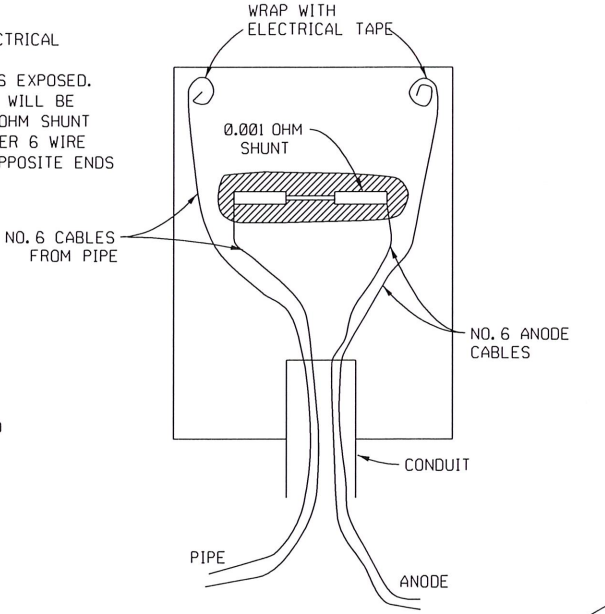
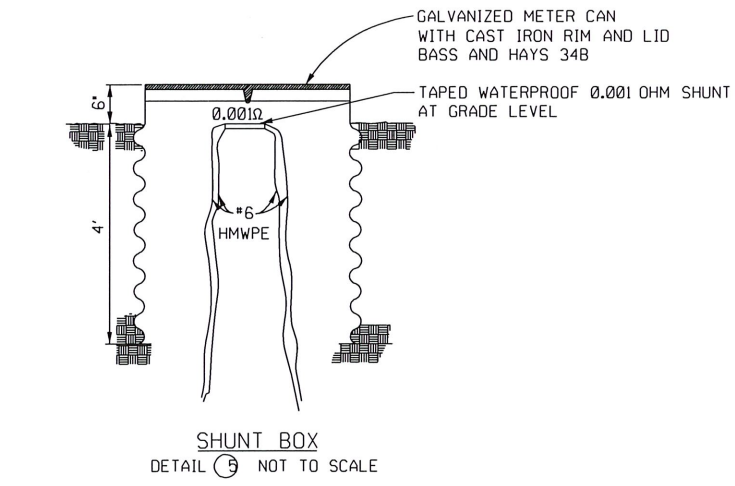


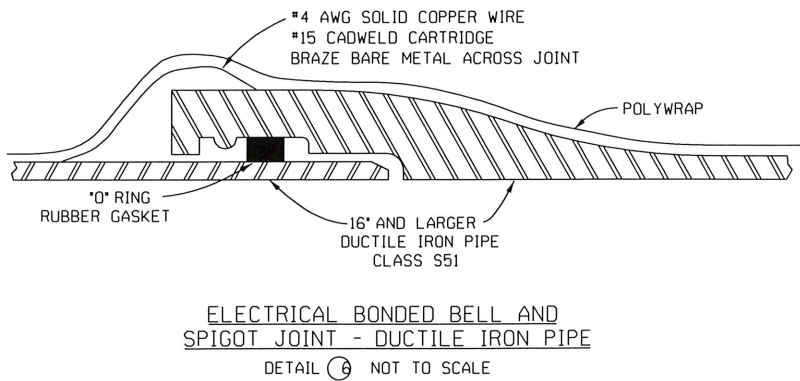
NOTE: 1. COAT SHUNT WITH ELECTRICAL PUTTY AND TAPE. 2. LEAVE TEST TERMINALS EXPOSED. 3. ONLY TWO NO. 6 WIRES WILL BE HOOKED TO THE .001 OHM SHUNT AT A TIME, ONE NUMBER 6 WIRE FROM THE PIPE ON OPPOSITE ENDS OF THE SHUNT.



