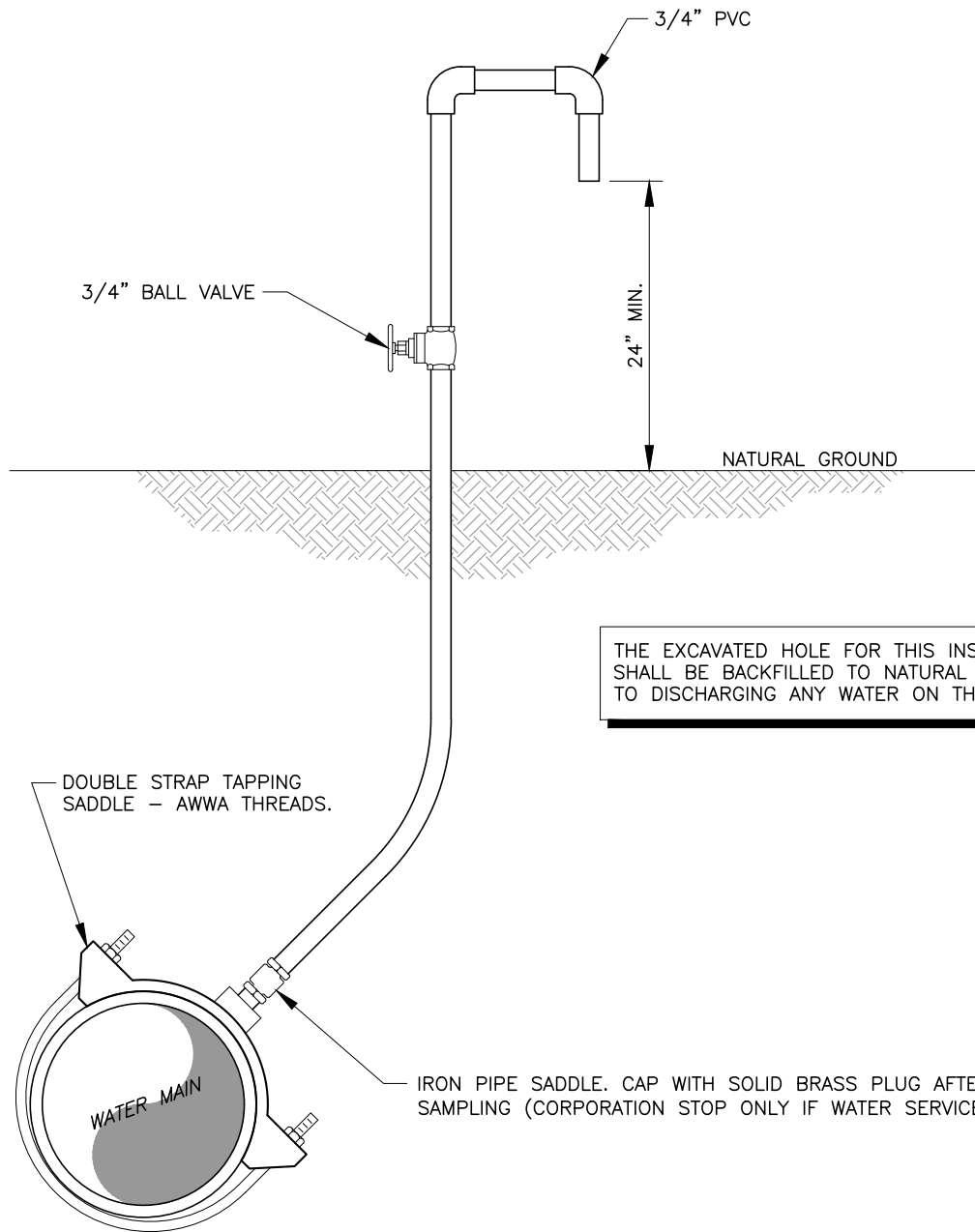


V. STANDARD DETAILS

DOMESTIC WATER DETAILS

DRAWING INDEX

<u>TITLE</u>	<u>DRAWING #</u>
Sampling Point (In-Line)	W-1
Sampling Point (Fire Hydrant).....	W-2
Permanent Sampling Station Detail (Eclipse 88WC)	W-3
This Sheet Left Blank Intentionally.....	W-4
Cleaning Cannon Flushing Procedure	W-5
New Connection Double Valve Swab Tee or Wye with Atmospheric Vent Connection	W-6
Typical Butterfly Valve Setting.....	W-7
Typical Gate Valve Setting and Cut-In Detail	W-8
Typical Fire Hydrant Installation.....	W-9
Typical Water Service Installation.....	W-10
Typical Residential & Commercial Water Service.....	W-11
Water Main Double Valve Detail	W-12
Potable Water Service Radio Read For Sensus ¾" & 1" Water Meters.....	W-13
Potable Water Service Radio Read For Sensus 1½" & 2" Water Meters.....	W-14
Potable Water Service Single ⅝" x ¾" & 1" Meter Installation Detail.....	W-15 & 15A
Potable Water Service w/ Custom Setter Single 1½" & 2" Meter Installation Detail.....	W-16
Potable Water Service 3", 4" & Special Meter Pit	W-17 & W-17A
Above Ground Potable Water Meter 3" & 4".....	W-17B
Backflow Device for ¾" to 2" Water Meter.....	W-18
Dual Backflow Device for ¾" to 2" Water Meters.....	W-19
Double Detector Check Backflow Assembly	W-20
This Sheet Left Blank Intentionally.....	W-21
Water Main Offset Air Release Valve and Manhole	W-22
Tangential Water Main Offset Air/Vacuum Combination Valve & Manhole.....	W-23
Lift Station Backflow Preventer Assembly	W-24
1½" & 2" Commercial & Multi-Family Ball Valve & Box Illustration.....	W-25
Fire Hydrant Clear Zone	W-26
Special Meter Pit – Diamond Plate Access Hatch.....	W-27 & W-27A
Tapping Sleeve and Valve Installation Detail	W-28
Water Main Locating Wire Detail For Non-Metallic Pipe.....	W-29
Bollard Detail.....	W-30
Water Termination Valve and Cap	W-31



NOTES:

1. WHERE POSSIBLE, SERVICE TAPS SHALL BE USED AS SAMPLING POINTS.
2. IF SAMPLE POINT IS NOT A SERVICE LINE OR FIRE HYDRANT, CORP. STOP SHALL BE REMOVED, AND PLUGGED UNDER DEPARTMENT INSPECTION AFTER SATISFACTORY BACTERIOLOGICAL TESTING AND RELEASED FOR SERVICE BY THE P.B.C. HEALTH DEPARTMENT.
3. IN NO CASE SHALL ANY SAMPLE POINT BE LOCATED IN A TRAFFIC AREA.
4. THREADED AREAS OF CORPORATION STOP SHALL BE SPIRAL WRAPPED WITH TWO WRAPS OF TEFLON TAPE.



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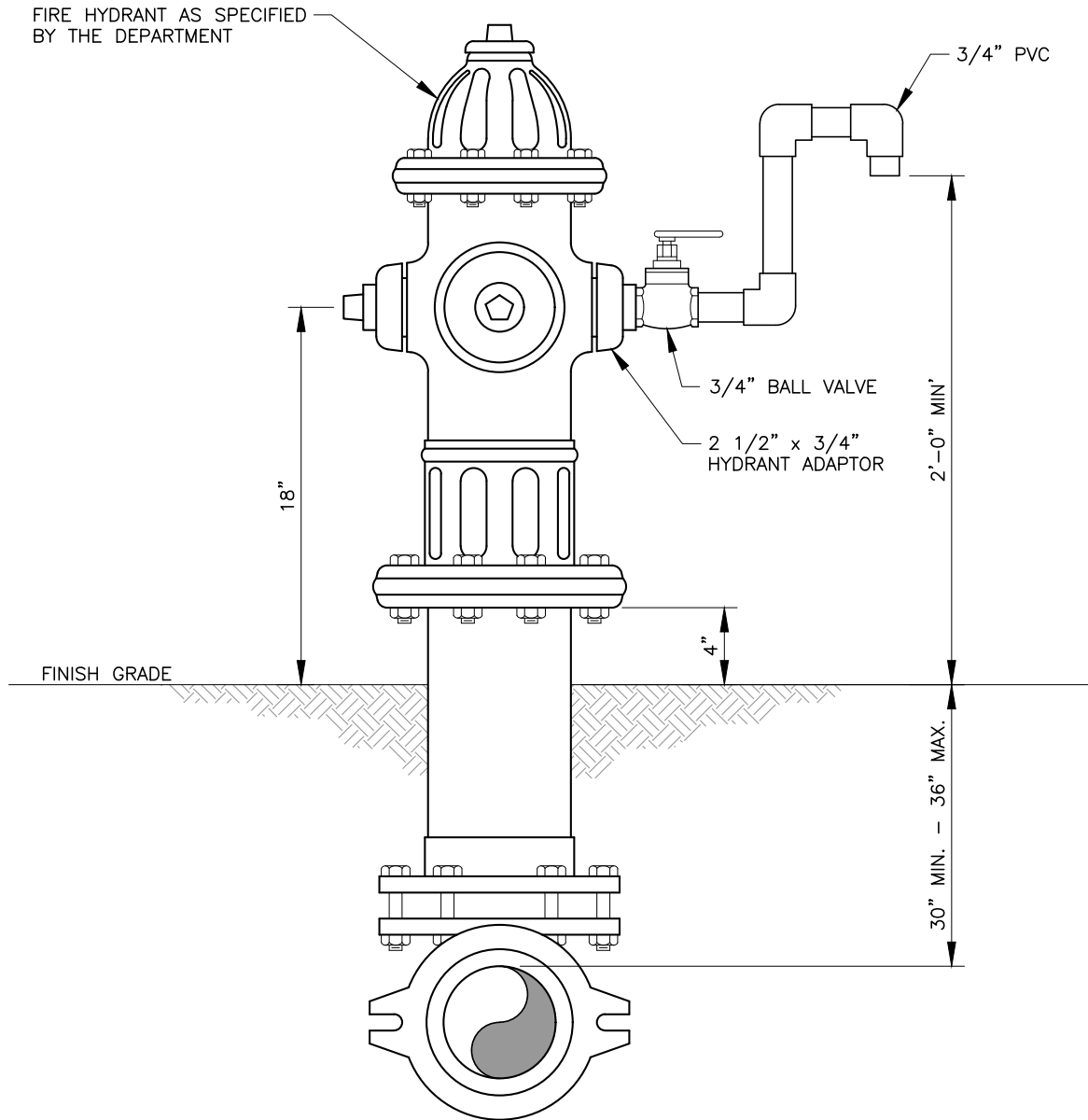
BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

SAMPLING POINT (IN-LINE)

NOT TO SCALE EFF. DATE
05/24

PAGE NUMBER
W-1

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NOTE:

USE OF THIS SAMPLING POINT METHOD IS STRICTLY FOR USE BY THE DEPARTMENT PERSONNEL ONLY.



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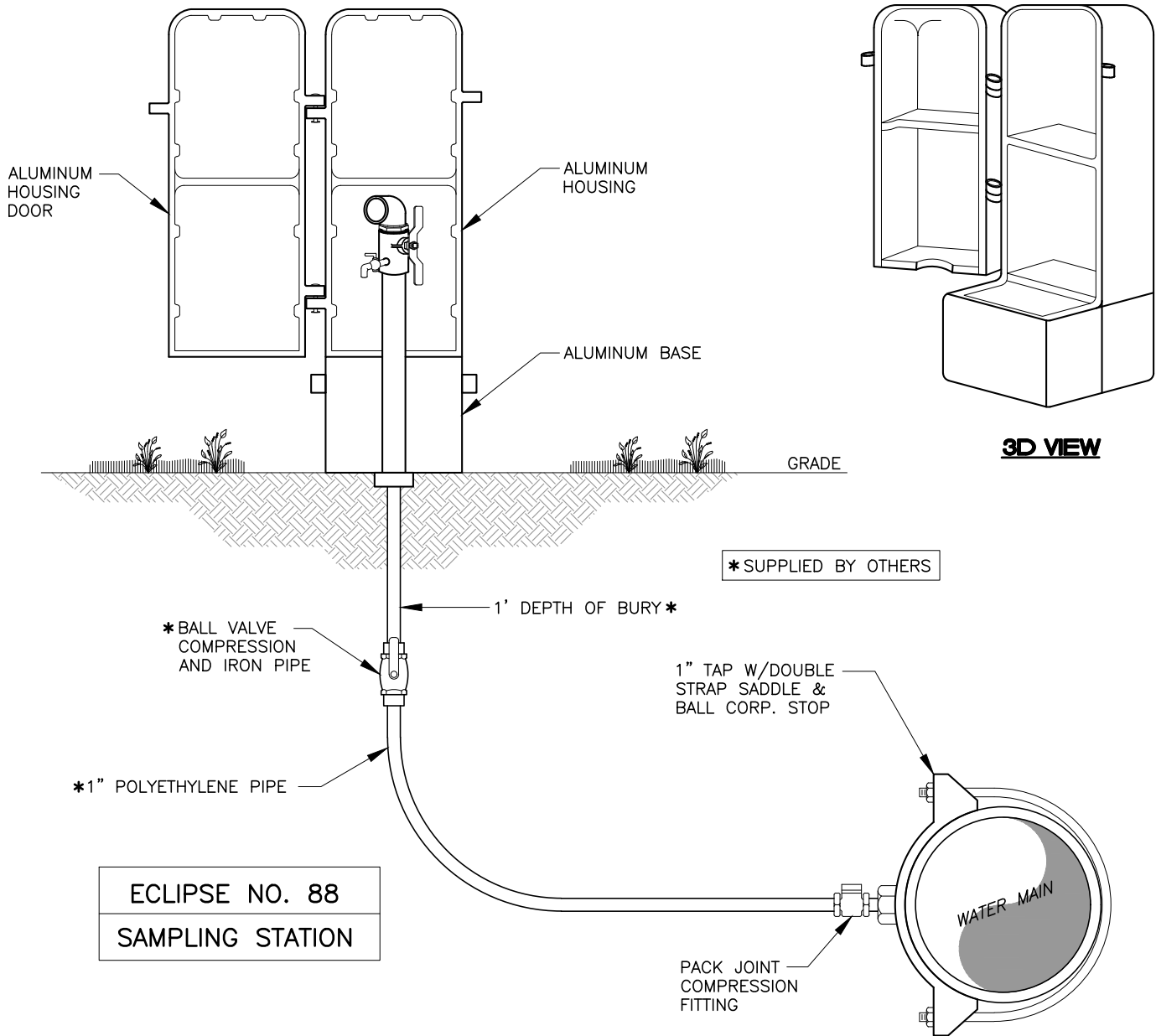
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SAMPLING POINT (FIRE HYDRANT)

NOT TO SCALE | EFF. DATE
05/24

PAGE NUMBER
W-2

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NOTES:

1. THE PERMANENT SAMPLING STATION SHALL BE INSTALLED AT EACH UTILITY WATER SYSTEM INTER- CONNECT AND AS DIRECTED BY THE DEPARTMENT.
2. THE SAMPLING STATION SHALL BE LOCATED IN EASILY ACCESSIBLE AREA, MINIMUM 10' (FEET) FROM EDGE OF PAVEMENT, PREFFERABLY IN GRASSED AREA.
3. THIS SAMPLING STATION "ECLIPSE NO. 88" WITH ALUMINUM HOUSING (ONE FOOT BURY DEPTH) IS FROM THE KUPFERLE FOUNDRY CO. ALTERNATIVE DESIGNS WILL BE ACCEPTED SUBJECT TO REVIEW AND APPROVAL BY THE DEPARTMENT.
4. LOCATION PLAN SHALL BE APPROVED BY THE DEPARTMENT.
5. SAMPLING STATIONS SHALL BE 1' BURY, WITH A 1" MIP INLET, AND A 1" THREADED DISCHARGE. A 1/4" BENT-NOSE SAMPLING BIBB SHALL BE LOCATED BEFORE THE DISCHARGE.
6. ALL STATIONS SHALL BE ENCLOSED IN A LOCKABLE PLASTIC HOUSING.
7. WHEN OPENED, THE STATION SHALL REQUIRE NO KEY FOR OPERATION, AND THE WATER WILL FLOW IN AN ALL BRASS WATERWAY.
8. ALL WORKING PARTS WILL BE OF BRASS AND SERVICEABLE FROM ABOVE GROUND WITH NO DIGGING. A 1" BALL VALVE WILL CONTROL THE WATER FLOW, AND BE LOCATED AFTER THE SAMPLING BIBB, AS MANUFACTURED BY KUPFERLE FOUNDRY, MODEL# 88WC ST. LOUIS, MO 63102.



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PERMANENT SAMPLING STATION DETAIL (ECLIPSE 88)

NOT TO SCALE EFF. DATE
05/24

PAGE NUMBER
W-3

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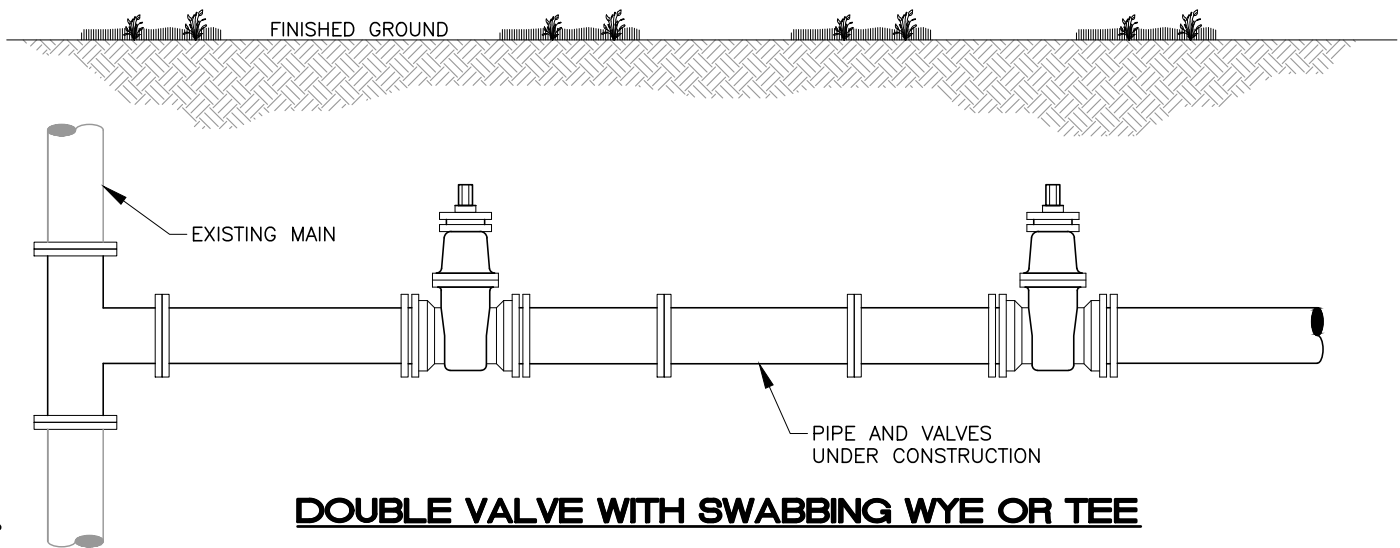
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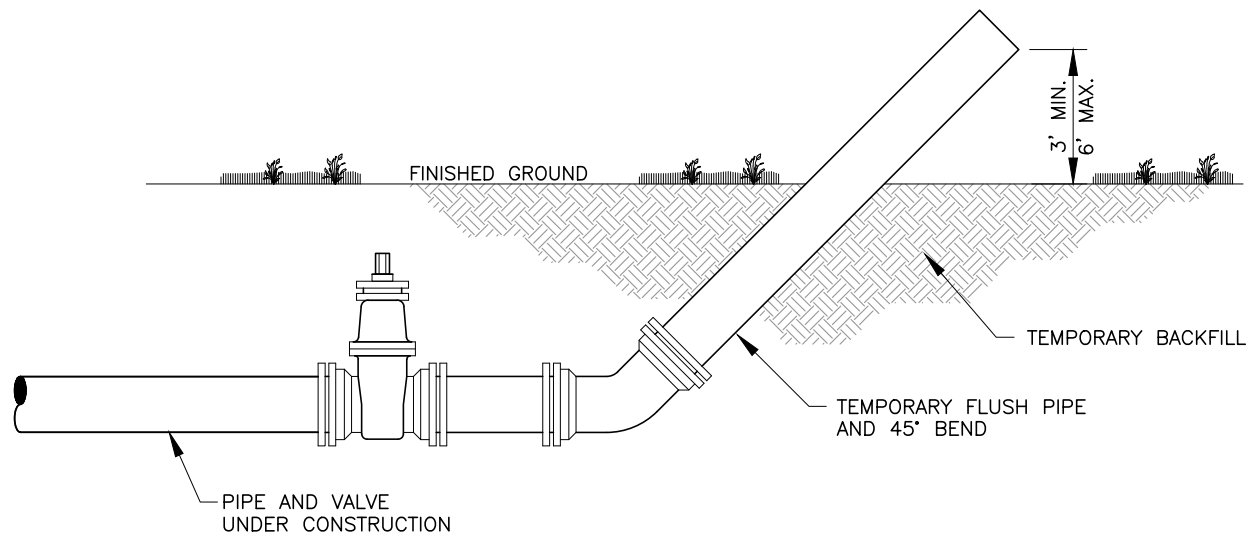
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PAGE NUMBER W-4

