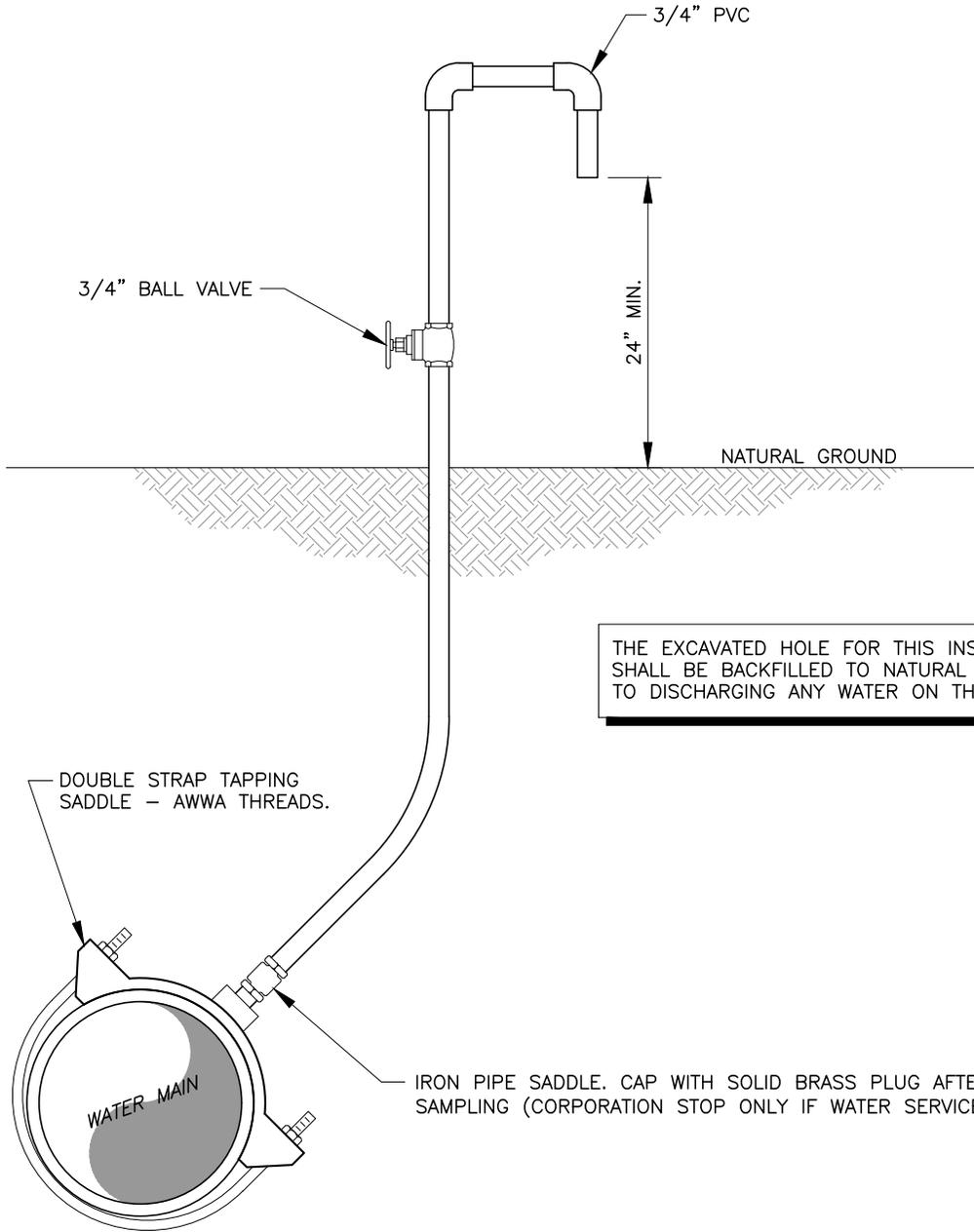


V. STANDARD DETAILS

DOMESTIC WATER DETAILS

DRAWING INDEX

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Sampling Point (Fire Hydrant).....	W-2
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THE EXCAVATED HOLE FOR THIS INSTALLATION SHALL BE BACKFILLED TO NATURAL GRADE PRIOR TO DISCHARGING ANY WATER ON THE GROUND.

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.

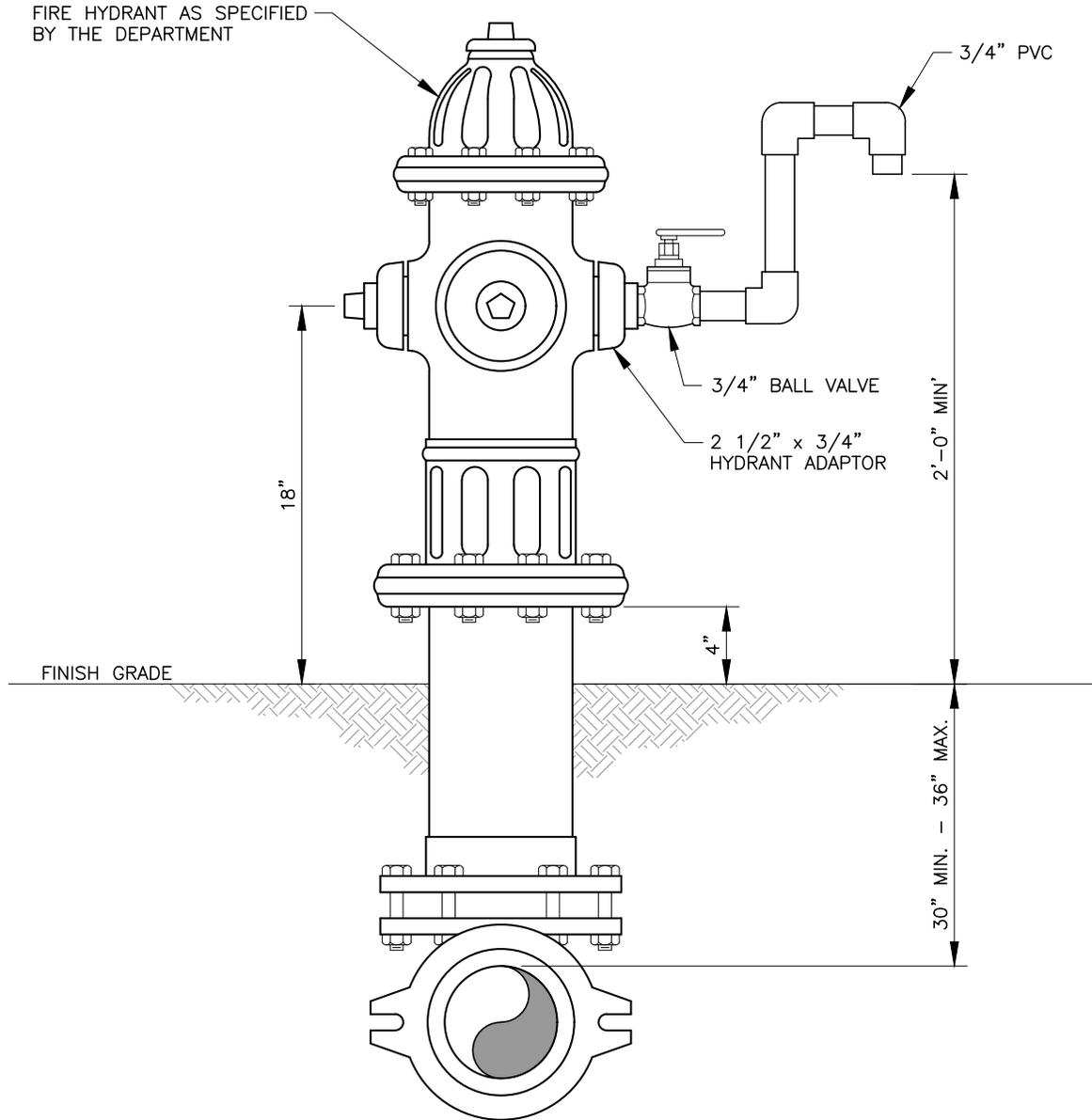


BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

SAMPLING POINT (IN-LINE)

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NOTE:

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



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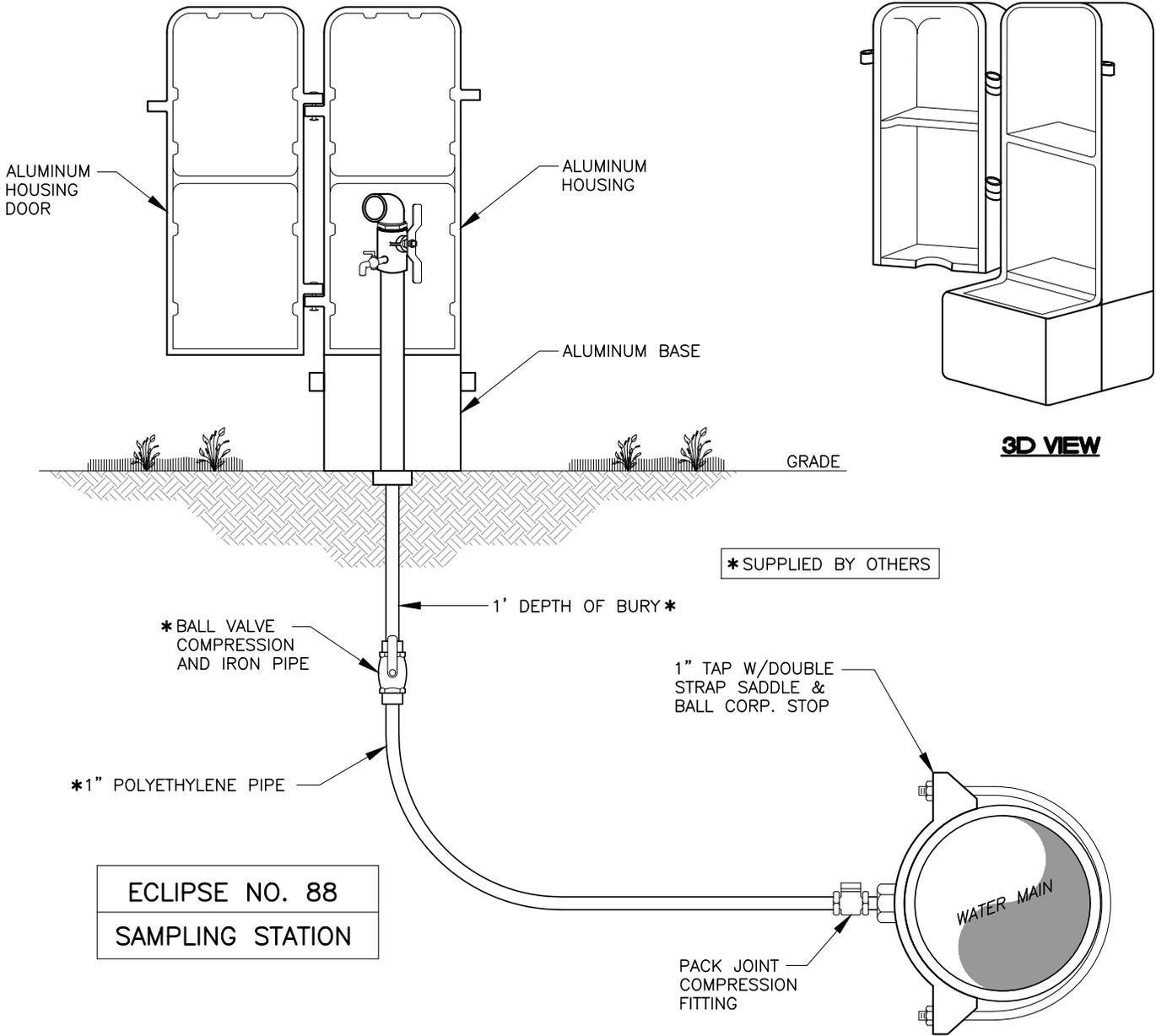
SAMPLING POINT (FIRE HYDRANT)

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ECLIPSE NO. 88
SAMPLING STATION

* SUPPLIED BY OTHERS

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, PREFERABLY 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.



BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

**PERMANENT SAMPLING STATION DETAIL
(ECLIPSE 88)**

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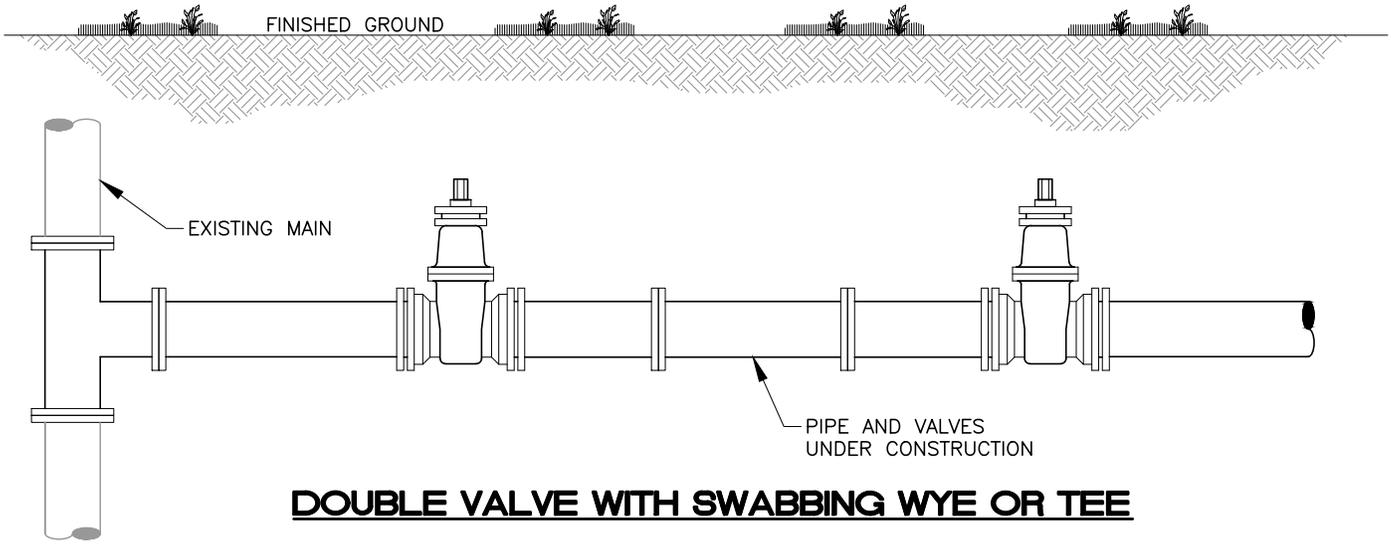
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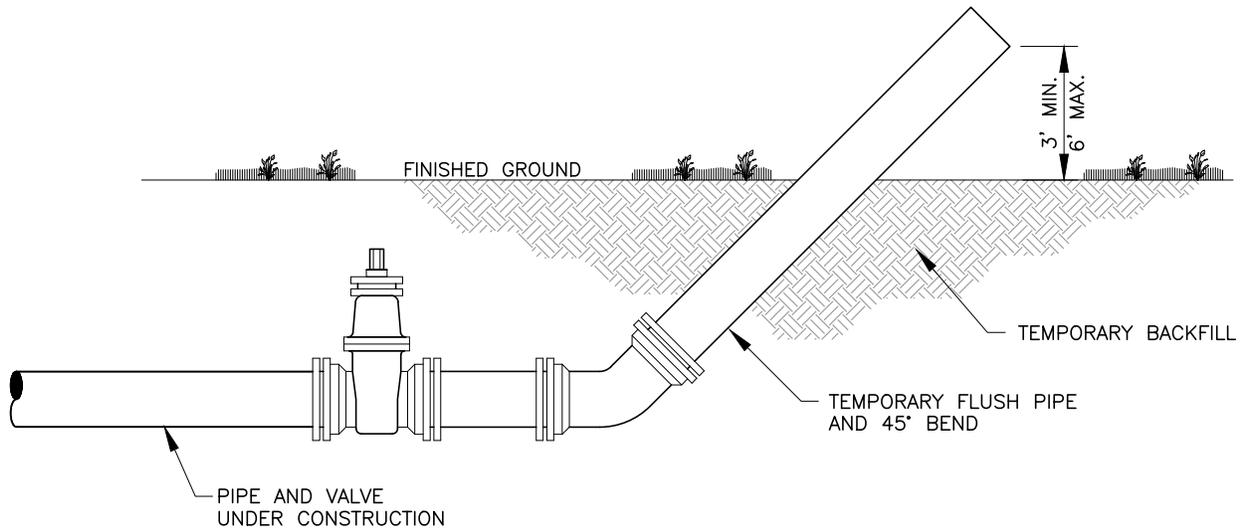
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DOUBLE VALVE WITH SWABBING WYE OR TEE



