



1 SUBSTATION DOORS TO MEET SPECIFICATION WITH VENTILATION OPENINGS IN 2590X2400 HIGH BRICKWORK OPENING. RIGHT LEAF TO OPEN INHS.

2 REMOVABLE GRP ROOF

3 GENERATOR CABLE ACCESS PLATE WITH A PADLOCK ON THE INSIDE (SIZE 225 x 225mm)

4 LOCKING COVER

5 EARTH VENTILATION TO BE PROVIDED TO RELIEF FITTINGS 3 SIDES (REAR & SIDE)

6 UNIT OVER DOOR OPENING

7 1% GALV. STEEL LOUVERS REFER TO DRG No. (C969427)

8 GROUND LEVEL TO FINISH 75mm BELOW

9 REINFORCED SLAB WITH A393 MESH LAID WITH A 50mm COVER

10 REINFORCED SLAB WITH A393 MESH LAID WITH A 50mm COVER

11 8 No. H10 BARS EQUALLY SPACED AND LAID WITH A 50mm COVER BOTTOM & SIDES

12 MINIMUM 75mm BUNDLING

13 50mm WIDE x 25mm DEEP REBATES TO RECEIVE 25mm PLYWOOD COVERS

14 REINFORCED SLAB WITH A393 MESH LAID WITH A 50mm COVER

15 BUILD IN 1 No. 125mm I/O RIDGE-DUCTS EARTHING CABLES

16 BUILD IN 14 No. 125mm I/O RIDGE-DUCTS TO EMA-TS-12-24

17 BUILD IN 1 No. 125mm I/O RIDGE-DUCTS LONG

18 50mm WIDE x 25mm DEEP REBATES TO RECEIVE 25mm PLYWOOD COVERS

19 500mm

20 3265

21 500

22 845

23 750

24 1545

25 3140

26 4265

27 250

28 250

29 500

30 500

31 500

32 500

33 500

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SWITCHGEAR	EQUIPMENT SCHEDULE	PLEASE TICK UNITS TO BE INSTALLED
11kV R&U Non-Extendible - 200A Ring Main Unit with TLF Protection - Overcurrent and Earth fault protection Supplier Ref - Schneider RM2C-11/21/R&U103853 Commodity Code: 103853		
Inc: Ring Sw actuator wiring on both switches (430A), CTs Ring Sw VPIs, 3 hole plates, CFS4s, stud, SF6 alarm contact Protection CTs - 100/50/5		
PI (Northall 2350-NRP) on IHS - Supplier Ref: Cable Trill 2350-NRP - Commodity Code: 24389B		
TRANSFORMER		
1000KVA Transformer		
1000KVA 3 Phase 50Hz 11000/433V, Supplier Ref: YEDL 122861 Commodity Code:122861		
Oil Immersed Naturally Cooled Ground Mounted Transformer to EMA 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 EMA 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 EMA 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 EMA TS 35-1		
LV FUSE CABINET / ACB		
LV Fuse Cabinet 1600A - 7 Way Fuse Cabinet - Supplier Ref:EC0394 Commodity code:218583		
LV Fuse Cabinet 1600A - 5 Way Fuse Cabinet - Supplier Ref:EC0294 Commodity code:218582		
LV Fuse Cabinet 800A - 3 Way Fuse Cabinet - Supplier Ref:EC0194 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: ECE0984 Commodity Code:218519		
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: ECE0864 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: ECE0784 Commodity Code:218617		
Transformer Mounted Bottom Outgoing - LV Supply Transformer links on Right Hand Side		
CABLES		
LV 300W/F Al/Cu Commodity code - 110978		
HV 300A T XLPE Commodity code - 110400		
SMA Cables - 4 core SMA 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 ACBS		
30V Battery Unit with Charger Commodity code: 215989		
Puran 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 RIGID TO COMPLY WITH IMP/001/911		

SUBSTATION CONSTRUCTION DETAILS	
1 Foundations shown are based on a maximum weight of transformer of 40kN and a minimum ground bearing pressure of 80kN/m ² . Floor slab shall be designed to carry a minimum of 10kN/m ² and be finished with a 75mm concrete screed and sealed with approved concrete sealer or concrete paint before equipment installation.	
2 Customer to undertake a ground investigation survey, subsidence foundations to be submitted to Northern Powergrid for comment prior to construction.	
3 Earthed area of floor slab reinforcement shown indicated (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 point shall be 25mm diameter finger holes, covers to be printed two coats silver glass point steel slates and all edges.	
6 External piling and site finishes shall be provided as agreed with Northern Powergrid representative on site. As a minimum this shall consist of piling to full width of subsstation doors x 1200mm deep, with piling linking nearest highway path	
ROOF:	
7 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 properly fitted to be designed to BS5395 Part 3.	
BRICKWORK:	
8 Walls to be 215mm with blockwork or brick inner leaf internal walls minimum 100mm thick. External walls to be 215mm with blockwork or brick inner leaf. All walls to be secured to walls via ironage wall ties to BS1243 of 450mm centres vertical and 900mm centres horizontal.	
DOORS:	
9 Doors to be reinforced security rated from Northern Powergrid suppliers. Details to be submitted to Northern Powergrid for comment prior to ordering.	
10 Doors to include ventilation where shown via steel door louvers to Northern Powergrid specification and approval.	
11 Door handles & Intel soffits to be closed, closure to provide minimum one hour fire protection.	
Cable is to be taken to ensure that access to cable openings is not impeded.	
No Gas, Sanitary, Water or other Services to run through or under the subsstation.	
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 subsstation 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 DOORS	SUBSTATION DOORS
www.kingsplastics.co.uk	www.primadors.co.uk
www.environengineering.com	www.brodburyuk.com
www.npsgroup.co.uk	www.hodgson-syvers.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	11kV 315 - 1000 KVA UDE IN MASONRY ENCLOSURE
Manufacturer Details	Standard Distribution Substation Drawing
Sheet No. 1	AS SHOWN @AI
Prepared By JY	Document Details
Modified JY	Drawing No. C1065233
Created 19-10-2016	Revision 0

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