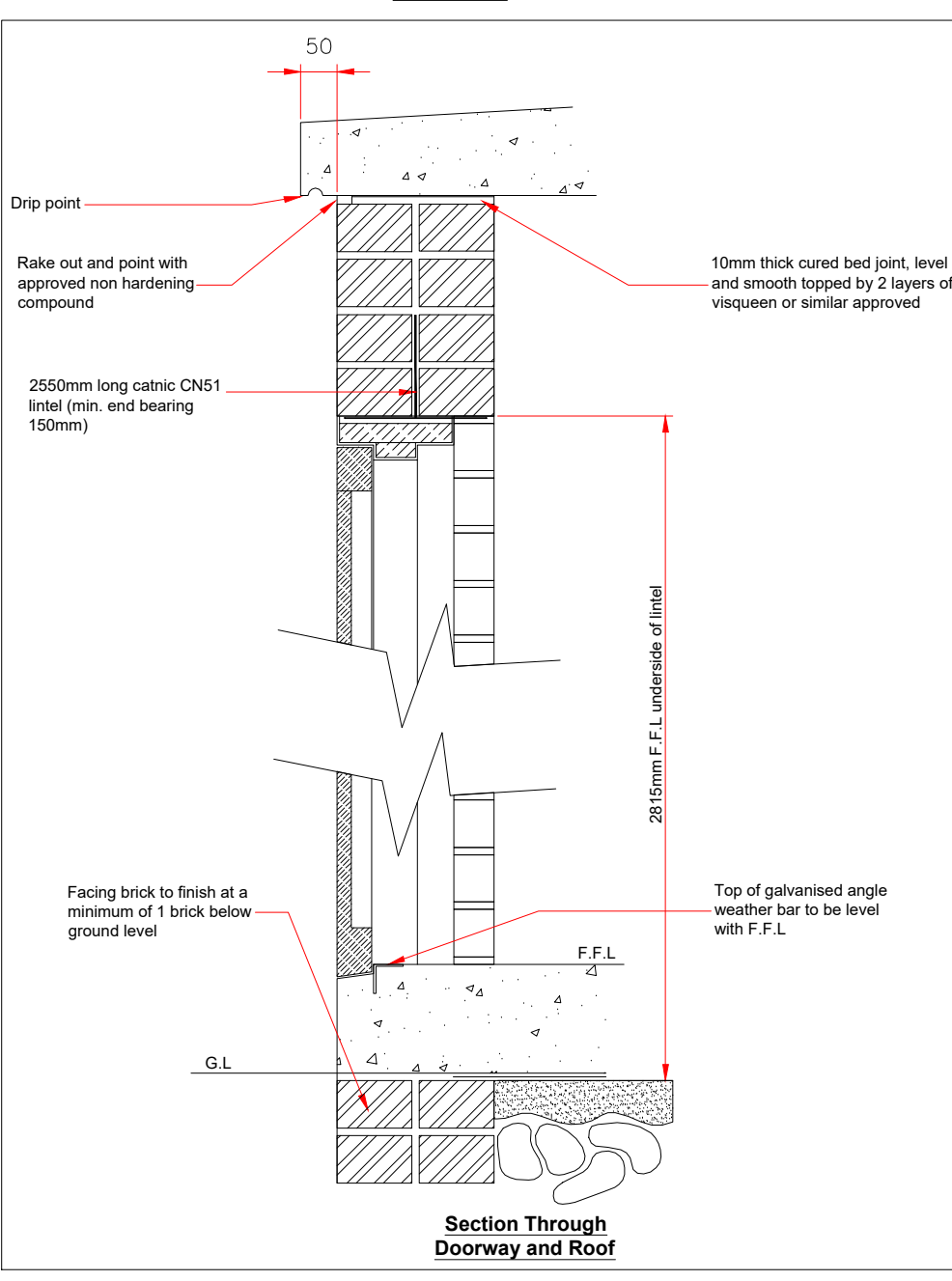
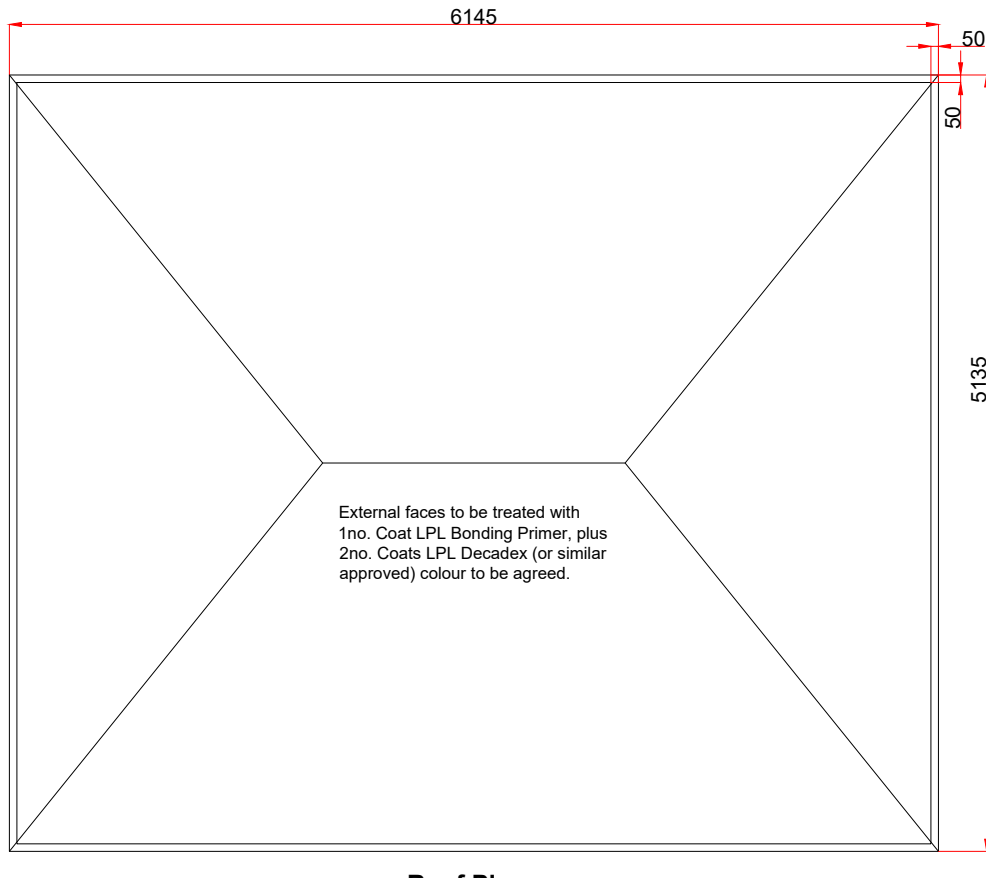
