GENERAL

SANITARY SEWER

WATER

ACWWA
13031 E Caley Ave, Centennial, CO 80111
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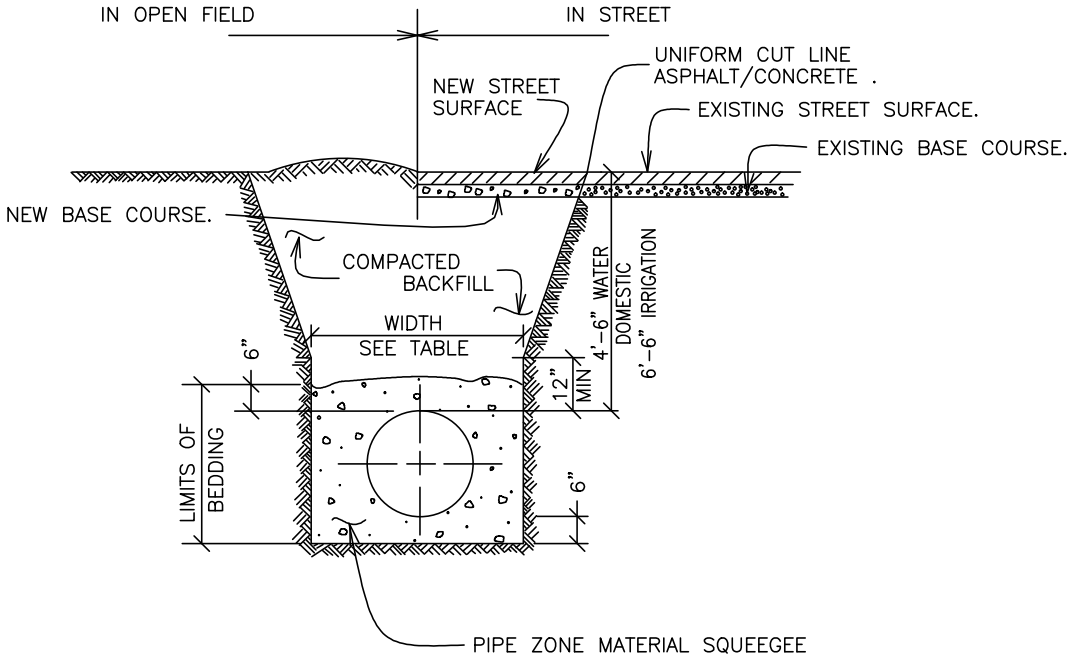

TYPICAL TRENCH SECTION

NOTES:

1. PAVING SHALL COMPLY WITH LOCAL AUTHORITY/JURISDICTION.
2. TRENCH WALLS TO BE SUPPORTED AS REQUIRED BY O.S.H.A.
3. MINIMUM COVER TO BE BELOW OFFICIAL STREET GRADE.
4. PLACE MARKING TAPE 18" ABOVE PIPE.

PIPE DIAMETER	MINIMUM WIDTH	MAXIMUM WIDTH
4"	1'-4"	2'-4"
6"	1'-6"	2'-6"
8"	1'-8"	2'-8"
12"	2'-0"	3'-0"
16"	2'-4"	3'-4"
20"	2'-8"	3'-8"
24"	4'-0"	5'-0"

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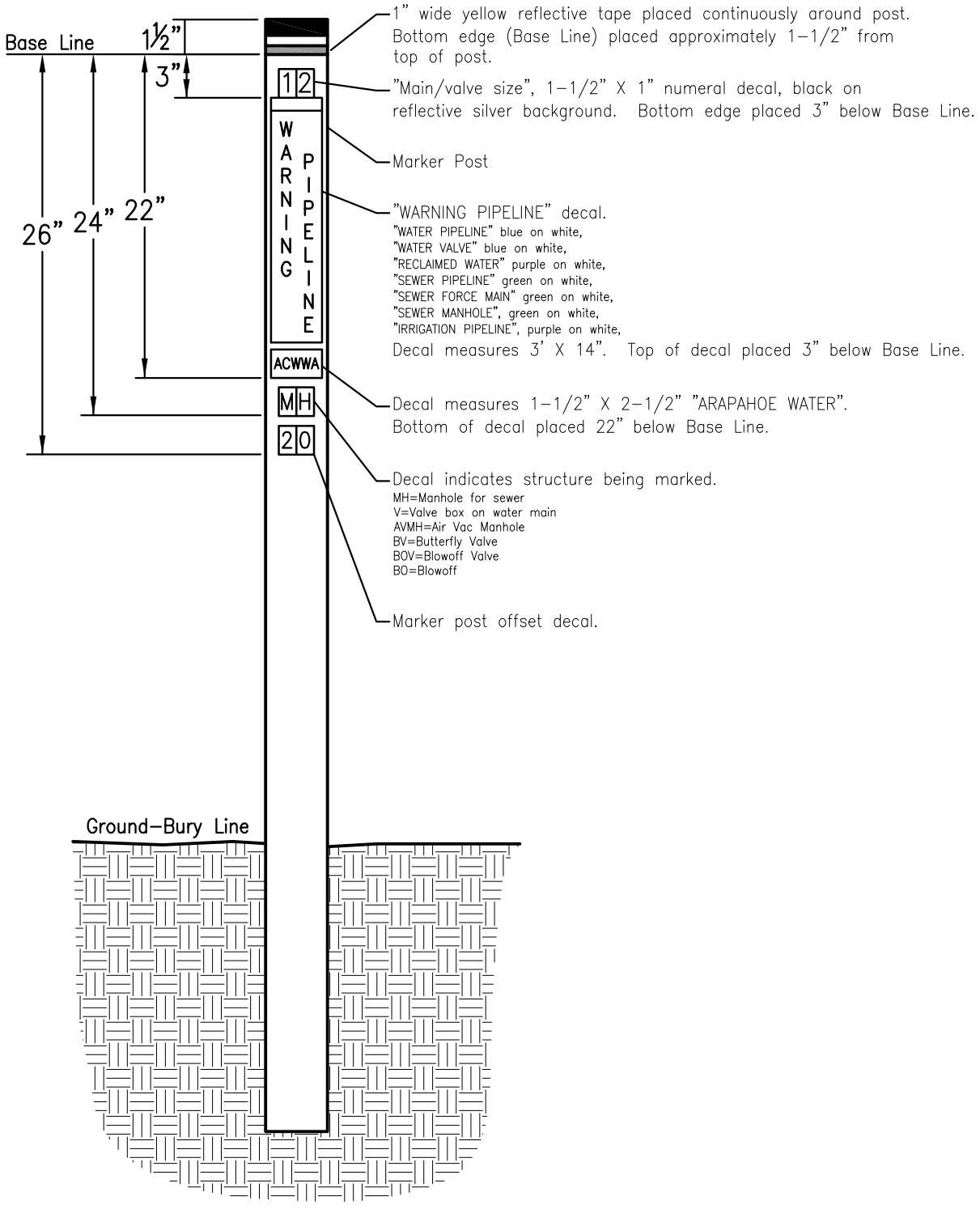
TYPICAL TRENCH SECTION
PIPE PROTECTION

REVISION DATE: 03/01/2013
FIGURE NO. G-1
SHEET NO. 1 of 1



1" wide yellow reflective tape placed continuously around post. Bottom edge (Base Line) placed approximately 1–1/2" from top of post.

"Main/valve size", 1–1/2" X 1" numeral decal, black on reflective silver background. Bottom edge placed 3" below Base Line.

Marker Post

"WARNING PIPELINE" decal.
"WATER PIPELINE" blue on white,
"WATER VALVE" blue on white,
"RECLAIMED WATER" purple on white,
"SEWER PIPELINE" green on white,
"SEWER FORCE MAIN" green on white,
"SEWER MANHOLE", green on white,
"IRRIGATION PIPELINE", purple on white,
Decal measures 3' X 14". Top of decal placed 3" below Base Line.

Decal measures 1–1/2" X 2–1/2" "ARAPAHOE WATER". Bottom of decal placed 22" below Base Line.

Decal indicates structure being marked.
MH=Manhole for sewer
V=Valve box on water main
AVMH=Air Vac Manhole
BV=Butterfly Valve
BOV=Blowoff Valve
BO=Blowoff

Marker post offset decal.

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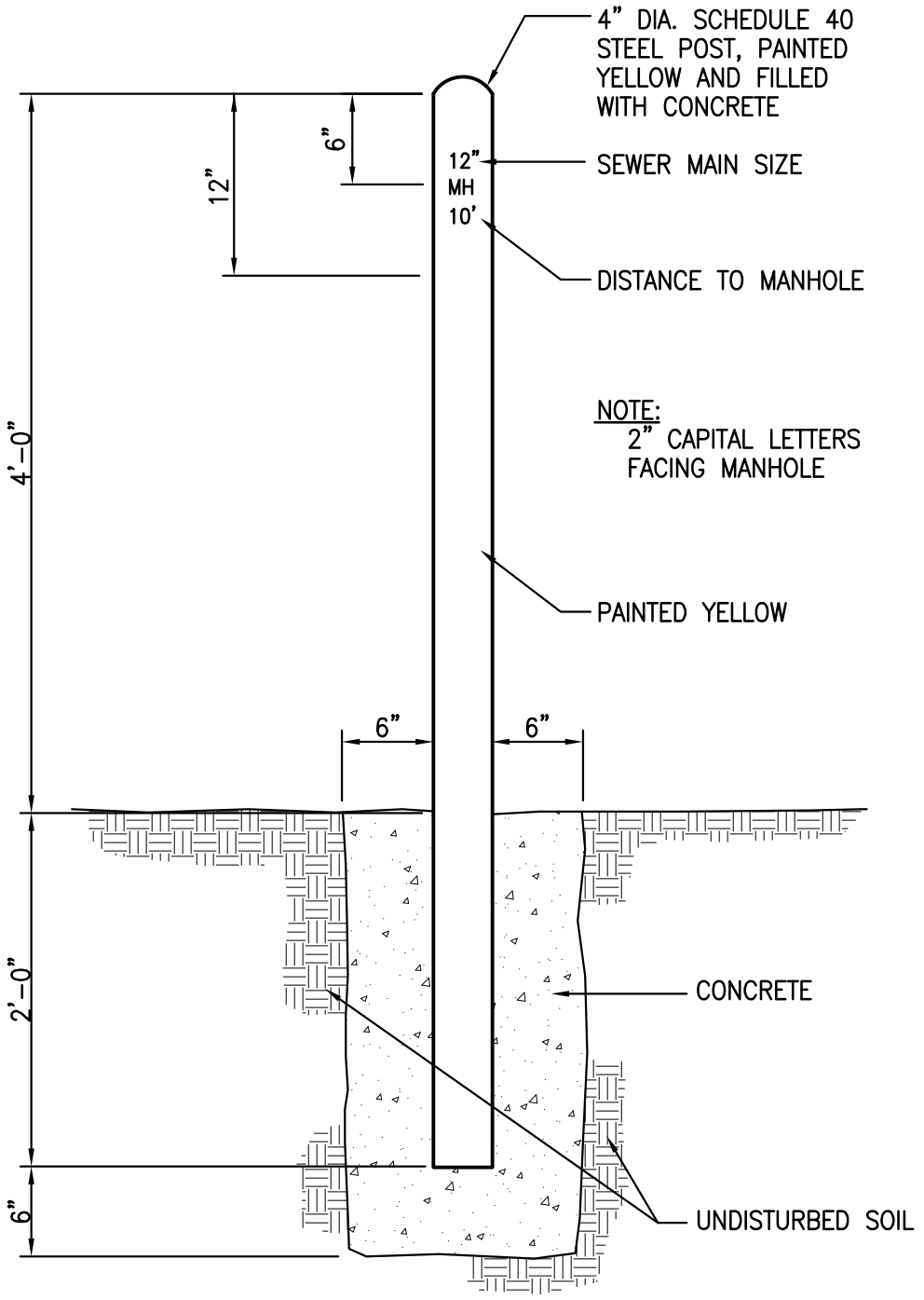
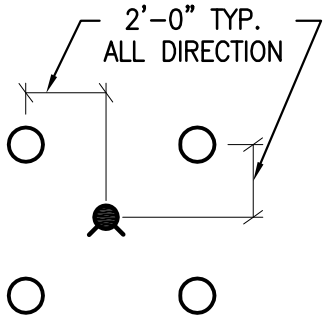
FIBERGLASS MARKER POST

REVISION DATE: 03/01/2013
FIGURE NO. G-2
SHEET NO. 1 of 1





FIRE HYDRANT BOLLARD DETAIL

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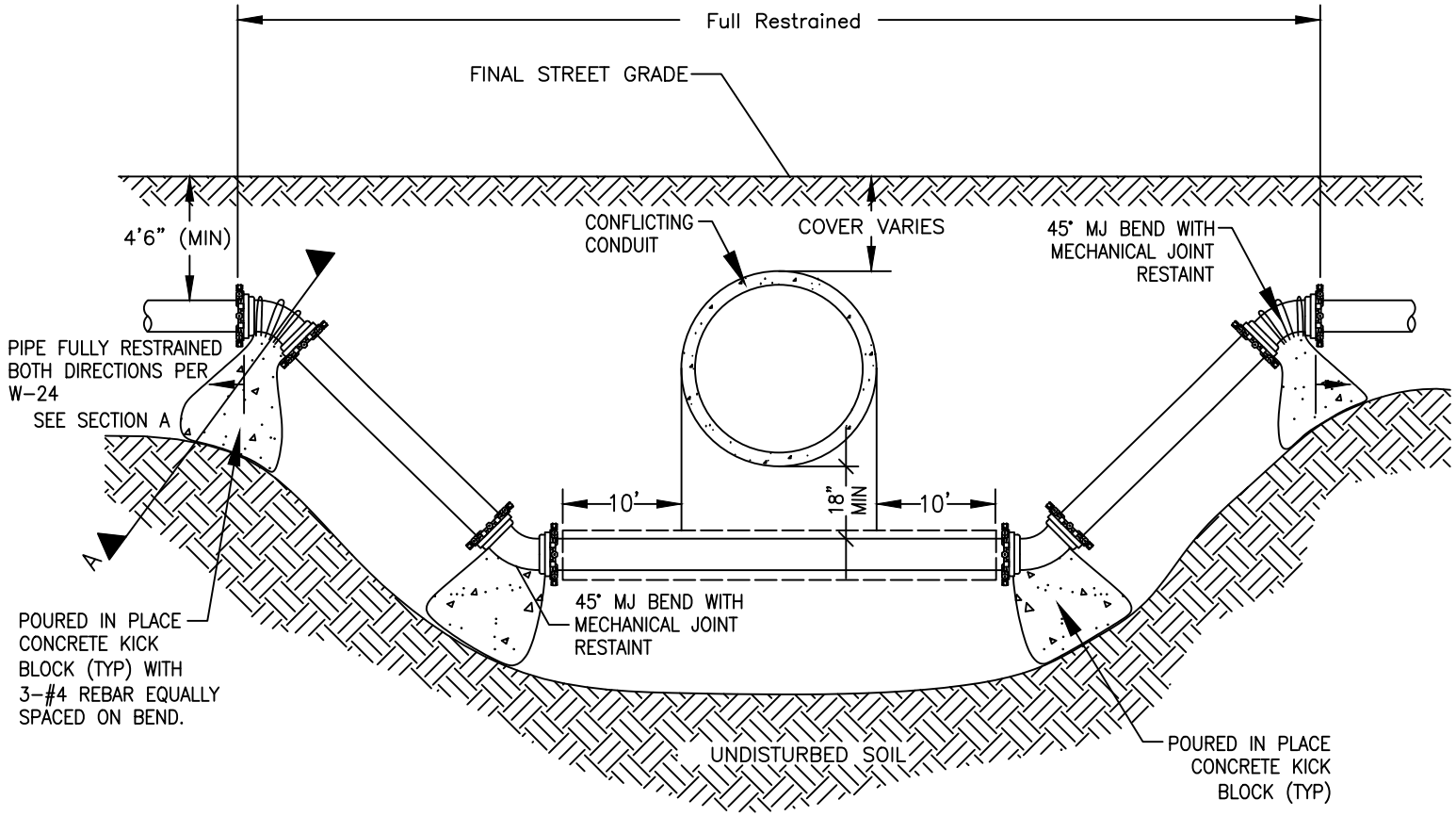
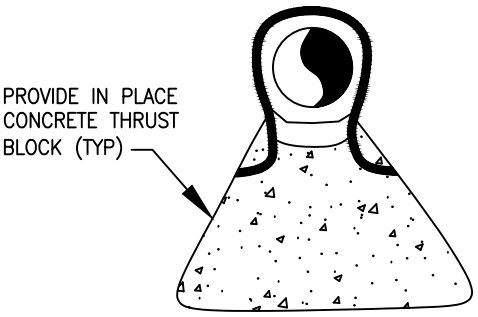
STEEL BOLLARD POST

REVISION DATE: 03/01/2013
FIGURE NO. G-3
SHEET NO. 1 of 1





SECTION A

1. ALL WATER MAINS WHICH CROSS ABOVE SANITARY SEWERS SHALL BE LAID TO PROVIDE A CLEAR SEPARATION OF AT LEAST 18", MEASURED FROM THE OUTSIDE OF PIPE.
2. ALL NEW PIPE CROSSING UNDER AN EXISTING PIPE WITH LESS THAN 18" OF SEPARATION, THE NEW PIPE MUST BE CONTAINED IN A CARRIER PIPE AT LEAST 10' ON EACH SIDE OF THE EXISTING PIPE, OR SHALL BE ENCASED IN A CONCRETE OR CONTROLLED LOW STRENGTH CONCRETE (FLOWABLE FILL) AT LEAST 10' ON EACH SIDE OF THE EXISTING PIPE. A MINIMUM OF 6" SEPARATION IS REQUIRED BETWEEN PIPES.
3. BACKFILLING OF THE EXISTING PIPE MUST BE DONE WITH CONTROLLED LOW STRENGTH CONCRETE (FLOWABLE FILL) TO THE TOP OF THE EXISTING PIPE.
4. IF THE EXISTING PIPE IS SEWER PIPE NOT CONSTRUCTED OF AWWA C-900 OF DIP, THE SEWER PIPE MUST BE REPLACES WITH A MINIMUM OF 18' OF AWWA C0900 OR DIP, CENTERED OVER CROSSING.
5. ALL NEW PIPE CROSSING OVER AN EXISTING PIPE WITH LESS THAN 18" COVER, THE NEW PIPE MUST BE CONTAINED IN A CARRIER PIPE AT LEAST 10' ON EACH SIDE OF THE EXISTING PIPE, OR SHALL BE ENCASED IN A CONCRETE OR CONTROLLED LOW STRENGTH CONCRETE (FLOWABLE FILL) AT LEAST 10' ON EACH SIDE OF THE EXISTING PIPE. A MINIMUM OF 6" SEPARATION IS REQUIRED BETWEEN PIPES.
6. IF THE EXISTING PIPE IS DAMAGED DURING CONSTRUCTION, THE ACWWA INSPECTOR SHALL DETERMINE THE LENGTH OF EXISTING PIPE TO BE REMOVED AND REPLACED WITH AWWA-900 PIPE.

REVISION DATE: 03/01/2013 | FIGURE NO. G-4 | SHEET NO. 1 of 1

UTILITY CROSSING STANDARD

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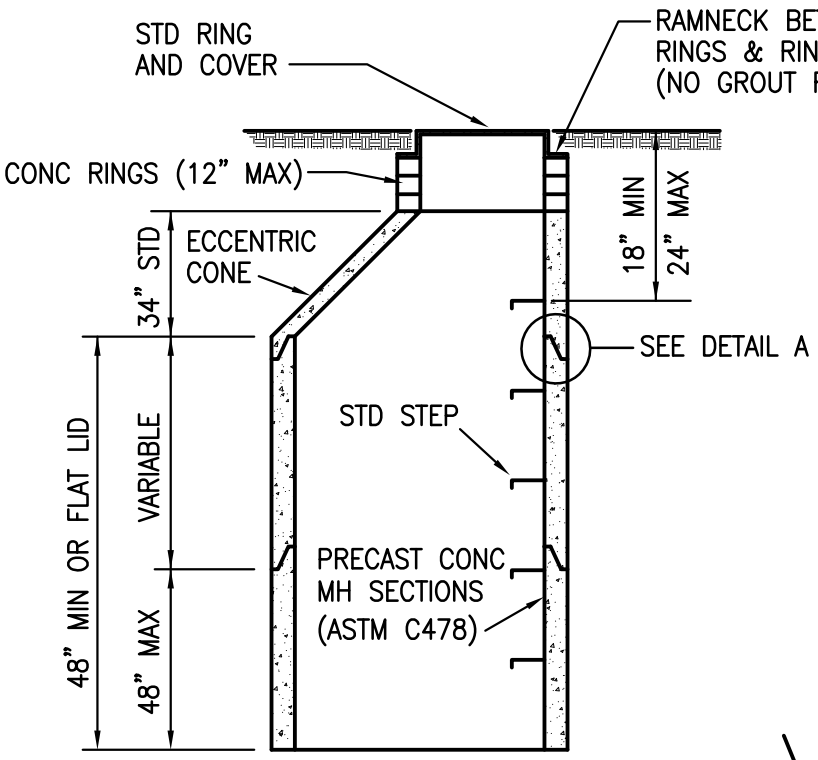
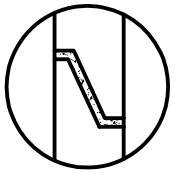
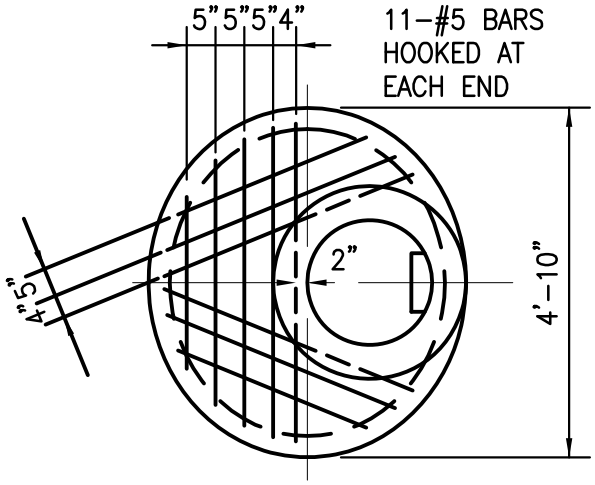


ELEVATION



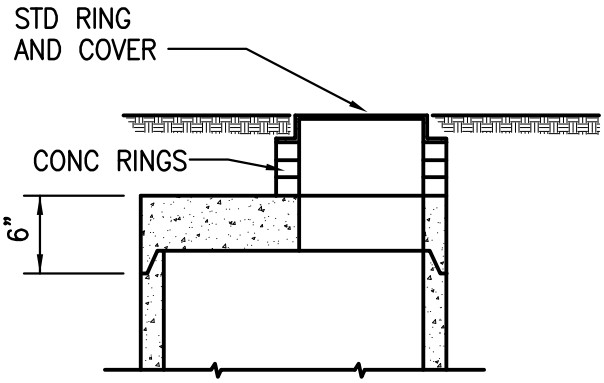
FLEXIBLE PLASTIC
JOINT MATERIAL
(K.T. SNYDER
"RAM-NEK" OR
APPROVED EQUAL)

DETAIL A



NOTE:

1. STEPS SHALL BE LOCATED DIRECTLY ABOVE THE EXIT PIPE IN A STRAIGHT LINE, 12" ON CENTER (O.C.) VERTICALLY.
2. 60" DIA. MANHOLES SHALL HAVE A 30" STANDARD RING AND COVER, J-MARK NO. J-1361 OR APPROVED EQUAL.
3. 48" DIA. MANHOLES SHALL HAVE A 24" STANDARD RING AND COVER, J-MARK NO. J-1161 OR APPROVED EQUAL.
4. MORTAR SHALL BE USED ON THE INSIDE OF THE BARREL AT ALL JOINTS (HYDRAULIC CEMENT).
5. ALL MANHOLES IN EXCESS OF 20' IN DEPTH SHALL HAVE AN INTERMEDIATE GRATING LOCATED AT THE CENTER OF THE DEPTH & SHALL BE 60" DIA.
6. THE WORD "SEWER" SHALL BE BOLDLY CAST ON ALL COVERS.
7. WHEN THE DISTANCE BETWEEN SEWER INVERT AND TOP OF THE MANHOLE COVER IS LESS THAN 8'6", A FLAT TOP MANHOLE SHALL BE CONSTRUCTED.
8. NO MANHOLE INSERTS ALLOWED.



ALTERNATE FLAT LID\
INTERMEDIATE PLATFORM

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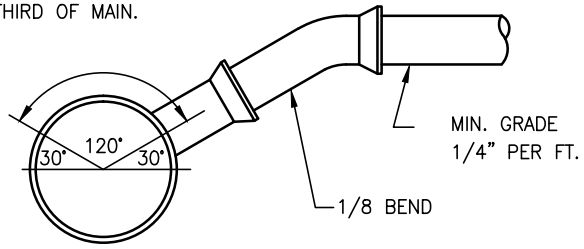
STANDARD MANHOLE

REVISION DATE: 03/01/2013
FIGURE NO. SS-1
SHEET NO. 1 of 1

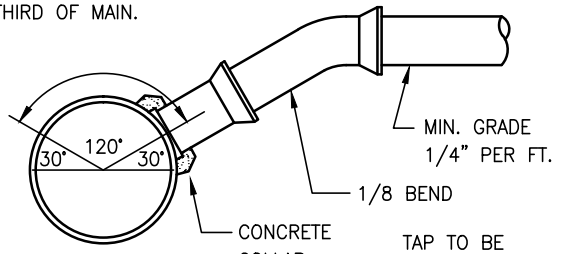
CENTER OF WYE BRANCH TO BE PLACED IN UPPER THIRD OF MAIN.



1/8 BEND CONNECTION TO TEE

CENTER OF WYE BRANCH TO BE PLACED IN UPPER THIRD OF MAIN.

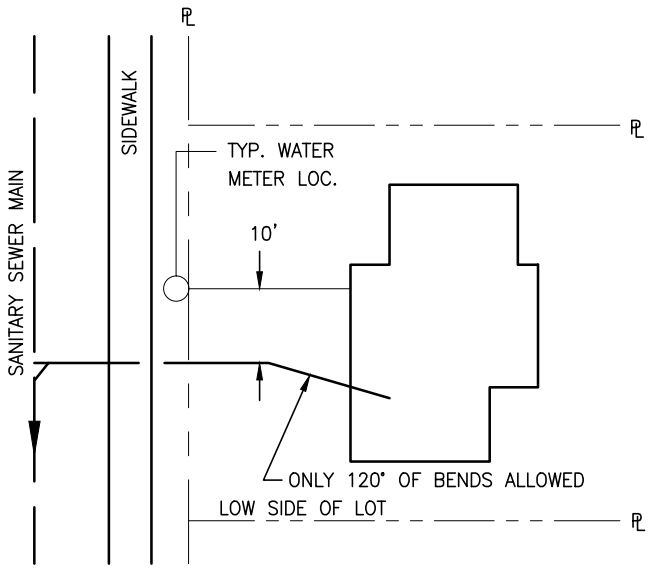
THIS APPLICATION TO BE USED ONLY WITH ACWWAS APPROVAL



1/8 BEND & SADDLE CONNECTION

NOTES:

1. THE BARREL SECTION SHALL BE SUPPORTED THROUGHOUT ITS LENGTH.
2. SERVICE TAPS SHALL BE IN-LINE WYE OR MACHINE TAPPED. HAND TAPS SHALL NOT BE ALLOWED.
3. THE MIN. SERVICE LINE GRADE SHALL BE 1/4" PER FT.
4. JOINTS SHALL BE WATER TIGHT.
5. WHEN SERVICE STUB-INS ARE INSTALLED WITH THE SEWER MAIN, THEY SHALL BE EXTENDED AT LEAST TO PROPERTY LINE AND SHALL BE PLUGGED WITH A 2x4 MARKER FOR LOCATION OF END.



