

**StageBase platforms  
Operation & Maintenance  
Manual for Schwarzman  
Centre, Oxford – 250 Seat  
Theatre/Lecture for**





# StageBase platforms Operation & Maintenance (O&M) manual for Schwarzman Centre, Oxford – 250 Seat Theatre/Lecture

*prepared by Brod Mason*  
[brod.mason@steeldeckuk.com](mailto:brod.mason@steeldeckuk.com)  
*of Steeldeck*

**For Technical Support in the first Instance contact:**

J&C Joel Ltd  
Corporation Mill, Corporation Street  
Sowerby Bridge  
Halifax  
HX6 2QQ  
Tel; 01422-833835  
[UKprojects@jcjoel.com](mailto:UKprojects@jcjoel.com)

**or**

Steeldeck  
Unit B, 207 Manor Road  
Erith  
DA8 2AD  
*Emergency Tel; 0845-601 9127*  
[info@steeldeckuk.com](mailto:info@steeldeckuk.com)  
[www.steeldeckuk.com](http://www.steeldeckuk.com)

Minor colour changes can occur on coloured illustrations through the scanning and printing process. Our products are subject to continuous development and improvement. Steeldeck reserve the right to make alterations to the technical data, design or construction of the described products, to stop production of the products or substitute them without prior announcement. All descriptions and technical data in this brochure are for general information only and are not components of a purchasing or a delivery contract. We accept no liability for errors or omissions.

***Steeldeck® is a registered trademark of Steeldeck Industries Ltd.***

***NIVOflex® is a registered trade mark of Bühnenbau Schnakenberg GmbH.***



# 1 Contents

1	Contents.....	3
2	Revision History .....	4
3	Introduction .....	5
3.1	Project Description .....	5
3.2	StageBase.....	5
3.3	General .....	5
4	Safety Precautions .....	6
4.1	Overloading.....	6
4.2	Damaged Equipment.....	6
4.3	Modification .....	6
4.4	Inspecting fixtures and fittings .....	6
4.5	Manual Handling .....	6
4.6	Crushing.....	6
4.7	Storage .....	6
4.8	Electrical Shock.....	6
4.9	Personal Protective Equipment .....	6
5	Operation .....	7
5.1	Erecting Individual StageBase Platforms .....	7
5.2	Dismantling Individual StageBase Platforms .....	7
5.3	Connecting StageBase Platforms .....	7
5.4	Connecting StageBase Platforms to Permanent Stage.....	8
5.5	StageBase Platform Loading .....	8
5.6	Hard Fascia.....	9
6	Format Layout Information .....	10
6.1	250 Seat Theatre/Lecture Formats .....	10
6.2	Format Change Instructions .....	11
7	Maintenance .....	13
7.1	Routine Maintenance – StageBase Platforms .....	13
7.2	Routine Maintenance – Cleaning.....	13
7.3	Replacement Parts and Accessories .....	13
8	Appendices .....	14
8.1	StageBase Calculations and Test Certificate .....	14
8.2	Residual Risk Register .....	14
8.3	Drawing 10335 d106rJ SCO 250 Theatre – Layout .....	14
8.4	Drawing 10335 d107rJ SCO 250 Theatre - Stall Level – Layout.....	14
8.5	Drawing 10335 d108rJ SCO 250 Theatre - Three Rows at Stage – Layout.....	14
8.6	Drawing 10335 d109rJ SCO 250 Theatre - Two Rows at Stage – Layout.....	14
8.7	Drawing 10335 d110rJ SCO 250 Theatre - One Rows at Stage – Layout.....	14



8.8 Acoustic Foam Data Sheet..... 14

## 2 Revision History

Revision History		
<i>version</i>	<i>date</i>	<i>changes</i>
1	21-Mar-25	First draft
2	7-May-25	Section 6.1 250 Seat Theatre/Lecture Formats revised
3	16-Dec-25	Charcoalblue snags incorporated.
4	23-Dec-25	Further Charcoalblue snags incorporated. <ul style="list-style-type: none"><li>• Some drawings updated</li></ul>

## 3 Introduction

### 3.1 Project Description

Steeldeck's involvement in this part of the project consists of a package of demountable modular rostra is to be provided to allow a variety of formats to be created including:

- Seating rake
- Forestage extension.

The platform sizes are dictated by the seating layout, and the intention that no seat sits over where two platforms meet.

### 3.2 StageBase

StageBase is a simple steel framed durable platform, almost as robust as our Steeldeck platforms but lighter with a smaller packing volume and therefore more suited for schools and seating tiers.



### 3.3 General

All the platforms have LSP207 Acoustic Foam applied to the underside.

Safe and efficient use can be achieved only if ALL components are used properly.

All the platforms are covered in a 20mm thick wooden floor covering finish (provided by other contractors).

For dance and movement activities we strongly recommend that a dance floor such as Harlequin Cascade, or similar is laid over the entire platform area. Ensure that the seams in the covering run parallel to the gaps in the platforms, and are at least 100mm (4 inches) from a gap.

Before using these platforms read this entire document.

Unless stated all dimensions are in millimetres.

## 4 Safety Precautions

**△ THIS MANUAL IS NOT MEANT TO BE A METHOD STATEMENT OR RISK ASSESSMENT, BUT IS INTEND TO PROVIDE INFORMATION TO THE END USER SO THAT THEY CAN PRODUCE THEIR OWN METHOD STATEMENTS AND RISK ASSESSMENTS.**

### 4.1 Overloading

For StageBase do not exceed UDL of  $5\text{N/m}^2$  ( $500\text{kg/m}^2$ ), evenly distributed on the platform.

### 4.2 Damaged Equipment

Do not use damaged equipment. Bent, broken or cracked platforms or components may have lost their structural integrity. Remove from use immediately.

### 4.3 Modification

Do not bend, cut or modify the structure of platforms in any way. Any modification may weaken the platforms.

### 4.4 Inspecting fixtures and fittings

Please ensure all fixtures and fittings are securely fastened; due care and attention is taken at all times; and that the maintenance instructions in this manual are followed.

### 4.5 Manual Handling

All Steeldeck platforms are built to perform and this dictates the weight of the unit. Observe normal manual handling practice.

**△ DO NOT LIFT PLATFORMS WHEN THERE IS ANY RISK OF THEIR FALLING AND CAUSING INJURY TO SOMEONE.**

### 4.6 Crushing

Stage platforms are heavy. If a platform falls, it can cause injury.

### 4.7 Storage

Do not store any components where it is exposed to rain or high moisture conditions. Wet conditions or high moisture will cause steel and aluminium to corrode, and plywood to rot, reducing the strength of the platforms.

### 4.8 Electrical Shock

The platforms and legs are predominantly made from metal and will conduct electricity.

**△ CONSULT A QUALIFIED ELECTRICIAN TO ENSURE THAT YOU HAVE ADEQUATE PROTECTION BEFORE USING ELECTRICAL APPLIANCES IN CONTACT WITH THE PLATFORMS.**

### 4.9 Personal Protective Equipment

Steel capped footwear, and gloves to protected hands and improve grip should be worn, and hard hats if falling objects are a hazard. The working environment may also dictate additional PPE.

## 5 Operation

### 5.1 Erecting Individual StageBase Platforms

The platforms can be erected with a minimum team of two people. The immediate area should be clear before starting work.

We recommend the use of 17mm/19mm Podger Ratchet Spanners (see right), the pointed end will align the bolt holes while the other end with its reversible ratchet 17mm/19mm sockets will tighten the bolts.



1. Stand one unit on its long edge.
2. Check that all four of the legs are fitted with a plastic foot.
3. Insert the open end of the leg into one of the lower corner socket posts first to stop the platform toppling over.
4. Check that the leg is fully inserted into socket.
5. Tighten the socket post M12 bolt firmly onto the leg using a 19mm spanner or equivalent to a maximum torque 4Nm.
6. Repeat this for all four corner posts and check that all four legs are secure.
7. Ensure that you have enough space to manoeuvre the platform.
8. Turn the completed platform upright onto its legs.

### 5.2 Dismantling Individual StageBase Platforms

The platforms can be dismantled with a minimum team of two people. The immediate area should be clear before starting work.

1. Ensure that you have enough space to manoeuvre the platform.
2. Turn the platform onto its long edge.
3. Loosen the socket post M12 bolts fully using a 19mm spanner or equivalent.
4. Remove the legs from the two upper corner socket posts first, so the platform does not topple over.
5. Then remove the legs from the two lower corner socket posts.
6. Store platforms and legs safely.

### 5.3 Connecting StageBase Platforms

StageBase platforms are predrilled for connection by bolting together with an M10 setbolt and nut with two 17mm spanners or equivalent. The holes are drilled and are reinforced on the inner face to resist crushing of the tube. In most circumstances bolts and nuts need be little more than finger tight (maximum torque 4Nm). It is not normally necessary to bolt through every hole as the function is simply to hold the units together, the two centre holes can be left empty and used to line up platforms with a podger/spike.

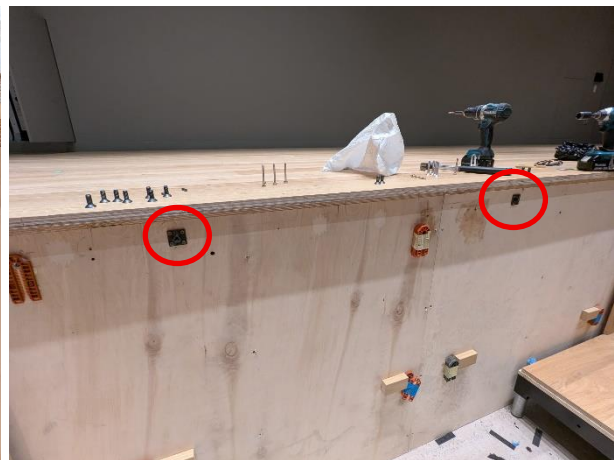
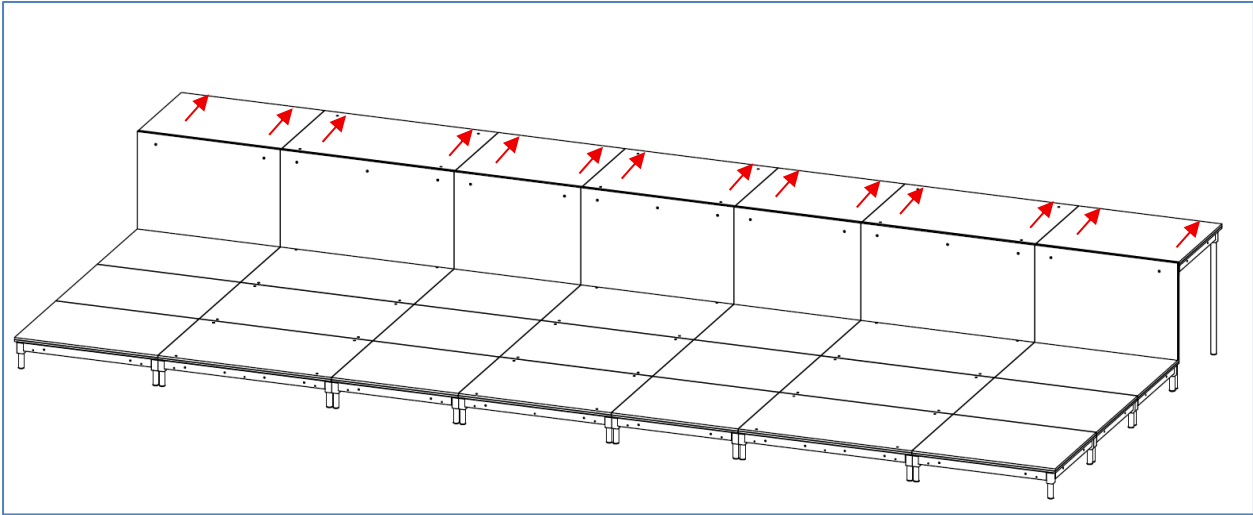
As you bolt platforms together keep checking how level the surface of the platforms are, any necessary minor adjustments of a few millimetres can be made by loosening bolts and slightly lifting the lower platform (this can be done with a podger/spike inserted in to an adjacent hole), also check that legs are fully in sockets.

**△ THE M10 BOLTS ARE NOT INTENDED TO SUBSTITUTE FOR THE USE OF LEGS TO SUPPORT THE PLATFORMS. THEY ARE NOT LOAD-BEARING.**

**DO NOT ERECT ANY PLATFORM WITHOUT FITTING ALL THE LEGS.**

**5.4 Connecting StageBase Platforms to Permanent Stage**

StageBase platforms are predrilled and reinforced on the inner face to resist crushing for connection by bolting together with an M10 setbolt and nut with two 17mm spanners or equivalent. These holes can also be used to bolt the StageBase to the Permanent Stage which has Boss Plates set into it to accept M10 bolts, approximate positions are indicated below by red arrows. The photos below show the Boss Plates set in the permanent stage.



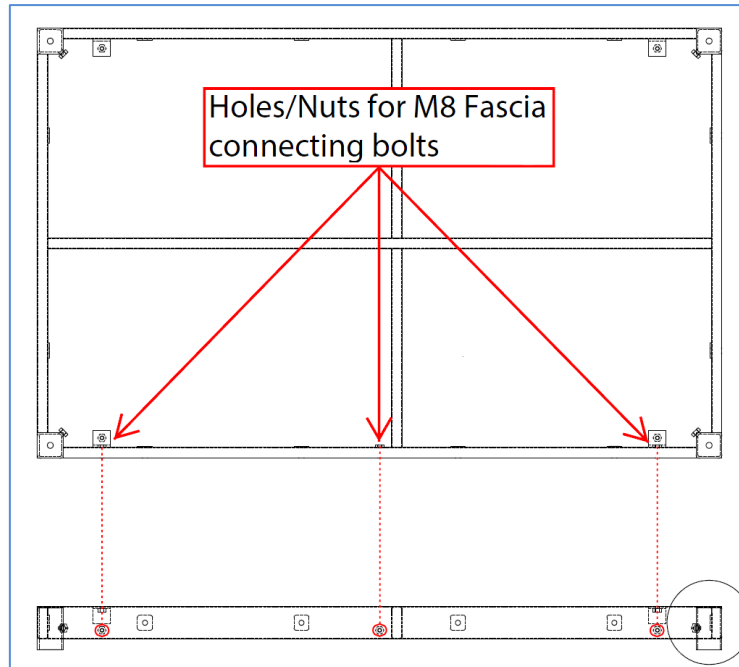
**5.5 StageBase Platform Loading**

The StageBase UDL is  $5\text{kN/m}^2$  or  $500\text{kg/m}^2$ , (ie 1,000Kg weight per 2000mm x 1000mm platform), evenly distributed on the platform.

The StageBase point loading (based on a point 50mm x 50mm) is 4.5kN. This of course assumes that the platform top is in good condition. Of course, the 20mm thick wood finish by others improves the point loading substantially.

## 5.6 Hard Fascia

There are demountable hard fascia for the 250 Seat Theatre/Lecture supplied by others. For the 250 Seat Theatre/Lecture the StageBase frames have M8 nuts welded to the inside of the frame (see below) so that fascias can be fixed with in place with M8 x 50mm stainless steel countersunk socket screws using a 5mm Hex Key. These nuts are only on one face, so make sure you have the platform the right way round.

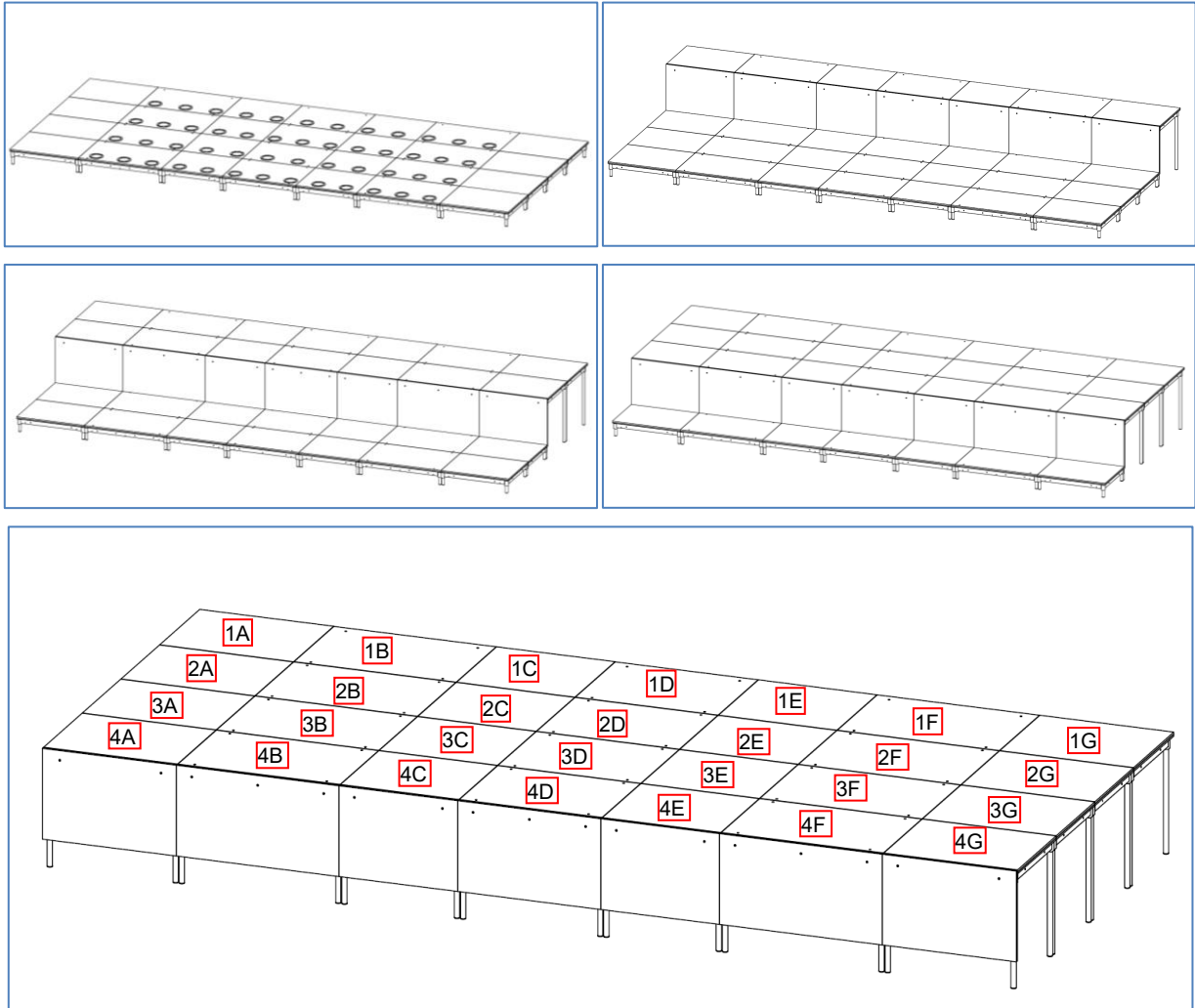


## 6 Format Layout Information

### 6.1 250 Seat Theatre/Lecture Formats

See the following drawings in the appendix.

- 10335 d106rJ SCO 250 Theatre – Layout
- 10335 d107rJ SCO 250 Theatre - Stall Level – Layout
- 10335 d108rJ SCO 250 Theatre - Three Rows at Stage – Layout
- 10335 d109rJ SCO 250 Theatre - Two Rows at Stage – Layout
- 10335 d110rJ SCO 250 Theatre - One Rows at Stage – Layout



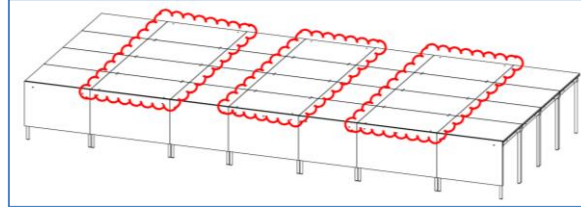
The platforms are labelled on the inner frame as photos below.



