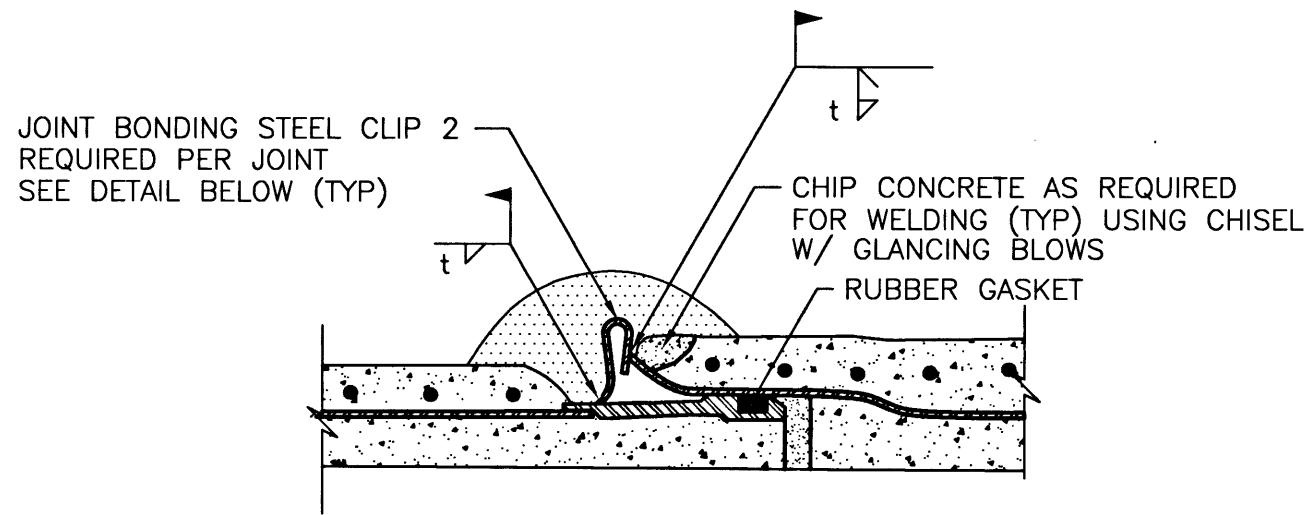
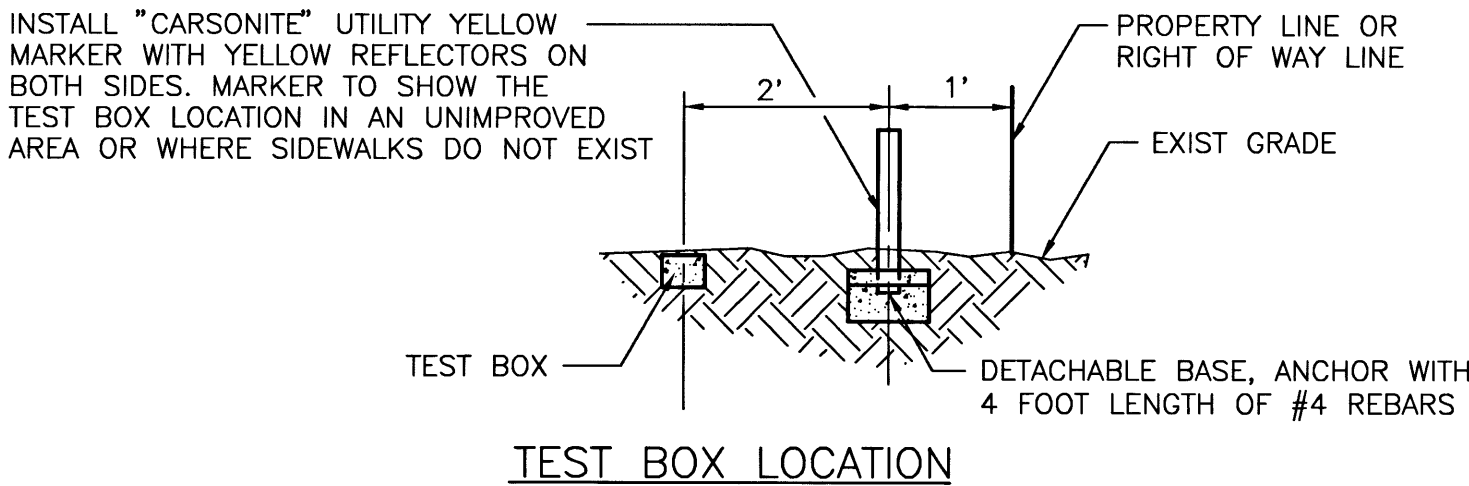
