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SPECTATOR TERRACE WEALDSTONE FC

STRUCTURAL CALCULATIONS

■

Prepared by: AB/HBJ

Date: July 2021

Reference: 21/45268

VAT Registration No.: 670 8636 12

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Design Notes

Job Ref: 21/45268

RE: SPECTATOR TERRACE, WEALDSTONE FC

The following calculations are in respect of our clients brief relating to **specific structural elements listed on the following page(s)**. No responsibility is accepted in respect of other elements of the building. Any assumed bearing stresses must be confirmed on site to the satisfaction of the Building Control Officer.

Dimensions have been obtained from information provided and where no figured dimensions have been provided, scaling has been used. **Dimensions indicated on the following calculations are for design purposes only and must not be used for constructional purposes. All dimensions for construction are to be obtained by site measurements prior to manufacture / building.**

Appended sketches are to demonstrate certain features of the design and are not intended as working drawings. Where shown, details are intended to identify the main structural features. It is assumed that the work will be carried out by experienced and competent personnel, therefore exhaustive detailing is not required.

Where constructional connection details are indicated on these calculations, these shall not be varied. Any proposed changes should be substantiated by calculation, submitted and approved in writing by the Engineer before fabrication is commenced.

Where Building Control approval is required it is essential that this be obtained before the works proceed or materials are ordered. The contractor must ensure the stability of each element, and overall stability of the construction is maintained until all the works are completed.

These calculations and designs are copyright and must not be reproduced, defaced or passed to any other person or persons for any purpose other than as originally intended

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REFERENCES

British Standards and Codes of Practice indicated below have been used in the preparation of these calculations - all constructional details must be in accordance with all relevant clauses contained in these same standards, associated standards or manufacturer's recommendations and details and normal good practice.

Loadings	[BS 6399 - Part 1:1996, Part 2:1997, Part 3:1988] [BS 648:1964]
Concrete	[BS 8110 - Part 1:1997, Part 3:1985] [BS 8007 : 1987]
Foundations	[BS 8004:1986] [BS 8002 : 1994]
Timber	[BS 5268 - Part 2:2002]
Masonry	[BS 5628 - Part 1:2005, Part 2:2005, Part 3:2005]
Industrial Floor Slabs	[Concrete Society Technical Report 34 (2nd Edition)] [C & CA Technical Report 550] [BCA Tech Note 11]
Steelwork	[BS 5950 - Part 1:2000, Part 3:1990, Part 5:1987, Part 8:1990] [BS 2853:1957]

ISSUE RECORD

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HEALTH & SAFETY

Where appropriate, the Client will be the/or appoint a, Principal Designer to act on his behalf who will ensure that where applicable the "Construction (Design and Management) Regulations 2015" are adhered to.

The Principal Contractor must at all times ensure safe working practices, maintain the integrity of the existing structures and conform to all the appropriate requirements of the Health and Safety Executive including the "Construction (Design and Management) Regulations 2015".

The working methods of any hazardous operations must first be discussed with the Principal Designer and the designer prior to commencement.

Below are identified hazards that are either impractical or uneconomic to eliminate at the design stage. The list is not exhaustive and must be read in conjunction with the main contractors own Health & Safety policy.

Hazard	Solution/Precaution/Sequence
Demolition and creation of new openings	To be carried out in accordance with prepared demolition statement ensuring structural integrity of existing building at all times. Openings should follow published procedure in Building Research Establishment publication GBG20 "Removing internal loadbearing walls in older dwellings".
Scaffolds	Scaffolds erected and used in accordance with BS5973. Scaffolds and propping must be inspected by a qualified person before use and at least once per week to ensure they are fit for use.
Personnel working at height	Works to be properly supervised with personnel provided with safe working platforms.
Lifting	Adequate means for moving and positioning elements to be available. Handling and construction to be carried out in accordance with relevant HSE 7 BS guidelines. Individuals are not to manually lift more than 25kg.
Deep excavation	No one shall enter an excavation deeper than 1.2m without adequately designed temporary shoring being in place. Where foundations are deeper than 2.5m they should be constructed in two pours.
Open trenched footings	Access to unattended trenches to be protected.

