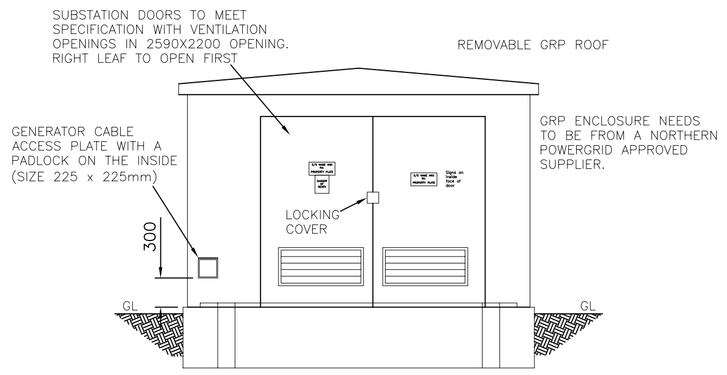
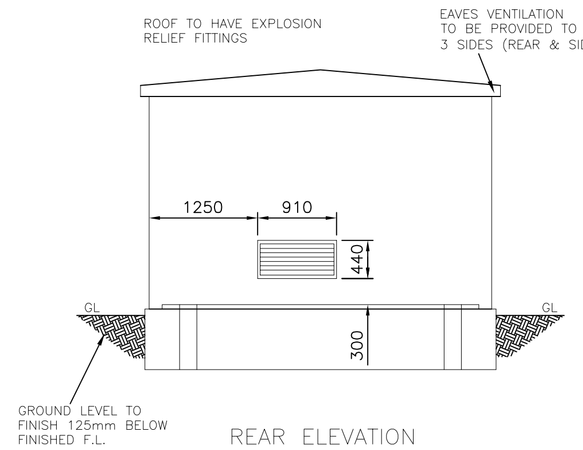
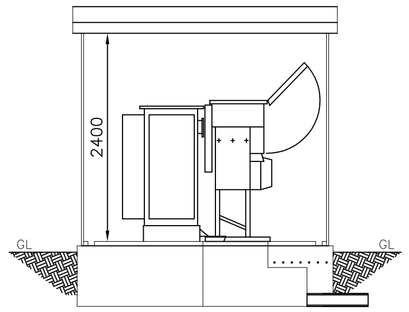


