FM	FIRE HYDRANT	D	—W—	BURIED WATER LINE	RCP	REINFORCED CONCRETE PIPE
CLS	CENTRIFUGAL SINK	WM	WATER METER	CH	—E—	BURIED ELECTRIC LINE	CP	CORRUGATED METAL PIPE
STA	STATION	LP	LIGHT POLE	CH	—C—	BURIED GAS LINE	WH	WATER HOLE
CO	CLEAROUT	N	IRRIGATION VALVE	TV	—TV—	BURIED TELEVISION LINE	MB	MAP BOOK
SA	SANITARY	GA	GUT ANCHOR	FPAL	—R/W—	RIGHT OF WAY	IP	IRON PIPE
ES	ELECTRIC SERVICE	CPP	CORRUGATED PLASTIC PIPE	NWD	—EL—	ELEVATION	ORB	OFFICIAL RECORDS BOOK
HOPE	HIGH DENSITY POLYETHYLENE PIPE	OP	OUTLET IRON PIPE	NWD	—(R)—	NON RADIAL	PG	PAVE
VCP	VITRIFIED CLAY PIPE	PVC	POLYVINYL CHLORIDE	USC & GS	—(M)—	MEASURED DIMENSION	D	IDENTIFICATION
CV	CHECK VALVE	DN	DRAINAGE	Q	—(TY)—	TYPICAL	NWD	NAIL AND DISK
							REC	RECOVERED

LEGEND

- IRON ROD WITH CAP
- IRON ROD
- IRON PIPE WITH CAP
- IRON PIPE
- TO 7/8" DIA IN CONCRETE
- CONCRETE MONUMENT
- PERMANENT REFERENCE MONUMENT
- ▲ PERMANENT CONTROL POINT
- ▲ FIRE HYDRANT
- ▲ WATER VALVE
- ▲ WATER METER
- ▲ FIRE HYDRANT
- ▲ TELEPHONE BOX
- ▲ TRAFFIC SIGNAL BOX
- ▲ ELECTRIC BOX
- ▲ CABLE TELEVISION BOX
- ▲ MAIL BOX
- ▲ LIGHT POLE
- ▲ UTILITY POLE
- ▲ GUY ANCHOR
- ▲ CLEAN OUT
- ▲ SIGN
- ▲ TREE
- ▲ EXISTING ELEVATION
- ▲ EXISTING MANHOLE
- ▲ SANITARY MANHOLE
- ▲ STORM MANHOLE

ADDITIONAL ABBREVIATIONS-TREE LEGEND

CP	CAMPYLODENDRUM	SB	SUGARBERRY TREE
MP	MAPLE TREE	CD	CEDAR TREE
SYC	SYCAMORE TREE	EM	ELM TREE
OK	OAK TREE	OT	CITRUS TREE
SG	SWEET GUM TREE	PN	PINE TREE
HK	HICKORY TREE	PM	PALM TREE
CB	CHINA BERRY TREE	HY	HOLLY

TREE SIZE (INCHES)

DIAMETER AT BREAST HEIGHT

MULTIPLE TRUNKS

SLIGER & ASSOCIATES, INC.

PROFESSIONAL LAND SURVEYORS

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PORT ORANGE, FL 32127
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LICENSED BUSINESS CERTIFICATION NUMBER 3019

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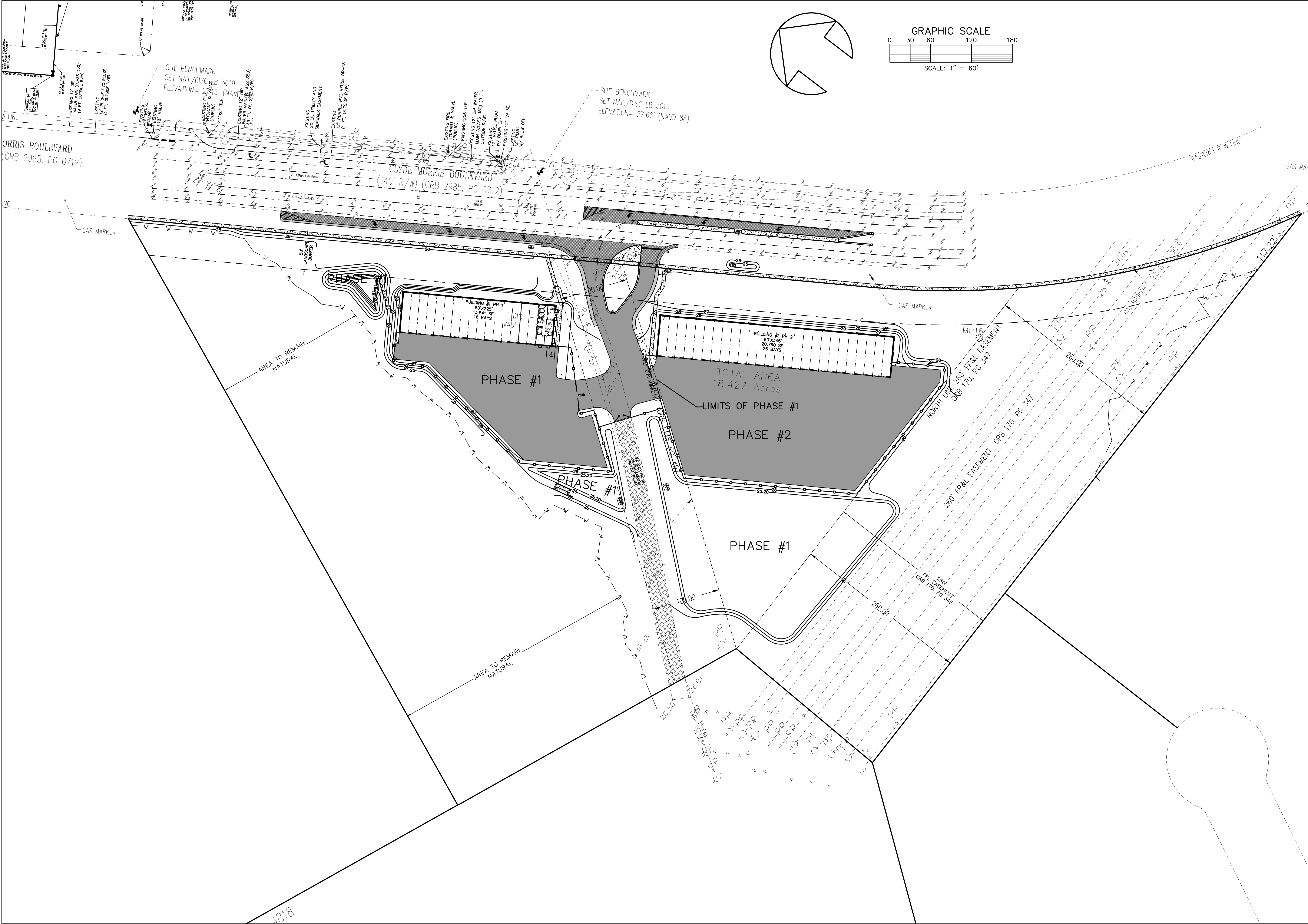
TYPE OF SURVEY	CERTIFIED TO	SURVEY DATE	JOB NUMBER
BOUNDARY	CIRCLE C BOAT & RV STORAGE	5-12-22	22-0706

BOUNDARY/ TOPOGRAPHIC/ WETLAND SURVEY

I HEREBY CERTIFY THAT THIS PLAT MEETS THE STANDARDS OF PRACTICE SET FORTH BY THE FLORIDA BOARD OF PROFESSIONAL SURVEYORS AND MAPPERS IN CHAPTER 51-17.05, FLORIDA ADMINISTRATIVE CODE, PURSUANT TO SECTION 472.027, FLORIDA STATUTES.

SEE SHEET 1 OF 4 FOR SIGNATURE/SEAL

J.E. ZAPERT, P.L.S. NO. 4046
JEFF BARNES, P.S.M. NO. 5576
C.O. VAN KLEECK JR., P.S.M. NO. 6149
MICHAEL S. MURPHY, P.S.M. NO. 6208



CIRCLE C BOAT & RV STORAGE

DAYTONA BEACH * FLORIDA

OVERALL PLAN

2

SHEET NO.

Drawn By: M .GRECO

Date: 09/30/2020

JOB # 20-42

SCALE: 1"=60'

PARKER MYNCHENBERG & ASSOCIATES, INC.

PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS

1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117

(386) 677-8801 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com

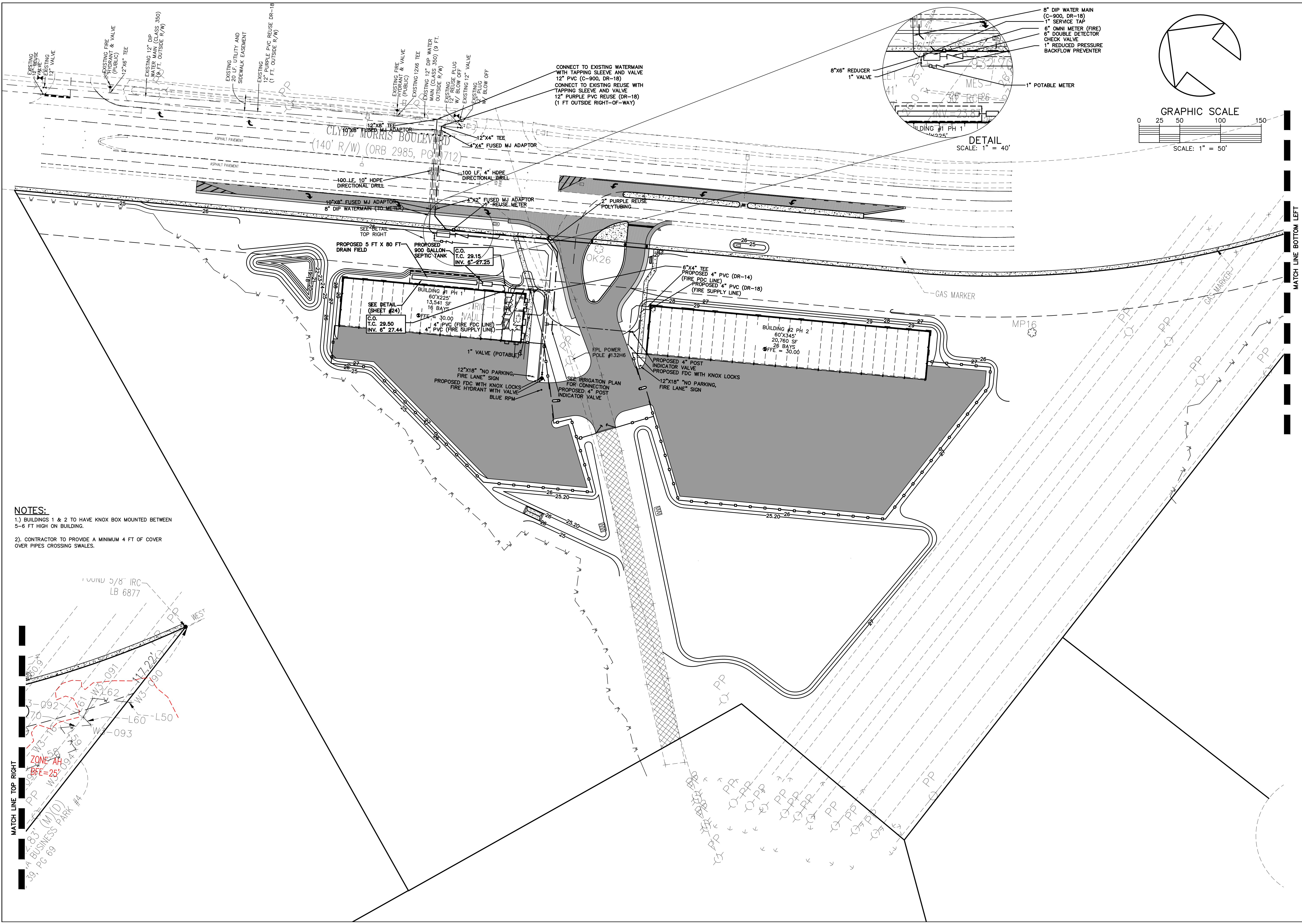
CERTIFICATE OF AUTHORIZATION NUMBER 000003910

DEV 2022-020

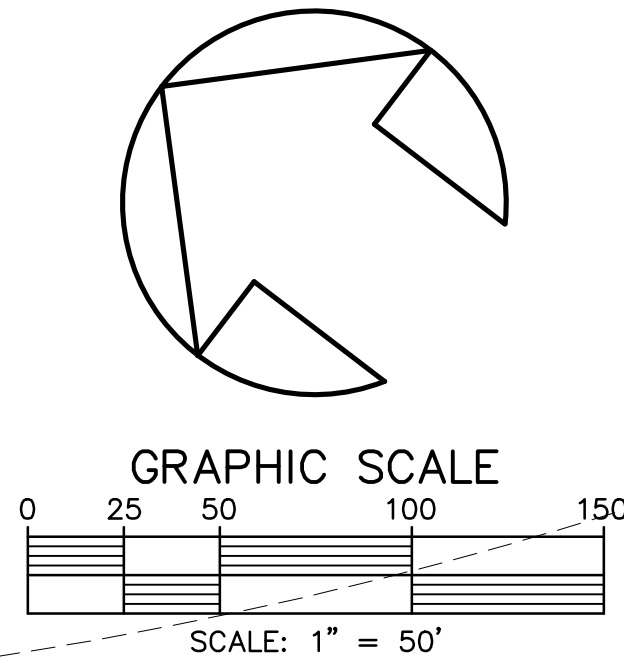
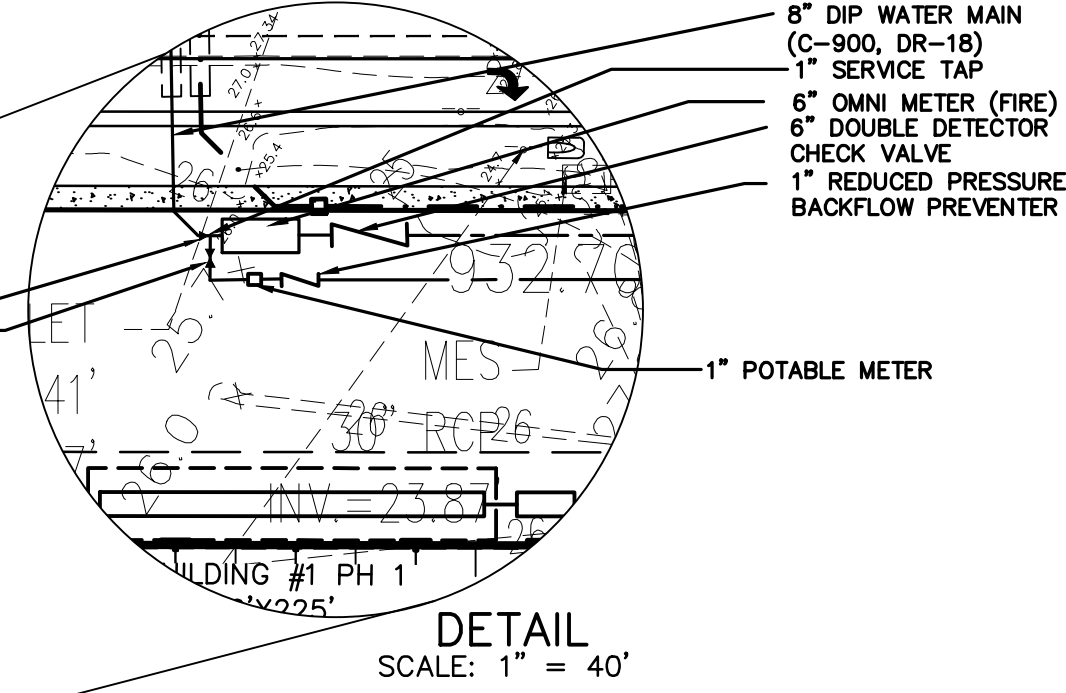
CITY APPROVAL STAMP

MAG	REVISED PER CITY COMMENTS
7	10/27/2023
6	10/05/2023
5	09/19/2023
4	05/23/2023
3	02/08/2023
2	09/13/2022
1	04/26/2022

NO. DATE DESCRIPTION REVISIONS



- NOTES:**
- 1.) BUILDINGS 1 & 2 TO HAVE KNOX BOX MOUNTED BETWEEN 5-6 FT HIGH ON BUILDING.
 - 2.) CONTRACTOR TO PROVIDE A MINIMUM 4 FT OF COVER OVER PIPES CROSSING SWALES.



DEV 2022-020	
CITY APPROVAL STAMP	
MAG	REVISED PER CITY COMMENTS
MAG	REVISED PER CITY COMMENTS
MAG	REVISED PER CITY COMMENTS
MAG	REVISED PER CITY COMMENTS
MAG	REVISED PER CITY COMMENTS
MAG	REVISED PER CITY COMMENTS
MAG	REVISED PER CITY COMMENTS
NO.	DATE
DESCRIPTION	
REVISIONS	
BY	

PARKER MYNCHENBERG & ASSOCIATES, INC.
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-6891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER 00003910

CIRCLE C BOAT & RV STORAGE
DAYTONA BEACH * FLORIDA
UTILITY PLAN

6
SHEET NO.

Drawn By: M .GRECO

Date: 09/30/2020

JOB # 20-42

SCALE: 1"=50'

SEAL

POTABLE WATER CONSTRUCTION & DESIGN STANDARDS

1. THE CITY'S UTILITIES DEPARTMENT SHALL BE GIVEN A MINIMUM OF 3 BUSINESS DAYS ADVANCE NOTICE (NOT INCLUDING HOLIDAYS OR WEEKENDS) PRIOR TO BEGINNING ANY POTABLE WATER SYSTEM CONSTRUCTION.
2. A PERMIT SHALL BE REQUIRED PRIOR TO ENGAGING IN ANY DEWATERING OR CONSTRUCTION ACTIVITY THAT CHANGES THE INTERVIEWS AREA OF LATE DEWATERING ACTIVITIES INCLUDE THE REMOVAL OF GROUND WATER FROM A CONSTRUCTION SITE, ENCLOSED VAULT, COFFERDAM, OR TRENCHES, ALLOWING CONSTRUCTION OR MAINTENANCE IN A DRY ENVIRONMENT. SITE SPECIFIC DEWATERING PERMITS SHALL REQUIRE PAYMENT OF A PER ACRE FEE BASED ON THE SIZE OF THE DEVELOPMENT. GENERAL PURPOSE PERMITS SHALL REQUIRE AN ANNUAL FEE BASED ON A BIENNIAL SCHEDULE OF DEWATERING ACTIVITIES DISCHARGING DIRECTLY INTO THE CITY'S M54 CONVEYANCE SYSTEM. DEWATERING PERMIT APPLICATIONS CAN BE FOUND AT <https://www.codb.us/index.aspx?nid=262>. FEES ARE SUBJECT TO ARTICLE 7, SECTION 7.2 OF THE LAND DEVELOPMENT CODE AND MUST BE SUBMITTED WITH THE PERMIT APPLICATION TO THE CITY OF DAYTONA BEACH STORM WATER COORDINATOR AT 125 BASIN STREET, SUITE 100, DAYTONA BEACH, FLORIDA 32114 PRIOR TO ANY USE OF THE CITY'S M54 CONVEYANCE SYSTEM. FAILURE TO COMPLY WILL RESULT IN IMMEDIATE TERMINATION OF ACCESS TO THE CITY'S M54 SYSTEM.
3. ALL WORK PERFORMED ON POTABLE WATER FACILITIES OWNED OR PROPOSED TO BE OWNED BY THE CITY SHALL BE CONSTRUCTED BY AN UNDERGROUND UTILITY CONTRACTOR OR GENERAL CONTRACTOR LICENSED IN THE STATE OF FLORIDA AND REGISTERED WITH THE CITY.
4. UPON CONSTRUCTION COMPLETION AND ACCEPTANCE OF THE SYSTEM, IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THAT THE SYSTEM IS PROPERLY CERTIFIED AND ACCEPTED BY THE DEPARTMENT OF HEALTH, AND THAT AS-BUILT DRAWINGS MEETING THE CITY'S REQUIREMENTS ARE PROVIDED TO THE CITY AND ACCEPTED PRIOR TO ANY USE OF THE SYSTEM.
5. THE WATER DISTRIBUTION SYSTEM SHALL BE DESIGNED TO COMPLY WITH THE CITY'S FIRE (WATER) FLOW CODE.
6. EACH WATER SERVICE TERMINATION SHALL BE MARKED WITH 2" X 4" PRESSURE TREATED LUMBER EXTENDING 4' ABOVE GRADE DIRECTLY IN FRONT OF THE METER BOX WITH 2' OF ENDTRACE POLY-TUBE OR APPROVED EQUAL COILED AND CAPPED WITH AN ELSTER HYDROSEPT CAP INSIDE EACH METER BOX.
7. ALL WATER SERVICES SHALL BE MARKED WITH A "V" SAW CUT INTO THE CURB.
8. ALL WATER VALVES SHALL BE MARKED WITH AN "X" SAW CUT INTO THE CURB.
9. ALL TAPPING OF MAINS (12" OR SMALLER) SHALL BE PERFORMED BY CITY PERSONNEL. SCHEDULING OF THESE CONNECTIONS REQUIRES A MINIMUM OF 3 BUSINESS DAYS ADVANCE NOTICE AND SHALL BE COORDINATED WITH THE CITY INSPECTOR (TAPS ON MONDAY – THURSDAY ONLY).
10. THE PLANS SHALL INCLUDE RIGHT OF WAY LINES AND STATIONING AND OFFSETS FROM THE CENTER LINE OF CONSTRUCTION.
11. DEWATERING ACTIVITIES SHALL KEEP THE GROUNDWATER ELEVATION A MINIMUM OF 6 INCHES BELOW THE WATER MAIN BEING INSTALLED.
12. ALL WATER MAINS SHALL BE INSTALLED ON A FIRM UNYIELDING FOUNDATION WITH ALL UNSUITABLE MATERIAL (MUCK, ROCK, COQUINA, ETC.) REMOVED AND REPLACED WITH CLEAN GRANULAR MATERIAL.
13. TRENCHES SHALL BE BACKFILLED WITH MATERIAL ACCEPTABLE TO THE CITY WITH A MINIMUM COMPACTION OF 98% IN PAVED AREAS AND 95% IN UNPAVED AREAS IN ACCORDANCE WITH AASHTO T-180 MODIFIED PROCTOR TEST.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



