



Bonneagar Iompair Éireann
Transport Infrastructure Ireland

TII Publications



Standard Construction Details - Series 1500

April 2017

Standard Construction Details (SCDs) – Series 1500

TII Publications contains Standard Construction Details (SCDs) for use on National Road schemes in Ireland. This composite document brings together all the Series 1500 SCDs from TII Publications current at the date of this document's publication, into a single location for convenience.

Every effort has been made to keep this composite document updated and available from the TII Publications website (<http://www.tiipublications.ie/>). Please note that the SCD drawings available from the TII Publications website (individually linked below) are the controlled versions for all SCDs.

The SCDs contained in this document are as follows:

Series 1500 Installation Drawing TCC

CC-SCD-01501	Installation Drawing TCC - Ducts for Motorway Cables at Interchange Overbridges
CC-SCD-01502	Installation Drawing TCC - Ducts for Motorway Cables at Interchange Overbridges
CC-SCD-01503	Installation Drawing TCC - Ducts for Motorway Cables for Single Bridges
CC-SCD-01504	Installation Drawing TCC - Network Ducts Sections
CC-SCD-01505	Installation Drawing TCC - Network Ducts Plan View
CC-SCD-01506	Installation Drawing TCC - Network Ducts Deep Transverse Ducts
CC-SCD-01507	Installation Drawing TCC - Local Ducts to Cabinet Sites
CC-SCD-01508	Installation Drawing TCC - Equipment Cabinet Arrangement, Typical Plinth Layout and Local Ducts
CC-SCD-01509	Installation Drawing TCC - Cabinet Arrangements General Layout
CC-SCD-01510	Installation Drawing TCC - Duct Installation Longitudinal Ducts
CC-SCD-01511	Installation Drawing TCC - Duct Installation Local Ducts
CC-SCD-01512	Installation Drawing TCC - Duct Installation Transverse Ducts
CC-SCD-01513	Installation Drawing TCC - Duct Installation Spacer and Strapping
CC-SCD-01514	Installation Drawing TCC - Duct Installation Mechanical Duct Plug
CC-SCD-01515	Installation Drawing TCC - Comms I Chambers

TRANSPORT INFRASTRUCTURE IRELAND (TII) PUBLICATIONS

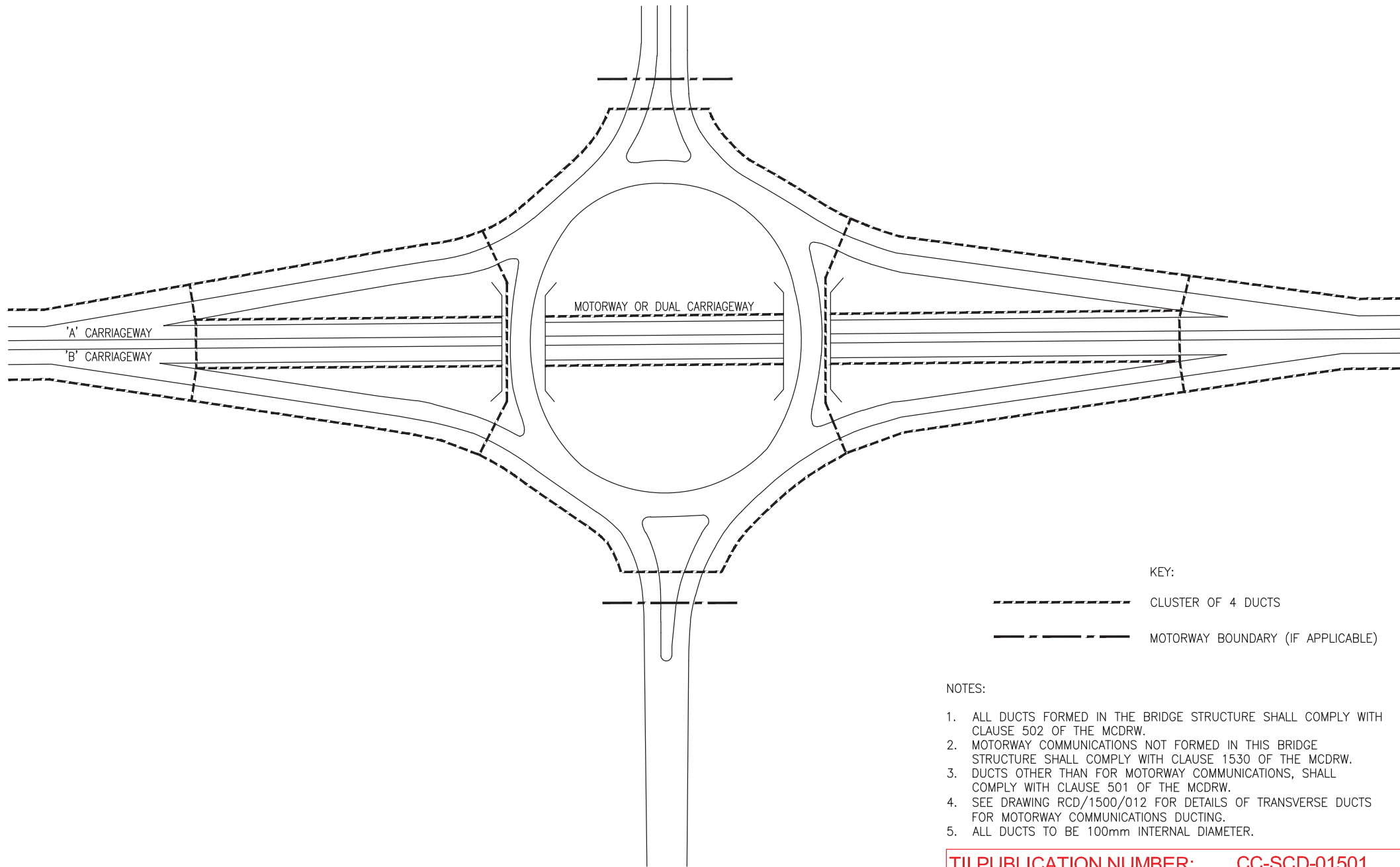
CC-SCD-01516	Installation Drawing TCC - Chambers Cable Support for Comms I
CC-SCD-01517	Installation Drawing TCC - Comms II Chambers
CC-SCD-01518	Installation Drawing TCC - Comms III Chambers
CC-SCD-01519	Installation Drawing TCC - Cable Installation Cable Marking
CC-SCD-01520	Installation Drawing TCC - Cable Management Joint Chamber
CC-SCD-01521	Installation Drawing TCC - Cable Management Details
CC-SCD-01522	Installation Drawing TCC - Typical Access Steps
CC-SCD-01523	Installation Drawing TCC - Typical Safety Handrail Details
CC-SCD-01524	Installation Drawing TCC - Maintenance Vehicle Lay-by Typical Lay-by Layout
CC-SCD-01525	Installation Drawing TCC - Detector Loop Slot Details Sheet 1
CC-SCD-01526	Installation Drawing TCC - Detector Loop Slot Details Sheet 2
CC-SCD-01527	Installation Drawing TCC - Detector Loop Slot Details Sheet 3
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CC-SCD-01529	Installation Drawing TCC - Cross Cutting Corners of Slots
CC-SCD-01530	Installation Drawing TCC - Inductive Loop Test Certificate
CC-SCD-01531	Installation Drawing TCC - Loop Joint Chamber - Sheet 1
CC-SCD-01532	Installation Drawing TCC - Loop Joint Chamber - Sheet 2
CC-SCD-01533	Installation Drawing TCC - Detector Loop Layout - Sheet 1
CC-SCD-01534	Installation Drawing TCC - Detector Loop Layout - Sheet 2
CC-SCD-01535	Installation Drawing TCC - Detector Loop Layout - Sheet 3
CC-SCD-01536	Installation Drawing TCC - Detector Loop Layout - Sheet 4

TRANSPORT INFRASTRUCTURE IRELAND (TII) PUBLICATIONS

<u>CC-SCD-01537</u>	Installation Drawing TCC - Detector Loop Layout - Sheet 5
<u>CC-SCD-01538</u>	Installation Drawing TCC - Loop (Inductive) - All Purpose Roads Details of Feeder Cable Slots
<u>CC-SCD-01539</u>	Installation Drawing TCC - Loop (Inductive) - All Purpose Roads Details of Entry to the Footway
<u>CC-SCD-01540</u>	Installation Drawing TCC - Loop (Inductive) - All Purpose Roads Details of Carriageway Chamber
<u>CC-SCD-01541</u>	Installation Drawing TCC - Loop (Inductive) - All Purpose Roads Detail of Signal Duct Chamber
<u>CC-SCD-01542</u>	Installation Drawing TCC - Loop (Inductive) - All Purpose Roads Chevron Loops
<u>CC-SCD-01543</u>	Installation Drawing TCC - Loop (Inductive) All - Purpose Road Turning, Queue and Speed Measuring Loops -Sheet 1
<u>CC-SCD-01544</u>	Installation Drawing TCC - Loop (Inductive) All - Purpose Road Speed Measuring Loops -Sheet 2
<u>CC-SCD-01545</u>	Installation Drawing TCC - Loop (Inductive) All - Purpose Road Speed Measuring Loops -Sheet 3
<u>CC-SCD-01546</u>	Installation Drawing TCC - Loop (Inductive) All - Purpose Road Typical Loop Configuration
<u>CC-SCD-01547</u>	Installation Drawing TCC - Loop (Inductive) All - Purpose Road Mova Loops
<u>CC-SCD-01548</u>	Installation Drawing TCC - Cabinet Enclosure Single Bay - Sheet 1
<u>CC-SCD-01549</u>	Installation Drawing TCC - Cabinet Enclosure Single Bay - Sheet 2
<u>CC-SCD-01550</u>	Installation Drawing TCC - Cabinet Enclosure Double Bay - Sheet 1
<u>CC-SCD-01551</u>	Installation Drawing TCC - Cabinet Enclosure Double Bay - Sheet 2
<u>CC-SCD-01552</u>	Installation Drawing TCC - Typical Roadside Cabinet Layout Type A - Front
<u>CC-SCD-01553</u>	Installation Drawing TCC - Typical Roadside Cabinet Layout Type A - Rear
<u>CC-SCD-01554</u>	Installation Drawing TCC - Typical Roadside Cabinet Layout Type B - Front
<u>CC-SCD-01555</u>	Installation Drawing TCC - Typical Roadside Cabinet Layout Type B - Rear
<u>CC-SCD-01556</u>	Installation Drawing TCC - Typical Roadside Cabinet Layout Distribution Node - Front
<u>CC-SCD-01557</u>	Installation Drawing TCC - Typical Roadside Cabinet Layout Distribution Node - Rear

TRANSPORT INFRASTRUCTURE IRELAND (TII) PUBLICATIONS

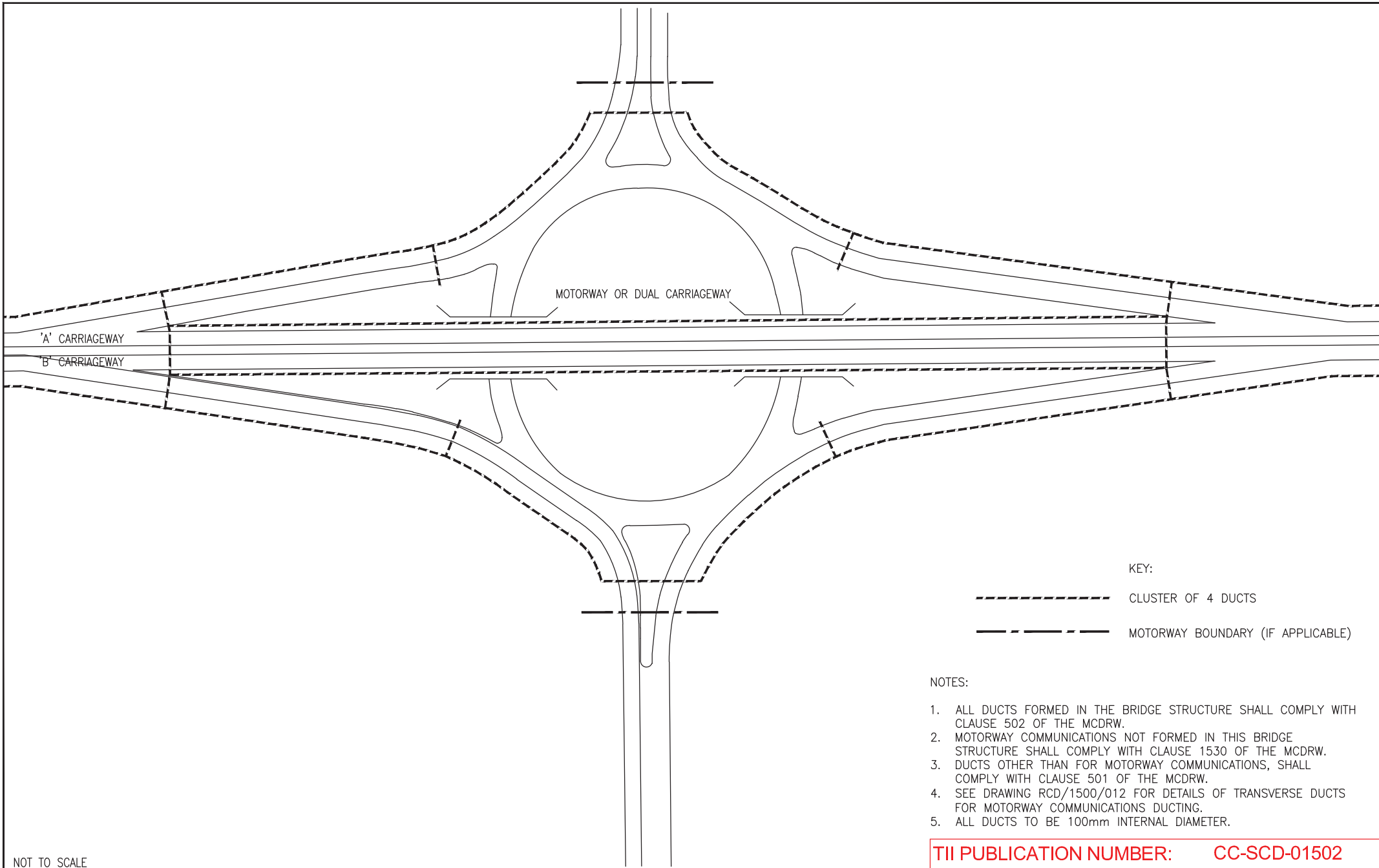
<u>CC-SCD-01558</u>	Installation Drawing TCC - Roadside Cabinet Heater Connections
<u>CC-SCD-01559</u>	Installation Drawing TCC - Typical Outstation Layout (Gantry Signals)
<u>CC-SCD-01560</u>	Installation Drawing TCC - Telephone Installation Without Safety Barrier
<u>CC-SCD-01561</u>	Installation Drawing TCC - Telephone Installation With Ducting/Chamber Details
<u>CC-SCD-01562</u>	Installation Drawing TCC - Detail of Telephone Installation Behind Safety Barrier
<u>CC-SCD-01563</u>	Installation Drawing TCC - Detail of Blister Surface Paving Slab
<u>CC-SCD-01564</u>	Installation Drawing TCC - ERT Plinth - Level with Road Surface and Kerb Around Plinth to Maintain Drainage
<u>CC-SCD-01565</u>	Installation Drawing TCC - ERT Unique Identification Number - Label
<u>CC-SCD-01566</u>	Installation Drawing TCC - ERT Unique Identification Number - Label Small
<u>CC-SCD-01567</u>	Installation Drawing TCC - Gantry Earthing and Bonding
<u>CC-SCD-01568</u>	Installation Drawing TCC - Typical Earth Bonding System for Gantry and Cantilever Structures
<u>CC-SCD-01569</u>	Installation Drawing TCC - Single Pole Installation Typical Plinth Layout and Local Ducts
<u>CC-SCD-01570</u>	Installation Drawing TCC - Multiple Pole Installation Typical Plinth Layout and Local Ducts
<u>CC-SCD-01571</u>	Installation Drawing TCC - Multiple Pole Installation Typical Plinth Layout and Local Ducts



NOT TO SCALE

- KEY:
- CLUSTER OF 4 DUCTS
 - MOTORWAY BOUNDARY (IF APPLICABLE)
- NOTES:
- ALL DUCTS FORMED IN THE BRIDGE STRUCTURE SHALL COMPLY WITH CLAUSE 502 OF THE MCDRW.
 - MOTORWAY COMMUNICATIONS NOT FORMED IN THIS BRIDGE STRUCTURE SHALL COMPLY WITH CLAUSE 1530 OF THE MCDRW.
 - DUCTS OTHER THAN FOR MOTORWAY COMMUNICATIONS, SHALL COMPLY WITH CLAUSE 501 OF THE MCDRW.
 - SEE DRAWING RCD/1500/012 FOR DETAILS OF TRANSVERSE DUCTS FOR MOTORWAY COMMUNICATIONS DUCTING.
 - ALL DUCTS TO BE 100mm INTERNAL DIAMETER.

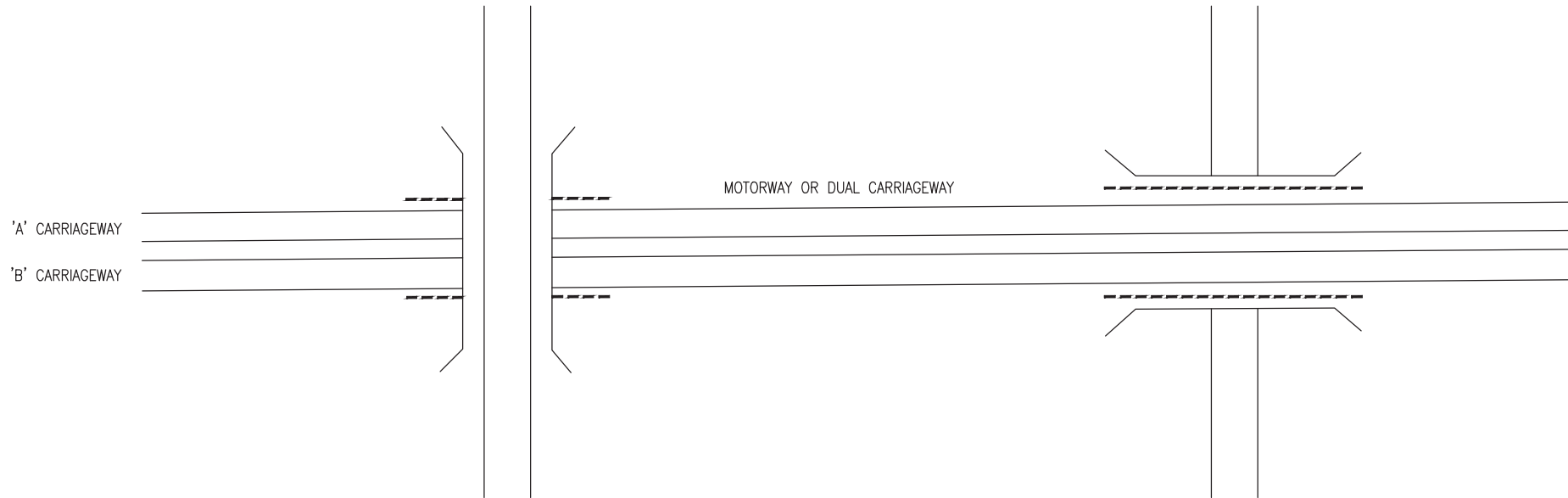
TII PUBLICATION NUMBER: CC-SCD-01501



NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01502

 NATIONAL ROADS AUTHORITY	ROAD CONSTRUCTION DETAILS	INSTALLATION DRAWING TCC			DUCTS FOR MOTORWAY CABLES AT INTERCHANGE UNDERBRIDGES	Drawing No.
			P1	10/13		RCD/
			Issue	Date		1500/002



KEY:

- CLUSTER OF 4 DUCTS
- - - - - MOTORWAY BOUNDARY (IF APPLICABLE)

NOTES:

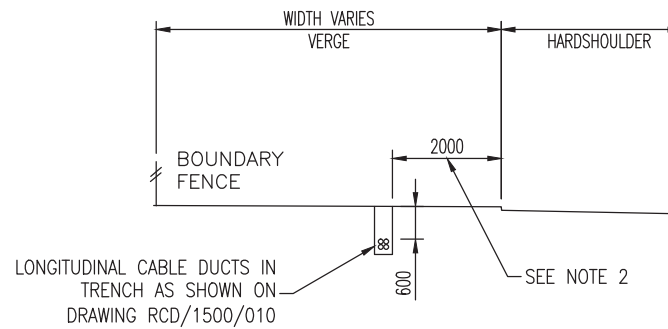
1. ALL DUCTS FORMED IN THE BRIDGE STRUCTURE SHALL COMPLY WITH CLAUSE 502 OF THE MCDRW.
2. MOTORWAY COMMUNICATIONS NOT FORMED IN THIS BRIDGE STRUCTURE SHALL COMPLY WITH CLAUSE 1530 OF THE MCDRW.
3. DUCTS OTHER THAN FOR MOTORWAY COMMUNICATIONS, SHALL COMPLY WITH CLAUSE 501 OF THE MCDRW.
4. SEE DRAWING RCD/1500/012 FOR DETAILS OF TRANSVERSE DUCTS FOR MOTORWAY COMMUNICATIONS DUCTING.
5. ALL DUCTS TO BE 100mm INTERNAL DIAMETER.

TII PUBLICATION NUMBER: CC-SCD-01503

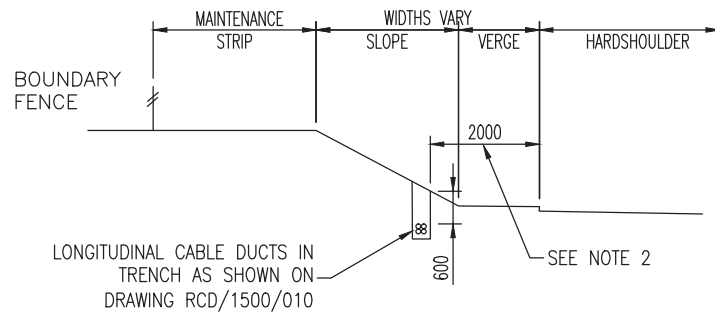
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NOTES:

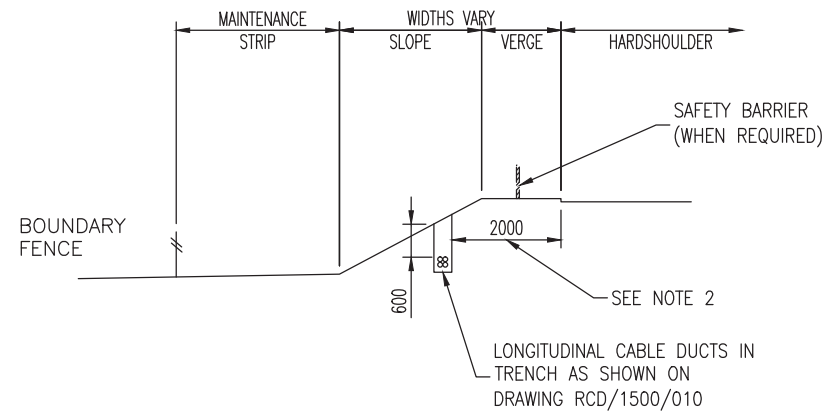
1. THE CROSS SECTION SHOWN IS TYPICAL ONLY.
2. CABLE DUCTS ARE TO BE LOCATED BEHIND ALL OTHER SERVICES, TYPICALLY AT AN OFFSET OF 2m.
3. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH NRA TD 27 (DMRB 6.1.2) 'CROSS SECTION AND HEADROOMS'.



FLAT VERGE



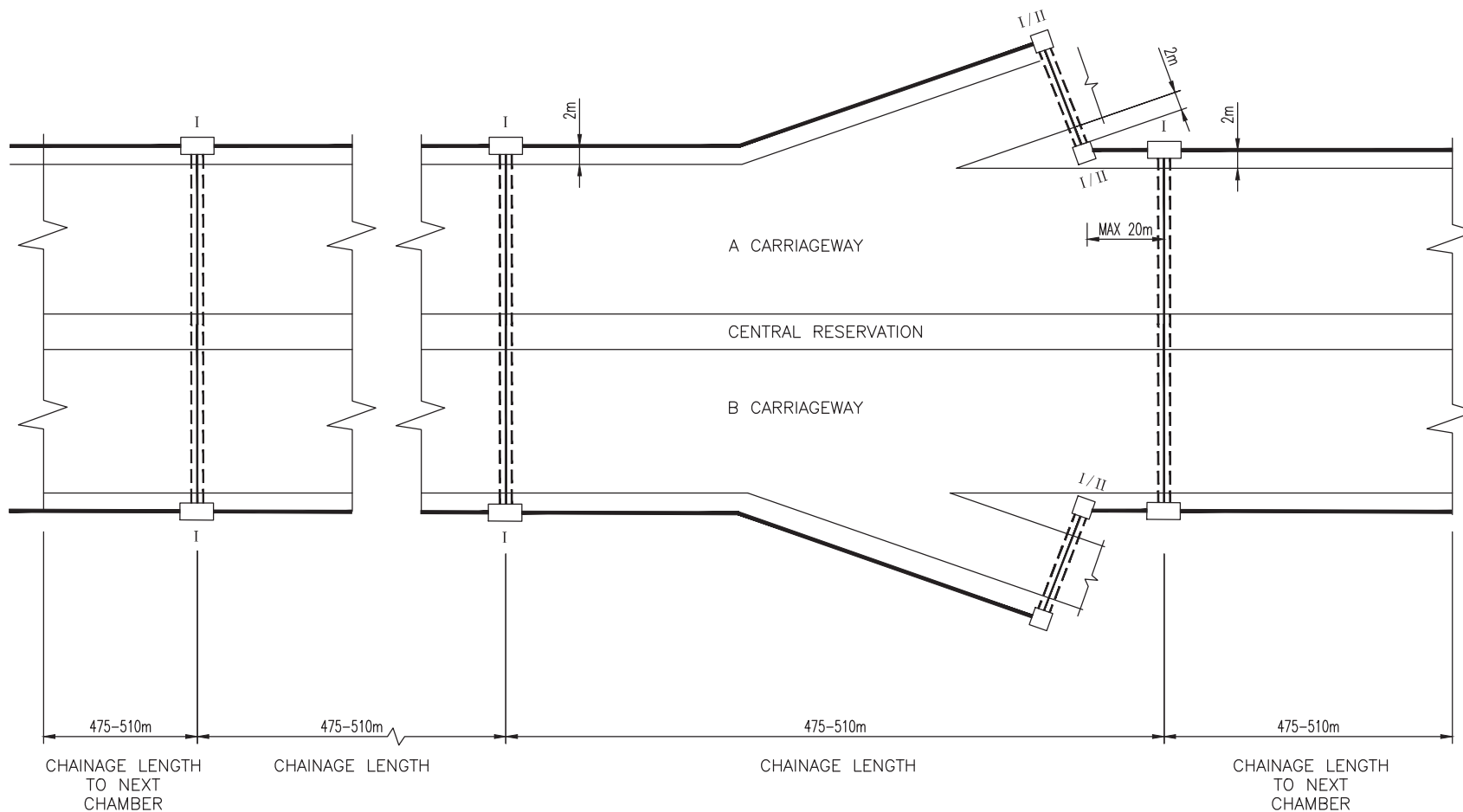
MOTORWAY IN CUTTING



MOTORWAY ON EMBANKMENT

NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01504



KEY:

— 4 X 100mm LONGITUDINAL DUCTS

≡≡≡ TRANSVERSE DUCTS

I
□ COMMS I CHAMBER

I / II
□ COMMS I OR II CHAMBER:

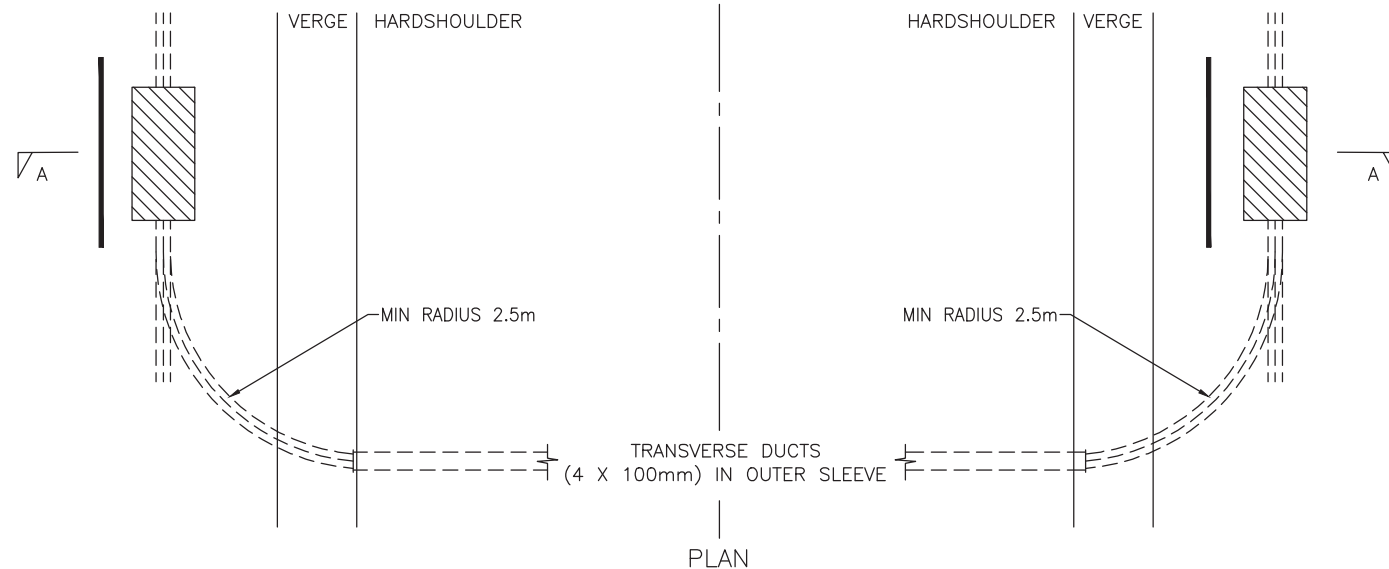
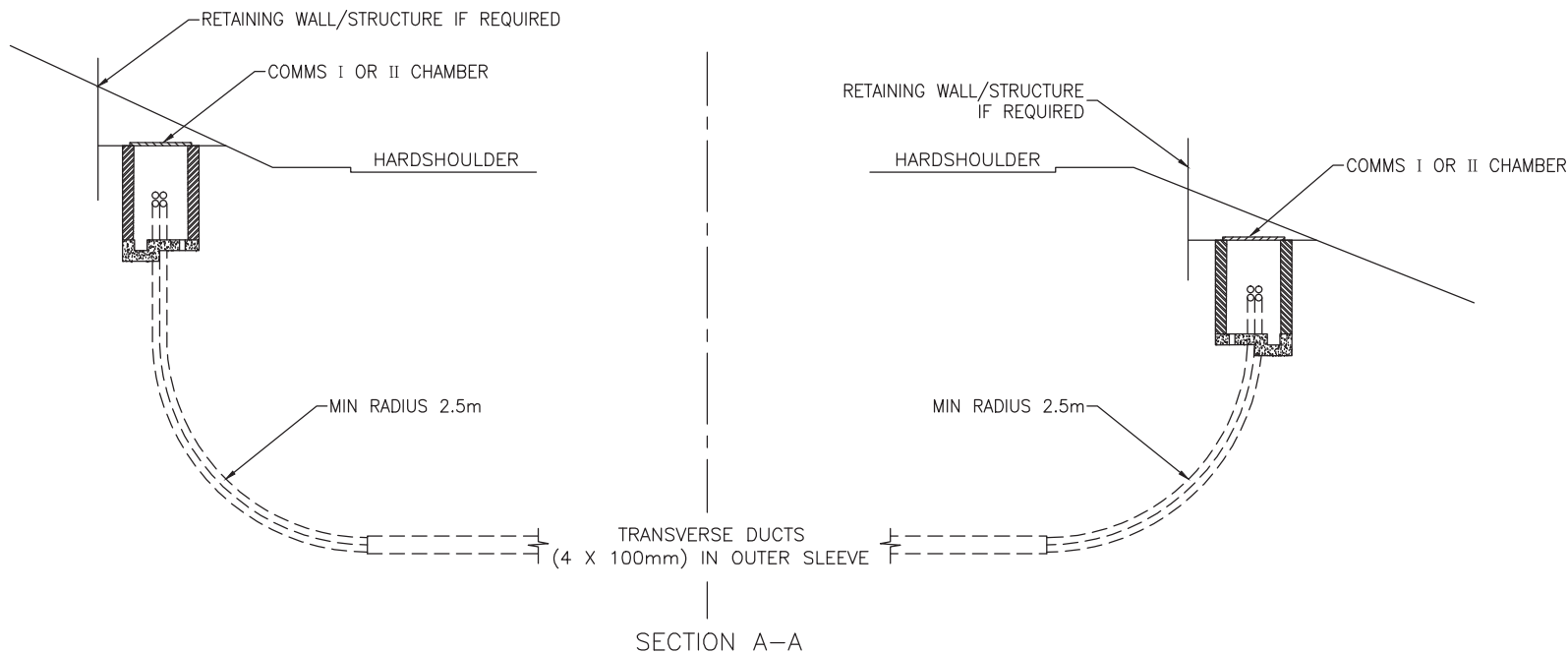
COMMS II CHAMBER SHOULD BE USED UNLESS THE DEPTH OF TRANSVERSE DUCTS DICTATES THAT THE CHAMBER DEPTH SHOULD BE GREATER THAN 1m, IN WHICH CASE COMMS I CHAMBER SHOULD BE USED

NOTES:

1. INSTALLATION DETAILS:
 - CHAMBERS ON DRAWINGS RCD/1500/015-018,
 - DUCTS ON DRAWINGS RCD/1500/010-014.
2. THE DEPTH OF THE CROSS-CARRIAGEWAY DUCTS ON EXISTING MOTORWAYS SHALL BE SUCH THAT THE INSTALLATION OF THE DUCTS, USING TRENCHLESS TECHNIQUES, DOES NOT AFFECT THE INTEGRITY OF CARRIAGEWAY CONSTRUCTION.
3. THE MAXIMUM DEPTH OF COMMS I CHAMBER IS 2m. WHERE THE DEPTH OF CROSS CARRIAGEWAY DUCTS REQUIRES A DEEPER CHAMBER, THE DETAIL SHOWN ON DRAWING RCD/1500/006 SHALL BE USED.
4. WHERE DUCTS ARE INSTALLED ON EXISTING MOTORWAYS THE NUMBER OF TRANSVERSE DUCTS TO BE PROVIDED SHALL BE DETERMINED BY REQUIREMENTS OF THE SCHEME. THE STANDARD PROVISION IS 4 x 100mm DUCT.

NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01505

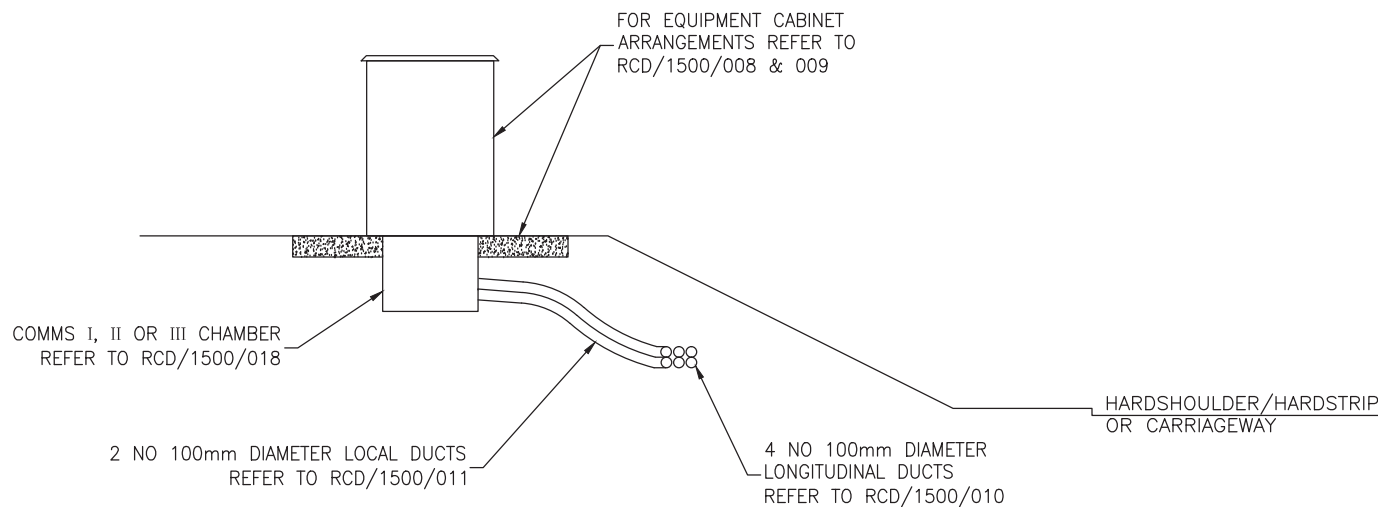
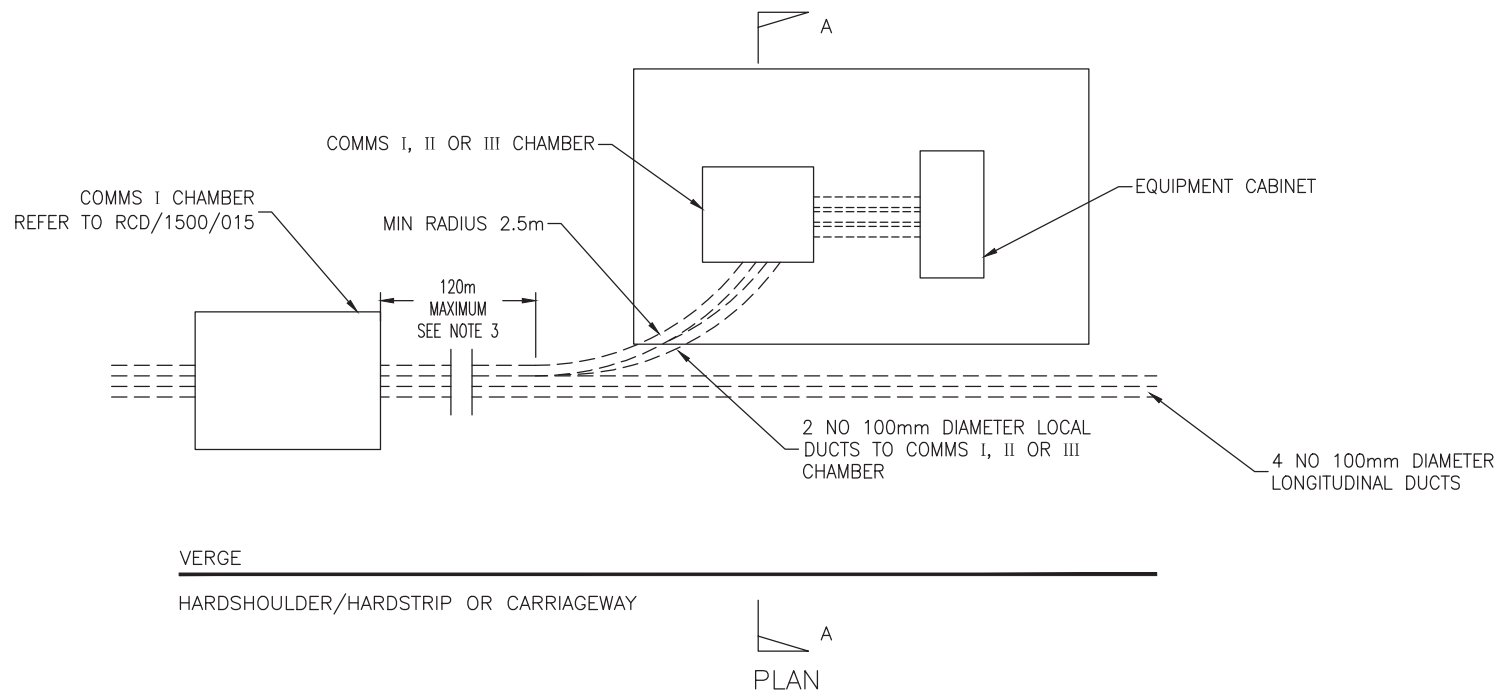


NOTES:

1. THIS DRAWING IS TO BE USED WHEN THE TRANSVERSE DUCTS ARE TOO DEEP TO BE ACCOMMODATED IN A 2m DEEP CHAMBER.
2. FOR CHAMBER DETAILS SEE DRAWINGS RCD/1500/015-018.
3. WHERE THE TOPOGRAPHY OF THE SITE DICTATES, A SECOND CHAMBER MAY BE REQUIRED IN ORDER TO BRING THE DUCTS ONTO THE LINE OF THE LONGITUDINAL DUCT ROUTE. THE TWO CHAMBERS SHALL BE LINKED WITH 4 x 100mm, STRAIGHT DUCTS AT RIGHT ANGLES TO THE LONGITUDINAL CABLE ROUTE.

