

1. HDPE PIPING MATERIAL – HDPE PIPING MATERIAL SHALL CONFORM TO MASS SECTION 60.02 FURNISH AND INSTALL PIPE, ARTICLE 2.2 MATERIAL, SUB-ARTICLE F. HIGH DENSITY POLYETHYLENE PIPE. HDPE PIPE, TUBING, AND FITTINGS SHALL CONFORM TO ALL APPLICABLE PROVISIONS AND REQUIREMENTS OF THE LATEST REVISION OF AWWA C901 AND AWWA C906 AND, BY INCLUSION, ALL APPROPRIATE STANDARDS REFERENCED THEREIN. ALL PIPE AND FITTINGS 4” AND LARGER SHALL BE MANUFACTURED TO IRON PIPE SIZE EQUIVALENT OUTSIDE DIAMETER (IPS).

2. HDPE PIPING MATERIAL – HDPE MJ/FLANGE CONNECTIONS SHALL BE ONE-PIECE, MOLDED POLYETHYLENE ADAPTERS WITH STAINLESS STEEL RETAINER RING. RETAINER RING SHALL BE TYPE 316 STAINLESS STEEL. MJ/FLANGE CONNECTIONS SHALL HAVE A MINIMUM PRESSURE RATING EQUAL TO OR GREATER THAN THAT OF THE HDPE PIPING. NUTS, BOLTS, AND WASHERS SHALL BE STAINLESS STEEL, TYPE 316. RUBBER GASKETS FOR MJ/FLANGE CONNECTIONS SHALL BE NSF STANDARD 61 CERTIFIED FOR USE IN POTABLE WATER SYSTEMS.

3. HDPE PIPING INSTALLATION – ALL HDPE WATER MAIN PIPING AND FITTINGS SHALL BE BUTT-FUSED IN ACCORDANCE WITH ASTM D2657. THE INDIVIDUAL WHO PERFORMS THE BUTT-FUSION SHALL HAVE WRITTEN CERTIFICATION FROM AN HDPE PIPE MANUFACTURER STATING HE/SHE HAS SUCCESSFULLY COMPLETED AN 8-HOUR (MINIMUM) CERTIFICATION CLASS ON BUTT-FUSION TECHNIQUES AND PROCEDURES. IN ADDITION, THIS INDIVIDUAL SHALL HAVE FUSED A COMBINED TOTAL OF MORE THAN 5,000 FEET OF HDPE PIPING IN DIAMETERS 4-INCHES AND LARGER.

4. HDPE PIPING INSTALLATION – A MAXIMUM OF THREE (3) JOINTS SELECTED AT RANDOM BY AWWU MAY BE TESTED FOR COMPLIANCE WITH ASTM D638 AS A QUALITY CONTROL MEASURE. SPECIMENS TO BE TESTED SHALL BE OBTAINED BY CUTTING THE WATER MAIN PIPING AT LEAST 12-INCHES ON EACH SIDE OF A FIELD-MADE JOINT. CONTRACTOR SHALL THEN REJOIN THE ENDS OF THE PIPING AND WORK MAY PROCEED. COSTS FOR REMOVAL AND REPAIR OF BUTT-FUSED JOINTS SHALL BE BORNE BY THE CONTRACTOR. ALL LAB COSTS ASSOCIATED WITH TESTING OF BUTT-FUSED JOINTS WILL BE BORNE BY AWWU.

5. HDPE PIPING INSTALLATION – THE CONTRACTOR SHALL ENSURE THAT EACH JOINT IS FUSED AT THE TEMPERATURE AND PRESSURE RECOMMENDED BY THE PIPE MANUFACTURER IN ORDER TO ACHIEVE THE MAXIMUM PRESSURE RATING FOR THAT JOINT. ALL BUTT-FUSED JOINTS FOR HDPE PIPING AND FABRICATED FITTINGS SHALL BE DOCUMENTED BY A COMPUTER DATA LOGGER THAT RECORDS PRESSURE AND TEMPERATURE APPLIED AT EACH FUSED JOINT, ALONG WITH THE DATE AND TIME THE JOINT WAS FUSED. COMPUTER PRINTOUTS, ELECTRONIC DATA, AND THE PROJECT STATION FOR EACH FIELD FUSED JOINT SHALL BE SUBMITTED TO AWWU.

6. HDPE PIPING INSTALLATION – THE USE OF ELECTRO-FUSION COUPLINGS TO JOIN HDPE PIPING MAY BE ALLOWED UPON WRITTEN APPROVAL OF AWWU. ELECTRO-FUSION COUPLINGS SHALL COMPLY WITH ASTM F1055. CONTRACTOR SHALL RECORD THE EXACT LOCATION OF ANY INSTALLED ELECTRO-FUSION COUPLING IN THE RECORD DRAWING SUBMITTAL.

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7. HDPE PIPING INSTALLATION – CONTRACTOR SHALL INSPECT THE HDPE PIPING FOR DAMAGE IMMEDIATELY PRIOR TO JOINING. DAMAGE IS DEFINED AS CUTS OR GOUGES EXCEEDING 10% OF THE PIPE WALL THICKNESS, KINKED PIPE SECTIONS, PIPE SECTIONS FLATTENED TO MORE THAN 5% OF THE ORIGINAL DIAMETER, OR ANY ABRASION OR CUTTING OF THE INSIDE SURFACE OF THE PIPING. DAMAGED PORTIONS OF PIPING SHALL BE CUT OUT AND DISCARDED.

8. HDPE PIPING INSTALLATION – THE HANDLING OF THE JOINED PIPELINE SHALL BE IN SUCH A MANNER THAT THE PIPE IS NOT DAMAGED. ROPES, FABRIC, OR RUBBER-PROTECTED SLINGS, OR STRAPS SHALL BE USED WHEN HANDLING PIPES. CHAINS, CABLES, OR HOOKS INSERTED INTO THE PIPE ENDS SHALL NOT BE ALLOWED. TWO SLINGS SPREAD APART SHALL BE USED FOR LIFTING EACH LENGTH OF PIPE. SLINGS FOR HANDLING THE PIPELINE SHALL NOT BE POSITIONED AT BUTT-FUSED JOINTS.


9. HDPE PIPING INSTALLATION – THE HORIZONTAL BENDING RADIUS FOR HDPE PIPING SHALL NOT BE LESS THAN THE MINIMUM RADIUS RECOMMENDED BY THE PIPING MANUFACTURER.

10. HDPE PIPING INSTALLATION: BEDDING – ALL HDPE WATER SYSTEM PIPING SHALL BE PLACED IN CLASS D PIPE BEDDING AS SHOWN IN THE TYPICAL TRENCH SECTION DETAIL. CLASS D PIPE BEDDING MATERIAL SHALL CONFORM TO THE FOLLOWING GRADATION: CUMULATIVE PERCENT PASSING BY WEIGHT U.S. STANDARD SIEVE SIZE: 1" 100%, 3/4" 90-100%, 1/2" 50-70%, 3/8" 20-50%, NO. 4 0-10%, NO. 200 0-1%

11. HDPE PIPING INSTALLATION: TRACER WIRE – INSTALL TRACER WIRE ON TOP OF ALL HDPE WATER MAINS IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS. TRACER WIRE SHALL BE SUITABLE FOR DIRECT BURY APPLICATIONS AND SHALL BE 10 AWG WITH 30-MIL HDPE JACKET (JACKET COLOR BLUE), CAPABLE OF A 575 POUND AVERAGE TENSILE BREAK LOAD. TRACER WIRE SHALL BE COPPERHEAD INDUSTRIES REINFORCED TRACER WIRE. TRACER WIRE SHALL BE INSTALLED IN CONTINUOUS LENGTHS WITH NO SPLICES. TERMINATE EACH END OF TRACER WIRE AT GROUND SURFACE IN A VALVE BOX TOP SECTION WITH CAP. PROVIDE A MINIMUM OF FIVE (5) FEET OF ADDITIONAL WIRE NEATLY COILED WITHIN VALVE BOX AT EACH END. SPLICES MAY BE ALLOWED AT THE DIRECTION OF THE ENGINEER. IF A SPLICE IS ALLOWED USE COPPERHEAD INDUSTRIES CONNECTOR, PART #3WB-01 (BLUE).

12. HDPE PIPING FLUSHING – NEWLY INSTALLED HDPE WATER MAINS SHALL BE OPEN-BORE FLUSHED BY AWWU PRIOR TO INSTALLATION OF WATER SERVICES.

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13. HDPE PIPING TESTING – A HYDROSTATIC TEST SHALL BE CONDUCTED AFTER "OPEN-BORE" FLUSHING ON ALL NEWLY INSTALLED HDPE WATER MAINS IN THE PRESENCE OF AWWU. PRIOR TO PERFORMING THE HYDROSTATIC TEST, ENSURE THAT THERE IS NO AIR TRAPPED IN THE TEST SECTION. THE HYDROSTATIC PRESSURE TEST PROCEDURE CONSISTS OF FILLING THE PIPING WITH WATER, AN INITIAL EXPANSION PHASE, A TEST PHASE, AND DEPRESSURIZING. BEFORE APPLYING HYDROSTATIC PRESSURE TEST, ALL PIPING AND ALL COMPONENTS IN THE TEST SECTION SHALL BE RESTRAINED AND THE TRENCH SECTION BACKFILLED TO ORIGINAL GRADE. THE MAXIMUM TEST DURATION IS EIGHT (8) HOURS INCLUDING TIME TO PRESSURIZE, TIME FOR INITIAL EXPANSION, TIME AT TEST PRESSURE AND TIME TO DEPRESSURIZE THE TEST SECTION. IF THE TEST IS NOT COMPLETED DUE TO LEAKAGE, EQUIPMENT FAILURE, OR FOR ANY OTHER REASON, DEPRESSURIZE THE TEST SECTION COMPLETELY AND ALLOW IT TO RELAX FOR AT LEAST EIGHT (8) HOURS BEFORE PRESSURIZING THE TEST SECTION AGAIN. THE NEWLY INSTALLED HDPE WATER MAIN SHALL BE HYDROSTATICALLY TESTED TO THE RATED OPERATING PRESSURE OF THE PIPE. THE RATED OPERATING PRESSURE OF HDPE SDR11 PIPING IS 160 PSI. GRADUALLY PRESSURIZE THE TEST SECTION TO TEST PRESSURE AND MAINTAIN TEST PRESSURE FOR FOUR (4) HOURS. DURING THE INITIAL EXPANSION PHASE, POLYETHYLENE PIPE WILL EXPAND SLIGHTLY. ADDITIONAL TEST LIQUID WILL BE REQUIRED TO MAINTAIN PRESSURE. IT IS NOT NECESSARY TO MONITOR THE AMOUNT OF WATER ADDED DURING THE INITIAL EXPANSION PHASE. IMMEDIATELY FOLLOWING THE INITIAL EXPANSION PHASE, REDUCE TEST PRESSURE BY 10 PSI AND STOP ADDING TEST LIQUID. IF THERE ARE NO VISIBLE LEAKS AND THE TEST PRESSURE REMAINS STEADY (WITHIN 5% OF THE TARGET VALUE) FOR ONE (1) HOUR, THE WATER MAIN SHALL BE DEEMED AS HAVING PASSED THE TEST.

