

| ITEM No. | DESCRIPTION | QTY |
|----------|--------------------------------------------------|-----|
| 1 | FACE PLATE (SEE DETAIL) | 1 |
| 2 | 1.6mm THICK NEOPRENE GASKET | 1 |
| 3 | TEST POINT UPSTAND (SEE DETAIL) | 1 |
| 4 | 6mm ² FLEXIBLE COPPER INSULATED CABLE | 1m |
| 5 | M6 x 20 316 S/STEEL HEX HEAD BOLT AND WASHER | 10 |
| 6 | UTILUX CRIMP LUG 8 DIA. HOLE/6mm CABLE | 6 |
| 7 | UTILUX 1405A/100 CRIMP LUG | 4 |

TEST POINT HEAD BILL OF MATERIALS (TYPE 2)

(1) TEST POINT HEAD FABRICATION NOTES:

- (1.1) MATERIAL - GRAVITY DIE CAST ALUMINIUM CORROSION RESISTANT GRADE CC601.
- (1.2) FIX GRUB SCREW INTO POSITION TO LOCK BOX ONTO UPSTAND (REFER TO DETAIL 2 & SECTION 3B).

(2) FACE PLATE FABRICATION NOTES:

- (2.1) MATERIAL - 6mm THICK LEXAN POLY CARBONATE
- (2.2) ALL LINEWORK AND PRINTING TO BE SILKSCREEN EPOXY ON INTERNAL FACE. WHITE BACKGROUND WITH BLACK LETTERING AND LINEWORK
- (2.3) FOR TYPE FS, CABLES TO THE FOREIGN STRUCTURE PIPE SHALL BE IDENTIFIED USING SUITABLE CABLE IDENTIFICATION.

(3) GENERAL NOTES:

- 3.1. THE THREADS ON THE TEST POINT UPSTAND AND IN THE TEST POINT HEAD SHALL BE CLEANED FREE OF OIL, GREASE AND DIRT. THE HEAD SHALL BE SCREWED DOWN ONTO THE UPSTAND AND POSITIONED BY THE GRUB SCREW (REFER TO DETAIL 2 & SECTION 3B), SO THAT THE BACK OF THE HEAD FACES UPSTREAM. AFTER FIXING BOX TO UPSTAND, PAINT EXPOSED PIPE THREADS WITH GALVANISING TYPE PAINT.
- 3.2. THE TEST POINT FACE PLATES SHALL BE HANDLED SUCH THAT THEY ARE NOT SCRATCHED OR MARKED IN ANY WAY.
- 3.3. CABLE SHALL BE INSTALLED WITH SLACK IN PIPE TRENCH AND CONDUIT. BACKFILL MUST NOT DAMAGE CABLE OR CAUSE STRAIN ON CABLE TERMINATIONS.
- 3.4. ATTACHMENT OF CABLES AND COATING REINSTATEMENT SHALL BE IN ACCORDANCE WITH DRAWINGS AND IN ACCORDANCE WITH ANY RELEVANT FOREIGN STRUCTURE OWNERS REQUIREMENTS. FINAL TEST POINT LOCATION & ARRANGEMENT SHALL BE SUBJECT TO THE DIRECTIVE OF THE COMPANY'S REPRESENTATIVE

(4) REFERENCE ELECTRODE:

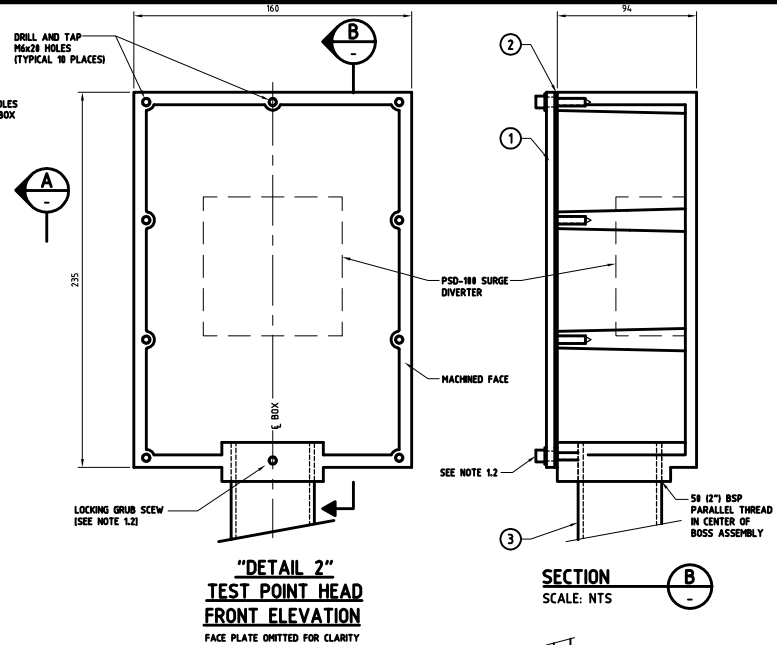
- 4.1. REFERENCE ELECTRODE SHALL BE STABILISED ZINC TO AS 2239-1993 TYPE 1Z1 AND PER ANODE ENGINEERING'S STANDARD DATA SHEET FOR STABILISED PERMANENT ZINC REFERENCE ELECTRODES TYPE AE-SP2RE-01. PERMANENT ELECTRODES SHALL BE SUPPLIED COMPLETE WITH A 10m TAIL OF FLEXIBLE COPPER CONDUCTOR (4mm² PVC YELLOW). THE REFERENCE IS IN A CALICO BAG FILLED WITH GYPSUM BENTONITE (AS 2239-1993). PRIOR TO INSTALLATION, REMOVE THE PACKAGE FROM THE PROTECTIVE PLASTIC BAG. SOAK THE CELL AND BACKFILL IN FRESH WATER FOR 20 MINUTES. AFTER SOAKING, INSTALL THE CELL IN THE PIPE TRENCH AS SHOWN IN THE DRAWINGS. IT IS RECOMMENDED THAT THE REFERENCE PACKAGE BE PLACED WITH FINE BACKFILL BELOW AND ON TOP OF THE CELL PACKAGE DURING BACKFILLING.

