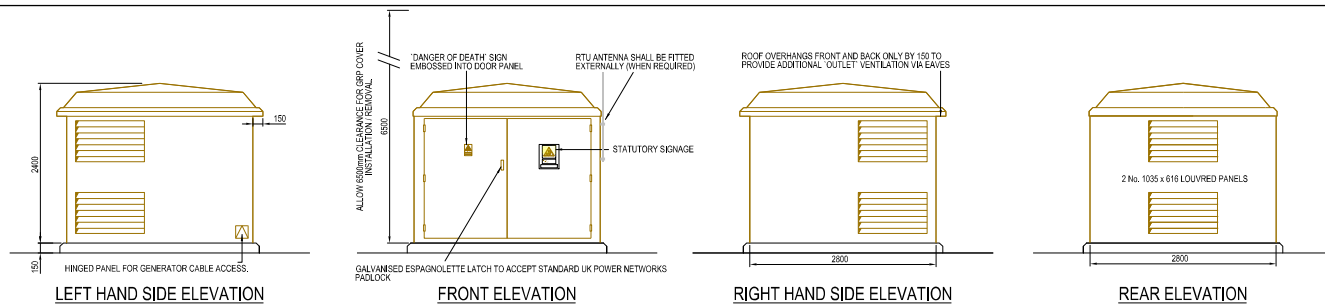


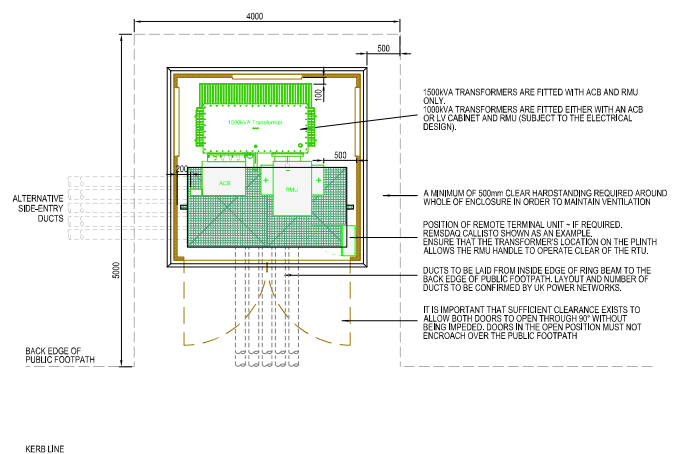


**PROPOSED SUBSTATION LOCATION TO BE ADVISED BY DEVELOPER AND AGREED WITH UK POWER NETWORKS PRIOR TO CONSTRUCTION.**

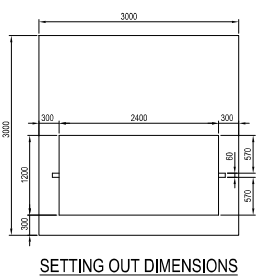
**IF WITHIN 10m OF A WATERCOURSE OR WITHIN 50m OF A BOREHOLE USE THE FULLY-BUNDED DESIGN**

**DRAWING EDS 07-3102.02**

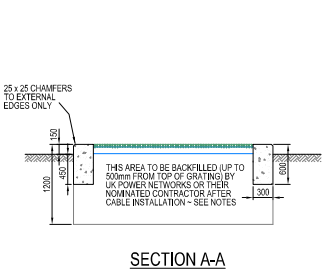
**LOCATION PLAN**



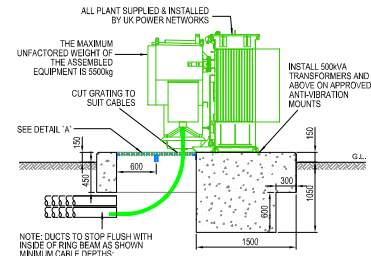
**PLAN VIEW OF SITE AND EQUIPMENT ARRANGEMENT**  
(GRP ROOF REMOVED FOR CLARITY)



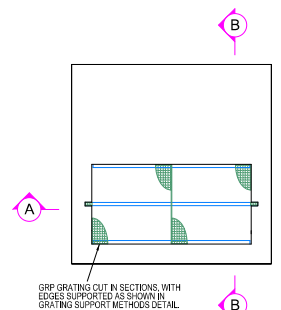
**SETTING OUT DIMENSIONS**



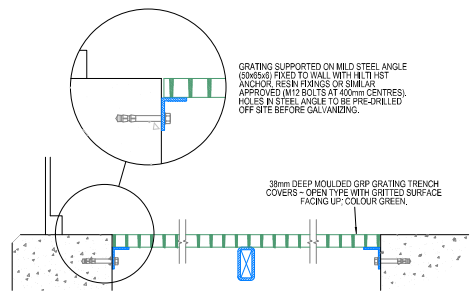
**SECTION A-A**



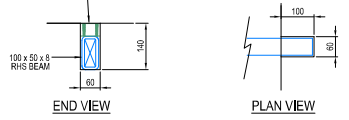
**UNIT SUBSTATION - SECTION B-B**



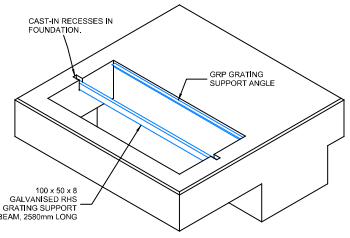
**FOUNDATION PLAN VIEW**



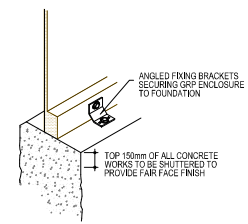
**DETAIL 'A' (SECTION B-B)**



**GRATING SUPPORT BEAM IN CONCRETE RECESS**



**FOUNDATION ~ ISOMETRIC VIEW**



**FIXING OF GRP COVER TO FOUNDATION ~ DETAIL**

**GENERAL NOTES**

- DO NOT SCALE FROM THIS DRAWING. NO VARIATION TO THE STATED DIMENSIONS OR MATERIALS SPECIFIED SHALL BE PERMITTED WITHOUT PRIOR WRITTEN CONSENT FROM UK POWER NETWORKS.
- ALL DIMENSIONS ARE IN MILLIMETRES.
- THE RUNNING OF SPRINKLER SYSTEM, HEATING, GAS, TELECOM, 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 STANDARDS AND EUROCODES.
- LOCATION OF THIS SITE SHALL BE OVERLAIN ON THE ORDNANCE SURVEY MAP AND ADDED ONTO THE PROJECT SPECIFIC DRAWINGS.