SEWER SERVICE

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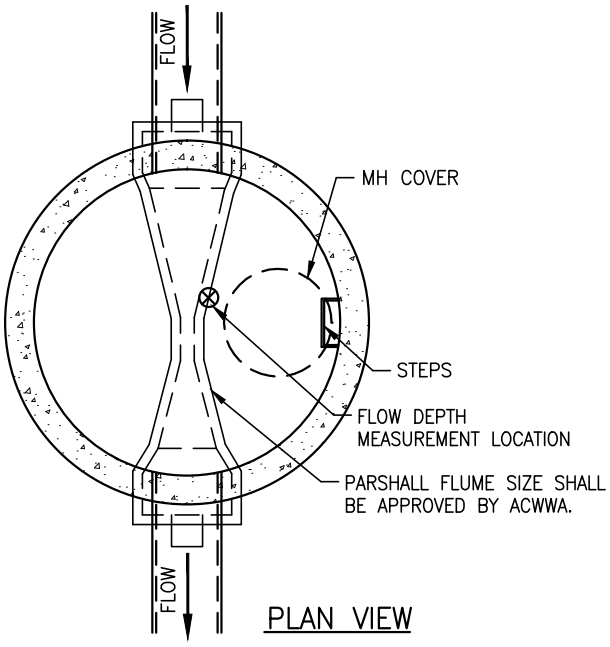
SANITARY SEWER SERVICE

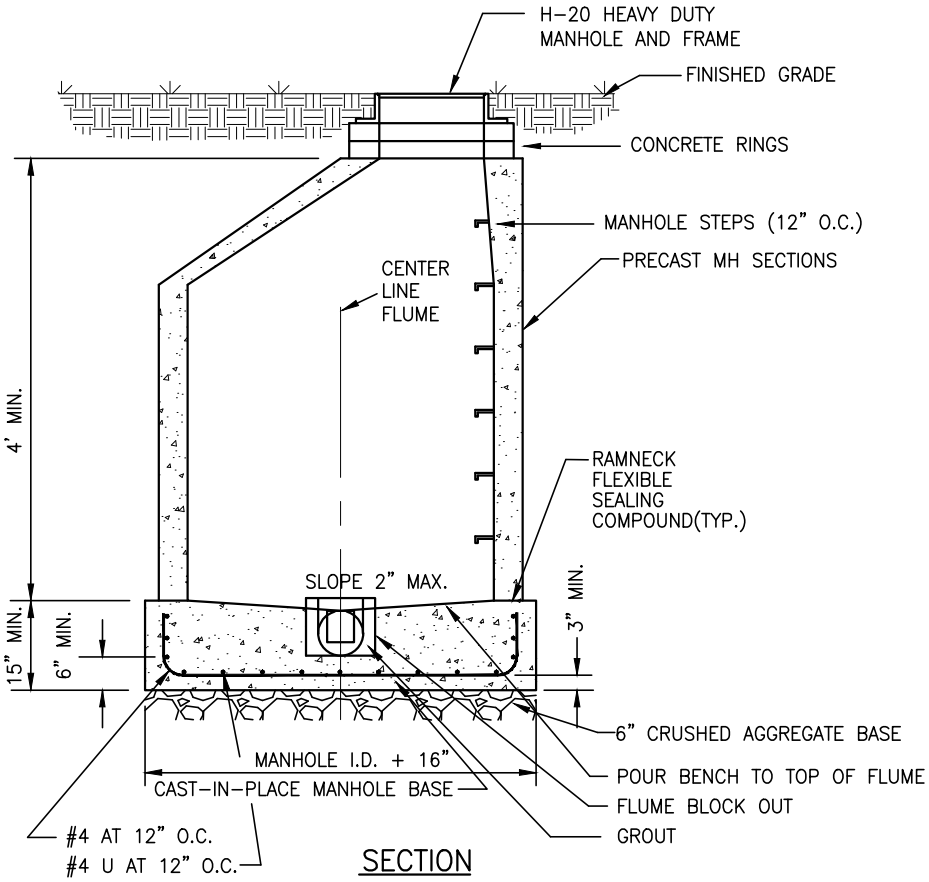
REVISION DATE: 9/7/2005
FIGURE NO. SS-2



PLAN VIEW

NOTES

1. MOUNTING OF MONITORING HARDWARE REQUIRES STAINLESS STEEL OR CORROSION PROTECTED METAL. REFER TO SPECIFICATIONS.
2. CONSTRUCTION SHALL MEET REQUIREMENTS OF A STANDARD MANHOLE (DETAIL SS–1).
3. ALTERNATIVE MANHOLE CONSTRUCTION SHOWN OF PAGE 2 OF 2.



SECTION

NOTES: STEPS SHALL BE PERPENDICULAR TO THE FLOW IN A STRAIGHT LINE, 12" ON CENTER, VERTICALLY.

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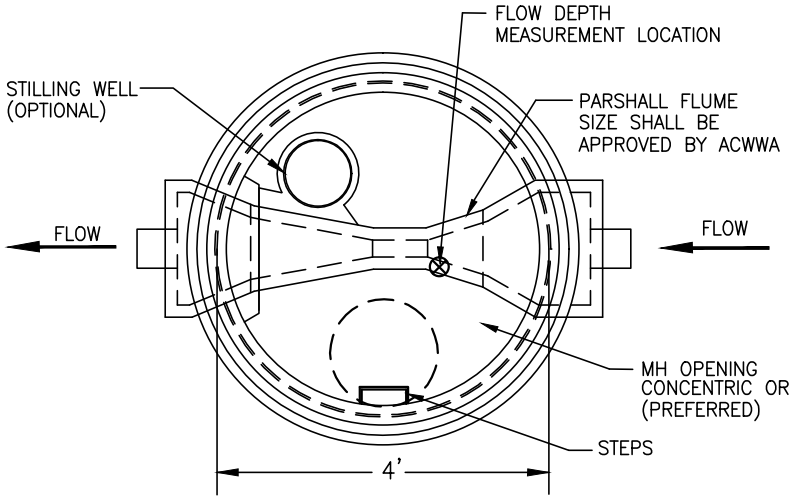
CONTROL MANHOLE FOR INDUSTRIAL WASTE METERING & SAMPLING

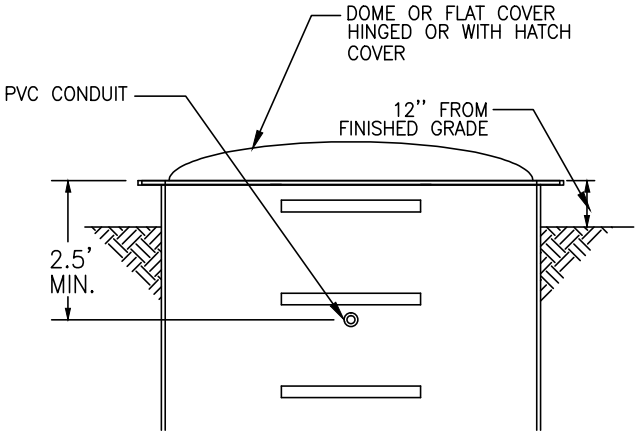
REVISION DATE: 02/10/2016
FIGURE NO. SS-3



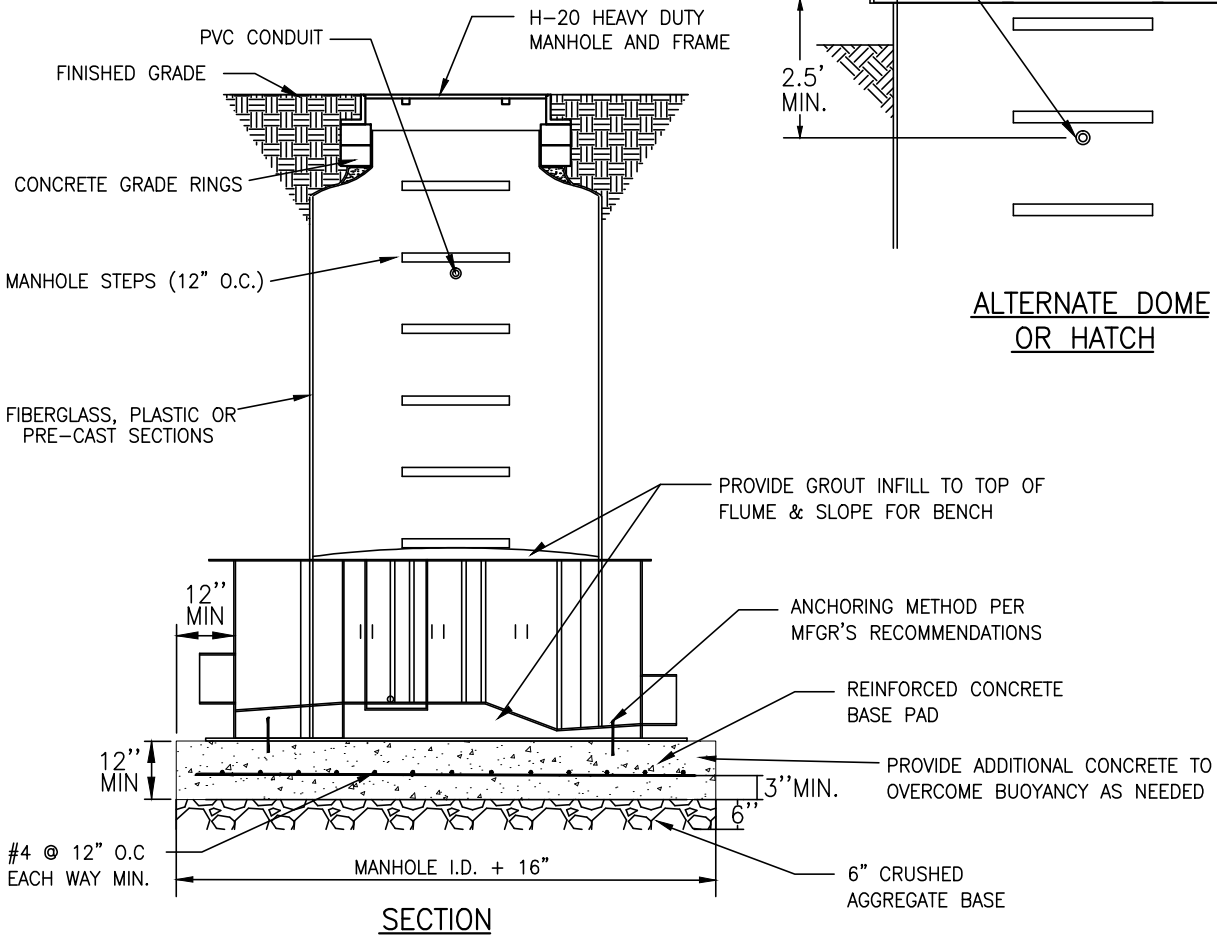
PLAN VIEW

NOTES

1. MOUNTING OF MONITORING HARDWARE REQUIRES STAINLESS STEEL OR CORROSION PROTECTED METAL. REFER TO SPECIFICATIONS.
2. LADDERS SHALL BE INSTALLED IN ALL FIBERGLASS AND PLASTIC MANHOLES.



ALTERNATE DOME OR HATCH



SECTION

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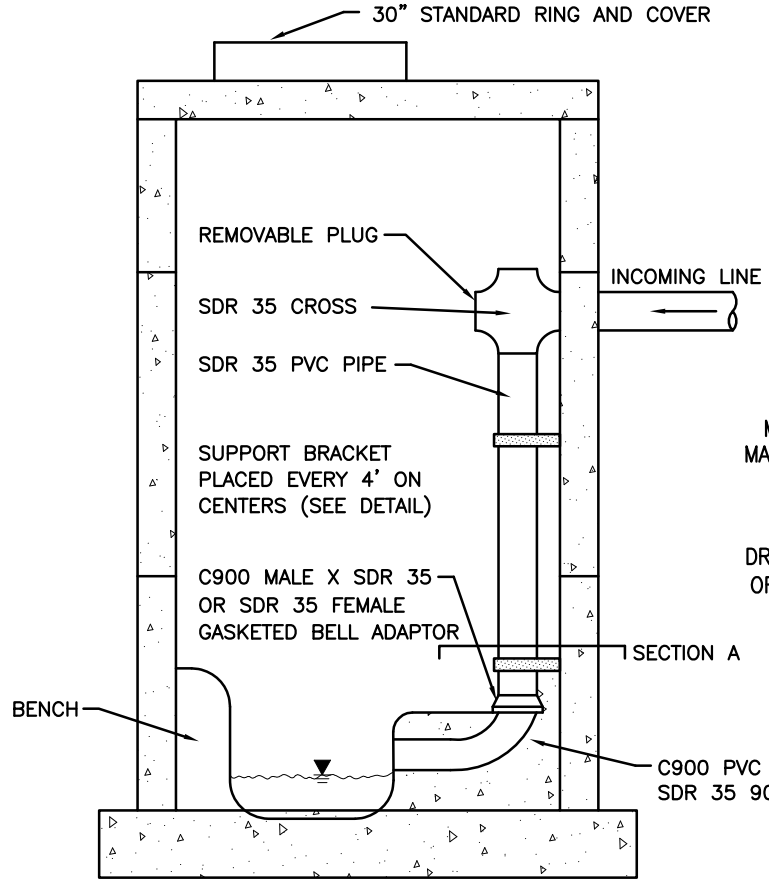
CONTROL MANHOLE FOR INDUSTRIAL WASTE METERING & SAMPLING

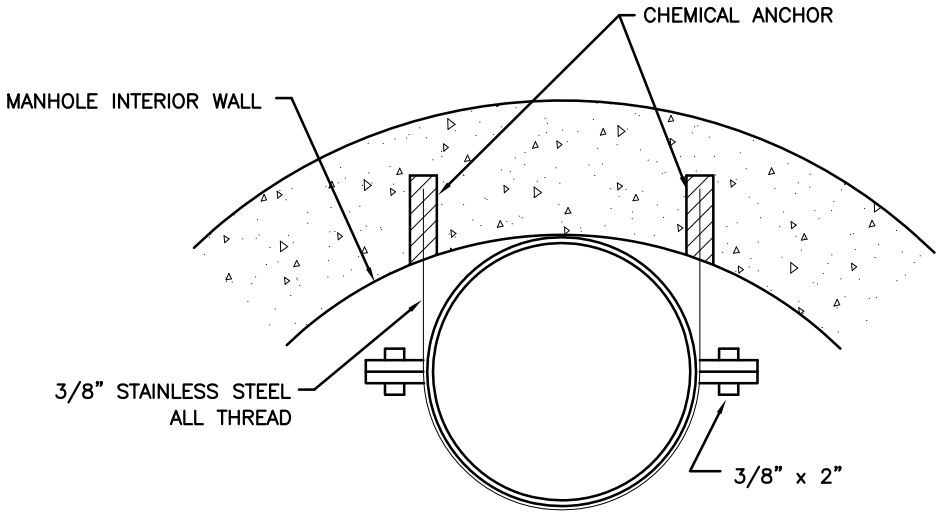
REVISION DATE: 02/11/2016
FIGURE NO. SS-3
SHEET NO. 2 of 2

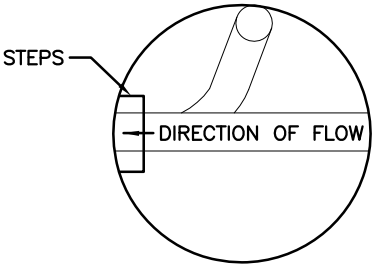


NOTES:

SEE ACWWA STANDARD MANHOLE DETAILS FOR ALL MANHOLE SPECIFICS INCLUDING BASE DETAILS
SEE DETAIL SS-1

DROP PIPE SHALL MATCH SIZE OF INFLUENT LINE OR 6" MIN





SECTION A

BRACKET DETAIL

MANUFACTURE BRACKET FROM 3/8" STAINLESS STEEL.

NOTES:

MANHOLE SIZE VARIES WITH SIZE OF THE MAINLINE.
8" – 10" MAINLINE = 5' DIA. MANHOLE
12" – 15" MAINLINE = 6' DIA. MANHOLE
7' DIA. MANHOLE FOR LARGER MAINLINES.
STEPS INSTALLED OVER DOWNSTREAM INVERT OF MANHOLE.

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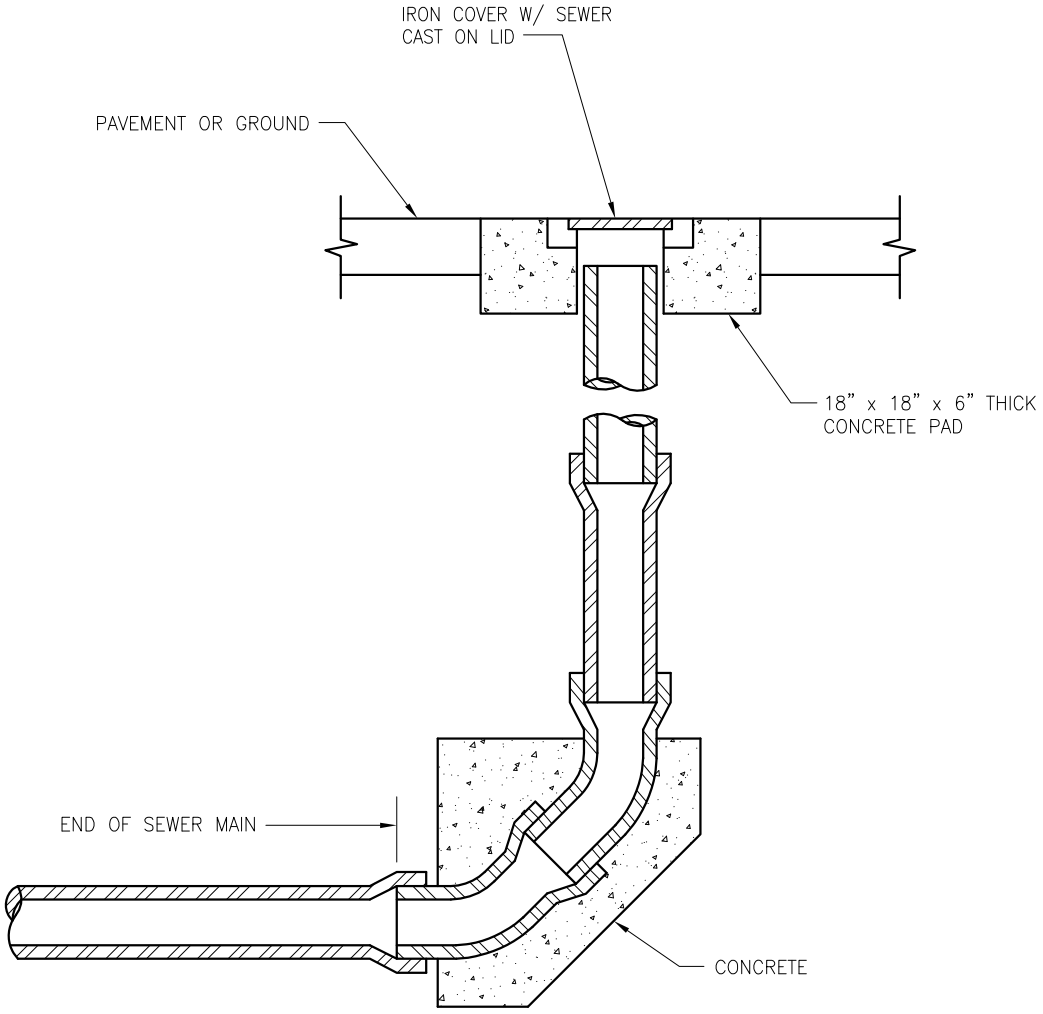
INSIDE DROP MANHOLE CONSTRUCTION DETAIL

REVISION DATE: 03/01/2013
FIGURE NO. SS-4
SHEET NO. 1 of 1



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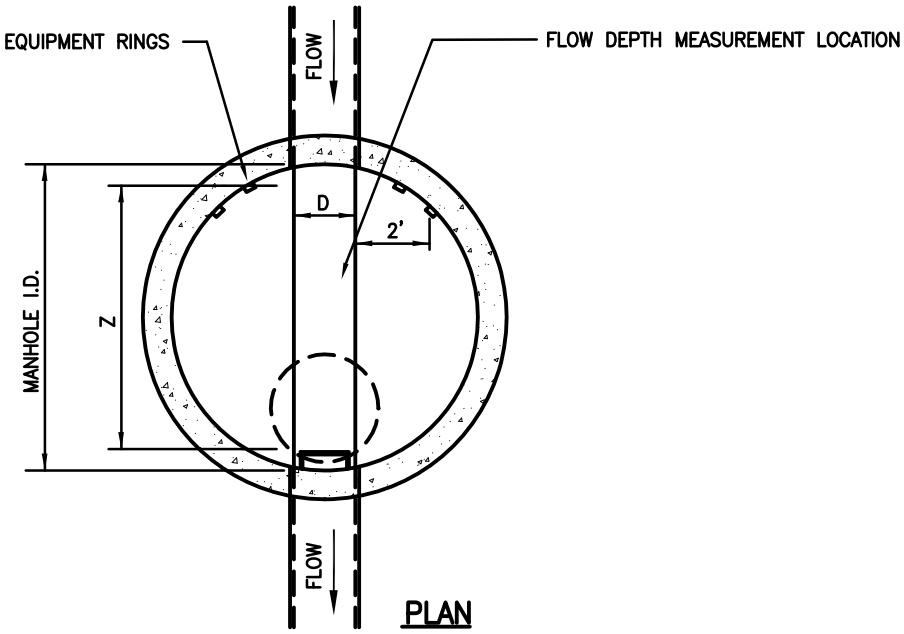
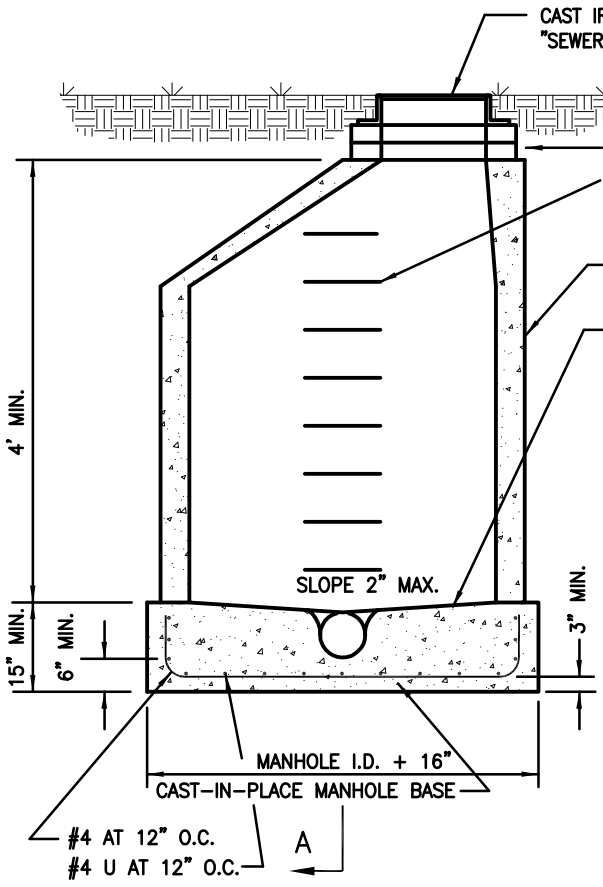
TERMINAL CLEANOUT

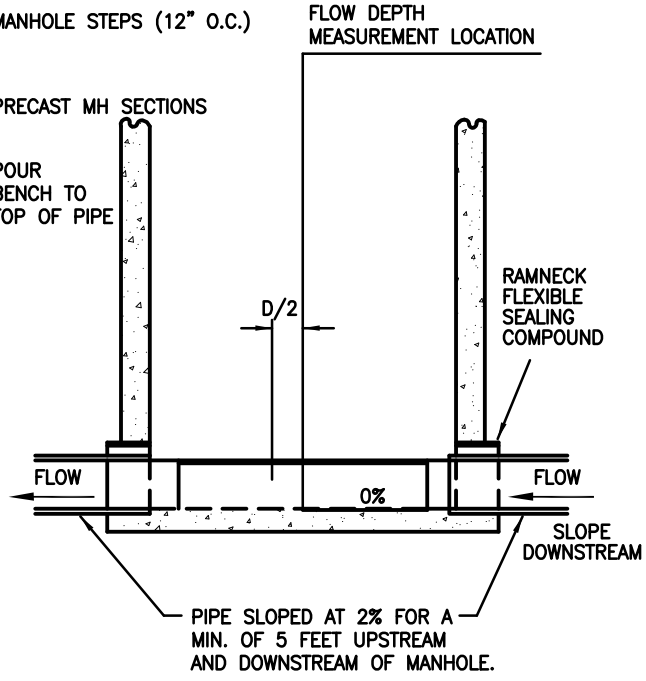
REVISION DATE: 03/01/2013
FIGURE NO. SS-5
SHEET NO. 1 of 1



PLAN



SECTION



SECTION A–A

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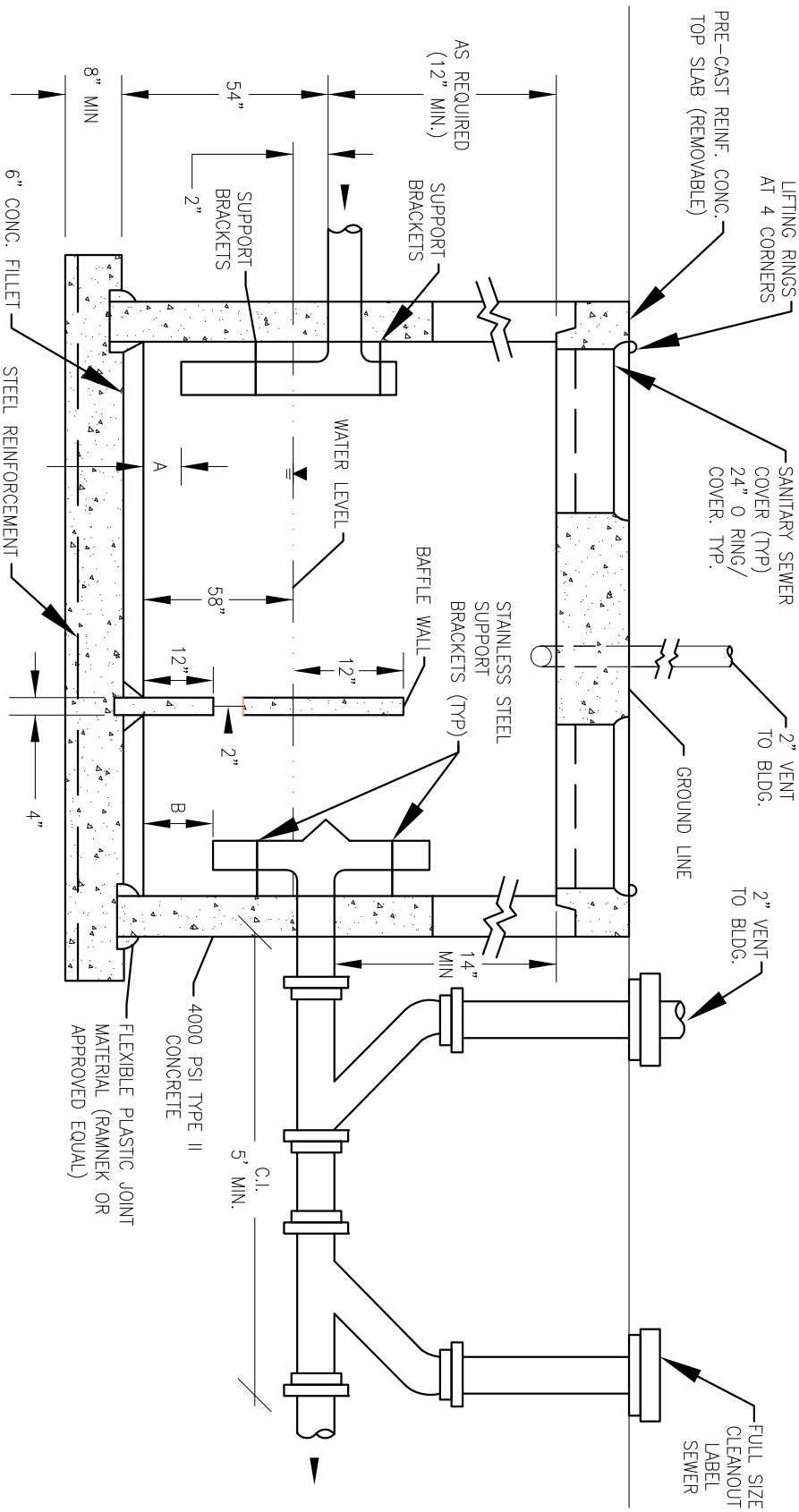
SAMPLING MANHOLE FOR COMMERCIAL SAMPLING

REVISION DATE:	03/01/2013
FIGURE NO.	SS-6
SHEET NO.	1 of 1



Grout all penetrations with non-shrink grout.