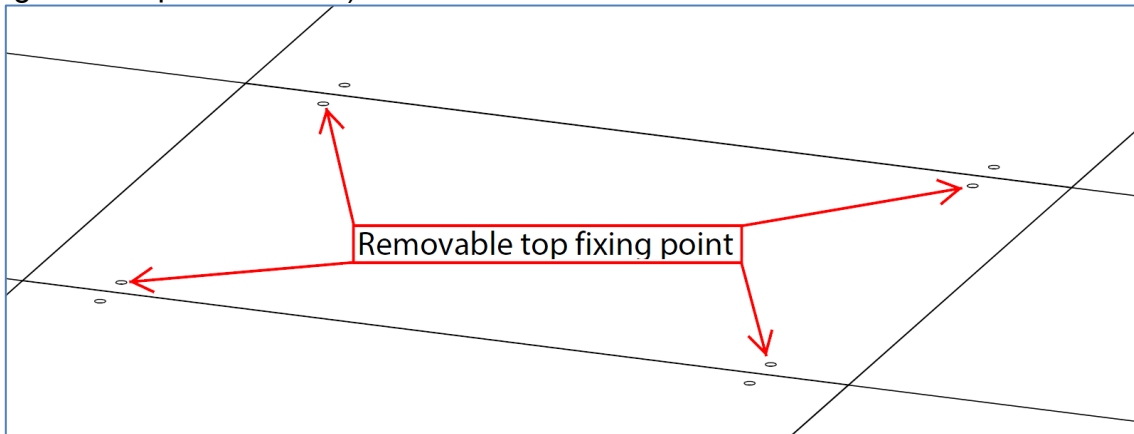
## 6.2 Format Change Instructions

To install 250 Seat Theatre/Lecture platforms;

1. Platform columns B, D, and F (see above & below) have removable tops to aide ease of assembly and reduce the weight of individual elements.

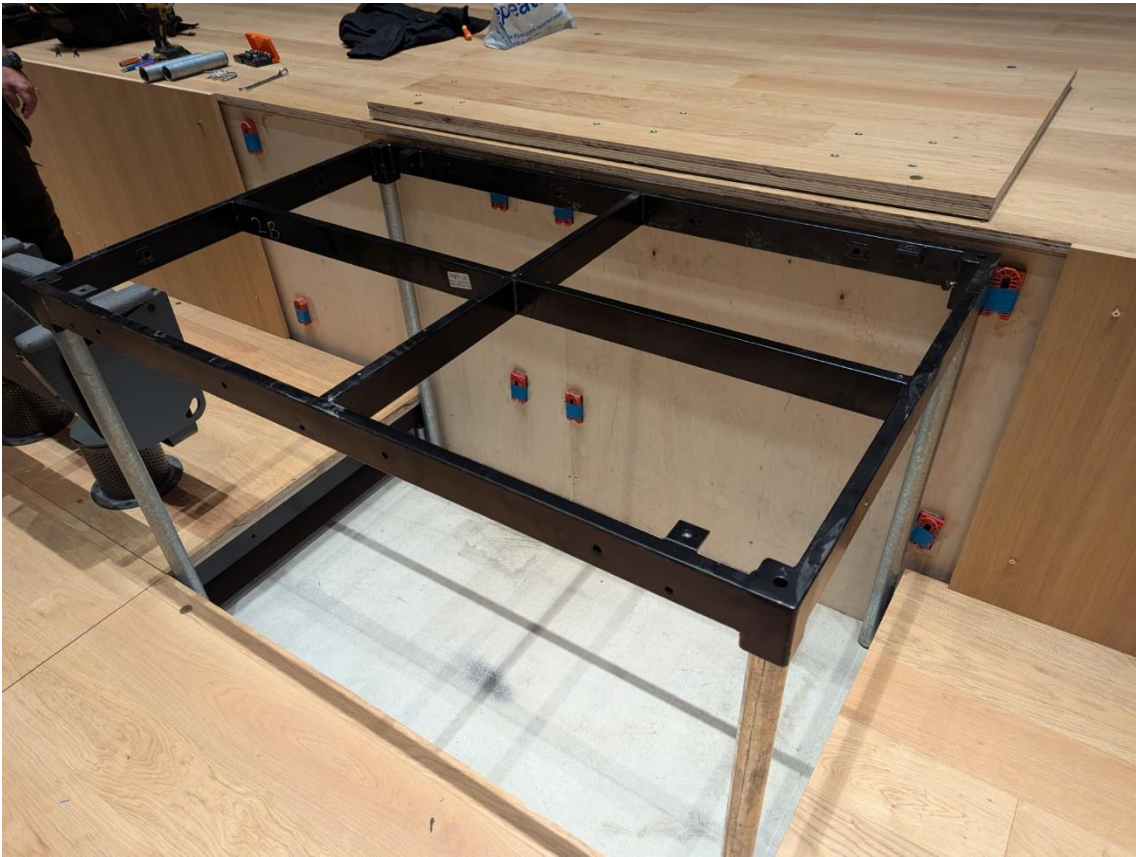
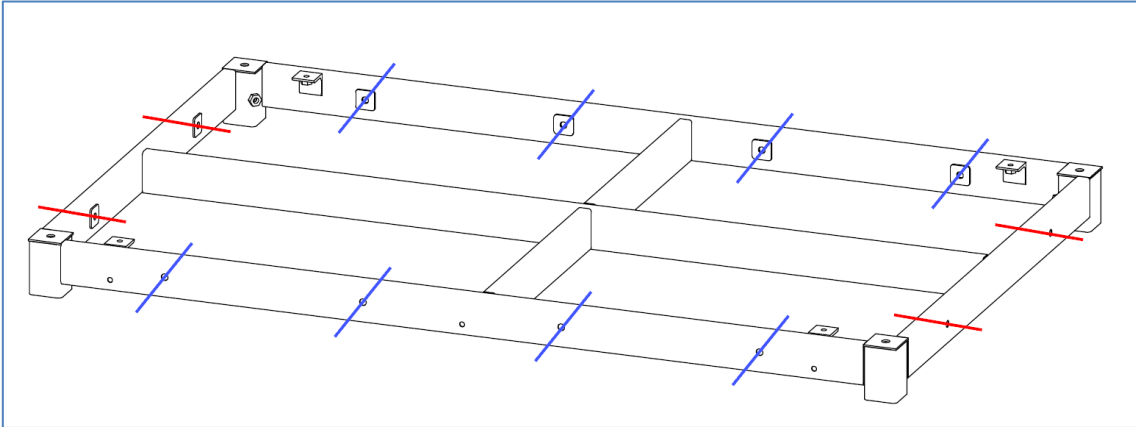


2. If require remove the wooden fascias (by others) as described in 5.5 above.
3. The removable tops are fixed with in place with M8 x 50mm stainless steel countersunk socket screws using a 5mm Hex Key which are covered by caps by James Johnson (see diagram and photos below).



4. To assemble a row of platforms, start in a corner and put into position the appropriate A column platform making sure it has the right size legs.
5. Next use a 5mm Hex-Key to undo the M8 x 50mm stainless steel countersunk socket screws and remove the top from the appropriate B column platform making sure it has the right size legs.

6. Position the B platform in place and connect platforms using M10 x 70mm bolts and nuts through the holes indicated below in red, and if connecting to another row through the holes indicated below in blue.



7. Position the appropriate C column platform in place and connect to the B platform as described above.
8. Fix wooden top back on the B platform frame with M8 x 50mm stainless steel countersunk socket screws using a 5mm Hex Key.
9. Repeat steps 4 to 7 above with the D/E and F/G platforms.
10. Attach Wooden fascia by others as described in 5.5 above.



## 7 Maintenance

### 7.1 Routine Maintenance – StageBase Platforms

All Steeldeck platforms are maintenance free.

Platforms should be inspected for damage and excessive wear whenever they are moved.

Under no circumstances should alterations be made to the platforms – if in doubt, please contact the Steeldeck.

### 7.2 Routine Maintenance – Cleaning

The Pit should be kept clean and free from dust and rubbish.

### 7.3 Replacement Parts and Accessories

Replacement parts as well as a full range of additional platform systems and accessories can be obtained through:

Steeldeck  
Unit B, 207 Manor Road, Erith DA8 2AD  
United Kingdom

Tel: +44 20 8692 9721  
Fax: +44 20 8691 4263  
[info@steeldeckuk.com](mailto:info@steeldeckuk.com)  
[www.steeldeckuk.com](http://www.steeldeckuk.com)



## 8 Appendices

- 8.1 **StageBase Calculations and Test Certificate**
- 8.2 **Residual Risk Register**
- 8.3 **Drawing 10335 d106rJ SCO 250 Theatre – Layout**
- 8.4 **Drawing 10335 d107rJ SCO 250 Theatre - Stall Level – Layout**
- 8.5 **Drawing 10335 d108rJ SCO 250 Theatre - Three Rows at Stage – Layout**
- 8.6 **Drawing 10335 d109rJ SCO 250 Theatre - Two Rows at Stage – Layout**
- 8.7 **Drawing 10335 d110rJ SCO 250 Theatre - One Rows at Stage – Layout**
- 8.8 **Acoustic Foam Data Sheet**

## Design of StageBase Units

### Check StageBase Units which are up to 2000 x 1000 mm

Design calculations to EC3 are presented below.  
Steel box sections are assumed to be E220 ERW Sections.

For units with plywood deck, estimate design moments and resulting stresses if the unit is subject to a uniformly distributed load.

Design to the relevant Eurocodes and initially allow for a characteristic variable (superimposed) load of 5 kPa

Initially consider a generic unit with 3 No long beams (one central beam and 2 each side) and 3 No cross beams (one central beam and one each side) and assume that these beams have the same bending stiffness (EI)

### 1) Actions (Loads)

Initially take

$$g_k := 0.25 \cdot \text{kPa} \quad q_k := 5 \cdot \text{kPa}$$

$$e_k := g_k + q_k \quad e_k = 5.25 \cdot \text{kPa} \quad e_d := 1.35 \cdot g_k + 1.5 \cdot q_k \quad e_d = 7.838 \cdot \text{kPa}$$

### 2) Beam Properties

$$d := 75 \cdot \text{mm} \quad b := 25 \cdot \text{mm} \quad t := 1.5 \cdot \text{mm} \quad A_b := d \cdot b - (d - 2 \cdot t) \cdot (b - 2 \cdot t) \quad A_b = 2.91 \text{ cm}^2$$

$$I_b := \frac{b \cdot d^3 - (b - 2 \cdot t) \cdot (d - 2 \cdot t)^3}{12} \quad I_b = 19.462 \text{ cm}^4 \quad W_{elb} := \frac{2 \cdot I_b}{d} \quad W_{elb} = 5.19 \text{ cm}^3$$

$$W_{plb} := \frac{b \cdot d^2 - (b - 2 \cdot t) \cdot (d - 2 \cdot t)^2}{4} \quad f_y := 220 \cdot \text{MPa} \quad M_{dRb} := f_y \cdot W_{plb} \quad W_{plb} = 6.644 \text{ cm}^3$$

$$M_{dRb} = 1.462 \text{ kN} \cdot \text{m}$$

### 3) Estimate elastic moments and deflections in beams

#### a) Consider how plywood will distribute udl onto beams

The loads and moments in the beams under udl will depend upon the relative stiffness of the plywood and steel beams. Hence initially consider strength and stiffness of plywood as follows.

Consider 18 mm plywood with E perpendicular to the grain of 2500 - 5000 MPa

$$EI_{ply1} := \frac{2.5 \cdot \text{GPa} \cdot (18 \cdot \text{mm})^3}{12} \quad EI_{ply2} := 2 \cdot EI_{ply1} \quad L_1 := 1000 \cdot \text{mm} \quad L_2 := 2000 \cdot \text{mm}$$

$$EI_{ply1} = 1.215 \cdot \frac{\text{kN} \cdot \text{m}^2}{\text{m}} \quad EI_{ply2} = 2.43 \cdot \frac{\text{kN} \cdot \text{m}^2}{\text{m}} \quad A_u := L_1 \cdot L_2$$

For plywood spanning 1000 mm over simple span

$$\Delta_{plss1} := \frac{5}{384} \cdot \frac{e_k \cdot L_1^4}{EI_{ply1}} \quad \Delta_{plss2} := \frac{\Delta_{plss1}}{2} \quad \Delta_{plss1} = 56.263 \cdot \text{mm} \quad \Delta_{plss2} = 28.131 \cdot \text{mm}$$

For plywood over 2 No continuous 500 mm spans

$$\Delta_{plc1} := \frac{1}{185} \cdot \frac{e_k \cdot L_1^4}{16EI_{ply1}} \quad \Delta_{plc2} := \frac{\Delta_{plc1}}{2} \quad \Delta_{plc1} = 1.46 \cdot \text{mm} \quad \Delta_{plc2} = 0.73 \cdot \text{mm}$$

$$M_{dply} := \frac{e_d \cdot (0.5 \cdot L_1)^2}{8} \quad W_{elply} := \frac{(18 \cdot \text{mm})^2}{6} \quad \sigma_{dply} := \frac{M_{dply}}{W_{elply}} \quad \sigma_{dply} = 4.536 \cdot \text{MPa}$$

### **b) Estimate beam deflections and moments under udl**

From the above it is clear that, for design purposes the plywood may be considered to be "flexible" and the steel frame "rigid". Hence 62.5 % of the udl on the plywood will be taken on the long central beam and 18.75 % on each of the long side beams.

Total Load  $E_k := e_k \cdot A_u$   $E_k = 10.5 \cdot \text{kN}$   $E_d := e_d \cdot A_u$   $E_d = 15.675 \cdot \text{kN}$

Consider the proportion of total load shed on to central beam as being  $\alpha := 0.625$

assuming that the plywood is one way spanning and that the load on the steel beam is therefore uniformly distributed

Consider point load shed from main central beam to cross beam at centre of unit as

$$\beta := 18.51852\% \quad F_k := \beta \cdot E_k \quad F_d := \beta \cdot E_d \quad F_k = 1.944 \cdot \text{kN} \quad F_d = 2.903 \cdot \text{kN}$$

Note  $\beta$  is chosen to ensure compatibility of deflections as demonstrated below

#### **For end beams**

$$E_s := 210 \cdot \text{GPa} \quad I_b = 19.462 \text{ cm}^4 \quad EI := E_s \cdot I_b$$

$$F_{kebu} := \frac{\alpha \cdot E_k - F_k}{2} \quad F_{debu} := \frac{\alpha \cdot E_d - F_d}{2} \quad M_{debu} := \frac{F_{debu} \cdot L_1}{4} \quad \Delta_{kebu} := \frac{F_{kebu} \cdot L_1^3}{48 \cdot EI}$$

$$M_{debu} = 0.862 \cdot \text{kN} \cdot \text{m} \quad \Delta_{kebu} = 1.177 \cdot \text{mm}$$

#### **For side beams**

$$M_{ksbu} := \left[ \frac{E_k \cdot (1 - \alpha) \cdot (L_2)}{2} \cdot \frac{(L_2)}{8} + \frac{F_k \cdot (L_2)}{2} \cdot \frac{(L_2)}{4} \right] \quad M_{ksbu} = 0.978 \cdot \text{kN} \cdot \text{m}$$

$$M_{dsbu} := \left[ \frac{E_d \cdot (1 - \alpha) \cdot (L_2)}{2} \cdot \frac{(L_2)}{8} + \frac{F_d \cdot (L_2)}{2} \cdot \frac{(L_2)}{4} \right] \quad M_{dsbu} = 1.46 \cdot \text{kN} \cdot \text{m}$$

$$\Delta_{ksbu} := \left[ \frac{5}{384} \cdot \frac{E_k \cdot \left( \frac{1 - \alpha}{2} \right) \cdot (L_2)^3}{EI} + \frac{F_k \cdot (L_2)^3}{2 \cdot 48 \cdot EI} \right] \quad \Delta_{ksbu} = 8.98 \cdot \text{mm}$$

**For central longitudinal beam**

$$\Delta_{kcbu} := \left[ \frac{5}{384} \cdot \frac{E_k \cdot \alpha \cdot (L_2)^3}{EI} - F_k \cdot \frac{(L_2)^3}{48 \cdot EI} \right] + \Delta_{kebu} \quad \Delta_{kcbu} = 9.97 \cdot \text{mm}$$

$$M_{dcbu} := \left[ E_d \cdot \alpha \cdot \frac{(L_2)}{8} - F_d \cdot \frac{(L_2)}{4} \right] \quad M_{kcbu} := \left[ E_k \cdot \alpha \cdot \frac{(L_2)}{8} - F_k \cdot \frac{(L_2)}{4} \right]$$

$$M_{dcbu} = 0.998 \cdot \text{kN} \cdot \text{m}$$

$$M_{kcbu} = 0.668 \cdot \text{kN} \cdot \text{m}$$

**For transverse beam**

$$M_{dtbu} := \frac{F_d \cdot L_1}{4} \quad M_{ktbu} := \frac{F_k \cdot L_1}{4} \quad \Delta_{ktrbu} := \left( \frac{F_k \cdot L_1^3}{48 \cdot EI} + \Delta_{ksbu} \right)$$

$$M_{ktbu} = 0.486 \cdot \text{kN} \cdot \text{m}$$

$$M_{dtbu} = 0.726 \cdot \text{kN} \cdot \text{m}$$

Check compatibility of deflections and adjust  $\beta$  to suit

$$\Delta_{kcbu} = 9.974 \cdot \text{mm} \quad \Delta_{ksbu} = 8.983 \cdot \text{mm} \quad \Delta_{ktrbu} = 9.974 \cdot \text{mm}$$

$$\frac{\Delta_{kcbu}}{\Delta_{ktrbu}} = 1$$

From the above it would seem that if the structure is linear elastic then the side beams and central transverse beam will be critical and the moments in these beams will be as follows

$$M_{ksbu} = 0.978 \cdot \text{kN} \cdot \text{m} \quad M_{dsbu} = 1.46 \cdot \text{kN} \cdot \text{m} \quad M_{ktbu} = 0.486 \cdot \text{kN} \cdot \text{m} \quad M_{dtbu} = 0.726 \cdot \text{kN} \cdot \text{m}$$

**4) Check Beams in Elastic Working Condition**

From the above, critical moments in elastic condition under characteristic udl is

$$M_{kmax} := \max(M_{ksbu}, M_{dcbu}, M_{ktbu}) \quad M_{kmax} = 0.998 \text{ kN} \cdot \text{m}$$

$$\sigma_{kmax} := \frac{M_{kmax}}{W_{elb}} \quad \sigma_{kmax} = 192.267 \text{ MPa} \quad \frac{\sigma_{kmax}}{f_y} = 0.874$$

**5) Check Beams in Plastic Condition under udl**

$$M_{db} := \frac{e_d \cdot L_1}{3} \cdot \frac{L_2^2}{8} \quad M_{db} = 1.306 \text{ kN} \cdot \text{m} \quad \frac{M_{db}}{M_{dRb}} = 0.894$$

Hence - Steel will not yield under working loads

Steel will not collapse under ultimate loads

Under working loads, maximum central deflection will be

$$\Delta_{kcbu} = 9.974 \text{ mm}$$

Assumed allowable deflection under imposed load =  $\frac{L_2}{200} = 10 \text{ mm}$  Hence OK

95 Winchester Road, Rousey, Hants RG61 8JF  
 Tel: 0794 830199, Fax: 0794 612744



## CERTIFICATE OF CONFORMITY

OUR REF. JOB NO. F/1042/T

YOUR ORDER No. 3803/95

TO Andalite Ltd  
 Unit 21, Hopkinson Way  
 West Fordingham  
 Andover, Hants, SP10 3LLF

CONTRACT NAME / DETAIL \_\_\_\_\_

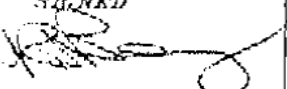
PART / COMPONENT NAME	No. Off	DRAWING No.	SPECIFICATION	P/L	N.W.T.
Slage Base Unit	1		2" x 1" x 16 gauge ERW 2m x 1m in Brick wall configuration	2000kg	1000kg

CERTIFIED THAT THE WHOLE OF THE SUPPLIES HEREON HAVE BEEN INSPECTED, TESTED & UNLESS OTHERWISE STATED ABOVE, CONFORM IN ALL RESPECTS WITH THE REQUIREMENTS OF THE ORDER.

