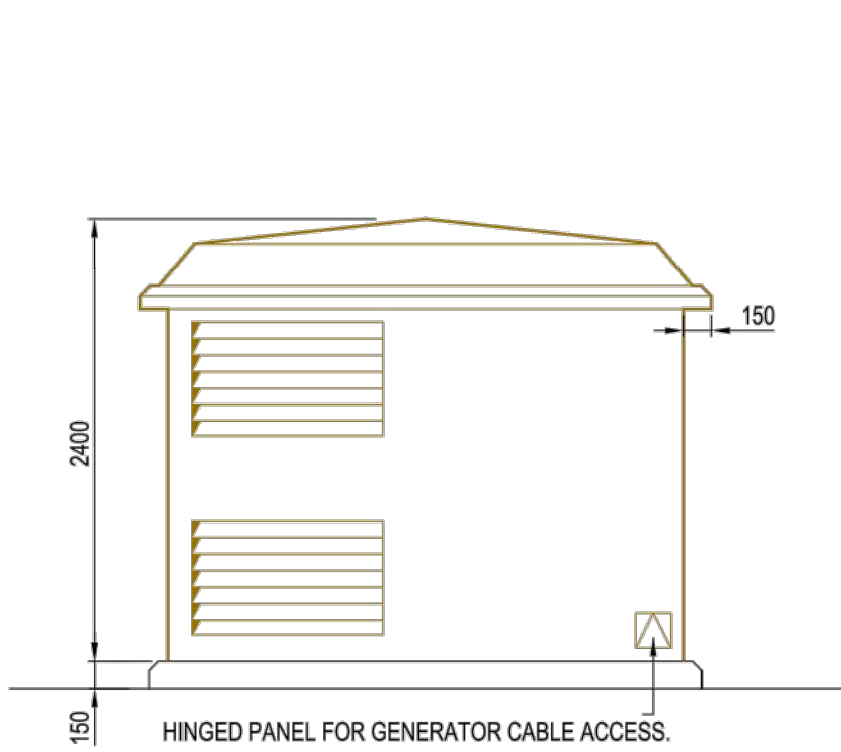
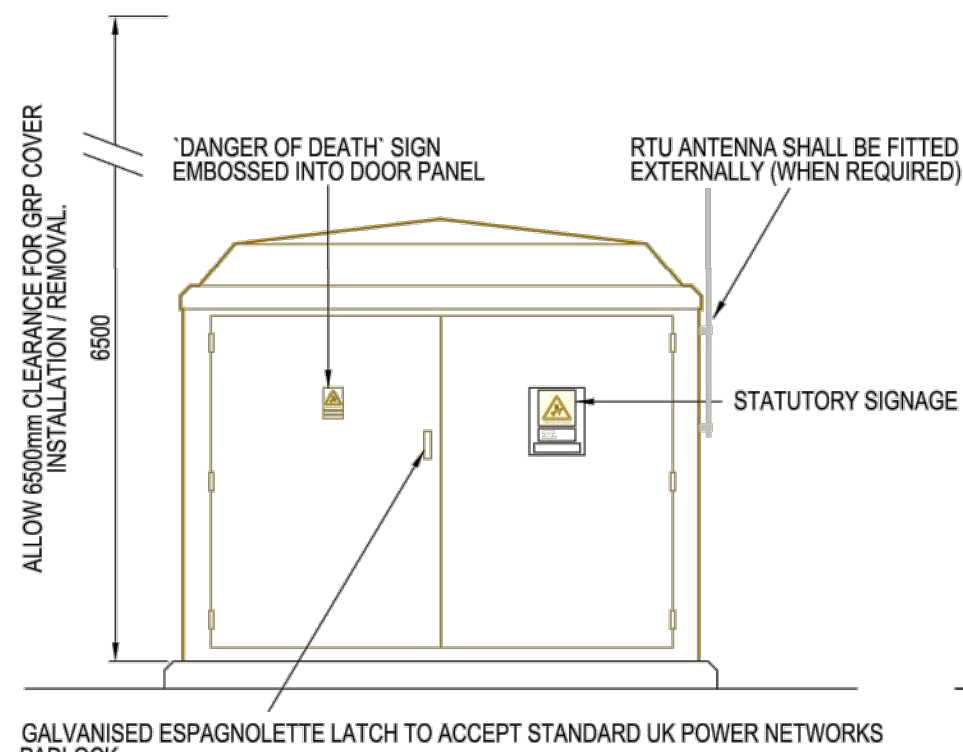
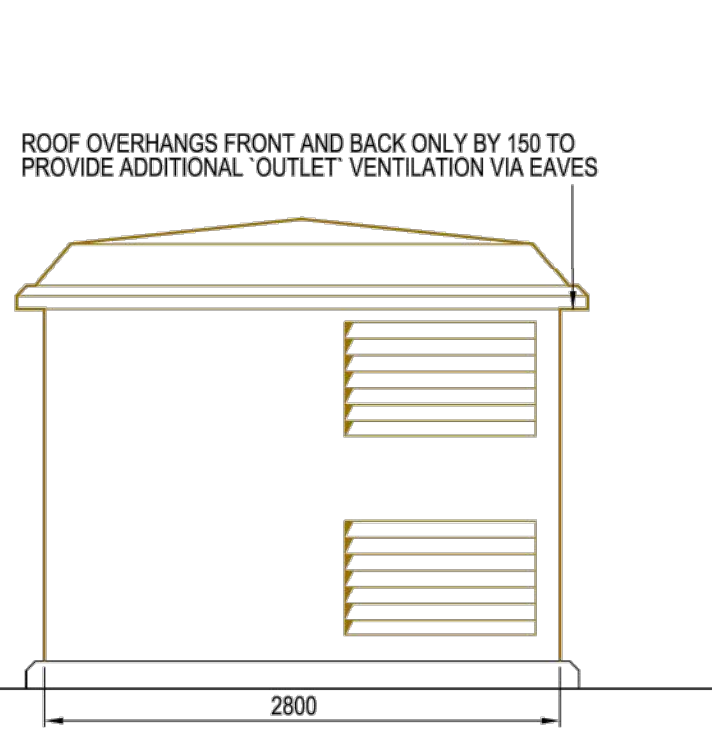




