

NOTES:

1. WHEN DETERMINED BY THE DISTRICT ENGINEER, TEST STATIONS WILL BE REQUIRED IN HEAVILY TRAFFICKED AREAS OR AREAS THAT ARE DIFFICULT TO ACCESS AND MAINTAIN.
2. TEST STATION SHALL BE INSTALLED BEHIND CURB AND OUT OF ROAD TRAFFIC IN LANDSCAPE OR SIDEWALK.
3. BOND CABLES MAY BE REMOVED FROM FLANGES, PROVIDED EPOXY COATING IS REMOVED USING A GRINDING TOOL UNTIL ALL WASHERS SEAT TO BARE, SHINY METAL ON THE FLANGE ASSEMBLIES.
4. ALL BOLTS SHALL BE STAINLESS STEEL TYPE 316, OR APPROVED EQUAL, AND ALL BOLTS, NUTS, AND WASHERS SHALL BE STAMPED IDENTIFYING THE GRADE OF STAINLESS STEEL. ANTI-SEIZE LUBRICANT SHALL BE APPLIED TO BOLT THREAD.
5. ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN POLYETHYLENE, PER NOTE 4., CP-37.
6. THIS DETAIL IS INTENDED FOR INSTALLATION ON PVC WATER MAINS ONLY. FOR CATHODIC PROTECTION OF FIRE HYDRANTS ATTACHED TO DUCTILE IRON WATER MAINS, SEE DETAIL CP-33.

Dublin San Ramon Services District

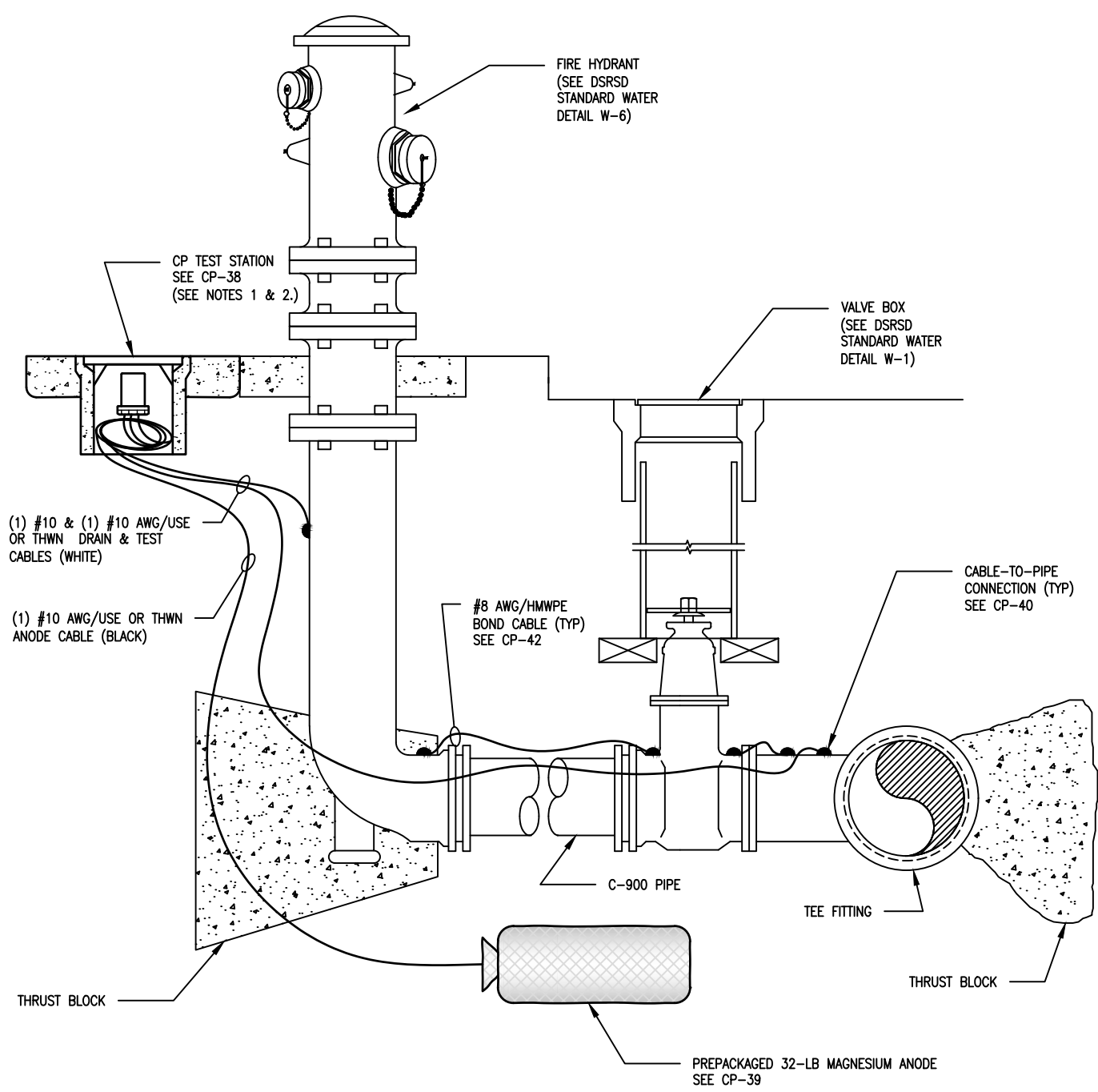
REVISION DATE
JUNE 2022

CP FOR DI FIRE HYDRANT

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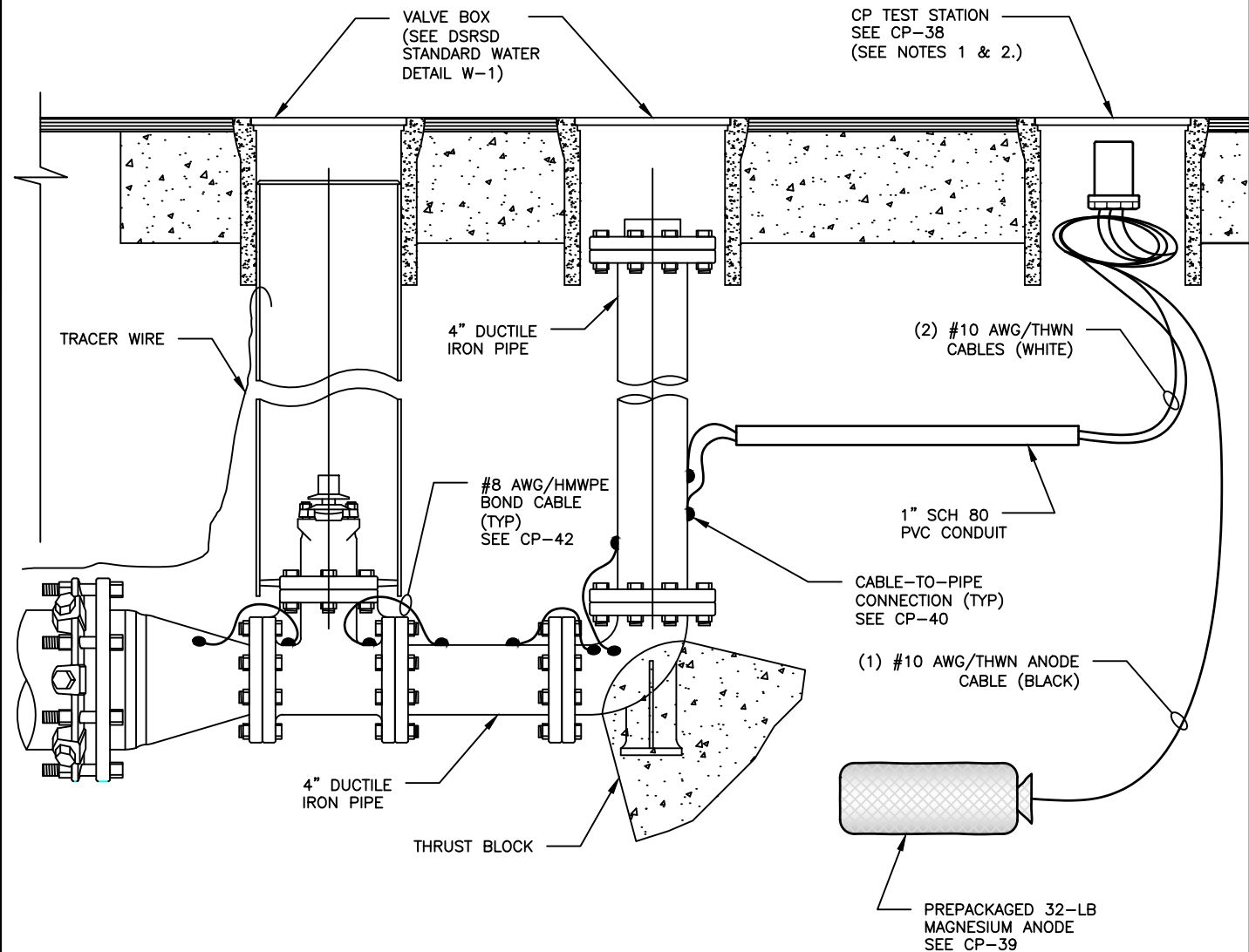
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CP-6



NOTES:

1. WHEN DETERMINED BY THE DISTRICT ENGINEER, TEST STATIONS WILL BE REQUIRED IN HEAVILY TRAFFICKED AREAS OR AREAS THAT ARE DIFFICULT TO ACCESS AND MAINTAIN.
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6. THIS DETAIL IS INTENDED FOR INSTALLATION ON PVC WATER MAINS ONLY. FOR CATHODIC PROTECTION OF FIRE HYDRANTS ATTACHED TO DUCTILE IRON WATER MAINS, SEE DETAIL CP-33.

Dublin San Ramon Services District	REVISION DATE JUNE 2022
CP FOR C-900 PIPE FIRE HYDRANT INSTALLATION	REVISED BY SC
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NOTES:

1. WHEN DETERMINED BY THE DISTRICT ENGINEER, TEST STATIONS MAY BE REQUIRED TO BE INSTALLED BEHIND CURB AND OUT OF ROAD TRAFFIC IN LANDSCAPE OR SIDEWALK.
2. TEST STATION SHALL BE INSTALLED WITHIN ROADWAY ABOVE PIPE.
3. BOND CABLES MAY BE REMOVED FROM FLANGES, PROVIDED EPOXY COATING IS REMOVED USING A GRINDING TOOL UNTIL ALL WASHERS SEAT TO BARE, SHINY METAL ON THE FLANGE ASSEMBLIES.
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5. ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN POLYETHYLENE, PER NOTE 4., CP-37.
6. THIS DETAIL IS INTENDED FOR INSTALLATION ON PVC WATER MAINS ONLY. FOR CATHODIC PROTECTION OF IN-LINE VALVES ATTACHED TO DUCTILE IRON WATER MAINS, SEE DETAIL CP-33.

Dublin San Ramon Services District

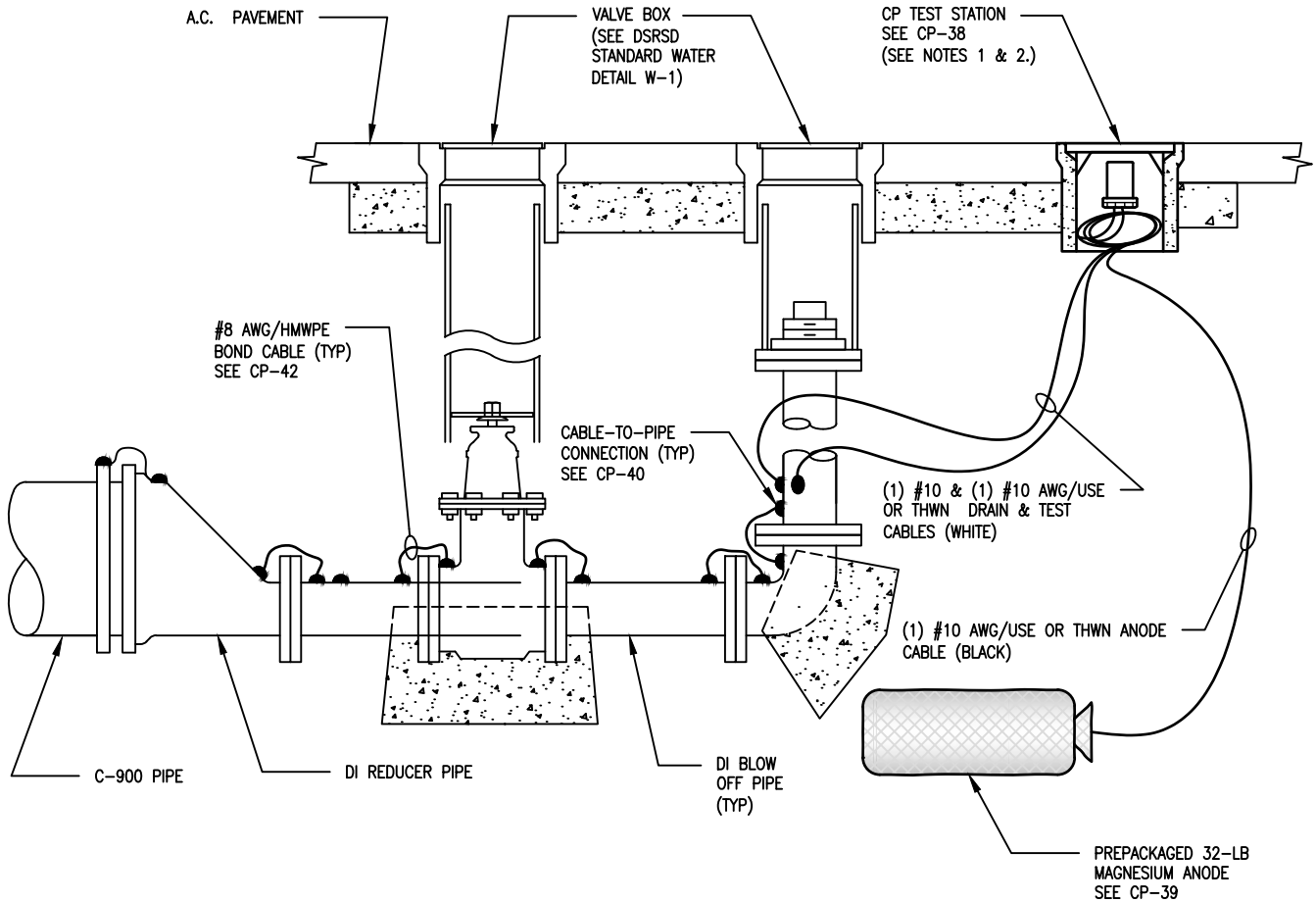
4" BLOW-OFF ASSEMBLY
6", 8", 10" AND 12" MAINS

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REVISION DATE
JULY 2022

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DRAWING
CP-9



NOTES:

1. WHEN DETERMINED BY THE DISTRICT ENGINEER, TEST STATIONS MAY BE REQUIRED TO BE INSTALLED BEHIND CURB AND OUT OF ROAD TRAFFIC IN LANDSCAPE OR SIDEWALK.
2. TEST STATION SHALL BE INSTALLED WITHIN ROADWAY ABOVE PIPE.
3. BOND CABLES MAY BE REMOVED FROM FLANGES, PROVIDED EPOXY COATING IS REMOVED USING A GRINDING TOOL UNTIL ALL WASHERS SEAT TO BARE, SHINY METAL ON THE FLANGE ASSEMBLIES.
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Dublin San Ramon Services District

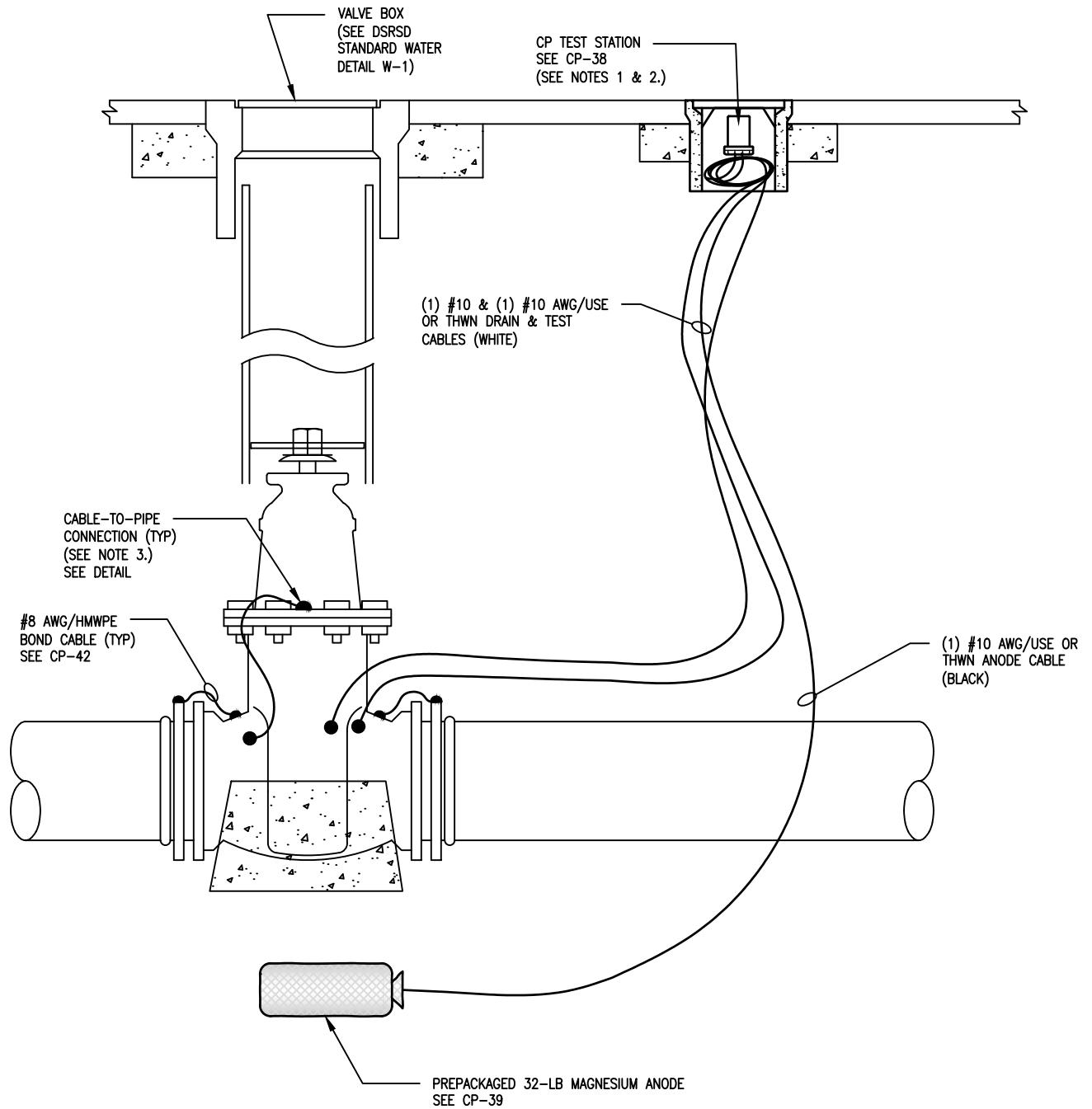
REVISION DATE
JULY 2022

CP FOR BLOW-OFF ASSEMBLY AT DEAD END
16" MAINS

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DRAWING
CP-10



NOTES:

