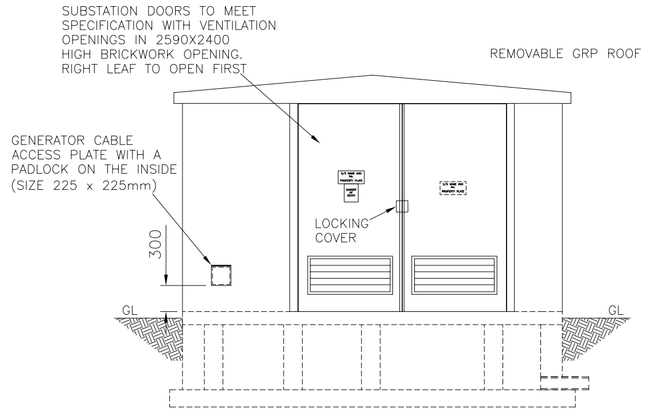
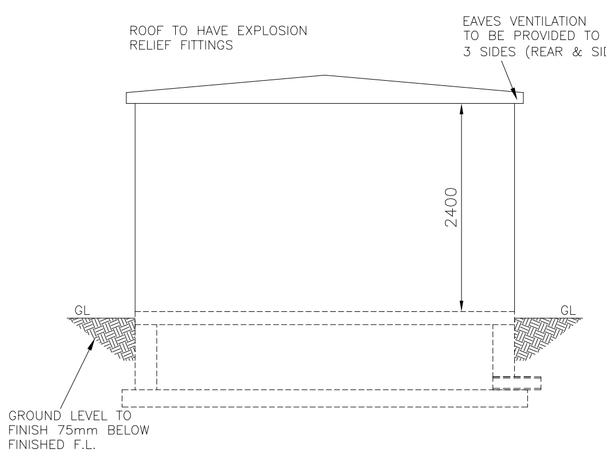
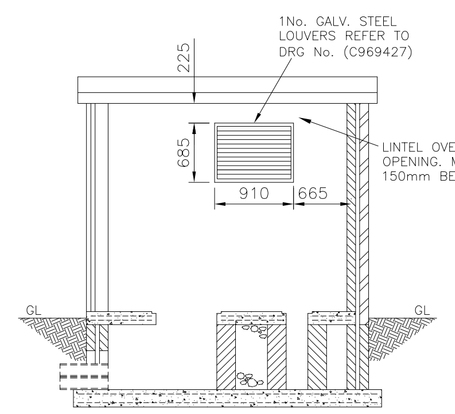