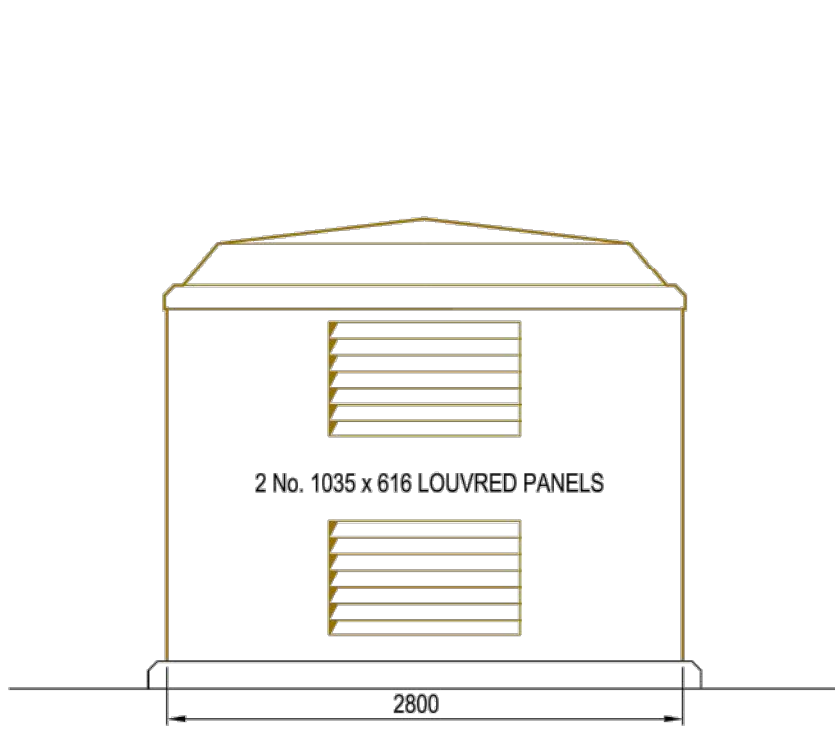
LEFT HAND SIDE ELEVATION



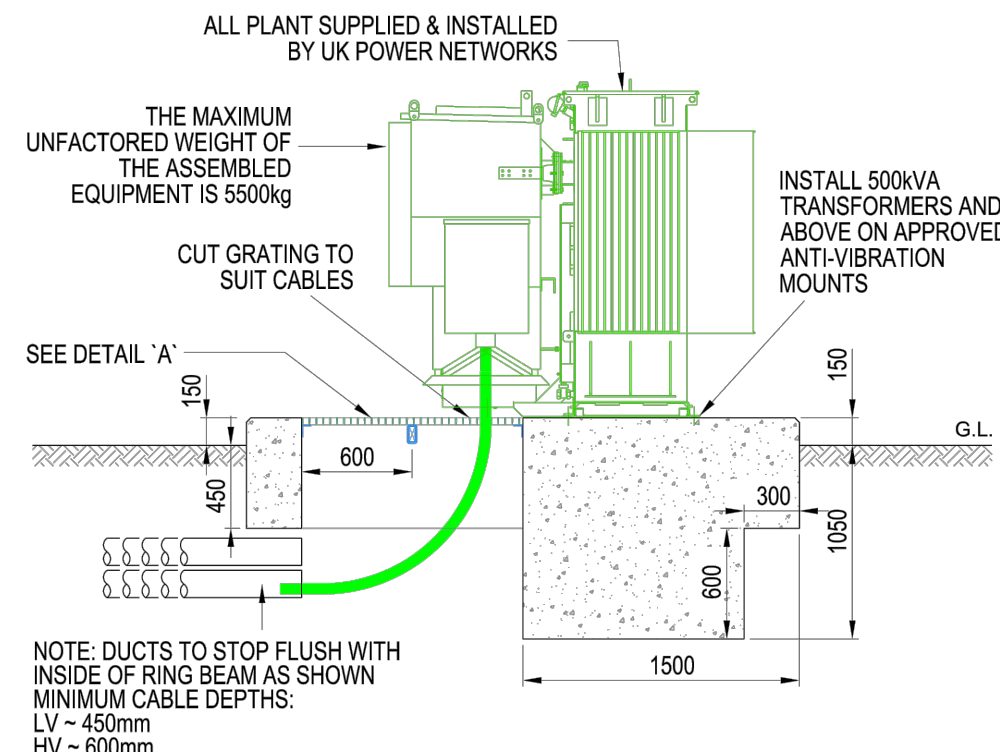
FRONT ELEVATION



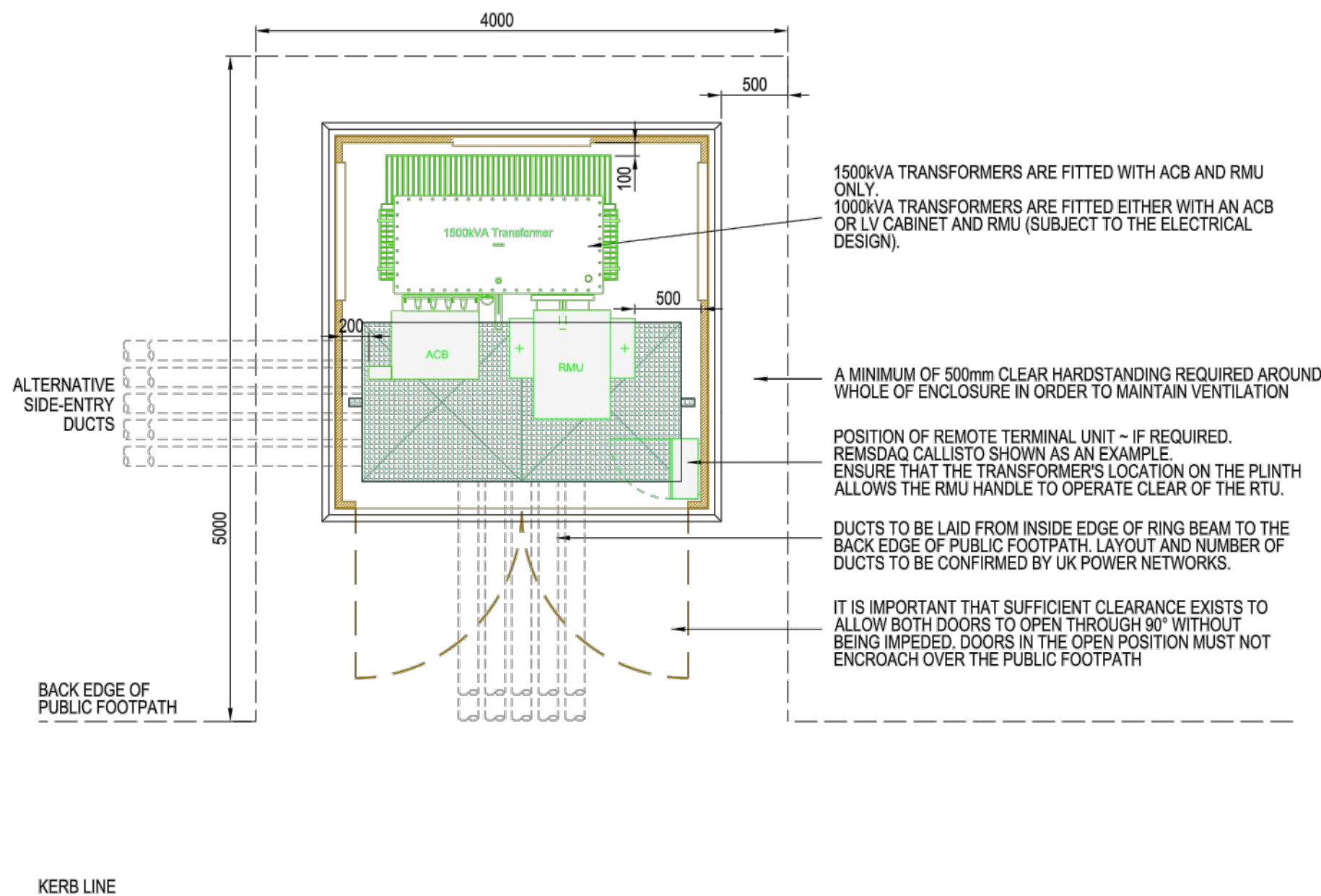
RIGHT HAND SIDE ELEVATION



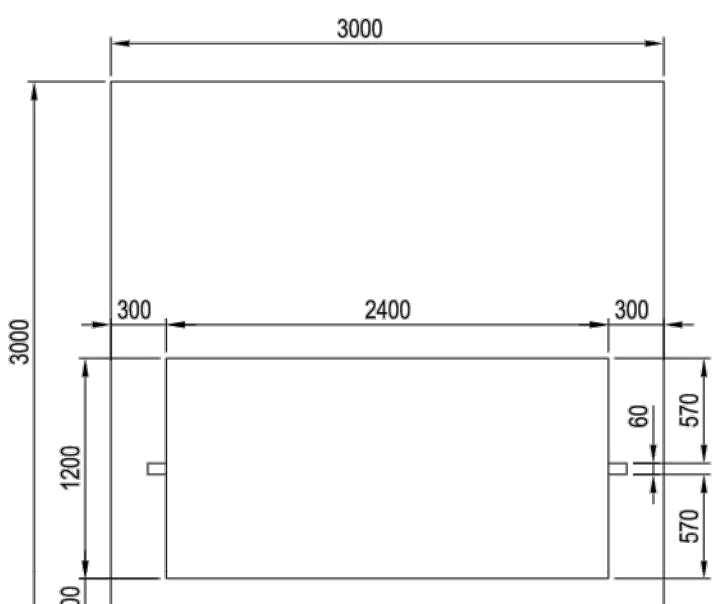