ABOVE ITEMS ARE COMPLETE ORDER

PART ORDER

COMPLETION OF ALL OUTSTANDING ITEMS

SIGNED 	QUALITY REP / INSPECTOR	DATE 27-08-95	MATERIAL CERTS. & / OR HEAT TREATMENT TESTING CERTS. ETC.	HELD BY US
				ATTACHED
				TO BE SENT

QM021



# Residual Risk Register for NIVOflex MULTI used as Auditorium Platforms in the Schwarzman Centre, 250 Seat Theatre/Lecture

Notes:

1. This residual risk register is provided as guidance to the client / end user as to the residual risks in the installation that cannot be eliminated. These are often due to the client’s design team specification or are inherent to the product or system.
2. The client / end user must ensure that these are addressed in any risk assessments and method statements they implement.
3. It is essential that the client / end user makes their staff and other users of this installation familiar with O&M manual for the installation, and any relevant risk assessments and method statements.
4. It is essential that the client / end user makes due provision for the required and predictable usage and maintenance activities associated with the installation especially with regard of safe access and manual handling.
5. The client / end user must revise and update this schedule as he uses this installation in conjunction with equipment and installations provided by others.

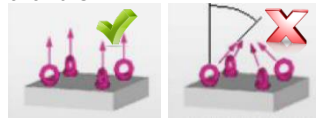
<b>Note: Multiply Occurrence Likelihood by Potential Severity to obtain Risk Factor</b>					
<b>Occurrence Likelihood</b>	1 = Remote-Would not happen in 5 years	2 = Unlikely – Would not happen in 2-3 years	3 = Likely – Could happen once a year	4 = Very Likely – Could occur 2 or 3 times a year	5 = Certainly – Likely to happen at any moment
<b>Potential Severity</b>	1 = Minor injury	2 = Lost time injury	3 = Major injury	4 = Single fatality	5 = Multiple fatality
	<b>Risk Factor 1-5 = TRIVIAL or LOW</b> Risk Factor above 5 = improve if possible	<b>Risk Factor 6-11 = MEDIUM</b> Risk Factor above 11 = implement measures noted to reduce risk		<b>Risk Factor 12-25 = HIGH or VERY HIGH</b> Implement measures and consider alternative work methods	

# Residual Risk Register - Analysis of risk & mitigation

## 10335 Schwarzman Centre, Oxford – 250 Seat Theatre/Lecture

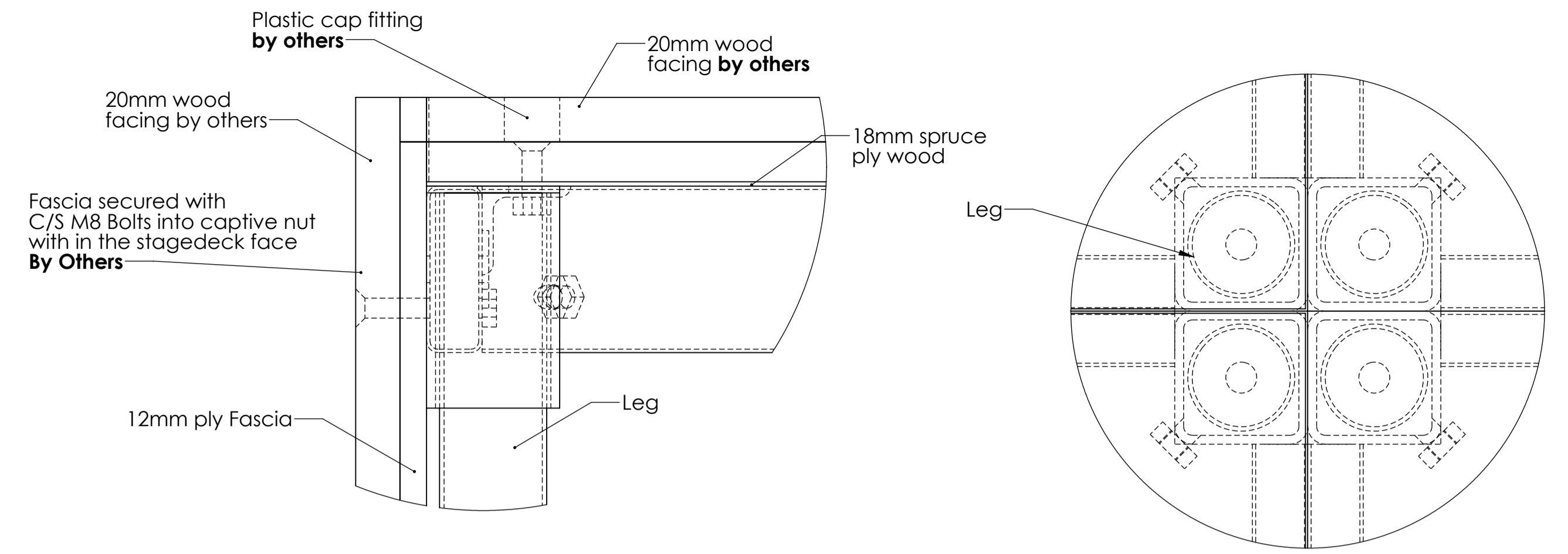
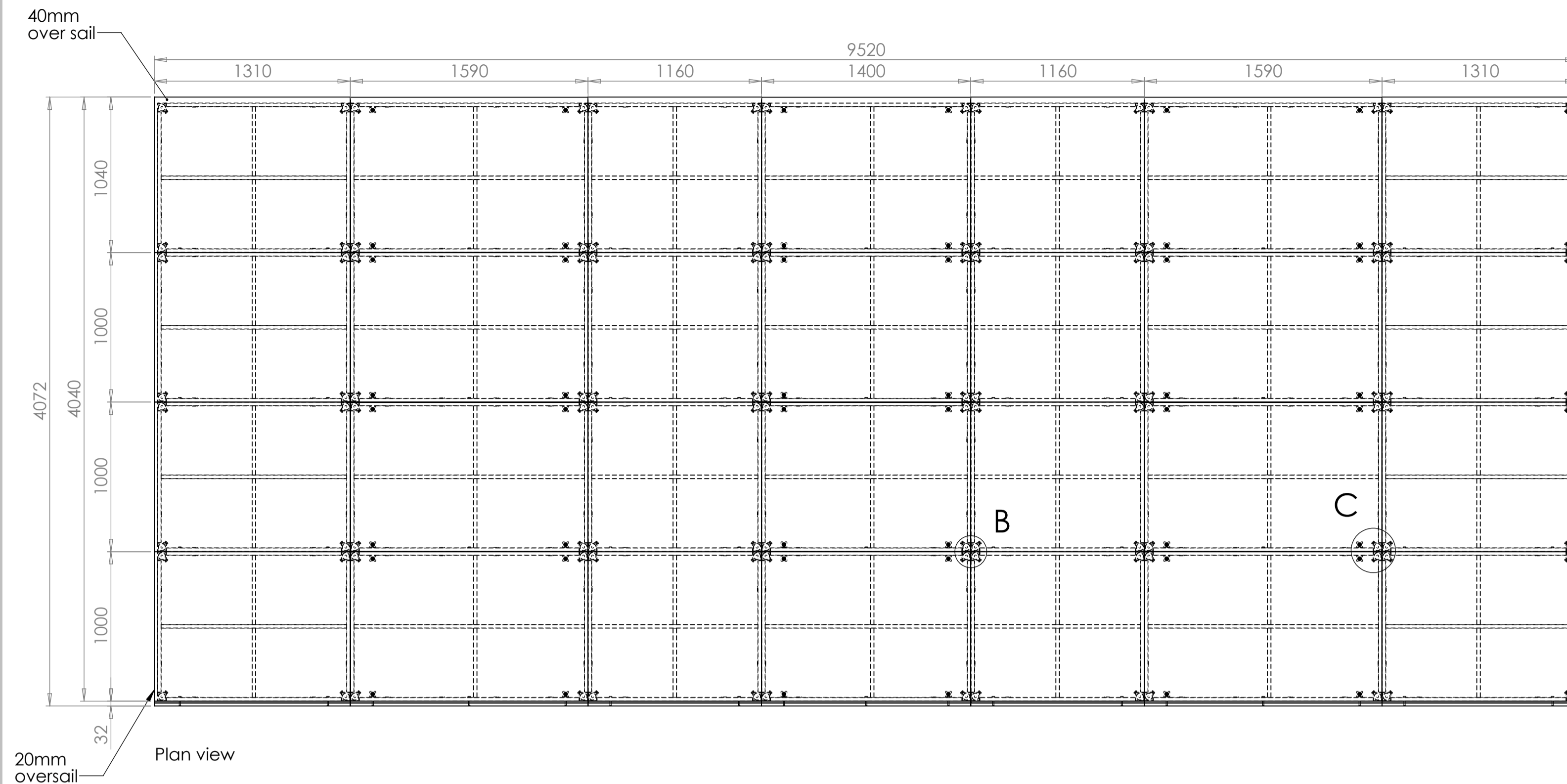
### Prepared by Brod Mason, Steeldeck Project Manager, 22-Dec-25



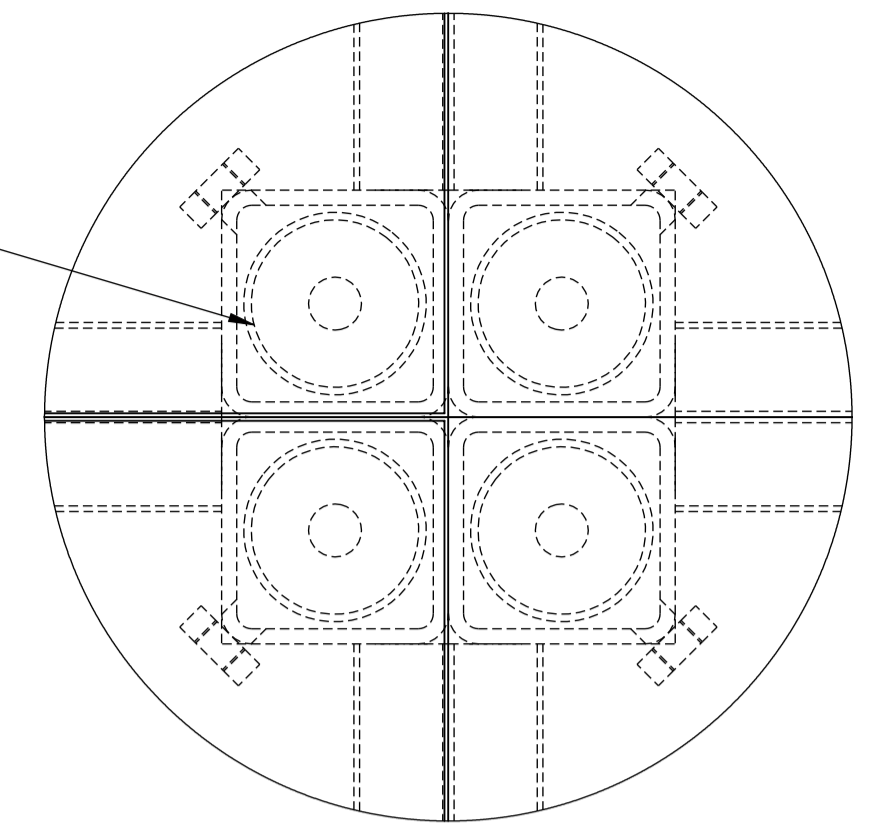
#	Installation Element	Detail of hazard	Who is at Risk?	Likelihood	Potential Severity	Risk Factor	Recommended measures to reduce risk <i>(xx) = risk analysis after control measures in place</i>
1	Platform metal structure	Electrocution when electrical items used in contact with platforms	Operatives	2(1)	4(4)	8(4)	<ul style="list-style-type: none"> <li>Only qualified electrician to install or work on electrical items</li> <li>Earth bond metal platforms</li> </ul>
2	Steeldeck & StageBase Platform	Manual Handling of Platforms up to 70Kg, all platforms have weights marked	Operatives	3(1)	2(2)	6(2)	<ul style="list-style-type: none"> <li>Check platform's marked weight.</li> <li>Where possible remove timber top first.</li> <li>Platforms are at least a two-person lift. Manual handling posture and lifting methods adopted should be as HSE recommendations.</li> <li>Steel toecap footwear should be worn</li> </ul>
3	StageBase Pick-up Points	Failure of Eyebolts: the supplied eyebolts are only for straight lifts and should never be used at an angle as a bridle. 	Operatives	3(1)	3(3)	9(3)	<ul style="list-style-type: none"> <li>Remove caps by others to reveal integral lifting point.</li> <li>Only use supplied eyebolts to perform straight manual lifts.</li> <li>Only competent persons to lift platforms mechanically.</li> <li>If lifting platforms mechanically either use a lifting frame that imposes a correct straight load on eyebolts or use other suitably rated eyebolts.</li> <li>Contact Steeldeck for further information.</li> </ul>
							<ul style="list-style-type: none"> <li></li> </ul>

**Note: Multiply Occurrence Likelihood by Potential Severity to obtain Risk Factor**

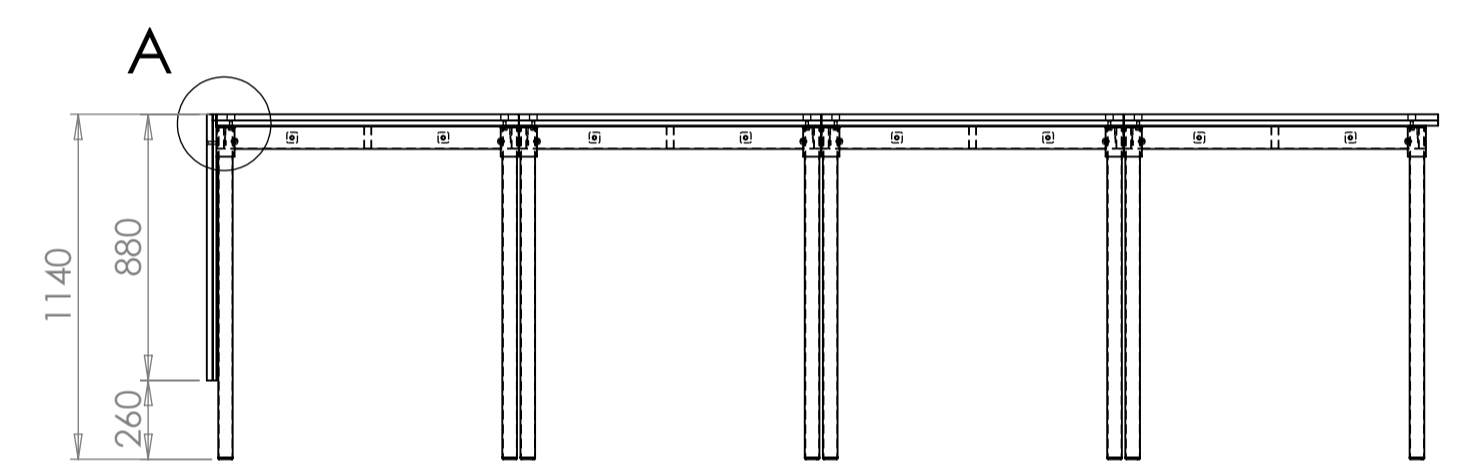
<b>Occurrence Likelihood</b>	1 = Remote-Would not happen in 5 years	2 = Unlikely – Would not happen in 2-3 years	3 = Likely – Could happen once a year	4 = Very Likely – Could occur 2 or 3 times a year	5 = Certainly – Likely to happen at any moment
<b>Potential Severity</b>	1 = Minor injury	2 = Lost time injury	3 = Major injury	4 = Single fatality	5 = Multiple fatality
	<b>Risk Factor 1-5 = TRIVIAL or LOW</b> Risk Factor below 5 = improve if possible		<b>Risk Factor 6-11 = MEDIUM</b> Risk Factor 6 or above = implement measures noted to reduce risk		<b>Risk Factor 12-25 = HIGH or VERY HIGH</b> Risk Factor 12 or above = Implement measures immediately and consider alternative work methods