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 INFLECT 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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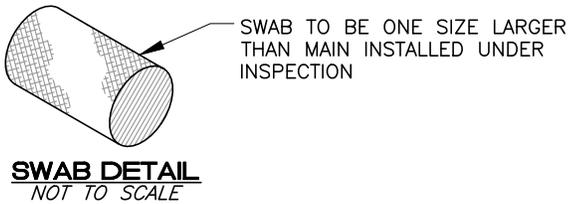
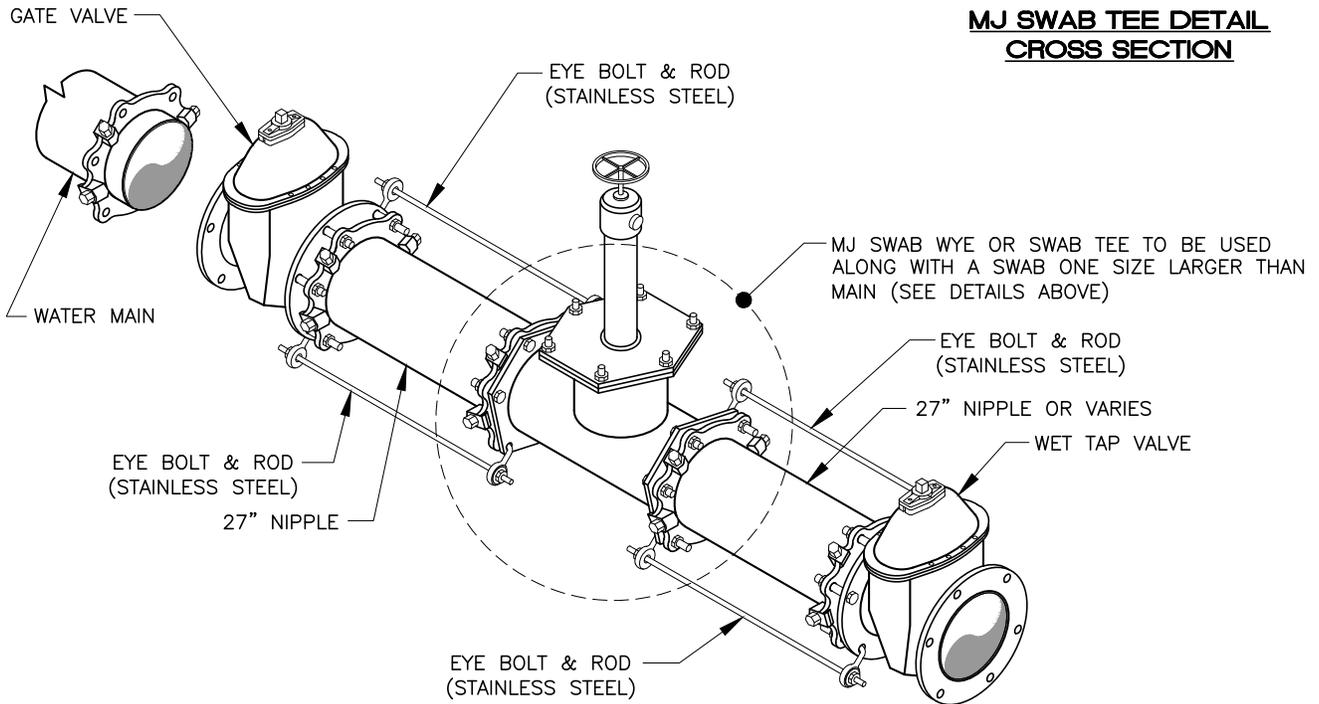
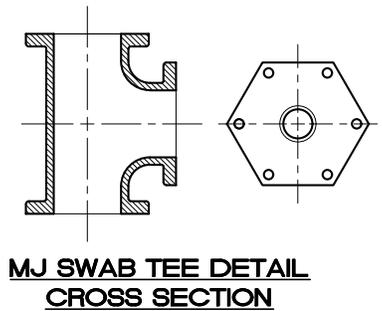
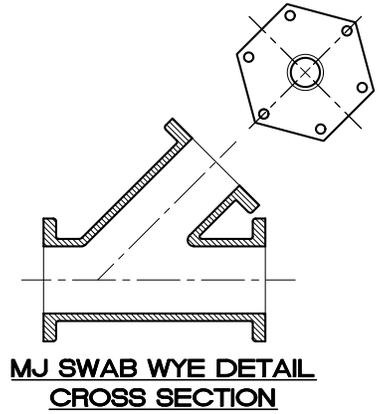
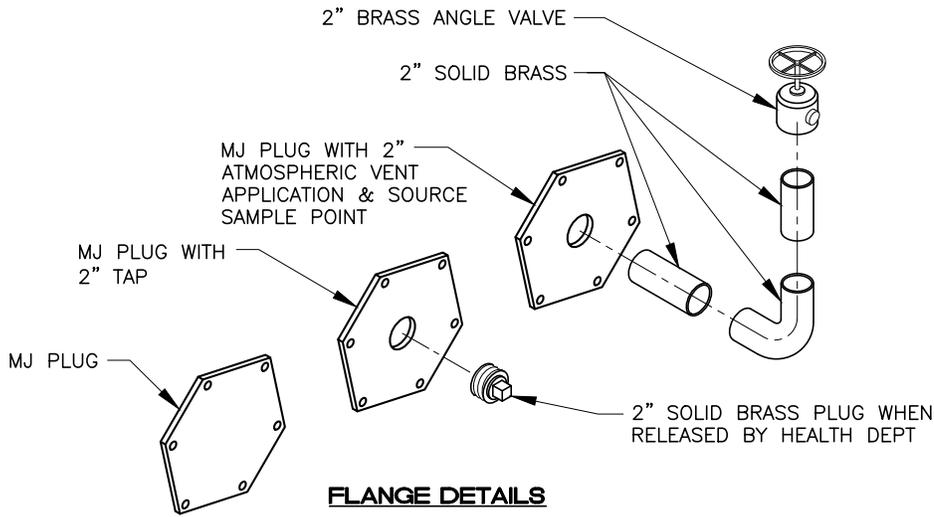
BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

CLEANING CANNON FLUSHING PROCEDURE

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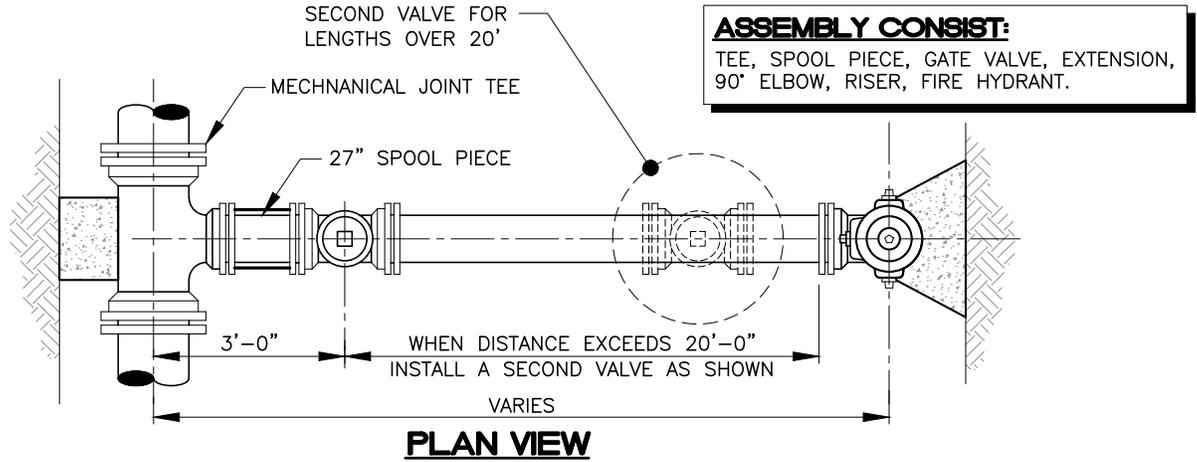
BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

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

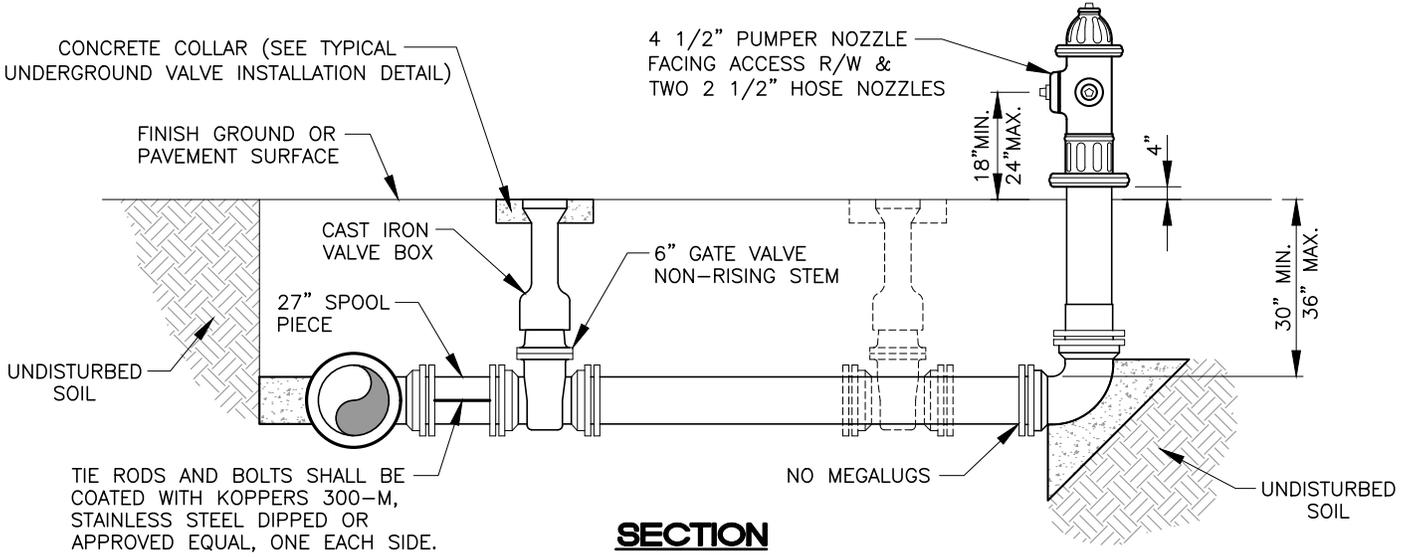
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PLAN VIEW



SECTION

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.



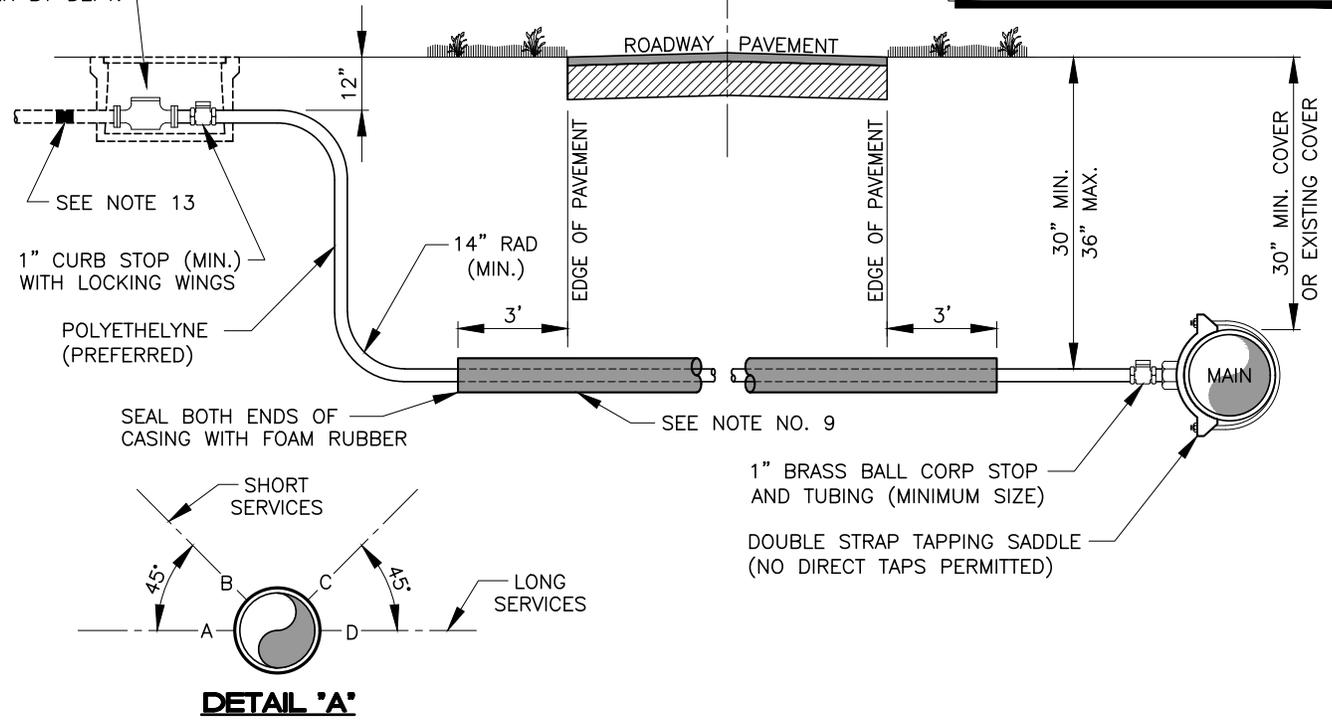
BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

TYPICAL FIRE HYDRANT INSTALLATION

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METER BOX BY DEVELOPER & METER BY DEPT.

