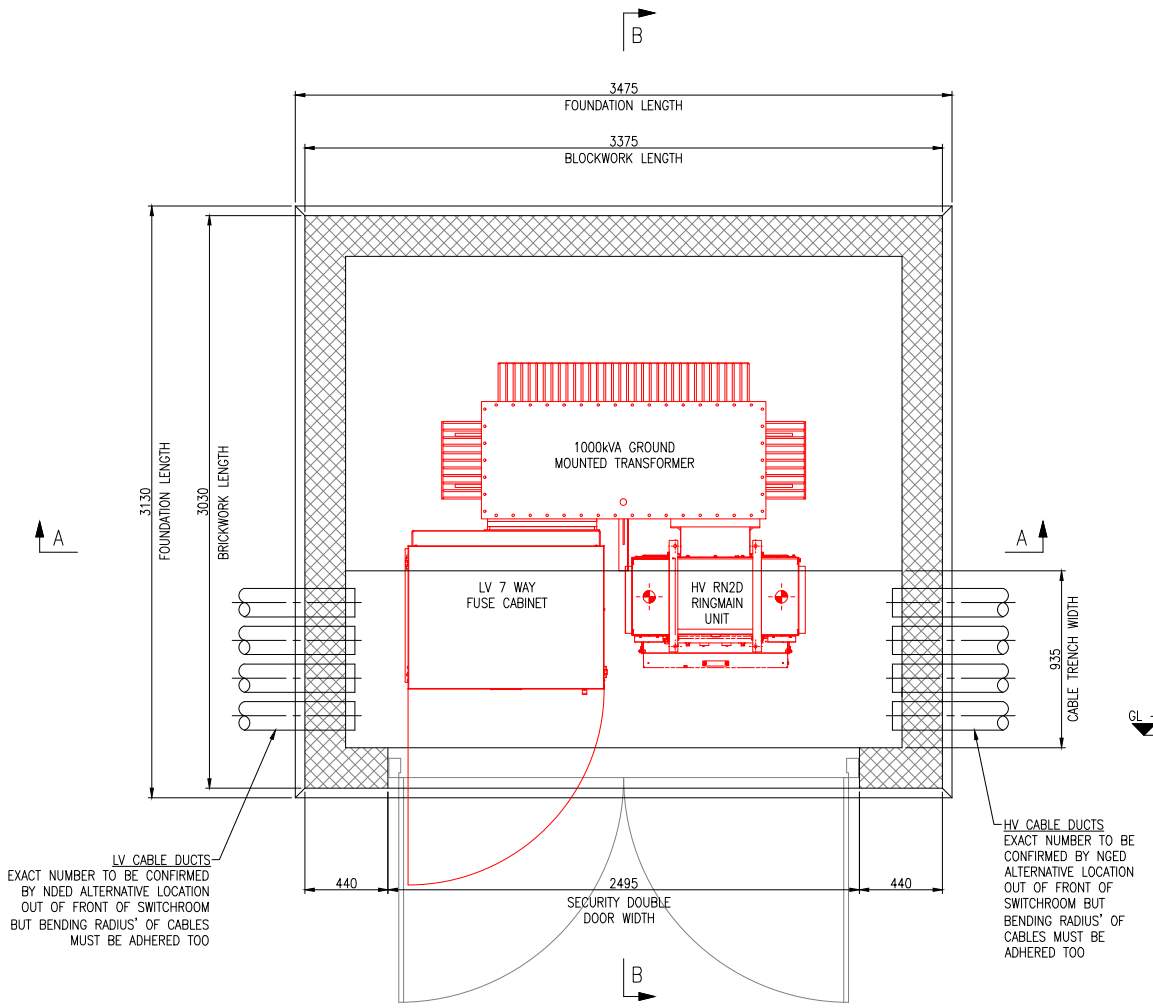
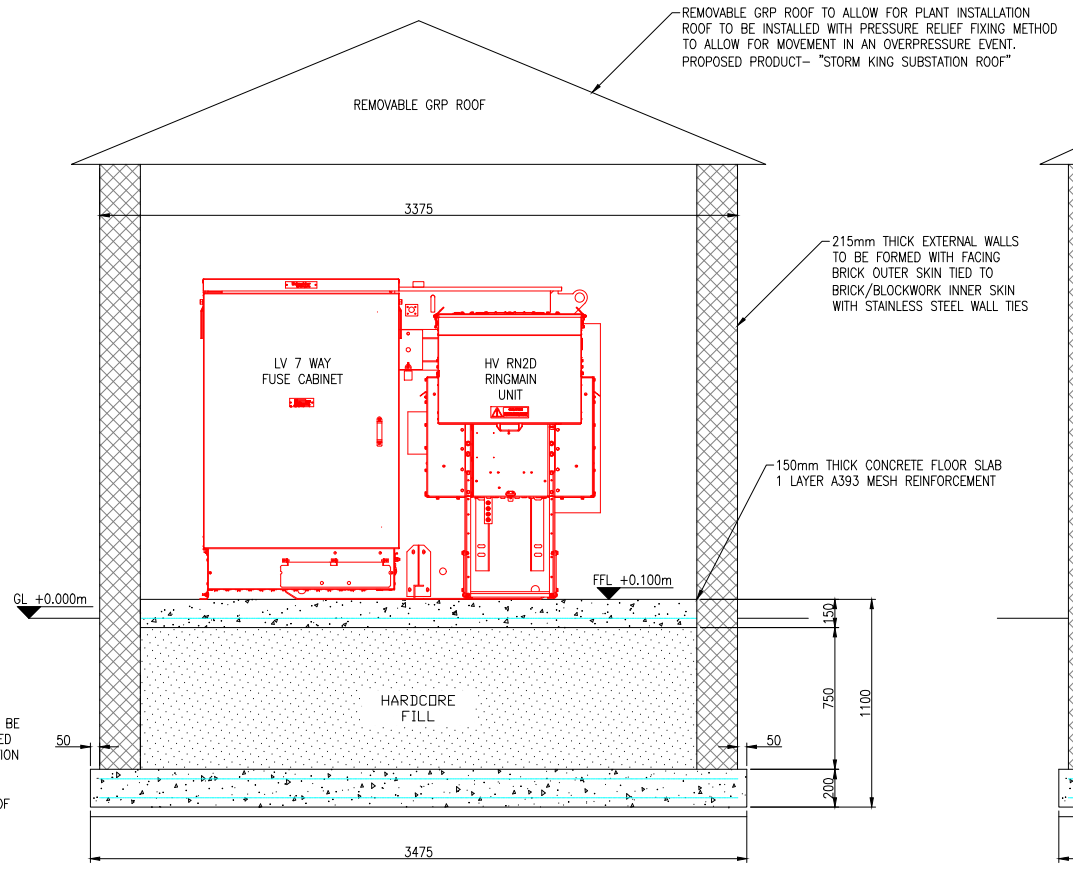
