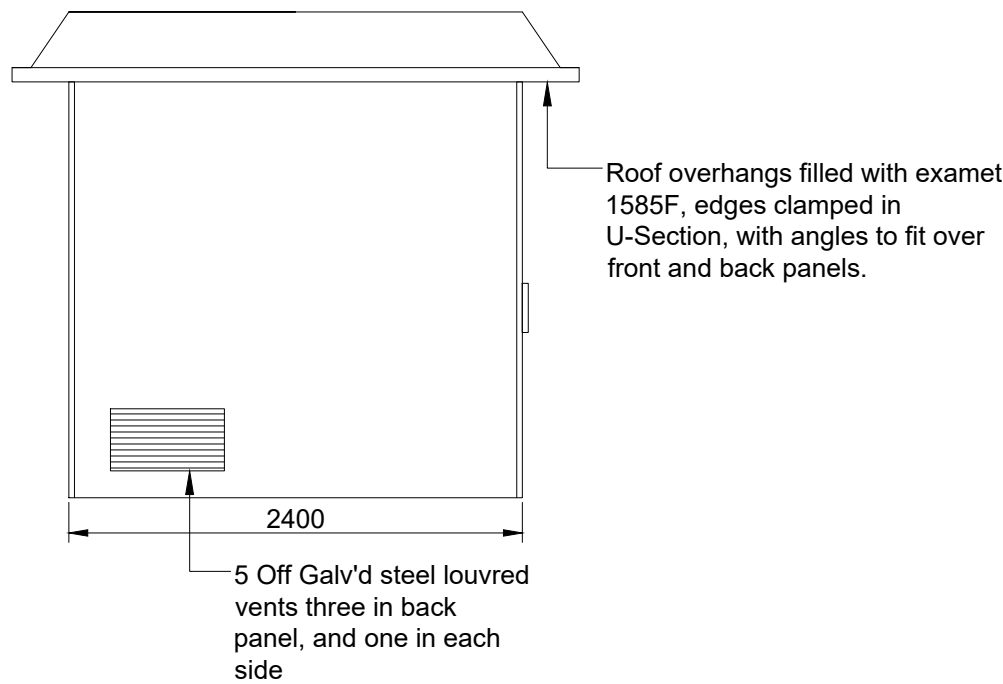
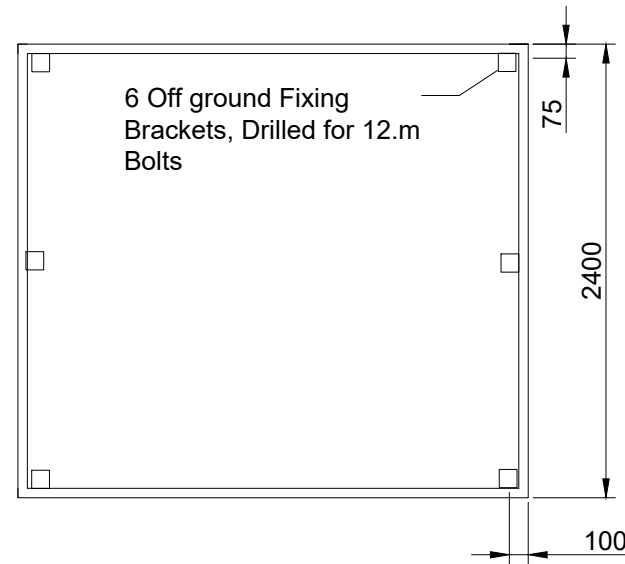
