



You have accessed the QECM Drawing Supplement for Version 4 of the Queensland Electricity Connection Manual (QECM). This version of the QECM is available for review and is not in effect until 21 February 2024.

The current version of the QECM is Version 3. Please check that you have accessed the correct version for your connection activity.



Queensland Electricity Connection Manual

Drawings Supplement

Effective from 21 February 2024



Part of Energy Queensland

Release: 1, 12 Dec 2023 | Doc ID: 15919201
Uncontrolled When Printed 1 of 51

Owner: Chief Engineer
SME: Manager Generation & Customer Standards

This document has been developed as a supplement to the Queensland Electricity Connection Manual (QECM) to provide the drawings as a reference. This QECM supplement document shall be considered in conjunction with the latest version of the QECM. It is a requirement that all premises be connected in compliance with the QECM.

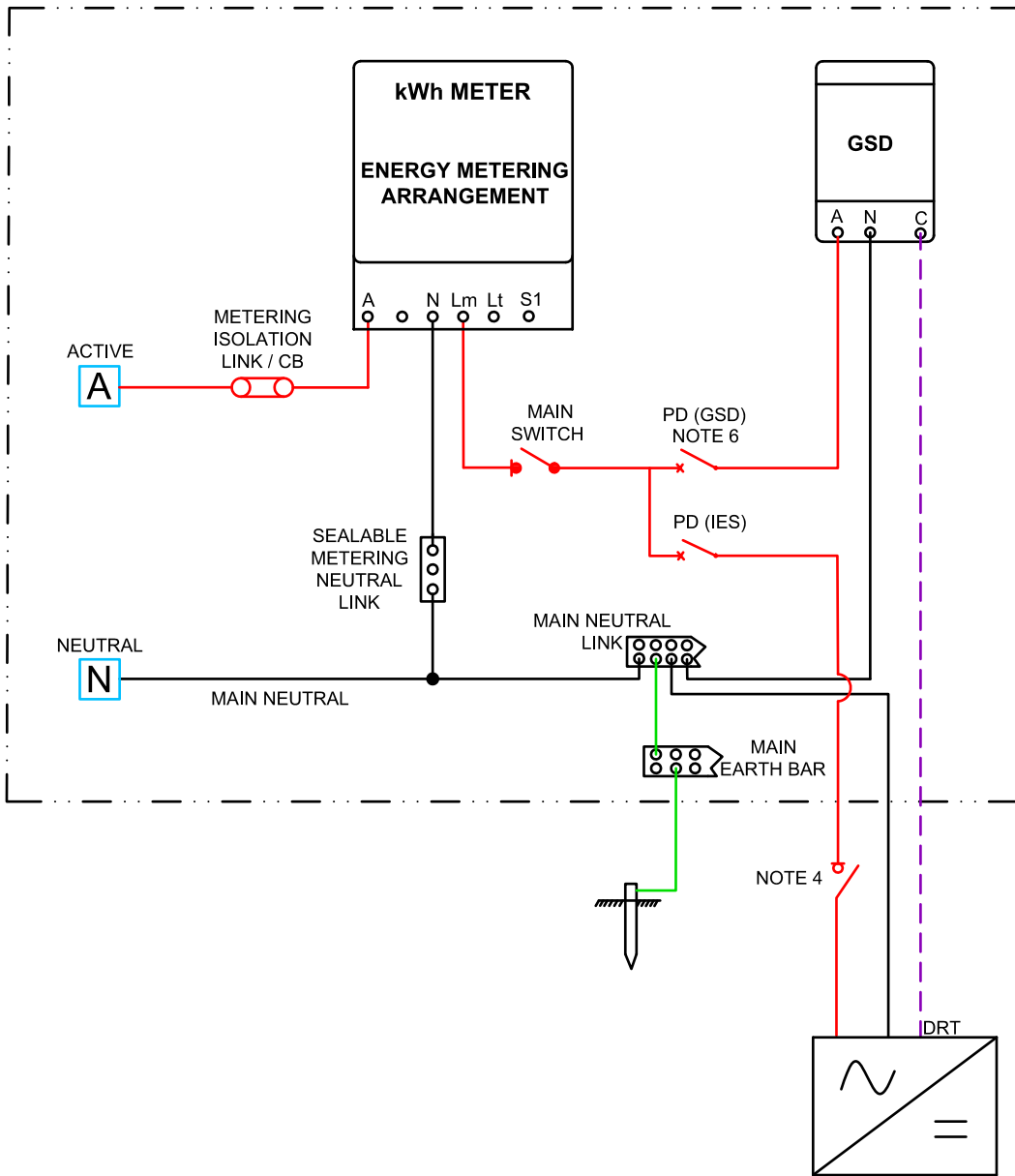
If this supplement is a printed version, to ensure compliance, reference must be made to the Energex or Ergon Energy Network internet site to obtain the latest version.

Approver	Glenn Springall General Manager Renewables and Distributed Energy	
If <i>RPEQ</i> Sign-off required insert details below.		
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MAIN SWITCHBOARD



NOTES

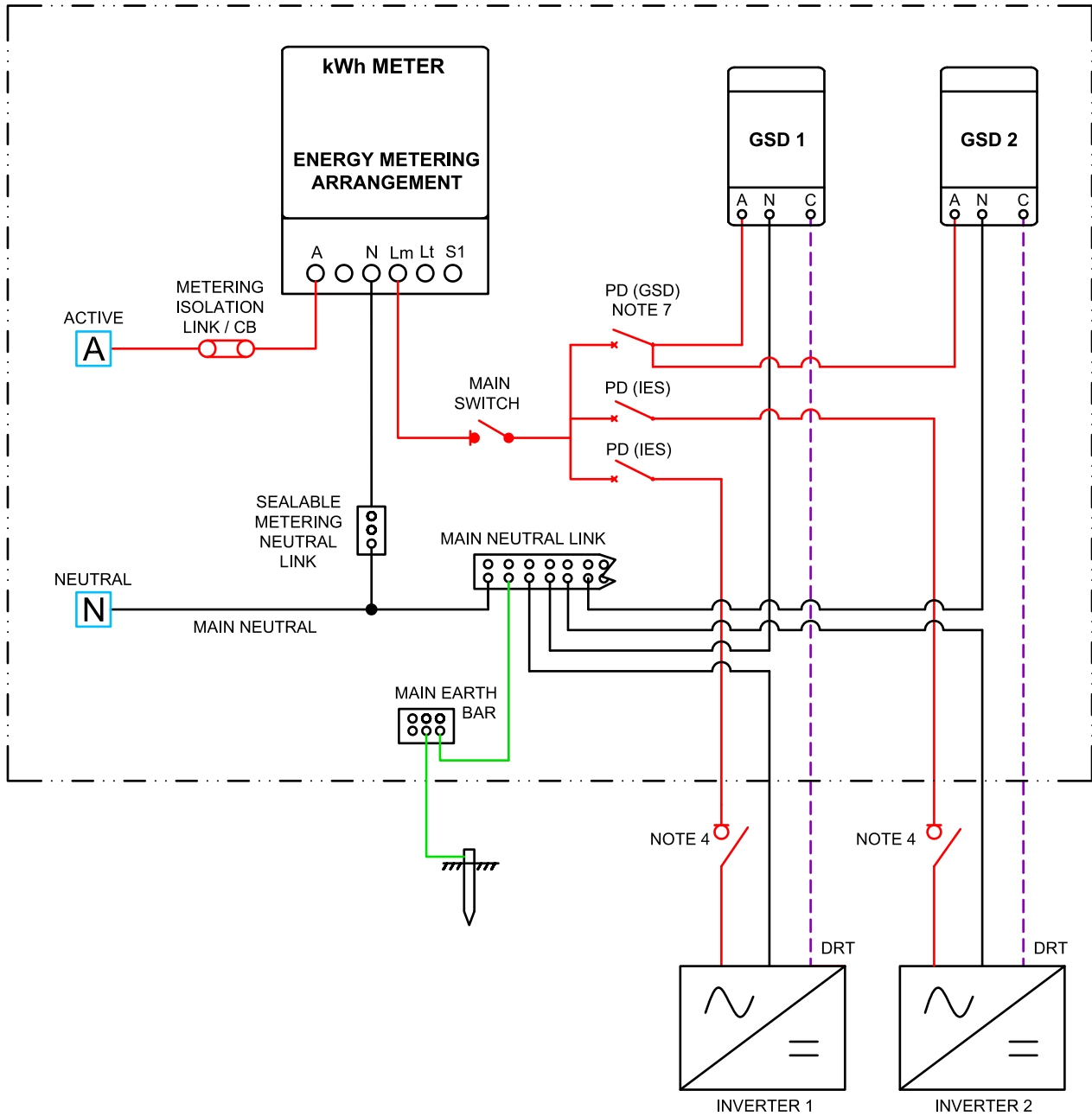
1. GSD IS PERMITTED TO BE INSTALLED IN EITHER THE MAIN SWITCHBOARD OR A DISTRIBUTION BOARD WHERE THE PD (IES) IS ALSO LOCATED.
2. THE GSD TO BE INSTALLED ON THE BACK OF THE SWITCHBOARD.
3. CONTROL CABLE MAY BE EXTENDED AS REQUIRED BY THE ELECTRICAL CONTRACTOR.
4. FOR ISOLATING SWITCH REQUIREMENTS REFER TO AS/NZS 4777.1 CLAUSE 3.4.3.
5. EARTH CONNECTIONS OTHER THAN THE MAIN EARTH CONDUCTOR AND EARTH ELECTRODE ARE NOT SHOWN.
6. RECOMMENDED THAT THE PD (GSD) IS LABELLED "BACKSTOP" AT THE SWITCHBOARD.

LEGEND.

PD - PROTECTIVE DEVICE
 GSD - GENERATION SIGNALING DEVICE
 DRT - DEMAND RESPONSE TERMINAL

Revision: A	GENERATION SIGNALLING DEVICE FOR SINGLE INVERTER - SMALL IES	QCD05-01
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MAIN SWITCHBOARD



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2. THE GSD TO BE INSTALLED ON THE BACK OF THE SWITCHBOARD.
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5. EARTH CONNECTIONS OTHER THAN THE MAIN EARTH CONDUCTOR AND EARTH ELECTRODE ARE NOT SHOWN.
6. EACH INDIVIDUAL INVERTER INSTALLED AT THE PREMISE SHALL HAVE A CORRESPONDING GSD INSTALLED IN CONFORMANCE WITH THIS CONFIGURATION.
7. RECOMMENDED THAT THE PD (GSD) IS LABELLED "BACKSTOP" AT THE SWITCHBOARD.

LEGEND

- PD - PROTECTIVE DEVICE
- GSD - GENERATION SIGNALLING DEVICE
- DRT - DEMAND RESPONSE TERMINAL

Revision:

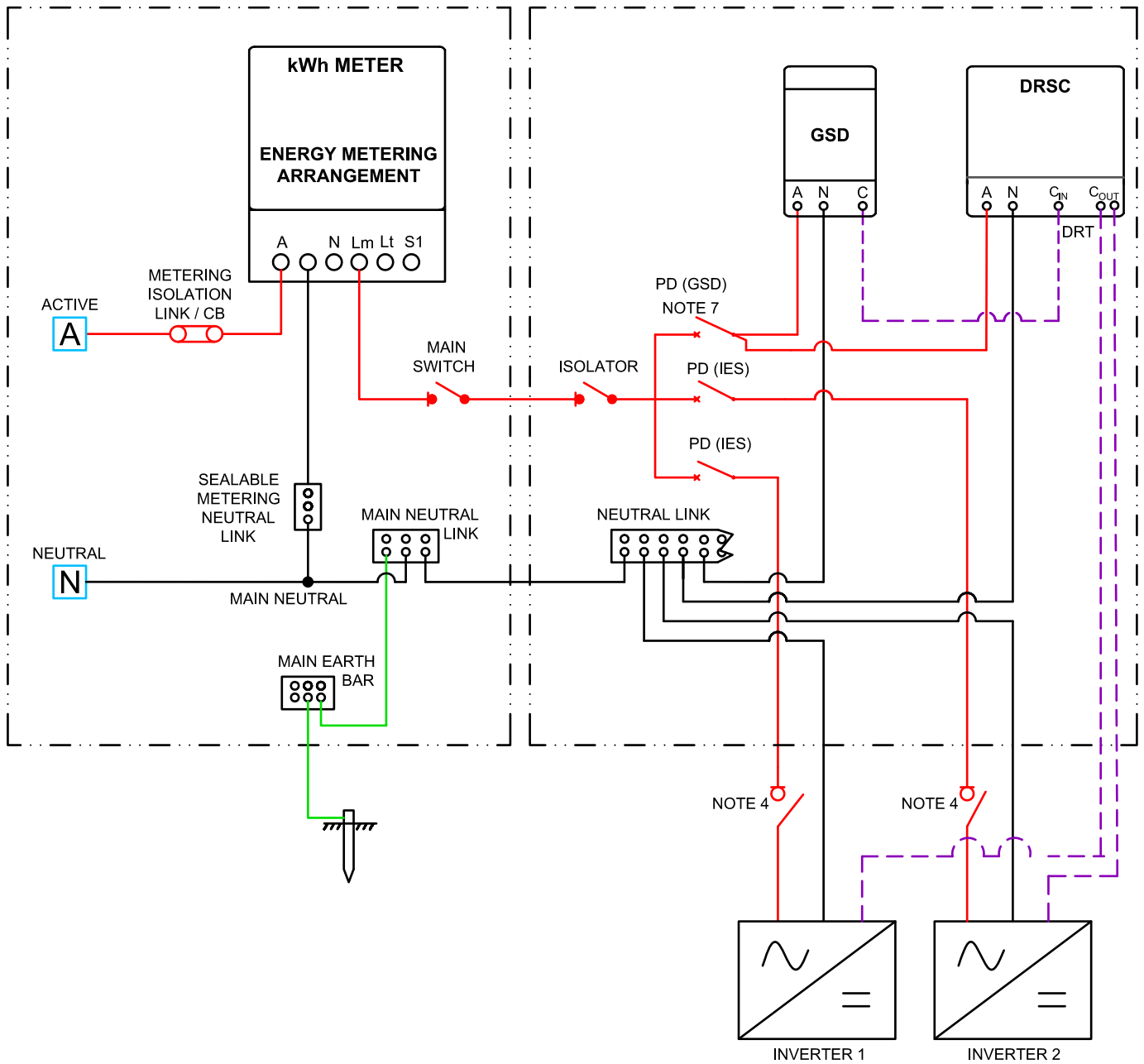
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MULTIPLE GENERATION SIGNALLING DEVICES FOR MULTIPLE INVERTERS - SMALL IES

QCD05-02

MAIN SWITCHBOARD

DISTRIBUTION BOARD



NOTES

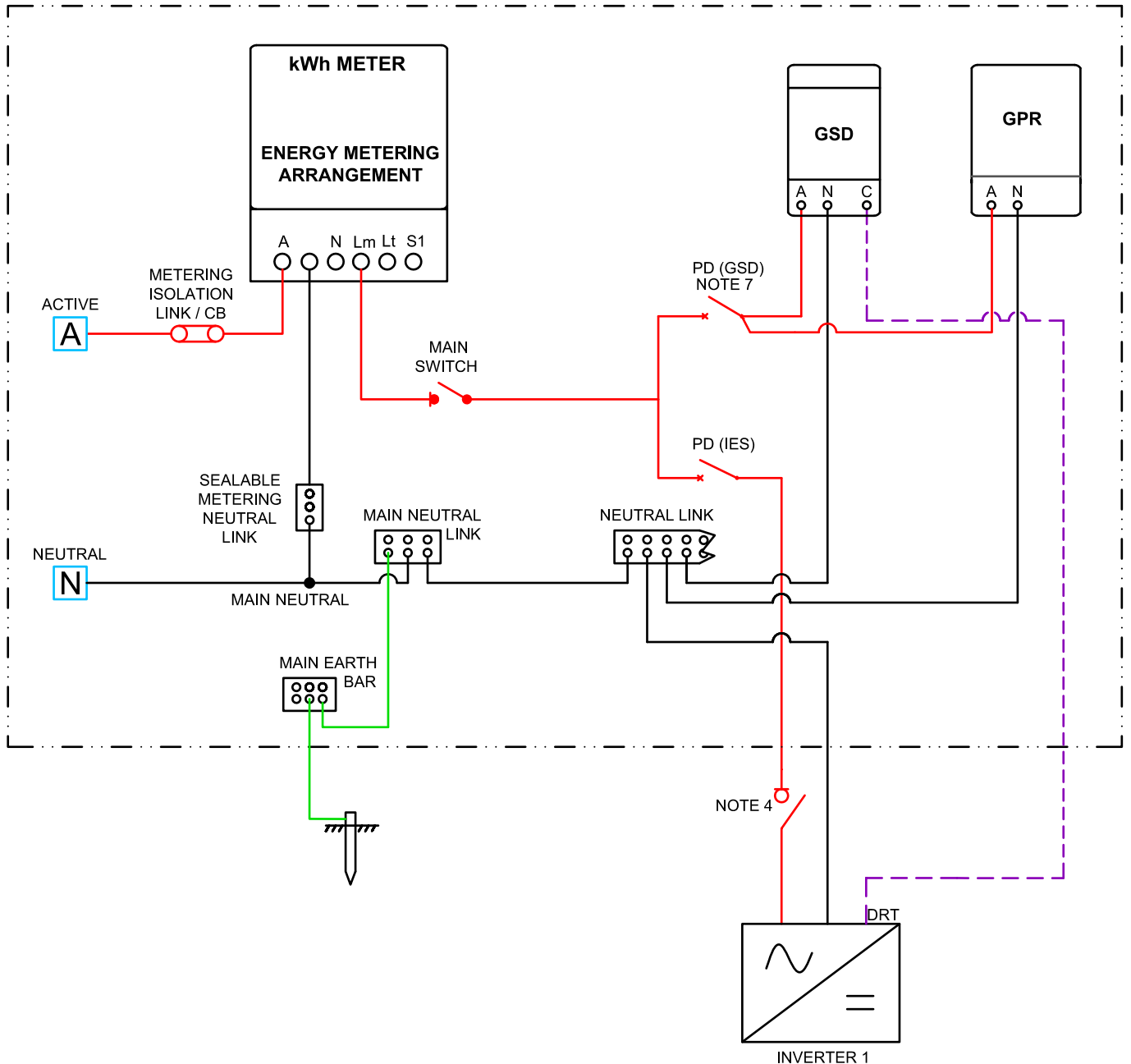
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2. THE GSD TO BE INSTALLED ON THE BACK OF THE SWITCHBOARD.
3. CONTROL CABLE MAY BE EXTENDED AS REQUIRED BY THE ELECTRICAL CONTRACTOR.
4. FOR ISOLATING SWITCH REQUIREMENTS REFER TO AS/NZS 4777.1 CLAUSE 3.4.3.
5. EARTH CONNECTIONS OTHER THAN THE MAIN EARTH CONDUCTOR AND EARTH ELECTRODE ARE NOT SHOWN.
6. LAYOUT CAN BE EXTENDED FOR ADDITIONAL INVERTERS.
7. RECOMMENDED THAT THE PD (GSD) IS LABELLED "BACKSTOP" AT THE SWITCHBOARD.

LEGEND

- DRT - DEMAND RESPONSE TERMINAL
- GSD - GENERATION SIGNALLING DEVICE
- DRSC - DEMAND RESPONSE SITE CONTROLLER
- PD - PROTECTIVE DEVICE

Revision: A	GENERATION SIGNALLING DEVICE WITH DEMAND RESPONSE SITE CONTROLLER FOR MULTIPLE INVERTERS - SMALL IES	QCD05-03
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MAIN SWITCHBOARD



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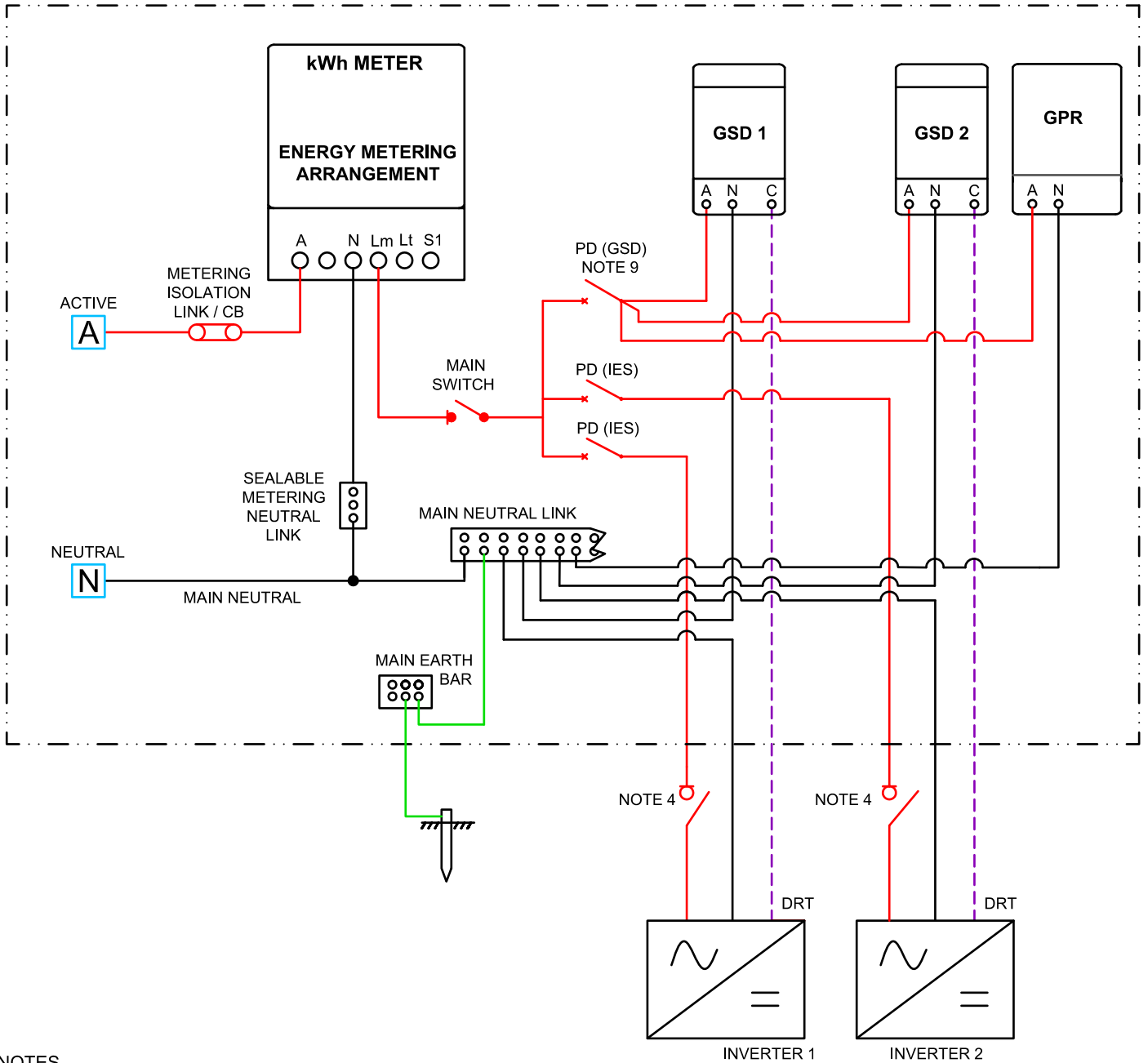
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2. THE GSD TO BE INSTALLED ON THE BACK OF THE SWITCHBOARD.
3. CONTROL CABLE MAY BE EXTENDED AS REQUIRED BY THE ELECTRICAL CONTRACTOR.
4. FOR ISOLATING SWITCH REQUIREMENTS REFER TO AS/NZS 4777.1 CLAUSE 3.4.3
5. EARTH CONNECTIONS OTHER THAN THE MAIN EARTH CONDUCTOR AND EARTH ELECTRODE ARE NOT SHOWN.
6. THE GPR SHALL BE INSTALLED IN COMPLIANCE WITH STNW1174 AND STNW3511.
7. RECOMMENDED THAT THE PD (GSD) IS LABELLED "BACKSTOP" AT THE SWITCHBOARD.
8. THE GSD SHALL BE INTEGRATED IN SUCH A WAY THAT IT IS FAIL SAFE, AND INVERTER(S) DO NOT GENERATE WHILE THE GSD IS OUT OF SERVICE.

LEGEND.

- PD - PROTECTIVE DEVICE
- GSD - GENERATION SIGNALLING DEVICE
- GPR - GRID PROTECTION RELAY
- DRT - DEMAND RESPONSE TERMINAL

Revision: A	GENERATION SIGNALLING DEVICE FOR SINGLE INVERTER - LV IES	QCD05-04
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MAIN SWITCHBOARD



NOTES

1. GSD IS PERMITTED TO BE INSTALLED IN EITHER THE MAIN SWITCHBOARD OR A DISTRIBUTION BOARD WHERE THE PD (IES) IS ALSO LOCATED.
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5. EARTH CONNECTIONS OTHER THAN THE MAIN EARTH CONDUCTOR AND EARTH ELECTRODE ARE NOT SHOWN.
6. EACH INDIVIDUAL INVERTER INSTALLED AT THE PREMISE SHALL HAVE A CORRESPONDING GSD INSTALLED IN CONFORMANCE WITH THIS CONFIGURATION.
7. THE GPR SHALL BE INSTALLED IN COMPLIANCE WITH STNW174 AND STNW3511.
8. RECOMMENDED THAT THE PD (GSD) IS LABELLED "BACKSTOP" AT THE SWITCHBOARD.
9. THE GSD SHALL BE INTEGRATED IN SUCH A WAY THAT IT IS FAIL SAFE, AND INVERTER(S) DO NOT GENERATE WHILST THE GSD IS OUT OF SERVICE.

LEGEND

- PD - PROTECTIVE DEVICE
- GSD - GENERATION SIGNALLING DEVICE
- DRT - DEMAND RESPONSE TERMINAL
- GPR - GRID PROTECTION RELAY

Revision:

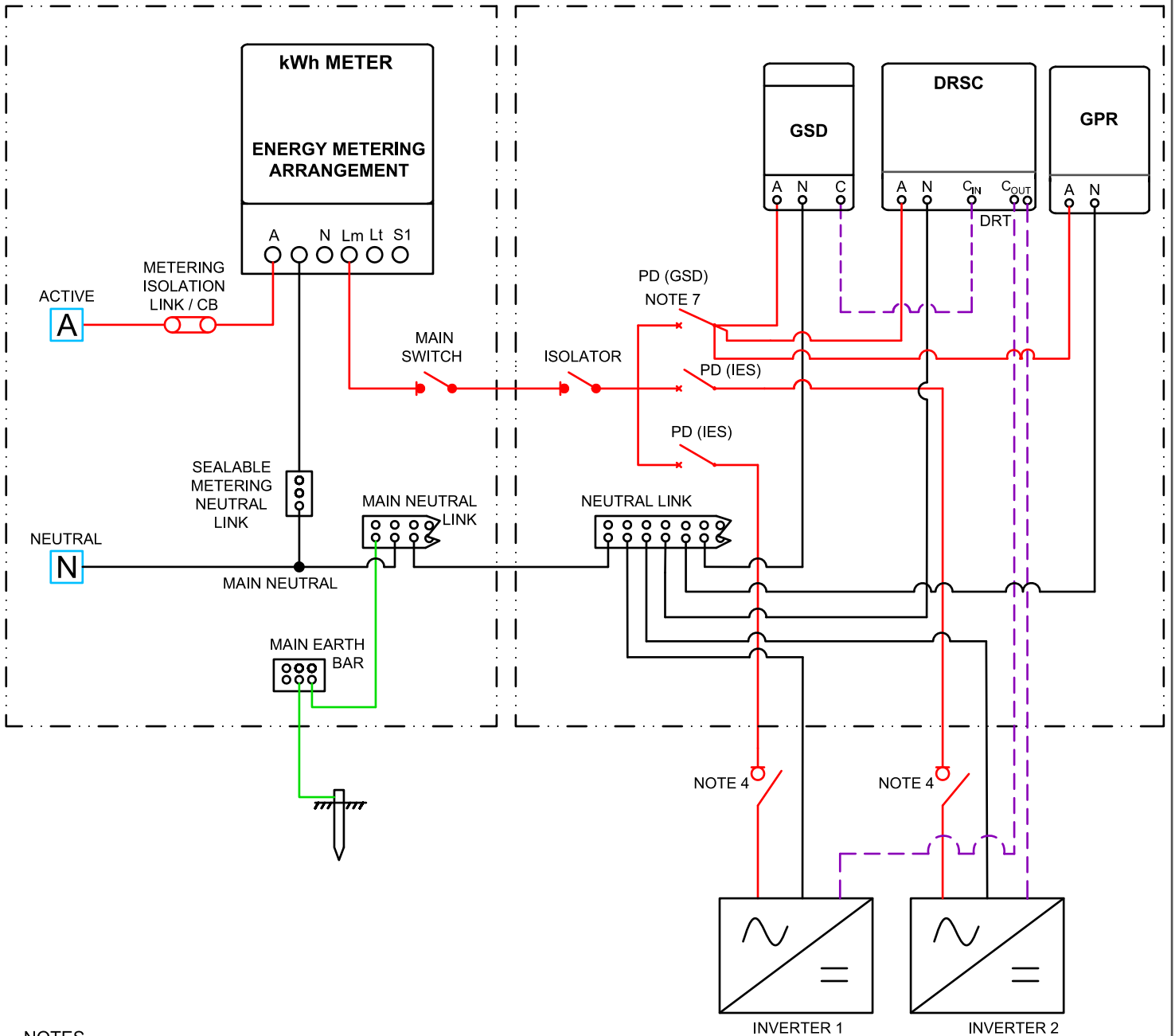
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MULTIPLE GENERATION SIGNALLING DEVICES FOR MULTIPLE INVERTERS - LV IES

QCD05-05

MAIN SWITCHBOARD

DISTRIBUTION BOARD



NOTES

1. GSD IS PERMITTED TO BE INSTALLED IN EITHER THE MAIN SWITCHBOARD OR A DISTRIBUTION BOARD WHERE THE PD (IES) IS ALSO LOCATED.
2. THE GSD TO BE INSTALLED ON THE BACK OF THE SWITCHBOARD.
3. CONTROL CABLE MAY BE EXTENDED AS REQUIRED BY THE ELECTRICAL CONTRACTOR.
4. FOR ISOLATING SWITCH REQUIREMENTS REFER TO AS/NZS 4777.1.2016 CLAUSE 3.4.3.
5. EARTH CONNECTIONS OTHER THAN THE MAIN EARTH CONDUCTOR AND EARTH ELECTRODE ARE NOT SHOWN.
6. LAYOUT CAN BE EXTENDED FOR ADDITIONAL INVERTERS.
7. RECOMMENDED THAT THE PD (GSD) IS LABELLED "BACKSTOP" AT THE SWITCHBOARD.
8. THE GPR SHALL BE INSTALLED IN COMPLIANCE WITH STNW1174 OR STNW3511.
9. THE GSD SHALL BE INTEGRATED IN SUCH A WAY THAT IT IS FAIL SAFE, AND INVERTER(S) DO NOT GENERATE WHILE THE GSD IS OUT OF SERVICE.