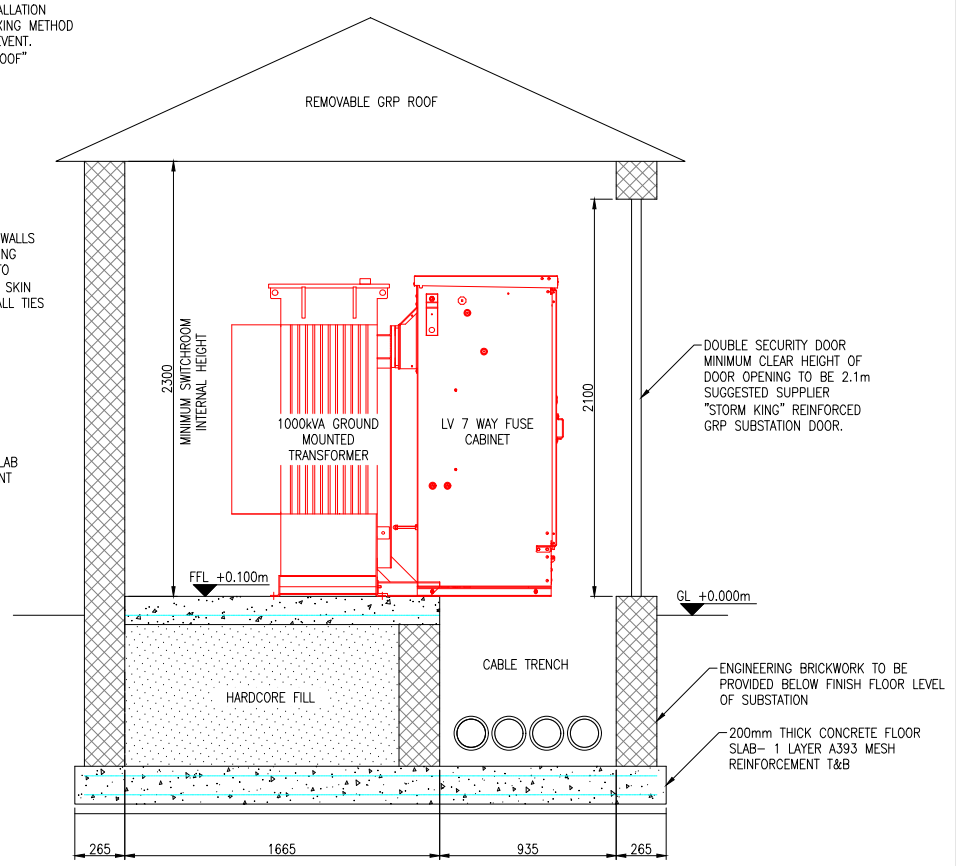