(5) FOREIGN CROSSING: (WHERE APPLICABLE)

- 5.1. IF THE FOREIGN STRUCTURE OWNER DOES NOT REQUIRE CABLES TO BE CONNECTED TO THEIR STRUCTURE/S YOU MUST RESPECT THIS REQUEST AND THUS NOT INSTALL ANY CABLING ATTACHMENTS TO THEIR STRUCTURE WITHOUT PRIOR WRITTEN CONSENT AND ADVICE OF THEIR RELEVANT PROCEDURAL REQUIREMENTS. OFTEN HOWEVER IT IS GOOD HOUSE KEEPING TO PLACE A PERMANENT REFERENCE CELL BETWEEN THE TWO PIPELINES AT THE CROSSING POINT. ALTERNATIVELY LOCATE THE CELL AS CLOSE AS POSSIBLE TO THE CROSSING POINT SUCH THAT ANY IR ERRORS DUE TO SOIL ERRORS ARE REDUCED TO A MINIMUM. LOCATE TEST FACILITIES AS CLOSE AS POSSIBLE TO ANY CROSSING POINT, AND ROUTE THE CABLING APPROPRIATELY IF THIS IS SOME DISTANCE FROM THE CROSSING POINT. IN THE EVENT THAT A FOREIGN STRUCTURE OWNER DOES NOT WISH TO HAVE CABLING INSTALLED ONTO THEIR PIPELINE AT THE TIME OF INSTALLATION, IT IS RECOMMENDED THAT A MINIMUM OF THREE METERS OF SPARE CABLE FOR FUTURE CONNECTION BE BURIED TWO METERS FROM THE TEST POINT IN THE CABLING TRENCH BETWEEN THE CLIENTS STRUCTURE AND THE FOREIGN STRUCTURE. THUS THE CABLE CAN BE EXHUMED IN THE FUTURE WITHOUT THE NEED TO DISTURB THE WIRING THAT SHALL BE TERMINATED IN THE FOREIGN STRUCTURE BOND BOX IN QUESTION

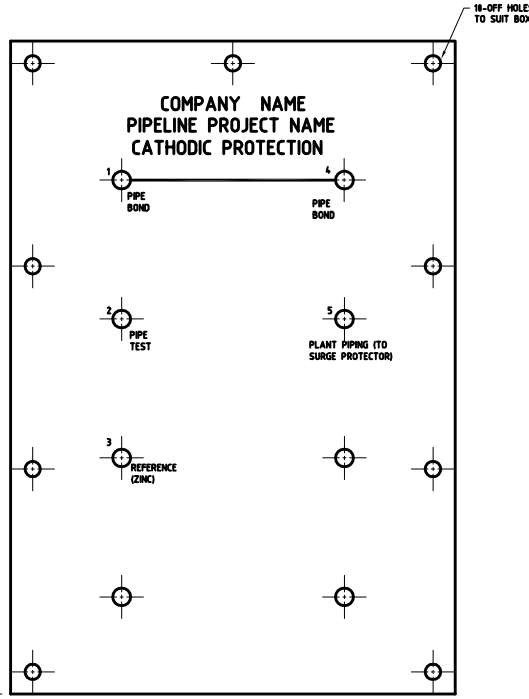
(6) EARTHING CABLE ATTACHMENTS (35mm² CABLE)