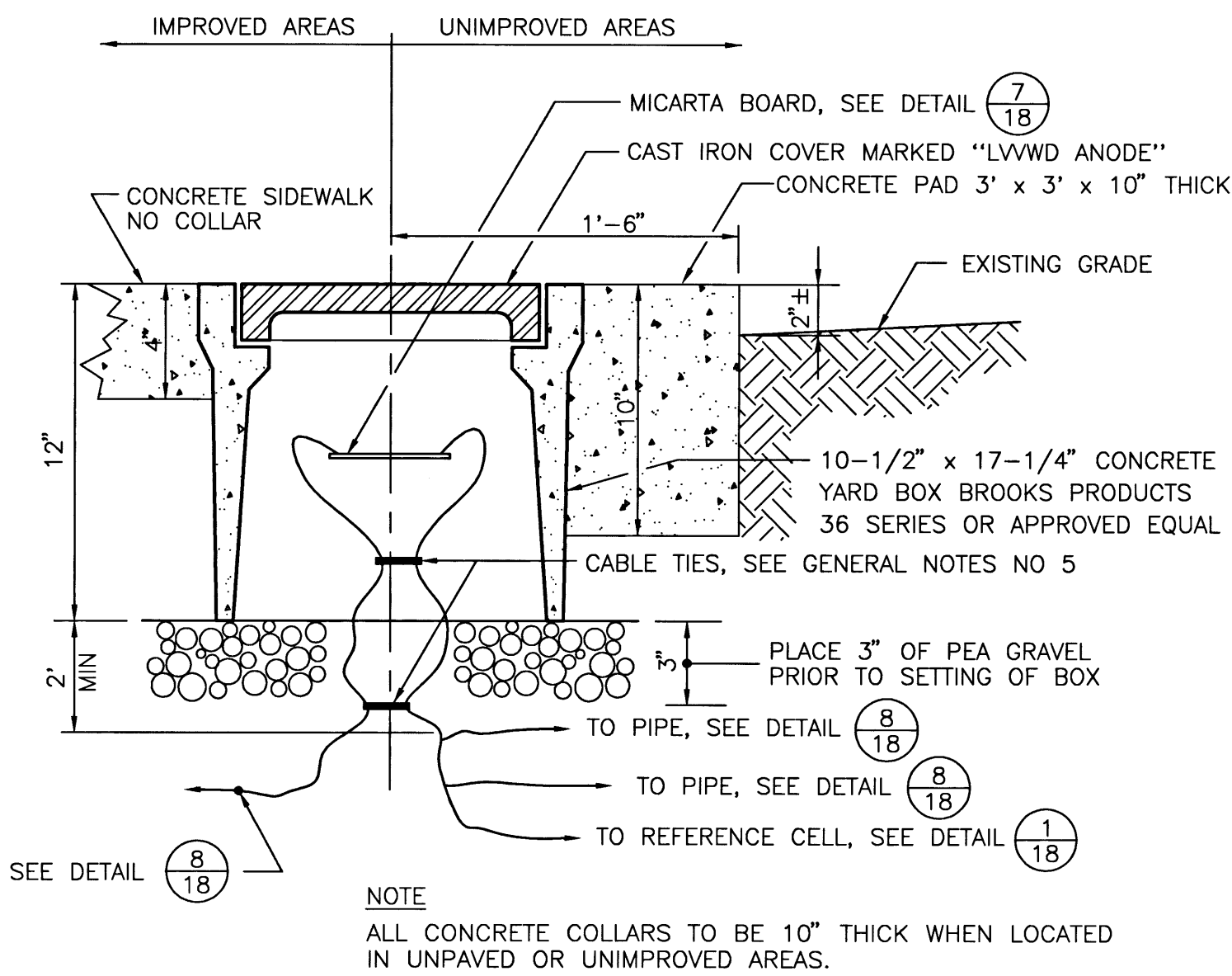