A. DISTANCE EQUALS 1/3 THE DESIGN LIQUID DEPTH.
B. DISTANCE EQUALS 2/3 THE DESIGN LIQUID DEPTH.

NOTE: VAULT SIZE BASED ON FLOW RATE AND SHALL BE APPROVED BY ACWWA.

DRAWING NOT TO SCALE

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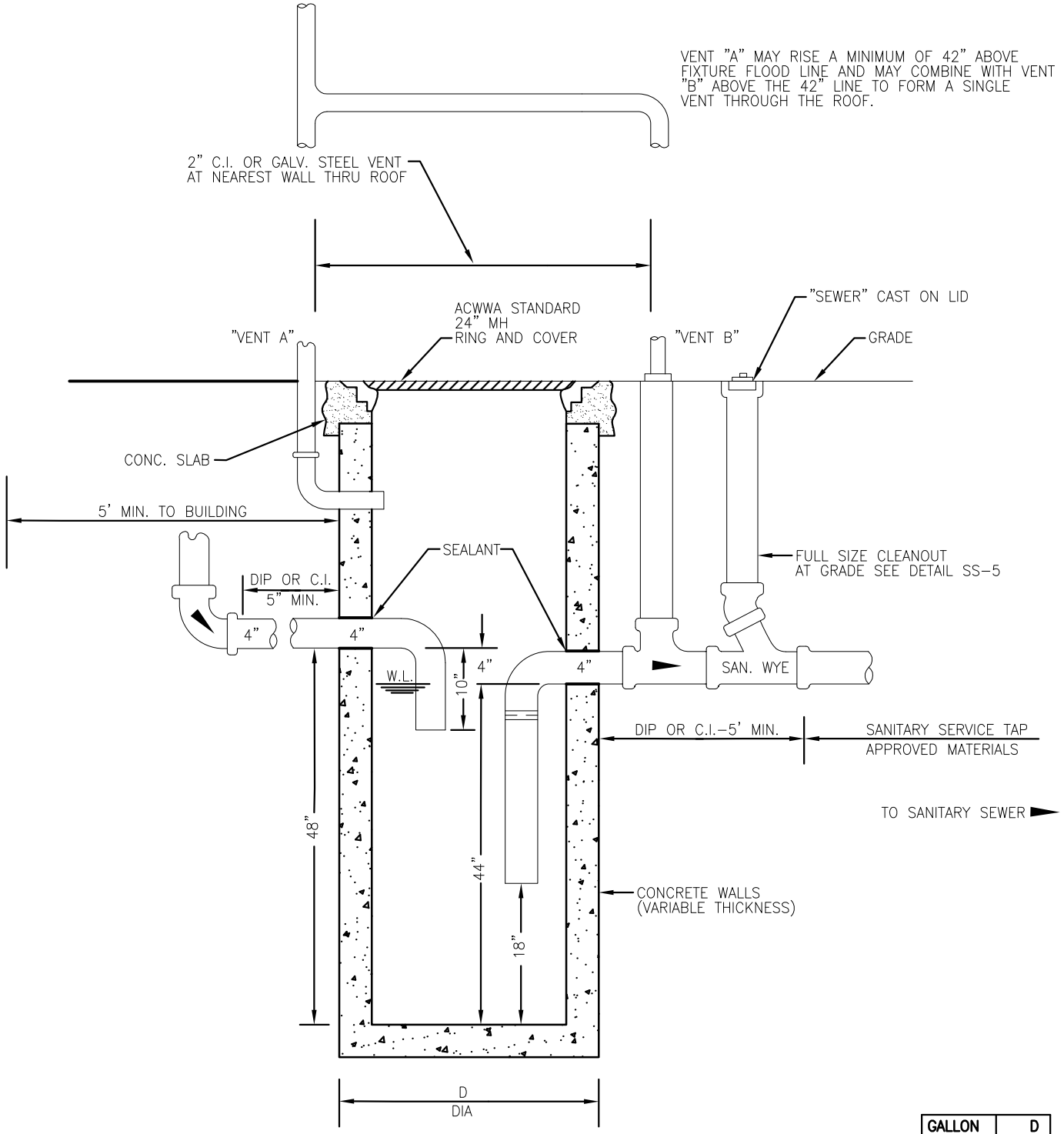
GREASE INTERCEPTOR

REVISION DATE: 03/01/2013
FIGURE NO. SS-7
SHEET NO. 1 of 1



GALLON	D
85	24"
200	36"

NOTES:

1. PRE-MANUFACTURED 85 GALLON SINGLE COMPARTMENT.
2. PROVIDE TWO WAY CLEANOUT AS REQUIRED BY LOCAL CODE.
3. VENT PIPE SHALL BE CAST IRON. 2-INCHES IN DIAMETER MINIMUM. VENTS MAY BE COMBINED AT 42" ABOVE FLOOD RIM TO INDIVIDUAL VENT THRU ROOF.
4. STANDARD MANHOLE RING AND COVER SHALL BE NEENAH R-1706 OR EQUAL.

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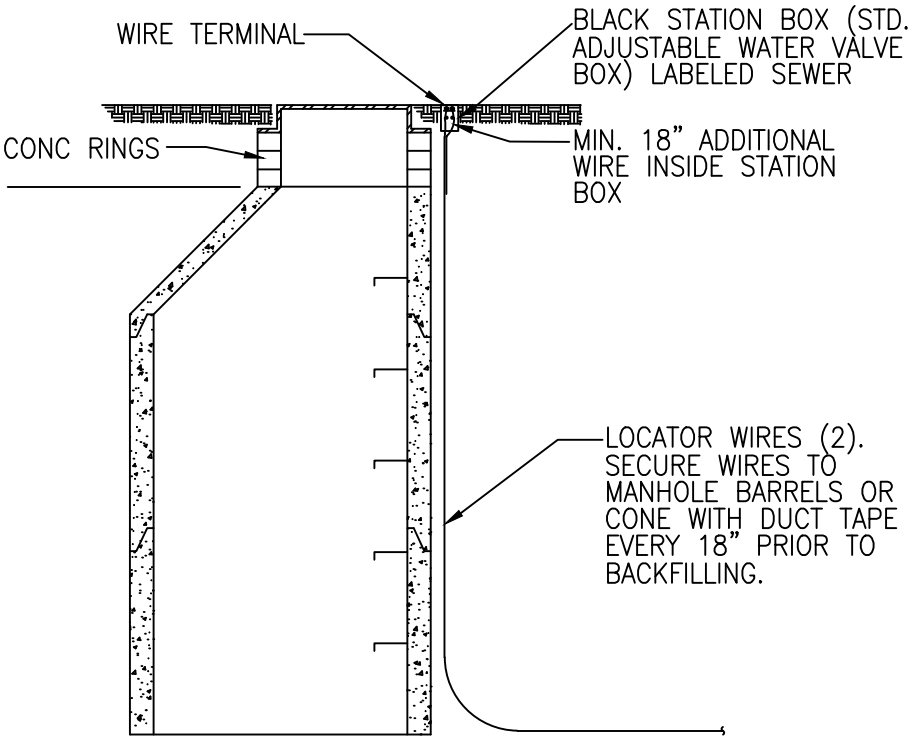
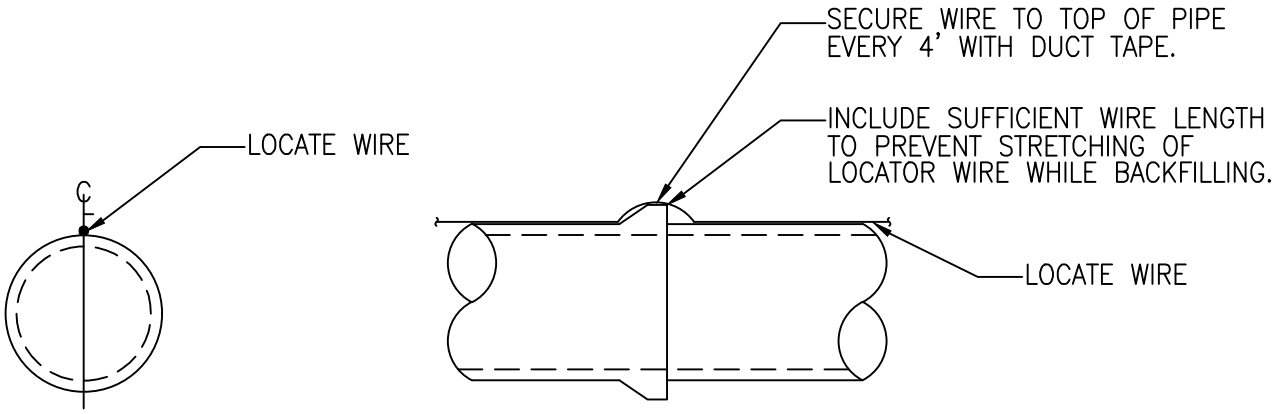
SINGLE COMPARTMENT SAND & OIL INTERCEPTOR

REVISION DATE: 03/01/2013
FIGURE NO. SS-8
SHEET NO. 1 of 1



ELEVATION



NOTES:
1. WIRE SHALL BE 12 GA. AWG
2. STATION BOX SHALL BE LOCATED AT UPSTREAM SIDE OF THE MANHOLE UNLESS SPECIFIED OTHERWISE BY INSPECTOR.
3. WIRE TO BE CONTINUOUS OR THERMOWELDED OR USE AN APPROVED WATER–TIGHT CONNECTOR.

DRAWING NOT TO SCALE

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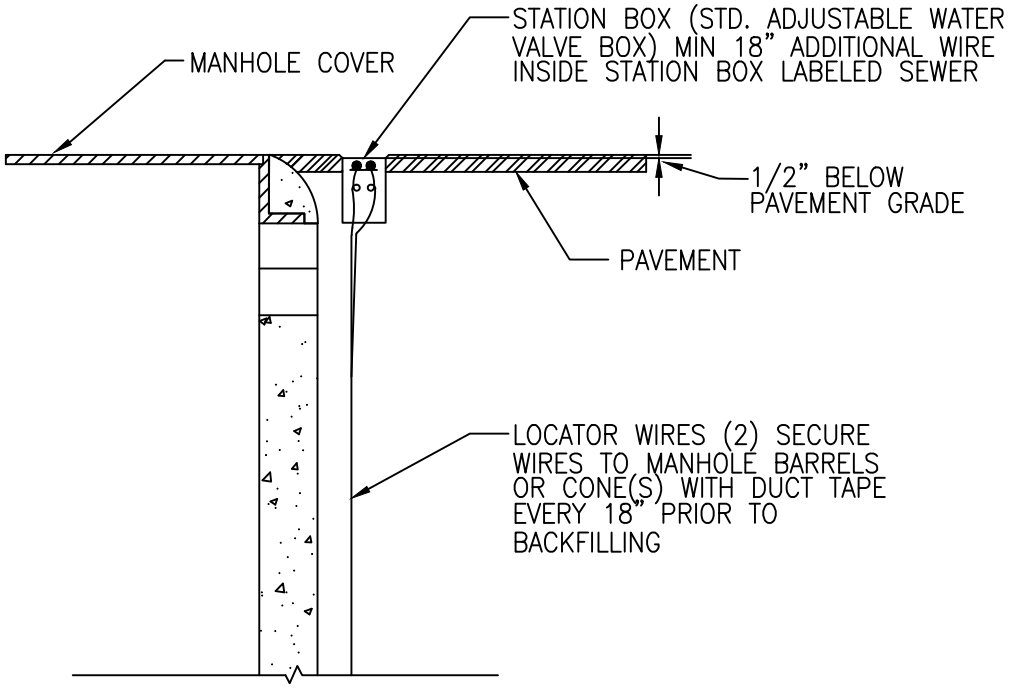
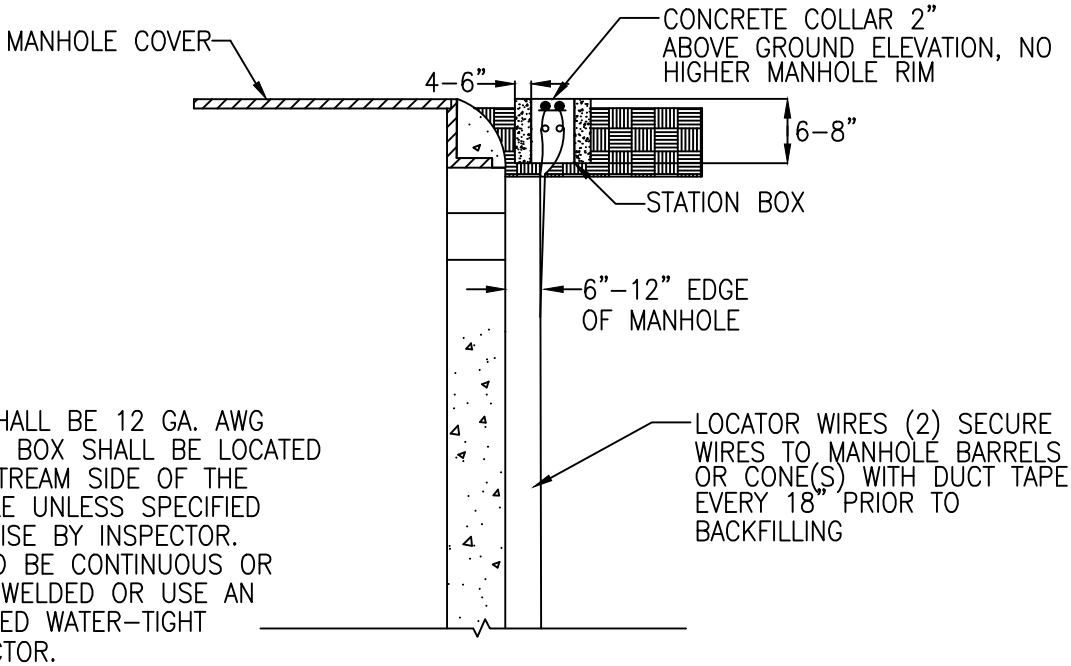
LOCATOR OR TRACER WIRE

WASTEWATER COLLECTION SYSTEM

REVISION DATE: 7/18/2020
FIGURE NO. SS-9
SHEET NO. 1 OF 1



STATION BOX INSTALLATION IN PAVEMENT



NOTES:
1. WIRE SHALL BE 12 GA. AWG
2. STATION BOX SHALL BE LOCATED AT UPSTREAM SIDE OF THE MANHOLE UNLESS SPECIFIED OTHERWISE BY INSPECTOR.
3. WIRE TO BE CONTINUOUS OR THERMOWELDED OR USE AN APPROVED WATER-TIGHT CONNECTOR.

STATION BOX INSTALLATION IN NON-PAVEMENT

DRAWING NOT TO SCALE

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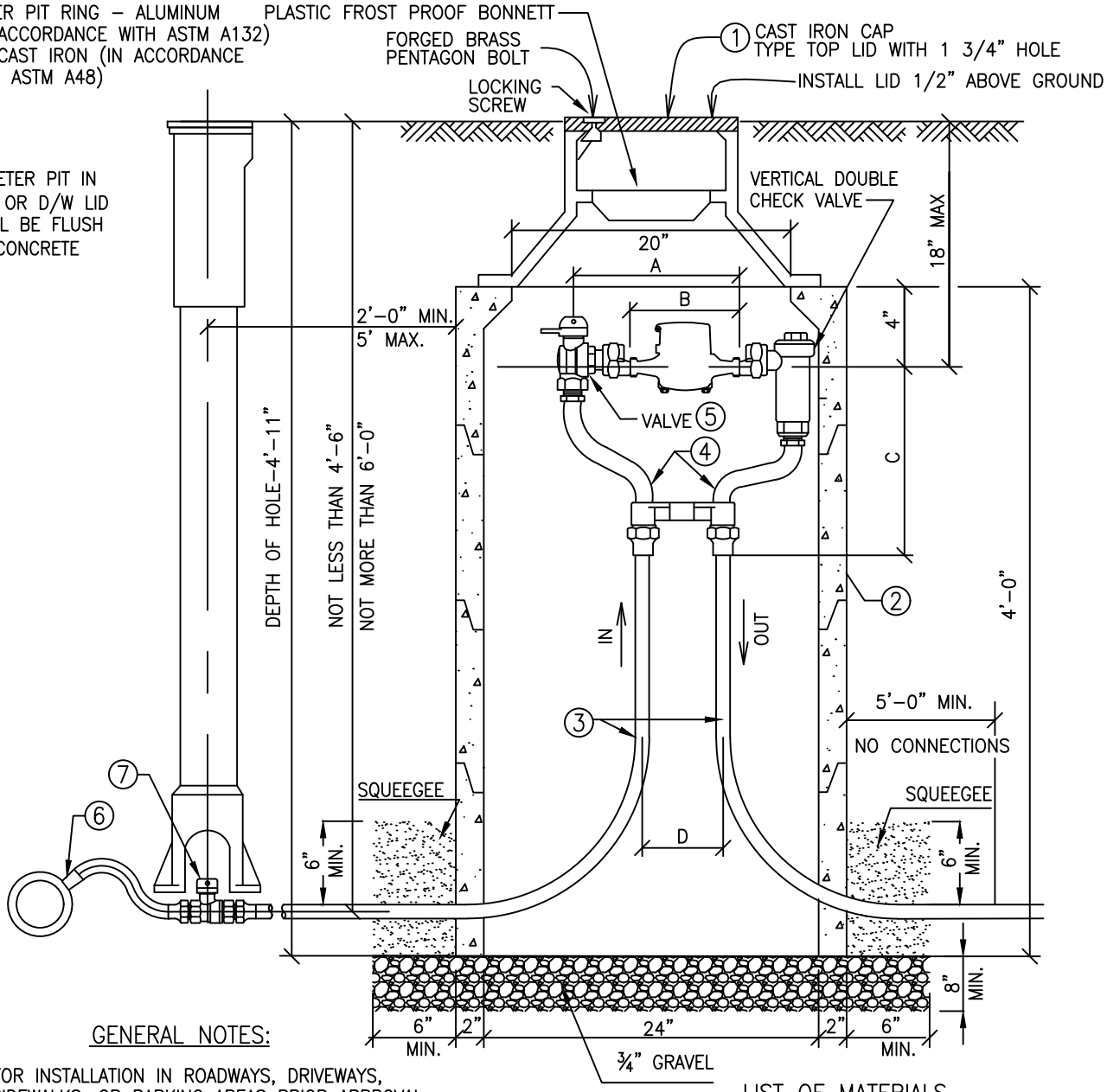
LOCATOR OR TRACER WIRE STATION BOX

WASTEWATER COLLECTION SYSTEM

REVISION DATE: 7/18/2020
FIGURE NO. SS-10
SHEET NO. 1 OF 1



GENERAL NOTES:

1. FOR INSTALLATION IN ROADWAYS, DRIVEWAYS, SIDEWALKS, OR PARKING AREAS PRIOR APPROVAL REQUIRED.
2. METER PITS SHALL BE 24" DIAMETER PRECAST CONCRETE PIT, 48" TALL. METER PIT COVER TO BE A CAST IRON ASSEMBLY WITH PLASTIC INNER FROST LID AND C.I. TOP LID DRILLED WITH A 1 ¾" HOLE FOR METER SENSOR PAD. 4" DIAMETER RECESS CENTERED ON LID.
3. ADJUSTMENT RINGS SHALL BE 2", 3", 4" OR 6" IN HEIGHT AND SHALL BE INSERTED BETWEEN THE DOME AND TOP RING.
4. NO CONNECTIONS OR CHANGES IN PIPE DIAMETER SHALL BE MADE FROM THE MAIN/TAP TO A DISTANCE OF FIVE FEET BEYOND THE METER PIT WALL ON THE OUTLET SIDE.
5. LID SHALL SAY "WATER METER"

LIST OF MATERIALS

1. RING AND COVER – J'MARK NO. J–2290 (81 LBS.) OR APPROVED EQUAL WITH INTERNAL FROST LID.
2. METER PIT – ARCO NO. 24–4 PRECAST MANHOLE (24" DIA.) OR APPROVED EQUAL.
3. SERVICE LINE – COPPER TUBING TYPE K Q–LING OR POLY LINE SIDR 7, SAME DIAMETER AS THE METER.
4. METER YOKE ASSEMBLY – FORD 80 SERIES COPPERSETTER WITH OUTLET VALVE BHC83W–22–33 (3/4" YOKE), VBHC 84W–22–44 (1" YOKE) OR APPROVED EQUAL.
5. SHUT–OFF VALVE.
6. CORPORATION STOP. A SADDLE SHALL BE REQUIRED.
7. 3/4" FORD B–22–333 OR EQUAL
   1" B–22–444

METER SIZE	A	B	C	D
3/4"	14–1/4"	9–5/16"	8–15/16"	5"
1"	17–1/4"	11–1/16"	11–1/4"	6"

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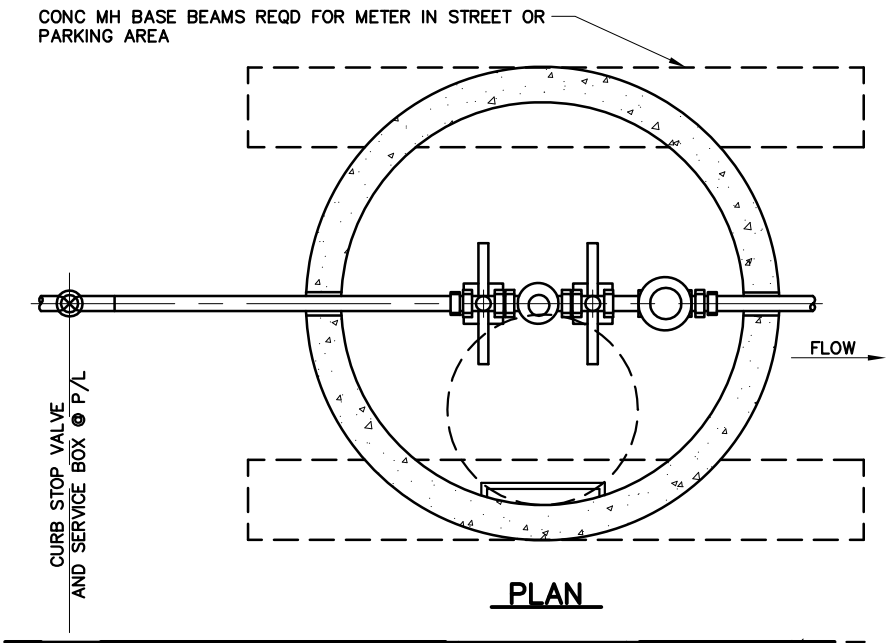
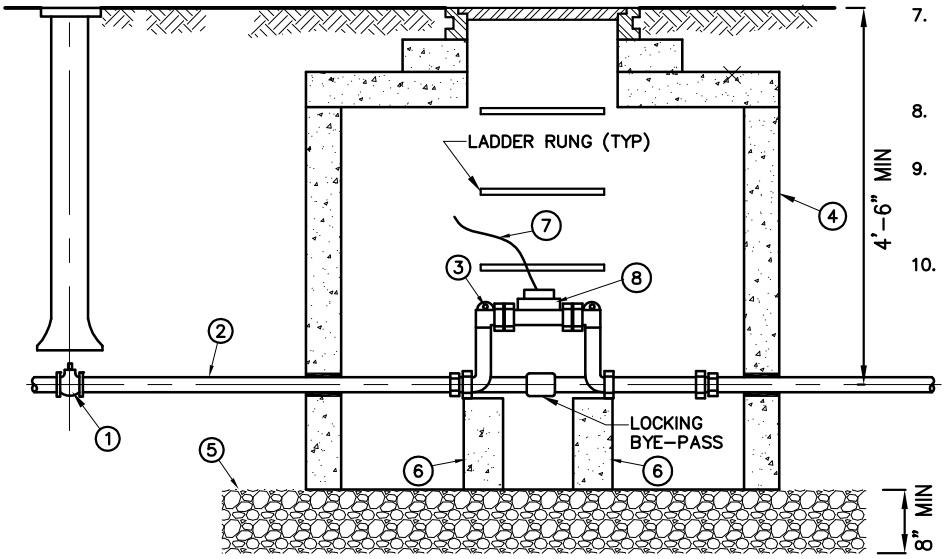
OUTSIDE DOMESTIC METER - 3/4" AND 1" METERS

REVISION DATE: 03/01/2013
FIGURE NO. W-1
SHEET NO. 1 of 1



PLAN



ELEVATION

NOTES:

1. METER VAULT SHALL BE INSTALLED IN LANDSCAPED AREA UNLESS APPROVED BY ACWWA.
2. CURB STOP SHALL BE 24" AND NO GREATER THAN 60" FROM THE INLET SIDE OF THE METER VAULT, IN LANDSCAPED AREA UNLESS APPROVED BY ACWWA.
3. FOR VAULT INSTALLATIONS IN ROADWAYS AND DRIVEWAYS, WHEN APPROVED, MH BASE BEAMS ARE REQD. METER VAULT MAY NOT BE INSTALLED IN PARKING AREA.
4. NO CONC FLOOR ALLOWED IN METER VAULT.
5. 3/4" CRUSHED ROCK.
6. NO CONNECTIONS OF ANY TYPE, PIPE BENDS, OR CHANGES IN PIPE SIZE ARE PERMITTED BETWEEN THE TAP AND 5 FT BEYOND THE OUTLET SIDE OF THE METER VAULT, EXCEPT AS SHOWN ON THIS DETAIL.
7. DISTANCE BETWEEN RUNGS, CLEATS AND STEPS SHALL NOT EXCEED 12" AND SHALL BE UNIFORM THROUGHOUT THE LENGTH OF THE LADDER.
8. VAULT WALL PENETRATIONS SHALL BE GROUTED WITH CONC.
9. COPPERSETTER OR METER YOKE SHALL BE NO MORE THAN 12" HIGH. COPPERSETTER OR YOKE WITH BYPASS SHALL HAVE LOCKING BYPASS VALVE.
10. STEPS SHALL BE ALIGNED PERPENDICULAR TO SERVICE LINE.