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DOUBLE VALVE WITH SWABBING WYE OR TEE



CANNON FLUSH

NOTES:

1. UPON COMPLETION OF THE PIPE INSTALLATION FOR ANY SECTION, THE MAINS SHALL BE SWABBED TO REMOVE DIRT AND ANY OTHER FOREIGN MATTER BY ACHIEVING A MINIMUM VELOCITY OF 2.5 FEET PER SECOND IN THE PIPE. TEMPORARY FITTINGS, PIPE, ETC. MAY BE NEEDED TO FACILITATE FLUSHING.
2. INSTALL A 45° BEND OR WYE FITTING AND ASSOCIATED PIPING AS SHOWN TO DIRECT THE FLUSHING WATER AWAY FROM THE IMMEDIATE WORK AREA AND EXERCISE DUE CARE SO AS TO ENSURE THAT THE WATER USED IN FLUSHING DOES NOT CAUSE A NUISANCE OR INFLICT PROPERTY DAMAGE.
3. BENDS AND PIPING SHALL BE THE SAME SIZE AS THE LINE TO BE FLUSHED.
4. PRIOR TO THE ACTUAL LINE FLUSHING OPERATION, THE CONTRACTOR SHALL PROPERLY NOTIFY THE DEPARTMENT INSPECTOR OF SUCH INTENDED WATER USE.
5. NO EXISTING VALVES SHALL BE TURNED ON OR OFF, EXCEPT BY AUTHORIZED DEPARTMENT PERSONNEL.
6. FLUSHING SHALL NOT BE ACCOMPLISHED WITHOUT THE ACTUAL PRESENCE OF THE DEPARTMENT INSPECTOR.
7. AFTER THE LINE UNDER CONSTRUCTION HAS BEEN SUCCESSFULLY FLUSHED THE CONTRACTOR SHALL REMOVE THE TEMPORARY PIPING ARRANGEMENT AND PROCEED WITH THE REMAINING CONSTRUCTION AS SPECIFIED.
8. THERE MAY BE SPECIAL REQUIREMENTS FOR FLUSHING PIPE LARGER THAN 12" DIAMETER.



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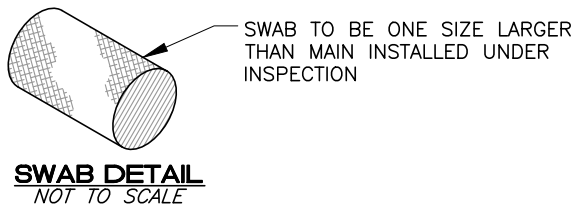
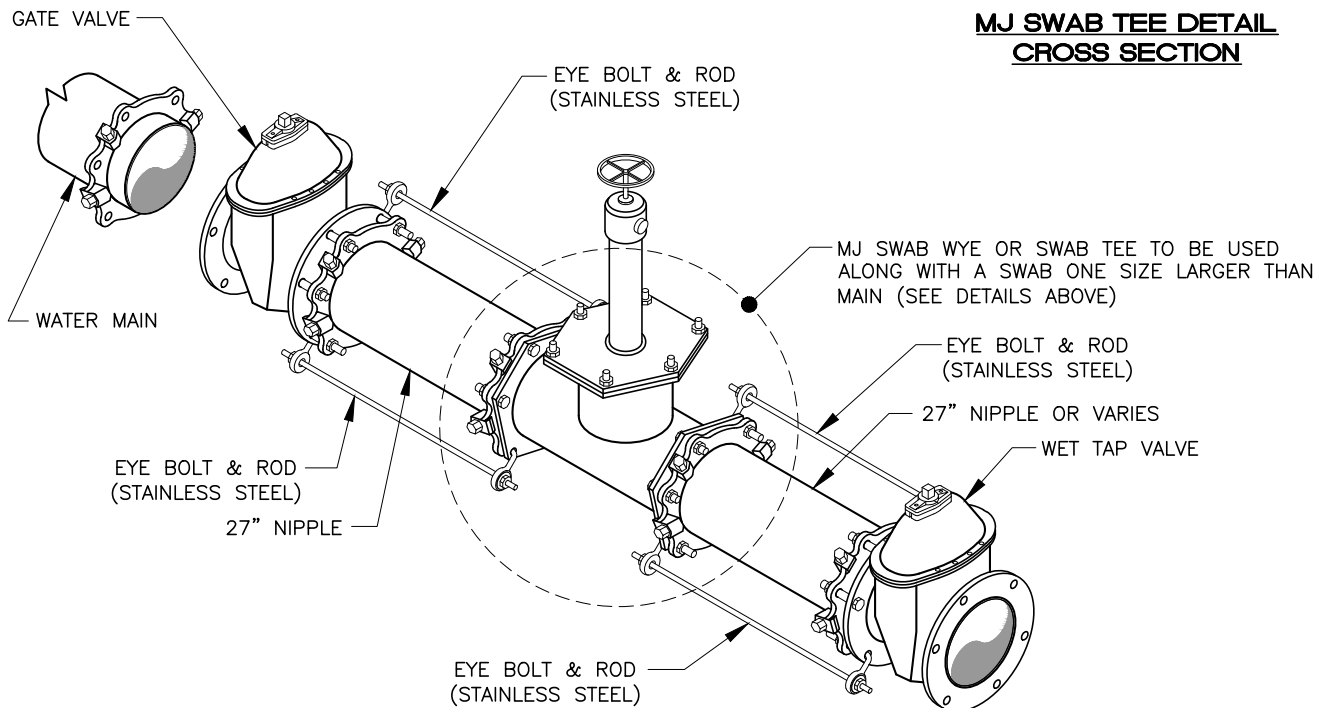
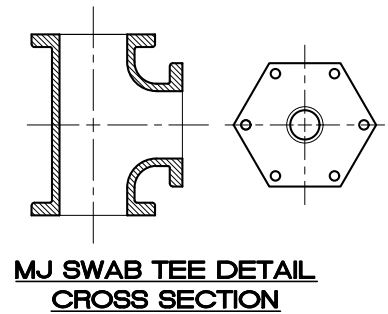
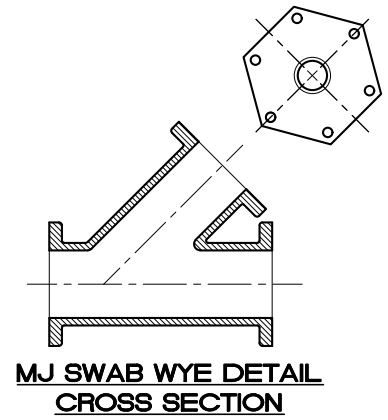
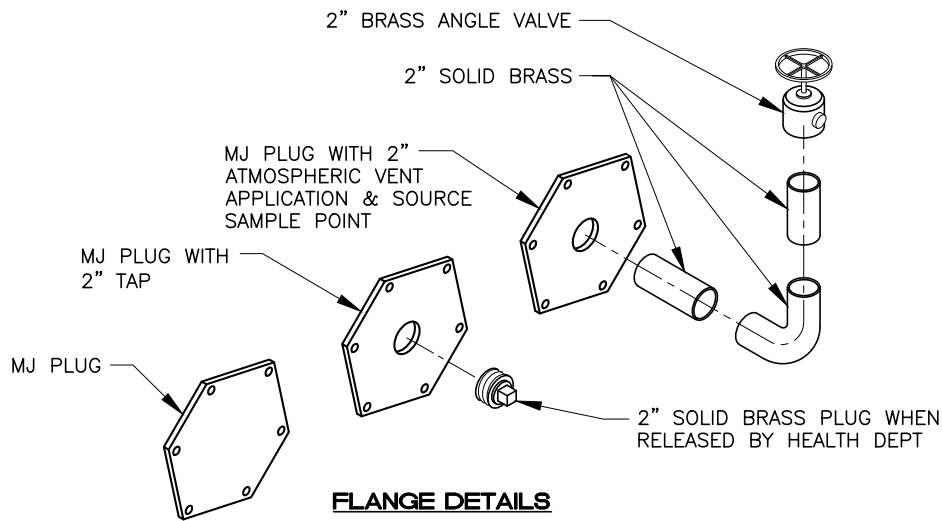
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CLEANING CANNON FLUSHING PROCEDURE

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05/24

PAGE NUMBER
W-5

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NEW CONNECTION DOUBLE VALVE SWAB TEE OR WYE WITH ATMOSPHERIC VENT CONNECTION

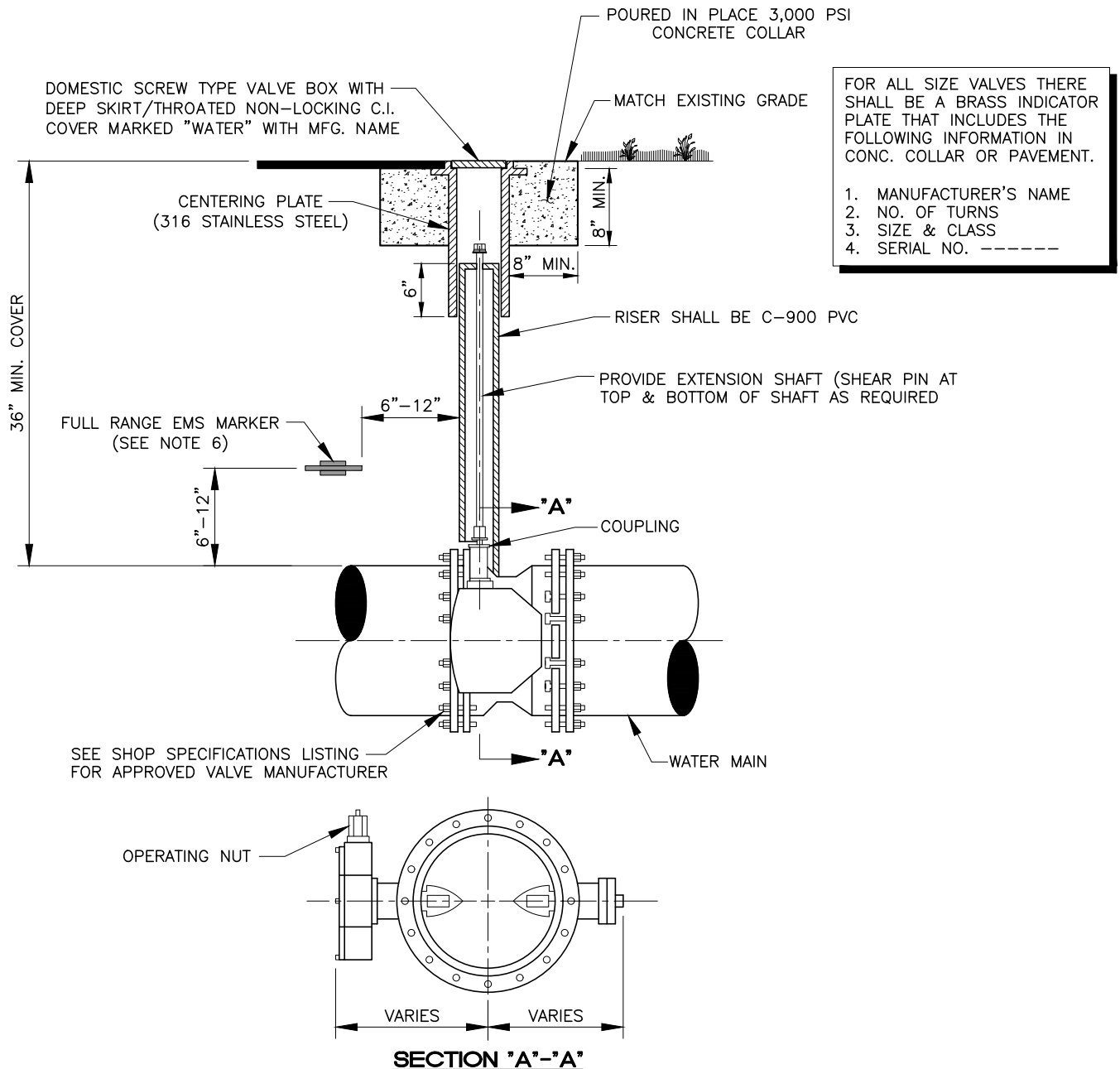
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EFF. DATE
05/24

PAGE NUMBER

W-6

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NOTES:

1. CONCRETE COLLAR IS NOT REQUIRED IN PAVED AREAS IF PAVEMENT SURFACE IS FINISHED PRIOR TO CONDITIONAL FINAL INSPECTION.
2. WHEN TOP OF OPERATING NUT IS DEEPER THAN 42" A HIGH STRENGTH STEEL EXTENSION WILL BE REQUIRED TO BRING OPERATING NUT 24"-30" BELOW FINISHED GRADE. EXTENSION BOLTS AND NUTS ARE TO BE STAINLESS STEEL. A HIGH STRENGTH STEEL CENTERING PLATE, WELDED TO THE EXTENSION, IS ALSO REQUIRED.
3. VALVE BOXES SHALL HAVE COVERS MARKED "WATER".
4. A BUTTERFLY VALVE INSTALLATION SHALL REQUIRE MEGALUGS OR EQUAL THROUGHOUT ASSEMBLY.
5. AT DEAD END OR WHERE MAIN LINES CHANGE DIRECTION, VALVES SHALL BE RESTRAINED USING "MEGALUGS", STAINLESS STEEL TIE RODS, RESTRAINING GASKETS OR OTHER APPROVED RESTRAINT BY DEPARTMENT AT LENGTH BASED ON G-17.
6. FULL RANGE EMS MARKER SHALL BE USED. FULL RANGE MARKER CANNOT TOUCH PIPE.



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BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

TYPICAL BUTTERFLY VALVE SETTING

NOT TO SCALE EFF. DATE
05/24

PAGE NUMBER
W-7

1. MANUFACTURER'S NAME
2. NO. OF TURNS
3. SIZE & CLASS
4. SERIAL NO. -----



1. CONCRETE COLLAR IS NOT REQUIRED IN PAVED AREAS IF PAVEMENT SURFACE IS FINISHED PRIOR TO CONDITIONAL FINAL INSPECTION.
2. WHEN OPERATING NUT IS DEEPER THAN 36" AN EXTENSION WILL BE REQUIRED TO BRING OPERATING NUT 24"–30" BELOW FINISHED GRADE. EXTENSION BOLTS & NUTS ARE TO BE 316 STAINLESS STEEL. A HIGH STRENGTH STEEL CENTERING PLATE, WELDED TO THE EXTENSION, IS ALSO REQUIRED.
3. VALVE BOXES SHALL HAVE COVERS MARKED "WATER" AND SHALL BE BLUE. IF THE VALVE BOX IS FOR A FIRE LINE THE VALVE COVERS SHALL HAVE COVERS MARKED "FIRE" AND SHALL BE COATED RED.
4. A GATE VALVE INSTALLATION SHALL REQUIRE MEGALUGS OR EQUAL THROUGHOUT ASSEMBLY.
5. AT DEAD END OR WHERE MAIN LINES CHANGE DIRECTION, VALVES SHALL BE RESTRAINED USING "MEGALUGS", TIE RODS, OR OTHER APPROVED RESTRAINT BY DEPARTMENT.
6. A CUT-IN INSTALLATION SHALL REQUIRE MEGALUGS OR EQUAL THROUGHOUT ASSEMBLY.
7. FULL RANGE EMS MARKER SHALL BE USED. FULL RANGE MARKER CANNOT TOUCH PIPE.
8. COVER WILL BE DETERMINED BY 18" COVER TO TOP OF VALVE OPERATING NUT.



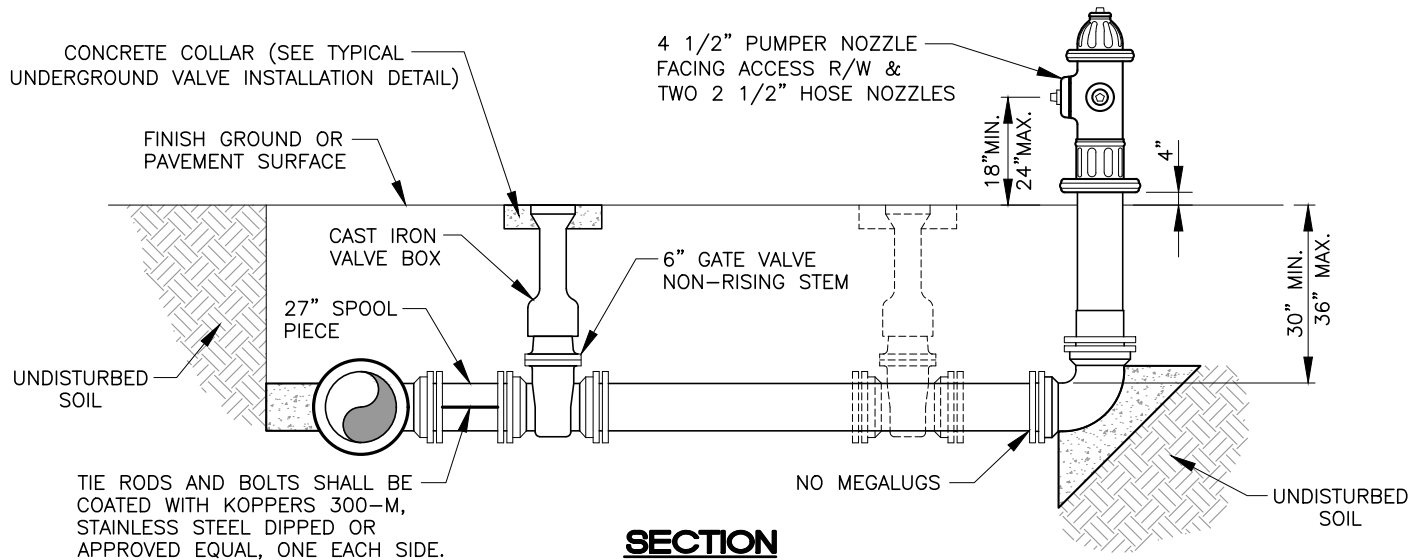
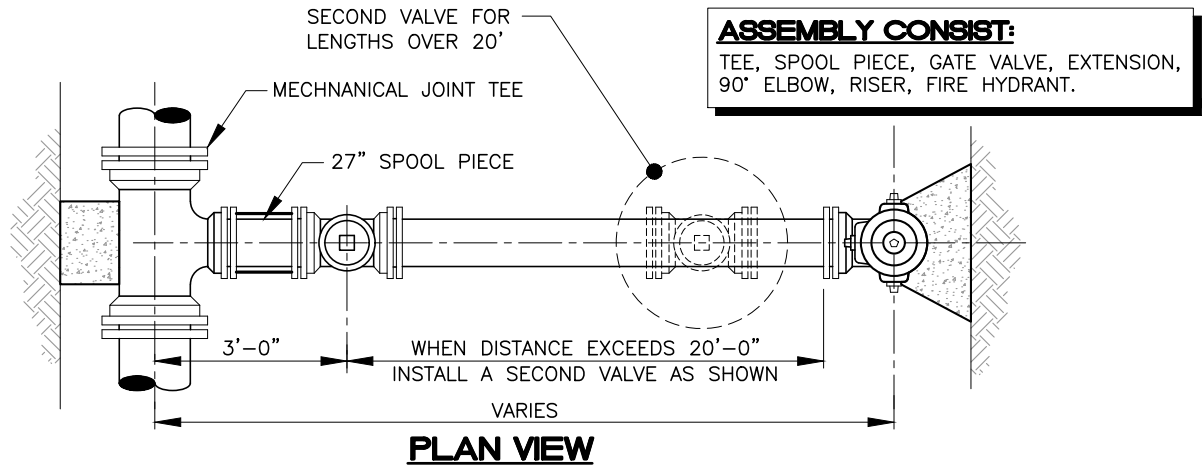
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TYPICAL GATE VALVE SETTING AND CUT-IN DETAIL

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PAGE NUMBER
W-8

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NOTES:

1. HYDRANT SHALL BE INSTALLED PLUMB AND TRUE IN UNOBSTRUCTED LOCATION (5 FEET CLEARANCE ALL SIDES)
2. THE SAME MODEL HYDRANT SHALL BE USED THROUGHOUT CURRENT CONTRACT PHASE, COLOR SHALL BE RED AS APPLIED AT FACTORY.
3. CONTROL VALVE SHALL BE PLACED ADJACENT TO MAIN AND RESTRAINED WITH 3/4" RODS & BOLTS AND MEGALUGS OR EQUAL.
4. NO MEGALUGS ARE REQUIRED AT FOOT OF FIRE HYDRANT. THUST BLOCKS ONLY.
5. HYDRANTS SHALL NOT BE PLACED IN SIDEWALKS, ROADWAYS, OR BIKE PATHS.
6. ON RUNS LONGER THAN 20 FEET A SECOND VALVE IS REQUIRED.
7. PAINT RED, IF REQUIRED, WITH BENJAMIN RUSTOLEUM FIRE HYDRANT RED OR APPROVED EQUAL.
8. BOLLARDS ARE REQUIRED FOR HYDRANTS WITH LESS THAN 5 FEET TO FRONT OF CURB.
9. THRUST BLOCKS TO REST IN UNDISTURBED SOIL.
10. DRAINS OR WEEP HOLES ON HYDRANT BARREL SHALL BE PLUGGED.
11. FULL RANGE EMS MARKER SHALL BE USED. FULL RANGE MARKER CANNOT TOUCH PIPE.
12. PROVIDE "OUT OF SERVICE" PLATE AT TIME OF INSTALLATION, UNTIL SYSTEM IS RELEASED BY P.B.C. HEALTH DEPT.
13. ALL FIRE HYDRANTS MUST BE INSTALLED PRIOR TO MAIN LINE PRESSURE TESTING AND CANNON FLUSHING.
14. ALL HYDRANT PIPING TO BE DUCTILE IRON PIPE.



