

301 East Atlantic Boulevard
Pompano Beach, Florida 33060-6643

2160 NW 82nd Avenue
Doral, Florida 33122

PH: (954) 788-3400

Florida Certificate of
Authorization # - 7928

BID / CONTRACT NO. :

REVISIONS

NO.	DESCRIPTION	DATE

PRELIMINARY PLAN
NOT FOR CONSTRUCTION

RESPONSIBILITY FOR THE USE OF THESE
PLANS PRIOR TO OBTAINING PERMITS
FROM ALL AGENCIES HAVING JURISDICTION
OVER THE PROJECT WILL FALL SOLELY
UPON THE USER.

INVESCA



P I X L

4400 NW 8th CT
PLANTATION, FL 33317

SCALE: AS NOTED

DATE ISSUED: NOVEMBER, 2017

DRAWN BY: FA

DESIGNED BY: SB

CHECKED BY: JT

JAMES A. THIELE, P.E.
FLORIDA REG. NO. 33256
(FOR THE FIRM)

SHEET TITLE


WATER & SEWER
DETAILS

SHEET NUMBER

CU-501

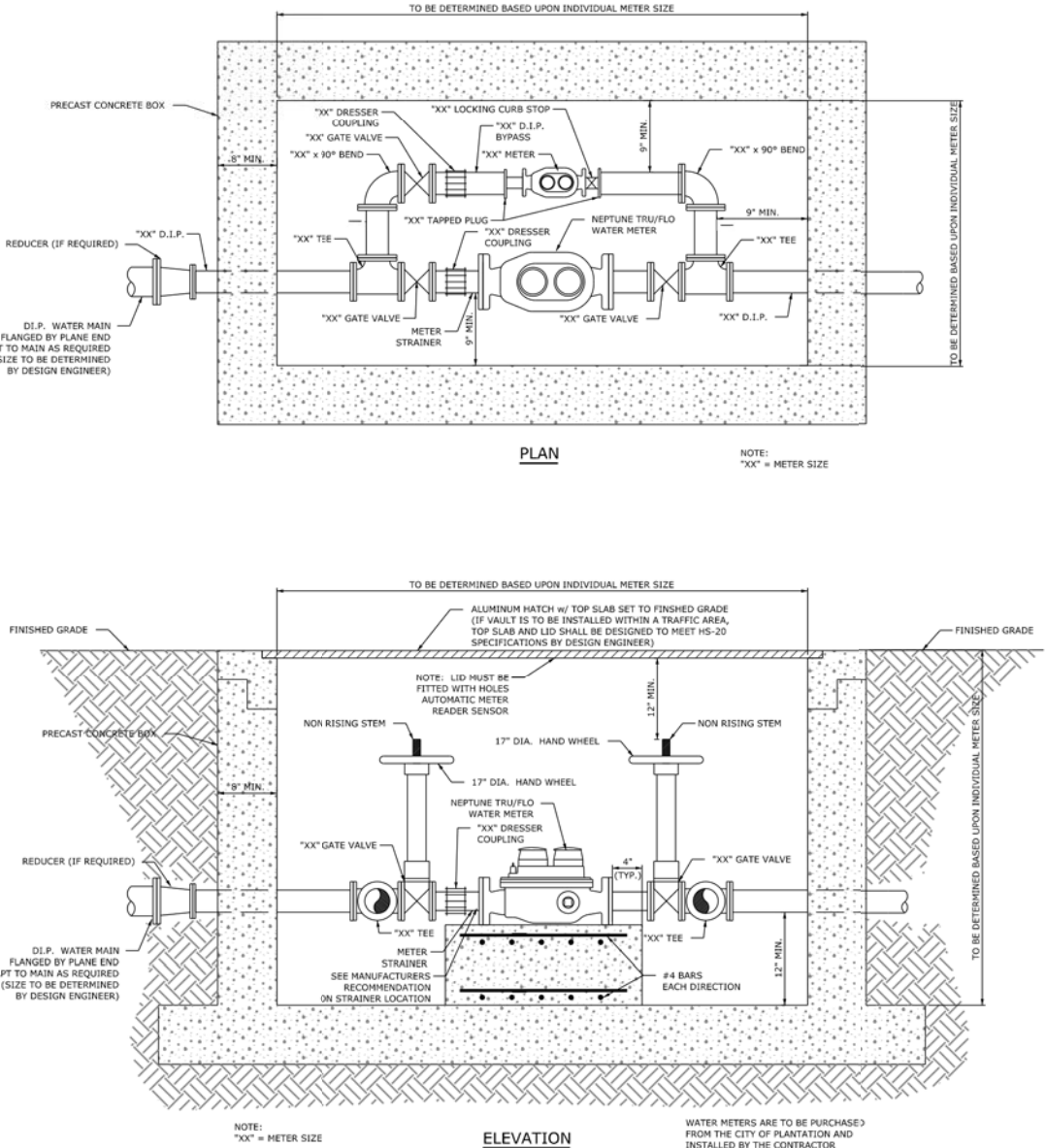
CITY COMMISSION SUBMITTAL

PROJECT NO. 080808.01



CITY OF PLANTATION
UTILITIES DEPARTMENT
400 NW 73rd AVENUE
PLANTATION, FLORIDA 33317
PHONE: 954-797-2290

STANDARD DETAIL



TO BE DETERMINED BASED UPON INDIVIDUAL METER SIZE


PLAN

ELEVATION

NOTE: 1" = 1" METER SIZE

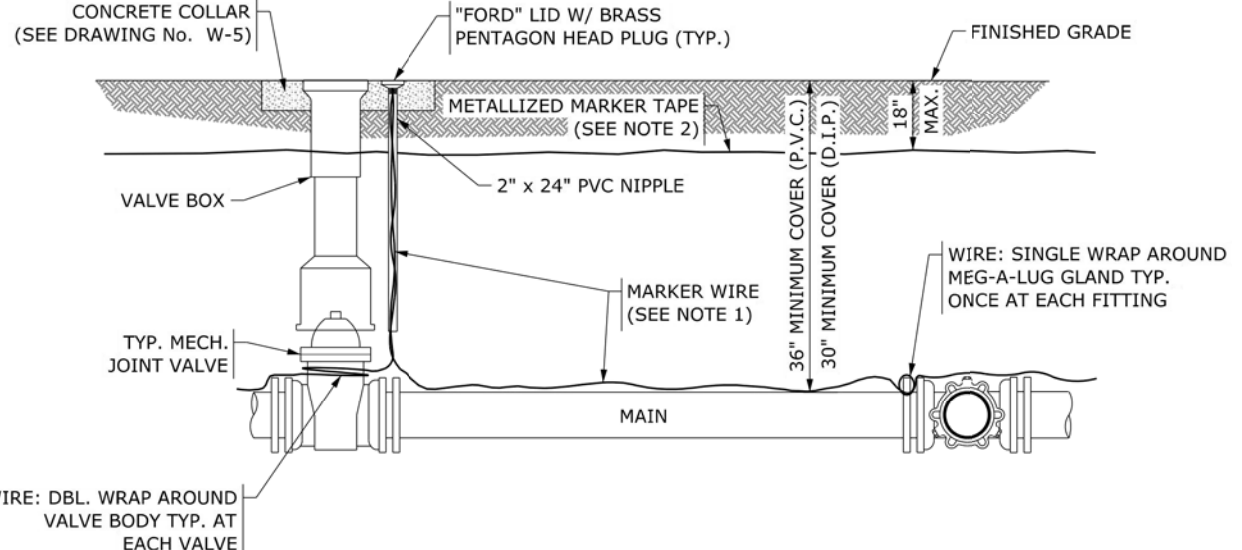
DRAWING No.

