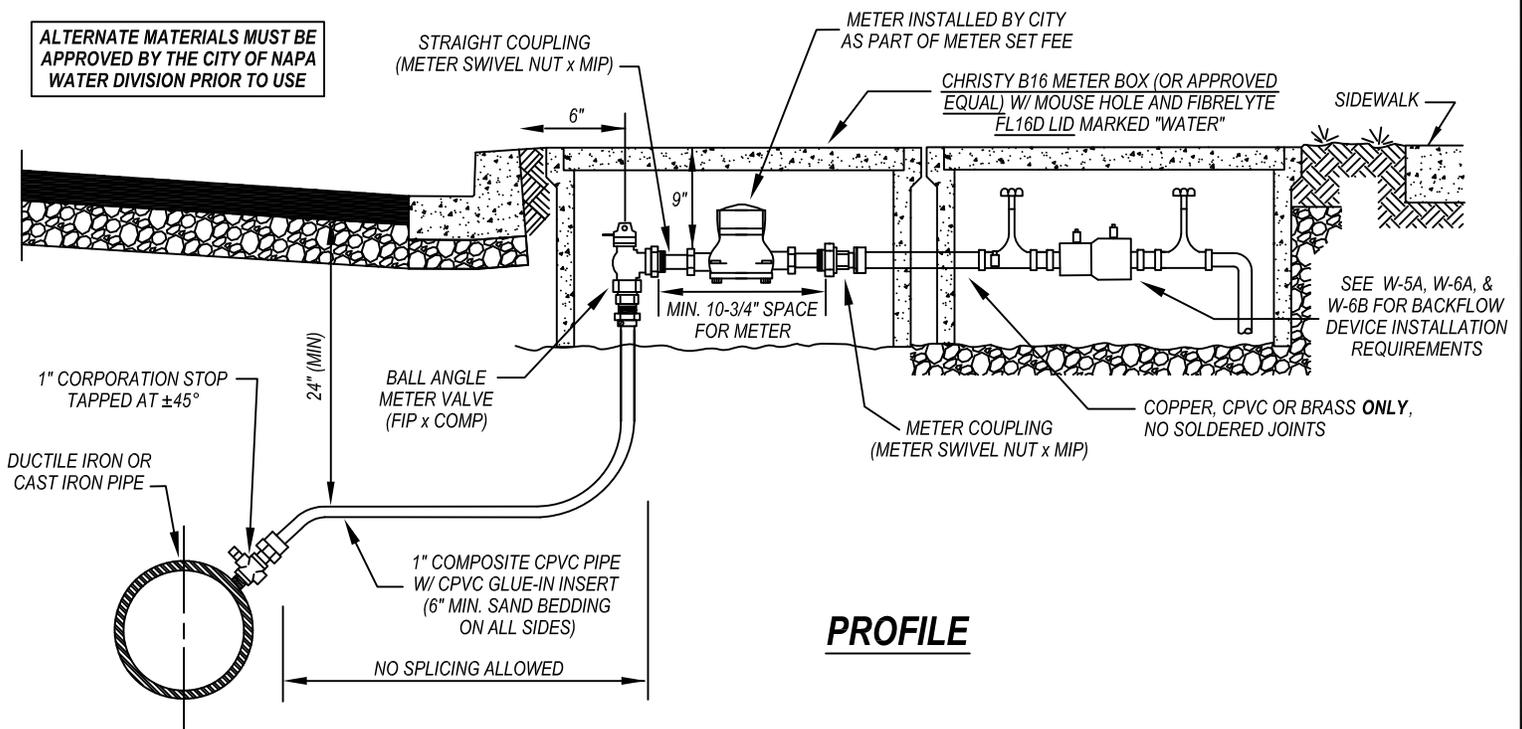


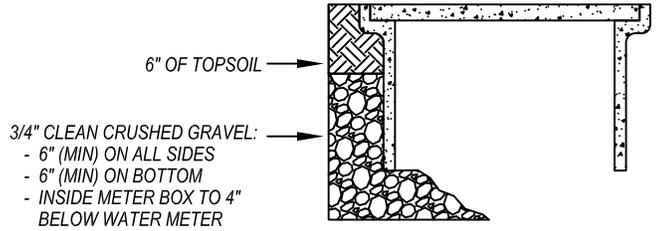
ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE



PROFILE

APPROVED FITTINGS	
DESCRIPTION	MUELLER
BRASS METER IDLER	H-10887
BALL ANGLE METER VALVE (FIP x COMP)	B-24274
METER COUPLING (METER SWIVEL NUT x COMP)	H-14201
CORPORATION STOP (CC x COMP)	B-25008
STRAIGHT COUPLING (METER SWIVEL NUT x MIP)	H-10896

** FORD OR JONES EQUIVALENT ALSO APPROVED



DETAIL

METER BOX INSTALLATION

NOTES

- CURB ADJACENT SIDEWALK:** INSTALL METER AT BACK OF CURB AS SHOWN. INSTALL BACKFLOW DEVICE BEHIND SIDEWALK.
- METER BOX AND SERVICE LINE SHALL BE INSTALLED 3-FT (MIN) OUTSIDE OF DRIVEWAYS, DRIVEWAY APPROACHES, AND OTHER VEHICULAR ACCESS WAYS.
- ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL PLASTIC SLEEVE. COUPLING AND CORPORATION STOP SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF BOTH POINTS.
- EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER'S EXPENSE. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT-TAP SHALL BE INSTALLED 24-IN (MIN) FROM ANY TAP, BELL, FITTING, OR OTHER WATER SERVICE.
- APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
- METERS SHALL BE PLACED A MINIMUM OF 3-FT FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCES, WALLS, ETC.). NO TREES SHALL BE PLANTED WITHIN 10-FT OR LARGE SHRUBS WITHIN 5-FT OF THE METER BOX. SEE W-18 FOR ADDITIONAL REQUIREMENTS.
- WHEN TWO OR MORE NEW SERVICES ARE INSTALLED CLOSE TOGETHER, PERMANENT ADDRESS TAGS SHALL BE INSTALLED ON EACH METER SETTER SPECIFYING THE ADDRESS THEY WILL BE SERVING. ADDRESS TAGS SHALL BE STAMPED METAL OR PLASTIC TAGS, AND SHALL BE INSTALLED PRIOR TO INSTALLATION OF WATER METERS.
- SERVICES SHALL BE SIZED APPROPRIATELY FOR THE INTENDED USE OF THE SERVICE. WATER DIVISION MAY REQUEST AN ENGINEERED WATER ANALYSIS OF THE SYSTEM (NEW OR EXISTING) TO EVALUATE THE APPROPRIATENESS OF THE WATER SERVICE SIZE. NO UNDERSIZED WATER SERVICES SHALL BE PERMITTED.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

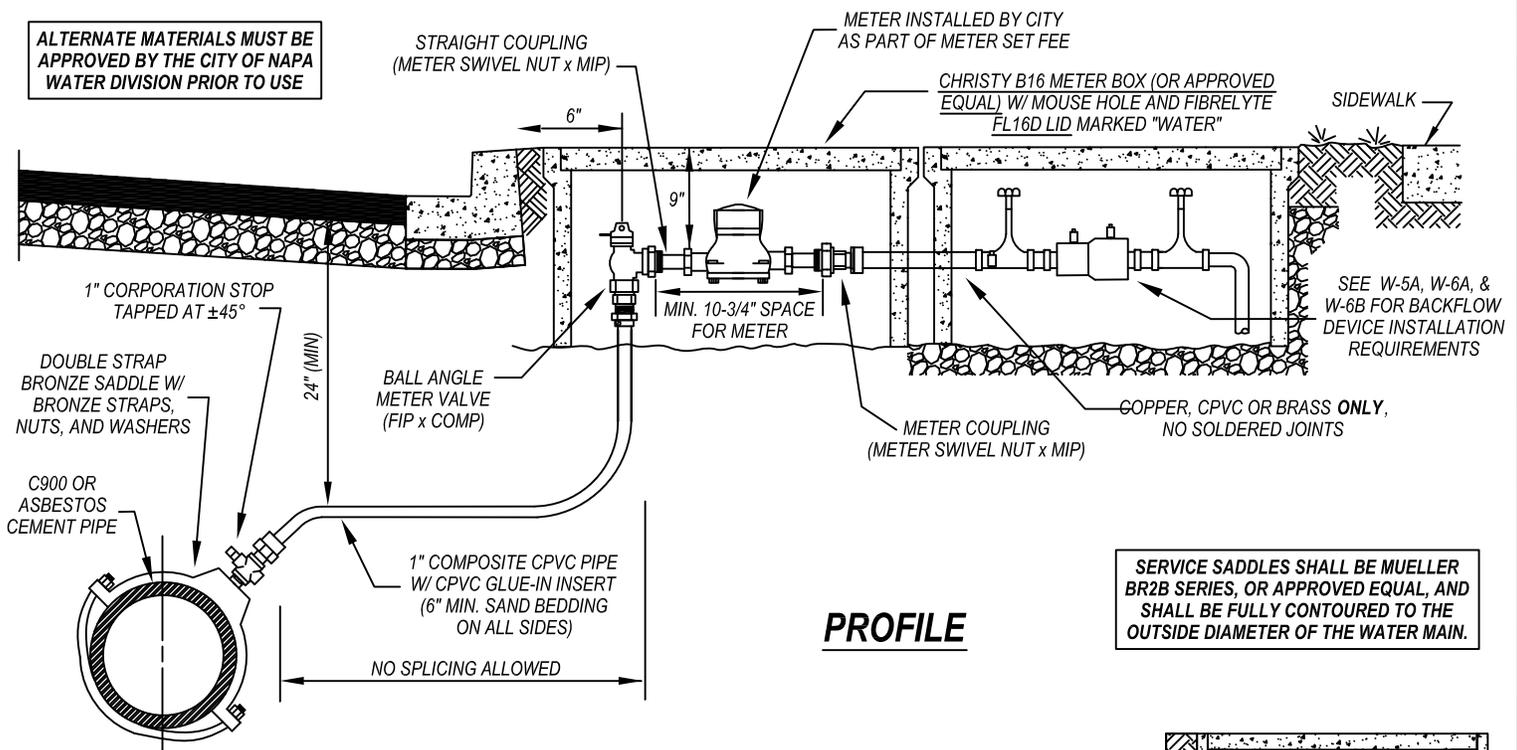
**3/4" AND 1" CPVC WATER SERVICE
(CI AND DIP WATER MAINS)**

DATE REVISED: MAY 2016
 CHECKED: DCF
 APPROVED: MJH
 SCALE: NONE

DWG NO.

W - 1A

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

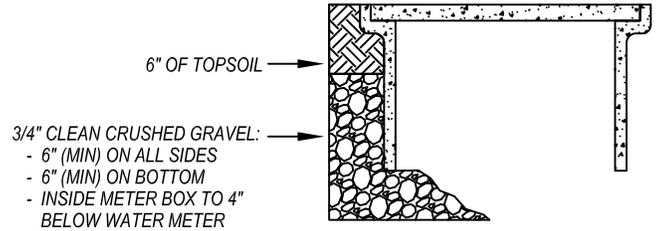


SERVICE SADDLES SHALL BE MUELLER BR2B SERIES, OR APPROVED EQUAL, AND SHALL BE FULLY CONTOURED TO THE OUTSIDE DIAMETER OF THE WATER MAIN.

PROFILE

APPROVED FITTINGS	
DESCRIPTION	MUELLER
BRASS METER IDLER	H-10887
BALL ANGLE METER VALVE (FIP x COMP)	B-24274
METER COUPLING (METER SWIVEL NUT x COMP)	H-14201
CORPORATION STOP (CC x COMP)	B-25008
STRAIGHT COUPLING (METER SWIVEL NUT x MIP)	H-10896

**** FORD OR JONES EQUIVALENT ALSO APPROVED**



DETAIL

METER BOX INSTALLATION

NOTES

- CURB ADJACENT SIDEWALK:** INSTALL METER AT BACK OF CURB AS SHOWN. INSTALL BACKFLOW DEVICE BEHIND SIDEWALK.
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CITY OF NAPA

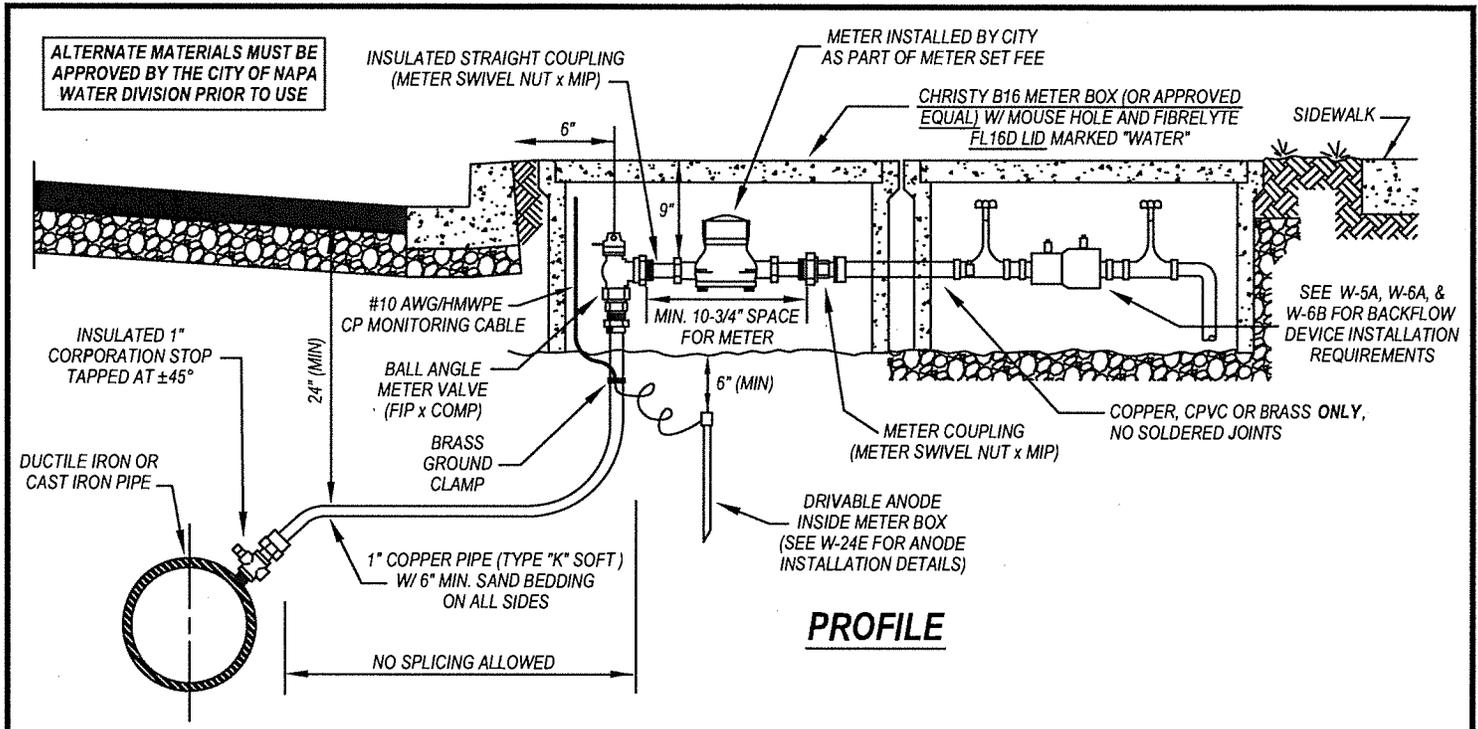
PUBLIC WORKS - WATER DIVISION

**3/4" AND 1" CPVC WATER SERVICE
(AC AND C900 WATER MAINS)**

DATE REVISED: MAY 2016
 CHECKED: DCF
 APPROVED: MJH
 SCALE: NONE

DWG NO.

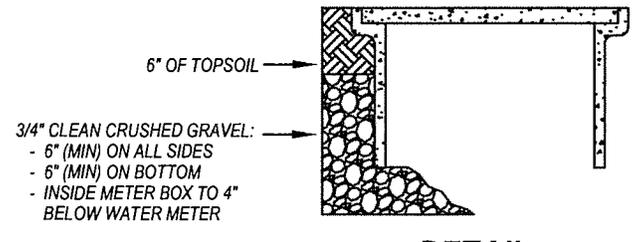
W - 1B



PROFILE

APPROVED FITTINGS	
DESCRIPTION	MUELLER
BRASS METER IDLER	H-10887
BALL ANGLE METER VALVE (FIP x COMP)	B-24274
METER COUPLING (METER SWIVEL NUT x COMP)	H-14201
INSULATED CORPORATION STOP (CC x COMP)	N-35008**
INSULATED STRAIGHT COUPLING (METER SWIVEL NUT x MIP)	H-10871**

** EXCEPT FOR INSULATED FITTINGS, FORD OR JONES EQUIVALENT ALSO APPROVED



DETAIL

METER BOX INSTALLATION

NOTES

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CITY OF NAPA

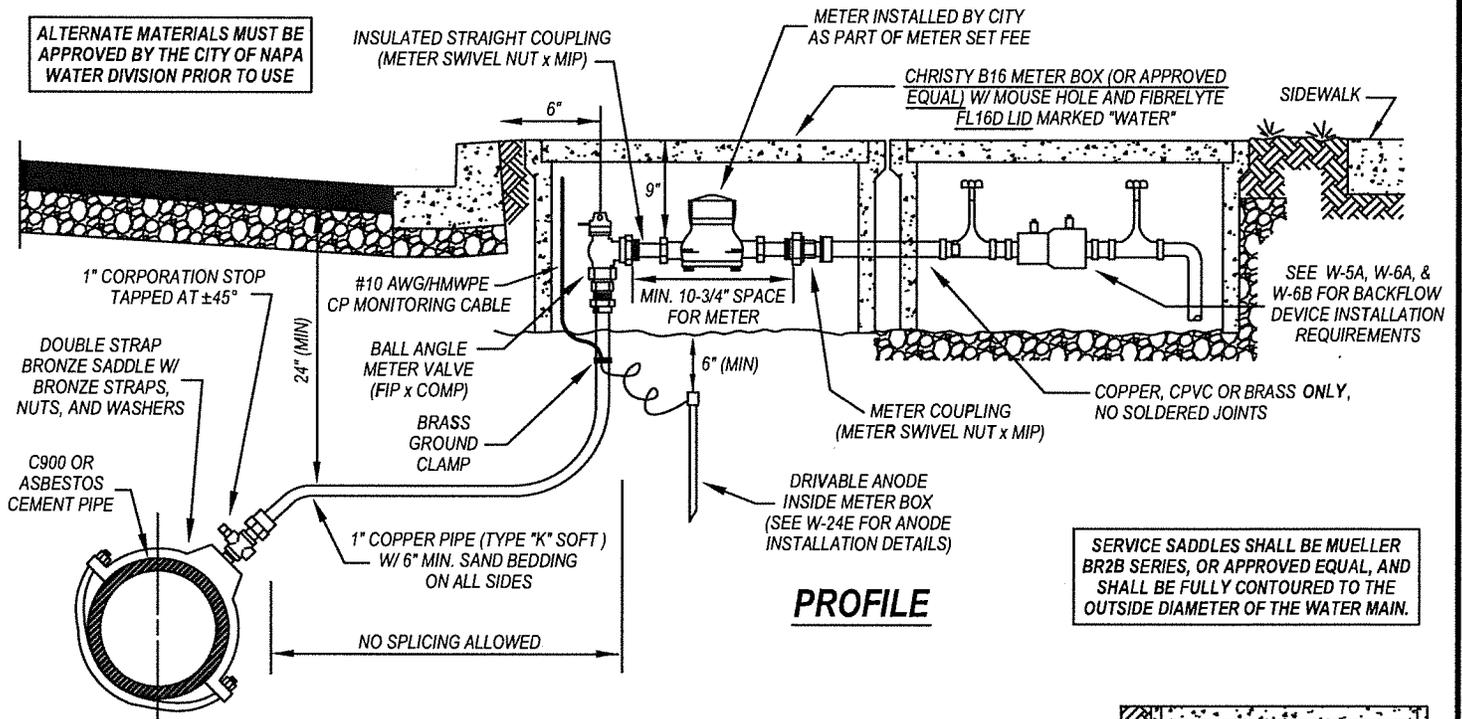
PUBLIC WORKS - WATER DIVISION

**3/4" AND 1" COPPER WATER SERVICE
(CI AND DIP WATER MAINS)**

DATE REVISED: DECEMBER 2015
CHECKED: <i>[Signature]</i>
APPROVED: <i>[Signature]</i>
SCALE: NONE

DWG NO. **W-1C**

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

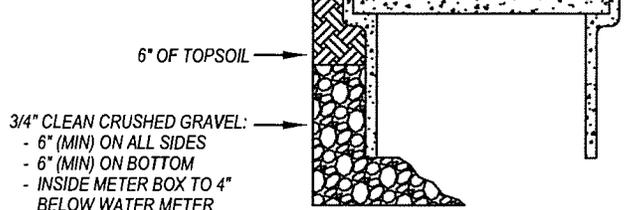


PROFILE

SERVICE SADDLES SHALL BE MUELLER BR2B SERIES, OR APPROVED EQUAL, AND SHALL BE FULLY CONTOURED TO THE OUTSIDE DIAMETER OF THE WATER MAIN.

APPROVED FITTINGS	
DESCRIPTION	MUELLER
BRASS METER IDLER	H-10887
BALL ANGLE METER VALVE (FIP x COMP)	B-24274
METER COUPLING (METER SWIVEL NUT x COMP)	H-14201
CORPORATION STOP (CC x COMP)	B-25008
INSULATED STRAIGHT COUPLING (METER SWIVEL NUT x MIP)	H-10871**

** EXCEPT FOR INSULATED FITTINGS, FORD OR JONES EQUIVALENT ALSO APPROVED



DETAIL

METER BOX INSTALLATION

NOTES

- CURB ADJACENT SIDEWALK:** INSTALL METER AT BACK OF CURB AS SHOWN. INSTALL BACKFLOW DEVICE BEHIND SIDEWALK.
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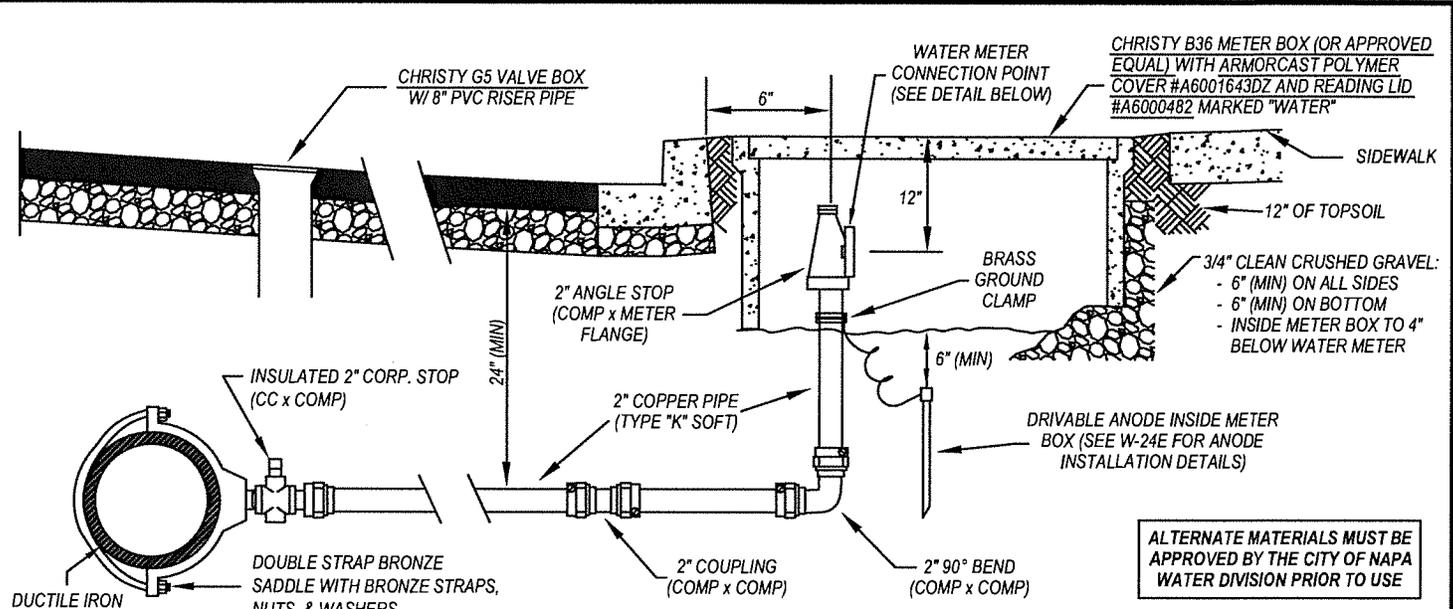
CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**3/4" AND 1" COPPER WATER SERVICE
(AC AND C900 WATER MAINS)**

DATE REVISED: DECEMBER 2015
CHECKED: <i>[Signature]</i>
APPROVED: <i>[Signature]</i>
SCALE: NONE

W - 1D
DWG NO.

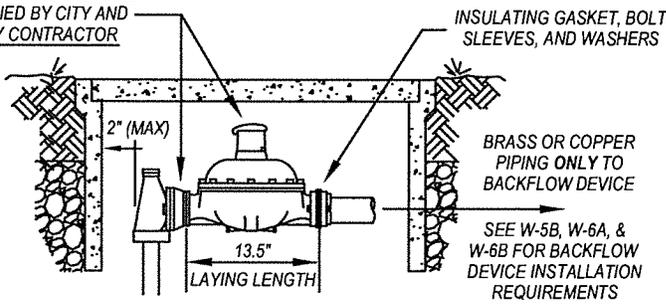


SERVICE LINE INSTALLATION

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

FLANGETYTE GASKETS BY U.S. PIPE SHALL BE USED FOR ALL FLANGED FITTINGS. INSULATING GASKETS SHALL BE TYPE E 1/8" THICK FULL-FACED NEOPRENE PHENOLIC GASKETS INSTALLED WITH GRADE G-10 FIBERGLASS EPOXY INSULATING BOLT SLEEVES AND WASHERS.

1-1/2" METER AND 2" x 1-1/2" REDUCER FITTING SUPPLIED BY CITY AND INSTALLED BY CONTRACTOR



1-1/2" METER INSTALLATION

APPROVED FITTINGS	
DESCRIPTION	MUELLER
INSULATED CORP. STOP (CC x COMP)	N-35008
COUPLING (COMP x COMP)	H-15403
90° BEND (COMP x COMP)	H-15526
ANGLE STOP (COMP x METER FLANGE)	B-24276

** EXCEPT FOR INSULATED FITTINGS, FORD OR JONES EQUIVALENT ALSO APPROVED

NOTES

- METER BOX AND SERVICE LINE SHALL BE INSTALLED 3-FT (MIN) OUTSIDE OF DRIVEWAY, DRIVEWAY APPROACHES, AND OTHER VEHICULAR ACCESS WAYS.
- SERVICE LATERAL FROM MAIN TO METER SHALL BE 2-INCH TYPE "K" SOFT COPPER PIPE. WATER SERVICE SHALL BE REDUCED TO 1.5-INCHES AT THE METER (SEE METER INSTALLATION DETAIL).
- METER, STRAINER, ISOLATION GASKET (FOR METER ONLY), BOLT SLEEVES AND WASHERS ARE PROVIDED BY CITY OF NAPA AFTER PAYMENT OF METER SET FEE AND INSTALLED BY CONTRACTOR.
- ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL PLASTIC SLEEVE. COPPER PIPE NOT WRAPPED IN A PLASTIC SLEEVE SHALL BE NSF 61 APPROVED PLASTIC COATED COPPER TUBING (TYPE "K" SOFT, BLUE IN COLOR). BURIED INSULATING GASKET SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF THE INSULATION POINT.
- EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER'S EXPENSE. HOT-TAP INCLUDES SADDLE VALVE, G5 BOX, PVC RISER, AND MISC. FITTINGS. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT-TAP SHALL BE INSTALLED 36-IN (MIN) FROM ANY TAP, BELL, FITTING, OR OTHER WATER SERVICE.
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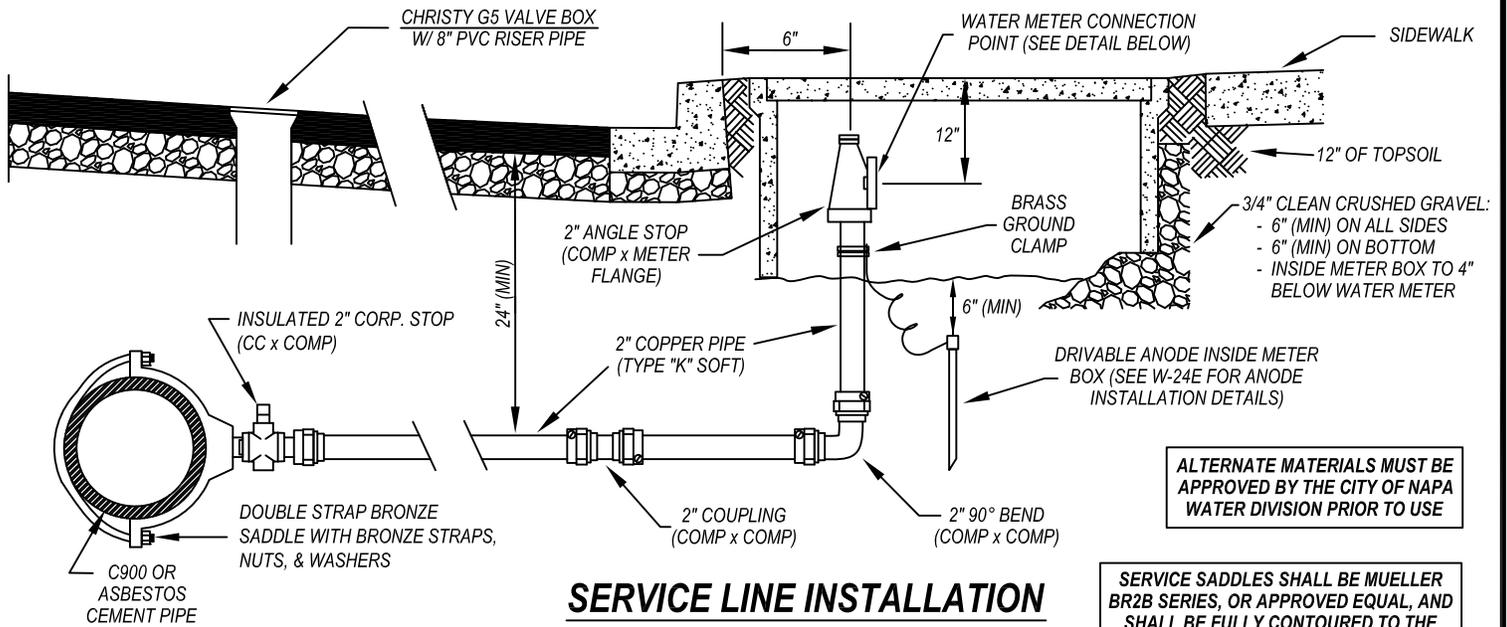
CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**1 1/2" WATER SERVICE
(CI AND DIP WATER MAINS)**

DATE REVISED: DECEMBER 2015
CHECKED: <i>[Signature]</i>
APPROVED: <i>[Signature]</i>
SCALE: NONE

DWG NO. **W - 2A**

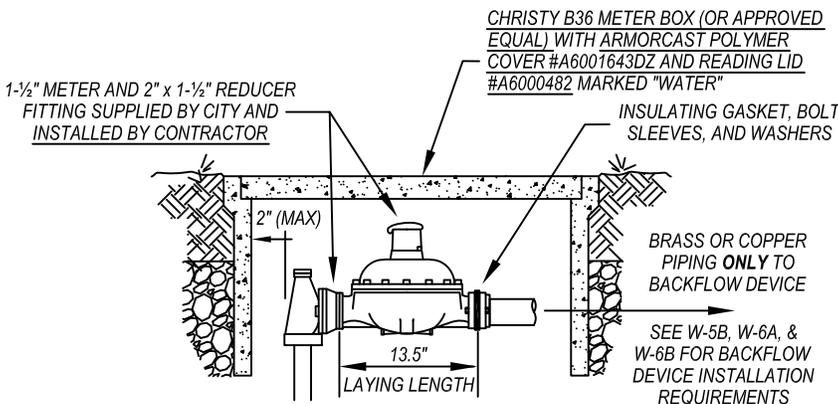


SERVICE LINE INSTALLATION

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

SERVICE SADDLES SHALL BE MUELLER BR2B SERIES, OR APPROVED EQUAL, AND SHALL BE FULLY CONTOURED TO THE OUTSIDE DIAMETER OF THE WATER MAIN.

FLANGETYTE GASKETS BY U.S. PIPE SHALL BE USED FOR ALL FLANGED FITTINGS. INSULATING GASKETS SHALL BE TYPE E 1/8" THICK FULL-FACED NEOPRENE PHENOLIC GASKETS INSTALLED WITH GRADE G-10 FIBERGLASS EPOXY INSULATING BOLT SLEEVES AND WASHERS.



1-1/2" METER INSTALLATION

APPROVED FITTINGS	
DESCRIPTION	MUELLER
INSULATED CORP. STOP (CC X COMP)	N-35008
COUPLING (COMP X COMP)	H-15403
90° BEND (COMP X COMP)	H-15526
ANGLE STOP (COMP X METER FLANGE)	B-24276

** EXCEPT FOR INSULATED FITTINGS, FORD OR JONES EQUIVALENT ALSO APPROVED

NOTES

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CITY OF NAPA

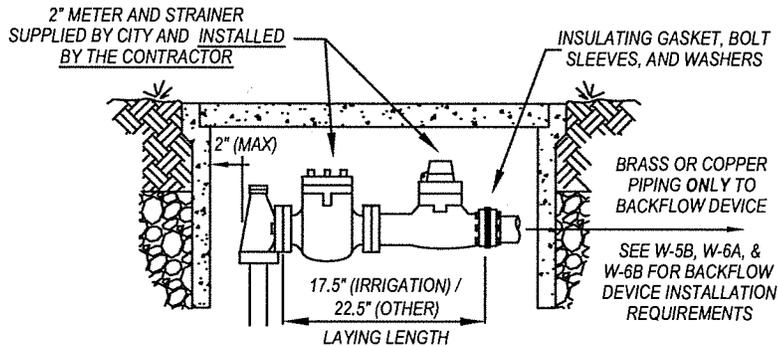
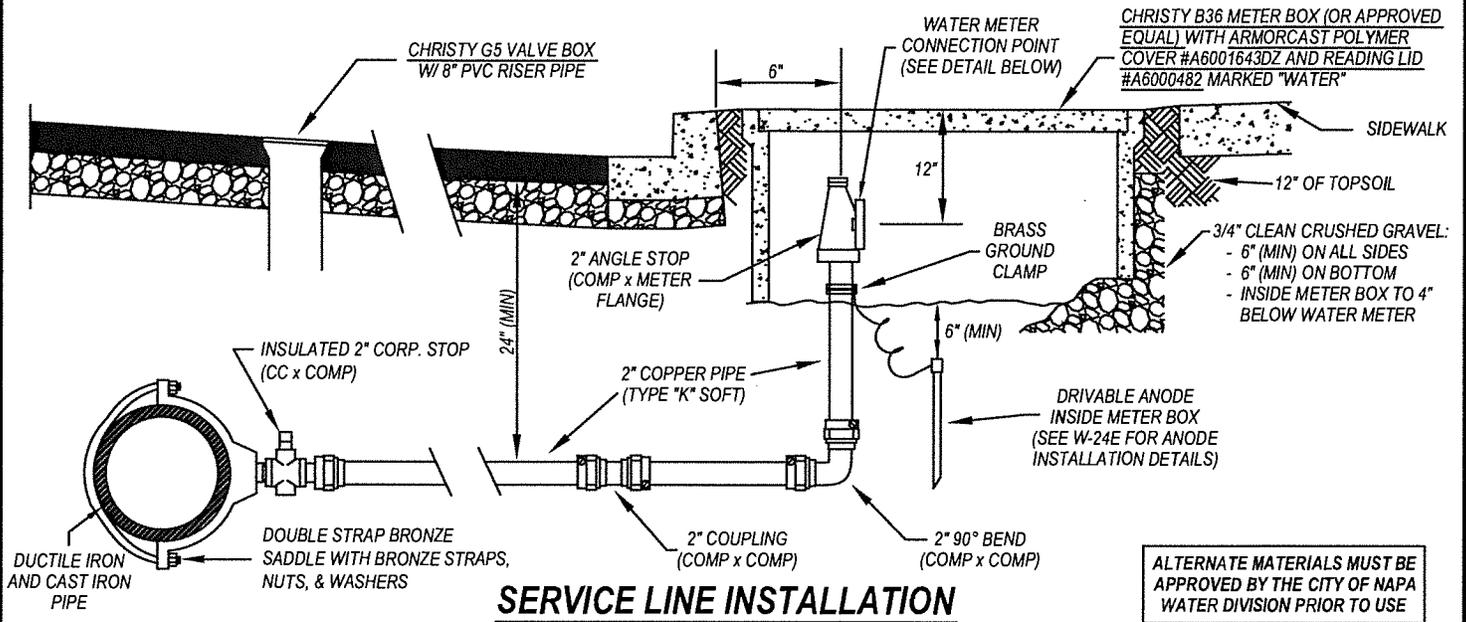
PUBLIC WORKS - WATER DIVISION

**1 1/2" WATER SERVICE
(AC AND C900 WATER MAINS)**

DATE REVISED: MAY 2016
 CHECKED: DCF
 APPROVED: MJH
 SCALE: NONE

DWG NO.

W - 2B



FLANGETYTE GASKETS BY U.S. PIPE SHALL BE USED FOR ALL FLANGED FITTINGS. INSULATING GASKETS SHALL BE TYPE E 1/8" THICK FULL-FACED NEOPRENE PHENOLIC GASKETS INSTALLED WITH GRADE G-10 FIBERGLASS EPOXY INSULATING BOLT SLEEVES AND WASHERS.

APPROVED FITTINGS	
DESCRIPTION	MUELLER
INSULATED CORP. STOP (CC x COMP)	N-35008
COUPLING (COMP x COMP)	H-15403
90° BEND (COMP x COMP)	H-15526
ANGLE STOP (COMP x METER FLANGE)	B-24276

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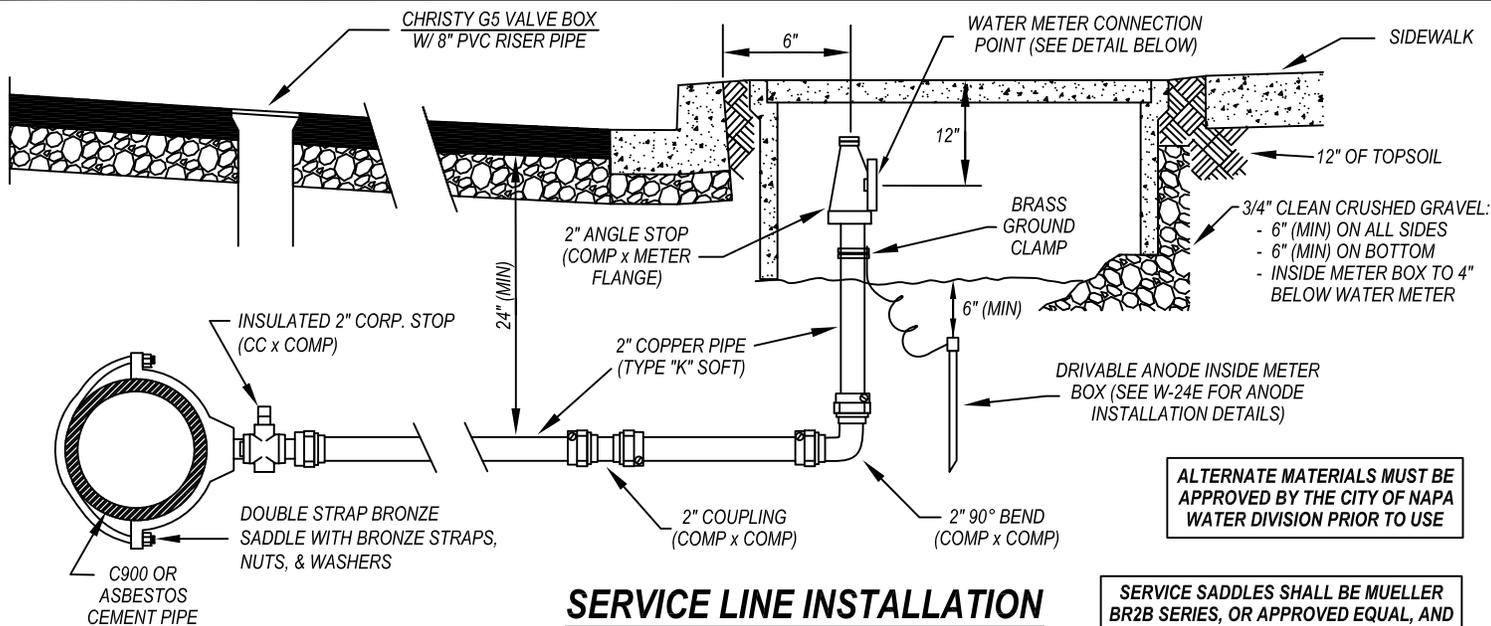
CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

2" WATER SERVICE
(CI AND DIP WATER MAINS)

DATE REVISED: DECEMBER 2015
CHECKED: <i>[Signature]</i>
APPROVED: <i>[Signature]</i>
SCALE: NONE

W - 2C
DWG NO.

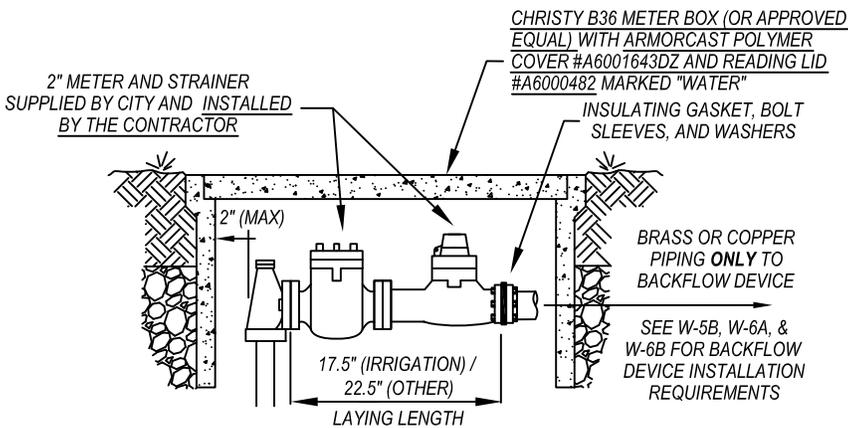


SERVICE LINE INSTALLATION

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

SERVICE SADDLES SHALL BE MUELLER BR2B SERIES, OR APPROVED EQUAL, AND SHALL BE FULLY CONTOURED TO THE OUTSIDE DIAMETER OF THE WATER MAIN.

FLANGETYPE GASKETS BY U.S. PIPE SHALL BE USED FOR ALL FLANGED FITTINGS. INSULATING GASKETS SHALL BE TYPE E 1/8\"/>



2" METER INSTALLATION

APPROVED FITTINGS	
DESCRIPTION	MUELLER
INSULATED CORP. STOP (CC x COMP)	N-35008
COUPLING (COMP x COMP)	H-15403
90° BEND (COMP x COMP)	H-15526
ANGLE STOP (COMP x METER FLANGE)	B-24276

** EXCEPT FOR INSULATED FITTINGS, FORD OR JONES EQUIVALENT ALSO APPROVED

NOTES

- METER BOX AND SERVICE LINE SHALL BE INSTALLED 3-FT (MIN) OUTSIDE OF DRIVEWAY, DRIVEWAY APPROACHES, AND OTHER VEHICULAR ACCESS WAYS.
- SERVICE LATERAL FROM MAIN TO METER SHALL BE 2-INCH TYPE "K" SOFT COPPER PIPE.
- METER, STRAINER, ISOLATION GASKET (FOR METER ONLY), BOLT SLEEVES AND WASHERS ARE PROVIDED BY CITY OF NAPA AFTER PAYMENT OF METER SET FEE AND INSTALLED BY CONTRACTOR.
- ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL PLASTIC SLEEVE. COPPER PIPE NOT WRAPPED IN A PLASTIC SLEEVE SHALL BE NSF 61 APPROVED PLASTIC COATED COPPER TUBING (TYPE "K" SOFT, BLUE IN COLOR).
- EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER'S EXPENSE. HOT-TAP INCLUDES SADDLE VALVE, G5 BOX, PVC RISER, AND MISC. FITTINGS. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT-TAP SHALL BE INSTALLED 36-IN (MIN) FROM ANY TAP, BELL, FITTING, OR OTHER WATER SERVICE.
- APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
- METERS SHALL BE PLACED A MINIMUM OF 3-FT FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCES, WALLS, ETC.). NO TREES SHALL BE PLANTED WITHIN 10-FT OR LARGE SHRUBS WITHIN 5-FT OF THE METER BOX. SEE W-18 FOR ADDITIONAL REQUIREMENTS.
- SERVICES SHALL BE SIZED APPROPRIATELY FOR THE INTENDED USE OF THE SERVICE. WATER DIVISION MAY REQUEST AN ENGINEERED WATER ANALYSIS OF THE SYSTEM (NEW OR EXISTING) TO EVALUATE THE APPROPRIATENESS OF THE WATER SERVICE SIZE. NO UNDERSIZED WATER SERVICES SHALL BE PERMITTED.

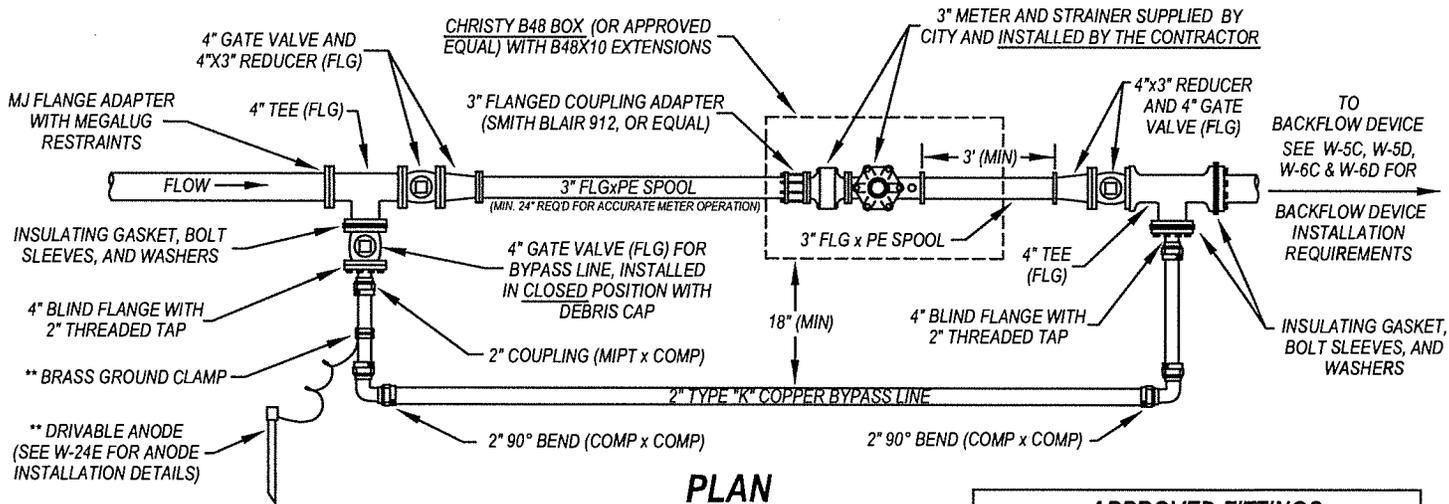
CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**2" WATER SERVICE
(AC AND C900 WATER MAINS)**

DATE REVISED: MAY 2016
 CHECKED: DCF
 APPROVED: MJH
 SCALE: NONE

W - 2D
 DWG NO.



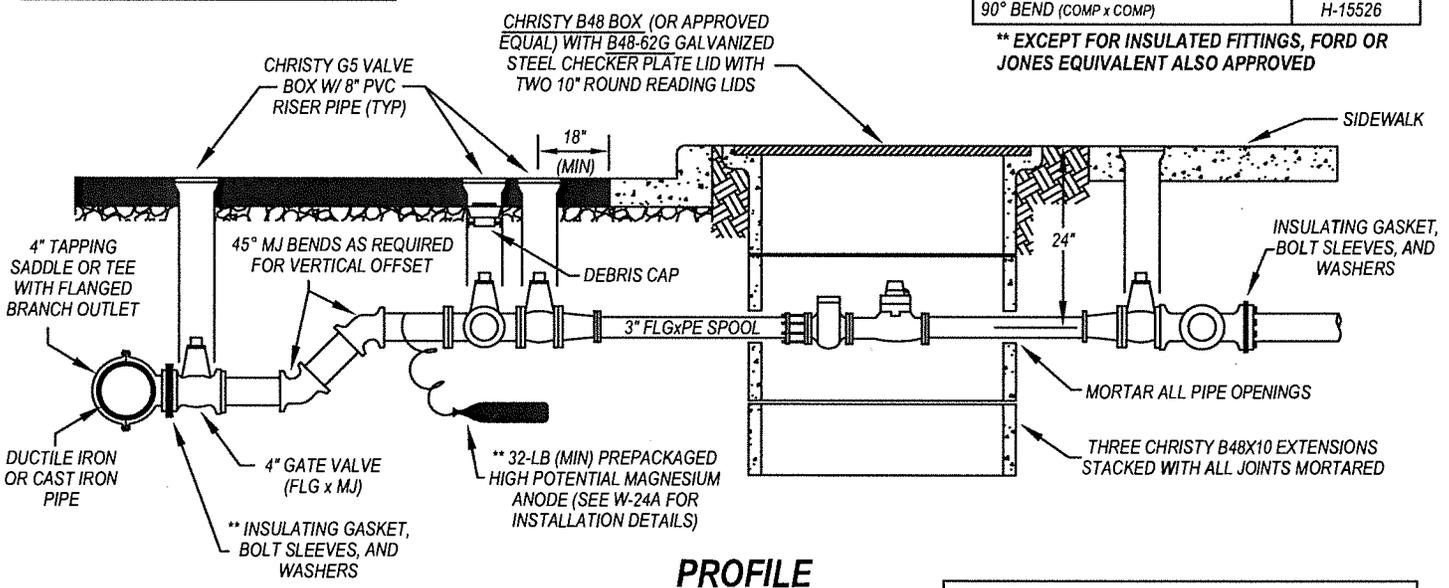
PLAN

APPROVED FITTINGS	
DESCRIPTION	MUELLER
COUPLING (MIPT x COMP)	H-15428
COUPLING (COMP x COMP)	H-15403
90° BEND (COMP x COMP)	H-15526

ALL JOINTS SHALL BE RESTRAINED. FITTINGS: MEGALUG RESTRAINTS, OR EQUAL PIPE BELLS: FIELD LOK GASKETS, OR EQUAL

** REQUIRED FOR ALL METALLIC PIPE INSTALLATIONS

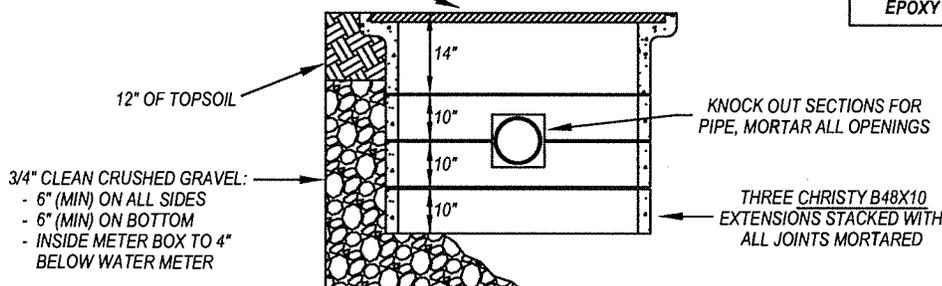
** EXCEPT FOR INSULATED FITTINGS, FORD OR JONES EQUIVALENT ALSO APPROVED



PROFILE

FLANGETYTE GASKETS BY U.S. PIPE SHALL BE USED FOR ALL FLANGED FITTINGS. INSULATING GASKETS SHALL BE TYPE E 1/8" THICK FULL-FACED NEOPRENE PHENOLIC GASKETS INSTALLED WITH GRADE G-10 FIBERGLASS EPOXY INSULATING BOLT SLEEVES AND WASHERS.

CHRISTY B48 BOX (OR APPROVED EQUAL) WITH B48-62G GALVANIZED STEEL CHECKER PLATE LID WITH TWO 10" ROUND READING LIDS



DETAIL

METER BOX INSTALLATION

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**3" WATER SERVICE
(CI AND DIP WATER MAINS)**

DATE REVISED: DECEMBER 2015
 CHECKED: *[Signature]*
 APPROVED: *[Signature]*
 SCALE: NONE

DWG NO. **W - 3A.1**

NOTES

1. METER BOX AND SERVICE LINE SHALL BE INSTALLED 3-FT (MIN) OUTSIDE OF DRIVEWAY, DRIVEWAY APPROACHES, AND OTHER VEHICULAR ACCESS WAYS.
2. SERVICE LATERAL (FROM WATER MAIN TO TEE AT METER/BYPASS SPLIT) SHALL BE 4-INCH C900 PVC OR CLASS 350 DUCTILE IRON PIPE.
3. METER, STRAINER, ISOLATION GASKET (FOR METER ONLY), BOLT SLEEVES AND WASHERS ARE PROVIDED BY CITY OF NAPA AFTER PAYMENT OF METER SET FEE AND INSTALLED BY CONTRACTOR.
4. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL POLYETHYLENE WRAP, WITH THE EXCEPTION OF COPPER PIPE AND BRASS FITTINGS WHICH SHALL BE WRAPPED WITH AN 8-MIL PLASTIC SLEEVE. COPPER PIPE NOT WRAPPED IN A PLASTIC SLEEVE SHALL BE NSF 61 APPROVED PLASTIC COATED COPPER TUBING (TYPE "K", BLUE IN COLOR). ALL BURIED INSULATED GASKETS SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF THE INSULATION POINTS.
5. EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER'S EXPENSE. HOT-TAP INCLUDES SADDLE, VALVE, G5 BOX, PVC RISER, AND MISCELLANEOUS FITTINGS. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT TAPS SHALL BE 3/8-IN (MIN) FROM ANY TAP, BELL, FITTING, OR OTHER SERVICE.
6. A TEE AND 4-INCH GATE VALVE SHALL BE INSTALLED INSTEAD OF A HOT-TAP WHEN THE EXISTING WATER MAIN IS 4-INCHES IN DIAMETER, OR WHEN IT IS INSTALLED AS PART OF A NEW WATER MAIN INSTALLATION. 3-INCH WATER SERVICES SHALL NOT BE INSTALLED ON WATER MAINS SMALLER THAN 4-INCHES IN DIAMETER.
7. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED, AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
8. METERS SHALL BE PLACED A MINIMUM OF 3-FT FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCES, WALLS, ETC.). NO TREES SHALL BE PLANTED WITHIN 10-FT OR LARGE SHRUBS WITHIN 5-FT OF THE METER BOX. SEE W-18 FOR ADDITIONAL REQUIREMENTS.
9. SERVICES SHALL BE SIZED APPROPRIATELY FOR THE INTENDED USE OF THE SERVICE. WATER DIVISION MAY REQUEST AN ENGINEERED WATER ANALYSIS OF THE SYSTEM (NEW OR EXISTING) TO EVALUATE THE APPROPRIATENESS OF THE WATER SERVICE SIZE. NO UNDERSIZED WATER SERVICES SHALL BE PERMITTED.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**3" WATER SERVICE
(CI AND DIP WATER MAINS)**

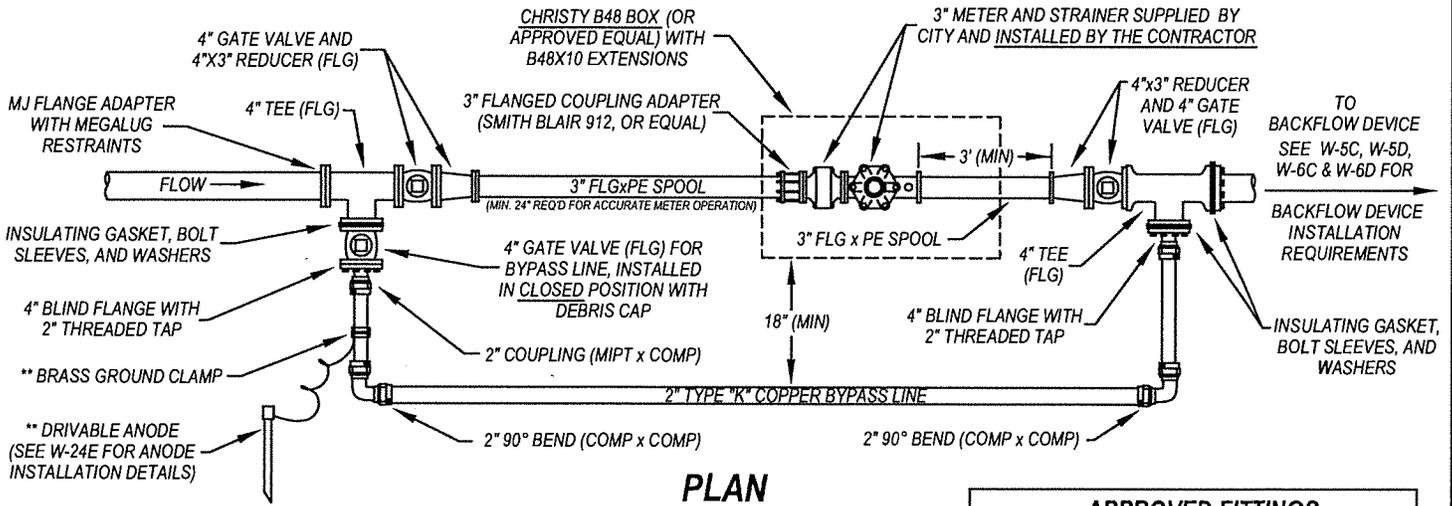
DATE REVISED: DECEMBER 2015

CHECKED: *[Signature]*

APPROVED: *[Signature]*

SCALE: NONE

W - 3A.2
DWG NO.



