

Technical Report

Title: Heat Rain, Freeze Thaw, Cyclic Wind Loading and Impact Testing of Barracuda Brick Slip System.

Report No: N950-24-18683



Technical Report

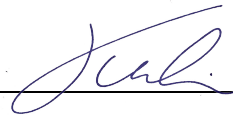
Title: Heat Rain, Freeze Thaw, Cyclic Wind Load and Impact Testing of Barracuda Brick Slip System

Customer: James & Taylor Ltd,
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Leatherhead Road, Chessington, Surrey KT9 2NY.

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Authorised by: S. R. Moxon – Operations Director



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

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1 INTRODUCTION

This certificate of test describes testing carried out at the request of James & Taylor Ltd. between November 2022 and July 2023 at VINCI Technology Centre, Leighton Buzzard.

Testing carried out was in accordance or general accordance with the following:

- *EAD 090062-00-0404 (M.1.2 Hygrothermal Cycles, Heat – Rain Cycles)
- *CEN/TS: 772-22:2006 (9.2 Freeze/Thaw Cycling)
- CWCT Standard for systemised building envelopes (Part 8, 8.14.6)
- CWCT TN75/76

Tests listed above and marked with an asterisk are not on our UKAS schedule.

Testing was undertaken by J. Lakin at the VINCI Technology Centre, Stanbridge Road, Leighton Buzzard, Bedfordshire, LU7 4QH, at the instruction of James & Taylor Ltd..

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.

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

2.1 HEAT RAIN CYCLING

Hairline cracking <0.2 mm was observed running horizontally through the mortar beds at several locations, up to a maximum length of 1.5 m.

No blistering or peeling was observed to the brick slip sample during and after the completion of the testing.

No damage or degradation was observed to any of the brick slips or supporting elements during and after the completion of the testing.

2.2 FREEZE THAW CYCLING

Hairline cracking <0.2 mm was observed running horizontally through the mortar beds at several locations, up to a maximum length of 1.5 m.

No blistering or peeling was observed to the brick slip sample during and after the completion of the testing.

No damage or degradation was observed to any of the brick slips or supporting elements during and after the completion of the testing.

2.3 CYCLIC WIND LOADING

No blistering or peeling was observed to the brick slip sample during and after the completion of the testing.

No damage or degradation was observed to any of the brick slips or supporting elements during and after the completion of the testing.

2.4 IMPACT TESTING

2.4.1 Soft body impacts

120 J serviceability	350 J safety	500 J safety
Class 1	Negligible risk	Negligible risk

2.4.2 Hard body impacts

3 J serviceability / safety	6 J serviceability	10 J serviceability / safety
Class 1 / Negligible risk	Class 1	Class 1 / Negligible risk

2.4.3 Impact classes

Note: Tables 1 to 2 are taken from CWCT TN76.

Table 1 - Classes for serviceability performance

Class	Definition	Explanation/Examples
1	No damage.	No damage visible from 1m, and Any damage visible from closer than 1 m unlikely to lead to significant deterioration.
2	Surface damage of an aesthetic nature which is unlikely to require remedial action.	Dents or distortion of panels not visible from more than 5m (note visibility of damage will depend on surface finish and lighting conditions – damage will generally be more visible on reflective surfaces), and Any damage visible from closer than 5 m unlikely to lead to significant deterioration.
3	Damage that may require remedial action or replacement of components to maintain appearance or long term performance but does not require immediate action.	Dents or distortion of panels visible from more than 5 m, or Spalling of edges of panels of brittle materials, or Damage to finishes that may lead to deterioration of the substrate.
4	Damage requiring immediate action to maintain appearance or performance. Remedial action may include replacement of a panel but does not require dismantling or replacement of supporting structure.	Significant cracks in brittle materials e.g. cracks that may lead to parts of tile falling away subsequent to test, or Fracture of panels causing significant amounts of material to fall away during test.
5	Damage requiring more extensive replacement than 4.	Buckling of support rails.

Table 2 - Classes for safety performance

Class	Explanation/examples
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 50g, and Maximum mass of particle that may fall subsequent to impact 50g, and

	No sharp edges produced that would be likely to cause severe injury during impact.
Moderate risk	Maximum mass of falling particle less than 500g, and Maximum mass of particle that may fall subsequent to impact less than 500g, 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 500g, or Cladding penetrated by impact, or Sharp edges produced that would be likely to cause severe injury during impact.

3 DESCRIPTION OF TEST SAMPLE

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

The sample was installed and mortar injected and left for 28 days prior to any testing commencing.