3" AND LARGER METER INSTALLATION W-21



CITY OF PLANTATION
UTILITIES DEPARTMENT
400 NW 73rd AVENUE
PLANTATION, FLORIDA 33317
PHONE: 954-797-2290

STANDARD DETAIL



CONCRETE COLLAR (SEE DRAWING NO. W-5)

"FORD" LID W/ BRASS PENTAGON HEAD PLUG (TYP.)

FINISHED GRADE

VALVE BOX

2" x 24" PVC NIPPLE

METALLIZED MARKER TAPE (SEE NOTE 2)

1" MIN. MAX.

36" MINIMUM COVER (D.I.P.)

30" MINIMUM COVER (D.I.P.)

WIRE: SINGLE WRAP AROUND MEG-A-LUG GLAND TYP. ONCE AT EACH FITTING

MARKER WIRE (SEE NOTE 1)

MAIN

WIRE: DBL. WRAP AROUND VALVE BODY TYP. AT EACH VALVE

TYP. MECH. JOINT VALVE


NOTES:

1. MARKING WIRE: SHALL BE INSTALLED WITH ALL NEW WATER MAINS AND FORCE MAINS CONTINUOUSLY FOR THE ENTIRE LENGTH OF THE LINE. THE WIRE SHALL BE 14GA SOLID INSULATED (BLUE FOR WATER MAINS AND GREEN FOR FORCE MAINS). COST OF MARKER WIRE SHALL BE INCLUDED IN THE LINEAL FOOT PRICE OF THE PIPE BID.

2. MARKING TAPE: SHALL BE INSTALLED WITH ALL NEW WATER MAINS AND FORCE MAINS CONTINUOUSLY FOR THE ENTIRE LENGTH OF THE LINE. THE TAPE SHALL BE METALLIZED AND SHALL BE IMPRINTED WITH THE CONTINUOUS MESSAGE "CAUTION-WATER (FORCE) MAIN BURIED BELOW" (WORDING BEING APPROPRIATE TO THE TYPE OF MAIN BEING INSTALLED). THE TAPE MUST CONFORM TO "ALLEN SYSTEMS, INC. DETECTABLE" OR AN APPROVED EQUAL. MINIMUM WIDTH SHALL BE 3" AND THE MAXIMUM DEPTH OF BURIAL SHALL BE 18". COST OF MARKER TAPE SHALL BE INCLUDED IN THE LINEAL FOOT PRICE OF THE PIPE BID.

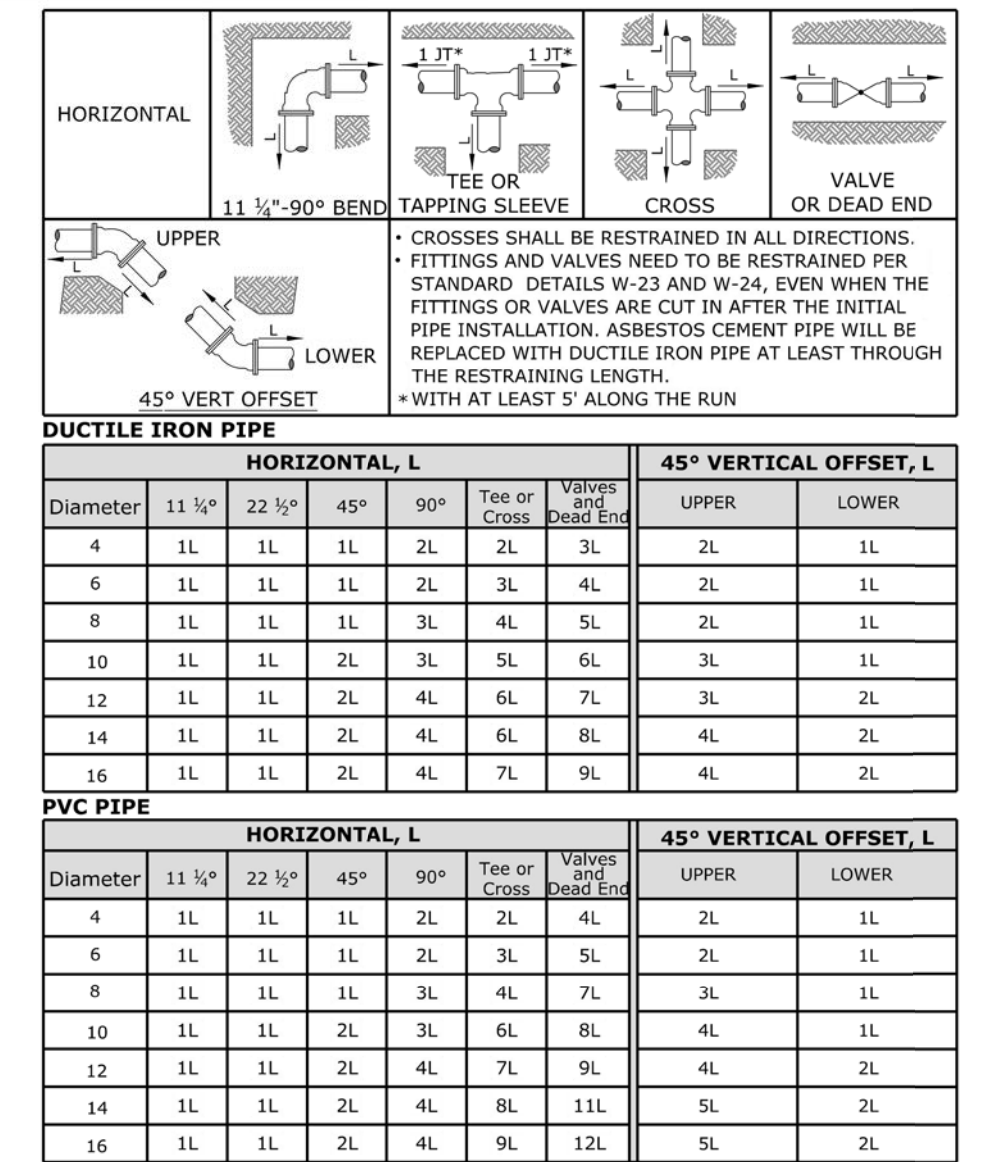
DRAWING No.