14. VALVE MATERIAL – GATE VALVES SHALL BE IRON BODY, RESILIENT-SEATED VALVES WITH NON-RISING STEMS FOR WATER SUPPLY SERVICE, MANUFACTURED IN ACCORDANCE WITH AWWA C509. GATE VALVES SHALL HAVE A TWO (2) INCH SQUARE OPERATING NUT, AND SHALL OPEN COUNTERCLOCKWISE. UNLESS OTHERWISE DETAILED ON THE DRAWINGS, VALVE AND VALVE/PIPE INTERFACE SHALL BE MJ/FLANGE TYPE CONNECTIONS CONFORMING TO AWWA C110. INTERIOR AND EXTERIOR VALVE COATING SHALL BE FUSION BONDED EPOXY (FBE) IN ACCORDANCE WITH AWWA C550. IF INTEGRITY OF FBE COATING IS DAMAGED DURING SHIPPING OR INSTALLATION, CONTRACTOR SHALL FIELD REPAIR FBE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS. VALVE NUTS, BOLTS AND WASHERS SHALL BE STAINLESS STEEL, TYPE 316. CARBON STEEL GALVANIZED OR ZINC PLATED NUTS, BOLTS, AND WASHERS SHALL NOT BE ALLOWED.

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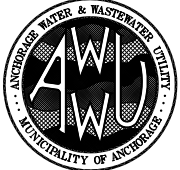
15. VALVE INSTALLATION – INSTALL DENSYL TAPE OR APPROVED EQUAL. INSTALL DENSYL TAPE COAT ON EXTERIOR OF VALVE BOXES AND VALVE BOX BASE SECTIONS AS SHOWN IN THE DETAILS. PREPARE SURFACES BY HAND—REMOVING ALL LOOSE DIRT, DUST, OR OTHER FOREIGN MATTER THAT MAY INTERFERE WITH THE TAPE ADHESION. POWER TOOL CLEANING OF THE SURFACES IS NOT REQUIRED. ENSURE VALVE BOX AND BASE SECTION SURFACES ARE CLEAN AND DRY PRIOR TO BEGINNING COATING APPLICATION. APPLY A THIN COAT OF PRIMER TO THE SURFACES, DENSO PASTE OR APPROVED EQUAL. SPIRAL WRAP THE TAPE WITH A 50% OVERLAP. WRAP TAPE CONTINUOUSLY BETWEEN VALVE BOX AND BASE SECTION. WHILE WRAPPING, PRESS AIR POCKETS OUT AND SMOOTH ALL LAP SEAMS. TAPE COAT AND PRIMER MATERIALS SHALL BE PRODUCTS OF THE SAME MANUFACTURER. INSTALL THREE LAYERS OF 8 MIL POLYETHYLENE ENCASMENT PER M.A.S.S SECTION 60.07 ON VALVE BOX EXTENSION PIECE, VALVE BOX BASE SECTION AND TOP SECTION.

16. HYDRANT MATERIAL – FIRE HYDRANT LEG PIPING SHALL BE HDPE SDR9. HYDRANT NUTS, BOLTS AND WASHERS SHALL BE STAINLESS STEEL, TYPE 316. CARBON STEEL GALVANIZED OR ZINC PLATED NUTS, BOLTS, AND WASHERS SHALL NOT BE ALLOWED.

17. HYDRANT INSTALLATION – INSTALL DENSYL TAPE OR APPROVED EQUAL. INSTALL DENSYL TAPE COAT ON EXTERIOR OF HYDRANT LOWER BARREL, HYDRANT BASE (SHOE), AND HDPE MJ/FLANGE ADAPTER AS SHOWN ON THE DETAILS. PREPARE SURFACES BY HAND—REMOVING ALL LOOSE DIRT, DUST, OR OTHER FOREIGN MATTER THAT MAY INTERFERE WITH THE TAPE ADHESION. POWER TOOL CLEANING OF THE SURFACES IS NOT REQUIRED. ENSURE HYDRANT BARREL, SHOE, AND HDPE MJ/FLANGE ADAPTER SURFACES ARE CLEAN AND DRY PRIOR TO BEGINNING COATING APPLICATION. LIGHTLY ABRABE SURFACE OF HDPE MJ/FLANGE ADAPTER TO ALLOW TAPE TO BOND. APPLY A THIN COAT OF PRIMER TO THE SURFACES, DENSO PASTE OR APPROVED EQUAL. SPIRAL WRAP THE TAPE WITH A 50% OVERLAP. WRAP TAPE CONTINUOUSLY BETWEEN LOWER HYDRANT BARREL, SHOE, AND HDPE MJ/FLANGE ADAPTER. WHILE WRAPPING, PRESS AIR POCKETS OUT AND SMOOTH ALL LAP SEAMS. FURNISH AND INSTALL PROFILING MASTIC AS REQUIRED TO TAPE AROUND MJ/FLANGES. TAPE COAT, PRIMER MATERIALS, AND PROFILING MASTIC SHALL BE PRODUCTS OF THE SAME MANUFACTURER. INSTALL THREE LAYERS OF 8 MIL POLYETHYLENE ENCASMENT PER M.A.S.S. SECTION 60.07 ON HYDRANT BARREL SECTION.

18. WATER SERVICE MATERIALS – WATER SERVICE PIPING BETWEEN ONE-INCH AND TWO-INCHES SHALL BE SOFT DRAWN SEAMLESS COPPER TYPE K. COPPER PIPING SHALL BE SUPPLIED WITH TYPE STAMPED ON EXTERIOR. WATER SERVICE CONNECTION PIPING LARGER THAN TWO INCHES SHALL BE HDPE SDR11. GATE VALVES FOR HDPE WATER SERVICE CONNECTIONS SHALL HAVE THE SAME NOMINAL DIAMETER AS THE SERVICE PIPING AND SHALL HAVE MJ/FLANGE CONNECTIONS AS DESCRIBED HEREIN.

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19. COPPER WATER SERVICE INSTALLATION – INSTALL DENSYL TAPE OR APPROVED EQUAL. INSTALL DENSYL TAPE COAT ON NEW COPPER WATER SERVICES AS SHOWN ON THE DETAILS. TAPE COAT WATER SERVICE PIPING, VALVES, AND FITTINGS. PREPARE PIPING, VALVE, AND FITTING SURFACES BY HAND—REMOVING ALL LOOSE DIRT, DUST, OR OTHER FOREIGN MATTER THAT MAY INTERFERE WITH THE TAPE ADHESION. POWER TOOL CLEANING OF THE SURFACES IS NOT REQUIRED. ENSURE PIPING, VALVE, AND FITTING SURFACES ARE CLEAN AND DRY PRIOR TO BEGINNING COATING APPLICATION. APPLY A THIN COAT OF PRIMER TO THE SURFACES, DENSO PASTE OR APPROVED EQUAL. SPIRAL WRAP THE TAPE WITH A 50% OVERLAP. WRAP TAPE CONTINUOUSLY BETWEEN PIPING, VALVES, AND FITTINGS. WHILE WRAPPING, PRESS AIR POCKETS OUT AND SMOOTH ALL LAP SEAMS. TAPE COAT AND PRIMER MATERIALS SHALL BE PRODUCTS OF THE SAME MANUFACTURER. INSTALL GALVONIC ANODE AND BED ACCORDING TO M.A.S.S. 20.07–20.08. INSTALL THREE LAYERS OF 8 MIL POLYETHYLENE ENCASUREMENT PER M.A.S.S. SECTION 60.07 ON KEY BOX EXTENSION.

20. HDPE WATER SERVICE INSTALLATION – INSTALLATION OF HDPE WATER SERVICE PIPING SHALL BE IN ACCORDANCE WITH HDPE WATER MAIN. INSTALLATION OF GATE VALVES SHALL BE IN ACCORDANCE WITH MASS SECTION 60.03 FURNISH AND INSTALL VALVES AND AS DESCRIBED HEREIN.

21. HDPE FIRE LINES – FIRE LINES SHALL BE CONSTRUCTED WITH HDPE SDR9 PIPING, AND TESTED IN ACCORDANCE WITH HDPE PIPING TESTING EXCEPT THE HYDROSTATIC TEST PRESSURE SHALL BE 200 PSI.

22. ANODES – ANODES SHALL BE INSTALLED FOR ALL WATER MAIN GATE VALVES, WATER SERVICE GATE VALVES, WATER SERVICE CURB STOPS, AND FIRE HYDRANTS. INSTALL JUMPER WIRES BETWEEN VALVES AND HYDRANTS AS SHOWN ON THE DETAILS. IF MORE THAN ONE GATE VALVE AND/OR HYDRANT IS WITHIN A 30 FOOT RADIUS, USE TWO NO. 10 AWG HMWPE JUMPER WIRES TO BOND THE VALVES/HYDRANTS AND USE ONLY ONE ANODE PER CLUSTER. THE NO. 10 AWG HMWPE LEAD WIRES SHALL BE ATTACHED TO THE VALVES OR HYDRANTS AS SHOWN ON THE DETAILS. LEAD WIRE CONNECTION TO THE VALVE FLANGE OR HYDRANT SHOE SHALL UTILIZE A MECHANICAL CONNECTION AS SHOWN ON THE DETAILS. ANODES SHALL BE INSTALLED 12”–36” FROM THE SIDE WALL OF THE GATE VALVES, CURB STOPS, AND HYDRANT LEGS, TO A CENTERLINE DEPTH IN-LINE WITH THE APPROXIMATE HORIZONTAL PLANE OF THE VALVE OR HYDRANT LEG BOTTOM DEAD CENTER. ANODES SHALL BE PLACED AT THE MIDPOINT BETWEEN THE MAIN LINE VALVES OR THE HYDRANT AND ITS AUXILIARY VALVE. EXACT ANODE LOCATION SHALL BE SHOWN ON THE RECORD DRAWINGS. EXTREME CARE SHALL BE TAKEN SO AS NOT TO DAMAGE THE ANODES OR LEAD WIRES DURING BACKFILL PROCEDURES.