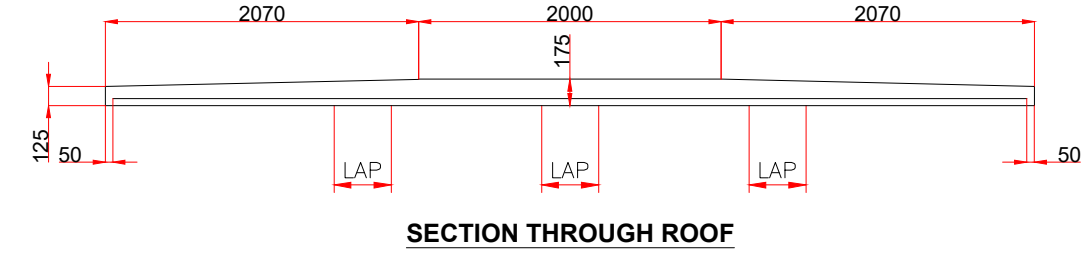
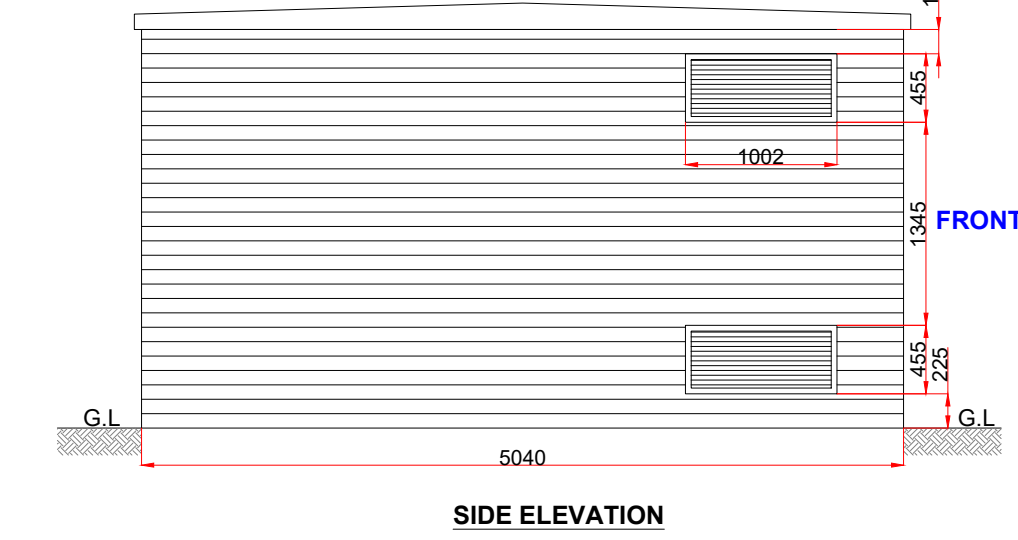
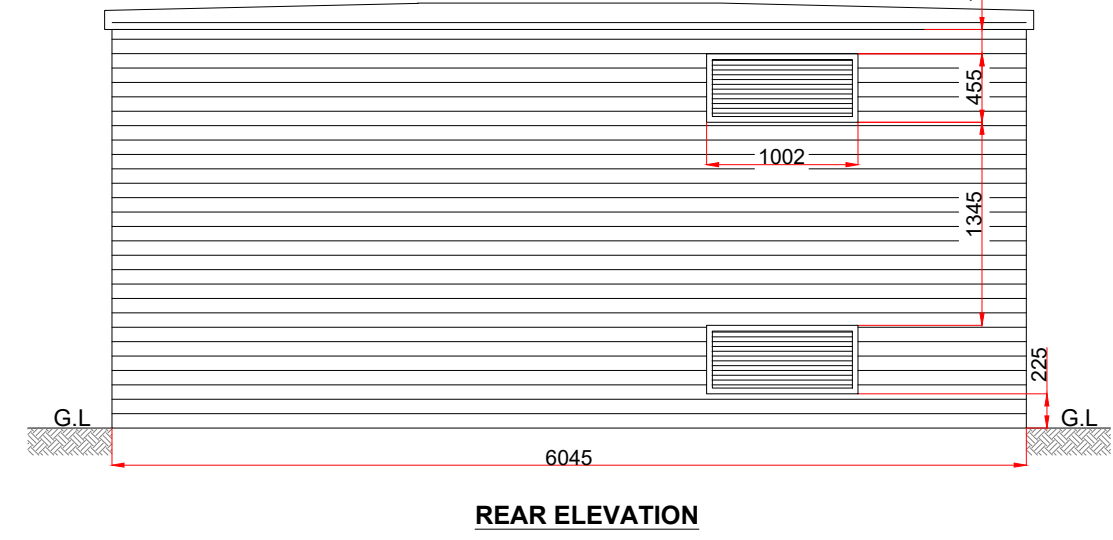
