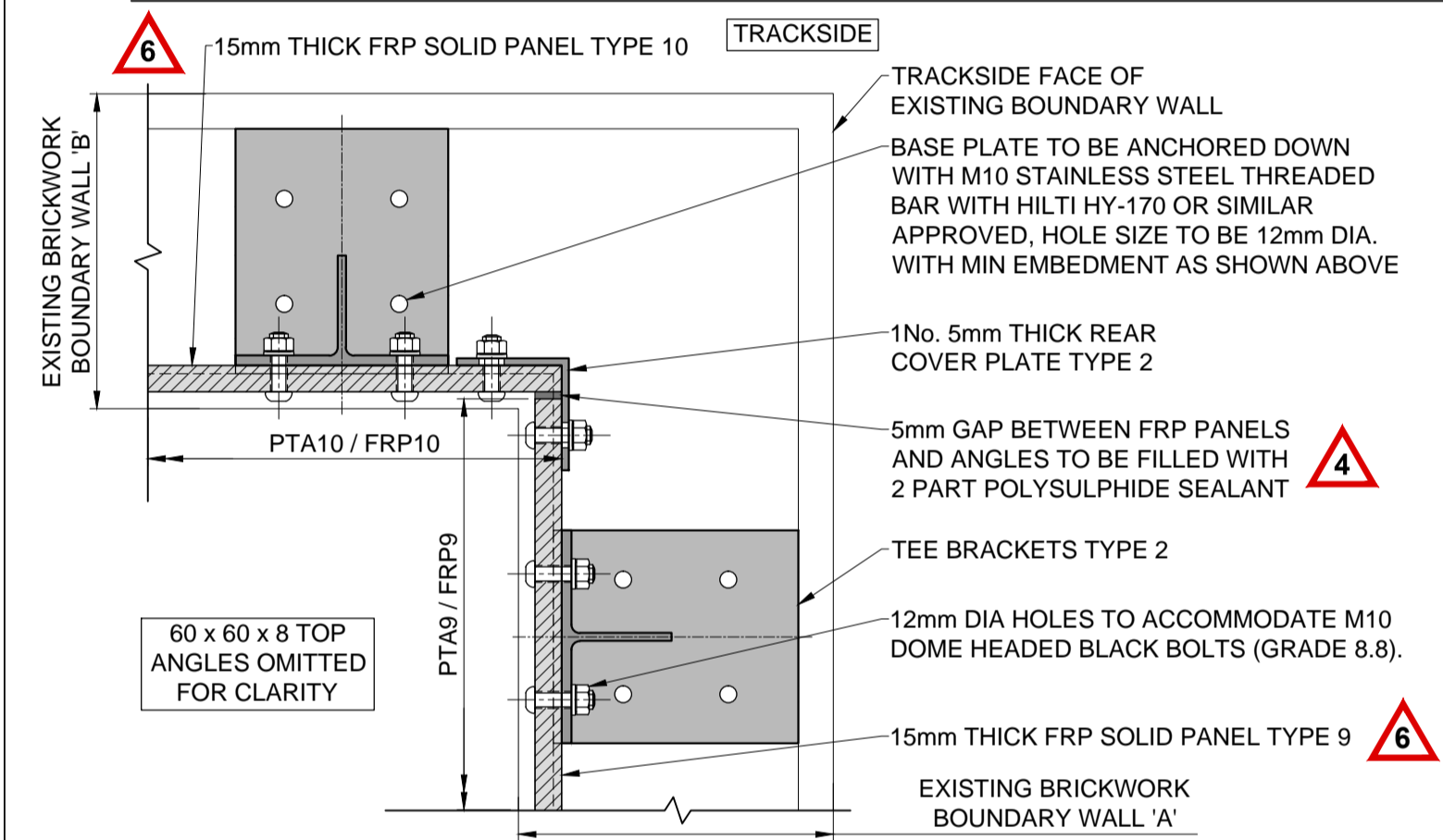
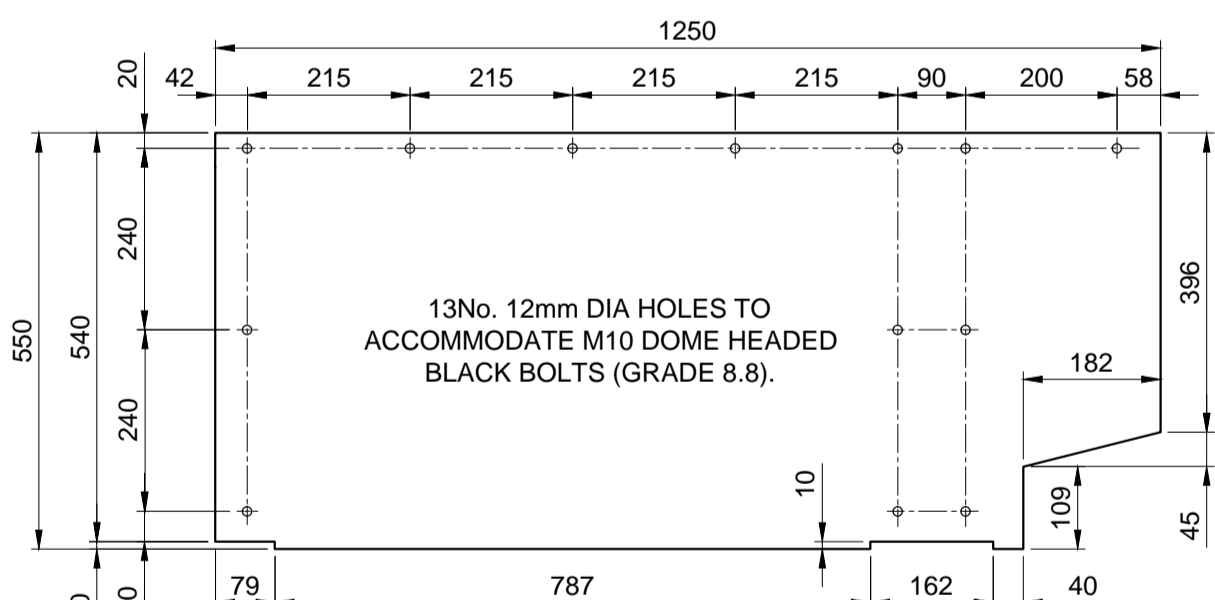