LEGEND

- DRT - DEMAND RESPONSE TERMINAL
- GSD - GENERATION SIGNALLING DEVICE
- DRSC - DEMAND RESPONSE SITE CONTROLLER
- PD - PROTECTIVE DEVICE
- GPR - GRID PROTECTION RELAY

Revision:

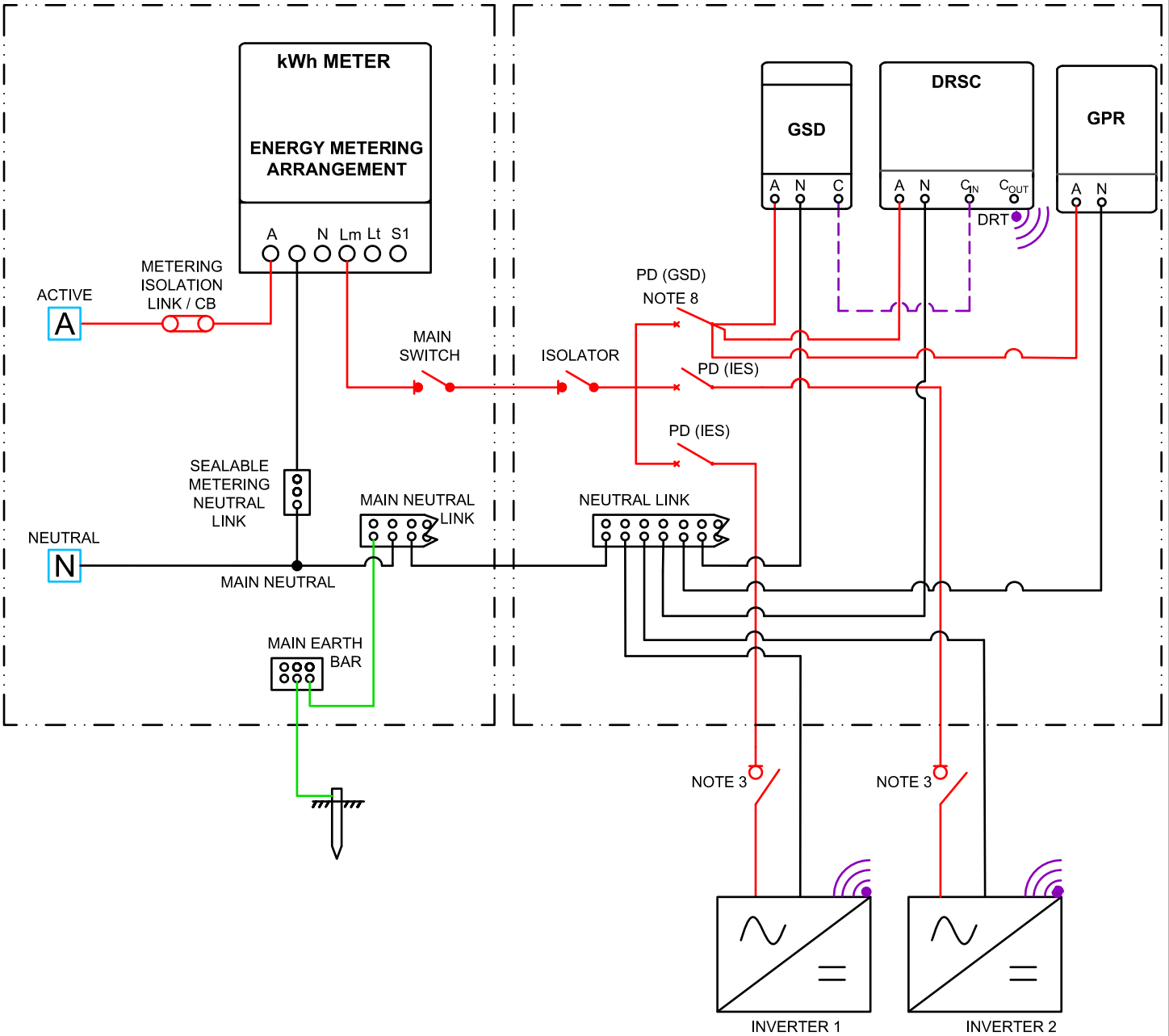
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**GENERATION SIGNALLING DEVICE WITH DEMAND RESPONSE
SITE CONTROLLER FOR MULTIPLE INVERTERS
- HARDWIRED CONNECTION TO LV IES**

QCD05-06

MAIN SWITCHBOARD

DISTRIBUTION BOARD



NOTES

1. GSD IS PERMITTED TO BE INSTALLED IN EITHER THE MAIN SWITCHBOARD OR A DISTRIBUTION BOARD WHERE THE PD (IES) IS ALSO LOCATED.
2. THE GSD TO BE INSTALLED ON THE BACK OF THE SWITCHBOARD.
3. FOR ISOLATING SWITCH REQUIREMENTS REFER TO AS/NZS 4777.1.2016 CLAUSE 3.4.3.
4. EARTH CONNECTIONS OTHER THAN THE MAIN EARTH CONDUCTOR AND EARTH ELECTRODE ARE NOT SHOWN.
5. LAYOUT CAN BE EXTENDED FOR ADDITIONAL INVERTERS.
6. RECOMMENDED THAT THE PD (GSD) IS LABELLED "BACKSTOP" AT THE SWITCHBOARD.
7. THE GPR SHALL BE INSTALLED IN COMPLIANCE WITH STNW1174 OR STNW3511.
8. THE GSD SHALL BE INTEGRATED IN SUCH A WAY THAT IT IS FAIL SAFE, AND INVERTER(S) DO NOT GENERATE WHILEST THE GSD IS OUT OF SERVICE.

LEGEND

- DRT - DEMAND RESPONSE TERMINAL
- GSD - GENERATION SIGNALLING DEVICE
- DRSC - DEMAND RESPONSE SITE CONTROLLER
- PD - PROTECTIVE DEVICE
- GPR - GRID PROTECTION RELAY

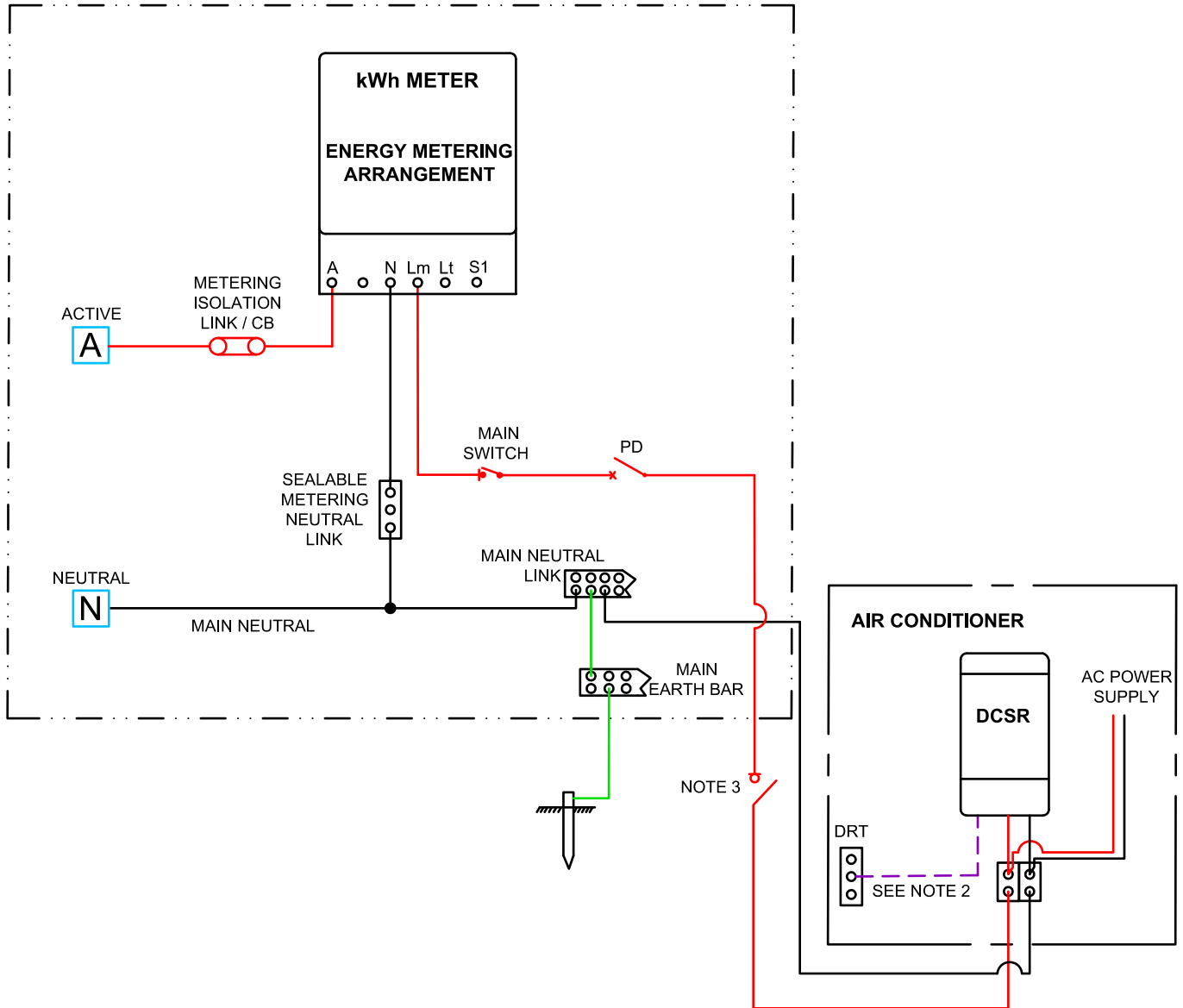
Revision:

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**GENERATION SIGNALLING DEVICE WITH DEMAND RESPONSE
SITE CONTROLLER FOR MULTIPLE INVERTERS
- WIRELESS CONNECTION TO LV IES**

QCD05-07

MAIN SWITCHBOARD



NOTES

1. GENERAL CONNECTION DIAGRAM APPLICABLE FOR RESIDENTIAL INSTALLATION ONLY.
2. CONTROL CABLE MAY BE EXTENDED AS REQUIRED BY THE ELECTRICAL CONTRACTOR.
3. FOR ISOLATING SWITCH REQUIREMENTS REFER TO AS/NZS 3000.
4. EARTH CONNECTIONS OTHER THAN THE MAIN EARTH CONDUCTOR AND EARTH ELECTRODE ARE NOT SHOWN.

LEGEND.

PD - PROTECTIVE DEVICE
 DCRS - DEMAND CONTROL SIGNAL RECEIVER
 DRT - DEMAND RESPONSE TERMINAL

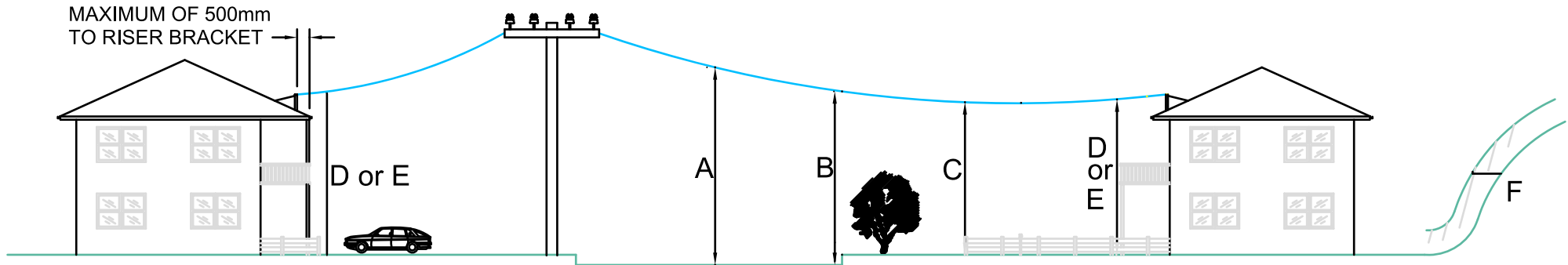
Revision:

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PEAK SMART AIR CONDITIONER CONNECTION

QCD05-08

OVERHEAD SERVICE CLEARANCES



SERVICE CLEARANCE TABLE

CATEGORY		CODE	LOCATION	DIRECTION	MINIMUM CLEARANCE
NEUTRAL SCREENED AND INSULATED CABLES	ROADS	A	At centre-line of the carriageway	VERTICALLY	5.5m
		B	At kerb line (bottom of kerb)	VERTICALLY	4.9m
		C	At fence alignment	VERTICALLY	3.7m
	OTHER	D	Private driveways and areas including elevated areas used by vehicles	VERTICALLY	4.5m
		E	Areas not normally used by vehicles	VERTICALLY	2.7m
		F	Road cuttings, embankments and other similar places.	HORIZONTALLY	1.5m

NOTES :

1. Minimum clearance in the table is for Low Voltage Insulated conductor (ABC). For other voltages or conductor clearances please refer to the Electricity Entity Requirements - Working Near Overhead and Underground Electric Lines document.
2. Stated clearances apply to a *service line* not attached to the part of the building described.
3. Where there is no formed footpath, the kerb line means:
 - the kerb line of a proposed footpath; or
 - where no footpath is proposed, the edge of the existing carriageway or any proposed widening thereof.
 - where there is a formed footpath with kerb and channel the kerb line means to the bottom of the channel.
4. The clearances above and adjacent to sugar cane, both green and burnt cane areas, are outlined in the Overhead Construction Manual.

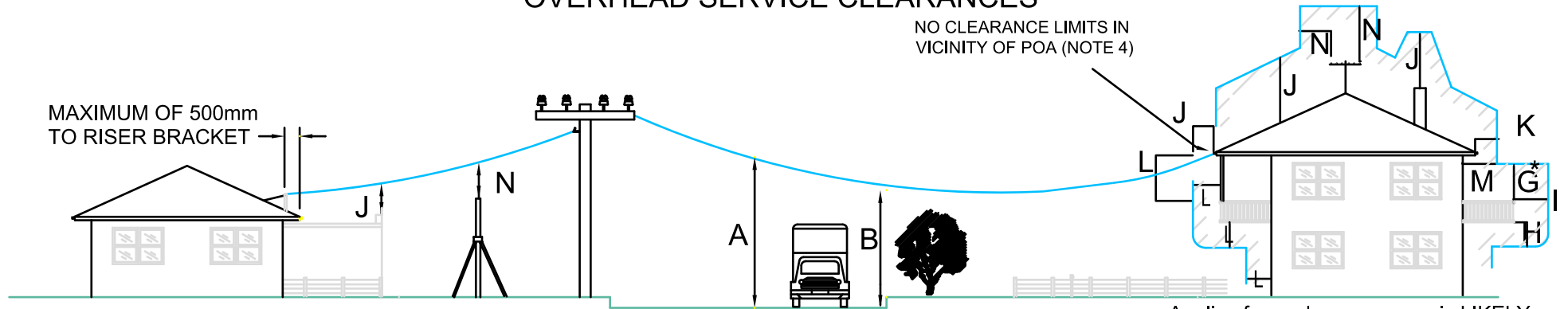
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**OVERHEAD SERVICE CLEARANCES
FROM GROUND**

QCD06-01

OVERHEAD SERVICE CLEARANCES



* Applies from where a person is LIKELY to stand as determined by site risk assessment.

SERVICE CLEARANCE TABLE

CATEGORY	CODE	LOCATION	DIRECTION	MINIMUM CLEARANCE
NEUTRAL SCREENED AND INSULATED CABLES	G H I	<u>Unroofed terraces, balconies, sun-decks, paved areas, and similar areas that are subject to pedestrian traffic only, that have a hand rail or wall surrounding the area and on which a person is likely to stand (Note 2) must be-</u>	VERTICALLY ABOVE VERTICALLY BELOW HORIZONTALLY (Note 1)	2.4m 1.2m 0.9m
	J K	<u>Roofs or similar structures not used for traffic or resort but on which a person is likely to stand, and for parapets surrounding roofs or similar structures not used for traffic or resort but on which a person is likely to stand (Note 2) must be-</u>	VERTICALLY HORIZONTALLY (Note 1)	0.5m 0.2m
	L	<u>Covered places of traffic or resort including for example windows which are capable of being opened, roofed open verandahs and covered balconies must be (Note 5)</u>	IN ANY DIRECTION	1.2m
	M	<u>Blank walls, windows which cannot be opened (Note 3) must be-</u>	HORIZONTALLY	0.2m
	N	<u>Other structures not normally accessible to persons (Note 3) must be-</u>	IN ANY DIRECTION	1.2m

NOTES :

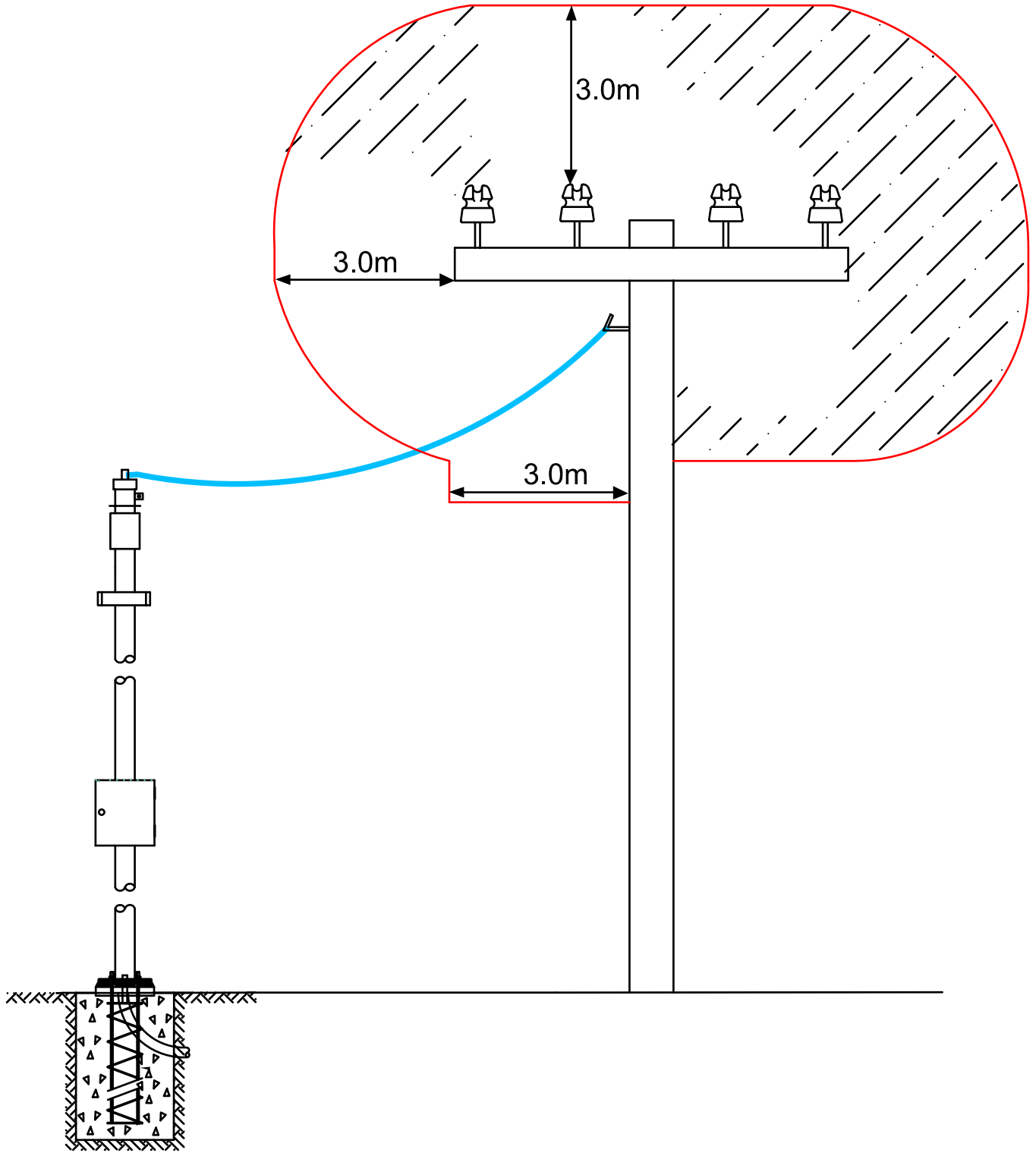
- Minimum clearance in the table is for Low Voltage Insulated conductor (ABC). For other voltages or conductor clearances please refer to the Electricity Entity Requirements - Working Near Overhead and Underground Electric Lines document.
- Either the vertical clearance or the horizontal clearance stated must be maintained. Also in, the zone outside the vertical alignment of the building or structure, either the horizontal clearance from the vertical alignment, or vertical clearance above the horizontal level on which a person is likely to stand must be maintained.
- For the purpose of the service clearance determination a person is considered **LIKELY TO STAND ON**:
 - A part of a structure that is strong enough to support a person's weight; and
 - A surrounding wall or handrail where the wall or handrail is at least 200mm wide.
- Stated clearances apply to a *service line* not attached to the part of the building described.
- The clearance stated does not apply to the part of the low voltage overhead *service line* not under tension. Drip loops are excluded and consideration should be given to drip loop positioning. (Note: Point of supply is to be not more than 600mm from the point of attachment).
- Where a window still is determined as not being a place a person is likely to stand (eg. hopper windows, security screened windows and sliding windows) a clearance of 2.4m vertically from floor or 1.2m horizontally shall apply.

Revision:

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OVERHEAD SERVICE CLEARANCES FROM STRUCTURES

QCD06-02



NOTES

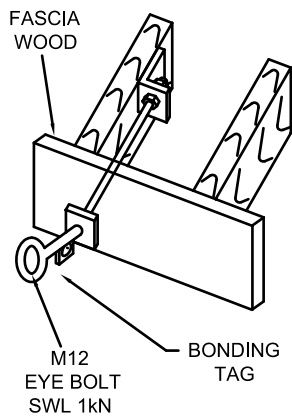
1. An exclusion zone is a safety envelope around an overhead *service line*. No part of a worker, operating plant or vehicle should enter an exclusion zone while the *DNSP overhead service line* is energised.
2. For additional detail on clearance zones refer to the document Electricity Entity Requirement: Working Near Overhead and Underground Electric Lines available on the websites.

Revision:

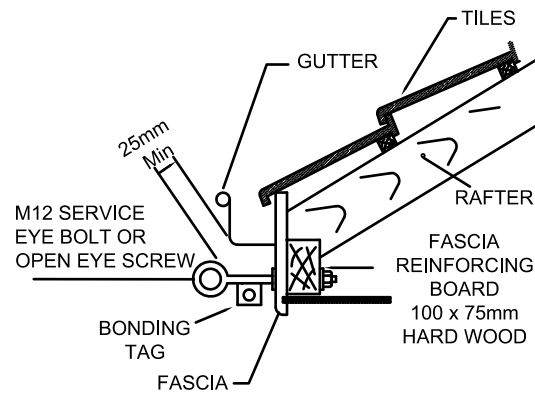
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OVERHEAD EXCLUSION ZONE

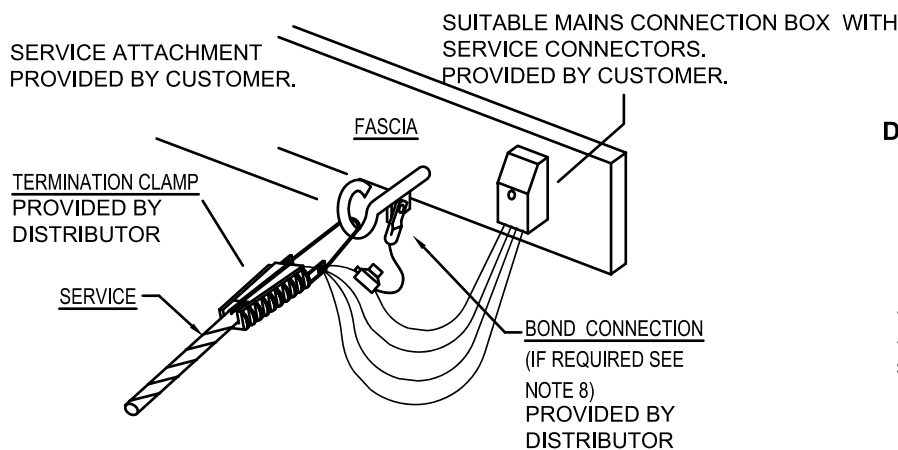
QCD06-03



EYE BOLT - TYPE 1

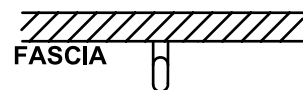


EYE BOLT - TYPE 2



THREE PHASE SERVICE ARRANGEMENT SHOWN

DIRECTION OF SERVICE - EYEBOLT



EYEBOLT

Service permitted in any required position. Service must not come in contact with any structure and statutory clearances apply.

NOTES

1. *Proponent* to supply and install suitable *mains connection box* or non-metallic UV stabilised weatherproof enclosure. Refer to Clause 6.7.4 for minimum size requirements.
2. To prevent corrosion copper conductors shall not be directly connected to galvanised surfaces.
3. Manufacturers and Registered Professional Engineer Qld (RPEQ) installation instructions are to be followed in all cases - the detail in this drawing is **INFORMATIVE ONLY**.
4. Eyebolts are to be Hot Dipped Galvanised Steel and marked with a suitable 'SWL rating'.
5. 1kN raiser brackets must not be used to terminate 50/95mm² LVABC service. A 3.5kN raiser bracket or an eye bolt/open eye screw installed on a suitable portion of the building or a property pole is to be used.
6. If the service bracket/eye bolt is within 25mm of any structural metal work e.g. guttering or metal fascia of the building, the *distributor* will bond between the service attachment and the neutral conductor of the service.
7. The *Proponent* is to provide suitable means to connect bonding conductor. ie. Earth tag with 12mm hole.
8. The bonding of exposed metalwork (eye bolt) must use a conductor size or current rating equivalent to the service line neutral.