1. WHEN DETERMINED BY THE DISTRICT ENGINEER, TEST STATIONS MAY BE REQUIRED TO BE INSTALLED BEHIND CURB AND OUT OF ROAD TRAFFIC IN LANDSCAPE OR SIDEWALK.
2. TEST STATION SHALL BE INSTALLED WITHIN ROADWAY ABOVE PIPE.
3. BOND CABLES MAY BE REMOVED FROM FLANGES, PROVIDED EPOXY COATING IS REMOVED USING A GRINDING TOOL UNTIL ALL WASHERS SEAT TO BARE, SHINY METAL ON THE FLANGE ASSEMBLIES.
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6. THIS DETAIL IS INTENDED FOR INSTALLATION ON PVC WATER MAINS ONLY. FOR CATHODIC PROTECTION OF IN-LINE VALVES ATTACHED TO DUCTILE IRON WATER MAINS, SEE DETAIL CP-33.

Dublin San Ramon Services District

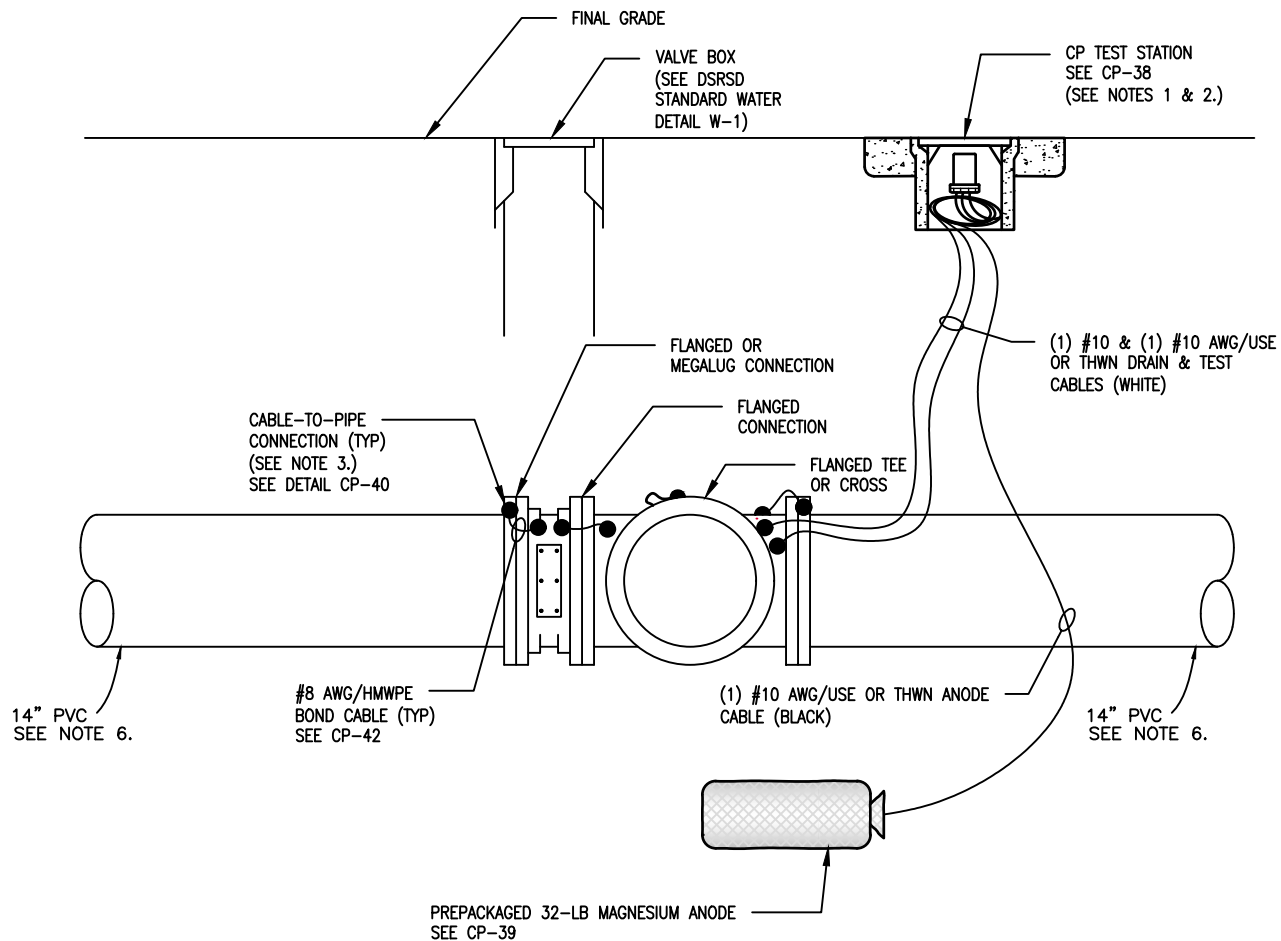
REVISION DATE
JULY 2022

CP FOR GATE VALVE INSTALLATION
12" GATE VALVE AND SMALLER

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DRAWING
CP-13



BFV AT TEE OR CROSS

NTS

NOTES:

1. WHEN DETERMINED BY THE DISTRICT ENGINEER, TEST STATIONS MAY BE REQUIRED TO BE INSTALLED BEHIND CURB AND OUT OF ROAD TRAFFIC IN LANDSCAPE OR SIDEWALK.
2. TEST STATION SHALL BE INSTALLED WITHIN ROADWAY ABOVE PIPE.
3. BOND CABLES MAY BE REMOVED FROM FLANGES, PROVIDED EPOXY COATING IS REMOVED USING A GRINDING TOOL UNTIL ALL WASHERS SEAT TO BARE, SHINY METAL ON THE FLANGE ASSEMBLIES.
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5. ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN POLYETHYLENE, PER NOTE 4., CP-37.
6. THIS DETAIL IS INTENDED FOR INSTALLATION ON PVC WATER MAINS ONLY. FOR CATHODIC PROTECTION OF IN-LINE VALVES ATTACHED TO DUCTILE IRON WATER MAINS, SEE DETAIL CP-33.

Dublin San Ramon Services District

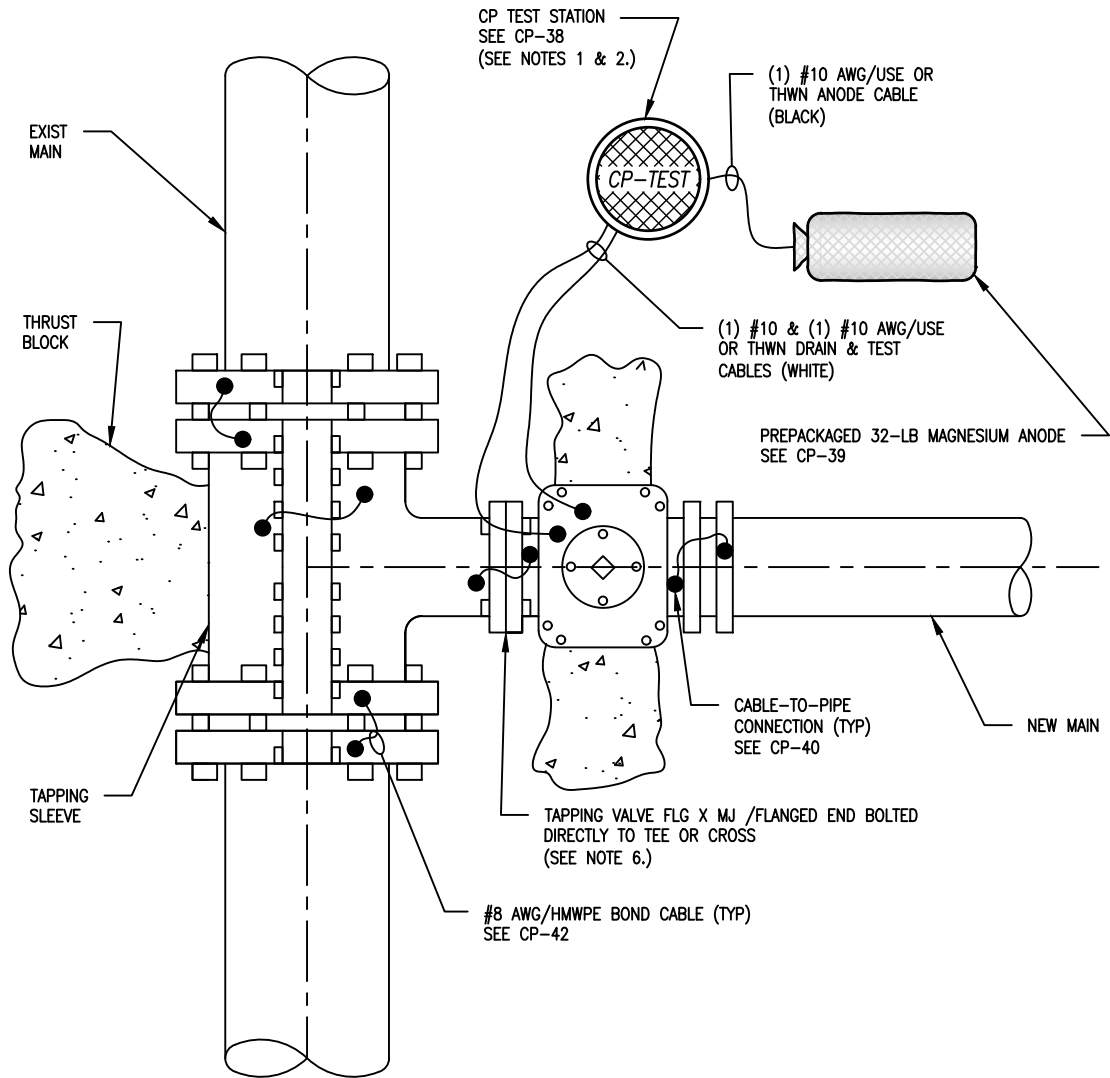
REVISION DATE
JULY 2022

CP FOR BUTTERFLY VALVE INSTALLATION
14" PVC PIPE AND TEE OR CROSS TO BFV

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SIGNED COPY ON FILE AT DISTRICT OFFICE

DRAWING
CP-14



NOTES:

1. WHEN DETERMINED BY THE DISTRICT ENGINEER, TEST STATIONS MAY BE REQUIRED TO BE INSTALLED BEHIND CURB AND OUT OF ROAD TRAFFIC IN LANDSCAPE OR SIDEWALK.
2. TEST STATION SHALL BE INSTALLED WITHIN ROADWAY ABOVE PIPE.
3. BOND CABLES MAY BE REMOVED FROM FLANGES, PROVIDED EPOXY COATING IS REMOVED USING A GRINDING TOOL UNTIL ALL WASHERS SEAT TO BARE, SHINY METAL ON THE FLANGE ASSEMBLIES.
4. ALL BOLTS SHALL BE STAINLESS STEEL TYPE 316, OR APPROVED EQUAL, AND ALL BOLTS, NUTS, AND WASHERS SHALL BE STAMPED IDENTIFYING THE GRADE OF STAINLESS STEEL. ANTI-SEIZE LUBRICANT SHALL BE APPLIED TO BOLT THREAD.
5. ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN POLYETHYLENE, PER NOTE 4., CP-37.
6. THIS DETAIL IS INTENDED FOR INSTALLATION ON PVC WATER MAINS ONLY. FOR CATHODIC PROTECTION OF IN-LINE VALVES ATTACHED TO DUCTILE IRON WATER MAINS, SEE DETAIL CP-33.

Dublin San Ramon Services District

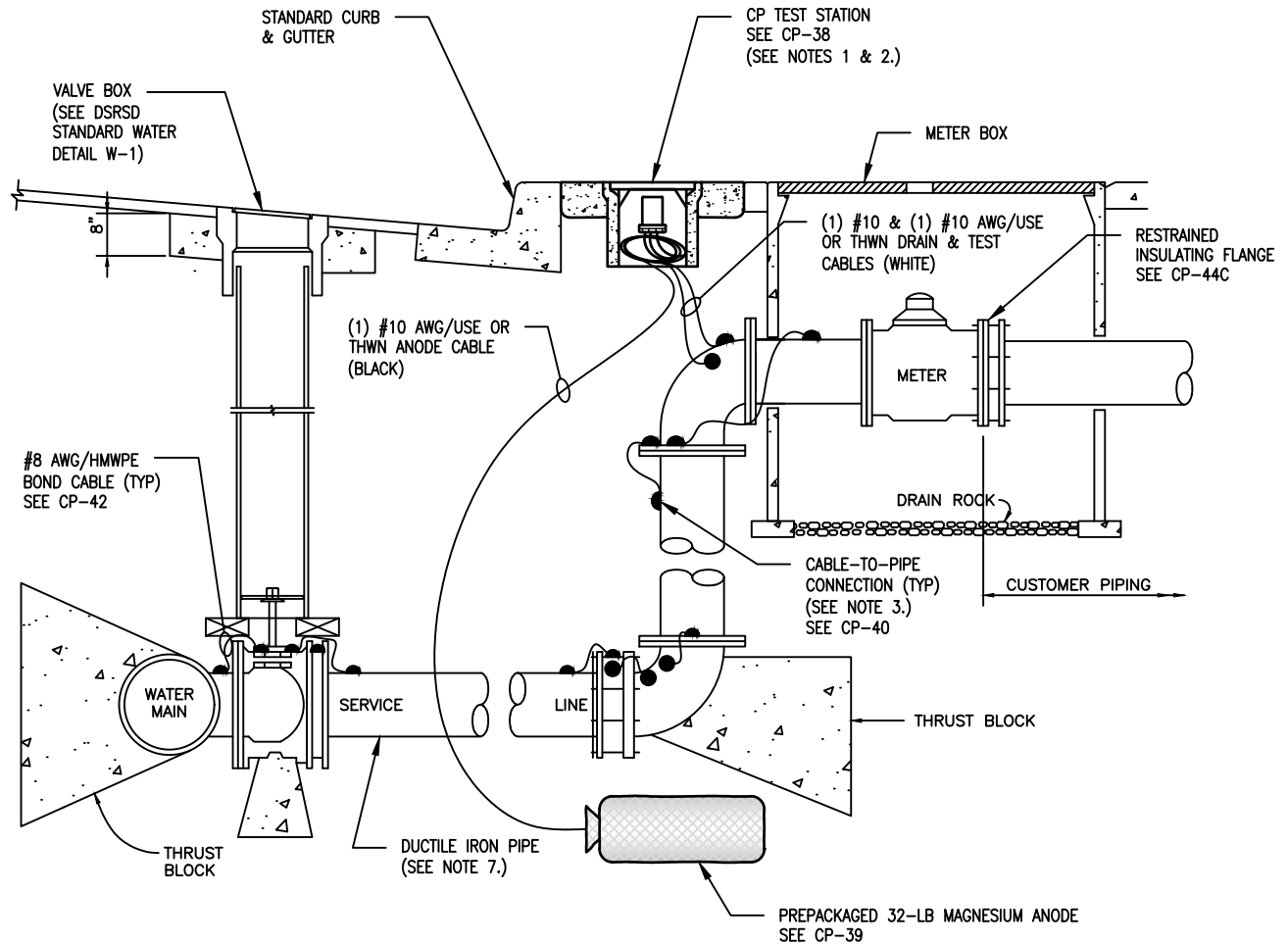
REVISION DATE
JULY 2022

CP FOR TAPPING SLEEVE AND TAPPING VALVE INSTALLATION

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DRAWING
CP-17



NOTES:

1. WHEN DETERMINED BY THE DISTRICT ENGINEER, TEST STATIONS WILL BE REQUIRED IN HEAVILY TRAFFICKED AREAS OR AREAS THAT ARE DIFFICULT TO ACCESS AND MAINTAIN.
2. TEST STATION SHALL BE INSTALLED BEHIND CURB AND OUT OF ROAD TRAFFIC IN LANDSCAPE OR SIDEWALK.
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6. THIS DETAIL IS INTENDED FOR INSTALLATION ON PVC WATER MAINS ONLY. FOR CATHODIC PROTECTION OF SERVICE LATERALS ATTACHED TO DUCTILE IRON WATER MAINS, SEE DETAIL CP-33.
7. IF INSTALLED PIPE IS C-900, ELIMINATE BONDING TO HORIZONTAL PIPE AND INSTALL A SINGLE BOND CABLE DIRECTLY FROM VALVE TO FLEXIBLE COUPLING.