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RE: SPECTATOR TERRACE, WEALDSTONE FC

Dimensions

1. **All dimensions for construction to be obtained by site measurements prior to manufacture / building**

Steelwork Specifications

1. Unless noted otherwise, all steelwork to be Grade S275 to BS 5950-2. All materials to comply with BS 5950:2000 and to B.S.C.A. 1/89 - National Structural Steelwork Specification.
2. Unless noted otherwise, all steelwork to be shot blasted to SA 2.5 or mechanically wire brushed to remove all surface contamination, rust or millscale and have 2 coats of zinc phosphate primer applied to achieve a minimum dry film thickness of 75 microns per coat, prior to site delivery.
3. Grade 4.6 bolts to BS4190 and Grade 8.8 bolts to BS3692.
4. Unless stated otherwise, all structural connections to have minimum of 2 bolts. Minimum bolt size for any connection to be M16 Grade 8.8 bolts.
5. Fire surround to all steelwork as per Architects/Local Authority requirements but generally cased in a layer of 12.5mm thick plasterboard and skim.
6. For steel within an external wall cavity (this includes shelf angles and plates supporting external skins that are welded to the bottom flange of beams) the steel should be shot blasted to SA2½ and use 450µm coat of solvent free epoxy applied. Alternatively, the steel may be galvanized to a thickness of 85µm and 200µm of heavy duty bitumen applied in two coats.

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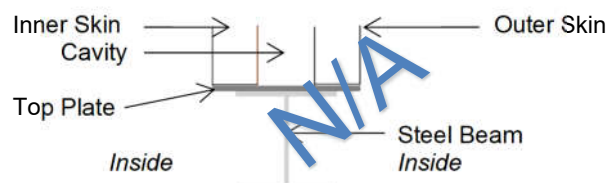
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General Notes

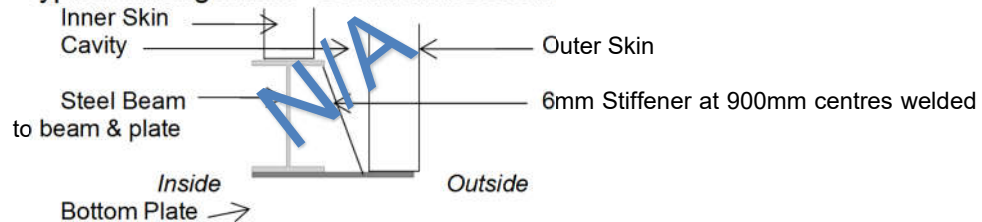
Works to be carried out regarding installation of new beams/lintels

All works should be carried out by a competent contractor/builder familiar and experienced with the procedures.

1. All works to comply with current British EN Standards and Building Regulations and to be to good building practice.
2. All new steelwork to be to BS EN 10025 1993: Minimum Grade S275 unless noted otherwise.
3. Any bolts to be Grade 8.8 and zinc plated with washers and nuts.
4. All mortar to be 1: 1: 6 (cement: lime: sand) unless noted otherwise.
5. Where new steelwork or other fabricated components are specified, site dimensions must be undertaken by the builder/fabricator to ensure an accurate fit and adequate clearance, etc.
6. Unless noted otherwise, generally steel beam is to be installed so that its centerline coincides with centerline of the wall it is supporting. In case of cavity walls, this will generally be centerline of the overall thickness of the wall including the thickness of the inner skin, cavity and outer-skin (See also Note 8 for variations).
7. Where multiple beams/lintels are indicated to support existing walls, the exact number of beams/lintel is to be determined by the builder on site to suit thickness of wall(s) prior to commencing works in that area and ordering/fabrication of materials. Report immediately to DSA for further advice if site conditions differ to that indicated on the drawings/details.
8. Scenarios for supporting external walls on single beam:
(a) Typical Arrangement - Beam with Top Plate