ALL METERS & SERVICES SHALL BE IN A UTILITY EASEMENT



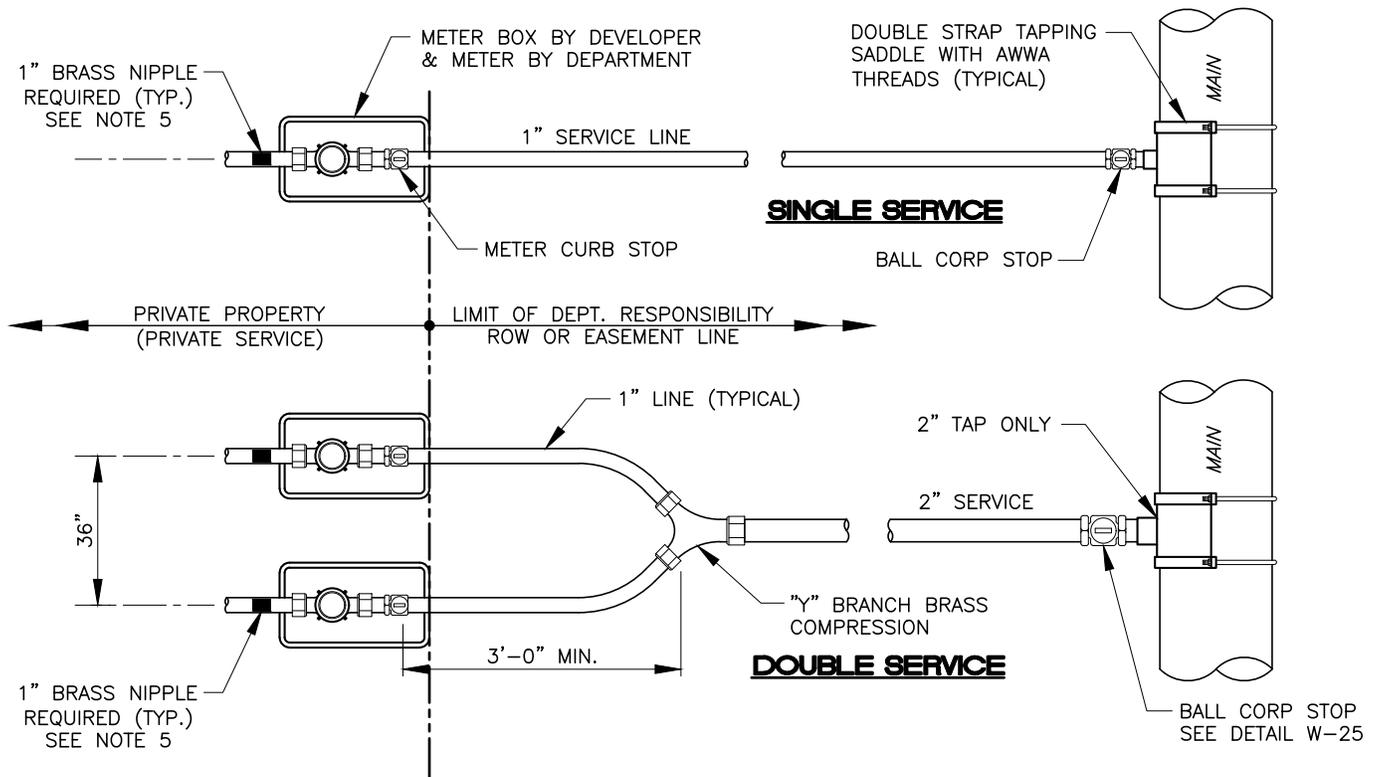
NOTES:

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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NOTES:

1. AUTHORIZED SERVICE LINE MATERIAL:
 - A. POLYETHYLENE TUBING SDR 9.
 - B. IF EITHER TERMINAL END IS LOCATED UNDER PAVEMENT, PVC CASING SHALL BE USED.
2. 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.
3. NO FITTINGS BETWEEN BALL CORP. STOP AND METER CURB STOP ALLOWED WHEN USING POLYETHYLENE TUBING.
4. LOW RANGE EMS MARKER SHALL BE PLACED ABOVE THE SERVICE WYE & WIRED TO THE WYE.
5. 1" BRASS NIPPLE TO EXTEND UP TO NO LESS THAN 2" OUTSIDE THE METER BOX.

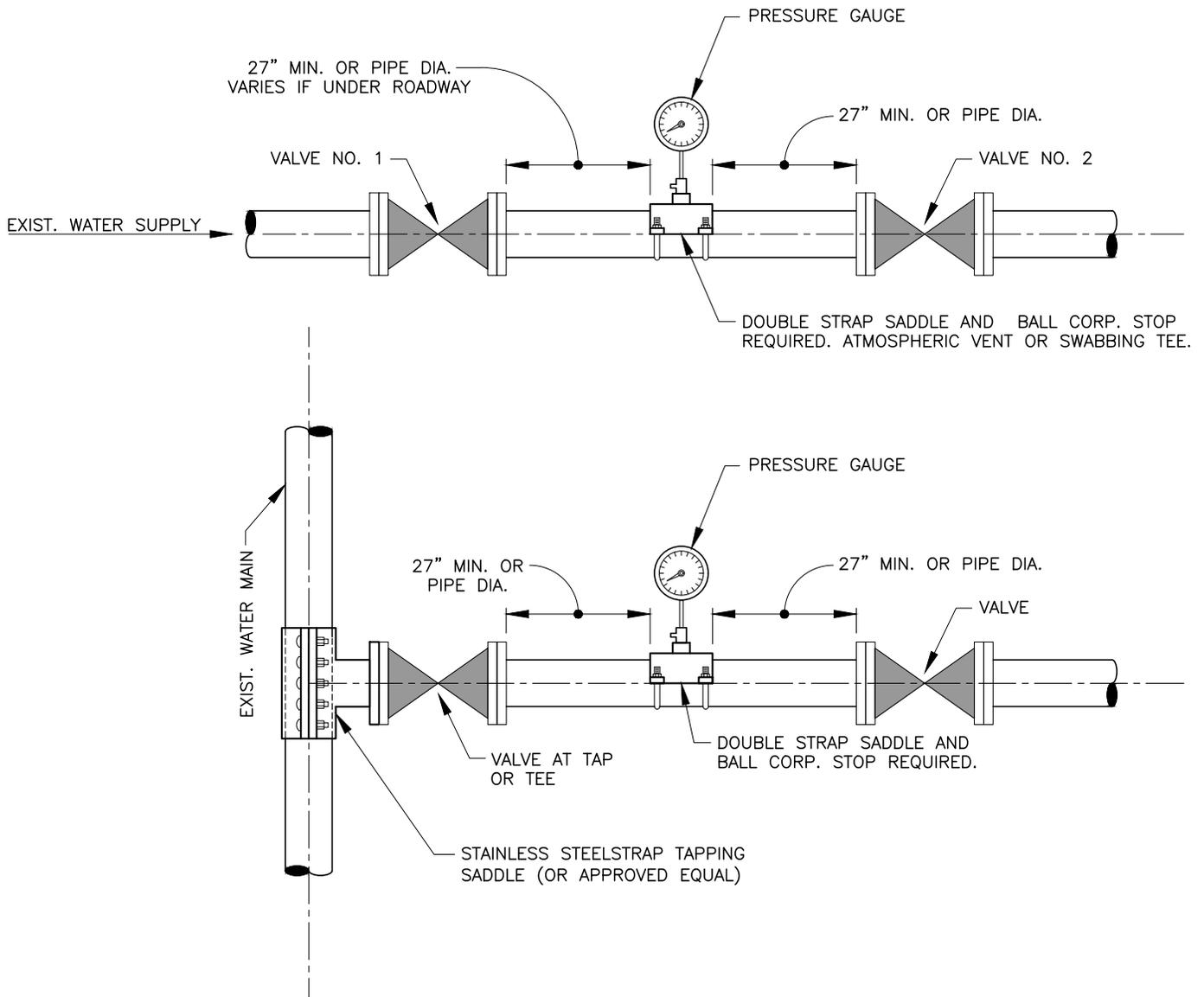


BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

TYPICAL RESIDENTIAL & COMMERCIAL WATER SERVICE

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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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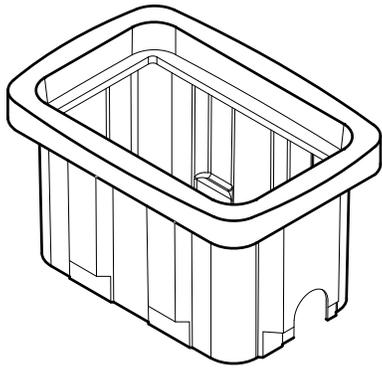
BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

WATER MAIN DOUBLE VALVE DETAIL

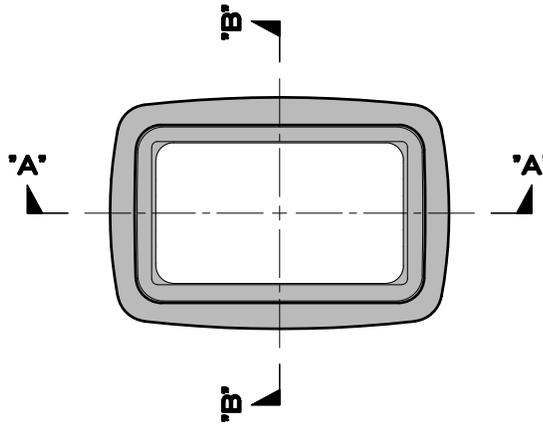
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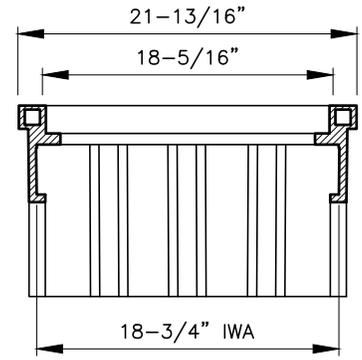
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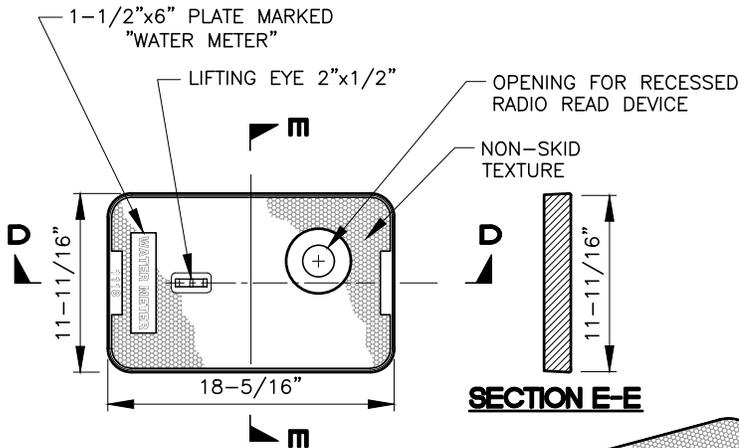
**METER BOX
OBLIQUE VIEW**



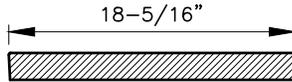
METER BOX TOP VIEW



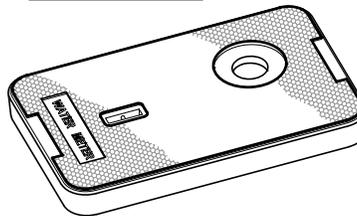
SECTION A-A



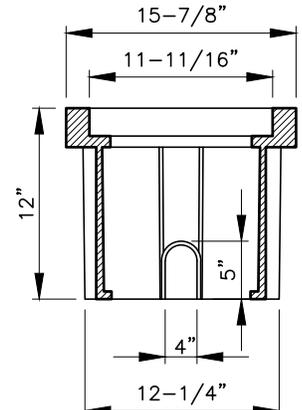
METER BOX COVER



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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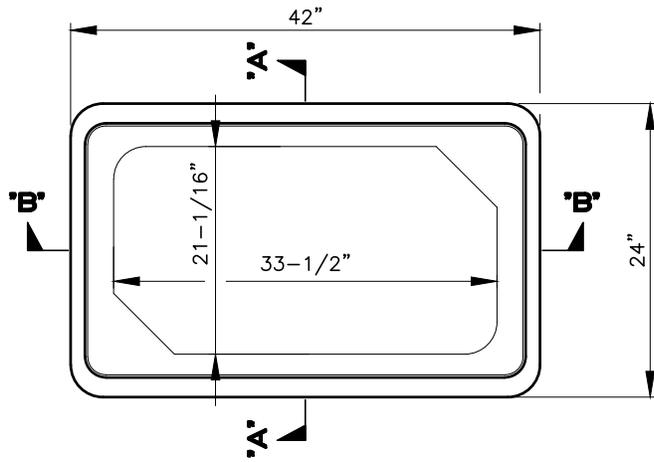
BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

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

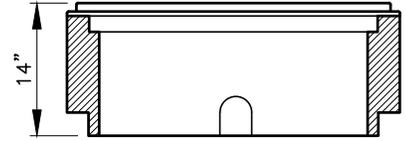
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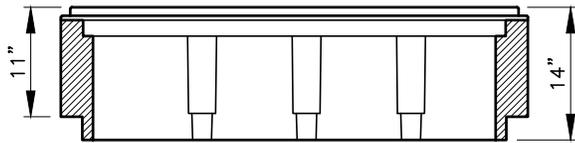
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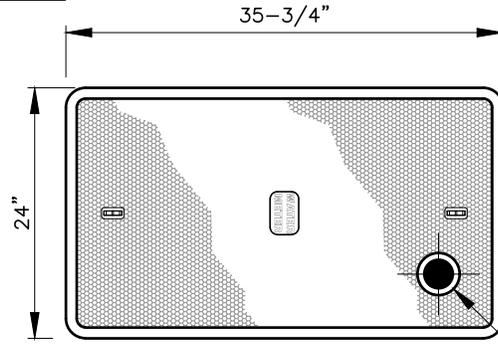
METER BOX TOP VIEW



SECTION A-A

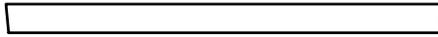


SECTION B-B

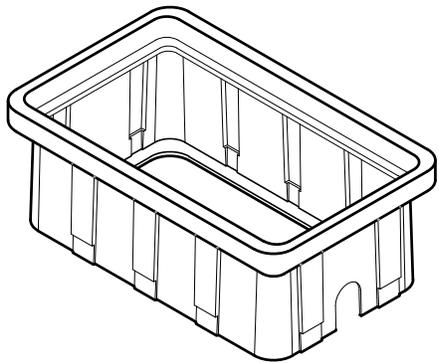


METER BOX COVER

OPENING FOR RECESSED RADIO READ DEVICE



SIDE VIEW



METER BOX OBLIQUE 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.