PLAN

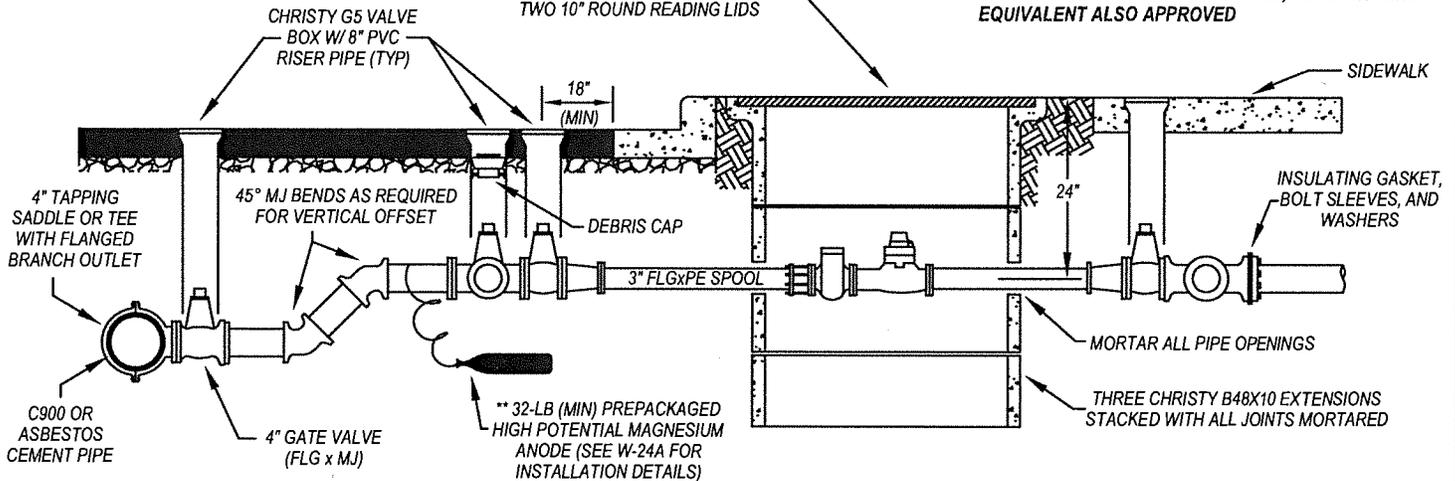
ALL JOINTS SHALL BE RESTRAINED. FITTINGS: MEGALUG RESTRAINTS, OR EQUAL PIPE BELLS: FIELD LOK GASKETS, OR EQUAL

** REQUIRED FOR ALL METALLIC PIPE INSTALLATIONS

CHRISTY B48 BOX (OR APPROVED EQUAL) WITH B48-62G GALVANIZED STEEL CHECKER PLATE LID WITH TWO 10" ROUND READING LIDS

APPROVED FITTINGS	
DESCRIPTION	MUELLER
COUPLING (MIPT x COMP)	H-15428
COUPLING (COMP x COMP)	H-15403
90° BEND (COMP x COMP)	H-15526

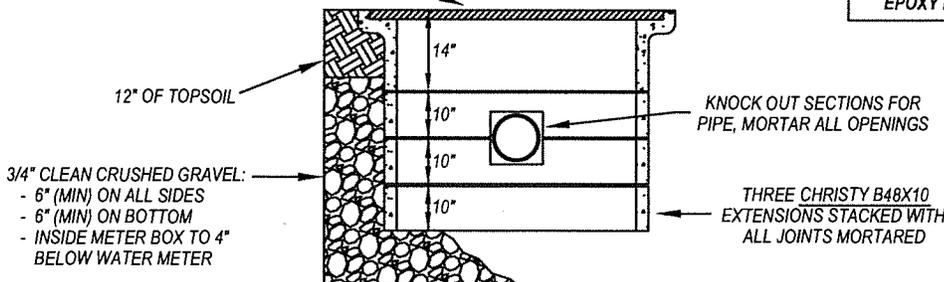
** EXCEPT FOR INSULATED FITTINGS, FORD OR JONES EQUIVALENT ALSO APPROVED



PROFILE

CHRISTY B48 BOX (OR APPROVED EQUAL) WITH B48-62G GALVANIZED STEEL CHECKER PLATE LID WITH TWO 10" ROUND READING LIDS

FLANGETYTE GASKETS BY U.S. PIPE SHALL BE USED FOR ALL FLANGED FITTINGS. INSULATING GASKETS SHALL BE TYPE E 1/8" THICK FULL-FACED NEOPRENE PHENOLIC GASKETS INSTALLED WITH GRADE G-10 FIBERGLASS EPOXY INSULATING BOLT SLEEVES AND WASHERS.



DETAIL

METER BOX INSTALLATION

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**3" WATER SERVICE
(AC AND C900 WATER MAINS)**

DATE REVISED: DECEMBER 2015

CHECKED: *[Signature]*

APPROVED: *[Signature]*

SCALE: NONE

W - 3B.1
DWG NO.

NOTES

1. METER BOX AND SERVICE LINE SHALL BE INSTALLED 3-FT (MIN) OUTSIDE OF DRIVEWAY, DRIVEWAY APPROACHES, AND OTHER VEHICULAR ACCESS WAYS.
2. SERVICE LATERAL (FROM WATER MAIN TO TEE AT METER/BYPASS SPLIT) SHALL BE 4-INCH C900 PVC OR CLASS 350 DUCTILE IRON PIPE.
3. METER, STRAINER, ISOLATION GASKET (FOR METER ONLY), BOLT SLEEVES AND WASHERS ARE PROVIDED BY CITY OF NAPA AFTER PAYMENT OF METER SET FEE AND INSTALLED BY CONTRACTOR.
4. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL POLYETHYLENE WRAP, WITH THE EXCEPTION OF COPPER PIPE AND BRASS FITTINGS WHICH SHALL BE WRAPPED WITH AN 8-MIL PLASTIC SLEEVE. COPPER PIPE NOT WRAPPED IN A PLASTIC SLEEVE SHALL BE NSF 61 APPROVED PLASTIC COATED COPPER TUBING (TYPE "K", BLUE IN COLOR). ALL BURIED INSULATED GASKETS SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF THE INSULATION POINTS.
5. EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER'S EXPENSE. HOT-TAP INCLUDES SADDLE, VALVE, G5 BOX, PVC RISER, AND MISCELLANEOUS FITTINGS. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT TAPS SHALL BE 36" (MIN) FROM ANY TAP, BELL, FITTING, OR OTHER SERVICE.
6. A TEE AND 4-INCH GATE VALVE SHALL BE INSTALLED INSTEAD OF A HOT-TAP WHEN THE EXISTING WATER MAIN IS 4-INCHES IN DIAMETER, OR WHEN IT IS INSTALLED AS PART OF A NEW WATER MAIN INSTALLATION. 3-INCH WATER SERVICES SHALL NOT BE INSTALLED ON WATER MAINS SMALLER THAN 4-INCHES IN DIAMETER.
7. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED, AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
8. METERS SHALL BE PLACED A MINIMUM OF 3-FT FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCES, WALLS, ETC.). NO TREES SHALL BE PLANTED WITHIN 10-FT OR LARGE SHRUBS WITHIN 5-FT OF THE METER BOX. SEE W-18 FOR ADDITIONAL REQUIREMENTS.
9. SERVICES SHALL BE SIZED APPROPRIATELY FOR THE INTENDED USE OF THE SERVICE. WATER DIVISION MAY REQUEST AN ENGINEERED WATER ANALYSIS OF THE SYSTEM (NEW OR EXISTING) TO EVALUATE THE APPROPRIATENESS OF THE WATER SERVICE SIZE. NO UNDERSIZED WATER SERVICES SHALL BE PERMITTED.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**3" WATER SERVICE
(AC AND C900 WATER MAINS)**

DATE REVISED: DECEMBER 2015

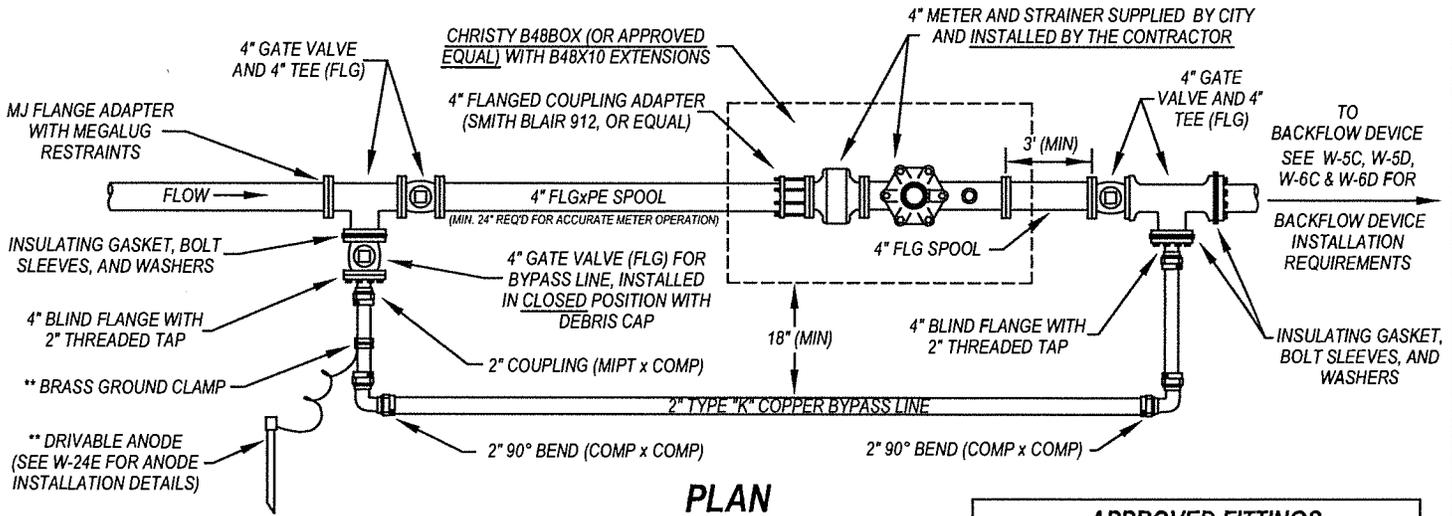
CHECKED: *mt*

APPROVED: *g*

SCALE: NONE

DWG NO.

W - 3B.2



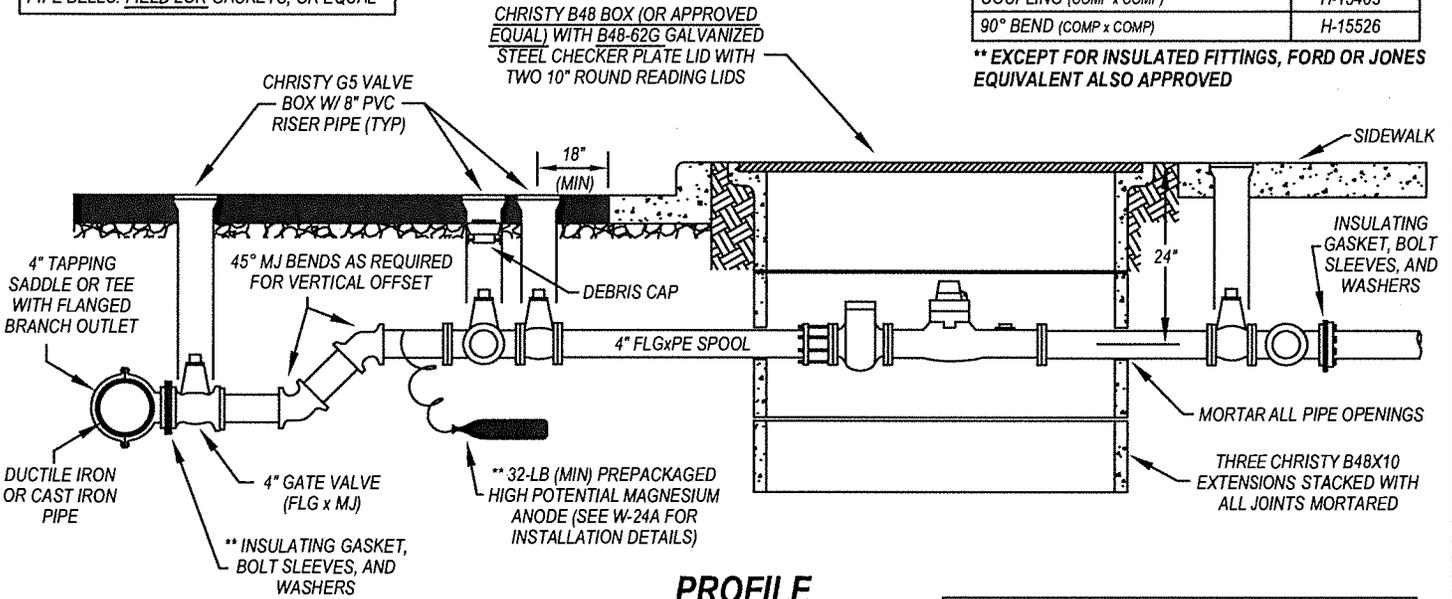
APPROVED FITTINGS

DESCRIPTION	MUELLER
COUPLING (MIPT x COMP)	H-15428
COUPLING (COMP x COMP)	H-15403
90° BEND (COMP x COMP)	H-15526

** EXCEPT FOR INSULATED FITTINGS, FORD OR JONES EQUIVALENT ALSO APPROVED

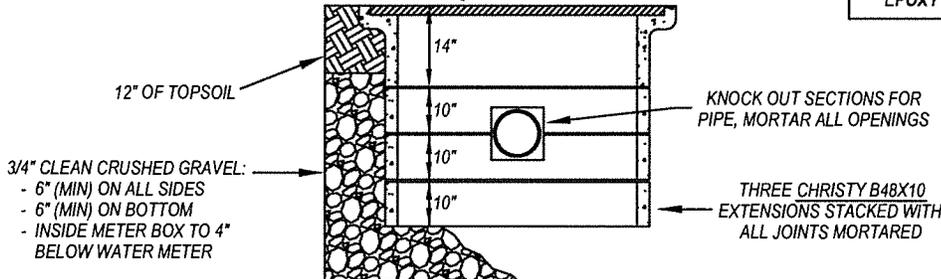
ALL JOINTS SHALL BE RESTRAINED. FITTINGS: MEGALUG RESTRAINTS, OR EQUAL PIPE BELLS; FIELD LOK GASKETS, OR EQUAL

** REQUIRED FOR ALL METALLIC PIPE INSTALLATIONS



CHRISTY B48 BOX (OR APPROVED EQUAL) WITH B48-62G GALVANIZED STEEL CHECKER PLATE LID WITH TWO 10" ROUND READING LIDS

FLANGETYTE GASKETS BY U.S. PIPE SHALL BE USED FOR ALL FLANGED FITTINGS. INSULATING GASKETS SHALL BE TYPE E 1/8" THICK FULL-FACED NEOPRENE PHENOLIC GASKETS INSTALLED WITH GRADE G-10 FIBERGLASS EPOXY INSULATING BOLT SLEEVES AND WASHERS.



ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**4" WATER SERVICE
 (CI AND DIP WATER MAINS)**

DATE REVISED: DECEMBER 2015

CHECKED: *[Signature]*

APPROVED: *[Signature]*

SCALE: NONE

W - 3C.1

DWG NO.

NOTES

1. METER BOX AND SERVICE LINE SHALL BE INSTALLED 3-FT (MIN) OUTSIDE OF DRIVEWAY, DRIVEWAY APPROACHES, AND OTHER VEHICULAR ACCESS WAYS.
2. SERVICE LATERAL (FROM WATER MAIN TO TEE AT METER/BYPASS SPLIT) SHALL BE 4-INCH C900 PVC OR CLASS 350 DUCTILE IRON PIPE.
3. METER, STRAINER, ISOLATION GASKET (FOR METER ONLY), BOLT SLEEVES AND WASHERS ARE PROVIDED BY CITY OF NAPA AFTER PAYMENT OF METER SET FEE AND INSTALLED BY CONTRACTOR.
4. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL POLYETHYLENE WRAP, WITH THE EXCEPTION OF COPPER PIPE AND BRASS FITTINGS WHICH SHALL BE WRAPP 8-MIL PLASTIC SLEEVE. COPPER PIPE NOT WRAPPED IN A PLASTIC SLEEVE SHALL BE NSF 61 APPROVED PLASTIC COATED COPPER TUBING (TYPE "K", BLUE IN COLOR). ALL BURIED INSULATED GASKETS SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF THE INSULATION POINTS.
5. EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER'S EXPENSE. HOT-TAP INCLUDES SADDLE, VALVE, G5 BOX, PVC RISER, AND MISCELLANEOUS FITTINGS. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT TAPS SHALL BE 36-IN (MIN) FROM ANY TAP, BELL, FITTING, OR OTHER SERVICE.
6. A TEE AND 4-INCH GATE VALVE SHALL BE INSTALLED INSTEAD OF A HOT-TAP WHEN THE EXISTING WATER MAIN IS 4-INCHES IN DIAMETER, OR WHEN IT IS INSTALLED AS PART OF A NEW WATER MAIN INSTALLATION. 4-INCH WATER SERVICES SHALL NOT BE INSTALLED ON WATER MAINS SMALLER THAN 4-INCHES IN DIAMETER.
7. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED, AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
8. METERS SHALL BE PLACED A MINIMUM OF 3-FT FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCES, WALLS, ETC.). NO TREES SHALL BE PLANTED WITHIN 10-FT OR LARGE SHRUBS WITHIN 5-FT OF THE METER BOX. SEE W-18 FOR ADDITIONAL REQUIREMENTS.
9. SERVICES SHALL BE SIZED APPROPRIATELY FOR THE INTENDED USE OF THE SERVICE. WATER DIVISION MAY REQUEST AN ENGINEERED WATER ANALYSIS OF THE SYSTEM (NEW OR EXISTING) TO EVALUATE THE APPROPRIATENESS OF THE WATER SERVICE SIZE. NO UNDERSIZED WATER SERVICES SHALL BE PERMITTED.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**4" WATER SERVICE
(CI AND DIP WATER MAINS)**

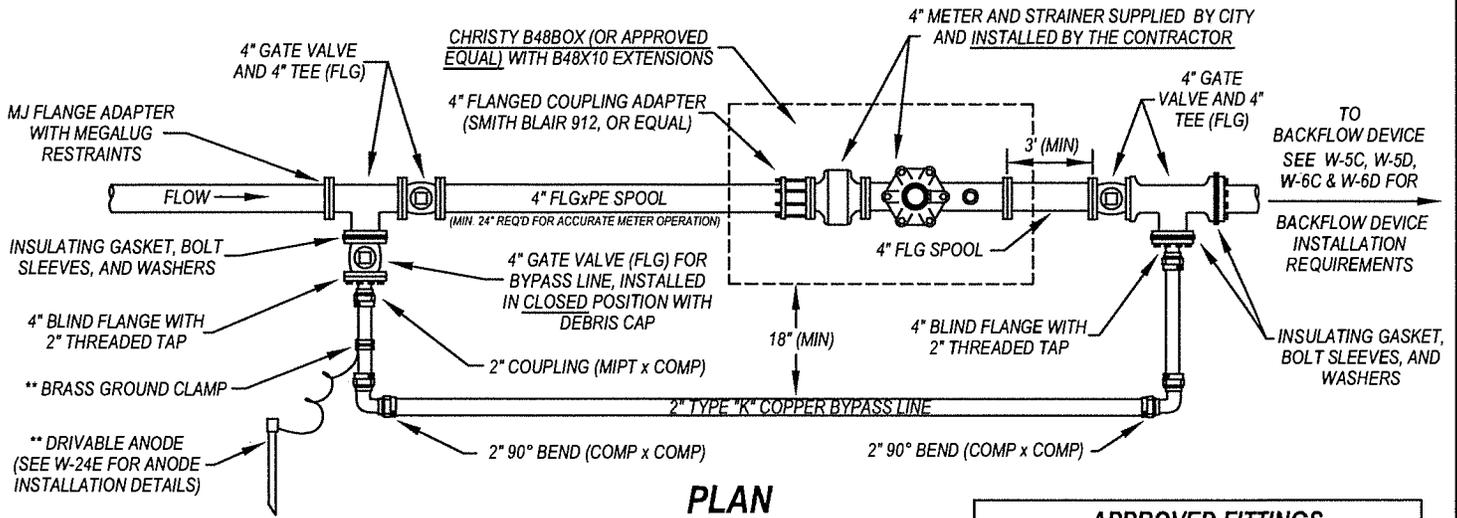
DATE REVISED: DECEMBER 2015

CHECKED: *mt*

APPROVED: *GR*

SCALE: NONE

W - 3C.2
DWG NO.



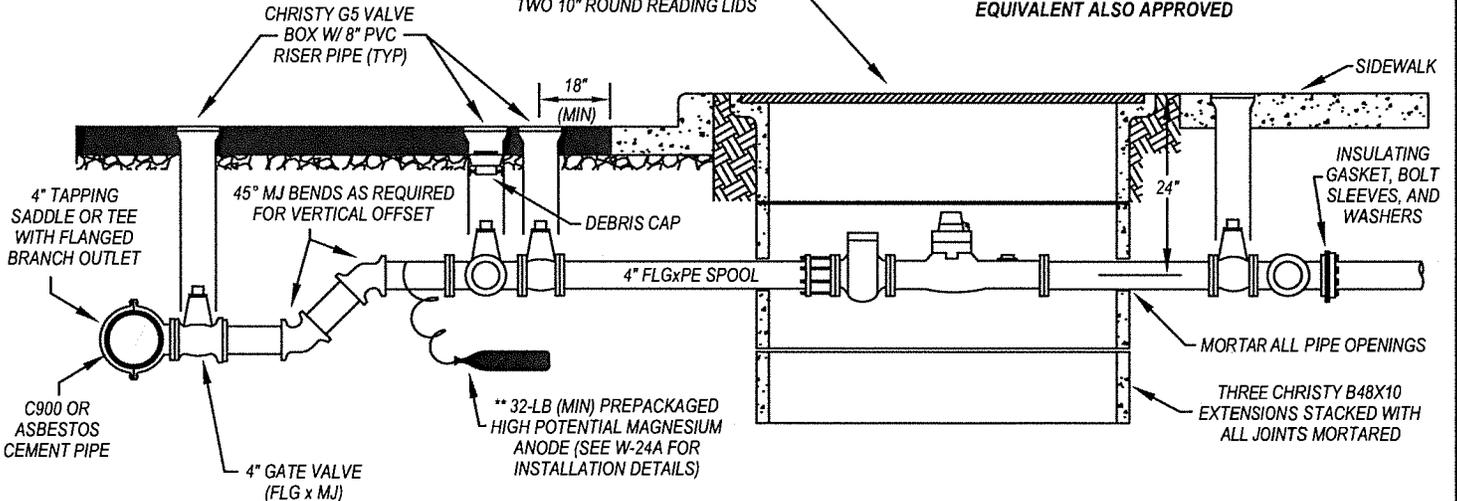
ALL JOINTS SHALL BE RESTRAINED. FITTINGS: MEGALUG RESTRAINTS, OR EQUAL PIPE BELLS: FIELD LOK GASKETS, OR EQUAL

** REQUIRED FOR ALL METALLIC PIPE INSTALLATIONS

CHRISTY B48 BOX (OR APPROVED EQUAL) WITH B48-62G GALVANIZED STEEL CHECKER PLATE LID WITH TWO 10" ROUND READING LIDS

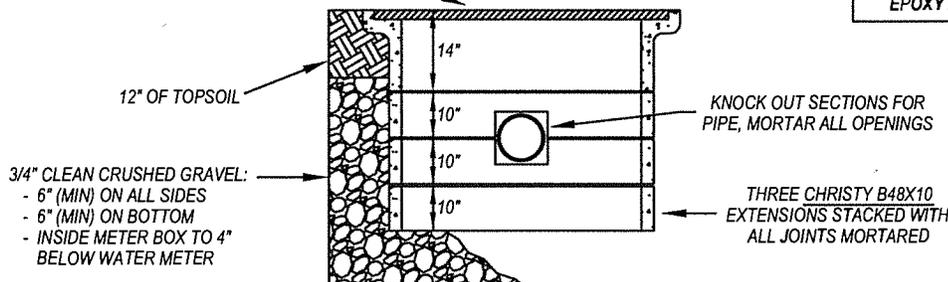
APPROVED FITTINGS	
DESCRIPTION	MUELLER
COUPLING (MIPT x COMP)	H-15428
COUPLING (COMP x COMP)	H-15403
90° BEND (COMP x COMP)	H-15526

** EXCEPT FOR INSULATED FITTINGS, FORD OR JONES EQUIVALENT ALSO APPROVED



CHRISTY B48 BOX (OR APPROVED EQUAL) WITH B48-62G GALVANIZED STEEL CHECKER PLATE LID WITH TWO 10" ROUND READING LIDS

FLANGETYPE GASKETS BY U.S. PIPE SHALL BE USED FOR ALL FLANGED FITTINGS. INSULATING GASKETS SHALL BE TYPE E 1/8" THICK FULL-FACED NEOPRENE PHENOLIC GASKETS INSTALLED WITH GRADE G-10 FIBERGLASS EPOXY INSULATING BOLT SLEEVES AND WASHERS.



ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

4" WATER SERVICE
 (AC AND C900 WATER MAINS)

DATE REVISED: DECEMBER 2015

CHECKED: *[Signature]*

APPROVED: *[Signature]*

SCALE: NONE

DWG NO. **W - 3D.1**

NOTES

1. METER BOX AND SERVICE LINE SHALL BE INSTALLED 3-FT (MIN) OUTSIDE OF DRIVEWAY, DRIVEWAY APPROACHES, AND OTHER VEHICULAR ACCESS WAYS.
2. SERVICE LATERAL (FROM WATER MAIN TO TEE AT METER/BYPASS SPLIT) SHALL BE 4-INCH C900 PVC OR CLASS 350 DUCTILE IRON PIPE.
3. METER, STRAINER, ISOLATION GASKET (FOR METER ONLY), BOLT SLEEVES AND WASHERS ARE PROVIDED BY CITY OF NAPA AFTER PAYMENT OF METER SET FEE AND INSTALLED BY CONTRACTOR.
4. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL POLYETHYLENE WRAP, WITH THE EXCEPTION OF COPPER PIPE AND BRASS FITTINGS WHICH SHALL BE WRAPPED WITH AN 8-MIL PLASTIC SLEEVE. COPPER PIPE NOT WRAPPED IN A PLASTIC SLEEVE SHALL BE NSF 61 APPROVED PLASTIC COATED COPPER TUBING (TYPE "K", BLUE IN COLOR). ALL BURIED INSULATED GASKETS SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF THE INSULATION POINTS.
5. EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER'S EXPENSE. HOT-TAP INCLUDES SADDLE, VALVE, G5 BOX, PVC RISER, AND MISCELLANEOUS FITTINGS. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT TAPS SHALL BE 36-IN (MIN) FROM ANY TAP, BELL, FITTING, OR OTHER SERVICE.
6. A TEE AND 4-INCH GATE VALVE SHALL BE INSTALLED INSTEAD OF A HOT-TAP WHEN THE EXISTING WATER MAIN IS 4-INCHES IN DIAMETER, OR WHEN IT IS INSTALLED AS PART OF A NEW WATER MAIN INSTALLATION. 4-INCH WATER SERVICES SHALL NOT BE INSTALLED ON WATER MAINS SMALLER THAN 4-INCHES IN DIAMETER.
7. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED, AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
8. METERS SHALL BE PLACED A MINIMUM OF 3-FT FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCES, WALLS, ETC.). NO TREES SHALL BE PLANTED WITHIN 10-FT OR LARGE SHRUBS WITHIN 5-FT OF THE METER BOX. SEE W-18 FOR ADDITIONAL REQUIREMENTS.
9. SERVICES SHALL BE SIZED APPROPRIATELY FOR THE INTENDED USE OF THE SERVICE. WATER DIVISION MAY REQUEST AN ENGINEERED WATER ANALYSIS OF THE SYSTEM (NEW OR EXISTING) TO EVALUATE THE APPROPRIATENESS OF THE WATER SERVICE SIZE. NO UNDERSIZED WATER SERVICES SHALL BE PERMITTED.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**4" WATER SERVICE
(AC AND C900 WATER MAINS)**

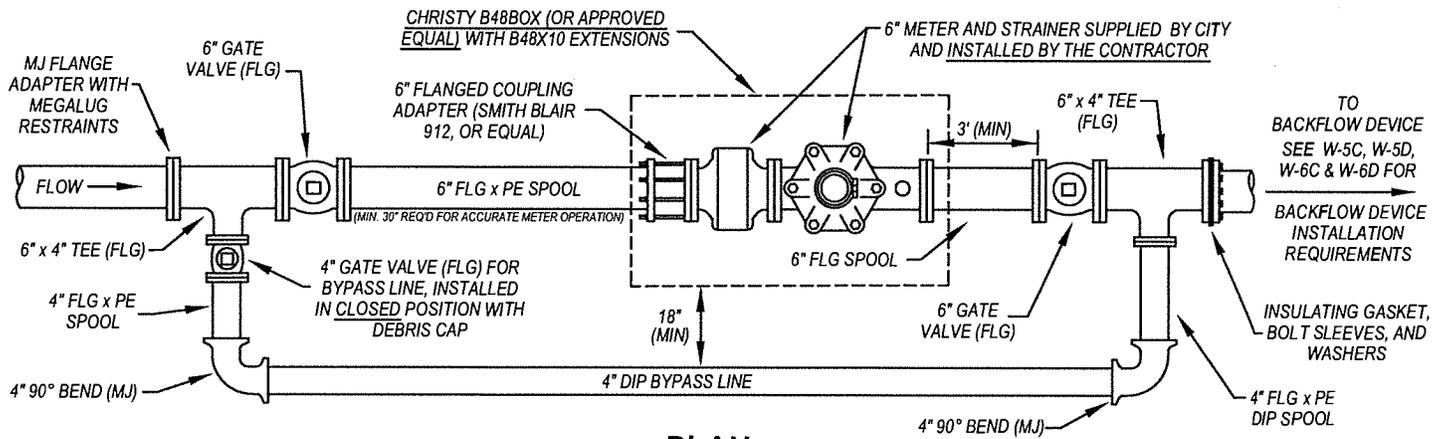
DATE REVISED: DECEMBER 2015

CHECKED: *[Signature]*

APPROVED: *[Signature]*

SCALE: NONE

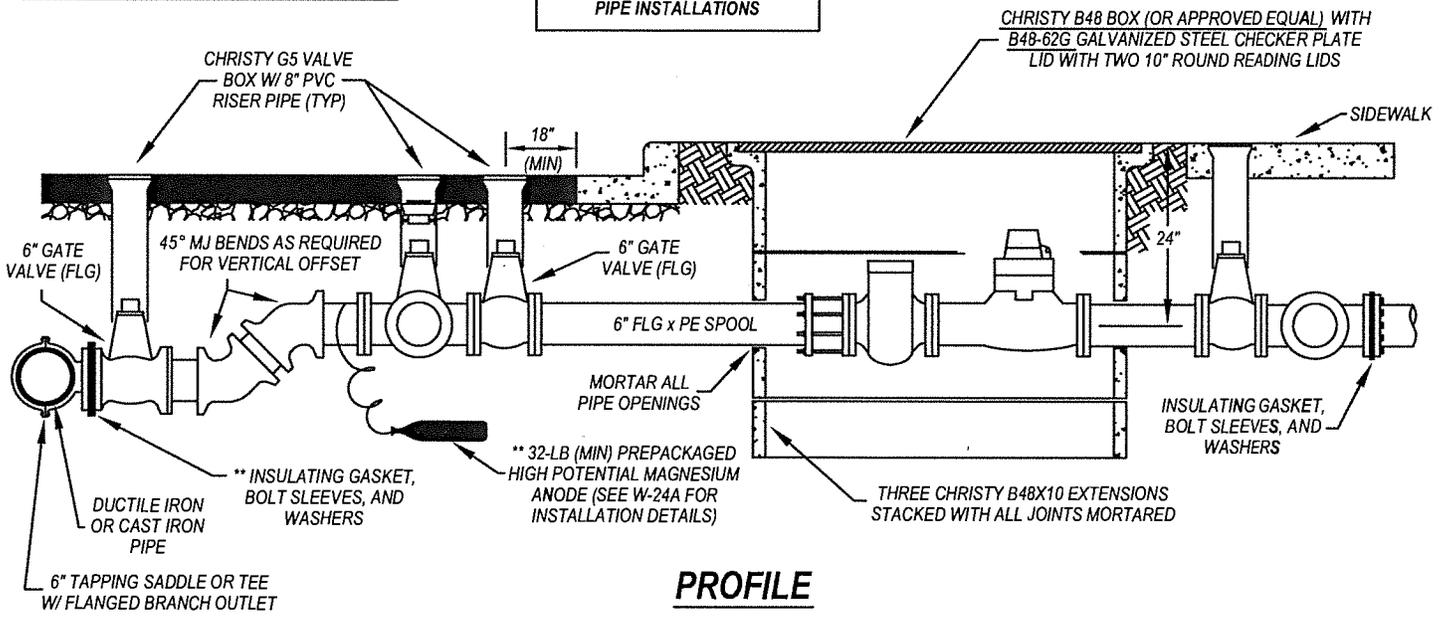
W - 3D.2
DWG NO.



PLAN

ALL JOINTS SHALL BE RESTRAINED. FITTINGS: MEGALUG RESTRAINTS, OR EQUAL PIPE BELLS: FIELD LOK GASKETS, OR EQUAL

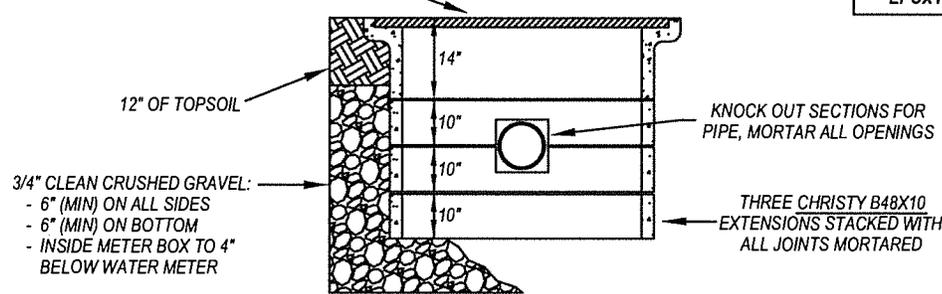
** REQUIRED FOR ALL METALLIC PIPE INSTALLATIONS



PROFILE

CHRISTY B48 BOX (OR APPROVED EQUAL) WITH B48-62G GALVANIZED STEEL CHECKER PLATE LID WITH TWO 10" ROUND READING LIDS

FLANGETYTE GASKETS BY U.S. PIPE SHALL BE USED FOR ALL FLANGED FITTINGS. INSULATING GASKETS SHALL BE TYPE E 1/8" THICK FULL-FACED NEOPRENE PHENOLIC GASKETS INSTALLED WITH GRADE G-10 FIBERGLASS EPOXY INSULATING BOLT SLEEVES AND WASHERS.



DETAIL

METER BOX INSTALLATION

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**6" WATER SERVICE
(CI OR DIP WATER MAINS)**

DATE REVISED: DECEMBER 2015
CHECKED: <i>[Signature]</i>
APPROVED: <i>[Signature]</i>
SCALE: NONE

DWG NO. **W - 3E.1**

NOTES

1. METER BOX AND SERVICE LINE SHALL BE INSTALLED 3-FT (MIN) OUTSIDE OF DRIVEWAY, DRIVEWAY APPROACHES, AND OTHER VEHICULAR ACCESS WAYS.
2. SERVICE LATERAL (FROM WATER MAIN TO TEE AT METER/BYPASS SPLIT) SHALL BE 6-INCH C900 PVC OR CLASS 350 DUCTILE IRON PIPE.
3. METER, STRAINER, ISOLATION GASKET (FOR METER ONLY), BOLT SLEEVES AND WASHERS ARE PROVIDED BY CITY OF NAPA AFTER PAYMENT OF METER SET FEE AND INSTALLED BY CONTRACTOR.
4. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL POLYETHYLENE WRAP. ALL BURIED INSULATED GASKETS SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF THE INSULATION POINTS.
5. EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER'S EXPENSE. HOT-TAP INCLUDES SADDLE, VALVE, G5 BOX, PVC RISER, AND MISCELLANEOUS FITTINGS. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT TAPS SHALL BE 36-IN (MIN) FROM ANY TAP, BELL, FITTING, OR OTHER SERVICE.
6. A TEE AND 6-INCH GATE VALVE SHALL BE INSTALLED INSTEAD OF A HOT-TAP WHEN THE EXISTING WATER MAIN IS 6-INCHES IN DIAMETER, OR WHEN IT IS INSTALLED AS PART OF A NEW WATER MAIN INSTALLATION. 6-INCH WATER SERVICES SHALL NOT BE INSTALLED ON WATER MAINS SMALLER THAN 6-INCHES IN DIAMETER.
7. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED, AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
8. METERS SHALL BE PLACED A MINIMUM OF 3-FT FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCES, WALLS, ETC.). NO TREES SHALL BE PLANTED WITHIN 10-FT OR LARGE SHRUBS WITHIN 5-FT OF THE METER BOX. SEE W-18 FOR ADDITIONAL REQUIREMENTS.
9. SERVICES SHALL BE SIZED APPROPRIATELY FOR THE INTENDED USE OF THE SERVICE. WATER DIVISION MAY REQUEST AN ENGINEERED WATER ANALYSIS OF THE SYSTEM (NEW OR EXISTING) TO EVALUATE THE APPROPRIATENESS OF THE WATER SERVICE SIZE. NO UNDERSIZED WATER SERVICES SHALL BE PERMITTED.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**6" WATER SERVICE
(CI OR DIP WATER MAINS)**

DATE REVISED: DECEMBER 2015

CHECKED: *[Signature]*

APPROVED: *[Signature]*

SCALE: NONE

W - 3E.2
DWG NO.

NOTES

1. METER BOX AND SERVICE LINE SHALL BE INSTALLED 3-FT (MIN) OUTSIDE OF DRIVEWAY, DRIVEWAY APPROACHES, AND OTHER VEHICULAR ACCESS WAYS.
2. SERVICE LATERAL (FROM WATER MAIN TO TEE AT METER/BYPASS SPLIT) SHALL BE 6-INCH C900 PVC OR CLASS 350 DUCTILE IRON PIPE.
3. METER, STRAINER, ISOLATION GASKET (FOR METER ONLY), BOLT SLEEVES AND WASHERS ARE PROVIDED BY CITY OF NAPA AFTER PAYMENT OF METER SET FEE AND INSTALLED BY CONTRACTOR.
4. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL POLYETHYLENE WRAP. ALL BURIED INSULATED GASKETS SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF THE INSULATION POINTS.
5. EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER'S EXPENSE. HOT-TAP INCLUDES SADDLE, VALVE, G5 BOX, PVC RISER, AND MISCELLANEOUS FITTINGS. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT TAPS SHALL BE 36-IN (MIN) FROM ANY TAP, BELL, FITTING, OR OTHER SERVICE.
6. A TEE AND 6-INCH GATE VALVE SHALL BE INSTALLED INSTEAD OF A HOT-TAP WHEN THE EXISTING WATER MAIN IS 6-INCHES IN DIAMETER, OR WHEN IT IS INSTALLED AS PART OF A NEW WATER MAIN INSTALLATION. 6-INCH WATER SERVICES SHALL NOT BE INSTALLED ON WATER MAINS SMALLER THAN 6-INCHES IN DIAMETER.
7. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED, AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
8. METERS SHALL BE PLACED A MINIMUM OF 3-FT FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCES, WALLS, ETC.). NO TREES SHALL BE PLANTED WITHIN 10-FT OR LARGE SHRUBS WITHIN 5-FT OF THE METER BOX. SEE W-18 FOR ADDITIONAL REQUIREMENTS.
9. SERVICES SHALL BE SIZED APPROPRIATELY FOR THE INTENDED USE OF THE SERVICE. WATER DIVISION MAY REQUEST AN ENGINEERED WATER ANALYSIS OF THE SYSTEM (NEW OR EXISTING) TO EVALUATE THE APPROPRIATENESS OF THE WATER SERVICE SIZE. NO UNDERSIZED WATER SERVICES SHALL BE PERMITTED.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**6" WATER SERVICE
(AC AND C900 WATER MAINS)**

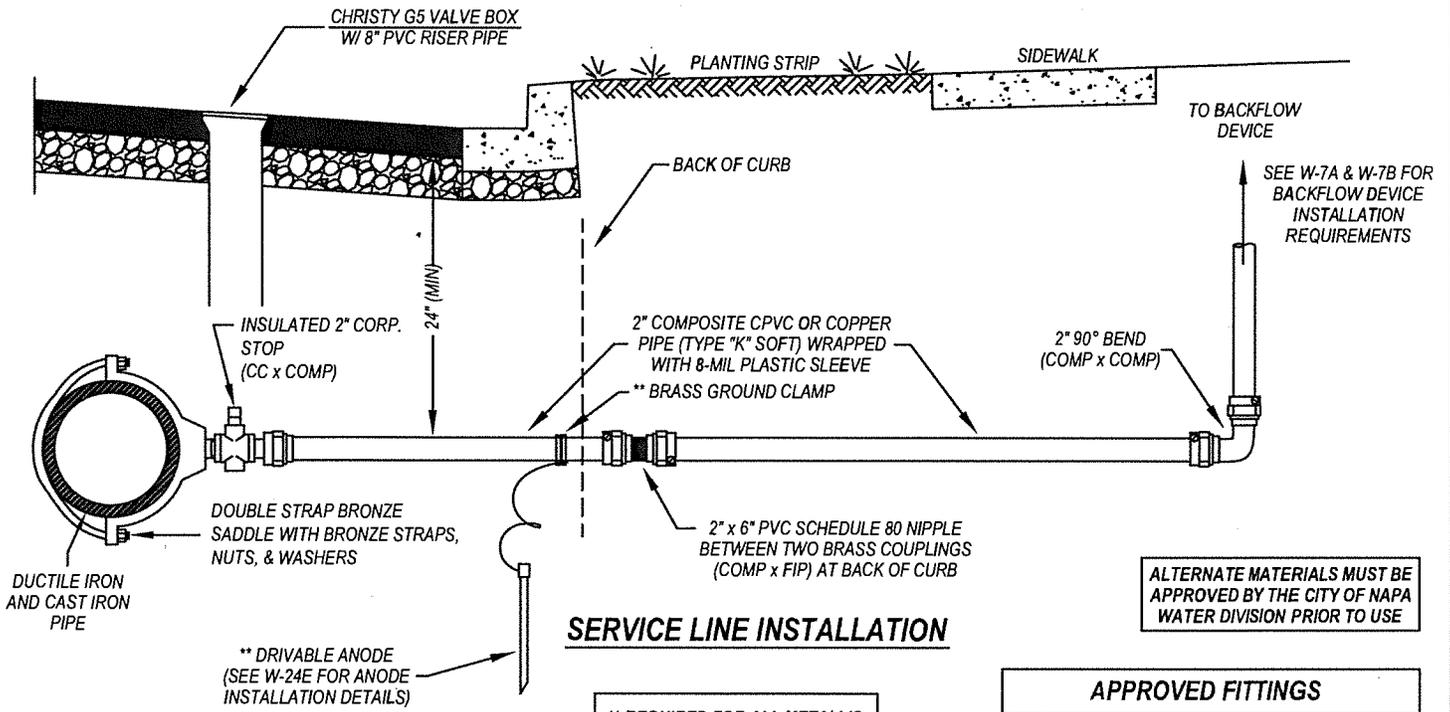
DATE REVISED: DECEMBER 2015

CHECKED: *[Signature]*

APPROVED: *[Signature]*

SCALE: NONE

DWG NO. **W - 3F.2**



SERVICE LINE INSTALLATION

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

FLANGETYTE GASKETS BY U.S. PIPE SHALL BE USED FOR ALL FLANGED FITTINGS. INSULATING GASKETS SHALL BE TYPE E 1/8" THICK FULL-FACED NEOPRENE PHENOLIC GASKETS INSTALLED WITH GRADE G-10 FIBERGLASS EPOXY INSULATING BOLT SLEEVES AND WASHERS.

** REQUIRED FOR ALL METALLIC PIPE INSTALLATIONS

APPROVED FITTINGS	
DESCRIPTION	MUELLER
INSULATED CORP. STOP (CC X COMP)	N-35008
COUPLING (COMP X FIP)	H-15451
90° BEND (COMP X COMP)	H-15526

** EXCEPT FOR INSULATED FITTINGS, FORD OR JONES EQUIVALENT ALSO APPROVED

NOTES

- CITY INSTALLATION ENDS AT INSULATING FITTING (AT BACK OF CURB). CONTRACTOR SHALL BE RESPONSIBLE FOR SERVICE INSTALLATION FROM INSULATING FITTING TO BACKFLOW DEVICE. ENCROACHMENT PERMIT REQUIRED.
- FIRE SERVICES SUPPLYING WATER TO PRIVATE FIRE HYDRANTS OR FIRE STORAGE TANKS SHALL BE INSTALLED WITH A DETECTION METER AT THE BACK OF CURB (SEE W-4E). METER BOX AND SERVICE LATERAL SHALL BE INSTALLED 3-FT (MIN) OUTSIDE OF DRIVEWAY, DRIVEWAY APPROACHES, AND OTHER VEHICULAR ACCESS WAYS.
- SERVICE LATERAL FROM MAIN TO METER SHALL BE 2-INCH COMPOSITE CPVC OR TYPE "K" SOFT COPPER PIPE.
- ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL PLASTIC SLEEVE. COPPER PIPE NOT WRAPPED IN A PLASTIC SLEEVE SHALL BE NSF 61 APPROVED PLASTIC COATED COPPER TUBING (TYPE "K" SOFT, BLUE IN COLOR). BURIED INSULATING GASKET AND COUPLING SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF THE INSULATION POINTS.
- EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER'S EXPENSE. HOT-TAP INCLUDES SADDLE VALVE, G5 BOX, PVC RISER, AND MISC. FITTINGS. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT-TAP SHALL BE INSTALLED 36-IN (MIN) FROM ANY TAP, BELL, FITTING, OR OTHER WATER SERVICE.
- APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED, AND WATER METERS (IF APPLICABLE) SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
- METERS SHALL BE PLACED A MINIMUM OF 3-FT FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCES, WALLS, ETC.). NO TREES SHALL BE PLANTED WITHIN 10-FT OR LARGE SHRUBS WITHIN 5-FT OF THE METER BOX. SEE W-18 FOR ADDITIONAL REQUIREMENTS.
- ONLY PRIVATE FIRE PROTECTION SYSTEMS (INCLUDING BUT NOT LIMITED TO FIRE SPRINKLERS AND FIRE HYDRANTS) SHALL BE CONNECTED TO FIRE SERVICES. OTHER USES MUST BE SERVED FROM STANDARD METERED WATER SERVICES. FIRE SERVICES WITH DETECTION METERS DO NOT QUALIFY AS STANDARD METERED WATER SERVICES.
- FIRE SERVICE LATERAL SIZE SHALL NOT EXCEED THE SIZE OF THE PUBLIC WATER MAIN THAT SERVES THE FIRE SERVICE. THE FIRE SERVICE SHALL BE SIZED SUCH THAT FIRE FLOW DEMANDS DO NOT EXCEED A 10-FT/SEC FLOW RATE THROUGH THE FIRE SERVICE LATERAL.

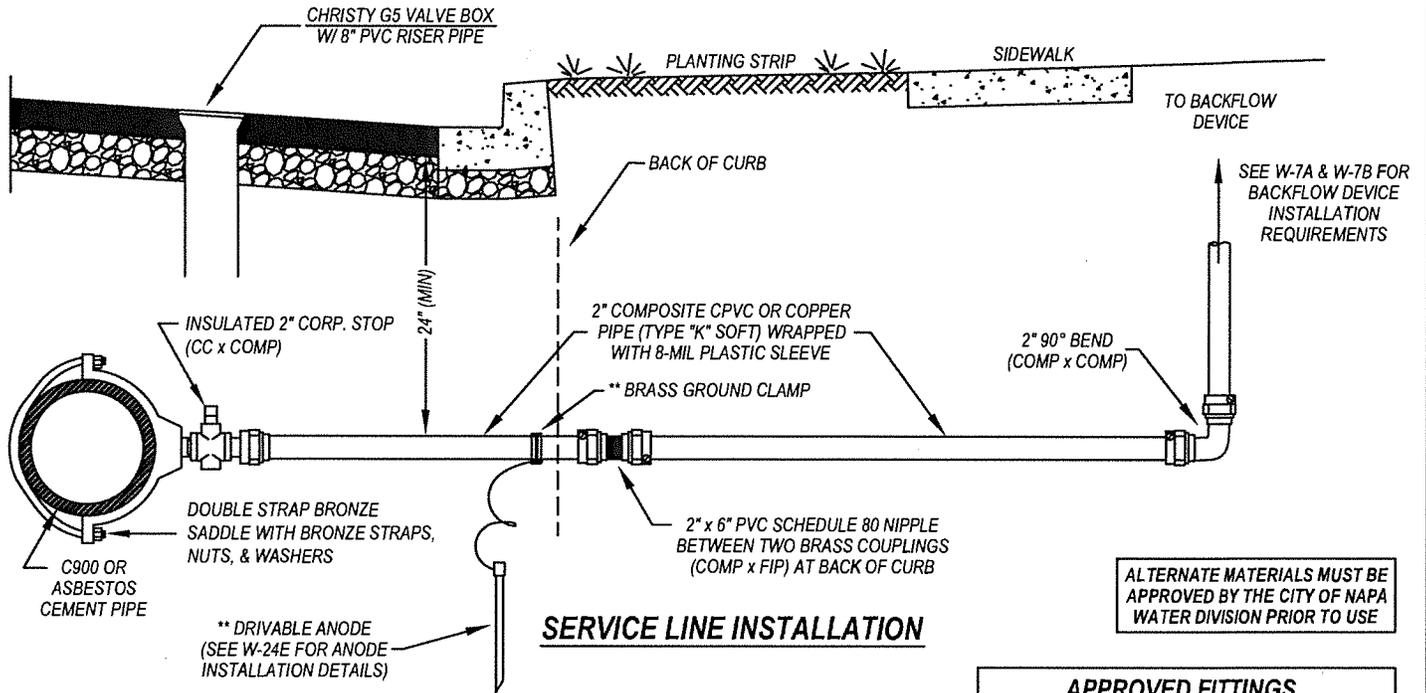
CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**2" FIRE SERVICE
(CI AND DIP WATER MAINS)**

DATE REVISED: DECEMBER 2015
CHECKED: <i>[Signature]</i>
APPROVED: <i>[Signature]</i>
SCALE: NONE

DWG NO. **W-4A**



FLANGETYPE GASKETS BY U.S. PIPE SHALL BE USED FOR ALL FLANGED FITTINGS.

** REQUIRED FOR ALL METALLIC PIPE INSTALLATIONS

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

APPROVED FITTINGS	
DESCRIPTION	MUELLER
INSULATED CORP. STOP (CC x COMP)	N-35008
COUPLING (COMP x FIP)	H-15451
90° BEND (COMP x COMP)	H-15526

** EXCEPT FOR INSULATED FITTINGS, FORD OR JONES EQUIVALENT ALSO APPROVED

NOTES

1. CITY INSTALLATION ENDS AT **INSULATING FITTING** (AT BACK OF CURB). CONTRACTOR SHALL BE RESPONSIBLE FOR SERVICE INSTALLATION FROM INSULATING FITTING TO BACKFLOW DEVICE. ENCROACHMENT PERMIT REQUIRED.
2. FIRE SERVICES SUPPLYING WATER TO PRIVATE FIRE HYDRANTS OR FIRE STORAGE TANKS SHALL BE INSTALLED WITH A DETECTION METER AT THE BACK OF CURB (SEE W-4F). METER BOX AND SERVICE LATERAL SHALL BE INSTALLED 3-FT (MIN) OUTSIDE OF DRIVEWAY, DRIVEWAY APPROACHES, AND OTHER VEHICULAR ACCESS WAYS.
3. SERVICE LATERAL FROM MAIN TO METER SHALL BE 2-INCH COMPOSITE CPVC OR TYPE "K" SOFT COPPER PIPE.
4. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL PLASTIC SLEEVE. COPPER PIPE NOT WRAPPED IN A PLASTIC SLEEVE SHALL BE NSF 61 APPROVED PLASTIC COATED COPPER TUBING (TYPE "K" SOFT, BLUE IN COLOR). BURIED INSULATING COUPLING SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF THE INSULATION POINT.
5. EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER'S EXPENSE. HOT-TAP INCLUDES SADDLE VALVE, G5 BOX, PVC RISER, AND MISC. FITTINGS. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT-TAP SHALL BE INSTALLED 36-IN (MIN) FROM ANY TAP, BELL, FITTING, OR OTHER WATER SERVICE.
6. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED, AND WATER METERS (IF APPLICABLE) SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
7. METERS SHALL BE PLACED A MINIMUM OF 3-FT FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCES, WALLS, ETC.). NO TREES SHALL BE PLANTED WITHIN 10-FT OR LARGE SHRUBS WITHIN 5-FT OF THE METER BOX. SEE W-18 FOR ADDITIONAL REQUIREMENTS.
8. ONLY PRIVATE FIRE PROTECTION SYSTEMS (INCLUDING BUT NOT LIMITED TO FIRE SPRINKLERS AND FIRE HYDRANTS) SHALL BE CONNECTED TO FIRE SERVICES. OTHER USES MUST BE SERVED FROM STANDARD METERED WATER SERVICES. FIRE SERVICES WITH DETECTION METERS DO NOT QUALIFY AS STANDARD METERED WATER SERVICES.
9. FIRE SERVICE LATERAL SIZE SHALL NOT EXCEED THE SIZE OF THE PUBLIC WATER MAIN THAT SERVES THE FIRE SERVICE. THE FIRE SERVICE SHALL BE SIZED SUCH THAT FIRE FLOW DEMANDS DO NOT EXCEED A 10-FT/SEC FLOW RATE THROUGH THE FIRE SERVICE LATERAL.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**2" FIRE SERVICE
(AC AND C900 WATER MAINS)**

DATE REVISED: DECEMBER 2015

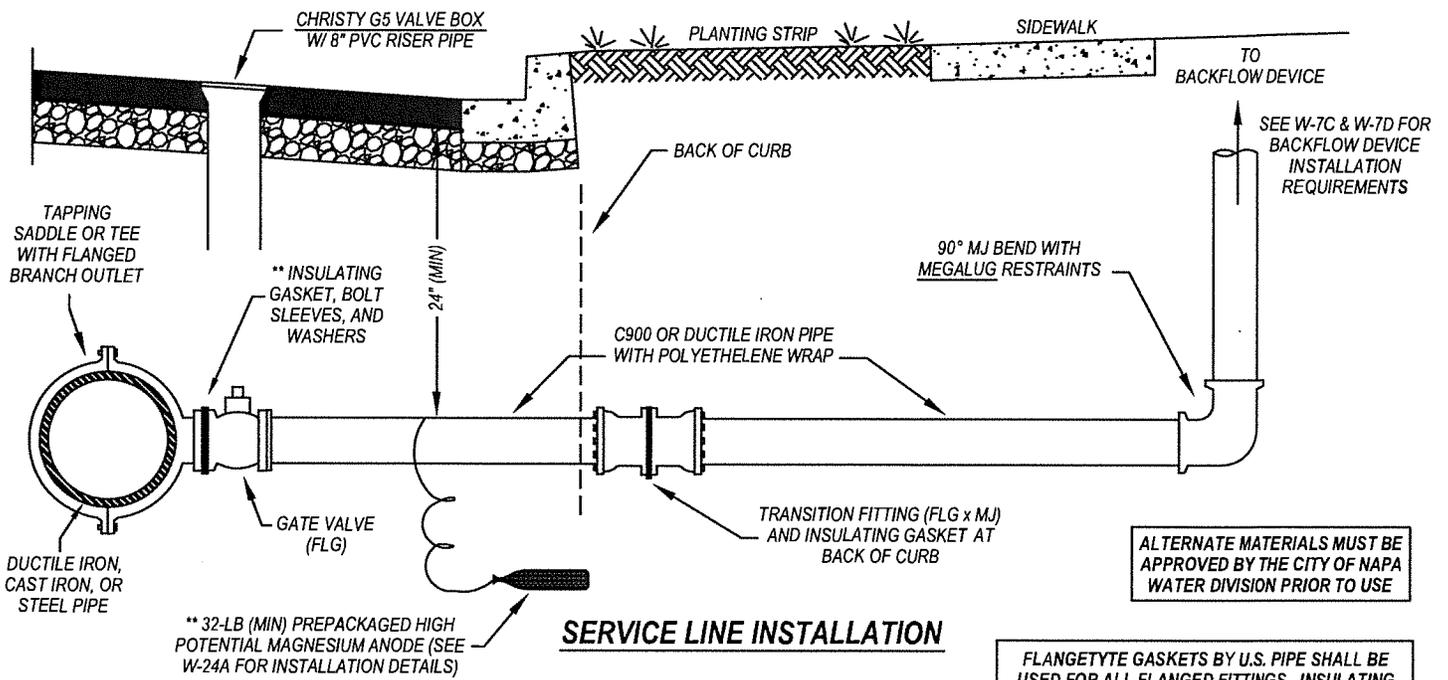
CHECKED: *[Signature]*

APPROVED: *[Signature]*

SCALE: NONE

DWG NO.

