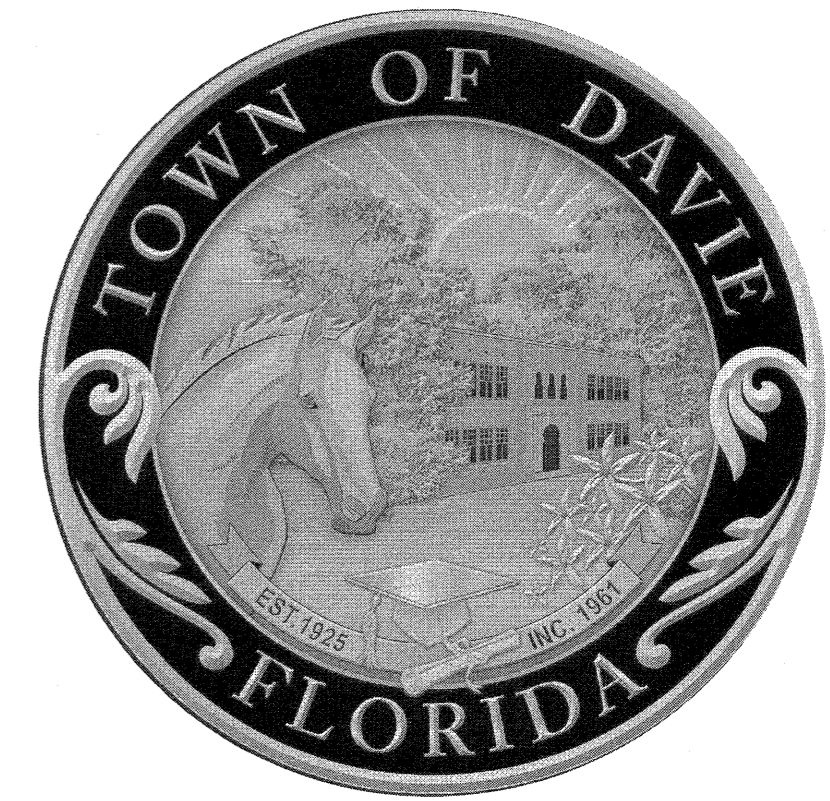


# SW 48TH COURT WATER MAIN UPGRADE

## TOWN OF DAVIE, FLORIDA

### APRIL 2016



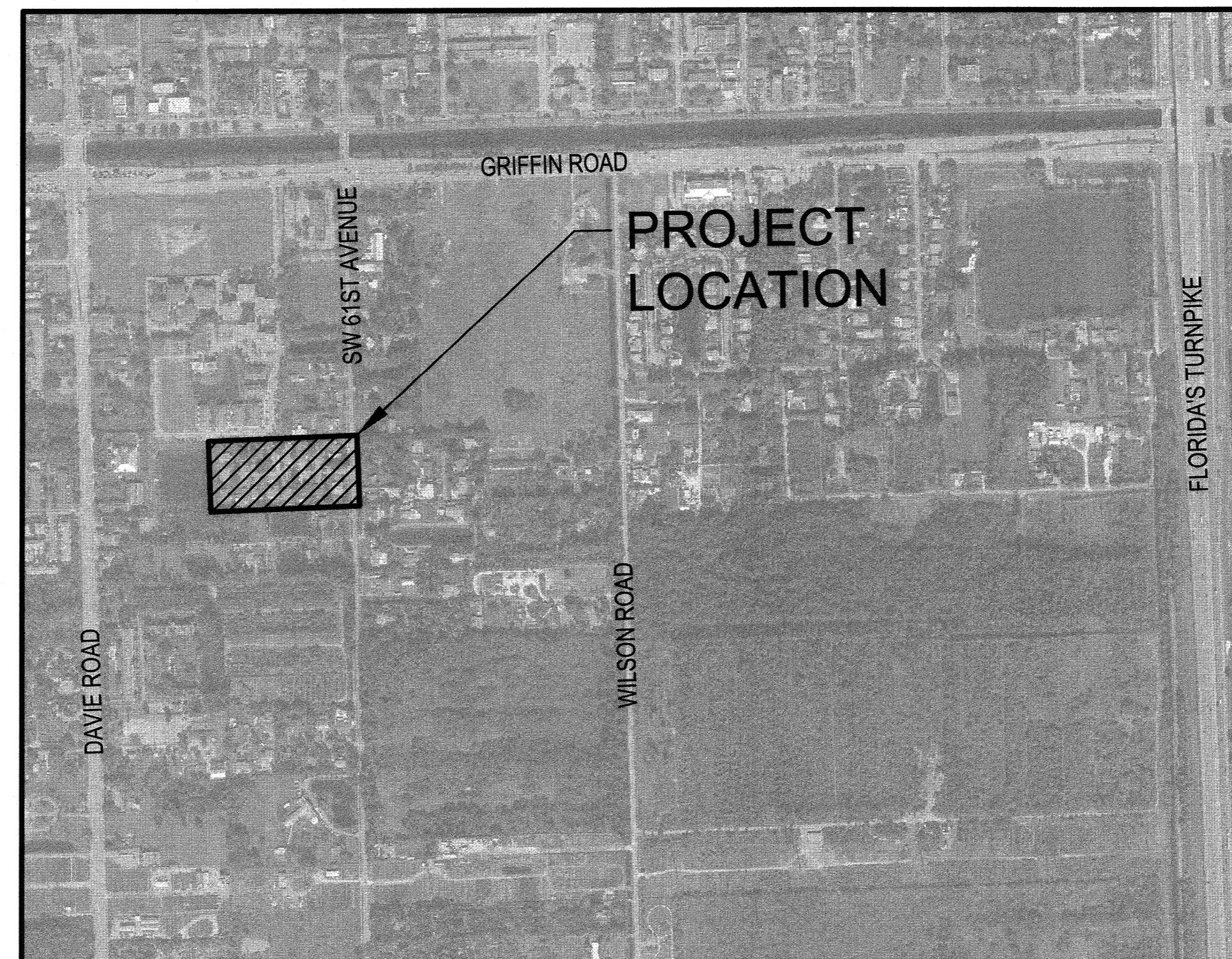
#### TOWN OFFICIALS

MAYOR  
VICE MAYOR  
TOWN COUNCIL

JUDY PAUL  
MARLON LUIS  
SUSAN STARKEY  
BRYAN CALETKA  
CARYL HATTAN  
RICHARD J. LEMACK  
DON BAYLER  
EVELYN ROIG  
JOHN RAYSON  
WILLIAM ACKERMAN  
BRIAN K. O'CONNOR

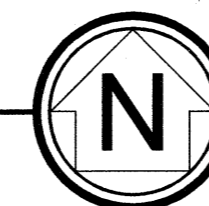
TOWN ADMINISTRATOR  
UTILITIES DIRECTOR  
TOWN CLERK  
TOWN ATTORNEY  
DIRECTOR OF FINANCE  
PROCUREMENT MANAGER

DRAWING INDEX	
SHEET No.	SHEET TITLE
C1	COVER SHEET
C2	WATER PLAN
C3	WATER DISTRIBUTION DETAILS
C4	WATER DISTRIBUTION DETAILS
C5	GENERAL NOTES AND SPECIFICATIONS



#### LOCATION MAP

PORTION OF TWP. 51S, RGE. 41E  
SCALE: NOT TO SCALE



#### BENCHMARK:

BROWARD COUNTY HIGHWAY CONSTRUCTION AND ENGINEERING DIVISION No. 3082 B.C. DISK AND P.K.NAIL IN SQUARE CUT, BACK OF WALK, 10' WEST OF THE WEST EDGE OF PAVEMENT OF DAVIE ROAD ON PROJECTED CENTERLINE OF S.W. 38TH COURT, SEC.27-50-41 B.M. ELEVATION = 7.879. NAVD 1988. ELEVATIONS SHOWN ON PLANS ARE (NAVD 1988).

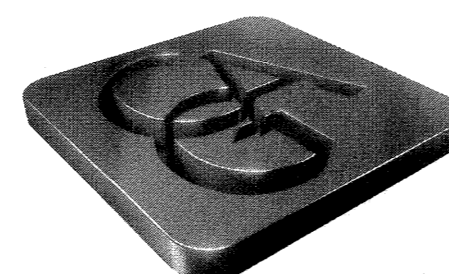
#### NOTES:

- RESPONSIBILITY FOR THE USE OF THESE PLANS FOR ANY PURPOSE PRIOR TO SECURING PERMITS FROM ALL AGENCIES HAVING JURISDICTION OVER THIS PROJECT WILL FALL SOLELY UPON THE USER.
- AN ELECTRONIC CAD FILE WILL BE PROVIDED FOR SURVEY LAYOUT.