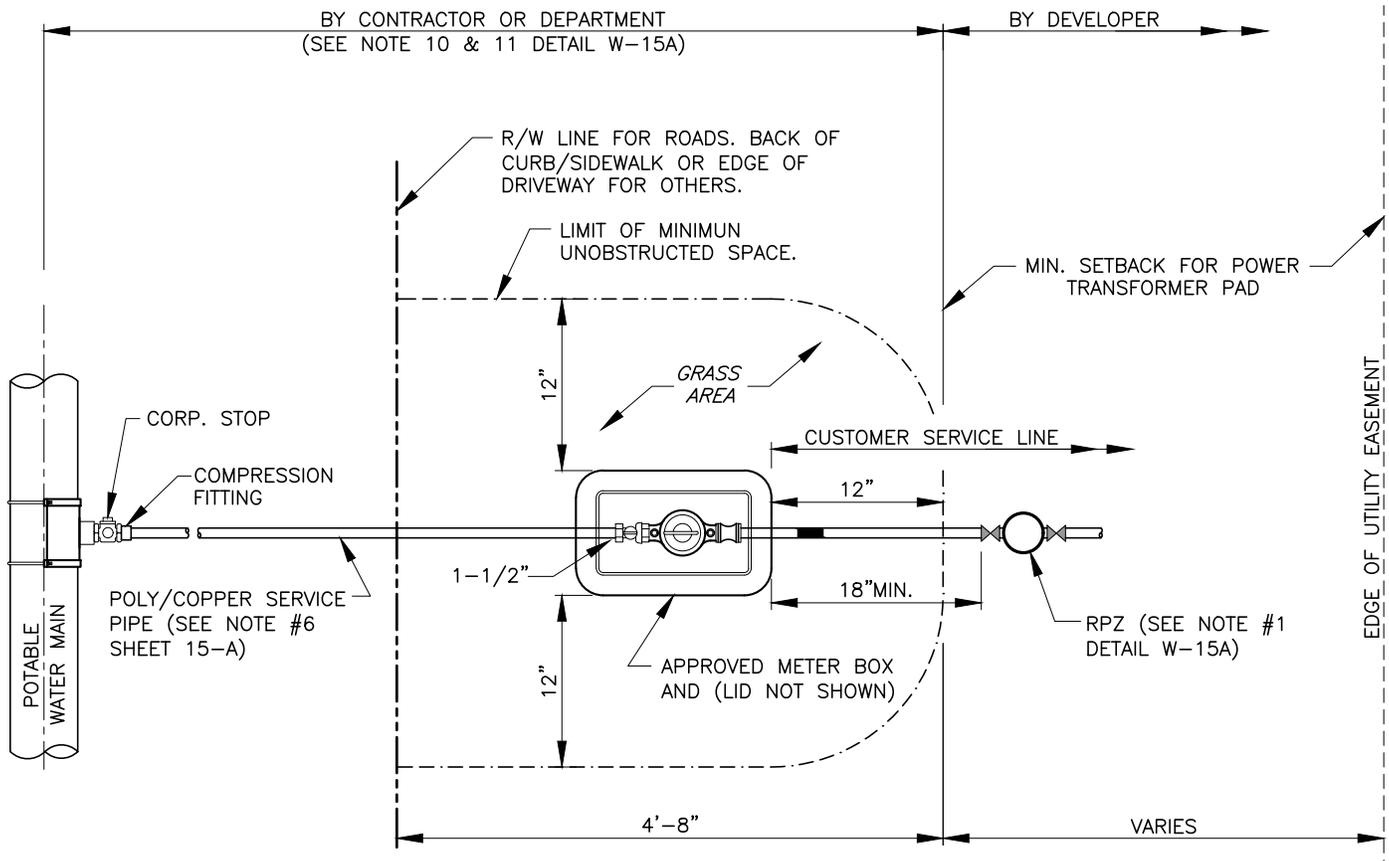


BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

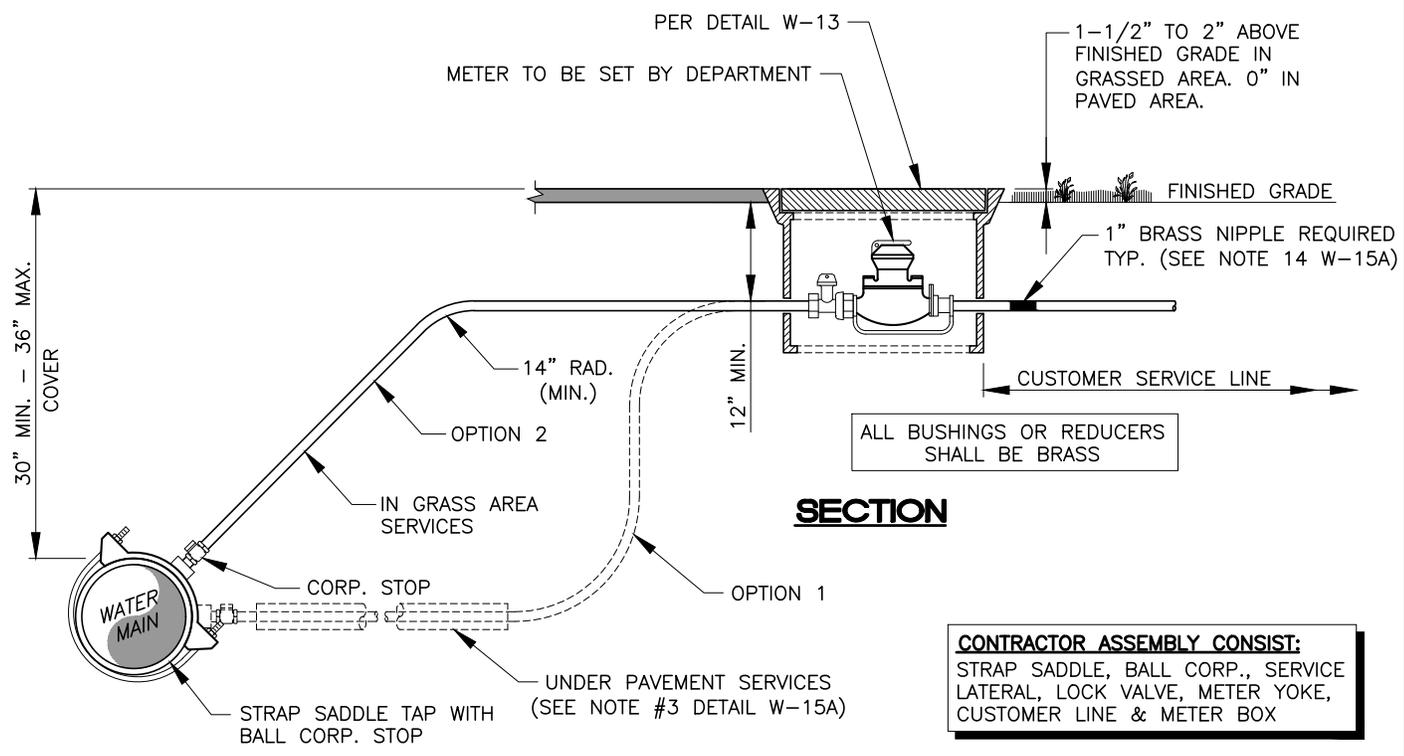
POTABLE WATER SERVICE RADIO READ FOR SENSUS
1-1/2" & 2" WATER METERS

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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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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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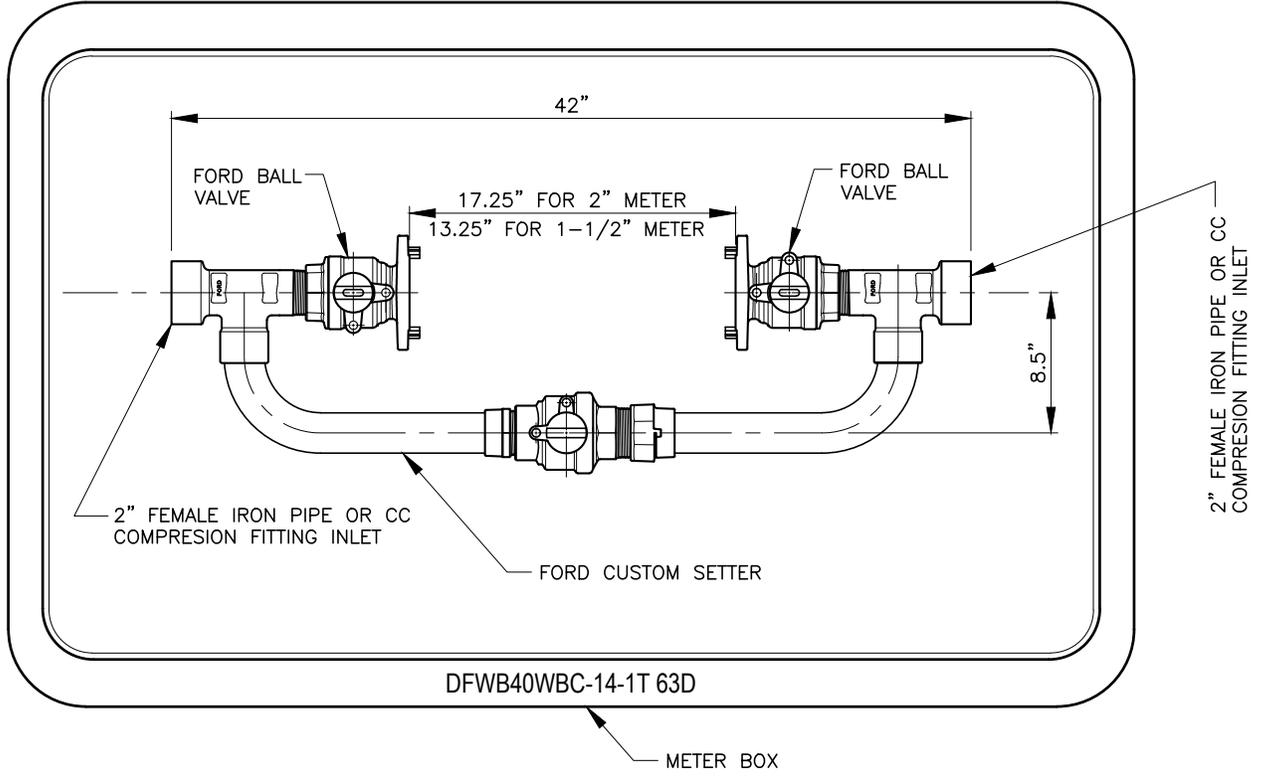
BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

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

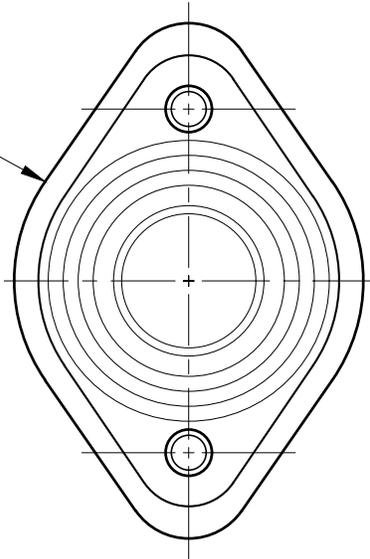
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FORD A67-NL FLANGE TO FLANGE
METER ADAPTER TO BE USED ON
THE 1-1/2" CUSTOM SETTER



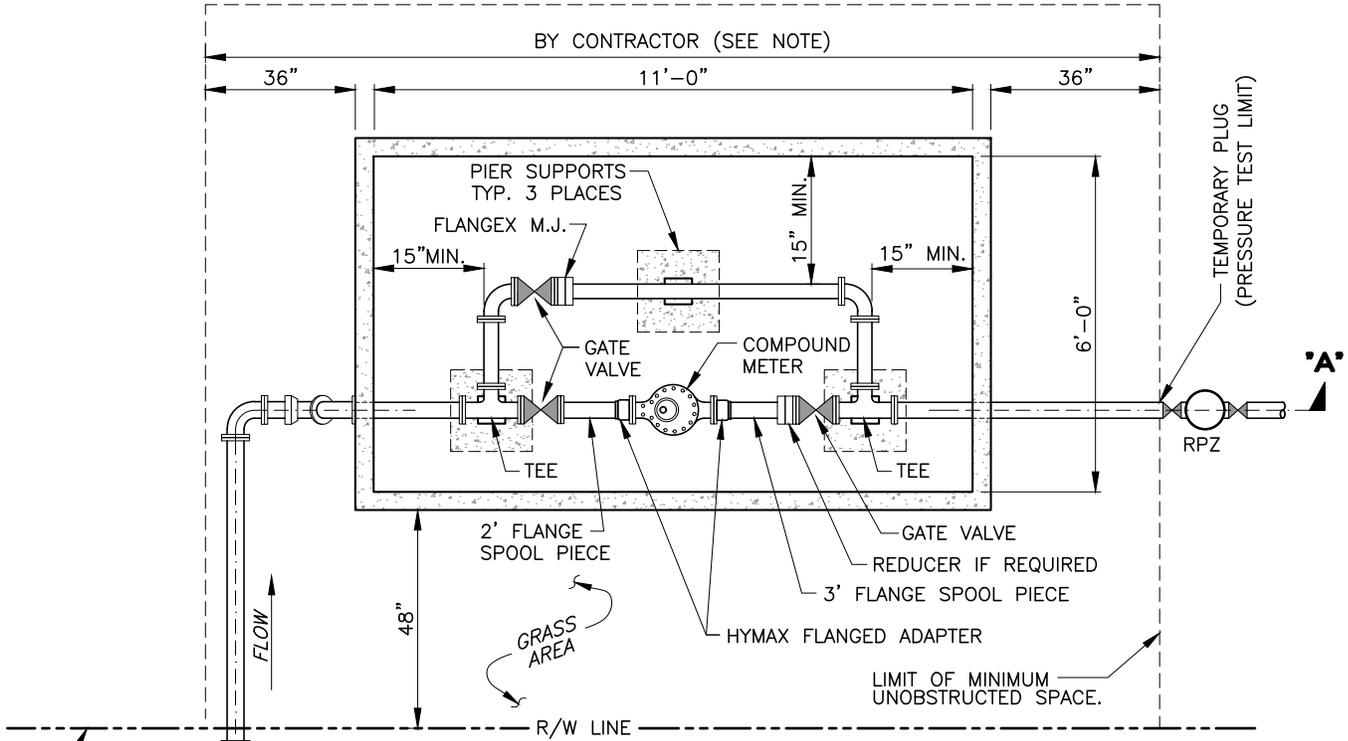
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POTABLE WATER SERVICE WITH CUSTOM SETTER
SINGLE 1-1/2" THRU 2" METER INSTALLATION DETAIL

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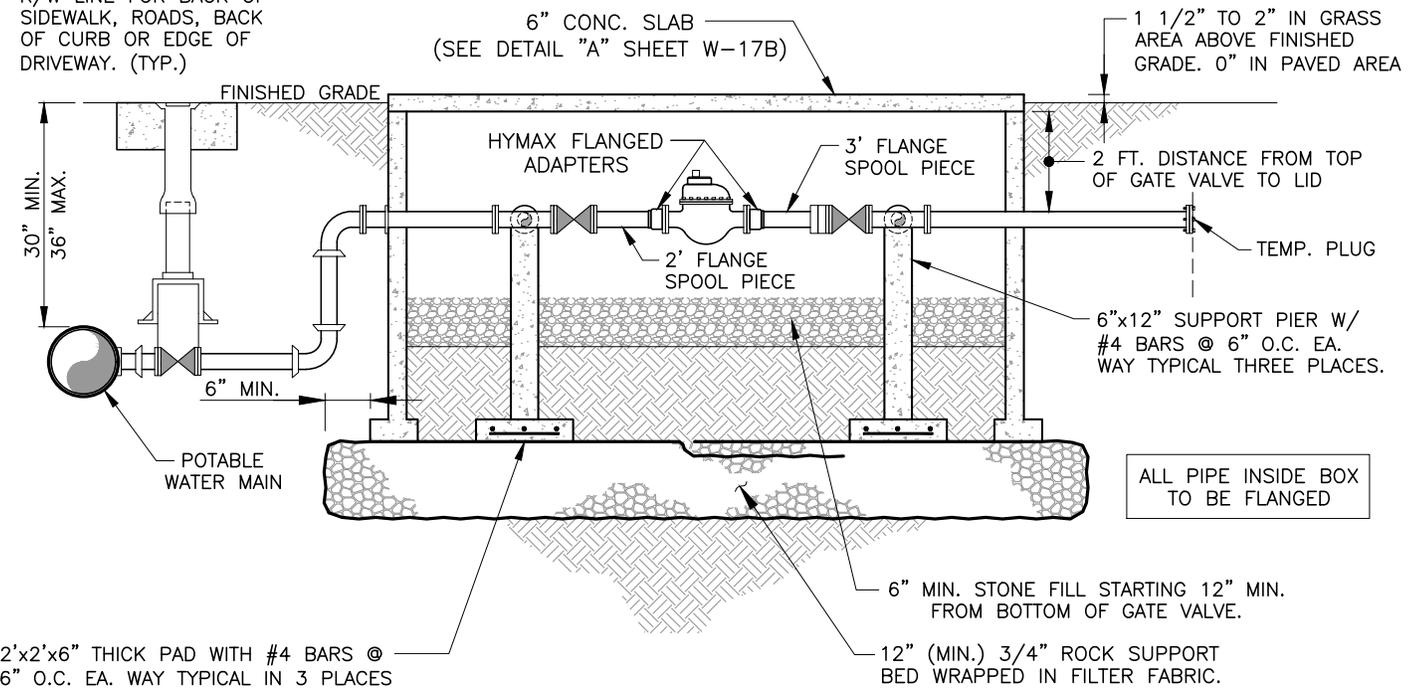
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METER PIT PLAN

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



BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

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

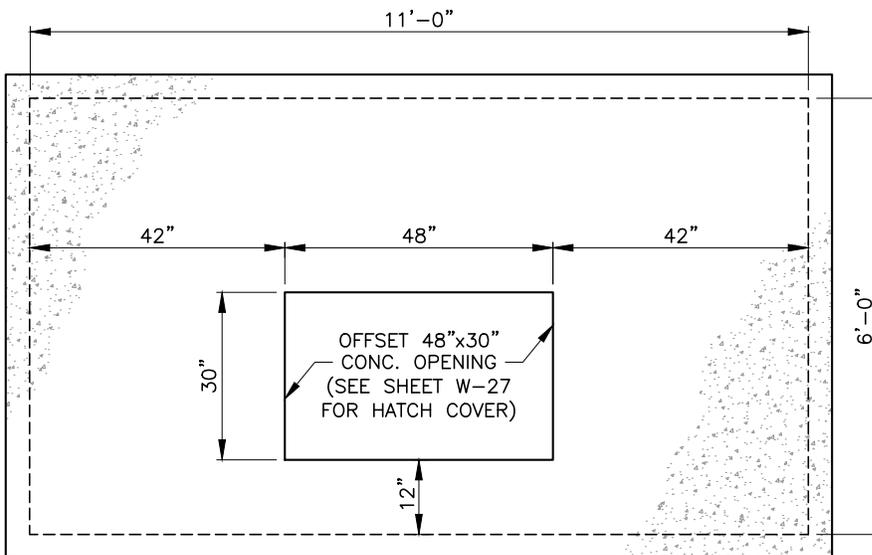
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INSTALLATION NOTES:

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.