TII PUBLICATION NUMBER: CC-SCD-01506

NOT TO SCALE



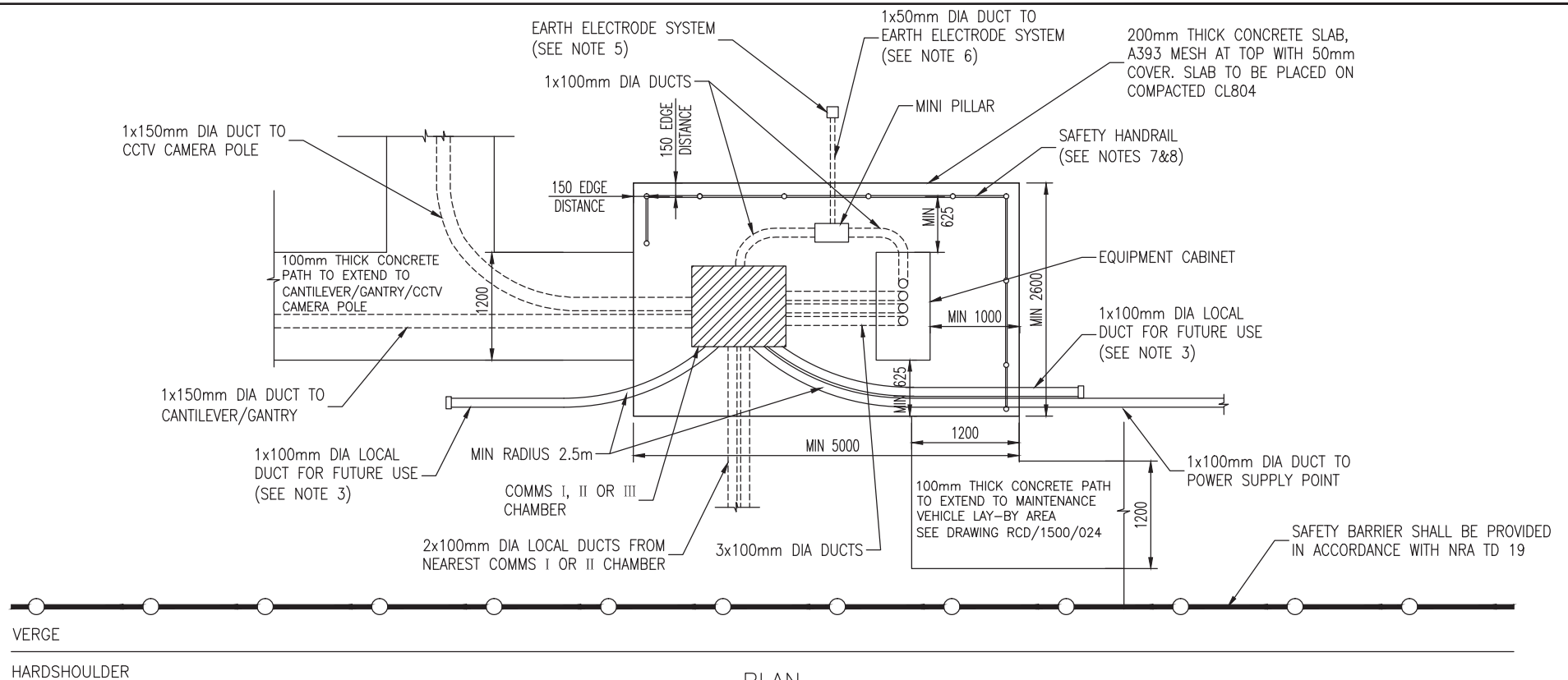
NOTES:

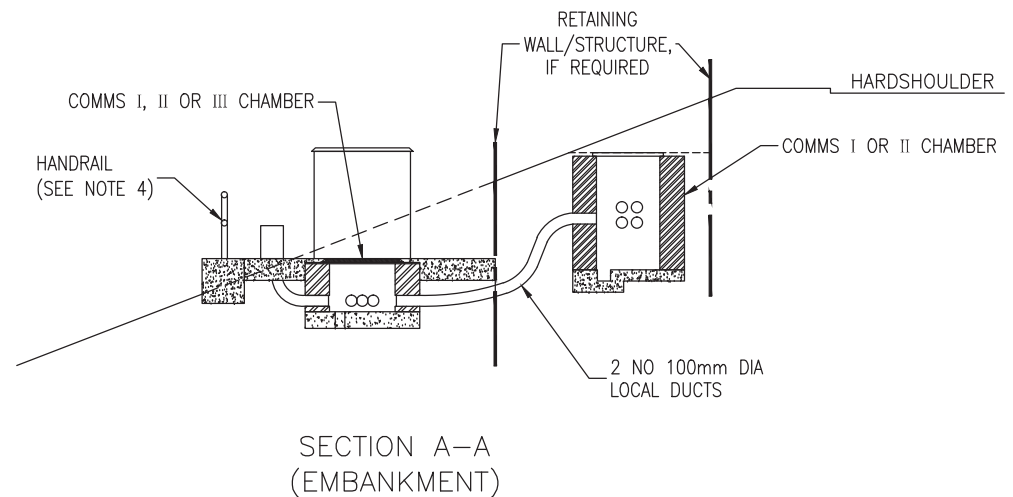
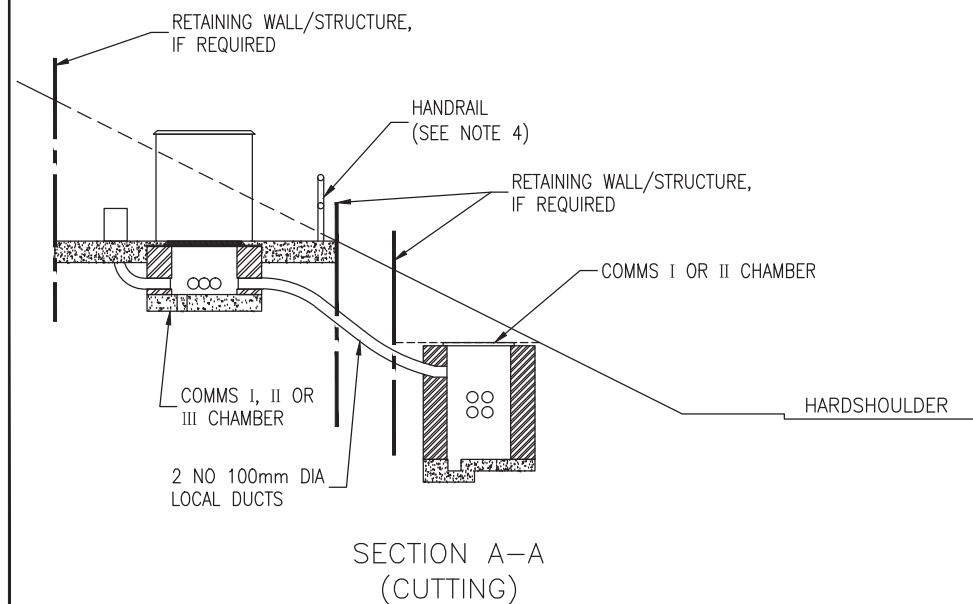
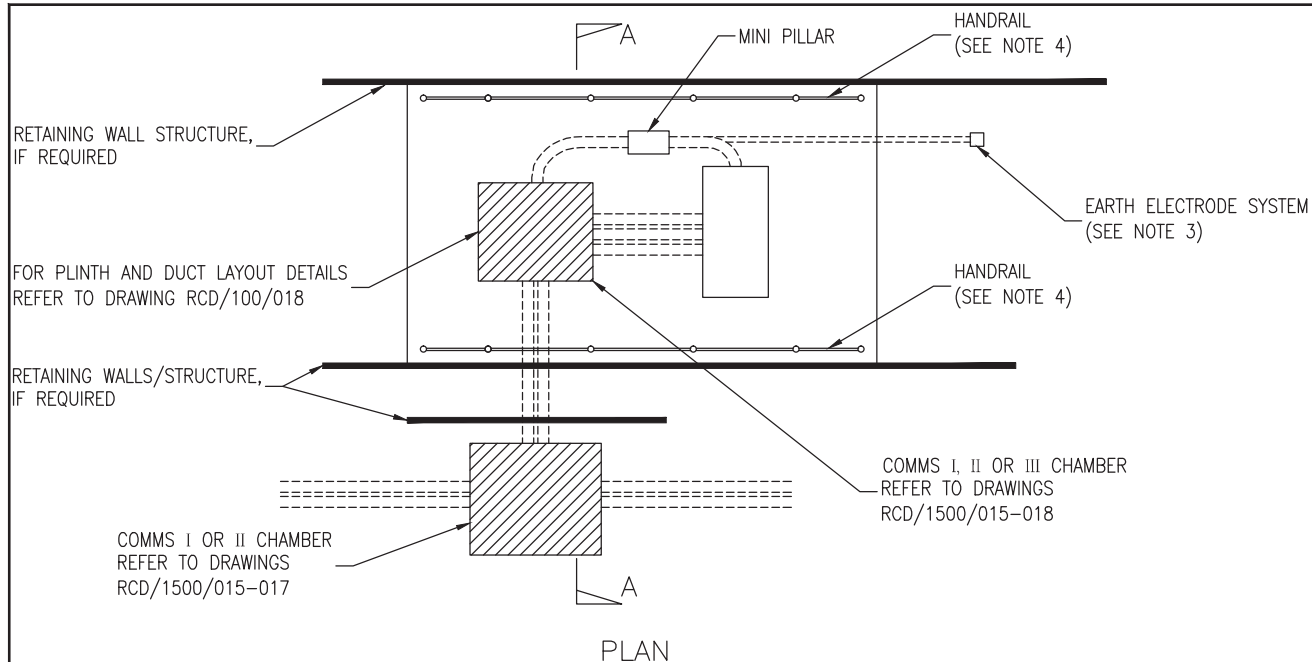
1. THE LAYOUT SHOWN IS TYPICAL ONLY.
2. THE DIRECTION OF THE LOCAL DUCTS WILL DEPEND ON THE LOCATION OF THE NEAREST COMMS I CHAMBER.
3. WHERE THE DISTANCE EXCEEDS 120m A COMMS II CHAMBER SHALL BE INSTALLED TO ALLOW FOR THE INSTALLATION OF CABLE.
4. STEPS AND HANDRAILS MAY BE REQUIRED, REFER TO DRAWINGS RCD/1500/022&023 FOR DETAILS.

TII PUBLICATION NUMBER: CC-SCD-01507

NOT TO SCALE

SECTION A-A



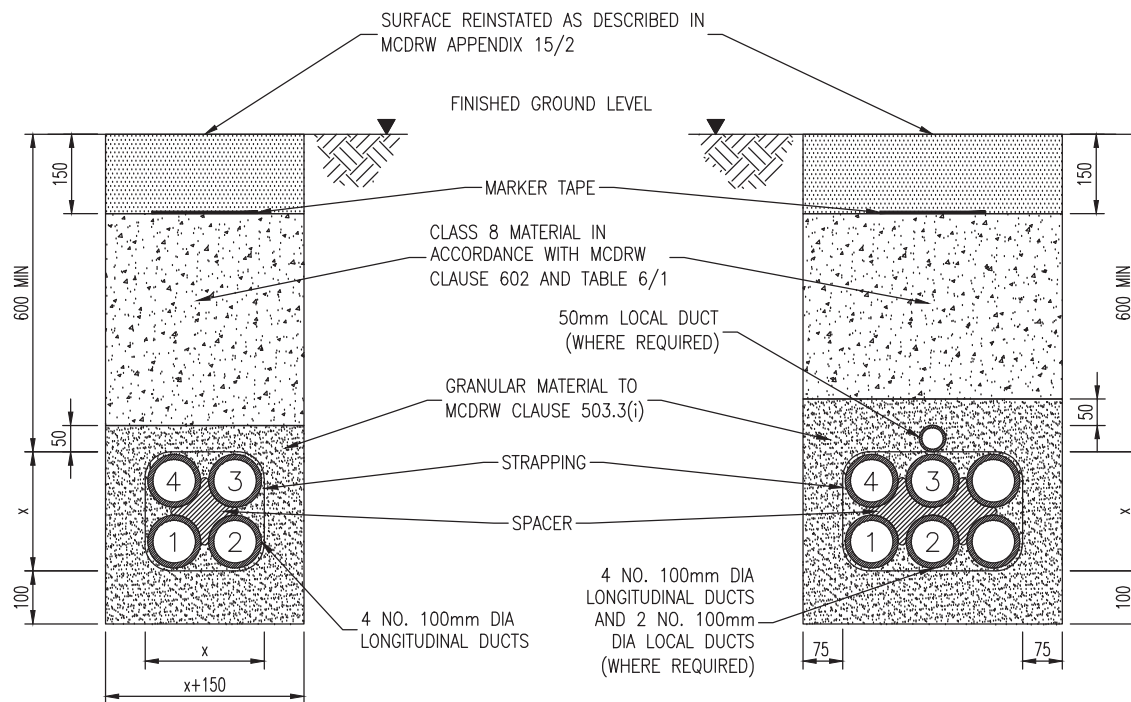


NOTES:

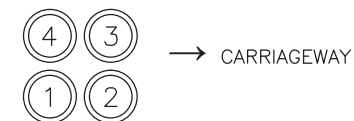
1. THE ARRANGEMENTS SHOWN ARE TYPICAL ONLY. WHERE CABINET LOCATION DO NOT COINCIDE WITH COMMS I OR II CHAMBERS LOCATIONS REFER TO DRAWING RCD/1500/011.
2. INSTALLATION DETAILS:
 - CABINET ARRANGEMENTS RCD/1500/009
 - DUCTS RCD/1500/010-014
 - CHAMBERS RCD/1500/015-018
3. THE FINAL LOCATION AND LAYOUT OF THE EQUIPMENT CABINET PLINTH, CHAMBERS, DUCTED LAYOUT, EARTH ELECTRODE SYSTEM AND MINI PILLAR TO SUIT LOCAL TOPOGRAPHY. REFER TO DRAWING RCD/1500/008 FOR DETAILS OF THE EARTH ELECTRODE SYSTEM.
4. HANDRAIL ONLY REQUIRED ON EMBANKMENT OR ADJACENT TO LOCAL HAZARD. HANDRAIL TO BE 1100mm HIGH IN ACCORDANCE WITH BS 6180 AND BS 5395 PART 3. FOOTING TO BE EITHER BOLTED OR ROOTED, AS DETERMINED BY SITE CONDITIONS. REFER TO DRAWINGS RCD/1500/022 & 023
5. THE CONCRETE EQUIPMENT CABINET IS 200mm THICK C40 CONCRETE SLAB WITH A393 MESH AT TOP WITH A 50mm COVER. THE CONCRETE SLAB SHALL BE PLACED ON 250mm COMPACTED CLAUSE 804.

NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01509



STANDARD DUCT ALLOCATION



- CABLE DESIGNATION:
1. TCC POWER CABLES
 2. LONGITUDINAL COMMUNICATIONS
 3. EQUIPMENT CABLING
 4. EMPTY

LONGITUDINAL DUCTS ONLY

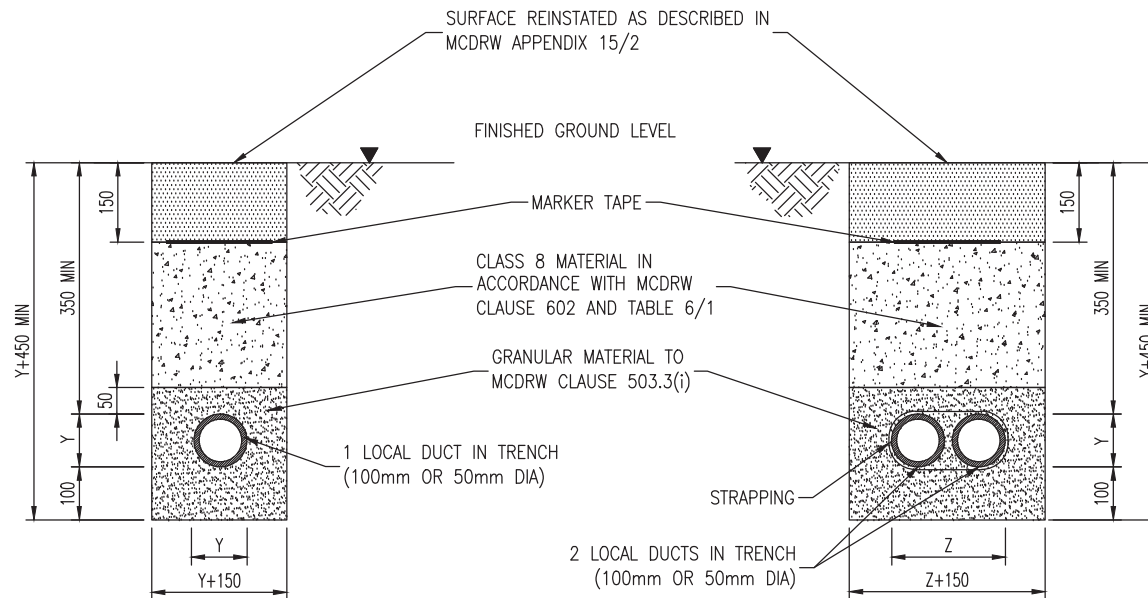
LONGITUDINAL AND LOCAL DUCTS

NOTES:

1. DIMENSION X IS THE EXTERNAL DIMENSION OF THE DUCTS AND SPACER WHEN STRAPPED TOGETHER AS SHOWN ON DRAWING RCD/1500/013.
2. CABLE MARKER TAPE IN ACCORDANCE WITH MCDRW CLAUSE 1531 SHALL BE INSTALLED AS SHOWN.
3. FOR DETAILS OF STRAPPING AND SPACER REFER TO DRAWING RCD/1500/013.
4. TRENCHES SHALL BE BACKFILLED IN ACCORDANCE WITH MCDRW CLAUSE 1531.

NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01510

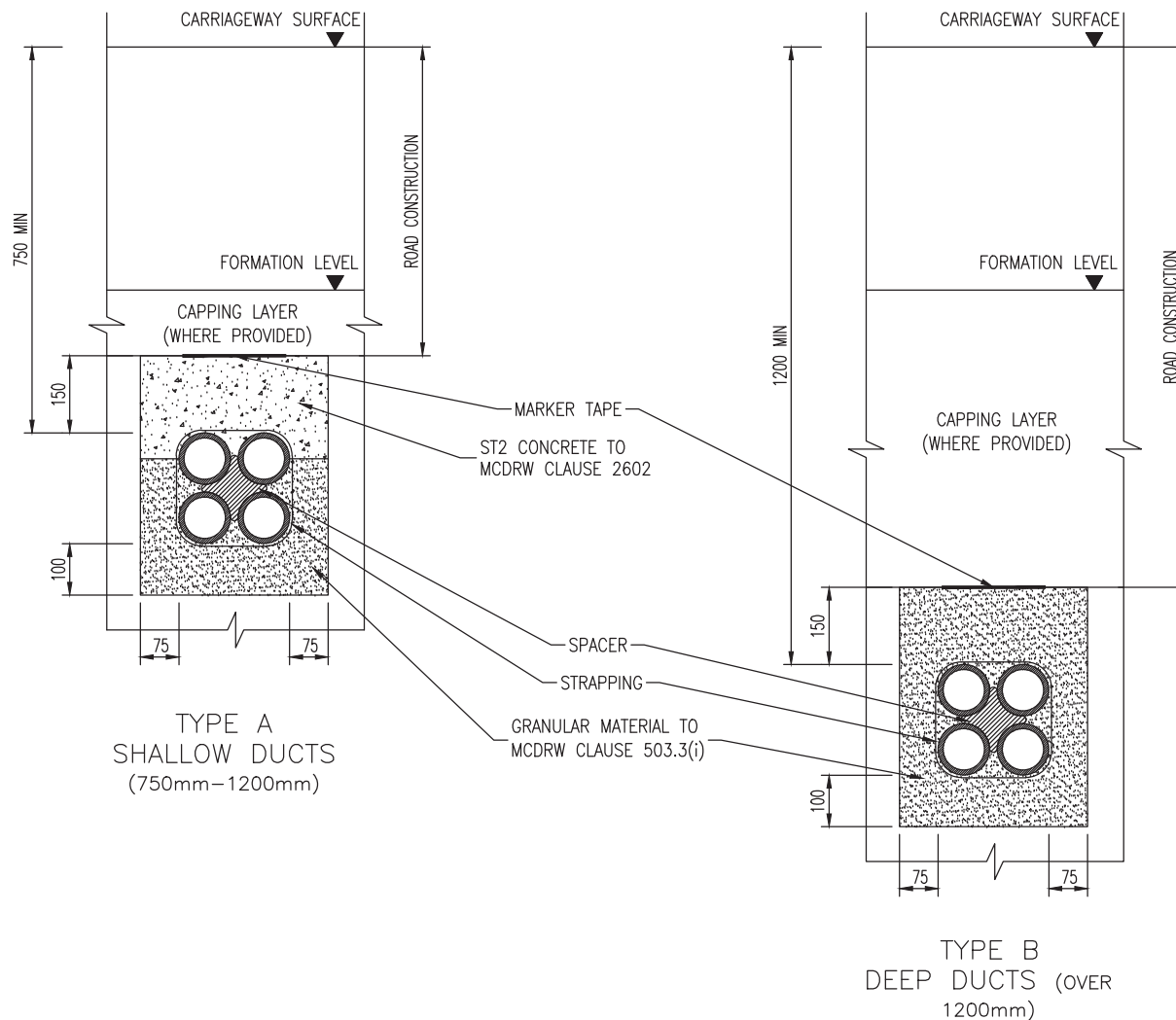


NOTES:

1. DIMENSION Y IS THE EXTERNAL DIMENSION OF 1 DUCT.
2. DIMENSION Z IS THE EXTERNAL DIMENSION OF 2 DUCTS LAID WITH A 20mm SEPARATION.
3. CABLE MARKER TYPE IN ACCORDANCE WITH MCDRW CLAUSE 1531 SHALL BE INSTALLED AS SHOWN.
4. REFER TO DRAWING RCD/1500/012 FOR DETAILS OF LOCAL DUCTS INSTALLED BENEATH CARRIAGEWAYS.
5. TRENCHES SHALL BE BACKFILLED IN ACCORDANCE WITH MCDRW CLAUSE 1531.

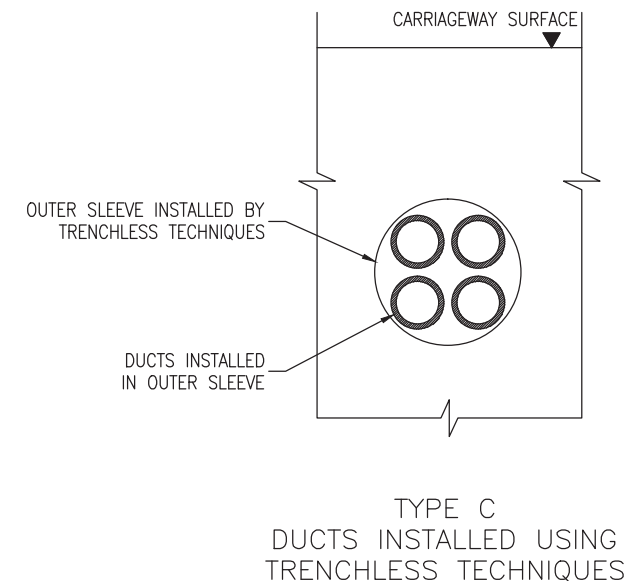
NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01511



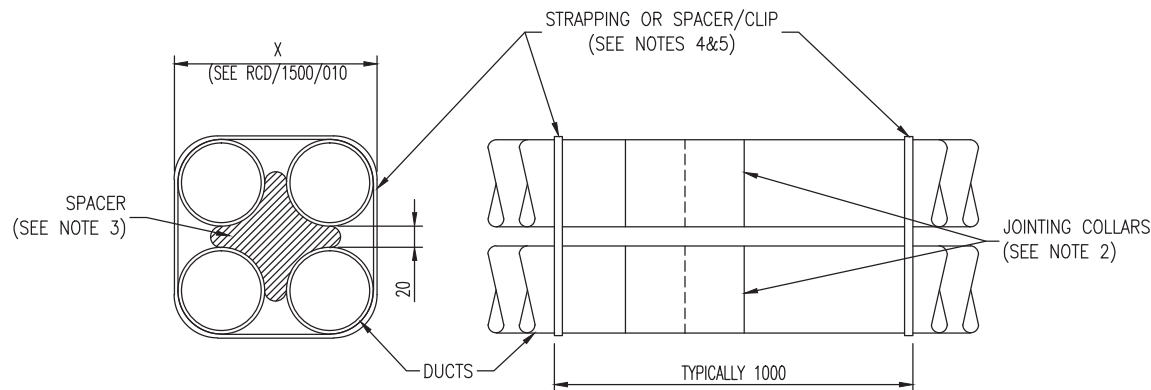
NOTES:

1. TYPES A AND B APPLY TO DUCTS INSTALLED DURING CONSTRUCTION OR RECONSTRUCTION OR MAJOR MAINTENANCE OF THE ROAD.
2. TYPE C DUCTS INSTALLED BENEATH EXISTING CARRIAGEWAYS SHALL BE INSTALLED USING TRENCHLESS TECHNIQUES WITH AT LEAST 300mm CLEARANCE BETWEEN THE DUCTS AND THE ROAD CONSTRUCTION AND SHALL COMPRISE OF 4 NO. 100mm DUCTS WITHIN A SLEEVE. ALTERNATIVELY A FOUR DUCT BUNDLE WITHOUT A SLEEVE USING DIRECTIONAL DRILLING MAY BE USED SUBJECT TO THE APPROVAL OF THE ROAD AUTHORITY.
3. THE DEPTH OF CROSS CARRIAGEWAY DUCTS WILL BE DEPENDANT UPON THE LOCATION OF DRAINAGE PIPES, AS DRAINAGE PIPES ARE INSTALLED TO STRICTLY DEFINED LEVELS. THIS WILL GENERALLY RESULT IN DUCTS BEING INSTALLED DEEPER THAN THE DRAINAGE PIPES. ON EXISTING MOTORWAYS A LINE AND LEVEL SURVEY OF EXISTING DRAINAGE SHOULD BE UNDERTAKEN BEFORE THE DEPTH OF DUCTS IS DECIDED.
4. BACKFILLING SHALL BE IN ACCORDANCE WITH MCDRW CLAUSE 505.



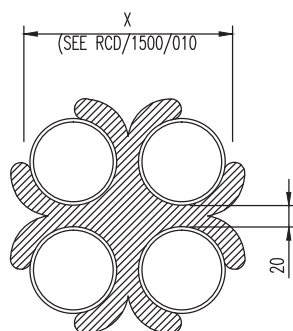
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TII PUBLICATION NUMBER: CC-SCD-01512



SECTION THROUGH
LONGITUDINAL DUCT
ARRANGEMENT

ELEVATION ON
LONGITUDINAL DUCT
ARRANGEMENT



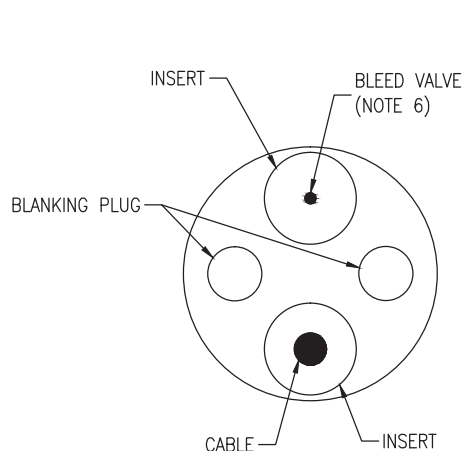
ALTERNATIVE SPACER/CLIP
ARRANGEMENT
(SEE NOTE 5)

NOTES:

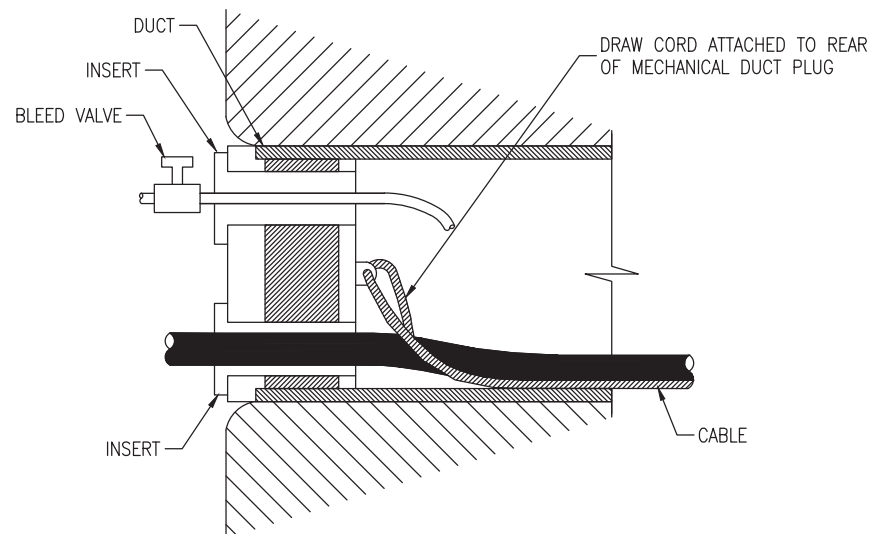
1. DUCT MATERIALS, SPACERS AND STRAPPING ARE SPECIFIED IN MCDRW CLAUSE 1530.
2. JOINTING COLLARS SHALL BE INSTALLED TO AXIALLY ALIGN AND FIRMLY HOLD CONSECUTIVE LENGTHS OF DUCT. THEY SHALL BE DESIGNED, MADE AND INSTALLED TO ENSURE THAT A WATER AND AIR TIGHT SEAL IS ACHIEVED BETWEEN ADJACENT DUCT LENGTHS, THE EFFICACY OF THE SEAL SHALL BE TESTED IN ACCORDANCE WITH MCDRW CLAUSE 1533. COLD SHRINK SEALS MAY BE USED TO SUPPLEMENT THE SEALING PERFORMANCE OF THE JOINTING COLLAR. COLD SHRINK SEALS SHALL NOT BE USED ON THEIR OWN.
3. DUCTS SHALL BE SEPARATED BY MEANS OF A PURPOSE MADE SPACER. THE SPACER SHALL ENSURE THAT THERE IS SUFFICIENT ROOM FOR JOINTING COLLARS – NOMINALLY 20mm SEPARATION. SPACERS ARE PROVIDED TO ENSURE THAT THE SEPARATION BETWEEN DUCTS REMAINS CONSTANT ALONG THE LENGTH OF DUCTS DURING INSTALLATION, BACKFILLING AND IN SERVICE. SPACERS SHALL NOT CAUSE DAMAGE TO THE DUCTS EITHER DURING INSTALLATION OR IN SERVICE.
4. THE STRAPPING IS TO BE PURPOSE MADE AND SPACED AT INTERVALS TO ENSURE THAT THE DUCT AND SPACER ARRANGEMENT SHOWN IN THE SECTIONAL DETAIL IS NOT DISTURBED DURING INSTALLATION, BACKFILLING AND IN THE SERVICE. THE STRAPPING WOULD TYPICALLY BE INSTALLED AT 1000 INTERVALS.
5. A PURPOSE MADE, COMBINED, SPACER/CLIP ARRANGEMENT MAY BE USED AS AN ALTERNATIVE TO SEPARATE SPACER AND STRAPPING, PROVIDED THAT THE CONTRACTOR CAN DEMONSTRATE THAT THE SPACER/CLIP IS CAPABLE OF RETAINING DUCTS IN PLACE DURING INSTALLATION AND SERVICE.

NOT TO SCALE

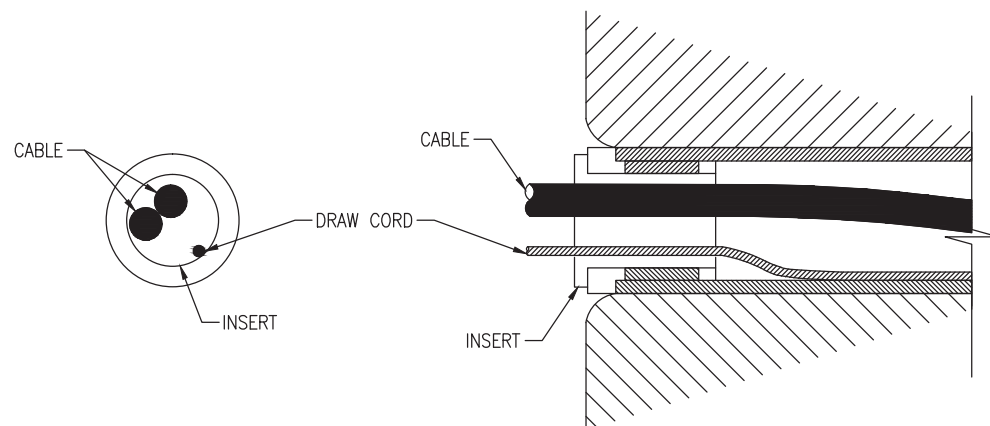
TII PUBLICATION NUMBER: CC-SCD-01513



END VIEW OF MECHANICAL DUCT PLUG
(100mm DUCT)



SECTION THROUGH DUCT AND DUCT PLUG
(100mm DUCT)



END VIEW OF MECHANICAL DUCT PLUG
(50mm DUCT)

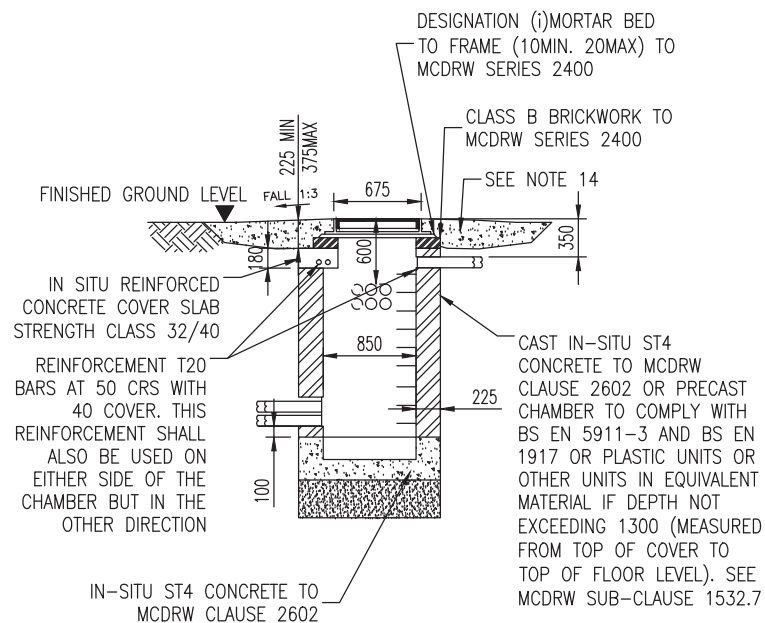
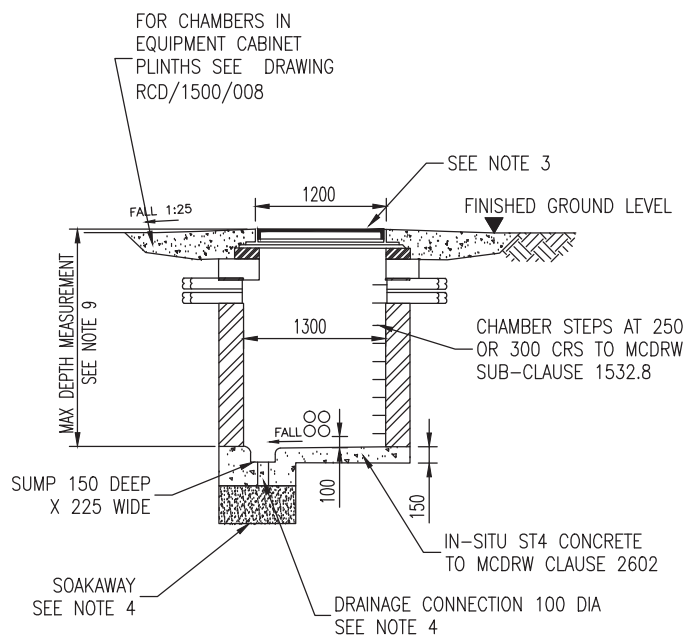
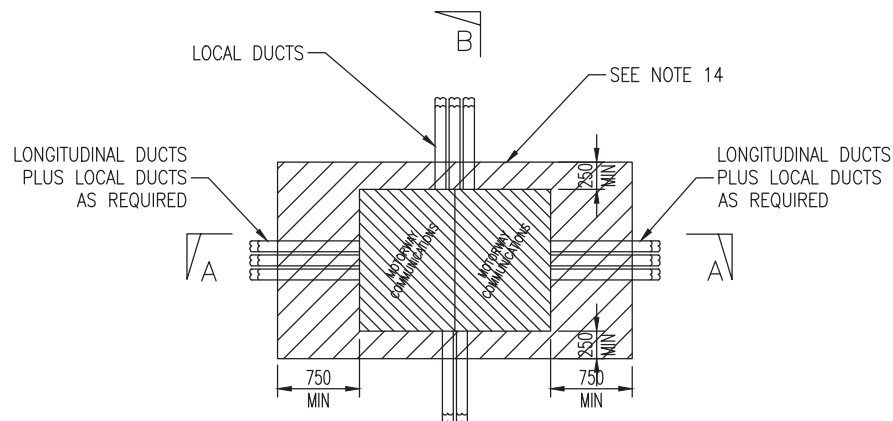
SECTION THROUGH DUCT AND DUCT PLUG
(50mm DUCT)

NOTES:

1. THE MECHANICAL DUCT PLUG SHOWN IS TYPICAL.
2. THE MECHANICAL DUCT PLUG SHALL BE IN ACCORDANCE WITH THE MCDRW CLAUSE 1530.
3. THE CONTRACTOR SHALL PROVIDE AND INSTALL A MECHANICAL DUCT PLUG INTO THE END OF EVERY DUCT AT EVERY CHAMBER AND EVERY CABINET.
4. THE CONTRACTOR SHALL PROVIDE AND INSTALL A BLANKING INSERT FOR EACH CABLE PORT.
5. FOR THE 100mm DIAMETER MECHANICAL DUCT PLUG, THE CONTRACTOR SHALL PROVIDE INSERTS TO FIT IN THE CABLE PORTS SO THAT EACH CABLE PORT IS CAPABLE OF ACCOMMODATING THE FOLLOWING CABLES:
 - i) 1 x 40 PAIR, OR
 - ii) 1 x 96 FIBRE CABLE, OR
 - iii) UP TO 4 x QUAD CABLE, OR
 - iv) UP TO 2 x POWER CABLE (10mm² AND 25mm²), OR
 - v) UP TO 2 x COAXIAL CABLES.
6. THE BLEED VALVE MAY BE INCORPORATED EITHER IN A CABLE PORT OR WITHIN THE MECHANICAL DUCT PLUG ITSELF. THE PURPOSE OF THE BLEED VALVE IS TO ALLOW THE AIR PRESSURE TEST DESCRIBED IN MCDRW CLAUSE 1533, AND ALSO TO ALLOW FOR GAS TESTING OF THE DUCT.
7. THE MECHANICAL DUCT PLUG SHALL NOT HOLD CABLES CAPTIVE. THIS MAY BE ACHIEVED BY THE MECHANICAL DUCT PLUG HAVING SPLIT COMPRESSION GASKET. CABLE PORT INSERT BUSHING SLEEVES SHALL BE SPLIT.

