

# Technical Report

Title: Impact testing of Barracuda Brick Slip System (Un-Mortared)

Report No: N950-24-18684



# Technical Report

**Title:** Impact Testing of Barracuda Brick Slip System (Un-Mortared).

**Customer:** James & Taylor Ltd,  
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**Issue date:** 4 March 2024

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*N. McDonald*

**Authorised by:** S. R. Moxon – Operations Director

*S. R. Moxon*

**Distribution:** 1 copy to James & Taylor  
(confidential) 1 copy to project file

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## **CONTENTS**

1	INTRODUCTION.....	4
2	SUMMARY AND CLASSIFICATION OF TEST RESULTS .....	5
3	IMPACT CLASSES .....	6
4	DESCRIPTION OF TEST SAMPLE.....	7
5	TEST EQUIPMENT .....	10
6	TEST PROCEDURE .....	11
7	TEST RESULTS .....	12
8	APPENDIX - DRAWINGS .....	26

## 1 INTRODUCTION

This certificate of test describes impact tests carried out at the request of James & Taylor Ltd. on 12<sup>th</sup> September 2023 at VINCI Technology Centre, Leighton Buzzard.

The test was carried out in accordance with CWCT TN75/76.

The test was witnessed by:

John Champion - James & Taylor Ltd.

This test report relates only to the actual sample as tested and described herein.

The results are valid only for sample(s) tested and the conditions under which the tests were conducted.

The long-term durability of the façade system is not assessed by these test methods.

VINCI Technology Centre UK Limited is accredited to ISO/IEC 17025:2017 by the United Kingdom Accreditation Service as UKAS Testing Laboratory No. 0057 for a schedule of tests. Tests listed above and marked with an asterisk are not on our schedule.

VINCI Technology Centre UK Limited is Approved Body No. 1766.

VINCI Technology Centre UK Limited is certified by BSI for:

- ISO 9001 Quality Management System,
- ISO 14001 Environmental Management System,
- ISO 45001 Occupational Health and Safety Management System.

## 2 SUMMARY AND CLASSIFICATION OF TEST RESULTS

Impact testing has been carried out for safety impacts only, serviceability impacts have not been carried out.

### Soft body impacts

500 J Safety
Negligible risk

### Hard body impacts

10 J Safety
Low Risk

### 3 IMPACT CLASSES

**Note:** Tables 1 is taken from CWCT TN76.

**Table 1 - Classes for safety performance**

<b>Class</b>	<b>Explanation/examples</b>
Negligible risk	No material dislodged during test, and No damage likely to lead to materials falling subsequent to test, and No sharp edges produced that would be likely to cause severe injury to a person during impact, and Cladding not penetrated by impactor.
Low risk	Maximum mass of falling particle 50 g, and Maximum mass of particle that may fall subsequent to impact 50 g, and No sharp edges produced that would be likely to cause severe injury during impact.
Moderate risk	Maximum mass of falling particle less than 500 g, and Maximum mass of particle that may fall subsequent to impact less than 500 g, and Cladding not penetrated by impact, and No sharp edges produced that would be likely to cause severe injury during impact.
High risk	Maximum mass of falling particle greater than 500 g, or Cladding penetrated by impact, or Sharp edges produced that would be likely to cause severe injury during impact.



## 4 DESCRIPTION OF TEST SAMPLE

The sample was mounted to a solid steel frame which was fixed to a concrete slab as shown in the photograph below.

PHOTO IMG-5655



TEST SAMPLE

PHOTO IMG-5358



SUPPORT BRACKET



PHOTO IMG\_5352



CLOSE UP OF BRICK SLIPS

## **5 TEST EQUIPMENT**

The soft body impactor comprised a canvas spherical/conical bag 400 mm in diameter filled with 3 mm diameter glass spheres with a total mass of 50 kg suspended from a cord at least 3 m long.

The hard body impactor was solid steel ball of 62.5 mm diameter and mass of 1.0 kg.

## **6 TEST PROCEDURE**

### **6.1 SOFT BODY**

The impactor almost touched the face of the sample when at rest. It was swung in a pendular movement to hit the sample normal to its face.

