

## SPEN Project Management Guidance Pack - Civil



## Introduction

The needs of large, commercial connection customers can be different to the needs of smaller, domestic connections customers. To address this, Ofgem introduced ICE which ensures that Distribution Network Operators continually listen, adapt, and change to meet the needs of this type of customer.

As part of this process one of the key actions identified after engaging with our key stakeholders and connection customers was the creation of a project management guidance pack to help facilitate connections activities for our large commercial connection customers in the Demand, Generation and UMS market segments. This can be found under action 7.1 in our [ICE Plan 2021/22](#).

This pack is one of 4 packs we have published which includes Project Management guidance packs for General, Civil, Electrical and IBERDROLA S.A. 'Pre-fabricated enclosures for distribution substations' document. Within these packs contains all the relevant information to assist our customers in understanding their requirements for the successful delivery of their projects by detailing SPEN's commitments for the Design, Commercial, Land & Planning and DELIVERY of each project.

## Contents

### Published Online

For the below documents, please click the link to view the most up to date version.

Document Name	Document Reference
<a href="#">General Specification for the Civil Engineering and Building Design and Construction of Primary and 33kV Switching Substations</a>	SUB-03-025
<a href="#">General Specification for the Civil Engineering and Building Design and Construction of Primary and 33kV Switching Substations - Appendix 1</a>	SUB-03-025

\* All the above documents can also be found in the SPEN document library.

\* [Policies, Procedures and Specifications: Documentation - SP Energy Networks](#)

\* [Safety Documents - SP Energy Networks](#)

### Additional Documents Contained Within This Pack

The below documents are included within this project management guidance pack - Civil. Any documents highlighted with a \*\*\*, the scope of the document is provided. For more information please contact your assigned design/delivery engineer.

Document Name	Document Reference
Typical Substation Switchroom Guidance Details for 3 Panel Schneider Switchgear	SP4136497
Typical Support Steelwork Details for 33KV Mesa Switchgear	SP4030987
Modular Substation	SP4144219
Hardwood Door Details	SP40000543
Duct Sealing	3d
Cable Trench Covers	3c

\* The above documents are also available on request upon a project being accepted.

## Typical Substation Switchroom Guidance Details for 3 Panel Schneider Switchgear

For guidance purposes only.

For more information please contact your assigned design/delivery engineer upon acceptance of your project.