WATER CONSTRUCTION
& DESIGN STANDARDS
(PAGE 1 OF 4)
W-1

FY-21/22
Drawing Date: 01/08
Drawn By: JWP
Checked By: CRB
Scale: NTS
Revision Date: 12/20
File Name: Water Notes W-1
Page: 5

POTABLE WATER CONSTRUCTION & DESIGN STANDARDS
(CONT'D)

14. WHERE POTABLE WATER AND SANITARY SEWER MAINS CROSS WITH LESS THAN SIX (6) INCHES OF VERTICAL CLEARANCE OR WHERE THE SEWER MAIN IS ABOVE THE WATER MAIN, MEDIATION MUST BE REVIEWED AND APPROVED BY FDOT.
15. WATER MAINS SHALL BE CONSTRUCTED A MINIMUM OF 4 FEET BEHIND THE BACK OF CURB OR THE EDGE OF ROADWAY PAVEMENT, WHICHEVER IS GREATER, AS MEASURED FROM OUTSIDE WALL OF THE WATER MAIN.
16. 3 INCH METALIZED PIPE LOCATION TAPE SHALL BE LOCATED 15 INCHES TO 24 INCHES BELOW FINISHED GRADE OR AS SPECIFIED BY THE MANUFACTURER FOR ALL WATER LINES. BLUE TRACER WIRE SHALL BE ATTACHED TO ALL PIPES. WIRE RUNS SHALL BE CONNECTED WITH SILICONE FILLED WIRE CONNECTORS. SERVICES SHALL BE CONNECTED TO THE MAIN WIRE WITH SILICONE FILLED WIRE CONNECTORS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE AND TEST FOR CONTINUITY (SEE CITY SPECIFICATION #15049 TRACER WIRE AND ALARMING TAPE). TRACER WIRE SHALL BE TESTED FOR CONTINUITY UNDER THE SUPERVISION OF A CITY REPRESENTATIVE AFTER INSTALLATION. IF A METER BOX IS NOT WITHIN 200 FEET OF A VALVE AND VALVE BOX AN ADDITIONAL VALVE BOX FOR TRACER WIRE IS REQUIRED.
17. SINGLE RESIDENTIAL WATER SERVICES SHALL BE A MINIMUM 1-INCH ENDOT, ENDTRACE OR APPROVED EQUAL POLY-TUBE (MEETING THE SPECIFICATIONS OF NSF-14, AND AWWA C901.)
18. ALL WATER MAINS SHALL BE NSF-APPROVED FOR POTABLE WATER USE AND HAVE A MINIMUM COVER OF 36-INCHES.
19. WATER MAINS LESS THAN 18" MAY USE POLYVINYL CHLORIDE (PVC) C900, OR C905, SHALL MEET AWWA REQUIREMENTS AND HAVE A MINIMUM DIMENSION RATIO (DR-18) PRESSURE CLASS 150. WATER MAINS 18" AND LARGER SHALL BE DUCTILE IRON PIPE (D.I.P.), CLASS 350, CEMENT LINED. ALL NON-DUCTILE IRON PIPE HORIZONTAL DIRECTIONAL DRILL WATER MAINS SHALL HAVE A MINIMUM WORKING PRESSURE OF 160 PSI. THE CITY MAY REQUIRE A HIGHER PRESSURE RATING BASED ON SITE CONDITIONS. INSIDE DIAMETER OF NON D.I.P. HORIZONTAL DIRECTIONAL DRILL PIPE SHALL MATCH THE INSIDE DIAMETER OF CONNECTING PIPES. ALL GASKETS SHALL BE LUBRICATED BEFORE INSTALLATION.
20. DIRECTIONAL DRILLS SHALL HAVE FUSED MJ ADAPTERS.
21. ALL POTABLE WATER MAINS SHALL USE THRUST RESTRAINT AS CALCULATED BY A PROGRAM AVAILABLE AT EBAA.COM. THE RESTRAINED JOINT LENGTHS SHALL BE SHOWN ON PLANS PROVIDED BY EOR.
22. ALL FITTINGS, VALVES, ETC. SHALL BE DUCTILE IRON CEMENT LINED (MJ OR FLANGED) AND SHALL BE RESTRAINED.
23. ALL RESTRAINED PIPE BELL JOINTS SHALL USE BELL RESTRAINTS OR GRIPPER TYPE GASKETS CAN BE USED FOR DUCTILE IRON PIPE JOINTS. CONCRETE THRUST BLOCKS ARE NOT PERMITTED.
24. WATER VALVES SHALL BE INSTALLED AT ALL STREET INTERSECTIONS AND AT A MAXIMUM SPACING OF 750 FEET. SPACING OF VALVES ON PRIMARY TRANSMISSION MAINS WILL BE DETERMINED BY THE CITY.
25. VALVES SHALL BE INSTALLED ON ALL LEGS OF WATER MAIN TEES EXCEPT ONE.
26. ALL FITTINGS SHALL MEET MINIMUM RESTRAINT REQUIREMENTS PER ANSI/AWWA/EBAA, AND ALL PRESSURE PIPES UNDER THE ROADWAYS SHALL BE RESTRAINED.
27. METER LENGTHS REQUIRED FOR WATER METERS INSTALLATION ARE AS FOLLOWS:
3/4" TO 2" METER REQUIRES 6', 4" METER REQUIRES 12', 6" AND 8" METER REQUIRES 14', AND A 10" METER REQUIRES 20'.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



WATER CONSTRUCTION
& DESIGN STANDARDS
(PAGE 2 OF 4)
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FY-21/22
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Checked By: CRB
Scale: NTS
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POTABLE WATER CONSTRUCTION & DESIGN STANDARDS
(CONT'D)

28. ALL WATER VALVE BOXES SHALL BE ADJUSTED, INCLUDING DEBRIS CAP, AND CONCRETE COLLAR TO FINISHED GRADE. VALVE BOX LIDS SHALL BE PAINTED BLUE TO MAKE THEM CLEARLY VISIBLE.
29. UPON FINAL ACCEPTANCE OF NEW WATER SYSTEMS, WATER VALVES SHALL BE COMPLETELY OPENED BY CITY UTILITIES PERSONNEL. THE CONTRACTOR SHALL NOT OPERATE ANY EXISTING VALVES WITHOUT A CITY REPRESENTATIVE PRESENT.
30. ALL VALVES 2 INCHES AND SMALLER SHALL BE CURB STOPS. VALVES LARGER THAN 2 INCHES SHALL BE GATE VALVES.
31. A MINIMUM OF ONE FIRE HYDRANT SHALL BE LOCATED AT EVERY INTERSECTION. OTHER FIRE HYDRANTS SHALL BE LOCATED TO PRODUCE A MAXIMUM 500 FOOT RADIUS OF COVERAGE. ALL FIRE HYDRANTS SHALL BE INSTALLED IN EASILY ACCESSIBLE LOCATIONS FOR FIRE PERSONNEL. THE PRIMARY HYDRANT PORT SHALL FACE THE STREET.
32. THE CONTRACTOR SHALL PIG ALL PIPES 6 INCHES OR LARGER IN DIAMETER. LAUNCHING AND EXTRACTION POINTS SHALL BE DETERMINED BY THE CONTRACTOR AND CITY REPRESENTATIVE. REUSE WATER MAY ONLY BE USED FOR PIGGING OF LINES 14" OR LARGER AT THE CITY'S DIRECTION AND BE DIRECTLY DISCHARGED TO A SANITARY CONNECTION, APPROVED BY THE CITY.
33. FOR PIPE FLUSHING, PIGGING, TESTING, AND TIE-IN CONNECTIONS, THE CITY RESERVES THE RIGHT TO REQUIRE WORK TO BE PERFORMED DURING PERIODS OF LOW FLOW (MIDNIGHT TO 8 A.M.) THE CONTRACTOR SHALL COORDINATE WITH THE CITY REPRESENTATIVE AND WATER PLANT OPERATIONS TO SCHEDULE THE DATE AND TIME FOR THESE ACTIVITIES.
34. THE CITY RESERVES THE RIGHT TO PERFORM THE SAMPLING AND ANALYSIS FOR BACTERIOLOGICAL CLEARANCE OF THE WATER MAIN. ANY RETESTING WILL BE AT THE CONTRACTORS EXPENSE.
35. POTABLE WATER LINES SHALL NOT BE USED OR PLACED INTO SERVICE UNTIL CLEARANCE IS ACCEPTED BY VOLUSIA COUNTY HEALTH DEPARTMENT AND THE CITY OF DAYTONA BEACH.
36. BACKFLOW PREVENTERS (BFP) SHALL BE PLACED ON ALL POTABLE AND FIRE LINES SERVING COMMERCIAL AND RESIDENTIAL PROPERTIES. THE TYPE OF BACKFLOW PREVENTERS REQUIRED ARE AS FOLLOWS:
POTABLE WATER SERVICE; REDUCED PRESSURE ZONE (RPZ)(BFP)
FIRE LINE SERVING A FIRE SPRINKLER SYSTEM AND/OR PRIVATE FIRE HYDRANT; DOUBLE CHECK VALVE ASSEMBLY
FIRE LINE; DOUBLE CHECK VALVE ASSEMBLY
IN CASES WHERE A WATER LINE SERVES BOTH DOMESTIC AND FIRE SERVICES, A REDUCED PRESSURE ZONE BFP IS REQUIRED.
37. ALL JACK & BORES REQUIRED FOR COMMERCIAL DEVELOPMENT SHALL BE PERFORMED AT THE SOLE COST OF THE OWNER/DEVELOPER.
38. ALL C-900 DR-18 PVC PIPE REQUIREMENTS REFERENCE TO THE C-900 STANDARDS.
39. CHLORINATED WATER MUST BE DECHLORINATED PRIOR TO DISCHARGE INTO ANY JURISDICTIONAL WETLAND OR WATER BODY PER AWWA STANDARD, ANSI/AWWA C655.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



WATER CONSTRUCTION
& DESIGN STANDARDS
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Drawn By: JWP
Checked By: CRB
Scale: NTS
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POTABLE WATER CONSTRUCTION & DESIGN STANDARDS
TESTING REQUIREMENTS:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE TRENCH COMPACTION TESTS AT POINTS 12 INCHES ABOVE THE PIPE AND AT 12-INCH VERTICAL INTERVALS TO FINISHED GRADE AT A MAXIMUM HORIZONTAL SPACING OF 300 FEET. TEST RESULTS ARE TO BE PROVIDED TO THE CITY ON ALL PUBLIC UTILITIES.
2. ON ALL PROJECTS OTHER THAN THOSE INITIATED BY THE CITY THE CONTRACTOR SHALL EMPLOY AN INDEPENDENT TESTING LABORATORY AT HIS OWN EXPENSE TO INSURE THAT COMPACTION OF ALL FILL MATERIAL IS COMPLETED PROPERLY. ON ALL CITY PROJECTS THE TESTING WILL BE DONE IN ACCORDANCE WITH THE PLANS AND SPECIFICATIONS. IDENTIFICATION OF TEST LOCATIONS SHALL BE CLEARLY INDICATED ON TEST REPORTS. TEST RESULTS SHALL BE FORWARDED PROMPTLY TO THE CITY'S INSPECTOR.
3. ALL POTABLE WATER MAINS SHALL BE FLUSHED, DISINFECTED, PRESSURE TESTED AND BACTERIOLOGICALLY CLEARED FOR SERVICE WHEN APPROPRIATE IN ACCORDANCE WITH THE LATEST AWWA STANDARDS AND THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE CITY'S DESIGNATED INSPECTOR WHO SHALL COORDINATE WITH CITY PERSONNEL AT THE WATER TREATMENT PLANT AT LEAST 3 BUSINESS DAYS PRIOR TO BEGINNING FLUSHING THE MAINS BEFORE PRESSURE TESTING. THE CITY MAY REQUIRE WORK TO BE PERFORMED DURING PERIODS OF LOW FLOW (MIDNIGHT TO 8 AM). THE DATE AND TIME SCHEDULE FOR FLUSHING AND PIGGING MUST BE APPROVED BY THE WATER PLANT OPERATIONS. NO HOSE OR FIRE HYDRANT SHALL BE USED IN THE COLLECTION OF BACTERIOLOGICAL SAMPLES. THE SAMPLING TAP MUST BE DEDICATED, CLEAN, DISINFECTED AND FLUSHED PRIOR TO SAMPLING. SAMPLING TAP SHALL BE SMOOTH, UNTHREADED 1/2 INCH HOSE BIB. DISINFECTION AND SAMPLING SHALL BE SCHEDULED AT THE CITY'S CONVENIENCE.
4. PRESSURE TEST FOR TAPPING SADDLES AND VALVES FOR A MINIMUM OF 30 MINUTES AT 150 PSI OR 30 MINUTES AT MANUFACTURER RECOMMENDED TESTING PRESSURE.
5. WATERMANS SHALL BE PRESSURE TESTED AT 150 PSI FOR 3 HOURS. TESTING SHALL BE IN ACCORDANCE WITH AWWA C-600 AND AWWA C-605 AS APPLICABLE WITH ALLOWABLE LEAKAGE TO BE BASED ON THE TABLE BELOW.

ALLOWABLE LEAKAGE PER 1000 FT. OF PIPELINE * -GPH	
AVERAGE PRESSURE TEST (PSI)	NOMINAL PIPE DIAMETER - INCHES
TEST	3 4 6 8 10 12 14 16 18 20 24 30 36 42 48 54 60 64
450	0.48 0.64 0.95 1.27 1.59 1.91 2.23 2.55 2.87 3.18 3.82 4.78 5.73 6.69 7.64 8.60 9.56 10.19 450
400	0.45 0.60 0.90 1.20 1.50 1.80 2.10 2.40 2.70 3.00 3.60 4.50 5.41 6.31 7.21 8.11 9.01 9.61 400
350	0.42 0.56 0.84 1.12 1.40 1.68 1.97 2.25 2.53 2.81 3.37 4.21 5.06 5.90 6.74 7.58 8.43 8.99 350
300	0.39 0.52 0.78 1.04 1.30 1.56 1.82 2.08 2.34 2.60 3.12 3.90 4.68 5.46 6.24 7.02 7.80 8.32 300
275	0.37 0.50 0.75 1.00 1.24 1.49 1.74 1.99 2.24 2.49 2.99 3.73 4.48 5.23 5.98 6.72 7.47 7.97 275
250	0.36 0.47 0.71 0.96 1.21 1.46 1.71 1.96 2.21 2.46 2.96 3.70 4.45 5.20 5.95 6.70 7.45 7.95 250
225	0.34 0.45 0.68 0.90 1.13 1.35 1.58 1.80 2.03 2.25 2.70 3.38 4.05 4.73 5.41 6.03 6.76 7.21 225
200	0.32 0.43 0.64 0.85 1.06 1.28 1.48 1.70 1.91 2.12 2.55 3.19 3.82 4.46 5.09 5.73 6.37 6.80 200
175	0.30 0.40 0.59 0.80 1.01 1.22 1.43 1.64 1.85 2.06 2.38 2.98 3.58 4.17 4.77 5.36 5.96 6.36 175
150	0.28 0.37 0.55 0.74 0.92 1.10 1.29 1.47 1.66 1.84 2.21 2.76 3.31 3.86 4.41 4.97 5.52 5.88 150
125	0.25 0.34 0.50 0.67 0.84 1.01 1.18 1.34 1.51 1.68 2.01 2.52 3.02 3.53 4.03 4.53 5.04 5.37 125
100	0.23 0.30 0.43 0.60 0.76 0.90 1.05 1.20 1.35 1.50 1.80 2.27 2.70 3.00 3.40 3.80 4.30 4.60 100

* IF THE PIPELINE UNDER TEST CONTAINS SECTIONS OF VARIOUS DIAMETERS, THE ALLOWABLE LEAKAGE WILL BE THE SUM OF THE COMPUTED LEAKAGE FOR EACH SIZE.

WHERE:
W = ALLOWABLE LEAKAGE, IN GALLONS PER HOUR
S = LENGTH OF PIPE TESTED, IN FEET
D = NOMINAL DIAMETER OF PIPE, IN INCHES
P = AVERAGE TEST PRESSURE DURING THE LEAKAGE TEST, IN POUNDS PER SQUARE INCH (GAUGE)

$$L = \frac{SD \sqrt{P}}{133,200}$$

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



WATER CONSTRUCTION
& DESIGN STANDARDS
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DEV 2022-020
CITY APPROVAL STAMP

REVISED PER CITY COMMENTS	REVISED PER COUNTY COMMENTS	REVISED PER CITY COMMENTS	REVISED PER CITY COMMENTS	REVISED PER CITY COMMENTS	REVISED PER CITY COMMENTS	DESCRIPTION	REVISIONS
MAG	MAG	MAG	MAG	MAG	MAG		
7/10/27/2023	6/10/05/2023	5/09/19/2023	4/05/23/2023	3/02/08/2023	2/09/13/2022	1/04/26/2022	
NO.	DATE						

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CERTIFICATE OF AUTHORIZATION NUMBER 00003910

CIRCLE C BOAT & RV STORAGE
DAYTONA BEACH * FLORIDA
WATER DISTRIBUTION DETAILS

18
SHEET NO.

Drawn By: M. GRECO

Date: 09/30/2020

JOB # 20-42

SCALE: NTS

SEAL

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

Other Pipe	Horizontal Separation	Crossings (1)	Joint Spacing @ Crossings (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 12 inches is preferred	Alternate 3 ft. minimum
Vacuum Sanitary Sewer	Water Main 10 ft. preferred 3 ft. minimum	Water Main 12 inches minimum	Alternate 3 ft. minimum
Gravity or Pressure Sanitary Sewer, Force Main, Reclaimed Water (3)	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

On-Site Sewer Treatment & Disposal System
(1) Water main should cross above other pipes. 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) Reclaimed water regulated under Part III of Chapter 62-610 F.A.C.
(4) Reclaimed water not regulated under Part III of Chapter 62-610 F.A.C.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



WATER MAIN
SEPARATION CHART
W-8

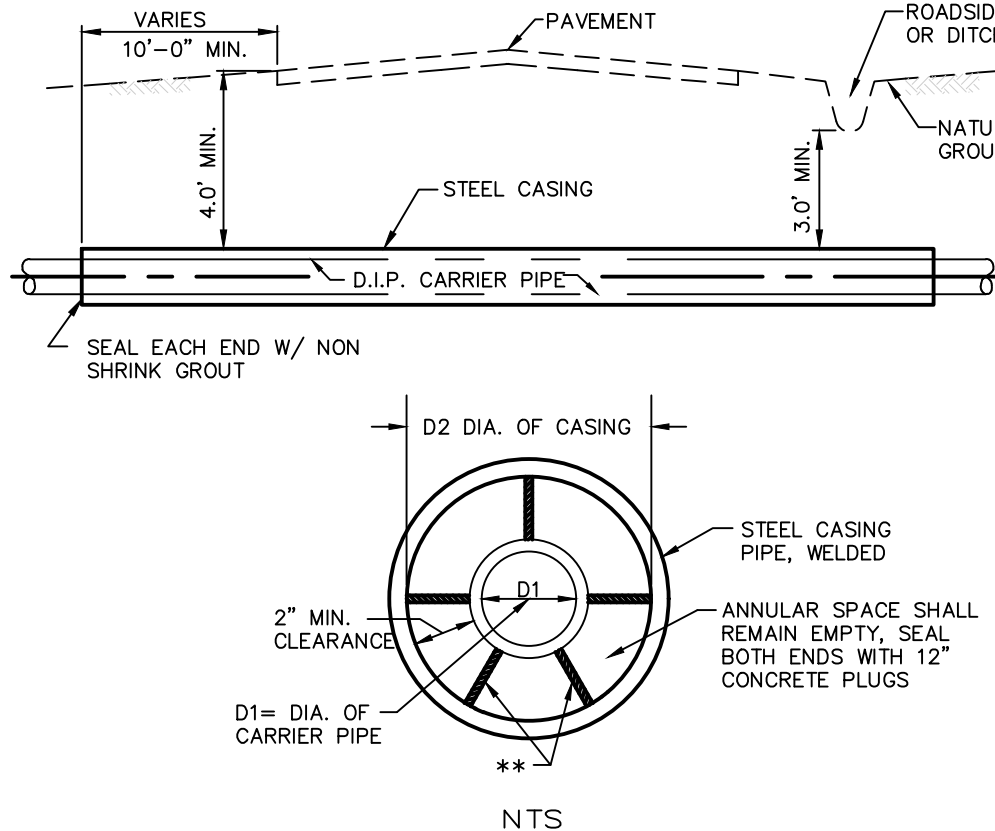
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THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