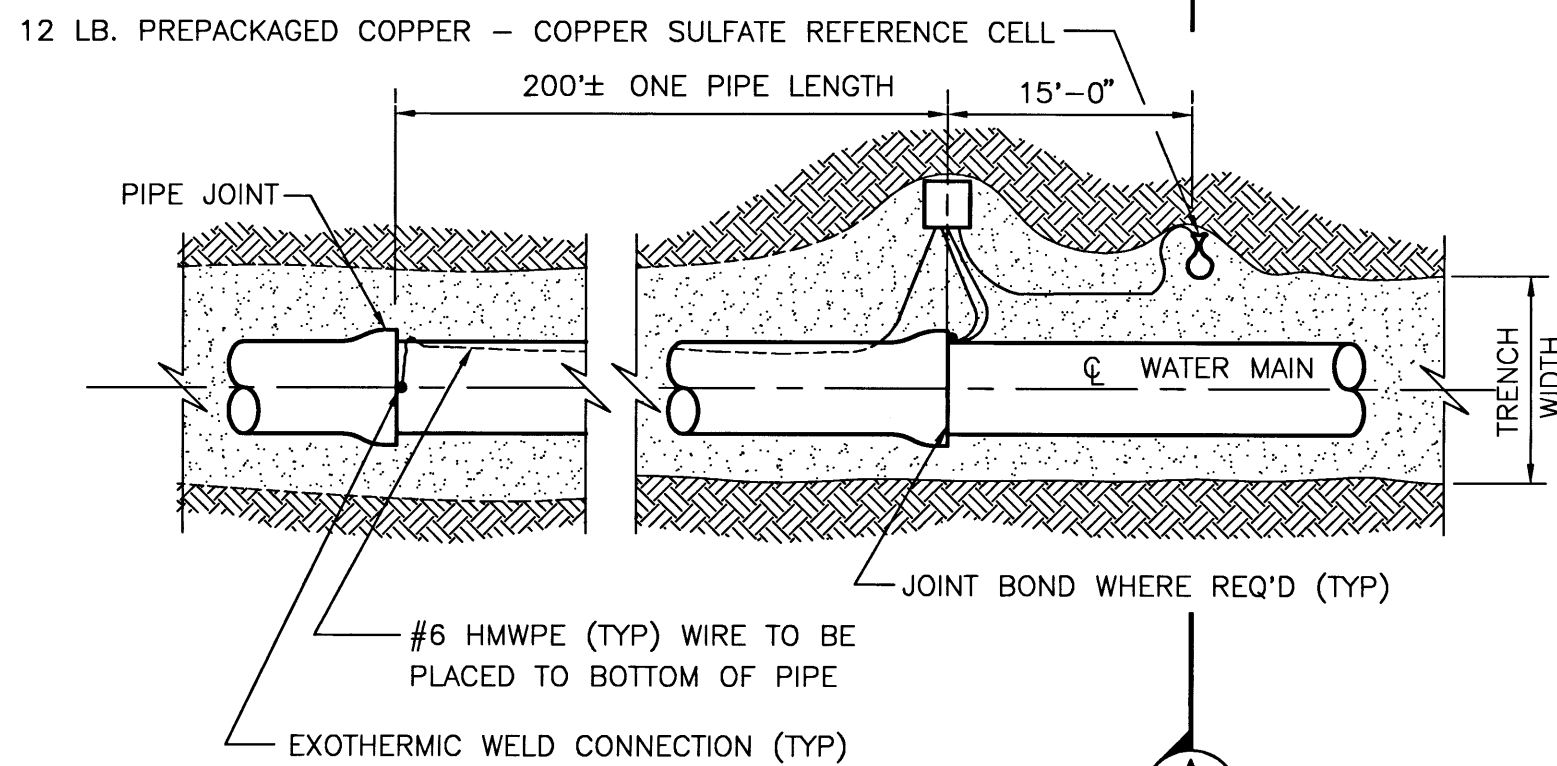
CARNEGIE JOINT BONDING DETAIL 3
18
NOT TO SCALE