MARKER WIRE & MARKER TAPE DETAIL W-22



CITY OF PLANTATION
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PLANTATION, FLORIDA 33317
PHONE: 954-797-2290

STANDARD DETAIL



HORIZONTAL

11 1/4" 90° BEND

TEE OR TAPPING SLEEVE

CROSS

VALVE OR DEAD END

UPPER

LOWER

45° VERT OFFSET

DUCTILE IRON PIPE

Diameter	HORIZONTAL, L						45° VERTICAL OFFSET, L	
	11 1/4"	22 1/2"	45"	90"	Tee or Cross	Valves and Dead End	UPPER	LOWER
4	1L	1L	1L	2L	2L	3L	2L	1L
6	1L	1L	1L	2L	3L	4L	2L	1L
8	1L	1L	1L	3L	4L	5L	2L	1L
10	1L	1L	2L	3L	5L	6L	3L	1L
12	1L	1L	2L	4L	6L	7L	3L	2L
14	1L	1L	2L	4L	6L	8L	4L	2L
16	1L	1L	2L	4L	7L	9L	4L	2L

PVC PIPE

Diameter	HORIZONTAL, L						45° VERTICAL OFFSET, L	
	11 1/4"	22 1/2"	45"	90"	Tee or Cross	Valves and Dead End	UPPER	LOWER
4	1L	1L	1L	2L	2L	4L	2L	1L
6	1L	1L	1L	2L	3L	5L	2L	1L
8	1L	1L	1L	3L	4L	7L	3L	1L
10	1L	1L	2L	3L	6L	8L	4L	1L
12	1L	1L	2L	4L	7L	9L	4L	2L
14	1L	1L	2L	4L	8L	11L	5L	2L
16	1L	1L	2L	4L	9L	12L	5L	2L

L = ONE PIPE LENGTH (18 FEET)


NOTES:

- THE NOTED REQUIREMENTS WERE CALCULATED IN ACCORDANCE WITH THRUST RESTRAINT LENGTH CALCULATOR V7.1.2 BY EBAA IRON WITH THE FOLLOWING ASSUMPTIONS:
SOIL CONDITIONS: SAND (SM, SP, GP)
TRENCH TYPE/LAYING CONDITION: 4, SAND BEDDING, BACKFILL COMPACTED > 80% STANDARD PROCTOR
MINIMUM COVER: 3.0 FT P.V.C. AND 2.5 FT D.I.P. SAFETY FACTOR: 2.5
- IF FIELD CONDITIONS DIFFER FROM THE ABOVE, CONTRACTOR SHALL NOTIFY ENGINEER OF RECORD.
- FOR PIPE LARGER THAN INCLUDED IN THE ABOVE TABLES, ENGINEER OF RECORD SHALL SUBMIT CALCULATIONS FOR EACH JOINT
- REQUIRING RESTRAINT.
- ALL JOINTS WITHIN CALCULATED LENGTH MUST BE RESTRAINED.
IF DISTANCE BETWEEN FITTINGS IS LESS THAN OR EQUAL TO THE CALCULATED RESTRAINED LENGTH, RESTRAIN ALL JOINTS BETWEEN THESE FITTINGS.

SINGLE FITTING RESTRAINED JOINT 150 PSI TEST PRESSURE

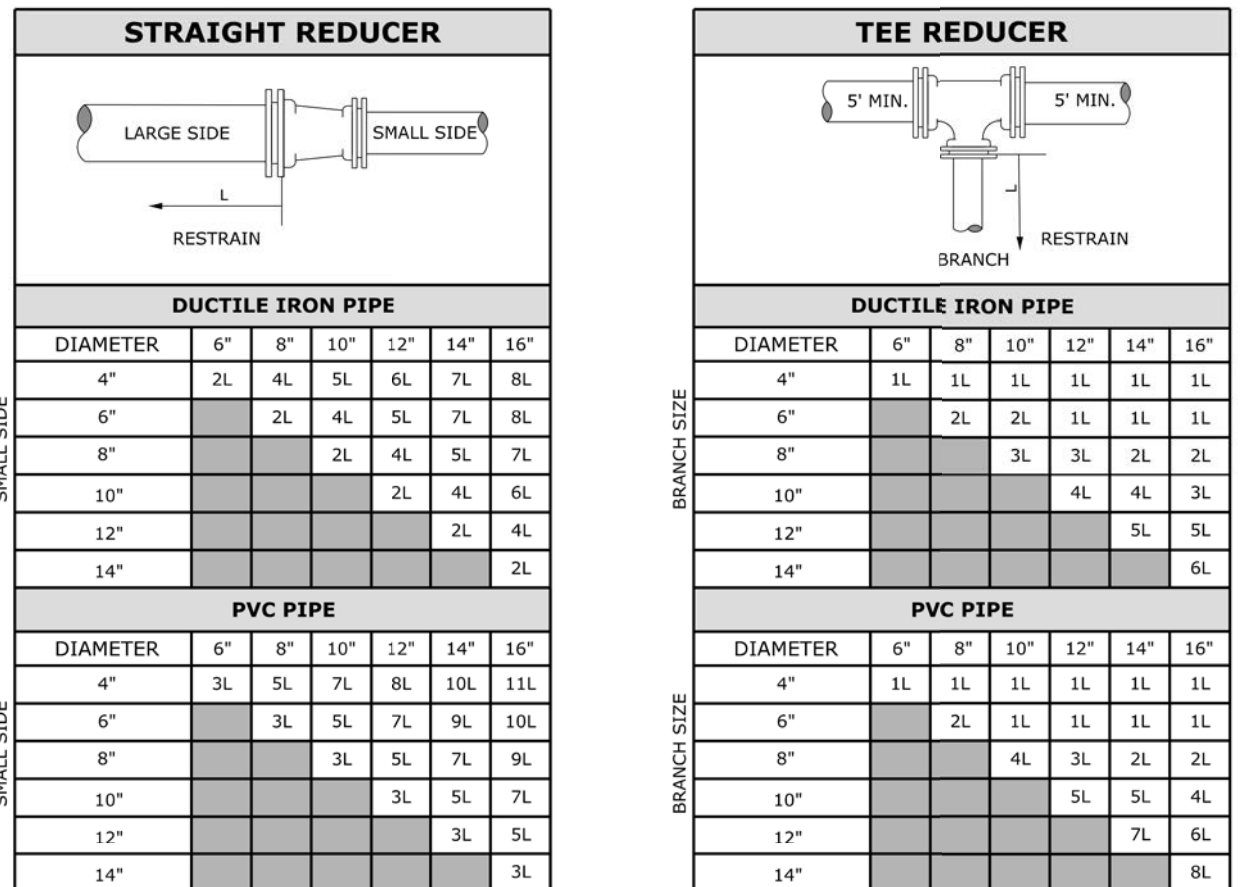
DRAWING No.

RESTRAINED JOINT REQUIREMENTS SINGLE FITTING W-23



CITY OF PLANTATION
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PLANTATION, FLORIDA 33317
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STANDARD DETAIL



STRAIGHT REDUCER

TEE REDUCER

5' MIN.

5' MIN.

RESTRAIN

BRANCH

RESTRAIN

DUCTILE IRON PIPE

Diameter	6"	8"	10"	12"	14"	16"
4"	2L	4L	5L	6L	7L	8L
6"		2L	4L	5L	7L	8L
8"			2L	4L	5L	7L
10"				2L	4L	6L
12"					2L	4L
14"						2L

PVC PIPE

Diameter	6"	8"	10"	12"	14"	16"
4"	3L	5L	7L	8L	10L	11L
6"		3L	5L	7L	9L	10L
8"			3L	5L	7L	9L
10"				3L	5L	7L
12"					3L	5L
14"						3L

L = ONE PIPE LENGTH (18 FEET)

DUCTILE IRON PIPE

Diameter	6"	8"	10"	12"	14"	16"
4"	1L	1L	1L	1L	1L	1L
6"		2L	2L	1L	1L	1L
8"			2L	3L	2L	2L
10"				4L	4L	3L
12"					5L	5L
14"						6L

PVC PIPE

Diameter	6"	8"	10"	12"	14"	16"
4"	1L	1L	1L	1L	1L	1L
6"		2L	2L	1L	1L	1L
8"			4L	3L	2L	2L
10"				5L	5L	4L
12"					7L	6L
14"						8L

L = ONE PIPE LENGTH (18 FEET)


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- REQUIRING RESTRAINT.
- ALL JOINTS WITHIN CALCULATED LENGTH MUST BE RESTRAINED.
IF DISTANCE BETWEEN FITTINGS IS LESS THAN OR EQUAL TO THE CALCULATED RESTRAINED LENGTH, RESTRAIN ALL JOINTS BETWEEN THESE FITTINGS.