DETAIL A  
SCALE 1 : 2

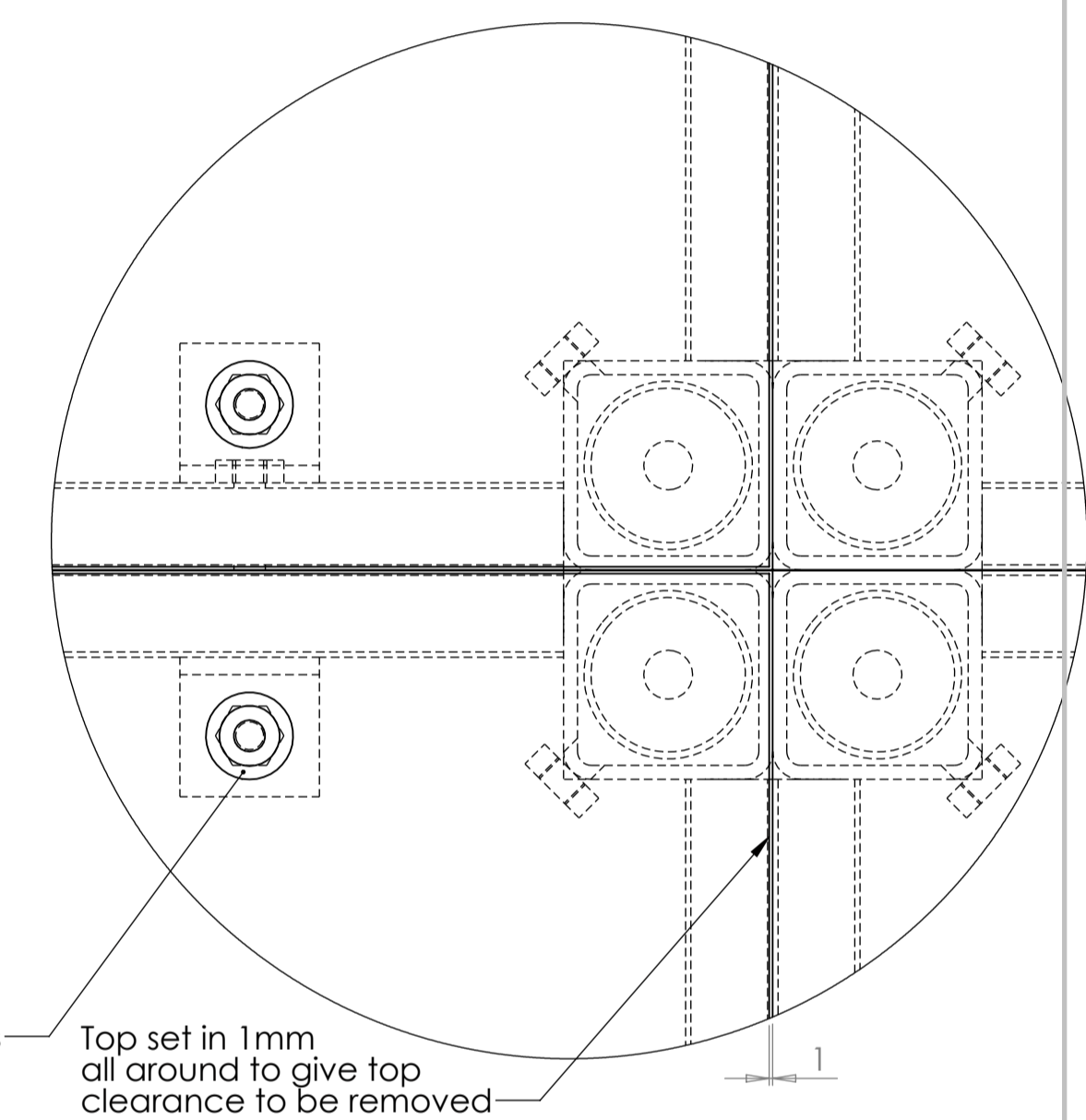


DETAIL B  
SCALE 1 : 2

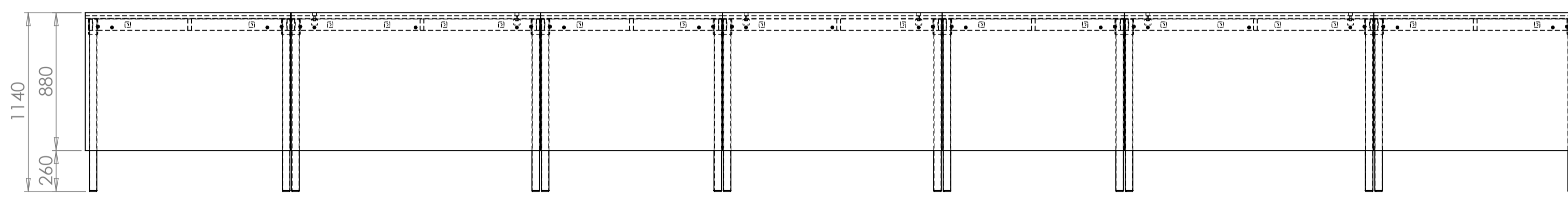


Side view

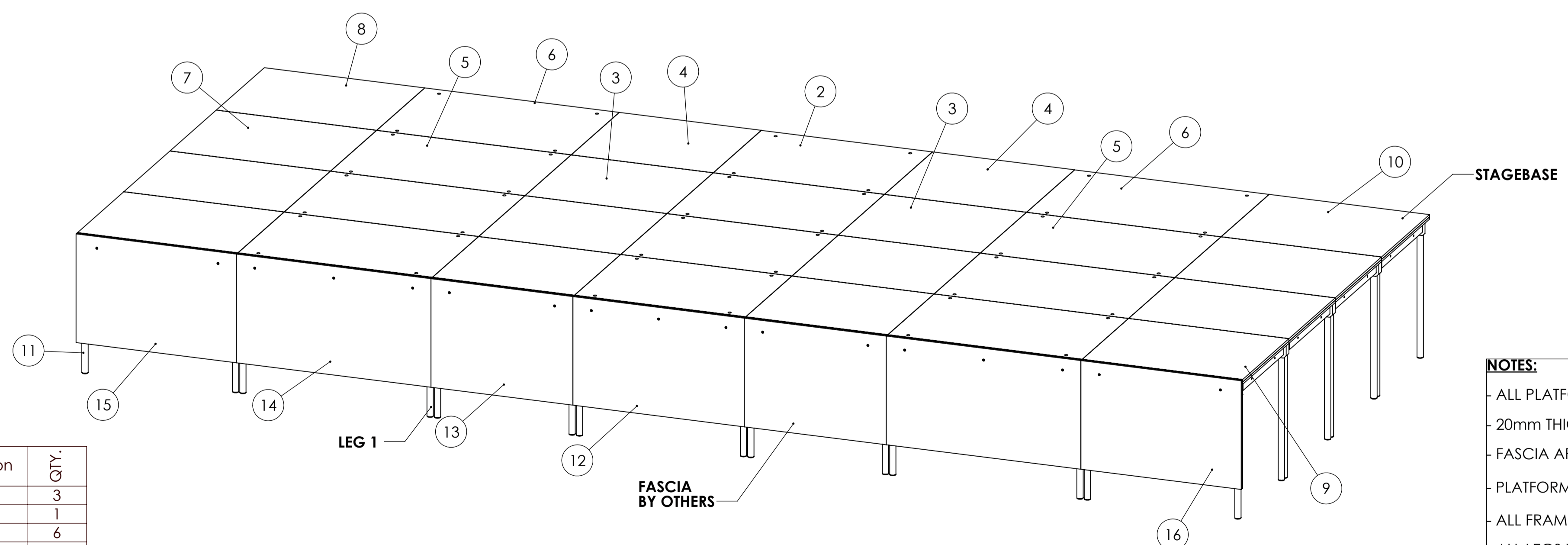
Removable top secured to frame with M8 C/S Bolt. Covered with cap by others



DETAIL C  
SCALE 1 : 2



Front view



**DECK WEIGHTS - INCLUDING TIMBER FACING**

- DECK 1 FRAME (1400 X1000MM) WEIGHS: 19KG
- DECK 1 REMOVABLE TOP (1398X998MM) WEIGHS: 31KG
- DECK 2(1160 X1000MM) WEIGHS: 44KG
- DECK 3 FRAME(1590 X1000MM) WEIGHS: 21KG
- DECK 3 REMOVABLE TOP (1588X998MM) WEIGHS: 35KG
- DECK 4(1290 X1000MM) WEIGHS: 48KG

**FASCIA WEIGHTS - INCLUDING TIMBER FACING:**

- FASCIA 1(1400X860MM) WEIGHS: 28KG
- FASCIA 2(1160X860MM) WEIGHS: 23KG
- FASCIA 3(1590X860MM) WEIGHS: 31KG
- FASCIA 4(1290X860MM) WEIGHS: 25KG

- NOTES:**
- ALL PLATFORMS ARE STEELDECK STAGEBASE WITH SPRUCE PLY TOPS
  - 20mm THICK WOODEN FACING BY OTHERS.
  - FASCIA ARE FIXED TO STAGEBASE BY M8 NUTS WELDED TO INSIDE OF FRAME - BY OTHERS
  - PLATFORMS WILL BE CONNECTED BY M10 BOLTS AND NUTS.
  - ALL FRAMES WILL BE POWDER COATED BLACK
  - ALL LEGS WILL BE STANDARD GALVANISED FINISH
  - ALL EXPOSED FASTENERS WILL BE BRUSHED STAINLESS STEEL FINISH.
  - UDL IS 5KN/M2 AND POINT LOAD WITH 20mm WOOD COVERING IS 3KN OVER 300mm2.
  - CLASS 0 ACOUSTIC FOAM APPLIED TO UNDERSIDE OF ALL PLATFORMS.
  - ALL LOOSE ITEMS MUST BE STORED IN SUITABLE STORAGE CONTAINERS SO THEY ARE NOT LOST.
  - STEELDECK HAVE SURVEYED THE CONCRETE FLOOR WE ARE INSTALLING ONTO AND FOUND IT TO BE FLAT WITH A 3mm TOLERANCE BETWEEN ALL MEASUREMENTS TAKEN AND WOULD PROPOSE TO SIT PLATFORMS ON EXISTING CONCRETE FLOOR WITH NO OTHER LEVELLING DEVICES
  - STAGE HEIGHT MEASUREMENTS TO BE CHECKED PRIOR TO MANUFACTURE

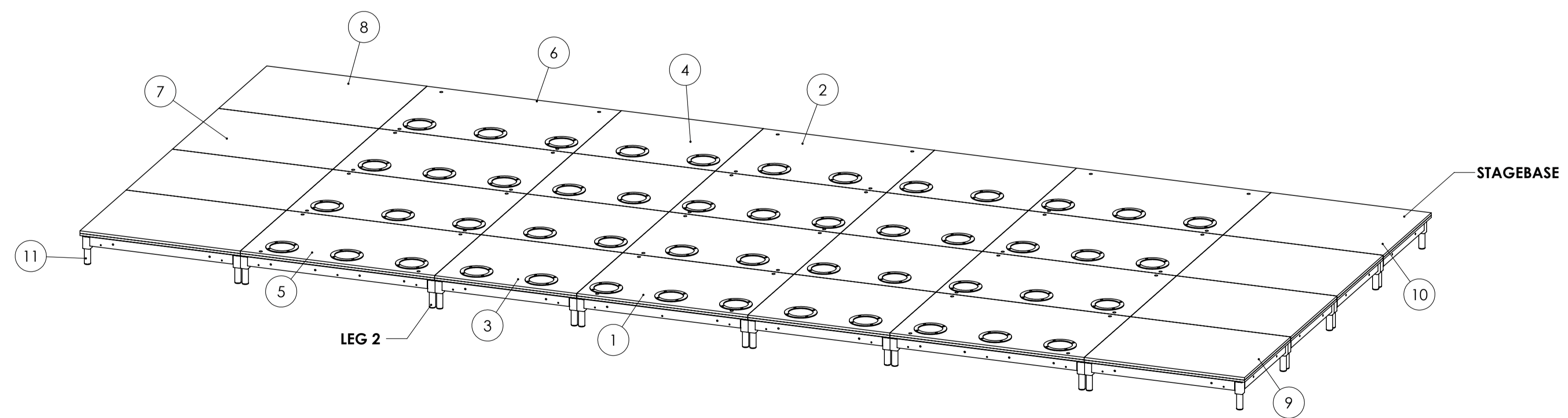
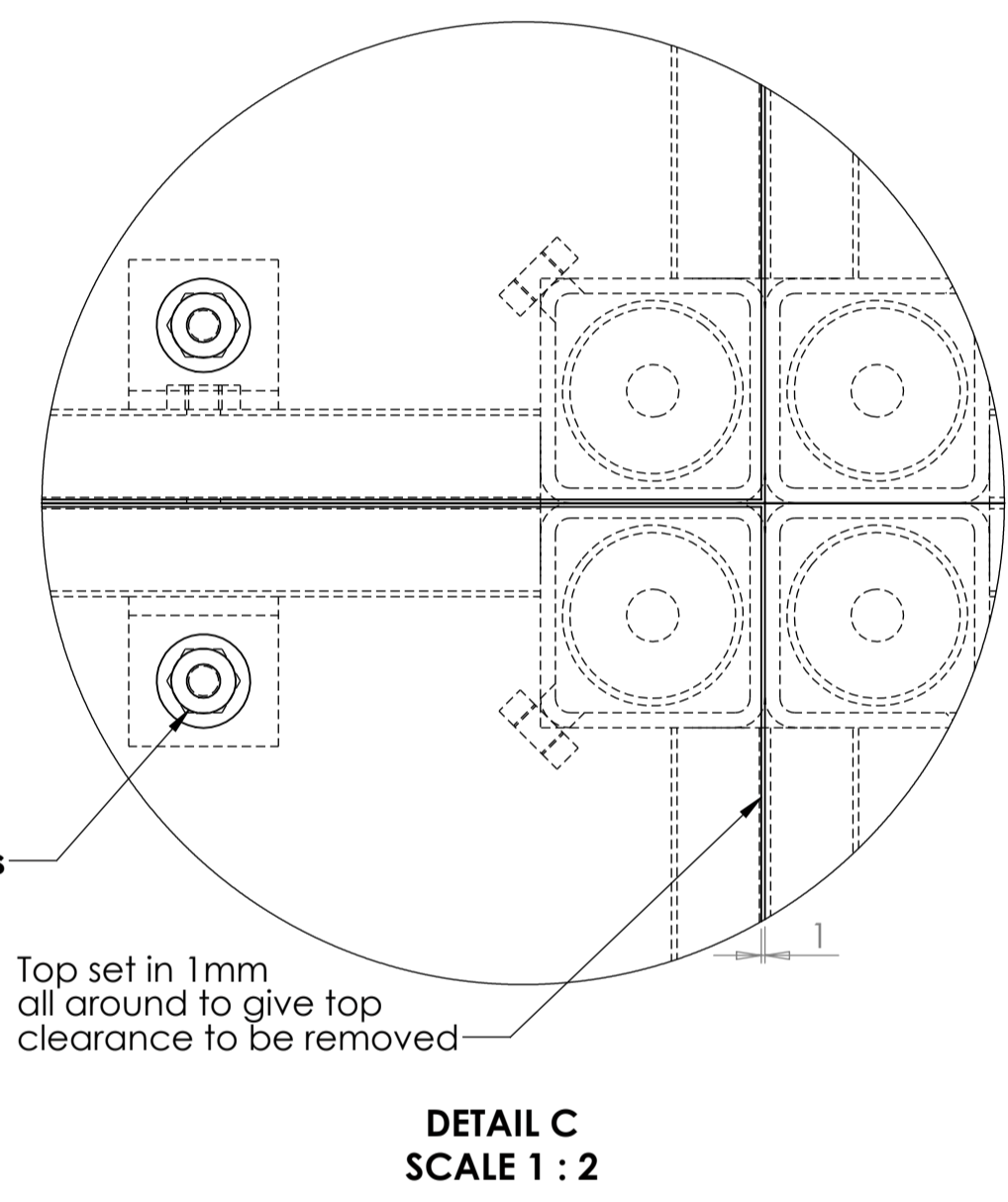
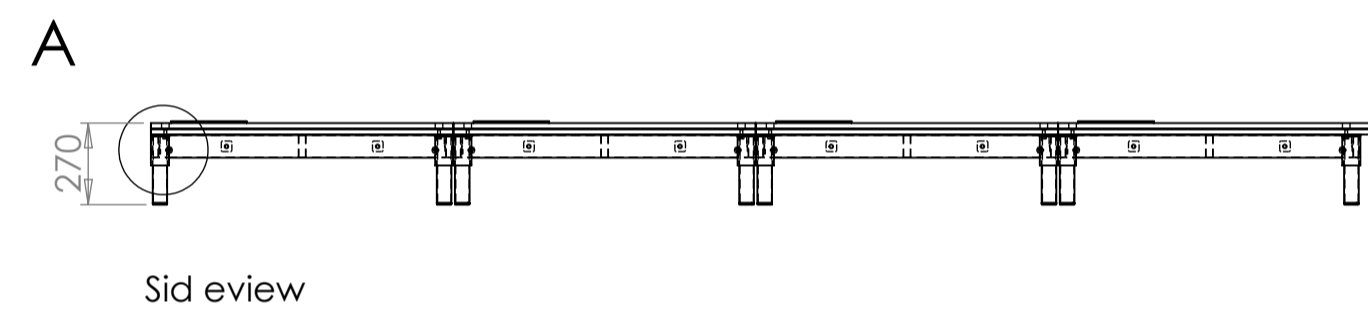
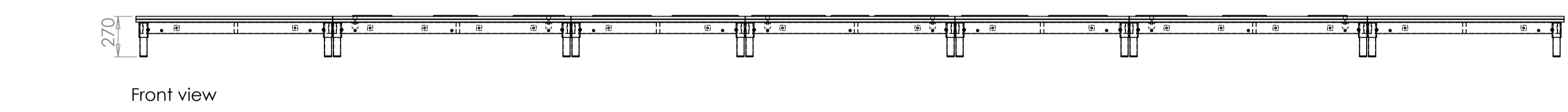
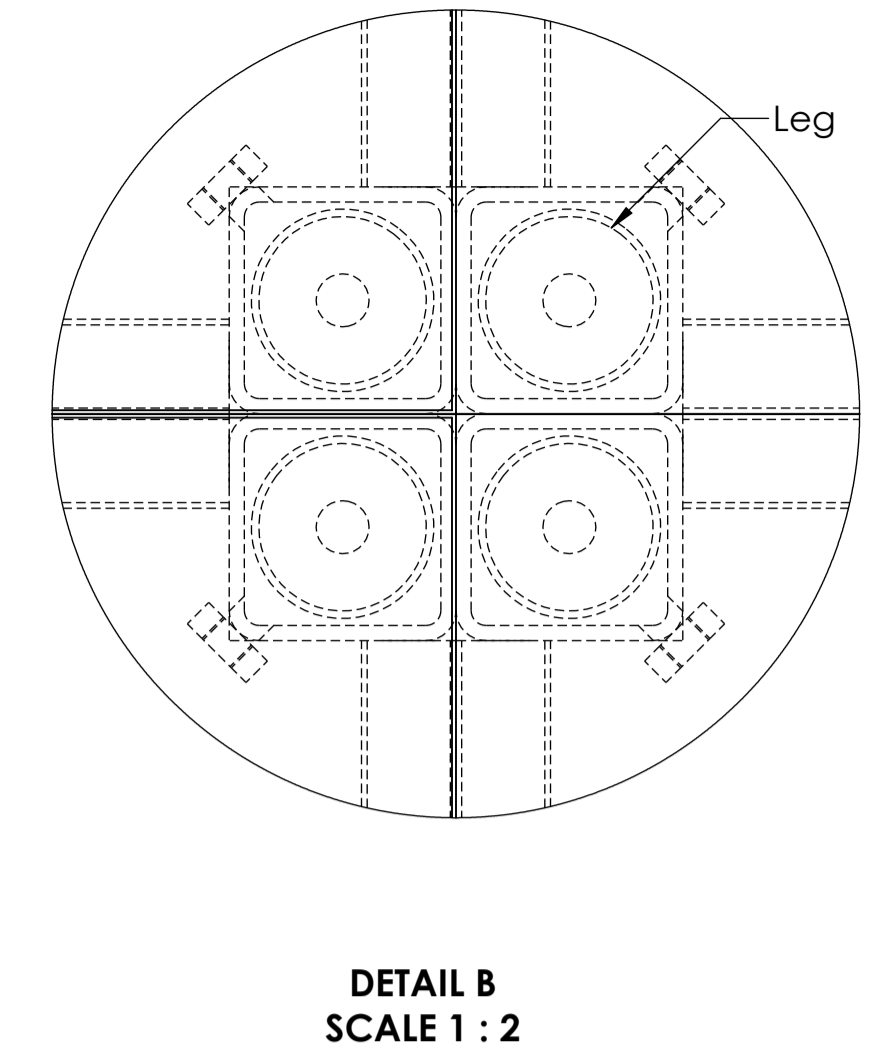
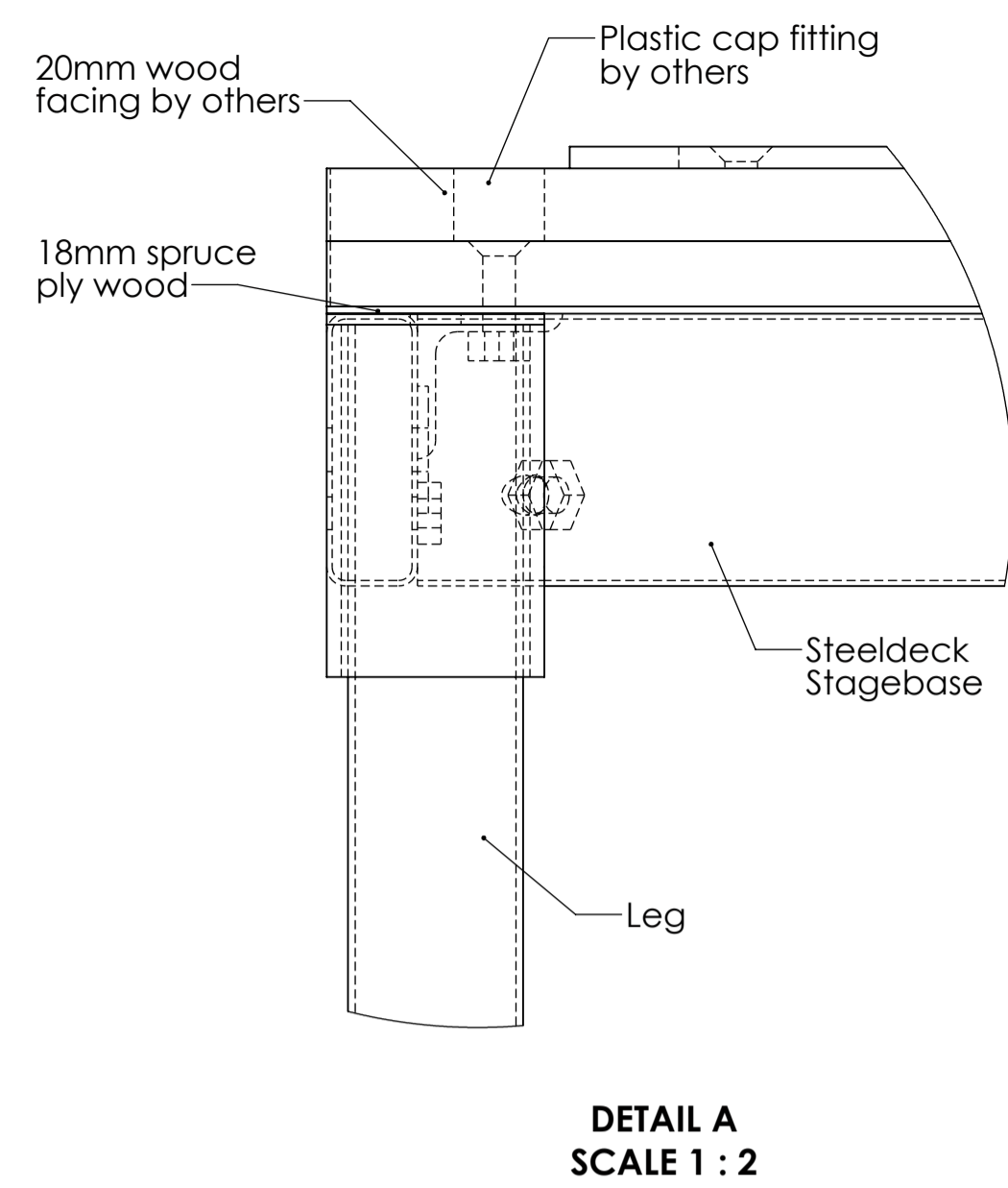
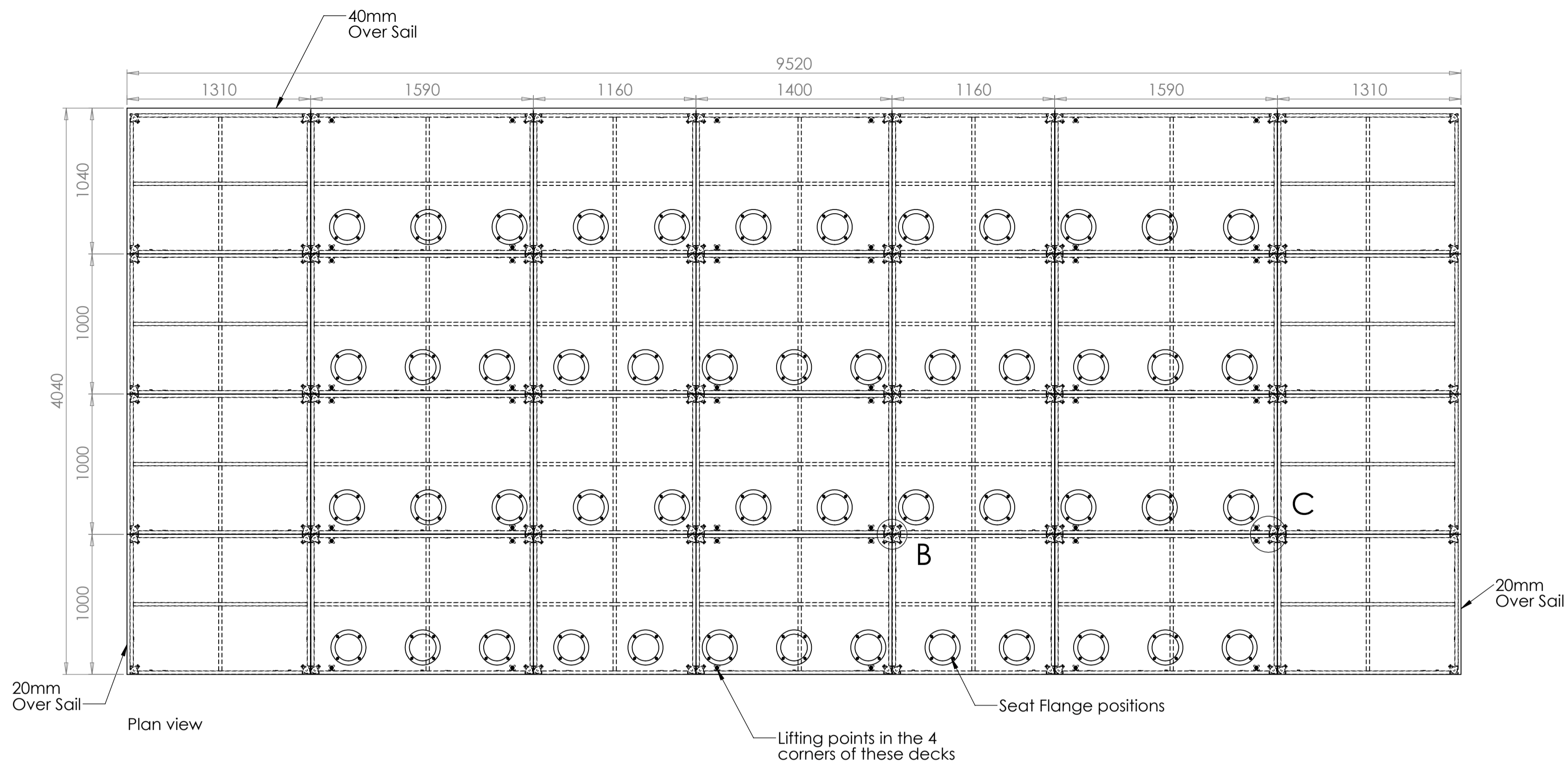
ITEM NO.	Description	QTY.
1	Deck 1	3
2	Deck 1 - US	1
3	Deck 2	6
4	Deck 2 - US	2
5	Deck 3	6
6	Deck 3 - US	2
7	Deck 4 - SR	3
8	Deck 4 - USR	1
9	Deck 4 - SL	3
10	Deck 4 - USL	1
11	Leg 1	112
12	Fascia 1	1
13	Fascia 2	2
14	Fascia 3	2
15	Fascia 4 - SR	1
16	Fascia 4 - SL	1