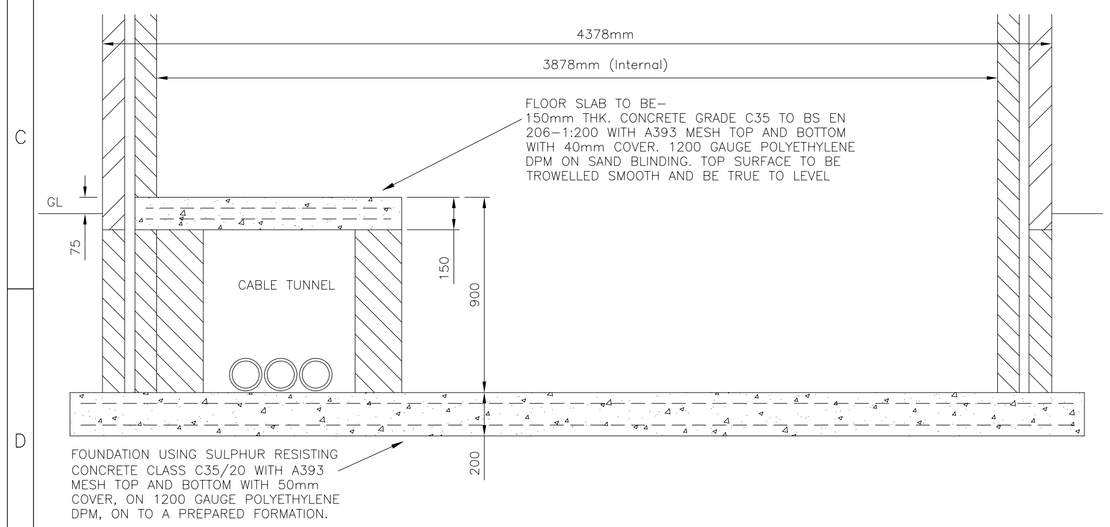
FRONT ELEVATION
SCALE 1:50



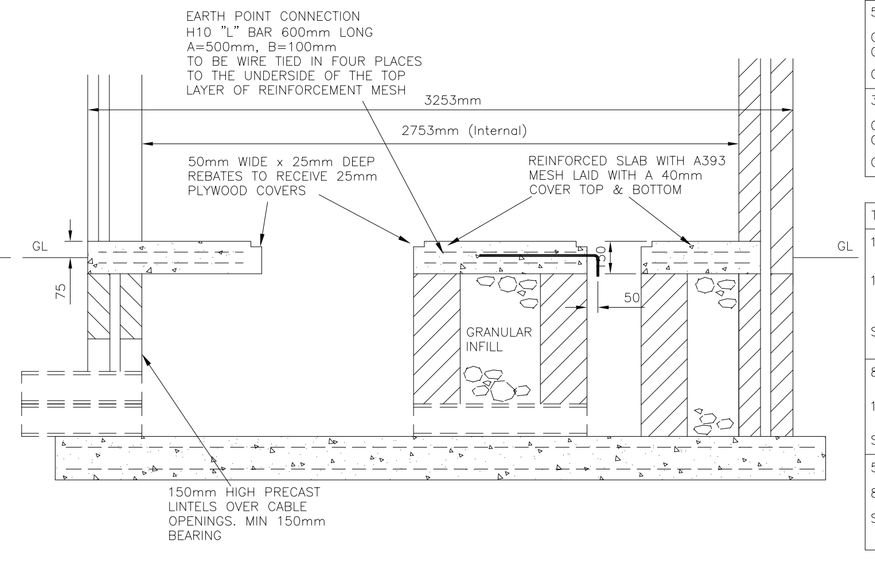
REAR ELEVATION
SCALE 1:50



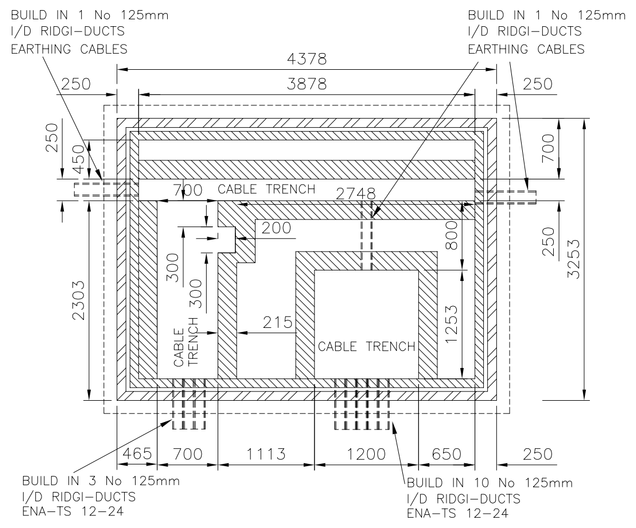
SIDE ELEVATION
SCALE 1:50



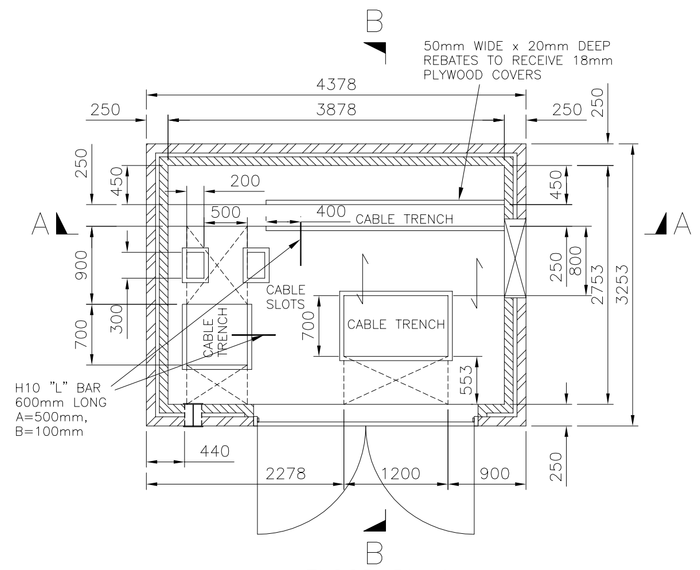
DETAILED SECTION A–A
SCALE 1:20



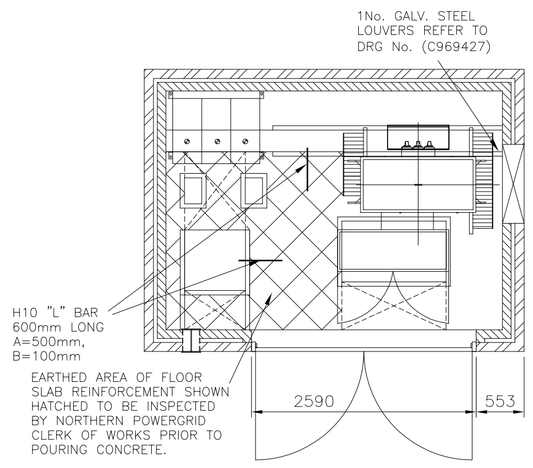
DETAILED SECTION B–B
SCALE 1:20



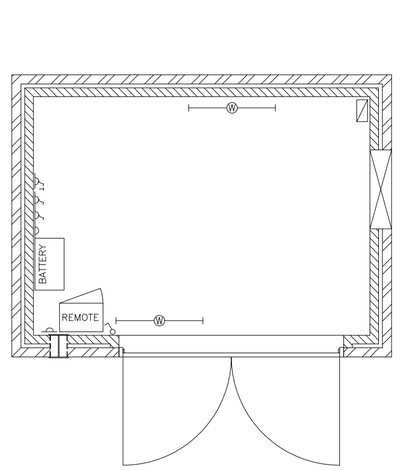
FOUNDATION PLAN
SCALE 1:50



FLOOR PLAN
SCALE 1:50



PLAN OF EQUIPMENT & ENCLOSURE
SCALE 1:50



INTERNAL POWER AND LIGHTING
SCALE 1:50

- LIGHT SWITCH
- SWITCHED SOCKET OUTLET
- SWITCHED SOCKET OUTLET (TEST)
- UNSWITCHED SPUR
- CONSUMER UNIT WITH MCB's
- FLUORESCENT TUBES IN IP56 FITTINGS (WALL MOUNTED)