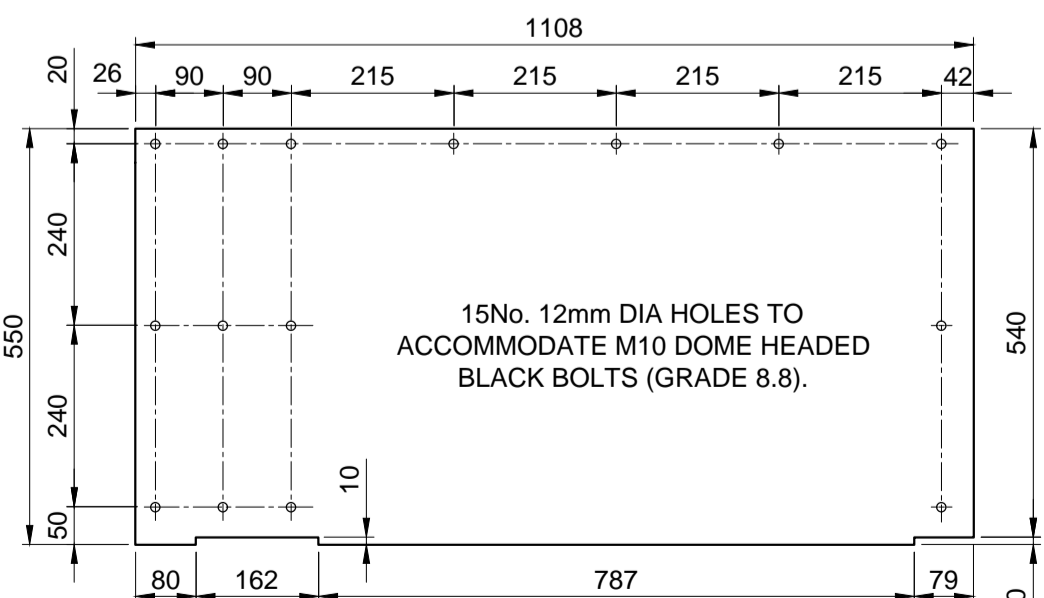
FOR BRACKETS, ANGLES
AND FRP PANEL LOCATIONS
REFER TO DRAWING 11



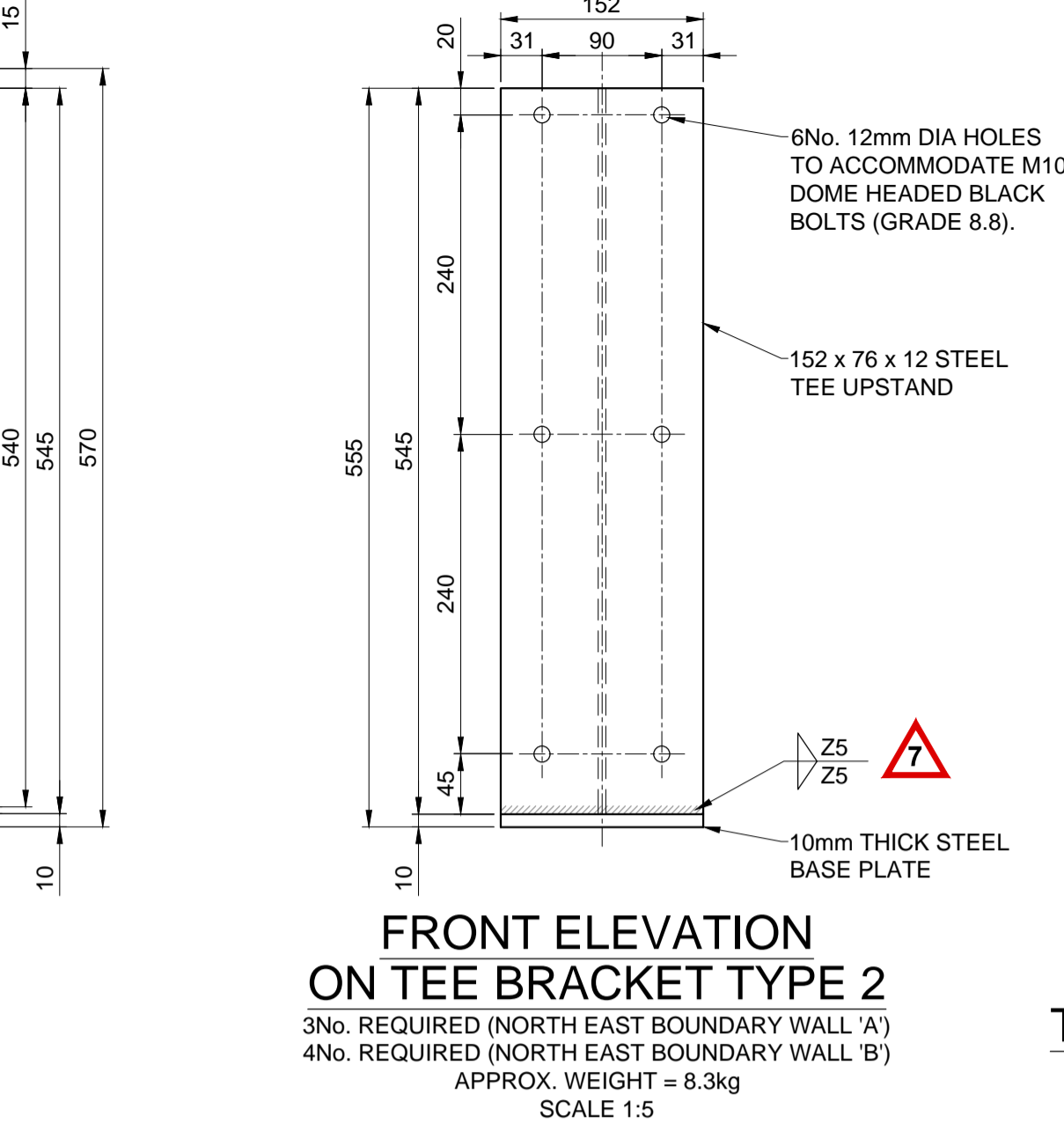
CORNER CONNECTION DETAIL
NORTH EAST BOUNDARY WALL ONLY
SCALE 1:5



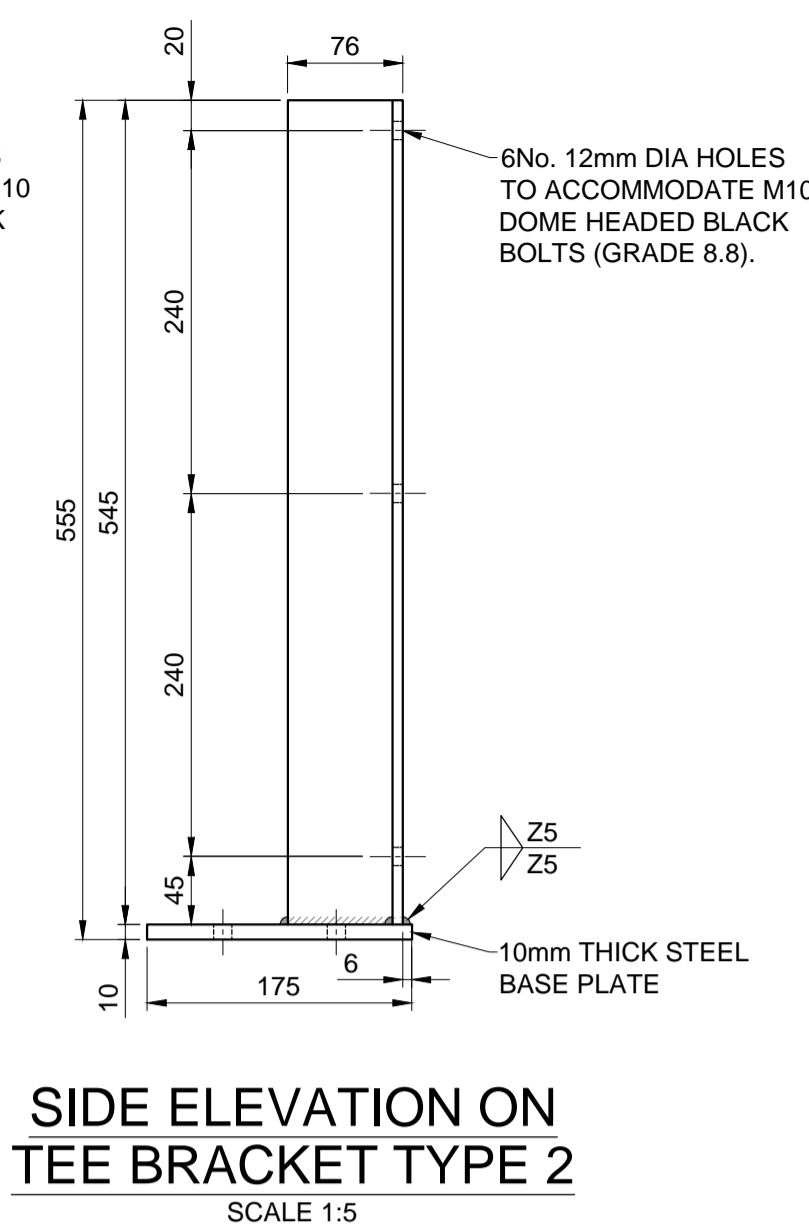
