

General
This drawing is to be read in conjunction with document SUB-03-017 General Specification for the Civil Engineering and Building Design and Construction of Secondary Substations. It is the constructor's responsibility to confirm, before construction, that the details on this drawing are correct as per SUB-03-017.

Details shown on this drawing are typical for this type of substation building but may not be suitable for substations housing alternative equipment. The constructor shall satisfy themselves that the appropriate details shown are correct depending on the type of substation being constructed.

General
The concrete shall be in accordance with the specification and attain the relevant cub crushing strength at 28 days.

Floor (Concrete 40N/mm² 28-Day Cube Strength)
Floors of substations housing indoor switchgear shall have a visqueen damp proof membrane installed where graded stone infill is used.
A flat, level and smooth floor surface is essential for installation of plant. Tolerances to finished level expressed as a maximum permissible deviation beneath a straight edge with feet placed anywhere on the floor shall not exceed 1mm in 1m or 3mm in 3m. Floors to be cured, prepared & painted with 2 No. Coats of non-slip floor paint on completion.

General
All brickwork below D.P.C. to be H.D. category 1 min. 75N/mm² mean compressive strength and max 7% M.A. and durability designation F2 S2 (Ex Engineering Brickwork Class B) in English bond except for exposed faces.
External facing brickwork to be H.D. category 1 min. 30N/mm² mean compressive strength and max 12% M.A. and durability designation F1 S1 or better.
Internal facing brickwork to fair faced smooth textured solid concrete bricks, sized to match external facing bricks and with a mean compressive strength of not less than 20N/mm².
Class iii mortar.

Walls
 External walls to enclosures housing Indoor Equipment shall be cavity construction that provides, as a minimum, standard thermal insulation values in accordance with the table below. The internal leaf shall be solid brickwork construction minimum 215mm overall thickness. Walls shall be fair-faced plumb and smooth to the interior.
 Leaves of walls to be tied together by means of type 1 or type 2 stainless steel ties laid in every fourth course at 375mm centres and set back 38mm from outer face, ties are to be staggered.

Details of proposed doors shall be submitted to SPEN for comment, before work commences.

Proprietary GRP faced aluminium or steel security doors are the preferred option, unless stated otherwise.

An alternative option for hardwood doors (see Drg SP4000543 for details) or GRP doors is also available.

On completion of cabling, cable trench to be filled with dry sand and skimmed with minimum 50mm depth of sand/cement screed over a visqueen membrane (top to be level with FFL).

Roofs shall provide a minimum standard thermal insulation values as detailed in the table below.

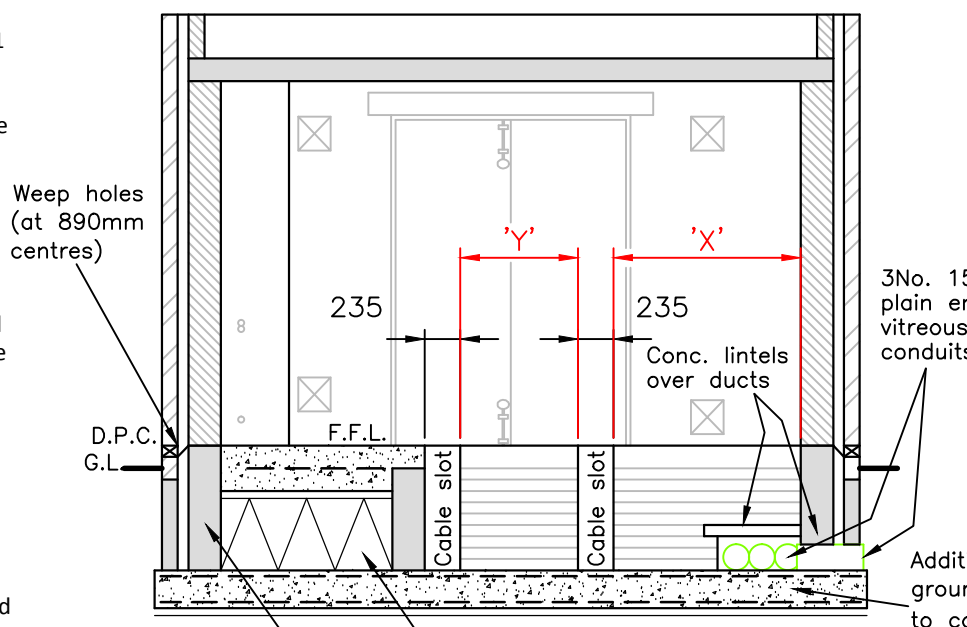
Roof shall be proprietary precast pre-stressed beam and in situ concrete screed topping systems with a fair-faced soffit finish, sealed joints and with reinforcement to screed where applicable with water proofing shall be that as shown in the Typical Detail above.

Nominal trickle ventilation is to be provided to reduce the risk of condensation.