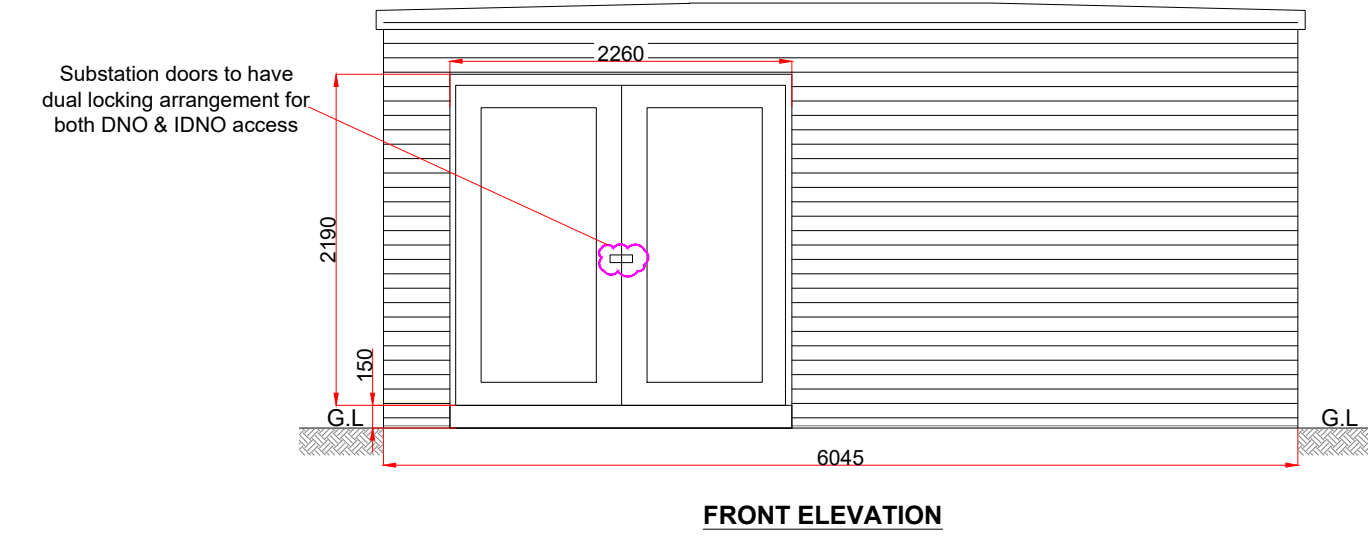
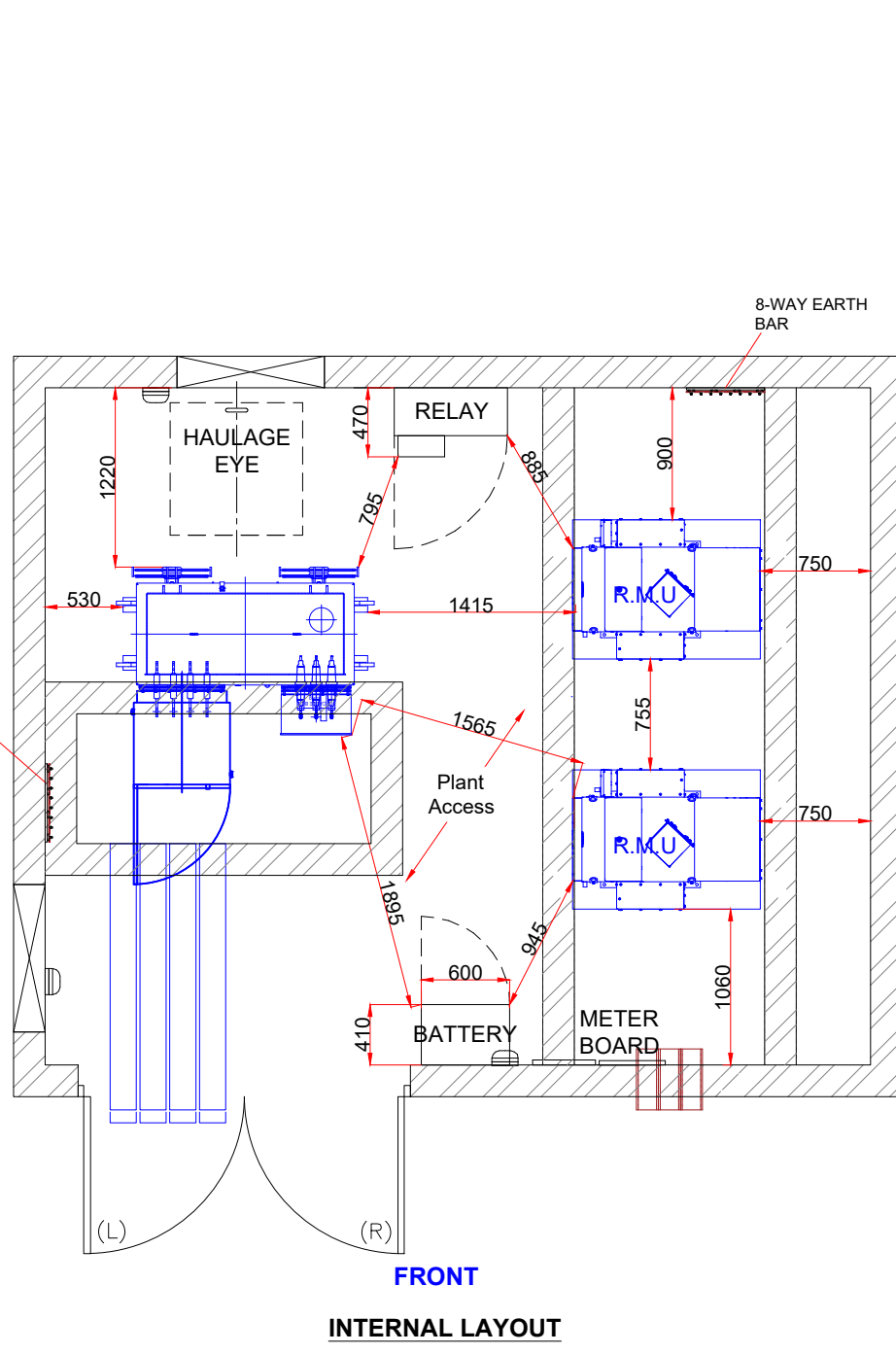