DETAILS:

1. CURB STOP
2. TYPE K COPPER TUBING
3. COPPERSETTER/METER YOKE WITH LOCKABLE BYPASS
4. 48" CONC MH WITH FLAT LID
5. CONC BLOCK SUPPORTS 4" x 4" x 24"
6. SIGNAL WIRE TO ITRON ERT INSTALLED BY ACWWA
7. METER INSTALLED BY ACWWA
8. WATER METER

SIZE	FORD CUSTOM SETTER		MUELLER	
		CAT. No.	TYPE	CAT. No.
1 1/2"	FLANGED KEY VALVE	V V76-12B-11-66 1" BY-PASS	FLANGED ANGLE METER	H-1423
1 1/2"	FLANGED ANGLE BALL VALVE	VBB76-12B-11-66 1" BY-PASS	FLANGED BALL ANGLE	H-2423
2"	FLANGED KEY VALVE	V V77-12B-11-77 1-1/4" BY-PASS	FLANGED ANGLE METER STOP	H-1423
2"	FLANGED ANGLE BALL VALVE	VBB77-12B-11-77 1-1/4" BY-PASS	FLANGED ANGLE BALL VALVE	H-2423

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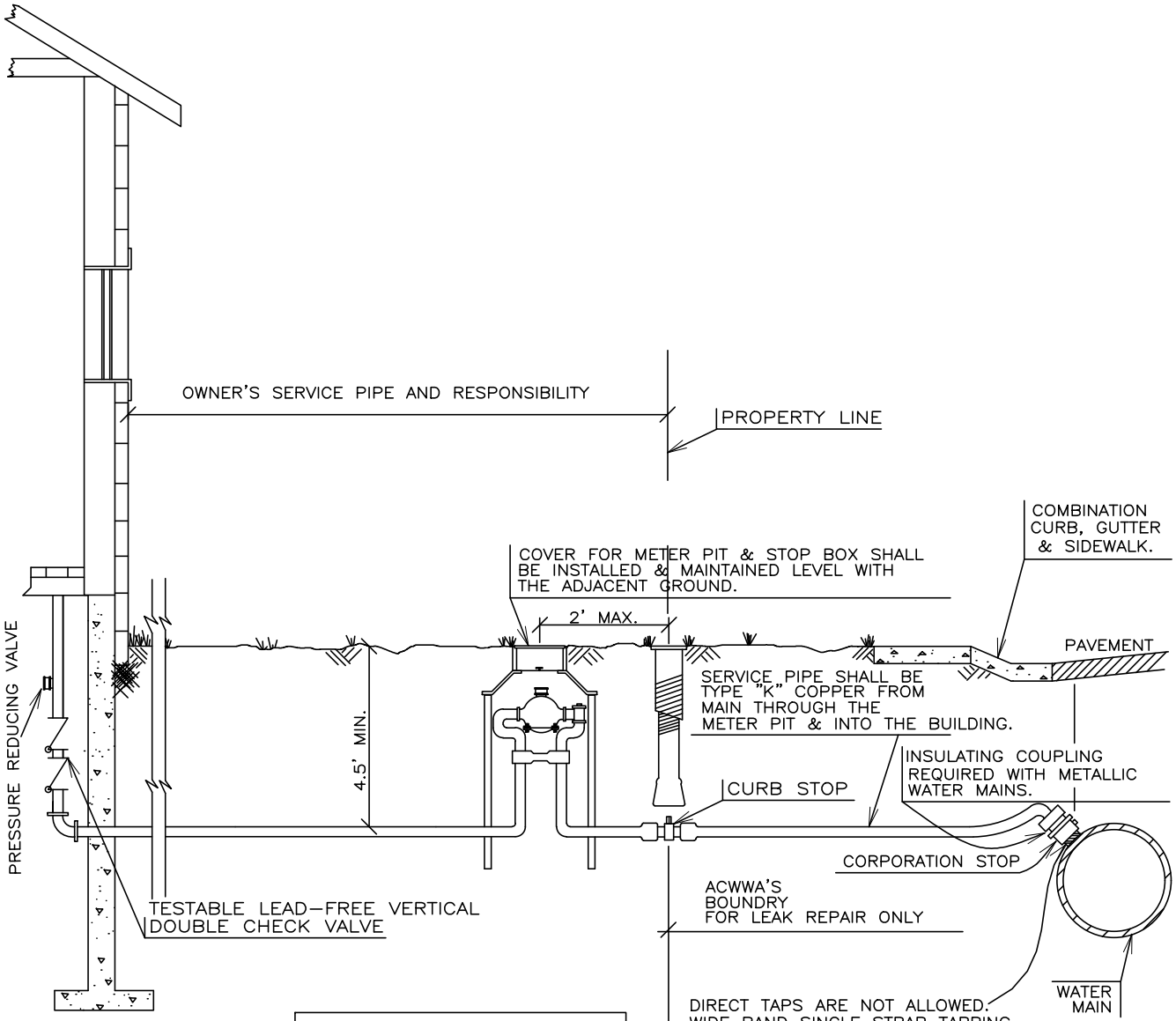
OUTSIDE DOMESTIC METER 1-1/2" METER & UP

REVISION DATE: 03/01/2013
FIGURE NO. W-2
SHEET NO. 1 of 1

NOTE:

1 – PLACEMENT OF STOP BOX CAN VARY FROM A MAXIMUM OF 5 FEET OUTSIDE THE PROPERTY LINE TO THE PROPERTY LINE. PLACEMENT OF THE STOP BOX ON THE PROPERTY LINE IS PREFERRED.



SHOULD ANY SITUATION ARISE OTHER THAN SHOWN CONCERNING THE DEPTH OR OBSTRUCTION OF SERVICE LINE OR THE PLACEMENT OF METER PIT OR STOP BOX CALL 303–790–4830 AND ASK FOR CUSTOMER SERVICES FIELD SECTION.

ACWWA
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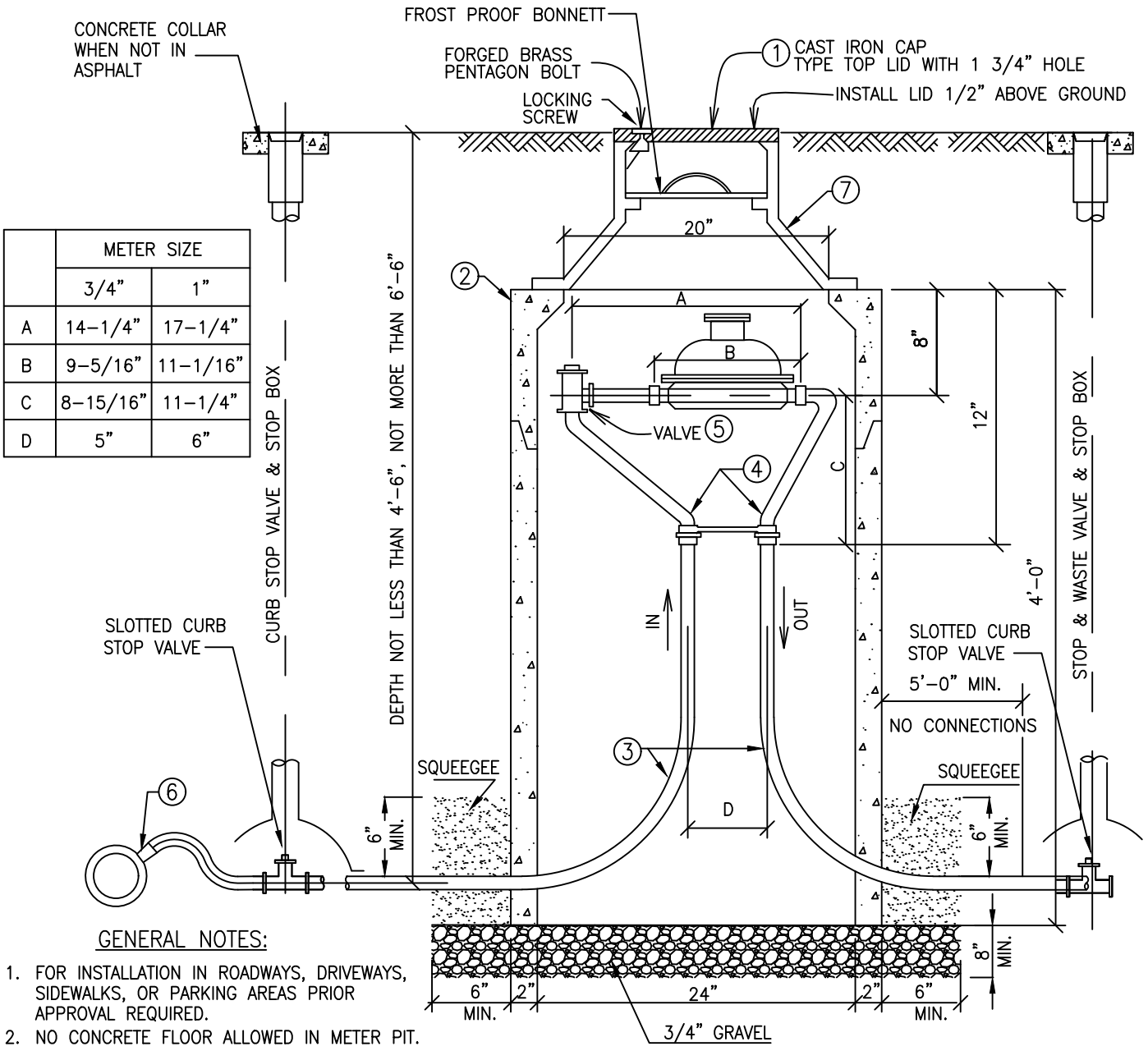
DOMESTIC SERVICE LINE; STOP BOX & OUTSIDE METER INSTALLATION

REVISION DATE: 04/03/2017
FIGURE NO. W-3
SHEET NO. 1 of 1



	METER SIZE	
	3/4"	1"
A	14–1/4"	17–1/4"
B	9–5/16"	11–1/16"
C	8–15/16"	11–1/4"
D	5"	6"

GENERAL NOTES:

1. FOR INSTALLATION IN ROADWAYS, DRIVEWAYS, SIDEWALKS, OR PARKING AREAS PRIOR APPROVAL REQUIRED.
2. NO CONCRETE FLOOR ALLOWED IN METER PIT.
3. METER PITS SHALL BE 24" DIAMETER PRECAST CONCRETE PIT, 48" TALL. UPON PRIOR APPROVAL BY ACWWA A ONE–PIECE PLASTIC PIT "DFW" BRAND ONLY MAY BE USED. METER PIT COVER TO BE A CAST IRON ASSEMBLY WITH C.I. INNER FROST LID AND C.I. TOP LID DRILLED WITH A 1 ¾" HOLE FOR METER SENSOR PAD. 4" DIAMETER RECESS CENTERED ON LID.
4. ADJUSTMENT RINGS SHALL BE 2", 3", 4" OR 6" IN HEIGHT AND SHALL BE INSERTED BETWEEN THE DOME AND TOP RING.
5. NO CONNECTIONS OR CHANGES IN PIPE DIAMETER SHALL BE MADE FROM THE MAIN TAP TO A DISTANCE OF FIVE FEET BEYOND THE METER PIT WALL ON THE OUTLET SIDE.
6. LID SHALL SAY "WATER METER"
7. THE AUTHORITY SHALL INSPECT FROM THE MAIN TO THE BUILDING PRIOR TO BACKFILLING.
8. IF THE SURFACE IS NOT TO FINAL GRADE AT THE TIME OF THE METER INSTALLATION, THE PROPERTY OWNER SHALL RAISE OR LOWER THE METER PIT ACCESS MANHOLE TO MATCH THE FINAL GRADE.

LIST OF MATERIALS

1. RING AND COVER – J'MARK NO. J–2290 (81 LBS.) OR APPROVED EQUAL WITH INTERNAL FROST LID.
2. METER PIT – ARCO NO. 24–4 PRECAST MANHOLE (24" DIA.) OR APPROVED EQUAL.
3. SERVICE LINE – COPPER TUBING TYPE K Q–LINE OR POLYLINE SIDR 7, SAME DIAMETER AS THE METER.
4. METER YOKE ASSEMBLY – FORD 80 SERIES COPPERSETTER WITH OUTLET VALVE (VBHC83–22–33) OR APPROVED EQUAL.
5. SHUT–OFF VALVE.
6. CORPORATION STOP. A SADDLE SHALL BE REQUIRED.
7. METER PIT RING – ALUMINUM (IN ACCORDANCE WITH ASTM A132) OR CAST IRON (IN ACCORDANCE WITH ASTM A48)

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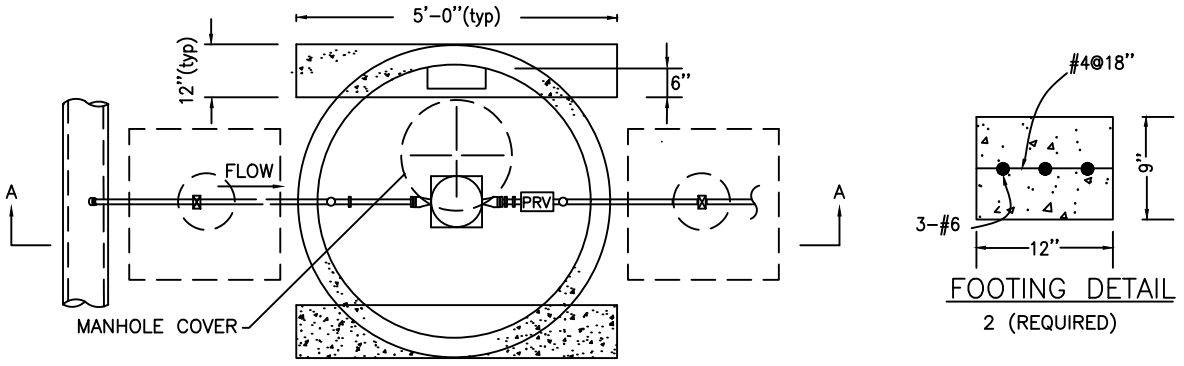
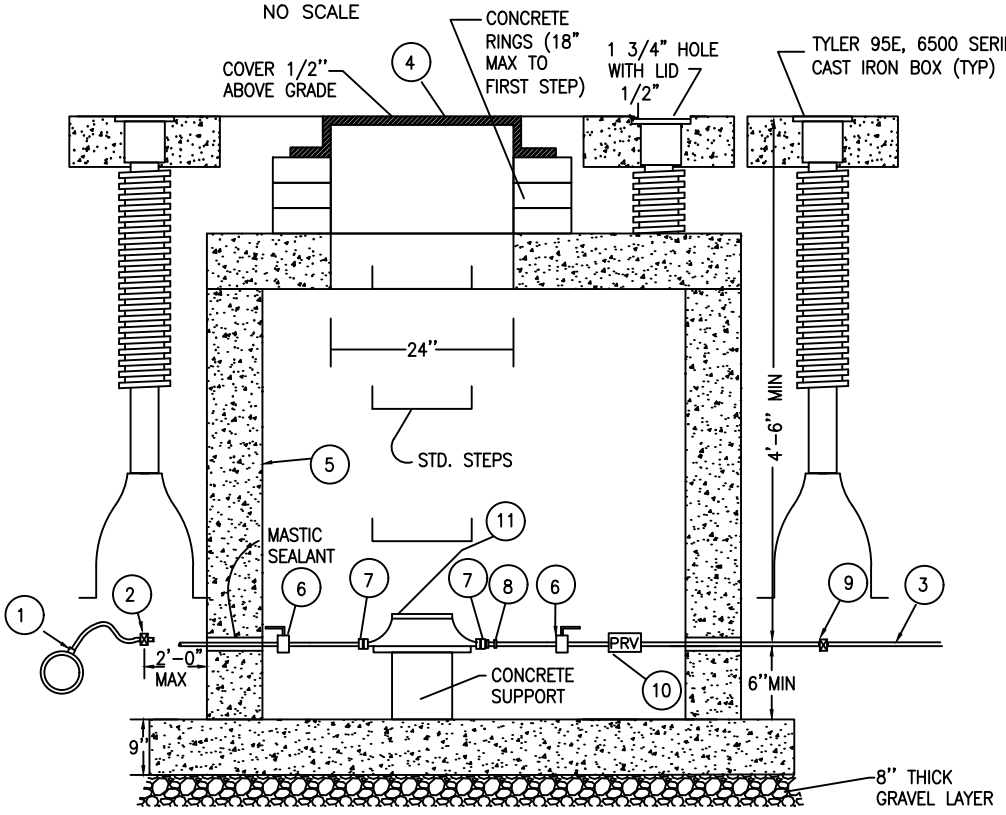
OUTSIDE IRRIGATION METER 3/4" AND 1" METERS

REVISION DATE: 03/01/2013
FIGURE NO. W-4
SHEET NO. 1 of 1



SECTIONAL PLAN
NO SCALE

FOOTING DETAIL
2 (REQUIRED)



LIST OF MATERIALS

1. CORPORATION STOP VALVE.
2. CURB STOP VALVE AND BOX W/ 2" OPERATOR NUT AND FLARED COPPER ENDS. CURB STOP VALVE BOX MUST BE A 3-PIECE BOX WITH 5-1/4" BARREL AND WIDE OVAL BASE (TYLER 6860 SERIES, OR APPROVED EQUAL)
3. SERVICE LINE – COPPER TUBING TYPE K, SAME DIAMETER AS THE METER.
4. RING AND COVER – J'MARK NO. J1163 (125 LBS. COVER) OR APPROVED WITH WATER CAST INTO COVER. 4" DIAMETER RECESS CENTERED ON LID.
5. METER PIT – 48" DIA. PRECAST MANHOLE ASTM C478, FLAT TOP.
6. BALL VALVE– FORD BALL VALVE CURB STOP W/ FEMALE THREAD IRON PIPE & FLARED COPPER ENDS OR EQUAL. (2 REQ.)
7. BRASS FLANGE COUPLING.
8. FORD LOK-PAK ADJUSTMENT COUPLING W/2 STAINLESS STEEL SET SCREWS.
9. STOP & WASTE VALVE W/FLARED COPPER ENDS.
10. PRESSURE REDUCING VALVE.
11. METER INSTALLED BY ACWWA.

NOTES

1. ACWWA SHALL INSPECT FROM THE MAIN TO THE BUILDING PRIOR TO BACKFILLING.
2. IF THE SURFACE IS NOT TO FINAL GRADE AT TIME OF THE METER INSTALLATION, THE PROPERTY OWNER SHALL RAISE OR LOWER THE METER PIT ACCESS MANHOLE TO MATCH THE FINAL GRADE.
3. BRASS FLANGE COUPLINGS SHALL BE PROVIDED ON UPSTREAM AND DOWNSTREAM SIDES OF METER TO ALLOW FOR REMOVAL.
4. TOP STEP TO BE 18" MAX" BELOW TOP OF COVER, THEN THE SURFACE, AT 12" O.C. VERTICAL INTERVALS.

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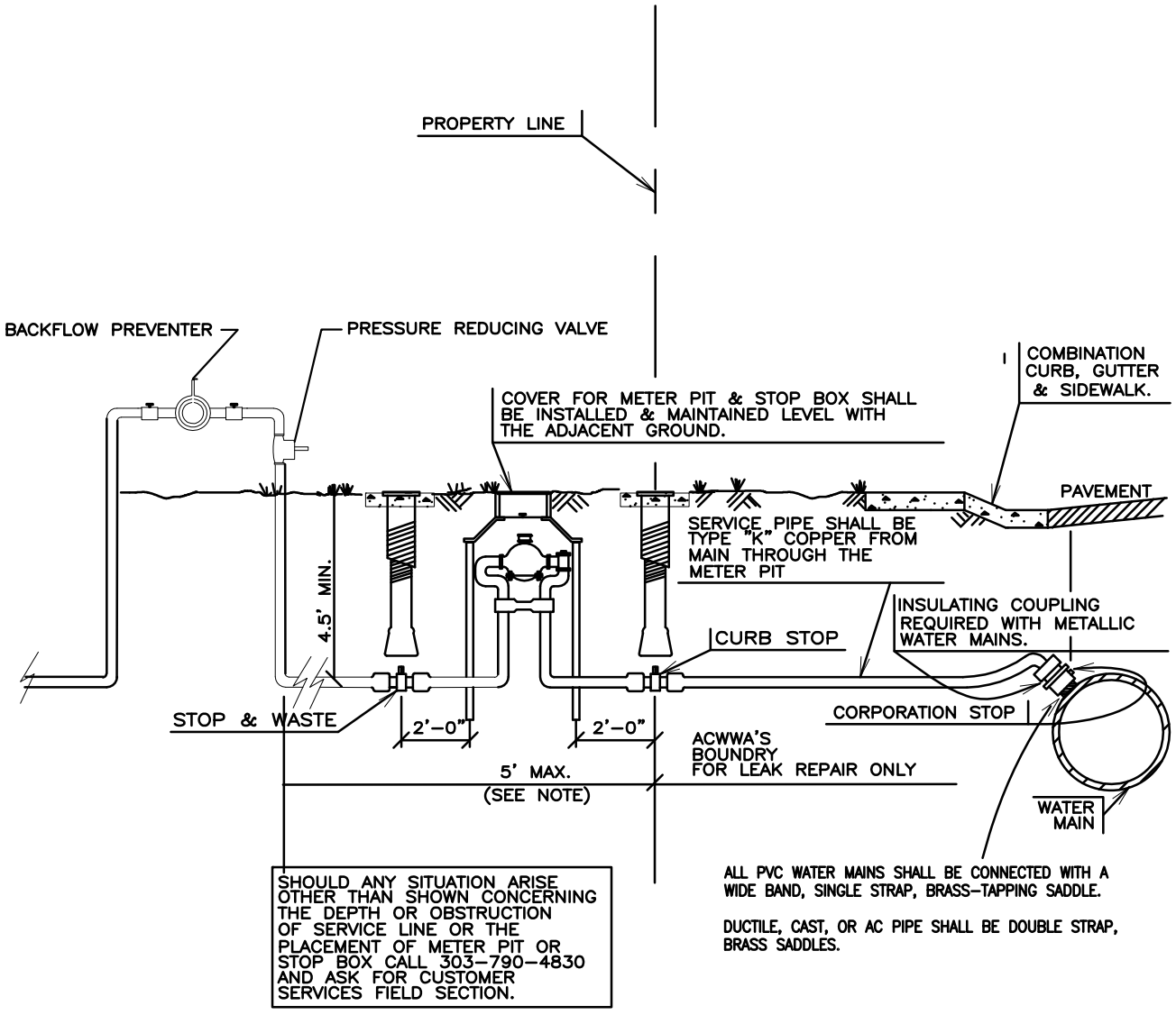
OUTSIDE IRRIGATION METER
1 1/2" AND 2" METER

REVISION DATE: 03/01/2013
FIGURE NO. W-5
SHEET NO. 1 of 1

NOTE:

1 – ALL MATERIALS AND INSTALLATION MUST BE APPROVED AND INSPECTED BY ACWWA.



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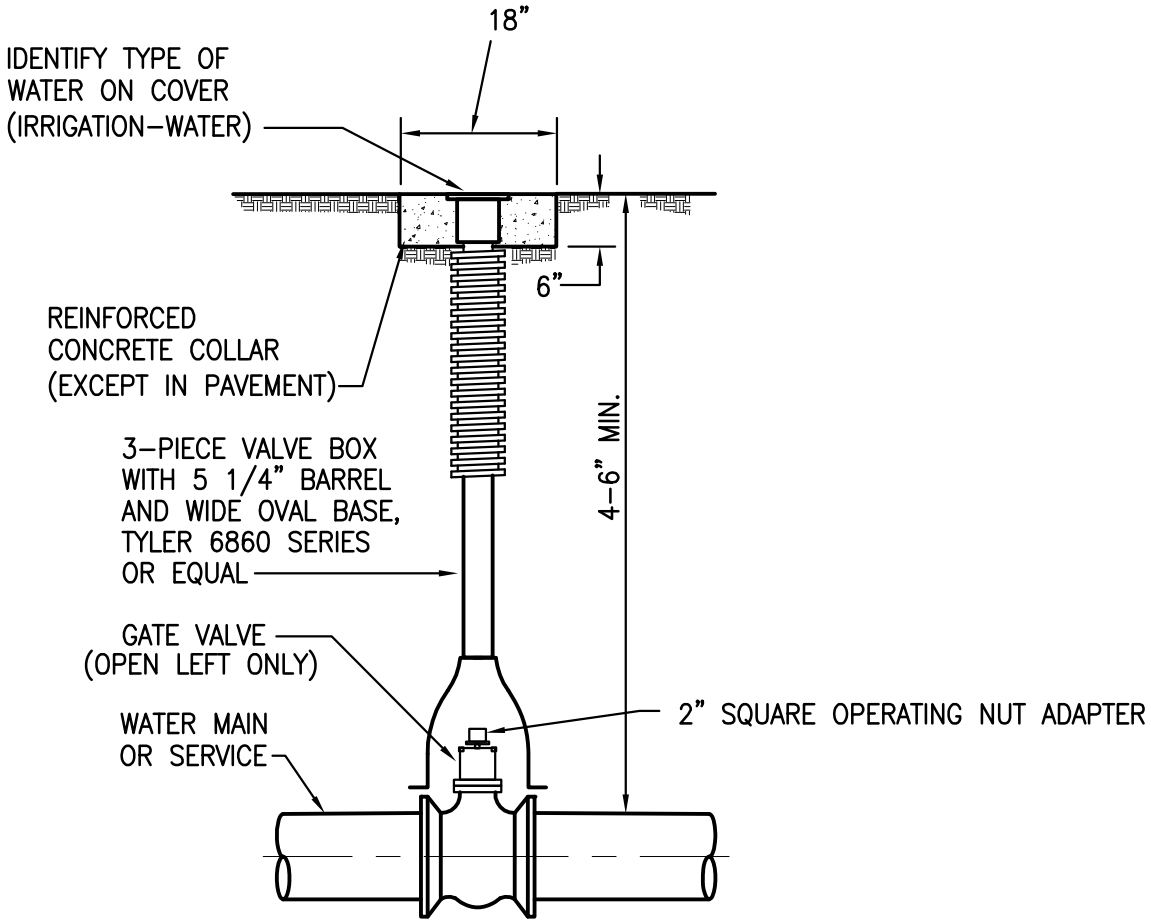
IRRIGATION SERVICE LINE, WITH RPBP INSTALLATION

REVISION DATE: 03/01/2013
FIGURE NO. W-6
SHEET NO. 1 of 1



WATERMAIN 8" OR LARGER

NOTES:

1. VALVE BOX COVER SHALL BE SET 1/4" BELOW FINAL GRADE OF ASPHALT/CONCRETE PAVEMENT.

2. VALVE BOXES PLACED IN AREAS OTHER THAN PAVEMENT (I.E. DIRT OR LANDSCAPING) SHALL HAVE A 18"SQX6" THICK REINFORCED CONCRETE COLLAR SET FLUSH WITH FINAL GRADE. CONCRETE PAD TO BE PLACED USING PROPER FORMS; SET SQUARE AND FLUSH WITH GROUND.

3. IF THE DISTANCE FROM FINAL GRADE TO THE OPERATING NUT IS GREATER THAN 6'–6", OPERATOR EXTENSIONS SHALL BE CONNECTED TO VALVE OPERATOR USING SET SCREW TO RAISE THE NUT TO WITHIN 12" BELOW GRADE.

4. TYLER 6860 SERIES BOX WITH WIDE OVAL BASE, OR APPROVED EQUAL, REQUIRED ON ALL VALVES INCLUDING ALL CURB STOPS EXCEPT 3/4" RESIDENTIAL SERVICES.

5. FOR FIRE HYDRANT VALVE, LID READS "FIRE". FOR OTHER UTILITIES VALVE BOX LID SHALL READ "SEWER", "IRRIGATION", ETC. RESPECTIVE TO THE TYPE OF SERVICE.