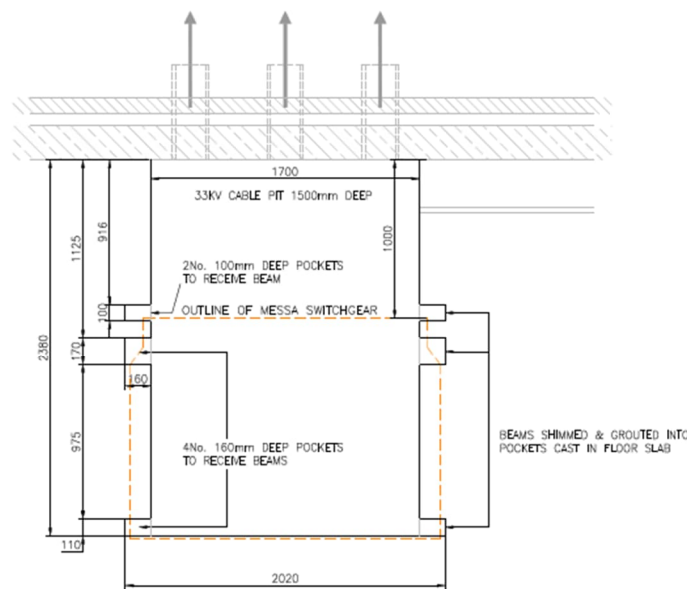


## Typical Support Steelwork Details for 33KV Mesa Switchgear

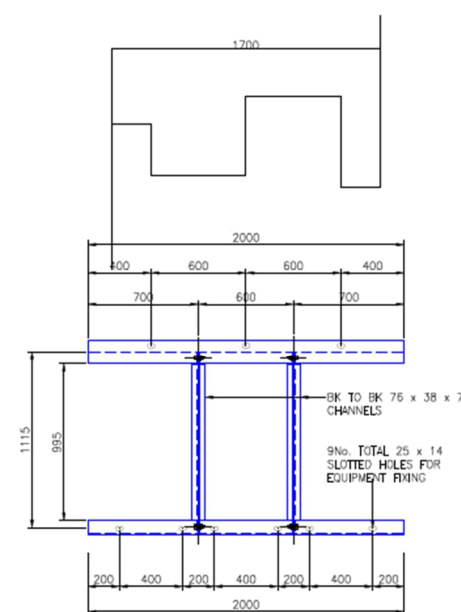
For guidance purposes only.

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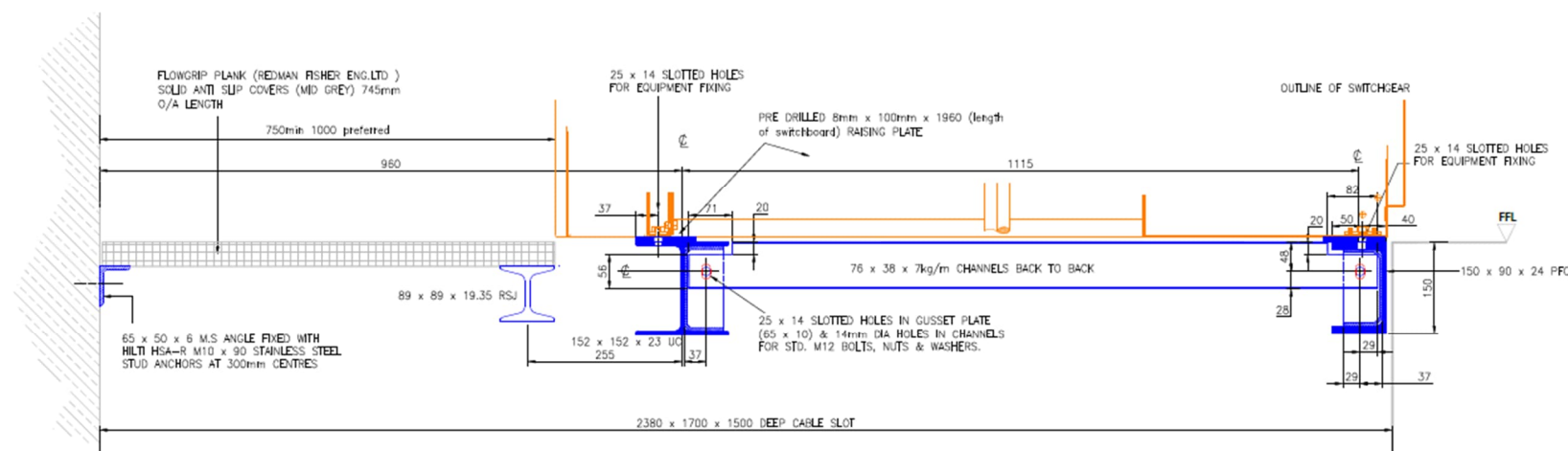
**PART FLOOR PLAN**  
to suit 1000mm access behind



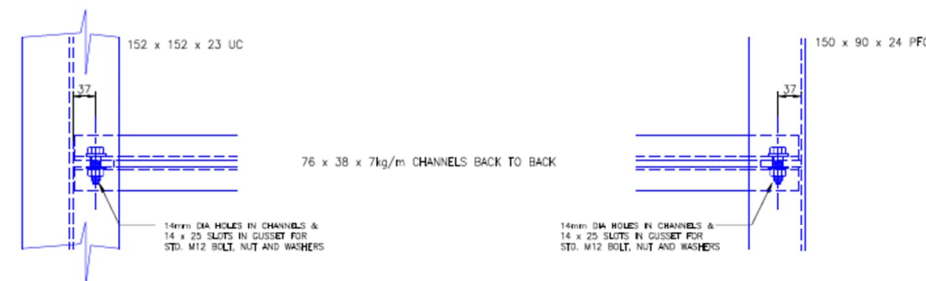
**PLAN OF MAIN STEELWORK FOR MESA SWITCHGEAR**