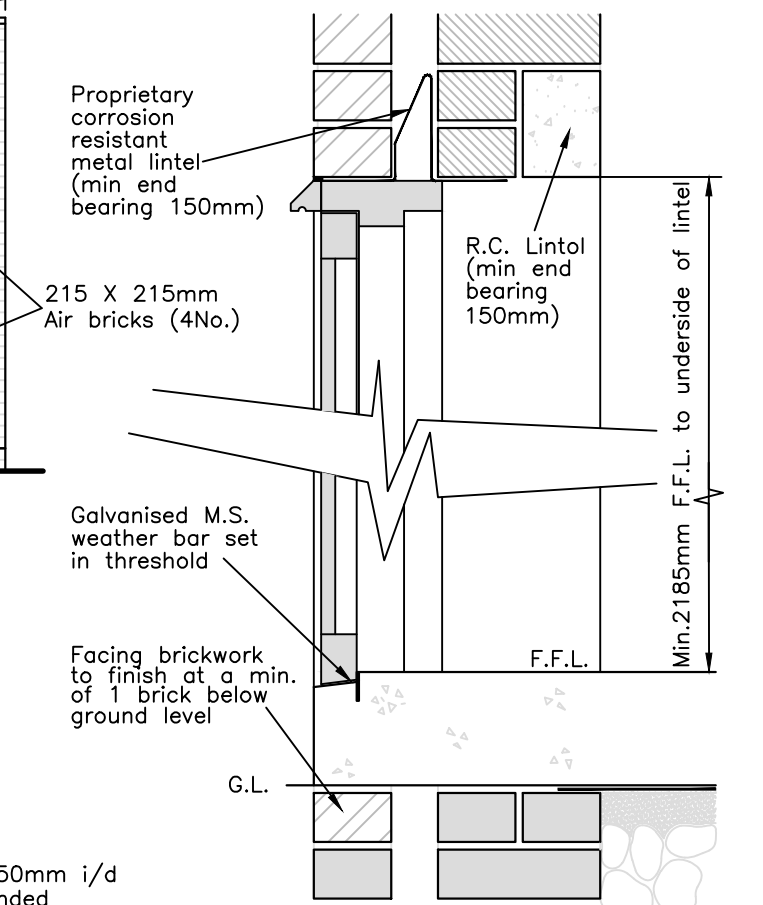
Substations housing indoor switchgear require insulation. U values for wall and roof shall meet those detailed in the table below:

Related Typical Deemed to Satisfy Drawings

Hardwood Doors	SP4000543	Provide 19
Meter Cupboards	SP4078901	plywood co
		to u/s to

[illegible]

For plant installation: /
Provide 19mm thk. temporary
plywood covers (with battens fitted
to u/s to prevent movement)
over open trench area



Foundation and/or
improvement works
constructors design to
site-specific conditions