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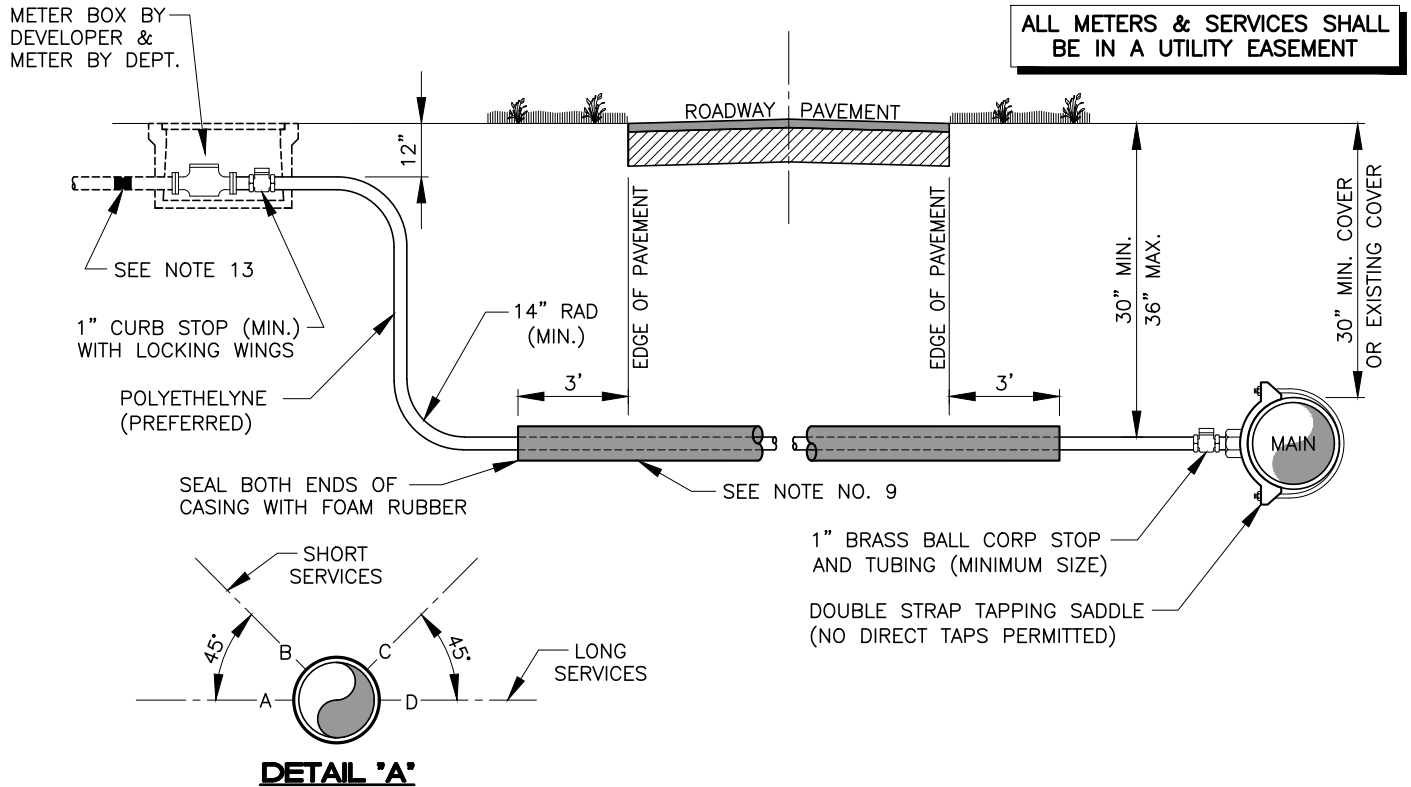
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TYPICAL FIRE HYDRANT INSTALLATION

NOT TO SCALE EFF. DATE
05/24

PAGE NUMBER
W-9

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NOTES:

1. CASINGS SHALL BE REQUIRED FOR ALL SERVICES CROSSING PAVED AREAS.
2. SUCCESSIVE TAPS INTO THE WATER MAIN SHALL BE SPACED A MINIMUM OF 18" OFFSET BETWEEN FITTINGS AND AT 45° FROM THE CENTERLINE MAINS WITH GREATER THAN 30" OF COVER. (SEE DETAIL "A" ABOVE)
3. METER BOXES SHALL BE SET TO CONFORM TO FINISH GRADE. NO METER BOX SHALL BE SET IN SIDEWALK OR PAVEMENT UNLESS APPROVED BY THE DEPARTMENT.
4. POLYETHYLENE TUBING (ENDOT BLUE) SHALL BE SDR 9.
5. ROTATE THE BALL CORP. STOP SO THAT THE OPERATING NUT IS ACTUATED FROM THE VERTICAL POSITION RATHER THAN THE HORIZONTAL.
6. BOTH COPPER AND POLYETHYLENE TUBING SERVICE LINES SHALL BE CONTINUOUS FROM BALL CORP. STOP TO CURB STOP WITH NO FITTINGS IN BETWEEN.
7. TAPPING SADDLES AND BALL CORP. STOPS SHALL HAVE AWWA INLET THREADS.
8. SCHEDULE 80 PVC CASING RECOMMENDED FOR ANY INSTALLATION UNDER PAVEMENT. 3" SCHEDULE 40 PVC MAY BE USED FOR AN OPEN CUT INSTALLATION WITH THE APPROVAL OF THE DEPARTMENT, CASING SHOULD EXTEND THREE (3) FEET BEYOND EDGE OF PAVEMENT AND SIZED AS FOLLOWS:
 - A. 1" SERVICE USE 3" CASING
 - B. 1-1/2" SERVICE USE 3" OR 4" CASING
 - C. 2" SERVICE USE 4" CASING
9. SERVICE LINES SHALL NOT BE PLACED UNDER DRIVEWAYS.
10. MAXIMUM SERVICE LENGTH IS 100' TO METER.
11. INSTALLATIONS LARGER THAN 2" METER TO BE REVIEWED ON A CASE BY CASE BASIS.
12. 1" BRASS NIPPLE TO EXTEND UP TO NO LESS THAN 2" OUTSIDE THE METER BOX.



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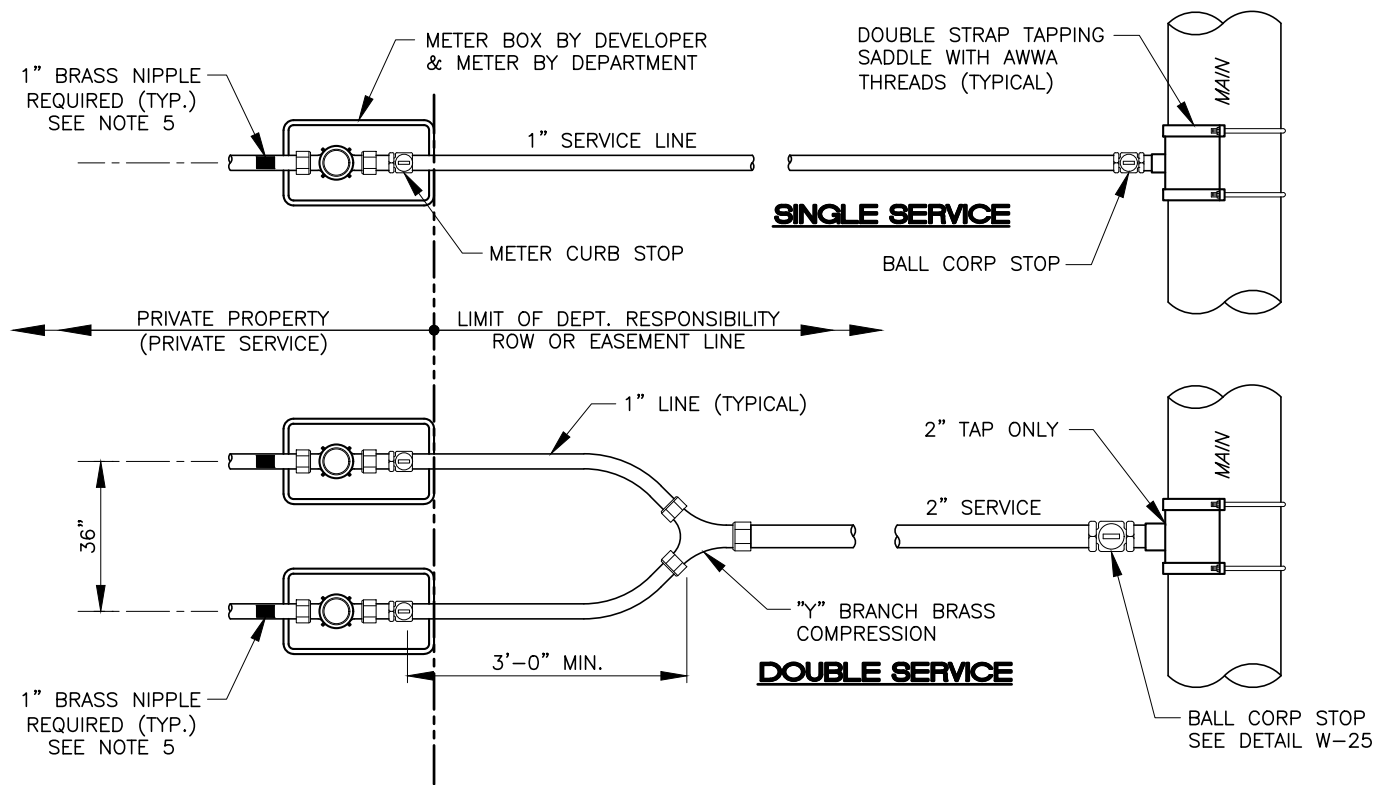
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TYPICAL WATER SERVICE INSTALLATION

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05/24

PAGE NUMBER
W-10

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NOTES:

- AUTHORIZED SERVICE LINE MATERIAL:
 - POLYETHYLENE TUBING SDR 9.
 - IF EITHER TERMINAL END IS LOCATED UNDER PAVEMENT, PVC CASING SHALL BE USED.
- MULTIPLE SERVICE/METER INSTALLATIONS OF MORE THAN 4 METERS PER SERVICE AND SERVICE LINES LARGER THAN 2" IN DIAMETER SHALL BE HANDLED ON AN INDIVIDUAL BASIS.
- NO FITTINGS BETWEEN BALL CORP. STOP AND METER CURB STOP ALLOWED WHEN USING POLYETHYLENE TUBING.
- LOW RANGE EMS MARKER SHALL BE PLACED ABOVE THE SERVICE WYE & WIRED TO THE WYE.
- 1" BRASS NIPPLE TO EXTEND UP TO NO LESS THAN 2" OUTSIDE THE METER BOX.



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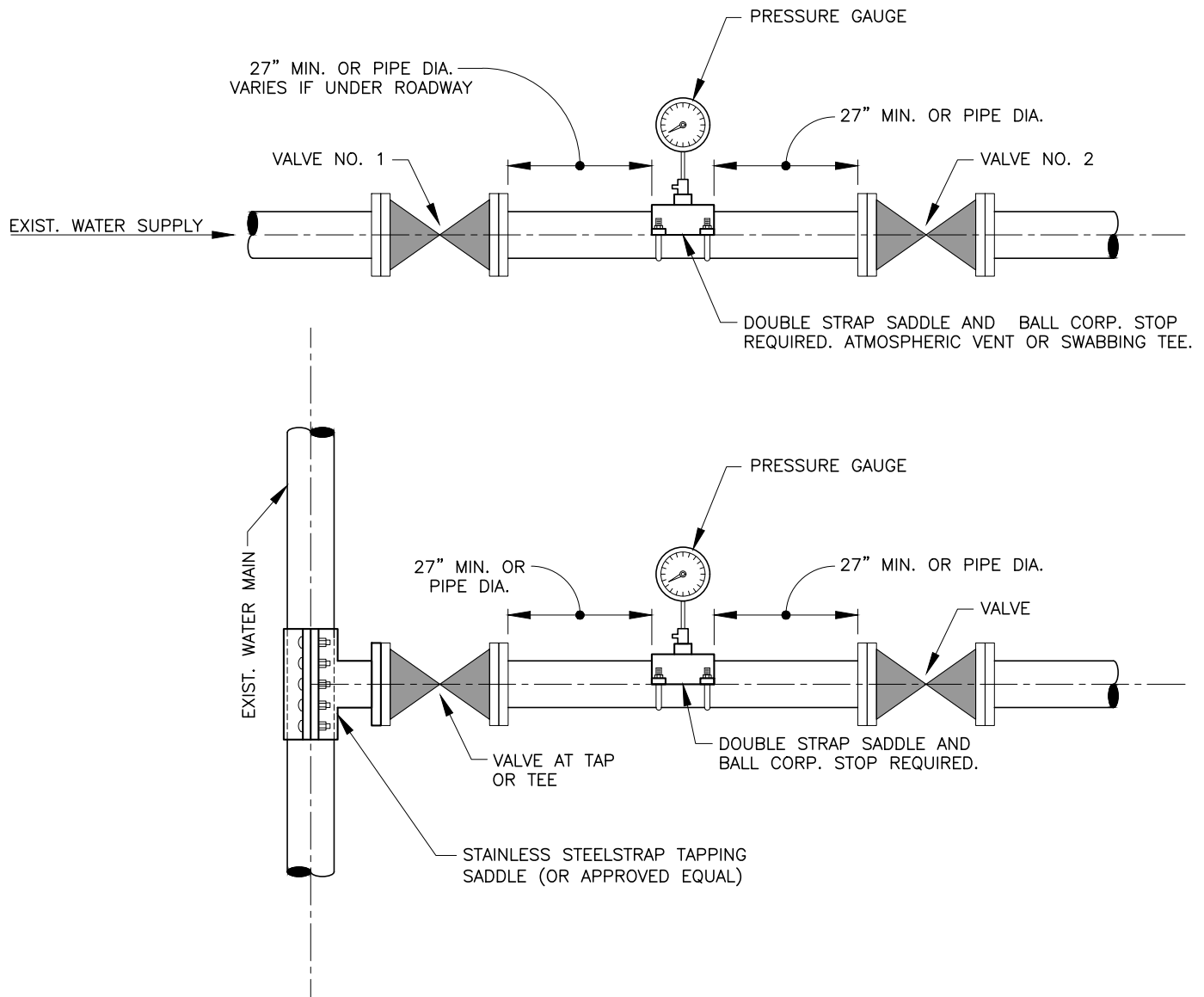
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TYPICAL RESIDENTIAL & COMMERCIAL WATER SERVICE

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05/24

PAGE NUMBER
W-11

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NOTES:

1. BOTH VALVES SHALL BE KEPT CLOSED EXCEPT FOR FILLING, FLUSHING AND BACTERIOLOGICAL TESTING PURPOSES.
2. GAUGE AND RISER TO BE REMOVED AFTER PRESSURE TEST, HOLE TO BE PLUGGED AT SADDLE WITH BRASS PLUG. UNDER DEPARTMENT INSPECTION.
3. THE DEPARTMENT SHALL BE NOTIFIED BEFORE FILLING AND FLUSHING.
4. VALVE BOXES ARE REQUIRED FOR BOTH VALVES.
5. PRESSURE TEST PUMP CONNECTS TO SERVICE LINE, FIRE HYDRANTS OR BLOWOFF. NO EXTRA TAPS ARE PERMITTED UNLESS APPROVED BY THE DEPARTMENT.
6. THREAD AREAS OF BALL CORP. STOP SHALL BE SPIRAL WRAPPED WITH TWO WRAPS OF TEFLON TAPE.
7. DISTANCE BETWEEN DOUBLE VALVES SHALL NOT EXCEED 20 FEET UNLESS AUTHORIZED.