The test was performed at the locations shown in Figure 1.

The impact energies were 500 J for safety.

### **6.2 HARD BODY**

The impactor almost touched the face of the sample when at rest. It was swung in a pendular movement to hit the sample normal to its face.

The test was performed at the locations shown in Figure 2.

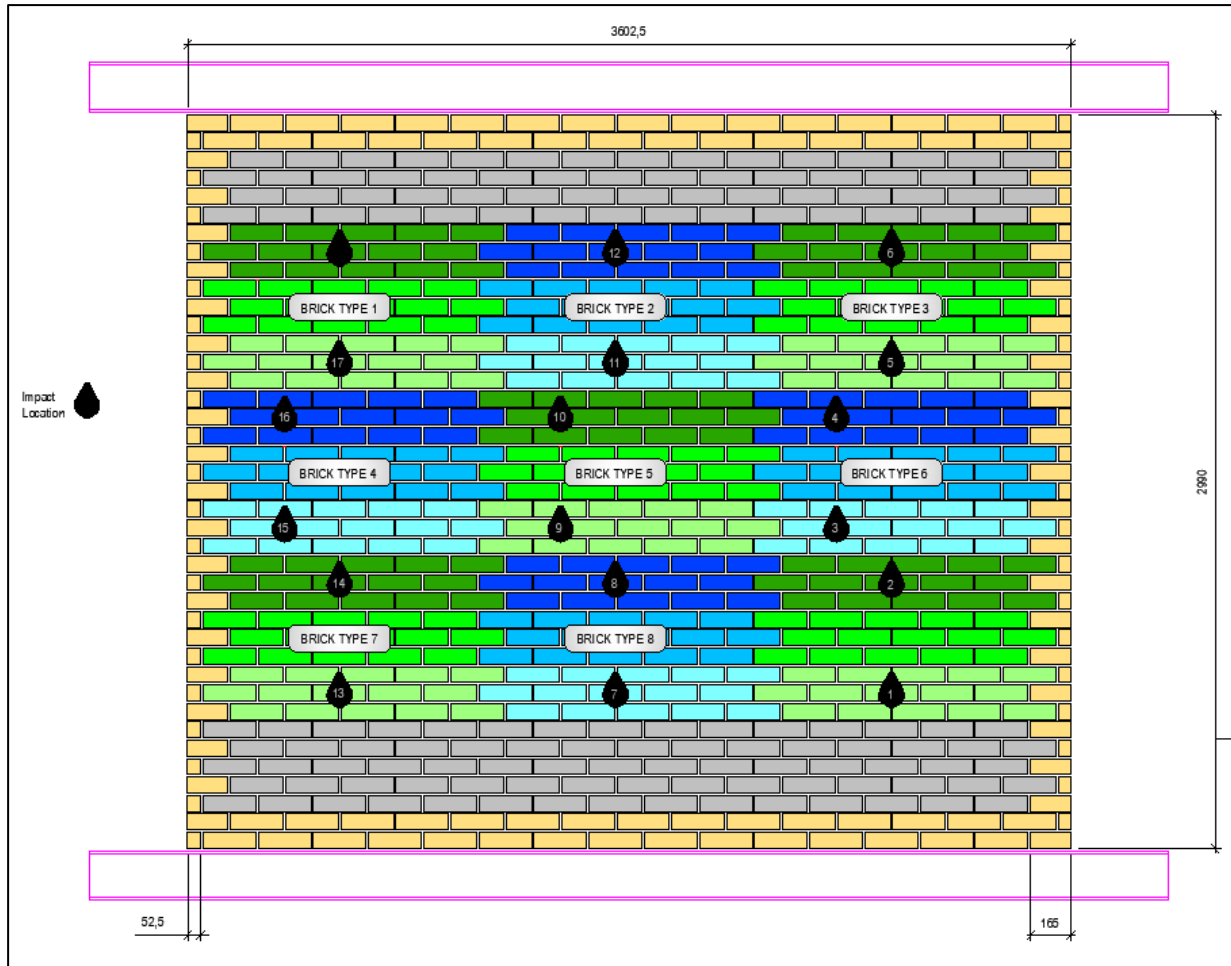
The impact energies were 10 J.