W - 4B



SERVICE LINE INSTALLATION

ALL JOINTS SHALL BE RESTRAINED.
FITTINGS: MEGALUG RESTRAINTS, OR EQUAL
PIPE BELLS: FIELD LOK GASKETS, OR EQUAL

** REQUIRED FOR ALL METALLIC
PIPE INSTALLATIONS

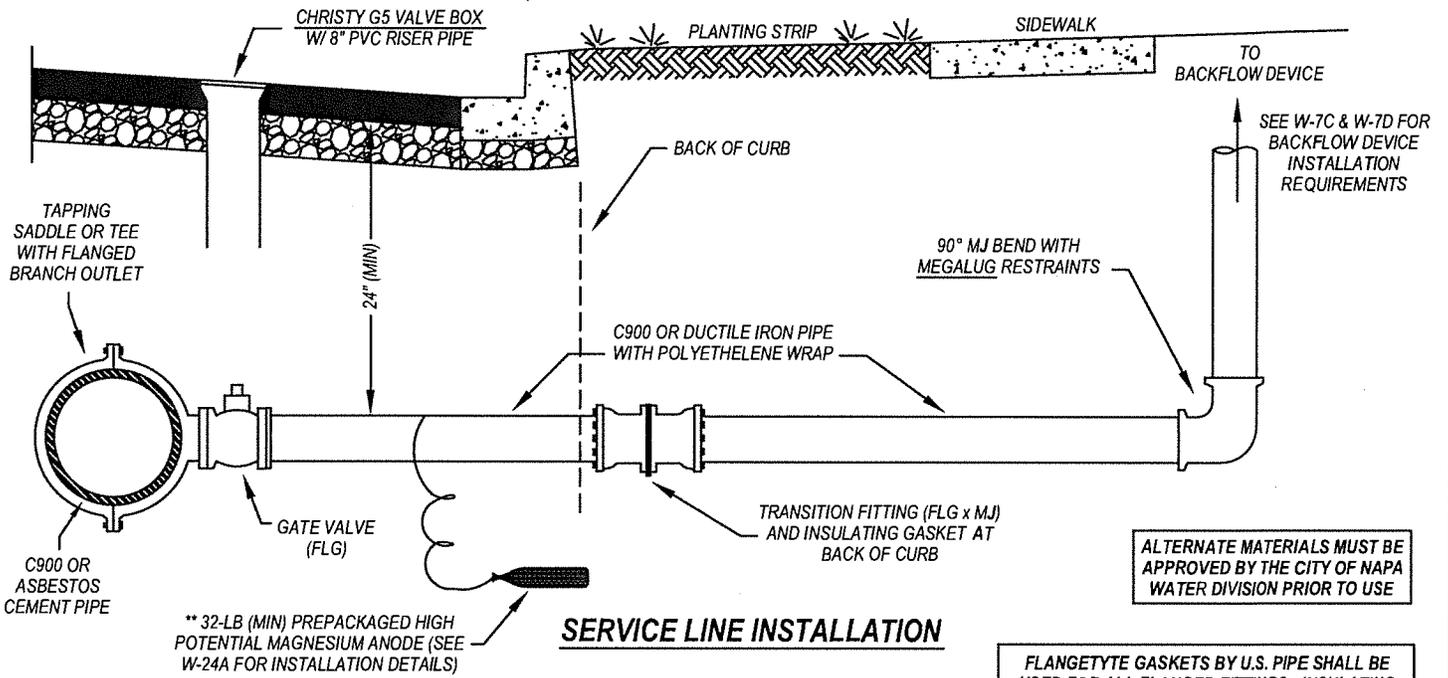
ALTERNATE MATERIALS MUST BE
APPROVED BY THE CITY OF NAPA
WATER DIVISION PRIOR TO USE

FLANGETYTE GASKETS BY U.S. PIPE SHALL BE
USED FOR ALL FLANGED FITTINGS. INSULATING
GASKETS SHALL BE TYPE E 1/8" THICK
FULL-FACED NEOPRENE PHENOLIC GASKETS
INSTALLED WITH GRADE G-10 FIBERGLASS EPOXY
INSULATING BOLT SLEEVES AND WASHERS.

NOTES

1. CITY INSTALLATION ENDS AT **INSULATING FITTING** (AT BACK OF CURB). CONTRACTOR SHALL BE RESPONSIBLE FOR SERVICE INSTALLATION FROM INSULATING FITTING TO BACKFLOW DEVICE. ENCROACHMENT PERMIT REQUIRED.
2. FIRE SERVICES SUPPLYING WATER TO PRIVATE FIRE HYDRANTS OR FIRE STORAGE TANKS SHALL BE INSTALLED WITH A DETECTION METER AT THE BACK OF CURB (SEE W-4E). METER BOX AND SERVICE LATERAL SHALL BE INSTALLED 3-FT (MIN) OUTSIDE OF DRIVEWAY, DRIVEWAY APPROACHES, AND OTHER VEHICULAR ACCESS WAYS.
3. SERVICE LATERAL FROM MAIN TO METER SHALL BE C900 PVC OR CLASS 350 DUCTILE IRON PIPE.
4. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL POLYETHYLENE WRAP. ALL BURIED INSULATED GASKETS SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF THE INSULATION POINTS.
5. EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER'S EXPENSE. HOT-TAP INCLUDES SADDLE VALVE, G5 BOX, PVC RISER, AND MISC. FITTINGS. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT-TAP SHALL BE INSTALLED 36-IN (MIN) FROM ANY TAP, BELL, FITTING, OR OTHER WATER SERVICE.
6. A TEE AND GATE VALVE SHALL BE INSTALLED INSTEAD OF A HOT-TAP WHEN THE EXISTING WATER MAIN IS EQUAL TO THE DIAMETER OF THE NEW WATER SERVICE, OR WHEN THE WATER SERVICES IS INSTALLED AS PART OF A NEW WATER MAIN INSTALLATION. WATER SERVICES SHALL NOT BE INSTALLED ON WATER MAINS WITH A SMALLER DIAMETER THAN THE WATER SERVICE.
7. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED, AND WATER METERS (IF APPLICABLE) SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
8. METERS SHALL BE PLACED A MINIMUM OF 3-FT FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCES, WALLS, ETC.). NO TREES SHALL BE PLANTED WITHIN 10-FT OR LARGE SHRUBS WITHIN 5-FT OF THE METER BOX. SEE W-18 FOR ADDITIONAL REQUIREMENTS.
9. ONLY PRIVATE FIRE PROTECTION SYSTEMS (INCLUDING BUT NOT LIMITED TO FIRE SPRINKLERS AND FIRE HYDRANTS) SHALL BE CONNECTED TO FIRE SERVICES. OTHER USES MUST BE SERVED FROM STANDARD METERED WATER SERVICES. FIRE SERVICES WITH DETECTION METERS DO NOT QUALIFY AS STANDARD METERED WATER SERVICES.
10. FIRE SERVICE LATERAL SIZE SHALL NOT EXCEED THE SIZE OF THE PUBLIC WATER MAIN THAT SERVES THE FIRE SERVICE. THE FIRE SERVICE SHALL BE SIZED SUCH THAT FIRE FLOW DEMANDS DO NOT EXCEED A 10-FT/SEC FLOW RATE THROUGH THE FIRE SERVICE LATERAL.

<p>CITY OF NAPA</p> <p>4" AND LARGER FIRE SERVICE - NO PRIVATE HYDRANTS (CI AND DIP WATER MAINS)</p>	<p>PUBLIC WORKS - WATER DIVISION</p>	<p>W - 4C</p>
<p>DATE REVISED: DECEMBER 2015</p> <p>CHECKED: <i>[Signature]</i></p> <p>APPROVED: <i>[Signature]</i></p> <p>SCALE: NONE</p>		<p>DWG NO.</p>



SERVICE LINE INSTALLATION

ALL JOINTS SHALL BE RESTRAINED.
 FITTINGS: MEGALUG RESTRAINTS, OR EQUAL
 PIPE BELLS: FIELD LOK GASKETS, OR EQUAL

** REQUIRED FOR ALL METALLIC
 PIPE INSTALLATIONS

ALTERNATE MATERIALS MUST BE
 APPROVED BY THE CITY OF NAPA
 WATER DIVISION PRIOR TO USE

FLANGETYTE GASKETS BY U.S. PIPE SHALL BE
 USED FOR ALL FLANGED FITTINGS. INSULATING
 GASKETS SHALL BE TYPE E 1/8" THICK
 FULL-FACED NEOPRENE PHENOLIC GASKETS
 INSTALLED WITH GRADE G-10 FIBERGLASS EPOXY
 INSULATING BOLT SLEEVES AND WASHERS.

** 32-LB (MIN) PREPACKAGED HIGH
 POTENTIAL MAGNESIUM ANODE (SEE
 W-24A FOR INSTALLATION DETAILS)

NOTES

1. CITY INSTALLATION ENDS AT **INSULATING FITTING** (AT BACK OF CURB). CONTRACTOR SHALL BE RESPONSIBLE FOR SERVICE INSTALLATION FROM INSULATING FITTING TO BACKFLOW DEVICE. ENCROACHMENT PERMIT REQUIRED.
2. FIRE SERVICES SUPPLYING WATER TO PRIVATE FIRE HYDRANTS OR FIRE STORAGE TANKS SHALL BE INSTALLED WITH A DETECTION METER AT THE BACK OF CURB (SEE W-4E). METER BOX AND SERVICE LATERAL SHALL BE INSTALLED 3-FT (MIN) OUTSIDE OF DRIVEWAY, DRIVEWAY APPROACHES, AND OTHER VEHICULAR ACCESS WAYS.
3. SERVICE LATERAL FROM MAIN TO METER SHALL BE C900 PVC OR CLASS 350 DUCTILE IRON PIPE.
4. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL POLYETHYLENE WRAP. ALL BURIED INSULATED GASKETS SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF THE INSULATION POINTS.
5. EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER'S EXPENSE. HOT-TAP INCLUDES SADDLE VALVE, G5 BOX, PVC RISER, AND MISC. FITTINGS. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT-TAP SHALL BE INSTALLED 36-IN (MIN) FROM ANY TAP, BELL, FITTING, OR OTHER WATER SERVICE.
6. A TEE AND GATE VALVE SHALL BE INSTALLED INSTEAD OF A HOT-TAP WHEN THE EXISTING WATER MAIN IS EQUAL TO THE DIAMETER OF THE NEW WATER SERVICE, OR WHEN THE WATER SERVICES IS INSTALLED AS PART OF A NEW WATER MAIN INSTALLATION. WATER SERVICES SHALL NOT BE INSTALLED ON WATER MAINS WITH A SMALLER DIAMETER THAN THE WATER SERVICE.
7. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED, AND WATER METERS (IF APPLICABLE) SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
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10. FIRE SERVICE LATERAL SIZE SHALL NOT EXCEED THE SIZE OF THE PUBLIC WATER MAIN THAT SERVES THE FIRE SERVICE. THE FIRE SERVICE SHALL BE SIZED SUCH THAT FIRE FLOW DEMANDS DO NOT EXCEED A 10-FT/SEC FLOW RATE THROUGH THE FIRE SERVICE LATERAL.

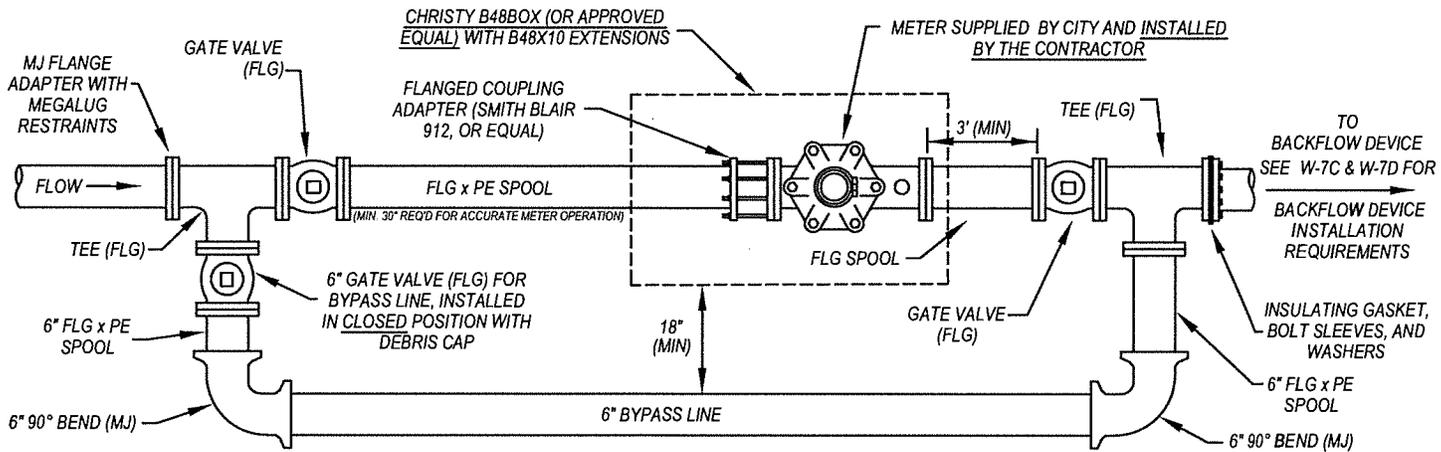
CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**4" AND LARGER FIRE SERVICE
 - NO PRIVATE HYDRANTS
 (AC AND C900 WATER MAINS)**

DATE REVISED: DECEMBER 2015
 CHECKED: *[Signature]*
 APPROVED: *[Signature]*
 SCALE: NONE

DWG NO. **W - 4D**

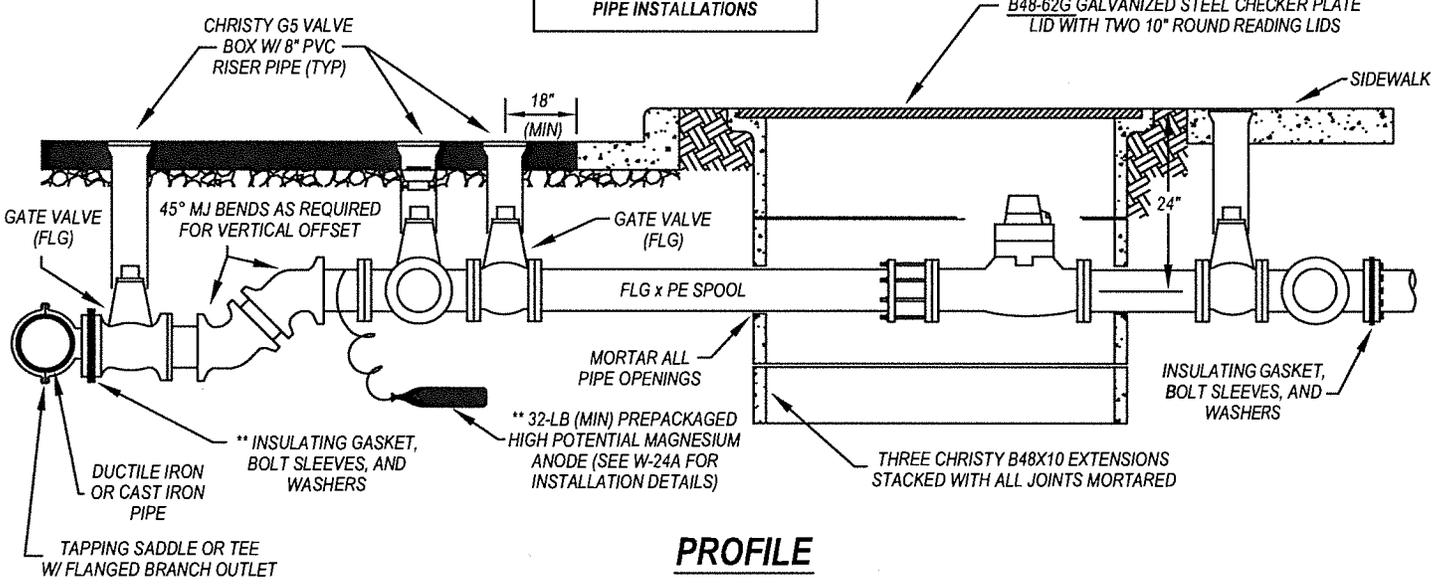


PLAN

ALL JOINTS SHALL BE RESTRAINED. FITTINGS: MEGALUG RESTRAINTS, OR EQUAL PIPE BELLS: FIELD LOK GASKETS, OR EQUAL

** REQUIRED FOR ALL METALLIC PIPE INSTALLATIONS

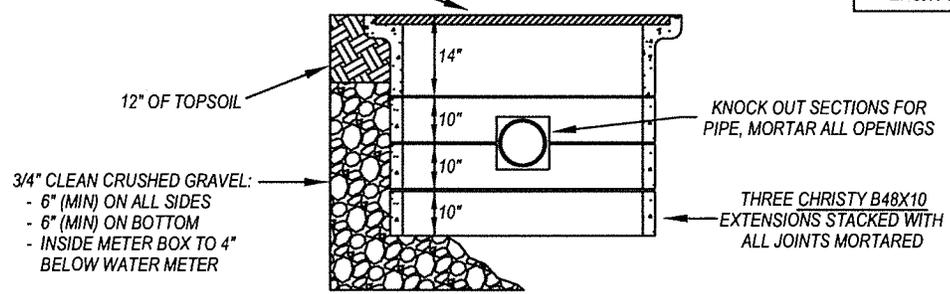
CHRISTY B48 BOX (OR APPROVED EQUAL) WITH B48-62G GALVANIZED STEEL CHECKER PLATE LID WITH TWO 10" ROUND READING LIDS



PROFILE

CHRISTY B48 BOX (OR APPROVED EQUAL) WITH B48-62G GALVANIZED STEEL CHECKER PLATE LID WITH TWO 10" ROUND READING LIDS

FLANGETYPE GASKETS BY U.S. PIPE SHALL BE USED FOR ALL FLANGED FITTINGS. INSULATING GASKETS SHALL BE TYPE E 1/8" THICK FULL-FACED NEOPRENE PHENOLIC GASKETS INSTALLED WITH GRADE G-10 FIBERGLASS EPOXY INSULATING BOLT SLEEVES AND WASHERS.



DETAIL

METER BOX INSTALLATION

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**METERED FIRE SERVICE
- WITH PRIVATE HYDRANTS
(CI OR DIP WATER MAINS)**

DATE REVISED: DECEMBER 2015
CHECKED: <i>[Signature]</i>
APPROVED: <i>[Signature]</i>
SCALE: NONE

W - 4E.1
DWG NO.

NOTES

1. METER BOX AND SERVICE LINE SHALL BE INSTALLED 3-FT (MIN) OUTSIDE OF DRIVEWAY, DRIVEWAY APPROACHES, AND OTHER VEHICULAR ACCESS WAYS.
2. SERVICE LATERAL (FROM WATER MAIN TO TEE AT METER/BYPASS SPLIT) SHALL BE C900 PVC OR CLASS 350 DUCTILE IRON PIPE.
3. METER, ISOLATION GASKET (FOR METER ONLY), BOLT SLEEVES AND WASHERS ARE PROVIDED BY CITY OF NAPA AFTER PAYMENT OF METER SET FEE AND INSTALLED BY CONTRACTOR.
4. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL POLYETHYLENE WRAP. ALL BURIED INSULATED GASKETS SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF THE INSULATION POINTS.
5. EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER'S EXPENSE. HOT-TAP INCLUDES SADDLE, VALVE, G5 BOX, PVC RISER, AND MISCELLANEOUS FITTINGS. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT TAPS SHALL BE 36-IN (MIN) FROM ANY TAP, BELL, FITTING, OR OTHER SERVICE.
6. A TEE AND GATE VALVE SHALL BE INSTALLED INSTEAD OF A HOT-TAP WHEN THE EXISTING WATER MAIN IS EQUAL IN DIAMETER TO THE SERVICE, OR WHEN IT IS INSTALLED AS PART OF A NEW WATER MAIN INSTALLATION. WATER SERVICES SHALL NOT BE INSTALLED ON WATER MAINS SMALLER THAN THE SERVICE IN DIAMETER.
7. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED, AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
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CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**METERED FIRE SERVICE
- WITH PRIVATE HYDRANTS
(CI OR DIP WATER MAINS)**

DATE REVISED: DECEMBER 2015

CHECKED:

APPROVED:

SCALE:

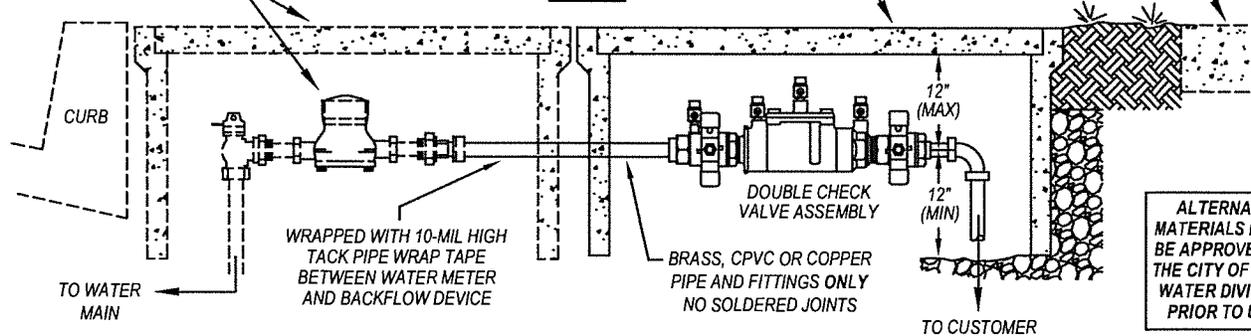
NONE

W - 4E.2
DWG NO.

FOR METER BOX AND WATER METER
INSTALLATION, SEE W-1A & W-1B

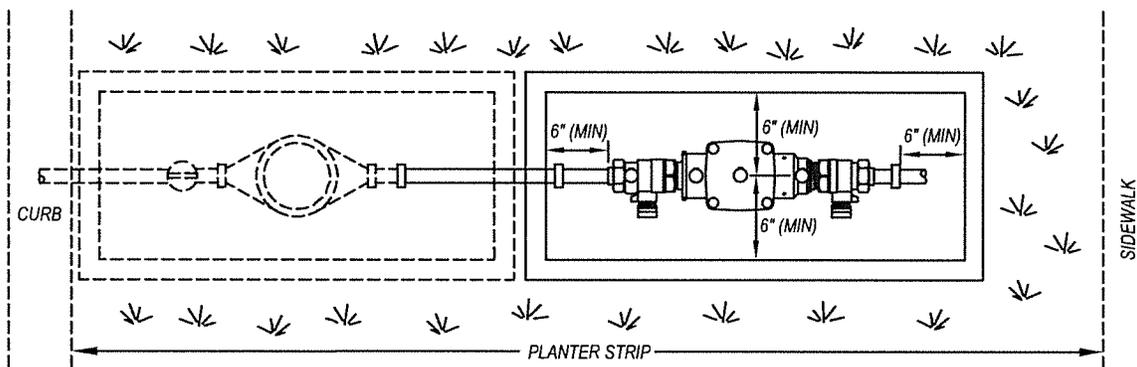
CHRISTY B16 METER BOX (OR APPROVED EQUAL) WITH
FIBRELYTE FL16D LID MARKED "WATER"

SIDEWALK



ALTERNATE
MATERIALS MUST
BE APPROVED BY
THE CITY OF NAPA
WATER DIVISION
PRIOR TO USE

PROFILE



PLAN

CLEARANCE REQUIREMENTS

NOTES

1. **CURB ADJACENT SIDEWALK:** INSTALL METER AT BACK OF CURB AS SHOWN. INSTALL BACKFLOW DEVICE AT BACK OF SIDEWALK.
2. DOUBLE CHECK VALVE MUST BE INSTALLED IN A TRUE HORIZONTAL POSITION.
3. DOUBLE CHECK VALVE MUST BE INSTALLED WITHIN IN A PROTECTIVE BOX. STACKED BOXES SHALL BE USED AS NEEDED TO MAINTAIN CLEARANCE REQUIREMENTS.
4. NO CONNECTIONS ARE ALLOWED BETWEEN THE WATER METER AND THE DOUBLE CHECK VALVE ASSEMBLY.
5. ALL PARTS MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
6. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
7. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS BETWEEN THE WATER METER AND THE BACKFLOW DEVICE SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE. WRAPPING METALLIC PIPE AND FITTINGS BEYOND THE BACKFLOW DEVICE IS RECOMMENDED, BUT NOT REQUIRED.
8. INSTALLATION MUST BE APPROVED BY THE WATER DIVISION CROSS CONNECTION SPECIALIST AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON.
9. DOUBLE CHECK ASSEMBLY MUST BE APPROVED BY THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES.
10. NO TREES SHALL BE PLANTED WITHIN 10-FT, OR LARGE SHRUBS WITHIN 5-FT, OF DOUBLE CHECK VALVE.
11. DOUBLE CHECK BACKFLOW DEVICES MAY BE USED FOR IRRIGATION WATER SERVICES, EXCEPT IF AN IRRIGATION SERVES A PROPERTY USING ALTERNATE WATER SOURCES (INCLUDING WELLS, RECLAIMED WATER, PONDS, ETC.). IF ALTERNATE WATER SOURCES ARE USED, SEE W-6A FOR INSTALLATION REQUIREMENTS.
12. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.

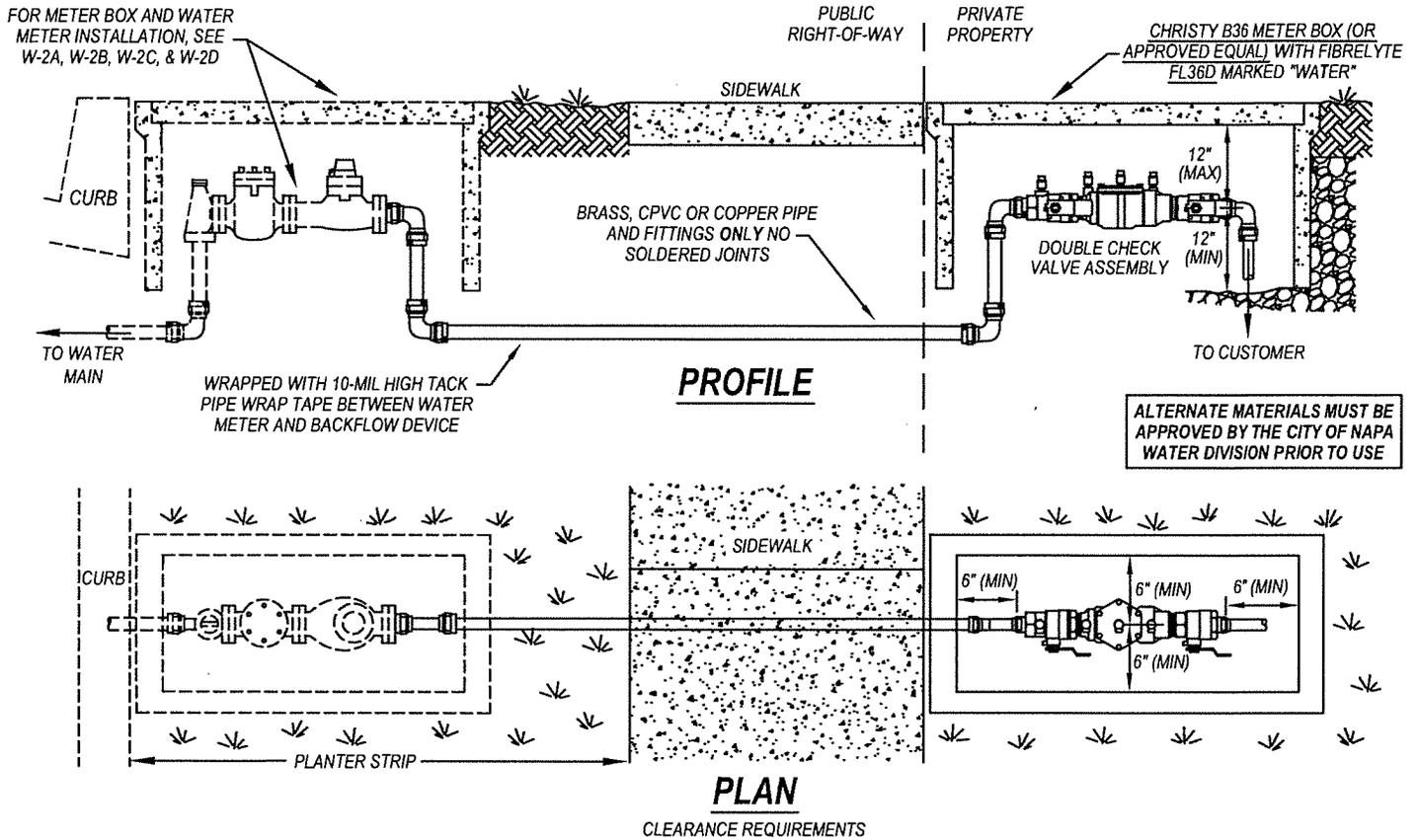
CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**DOUBLE CHECK VALVE
BACKFLOW DEVICE INSTALLATION FOR
3/4" AND 1" RESIDENTIAL WATER SERVICES**

DATE REVISED: DECEMBER 2015
CHECKED: <i>[Signature]</i>
APPROVED: <i>[Signature]</i>
SCALE: NONE

W - 5A
DWG NO.



NOTES

1. **CURB ADJACENT SIDEWALK:** INSTALL METER AT BACK OF CURB AS SHOWN. INSTALL BACKFLOW DEVICE AT BACK OF SIDEWALK.
2. DOUBLE CHECK VALVE MUST BE INSTALLED IN A TRUE HORIZONTAL POSITION.
3. DOUBLE CHECK VALVE MUST BE INSTALLED WITHIN IN A PROTECTIVE BOX. STACKED BOXES SHALL BE USED AS NEEDED TO MAINTAIN CLEARANCE REQUIREMENTS.
4. NO CONNECTIONS ARE ALLOWED BETWEEN THE WATER METER AND THE DOUBLE CHECK VALVE ASSEMBLY.
5. ALL PARTS MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
6. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
7. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS BETWEEN THE WATER METER AND THE BACKFLOW DEVICE SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE. WRAPPING METALLIC PIPE AND FITTINGS BEYOND THE BACKFLOW DEVICE IS RECOMMENDED, BUT NOT REQUIRED.
8. INSTALLATION MUST BE APPROVED BY THE WATER DIVISION CROSS CONNECTION SPECIALIST AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON.
9. DOUBLE CHECK ASSEMBLY MUST BE APPROVED BY THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES.
10. NO TREES SHALL BE PLANTED WITHIN 10-FT, OR LARGE SHRUBS WITHIN 5-FT, OF DOUBLE CHECK VALVE.
11. DOUBLE CHECK BACKFLOW DEVICES MAY BE USED FOR IRRIGATION WATER SERVICES, EXCEPT IF AN IRRIGATION SERVES A PROPERTY USING ALTERNATE WATER SOURCES (INCLUDING WELLS, RECLAIMED WATER, PONDS, ETC.). IF ALTERNATE WATER SOURCES ARE USED, SEE W-6A FOR INSTALLATION REQUIREMENTS.
12. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
13. BACKFLOW DEVICE CAN BE INSTALLED WITHIN A BUILDING IN A DEDICATED UTILITY CLOSET IF THE BUILDING IS LOCATED WITHIN 20-FT OF THE PUBLIC RIGHT-OF-WAY, THE BACKFLOW DEVICE IS PLACED AT THE CORNER OF THE BUILDING CLOSEST TO THE PUBLIC RIGHT-OF-WAY WHERE THE CONNECTION IS MADE, AND WITH THE APPROVAL FROM THE WATER DIVISION CROSS CONNECTION SPECIALIST (SEE W-5D FOR INTERNAL INSTALLATION REQUIREMENTS).

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**DOUBLE CHECK VALVE
BACKFLOW DEVICE INSTALLATION FOR
1.5" AND 2" RESIDENTIAL WATER SERVICES**

DATE REVISED: DECEMBER 2015

CHECKED:

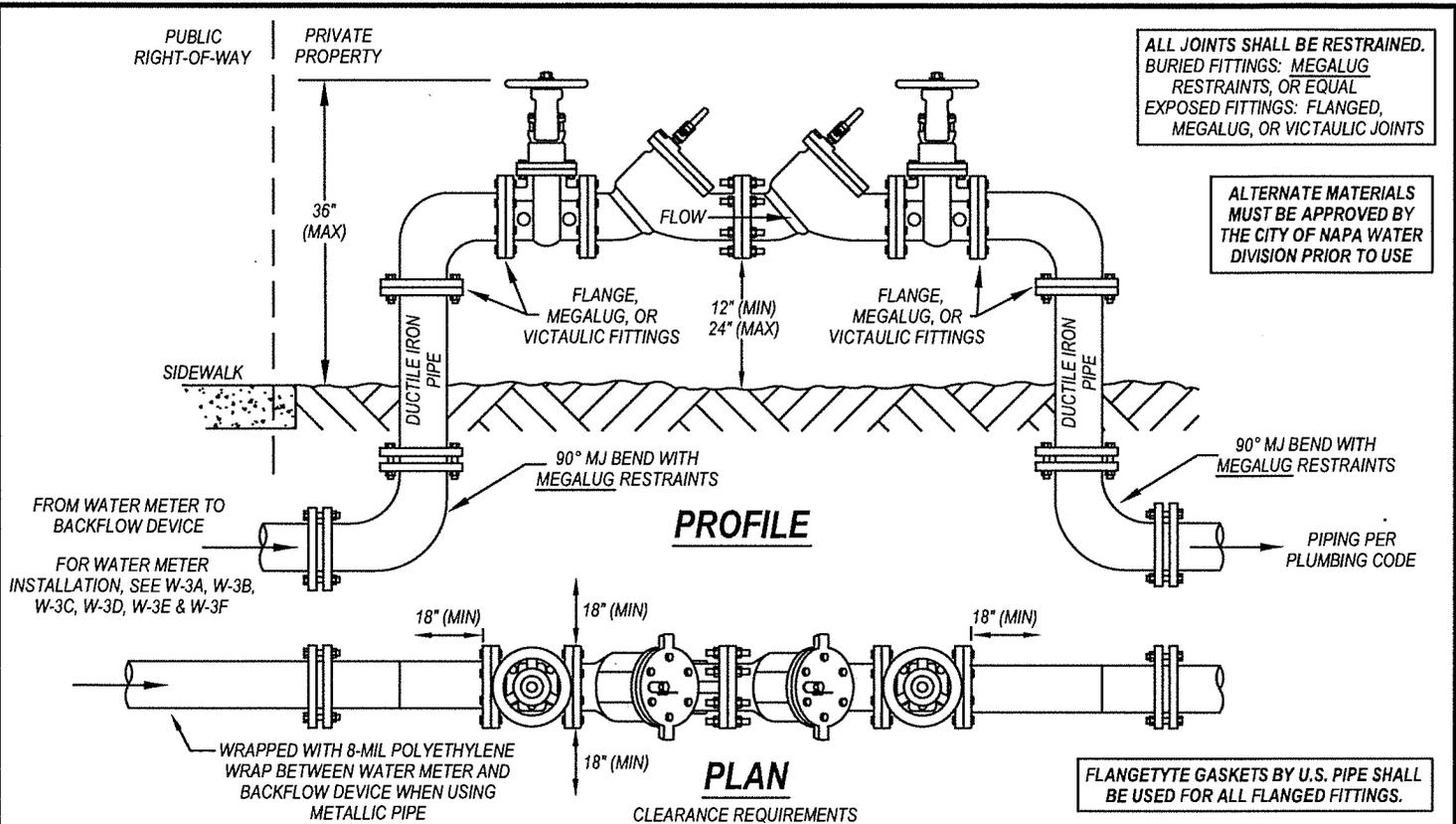
APPROVED:

SCALE:

[Handwritten signatures]
NONE

DWG NO.

W - 5B



NOTES

1. BACKFLOW DEVICE MUST BE INSTALLED BEHIND THE BACK OF SIDEWALK OUTSIDE OF THE PUBLIC RIGHT-OF-WAY AND PROTECTED FROM TRAFFIC HAZARDS, EITHER BY LOCATION OR BARRIERS.
2. BACKFLOW DEVICE CAN BE INSTALLED WITHIN A BUILDING IN A DEDICATED UTILITY CLOSET IF THE BUILDING IS LOCATED WITHIN 20-FT OF THE PUBLIC RIGHT-OF-WAY, THE BACKFLOW DEVICE IS PLACED AT THE CORNER OF THE BUILDING CLOSEST TO THE PUBLIC RIGHT-OF-WAY WHERE THE CONNECTION IS MADE, AND WITH THE APPROVAL FROM THE WATER DIVISION CROSS CONNECTION SPECIALIST (SEE W-5D FOR INTERNAL INSTALLATION REQUIREMENTS).
3. NO CONNECTIONS ARE ALLOWED BETWEEN THE WATER METER AND THE DOUBLE CHECK VALVE ASSEMBLY, OR DIRECTLY TO THE BACKFLOW DEVICE.
4. ALL PARTS MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
5. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
6. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS BETWEEN THE WATER METER AND THE BACKFLOW DEVICE SHALL BE WRAPPED WITH 8-MIL POLYETHYLENE WRAP. WRAPPING METALLIC PIPE AND FITTINGS BEYOND THE BACKFLOW DEVICE IS RECOMMENDED, BUT NOT REQUIRED.
7. INSTALLATION MUST BE APPROVED BY THE WATER DIVISION CROSS CONNECTION SPECIALIST AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON.
8. DOUBLE CHECK ASSEMBLY MUST BE APPROVED BY THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES.
9. NO TREES SHALL BE PLANTED WITHIN 10-FT, OR LARGE SHRUBS WITHIN 5-FT, OF DOUBLE CHECK VALVE.
10. DOUBLE CHECK BACKFLOW DEVICES MAY BE USED FOR IRRIGATION WATER SERVICES, EXCEPT IF AN IRRIGATION SERVES A PROPERTY USING ALTERNATE WATER SOURCES (INCLUDING WELLS, RECLAIMED WATER, PONDS, ETC.). IF ALTERNATE WATER SOURCES ARE USED, SEE W-6A FOR INSTALLATION REQUIREMENTS.
11. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
12. THE VISUAL IMPACT OF BACKFLOW DEVICES SHOULD BE CONSIDERED IF NOT PLACED WITHIN A UTILITY CLOSET.

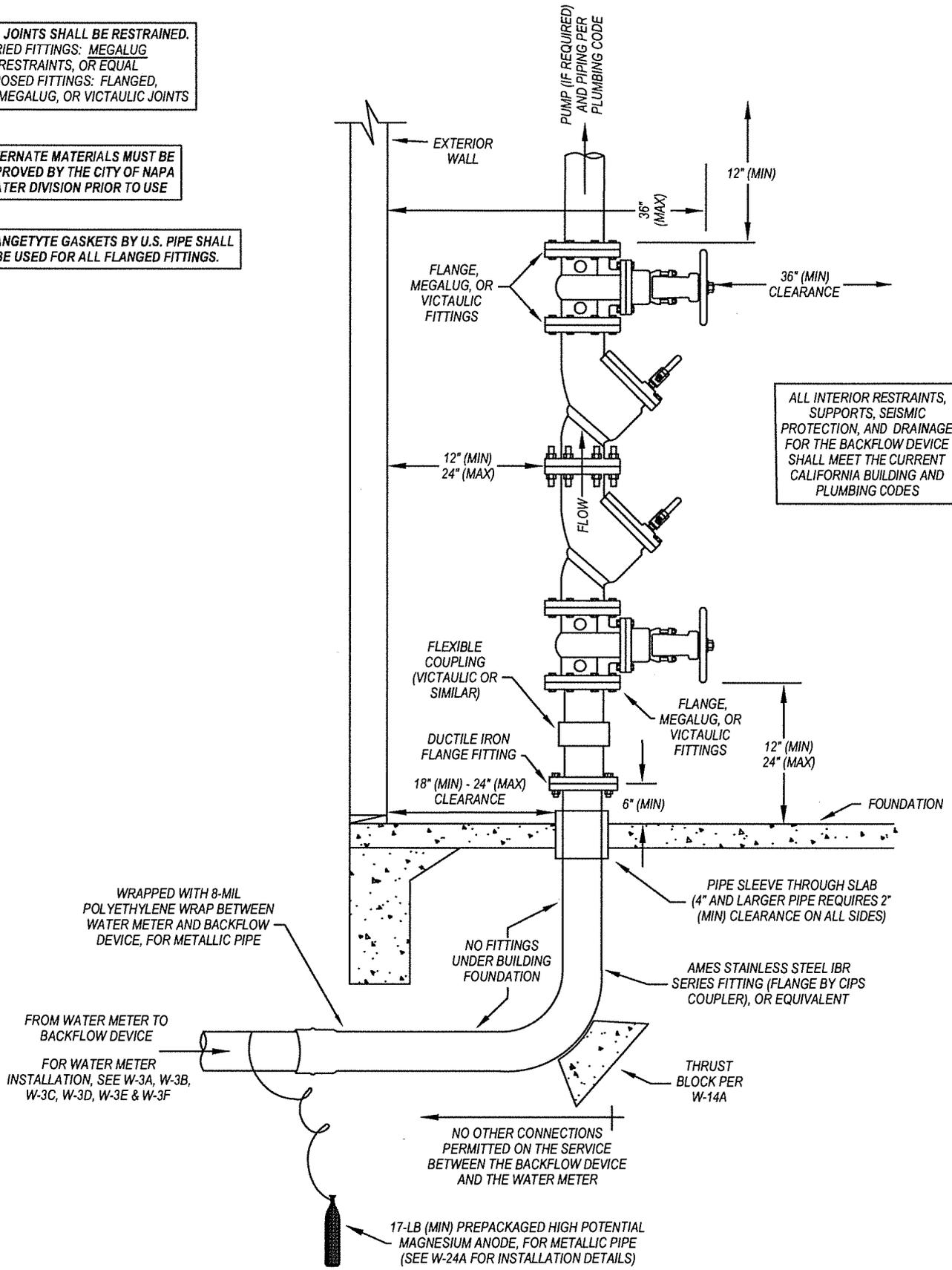
CITY OF NAPA	PUBLIC WORKS - WATER DIVISION
EXTERIOR DOUBLE CHECK VALVE BACKFLOW DEVICE INSTALLATION FOR 3" TO 8" RESIDENTIAL WATER SERVICES	DATE REVISED: DECEMBER 2015
	CHECKED: <i>[Signature]</i>
	APPROVED: <i>[Signature]</i>
	SCALE: NONE
	W - 5C DWG NO.

ALL JOINTS SHALL BE RESTRAINED.
 BURIED FITTINGS: MEGALUG
 RESTRAINTS, OR EQUAL
 EXPOSED FITTINGS: FLANGED,
 MEGALUG, OR VICTAULIC JOINTS

ALTERNATE MATERIALS MUST BE
 APPROVED BY THE CITY OF NAPA
 WATER DIVISION PRIOR TO USE

FLANGETYTE GASKETS BY U.S. PIPE SHALL
 BE USED FOR ALL FLANGED FITTINGS.

ALL INTERIOR RESTRAINTS,
 SUPPORTS, SEISMIC
 PROTECTION, AND DRAINAGE
 FOR THE BACKFLOW DEVICE
 SHALL MEET THE CURRENT
 CALIFORNIA BUILDING AND
 PLUMBING CODES



CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**INTERIOR DOUBLE CHECK VALVE
 BACKFLOW DEVICE INSTALLATION FOR
 3" TO 8" RESIDENTIAL WATER SERVICES**

DATE REVISED: DECEMBER 2015

CHECKED: *[Signature]*

APPROVED: *[Signature]*

SCALE: NONE

W - 5D.1

DWG NO.

NOTES

1. BACKFLOW DEVICE MUST BE INSTALLED BEHIND THE BACK OF SIDEWALK OUTSIDE OF THE PUBLIC RIGHT-OF-WAY AND PROTECTED FROM TRAFFIC HAZARDS, EITHER BY LOCATION OR BARRIERS.
2. BACKFLOW DEVICE CAN BE INSTALLED WITHIN A BUILDING IN A DEDICATED UTILITY CLOSET IF THE BUILDING IS LOCATED WITHIN 20-FT OF THE PUBLIC RIGHT-OF-WAY, THE BACKFLOW DEVICE IS PLACED AT THE CORNER OF THE BUILDING CLOSEST TO THE PUBLIC RIGHT-OF-WAY WHERE THE CONNECTION IS MADE, AND WITH THE APPROVAL FROM THE WATER DIVISION CROSS CONNECTION SPECIALIST. BACKFLOW DEVICES MUST BE APPROVED BY AWWA FOR VERTICAL INSTALLATION.
3. PIPE INSTALLATION TO THE BACKFLOW DEVICE SHALL MEET CITY STANDARD REQUIREMENTS FOR PUBLIC WATER MAINS (INCLUDING, BUT NOT LIMITED TO, CORROSION PROTECTION, SAND BEDDING, AND PRESSURE TESTING). CONTRACTOR IS RESPONSIBLE FOR CONTACTING WATER DIVISION INSPECTOR FOR INSPECTION OF PIPE INSTALLATION AND TESTING FROM THE CONNECTION AT THE WATER METER TO THE BACKFLOW DEVICE.
4. NO CONNECTIONS ARE ALLOWED BETWEEN THE WATER METER AND THE DOUBLE CHECK VALVE ASSEMBLY, OR DIRECTLY TO THE BACKFLOW DEVICE.
5. ALL PARTS MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
6. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
7. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS BETWEEN THE WATER METER AND THE BACKFLOW DEVICE SHALL BE WRAPPED WITH 8-MIL POLYETHYLENE WRAP. WRAPPING METALLIC PIPE AND FITTINGS BEYOND THE BACKFLOW DEVICE IS RECOMMENDED, BUT NOT REQUIRED.
8. INSTALLATION MUST BE APPROVED BY THE WATER DIVISION CROSS CONNECTION SPECIALIST AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON.
9. DOUBLE CHECK ASSEMBLY MUST BE APPROVED BY THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES.
10. INTERIOR INSTALLATION MAY BE INSTALLED IN THE HORIZONTAL POSITION. IF HORIZONTAL INSTALLATION IS DESIRED, AFTER THE INITIAL FLEXIBLE COUPLING, INSTALL A DUCTILE IRON 90-DEGREE BEND. CLEARANCES AROUND THE DEVICE SHALL BE PER W-5C AND W-5D.
11. VERTICAL INSTALLATIONS SHALL HAVE A MINIMUM CLEARANCE OF 3-FT FROM THE FRONT OF THE DEVICE AND 18-IN TO EACH SIDE OF THE DEVICE FROM ANY STRUCTURE, UTILITY, OR OTHER FEATURE FOR ACCESSIBILITY.
12. DRAINAGE SHALL BE PROVIDED IN THE UTILITY CLOSET (AS REQUIRED BY THE BUILDING DIVISION) TO DRAIN WATER THAT MAY BE RELEASED FROM THE TESTING OR DRAINAGE OF THE BACKFLOW DEVICE.
13. DOUBLE CHECK BACKFLOW DEVICES MAY BE USED FOR IRRIGATION WATER SERVICES, EXCEPT IF AN IRRIGATION SERVES A PROPERTY USING ALTERNATE WATER SOURCES (INCLUDING WELLS, RECLAIMED WATER, PONDS, ETC.). IF ALTERNATE WATER SOURCES ARE USED, SEE W-6A FOR INSTALLATION REQUIREMENTS.
14. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
15. THE VISUAL IMPACT OF BACKFLOW DEVICES SHOULD BE CONSIDERED IN NOT PLACED WITHIN A UTILITY CLOSET.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**INTERIOR DOUBLE CHECK VALVE
BACKFLOW DEVICE INSTALLATION FOR
3" TO 8" RESIDENTIAL WATER SERVICES**

DATE REVISED: DECEMBER 2015

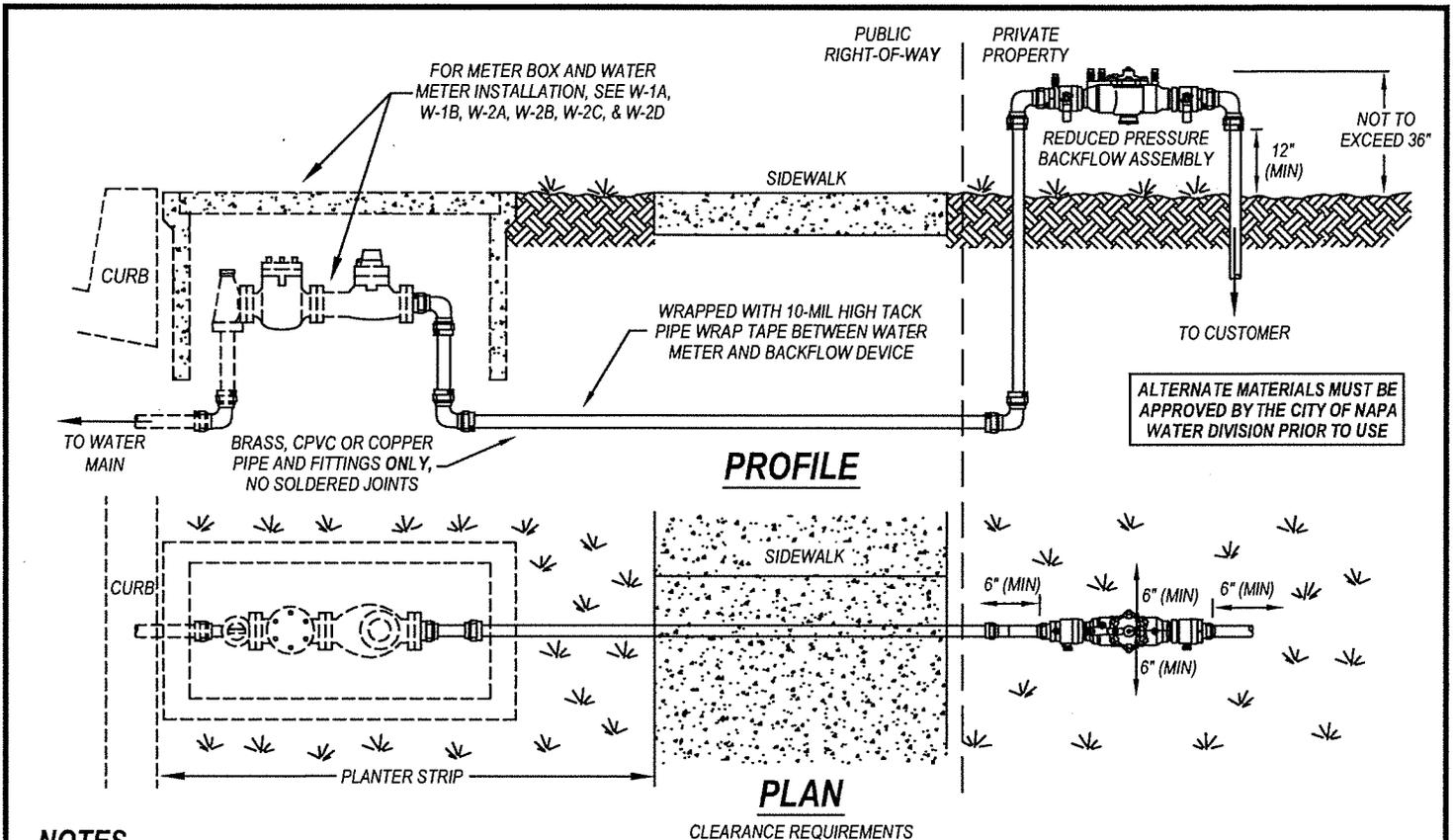
CHECKED: *[Signature]*

APPROVED: *[Signature]*

SCALE: NONE

W - 5D.2

DWG NO.