CALVIN, GIORDANO & ASSOCIATES  
APPROVED FOR BIDDING  
By: *Calvin Giordano*  
Date: 10/26/16

PERMITTING AGENCIES	DATE SUBMITTED	CGA INITIALS	DATE APPROVED	PERMIT NUMBER
TOWN OF DAVIE ENGINEERING DEPARTMENT	-	-	-	-
DEPARTMENT OF HEALTH	4/21/16	R.A.D.	5/23/16	0126324-225-DSGP
-	-	-	-	-
-	-	-	-	-

NO	DATE	REVISION	BY	NO	DATE	REVISION	BY
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-



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EXCEPTIONAL SOLUTIONS<sup>SM</sup>  
1800 Eller Drive, Suite 600, Fort Lauderdale, Florida 33316  
Phone: 954.921.7781 • Fax: 954.921.8807

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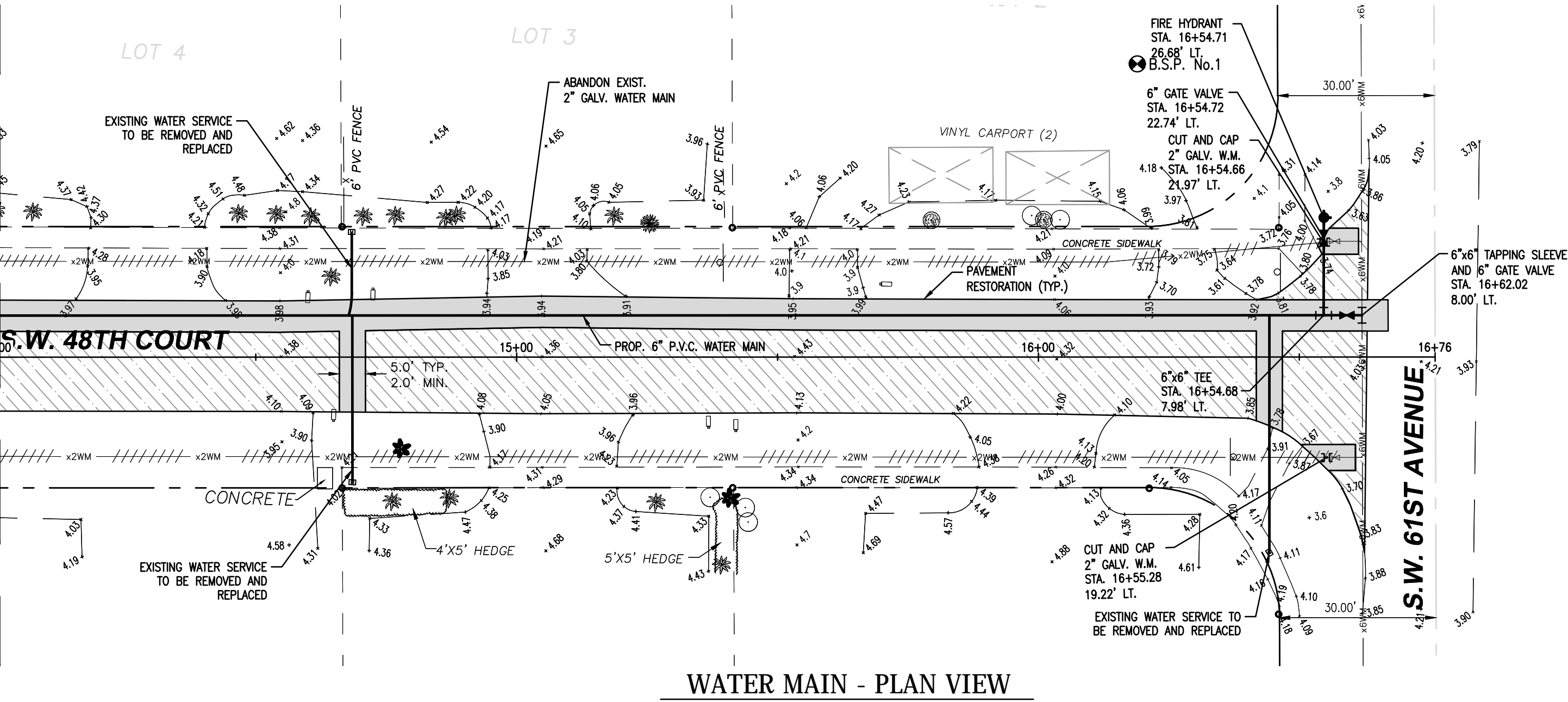
**FOR BIDDING PURPOSES ONLY**  
**NOT FOR CONSTRUCTION**



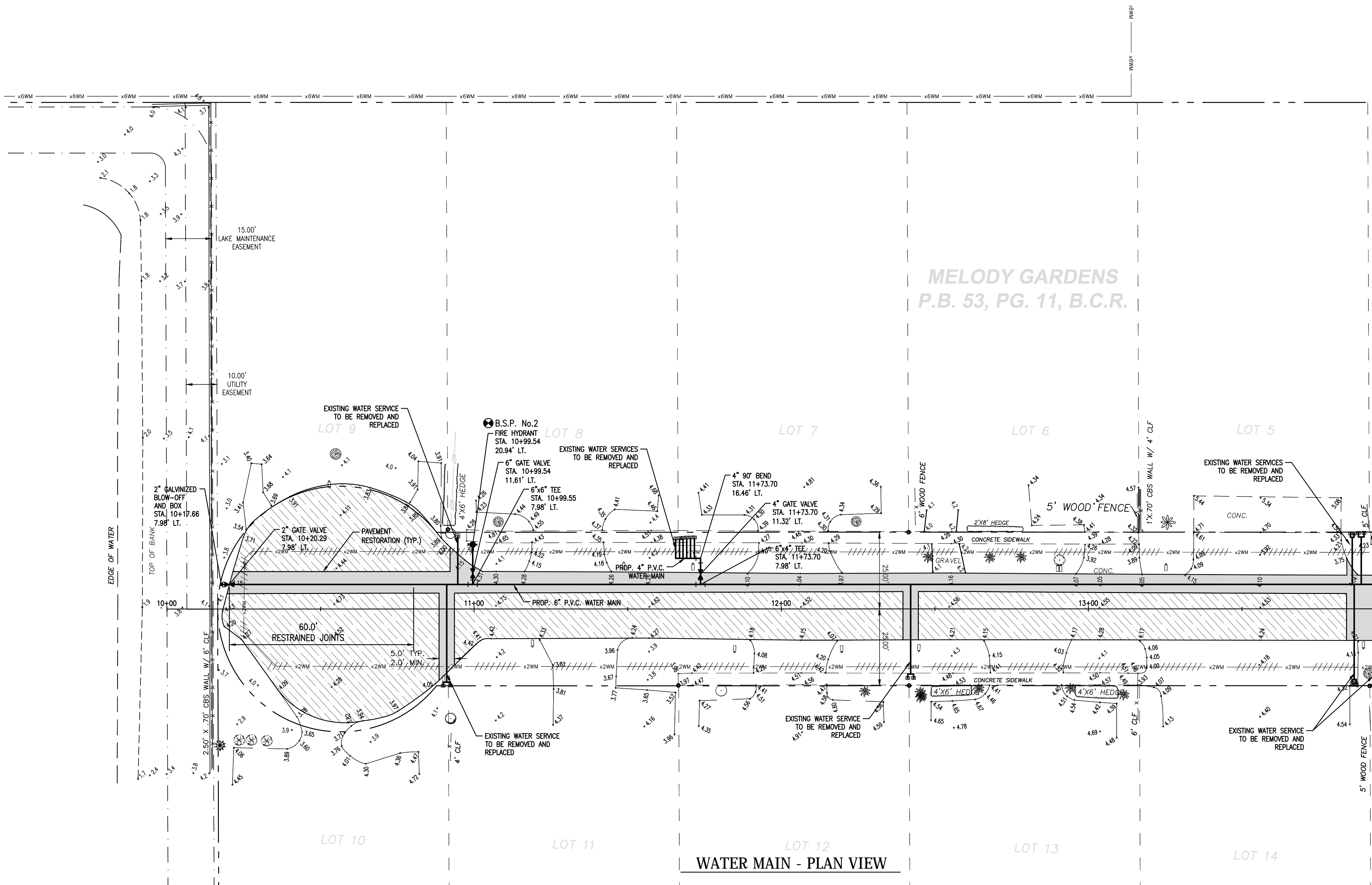
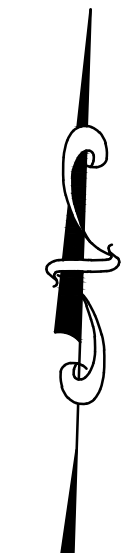
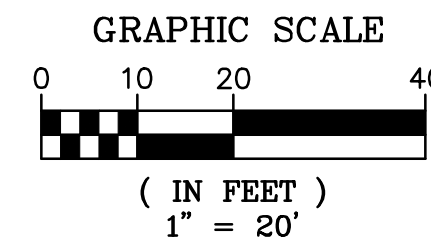
CURRENT REV No.: ---- - ----	RICKY A. DEROSIA, P.E. STATE OF FLORIDA PROFESSIONAL ENGINEER LICENSE No. 38604	SHEET: 1
	DATE: 09/27/16	<b>C1</b>
		OF 1 SHEETS

File Name: P:\Projects\1996\961630\_Dave General Engineering Services\Cadd Files\961630.101 SW 48TH COURT WATER MAIN REPLACEMENT\96-1630.101\_C1\_WATER\_PLAN.dwg -- (Plotted by: Mike Orefice on Thursday, October 27, 2016 8:38:12 AM)

**MATCH LINE STA 14+00 (SEE BELOW RIGHT)**

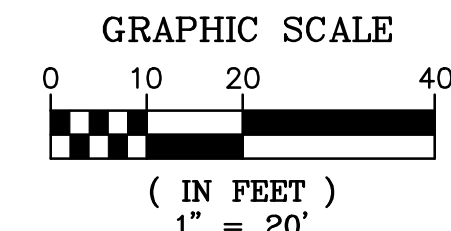


**WATER MAIN - PLAN VIEW**



**WATER MAIN - PLAN VIEW**

**MATCH LINE STA 14+00 (SEE ABOVE LEFT)**



**SYMBOL LEGEND**

- B.S.P. No. BACTERIOLOGICAL SAMPLE POINT
- EXIST. WATER METER
- PROP. METER LOCATION/RELOCATION
- PROP. FIRE HYDRANT
- EXIST. FIRE HYDRANT
- PROP. BLOWOFF
- PROP. CAP OR PLUG
- PROP. REDUCER
- PROP. GATE VALVE
- 90°, 45°, 22.5° & 11.25° BENDS
- TEE
- CROSS
- EXIST. WATER LINE
- OVERHEAD WIRES
- EXIST. STORM SEWER
- EXIST. WATER MAIN TO BE REMOVED
- EXIST. 2" WATER MAIN TO BE ABANDONED IN PLACE
- EXIST. 6" WATER MAIN TO BE GROUDED AND ABANDONED IN PLACE
- EXIST. UNGD CABLE
- PAVEMENT RESTORATION
- 1" ASPHALT OVERLAY