TEST BOX LOCATION



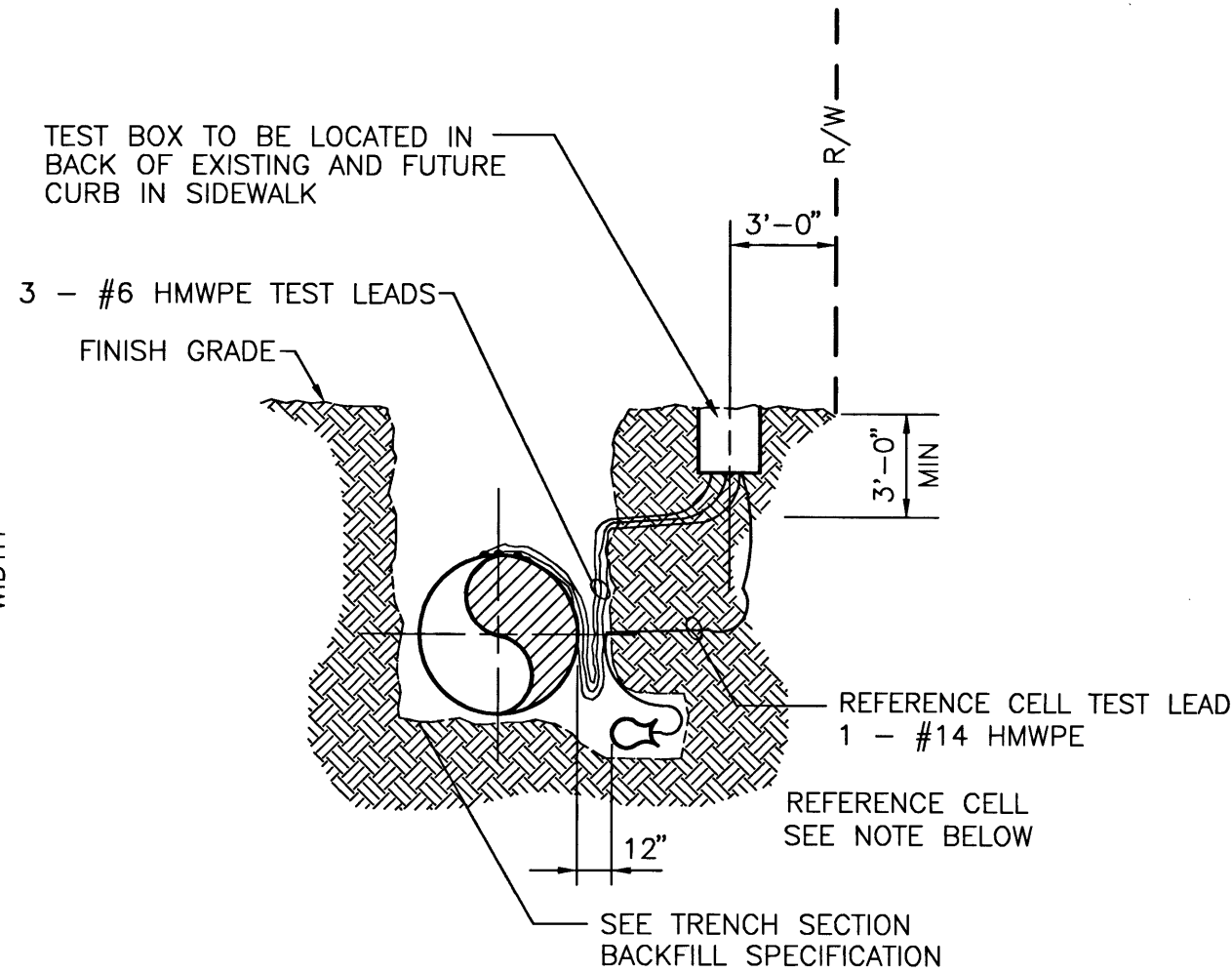
TYPICAL TEST BOX DETAIL 2
18
NOT TO SCALE