Dublin San Ramon Services District

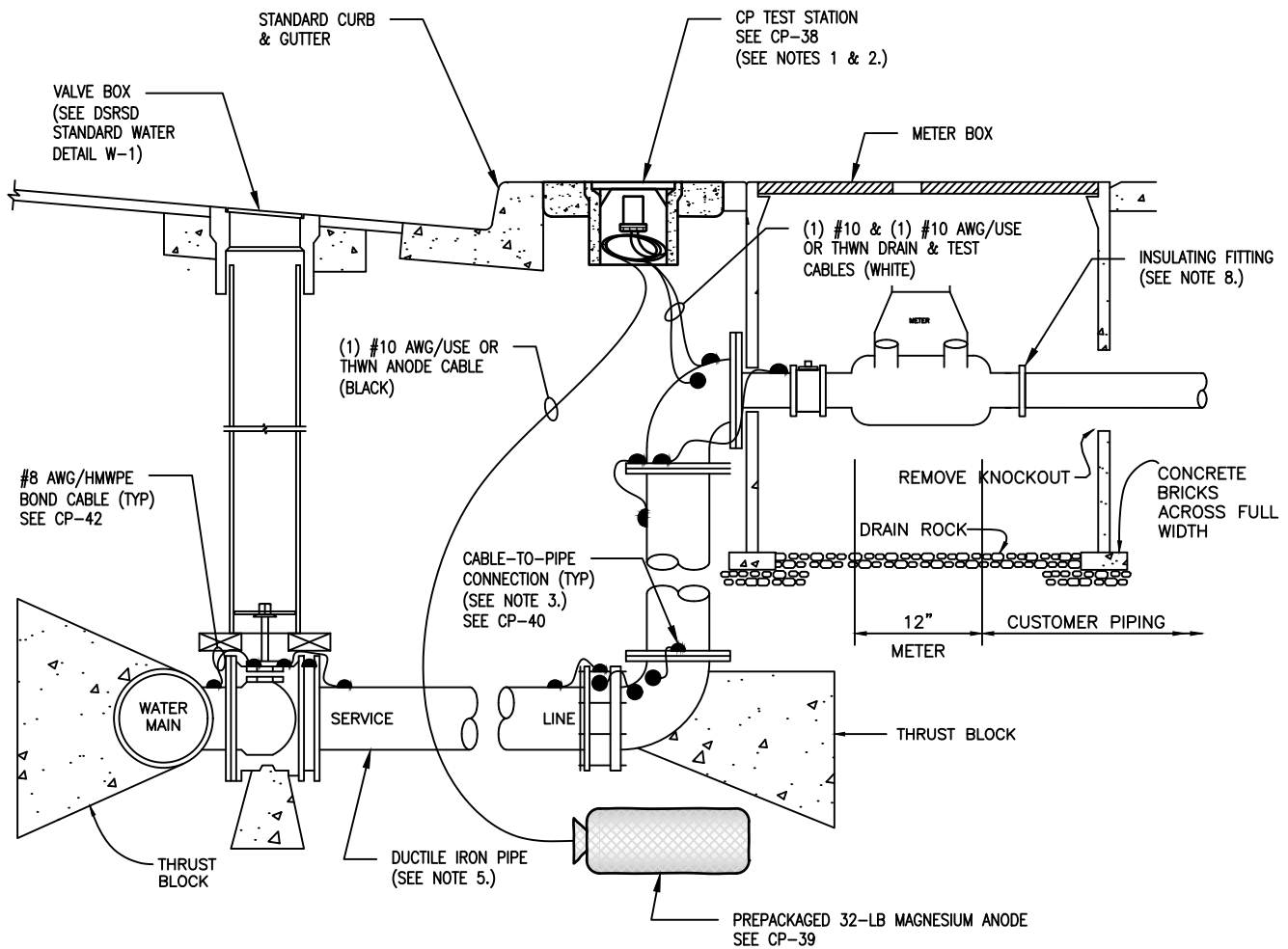
DATE
JUNE 2022

CP FOR 3" METER INSTALLATION

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DRAWING
CP-20



NOTES:

1. WHEN DETERMINED BY THE DISTRICT ENGINEER, TEST STATIONS WILL BE REQUIRED IN HEAVILY TRAFFICKED AREAS OR AREAS THAT ARE DIFFICULT TO ACCESS AND MAINTAIN.
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6. THIS DETAIL IS INTENDED FOR INSTALLATION ON PVC WATER MAINS ONLY. FOR CATHODIC PROTECTION OF SERVICE LATERALS ATTACHED TO DUCTILE IRON WATER MAINS, SEE DETAIL CP-33.
7. IF INSTALLED PIPE IS C-900, ELIMINATE BONDING TO HORIZONTAL PIPE AND INSTALL A SINGLE BOND CABLE DIRECTLY FROM VALVE TO FLEXIBLE COUPLING.
8. IF CUSTOMER'S PIPE IS NOT METALLIC, NO ELECTRICAL ISOLATION IS REQUIRED. IF CUSTOMER'S PIPE IS METALLIC, ELECTRICAL ISOLATION SHALL BE INSTALLED PER DETAIL CP-44, CP-44A, OR CP-44B.

Dublin San Ramon Services District

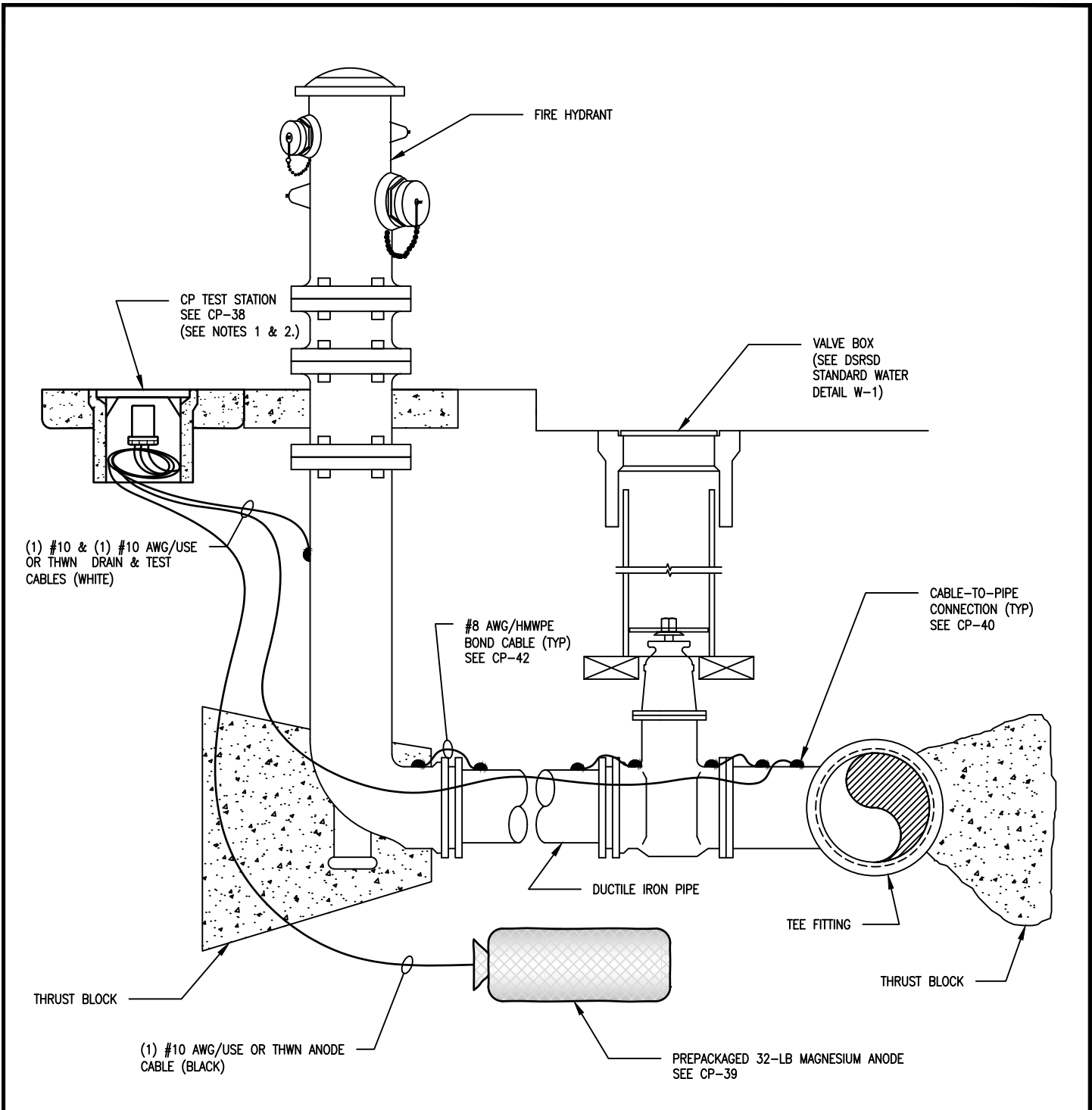
REVISION DATE
JUNE 2022

CP FOR 4-INCH SERVICE W/ 2-INCH METER INSTALLATION

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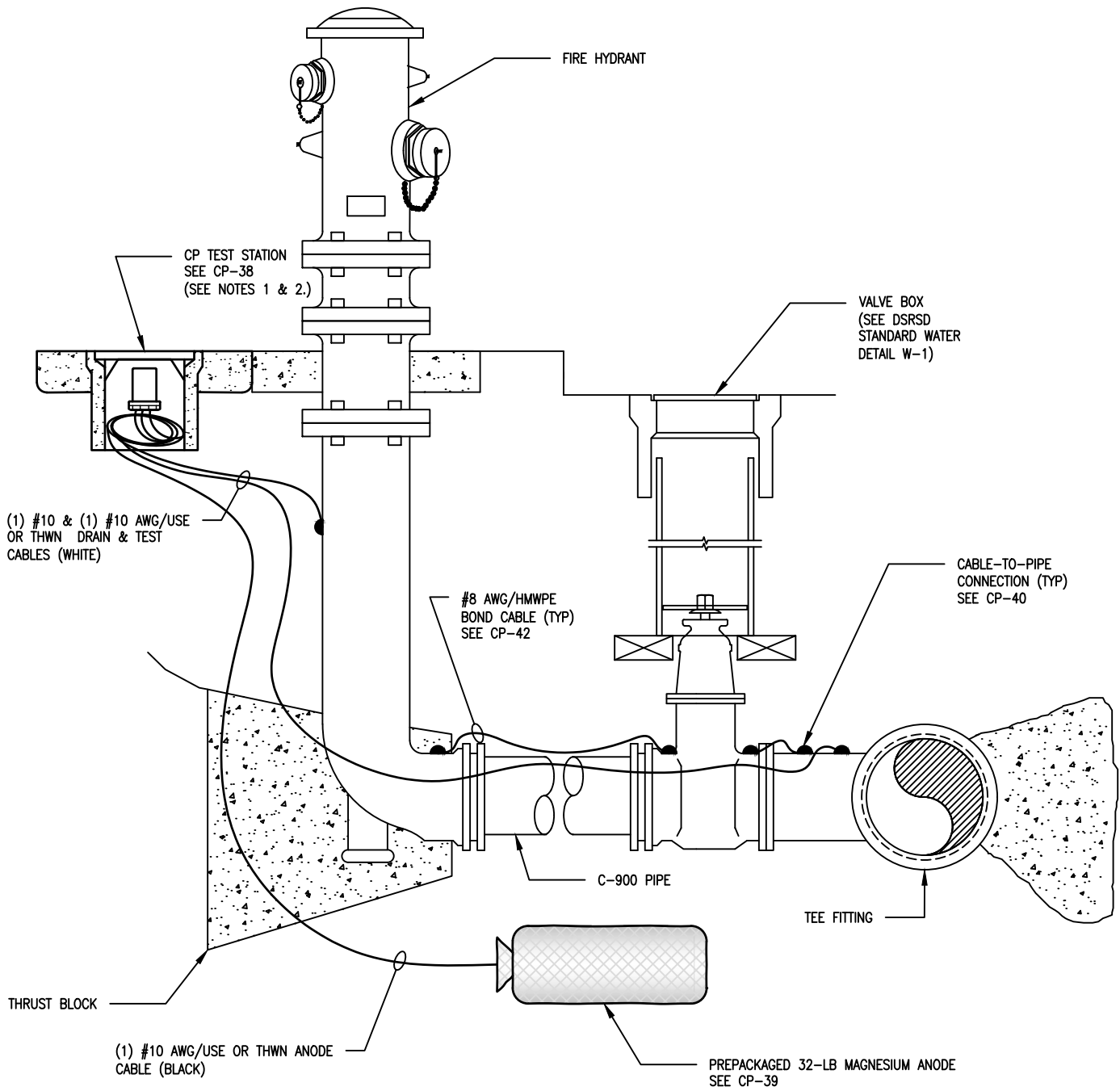
DRAWING
CP-20A



NOTES:

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Dublin San Ramon Services District	REVISION DATE JUNE 2022
CP FOR RECYCLED DI WATER FIRE HYDRANT INSTALLATION	REVISED BY SC
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NOTES:

1. WHEN DETERMINED BY THE DISTRICT ENGINEER, TEST STATIONS WILL BE REQUIRED IN HEAVILY TRAFFICKED AREAS OR AREAS THAT ARE DIFFICULT TO ACCESS AND MAINTAIN.
2. TEST STATION SHALL BE INSTALLED BEHIND CURB AND OUT OF ROAD TRAFFIC IN LANDSCAPE OR SIDEWALK.
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Dublin San Ramon Services District

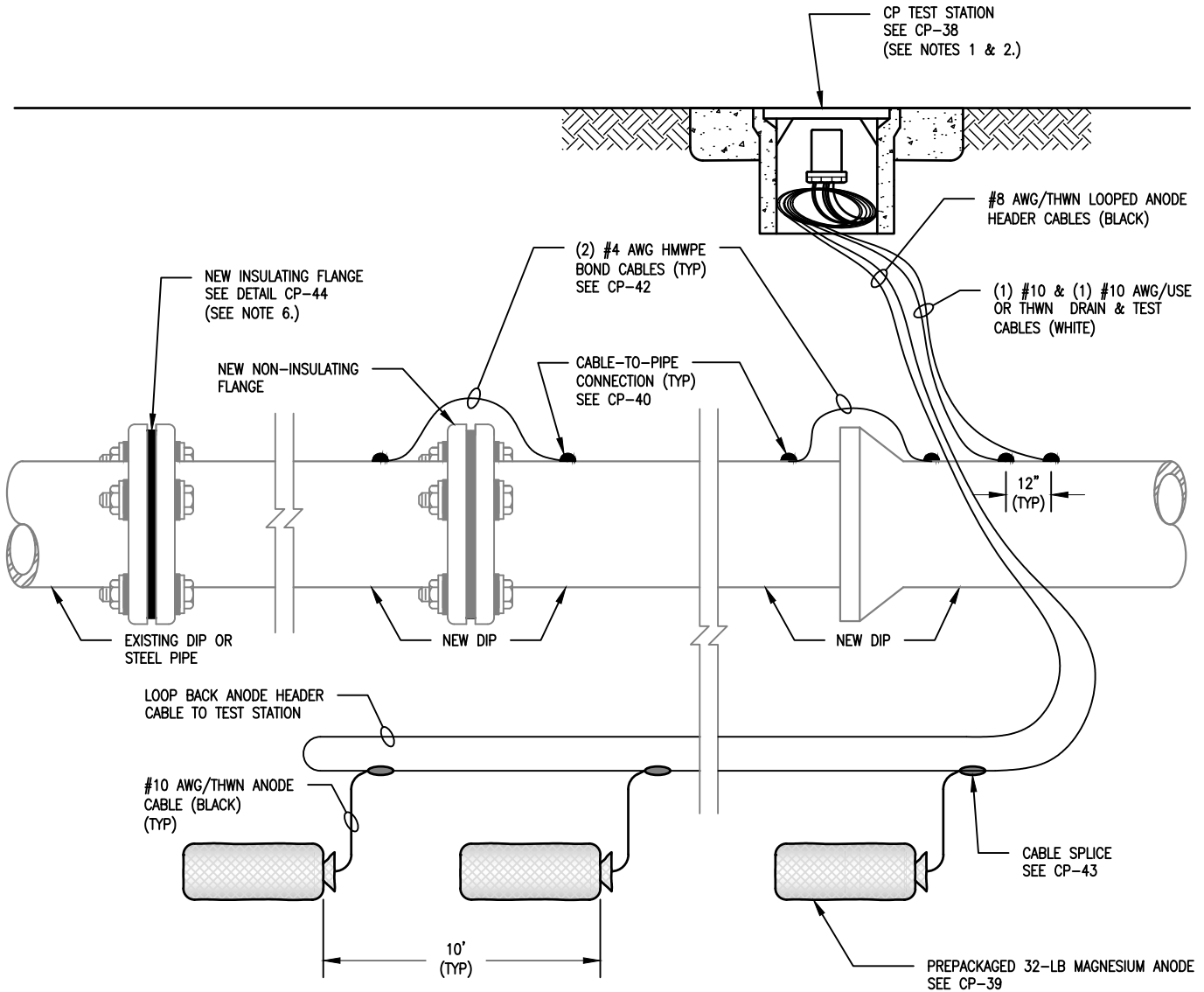
REVISION DATE
JUNE 2022

CP FOR C900 RECYCLED WATER FIRE HYDRANT INSTALLATION

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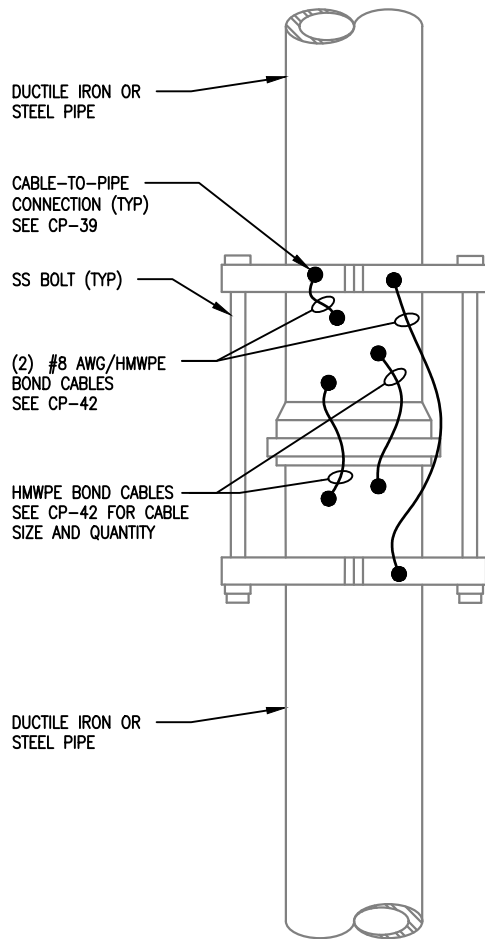
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CP-32A