6. DO NOT RUN TRACER WIRE UP VALVE BOXES.

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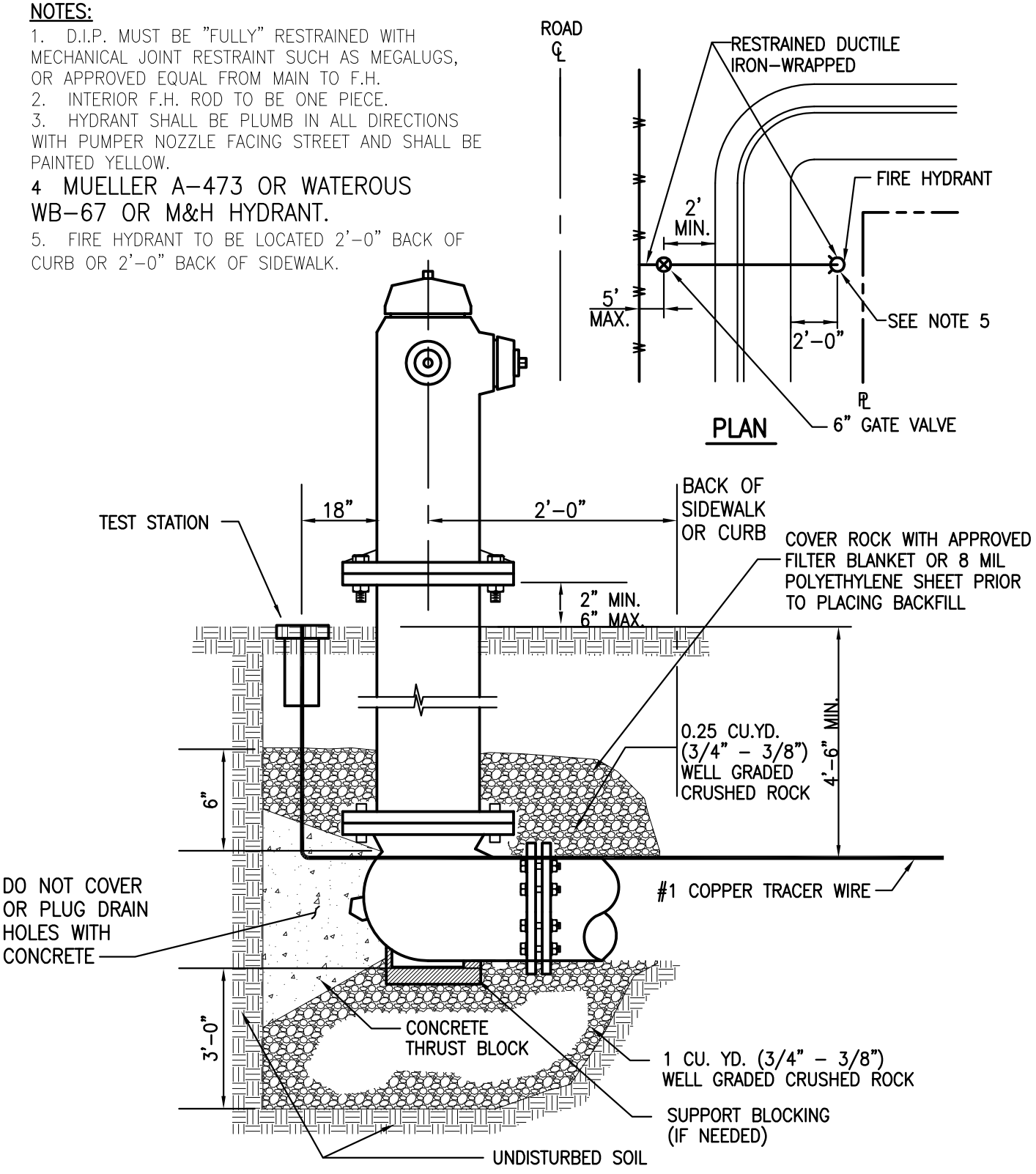
VALVE BOX STANDARD
DOMESTIC WATER SYSTEM

REVISION DATE: 03/01/2013
FIGURE NO. W-7
SHEET NO. 1 of 1

NOTES:

1. D.I.P. MUST BE "FULLY" RESTRAINED WITH MECHANICAL JOINT RESTRAINT SUCH AS MEGALUGS, OR APPROVED EQUAL FROM MAIN TO F.H.
2. INTERIOR F.H. ROD TO BE ONE PIECE.
3. HYDRANT SHALL BE PLUMB IN ALL DIRECTIONS WITH PUMPER NOZZLE FACING STREET AND SHALL BE PAINTED YELLOW.
4. MUELLER A-473 OR WATEROUS WB-67 OR M&H HYDRANT.
5. FIRE HYDRANT TO BE LOCATED 2'-0" BACK OF CURB OR 2'-0" BACK OF SIDEWALK.



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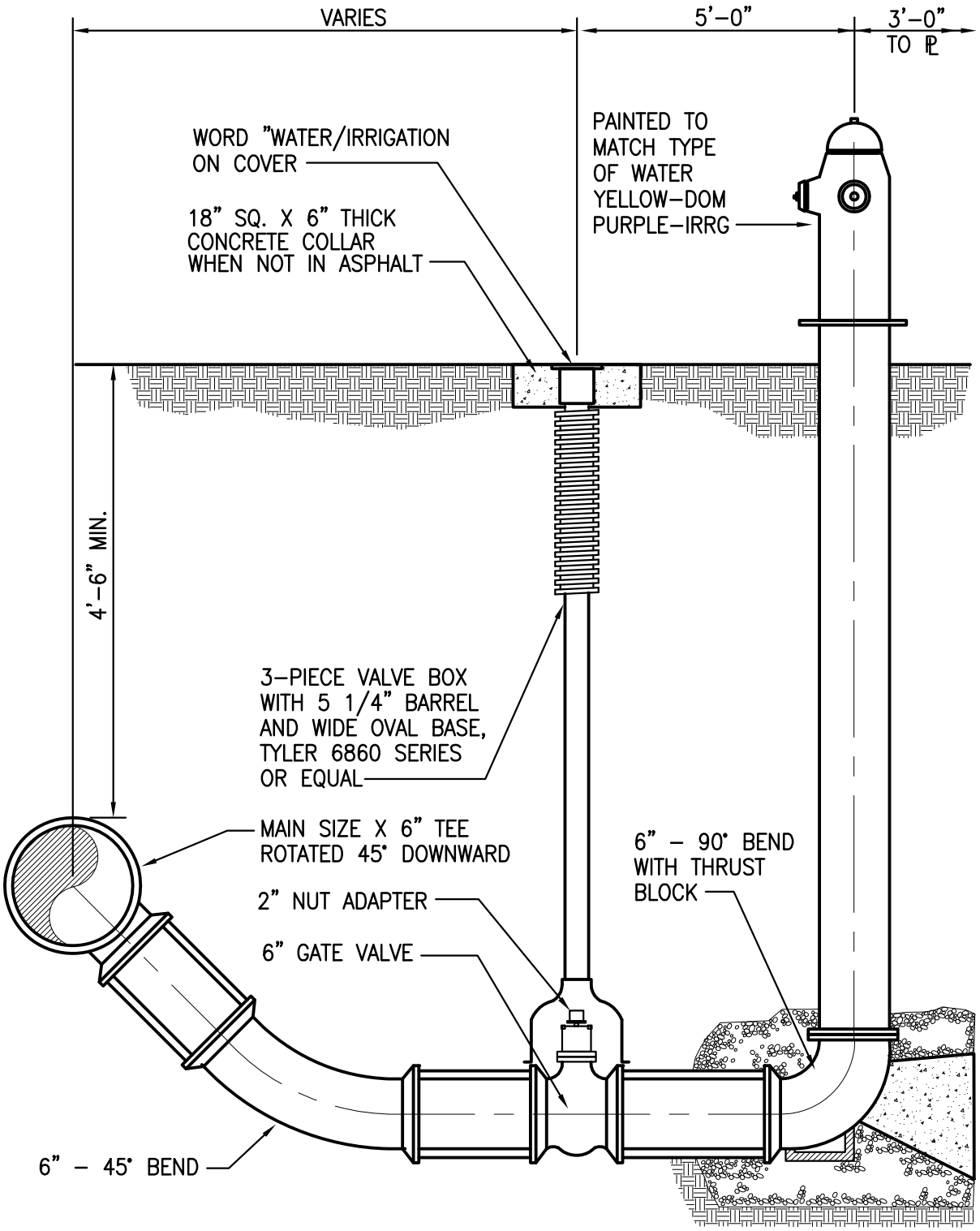
FIRE HYDRANT

REVISION DATE: 03/01/2013
FIGURE NO. W-9
SHEET NO. 1 of 1



NOTE:
DUCTILE IRON PIPE TO BE RESTRAINED
& WRAPPED FROM TEE TO FIRE HYDRANT.

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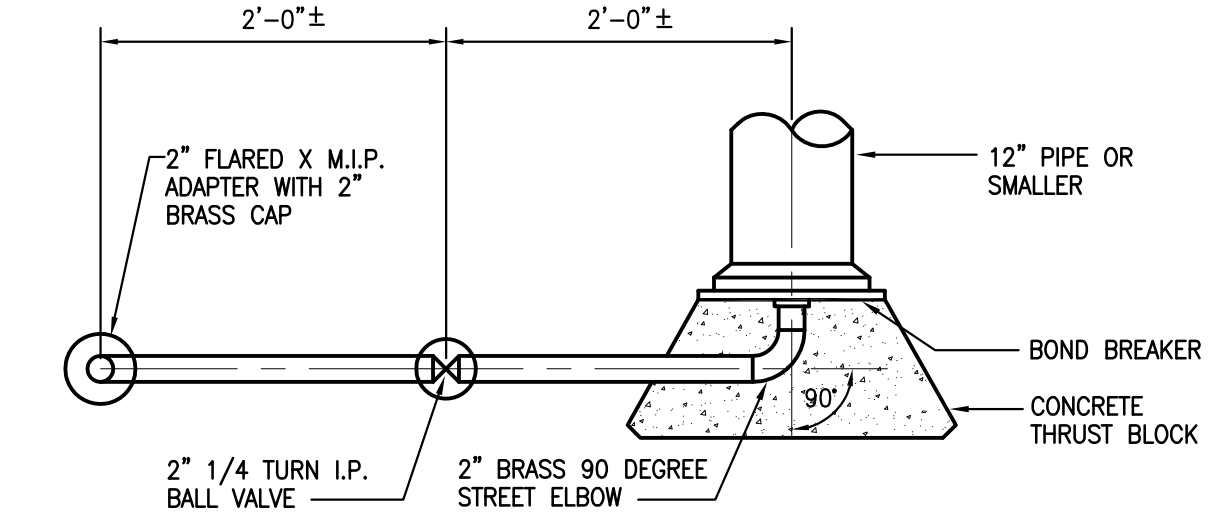
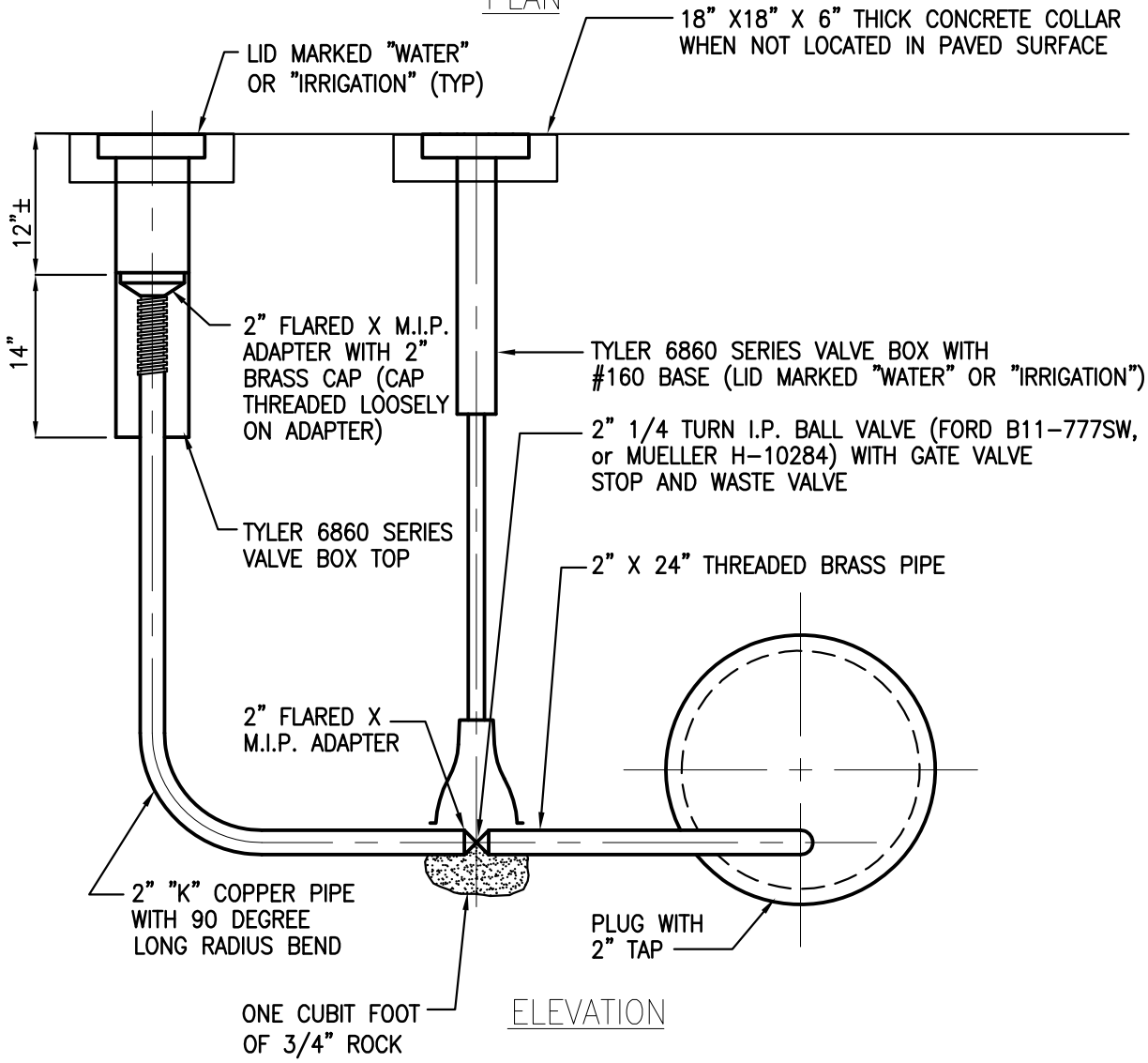
BLOW-OFF INSTALLATION
FIRE HYDRANT ALTERNATIVE

REVISION DATE: 03/01/2013
FIGURE NO. W-10
SHEET NO. 1 of 1



PLAN



ELEVATION

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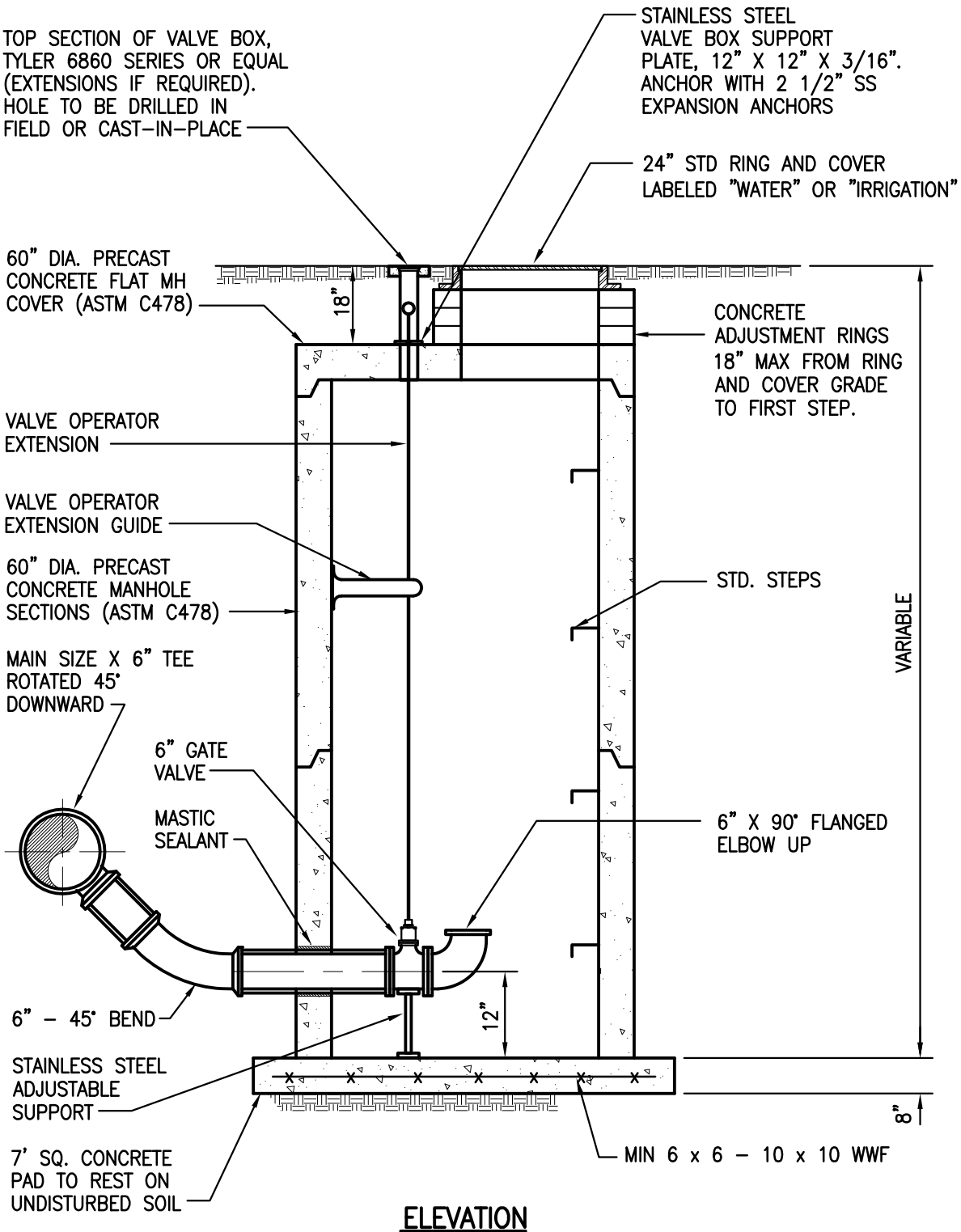
TEMPORARY BLOW-OFF INSTALLATION

REVISION DATE: 03/01/2013
FIGURE NO. W-11
SHEET NO. 1 of 1



ELEVATION

NOTES:

1. UPON ACWWA APPROVAL A FIRE HYDRANT MAY BE USED AS AN ALTERNATE BLOW-OFF. SEE DETAIL W-10.
2. ALL METAL SURFACES SHALL BE COATED WITH TWO COATS OF LIQUID EPOXY, 16 MIL DRY FILM THICKNESS IN ACCORDANCE WITH AWWA C210.

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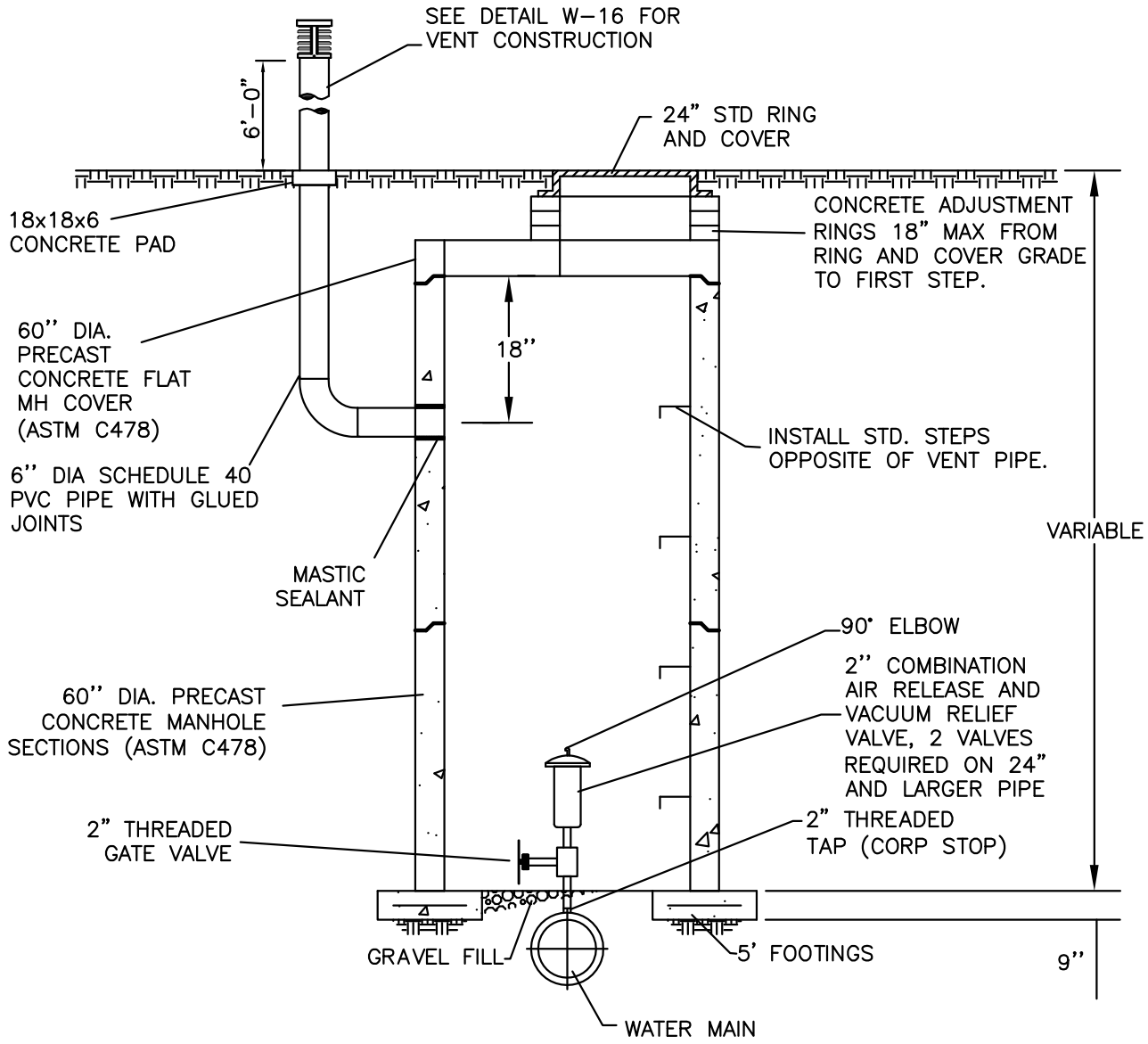
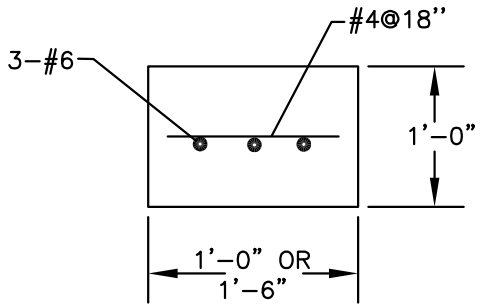
BLOW-OFF INSTALLATION FOR DOMESTIC AND IRRIGATION MAINS

REVISION DATE: 03/01/2013
FIGURE NO. W-12
SHEET NO. 1 of 1





FOOTING DETAIL

NOTE: ALL METAL SURFACES SHALL BE COATED WITH LIQUID EPOXY, 16 MIL FILM THICKNESS IN ACCORDANCE WITH AWWA C210.

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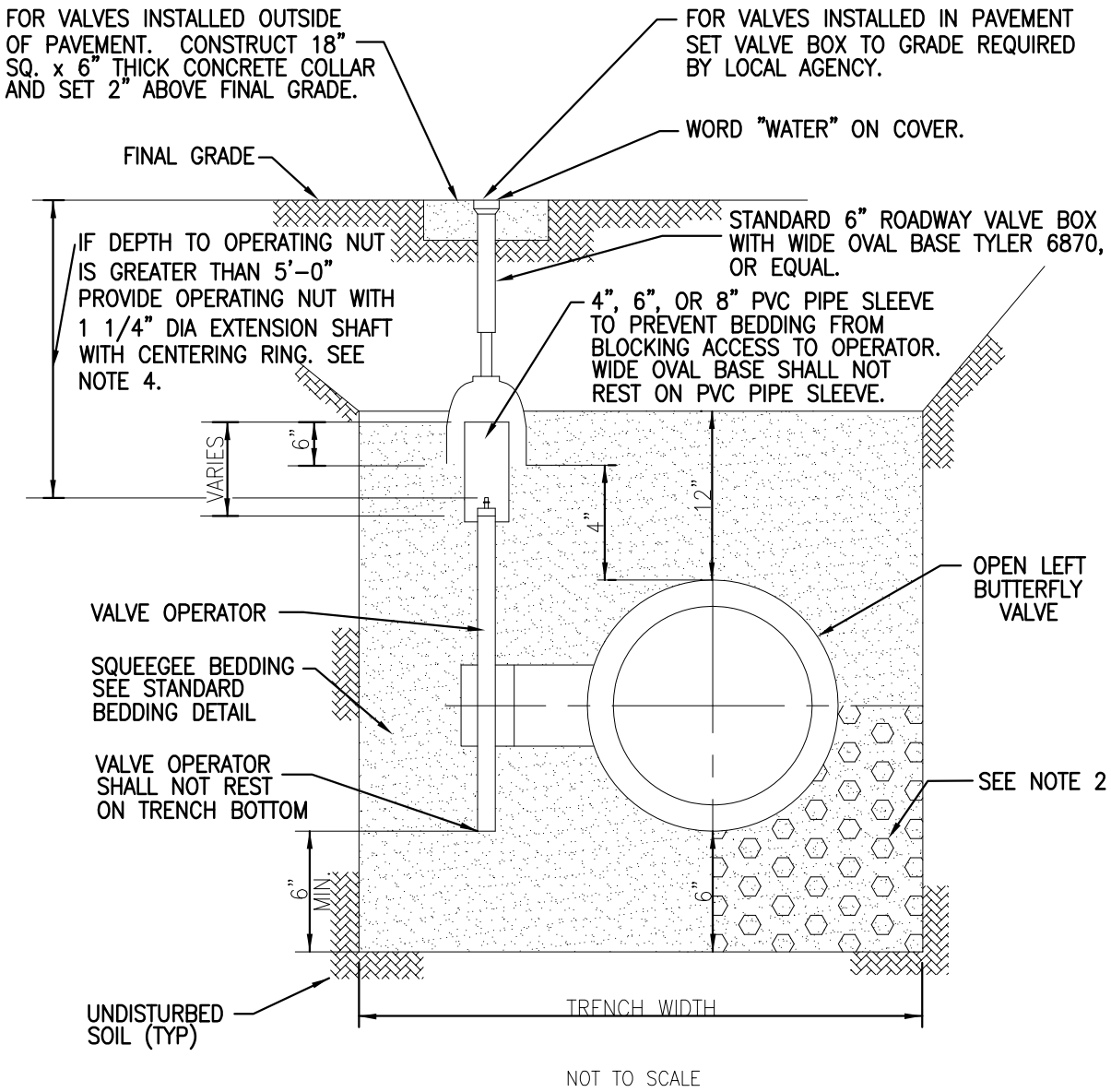
AIR RELEASE AND VACUUM RELIEF VALVE
DOMESTIC IRRIGATION WATER SYSTEM

REVISION DATE: 03/01/2013
FIGURE NO. W-13
SHEET NO. 1 of 1



NOT TO SCALE

NOTES:

1. THIS DETAIL IS FOR BUTTERFLY VALVE INSTALLATIONS 20-INCHES IN DIAMETER OR SMALLER.
2. CARE SHALL BE TAKEN WHEN INSTALLING VALVES TO ASSURE PROPER SUPPORT OF THE VALVE. THE AUTHORITY MAY REQUIRE 3/4" MAXIMUM CRUSHED ROCK TO BE INSTALLED UNDER THE VALVE TO PROVIDE PROPER SUPPORT.
3. VALVES SHALL NOT BE PLACED IN CONCRETE CROSS PANS.
4. OPERATING NUTS SHALL BE 18" TO FINAL GRADE OPERATOR EXTENSIONS SHALL BE CONNECTED TO OPERATOR EXTENSIONS SHALL BE CONNECTED VALVE OPERATOR USING SET SCREW.
5. BUTTERFLY VALVE AND OPERATOR SHALL BE POLYETHYLENE WRAPPED.