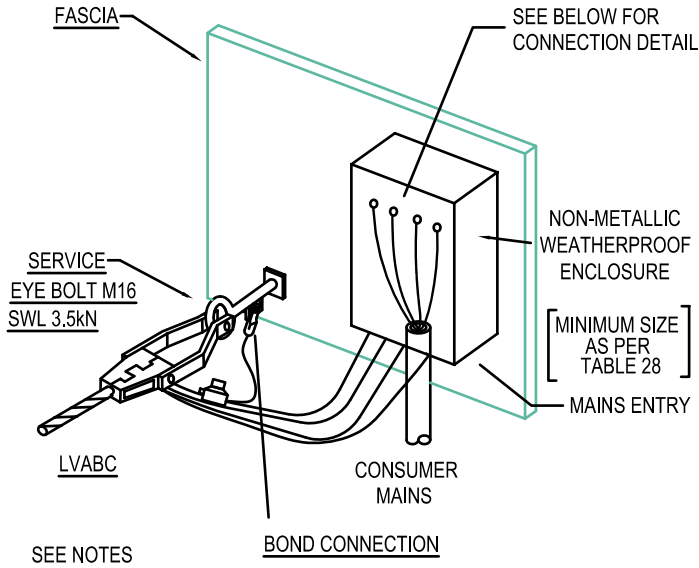
Revision:

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**OVERHEAD 25/35mm² SERVICE ATTACHMENT TO FACIA (1.0kN)
CONNECTION AND BRIDGING DETAILS**

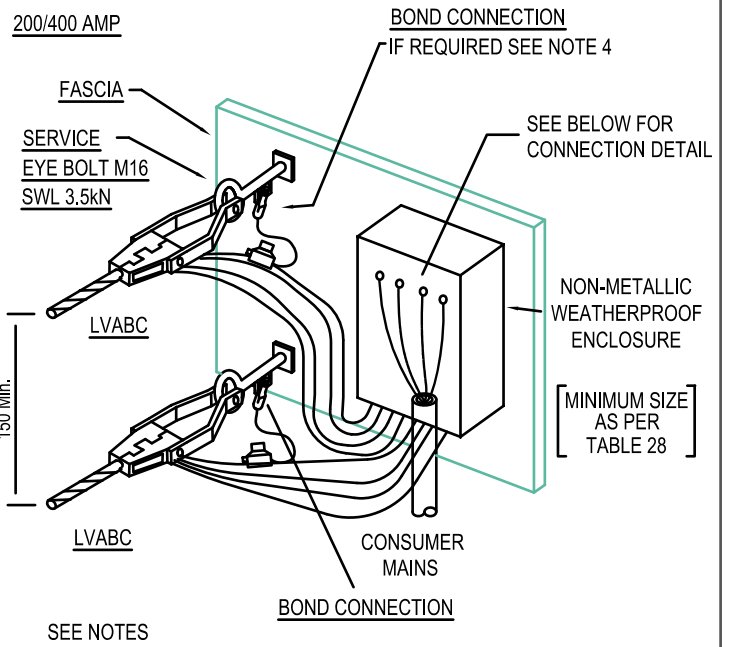
QCD06-04

UP TO 200 AMP

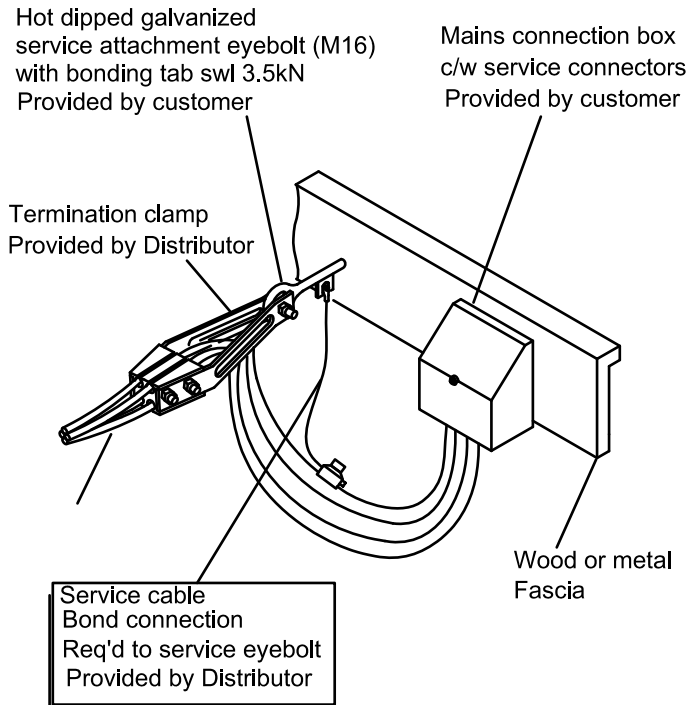


SINGLE SERVICE LINE CONNECTION DETAIL

200/400 AMP



PARALLEL SERVICE LINES CONNECTION DETAIL



**50/95mm LV ABC SERVICE CONNECTION
WOOD OR METAL FASCIA - 3.5kN SWL**

NOTES

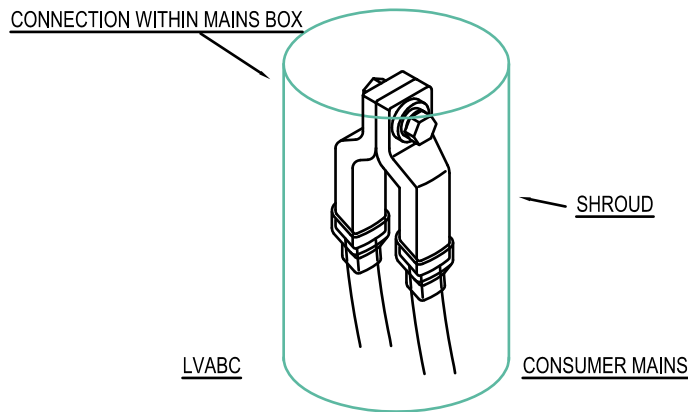
1. Proponent to supply and install suitable mains connection box or non-metallic UV stabilised weatherproof enclosure and suitable lugs. Refer to Clause 6.7.4 for minimum size requirements.
2. Proponent to supply and install lugs to suit current rating of consumer mains and service line. Proponent shall accommodate a 12mm S/S bolt and lug dies where required.
3. Consumer mains to enter through bottom of enclosure.
4. The bonding of exposed metalwork (eyebolt) must use a conductor size or current rating equivalent to the service line neutral.
5. IPC's must be used to connect all earthing conductors to service line neutral.
6. Proponent's fascia strength should be strengthened as required, and is the Proponent's responsibility to ensure is structurally adequate.

Revision:

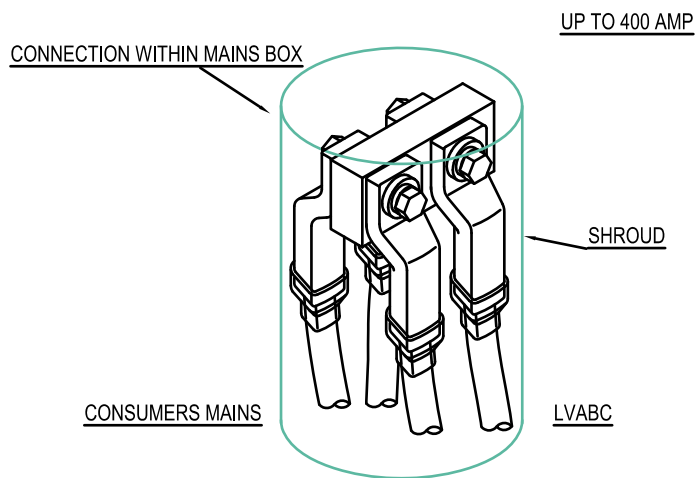
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**OVERHEAD 50/95mm² SERVICE ATTACHMENT TO FACIA (3.5kN)
CONNECTION AND BRIDGING DETAIL**

QCD06-05



LVABC CONNECTION TO SINGLE CONSUMER MAINS



LVABC CONNECTION TO PARALLEL CONSUMER MAINS

NOTES

1. Proponent to supply and install lugs to suit current rating of consumer mains and service line.
2. Proponent shall accommodate a 12mm stainless steel bolt and lug dies where required.
3. Alternative connections method use appropriate copper bus bar.
4. Cover with insulating shroud and secure with zip tie.

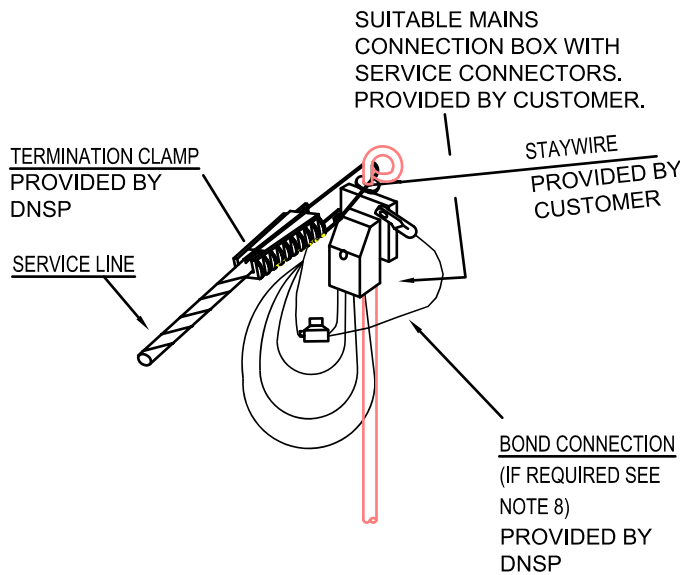
Revision:

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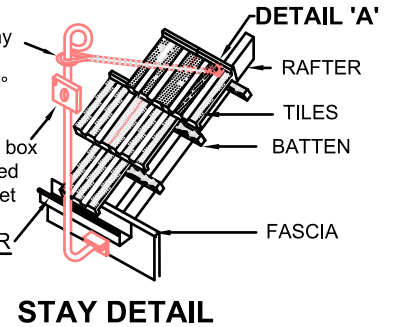
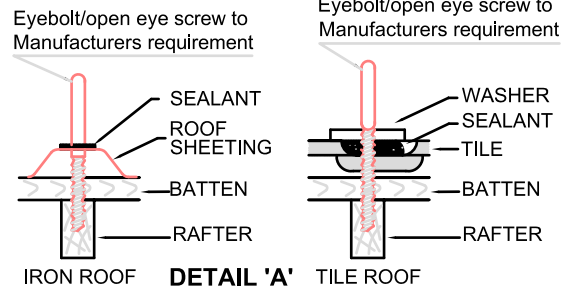
**OVERHEAD 50/95 mm² SERVICE ATTACHMENT MAINS BOX
CONNECTION DETAILS**

QCD06-06

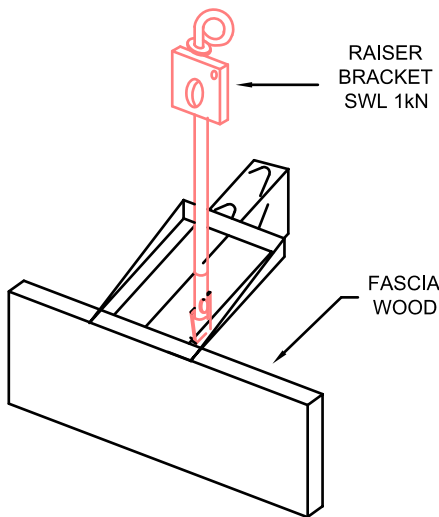
THREE PHASE SERVICE ARRANGEMENT SHOWN



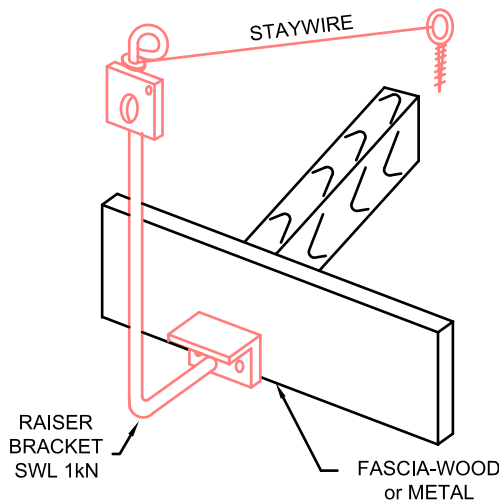
GALVANISED STEEL RAISER BRACKET



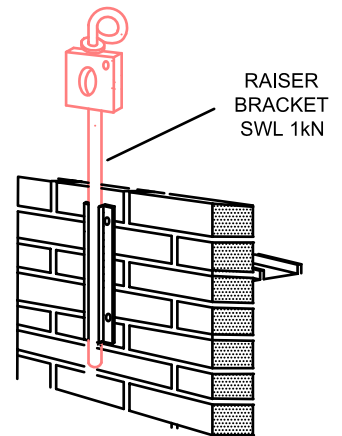
STAY DETAIL



THROUGH (RAFTER) ROOF TYPE

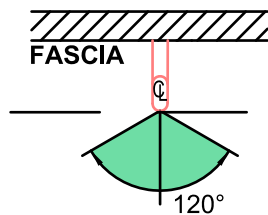


FASCIA TYPE



PARAPET TYPE

DIRECTION OF SERVICE - RAISER BRACKET/OPEN EYE SCREW



NOTES

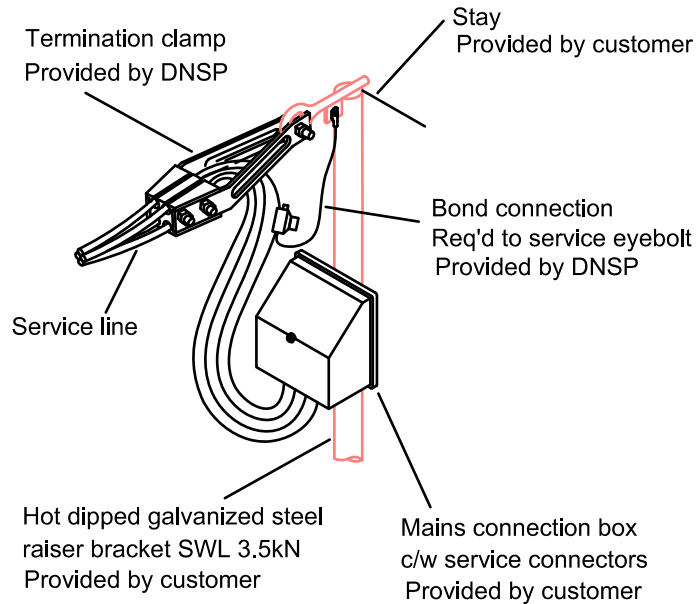
1. Service Line will not be connected where the bracket is installed incorrectly ie.service direction altered without permission/agreement by manufacturer.
2. Installation instructions are to be followed in all cases - the detail in this drawing is INFORMATIVE ONLY.
3. Refer to clause 6.7.5 for further connection requirements for raiser brackets.
4. Raiser brackets are to be Hot Dipped Galvanised Steel and marked with a suitable 'SWL rating'.
5. 1kN raiser brackets must not be used to terminate 50/95mm² LVABC service. A 3.5kN raiser bracket or an eyebolt/open eye screw installed on a suitable portion of the building or a property pole is to be used.
6. If the service bracket/eyebolt is within 25mm of any structural metal work e.g. guttering or metal fascia of the building, the DNSP will bond between the service attachment and the neutral conductor of the service.
7. The Customer is to provide suitable means to connect bonding conductor. ie. Earth tag with 12mm hole.
8. The bonding of exposed metalwork (eyebolt) must use a conductor size or current rating equivalent to the service line neutral.

Revision:

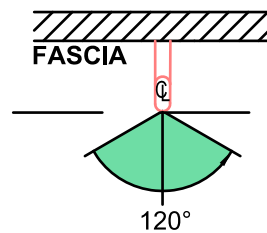
A

OVERHEAD 25/35mm² SERVICE ATTACHMENT TO RAISER BRACKET (1.0kN) - CONNECTION AND BRIDGING DETAILS

QC06-07



DIRECTION OF SERVICE - RAISER BRACKET



NOTES

1. *Proponent* to supply and install *suitable mains connection box* or non-metallic UV stabilised weatherproof enclosure and suitable lugs. Refer to Clause 6.7.4 for minimum size requirements.
2. *Proponent* to supply and install lugs to suit current rating of *consumer mains* and *service line*. *Proponent* shall accommodate a 12mm S/S bolt and lug dies where required.
3. *Consumer mains* to enter through bottom of enclosure.
4. *Service Line* will not be connected where the bracket is installed incorrectly ie. service direction altered without permission/agreement by manufacturer.
5. Installation instructions are to be followed in all cases - the detail in this drawing is **INFORMATIVE ONLY**.
6. Refer to clause 6.7.5 for further connection requirements for raiser brackets.
7. Raiser brackets are to be Hot Dipped Galvanised Steel and marked with a suitable 'SWL rating'.
8. The bonding of exposed metalwork (eyebolt) must use a conductor size or current rating equivalent to the service line neutral.
9. IPC's must be used to connect all earthing conductors to *service line* neutral.

Revision:

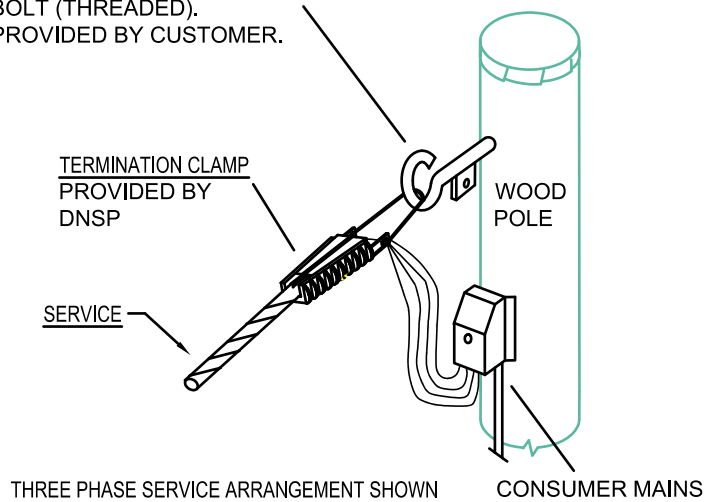
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OVERHEAD 50/95mm² SERVICE ATTACHMENT TO RAISER BRACKET (3.5kN) - CONNECTION AND BRIDGING DETAILS

QCD06-08

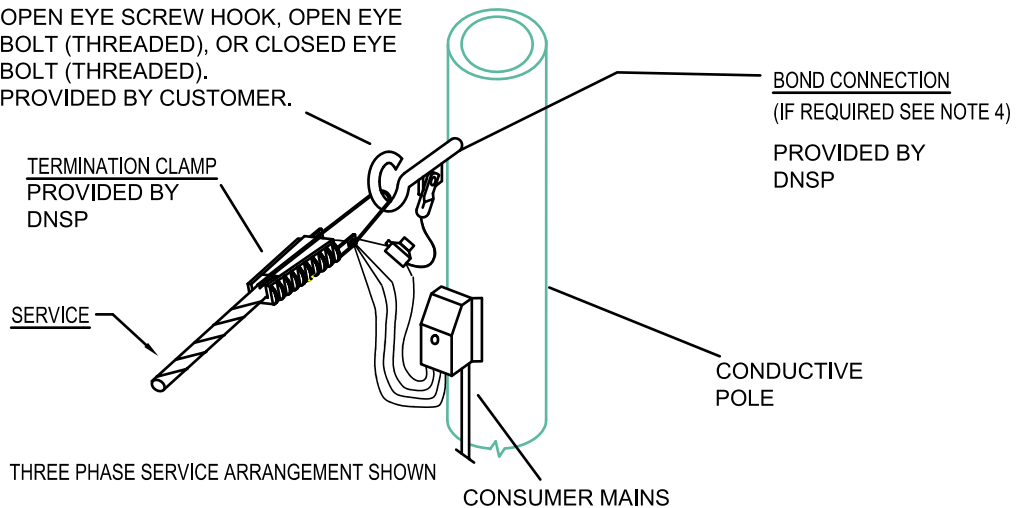
25/35 mm² SERVICE LINE CONNECTION WOOD PROPERTY POLE

M12 SERVICE ATTACHMENT.
OPEN EYE SCREW HOOK, OPEN EYE
BOLT (THREADED), OR CLOSED EYE
BOLT (THREADED).
PROVIDED BY CUSTOMER.



25/35 mm² SERVICE LINE CONNECTION CONDUCTIVE PROPERTY POLE

M12 SERVICE ATTACHMENT.
OPEN EYE SCREW HOOK, OPEN EYE
BOLT (THREADED), OR CLOSED EYE
BOLT (THREADED).
PROVIDED BY CUSTOMER.



NOTES

1. *Proponent* to supply and install *suitable mains connection box* or non-metallic UV stabilised weatherproof enclosure and *suitable lugs*. Refer to Clause 6.7.4 for minimum size requirements.
2. *Proponent* to supply and install lugs to suit current rating of *consumer mains* and *service line*. *Proponent* shall accommodate a 12mm S/S bolt and lug dies where required.
3. *Consumer mains* to enter through bottom of enclosure.
4. The bonding of exposed metalwork (eye bolt) must use a conductor size or current rating equivalent to the *service line* neutral.
5. IPC's must be used to connect all earthing conductors to *service line* neutral.

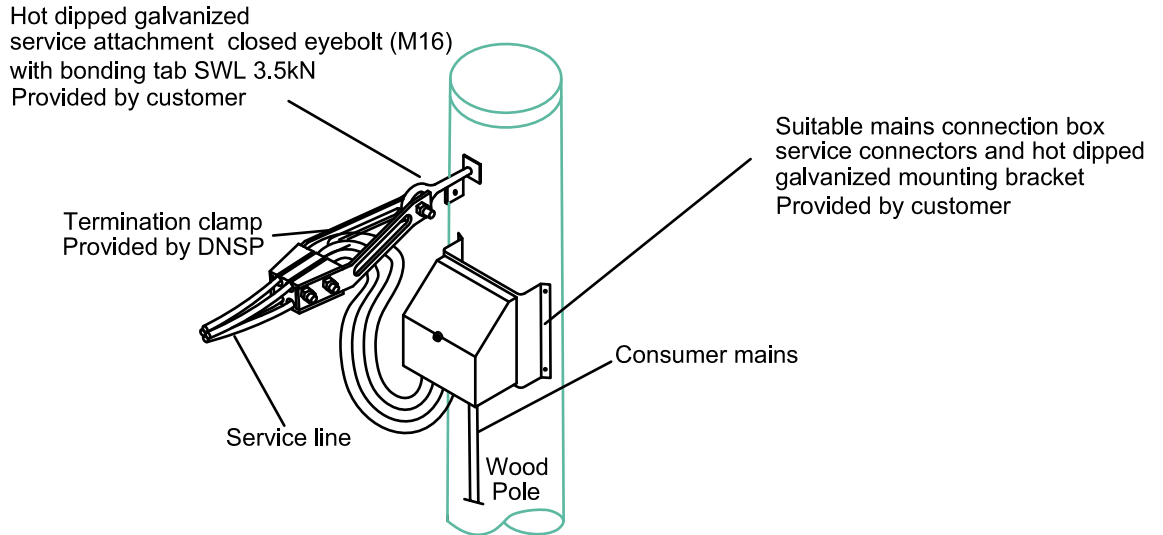
Revision:

A

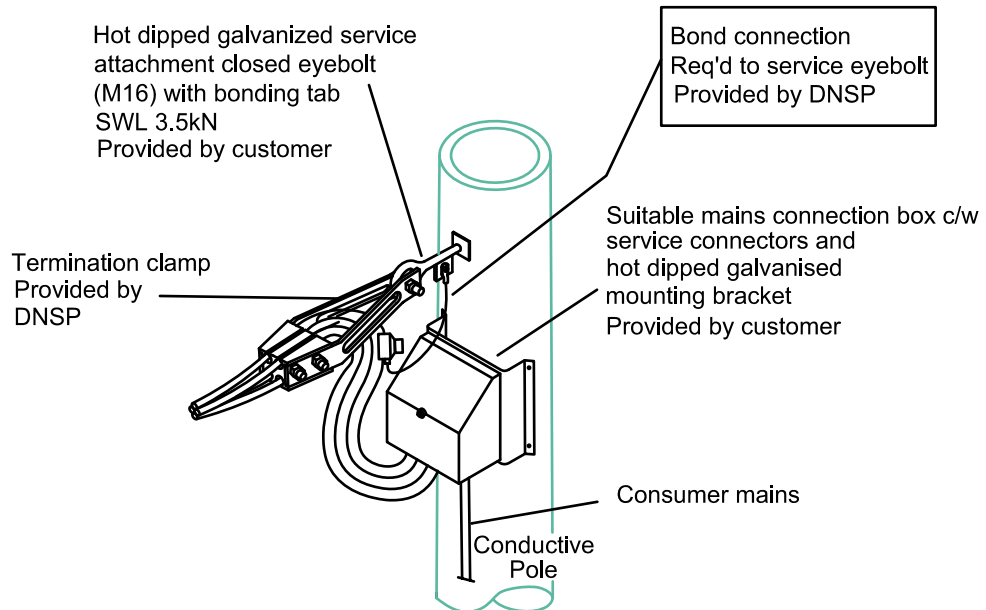
**OVERHEAD 25/35mm² SERVICE ATTACHMENT TO PROPERTY
POLE (1.0kN) - CONNECTION AND BRIDGING DETAILS**

QCD06-09

50/95mm² SERVICE LINE CONNECTION
WOOD PROPERTY POLE



50/95mm² SERVICE LINE CONNECTION
CONDUCTIVE PROPERTY POLE



NOTES

1. *Proponent* to supply and install *suitable mains connection box* or non-metallic UV stabilised weatherproof enclosure and suitable lugs. Refer to Clause 6.7.4 for minimum size requirements.
2. *Proponent* to supply and install lugs to suit current rating of *consumer mains* and *service line*. *Proponent* shall accommodate a 12mm S/S bolt and lug dies where required.
3. *Consumer mains* to enter through bottom of enclosure.
4. The bonding of exposed metalwork (eyebolt) must use a conductor size or current rating equivalent to the service line neutral.
5. IPC's must be used to connect all earthing conductors to *service line* neutral.

Revision:

A

OVERHEAD 50/95mm² SERVICE ATTACHMENT TO PROPERTY POLE (3.5kN) - CONNECTION AND BRIDGING DETAILS

QCD06-10

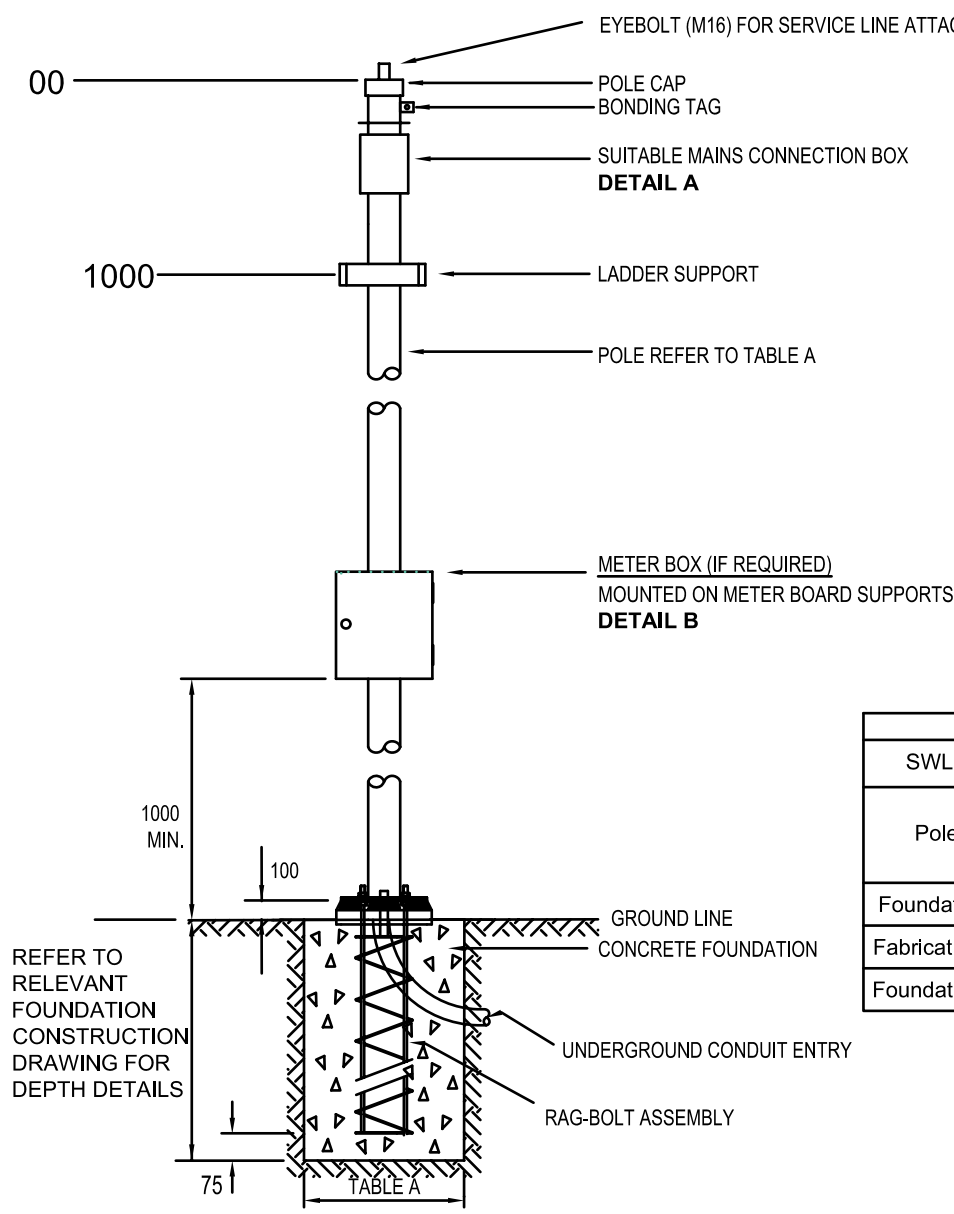
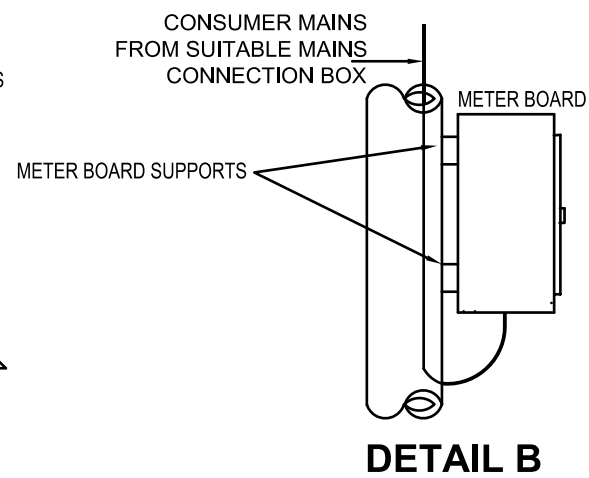
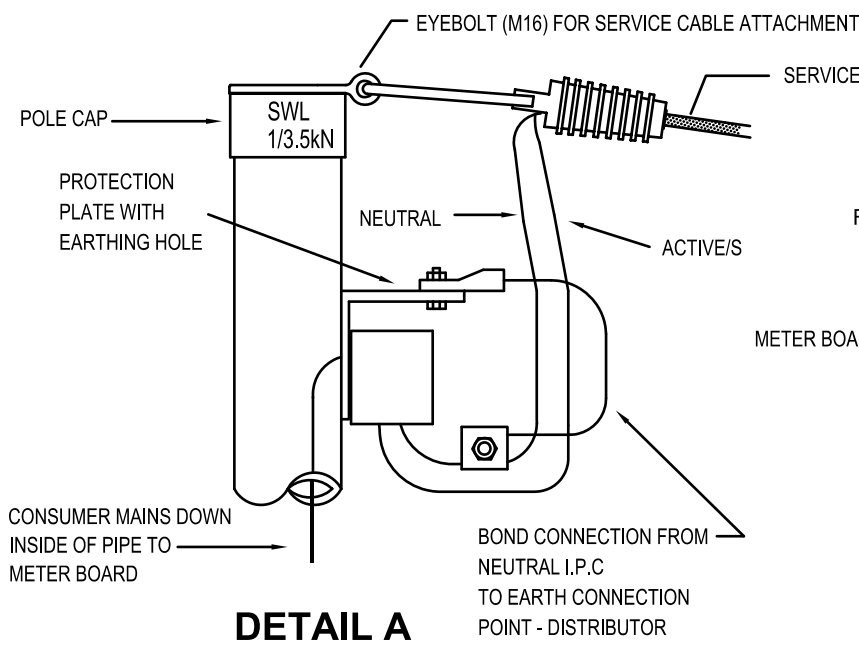
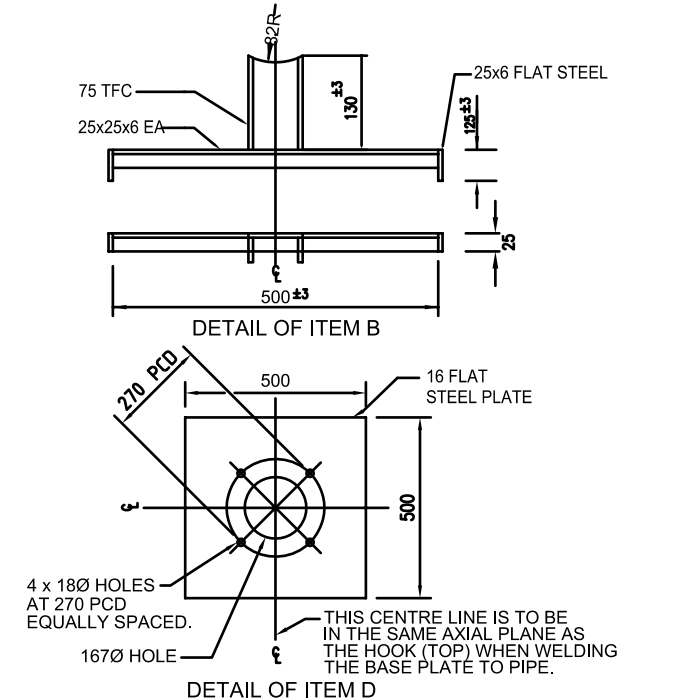
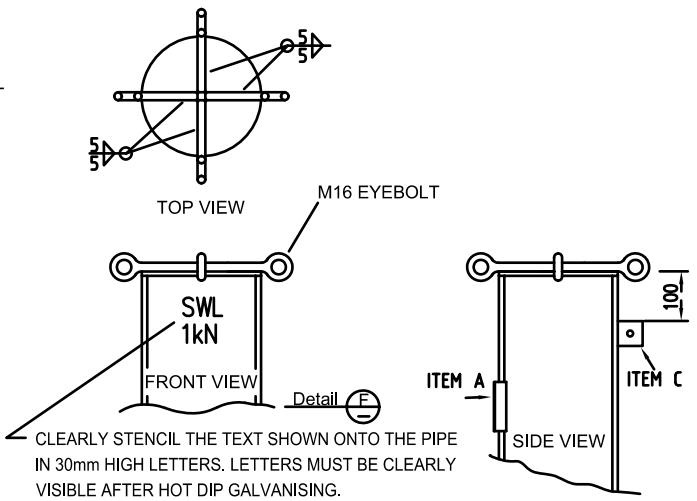
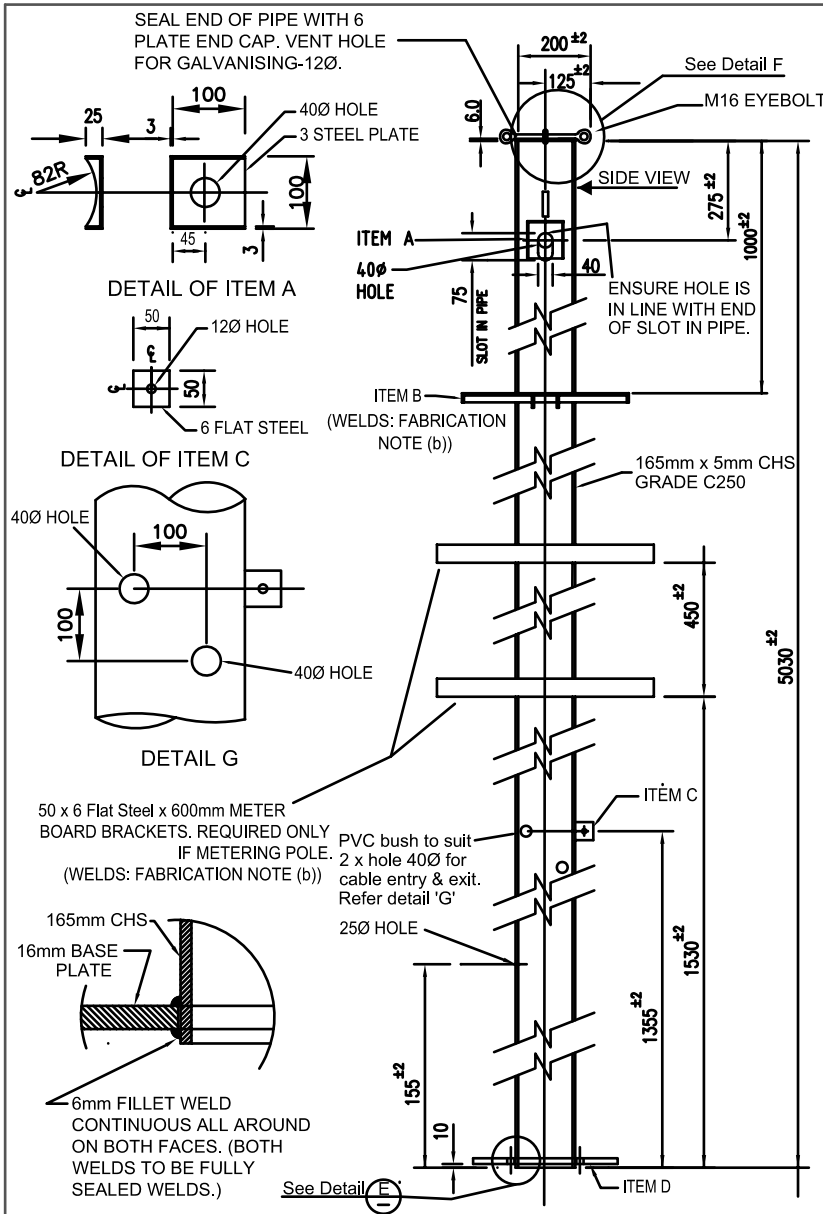