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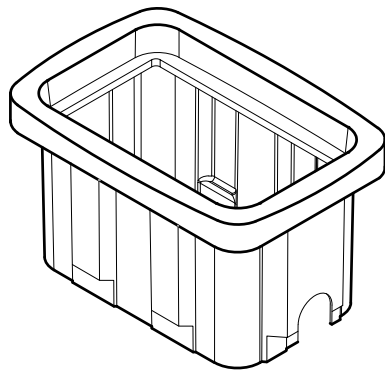
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WATER MAIN DOUBLE VALVE DETAIL

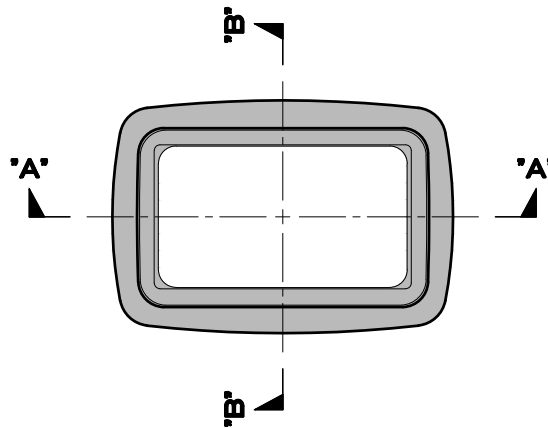
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05/24

PAGE NUMBER
W-12

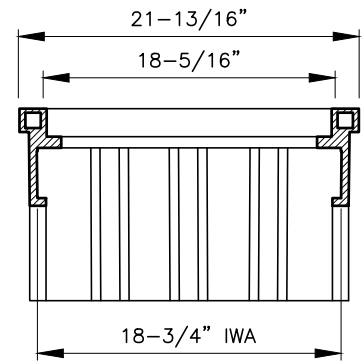
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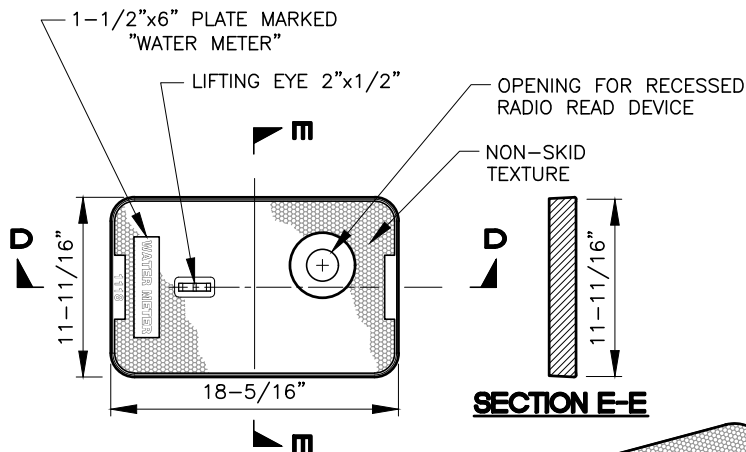
**METER BOX
OBLIQUE VIEW**



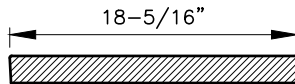
METER BOX TOP VIEW



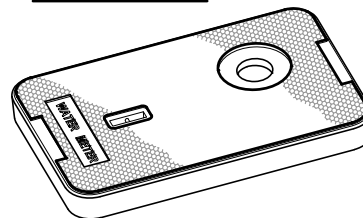
SECTION A-A



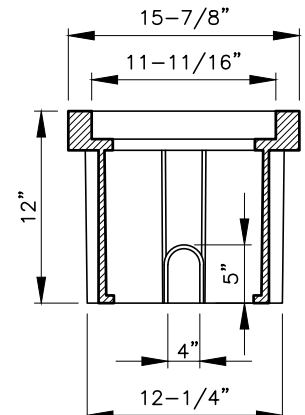
METER BOX COVER



SECTION D-D



**METER BOX COVER
OBLIQUE VIEW**



SECTION B-B

METER BOX MODEL NUMBER:
SIGMA RMB 111812 NSW

METER BOX LID MODEL NUMBER:
OLDCASTLE FL12P-"WATER",
AMR-2.0"x4.125"x.375"

NOTES:

1. METER BOXES SHALL BE INSTALLED IN A GRASS AREA OUTSIDE OF DRIVEWAYS AND SIDEWALKS.
2. ALL BOXES AND COVERS SHALL BE POLYMER CONCRETE AND FIBERGLASS COMPOSITE UNLESS OTHERWISE APPROVED BY THE DEPARTMENT. THEY SHALL MEET ASTM D-570 STANDARDS FOR WATER ABSORPTION, GAINING NO MORE THAN 0.5% IN WEIGHT AFTER EXPOSURE TO MOISTURE AS ESTABLISHED BY THIS STANDARD.
3. ALL BOXES AND COVERS SHALL MEET THE REQUIREMENTS FOR INCIDENTAL TRAFFIC H-10 LOADING AS ESTABLISHED BY AASHTO, THE REQUIREMENTS OF ASTM C-857, SEC. A-8, AND A COMPRESSION STRENGTH OF AT LEAST 11,000 PSI.
4. ALL BOXES AND COVERS SHALL BE DESIGNED TO FIT AND INTERCHANGE WITH STANDARD CONCRETE BOXES AND COVERS. STANDARD COLOR TO BE CONCRETE GRAY.
5. ALL COVERS SHALL BE CONSTRUCTED WITH A 4 INCH RECESSED OPENING FOR A RADIO READ DEVICE AND ITS PERTINENT HARDWARE.
6. ALL BOXES AND COVERS SHALL BE AVAILABLE BOLTED DOWN WITH ALL HARDWARE BEING STAINLESS STEEL INCLUDING ANY REPLACEABLE PARTS.
7. FOR DETAILS OF A SERVICE LINE, METER INSTALLATION AND OTHER SERVICE REQUIREMENTS, REFER TO METER INSTALLATION DETAIL, PAGE W-15.
8. NO FLIP TOP LIDS ARE ALLOWED.



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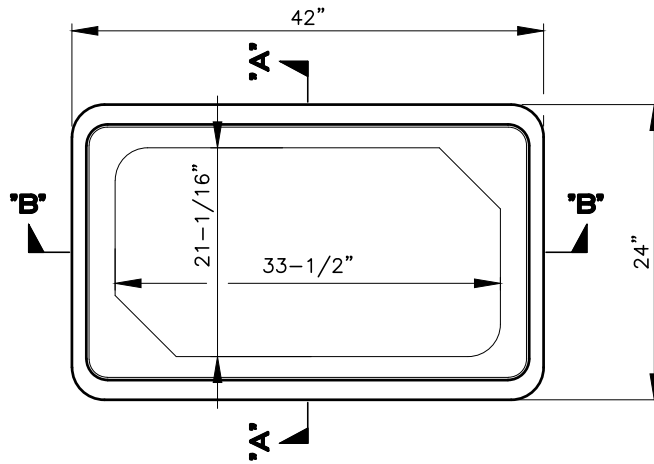
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**POTABLE WATER SERVICE RADIO READ FOR
SENSUS 3/4" & 1" WATER METERS**

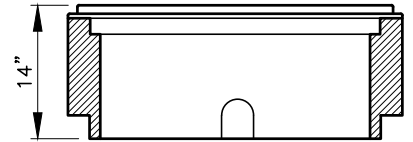
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05/24

PAGE NUMBER
W-13

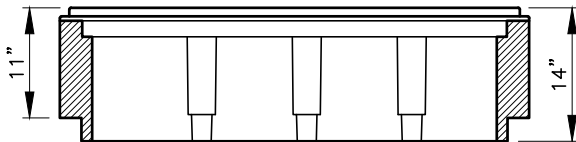
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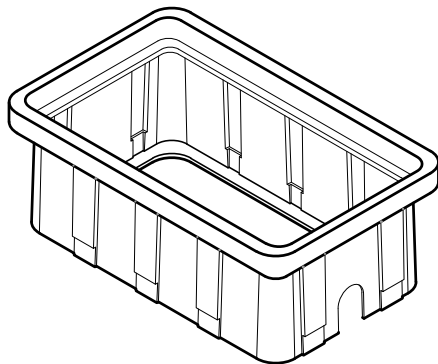
METER BOX TOP VIEW



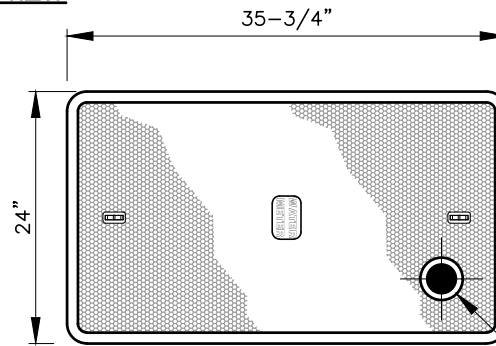
SECTION A-A



SECTION B-B



**METER BOX
OBlique VIEW**



METER BOX COVER

OPENING FOR
RECESSED RADIO
READ DEVICE

SIDE VIEW

METER BOX & LID MODEL NUMBER:
DFW PLASTICS:
DFWB40WBC-14-1T 63D

NOTES:

1. METER BOXES SHALL BE INSTALLED IN A GRASS AREA OUTSIDE OF DRIVEWAYS AND SIDEWALKS.
2. ALL BOXES AND COVERS SHALL BE POLYMER CONCRETE AND FIBERGLASS COMPOSITE UNLESS OTHERWISE APPROVED BY THE DEPARTMENT. THEY SHALL MEET ASTM D-570 STANDARDS FOR WATER ABSORPTION, GAINING NO MORE THAN 0.5% IN WEIGHT AFTER EXPOSURE TO MOISTURE AS ESTABLISHED BY THIS STANDARD.
3. ALL BOXES AND COVERS SHALL MEET THE REQUIREMENTS FOR INCIDENTAL TRAFFIC H-10 LOADING AS ESTABLISHED BY AASHTO, THE REQUIREMENTS OF ASTM C-857, SEC. A-8, AND A COMPRESSION STRENGTH OF AT LEAST 11,000 PSI.
4. ALL BOXES AND COVERS SHALL BE DESIGNED TO FIT AND INTERCHANGE WITH STANDARD CONCRETE BOXES AND COVERS. STANDARD COLOR TO BE CONCRETE GRAY.
5. ALL COVERS SHALL BE CONSTRUCTED WITH A 4 INCH RECESSED OPENING FOR A RADIO READ DEVICE AND ITS PERTINENT HARDWARE.
6. ALL BOXES AND COVERS SHALL BE AVAILABLE BOLTED DOWN WITH ALL HARDWARE BEING STAINLESS STEEL INCLUDING ANY REPLACEABLE PARTS.
7. FOR DETAILS OF A SERVICE LINE, METER INSTALLATION AND OTHER SERVICE REQUIREMENTS, REFER TO METER INSTALLATION DETAIL, PAGE W-15.
8. NO FLIP TOP LIDS ARE ALLOWED.



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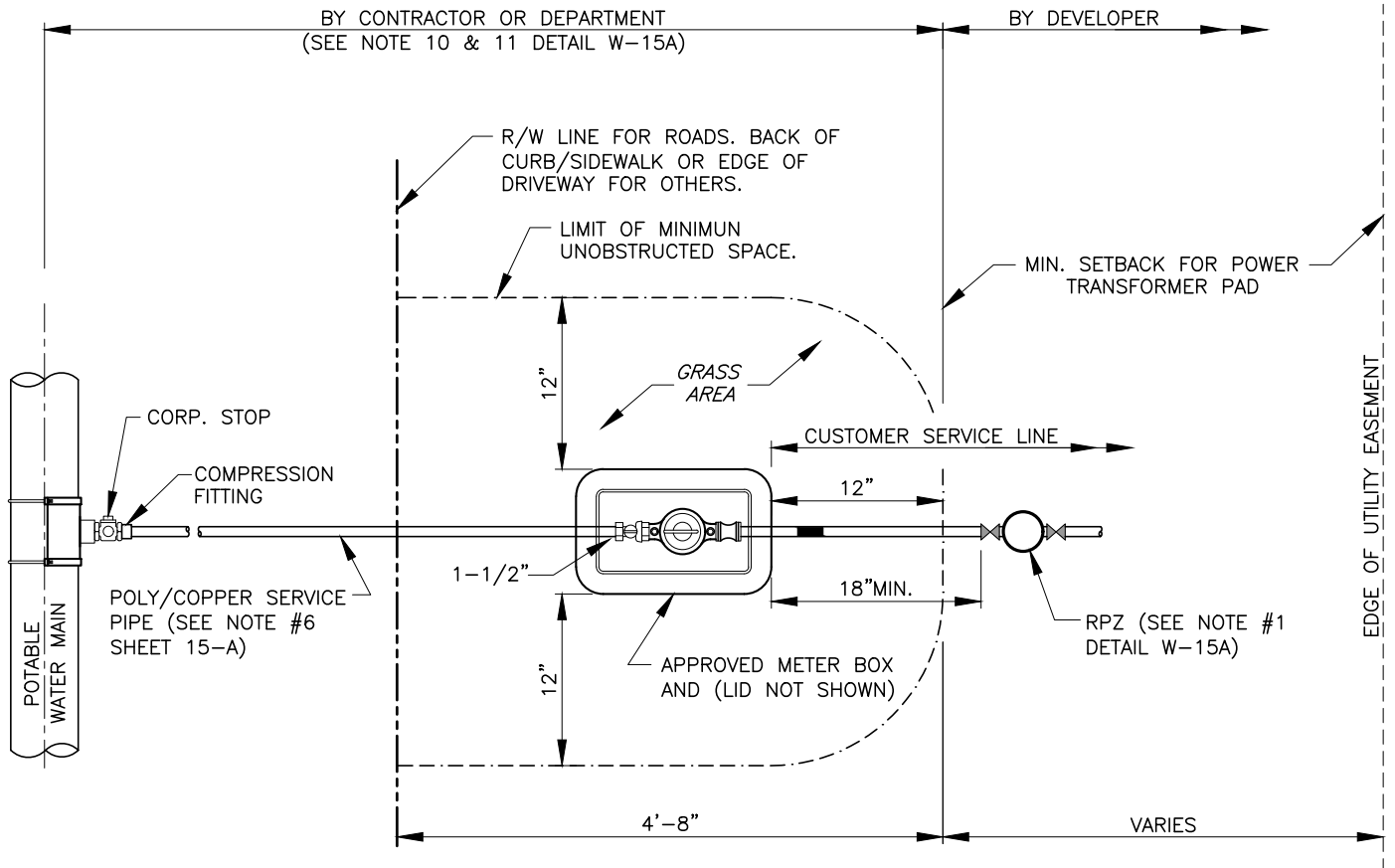
BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

**POTABLE WATER SERVICE RADIO READ FOR SENSUS
1-1/2" & 2" WATER METERS**

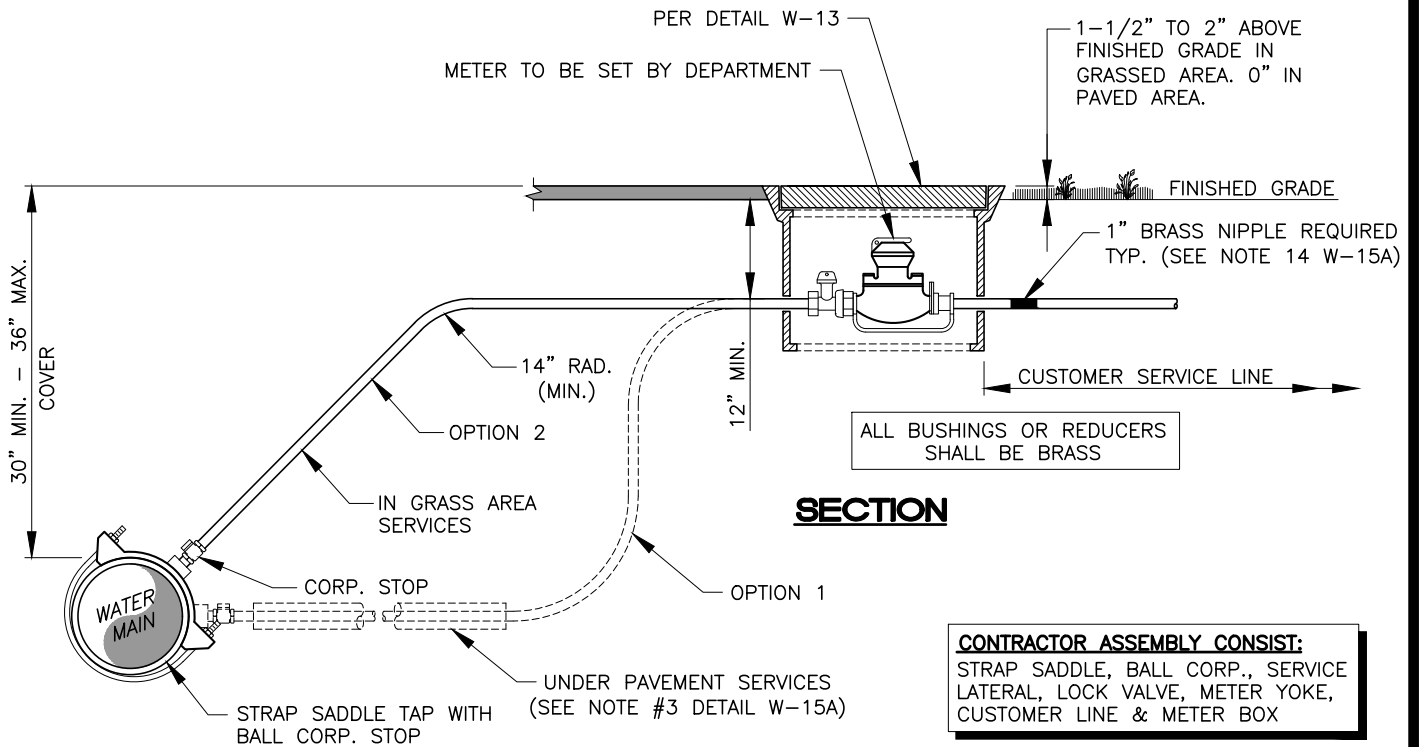
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PAGE NUMBER
W-14

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PLAN



SECTION

CONTRACTOR ASSEMBLY CONSIST:
STRAP SADDLE, BALL CORP., SERVICE LATERAL, LOCK VALVE, METER YOKE, CUSTOMER LINE & METER BOX



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POTABLE WATER SERVICE SINGLE 5/8" X 3/4" THRU 1"
METER INSTALLATION DETAIL

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05/24

PAGE NUMBER
W-15

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NOTES:

1. ALL NON-RESIDENTIAL SERVICES, SERVICES FOR ALL BUILDINGS OVER THREE STORIES AND SERVICES WITH INDIVIDUALLY METERED WATER SERVICE TO HAVE RPZ BACKFLOW PREVENTERS AS APPROVED BY UNIV. OF SOUTHERN CALIFORNIA. A CERTIFICATION OF PROPER INSTALLATION SHALL BE PROVIDED FROM A LICENSED BACKFLOW PREVENTION TECHNICIAN WITHIN TEN (10) BUSINESS DAYS. A DUAL CHECK VALVE IS NOT REQUIRED FOR SERVICES WITH RPZ.
2. 12" MINIMUM CLEARANCE TO BE MAINTAINED BETWEEN METER BOX AND ANY OBSTRUCTION.
3. FOR JACK AND BORE INSTALLATION OF SERVICES UNDER EXISTING PAVEMENT AND SERVICES UNDER PROPOSED PAVEMENT USE MIN. 3" DIAMETER PVC SCH 80 CASING. END OF CASING TO BE SEALED WITH FOAM RUBBER.
4. SUCCESSIVE TAPS INTO THE WATER MAIN SHALL BE SPACED A MINIMUM OF 18" APART AND SHALL NOT BE ON A COMMON LINE PARALLEL TO THE LONGITUDINAL AXIS OF THE PIPE.
5. METER SHALL NOT BE PLACED IN SIDEWALK OR DRIVEWAY AREAS UNLESS APPROVED BY THE DEPARTMENT. SERVICE LINES AND TAPS SHALL NOT BE PLACED UNDER DRIVES WHENEVER POSSIBLE.
6. PVC CASING IS REQUIRED IF EITHER TERMINAL END IS LOCATED UNDER PAVEMENT.
7. MAXIMUM SERVICE LENGTH IS 100' TO METER.
8. BEDDING OVER SERVICE LINE OR CASING SHALL CONSIST OF FINE GRANULAR MATERIAL. UNSUITABLE IN-SITU MATERIALS SUCH AS MUCK, DEBRIS AND LARGER ROCKS SHALL BE REMOVED.
9. METER SERVICE WILL NOT BE INSTALLED UNTIL:
 - A. FORM BOARDS FOR DRIVEWAY AND/OR SIDEWALK ARE IN PLACE OR DRIVEWAY OR SIDEWALK IS IN PLACE OR "FINISHED GRADE" STAKE IS SET ADJACENT TO PROPOSED METER BOX LOCATION.
 - B. "MINIMUM UNOBSTRUCTED SPACE" (AS SHOWN) IS PROVIDED.
 - C. THE REQUIRED BACKFLOW PREVENTION DEVICE IS INSTALLED.
 - D. YOKE SHOULD BE CENTERED IN THE BOX, UPRIGHT AND FREE FROM DEBRIS.
 - E. LINE SHOULD BE TIED IN AT THE BUILDING & INSIDE THE METER BOX. WE MUST BE ABLE TO FLUSH LINE UPON INSTALLATION.
10. METER TO BE SET BY THE DEPARTMENT AFTER APPROVED INSPECTION.
11. THE DEVELOPER/PROPERTY OWNER OR ASSIGNEE SHALL BE RESPONSIBLE FOR INSTALLATION OF SERVICES BEYOND PRESSURE TEST LIMITS AS SPECIFIED BY THE DEPARTMENT.
12. THREAD AREAS OF CORPORATION STOP AND OTHER FITTINGS SHALL BE SPIRAL WRAPPED WITH TWO WRAPS OF TEFLON TAPE. CORPORATION STOP SHALL NOT BE BOTTOMED OUT (1-3 THREADS SHOWING). AWWA TAPER THREAD IS REQUIRED.
13. LOW RANGE E.M.S. MARKER TO BE PLACED ADJACENT TO BALL VALVE AND 2" OPERATING NUT WITH VALVE BOXES.
14. 1" BRASS NIPPLE TO EXTEND UP TO NO LESS THAN 2" OUTSIDE THE METER BOX.
15. EXPANSION NUTS & A24 ADAPTERS (IF REQUIRED) ARE TO BE PROVIDED BY THE CONTRACTOR FOR EACH METER.