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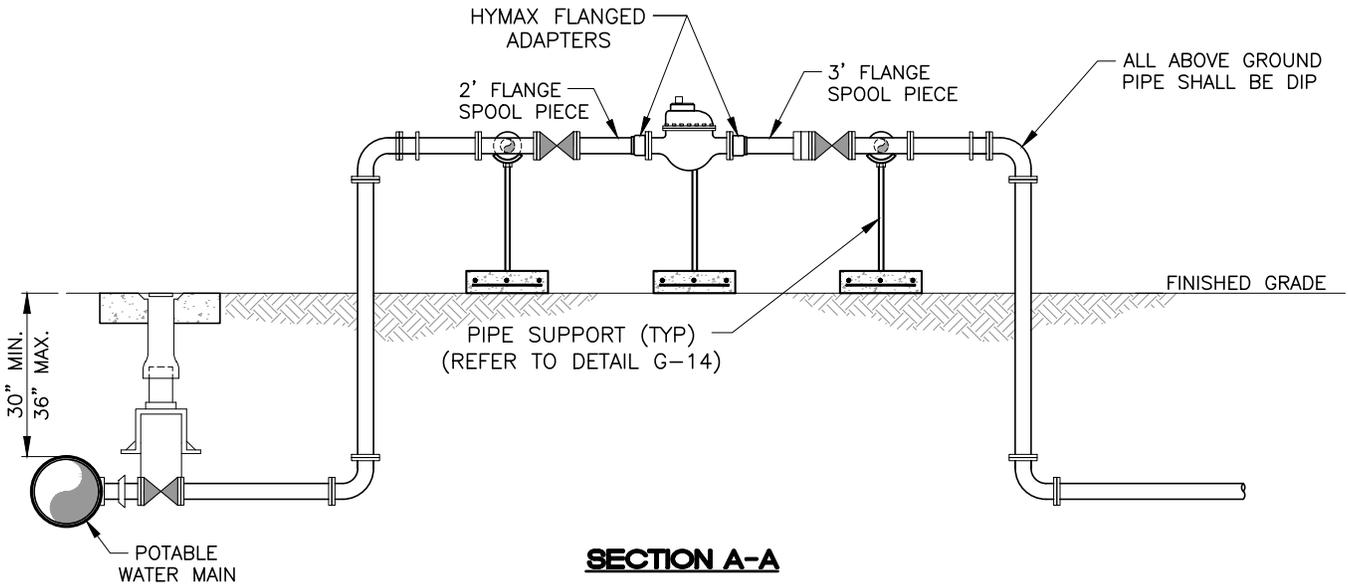
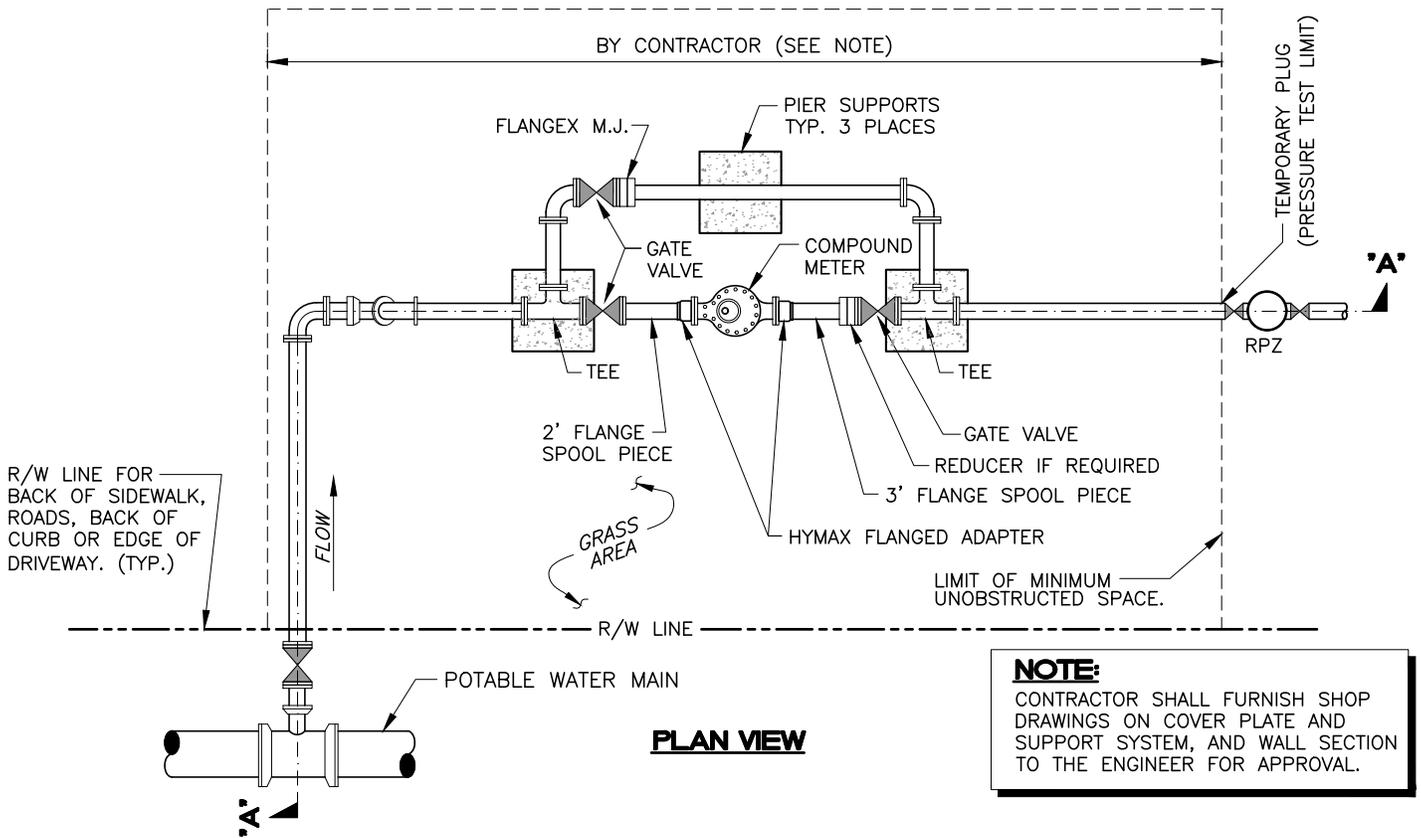


BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

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

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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.



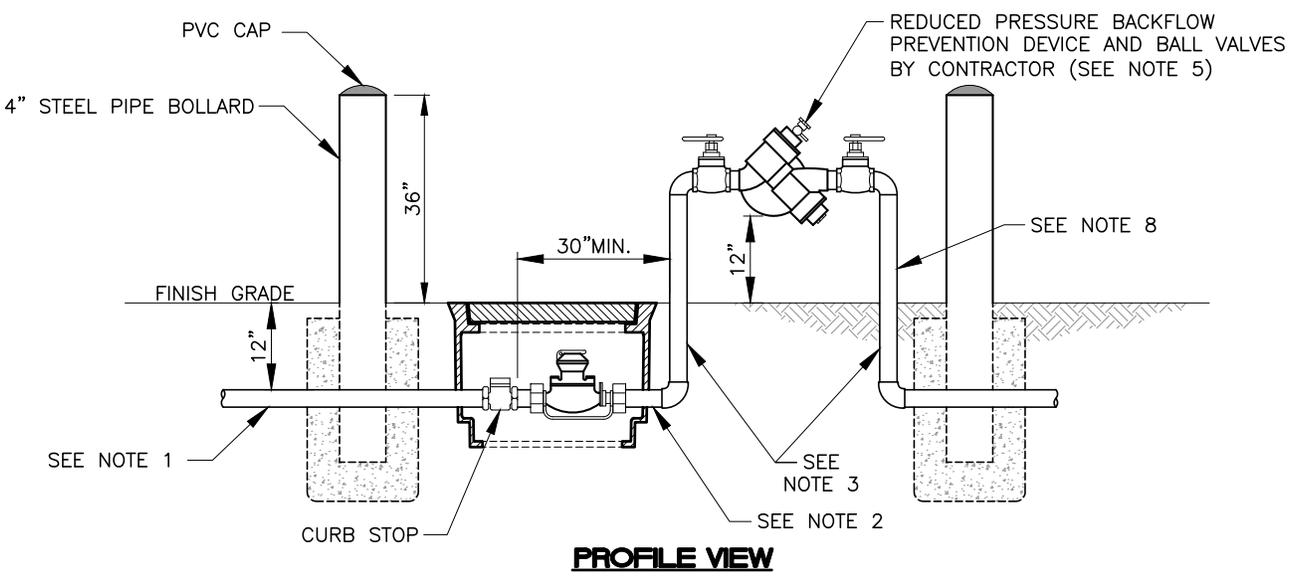
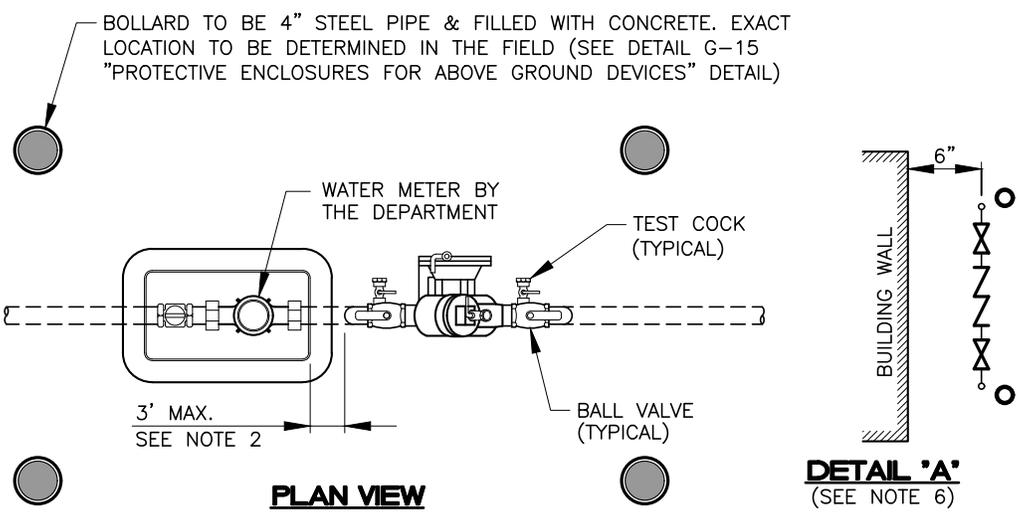
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ABOVE GROUND POTABLE
WATER METER 3" AND 4"

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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" 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

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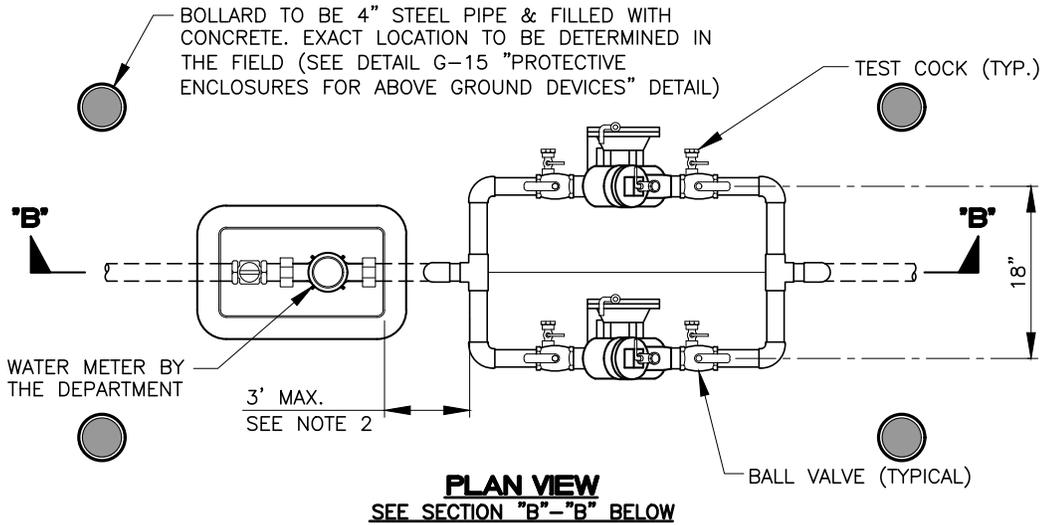


BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

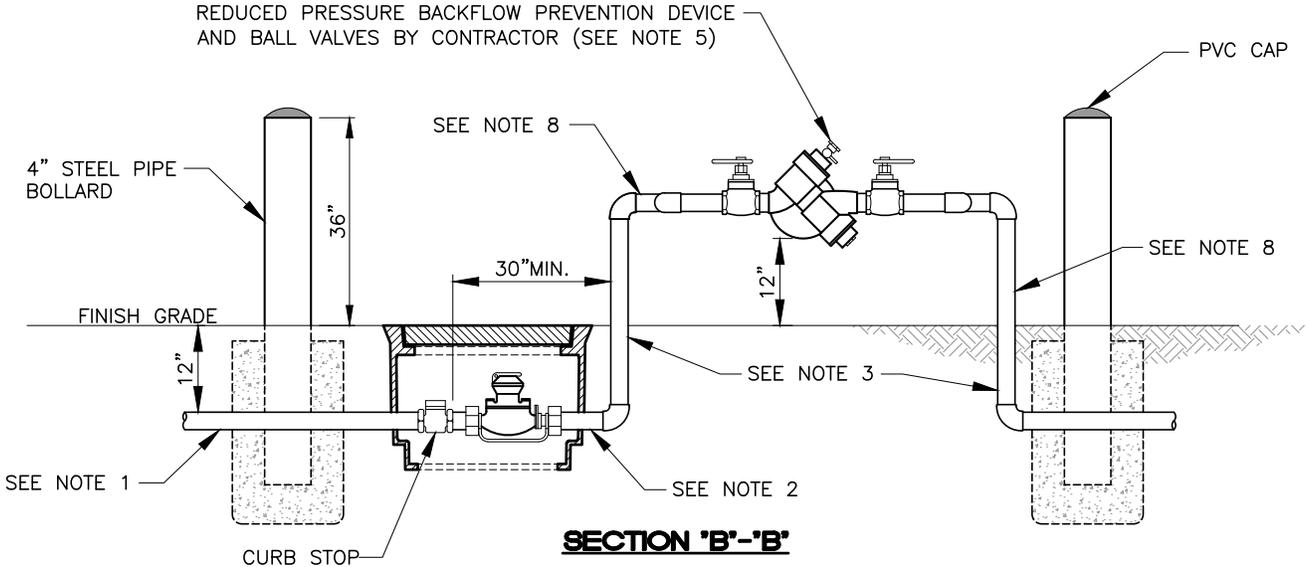
BACKFLOW DEVICE FOR 3/4" TO 2"
WATER METER

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PLAN VIEW
SEE SECTION "B"- "B" BELOW



SECTION "B"- "B"