- 6.1. WHERE 35mm² CABLES ARE REQUIRED TO BE ATTACHED TO THE PIPELINE FOR ELECTRICAL EARTHING AND SURGE CONDUCTORS, THEY SHALL BE ATTACHED SIMILARLY TO THE 6mm² CABLE. ALLOW THE USE OF 15 GRAM EXOTHERMIC CHARGES AND CONDUCTORS SHALL BE SPLIT INTO BUNDLES OF 8 CABLE STRANDS OR LESS.
- 6.2. WHEN ATTACHING BUNDLES OF CONDUCTORS AS ABOVE, USE A 16mm² COPPER SLEEVE AND APPLY USING THE THERMOWELD PROCESS.
- 6.3. APPLY USING AN M100 OR M101 MOULD DESIGNED FOR THE APPLICATION OF 16mm² CONDUCTORS. REFER TO DRAWINGS D4101-010 & D4101-011.
- 6.4. SEE DRAWING D4101-014 - STRATHBLANE PLANT END.

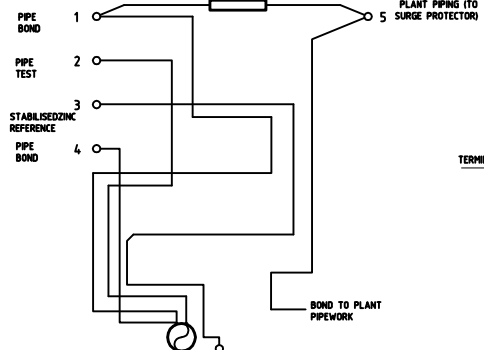


**"DETAIL 2"
TEST POINT HEAD
FRONT ELEVATION**
FACE PLATE OMITTED FOR CLARITY

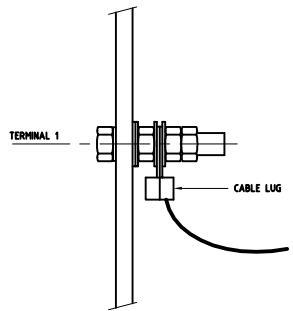
SECTION B
SCALE: NTS



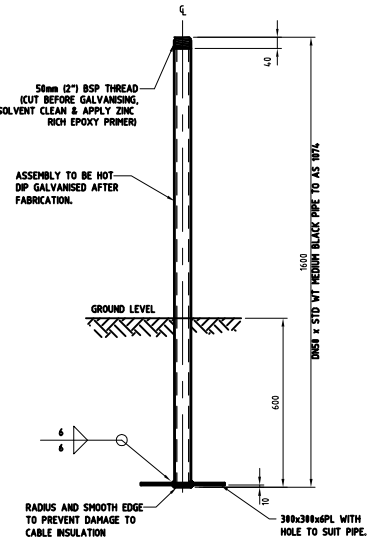
**"DETAIL 3"
FACE PLATE LAYOUT**
SCALE: N.T.S.



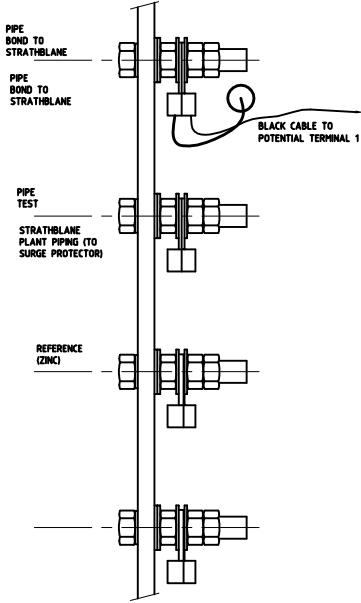
**ENCLOSURE CONNECTION SCHEMATIC
RP TYPE INSTALLATION**
INSTALLED AS SHOWN ON THIS DRAWING
SCALE: N.T.S.



**"DETAIL 1"
TYPICAL FACE PLATE
TERMINATION ARRANGEMENT**
N.T.S.



**"DETAIL 4"
TEST POINT UPSTAND**
SCALE: 1:10



SECTION A
SCALE: NTS

| No. | DATE | REVISIONS | DESIGN | DRAWN | CHK | APP |
|-----|------------|-------------------|--------|-------|-----|-----|
| A | 15-12-2006 | ISSUED FOR REVIEW | WB | AH | SB | WB |

PROPRIETARY INFORMATION

THIS DRAWING AND ALL INFORMATION SHOWN SHALL ONLY BE REPRODUCED IN FULL AND ONLY WITH THE EXPRESS PERMISSION OF ANODE ENGINEERING PTY. LTD OR AUTHORISED AGENT THEREOF.

| PROJECT | TITLE |
|-----------------------------------------------------------------|-----------------------------------|
| STANDARD DRAWING - TYPE 2 TEST POINT CATHODIC PROTECTION SYSTEM | INSTALLATION & CONNECTION DETAILS |

| | | |
|-------------|----------|----------------------------------------------------------------------------------------------------------------------------|
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| SCALE: | N.T.S. | |
| PROJECT No. | D4101 | |
| DRG No. | D010-006 | REV A |