**REVISIONS**

Rev	Description
A	-
B	-
C	-
D	-

**STEELDECK INDUSTRIES Ltd.**  
203-207 Manor Road.,  
Erith, London DA8 2AA U.K.  
TEL +44 (0)20 8 692 9721

Venue: **Schwarman Centre**  
Project: **250 Theatre**  
Drawing: **Stage Layout**  
Drawing No.: **e10335-d106** Rev. **J**  
Scale: **1:25 @ A1** Date: **23/12/2025**  
Drawn By: **N. LUNDY**



**DECK WEIGHTS - INCLUDING TIMBER FACING**

- DECK 1 FRAME (1400 X1000MM) WEIGHS: 19KG
- DECK 1 REMOVABLE TOP (1398X998MM) WEIGHS: 31KG
- DECK 2(1160 X1000MM) WEIGHS: 44KG
- DECK 3 FRAME(1590 X1000MM) WEIGHS: 21KG
- DECK 3 REMOVABLE TOP (1588X998MM) WEIGHS: 35KG
- DECK 4(1290 X1000MM) WEIGHS: 48KG

**NOTES:**

- ALL PLATFORMS ARE STEELDECK STAGEBASE WITH SPRUCE PLY TOPS
- 20mm THICK WOODEN FACING BY OTHERS.
- FASCIA ARE FIXED TO STAGEBASE BY M8 NUTS WELDED TO INSIDE OF FRAME - BY OTHERS
- PLATFORMS WILL BE CONNECTED BY M10 BOLTS AND NUTS.
- ALL FRAMES WILL BE POWDER COATED BLACK
- ALL LEGS WILL BE STANDARD GALVANISED FINISH
- ALL EXPOSED FASTENERS WILL BE BRUSHED STAINLESS STEEL FINISH.
- UDL IS 5KN/M2 AND POINT LOAD WITH 20mm WOOD COVERING IS 3KN OVER 300mm2.
- CLASS 0 ACOUSTIC FOAM APPLIED TO UNDERSIDE OF ALL PLATFORMS.
- ALL LOOSE ITEMS MUST BE STORED IN SUITABLE STORAGE CONTAINERS SO THEY ARE NOT LOST.
- STEELDECK HAVE SURVEYED THE CONCRETE FLOOR WE ARE INSTALLING ONTO AND FOUND IT TO BE FLAT WITH A 3mm TOLERANCE BETWEEN ALL MEASUREMENTS TAKEN AND WOULD PROPOSE TO SIT PLATFORMS ON EXISTING CONCRETE FLOOR WITH NO OTHER LEVELLING DEVICES
- STAGE HEIGHT MEASUREMENTS TO BE CHECKED PRIOR TO MANUFACTURE

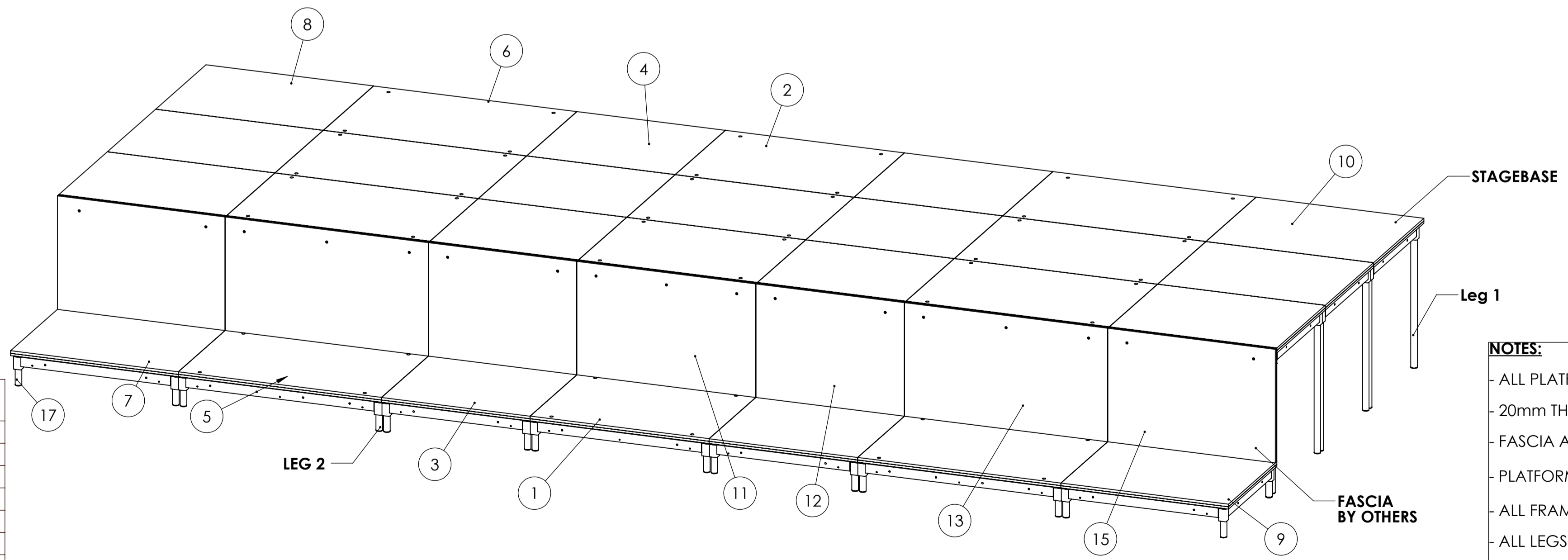
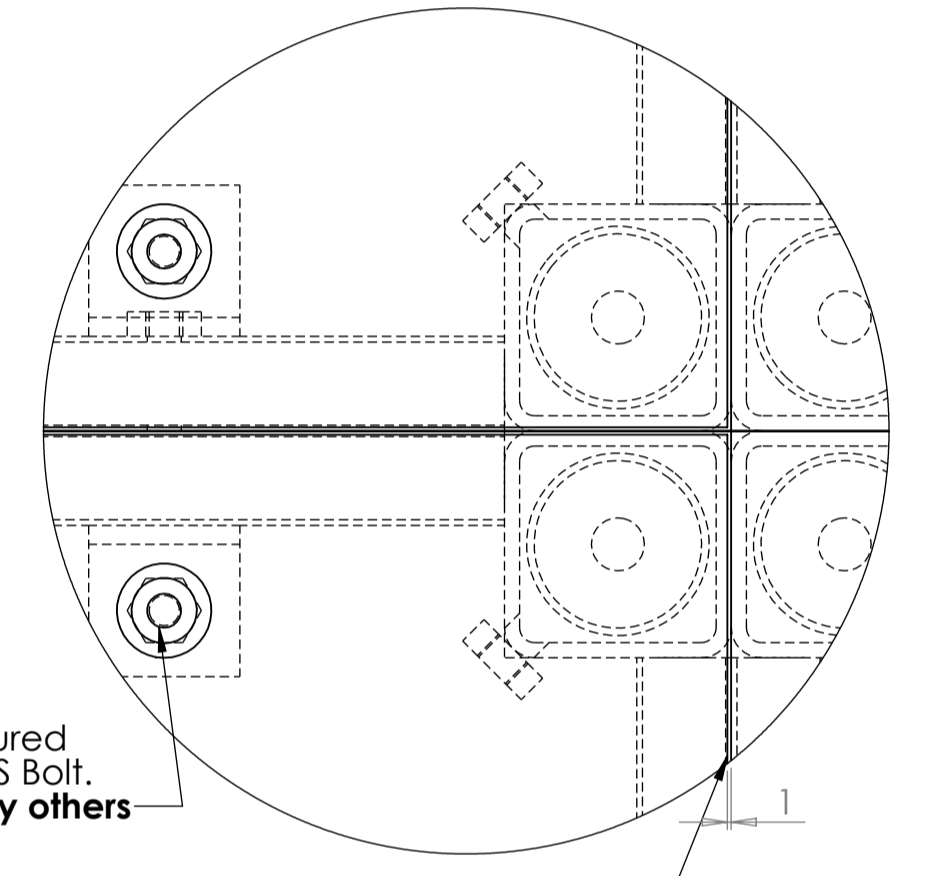
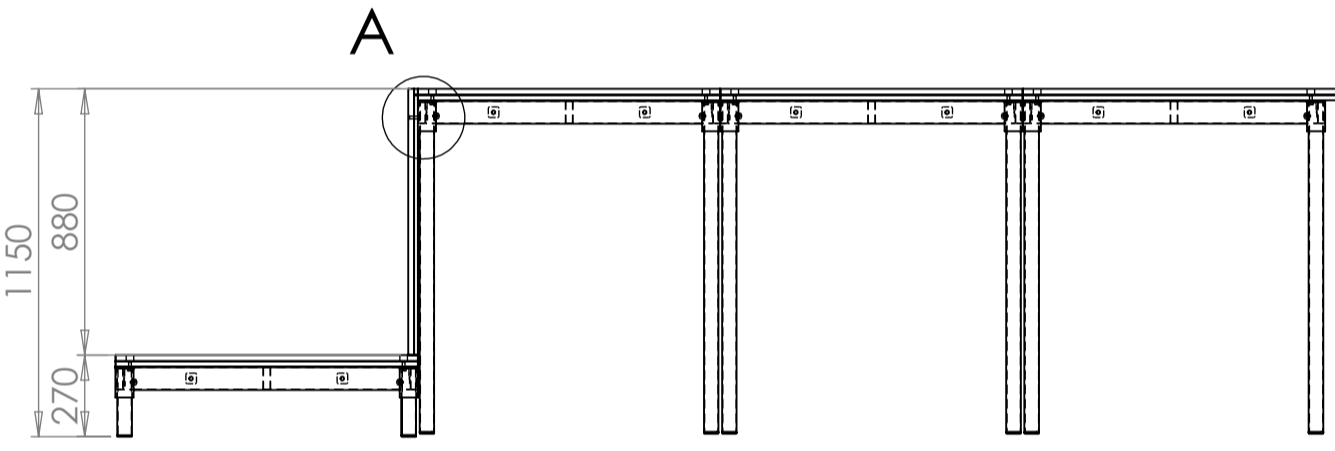
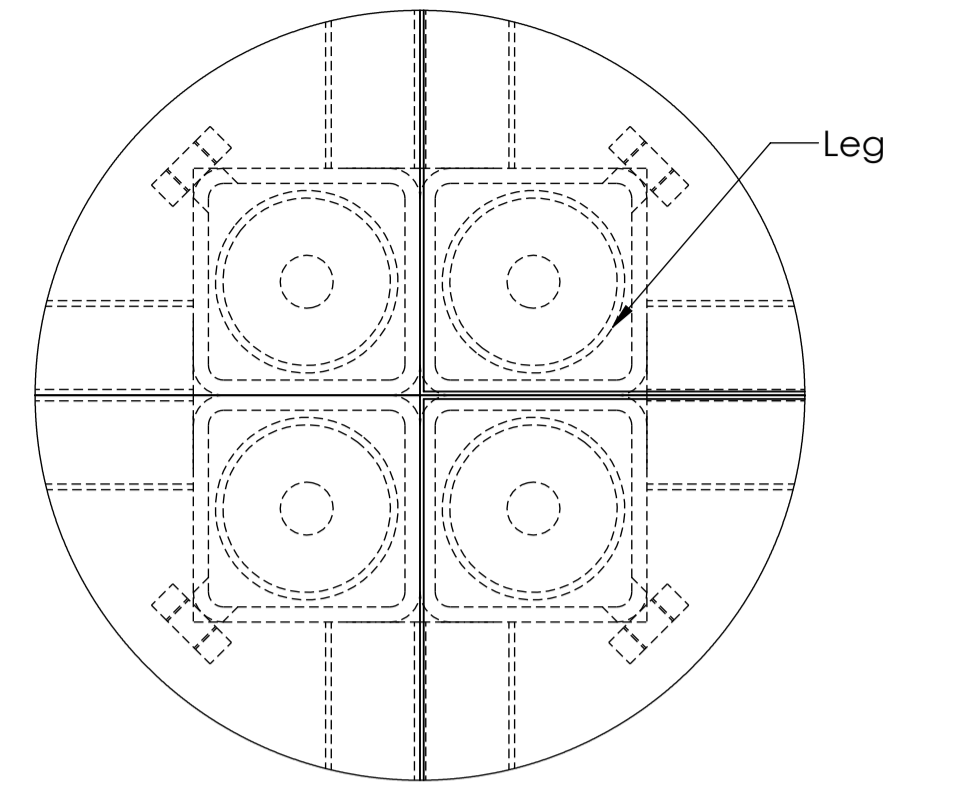
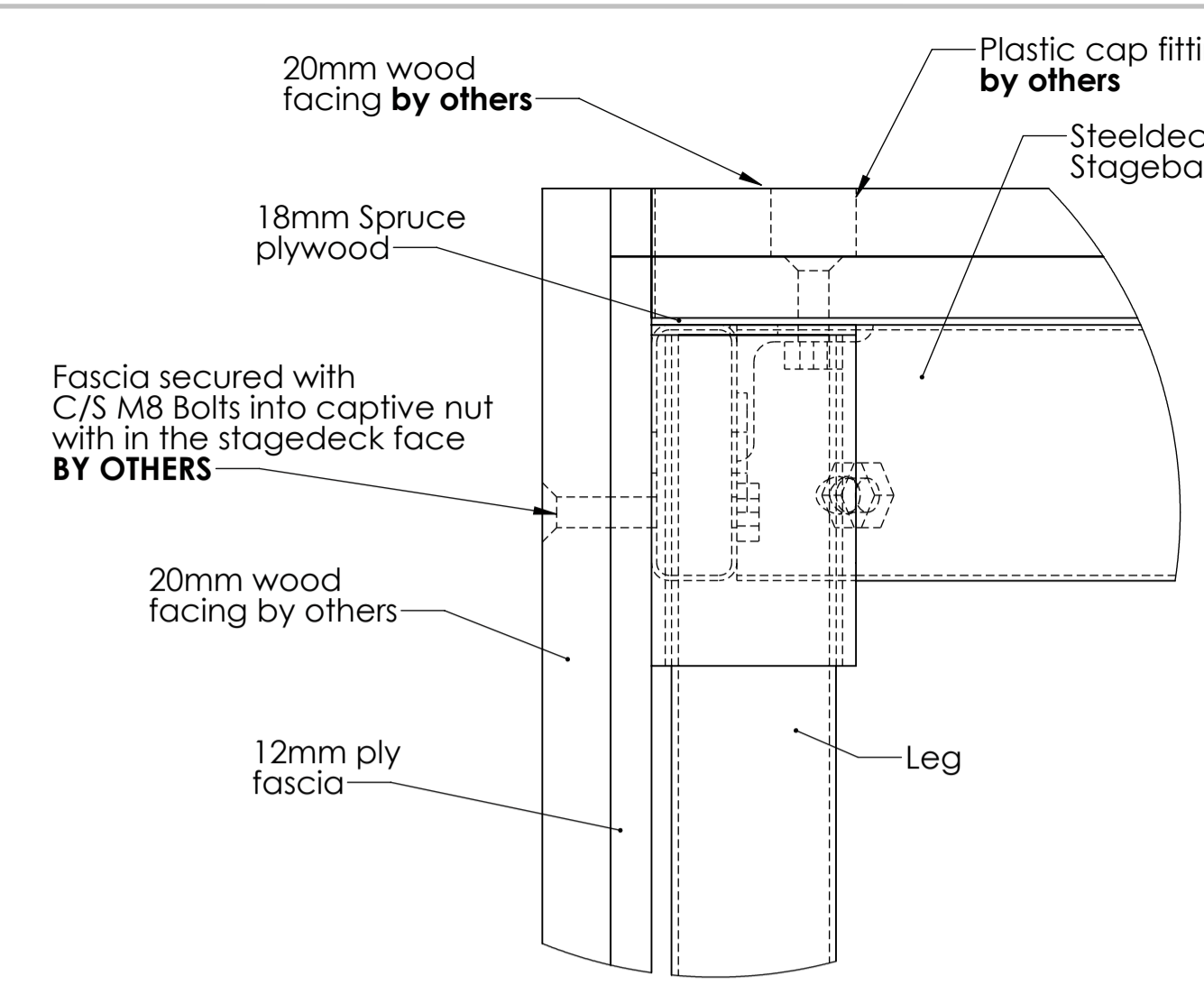
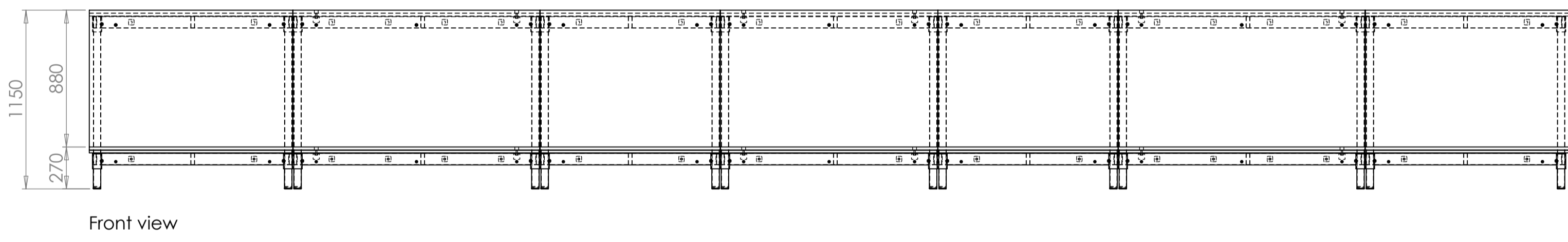
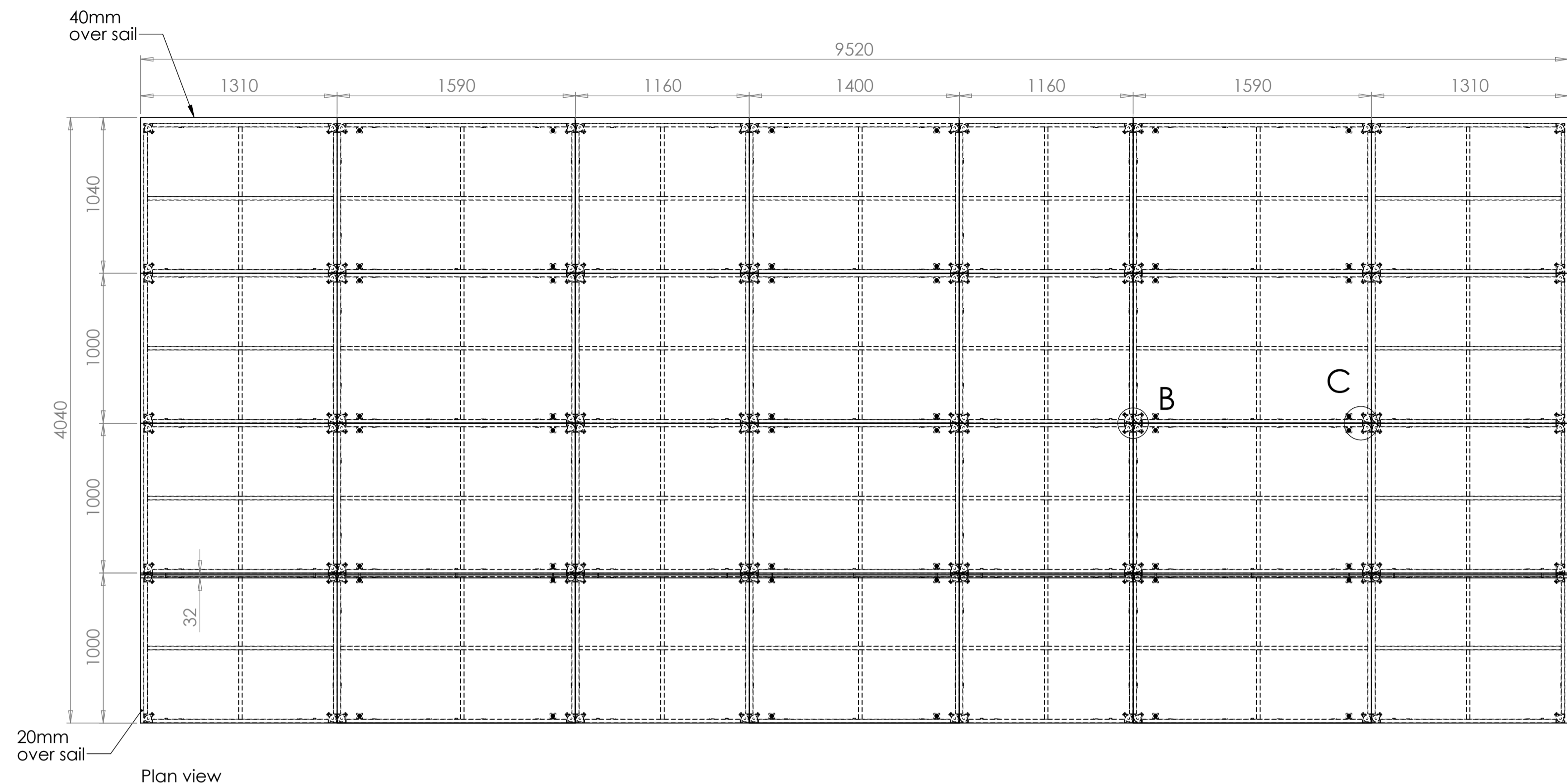
ITEM NO.	Description	QTY.
1	Deck 1	3
2	Deck 1 - US	1
3	Deck 2	6
4	Deck 2 - US	2
5	Deck 3	6
6	Deck 3 - US	2
7	Deck 4 - SR	3
8	Deck 4 - USR	1
9	Deck 4 - SL	3
10	Deck 4 - USL	1
11	Leg 2	112
12	Seat Flange	50