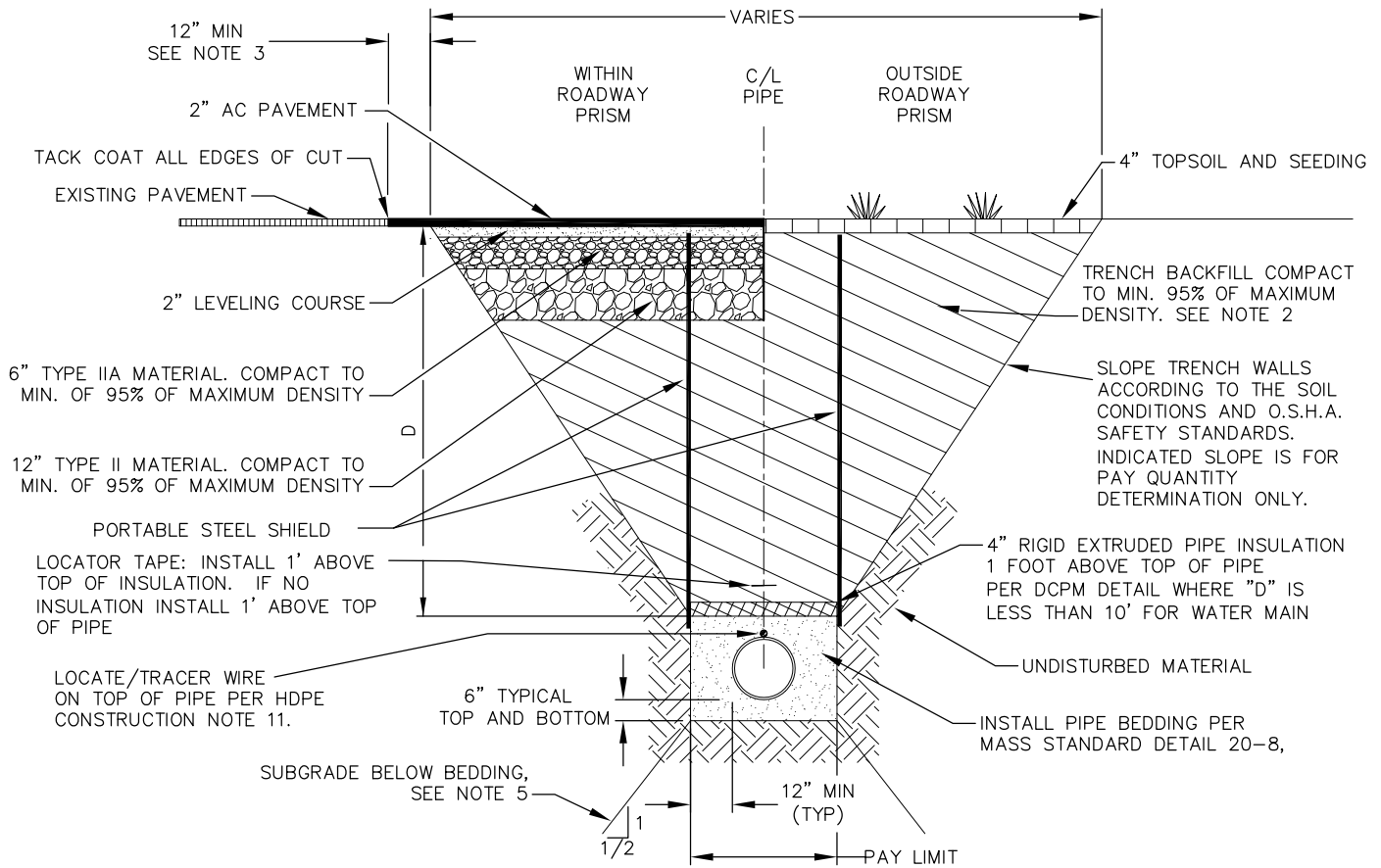
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TRENCH SECTION NOTES

1. TRENCH EXCAVATION AND SHORING SHALL COMPLY WITH ALL LOCAL, STATE AND OSHA REGULATIONS AND REQUIREMENTS.
2. TRENCH BACKFILL SHALL BE NATIVE MATERIAL, MEETING TYPE III CLASSIFICATION (MINIMUM) AS APPROVED BY THE ENGINEER. NATIVE MATERIAL NOT MEETING TYPE III CLASSIFICATION SHALL BE REMOVED AND REPLACED WITH MATERIAL MEETING TYPE III CLASSIFICATION (MINIMUM). BACKFILL MATERIAL WITHIN ROADWAY PRISM SHALL HAVE 8" MAXIMUM ROCK SIZE.
3. IN PREPARATION FOR AND IMMEDIATELY PRIOR TO PAVING, CONTRACTOR SHALL SAW CUT AND REMOVE AN ADDITIONAL 12" FROM EXISTING PAVEMENT EDGE. THE ENGINEER MAY REQUIRE MORE THAN A 12" ADDITIONAL CUT IF THE EXISTING PAVEMENT HAS BEEN LIFTED IN THE REMOVAL PROCESS, IF THE JOINT DOES NOT OCCUR ON UNDISTURBED MATERIAL, OR IF THE JOINT IS LOCATED WITHIN THE TRAVEL LANE. CUTS MAY BE MADE WITH A SAW.
4. REMOVE AND PROPERLY DISPOSE OF ALL ORGANIC MATERIALS IN ACCORDANCE WITH MASS SECTION 20.13.
5. SUBGRADE BELOW BEDDING PRISM SHALL BE CLEARED OF ALL DEBRIS AND ORGANIC MATERIAL. BACKFILL AND COMPACT EXCAVATED SUBGRADE IN ACCORDANCE WITH MASS SECTION 20.10 FURNISH FOUNDATION BACKFILL.

TYPICAL TRENCH SECTION – HDPE WATER MAIN 60–15

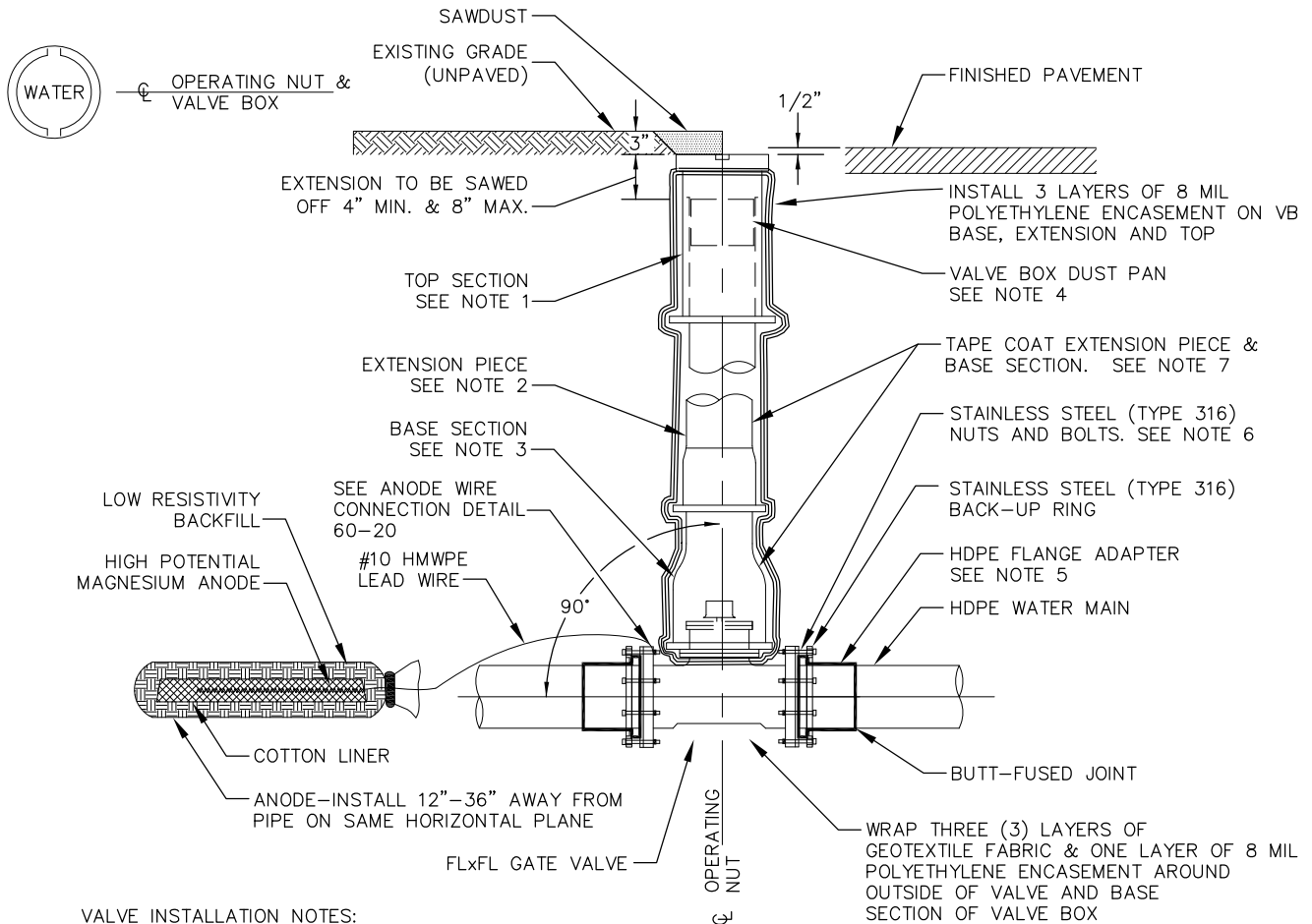
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VALVE INSTALLATION NOTES:

1. LID AND TOP SECTION SHALL BE OLYMPIC FOUNDRY TYPE C OR APPROVED EQUAL.
2. EXTENSION PIECE SHALL BE OLYMPIC FOUNDRY TYPE A, 10 FOOT SECTION OF 5" DIAMETER SINGLE HUB SOIL PIPE OR APPROVED EQUAL.
3. BASE SECTION SHALL BE OLYMPIC FOUNDRY TYPE B OR APPROVED EQUAL.
4. VALVE BOX DUST PAN SHALL BE CAST IRON AND BE THE PRODUCT OF THE VALVE BOX MANUFACTURER.
5. FURNISH AND INSTALL RUBBER GASKET/NSF 61 BETWEEN ALL FLANGES.
6. ALL STAINLESS STEEL BOLT THREADS SHALL BE COATED WITH TS MOLY-LUBRICANTS TS-74 STAINLESS ANTISEIZE, OR APPROVED EQUAL, IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. TAPE COAT EXTENSION PIECE, BASE SECTION, AND ALL BURIED BOLTED CONNECTIONS WITH DENSYL TAPE OR APPROVED EQUAL IN ACCORDANCE WITH THE SPECIFICATIONS. PRIME SURFACES WITH DENSO PASTE OR APPROVED EQUAL.