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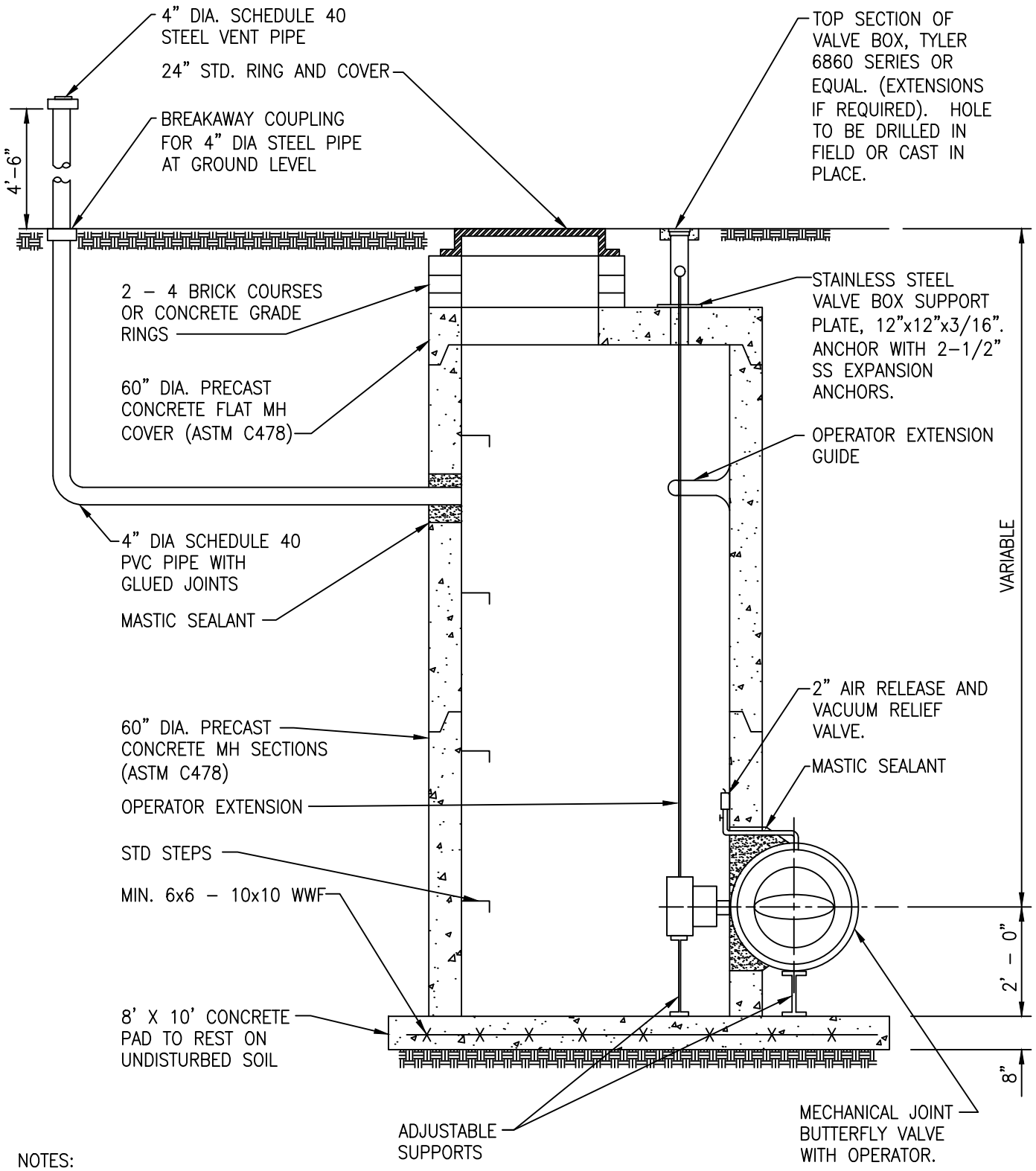
BURIED BUTTERFLY VALVE

REVISION DATE: 03/01/2013
FIGURE NO. W-14
SHEET NO. 1 of 1



NOTES:

1. BUTTERFLY VALVE INSTALLATION SHALL INCLUDE A TAP ON EACH SIDE OF THE VALVE FOR CHLORINATION AND AIR RELEASE.

ELEVATION

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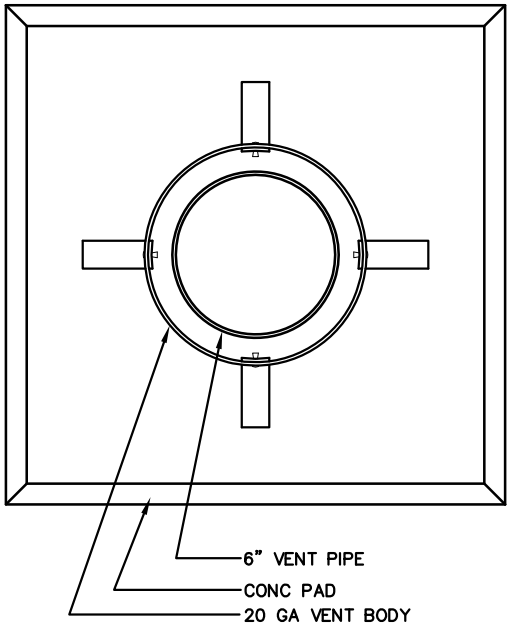
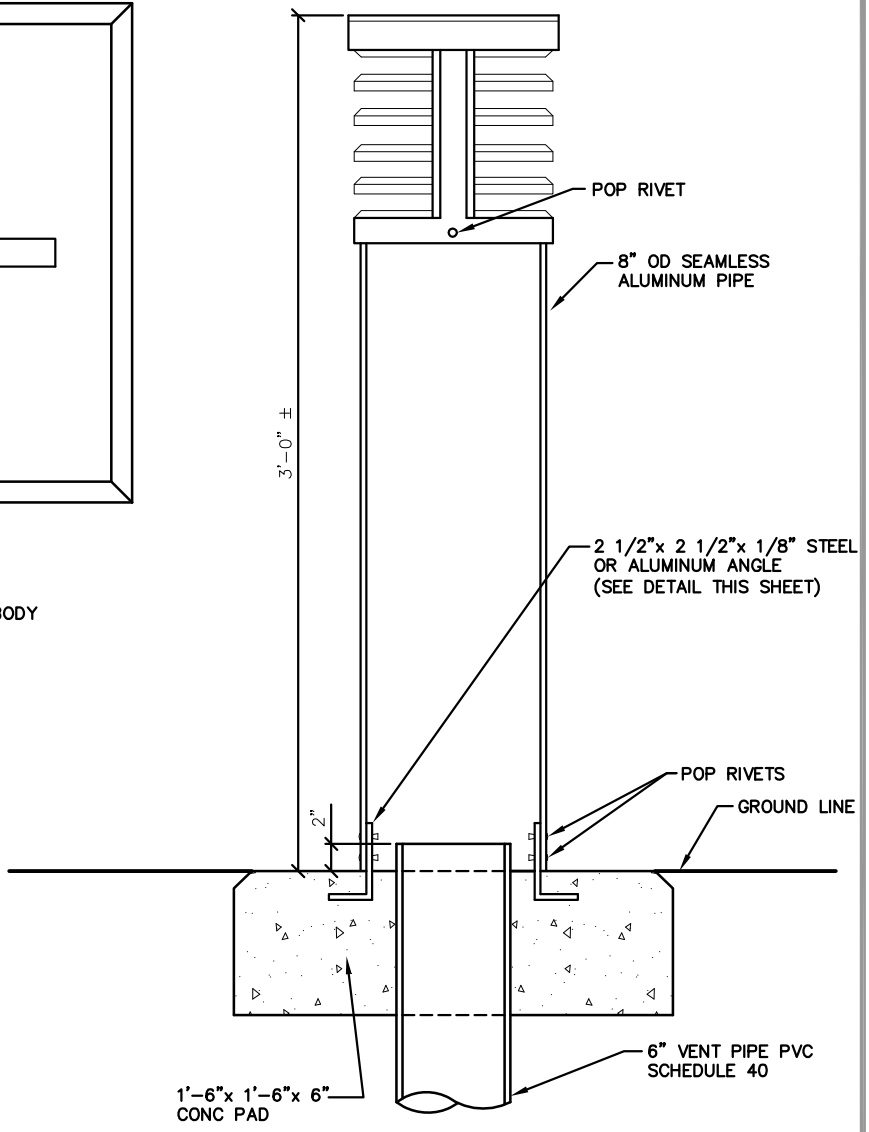
BUTTERFLY VALVE VAULT
> 12" AND LARGER

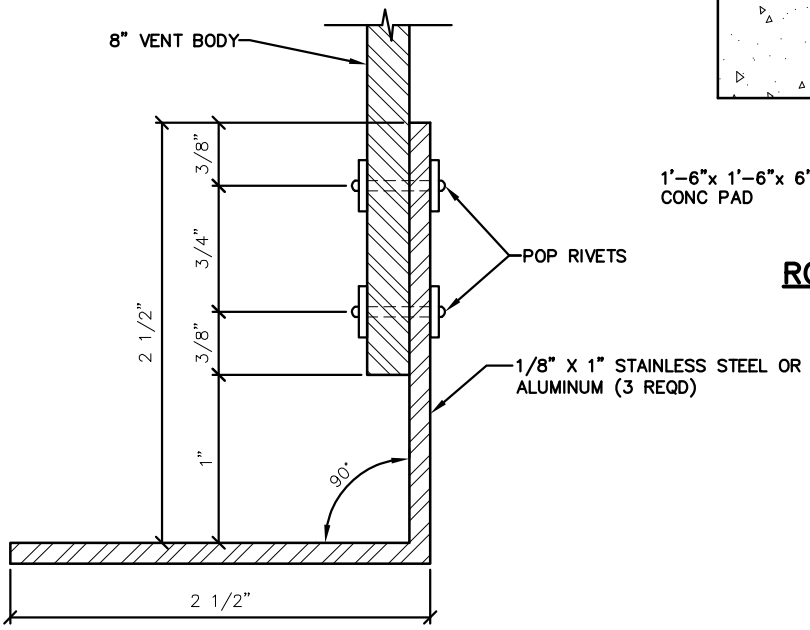
REVISION DATE: 03/01/2013
FIGURE NO. W-15
SHEET NO. 1 of 1



BASE DETAIL



ROUND VENT SCREEN



STEEL OR ALUMINUM ANGLE DETAIL

NOTE:
COLOR SHALL BE OLIVE GREEN OR FLAT BLACK TO MATCH SURROUNDINGS PAINTED WITH LIQUID EPOXY 8 MILS DRY FILM THICKNESS MINIMUM.

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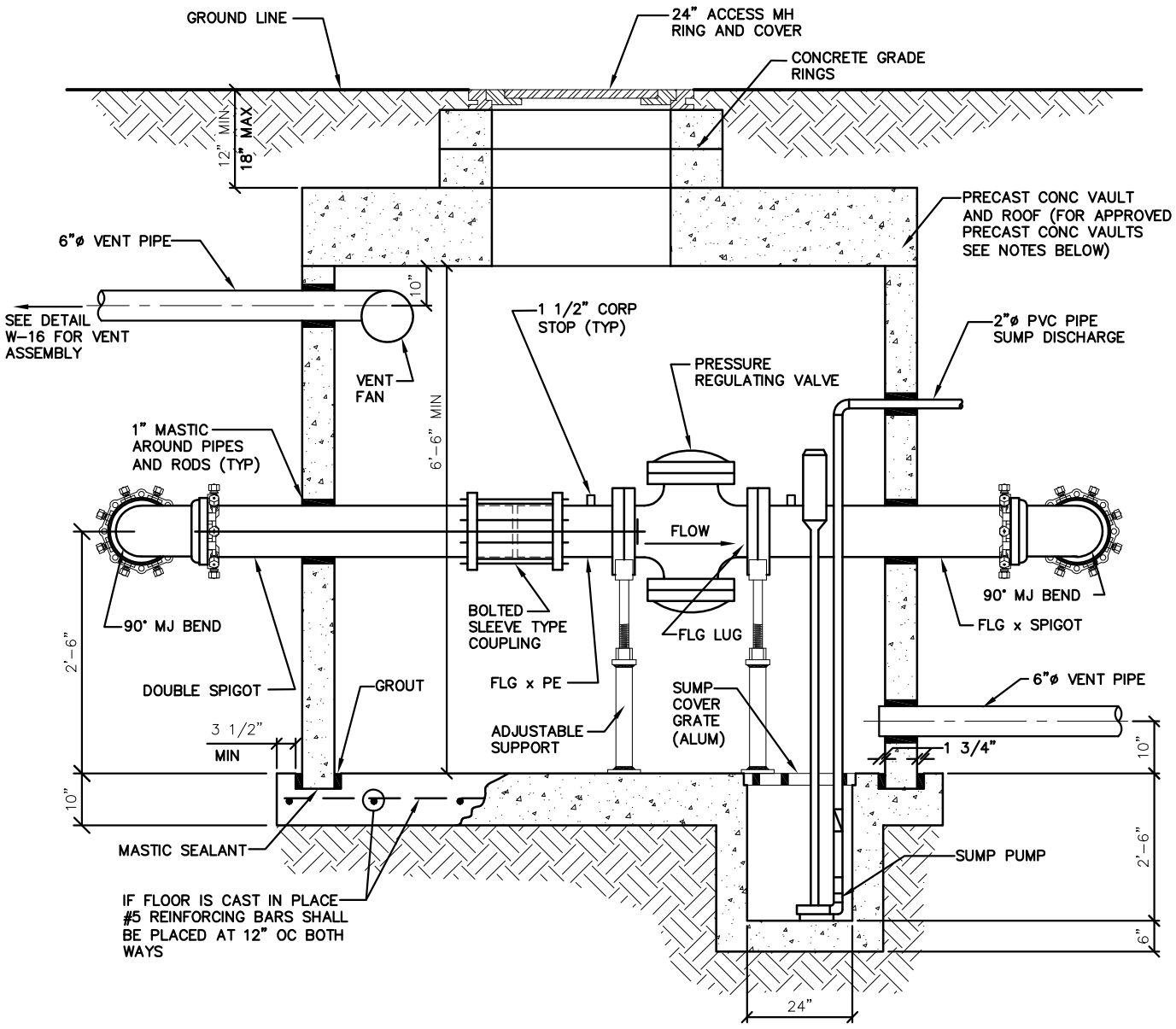
RESIDENTIAL VENT ASSEMBLY

REVISION DATE: 03/01/2013
FIGURE NO. W-16
SHEET NO. 1 of 1



NOTES:

1. APPROVED PRECAST CONC VAULTS:
   AMCOR CONC INC– 10'x 10'x 7' 7080M, 7080–12.
   ADAMS CITY MFG 12', 6'x 8'–6", 7'x 12'–6"
2. SEE FIG W–18 FOR PLAN VIEW AND ADDITIONAL NOTES.

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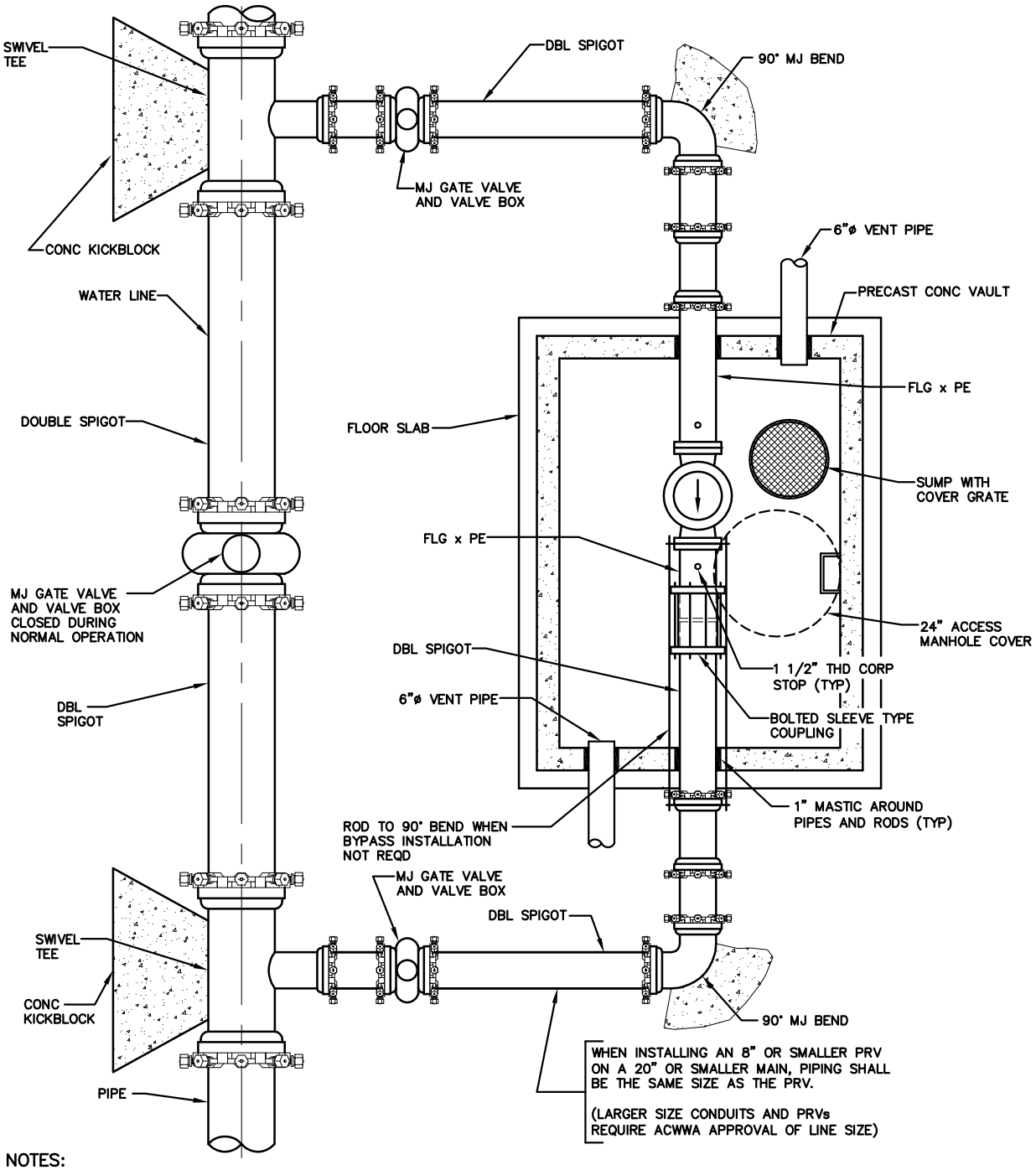
PRESSURE REGULATING VALVE VAULT CROSS SECTION

REVISION DATE: 03/01/2013
FIGURE NO. W-17
SHEET NO. 1 of 1



NOTES:

1. A RECTANGULAR VAULT IS REQD WHERE TELEMETRY OR ELECTRICAL EQUIPMENT IS ANTICIPATED INSIDE THE VAULT.
2. ACCESS STAIRS WITH DOOR OUTSIDE OF PAVEMENT MAY BE REQD ON STREETS WITH HEAVY TRAFFIC.
3. FOR CROSS SECTION VIEW, SEE CROSS SECTION FIG W-17.
4. DO NOT PLACE SUMP DIRECTLY UNDER ACCESS MH.
5. THIS VAULT IS SUITABLE FOR CHECK VALVE INSTALLATIONS.
6. PIPING FOR PRV AND CHECK VALVE INSTALLATIONS SHALL BE DI.
7. LADDER RUNGS ARE REQD IN PRE-CAST VAULT. THE DISTANCE BETWEEN RUNGS, CLEATS, AND STEPS SHALL NOT EXCEED 12" AND SHALL BE UNIFORM THROUGHOUT THE LENGTH OF THE LADDER.

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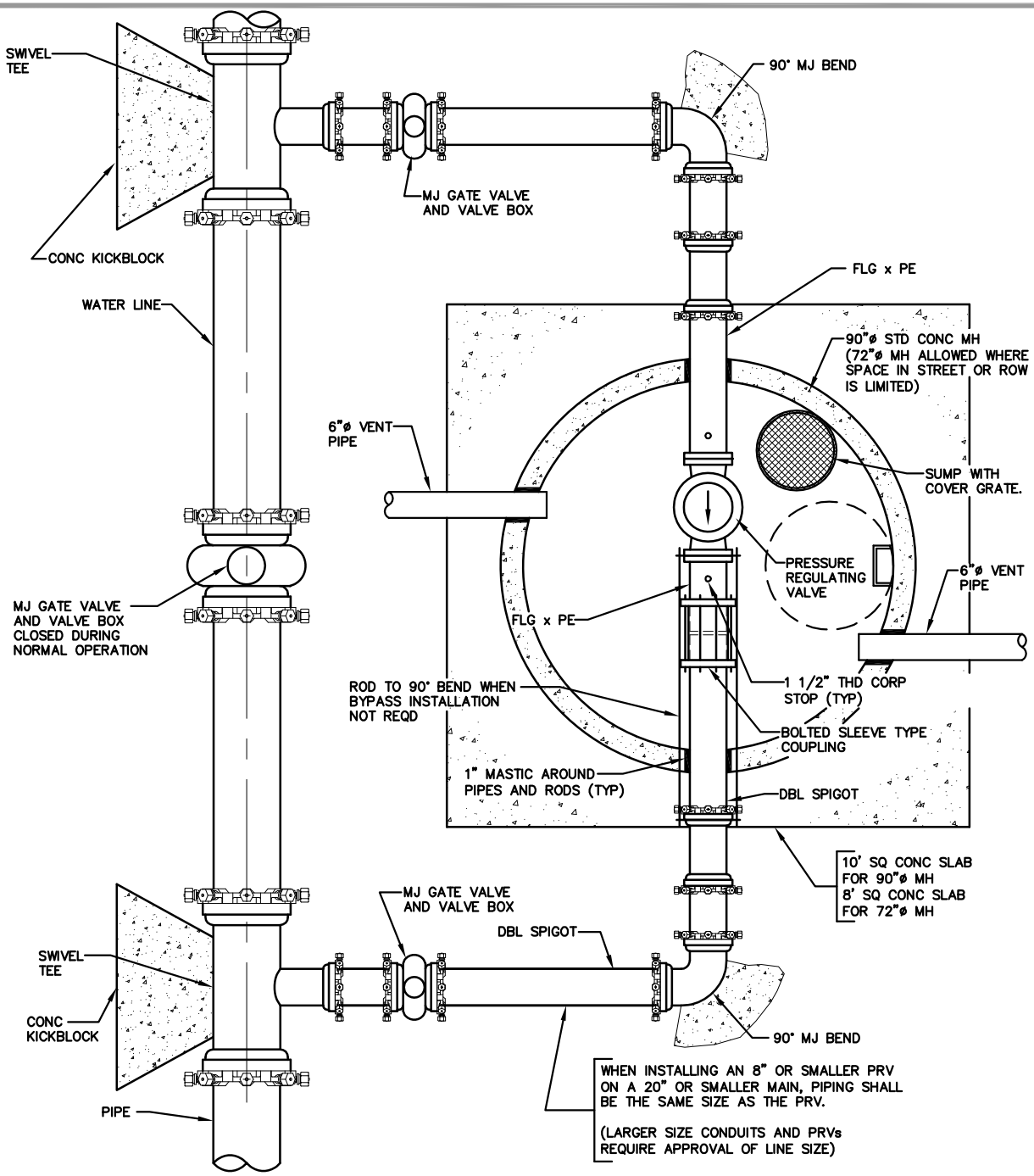
PRESSURE REGULATING VALVE VAULT TYPICAL PLAN

REVISION DATE: 03/01/2013
FIGURE NO. W-18
SHEET NO. 1 of 1



NOTES:

1. A RECTANGULAR VAULT IS REQD WHERE TELEMETRY OR ELECTRICAL EQUIPMENT IS ANTICIPATED INSIDE THE VAULT.
2. ACCESS STAIRS WITH DOOR OUTSIDE OF PAVEMENT MAY BE REQD ON STREETS WITH HEAVY TRAFFIC.
3. FOR CROSS SECTION VIEW, SEE CROSS SECTION FIG W-17 (TYPICAL).
4. DO NOT PLACE SUMP DIRECTLY UNDER MH.
5. THIS MH IS SUITABLE FOR CHECK VALVE INSTALLATIONS.
6. PIPING FOR PRV AND CHECK VALVE INSTALLATIONS SHALL BE DI.
7. LADDER RUNGS ARE REQD IN PRE-CAST MH. THE DISTANCE BETWEEN RUNGS, CLEATS, AND STEPS SHALL NOT EXCEED 12" AND SHALL BE UNIFORM THROUGHOUT THE LENGTH OF THE LADDER.

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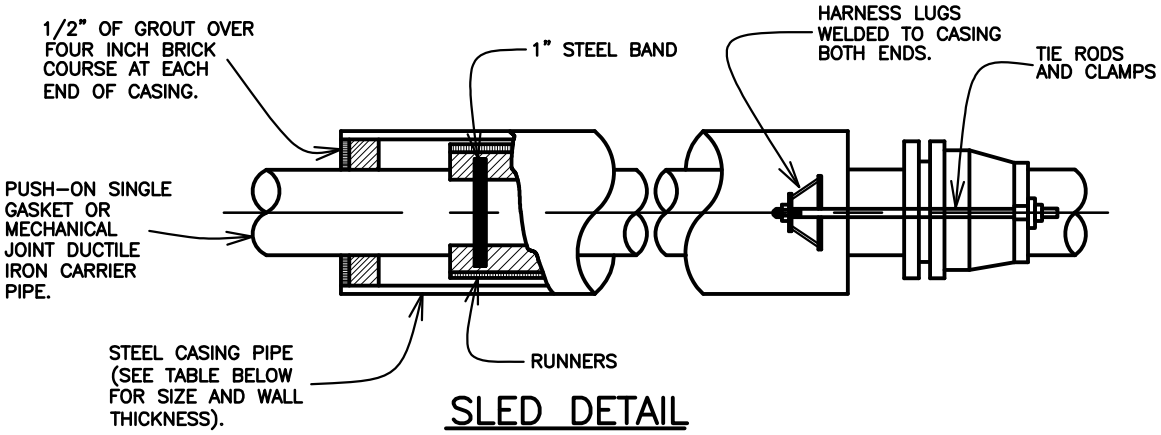
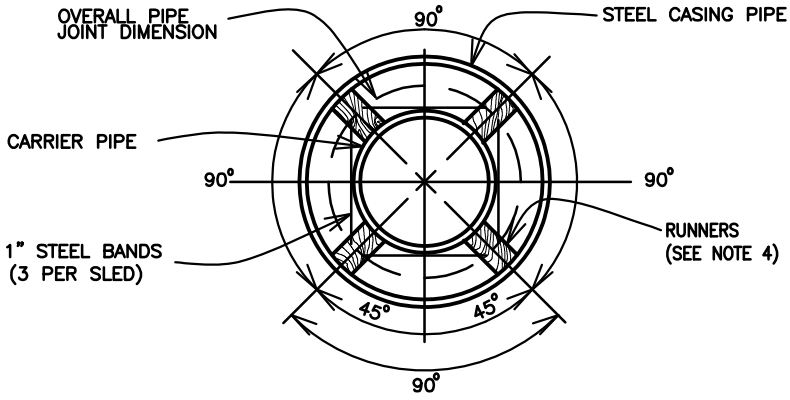
PRESSURE REGULATING VALVE MANHOLE INSTALLATION TYPICAL PLAN

REVISION DATE: 03/01/2013
FIGURE NO. W-19
SHEET NO. 1 of 1



SLED DETAIL



PIPE CASING DETAIL

CARRIER PIPE NOMINAL DIA.	CASING PIPE		MINIMUM RUNNER SIZE
	MIN. O.D.	MIN. WALL THICK	
4"	12"	0.188"	2" x 4"
6"	16"	0.250"	2" x 4"
8"	18"	0.282"	2" x 4"
12"	22"	0.344"	2" x 4"
16"	28"	0.5"	2" x 6"
24"	42"	0.5"	2" x 6"

NOTES:

1 – RUNNER LENGTH TO BE 75% OF LAYING LENGTH.