RESTRAINED REDUCING FITTINGS 150 PSI TEST PRESSURE

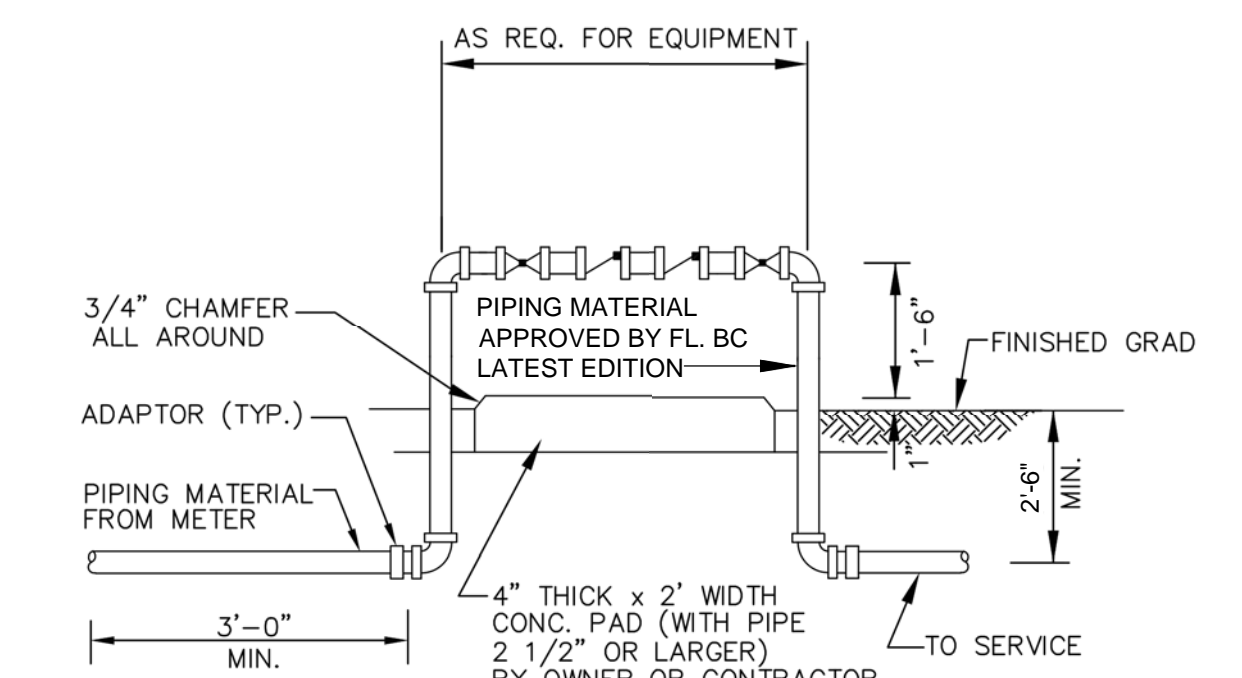
DRAWING No.

RESTRAINED JOINT REQUIREMENTS REDUCING FITTINGS W-24



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STANDARD DETAIL



AS REQ. FOR EQUIPMENT

3/4" CHAMFER ALL AROUND

ADAPTOR (TYP.)

PIPING MATERIAL FROM METER

PIPING MATERIAL APPROVED BY FL. BC LATEST EDITION

1'-6"

FINISHED GRAD

2'-6" MIN.

TO SERVICE

4" THICK x 2' WIDTH CONC. PAD (WITH PIPE 2 1/2" OR LARGER) BY OWNER OR CONTRACTOR

3'-0" MIN.


USE MEGALUGS AT ALL PIPE JOINTS 3" AND LARGER

PLEASE SEE METER INSTALL DIMENSION LIST ON STANDARD NO. 106-4

SMALL UNITS UNI-STRUT SUPPORT

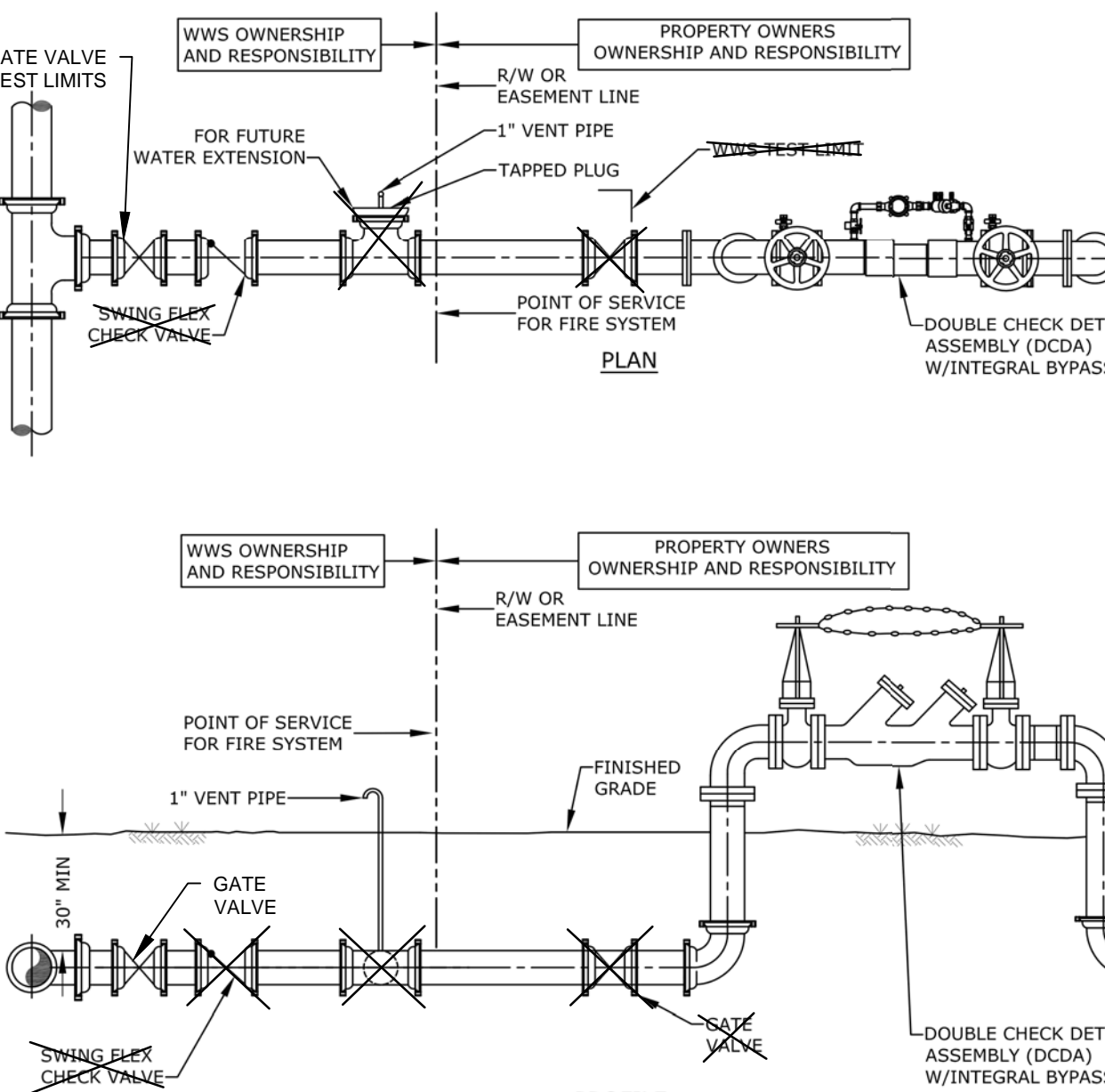
DRAWING No.