ALL FITTING/CONDUIT TO BE PVC

FOR DETAILED INFORMATION SEE TECHNICAL SPECIFICATION NPS/006/001

LV SUPPLIES TO BE FROM LV CABINET

EQUIPMENT SCHEDULE	PLEASE TICK UNITS TO BE INSTALLED
SWITCHGEAR	
20kV Ring Main Unit (RMU) – SAFERING One 200A CB with Relay Protection Commodity Code: 315953 Inc: Two switches (630A), One with integral FPI 16ka Rating PR512/P Relay	

TRANSFORMER WITH CLOSE COUPLED LV FUSE CABINETS	
1000kVA Transformer With 7 Way LV Fused Cabinet Cable Connected Style, Ground Mounted Tx with Phase Reversed Close Coupled 7–way LV Cabinet and HV cable box Commodity Code:380472	
800kVA Transformer with 5–Way LV Fuse Cabinet Cable Connected Style, Ground Mounted Tx with Phase Reversed Close Coupled 5–way LV Cabinet and HV cable box Commodity Code:380468	
500kVA Transformer with 5–Way LV Fuse Cabinet Cable Connected Style, Ground Mounted Tx with Phase Reversed Close Coupled 5–way LV Cabinet and HV cable box Commodity Code:380464	
315kVA Transformer with 3 Way LV Fuse Cabinet Cable Connected Style, Ground Mounted Tx with Phase Reversed Close Coupled 3–way LV Cabinet and HV cable box Commodity Code:380462	

TRANSFORMER WITH ACB (Air Circuit Breakers) and LV Fuse Ways	
1000kVA Transformer 1600A ACB (Air Circuit Breaker) + 2 feeder ways Phase Reversed Supplier Ref: ECE09PRR4 Commodity Code: 218619	
800kVA Transformer 1250A ACB (Air Circuit Breaker) + 2 feeder ways Phase Reversed Supplier Ref: ECE08PRR4 Commodity Code:218618	
500kVA Transformer 800A ACB (Air Circuit Breaker) + 2 feeder ways Phase Reversed Supplier Ref: ECE07PRR4 Commodity Code: 218617	

CABLES	
LV 300wF Al/Cu Commodity code – 110978	
HV 185Al T XLPE Commodity code – 110097	
SWA Cables – 4 core SWA 2.5mm (used with PB TRIP) commodity code: 125460	

PROTECTION (SITE SPECIFIC– TO BE CONFIRMED AT COMMISIONING)	
PB TRIP – REQUIRED FOR ACB	
30V Battery Unit with Charger Commodity Code:215989	
Push Button Trip Commodity Code: 099457	

EARTHING	
S/S Earthing complies with Earthing Drawing C1010842 – (Cold Site)	
S/S Earthing complies with Earthing Drawing C1010867 – (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 125mm 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

ROOF:

8. Roof shall be to Northern Powergrid specification. Other roof types shall only be used with written approval from Northern Powergrid. Must accommodate an explosion relief device and must support distributed loading of 1.8kN/m². All roofs to be secured to walls via propriety fixings to be designed to BS6395 Part 3.

BRICKWORK:

9. Walls to be 250mm with blockwork or brick inner leaf. Internal walls minimum 100mm thick 7N concrete block or brickwork. Leafs to be tied together with stainless steel double triangle wall ties to BS1243 at 450mm centres vertical and 900mm centres horizontal.

DOORS:

10. Doors to be enhanced security rated from Northern Powergrid approved suppliers. Details to be submitted to Northern Powergrid for comment prior to ordering.
11. Doors to include ventilation where shown via steel door louvres to Northern Powergrid specification and approval.
12. Door reveals & lintel soffits to be closed, closure to provide minimum one hour fire protection

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 ROOFS	SUBSTATION DOORS
www.kingsleyplastics.co.uk	www.primadoors.co.uk
www.enviroengineering.com	www.bradburyuk.com
www.npsgroup.co.uk	www.hodgson–sayers.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

20kV DISTRIBUTION SUBSATION IN MASONRY ENCLOSURE (ICP)

ISO A1

C.A.D

Sheet No.	Scale	Document Details	
1	AS SHOWN @A1	STANDARD DISTRIBUTION SUBSTATION DRAWING	
Prepared By			
JW			
Modified	Grid Reference	Drawing No.	Historic Drawing No.
		C1065717	Y001S12151
Created	Checked By	Revision	Notes
25-11-2016	JJ	0	