**IMPORTANT NOTE :**  
CONSTRUCTION DRAWINGS ARE BASED UPON THE ASSUMPTION OF A SAFE MIN. GROUND BEARING PRESSURE OF 100kN/m<sup>2</sup>. APPROPRIATE LOCATION SPECIFIC BOREHOLE DATA SHOULD BE TAKEN PRIOR TO DESIGN CHECK OF ALL STRUCTURAL ELEMENTS BY A SUITABLY QUALIFIED STRUCTURAL/CIVIL ENGINEER

DETAILED GUIDANCE ISSUE



**SECTION THROUGH MAIN STEELWORK & ENLARGED PLAN  
DETAIL OF CONNECTION FOR MESA SWITCHGEAR**



**NOTES:**  
LATEST NATIONAL STRUCTURAL STEELWORK SPECIFICATION FOR BUILDING CONSTRUCTION (BCSA PUBLICATION) TO BE USED :  
ALL STEELWORK TO BE HOT DIPPED GALVANISED BEFORE ASSEMBLY & ANY DAMAGE DURING ASSEMBLY TO BE WIRE BRUSHED & TREATED WITH AN APPROVED ZINC RICH PAINT SYSTEM.  
UNLESS OTHERWISE STATED ALL BOLTS TO BE GALV. HIGH TENSILE M16 DIA. GRADE 8.8  
TOP FLANGES OF SUPPORT STEELWORK TO BE SET FLAT & LEVEL TO THE FOLLOWING TOLERANCES:  
FLATNESS: 1mm IN 1m  
LEVEL ± OR - 2mm OVER FULL LENGTH & FRONT TO BACK  
TWIST: NOT PERMITTED

Rev. 4.0	Date 04/17	beam length, part floor plan altered to suit 750-1000 access
Drawn DBA		
Checked C.WOOD		
Approved sh		
SP PowerSystems Ltd. System Design, Drawing Office Gateway House 2nd Floor, Old Hall Road, Bromborough CH62 3NX Telephone 0141 6147143		
<b>TYPICAL SUPPORT STEELWORK DETAILS FOR 33KV MESA SWITCHGEAR</b>		
<b>STANDARDS</b>		
Drawn N.DUNN	Date 08/10/07	Checked C.WOOD
Date 09/10/07	Approved A.J. ROWLEY	Date 22/10/07
Status: DETAILED GUIDANCE	Org. No. SP4030987	Rev. 4.0
© Copyright property of SP PowerSystems Ltd.		Scale 1/20 & 1/5
		Size A1