BACKFLOW PREVENTER



WATER & WASTEWATER SERVICES
ENGINEERING DIVISION
2555 WEST COPPIN ROAD
POMPAHO BEACH, FL 33069
PHONE NO. 954-831-0745
FAX: 954-831-0925

STANDARD DETAIL



GATE VALVE TEST LIMITS

WWS OWNERSHIP AND RESPONSIBILITY

PROPERTY OWNERS OWNERSHIP AND RESPONSIBILITY

R/W OR EASEMENT LINE

FOR FUTURE WATER EXTENSION

1" VENT PIPE

TAPPED PLUG

WWS TEST LIMIT

POINT OF SERVICE FOR FIRE SYSTEM

DOUBLE CHECK DETECTOR ASSEMBLY (DCCA) W/INTEGRAL BYPASS METER

PLAN

WWS OWNERSHIP AND RESPONSIBILITY

PROPERTY OWNERS OWNERSHIP AND RESPONSIBILITY

R/W OR EASEMENT LINE

POINT OF SERVICE FOR FIRE SYSTEM

1" VENT PIPE

FINISHED GRADE

GATE VALVE

DOUBLE CHECK DETECTOR ASSEMBLY (DCCA) W/INTEGRAL BYPASS METER

PROFILE

NOTES:

- THE DOUBLE CHECK DETECTOR ASSEMBLY SHALL BE PRIVATELY OWNED BY PROPERTY OWNER.
- FIRE SYSTEM TO BE CONSTRUCTED/TESTED IN ACCORDANCE WITH NFPA STAND. AND ALL APPLICABLE CODES.
- OWNER SHALL EXECUTE COMMERCIAL FIRE SERVICE AGREEMENT WITH WWS.
- 1" VENT PIPE TO BE REMOVED AFTER WWS APPROVAL.

REPLACES FORMER DWG NO. 9A

REVISED 3/22/2012

TYPE 1
PRIVATE FIRE PROTECTION
4", 6" AND 8" DIAMETER CONNECTION

FIGURE 235



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PIXL

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FLORIDA REG. NO. 33256
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SHEET TITLE