(b) Typical Arrangement - Beam with Bottom Plate



9. Where steel beams bear into walls at right angles, fully surround the beam with brickwork to prevent any rotation of the beam.
10. Where steel beams/lintels are required to be concealed within floor/ceiling void, the contractor must take measurements of floor/ceiling void and review the size of beam/lintel specified on the drawings prior to ordering/fabrication of material. Report to DSA for further advice if the specified beam/lintel size cannot be concealed within the floor/ceiling zone due to existing site details.
11. Where walls are to be removed:
 - a) Fully support wall over the new beams by needling through the wall and supporting needles on Acrow props. Number of needles and props required will depend on the existing structural format, loading and site conditions. Contractor/Builder to be responsible for the necessary temporary works.
 - b) When wall is supported cut out openings and prepare piers and padstones. Ensure padstone size and full bearing lengths as specified are achieved.
 - c) Install steel beams and shim / dry pack beams as necessary onto padstones to ensure full load transfer.
 - d) To minimize cracking of the walls above, preload the new beams by using machined steel folding wedges rammed home.
If the beam is not preloaded there is a risk of initial cracking to the walls above as the load is transferred but this will not be progressive.
 - e) After preloading the beams dry pack the gap between existing wall and the beam using a minimum thickness of 30mm of sand and cement 3:1 mixed to just bind and then rammed home to ensure a fully packed joint for the full width of the beam/wall.
 - f) Leave props in place for at least 7 days until the packing is cured.

Exact arrangement of works to suit site specific conditions; if in doubt, Contractor/Builder to contact DSA for further advice prior to commencing of works and ordering/fabrication of materials.



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Job Title	Job No.
SPECTATOR TERRACE, WEALDSTONE FC	21/45268

Compliance with BS EN 1090-1:2009 +A1:2011
 Execution of steel structures and aluminium structures.
 Requirements for conformity assessment of structural components
 CE Marking of Fabricated Structural Steelwork

DERIVATION OF EXECUTION CLASS

Table A.1 - Categorisation of Consequence Classes

Example of categorisation of building type and occupancy	Consequence Class
All buildings not exceeding 2 storeys to which the public are admitted and which contain floor areas not exceeding 2,000m ² at each storey.	2a Lower Risk Group

Table A.1 - Definition of Consequence Classes

Description	Consequence Class
Medium consequence for loss of human life; economic, social or environmental consequences considerable Example Residential and office buildings, public buildings where consequences of failure are medium (e.g. an office building)	CC2

Table B.1 - Suggested Criteria for Service Categories

Criteria	Categories
Buildings and components designed for quasi static actions only (Example: Buildings)	SC1