NOTES

1. ABOVE GROUND INSTALLATION IS MANDATORY FOR REDUCED PRESSURE BACKFLOW DEVICES.
2. REDUCED PRESSURE DEVICES ARE REQUIRED FOR ALL COMMERCIAL SERVICES AND FOR IRRIGATION SERVICES TO PROPERTIES USING ALTERNATE WATER SOURCES (INCLUDING WELLS, RECLAIMED WATER, PONDS, ETC.).
3. BACKFLOW DEVICE MUST BE INSTALLED BEHIND THE BACK OF SIDEWALK OUTSIDE OF THE PUBLIC RIGHT-OF-WAY AND PROTECTED FROM TRAFFIC HAZARDS, EITHER BY LOCATION OR BARRIERS.
4. BACKFLOW DEVICE CAN BE INSTALLED WITHIN A BUILDING IN A DEDICATED UTILITY CLOSET IF THE BUILDING IS LOCATED WITHIN 20-FT OF THE PUBLIC RIGHT-OF-WAY, THE BACKFLOW DEVICE IS PLACED AT THE CORNER OF THE BUILDING CLOSEST TO THE PUBLIC RIGHT-OF-WAY WHERE THE CONNECTION IS MADE, AND WITH THE APPROVAL FROM THE WATER DIVISION CROSS CONNECTION SPECIALIST (SEE W-6B FOR INTERNAL INSTALLATION REQUIREMENTS).
5. NO CONNECTIONS ARE ALLOWED BETWEEN THE WATER METER AND THE BACKFLOW ASSEMBLY, OR DIRECTLY TO THE BACKFLOW DEVICE. A THERMAL EXPANSION RELIEF VALVE SHALL BE INSTALLED BETWEEN BACKFLOW DEVICE AND WATER HEATERS BEING SERVED.
6. ALL PARTS MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
7. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
8. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS BETWEEN THE WATER METER AND THE BACKFLOW DEVICE SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE. WRAPPING METALLIC PIPE AND FITTINGS BEYOND THE BACKFLOW DEVICE IS RECOMMENDED, BUT NOT REQUIRED.
9. INSTALLATION MUST BE APPROVED BY THE WATER DIVISION CROSS CONNECTION SPECIALIST AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON.
10. REDUCED PRESSURE BACKFLOW DEVICE MUST BE APPROVED BY THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES.
11. NO TREES SHALL BE PLANTED WITHIN 10-FT, OR LARGE SHRUBS WITHIN 5-FT, OF DOUBLE CHECK VALVE.
12. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
13. THE VISUAL IMPACT OF BACKFLOW DEVICES SHOULD BE CONSIDERED IF NOT PLACED WITHIN A UTILITY CLOSET.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**EXTERIOR REDUCED PRESSURE
BACKFLOW DEVICE INSTALLATION FOR
3/4" TO 2" COMMERCIAL WATER SERVICES**

DATE REVISED: DECEMBER 2015

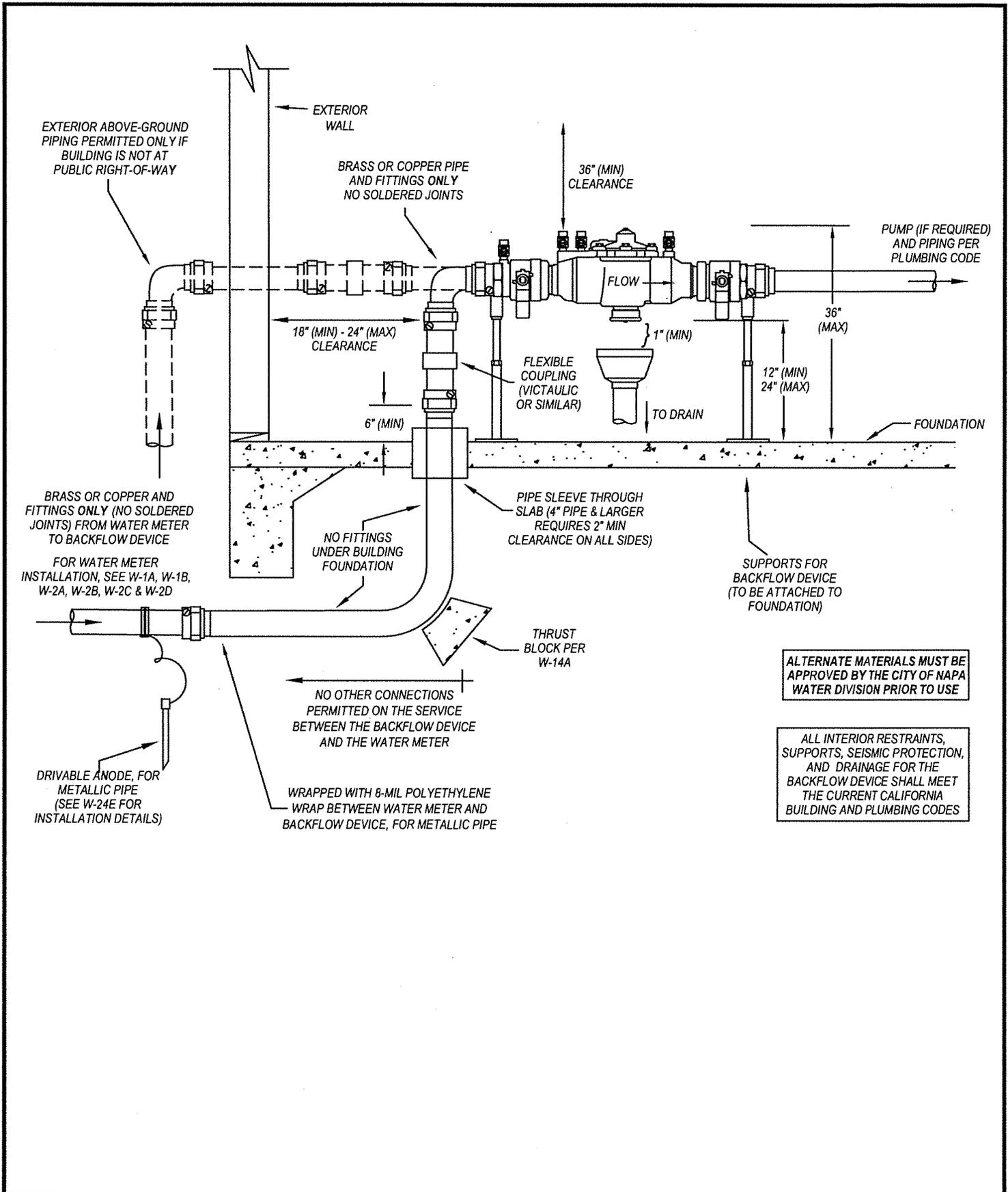
CHECKED: *[Signature]*

APPROVED: *[Signature]*

SCALE: NONE

W - 6A

DWG NO.



CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**INTERIOR REDUCED PRESSURE
BACKFLOW DEVICE INSTALLATION FOR
3/4" TO 2" COMMERCIAL WATER SERVICES**

DATE REVISED: DECEMBER 2015

CHECKED: *[Signature]*

APPROVED: *[Signature]*

SCALE: NONE

DWG NO.

W - 6B.1

NOTES

1. **ABOVE GROUND INSTALLATION IS MANDATORY** FOR REDUCED PRESSURE BACKFLOW DEVICES.
2. REDUCED PRESSURE DEVICES ARE REQUIRED FOR ALL COMMERCIAL SERVICES AND FOR IRRIGATION SERVICES TO PROPERTIES USING ALTERNATE WATER SOURCES (INCLUDING WELLS, RECLAIMED WATER, PONDS, ETC.).
3. BACKFLOW DEVICE MUST BE INSTALLED BEHIND THE BACK OF SIDEWALK OUTSIDE OF THE PUBLIC RIGHT-OF-WAY AND PROTECTED FROM TRAFFIC HAZARDS, EITHER BY LOCATION OR BARRIERS.
4. BACKFLOW DEVICE CAN BE INSTALLED WITHIN A BUILDING IN A DEDICATED UTILITY CLOSET IF THE BUILDING IS LOCATED WITHIN 20-FT OF THE PUBLIC RIGHT-OF-WAY, THE BACKFLOW DEVICE IS PLACED AT THE CORNER OF THE BUILDING CLOSEST TO THE PUBLIC RIGHT-OF-WAY WHERE THE CONNECTION IS MADE, AND WITH THE APPROVAL FROM THE WATER DIVISION CROSS CONNECTION SPECIALIST. THE BACKFLOW DEVICE MUST BE APPROVED BY AWWA FOR VERTICAL INSTALLATION.
5. VERTICAL INSTALLATIONS SHALL HAVE A MINIMUM CLEARANCE OF 3-FT FROM THE FRONT OF THE DEVICE AND 18-IN TO EACH SIDE OF THE DEVICE FROM ANY STRUCTURE, UTILITY, OR OTHER FEATURE FOR ACCESSIBILITY.
6. PIPE INSTALLATION TO THE BACKFLOW DEVICE SHALL MEET CITY STANDARD REQUIREMENTS FOR PUBLIC WATER MAINS (INCLUDING, BUT NOT LIMITED TO, CORROSION PROTECTION, SAND BEDDING, AND PRESSURE TESTING). CONTRACTOR IS RESPONSIBLE FOR CONTACTING WATER DIVISION INSPECTOR FOR INSPECTION OF PIPE INSTALLATION AND TESTING FROM THE CONNECTION AT THE WATER METER TO THE BACKFLOW DEVICE
7. NO CONNECTIONS ARE ALLOWED BETWEEN THE WATER METER AND THE BACKFLOW ASSEMBLY, OR DIRECTLY TO THE BACKFLOW DEVICE. A THERMAL EXPANSION RELIEF VALVE SHALL BE INSTALLED BETWEEN BACKFLOW DEVICE AND WATER HEATERS BEING SERVED.
8. ALL PARTS MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
9. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
10. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS BETWEEN THE WATER METER AND THE BACKFLOW DEVICE SHALL BE WRAPPED WITH 8-MIL POLYETHYLENE WRAP. WRAPPING METALLIC PIPE AND FITTINGS BEYOND THE BACKFLOW DEVICE IS RECOMMENDED, BUT NOT REQUIRED.
11. DRAINAGE SHALL BE PROVIDED IN THE UTILITY CLOSET (AS REQUIRED BY THE BUILDING DIVISION) TO DRAIN WATER THAT MAY BE RELEASED FROM THE TESTING OR DRAINAGE OF THE BACKFLOW DEVICE.
12. INSTALLATION MUST BE APPROVED BY THE WATER DIVISION CROSS CONNECTION SPECIALIST AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON.
13. REDUCED PRESSURE BACKFLOW DEVICE MUST BE APPROVED BY THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES.
14. NO TREES SHALL BE PLANTED WITHIN 10-FT, OR LARGE SHRUBS WITHIN 5-FT, OF DOUBLE CHECK VALVE.
15. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
16. THE VISUAL IMPACT OF BACKFLOW DEVICES SHOULD BE CONSIDERED IF NOT PLACED WITHIN A UTILITY CLOSET.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**INTERIOR REDUCED PRESSURE
BACKFLOW DEVICE INSTALLATION FOR
3/4" TO 2" COMMERCIAL WATER SERVICES**

DATE REVISED: DECEMBER 2015

CHECKED: *mfH*

APPROVED: *GRJ*

SCALE: NONE

W - 6B.2

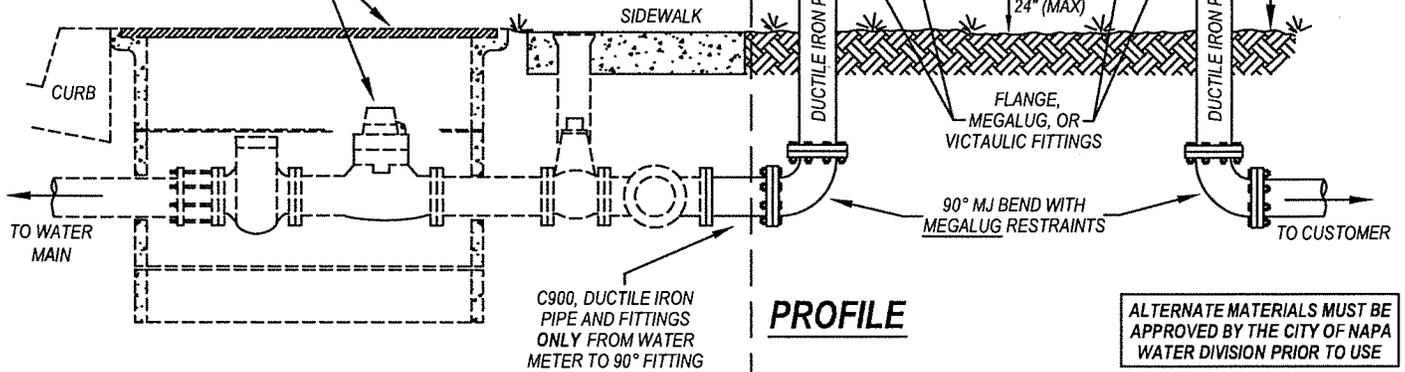
DWG NO.

ALL JOINTS SHALL BE RESTRAINED.
 BURIED FITTINGS: MEGALUG
 RESTRAINTS, OR EQUAL
 EXPOSED FITTINGS: FLANGED,
 MEGALUG, OR VICTAULIC JOINTS

PUBLIC
 RIGHT-OF-WAY

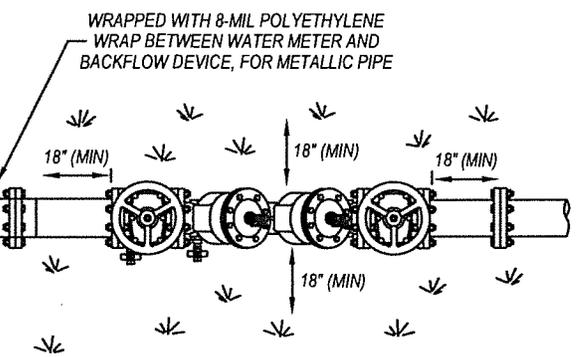
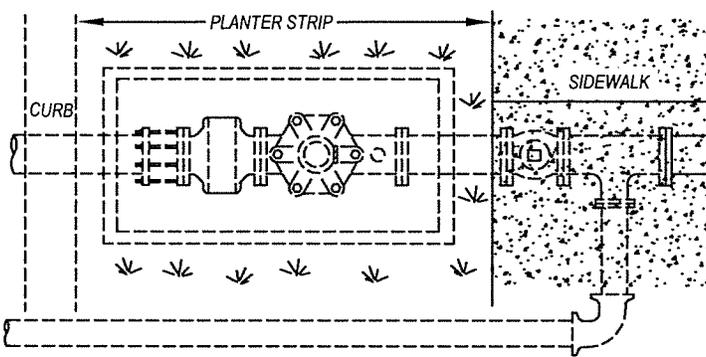
PRIVATE
 PROPERTY

FOR METER BOX AND WATER
 METER INSTALLATION, SEE W-3A,
 W-3B, W-3C, W-3D, W-3E, & W-3F



ALTERNATE MATERIALS MUST BE
 APPROVED BY THE CITY OF NAPA
 WATER DIVISION PRIOR TO USE

PROFILE



PLAN
 CLEARANCE REQUIREMENTS

FLANGETYTE GASKETS BY U.S. PIPE SHALL
 BE USED FOR ALL FLANGED FITTINGS.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**EXTERIOR REDUCED PRESSURE
 BACKFLOW DEVICE INSTALLATION FOR
 3" TO 8" COMMERCIAL WATER SERVICES**

DATE REVISED: DECEMBER 2015
 CHECKED: *[Signature]*
 APPROVED: *[Signature]*
 SCALE: NONE

DWG NO. **W-6C.1**

NOTES

1. **ABOVE GROUND INSTALLATION IS MANDATORY** FOR REDUCED PRESSURE BACKFLOW DEVICES.
2. REDUCED PRESSURE DEVICES ARE REQUIRED FOR ALL COMMERCIAL SERVICES AND FOR IRRIGATION SERVICES TO PROPERTIES USING ALTERNATE WATER SOURCES (INCLUDING WELLS, RECLAIMED WATER, PONDS, ETC.).
3. BACKFLOW DEVICE MUST BE INSTALLED BEHIND THE BACK OF SIDEWALK OUTSIDE OF THE PUBLIC RIGHT-OF-WAY AND PROTECTED FROM TRAFFIC HAZARDS, EITHER BY LOCATION OR BARRIERS.
4. BACKFLOW DEVICE CAN BE INSTALLED WITHIN A BUILDING IN A DEDICATED UTILITY CLOSET IF THE BUILDING IS LOCATED WITHIN 20-FT OF THE PUBLIC RIGHT-OF-WAY, THE BACKFLOW DEVICE IS PLACED AT THE CORNER OF THE BUILDING CLOSEST TO THE PUBLIC RIGHT-OF-WAY WHERE THE CONNECTION IS MADE, AND WITH THE APPROVAL FROM THE WATER DIVISION CROSS CONNECTION SPECIALIST (SEE W-6B FOR INTERNAL INSTALLATION REQUIREMENTS).
5. NO CONNECTIONS ARE ALLOWED BETWEEN THE WATER METER AND THE BACKFLOW ASSEMBLY, OR DIRECTLY TO THE BACKFLOW DEVICE. A THERMAL EXPANSION RELIEF VALVE SHALL BE INSTALLED BETWEEN BACKFLOW DEVICE AND WATER HEATERS BEING SERVED.
6. ALL PARTS MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
7. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
8. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS BETWEEN THE WATER METER AND THE BACKFLOW DEVICE SHALL BE WRAPPED WITH 8-MIL POLYETHYLENE WRAP. WRAPPING METALLIC PIPE AND FITTINGS BEYOND THE BACKFLOW DEVICE IS RECOMMENDED, BUT NOT REQUIRED.
9. INSTALLATION MUST BE APPROVED BY THE WATER DIVISION CROSS CONNECTION SPECIALIST AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON.
10. REDUCED PRESSURE BACKFLOW DEVICE MUST BE APPROVED BY THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES.
11. NO TREES SHALL BE PLANTED WITHIN 10-FT, OR LARGE SHRUBS WITHIN 5-FT, OF DOUBLE CHECK VALVE.
12. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
13. THE VISUAL IMPACT OF BACKFLOW DEVICES SHOULD BE CONSIDERED IF NOT PLACED WITHIN A UTILITY CLOSET.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**EXTERIOR REDUCED PRESSURE
BACKFLOW DEVICE INSTALLATION FOR
3" TO 8" COMMERCIAL WATER SERVICES**

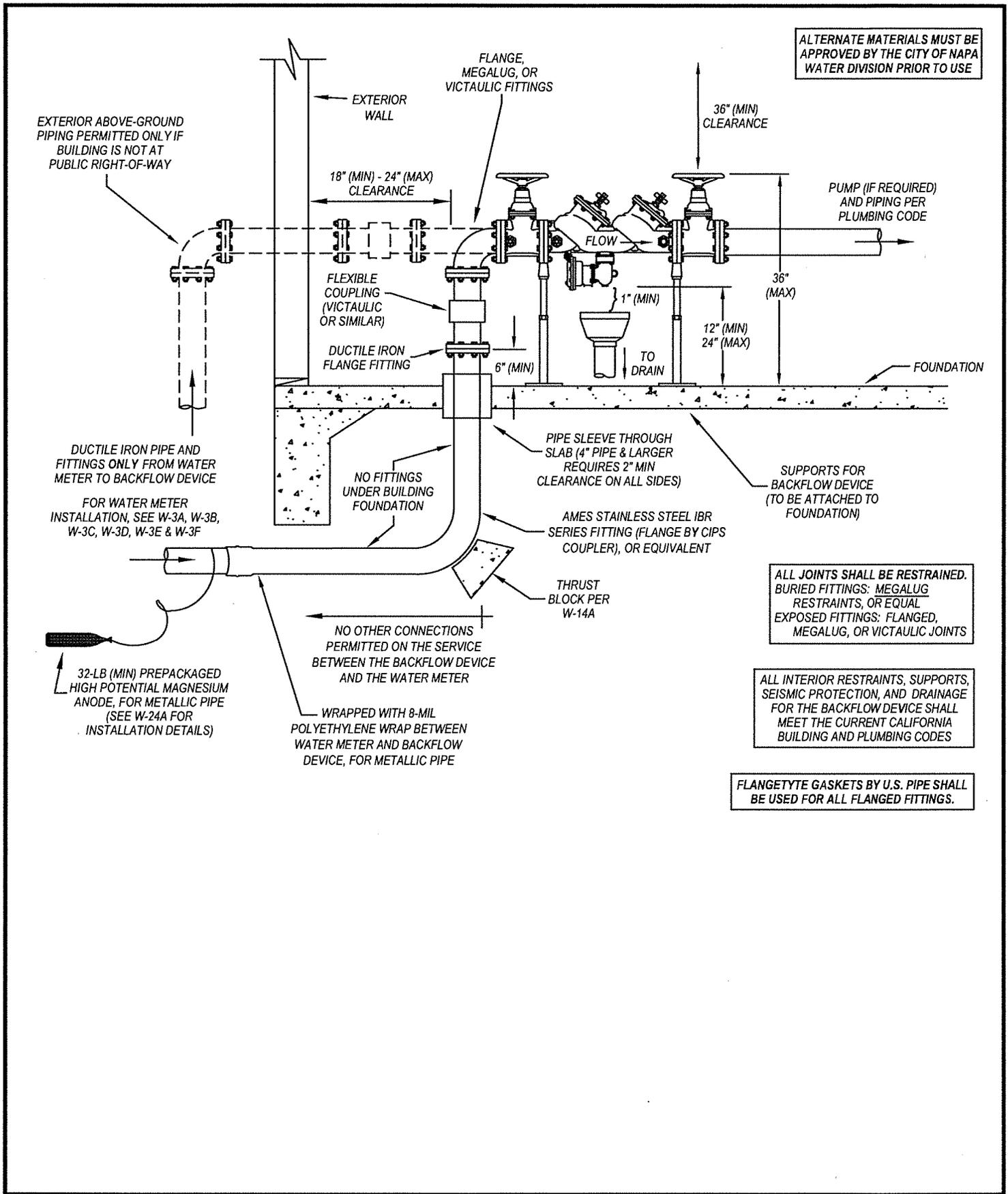
DATE REVISED: DECEMBER 2015

CHECKED: 

APPROVED: 

SCALE: NONE

DWG NO. **W - 6C.2**



ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

ALL JOINTS SHALL BE RESTRAINED. BURIED FITTINGS: MEGALUG RESTRAINTS, OR EQUAL EXPOSED FITTINGS: FLANGED, MEGALUG, OR VICTAULIC JOINTS

ALL INTERIOR RESTRAINTS, SUPPORTS, SEISMIC PROTECTION, AND DRAINAGE FOR THE BACKFLOW DEVICE SHALL MEET THE CURRENT CALIFORNIA BUILDING AND PLUMBING CODES

FLANGETYTE GASKETS BY U.S. PIPE SHALL BE USED FOR ALL FLANGED FITTINGS.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**INTERIOR REDUCED PRESSURE
BACKFLOW DEVICE INSTALLATION FOR
3" TO 8" COMMERCIAL WATER SERVICES**

DATE REVISED: DECEMBER 2015

CHECKED:

APPROVED:

SCALE:

NONE

W - 6D.1

DWG NO.

NOTES

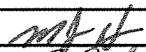
1. **ABOVE GROUND INSTALLATION IS MANDATORY** FOR REDUCED PRESSURE BACKFLOW DEVICES.
2. REDUCED PRESSURE DEVICES ARE REQUIRED FOR ALL COMMERCIAL SERVICES AND FOR IRRIGATION SERVICES TO PROPERTIES USING ALTERNATE WATER SOURCES (INCLUDING WELLS, RECLAIMED WATER, PONDS, ETC.).
3. BACKFLOW DEVICE MUST BE INSTALLED BEHIND THE BACK OF SIDEWALK OUTSIDE OF THE PUBLIC RIGHT-OF-WAY AND PROTECTED FROM TRAFFIC HAZARDS, EITHER BY LOCATION OR BARRIERS.
4. BACKFLOW DEVICE CAN BE INSTALLED WITHIN A BUILDING IN A DEDICATED UTILITY CLOSET IF THE BUILDING IS LOCATED WITHIN 20-FT OF THE PUBLIC RIGHT-OF-WAY, THE BACKFLOW DEVICE IS PLACED AT THE CORNER OF THE BUILDING CLOSEST TO THE PUBLIC RIGHT-OF-WAY WHERE THE CONNECTION IS MADE, AND WITH THE APPROVAL FROM THE WATER DIVISION CROSS CONNECTION SPECIALIST. THE BACKFLOW DEVICE MUST BE APPROVED BY AWWA FOR VERTICAL INSTALLATION.
5. VERTICAL INSTALLATIONS SHALL HAVE A MINIMUM CLEARANCE OF 3-FT FROM THE FRONT OF THE DEVICE AND 18-IN TO EACH SIDE OF THE DEVICE FROM ANY STRUCTURE, UTILITY, OR OTHER FEATURE FOR ACCESSIBILITY.
6. PIPE INSTALLATION TO THE BACKFLOW DEVICE SHALL MEET CITY STANDARD REQUIREMENTS FOR PUBLIC WATER MAINS (INCLUDING, BUT NOT LIMITED TO, CORROSION PROTECTION, SAND BEDDING, AND PRESSURE TESTING). CONTRACTOR IS RESPONSIBLE FOR CONTACTING WATER DIVISION INSPECTOR FOR INSPECTION OF PIPE INSTALLATION AND TESTING FROM THE CONNECTION AT THE WATER METER TO THE BACKFLOW DEVICE
7. NO CONNECTIONS ARE ALLOWED BETWEEN THE WATER METER AND THE BACKFLOW ASSEMBLY, OR DIRECTLY TO THE BACKFLOW DEVICE. A THERMAL EXPANSION RELIEF VALVE SHALL BE INSTALLED BETWEEN BACKFLOW DEVICE AND WATER HEATERS BEING SERVED.
8. ALL PARTS MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
9. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
10. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS BETWEEN THE WATER METER AND THE BACKFLOW DEVICE SHALL BE WRAPPED WITH 8-MIL POLYETHYLENE WRAP. WRAPPING METALLIC PIPE AND FITTINGS BEYOND THE BACKFLOW DEVICE IS RECOMMENDED, BUT NOT REQUIRED.
11. DRAINAGE SHALL BE PROVIDED IN THE UTILITY CLOSET (AS REQUIRED BY THE BUILDING DIVISION) TO DRAIN WATER THAT MAY BE RELEASED FROM THE TESTING OR DRAINAGE OF THE BACKFLOW DEVICE.
12. INSTALLATION MUST BE APPROVED BY THE WATER DIVISION CROSS CONNECTION SPECIALIST AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON.
13. REDUCED PRESSURE BACKFLOW DEVICE MUST BE APPROVED BY THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES.
14. NO TREES SHALL BE PLANTED WITHIN 10-FT, OR LARGE SHRUBS WITHIN 5-FT, OF DOUBLE CHECK VALVE.
15. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED AND WATER METERS SHALL BE SET, PRIOR TO ANY USE OF WATER SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
16. THE VISUAL IMPACT OF BACKFLOW DEVICES SHOULD BE CONSIDERED IF NOT PLACED WITHIN A UTILITY CLOSET.

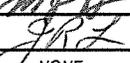
CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**INTERIOR REDUCED PRESSURE
BACKFLOW DEVICE INSTALLATION FOR
3" TO 8" COMMERCIAL WATER SERVICES**

DATE REVISED: DECEMBER 2015

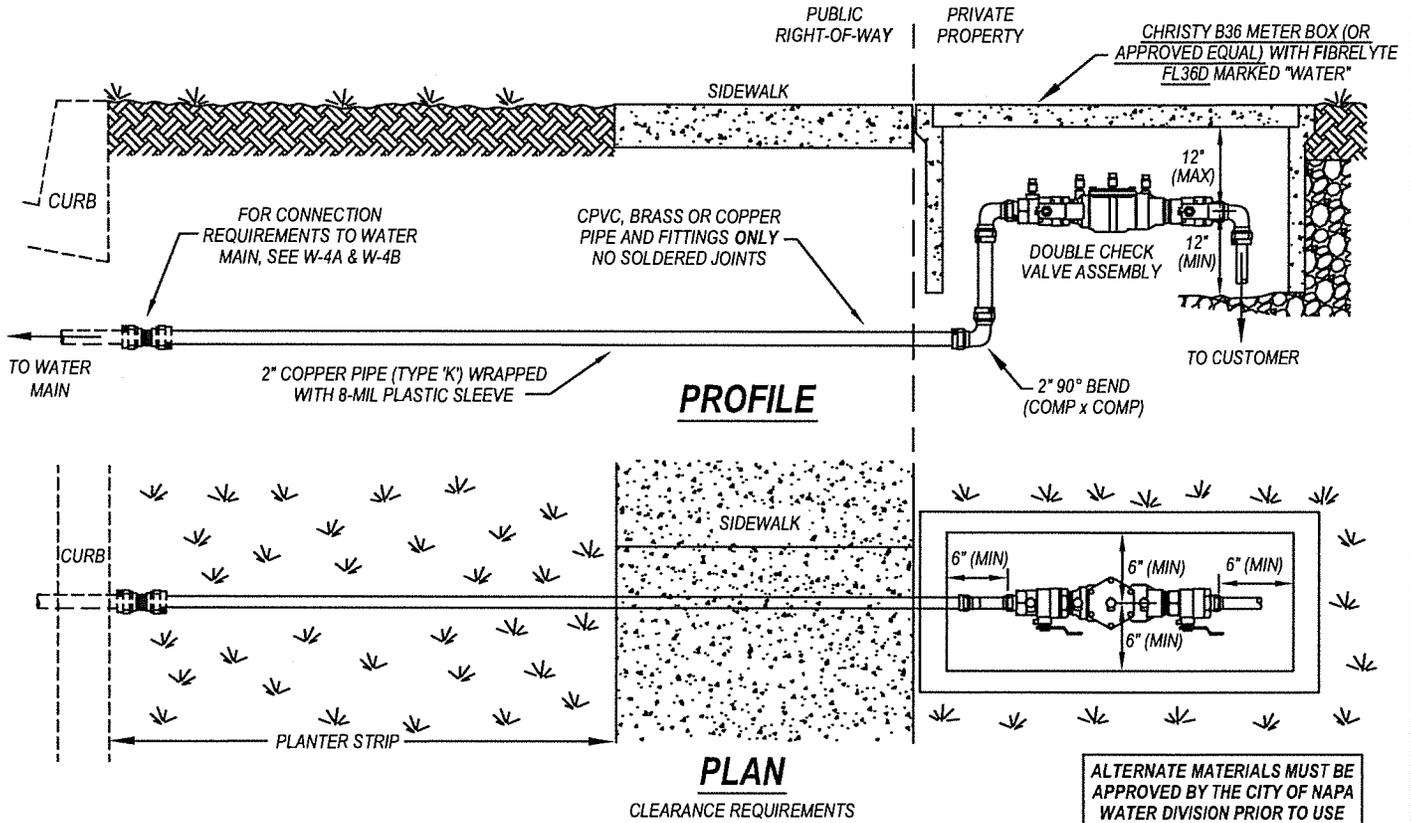
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APPROVED: 

SCALE: NONE

W - 6D.2

DWG NO.



ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

NOTES

1. DOUBLE CHECK VALVE MUST BE INSTALLED IN A TRUE HORIZONTAL POSITION.
2. DOUBLE CHECK VALVE MUST BE INSTALLED WITHIN IN A PROTECTIVE BOX. STACKED BOXES SHALL BE USED AS NEEDED TO MAINTAIN CLEARANCE REQUIREMENTS. BACKFLOW DEVICE MUST BE INSTALLED BEHIND THE BACK OF SIDEWALK OUTSIDE OF THE PUBLIC RIGHT-OF-WAY AND PROTECTED FROM TRAFFIC HAZARDS, EITHER BY LOCATION OR BARRIERS.
3. NO CONNECTIONS ARE ALLOWED BETWEEN THE WATER MAIN AND THE DOUBLE CHECK VALVE ASSEMBLY.
4. ALL PARTS MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
5. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
6. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL PLASTIC SLEEVE BETWEEN THE WATER MAIN AND THE BACKFLOW DEVICE. COPPER PIPE NOT WRAPPED IN A PLASTIC SLEEVE SHALL BE NSF 61 APPROVED PLASTIC COATED COPPER TUBING (TYPE "K", BLUE IN COLOR). INSULATED COUPLING SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF INSULATION POINT. WRAPPING METALLIC PIPE AND FITTINGS BEYOND THE BACKFLOW DEVICE IS RECOMMENDED, BUT NOT REQUIRED.
7. INSTALLATION MUST BE APPROVED BY THE WATER DIVISION CROSS CONNECTION SPECIALIST AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON.
8. DOUBLE CHECK ASSEMBLY MUST BE APPROVED BY THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES.
9. NO TREES SHALL BE PLANTED WITHIN 10-FT, OR LARGE SHRUBS WITHIN 5-FT, OF DOUBLE CHECK VALVE.
10. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED PRIOR TO ACTIVATION OF SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
11. THE FIRE DEPARTMENT CONNECTION AND RELATED APPURTENANCES SHALL MEET THE CITY OF NAPA FIRE DEPARTMENT SPECIFICATIONS AND REQUIREMENTS. LOCATION OF THE FIRE DEPARTMENT CONNECTION SHALL BE APPROVED BY THE NAPA FIRE DEPARTMENT.
12. BACKFLOW DEVICE CAN BE INSTALLED WITHIN A BUILDING IN A DEDICATED UTILITY CLOSET IF THE BUILDING IS LOCATED WITHIN 20-FT OF THE PUBLIC RIGHT-OF-WAY, THE BACKFLOW DEVICE IS PLACED AT THE CORNER OF THE BUILDING CLOSEST TO THE PUBLIC RIGHT-OF-WAY WHERE THE CONNECTION IS MADE, AND WITH THE APPROVAL FROM THE WATER DIVISION CROSS CONNECTION SPECIALIST (SEE W-7B FOR INTERNAL INSTALLATION REQUIREMENTS).

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**EXTERIOR DOUBLE CHECK VALVE
BACKFLOW DEVICE INSTALLATION FOR
2" FIRE WATER SERVICES**

DATE REVISED: DECEMBER 2015

CHECKED:

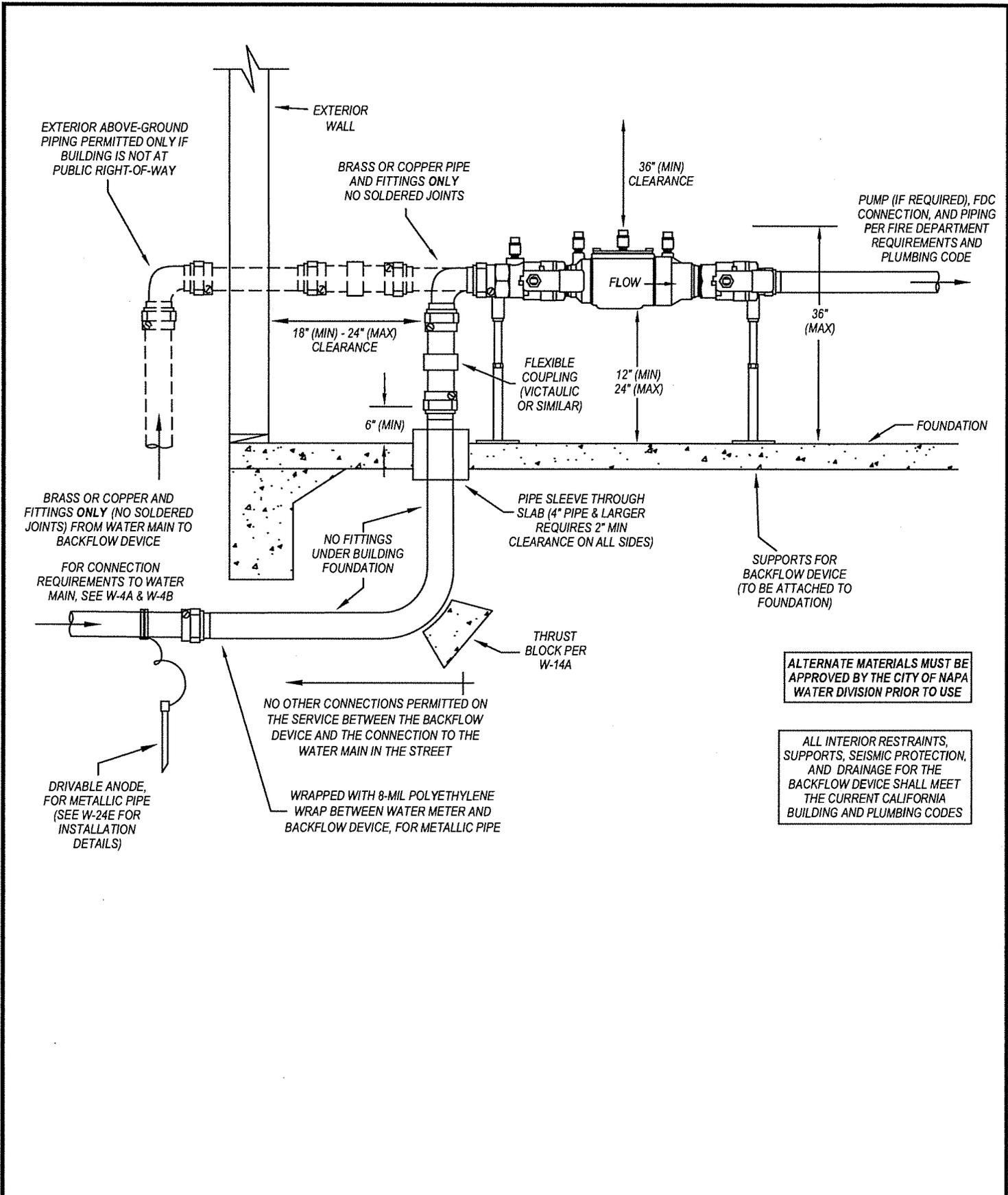
APPROVED:

SCALE:

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NONE

DWG NO.

W - 7A



ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

ALL INTERIOR RESTRAINTS, SUPPORTS, SEISMIC PROTECTION, AND DRAINAGE FOR THE BACKFLOW DEVICE SHALL MEET THE CURRENT CALIFORNIA BUILDING AND PLUMBING CODES

CITY OF NAPA		PUBLIC WORKS - WATER DIVISION	
INTERIOR DOUBLE CHECK VALVE BACKFLOW DEVICE INSTALLATION FOR 2" FIRE WATER SERVICES		DATE REVISED: DECEMBER 2015	W - 7B.1 DWG NO.
		CHECKED: <i>[Signature]</i>	
		APPROVED: <i>[Signature]</i>	
		SCALE: NONE	

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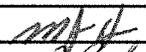
1. DOUBLE CHECK VALVE MUST BE INSTALLED IN A TRUE HORIZONTAL POSITION.
2. BACKFLOW DEVICE MUST BE INSTALLED BEHIND THE BACK OF SIDEWALK OUTSIDE OF THE PUBLIC RIGHT-OF-WAY AND PROTECTED FROM TRAFFIC HAZARDS, EITHER BY LOCATION OR BARRIERS.
3. NO CONNECTIONS ARE ALLOWED BETWEEN THE WATER MAIN AND THE DOUBLE CHECK VALVE ASSEMBLY. A THERMAL EXPANSION RELIEF VALVE SHALL BE INSTALLED BETWEEN BACKFLOW DEVICE AND WATER HEATERS BEING SERVED.
4. ALL PARTS MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
5. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
6. ALL BURIED SECTIONS OF METALLIC PIPE AND FITTINGS SHALL BE WRAPPED WITH AN 8-MIL PLASTIC SLEEVE BETWEEN THE WATER MAIN AND THE BACKFLOW DEVICE. COPPER PIPE NOT WRAPPED IN A PLASTIC SLEEVE SHALL BE NSF 61 APPROVED PLASTIC COATED COPPER TUBING (TYPE "K", BLUE IN COLOR). INSULATED FITTINGS SHALL BE WRAPPED WITH 10-MIL HIGH TACK PIPE WRAP TAPE 3-FT (MIN) TO EACH SIDE OF INSULATION POINT. WRAPPING METALLIC PIPE AND FITTINGS BEYOND THE BACKFLOW DEVICE IS RECOMMENDED, BUT NOT REQUIRED.
7. INSTALLATION MUST BE APPROVED BY THE WATER DIVISION CROSS CONNECTION SPECIALIST AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON.
8. DOUBLE CHECK ASSEMBLY MUST BE APPROVED BY THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES.
9. NO TREES SHALL BE PLANTED WITHIN 10-FT, OR LARGE SHRUBS WITHIN 5-FT, OF DOUBLE CHECK VALVE.
10. APPROVED BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED AND TESTED PRIOR TO ACTIVATION OF SERVICE. USE OF JUMPERS, HOSE BIBS, OR OTHER DEVICES SHALL NOT BE PERMITTED.
11. THE FIRE DEPARTMENT CONNECTION AND RELATED APPURTENANCES SHALL MEET THE CITY OF NAPA FIRE DEPARTMENT SPECIFICATIONS AND REQUIREMENTS. LOCATION OF THE FIRE DEPARTMENT CONNECTION SHALL BE APPROVED BY THE NAPA FIRE DEPARTMENT.
12. BACKFLOW DEVICE CAN BE INSTALLED WITHIN A BUILDING IN A DEDICATED UTILITY CLOSET IF THE BUILDING IS LOCATED WITHIN 20-FT OF THE PUBLIC RIGHT-OF-WAY, THE BACKFLOW DEVICE IS PLACED AT THE CORNER OF THE BUILDING CLOSEST TO THE PUBLIC RIGHT-OF-WAY WHERE THE CONNECTION IS MADE, AND WITH THE APPROVAL FROM THE WATER DIVISION CROSS CONNECTION SPECIALIST. THE BACKFLOW DEVICE MUST BE APPROVED BY AWWA FOR VERTICAL INSTALLATION.
13. PIPE INSTALLATION TO THE BACKFLOW DEVICE SHALL MEET CITY STANDARD REQUIREMENTS FOR PUBLIC WATER MAINS (INCLUDING, BUT NOT LIMITED TO, CORROSION PROTECTION, SAND BEDDING, AND PRESSURE TESTING). CONTRACTOR IS RESPONSIBLE FOR CONTACTING WATER DIVISION INSPECTOR FOR INSPECTION OF PIPE INSTALLATION AND TESTING FROM THE CONNECTION AT THE WATER METER TO THE BACKFLOW DEVICE.
14. DRAINAGE SHALL BE PROVIDED IN THE UTILITY CLOSET (AS REQUIRED BY THE BUILDING DIVISION) TO DRAIN WATER THAT MAY BE RELEASED FROM THE TESTING OR DRAINAGE OF THE BACKFLOW DEVICE.
15. VERTICAL INSTALLATIONS SHALL HAVE A MINIMUM CLEARANCE OF 3-FT FROM THE FRONT OF THE DEVICE AND 18-IN TO EACH SIDE OF THE DEVICE FROM ANY STRUCTURE, UTILITY, OR OTHER FEATURE FOR ACCESSIBILITY.

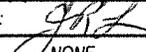
CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**INTERIOR DOUBLE CHECK VALVE
BACKFLOW DEVICE INSTALLATION FOR
2" FIRE WATER SERVICES**

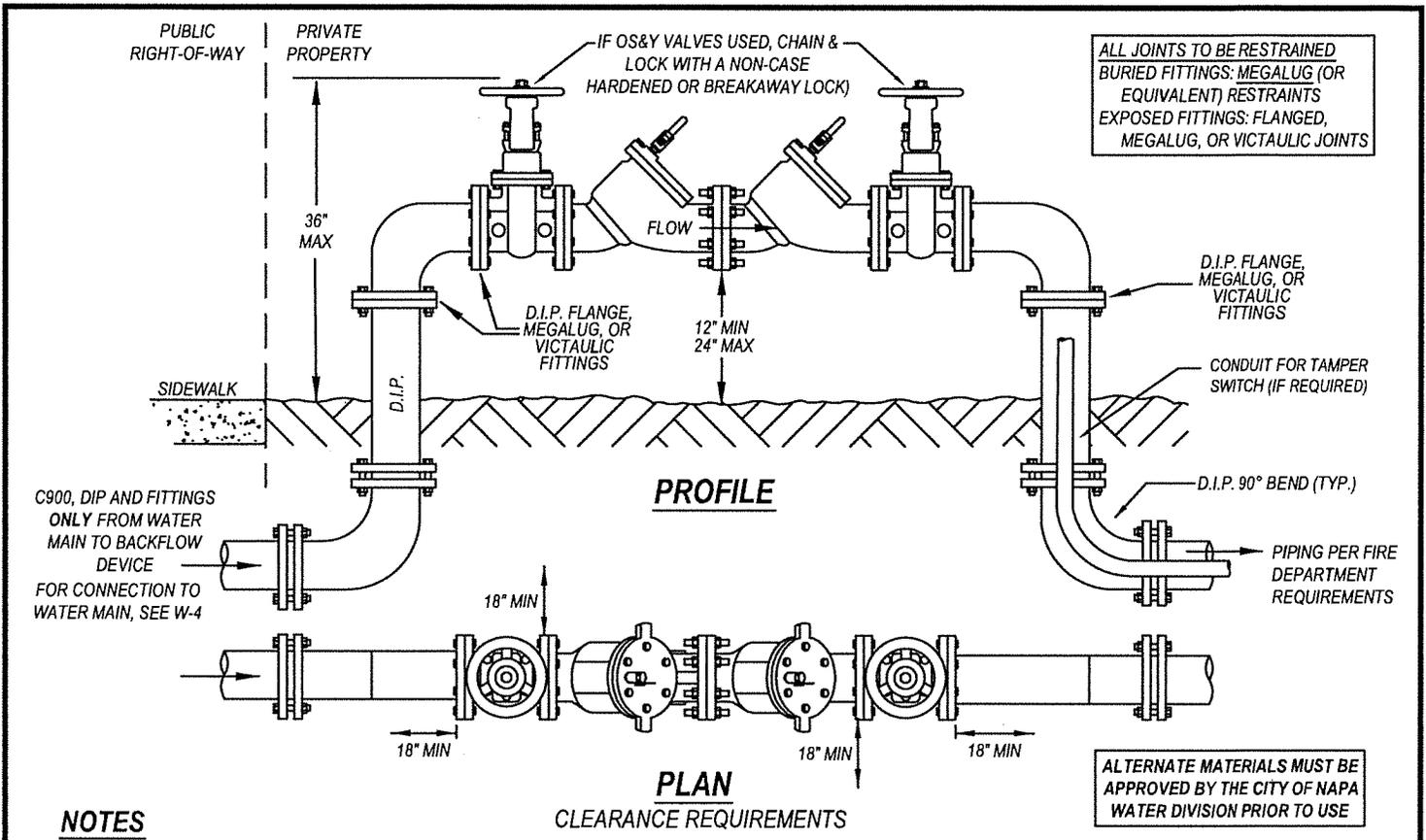
DATE REVISED: DECEMBER 2015

CHECKED: 

APPROVED: 

SCALE: NONE

W - 7B.2
DWG NO.



NOTES

1. THE FIRE DEPARTMENT CONNECTION AND RELATED APPURTENANCES SHALL MEET THE CITY OF NAPA FIRE DEPARTMENT SPECIFICATIONS AND REQUIREMENTS. LOCATION OF THE FIRE DEPARTMENT CONNECTION SHALL BE APPROVED BY THE NAPA FIRE DEPARTMENT.
2. BACKFLOW DEVICE MUST BE PROTECTED FROM HAZARDS EITHER BY LOCATION OR BARRIERS.
3. NO CONNECTIONS ARE ALLOWED BETWEEN WATER MAIN AND THE BACKFLOW DEVICE OR DIRECTLY TO THE DEVICE.
4. ALL PARTS MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
5. INSTALLATION MUST BE APPROVED BY THE WATER DIVISION CROSS CONNECTION SPECIALIST AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
6. BACKFLOW DEVICE CAN BE INSTALLED WITHIN A BUILDING IN A DEDICATED UTILITY CLOSET IF THE BUILDING IS LOCATED WITHIN 20 FEET OF THE PUBLIC RIGHT-OF-WAY, THE BACKFLOW DEVICE IS PLACED AT THE CORNER OF THE BUILDING CLOSEST TO THE PUBLIC RIGHT-OF-WAY WHERE THE CONNECTION IS MADE, AND WITH THE APPROVAL FROM THE WATER DIVISION CROSS CONNECTION SPECIALIST (SEE W-7D FOR INTERIOR INSTALLATION).
7. VERTICAL INSTALLATIONS SHALL HAVE A MINIMUM CLEARANCE OF 3-FEET FROM THE FRONT OF THE DEVICE AND 18-INCHES TO EACH SIDE OF THE DEVICE FROM ANY STRUCTURE, FEATURE UTILITY, ETC. FOR ACCESSIBILITY.
8. PIPE INSTALLATION TO THE BACKFLOW DEVICE SHALL MEET THE CITY STANDARD REQUIREMENTS FOR PUBLIC WATER MAINS (INCLUDING, BUT NOT LIMITED TO, CORROSION PROTECTION, SAND BEDDING, AND PRESSURE TESTING). CONTRACTOR IS RESPONSIBLE FOR CONTACTING THE WATER DIVISION INSPECTOR FOR INSPECTION OF PIPE INSTALLATION AND TESTING FROM THE CONNECTION AT THE WATER MAIN TO THE BACKFLOW DEVICE.
9. NO TREES SHALL BE PLANTED WITHIN 10', OR LARGE SHRUBS WITHIN 5', OF DOUBLE CHECK VALVE AND WATER LATERAL.
10. BACKFLOW DEVICE MUST BE APPROVED BY THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES. DEVICE MUST BE SPECIFICALLY APPROVED FOR VERTICAL INSTALLATION TO INSTALL VERTICALLY.
11. BACKFLOW DEVICES THAT SERVE ON-SITE PRIVATE FIRE HYDRANTS SHALL BE EQUIPPED WITH A FIRE SERVICE METER.
12. THE VISUAL IMPACT OF BACKFLOW DEVICES SHOULD BE CONSIDERED IF NOT PLACED WITHIN BOXES, VAULTS, OR UTILITY CLOSETS. BACKFLOW DEVICE SHALL BE PAINTED IN A COLOR APPROVED BY THE COMMUNITY DEVELOPMENT DEPARTMENT.

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**EXTERIOR INSTALLATION OF
DOUBLE CHECK VALVES FOR
4" TO 8" FIRE WATER SERVICES**

DATE REVISED DECEMBER 2015

CHECKED *[Signature]*

APPROVED *[Signature]*

SCALE NONE

W-7C

DWG NO.

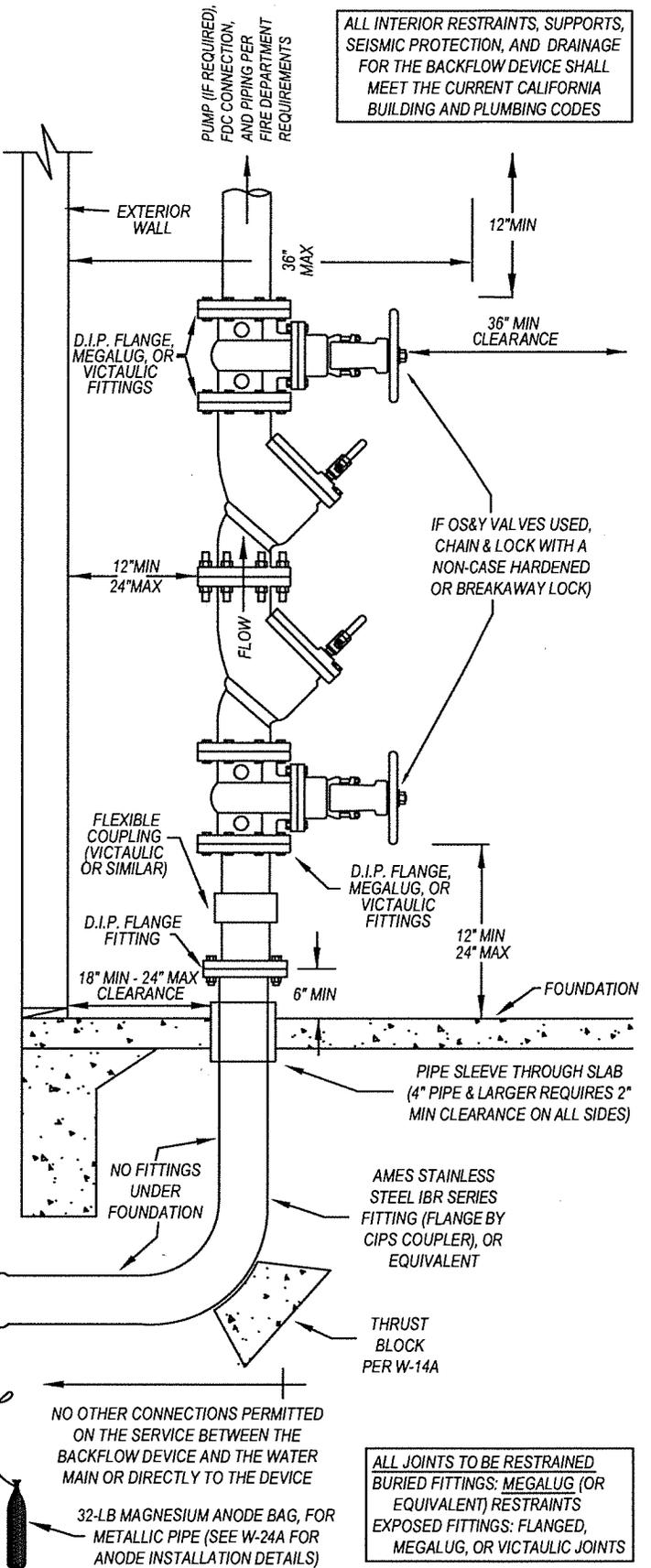
NOTES

- BACKFLOW DEVICES THAT SERVE ON-SITE PRIVATE FIRE HYDRANTS SHALL BE EQUIPPED WITH A FIRE SERVICE METER.
- THE FIRE DEPARTMENT CONNECTION AND RELATED APPURTENANCES SHALL MEET THE CITY OF NAPA FIRE DEPARTMENT SPECIFICATIONS AND REQUIREMENTS. LOCATION OF THE FIRE DEPARTMENT CONNECTION SHALL BE APPROVED BY THE NAPA FIRE DEPARTMENT.
- BACKFLOW DEVICE MAY BE INSTALLED WITHIN A BUILDING IN A DEDICATED UTILITY CLOSET WITH APPROVAL FROM THE WATER DIVISION.
- BACKFLOW DEVICE MUST BE PROTECTED FROM HAZARDS EITHER BY LOCATION OR BARRIERS.
- INTERIOR INSTALLATIONS MAY BE INSTALLED IN THE HORIZONTAL POSITION. IF HORIZONTAL INSTALLATION IS DESIRED, AFTER THE INITIAL FLEXIBLE COUPLING, INSTALL A DUCTILE IRON 90-DEGREE BEND. CLEARANCES AROUND THE DEVICE SHALL BE PER W-7C AND W-7D.
- ALL PARTS MUST BE EASILY ACCESSIBLE FOR INSPECTION BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
- INSTALLATION MUST BE APPROVED BY THE WATER DIVISION CROSS CONNECTION SPECIALIST AND THE DEVICE TESTED BY A CITY APPROVED AWWA CERTIFIED BACKFLOW TESTER BEFORE WATER IS TURNED ON. ANY OTHER LOCATION OR METHOD OF INSTALLATION MUST BE APPROVED IN ADVANCE BY THE WATER DIVISION CROSS CONNECTION SPECIALIST.
- BACKFLOW DEVICE MUST BE APPROVED BY THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES. DEVICE MUST BE SPECIFICALLY APPROVED FOR VERTICAL INSTALLATION TO INSTALL VERTICALLY.
- VERTICAL INSTALLATIONS SHALL HAVE A MINIMUM CLEARANCE OF 3-FEET FROM THE FRONT OF THE DEVICE AND 18-INCHES TO EACH SIDE OF THE DEVICE FROM ANY STRUCTURE, FEATURE, UTILITY, ETC. FOR ACCESSIBILITY.
- DRAINAGE SHALL BE PROVIDED IN THE UTILITY CLOSET (AS REQUIRED BY THE BUILDING DIVISION) TO DRAIN WATER THAT MAY BE RELEASED FROM THE TESTING OR DRAINAGE OF THE BACKFLOW DEVICE.
- NO TREES SHALL BE PLANTED WITHIN 10', OR LARGE SHRUBS WITHIN 5', OF WATER LATERAL.

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

- PIPE INSTALLATION TO THE BACKFLOW DEVICE SHALL MEET CITY STANDARD REQUIREMENTS FOR PUBLIC WATER MAINS (INCLUDING, BUT NOT LIMITED TO CORROSION PROTECTION, SAND BEDDING, AND PRESSURE TESTING). CONTRACTOR IS RESPONSIBLE FOR CONTACTING WATER DIVISION INSPECTOR FOR INSPECTION OF PIPE INSTALLATION AND TESTING FROM THE CONNECTION AT THE PUBLIC MAIN TO THE BACKFLOW DEVICE.