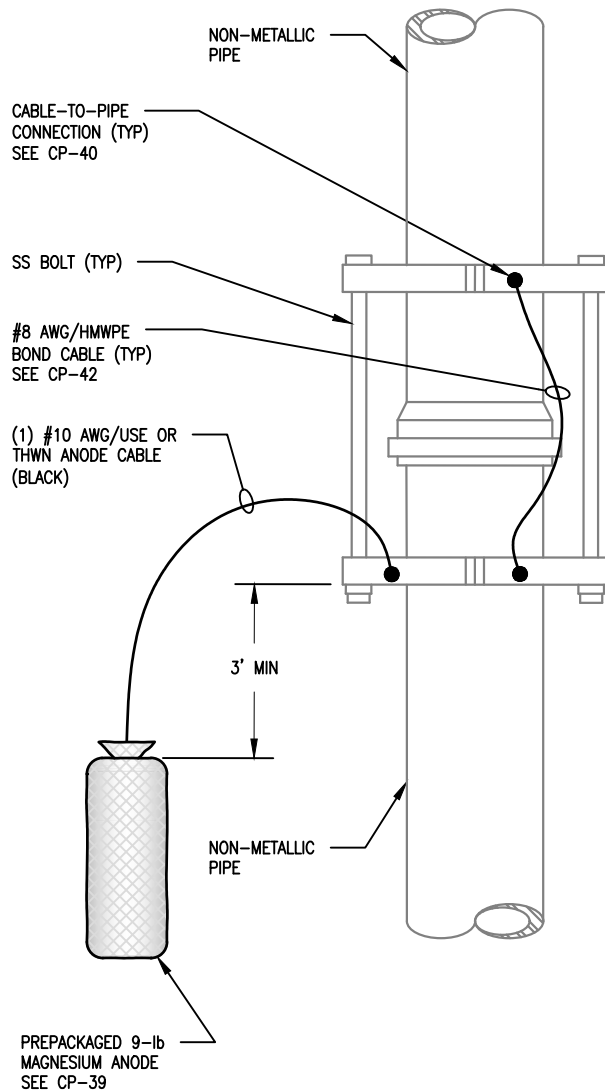
NOTES:

1. PIPELINE CATHODIC PROTECTION SHALL BE DESIGN BY A CORROSION ENGINEER, AND, DEPENDING ON PIPELINE LENGTH, CATHODIC PROTECTION WILL TYPICALLY INCLUDE TEST STATIONS AND ANODE BEDS INSTALLED AT REGULAR INTERVALS ALONG THE LENGTH OF THE PIPELINE.
2. TEST STATION SHALL BE INSTALLED BEHIND CURB AND OUT OF ROAD TRAFFIC IN LANDSCAPE OR SIDEWALK.
3. ALL FASTENER BOLTS SHALL BE STAINLESS STEEL TYPE 316, OR APPROVED EQUAL, AND ALL BOLTS, NUTS, AND WASHERS SHALL BE STAMPED IDENTIFYING THE GRADE OF STAINLESS STEEL. ANTI-SEIZE LUBRICANT SHALL BE APPLIED TO BOLT THREAD.
4. ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN POLYETHYLENE, PER NOTE 4., CP-37.
5. THIS DETAIL IS INTENDED FOR NEW DUCTILE IRON OR STEEL WATER PIPELINES.
6. ENSURE ELECTRICAL ISOLATION BETWEEN NEW DSRSD PROJECT PIPELINE AND EXISTING PIPELINES OR ANY PIPES OWNED OR OPERATED BY OTHERS.
7. ENSURE A MINIMUM DISTANCE OF 24-INCHES BETWEEN NEW DSRSD DUCTILE IRON PROJECT WATER MAINS AND ANY FOREIGN, METALLIC UTILITY PIPELINE. IF 24" MINIMUM DISTANCE CANNOT BE ACHIEVED, NOTIFY DSRSD REPRESENTATIVE FOR POTENTIAL FOREIGN PIPELINE INTERFERENCE MITIGATION REQUIREMENTS.
8. IF STEEL PIPE IS INSTALLED WITH MORTAR COATING, CATHODIC PROTECTION MAY NOT BE REQUIRED. MORTAR COATED PIPE WILL REQUIRE BONDING AND TEST STATION INSTALLATION, HOWEVER.

Dublin San Ramon Services District	DATE JUNE 2022
CP FOR DUCTILE IRON OR STEEL PIPELINE	DESIGNED SC
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DUCTILE IRON OR STEEL PIPE



NON-METALLIC PIPE

NOTES:

1. ALL FASTENER BOLTS SHALL BE STAINLESS STEEL TYPE 316, OR APPROVED EQUAL, AND ALL BOLTS, NUTS, AND WASHERS SHALL BE STAMPED IDENTIFYING THE GRADE OF STAINLESS STEEL. ANTI-SEIZE LUBRICANT SHALL BE APPLIED TO BOLT THREAD.
2. IF 316 STAINLESS STEEL RESTRAINED JOINTS ARE INSTALLED, NO COATINGS OR CATHODIC PROTECTION ARE REQUIRED.
3. IF CARBON STEEL RESTRAINED JOINTS ARE INSTALLED, THREE OPTIONS ARE AVAILABLE FOR CORROSION CONTROL AS DESCRIBED BELOW:
 - 3.1. FOR DUCTILE IRON PIPE, INSTALL BOND CABLES FROM DUCTILE IRON PIPE TO RESTRAINED COUPLING, WITH 8-MIL POLYETHYLENE COATING PER NOTE 4., CP-37.
 - 3.2. OPTION 1 FOR NON-METALLIC PIPE, PROVIDE WAX TAPE TO COMPLETELY COVER ALL BURIED CARBON STEEL ELEMENTS. NON-FIRMING WAX TAPE SHALL BE PROVIDED WITH A PROTECTIVE OUTER WRAP, SUCH AS 8-MIL POLYETHYLENE WRAP, OR APPROVED EQUAL. SEE DSRSD'S APPROVED MATERIALS LIST.
 - 3.3. OPTION 2 FOR NON-METALLIC PIPE, INSTALL CATHODIC PROTECTION AND BOND CABLES AS SHOWN IN THIS DETAIL, WITH 8-MIL POLYETHYLENE OUTER WRAP.
4. INSTALL THE ANODE 1-FT BELOW BOTTOM OF THE TRENCH WITH A MINIMUM OF 1-FT OF CLEANED NATIVE BACKFILL. ATTACH ANODE CABLE DIRECTLY TO THRUST RESTRAINT FITTING.
5. THIS DETAIL IS INTENDED FOR NEW DUCTILE IRON OR STEEL WATER PIPELINES.
6. ENSURE ELECTRICAL ISOLATION BETWEEN NEW DSRSD PROJECT PIPELINE AND EXISTING PIPELINES OR ANY PIPES OWNED OR OPERATED BY OTHERS.
7. NO TEST STATION IS REQUIRED FOR THESE FITTINGS, HOWEVER A RECORD OF ALL INSTALLATIONS SHALL BE PROVIDED TO THE PROJECT ENGINEER.

Dublin San Ramon Services District

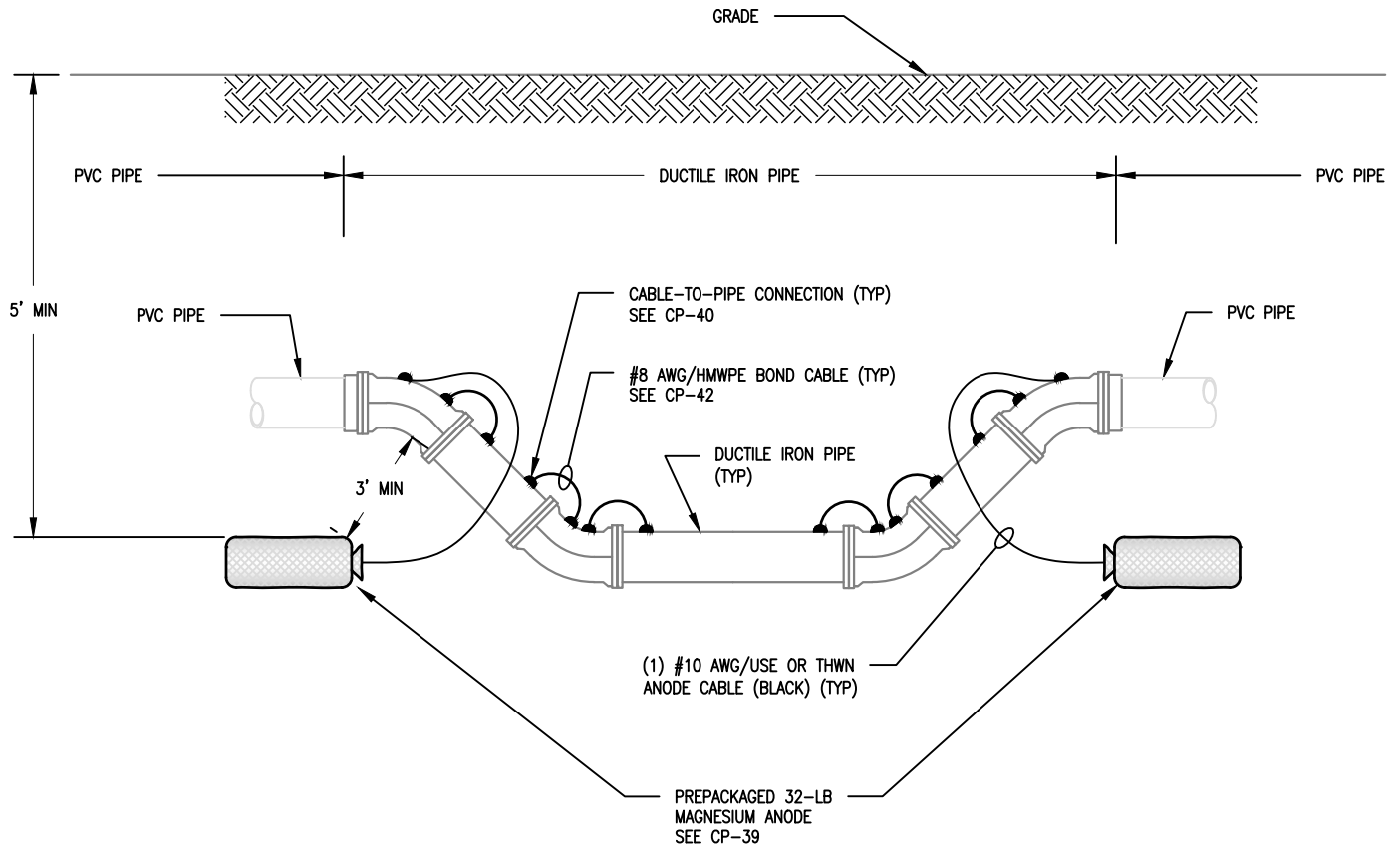
DATE
JUNE 2022

CP FOR MECHANICAL THRUST RESTRAINT

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SC

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CP-34



NOTES:

1. VERTICAL OFFSETS CONNECTED TO PVC PIPE SHALL BE INSTALLED WITH ANODES AS INDICATED IN THIS DETAIL. FOR VERTICAL OFFSETS CONNECTED TO DUCTILE IRON PIPE, REFER TO CP-33.
2. THIS DETAIL MAY BE USED FOR DISTANCES UP TO 100 LINEAR FEET OF DUCTILE IRON VERTICAL OFFSET, AS SHOWN ABOVE, FOR DEEPENING OR SHALLOWING OF THE ALIGNMENT.
3. TWO 32 POUND ANODES SHALL BE INSTALLED FOR EACH 50-FOOT OF DUCTILE IRON PIPE WITH THE TOP OF THE ANODE A MINIMUM OF 5- FEET BELOW GRADE AND 3- FEET OFF OF THE PIPELINE AND A MINIMUM OF 5- FEET BELOW FINISHED GRADE.
4. IF THE SPOOL PIECES ARE PVC PIPE, BOND THE DUCTILE IRON ELBOWS/FITTINGS TOGETHER BY INSTALLING ONE #8 AWG/HMWPPE BOND CABLE FROM FITTING TO FITTING ACROSS EACH JOINT.
5. ALL FASTENER BOLTS SHALL BE STAINLESS STEEL TYPE 316, OR APPROVED EQUAL, AND ALL BOLTS, NUTS, AND WASHERS SHALL BE STAMPED IDENTIFYING THE GRADE OF STAINLESS STEEL. ANTI-SEIZE LUBRICANT SHALL BE APPLIED TO BOLT THREAD.
6. ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN POLYETHYLENE, PER NOTE 4., CP-37.
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8. ENSURE ELECTRICAL ISOLATION BETWEEN NEW DSRSD PROJECT PIPELINE AND EXISTING PIPELINES OR ANY PIPES OWNED OR OPERATED BY OTHERS.
9. ENSURE A MINIMUM DISTANCE OF 24-INCHES BETWEEN NEW DSRSD DUCTILE IRON PROJECT WATER MAINS AND ANY FOREIGN, METALLIC UTILITY PIPELINE. IF 24" MINIMUM DISTANCE CANNOT BE ACHIEVED, NOTIFY DSRSD REPRESENTATIVE FOR POTENTIAL FOREIGN PIPELINE INTERFERENCE MITIGATION REQUIREMENTS.

Dublin San Ramon Services District

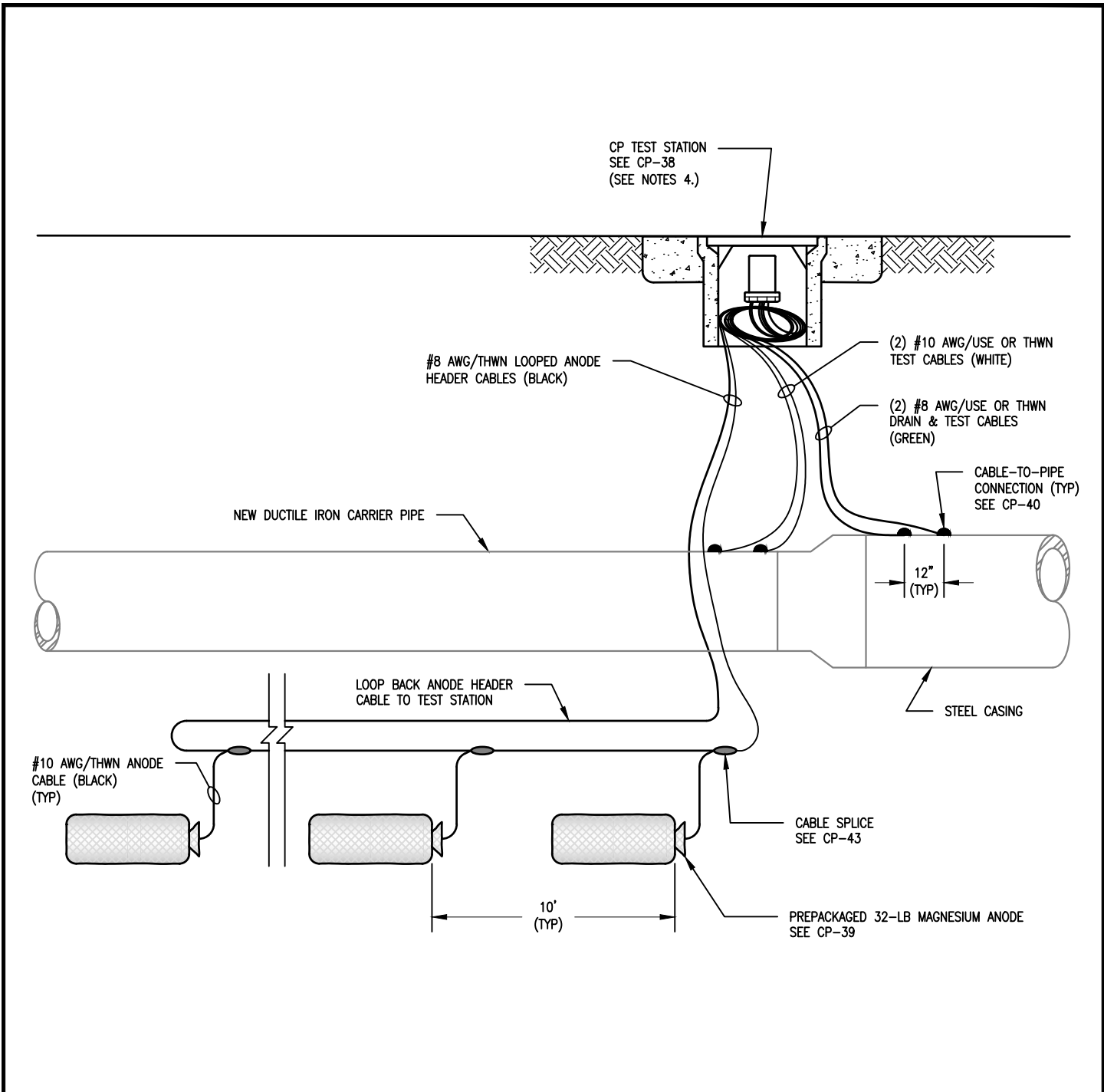
REVISION DATE
JUNE 2022

CP FOR PIPELINE VERTICAL OFFSET

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CP-35



NOTES:

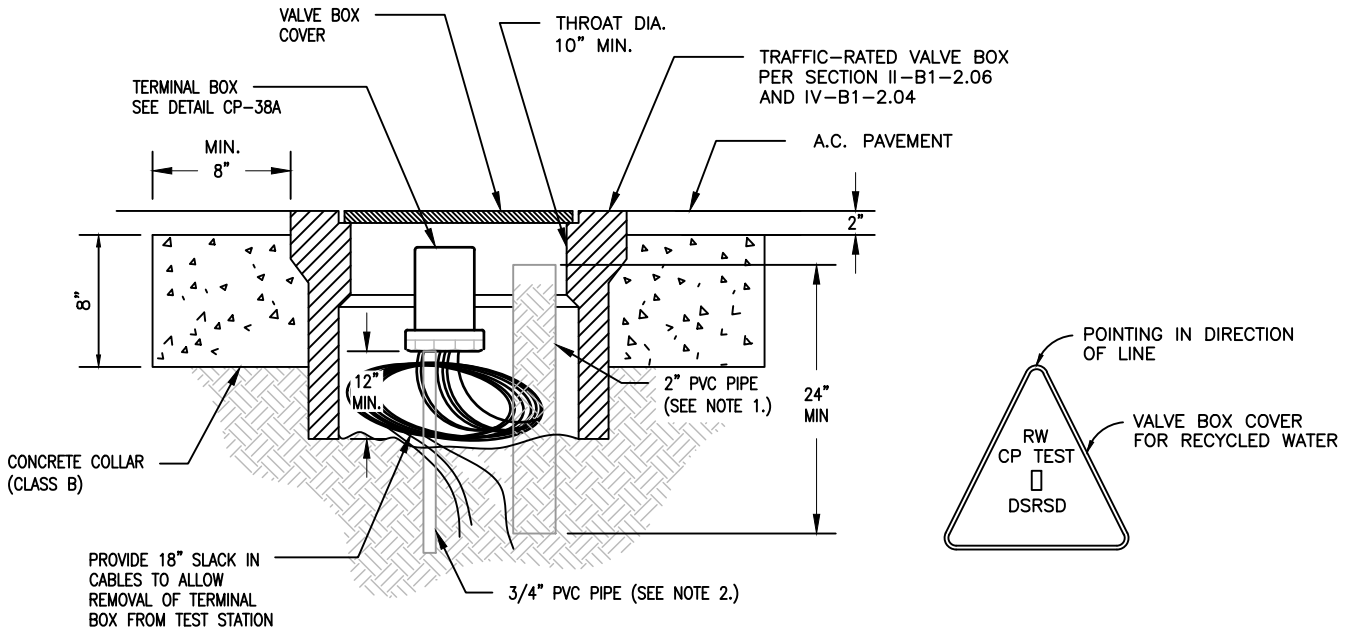
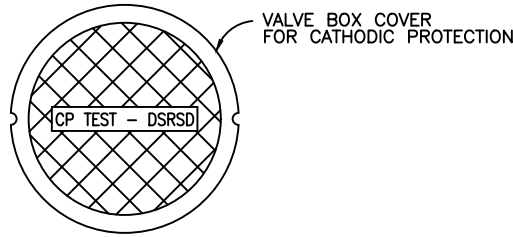
1. ENSURE ELECTRICAL ISOLATION BETWEEN THE CASING AND METALLIC CARRIER PIPE. AFTER INSTALLATION OF CASING AND CARRIER PIPE, AND BEFORE BACKFILL, DSRSD REPRESENTATIVE SHALL FIELD TEST TO CONFIRM ELECTRICAL ISOLATION. NO TESTING IS REQUIRED FOR NON-METALLIC PIPE.
2. FOR C-900 CARRIER PIPE INSTALLATIONS, TEST WIRES TO THE CARRIER PIPE SHALL NOT BE INSTALLED ON NON-METALLIC PIPE.
3. CASING CATHODIC PROTECTION SHALL BE DESIGN BY A CORROSION ENGINEER, AND, DEPENDING ON CASING LENGTH, CATHODIC PROTECTION WILL TYPICALLY INCLUDE A TEST STATION AND AN ANODE BED INSTALLED AT EACH END OF THE CASING.
4. TEST STATION SHALL BE INSTALLED BEHIND CURB AND OUT OF ROAD TRAFFIC IN LANDSCAPE OR SIDEWALK.
5. ALL DIRECT BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN POLYETHYLENE, PER NOTE 4., CP-37.

Dublin San Ramon Services District	DATE JUNE 2022
CP FOR STEEL CASINGS	DESIGNED SC
SIGNED COPY ON FILE AT DISTRICT OFFICE	DRAWING CP-36

GENERAL CATHODIC PROTECTION NOTES:

1. CATHODIC PROTECTION REQUIREMENTS ARE ESTABLISHED ACCORDING TO SITE SOIL CONDITIONS, AS DETERMINED BY A SITE SOIL STUDY. A SOIL CORROSIVITY STUDY SHALL BE PERFORMED UNDER THE SUPERVISION OF A NACE CERTIFIED CATHODIC PROTECTION SPECIALIST (CP4), A NACE CERTIFIED CORROSION SPECIALIST, OR A STATE CERTIFIED CORROSION ENGINEER FOR ALL PROJECTS INVOLVING NEW, BURIED WATER PRESSURE PIPING.
2. THE PIPELINES WHICH MAY BE THE SUBJECT OF THE CATHODIC PROTECTION SYSTEM ARE THE DUCTILE IRON, CAST IRON OR STEEL PIPES, METALLIC VALVES AND FITTINGS ON DOMESTIC & FIRE WATER PIPELINES. ALSO CATHODIC PROTECTION MAY BE REQUIRED FOR BURIED DUCTILE IRON WATER SERVICES, ARV'S, AND BLOW OFFS.
3. PREPACKAGED ANODE SIZE AND ALLOY SHALL BE INCLUDED IN A SITE CORROSION CONTROL DESIGN. ANODE ALLOYS MAY BE ZINC, STANDARD POTENTIAL (H-1) MAGNESIUM, OR HIGH-POTENTIAL MAGNESIUM ALLOY, DEPENDING ON SITE SOIL CONDITIONS.
4. ALL FERROUS METAL PIPE & FITTINGS SHALL BE WRAPPED WITH 8-MIL POLYETHYLENE IN ACCORDANCE WITH AWWA C-105.
5. ALL BURIED PIPING SHALL BE ELECTRICALLY ISOLATED FROM BUILDING PLUMBING, BUILDING STRUCTURES (SUCH AS CONCRETE SLABS AND WALLS), AND FOREIGN OR EXISTING PIPELINE CONNECTIONS PER DETAILS CP-44, CP-44A, CP-44B, OR CP-44C.
6. ALL NON-WELDED, NON-INSULATING JOINTS SHALL BE BONDED WITH HMWPE INSULATED COPPER CABLES FOR ELECTRICAL CONTINUITY OF THE DUCTILE IRON FITTINGS. INSTALL ONE #8 AWG/HMWPE BOND CABLE ON EACH JOINT FOR PIPE OF UP TO 6-INCHES IN DIAMETER. INSTALL ONE #4 AWG/HMWPE BOND CABLE ON EACH JOINT FOR PIPE OF UP TO 18-INCHES IN DIAMETER. INSTALL TWO #4 AWG/HMWPE BOND CABLES ON EACH JOINT FOR 20-INCH DIAMETER PIPE AND LARGER.
7. WHEN DETERMINED BY THE DISTRICT ENGINEER, TEST STATIONS ARE REQUIRED FOR ALL ANODE LOCATIONS FOR CATHODICALLY PROTECTED METALLIC PIPES AND FITTINGS, WITH THE EXCEPTION THAT ANODES MAY BE CONNECTED DIRECTLY TO ISOLATED ELBOWS AS SHOWN IN DWG. CP-34.
8. MULTIPLE FITTINGS CAN BE BONDED TOGETHER USING A #8 AWG/HMWPE CABLE AND PROTECTED WITH A SINGLE ANODE FOR C-900 PIPELINES. CONSULT THE PROJECT CORROSION ENGINEER IN COORDINATION WITH DSRSD ENGINEERING FOR ACCEPTABLE VARIANCES FROM THE DSRSD STANDARDS. FOR FITTINGS FROM 8-INCHES TO 18-INCHES IN DIAMETER USE ONE #4 AWG/HMWPE CABLE. FOR DIAMETERS OF 6-INCHES OR LESS USE ONE #8 AWG/HMWPE CABLE.
9. ALL TEST STATIONS SHALL BE PROVIDED WITH TWO STRUCTURE CABLES; ONE FOR TESTING AND ONE FOR DRAINING OF CATHODIC PROTECTION CURRENT IN THE CATHODIC PROTECTION CIRCUIT. FOR CATHODIC PROTECTION SYSTEMS IN WHICH ANODES ARE BONDED DIRECTLY TO STRUCTURES, NO SEPARATE STRUCTURE DRAIN CABLE IS REQUIRED AND A SINGLE, DIRECTLY BONDED ANODE CABLE SHALL BE PROVIDED WITH EACH INSTALLED ANODE.
10. ALL ANODES INSTALLED SHALL BE DOCUMENTED AND REPORT SHALL BE PROVIDED TO THE PROJECT CORROSION ENGINEER OR NACE SPECIALIST.
11. AFTER COMPLETION THE SYSTEM SHALL BE TESTED, AND THE FINDINGS CERTIFIED, UNDER THE SUPERVISION OF A REGISTERED CORROSION ENGINEER OR NACE CATHODIC PROTECTION SPECIALIST.

Dublin San Ramon Services District	DATE JULY 2022
CP GENERAL NOTES	DESIGNED SC / RM
SIGNED COPY ON FILE AT DISTRICT OFFICE	DRAWING CP-37

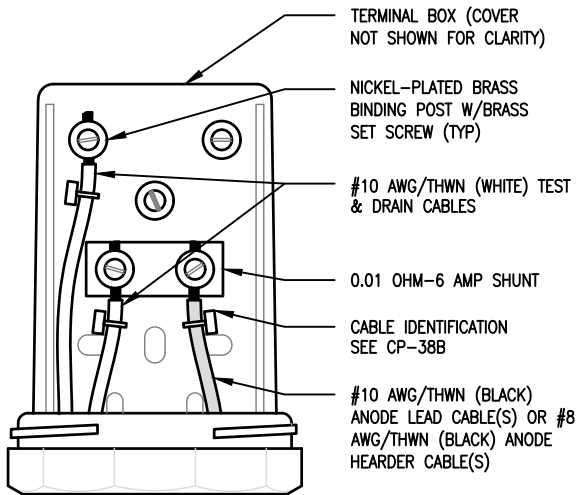


**CP TEST STATION BOX
WITH CAST IRON
TRAFFIC LID**

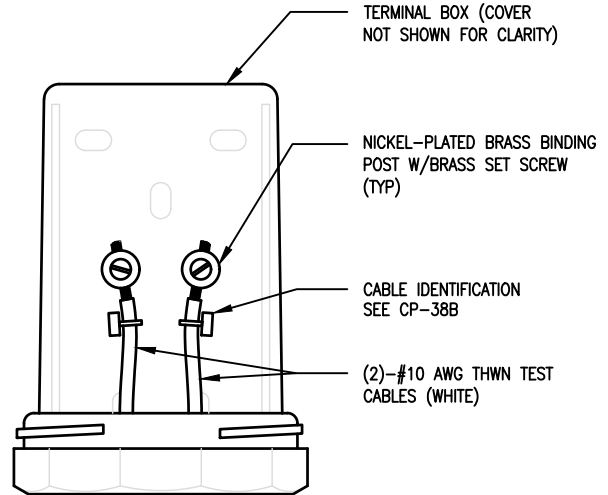
NOTES:

1. INSTALL 2" PVC PIPE IN CLEAN NATIVE SOIL. FILL PIPE WITH CLEAN SOIL, FREE FROM ROCKS & DEBRIS.
2. INSTALL 18" LENGTH OF 3/4" PVC PIPE TO ENSURE THAT THE TERMINAL BOX WILL REMAIN IN THE UPRIGHT POSITION. POSITION THE PIPE SO THAT THE TERMINAL BOX WILL BE AS HIGH AS POSSIBLE WITH THE CAST IRON LID STILL CLOSING PROPERLY.
3. A.C. AND SIDEWALK PAVEMENT TO COMPLY WITH STREET PAVEMENT OR SIDEWALK REQUIREMENTS.
4. ALL CP TEST STATIONS SHALL BE INSTALLED A MINIMUM OF 2-FT OUTSIDE OF AUTOMOBILE TRAFFIC LANES. IF CURBS ARE PRESENT, TEST STATIONS SHALL BE INSTALLED BEHIND CURBS IN TRAFFIC MEDIANS, SIDEWALKS, OR LANDSCAPING.
5. FOR TESTS STATION BOXES INSTALLED IN NON-TRAFFIC AREAS, CONCRETE COLLAR SHALL BE EXTENDED TO FINISH GRADE. SLOPE COLLAR TO DRAIN AWAY FROM LID.
6. RISER PIPE TO BE ONE CONTINUOUS PIECE OF PVC.
7. CP TEST STATION BOX COVERS FOR RECYCLED WATER MAINS SHALL BE TRIANGULAR WITH "RW CP TEST -DSRSD" INSCRIPTION CAST ON THE TOP SURFACE.

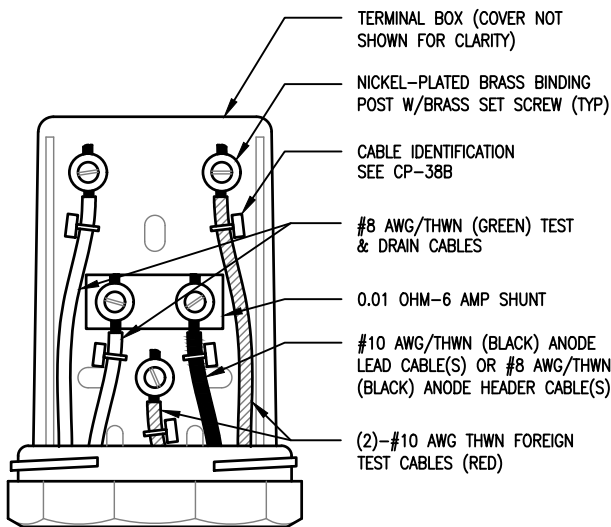
Dublin San Ramon Services District	DATE JUNE 2022
CP TEST STATION BOX INSTALLATION	DESIGNED SC
SIGNED COPY ON FILE AT DISTRICT OFFICE	DRAWING CP-38