TII PUBLICATION NUMBER: CC-SCD-01514

NOT TO SCALE

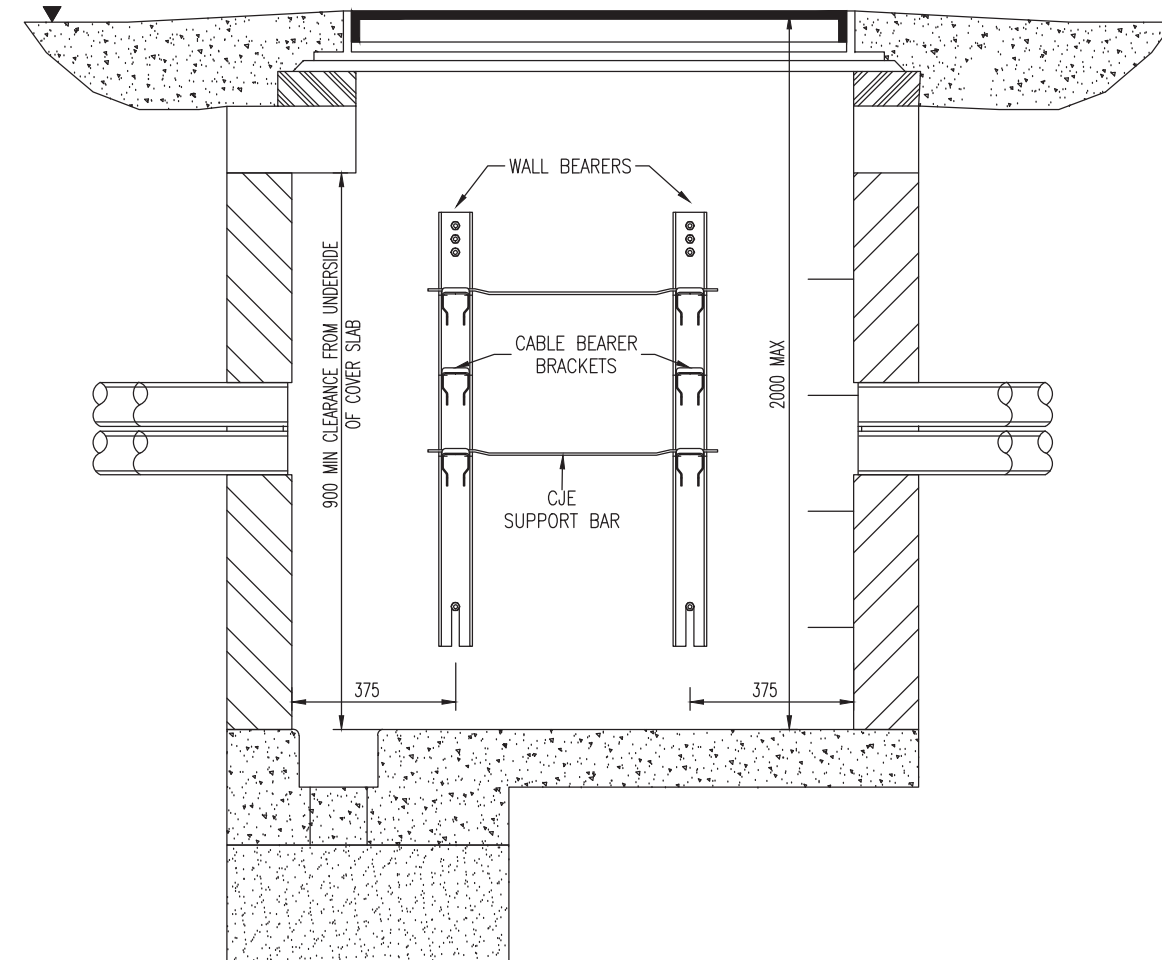


NOTES:

- CHAMBER WALLS SHALL BE 225MM THICK AND SHALL BE CONSTRUCTED AS SPECIFIED IN MCDRW CLAUSE 1532.
- TO ACCOMMODATE THE FORM OF CONSTRUCTION USED FOR THE CHAMBER, THE SPACING BETWEEN LOCAL DUCTS MAY VARY BETWEEN 0 AND 100mm.
- COVER(S) AND FRAME SHALL COMPLY WITH IS EN 124 AND SHALL BE AS DESCRIBED IN APPENDIX 15/2.
- INSITU BASE SLAB TO BE CAST WITH A MINIMUM FALL OF 1:20 TOWARDS THE SUMP. POSITIVE DRAINAGE IN THE FORM OF SOAKAWAY TO SUIT LOCAL GROUND CONDITIONS OR CONNECTION TO THE HIGHWAY DRAINAGE NETWORK IS REQUIRED.
- THE CHAMBER WALLS SHALL BE CHAMFERED AROUND THE DUCT ENTRY POINTS TO PROVIDE A SMOOTH SURFACE FOR CABLE INSTALLATION.
- THE OVERALL DEPTH OF CHAMBER SHALL BE AS SPECIFIED IN THE CHAMBER SCHEDULE OF APPENDIX 15/2.
- STEPS SHALL COMPLY WITH MCDRW CLAUSE 1532.
- JOINTING CHAMBERS SHALL HAVE A MINIMUM DEPTH OF 900mm MEASURED FROM THE UNDERSIDE OF THE COVER SLAB TO THE BASE OF A CHAMBER.
- MAXIMUM DEPTH OF THE CHAMBER SHALL BE 2000. WHERE TRANSVERSE DUCTS ARE CONSTRUCTED AT THE GREATER DEPTH REFER TO DRAWING RCD/1500/006.
- JOINTING CHAMBERS SHALL BE PROVIDED WITH CABLE SUPPORTS AS DETAILED ON DRAWING RCD/1500/016.
- FOR DUCT INSTALLATION DETAILS SEE DRAWINGS RCD/1500/010-014.
- CHAMBER MARKING SHALL BE IN ACCORDANCE WITH MCDRW CLAUSE 1532.
- THE CONTRACTOR SHALL SUPPLY AND INSTALL A MECHANICAL DUCT PLUG INTO EVERY DUCT ENTERING A CHAMBER (SEE DRAWING RCD/1500/014) IN ACCORDANCE WITH MCDRW CLAUSE 1530.
- AN AREA WITH A SHALLOW SLOPE AS SHOWN ON THE PLAN VIEW SHALL BE CONSTRUCTED FOR MAINTENANCE ACCESS. IT SHALL BE FORMED FROM A 150 MIN. DEEP LAYER OF ST4 CONCRETE TO MCDRW CLAUSE 2602 WITH A U2 SURFACE FINISH. FOR CHAMBERS IN EQUIPMENT CABINET PLINTHS SEE DRAWING RCD/1500/008.
- THE EXTERNAL BURIED SURFACES OF THE CHAMBER SHALL RECEIVE TWO COATS OF WATERPROOFED MATERIAL COMPLYING WITH MCDRW CLAUSE 2004.

NOT TO SCALE

FINISHED GROUND LEVEL

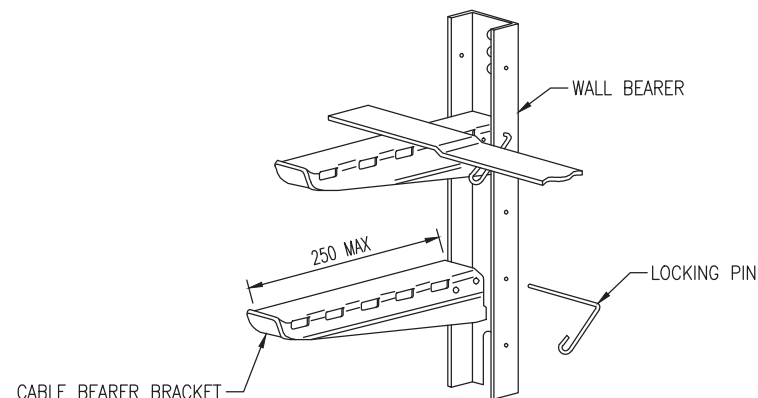


SECTION A-A
(REFER TO RCD/1500/015)

NOT TO SCALE

NOTES:

1. THE INSTALLED CABLE BEARER SYSTEM SHALL BE CAPABLE OF WITHSTANDING A POINT LOAD OF 3.5kN APPLIED AT THE END OF THE LONGEST BRACKET ON EACH WALL BEARER.
2. ALL CABLE BEARER COMPONENTS SHALL BE FABRICATED FROM STEEL HOT DIP GALVANISED AFTER FABRICATION IN ACCORDANCE WITH MCDRW CLAUSE 1909.
3. WALL BRACKETS SHALL BE FIXED TO THE WALL OF THE CHAMBER BY RESIN BONDED M12 GALVANISED STEEL STUDS WITH AN AVERAGE TENSILE FAILURE LOAD OF 25kN.
4. ARRANGEMENT SHOWN IS FOR A CHAMBER WHICH HOUSES 2 NO. CJE. WHERE 3 NO. CJE ARE TO BE ACCOMMODATED A THIRD CJE SUPPORT BAR SHALL BE PROVIDED.
5. THE PROPOSED METHOD OF SECURING THE CJE SUPPORT BAR TO THE CABLE BEARER BRACKET SHALL BE SUBMITTED TO THE OVERSEEING ORGANISATION FOR APPROVAL.
6. STANDARD DEPTH ACCOMMODATES UP TO THREE CJE. IF MORE CJE ARE REQUIRED THEN A SECOND CHAMBER ADJACENT TO MAY BE RELAXED TO ALLOW TWO SMALL SIZE CJE TO BE ACCOMMODATED ON THE SAME CJE SUPPORT BAR.
7. CABLES AND CJE SHALL BE INSTALLED IN ACCORDANCE WITH DRAWINGS RCD/1500/020 AND 021.



BRACKET SUPPORT DETAIL

TII PUBLICATION NUMBER: CC-SCD-01516

2x100 DIA LOCAL DUCTS TO COMMS III CHAMBER. IN OTHER SITUATIONS DUCTS ARE PROVIDED TO SUIT LOCAL CONDITIONS

LONGITUDINAL DUCTS PLUS LOCAL DUCTS AS REQUIRED

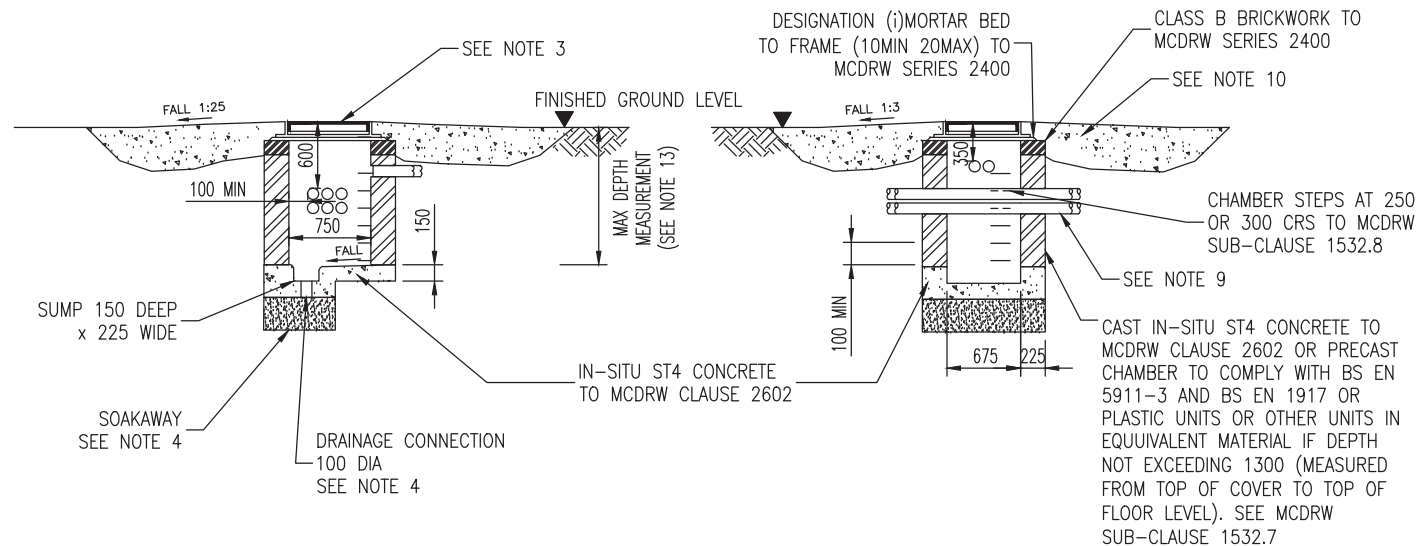
FOR CHAMBERS IN EQUIPMENT CABINET PLINTH SEE DRAWING RCD/1500/008

LONGITUDINAL DUCTS PLUS LOCAL DUCTS AS REQUIRED

VERGE

HARDSHOULDER

PLAN

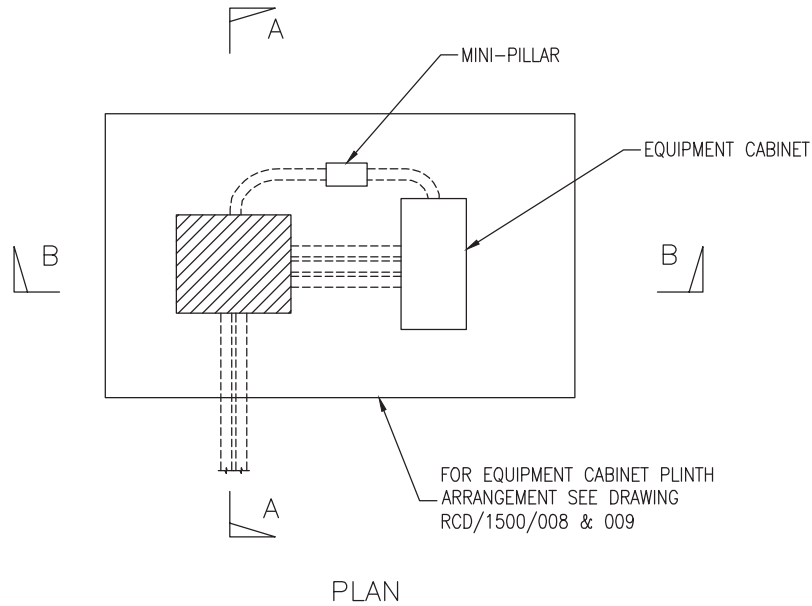


NOTES:

1. CHAMBER WALLS SHALL BE 225MM THICK AND SHALL BE CONSTRUCTED AS SPECIFIED IN MCDRW CLAUSE 1532.
2. TO ACCOMMODATE THE FORM OF CONSTRUCTION USED FOR THE CHAMBER, THE SPACING BETWEEN LOCAL DUCTS MAY VARY BETWEEN 0 AND 100mm.
3. COVER AND FRAME SHALL COMPLY WITH IS EN 124 AND SHALL BE AS DESCRIBED IN APPENDIX 15/2.
4. INSITU BASE SLAB TO BE CAST WITH A MINIMUM FALL OF 1:20 TOWARDS THE SUMP. POSITIVE DRAINAGE IN THE FORM OF SOAKAWAY TO SUIT LOCAL GROUND CONDITIONS OR CONNECTION TO THE HIGHWAY DRAINAGE NETWORK IS REQUIRED.
5. THE CHAMBER WALLS SHALL BE CHAMFERED AROUND THE DUCT ENTRY POINTS TO PROVIDE A SMOOTH SURFACE FOR CABLE INSTALLATION.
6. WHERE THE DEPTH OF CHAMBER EXCEEDS 900mm STEP IRONS COMPLYING WITH MCDRW CLAUSE 1532 SHALL BE INSTALLED.
7. REFER TO DRAWINGS RCD/1500/010-014 FOR DUCT INSTALLATION DETAILS.
8. CHAMBER MARKINGS SHALL BE IN ACCORDANCE WITH MCDRW CLAUSE 1532.
9. LONGITUDINAL DUCTS SHALL BE CONTINUOUS THROUGH THE CHAMBER WHERE ACCESS TO THE CABLES WITHIN IS NOT REQUIRED.
10. AN AREA WITH A SHALLOW SLOPE AS SHOWN ON THE PLAN VIEW SHALL BE CONSTRUCTED FOR MAINTENANCE ACCESS. IT SHALL BE FORMED FROM A 150 MIN. DEEP LAYER OF ST4 CONCRETE TO MCDRW CLAUSE 2602 WITH A U2 SURFACE FINISH. FOR CHAMBERS IN EQUIPMENT CABINET PLINTHS SEE DRAWING RCD/1500/008.
11. THE EXTERNAL BURIED SURFACES OF THE CHAMBER SHALL BE WATERPROOFED WITH TWO COATS OF CUT-BACK BITUMEN COMPLYING WITH MCDRW CLAUSE 2004.
12. WHERE CABLES GRATER THAN 70mm ARE USED TO SUPPLY LOCAL DUCTS A TYPE COMMS I CHAMBER SHALL BE USED.
13. MAXIMUM DEPTH OF THE CHAMBER SHALL BE 1300. WHERE TRANSVERSE DUCTS ARE CONSTRUCTED AT A GREATER DEPTH REFER TO DRAWING RCD/1500/006.

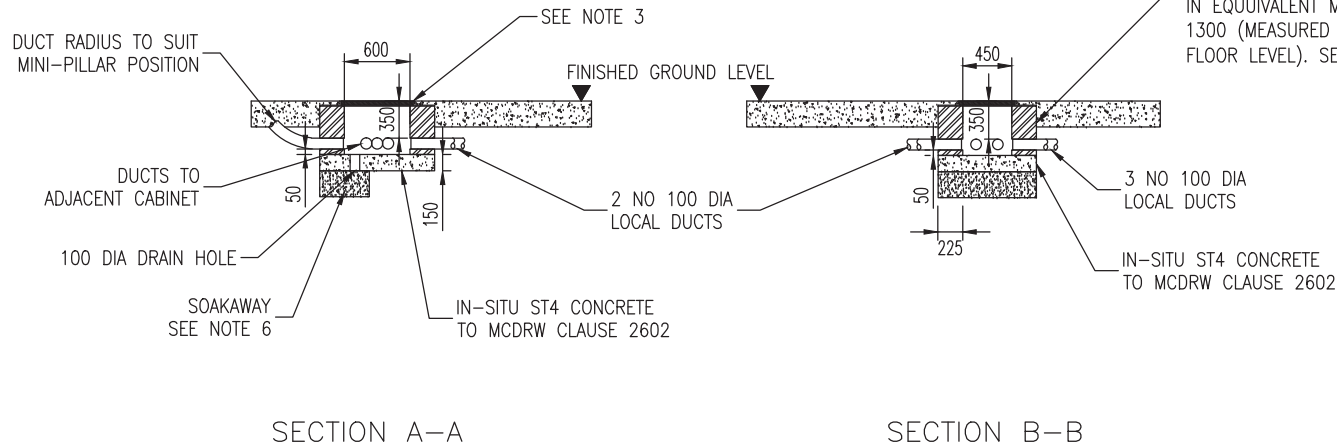
NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01517



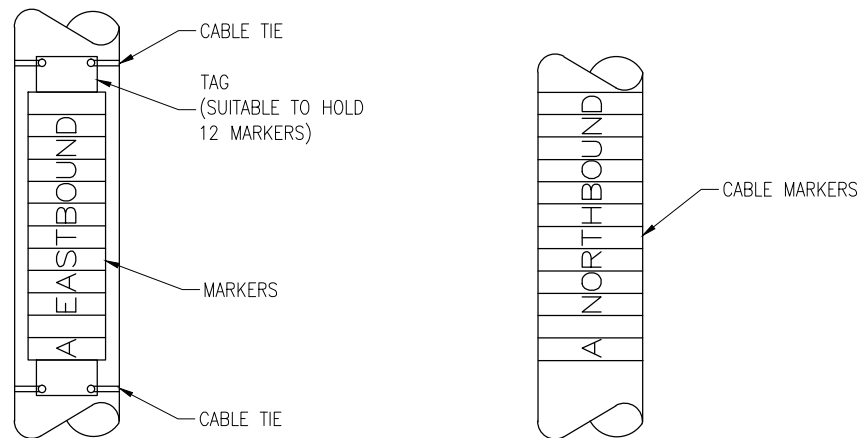
NOTES:

- CHAMBER WALLS SHALL BE 225MM THICK AND SHALL BE AS SPECIFIED IN MCDRW CLAUSE 1532.
- TO ACCOMMODATE THE FORM OF CONSTRUCTION USED FOR THE CHAMBER THE SPACING OF THE LOCAL DUCTS MAY VARY BETWEEN 0 AND 100mm.
- COVER AND FRAME SHALL COMPLY WITH IS EN 124 AND SHALL BE AS DESCRIBED IN APPENDIX 15/2.
- THE CHAMBER WALLS SHALL BE CHAMFERED AROUND THE DUCT ENTRY POINTS TO PROVIDE SMOOTH SURFACE FOR CABLE INSTALLATION.
- REFER TO DRAWINGS BELOW FOR INSTALLATION DETAILS:
 - DUCTS: RCD/1500/010-014
 - CABINETS: RCD/1500/009.
- POSITIVE DRAINAGE IN THE FORM OF SOAKAWAY TO SUIT LOCAL GROUND CONDITIONS OF CONNECTION TO THE HIGHWAY DRAINAGE NETWORK IS REQUIRED.



NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01518



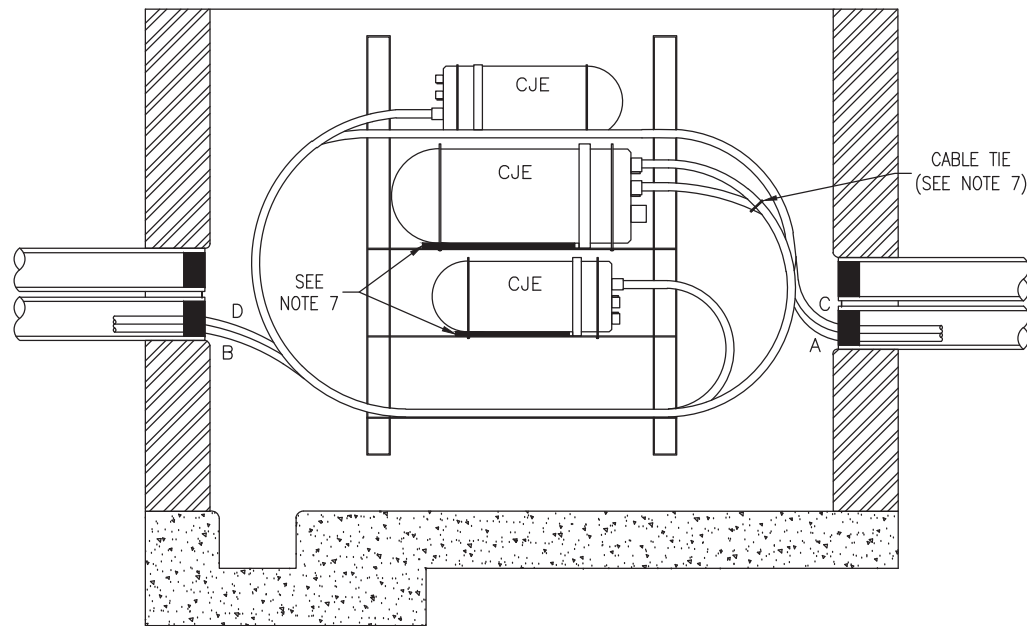
TYPICAL METHOD OF MARKING CABLES

NOTES:

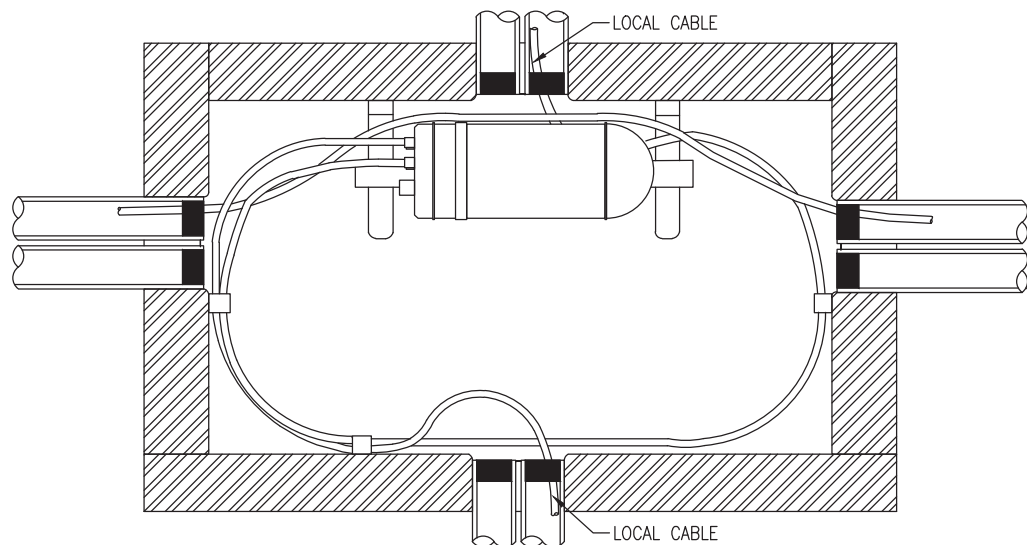
1. ALL CABLES SHALL BE CLEARLY AND UNAMBIGUOUSLY MARKED TO SHOW DETAILS OF CABLE ROUTES AND DESTINATIONS.
2. AT CABLE JOINT ENCLOSURES (CJE) THE CABLE SHALL BE MARKED IMMEDIATELY ADJACENT TO THE CJE OVER THE HEAT SHRINK MATERIAL.
3. THE ROAD AUTHORITY SHALL BE CONSULTED TO AGREE UPON CABLE MARKER LETTERS AND/OR NUMERALS TO BE FITTED BY THE CABLING CONTRACTOR.
4. EACH END OF EVERY CABLE SHALL FITTED WITH AN IDENTIFICATION TAG ADJACENT TO THE CABLE GLAND SHROUD.
5. IDENTIFICATION TAG TEXT SHALL BE INDELIBLE AND SHALL BE FASTENED SECURELY USING CABLE TIES. HAND WRITTEN, SELF-ADHESIVE PLASTIC LABELS SHALL NOT BE ACCEPTED AS A PERMANENT MEANS OF IDENTIFICATION.

NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01519



FRONT ELEVATION



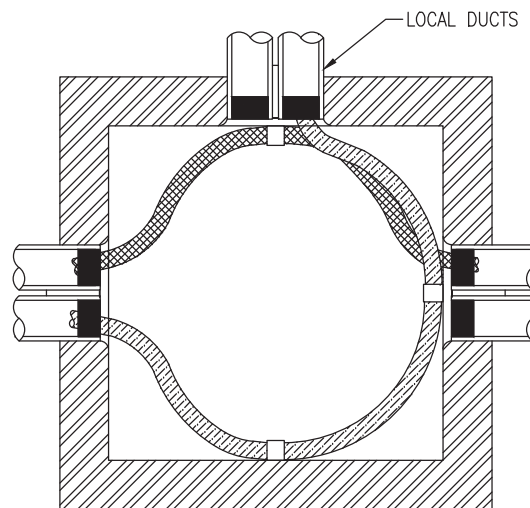
PLAN VIEW
(TYPICAL MANAGEMENT OF LOCAL CABLES)

NOTES:

1. CABLE AND CABLE JOINT ENCLOSURES (CJE) SHALL BE INSTALLED IN JOINTING CHAMBERS (RCD/1500/015) AS SHOWN. JOINTING CHAMBERS ARE PROVIDED WITH SUPPORTS AS SHOWN ON DRAWING RCD/1500/016.
2. THE SITUATION SHOWN ARE TYPICAL. WHERE THE ACTUAL CABLING ARRANGEMENT DIFFERS, THE PRINCIPLES SHOWN INCLUDING THE SECURING OF CJE's AND CABLE, SHALL BE ADHERED TO. WHERE CJE's ARE MOUNTED VERTICALLY, THEY SHALL BE SECURED USING PROPRIETARY MADE BRACKETS.
3. LONGITUDINAL CABLES HAVE BEEN OMITTED FROM THE PLAN VIEW FOR CLARITY. LOCAL CABLES HAVE ALSO BEEN OMITTED FROM THE FRONT ELEVATION FOR CLARITY.
4. THE METHOD OF SECURING CABLES TO THE CHAMBER WALL IS TO BE AGREED WITH THE ROAD AUTHORITY. CABLE TRAY OR CABLE BEARING CLIPS OF THE RE-ENTERABLE TYPE MAY BE USED.
5. MINIMUM BENDING RADII OF THE CABLES ($12 \times \text{DIAMETER}$) SHALL BE ADHERED TO.
6. CJE's SHALL BE SECURED TO SUPPORTS USING CABLE TIES. CJE's SHALL BE LAID ON A PAD OF NEOPRENE OR SIMILAR FLEXIBLE MATERIAL TO ENSURE THAT THEY LAY HORIZONTALLY.
7. WHERE TWO OR MORE CABLES ARE INSTALLED INTO A CJE THEY SHALL BE BOUND SECURELY TOGETHER FOR A LENGTH OF 500mm USING CABLE TIES AT 150mm (MAX) INTERVALS.

NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01520



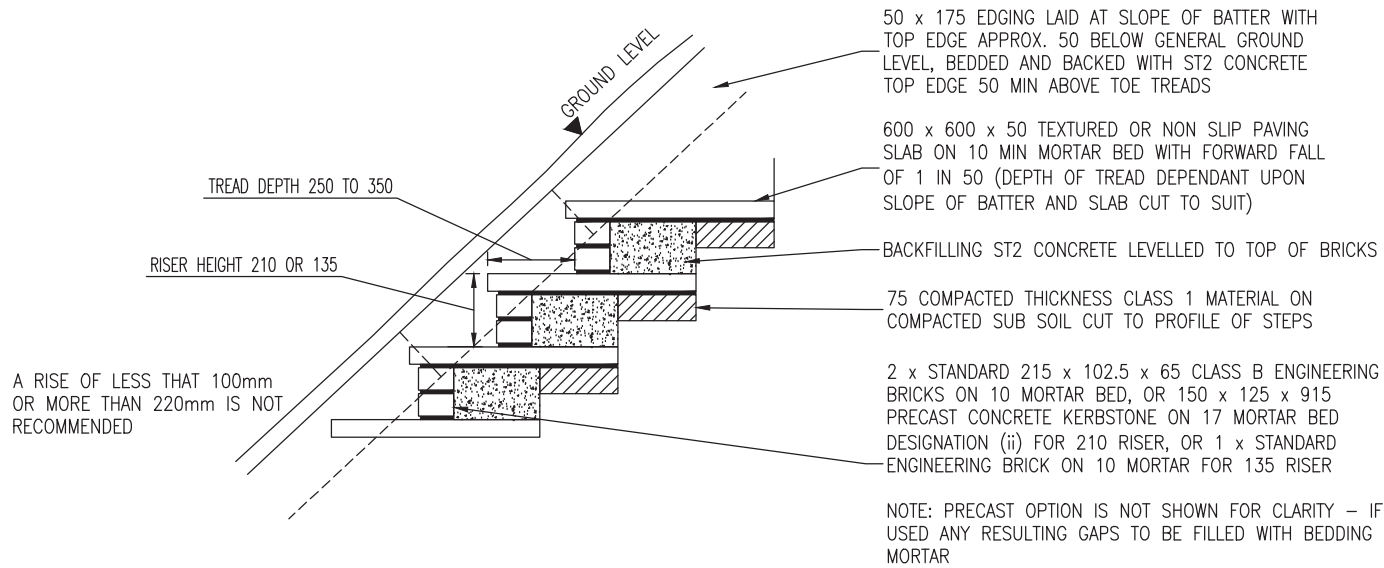
CABLE MANAGEMENT IN
COMMS II AND III CHAMBERS
(PLAN VIEW)

NOTES:

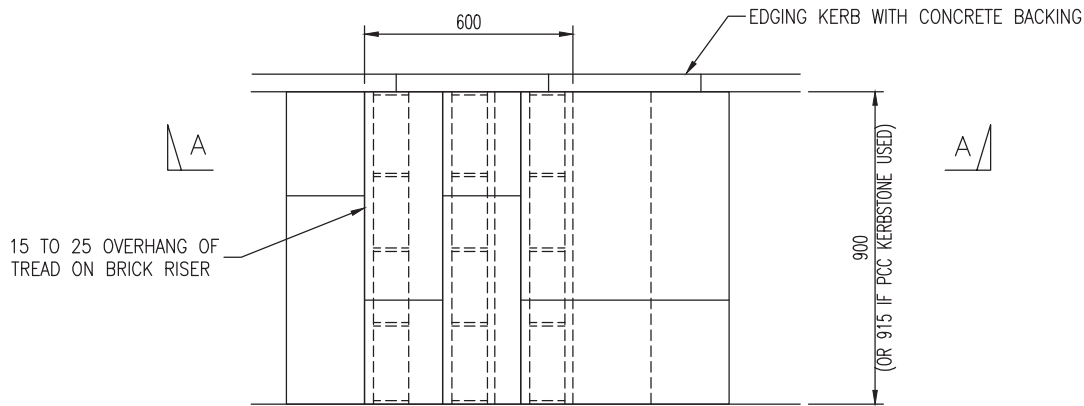
1. CABLES SHALL BE INSTALLED IN CHAMBERS AS SHOWN ON THESE DETAILS. THE SITUATIONS SHOWN ARE TYPICAL. WHERE THE ACTUAL CABLING ARRANGEMENT DIFFERS THE PRINCIPLE SHOWN SHALL BE ADHERED TO.
2. THE METHOD OF SECURING CABLES TO THE CHAMBER WALL IS TO BE AGREED WITH THE ROAD AUTHORITY. CABLE TRAY OR CABLE BEARING CLIPS OF THE RE-ENTERABLE TYPE MAY BE USED.
3. MINIMUM BENDING RADII OF THE CABLES SHALL BE ADHERED TO (12 x DIAMETER).

NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01521



SECTION A-A



PLAN
TYPICAL ARRANGEMENT OF ACCESS STEPS
(HAND RAILS ARE NOT SHOWN)

NOTES:

1. IT IS THE RESPONSIBILITY OF THE SCHEME DESIGNER TO ASSESS THE NEED FOR STEPS (AND HANDRAILS) TO ENABLE THE SAFE ACCESS TO AND EGRESS FROM ANY CABINET SITE.
2. THIS DRAWING SHOWS TYPICAL CONSTRUCTION DETAILS FOR STEPS. THE SCHEME DESIGNER SHALL PROVIDE DRAWINGS OF STEP DETAILS FOR GRADIENTS WHERE THIS DRAWING IS INAPPROPRIATE.
3. CLASSES AND GRADES OF MATERIALS ARE DETAILED IN THE MCDRW.
4. STEPS WHERE PAVING SLABS HAVE AN OVERHANG GREATER THAN THAT SHOWN OR ARE CRACKED WILL NOT BE ACCEPTED.
5. THE DESIGN AND CONSTRUCTION OF THE STEPS, INCLUDING LANDING, HANDRAILS AND OTHER STEP AND STAIRWAY ELEMENTS SHALL COMPLY WITH THE RECOMMENDATIONS OF BS 5395 PART 3.

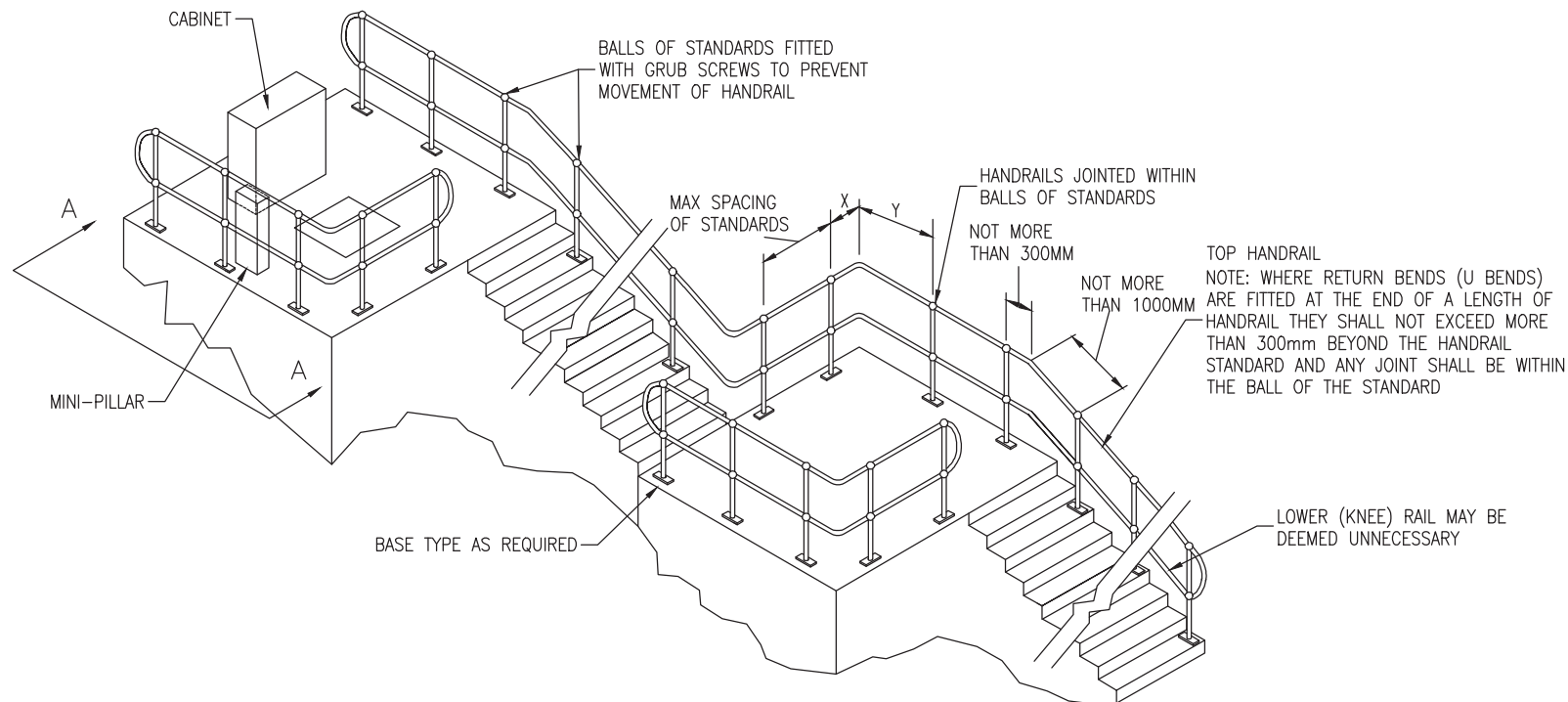
TII PUBLICATION NUMBER: CC-SCD-01522-01

NOT TO SCALE

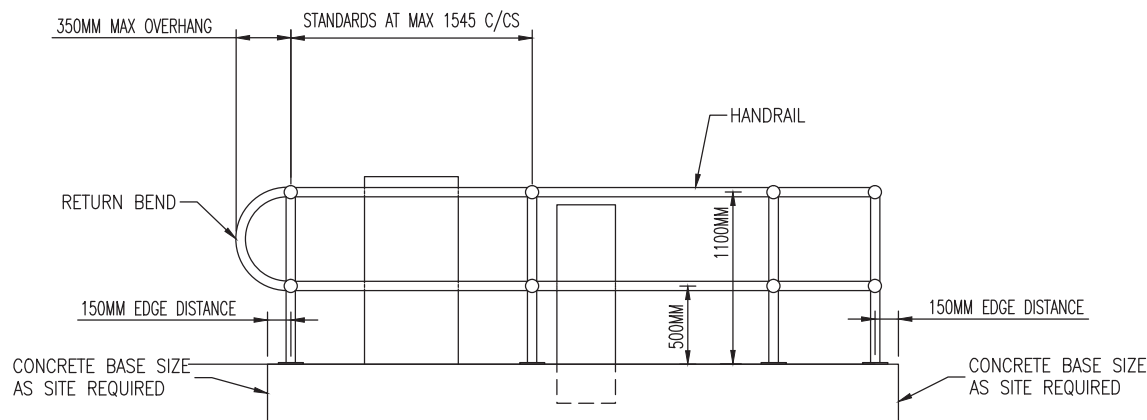
 NRA NATIONAL ROADS AUTHORITY	ROAD CONSTRUCTION DETAILS	INSTALLATION DRAWING TCC			TYPICAL ACCESS STEPS	Drawing No.
			P1	10/13		RCD/
			Issue	Date		1500/022

NOTES:

X TO BE 300 MAX.
X + Y TO BE 1000 MAX.



TYPICAL ARRANGEMENT OF HANDRAILS FOR STEPS AND CONCRETE CABINET BASES



SECTION A-A

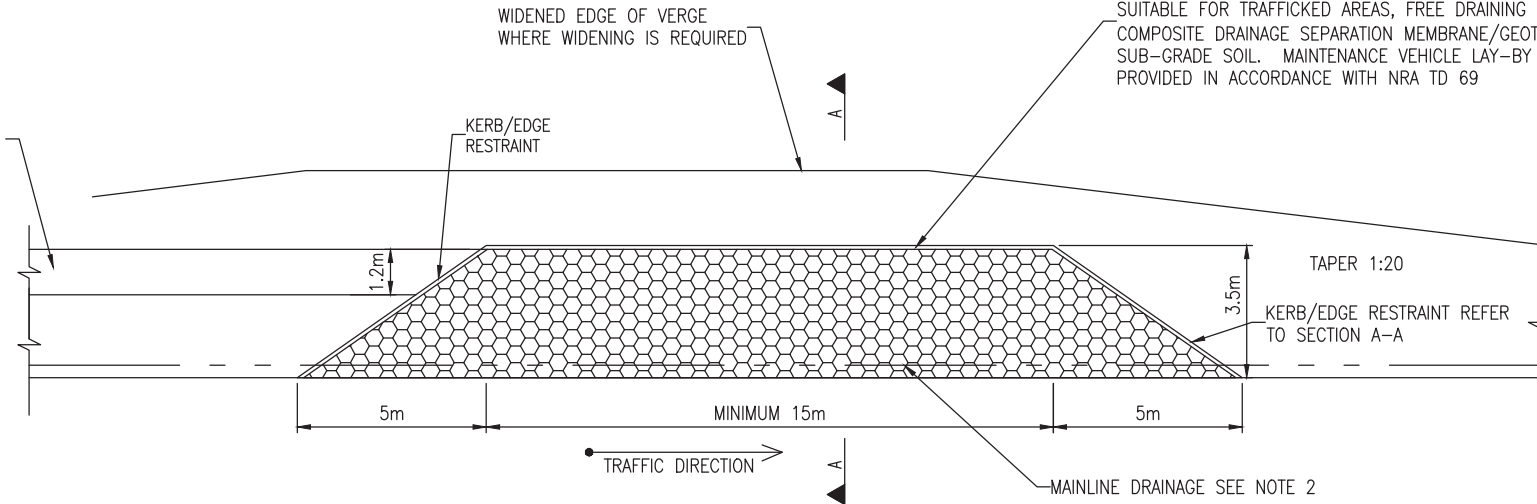
NOT TO SCALE

NOTES:

1. THE DESIGN AND CONSTRUCTION OF THE STEPS, INCLUDING LANDING, HANDRAILS AND OTHER STEP AND STAIRWAY ELEMENTS SHALL COMPLY WITH THE RECOMMENDATIONS OF BS 5395 PART 3.
2. HANDRAILS REQUIRED WHERE THERE IS A POTENTIAL 'FALLING' HAZARD TO SITE OPERATIVES eg. CABINETS AT THE TOP OF EMBANKMENTS, SLOPES OR DITCHES.
3. THE HANDRAIL SHALL BE GALVANISED STEEL TUBES TO BS 1387 DN 40 MEDIUM SERIES WITH 90MM DIA. BALLS OR KEY CLAMPED SOCKETS EITHER CAST INTO BASE OR BOLTED DOWN WITH 2 NO. M16 GALVANISED STEEL ANCHORS PER BASEPLATE.