C900, DIP AND FITTINGS ONLY FROM WATER MAIN TO 90° FITTING
FOR CONNECTION TO WATER MAIN, SEE W-4



ALL INTERIOR RESTRAINTS, SUPPORTS, SEISMIC PROTECTION, AND DRAINAGE FOR THE BACKFLOW DEVICE SHALL MEET THE CURRENT CALIFORNIA BUILDING AND PLUMBING CODES

CITY OF NAPA PUBLIC WORKS - WATER DIVISION

INTERIOR INSTALLATION OF DOUBLE CHECK VALVES FOR 4" TO 8" FIRE WATER SERVICES

DATE REVISED	DECEMBER 2015
CHECKED	<i>[Signature]</i>
APPROVED	<i>[Signature]</i>
SCALE	NONE

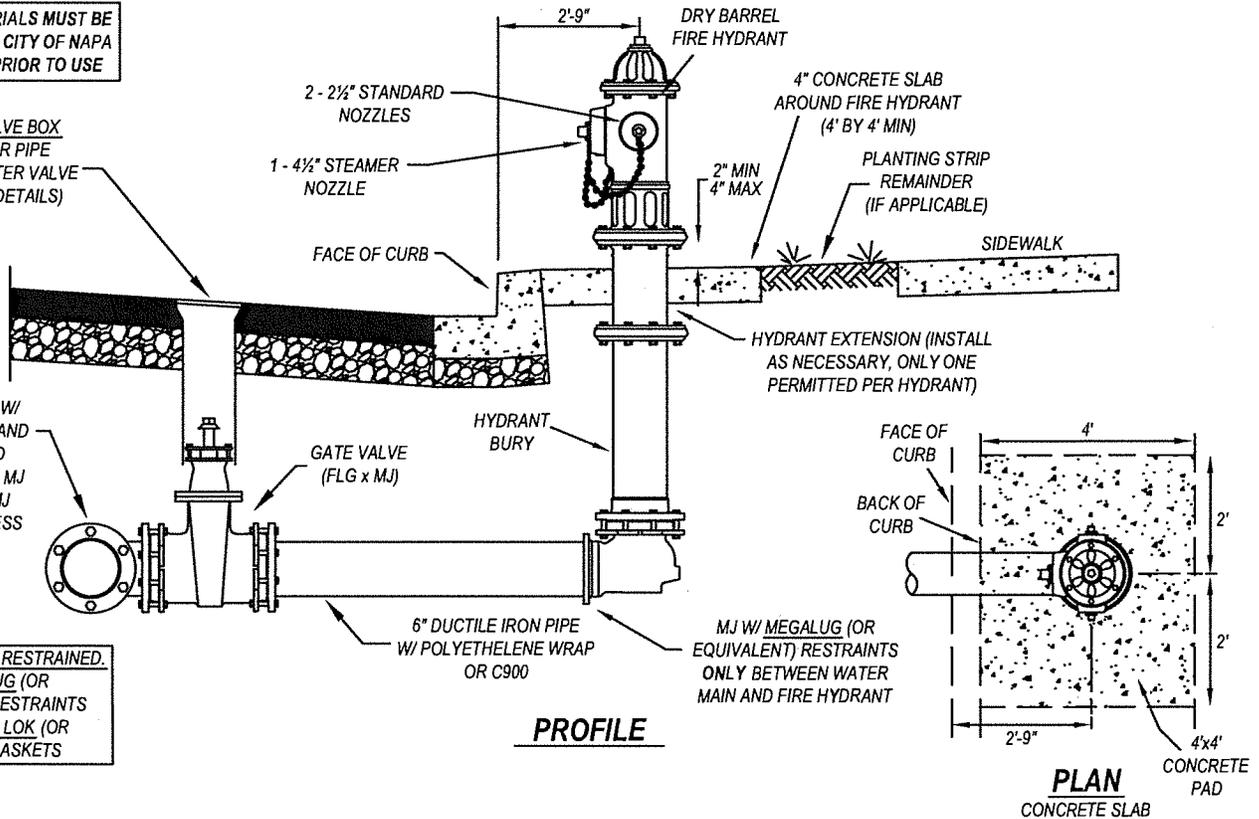
W-7D
DWG NO.

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

CHRISTY G5 VALVE BOX
W/ 8" PVC RISER PIPE
(SEE W-9 FOR WATER VALVE
INSTALLATION DETAILS)

MJ HYDRANT TEE W/
ROTATABLE MJ GLAND
ON 6" PLAIN END
BRANCH OR FLG x MJ
TEE AND FLG x MJ
VALVE W/ STAINLESS
STEEL BOLTS

ALL JOINTS TO BE RESTRAINED.
FITTINGS: MEGALUG (OR
EQUIVALENT) RESTRAINTS
PIPE BELLS: FIELD LOK (OR
EQUIVALENT) GASKETS



NOTES

1. APPROVED HYDRANTS: MUELLER "SUPER CENTURION", KENNEDY "GUARDIAN", AND AMERICAN-DARLING "B-62-B". **NO SUBSTITUTES WILL BE ACCEPTED.**
2. HYDRANTS SHALL CONFORM TO AWWA STANDARD C 502-85. HYDRANTS SHALL HAVE ONE 4-1/2" OUTLET AND TWO 2-1/2" OUTLETS WITH CHAINED CAPS. MAIN VALVE SIZE SHALL BE 5-1/4". HYDRANTS INSTALLED ON 12" DIAMETER OR LARGER WATER MAINS SHALL BE 8-IN IN DIAMETER.
3. OPERATION: AWWA STANDARD PENTAGON NUT, OPEN LEFT WITH A MAXIMUM 60 FT-LB OPERATING TORQUE.
4. BURY DEPTH: 36" TYPICAL.
5. PUBLIC FIRE HYDRANTS SHALL BE PAINTED A PRIME COST PLUS "ALUMINUM SILVER" COLOR FINISH. FIRE HYDRANTS ON A PRIVATE FIRE SYSTEM SHALL BE PAINTED WITH A PRIME COAT PLUS "OSHA YELLOW" COLOR FINISH.
6. DRAINS: HYDRANTS SHALL BE FURNISHED WITH DRAINS **PLUGGED.**
7. WHERE SIDEWALK IS ADJACENT TO CURB, EXTEND SIDEWALK AND RIGHT-OF-WAY TO PROVIDE A MINIMUM 4 FEET CLEARANCE BEHIND FIRE HYDRANT PER ADA REQUIREMENTS
8. A 6" VERTICAL CURB IS REQUIRED FOR A MINIMUM OF 10' ON EACH SIDE OF HYDRANT.
9. INSTALL 8 MIL POLYETHYLENE WRAP ON LATERAL, JOINTS, AND VERTICAL RISE.
10. VERTICAL OFFSETS BETWEEN MAIN AND HYDRANT SHALL BE ACHIEVED WITH 45° BENDS W/ RESTRAINED JOINTS.
11. INSTALL PAVEMENT MARKER(S) IN PUBLIC STREET FOR ALL NEW AND RELOCATED FIRE HYDRANTS (SEE W-21).
12. FIRE HYDRANTS THAT ARE NOT IN SERVICE SHALL BE COMPLETELY COVERED.
13. PUBLIC FIRE HYDRANTS THAT ARE IN SERVICE SHALL BE OPERATED BY WATER DIVISION OR FIRE DEPARTMENT STAFF ONLY.
14. WATER USE THROUGH ANY FIRE HYDRANT SHALL BE LIMITED TO WATER SYSTEM MAINTENANCE AND FIRE PREVENTION USES ONLY. FIRE HYDRANTS MAY BE USED FOR CONSTRUCTION WATER PURPOSES WITH THE USE OF A HYDRANT METER OBTAINED FROM THE CITY **AND** IF THE LOCATION IS APPROVED BY THE CITY OF NAPA WATER DIVISION.
15. NO TREES SHALL BE PLANTED WITHIN 10', OR LARGE SHRUBS WITHIN 5', OF FIRE HYDRANTS.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

FIRE HYDRANT

DATE REVISED DECEMBER 2015

CHECKED

APPROVED

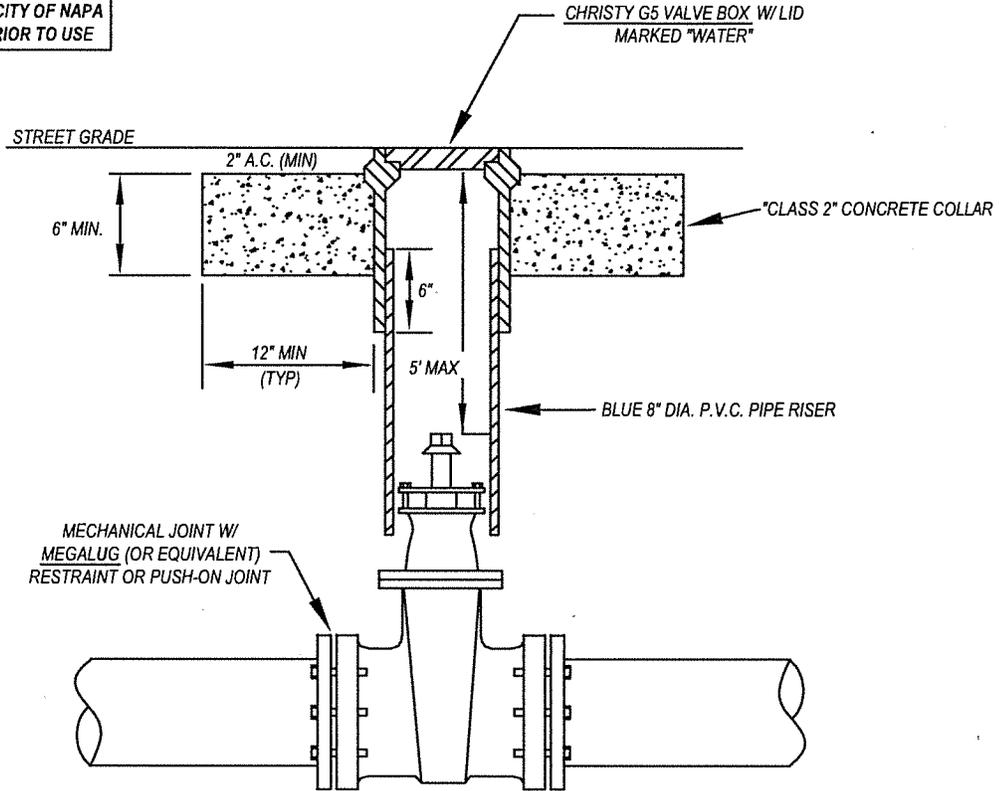
SCALE

NONE

DWG NO.

W - 8

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE



NOTES

1. BUTTERFLY VALVES SHALL BE INSTALLED FOR 12" AND LARGER PIPES. VALVE NUTS SHALL BE PLACED ON THE SIDE OF THE MAIN CLOSEST TO THE NEAREST CURB.
2. VALVE RING SHALL BE SET TO GRADE PRIOR TO PLACING FINISHED PAVEMENT.
3. THE TWO (2) INCH SQUARE OPERATING NUT ON ALL VALVES SHALL BE INSTALLED AT A MAXIMUM OF 5- FEET IN DEPTH MEASURED FROM THE TOP OF THE OPERATING NUT TO FINISHED GRADE. ALL OPERATING NUTS INSTALLED AT A DEPTH GREATER THAN 5- FEET SHALL INCLUDE A VALVE EXTENSION TO RAISE THE OPERATING NUT TO 24- INCHES FROM FINISHED GRADE.
4. VALVE EXTENSIONS (IF REQUIRED) SHALL BE ROUND OR SQUARE 1.5- INCH DIAMETER STEEL ROD, WELDED CONSTRUCTION, AND COATED WITH TOP CENTERING RING AND AWWA 2" OPERATING NUTS TOP AND BOTTOM (PIPELINE PRODUCTS SX-900 OR SIMILAR). SOCKET END SHALL BE DRILLED AND TAPPED WITH TWO (2) 1/4" SET SCREWS INSTALLED ON OPPOSITE SIDES. OPERATING NUT SHALL BE DRILLED WITH RECESSES TO ACCEPT THE TWO (2) 1/4" SET SCREWS. SET SCREWS SHALL BE SECURELY FASTENED TO THE OPERATING NUT.
5. WATER VALVES SHALL BE OPERATED BY WATER DIVISION PERSONNEL ONLY.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

VALVES

DATE REVISED DECEMBER 2015

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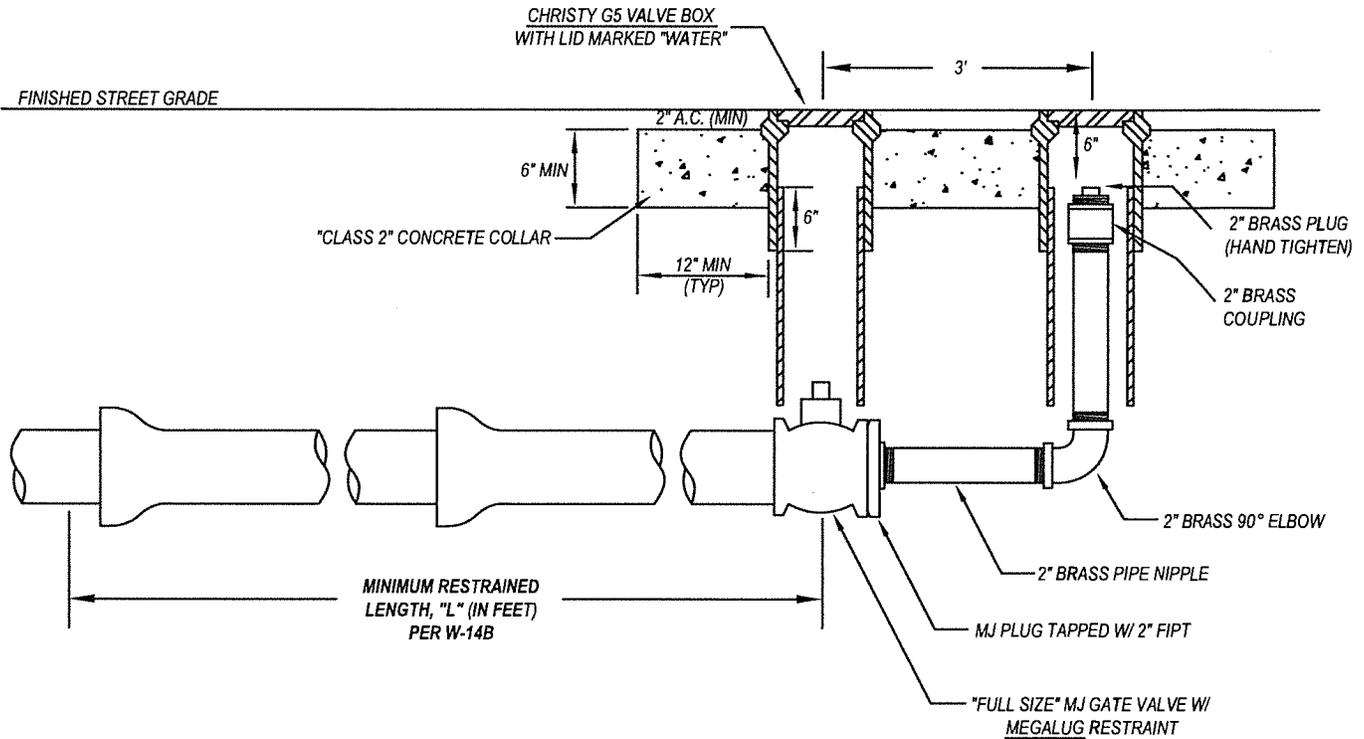
APPROVED

SCALE

NONE

DWG NO.

W - 9



ALL JOINTS TO BE RESTRAINED.
 FITTINGS: MEGALUG (OR EQUIVALENT) RESTRAINTS
 PIPE BELLS: FIELD LOK (OR EQUIVALENT) GASKETS

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

NOTES

1. BLOW-OFFS SHALL ONLY BE INSTALLED AT THE END OF PUBLIC WATER MAINS SMALLER THAN 6 INCHES IN DIAMETER OR AT THE DISCRETION OF THE WATER DIVISION. WATER MAINS 6 INCHES AND LARGER IN DIAMETER SHALL BE INSTALLED WITH A FIRE HYDRANT AT THE END OF THE MAIN AS THE BLOW-OFF (SEE W-8 FOR DETAILS).
2. ALL JOINTS WITHIN MINIMUM RESTRAINED LENGTH "L" SHALL BE RESTRAINED. FULL LENGTH PIPE SECTIONS SHALL BE USED. WHEN LENGTH "L" OCCURS WITHIN THE MID SECTION OF A PIPE, THE NEXT JOINT OUT SHALL BE RESTRAINED.
3. RESTRAINED JOINTS REQUIRE INSPECTION BY THE CITY OF NAPA. **CONTRACTOR IS RESPONSIBLE FOR SCHEDULING INSPECTION IN ADVANCE AND LEAVING JOINTS EXPOSED FOR THE CITY INSPECTOR.**
4. MINIMUM RESTRAINED LENGTH SHALL BE CLEARLY SHOWN ON THE PROFILE OF ALL WATERLINE PLANS.
5. MINIMUM RESTRAINED LENGTH SHALL BE RE-CALCULATED TO ACCOUNT FOR OTHER FITTINGS (VALVES, TEES, BENDS) WITHIN LENGTH "L".
6. RESTRAINED LENGTHS FOR PIPE SIZES LARGER THAN 12" SHALL BE DETERMINED BY THE ENGINEER AND APPROVED BY THE CITY.
7. SEE W-14B FOR "L" LENGTH SPECIFICATIONS AND ADDITIONAL RESTRAINED JOINT DETAILS.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

2" BLOW-OFF ASSEMBLY

DATE REVISED DECEMBER 2015

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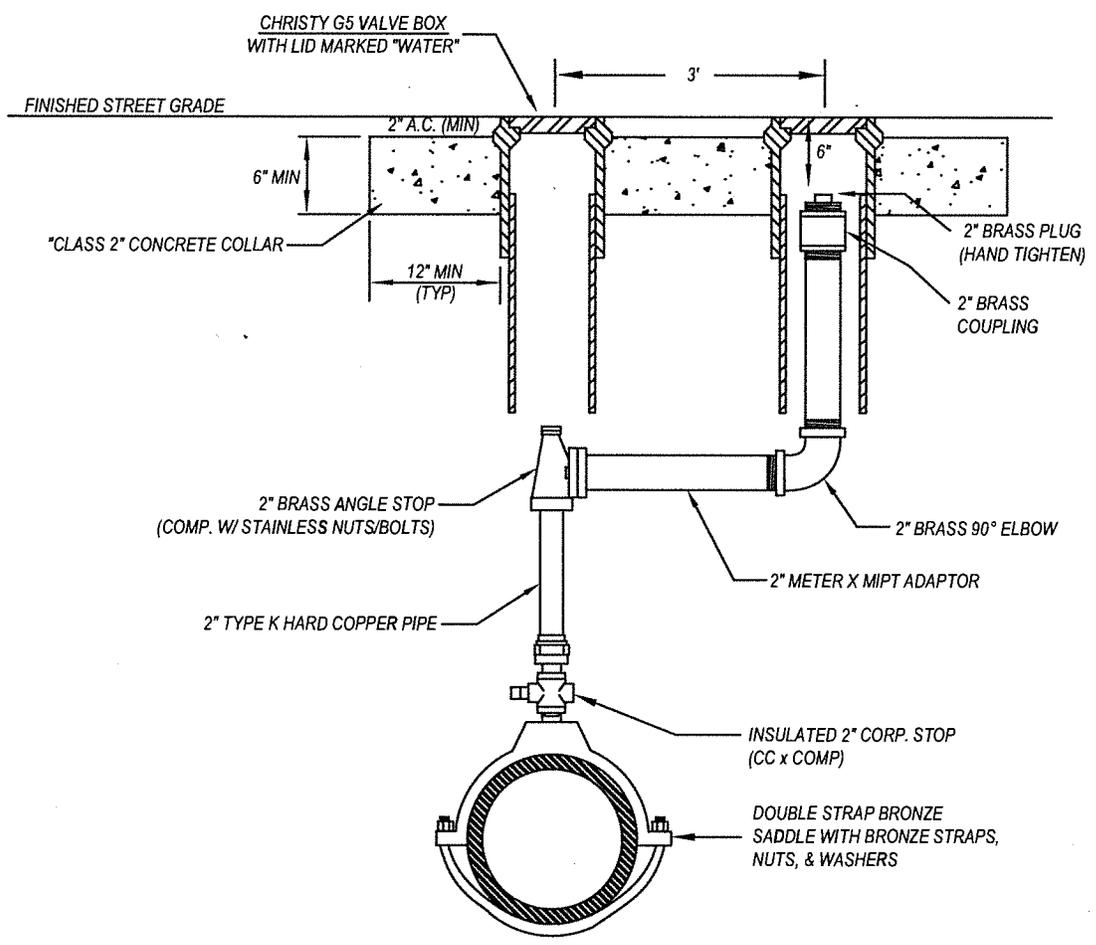
APPROVED

SCALE

NONE

DWG NO.

W - 10A



APPROVED FITTINGS	
DESCRIPTION	MUELLER
INSULATED CORP. STOP (CC x COMP)	N-35008
90° BEND (COMP x FIPT)	H-15533
90° BEND (COMP x MIPT)	H-15531
ANGLE STOP (COMP x METER FLANGE)	B-24276

** EXCEPT FOR INSULATED FITTINGS, FORD OR JONES EQUIVALENT ALSO APPROVED

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

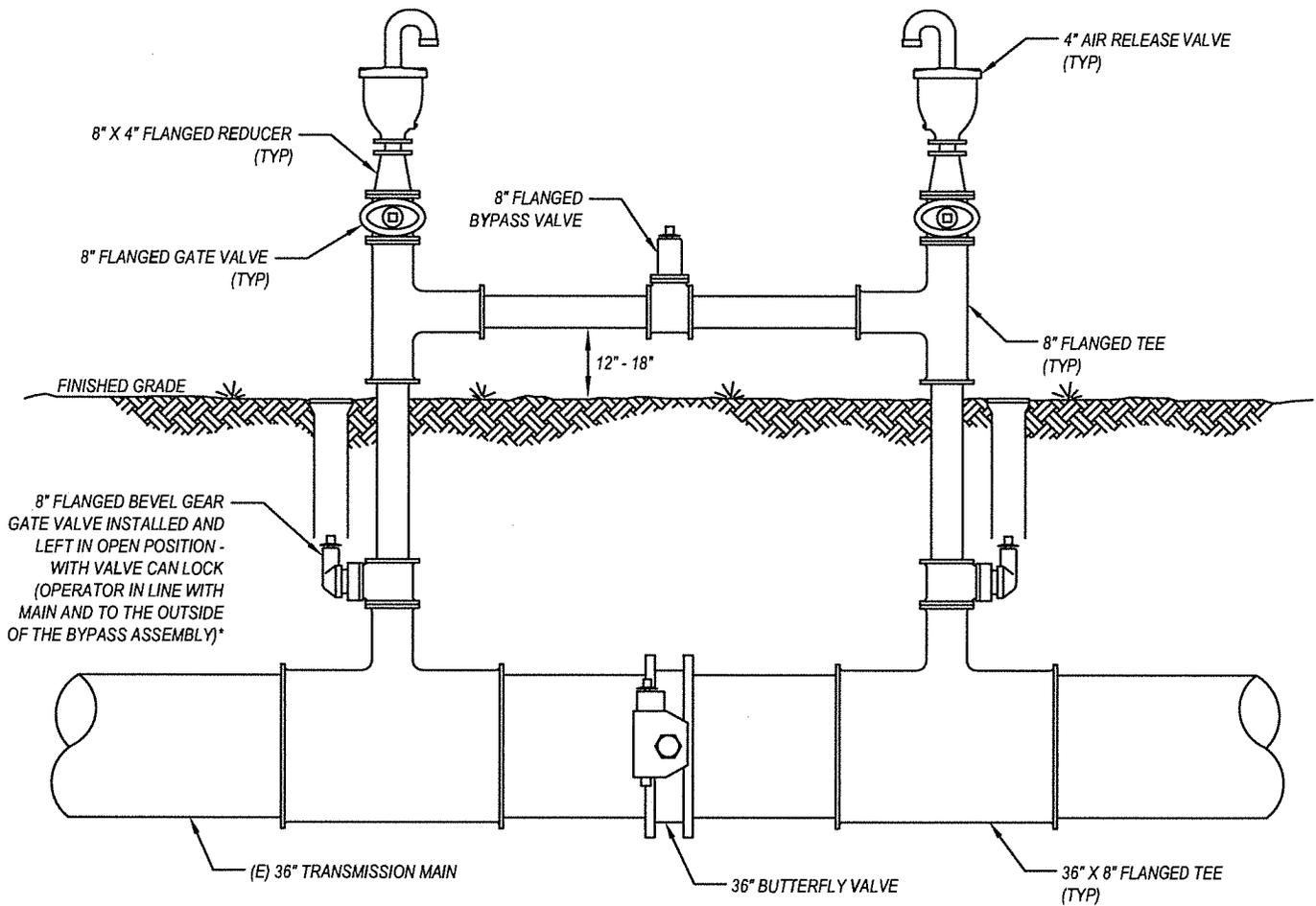
CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

2" TOP BLOW OFF ASSEMBLY

DATE REVISED	DECEMBER 2015
CHECKED	<i>[Signature]</i>
APPROVED	<i>[Signature]</i>
SCALE	NONE

DWG NO. **W - 10B**



* VALVE TO BE ACTIVATED ONLY WITH APPROVAL FROM DISTRIBUTION SUPERINTENDENT

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

TYPICAL TRANSMISSION BYPASS

DATE REVISED DECEMBER 2015

CHECKED *[Signature]*

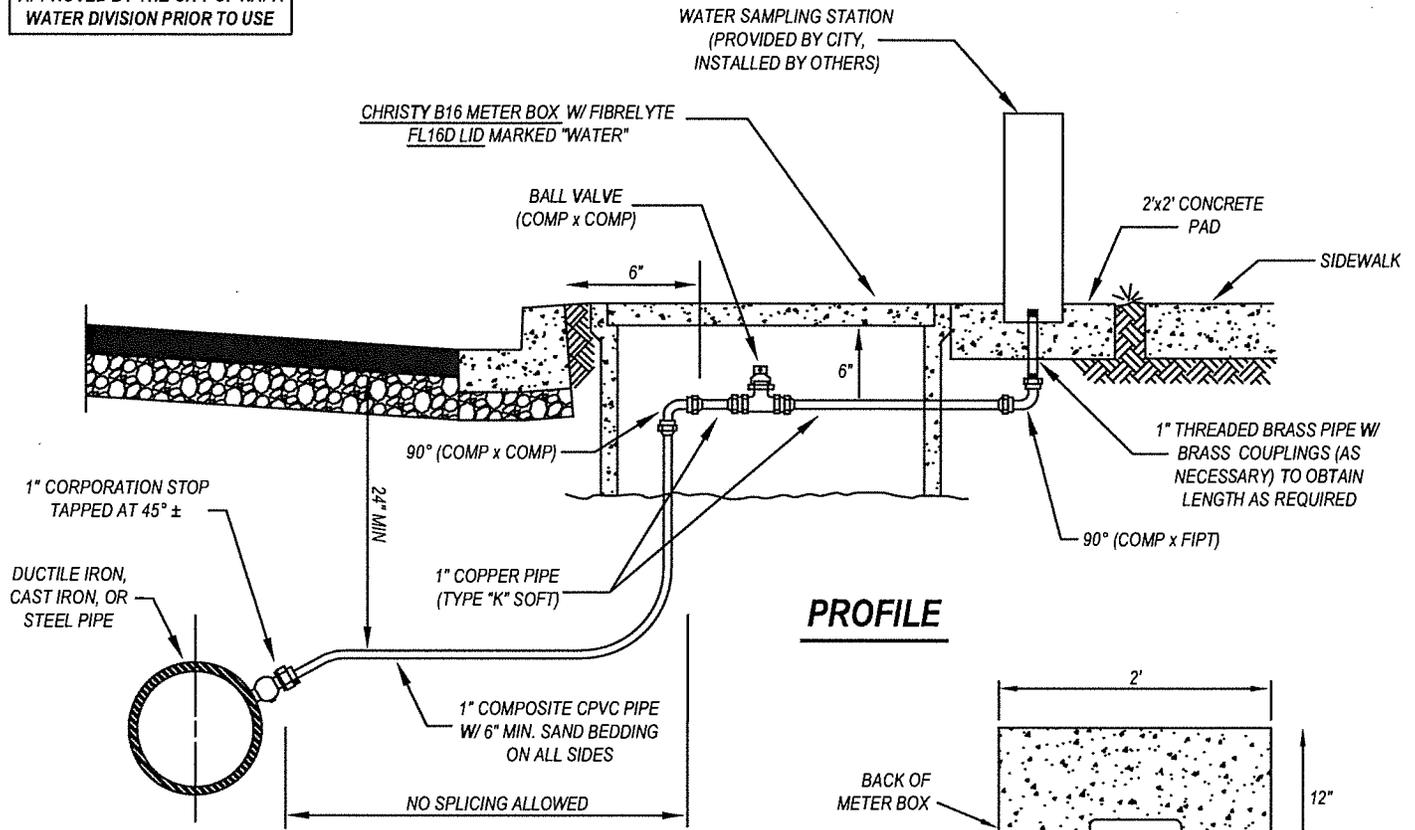
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SCALE NONE

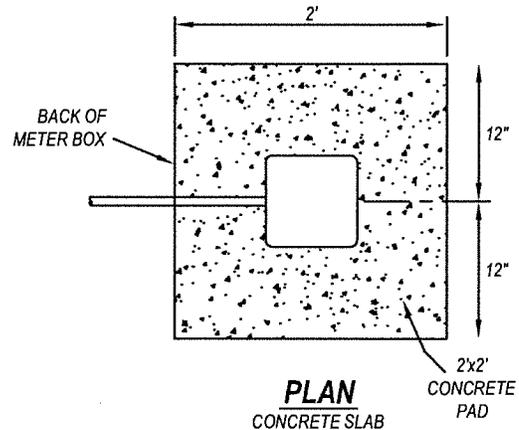
DWG NO.

W - 10C

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE



PROFILE



PLAN
CONCRETE SLAB

APPROVED FITTINGS

DESCRIPTION	MUELLER	FORD	JONES
CORPORATION STOP (CC x COMP)	B-25008	---	---
90° BEND (COMP x FIPT)	H-15533	L14-77Q	J-2621SG
90° BEND (COMP x COMP)	H-15526	L44-44-Q	J-2611SG
BALL VALVE (COMP x COMP)	B-25155	B44-445	J-1949SG

NOTES

1. WATER SAMPLING STATIONS SHALL BE INSTALLED DURING THE CONSTRUCTION NEW WATER MAINS AS DIRECTED BY THE CITY WATER QUALITY MANAGER, AND AT OTHER SPECIFIED LOCATIONS AS REQUIRED.
2. ALL BURIED SECTIONS OF COPPER AND BRASS PIPE SHALL BE WRAPPED WITH AN 8-MIL PLASTIC SLEEVE (BLUE IN COLOR). COPPER PIPE NOT WRAPPED IN A PLASTIC SLEEVE SHALL BE NSF 61 APPROVED PLASTIC COATED COPPER TUBING (TYPE "K" SOFT, BLUE IN COLOR).
3. METER BOX AND SERVICE LINE SHALL BE INSTALLED 5-FT (MIN) FROM DRIVEWAY APPROACHES AND OTHER VEHICULAR ACCESS WAYS.
4. EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER'S EXPENSE. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT TAP SHALL BE 24" (MIN) FROM ANY OTHER TAP, BELL, FITTING, OR OTHER SERVICE.
5. WATER SAMPLING STATIONS SHALL NOT BE INSTALLED OFF EXISTING SERVICE LATERALS UNLESS OTHERWISE APPROVED BY THE CITY WATER QUALITY MANAGER.
6. METER BOXES SHALL BE PLACED A MINIMUM OF 3' FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCES, WALLS, ETC.). NO TREES SHALL BE PLANTED WITHIN 10' OR LARGE SHRUBS WITHIN 5' OF THE METER BOX. SEE W-18 FOR ADDITIONAL REQUIREMENTS.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**WATER SAMPLING STATION
(CI AND DIP WATER MAINS)**

DATE REVISED: DECEMBER 2015

CHECKED: *[Signature]*

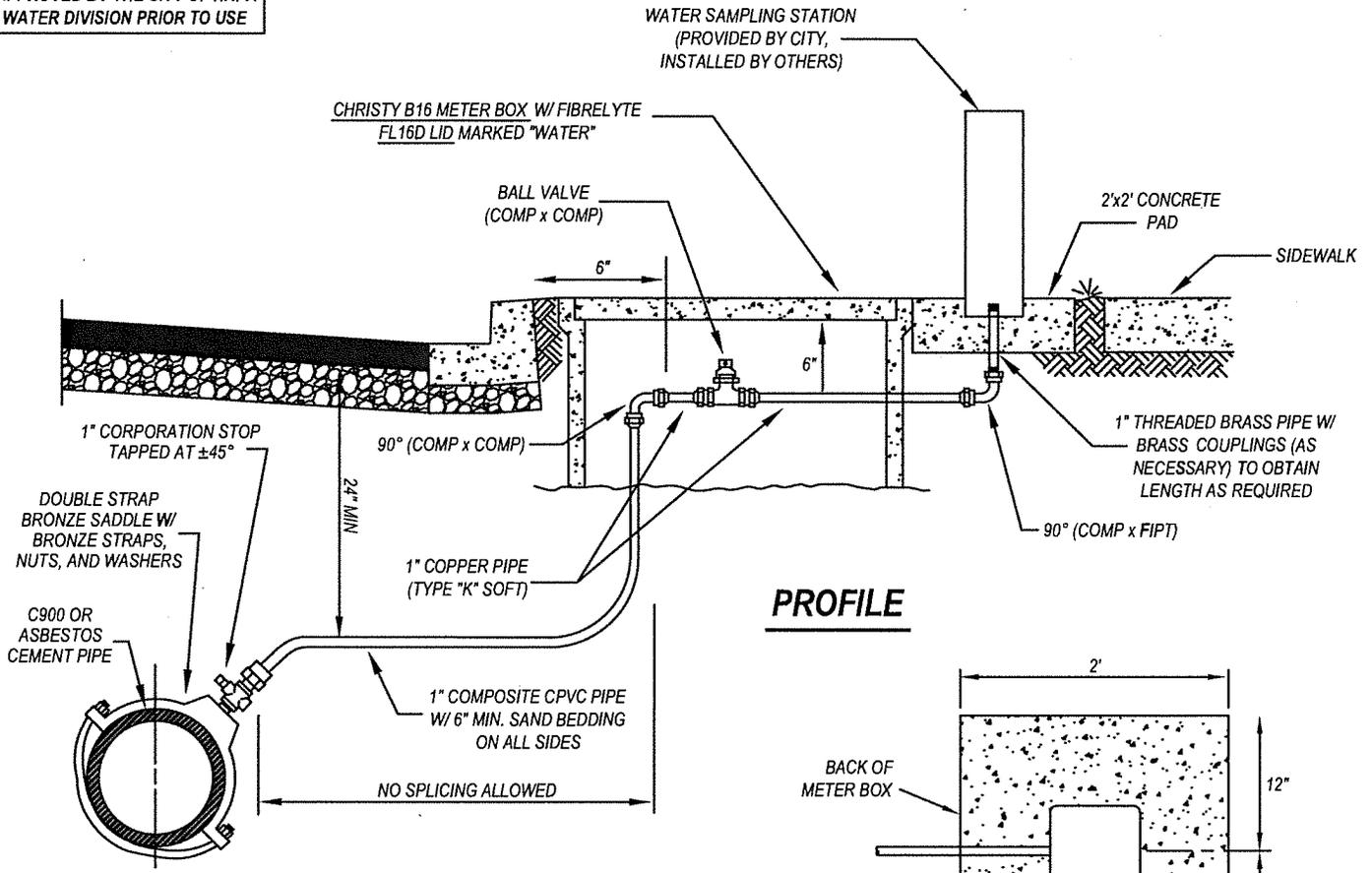
APPROVED: *[Signature]*

SCALE: NONE

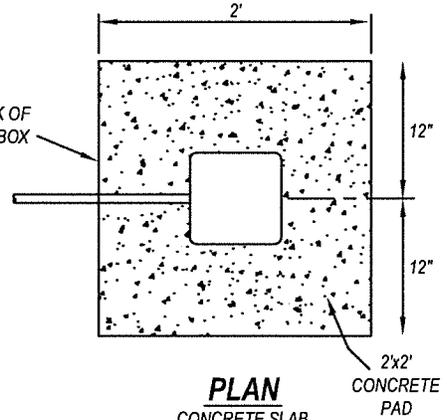
DWG NO.

W - 10D

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE



PROFILE



PLAN
CONCRETE SLAB
CONCRETE PAD

APPROVED FITTINGS			
DESCRIPTION	MUELLER	FORD	JONES
CORPORATION STOP (CC x COMP)	B-25008	---	---
90° BEND (COMP x FIPT)	H-15533	L14-77Q	J-2621SG
90° BEND (COMP x COMP)	H-15526	L44-44-Q	J-2611SG
BALL VALVE (COMP x COMP)	B-25155	B44-445	J-1949SG

NOTES

1. WATER SAMPLING STATIONS SHALL BE INSTALLED DURING THE CONSTRUCTION NEW WATER MAINS AS DIRECTED BY THE CITY WATER QUALITY MANAGER, AND AT OTHER SPECIFIED LOCATIONS AS REQUIRED.
2. ALL BURIED SECTIONS OF COPPER AND BRASS PIPE SHALL BE WRAPPED WITH AN 8-MIL PLASTIC SLEEVE (BLUE IN COLOR). COPPER PIPE NOT WRAPPED IN A PLASTIC SLEEVE SHALL BE NSF 61 APPROVED PLASTIC COATED COPPER TUBING (TYPE "K" SOFT, BLUE IN COLOR).
3. METER BOX AND SERVICE LINE SHALL BE INSTALLED 5-FT (MIN) FROM DRIVEWAY APPROACHES AND OTHER VEHICULAR ACCESS WAYS.
4. EXISTING WATER MAINS SHALL BE HOT-TAPPED BY CITY FORCES AT DEVELOPER'S EXPENSE. SEE W-16 FOR HOT-TAP REQUIREMENTS. HOT TAP SHALL BE 24" (MIN) FROM ANY OTHER TAP, BELL, FITTING, OR OTHER SERVICE.
5. WATER SAMPLING STATIONS SHALL NOT BE INSTALLED OFF EXISTING SERVICE LATERALS UNLESS OTHERWISE APPROVED BY THE CITY WATER QUALITY MANAGER.
6. METER BOXES SHALL BE PLACED A MINIMUM OF 3' FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCES, WALLS, ETC.). NO TREES SHALL BE PLANTED WITHIN 10' OR LARGE SHRUBS WITHIN 5' OF THE METER BOX. SEE W-18 FOR ADDITIONAL REQUIREMENTS.

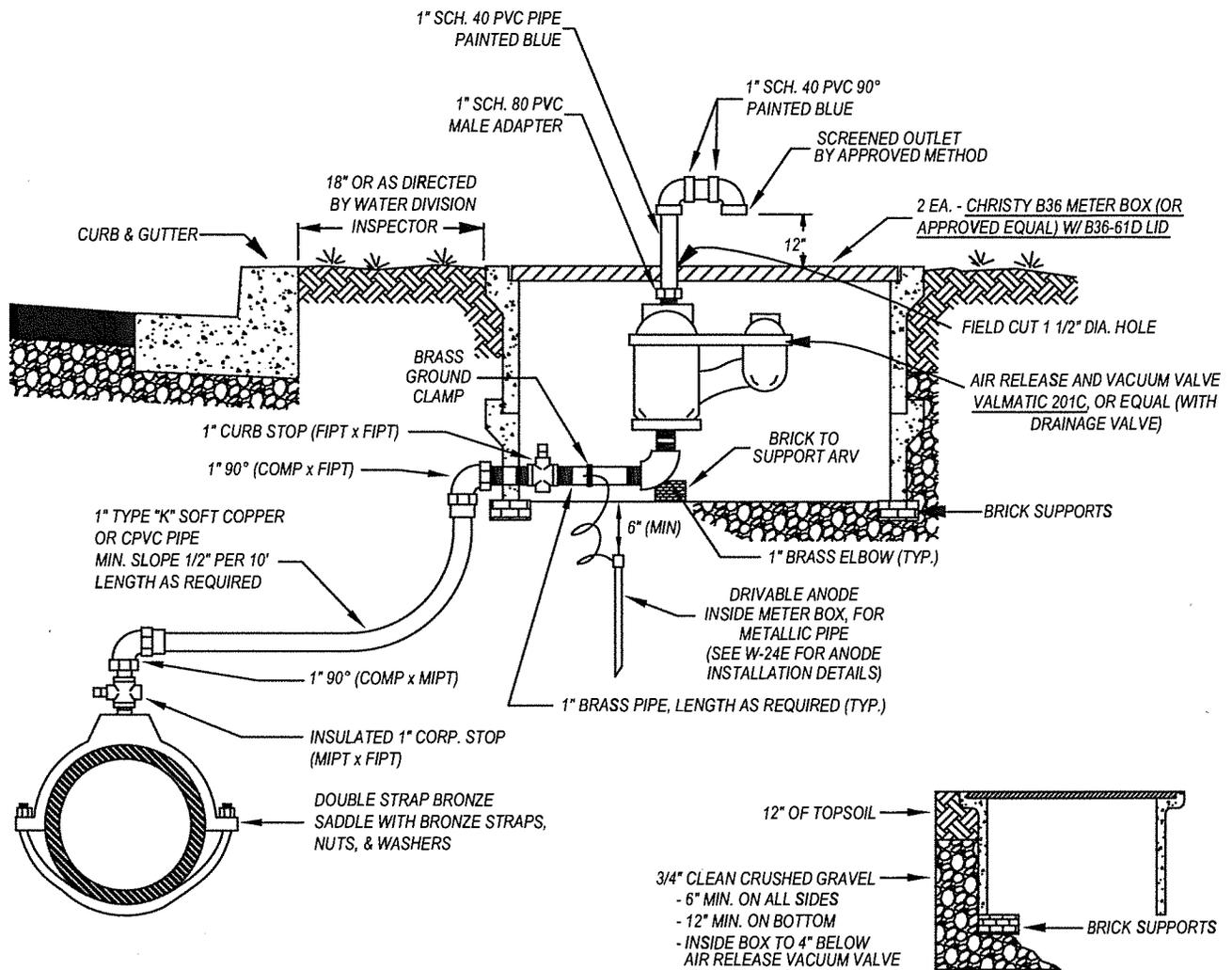
CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**WATER SAMPLING STATION
(AC AND C900 WATER MAINS)**

DATE REVISED: DECEMBER 2015
CHECKED: <i>[Signature]</i>
APPROVED: <i>[Signature]</i>
SCALE: NONE

W - 10E
DWG NO.



DETAIL

BOX INSTALLATION

APPROVED FITTINGS			
DESCRIPTION	MUELLER	FORD	JONES
CORP. STOP (MIPT x FIPT)	N-30045	-	-
90° BEND (COMP x FIPT)	H-15533	L14-44Q	J-2621SG
90° BEND (COMP x MIPT)	H-15531	L84-44Q	J-2619SG
CURB STOP (FIPT x FIPT)	B-20200	B11-444W	J-1900W

** EXCEPT FOR INSULATED FITTINGS, FORD OR JONES EQUIVALENT ALSO APPROVED

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

NOTES

- CURB ADJACENT SIDEWALK: INSTALL AIR-VAC ASSEMBLY BEHIND SIDEWALK.
- AIR-VAC SHALL BE PLACED A MINIMUM OF 3' FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCE, ETC.). NO TREES SHALL BE PLANTED WITHIN 10' OR LARGE SHRUBS WITHIN 5' OF THE AIR-VAC. SEE W-18 FOR ADDITIONAL REQUIREMENTS.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**1" AIR RELEASE AND
VACUUM VALVE ASSEMBLY
(FOR 6" AND 8" WATER MAINS)**

DATE REVISED DECEMBER 2015

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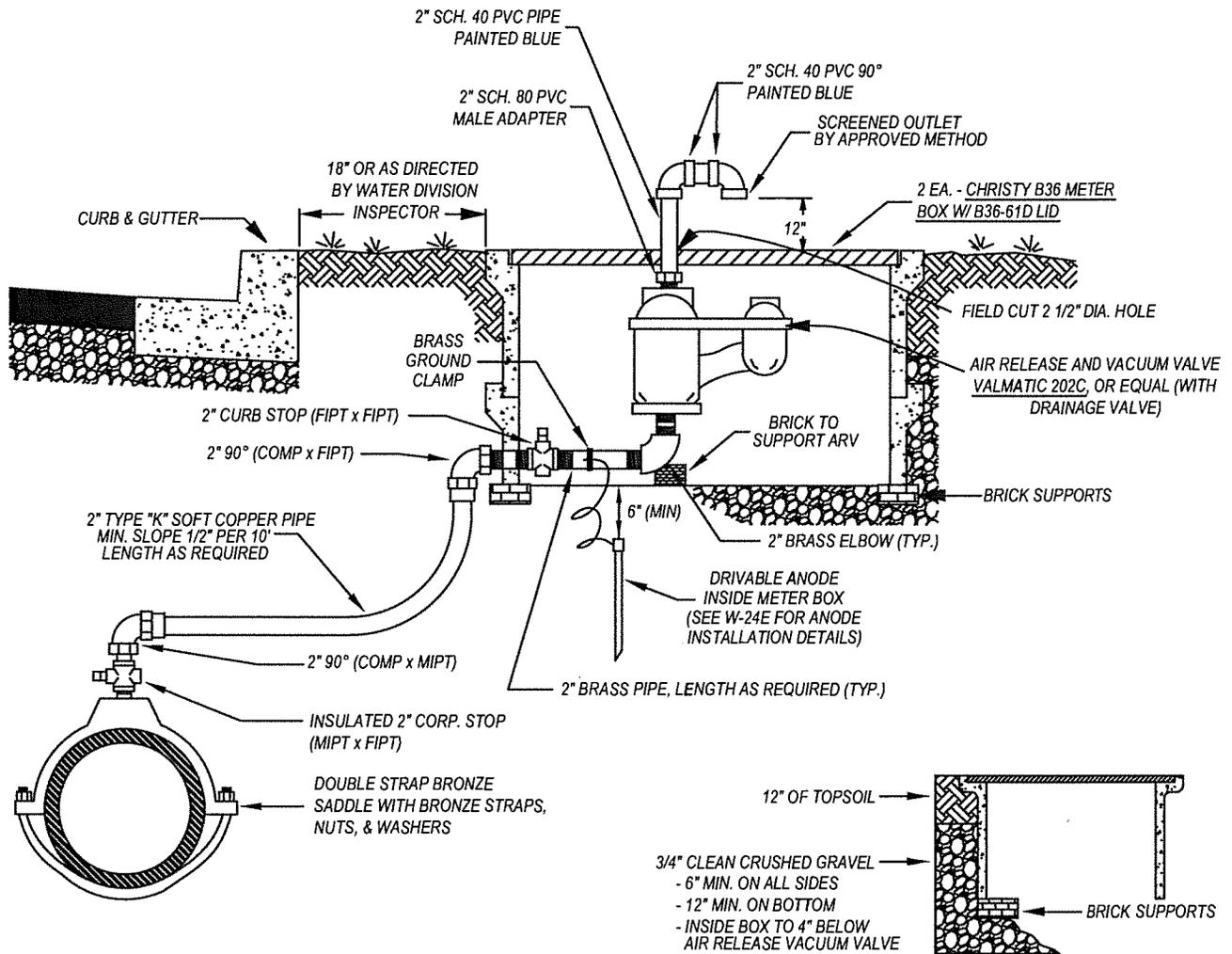
APPROVED

SCALE

NONE

W - 11A

DWG NO.



DETAIL
BOX INSTALLATION

APPROVED FITTINGS			
DESCRIPTION	MUELLER	FORD	JONES
CORP. STOP (MIPT x FIPT)	N-30045	-	-
90° BEND (COMP x FIPT)	H-15533	L14-44Q	J-2621SG
90° BEND (COMP x MIPT)	H-15531	L84-44Q	J-2619SG
CURB STOP (FIPT x FIPT)	B-20200	B11-444W	J-1900W

** EXCEPT FOR INSULATED FITTINGS, FORD OR JONES EQUIVALENT ALSO APPROVED

ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE

NOTES

- CURB ADJACENT SIDEWALK: INSTALL AIR-VAC ASSEMBLY BEHIND SIDEWALK.
- AIR-VAC SHALL BE PLACED A MINIMUM OF 3' FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCE, ETC.). NO TREES SHALL BE PLANTED WITHIN 10' OR LARGE SHRUBS WITHIN 5' OF THE AIR-VAC. SEE W-18 FOR ADDITIONAL REQUIREMENTS.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**2" AIR RELEASE AND
VACUUM VALVE ASSEMBLY
(FOR 12" AND LARGER WATER MAINS)**

DATE REVISED DECEMBER 2015

CHECKED *mfh*

APPROVED *grl*

SCALE NONE

W - 11B

DWG NO.

1. CONSTRUCTION DETAILS: REFER TO CITY OF NAPA STANDARD SPECIFICATIONS AND PLANS.
2. WATER-SEWER SEPARATION: WATER-SEWER (OR WATER-RECYCLED WATER) SEPARATION SHALL COMPLY WITH ALL CALIFORNIA DEPARTMENT OF HEALTH SERVICES REQUIREMENTS. PARALLEL CONSTRUCTION: 10' OF HORIZONTAL SEPARATION. PERPENDICULAR CONSTRUCTION: WATER MAINS AT LEAST 1' ABOVE SEWER AND RECYCLED WATER LINES.
3. EXISTING WATER FACILITIES: CONTRACTOR SHALL LOCATE BY EXCAVATION ALL EXISTING WATER FACILITIES PRIOR TO ANY CONSTRUCTION ACTIVITIES. IF CONFLICTS ARISE, AN ALTERNATE DESIGN MUST BE SUBMITTED TO THE CITY FOR APPROVAL.
4. OBSTRUCTIONS: TREES, FOUNDATIONS, OR OTHER PERMANENT STRUCTURES SHALL NOT BE INSTALLED WITHIN 10' OF ANY WATER FACILITY. NO OBSTRUCTIONS (SIGN POST, MAIL BOX, WALL, FENCE, ETC.) SHALL BE INSTALLED WITHIN 3' OF ANY WATER FACILITY. SEE STANDARD PLAN W-18 FOR ADDITIONAL REQUIREMENTS.
5. CONSTRUCTION WATER: WATER SUPPLIED FROM THE CITY OF NAPA SYSTEM SHALL BE TAKEN THROUGH A METERED SERVICE OR FIRE HYDRANT METER. FIRE HYDRANT METERS SHALL BE OBTAINED BY APPLYING AT THE REVENUE/COLLECTIONS DIVISION IN CITY HALL AT 955 SCHOOL STREET, NAPA (707.257.9508).
6. INSPECTION: PUBLIC WATER FACILITIES UP TO AND INCLUDING THE WATER METER SHALL BE INSPECTED BY THE WATER DIVISION INSPECTOR (CONTACT 707-257-9521 TO SCHEDULE INSPECTION). ALL WATER FACILITIES BETWEEN THE WATER METER UP TO AND INCLUDING THE BACKFLOW DEVICE SHALL BE INSPECTED BY THE WATER DIVISION BACKFLOW PREVENTION SPECIALIST (CONTACT 707-257-9544 TO SCHEDULE INSPECTION). ALL NEW WATER FACILITIES SHALL BE TESTED AND INSPECTED PRIOR TO ACTIVATION.
7. WATER SERVICE INTERRUPTION: CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING AFFECTED WATER CUSTOMERS A MINIMUM OF 48 HOURS (2 BUSINESS DAYS) IN ADVANCE. ALL VALVES SHALL BE OPERATED BY CITY PERSONNEL. CONTRACTOR SHALL SCHEDULE ALL WATER SERVICE INTERRUPTIONS BY CALLING 707-257-9544.
8. JOINT DEFLECTION: MAXIMUM DEFLECTION AT PIPE JOINTS SHALL NOT EXCEED 3° WITH A MAXIMUM OFFSET OF 10" PER 18' LENGTH (MINIMUM RADIUS = 345') OR AS SET FORTH BY MANUFACTURER SPECIFICATIONS OR INSTALLATION PROCEDURES.
9. CORROSION PROTECTION: DUCTILE IRON PIPE SHALL BE CATHODICALLY PROTECTED IN ACCORDANCE WITH THE CITY OF NAPA STANDARD SPECIFICATIONS, PLANS AND SPECIAL PROVISIONS. ALL BOLTS, STUDS WASHERS, NUTS, ETC. SHALL BE STAINLESS STEEL MINIMUM GRADE 304SS WITH TEFLON COATED NUTS OR CITY APPROVED EQUAL.
10. VALVES: VALVES SHALL BE INSTALLED AS SHOWN IN THE APPROVED PLANS AND COMPLY WITH CITY OF NAPA STANDARD PLAN W-9. ALL WATER SERVICE VALVES SHALL BE PLACED IMMEDIATELY AFTER THE TEE OR HOT TAP.
11. FIRE HYDRANTS: FIRE HYDRANT INSTALLATIONS SHALL COMPLY WITH CITY OF NAPA STANDARD PLAN W-8. FIRE HYDRANT(S) NOT IN SERVICE SHALL BE COMPLETELY COVERED.
12. SERVICES: WATER SERVICE INSTALLATIONS SHALL COMPLY WITH APPLICABLE CITY OF NAPA STANDARD PLANS. FIRE SERVICE METERS SHALL BE INSTALLED ON ALL FIRE SERVICES WITH PRIVATE FIRE HYDRANTS.
13. BACKFLOW DEVICES: BACKFLOW PREVENTION DEVICES SHALL BE INSTALLED ON ALL NEW SERVICES AND COMPLY WITH CITY OF NAPA STANDARD PLANS W-5 (A, B, C, & D), W-6 (A, B, C, & D), AND W-7 (A, B, C, & D). METER INSTALLATIONS SHALL NOT OCCUR UNTIL ALL BACKFLOW(S) HAVE BEEN CERTIFIED AND TESTED.
14. BACKFILL: WATER MAIN TRENCH BACKFILL SHALL COMPLY WITH CITY OF NAPA STANDARD PLAN W-13A.
15. TIE-INS: NEW TIE-INS TO EXISTING CITY WATER MAINS SHALL BE CONDUCTED UNDER CITY INSPECTION ONLY AFTER PRESSURE TESTING, CHLORINATION, AND BACTERIOLOGICAL TESTING IS COMPLETE. ALL HOT-TAPS TO EXISTING MAINS SHALL BE CONDUCTED BY THE CITY AT THE CONTRACTOR'S EXPENSE.
16. METER INSTALLATION(S) AND SERVICE ACTIVATION : METER INSTALLATION(S) SHALL OCCUR UPON RECEIPT OF PAYMENT, PARCEL ADDRESS(ES) AND RESPONSIBLE BILLING PARTY. ALL PRESSURIZED SERVICES SHALL BE CONSIDERED ACTIVE AND BILLABLE.
17. PRESSURE: CONTRACTOR SHALL INSTALL PRESSURE REGULATORS ON ALL WATER SERVICE CONNECTIONS (PROPERTY OWNER'S SIDE) WHERE PRESSURES EXCEED 80 POUNDS PER SQUARE INCH (PSI).
18. DOCUMENTATION AND RECORD DRAWING: ALL NEW WATER SYSTEM INSTALLATIONS SHALL BE GPS SURVEYED WITHIN 5 BUSINESS DAYS OF INSTALLATION. CONTRACTOR SHALL SCHEDULE ALL SURVEYS BY CALLING 707.257.9521. RECORD DRAWINGS SHALL BE SUBMITTED WITHIN 20 BUSINESS DAYS AFTER WATER SYSTEM ACTIVATION.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

GENERAL WATER NOTES

DATE REVISED DECEMBER 2015

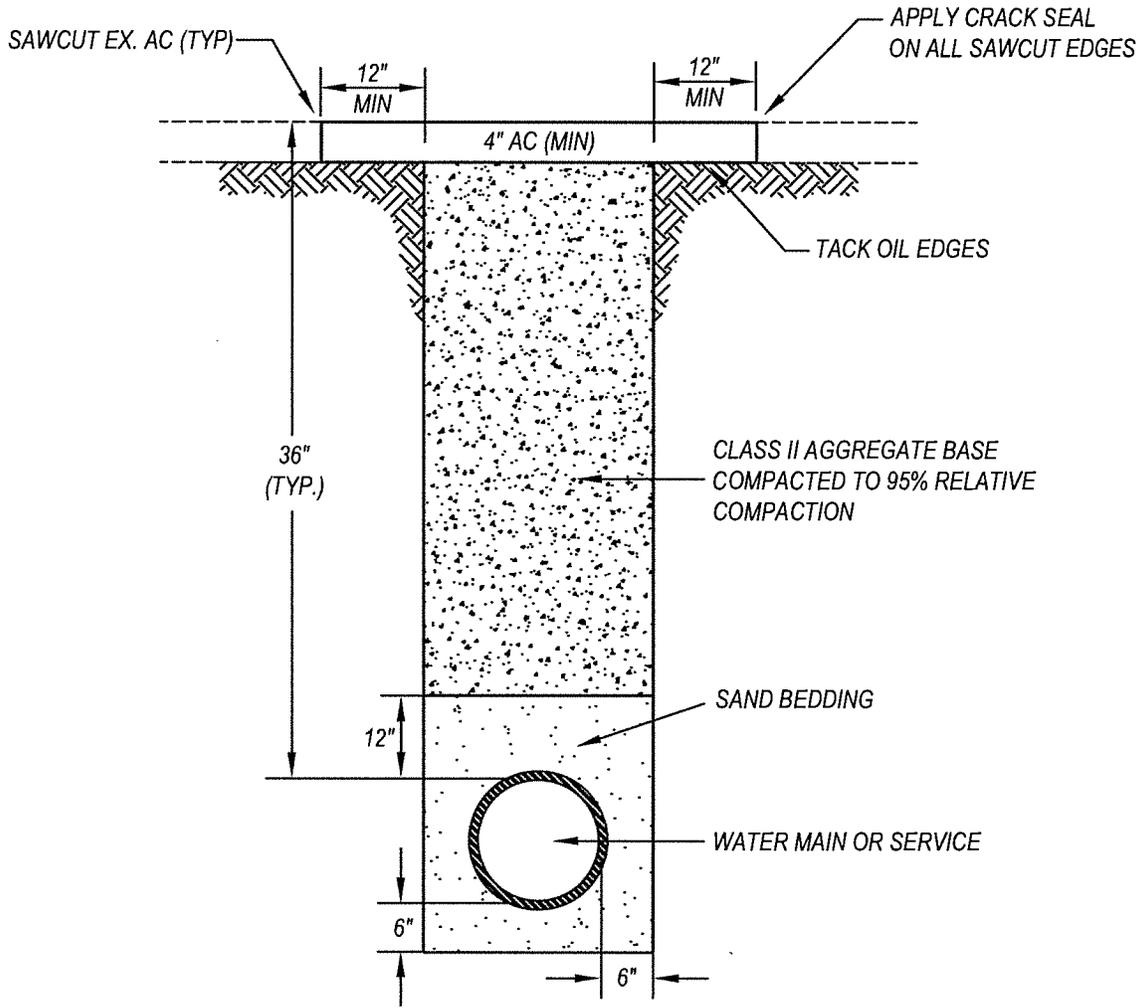
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APPROVED *[Signature]*

SCALE NONE

DWG NO.