## 7 TEST RESULTS

**Test Date:** 14<sup>th</sup> September 2023

Ambient temperature = 20 °C

FIGURE 1



SOFT BODY IMPACT LOCATIONS

TABLE 3

SOFT BODY IMPACT TEST RESULTS

Location	Impact energy (J)	Observations	Classification
1	500	No damage observed	Negligible risk
2	500	No damage observed	Negligible risk
3	500	No damage observed	Negligible risk
4	500	No damage observed	Negligible risk
5	500	No damage observed	Negligible risk
6	500	No damage observed	Negligible risk
7	500	No damage observed	Negligible risk
8	500	No damage observed	Negligible risk
9	500	No damage observed	Negligible risk
10	500	No damage observed	Negligible risk
11	500	No damage observed	Negligible risk
12	500	No damage observed	Negligible risk
13	500	No damage observed	Negligible risk
14	500	No damage observed	Negligible risk
15	500	No damage observed	Negligible risk
16	500	No damage observed	Negligible risk
17	500	No damage observed	Negligible risk
18	500	No damage observed	Negligible risk



Figure 1 is a schematic diagram of the impact test specimen. The specimen is a rectangular brick wall with a width of 3602,5 mm and a height of 2090 mm. The wall is composed of various brick types, labeled BRICK TYPE 1 through BRICK TYPE 8. The bricks are arranged in a pattern that includes horizontal and vertical courses of different colors (yellow, grey, green, blue, light blue, and orange). The impact location is marked by a black dot on the left side of the wall. The impact energy is 165 J, and the impact velocity is 52,5 m/s. The diagram also shows the impact direction, indicated by a black arrow pointing towards the wall.

Page 14 of 26

TABLE 4  
HARD BODY IMPACT TEST RESULTS

Location	Impact energy (J)	Observations	Classification
1	10	Crack through full height of tile	Low risk
2	10	Crack through full height of tile	Low risk
3	10	Crack through full height of tile. Small chip to corner of brick	Low risk
4	10	Minor indent	Negligible risk
5	10	Crack through full height of tile	Low risk
6	10	Crack through full height of tile	Low risk
7	10	Crack through full height of tile	Low risk
8	10	Crack through full height of tile. Small chip to corner of brick (4 g)	Low risk
9	10	Crack through full height of tile	Low risk
10	10	Minor indent	Negligible risk
11	10	Crack through full height of tile	Low risk
12	10	Crack through full height of tile	Low risk
13	10	Crack through full height of tile	Low risk
14	10	Crack through full height of tile	Low risk
15	10	Crack through full height of tile	Low risk
16	10	Crack through full height of tile	Low risk
17	10	Crack through full height of tile. Small chip to corner of brick	Low risk
18	10	Crack through full height of tile. Small chip to corner of brick (4 g)	Low risk