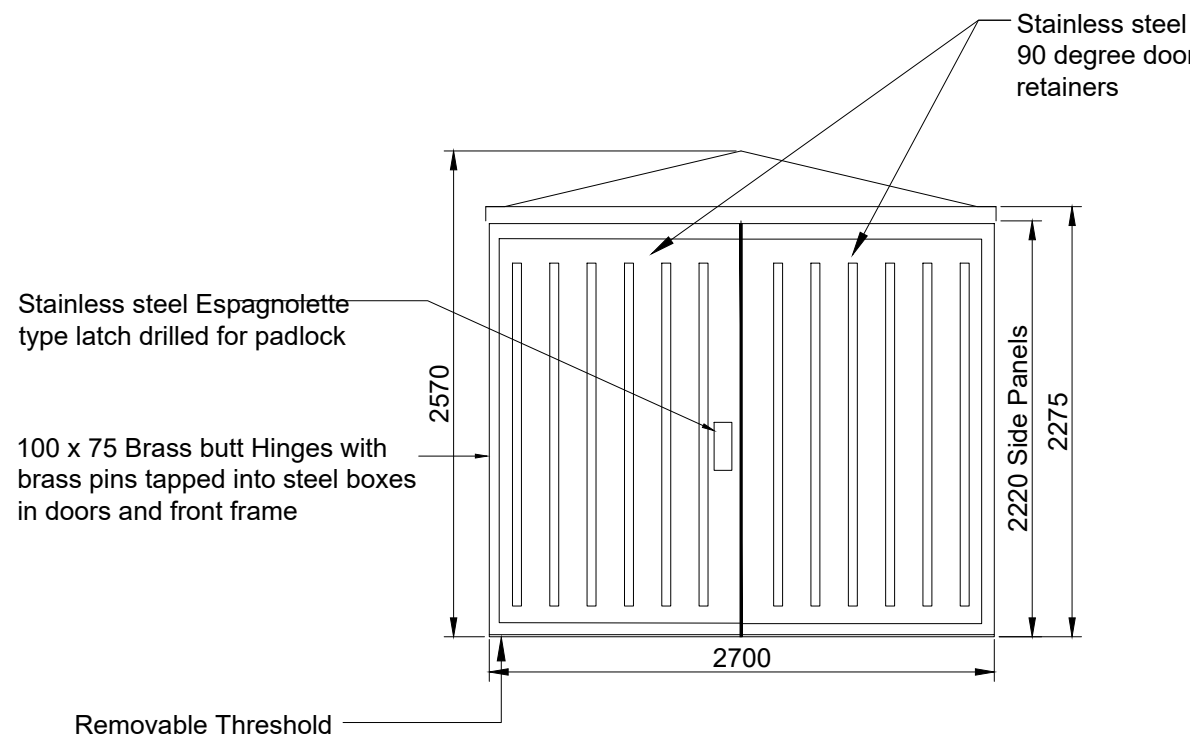