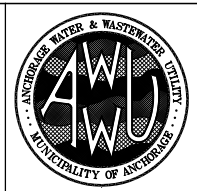
ANODE INSTALLATION NOTES:

1. ANODE SHALL BE INSTALLED ON SAME HORIZONTAL PLANE AS VALVE. IF MULTIPLE VALVES ARE JUMPERED TOGETHER, INSTALL THE ANODE AT MIDPOINT BETWEEN THEM.
2. HIGH POTENTIAL MAGNESIUM ANODES SHALL BE PREPACKAGED IN A CLOTH BAG WITH A BACKFILL MIXTURE OF 75% GYPSUM, 20% BENTONITE AND 5% SODIUM SULFATE. THE ANODES SHALL HAVE A 20 POUND BARE WEIGHT AND APPROXIMATELY 70 POUND PACKAGED WEIGHT.
3. THE CONTRACTOR IS REQUIRED TO PROVIDE COORDINATES OR PIPE STATIONING FOR EACH ANODE INSTALLED.
4. ALL CABLES SHALL BE SINGLE CONDUCTOR, STRANDED COPPER, WITH TYPE HMWPE INSULATION RATED FOR 600 VOLTS.
5. SPLIT-BOLT CONNECTIONS SHALL NOT BE ALLOWED ON ANY UNDERGROUND CONDUCTORS. IF SPLICES ARE REQUIRED, COMPRESSION CONNECTIONS (BURNDY OR APPROVED EQUAL) SHALL BE USED. COMPRESSION CONNECTIONS SHALL BE SEALED WITH A HEAT SHRINK SLEEVE RATED FOR BELOW GRADE USE.

TYPICAL VALVE & VALVE BOX ASSEMBLY DETAIL 60-16

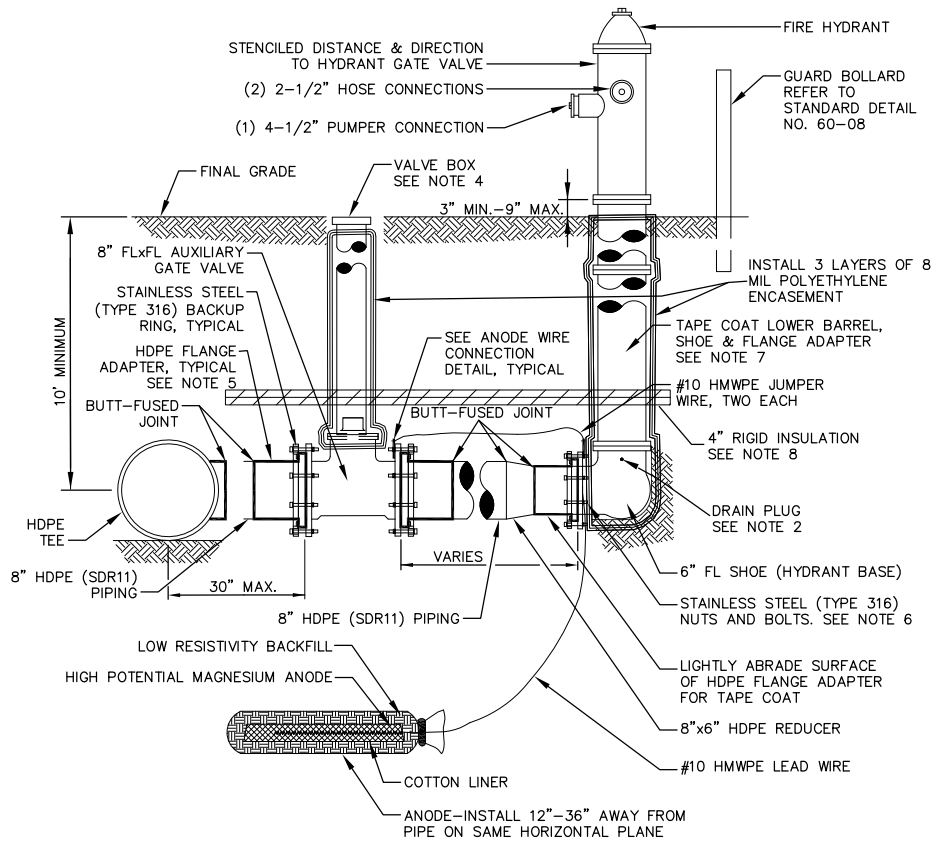
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HYDRANT INSTALLATION NOTES:

1. HYDRANT BARREL SHALL BE INSTALLED PLUMB AND THE LEG SHALL BE INSTALLED LEVEL.
2. DRAIN PLUG SHALL BE INSTALLED BY CONTRACTOR.
3. ALL HYDRANTS SHALL BE PAINTED CATERPILLAR YELLOW.
4. AUXILIARY GATE VALVE & VALVE BOX SHALL BE INSTALLED ACCORDING TO DETAIL FOR TYPICAL VALVE & VALVE BOX ASSEMBLY.
5. FURNISH AND INSTALL RUBBER GASKET/NSF 61 BETWEEN ALL FLANGES.
6. ALL STAINLESS STEEL BOLT THREADS SHALL BE COATED WITH TS MOLY-LUBRICANTS TS-74 STAINLESS ANTISEIZE, OR APPROVED EQUAL, IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. TAPE COAT LOWER BARREL, SHOE, FLANGE ADAPTER, AND ALL BURIED BOLTED CONNECTIONS WITH DENSYL TAPE OR APPROVED EQUAL IN ACCORDANCE WITH THE SPECIFICATIONS. PRIME SURFACES WITH DENSO PASTE OR APPROVED EQUAL.
8. 4" (R-20 EQUIVALENT) EXTRUDED POLYSTYRENE, 60 PSI, RIGID BOARD INSULATION. 4' WIDE CENTERED OVER THE PIPE WITH STAGGERED INSULATION SEAMS. INSTALL ENTIRE LENGTH FROM THE MAIN TO THE HYDRANT SHOE, INCLUDING AROUND THE VALVE BOX BASE AND EXTENSION.

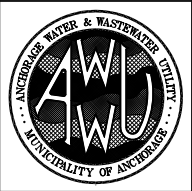
ANODE INSTALLATION NOTES:

1. ANODE SHALL BE INSTALLED ON SAME HORIZONTAL PLANE AND NEAR MIDPOINT OF THE HYDRANT LEG. IF VALVES OR HYDRANTS ARE JUMPERED TOGETHER, INSTALL THE ANODE AT MIDPOINT BETWEEN THEM.
2. HIGH POTENTIAL MAGNESIUM ANODES SHALL BE PREPACKAGED IN A CLOTH BAG WITH A BACKFILL MIXTURE OF 75% GYPSUM, 20% BENTONITE AND 5% SODIUM SULFATE. THE ANODES SHALL HAVE A 20 POUND BARE WEIGHT AND APPROXIMATELY 70 POUND PACKAGED WEIGHT.
3. THE CONTRACTOR IS REQUIRED TO PROVIDE COORDINATES OR PIPE STATIONING FOR EACH ANODE INSTALLED.
4. ALL CABLES SHALL BE SINGLE CONDUCTOR, STRANDED COPPER, WITH TYPE HMWPE INSULATION RATED FOR 600 VOLTS.
5. SPLIT-BOLT CONNECTIONS SHALL NOT BE ALLOWED ON ANY UNDERGROUND CONDUCTORS. IF SPLICES ARE REQUIRED, COMPRESSION CONNECTIONS (BURNDY OR APPROVED EQUAL) SHALL BE USED. COMPRESSION CONNECTIONS SHALL BE SEALED WITH A HEAT SHRINK SLEEVE RATED FOR BELOW GRADE USE.

SINGLE PUMPER 'L' BASE HYDRANT ASSEMBLY DETAIL 60-17

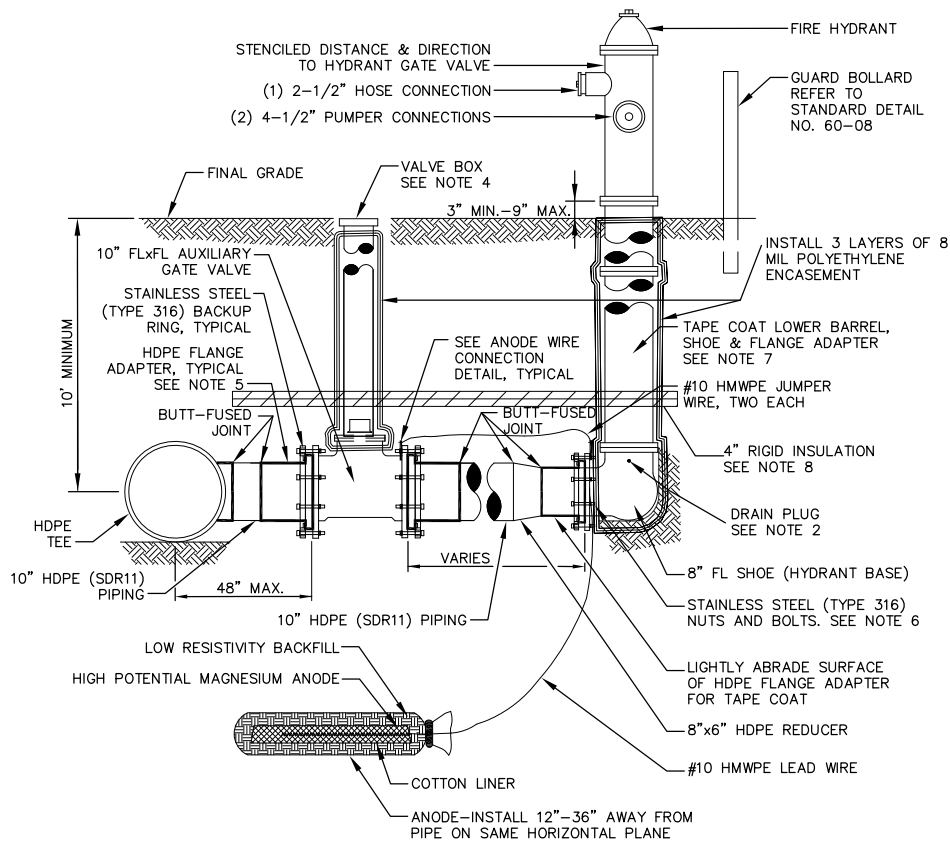
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HYDRANT INSTALLATION NOTES:

1. HYDRANT BARREL SHALL BE INSTALLED PLUMB AND THE LEG SHALL BE INSTALLED LEVEL.
2. DRAIN PLUG SHALL BE INSTALLED BY CONTRACTOR.
3. ALL HYDRANTS SHALL BE PAINTED CATERPILLAR YELLOW.
4. AUXILIARY GATE VALVE & VALVE BOX SHALL BE INSTALLED ACCORDING TO DETAIL FOR TYPICAL VALVE & VALVE BOX ASSEMBLY.
5. FURNISH AND INSTALL RUBBER GASKET/NSF 61 BETWEEN ALL FLANGES.
6. ALL STAINLESS STEEL BOLT THREADS SHALL BE COATED WITH TS MOLY-LUBRICANTS TS-74 STAINLESS ANTISEIZE, OR APPROVED EQUAL, IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. TAPE COAT LOWER BARREL, SHOE, FLANGE ADAPTER, AND ALL BURIED BOLTED CONNECTIONS WITH DENSYL TAPE OR APPROVED EQUAL IN ACCORDANCE WITH THE SPECIFICATIONS. PRIME SURFACES WITH DENSO PASTE OR APPROVED EQUAL.
8. 4" (R-20 EQUIVALENT) EXTRUDED POLYSTYRENE, 60 PSI, RIGID BOARD INSULATION. 4' WIDE CENTERED OVER THE PIPE WITH STAGGERED INSULATION SEAMS. INSTALL ENTIRE LENGTH FROM THE MAIN TO THE HYDRANT SHOE, INCLUDING AROUND THE VALVE BOX BASE AND EXTENSION.