REAR ELEVATION



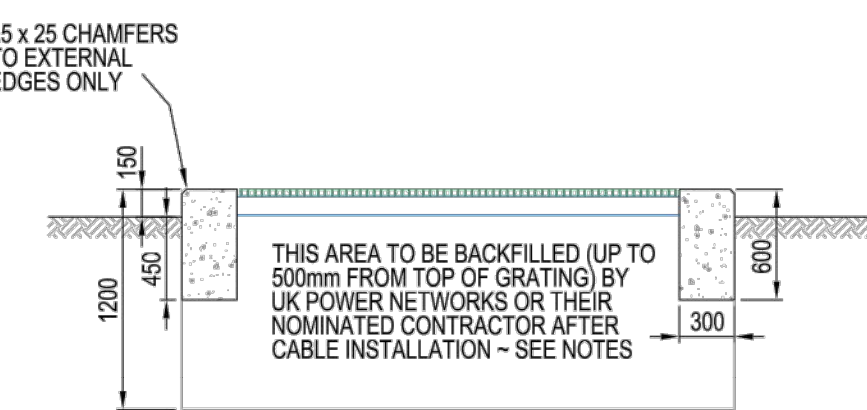
UNIT SUBSTATION ~ SECTION B-B



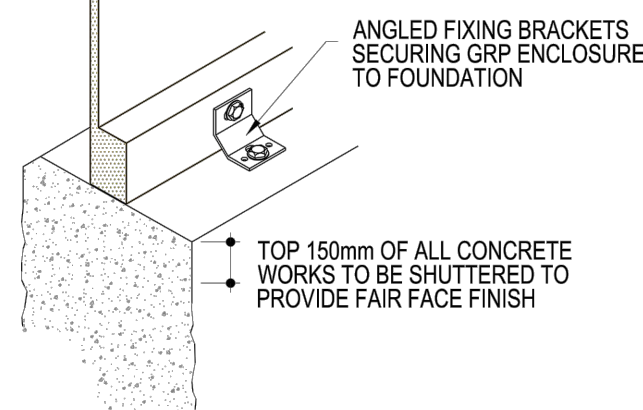
PLAN VIEW OF SITE AND EQUIPMENT ARRANGEMENT
(GRP ROOF REMOVED FOR CLARITY)