Table B.2 - Suggested Criteria for Production Categories

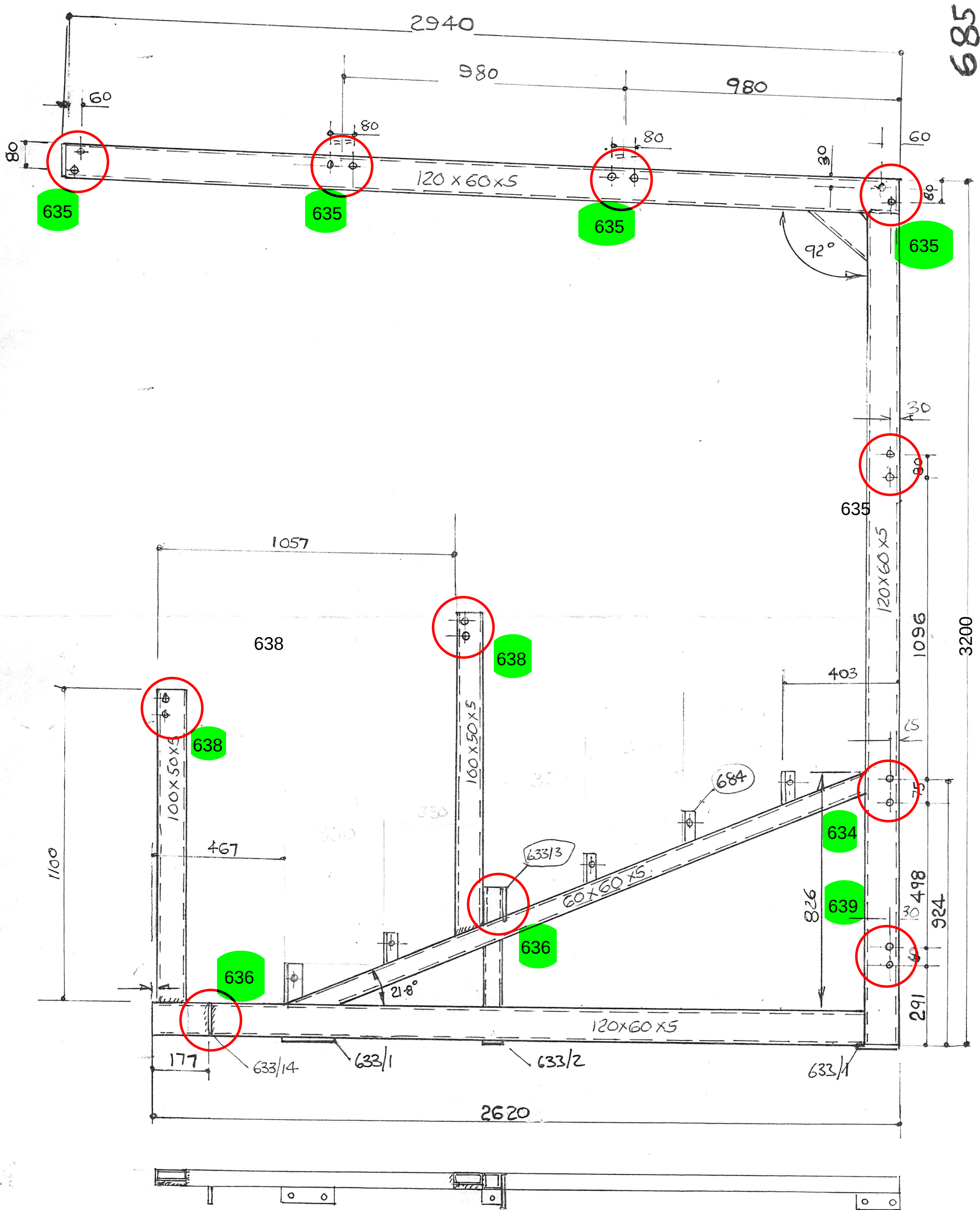
Criteria	Categories
Welded components manufactured from steel grade products below S355	PC1

Table B.3 - Recommended Matrix for Determination of Execution Classes

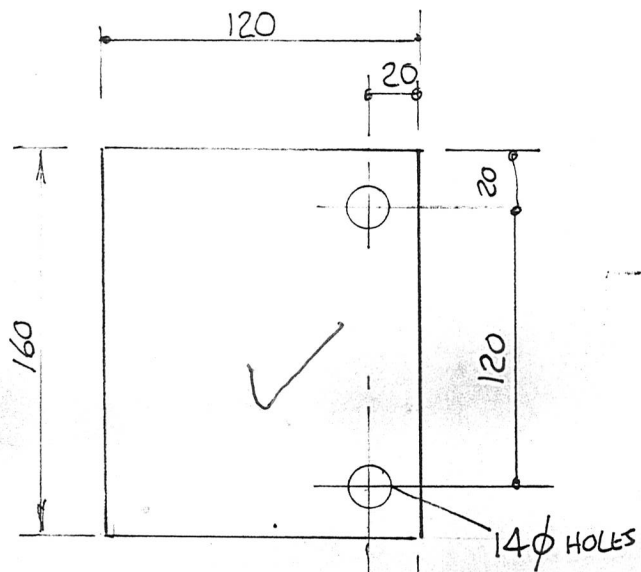
Consequence classes	CC2
Service categories	SC1
Production categories	PC1
Execution Class	EXC2

a EXC4 should be applied to special structures or structures with extreme consequences of a structural failure as required by national provisions

Execution Class	EXC2
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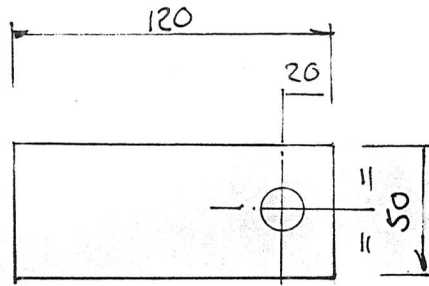