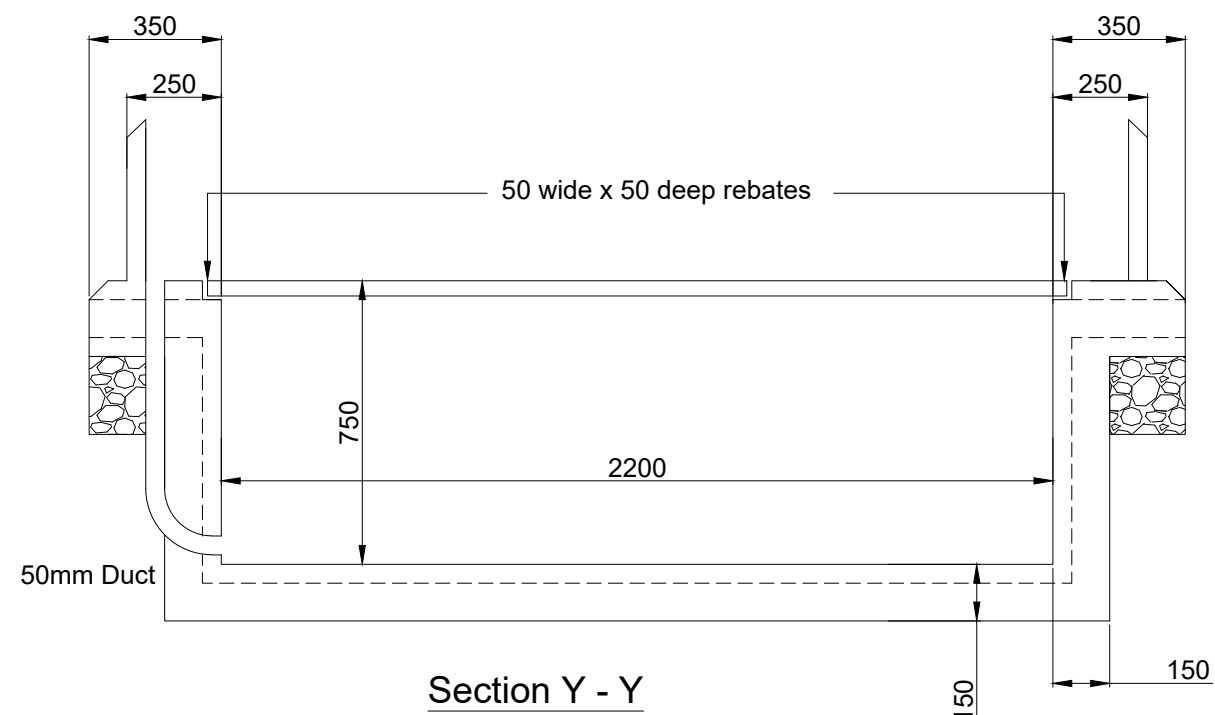
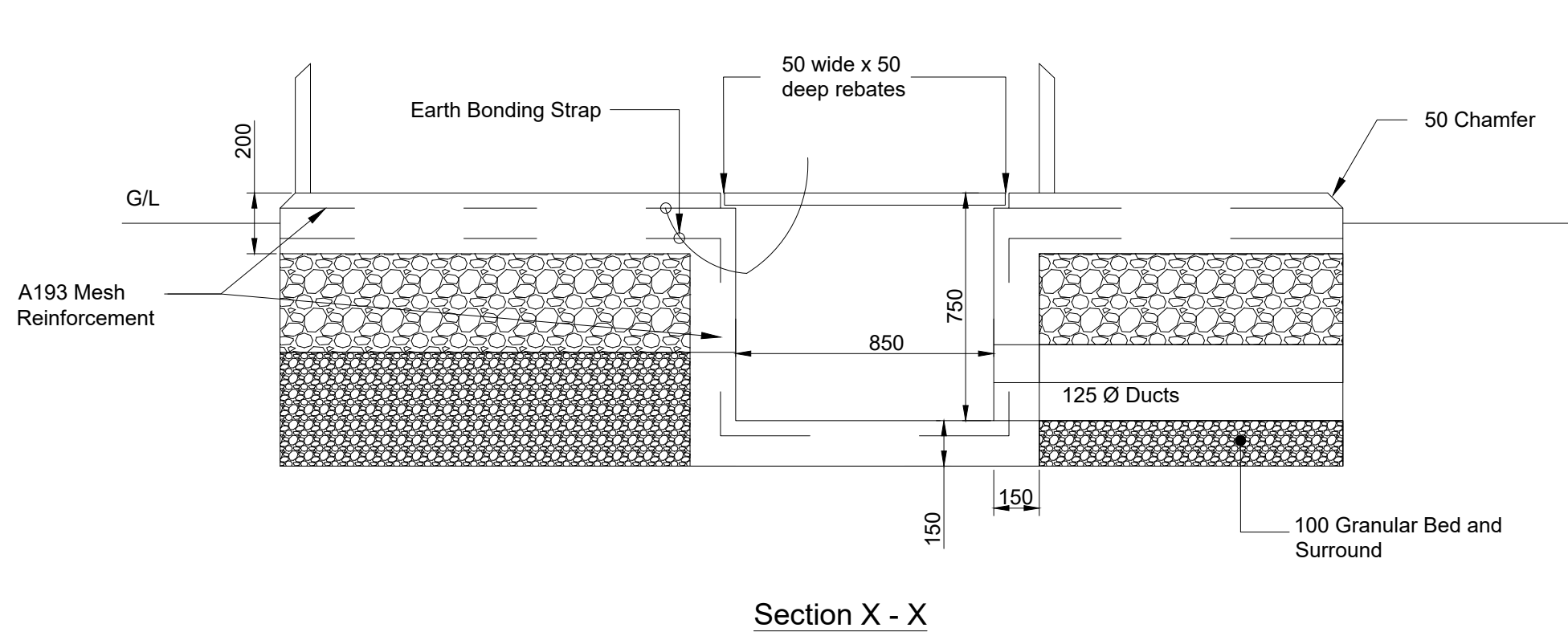