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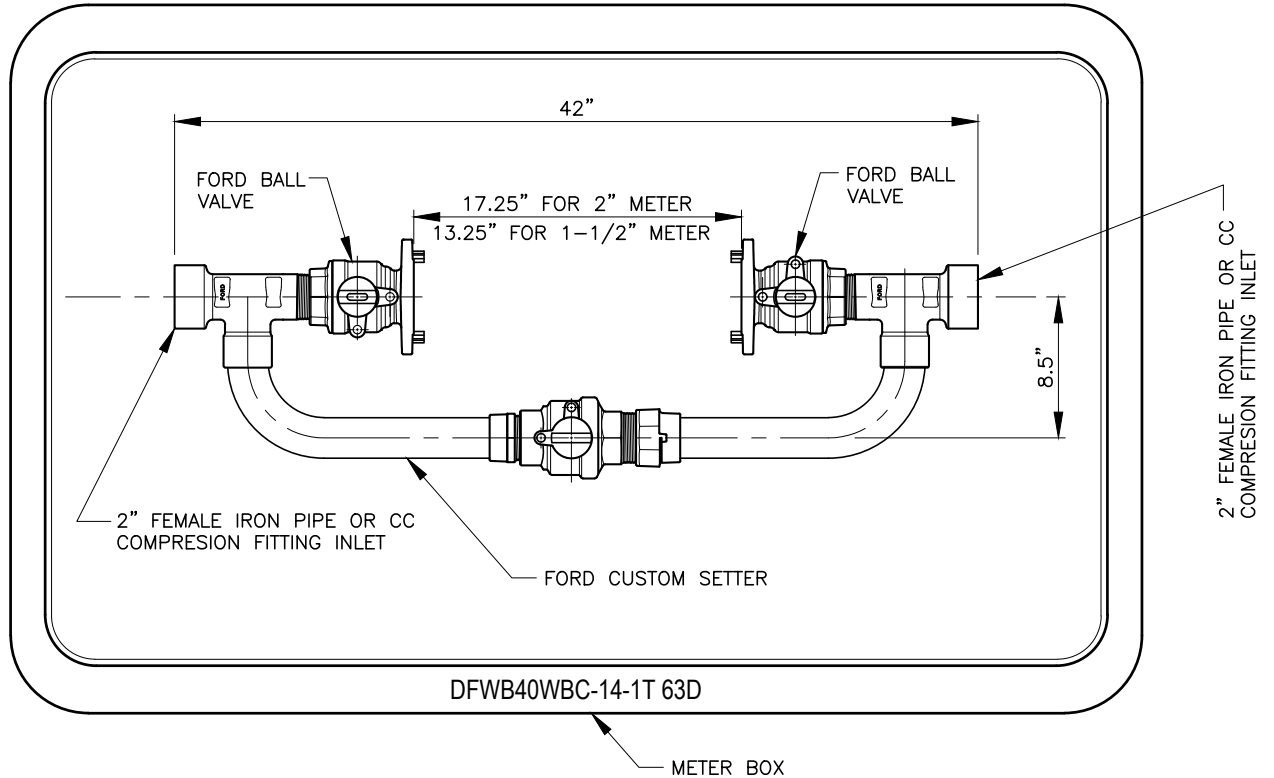
BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

POTABLE WATER SERVICE SINGLE 5/8" X 3/4" THRU 1" METER INSTALLATION DETAIL

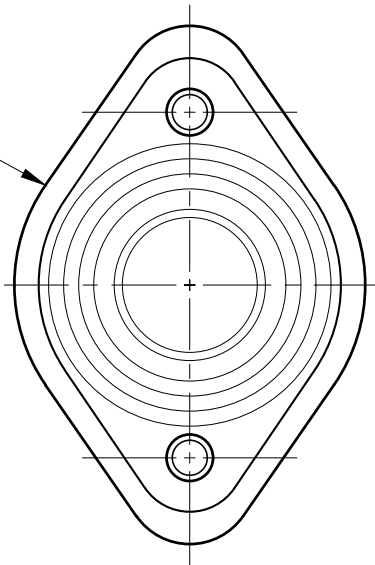
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FORD A67-NL FLANGE TO FLANGE
METER ADAPTER TO BE USED ON
THE 1-1/2" CUSTOM SETTER



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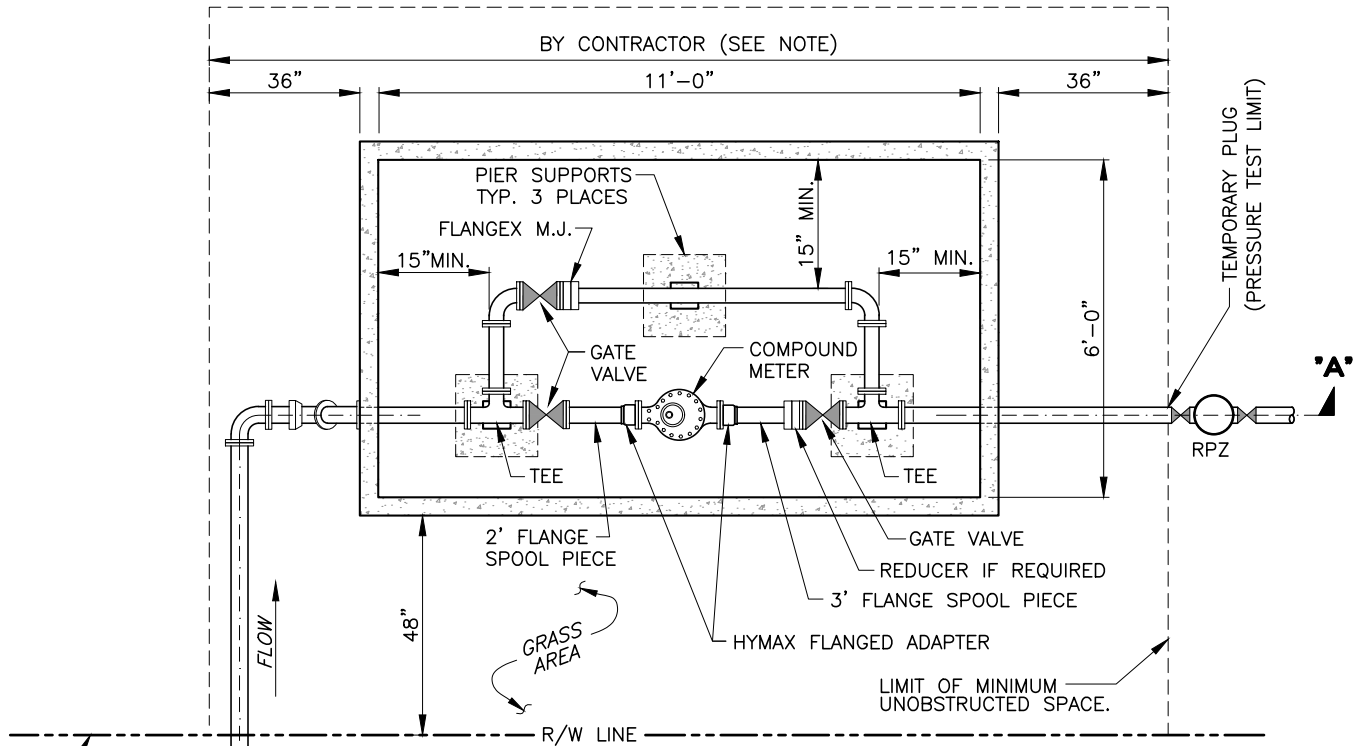
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POTABLE WATER SERVICE WITH CUSTOM SETTER SINGLE 1-1/2" THRU 2" METER INSTALLATION DETAIL

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EFF. DATE
05/24

PAGE NUMBER
W-16

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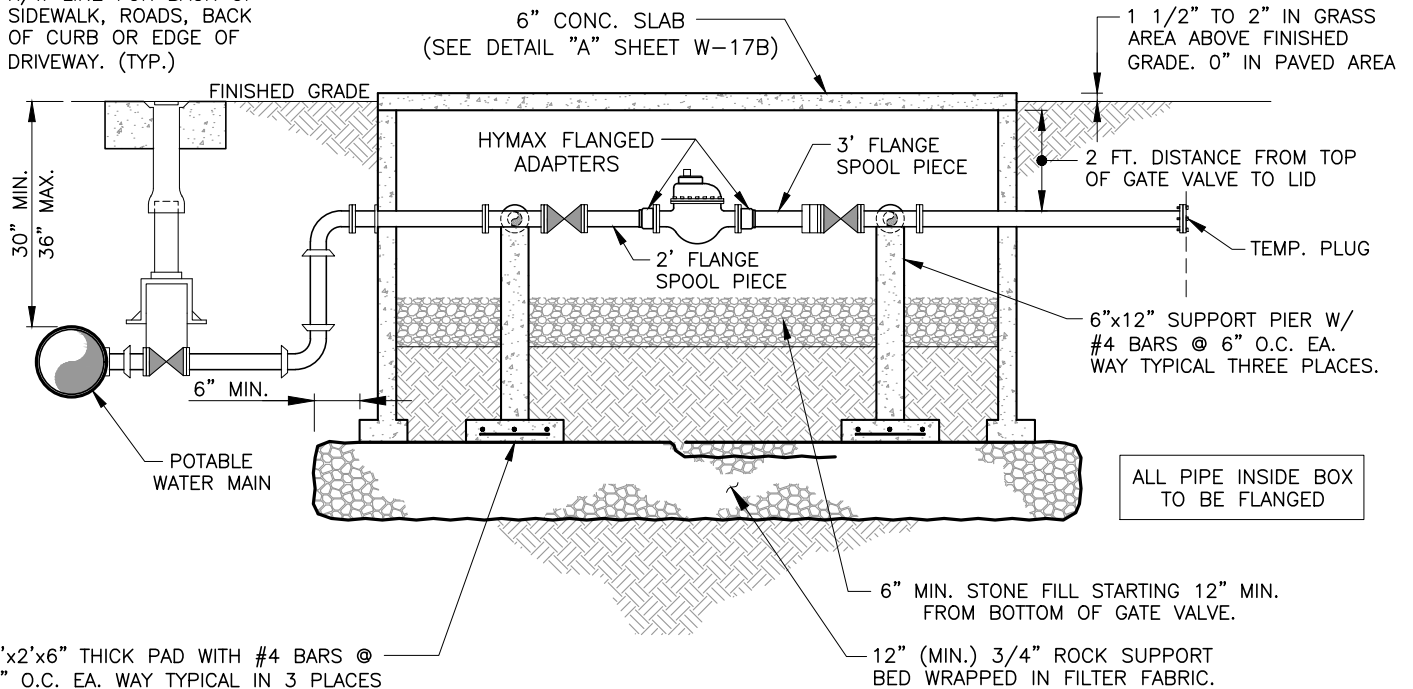


METER PIT PLAN

NOTE:

CONTRACTOR SHALL FURNISH SHOP DRAWINGS ON COVER PLATE AND SUPPORT SYSTEM, AND WALL SECTION TO THE ENGINEER FOR APPROVAL.

R/W LINE FOR BACK OF SIDEWALK, ROADS, BACK OF CURB OR EDGE OF DRIVEWAY. (TYP.)



METER PIT SECTION A-A



UTILITIES
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BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

POTABLE WATER SERVICE
3", 4" & SPECIAL METER PIT

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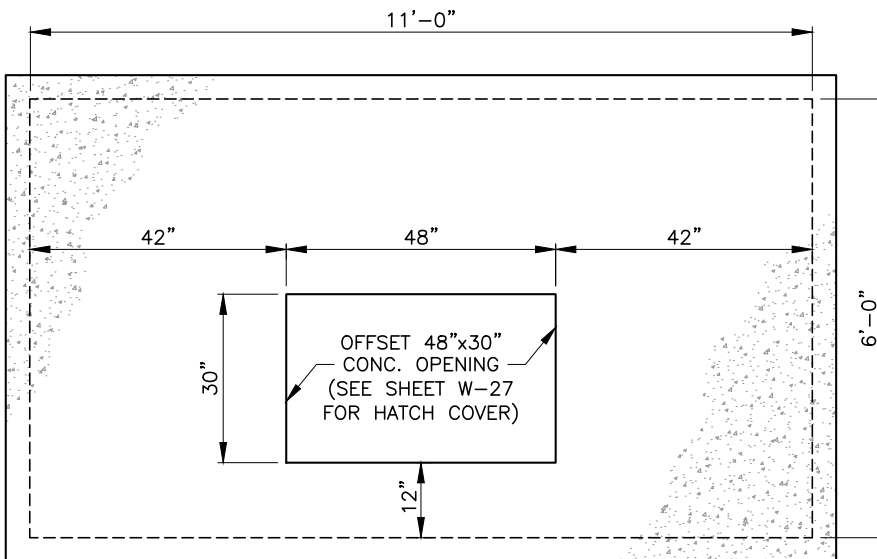
PAGE NUMBER
W-17

INSTALLATION NOTES:

1. ALL SERVICE PIPING SHALL BE 4" DUCTILE IRON WITH 4" GATE VALVES AND VALVE BOXES. PLACE 4"X 3" REDUCERS FOR 3" METER ASSEMBLY.
2. ALL PIPE AND FITTINGS TO BE 150 PSI W/CLASS 125 FLANGED, FULL BODIED. ALL HARDWARE FOR FLANGED FITTINGS (BOLTS, ETC...) TO BE STAINLESS STEEL. RESTRAINER RODS MAY BE REQUIRED.
3. CONTRACTOR SHALL CONSTRUCT SERVICE FOR THE METER TO BE INSTALLED "TRUE" AND "PLUMB" AND TO ALLOW METER READING THROUGH THE METER READING LID.
4. THE ENTIRE ASSEMBLY (WITHOUT METER) SHALL BE PRESSURE TESTED AS REQUIRED.
5. A REDUCED PRESSURE BACKFLOW PREVENTER (AS APPROVED BY THE UNIV. OF SO. CALIF.) IS REQUIRED. A CERTIFICATION OF PROPER INSTALLATION IS REQUIRED FROM A CERTIFIED BACKFLOW PREVENTION TECHNICIAN.
6. METER SERVICE WILL NOT BE INSTALLED UNTIL:
 - A. FORM BOARDS FOR DRIVEWAY AND/OR SIDEWALK ARE IN PLACE OR DRIVEWAY OR SIDEWAY IS IN PLACE OR "FINISHED GRADE" STAKE IS SET ADJACENT TO PROPOSED METER BOX LOCATION.
 - B. "MINIMUM UNOBSTRUCTED SPACE" (AS SHOWN) IS PROVIDED.
 - C. THE REQUIRED BACKFLOW PREVENTION DEVICE IS INSTALLED.
 - D. 12' OF 5/8" CHAIN FOR EACH PIT SHALL BE ON ONSITE.
7. SENSUS HIGH-PERFORMANCE COMPOUND METER SHALL HAVE A TOUCH-READ REGISTER & DELIVER TO THE CITY OF BOYNTON BEACH UTILITIES ENGINEERING DEPT. TO AWAIT INSTALLATION.
8. WATER METER SHALL BE INSTALLED BY THE CONTRACTOR & COORDINATED WITH THE CITY.
9. WHEN THE ORDER IS PLACED BY THE CONTRACTOR, A CONFIGURATION SHEET WILL BE PROVIDED BY THE CITY.
10. THE ABOVEGROUND PIPING SHALL BE PAINTED BLUE, IF IT'S A FIRE LINE THE PIPING SHALL BE PAINTED RED.

FOR METER PIT INSTALLATIONS:

1. REFER TO STANDARD DRAWING W-27 FOR ACCESS COVER DETAIL.
2. HATCH TO BE CENTERED, OFFSET AND OVER THE METER (SEE SKETCH BELOW).
3. DRIVE UP ACCESS IS NEEDED FOR INSTALLATION AND FUTURE MAINTENANCE.



CONCRETE METER PIT COVER AND OPENING DETAIL 'A'

NOTE:

PROVIDE 2" HOLE FOR TOUCHREAD DEVICE
AND ITS PERTINENT HARDWARE.



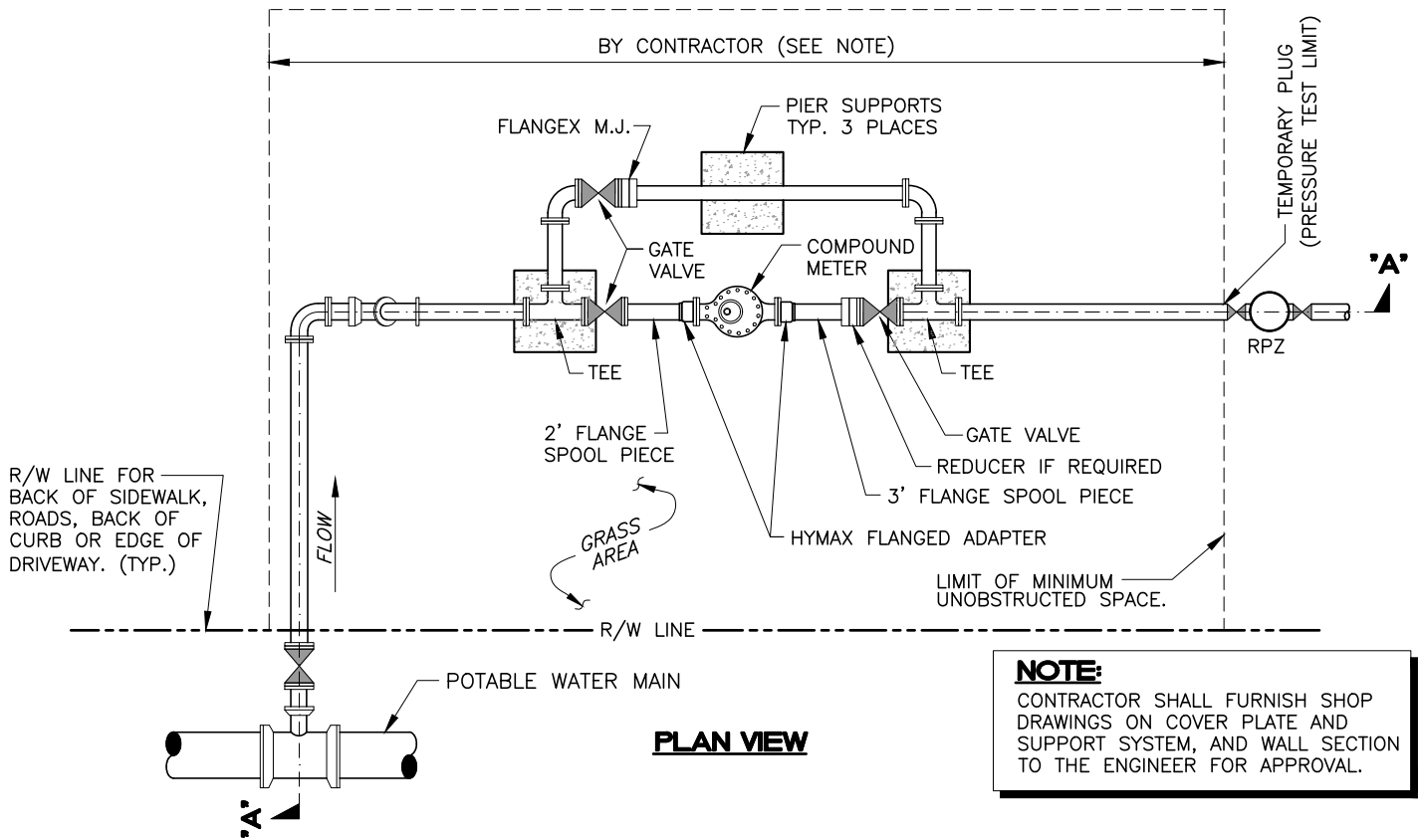
BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

POTABLE WATER SERVICE 3", 4" & SPECIAL METER PIT

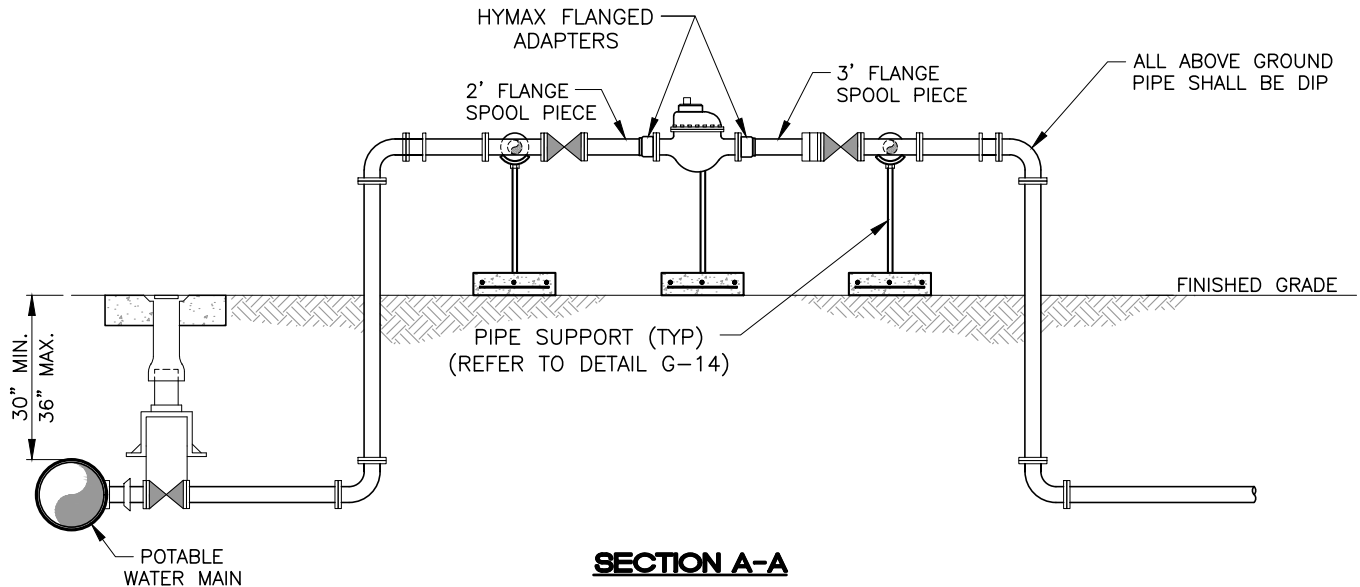
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PAGE NUMBER
W-17A

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PLAN VIEW



SECTION A-A

NOTES:

1. LOCATION OF BOLLARDS SHALL BE IN ACCORDANCE WITH CITY REQUIREMENTS
2. THE ABOVEGROUND PIPING SHALL BE PAINTED BLUE, IF IT'S A FIRE LINE THE PIPING SHALL BE PAINTED RED.