MAIN FRAMES
COLD STREAM FC



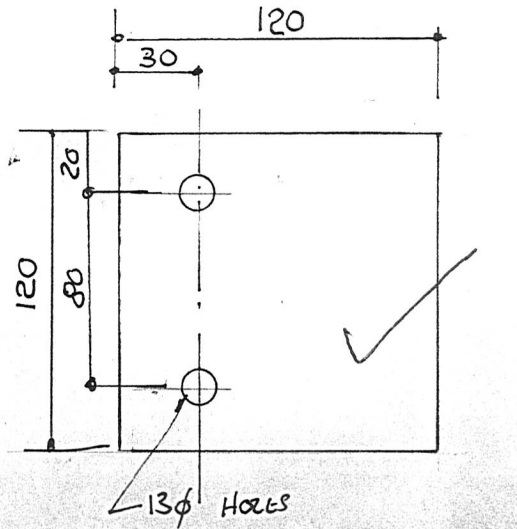
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10MM PLATE M.S.



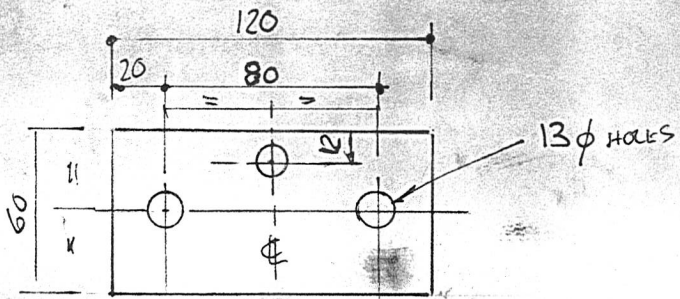
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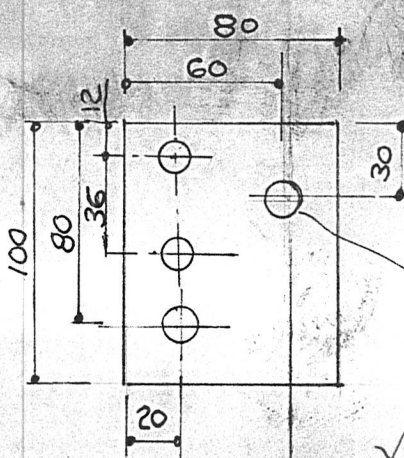


5MM MS. PLATE

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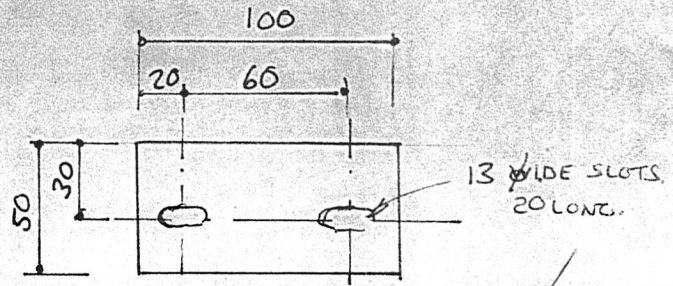
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5MM. MS.