PHOTO IMG\_9288



SOFT BODY IMPACTOR

PHOTO IMG\_9311



HARD BODY IMPACTOR



PHOTO IMG\_9310



IMPACT LOCATION 1

PHOTO IMG\_9312



IMPACT LOCATION 2



PHOTO IMG\_9314



IMPACT LOCATION 3

PHOTO IMG\_9316



IMPACT LOCATION 5



PHOTO IMG\_9319



IMPACT LOCATION 6

PHOTO 9321



IMPACT LOCATION 7



PHOTO IMG\_9323



IMPACT LOCATION 8

PHOTO IMG\_9325



IMPACT LOCATION 9

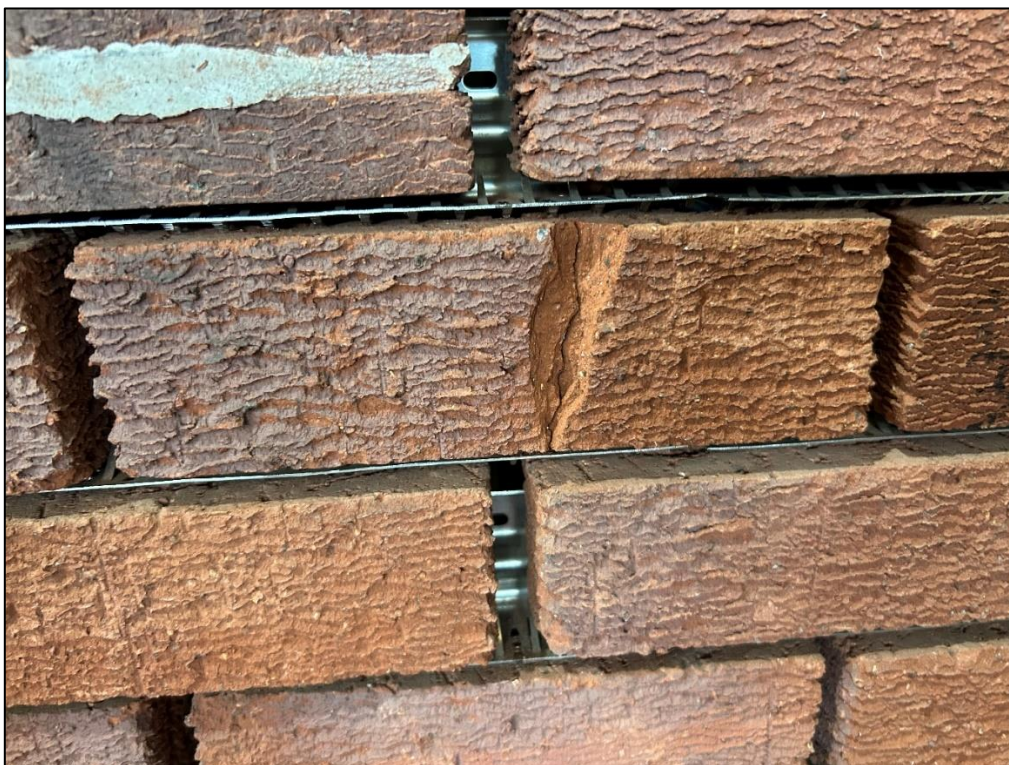


PHOTO IMG\_9329



IMPACT LOCATION 9

PHOTO IMG\_9331



IMPACT LOCATION 11



PHOTO IMG\_9336



IMPACT LOCATION 12

PHOTO IMG\_9338



IMPACT LOCATION 13



PHOTO IMG\_9340



IMPACT LOCATION 14

PHOTO IMG\_9342



IMPACT LOCATION 15



PHOTO IMG\_9344



IMPACT LOCATION 16

PHOTO IMG\_9349



IMPACT LOCATION 17

PHOTO IMG\_9354



IMPACT LOCATION 18

## **8 APPENDIX - DRAWINGS**

The following 4 unnumbered pages are copies of James & Taylor Limited drawings numbered:

- BSS-TRB-GA-001
- BSS-TRB-GA-002
- BSS-TRB-GA-003
- BSS-TRA-T1

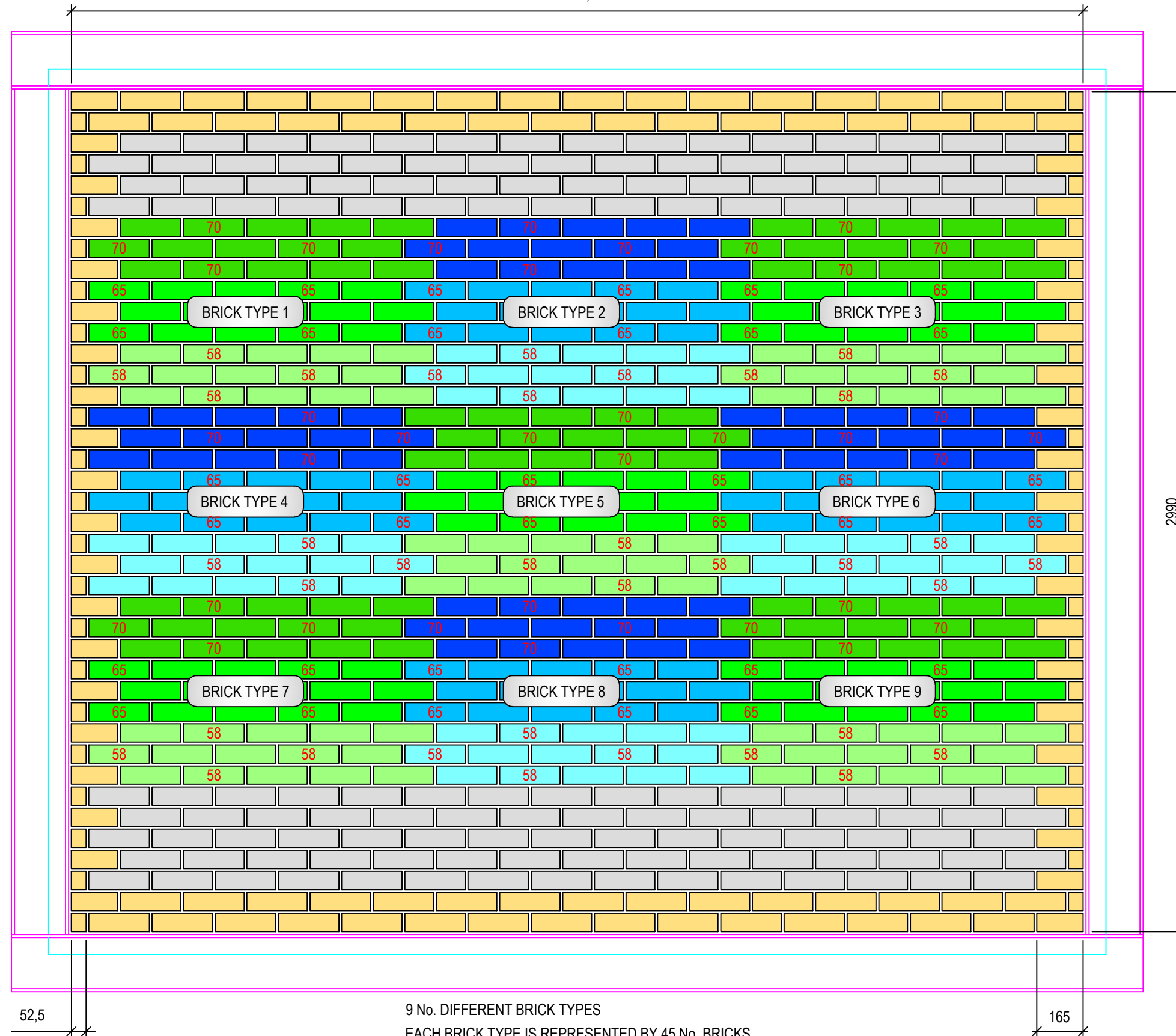
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END OF REPORT



# TEST RIG TYPE A - TEST 1 [UNMORTARED BRICK PULL]

3602,5



9 No. DIFFERENT BRICK TYPES  
EACH BRICK TYPE IS REPRESENTED BY 45 No. BRICKS  
MEDIAN HEIGHT BRICKS = 15 No.  
SMALL BRICKS = 4 No. 58mm HIGH AND 11 No. MEDIAN HEIGHT [26.66%]  
LARGE BRICKS = 4 No. 70mm HIGH AND 11 No. MEDIAN HEIGHT [26.66%]





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T. 020 8942 3688 F. 020 8336 2036 E. info@jamesandtaylor.co.uk  
www.jamesandtaylor.co.uk

## GENERAL NOTES:

DO NOT SCALE FROM THIS DRAWING.

THIS DRAWING IS TO BE READ IN CONJUNCTION  
WITH ALL RELEVANT JAMES & TAYLOR,  
ARCHITECT'S AND ENGINEER'S DRAWINGS.

 = BLOCKLEY WINDERMERE GREY SOLID  
215mm LONG 'STANDARD' SLIPS = 135 No.

 = WIENERBERGER STAFFORDSHIRE  
SMOOTH CREAM

215mm LONG 'STANDARD' SLIPS = 30 No.