TYPICAL
BORE AND JACK
DETAIL
W-11

FY-21/22
Drawing Date: 01/08
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File Name: Water Notes W-11
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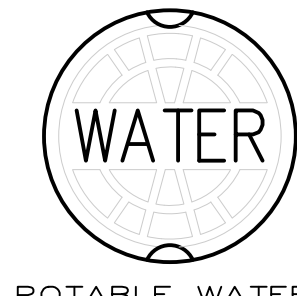
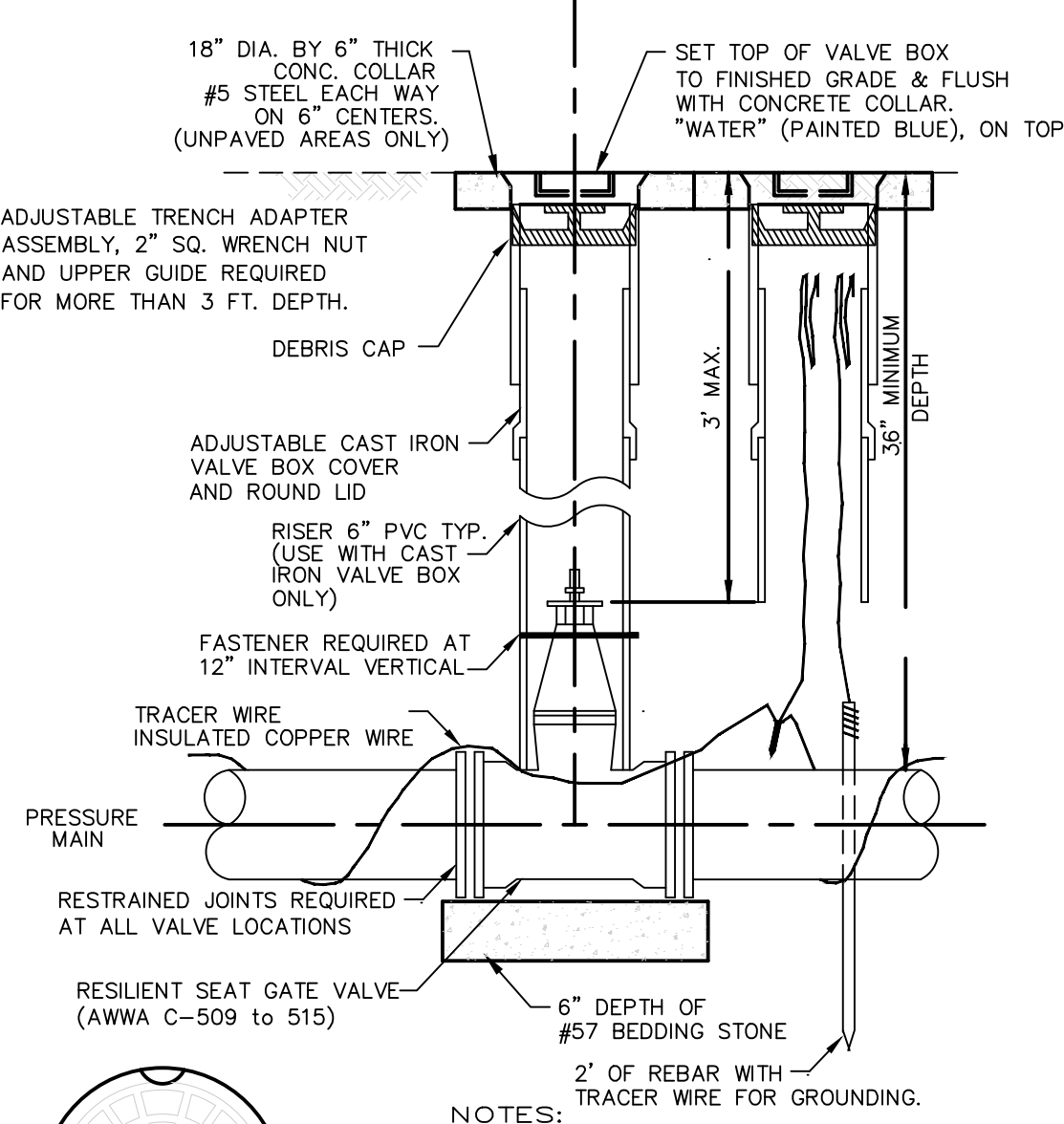
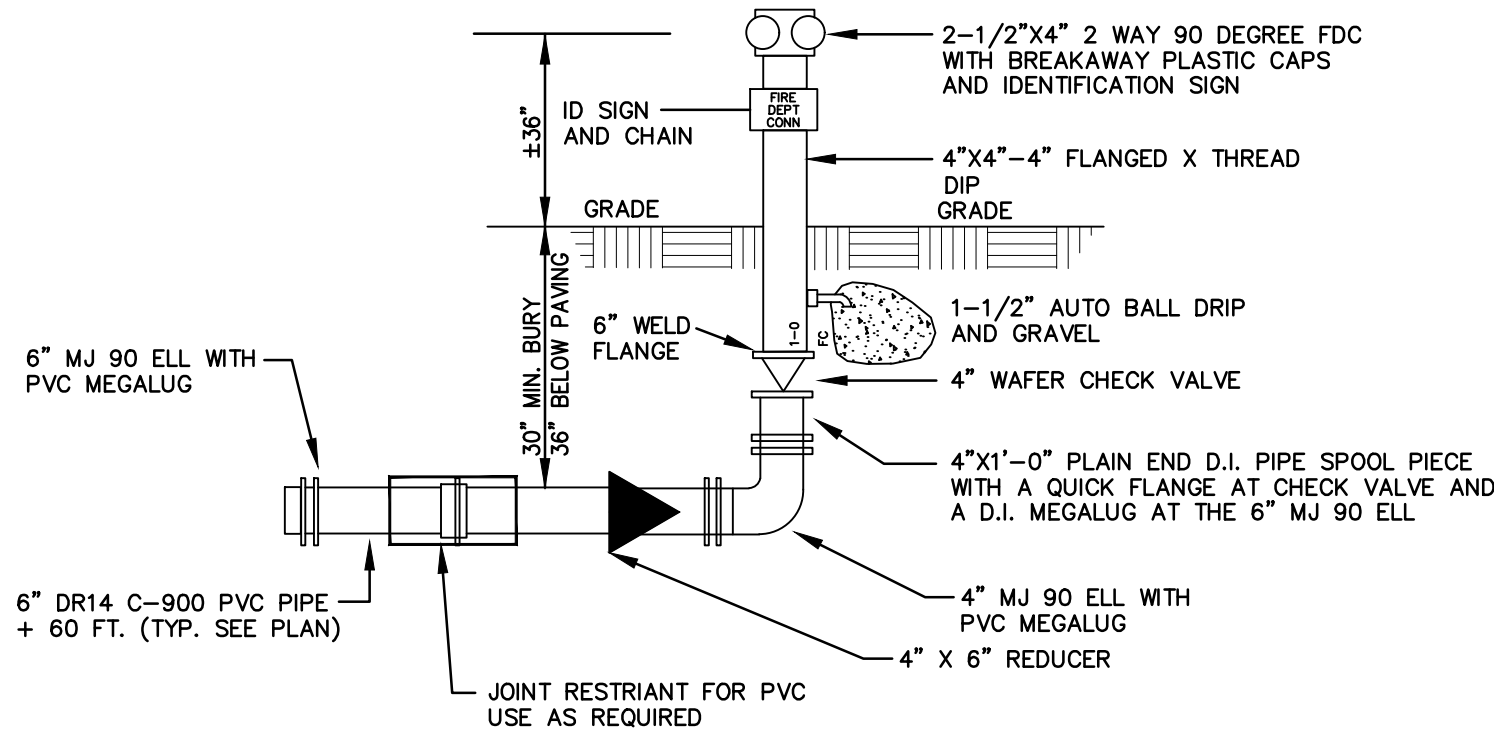


- NOTES:
1. MINIMUM COVER FOR TOP OF CASING ON ALL CITY STREETS SHALL BE 3.0'
 2. ROTATION OF CARRIER PIPE INSIDE THE CASING PIPE WILL NOT BE PERMITTED. RESTRAINED MECHANICAL OR FLANGED JOINT PIPE SHALL BE USED TO HELP PREVENT SUCH ROTATION.
 3. SHOP DRAWINGS OF CASING & CARRIER PIPE INSTALLATION SHALL BE SUBMITTED FOR APPROVAL PRIOR TO FABRICATION OF PIPING, CASING, AND APPURTENANCES. CERTIFICATION OF CASING PIPE IS REQUIRED.
 4. WELDING OF CASING PIPE TO BE DONE BY STATE CERTIFIED WELDER. ALL ENDS OF CASING PIPE SHALL BE CHAMFERED PRIOR TO ANY WELDING. SEAL END OF CASING PIPE WITH NON SHRINK GROUT.
 5. CITY INSPECTOR SHALL BE PRESENT THROUGHOUT ALL BORE AND JACK ACTIVITIES.
 - * WITHIN VOLUSIA COUNTY RIGHT OF WAY, USE CURRENT FDOT STANDARDS.

** SPECIALLY DESIGNED SPACERS SHALL BE USED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. USE CASCADE CASING SPACERS OR APPROVED EQUAL.

NOTE TO ENGINEER: CROSSING DETAIL SHALL BE TO SCALE AND SHOW EXISTING UTILITIES, CLEARANCES, CASING LENGTH, LOCATION OF PAVED ROAD AND LIMITS OF RIGHT OF WAY.

FIRE DEPARTMENT CONNECTION DETAIL
N.T.S.



POTABLE WATER COVER

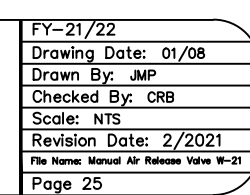
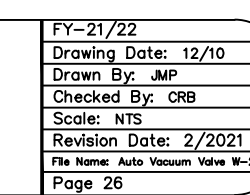
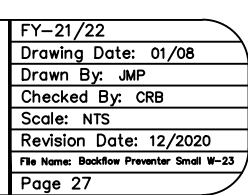
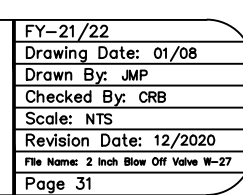
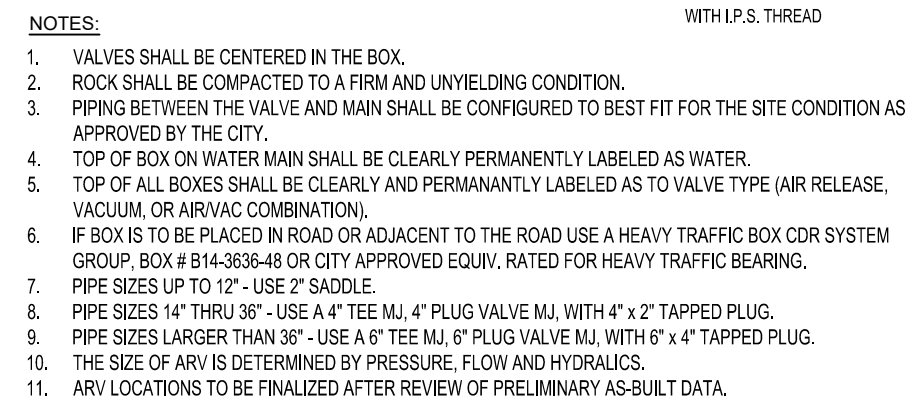
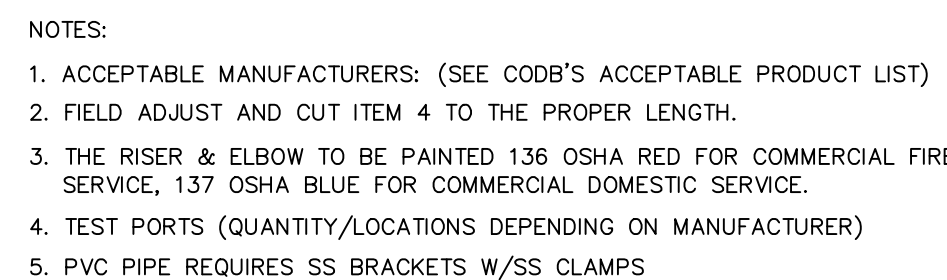
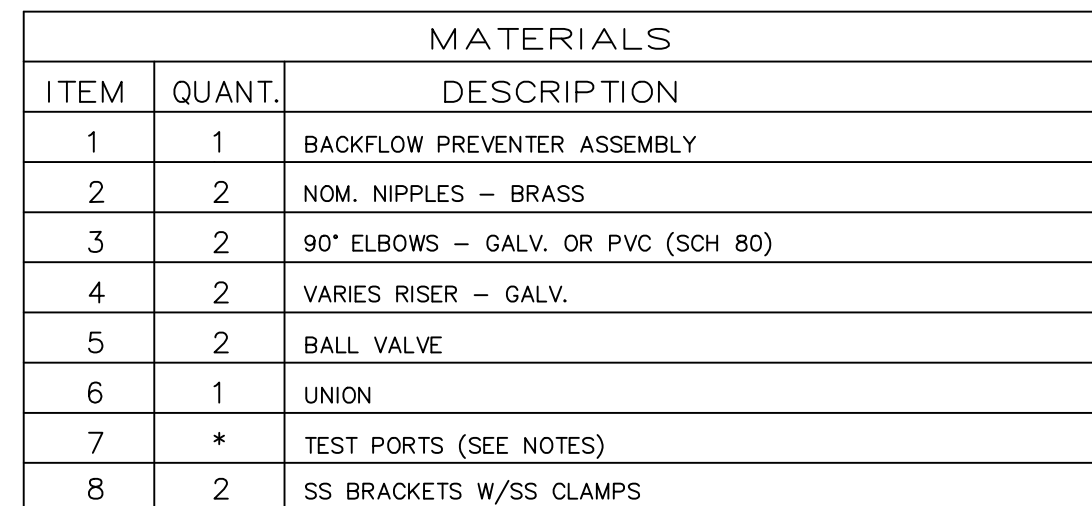
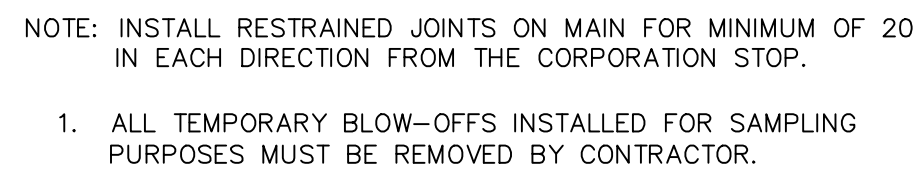
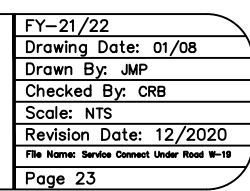
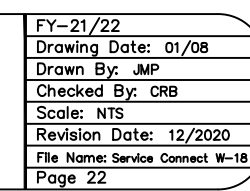
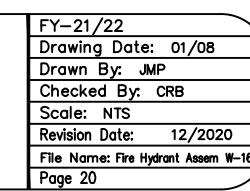
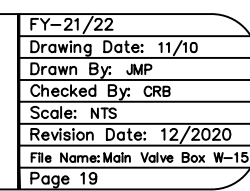
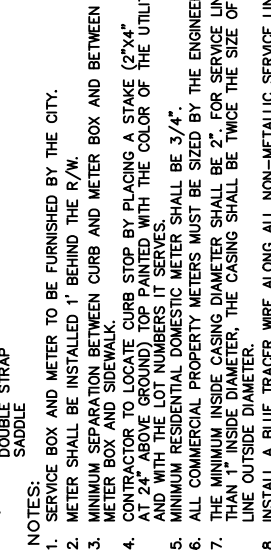
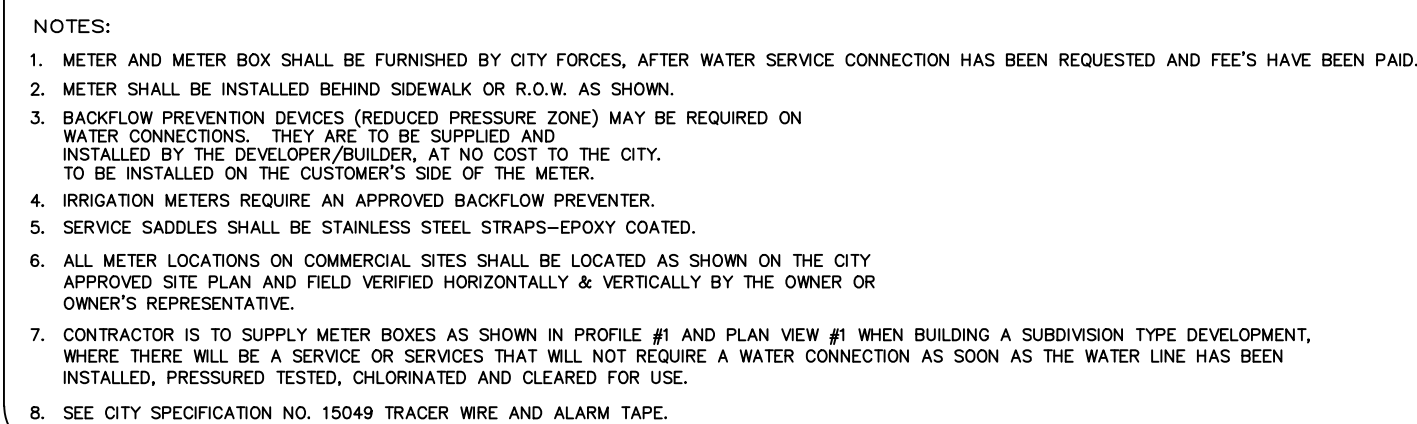
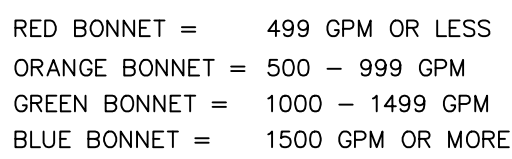
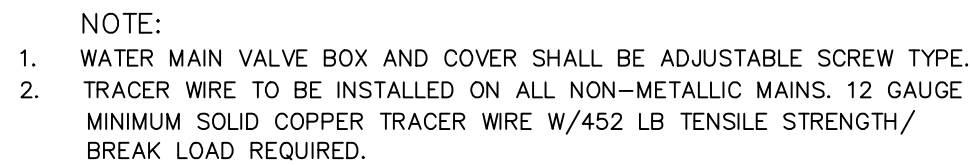
1. SEE CODB'S APPROVED PRODUCT LIST FOR ACCEPTABLE MANUFACTURERS.
2. INSTALL RESTRAINED JOINTS, AS REQUIRED, FROM DEFLECTION POINT IN BOTH DIRECTIONS (20' MIN.)
3. IF A WATER METER BOX IS NOT WITHIN 200 FEET OF A VALVE & VALVE BOX, THEN IT REQUIRES AN ADDITIONAL VALVE BOX FOR TRACER WIRE.
4. TRACER WIRE SHALL BE A MINIMUM 12 GAUGE WITH A TENSILE STRENGTH/BREAK LOAD OF 452 LBS. SEE TRACER WIRE SPECIFICATION #15049
5. [REDACTED]

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



WATER VALVE AND
VALVE BOX
DETAIL
W-13

FY-21/22
Drawing Date: 01/08
Drawn By: JWP
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**PARKER MYNCHENBERG
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OFFICE OF AUTHORIZATION NUMBER 00003910

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CERTIFICATE OF AUTHORIZATION NUMBER 00003910