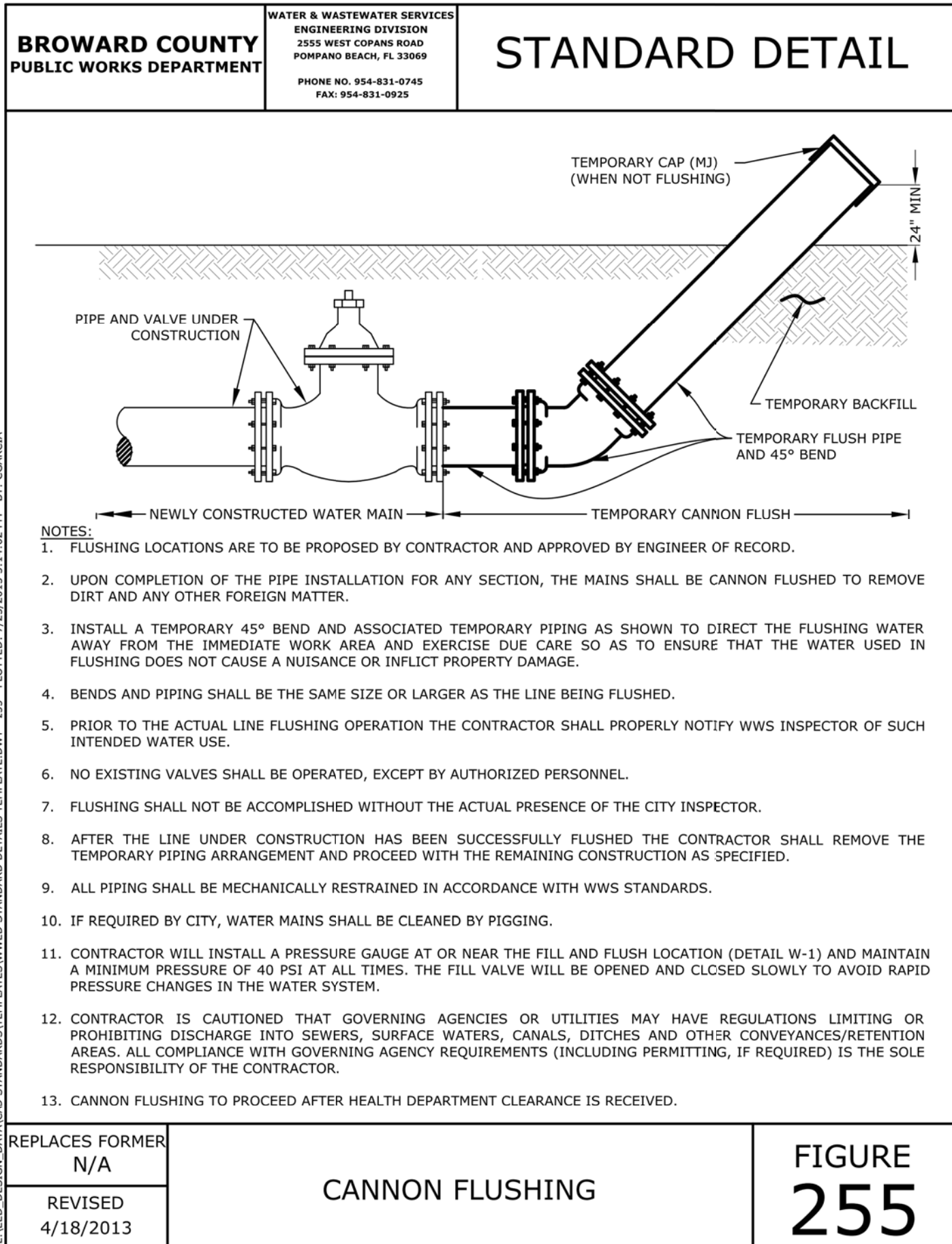
WATER & SEWER
DETAILS

SHEET NUMBER

CU-504

CITY COMMISSION SUBMITTAL

PROJECT NO. 080808.01

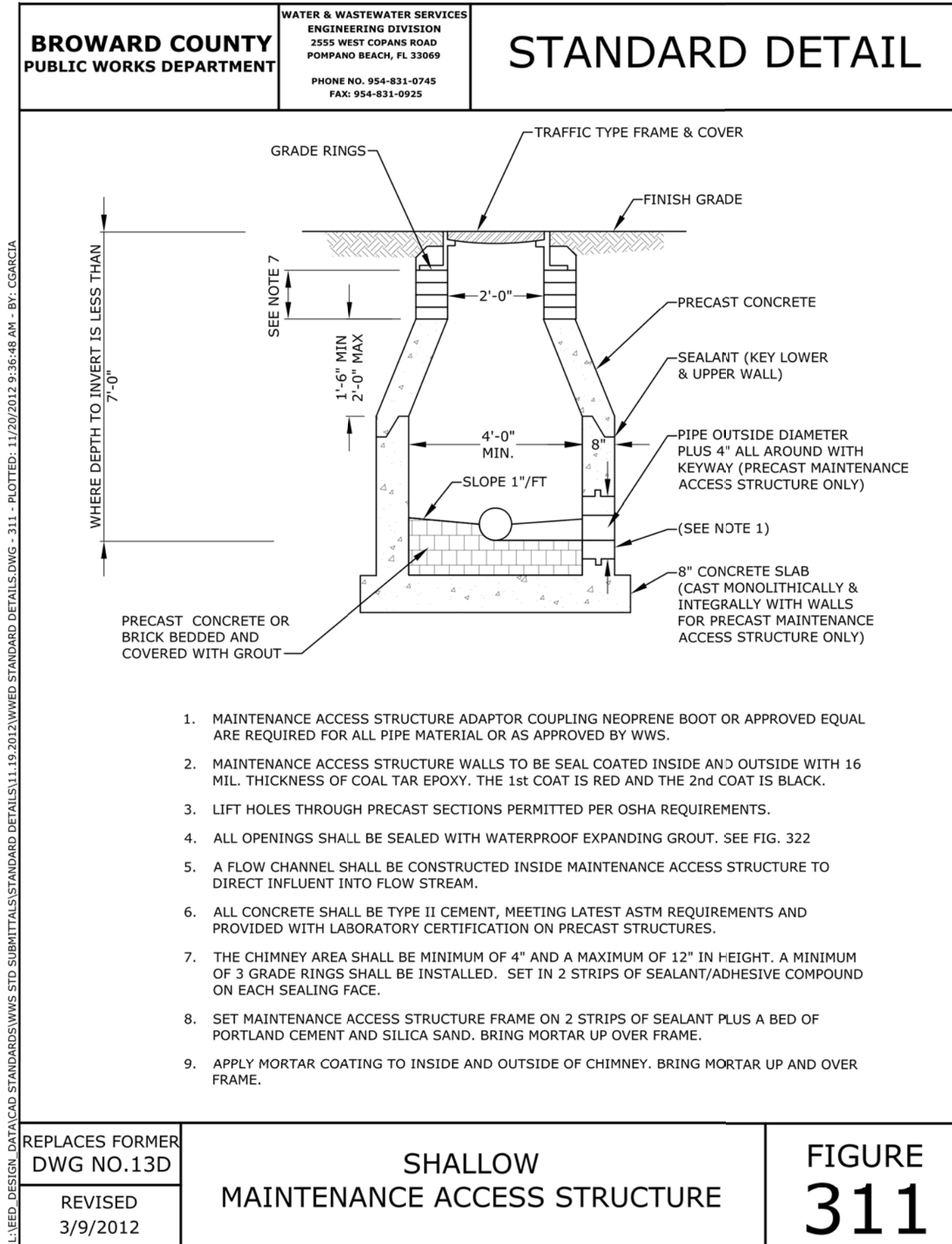


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REPLACES FORMER DWG NO.13B
REVISED 3/9/2012

INVERT CHANNEL FLOW DIRECTIONS

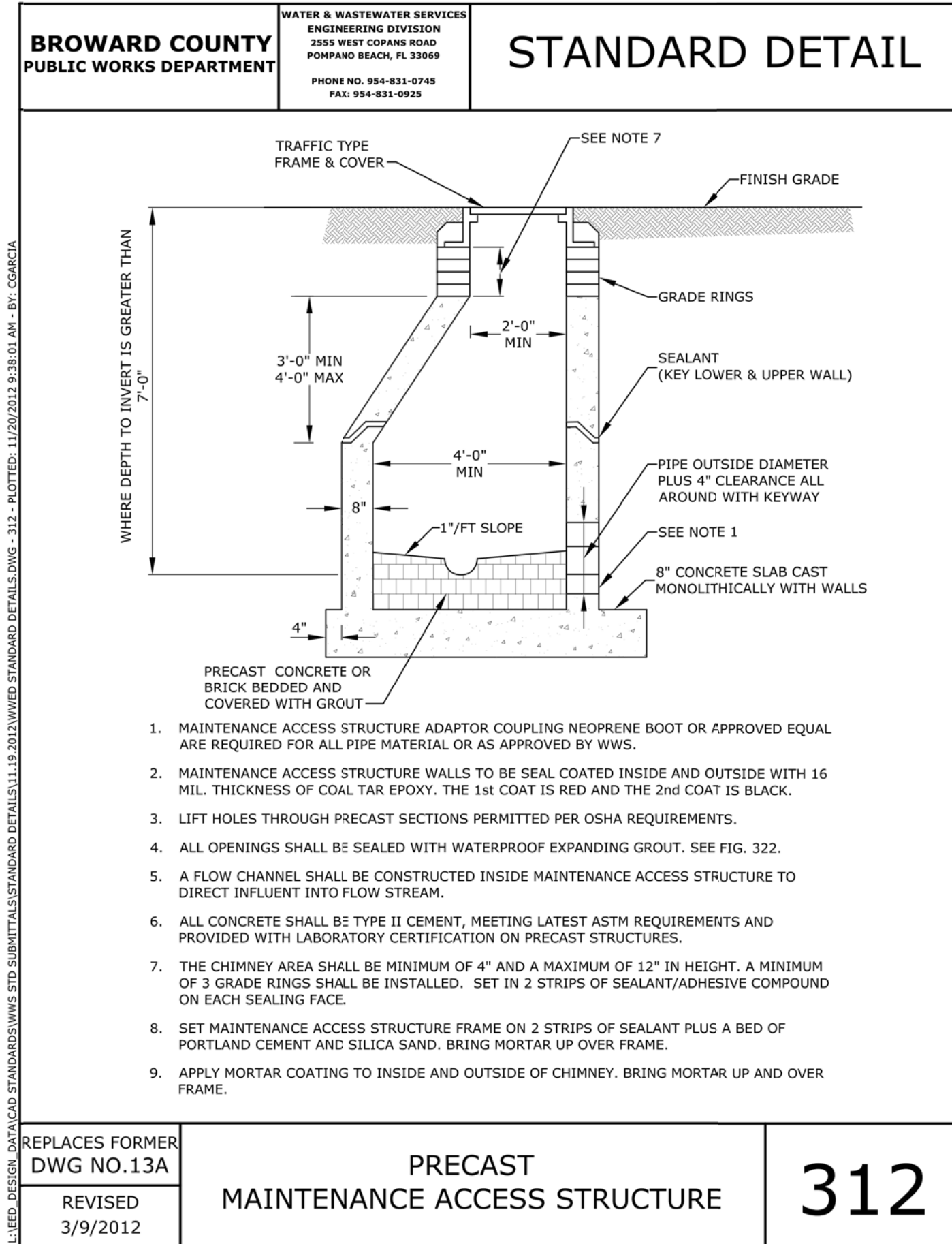
FIGURE
318



L:\EED DESIGN_DATA\CAD STANDARDS\TEMPLATES\WWED STANDARD DETAILS TEMPLATE.DWT - 322 - PLOTTED: 10/18/2012 1:40:58 PM - BY: CGARCIA