**NOTES:**

1. CONTRACTOR SHALL FIELD VERIFY THE LOCATION AND INVERT ELEVATIONS OF ALL EXISTING UNDERGROUND UTILITIES AND NOTIFY THE ENGINEER.
2. CONTRACTOR MUST RECEIVE CERTIFICATION OF PROPOSED WATER MAIN BEFORE PUTTING WATER MAIN INTO SERVICE.
3. EXISTING LANDSCAPING WILL BE REMOVED AND REPLACED WHERE NECESSARY.
4. CONNECT PROPOSED SERVICE LINE TO EXISTING/RELOCATED WATER METER UNLESS OTHERWISE INSTRUCTED BY THE TOWN OF DAVIE UTILITIES DEPARTMENT.
5. CONTRACTOR TO REUSE EXISTING WATER METERS AND BOXES.
6. EXISTING WATER SERVICE TO BE ABANDONED IN PLACE.
7. SINGLE SERVICE - 1" LINE
8. DOUBLE SERVICE - 2" LINE

NO	DATE	REVISION	BY	NO	DATE	REVISION	BY

DESIGNED M.J.O. DATE OCT. 2012  
 CHECKED R.F.M. DATE OCT. 2012  
 ISSUED FOR DATE OCT. 2012

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**SW 48TH COURT WATER MAIN UPGRADE**  
 TOWN OF DAVIE, FLORIDA

**WATER PLAN**

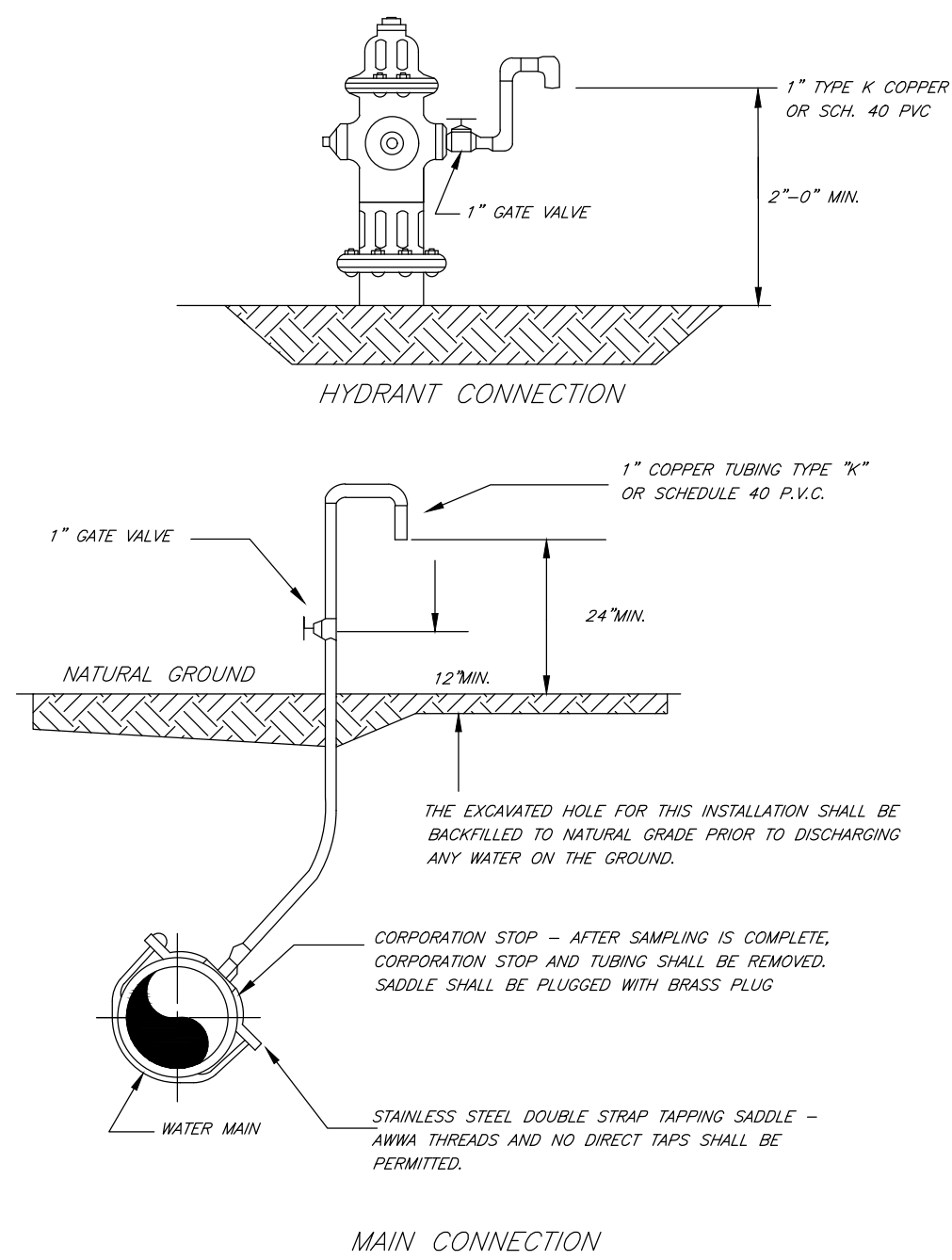
**FOR BIDDING PURPOSES ONLY**  
**NOT FOR CONSTRUCTION**

RICKY A. DEROSIA, P.E.  
 STATE OF FLORIDA PROFESSIONAL ENGINEER  
 LICENSE No. 38804  
 DATE: 09/27/16

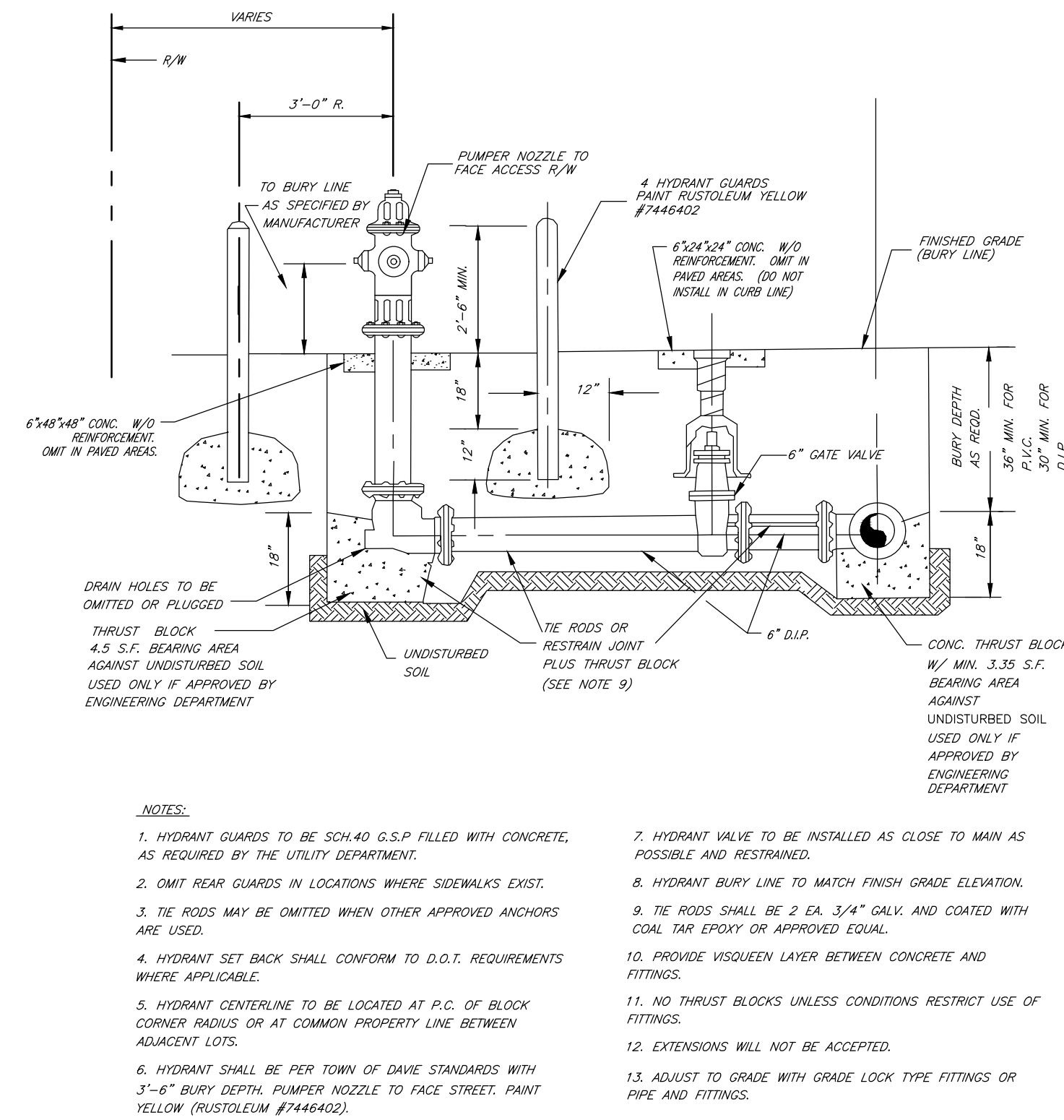


SCALE AS SHOWN  
 PROJECT No 96-1630.101  
 PURPOSE OF THIS SET PHASE  
 SHEET: 1  
**C2**  
 OF 1 SHEETS

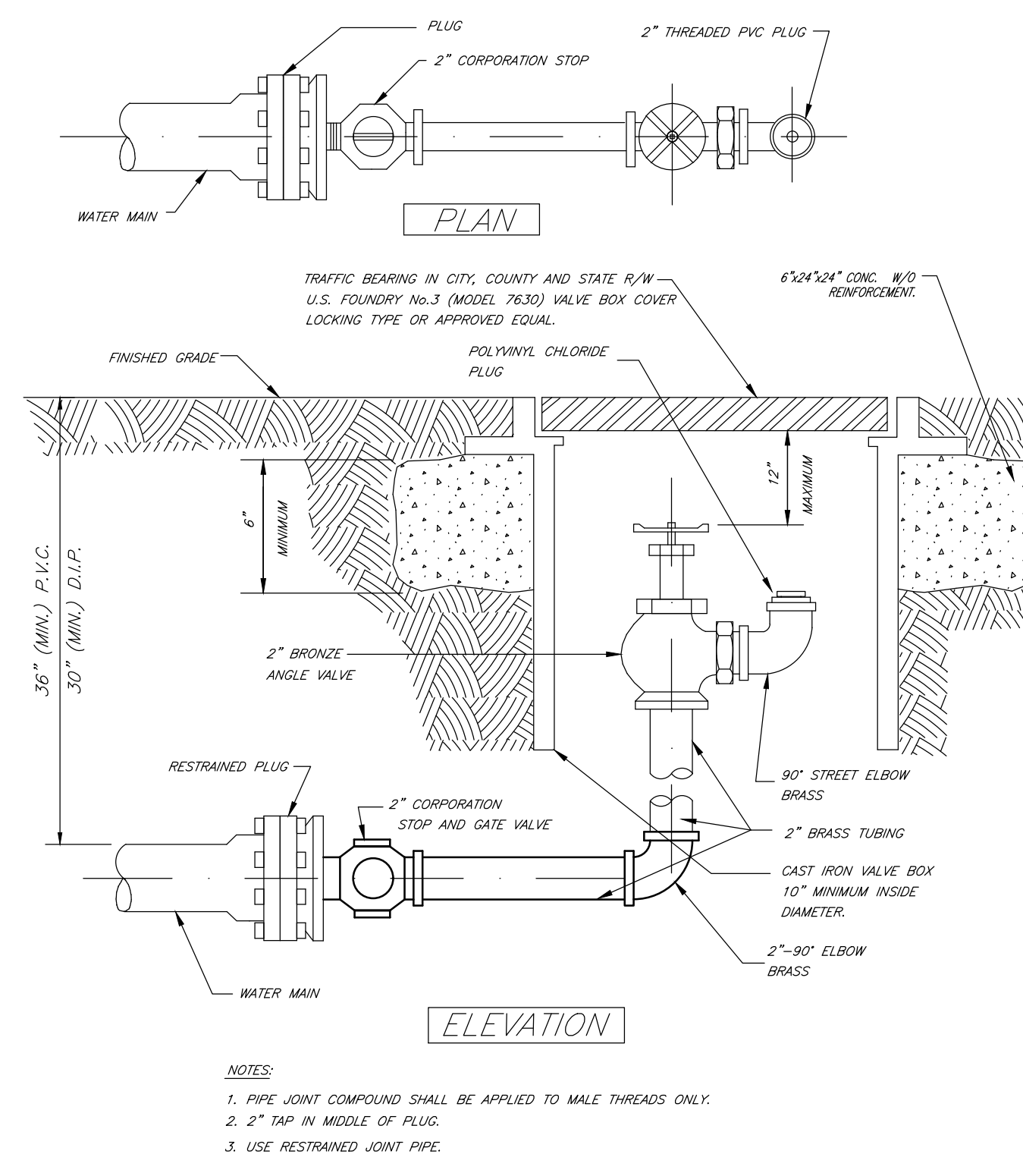
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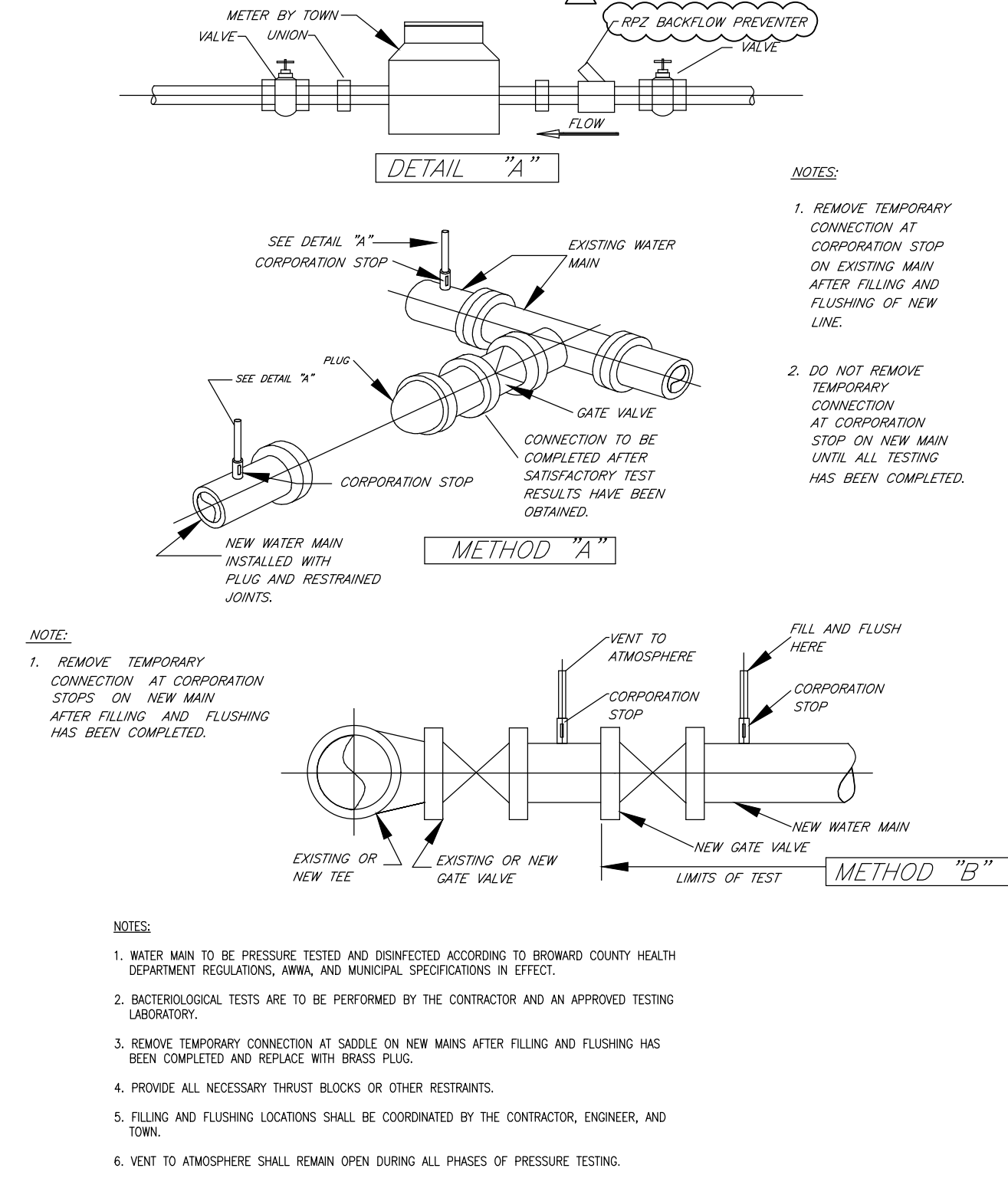
**W1. BACTERIOLOGICAL SAMPLING POINTS**  
REVISED 2013