TABLE A		
SWL Stamp	1.00kn	3.50kn
Pole Type	150NB Galvanised Pipe	168.3*6.4 CHS Galvanised
Foundation Width	450mm	550mm
Fabrication Details	QDC06-11	QDC06-12
Foundation Details	QDC06-13	QDC06-14



Revision: A	OVERHEAD SERVICE ATTACHMENT TO STEELPROPERTY POLE (1.0 kN SWL AND 3.5kN SWL OPTIONS) GENERAL ARRANGEMENT	QCD06-11
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MANUFACTURE: IN ACCORDANCE WITH DRAWING UNLESS OTHERWISE SPECIFIED.

RATING: THIS STRUCTURE HAS BEEN DESIGNED BASED ON THE FOLLOWING LOADS:
APPLIED TIP LOAD = 1.0kN
WIND LOAD (EQUIVALENT TIP LOAD) = 2.0kN

TOLERANCE: < 100mm LENGTH: ± 1.0mm
> 100mm LENGTH: ± 5.0mm
HOLE DIAS: ± 0.25mm
HOLE CTRS: ± 0.5mm
UNLESS SHOWN OTHERWISE ON DRAWING.

MATERIAL:

- MILD STEEL PLATES SHALL BE GRADE 300 COMPLYING WITH AS/NZS 3678
- CIRCULAR, SQUARE & RECTANGULAR HOLLOW SECTIONS SHALL BE GRADE C250, C350 OR C450 AS NOTED, COMPLYING WITH AS/NZS 1163.
- MILD STEEL ROLLED SECTIONS SHALL BE GRADE 300 COMPLYING WITH AS/NZS 3679.1

FABRICATION:

- HOLES TO BE DRILLED OR PUNCHED.
- ALL WELDS TO BE 5mm CONTINUOUS FILLET WELDS TO AS/NZS 1554.1 (UNLESS NOTED OTHERWISE CATEGORY GP.)
- REMOVE ALL SHARP EDGES AND BURRS.

PROTECTIVE COAT: HOT DIP GALVANISED IN ACCORDANCE WITH AS/NZS 4680. (AFTER FABRICATION)

MARKING: SWL. 1kN.

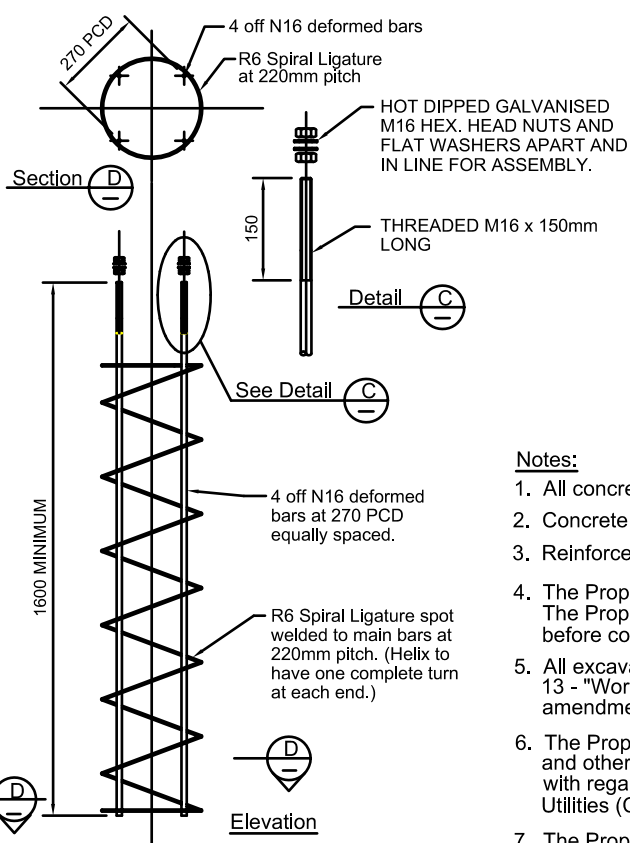
STOCK CODE No: N/A

QESI REF: N/A

NOTE: ALL DIMENSIONS SHOWN ARE IN MILLIMETERS

FABRICATION, CONSTRUCTION ON SITE AND ALL ELECTRICAL SERVICES / INSTALLATIONS ESTABLISHED ON THE POLE ARE TO COMPLY STRICTLY WITH AS/NZS 3000 INCLUDING ALL THE CURRENT AMENDMENTS THERE IN.

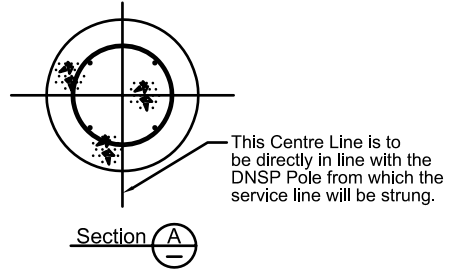
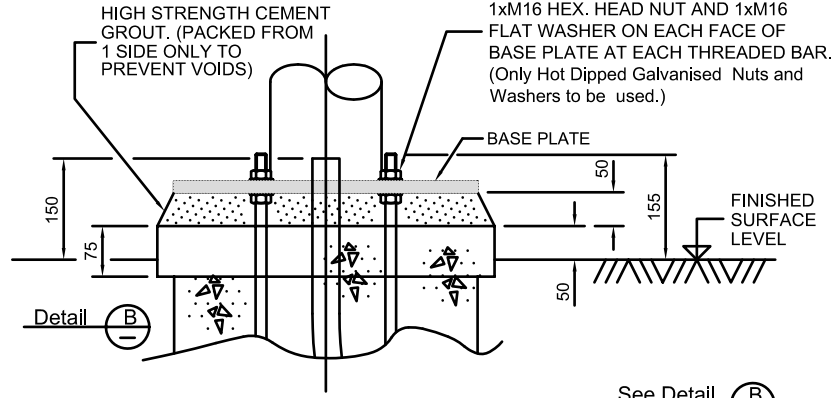
Revision: A	STEEL PROPERTY POLE (1.0 kN SWL) - FABRICATION DETAILS	QCD06-12
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MATERIAL:
 N16 Deformed Bar Grade D500N conforming with AS/NZS 4671
 R6 Structural Grade Plain Round Bar to AS. 1302 Grade 230 R.
 M16 Hex. Head Nut Galvanised
 M16 Washer Flat Galvanised

FABRICATION:
 All welding in accordance with AS/NZS 1554.1
 All resulting thread forms shall have a tolerance class of 6H/8g (in accordance with AS/NZS 1275)

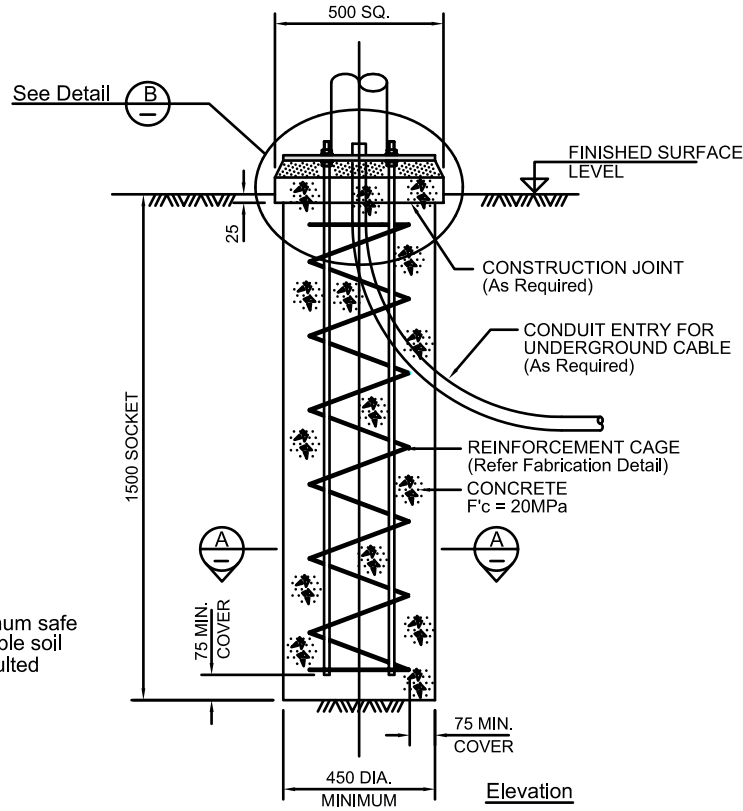
PROTECTIVE COAT:
 Hot dip galvanised in accordance with AS/NZS 4680 after fabrication.



Notes:

1. All concrete work shall comply with AS/NZS 3600.
2. Concrete Foundation:- F'c=20MPa., 80mm Slump, 20mm Max. AGG.
3. Reinforcement :- Refer to fabrication details on this sheet.
4. The Proponent shall be responsible for the correct setting out of works. The Proponent shall establish the actual position of all services on site before commencing work on the site.
5. All excavation work and excavation protection shall comply with regulation 13 - "Workplace Health and Safety Regulations" - 2011 including latest amendments.
6. The Proponent shall comply with acts of parliament, statutory, municipal and other regulations, or bylaws in any way affecting the working particular with regard to: (A) Workplace Health and Safety Act (B) Protection of Public Utilities (C) Traffic Hazards and Public Safety.
7. The Proponent shall be responsible for any damage to public utility service installations such as water, gas and sewer pipes, electrical, traffic signal or telephone conduits and shall bear the costs of reinstating any service damaged during construction of the works.
8. This foundation has been designed based on Natural Ground having a minimum safe bearing capacity of 100kPa. Should the owner/contractor encounter unsuitable soil conditions at the site a Registered Professional Civil Engineer must be consulted prior to the construction of the foundation.

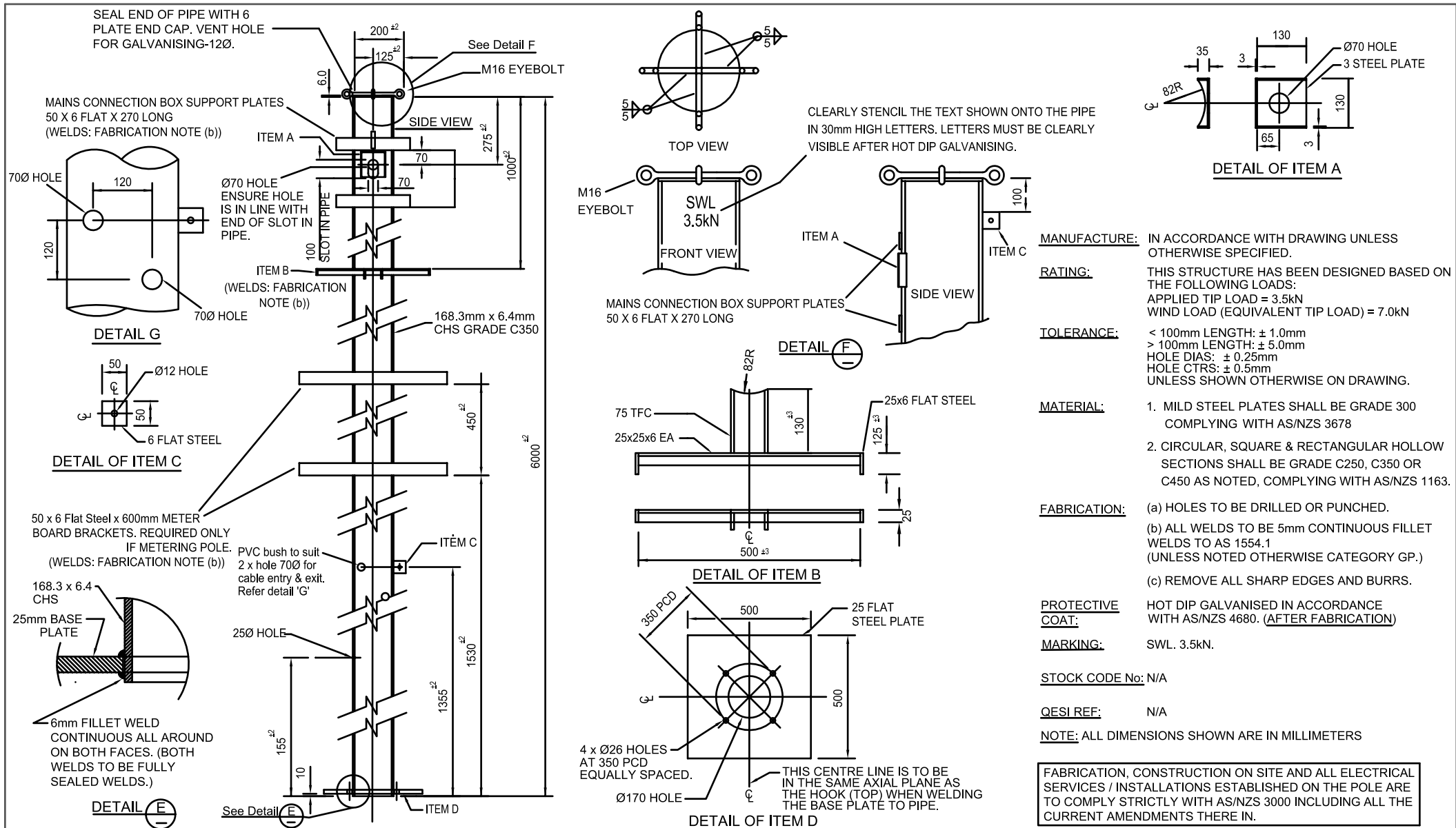
FABRICATION, CONSTRUCTION ON SITE AND ALL ELECTRICAL SERVICES / INSTALLATIONS ESTABLISHED ON THE POLE ARE TO COMPLY STRICTLY WITH AS/NZS 3000 INCLUDING ALL THE CURRENT AMENDMENTS THERE IN.



REINFORCEMENT FABRICATION

CONSTRUCTION DETAILS

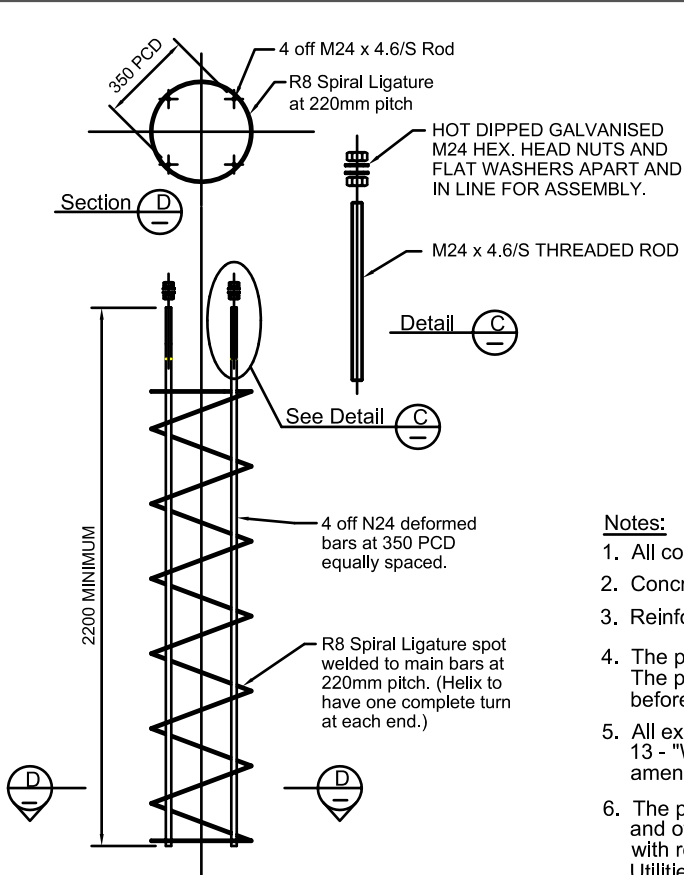
Revision: A	STEEL PROPERTY POLE (1.0 kN SWL) - FOUNDATION CONSTRUCTION DETAILS	QCD06-13
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- MANUFACTURE:** IN ACCORDANCE WITH DRAWING UNLESS OTHERWISE SPECIFIED.
- RATING:** THIS STRUCTURE HAS BEEN DESIGNED BASED ON THE FOLLOWING LOADS:
 APPLIED TIP LOAD = 3.5kN
 WIND LOAD (EQUIVALENT TIP LOAD) = 7.0kN
- TOLERANCE:**
 < 100mm LENGTH: ± 1.0mm
 > 100mm LENGTH: ± 5.0mm
 HOLE DIAS: ± 0.25mm
 HOLE CTRS: ± 0.5mm
 UNLESS SHOWN OTHERWISE ON DRAWING.
- MATERIAL:**
- MILD STEEL PLATES SHALL BE GRADE 300 COMPLYING WITH AS/NZS 3678
 - CIRCULAR, SQUARE & RECTANGULAR HOLLOW SECTIONS SHALL BE GRADE C250, C350 OR C450 AS NOTED, COMPLYING WITH AS/NZS 1163.
- FABRICATION:**
- HOLES TO BE DRILLED OR PUNCHED.
 - ALL WELDS TO BE 5mm CONTINUOUS FILLET WELDS TO AS 1554.1 (UNLESS NOTED OTHERWISE CATEGORY GP.)
 - REMOVE ALL SHARP EDGES AND BURRS.
- PROTECTIVE COAT:** HOT DIP GALVANISED IN ACCORDANCE WITH AS/NZS 4680. (AFTER FABRICATION)
- MARKING:** SWL. 3.5kN.
- STOCK CODE No:** N/A
- QESI REF:** N/A
- NOTE:** ALL DIMENSIONS SHOWN ARE IN MILLIMETERS

FABRICATION, CONSTRUCTION ON SITE AND ALL ELECTRICAL SERVICES / INSTALLATIONS ESTABLISHED ON THE POLE ARE TO COMPLY STRICTLY WITH AS/NZS 3000 INCLUDING ALL THE CURRENT AMENDMENTS THERE IN.

Revision: A	STEEL PROPERTY POLE (3.5kN SWL) - FABRICATION DETAILS	QCD06-14
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MATERIAL:

M24 4.6/S Threaded rod grade 400 conforming with AS/NZS1111
 R8 Structural Grade Plain Round Bar to AS. 1302 Grade 230 R.
 M24 Hex. Head Nut Galvanised
 M24 Washer Flat Galvanised

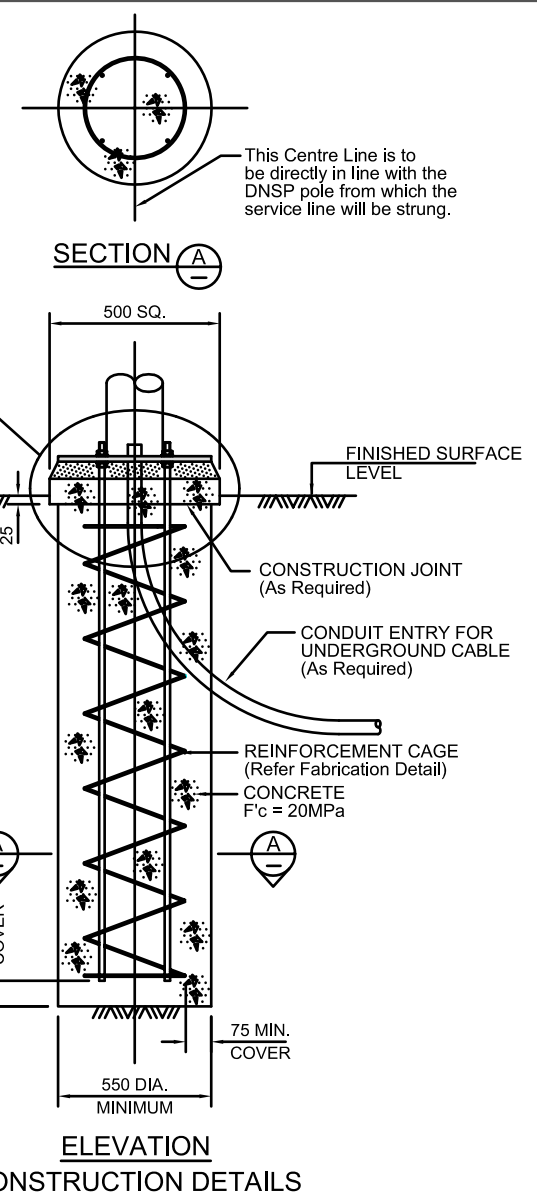
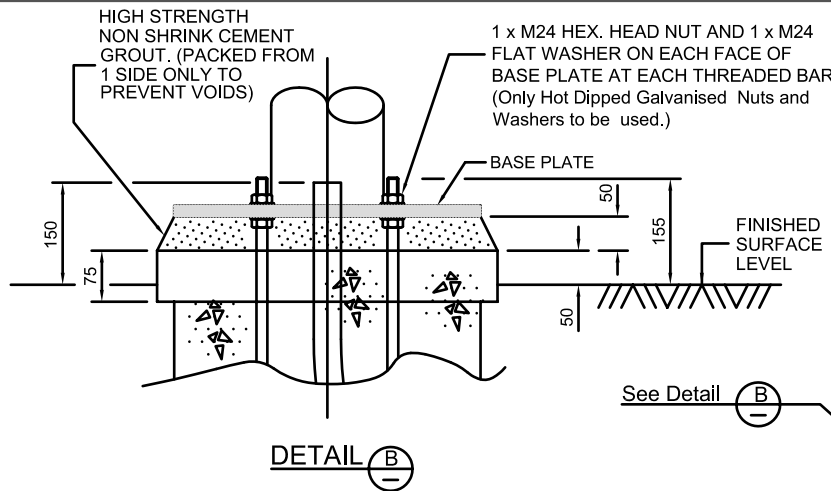
FABRICATION:

All welding in accordance with AS/NZS 1554.1
 All resulting thread forms shall have a tolerance class of 6H/8g (In accordance with AS/NZS 1275)

PROTECTIVE COAT:

Hot dip galvanised in accordance with AS/NZS 4680 after fabrication.

REINFORCEMENT FABRICATION



Notes:

- All concrete work shall comply with AS/NZS 3600.
- Concrete Foundation:- F_c=20MPa., 80mm Slump, 20mm Max. AGG.
- Reinforcement :- Refer to fabrication details on this sheet.
- The proponent shall be responsible for the correct setting out of works. The proponent shall establish the actual position of all services on site before commencing work on the site.
- All excavation work and excavation protection shall comply with regulation 13 - "Workplace Health and Safety Regulations" - 1989 including latest amendments.
- The proponent shall comply with acts of parliament, statutory, municipal and other regulations, or bylaws in any way affecting the working particular with regard to: (A) Workplace Health and Safety Act (B) Protection of Public Utilities (C) Traffic Hazards and Public Safety.
- The proponent shall be responsible for any damage to public utility service installations such as water, gas and sewer pipes, electrical, traffic signal or telephone conduits and shall bear the costs of reinstating any service damaged during construction of the works.
- This foundation has been designed based on Natural Ground having a minimum safe bearing capacity of 100kPa. Should the owner/contractor encounter unsuitable soil conditions at the site a Registered Professional Civil Engineer must be consulted prior to the construction of the foundation.