2 – CASING LENGTH IS MIN. OF 18 FEET. CONCRETE ENCASEMENT OF SEWER SHALL EXTEND A DISTANCE OF 10 FEET HORIZONTALLY AND PERPENDICULAR TO EITHER SIDE OF THE WATER MAIN.

3 – HARNESS LUGS TO BE INSULATED FROM D.I. PIPE.

4 – NEOPRENE OR PVC RUNNERS TO BE USED.

5 – TRENCH LAID CASINGS SHALL BE DESIGNED AND INSTALLED TO CONDUIT STANDARDS.

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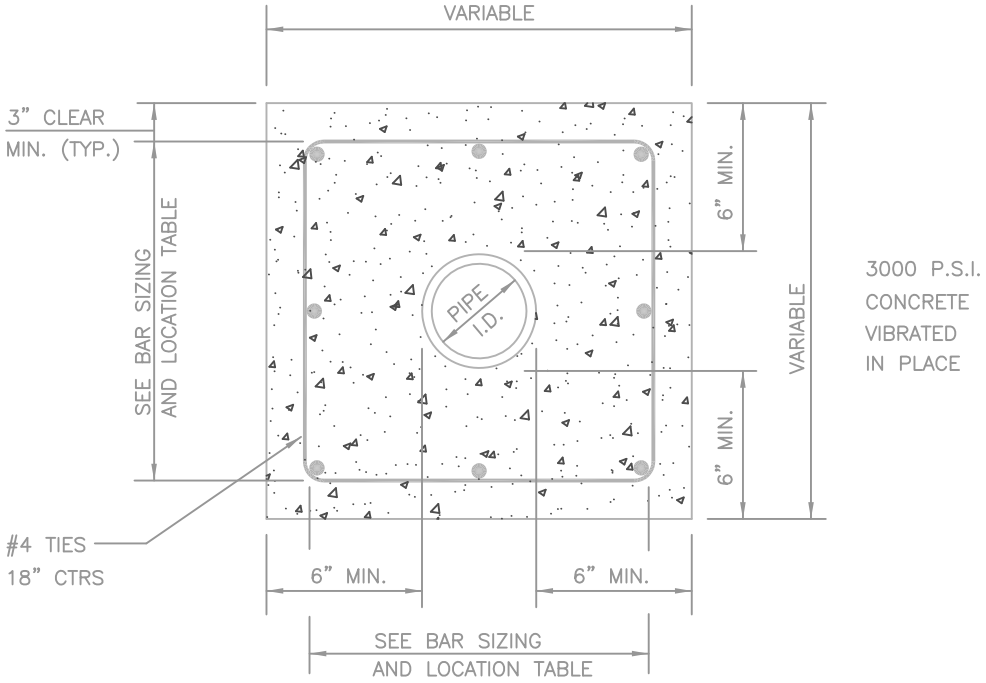
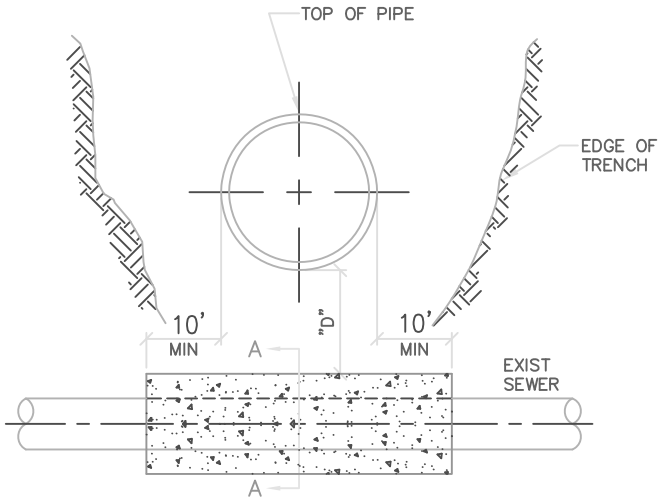
BORE CASING DETAILS

REVISION DATE: 03/01/2013
FIGURE NO. W-20
SHEET NO. 1 of 1



PIPE SIZE	NO. OF LONGITUDINAL BARS AND LOCATION	
6"	4 – NO. 4 BARS	1 EACH CORNER
8"	4 – NO. 4 BARS	1 EACH CORNER
10"	8 – NO. 4 BARS	3 EACH SIDE
12"	8 – NO. 4 BARS	3 EACH SIDE
15"	8 – NO. 4 BARS	3 EACH SIDE
18"	8 – NO. 4 BARS	3 EACH SIDE
21"	12 – NO. 4 BARS	4 EACH SIDE
24"	12 – NO. 4 BARS	4 EACH SIDE
27"	12 – NO. 4 BARS	4 EACH SIDE
30"	12 – NO. 4 BARS	4 EACH SIDE
33"	12 – NO. 4 BARS	4 EACH SIDE
36"	16 – NO. 4 BARS	5 EACH SIDE



SEWER CROSSING UNDER
WITH "D" LESS THAN 18"

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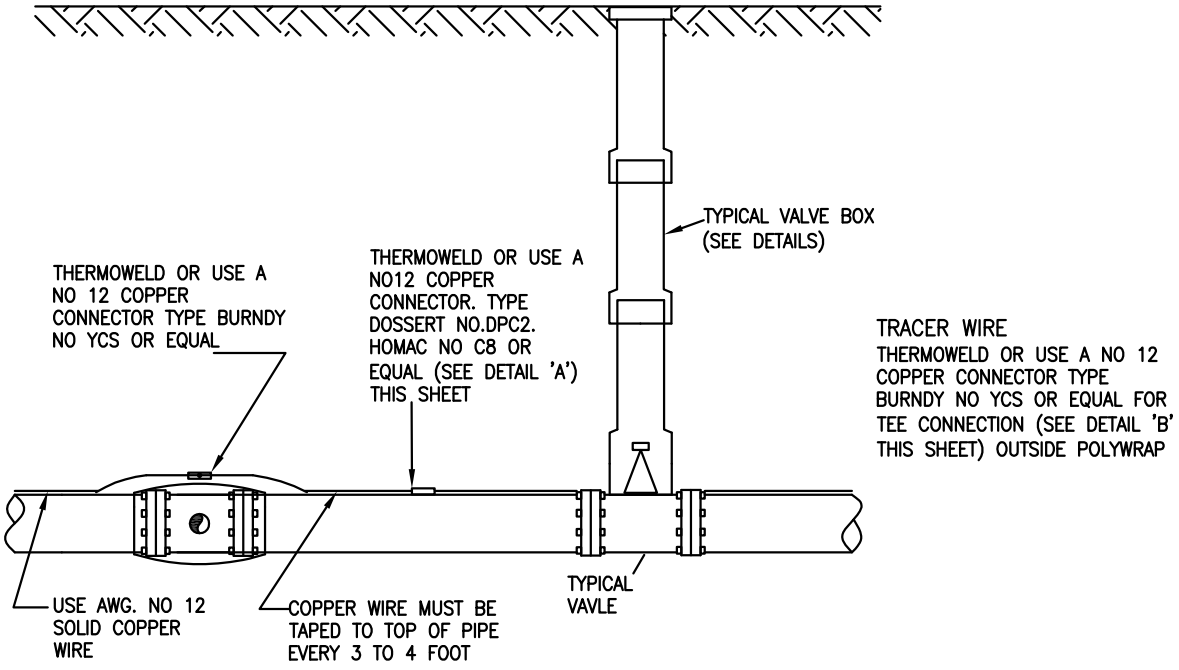
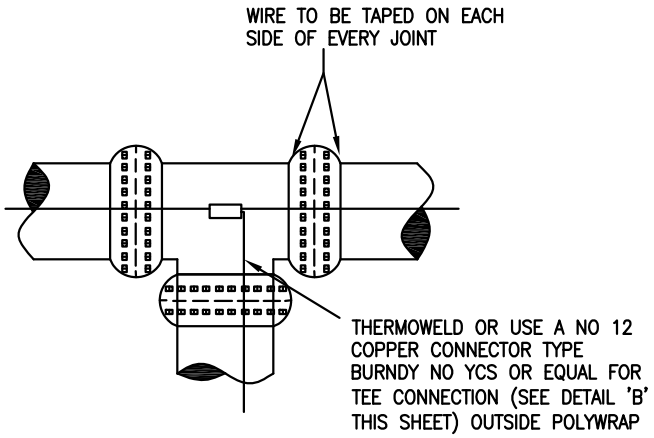
CONCRETE ENCASEMENT

REVISION DATE: 9/7/2005
FIGURE NO. W-21
SHEET NO. 1 of 1





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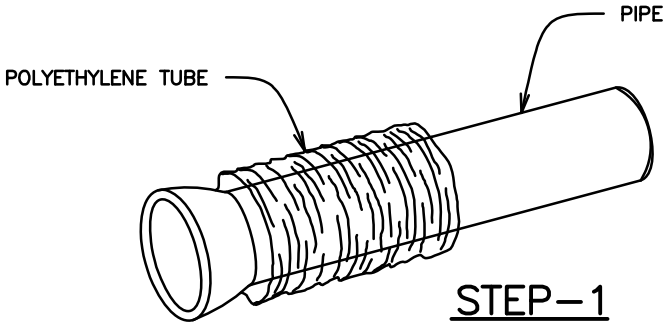
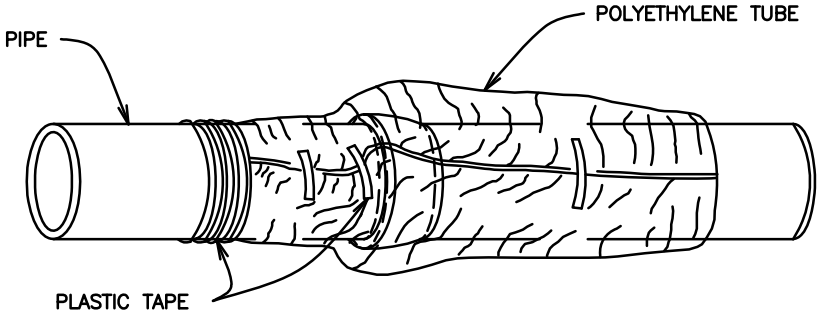
TRACER WIRE DETAILS (TO BE USED ON ALL WATER PIPE)

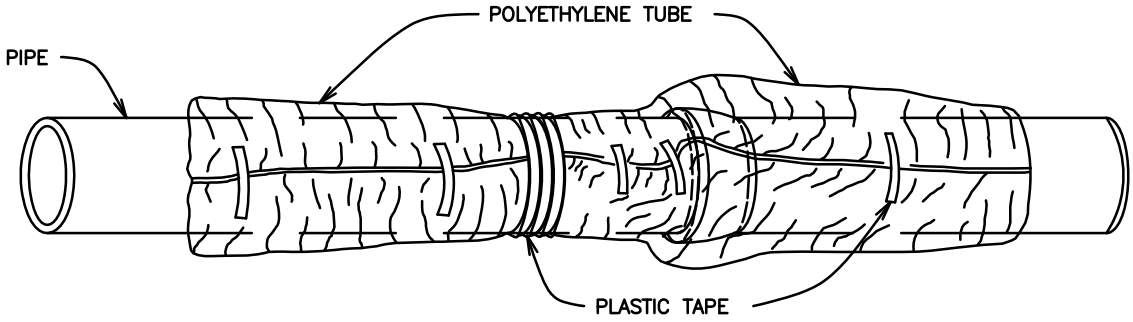
REVISION DATE: 03/01/2013
FIGURE NO. W-22
SHEET NO. 1 of 1



STEP–1



STEP–2



STEP–3

FIELD INSTALLATION–POLYETHYLENE WRAP

STEP–1 PLACE TUBE OF POLYETHYLENE MATERIAL AROUND PIPE PRIOR TO LOWERING PIPE INTO TRENCH.

STEP–2 PULL THE TUBE OVER THE LENGTH OF THE PIPE. TAPE TUBE TO PIPE AT JOINT. FOLD MATERIAL AROUND THE ADJACENT SPIGOT END AND WRAP WITH THREE CIRCUMFERENTIAL TURNS OF TWO–INCH WIDE PLASTIC TAPE TO HOLD PLASTIC TUBE AROUND SPIGOT END.

STEP–3 ADJACENT TUBE OVERLAPS FIRST TUBE AND IS SECURED WITH PLASTIC ADHESIVE TAPE. THE POLYETHYLENE TUBE MATERIAL COVERING THE PIPE WILL BE LOOSE. EXCESS MATERIAL SHALL BE NEATLY DRAWN UP AROUND THE PIPE BARREL, FOLDED INTO AN OVERLAP ON TOP OF THE PIPE AND HELD IN PLACE BY MEANS OF PIECES OF THE PLASTIC TAPE AT APPROXIMATELY THREE TO FIVE FOOT INTERVALS.

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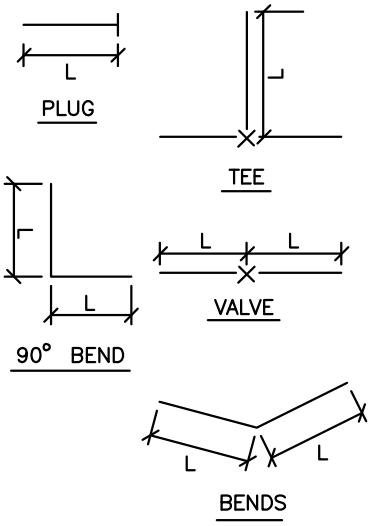
POLYETHYLENE WRAP
DUCTILE IRON

REVISION DATE: 03/01/2013
FIGURE NO. W-23
SHEET NO. 1 of 1

ROD DIAMETER (D), LENGTH (L), & GRADE (G)

PIPE SIZE	4"			6"			8"			12"			16"			20"			24"		
FITTING	D	L	G	D	L	G	D	L	G	D	L	G	D	L	G	D	L	G	D	L	G
90° BEND TEE, PLUG	3/4"	30'	M.S.	3/4"	45'	M.S.	3/4"	60'	M.S.	3/4"	86'	H.S.	1"	108'	H.S.	1 1/4"	132'	H.S.	—	155'	—
VALVE	3/4"	30'	M.S.	3/4"	45'	M.S.	3/4"	60'	M.S.	3/4"	86'	H.S.	1"	108'	H.S.	1 1/4"	132'	H.S.	—	155'	—
45° BEND	3/4"	9'	M.S.	3/4"	13'	M.S.	3/4"	18'	M.S.	3/4"	25'	M.S.	1"	32'	M.S.	3/4"	39'	H.S.	—	45'	—
22 1/2° BEND	3/4"	1'	M.S.	3/4"	4'	M.S.	3/4"	5'	M.S.	3/4"	7'	M.S.	3/4"	8'	M.S.	3/4"	10'	M.S.	—	12'	—
11 1/4° BEND	3/4"	1'	M.S.	3/4"	1'	M.S.	3/4"	1'	M.S.	3/4"	2'	M.S.	3/4"	2'	M.S.	3/4"	3'	M.S.	—	3'	—



NOTES:

1.) LENGTH OF RESTRAINED PIPE MEASURED EACH WAY FROM VALVES AND BENDS.
2.) CLAMPS, RODS & MEGALUGS NOT ALLOWED FOR 24" & LARGER PIPES.
3.) D=DIAMETER, L=LENGTH, G=GRADE
M.S.=MILD STEEL, H.S.=HIGH STRENGTH.
4.) MINIMUM 4.5' GROUND COVER REQUIRED.
5.) BASED ON 150 PSI INTERNAL PRESSURE
6.) M.S. = MILD STEEL ROD ASTM A36.
7.) H.S. = HIGH STRENGTH ROD ASTM A193 GRADE B7.
8.) NUTS SHALL BE ASTM A307 GRADE A OR B HEXAGON HEAVY SERIES.
HIGH STRENGTH NUTS SHALL BE ASTM A 194, GRADE 2H.
9.) LENGTH REFERS TO THE AMOUNT OF PIPE WHICH MUST BE RESTRAINED TOGETHER AND IS NOT NECESSARILY THE LENGTH OF THE RODS.
10.) LENGTH OF RESTRAINED PIPE CHART IS ALSO FOR THE LENGTH OF JOINT RESTRAINT FOR EBBA IRON MEGALUGS OR UNIFLANGE PIPE RESTRAINT DEVICES.
11.) CROSSES MUST BE RESTRAINED IN ALL APPLICABLE DIRECTIONS.
12.) MECHANICAL JOINT RESTRAINT DEVICE SHALL BE: DIP – EBAA 1100 SERIES, UNI–FLANGE SERIES 1400, OR EQUIVALENT; PVC – EBAA MEGALUG 2000 PV SERIES, UNI–FLANGE SERIES 1500, OR EQUIVALENT.
13.) A SECOND VALVE WILL BE REQUIRED TO BE CLOSED WHEN EXCAVATING NEXT TO AN EXISTING VALVE.

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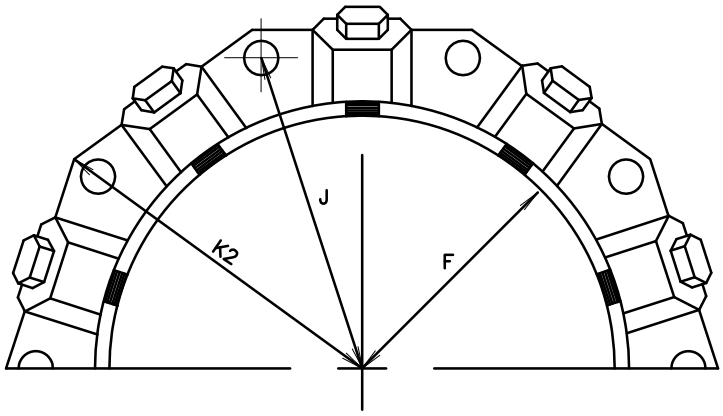
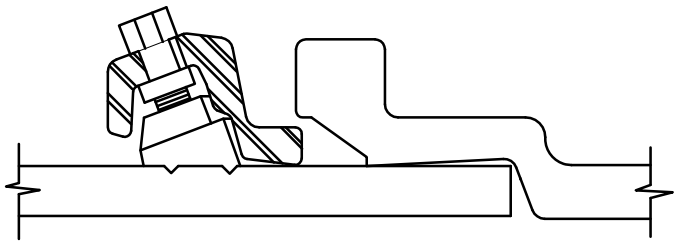
LENGTH OF RESTRAINED PIPE

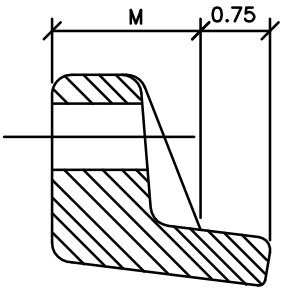
REVISION DATE: 03/01/2013
FIGURE NO. W-24
SHEET NO. 1 of 1



MECHANICAL JOINT RESTRAINT



WEDGE DETAIL



BOLT HOLE DETAIL

DIMENSIONS

	NOMINAL PIPE SIZE	NO. OF BOLTS	NO. OF WEDGES	K2 INCHES	J INCHES	F INCHES	M INCHES	
PVC	4"	2	2					PVC
	6"	6	3	11.12	9.50	7.00	0.88	
	8"	6	4	13.37	11.75	9.15	1.00	
	10"	8	6	15.62	14.00	11.20	1.00	
	12"	8	8	17.88	16.25	13.30	1.25	
DI	4"	4	2					DI
	6"	6	3	11.12	9.50	7.00	0.88	
	8"	6	4	13.37	11.75	9.15	1.00	
	10"	8	6	15.62	14.00	11.20	1.00	
	12"	8	8	17.88	16.25	13.30	1.25	

ACCEPTABLE MANUFACTURERS – EBAA IRON SERIES 1100 "MEGALUG" OR APPROVED EQUAL

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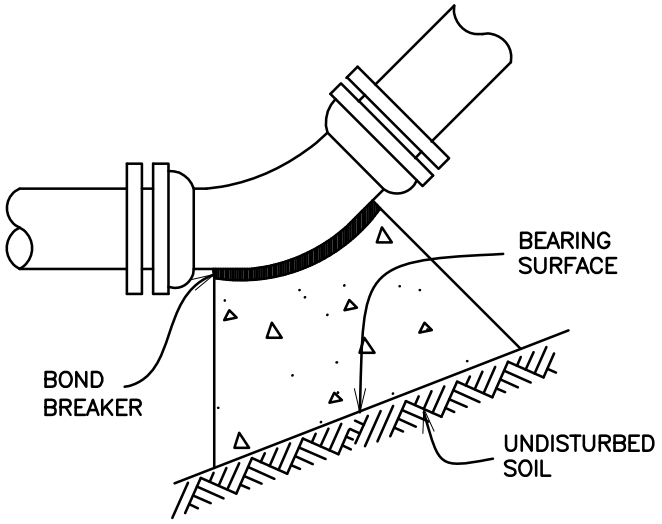
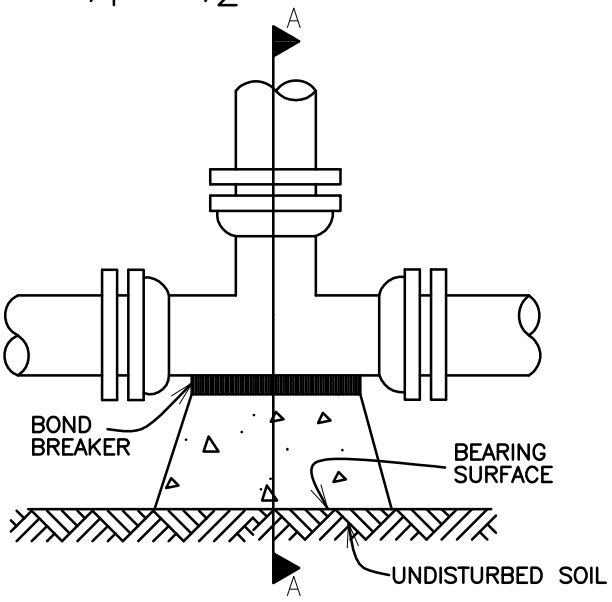
MECHANICAL JOINT RESTRAINT DETAILS

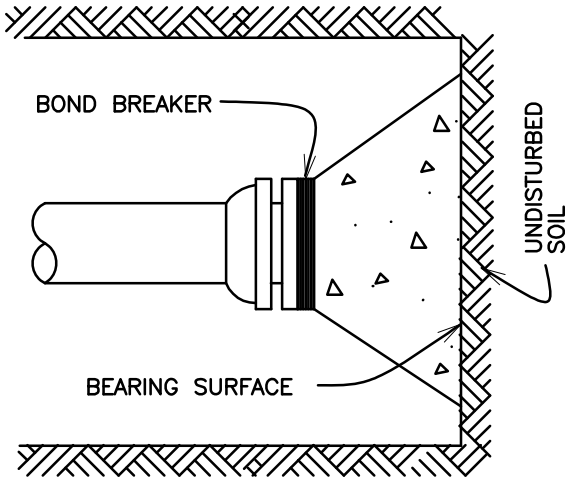
REVISION DATE: 03/01/2013
FIGURE NO. W-25
SHEET NO. 1 of 1



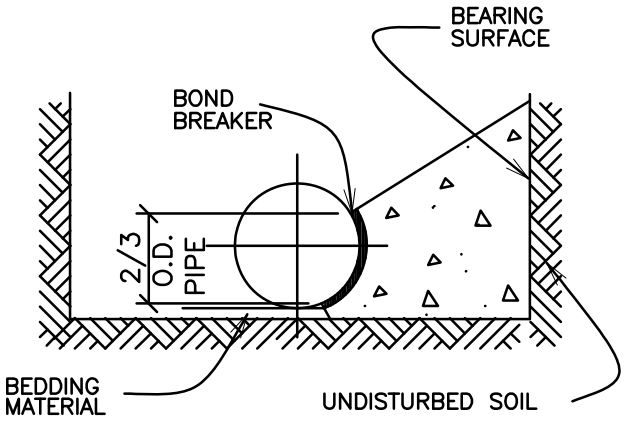
11¼°, 22½°, 45° AND 90° BENDS



TEE



DEAD END



SECTION A

MINIMUM BEARING SURFACE AREA

(IN SQUARE FEET)

SIZE OF PIPE	BENDS				TEE OR DEAD END
	11¼°	22½°	45°	90°	
4"	1.00	1.00	1.00	N.A.	1.50
6"	1.00	1.25	2.25	4.25	3.00
8"	1.00	2.00	4.00	8.00	5.25
12"	2.25	4.50	8.75	12.00	11.25
16"	3.75	7.50	14.50	27.00	19.00
20"	5.00	10.00	19.50	35.50	25.00
24"	7.00	14.00	27.75	51.00	36.00

NA = NOT APPLICABLE.

NOTES:

1.) BEARING SURFACES SHOWN IN CHART ARE MINIMUM.

2.) BASED ON 150 PSI INTERNAL PIPE PRESSURE PLUS WATER HAMMER.
4",6",8" AND 12" WATER HAMMER = 110 P.S.I.
16",20' AND 24" WATER HAMMER = 70 P.S.I.

3.) CONCRETE MUST BE MINIMUM OF 3000 PSI, AND CURE FOR 24 HOURS BEFORE TAMPING OR COMPACTING.

4.) BASED ON 3,000 psf SOIL BEARING CAPACITY.