CIRCLE C BOAT & RV STORAGE

WATER DISTRIBUTION DETAILS

19
SHEET NO.

Drawn By: M .GRECC

Date: 09/30/2020

JOB # 20-42

SCALE: NTS

SEAL

RECLAIMED WATER CONSTRUCTION NOTES

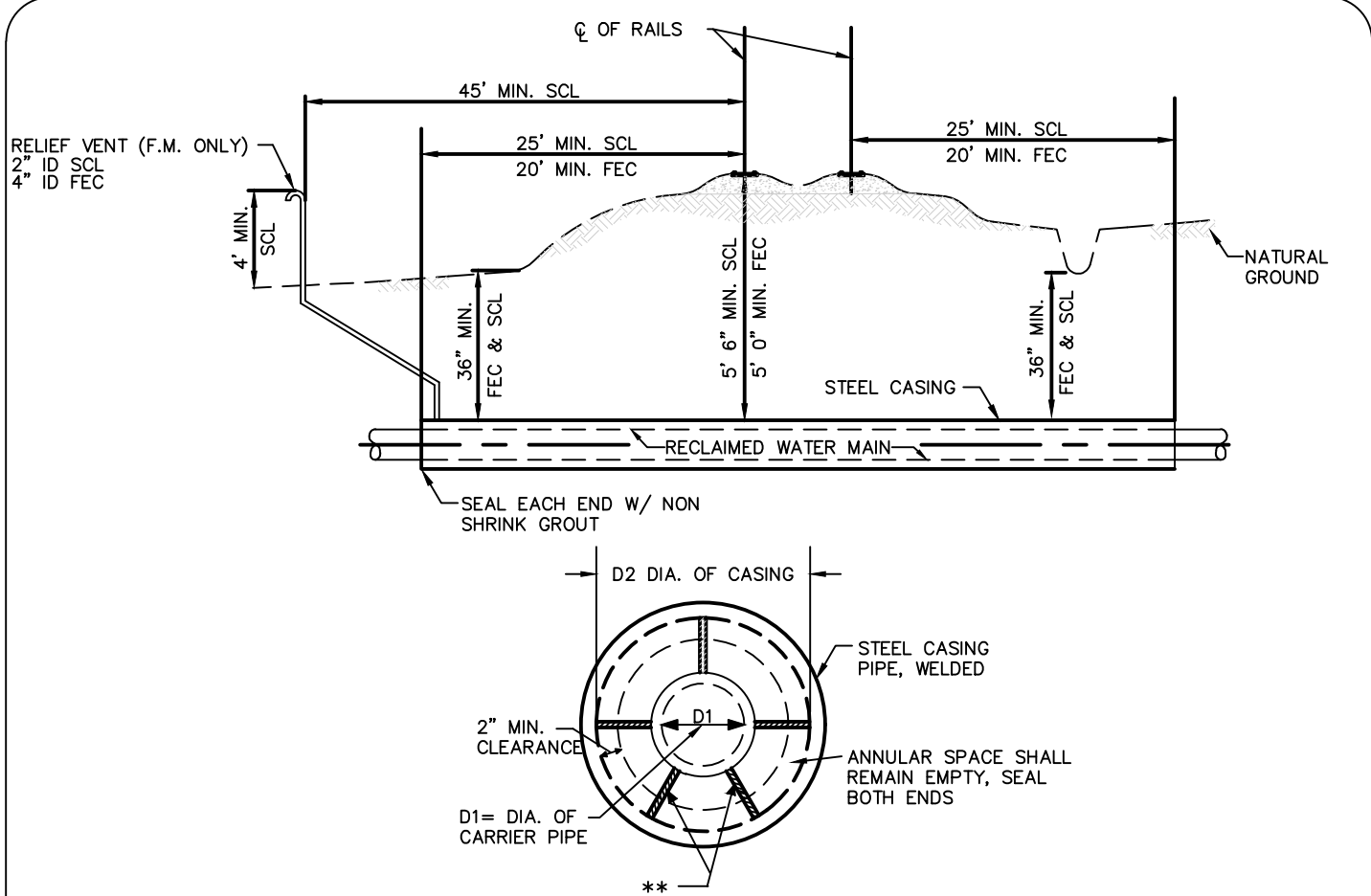
1. THE CITY'S UTILITIES DEPARTMENT (671-8815) SHALL BE GIVEN A MINIMUM OF THREE BUSINESS DAYS NOTICE (NOT INCLUDING HOLIDAYS) PRIOR TO BEGINNING ANY RECLAIMED WATER SYSTEM CONSTRUCTION.
2. A PERMIT SHALL BE REQUIRED PRIOR TO ENGAGING IN ANY DOWATERING OR CONSTRUCTION ACTIVITY THAT CHANGES THE IMPERVIOUS AREA OF LAND. DOWATERING ACTIVITIES INCLUDE THE REMOVAL OF GROUND WATER FROM A CONSTRUCTION SITE, ENCLOSED VAULT, COFFERDAM, OR TRENCHES, ALLOWING CONSTRUCTION OR MAINTENANCE IN A DRY ENVIRONMENT. SITE SPECIFIC DOWATERING PERMITS SHALL REQUIRE PAYMENT OF A PER ACRE FEE BASED ON THE SIZE OF THE DEVELOPMENT. GENERAL PURPOSE PERMITS SHALL REQUIRE AN ANNUAL FEE BASED ON A BIENNIAL SCHEDULE OF DOWATERING ACTIVITIES DISCHARGING DIRECTLY INTO THE CITY'S M54 CONVEYANCE SYSTEM. DOWATERING PERMIT APPLICATIONS CAN BE FOUND AT <https://www.codbus/index.aspx?nid=262>. FEES ARE SUBJECT TO ARTICLE 7, SECTION 7.2 OF THE LAND DEVELOPMENT CODE AND MUST BE SUBMITTED WITH THE PERMIT APPLICATION TO THE CITY OF DAYTONA BEACH STORM WATER COORDINATOR AT 125 BASIN STREET, SUITE 100, DAYTONA BEACH, FLORIDA 32114 PRIOR TO ANY USE OF THE CITY'S M54 CONVEYANCE SYSTEM. FAILURE TO COMPLY WILL RESULT IN IMMEDIATE TERMINATION OF ACCESS TO THE CITY'S M54 SYSTEM.
3. RECLAIMED WATER SERVICE ENDINGS SHALL BE SECURED BY WIRE TO 2" x 4" PRESSURE TREATED STAKES, APPROXIMATELY 2' ABOVE GRADE OR MAY BE PLACED IN RECLAIMED WATER METER BOXES PROVIDED BY THE CONTRACTOR AT THE TIME OF FINAL SUBDIVISION INSPECTION.
4. FOR PIPE FLUSHING, PIGGING, TESTING, AND TIE-IN CONNECTIONS, THE CITY RESERVES THE RIGHT TO REQUIRE WORK TO BE PERFORMED DURING PERIODS OF LOW FLOW (MIDNIGHT TO 8 A.M.) IN ORDER TO MINIMIZE SERVICE DISRUPTION TO EXISTING CUSTOMERS. THE CONTRACTOR SHALL COORDINATE AND SCHEDULE ALL WORK WITH THE CITY REPRESENTATIVE THE DATE AND TIME, THAT MUST BE APPROVED BY WATER PLANT OPERATIONS.
5. IT IS THE CONTRACTOR'S RESPONSIBILITY TO SUPPLY "AS-BUILT DRAWINGS" TO THE CITY PRIOR TO ANY USE OF THE SYSTEM. **SEE CITY OF DAYTONA BEACH AS-BUILT REQUIREMENTS.**
6. ALL RECLAIMED WATER SERVICES SHALL BE MARKED ALONG THE OUTSIDE EDGE OF CURB WITH A "◊" OR BY METAL TABS SET INTO PAVEMENT. VALVES AND BLOW-OFFS FOR RECLAIMED WATER MAINS SHALL BE MARKED BY A "4" SET INTO THE PAVEMENT AND PAINTED WITH PURPLE ENAMEL.
7. RECLAIMED WATER SERVICES SHALL BE LOCATED AT SIDE LOT LINES ALTERNATING WITH POTABLE WATER SERVICE LOCATIONS. IN INSTANCES WHERE RECLAIMED WATER SERVICES MUST BE OFFSET, THE SERVICES MAY BE OFFSET FROM THE LOT LINE A MAXIMUM DISTANCE OF 2 FEET.
8. ALL RECLAIMED WATER HAND-OPERATED CONNECTIONS AND OUTLETS SHALL BE CONTAINED IN UNDERGROUND SERVICE VAULTS AND APPROPRIATELY TAGGED OR LABELED TO WARN THE PUBLIC AND EMPLOYEES THAT THE WATER IS NOT INTENDED FOR DRINKING OR SWIMMING. ANY SIGNIFICANT IRRIGATION SITE UTILIZING RECLAIMED WATER, SUCH AS AN ATHLETIC FIELD, GOLF COURSE, PARK OR POND, IS REQUIRED TO POST A 12" x 12" RECLAIMED WATER SIGN WARNING THE PUBLIC AND EMPLOYEES THAT RECLAIMED WATER IS NOT INTENDED FOR DRINKING OR SWIMMING. THIS SIGN SHALL BE PLACED AT THE ENTRANCE TO THE SITE AND THE LOCATION OF THE PRIVATE REUSE SYSTEM. SEE "RECLAIMED WATER IN USE" DETAIL.
9. VAULTS FOR OUTLETS SHALL BE LOCKED OR REQUIRE A SPECIAL TOOL FOR OPERATION.
10. A 75 FOOT SETBACK DISTANCE SHALL BE PROVIDED FROM PUBLIC ACCESS RECLAIMED WETTED AREAS TO PUBLIC OR PRIVATE POTABLE WATER SUPPLY WELLS.
11. LOW TRAJECTORY NOZZLES ARE REQUIRED WITHIN 100 FEET OF PUBLIC EATING, DRINKING OR BATHING FACILITIES.
12. ALL RECLAIMED WATER MAINS SHALL BE INSTALLED ON A FIRM FOUNDATION WITH ALL UNSUITABLE MATERIAL (MUCK, ROCK, COQUINA, ETC.) REMOVED AND REPLACED WITH CLEAN GRANULAR MATERIAL.
13. TRENCHES SHALL BE BACKFILLED WITH MATERIAL ACCEPTABLE TO THE CITY WITH A MINIMUM COMPACTION OF 95% IN UNPAVED AREAS AND 98% IN PAVED AREAS IN ACCORDANCE WITH AASHTO T-180.

RECLAIMED WATER CONSTRUCTION NOTES
(CONT'D)

14. IT IS THE CONTRACTOR'S RESPONSIBILITY TO PROVIDE TRENCH COMPACTION TESTS AT POINTS 12 INCHES ABOVE THE PIPE AND AT 12 INCHES VERTICAL INTERVALS TO FINISH GRADE AT A MAXIMUM SPACING OF EVERY 300 FEET.
15. ALL SINGLE RESIDENTIAL WATER SERVICES SHALL BE 1". SERVICES SHALL BE CTS 3408 HIGH DENSITY POLYETHYLENE TUBING RATED FOR A MINIMUM OF 200 PSI WITH STANDARD OUTSIDE DIMENSION RATIO (SDOR) = 9 (CTS). THE TUBING SHALL HAVE A VIRGIN HIGH DENSITY POLYETHYLENE CENTER FOR WHICH THE MANUFACTURER SHALL FURNISH A CERTIFICATE OF PURITY. THE TUBING SHALL BE PURPLE IN COLOR AND SHALL HAVE THE WORDS "RECLAIMED WATER" PERMANENTLY PRINTED ON THE OUTSIDE. THE TUBING SHALL HAVE U.V. PROTECTION AND SHALL NOT BE AFFECTED BY DIRECT SUNLIGHT. THE TUBING SHALL COMPLY WITH OR EXCEED THE APPLICABLE STANDARDS OF A.S.T.M. D1248, D3350, D2239, D2737, N.S.F.-14 AND A.W.W.A. C901 AND SHALL COME WITH A LIFETIME WARRANTY. APPROVED SIZES: 1" AND 2" DIAMETERS.
16. RECLAIMED WATER MAINS SHALL BE INSTALLED 4 FEET OFF THE BACK OF THE CURB ON THE OPPOSITE SIDE OF THE ROAD OF THE POTABLE WATER MAINS, OR AS APPROVED BY THE CITY. RECLAIMED WATER MAINS SHOULD NOT BE INSTALLED UNDER SIDEWALK.
17. ALL RECLAIMED WATER MAINS SHALL HAVE A MINIMUM COVER OF 36 INCHES. IN SPECIAL CASES WHERE IT IS IMPOSSIBLE OR INAPPROPRIATE TO PROVIDE ADEQUATE COVER, DUCTILE IRON PRESSURE CLASS 350 OR CONCRETE ENCASEMENT/PROTECTIVE SLAB MAY BE USED AT THE DISCRETION OF THE UTILITIES DEPARTMENT. ALL DIP SHALL HAVE 2" PURPLE STRIPES PAINTED AT 12 O'CLOCK, 3 O'CLOCK, 6 O'CLOCK AND 9 O'CLOCK FOR THE FULL LENGTH OF PIPE. NON PAINTED RECLAIMED PIPE OR PIPES SHALL BE PAINTED WITH AN EPOXY PAINT (PANTONE PURPLE) TO CLEARLY MARK THE RECLAIM PIPE OR PIPES.
18. RECLAIMED WATER MAINS SHALL BE PURPLE PVC, DR-18 AWWA CLASS C-900 OR C-905, CL 150, OR DIP PRESSURE CLASS 350, STANDARD CEMENT LINED (PAINTED PANTONE PURPLE) UNLESS APPROVED OTHERWISE BY THE CITY. ALL HORIZONTAL DIRECTIONAL DRILLS SHALL HAVE A MINIMUM WORKING PRESSURE OF 160 PSI. THE CITY MAY REQUIRE A HIGHER PRESSURE RATING BASED ON SITE CONDITIONS. INSIDE DIAMETER OF HORIZONTAL DRILL PIPE SHALL MATCH THE INSIDE DIAMETER OF CONNECTING PIPES. ALL GASKETS SHALL BE LUBRICATED BEFORE INSTALLATION.
19. DIRECTIONAL DRILLS SHALL HAVE FUSSED MJ ADAPTERS.
20. ALL RECLAIMED WATER MAINS SHALL USE THRUST RESTRAINT AS CALCULATED BY A PROGRAM AVAILABLE AT EBAA.COM, THE RESTRAINED JOINT LENGTHS SHALL BE SHOWN ON PLANS PROVIDED BY EOR.
21. ALL FITTINGS, VALVES, ECT. SHALL BE DUCTILE IRON (MJ OR FLANGED) AND SHALL BE RESTRAINED.
22. BELL RESTRAINTS OR GRIPPER TYPE GASKETS CAN BE USED FOR ALL RESTRAINED PIPE BELL JOINTS. CONCRETE THRUST BLOCKS ARE NOT PERMITTED.
23. VALVES SHALL BE PLACED AT ALL STREET INTERSECTIONS AND AT MAXIMUM SPACINGS OF 750 FEET.
24. VALVES SHALL BE INSTALLED ON ALL LEGS EXCEPT ONE AT ALL RECLAIMED WATER MAIN TEES AND CROSSES.
25. ALL VALVES SHALL BE ADJUSTED TO FINISH GRADE AND CAPS SHALL BE PAINTED PURPLE.
26. THE CONTRACTOR IS REQUIRED TO PIG ALL RECLAIMED WATER MAINS EQUAL TO OR GREATER THAN 6" IN DIAMETER AND PRIMARY DISTRIBUTION MAINS LOCATED ON COLLECTOR AND ARTERIAL ROADWAYS. LAUNCHING AND EXTRACTION POINTS SHALL BE DETERMINED BY THE CONTRACTOR.
27. IN AREAS WHERE RECLAIMED WATER IS AVAILABLE, RECLAIMED WATER WILL BE UTILIZED IN THE PRESSURE TESTING OF NEW NON-POTABLE WATER LINES.
28. RECLAIMED WATER MAINS SHALL NOT BE PLACED IN SERVICE UNTIL A PRESSURE TEST AT 150 PSI FOR 3 HOURS HAS PASSED AND THE RESULTS ARE FORWARDED TO THE CITY.
29. THE CONTRACTOR SHALL PERFORM RECLAIMED WATER TAPS WITH A CITY REPRESENTIVE PRESENT.

RECLAIMED WATER CONSTRUCTION NOTES
(CONT'D)

30. WITH RESPECT TO TIE-IN CONNECTIONS, THE CITY RESERVES THE RIGHT TO REQUIRE CONNECTIONS TO BE PERFORMED DURING PERIODS OF LOW FLOW.
31. THE PLANS SHALL INCLUDE THE PROPOSED LOCATIONS OF ALL RECLAIMED WATER MAINS MEASURED FROM THE BACK OF CURB (EDGE OF PAVEMENT IF NO CURB EXISTS) AND THE RIGHT-OF-WAY LINE.
32. LANDSCAPE PLANS SHALL CLEARLY DEPICT THE DESIGN LOCATION OF PLANTINGS RELATIVE TO THE LOCATION OF PUBLIC UTILITIES AND STORM WATER INFRASTRUCTURE.
33. THE RECLAIMED WATER MAIN SHALL NOT BE PLACED IN SERVICE UNTIL AN APPROVED BACKFLOW PREVENTER HAS BEEN INSTALLED ON THE CUSTOMER'S POTABLE SERVICE LINE.
34. PRESSURE TESTS FOR TAPPING SADDLES AND VALVES SHALL BE A MINIMUM OF 30 MINUTES AT 150 PSI OR 30 MINUTES AT THE MANUFACTURER'S RECOMMENDED TESTING PRESSURE.
35. 3 INCH METALIZED PIPE LOCATION TAPE SHALL BE LOCATED 15 INCHES TO 24 INCHES BELOW FINISHED GRADE OR AS SPECIFIED BY THE MANUFACTURER FOR ALL WATER LINES. BLUE TRACER WIRE SHALL BE ATTACHED TO ALL PIPES. WIRE RUNS SHALL BE CONNECTED WITH SILICONE FILLED WIRE CONNECTORS. SERVICES SHALL BE CONNECTED TO THE MAIN WIRE WITH SILICONE FILLED WIRE CONNECTORS. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE AND TEST FOR CONTINUITY (SEE CITY SPECIFICATION #15049 TRACER WIRE AND ALARMING TAPE). TRACER WIRE SHALL BE TESTED FOR CONTINUITY UNDER THE SUPERVISION OF A CITY REPRESENTATIVE AFTER INSTALLATION. IF A METER BOX IS NOT WITHIN 200 FEET OF A VALVE AND VALVE BOX AN ADDITIONAL VALVE BOX FOR TRACER WIRE IS REQUIRED.
36. ALL FITTINGS SHALL MEET MINIMUM RESTRAINT REQUIREMENTS PER ANSI/AWWA/EBAA, AND ALL PRESSURE PIPES UNDER THE ROADWAYS SHALL BE RESTRAINED.
37. IN AREAS WHERE RECLAIMED WATER IS NOT AVAILABLE, THE CONTRACTOR IS REQUIRED TO USE THE NECESSARY BACKFLOW PREVENTION DEVICES TO TRANSFER POTABLE WATER TO NON-POTABLE WATER LINES TO PERFORM THE REQUIRED PRESSURE TEST.
38. WHERE POTABLE WATER MAINS, RECLAIMED WATER MAINS, FORCE MAINS, SANITARY SEWER MAINS OR STORMWATER MAINS CROSS WITH LESS THAN 12 INCHES OF VERTICAL CLEARANCE OR WHERE THE SEWER OR THE RECLAIMED WATER MAIN IS ABOVE THE WATER MAIN, MEDIATION MUST BE REVIEWED AND APPROVED BY FDEP.



TYPICAL RAILROAD CROSSING
NTS

CARRIER PIPE AND CASING PIPE SIZES (MIN.)	
CARRIER PIPE NOM. DIA. (D1)	4 6 8 10 12 14 16 18 20 24 30 36 42 48
CASING PIPE NOM. DIA. (D2)	14 16 18 22 24 30 32 36 42 48 54 60 66
WALL THICKNESS-INCHES *	PER AUTHORITY HAVING JURISDICTION

NOTES:

- MINIMUM COVER FOR TOP OF CASING TO R/R BASE SHALL BE 5'-6" (SCL), 5'-0" (FEC).
- MINIMUM COVER FOR TOP OF CASING ON ALL GROUND COVER SHALL BE 3'-0".
- ROTATION OF CARRIER PIPE INSIDE THE CASING PIPE WILL NOT BE PERMITTED. RESTRAINED MECHANICAL OR FLANGED JOINT PIPE SHALL BE USED TO HELP PREVENT SUCH ROTATION.
- SHOP DRAWINGS SHALL BE SUBMITTED FOR REVIEW AND APPROVAL PRIOR TO INSTALLATION FOR APPROVAL PRIOR TO FABRICATION OF PIPING, CASING, AND APPURTENANCES. CERTIFICATION OF CASING PIPE IS REQUIRED.
- GROUTING OF SPACE BETWEEN CASING AND CARRIER PIPE NOT REQUIRED UNLESS NEGATIVE FLOTATION EXISTS.
- WELDING OF CASING SHALL BE DONE BY CERTIFIED WELDER. ALL ENDS OF CASING PIPE SHALL BE CHAMFERED PRIOR TO ANY WELDING. SEAL END OF CASING PIPE WITH NON SHRINK GROUT.
- CITY INSPECTOR SHALL BE PRESENT THROUGHOUT ALL BORE AND JACK ACTIVITIES.
- WITHIN THE CITY OF DAYTONA BEACH RIGHT OF WAY, USE CURRENT FOOT STANDARDS.
- SPECIALY DESIGNED SPACERS SHALL BE USED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS. USE CASCADE CASING SPACERS OR PRE-APPROVED EQUAL.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



DESIGN AND CONSTRUCTION
NOTES
PAGE 1 OF 3
RW-1

FY-21/22
Drawing Date: 01/08
Drawn By: MJP
Checked By: JAP
Scale: NTS
Revision Date: 02/2019
File Name: Reclaimed Notes RW-1
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THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



DESIGN AND CONSTRUCTION
NOTES
PAGE 2 OF 3
RW-2

FY-21/22
Drawing Date: 01/08
Drawn By: MJP
Checked By: JAP
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File Name: Reclaimed Notes RW-2
Page 44