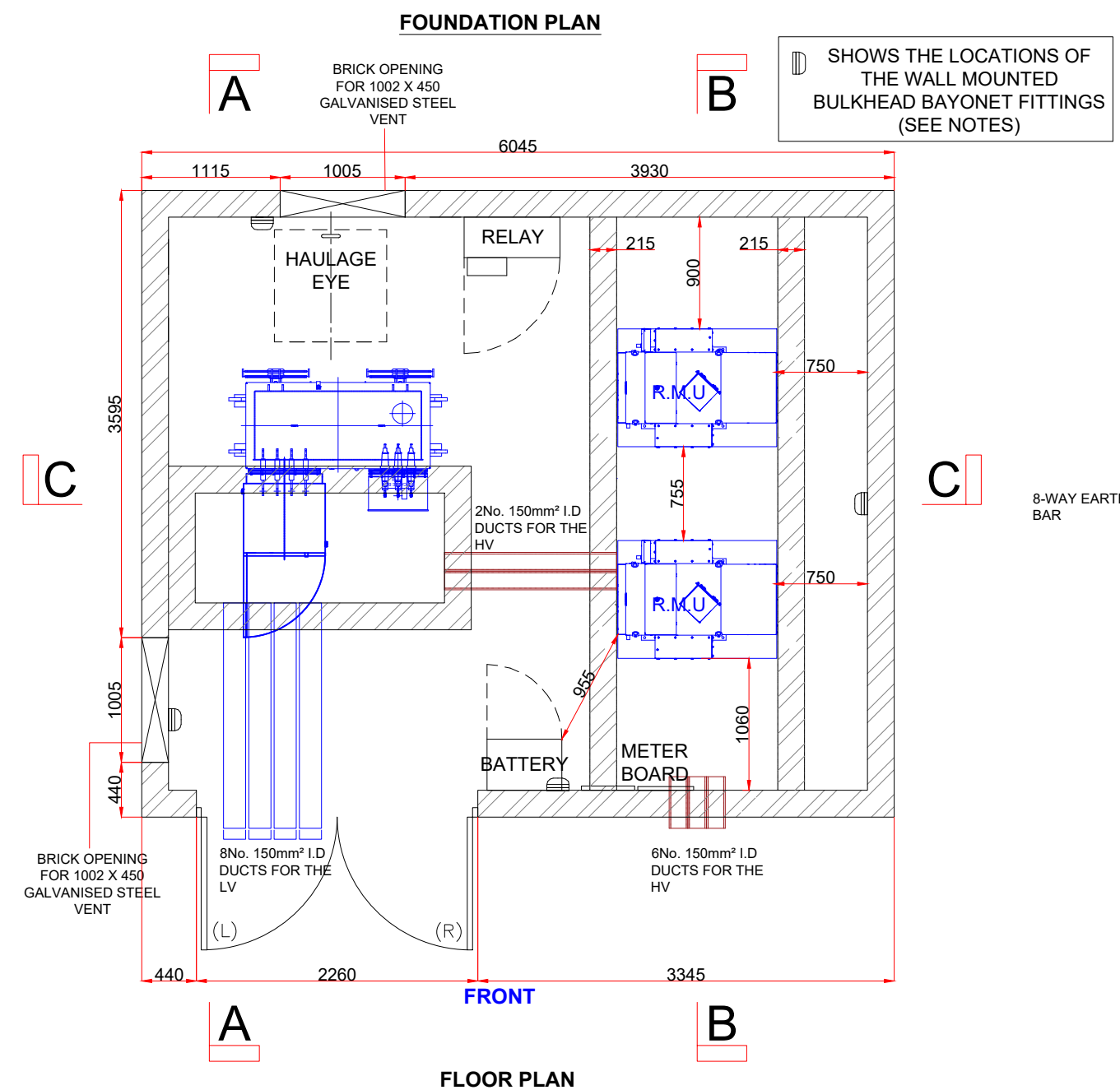
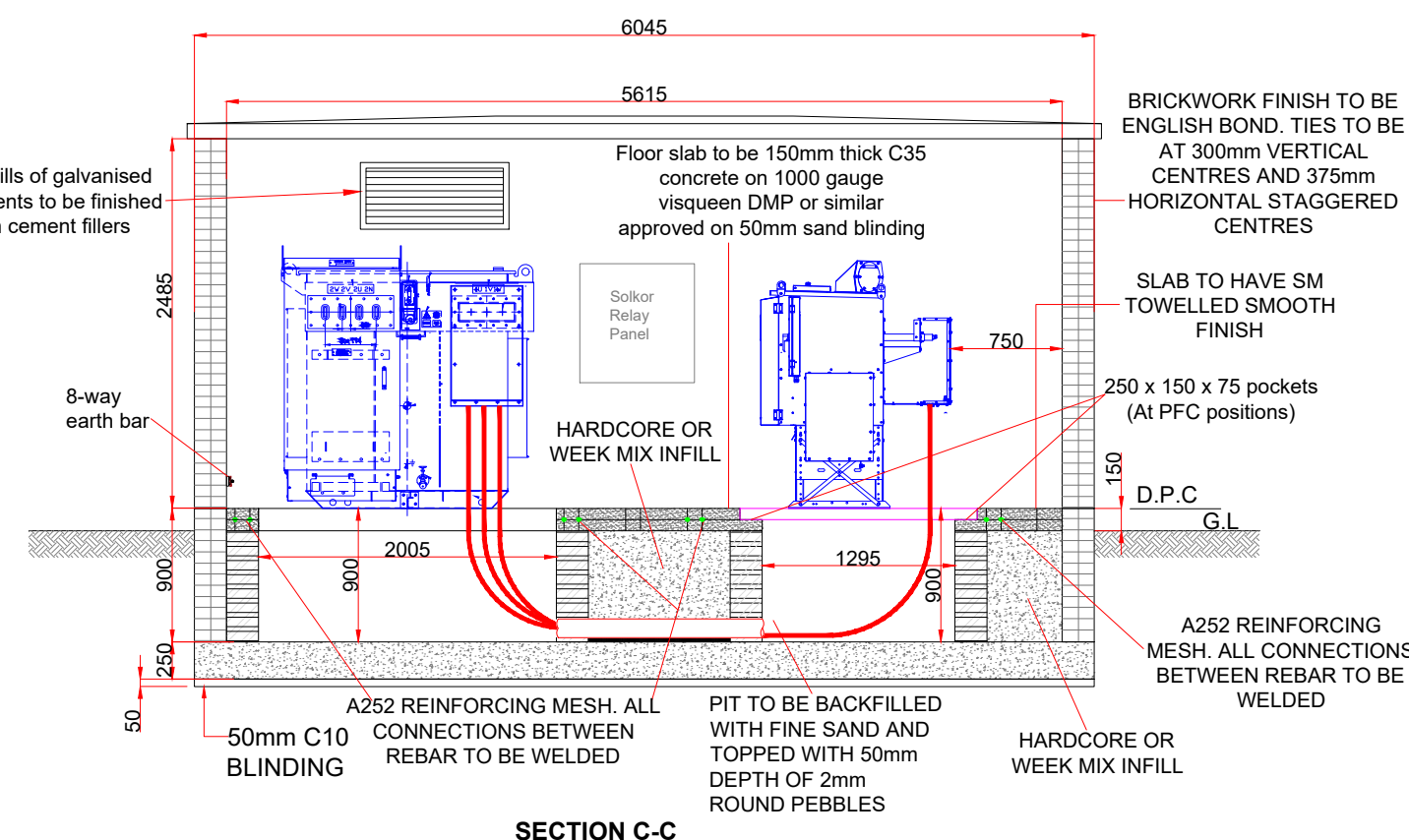
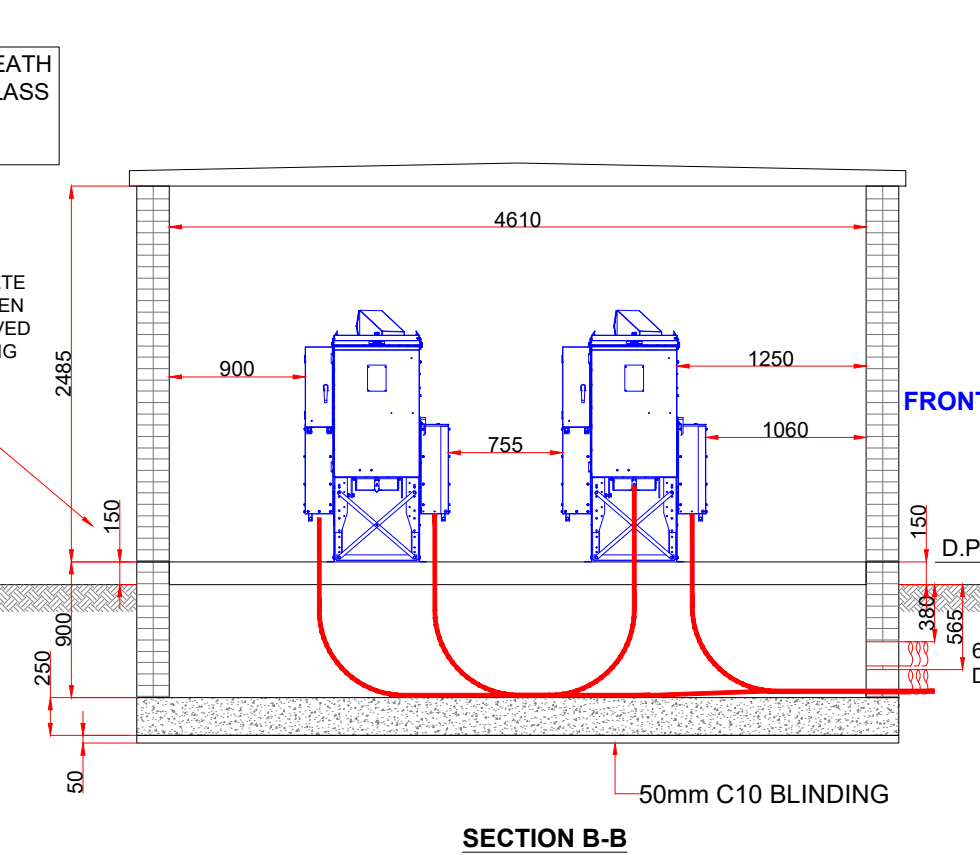