165mm LONG 'STANDARD' SLIPS = 38 No.

52mm LONG 'STANDARD' SLIPS = 38 No.

215mm LONG SLIPS WITH 'TOP' REBATE = 15 No.

215mm LONG SLIPS WITH 'BOTTOM' REBATE = 15 No.

165mm LONG SLIPS WITH 'TOP' REBATE = 1 No.

165mm LONG SLIPS WITH 'BOTTOM' REBATE = 1 No.

52mm LONG SLIPS WITH 'TOP' REBATE = 1 No.

52mm LONG SLIPS WITH 'BOTTOM' REBATE = 1 No.

REVISIONS: \_\_\_\_\_ DATE: \_\_\_\_\_

CLIENT:  
**JAMES & TAYLOR LTD**

PROJECT:  
**BRICK SLIP SYSTEM**

TITLE:  
**TEST RIG TYPE A - TEST 1  
UNMORTARED BRICK PULL**

DATE:  
**04/12/2021**

DRAWN BY: **JSC** CHECKED BY: **JSC**

SCALE: **1:16** PLOT SIZE: **A3**

DRAWING NUMBER: **BSS-TRA-T1** REVISION: \_\_\_\_\_

PLOT DATE: **December 5, 2021 5:38 PM** © James & Taylor Ltd - 2009

TEST RIG TYPE B  
STEEL FRAMING (TO BE PROVIDED BY TECHNOLOGY CENTRE)



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STEEL FRAMING REQUIREMENT

203x203x46 UC (AS DRAWN)  
60x60x6 RSA (AS DRAWN)

REVISIONS:	DATE:
CLIENT:	
JAMES & TAYLOR LTD	
PROJECT:	
BRICK SLIP SYSTEM	
TITLE:	
TEST RIG TYPE B GENERAL ARRANGEMENT	
DATE:	
03/12/2021	
DRAWN BY:	CHECKED BY:
JSC	JSC
SCALE:	PLOT SIZE:
1:16	A3
DRAWING NUMBER:	REVISION:
BSS-TRB-GA-001	
PLOT DATE:	
December 5, 2021	5:40 PM
© James & Taylor Ltd - 2009	