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

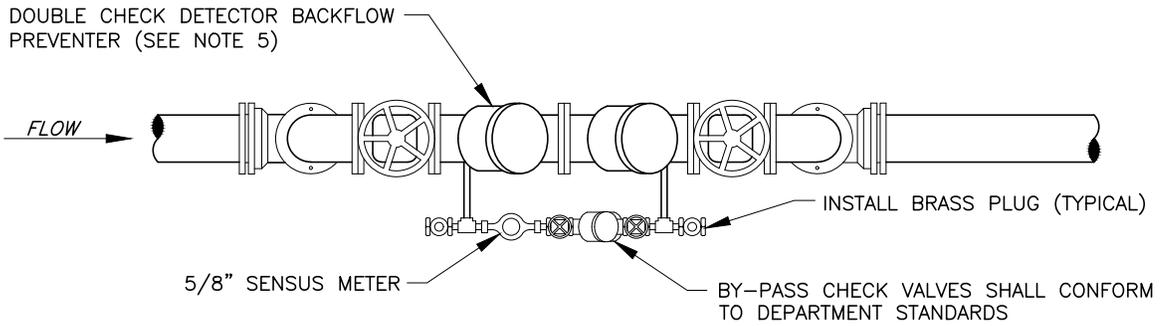


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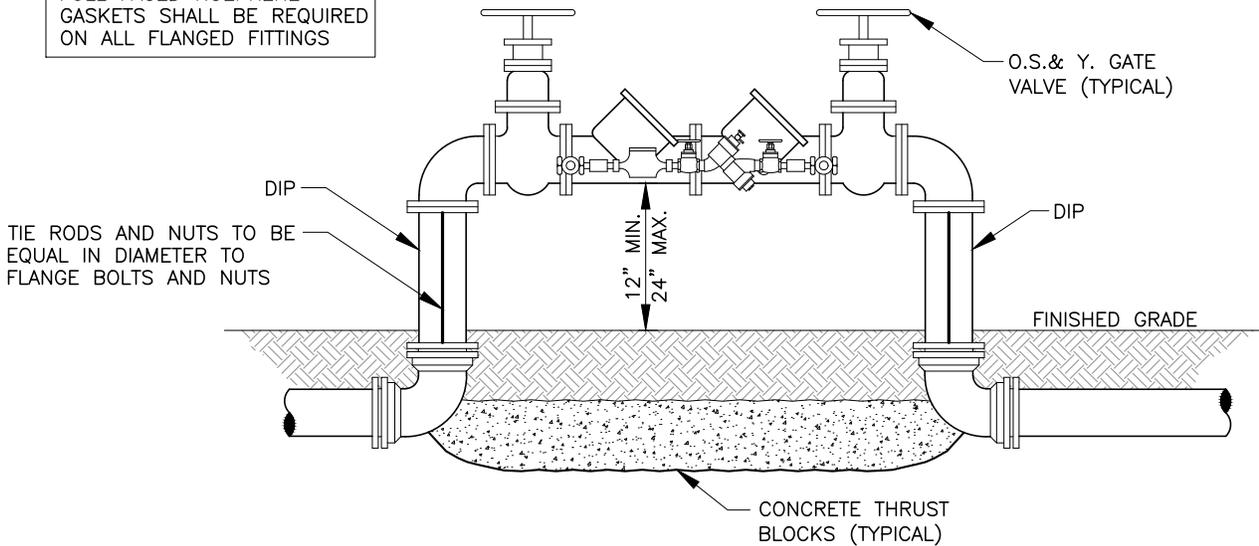
DUAL BACKFLOW DEVICE FOR 3/4" TO 2" WATER METERS

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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



BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

DOUBLE DETECTOR CHECK BACKFLOW ASSEMBLY

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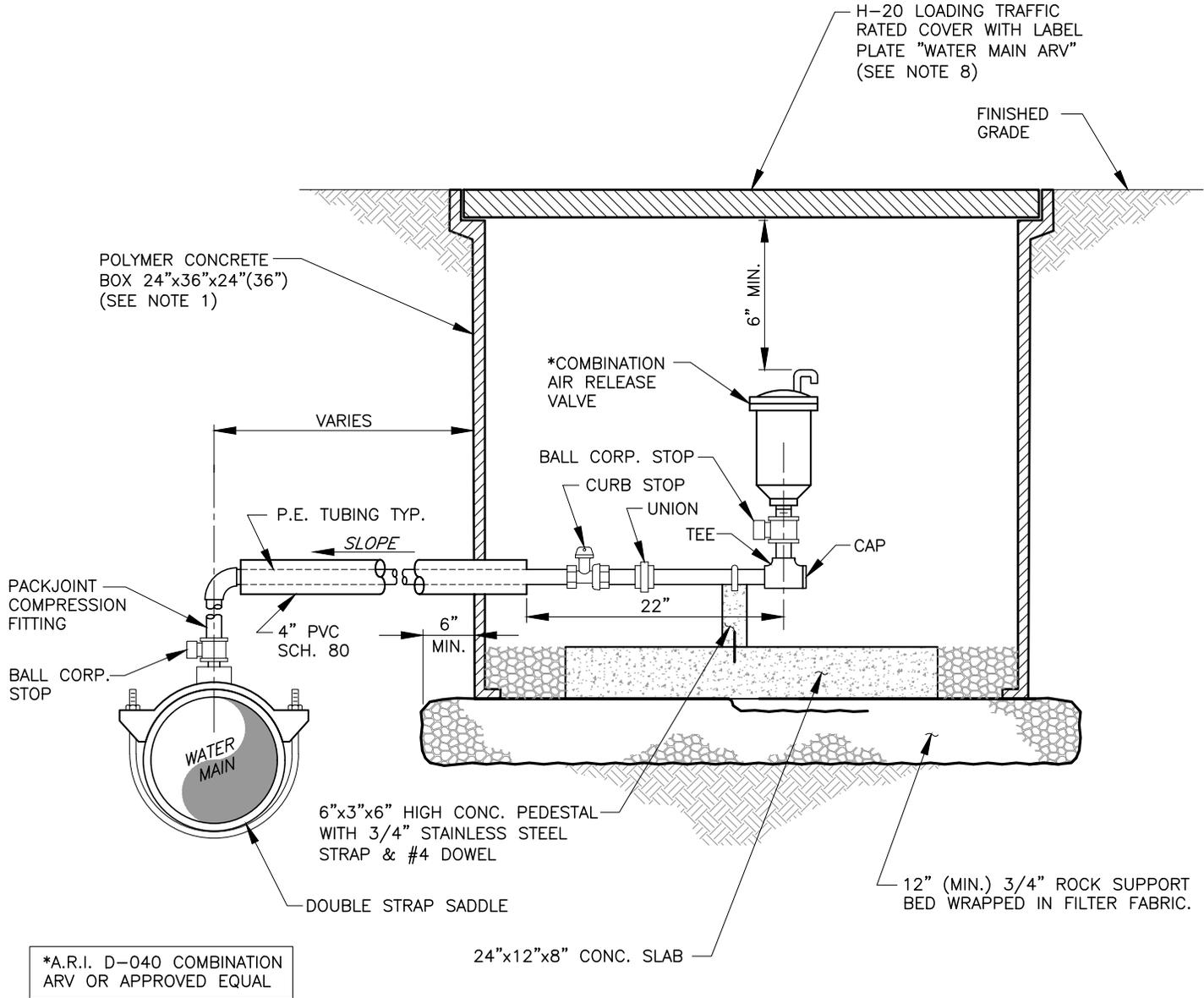
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*A.R.I. D-040 COMBINATION ARV OR APPROVED EQUAL

NOTES:

1. POLYMER CONCRETE BOX 24"Wx36L"x24"(MIN. 36" DEPTH AS REQUIRED) BY OLDCASTLE PRECAST, INC. OR APPROVED EQUAL (SHOP DRAWING IS REQUIRED FOR REVIEW AND APPROVAL).
2. POLYMER CONCRETE BOX AND COVER SHALL BE HEAVY DUTY TRAFFIC RATED 20K POUNDS.
3. BOXES SHALL NOT BE INSTALLED IN ROADWAYS OR DRIVEWAYS AND SHALL BE INSTALLED FLUSH WITH THE FINISH GRADE SURFACE.
4. THREADED AREAS OF BALL CORP. STOP AND OTHER FITTINGS SHALL BE SPIRAL WRAPPED WITH TWO WRAPS OF TEFLON TAPE
5. ALL OPENINGS SHALL BE SEALED WITH A WATERPROOF NON-SHRINKING GROUT.
6. ALL PIPE HOLES SHALL BE PRECAST OR CORE-DRILLED.
7. AIR RELEASE VALVE SHALL BE TYPE AND SIZE APPROPRIATE PER EXHIBIT "D" SPECIFICATIONS.
8. AIR RELEASE VALVE & PIPING TO BE IDENTIFIED AS "WATER MAIN ARV" OR "RAW WATER MAIN" AS APPROPRIATE STAMPED ON THE LID.
9. ALL PIPE AND FITTINGS INSIDE VAULT TO BE BRASS.
10. STANDARD DESIGN FOR ALL EASEMENT AREAS & RIGHT-OF-WAY.



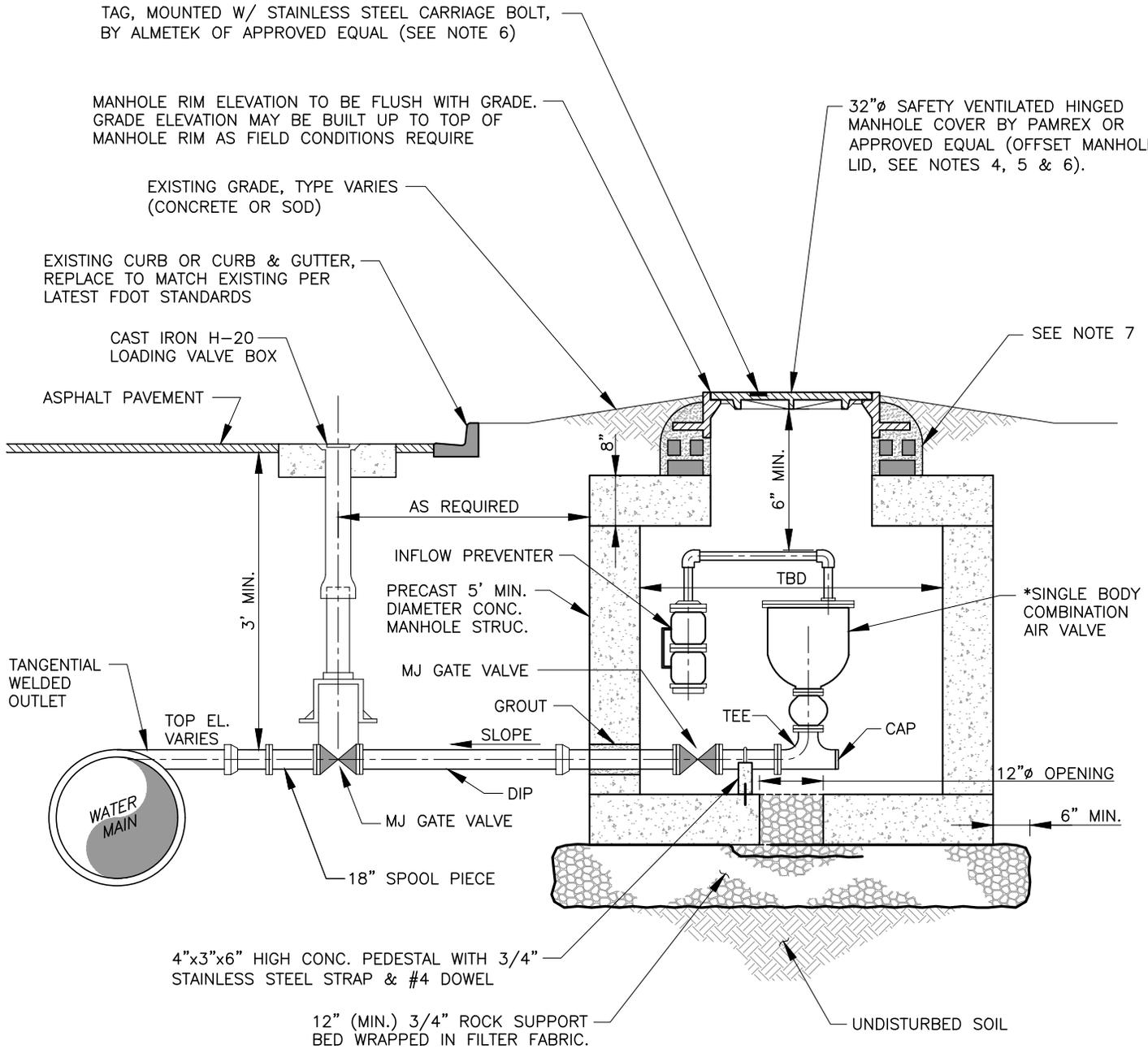
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WATER MAIN OFFSET AIR RELEASE VALVE AND MANHOLE

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TAG, MOUNTED W/ STAINLESS STEEL CARRIAGE BOLT, BY ALMETEK OF APPROVED EQUAL (SEE NOTE 6)

MANHOLE RIM ELEVATION TO BE FLUSH WITH GRADE. GRADE ELEVATION MAY BE BUILT UP TO TOP OF MANHOLE RIM AS FIELD CONDITIONS REQUIRE

32"Ø SAFETY VENTILATED HINGED MANHOLE COVER BY PAMREX OR APPROVED EQUAL (OFFSET MANHOLE LID, SEE NOTES 4, 5 & 6).

EXISTING GRADE, TYPE VARIES (CONCRETE OR SOD)

EXISTING CURB OR CURB & GUTTER, REPLACE TO MATCH EXISTING PER LATEST FDOT STANDARDS

CAST IRON H-20 LOADING VALVE BOX

SEE NOTE 7

ASPHALT PAVEMENT

AS REQUIRED

INFLOW PREVENTER

PRECAST 5' MIN. DIAMETER CONC. MANHOLE STRUC.

TBD

*SINGLE BODY COMBINATION AIR VALVE

TANGENTIAL WELDED OUTLET

MJ GATE VALVE

TOP EL. VARIES

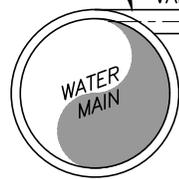
GROUT

SLOPE

TEE

CAP

12"Ø OPENING



MJ GATE VALVE

18" SPOOL PIECE

6" MIN.

4"x3"x6" HIGH CONC. PEDESTAL WITH 3/4" STAINLESS STEEL STRAP & #4 DOWEL

12" (MIN.) 3/4" ROCK SUPPORT BED WRAPPED IN FILTER FABRIC.

*ENGINEER SHALL SUBMIT COMBINATION ARV FOR APPROVAL

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.