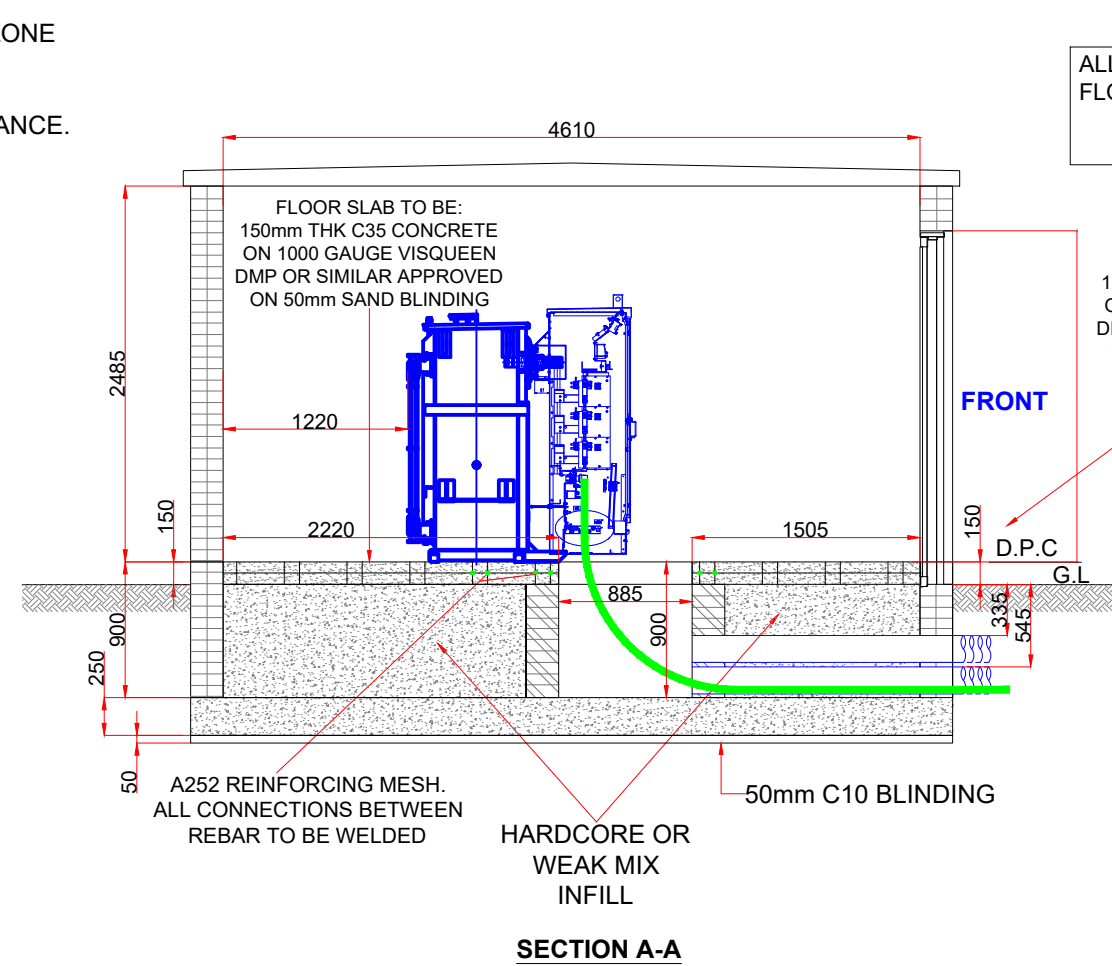
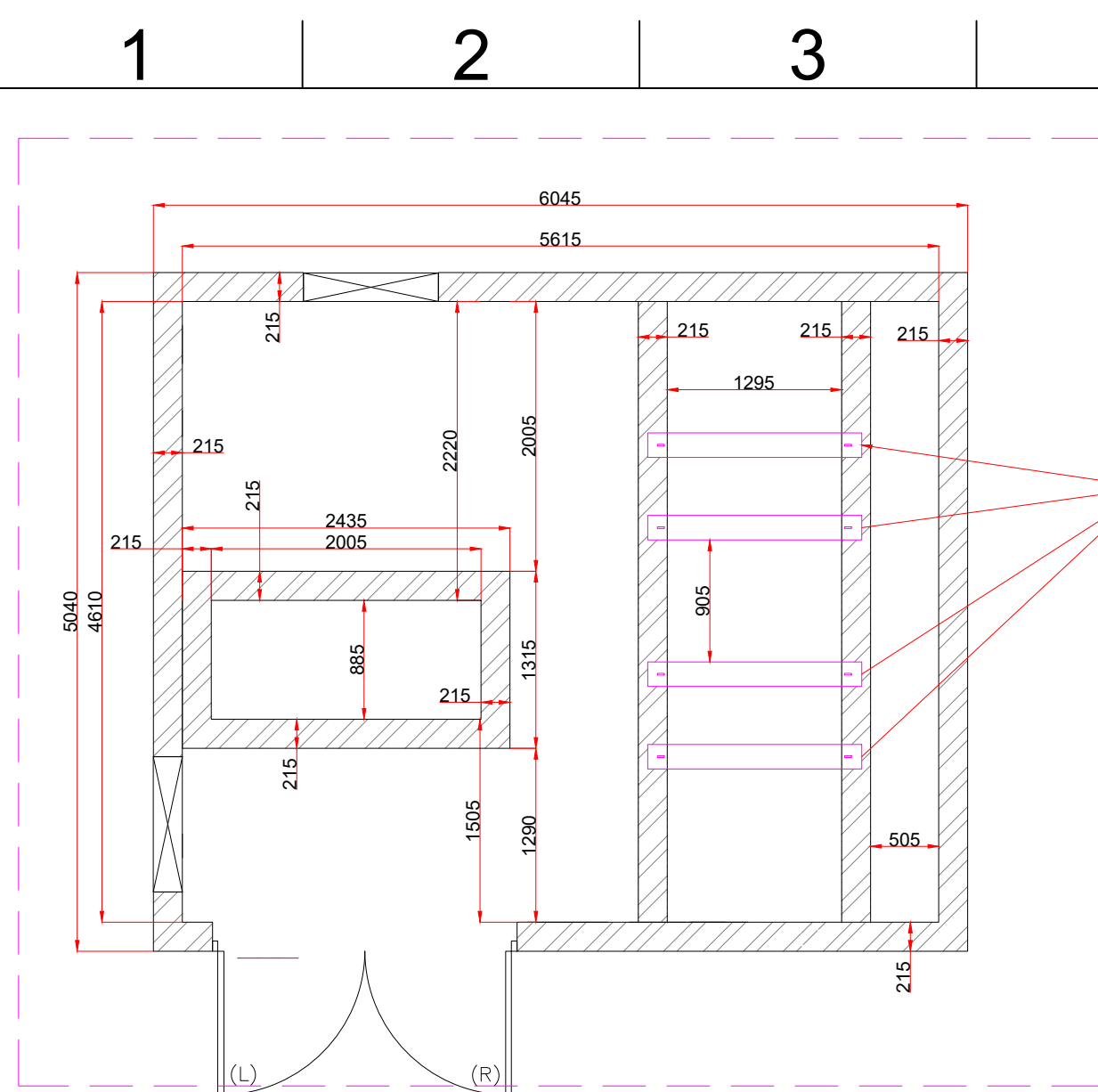