**REVISIONS**

A	-	-
B	-	-
C	-	-
D	-	-

**STEELDECK**  
© STEELDECK INDUSTRIES Ltd. 2019  
203-207 Manor Road.,  
Erith, London DA8 2AA U.K.  
TEL +44 (0)20 8 692 9721

Venue **Schwarman Centre**  
Project **250 Theatre**  
Drawing **Stall Layout**  
Drawing No. **e10335-d107** Rev. **J**  
Scale **1:25 @ A1** Date **23/12/2025**  
Drawn By **N. LUNDY**



**DECK WEIGHTS - INCLUDING TIMBER FACING**

- DECK 1 FRAME (1400 X1000MM) WEIGHS: 19KG
- DECK 1 REMOVABLE TOP (1398X998MM) WEIGHS: 31KG
- DECK 2(1160 X1000MM) WEIGHS: 44KG
- DECK 3 FRAME(1590 X1000MM) WEIGHS: 21KG
- DECK 3 REMOVABLE TOP (1588X998MM) WEIGHS: 35KG
- DECK 4(1290 X1000MM) WEIGHS: 48KG

**FASCIA WEIGHTS - INCLUDING TIMBER FACING:**

- FASCIA 1(1400X860MM) WEIGHS: 28KG
- FASCIA 2(1160X860MM) WEIGHS: 23KG
- FASCIA 3(1590X860MM) WEIGHS: 31KG
- FASCIA 4(1290X860MM) WEIGHS: 25KG

**NOTES:**

- ALL PLATFORMS ARE STEELDECK STAGEBASE WITH SPRUCE PLY TOPS
- 20mm THICK WOODEN FACING BY OTHERS.
- FASCIA ARE FIXED TO STAGEBASE BY M8 NUTS WELDED TO INSIDE OF FRAME - BY OTHERS
- PLATFORMS WILL BE CONNECTED BY M10 BOLTS AND NUTS.
- ALL FRAMES WILL BE POWDER COATED BLACK
- ALL LEGS WILL BE STANDARD GALVANISED FINISH
- ALL EXPOSED FASTENERS WILL BE BRUSHED STAINLESS STEEL FINISH.
- UDL IS 5KN/M2 AND POINT LOAD WITH 20mm WOOD COVERING IS 3KN OVER 300mm2.
- CLASS 0 ACOUSTIC FOAM APPLIED TO UNDERSIDE OF ALL PLATFORMS.
- ALL LOOSE ITEMS MUST BE STORED IN SUITABLE STORAGE CONTAINERS SO THEY ARE NOT LOST.
- STEELDECK HAVE SURVEYED THE CONCRETE FLOOR WE ARE INSTALLING ONTO AND FOUND IT TO BE FLAT WITH A 3mm TOLERANCE BETWEEN ALL MEASUREMENTS TAKEN AND WOULD PROPOSE TO SIT PLATFORMS ON EXISTING CONCRETE FLOOR WITH NO OTHER LEVELLING DEVICES
- STAGE HEIGHT MEASUREMENTS TO BE CHECKED PRIOR TO MANUFACTURE

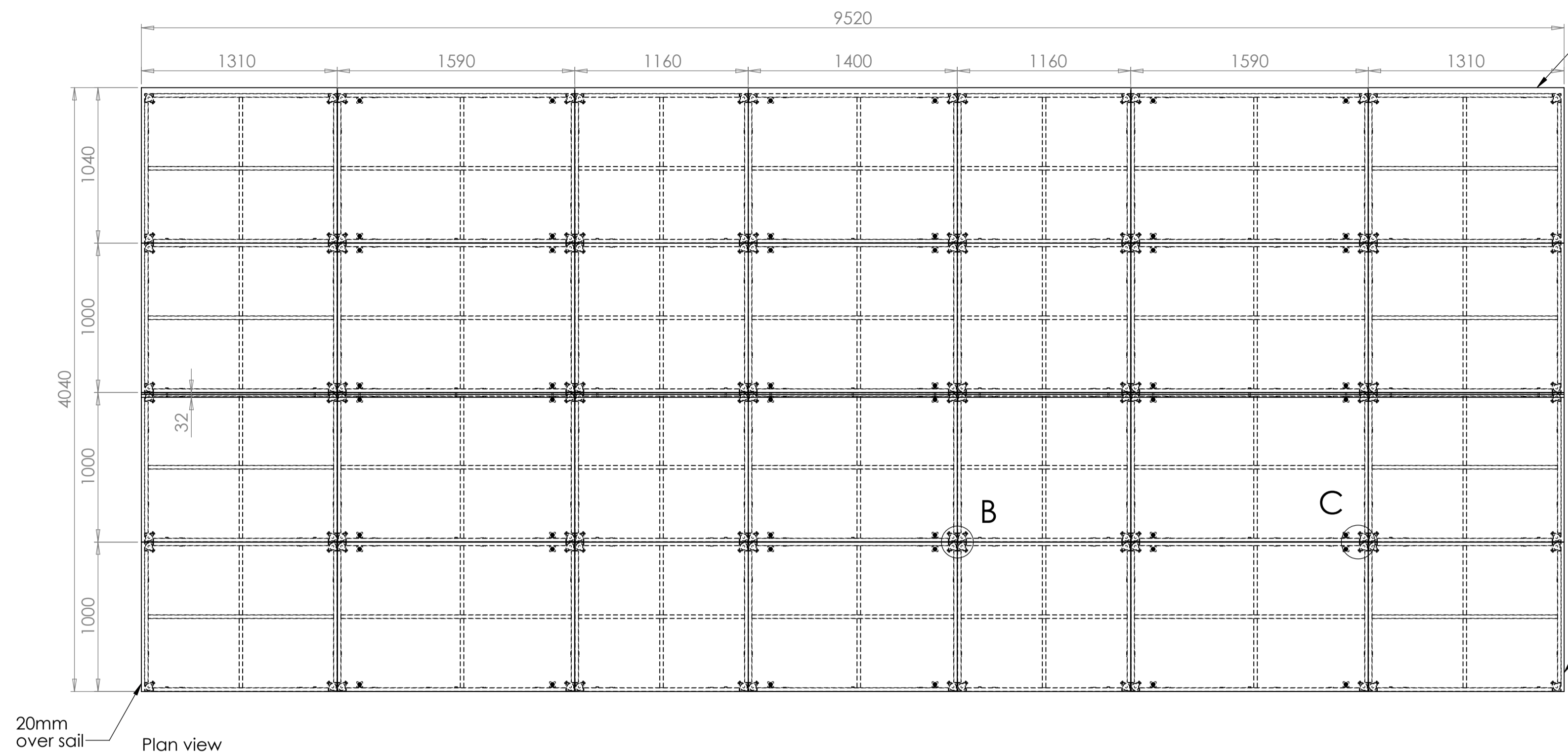
ITEM NO.	Description	QTY.
1	Deck 1	3
2	Deck 1 - US	1
3	Deck 2	6
4	Deck 2 - US	2
5	Deck 3	6
6	Deck 3 - US	2
7	Deck 4 - SR	3
8	Deck 4 - USR	1
9	Deck 4 - SL	3
10	Deck 4 - USL	1
11	Fascia 1	1
12	Fascia 2	2
13	Fascia 3	2
14	Fascia 4 - SR	1
15	Fascia 4 - SL	1
16	Leg 1	84
17	Leg 2	36

**REVISIONS**

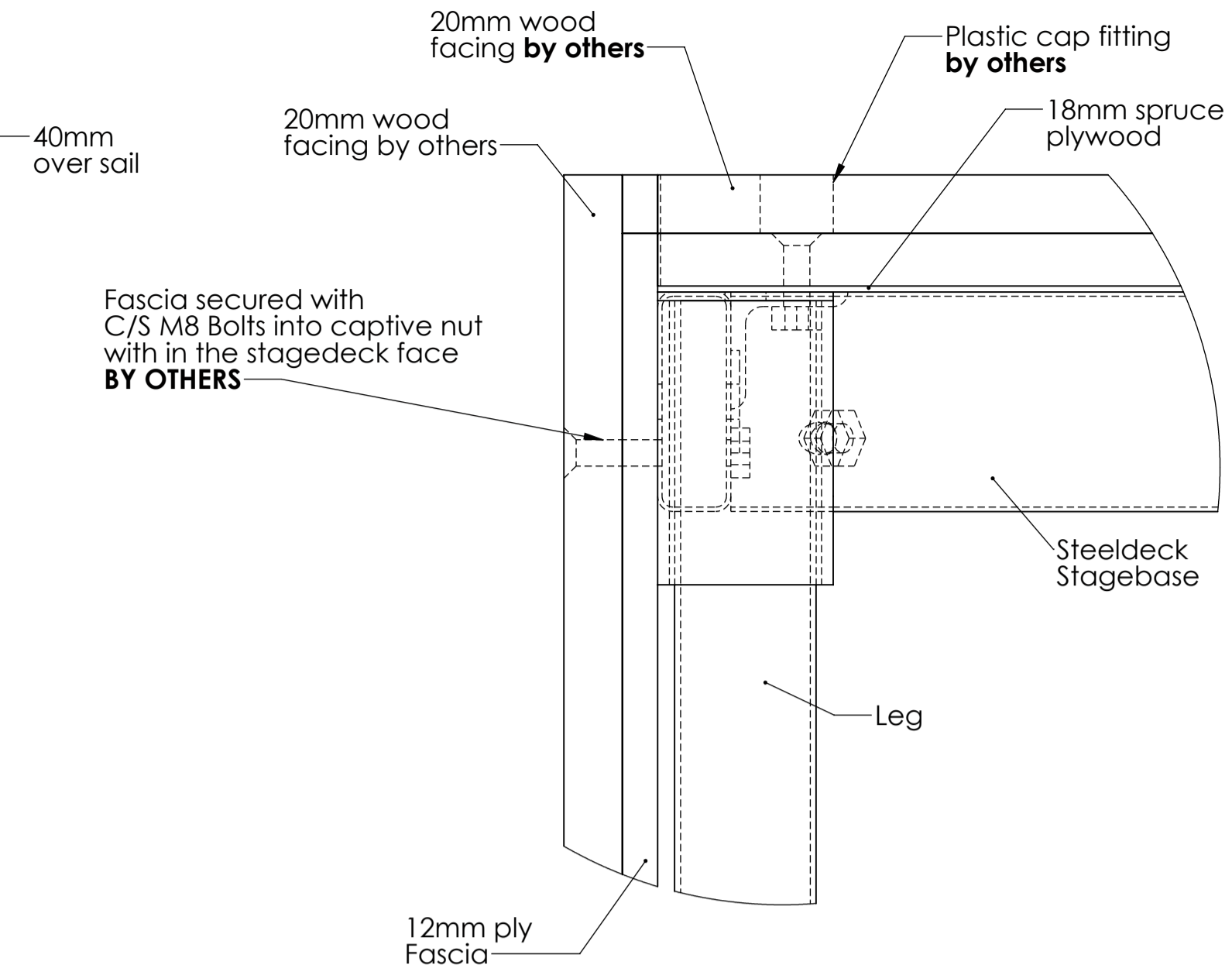
Rev.	Description
A	-
B	-
C	-
D	-

**STEELDECK INDUSTRIES Ltd. 2019**  
 203-207 Manor Road.,  
 Erith, London DA8 2AA U.K.  
 TEL +44 (0)20 8 692 9721

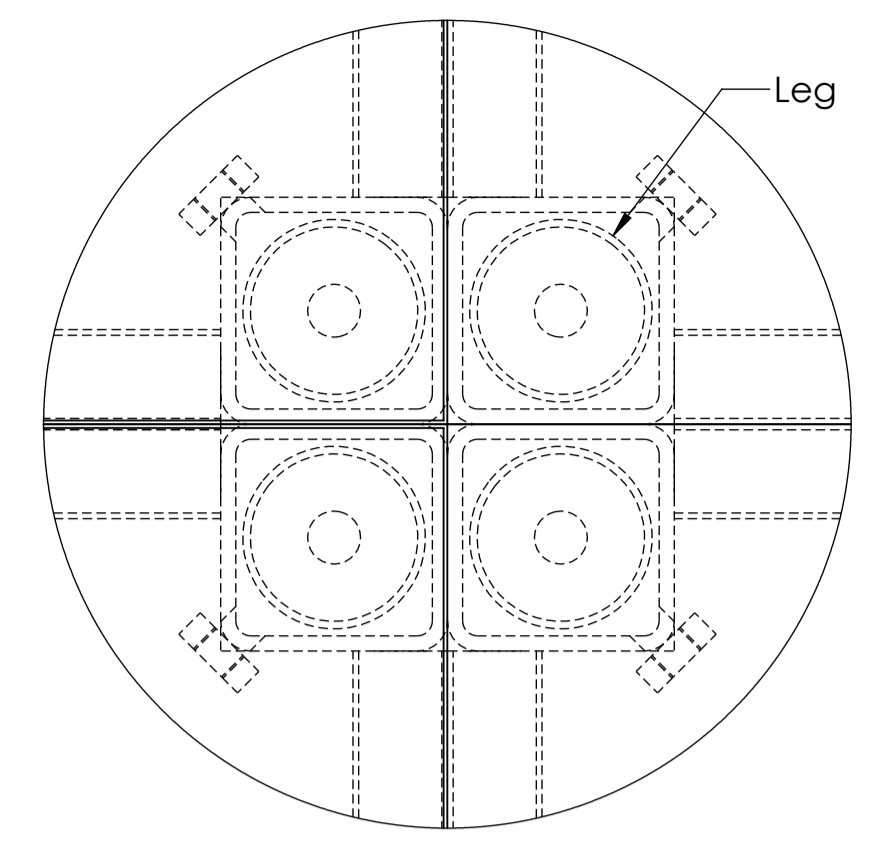
Venue: **Schwarman Centre**  
 Project: **250 Theatre**  
 Drawing: **Three Rows at Stage Level**  
 Drawing No. **e10335-d108** Rev. **J**  
 Scale: **1:25 @ A1** Date: **23/12/2025**  
 Drawn By: **N. LUNDY**