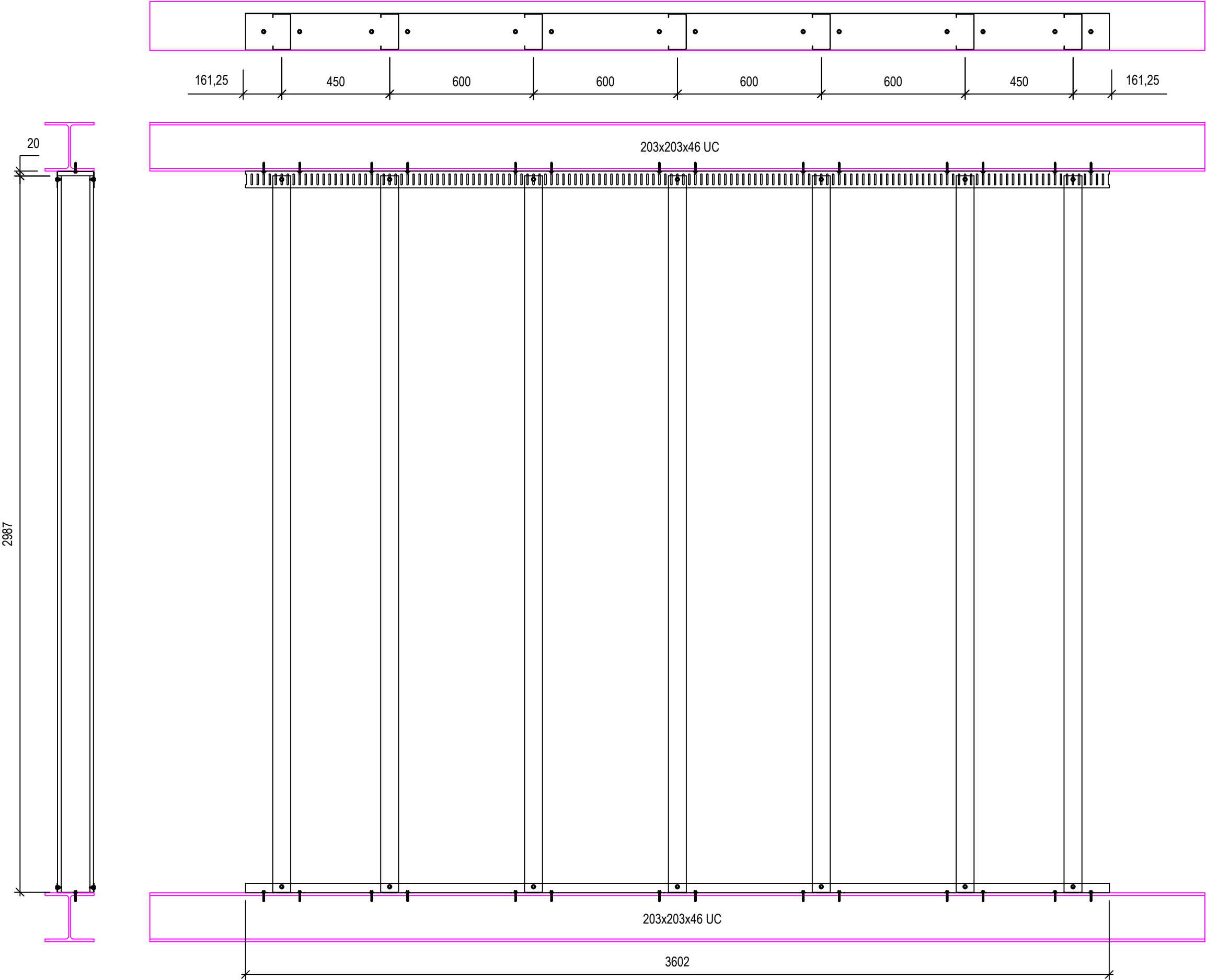


TEST RIG TYPE B  
METSEC BACKING WALL; STUDWORK, BASE, AND HEAD TRACK SETTING OUT/CONFIGURATION

GENERAL NOTES:  
  