TII PUBLICATION NUMBER: CC-SCD-01523

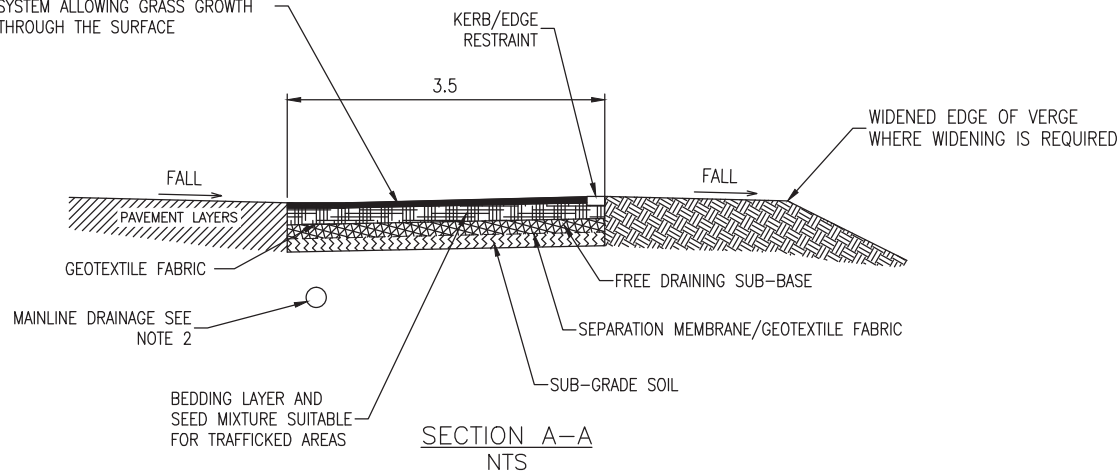
100mm THICK CONCRETE PATH TO
EXTEND TO EQUIPMENT CABINET
PLINTH SEE RCD/1500/008



PERMEABLE CELLULAR TYPE PAVING SYSTEM ALLOWING GRASS GROWTH
THROUGH THE SURFACE INCLUDING BEDDING LAYER AND SEED MIXTURE
SUITABLE FOR TRAFFICKED AREAS, FREE DRAINING SUB-BASE,
COMPOSITE DRAINAGE SEPARATION MEMBRANE/GEOTEXTILE FABRIC AND
SUB-GRADE SOIL. MAINTENANCE VEHICLE LAY-BY AREA SHALL BE
PROVIDED IN ACCORDANCE WITH NRA TD 69

PLAN OF TYPICAL MAINTENANCE VEHICLE LAY-BY AREA
Scale 1:200

PERMEABLE CELLULAR TYPE PAVING
SYSTEM ALLOWING GRASS GROWTH
THROUGH THE SURFACE



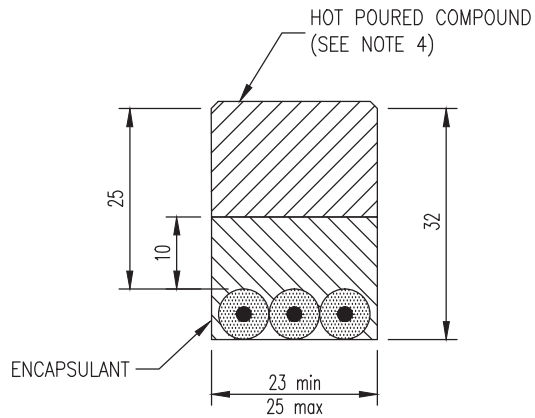
Notes:

1. WHERE SAFETY BARRIER IS REQUIRED AS PER NRA TD 19 IN THE VICINITY OF THE MAINTENANCE LAY-BY, A SAFE MEANS OF ACCESS FOR MAINTENANCE PERSONNEL SHALL BE PROVIDED BETWEEN THE MAINTENANCE LAY-BY AND THE EQUIPMENT CABINET PLINTH.
2. THE INTEGRITY OF THE MAINLINE DRAINAGE SYSTEM SHALL BE MAINTAINED.

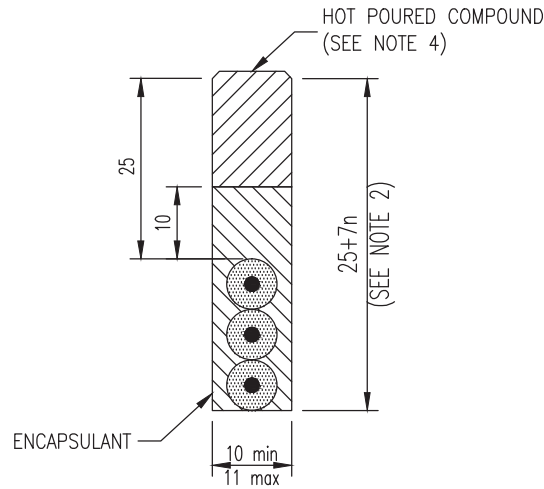
NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01524

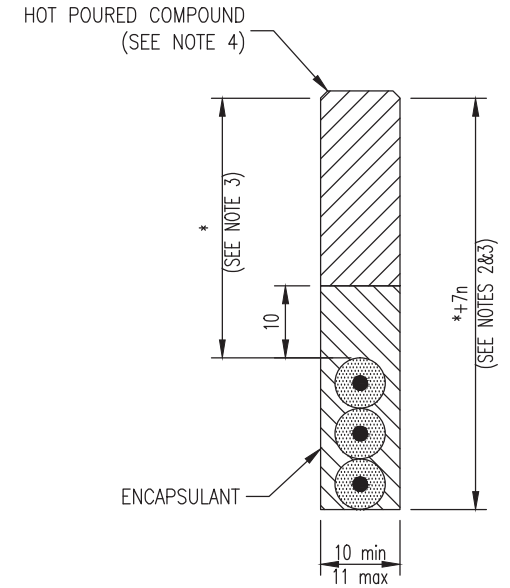
FOR LOOPS LAID IN REINFORCED CONCRETE
CONSTRUCTION
TYPE S1



FOR LOOPS LAID IN NON-REINFORCED CONCRETE
CONSTRUCTION
TYPE S2



FOR LOOPS LAID IN FLEXIBLE
CONSTRUCTION
TYPE S3

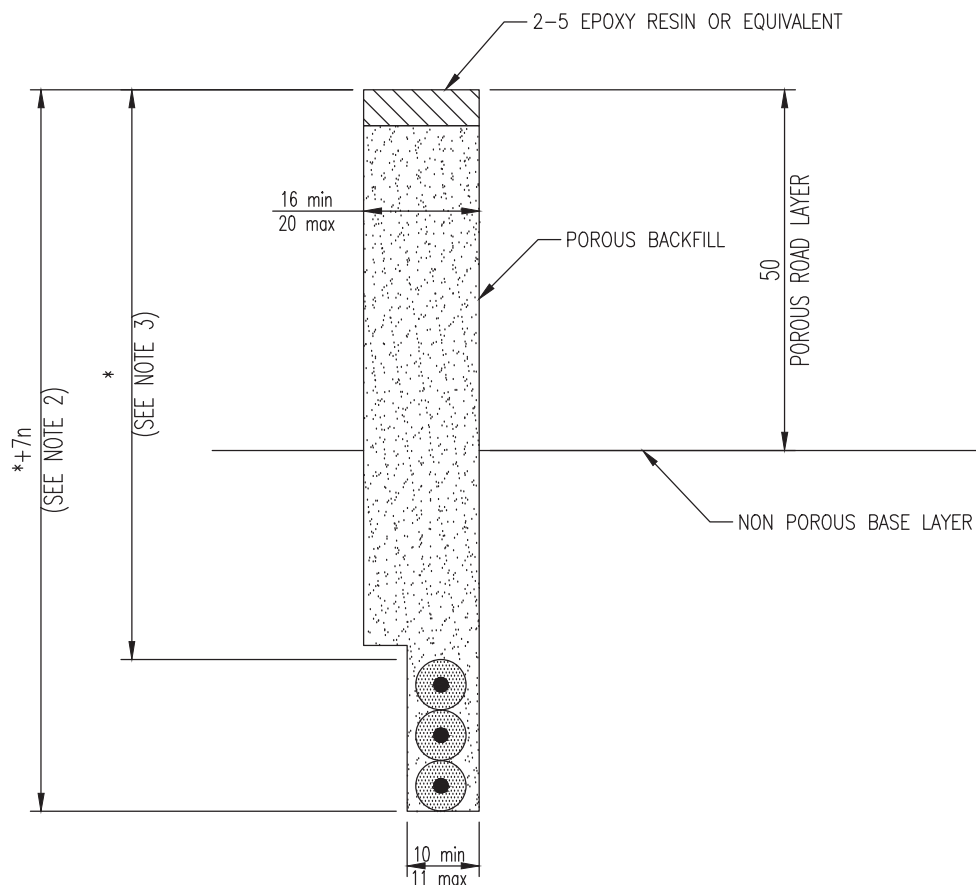


NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. n = NUMBER OF CABLES IN THE SLOT.
3. * = UNLESS OTHERWISE SPECIFIED TO BE 80 FOR MOTORWAY APPLICATIONS AND 65 FOR ALL-PURPOSE ROADS.
4. HOT POURED COMPOUND SHALL BE OXIDISED GRADE BITUMEN TO IS EN 13304 AND IS EN 12591 GRADE S85/40 OR GRADE S85/25.
5. LOOP TAIL SLOT WIDTH SHALL BE 16 (+4/-0) WHERE TWISTED LOOP TAIL PAIRS OCCUPY THE SLOT.
6. FOR THE INSTALLATION OF DETECTOR LOOPS ON MOTORWAYS AND ALL PURPOSE DUAL CARRIAGEWAYS TO DMRB HD 20.

NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01525



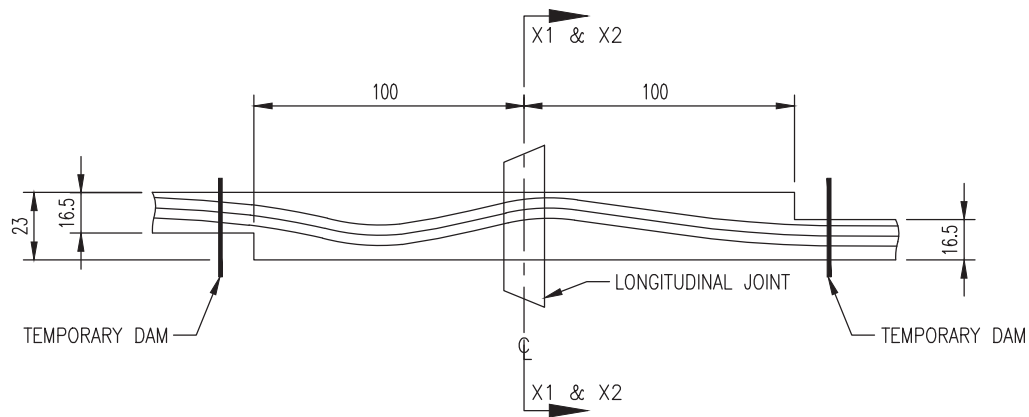
SLOT PROFILE – POROUS ROAD SURFACES

NOTES:

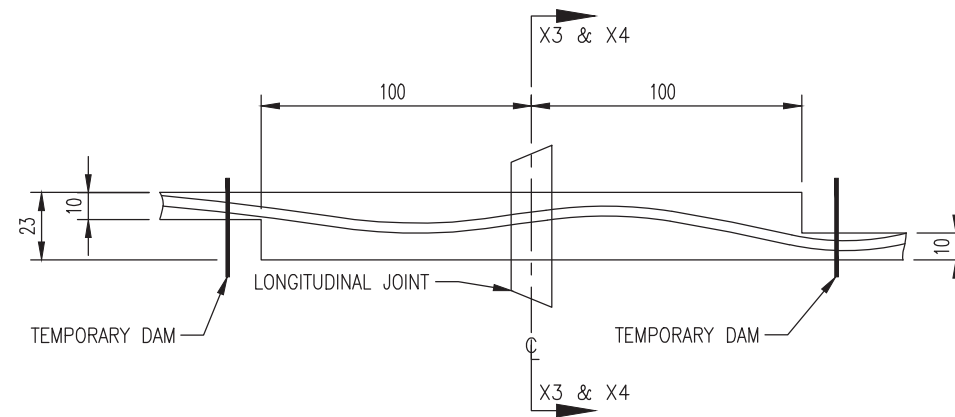
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. n = NUMBER OF CABLES IN THE SLOT.
3. * = UNLESS OTHERWISE SPECIFIED TO BE 80 FOR MOTORWAY APPLICATIONS AND 65 FOR ALL-PURPOSE ROADS.
4. FOR LOOPS USED WITH AUTOMATIC DATA COLLECTION EQUIPMENT SEEK FURTHER ADVICE FROM THE ROAD AUTHORITY.
5. LOOP TAIL SLOT WIDTH SHALL BE 16 (+4/-0) WHERE TWISTED LOOP TAIL PAIRS OCCUPY THE SLOT.
6. FOR THE INSTALLATION OF DETECTOR LOOPS ON MOTORWAYS AND ALL PURPOSE DUAL CARRIAGEWAYS.

NOT TO SCALE

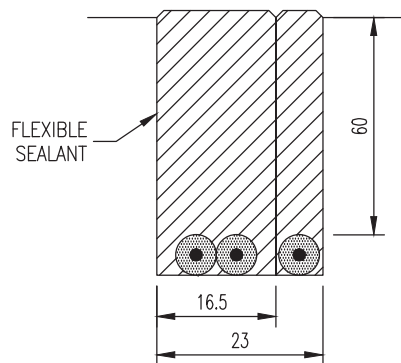
TII PUBLICATION NUMBER: CC-SCD-01526



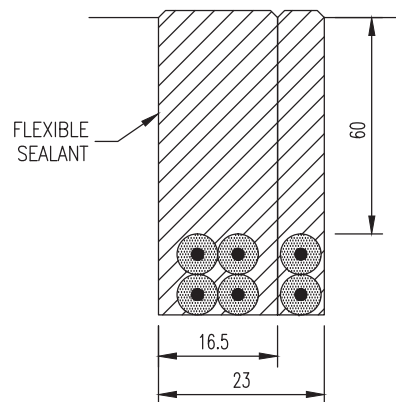
TYPE X1 & X2 (PLAN)



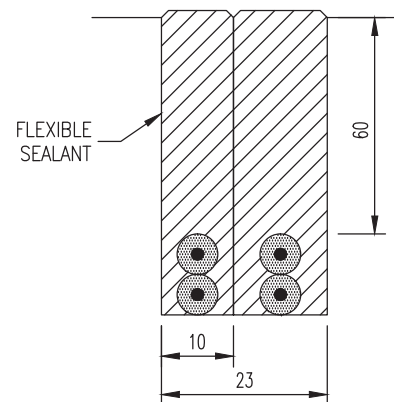
TYPE X3 & X4 (PLAN)



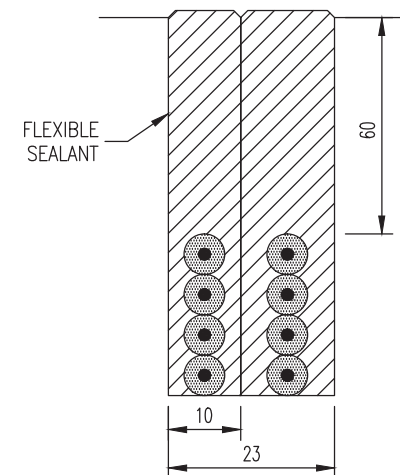
X1 SECTION



X2 SECTION



X3 SECTION



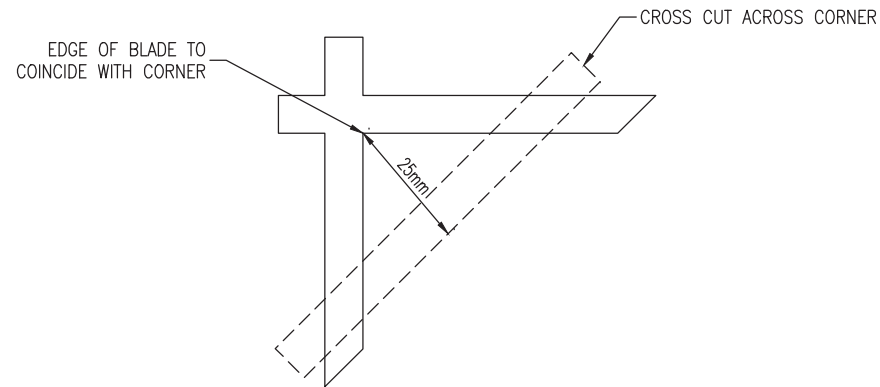
X4 SECTION

NOTES:

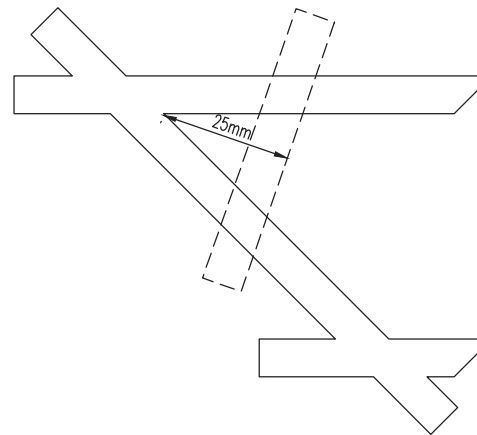
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. FOR THE INSTALLATION OF DETECTOR LOOPS ON MOTORWAYS AND ALL PURPOSE DUAL CARRIAGEWAYS TO DMRB HD 20.

NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01527



CROSS CUT 90° ANGLE



CROSS CUT 45° ANGLE

NOTES:

1. FOR THE INSTALLATION OF DETECTOR LOOPS ON MOTORWAYS AND ALL PURPOSE DUAL CARRIAGEWAYS TO DMRB HD 20.

TII PUBLICATION NUMBER: CC-SCD-01529

NOT TO SCALE

INSTALLATION TEST CERTIFICATE FOR INDUCTIVE LOOP DETECTORS

SITE ADDRESS/REFERENCE:.....

CONTRACTOR:
 DRAWING NUMBER:
 DATE TESTED:

WEATHER CONDITIONS:

 TEMPERATURE:

LOOP TESTS	LOOP TAIL LENGTH	TEST 1 SERIES RESISTANCE. MEASURED INTO LOOP TAILS.		TEST 2 RESISTANCE TO EARTH OF LOOP TAILS. MEASURED AT 500V DC WITH ALL CONDUCTORS CONNECTED TOGETHER.		TEST 3 INDUCTANCE. MEASURED INTO LOOP TAILS.	CALCULATED INDUCTANCE.
DESIGNATION	METRES	MAX. 5 Ohms		MIN. 100 Megohms		μH	μH
		READING	PASS/FAIL	READING	PASS/FAIL		

COMPLETE CIRCUIT TESTS	FEEDER LENGTH	TEST 1 SERIES RESISTANCE. MEASURED INTO FEEDER AND LOOP TAILS.		TEST 2 RESISTANCE TO EARTH OF CABLE ARMOURING (ARMOURING NOT CONNECTED).		TEST 3 RESISTANCE TO EARTH OF CABLE ARMOURING (ARMOURING CONNECTED AT DETECTOR HOUSING).		TEST 4 RESISTANCE TO EARTH OF FEEDER AND LOOP TAILS. MEASURED AT 500V DC WITH ALL CONDUCTORS CONNECTED TOGETHER.		TEST 5 INDUCTANCE. MEASURED INTO FEEDER AND LOOP TAILS.
DESIGNATION	METRES	MAX. 5 Ohms		MIN. 100 Megohms		MAX. 5 Ohms		MIN. 100 Megohms		μH
		READING	PASS/FAIL	READING	PASS/FAIL	READING	PASS/FAIL	READING	PASS/FAIL	

LOOP DIMENSIONS

TEST EQUIPMENT USED

RESISTANCE MAKE
 INDUCTANCE MAKE

TYPE
 TYPE

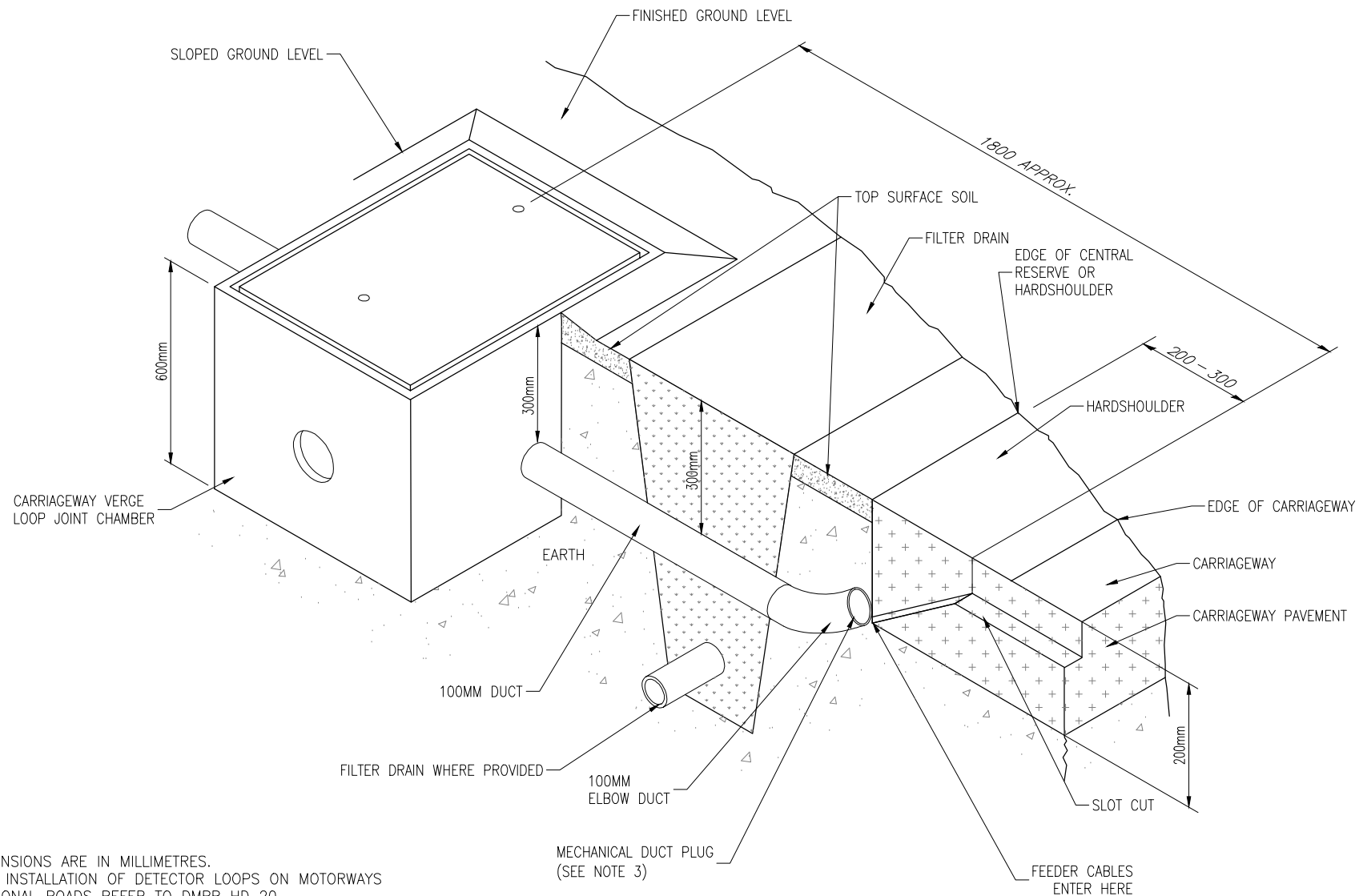
I certify that this equipment has been installed and tested in accordance with specification DMRB HD 20.

Signed on behalf of the Contractor Company Date

NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01530

 NATIONAL ROADS AUTHORITY	ROAD CONSTRUCTION DETAILS	INSTALLATION DRAWING TCC			INDUCTIVE LOOP TEST CERTIFICATE	Drawing No.
			P1	10/13		RCD/
			Issue	Date		1500/030

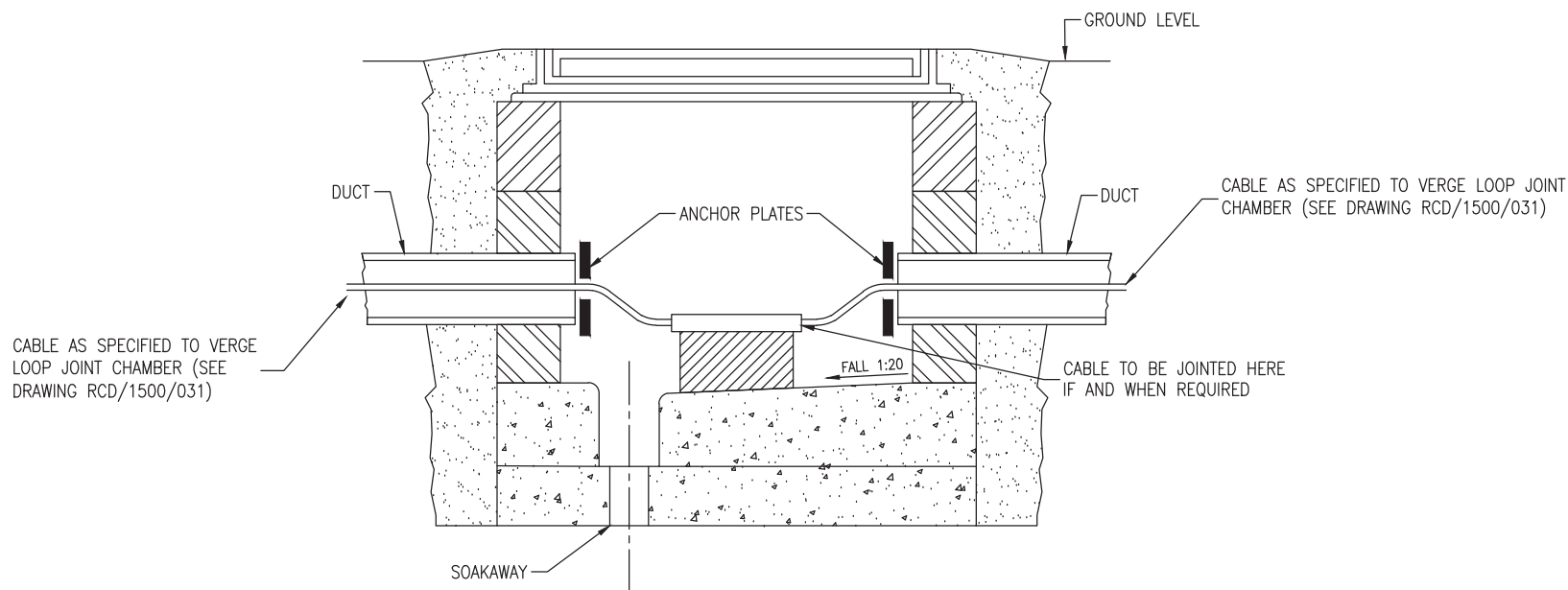


NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. FOR THE INSTALLATION OF DETECTOR LOOPS ON MOTORWAYS AND NATIONAL ROADS REFER TO DMRB HD 20.
3. THE ELBOW DUCT CONNECTION SHALL BE FITTED WITH A MECHANICAL DUCT PLUG IN ACCORDANCE WITH MCDRW 1530 AND DRAWING RCD/1500/014.

NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01531



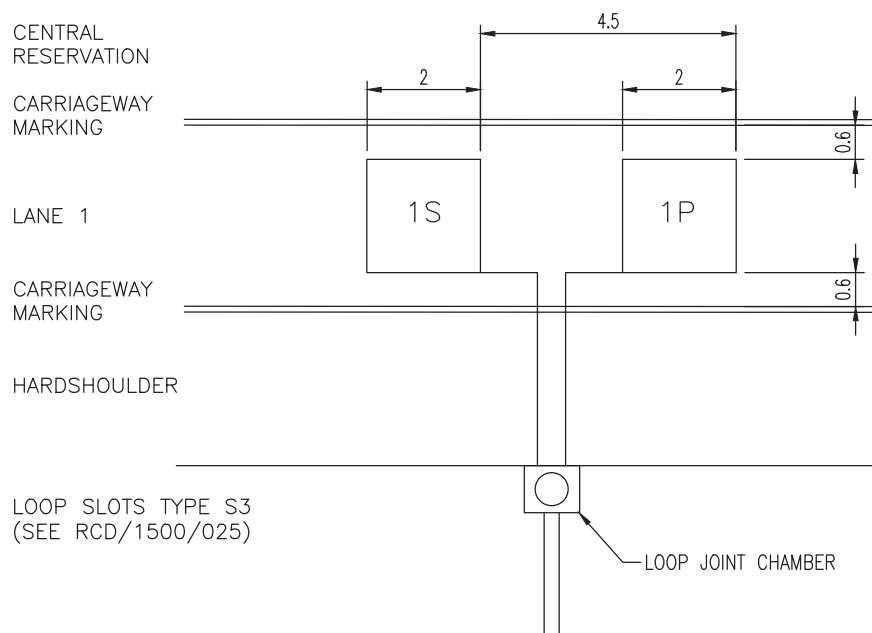
SECTIONAL ELEVATION OF CENTRAL RESERVE CHAMBER

NOTES:

1. THIS ARRANGEMENT MAY NOT BE SUITABLE FOR ALL SITE CONDITIONS. THE SCHEME DESIGNER SHALL TAILOR OTHER ARRANGEMENTS TO SUIT INDIVIDUAL LOCATIONS.
2. CABLE IDENTIFICATION SHALL BE FITTED DURING INSTALLATION.
3. FOR THE INSTALLATION OF DETECTOR LOOPS ON MOTORWAYS AND NATIONAL ROADS REFER DMRB HD 20.

TII PUBLICATION NUMBER: CC-SCD-01532

NOT TO SCALE

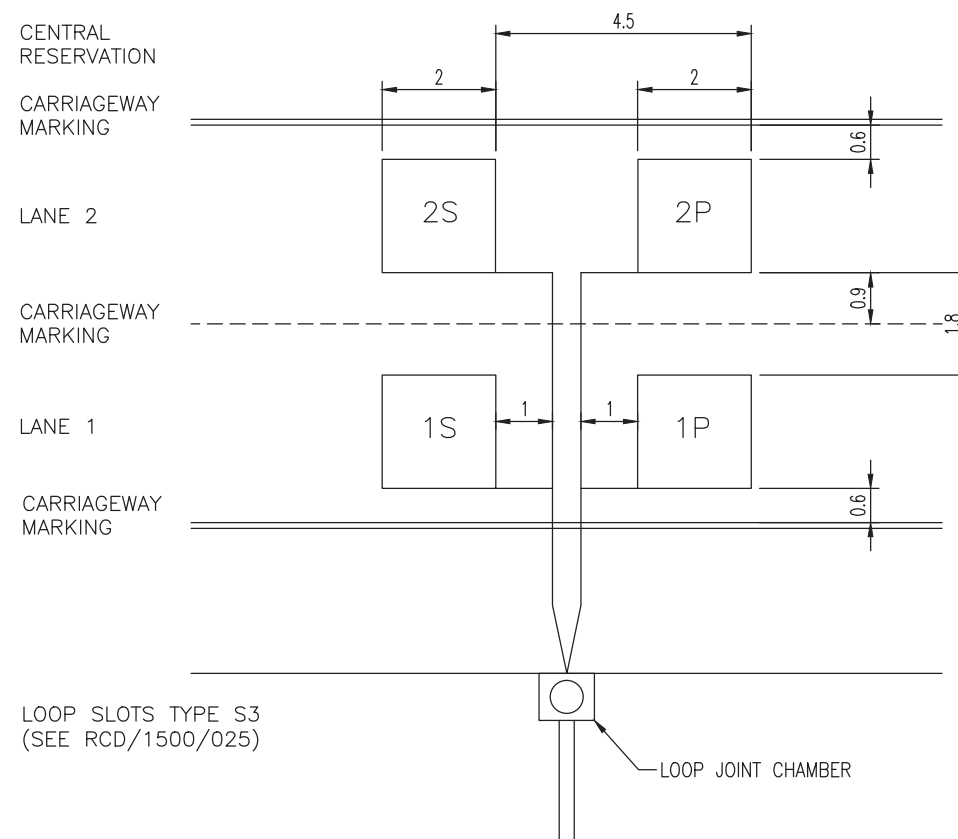


1 LANE AND HARDSHOULDER IN FLEXIBLE CONSTRUCTION

NOTES:

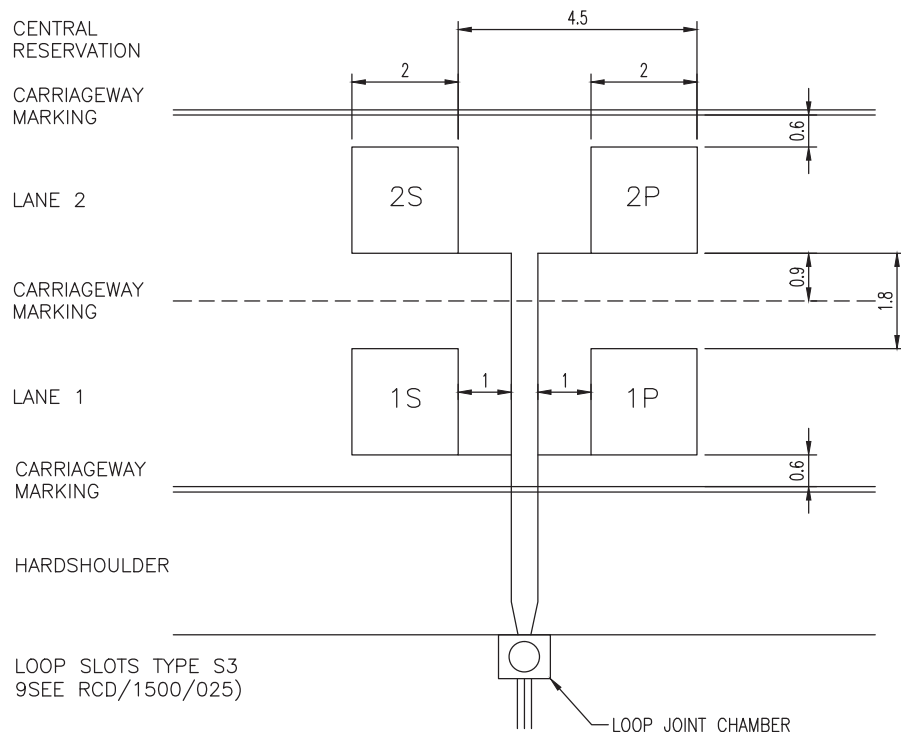
1. ALL DIMENSIONS ARE IN METRES.
2. ALL LOOPS TO BE 3 TURNS.
3. LOOP TAILS TO BE IDENTIFIED WITH LOOP REFERENCE SHOWN USING PREPRINTED DURABLE PLASTIC SLEEVE.
4. THIS IS A GENERAL DRAWING. LOOP WIDTHS WILL VARY ACCORDING TO LANE WIDTHS.
5. CONSULT WITH DETECTOR MANUFACTURER ON FREQUENCY OF CHANNEL ALLOCATION.
6. QUAD ARMoured FEEDER CABLE IS REQUIRED FOR SPEED LOOPS IN EACH LANE AND HARDSHOULDER.
7. TOLERANCE ± 0.02 METRES UNLESS OTHERWISE STATED.
8. LOOP SLOT TYPES S1 TO S3 ARE SHOWN ON DRAWING RCD/1500/025.
9. FOR THE INSTALLATION OF DETECTOR LOOPS ON MOTORWAYS AND NATIONAL ROADS REFER TO DMRB HD 20.

NOT TO SCALE

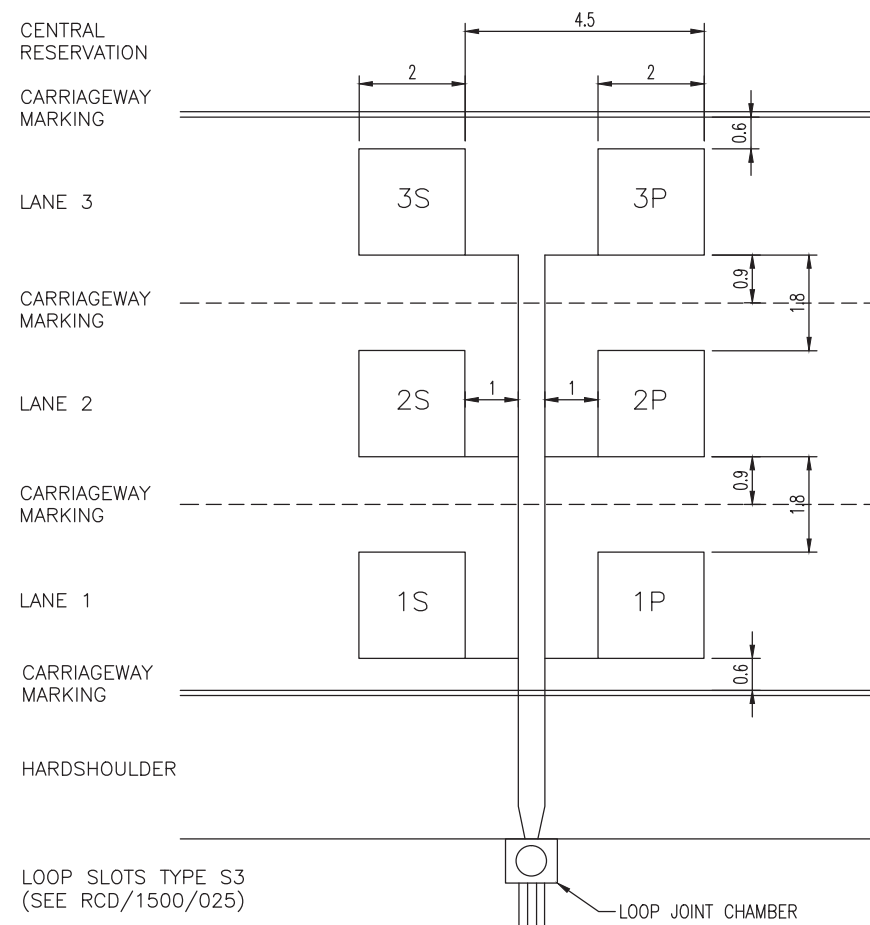


2 LANE FLEXIBLE CONSTRUCTION

TII PUBLICATION NUMBER: CC-SCD-01533



2 LANE AND HARDSHOULDER IN FLEXIBLE CONSTRUCTION



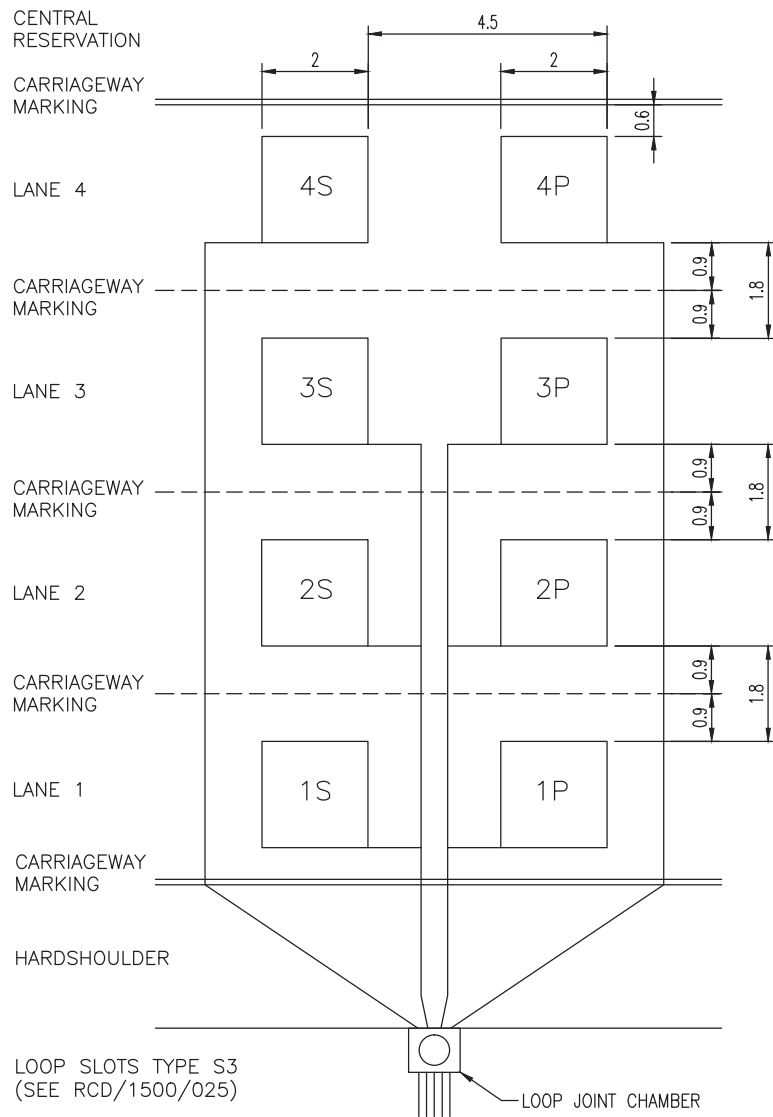
3 LANE AND HARDSHOULDER IN FLEXIBLE CONSTRUCTION

NOTES:

1. ALL DIMENSIONS ARE IN METRES.
2. ALL LOOPS TO BE 3 TURNS.
3. LOOP TAILS TO BE IDENTIFIED WITH LOOP REFERENCE SHOWN USING PREPRINTED DURABLE PLASTIC SLEEVE.
4. THIS IS A GENERAL DRAWING. LOOP WIDTHS WILL VARY ACCORDING TO LANE WIDTHS.
5. CONSULT WITH DETECTOR MANUFACTURER ON FREQUENCY OF CHANNEL ALLOCATION.
6. QUAD ARMoured FEEDER CABLE IS REQUIRED FOR SPEED LOOPS IN EACH LANE AND HARDSHOULDER.
7. TOLERANCE ± 0.02 METRES UNLESS OTHERWISE STATED.
8. LOOP SLOT TYPES S1 TO S3 ARE SHOWN ON DRAWING RCD/1500/025.
9. FOR THE INSTALLATION OF DETECTOR LOOPS ON MOTORWAYS AND NATIONAL ROADS REFER TO DMRB HD 20.