15mm THICK FRP PANEL TYPE 8 (FRP8)
1No. REQUIRED (NORTH EAST BOUNDARY WALL 'A')
APPROX. WEIGHT = 18.8kg
SCALE 1:10



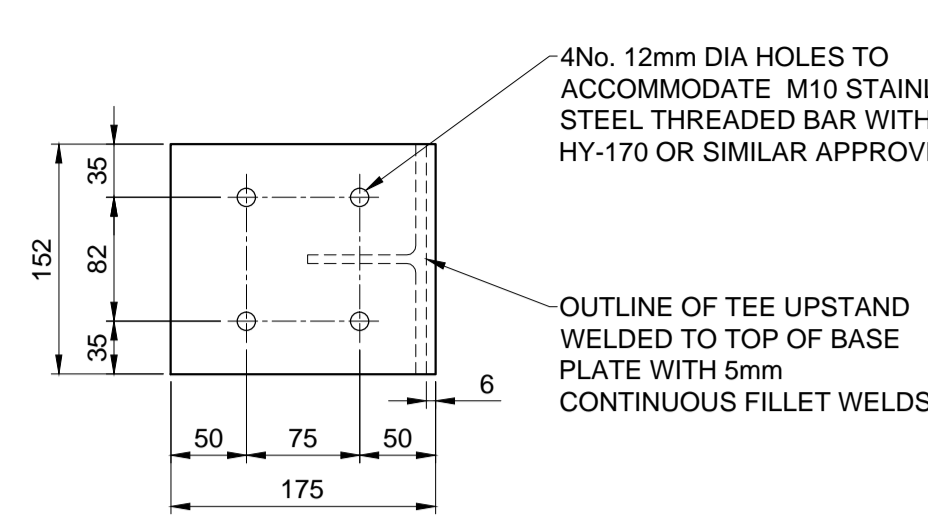
15mm THICK FRP PANEL TYPE 9 (FRP9)
1No. REQUIRED (NORTH EAST BOUNDARY WALL 'A')
APPROX. WEIGHT = 17.3kg
SCALE 1:10