PLAN VIEW

APPROXIMATE PIPELINE STATIONING OF TEST STATIONS	
SHEET NO	STATION
4	9+00
4	18+00
5	28+00
6	39+50
7	49+50

TEST STATION INSTALLATION WITHOUT ANODES 1
18
NOT TO SCALE

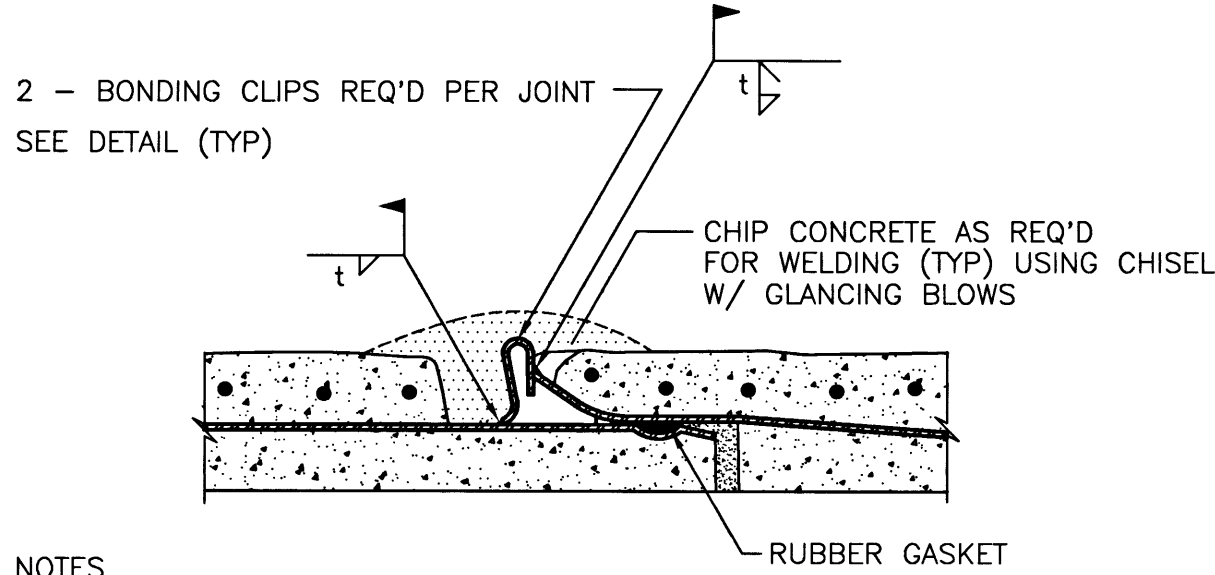


SECTION A

NOTE
USE ONLY NATIVE SOIL FREE OF ROCKS AND CLODS FOR BACKFILL AROUND CELLS WITH A MINIMUM OF 5 GALS OF WATER SATURATION DURING INSTALLATION. DO NOT USE SAND AS BACKFILL.

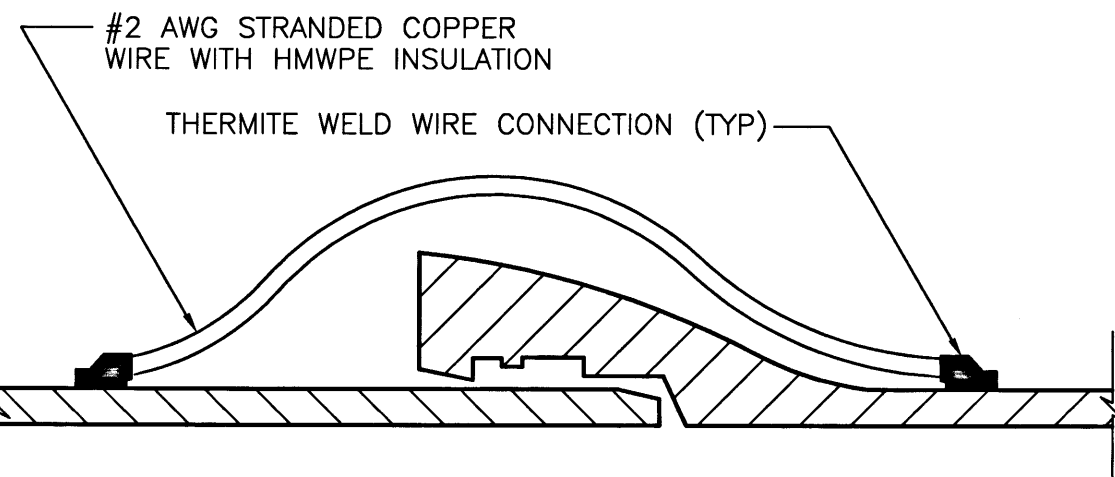
- 1 LYTHERM FILLER STRIP
- 1/4" R
- PT "A"
- 1/4" R
- # 10 GA
- 1/2"
- 1/4"
- 15/16"
- STEEL BONDING CLIP:
MATERIAL SPECIFICATION...ASTM A366 (COMMERCIAL QUALITY)
CUT LENGTH.....2 1/2" ± 1/16"
WIDTH.....1 1/4" ± 1/16"
 - LYTHERM FILLER STRIP TO BE 1' x 1 1/2" WIDE TO OVERLAP SIDES OF CLIP
 - CRIMP THE STEEL JOINT BONDING CLIP OVER THE LYTHERM FILLER STRIP AT PT "A" TO COMPRESS THE FILLER MATERIAL. CLOSE THE CAP AT PT "A" AS MUCH AS POSSIBLE WITHOUT CUTTING THE LYTHERM FILLER STRIP
 - IF THE LYTHERM FILLER STRIP IS CUT AT PT "A" REMOVE THE ENTIRE STRIP AND REPLACE WITH A NEW LYTHERM FILLER STRIP PER THIS DETAIL
 - INSTALL THE STEEL BONDING CLIPS ALONG THE TOP PORTION OF THE PIPE