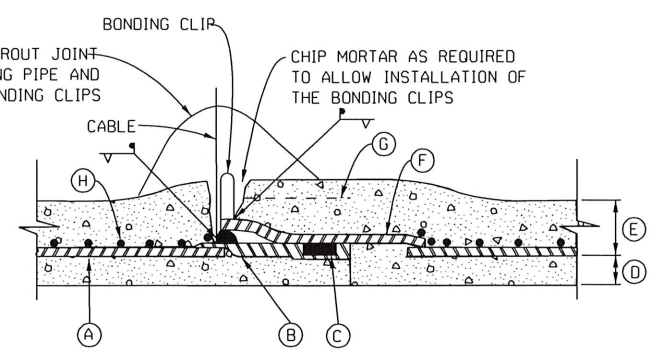
ALTERNATE SHUNT BOX FOR RURAL AREAS DETAIL 1 NOT TO SCALE



SHUNT BOX DETAIL 3 NOT TO SCALE

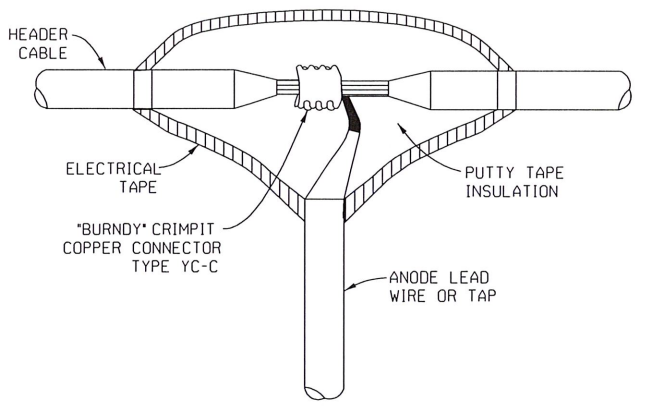


ELECTRICAL BONDED BELL AND SPIGOT JOINT - DUCTILE IRON PIPE DETAIL 4 NOT TO SCALE

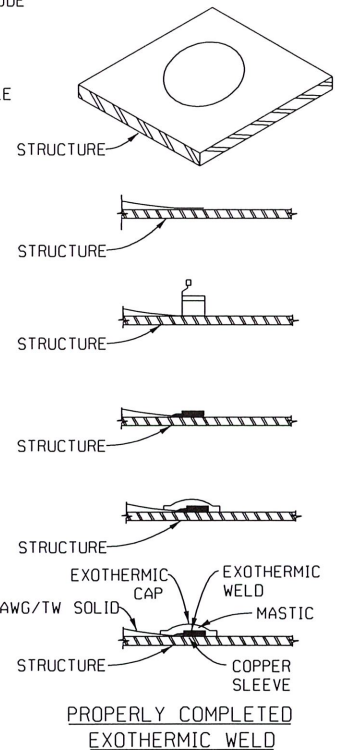


- (A) STEEL CYLINDER (E) MECHANICAL IMPACTED MORTAR COATING (B) SPIGOT RING (F) BELL RING (C) RUBBER GASKET (G) WELDED WIRE MESH (D) CONCRETE CORE (H) HIGH TENSILE WIRE UNDER TENSION