W - 12



NOTES

1. TRENCHES MADE WITHIN 5' PARALLEL TO AN EXISTING GUTTER OR EDGE OF ROAD WILL REQUIRE REMOVAL AND REPLACEMENT OF EXISTING AC PAVING TO EDGE.
2. IF UTILITY CONFLICTS REQUIRE OFFSET OF NEW OR EXISTING WATER MAINS OR WATER SERVICES, WATER FACILITIES SHALL NOT BE INSTALLED WITH LESS THAN 2-FEET COVER.
3. POTHoles SHALL BE BACKFILLED WITH CONTROLLED DENSITY FILL INSTEAD OF CLASS II AGGREGATE BASE. SAND BEDDING SHALL STILL BE REPLACED BACK OVER WATER MAIN AS SHOWN.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

WATER TRENCH DETAIL

DATE REVISED DECEMBER 2015

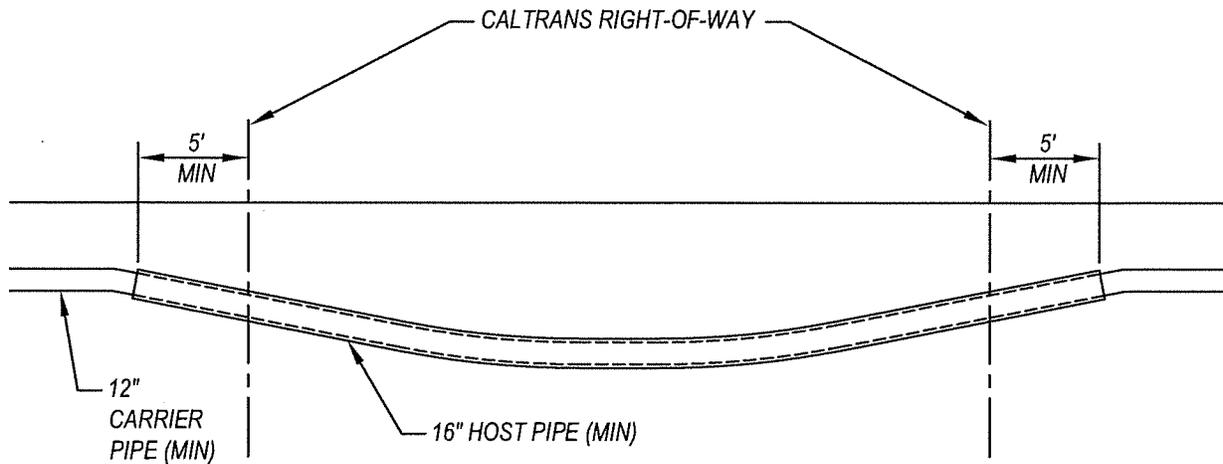
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APPROVED *JRL*

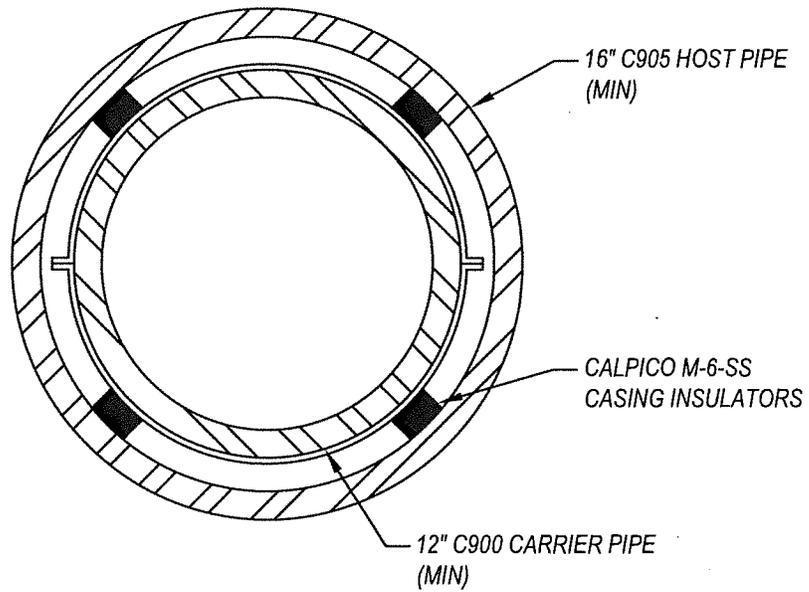
SCALE NONE

W - 13A

DWG NO.



PROFILE



SECTION

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

DOT WATER MAIN CASING

DATE REVISED DECEMBER 2015

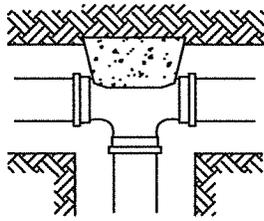
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APPROVED *[Signature]*

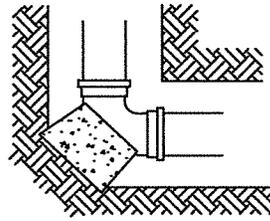
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DWG NO.

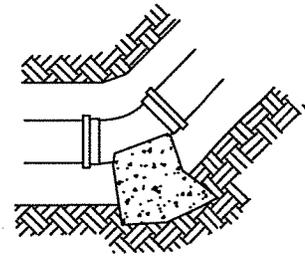
W - 13B



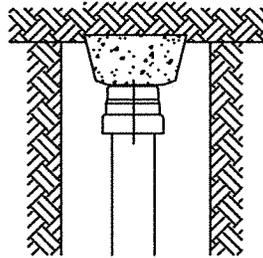
TEE



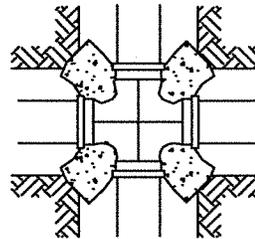
90° BEND



45°, 22½°, AND 11¼° BENDS



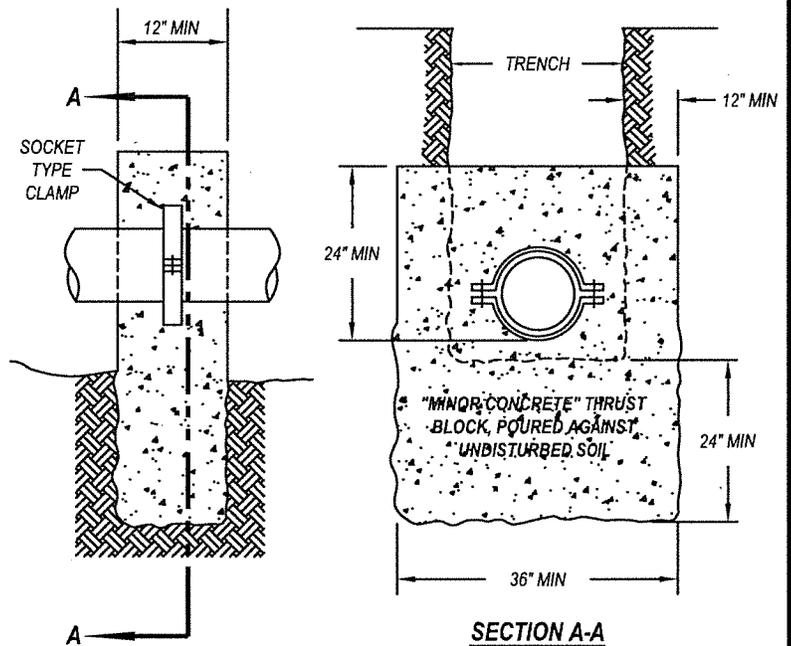
DEAD END



CROSS

NOTES

1. DETAILS ON THIS SHEET ARE FOR WATER MAINS 8" IN DIAMETER AND SMALLER. SEE W-14B FOR RESTRAINT REQUIREMENTS FOR 12" AND LARGER WATER MAINS.
2. "MINOR CONCRETE" PER SECTION 90 OF THE CALTRANS STANDARDS, WITH 3/4" AGGREGATE, SHALL BE USED FOR THRUST BLOCKS AND WINGWALLS. CONCRETE SHALL BE POURED AGAINST UNDISTURBED SOIL AND BARE PIPE.
3. FOR ADDITIONAL RESTRAINT DETAILS, SEE W-14B. FOR WATER MAIN OFFSET AND JOINT DEFLECTION DESIGN REQUIREMENTS, SEE W-15.
4. FIELD LOK GASKETS SHALL BE USED, INSTEAD OF THRUST BLOCKS, FOR RESTRAINING WATER MAINS WITH LESS THAN STANDARD COVER (PER W-12), AND WATER MAINS WITHIN STEEL CASINGS.
5. CONCRETE RESTRAINTS SHALL BE CURED FOR A MINIMUM OF 7 DAYS (OR REACH A MINIMUM 75% OF THE FINAL CURE STRENGTH) PRIOR TO INSTALLATION OF OFFSET ON EXISTING WATER FACILITIES, OR ACTIVATION OF NEW WATER FACILITIES.



**WINGWALL DETAIL FOR
BLOW-OFFS, VERTICAL, AND HORIZONTAL
OFFSETS**

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

THRUST BLOCKS AND WINGWALLS

DATE REVISED DECEMBER 2015

CHECKED

APPROVED

SCALE

NONE

W - 14A

DWG NO.

NOTES

RESTRAINING REQUIREMENTS FOR 4", 6" AND 8" WATER MAINS:

1. BEARING AREAS SHOWN ARE BASED ON 150 PSI SERVICE PRESSURE, 1500 PSF SOIL BEARING CAPACITY, AND SAFETY FACTOR OF 1.25. BLOCKING AREAS NEED TO BE MODIFIED WHERE FIELD CONDITIONS DIFFER.
2. "MINOR CONCRETE" PER SECTION 90 OF THE CALTRANS STANDARDS, WITH 3/4" AGGREGATE, SHALL BE USED FOR THRUST BLOCKS AND WINGWALLS. CONCRETE SHALL BE POURED AGAINST UNDISTURBED SOIL AND BARE PIPE.
3. FOR ADDITIONAL WATER MAIN OFFSET AND JOINT DEFLECTION DESIGN REQUIREMENTS, SEE W-15. FOR ADDITIONAL THRUST BLOCK AND WINGWALL DESIGN REQUIREMENTS, SEE W-14A.
4. FIELD LOK GASKETS SHALL BE USED, INSTEAD OF THRUST BLOCKS, FOR RESTRAINING WATER MAINS WITH LESS THAN STANDARD COVER (PER W-12), AND WATER MAINS WITHIN STEEL CASINGS.
5. CONCRETE RESTRAINTS SHALL BE CURED FOR A MINIMUM OF 7 DAYS (OR REACH A MINIMUM 75% OF THE FINAL CURE STRENGTH) PRIOR TO INSTALLATION OF OFFSET ON EXISTING WATER FACILITIES, OR ACTIVATION OF NEW WATER FACILITIES.

MINIMUM REQUIRED TOTAL BEARING AREAS (IN SQ. FT.) FOR THRUST BLOCKS AND WINGWALLS FOR 4", 6" AND 8" WATER MAINS			
<u>TYPE OF FITTING</u>	<u>MAIN SIZE</u>		
	4"	6"	8"
11-1/4° ELL	1	1	2
22-1/2° ELL	1	2	3
45° ELL	2	3	5
90° ELL	3	5	9
CROSS OR TEE	2	4	7
DEAD END	2	4	7

RESTRAINING REQUIREMENTS FOR 12" AND LARGER WATER MAINS:

1. RESTRAINING FORCES SHOWN ARE BASED ON 150 PSI SERVICE PRESSURE, 1500 PSF SOIL BEARING CAPACITY, AND SAFETY FACTOR OF 1.5. RESTRAINING FORCES NEED TO BE MODIFIED WHERE FIELD CONDITIONS DIFFER.
2. WINGWALL DESIGNS SHALL INCORPORATE RESTRAINING FORCES, SOIL BEARING CAPACITIES, AND WATER MAIN DEPTH. WINGWALLS SHALL BE DESIGNED AND STAMPED BY A LICENSED CIVIL ENGINEER, AND SHALL BE REVIEWED AND APPROVED BY THE WATER DIVISION PRIOR TO INSTALLATION.
3. FOR ADDITIONAL WATER MAIN OFFSET AND JOINT DEFLECTION DESIGN REQUIREMENTS, SEE W-15. FOR ADDITIONAL THRUST BLOCK AND WINGWALL DESIGN REQUIREMENTS, SEE W-14A.
4. "MINOR CONCRETE" PER SECTION 90 OF THE CALTRANS STANDARDS, WITH 3/4" AGGREGATE, SHALL BE USED FOR WINGWALLS AND SHALL BE INCORPORATED AS PART OF THE ENGINEERED DESIGN. CONCRETE SHALL BE POURED AGAINST UNDISTURBED SOIL AND BARE PIPE.
5. FIELD LOK GASKETS SHALL BE USED, INSTEAD OF THRUST BLOCKS, FOR RESTRAINING JOINTS OF 12" AND LARGER WATER MAINS. RESTRAINED LENGTHS FOR PIPE SIZES LARGER THAN 12" SHALL BE DETERMINED BY THE ENGINEER AND APPROVED BY THE CITY.
6. CONCRETE RESTRAINTS SHALL BE CURED FOR A MINIMUM OF 7 DAYS (OR REACH A MINIMUM 75% OF THE FINAL CURE STRENGTH) PRIOR TO INSTALLATION OF OFFSET ON EXISTING WATER FACILITIES, OR ACTIVATION OF NEW WATER FACILITIES.

MINIMUM RESTRAINED LENGTH "L" (IN FEET)				
<u>BEND ANGLE</u>	<u>PIPE SIZE</u>			
	4"	6"	8"	12"
11-1/4° ELL	7	10	14	20
22-1/2° ELL	14	21	28	41
45° ELL	28	43	57	85
90° ELL	36	54	72	108
DEAD END	36	54	72	108

MINIMUM REQUIRED RESTRAINING FORCE (IN 1,000 PSI INCREMENTS) FOR ENGINEERED WINGWALL DESIGN FOR 12" AND LARGER WATER MAINS

<u>TYPE OF FITTING</u>	<u>MAIN SIZE</u>				
	12"	16"	20"	24"	30"
11-1/4° ELL	5	9	14	20	40
22-1/2° ELL	10	18	28	40	70
45° ELL	20	35	55	80	130
90° ELL	36	64	100	150	230
CROSS OR TEE	26	46	71	110	160
DEAD END	26	46	71	110	160

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

WATER MAIN RESTRAINT DETAILS

DATE REVISED DECEMBER 2015

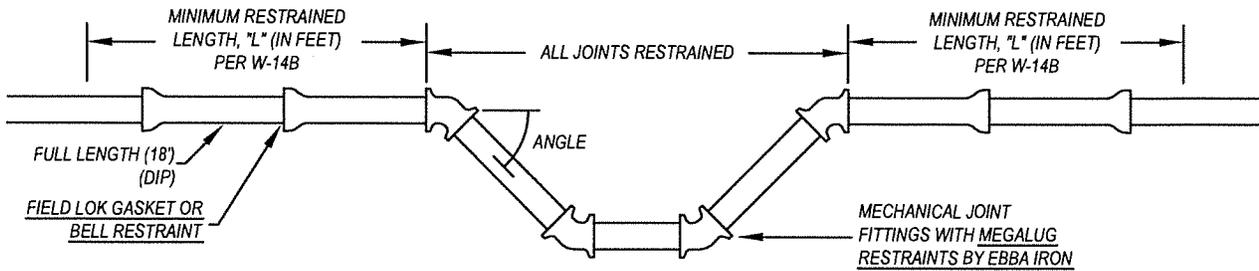
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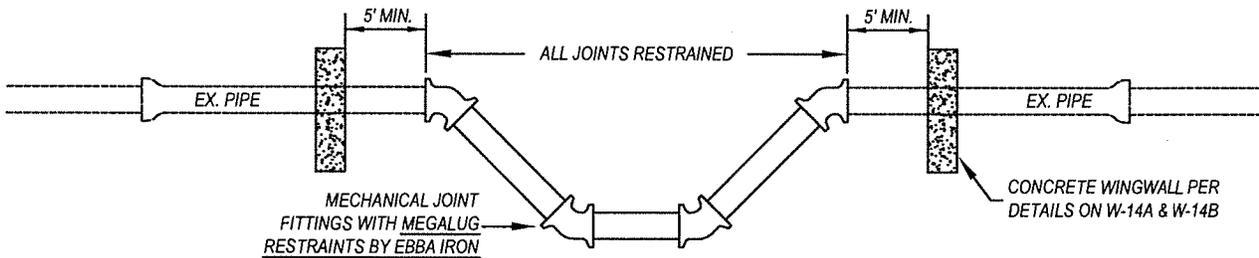
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W - 14B

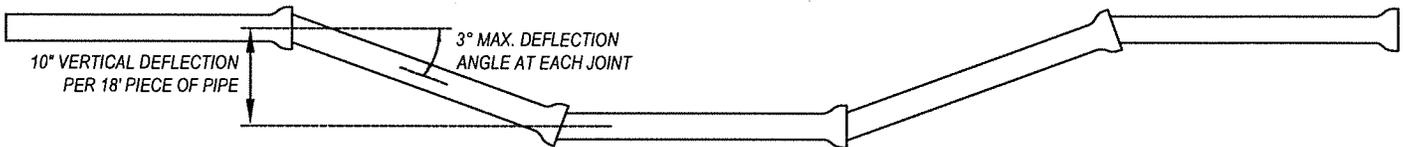
DWG NO.



RESTRAINED JOINTS - NEW INSTALLATION



RESTRAINED JOINTS - EXISTING PIPE



ROPED PIPE (JOINT DEFLECTION)

NOTES

1. ALL JOINTS WITHIN MINIMUM RESTRAINED LENGTH "L" SHALL BE RESTRAINED. FULL LENGTH PIPE SECTIONS SHALL BE USED. WHEN LENGTH "L" OCCURS WITHIN THE MID SECTION OF A PIPE, THE NEXT JOINT OUT SHALL BE RESTRAINED. SEE W-14B FOR "L" LENGTH SPECIFICATIONS AND ADDITIONAL RESTRAINED JOINT DETAILS.
2. RESTRAINED JOINTS REQUIRE INSPECTION BY THE CITY OF NAPA. CONTRACTOR IS RESPONSIBLE FOR SCHEDULING INSPECTION IN ADVANCE AND LEAVING JOINTS EXPOSED FOR THE CITY INSPECTOR.
3. MINIMUM RESTRAINED LENGTH SHALL BE CLEARLY SHOWN ON THE PROFILE OF ALL WATERLINE PLANS.
4. VERTICAL OFFSETS SHALL BE AVOIDED WHENEVER POSSIBLE BY DEFLECTING JOINTS (ROPING) TO ACHIEVE OFFSET.
5. MINIMUM RESTRAINED LENGTH SHALL BE RE-CALCULATED TO ACCOUNT FOR OTHER FITTINGS (VALVES, TEES, BENDS) WITHIN LENGTH "L", OR IF WATER MAIN DEPTHS ARE SHALLOWER THAN STANDARD INSTALLATION DEPTH (SEE W-13A).
6. RESTRAINED LENGTHS FOR PIPE SIZES LARGER THAN 12" SHALL BE DETERMINED BY THE ENGINEER AND APPROVED BY THE CITY.
7. ALTERNATE MATERIALS MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE.
8. WATER MAINS SHALL BE ROPED OVER UTILITY CONFLICTS WHENEVER 2-FEET OF COVER AND 1-FOOT SEPARATION BETWEEN UTILITIES CAN BE MAINTAINED.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

WATER MAIN OFFSETS

DATE REVISED DECEMBER 2015

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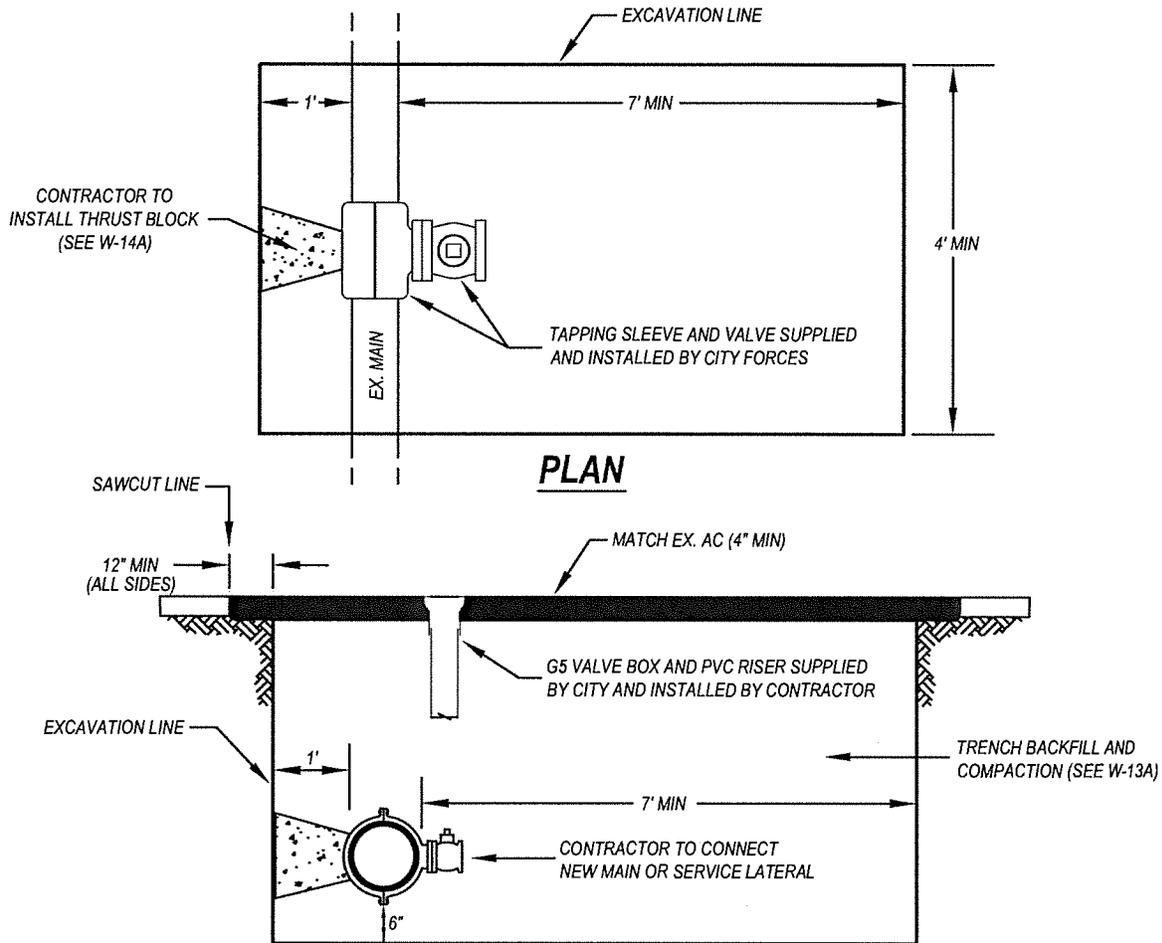
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SCALE

NONE

W - 15

DWG NO.



NOTES

PROFILE

1. HOT-TAPS REQUIRED WHEN NEW MAINS OR SERVICE LATERALS ARE CONNECTED TO EXISTING WATER MAINS. ALL HOT TAPS SHALL BE BY CITY FORCES AT THE CONTRACTOR'S EXPENSE.
2. CONTRACTOR SHALL PROVIDE SAWCUTTING, EXCAVATION, BACKFILL, COMPACTION, PLATING, PAVING, TRAFFIC CONTROL, AND ENCROACHMENT PERMIT.
3. CONTRACTOR SHALL PROVIDE AND INSTALL SHORING PER OSHA STANDARDS.
4. THE CONTRACTOR SHALL MODIFY SITE CONDITIONS TO THE SATISFACTION OF THE CITY REPRESENTATIVE.
5. HOT TAPS FOR 1.5" AND 2" WATER SERVICES WILL BE MADE WITH A 4" TAPPING SADDLE AND GATE VALVE. THE CITY WILL INSTALL FITTINGS SO THAT CONTRACTOR CAN CONNECT TO A 2" COMPRESSION FITTING.
6. FOR 1" HOT-TAPS, 7' DIMENSION CAN BE REDUCED TO 5'.
7. FEES SHALL BE PAID AT THE WATER DIVISION OFFICE LOCATED AT 1340 CLAY ST. FOR QUESTIONS REGARDING FEES, CALL (707) 257-9521.
8. AFTER FEES HAVE BEEN PAID, ALLOW 7 TO 10 WORKING DAYS FOR SCHEDULING HOT-TAP INSTALLATION.
9. TO SCHEDULE A HOT-TAP AFTER FEES HAVE BEEN PAID, CALL (707) 257-9544.
10. IF EXISTING UTILITIES EXIST WITHIN THE HOT TAP EXCAVATION PIT AND INHIBIT CITY CREWS FROM COMPLETING HOT TAP, CONTRACTOR MAY BE REQUIRED TO MODIFY EXISTING WATER MAIN, TO CUT IN NEW TEE FOR WATER SERVICE, OR RELOCATE EXISTING UTILITIES. MODIFICATIONS TO WATER FACILITIES SHALL BE DETERMINED BY WATER DIVISION STAFF.

CITY OF NAPA

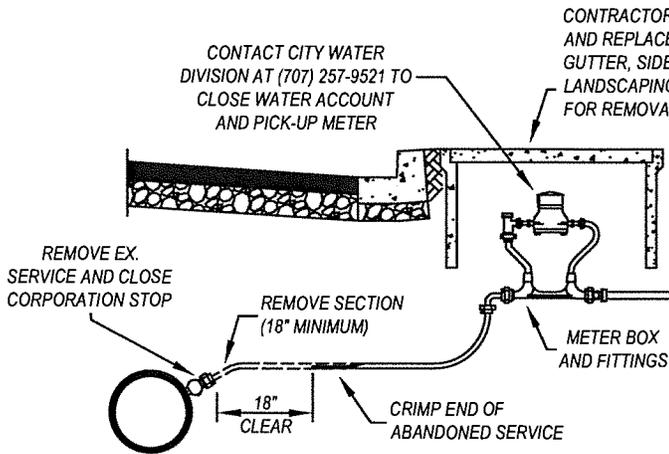
PUBLIC WORKS - WATER DIVISION

HOT-TAP DETAIL

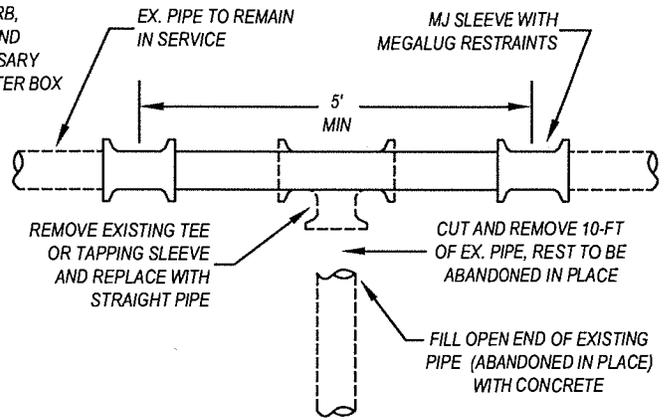
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SCALE	NONE

DWG NO.

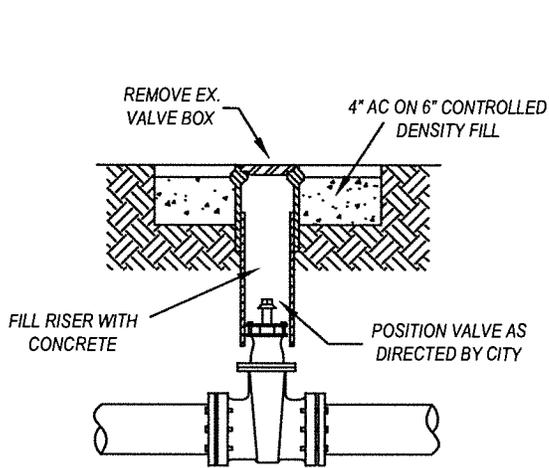
W - 16



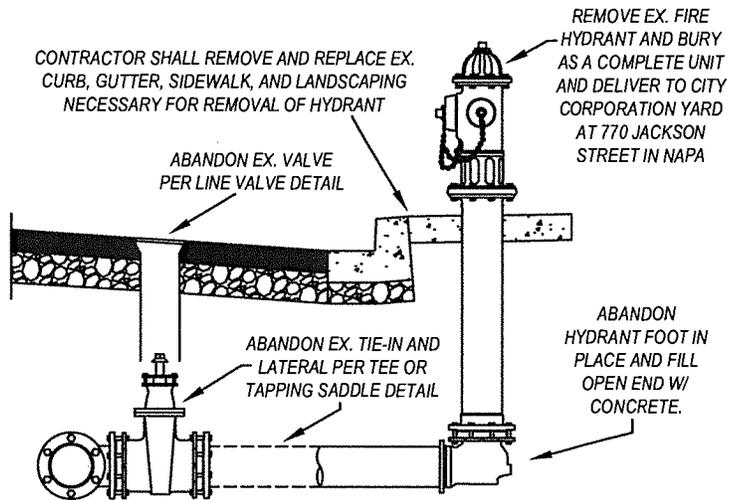
3/4" TO 2" SERVICES WITH CORPORATION STOPS



TEE OR TAPPING SADDLE



LINE VALVE



FIRE HYDRANT

NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR NOTIFYING WATER CUSTOMERS AFFECTED BY A WATER SHUT-OFF A MINIMUM OF 48 HOURS (2 WORKING DAYS) IN ADVANCE. CITY PERSONNEL SHALL OPERATE EXISTING VALVES ON THE WATER SYSTEM. CONTRACTOR TO PROVIDE A MINIMUM OF 48 HOUR (2 WORKING DAYS) NOTICE FOR CITY PERSONNEL BY CALLING 707-257-9544 TO SCHEDULE SHUTDOWN.
2. WATER SERVICES LARGER THAN 2" REQUIRE REMOVAL OF THE TEE OR TAPPING SADDLE AT THE MAIN AS SHOWN ABOVE AND REMOVAL OF METER BOX. CONTACT WATER DIVISION TO CLOSE ACCOUNT AND PICK-UP METER.
3. WATER MAINS REQUIRE ABANDONMENT OF THE TEE OR TAPPING SADDLE AS SHOWN ABOVE. CONTRACTOR IS RESPONSIBLE FOR RELOCATING AND RECONNECTING EXISTING WATER SERVICES TO AN ACTIVE WATER MAIN AT THE DIRECTION OF WATER DIVISION STAFF.
4. WHEN WATER FACILITIES ARE REMOVED (INCLUDING BUT NOT LIMITED TO WATER METERS AND FIRE HYDRANTS), CONTRACTOR SHALL BACKFILL HOLE WITH CONCRETE (PER S-4) IF HOLE IS LOCATED WITHIN SIDEWALK SECTION, ASPHALT (PER W-13A) IF HOLE IS LOCATED WITHIN STREET SECTION, OR SOIL COMPACTED TO 90% IF HOLE IS LOCATED WITHIN A LANDSCAPE STRIP, AS DETERMINED BY THE WATER DIVISION.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**ABANDONMENT OF EXISTING
WATER FACILITIES**

DATE REVISED DECEMBER 2015

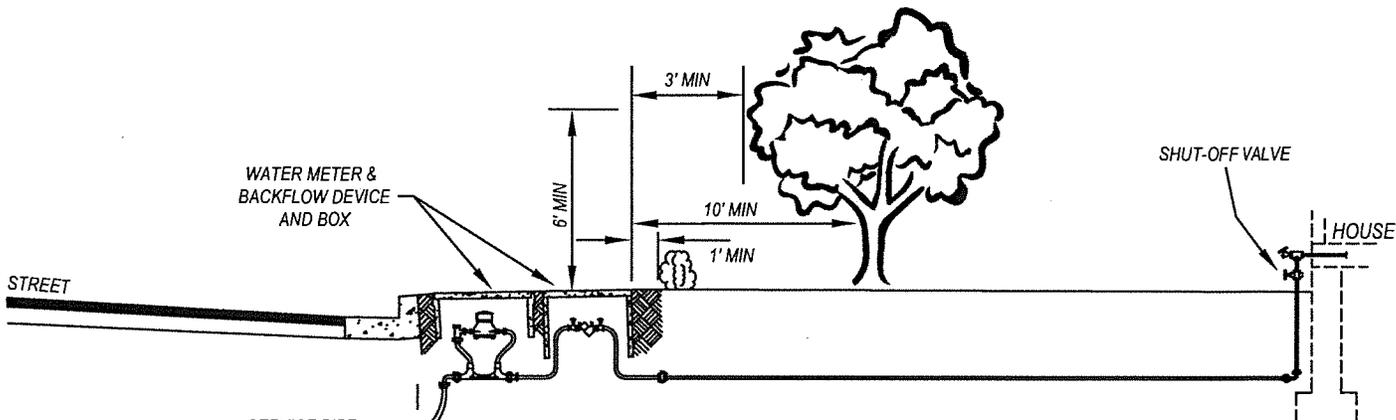
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SCALE NONE

DWG NO.

W - 17



DEFINITIONS

OBSTRUCTIONS - OBSTRUCTIONS ARE OBJECTS (PERMANENT OR TEMPORARY) THAT PREVENT WATER SERVICE CREWS FROM READING OR MAINTAINING PUBLIC WATER FACILITIES, INCLUDING BY NOT LIMITED TO WATER METERS, FIRE HYDRANTS, AND AIR-VACUUM RELEASE VALVES. SUCH ITEMS INCLUDE, BUT ARE NOT LIMITED TO, POSTS, FENCES, VEHICLES, SIGNS, TRASH, STORAGE CONTAINERS, DEBRIS, AND PLANT GROWTH.

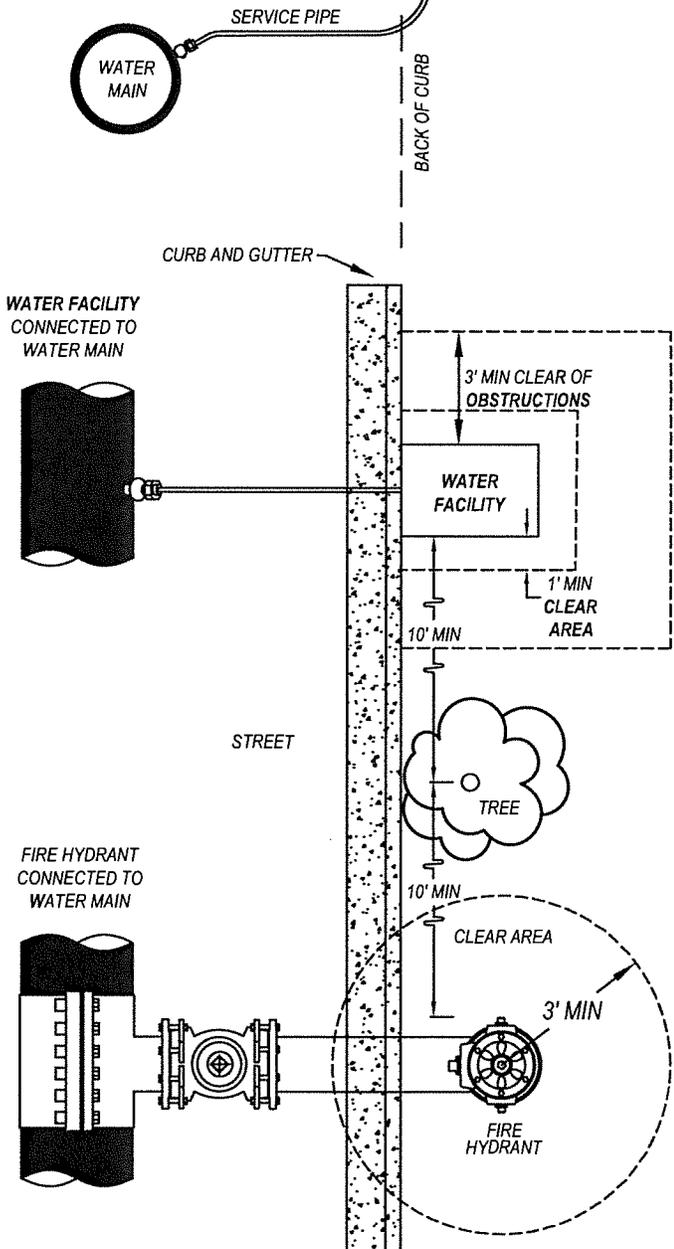
CLEAR AREA - A CLEAR AREA ALLOWS SERVICE WORKERS TO READ AND MAINTAIN PUBLIC WATER FACILITIES WITHOUT REQUIRING ADDITIONAL, NON-WATER BASED WORK, INCLUDING BUT NOT LIMITED TO CLEARING BUSHES, MOVING SIGNS, AND REMOVING DEBRIS.

WATER FACILITY - A WATER FACILITY IS ANY DEVICE CONNECTED TO THE PUBLIC WATER SYSTEM, INCLUDING BUT NOT LIMITED TO WATER METERS, VALVES, BLOW-OFF VALVES, FIRE HYDRANTS, AIR-VACUUM RELEASE VALVES, WATER SERVICE LATERALS, AND BACKFLOW DEVICES.

PERMANENT STRUCTURE - PERMANENT STRUCTURES INCLUDE ANY OBJECTS THAT ARE NOT INTENDED TO BE REMOVED OR RELOCATED, INCLUDING BUT NOT LIMITED TO FOUNDATIONS, FENCES, RETAINING WALLS, POOLS, HOUSES, TREES, LARGE BUSHES, AND SIGNS.

SEPARATION REQUIREMENTS

1. OBSTRUCTIONS SHALL BE KEPT A MINIMUM OF 3-FEET AWAY FROM WATER FACILITIES.
2. A CLEAR AREA SHALL BE MAINTAINED 1-FOOT AROUND AND 6-FEET ABOVE WATER FACILITIES BY THE CUSTOMER (EXCEPT A 3-FOOT CLEAR AREA SHALL BE MAINTAINED FOR FIRE HYDRANTS).
3. PERMANENT STRUCTURES SHALL BE KEPT A MINIMUM OF 10-FEET AWAY FROM WATER FACILITIES (LARGE SHRUBS CAN BE KEPT A MINIMUM OF 5-FEET AWAY).



WATER FACILITY OBSTRUCTION SEPARATION REQUIREMENTS

DATE REVISED	DECEMBER 2015
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SCALE	NONE

DWG NO. **W - 18**

FINISHED STREET GRADE

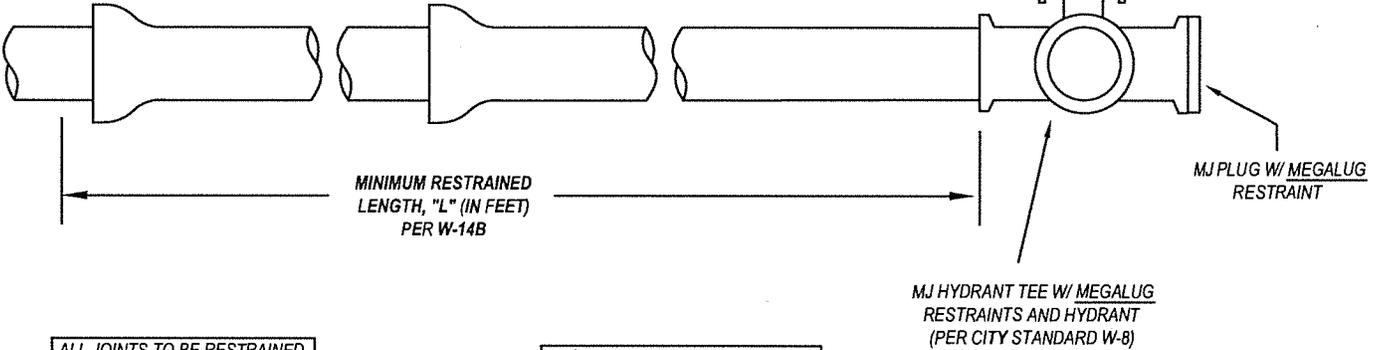
CHRISTY G5 VALVE BOX
WITH LID MARKED "WATER"

"CLASS 2"
CONCRETE COLLAR

2" A.C. (MIN.)

6" MIN

12" MIN
(TYP)



MINIMUM RESTRAINED
LENGTH, "L" (IN FEET)
PER W-14B

MJ PLUG W/ MEGALUG
RESTRAINT

MJ HYDRANT TEE W/ MEGALUG
RESTRAINTS AND HYDRANT
(PER CITY STANDARD W-8)

ALL JOINTS TO BE RESTRAINED.
 FITTINGS: MEGALUG (OR
 EQUIVALENT) RESTRAINTS
 PIPE BELLS: FIELD LOK (OR
 EQUIVALENT) GASKETS

ALTERNATE MATERIALS MUST BE
 APPROVED BY THE CITY OF NAPA
 WATER DIVISION PRIOR TO USE

NOTES

1. ALL WATER MAINS 6" OR LARGER STUBBED WITH THE INTENT OF BEING CONNECTED IN THE FUTURE SHALL BE INSTALLED PER THIS DETAIL, REGARDLESS OF THE LOCATION OF THE NEAREST HYDRANT. BLOW-OFFS SHALL ONLY BE INSTALLED ON WATER MAINS LESS THAN 6" IN DIAMETER, OR AT THE DISCRETION OF THE WATER DIVISION.
2. ALL JOINTS WITHIN MINIMUM RESTRAINED LENGTH "L" SHALL BE RESTRAINED. FULL LENGTH PIPE SECTIONS SHALL BE USED. WHEN LENGTH "L" OCCURS WITHIN THE MID SECTION OF A PIPE, THE NEXT JOINT OUT SHALL BE RESTRAINED.
3. RESTRAINED JOINTS REQUIRE INSPECTION BY THE CITY OF NAPA. **CONTRACTOR IS RESPONSIBLE FOR SCHEDULING INSPECTION IN ADVANCE AND LEAVING JOINTS EXPOSED FOR THE CITY INSPECTOR.**
4. MINIMUM RESTRAINED LENGTH SHALL BE CLEARLY SHOWN ON THE PROFILE OF ALL WATERLINE PLANS.
5. MINIMUM RESTRAINED LENGTH SHALL BE RE-CALCULATED TO ACCOUNT FOR OTHER FITTINGS (VALVES, TEES, BENDS) WITHIN LENGTH "L".
6. RESTRAINED LENGTHS FOR PIPE SIZES LARGER THAN 12" SHALL BE DETERMINED BY THE ENGINEER AND APPROVED BY THE CITY.
7. A BUTTERFLY VALVE SHALL BE USED INSTEAD OF A GATE VALVE (PER CITY STANDARD W-9) FOR WATER MAINS 12" OR LARGER.
8. SEE W-14B FOR "L" LENGTH SPECIFICATIONS AND ADDITIONAL RESTRAINED JOINT DETAILS.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

FUTURE MAIN EXTENSION STUB

DATE REVISED DECEMBER 2015

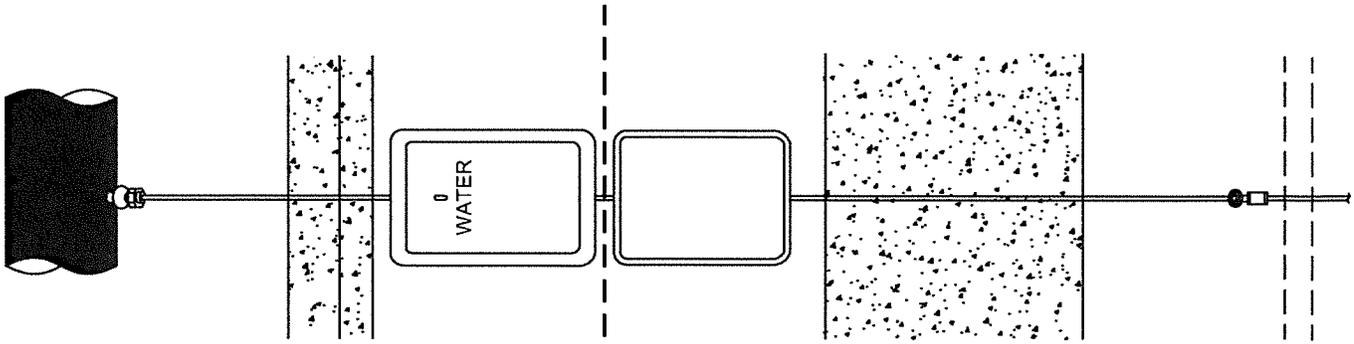
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W - 19

DWG NO.



CITY OF NAPA RESPONSIBILITY

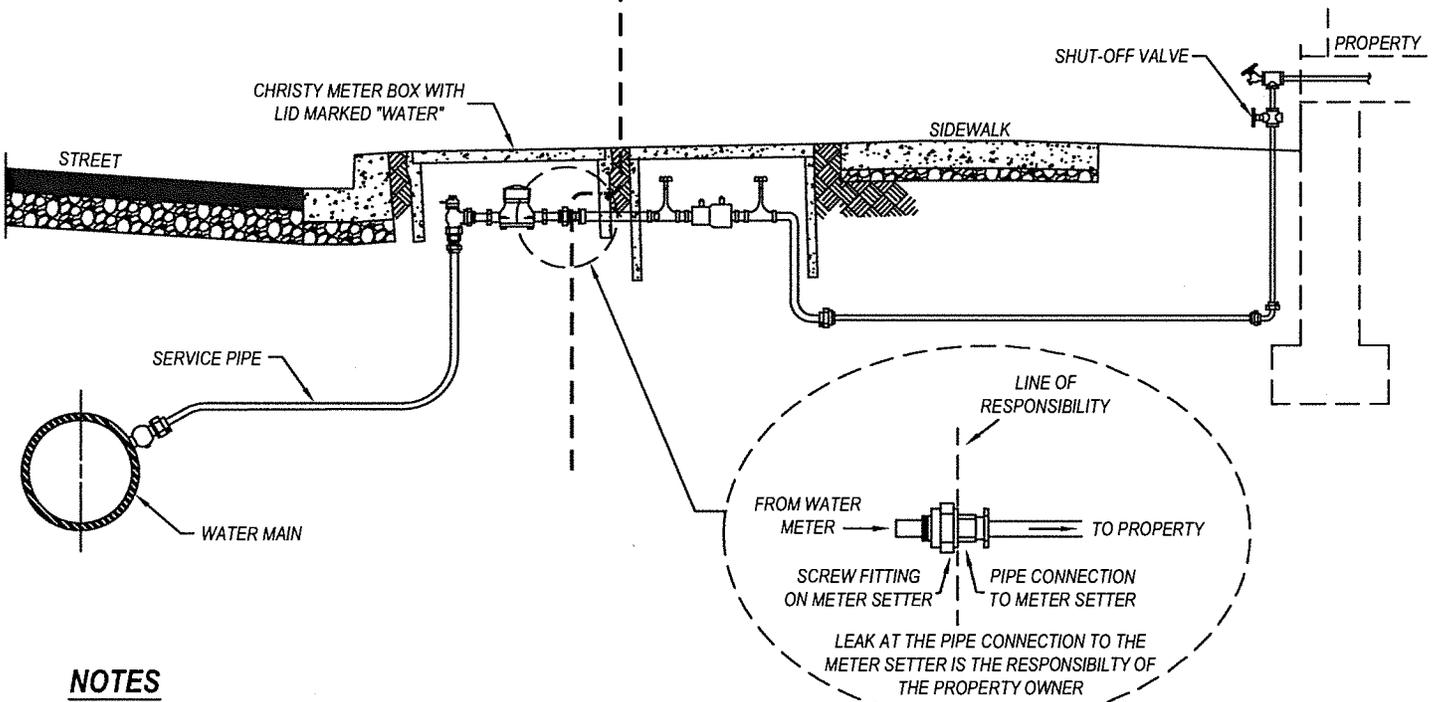
CITY WILL MAINTAIN WATER SYSTEM ON THIS SIDE OF THE METER SETTER

WATER LOST ON THIS SIDE OF METER SETTER WILL NOT BE CHARGED TO THE CUSTOMER

PROPERTY OWNER'S RESPONSIBILITY

PROPERTY OWNER IS RESPONSIBLE FOR MAKING ALL PLUMBING REPAIRS ON THIS SIDE OF THE METER SETTER. THE CITY WILL NOT MAKE THESE REPAIRS.

WATER LOST ON THIS SIDE OF METER SETTER WILL BE BILLED TO THE CUSTOMER.



NOTES

1. CURB ADJACENT SIDEWALK: METER INSTALLED AT CURB AS SHOWN. BACKFLOW DEVICE INSTALLED BEHIND SIDEWALK.
2. METER BOX AND SERVICE LINE SHALL BE INSTALLED OUTSIDE OF DRIVEWAYS AND DRIVEWAY APPROACHES.
3. METERS SHALL BE PLACED A MINIMUM OF 3' FROM ANY OBSTRUCTION (SIGN POST, MAIL BOX, FENCE, ETC.). NO TREES SHALL BE PLANTED WITHIN 10', OR LARGE SHRUBS WITHIN 5', OF THE METER BOX. SEE W-18 FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.
4. FOR AN OLDER WATER SERVICE INSTALLATION WHERE A METER SETTER WAS NOT INSTALLED, CUSTOMER'S RESPONSIBILITY STARTS IMMEDIATELY PAST THE WATER METER.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**WATER SERVICE MAINTENANCE
RESPONSIBILITY (METERED SERVICE)**

DATE REVISED DECEMBER 2015

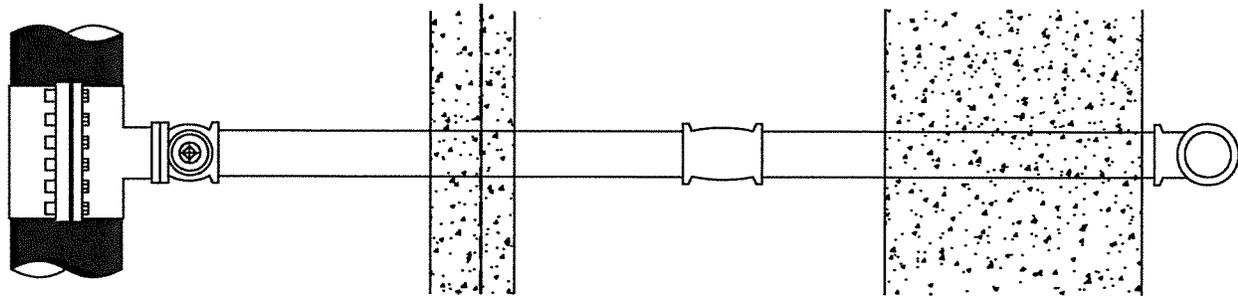
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W - 20A

DWG NO.

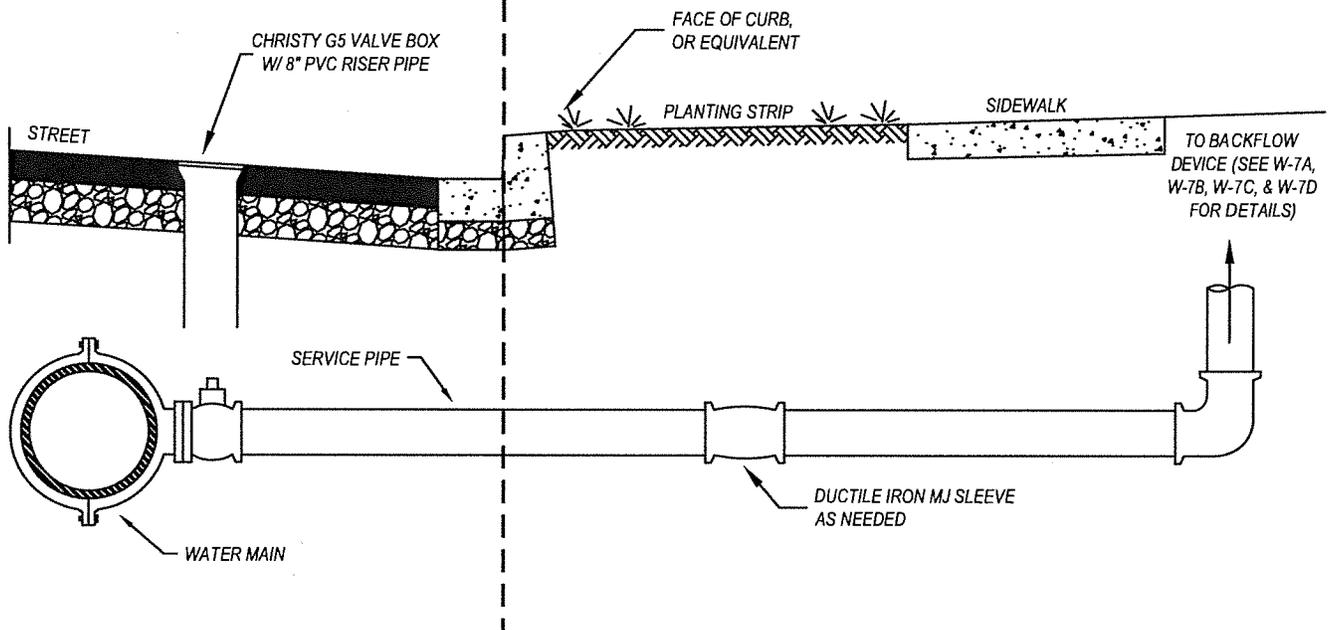


CITY OF NAPA RESPONSIBILITY

CITY WILL MAINTAIN WATER SYSTEM ON THIS SIDE OF THE FACE OF CURB

PROPERTY OWNER'S RESPONSIBILITY

PROPERTY OWNER IS RESPONSIBLE FOR MAKING ALL PLUMBING REPAIRS ON THIS SIDE OF THE FACE OF CURB. THE CITY WILL NOT MAKE THESE REPAIRS.