ANODE INSTALLATION NOTES:

1. ANODE SHALL BE INSTALLED ON SAME HORIZONTAL PLANE AND NEAR MIDPOINT OF THE HYDRANT LEG. IF VALVES OR HYDRANTS ARE JUMPERED TOGETHER, INSTALL THE ANODE AT MIDPOINT BETWEEN THEM.
2. HIGH POTENTIAL MAGNESIUM ANODES SHALL BE PREPACKAGED IN A CLOTH BAG WITH A BACKFILL MIXTURE OF 75% GYPSUM, 20% BENTONITE AND 5% SODIUM SULFATE. THE ANODES SHALL HAVE A 20 POUND BARE WEIGHT AND APPROXIMATELY 70 POUND PACKAGED WEIGHT.
3. THE CONTRACTOR IS REQUIRED TO PROVIDE COORDINATES OR PIPE STATIONING FOR EACH ANODE INSTALLED.
4. ALL CABLES SHALL BE SINGLE CONDUCTOR, STRANDED COPPER, WITH TYPE HMWPE INSULATION RATED FOR 600 VOLTS.
5. SPLIT-BOLT CONNECTIONS SHALL NOT BE ALLOWED ON ANY UNDERGROUND CONDUCTORS. IF SPLICES ARE REQUIRED, COMPRESSION CONNECTIONS (BURNDY OR APPROVED EQUAL) SHALL BE USED. COMPRESSION CONNECTIONS SHALL BE SEALED WITH A HEAT SHRINK SLEEVE RATED FOR BELOW GRADE USE.

DOUBLE PUMPER 'L' BASE HYDRANT ASSEMBLY DETAIL 60-18

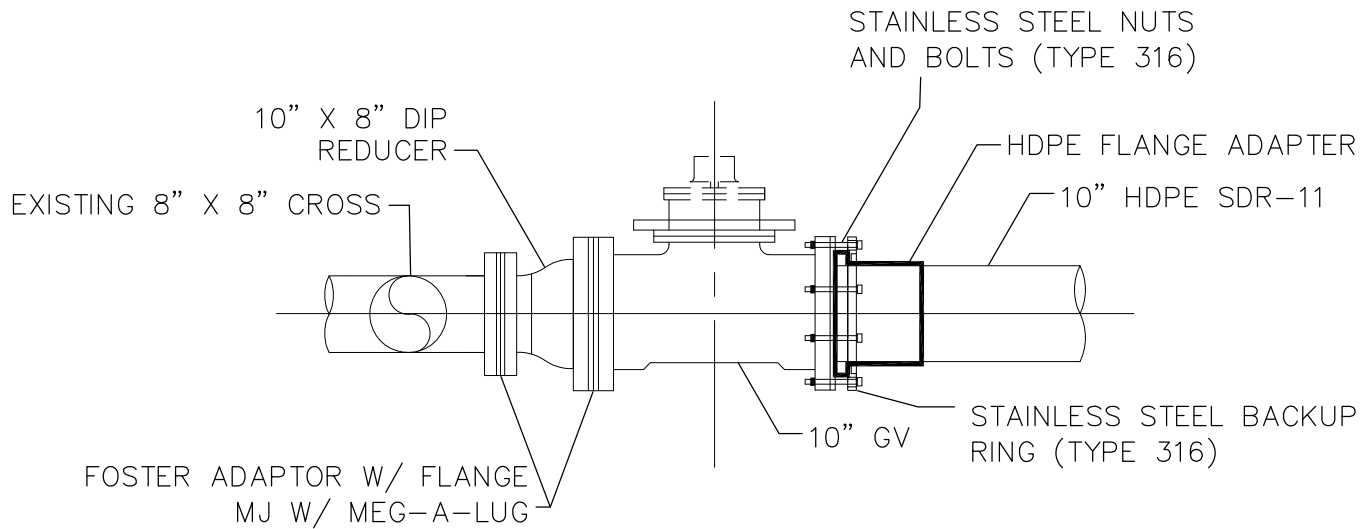
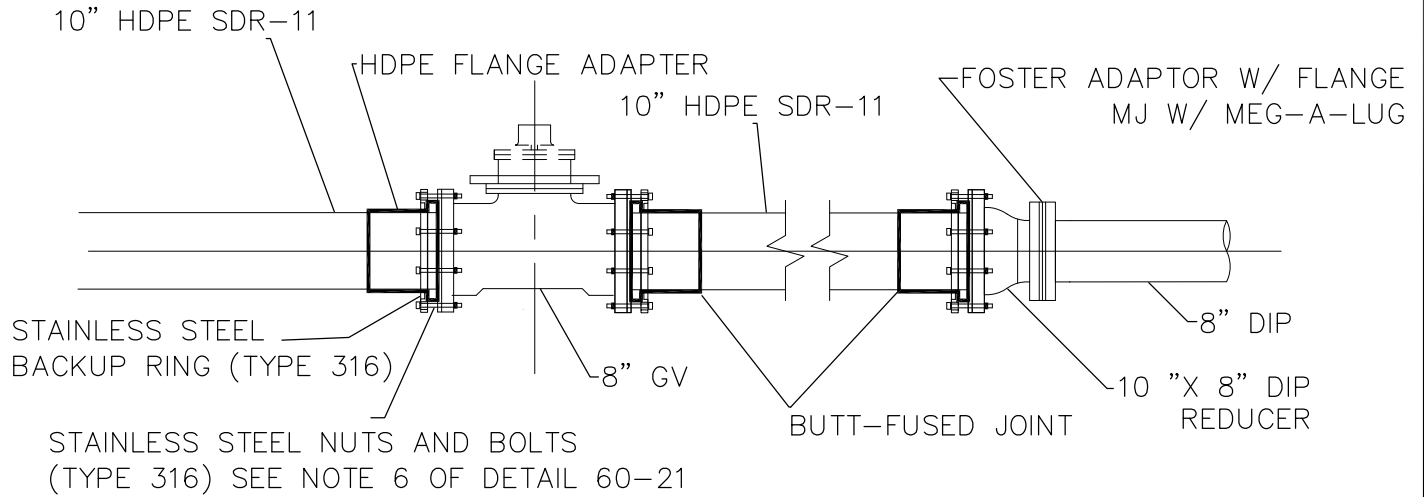
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CONNECTION DETAIL 60-19
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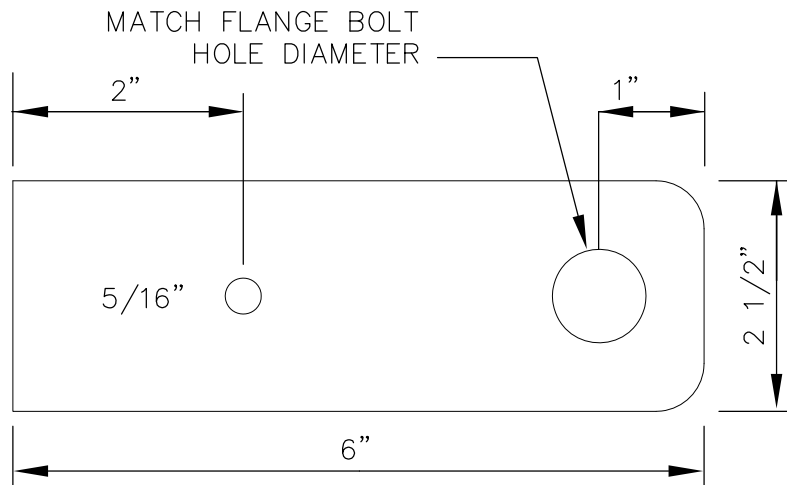
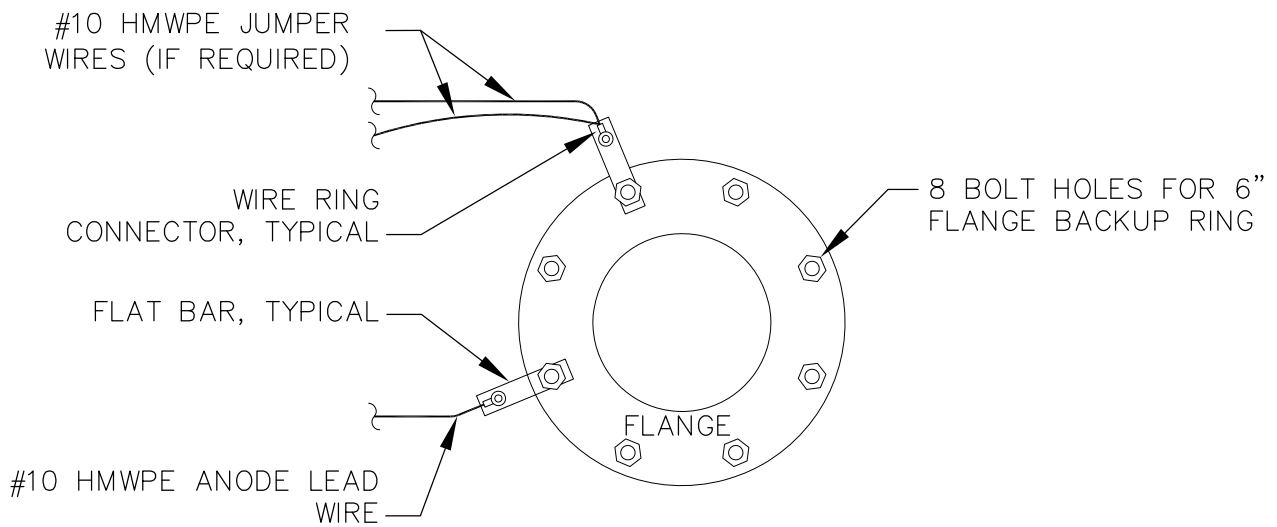


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2½" x 1/8" FLAT BAR 316 STAINLESS STEEL MATERIAL 1/8" THICKNESS

NOTES:

1. INSTALL FLAT BAR ON BODY SIDE OF FLANGE. REMOVE COATING, AT THE FLAT BAR LOCATION, PRIOR TO INSTALLATION. METAL TO METAL CONTACT IS REQUIRED. REPAIR VISIBLE COATING DAMAGE IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
2. CONNECT WIRE WITH COMPRESSION RING CONNECTOR AND 1/4" x 1" STAINLESS STEEL BOLT (TYPE 316) WITH WASHER AND SELF LOCKING NUT.
3. TWO #10 HMWPE JUMPER WIRES REQUIRED TO CONNECT EACH VALVE/HYDRANT.
4. WRAP TAPE AROUND RING CONNECTOR AND BOND STRAP (WIRE END ONLY). DENSYL TAPE OR APPROVED EQUAL.
5. WRAP TAPE A MINIMUM OF 3" DOWN ON WIRE INSULATION TO ENCAPSULATE CONNECTION.