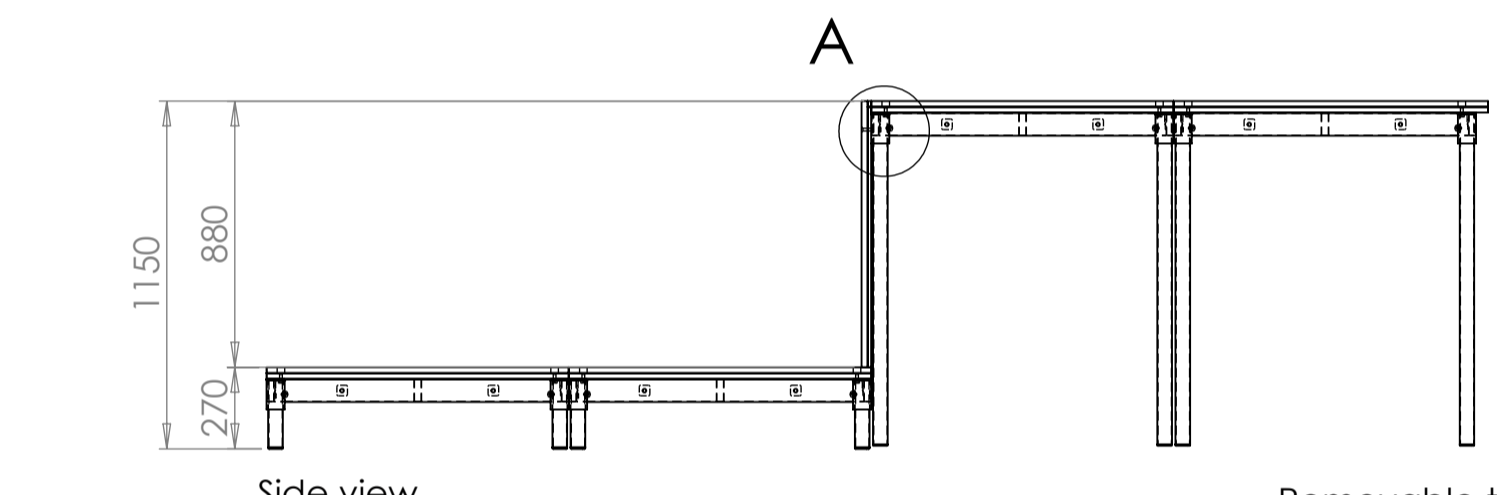
20mm over sail  
Plan view



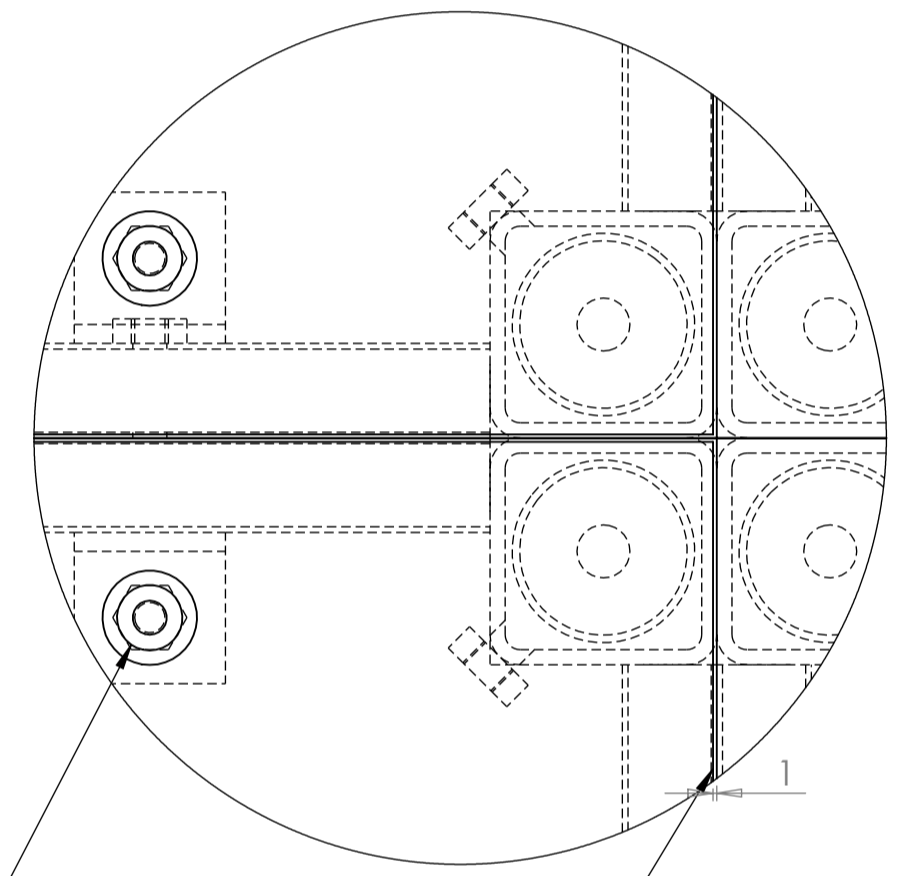
DETAIL A  
SCALE 1 : 2



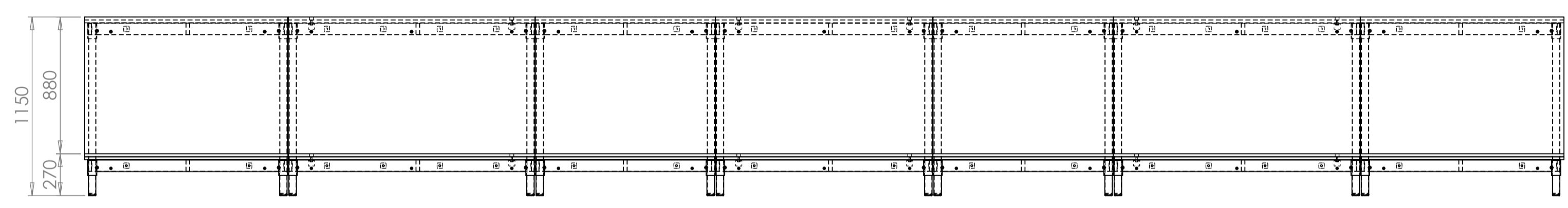
DETAIL B  
SCALE 1 : 2



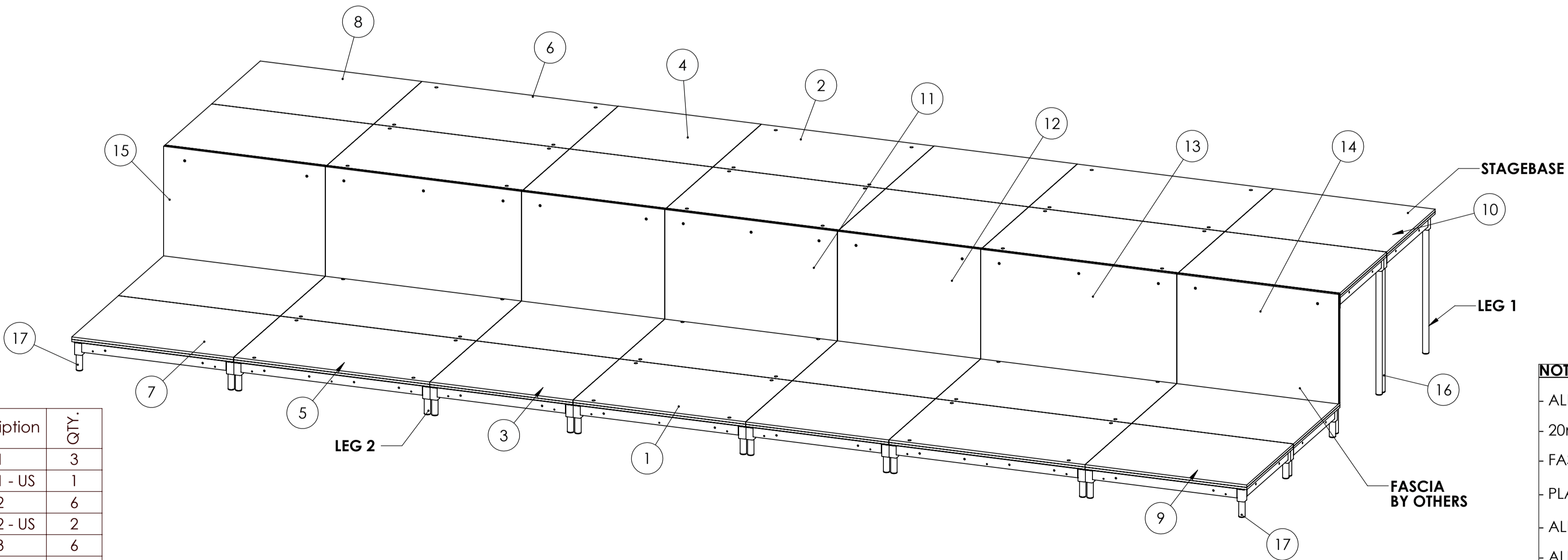
Side view



DETAIL C  
SCALE 1 : 2



Front view



**DECK WEIGHTS - INCLUDING TIMBER FACING**

- DECK 1 FRAME (1400 X1000MM) WEIGHS: 19KG
- DECK 1 REMOVABLE TOP (1398X998MM) WEIGHS: 31KG
- DECK 2(1160 X1000MM) WEIGHS: 44KG
- DECK 3 FRAME(1590 X1000MM) WEIGHS: 21KG
- DECK 3 REMOVABLE TOP (1588X998MM) WEIGHS: 35KG
- DECK 4(1290 X1000MM) WEIGHS: 48KG

**FASCIA WEIGHTS - INCLUDING TIMBER FACING:**

- FASCIA 1(1400X860MM) WEIGHS: 28KG
- FASCIA 2(1160X860MM) WEIGHS: 23KG
- FASCIA 3(1590X860MM) WEIGHS: 31KG
- FASCIA 4(1290X860MM) WEIGHS: 25KG

**NOTES:**

- ALL PLATFORMS ARE STEELDECK STAGEBASE WITH SPRUCE PLY TOPS
- 20mm THICK WOODEN FACING BY OTHERS.
- FASCIA ARE FIXED TO STAGEBASE BY M8 NUTS WELDED TO INSIDE OF FRAME - BY OTHERS
- PLATFORMS WILL BE CONNECTED BY M10 BOLTS AND NUTS.
- ALL FRAMES WILL BE POWDER COATED BLACK
- ALL LEGS WILL BE STANDARD GALVANISED FINISH
- ALL EXPOSED FASTENERS WILL BE BRUSHED STAINLESS STEEL FINISH.
- UDL IS 5KN/M2 AND POINT LOAD WITH 20mm WOOD COVERING IS 3KN OVER 300mm2.
- CLASS 0 ACOUSTIC FOAM APPLIED TO UNDERSIDE OF ALL PLATFORMS.
- ALL LOOSE ITEMS MUST BE STORED IN SUITABLE STORAGE CONTAINERS SO THEY ARE NOT LOST.
- STEELDECK HAVE SURVEYED THE CONCRETE FLOOR WE ARE INSTALLING ONTO AND FOUND IT TO BE FLAT WITH A 3mm TOLERANCE BETWEEN ALL MEASUREMENTS TAKEN AND WOULD PROPOSE TO SIT PLATFORMS ON EXISTING CONCRETE FLOOR WITH NO OTHER LEVELLING DEVICES
- STAGE HEIGHT MEASUREMENTS TO BE CHECKED PRIOR TO MANUFACTURE

ITEM NO.	Description	QTY.
1	Deck 1	3
2	Deck 1 - US	1
3	Deck 2	6
4	Deck 2 - US	2
5	Deck 3	6
6	Deck 3 - US	2
7	Deck 4 - SR	3
8	Deck 4 - USR	1
9	Deck 4 - SL	3
10	Deck 4 - USL	1
11	Fascia 1	1
12	Fascia 2	2
13	Fascia 3	2
14	Fascia 4 - SL	1
15	Fascia 4 - SR	1
16	Leg 1	56
17	Leg 2	56

**REVISIONS**

Rev.	Description
A	-
B	-
C	-
D	-

**STEELDECK**  
© STEELDECK INDUSTRIES Ltd. 2019  
203-207 Manor Road.,  
Erith, London DA8 2AA U.K.  
TEL +44 (0)20 8 692 9721

