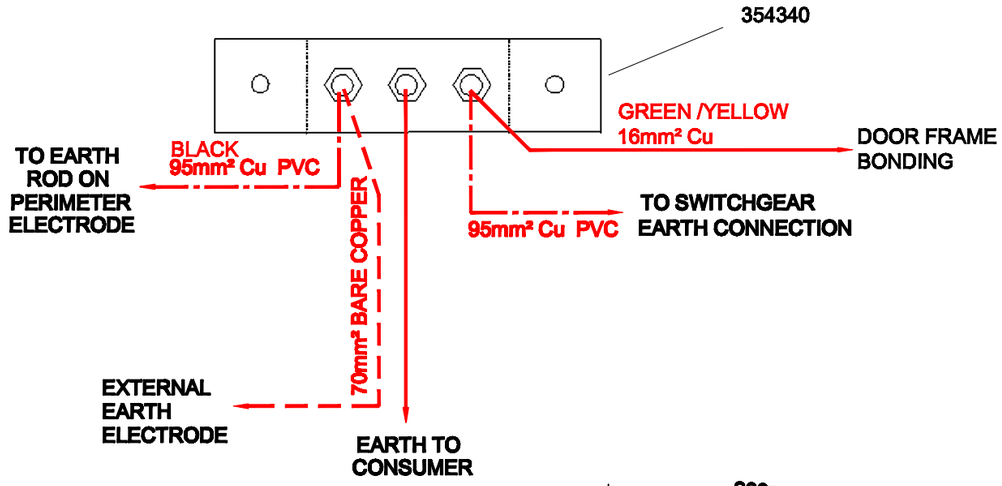
FIG. 5



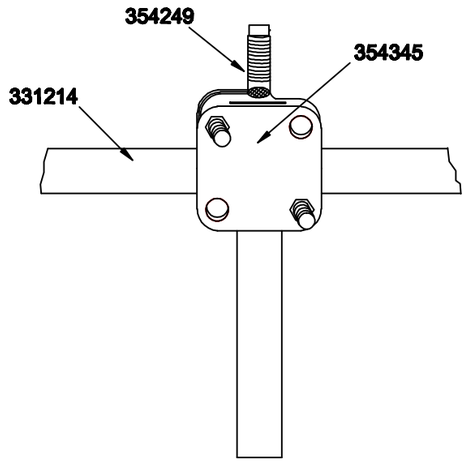
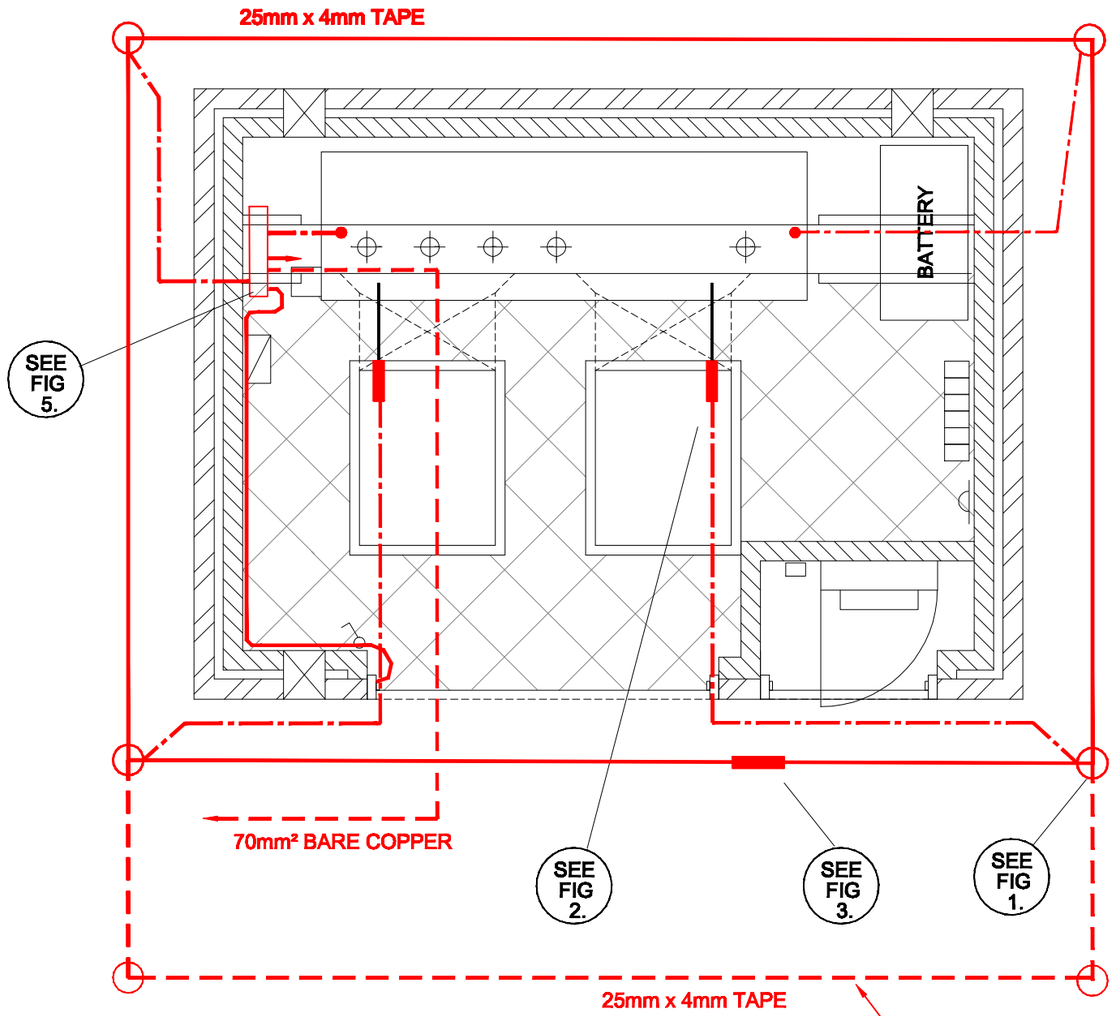