FRONT ELEVATION
ON TEE BRACKET TYPE 2
3No. REQUIRED (NORTH EAST BOUNDARY WALL 'A')
4No. REQUIRED (NORTH EAST BOUNDARY WALL 'B')
APPROX. WEIGHT = 8.3kg
SCALE 1:5

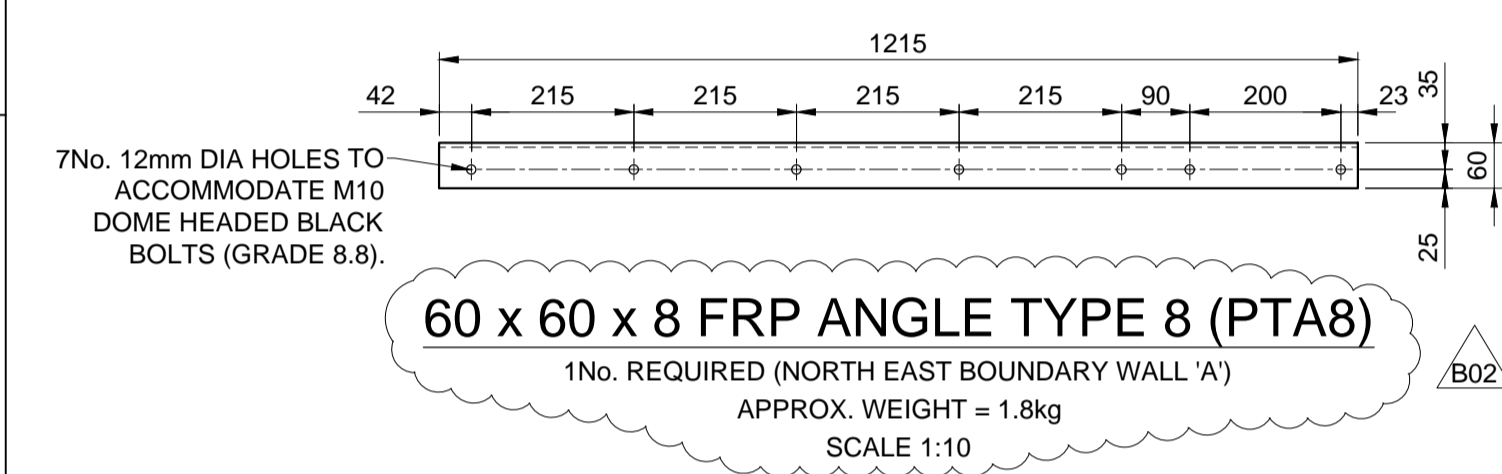
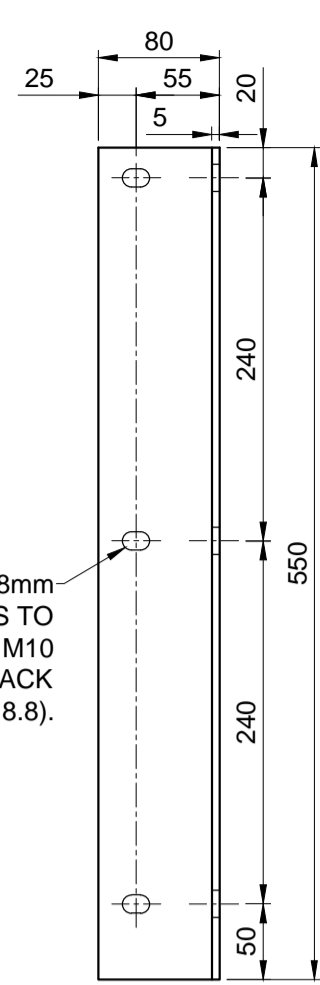


PLAN ON 10mm THICK
STEEL BASE PLATE TYPE 2
SCALE 1:5

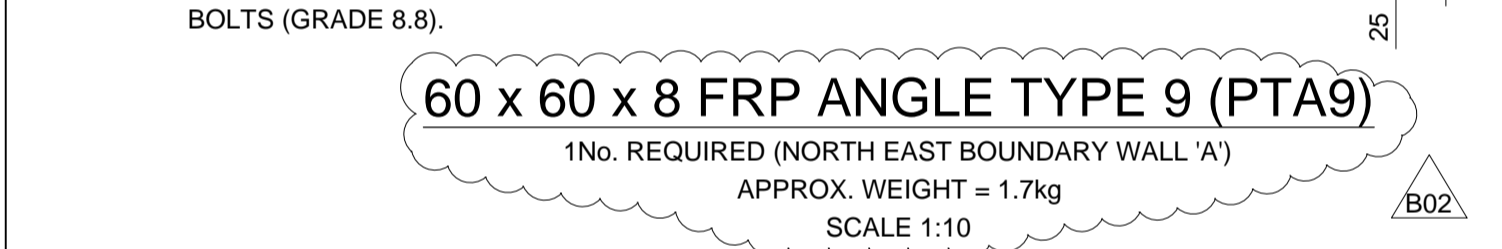


PLAN ON 5mm THICK STEEL
REAR COVER PLATE TYPE 2
1No. REQUIRED (NORTH EAST BOUNDARY WALL)
APPROX. WEIGHT = 3.3kg
SCALE 1:5