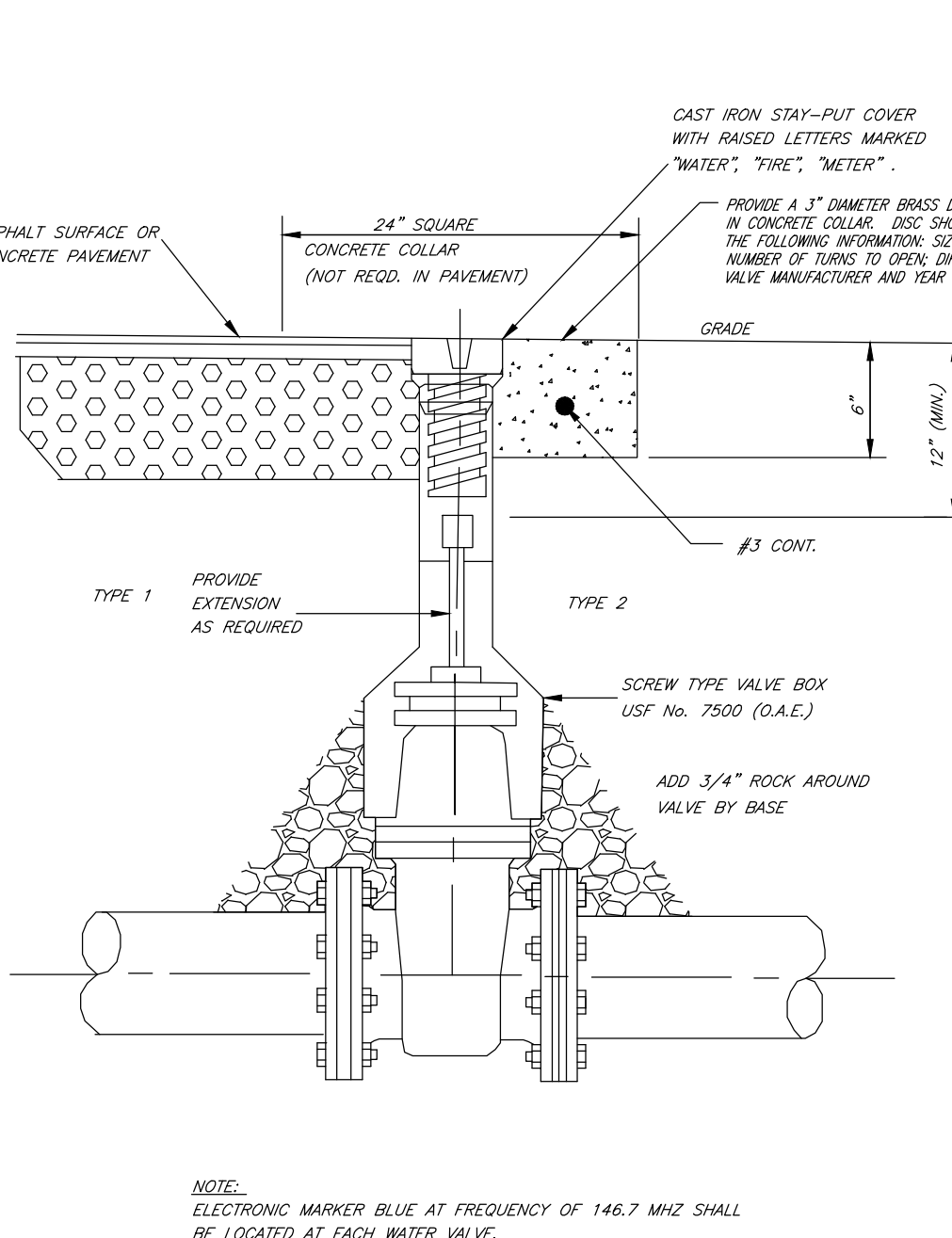
**W3. FIRE HYDRANT DETAIL**  
REVISED 2013



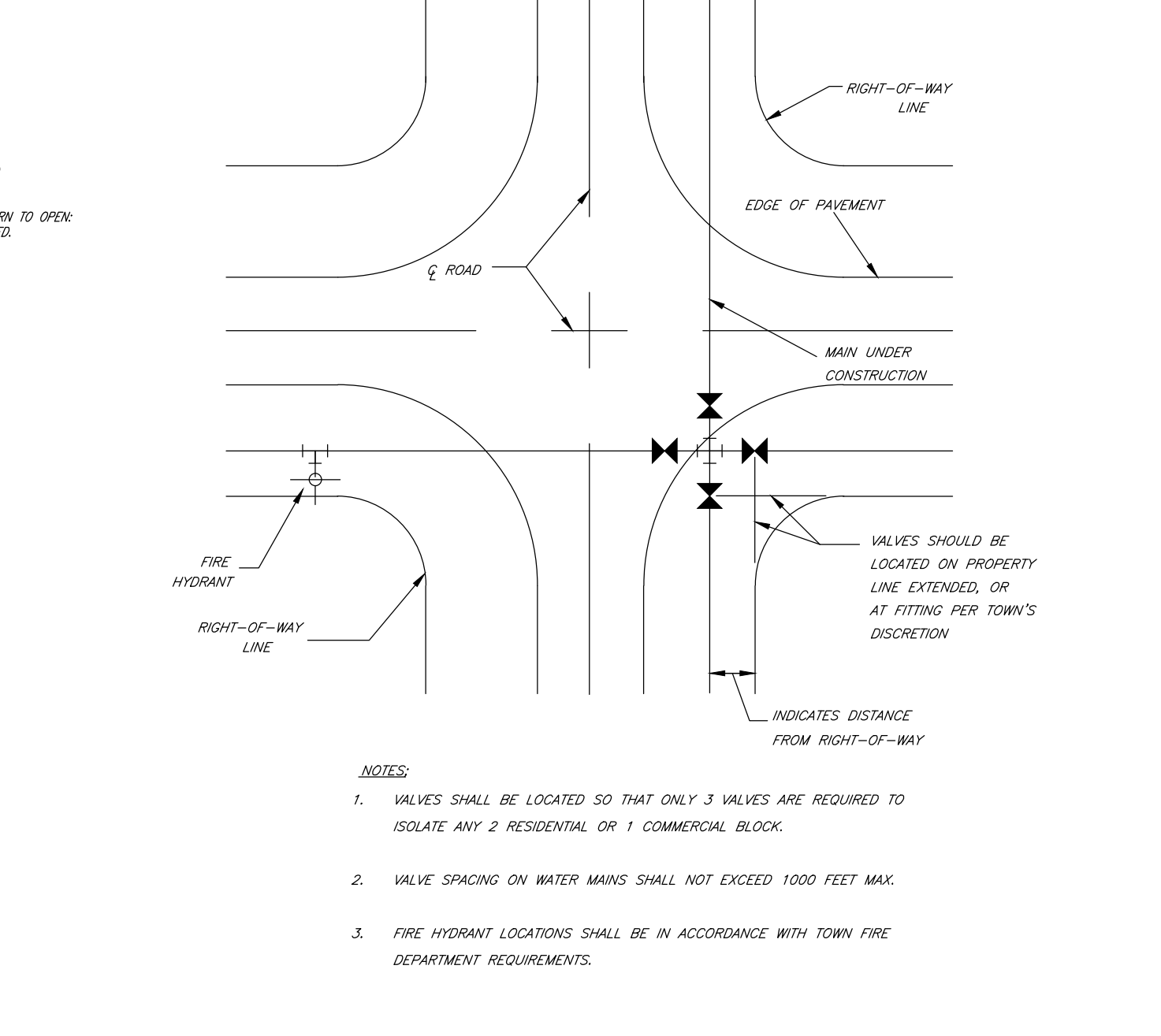
**W4. 2" TERMINAL BLOW OFF**  
REVISED 2013