ANODE WIRE CONNECTION DETAIL 60-20

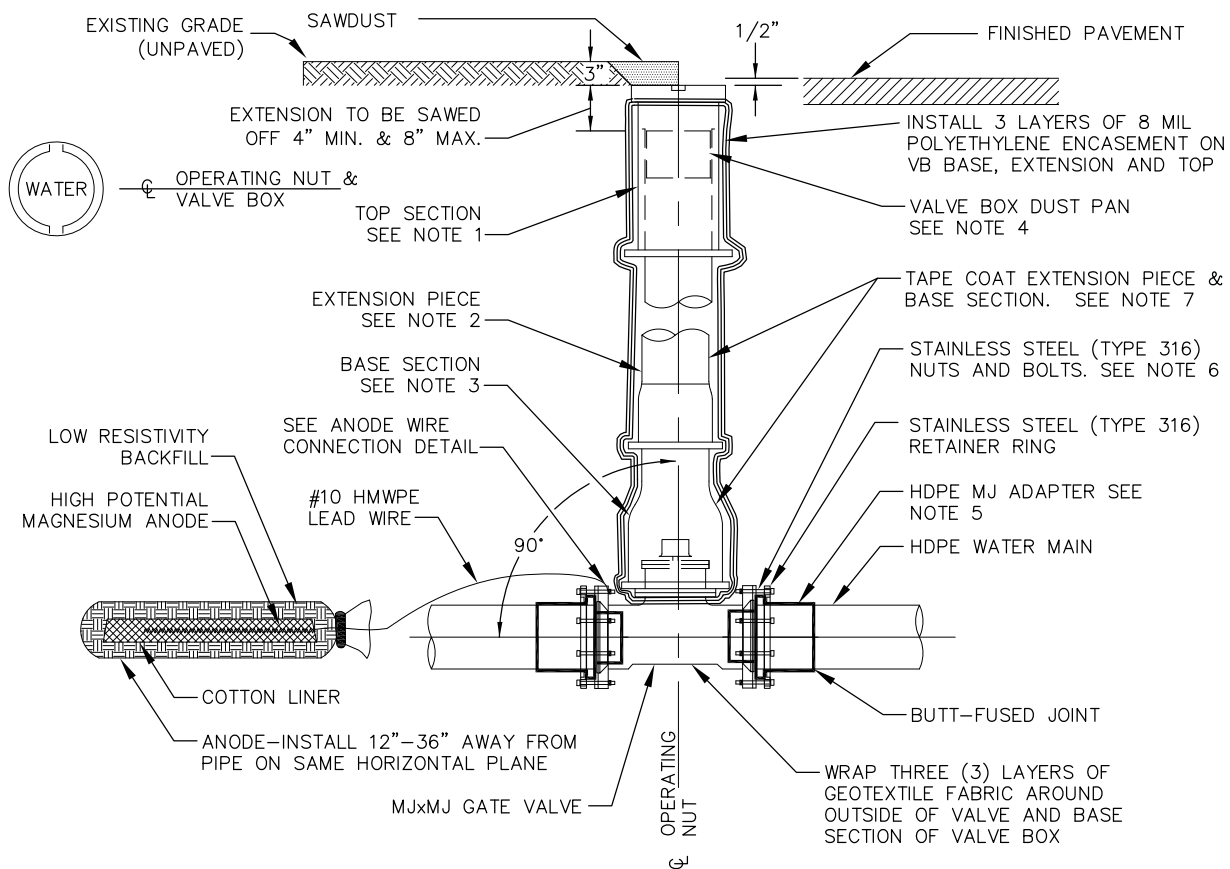
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VALVE INSTALLATION NOTES:

1. LID AND TOP SECTION SHALL BE OLYMPIC FOUNDRY TYPE C OR APPROVED EQUAL.
2. EXTENSION PIECE SHALL BE OLYMPIC FOUNDRY TYPE A, 10 FOOT SECTION OF 5" DIAMETER SINGLE HUB SOIL PIPE OR APPROVED EQUAL.
3. BASE SECTION SHALL BE OLYMPIC FOUNDRY TYPE B OR APPROVED EQUAL.
4. VALVE BOX DUST PAN SHALL BE CAST IRON AND BE THE PRODUCT OF THE VALVE BOX MANUFACTURER.
5. FURNISH AND INSTALL RUBBER GASKET/NSF 61 BETWEEN ALL MJ CONNECTIONS.
6. ALL STAINLESS STEEL BOLT THREADS SHALL BE COATED WITH TS MOLY-LUBRICANTS TS-74 STAINLESS ANTISEIZE, OR APPROVED EQUAL, IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. TAPE COAT EXTENSION PIECE, BASE SECTION, AND ALL BURIED BOLTED CONNECTIONS WITH DENSYL TAPE OR APPROVED EQUAL IN ACCORDANCE WITH THE SPECIFICATIONS. PRIME SURFACES WITH DENSO PASTE OR APPROVED EQUAL.

ANODE INSTALLATION NOTES:

1. ANODE SHALL BE INSTALLED ON SAME HORIZONTAL PLANE AS VALVE. IF MULTIPLE VALVES ARE JUMPED TOGETHER, INSTALL THE ANODE AT MIDPOINT BETWEEN THEM.
2. HIGH POTENTIAL MAGNESIUM ANODES SHALL BE PREPACKAGED IN A CLOTH BAG WITH A BACKFILL MIXTURE OF 75% GYPSUM, 20% BENTONITE AND 5% SODIUM SULFATE. THE ANODES SHALL HAVE A 20 POUND BARE WEIGHT AND APPROXIMATELY 70 POUND PACKAGED WEIGHT.
3. THE CONTRACTOR IS REQUIRED TO PROVIDE COORDINATES OR PIPE STATIONING FOR EACH ANODE INSTALLED.
4. ALL CABLES SHALL BE SINGLE CONDUCTOR, STRANDED COPPER, WITH TYPE HMWPE INSULATION RATED FOR 600 VOLTS.
5. SPLIT-BOLT CONNECTIONS SHALL NOT BE ALLOWED ON ANY UNDERGROUND CONDUCTORS. IF SPLICES ARE REQUIRED, COMPRESSION CONNECTIONS (BURNDY OR APPROVED EQUAL) SHALL BE USED. COMPRESSION CONNECTIONS SHALL BE SEALED WITH A HEAT SHRINK SLEEVE RATED FOR BELOW GRADE USE.

TYPICAL VALVE & VALVE BOX ASSEMBLY DETAIL 60-21

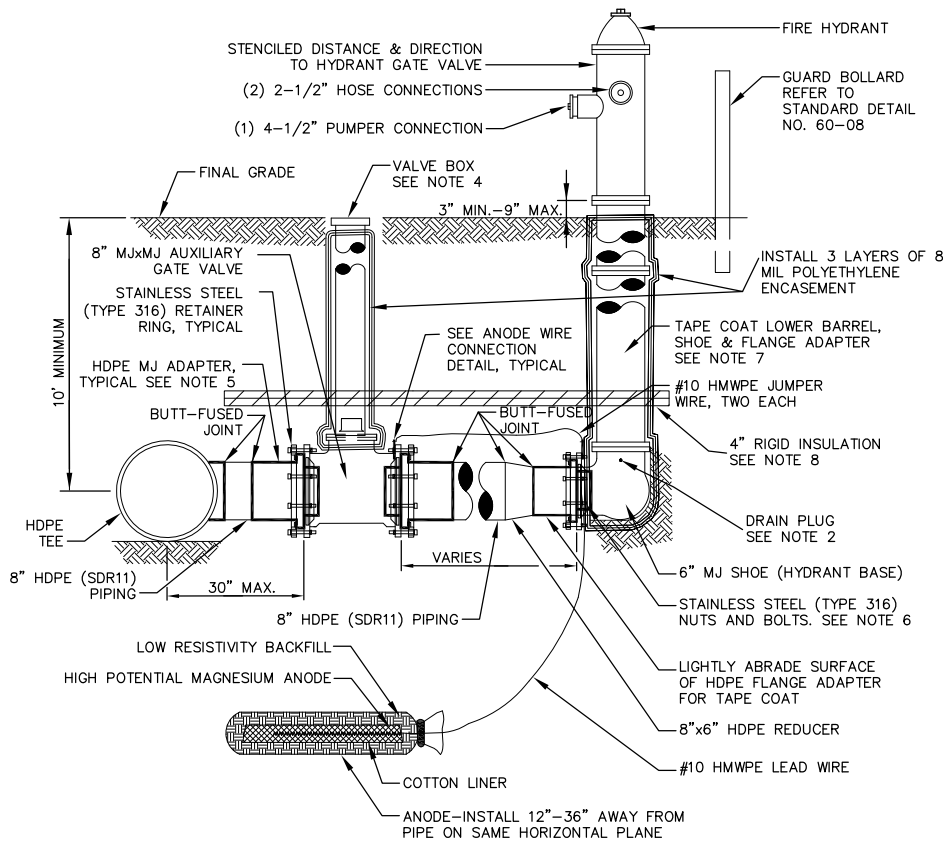
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HYDRANT INSTALLATION NOTES:

1. HYDRANT BARREL SHALL BE INSTALLED PLUMB AND THE LEG SHALL BE INSTALLED LEVEL.
2. DRAIN PLUG SHALL BE INSTALLED BY CONTRACTOR.
3. ALL HYDRANTS SHALL BE PAINTED CATERPILLAR YELLOW.
4. AUXILIARY GATE VALVE & VALVE BOX SHALL BE INSTALLED ACCORDING TO DETAIL FOR TYPICAL VALVE & VALVE BOX ASSEMBLY.
5. FURNISH AND INSTALL RUBBER GASKET/NSF 61 BETWEEN ALL MJ'S.
6. ALL STAINLESS STEEL BOLT THREADS SHALL BE COATED WITH TS MOLY-LUBRICANTS TS-74 STAINLESS ANTISEIZE, OR APPROVED EQUAL, IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. TAPE COAT LOWER BARREL, SHOE, MJ ADAPTER, AND ALL BURIED BOLTED CONNECTIONS WITH DENSYL TAPE OR APPROVED EQUAL IN ACCORDANCE WITH THE SPECIFICATIONS. PRIME SURFACES WITH DENSO PASTE OR APPROVED EQUAL.
8. 4" (R-20 EQUIVALENT) EXTRUDED POLYSTYRENE, 60 PSI, RIGID BOARD INSULATION. 4' WIDE CENTERED OVER THE PIPE WITH STAGGERED INSULATION SEAMS. INSTALL ENTIRE LENGTH FROM THE MAIN TO THE HYDRANT SHOE, INCLUDING AROUND THE VALVE BOX BASE AND EXTENSION.