REPLACES FORMER DWG NO.322
REVISED 3/9/2012

MAINTENANCE ACCESS STRUCTURE CONNECTION DETAIL

FIGURE
322

REPLACES FORMER DWG NO.2A
REVISED 1/14/2016

WYE SEWER
SERVICE CONNECTION

FIGURE
331



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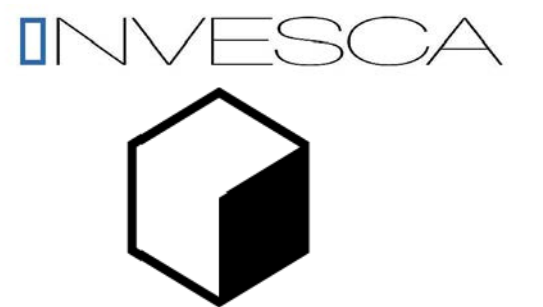
BID / CONTRACT NO. :

REVISIONS

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CHECKED BY:	JT

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JAMES A. THIELE, P.E.
FLORIDA REG. NO. 33256
(FOR THE FIRM)

SHEET TITLE

WATER & SEWER DETAILS

SHEET NUMBER

CU-505

CITY COMMISSION SUBMITTAL

PROJECT NO. 08808.01

Drawing name: N:\08\0808.01 - PIXL (Strata Phase 2) - Invesca\Engineering\Cadd\0808.01 CU-502-506.dwg Layout Name: CU-505 Plotted by: mcartossa Plotted on: Mar 01, 2019 - 2:25pm



C

B

A



301 East Atlantic Boulevard
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[illegible]

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P I X L
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PLANTATION, FL 33317

SCALE: AS NOTED

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DESIGNED BY: SB

CHECKED BY: IT

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FLORIDA REG. NO. 33256
(FOR THE FIRM)

SHEET TITLE

WATER & SEWER DETAILS

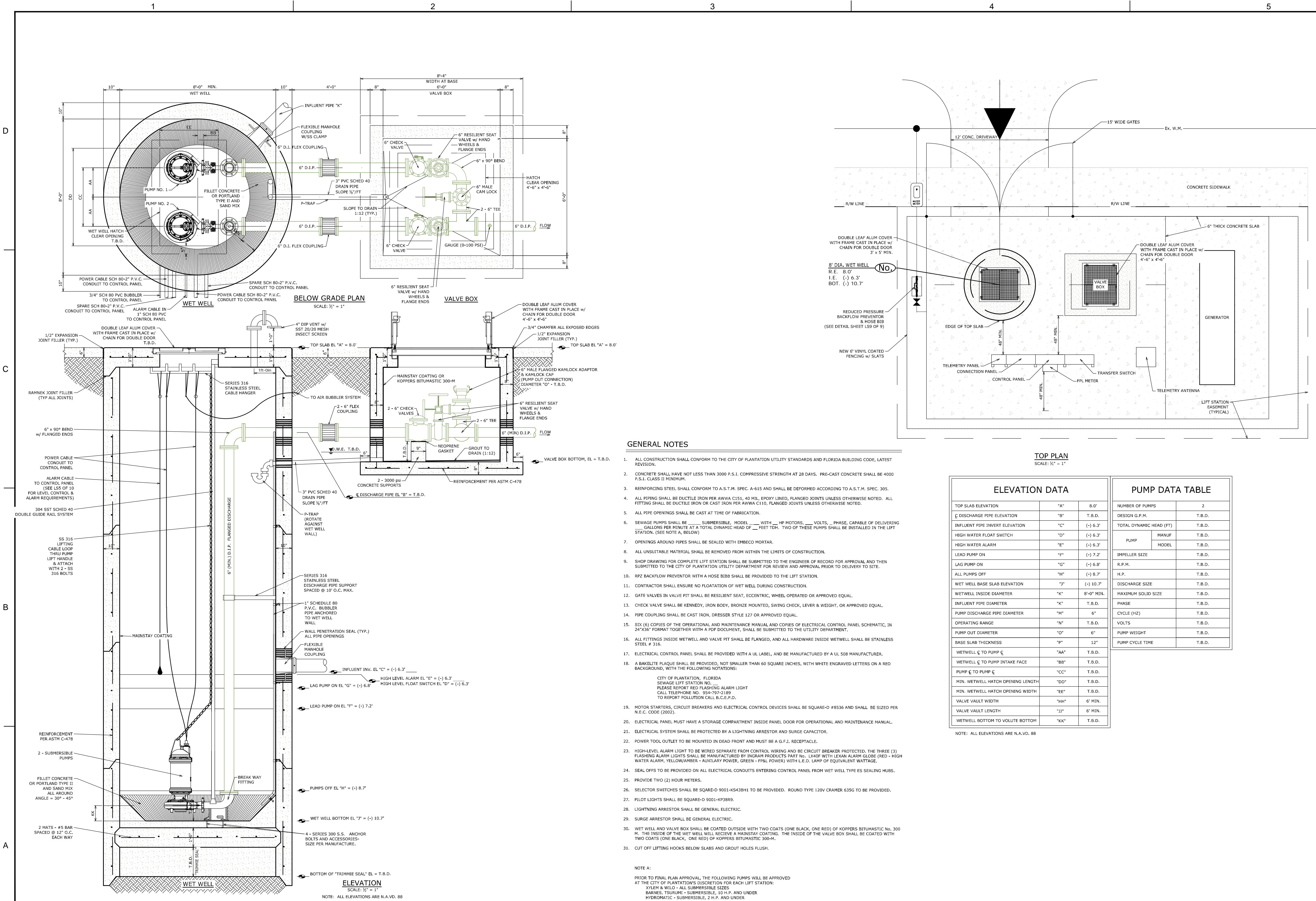
SHEET NUMBER

CU-506

CITY COMMISSION SUBMITTAL

PROJECT NO. 08808.01

Drawing name: N:\08\08808.01 - PIXL (Strata Phase 2) - Invesca\Engineering\Cadd\08808.01 CU-502-506.dwg Layout Name: CU-506 Plotted by: mcartossa Plotted on: Mar 01, 2019 - 2:25pm



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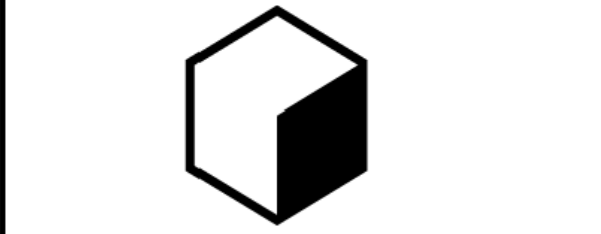
BID / CONTRACT NO. :

REVISIONS

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JAMES A. THIELE, P.E.
FLORIDA REG. NO. 33256
(FOR THE FIRM)