NOTES

1. SERVICE LINE SHALL BE INSTALLED OUTSIDE OF DRIVEWAYS AND DRIVEWAY APPROACHES.
2. NO TREES SHALL BE PLANTED WITHIN 10', OR LARGE SHRUBS WITHIN 5', OF THE SERVICE LATERAL. SEE W-18 FOR ADDITIONAL CONSTRUCTION REQUIREMENTS.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**WATER SERVICE MAINTENANCE
RESPONSIBILITY (FIRE SERVICE)**

DATE REVISED DECEMBER 2015

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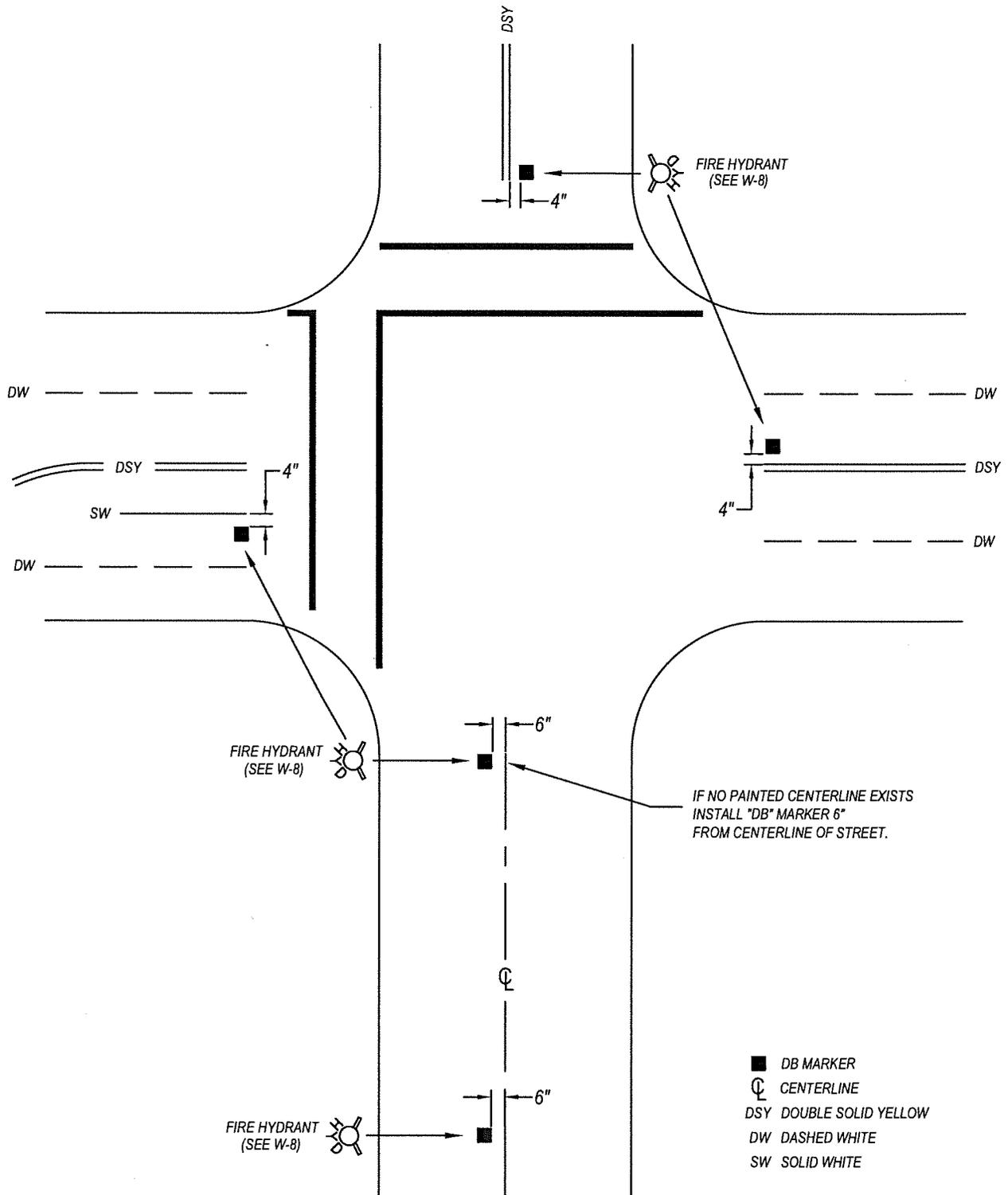
APPROVED

SCALE

mfH
JRT
NONE

W - 20B

DWG NO.



NOTES

1. FIRE HYDRANTS LOCATED AT STREET INTERSECTIONS (INCLUDING "T"-INTERSECTIONS) SHALL HAVE MARKERS PLACED ON BOTH STREETS.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**INSTALLATION OF FIRE HYDRANT
("DB") PAVEMENT MARKERS**

DATE REVISED DECEMBER 2015

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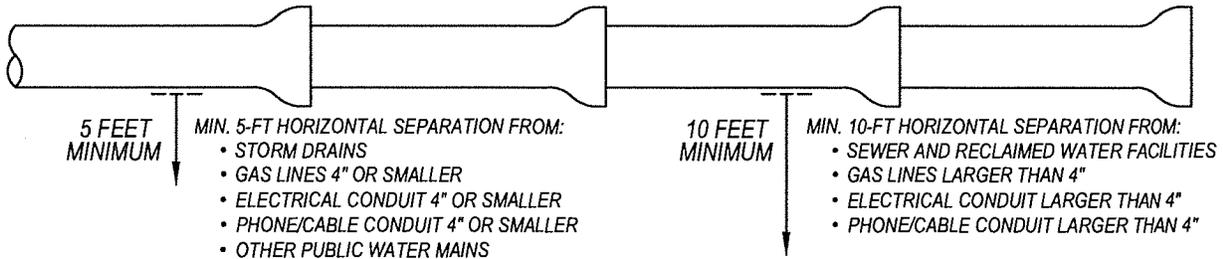
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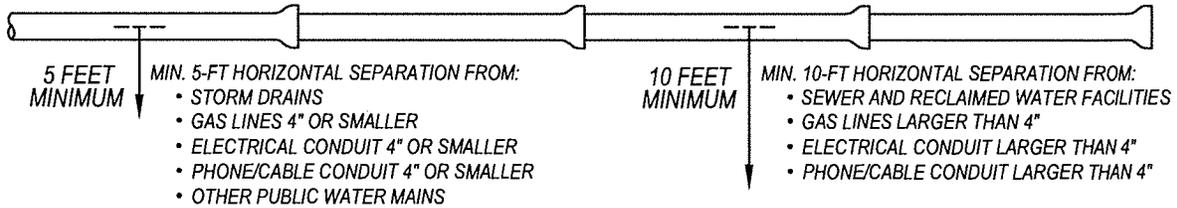
W - 21

DWG NO. **(M-9244)**

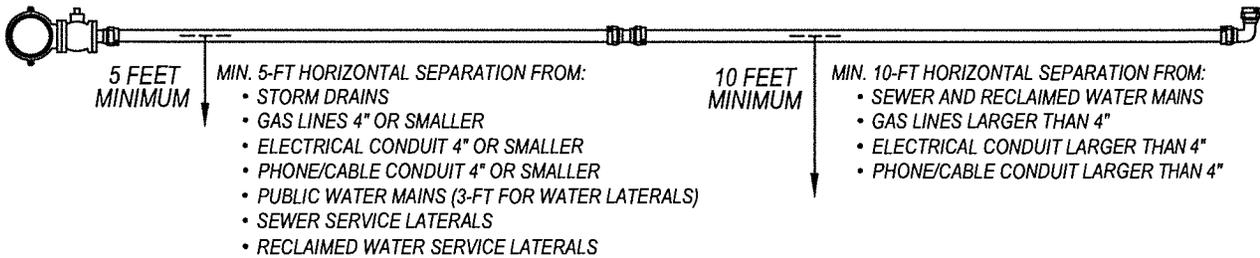
EXISTING OR PROPOSED WATER MAINS, 12" AND LARGER
(MEASURED FROM OUTER EDGE OF WATER MAIN TO OUTER EDGE OF OTHER UTILITY)



EXISTING OR PROPOSED WATER MAINS, 8" AND SMALLER
(MEASURED FROM CENTERLINE OF WATER MAIN TO OUTER EDGE OF OTHER UTILITY)



EXISTING OR PROPOSED WATER SERVICE AND FIRE HYDRANT LATERALS
(MEASURED FROM CENTERLINE OF WATER LATERAL TO OUTER EDGE OF OTHER UTILITY)



NOTES

1. WATER-SEWER (WATER-RECLAIMED WATER) SEPARATION SHALL BE PER THE REQUIREMENTS OF THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES.
2. IF EXISTING UTILITIES ARE REPLACED, THE NEW FACILITIES SHALL MEET THE CURRENT MINIMUM SEPARATION REQUIREMENTS.
3. IF THERE ARE DIFFERENT SEPARATION REQUIREMENTS BASED ON OTHER UTILITY REQUIREMENTS, OR LOCAL, STATE, OR FEDERAL REGULATIONS, THE STRICTER SEPARATION REQUIREMENTS SHALL PREVAIL.
4. FOR VERTICAL SEPARATION REQUIREMENTS, SEE W-22B.

CITY OF NAPA

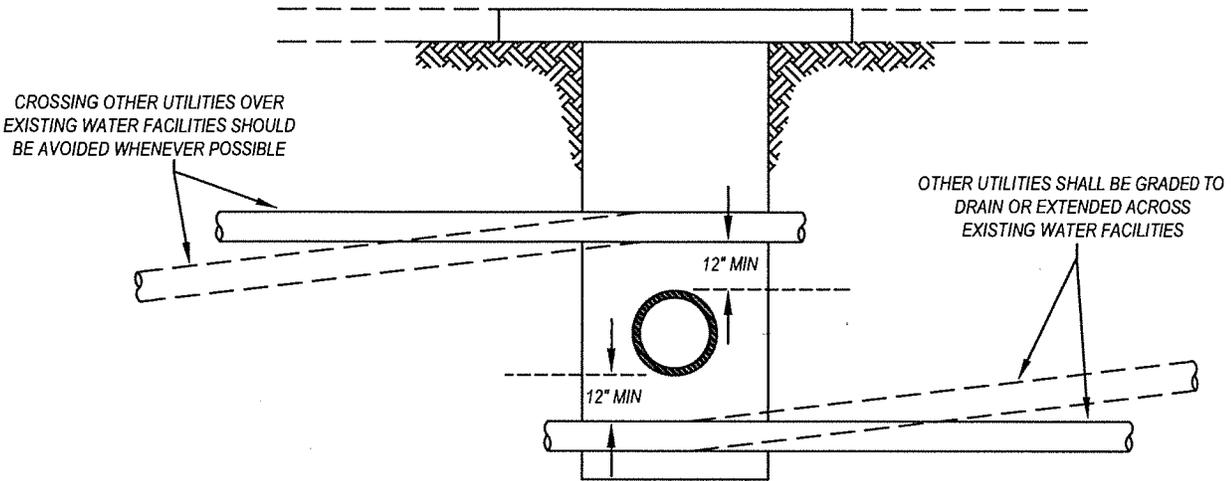
PUBLIC WORKS - WATER DIVISION

**HORIZONTAL SEPARATION REQUIREMENTS
BETWEEN PUBLIC WATER FACILITIES
AND OTHER UTILITIES**

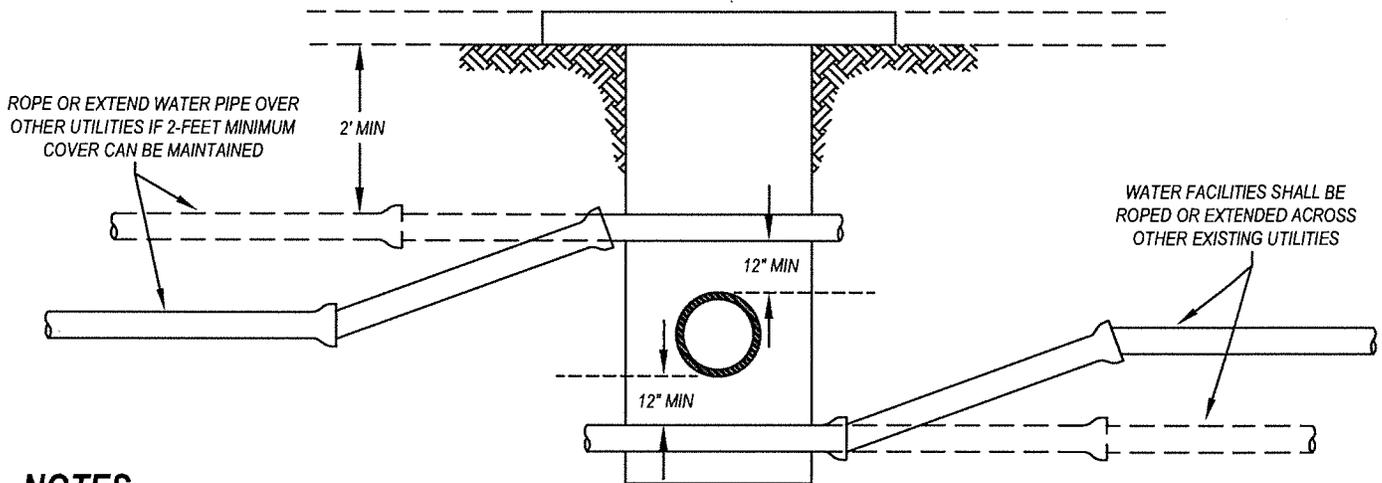
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APPROVED	<i>JRL</i>
SCALE	NONE

DWG NO. **W - 22A**

NEW UTILITIES AROUND EXISTING WATER FACILITIES



NEW WATER FACILITIES AROUND EXISTING UTILITIES



NOTES

1. WATER-SEWER (WATER-RECLAIMED WATER) SEPARATION SHALL BE PER THE REQUIREMENTS OF THE CALIFORNIA DEPARTMENT OF HEALTH SERVICES. WATER FACILITIES SHALL CROSS **OVER** SEWER FACILITIES WHENEVER POSSIBLE, OTHERWISE ADDITIONAL INSTALLATION REQUIREMENTS MAY BE REQUIRED.
2. IF EXISTING UTILITIES ARE REPLACED, THE NEW FACILITIES SHALL MEET THE CURRENT MINIMUM SEPARATION REQUIREMENTS.
3. IF THERE ARE DIFFERENT SEPARATION REQUIREMENTS BASED ON OTHER UTILITY, LOCAL, STATE, OR FEDERAL REGULATIONS OR REQUIREMENTS, THE STRICTER SEPARATION REQUIREMENTS SHALL PREVAIL.
4. WHEN UTILITIES CROSS OVER EXISTING WATER FACILITIES, BACKFILL OVER EXISTING WATER FACILITIES SHALL MEET THE WATER TRENCH DETAIL SPECIFICATIONS (SEE W-13A).
5. WHEN A MINIMUM 2-FOOT COVER (WITH 1- FOOT VERTICAL SEPARATION) CAN BE MAINTAINED OVER WATER FACILITIES, NEW WATER FACILITIES SHALL BE ROPED OVER OTHER UTILITIES.
6. VERTICAL SEPARATION REQUIREMENTS BETWEEN NEW AND EXISTING WATER FACILITIES (BOTH 8" OR LESS IN DIAMETER), CAN BE REDUCED TO A MINIMUM 6" OF SEPARATION.
7. FOR HORIZONTAL SEPARATION REQUIREMENTS, SEE W-22A.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**VERTICAL SEPARATION REQUIREMENTS
BETWEEN PUBLIC WATER FACILITIES
AND OTHER UTILITIES**

DATE REVISED DECEMBER 2015

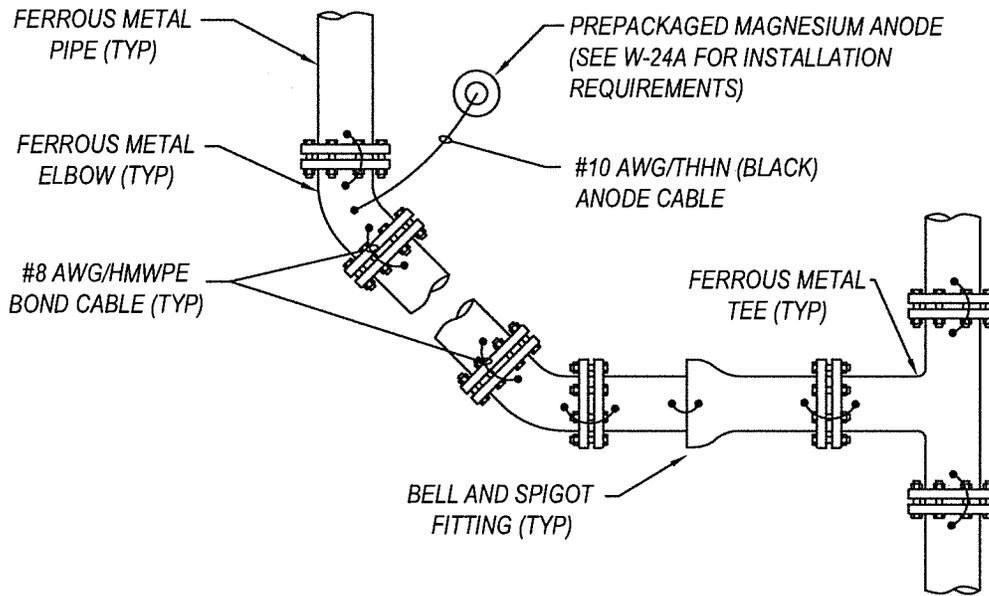
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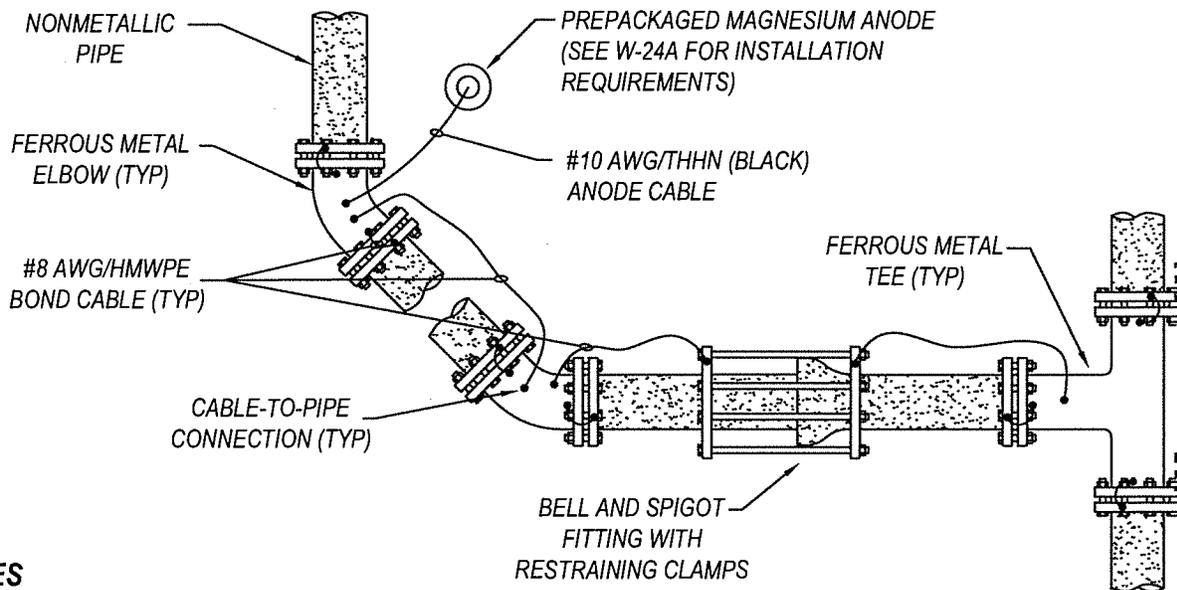
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W - 22B
DWG NO.

FERROUS METAL PIPE CONNECTIVITY



NON-METALLIC PIPE CONNECTIVITY



NOTES

1. ALL CABLE CONNECTIONS TO STEEL PIPE AND FITTINGS SHALL BE ACCOMPLISHED UTILIZING AN EXOTHERMIC WELDING PROCESS SUCH AS "CALDWELL" BY ERICO PRODUCTS, INC. OR APPROVED EQUAL (SEE W-23B FOR EXOTHERMIC WELD DETAIL). ALL MATERIAL AND EQUIPMENT UTILITIZED FOR WELDING SHALL BE FROM ONE MANUFACTURER.
2. BOND WIRE SHALL BE #8 AWG/HMWPE BOND CABLE. ALL JOINTS, EXCEPT FIELD WELDED JOINTS AND INSULATING JOINTS, SHALL BE CONTINUITY BONDED. BONDS SHALL BE WELDED TO STEEL PIPE AS WELL AS MAJOR PARTS OF ANY COUPLINGS USED. THE LENGTH OF THE BOND CABLES BETWEEN FITTINGS SHALL BE SUFFICIENT IN LENGTH TO ALLOW FOR SOIL CONTRACTION AND PIPE MOVEMENT.
3. NEW WATER MAINS SHALL BE CONTINUITY BONDED TO ALL EXISTING FERROUS WATER MAINS. IN LOCATIONS WHERE A NEW WATER MAIN IS TIED INTO AN EXISTING NON-FERROUS WATER MAIN WITH A BOND CABLE, THE NEW WATER MAIN SHALL BE CONTINUITY BONDED WITH THE EXISTING BOND CABLE ON EACH SIDE OF THE TIE-IN POINT.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

PIPE CONNECTIVITY

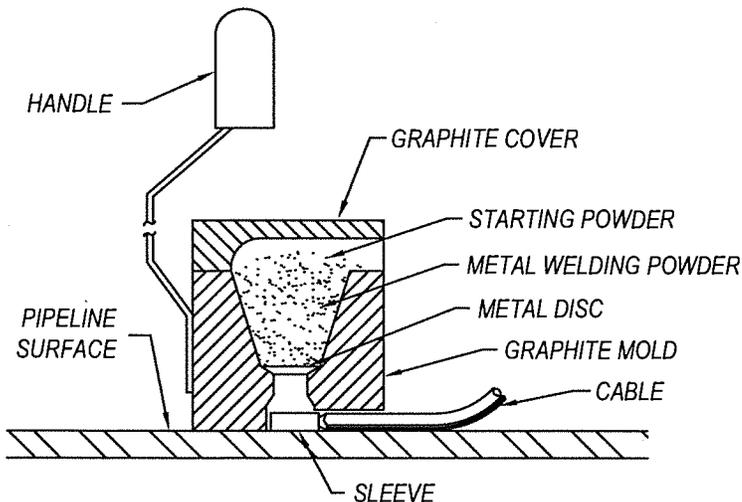
DATE REVISED DECEMBER 2015

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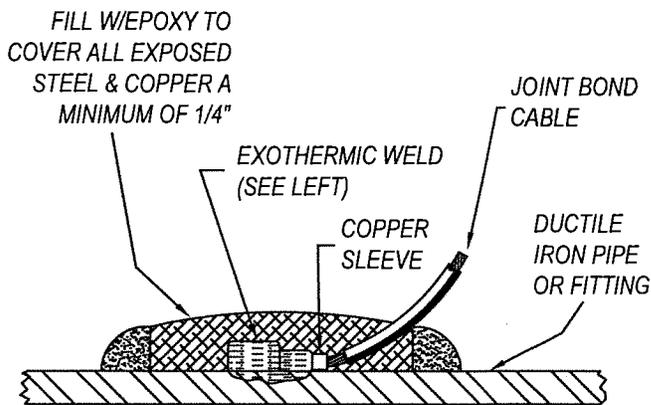
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DWG NO.



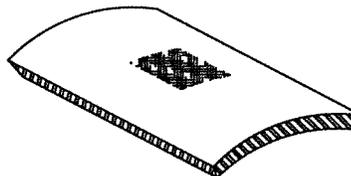
EXOTHERMIC WELD



CABLE-TO-PIPE CONNECTION

EXOTHERMIC WELD PROCEDURE

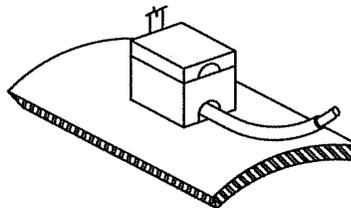
STEP 1. FILE STRUCTURE CONNECTION AREA TO BARE SHINY METAL AND CLEAN.



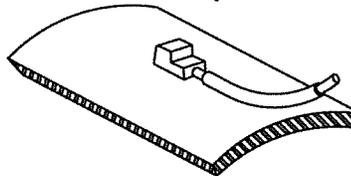
STEP 2. STRIP INSULATION FROM WIRE. ATTACH SLEEVE REQUIRED ON #6 AWG WIRE OR SMALLER.



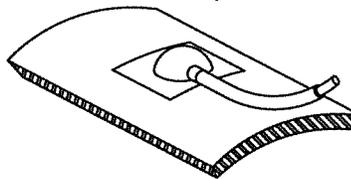
STEP 3. HOLD MOLD FIRMLY WITH OPENING AWAY FROM OPERATOR AND IGNITE WITH FLINT GUN.



STEP 4. REMOVE SLAG FROM CONNECTION AND PEEN WELD FOR SOUNDNESS.



STEP 5. COMPLETELY COVER CONNECTION AND EXPOSED STRUCTURE SURFACE WITH EPOXY COATING COMPOUND.



NOTES

1. EXOTHERMIC WELD PROCEDURE SHOWN ABOVE IS TO BE USED AS A GENERAL GUIDE ONLY. CONSULT MANUFACTURER'S LITERATURE FOR SPECIFIC SIZE AND INSTALLATION INSTRUCTIONS.
2. PUTTY USED FOR THE CABLE TO PIPE CONNECTION SEAL DAM (THERMITE CONNECTIONS) SHALL BE "A+B" EPOXY AS MANUFACTURED BY BIGGS COMPANY, OR EQUAL. ALL BONDS SHALL BE INSPECTED BY WATER DIVISION PRIOR TO BACKFILLING TRENCH.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

EXOTHERMIC WELD

DATE REVISED DECEMBER 2015

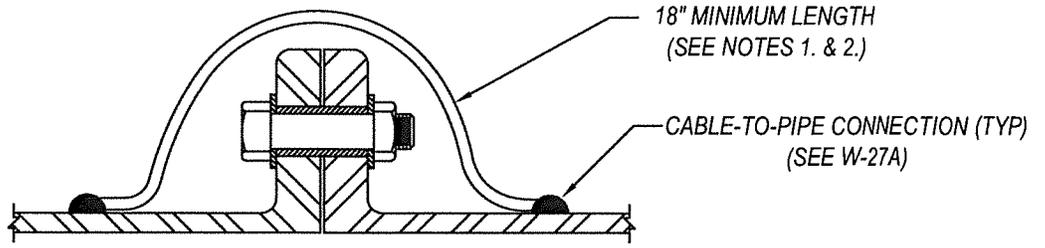
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APPROVED *[Signature]*

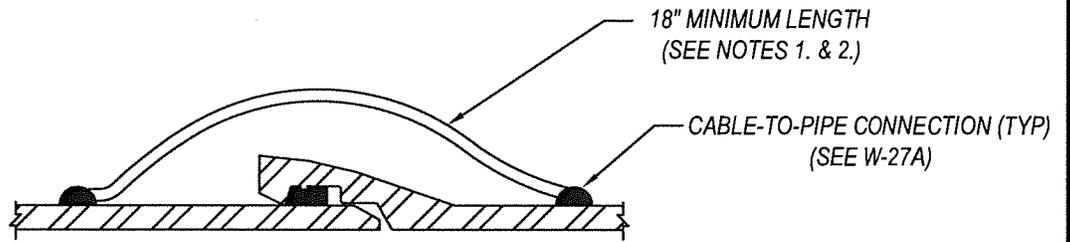
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W - 23B

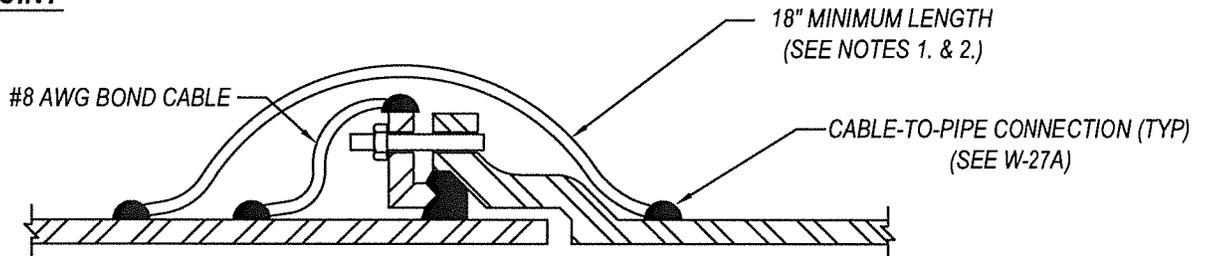
DWG NO.



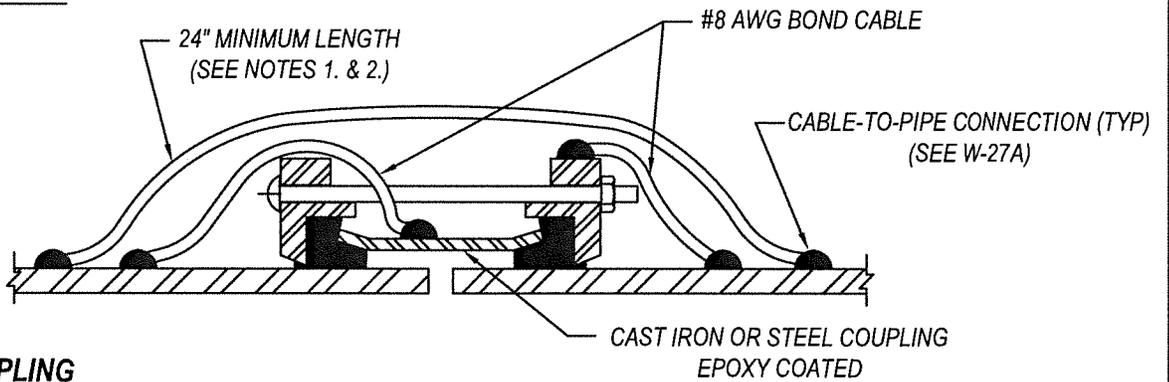
FLANGED JOINT



PUSH-ON JOINT



MECHANICAL JOINT



FLEXIBLE COUPLING

NOTES:

1. USE #8 AWG/HMWPE BOND CABLES FOR BONDING METALLIC FITTINGS ON NON- METALLIC PIPING SYSTEMS.
2. USE #4 AWG/HMWPE BOND CABLES FOR BONDING PIPE JOINTS ON METALLIC PIPING SYSTEMS PER SPECIFICATIONS.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

BOND CABLES

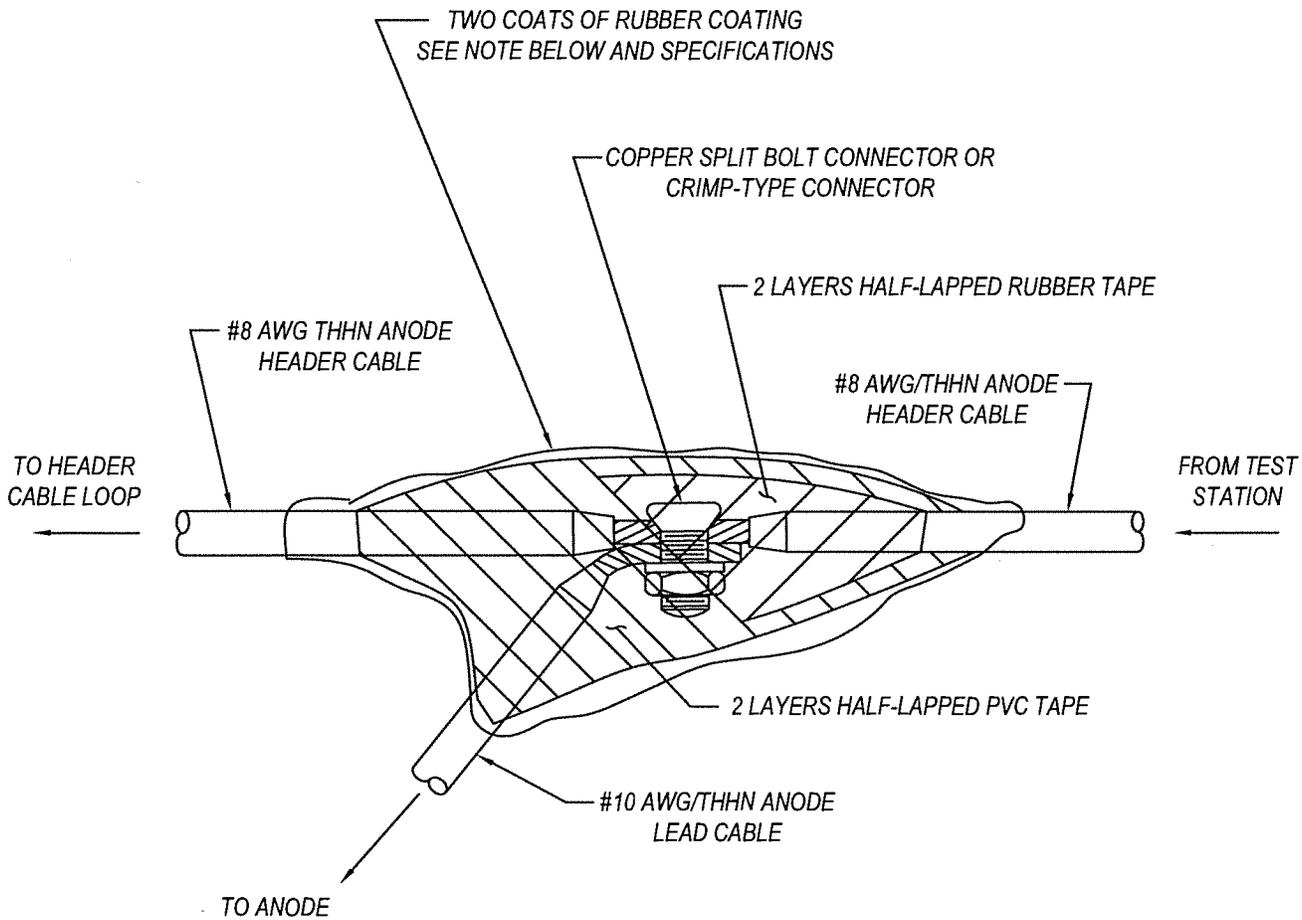
DATE REVISED DECEMBER 2015

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APPROVED *grt*

SCALE NONE

W - 23C
DWG NO.



NOTE:
COAT ENTIRE SPLICE CONNECTION WITH TWO COATS OF RUBBER COATING. SEE SPECIFICATIONS.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

CABLE SPLICE

DATE REVISED DECEMBER 2015

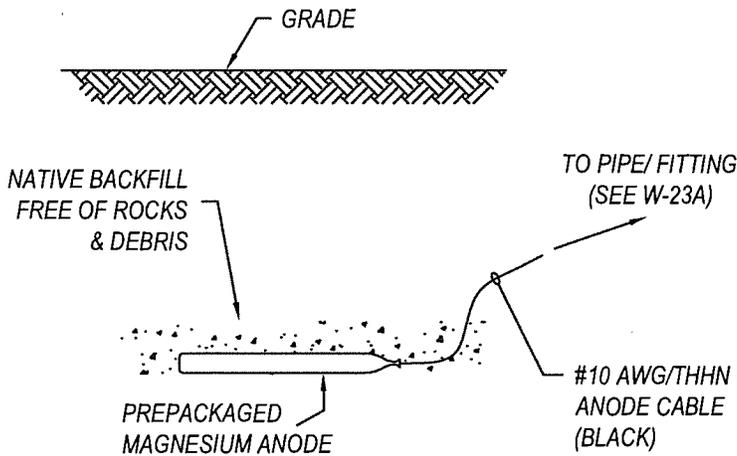
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APPROVED *[Signature]*

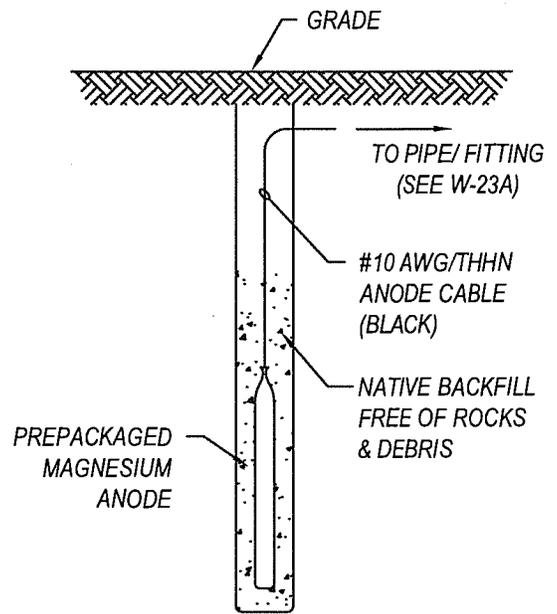
SCALE NONE

W - 23D
DWG NO.

HORIZONTAL INSTALLATION



VERTICAL INSTALLATION



NOTES

1. INSTALL ANODES WITH 3-FT SEPARATION FROM THE PIPE/FITTING IN NATIVE SOIL.
2. ANODES MAY BE INSTALLED HORIZONTALLY OR VERTICALLY, UNLESS SPECIFICALLY DIRECTED BY THE WATER DIVISION.
3. A MINIMUM DISTANCE OF 10-FT SHALL BE MAINTAINED BETWEEN MULTIPLE ANODES.
4. ANODES SHALL BE INSTALLED A MINIMUM OF 3-FEET FROM ALL SEWER AND STORM DRAIN FACILITIES, AND A MINIMUM OF 5-FEET FOR ALL OTHER UTILITIES (INCLUDING, BUT NOT LIMITED TO, GAS, ELECTRIC, CABLE, AND PHONE).
5. ALL CABLE CONNECTIONS TO STEEL PIPE AND FITTINGS SHALL BE ACCOMPLISHED UTILIZING AN EXOTHERMIC WELDING PROCESS SUCH AS "CALDWELL" BY ERICO PRODUCTS, INC. OR APPROVED EQUAL (SEE W-23B FOR EXOTHERMIC WELD DETAIL). ALL MATERIAL AND EQUIPMENT UTILIZED FOR WELDING SHALL BE FROM ONE MANUFACTURER.
6. ANODE CABLES SHALL BE CONNECTED DIRECTLY TO FERROUS PIPE OR FITTINGS. LEAD WIRE FOR THE ANODES SHALL BE 30-FOOT LONG, #10 AWG SOLID COPPER WIRE WITH BLACK RHW-USE INSULATION. LEAD WIRES SHALL BE SILVER SOLDERED TO ANODE CORE WITH THE CONNECTION ENCAPSULATED IN EPOXY RESIN.
7. ANODE INSTALLATION PROCEDURE SHOWN ABOVE IS TO BE USED AS A GENERAL GUIDE ONLY. CONSULT MANUFACTURER'S LITERATURE FOR SPECIFIC INSTALLATION INSTRUCTIONS.
8. A SOILS ANALYSIS IS REQUIRED FOR ALL NEW WATER MAIN INSTALLATIONS. A SOIL SAMPLE SHALL BE TAKEN EVERY 1000-FT OF NEW PIPE INSTALLATION AT A DEPTH OF 4-FEET. THE SOILS ANALYSIS SHALL INCLUDE CORROSION TESTING. THE CORROSION TESTS SHALL INCLUDE (AT A MINIMUM) CHLORIDES (ASTM D4327), pH (ASTM D4972), RESISTIVITY AT 100% SATURATION (ASTM G57), SULFATE (ASTM D4327), AND REDOX POTENTIAL (ASTM D1498).
9. QUANTITY, SIZE, AND TYPE OF ANODES REQUIRED FOR NEW WATER FACILITIES SHALL BE DETERMINED BY THE WATER DIVISION AFTER RESULTS OF SOILS ANALYSIS HAVE BEEN REVIEWED BY THE WATER DIVISION.
10. AREAS DETERMINED TO CONTAIN MODERATELY OR HIGHLY CORROSIVE SOILS SHALL REQUIRE INSTALLATION OF A CORROSION TESTING STATION AT 500-FT TO 1000-FT INTERVALS, AS APPROVED BY THE WATER DIVISION. TEST STATIONS SHALL BE INSTALLED UNDER THE DIRECTION AND OBSERVATION OF A CERTIFIED CORROSION SPECIALIST. TEST STATIONS SHALL BE LOCATED ABOVE THE POINT OF CONNECTION ON THE WATER MAIN AND KEPT WITHIN A G5 BOX LABELED "CP TEST" IN THE STREET PAVEMENT SECTION.
11. ANODE SHALL BE INSTALLED LEVEL WITH OR DEEPER THAN THE WATER MAIN IT IS CONNECTED TO, WITH A MINIMUM DEPTH OF 24-INCHES (2-FEET).

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

ANODE INSTALLATION

DATE REVISED DECEMBER 2015

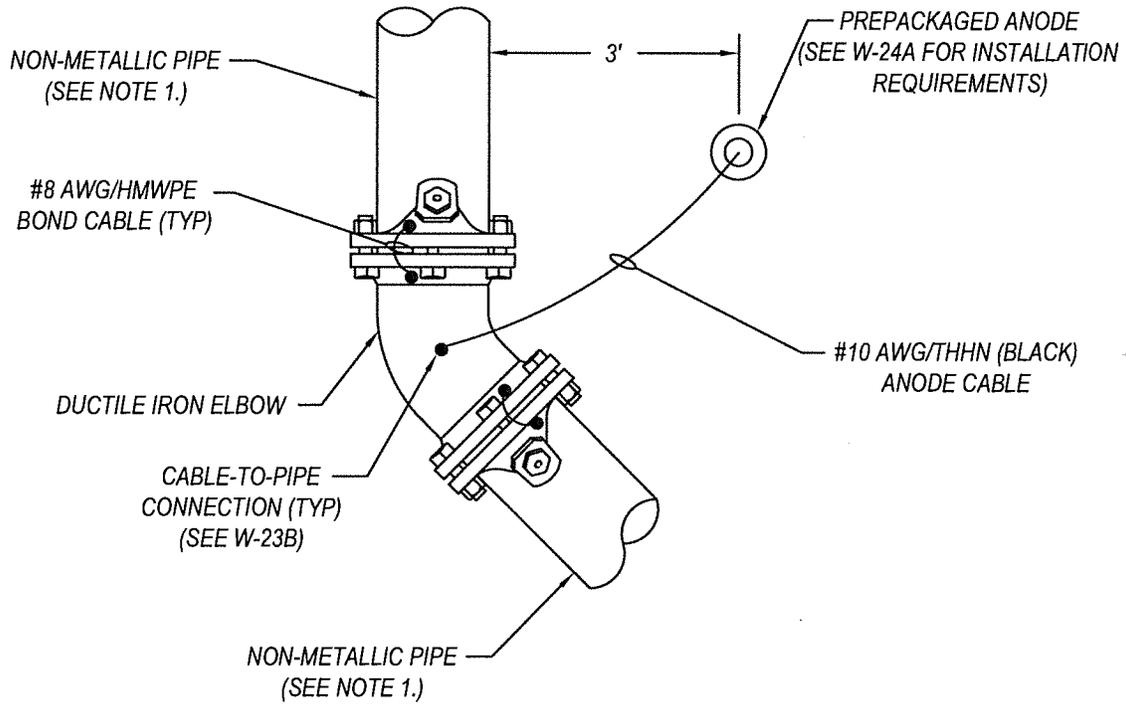
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APPROVED *[Signature]*

SCALE NONE

W - 24A

DWG NO.



NOTES:

1. THE USE OF NON-METALLIC PIPE AS AN ALTERNATE MATERIAL TO DUCTILE IRON MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE.
2. THIS DETAIL IS TYPICAL OF ELBOWS, REDUCERS & OTHER FITTINGS.
3. MULTIPLE FITTINGS MAY BE BONDED TOGETHER AND PROTECTED WITH ONE ANODE PER DRAWING W-25C.
4. NO TEST STATION IS REQUIRED FOR THESE FITTINGS, HOWEVER A RECORD OF ALL INSTALLATIONS SHALL BE PROVIDED TO THE PROJECT ENGINEER.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

FITTING - ANODE INSTALLATION

DATE REVISED DECEMBER 2015

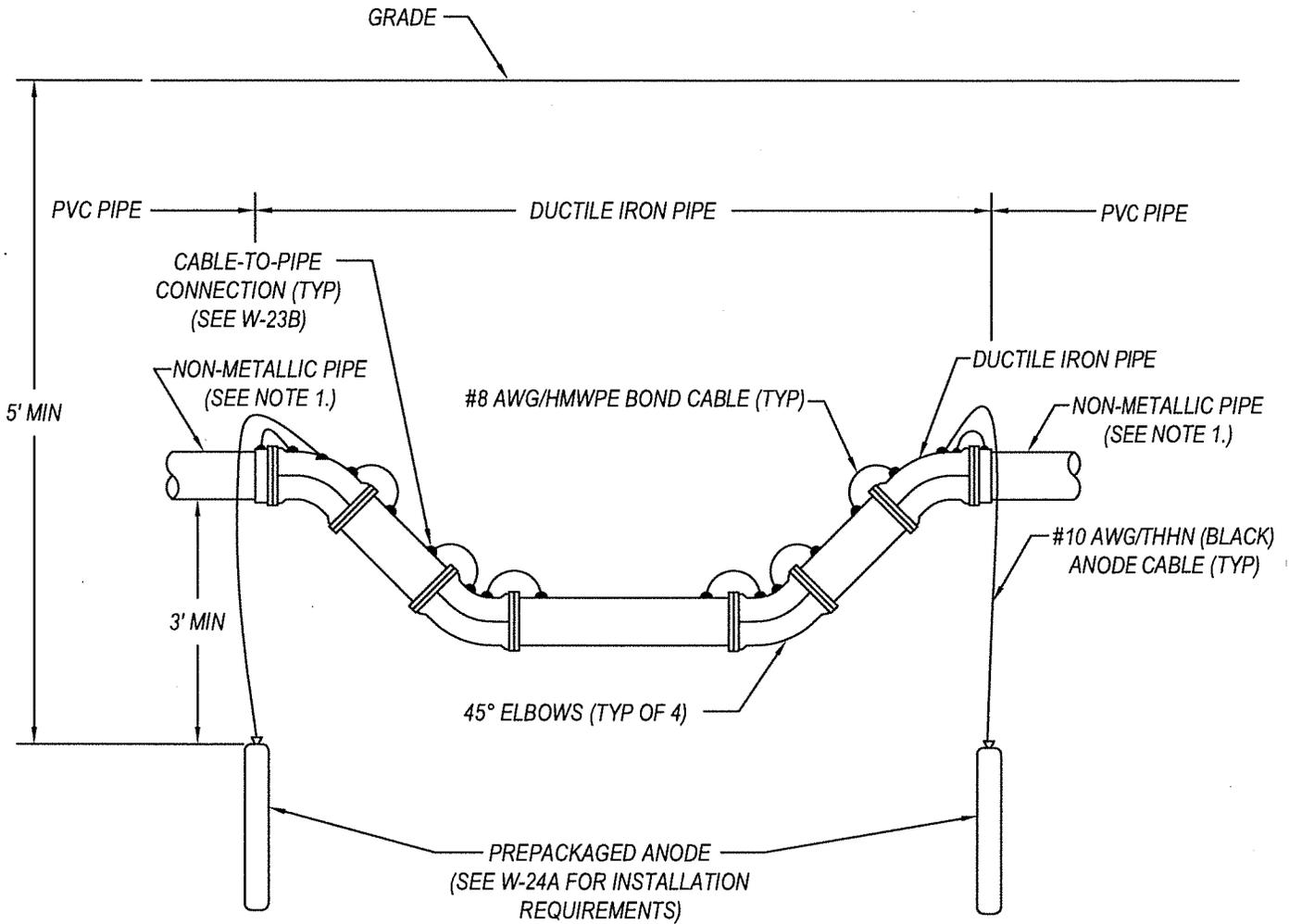
CHECKED *[Signature]*

APPROVED *[Signature]*

SCALE NONE

DWG NO.

W - 24B



NOTES:

1. THE USE OF NON-METALLIC PIPE AS AN ALTERNATE MATERIAL TO DUCTILE IRON MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE.
2. THE ANODE SHALL BE INSTALLED VERTICALLY OR HORIZONTALLY WITH THE TOP OF THE ANODE 5 FT. BELOW GRADE AND 3 FEET BELOW PIPE.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

VERTICAL OFFSETS - ANODE INSTALLATION

DATE REVISED DECEMBER 2015

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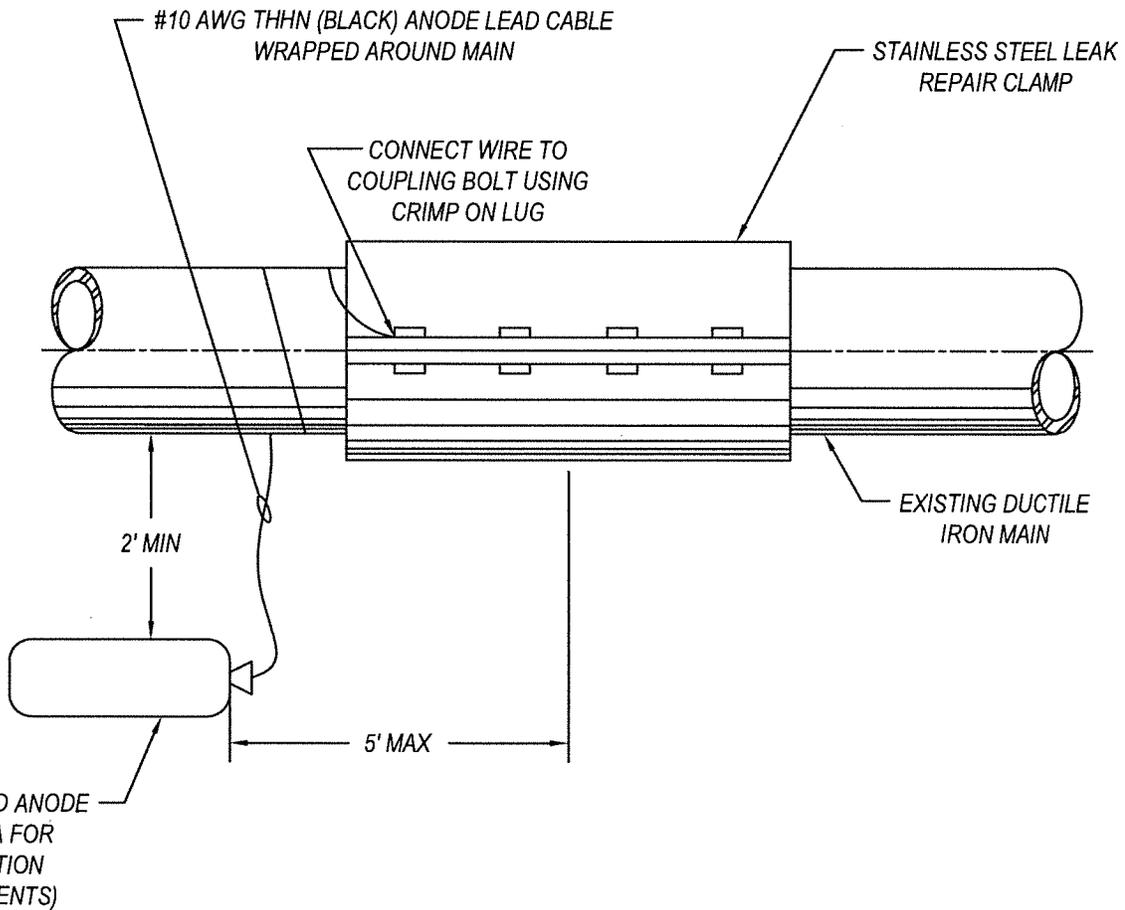
APPROVED *[Signature]*

SCALE

NONE

DWG NO.

W - 24C



NOTES:

1. INSTALL ANODE A MINIMUM OF 2-FEET BELOW PIPE DEPTH IN NATIVE SOIL.
2. MAXIMUM HORIZONTAL DISTANCE FROM ANODE TO LEAK REPAIR CLAMP IS 5-FEET.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

LEAK REPAIR CLAMP - ANODE INSTALLATION

DATE REVISED DECEMBER 2015

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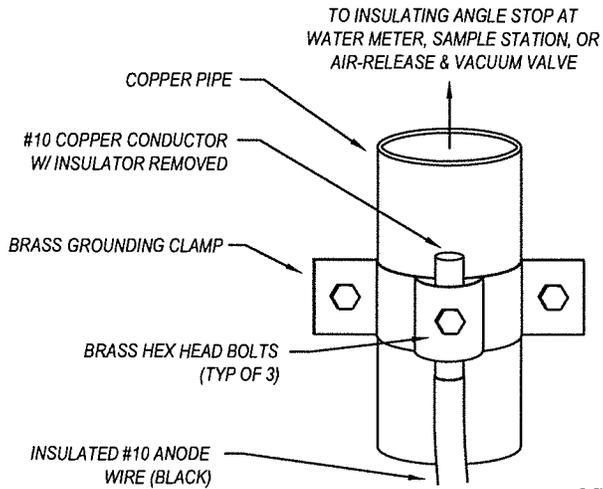
APPROVED

SCALE

NONE

DWG NO.

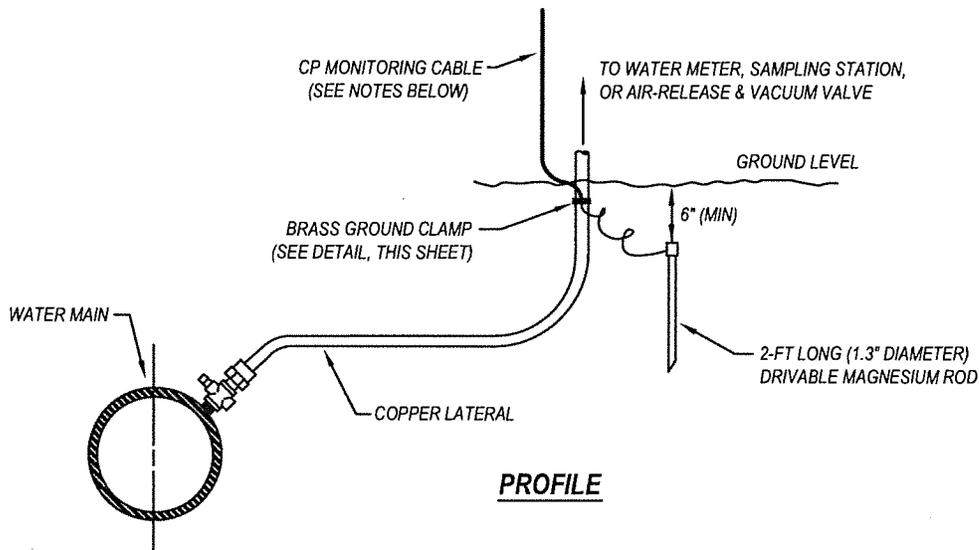
W - 24D



GROUND CLAMP DETAIL

NOTES

1. STRIP WIRE INSULATION AT THE GROUNDING CLAMP TO ENSURE ELECTRICAL CONTINUITY.
2. ALL BOLTS SHALL BE BRASS WITH HEX HEADS.
3. GROUNDING CLAMP SHALL BE AT DEPTH READILY ACCESSIBLE IN THE METER BOX.
4. GROUNDING CLAMP SHALL BE INSTALLED PRIOR TO WRAPPING OF PIPE WITH 10-MIL HIGH TACK PIPE TAPE.