25mm Dia. galvanised m.s. bar

A252 Fabric reinfnt.
900 X 900mm sheet

150, 150

125

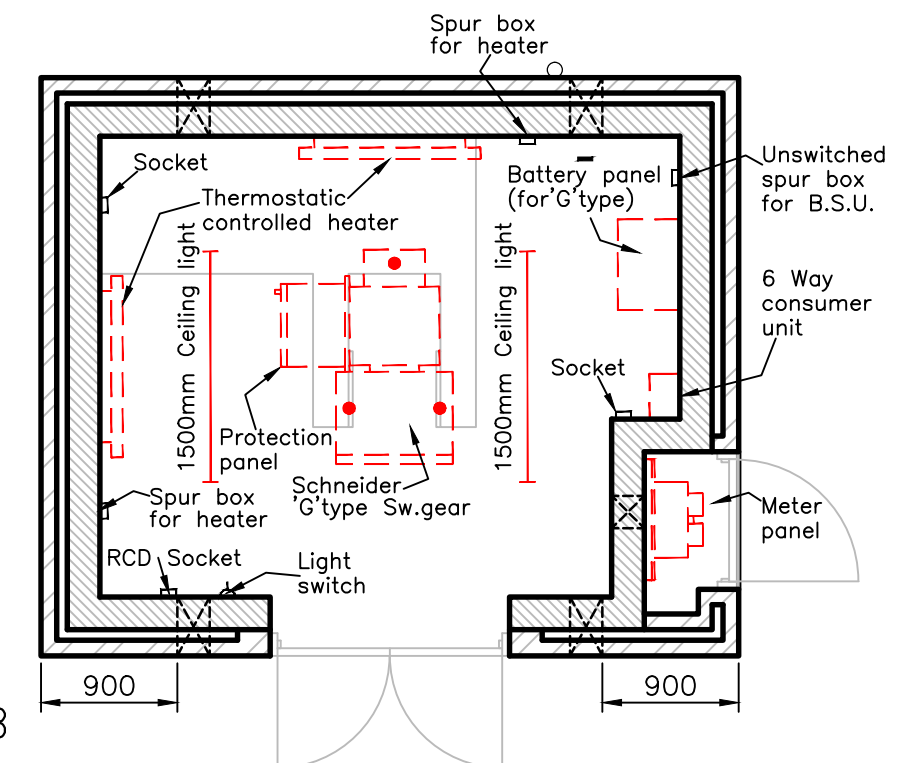
100

180

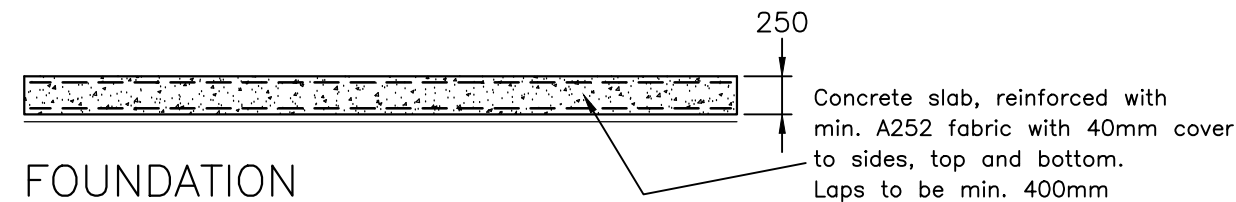
300



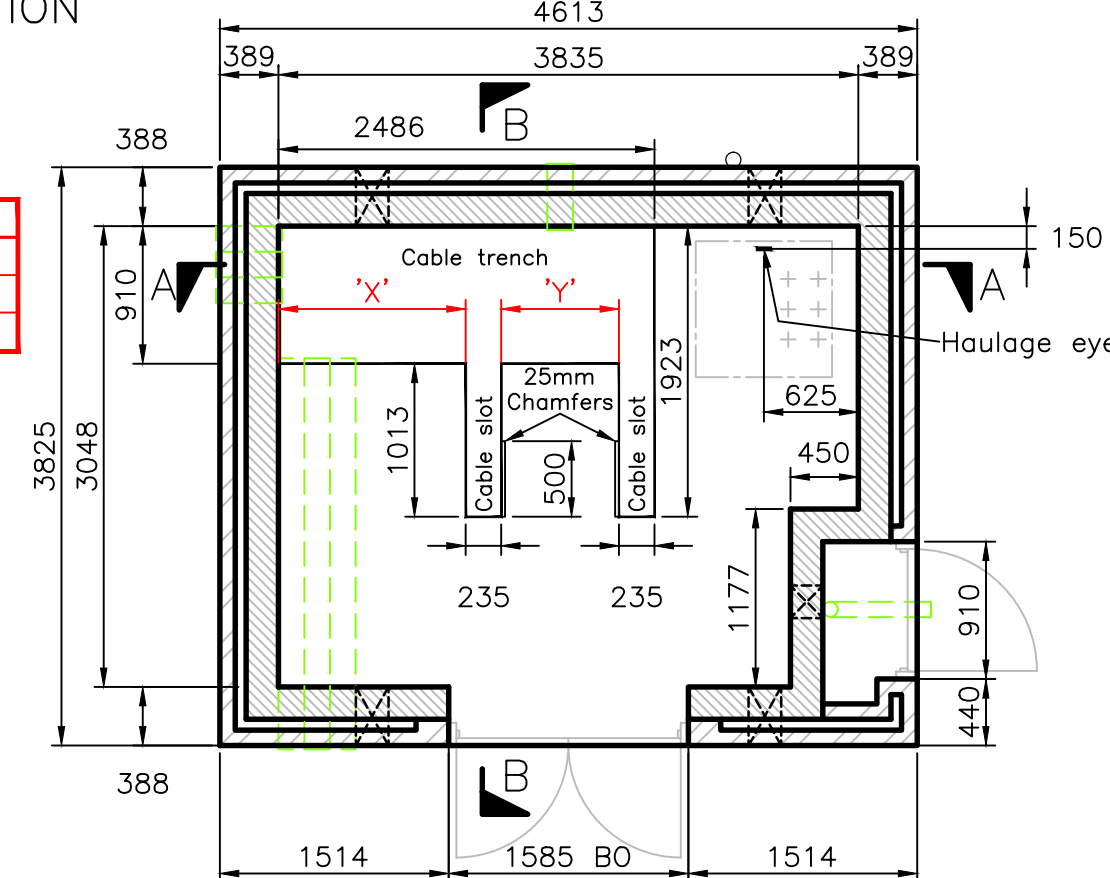
TYPICAL DETAIL AT
ROOF OUTLET & SIDE BEARING



PLANT LAYOUT



FOUNDATION
SECTION



PLAN

Rev. 10.0	Date 27/11/17	GENERAL UPDATES TO REFLECT CHANGES TO CIVILS POLICY DOCUMENT
Drawn	C.B.	
Checked	G.R.	
Approved	G.R.	



SP PowerSystems Ltd
System Design, Drawing Office, Gateway House,
Old Hall Road, Bromborough, CH62 3NX.
Telephone 0141 614 7143.

TYPICAL TRADITIONAL BUILDING DETAILS FOR 11KV BRICKBUILT SUBSTATION (‘D’ OR ‘G’ TYPE RMU WITH METERING)

Location					
11kV SUBSTATIONS					
Drawn	Date	Checked	Date	Approved	Date
MT	OCT 08	C.O.B	OCT 08	C.W	OCT 08
Status			Drq. No.	Rev.	
ISSUED			SP4049060	10.	
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			1:50	A2	