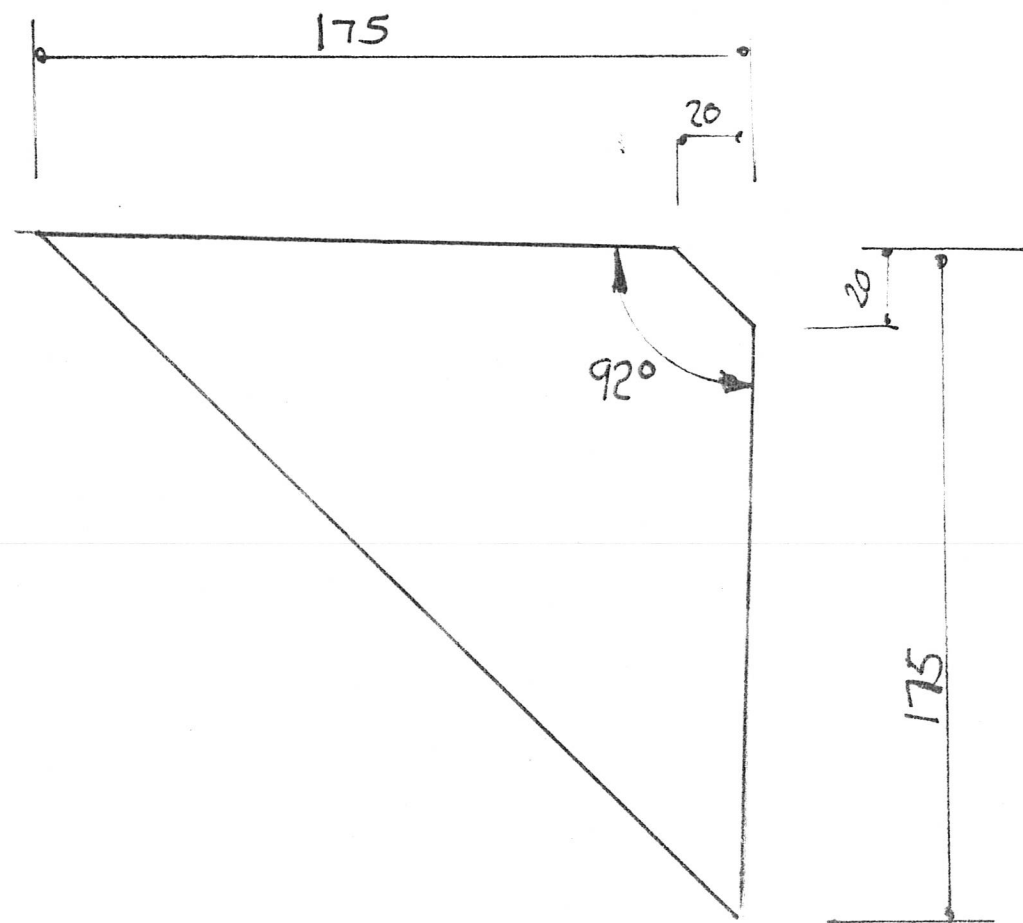
13mm HOLES

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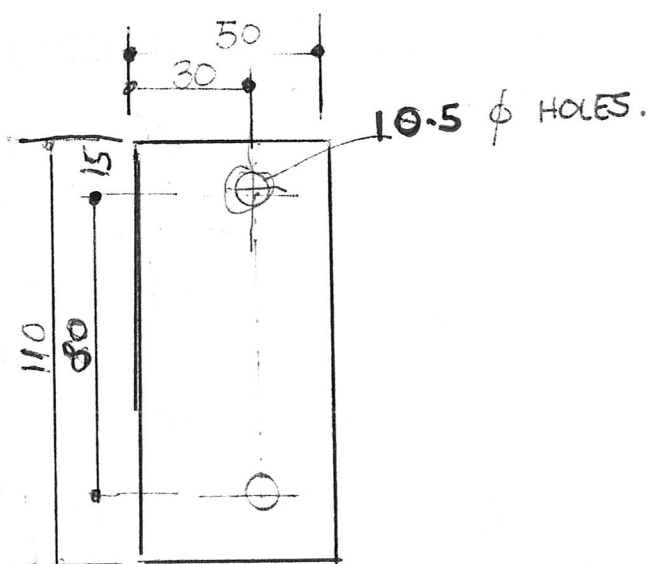