SUBSTATION LAYOUT
SCALE 1:20



SECTION A–A
SCALE 1:20



SECTION B–B
SCALE 1:20

DESIGN HAZARD IDENTIFICATION

REMOVABLE GRP ROOF
GRP ROOF TO BE INSTALLED WITH PRESSURE RELIEF FIXING METHOD– THIS IS TO ENSURE OPERATOR SAFETY IN THE EVENT OF OVERPRESSURE VENTING.

INSTALLATION OF NGED PLANT
THE SWITCHROOM HAS BEEN DESIGNED FOR THE NGED PLANT TO BE INSTALLED BY LIFTING INTO POSITION USING A HIAB. (PROPOSE TO COMPLETE THIS BEFORE INSTALLING GRP ROOF).

IF A DEVELOPER WANTS TO SKID THE NGED PLANT INTO POSITION OVER THE OPEN CABLE TRENCH ADDITIONAL TEMPORARY WORKS WILL HAVE TO BE INSTALLED TO SUPPORT THE PLANT THROUGHOUT THIS OPERATION– AT THEIR OWN EXPENSE.

SPECIFICATION NOTES

DO NOT SCALE THIS DRAWING.
ALL WORK IS TO BE CARRIED OUT TO THE APPROVAL OF NGED PROJECT ENGINEER
WORKMANSHIP AND MATERIALS TO CONFORM WITH THE LATEST EDITION OF THE RELEVANT CODES OF PRACTICE OR BRITISH STANDARDS AND EUROCODES
THE CONTRACTOR IS TO LOCATE AND DIVERT SERVICES AS NECESSARY PRIOR TO EXCAVATION WORK.
ALL PROPRIETY PRODUCTS TO BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS RECOMMENDATIONS.

EXCAVATION
FORMATION LEVEL TO BE INSPECTED BY A SUITABLY QUALIFIED/EXPERIENCED ENGINEER TO ENSURE THAT IT IS OF SUITABLE DENSITY. ANY SOFT OR VERY LOOSE POCKETS ENCOUNTERED ARE TO BE EXCAVATED AND REPLACED WITH BLINDING CONCRETE.
MAXIMUM FOUNDATION BEARING PRESSURE= 100kN/m²

CLAY SOILS ARE LIKELY TO RAPIDLY SOFTEN UPON EXPOSURE TO RAINWATER, RAIN OR FROST AND SHOULD THEREFORE BE COVERED WITH BLINDING CONCRETE AS SOON AFTER EXPOSURE AND CHECKING AS POSSIBLE. WHERE THIS IS UNAVOIDABLE, THE UPPER SOFTENED LAYER SHOULD BE SKIMMED PRIOR TO BLINDING.

CONCRETE SPECIFICATION
ALL STRUCTURAL CONCRETE TO BE C32/40 WITH NOMINAL MAX AGGREGATE SIZE 20mm.
MINIMUM OPC CONTENT 330kg/m³, MINIMUM WATER/CEMENT RATIO= 0.5
DESIGN SULPHATE CLASS DS-2 AND ACEC CLASS AC-2

BLINDING AND MASS CONCRETE TO BE GRADE C16/20. BLINDING TO BE 50mm THICK UNLESS NOTED OTHERWISE.