PHOTO 6119



TEST SAMPLE

PHOTO IMG_6608



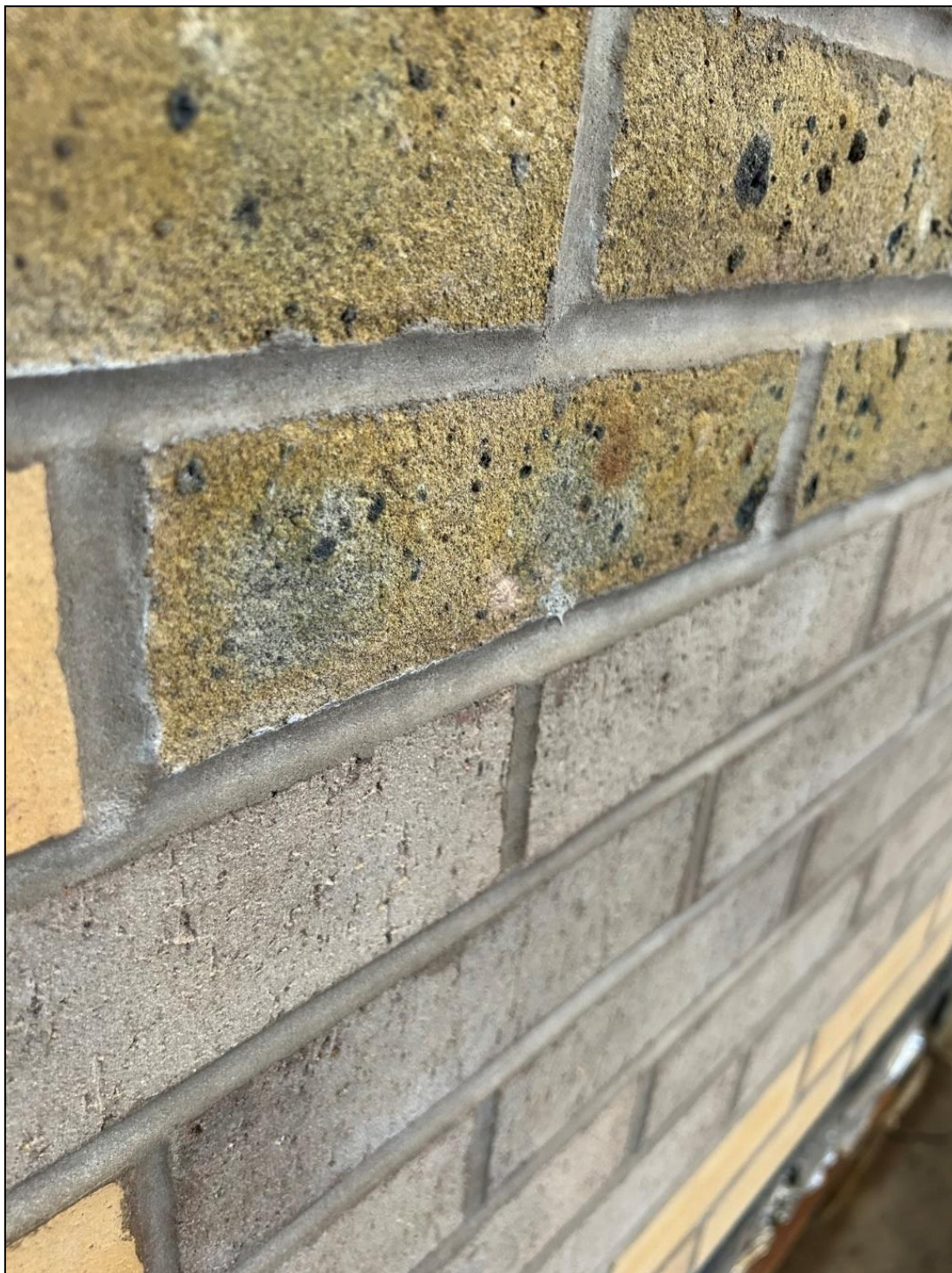
SUPPORT BRACKET

PHOTO IMG_6609



SUPPORT BRACKETS / RAIL

PHOTO IMG_6606



CLOSE UP OF BRICK SLIPS

4 TEST EQUIPMENT

4.1 HEAT RAIN CYCLING

Temperature was measured using suitable type k thermocouples.

Relative humidity was measured using a hygrometer.

375 W heat lamps along with a 30 kWh convection based heater.

Spray bar with nozzles 400 mm apart, nozzles had a full cone pattern between 90 ° and 120 ° spread.

4.2 FREEZE THAW CYCLING

Temperature was measured using suitable type k thermocouples.

Relative humidity was measured using a hygrometer.

Large industrial freezer unit.

Spray bar with nozzles 400 mm apart, nozzles had a full cone pattern between 90 ° and 120 ° spread.

4.3 CYCLIC WIND LOADING

Pressure was measured using a suitable ranged pressure transducer and digital display.

Pressure was applied using suitable sized fans, along with diverter valve to allow for transition between positive and negative pressure.

4.4 IMPACT TESTING

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 50.0 mm or 62.5 mm diameter and mass of 0.5 kg or 1.0 kg.

5 INSTRUMENTATION

Below is Table 3 showing details of all the of direct measurement equipment and it's accuracy used during testing.

Table 3 – Details of Measurement Instrumentation Used.

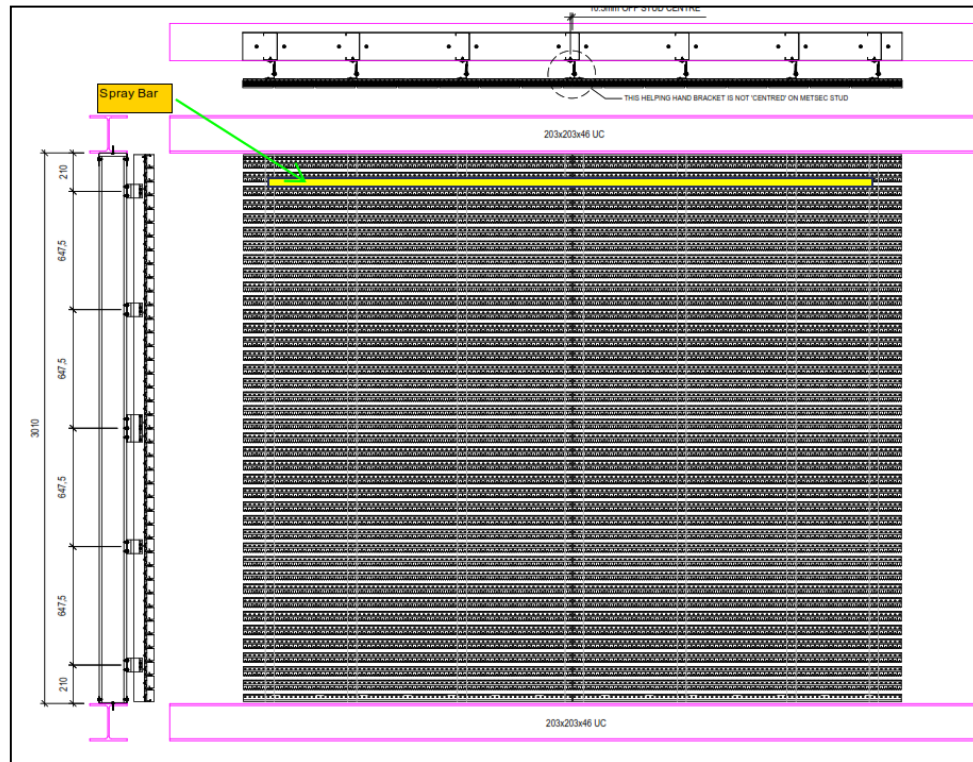
VINCI Technology Centre Ref.	Description	Accuracy
CLR755	Type K Thermocouples and Readout	2 °C
CLR510	Humidity Sensor	5 %
CLR740	8 m Tape Measure	2 mm
CLR467	± 4000 Pa Differential Pressure Transducer	2 %

6 TEST PROCEDURE

6.1 HEAT RAIN CYCLING

A controlled thermal environment enclosure was installed and sealed around the external face of the sample.

The water spray system was installed at the head of the sample, spraying uniformly and being allowed to run down the sample. See Drawing 1 for details of spray bar location.



Drawing 1 – Spray Bar Location.

The sample was subject to 100 cycles (six hours each cycle), comprising of the following phases:

1. Heated to 70 °C, over three hours rising and maintained at 70 ± 5 °C at 10 % to 30 % RH.
2. Sprayed at 1.0 l/m² min, water temperature 15 ± 5 °C for one hour.
3. Left for 2 hours to drain.

After a period of every four cycles the sample was inspected and any change in characteristics or performance (blistering, detachment, crazing, loss of adhesion, formation of cracks) was recorded.

Total Single Cycle Time = 6 Hours

6.2 FREEZE THAW CYCLING

A controlled thermal environment enclosure was installed and sealed around the external face of the sample.

The water spray system was installed at the head of the sample, spraying uniformly and being allowed to run down the sample. See Drawing 1 for details of spray bar location.

Samples was subject to 100 cycles (150 minutes each cycle), comprising of the following phases:

Temperature measurements were be based upon an air temperature measurement, taken from $30 \text{ mm} \pm 10 \text{ mm}$ away from the centre of the exposed face.

The first freezing period lasted for $6 \text{ h} \pm 5 \text{ min}$.

1. Temperature fell from $20 \pm 3 \text{ }^{\circ}\text{C}$ to $-15 \pm 3 \text{ }^{\circ}\text{C}$ in more than 20 but less than 30 minutes. The temperature was then be held at $-15 \pm 3 \text{ }^{\circ}$ for more than 90 but less than 100 minutes.
2. Temperature the rose from $-15 \pm 3 \text{ }^{\circ}\text{C}$ to $20 \pm 3 \text{ }^{\circ}\text{C}$ in more than 15 but no less than 20 minutes. The total warm air period including the period of temperature rise was 20 minutes 1 ± 1 minutes.
3. Sprayed at $6 \pm 0.5 \text{ l/min}$ per metre width of sample for $120 \pm 10 \text{ s}$.

At the end of the 100th cycle the panel was allowed to thaw completely and any visible damage to the exposed face of the were panel recorded.

Total Single Cycle Time = 150 Minuets

6.3 CYCLIC WIND LOADING

The following cyclic load tests were carried out on the sample.