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BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

**ABOVE GROUND POTABLE
WATER METER 3" AND 4"**

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05/24

PAGE NUMBER
W-17B

Diagram illustrating the installation of a water meter assembly. The assembly includes a water meter, a test cock (typical), and a ball valve (typical). The water meter is labeled "WATER METER BY THE DEPARTMENT". The test cock is labeled "TEST COCK (TYPICAL)". The ball valve is labeled "BALL VALVE (TYPICAL)". The distance between the water meter and the ball valve is indicated as "3' MAX." and "SEE NOTE 2".

DETAIL "A"
(SEE NOTE 6)



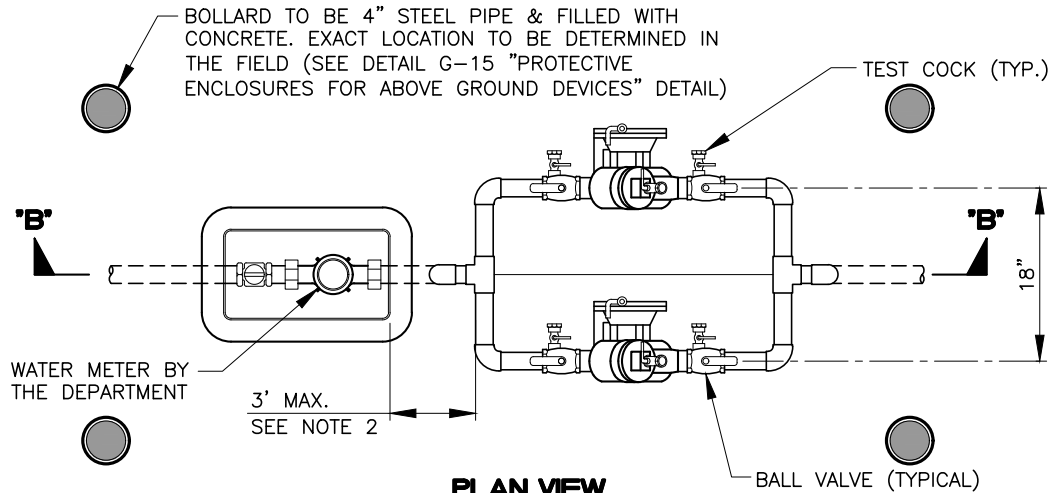
1. POLYETHYLENE TUBING SDR 9.
2. THE DISTANCE BETWEEN THE METER & BACKFLOW PREVENTER SHALL BE A MAXIMUM OF 3 FEET.
3. BOTH RISERS SHALL BE TYPE "K" COPPER TUBING (HARD DRAWN) WITH COPPER/BRASS SOLDER FITTINGS AND ADAPTERS. ONLY LEAD FREE SOLDER AND FLUX SHALL BE PERMITTED.
4. BOTH 1 1/2" AND 2" CUSTOM METER SETTERS SHALL BE EQUIPPED WITH LOCK WING BALL VALVES.
5. APPROVED BACKFLOW PREVENTION DEVICES NOTED IN APPENDIX "D" – SHOP SPECIFICATIONS.
6. WHEN THE DEVICE IS INSTALLED PARALLEL TO A BUILDING WALL THERE SHALL BE A MIN. OF 6" BETWEEN THE EDGE OF THE DEVICE AND THE BUILDING WALL.
7. BACKFLOW PREVENTION DEVICE SHALL BE EQUIPPED WITH BALL VALVES IN LIEU OF GATE VALVES.
8. BACKFLOW PREVENTION DEVICE SHALL BE SUPPORTED AT BOTH RISERS WITH STAINLESS STEEL UNISTRUT. RISERS TO BE SECURED TO UNISTRUT WITH STAINLESS STEEL (304) MOUNTING HARDWARE AND NEOPRENE INSULATORS BETWEEN ALL DISSIMILAR METALS.
9. PASSING TEST REPORT MUST BE SUBMITTED WITHIN TEN (10) BUSINESS DAYS AFTER WATER IS SUPPLIED. FAX TO 561-742-6298



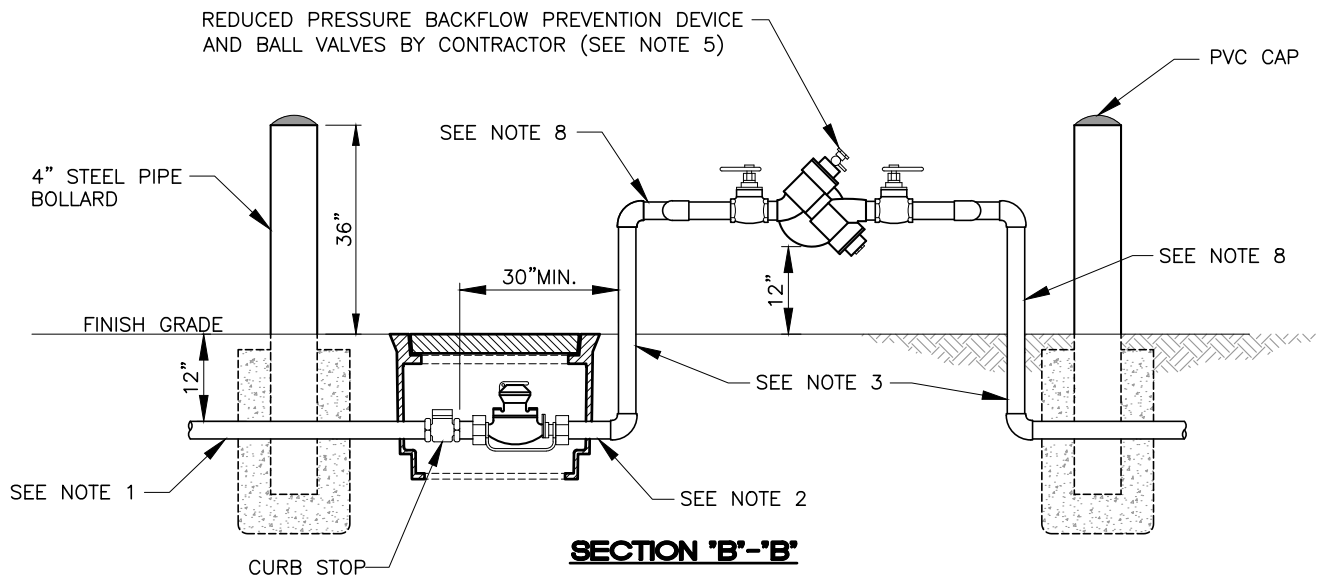
BACKFLOW DEVICE FOR 3/4" TO 2" WATER METER

PAGE NUMBER
W-18

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PLAN VIEW
SEE SECTION "B"-B" BELOW



NOTES:

1. POLYETHYLENE TUBING SDR 9.
2. THE DISTANCE BETWEEN THE METER & BACKFLOW PREVENTER SHALL BE A MAXIMUM OF 3 FEET.
3. BOTH RISERS SHALL BE TYPE "K" COPPER TUBING (HARD DRAWN) WITH COPPER/BRASS SOLDER FITTINGS AND ADAPTERS. ONLY LEAD FREE SOLDER AND FLUX SHALL BE PERMITTED.
4. BOTH 1-1/2" AND 2" ANGLE METER STOPS SHALL BE EQUIPPED WITH LOCKING CAPS AND METER FLANGES.
5. APPROVED BACKFLOW PREVENTION DEVICES NOTED IN APPENDIX EXHIBIT "D" - SHOP SPECIFICATIONS.
6. WHEN THE DEVICE IS INSTALLED PARALLEL TO A BUILDING WALL THERE SHALL BE A MIN. OF 6" BETWEEN THE EDGE OF THE DEVICE AND THE BUILDING WALL.
7. BACKFLOW PREVENTION DEVICE SHALL BE EQUIPPED WITH BALL VALVES IN LIEU OF GATE VALVES.
8. EACH BACKFLOW PREVENTION DEVICE SHALL BE SUPPORTED BETWEEN 90° BEND AND UNION WITH STAINLESS STEEL UNISTRUT. RISERS TO BE SECURED TO UNISTRUT WITH STAINLESS STEEL (304) MOUNTING HARDWARE AND NEOPRENE INSULATORS BETWEEN ALL DISSIMILAR METALS. ONE UNISTRUT PER BACKFLOW.
9. PASSING TEST REPORT MUST BE SUBMITTED WITHIN TEN (10) BUSINESS DAYS AFTER WATER IS SUPPLIED. FAX TO 561-742-6298



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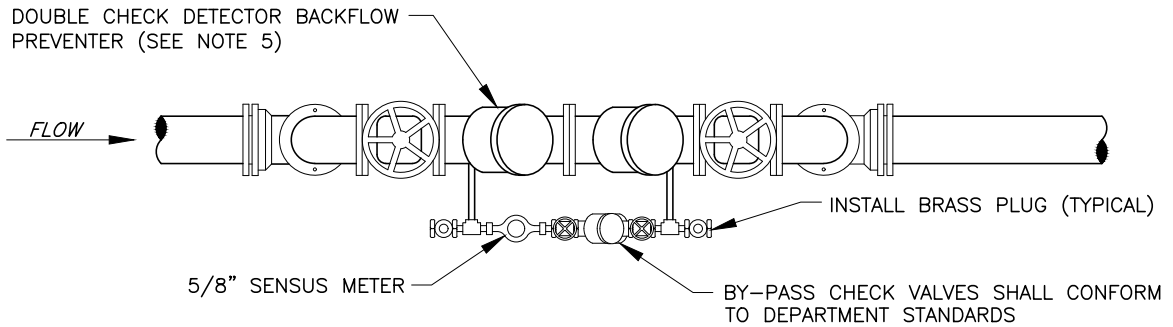
BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

**DUAL BACKFLOW DEVICE FOR 3/4" TO 2"
WATER METERS**

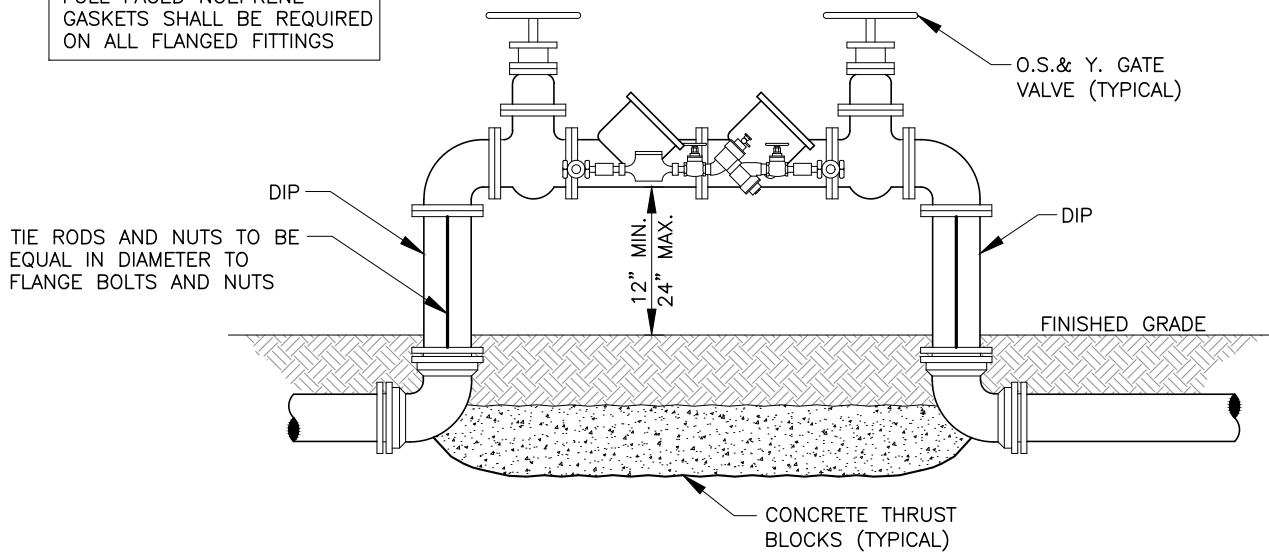
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PAGE NUMBER
W-19

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FULL FACED NOEPRENE
GASKETS SHALL BE REQUIRED
ON ALL FLANGED FITTINGS



NOTES:

1. MECHANICAL JOINT DIP FITTINGS & PIPE SHALL BE REQUIRED UNDERGROUND AND FLANGED FITTINGS FOR ABOVE GROUND USE, NO UNIFLANGES PERMITTED.
2. PAINT THE ABOVE GROUND ASSEMBLY, INCLUDING ENTIRE LENGTH OF TIE RODS, WITH KOPPERS 300-M (BLACK) OR APPROVED EQUAL AFTER MANUFACTURERS RECOMMENDED SURFACE PREP IS COMPLETED. DO NOT PAINT OVER NAME/SERIAL PLATE OR BRASS FITTINGS.
3. SUPPORT PIERS OR PIPE JACKS AS APPROVED BY DEPARTMENT, EXACT LOCATION TO BE DETERMINED IN THE FIELD.
4. EITHER PROTECTIVE PIPE STANCHIONS OR A SCREEN WALL IS REQUIRED, SEE "G-15 PROTECTIVE ENCLOSURES FOR ABOVE GROUND DEVICES" DETAIL.
5. APPROVED DOUBLE DETECTOR CHECK VALVE ASSEMBLIES:
A.) SEE APPENDIX EXHIBIT "D" - SHOP SPECIFICATIONS.
6. SPECIAL FIRE PROTECTION SYSTEMS USING INTERNAL PUMPS, TANKS, ETC. SHALL BE REQUIRED TO USE A RPZ REDUCED PRESSURE BACKFLOW PREVENTION ASSEMBLY OR APPROVED EQUAL.
7. PASSING TEST REPORT MUST BE SUBMITTED WITHIN TEN (10) BUSINESS DAYS AFTER WATER IS SUPPLIED. FAX TO 561-742-6298



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DOUBLE DETECTOR CHECK BACKFLOW ASSEMBLY

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EFF. DATE
05/24

PAGE NUMBER
W-20

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PAGE NUMBER W-21

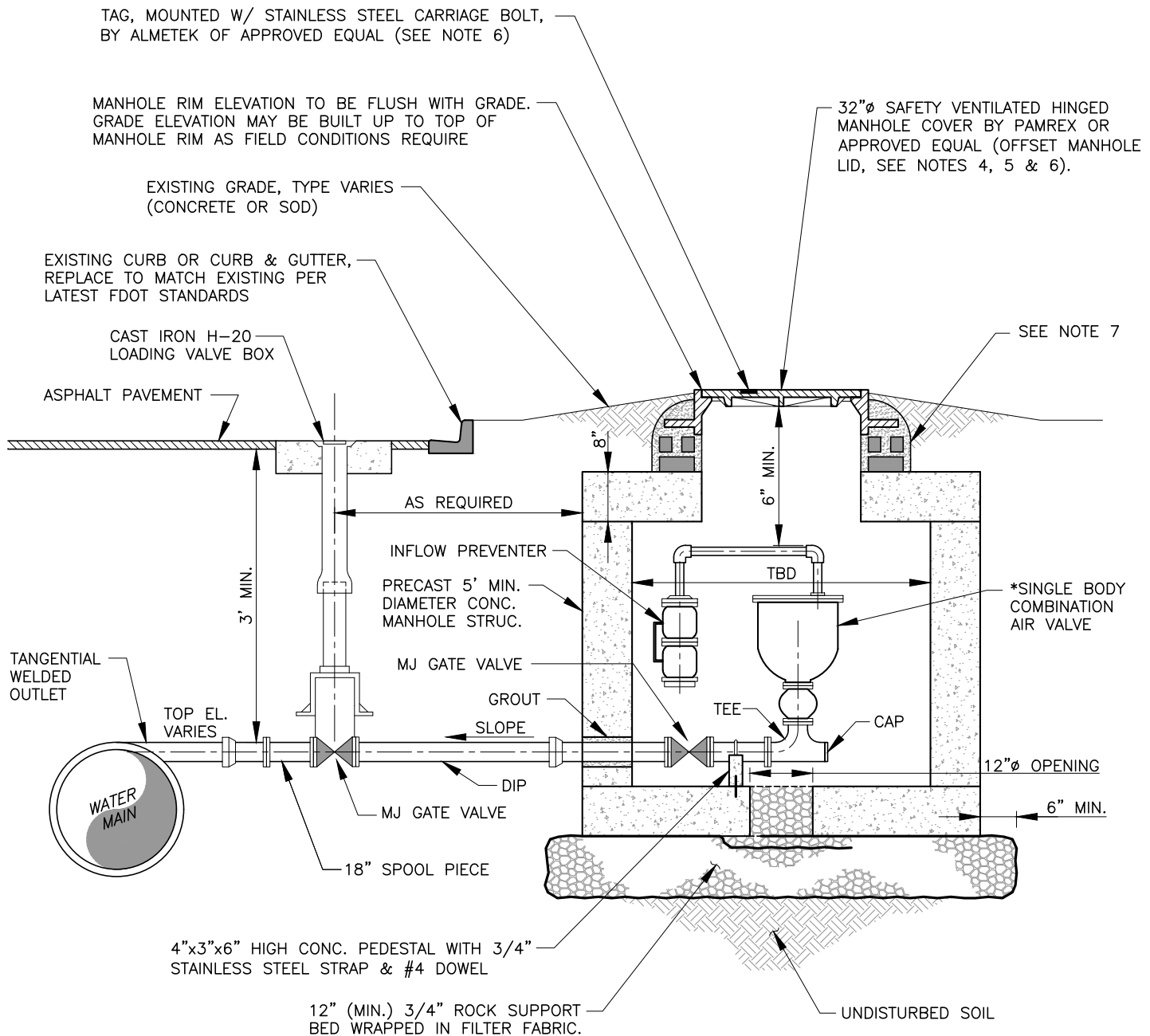


WATER MAIN OFFSET AIR RELEASE VALVE AND MANHOLE

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PAGE NUMBER
W-22

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NOTES:

1. PRECAST CONCRETE MANHOLE REQUIRED.
2. ALL OPENINGS SHALL BE SEALED WITH WATERPROOF NON-SHRINKING GROUT.
3. ALL PIPE HOLES SHALL BE PRECAST OR CORE-DRILLED.
4. SHOP DRAWINGS OF PIPING, VALVES, CONCRETE VAULT AND COVER ARE REQUIRED FOR REVIEW AND APPROVAL.
5. AIR RELEASE VALVE & PIPING TO BE IDENTIFIED AS "POTABLE WATER ARV" OR "RAW WATER ARV" AS APPROPRIATE AND STAMPED ON LID
6. ADJUST WITH 2 MINIMUM 4 MAX - 3 HOLE BRICK COURSES PLASTERED INSIDE & OUTSIDE WITH TYPE II PORTLAND CEMENT.
7. SEE NOTES ON W-22 FOR ADDITIONAL APPLICABLE REQUIREMENTS.