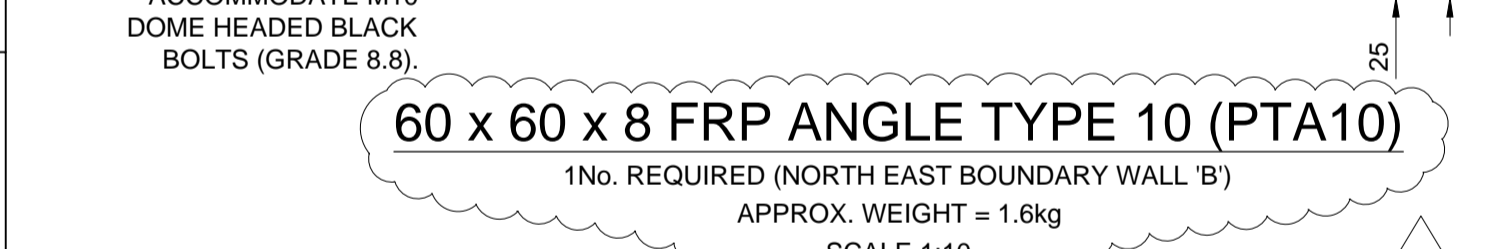
FRONT ELEVATION ON
5mm THICK STEEL REAR
COVER PLATE TYPE 2
SCALE 1:5



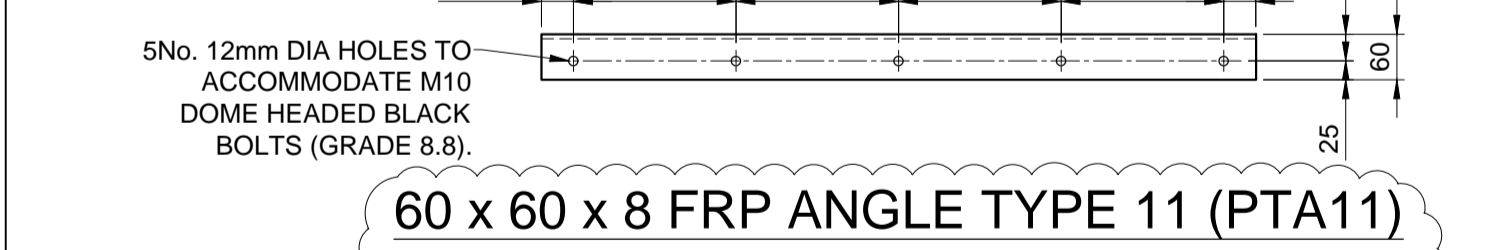
60 x 60 x 8 FRP ANGLE TYPE 8 (PTA8)
1No. REQUIRED (NORTH EAST BOUNDARY WALL 'A')
APPROX. WEIGHT = 1.8kg
SCALE 1:10



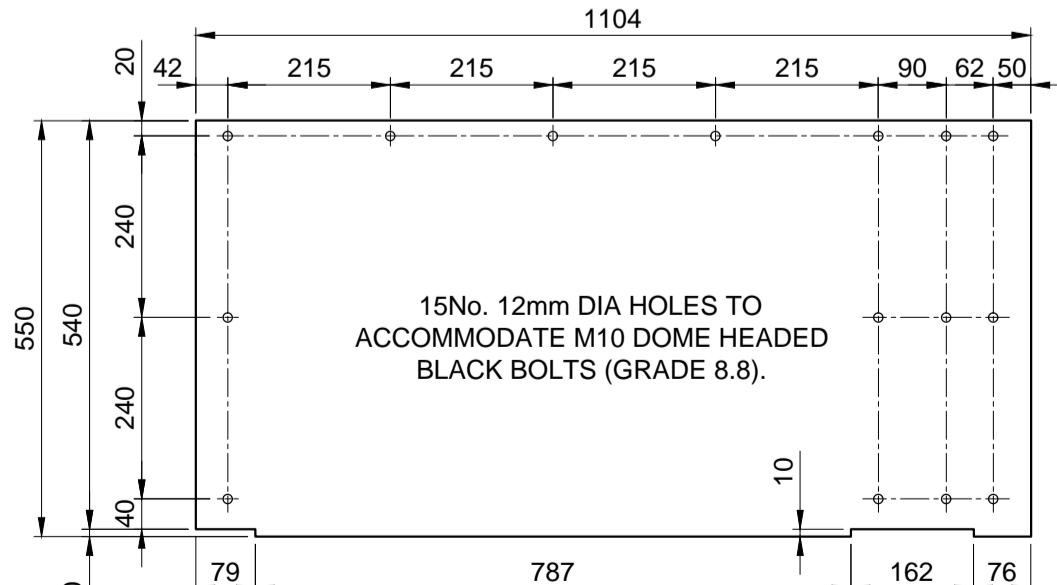
60 x 60 x 8 FRP ANGLE TYPE 9 (PTA9)
1No. REQUIRED (NORTH EAST BOUNDARY WALL 'A')
APPROX. WEIGHT = 1.7kg
SCALE 1:10



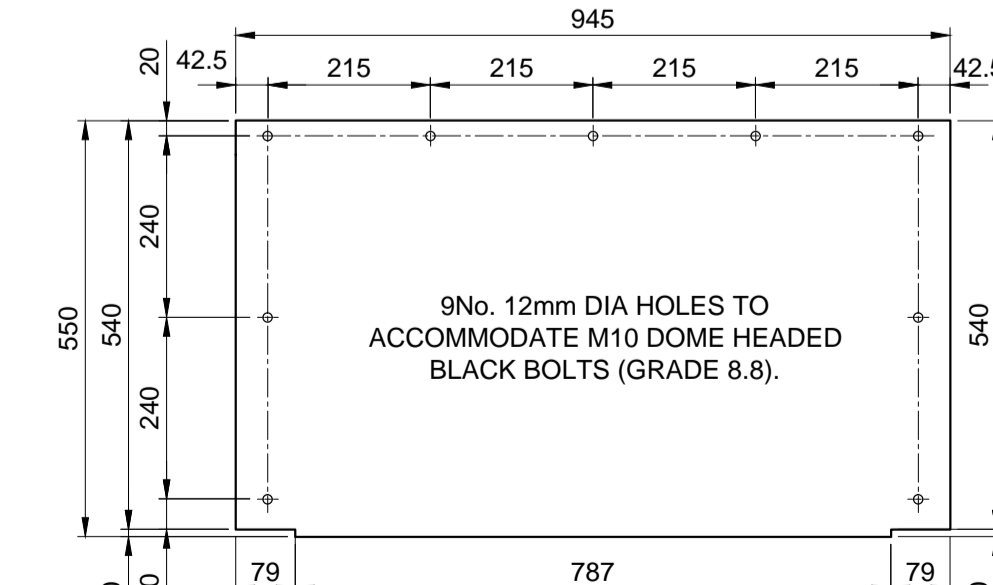
60 x 60 x 8 FRP ANGLE TYPE 10 (PTA10)
1No. REQUIRED (NORTH EAST BOUNDARY WALL 'B')
APPROX. WEIGHT = 1.6kg
SCALE 1:10