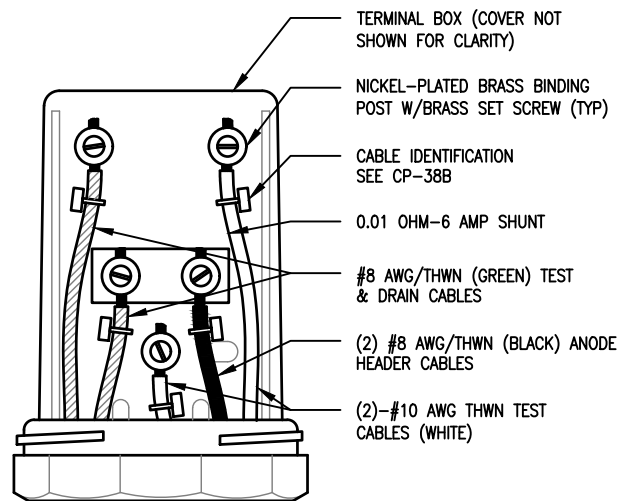
ATS TERMINAL BOX



CTS TERMINAL BOX



IJ TSA TERMINAL BOX



CATS TERMINAL BOX

Dublin San Ramon Services District

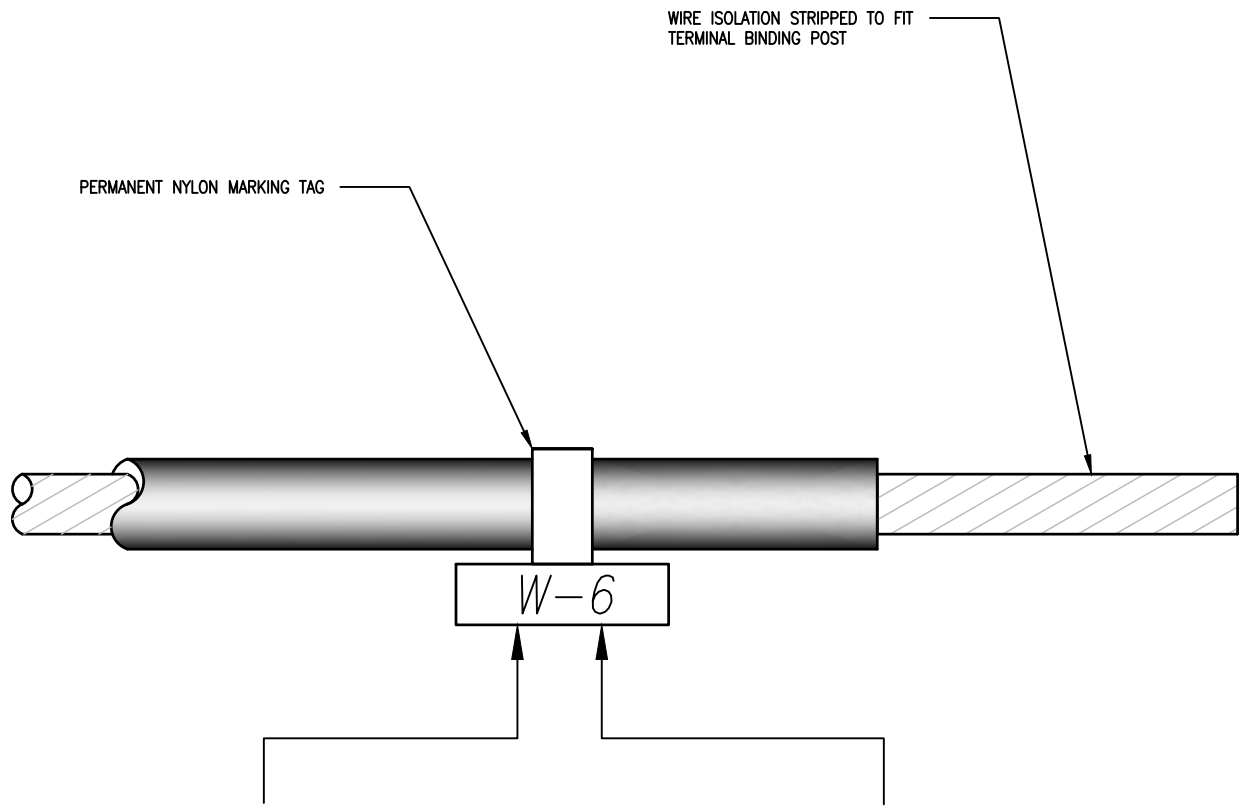
REVISION DATE
JUNE 2022

CP TERMINAL BOX

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SC

SIGNED COPY ON FILE AT DISTRICT OFFICE

DRAWING
CP-38A



ABBREVIATIONS

AN - ANODE
 DW - DOMESTIC WATER
 RW - RECYCLED WATER
 FW - FIRE WATER
 NPW - NON-POTABLE

NUMBER

PIPE DIAMETER (INCHES)
 ANODE NUMBER

Dublin San Ramon Services District

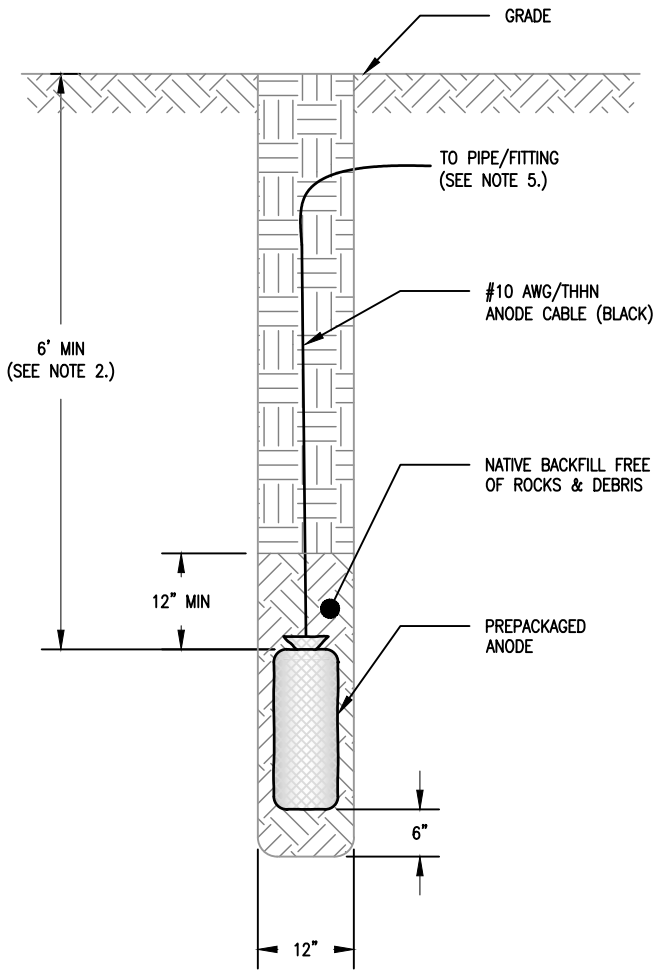
DATE
 JUNE 2022

CP CABLE IDENTIFICATION

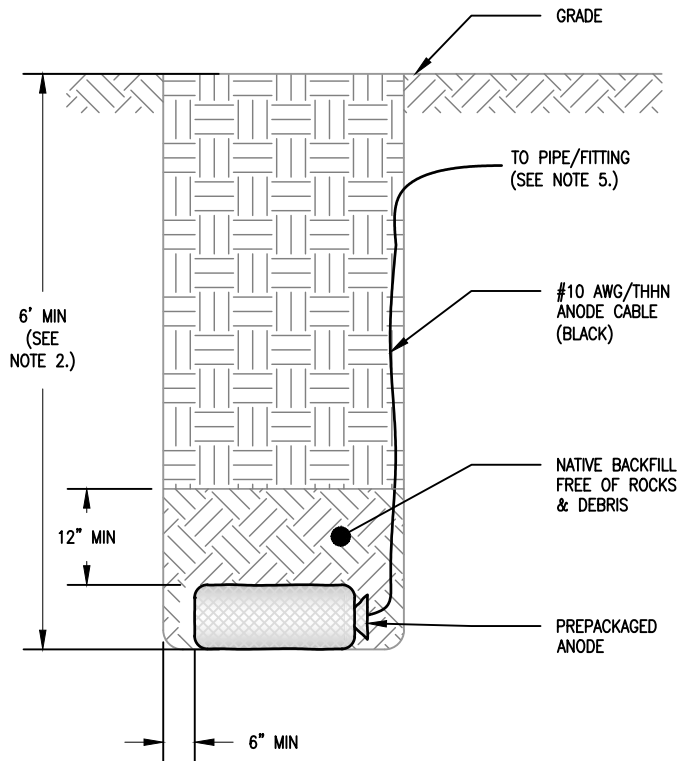
DESIGNED
 SC

SIGNED COPY ON FILE AT DISTRICT OFFICE

DRAWING
 CP-38B



VERTICAL INSTALLATION



HORIZONTAL INSTALLATION

NOTES:

1. INSTALL ANODES 3 FEET OFF THE PIPE/FITTING IN NATIVE SOIL.
2. FOR SACRIFICIAL ANODES PROTECTING DUCTILE IRON VALVES, FITTINGS & RISERS OF C900 PVC PIPELINES, ANODES MAY BE INSTALLED SUCH THAT THE TOP OF THE ANODE IS PLACED BELOW THE BOTTOM OF THE VALVE OR FITTING. FOR DUCTILE IRON PIPELINE INSTALLATIONS, ANODE SHALL BE INSTALLED TO A MINIMUM DEPTH OF 6 FEET AS INDICATED IN THIS DETAIL. A MINIMUM OF A 3 FEET DISTANCE SHALL BE MAINTAINED BETWEEN EACH ANODE AND THE DUCTILE IRON STRUCTURE IT PROTECTS IN ALL CASES.
3. THE ANODES MAY BE INSTALLED HORIZONTALLY OR VERTICALLY UPON DISCRETION OF THE CONTRACTOR.
4. MAINTAIN A MIN. DISTANCE OF 10 FEET BETWEEN ANODES IF MULTIPLE ANODES ARE INSTALLED.
5. CONNECT ANODE CABLE TO TEST STATION OR DIRECTLY TO PIPE OR FITTING AS SHOWN IN THE DRAWINGS.

Dublin San Ramon Services District

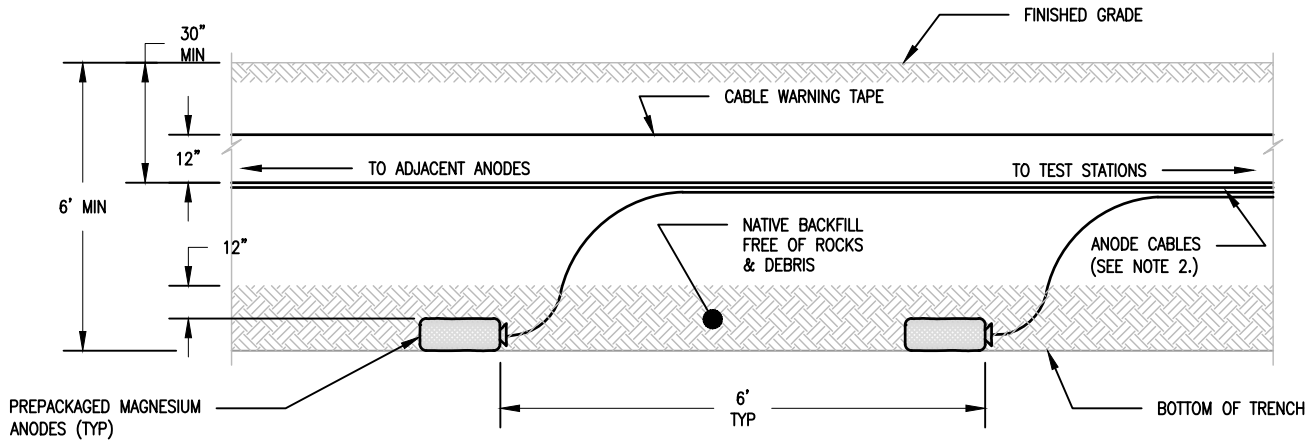
DATE
JUNE 2022

ANODE INSTALLATION – SINGLE ANODE

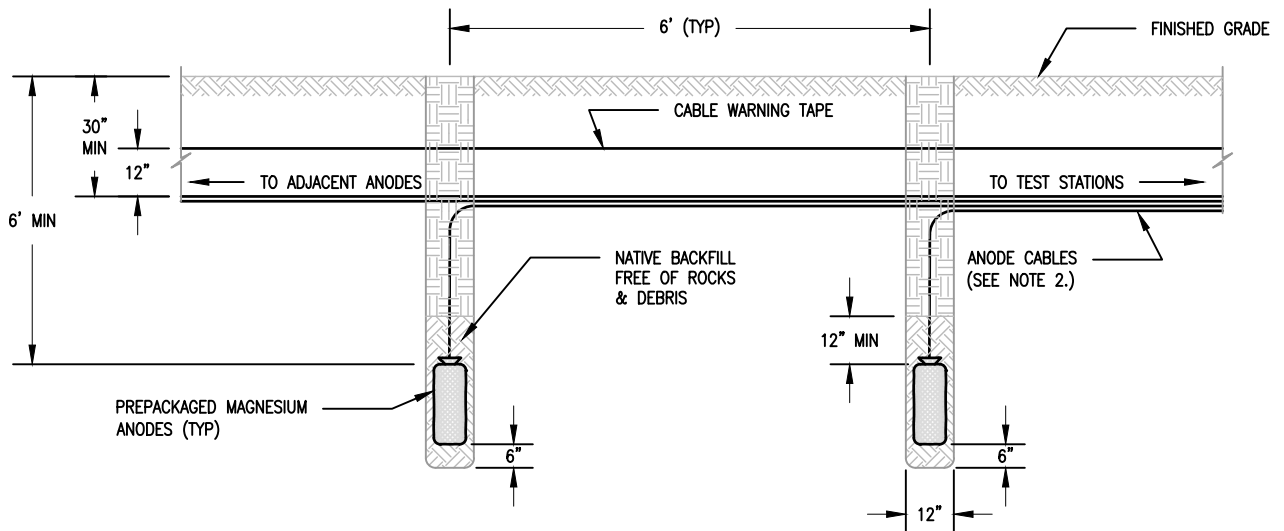
DESIGNED
SC

SIGNED COPY ON FILE AT DISTRICT OFFICE

DRAWING
CP-39



HORIZONTAL INSTALLATION



VERTICAL INSTALLATION

NOTES:

1. INSTALL ANODES 3 FEET OFF THE PIPE/FITTING IN NATIVE SOIL.
2. FOR SACRIFICIAL ANODES PROTECTING DUCTILE IRON VALVES, FITTINGS & RISERS OF C900 PVC PIPELINES, ANODES MAY BE INSTALLED SUCH THAT THE TOP OF THE ANODE IS PLACED BELOW THE BOTTOM OF THE VALVE OR FITTING. FOR DUCTILE IRON PIPELINE INSTALLATIONS, ANODE SHALL BE INSTALLED TO A MINIMUM DEPTH OF 6 FEET AS INDICATED IN THIS DETAIL. A MINIMUM OF A 3 FEET DISTANCE SHALL BE MAINTAINED BETWEEN EACH ANODE AND THE DUCTILE IRON STRUCTURE IT PROTECTS IN ALL CASES.
3. THE ANODES MAY BE INSTALLED HORIZONTALLY OR VERTICALLY UPON DISCRETION OF THE CONTRACTOR.
4. MAINTAIN A MIN. DISTANCE OF 10 FEET BETWEEN ANODES IF MULTIPLE ANODES ARE INSTALLED.
5. CONNECT ANODE CABLE TO TEST STATION OR DIRECTLY TO PIPE OR FITTING AS SHOWN IN THE DRAWINGS.

Dublin San Ramon Services District

DATE
JUNE 2022

ANODE INSTALLATION – MULTIPLE ANODES

DESIGNED
SC

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DRAWING
CP-39A

FILL W/EPOXY TO COVER ALL EXPOSED STEEL & COPPER A MINIMUM OF 1/4"

EXOTHERMIC WELD
SEE CP-41 OR CP-41A

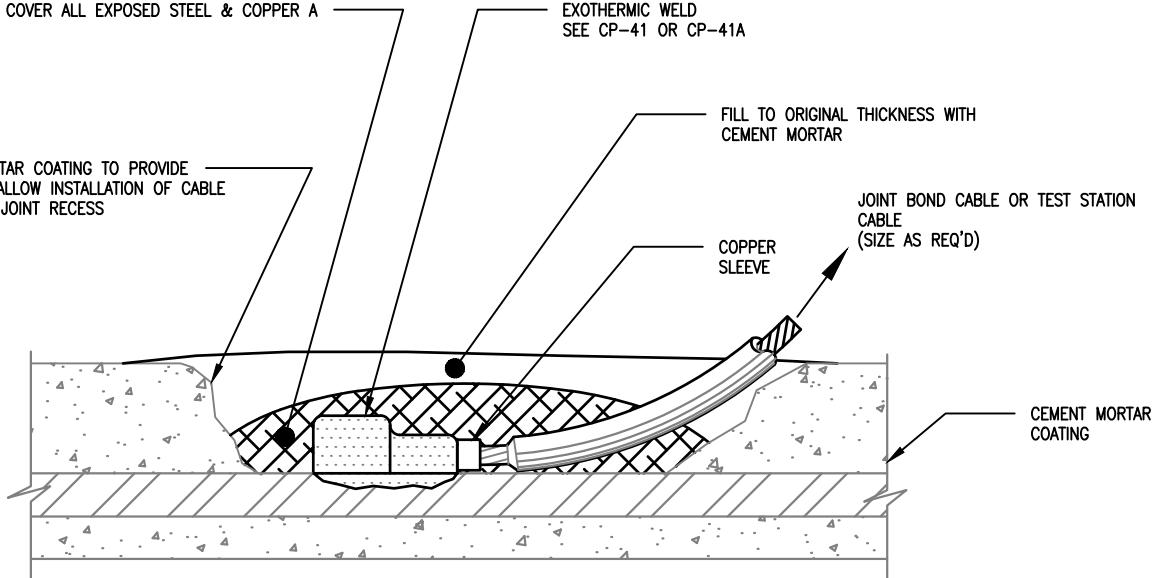
CHIP BACK MORTAR COATING TO PROVIDE CLEARANCE TO ALLOW INSTALLATION OF CABLE CONNECTION IN JOINT RECESS

FILL TO ORIGINAL THICKNESS WITH CEMENT MORTAR

JOINT BOND CABLE OR TEST STATION CABLE (SIZE AS REQ'D)

COPPER SLEEVE

CEMENT MORTAR COATING



MORTAR COATED STEEL PIPE

FILL W/EPOXY TO COVER ALL EXPOSED STEEL & COPPER A MINIMUM OF 1/4"

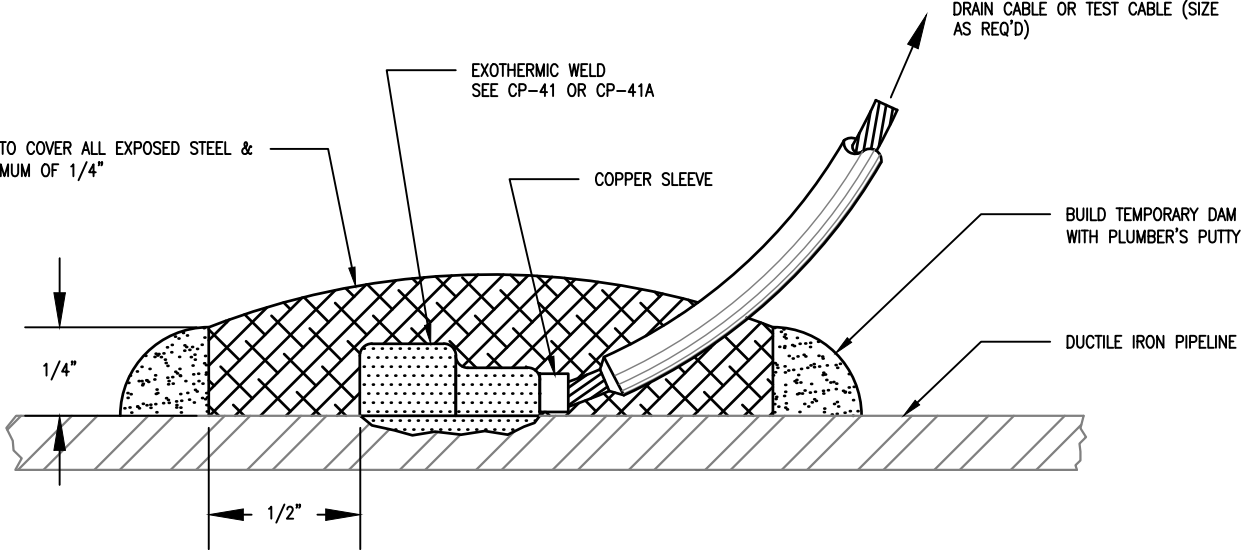
EXOTHERMIC WELD
SEE CP-41 OR CP-41A

DRAIN CABLE OR TEST CABLE (SIZE AS REQ'D)

COPPER SLEEVE

BUILD TEMPORARY DAM WITH PLUMBER'S PUTTY

DUCTILE IRON PIPELINE



DUCTILE IRON PIPE

NOTE:

1. COATING MAY CONSIST OF ANY OF THE FOLLOWING, OR APPROVED EQUALS:
 - 1.1. TWO PART LIQUID EPOXY WITH PUTTY DAM, AS SHOWN
 - 1.2. PROPOXY 20 EPOXY STICK.
2. COATING SHALL COVER ALL COPPER AND ANY STEEL OR DUCTILE IRON SURFACE THAT WAS CLEANED AND PREPARED FOR CADWELD CONNECTION.