No of cycles	Applied pressure (pascals)
1	$0.9 \times W_P = \pm 2160$
960	$0.4 \times W_P = \pm 960$
60	$0.6 \times W_P = \pm 1440$
240	$0.5 \times W_P = \pm 1200$
5	$0.8 \times W_P = \pm 1920$
14	$0.7 \times W_P = \pm 1680$

Where W_P = design wind load

The sequence above was repeated for a total of six times and then a single pulse of W_P (± 2400 pascals) was applied.

The frequency of oscillation was seven seconds between loading, with loading applied in a sinusoidal manner.

6.4 IMPACT TESTING

6.4.1 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 120 J for serviceability and 350 J or 500 J for safety.

6.4.2 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 1.

The impact energies were 3 J, 6 J and 10 J.

7 TEST RESULTS

7.1 HEAT RAIN CYCLING

Test Date: 23/11/22 and 29/02/23.

Hairline cracking <0.2 mm was observed running horizontally through the mortar beds at several locations, up to a maximum length of 1.5 m.

No blistering or peeling was observed to the brick slip sample during and after the completion of the testing.

No damage or degradation was observed to any of the brick slips or supporting elements during and after the completion of the testing.

PHOTO 20221123_132854



TEST SETUP AND WATER SPRAYING OCCURING

7.2 FREEZE THAW CYCLING

Test Date: March 2023 to May 2023

Hairline cracking <0.2 mm was observed running horizontally through the mortar beds at several locations, up to a maximum length of 1.5 m.

No blistering or peeling was observed to the brick slip sample during and after the completion of the testing.

No damage or degradation was observed to any of the brick slips or supporting elements during and after the completion of the testing.

PHOTO IMG_56422



ICE BUILD UP ON FACE OF BRICKS SLIPS BEFORE THAWING

7.3 CYCLIC WIND LOADING

Test Date: 8th May 2023 to 12th May 2023

No blistering or peeling was observed to the brick slip sample during and after the completion of the testing.

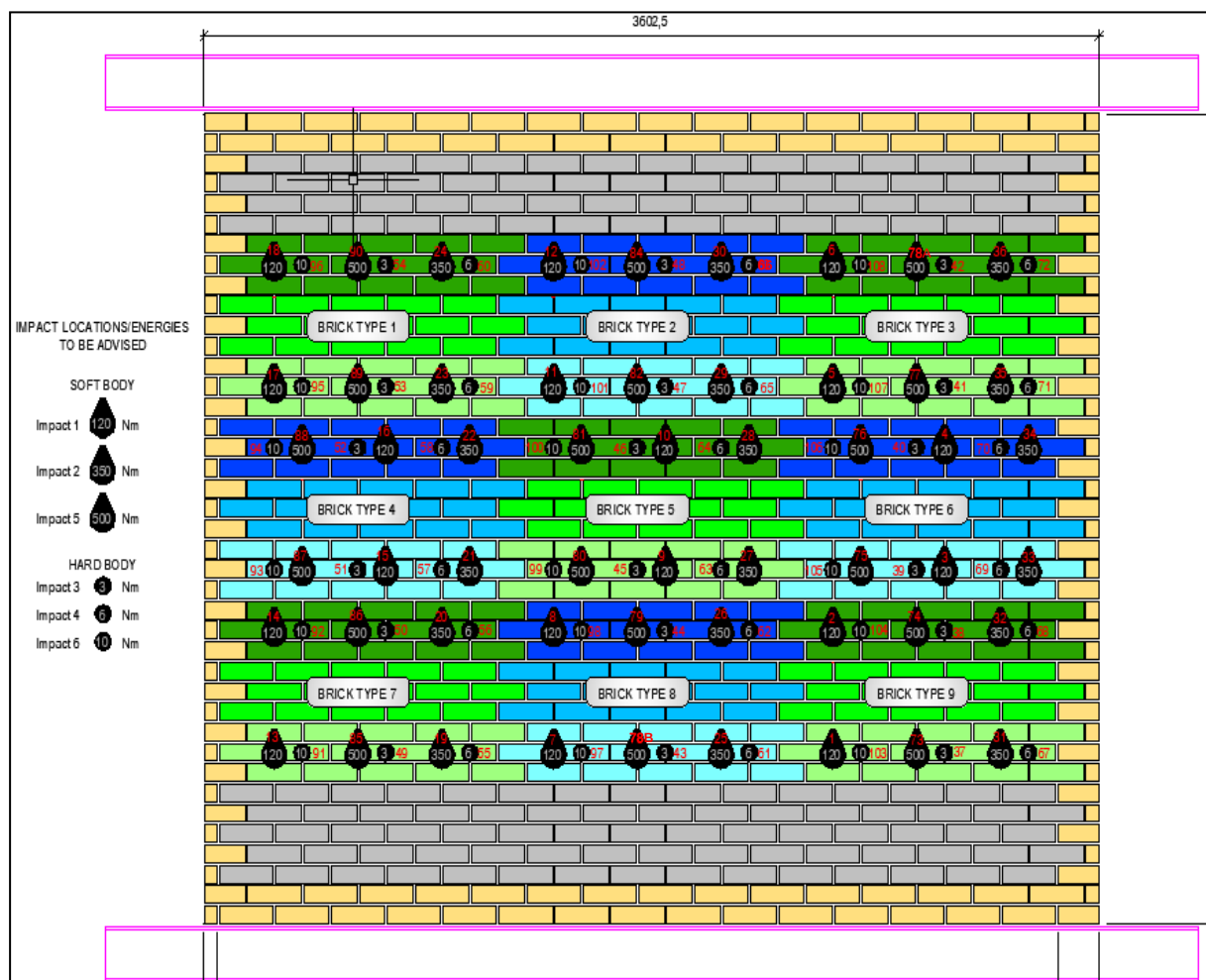
No damage or degradation was observed to any of the brick slips or supporting elements during and after the completion of the testing.