BONDING CLIP DETAIL 4
18
NOT TO SCALE



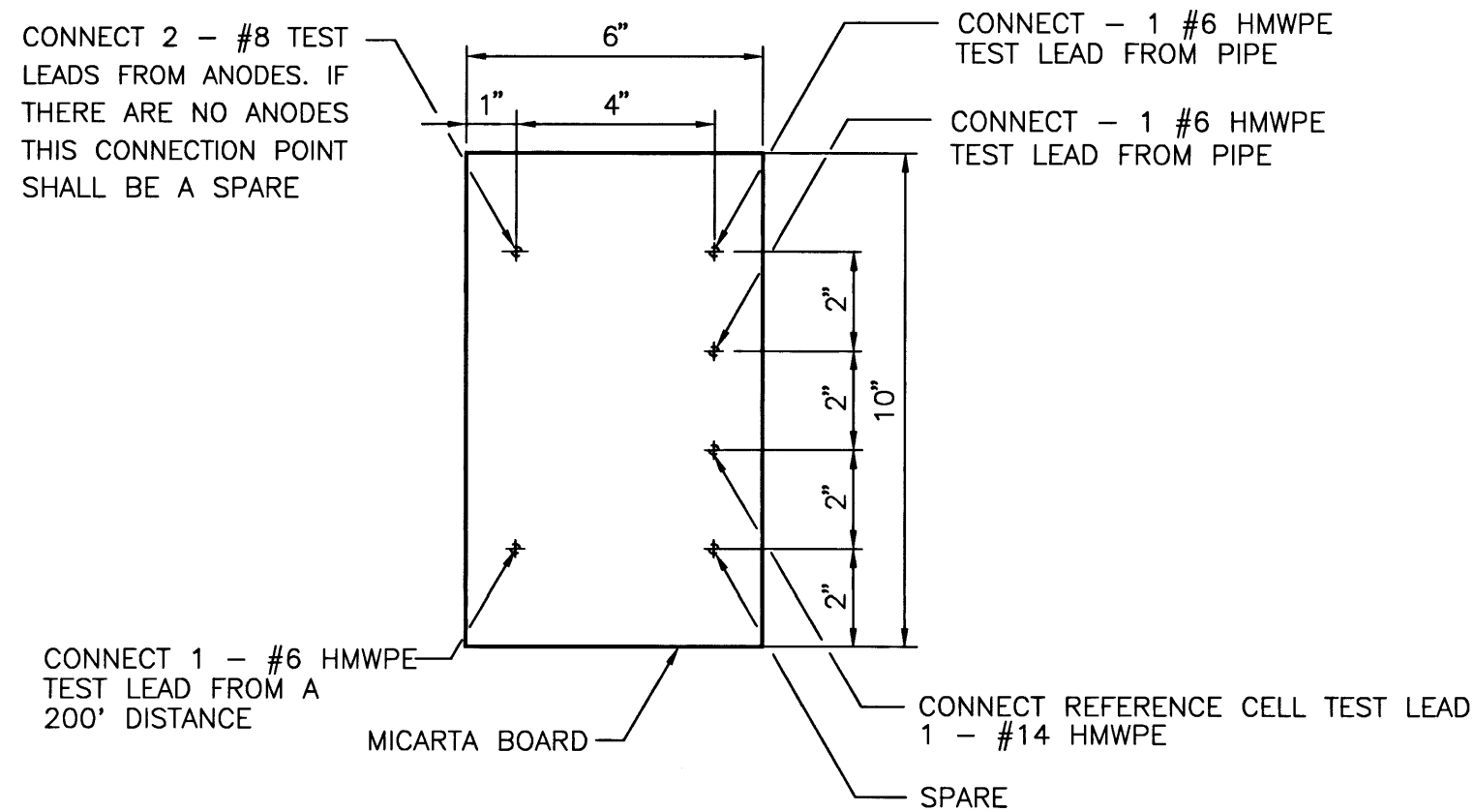
- NOTES**
- JOINT BONDING IS REQUIRED AT ALL BELL AND SPIGOT RUBBER GASKET JOINTS EXCEPT FOR FIELD WELDED JOINTS.
 - FOR JOINT BONDING INSTALLATIONS USING STRANDED COPPER BONDING CABLES MAINTAIN 4 TO 6 INCHES OF SLACK MIN. THE BONDING CABLE BETWEEN POINTS OF ATTACHMENT.