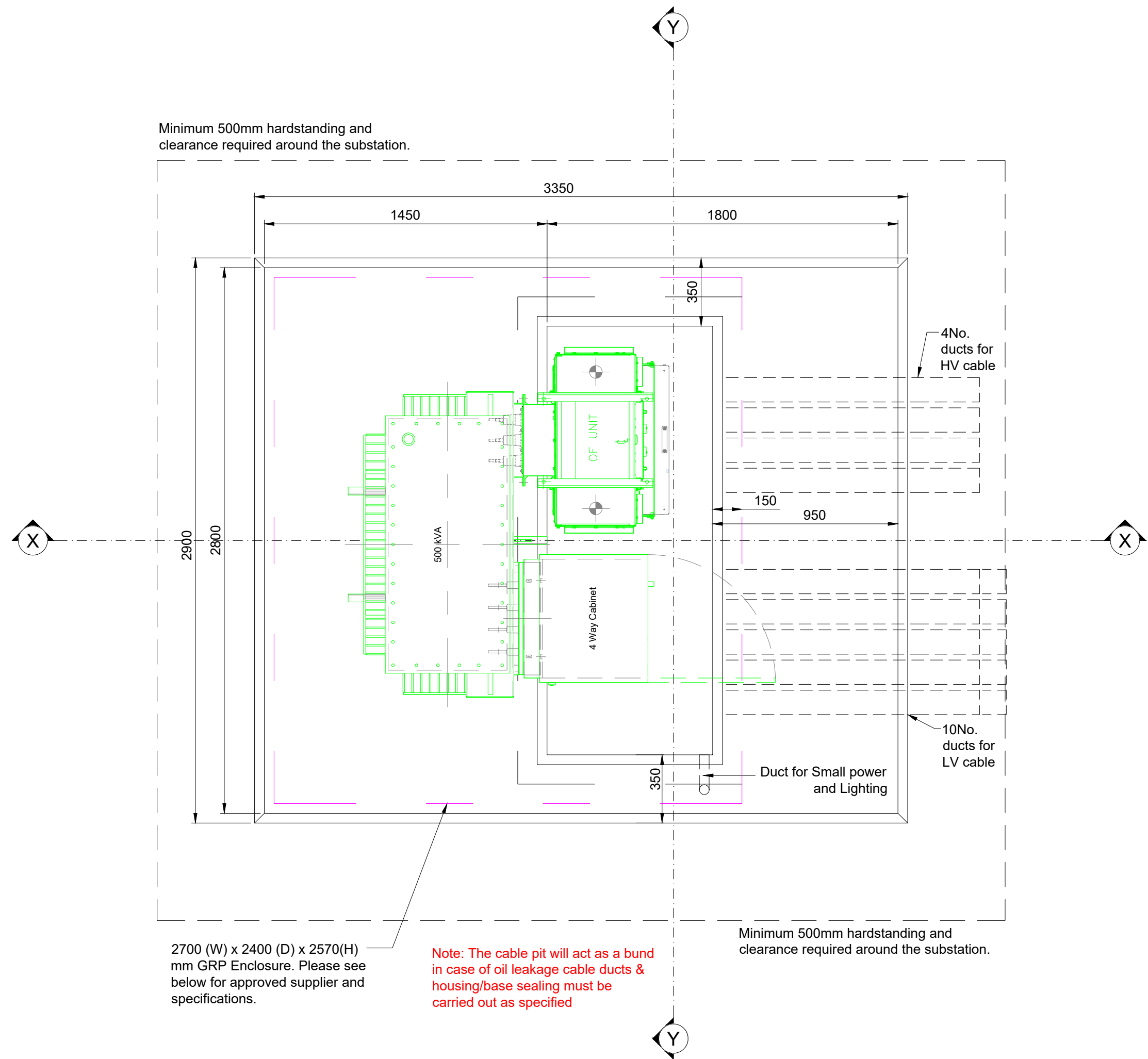