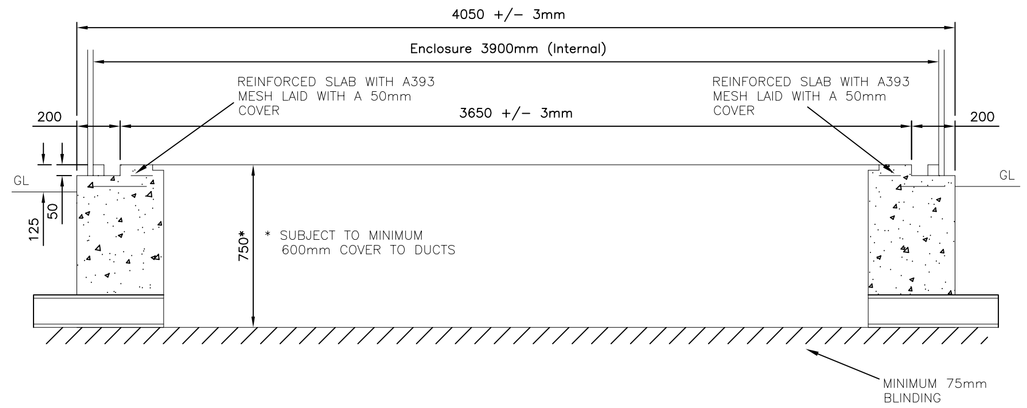
FRONT ELEVATION
SCALE 1:50



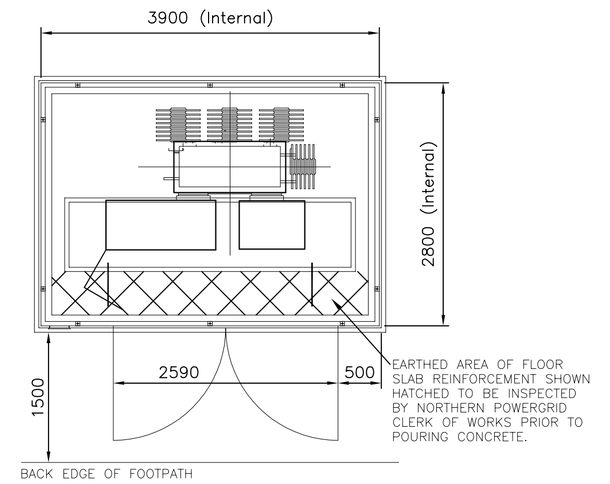
REAR ELEVATION
SCALE 1:50



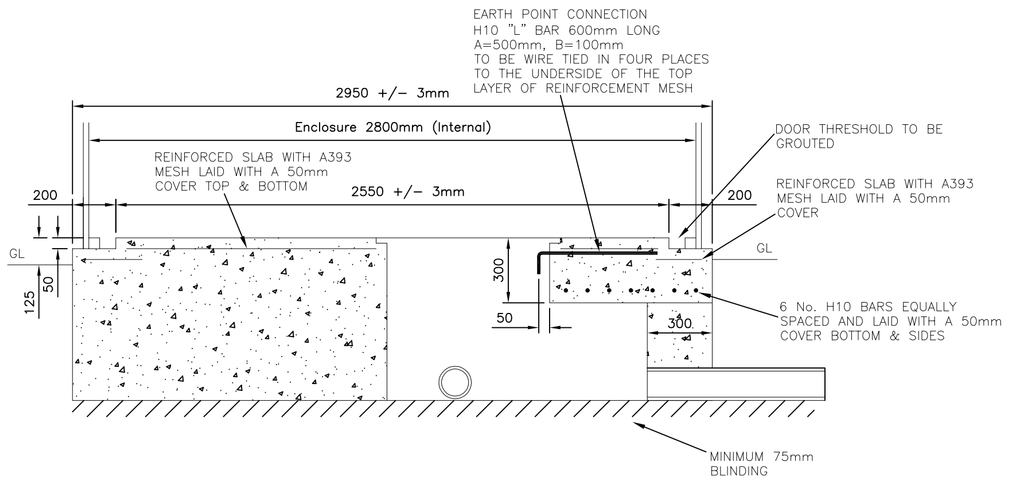
SECTION B–B
SCALE 1:50



DETAILED SECTION A–A
SCALE 1:20



PLAN OF EQUIPMENT & ENCLOSURE
SCALE 1:50



DETAILED SECTION B–B
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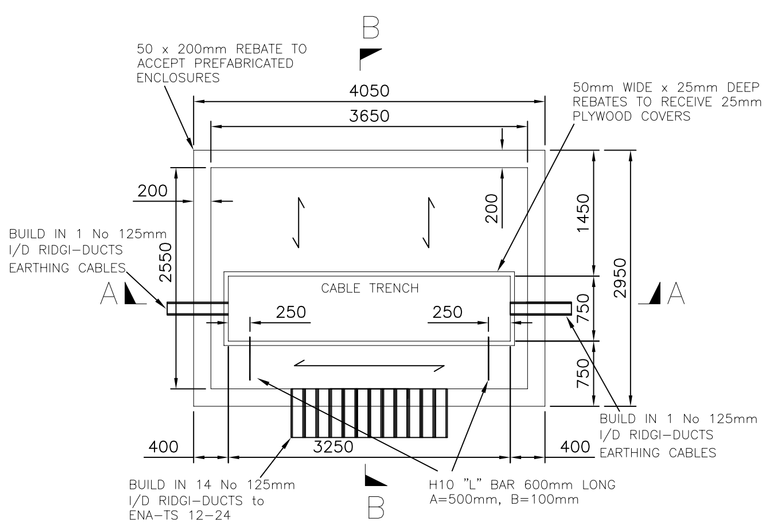
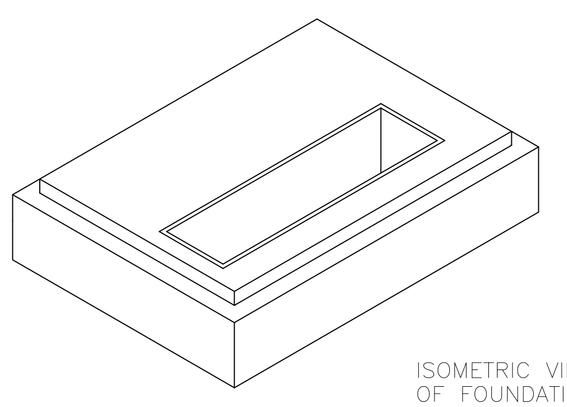