*ENGINEER SHALL SUBMIT COMBINATION ARV FOR APPROVAL



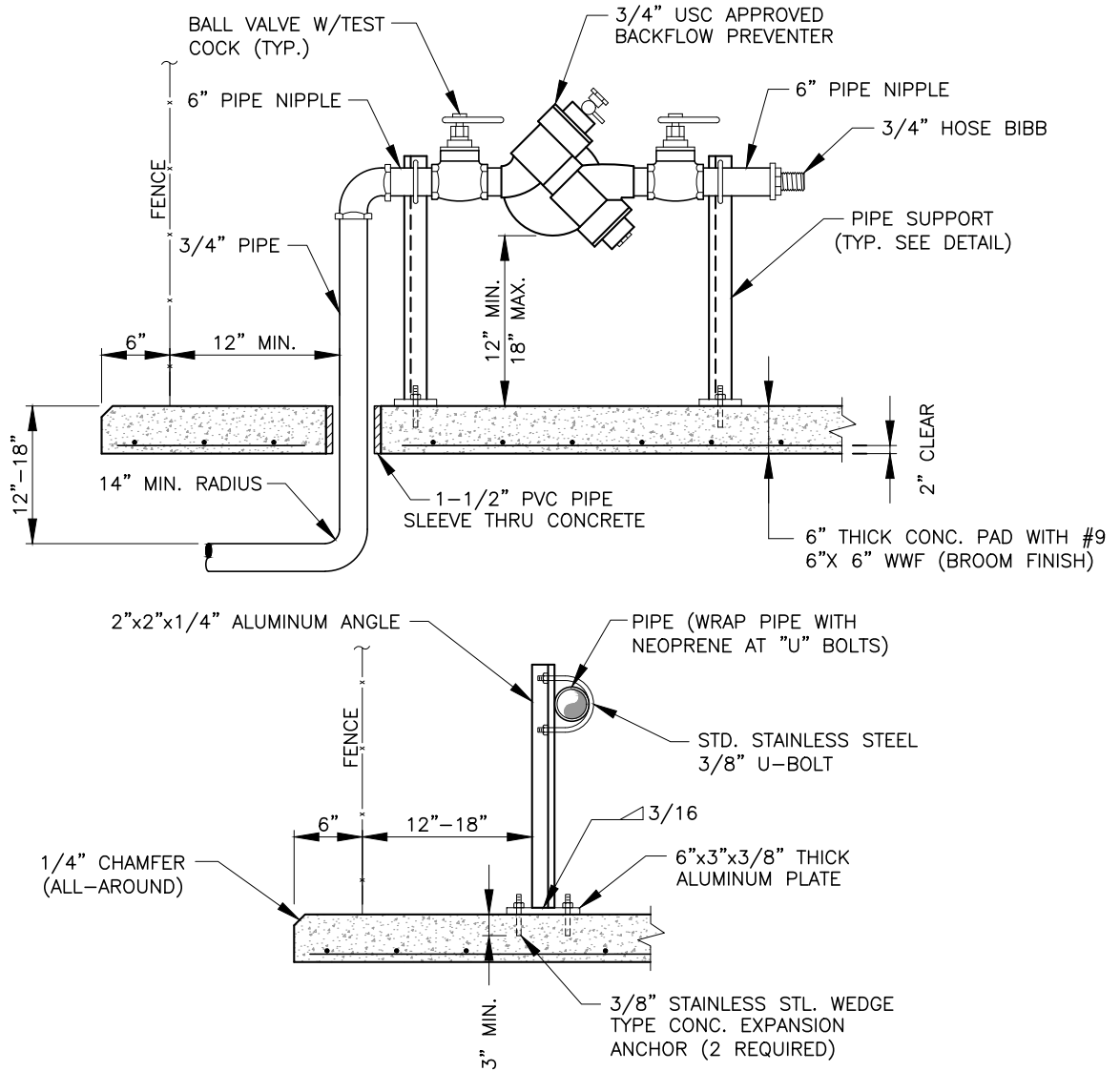
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TANGENTIAL WATER MAIN OFFSET AIR/VACUUM COMBINATION VALVE & MANHOLE

NOT TO SCALE EFF. DATE
05/24

PAGE NUMBER
W-23



PIPE SUPPORT DETAIL

NOTES:

1. RISER SHALL BE TYPE "K" COPPER TUBING (SOFT ROLLED) WITH BRASS FITTINGS AND ADAPTERS. ALL JOINTS SHALL BE THREADED.
2. BACKFLOW PREVENTION DEVICE MAKE, MODEL, ETC. SHALL CONFORM TO DEPARTMENT SPECIFICATIONS AND APPROVAL.
3. BACKFLOW PREVENTION DEVICE SHALL BE EQUIPPED WITH BALL VALVES IN LIEU OF GATE VALVES.
4. FOR PLACEMENT OF BACKFLOW ASSEMBLY WITHIN FENCED AREA SEE "TYPICAL LIFT STATION SITE PLAN" DETAIL.
5. BACKFLOW PREVENTION DEVICE SHALL BE SUPPORTED AT BOTH RISERS WITH ALUMINUM ANGLE AS SHOWN ABOVE. RISERS TO BE SECURED TO ANGLE WITH TYPE 304 SST MOUNTING HARDWARE AND NEOPRENE INSULATORS BETWEEN ALL DISSIMILAR METALS.
6. MINIMUM 24" CLEARANCE BETWEEN RPZ BACKFLOW PREVENTER AND CONTROL PANEL REQUIRED.
7. THREADED AREAS OF BALL CORP. STOP AND OTHER FITTINGS SHALL BE SPIRAL WRAPPED WITH TWO WRAPS OF TEFLON TAPE.
8. PASSING TEST REPORT MUST BE SUBMITTED WITHIN TEN (10) BUSINESS DAYS AFTER WATER IS SUPPLIED. EMAIL TO BACKFLOW@BBFL.US



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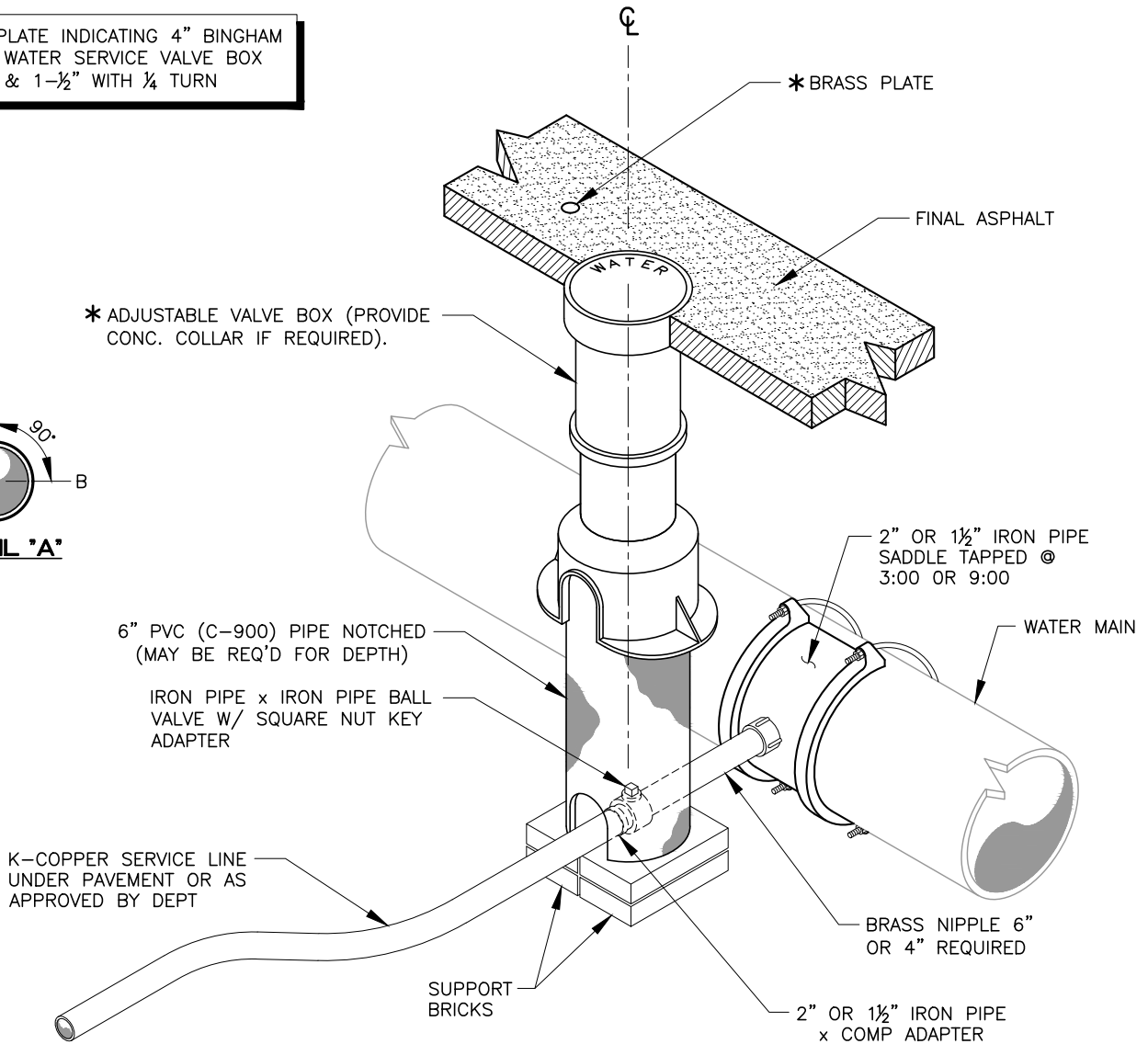
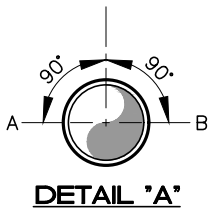
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LIFT STATION BACKFLOW PREVENTER ASSEMBLY

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05/24

PAGE NUMBER
W-24

*BRASS PLATE INDICATING 4" BINGHAM TAYLOR WATER SERVICE VALVE BOX FOR 2" & 1-1/2" WITH 1/4 TURN



NOTES:

1. 2" RESILIENT SEAT GATE VALVE IS ACCEPTABLE WITH STANDARD 5" VALVE BOX.
2. SUCCESSIVE TAPS INTO THE WATER MAIN SHALL BE SPACED A MINIMUM OF 18" OFFSET AND AT 90° FROM THE CENTERLINE AS SHOWN ON DETAIL "A".
3. COPPER TUBING SHALL BE TYPE "K" WITH COMPRESSION FITTINGS.
4. ALL BUSHINGS OR REDUCERS SHALL BE BRASS.
5. COPPER TUBING SERVICE LINES SHALL BE CONTINUOUS FROM BALL CORP TO METER STOP WITH NO FITTINGS IN BETWEEN.
6. TAPPING SADDLES TO HAVE IRON PIPE THREADS.
7. BALL VALVE AT THE MAIN TO HAVE FEMALE IRON PIPE THREADS ON BOTH SIDES.
8. VALVE BOX SHALL BE 4 -1/4" CAST IRON SCREW TYPE ADJUSTABLE.
9. CONCRETE COLLAR VALVE BOX SUPPORT TO BE PLACED ON COMPACTED SOIL TO SUPPORT VALVE BOX SO THAT A MINIMUM OF 4 INCHES EXISTS BETWEEN THE BOTTOM OF THE CONCRETE COLLAR AND THE TOP OF THE WATER MAIN.



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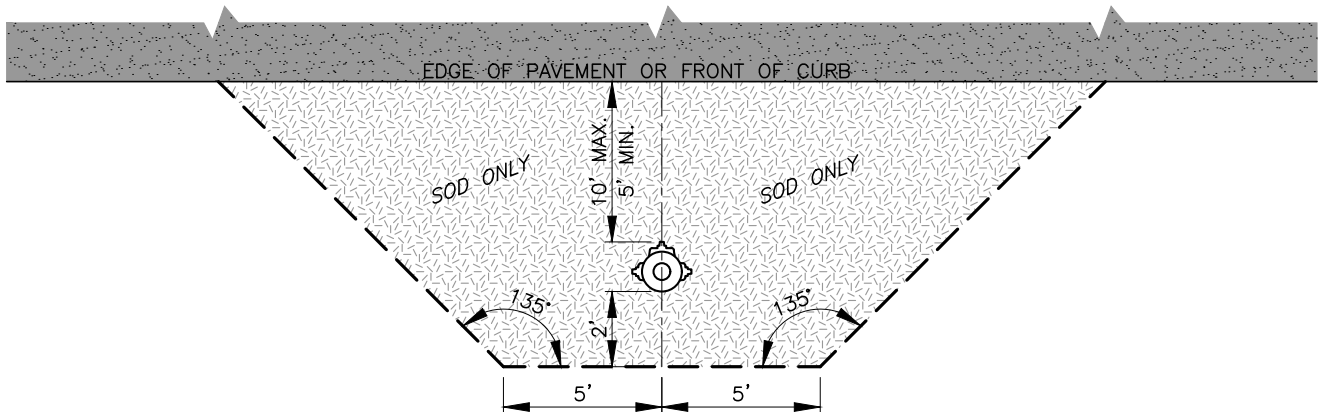
BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

1-1/2" & 2" COMMERCIAL & MULTI FAMILY BALL VALVE & BOX ILLUSTRATION

NOT TO SCALE EFF. DATE
05/24

PAGE NUMBER
W-25

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NOTES:

1. REQUIREMENTS APPLY TO FIRE HYDRANTS, SIAMESE CONNECTIONS AND ANY OTHER FIRE EQUIPMENT FOR UTILIZING FIRE HOSE, ON PUBLIC OR PRIVATE PROPERTY.
2. BY THE AUTHORITY OF THE SOUTH FLORIDA FIRE PREVENTION CODE SECTION 5211.2.
3. THE CLEAR ZONE SHALL BE FREE OF LANDSCAPE (EXCEPT SOD), MAILBOXES, PARKING, LAMP-POSTS AND ALL OTHER OBJECTS.
4. EXCEPTIONS: OTHER FIRE FIGHTING EQUIPMENT, OR BOLLARDS TO PROTECT FIRE FIGHTING EQUIPMENT.



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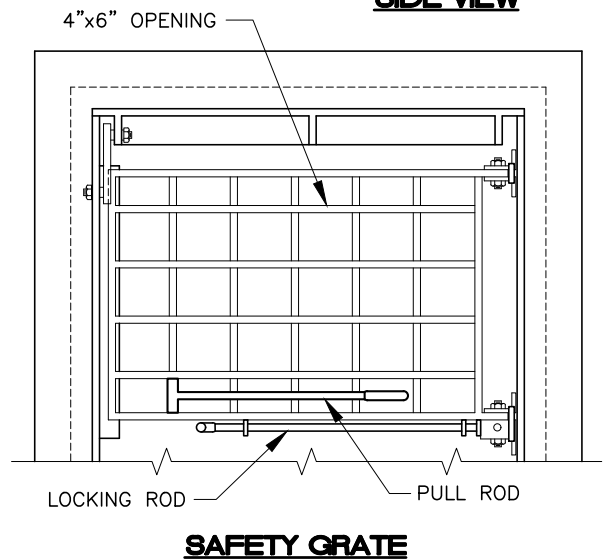
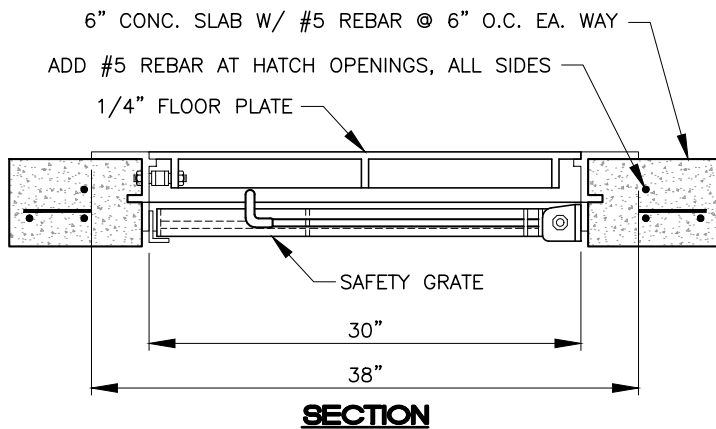
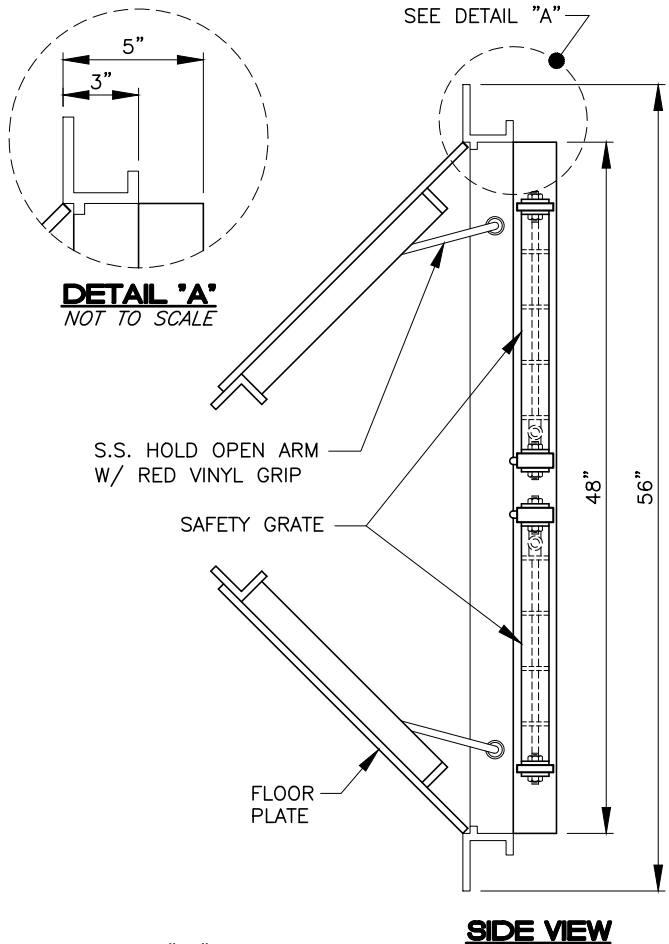
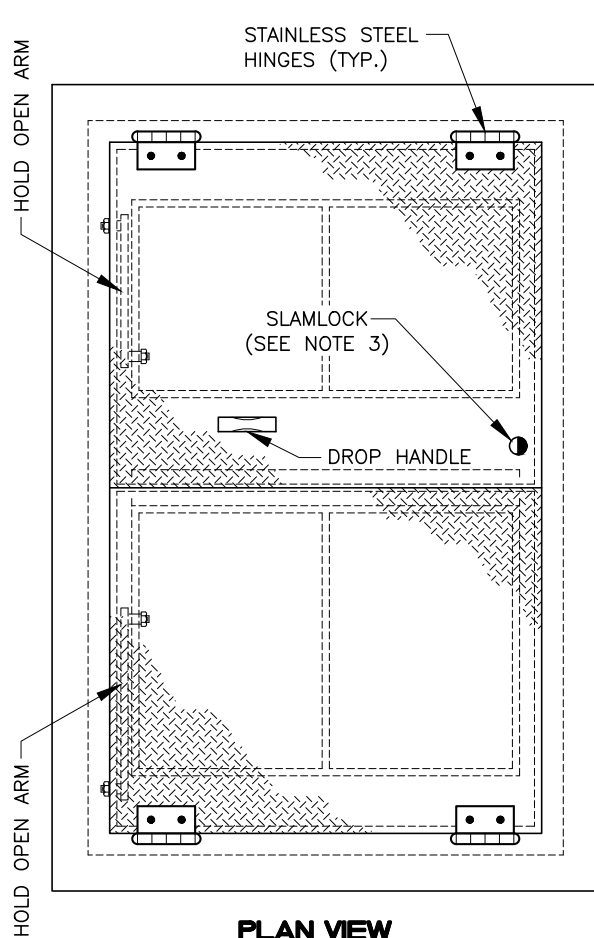
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FIRE HYDRANT CLEAR ZONE

NOT TO SCALE EFF. DATE
05/24

PAGE NUMBER
W-26

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NOTES:

1. HATCH TO BE ALUMINUM MATERIAL 6063-T5, WITH A MINIMUM LOAD CAPABILITY OF 300 LBS. PER SQ/FT. & STAINLESS STEEL HARDWARE.
2. HINGED SAFETY HATCH TO BE U.S.F. FABRICATION, INC. MANUFACTURED; GRATE TO BE RETROFIT, MADE OF ALUMINUM, S.S. HARDWARE, PERMITTED TO ROTATE 90° & AUTOMATICALLY LOCK IN PLACE WITH A 316 S.S. ROD. GRATE SHALL BE POWDER COATED WITH O.S.H.A. SAFETY ORANGE OR YELLOW COLOR. (REFER TO U.S.F. DRAWING #24019 FOR OTHER DETAILS).
3. SLAMLOCK TO BE KEY INSTEAD OF BOLTS.