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



DESIGN AND CONSTRUCTION
NOTES
PAGE 3 OF 3
RW-3

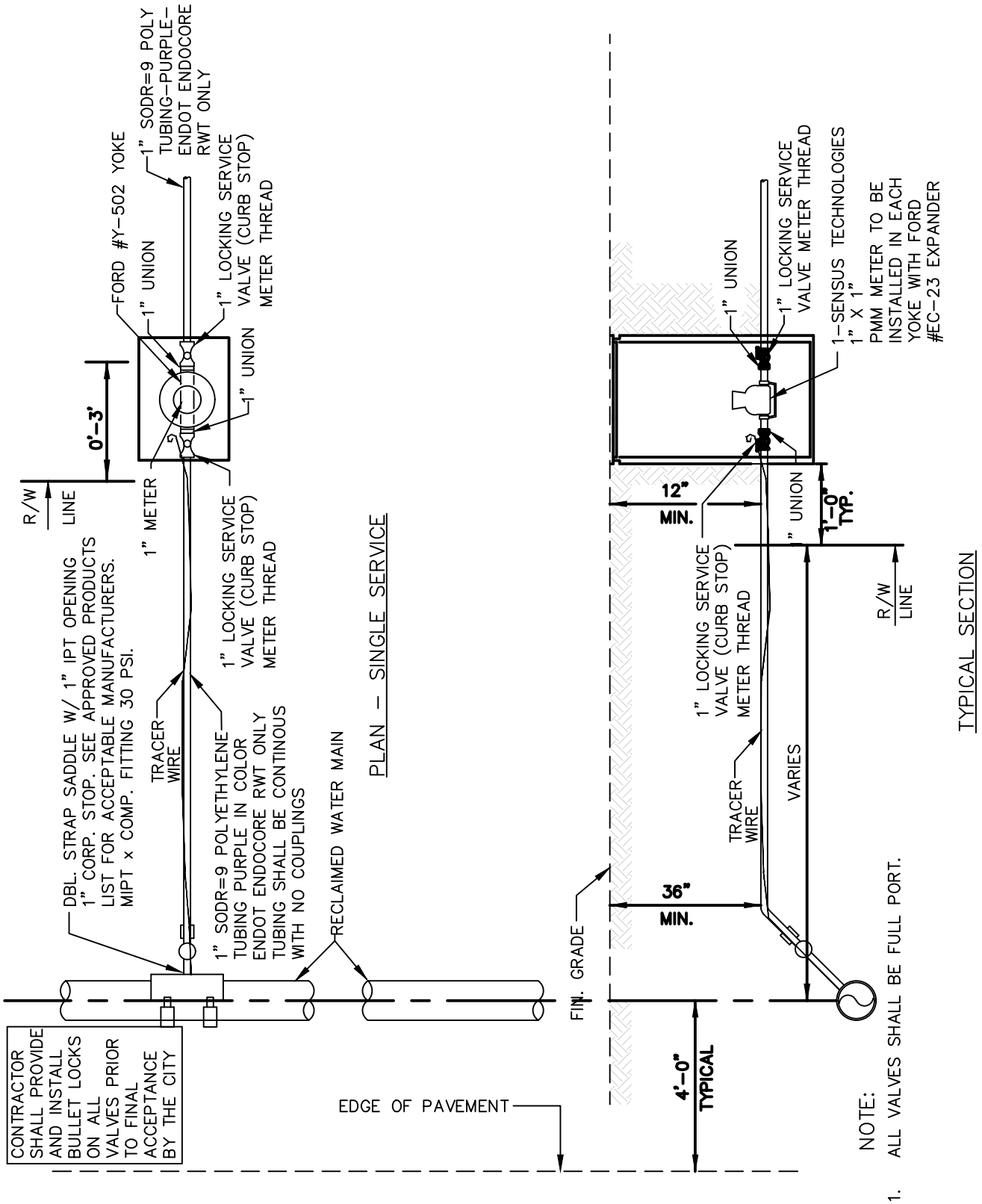
FY-21/22
Drawing Date: 01/08
Drawn By: MJP
Checked By: JAP
Scale: NTS
Revision Date: 1/2019
File Name: Reclaimed Notes RW-3
Page 45

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

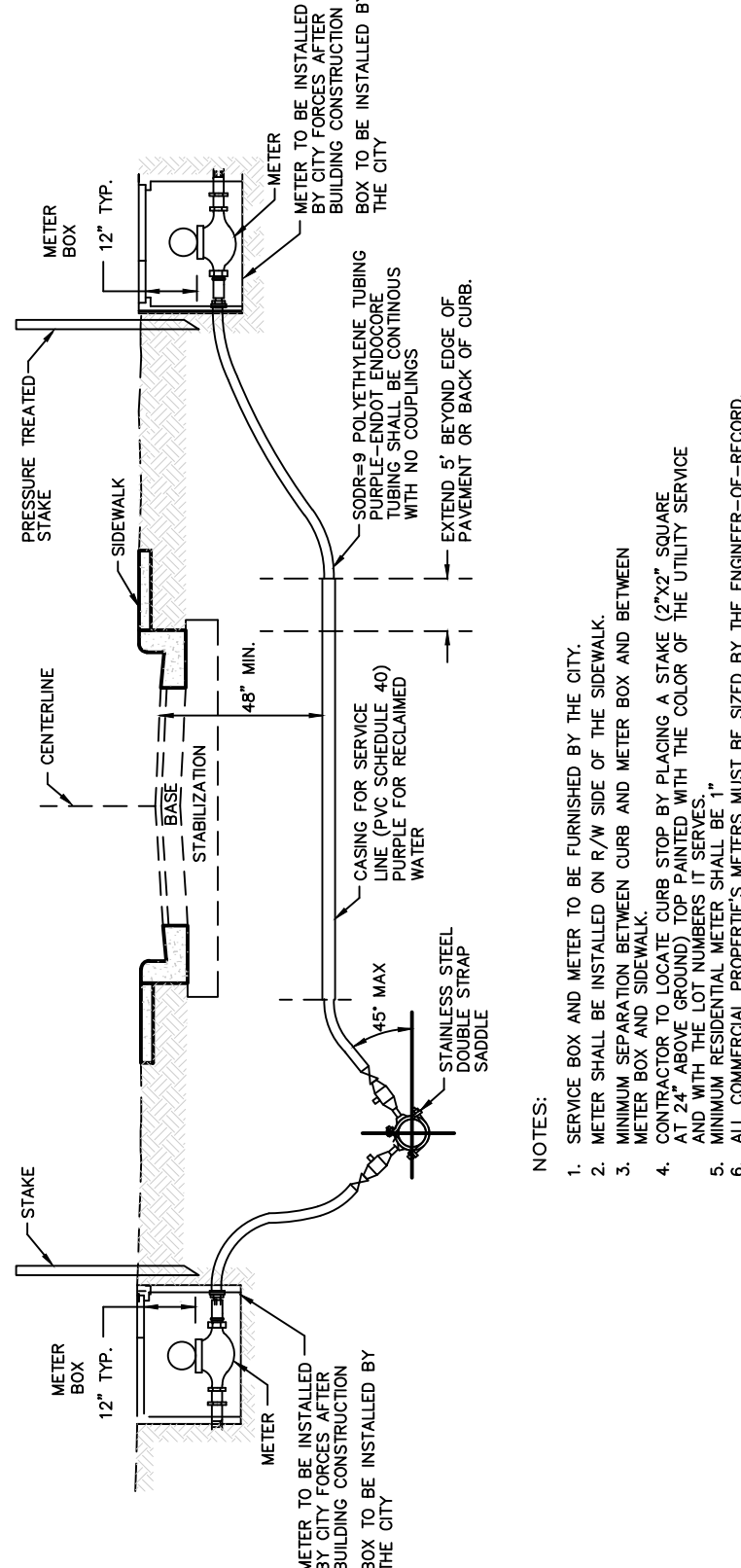


TYPICAL RAILROAD
CROSSING
DETAIL
RW-5

FY-21/22
Drawing Date: 01/08
Drawn By: MJP
Checked By: JAP
Scale: NTS
Revision Date:
File Name: Railroad Crossing RW-5
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NOTE:
1. ALL VALVES SHALL BE FULL PORT.



NOTES:

- SERVICE BOX AND METER TO BE FURNISHED BY THE CITY.
- METER SHALL BE INSTALLED ON 6" W/ SIDE OF THE SIDEWALK.
- METER BOX AND SIDEWALK SHALL BE INSTALLED BETWEEN CURB AND METER BOX AND BETWEEN CURB AND METER BOX.
- CONTRACTOR TO LOCATE CURB STOP BY PLACING A STAKE 12" SQUARE, 12" HIGH, 12" DIA. AND MARKING THE LOCATION OF THE CURB STOP.
- AND WITH THE LOT NUMBERS IN SERIES.
- ALL COMMERCIAL PROPERTY'S METER MUST BE SIZED BY THE ENGINEER-OF-RECORD.
- STOP ON THE END TWO METERS TO BE LEFT ABOVE GROUND.

CONTRACTOR SHALL PROVIDE AND INSTALL ALL VALVES PRIOR TO ACCEPTANCE BY THE CITY.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



IRRIGATION
(SPRINKLER) SERVICE
CONNECTION DETAIL
PAGE 1 OF 2
RW-6

FY-21/22
Drawing Date: 01/08
Drawn By: MJP
Checked By: JAP
Scale: NTS
Revision Date: 01/19
File Name: Irrigation Connection RW-6
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THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



IRRIGATION
(SPRINKLER) SERVICE
(UNDER ROAD) DETAIL
PAGE 2 OF 2
RW-7

FY-21/22
Drawing Date: 01/08
Drawn By: MJP
Checked By: JAP
Scale: NTS
Revision Date:
File Name: Irrigation Connection RW-7
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THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



PAVEMENT CUT
AND PATCH
DETAIL
RW-8

FY-21/22
Drawing Date: 01/08
Drawn By: MJP
Checked By: JAP
Scale: NTS
Revision Date: 01/19
File Name: Pavement Cut and Patch RW-8
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THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



VALVE AND VALVE BOX
DETAIL
RW-9

FY-21/22
Drawing Date: 01/08
Drawn By: MJP
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Scale: NTS
Revision Date: 01/19
File Name: Valve and Box RW-9
Page 51

PARKER MYNCHENBERG
& ASSOCIATES, INC.
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-8891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER 00003910

CIRCLE C BOAT & RV STORAGE

DAYTONA BEACH * FLORIDA

REUSE WATER DETAILS

20
SHEET NO.

Drawn By: M. GRECO

Date: 09/30/2020

JOB # 20-42

SCALE: NTS

SEAL

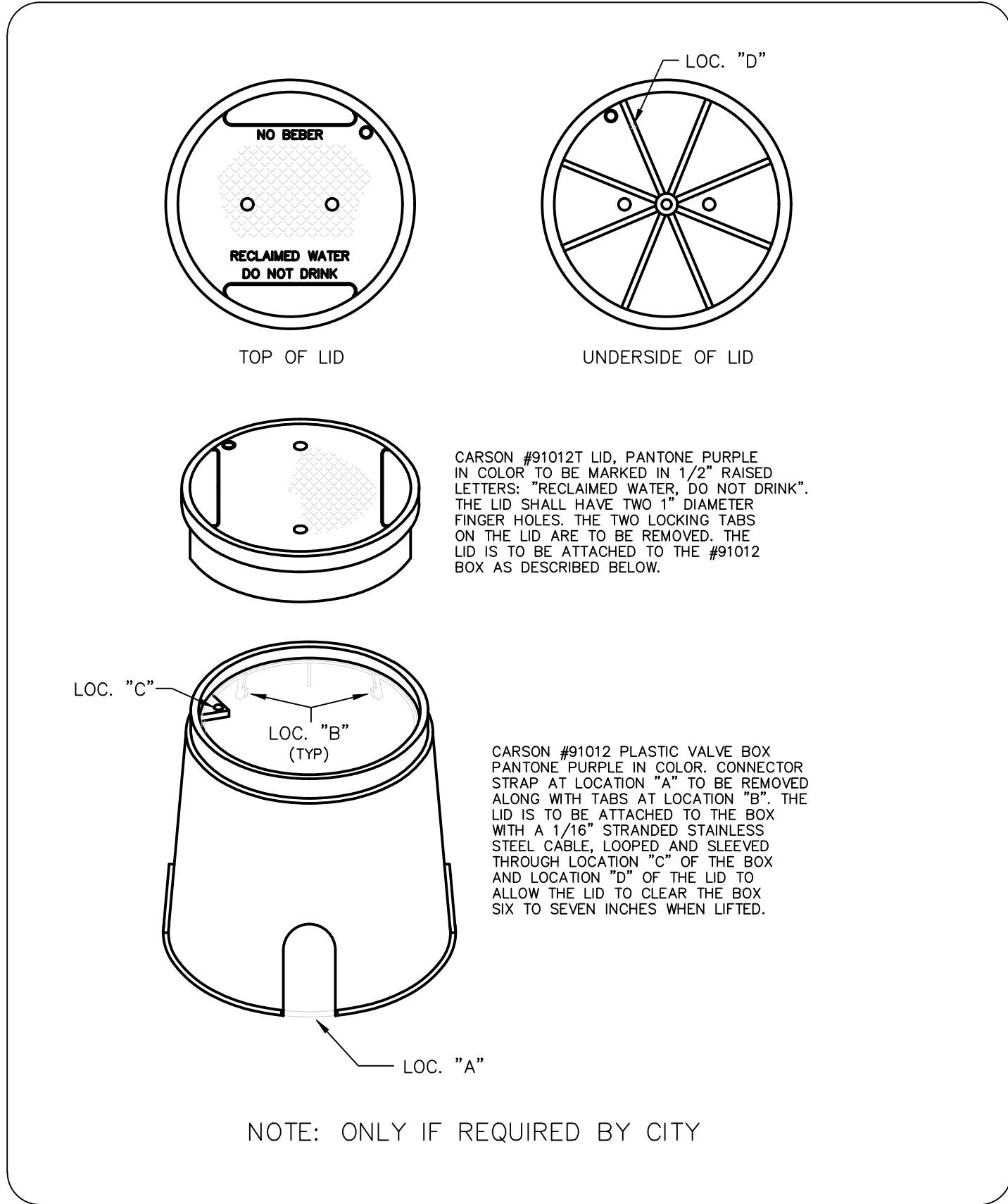


THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



RECLAIMED WATER
IN USE SIGN
RW-13

FY-21/22
Drawing Date: 12/10
Drawn By: MAL
Checked By: JWP
Scale: NTS
Revision Date: 03/17
File Name: Reclaimed Sign RW-13
Page 10

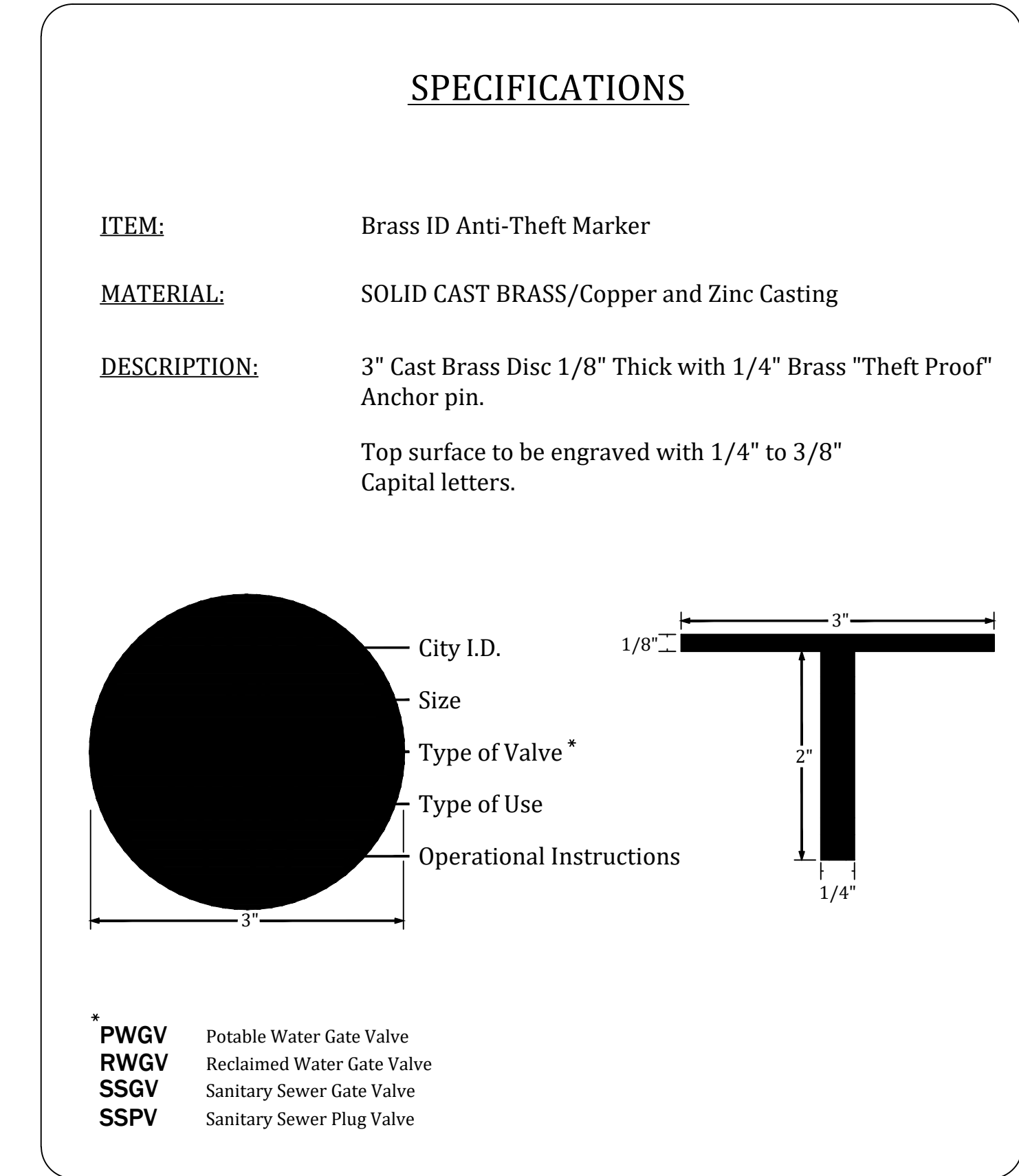


THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



CARSON PLASTIC
VALVE BOX
DETAIL
RW-10

FY-21/22
Drawing Date: 01/08
Drawn By: MAL
Checked By: JWP
Scale: NTS
Revision Date:
File Name: Carson Valve Box RW-10
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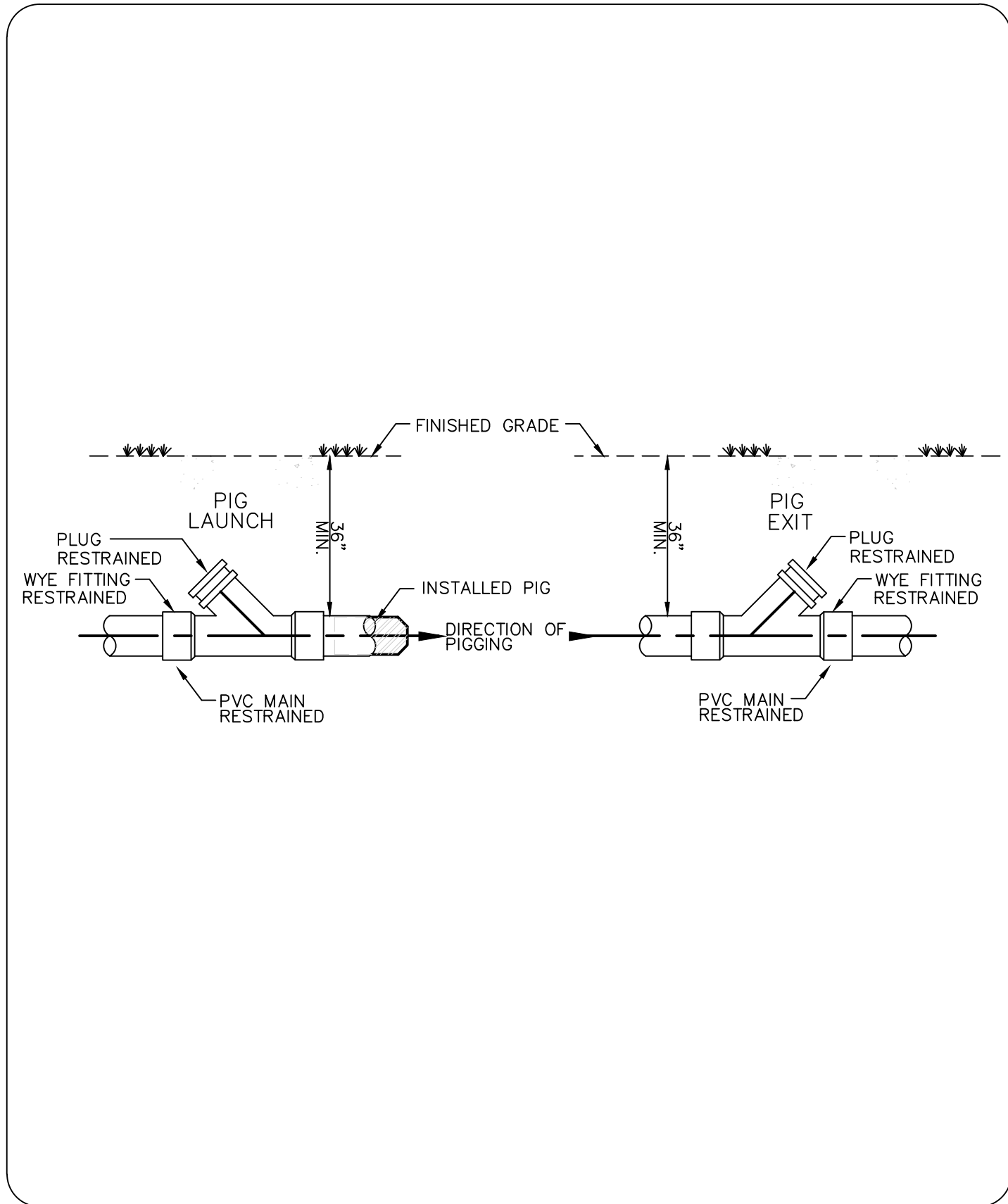


THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



RECLAIMED WATER VALVE
MARKER/TAG
DETAIL
RW-11

FY-21/22
Drawing Date: 03/17
Drawn By: MAL
Checked By: JWP
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Revision Date:
File Name: Reclaimed Sign RW-11
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THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



PIG LAUNCH
AND RECEIVING
DETAIL
RW-12

FY-21/22
Drawing Date: 01/08
Drawn By: MAL
Checked By: JWP
Scale: NTS
Revision Date:
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DEV 2022-020
CITY APPROVAL STAMP

NO.	DATE	DESCRIPTION	REVISIONS
7	10/27/2023	REVISED PER CITY COMMENTS	MAG
6	10/05/2023	REVISED PER COUNTY COMMENTS	MAG
5	09/19/2023	REVISED PER CITY COMMENTS	MAG
4	05/23/2023	REVISED PER CITY COMMENTS	MAG
3	02/08/2023	REVISED PER CITY COMMENTS	MAG
2	09/13/2022	REVISED PER CITY COMMENTS	MAG
1	04/26/2022	REVISED PER CITY COMMENTS	MAG
NO.	DATE	DESCRIPTION	BY

**PARKER MYNCHENBERG
& ASSOCIATES, INC.**
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CERTIFICATE OF AUTHORIZATION NUMBER 000003910

CIRCLE C BOAT & RV STORAGE
DAYTONA BEACH * FLORIDA
REUSE WATER DETAILS

21
SHEET NO.

Drawn By: M .GRECO

Date: 09/30/2020

JOB # 20-42

SCALE: NTS

SEAL

SANITARY SEWER
CONSTRUCTION & DESIGN STANDARDS

1. THE CITY'S UTILITIES DEPARTMENT SHALL BE GIVEN A MINIMUM OF 3 BUSINESS DAYS ADVANCE NOTICE (NOT INCLUDING HOLIDAYS) PRIOR TO BEGINNING ANY SANITARY SEWER CONSTRUCTION.
2. A PERMIT SHALL BE REQUIRED PRIOR TO ENGAGING IN ANY DEWATERING ACTIVITIES, OR IN ACTIVITIES, OR IN ANY CONSTRUCTION ACTIVITY THAT CHANGES THE IMPERVIOUS AREA OF LAND. DEWATERING ACTIVITIES INCLUDE THE REMOVAL OF GROUND WATER FROM A CONSTRUCTION SITE, ENCLOSED VAULT, COFFERDAM, OR TRENCHERS, ALLOWING CONSTRUCTION OR MAINTENANCE TO BE ONE IN THE DRY, OR ANY ACTIVITY WHICH CHANGES THE IMPERVIOUS AREA OF LAND. SITE SPECIFIC DEWATERING PERMITS SHALL REQUIRE PAYMENT OF A PER ACRE FEE BASED ON THE SIZE OF THE DEVELOPMENT. GENERAL PURPOSE PERMITS SHALL REQUIRE AN ANNUAL FEE BASED ON A BI-ANNUAL SCHEDULE OF DEWATERING ACTIVITIES DISCHARGING DIRECTLY INTO THE CITY'S MS4 CONVEYANCE SYSTEM. DEWATERING PERMIT APPLICATIONS CAN BE FOUND AT <https://www.codb.us/index.aspx?nid=262>. FEES ARE SUBJECT TO ARTICLE 7, SECTION 7.2 OF THE LAND DEVELOPMENT CODE AND MUST BE SUBMITTED WITH THE PERMIT APPLICATION TO CITY OF DAYTONA BEACH STORM WATER COORDINATOR AT 125 BASIN STREET, SUITE 100, DAYTONA BEACH, FLORIDA 32114 PRIOR TO ANY USE OF MS4. FAILURE TO COMPLY WILL RESULT IN THE IMMEDIATE TERMINATION OF ACCESS TO THE CITY'S MS4 SYSTEM.
3. MAINLINE TOLERANCES FOR SANITARY SEWER VERTICAL DEFLECTION SHALL BE NO MORE THAN 0.5" IN DEPTH AND NOT EXCEEDING THREE (3) FEET IN LENGTH. SEE VIDEO GUIDELINES ON "PIG LAUNCH/RECEIVING AND VIDEO GUIDELINES" DETAIL SHEET.
4. UPON COMPLETION, THE CONTRACTOR SHALL PROVIDE THE CITY UTILITIES DEPARTMENT WITH A CCTV INSPECTION LOG ON DVD AND A PRINTED REPORT FOR ALL GRAVITY MAINS AND LATERALS CONSTRUCTED. ALL WORK, WITH THE EXCEPTION OF FINAL GRADE ADJUSTMENT TO MANHOLES, BENCHES AND FLOW CHANNELS SHALL BE COMPLETED PRIOR TO COMMENCING THE CCTV INSPECTION. THE CONTRACTOR SHALL COORDINATE THE CCTV INSPECTION TIME WITH THE CITY UTILITY INSPECTOR PRIOR TO INITIATING THE WORK. FINAL PAVING SHALL NOT COMMENCE UNTIL APPROVAL IS RECEIVED FROM THE CITY UTILITY INSPECTOR. CCTV SEWER VIDEOS AND AS-BUILT DOCUMENTS MUST BE REVIEWED AND APPROVED BY THE EOR STATING COMPLIANCE WITH CITY STANDARDS PRIOR TO REVIEW BY THE CITY. CCTV MUST BE PERFORMED WITH CITY INSPECTOR AND/OR EOR PRESENT.
5. SEWER LATERAL LOCATIONS SHALL BE MARKED ALONG THE OUTSIDE OF THE CURB WITH A SAW CUT "V" OR BY A METAL TAB SET INTO THE PAVEMENT.
6. THE CONTRACTOR SHALL BE REQUIRED TO PIG ALL FORCE MAINS EQUAL TO OR GREATER THAN 6" IN DIAMETER AND PRIMARY TRANSMISSION MAINS LOCATED ON COLLECTOR AND ARTERIAL ROADWAYS. LAUNCHING AND EXTRACTION POINTS SHALL BE DETERMINED BY THE CITY.
7. WITH RESPECT TO TIE-IN CONNECTIONS AND CORING OPERATIONS, THE CITY RESERVES THE RIGHT TO REQUIRE CONNECTIONS TO BE PERFORMED DURING PERIODS OF LOW FLOW (MIDNIGHT TO 6:00 A.M.) (IN ORDER TO MINIMIZE SERVICE DISRUPTION TO EXISTING CUSTOMERS.
8. ALL WORK ON SANITARY SEWER FACILITIES OWNED OR PROPOSED TO BE OWNED BY THE CITY SHALL BE PERFORMED BY AN UNDERGROUND UTILITY CONTRACTOR OR GENERAL CONTRACTOR LICENSED IN THE STATE OF FLORIDA AND REGISTERED WITH THE CITY.
9. UPON CONSTRUCTION COMPLETION AND ACCEPTANCE OF THE SYSTEM, IT IS THE DESIGN ENGINEER'S RESPONSIBILITY TO ENSURE THAT THE SYSTEM IS PROPERLY CERTIFIED AND ACCEPTED BY THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION AND AS-BUILTS ARE PROVIDED TO THE CITY'S UTILITIES DEPARTMENT PRIOR TO ANY USE OF THE SYSTEM.
10. PLANS SHALL DIMENSION THE LOCATION OF ALL FORCE MAINS, VALVES, MANHOLES & LATERALS FROM THE BASELINE OF CONSTRUCTION AND FROM THE RIGHT-OF-WAY LINE.
11. LANDSCAPE PLANS SHALL CLEARLY DEPICT THE LOCATION OF PLANTINGS RELATIVE TO THE LOCATION OF PUBLIC UTILITIES AND STORM WATER INFRASTRUCTURE.
12. THE CITY'S AS-BUILT DRAWING REQUIREMENTS ARE ATTACHED TO THE BACK OF THE UTILITIES DEPARTMENT'S STANDARD DETAILS.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



SANITARY SEWER
CONSTRUCTION & DESIGN
STANDARDS
(PAGE 1 OF 4)
S-1

FY-21/22
Drawing Date: 01/08
Drawn By: MNL
Checked By: JAP
Scale: NTS
Revision Date: 03/20
File Name: Sanitary Sewer
Standards S-1
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SANITARY SEWER
CONSTRUCTION & DESIGN STANDARDS
(CONT'D)

13. ALL GRAVITY SANITARY SEWER MAINS SHALL BE A MINIMUM OF 8" DIAMETER. COMMERCIAL SERVICE LATERALS SHALL BE GREEN AND A MINIMUM OF 6" IN DIAMETER, OR LARGER. ALL SINGLE FAMILY RESIDENTIAL SERVICE LATERALS SHALL BE 6" SINGLE SERVICES WITH CLEAN OUTS INSTALLED AT PROPERTY LINES.
14. ALL GRAVITY SANITARY SEWER MAINS SHALL BE GREEN PVC SDR-26, ASTM D-3034, OR C-900 DR-18 MINIMUM PRESSURE CLASS 150. IN PLACES WHERE A MINIMUM COVER OF 4 FEET CANNOT BE MAINTAINED OR IN DEPTHS OF 10 FEET OR GREATER (CUT TO INVERT) MAINS SHALL BE C-900 DR-18.
15. FOR SINGLE FAMILY HOMES, SINGLE SIX INCH SEWER SERVICE LATERALS SHALL BE CONSTRUCTED AT EACH LOT OR UNIT AND LOCATED ON THE DOWNSTREAM SIDE OF THE LOT CENTER LINE. THESE SERVICES SHALL BE EXTENDED 4 FEET INTO THE ADJACENT PROPERTY WITH A PVC RISER AND PLUG EASILY VISIBLE FROM THE ROAD. RUBBER SEAL FITTINGS SHALL BE USED ON ALL LINES. NO GLUED JOINTS ARE PERMITTED ON LATERALS.
16. FOR MULTI-FAMILY AND COMMERCIAL SITES, SIX INCH MINIMUM SEWER SERVICES AND CLEANOUTS SHALL BE PROVIDED AS APPROVED BY THE CITY.
17. FORCE MAINS LESS THAN 18" MAY USE PVC C900 OR C905 DR-18. FORCE MAINS 18" AND LARGER SHALL BE DUCTILE IRON PIPE (D.I.P.), CLASS 350, EPOXY LINED. ALL NON DUCTILE IRON PIPE HORIZONTAL DIRECTIONAL DRILL FORCE MAINS SHALL HAVE A MINIMUM WORKING PRESSURE OF 160 PSI. THE CITY MAY REQUIRE A HIGHER PRESSURE RATING DEPENDING ON SITE CONDITIONS. INSIDE DIAMETER OF NON D.I.P. HORIZONTAL DIRECTIONAL DRILL PIPE SHALL MATCH THE INSIDE DIAMETER OF CONNECTING PIPES. DIRECTIONAL DRILLS SHALL HAVE FUSED MJ ADAPTERS.
18. FORCE MAIN MINIMUM DEPTH OF COVER SHALL BE 48". ALL FORCE MAINS SHALL BE DISTINCTLY MARKED BY GREEN STRIPES OR COLORED GREEN.
19. ALL FITTINGS, VALVES, ETC. SHALL BE DUCTILE IRON (MJ OR FLANGED) AND RESTRAINED. ALL FORCE MAINS SHALL USE THRUST RESTRAINT AS CALCULATED BY A PROGRAM AVAILABLE AT (EDBA.COM). THE RESTRAINED JOINT LENGTHS SHALL BE SHOWN ON THE PLANS PROVIDED BY THE ENGINEER OF RECORD.
20. ALL RESTRAINED PIPE BELL JOINTS SHALL USE BELL RESTRAINTS. GRIPPER TYPE GASKETS CAN BE USED FOR DUCTILE IRON PIPE JOINTS. CONCRETE THRUST BLOCKS ARE NOT PERMITTED.
21. AS A GENERAL RULE, THE NUMBER OF JOINTS SHALL BE LIMITED WHENEVER POSSIBLE. IN SPECIAL CASES WHERE A POINT REPAIR TO AN 8" TO 12" PVC SEWER MAIN IS REQUIRED, THE PROPER RIGID WRAP AROUND SLEEVE MAY BE ALLOWED BY CITY SPECIAL APPROVAL.
22. ALL IN-LINE SANITARY SEWER FORCE MAIN VALVES SHALL BE PLUG VALVES UNLESS OTHERWISE NOTED. VALVES SHALL BE INSTALLED AT EACH END OF THE FORCE MAIN AND ON STUP OUTS.
23. ALL C-900 PVC DR-18 PIPE REQUIREMENTS REFERENCE THE C-900 STANDARDS. DR UPGRADES FOR BURST PROTECTION MAY BE REQUIRED WHEN USING THE C-900 STANDARDS.
24. MINIMUM GRAVITY SANITARY SEWER SLOPES ARE AS FOLLOWS: 8" PIPE 0.40%, 10" PIPE 0.28%, 12" PIPE 0.22%, 15" PIPE 0.15%, OR OTHERWISE NOTED BY UTILITIES DEPT.
25. GRAVITY SANITARY SEWER LINES SHALL BE INSTALLED WHENEVER POSSIBLE UNDER PAVED AREAS WITHIN PUBLIC RIGHT-OF-WAYS. UTILITY EASEMENTS SHALL BE PROVIDED WHENEVER PUBLICLY-OWNED SEWER LINES ARE CONSTRUCTED OUTSIDE OF A PUBLIC RIGHT-OF-WAY.
26. GRAVITY SANITARY SEWER LINE CONSTRUCTION SHALL BE ACCOMPLISHED BY THE USE OF A LASER INSTRUMENT UNLESS ANOTHER METHOD IS APPROVED BY THE CITY.
27. DURING PIPE INSTALLATION DEWATER THE GROUND SUFFICIENTLY TO KEEP THE GROUNDWATER ELEVATION A MINIMUM OF 6" BELOW THE PIPE BEING INSTALLED WITHIN THE AREA OF THE TRENCH.
28. ALL PIPES SHALL BE INSTALLED ON A FIRM FOUNDATION, SOFT OR SPONGY BEDDING FOR PIPES IS NOT ACCEPTABLE. ANY UNSUITABLE MATERIAL SHALL BE REMOVED AND REPLACED WITH A DRY, COMPACTED, GRANULAR MATERIAL SATISFACTORY TO THE CITY.
29. ON ALL EXCAVATION AND BACKFILLING THE CONTRACTOR SHALL PROVIDE ADEQUATE SHEETING AND BRACING IN ORDER TO PROVIDE A SAFE WORKING ENVIRONMENT.
30. ALL TRENCHES SHALL BE BACKFILLED WITH ACCEPTABLE MATERIAL AND COMPACTED TO THE SPECIFIED MINIMUM COMPACTION (95% IN UNPAVED AREAS AND 98% IN PAVED AREAS) AND THE OPTIMUM DENSITY BASED ON THE ASTM D-1557 PROCTOR TEST.
31. ALL GASKETS SHALL BE LUBRICATED BEFORE INSTALLATION.

THE CITY OF DAYTONA BEACH
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CONSTRUCTION & DESIGN
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SANITARY SEWER
CONSTRUCTION & DESIGN STANDARDS (CONT'D)

32. THE CONTRACTOR SHALL INSTALL A #12-GAUGE MINIMUM COPPER TRACER WIRE TAPED TO THE TOP OF THE PIPE AT INTERVALS NO GREATER THEN 4'-FEET. COPPER WIRE SHALL HAVE A MIN. TENSILE STRENGTH/BREAK LOAD OF 452 LBS. AND REQUIRES APPROVAL BY THE CITY FOR THE FULL LENGTH OF ALL SEWER FORCE MAINS. THE PIPE LOCATOR TAPE SHALL BE INSTALLED BETWEEN 15" AND 24" BELOW FINISHED GRADE OR AS DIRECTED BY THE MANUFACTURER. TAPE SHALL BE COLOR CODED GREEN FOR FORCE MAINS. LOCATER WIRE SHALL TERMINATE AT A LOCATION AND IN A MANNER CONVENIENT FOR CITY LOCATER STAFF.
33. TRACER WIRE SHALL BE TESTED FOR CONTINUITY UNDER SUPERVISION OF A CITY REPRESENTATIVE AFTER INSTALLATION.
34. ALL SEWER LINES CONSTRUCTED OUTSIDE OF PUBLIC RIGHT-OF-WAYS WITHIN SIDE YARDS, BACKYARDS, AND OTHER POORLY ACCESSIBLE AREAS SHALL BE CONSTRUCTED OF GREEN C-900 PVC. ABSOLUTELY NO USE OF PLASTIC STYRENE FITTINGS SHALL BE ALLOWED.
35. ALL LOCAL COLLECTION SANITARY SEWER MANHOLES SHALL BE PRECAST WITH A MINIMUM INSIDE DIAMETER OF 4 FEET. MANHOLES OVER 6 FEET DEEP SHALL HAVE A MINIMUM 4 FT TALL PRE-CAST BOTTOM SECTION.
36. STANDARD MANHOLES SHALL BE LOCATED AT INTERVALS NOT EXCEEDING 400 FEET.
37. MANHOLE RIMS SHALL BE FLUSH WITH THE FINISH GRADE ELEVATION IN PAVED AREAS AND A MINIMUM OF 0.5 FEET AND MAXIMUM OF 1.0 FOOT ABOVE GRADE IN UNPAVED AREAS.
38. THE CONTRACTOR SHALL CONSTRUCT SANITARY SEWER MANHOLES IN SUCH A WAY THAT SEWER LINES DO NOT INTERSECT SEALED JOINTS BETWEEN SECTIONS OF THE MANHOLE.
39. INDIVIDUAL SANITARY SERVICES SHALL NOT BE CONNECTED DIRECTLY INTO MANHOLES AND MUST BE CONNECTED TO SEWER MAINS BY USE OF WYE CONNECTIONS UNLESS OTHERWISE APPROVED BY THE CITY.
40. SANITARY SEWER DROP MANHOLES SHALL ONLY BE USED UNDER SPECIAL CONDITIONS AS APPROVED BY THE CITY. DROPS LESS THAN 3.0' ARE NOT ALLOWED. INSIDE DROPS ARE NOT ALLOWED.
41. SANITARY SEWER MANHOLES WITH SEWER FORCE MAINS DISCHARGING DIRECTLY INTO THEM SHALL BE FIBERGLASS OR POLY-ETHYLENE LINED. RETRO-FITTING OF MANHOLES WITH LINERS IS REQUIRED WHEN NEW CONNECTIONS ARE MADE. FIBERGLASS SHALL BE A MINIMUM 1/2" THICK UNLESS APPROVED OTHERWISE BY THE CITY. OTHER LINING METHODS AND MATERIALS MAY BE CONSIDERED ON A CASE BY CASE BASIS. UNDER CIRCUMSTANCES WHERE HYDROGEN SULFIDE IS A SIGNIFICANT CONCERN, MANHOLES UPSTREAM AND/OR DOWNSTREAM OF THE FORCE MAIN TIE-IN MAY BE REQUIRED TO HAVE LININGS INSTALLED.
42. EZ-WRAP PLASTIC, AS MANUFACTURED BY PRESS SEAL GASKET CORPORATION, SHALL BE USED ON THE OUTSIDE OF ALL MANHOLE AND WETWELLS JOINTS. APPLY ONE LAYER OF 9" WRAP CENTERED ON EACH JOINT. A CITY INSPECTOR SHALL INSPECT ALL JOINT SEALS PRIOR TO BACKFILLING OPERATIONS.
43. CONTRACTOR FOR DEVELOPMENTS WITH THE POTENTIAL TO DISCHARGE INDUSTRIAL OR COMMERCIAL WASTE INTO THE SEWER SYSTEM SHALL CONSTRUCT AND MAINTAIN AT THE OWNER'S EXPENSE A SUITABLE CONTROL MANHOLE OR MANHOLES DOWNSTREAM OF ANY TREATMENT, STORAGE, OR OTHER APPROVED WORKING PREPARED TO THE CITY'S COLLECTION SYSTEM TO FACILITATE OBSERVATION, MEASUREMENT, AND SAMPLING OF ALL WASTE, INCLUDING ALL DOMESTIC SEWAGE FROM THE ESTABLISHMENT.
44. CONTROL MANHOLE OR MANHOLES SHALL BE CONSTRUCTED AT LOCATIONS EASILY ACCESSIBLE AT ALL TIMES TO CITY PERSONNEL FOR SAMPLING.
45. SANITARY SEWER LIFT STATIONS AND FORCE MAINS SHALL BE APPROVED BY THE CITY. LIFT STATIONS SHALL BE CONSTRUCTED WITH A MINIMUM WET WELL AS SHOWN IN THE LIFT STATION DETAIL.
46. IT SHALL BE THE RESPONSIBILITY OF THE DESIGN ENGINEER TO PREPARE AND SUBMIT FLOTATION CALCULATIONS TO SIZE THE BASE OF THE WET WELL, AND ANY MANHOLES AS DEEMED NECESSARY BY THE CITY.
47. ALL FITTINGS SHALL MEET THE MINIMUM RESTRAINT REQUIREMENTS PER ANSI/AWWA/DIPRA, AND ALL PRESSURE PIPES UNDER ROADWAYS SHALL BE RESTRAINED.