FOUNDATION PLAN
SCALE 1:50



ISOMETRIC VIEW OF FOUNDATION

INTERNAL CUBIC CAPACITY – 26.2m³

EQUIPMENT SCHEDULE	PLEASE TICK UNITS TO BE INSTALLED
SWITCHGEAR	
11kV RMU Non–Extensible – 200A Ring Main Unit with TLF Protection – Overcurrent and Earth Fault protection Supplier Ref – Schneider RN2C–T1/21/RA0103853 Commodity Code: 103853 Inc: Ring Sw actuator wiring on both switches (630A), CTs Ring Sw VPIS, 3 hole plates, CES4s, stud, SF6 alarm contact Protection CT's – 100/50/5	
FPI (Nortroll 2350–NPG) on LHS – Supplier Ref: Cable Troll 2350–NPG – Commodity Code: 245880	

TRANSFORMER	
1000kVA Transformer 1000kVA 3 Phase 50HZ 11000/433V, Supplier Ref: YEDL 122861 Commodity Code:122861 Oil Immersed Naturally Cooled Ground Mounted Transformer to ENA TS 35–1	
800kVA Transformer 800kVA 3 Phase 50HZ 11000/433V, Supplier Ref: YEDL 122770 Commodity Code:122770 Oil Immersed Naturally Cooled Ground Mounted Transformer to ENA TS 35–1	
500kVA Transformer 500kVA 3 Phase 50HZ 11000/433V, Supplier Ref: YEDL 122671 Commodity Code:122671 Oil Immersed Naturally Cooled Ground Mounted Transformer to ENA TS 35–1	
315kVA Transformer 315kVA 3 Phase 50HZ 11000/433V, Supplier Ref: YEDL 122648 Commodity Code:122648 Oil Immersed Naturally Cooled Ground Mounted Transformer to ENA TS 35–1	

LV FUSE CABINET / ACB	
LV Fuse Cabinet 1600A – 7 Way Fuse Cabinet – Supplier Ref:ECE03R4 Commodity code:218583	
LV Fuse Cabinet 1600A – 5 Way Fuse Cabinet – Supplier Ref:ECE02R4 Commodity code:218582 (only for 315 and 500kVA Transformers)	
LV Fuse Cabinet 800A – 3 Way Fuse Cabinet – Supplier Ref:ECE01R4 Commodity Code:218581 (only for 315kVA Transformer)	
1600A ACB (Air Circuit Breaker) + 2 feeder ways Left Side (metering CTs on bottom of ACB, with 30V DC shunt trip) Supplier Ref: ECE09R4 Commodity Code:218619 Transformer Mounted, Bottom Outgoing – LV Supply Transformer links on Right Hand Side	
1250A ACB (Air Circuit Breaker) + 2 feeder ways Left Side (metering CTs on bottom of ACB, with 30V DC shunt trip) Supplier Ref: ECE08R4 Commodity Code:218618 Transformer Mounted Bottom Outgoing – LV Supply Transformer links on Right Hand Side	
800A ACB (Air Circuit Breaker) + 2 feeder ways Left Side (metering CTs on bottom of ACB, with 30V DC shunt trip) Supplier Ref: ECE07R4 Commodity Code:218617 Transformer Mounted Bottom Outgoing – LV Supply Transformer links on Right Hand Side	

CABLES	
LV 300wF Al/Cu Commodity code – 110978	
HV 300Al T XLPE Commodity code – 110400	
SWA Cables – 4 core SWA 2.5mm (used with PB TRIP) commodity code: 099457	

PROTECTION SETTINGS	
1000kVA 100/5 with 10A O/C TLF	
800kVA 100/5 with 7.5A O/C TLF	
500kVA 50/5 with 10A O/C TLF	
315kVA 50/5 with 5A O/C TLF	
3A EF TLF for all Transformers	