7.4 IMPACT TESTING

Test Date: 25th July 2023

Ambient temperature = 18 °C

FIGURE 1



SOFT BODY IMPACT LOCATIONS

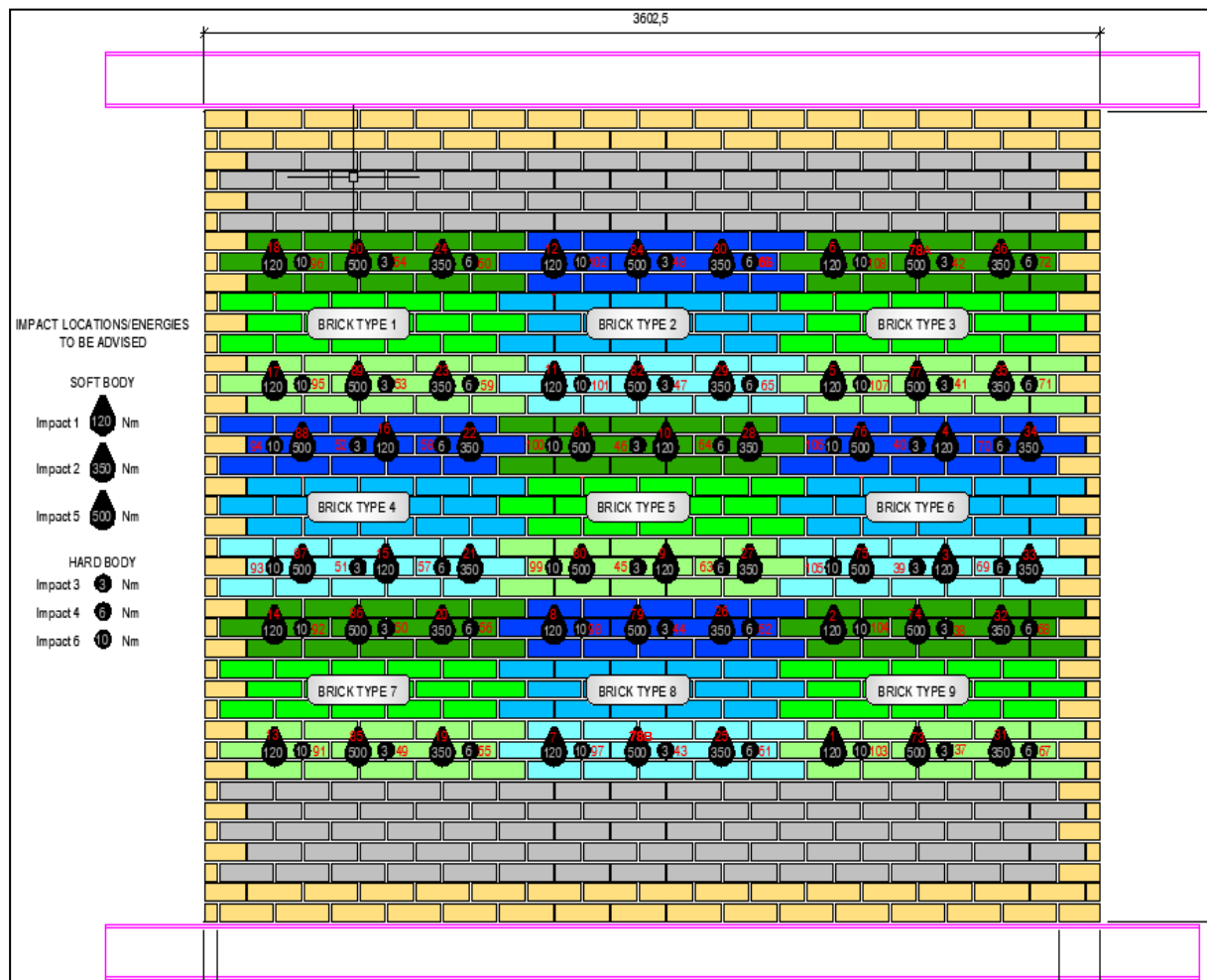
TABLE 3

SOFT BODY IMPACT TEST RESULTS

Location	Impact energy (J)	Observations	Classification
1	120 x 3	No damage observed	Class 1
2	120 x 3	No damage observed	Class 1
3	120 x 3	No damage observed	Class 1
4	120 x 3	No damage observed	Class 1
5	120 x 3	No damage observed	Class 1
6	120 x 3	No damage observed	Class 1
7	120 x 3	No damage observed	Class 1
8	120 x 3	No damage observed	Class 1
9	120 x 3	No damage observed	Class 1
10	120 x 3	No damage observed	Class 1
11	120 x 3	No damage observed	Class 1
12	120 x 3	No damage observed	Class 1
13	120 x 3	No damage observed	Class 1
14	120 x 3	No damage observed	Class 1
15	120 x 3	No damage observed	Class 1
16	120 x 3	No damage observed	Class 1
17	120 x 3	No damage observed	Class 1
18	120 x 3	No damage observed	Class 1
19	350	No damage observed	Negligible risk
20	350	No damage observed	Negligible risk
21	350	No damage observed	Negligible risk
22	350	No damage observed	Negligible risk
23	350	No damage observed	Negligible risk
24	350	No damage observed	Negligible risk
25	350	No damage observed	Negligible risk
26	350	No damage observed	Negligible risk
27	350	No damage observed	Negligible risk

28	350	No damage observed	Negligible risk
29	350	No damage observed	Negligible risk
30	350	No damage observed	Negligible risk
31	350	No damage observed	Negligible risk
32	350	No damage observed	Negligible risk
33	350	No damage observed	Negligible risk
34	350	No damage observed	Negligible risk
35	350	No damage observed	Negligible risk
36	350	No damage observed	Negligible risk
73	500	No damage observed	Negligible risk
74	500	No damage observed	Negligible risk
75	500	No damage observed	Negligible risk
76	500	No damage observed	Negligible risk
77	500	No damage observed	Negligible risk
78A	500	No damage observed	Negligible risk
78B	500	No damage observed	Negligible risk
79	500	No damage observed	Negligible risk
80	500	No damage observed	Negligible risk
81	500	No damage observed	Negligible risk
82	500	No damage observed	Negligible risk
83	500	No damage observed	Negligible risk
84	500	No damage observed	Negligible risk
85	500	No damage observed	Negligible risk
86	500	No damage observed	Negligible risk
87	500	No damage observed	Negligible risk
88	500	No damage observed	Negligible risk
89	500	No damage observed	Negligible risk
90	500	No damage observed	Negligible risk

FIGURE 2



HARD BODY IMPACT LOCATIONS

TABLE 4

23HARD BODY IMPACT TEST RESULTS

Location	Impact energy (J)	Observations	Classification
37	3	Small mark	Class 1 Negligible risk
38	3	Small mark	Class 1 Negligible risk
39	3	Small mark	Class 1 Negligible risk
40	3	Small mark	Class 1 Negligible risk
41	3	Small mark	Class 1

			Negligible risk
42	3	Small mark	Class 1 Negligible risk
43	3	Small mark	Class 1 Negligible risk
44	3	Small mark	Class 1 Negligible risk
45	3	Small mark	Class 1 Negligible risk
46	3	Small mark	Class 1 Negligible risk
47	3	Small mark	Class 1 Negligible risk
48	3	Small mark	Class 1 Negligible risk
49	3	Small mark	Class 1 Negligible risk
50	3	Small mark	Class 1 Negligible risk
51	3	Small mark	Class 1 Negligible risk
52	3	Small mark	Class 1 Negligible risk
53	3	Small mark	Class 1 Negligible risk
54	3	Small mark	Class 1 Negligible risk
55	6	Small mark	Class 1
56	6	Small mark	Class 1
57	6	Small mark	Class 1
58	6	Small mark	Class 1
59	6	Small mark	Class 1
60	6	Small mark	Class 1
61	6	Small mark	Class 1

62	6	Small mark	Class 1
63	6	Small mark	Class 1
64	6	Small mark	Class 1
65	6	Small mark	Class 1
66	6	Small mark	Class 1
67	6	Small mark	Class 1
68	6	Small mark	Class 1
69	6	Small mark	Class 1
70	6	Small mark	Class 1
71	6	Small mark	Class 1
72	6	Small mark	Class 1
91	10	Small mark	Class 1 Negligible risk
92	10	Small mark	Class 1 Negligible risk
93	10	Small mark	Class 1 Negligible risk
94	10	Small mark	Class 1 Negligible risk
95	10	Small mark	Class 1 Negligible risk
96	10	Small mark	Class 1 Negligible risk
97	10	Small mark	Class 1 Negligible risk
98	10	Small mark	Class 1 Negligible risk
99	10	Small mark	Class 1 Negligible risk
100	10	Small mark	Class 1 Negligible risk
101	10	Small mark	Class 1 Negligible risk