DETAILED CONSTRUCTION REQUIREMENTS

1. Foundations

1.1 Floor Slab

This shall comprise a 200mm reinforced concrete slab on a minimum 150mm thickness of compacted granular fill.

Concrete shall be grade C32/40.

Reinforcement shall be two layers of A193 steel mesh. Minimum reinforcement cover shall be 40mm.

Vertical faces shall be formed using full depth plywood shuttering.

Top surface shall be flat and even, finished with a metal trowel to give a smooth, tight surface.

The top edges shall be finished with a 50mm chamfer.

The granular fill shall comprise crushed or uncrushed natural gravel, hard limestone, hard sandstone, granite material, or recycled crushed demolition waste. If preferred, the granular fill may be replaced with mass concrete.

The base slab must extend to at least 750mm in front of the housing. This apron may be omitted if the area is hard landscaped with bitmac, paving slabs, setts, etc. Gravel or chippings is not an acceptable substitute.

The slab reinforcement mesh must be bonded to the Substation Earth. The earth conductor must be mechanically secured to both mesh layers. A minimum length of two meters of earth conductor must project from the face of the concrete in to the cable pit area. The earth conductor must be a minimum of 70mm² hard drawn stranded copper conductor (not copper wire rope) and connections shall be non-ferrous (copper or brass) U bolt connectors.

1.2 Cable Pit

Pit walls shall be at least 150mm thick, and may be constructed in situ concrete.

Base slab shall be 200mm in situ concrete on either 50mm concrete blinding or 1 layer of 1000 gauge polythene sheeting.

All in situ concrete shall be grade C32/40, reinforced with 1 layer of A193 steel mesh.

The pit shall be covered using 50mm thick GRP gratings with an anti-slip top surface. The gratings shall be installed on completion of the floor construction - any cable cut-outs will be formed later following cable installation.

Individual gratings may be no larger than 1.0 square metre.

1.3 Cable Ducts

Unless drawings show otherwise, all cable ducts shall be 125mm dia. twin wall HDPE, complying with Energy Networks Association (ENA) Technical Specification 12-24, Plastic Ducts for Buried Electric Cables.

All ducts must be sealed (at the time of installation) at the external end using a purpose made stop end. The use of rags, newspaper, timber boards, etc to seal the ducts is not acceptable.

Draw ropes will be required for ducts runs > 3.0m in length.