ROLLED - GROOVE JOINT BONDING DETAIL 5
18
NOT TO SCALE

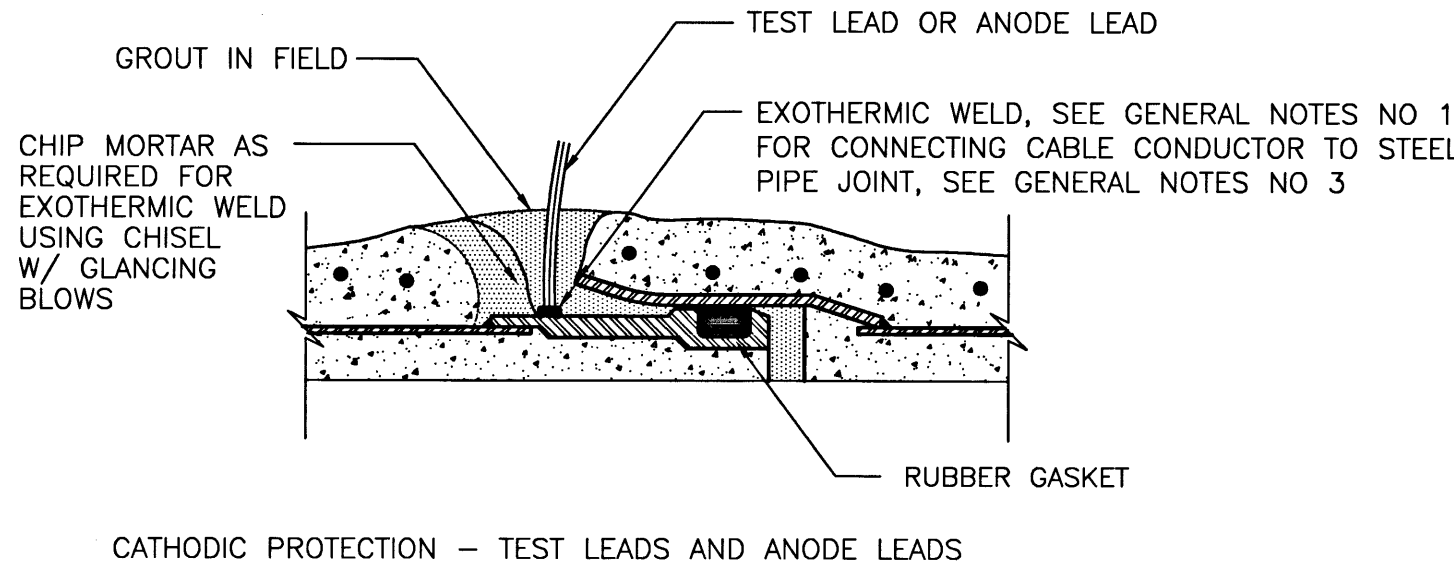


- NOTES**
- INSTALL TWO BOND WIRES AT EACH PIPE JOINT.

