

440 BATTERY ELECTRICAL SCALE 1 EARTHED AREA OF FLOOR SLAB
REINFORCEMENT SHOWN HATCHED TO
INSPECTED BY NORTHERN POWERGRID
CLERK OF WORKS PRIOR TO POURING
CONCRETE. LAYOUT BE

REINFORCED FLOOR SLAB OVER CABLE TUNNEL FOR ALTERNATIVE CABLE ROUTE

300

250

1253

1425

215

780

675

 \Box

FOR INTERNAL POWER AND LIGHTING SPECIFICATIONS SEE DRAWING C1010063 Rev C

CONFIGURATION OF CABLE TUNNELS AND DUCTS TO BE AGREED WITH ELECTRICAL ENGINEER / FPS CoW BEFORE FOUNDATIONS ARE BUILT.

MEET NORTHERN BE DESIGNED POWERGRID SPECIFICATION

INTERNAL

CUBIC

CAPACITY

28.4m³

TO

ROOM TEMP 30 °C TRANSFORMER HEAT OUTPUT

CUSTOMER NOTES

1500

893

2595

440

BUILD IN 10No 125mm I/D DUCTS SEALED IN 100 THICK CONCRETE

FOUNDATION PLAN

SCALE

1:50

¥

250

H10 "L" BAR 600mm LONG, A=500mm B=100mm

CABLE TRENCH

CABLE TUNNEL IF REQUIRED

SIDE CABLE ENTRY IF REQUIRED

CABLE TRENCH

SIDE CABLE ENTRY IF REQUIRED

3428 3928 600

ABLE TUNNE REQUIRED

CABLE TUNNEL IF REQUIRED

2048

EDGE

9F

F00TPATH

SCALE

1:50

PLAN

The customer to carry out all neces described including the provision of of any other areas or customers ac ecessary lighting ar of the LV supply. accommodation. ating installation and building work as substation shall be wired independently

Northern Powergrid will not install any equipment until the purpose.Customer service will not be made live until comp e accommodation is deemed fit for pletion certificate is issued.

Customer or their agent to obtain construction work commences. <u>Q</u> necessary Planning and Building approvals before

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

works, to allow Northern Powergrid to check for comp nimum 15 days prior to commencement pliance with their requirements.

Substation to be designed in accordance with Northern Northern Powergrid Project Engineer to be notified of site inspections to be carried out during construction. COL Powergrid flood mitigation policy. of site works to enable

s to be set back a m ion in this clearance t risk assessment and c

FLOOR:

- Foundations to be designed for a maximum weight of transformer of 40kN and a ground bearing pressure of $80kN/m^2$ minimum
- The foundations shown are for a substation built on natural ground, if ground is unsuitable the foundations are to be adjusted to structural engineers instructions.
- 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.
- Earthed area of floor slab reinforcement shown hatched (on electrical layout) to inspected by Northern Powergrid clerk of works prior to pouring concrete.
- 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
- Floor to be cast to front face of door opening, providing solid threshold. External level to be 150mm below finished floor level, allow unrestricted access for gear, and have a level
- 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 1200 mm deep, with paving linking nearest highway path
- Substation construction to provide 0.25 $\mbox{W/m}^2$ °C to roof.
- Ceiling height to be minimum 2400mm, maximum 2800mm, and to give one hour fire protection. Ceiling to be concrete, plasterboard, fireboard or similar on suitable timber framework where required
- Roof to be non fragile, waterproof membrane to have minimum life expectancy of 15 years Timber roofs to have 18mm minimum ply decking. Pitched tile or slate roofs to have 18mm ply sarking to prevent access, with counter battens and sarking felt over ply. On sloping or tiered sites, measures shall be incorporated to prevent access on to roof.
- All roofs to be secured to walls via proprietary fixings or straps (explosion relief devices not acceptable) to be designed to BS6399 part 3. Pitched roofs shall have gable restraint straps fixed to roof framework.
- 12. Masonry below ground level to be 7N/mm² dense concrete block or brick.
- Walls to be 250mm cavity walls 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 centers horizontal.
- 14. 215mm trench walls to be fair faced and flush pointed dense concrete block or brick
- 15. Doors must be to Northern Powergrid specification. Each substation site will be given a security rating by Northern Powergrid, standard, enhanced or high, the minimum door specification shall match or exceed this site specific security rating. Door details must I submitted for approval prior to placing an order with the supplier. must be
- 16. Doors to include ventilation where required via steel door louvres to Northern Powergrid specification and approval.
- 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 17. Door reveals & lintel soffits to be closed, closure to provide minimum 1hour fire protection

Substations attached to or enclosed within other buildings to have minimum one hour compartmentation. Irrespective of other requirements imposed by L.A. fire officer.

Trenches and cable routes linked to customer's accommodation to be closed off after cable installation. Closure to prevent physical access into substation and provide one hour fire protection.

No structural steel within substation to be exposed. Steel doors shall be fixed to not to steel structural frame of building. masonry

The position of the louvred ventilators should be such that they do not create a noise complaint.

250

No Gas, Sanitary, Water or other Services to run through or under the substation Care is to be taken to ensure that access to cable openings is not impaired.

REFERENCE DRAWINGS

- C969426 Door Louvre Details
 C969427 Wall Louvre Details
 C969428 Roof Details (GRP/STEEL)
 C969998 Generator Cable Access Detail
 C978643 Earth Point Connection Details
- C1010063 Rev C Internal Power & Lighting for 315 —
- 1000kVA Slide in UDE Substation

epared By NORTHERN POWERGRID id Reference SHOWN Ref No. ocument Detail Lloyds Court, \Box C993717 STANDARD DISTRIBUTION 78 Grey Street, Newcastle Upon 315 MASONRY ENCLOSURE 1000kVA SUBSTATION DRAWING Historic Drawing No. SLIDE IN UDE Tyne, Z E 1 6AF

n from back edge of footpath. Any Northern Powergrid following submission statement. 17.05.16