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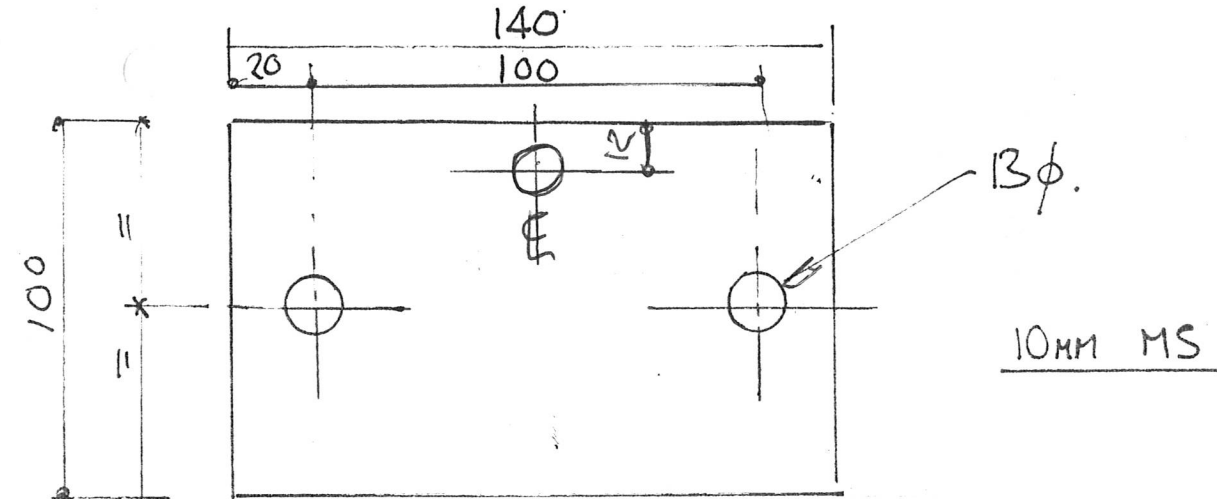
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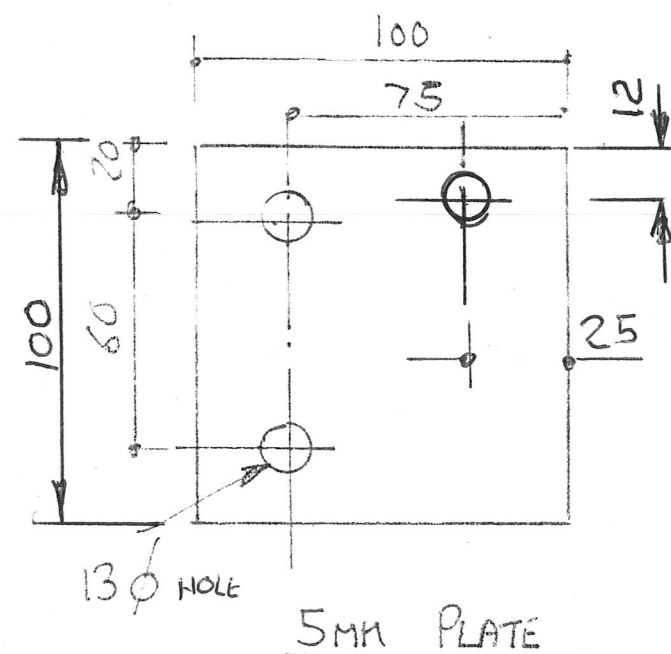