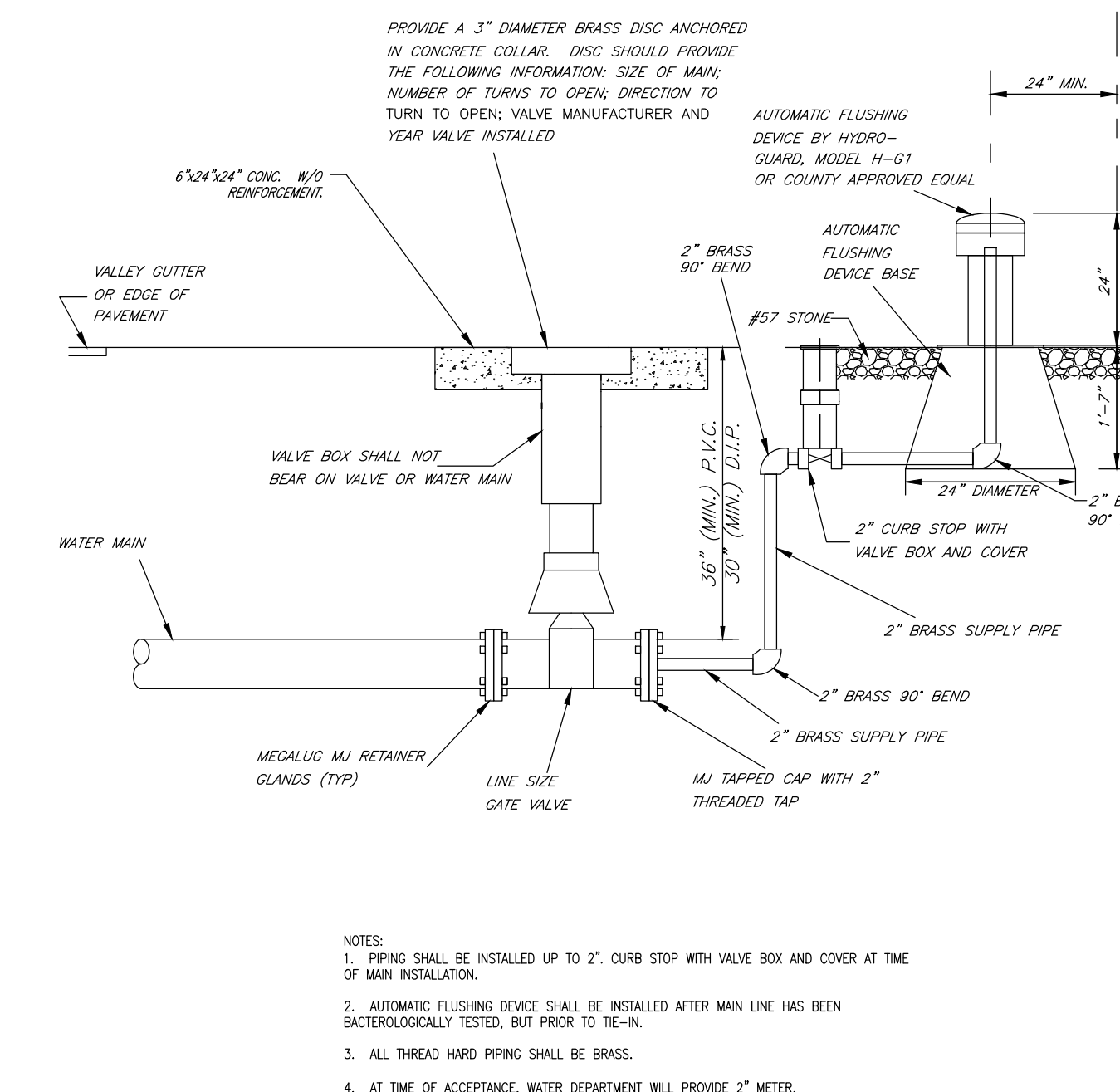
**W5. FILLING AND FLUSHING CONNECTION**



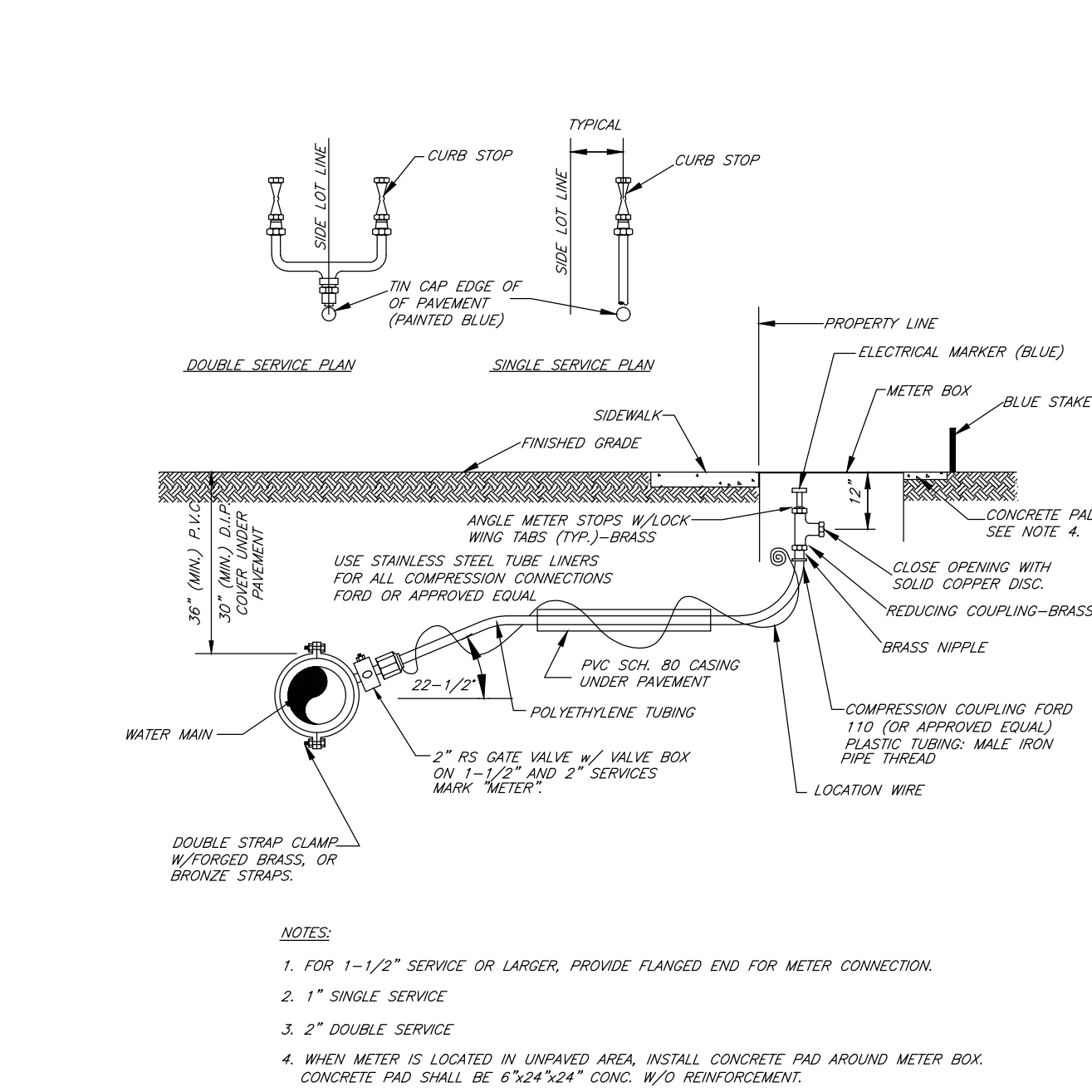
**W6. WATER VALVE BOX DETAIL**  
REVISED 2013



**W8. VALVE AND FIRE HYDRANT LOCATION**  
REVISED 2013



**W4. 2" AUTOMATIC WATER MAIN FLUSHING DETAIL**  
REVISED 2013



**W7. TYPICAL WATER SERVICE**  
REVISED 2013

NO	DATE	REVISION	BY	NO	DATE	REVISION	BY
3	03/09/13	REVISED PER BCHD	M.J.O.				

DESIGNED M.J.O. DATE SEPT. 2012  
 CHECKED R.F.M. DATE OCT. 2012  
 ISSUED FOR BIDDING DATE MAY 2013

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**SW 48TH COURT WATER MAIN UPGRADE**  
 TOWN OF DAVIE, FLORIDA

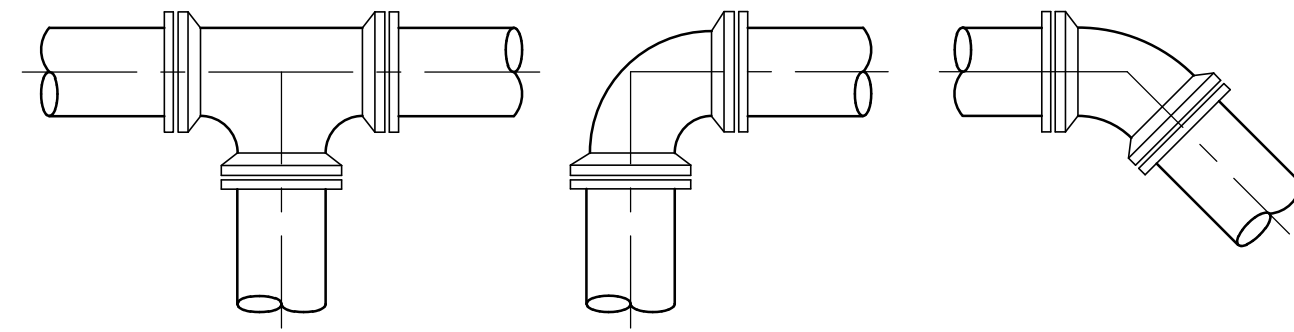
**WATER DISTRIBUTION DETAILS**

RICKY A. DEROSIA, P.E.  
 STATE OF FLORIDA PROFESSIONAL ENGINEER  
 LICENSE No. 38804  
 DATE: 09/27/16

SCALE: N.T.S.  
 PROJECT No: 96-1630.101  
 PURPOSE OF THIS SET: PHASE  
 SHEET: 1 OF 1 SHEETS  
**C3**



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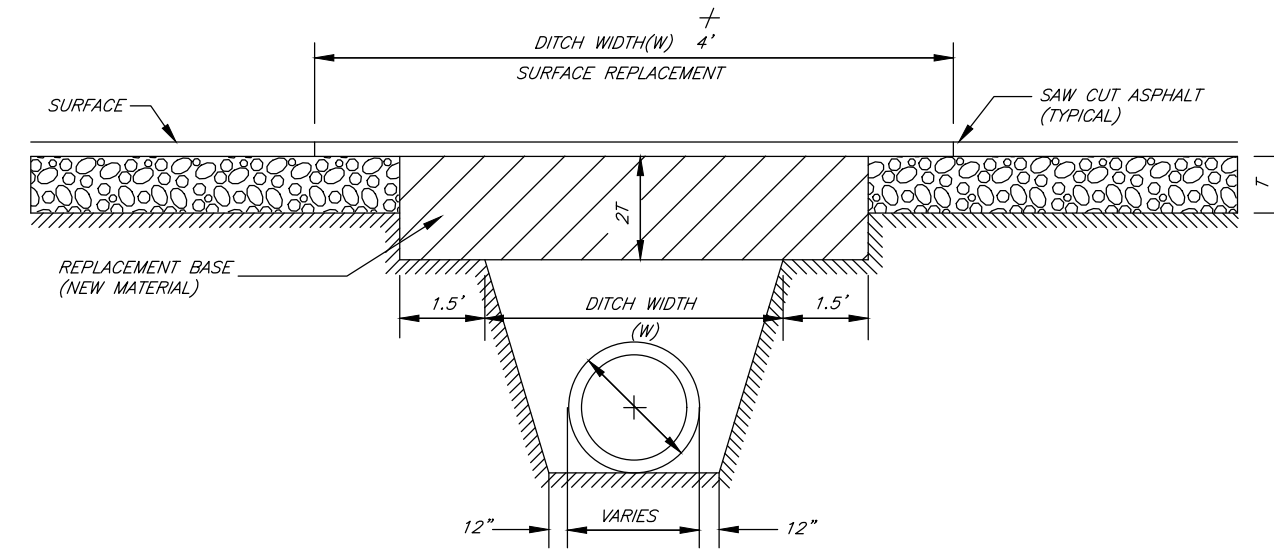


TEE & WYE 90° BEND 45° & 22 1/2° BEND

RESTRAINED PIPE LENGTH (LINEAR FEET)					
PIPE SIZE	TEE & WYE	90° BEND	45° BEND	22 1/2° BEND	11 1/4° BEND
6"	27	27	16	9	5
8"	34	34	20	11	6
10"	41	41	24	14	7
12"	48	48	28	16	8
14"	55	55	32	18	10
16"	62	62	35	20	11
18"	69	69	39	22	12
20"	75	75	42	24	13
24"	87	87	49	27	14
30"	104	104	57	31	17
36"	120	120	65	35	19
42"	134	134	72	39	21
48"	147	147	79	42	22
54"	160	160	85	45	24