102	10	Small mark	Class 1 Negligible risk
103	10	Small mark	Class 1 Negligible risk
104	10	Small mark	Class 1 Negligible risk
105	10	Small mark	Class 1 Negligible risk
106	10	Small mark	Class 1 Negligible risk
107	10	Small mark	Class 1 Negligible risk
108	10	Small mark	Class 1 Negligible risk

PHOTO IMG_6120



SOFT BODY IMPACTOR

PHOTO IMG_6155



HARD BODY IMPACTOR

PHOTO IMG_6156



IMPACT LOCATION 37

PHOTO IMG_6157



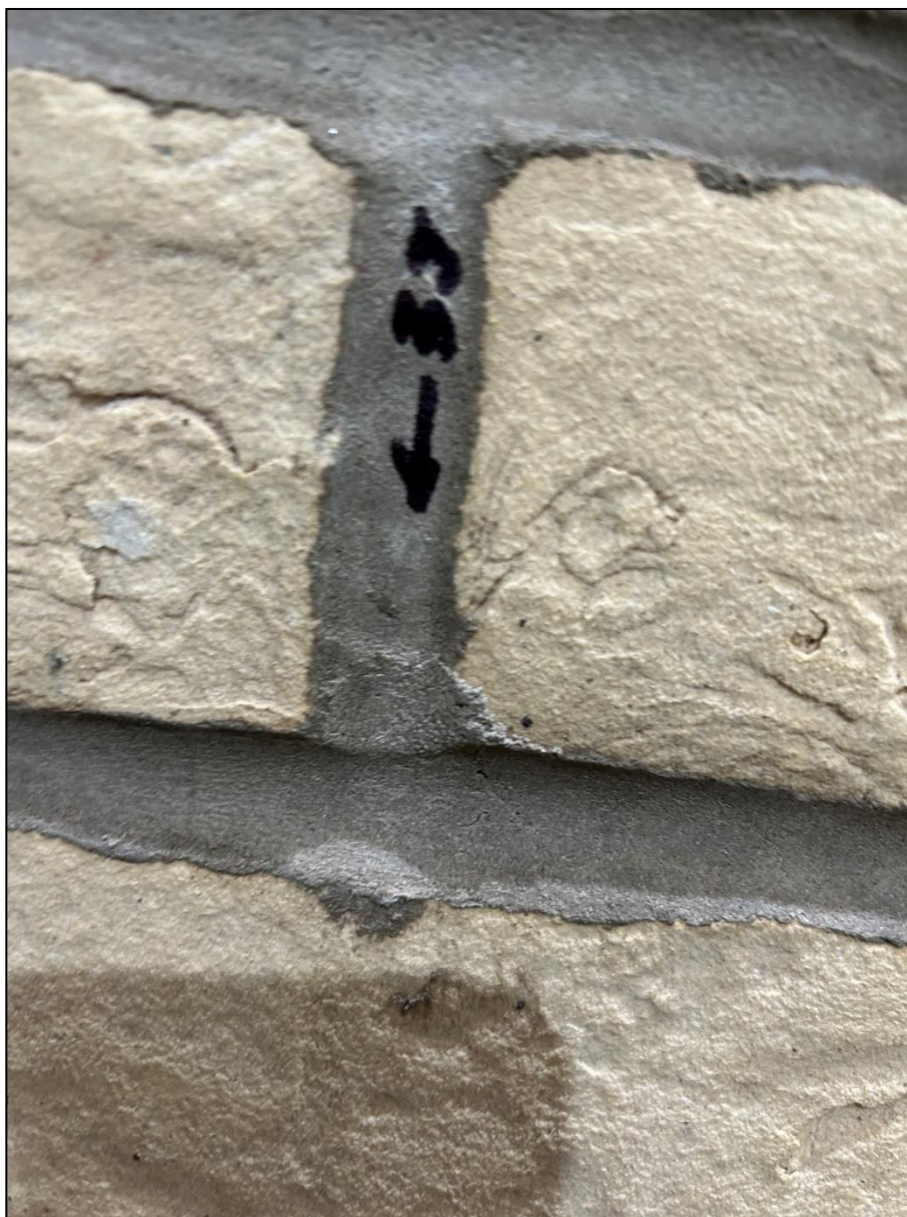
IMPACT LOCATION 38

PHOTO IMG_6158



IMPACT LOCATION 39

PHOTO IMG_6159



IMPACT LOCATION 40

PHOTO IMG_6160



IMPACT LOCATION 41

PHOTO IMG_6161



IMPACT LOCATION 42

PHOTO IMG_6162



IMPACT LOCATION 43

PHOTO IMG_6163



IMPACT LOCATION 44

PHOTO IMG_6164



IMPACT LOCATION 45

PHOTO IMG_6165



IMPACT LOCATION 46

PHOTO IMG_6166



IMPACT LOCATION 47

PHOTO IMG_6167



IMPACT LOCATION 48

PHOTO IMG_6168



IMPACT LOCATION 49

PHOTO IMG_6169



IMPACT LOCATION 50

PHOTO IMG_6170



IMPACT LOCATION 51

PHOTO IMG_6171



IMPACT LOCATION 52

PHOTO IMG_6172



IMPACT LOCATION 53

PHOTO IMG_6173



IMPACT LOCATION 54

PHOTO IMG_6174



IMPACT LOCATION 55

PHOTO IMG_6175



IMPACT LOCATION 56

PHOTO IMG_6176



IMPACT LOCATION 57

PHOTO IMG_6177



IMPACT LOCATION 58

PHOTO IMG_6178



IMPACT LOCATION 59

PHOTO IMG_6179



IMPACT LOCATION 60

PHOTO IMG_6180



IMPACT LOCATION 61

PHOTO IMG_6181



IMPACT LOCATION 62

PHOTO IMG_6182



IMPACT LOCATION 63

PHOTO IMG_6183



IMPACT LOCATION 64