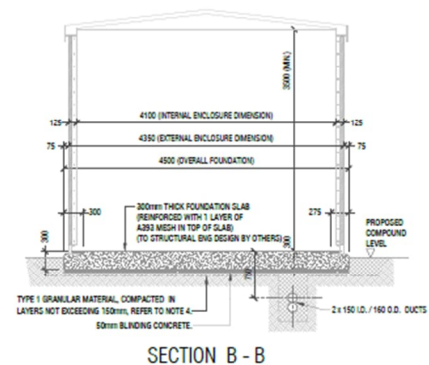
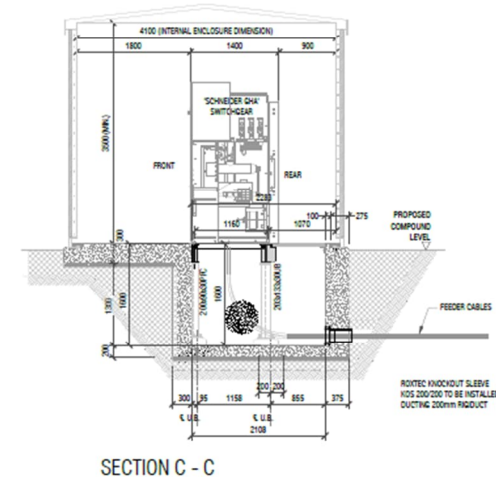
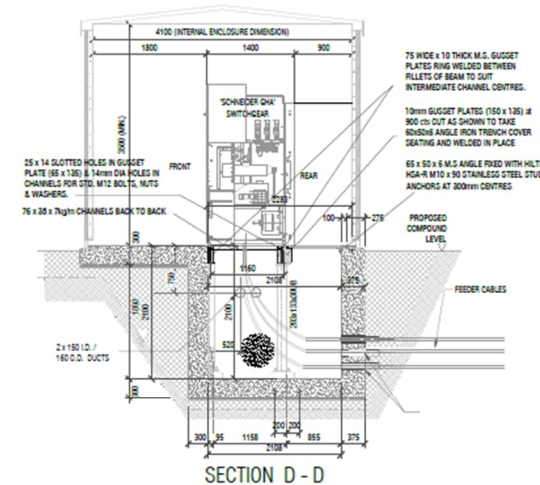