FIG. 1

FIG. 3



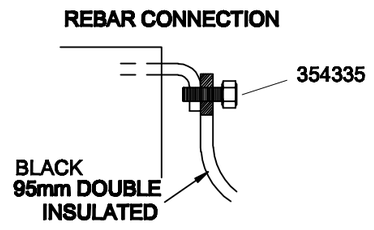


FIG. 2

COLD Site - (Combined Site)

- The external earth electrode is to be laid for a minimum of 80M out with the incoming cables or length of the HV trench if less than 80M. (Conductor to be 70mm2 CSA Bare Cu).**Note: To be installed on a COLD Site only.**
- Perimeter electrode to be installed in direct contact with the soil at a depth of 0.6M to 1.2M on the outer edge of the foundation. (25mm x 4mm Copper earth tape to be used with 'Property of Northern Powergrid' engraved on tape).
- Earth rods to be installed at a depth of 1.2M (2.4M in Rural Environments).
- Bonding from perimeter nest to switchgear, transformer, LV cabinet and rebar to be 95mm2 Cu Black PVC covered conductor.
- Bonding from metal door frame to switchgear to be 16mm2 Cu Green / Yellow PVC covered conductor.
- All external joints to be covered with denso mastic tape.
- Substations with metal doors will require additional perimeter earth electrode at the front of the substation, see additional layout on drawing.
- The maximum resistance value for the combined HV / LV earth electrode must be less than 20ohms.

Use this drawing in conjunction with Northern Powergrid policy – IMP/010/011 Code of Practice for Earthing LV Networks and HV Distribution Substations and supplementary drawing C978643 (Earth Point Connection Details).

For cold site substations that are integral to a building where a full perimeter electrode cannot be installed, the earthing should be installed to drawing C1065495.

Steel Kiosk Substationswill require additional perimeter earth electrode;these will be considered on an individual basis.

NORTHERN POWERGRID

Manufacturer Details

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20KV EXTENSIBLE HV PANEL WITH METERING ANNEXE EARTHING ARRANGEMENT COMBINED SITE (COLD)

Sheet No. 1	Scale N.T.S.	Type PLANT DIAGRAMS	WIRING
Prepared By Barbara.Gordon		Ref No. C1010841	Historic Drg.No. C1010841
Revised 09/01/17	Grid Reference	Revision C	Notes
Date Issued 27/06/12	Checked By S. CRAWFORD		