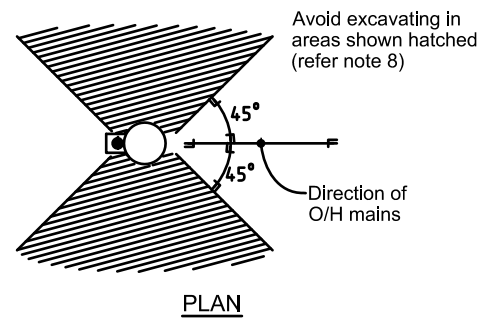
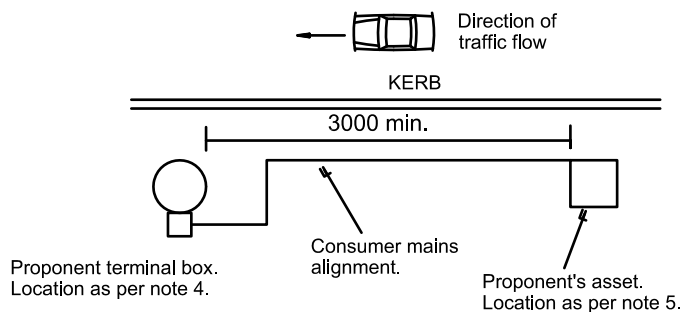
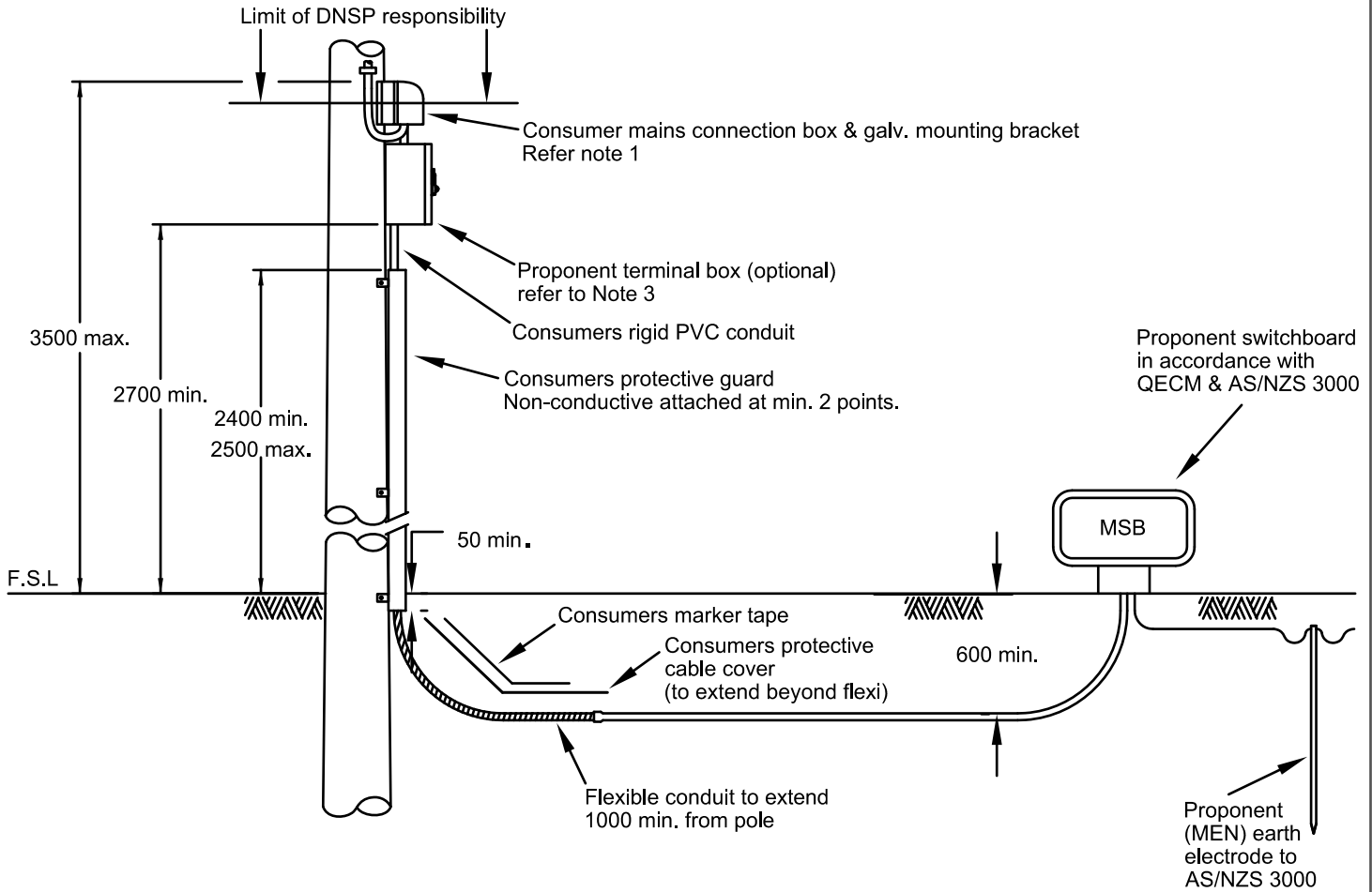
FABRICATION, CONSTRUCTION ON SITE AND ALL ELECTRICAL SERVICES / INSTALLATIONS ESTABLISHED ON THE POLE ARE TO COMPLY STRICTLY WITH AS/NZS 3000 INCLUDING ALL THE CURRENT AMENDMENTS THERE IN.

Revision:

A

STEEL PROPERTY POLE (3.5kN SWL) - FOUNDATION CONSTRUCTION DETAILS

QCD06-15



PLAN - ROUTE OF SERVICE

PLAN

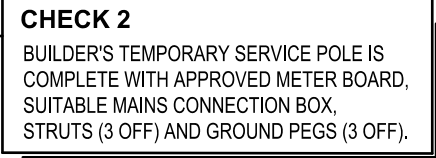
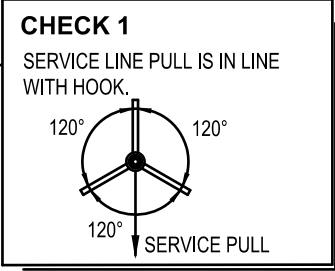
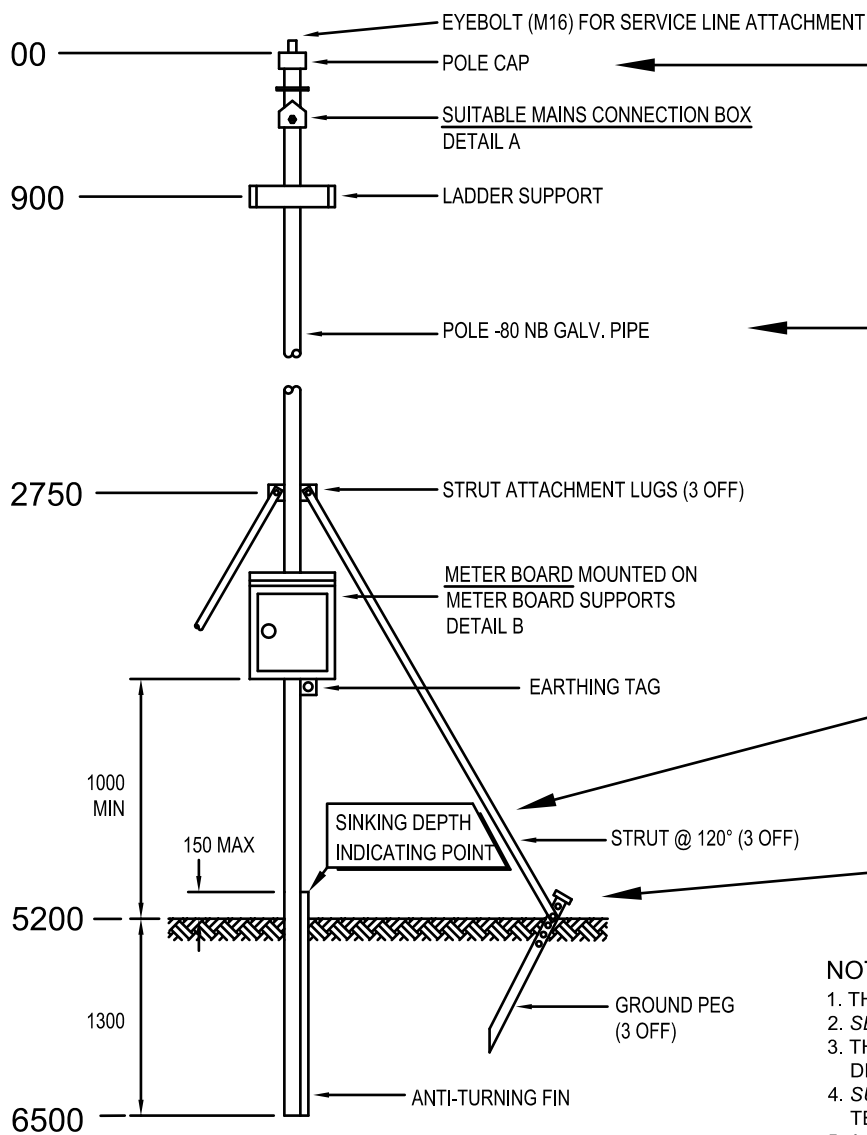
NOTES:

1. *Consumer mains* and installation including conduit and mains connection box are the responsibility of the *Proponent* and shall be installed by an approved contractor or the *DNISP* in accordance with AS/NZS 3000.
2. *Proponent* is responsible for seeking approval from *DNISP* to install *consumer mains* as per Clause 6.8.1
3. *Proponent's* terminal box is optional. For full details see underground construction manual.
4. *Proponent's* terminal box shall be located on the side of the pole which is least hazardous to maintenance personnel (normally facing building line).
5. *Proponent* assets shall be installed minimum of 3.0m from pole.
6. A *DNISP* Low voltage MEN earth is to be installed at the pole unless existing on an adjacent pole. For full details refer to the underground construction manual.
7. *Proponent* is responsible for seeking permission from road authority to install assets in the road reserve.
8. Excessive excavation at the pole base may disturb pole foundation. Avoid excavating in areas shown.

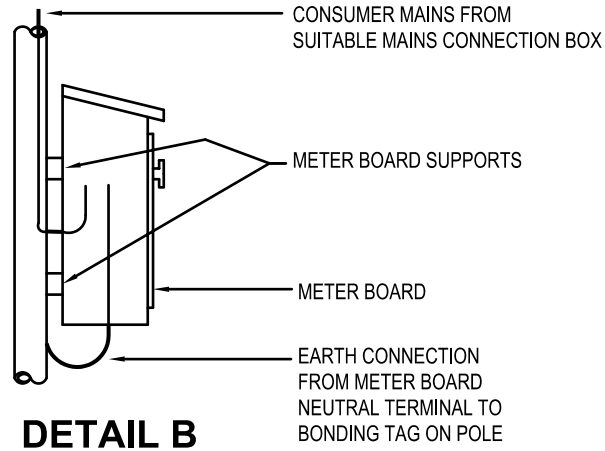
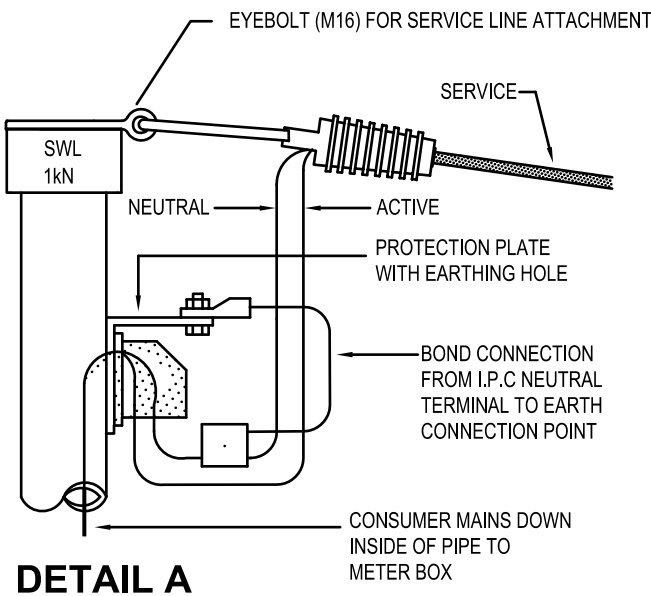
Revision:
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CONSUMER MAINS ON DNSP POLE

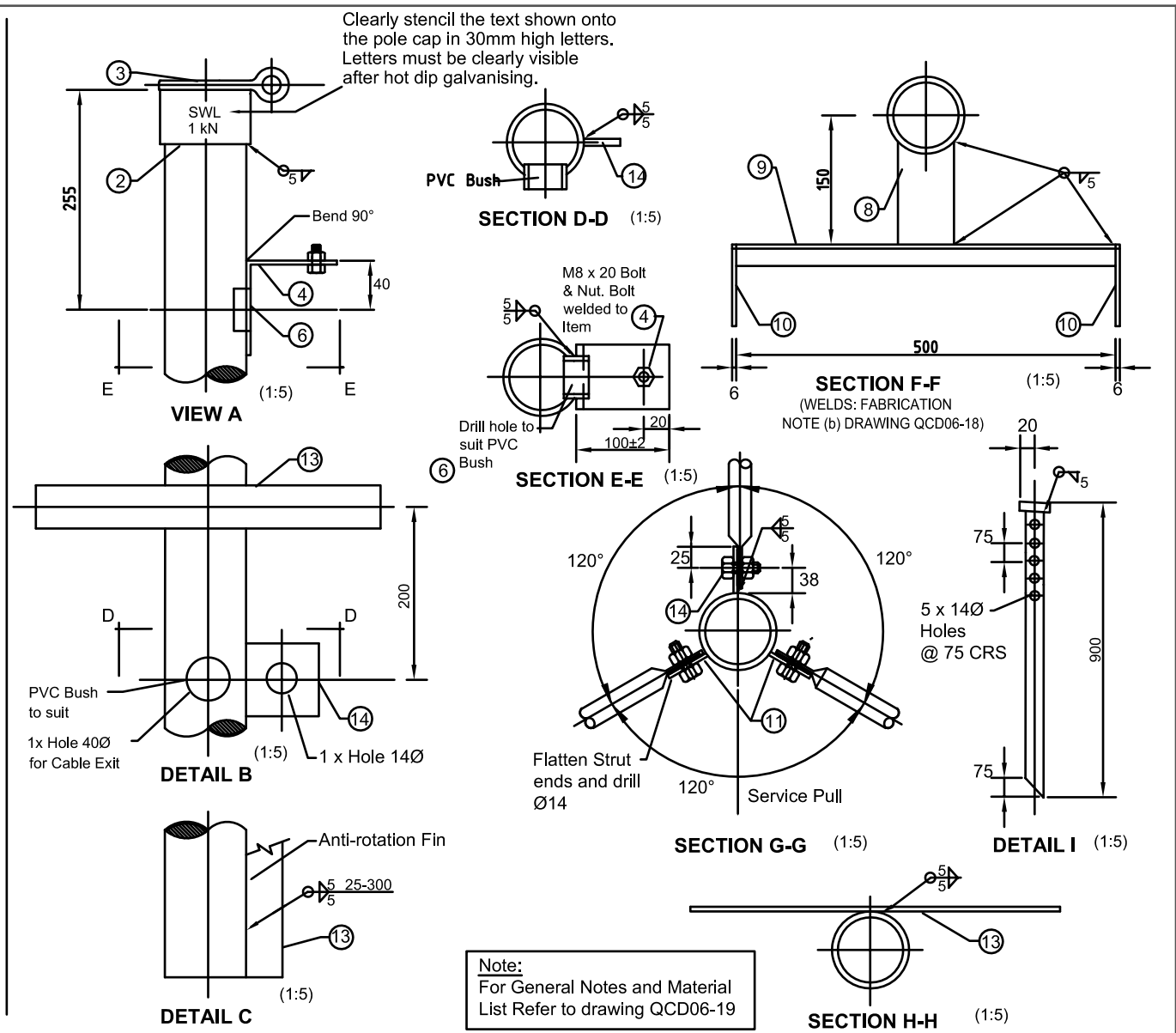
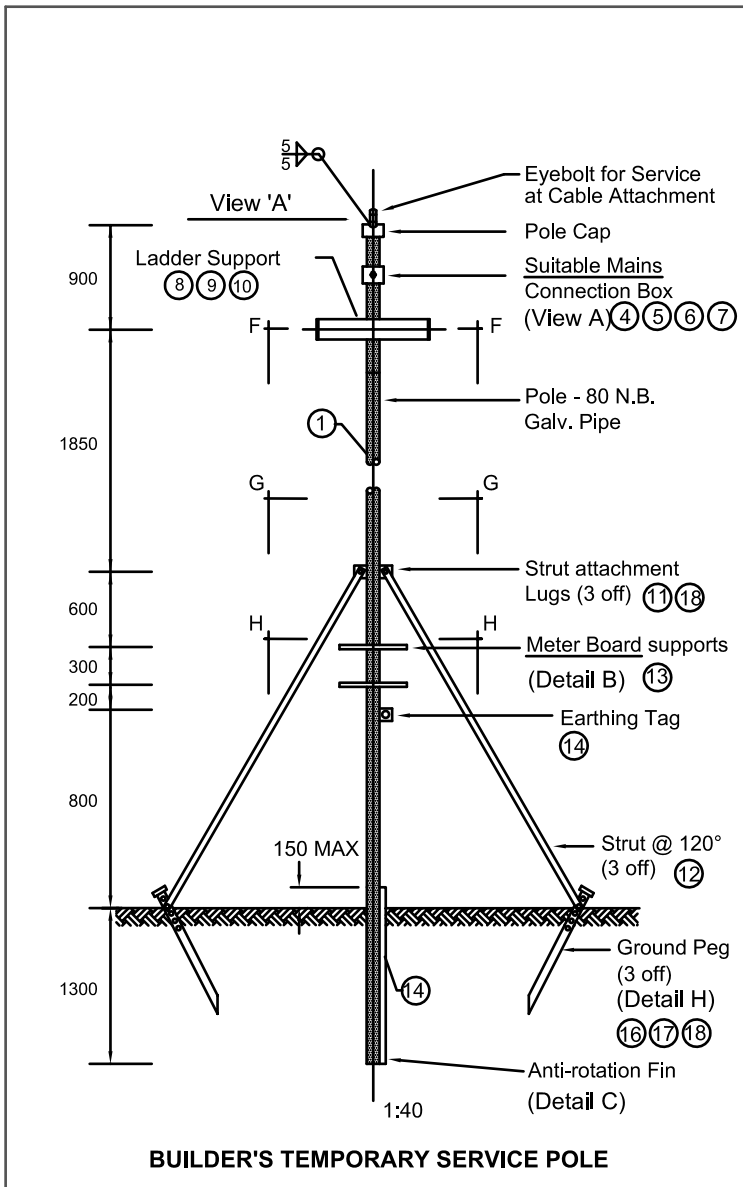
QCD06-16



- NOTES:**
1. THE B.T.S. POLE HAS A SAFE WORKING LOAD OF 1kN.
 2. SERVICE LINE MUST BE ATTACHED TO BTS POLE.
 3. THE B.T.S. POLE IS TO BE MANUFACTURED TO DRAWING QCD06-17 AND QCD06-18
 4. SUITABLE MAINS CONNECTION BOX FOR THE TERMINATION OF THE SERVICE LINE (LVABC).
 5. A SEPARATE EARTH ELECTRODE WILL BE REQUIRED IF THE STEEL POLE IS PAINTED OR COATED WITH ANY SUBSTANCE THAT WILL AFFECT ITS ABILITY TO MAKE GOOD CONTACT WITH THE SOIL.



Revision: A	OVERHEAD SERVICE ATTACHMENT TO BUILDERS TEMPORARY SERVICE POLE (1.0 kN SWL) GENERAL ARRANGEMENT	QCD06-17
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Revision: A	TEMPORARY SERVICE POLE 1.0 kN SWL FABRICATION & CONSTRUCTION DETAILS	QCD06-18
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MATERIAL LIST

Item	Description	No. Off	Description
①	Pole	1	80 N.B. x 4.0 Thk. x 6500Lg. Std. Galv. Pipe
②	Cap or Disc	1	To suit 80N.B. Pipe
③	Service Attachment Ring	1	M16 Eyebolt
④	Mains connection Box Baseplate	1	FL 75 3 x 200 Lg. Bent 90° as shown on QCD06-17
⑤	Mains Connection Box	1	3 terminal clipsal Cat. No. IP23
⑥	Threaded PVC Bush	1	To suit MCB
⑦	Screw (Drill & tap item-4 to suit MCB)	2	M5 x 12Lg. S/S Grade 304
⑧	Ladder Support Bracket	1	Taper-flange Channel
⑨	Ladder Support Member	1	L 25x25x6x500Lg
⑩	Ladder Stops	2	L 25x6x125Lg
⑪	Strut Attachment Lug	3	FL 75 x 10 x 75Lg.
⑫	Strut Members	3	25N.B. x 3150Lg. Std. Galv. Pipe
⑬	Meter Box Supports	2	FL 50 x 6 x 400Lg.
⑭	Earthing Lug	1	FL 50 x 6 x 50Lg.
⑮	Stabilising fin	1	FL 50 x 6 x 1450Lg.
⑯	Peg	3	L38 x 38 x 6 x 900Lg.
⑰	Striking Plate	3	FL 50 x 10 x 50 Lg.
⑱	Bolt & Nut	6	M12 x 40 Lg. Hex. Galv.

SPECIFICATIONS

RATING :

This structure has been designed based on the following loads:
Applied tip load - 1.0 kN.

TOLERANCE :

All tolerances to be ±5.0

MATERIAL :

Structural steel in accordance with AS/NZS 4100.

MATERIAL :

Structural Steel in accordance with AS/NZS 3678, AS/NZS 3679.1 Grade 250. See material list for details.

FABRICATION :

- (a) Holes to be drilled or punched undersize & reamed.
- (b) Welding to be in accordance with AS/NZS 1554.1
- (c) All sharp edges and burrs to be removed.

PROTECTIVE COAT :

All steelwork to be effectively corrosion protected.

MARKING :

SWL 1 kN

NOTES:

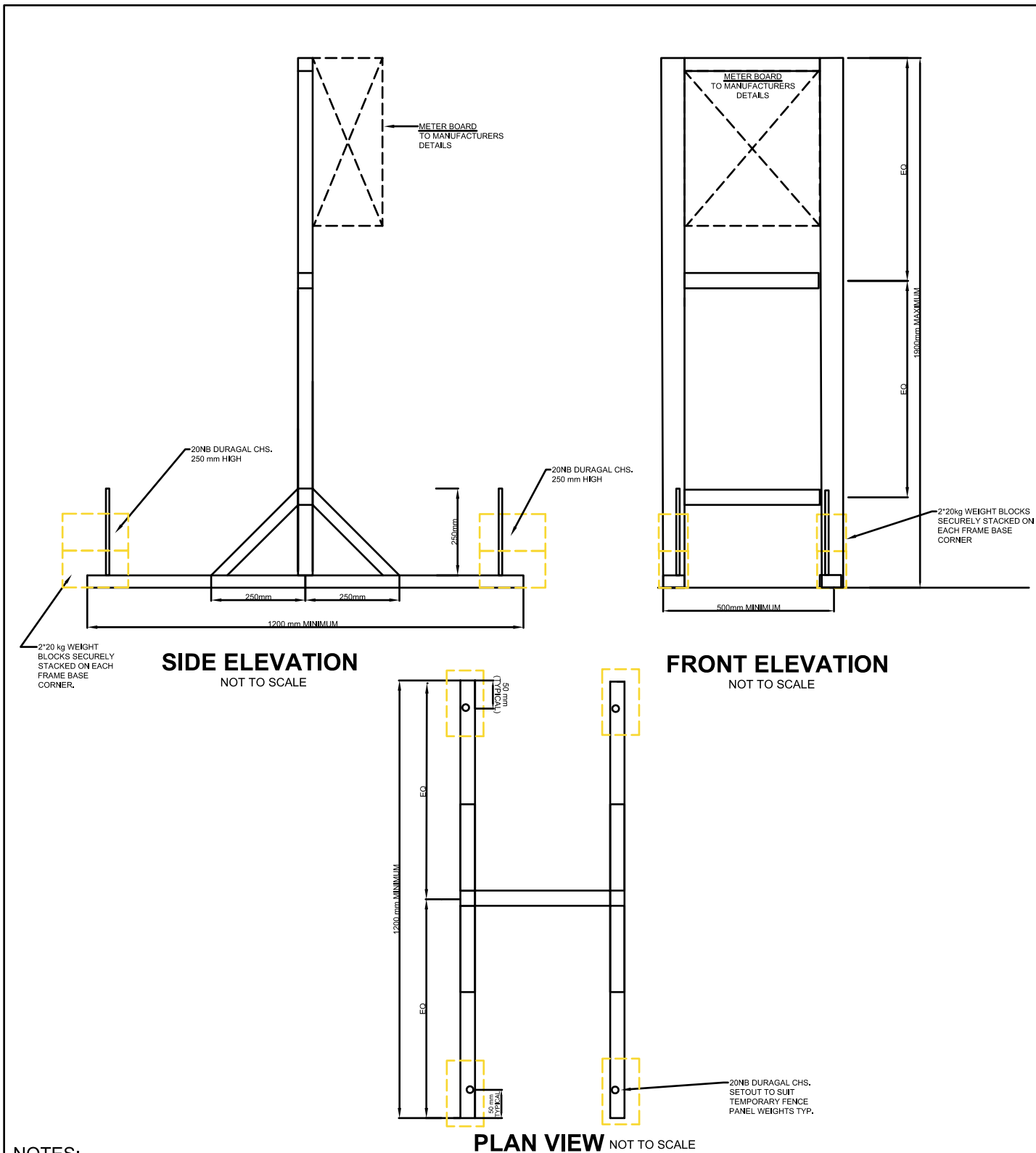
1. FOR CONSTRUCTION AND DETAILS REFER TO DRAWING QCD06-18
2. NB = NOMINAL BORE

Revision:

A

**TEMPORARY SERVICE POLE 1.0 kN SWL
FABRICATION AND CONSTRUCTION DETAILS**

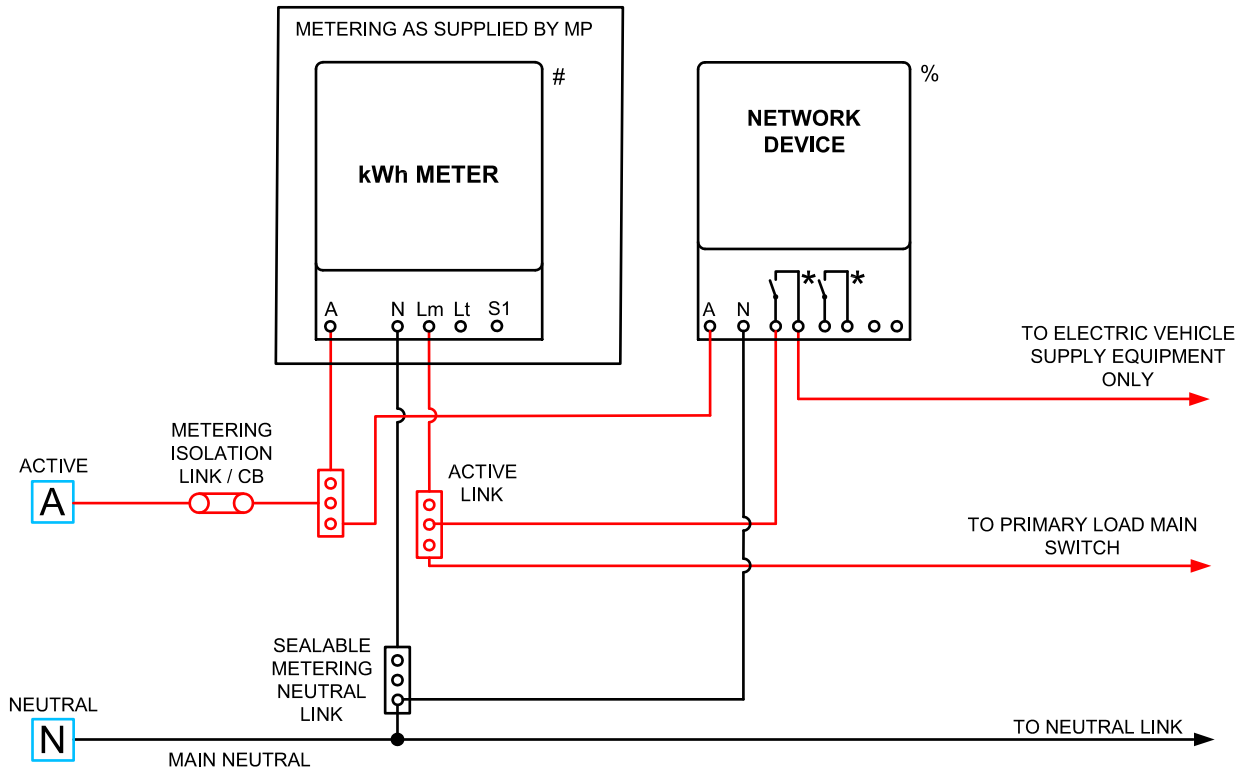
QCD06-19



NOTES:

1. Meter board shall be positioned on frame as shown and fixed to vertical members of the support frame. All meter board fixings to support frame shall be in accordance with the manufacturers specification.
2. Support frame shall be installed with all four corners of the base on even stable ground.
3. Where required, additional framing to support meter board shall be provided in accordance with manufacturers specification.
4. All support frame members shall be Duragal 30x1.6 SHS grade 450, unless noted otherwise.
5. All support frame connections shall be welds. All welds shall be 1.6 mm GP E4312 CFW all round.
6. Welding shall be in accordance with AS/NZS 1554, AS/NZS 4855 and Duragal easy welding guide.
7. Weight blocks may be temporary fence feet or similar with a minimum total weight of 40 kgs attached securely on top of the frame base at each corner as shown.
8. Maximum switchboard weight 18kg.
9. Ensure weight blocks are positioned to provide clear safe access to meter board.

Revision: A	UNDERGROUND CONNECTION TO AN INTERIM STRUCTURE DURING CONSTRUCTION GENERAL ARRANGEMENT	QCD07-01
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ITEMS SUPPLIED BY *METERING PROVIDER*.

% ITEMS SUPPLIED BY *DNBP*

* SWITCH POSITION AND NUMBER OF SWITCHES DETERMINED BY SUPPLY AND LOAD TYPE.