**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. 100 DAYS OF THE YEAR (ANY GATES 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 SCREENS) SHALL ALLOW FOR FUTURE PLANT GROWTH WITHOUT COMPROMISING ACCESS ON VENTILATION THROUGH DOORS AND GATES.
- GRP SUBSTATIONS SHALL BE AT LEAST 5m AWAY FROM THE NEAREST BUILDING UNLESS A 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 500mm INCREASE IN GROUND PRESSURE AT FORMATION LEVEL.
- STRUCTURAL CONCRETE TO BE POURED ON 50mm GEN MK CONCRETE BEDDING ON 100 GAUGE GEOMEMBRANE ON SAND BUNDING. ON WELL COMPACTED 375 TYPE MATERIAL.
- REINFORCEMENT SHALL 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 SURFACE WITH A MINIMUM COMPRESSIVE STRENGTH OF 40N/mm<sup>2</sup> AFTER 28 DAYS. CONCRETE WORKS FINISH WITH STEEL PLANT TO WITHIN 45mm OVER 200mm.
- REINFORCEMENT TO DEVELOPER'S STRUCTURAL ENGINEER'S REQUIREMENTS.

**GRP ENCLOSURE**

- SUPPLIED AND INSTALLED BY UK POWER NETWORKS. USUALLY DELIVERED ASSEMBLED. PLANT PACKS UNITS ARE AVAILABLE ON REQUEST.
- TOTAL WEIGHT OF GRP ENCLOSURE IS 80kg.
- THREE WAY LOCKING DEVICE WITH FREE ISSUED UK POWER NETWORKS PROTOCOL.
- THE THRESHOLD SECTION BELOW THE DOORS IS REMOVABLE TO FACILITATE PLANT MOVEMENT.
- GRP: 1000mm CLEARANCE MINIMUM ABOVE ENCLOSURE FOR PRESSURE RELIEF AT ALL TIMES.
- ALLOW 1000mm CLEAR HEADROOM FOR THE REMOVAL OF THE ENCLOSURE DURING MAINTENANCE OR REPLACEMENT OF THE TRANSFORMER.
- MAXIMUM LOAD ON ROOF TO BE 2.5kN/m<sup>2</sup>.
- LOUVERED VENTS SHALL NOT BE OBSTRUCTED: A MINIMUM CLEAR AREA OF 500mm IS REQUIRED AROUND THE ENCLOSURE.
- STANDARD COLOUR ARE RED (IRON OXIDE) OR DARK GREEN (4-C-9) TO BS480.

**DUCTS**

- 125mm INTERNAL DIAMETER TWIN WALLED HIGH DENSITY POLYETHYLENE DUCTING TO EN 438 OR EN 438-2 AND EN 438-3 SHALL BE USED.
- NUMBER AND ENTRY POSITIONS SHALL BE VERIFIED BY UK POWER NETWORKS.

**INFILL TO AREA AROUND CABLES**

- AFTER CABLE INSTALLATION, SEAL ALL CABLE DUCTS. FILL TRENCHES WITH SAND WITH 50mm ABOVE TOP DUCT AND TO A MINIMUM OF 500mm BELOW THE TOP OF GRATING.

**GRP GRATINGS AND SUPPORTS**

- USE APPROVED 10mm DEEP MOLDED 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       | DESCRIPTION                                       |
|-------------|---------------------------------------------------|
| SHEET 2     | EARTHING LAYOUT                                   |
| SHEET 3     | SMALL POWER AND LIGHTING LAYOUT                   |
| EAS 07-000  | APPROVED EQUIPMENT LIST - CABLES                  |
| EAS 05-000  | APPROVED EQUIPMENT LIST - CABLES & DUCTS          |
| EAS 07-110  | SUBSTATION ELECTRICAL SERVICES                    |
| EDS 07-3101 | PRE-DESIGN REQUIREMENTS FOR SECONDARY SUBSTATIONS |
| EDS 07-3102 | SECONDARY SUBSTATION CIVIL DESIGN STANDARD        |

**EQUIPMENT WHICH MAY BE USED WITH THIS DESIGN**

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

**UK Power Networks**

| Version | Date     | Description                                | Checked | Dim. | Approved | Designed |
|---------|----------|--------------------------------------------|---------|------|----------|----------|
| C       | 28-10-18 | Design revised to show 1500kVA transformer | UA      | RDH  |          |          |
| B       | 05-01-18 | Equipment positioning dimension added.     | UA      | RDH  |          |          |
| A       | 09-08-17 | ORIGINAL                                   | UA      | RDH  |          |          |

**UNIT OR PADMOUNT SUBSTATION IN A GRP ENCLOSURE CIVIL LAYOUT**

SCALE: NTS @A1 **APPROVED**

DRAWING NO. **EDS 07-3102.01** Sht 1 of 3

SITE: **SECONDARY SITES**