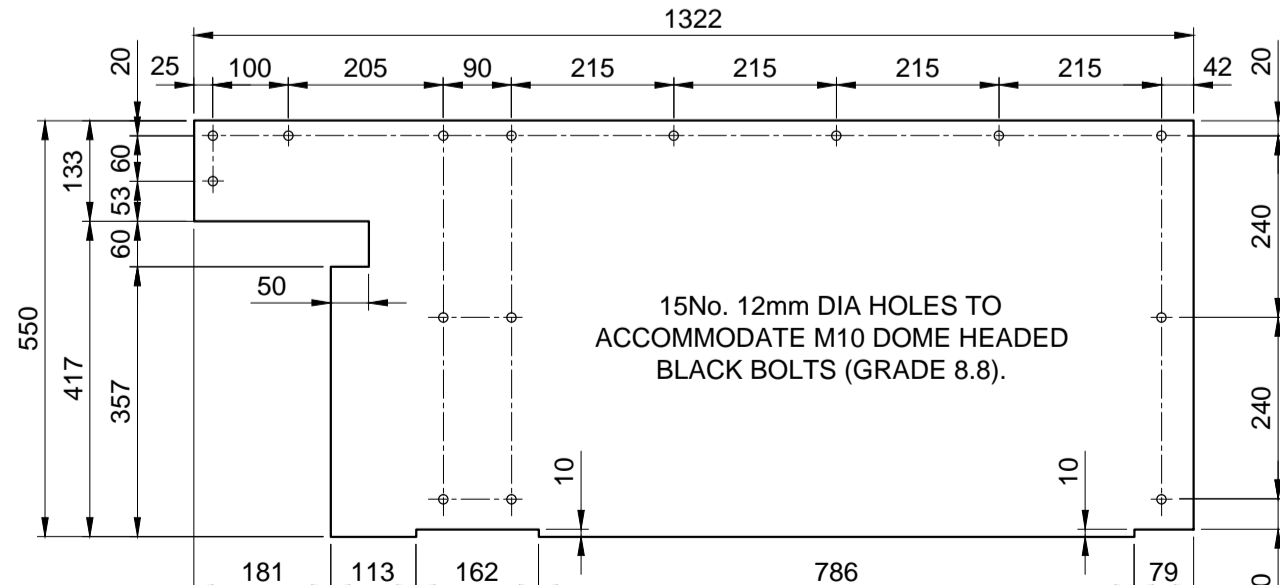
60 x 60 x 8 FRP ANGLE TYPE 11 (PTA11)
1No. REQUIRED (NORTH EAST BOUNDARY WALL 'B')
APPROX. WEIGHT = 1.4kg
SCALE 1:10