NOTES:

1. ELEMENT 1 FOR PRINCIPAL SUPPLY ONLY.

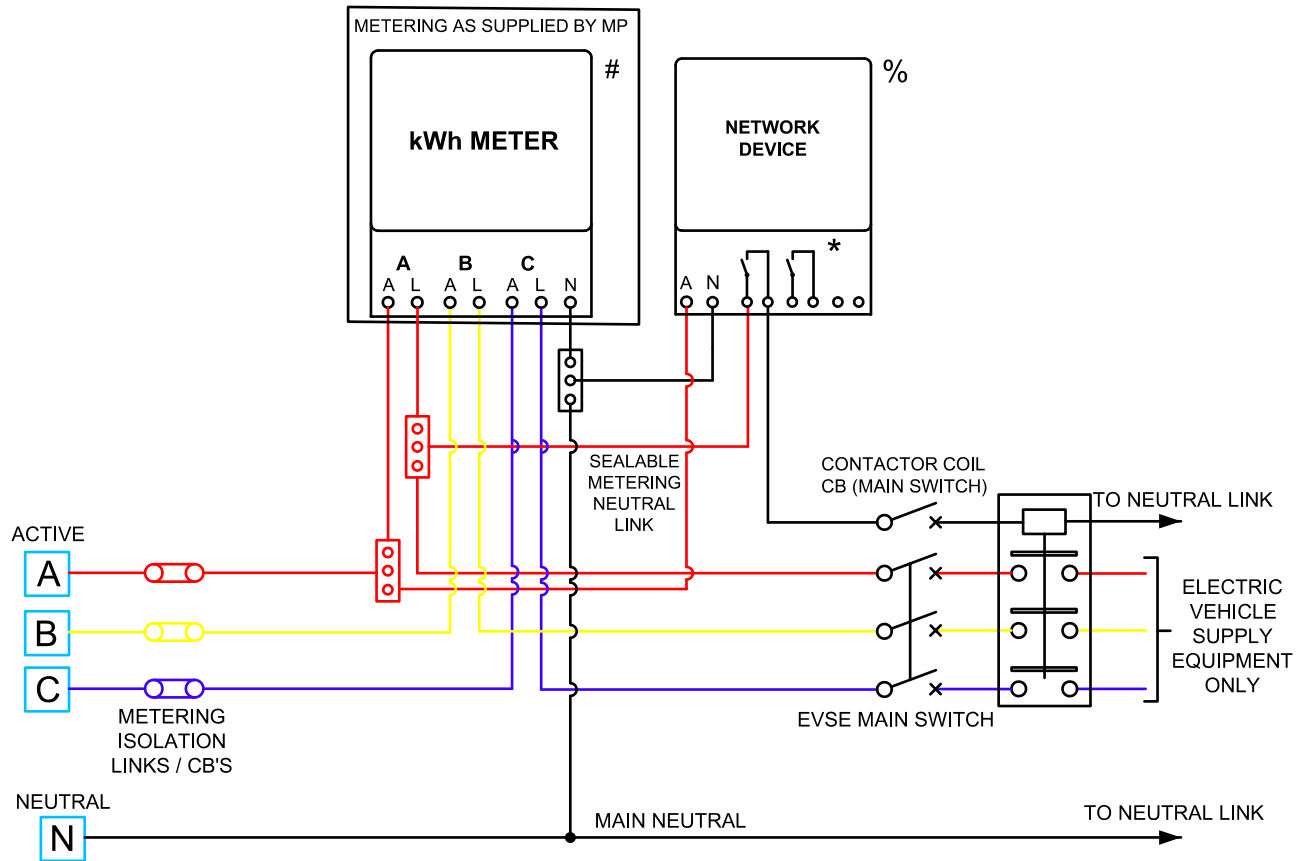
2. ELECTRIC VEHICLE SUPPLY EQUIPMENT CONNECTED TO *NETWORK DEVICE*

Revision:

A

BASIC ACTIVE MANAGEMENT VIA NETWORK DEVICE FOR ELECTRIC VEHICLE
SUPPLY EQUIPMENT WIRING DIAGRAM

QCD08-01



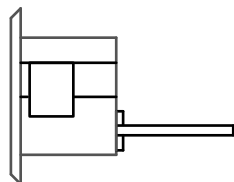
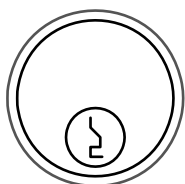
ITEMS SUPPLIED BY METERING PROVIDER.

% ITEMS SUPPLIED BY DNSP.

* SWITCH POSITION AND NUMBER OF SWITCHES DETERMINED BY SUPPLY AND LOAD TYPE.

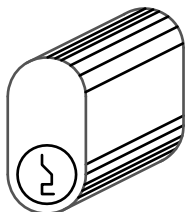
Revision: A	BASIC ACTIVE MANAGEMENT VIA NETWORK DEVICE FOR ELECTRIC VEHICLE SUPPLY EQUIPMENT WITH CONTACTOR WIRING DIAGRAM	QCD08-02
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RIM LOCK CYLINDER



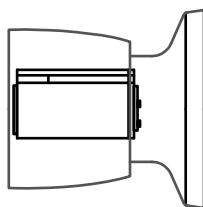
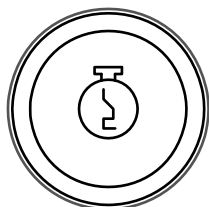
TYPE **201 CYL** FOR USE IN NIGHTLATCH/STREAMLATCH/DEADLATCH TYPE LOCKSETS.
(CYLINDER ONLY PROVIDED.)

MORTICE LOCK CYLINDER



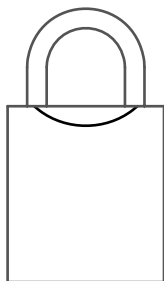
TYPE **570 CYL** FOR USE IN CYLINDER MORTICE LOCKS AND LATCHES.
(CYLINDER ONLY PROVIDED.)

KEY - IN - KNOB CYLINDER



TYPE **530 CYL** FOR USE IN KEY-IN-KNOB AND KEY-IN-LEVER LOCKSETS.
(CYLINDER ONLY PROVIDED.)

BRASS PADLOCK

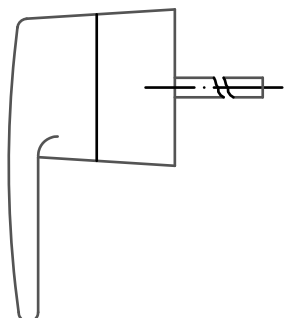
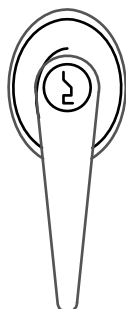


TYPE **234** FOR USE IN ERGON ENERGY
TYPE **234/SS** FOR USE IN ENERGEX

- 234/45/119 - 19mm SHACKLE
- 234/45/138 - 38mm SHACKLE
- 234/45/148 - 48mm SHACKLE
- 234/45/190 - 90mm SHACKLE

(COMPLETE LOCK PROVIDED.)

METER CUBICLE LOCK



TYPE **'L' HANDLE** OR **'T' HANDLE**
TO BE USED AS A METER CUBICLE LOCK.
(COMPLETE LOCK PROVIDED.)

NOTES:

1. USE 'EX' PREFIX TO INDICATE ENERGEX METERING KEY SYSTEM
EG ENERGEX RIM LOCK CYLINDER USE TYPE EX201 CYL.
2. A LIST OF APPROVED LOCKSMITHS IS AVAILABLE ON THE *DN*SP WEBSITE - SEE CONTACTS PAGE FOR DETAILS.

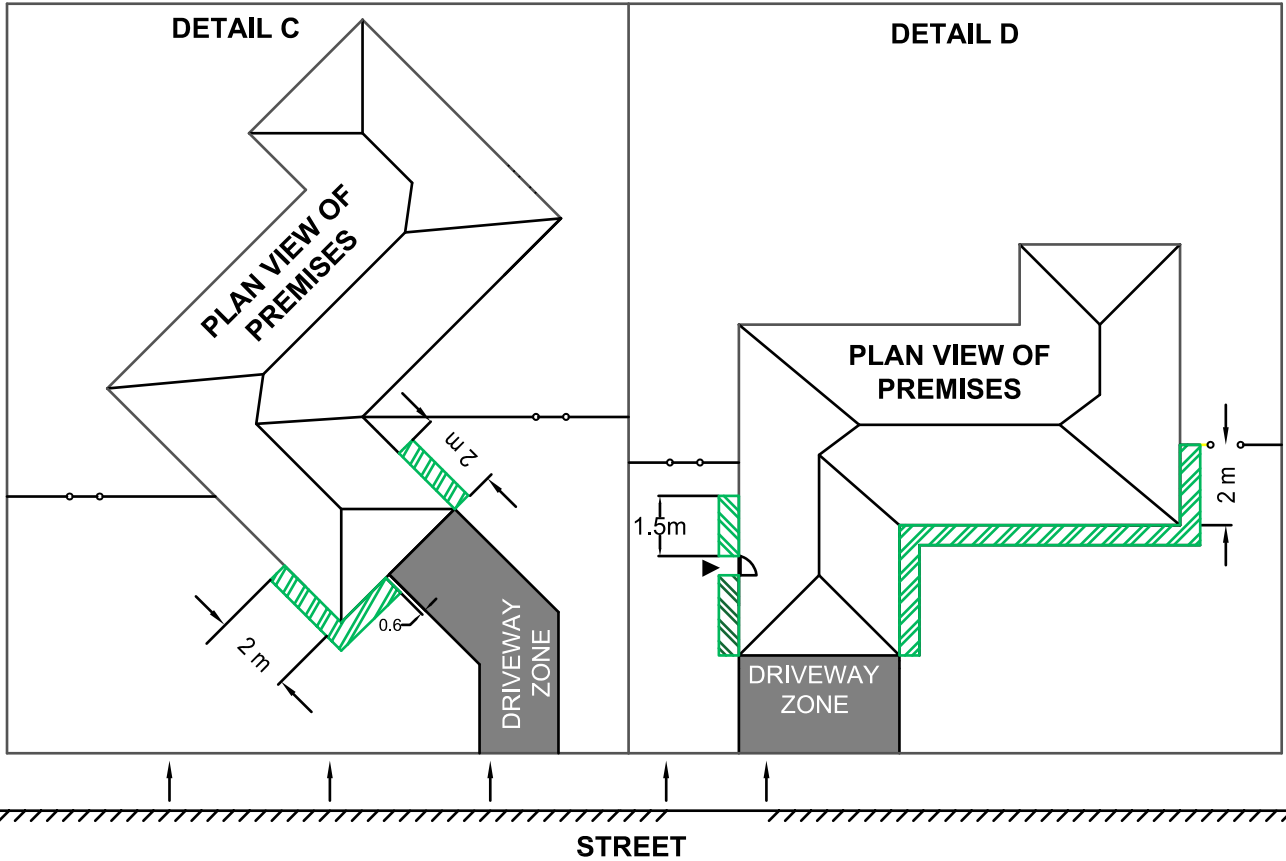
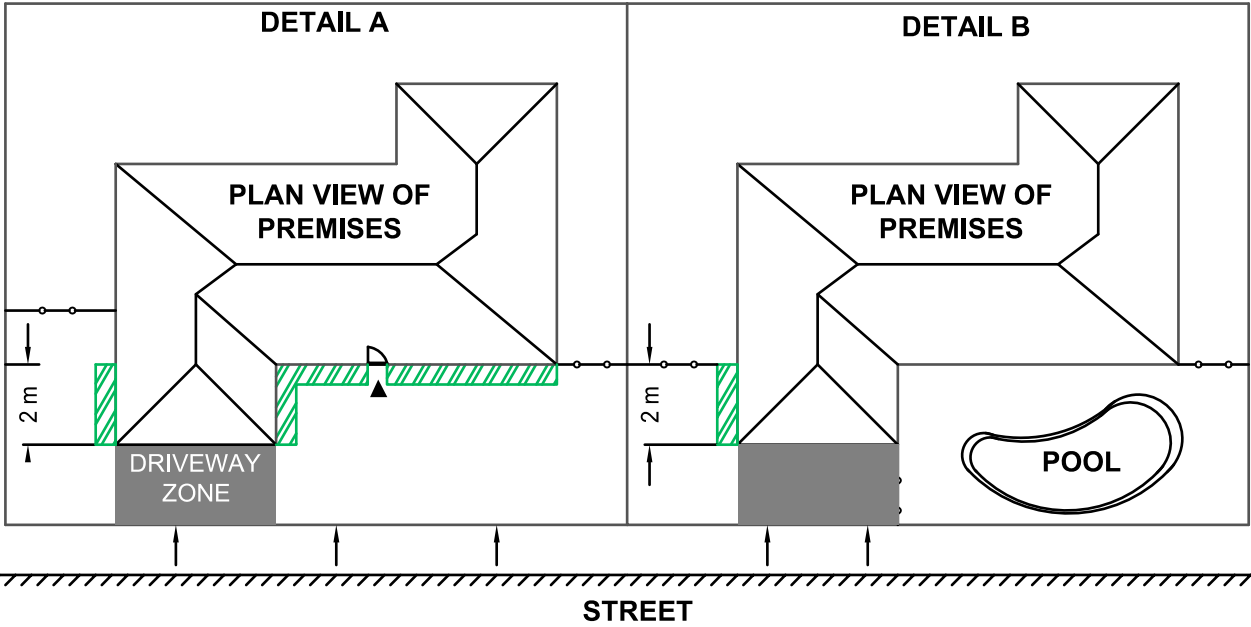
Revision:





A

MASTER KEYED UTILITY ACCESS LOCK DETAILS

QCD09-01

SINGLE STREET FRONTAGE



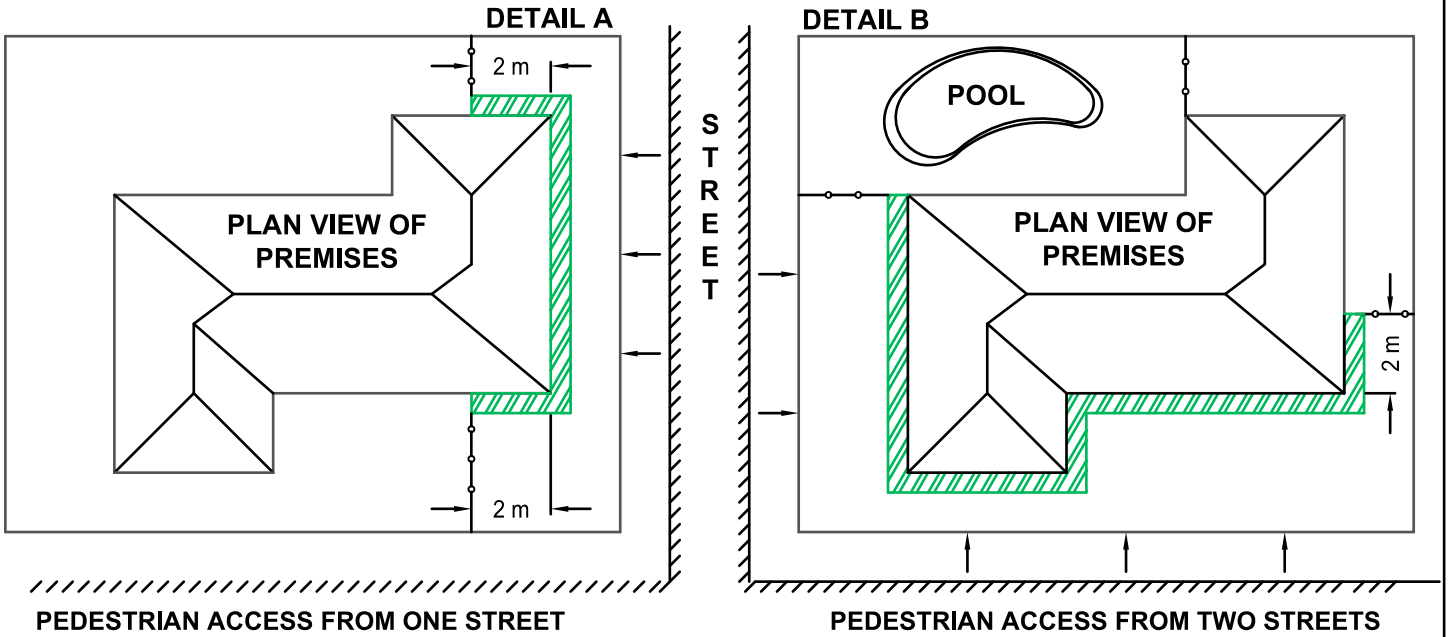
-  SHADING SHOWS SUITABLE LOCATION FOR METER BOARD. (NOT BEYOND PROPERTY FENCE).
-  SHOWS PEDESTRIAN ACCESS.
-  PROPERTY FENCE.
-  ENTRANCE/FRONT DOOR

Revision:
A

**ACCEPTABLE LOCATIONS OF METER BOARD
SINGLE DOMESTIC - SHEET 1 OF 2**

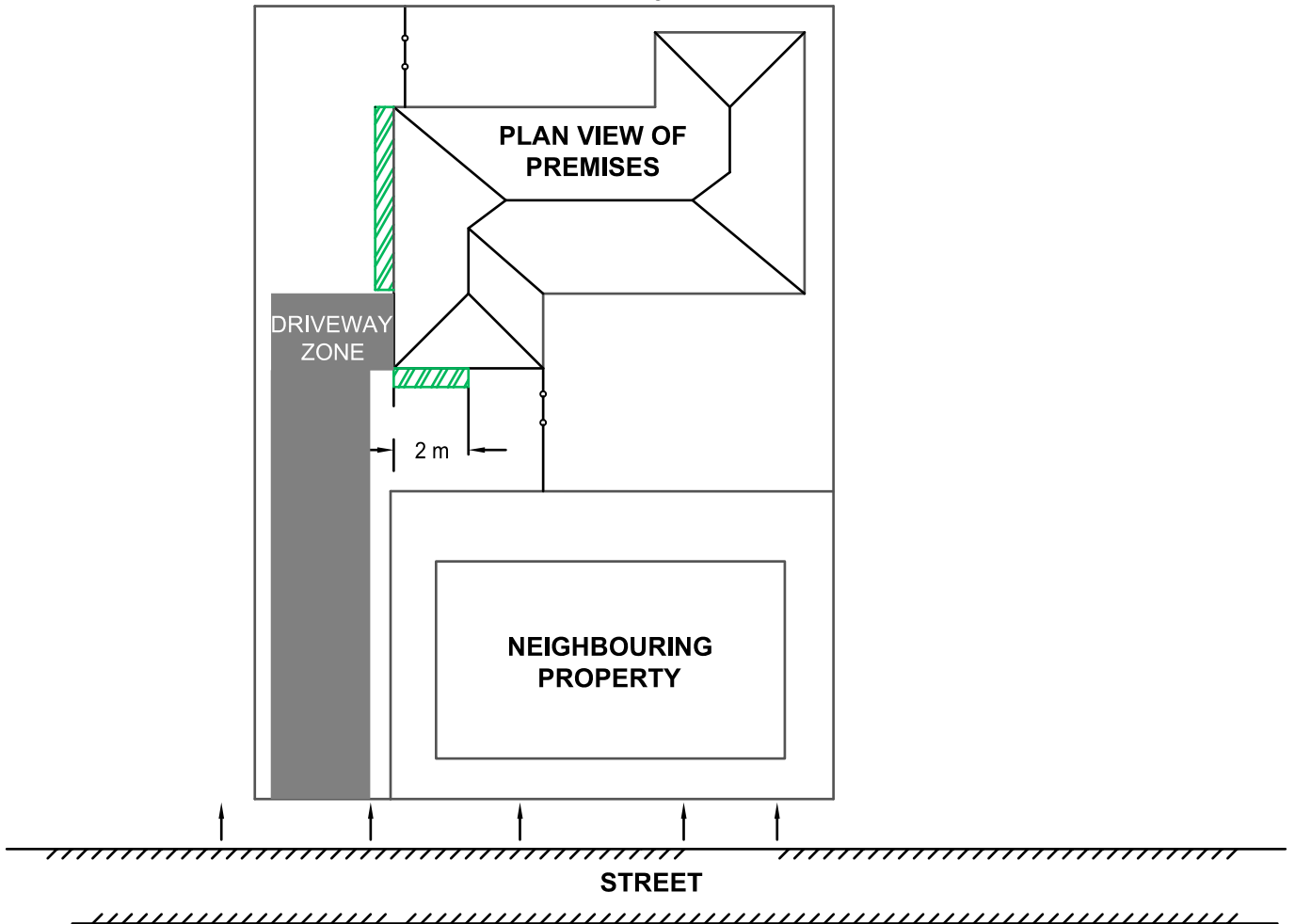
QCD09-02

DOUBLE STREET FRONTAGE



BATTLE-AXE BLOCK

DETAIL C



NOTES:

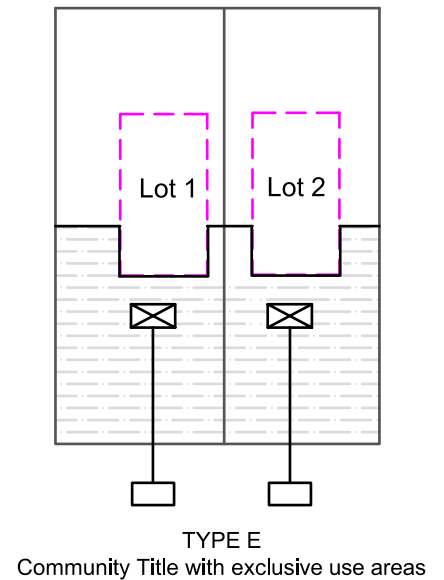
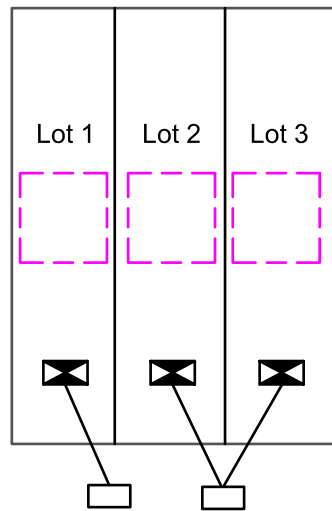
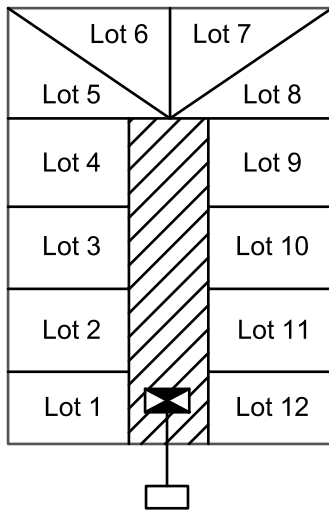
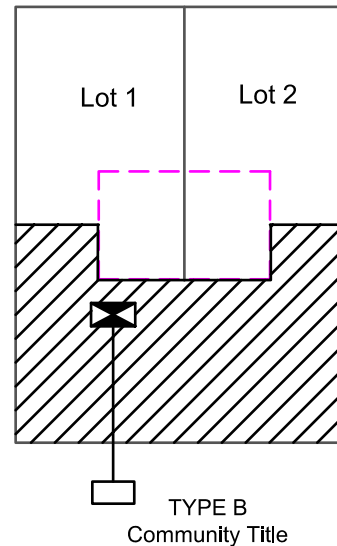
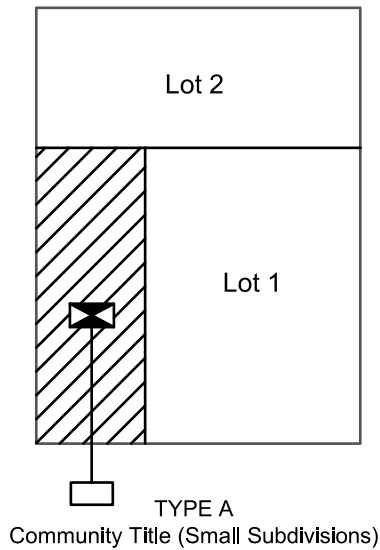
1. Meter boards shall be installed as per the requirement in Clause 9.8 of the QECM.
2. Battle-axe block refers to a block of land located behind another lot, which often has an existing house or building on it. This does not include service easements.

Revision:






A

**ACCEPTABLE LOCATIONS OF METER BOARD
SINGLE DOMESTIC - SHEET 2 OF 2**

QCD09-03



LEGEND

-  DNSP Service Point
-  Common Ground
-  Metering Position
-  Street/Laneway
-  Building outline

NOTES

1. Service line and meter board locations shown on diagrams are indicative only, refer to relevant clause for requirement of meter board locations.
2. Where a lot does not have a boundary adjacent to the road reserve as shown as Type A and Type C, a single DNSP service point will be provided for the development.
3. Refer to clause 5.5.3.2 of the QECM for Community Title requirements.
4. When designing a Community Title arrangement only one type from A to E as shown may be selected. A combination of types is not permitted.
5. For all types of Community Title arrangements shown the premise must meet clause 5.5.3.1(d).
6. Supply shall not be established or maintained where common property has been designated for the exclusive use of each lot, prohibiting access to other owners or occupiers of the meter board or service line location.
7. Dual occupancy developments shall only be entitled to have one service line and one meter board location ie. Granny flats, sheds, dependant persons accommodation.

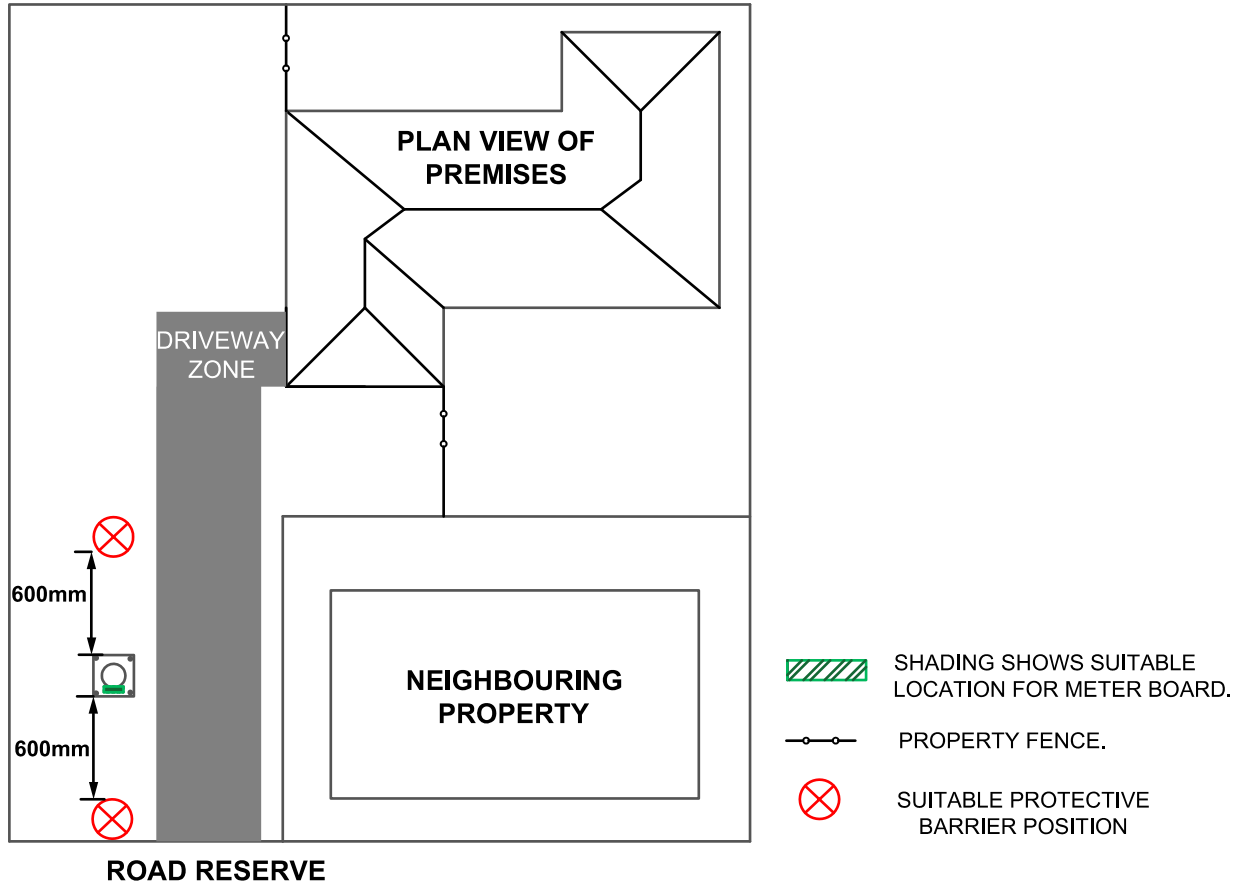
Revision:

A

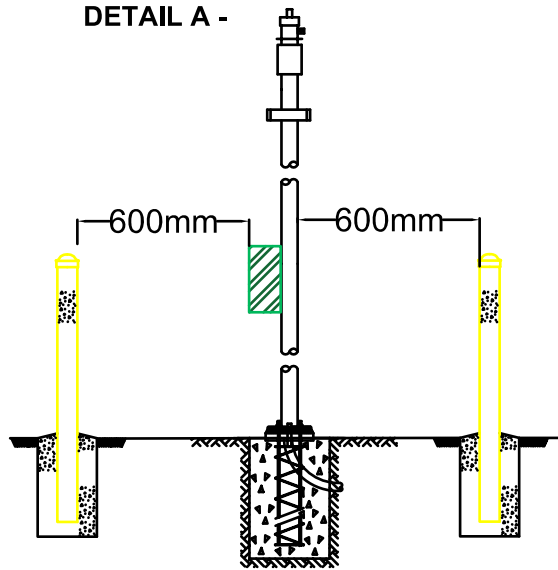
**SUITABLE LOCATION OF METER BOARD-
COMMUNITY AND STRATA TITLE**

QCD09-04

BATTLE - AXE BLOCK



DETAIL A -



NOTES:

1. *Meter boards* shall be installed as per the requirement in Clause 9.8 of the QECM.
2. Where the *meter board* position is located on the property pole it must not be located in an unsuitable position. Refer to clause 9.8.1.1 for clearance required from driveway.
3. Suitable permanent protective barriers are required when clearance in clause 9.8.1.1 is unable to be meet. A minimum 600mm clearance is required between the barrier and the meter board when installed adjacent to trafficable area. A suitable protective barrier position indicated by red X
4. Battle-axe block refers to a block of land located behind another lot, which often has an existing house or building on it. This does not include service and access *easements*.