PHOTO IMG_6184



IMPACT LOCATION 65

PHOTO IMG_6185



IMPACT LOCATION 66

PHOTO IMG_6186



IMPACT LOCATION 67

PHOTO IMG_6187



IMPACT LOCATION 68

PHOTO IMG_6188



IMPACT LOCATION 69

PHOTO IMG_6189



IMPACT LOCATION 70

PHOTO IMG_6190



IMPACT LOCATION 71

PHOTO IMG_7239



IMPACT LOCATION 72

PHOTO IMG_6205



IMPACT LOCATION 91

PHOTO IMG_6206



IMPACT LOCATION 92

PHOTO IMG_6207



IMPACT LOCATION 93

PHOTO IMG_6208



IMPACT LOCATION 94

PHOTO IMG_6209



IMPACT LOCATION 95

PHOTO IMG_6210



IMPACT LOCATION 96

PHOTO IMG_6211



IMPACT LOCATION 97

PHOTO IMG_6212



IMPACT LOCATION 98

PHOTO IMG_6214



IMPACT LOCATION 99

PHOTO IMG_6215



IMPACT LOCATION 100

PHOTO IMG_6216



IMPACT LOCATION 101

PHOTO IMG_6217



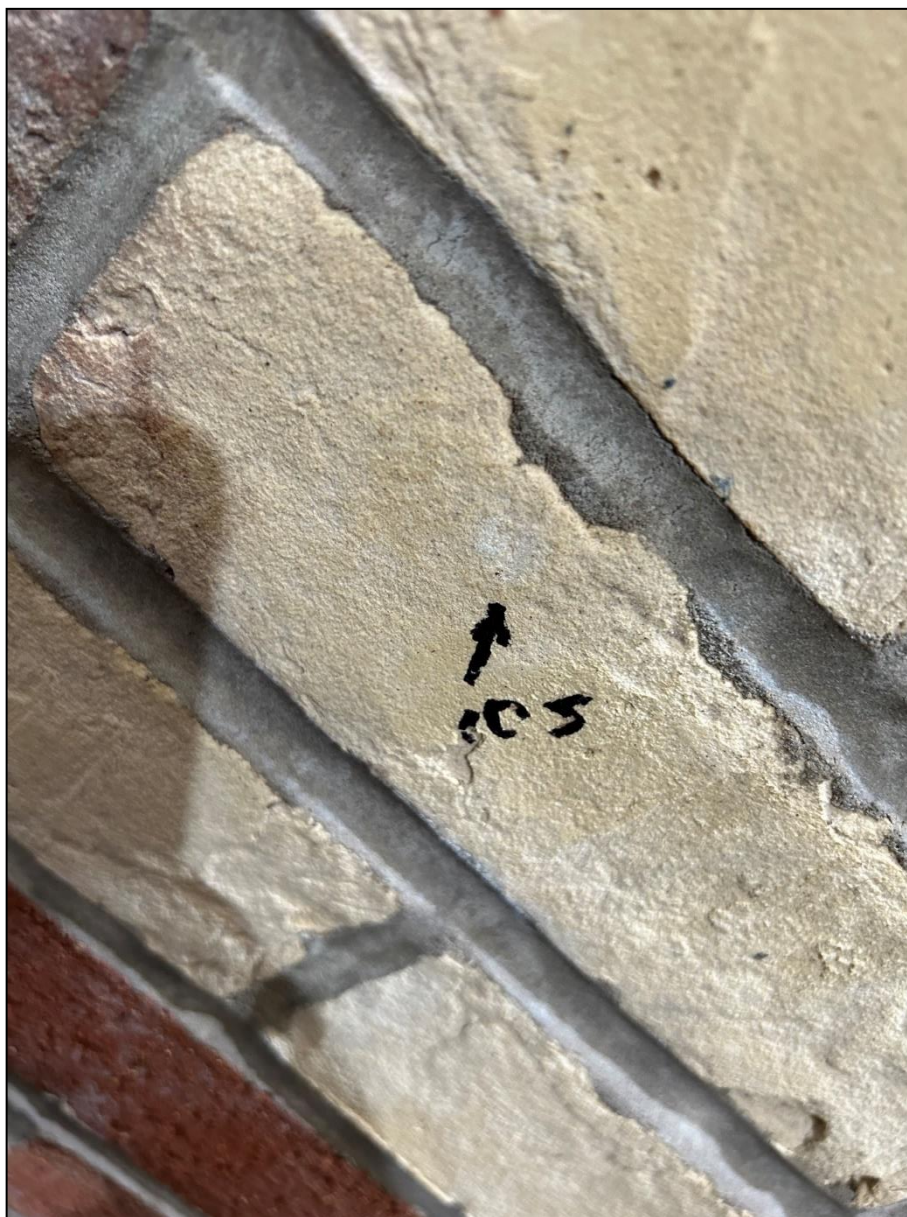
IMPACT LOCATION 102

PHOTO IMG_6218



IMPACT LOCATION 103

PHOTO IMG_6219



IMPACT LOCATION 104

PHOTO IMG_6220



IMPACT LOCATION 105

PHOTO IMG_6221



IMPACT LOCATION 106

PHOTO IMG_6222



IMPACT LOCATION 107

PHOTO IMG_7239



IMPACT LOCATION 108

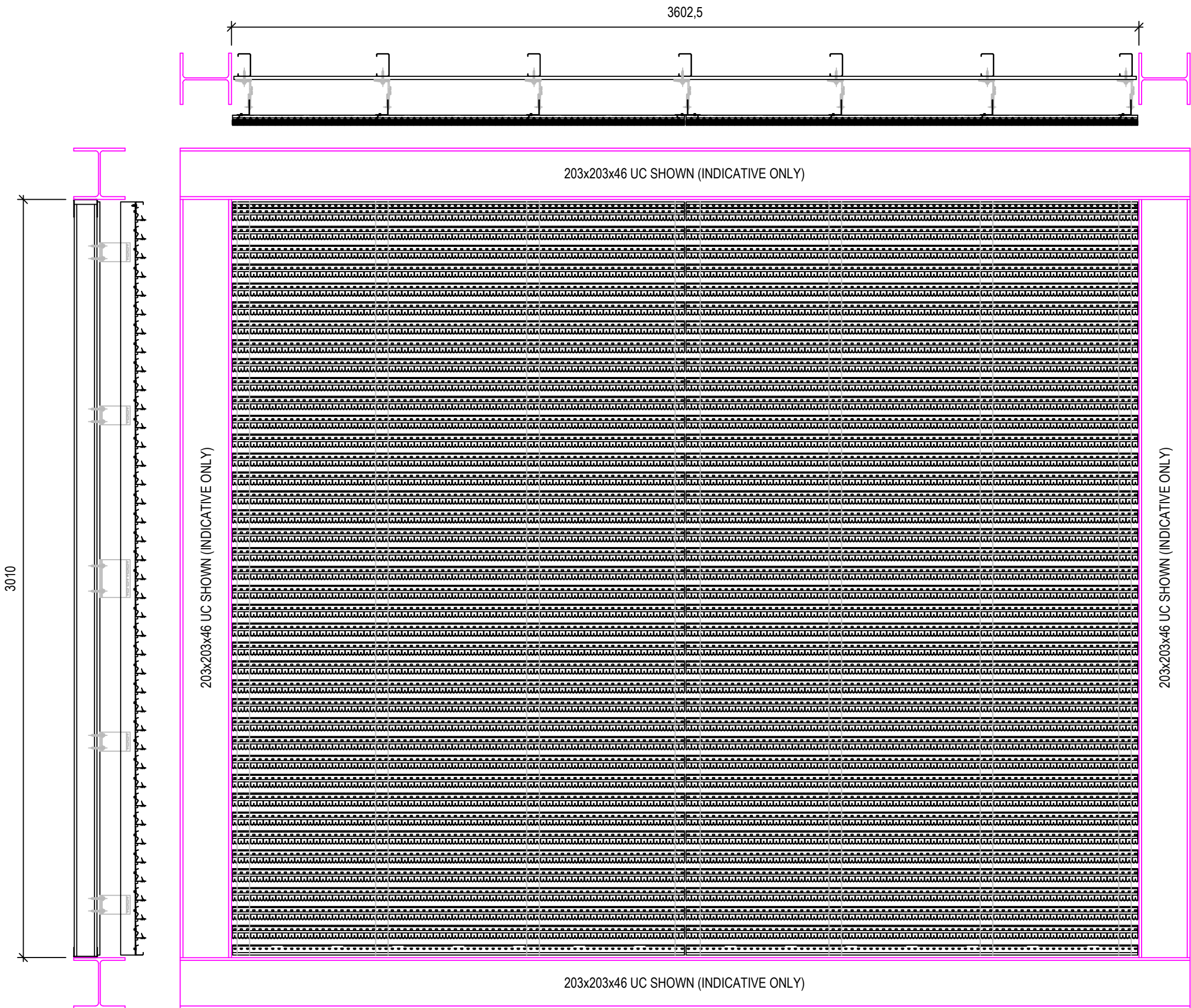
8 APPENDIX - DRAWINGS

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

- BSS-TRA-003
- BSS-TRA-DT-001
- BSS-TRA-GA-002
- BSS-TRA-T4 Rev B

END OF REPORT

TEST RIG TYPE A
VERTICAL SUB-STRUCTURE AND BARRACUDA RAIL SETTING OUT



SIXTY TWO, Barwell Business Park, Leatherhead Road,
Chessington, Surrey KT9 2NY
T. 020 8942 3688 F. 020 8336 2036 E. info@jamesandtaylor.co.uk
www.jamesandtaylor.co.uk