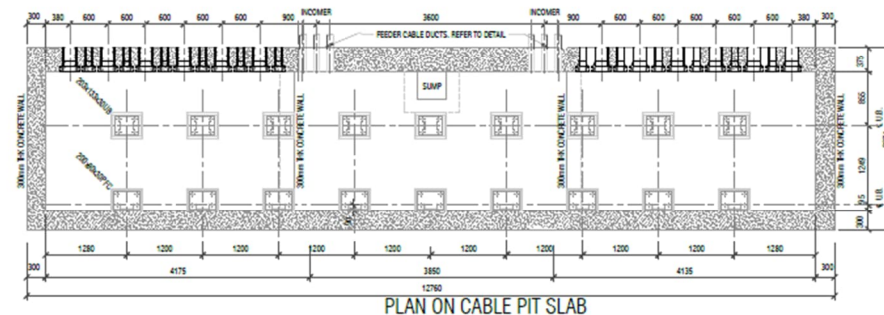
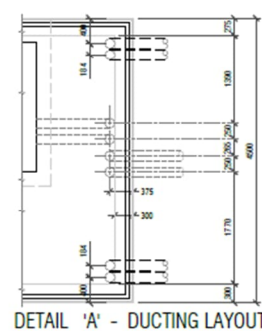
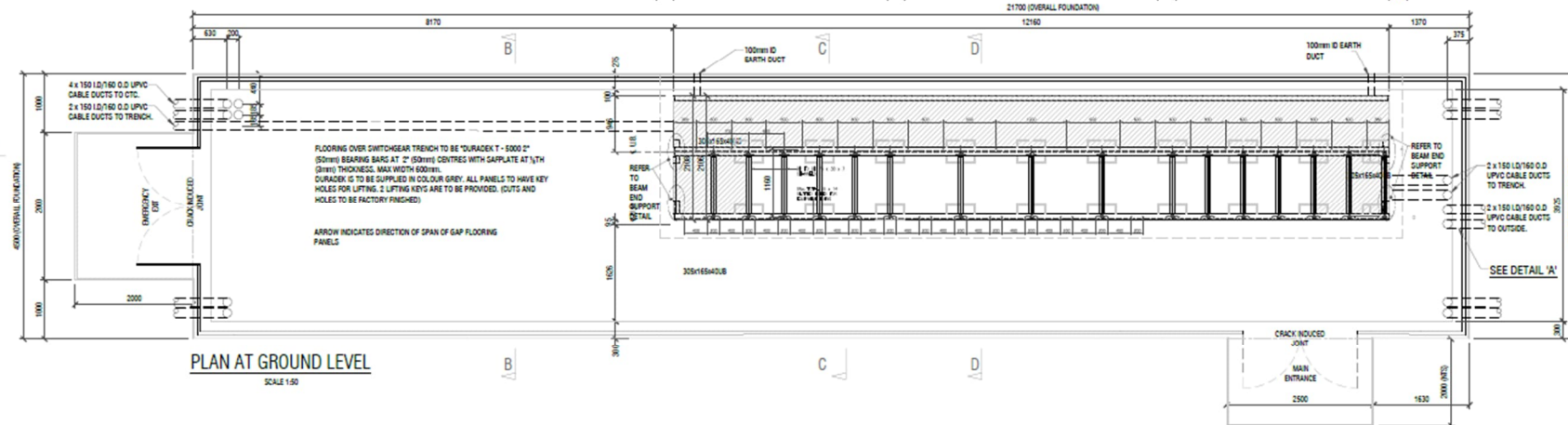