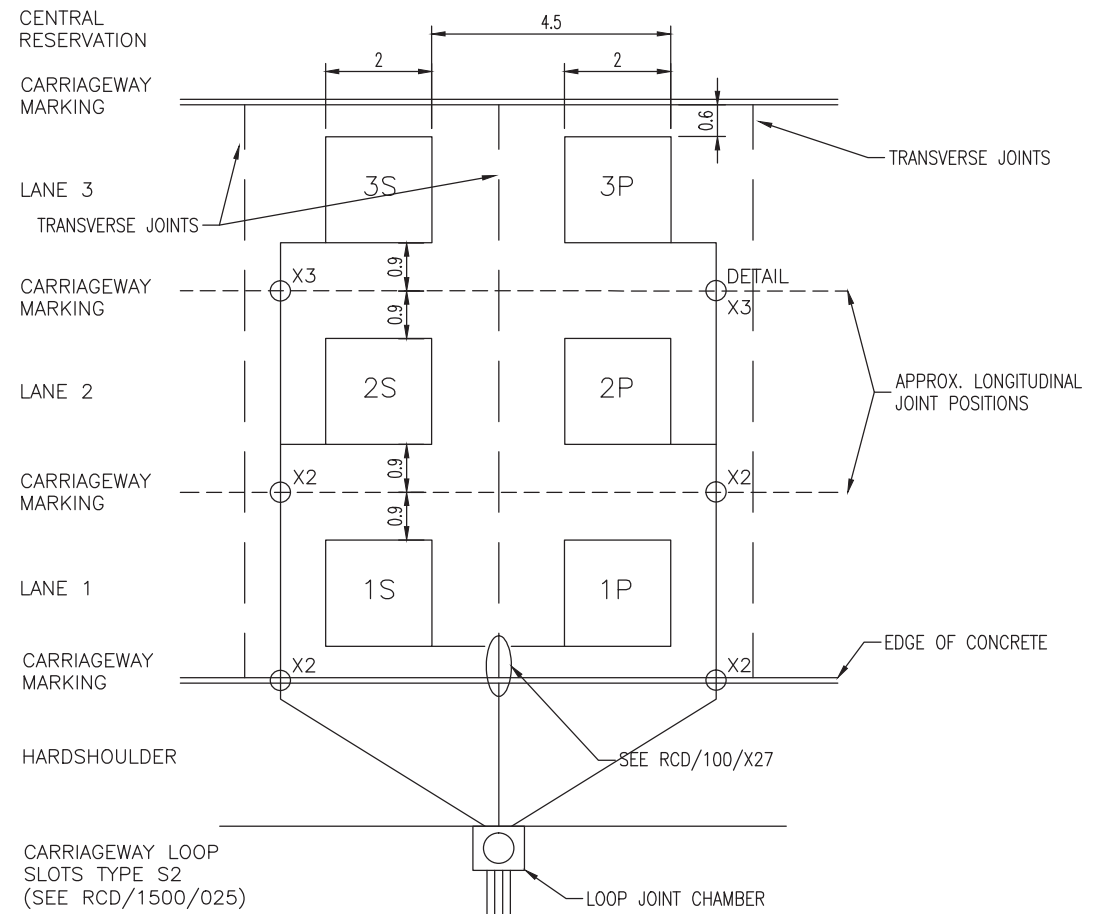
NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01534



4 LANE AND HARDSHOULDER IN FLEXIBLE CONSTRUCTION

NOT TO SCALE

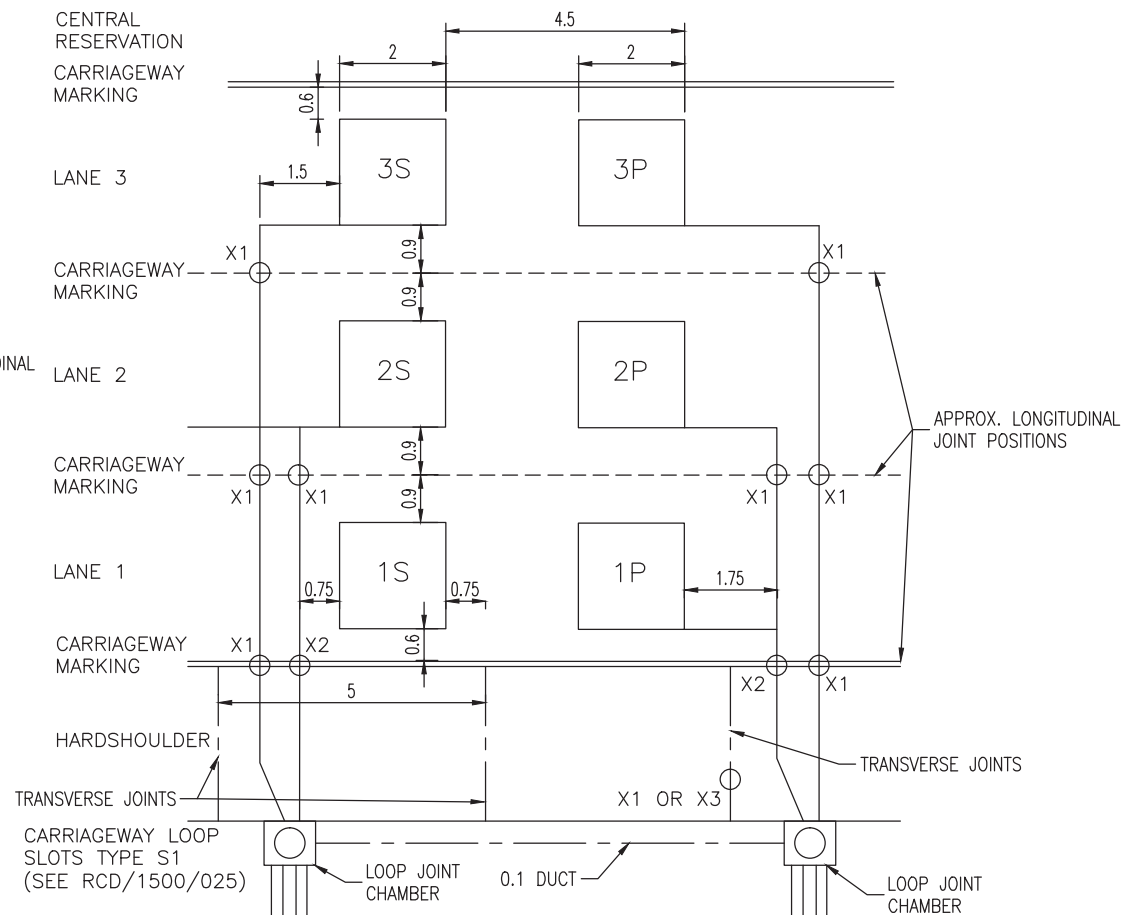
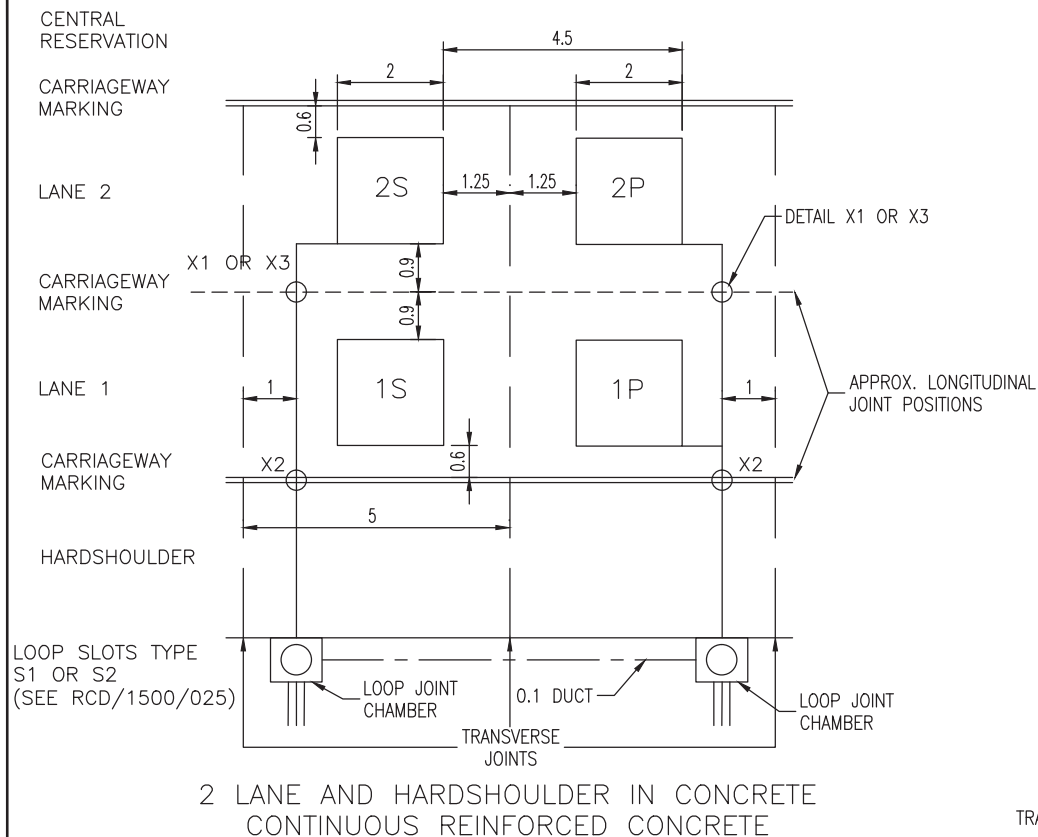


3 LANE CONCRETE WITH FLEXIBLE CONSTRUCTION HARDSHOULDER

NOTES:

1. ALL DIMENSIONS ARE IN METRES.
2. ALL LOOPS TO BE 3 TURNS.
3. LOOP TAILS TO BE IDENTIFIED WITH LOOP REFERENCE SHOWN USING PREPRINTED DURABLE PLASTIC SLEEVE.
4. THIS IS A GENERAL DRAWING. LOOP WIDTHS WILL VARY ACCORDING TO LANE WIDTHS.
5. CONSULT WITH DETECTOR MANUFACTURER ON FREQUENCY OF CHANNEL ALLOCATION.
6. QUAD ARMOURD FEEDER CABLE IS REQUIRED FOR SPEED LOOPS IN EACH LANE AND HARDSHOULDER.
7. TOLERANCE ± 0.02 METRES UNLESS OTHERWISE STATED.
8. DETAILS X2 AND X3 ARE SHOWN ON DRAWING RCD/1500/027.
9. LOOP SLOT TYPES S1 TO S3 ARE SHOWN ON DRAWING RCD/1500/025.
9. FOR THE INSTALLATION OF DETECTOR LOOPS ON MOTORWAYS AND NATIONAL ROADS REFER TO DMRB HD 20.

TII PUBLICATION NUMBER: CC-SCD-01535

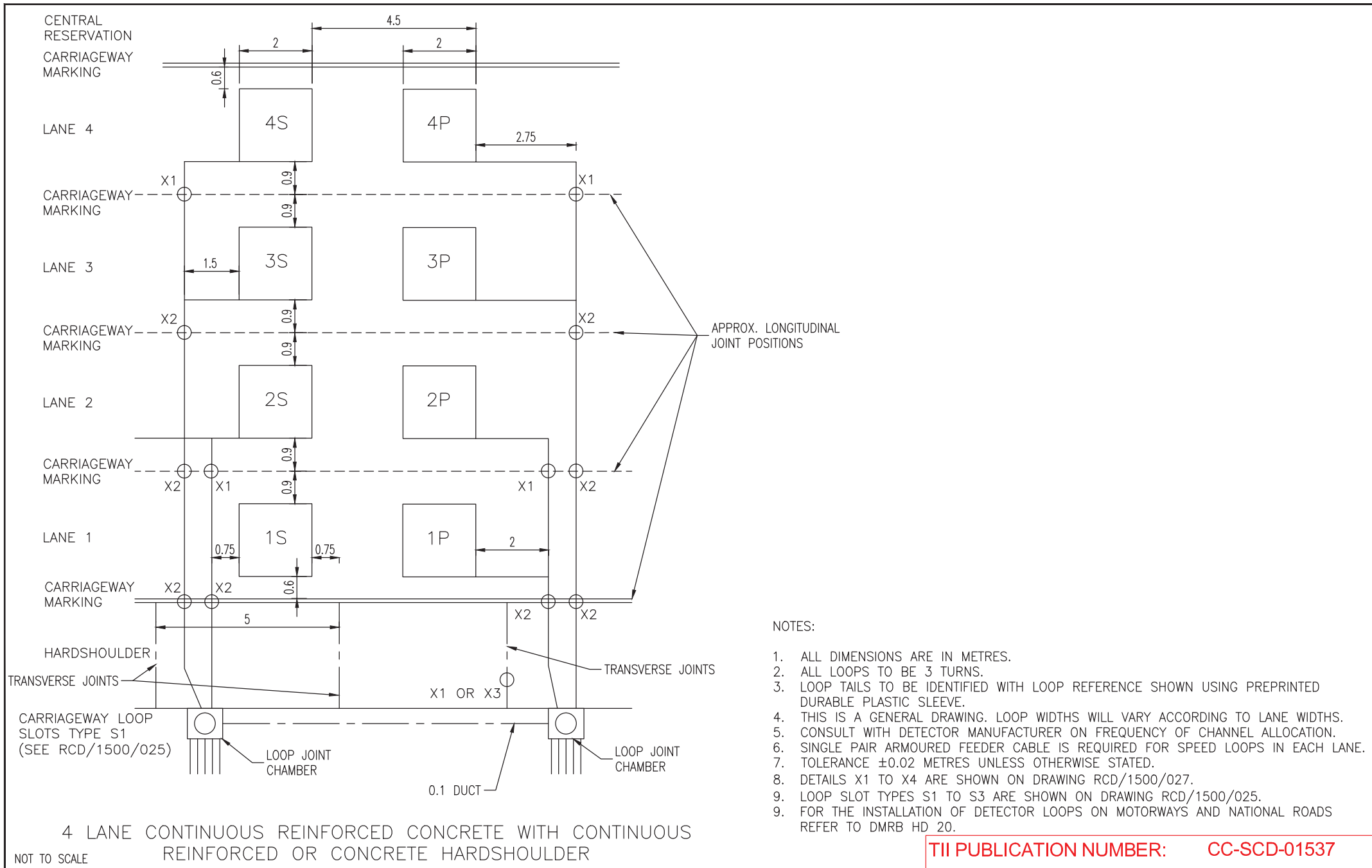


NOTES:

1. ALL DIMENSIONS ARE IN METRES.
2. ALL LOOPS TO BE 3 TURNS.
3. LOOP TAILS TO BE IDENTIFIED WITH LOOP REFERENCE SHOWN USING PREPRINTED DURABLE PLASTIC SLEEVE.
4. THIS IS A GENERAL DRAWING. LOOP WIDTHS WILL VARY ACCORDING TO LANE WIDTHS.
5. CONSULT WITH DETECTOR MANUFACTURER ON FREQUENCY OF CHANNEL ALLOCATION.
6. SINGLE PAIR ARMoured FEEDER CABLE IS REQUIRED FOR SPEED LOOPS IN EACH LANE.
7. TOLERANCE ± 0.02 METRES UNLESS OTHERWISE STATED.
8. DETAILS X1, X2 AND X3 ARE SHOWN ON DRAWING RCD/1500/027.
9. LOOP SLOT TYPES S1 TO S3 ARE SHOWN ON DRAWING RCD/1500/025.
9. FOR THE INSTALLATION OF DETECTOR LOOPS ON MOTORWAYS AND NATIONAL ROADS REFER TO DMRB HD 20.

NOT TO SCALE

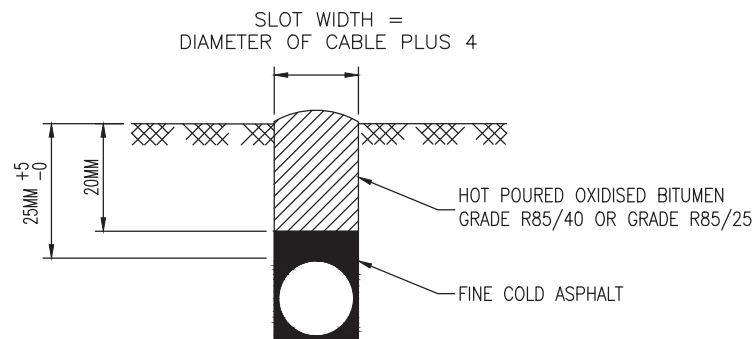
TII PUBLICATION NUMBER: CC-SCD-01536



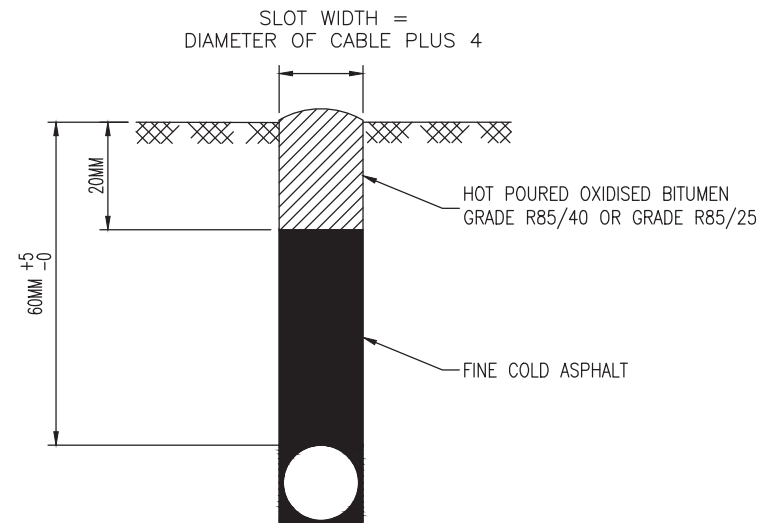
NOTES:

1. ALL DIMENSIONS ARE IN METRES.
2. ALL LOOPS TO BE 3 TURNS.
3. LOOP TAILS TO BE IDENTIFIED WITH LOOP REFERENCE SHOWN USING PREPRINTED DURABLE PLASTIC SLEEVE.
4. THIS IS A GENERAL DRAWING. LOOP WIDTHS WILL VARY ACCORDING TO LANE WIDTHS.
5. CONSULT WITH DETECTOR MANUFACTURER ON FREQUENCY OF CHANNEL ALLOCATION.
6. SINGLE PAIR ARMoured FEEDER CABLE IS REQUIRED FOR SPEED LOOPS IN EACH LANE.
7. TOLERANCE ± 0.02 METRES UNLESS OTHERWISE STATED.
8. DETAILS X1 TO X4 ARE SHOWN ON DRAWING RCD/1500/027.
9. LOOP SLOT TYPES S1 TO S3 ARE SHOWN ON DRAWING RCD/1500/025.
9. FOR THE INSTALLATION OF DETECTOR LOOPS ON MOTORWAYS AND NATIONAL ROADS REFER TO DMRB HD 20.

TII PUBLICATION NUMBER: CC-SCD-01537



CONCRETE ROAD SURFACE



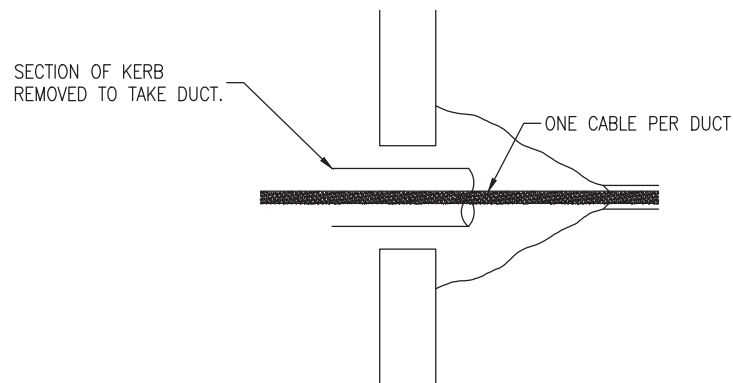
BITUMINOUS ROAD SURFACE

NOTES:

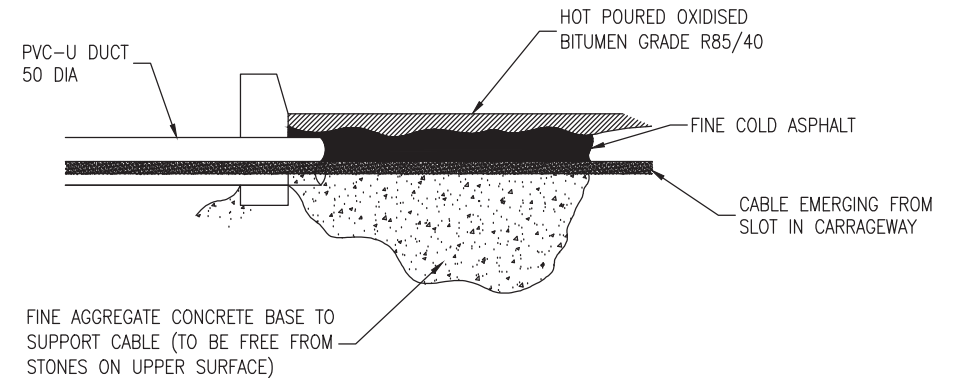
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. FOR THE INSTALLATION OF DETECTOR LOOPS ON MOTORWAYS AND NATIONAL ROADS REFER TO DMRB HD 20.

NOT TO SCALE

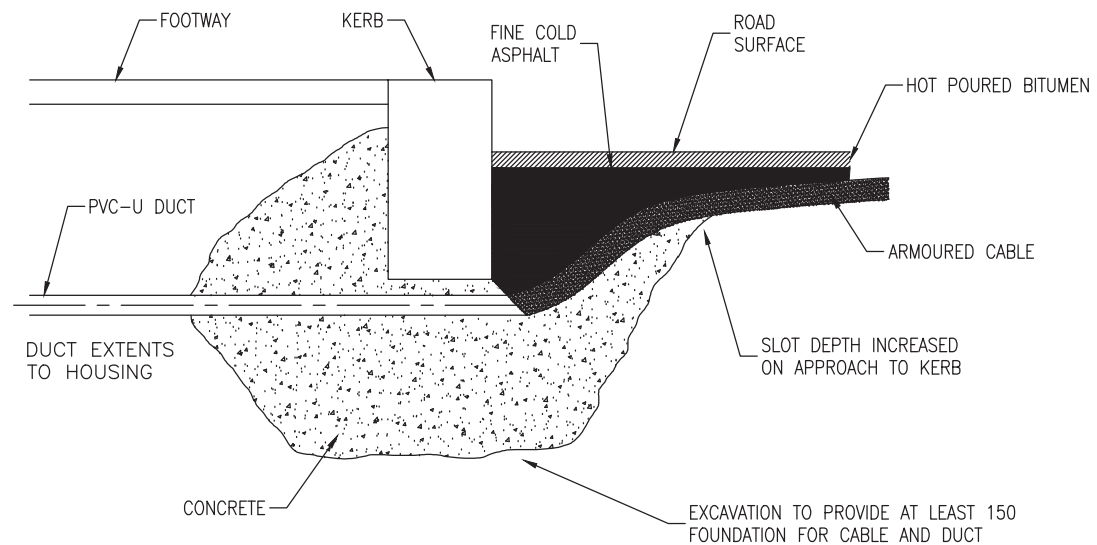
TII PUBLICATION NUMBER: CC-SCD-01538



OPTION 1



OPTION 2

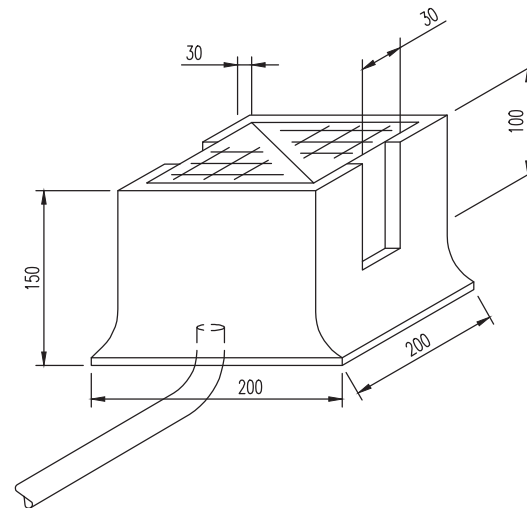


NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. FOR OPTION 3 SEE DRAWING RCD/1500/040.
3. FOR THE INSTALLATION OF DETECTOR LOOPS ON MOTORWAYS AND NATIONAL ROADS REFER TO DMRB HD 20.

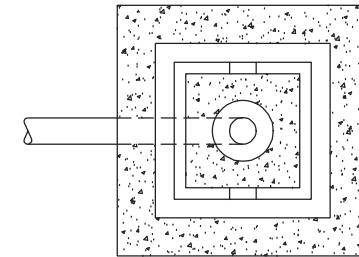
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TII PUBLICATION NUMBER: CC-SCD-01539

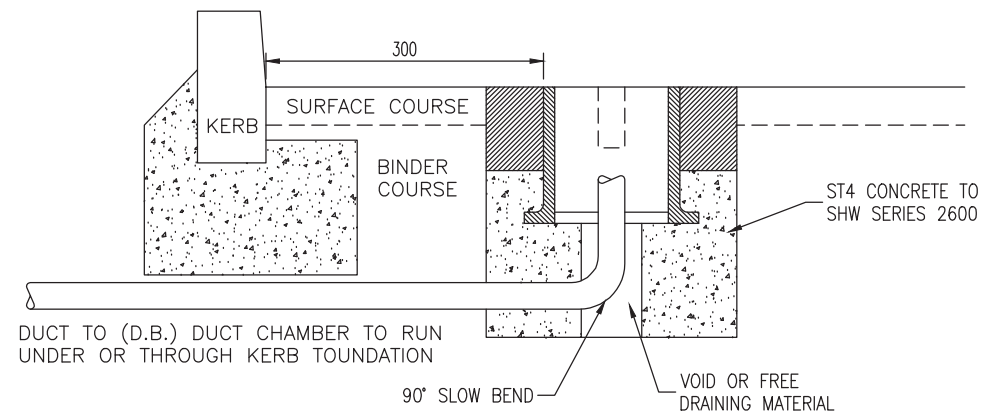


ISOMETRIC SKETCH

OPTION 3



PLAN



SECTION

CARRIAGEWAY CHAMBER FOR DETECTOR LOOP TAILS (L.B.)

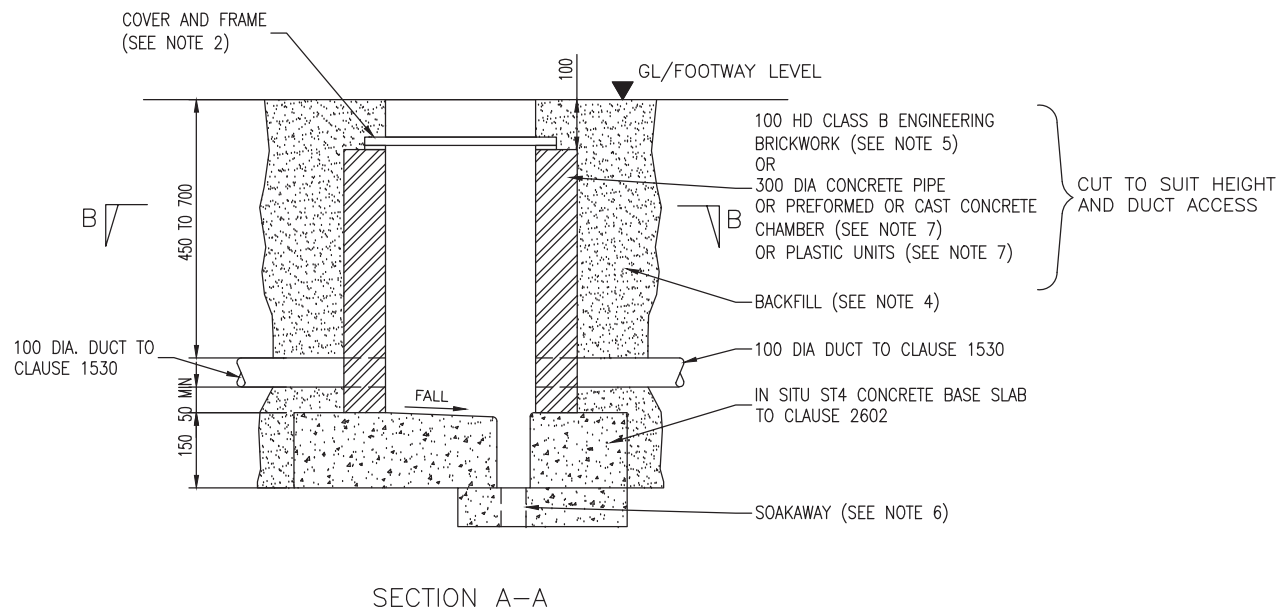
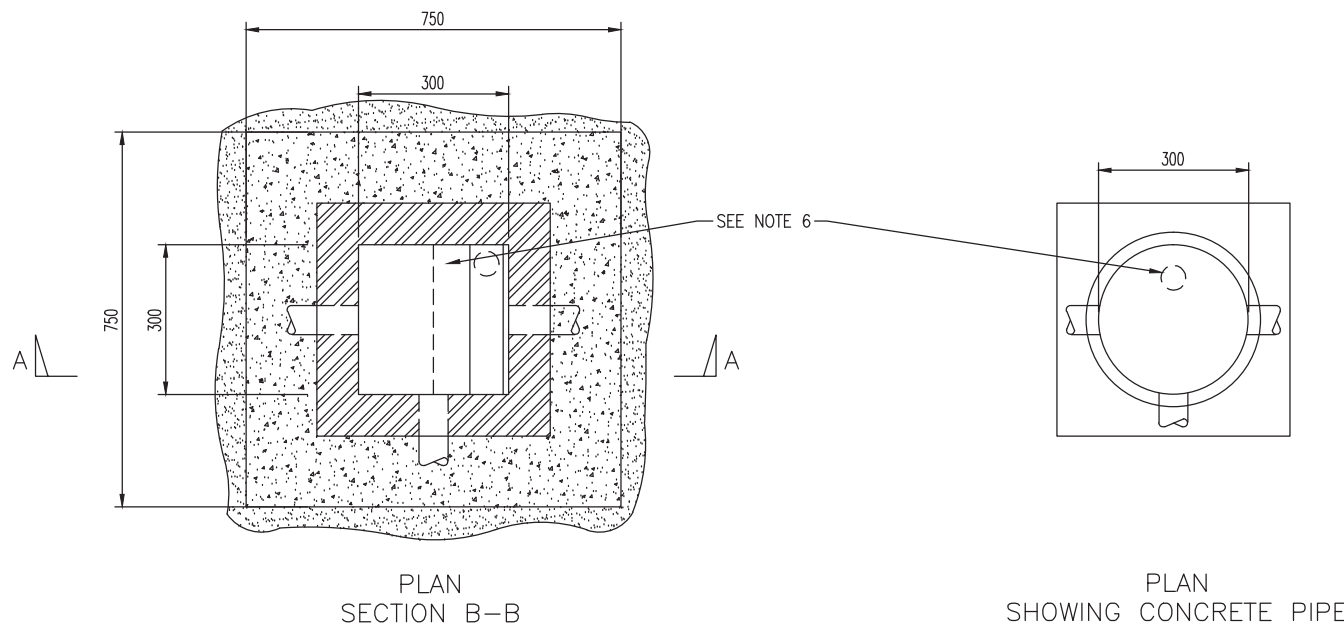
END OF DUCT TO BE BELOW THE SLOTS
BASE TO BE ABLE TO DRAIN
SLOTS TO BE PARALLEL TO KERB LINE

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. FOR OPTION 1 AND 2 SEE DRAWING RCD/1500/039.
3. FOR THE INSTALLATION OF DETECTOR LOOPS ON MOTORWAYS AND NATIONAL ROADS REFER TO DMRB HD 20.

NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01540

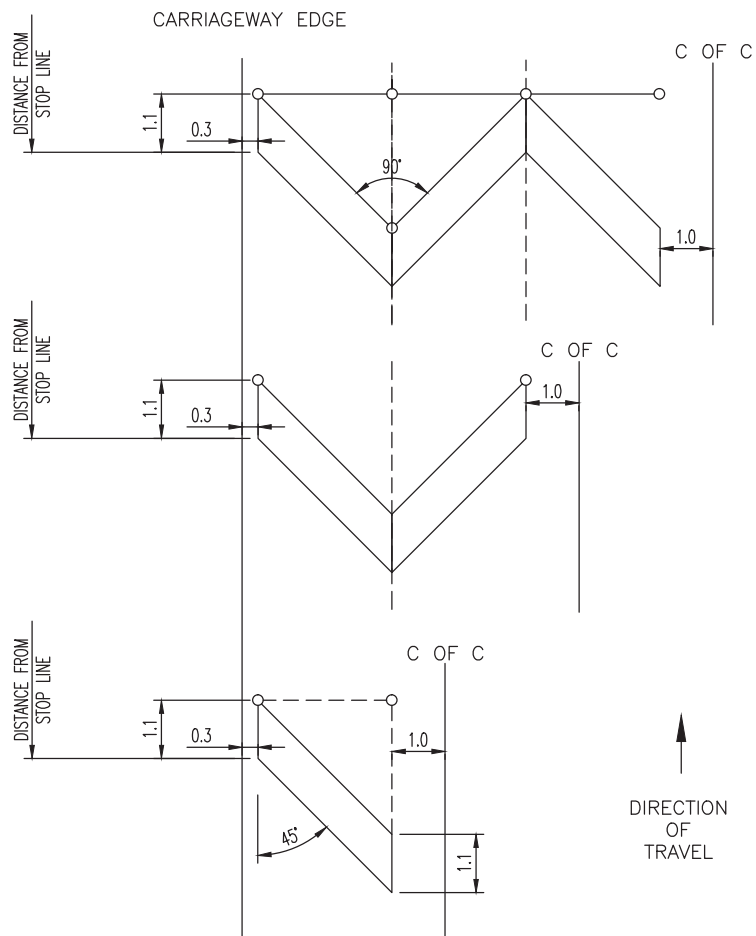


NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. COVER IS 300 x 300 x 100 I/D. INSPECTION COVER AND FRAME TO IS EN 124 CLASS B (OR AS DESCRIBED IN APPENDIX 15/2) BEDDED ON 10 MINIMUM MORTAR BED DESIGNATED (i) TO CLAUSE 2404.
3. RECOMMENDED DEPTH OF DUCT IN FOOTWAY IS 450 MINIMUM 700 MAXIMUM.
4. MCDRW TABLE 6/1 OR WITH ST2 CONCRETE TO CLAUSE 2602 WHERE MECHANICAL COMPACTION IS IMPRACTICAL.
5. 100 HD CLASS B ENGINEERING BRICKWORK TO CLAUSE 2406 ON 10 MINIMUM MORTAR BED DESIGNATED (i) TO CLAUSE 2404.
6. IN SITU BASE SLAB TO BE CAST WITH A MINIMUM FALL OF 1:20 TOWARDS THE SUMP. POSITIVE DRAINAGE IN THE FORM OF A SOAKAWAY OR CONNECTION TO THE HIGHWAY DRAINAGE NETWORK IS REQUIRED.
7. PRECAST CHAMBER TO COMPLY WITH BS 5911-3 AND BS EN 1917 OR PLASTIC UNITS OR OTHER UNITS IN EQUIVALENT MATERIAL.
8. FOR THE INSTALLATION OF DETECTOR LOOPS ON MOTORWAYS AND NATIONAL ROADS REFER TO DMRB HD 20.

TII PUBLICATION NUMBER: CC-SCD-01541

NOT TO SCALE

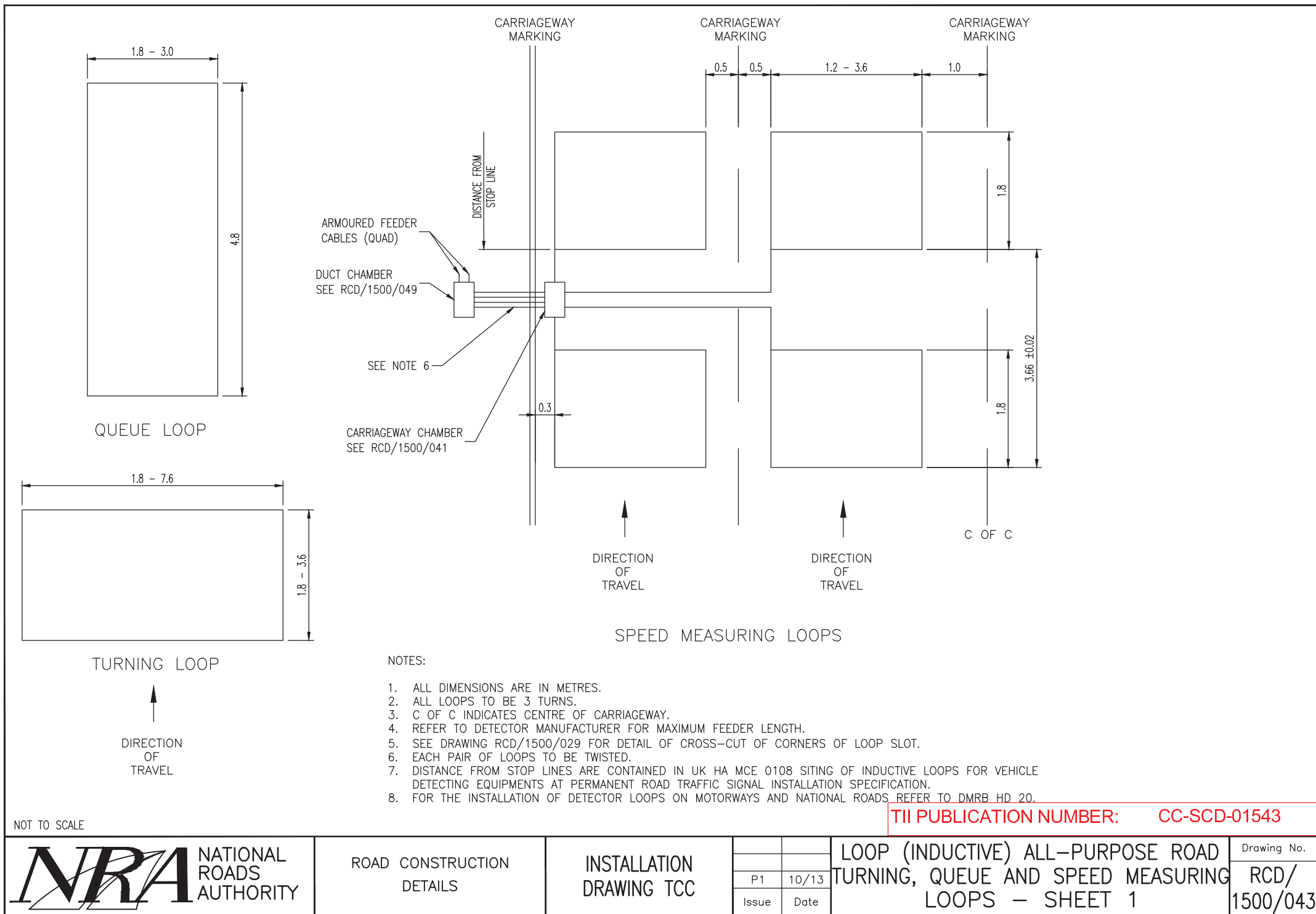


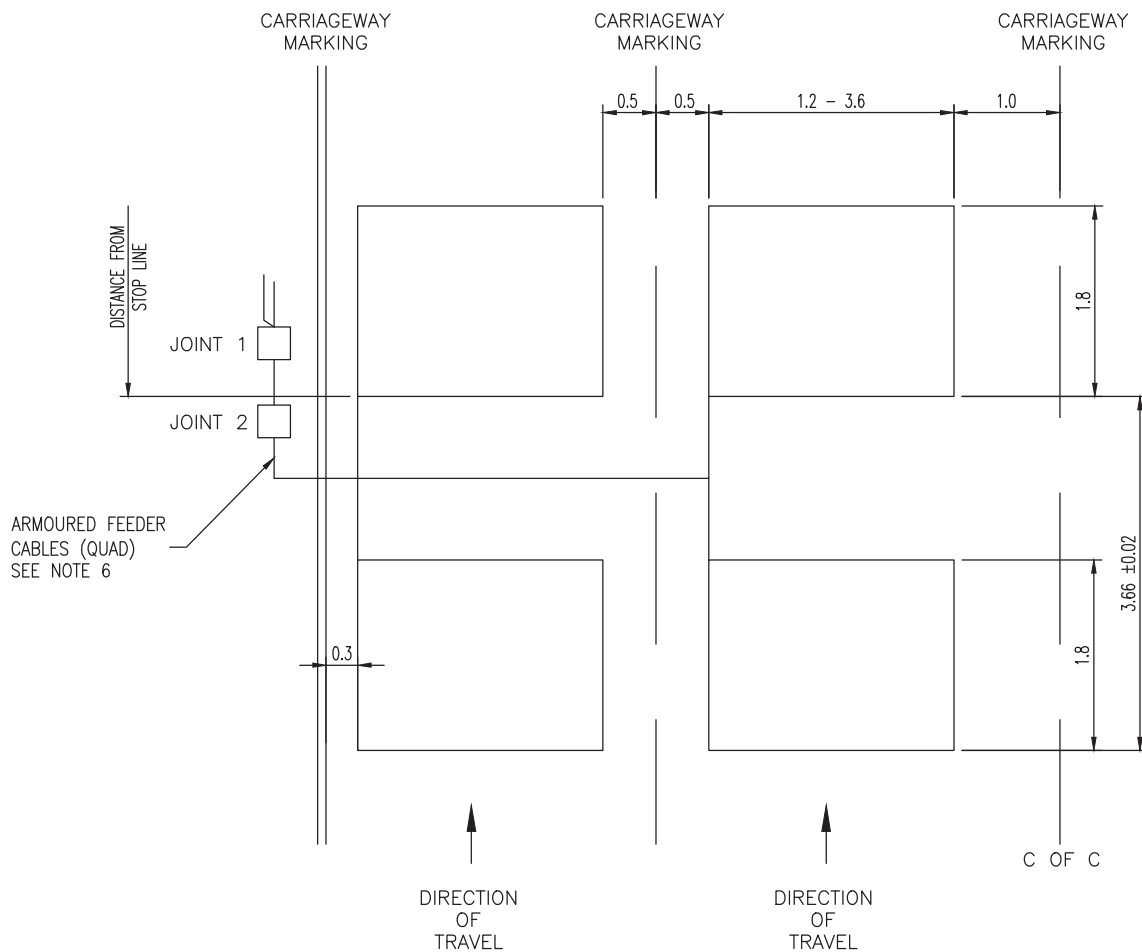
NOTES:

1. ALL DIMENSIONS ARE IN METRES.
2. ALL LOOPS TO BE 3 TURNS.
3. C OF C INDICATES CENTRE OF CARRIAGEWAY.
4. SEE DRAWING RCD/1500/029 FOR DETAILS OF CROSS-CUT OF CORNERS OF LOOP SLOT.
5. LOOP CONFIGURATIONS SHOWN ON THIS DRAWING ARE FOR CONTROL OF TRAFFIC SIGNALS.
6. DISTANCE FROM STOP LINES ARE CONTAINED IN UK HA MCE 0108 SITING OF INDUCTIVE LOOPS FOR VEHICLE DETECTING EQUIPMENTS AT PERMANENT ROAD TRAFFIC SIGNAL INSTALLATIONS SPECIFICATION.
7. FOR THE INSTALLATION OF DETECTOR LOOPS ON MOTORWAYS AND NATIONAL ROADS REFER TO DMRB HD 20.

NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01542





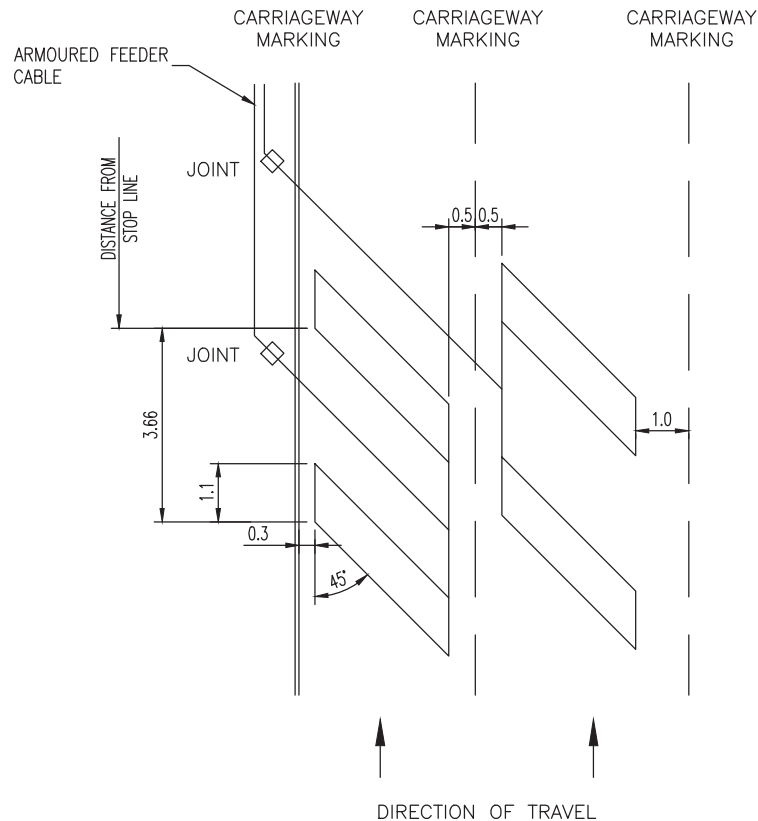
SPEED MEASURING LOOPS

NOTES:

1. ALL DIMENSIONS ARE IN METRES.
2. ALL LOOPS TO BE 3 TURNS.
3. C OF C INDICATES CENTRE OF CARRIAGEWAY.
4. REFER TO DETECTOR MANUFACTURER FOR MAXIMUM FEEDER LENGTH.
5. SEE DRAWING RCS/1500/029 FOR DETAIL OF CROSS-CUT OF CORNERS OF LOOP SLOT.
6. FEEDER CABLE 1 CONNECTED TO LOOPS IN LEFT HAND LANE. FEEDER CABLE 2 CONNECTED TO LOOPS IN RIGHT HAND LANE.
7. DISTANCE FROM STOP LINES ARE CONTAINED IN UK HA MCE 0108 SITING OF INDUCTIVE LOOPS FOR VEHICLE DETECTING EQUIPMENTS AT PERMANENT ROAD TRAFFIC SIGNAL INSTALLATION SPECIFICATION.
8. FOR THE INSTALLATION OF DETECTOR LOOPS ON MOTORWAYS AND NATIONAL ROADS REFER TO DMRB HD 20.

TII PUBLICATION NUMBER: CC-SCD-01544

NOT TO SCALE



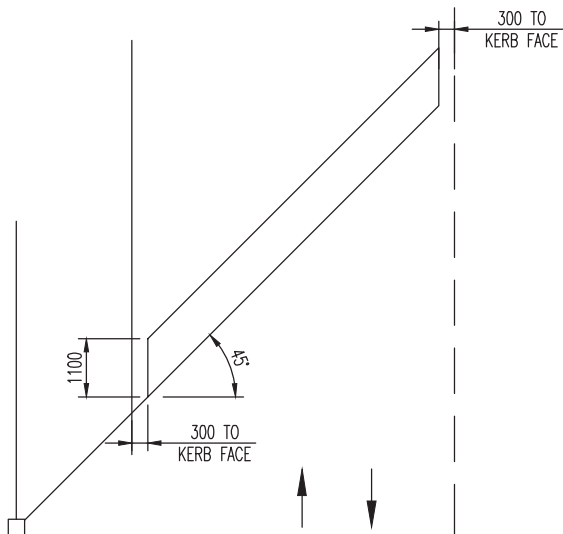
ROADS WITH REINFORCED MESH

NOTES:

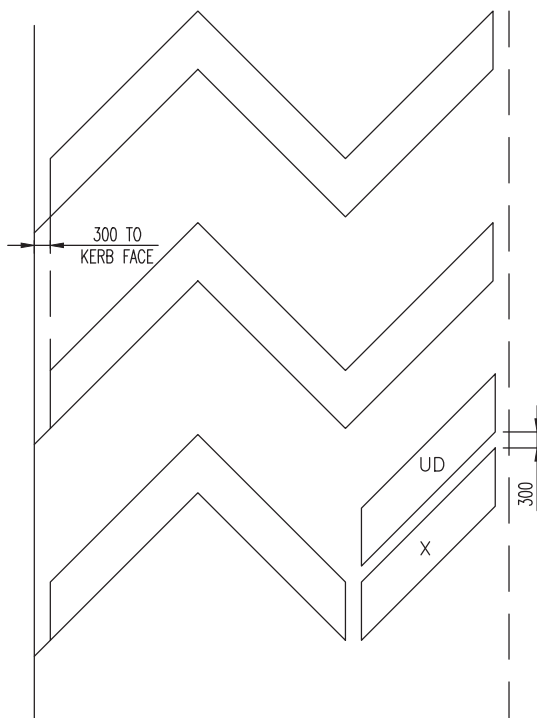
1. ALL DIMENSIONS ARE IN METRES.
2. ALL LOOPS TO BE 3 TURNS.
3. C OF C INDICATES CENTRE OF CARRIAGEWAY.
4. SEE RCD/1500/029 FOR DETAIL OF CROSS-CUT OF CORNERS OF LOOP SLOT.
5. LOOP CONFIGURATION SHOWN ON THIS DRAWING ARE FOR CONTROL OF TRAFFIC SIGNALS.
6. DISTANCE FROM STOP LINES ARE CONTAINED IN UK HA MCE 0108 SITING OF INDUCTIVE LOOPS FOR VEHICLE DETECTING EQUIPMENTS AT PERMANENT ROAD TRAFFIC SIGNAL INSTALLATION SPECIFICATION.
7. FOR THE INSTALLATION OF DETECTOR LOOPS ON MOTORWAYS AND NATIONAL ROADS REFER TO DMRB HD 20.

NOT TO SCALE

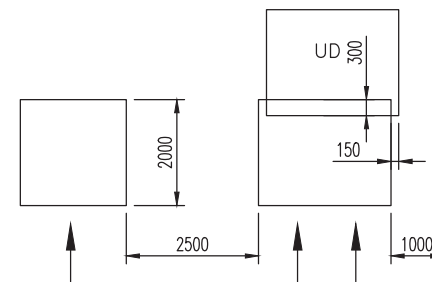
TII PUBLICATION NUMBER: CC-SCD-01545



ALL RED LOOP(S)



UD LOOP OVERLAPS X LOOP BY 300 IN DIRECTION OF TRAVEL



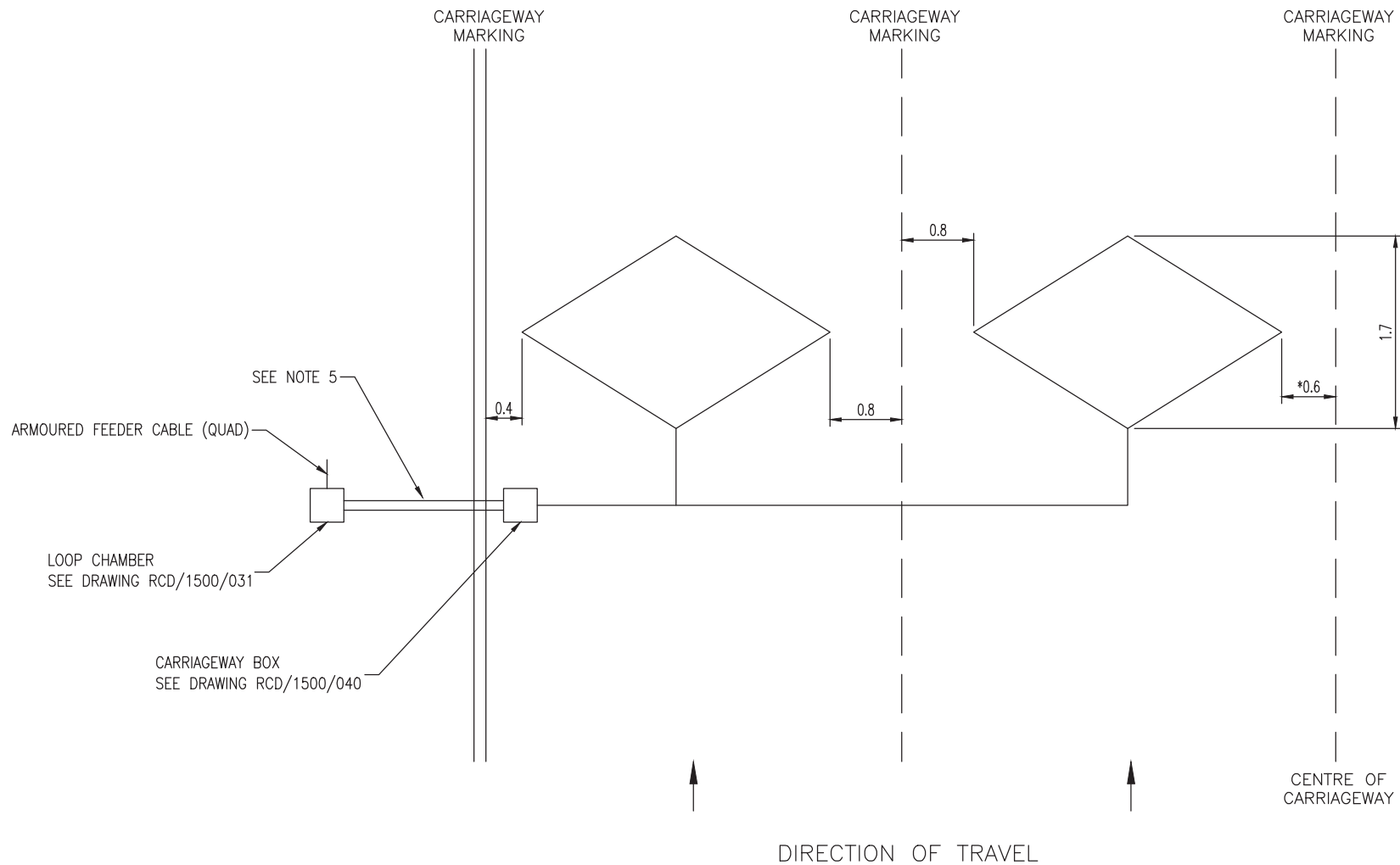
SCOOT LOOP DIMENSIONS

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL LOOPS TO BE 3 TURNS.
3. REFER TO DETECTOR MANUFACTURER FOR MAXIMUM FEEDER LENGTH.
4. SEE DRAWING RCD/1500/029 FOR DETAILS OF CROSS-CUT OF CORNERS OF LOOP SLOT.
5. LOOP CONFIGURATIONS SHAWN ON THIS DRAWING ARE FOR CONTROL OF TRAFFIC SIGNALS.
6. FOR THE INSTALLATION OF DETECTOR LOOPS ON MOTORWAYS AND NATIONAL ROADS REFER TO DMRB HD 20.

NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01546

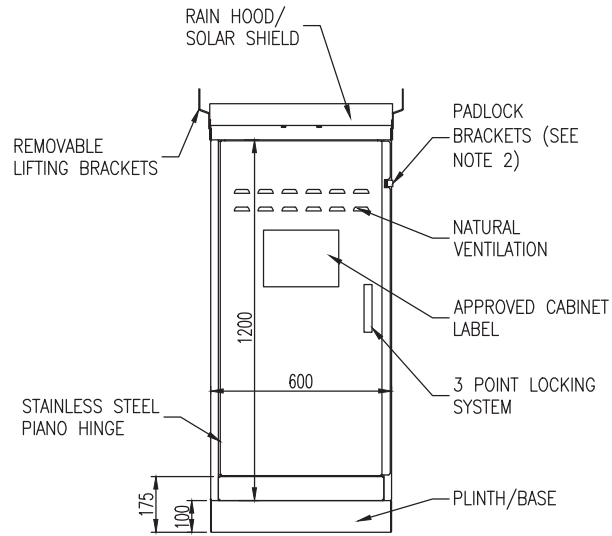


NOTES:

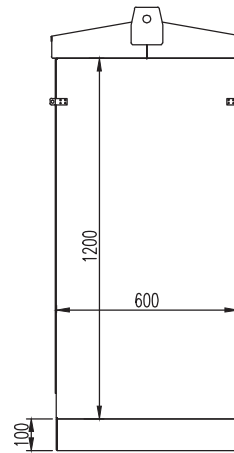
1. ALL DIMENSIONS ARE IN METRES.
2. ALL LOOPS TO BE 3 TURNS.
3. *DENOTES WHERE THERE IS A CENTRAL RESERVE THE DIMENSION MAY BE REDUCED TO 0.4m.
4. SEE DRAWING RCD/1500/029 FOR DETAILS OF CROSS-CUT OF SLOT.
5. EACH PAIR OF LOOP TAILS TO BE TWISTED TOGETHER.
6. FOR THE INSTALLATION OF DETECTOR LOOPS ON MOTORWAYS AND NATIONAL ROADS REFER TO DMRB HD 20.

NOT TO SCALE

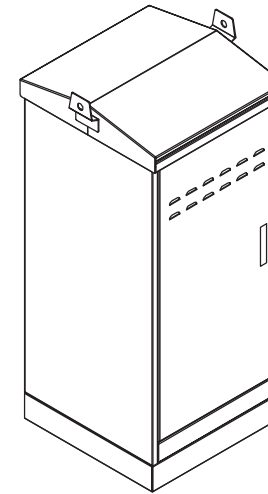
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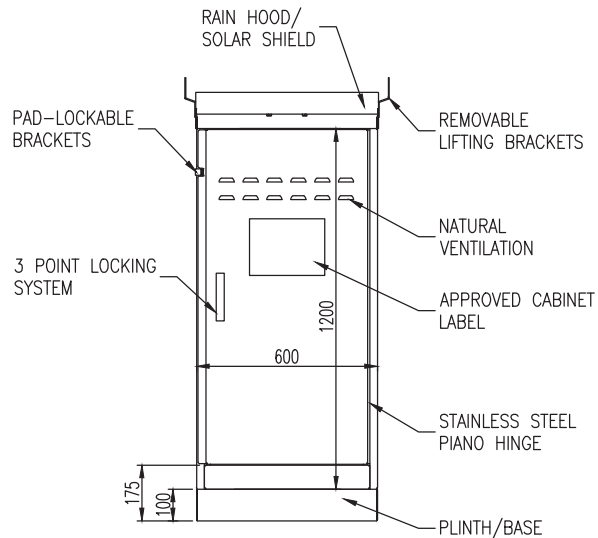
FRONT VIEW



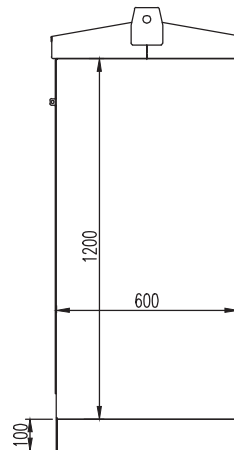
SIDE VIEW 1



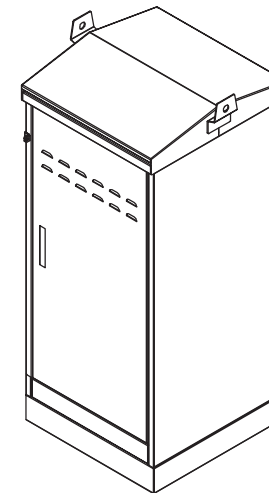
ISO VIEW 1



REAR VIEW



SIDE VIEW 2

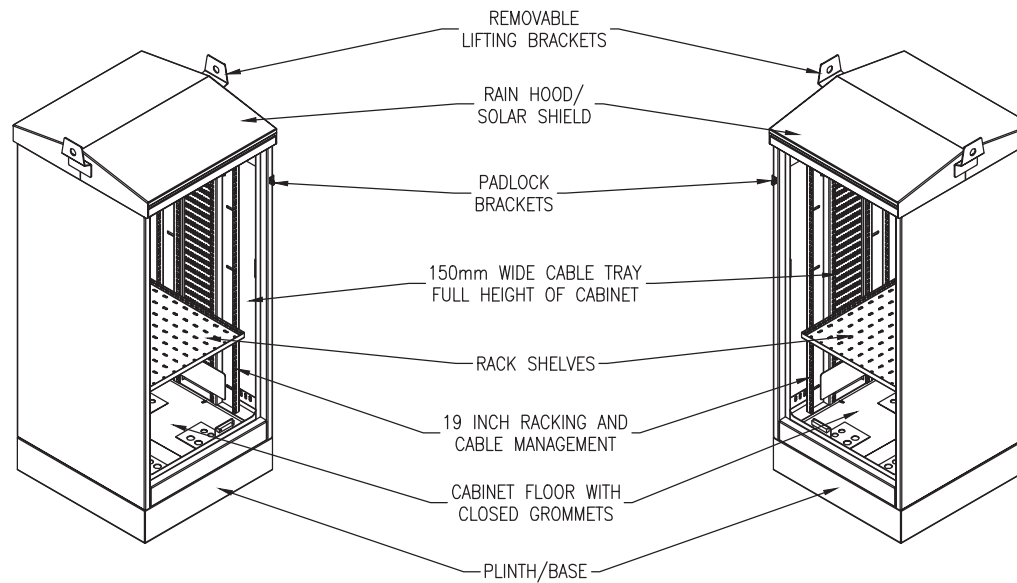


ISO VIEW 2

NOTES:

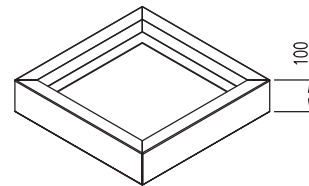
1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. BRACKET FOR PADLOCK CAN BE INCORPORATED INTO THE DOOR HANDLE MECHANISM.
3. DOOR HANDLES SHALL INCORPORATE A KEY LOCK; THE DOOR LOCK TYPES AND BARREL NUMBER TO BE PROVIDED BY THE ROAD AUTHORITY.
4. ALL DOORS FITTED WITH GAS PRESSURE STRUT TO HOLD DOOR IN OPEN POSITION.
5. DOCUMENT POCKET TO BE PROVIDED ON INTERNAL SIDE OF FRONT RIGHT HAND SIDE DOORS.
6. CONSTRUCTION:
3mm GALVANISED STEEL EQUIPMENT COMPARTMENT SINGLE SKINNED FINISH POWDER COATED (COLOUR PAL GREY RAL 7035) INGRESS PROTECTION IP-45 IMPACT RATING IK-10 FOR USE ON GREENFIELD & ROADSIDE LOCATIONS.

NOT TO SCALE



ISO VIEW 1 WITH DOORS REMOVED

ISO VIEW 2 WITH DOORS REMOVED



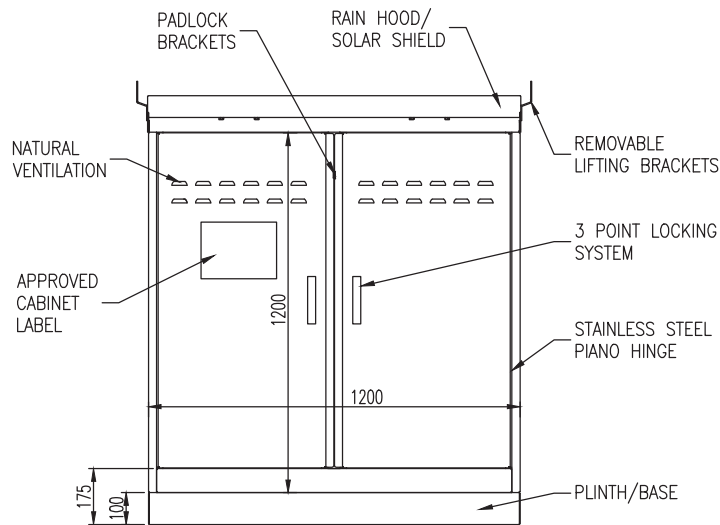
ISO VIEW OF PLINTH/BASE

NOTES:

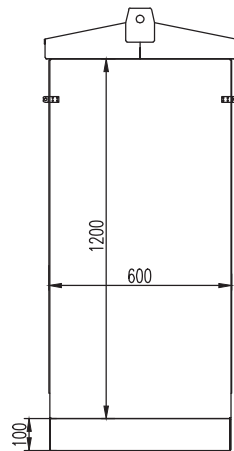
1. ALL DIMENSIONS ARE IN MILLIMETERS
2. ALL DOORS FITTED WITH GAS PRESSURE GAS STRUT TO HOLD DOOR IN OPEN POSITION.

NOT TO SCALE

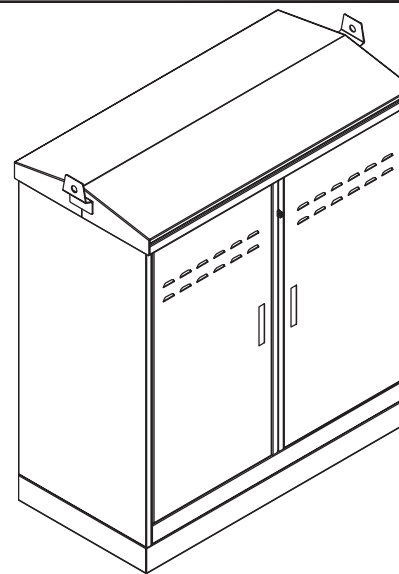
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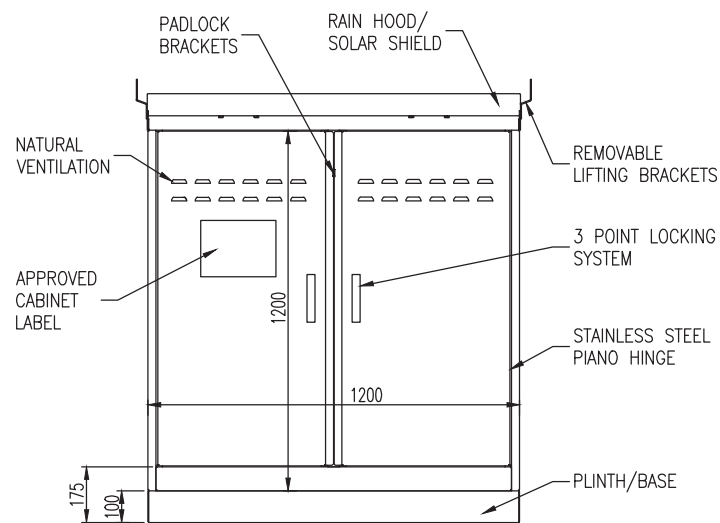
FRONT VIEW



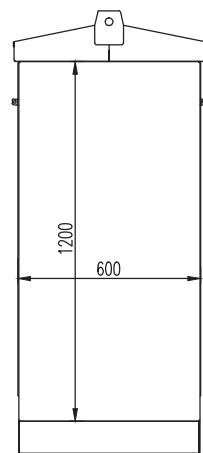
SIDE VIEW 1



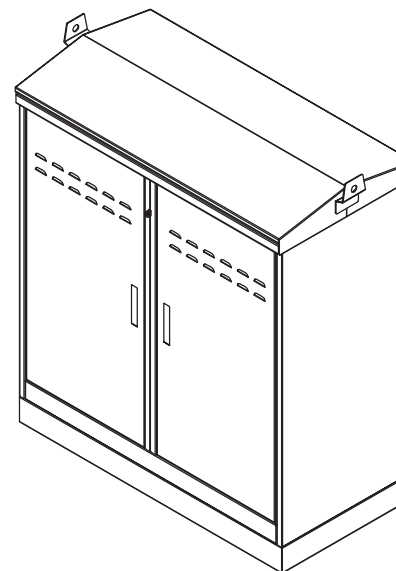
ISO VIEW 1



REAR VIEW



SIDE VIEW 2

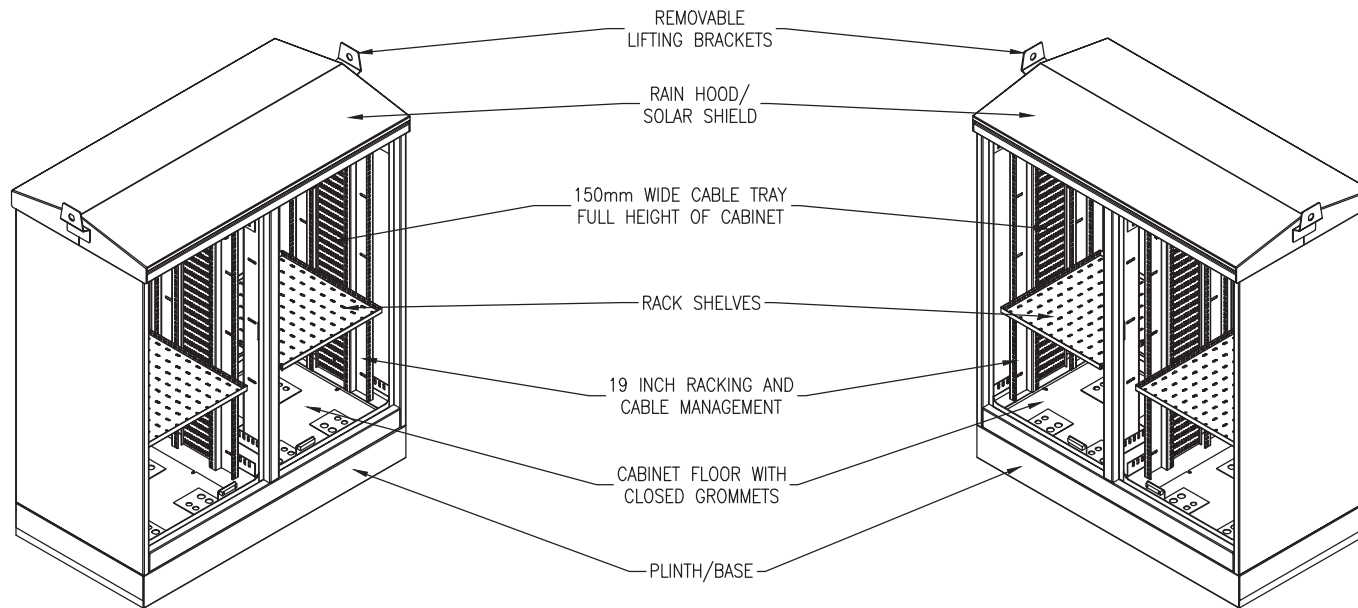


ISO VIEW 2

NOTES:

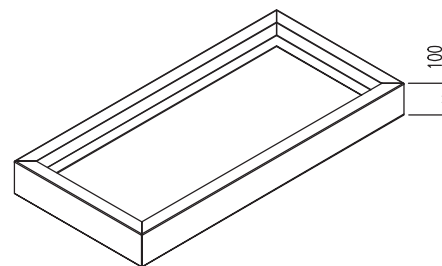
1. ALL DIMENSIONS ARE IN MILLIMETERS
2. BRACKET FOR PADLOCK CAN BE INCORPORATED INTO THE DOOR HANDLE MECHANISM.
3. DOOR HANDLES SHALL INCORPORATE A KEY LOCK; THE DOOR LOCK TYPES AND BARREL NUMBER TO BE PROVIDED BY THE ROAD AUTHORITY.
4. ALL DOORS FITTED WITH GAS PRESSURE STRUT TO HOLD DOOR IN OPEN POSITION.
5. DOCUMENT POCKET TO BE PROVIDED ON INTERNAL SIDE OF FRONT RIGHT HAND SIDE DOORS.
6. **CONSTRUCTION:**
3mm GALVANISED STEEL EQUIPMENT COMPARTMENT SINGLE SKINNED FINISH POWDER COATED (COLOUR PAL GREY RAL 7035) INGRESS PROTECTION IP-45 IMPACT RATING IK-10 FOR USE ON GREENFIELD & ROADSIDE LOCATIONS.

NOT TO SCALE



ISO VIEW 1 WITH DOORS REMOVED

ISO VIEW 2 WITH DOORS REMOVED



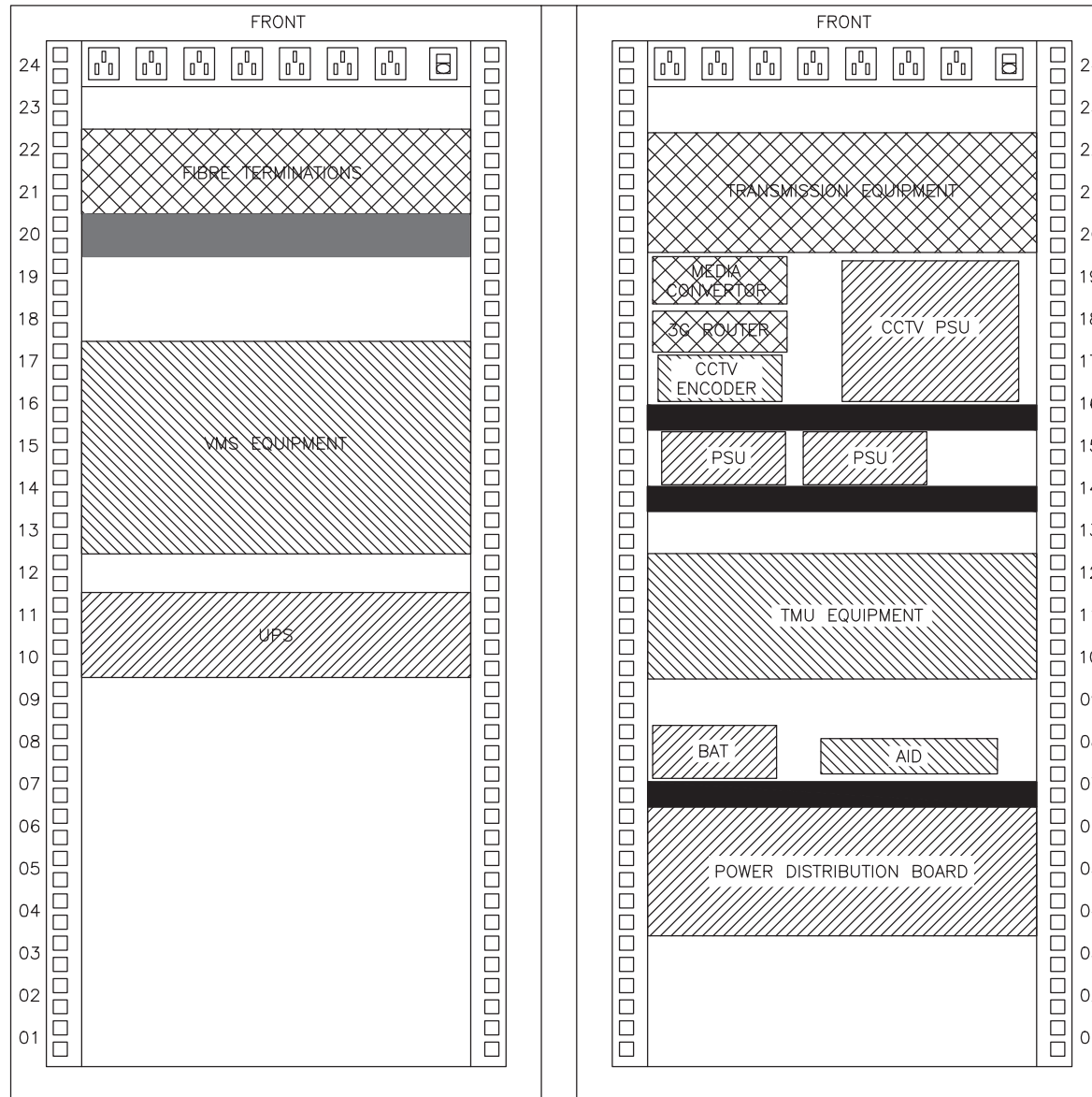
ISO VIEW OF PLINTH/BASE

NOTES:

1. ALL DIMENSIONS ARE IN MILLIMETERS
2. ALL DOORS FITTED WITH GAS PRESSURE GAS STRUT TO HOLD DOOR IN OPEN POSITION.

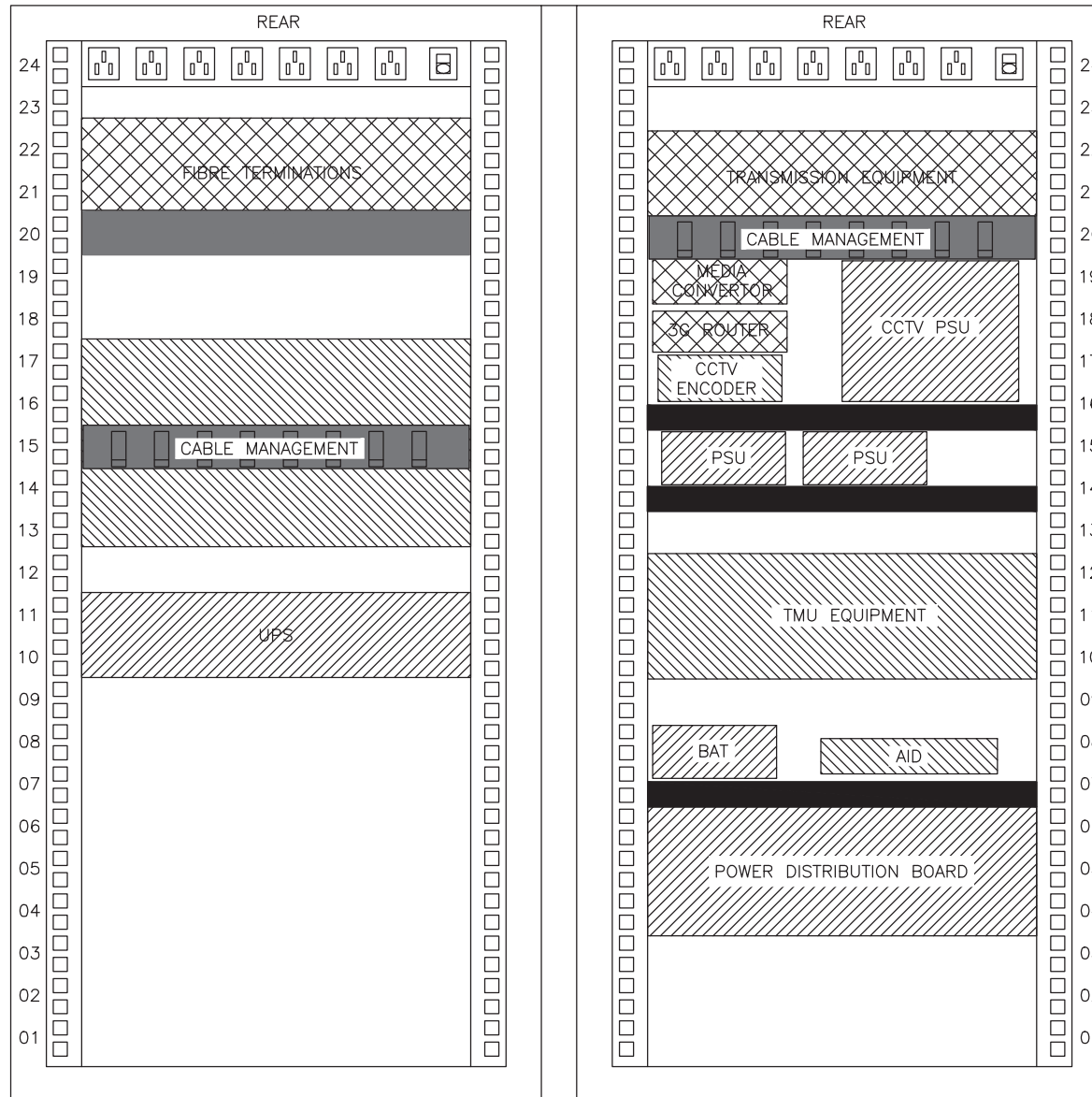
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TII PUBLICATION NUMBER: CC-SCD-01551



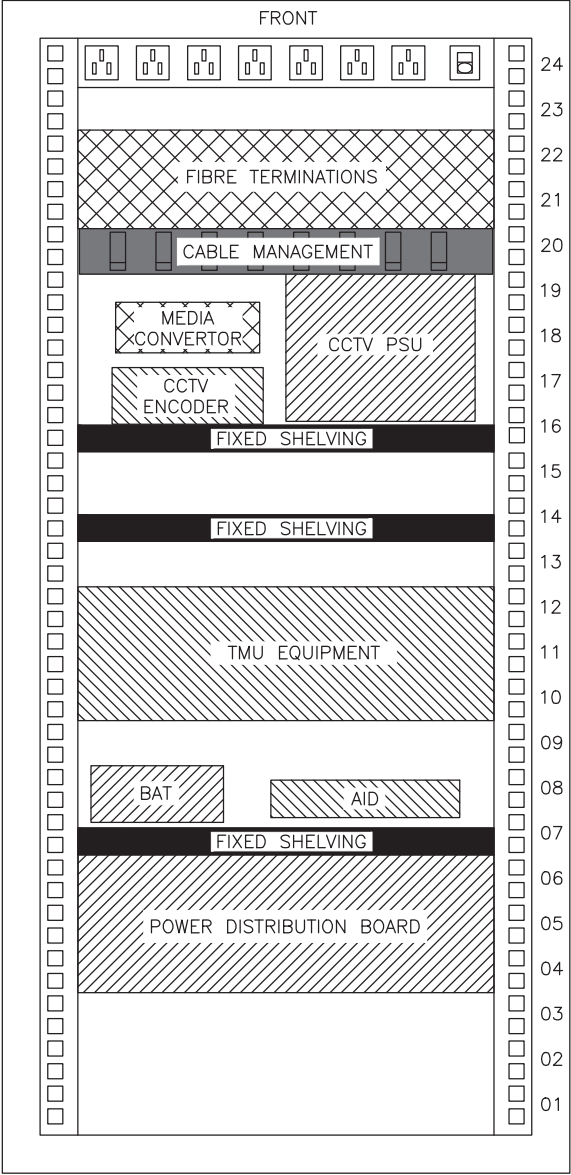
NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01552