EXTERNAL CORNERS VISIBLE WHEN WORK IS COMPLETED TO HAVE 25mm CHAMFERS UNLESS NOTED OTHERWISE FORMWORK TIES WHERE INSTALLED SHALL BE REMOVABLE AND HAVE CAST IN MIDDLE SECTION DESIGNED FOR WATER RETAINING CONSTRUCTION.

CONTRACTOR TO CONFIRM POSITION AND DETAIL OF ANY CONSTRUCTION JOINTS WITH WPD PROJECT ENGINEER

STEEL REINFORCEMENT
ALL STEEL REINFORCEMENT TO BE HIGH YIELD GRADE 500N/mm² BARS
MINIMUM LAP LENGTH TO BE 40x BAR DIAMETER
MINIMUM COVER TO ALL REINFORCEMENT TO BE 50mm SUITABLE CHAIRS AND SPACER BLOCKS TO BE USED TO MAINTAIN COVER TO REINFORCEMENT.

PROVIDE STEEL FLOAT FINISH TO ALL EXPOSED CONCRETE.

CONCRETE BLOCKWORK
CONCRETE BLOCKWORK TO CONFORM TO BS6073
MINIMUM COMPRESSIVE STRENGTH– 7N/mm²

SECURITY DOORS
DOORS TO BE LOW MAINTENCE GRP OR HARDWOO WITH HEAVY DUTY, HOLD OPEN DEVICES
COLOUR: 14–C–39 GREEN TO BS4800

ON COMPLETION
WHERE APPLICABLE AREA IN FRONT OF PLINTH AND SITE BOUNDARY TO BE PAVED WITH 600X600X50mm THICK CONCRETE PAVING SLABS
ALL REMAINING EXPOSED GROUND SURFACES WITHIN SITE BOUNDARY TO BE DRESSED WITH A 75mm THICK LAYER OF SINGLE SIZED STONE CHIPPINGS.

TOC= TOP OF CONCRETE LEVEL
FFL= FINISHED FLOOR LEVEL

EARTHING REQUIREMENTS

FOUNDATION FLOOR SLAB REINFORCEMENT TO BE CONNECTED TO BELOW GROUND HV EARTH MAT IN MINIMUM 2 PLACES.

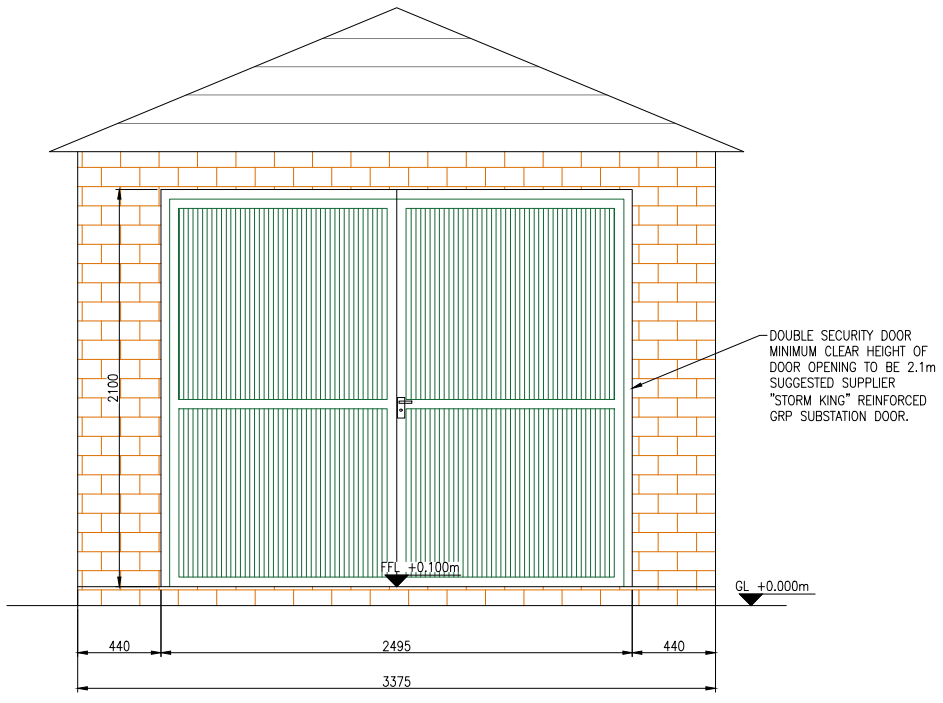
CIVIL CONTRACTOR MUST INSTALL 2No. ø16mm REINFORCEMENT L BARS IN FOUNDATION/FLOOR SLAB– TIED IN MIN 4 PLACES TO TOP LAYER OF MESH REINFORCEMENT.