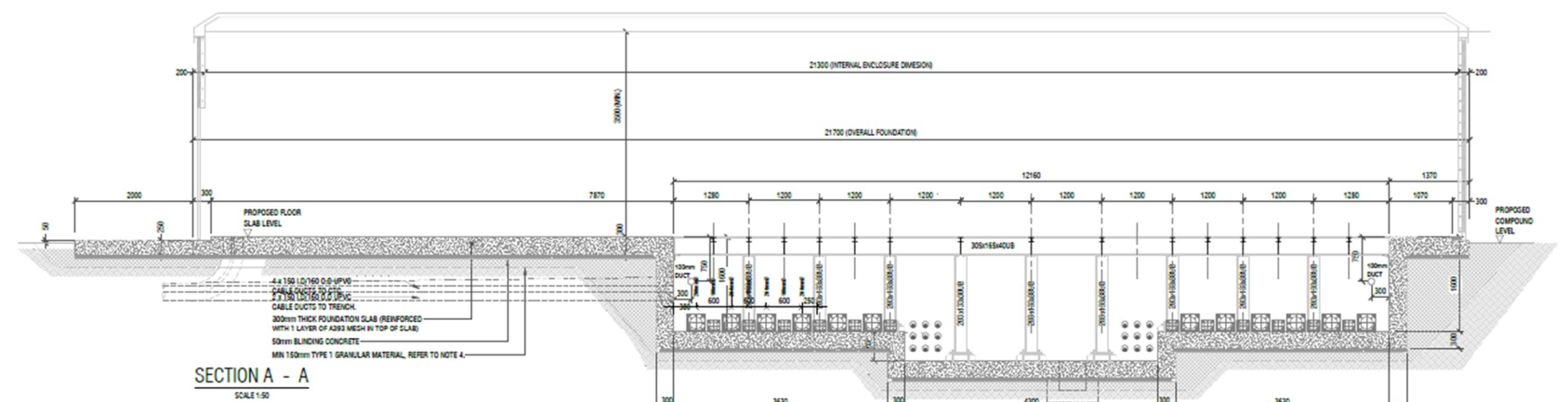
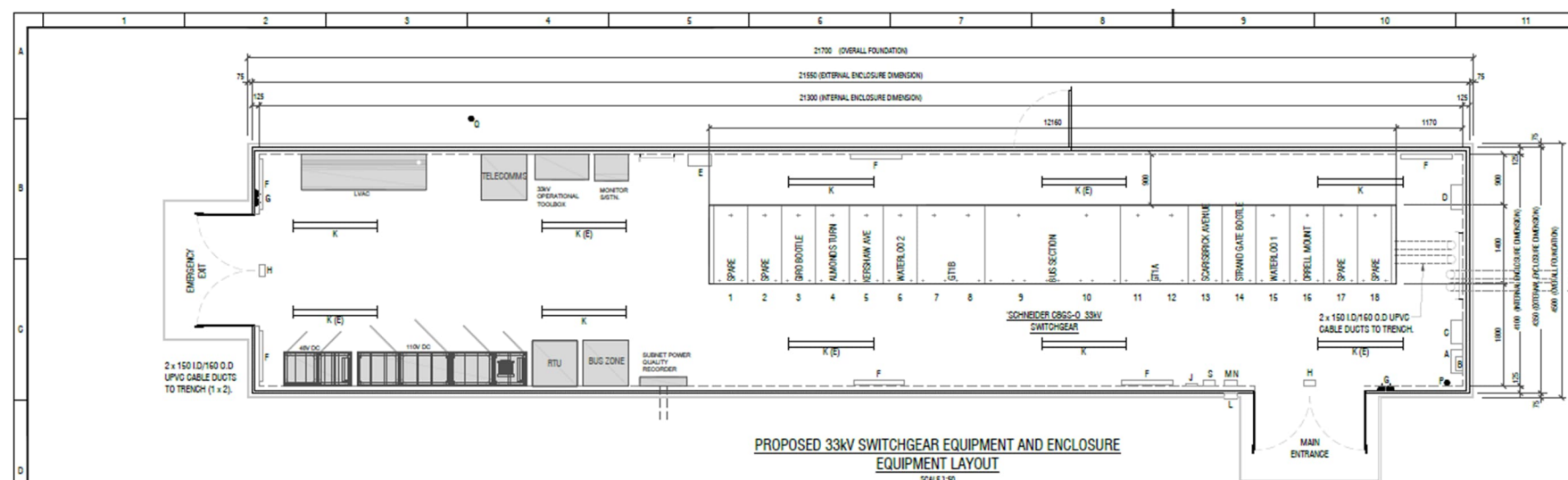
THIS STEELWORK IS RELEVANT TO LAYOUT SHOWN ON  
DRG. No. SP4136497