PROFILE

NOTES

1. DRIVABLE ANODE SHALL BE 2-LB (24" LONG, 1.3" DIAMETER) MAGNESIUM RODS WITH A 0.125-INCH DIAMETER STEEL CORE. LEAD WIRES FOR ANODES SHALL BE 3-FT LONG #10 AWG SOLID COPPER WIRE WITH BLACK RHHW-USE INSULATION. ANODES SHALL HAVE UHMW POLYETHYLENE DRIVE CAP AND THE DRIVE POINT SHALL BE CUT AT A 45-DEGREE ANGLE. GROUNDING CLAMPS SHALL BE BRASS WITH BRASS HEX BOLTS AND NUTS.
2. THE SURFACE OF THE COPPER RISER PIPE IN THE WATER METER BOX SHALL BE CLEANED PRIOR TO ATTACHMENT OF THE BRASS GROUNDING CLAMP IN ORDER TO ENSURE A GOOD ELECTRICAL CONNECTION BETWEEN THE CLAMP AND THE COPPER WATER LATERAL.
3. A PREDRILLED HOLE IS REQUIRED FOR ALL ANODE INSTALLATIONS. HOLE SHALL BE INSTALLED WITHIN THE METER BOX ADJACENT TO WATER METER. HOLE SHALL BE LARGE ENOUGH TO SUFFICIENTLY INSERT THE ANODE SUCH THAT A TIGHT FIT IS MAINTAINED BETWEEN THE ANODE AND THE SOIL, AND THAT A MINIMUM COVER OF 6-INCHES IS OBTAINED.
4. RUN WIRE IN CONTINUOUS LENGTH FROM THE ANODE TO THE GROUNDING CLAMP, FREE OF JOINTS OR SPLICES. CARE SHALL BE USED DURING INSTALLATION TO AVOID PUNCTURES, CUTS AND SIMILAR DAMAGE TO THE WIRE INSULATION.
5. CP MONITORING CABLES SHALL BE REQUIRED ON ALL COPPER LATERALS. CABLE SHALL BE #10 AWG/HMWPE BOND CABLE AND SHALL EXTEND A MINIMUM OF 9-INCHES ABOVE GROUND INTO THE WATER METER BOX FOR CP TESTING PURPOSES. CABLE SHALL BE CONNECTED TO THE BRASS CLAMP TO THE DRIVABLE MAGNESIUM ANODE. THE BRASS CLAMP (CONNECTED TO THE ANODE) SHALL BE CLAMPED TO BARE COPPER PRIOR TO WRAPPING WITH HIGH TACK TAPE, WAX TAPE, AND/OR POLYETHYLENE WRAP.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

**ANODE INSTALLATION
(DRIVABLE MAGNESIUM ANODES)**

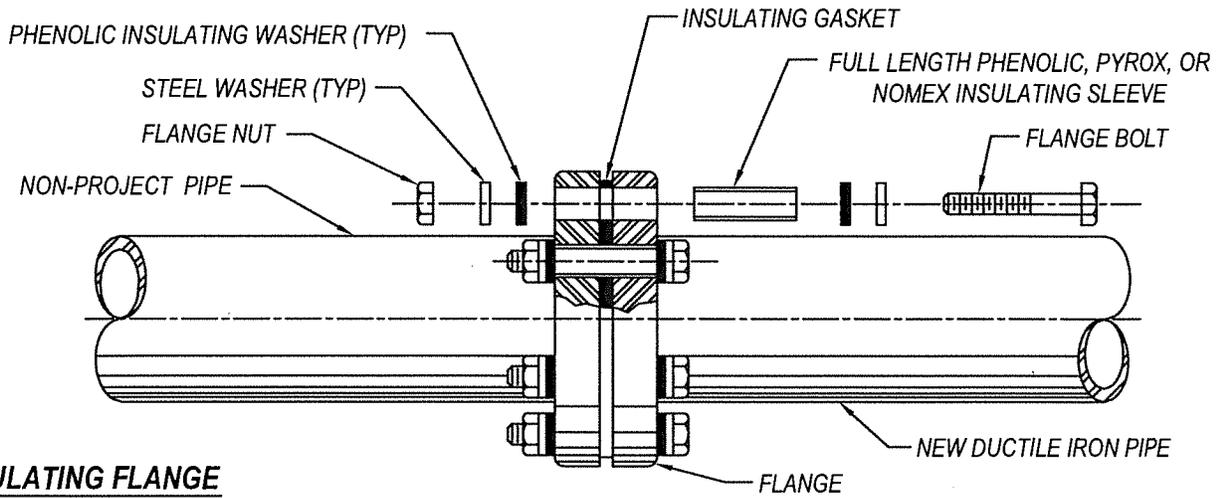
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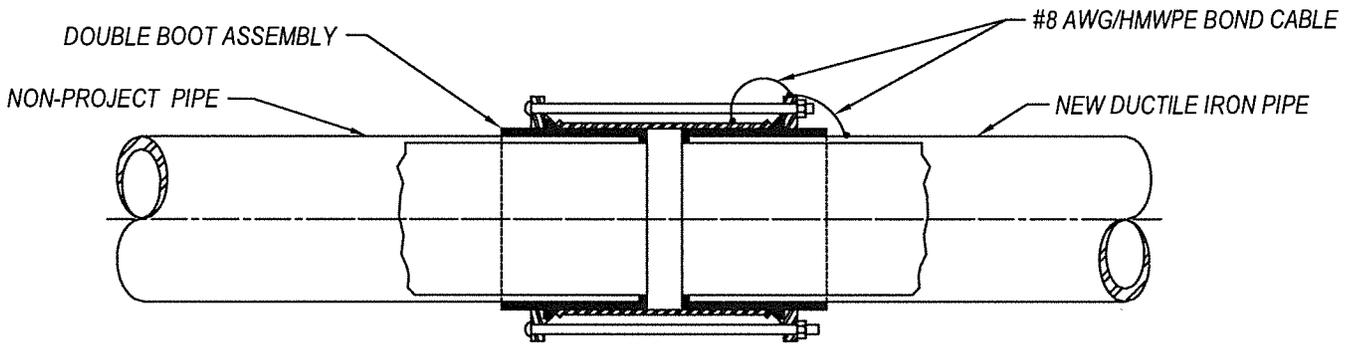
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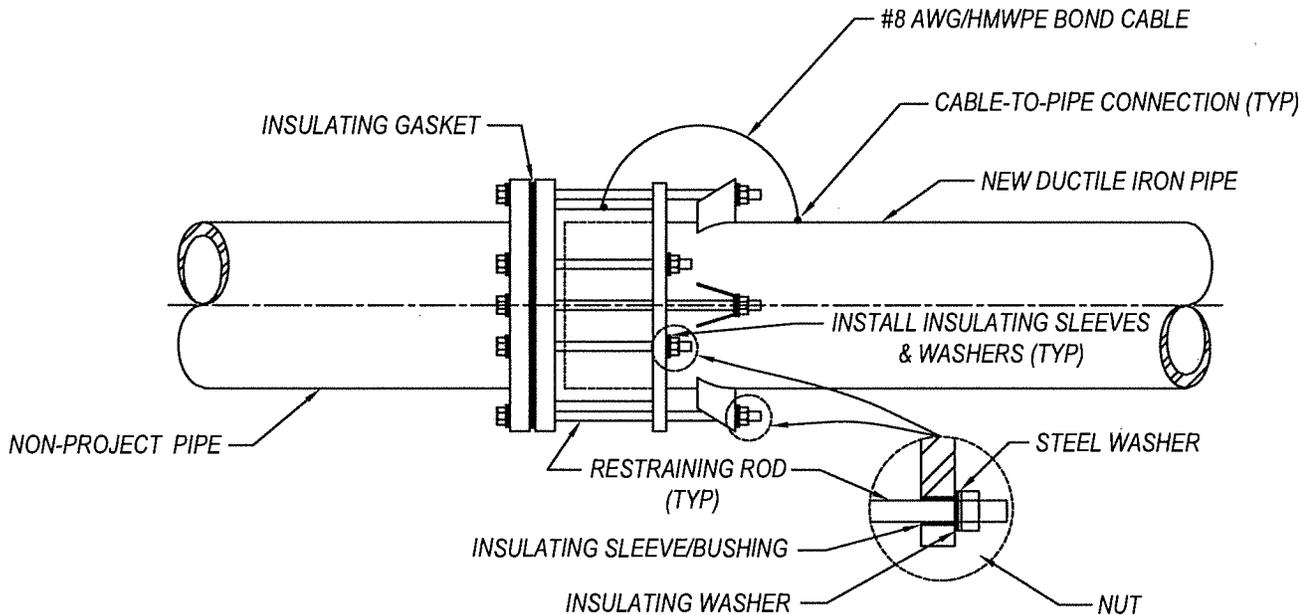
W - 24E
DWG NO.



INSULATING FLANGE



INSULATING FLEXIBLE COUPLING



INSULATING FLANGED COUPLING ADAPTER

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

INSULATING JOINT

DATE REVISED DECEMBER 2015

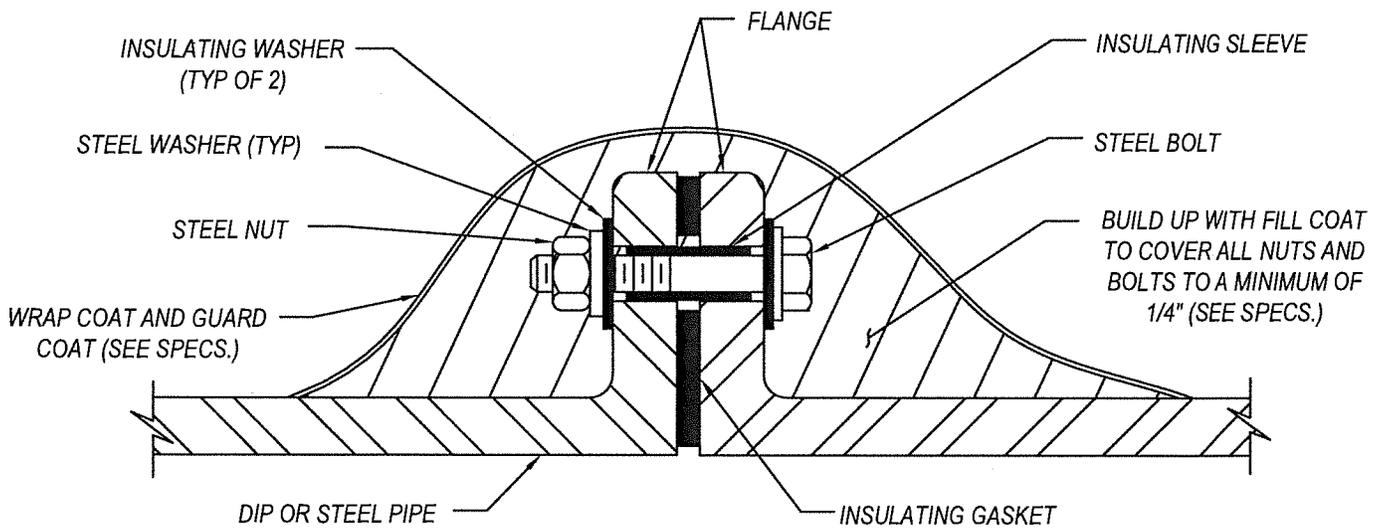
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APPROVED *JRZ*

SCALE NONE

DWG NO.

W - 25A



CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

INSULATING JOINT COATING

DATE REVISED DECEMBER 2015

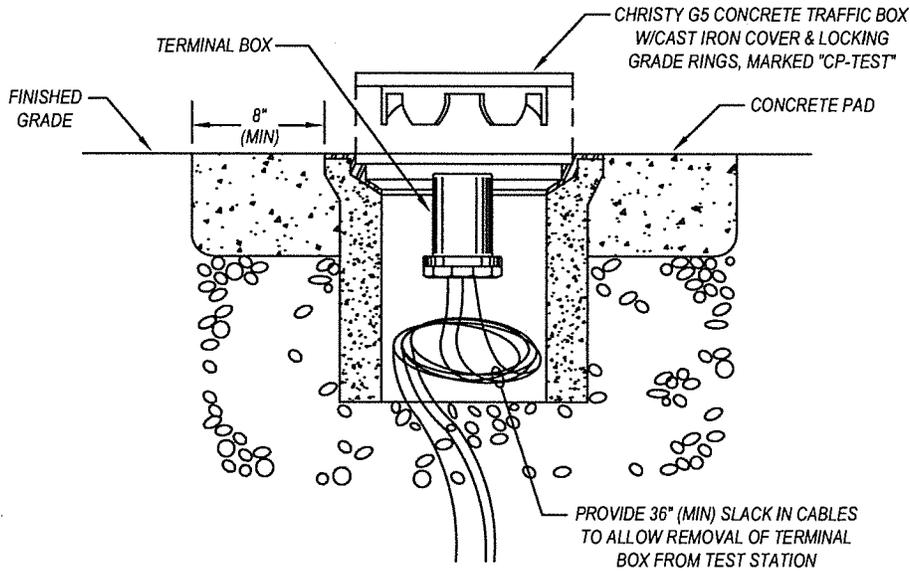
CHECKED *mt*

APPROVED *JNF*

SCALE NONE

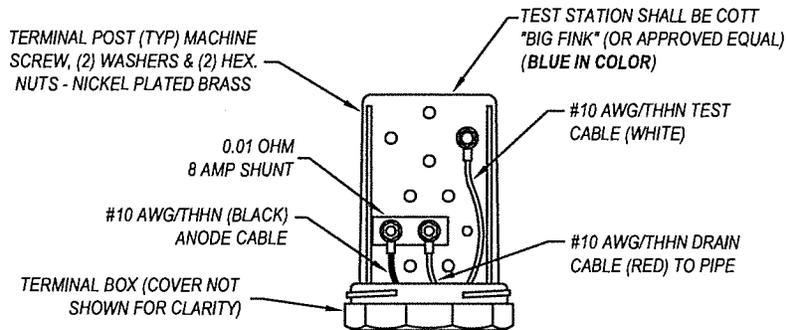
W - 25B

DWG NO.



TEST STATION DETAIL

NOT TO SCALE



ATS TERMINAL BOX

NOT TO SCALE

NOTES

1. CONTRACTOR TO PROVIDE TERMINAL BOX (WITH SHUNT) FOR THE WATER DIVISION CORROSION SPECIALIST TO INSTALL AT TEST STATION LOCATIONS.
2. ALL TEST STATIONS SHALL BE INSTALLED BEHIND THE BACK OF CURB, OUTSIDE OF ALL DRIVEWAYS AND DRIVEWAY APPROACHES, UNLESS OTHERWISE PERMITTED BY THE WATER DIVISION CORROSION SPECIALIST.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

TEST STATION AND TERMINAL BOX

DATE REVISED: DECEMBER 2015

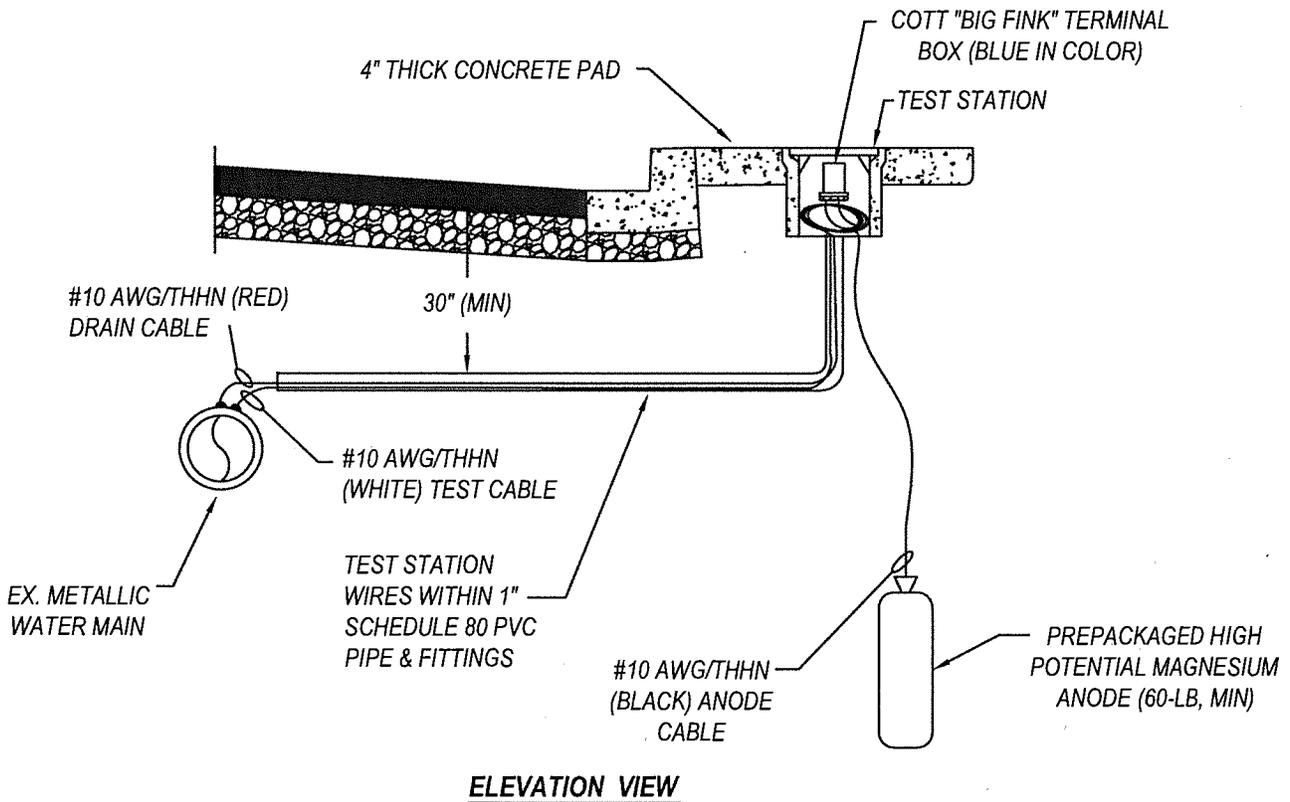
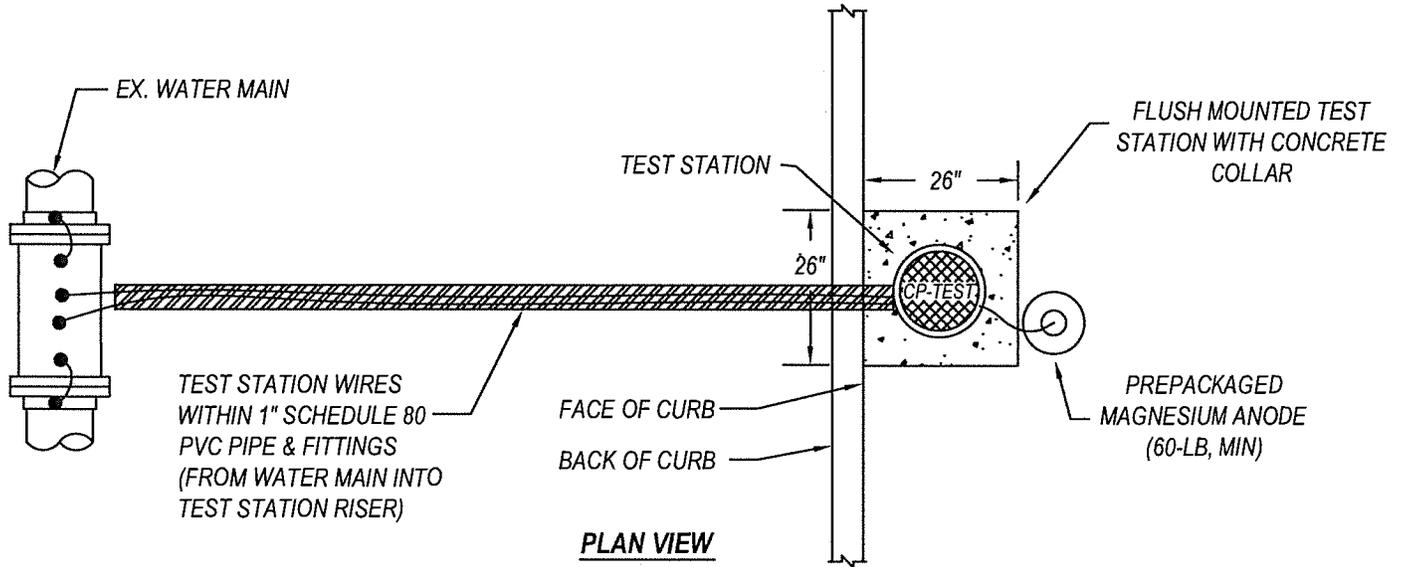
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APPROVED: *[Signature]*

SCALE: NONE

W - 26A

DWG NO.



NOTES:

1. CONTRACTOR TO PROVIDE COTT "BIG FINK" TEST STATION AND ASSOCIATED FITTINGS AND BRING WIRES INTO NEW RISER BOX. CONTRACTOR TO ENSURE WIRES IN BOX DO NOT SHORT TO EACH OTHER UNTIL AFTER CITY PERSONNEL TEST WIRE CONNECTIVITY.
2. CITY PERSONNEL SHALL TEST WIRE CONNECTIVITY PRIOR TO INSTALLATION OF TERMINAL BOX.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

EXISTING SYSTEM - ANODE TEST STATION

DATE REVISED DECEMBER 2015

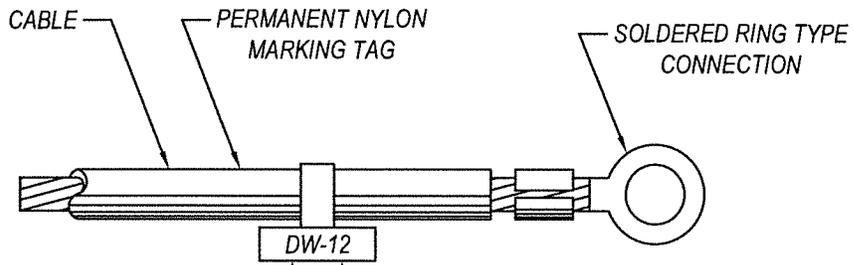
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APPROVED *JRT*

SCALE NONE

DWG NO.

W - 26B



ABBREVIATIONS

- BAN - ANODE
- BO - BLOW OFF
- CA - CASING
- DR - DRAIN CABLE
- DW - DOMESTIC WATER
- EL - ELBOW
- FH - FIRE HYDRANT
- FP - FOREIGN PIPELINE
- RW - RECYCLED WATER
- TT - TEST CABLE

NUMBER

PIPE DIA.
(INCHES)

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

CABLE IDENTIFICATION

DATE REVISED DECEMBER 2015

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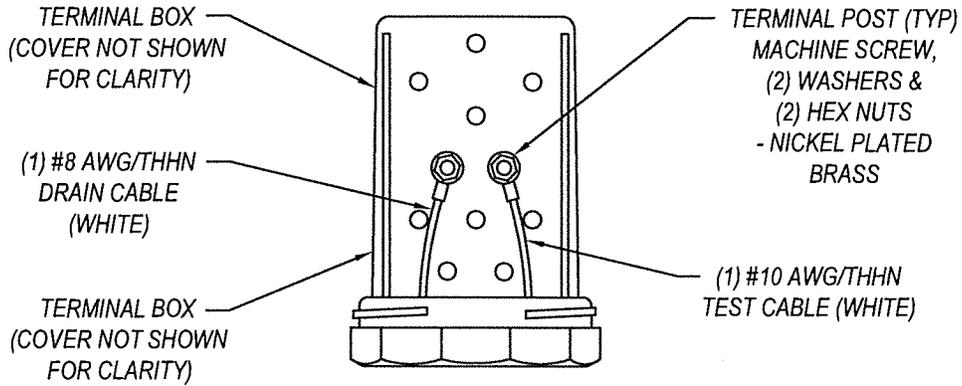
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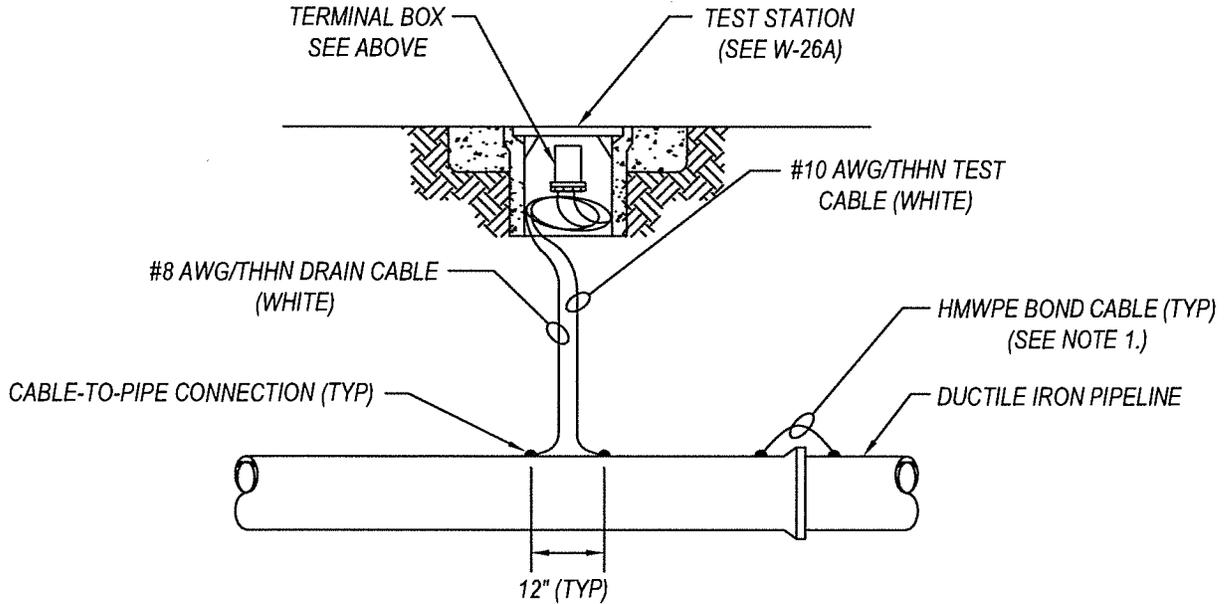
NONE

DWG NO.

W - 26C



CTS TERMINAL BOX



NOTES:

1. BOND ALL BURIED, NON-WELDED, PIPE JOINTS PER DRAWING W-26.
2. IDENTIFY CABLES PER DRAWING W-26C.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

CTS - CORROSION TEST STATION

DATE REVISED DECEMBER 2015

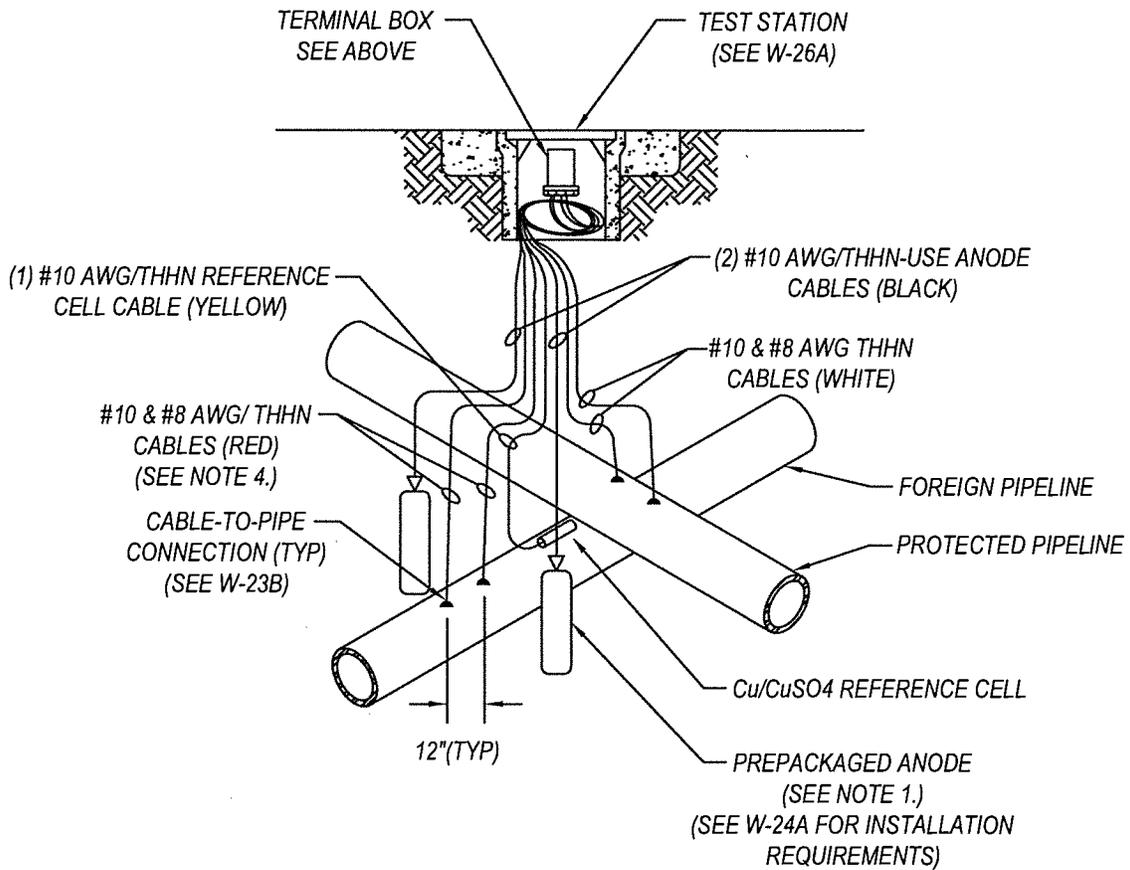
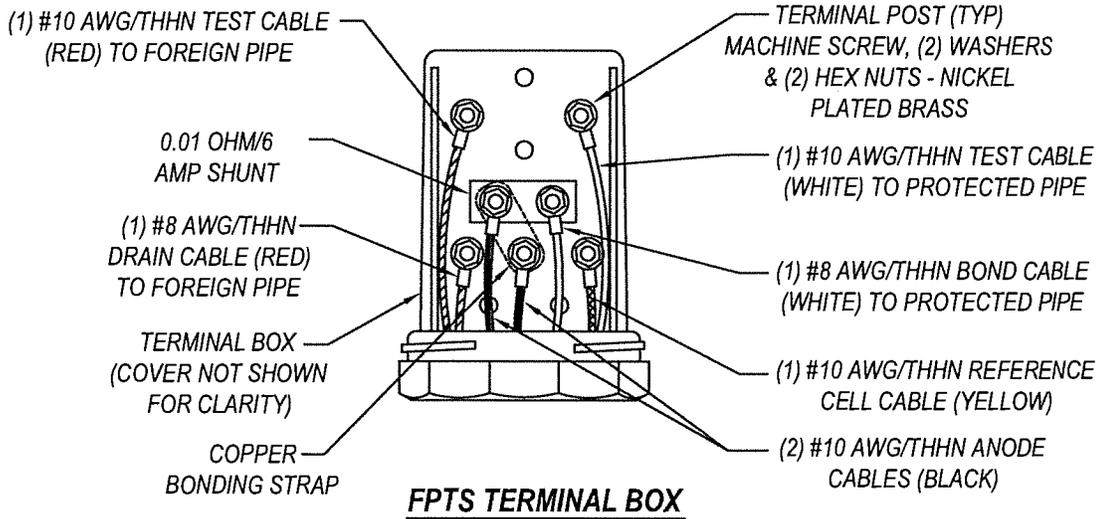
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SCALE NONE

W - 27A

DWG NO.



NOTES:

1. NUMBER AND SIZE OF ANODES SHALL BE DETERMINED BY THE PROJECT CORROSION ENGINEER.
2. IDENTIFY CABLES PER DRAWING W-26C.
3. INSTALL THE REFERENCE CELL BETWEEN THE TWO PIPELINES.
4. PERMISSION MUST BE OBTAINED FROM THE FOREIGN PIPELINE OWNER PRIOR TO ATTACHMENT OF TEST WIRES.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

FPTS - FOREIGN PIPELINE TEST STATION

DATE REVISED DECEMBER 2015

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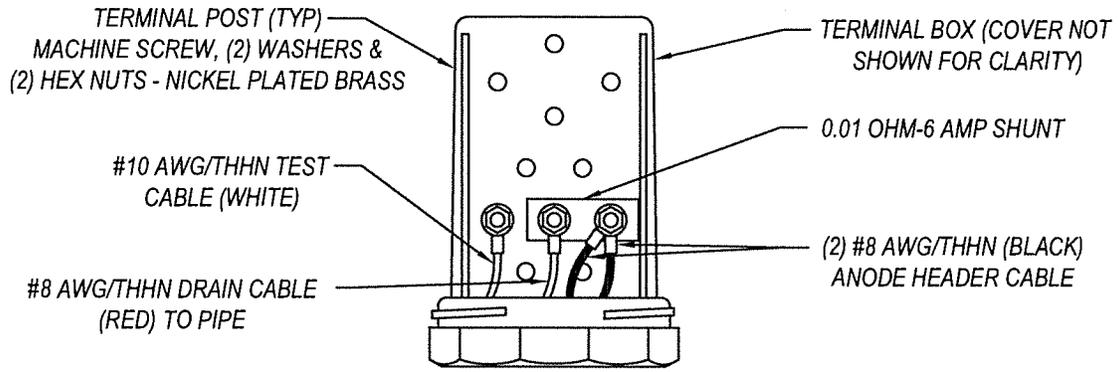
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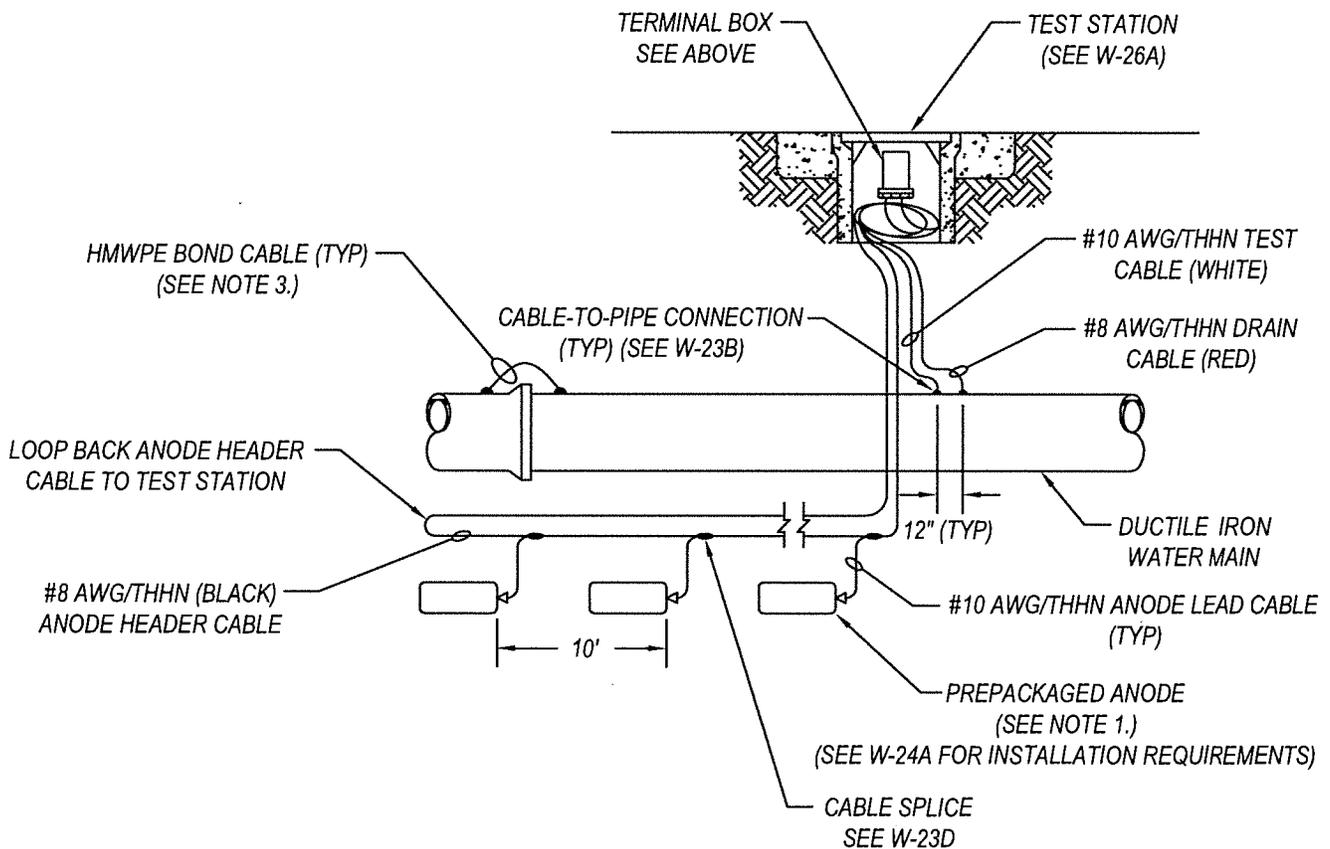
NONE

DWG NO.

W - 27B



ATS TERMINAL BOX



NOTES:

1. NUMBER AND SIZE OF ANODES SHALL BE DETERMINED BY THE PROJECT CORROSION ENGINEER.
2. THE ANODES SHALL BE INSTALLED A MINIMUM OF 3 FEET OFF THE WALL OF THE WATER PIPE.
3. BOND ALL BURIED, NON-WELDED, PIPE JOINTS PER DRAWING W-26.
4. IDENTIFY CABLES PER DRAWING W-26C.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

DUCTILE IRON PIPELINE - ANODE TEST STATION

DATE REVISED DECEMBER 2015

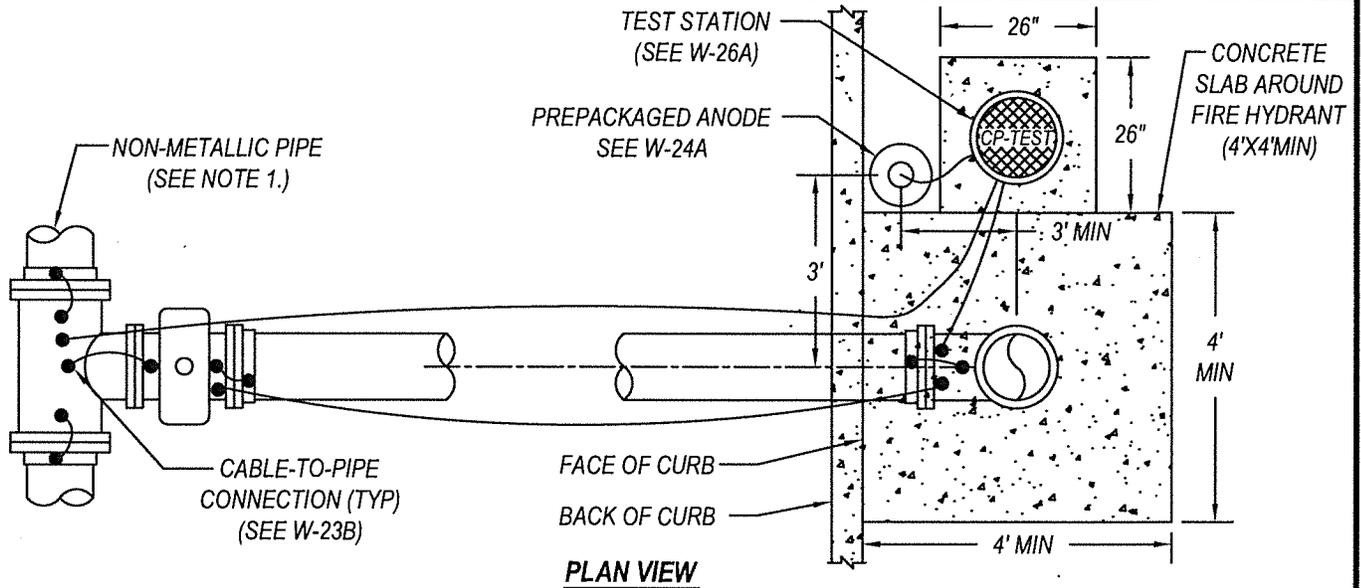
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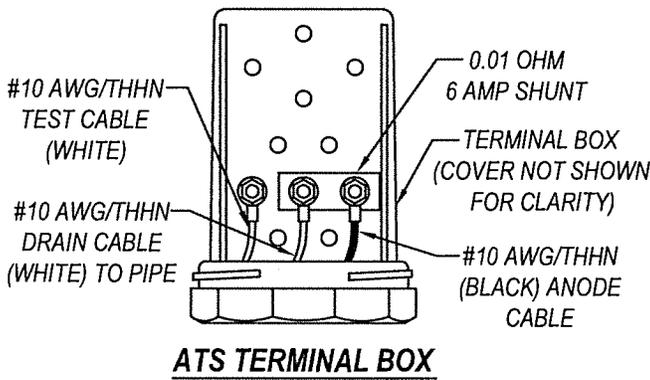
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W - 28A

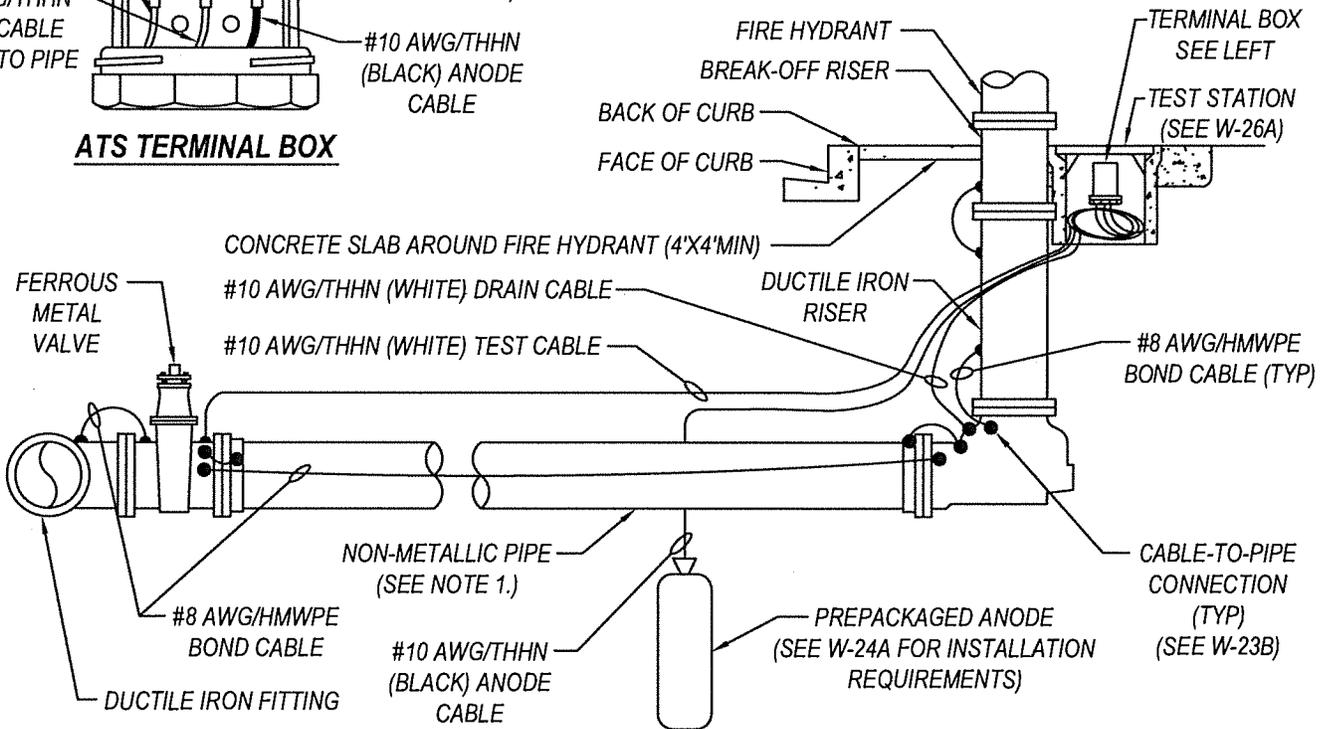
DWG NO.



PLAN VIEW



ATS TERMINAL BOX



ELEVATION VIEW

NOTES:

1. THE USE OF NON-METALLIC PIPE AS AN ALTERNATE MATERIAL TO DUCTILE IRON MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE.
2. IDENTIFY CABLES PER DRAWING W-26C.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

FIRE HYDRANT - ANODE TEST STATION

DATE REVISED DECEMBER 2015

CHECKED

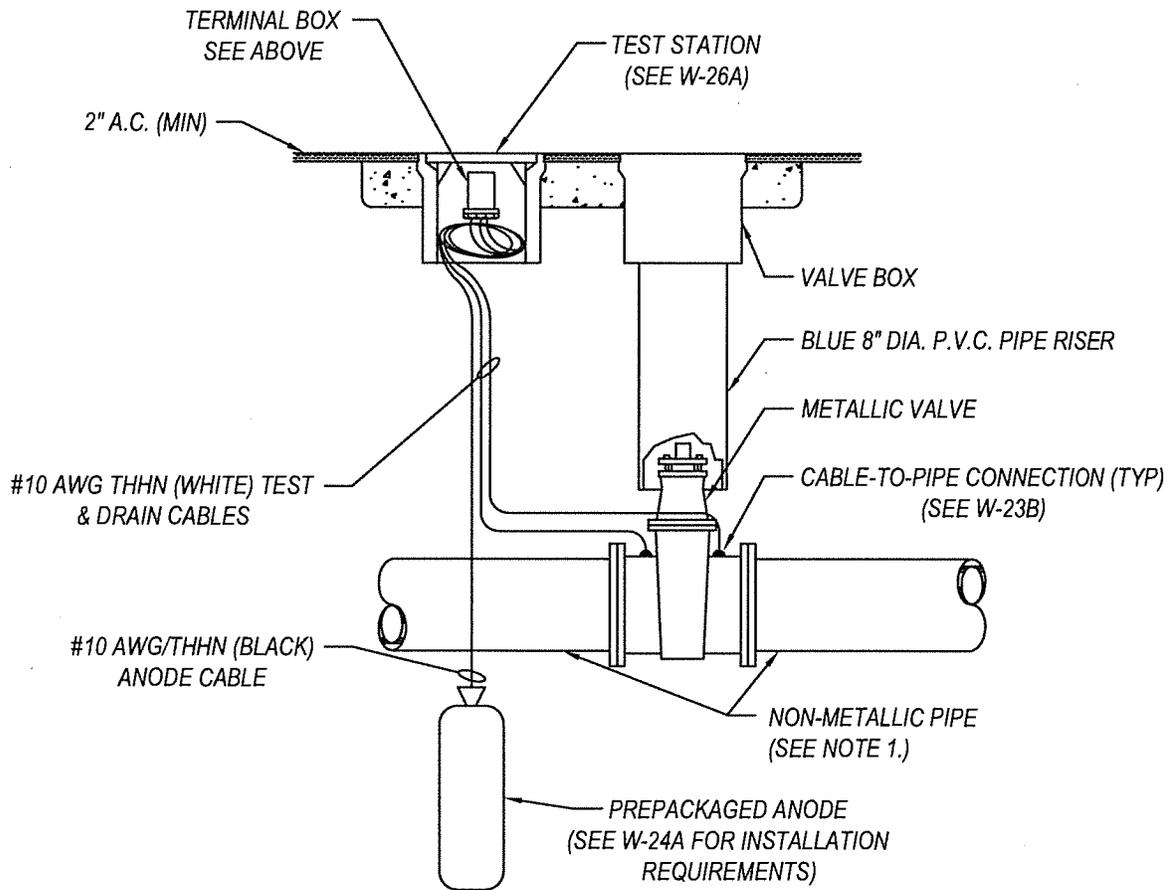
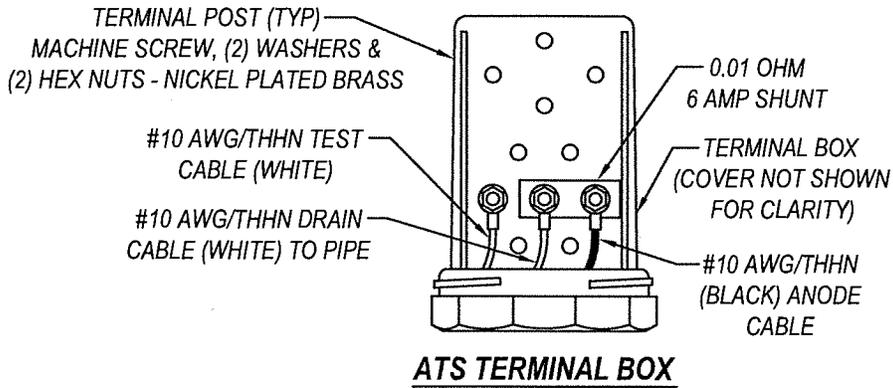
APPROVED

SCALE

NONE

DWG NO.

W - 28B



NOTES:

1. THE USE OF NON-METALLIC PIPE AS AN ALTERNATE MATERIAL TO DUCTILE IRON MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE.
2. INSTALL ANODE A MINIMUM OF 3- FEET FROM VALVE.
3. IDENTIFY CABLES PER DRAWING W-26C.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

VALVE - ANODE TEST STATION

DATE REVISED DECEMBER 2015

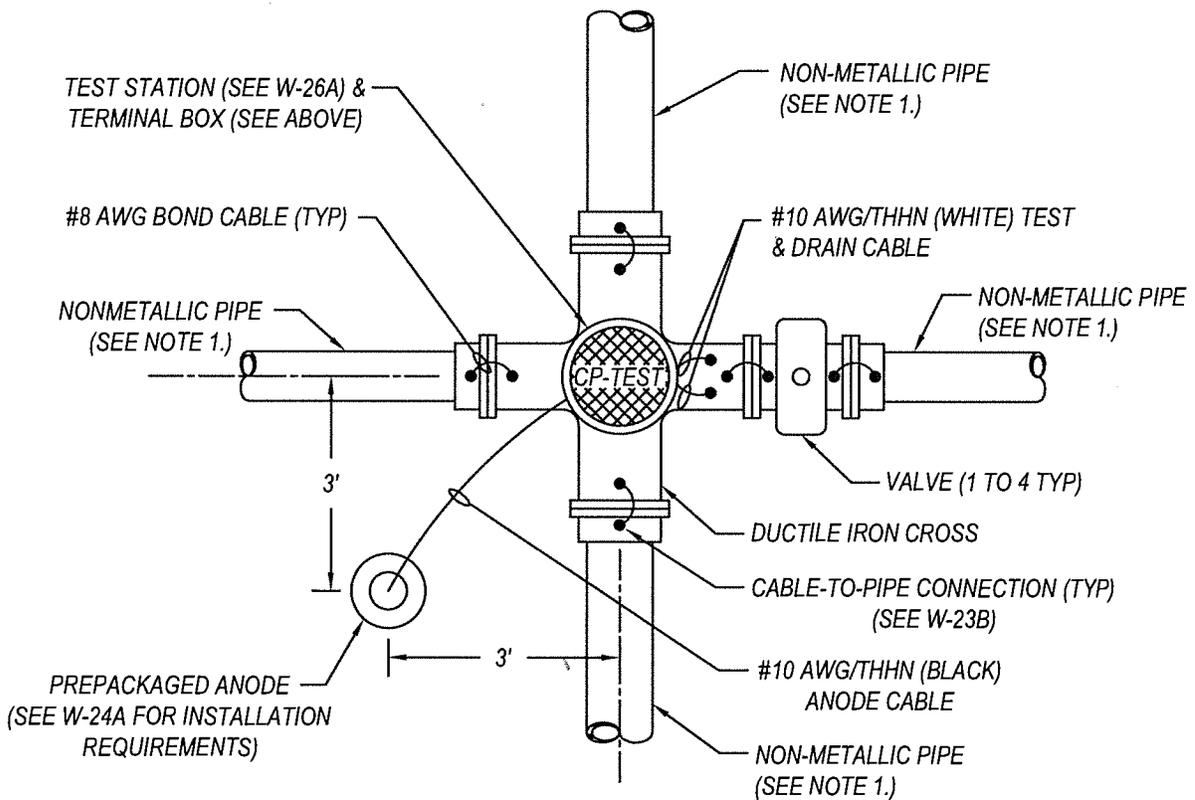
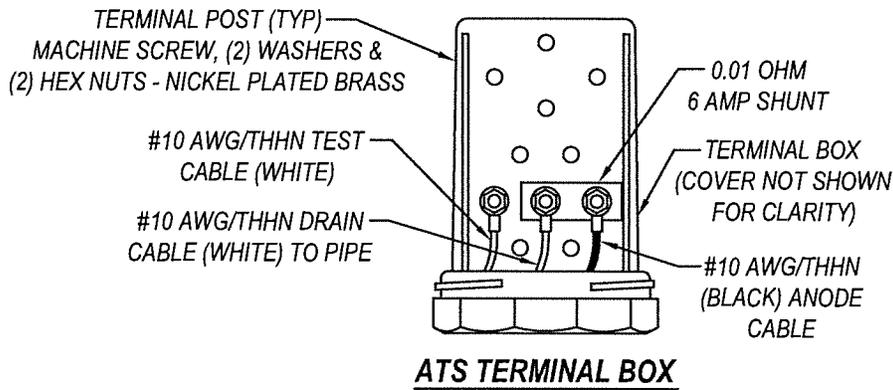
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APPROVED *[Signature]*

SCALE NONE

W - 28C

DWG NO.



NOTES:

1. THE USE OF NON-METALLIC PIPE AS AN ALTERNATE MATERIAL TO DUCTILE IRON MUST BE APPROVED BY THE CITY OF NAPA WATER DIVISION PRIOR TO USE.
2. INSTALL ANODE A MINIMUM OF 3 FEET FROM VALVE.
3. IDENTIFY CABLES PER DRAWING W-26C.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

CROSS - ANODE TEST STATION

DATE REVISED DECEMBER 2015

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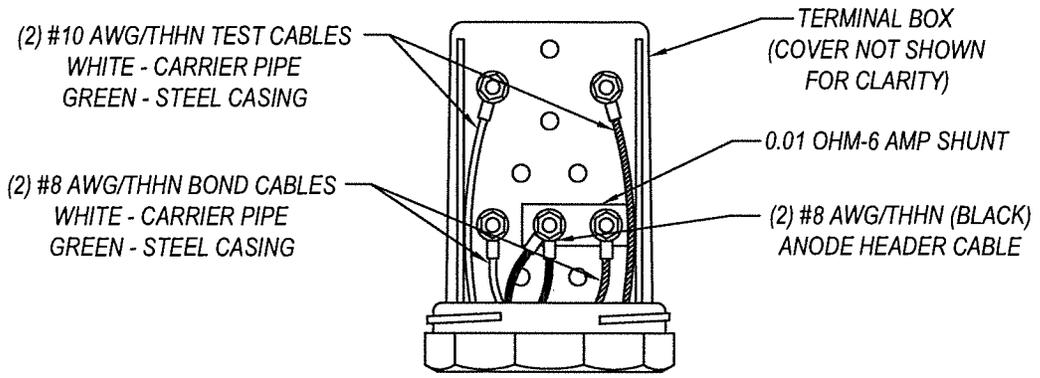
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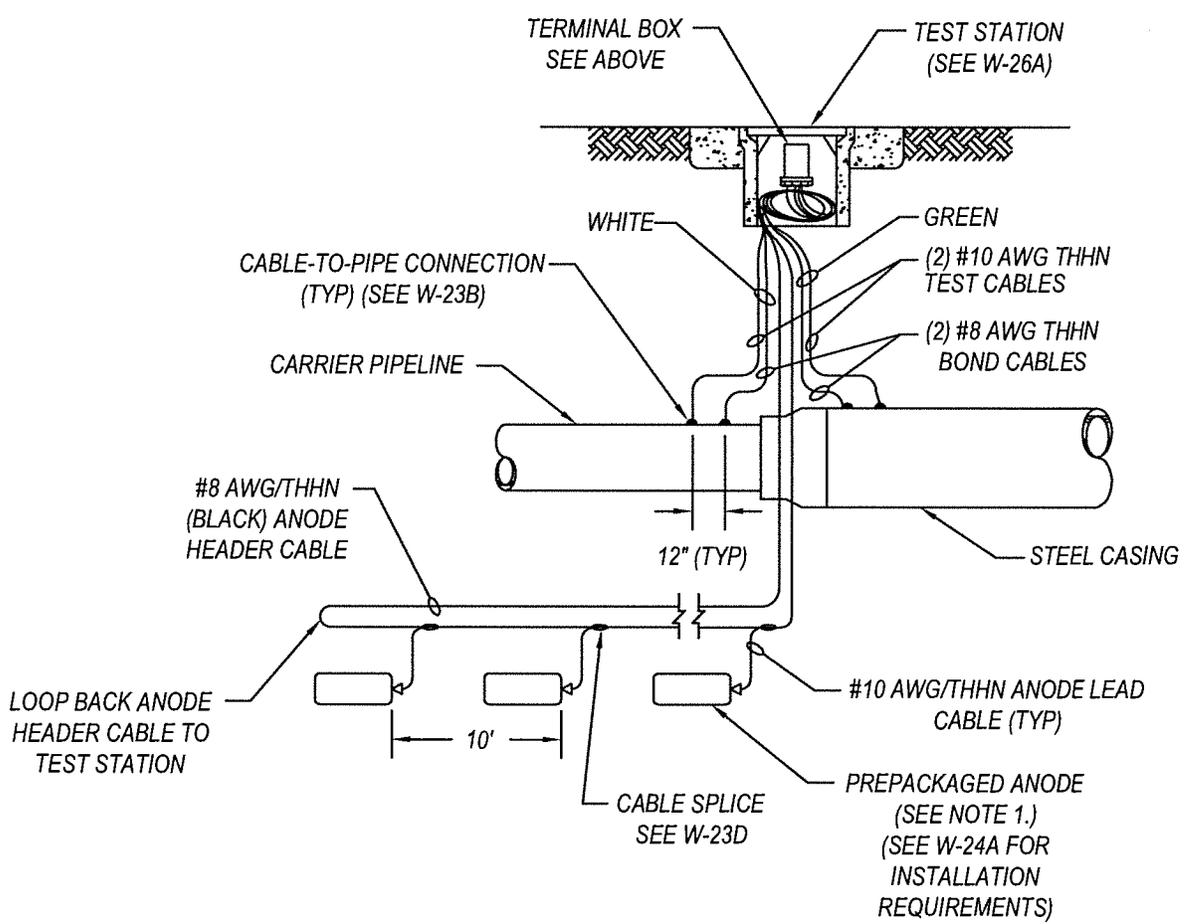
NONE

DWG NO.

W - 28D



CATS TERMINAL BOX



NOTES:

1. NUMBER AND SIZE OF ANODES SHALL BE DETERMINED BY THE PROJECT CORROSION ENGINEER.
2. CARRIER PIPE & CASING ARE TO BE ELECTRICALLY ISOLATED VIA CASING INSULATORS.
3. IF CARRIER PIPE IS NON-METALLIC DELETE WHITE CABLES AND EXOTHERMIC WELDS.
3. IDENTIFY CABLES PER DRAWING W-26C.

CITY OF NAPA

PUBLIC WORKS - WATER DIVISION

CATS - CASING ANODE TEST STATION

DATE REVISED	DECEMBER 2015
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APPROVED	<i>[Signature]</i>
SCALE	NONE

W - 28E
DWG NO.