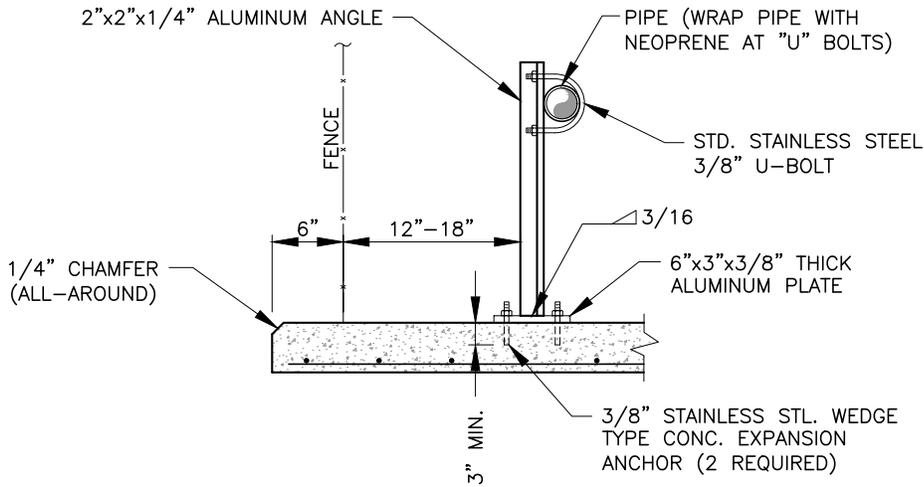
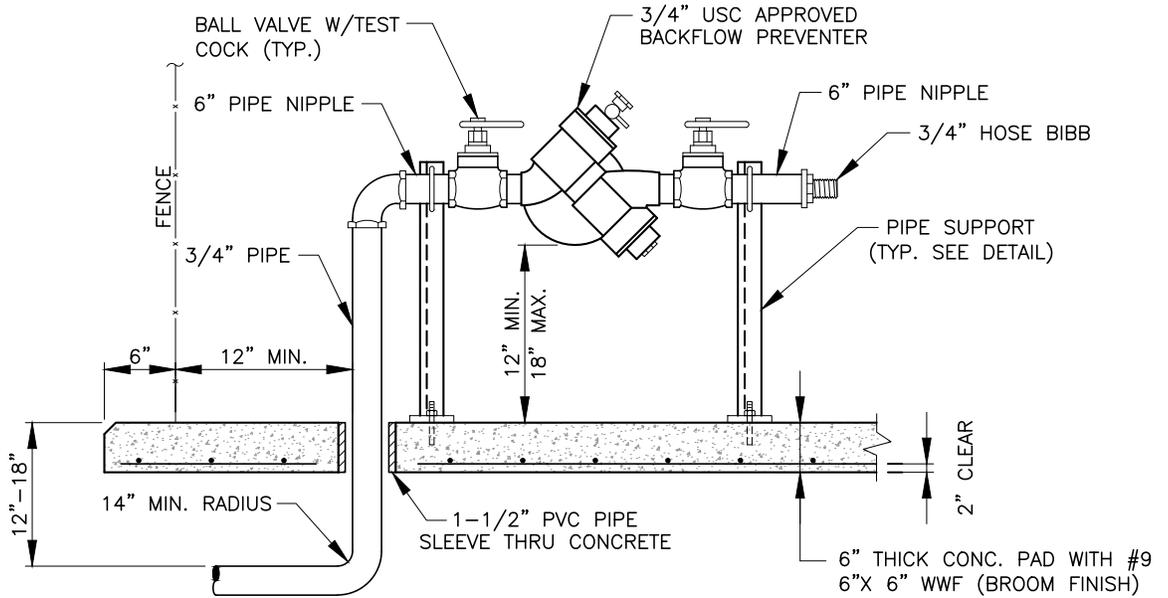


BOYNTON BEACH UTILITIES DEPARTMENT CONSTRUCTION STANDARDS & DETAILS

TANGENTIAL WATER MAIN OFFSET AIR/VACUUM COMBINATION VALVE & MANHOLE

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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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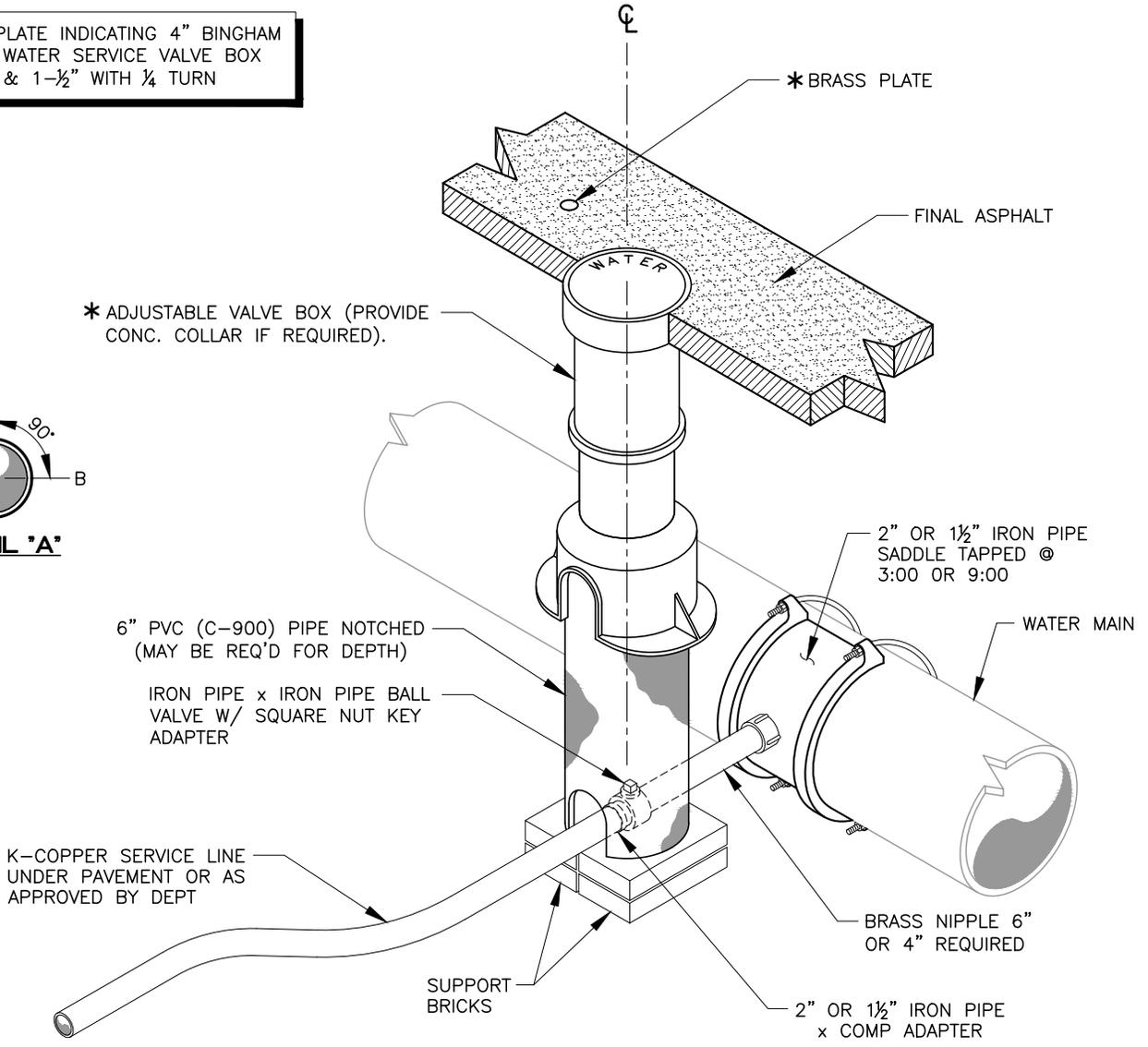
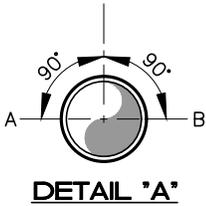
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LIFT STATION BACKFLOW PREVENTER ASSEMBLY

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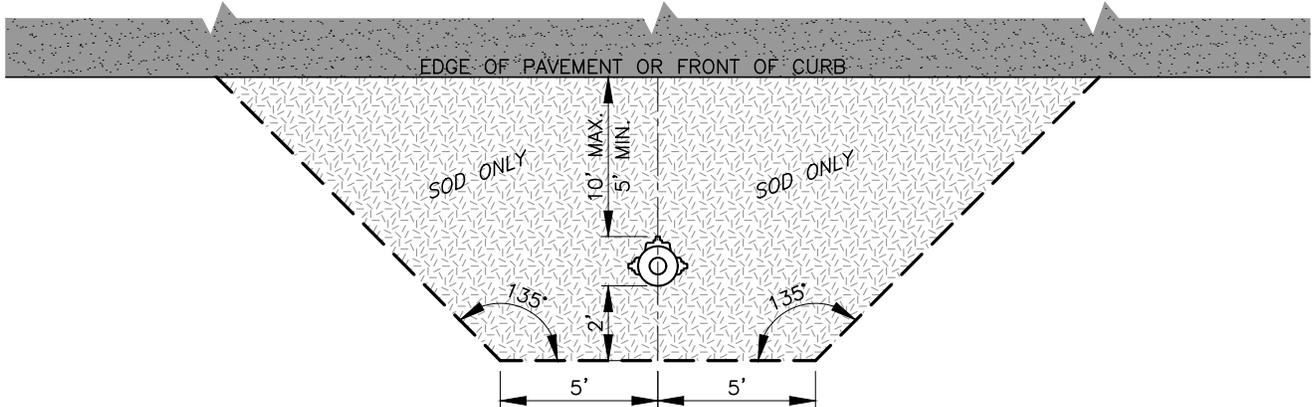
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1-1/2" & 2" COMMERCIAL & MULTI FAMILY
BALL VALVE & BOX ILLUSTRATION

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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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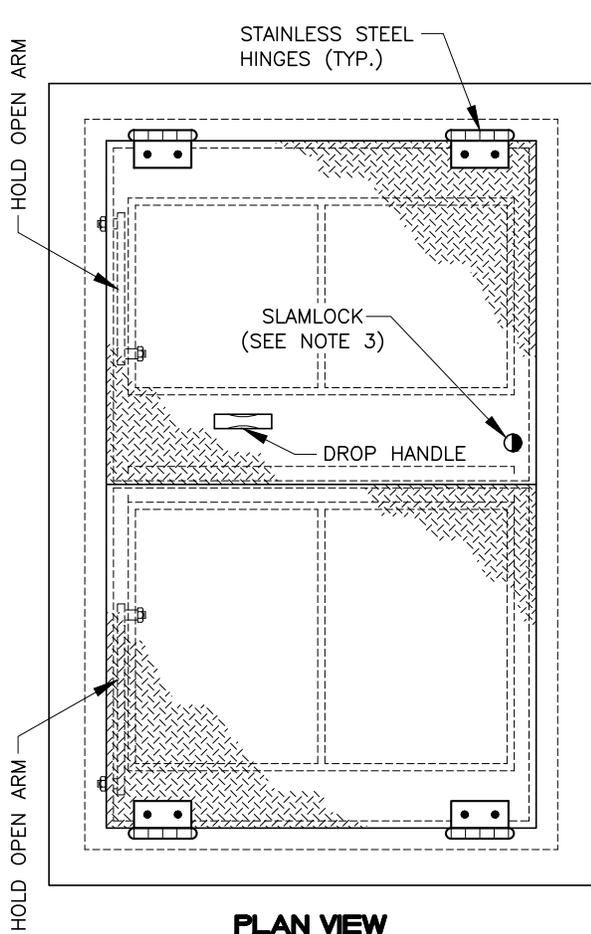
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FIRE HYDRANT CLEAR ZONE

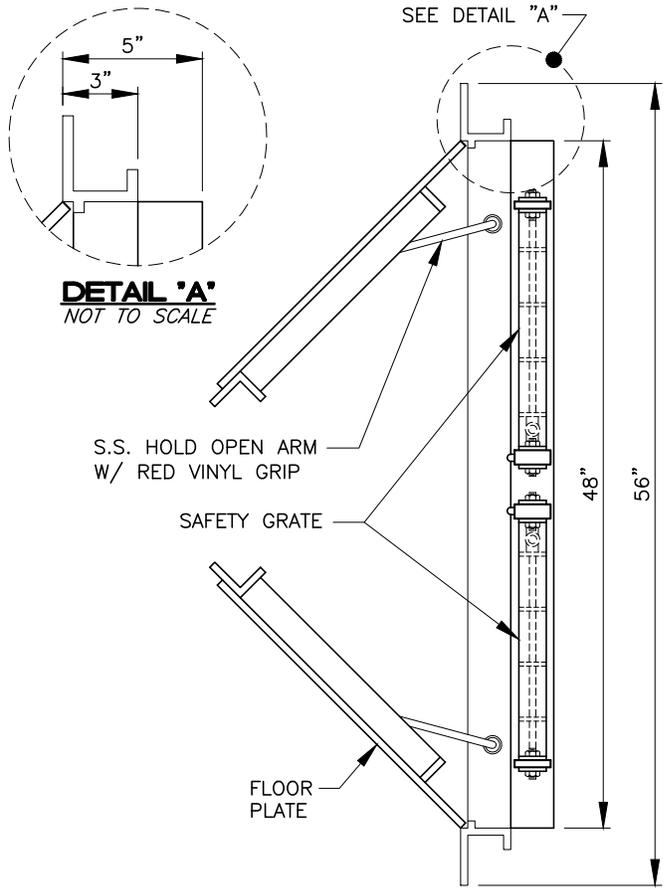
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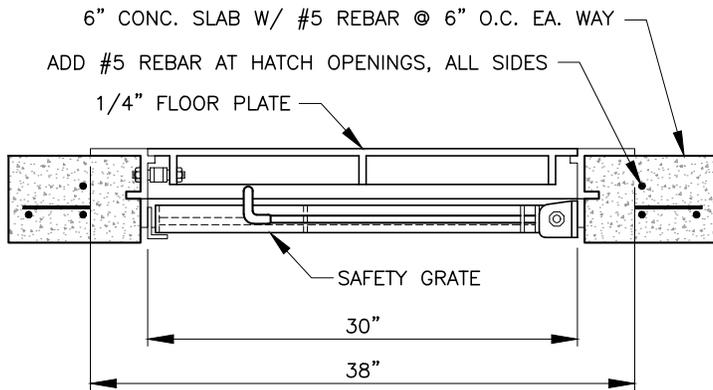
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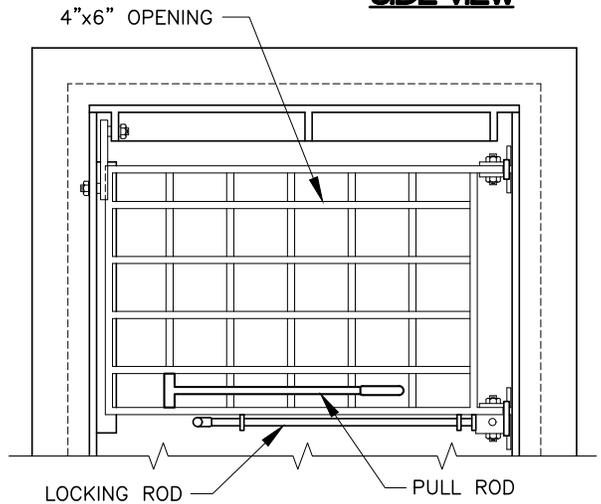
PLAN VIEW



SIDE VIEW



SECTION



SAFETY GRATE

NOTES:

- HATCH TO BE ALUMINUM MATERIAL 6063-T5, WITH A MINIMUM LOAD CAPABILITY OF 300 LBS. PER SQ/FT. & STAINLESS STEEL HARDWARE.
- HINGED SAFETY HATCH TO BE U.S.F. FABRICATION, INC. MANUFACTURED; GRATE TO BE RETROFIT, MADE OF ALUMINUM, S.S. HARWARE, 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).
- SLAMLOCK TO BE KEY INSTEAD OF BOLTS.