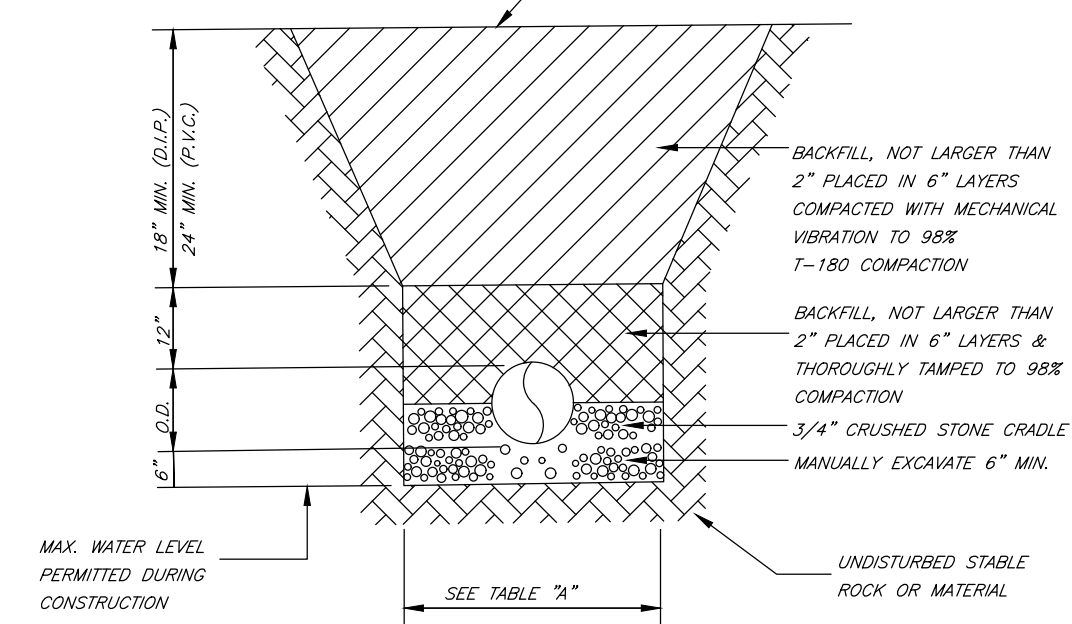
NOTE: THE FIGURES IN THIS TABLE ARE BASED ON 150 PSI TEST PRESSURE WITH 2.5 FEET OF COVER AND 2000 POUNDS PER SQUARE FOOT SOIL BEARING AGAINST UNDISTURBED TRENCH. A 20% SAFETY FACTOR HAS BEEN ADDED.

**RESTRAINED JOINT DETAIL**



**NOTES:**

1. REPLACED BASE MATERIAL OVER DITCH SHALL BE TWICE THE THICKNESS OF THE ORIGINAL BASE (MINIMUM 12", MAXIMUM 18").
2. BASE MATERIAL SHALL BE PLACED IN 6" MAXIMUM (LOOSE MEASUREMENT) LAYERS AND EACH LAYER THOROUGHLY ROLLED OR TAMPED TO 98% OF MAXIMUM DENSITY PER MASHTO T-180.
3. ASPHALT CONCRETE PAVEMENT JOINTS SHALL BE MECHANICALLY SAWED. SURFACED TREATED PAVEMENT JOINTS SHALL BE LAPPED AND FEATHERED.
4. SURFACE MATERIAL SHALL BE CONSISTENT WITH EXISTING SURFACE AND A MIN THICKNESS (1-1/4") OR MULTIPLE COURSES IF SO DESIRED.
5. A MINIMUM OF TWO DENSITY TESTS SHALL BE TAKEN FOR EACH SIX (6) INCH LIFT OF SUBGRADE AND EACH LIFT OF BASE MATERIAL AT EACH OPEN-CUT CROSSING. PROCTORS FOR MATERIALS USED IN BACKFILLING AND DENSITY TESTS SHALL BE CONDUCTED BY A CERTIFIED LABORATORY SELECTED BY THE TOWN. THE PERCENTAGE OF MAXIMUM DENSITY REQUIRED SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE FL DEPARTMENT OF TRANSPORTATION STANDARD SPECIFICATIONS AND OR B.C.E.D. "MINIMUM STANDARDS" IN COUNTY R/W'S AT THE TIME THE PERMIT IS ISSUED. ALL DENSITY TESTS SHALL BE COMPLETED AND ACCEPTED ON EACH LAYER PRIOR TO ADDITIONAL BACKFILLING. A COPY OF ALL COMPLETED AND ACCEPTED DENSITY TESTS SHALL BE FURNISHED TO THE BCD OR TO THE FL DEPARTMENT OF TRANSPORTATION UPON REQUEST.
6. BASE MATERIAL SHALL HAVE A MINIMUM LBY OF 100 AND A MINIMUM CARBONATE CONTENT OF 70% (SEE DEER FOR LOCAL STREETS).
7. IF THE DITCH IS FILLED TEMPORARILY, IT SHALL BE COVERED WITH A 2" ASPHALTIC CONCRETE PATCH TO KEEP THE FILL MATERIAL FROM TRAVELING UNTIL REPAID WITH A PERMANENT PATCH.
8. TRENCHES DEEPER THAN FIVE FEET (5') MUST COMPLY WITH CURRENT O.S.H.A. SHORING/BRACING REQUIREMENTS.

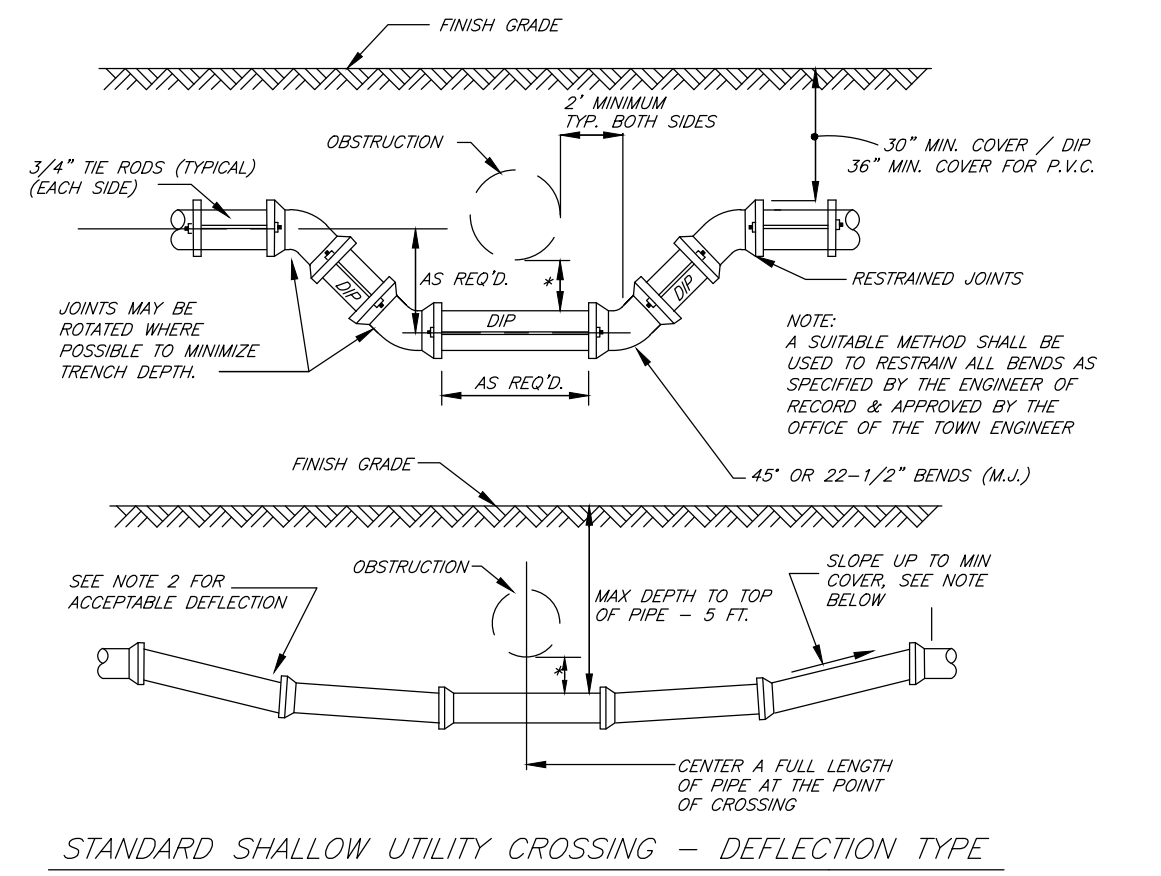


**NOTES:**

1. MAXIMUM DENSITY DETERMINED BY MASHTO T-99
2. MAXIMUM DEPTH TO BOTTOM OF PRESSURE MAINS SHALL NOT EXCEED SIX (6) FEET UNLESS OTHERWISE APPROVED BY THE TOWN OF DAVIE UTILITY DEPT.