COMPONENT DESCRIPTION



MECHANICAL CABLE SPLICE DETAIL 2 NOT TO SCALE

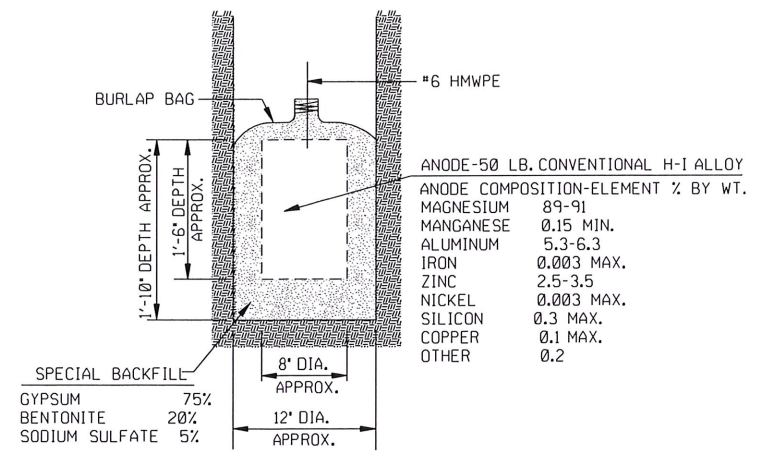


PROPERLY COMPLETED EXOTHERMIC WELD

- 1. FILE STRUCTURE SURFACE UNTIL 2" CIRCULAR AREA IS CLEAN, BRIGHT, AND DRY. 2. REMOVE REQUIRED AMOUNT OF INSULATION FROM WIRE. 3. CRIMP ON COPPER SLEEVE IF REQUIRED. 4. PLACE AGAINST CLEANED AND PROPERLY PREPARED SURFACE. 5. PLACE PROPERLY PREPARED WELDER OVER WIRE AND CLEANED SURFACE. 6. HOLD WELDER FIRMLY AGAINST STRUCTURE WITH A WIRE PROPERLY PLACED IN GROOVE PROVIDED. 7. IGNITE POWDER WITH FLINT IGNITER AND HOLD FIRMLY IN PLACE UNTIL WELD METAL IS BONDED. 8. REMOVE MOLD AND CLEAN RESIDUE FROM WELD. 9. TEST WELD INTEGRITY USING A SHARP BLOW TO THE SIDE OF WELD. 10. PLACE EXOTHERMIC CAP WITH MASTIC FILL OVER WELD.

FOR DUCTILE IRON PIPE, ALL BELL AND SPIGOT JOINTS SHALL BE ELECTRICALLY BONDED USING A NO. 4 AWG BARE COPPER WIRE, OF ADEQUATE LENGTH TO BRAZE, USING A NO. 15 CADWELD CARTRIDGE, THE COPPER WIRE TO THE BARE METAL AT THE BELL AND SPIGOT. COST SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF DUCTILE IRON PIPE. NO ADDITIONAL PAYMENT WILL BE MADE.

FOR DUCTILE IRON PIPE ONLY, JUNCTION BOX TEST STATION SHALL BE FURNISHED AND INSTALLED, EXCEPT, NO MAGNESIUM ANODE BANKS SHALL BE FURNISHED OR INSTALLED. JUNCTION BOX TEST STATIONS SHALL BE INSTALLED IN ACCORDANCE WITH THE STATIONING SHOWN ON THE SCHEDULE OF ANODE SPACING. COST SHALL BE INCLUDED IN THE UNIT PRICE BID PER LINEAR FOOT OF DUCTILE IRON PIPE. NO ADDITIONAL PAYMENT WILL BE MADE.



50 LB CONVENTIONAL ANODE DETAIL 3 NOT TO SCALE

SPECIAL BACKFILL: GYPSUM 75%, BENTONITE 20%, SODIUM SULFATE 5%

ANODE-50 LB. CONVENTIONAL H-I ALLOY ANODE COMPOSITION-ELEMENT % BY WT. MAGNESIUM 89-91, MANGANESE 0.15 MIN., ALUMINUM 5.3-6.3, IRON 0.003 MAX., ZINC 2.5-3.5, NICKEL 0.003 MAX., SILICON 0.3 MAX., COPPER 0.1 MAX., OTHER 0.2

SCHEDULE OF ANODE SPACING table with columns for STEEL PIPE (4) 50 LB. ANODES, (6) 50 LB. ANODES, and (10) 50 LB. ANODES. Rows represent stationing (STA) with '+' indicating anode placement.

Signature of City Engineer

CITY OF TULSA, OKLAHOMA ENGINEERING SERVICES DEPARTMENT

Signature of Design Manager

CATHODIC PROTECTION

REVISION table with columns for REVISION, BY, and DATE.

DATE: MARCH 2022

STD. 330