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CONCRETE KICKBLOCKS BEARING SURFACES AND INSTALLATION

REVISION DATE: 03/01/2013
FIGURE NO. W-26
SHEET NO. 1 of 1

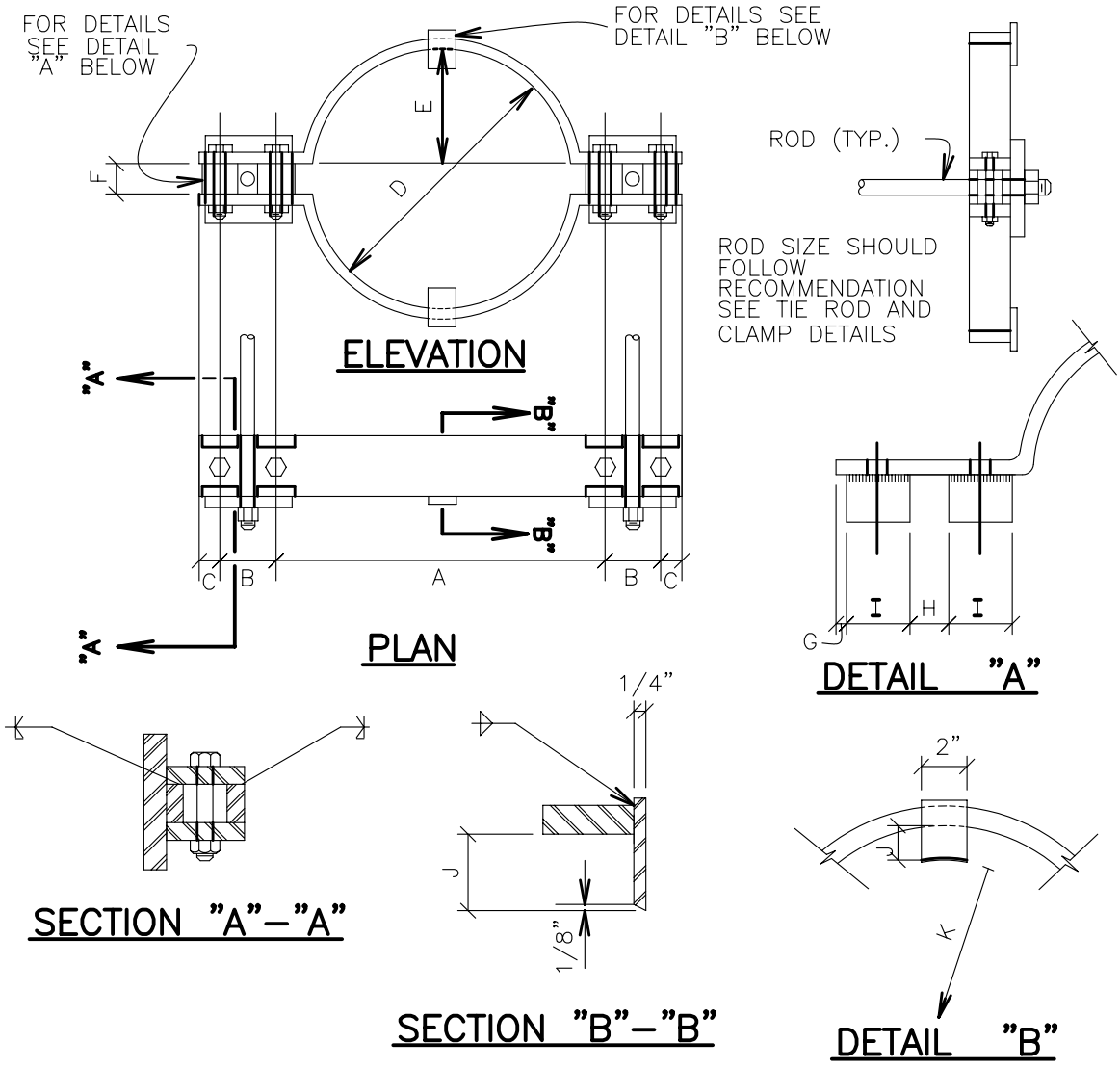

TABLE OF DIMENSIONS FOR CLAMPS

PIPE DIAMETER	BAR SIZE	A		B		C		D		E		F		G		H		I		J	K	BOLT SIZE		PIPE DIAMETER
		BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP	BELL CLAMP	BODY CLAMP			BELL CLAMP	BODY CLAMP	
4	1-1/2 x 1/2	9	7-3/8	3	4	1-1/2	1-1/2	6-1/4	4-3/4	2-5/8	1-7/8			3/8	3/8	1-1/4	1-1/4	2-1/4	2-1/2	5/8	2-1/2	3 x 1-1/2	2-1/2 x 3/8	4
6	2 x 1/2	11-1/4	9-5/8	3	4	1-1/2	1-1/2	8-1/2	6-7/8	3-3/4	2-15/16							2-1/4	2-1/2	1/2	3-3/4	3-1/2 x 1/2	3-1/2 x 1/2	6
8	2-1/2 x 1/2	13-5/8	11-7/8	3-1/2	4	1-1/2	1-1/2	10-3/4	9-1/8	4-7/8	4-1/6							2-1/4	2-1/2	5/8	4-3/4	4-1/2 x 1/2	4 x 1/2	8
12	2-1/2 x 5/8	18-1/4	16-3/8	3-1/2	4	1-1/2	1-1/2	15-1/8	13-1/4	7-1/16	6-1/8							2-1/4	2-1/2	13/16	6-3/4	4-1/2 x 5/8	4-1/2 x 5/8	12
16	3 x 3/4	23-1/8	20-5/8	4	4-1/2	1-1/2	1-1/2	19-3/4	17-3/8	9-1/4	8-1/16	1-1/4	1-1/4	1/4	1/4	1-1/2	1-1/2	2-1/4	2-3/4	15/16	8-15/16	5-1/2 x 5/8	5-1/2 x 5/8	16
20	3 x 3/4	27-1/2	25	4	4-1/2	1-1/2	1-1/2	24-1/8	21-5/8	11-5/16	10-1/16	1-1/2	1-1/2	3/8	3/8	1-3/4	1-3/4	2-1/4	2-1/2	1	11-1/16	5-1/2 x 5/8	5-1/2 x 5/8	20
24	RODS AND CLAMPS NOT ALLOWED.																							24

NOTE: ALL DIMENSIONS IN INCHES.

NOTE: NOT FOR USE WITH 18" & 20" D.I. COMPACT FITTINGS.

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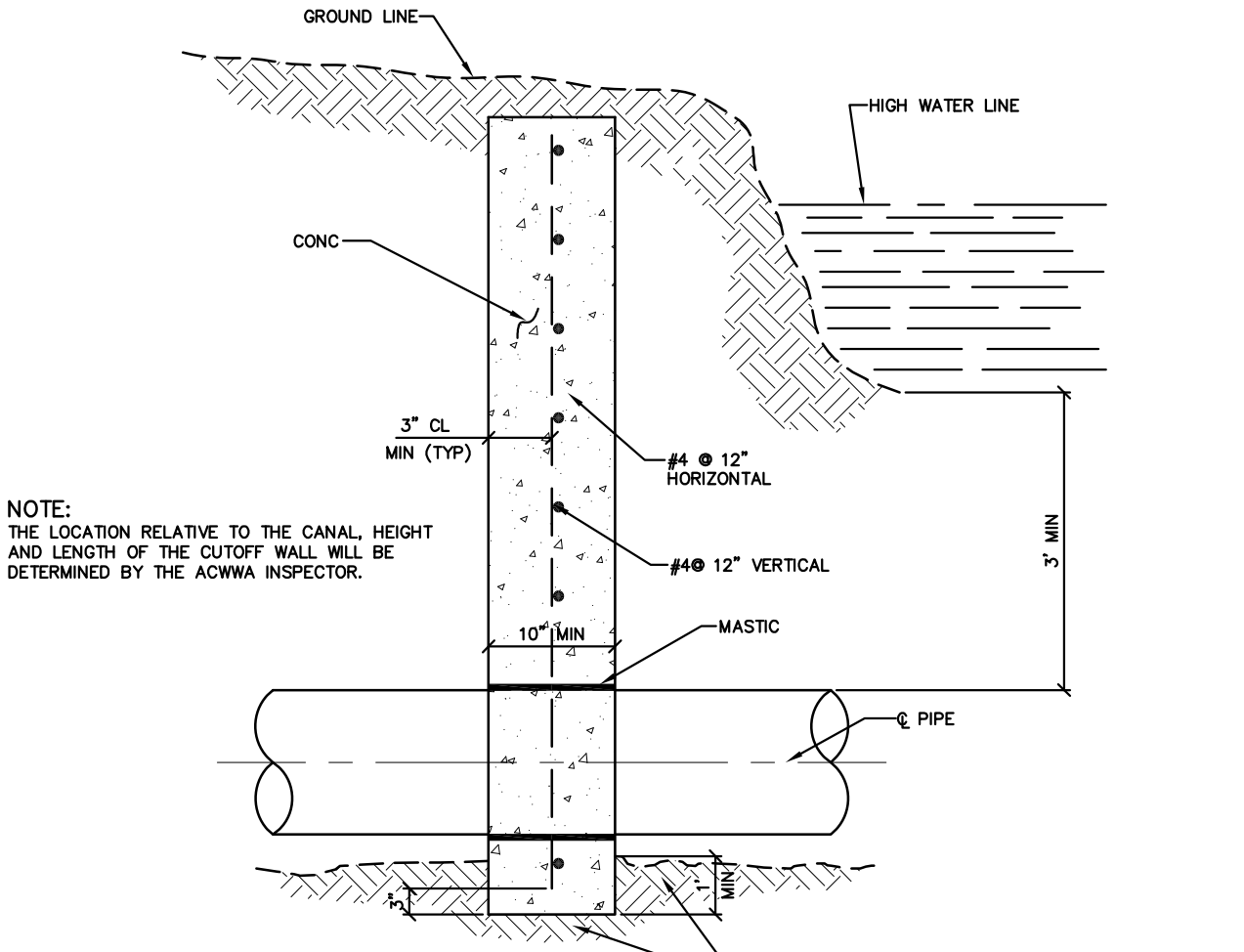
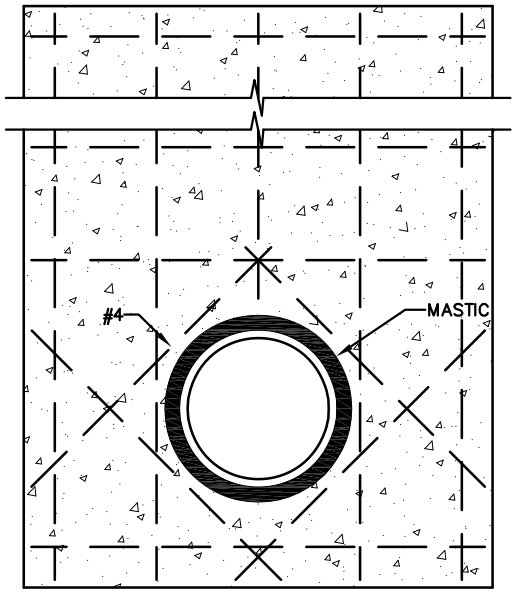
CLAMP DETAILS & DIMENSIONS FOR USE WITH CI AND DI FITTINGS ONLY

REVISION DATE: 9/7/2005
FIGURE NO. W-27
SHEET NO. 1 of 1

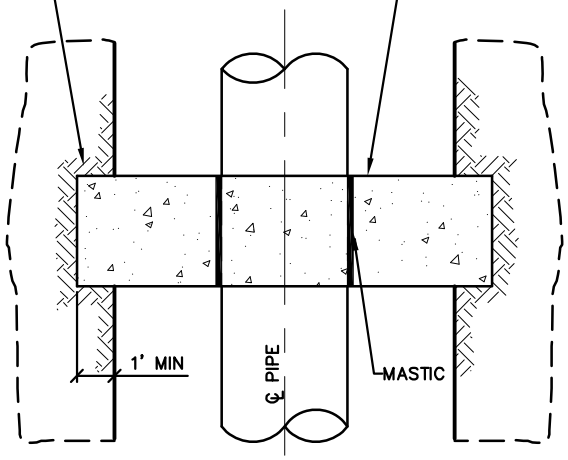


NOTE:
THE LOCATION RELATIVE TO THE CANAL, HEIGHT AND LENGTH OF THE CUTOFF WALL WILL BE DETERMINED BY THE ACWWA INSPECTOR.

SIDE VIEW



FRONT VIEW



TOP VIEW

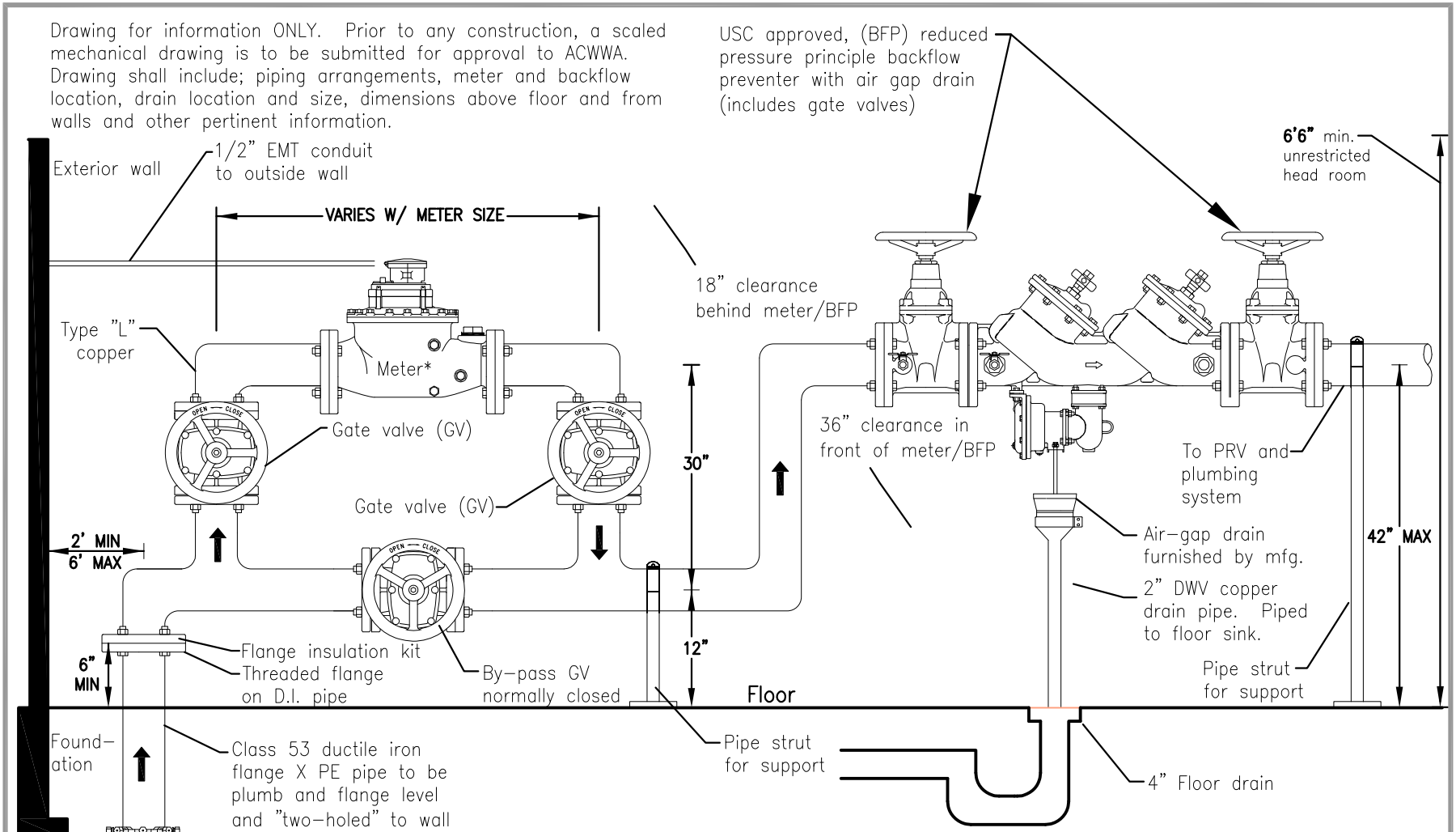
NOTE:
REINFORCEMENT NOT SHOWN.

ARAPAHOE COUNTY
Water and Wastewater Authority
13031 E Caley Ave, Centennial, Colorado 80111
Ph: (303) 790-4830 Fax: (303) 790-1718

TYPICAL CUTOFF WALL FOR DITCH OR CANAL CROSSING

REVISION DATE: 1/12/2006
FIGURE NO. W-28
SHEET NO. 1 of 1

Drawing for information ONLY. Prior to any construction, a scaled mechanical drawing is to be submitted for approval to ACWWA. Drawing shall include; piping arrangements, meter and backflow location, drain location and size, dimensions above floor and from walls and other pertinent information.



1. Meter and backflow to be installed in same room. Backflow preventer installed immediately downstream of meter.
2. Install a 1/2" electrical conduit from meter to outside wall for wired remote pad.
3. All pipe to be fully supported.
4. All valves to be open left, resilient wedge flanged gate valve (GV) with hand wheel operator.

*Meter supplied by ACWWA

REVISION DATE: 03/01/2013
FIGURE NO. W-29
SHEET NO. 1 of 1

3" INSIDE METER SETTING

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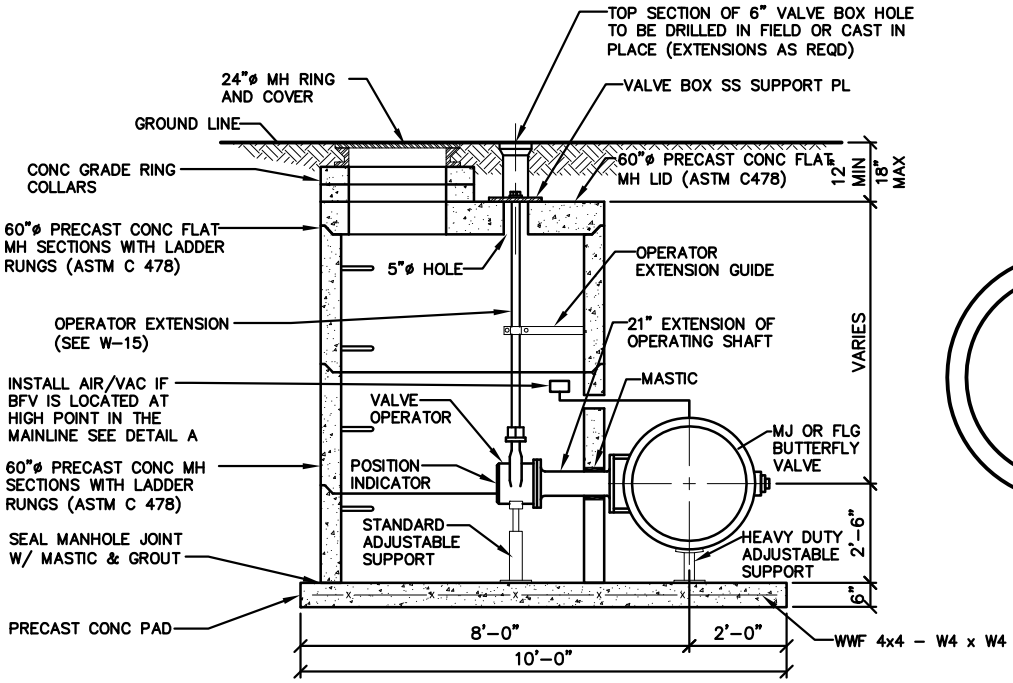
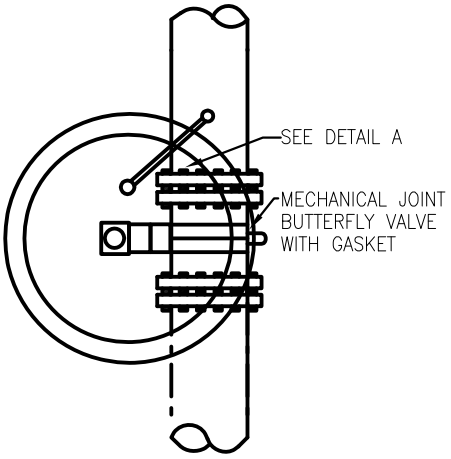
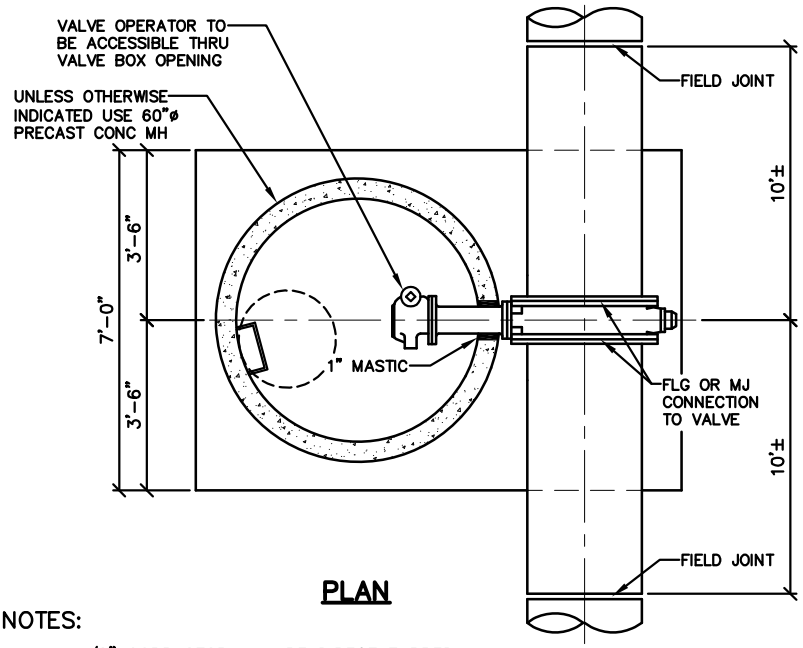
PLOT INFO: C:\PROJECTS\ACWWA WO138\DWG\W-29R.DWG
DATE: 5/3/2013 1:26:32 PM USER: CDA



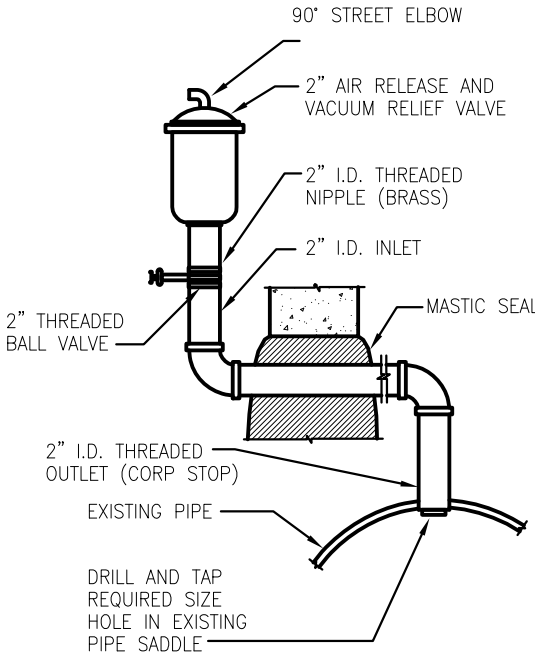
ELEVATION



DETAIL B



PLAN



DETAIL A

NOTES:

1. 1 1/2" CORP STOP MAY BE DIRECT TAPPED TO 16" AND LARGER MAINS.
2. THE DISTANCE BETWEEN RUNGS, CLEATS AND STEPS SHALL NOT EXCEED 12 INCHES AND SHALL BE UNIFORM THROUGHOUT THE LENGTH OF THE LADDER.

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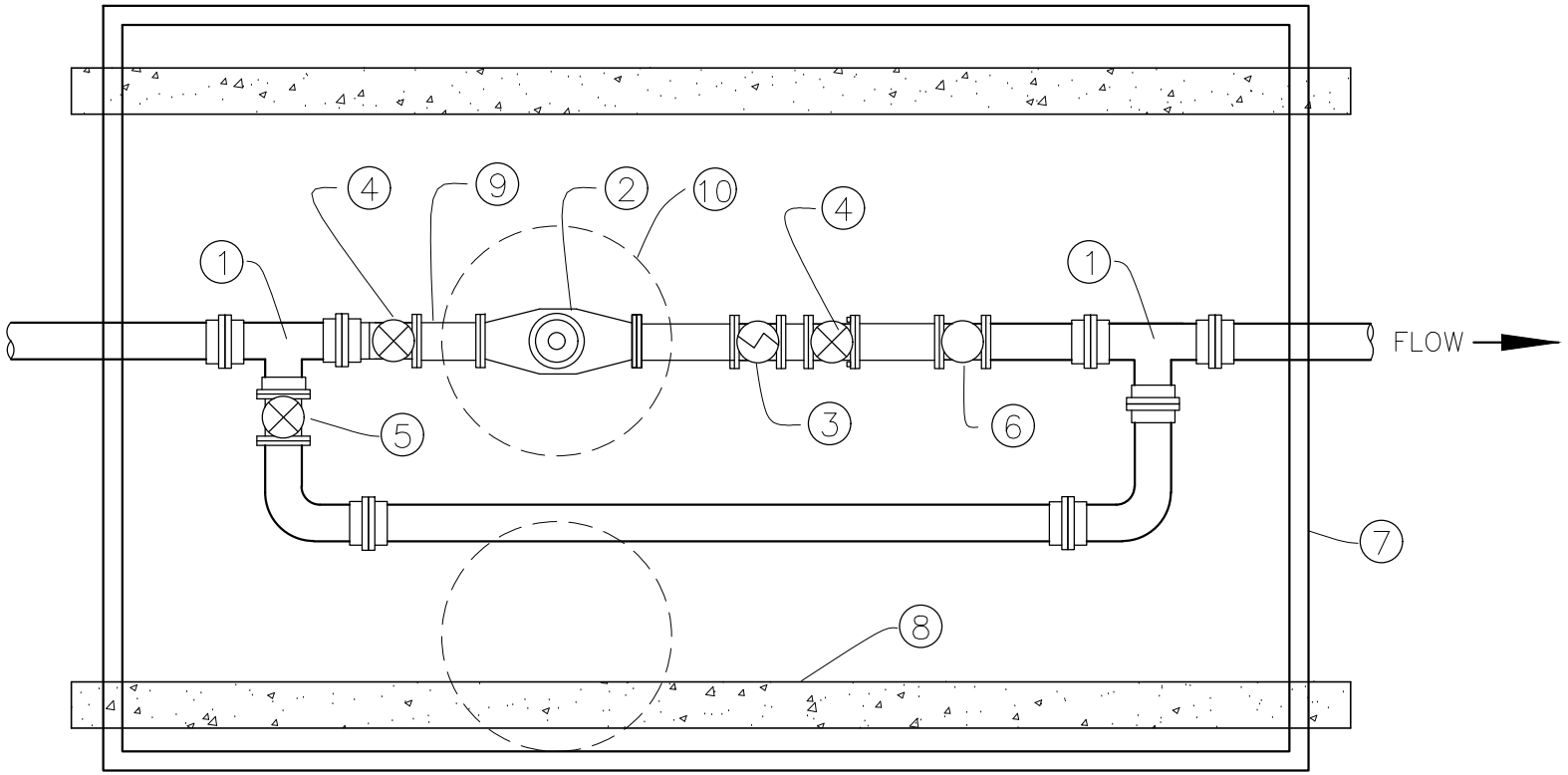
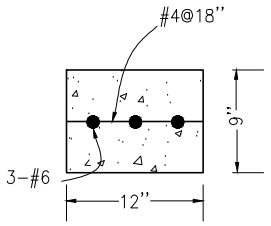
BUTTERFLY VALVE 18" AND ABOVE MAINLINE

REVISION DATE: 9/7/2005
FIGURE NO. W-30
SHEET NO. 1 of 1



3" OUTSIDE METER

1. 3 X 3 TEE
2. METER* (ACWWA SUPPLIED)
3. CHECK VALVE
4. GATE VALVE–OPEN LEFT
5. LOCKING VALVE
6. PRESSURE REDUCING VALVE
7. CONCRETE VAULT
8. CONCRETE FOOTERS
9. PIPE SECTON 15" LONG (MIN.)
10. 24" MANHOLE RING & LID



FOOTING DETAIL

2 (REQUIRED)

1. PIPING FOR 3" AND LARGER METERS SHALL BE DI OR BRASS.
2. INSTALLATION MUST ALLOW FOR FULL ACCESS TO METER AND VALVES, AND PROVIDE PROTECTION FROM FREEZING, WITH MIN 2 FT CLEARANCE TO WALL.
3. MIN DISTANCE FROM METER TO BYPASS LINE IS 2'–6"
4. ALL VALVES MUST BE SUPPORTED WITH ADJUSTABLE SUPPORT OR 4" X 4" X 24" CONCRETE SUPPORTS.
5. 3/4" CRUSHED ROCK FOR FLOOR OF BOX. NO CONCRETE BOTTOMS ALLOWED.
6. VAULT SUPPORTED ON CONCRETE FOOTINGS. SEE FOOTING DETAIL.
7. ALL FITTINGS ARE TO BE FLANGED.

REVISION DATE: 03/01/2013
FIGURE NO. W-31
SHEET NO. 1 of 1

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DATE: 4/7/2017 2:36:54 PM USER: CDA