GENERAL NOTES:

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

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

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

REVISIONS: DATE:

CLIENT:
JAMES & TAYLOR LTD

PROJECT:
BRICK SLIP SYSTEM

TITLE:
TEST RIG TYPE A
GENERAL ARRANGEMENT

DATE:
21/09/2020

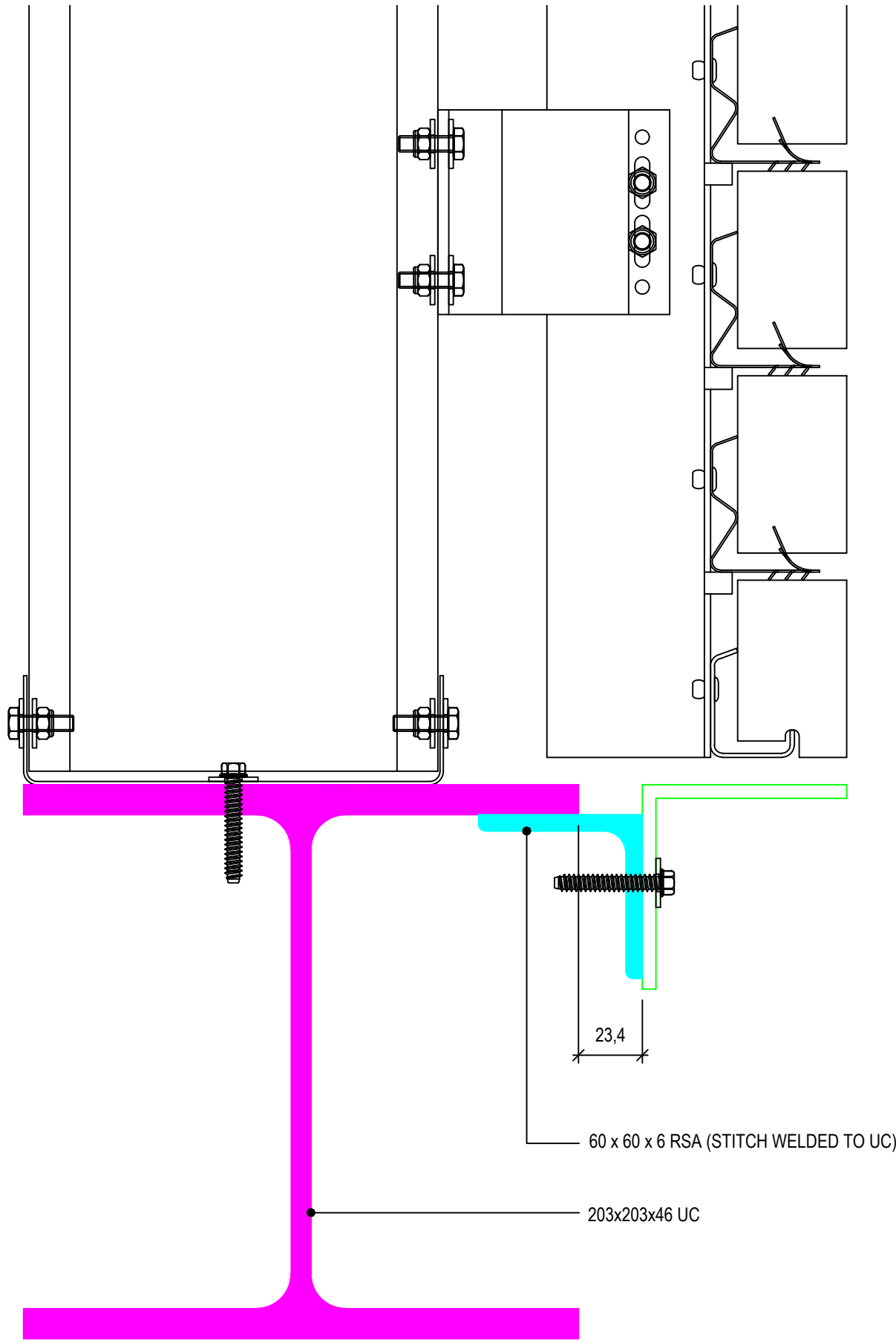
DRAWN BY: JSC CHECKED BY: JSC

SCALE: 1:16 PLOT SIZE: A3

DRAWING NUMBER: BSS-TRA-003 REVISION:

PLOT DATE:
September 23, 2020 11:37 AM © James & Taylor Ltd - 2009

TEST RIG TYPE A
TYPICAL PERIMETER DETAIL



GENERAL NOTES:

DO NOT SCALE FROM THIS DRAWING.

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REVISIONS:	DATE:
CLIENT:	JAMES & TAYLOR LTD
PROJECT:	BRICK SLIP SYSTEM
TITLE:	TEST RIG TYPE A TYPICAL PERIMETER DETAIL
DATE:	03/12/2021
DRAWN BY:	CHECKED BY:
JSC	JSC
SCALE:	PLOT SIZE:
1:2	A3
DRAWING NUMBER:	REVISION:
BSS-TRA-DT-001	
PLOT DATE:	
December 3, 2021	4:39 PM
© James & Taylor Ltd - 2009	