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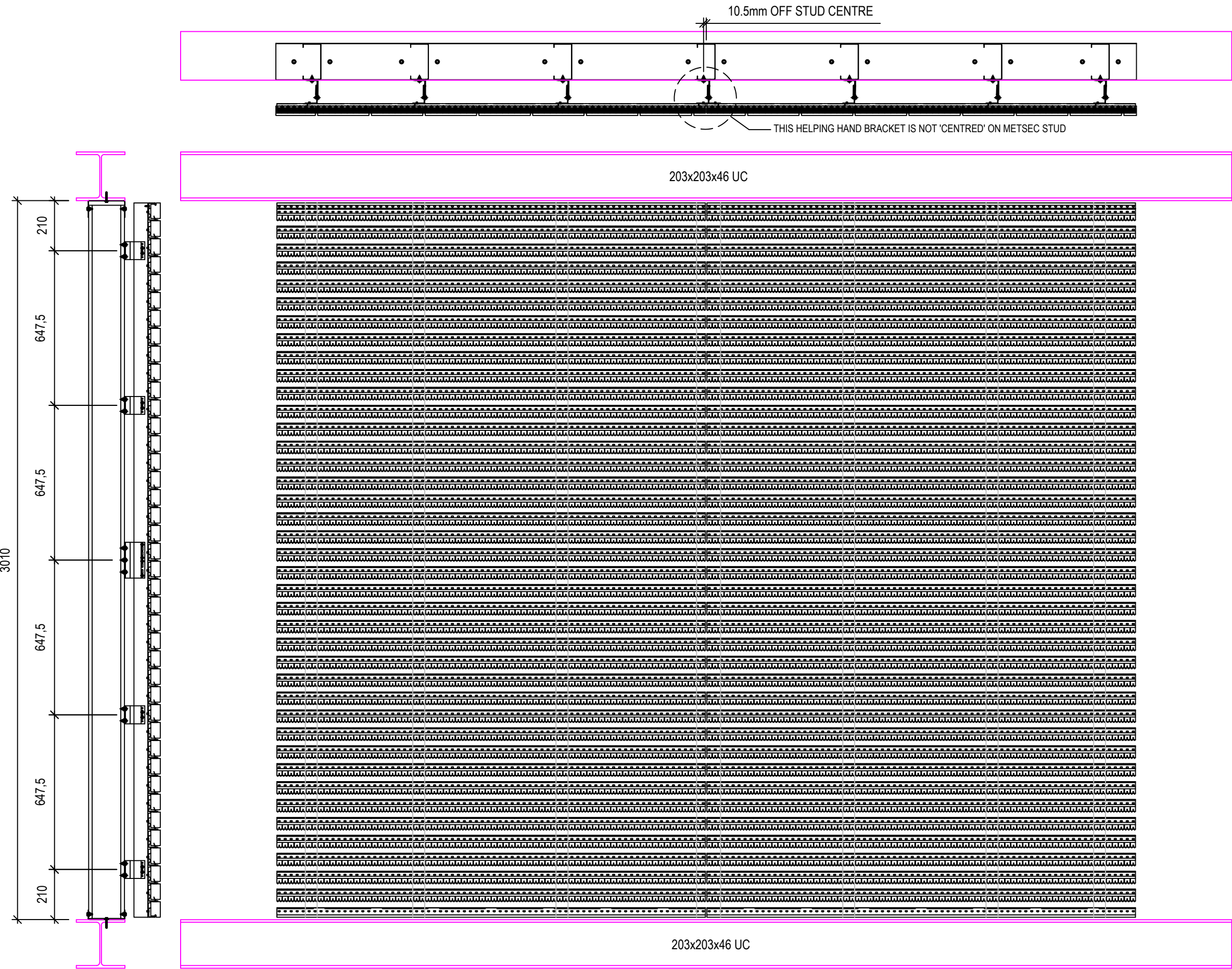
METSEC REQUIREMENT  
  
VERTICAL STUDS  
150M12-75 (THEORETICAL LENGTH 2987mm) = 7 No.  
  
BASE TRACK  
154M12-40 (THEORETICAL LENGTH 3602mm) = 1 No.  
  
HEAD TRACK  
154M16-70s (THEORETICAL LENGTH 3602mm) = 1 No.

REVISIONS:	DATE:
CLIENT:	JAMES & TAYLOR LTD
PROJECT:	BRICK SLIP SYSTEM
TITLE:	TEST RIG TYPE B GENERAL ARRANGEMENT
DATE:	03/12/2021
DRAWN BY:	CHECKED BY:
JSC	JSC
SCALE:	PLOT SIZE:
1:16	A3
DRAWING NUMBER:	REVISION:
BSS-TRB-GA-002	
PLOT DATE:	
December 5, 2021	5:42 PM
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TEST RIG TYPE B

'HELPING HAND' BRACKET, VERTICAL SUB-STRUCTURE AND BARRACUDA RAIL SETTING OUT/CONFIGURATION



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GENERAL NOTES:

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BARRACUDA HORIZONTAL RAIL REQUIREMENT

BAR-R1-1800 = 78 No.  
BAR-R2-1800 = 2 No.  
BAR-R3-1800 = 2 No.

BARRACUDA VERTICAL RAIL REQUIREMENT

BAR-VL1-2990 = 6 No.  
BAR-VT1-2990 = 1 No.

'HELPING HAND' BRACKET REQUIREMENT  
Nvelope 90 (ADJUSTMENT RANGE 92mm TO 132mm)

VERTICAL LOAD BEARING HELPING HAND = 7 No.  
RESTRAIN HELPING HAND = 28 No.

REVISIONS: DATE:

CLIENT:  
JAMES & TAYLOR LTD

PROJECT:  
BRICK SLIP SYSTEM

TITLE:  
TEST RIG TYPE B  
GENERAL ARRANGEMENT

DATE:  
03/12/2021

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SCALE: 1:16 PLOT SIZE: A3

DRAWING NUMBER: BSS-TRB-GA-003 REVISION:

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