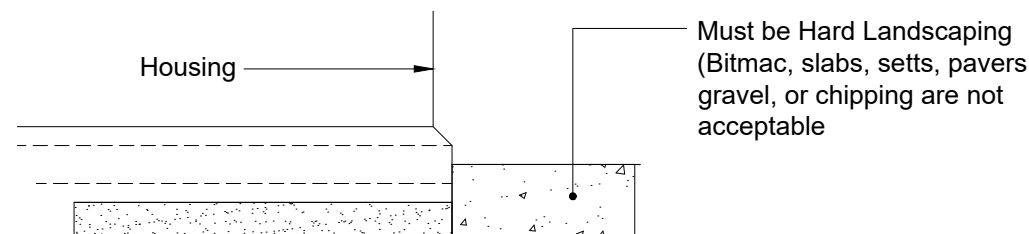
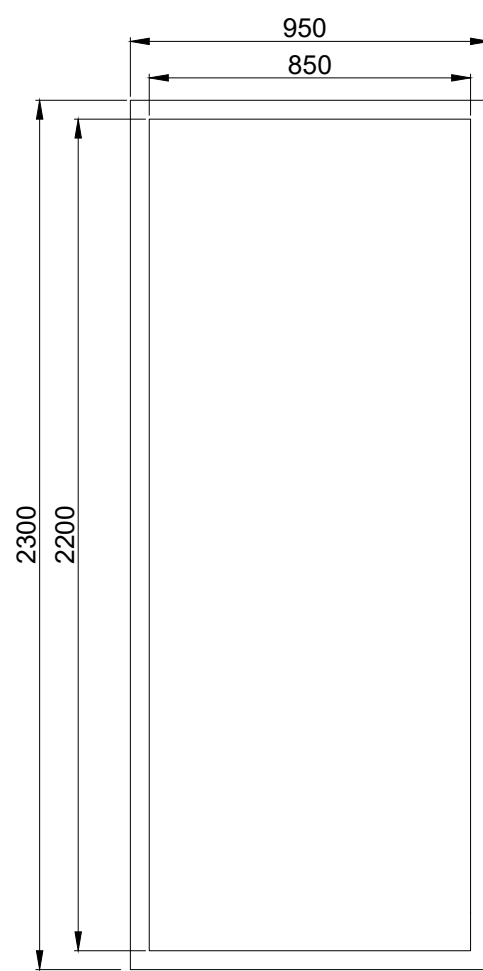
Ducts shall be surrounded by 100mm of selected granular material with a maximum particle size of 25mm. Compacted granular fill shall be used to fill the space between the duct surround and the underside of the foundation slab. Mass concrete may be used in place of granular fill.

Note: The Cable Pit is designed to act as a holding sump, in case of oil leakage from the transformer. It is essential therefore that all of the cable ducts be effectively sealed on completion of the cable installations. Expanding polyurethane foam shall be used to fill the pit end of the ducts, to a depth of 300mm. Where cables are present, these are to be centred in the duct before the foam is applied; measurements shall be taken to ensure that the cables are held in this position until the foam has cured sufficient to carry the weight of the cable.

Before all the cable ducts are sealed ensure any earth wires required are in position.

The standard arrangement allows for 'front entry' of both HV and LV cables. In some circumstances cables may need to enter / exit via the side or rear of the foundation. This is acceptable **providing** a check is made on the space needed for bending and terminating the cables. In some instances the cable pit may need to be made deeper or wider (or both) to accommodate cables entering from the side or rear.

2. Housing - Please refer below for housing details



Foundations shown are based on a minimum ground bearing pressure of 80kN/m²

0	Preliminary Design	30/05/24	CR
REV	AMENDMENT	DATE	BY
UKPS UK POWER SOLUTIONS River View House, Bonds Mill Estate, Bristol Road, Stonehouse, Gloucestershire, GL10 3RF Ealing Cross, 2nd Floor, 85 Uxbridge Road, Ealing, London, W5 5TH Suite 36, Genesis Centre, Birchwood, Warrington, WA3 7BH ukpowersolutions.co.uk			
Client	Leisure Energy		
Project	Biddulph Leisure Centre, Stoke on Trent		
Title	Construction Details - Substation		
Design and Planning Engineer	Musliyyu Hammed	Contact No.	0845 257 7105
Project Manager	TBC	Contact No.	TBC
Drawn By	CR	Checked By	NM
Scale	As Shown	Sheet No.	1 of 1
Drawing No.	UKP13137 - DWG100		
Client Ref.	N/A		
Drawing Status	For Design Approval		
Rev	0		