1. This drawing is to be read in conjunction with all relevant architect's, engineer's and mechanical and electrical engineer's drawings, specifications etc.
2. All dimensions to be checked on site.
3. Any discrepancies, contradictions to be notified to project architect/engineer.
4. Concrete
The concrete is to be in accordance with the specification and attain the relevant cube crushing strength at 28 days.
5. Foundations (Concrete 35N/mm² 28-day cube strength).
Foundations are to be set on undisturbed organic strata that provide the required minimum design safe ground bearing capacity.
6. Floor (Concrete 35N/mm² 28-day cube strength).
A flat, level, and smooth floor surface is essential for installation of plant. Tolerance 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, and painted with 2No. coats of non-slip floor paint on completion.
7. Brickwork
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 bricks to be H.D. category 1 min. 20N/mm² mean compressive strength, maximum 12% M.A. and durability designation F1 S1 or better. Internal bricks to be fair faced smooth textured solid concrete bricks, size to match external facing bricks and with a mean compressive strength of not less than 20N/mm².
8. Walls
Leaves of collar jointed double stretcher walls to be tied together by means of 4mm min dia. stainless steel double-triangle ties (or better) laid in every 4th course at 375mm centers and set back 38mm from outer face; ties are to be staggered. Where cavity wall construction is proposed the contractor shall confirm by structural design calculation to the satisfaction of energy networks that the proposed cavity wall panel construction has equivalent lateral strength or better than that detailed on this drawing (e.g., stainless steel windposts or other stainless steel reinforcement system).
9. Doors
Proprietary GRP faced aluminium or steel security doors are the preferred option, unless stated otherwise.
10. Roof
Internal/External faces of concrete to be fair faced. All external faces to be cured, prepared, primed and finished with a two-coat high-performance (Aliphatic) polyurethane waterproofing system (flat roof grade) with glass fibre mat reinforcement to initial coat E.G.