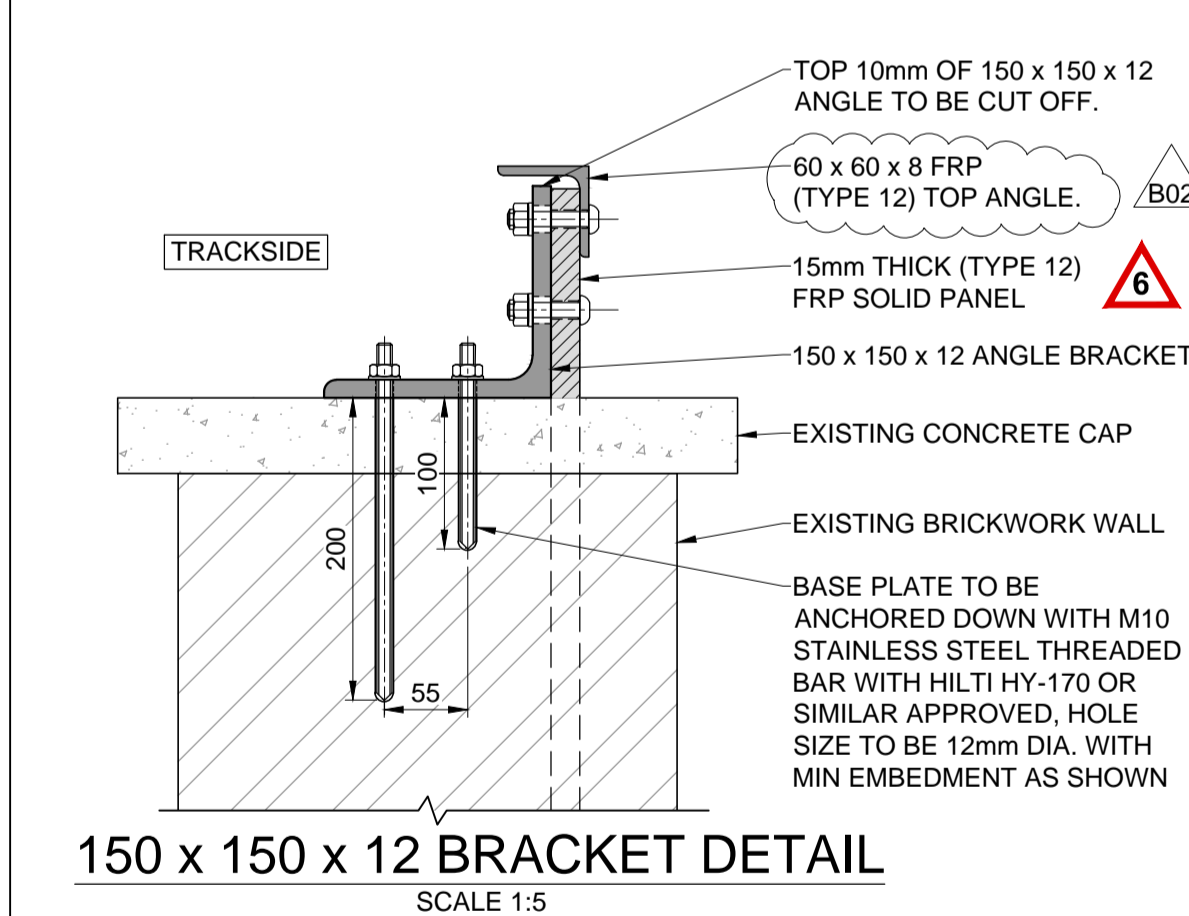
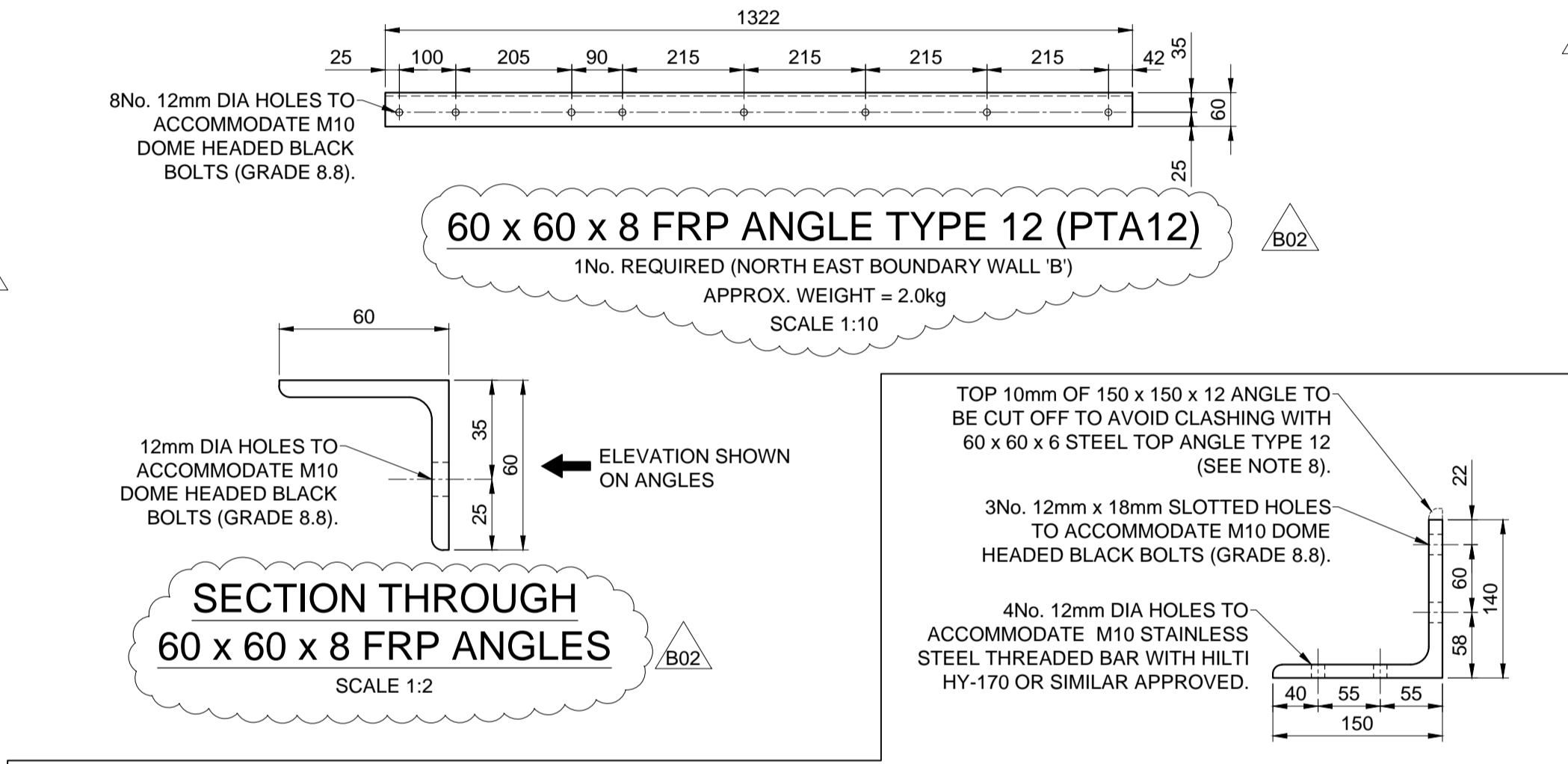
15mm THICK FRP PANEL TYPE 10 (FRP10)
1No. REQUIRED (NORTH EAST BOUNDARY WALL 'B')
APPROX. WEIGHT = 17.2kg
SCALE 1:10