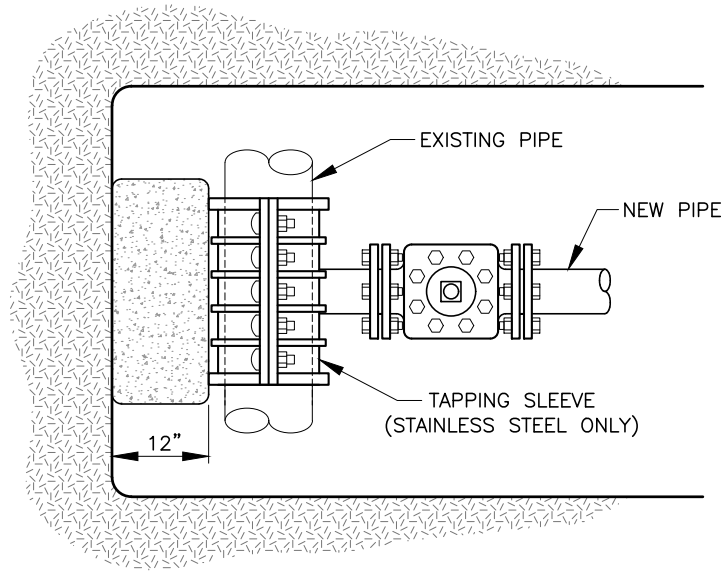
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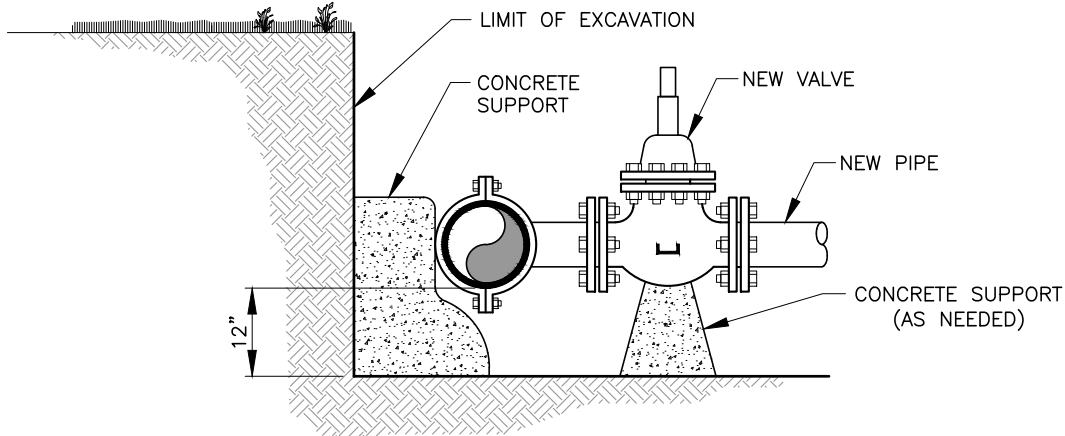
SPECIAL METER PIT DIAMOND PLATE
ACCESS HATCH

NOT TO SCALE EFF. DATE
05/24

PAGE NUMBER
W-27



PLAN VIEW



SECTION

NOTES:

1. 18" CLEARANCE FROM FITTINGS & BELLS.
2. TAPPING VALVE & SLEEVE SHALL BE PRESSURE TESTED AT 155 PSI PRIOR TO BEING TAPPED.



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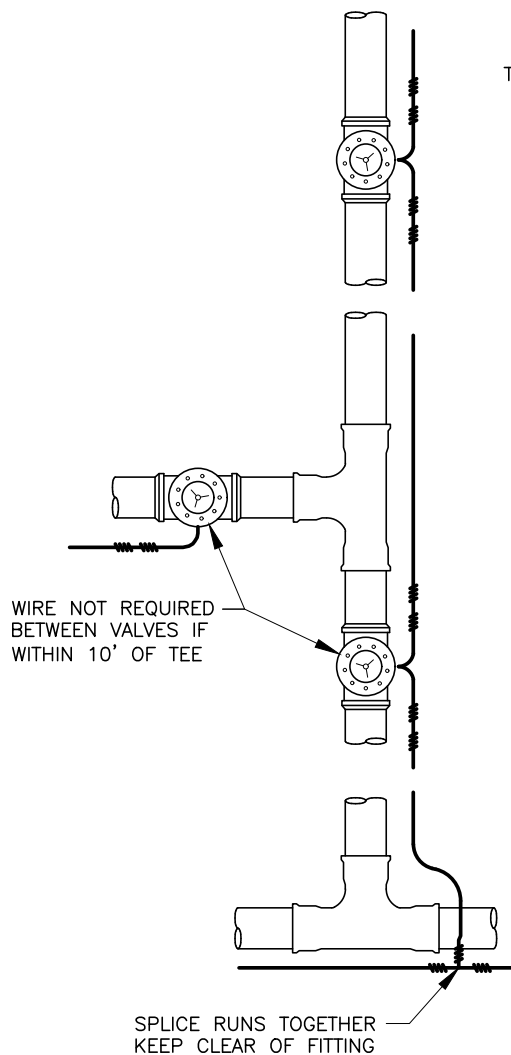
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TAPPING SLEEVE AND VALVE
INSTALLATION DETAIL

NOT TO SCALE | EFF. DATE
05/24

PAGE NUMBER
W-28

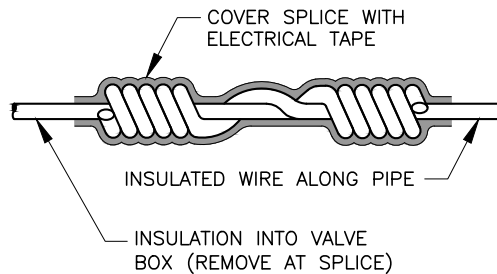
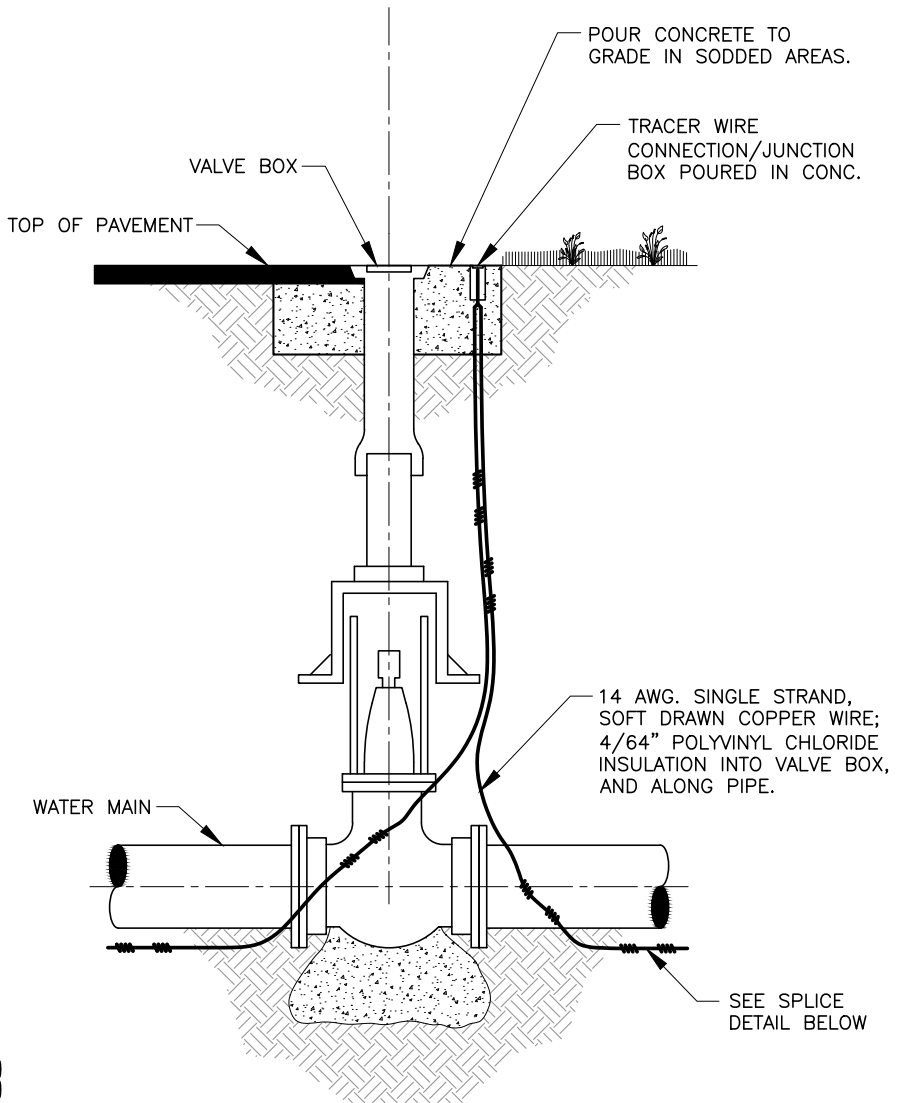
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TYPICAL LAYOUT

NOTES:

1. WIRE TO BE CONTINUOUS BETWEEN VALVE BOXES, EXCEPT AS NOTED.
2. LOCATING WIRE TO BE LAID AT BOTTOM OF TRENCH, NEXT TO PIPE.
3. LOCATING WIRE SHALL BE 14 AWG. SINGLE STRAND, SOFT DRAWN COPPER WIRE; 4/64" POLYVINYL CHLORIDE INSULATION INTO VALVE BOX AND ALONG PIPE.



SPLICE DETAIL



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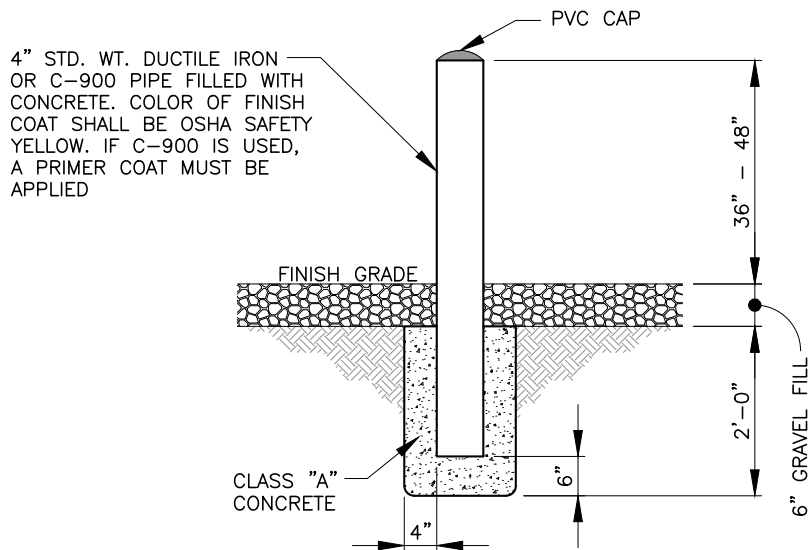
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WATER MAIN LOCATING WIRE DETAIL FOR NON-METALLIC PIPE

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05/24

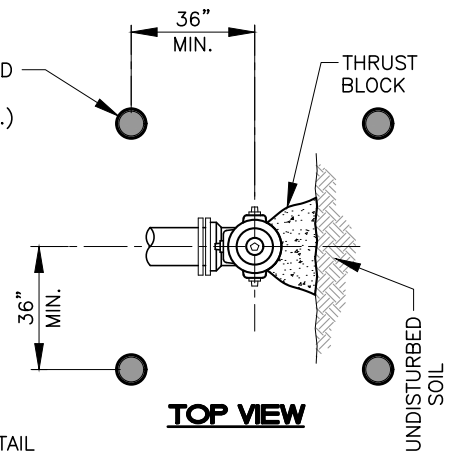
PAGE NUMBER
W-29

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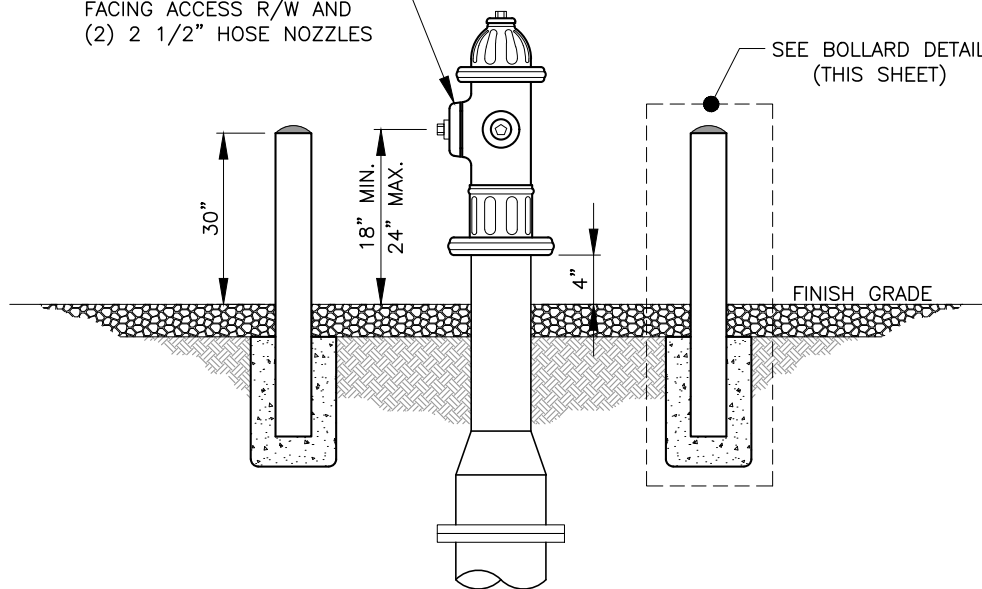


BOLLARD DETAIL

4" DIP BOLLARD FILLED WITH CONCRETE AND PAINTED YELLOW. (TYP.)



4-1/2" PUMPER NOZZLE FACING ACCESS R/W AND (2) 2 1/2" HOSE NOZZLES



SECTION

FIRE HYDRANT INSTALLATION WITH BOLLARDS

NOTE:

BOLLARDS ARE REQUIRED FOR HYDRANTS WITH LESS THAN 5 FEET TO BACK OF CURB.



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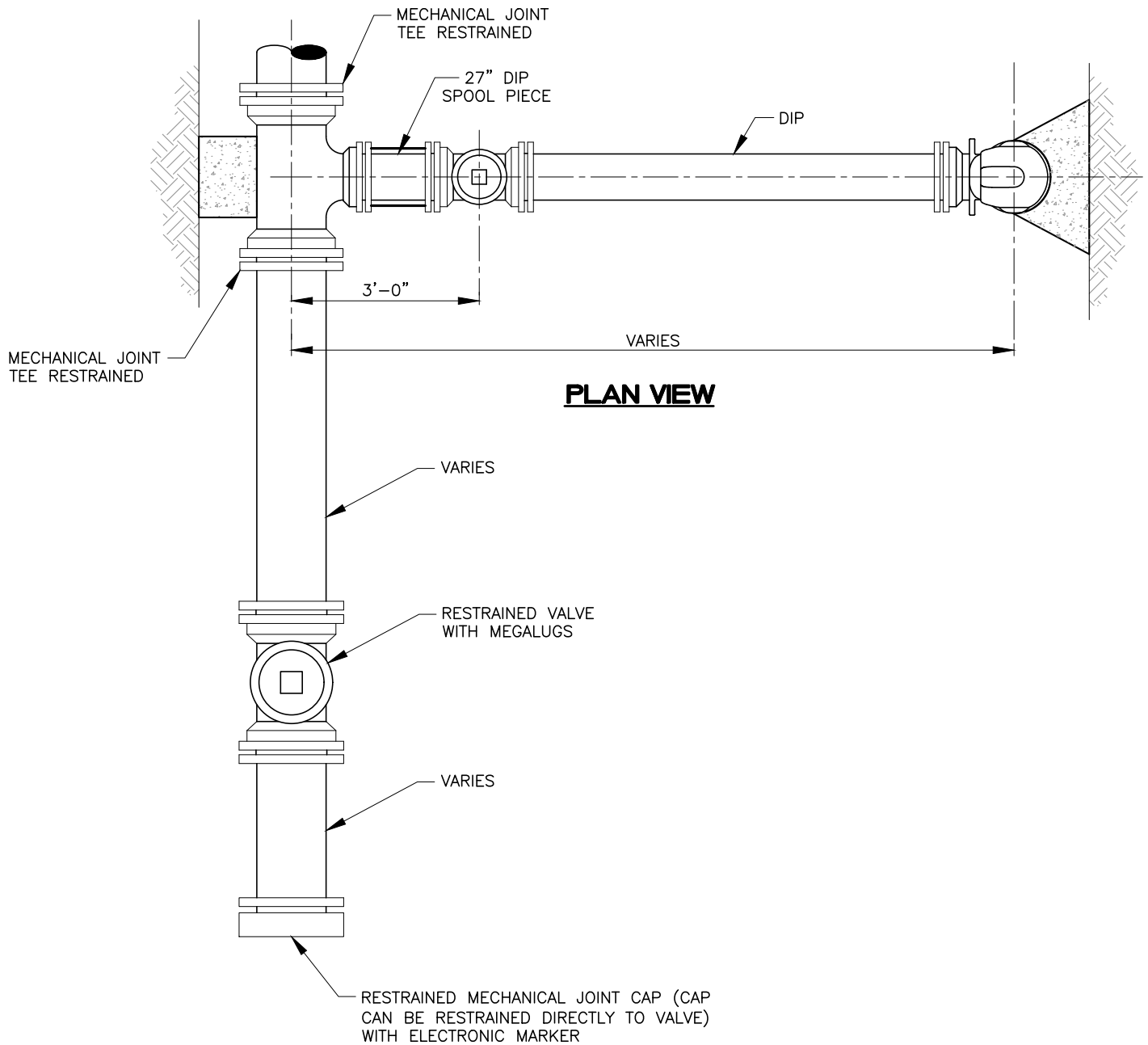
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BOLLARD DETAIL

NOT TO SCALE EFF. DATE
05/24

PAGE NUMBER
W-30

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WATER TERMINATION VALVE AND CAP

NOT TO SCALE | EFF. DATE
05/24

PAGE NUMBER
W-31