## Modular Substation

For guidance purposes only.

For more information please contact your assigned design/delivery engineer upon acceptance of your project.

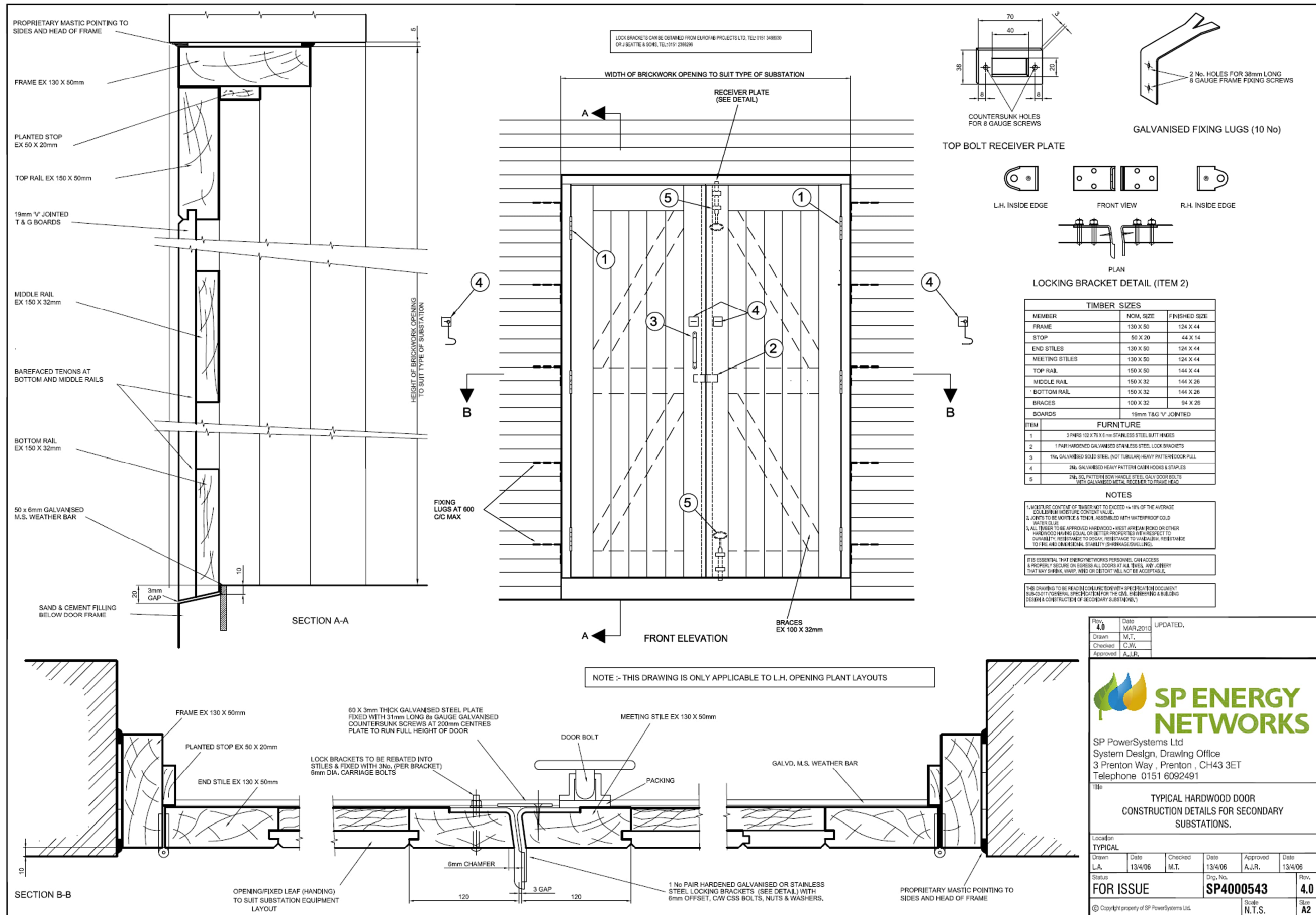


[illegible]

## Hardwood Door Details

For guidance purposes only.

For more information please contact your assigned design/delivery engineer upon acceptance of your project.



## Duct Sealing

The below is one option on our approved supply list as part of the tender process. There are many other suppliers available as part of your normal tendering process. This is an example of acceptable material only for demonstration purposes only.

**Example of a Roxtec cable sealing solution.**

For more information please contact your assigned design/delivery engineer upon acceptance of your project.



# Keep your equipment dry



Roxtec UG™ (underground) solutions for cables and pipes are developed to protect your site against environmental ingress in both normal and flood conditions. Their ability to withstand cable bending load and forces contributes to make the seals resistant to constant water pressure – and to make them your safeguard against the risk of partial discharge.

## User-friendly efficiency

Roxtec UG™ solutions are available for multiple as well as for single cables and pipes. They are easy to install even in wet conditions and in environments with running water. Use them to maintain optimum operating conditions, eliminate humidity and prevent corrosion and rodents.

### INSTALLATION

#### Flexible solutions

- Easy to install even in running water conditions
- Multidiameter™ by Roxtec – adapts to cables and pipes of different sizes
- Built-in spare capacity for future needs

### RETENTION

#### Excellent capabilities

- Withstands pull force of up to 10 000 N and a weight load of up to 1 000 kg
- Withstands extreme cable bending
- Flexible to expand 5 mm towards opening

### PROTECTION

#### Tight and resistant

- Constant water pressure up to 0.3 bar
- Catastrophic water pressure up to 1 bar
- Gas pressure
- Corrosion and rodent safe



## Cable Trench Covers

The below is one option on our approved supply list as part of the tender process. There are many other suppliers available as part of your normal tendering process. This is an example of acceptable material only for demonstration purposes only.

For more information please contact your assigned design/delivery engineer upon acceptance of your project.





- Call us on (+44) 01952 685110 | 

## GRP Flowgrip

- [Overview](#)
- [Technical Data/Downloads](#)
- [Images](#)

### Overview

GRP FlowGRiP plank flooring is a pultruded, one-piece construction, interlocking tongue and groove flooring system for large spans and specialist applications and used where solid flooring is required for odour control or dropped object protection. FlowGRiP's increased strength allows spans up to 1400mm clear span with 1/200 deflection.

Available punched for drainage, it meets 15mm dropped object requirements for offshore use. FlowGRiP provides excellent impact and loading characteristics and is fast and easy to install with low maintenance. FlowGRiP flooring conforms to BS4592 Pt4 1992 and BS5395 Pt3 1985.