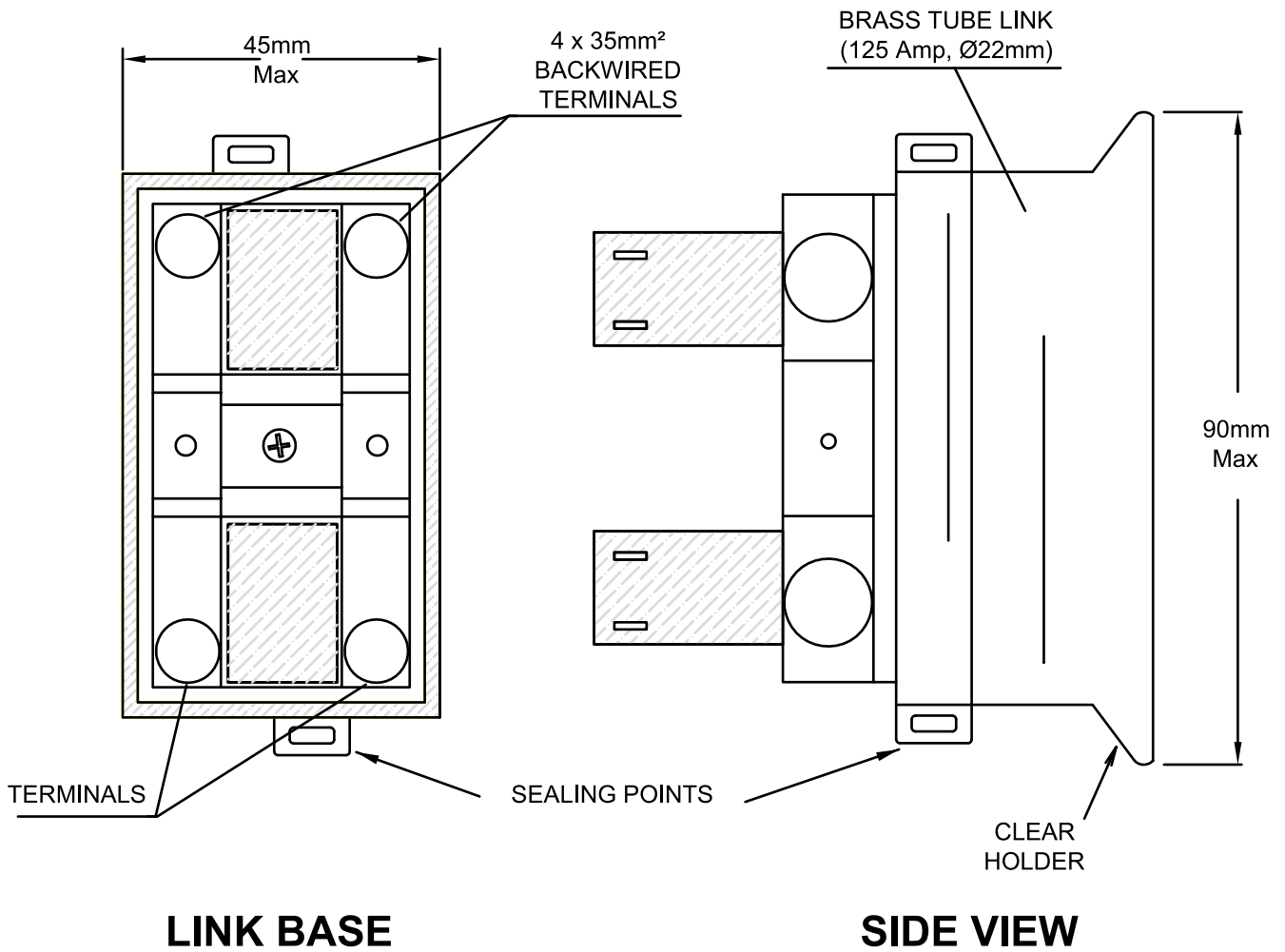
Revision:

A

**SUITABLE PERMANENT PROTECTIVE BARRIER POSITIONS
FOR METER BOARD LOCATED ON PROPERTY POLE**

QCD09-05

METERING ISOLATION LINK



NOTES:

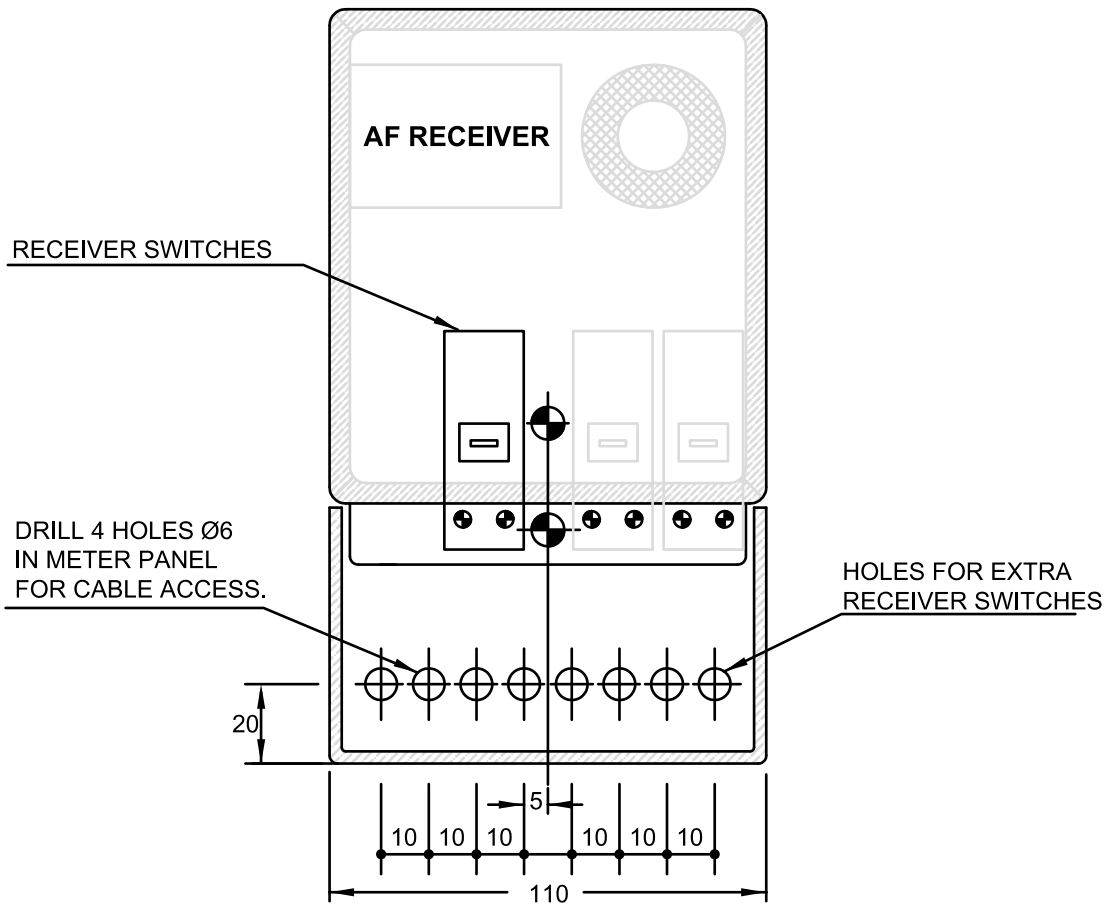
1. USE APPROVED METERING ISOLATION LINK, SUPPLIED WITH A 125 AMP BRASS TUBE LINK AND INSTALLED ON THE FACE OF THE METERING PANEL.
2. FOR POLYPHASE METERING - THE THREE METERING ISOLATION LINKS ARE TO BE GROUPED TOGETHER.
3. METERING ISOLATION LINKS SHOULD BE MOUNTED HORIZONTALLY UNDERNEATH THE METER.
4. CLEARANCE OF 40mm TO BE LEFT AT EACH END OF LINK TO FACILITATE SEALING.

Revision:

A

**METERING ISOLATION LINK
GENERAL DIMENSIONS**

QCD10-01

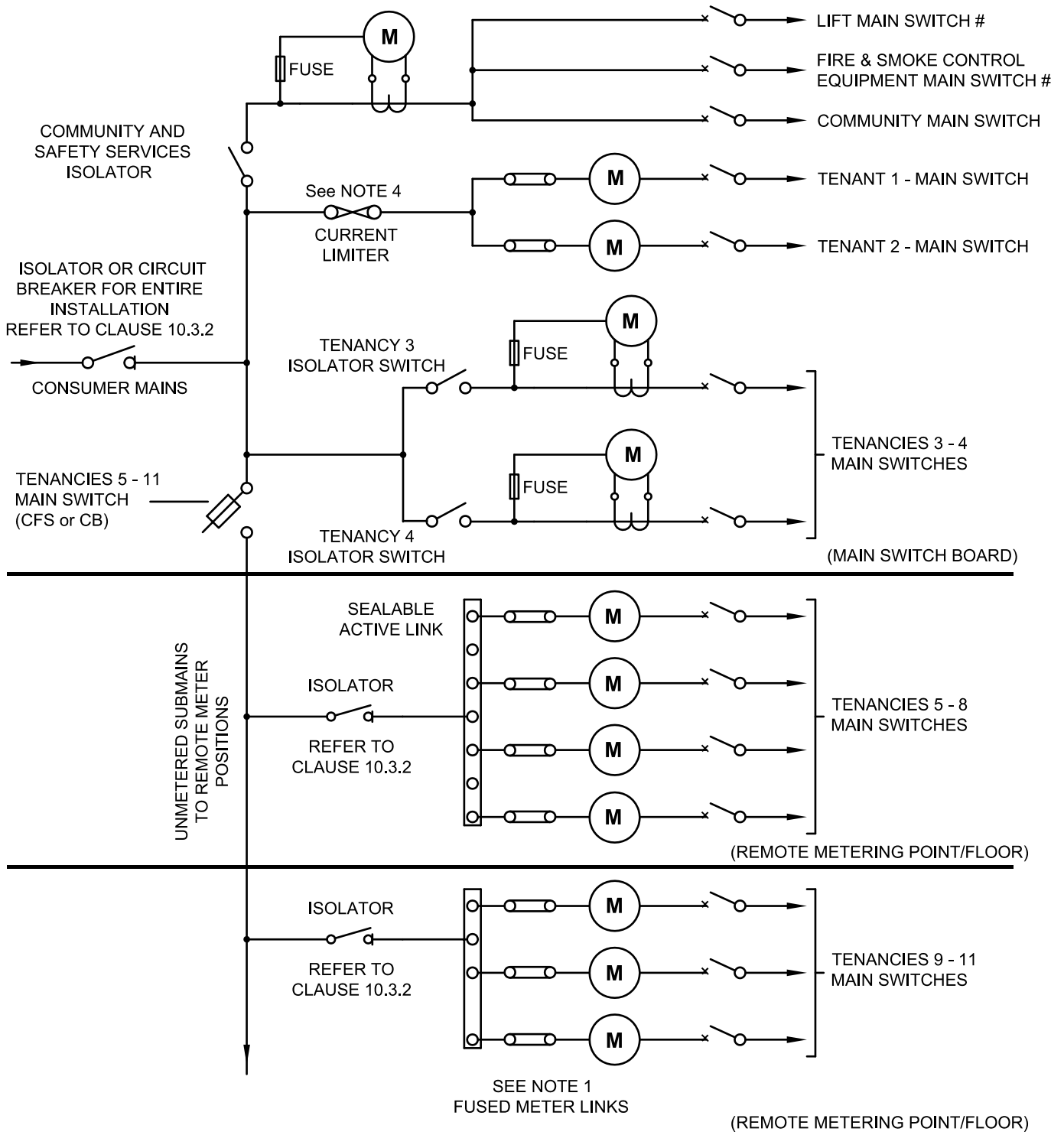


Revision:

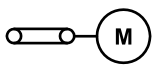
A

**AF RECEIVER
DRILLING DETAILS FOR CABLE ACCESS**

QCD10-02

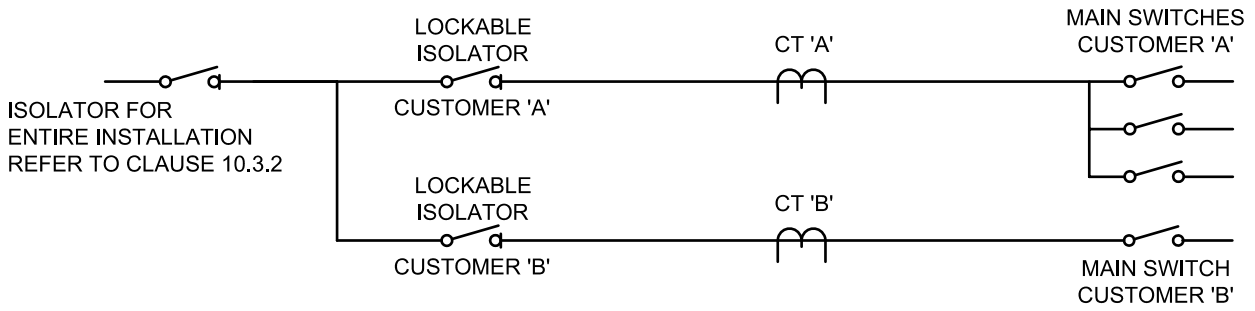


Notes:

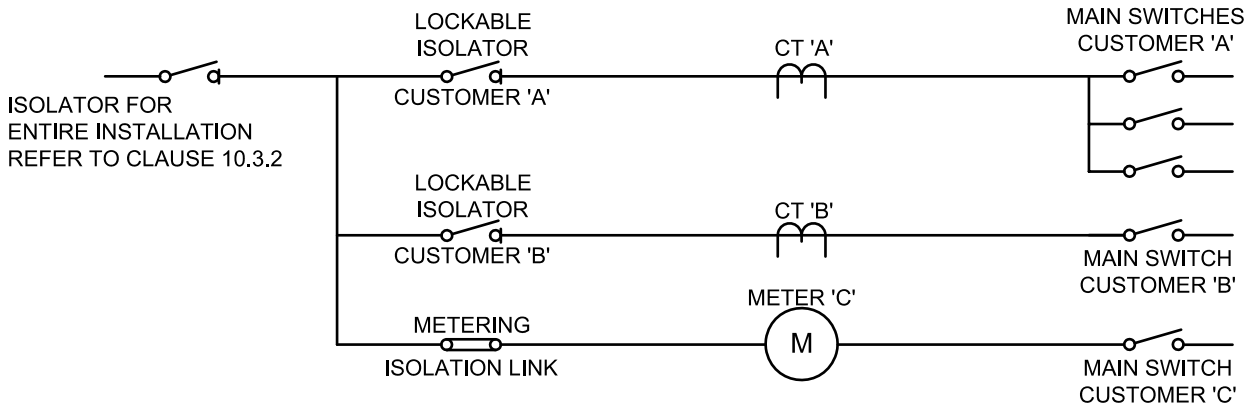
1. INSTALL METERING ISOLATION / FUSED LINKS BEFORE EACH DIRECT CONNECTED METER SHOWN AS 
2. USE APPROVED BACK WIRED METERING ISOLATION LINKS FITTED WITH 80 OR 100 AMP HRC FUSE CARTRIDGES. REFER CLAUSE 10.1.2.
3. ALL ISOLATORS, CIRCUIT BREAKERS AND MAIN SWITCHES BEFORE METERING EQUIPMENT TO BE LOCKABLE.
4. CURRENT LIMITING DEVICE FOR THE PROTECTION OF DIRECT CONNECTED METERING CIRCUITS TO COMPLY WITH AS/NZS3000 WHERE REQUIRED.
5. REFER TO AS/NZS3000 AS SPECIAL REQUIREMENTS APPLY TO THE ARRANGEMENT OF SUPPLY TO SAFETY SERVICES.

Revision: A	DIRECT CONNECTED AND CT METERING - MULTIPLE CUSTOMER METERING ARRANGEMENTS ON SHARED SERVICE (SHEET 1 OF 2)	QCD10-03
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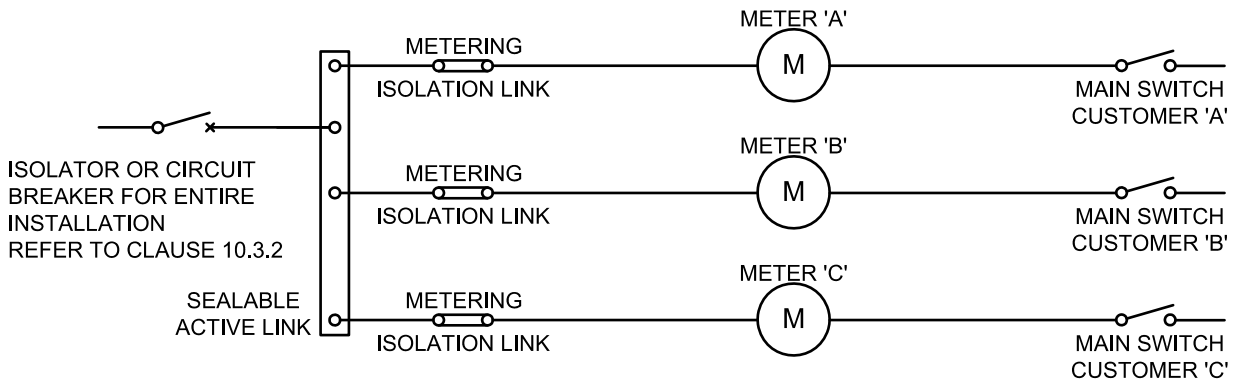
MULTIPLE CT CUSTOMERS



MULTIPLE CT & DIRECT CONNECTED METERED CUSTOMERS



MULTIPLE DIRECT CONNECTED METERED CUSTOMERS



TYPICAL EXAMPLES OF MAIN SWITCHBOARD METERING ARRANGEMENTS

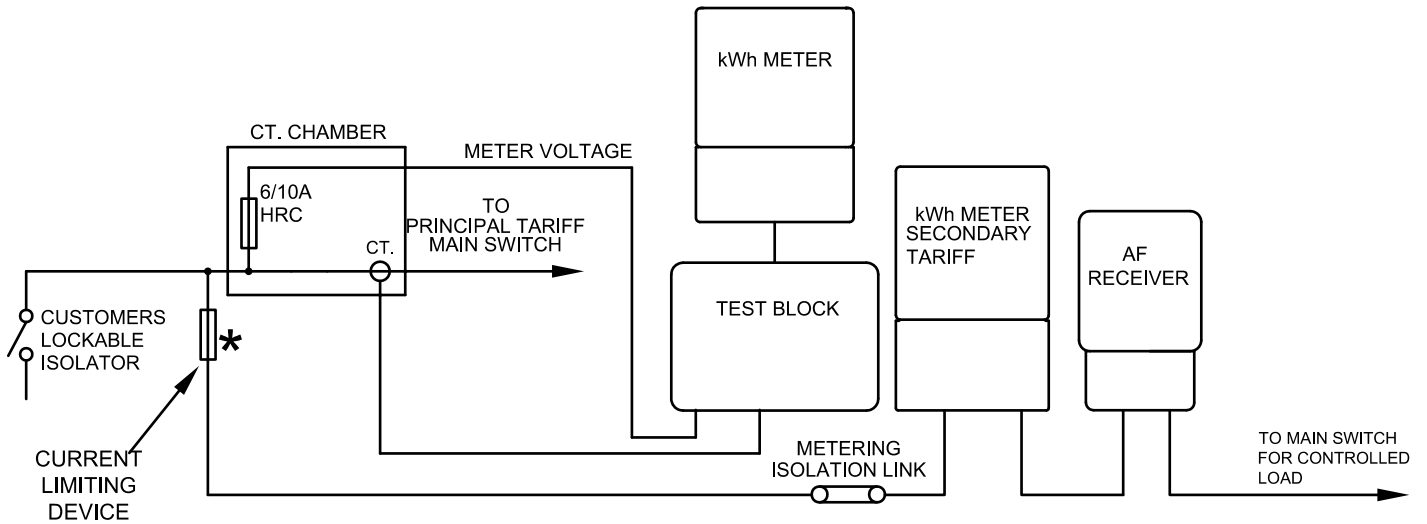
NOTE:
WHERE THE SERVICE FUSES ARE 100A OR GREATER, THE *METERING PROVIDER* CAN REPLACE THE METERING ISOLATION LINKS WITH 80 OR 100A HRC FUSE CARTRIDGES AS REQUIRED (REFER CLAUSE 10.1.2).

Revision:

A

**DIRECT CONNECTED AND CT METERING -
MULTIPLE CUSTOMER METERING ARRANGEMENTS ON
SHARED SERVICE (SHEET 2 OF 2)**

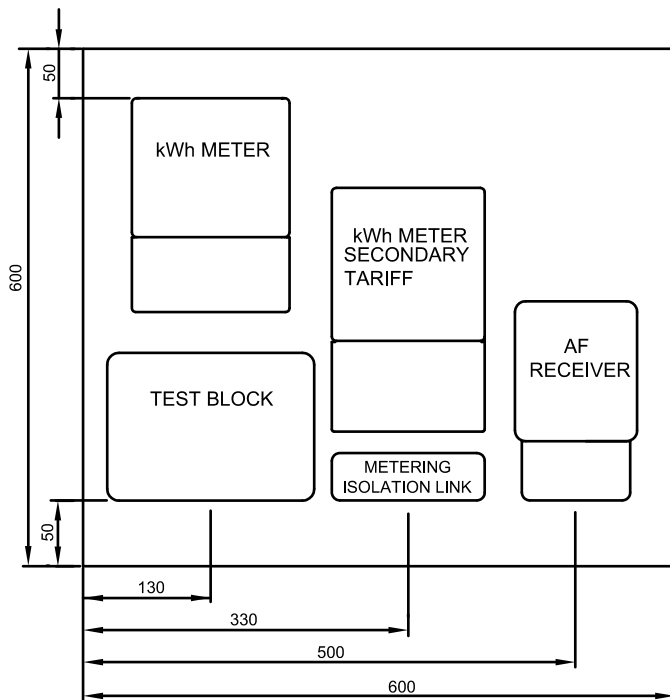
QCD10-04



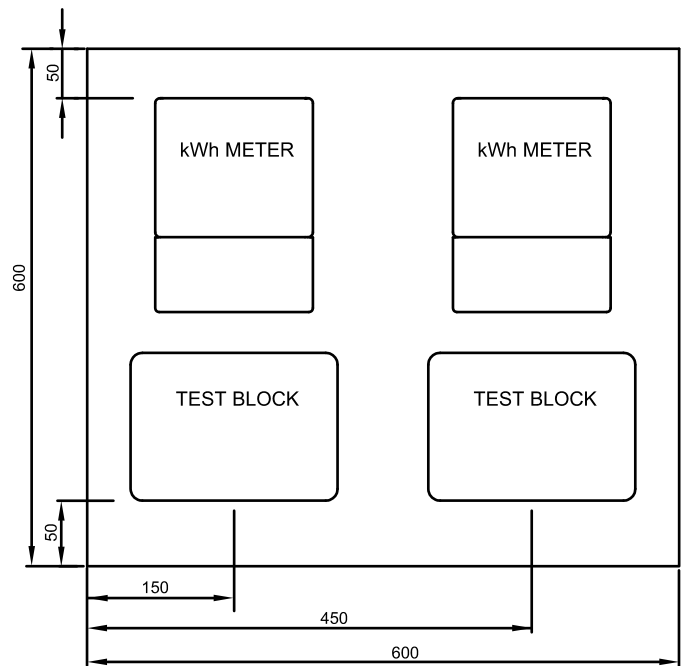
NOTES:

1. * CURRENT LIMITING DEVICES FOR THE PROTECTION OF DIRECT CURRENT METERING CIRCUITS SHALL COMPLY WITH AS/NZS 3000 AND SHALL NOT BE RATED GREATER THAN A 100A HRC FUSE OR EQUIVALENT.
2. THE METERING PROVIDER MAY USE AN INTEGRATED METER IN PLACE OF THE SEPARATE CONTROLLED LOAD METER AND AF RECEIVER.

TYPICAL LAYOUT OF A CURRENT TRANSFORMER METERING INSTALLATION INCORPORATING A DIRECT CONNECTED METER FOR A SEPARATE CONTROLLED SUPPLY.



TYPICAL LAYOUT FOR SINGLE NMI CT. METERING

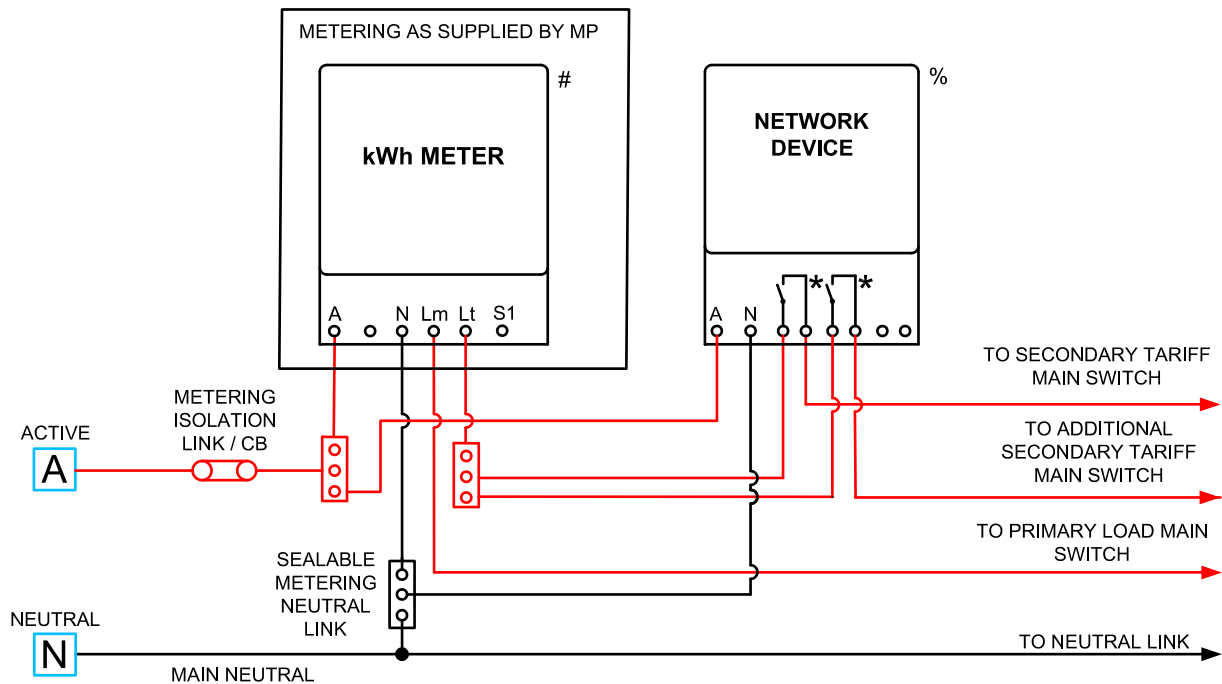


Revision:

A

CT METERING - TYPICAL METER PANEL LAYOUT AND ARRANGEMENT

QCD10-05



ITEMS SUPPLIED BY METERING PROVIDER.

% ITEMS SUPPLIED BY DNSP

* SWITCH POSITION AND NUMBER OF SWITCHES DETERMINED BY SUPPLY AND LOAD TYPE.

NOTES:

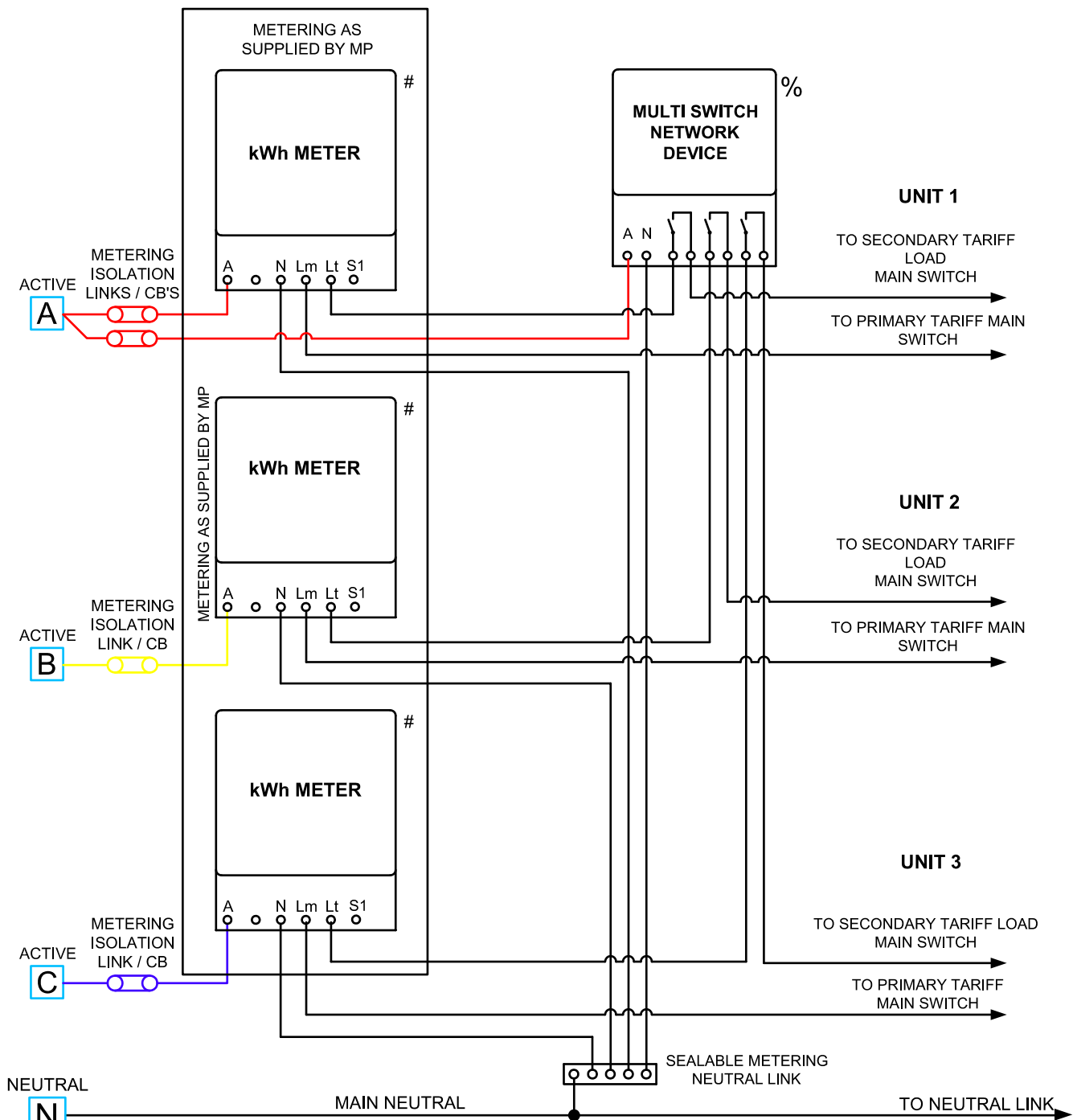
1. ELEMENT 1 FOR PRIMARY SUPPLY ONLY, ELEMENT 2 FOR CONTROLLED TARIFF.
2. CONTROLLED CIRCUIT ASSOCIATED WITH SECONDARY TARIFF CONNECTED TO UNSWITCHED TERMINAL OF TWO ELEMENT METER.
3. SECONDARY TARIFF SWITCHING IS DONE BY THE NETWORK DEVICE.
4. THE RETAILER MAY PROVIDE ADVICE THAT A SECOND kWh METER WILL BE REQUIRED. WHERE REQUESTED THIS SHALL BE CONNECTED TO LOAD SWITCH OF THE NETWORK DEVICE AS ADVISED BY THE RETAILER. .