ANODE INSTALLATION NOTES:

1. ANODE SHALL BE INSTALLED ON SAME HORIZONTAL PLANE AND NEAR MIDPOINT OF THE HYDRANT LEG. IF VALVES OR HYDRANTS ARE JUMPED TOGETHER, INSTALL THE ANODE AT MIDPOINT BETWEEN THEM.
2. HIGH POTENTIAL MAGNESIUM ANODES SHALL BE PREPACKAGED IN A CLOTH BAG WITH A BACKFILL MIXTURE OF 75% GYPSUM, 20% BENTONITE AND 5% SODIUM SULFATE. THE ANODES SHALL HAVE A 20 POUND BARE WEIGHT AND APPROXIMATELY 70 POUND PACKAGED WEIGHT.
3. THE CONTRACTOR IS REQUIRED TO PROVIDE COORDINATES OR PIPE STATIONING FOR EACH ANODE INSTALLED.
4. ALL CABLES SHALL BE SINGLE CONDUCTOR, STRANDED COPPER, WITH TYPE HMWPE INSULATION RATED FOR 600 VOLTS.
5. SPLIT-BOLT CONNECTIONS SHALL NOT BE ALLOWED ON ANY UNDERGROUND CONDUCTORS. IF SPLICES ARE REQUIRED, COMPRESSION CONNECTIONS (BURNDY OR APPROVED EQUAL) SHALL BE USED. COMPRESSION CONNECTIONS SHALL BE SEALED WITH A HEAT SHRINK SLEEVE RATED FOR BELOW GRADE USE.

SINGLE PUMPER 'L' BASE HYDRANT ASSEMBLY DETAIL 60-22

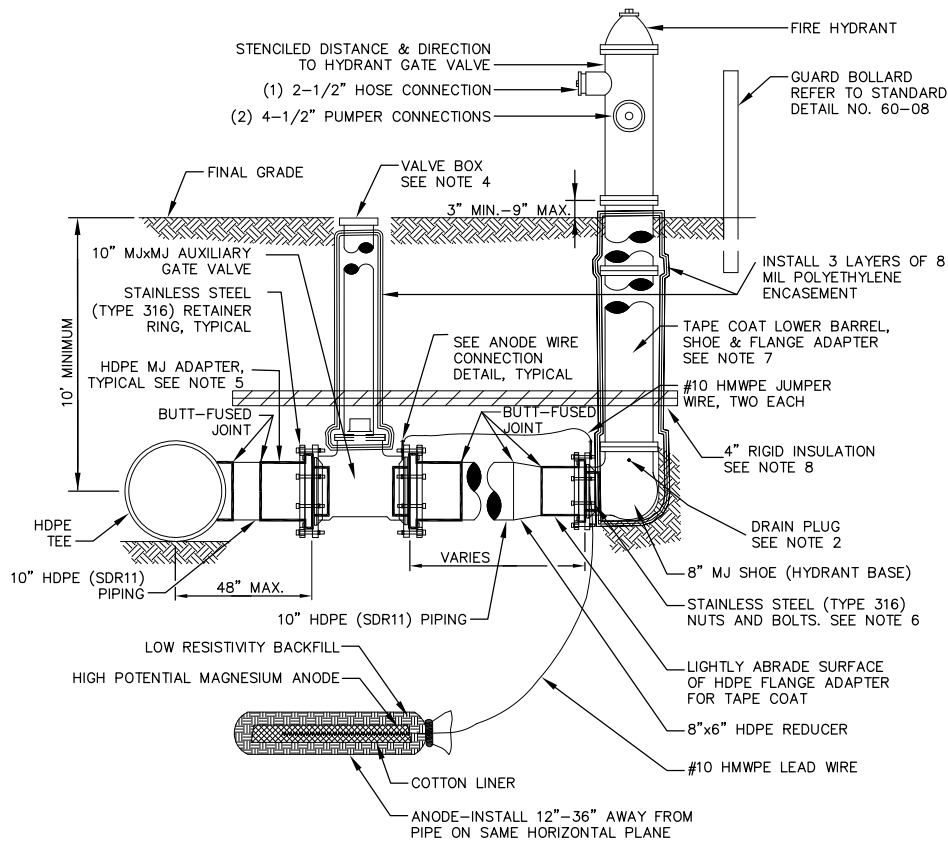
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HYDRANT INSTALLATION NOTES:

1. HYDRANT BARREL SHALL BE INSTALLED PLUMB AND THE LEG SHALL BE INSTALLED LEVEL.
2. DRAIN PLUG SHALL BE INSTALLED BY CONTRACTOR.
3. ALL HYDRANTS SHALL BE PAINTED CATERPILLAR YELLOW.
4. AUXILIARY GATE VALVE & VALVE BOX SHALL BE INSTALLED ACCORDING TO DETAIL FOR TYPICAL VALVE & VALVE BOX ASSEMBLY.
5. FURNISH AND INSTALL RUBBER GASKET/NSF 61 BETWEEN ALL MJ'S.
6. ALL STAINLESS STEEL BOLT THREADS SHALL BE COATED WITH TS MOLY-LUBRICANTS TS-74 STAINLESS ANTISEIZE, OR APPROVED EQUAL, IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. TAPE COAT LOWER BARREL, SHOE, MJ ADAPTER, AND ALL BURIED BOLTED CONNECTIONS WITH DENSYL TAPE OR APPROVED EQUAL IN ACCORDANCE WITH THE SPECIFICATIONS. PRIME SURFACES WITH DENSO PASTE OR APPROVED EQUAL.
8. 4" (R-20 EQUIVALENT) EXTRUDED POLYSTYRENE, 60 PSI, RIGID BOARD INSULATION. 4' WIDE CENTERED OVER THE PIPE WITH STAGGERED INSULATION SEAMS. INSTALL ENTIRE LENGTH FROM THE MAIN TO THE HYDRANT SHOE, INCLUDING AROUND THE VALVE BOX BASE AND EXTENSION.

ANODE INSTALLATION NOTES:

1. ANODE SHALL BE INSTALLED ON SAME HORIZONTAL PLANE AND NEAR MIDPOINT OF THE HYDRANT LEG. IF VALVES OR HYDRANTS ARE JUMPERED TOGETHER, INSTALL THE ANODE AT MIDPOINT BETWEEN THEM.
2. HIGH POTENTIAL MAGNESIUM ANODES SHALL BE PREPACKAGED IN A CLOTH BAG WITH A BACKFILL MIXTURE OF 75% GYPSUM, 20% BENTONITE AND 5% SODIUM SULFATE. THE ANODES SHALL HAVE A 20 POUND BARE WEIGHT AND APPROXIMATELY 70 POUND PACKAGED WEIGHT.
3. THE CONTRACTOR IS REQUIRED TO PROVIDE COORDINATES OR PIPE STATIONING FOR EACH ANODE INSTALLED.
4. ALL CABLES SHALL BE SINGLE CONDUCTOR, STRANDED COPPER, WITH TYPE HMWPE INSULATION RATED FOR 600 VOLTS.
5. SPLIT-BOLT CONNECTIONS SHALL NOT BE ALLOWED ON ANY UNDERGROUND CONDUCTORS. IF SPLICES ARE REQUIRED, COMPRESSION CONNECTIONS (BURNDY OR APPROVED EQUAL) SHALL BE USED. COMPRESSION CONNECTIONS SHALL BE SEALED WITH A HEAT SHRINK SLEEVE RATED FOR BELOW GRADE USE.

DOUBLE PUMPER 'L' BASE HYDRANT ASSEMBLY DETAIL 60-23

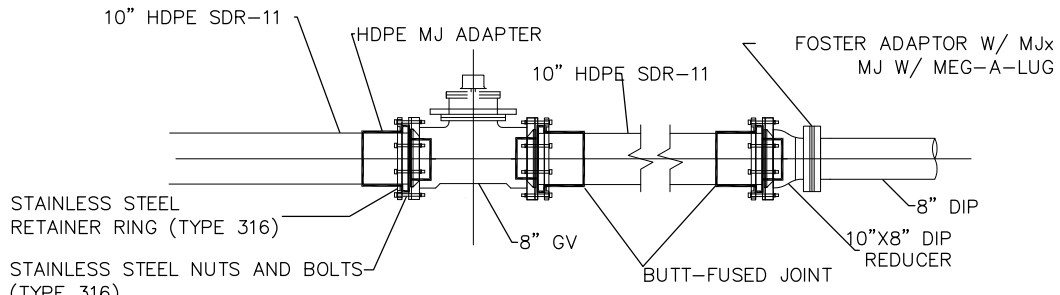
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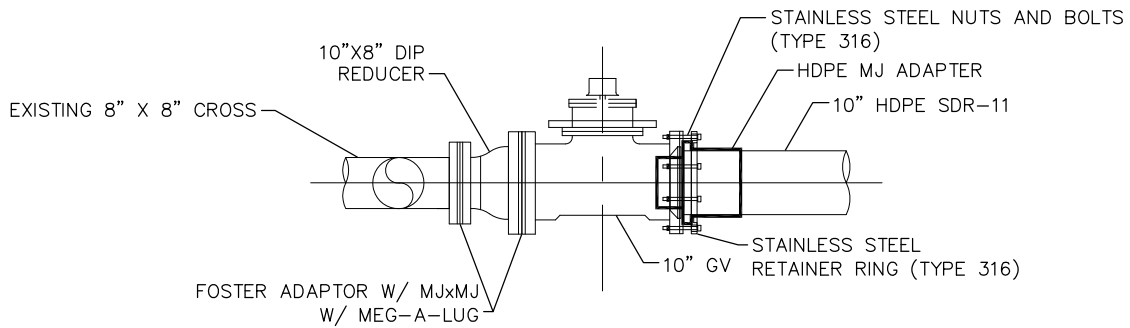
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CONNECTION DETAIL 60-25

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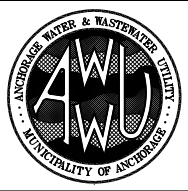