15mm THICK FRP PANEL TYPE 11 (FRP11)
1No. REQUIRED (NORTH EAST BOUNDARY WALL 'B')
APPROX. WEIGHT = 14.8kg
SCALE 1:10

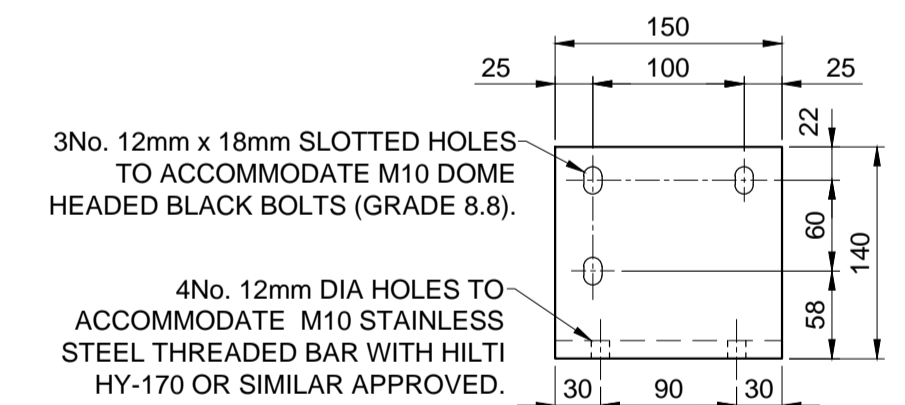


15mm THICK FRP PANEL TYPE 12 (FRP12)
1No. REQUIRED (NORTH EAST BOUNDARY WALL 'B')
APPROX. WEIGHT = 18.4kg
SCALE 1:10



150 x 150 x 12 BRACKET DETAIL
SCALE 1:5

SECTION THROUGH 150 x 150 x 12
STEEL ANGLE BRACKET
1No. REQUIRED (NORTH EAST BOUNDARY WALL 'B')
APPROX. WEIGHT = 5.8kg
SCALE 1:5



FRONT ELEVATION ON
150 x 150 x 12 STEEL
ANGLE BRACKET
SCALE 1:5

- Legend/Notes
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS STATED OTHERWISE.
 - DO NOT SCALE FROM THIS DRAWING.
 - THIS DRAWING IS BASED ON AVAILABLE NETWORK RAIL RECORD INFORMATION AND A BASIC DIMENSIONAL SITE SURVEY.
 - THE CONTRACTOR SHALL CONFIRM ALL DIMENSIONS PRIOR TO FABRICATION AND CONSTRUCTION.
 - ABSOLUTE MINIMUM HEIGHT OF PARAPET IS TO BE 1850mm FROM STANDING SURFACE OR ANY FOOTHOLD WITHIN 6m OF THE RUNNING RAIL.
- STEELWORK NOTES
- STEEL GRADES IN ACCORDANCE WITH BS EN 10025 2004 PARTS 1-6, TO BE S275 J0.
 - ALL WELDING SHALL BE IN ACCORDANCE WITH BS EN 1011-1:1998 AND AMENDMENT NO.1; 2002, BS EN 1011-2, BS EN 729 AND THE SPECIFICATION. ALL WELDERS SHALL BE APPROVED TO BS EN 287 PART 1 AND BS EN 1418.
 - ALL BOLTS AND ANCHORAGES DAMAGED/CUT DURING IMPLEMENTATION TO BE TOUCHED UP WITH GALVAFROID.
 - PROTECTIVE TREATMENT OF NEW STEELWORK ELEMENTS TO BE HOT DIP GALVANISED TO BS EN ISO 1461:2009 AND NR/GN/CIV/002
 - ALL DIMENSIONS OF NEW STEELWORK/FRP ELEMENTS AND BOLT LOCATIONS TO BE CONFIRMED PRIOR TO FABRICATION BY CONTRACTOR BY UNDERTAKING A SITE SURVEY.

- FRP NOTES
- CONTRACTOR TO CONFIRM ALL BOARD DIMENSIONS AND HOLE LOCATIONS PRIOR TO CUTTING THE FINAL LENGTHS.
 - FRP PANELS ARE TO BE FABRICATED FROM FIBREX FRP PLATES BY SMYTH COMPOSITES LTD OR SIMILAR APPROVED, COLOUR TO BE NIMBUS GREY, REF: 10.A.07 TO BS 5252.
 - ALL FRP BOARDS AND COMPONENTS ARE TO BE STORED AND INSTALLED IN ACCORDANCE WITH THE MANUFACTURERS SPECIFICATION.
 - ALL FIELD CUT & DRILLED EDGES, HOLES & ABRASIONS FOR FRP SHALL BE SEALED WITH A CATALYZED RESIN AS RECOMMENDED BY MANUFACTURERS. THE SEALING OF THE EDGES SHALL PREVENT PREMATURE FRAYING OF THE FIELD CUT EDGES.
 - ALL GAPS BETWEEN FRP ELEMENTS TO BE FILLED WITH 2 PART POLYSULPHIDE SEALANT OR SIMILAR APPROVED

RESIDUAL RISKS

- INJURY DUE TO WORKING WITH POWER TOOLS.
- INJURY DUE TO MANUAL HANDLING.
- DRILLING THROUGH REINFORCED CONCRETE / DAMAGE.
- ILLNESS DUE TO CHEMICALS WITHIN PAINT SYSTEMS AND SEALING RESIN.
- LIGHTING CABLES FOR PUBLIC HOUSE SIGNAGE ATTACHED TO NORTH EAST RETURN WALL.
- EXPOSURE TO FRP FIBRES FROM FIELD CUT EDGES.
- WELDING OPERATIONS.

Rev	Date	Description of Revisions	Drawn	Chkd	Appr
B02	06/05/16	SECOND ISSUE	RD	RB	TC
B01	18/12/15	FIRST ISSUE	RD	HD	TC

F003 - DETAILED DESIGN

Designers	Infrastructure Projects Buildings & Civils Civils Design Group Manchester Square One 4 Travis Street Manchester M1 2NY Tel: 0161 880 3936	Network Rail
Project		

LIVERPOOL TO MANCHESTER DSE LINE ELECTRIFICATION WORKS

Drawing Title		
DSE/39B QUEENS DRIVE PROPOSED DETAILS SHEET 2 OF 2 (AREA 3)		
Designer	R. TURNER	Signed <i>R. Turner</i> Date 18/12/2015
Drawn	R. DIVILLY	Signed <i>R. Divilly</i> Date 18/12/2015
Checked	H. DAS	Signed <i>H. Das</i> Date 18/12/2015
Approved	T. CHEETHAM	Signed <i>T. Cheetham</i> Date 18/12/2015
Scale(s) at A1	Sheet Size A1 594 x 841	ELR & Mileage
AS SHOWN	ELR : DSE	3m 0440yds
Drawing Number	LNW-124384-ECV-DRG-IAB-DSE-39-13	
Revision	B02	