1No. Coat of LPL bonding primer the
2No. coats of LPL decothane
Or equal system
11. Ventilation
Ventilation unit opening sizes for 1000kVA transformers shall be minimum 1002 x 450mm. Typical ventilation indicated may not be adequate in certain supply conditions which might require additional or alternative ventilation arrangements.
12. Foundation
Foundation and floor layout details indicated are typical for substation buildings housing indoor equipment and would not therefore be applicable to unit substation equipment of H.V. switching station layouts.

Lighting and Power

All wiring to be contained in surface mounted high impact PVC conduit and sourced from a quality manufacturer. All accessories to be metal-clad and sourced from a quality manufacturer e.g. MEM or MK.

The consumer unit will be single phase with a 100amp main switch, MCB outgoing circuits consumer unit to be 5-way and labelled to identify circuits.

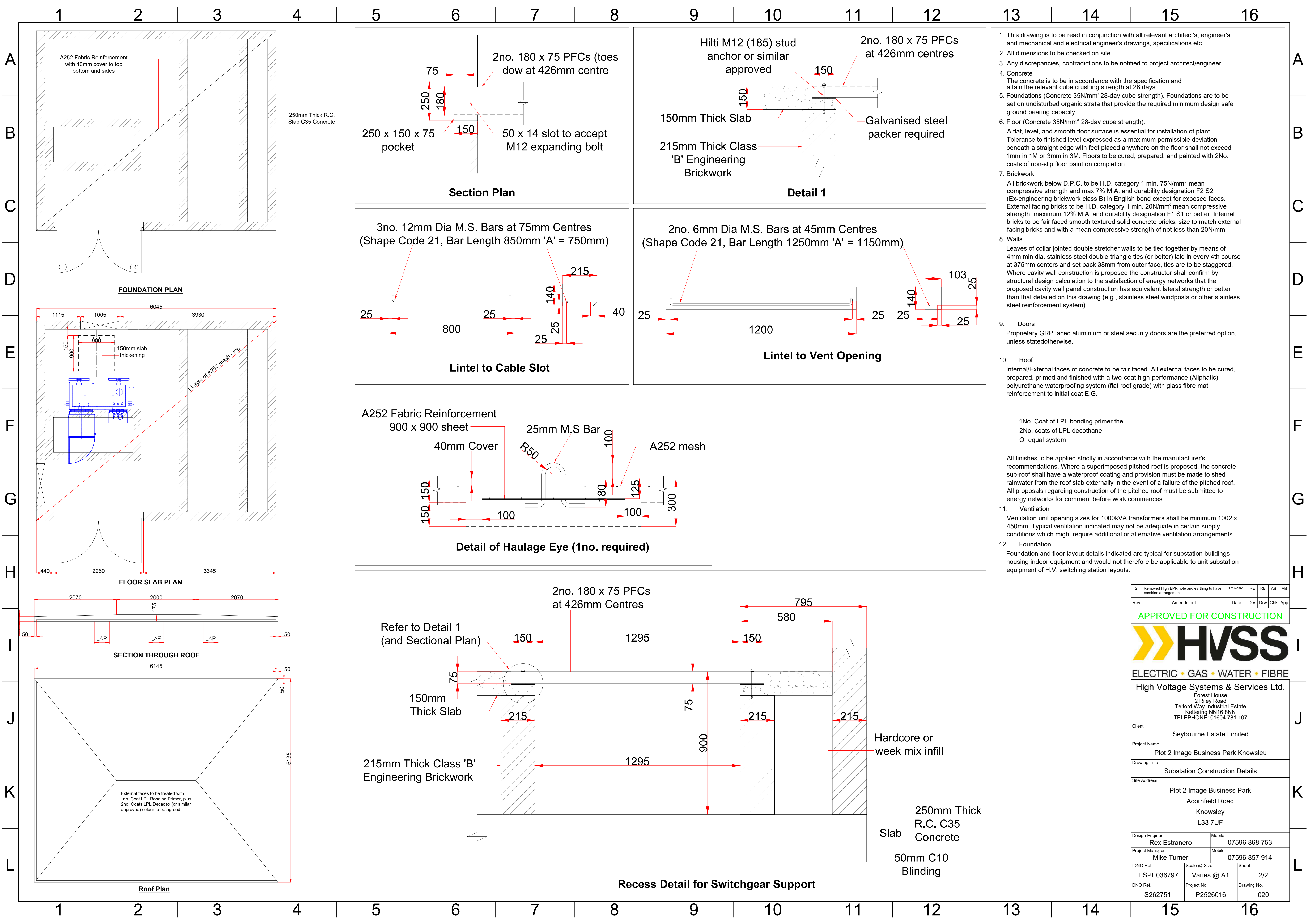
It shall be mounted 1200mm above finished floor level and sourced from a quality manufacturer. MCBs fitted to the consumer unit will comprise:

Lighting 6amp. Each socket circuit 20CB. All MCBs shall be to BS EN 60898 Type B. The supply to the consumer unit and selection of conductors will be designed to provide a minimum capacity of 32amps.

Lighting shall comprise 5 wall mounted bulkhead bayonet fittings to take 100w equivalent bulbs. The light switch shall be positioned adjacent to the 'first leaf opening' door, be surface mounted at 1200mm to centre above finished floor level and contain an illuminated lamp.

One 13amp socket outlet with integral 30mA RCD protection will be provided for use with portable tools and equipment with consideration given to the mounting position. This socket shall have a neon indicator labelled 'test equipment only' (Radial circuit) sockets shall be metal-clad type, comply with BS 1363 and be wall mounted adjacent to each other at a height of 450mm above ground level.

2	Removed High EPR note and earthing to have combine arrangement	17/07/2025	RE	RE	AB	AB
1	Added dual locking arrangement note and LV earth	18/06/2025	RE	RE	AB	AB
0	Original Issue	26/05/2025	RE	RE	AB	AB
Rev	Amendment	Date	Des	Drw	Chk	App
APPROVED FOR CONSTRUCTION						
						
ELECTRIC • GAS • WATER • FIBRE						
High Voltage Systems & Services Ltd.						
Forest House 2 Riley Road Telford Way Industrial Estate Kettering NN16 8NN TELEPHONE: 01604 781 107						
Client						
Seaybourne Estate Limited						
Project Name						
Plot 2 Image Business Park Knowsleu						
Drawing Title						
Substation Construction Details						
Site Address						
Plot 2 Image Business Park Aconfield Road Knowsley L33 7UF						
Design Engineer						
Rex Estranero Mobile 07596 868 753						
Project Manager						
Mike Turner Mobile 07596 857 914						
IDNO Ref.		Scale @ Size		Sheet		
ESPE036797		1:50 @ A1		1/2		
DNO Ref.		Project No.		Drawing No.		
S262751		P2526016		020		



- This drawing is to be read in conjunction with all relevant architect's, engineer's and mechanical and electrical engineer's drawings, specifications etc.
- All dimensions to be checked on site.
- Any discrepancies, contradictions to be notified to project architect/engineer.
- Concrete
The concrete is to be in accordance with the specification and attain the relevant cube crushing strength at 28 days.
- Foundations (Concrete 35N/mm² 28-day cube strength). Foundations are to be set on undisturbed organic strata that provide the required minimum design safe ground bearing capacity.
- Floor (Concrete 35N/mm² 28-day cube strength).
A flat, level, and smooth floor surface is essential for installation of plant. Tolerance 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, and painted with 2No. coats of non-slip floor paint on completion.
- Brickwork
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 bricks to be H.D. category 1 min. 20N/mm² mean compressive strength, maximum 12% M.A. and durability designation F1 S1 or better. Internal bricks to be fair faced smooth textured solid concrete bricks, size to match external facing bricks and with a mean compressive strength of not less than 20N/mm².
- Walls
Leaves of collar jointed double stretcher walls to be tied together by means of 4mm min dia. stainless steel double-triangle ties (or better) laid in every 4th course at 375mm centers and set back 38mm from outer face, ties are to be staggered. Where cavity wall construction is proposed the constructor shall confirm by structural design calculation to the satisfaction of energy networks that the proposed cavity wall panel construction has equivalent lateral strength or better than that detailed on this drawing (e.g., stainless steel windposts or other stainless steel reinforcement system).
- Doors
Proprietary GRP faced aluminium or steel security doors are the preferred option, unless stated otherwise.
- Roof
Internal/External faces of concrete to be fair faced. All external faces to be cured, prepared, primed and finished with a two-coat high-performance (Aliphatic) polyurethane waterproofing system (flat roof grade) with glass fibre mat reinforcement to initial coat E.G.

1No. Coat of LPL bonding primer the
2No. coats of LPL decothane
Or equal system

All finishes to be applied strictly in accordance with the manufacturer's recommendations. Where a superimposed pitched roof is proposed, the concrete sub-roof shall have a waterproof coating and provision must be made to shed rainwater from the roof slab externally in the event of a failure of the pitched roof. All proposals regarding construction of the pitched roof must be submitted to energy networks for comment before work commences.
- Ventilation
Ventilation unit opening sizes for 1000kVA transformers shall be minimum 1002 x 450mm. Typical ventilation indicated may not be adequate in certain supply conditions which might require additional or alternative ventilation arrangements.
- Foundation
Foundation and floor layout details indicated are typical for substation buildings housing indoor equipment and would not therefore be applicable to unit substation equipment of H.V. switching station layouts.

2	Removed High EPR note and earthing to have combine arrangement	17/07/2025	RE	RE	AB	AB
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Project Name Plot 2 Image Business Park Knowsleu						
Drawing Title Substation Construction Details						
Site Address Plot 2 Image Business Park Acomfield Road Knowsley L33 7UF						
Design Engineer Rex Estranero			Mobile 07596 868 753			
Project Manager Mike Turner			Mobile 07596 857 914			
IDNO Ref. ESPE036797	Scale @ Size Varies @ A1		Sheet 2/2			
DNO Ref. S262751	Project No. P2526016		Drawing No. 020			