Dublin San Ramon Services District

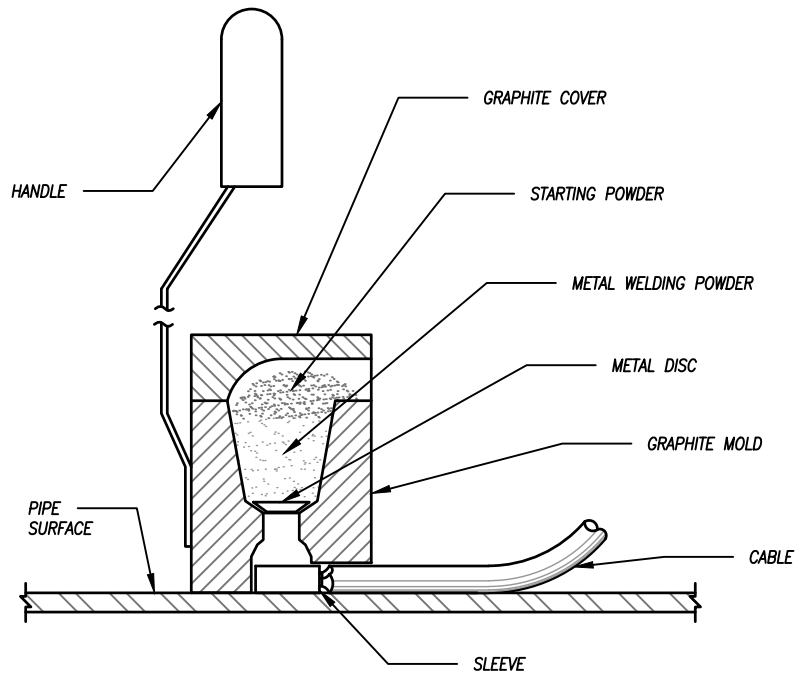
REVISION DATE
JUNE 2022

CP STRUCTURE-TO-CABLE CONNECTION

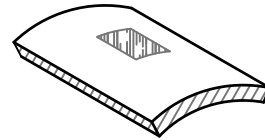
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SIGNED COPY ON FILE AT DISTRICT OFFICE

DRAWING
CP-40



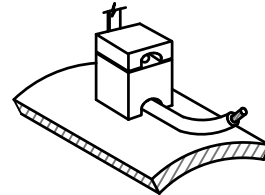
STEP 1. FILE STRUCTURE CONNECTION AREA TO BARE SHINY METAL AND CLEAN.



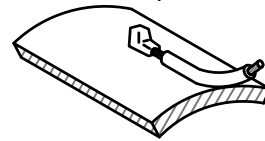
STEP 2. STRIP ISOLATION FROM WIRE. ATTACH SLEEVE REQUIRED ON #6 AWG/WIRE OR SMALLER.



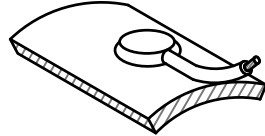
STEP 3. HOLD MOLD FIRMLY WITH OPENING AWAY FROM OPERATOR AND IGNITE WITH FLINT GUN.



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



STEP 5. COVER CONNECTION AND EXPOSED STRUCTURE SURFACE PER DETAIL CP-40.



NOTE:
PROCEDURE SHOWN ABOVE IS TO BE USED AS A GENERAL GUIDE ONLY. CONSULT MANUFACTURER'S LITERATURE FOR SPECIFIC INSTALLATION INSTRUCTIONS.

Dublin San Ramon Services District

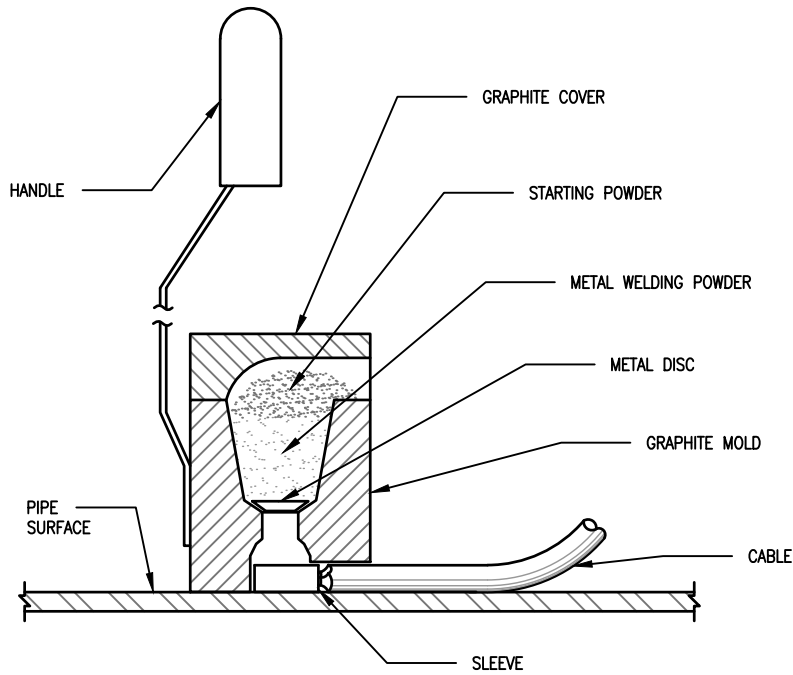
REVISION DATE
JUNE 2022

HORIZONTAL EXOTHERMIC WELD

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SC

SIGNED COPY ON FILE AT DISTRICT OFFICE

DRAWING
CP-41



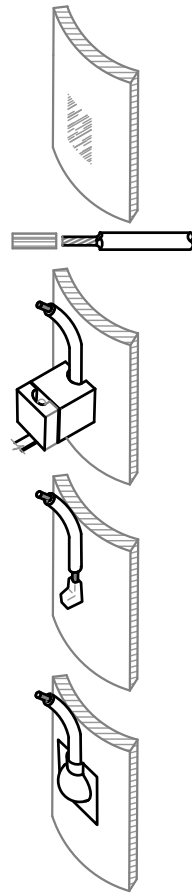
STEP 1. FILE STRUCTURE CONNECTION ARE TO BARE SHINY METAL AND CLEAN. →

STEP 2. STRIP ISOLATION 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. COVER CONNECTION AND EXPOSED STRUCTURE SURFACE PER CP-40 →



NOTE:
PROCEDURE SHOWN ABOVE IS TO BE USED AS A GENERAL GUIDE ONLY. CONSULT MANUFACTURER'S LITERATURE FOR SPECIFIC INSTALLATION INSTRUCTIONS.

Dublin San Ramon Services District

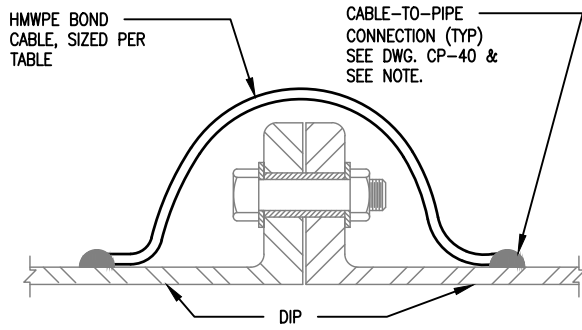
REVISION DATE
JUNE 2022

VERTICAL EXOTHERMIC WELD

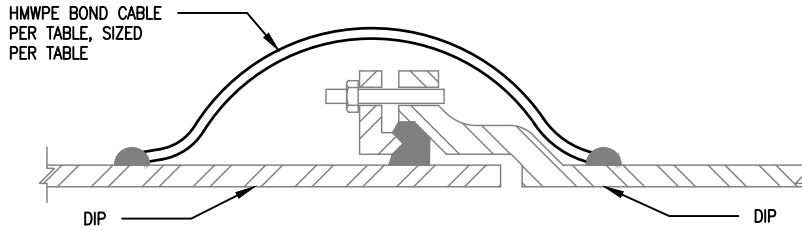
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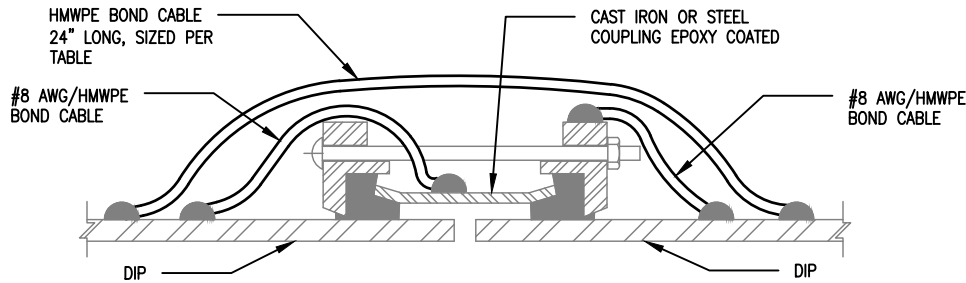
DRAWING
CP-41A



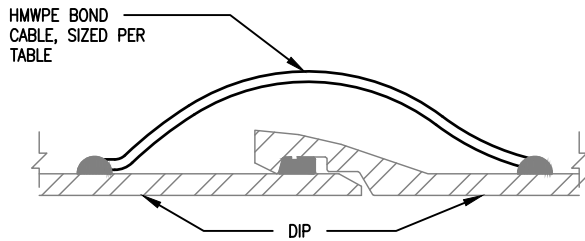
FLANGED JOINT



MECHANICAL JOINT



FLEXIBLE COUPLING



NOTE:

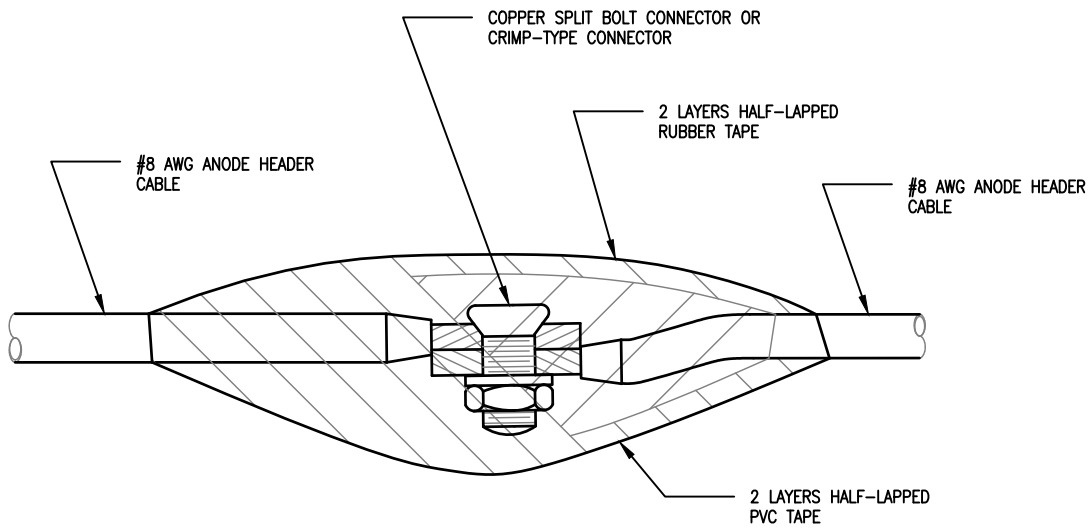
1. DO NOT INSTALL BOND CABLES ACROSS INSULATING JOINTS.
2. EXOTHERMIC WELD CONNECTIONS FOR DUCTILE IRON PIPE SHALL BE INSTALLED A MINIMUM OF 6-INCHES DISTANCE FROM ADJACENT WELDS.

TABLE 1

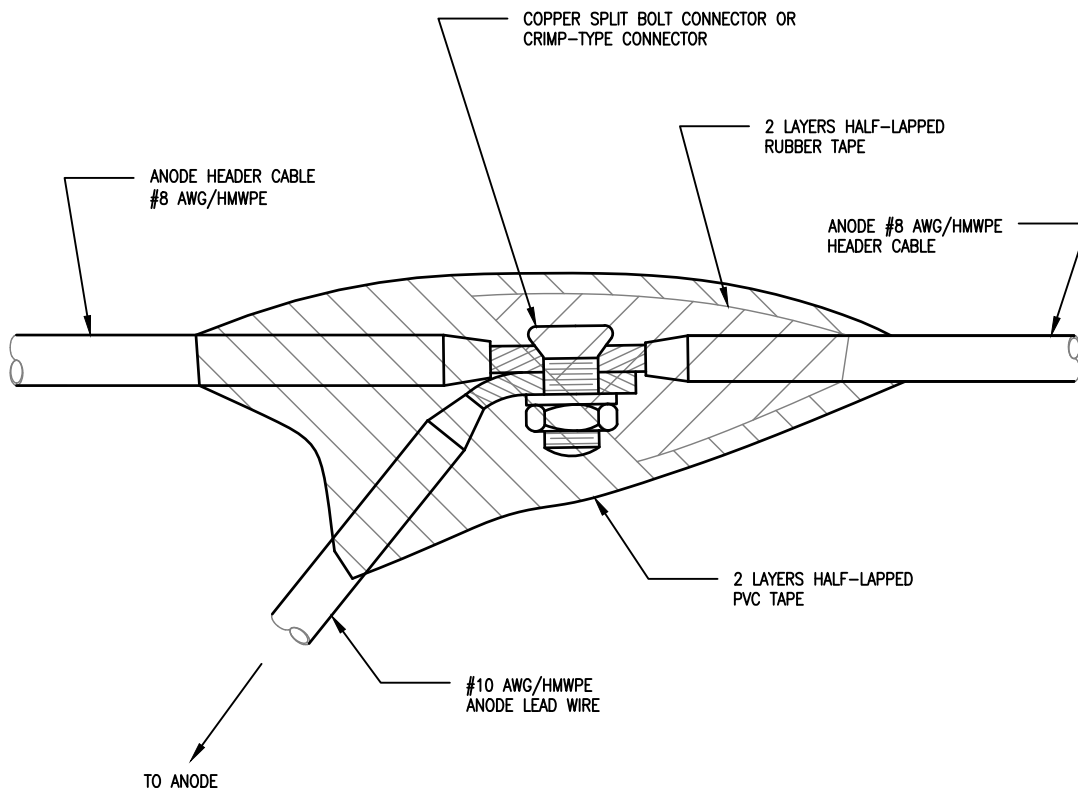
PIPE DIAMETER	WIRE COUNT AND GAUGE
FITTINGS & UP TO 8" DI PIPE	ONE (1) #8 AWG
10" to 18"	ONE (1) #4 AWG
20" AND LARGER	TWO (2) #4 AWG

PUSH-ON JOINT

Dublin San Ramon Services District	DATE JUNE 2022
BOND CABLE INSTALLATION	DESIGNED SC
SIGNED COPY ON FILE AT DISTRICT OFFICE	DRAWING CP-42