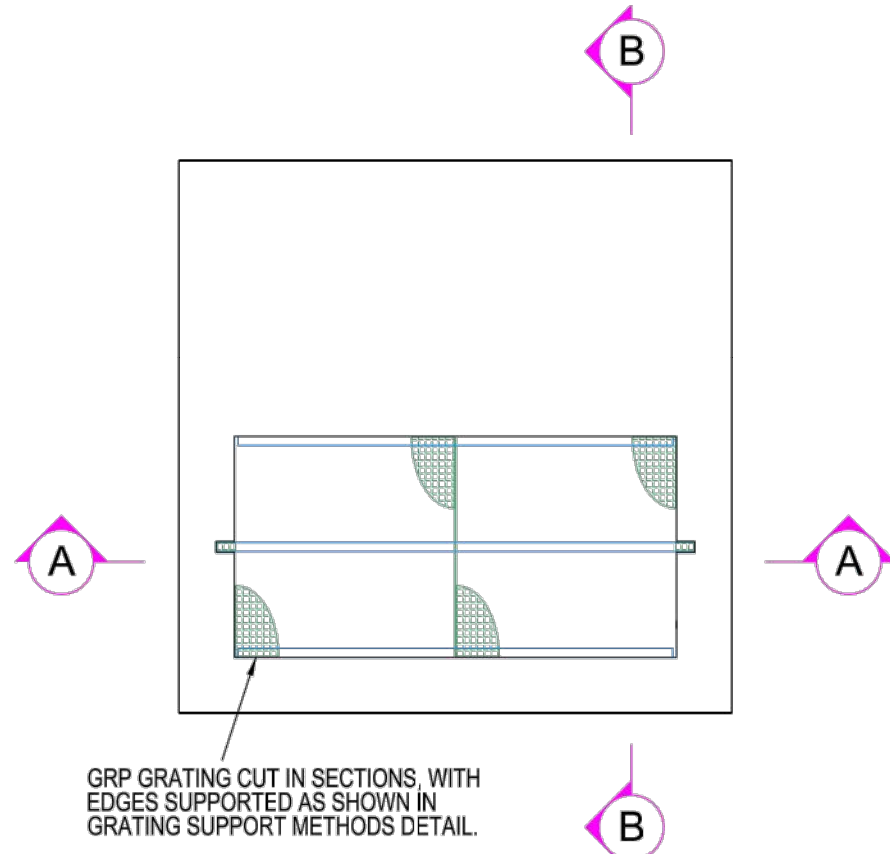
SETTING OUT DIMENSIONS



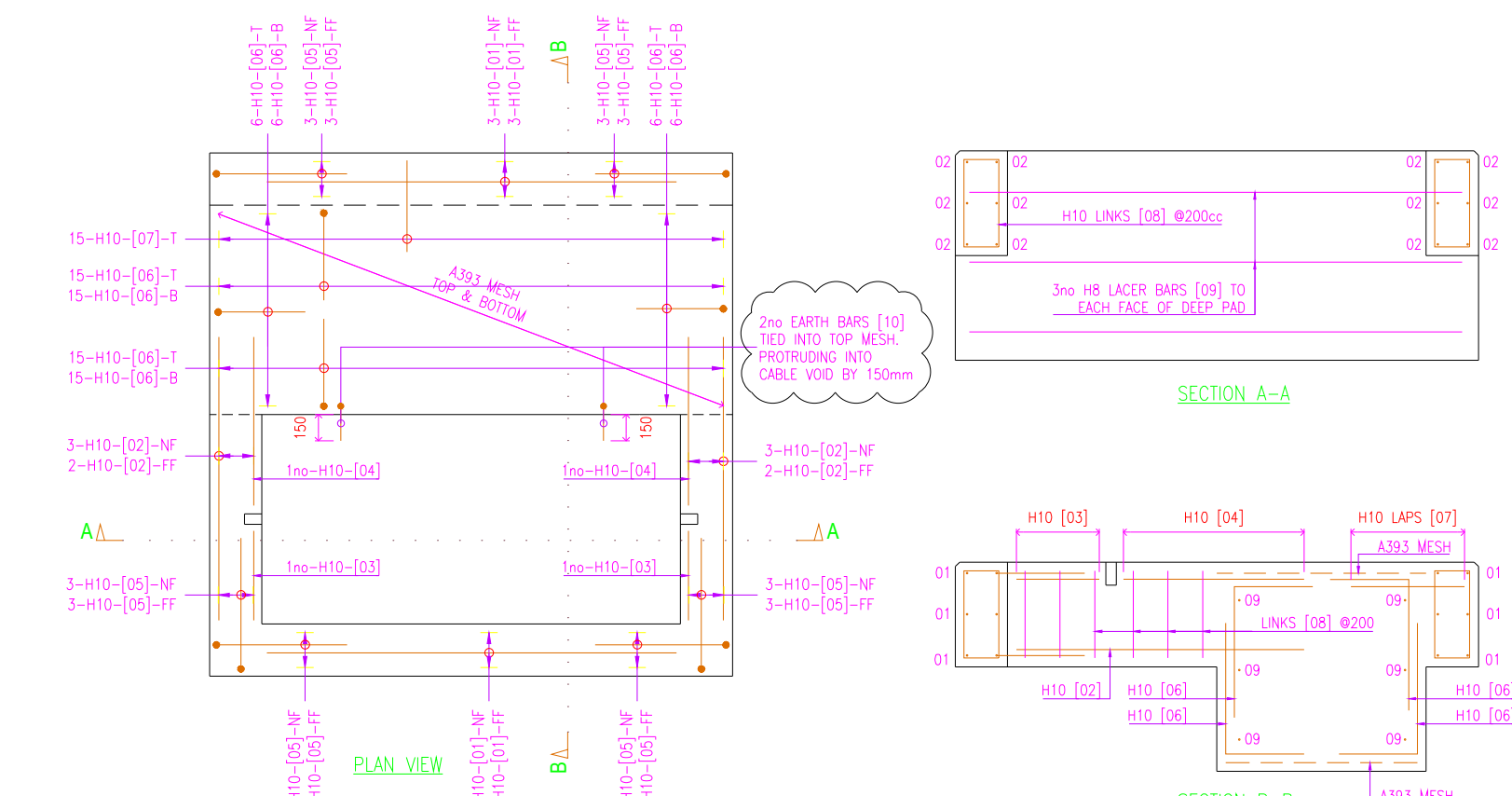
SECTION A-A



FIXING OF GRP COVER TO
FOUNDATION ~ DETAIL

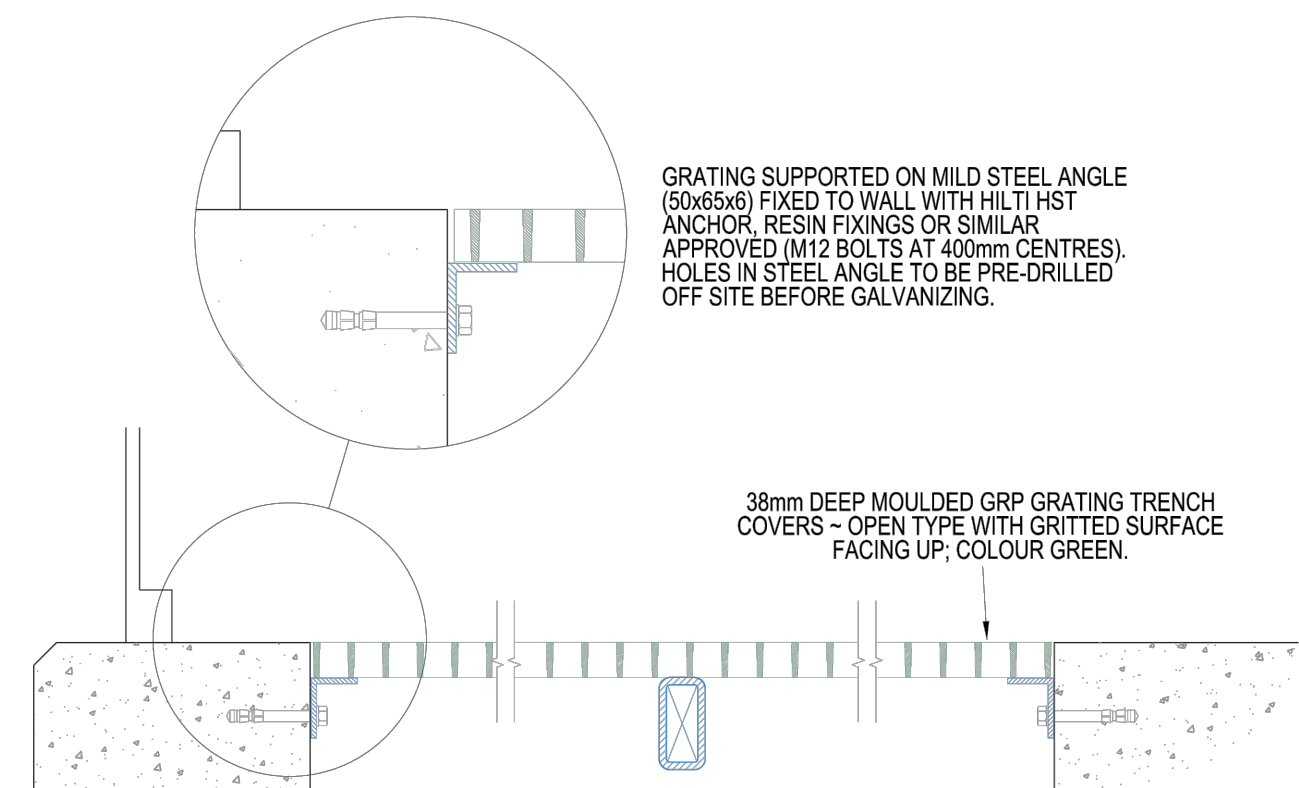


FOUNDATION PLAN VIEW