TABLE "A"		
PIPE SIZE	DEPTH OF BACKFILL AT WHICH TRENCH WIDTH IS TO BE LIMITED	MAX. TRENCH WIDTH
8"	15"	3'-0"
10"	12"	3'-0"
12"	12"	3'-3"
15"	12"	3'-6"
18"	12"	3'-9"

DIMENSIONS SHOWN APPLY TO ALL FOUNDATION



**STANDARD SHALLOW UTILITY CROSSING - DEFLECTION TYPE**

**SPECIAL UTILITY CROSSING**

**NOTES:**

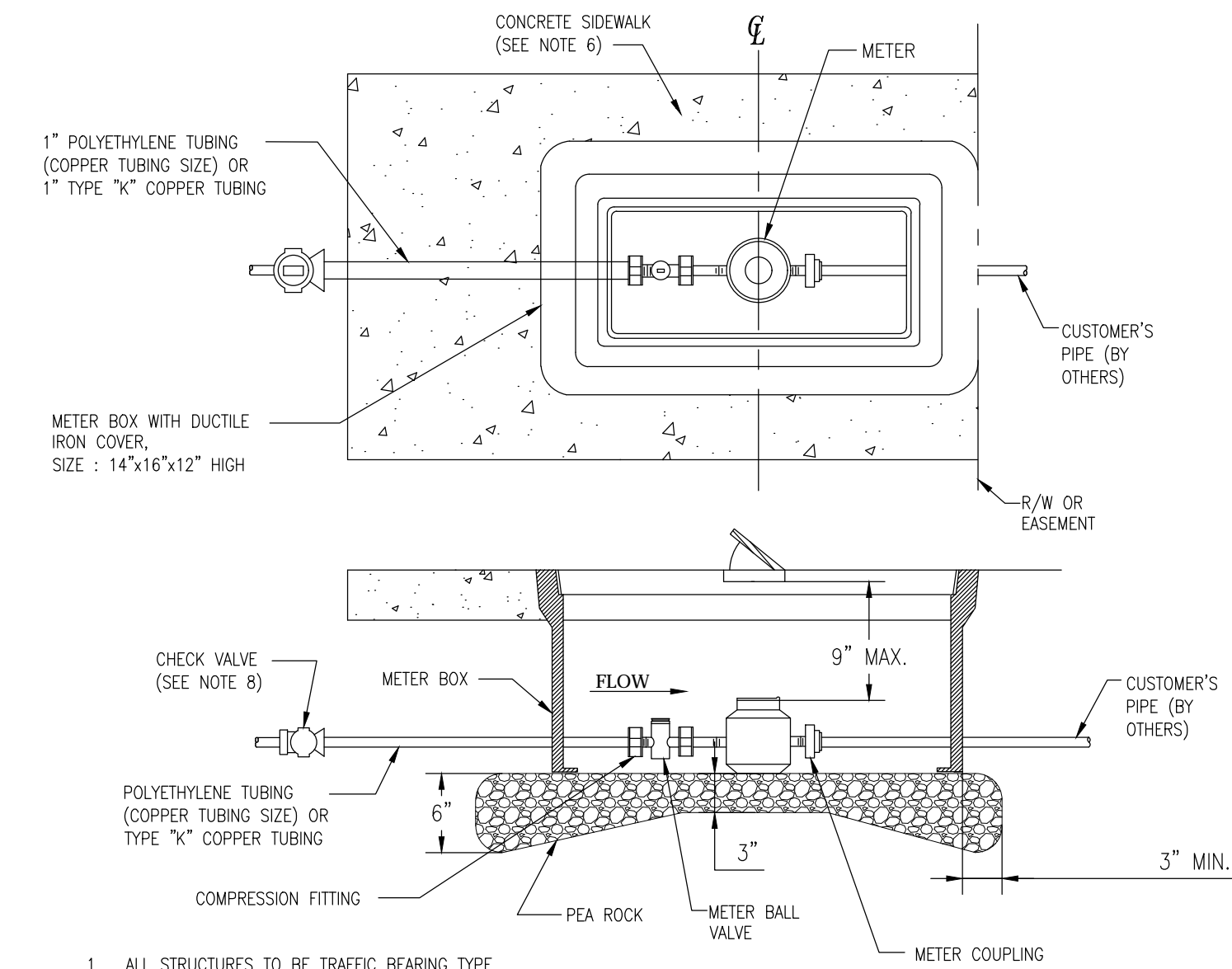
1. THE DEFLECTION TYPE CROSSING SHALL BE USED WHENEVER POSSIBLE ONLY UNDER SPECIFIC ORDERS BY THE ENGINEER. THE FITTING TYPE CROSSING BE ALLOWED.
2. CONSTRUCT STANDARD CROSSING USING 75% OF MANUFACTURER'S MAXIMUM JOINT DEFLECTION (MAX.).
3. COAT THE ROADS WITH A BITUMINOUS COATING (2 COATS MIN.) AFTER INSTALLATION WHEN THE ROADS ARE USED FOR PIPE RESTRAINT.
4. TOWN OF DAVIE ENGINEERING INSPECTOR SHALL BE NOTIFIED AT LEAST 48 HOURS IN ADVANCE OF ALL DEFLECTION OPERATIONS.
5. NO WATER OR SEWER FORCE MAINS OF ANY SIZE PVC OR DIP PIPE THAT CROSS OTHER UTILITIES AND WILL NOT MAINTAIN A MIN. 18" VERTICAL SEPARATION WILL NOT BE INSTALLED BY WAY OF DEFLECTION OTHER THAN FOUR 45 DEGREE BENDS WITH MECHANICAL AND RESTRAINED WITH THREADED RODS AT ALL JOINTS. PIPE RESTRAINTS ARE REQUIRED TO TOP 45 DEGREE BENDS.

FIELD INSPECTION BY TOWN'S ENGINEERING INSPECTOR IS REQUIRED PRIOR TO INSTALLATION.  
\* 12" MIN. CLEARANCE REQUIRED FOR WATER AND SEWER MAIN CROSSING. 12" MIN. CLEARANCE REQUIRED FOR OTHER TYPE UTILITIES CROSSING. ENCASEMENT IN CONCRETE IS NOT PERMITTED

**C5. REPLACEMENT OF FLEXIBLE PAVEMENT CUT FOR UTILITY CROSSING OF ROADWAY**  
REVISED 2013

**C4. TYPICAL WATER AND SEWER TRENCH DETAIL**

**C1. UTILITY CROSSINGS**  
REVISED 2013



1. ALL STRUCTURES TO BE TRAFFIC BEARING TYPE.
2. R/W LINE OR EASEMENT LINE IS THE CUSTOMER'S SIDE OF METER BOX.
3. TOWN'S RESPONSIBILITY ENDS AT THE CUSTOMER'S SIDE OF METER.
4. CURVE IN SERVICE LINE SHALL BE AS CLOSE TO METER BOX AS PRACTICAL, MINIMUM RADIUS SHALL BE 14" FOR 1" TUBING.
5. ALL METERS WILL BE SUPPLIED AND INSTALLED BY TOWN. METER HAS IRON PIPE THREAD MALE CONNECTION ON EACH END.
6. WHEN SIDEWALKS ARE PRESENT, OR PLANNED FOR IN THE R/W, THE BACK EDGE OF THE METER BOX SHALL LINE UP WITH THE BACK EDGE OF THE SIDEWALK.
7. METER SHALL BE CENTERED IN BOX DIRECTLY UNDER THE ACCESS LID.
8. THE CHECK VALVE IS TO BE INSTALLED 5 FEET BEFORE THE METER BALL VALVE.
9. WHEN THERE ARE NO SIDEWALKS, CONSTRUCT 6" WIDE x 6" THICK CONCRETE COLLAR AT GRADE.

METER SIZE	LAYING LENGTH (IN)	HEIGHT (IN)
3/8"	7.5	4.56
1"	10.75	5.75

**WATER METER BOX DETAIL**  
REVISED 2013

**C3. UTILITY CROSSING GENERAL REQUIREMENTS**  
REVISED 2013

1. A WATER MAIN SHOULD CROSS OVER PIPES WHEREVER POSSIBLE MAINTAINING A 36 INCH COVER FOR PVC 30 INCH COVER FOR D.I.P. AND 12 INCH SEPARATION 45 MINIMUM.
2. WHENEVER A WATER MAIN CROSSES UNDER A SEWER MAIN, OR CROSSES OVER WITH LESS THAN 12 INCHES VERTICAL SEPARATION THEN MECHANICALLY RESTRAINED D.I.P. SHALL BE USED FOR BOTH PIPES FOR A DISTANCE OF 20 FEET CENTERED ON CROSSING WITH NO JOINTS WITHIN 10 FEET OF THE CROSSING.
3. 12 INCH SEPARATION SHOULD BE MAINTAINED BETWEEN ALL PIPES (STORM, SEWER, WATER) WHENEVER POSSIBLE, 6 INCHES IS THE ABSOLUTE MINIMUM SEPARATION WITH MECHANICALLY RESTRAINED D.I.P. REQUIRED FOR ANY SEPARATION LESS THAN 12 INCHES.
4. MAINTAIN 6 FEET HORIZONTAL SEPARATION BETWEEN WATER AND SEWER AS A MINIMUM.
5. 3 FOOT HORIZONTAL CLEARANCE SHALL BE PROVIDED BETWEEN UTILITIES AND ANY OBSTRUCTION (CATCH BASINS, CONCRETE POLES, ETC.)
6. 5 FOOT HORIZONTAL CLEARANCE SHALL BE PROVIDED BETWEEN UTILITIES AND TREES.

File Name: P:\Projects\1996\961630.Dave General Engineering Services\Cadd Files\961630.01 SW 48TH COURT WATER MAIN REPLACEMENT\96-1630.01\_C\_WATR\_DET.DWG (Plotted by: Mike Orifice on Thursday, October 27, 2016 8:38:46 AM)

NO	DATE	REVISION	BY	NO	DATE	REVISION	BY

DESIGNED M.J.O.  
DATE SEPT. 2012  
CHECKED R.F.M.  
DATE OCT. 2012  
ISSUED FOR BIDDING  
DATE MAY 2013



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**SW 48TH COURT WATER MAIN UPGRADE**  
TOWN OF DAVIE, FLORIDA

**WATER DISTRIBUTION DETAILS**

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NOT FOR CONSTRUCTION

RICKY A. DEROSIA, P.E.  
STATE OF FLORIDA PROFESSIONAL ENGINEER  
LICENSE No. 38804  
DATE: 09/27/16

SCALE AS SHOWN  
PROJECT No 96-1630.101  
PURPOSE OF THIS SET PHASE  
SHEET: 1 OF 1 SHEETS



**C4**