CONNECTION DETAIL 60-24

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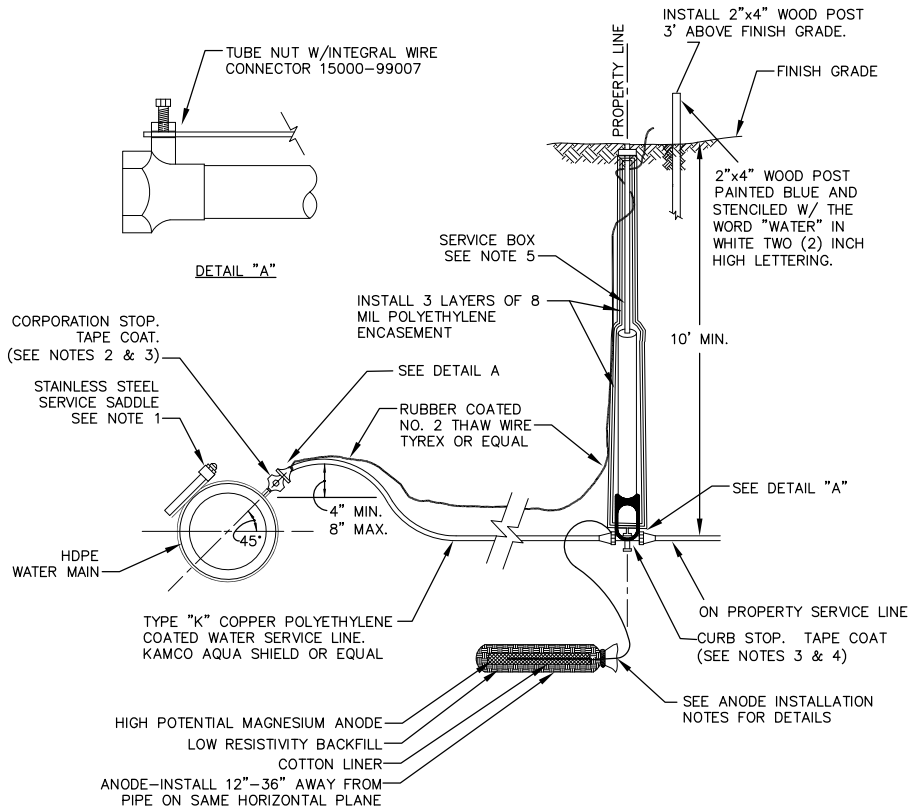
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WATER SERVICE INSTALLATION NOTES:

1. STAINLESS STEEL SERVICE SADDLE SHALL BE ROMAC 306-H OR APPROVED EQUAL. INSTALL STAINLESS STEEL (TYPE 316) NUTS, BOLTS AND WASHERS AND TORQUE PER MANUFACTURER'S RECOMMENDATIONS.
2. CORPORATION STOP SHALL BE MUELLER H-15025 OR APPROVED EQUAL.
3. TAPE COAT NEW SERVICE VALVES AND FITTINGS WITH DENSYL TAPE OR APPROVED EQUAL IN ACCORDANCE WITH SPECIFICATIONS. PRIME SURFACES WITH DENSO PASTE OR APPROVED EQUAL.
4. CURB STOP SHALL BE MUELLER H-15214 OR APPROVED EQUAL.
5. SERVICE BOX SHALL BE MUELLER H-10306 OR APPROVED EQUAL. ROD SHALL BE ATTACHED TO CURB STOP WITH 4" BRASS COTTER PIN OR #6 AWG SOLID COPPER WIRE
6. ALL STAINLESS STEEL BOLT THREADS SHALL BE COATED WITH TS MOLY-LUBRICANTS TS-74 STAINLESS ANTISEIZE, OR APPROVED EQUAL, IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

ANODE INSTALLATION NOTES:

1. ANODE SHALL BE INSTALLED ON SAME HORIZONTAL PLANE AS THE WATER SERVICE.
2. HIGH POTENTIAL MAGNESIUM ANODES SHALL BE PREPACKAGED IN A CLOTH BAG WITH A BACKFILL MIXTURE OF 75% GYPSUM, 20% BENTONITE AND 5% SODIUM SULFATE. THE ANODES SHALL HAVE A 17 POUND BARE WEIGHT AND APPROXIMATELY 45 POUND PACKAGED WEIGHT.
3. THE CONTRACTOR IS REQUIRED TO PROVIDE COORDINATES OR PIPE STATIONING FOR EACH ANODE INSTALLED.
4. ALL CABLES SHALL BE SINGLE CONDUCTOR, STRANDED COPPER, WITH TYPE HMWPE INSULATION RATED FOR 600 VOLTS.
5. SPLIT-BOLT CONNECTIONS SHALL NOT BE ALLOWED ON ANY UNDERGROUND CONDUCTORS. IF SPLICES ARE REQUIRED, COMPRESSION CONNECTIONS (BURNDY OR APPROVED EQUAL) SHALL BE USED. COMPRESSION CONNECTIONS SHALL BE SEALED WITH A HEAT SHRINK SLEEVE RATED FOR BELOW GRADE USE.

WATER SERVICE CONNECT 1" DETAIL 60-26

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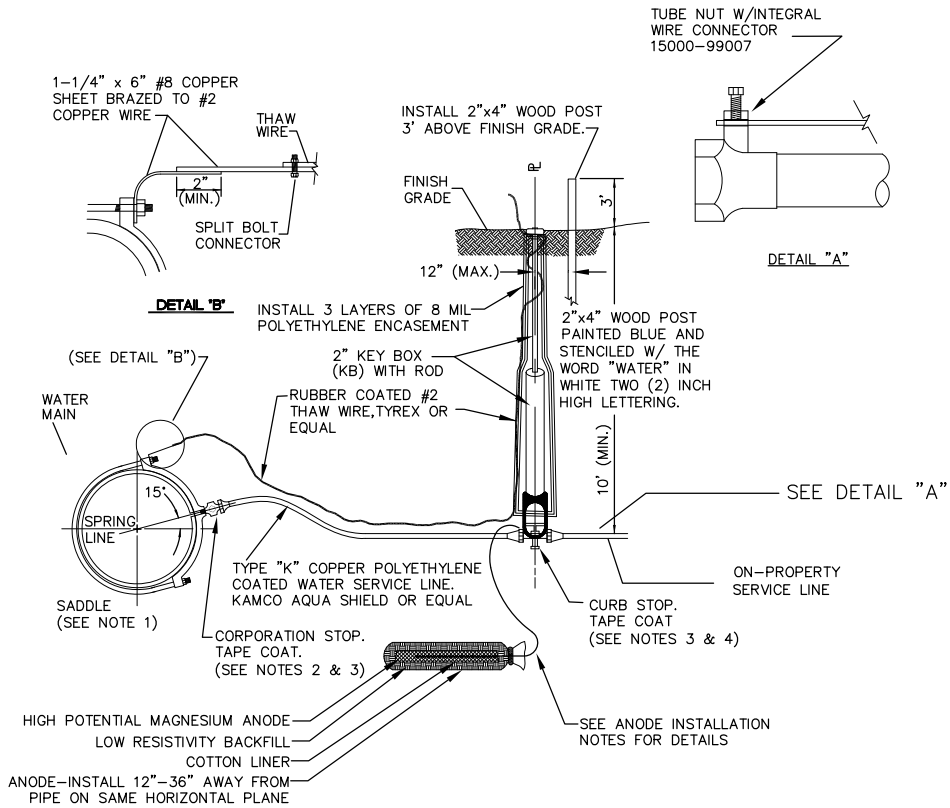
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NOTES:

1. HDPE DOUBLE STRAP SERVICE SADDLE SHALL BE ROMAC 202N-H OR APPROVED EQUAL. INSTALL STAINLESS STEEL (TYPE 316L) NUTS, BOLTS AND WASHERS AND TORQUE PER MANUFACTURER RECOMMENDATIONS.
2. CORPORATION STOP SHALL BE MUELLER H-15025 OR APPROVED EQUAL.
3. TAPE COAT NEW SERVICE VALVES AND FITTINGS WITH DENSYL TAPE OR APPROVED EQUAL IN ACCORDANCE WITH SPECIFICATIONS. PRIME SURFACES WITH DENSO PASTE OR APPROVED EQUAL.
4. CURB STOP SHALL BE MUELLER H-15214 OR APPROVED EQUAL.
5. SERVICE BOX SHALL BE MUELLER H-10306 OR APPROVED EQUAL. ROD SHALL BE ATTACHED TO CURB STOP WITH 4" BRASS COTTER PIN OR #6 SOLID COPPER WIRE
6. ALL STAINLESS STEEL BOLT THREADS SHALL BE COATED WITH TS MOLY-LUBRICANTS TS-74 STAINLESS ANTISEIZE, OR APPROVED EQUAL, IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.

ANODE INSTALLATION NOTES:

1. ANODE SHALL BE INSTALLED ON SAME HORIZONTAL PLANE AS THE WATER SERVICE.
2. HIGH POTENTIAL MAGNESIUM ANODES SHALL BE PREPACKAGED IN A CLOTH BAG WITH A BACKFILL MIXTURE OF 75% GYPSUM, 20% BENTONITE AND 5% SODIUM SULFATE. THE ANODES SHALL HAVE A 17 POUND BARE WEIGHT AND APPROXIMATELY 45 POUND PACKAGED WEIGHT.
3. THE CONTRACTOR IS REQUIRED TO PROVIDE COORDINATES OR PIPE STATIONING FOR EACH ANODE INSTALLED.
4. ALL CABLES SHALL BE SINGLE CONDUCTOR, STRANDED COPPER, WITH TYPE HMWPE INSULATION RATED FOR 600 VOLTS.
5. SPLIT-BOLT CONNECTIONS SHALL NOT BE ALLOWED ON ANY UNDERGROUND CONDUCTORS. IF SPLICES ARE REQUIRED, COMPRESSION CONNECTIONS (BURNDY OR APPROVED EQUAL) SHALL BE USED. COMPRESSION CONNECTIONS SHALL BE SEALED WITH A HEAT SHRINK SLEEVE RATED FOR BELOW GRADE USE.

WATER SERVICE CONNECT 1-1/2"/2" DETAIL 60-27

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2" CLASS E A.C. PAVEMENT

2" LEVELING COURSE

FINISH GRADE VARIES

6" TYPE IIA

EXISTING NATIVE MATERIAL MEETING F1/F2 FROST DESIGN SOIL CLASSIFICATION OR IMPORTED TYPE III CLASSIFIED FILL SPECIFICATION AS DIRECTED BY THE ENGINEER, COMPACTED TO MINIMUM OF 95% MAXIMUM DENSITY, INCLUDING OUTSIDE OF THE R.O.W. STRUCTURAL SECTION.

SLOPE TRENCH WALLS ACCORDING TO SOIL CONDITIONS AND O.S.H.A. SAFETY STANDARDS

10' (MIN.)

C OF TRENCH

TYPE II-A IMPORTED BEDDING MATERIAL AS SPECIFIED IN SPECIFICATIONS (SPECIAL PROVISIONS) OR AS DIRECTED BY THE ENGINEER. COMPACTION SHALL BE MIN. 95% OF MAX. DENSITY.



PORTABLE STEEL SHIELD (TYPICAL TRENCH BOX)

1" TYPE K COPPER POLYETHYLENE COATED WATER SERVICE LINE. KAMCO AQUA SHIELD OR EQUAL.

TYPICAL WATER SERVICE DETAIL
DETAIL 60-28
N.T.S.

HDPE_WATER_NOTES.DWG

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MUNICIPALITY OF ANCHORAGE
 WATER & WASTEWATER UTILITY
DESIGN AND CONSTRUCTION PRACTICES
 HDPE WATER MAIN CONSTRUCTION DETAILS
 HDPE WATER SERVICE DETAILS

REVISED		Date
03/2008	MEQ	02/2010
03/2008	ALR	Scale
08/2008	JRJ	NTS
02/2010	DEL	Sheet
XX/20XX	XXX	13 of 13