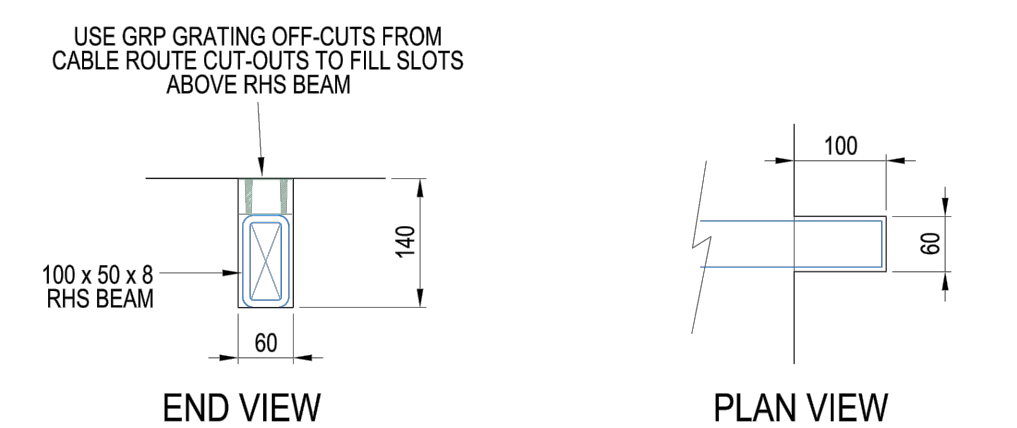


BAR BENDING SCHEDULE										
Member	Bar Mark	Type & Size	No. of bars	No. of bars in each	Total no.	Length of each bar (mm)	Shape Code	A* (mm)	B* (mm)	C* (mm)
01	H10	2	6	12	2400	00	2400			
02	H10	2	5	10	1600	00	1600			
03	H10	2	1	2	525	00	525			
04	H10	2	1	2	1000	00	1000			
05	H10	6	6	36	900	11	200	750		
06	H10	2	42	84	1325	11	500	825		
07	H10	1	15	15	750	00	750			
08	H10	1	38	38	1575	51	200	500		
09	H10	2	1	2	1000	00	1000			
10	H10	2	1	2	800	11	200	800		