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



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SANITARY SEWER
CONSTRUCTION & DESIGN STANDARDS
TESTING REQUIREMENTS:

1. THE CONTRACTOR SHALL EMPLOY AN INDEPENDENT TESTING LABORATORY AT HIS OWN EXPENSE TO INSURE COMPACTION OF ALL FILL MATERIAL IS COMPLETED PROPERLY. TESTS SHALL BE DONE ONE FOOT ABOVE THE PIPE AND AT ONE FOOT VERTICAL INTERVALS UNTIL FINAL GRADE IS REACHED. TESTS SHALL BE COMPLETED A MINIMUM FREQUENCY OF ONE SET OF TESTS EACH 300 FOOT LENGTH OF PIPING AND ONE ADDITIONAL SET OF TESTS AT EVERY MANHOLE. IDENTIFICATION OF TEST LOCATIONS SHALL BE CLEARLY INDICATED ON TEST REPORTS. TEST RESULTS SHALL BE FORWARDED PROMPTLY TO THE CITY'S DESIGNATED SITE INSPECTOR.
2. ALL TESTING REQUIRED BY THE CITY SHALL BE PAID FOR BY THE CONTRACTOR / DEVELOPER.
3. THE CITY OF DAYTONA BEACH RESERVES THE RIGHT TO REQUIRE THE DEVELOPER TO PERFORM VACUUM TESTING OF ALL SANITARY MANHOLES AND TO AIR TEST SEWER MAINS.
4. ALL PROPOSED SEWER FORCE MAINS SHALL BE FLUSHED, PRESSURE TESTED AND CLEARED FOR SERVICE IN ACCORDANCE WITH THE FLORIDA DEPARTMENT OF ENVIRONMENTAL PROTECTION REQUIREMENTS. THE CONTRACTOR SHALL NOTIFY THE CITY'S DESIGNATED SITE INSPECTOR AT LEAST 3 BUSINESS DAYS PRIOR TO BEGINNING A FULL-DIAMETER FLUSH OF THE MAINS FOR PRESSURE TESTING.
5. SANITARY SEWER FORCE MAINS SHALL BE PRESSURE TESTED TO 100 PSI FOR 2 HOURS WITH ALLOWABLE LEAKAGE BASED ON THE TABLE BELOW.

ALLOWABLE LEAKAGE PER 1000 FT. OF PIPELINE * -GPH

AVERAGE TEST PRESSURE (PSI)		NOMINAL PIPE DIAMETER - INCHES																		AVERAGE TEST PRESSURE (PSI)	
		3	4	6	8	10	12	14	16	18	20	24	30	36	42	48	54	60	64	72	
450	0.48	0.64	0.95	1.27	1.59	1.92	2.32	2.55	2.87	3.18	3.82	4.785	736	697	648	609	568	0.19	450		
400	0.43	0.60	0.90	1.20	1.50	1.80	2.10	2.40	2.70	3.00	3.60	4.505	416	631	712	811	919	0.61	400		
350	0.42	0.56	0.84	1.12	1.40	1.69	1.97	2.25	2.53	2.81	3.37	4.215	0.65	906	747	588	438	89	350		
300	0.39	0.52	0.78	1.04	1.30	1.56	1.82	2.08	2.34	2.60	3.12	3.904	0.685	466	247	027	806	32	300		
275	0.37	0.50	0.75	1.00	1.24	1.49	1.74	1.99	2.24	2.49	2.98	3.734	0.65	236	986	727	477	97	275		
250	0.36	0.47	0.71	0.95	1.19	1.42	1.66	1.90	2.14	2.37	2.85	3.564	0.27	4.995	70	6.47	1.127	60	250		
225	0.34	0.45	0.68	0.90	1.13	1.35	1.58	1.80	2.03	2.25	2.70	3.384	0.05	4.735	416	036	768	7	225		
200	0.32	0.43	0.64	0.85	1.06	1.28	1.49	1.70	1.91	2.12	2.55	3.195	0.22	4.495	0.95	736	376	80	200		
175	0.30	0.40	0.59	0.80	0.99	1.19	1.39	1.59	1.79	1.98	2.38	2.983	0.584	174	775	365	966	36	175		
150	0.28	0.37	0.55	0.74	0.92	1.10	1.29	1.47	1.66	1.84	2.21	2.763	0.313	864	414	975	525	88	150		
125	0.25	0.34	0.50	0.67	0.84	1.01	1.18	1.34	1.51	1.68	2.01	2.523	0.023	534	034	535	045	37	125		
100	0.23	0.30	0.45	0.60	0.75	0.90	1.05	1.20	1.35	1.50	1.80	2.262	0.703	153	604	054	504	80	100		

* IF THE PIPELINE UNDER TEST CONTAINS SECTIONS OF VARIOUS DIAMETERS, THE ALLOWABLE LEAKAGE WILL BE THE SUM OF THE COMPUTED LEAKAGE FOR EACH SIZE.

$$L = \frac{SD \sqrt{P}}{133,200}$$

WHERE:

L = ALLOWABLE LEAKAGE, IN GALLONS PER HOUR

S = LENGTH OF PIPE TESTED, IN FEET

D = NOMINAL DIAMETER OF PIPE, IN INCHES

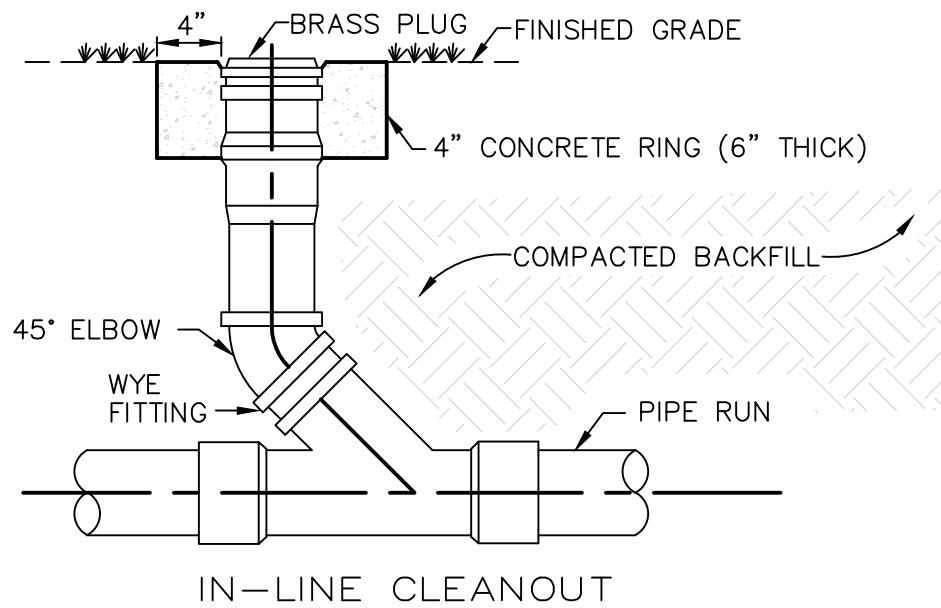
P = AVERAGE TEST PRESSURE DURING THE LEAKAGE TEST, IN POUNDS PER SQUARE INCH (GAUGE)

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT

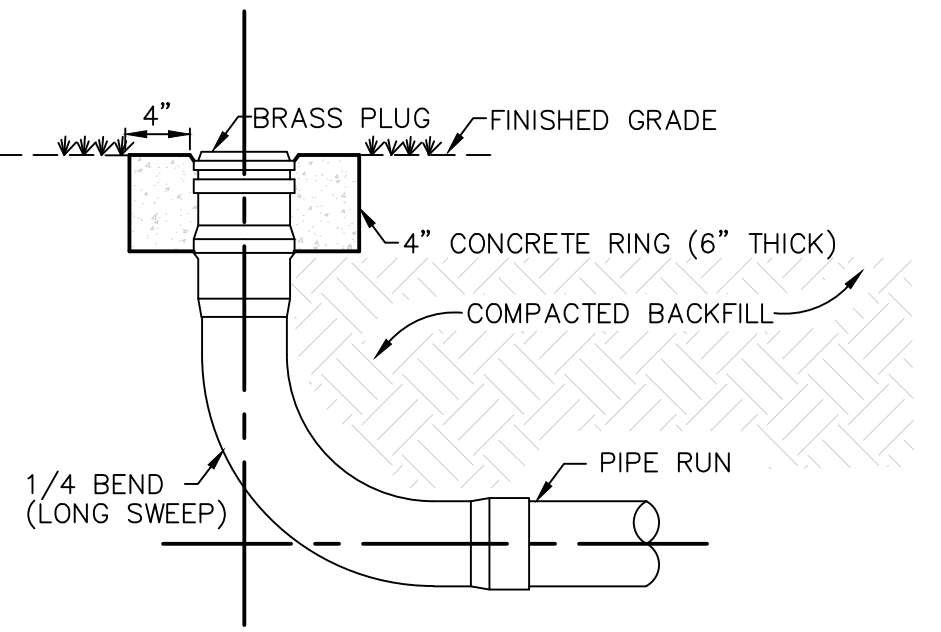


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TESTING REQUIREMENTS
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IN-LINE CLEANOUT



TERMINAL CLEANOUT

NOTE:
CONCRETE COLLAR REQUIRED IN UNPAVED AREAS

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SANITARY LATERAL
CLEANOUT
DETAIL
S-10

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SANITARY SEWER
MANHOLE AND
GENERAL NOTES
S-11

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SANITARY MANHOLE
INVERT DETAIL
S-13

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SANITARY SEWER
COVER DETAIL
S-15

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& ASSOCIATES, INC.

PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
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CERTIFICATE OF AUTHORIZATION NUMBER 00003910

CIRCLE C BOAT & RV STORAGE

DAYTONA BEACH * FLORIDA

SANITARY SEWER DETAILS

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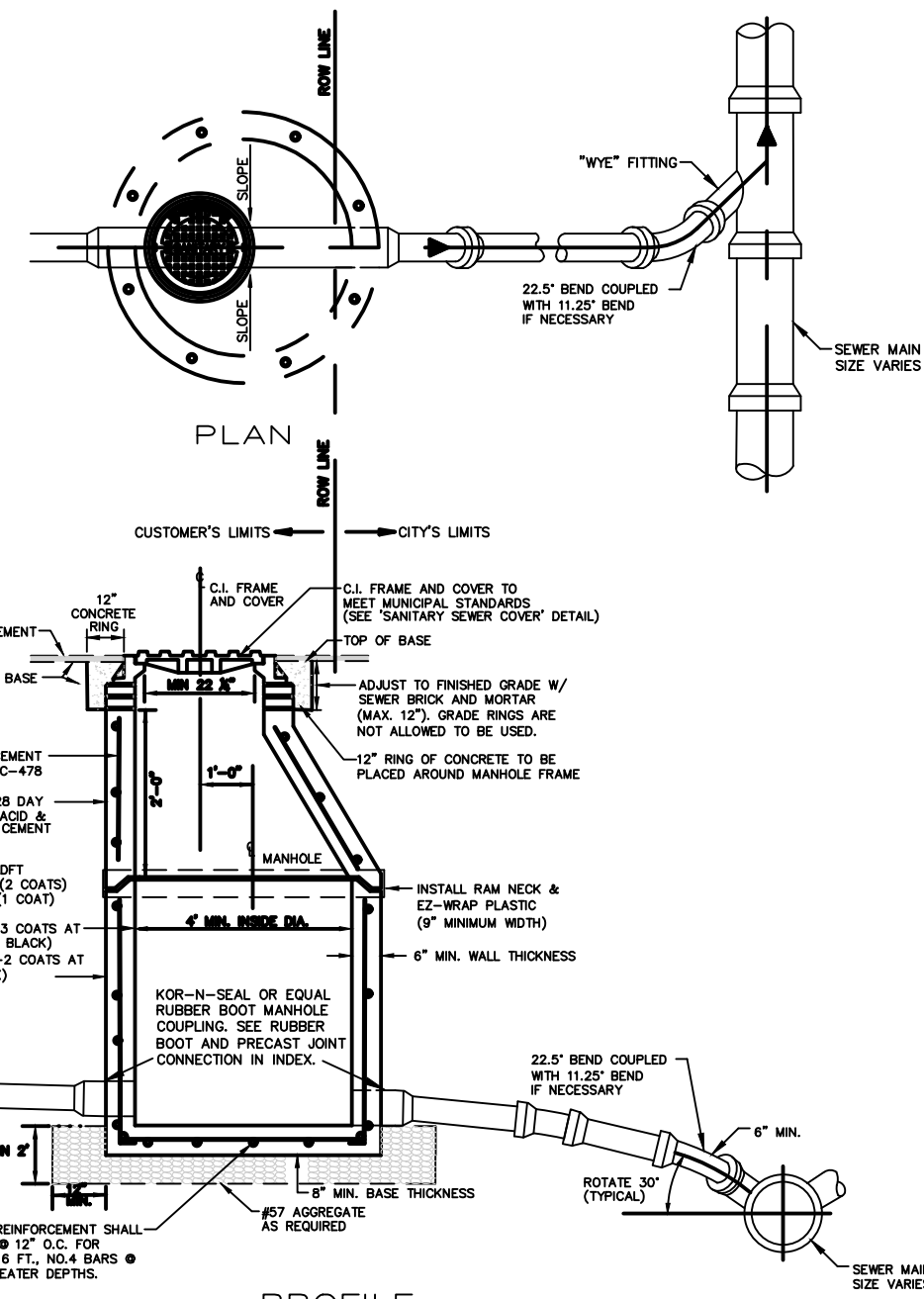
Drawn By: M. GRECO

Date: 09/30/2020

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SCALE: NTS

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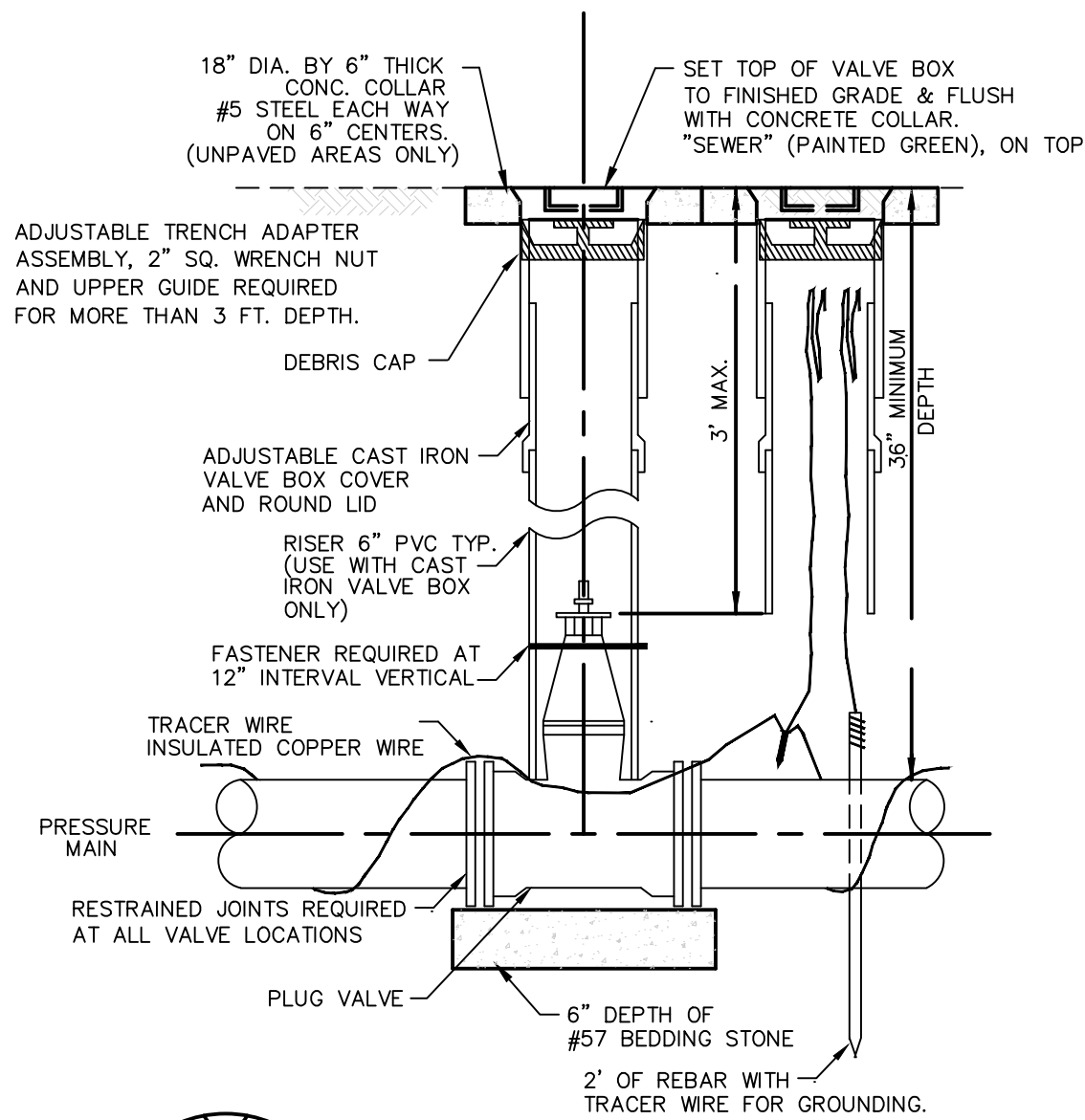
- NOTES:
1. MANHOLE IS TO BE TYPE P (ALT A OR B) AND COMPLY WITH FOOT STANDARD PLANS.
 2. MANHOLE HEIGHT SHALL BE THREE TIMES THE OD OF THE LATERAL BUT NO LESS THAN 18\".
 3. WHEN VCP (CLAY) MAIN IS ENCOUNTERED UTILIZE A PVC WYE WITH TWO PVC TO VCP COUPLINGS FOR SERVICE CONNECTION.
 4. ALL BENCHES AND INVERTS SHALL COMPLY TO OUR STANDARDS IN "SANITARY SEWER MANHOLE AND GENERAL NOTES".

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COMMERCIAL
SANITARY LATERAL
DETAIL
S-9 A

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- NOTES:
1. SEE COB'S APPROVED PRODUCT LIST FOR ACCEPTABLE MANUFACTURERS.
 2. INSTALL RESTRAINED JOINTS, AS REQUIRED, FROM DEFLECTION POINT IN BOTH DIRECTIONS (20' MIN.)
 3. TRACER WIRE SHALL BE A MINIMUM 12 GAUGE WITH A TENSILE STRENGTH/BREAK LOAD OF 452 LBS. SEE TRACER WIRE SPECIFICATION #15049

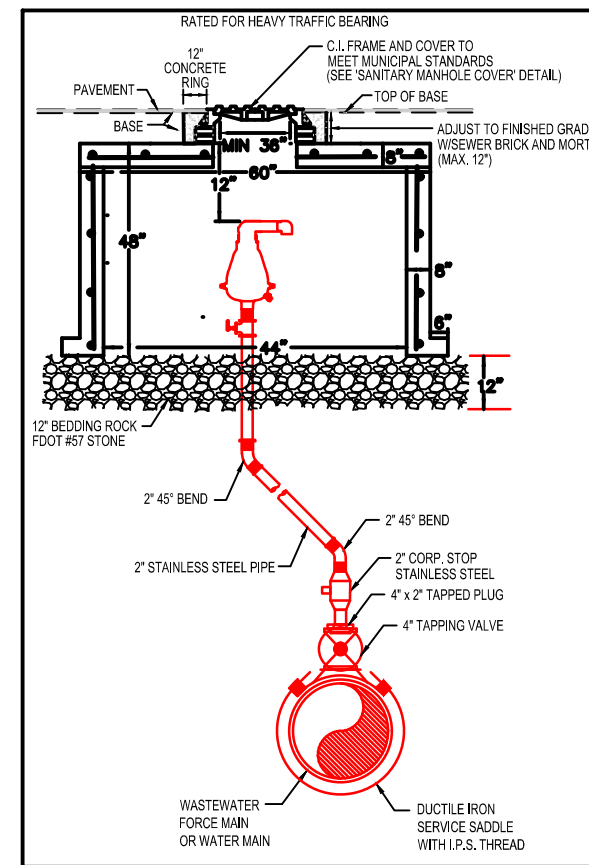


THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



SANITARY VALVE AND
VALVE BOX
DETAIL
S-16

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- NOTES:
1. VALVES SHALL BE CENTERED IN THE BOX.
 2. ROCK SHALL BE COMPACTED TO A FIRM AND UNWEAVING CONDITION.
 3. PIPING BETWEEN THE VALVE AND MAIN SHALL BE CONFIGURED TO BEST FIT FOR THE SITE CONDITION AS APPROVED BY THE CITY.
 4. TOP OF BOX ON SANITARY FORCE MAIN SHALL BE CLEARLY PERMANENTLY LABELED AS SANITARY FM.
 5. TOP OF ALL BOXES SHALL BE CLEARLY AND PERMANENTLY LABELED AS TO VALVE TYPE (AIR RELEASE, VACUUM, OR AR/VAC COMBINATION).
 6. IF BOX IS TO BE PLACED IN ROAD OR ADJACENT TO THE ROAD USE A HEAVY TRAFFIC BOX COR SYSTEM GROUP, BOX # B1430648 OR CITY APPROVED EQUIV. RATED FOR HEAVY TRAFFIC BEARINGS.
 7. PIPE SIZES UP TO 12\".
 8. PIPE SIZES 14\".
 9. PIPE SIZES LARGER THAN 36\".
 10. THE SIZE OF AR/V IS DETERMINED BY PRESSURE, FLOW AND HYDRAULICS.
 11. ANY LOCATIONS TO BE FINALIZED AFTER REVIEW OF PRELIMINARY AS-BUILT DATA.