Venue  
**Schwarman Centre**

Project  
**250 Theatre**

Drawing  
**Two Rows at Stage Level**

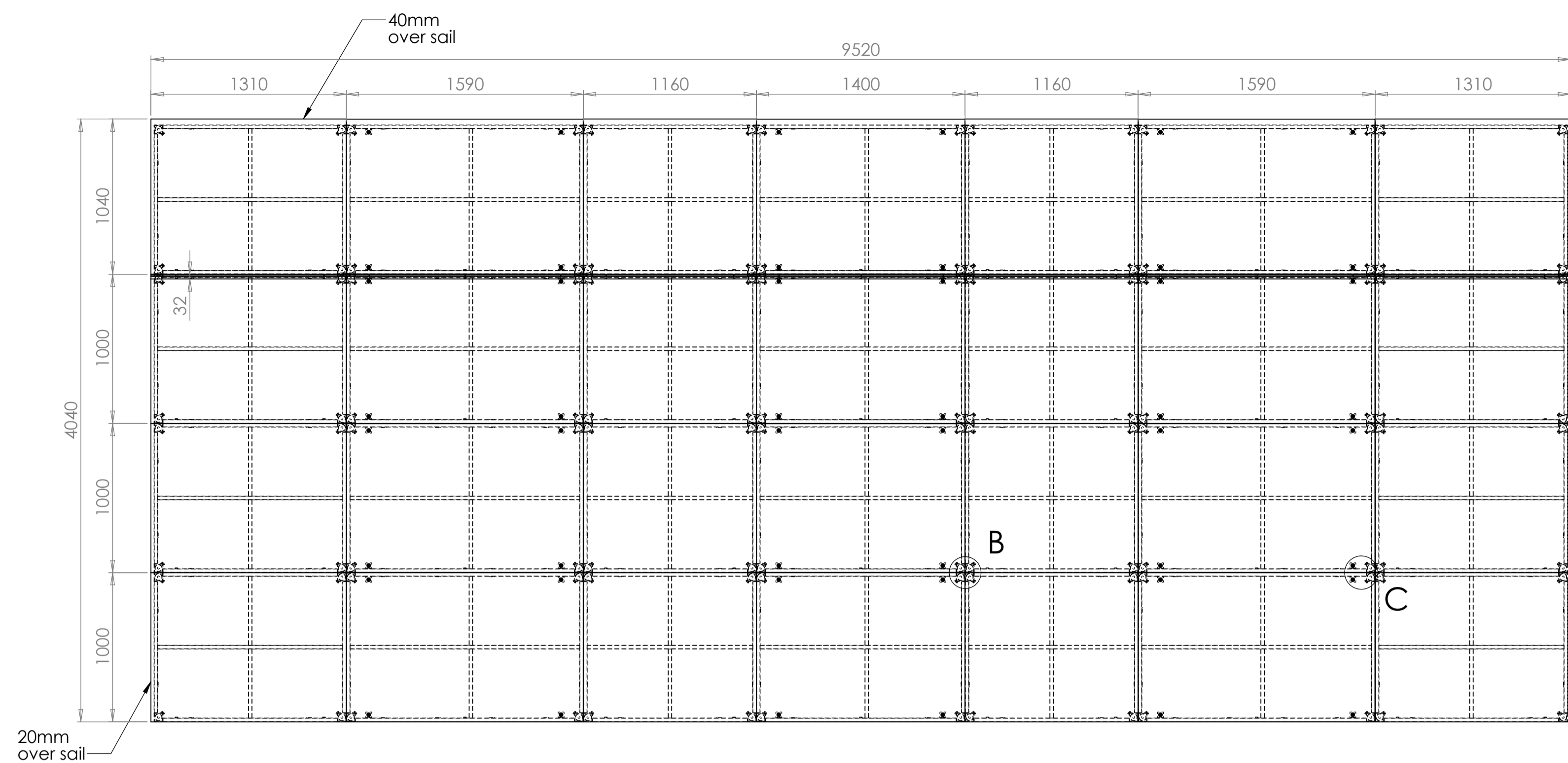
Drawing No.  
**e10335-d109**

Scale  
**1:25 @ A1**

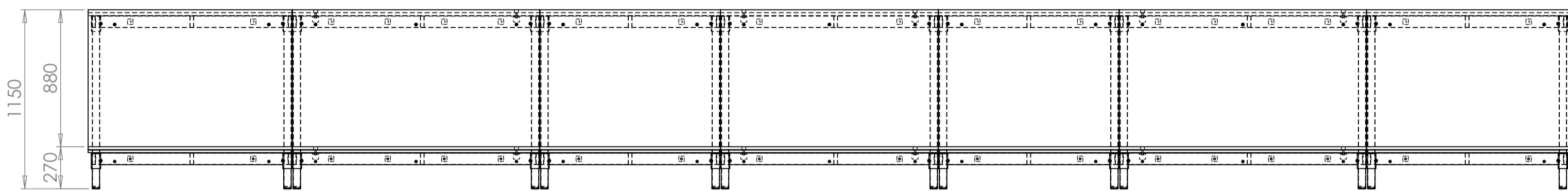
Date  
**23/12/2025**

Rev.  
**J**

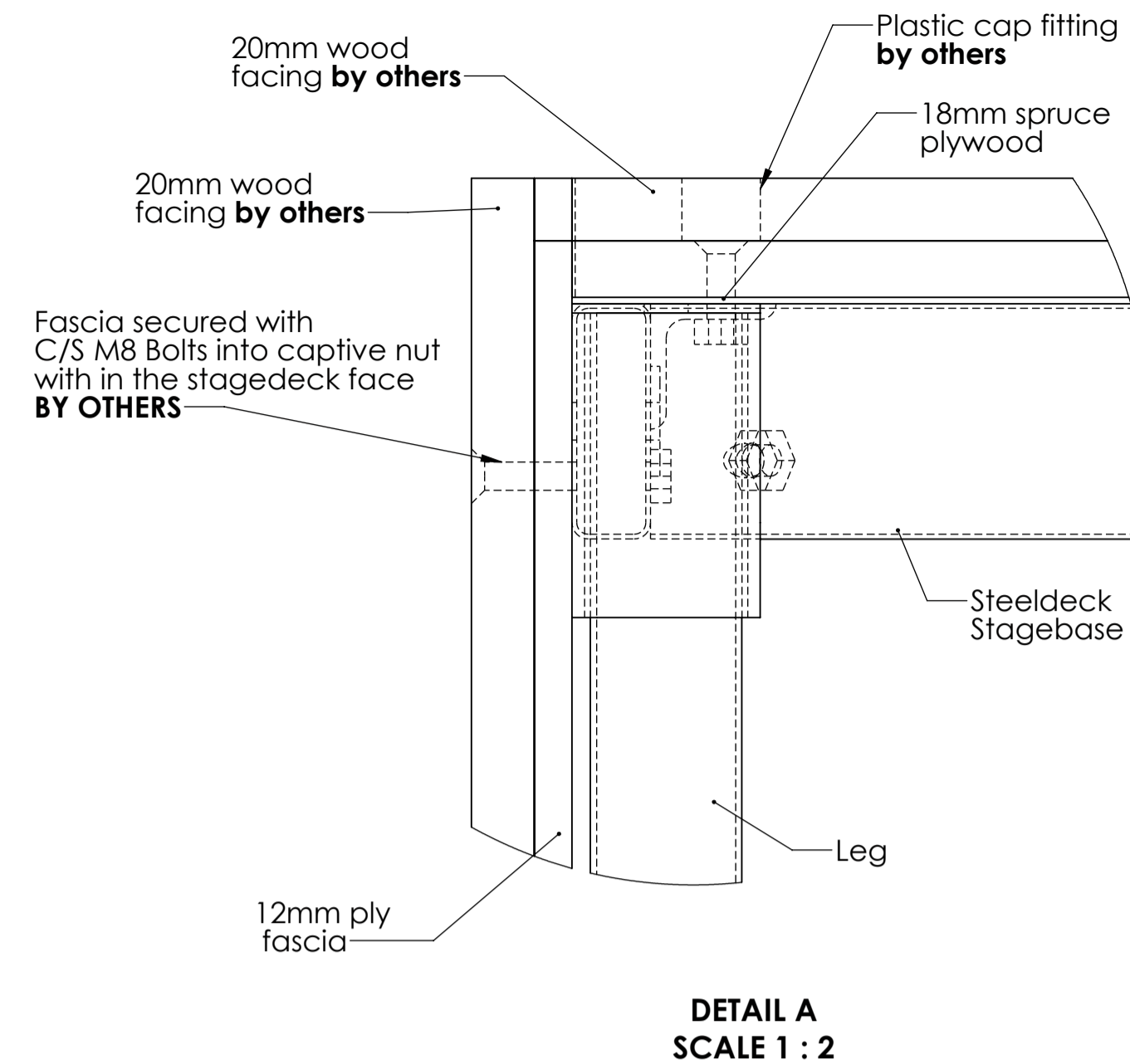
Drawn By  
**N. LUNDY**



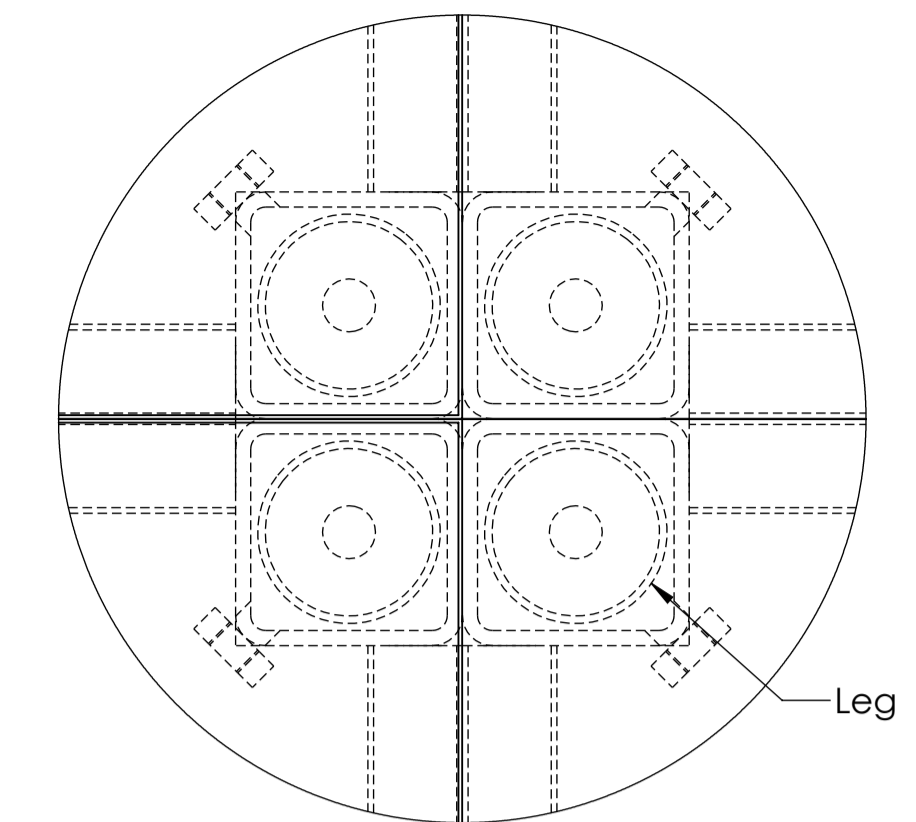
Plan view



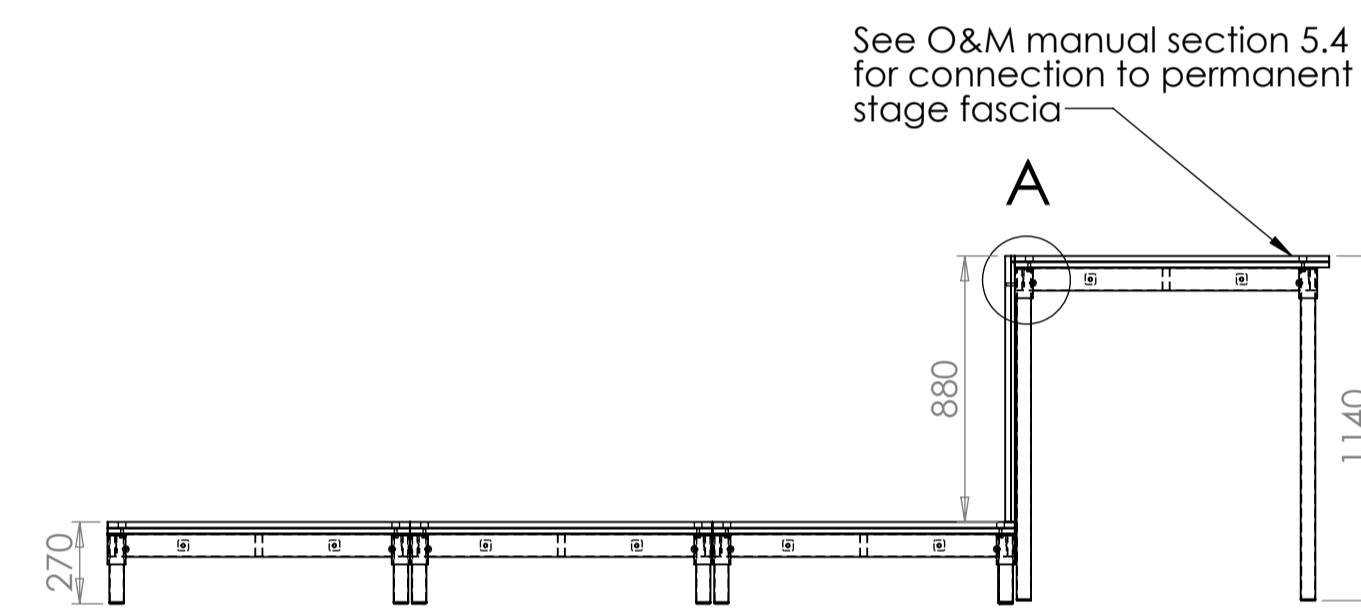
Front view



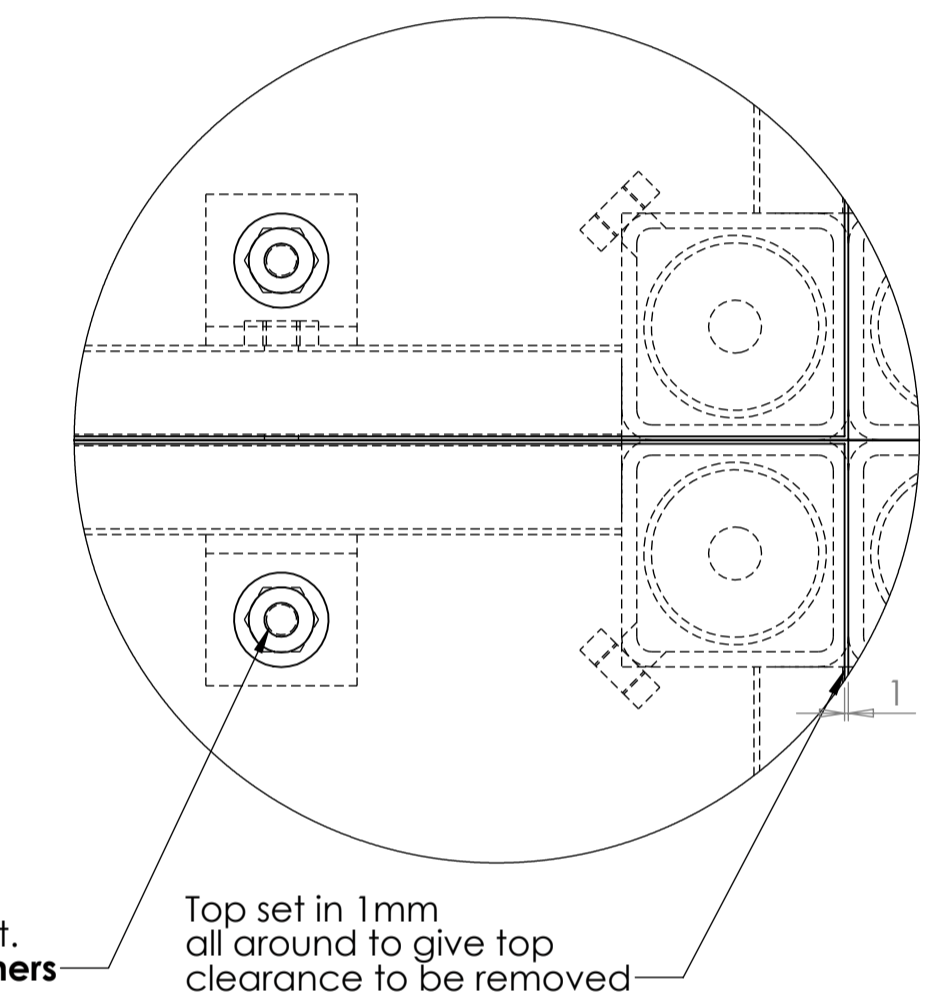
DETAIL A  
SCALE 1 : 2



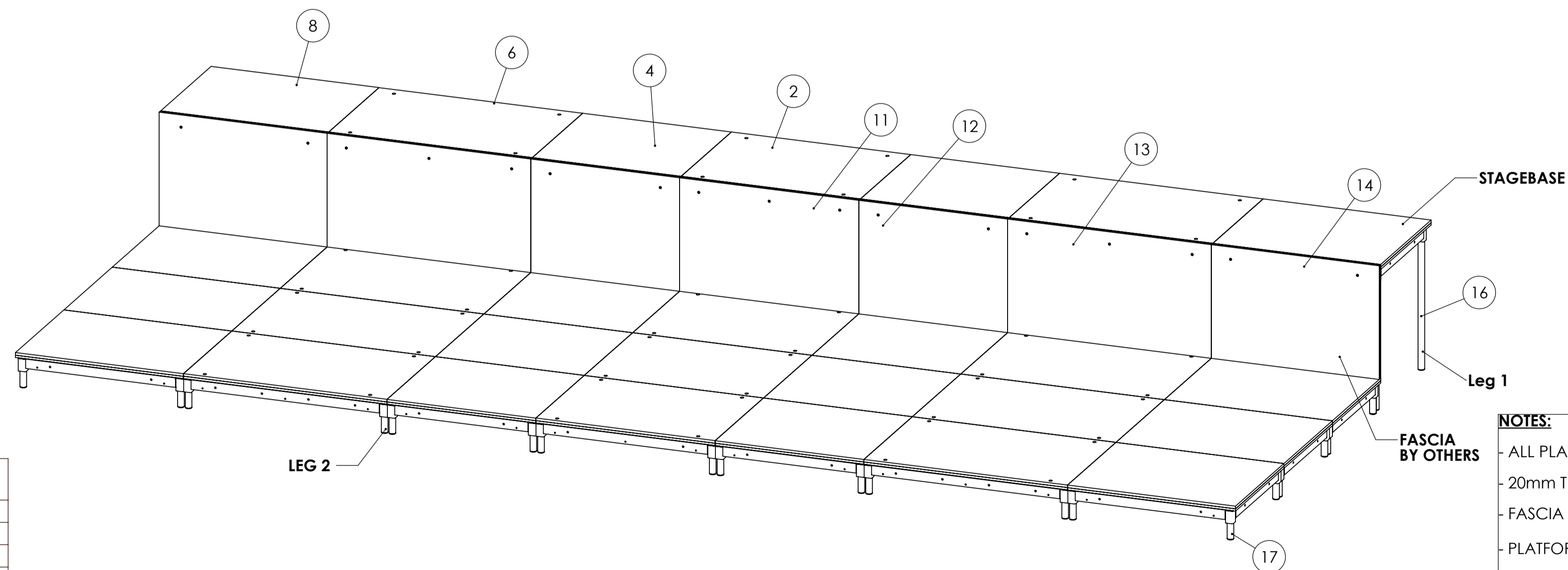
DETAIL B  
SCALE 1 : 2



Side view



DETAIL C  
SCALE 1 : 2



**DECK WEIGHTS - INCLUDING TIMBER FACING**

- DECK 1 FRAME (1400 X1000MM) WEIGHS: 19KG
- DECK 1 REMOVABLE TOP (1398X998MM) WEIGHS: 31KG
- DECK 2(1160 X1000MM) WEIGHS: 44KG
- DECK 3 FRAME(1590 X1000MM) WEIGHS: 21KG
- DECK 3 REMOVABLE TOP (1588X998MM) WEIGHS: 35KG
- DECK 4(1290 X1000MM) WEIGHS: 48KG

**FASCIA WEIGHTS - INCLUDING TIMBER FACING:**

- FASCIA 1(1400X860MM) WEIGHS: 28KG
- FASCIA 2(1160X860MM) WEIGHS: 23KG
- FASCIA 3(1590X860MM) WEIGHS: 31KG
- FASCIA 4(1290X860MM) WEIGHS: 25KG

**NOTES:**

- ALL PLATFORMS ARE STEELDECK STAGEBASE WITH SPRUCE PLY TOPS
- 20mm THICK WOODEN FACING BY OTHERS.
- FASCIA ARE FIXED TO STAGEBASE BY M8 NUTS WELDED TO INSIDE OF FRAME - BY OTHERS
- PLATFORMS WILL BE CONNECTED BY M10 BOLTS AND NUTS.
- ALL FRAMES WILL BE POWDER COATED BLACK
- ALL LEGS WILL BE STANDARD GALVANISED FINISH
- ALL EXPOSED FASTENERS WILL BE BRUSHED STAINLESS STEEL FINISH.
- UDL IS 5KN/M2 AND POINT LOAD WITH 20mm WOOD COVERING IS 3KN OVER 300mm2.
- CLASS 0 ACOUSTIC FOAM APPLIED TO UNDERSIDE OF ALL PLATFORMS.
- ALL LOOSE ITEMS MUST BE STORED IN SUITABLE STORAGE CONTAINERS SO THEY ARE NOT LOST.
- STEELDECK HAVE SURVEYED THE CONCRETE FLOOR WE ARE INSTALLING ONTO AND FOUND IT TO BE FLAT WITH A 3mm TOLERANCE BETWEEN ALL MEASUREMENTS TAKEN AND WOULD PROPOSE TO SIT PLATFORMS ON EXISTING CONCRETE FLOOR WITH NO OTHER LEVELLING DEVICES
- STAGE HEIGHT MEASUREMENTS TO BE CHECKED PRIOR TO MANUFACTURE

ITEM NO.	Description	QTY.
1	Deck 1	3
2	Deck 1 - US	1
3	Deck 2	6
4	Deck 2 - US	2
5	Deck 3	6
6	Deck 3 - US	2
7	Deck 4 - SR	3
8	Deck 4 - USR	1
9	Deck 4 - SL	3
10	Deck 4 - USL	1
11	Fascia 1	1
12	Fascia 2	2
13	Fascia 3	2
14	Fascia 4 - SL	1
15	Fascia 4 - SR	1
16	Leg 1	28
17	Leg 2	92

**REVISIONS**

Rev.	Description
A	
B	
C	
D	



© STEELDECK INDUSTRIES Ltd. 2019  
203-207 Manor Road.,  
Erith, London DA8 2AA U.K.  
TEL +44 (0)20 8 692 9721

Venue **Schwarman Centre**

Project **250 Theatre**

Drawing **One Row at Stage Level**

Drawing No. **e10335-d110** Rev. **J**

Scale **1:25 @ A1** Date **23/12/2025**

Drawn By **N. LUNDY**

# PYROSORB-S-GC1

## PYROSORB-S class 'O' acoustic foam faced with heavy duty woven glass cloth. Facing colour - natural

**PRODUCT FROMAT:** Sheet material. Standard sheet size. 2000 x 1220 mm.  
**Standard Thickness':** 6, 10, 12, 15, 20, 25 mm.  
Others available on request.

### PROPERTIES:

#### Foam

Thermal conductivity @ 5 C  
0.0545 W/mK (BS874 part 2 1986)  
See **PYROSORB-S** Brochure.  
Absorption co-efficients as per unfaced foam.

#### Facing

Facing is acoustically transparent.  
Base fabric Loomstate fibreglass.  
Weight - 200gsm.

### FIRE RATING:

**BS4735:** 1971 - Self Extinguishing  
FMVSS302 - Self Extinguishing  
BS476 Part 7 - Class 1  
BS476 Part 6 -  $I_1 < 12, i_2 < 6$   
BS476 Part 4 - Non combustible  
Moisture Resistant  
High Chemical Resistance  
Electrical Insulator  
**Working Temperature Range:**  
-10°C - +450°C

### TEMPERATURE RANGE:

-40 to +70°C (Continuous)

### USAGE:

- (a) Thermal barrier in air conditioning equipment.
- (b) Acoustic lining in engine covers.

**PRODUCT OPTION:** PYROSORB-S-GC1-AD (self-adhesive)

REF: C1502965 PSGC1

**PYROSORB-E**, is open celled acoustic/thermal impregnated polyurethane foam. **PYROSORB** was originally developed as safety critical foam, **PYROSORB-E** has been developed to meet the European Harmonized Flammability test. Acoustic performance is good and absorption coefficients are typical for a cellular material, but unusually high deadening performance is attributable to the high density of approximately 100 kgm<sup>3</sup>. The high mass helps to reduce vibration in metal enclosures hence drumming and noise breakout.

## PYROSORB-E

### FLAMMABILITY PROPERTIES

METHOD	RESULT
BS 476 Part 5	Non-Ignition
BS 476 Part 6	$I \leq 12, I_1 \leq 6$
BS 476 Part 7	Class "1"
BS 476 P6 & P7 Building Regulations	Class "O"
BS EN ISO 4589-3	No ignition, tested at 240°C, 300°C, 360°C and 380°C
UL94	V-0, 94-5V
BS6853:1987 App. B.5.3	$A_{0(max)} < 5$
NES 713	<3.0
EN 13501-1:2007 + A1:2009	B-s2, d0
EN ISO 11925-2 and EN13823	



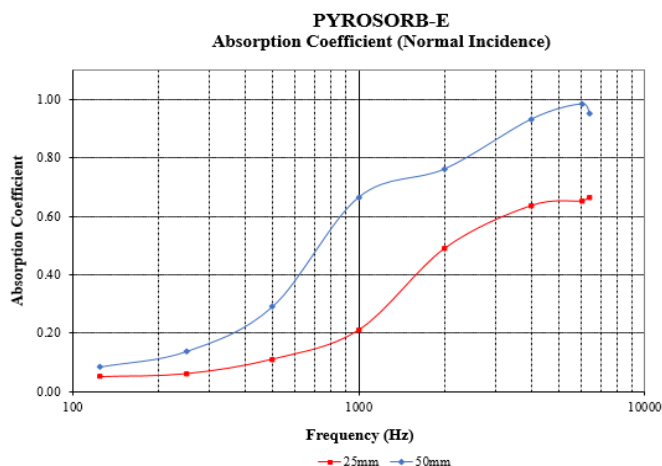
### PHYSICAL PROPERTIES

METHOD	RESULT
Density (Kg/m <sup>3</sup> )	>100
Hardness (N)	160 – 200
Tensile Strength (Kpa)	>70
Elongation at Break (%)	>90%
Thermal Conductivity (W/mK)	0.048 – 0.051
Erosion Resistance	6000 ft/min
Working Temperature (°C)	-40 - ~+110
CFC Free	Yes



### ACOUSTIC PERFORMANCE OF PYROSORB-E

ASTM and BS EN 20354 (previously BS3638: 1963) are both standard tests for measuring absorption coefficients. ASTM C384 is a laboratory scale test measuring normal incidence coefficients. Both methods give an indication of the potential performance of the material under the test. Whilst the latter reverberation room method may prove more relevant in most practical situations, neither test can predict overall performance in a real application.



## VITEC IMPREGNATION

### TYPICAL PRODUCT COMPOSITION

#### PYROSORB-S CLASS “O” ACOUSTIC FOAM

DESCRIPTION	PERCENTAGE BY WEIGHT
Polyurethane Foam	20.0
Alumina Trihydrate( $Al_2O_3 \cdot 5H_2O$ )	70.8
Acrylic Latex	7.1
Octyl Phenol	<0.1
Carbon Black	1.4
Surfactant(**)	<0.1
Thickener	0.4
Antioxidant(*)	<0.1

(\*) is Butlyated Para Cresol

(\*\*) is Dioctyl Sodium Sulphosuccinate – which has 5% by weight of sulphur meaning that the formulation could in theory contain 0.005% by weight of sulphur.

Doc. Ref. C3006981 Chemical Composition PYR-S



DELIBERATELY LEFT BLANK