TWO-WAY CABLE SPLICE



THREE-WAY CABLE SPLICE

Dublin San Ramon Services District

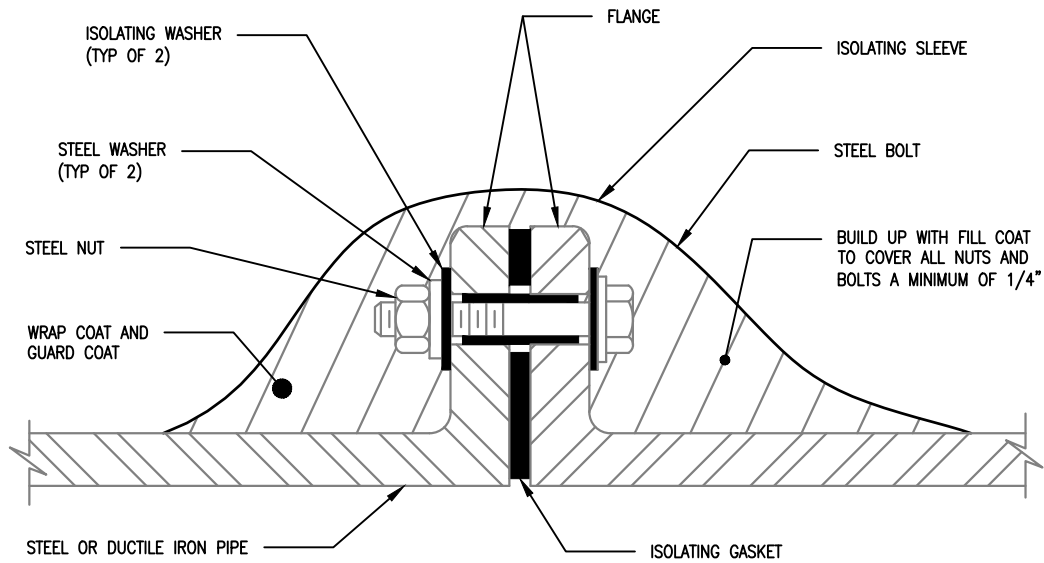
DATE
JUNE 2022

CP CABLE SPLICE CONNECTION

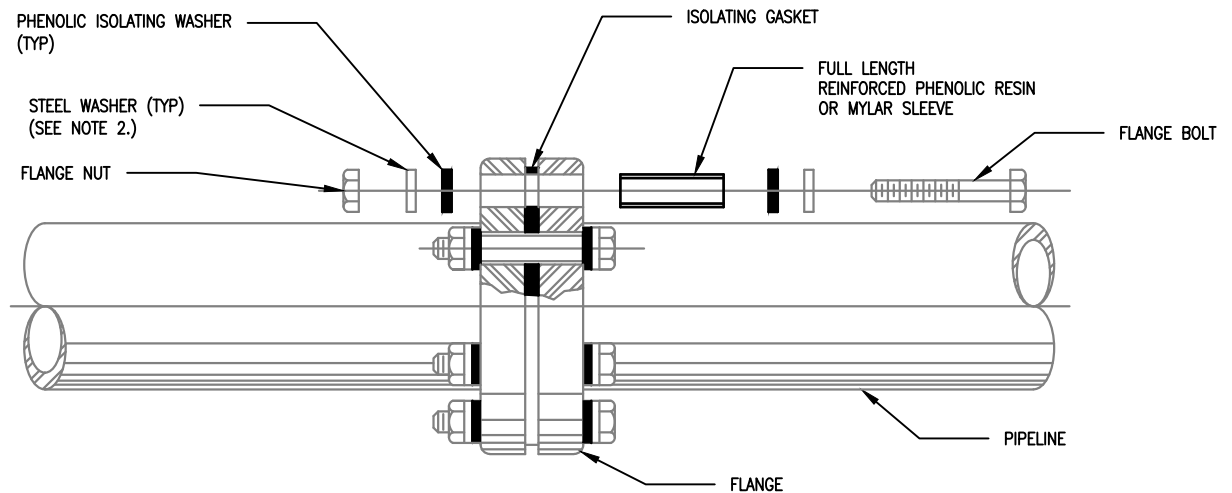
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DRAWING
CP-43



BELOW GRADE COATING



ABOVE GRADE ISOLATING JOINT

NOTES:

1. THE ISOLATING FLANGE KIT SHALL BE FOR WATER SERVICE, SUITABLE FOR WET & DRY LOCATIONS, AND BE OF SAME PRESSURE RATING AS THE FLANGE.
2. ALL BOLTS SHALL BE STAINLESS STEEL TYPE 316, OR APPROVED EQUAL, AND ALL BOLTS, NUTS, AND WASHERS SHALL BE STAMPED IDENTIFYING THE GRADE OF STAINLESS STEEL. ANTI-SEIZE LUBRICANT SHALL BE APPLIED TO BOLT THREAD.
3. ALL BURIED DUCTILE IRON PIPE SHALL BE WRAPPED IN POLYETHYLENE, PER NOTE 4., CP-37.
4. DELETE COATING IF FLANGE IS LOCATED ABOVE GRADE OR IN VAULTS. FOR BURIED ISOLATING JOINTS APPLY THE COATING SYSTEM AS SHOWN ABOVE.
5. ALL ISOLATING JOINTS SHALL BE TESTED AND APPROVED PRIOR TO BACKFILL.

Dublin San Ramon Services District

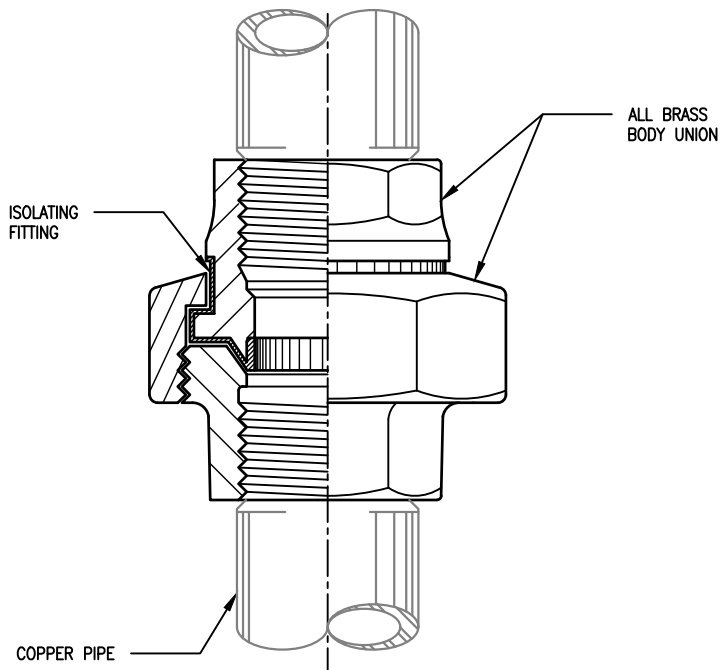
DATE
JUNE 2022

INSULATING JOINT FLANGE KIT AND FLANGE COATING

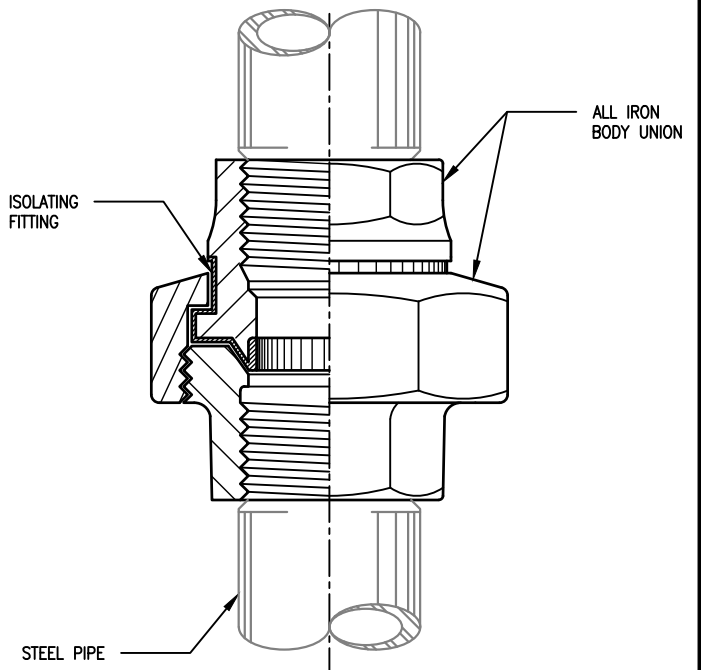
DESIGNED
SC

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DRAWING
CP-44



COPPER PIPE



STEEL PIPE

Dublin San Ramon Services District

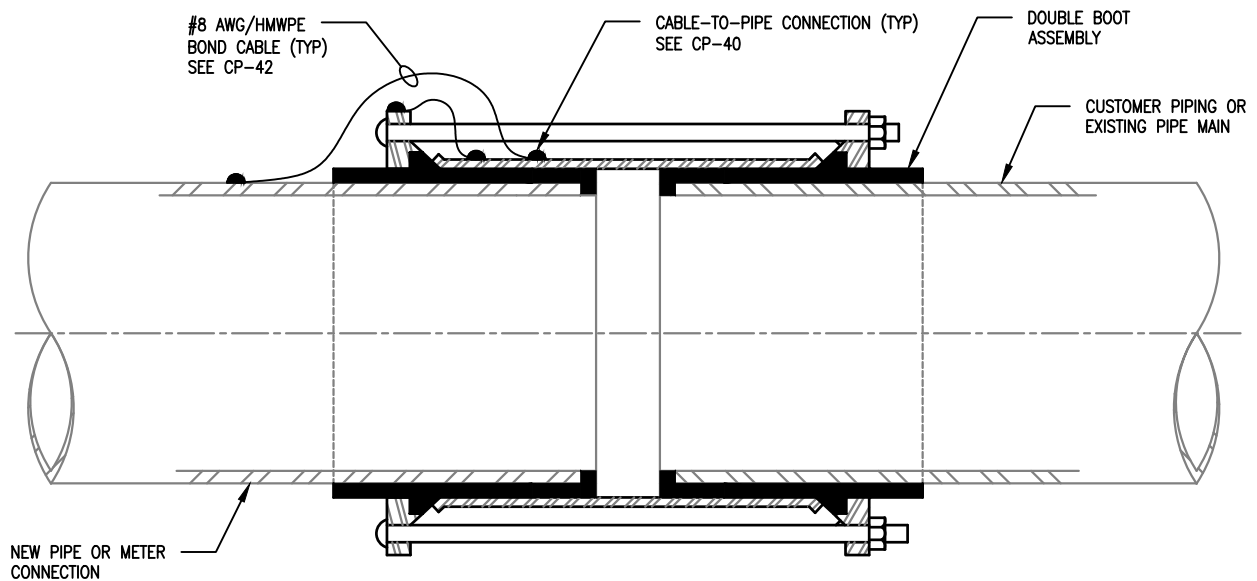
DATE
JUNE 2022

CP INSULATING UNION

DESIGNED
SC

SIGNED COPY ON FILE AT DISTRICT OFFICE

DRAWING
CP-44A

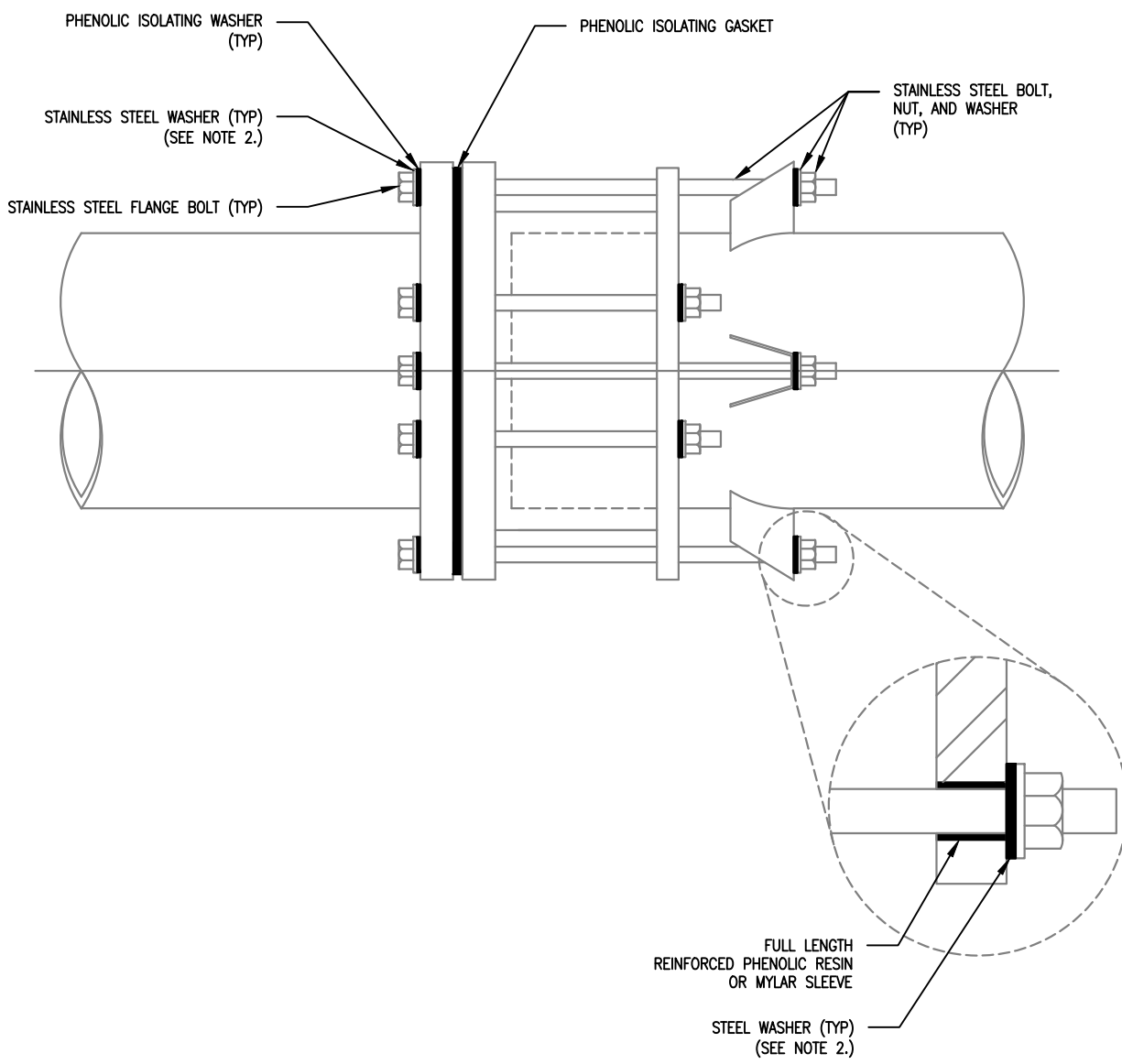


INSULATING FLEXIBLE COUPLING

NOTES:

1. ISOLATING FLANGE JOINT IS ONLY REQUIRED FOR CONNECTION OF TWO METALLIC PIPES. IF EITHER CONNECTED PIPE IS NON-METALLIC, NO ISOLATING JOINT IS REQUIRED.
2. ALL FASTENER BOLTS SHALL BE STAINLESS STEEL TYPE 316, OR APPROVED EQUAL, AND ALL BOLTS, NUTS, AND WASHERS SHALL BE STAMPED IDENTIFYING THE GRADE OF STAINLESS STEEL. ANTI-SEIZE LUBRICANT SHALL BE APPLIED TO BOLT THREAD.
3. THE ISOLATING FLANGE KIT SHALL BE FOR WATER SERVICE, SUITABLE FOR DRY LOCATIONS, AND BE OF SAME PRESSURE RATING AS THE FLANGE.
4. PROVIDE WAX TAPE TO COMPLETELY COVER ALL BELOW GRADE CARBON STEEL INSULATING FLEXIBLE COUPLINGS. ANY NON-FIRMING WAX TAPE SHALL BE PROVIDED WITH A PROTECTIVE OUTER WRAP, PER MANUFACTURERS RECOMMENDATIONS. SEE DSRSD'S APPROVED MATERIALS LIST.
5. ALL ISOLATING JOINTS SHALL BE TESTED AND APPROVED BY A DSRSD REPRESENTATIVE PRIOR TO BACKFILL.

Dublin San Ramon Services District	DATE JUNE 2022
INSULATING JOINT FLANGE KIT AND FLANGE COATING	DESIGNED SC
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ABOVE GRADE ISOLATING JOINT

NOTES:

1. ISOLATING FLANGE JOINT IS ONLY REQUIRED FOR CONNECTION OF TWO METALLIC PIPES. IF EITHER CONNECTED PIPE IS NON-METALLIC, NO ISOLATING JOINT IS REQUIRED.
2. ALL FASTENER BOLTS SHALL BE STAINLESS STEEL TYPE 316, OR APPROVED EQUAL, AND ALL BOLTS, NUTS, AND WASHERS SHALL BE STAMPED IDENTIFYING THE GRADE OF STAINLESS STEEL. ANTI-SEIZE LUBRICANT SHALL BE APPLIED TO BOLT THREAD.
3. THE ISOLATING FLANGE KIT SHALL BE FOR WATER SERVICE, SUITABLE FOR DRY LOCATIONS, AND BE OF SAME PRESSURE RATING AS THE FLANGE.
4. PROVIDE WAX TAPE TO COMPLETELY COVER ALL BELOW GRADE CARBON STEEL INSULATING FLEXIBLE COUPLINGS. ANY NON-FIRMING WAX TAPE SHALL BE PROVIDED WITH A PROTECTIVE OUTER WRAP, PER MANUFACTURERS RECOMMENDATIONS. SEE DSRSD'S APPROVED MATERIALS LIST.
5. ALL ISOLATING JOINTS SHALL BE TESTED AND APPROVED BY A DSRSD REPRESENTATIVE PRIOR TO BACKFILL.

Dublin San Ramon Services District	DATE JUNE 2022
INSULATING RESTRAINED FLANGE COUPLING	DESIGNED SC
SIGNED COPY ON FILE AT DISTRICT OFFICE	DRAWING CP-44C