PUSH-ON JOINT BOND DETAIL 6
18
DUCTILE IRON PIPE
NOT TO SCALE



TYPICAL TEST BOARD DETAIL 7
18
NOT TO SCALE



TEST LEAD OR ANODE LEAD CONNECTION TO PIPE JOINT CARNEGIE OR RINGSEAL DETAIL 8
18
NOT TO SCALE

GENERAL NOTES

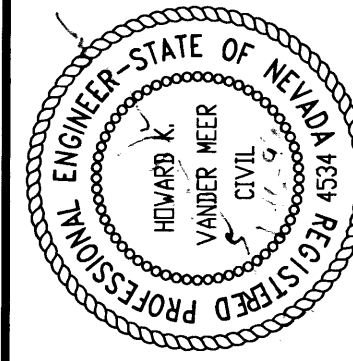
- ALL TEST LEADS AND ANODE LEADS SHALL BE ATTACHED TO THE STEEL CYLINDER OF THE PIPE BY MEANS OF A "CADWELD" EXOTHERMIC WELD.
- ALL TEST LEADS AND ANODE LEADS SHALL BE ATTACHED TO EITHER THE PIPELINE'S BELL END, SPIGOT END OR PLAIN END AS SHOWN ON THE DRAWING.
- ALL EXPOSED PORTIONS OF THE EXOTHERMIC WELD AND COPPER CABLE CONDUCTORS SHALL BE COATED WITH A SCOTCHCOAT 4 INSULATING RESIN PRIOR TO PLACING GROUT AROUND THE PIPELINE JOINT.
- ALL TEST LEADS AND ANODE LEADS SHALL BE RUN WITHOUT SPLICES FROM THE CONNECTION AT THE PIPE TO THE CONNECTION AT THE TEST STATION BOX.
- ALL TEST LEADS AND ANODE TEST LEADS INSIDE THE TEST BOX SHALL BE BUNDLED TOGETHER AT 8 INCH INTERVALS WITH NYLON CABLE TIES. ALL TEST STATION LEADS SHALL BE PROVIDED WITH SUFFICIENT SLACK SO THAT THE TEST BOARD MAY BE EXTENDED A MINIMUM OF 4 FEET ABOVE THE TEST BOX.
- ALL TEST LEADS AND ANODE LEADS SHALL BE COLOR CODED WITH COLORED TAPE AT EACH END AND AT 4 FOOT INTERVALS. COLOR CODE SHALL BE AS FOLLOWS:
TEST STATION LEADS FROM PIPE - WHITE
REFERENCE CELL TEST LEADS - RED
ANODE TEST LEADS - GREEN
200' TEST LEAD - BLUE
- ALL TEST LEADS AND ANODE LEADS SHALL BE CONNECTED TO THE BRASS BOLTS ON THE TEST BOARD WITH SOLDERLESS SCREW TIGHT COPPER LUG CONNECTORS OR PRESSURE TERMINAL CONNECTORS.
- ALL TEST LEADS AND ANODE TEST LEADS SHALL HAVE A MINIMUM OF 4' OF SLACK NEAR THE PIPE JOINT TO PREVENT DAMAGE DURING THE BACKFILL OPERATION.
- ALL TEST LEADS AND ANODE TEST LEADS SHALL BE PLACED ALONG THE SIDE AND BELOW THE SPRINGLINE OF THE PIPE.

LAS VEGAS VALLEY WATER DISTRICT

VERIFY SCALE

3205 ZONE RESERVOIR INLET/OUTLET PIPELINE

DRAWN BY: JUNE BRACIA/ANGELA RUSAGER 09/95
CHECKED BY: RON CHAPMAN 12/08/95



CONTRACT NUMBER
770
DRAWING NUMBER D11
SHEET 18 OF 19

CATHODIC PROTECTION DETAILS

SCALE 1"=1'

C:\DWG\3205\0\INOU-D11.DWG Plot @ 01-12-96 04:13 PM

R.P.E. NO. DATE

4534 1-12-94
R.P.E. NO. DATE
HOWARD VANDER WEER
ACCEPTED BY:

G.C. WALLACE, INC.
Engineering/Architecture
1555 SOUTH RAINBOW BLVD/LAS VEGAS, NEVADA 89102