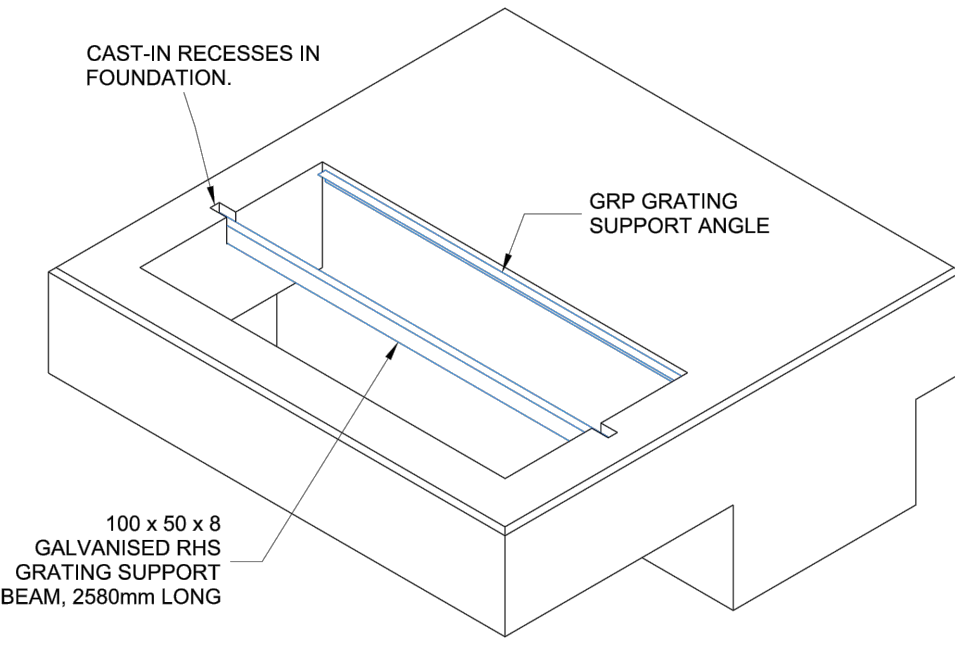
NOTE: ALL REINFORCEMENT TO RECEIVE WELDED JOINTS



DETAIL 'A' (SECTION B-B)



GRATING SUPPORT BEAM IN CONCRETE RECESS



FOUNDATION ~ ISOMETRIC VIEW

GENERAL NOTES

- DO NOT SCALE FROM THIS DRAWING. NO VARIATION TO THE STATED DIMENSIONS OR MATERIALS SPECIFIED WILL BE PERMITTED WITHOUT PRIOR WRITTEN CONSENT FROM UK POWER NETWORKS.
- ALL DIMENSIONS ARE IN MILLIMETRES.
- THE RUNNING OF SPRINKLER SYSTEM, HEATING, GAS, TELECOMS, WATER AND OTHER SERVICES THROUGH OR UNDER THE SUBSTATION AREA IS NOT PERMITTED.
- WORKMANSHIP AND MATERIALS TO CONFORM TO THE LATEST EDITION OF THE RELEVANT CODES OF PRACTICE OR BRITISH STANDARD AND EUROCODES.
- LOCATION OF THE SITE SHALL BE OVERLAIN ON THE ORDNANCE SURVEY MAP AND ADDED ONTO THE PROJECT SPECIFIC DRAWING.

PLANNING, LOCATION AND POSITION

- POSITION AND ORIENTATION OF THE SUBSTATION SHALL BE AGREED WITH UK POWER NETWORKS PRIOR TO THE COMMENCEMENT OF ANY BUILDING WORKS ON SITE.
- SUBSTATIONS SHALL BE LOCATED ADJACENT TO A PUBLIC HIGHWAY OR REACHED BY A PRIVATE DEDICATED ACCESS WAY WITH FULL CONTROL AND ASSOCIATED LEGAL RIGHTS.
- THE DEVELOPER IS RESPONSIBLE FOR OBTAINING ALL PLANNING CONSENTS AND BUILDING REGULATION APPROVALS.
- UNIMPEDED ACCESS FOR UK POWER NETWORKS PERSONNEL IS REQUIRED AT ALL TIMES, 365 DAYS OF THE YEAR (24/7). ANY DOORS OR GATES ON THE ACCESS ROUTE SHALL BE LOCKED WITH THE STANDARD UK POWER NETWORKS LOCKING SUITE.
- ACCESS VIA 24 HOUR SECURITY IS UNACCEPTABLE.
- PROPOSED SOFT LANDSCAPING ADJACENT TO THE SUBSTATION (E.G. PLANTING SCHEMES) SHALL ALLOW FOR FUTURE PLANT GROWTH WITHOUT COMPROMISING ACCESS OR VENTILATION THROUGH DOORS AND LOUVRES.
- GRP SUBSTATIONS SHALL BE AT LEAST 4m AWAY FROM THE NEAREST BUILDING UNLESS A 4HR FIRE BARRIER IS LOCATED IN BETWEEN.

FOUNDATION AND REINFORCED CONCRETE

- AS STATED ON DRAWING OR TO SUIT THE SITE CONDITION.
- SUFFICIENT COVER TO THE REINFORCEMENT TO ACHIEVE A 4 HOUR FIRE RATING (50mm MINIMUM).
- FOR PRELIMINARY DESIGN, ASSUME 50kN/m² INCREASE IN GROUND PRESSURE AT FORMATION LEVEL.
- STRUCTURAL CONCRETE TO BE POURED ON 50mm GBN1 MIX CONCRETE BLINDING ON 1200 GAUGE GEOMEMBRANE, ON SAND BLINDING, ON WELL COMPACTED DTp1 TYPE MATERIAL.
- REINFORCING BARS TO BE ELECTRICALLY CONTINUOUS.