Revision:

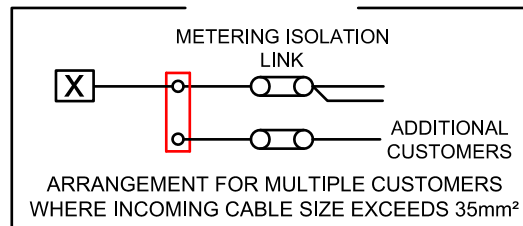
A

SINGLE PHASE SERVICE DIRECT CONNECTED METERING: PRIMARY AND SECONDARY TARIFF WIRING DIAGRAM

QCD10-06



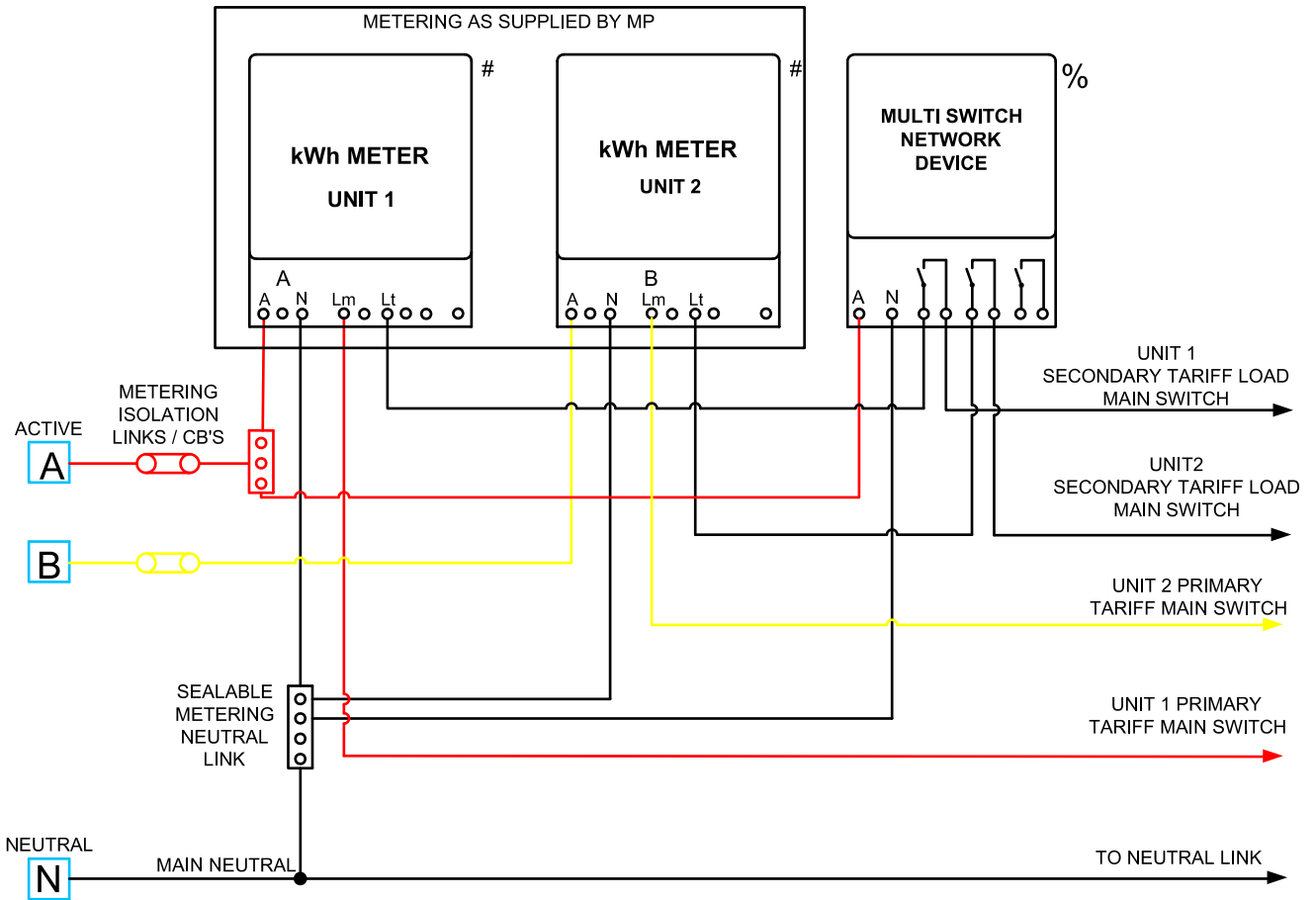
ITEMS SUPPLIED BY METERING PROVIDER.
 % ITEMS SUPPLIED BY DNSP



NOTES:

1. TERMINAL CONNECTIONS TO BE MADE ACCORDING TO THE TYPE OF NETWORK DEVICE.
2. WHERE POSSIBLE THE INDIVIDUAL SWITCHES OF EACH MULTI SWITCH NETWORK DEVICE SHOULD BE CONNECTED TO THE SAME PHASE.
3. INSTALL APPROVED BACK WIRED METERING ISOLATION LINKS. NOTE: WHERE METER NOT INSTALLED REMOVE SOLID LINK TO ENSURE NO EXPOSED LIVE TAILS.
4. WHERE THE SERVICE FUSES ARE 100 AMPS OR GREATER, THE METERING PROVIDER CAN REPLACE THE METERING ISOLATION LINKS WITH 80 OR 100A HRC FUSE CARTRIDGES AS REQUIRED (REFER CLAUSE 10.1.3.3).
5. AN INSTALLATION ISOLATOR OR LOCKABLE CB MAIN SWITCH IS REQUIRED ON THE LINE SIDE OF THE METERING. REFER TO CLAUSE 10.1.3.2.

Revision: A	MULTIPLE INSTALLATIONS THREE-PHASE SERVICE DIRECT CONNECTED METERING: PRIMARY AND SECONDARY TARIFF WIRING DIAGRAM	QCD10-07
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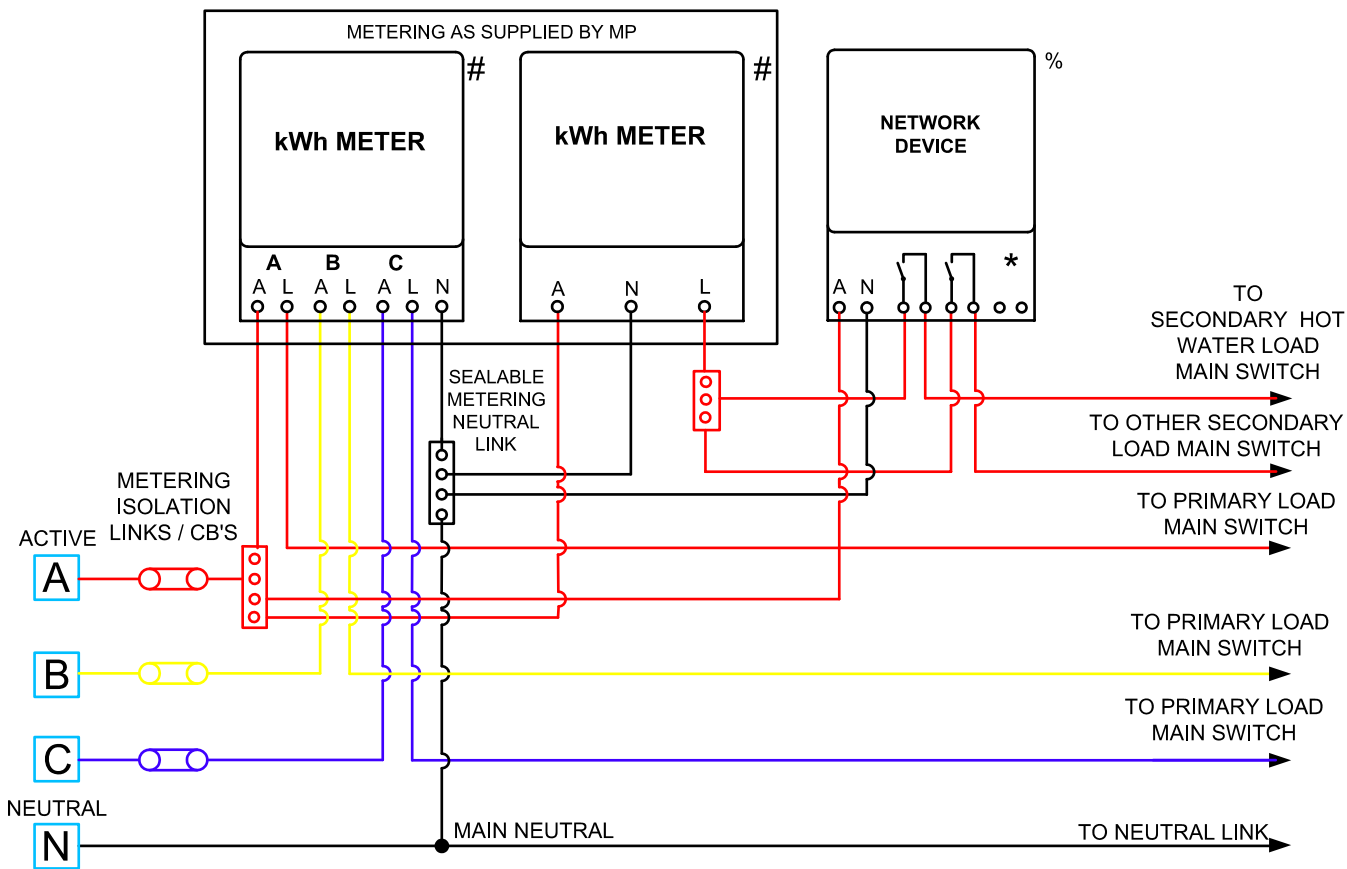


ITEMS SUPPLIED BY METERING PROVIDER.
 % ITEMS SUPPLIED BY DNSP.

NOTES:

1. THIS ARRANGEMENT IS FOR DUPLEX ARRANGEMENT ONLY
2. AN INSTALLATION ISOLATOR OR LOCKABLE CB MAIN SWITCH IS REQUIRED ON THE LINE SIDE OF THE METERING. REFER TO CLAUSE 10.1.3.2 AND DRAWING QCD10-04.

Revision: A	DUPLEX TWO-PHASE SERVICE DIRECT CONNECTED METERING: PRIMARY AND SECONDARY TARIFF WIRING DIAGRAM	QCD10-08
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ITEMS SUPPLIED BY METERING PROVIDER.

% ITEMS SUPPLIED BY DNSP.

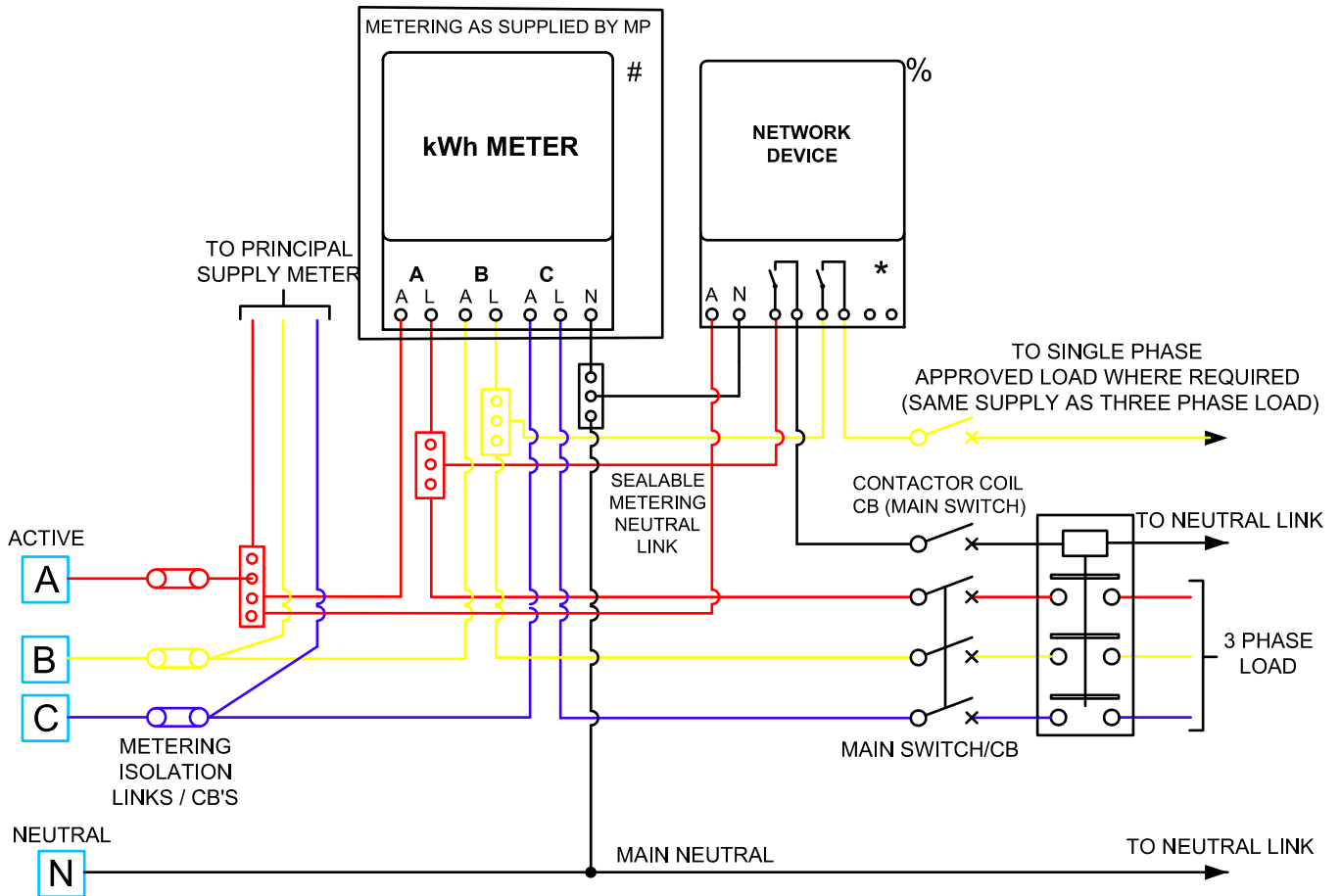
* SWITCH POSITION AND NUMBER OF SWITCHES DETERMINED BY SUPPLY AND LOAD TYPE.

Revision:

A

**WIRING DIAGRAM - DIRECT CONNECTED METERING
THREE PHASE PRIMARY AND SECONDARY TARIFF WIRING
DIAGRAM**

QCD10-09



ITEMS SUPPLIED BY METERING PROVIDER.

% ITEMS SUPPLIED BY DNSP.

* SWITCH POSITION AND NUMBER OF SWITCHES DETERMINED BY SUPPLY AND LOAD TYPE.

NOTES:

1. TWO SWITCH *NETWORK DEVICE* WITH SEPARATE SUPPLY AND SWITCH CIRCUITS IS TO BE USED TO CONTROL CONTACTOR.

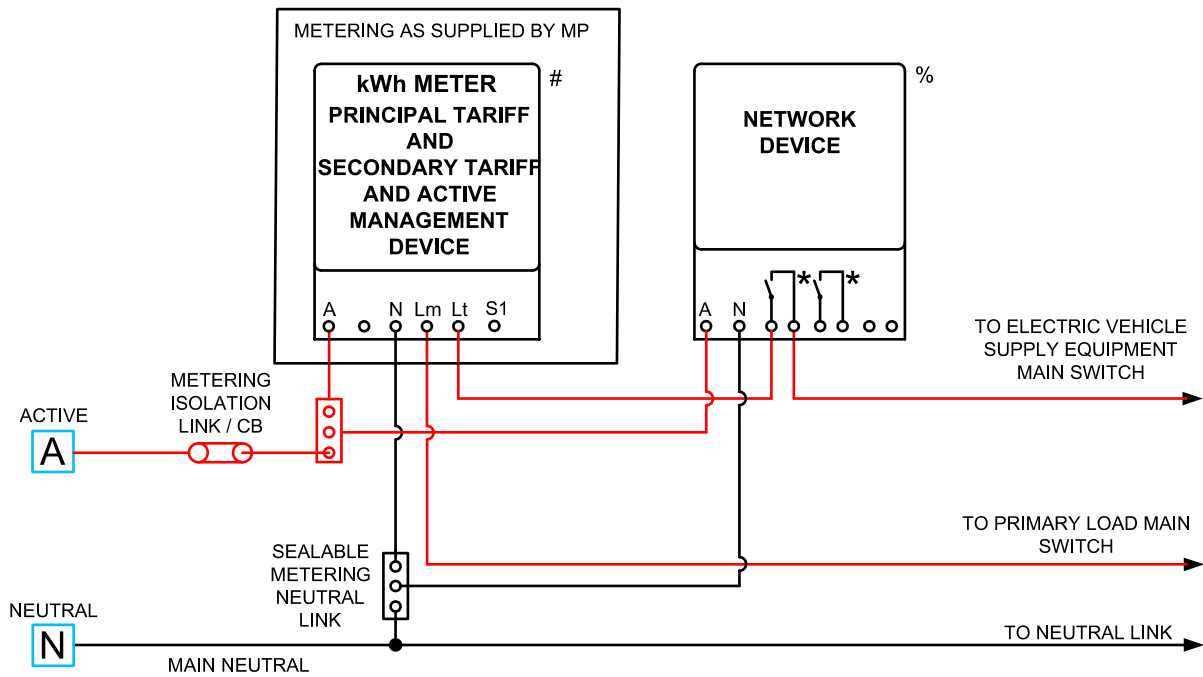
2. IF THE PRINCIPAL SUPPLY AND CONTROLLED SUPPLY LOAD EXCEED THE METERING ISOLATION LINK RATING, A SEPARATE SET OF METERING ISOLATION LINKS FOR EACH METER SHALL BE PROVIDED.

Revision:

A

**THREE-PHASE SERVICE DIRECT CONNECTED METERING:
PRIMARY AND SECONDARY TARIFF WIRING DIAGRAM**

QCD10-10



ITEMS SUPPLIED BY METERING PROVIDER.

% ITEMS SUPPLIED BY DNSP

* SWITCH POSITION AND NUMBER OF SWITCHES DETERMINED BY SUPPLY AND LOAD TYPE.

NOTES:

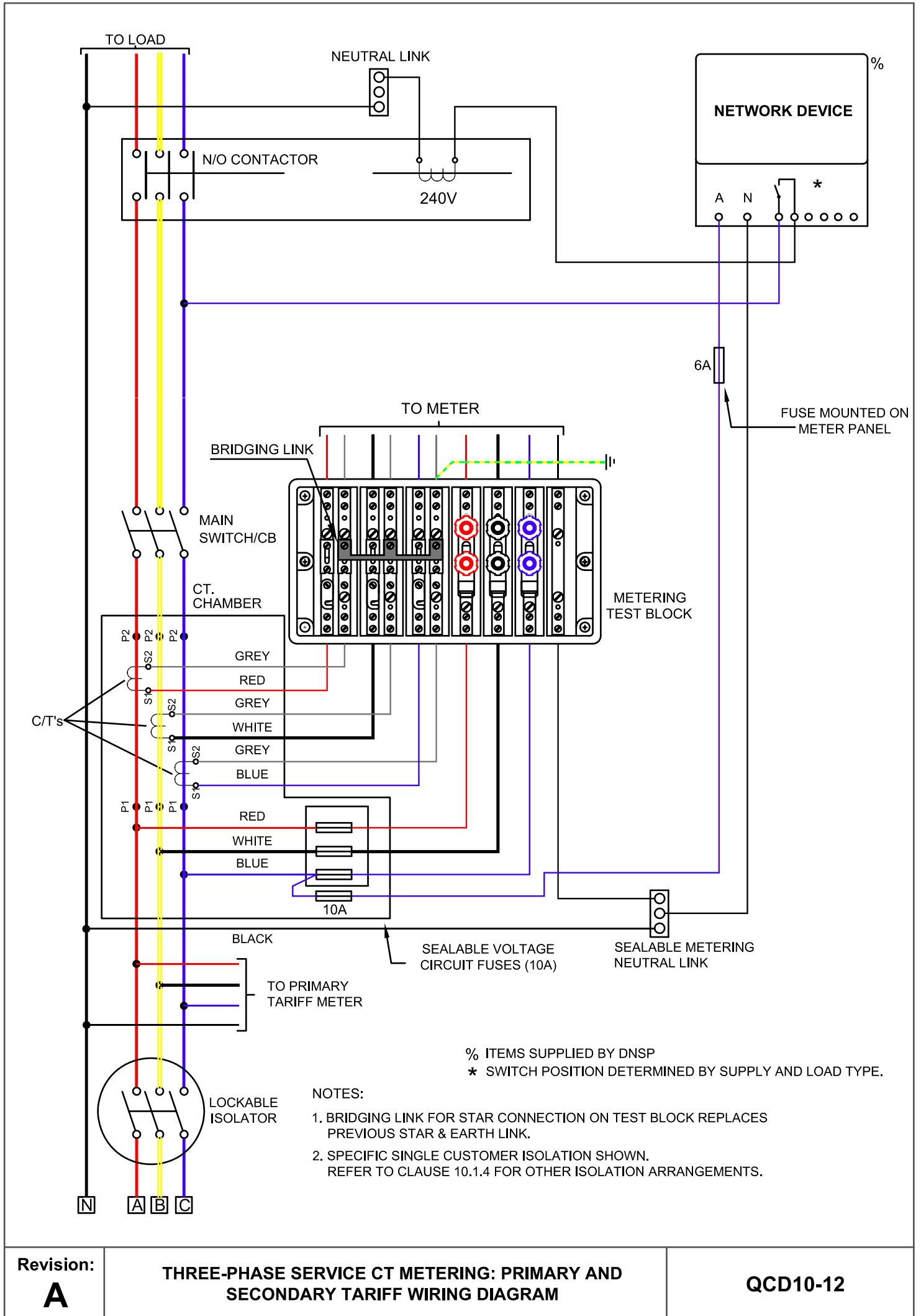
1. ELEMENT 1 FOR PRINCIPAL SUPPLY ONLY, ELEMENT 2 FOR SECONDARY TARIFF.
2. WHERE OVERLOAD PROTECTION FOR THE *CONSUMER MAINS*, IN ACCORDANCE WITH AS/NZS 3000, CANNOT BE ACHIEVED BY THE POSITIONING OF THE INSTALLATION CIRCUIT BREAKER MAIN SWITCHES ON THE LOAD SIDE OF THE METERING SEE CLAUSE 10.2.1 FOR THE REQUIREMENTS.

Revision:

A

SINGLE-PHASE SERVICE DIRECT CONNECTED METERING: PRIMARY AND CONTROLLED TARIFF WITH ELECTRIC VEHICLE WIRING DIAGRAM

QCD10-11



% ITEMS SUPPLIED BY DNSP
 * SWITCH POSITION DETERMINED BY SUPPLY AND LOAD TYPE.

NOTES:

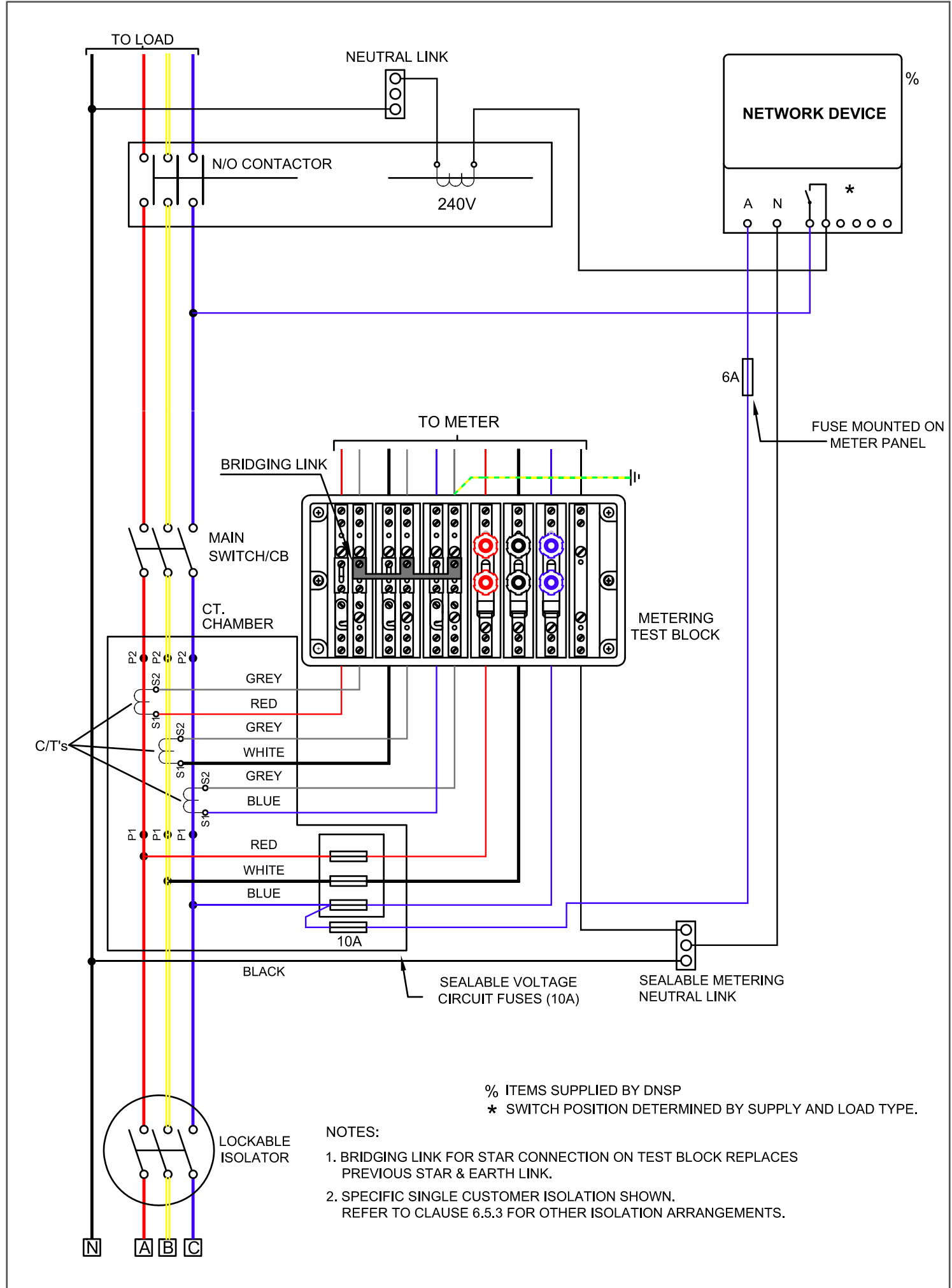
1. BRIDGING LINK FOR STAR CONNECTION ON TEST BLOCK REPLACES PREVIOUS STAR & EARTH LINK.
2. SPECIFIC SINGLE CUSTOMER ISOLATION SHOWN. REFER TO CLAUSE 10.1.4 FOR OTHER ISOLATION ARRANGEMENTS.

Revision:

A

THREE-PHASE SERVICE CT METERING: PRIMARY AND SECONDARY TARIFF WIRING DIAGRAM

QCD10-12



% ITEMS SUPPLIED BY DNSP
 * SWITCH POSITION DETERMINED BY SUPPLY AND LOAD TYPE.

- NOTES:
1. BRIDGING LINK FOR STAR CONNECTION ON TEST BLOCK REPLACES PREVIOUS STAR & EARTH LINK.
 2. SPECIFIC SINGLE CUSTOMER ISOLATION SHOWN. REFER TO CLAUSE 6.5.3 FOR OTHER ISOLATION ARRANGEMENTS.

Revision:
A

**THREE PHASE SERVICE CT METERING:
 PRIMARY LOAD CONTROL TARIFF WIRING DIAGRAM**

QCD10-13



Part of Energy Queensland

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Ergon Energy Network

ABN 50 087 646 062

Energex is the trading name of

Energex Limited

ABN 40 078 849 055

2-15-0104