NOT TO SCALE

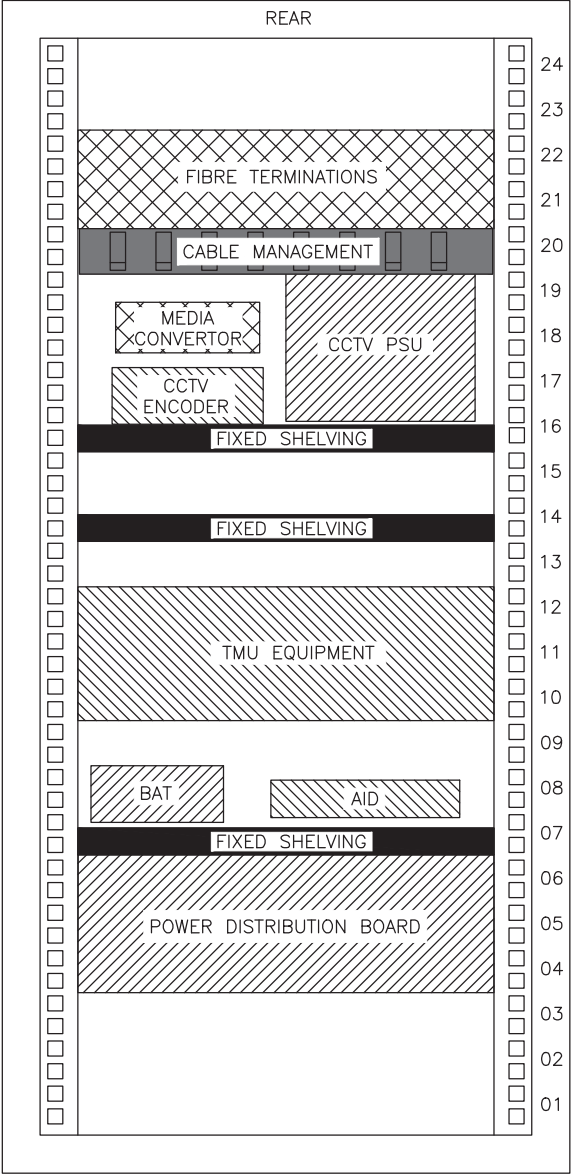
TII PUBLICATION NUMBER: CC-SCD-01553



NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01554

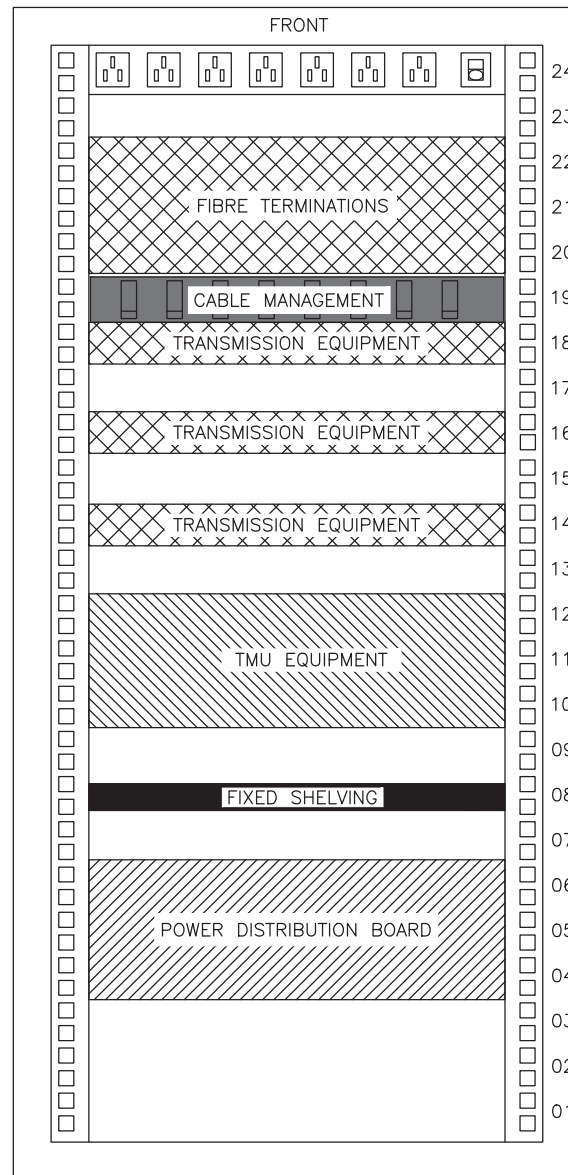
 NATIONAL ROADS AUTHORITY	ROAD CONSTRUCTION DETAILS	INSTALLATION DRAWING TCC			TYPICAL ROADSIDE CABINET LAYOUT TYPE B – FRONT	Drawing No.
			P1	10/13		RCD/
			Issue	Date		1500/054



NOT TO SCALE

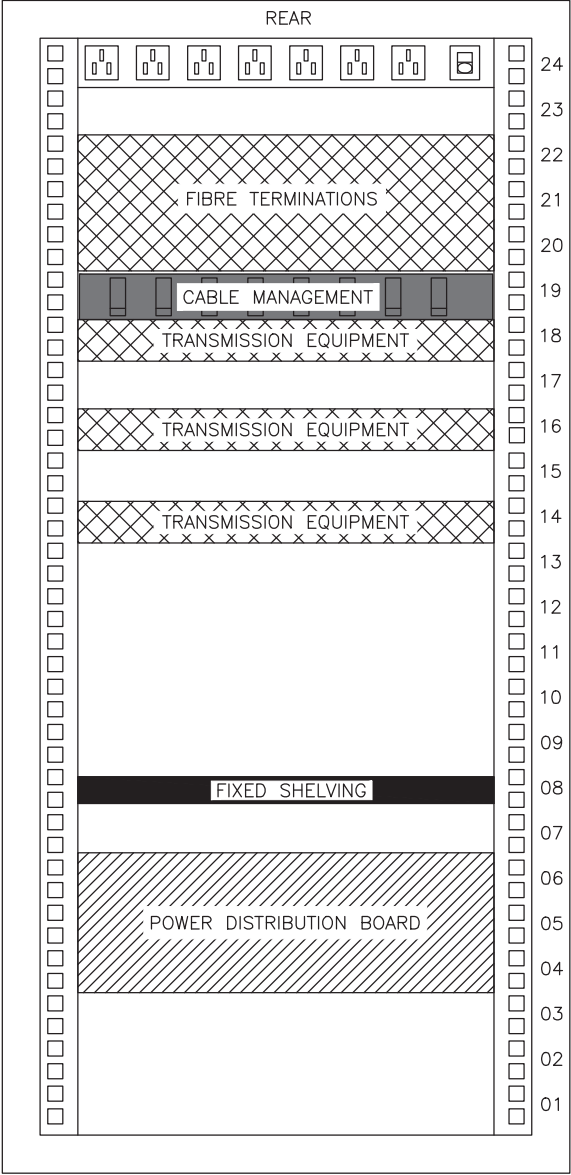
TII PUBLICATION NUMBER: CC-SCD-01555

 NATIONAL ROADS AUTHORITY	ROAD CONSTRUCTION DETAILS	INSTALLATION DRAWING TCC			TYPICAL ROADSIDE CABINET LAYOUT TYPE B – REAR	Drawing No.
			P1	10/13		RCD/
			Issue	Date		1500/055



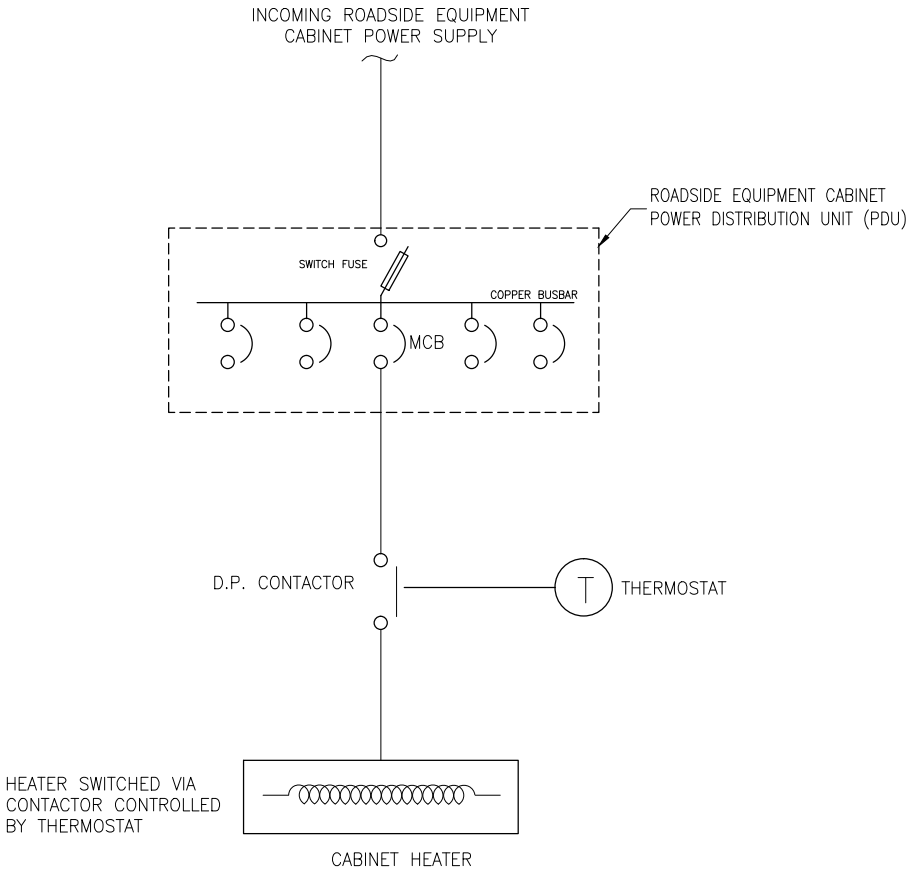
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TII PUBLICATION NUMBER: CC-SCD-01556



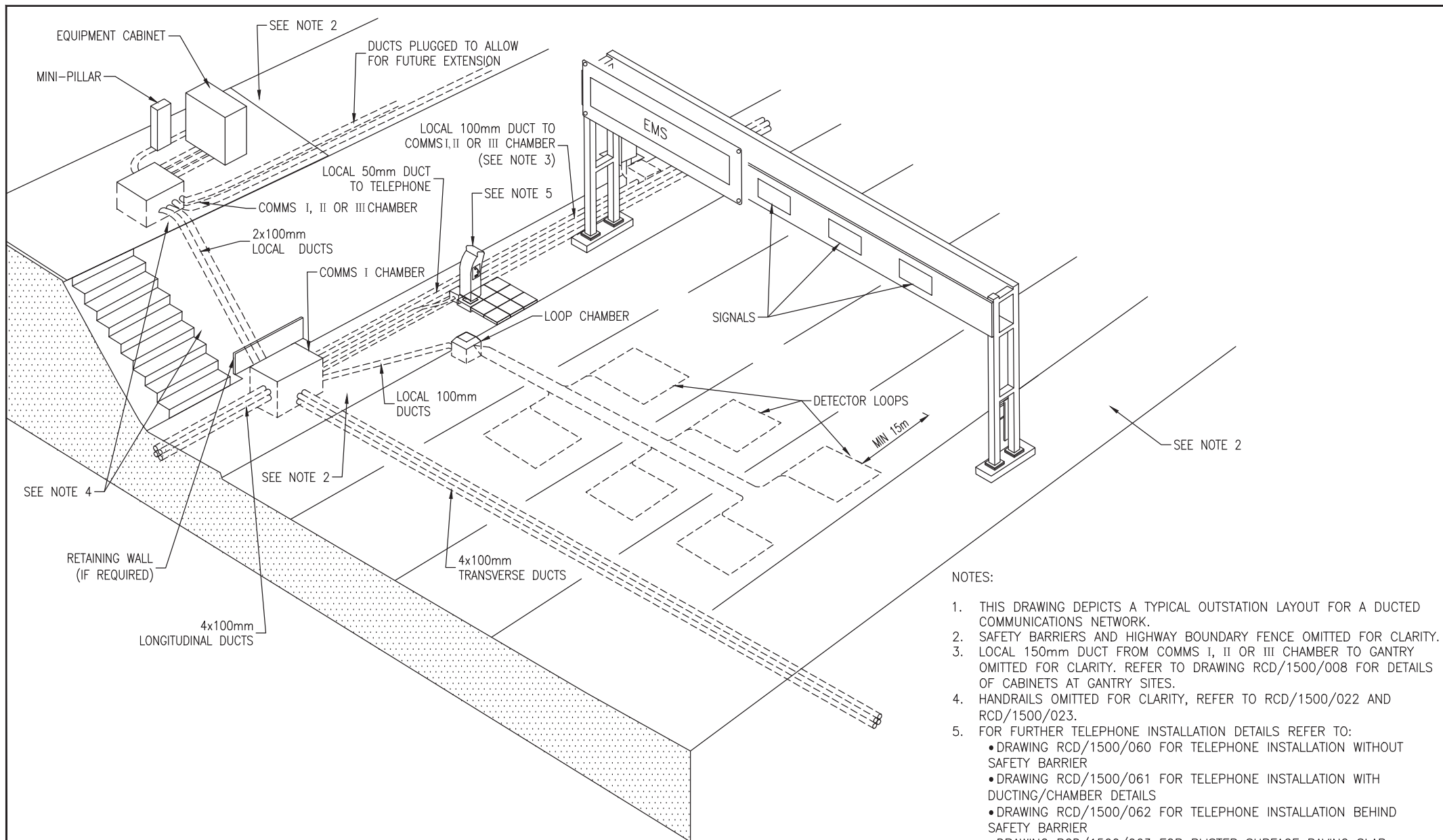
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TII PUBLICATION NUMBER: CC-SCD-01557



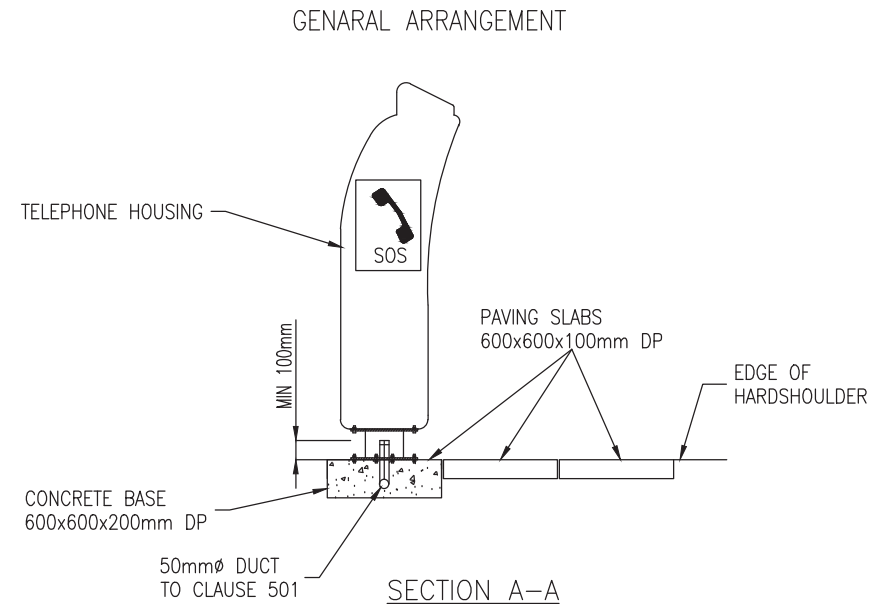
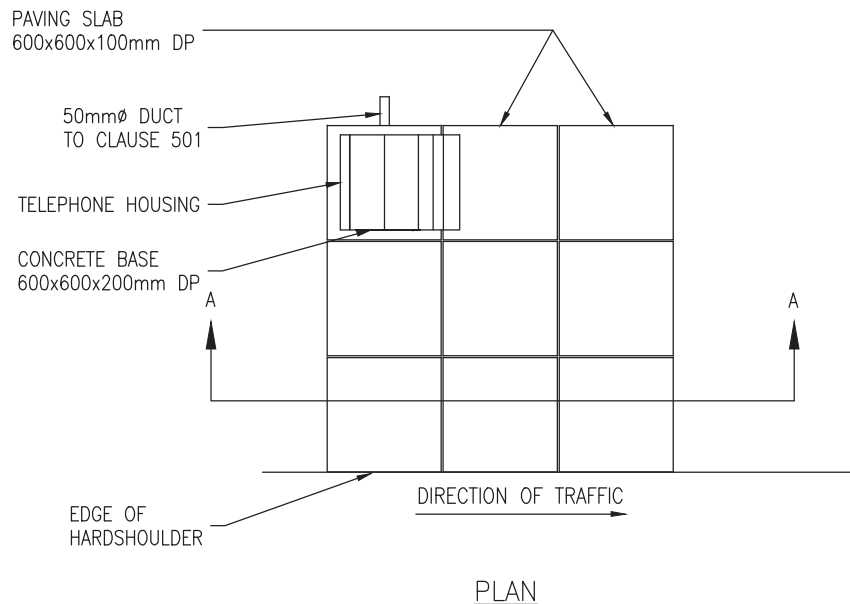
- NOTES:
- 1. ELECTRICAL DETAIL SHOWN ON DRAWING ARE INDICATIVE ROADSIDE EQUIPMENT CABINET HEATER CONNECTION ONLY.
 - 2. THE ELECTRICAL WORKS ASSOCIATED WITH THE CABINET HEATER SHALL BE IN ACCORDANCE WITH THE NATIONAL RULES FOR ELECTRICAL INSTALLATIONS BY THE ELECTRO TECHNICAL COUNCIL OF IRELAND.
 - 3. THE CONTRACTOR SHALL CONNECT THE HEATER TO A DEDICATED MCB LOCATED IN THE CABINET'S POWER DISTRIBUTION UNIT (PDU) AND SHALL CONNECT THE THERMOSTAT INTO THE CIRCUIT.
 - 4. THE TYPE AND RATING OF THE PROTECTIVE DEVICES SHALL BE AS DETAILED IN THE ELECTRICAL SPECIFICATION.

NOT TO SCALE



NOT TO SCALE

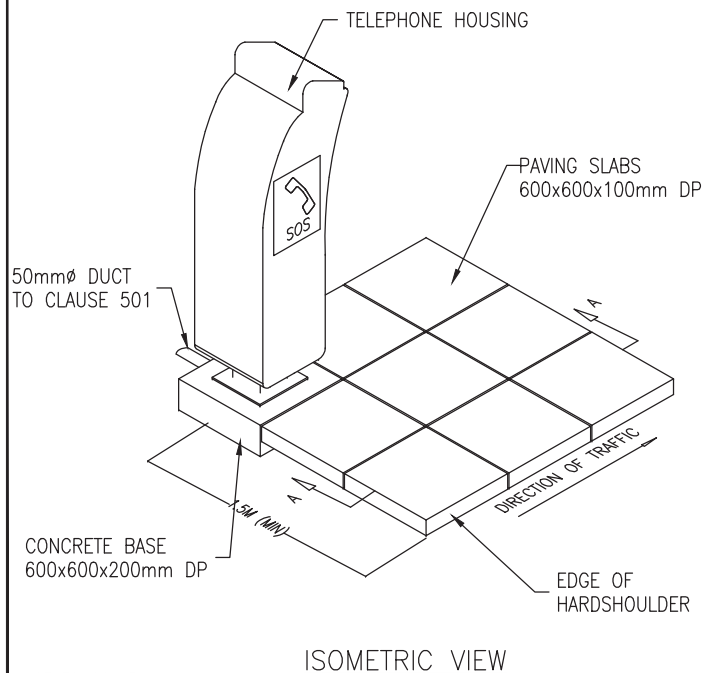
TII PUBLICATION NUMBER: CC-SCD-01559



NOTES:

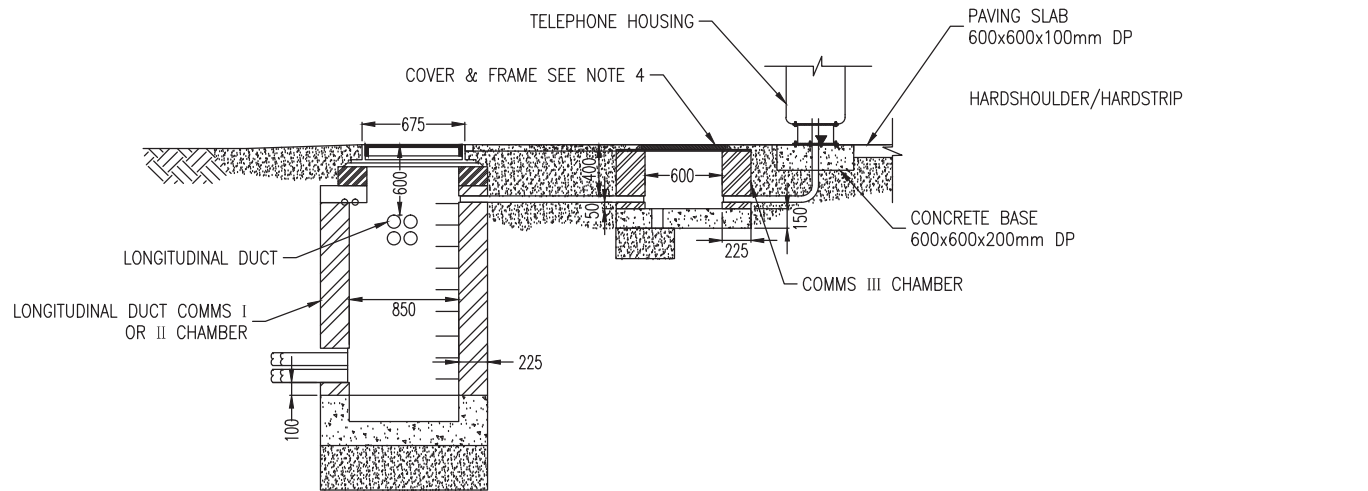
1. NOT TO SCALE. ALL DIMENSIONS IN MILLIMETRES.
2. THE EMERGENCY ROADSIDE TELEPHONE SHALL BE SET IN A 600x600x200mm ST2 CONCRETE BASE TO CLAUSE 2602.
3. ALL TOPSOIL AND/OR ORGANIC MATERIAL SHALL BE REMOVED. A PLATFORM SHALL BE PREPARED OF SIMILAR STANDARD TO THE SUB-FORMATION OF THE ADJACENT CARRIAGEWAY.
4. ALL PAVING SLABS SHALL BE LAID ON 150mm SUB-BASE COMPLYING WITH CLAUSE 804 AND COMPACTED IN ACCORDANCE WITH CLAUSE 802.
5. HANDRAIL ONLY REQUIRED ON EMBANKMENT OR ADJACENT TO LOCAL HAZARD. HANDRAIL TO BE 1100mm HIGH IN ACCORDANCE WITH BS 6180 AND BS 5395 PART 3. FOOTING TO BE EITHER BOLTED OR ROOTED, AS DETERMINED BY SITE CONDITIONS. REFER TO DRAWINGS RCD/1500/022 & 023.
6. WHERE A FILTER DRAIN IS INCLUDED IN THE VERGE, THE FILTER DRAIN SHALL EXTEND TO THE UNDERSIDE OF THE HARDSTANDING AND BE SEPERATED FROM THE HARDSTANDING BY A GEOTEXTILE MEMBRANE.
7. THE 50mm \varnothing DUCT THROUGH THE CONCRETE BASE SHALL BE LEFT 100mm PROUD OF THE SURFACE OF THE BASE.
8. THE DISTANCE FROM THE CENTRE OF THE EMERGENCY TELEPHONE TO THE EDGE OF HARDSHOULDER SHALL NOT BE LESS THAN 1500mm.
9. THE PAVING SLAB/ERT HARDSTANDING AREA SHALL BE LEVEL AND CONTINUOUS WITH THE HARD SHOULDER IN FRONT OF EACH ERT LOCATION. ANY GAPS BETWEEN THE PAVING SLAB/ERT HARDSTANDING AREA SHALL BE FILLED WITH BITUMINOUS MATERIAL.
10. FOR FURTHER TELEPHONE INSTALLATION DETAILS REFER TO:

- DRAWING RCD/1500/061 FOR TELEPHONE INSTALLATION WITH DUCTING/CHAMBER DETAILS
- DRAWING RCD/1500/062 FOR TELEPHONE INSTALLATION BEHIND SAFETY BARRIER
- DRAWING RCD/1500/063 FOR BLISTER SURFACE PAVING SLAB
- MCDRW 1500 SERIES.

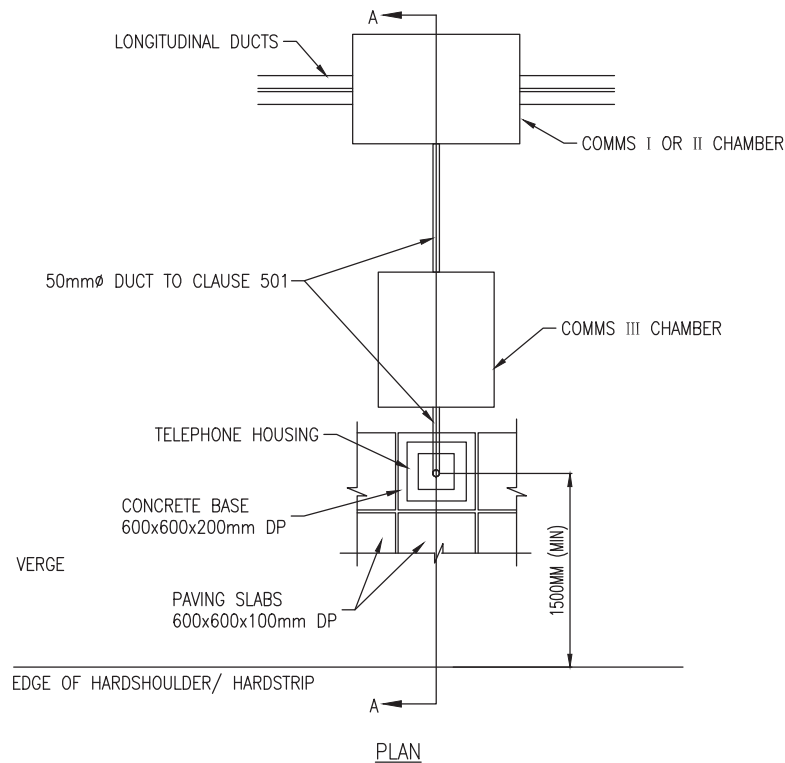


NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01560



SECTION A-A
GENERAL ARRANGEMENT



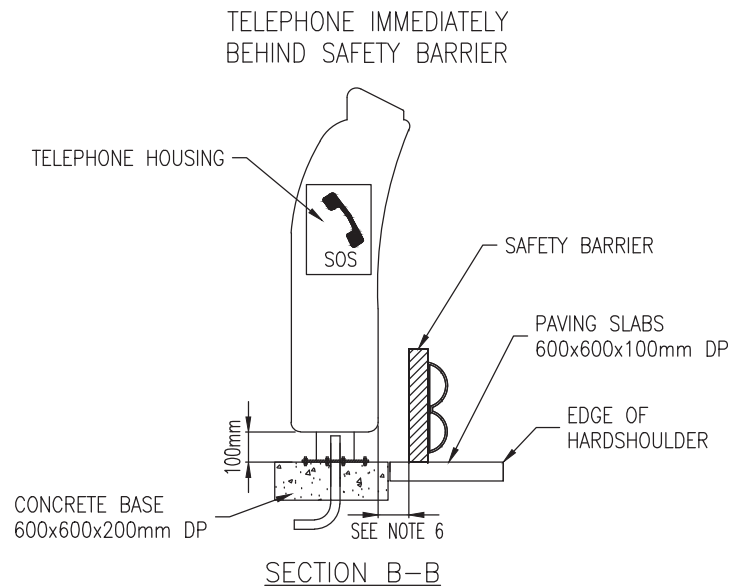
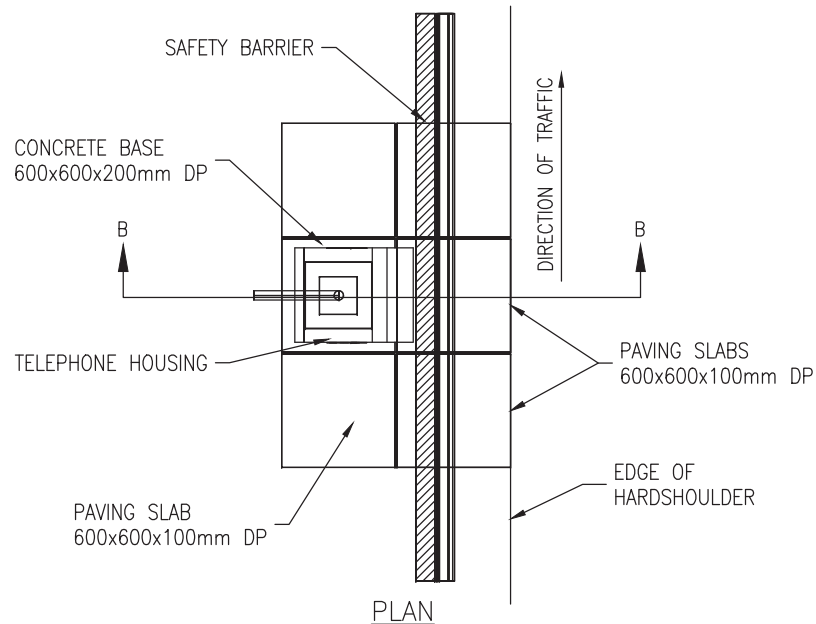
NOTES:

1. NOT TO SCALE. ALL DIMENSIONS IN MILLIMETRES.
2. THE LAYOUT SHOWN IS INDICATIVE ONLY.
3. THE DUCT AND CHAMBER LAYOUT WILL REMAIN THE SAME FOR TELEPHONES WITHOUT SAFETY BARRIER AND TELEPHONES LOCATED BEHIND SAFETY BARRIER.
4. COVER(S) AND FRAME SHALL COMPLY WITH IS EN 124 AND SHALL BE AS DESCRIBED IN APPENDIX 15/2.
5. THE EMERGENCY ROADSIDE TELEPHONE SHALL BE SET IN A 600x600x200mm ST2 CONCRETE BASE TO CLAUSE 2602.
6. 1x50mmØ DUCT TO BE CONNECTED FROM THE COMMS III CHAMBER TO THE NEAREST COMMS I OR II CHAMBER ON LONGITUDINAL DUCT NETWORK.
7. THE PAVING SLAB/ERT HARDSTANDING AREA SHALL BE LEVEL AND CONTINUOUS WITH THE HARD SHOULDER IN FRONT OF EACH ERT LOCATION. ANY GAPS BETWEEN THE PAVING SLAB/ERT HARDSTANDING AREA SHALL BE FILLED WITH BITUMINOUS MATERIAL.
8. FOR FURTHER TELEPHONE INSTALLATION DETAILS REFER TO:

- DRAWING RCD/1500/060 FOR TELEPHONE INSTALLATION WITHOUT SAFETY BARRIER
- DRAWING RCD/1500/062 FOR TELEPHONE INSTALLATION BEHIND SAFETY BARRIER
- DRAWING RCD/1500/063 FOR BLISTER SURFACE PAVING SLAB
- MCDRW 1500 SERIES.

NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01561

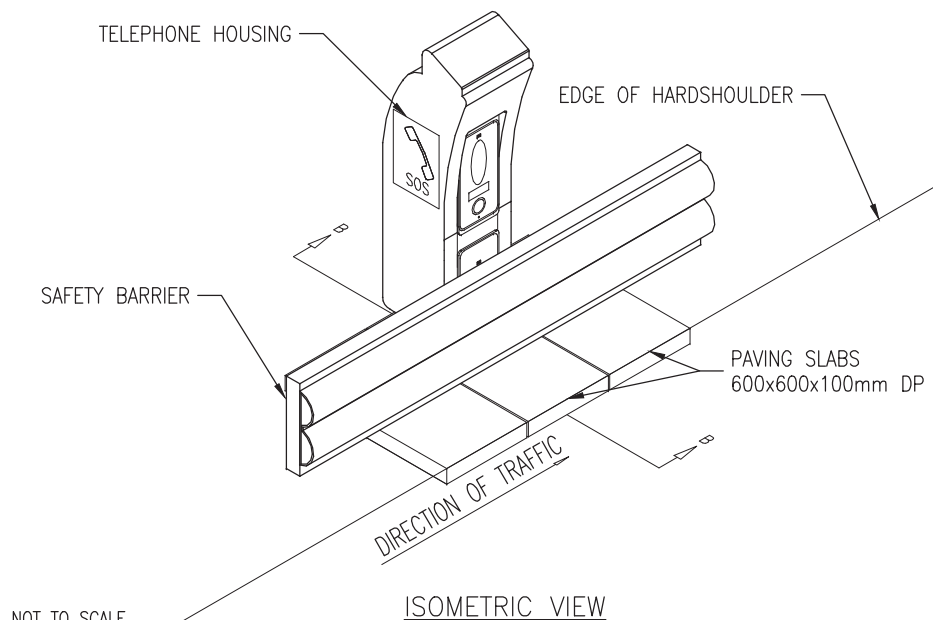


NOTES:

1. NOT TO SCALE. ALL DIMENSIONS IN MILLIMETRES.
2. THE EMERGENCY ROADSIDE TELEPHONE SHALL BE SET IN A 600x600x200mm ST2 CONCRETE BASE TO CLAUSE 2602.
3. ALL TOPSOIL AND/OR ORGANIC MATERIAL SHALL BE REMOVED. A PLATFORM SHALL BE PREPARED OF SIMILAR STANDARD TO THE SUB-FORMATION OF THE ADJACENT CARRIAGEWAY.
4. ALL PAVING SLABS SHALL BE LAID ON 150mm SUB-BASE COMPLYING WITH CLAUSE 804 AND COMPACTED IN ACCORDANCE WITH CLAUSE 802.
5. AS INSTALLED CLEARANCE OF 50-150mm (50 PREFERRED) SHALL BE PROVIDED BETWEEN THE BACK OF THE SAFETY BARRIER AND THE TELEPHONE HOUSING. NO SECTION OF THE TELEPHONE HOUSING SHALL BE INSTALLED OVER THE SAFETY BARRIER.
6. WHERE A FILTER DRAIN IS INCLUDED IN THE VERGE, THE FILTER DRAIN SHALL EXTEND TO THE UNDERSIDE OF THE HARDSTANDING AND BE SEPARATED FROM THE HARDSTANDING BY ITS GEOTEXTILE MEMBRANE.
7. THE 50mm ϕ DUCT THROUGH THE CONCRETE BASE SHALL BE LEFT 100mm PROUD OF THE SURFACE OF THE BASE.
8. THE PAVING SLAB/ERT HARDSTANDING AREA SHALL BE LEVEL AND CONTINUOUS WITH THE HARD SHOULDER IN FRONT OF EACH ERT LOCATION. ANY GAPS BETWEEN THE PAVING SLAB/ERT HARDSTANDING AREA SHALL BE FILLED WITH BITUMINOUS MATERIAL.
9. FOR FURTHER TELEPHONE INSTALLATION DETAILS REFER TO:

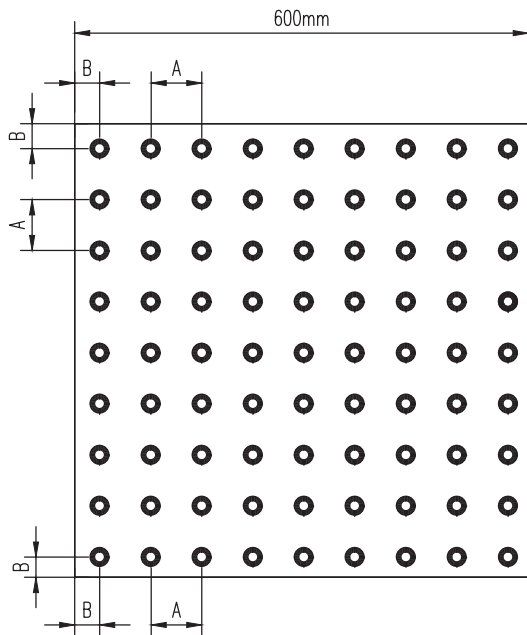
- DRAWING RCD/1500/060 FOR TELEPHONE INSTALLATION WITHOUT SAFETY BARRIER
- DRAWING RCD/1500/061 FOR TELEPHONE INSTALLATION IN CONJUNCTION WITH LONGITUDINAL DUCTING/CHAMBERS
- DRAWING RCD/1500/063 FOR BLISTER SURFACE PAVING SLAB
- MCDRW 1500 SERIES.

TII PUBLICATION NUMBER: CC-SCD-01562



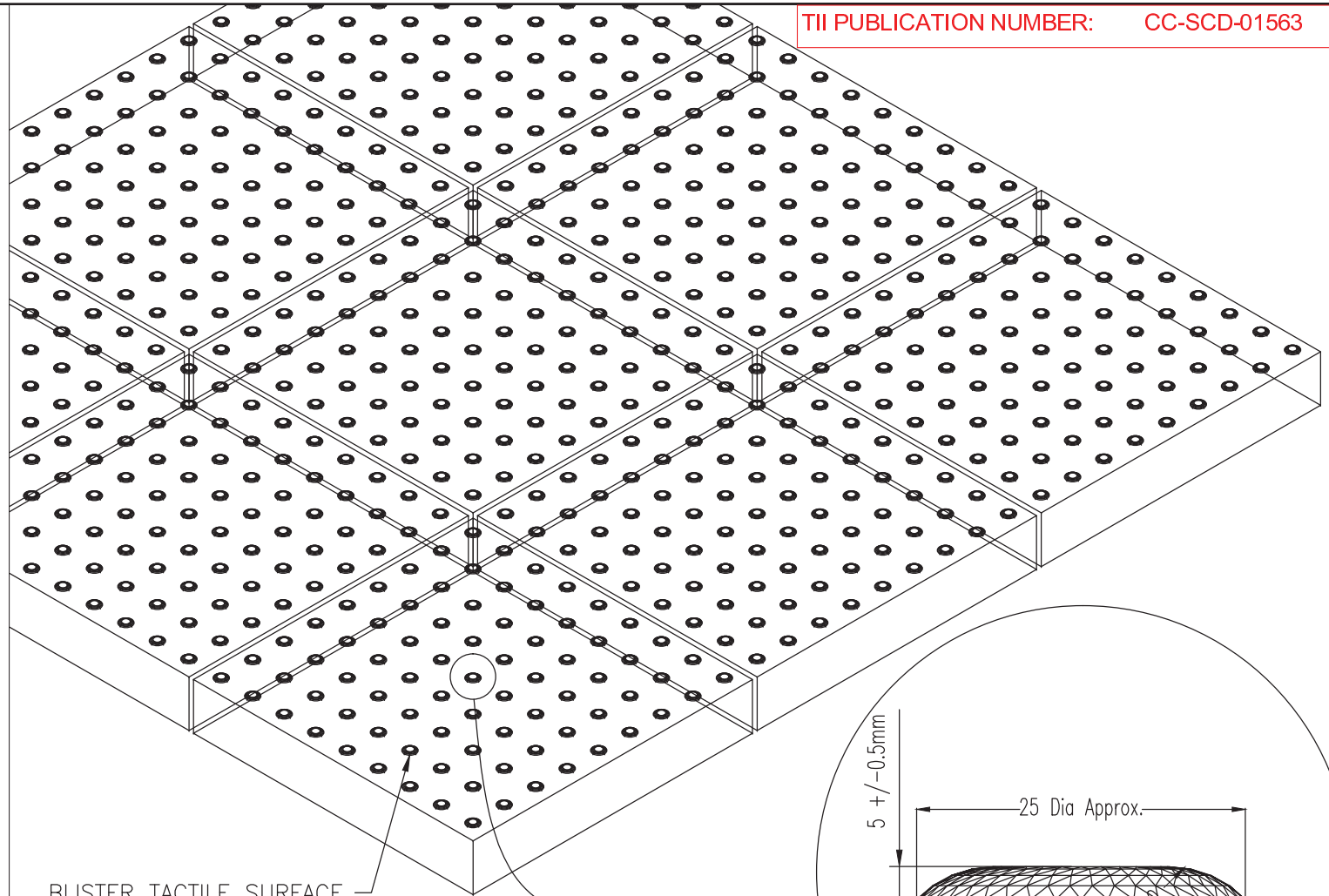


ELEVATION VIEW



PLAN VIEW

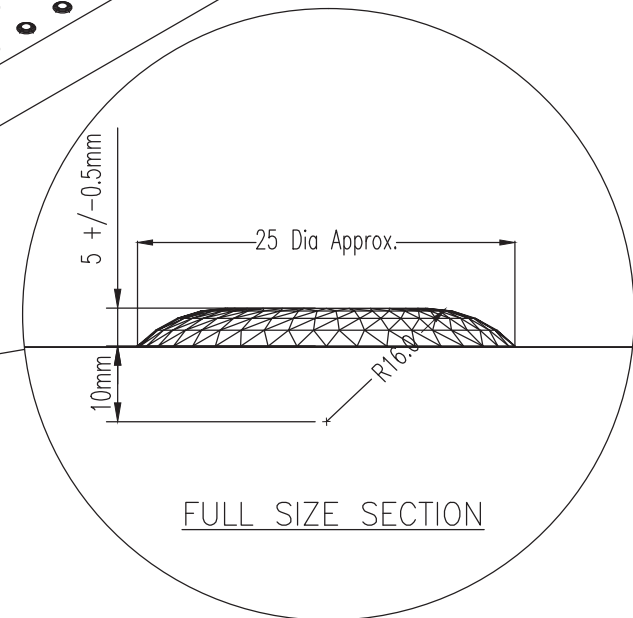
NOT TO SCALE



BLISTER TACTILE SURFACE

ISOMETRIC VIEW

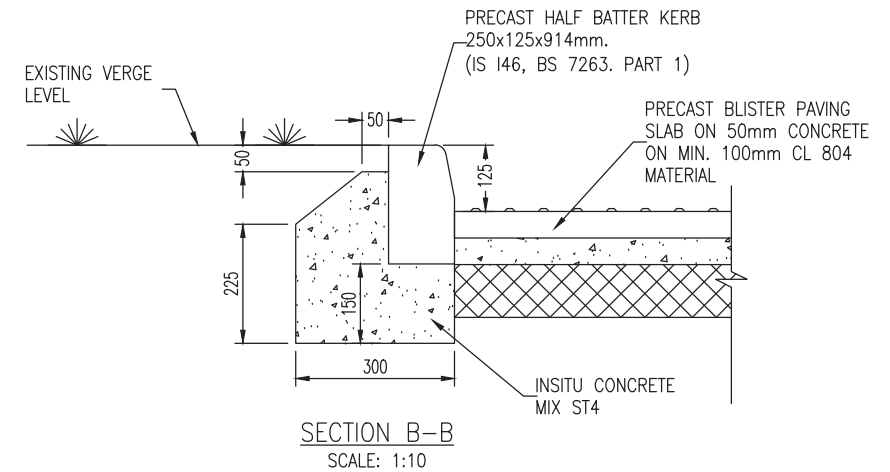
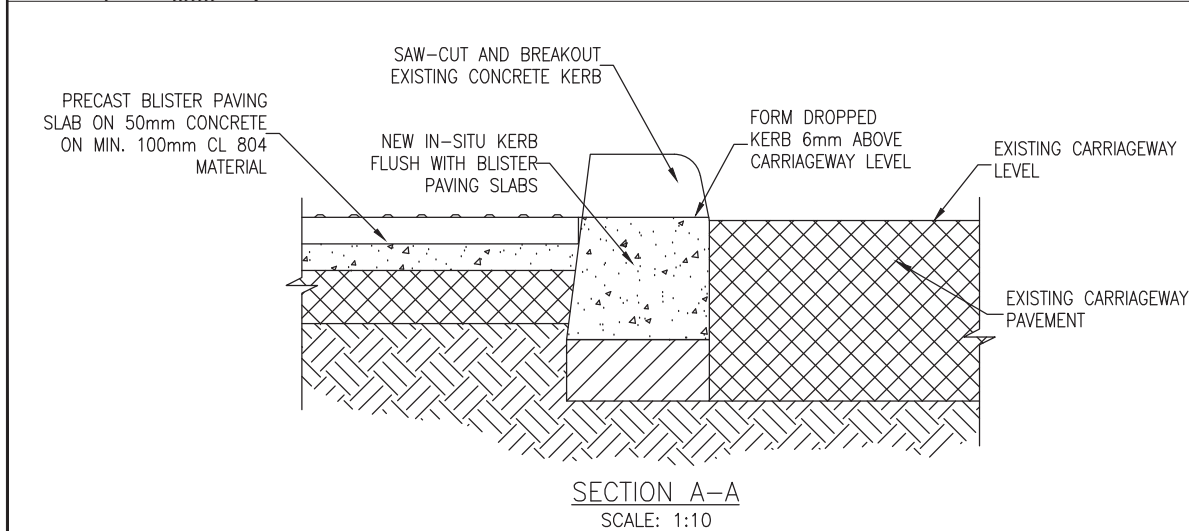
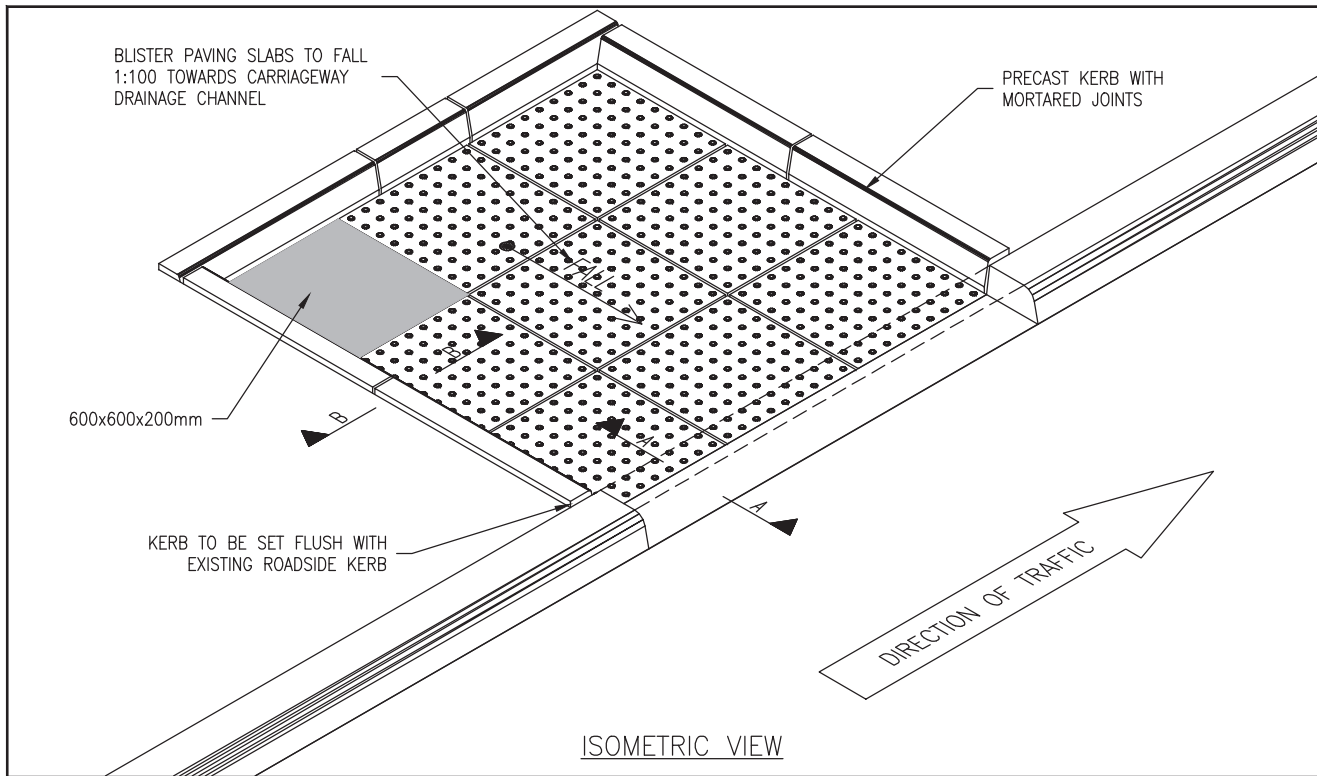
SIZE	PITCH DIMENSIONS	
	A	B
3600mm ²	66.75	33.0



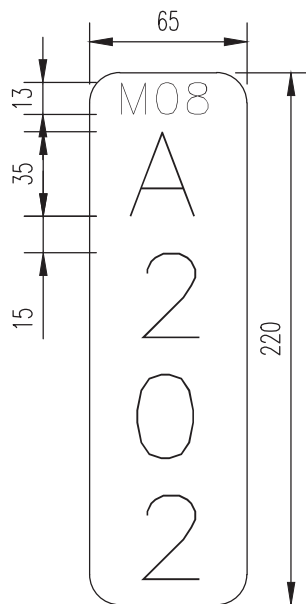
FULL SIZE SECTION

NOTES:

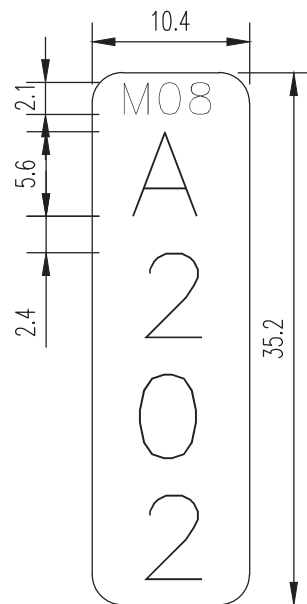
1. NOT TO SCALE. ALL DIMENSIONS IN MILLIMETRES.
2. FOR FURTHER TELEPHONE INSTALLATION DETAILS REFER TO:
 - DRAWING RCD/1500/060 FOR TELEPHONE INSTALLATION WITHOUT SAFETY BARRIER
 - DRAWING RCD/1500/061 FOR TELEPHONE INSTALLATION WITH DUCTING/CHAMBER DETAILS
 - DRAWING RCD/1500/062 FOR TELEPHONE INSTALLATION BEHIND SAFETY BARRIER
 - DRAWING RCD/1500/063 FOR BLISTER SURFACE PAVING SLAB
 - MCDRW 1500 SERIES.