FLOOR SLAB

- TO THE STRUCTURAL ENGINEER'S SPECIFICATIONS TO SUSTAIN LOADS SHOWN. THE ENTIRE ACCESS ROUTE IS TO BE CAPABLE OF SUSTAINING THE EQUIPMENT LOAD.
- STANDARD FLOOR SLAB THICKNESS OF 225mm MINIMUM REINFORCED CONCRETE WITH A SUITABLE WEARING SCREED WITH A MINIMUM COMPRESSIVE STRENGTH OF 40N/mm² AFTER 28 DAYS. CONCRETE WORKS FINISHED WITH STEEL FLOAT TO WITHIN +2mm OVER 2000mm.
- REINFORCEMENT TO DEVELOPER'S STRUCTURAL ENGINEER'S REQUIREMENTS.

GRP ENCLOSURE

- SUPPLIED AND INSTALLED BY UK POWER NETWORKS. USUALLY DELIVERED ASSEMBLED. FLAT PACK UNITS ARE AVAILABLE ON REQUEST.
- TOTAL WEIGHT OF GRP ENCLOSURE IS 600kg.
- THREE WAY LOCKING DEVICE WITH FREE ISSUED UK POWER NETWORKS PADLOCK.
- THE THRESHOLD SECTION BELOW THE DOORS IS REMOVABLE TO FACILITATE PLANT MOVEMENT.
- KEEP 100mm CLEARANCE MINIMUM ABOVE ENCLOSURE FOR PRESSURE RELIEF AT ALL TIMES.
- ALLOW 650mm CLEAR HEADROOM FOR THE REMOVAL OF THE ENCLOSURE DURING MAINTENANCE OR REPLACEMENT OF THE TRANSFORMER.
- MAXIMUM LOAD ON ROOF TO BE 2.5kN/m².
- LOUVERED VENTS SHALL NOT BE OBSTRUCTED, A MINIMUM CLEAR AREA OF 500mm IS REQUIRED AROUND THE ENCLOSURE.
- STANDARD COLOURS ARE MID BROWN 8B-25 OR DARK GREEN 14-C-39 TO BS4800.

DUCTS

- 125mm INTERNAL DIAMETER TWIN WALLED HIGH DENSITY POLYETHYLENE DUCTING TO BS 12-24 OR BS EN 61386, Laid Flat AND LEVEL.
- NUMBER AND ENTRY POSITIONS SHALL BE VERIFIED BY UK POWER NETWORKS.

FILL TO AREA AROUND CABLES

- AFTER CABLE INSTALLATION, SEAL ALL CABLE DUCTS, FILL TRENCHES WITH SAND WITH 100mm ABOVE TOP DUCT AND TO A MINIMUM OF 500mm BELOW THE TOP OF GRATINGS.

GRP GRATINGS AND SUPPORTS

- USE APPROVED 38mm DEEP MOULDED GRP GRATINGS, OPEN TYPE WITH GRITTED SURFACE AND COLOUR GREEN.
- GRATING SHALL BE FLUSH WITH TOP OF FOUNDATION AND SECURELY SUPPORTED, SEATED LEVEL WITH NO NOTICEABLE ROCKING OR SLIDING.
- CUT OFF OPENINGS FOR CABLE PENETRATIONS ENSURING THE GRATINGS CAN BE REMOVED WITH CABLES IN-SITU WHILE STILL REMAINING STABLE.
- STEELWORK FOR GRP GRATING SUPPORTS SHALL BE GALVANISED.

REFERENCES

SHEET 2	EARTHING LAYOUT
SHEET 3	SMALL POWER AND LIGHTING LAYOUT
EAS 07-0000	APPROVED EQUIPMENT LIST - CIVIL
EAS 02-0000	APPROVED EQUIPMENT LIST - CABLES & DUCTS
EDS 07-0119	SUBSTATION ELECTRICAL SERVICES
EDS 07-3102	PRE-DESIGN REQUIREMENTS FOR SECONDARY SUBSTATIONS
	SECONDARY SUBSTATION CIVIL DESIGN STANDARD

EQUIPMENT WHICH MAY BE USED WITH THIS DESIGN

- UNIT SUBSTATION WITH A 1500kVA TRANSFORMER OR BELOW.
- MICRO SUBSTATION.
- COMPACT SUBSTATION.

Rev	Description	By	Date	Chk'd	Auth

MARKS HEELEY

THE 'STABLES'
CANNONS MILL LANE
BISHOPS STORTFORD
HERTFORDSHIRE CM23 2BN

TELEPHONE: 01279 465900
FACSIMILE: 01279 465999
GENERAL@MARKSHEELEY.CO.UK

CONSULTING STRUCTURAL AND CIVIL ENGINEERS

Client					
Project					
UKPN SUBSTATION PLINTH					
Title					
SUBSTATION DETAILS					
Sheet Size	Original Scale	Designed/Drawn	Checked	Authorised	
A1	NTS	JB	MN	MN	
		Date 20.01.21	Date 20.01.21	Date 20.01.21	
Status	Drawing Number				Rev
C	H14707-01				A