PB TRIP – REQUIRED FOR ACB'S	
30V Battery Unit with Charger Commodity code: 215989	
Push Button Trip Commodity code: 099457	

EARTHING (Earthing arrangements available on northernpowergrid.com)	
S/S Earthing complies with Earthing Drawing C1010820 – (Cold Site)	
S/S Earthing complies with Earthing Drawing C1010864 – (Hot Site)	
Earthing drawing to be attached with design approval submission	

ALL OUTGOING LV WAYS TO BE FUSED TO COMPLY WITH IMP/001/911

SUBSTATION CONSTRUCTION DETAILS

FLOOR:

1. Foundations shown are based on a maximum weight of transformer of 40kN and a minimum ground bearing pressure of 80kN/m². Floor slab shall be designed to carry a minimum load of 7.5kNm². Floor to be level, steel float finish concrete, and sealed with approved concrete sealer or concrete paint before equipment installation.
2. Customer to undertake a ground investigation survey, substation foundations to be submitted to Northern Powergrid for comment prior to construction.
3. Earthed area of floor slab reinforcement shown hatched (on electrical layout) to be inspected by Northern Powergrid clerk of works prior to pouring.
4. Floor to be cast to front face of door opening, providing solid threshold. External level to be 75mm below finished floor level, allow unrestricted access for gear, and have a level landing area.
5. Trench covers to be 25mm exterior quality WBP ply, maximum width 1200mm, each cover to have 2 No. 35mm diameter finger holes, covers to be painted two coats silver gloss paint both sides and all edges
6. External paving and site finishes shall be provided as agreed with Northern Powergrid representative on site. As a minimum this shall consist of paving to full width of substation doors x 1200mm deep, with paving linking nearest highway path
7. Walls below ground level to be 7N dense concrete blockwork, fair faced in cable trenches.

GRP ENCLOSURE

8. GRP enclosure to be high security rated (unless otherwise agreed with Northern Powergrid). Details to be submitted to Northern Powergrid for comment prior to ordering and fabrication.
9. Doors to include ventilation where shown via steel door louvres to Northern Powergrid specification and approval.

Care is to be taken to ensure that access to cable openings is not impaired.

No Gas, Sanitary, Water or other Services to run through or under the substation.

Substation doors to be set back a minimum of 1500mm from back edge of footpath. Any proposed reduction in this clearance to be approved by Northern Powergrid following submission of site specific risk assessment and operational method statement.

2.0 metre strip around the substation is required for access and maintenance.

REFERENCE DRAWINGS :

C969426 – Door Louvre Details
C969428 – Roof Details (GRP/STEEL)
C969998 – Generator Cable Access Detail
C978643 – Earth Point Connection Details

Customer or their agent to obtain all necessary Planning and Building approvals before construction work commences.

This drawing is intended to indicate the minimum requirements for the installation of Northern Powergrid apparatus and is not in any way intended to describe the building to architectural, structural or other requirements.

Substation to be designed in accordance with Northern Powergrid flood mitigation policy –IMP/001/012.

Northern Powergrid Project Engineer to be notified of commencement of site works to enable site inspections to be carried out during construction.

APPROVED SUPPLIERS

GRP ENCLOSURES

www.kingsleyplastics.co.uk

www.enviroengineering.com

www.npsgroup.co.uk

NOTE: THE FULL LIST OF NORTHERN POWERGRID MATERIALS CAN BE FOUND ON THE ASSESSED PRODUCT DATABASE LINKED HERE: http://www.northernpowergrid.com/asset/6/document/1828.xlsx

NORTHERN POWERGRID

Lloyds Court, 78 Grey Street, Newcastle Upon Tyne, NE1 6AF

Manufacturer Details		11kV, 315 - 1000 kVA UDE IN PREFABRICATED ENCLOSURE (ICP)	ISO A1
Sheet No. 1	Scale AS SHOWN @A1		C.A.D
Prepared By JW		Document Details STANDARD DISTRIBUTION SUBSTATION DRAWING	
Modified	Grid Reference	Drawing No. C1065234	Historic Drawing No.
Created 19.10.2016	Checked By JJ	Revision 0	Notes