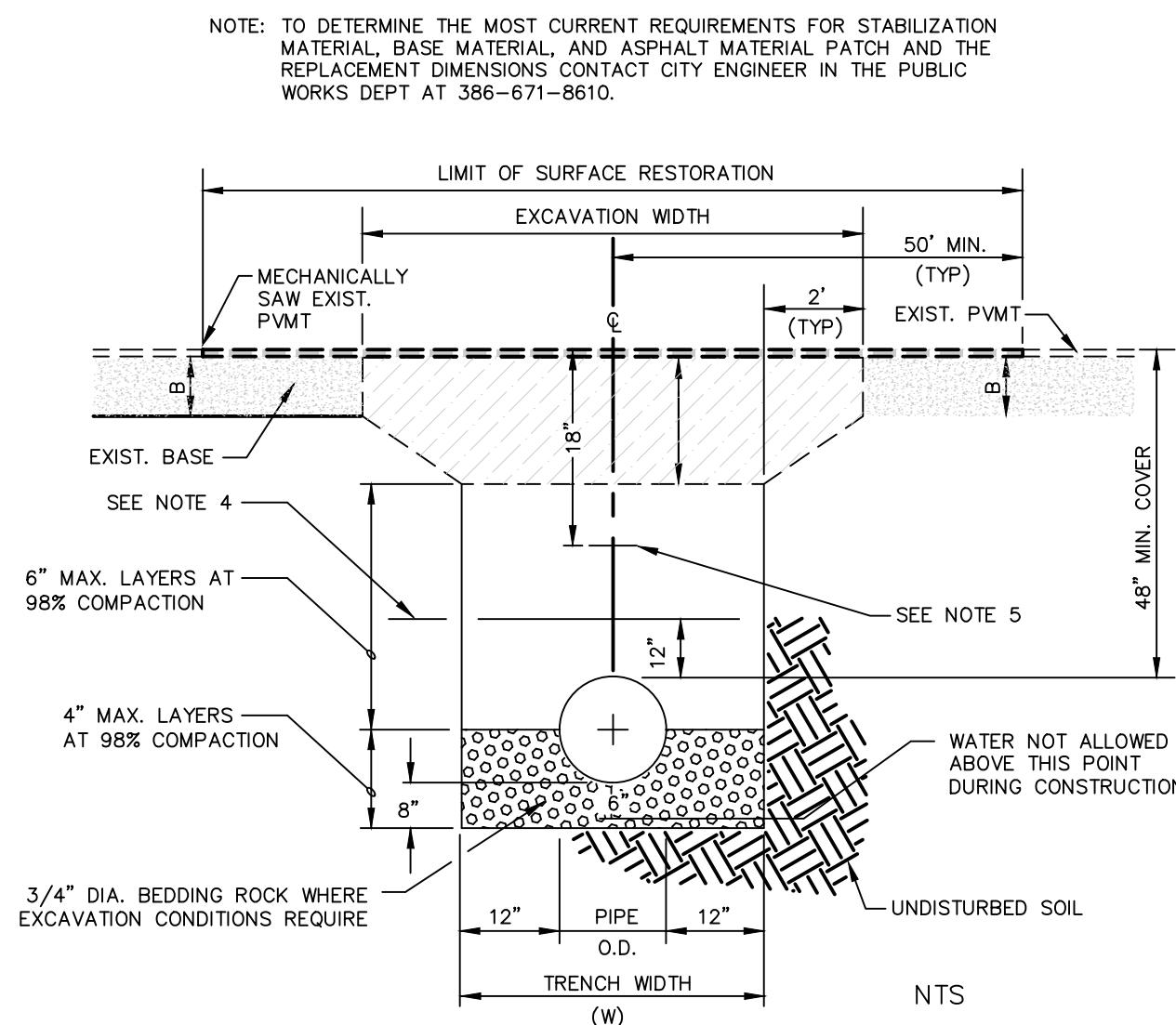
OFFSET AIR/VAC RELEASE VALVE
NTS

THE CITY OF DAYTONA BEACH
UTILITIES DEPARTMENT



AUTOMATIC ARV/VACUUM
VALVE DETAIL
S-18

FY-21/22
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- NOTES:
1. WHERE SOIL CONDITIONS CAN NOT BE MAINTAINED AS SHOWN ABOVE, PROVIDE APPROVED METHOD OF CONSTRUCTION.
 2. SHEETING WILL BE REQUIRED AS DETERMINED IN THE FIELD.
 3. COMPACTION PERCENTAGES SHOWN REFER TO A.A.S.H.T.O. T-180. PROVIDE COMPACTION TEST REPORTS TO CITY INSPECTOR.
 4. MECHANICAL COMPACTION NOT ALLOWED BELOW THIS LEVEL.
 5. INSTALL METALLIC TAPE AND UF #12 INSULATED SINGLE STRAND COPPER WIRE OVER FULL LENGTH OF PIPE.
 6. THE CONTRACTOR SHALL, UNLESS OTHERWISE NOTED, RESTORE ALL STRIPING, PAVEMENT MARKINGS, DELINEATORS, SIGNAGE AND TRAFFIC SIGNAL SYSTEM COMPONENTS DISTURBED DURING CONSTRUCTION ACTIVITIES. COST OF ALL WORK AND MATERIALS WILL BE CONSIDERED INCIDENTAL TO PATCH MATERIAL ITEMS.

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PAVEMENT CUT
AND PATCH
DETAIL
S-7

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DEV 2022-020
CITY APPROVAL STAMP

MAG	REVISED PER CITY COMMENTS	REVISIONS
7	10/27/2023	REVISED PER CITY COMMENTS
6	10/05/2023	REVISED PER CITY COMMENTS
5	09/19/2023	REVISED PER CITY COMMENTS
4	05/23/2023	REVISED PER CITY COMMENTS
3	02/08/2023	REVISED PER CITY COMMENTS
2	09/13/2022	REVISED PER CITY COMMENTS
1	04/26/2022	REVISED PER CITY COMMENTS
NO.	DATE	DESCRIPTION
BY		REVISIONS

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DAYTONA BEACH * FLORIDA
SANITARY SEWER DETAILS

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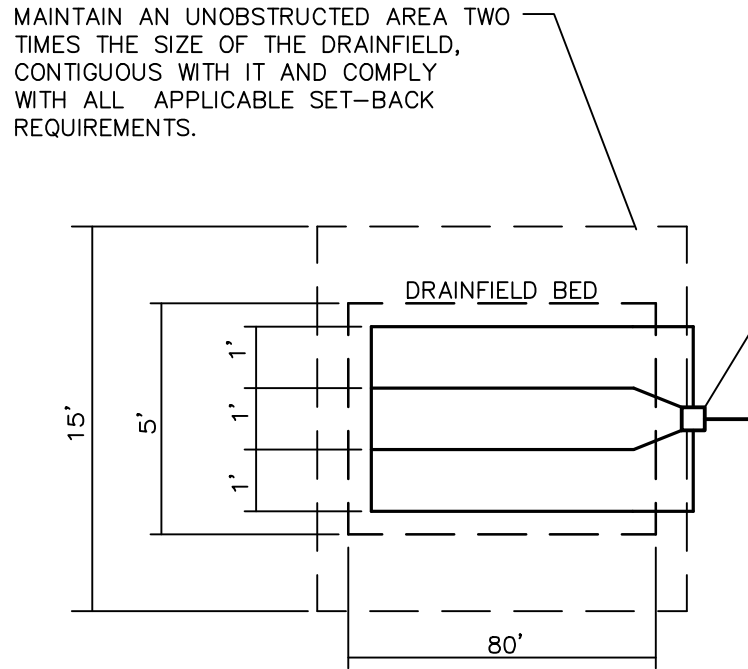
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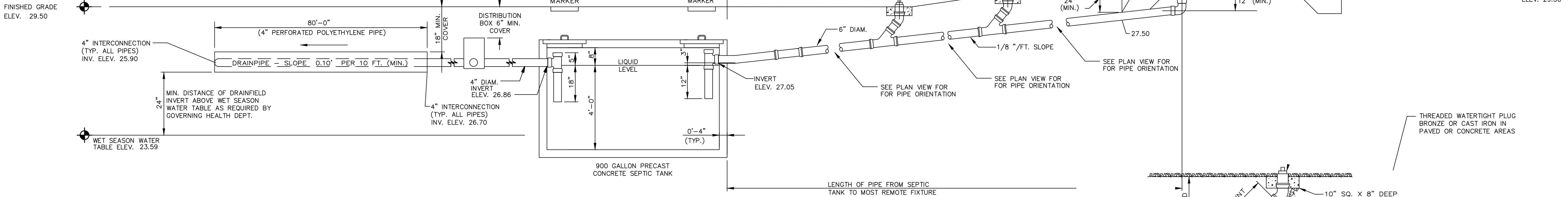
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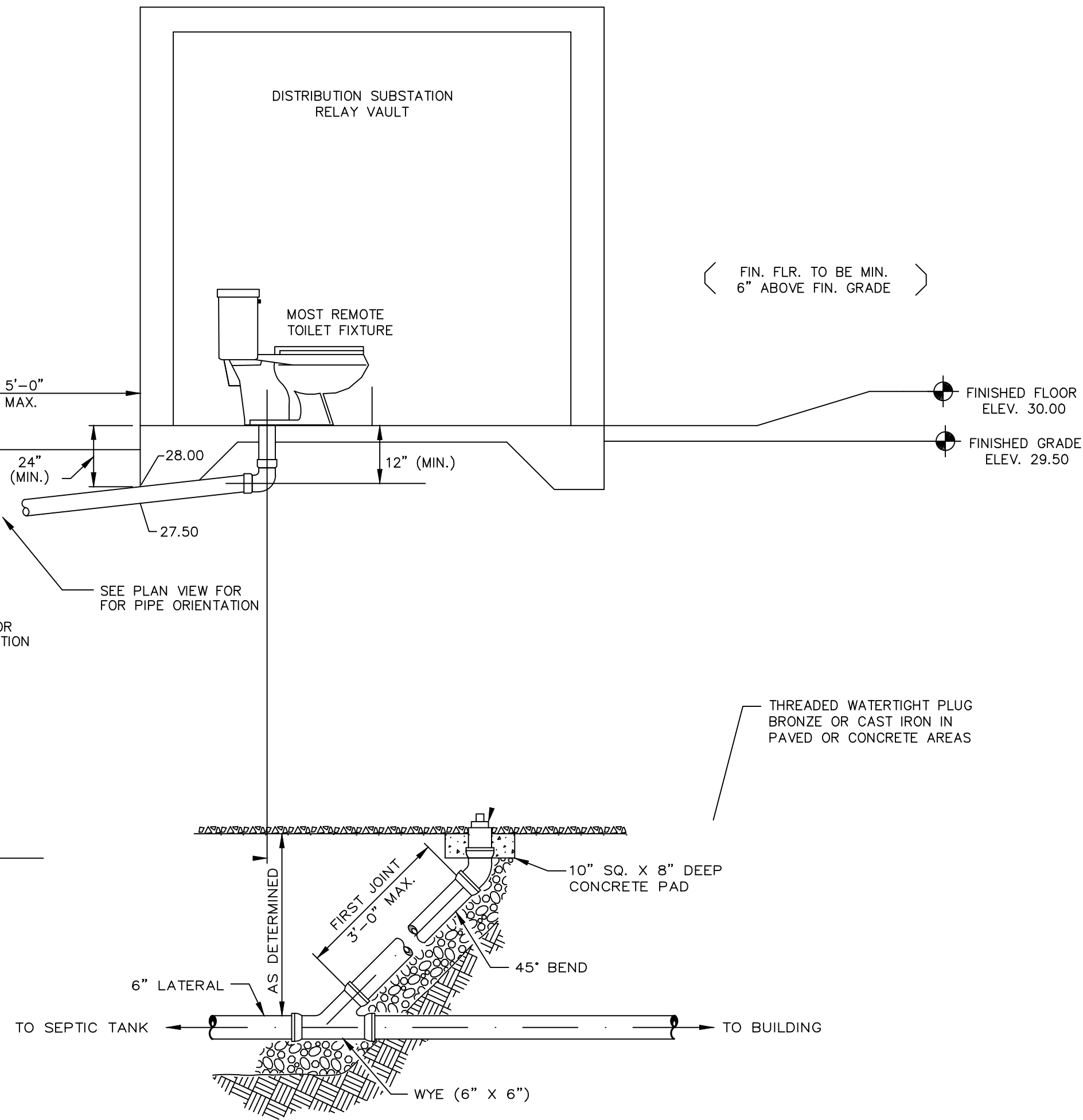
DRAINFIELD DIAGRAM

N.T.S.



SECTION THRU SEPTIC TANK SYSTEM

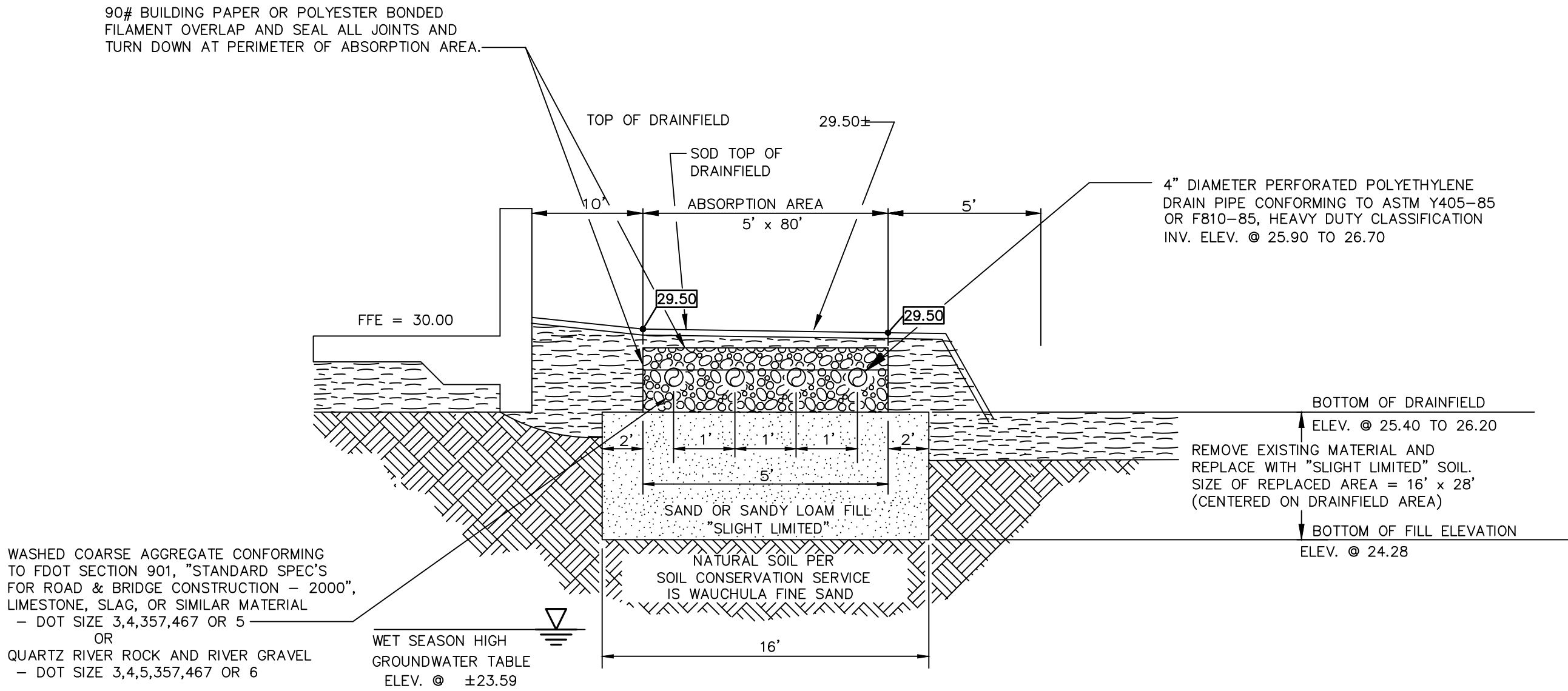
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SEWER CLEANOUT

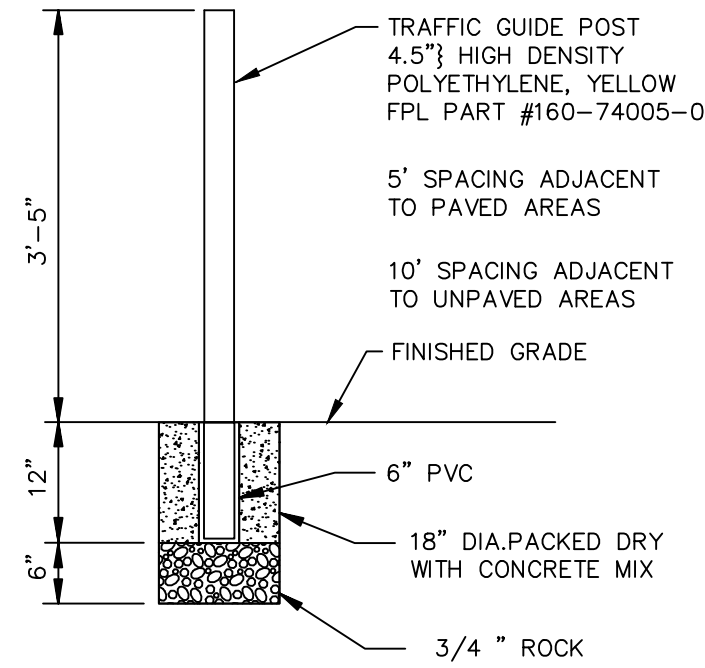
NOTES

- SUBSURFACE SEWAGE DISPOSAL SYSTEM SHALL COMPLY WITH CHAPTER 64E-6 OF THE RULES OF THE DEPARTMENT OF HEALTH AND REHABILITATIVE SERVICES "STANDARDS FOR ON-SITE SEWAGE DISPOSAL SYSTEMS"
- THE SEWAGE DISPOSAL SYSTEM IS CONFIGURED TO PROVIDE THE FOLLOWING MINIMUM CLEARANCES TO EXISTING/PROPOSED STRUCTURES:
 - DISTANCE TO PRIVATE POTABLE WELL (AS MEASURED FROM NEAREST CORNER OF DRAINFIELD).....EXCEEDS 75'
 - DISTANCE TO LIMITED USE NONCOMMUNITY OR OTHER PUBLIC POTABLE WATER WELL.....EXCEEDS 150'
 - DISTANCE TO PUBLIC POTABLE WELL SYSTEM.....EXCEEDS 200'
 - DISTANCE TO NONPOTABLE WELLEXCEEDS 50'
 - DISTANCE TO POTABLE WELL LINE.....EXCEEDS 10'
 - DISTANCE TO STRUCTURE FOUNDATIONS.....EXCEEDS 5'
 - DISTANCE TO MEAN HIGH WATER LINE OF TIDAL WATERS, STREAMS, CANALS AND DRAINAGE STRUCTURES.....EXCEEDS 75'
 - DISTANCE TO DESIGN HIGH WATER LINE OF INDIVIDUAL STORM WATER DRY RETENTION AREAS.....EXCEEDS 15'
 - DISTANCE TO PROPERTY LINE.....EXCEEDS 5'
- SEPTIC TANK EFFECTIVE CAPACITY OF 900 GALLONS, BASED ON ESTIMATED SEWAGE FLOW OF 200 GALLONS PER DAY (200 GPD).
- DRAINFIELD AREA OF 300 SQ.FT.(MINIMUM) BASED ON SEWAGE LOADING RATE TO BED BOTTOM OF 0.65 GALLONS PER SQUARE FOOT PER DAY.
- SEASONAL HIGH WATER TABLE ELEVATION = 23.59 N.G.V.D.



SECTION AT DRAINFIELD

N.T.S.



BOLLARD DETAIL

N.T.S.
(REMOVABLE TRAFFIC GUIDE POST)

DEV 2022-020
CITY APPROVAL STAMP

MAG	REVISED PER CITY COMMENTS	NO.	DATE	DESCRIPTION
7	10/27/2023	REVISED PER CITY COMMENTS		
6	10/05/2023	REVISED PER CITY COMMENTS		
5	09/19/2023	REVISED PER CITY COMMENTS		
4	05/23/2023	REVISED PER CITY COMMENTS		
3	02/08/2023	REVISED PER CITY COMMENTS		
2	09/13/2022	REVISED PER CITY COMMENTS		
1	04/26/2022	REVISED PER CITY COMMENTS		
		BY		

PARKER MYNCHENBERG & ASSOCIATES, INC.
PROFESSIONAL ENGINEERS * LANDSCAPE ARCHITECTS
1729 RIDGEWOOD AVENUE HOLLY HILL, FLORIDA 32117
(386) 677-8891 FAX (386) 677-2114 E-MAIL: info@parkermynchenberg.com
CERTIFICATE OF AUTHORIZATION NUMBER 00003910

CIRCLE C BOAT & RV STORAGE
DAYTONA BEACH * FLORIDA

SEPTIC SYSTEM DETAIL

24
SHEET NO.

Drawn By: M .GRECO

Date: 09/30/2020

JOB # 20-42

SCALE: NTS

SEAL