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



SIXTY TWO, Barwell Business Park, Leatherhead Road,
Chessington, Surrey KT9 2NY
T. 020 8942 3688 F. 020 8336 2036 E. info@jamesandtaylor.co.uk
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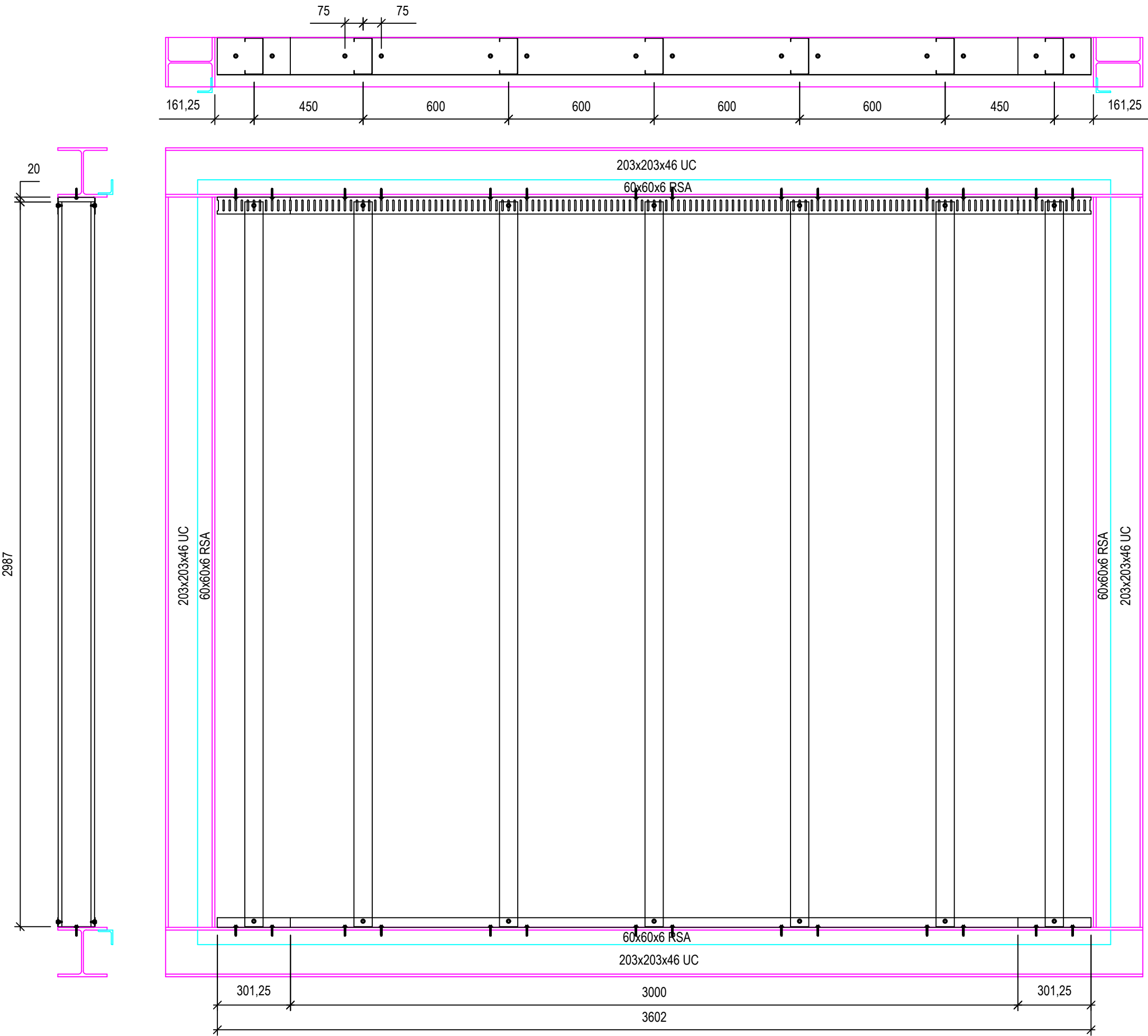
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METSEC REQUIREMENT

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 A
GENERAL ARRANGEMENT

DATE: 03/12/2021

DRAWN BY: JSC CHECKED BY: JSC

SCALE: 1:16 PLOT SIZE: A3

DRAWING NUMBER: BSS-TRA-GA-002 REVISION: _____

PLOT DATE: January 16, 2022 6:18 PM © James & Taylor Ltd - 2009

TEST RIG TYPE A - TEST 4 [MORTARED IMPACT]



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Chessington, Surrey KT9 2NY
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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.

Rev B DRAWING RENAMED JSC 11/11/2022

Rev A IMPACT LOCATIONS ADDED JSC 15/10/2022

REVISIONS: DATE:

CLIENT:

JAMES & TAYLOR LTD

PROJECT:

BRICK SLIP SYSTEM

TITLE:

TEST RIG TYPE A - TEST 4
MORTARED IMPACT

DATE:

04/12/2021

DRAWN BY:

JSC CHECKED BY: JSC

SCALE: PLOT SIZE:

1:16 A3

DRAWING NUMBER: REVISION:

BSS-TRA-T4 B

PLOT DATE:

November 11, 2022 12:20 PM © James & Taylor Ltd - 2009

IMPACT ENERGIES AND
SEQUENCE

SOFT BODY

Impact 1 120 Nm

Impact 2 350 Nm

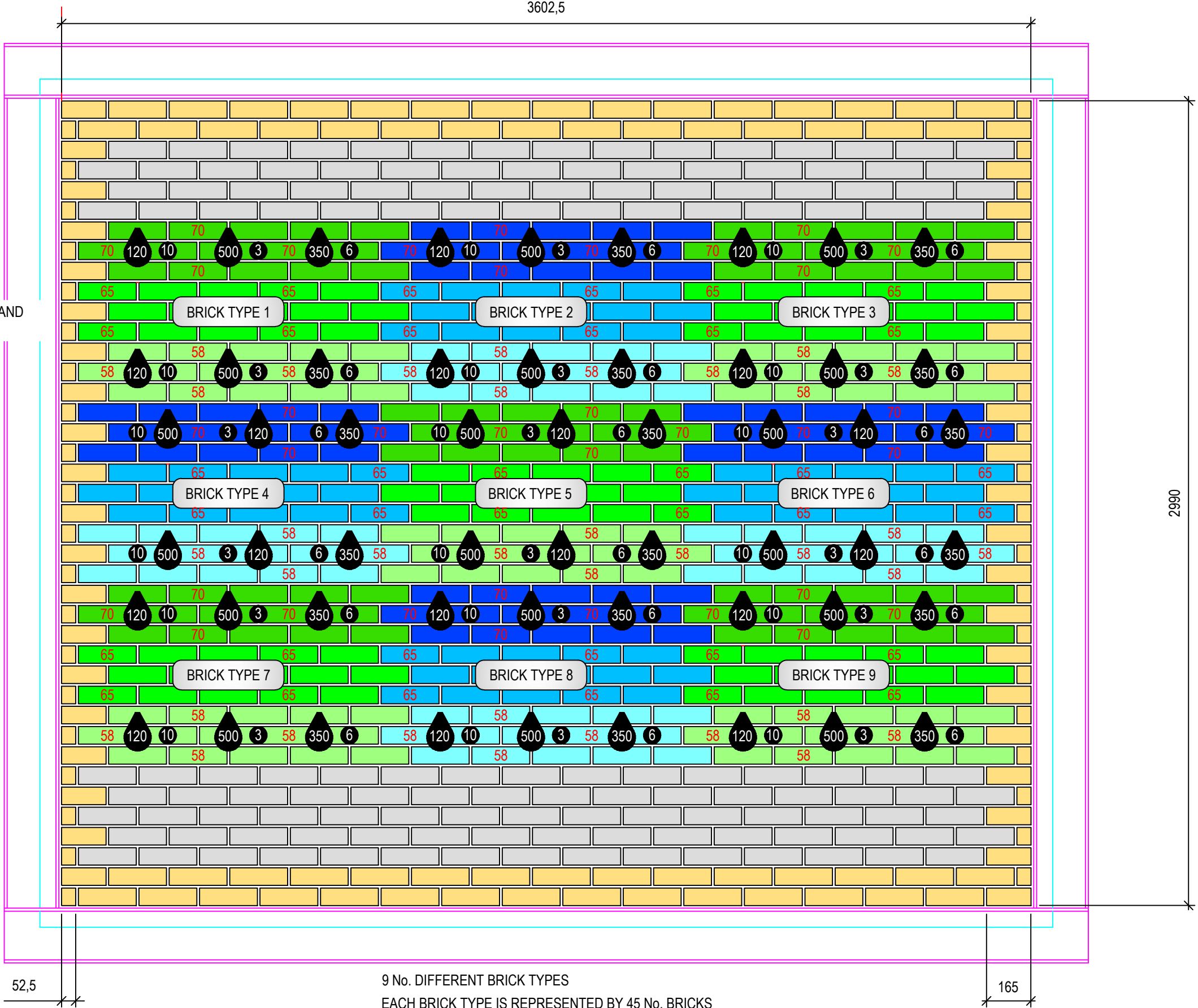
Impact 5 500 Nm

HARD BODY

Impact 3 3 Nm

Impact 4 6 Nm

Impact 6 10 Nm



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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