L BAR TO PROTRUDE FROM FLOOR SLAB INTO MAIN CABLE ENTRY SLOT.

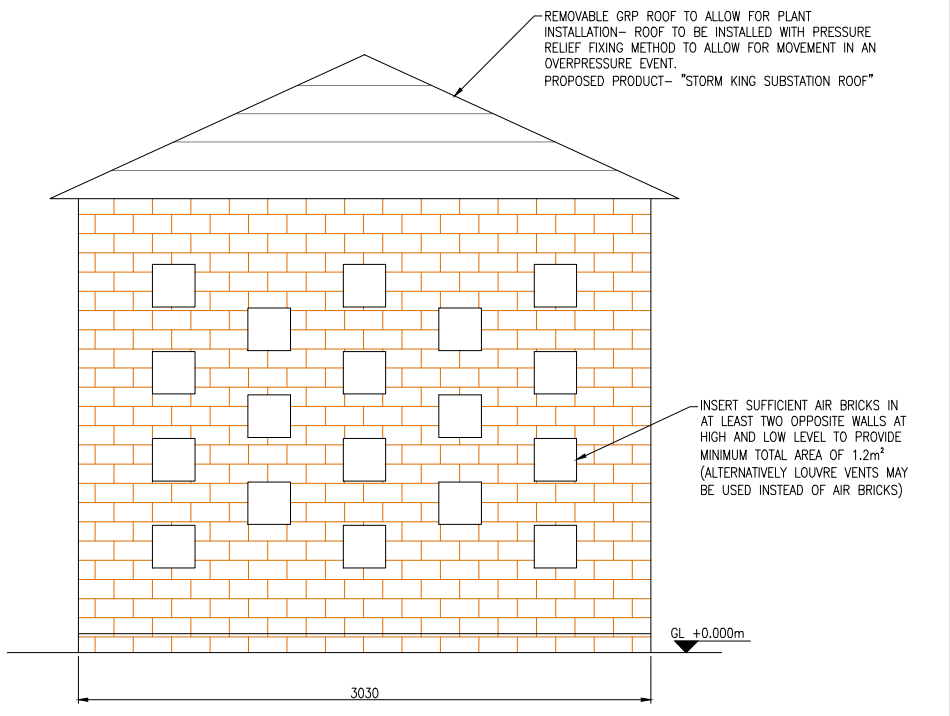
EARTHING REINFORCEMENT DETAILS
REBAR DIAMETER: ø16mm
REBAR SHAPE CODE TO BS8666: 11 (L BAR)
REBAR TOTAL LENGTH: 1400mm
DIM A: 200mm DIM B: 1200mm

FOR FURTHER EARTHING DETAILS PLEASE SEE NGED POLICY DOCUMENTS TP:21GA TO TP:21GH. CONSTRUCTION DRAWING EXAMPLES ARE CLEARLY SHOWN IN SECTION 5.0.

NGED ENGINEER TO PROVIDE THESE CONSTRUCTION DRAWINGS TO CIVIL CONTRACTOR UPON REQUEST.



SECTION A–A
SCALE 1:20



SECTION B–B
SCALE 1:20

FRONT ELEVATION
SCALE 1:20

SIDE ELEVATION
SCALE 1:20

						ORIGINAL ISSUE	Date
						Drawn PAS	13.10.22
						Checked	
						Approved	
1.0	PAS			13.10.22	ISSUED FOR CONSTRUCTION	SCALE: ORIGINAL SHEET SIZE: A1	
Rev No	Drawn	Chk'd	App'd	Date	Revision		

nationalgrid Electricity Distribution

Engineering Design (South West) Avonbank, Feeder Road, Bristol, BS2 0TB

Title: STANDARD TECHNIQUE: NC1V
GROUND MOUNTED TRANSFORMER (UP TO 1000kVA)
FOUNDATION LAYOUT & DETAILS– OPTION 4

Drg. No. NC1V–004

Rev No. 1.0

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