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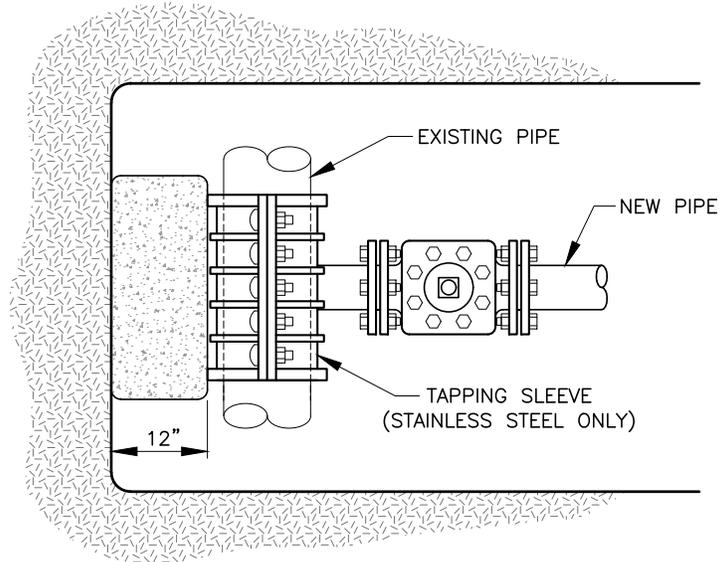
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**SPECIAL METER PIT DIAMOND PLATE
ACCESS HATCH**

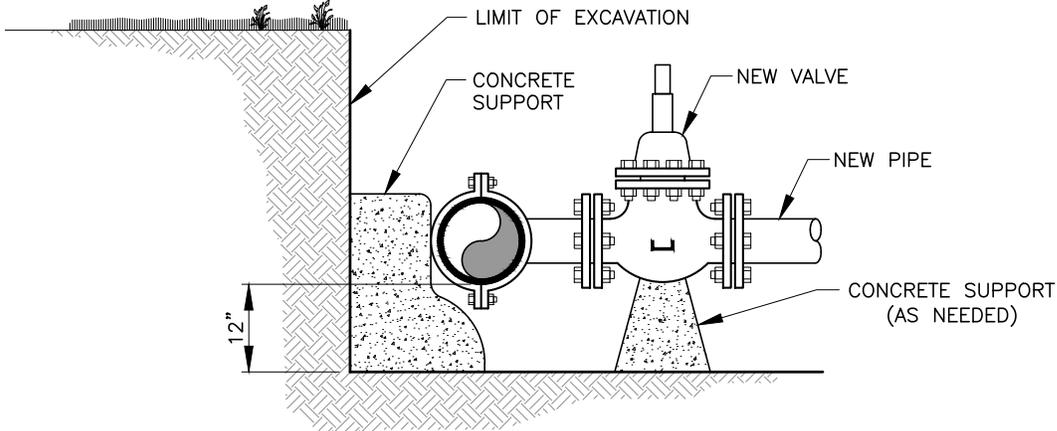
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PLAN VIEW



SECTION

NOTES:

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



UTILITIES
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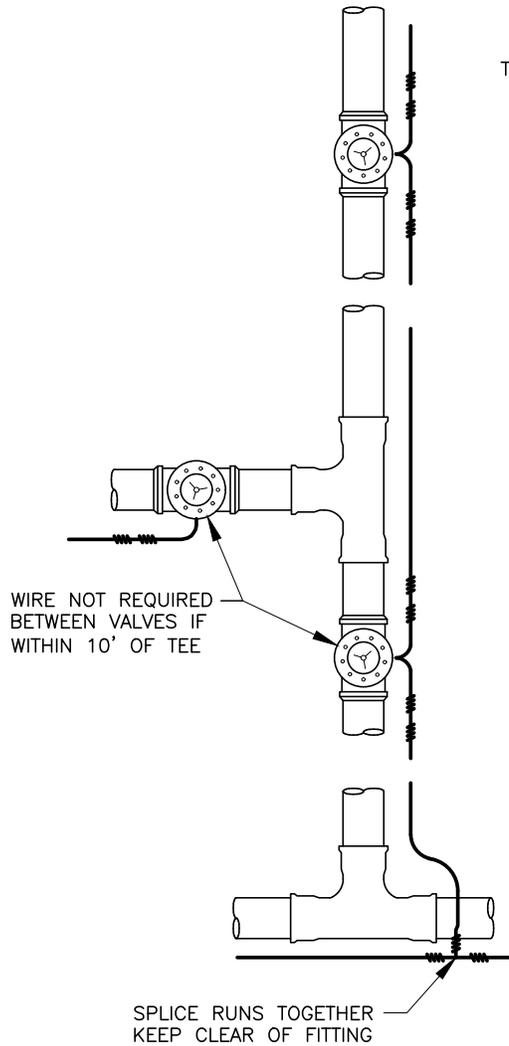
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TAPPING SLEEVE AND VALVE
INSTALLATION DETAIL

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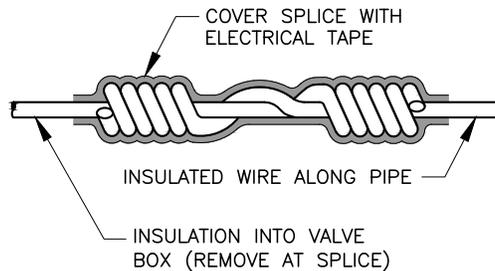
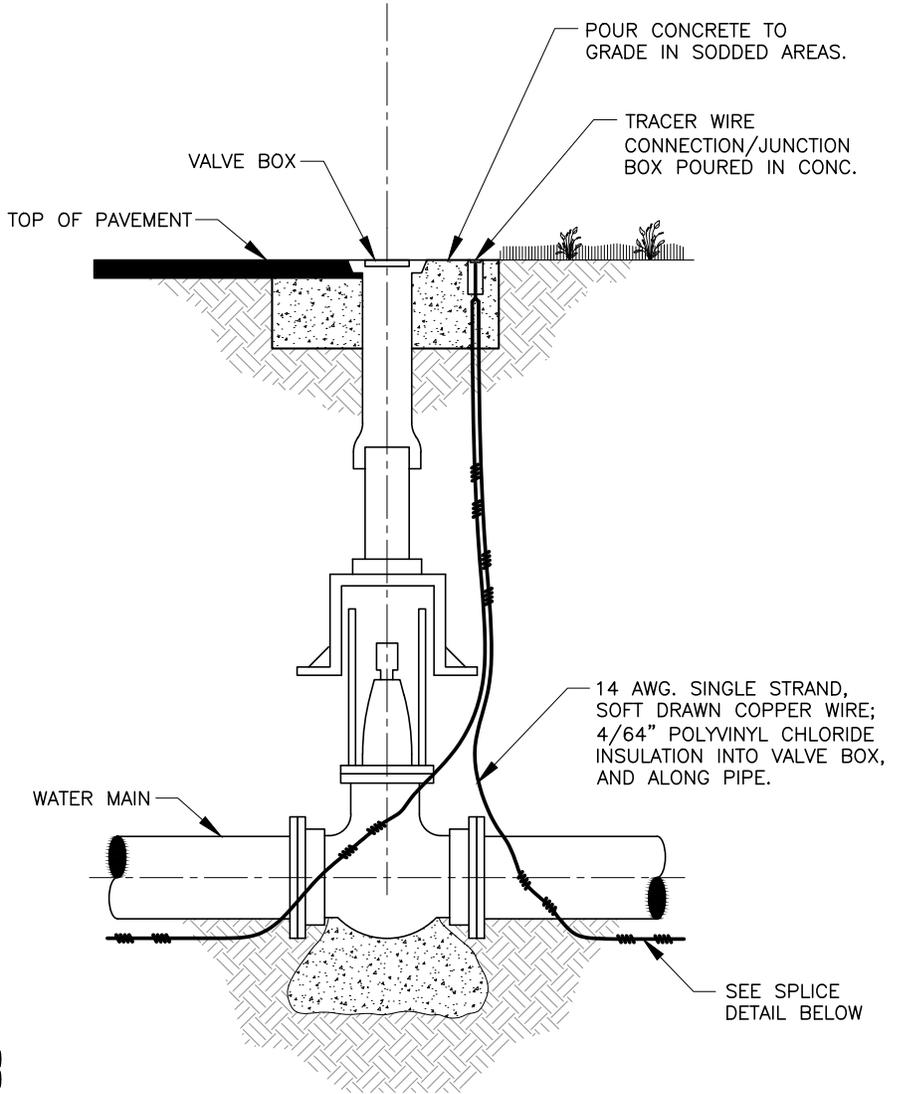
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TYPICAL LAYOUT

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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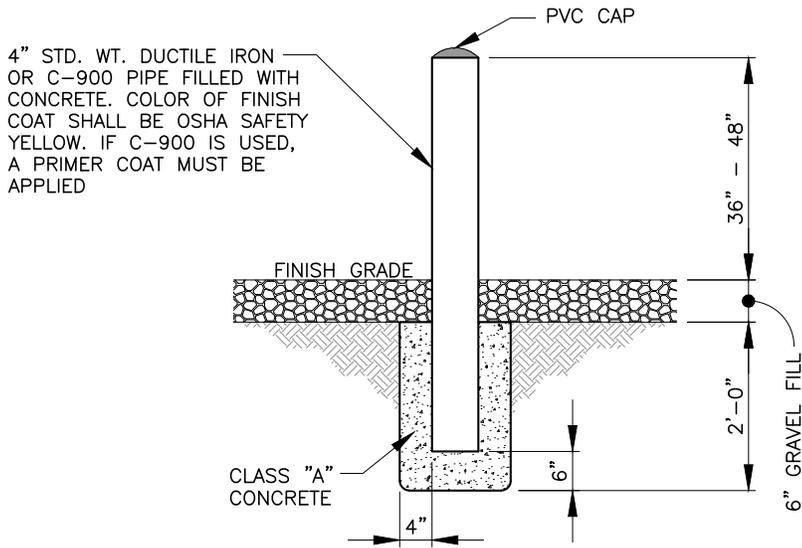
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WATER MAIN LOCATING WIRE DETAIL FOR NON-METALLIC PIPE

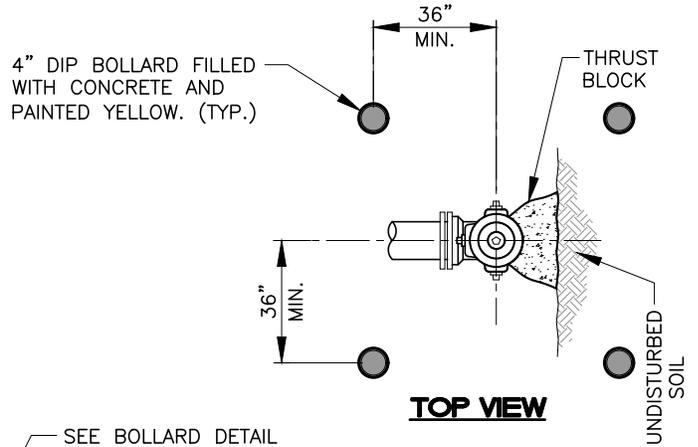
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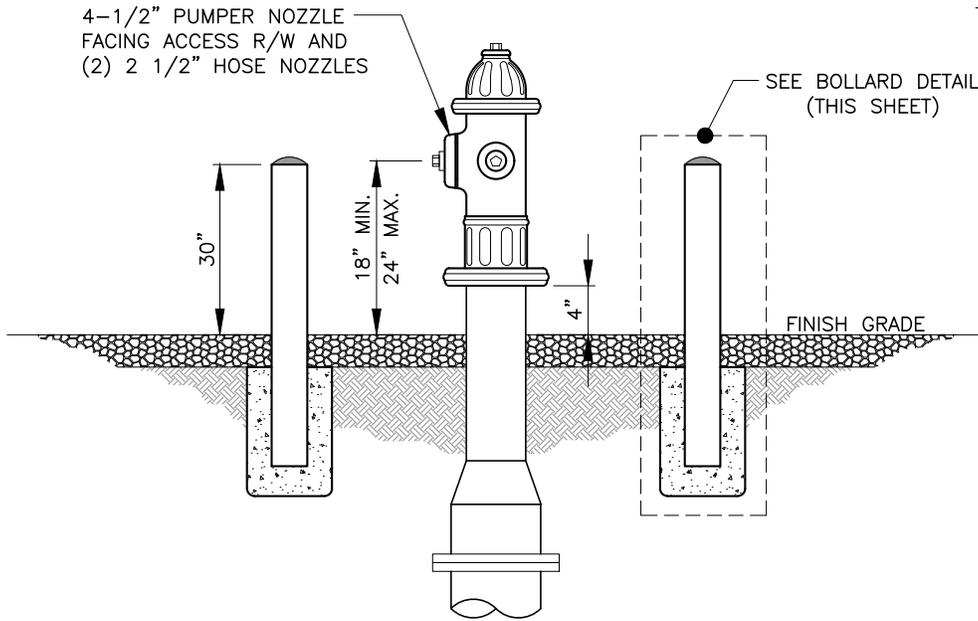
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BOLLARD DETAIL



TOP VIEW



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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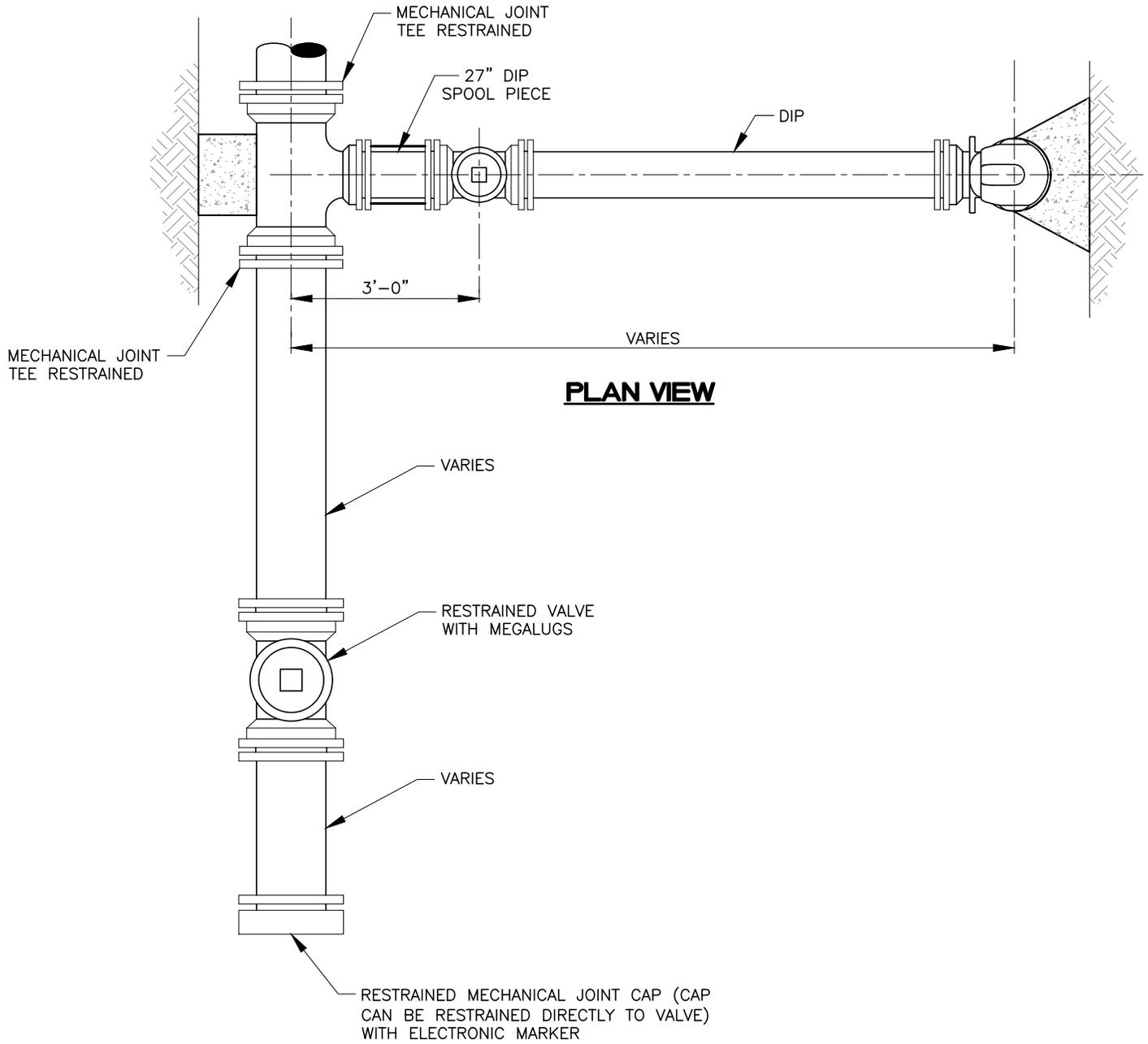
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BOLLARD DETAIL

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WATER TERMINATION VALVE AND CAP

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