NOT TO SCALE



DIMENSIONS IN mm



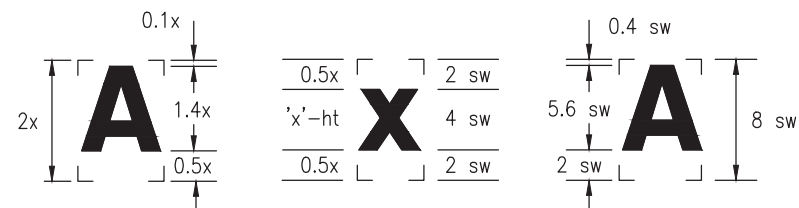
DIMENSIONS IN STROKE WIDTHS

Scheme Ref.			
Sign Ref.	ERT	X-height	25mm
Letter colour	BLACK	SIGN FACE	
Background	WHITE	Width	65mm
Border	n/a	Height	220mm
Material	SELF ADHESIVE VINYL	Area	0.01sq.m
Drawing file			

ERT UNIQUE IDENTIFICATION NUMBER DESCRIPTION

M	ROAD CATEGORY
0	ROUTE NUMBER
8	
A	DIRECTION OF TRAVEL
2	
0	UNIQUE IDENTIFIER BASED ON APPROX. CHAINAGE
2	

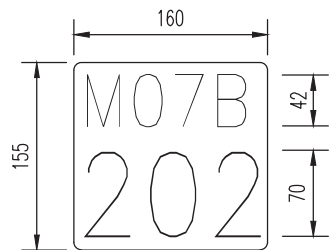
THE UNIT OF MEASUREMENT IS THE STROKE WIDTH (sw)
WHICH IS EQUAL TO ONE QUARTER OF THE 'x'-HEIGHT
 $x\text{-HEIGHT} = 4 \text{ STROKE WIDTHS}$



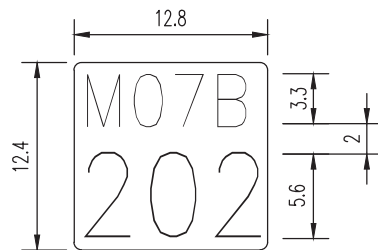
TRANSPORT HEAVY FONT

NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01565



DIMENSIONS IN mm



DIMENSIONS IN STROKE WIDTHS

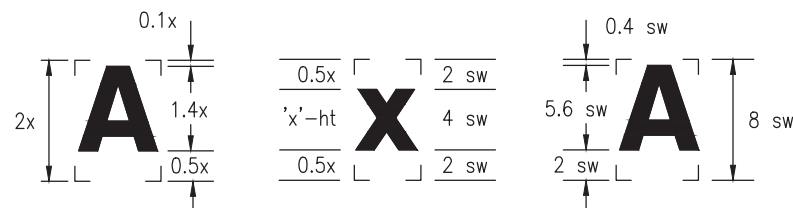


UNIQUE IDENTIFIER BASED
ON APPROX. CHAINAGE

APPLY 80% CONDENSING FACTOR

Scheme Ref.			
Sign Ref.	ERT	X-height	50mm
Letter colour	BLACK	SIGN FACE	
Background	WHITE	Width	160mm
Border	n/a	Height	155mm
Material	SELF ADHESIVE VINYL	Area	0.02sq.m
Drawing file			

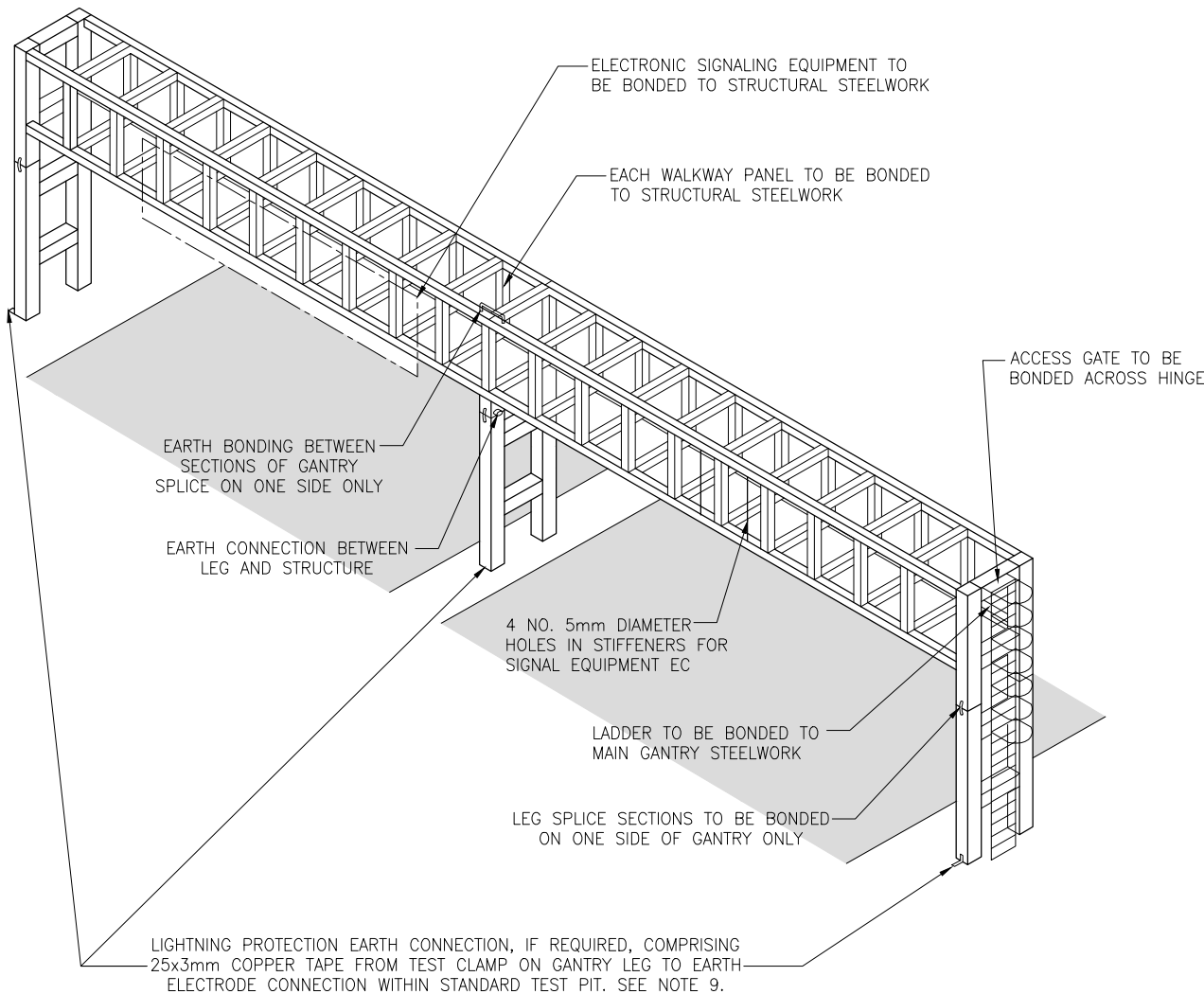
THE UNIT OF MEASUREMENT IS THE STROKE WIDTH (sw)
WHICH IS EQUAL TO ONE QUARTER OF THE 'x'-HEIGHT
 $x\text{-HEIGHT} = 4 \text{ STROKE WIDTHS}$



TRANSPORT HEAVY FONT

NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01566



NOTES:

GENERAL

1. GANTRY STRUCTURAL STEELWORK SHALL BE ELECTRICALLY CONTINUOUS THROUGHOUT.
2. NEW GANTRIES ARE PROVIDED WITH FACILITIES FOR THE TERMINATION OF ELECTRICAL EARTH AND LIGHTING PROTECTION BONDING TO AVOID DAMAGE TO GANTRY PROTECTIVE FINISH, BY THE LATER PROVISION OF TERMINATION LUGS FOR EXAMPLE.
3. ALL METALLIC EQUIPMENT MOUNTED ON THE GANTRY SHALL BE BONDED TO THE GANTRY STRUCTURE, THEY SHOULD BE BONDED TO THE STRUCTURE TO ENSURE COMMON POTENTIAL.
4. BONDING DETAILS SHOWN ON DIAGRAM ARE TYPICAL ONLY.

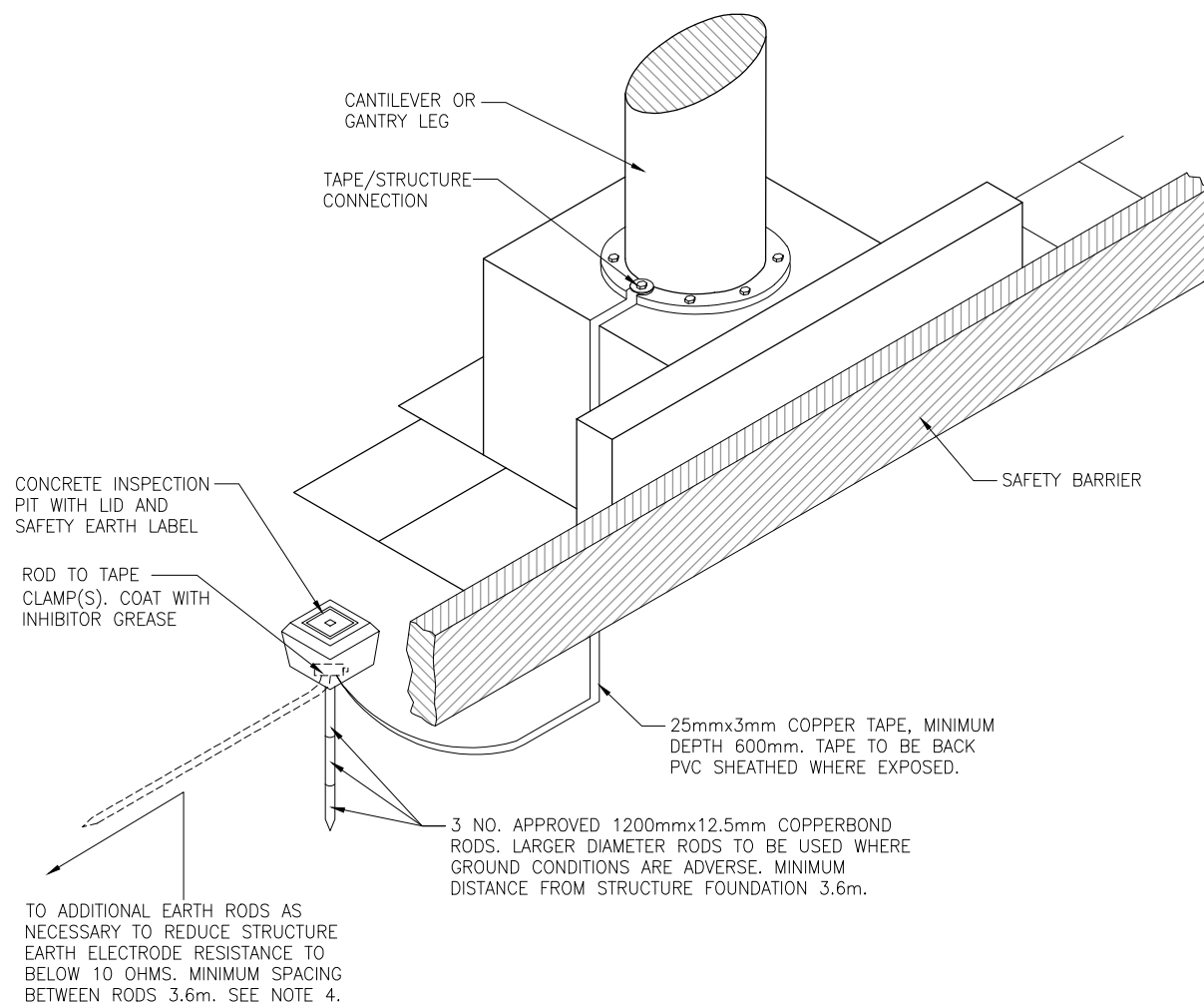
ELECTRICAL EARTHING

5. ELECTRICAL EARTH BONDING SHALL BE UTILISE 6mm²(MINIMUM) PVC INSULATED STRANDED COPPER EARTHING CONDUCTOR.
6. EARTHING CABLE SHALL BE PROVIDED WITH TERMINAL LUGS AND SHALL BE BONDED TO STRUCTURE (AT PREPROVIDED BONDING POINTS) WITH SUITABLE NUT, BOLT AND LOCKING WASHER ARRANGEMENT, SAFETY EARTH LABELS 'SAFETY ELECTRICAL EARTH DO NOT REMOVE' SHALL BE PROVIDED AT EACH BOND TO THE STRUCTURE.

LIGHTNING PROTECTION

7. THE GANTRY STRUCTURE WHEN ELECTRICALLY CONTINUOUS MAY BE CONSIDERED TO BE SELF PROTECTING, PROVIDED THE RESISTANCE TO EARTH DOES NOT EXCEED 10 OHMS.
8. PRIOR TO THE INSTALLATION OF THE GANTRY, SOIL RESISTIVITY TESTS SHALL BE CARRIED OUT TO DETERMINE THE NEED FOR THE PROVISION OF A LIGHTNING PROTECTION SYSTEM. WHERE THE RESISTANCE TO EARTH EXCEEDS 10 OHMS, AN APPROPRIATE EARTH ELECTRODE SYSTEM FROM THE GANTRY LEGS SHALL BE PROVIDED IN ACCORDANCE WITH ISEN 62305.
9. EARTH ELECTRODES/ TEST PITS (AS SHOWN ON RCD/1500/68 SHOULD BE PROVIDED AS CLOSE AS PRACTICAL TO GANTRY LEGS.
10. TESTS SHALL BE CARRIED OUT AFTER INSTALLATION OF GANTRIES TO ENSURE THAT THE RESISTANCE TO EARTH DOES NOT EXCEED 10 OHMS.

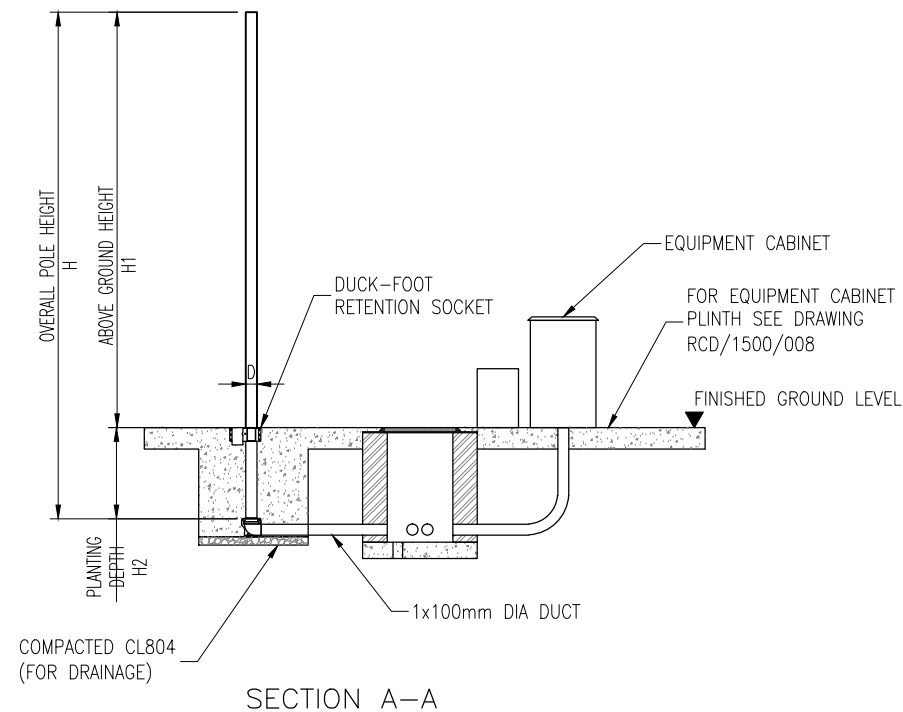
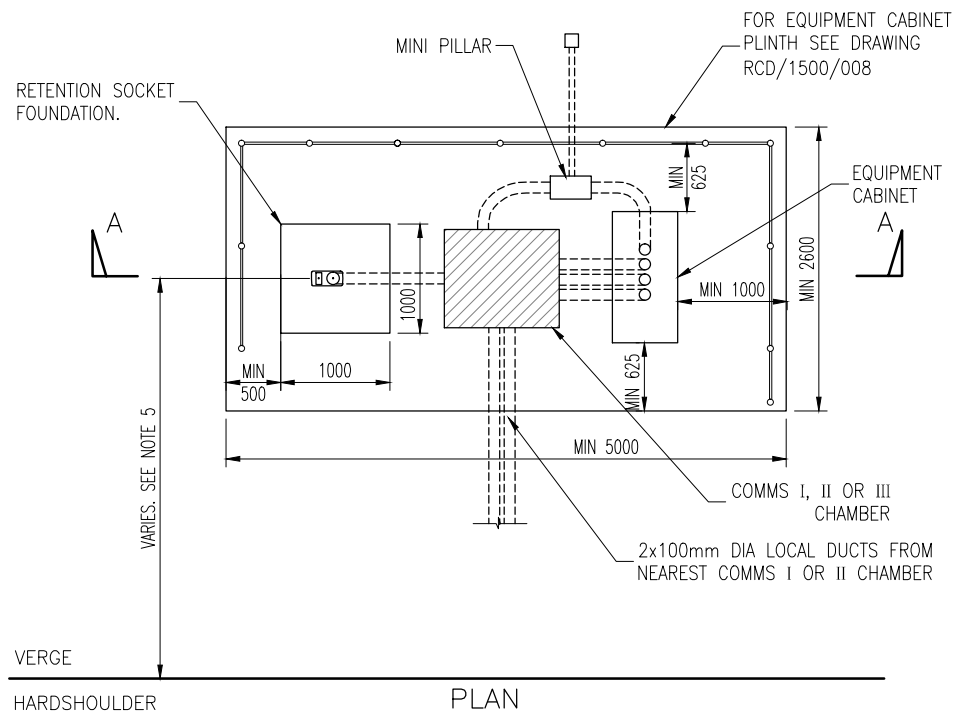
NOT TO SCALE



NOTES:

1. DETAILS SHOWN ARE FOR CANTILEVER OR GANTRY LEG.
2. AT EACH STRUCTURE THE MINIMUM REQUIREMENTS AS SHOWN SHALL BE INSTALLED AND TESTS CARRIED OUT TO ASCERTAIN THE STRUCTURE TO EARTH RESISTIVELY. TESTS SHALL BE CARRIED OUT IN ACCORDANCE WITH IS EN. TEST RESULTS TOGETHER WITH TEST WEATHER CONDITIONS SHALL BE RECORDED IN TABULAR FORM AND FORWARDED TO THE OVERSEEING ORGANISATION.
3. FOR THE TESTS IT IS REQUIRED THAT ALL LIVE SUPPLY CONDUCTORS, POWER CABLE, EARTH CONDUCTORS AND THE ARMOURING OF ALL POWER AND COMMUNICATIONS CABLE BE TEMPORARILY DISCONNECTED FROM THE STRUCTURE. EARTHING CONDUCTORS/ARMOURING SHALL BE DISCONNECTED ONLY AFTER DISCONNECTION OF LIVE CONDUCTORS AND UPON COMPLETION OF TESTING, SHALL BE RECONNECTED BEFORE RECONNECTION OF THE LIVE CONDUCTORS. IT SHOULD BE NOTED THAT NEUTRAL CONDUCTORS CONSTITUTE LIVE CONDUCTORS.
4. THE GANTRY STRUCTURE WHEN ELECTRICALLY CONTINUOUS MAY BE CONSIDERED TO BE CONSIDERED TO BE SELF PROTECTING, PROVIDED THE RESISTANCE TO EARTH DOES NOT EXCEED 10 OHMS. WHERE THE RESISTANCE TO EARTH EXCEEDS 10 OHMS AN APPROPRIATE EARTH ELECTRODE SYSTEM FROM THE GANTRY LEGS SHALL BE PROVIDED IN ACCORDANCE WITH IS EN 62305.
5. AT GANTRY SITE LIGHTING PROTECTION SHALL BE PROVIDED TO EACH LEG OF THE STRUCTURE WITH IDENTICAL INSTALLATIONS AS SHOWN ON RCD/1500/67.
6. AT CANTILEVER SITE THE INFRASTRUCTURE CONTRACTOR SHALL SUPPLY COPPER TAPE ONE METER LONGER THAN REQUIRED FOR THE TEST CONNECTION TO HOLDING DOWN BOLTS. AFTER TESTING THE TEST PLATE SHALL BE UNBOLTED AND THE SPARE COPPER TAPE COILED UP, PROTECTED WITH A POLYTHENE BAG AND BURIED IN THE GROUND ADJACENT TO THE CANTILEVER FOUNDATION.
7. IF GROUND CONDITION PROHIBIT THE DRIVING OF EARTH RODS, A SUITABLE EARTH PLATE SYSTEM MAY BE SUBSTITUTED FOLLOWING APPROVAL BY THE OVERSEEING ORGANISATION.

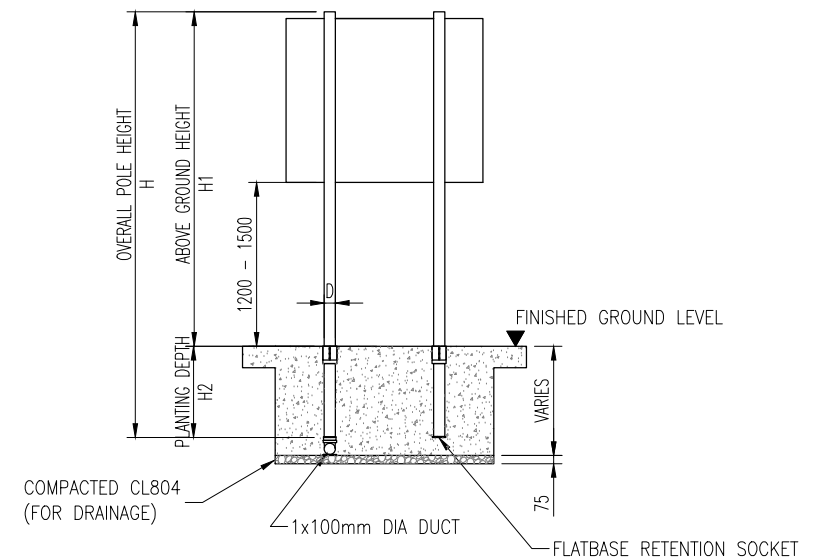
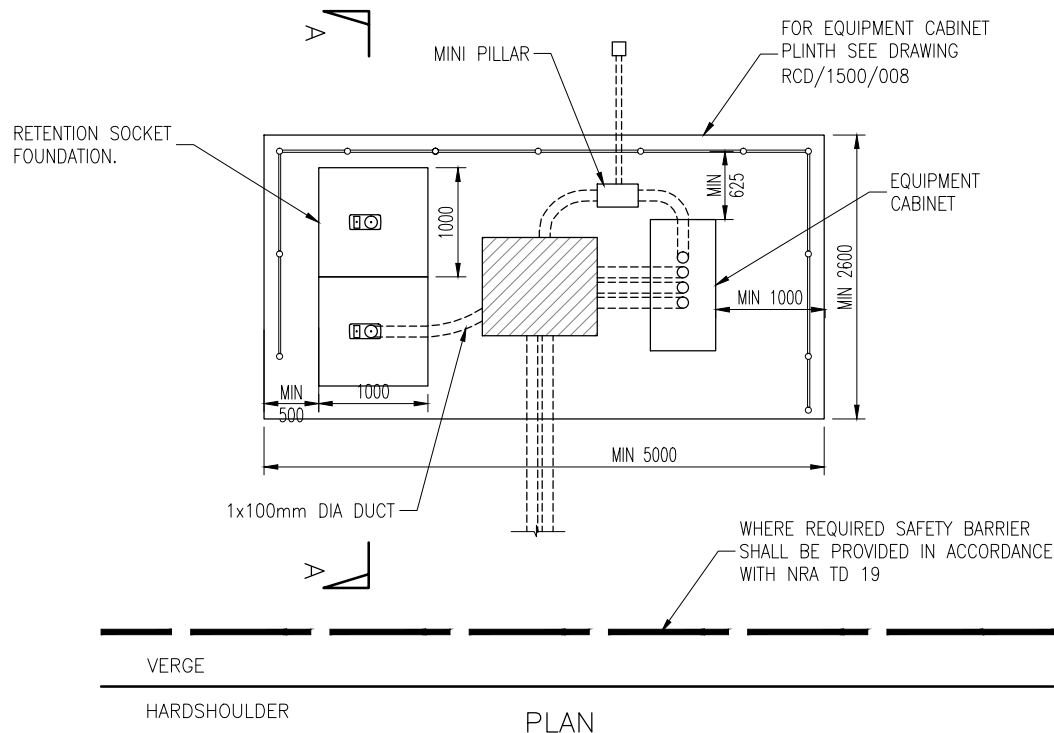
NOT TO SCALE



NOTES:

1. THE LAYOUTS SHOWN IS TYPICAL ONLY. REFER TO DRAWING RCD/1500/008 FOR DETAILS OF THE STANDARD EQUIPMENT CABINET PLINTH.
2. THE RETENTION SOCKET FOUNDATION SHALL BE INCORPORATED AND CAST IN THE EQUIPMENT CABINET PLINTH. CONCRETE RETENTION SOCKET FOUNDATION INSTALLATION DETAILS:
 - CONCRETE SHALL COMPLY WITH I.S. EN 206-1
 - MINIMUM CONCRETE STRENGTH CLASS: C30/37
 - MINIMUM SLUMP CLASS: S2
 - MAXIMUM WATER/CEMENT RATIO: 0.50
 - MINIMUM CEMENT CONTENT: 320 KG/M3
 - CEMENT TYPE: SULPHATE-RESISTING CEMENT
 - MAXIMUM AGGRESSIVE CHEMICAL ENVIRONMENT: XA2. FOR INSTALLATIONS IN A MORE CHEMICAL AGGRESSIVE ENVIRONMENT, REFER TO I.S.EN 206-1:2002 FOR ADDITIONAL REQUIREMENTS.
3. THE PLANT DEPTH SHALL BE DETERMINED BY THE EQUIPMENT TYPE AND MOUNTING HEIGHT AS PER TABLE 15/1 IN SERIES 1500.
4. THE MAXIMUM OFFSET BETWEEN THE POLE AND THE EDGE OF CARRIAGEWAY SHALL BE DETERMINED BY REQUIREMENTS OF THE EQUIPMENT AS PER THE MANUFACTURER'S RECOMMENDATIONS. POLES NOT LOCATED BEHIND SAFETY BARRIER SHALL BE PASSIVELY SAFETY AS PER I.S EN 12767.
5. POLES WITH POWER AND/OR COMMUNICATIONS CABLES SHALL HAVE ACCESS DOORS AND SHALL BE CONNECTED TO THE EQUIPMENT CABINET WITH 1 NO 100mm DIA DUCT VIA A RETENTION SOCKET WITH A DUCT-FOOT BASE.
6. PASSIVELY SAFE POLES WITH POWER AND/OR COMMUNICATIONS CABLES SHALL BE FITTED WITH A SUITABLE ELECTRICAL DISCONNECT SYSTEM AS PER NA.8 OF THE NATIONAL ANNEX TO I.S. EN 12767.

NOT TO SCALE

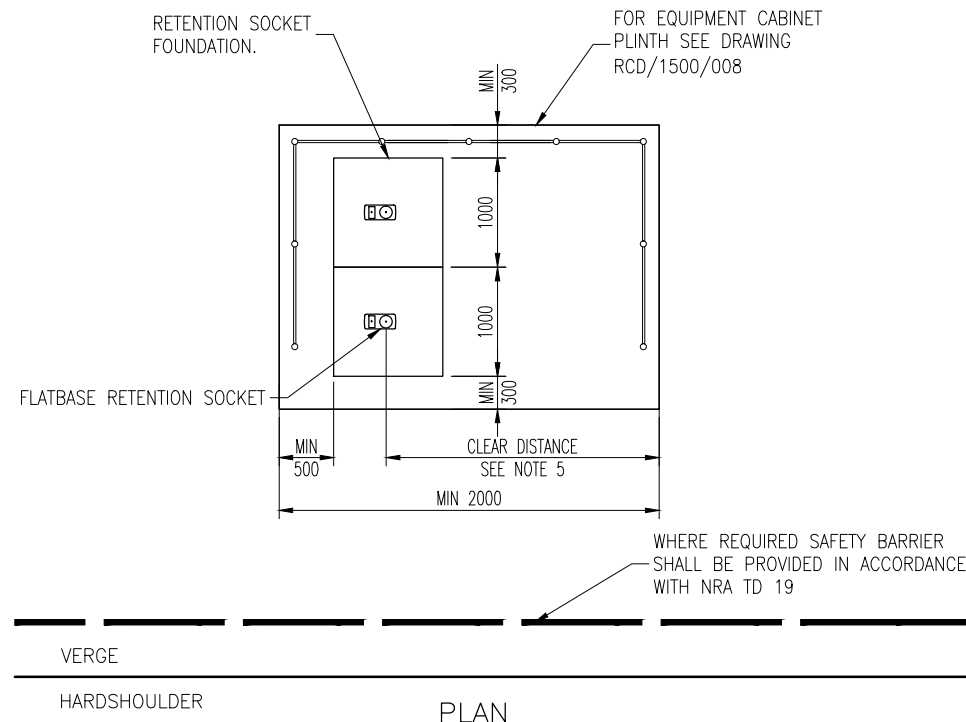
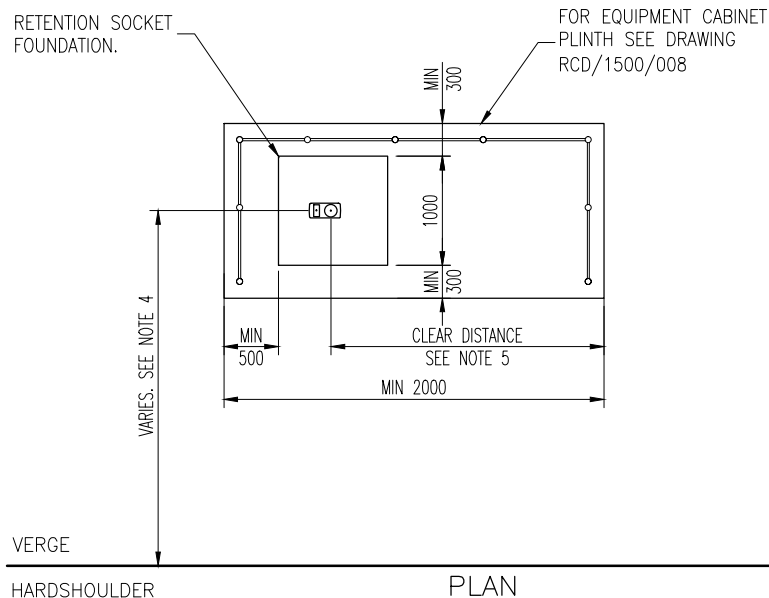


NOTES:

- THE LAYOUTS SHOWN IS TYPICAL ONLY. REFER TO DRAWING RCD/1500/008 FOR DETAILS OF THE STANDARD EQUIPMENT CABINET PLINTH.
- THE RETENTION SOCKET FOUNDATION SHALL BE INCORPORATED AND CAST IN THE EQUIPMENT CABINET PLINTH. CONCRETE RETENTION SOCKET FOUNDATION INSTALLATION DETAILS:
 - CONCRETE SHALL COMPLY WITH I.S. EN 206-1
 - MINIMUM CONCRETE STRENGTH CLASS: C30/37
 - MINIMUM SLUMP CLASS: S2
 - MAXIMUM WATER/CEMENT RATIO: 0.50
 - MINIMUM CEMENT CONTENT: 320 KG/M3
 - CEMENT TYPE: SULPHATE-RESISTING CEMENT
 - MAXIMUM AGGRESSIVE CHEMICAL ENVIRONMENT: XA2. FOR INSTALLATIONS IN A MORE CHEMICAL AGGRESSIVE ENVIRONMENT, REFER TO I.S.EN 206-1:2002 FOR ADDITIONAL REQUIREMENTS.
- THE CONCRETE SURROUND OF MULTIPLE RETENTION SOCKETS SHALL BE CAST AS A SINGLE FOUNDATION WHERE THE SEPARATION BETWEEN THE POLES IS LESS THAN 800mm.
- THE PLANT DEPTH SHALL BE DETERMINED BY THE EQUIPMENT TYPE AND MOUNTING HEIGHT AS PER TABLE 15/1 IN SERIES 1500.
- POLES CARRYING POWER AND/OR COMMUNICATIONS CABLES SHALL HAVE ACCESS DOORS AND SHALL BE CONNECTED TO THE EQUIPMENT CABINET WITH 1 NO 100mm DIA DUCT VIA A RETENTION SOCKET WITH A DUCT-FOOT BASE. ALL OTHER ADDITIONAL POLES SHALL BE INSTALLED IN FLAT BASE RETENTION SOCKETS.
- MOTORWAY SIGNS SHALL BE INSTALLED ON MULTIPLE POLES AND SHALL BE ACCOMPANIED BY SAFETY BARRIER. SAFETY BARRIER SHALL BE PROVIDED IN ACCORDANCE WITH NRA TD 19.
- PASSIVELY SAFE POLES WITH POWER AND/OR COMMUNICATIONS CABLES SHALL BE FITTED WITH A SUITABLE ELECTRICAL DISCONNECT SYSTEM AS PER NA.8 OF THE NATIONAL ANNEX TO I.S. EN 12767.

NOT TO SCALE

TII PUBLICATION NUMBER: CC-SCD-01570



NOTES:

1. THE LAYOUTS SHOWN IS TYPICAL ONLY. REFER TO DRAWING RCD/1500/008 FOR DETAILS OF THE STANDARD EQUIPMENT CABINET PLINTH.
2. THE RETENTION SOCKET FOUNDATION SHALL BE INCORPORATED AND CAST IN THE EQUIPMENT CABINET PLINTH. CONCRETE RETENTION SOCKET FOUNDATION INSTALLATION DETAILS:
 - CONCRETE SHALL COMPLY WITH I.S. EN 206-1
 - MINIMUM CONCRETE STRENGTH CLASS: C30/37
 - MINIMUM SLUMP CLASS: S2
 - MAXIMUM WATER/CEMENT RATIO: 0.50
 - MINIMUM CEMENT CONTENT: 320 KG/M3
 - CEMENT TYPE: SULPHATE-RESISTING CEMENT
 - MAXIMUM AGGRESSIVE CHEMICAL ENVIRONMENT: XA2. FOR INSTALLATIONS IN A MORE CHEMICAL AGGRESSIVE ENVIRONMENT, REFER TO I.S.EN 206-1:2002 FOR ADDITIONAL REQUIREMENTS.
3. THE PLANT DEPTH SHALL BE DETERMINED BY THE EQUIPMENT TYPE AND MOUNTING HEIGHT AS PER TABLE 15/1 IN SERIES 1500.
4. THE MAXIMUM OFFSET BETWEEN THE POLE AND THE EDGE OF CARRIAGEWAY SHALL BE DETERMINED BY REQUIREMENTS OF THE EQUIPMENT AS PER THE MANUFACTURER'S RECOMMENDATIONS. POLES NOT LOCATED BEHIND SAFETY BARRIER SHALL BE PASSIVELY SAFETY AS PER I.S EN 12767.
5. THE PLINTH SHALL BE EXTENDED TO ALLOW FOR THE PLACEMENT OF A LADDER FOR INSTALLING AND ACCESSING THE EQUIPMENT. THE CLEAR DISTANCE BETWEEN THE POLE AND THE EDGE OF THE PLINTH SHALL BE AT LEAST 3:1 RATIO OF THE POLE HEIGHT.

NOT TO SCALE

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