SHEET TITLE

WATER & SEWER
DETAILS

SHEET NUMBER

CU-507

CITY COMMISSION SUBMITTAL

PROJECT NO. 08808.01

- GENERAL NOTES**
- ALL CONSTRUCTION SHALL CONFORM TO THE CITY OF PLANTATION UTILITY STANDARDS AND FLORIDA BUILDING CODE, LATEST REVISION.
 - CONCRETE SHALL HAVE NOT LESS THAN 3000 P.S.I. COMPRESSIVE STRENGTH AT 28 DAYS. PRE-CAST CONCRETE SHALL BE 4000 P.S.I. CLASS II MINIMUM.
 - REINFORCING STEEL SHALL CONFORM TO A.S.T.M. SPEC. A-615 AND SHALL BE DEFORMED ACCORDING TO A.S.T.M. SPEC. 305.
 - ALL PIPING SHALL BE DUCTILE IRON PER AWWA C151, 40 MIL. EPOXY LINED, FLANGED JOINTS UNLESS OTHERWISE NOTED. ALL FITTING SHALL BE DUCTILE IRON OR CAST IRON PER AWWA C110, FLANGED JOINTS UNLESS OTHERWISE NOTED.
 - ALL PIPE OPENINGS SHALL BE CAST AT TIME OF FABRICATION.
 - SEWAGE PUMPS SHALL BE _____ SUBMERSIBLE, MODEL _____ WITH _____ HP MOTORS, _____ VOLTS, _____ PHASE, CAPABLE OF DELIVERING _____ GALLONS PER MINUTE AT A TOTAL DYNAMIC HEAD OF _____ FEET TDH. TWO OF THESE PUMPS SHALL BE INSTALLED IN THE LIFT STATION. (SEE NOTE A, BELOW)
 - OPENINGS AROUND PIPES SHALL BE SEALED WITH EMBECO MORTAR.
 - ALL UNSUITABLE MATERIAL SHALL BE REMOVED FROM WITHIN THE LIMITS OF CONSTRUCTION.
 - SHOP DRAWING FOR COMPLETE LIFT STATION SHALL BE SUBMITTED TO THE ENGINEER OF RECORD FOR APPROVAL AND THEN SUBMITTED TO THE CITY OF PLANTATION UTILITY DEPARTMENT FOR REVIEW AND APPROVAL PRIOR TO DELIVERY TO SITE.
 - RPZ BACKFLOW PREVENTOR WITH A HOSE BIBB SHALL BE PROVIDED TO THE LIFT STATION.
 - CONTRACTOR SHALL ENSURE NO FLOATION OF WET WELL DURING CONSTRUCTION.
 - GATE VALVES IN VALVE PIT SHALL BE RESILIENT SEAT, ECCENTRIC, WHEEL OPERATED OR APPROVED EQUAL.
 - CHECK VALVE SHALL BE KENNEDY, IRON BODY, BRONZE MOUNTED, SWING CHECK, LEVER & WEIGHT, OR APPROVED EQUAL.
 - PIPE COUPLING SHALL BE CAST IRON, DRESSER STYLE 127 OR APPROVED EQUAL.
 - SIX (6) COPIES OF THE OPERATIONAL AND MAINTENANCE MANUAL AND COPIES OF ELECTRICAL CONTROL PANEL SCHEMATIC, IN 24"x36" FORMAT TOGETHER WITH A PDF DOCUMENT, SHALL BE SUBMITTED TO THE UTILITY DEPARTMENT.
 - ALL FITTINGS INSIDE WETWELL AND VALVE PIT SHALL BE FLANGED, AND ALL HARDWARE INSIDE WETWELL SHALL BE STAINLESS STEEL # 316.
 - ELECTRICAL CONTROL PANEL SHALL BE PROVIDED WITH A UL LABEL, AND BE MANUFACTURED BY A UL 508 MANUFACTURER.
 - A BAKELITE PLAQUE SHALL BE PROVIDED, NOT SMALLER THAN 60 SQUARE INCHES, WITH WHITE ENGRAVED LETTERS ON A RED BACKGROUND, WITH THE FOLLOWING NOTATIONS:
CITY OF PLANTATION, FLORIDA
SEWAGE LIFT STATION NO. _____
PLEASE REPORT RED FLASHING ALARM LIGHT
CALL TELEPHONE NO. 954-797-2189
TO REPORT POLLUTION CALL 8-1-1 P.D.
 - MOTOR STARTERS, CIRCUIT BREAKERS AND ELECTRICAL CONTROL DEVICES SHALL BE SQUARE-D #8536 AND SHALL BE SIZED PER N.E.C. CODE (2002).
 - ELECTRICAL PANEL MUST HAVE A STORAGE COMPARTMENT INSIDE PANEL DOOR FOR OPERATIONAL AND MAINTENANCE MANUAL.
 - ELECTRICAL SYSTEM SHALL BE PROTECTED BY A LIGHTNING ARRESTOR AND SURGE CAPACITOR.
 - POWER TOOL OUTLET TO BE MOUNTED IN DEAD FRONT AND MUST BE A G.F.I., RECEPTACLE.
 - HIGH-LEVEL ALARM LIGHT TO BE WIRED SEPARATE FROM CONTROL WIRING AND BE CIRCUIT BREAKER PROTECTED, THE THREE (3) FLASHING ALARM LIGHTS SHALL BE MANUFACTURED BY INGRAM PRODUCTS PART NO. 1340F WITH LEAK ALARM GLOBE (RED - HIGH WATER ALARM, YELLOW/AMBER - AUXILIARY POWER, GREEN - P&AL POWER) WITH L.E.D. LAMP OF EQUIVALENT WATTAGE.
 - SEAL OFFS TO BE PROVIDED ON ALL ELECTRICAL CONDUITS ENTERING CONTROL PANEL FROM WET WELL TYPE ES SEALING HUBS.
 - PROVIDE TWO (2) HOUR METERS.
 - SELECTOR SWITCHES SHALL BE SQUARE-D 9001-KS43BH1 TO BE PROVIDED. ROUND TYPE 120V CRAMER 635G TO BE PROVIDED.
 - PILOT LIGHTS SHALL BE SQUARE-D 9001-KP38R9.
 - LIGHTNING ARRESTOR SHALL BE GENERAL ELECTRIC.
 - SURGE ARRESTOR SHALL BE GENERAL ELECTRIC.
 - WET WELL AND VALVE BOX SHALL BE COATED OUTSIDE WITH TWO COATS (ONE BLACK, ONE RED) OF KOPPERS BITUMASTIC No. 300 M. THE INSIDE OF THE WET WELL WILL RECEIVE A MAINSTAY COATING. THE INSIDE OF THE VALVE BOX SHALL BE COATED WITH TWO COATS (ONE BLACK, ONE RED) OF KOPPERS BITUMASTIC 300-M.
 - CUT OFF LIFTING HOOKS BELOW SLABS AND GROUT HOLES FLUSH.
- NOTE A:**
PRIOR TO FINAL PLAN APPROVAL, THE FOLLOWING PUMPS WILL BE APPROVED AT THE CITY OF PLANTATION'S DISCRETION FOR EACH LIFT STATION:
XYLEM & WILCO - ALL SUBMERSIBLE SIZES
BARNES, TSURUMI - SUBMERSIBLE, 10 H.P. AND UNDER
HYDRAMATIC - SUBMERSIBLE, 2 H.P. AND UNDER
GORMAN RUPP & CROWN - SUCTION-LIFT PUMPS