8MM PLATE

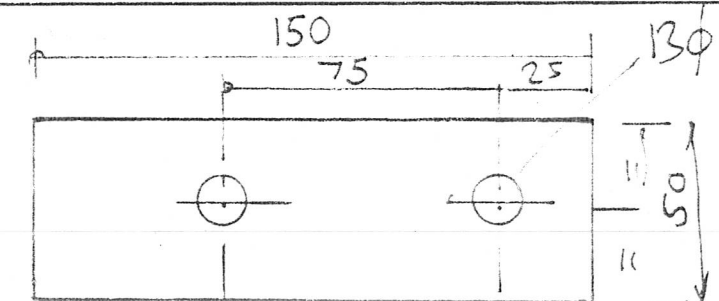
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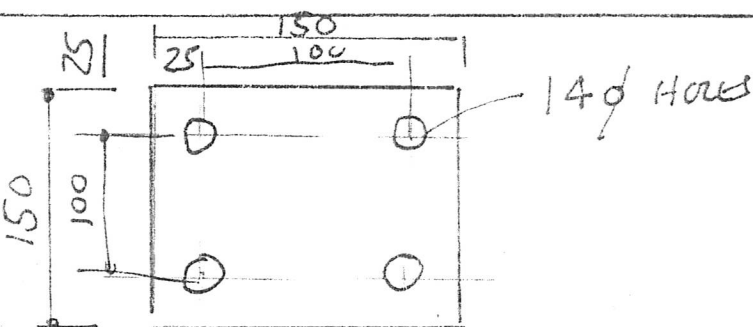
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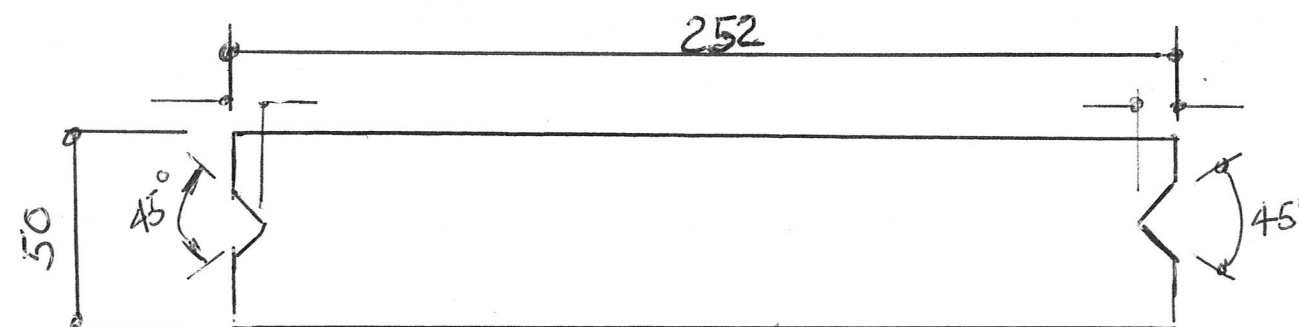
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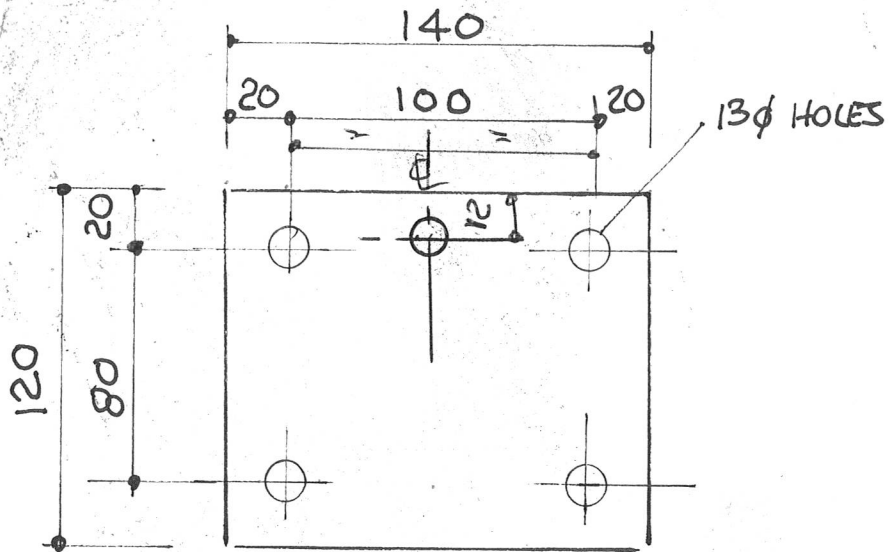
5MM PLATE MS.

⑮

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DRG.-633

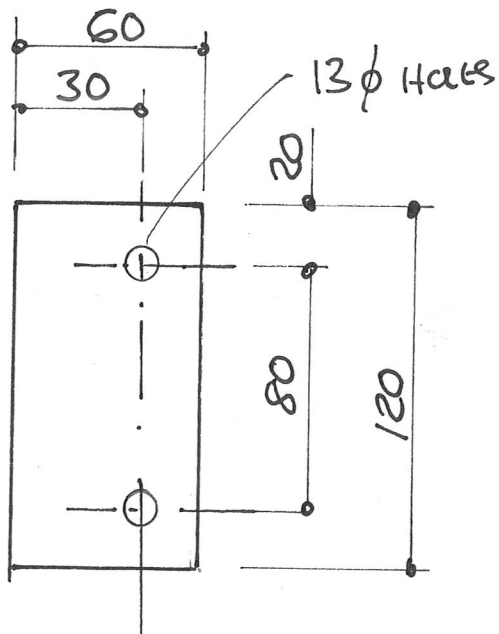
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MATL 10mm MS.

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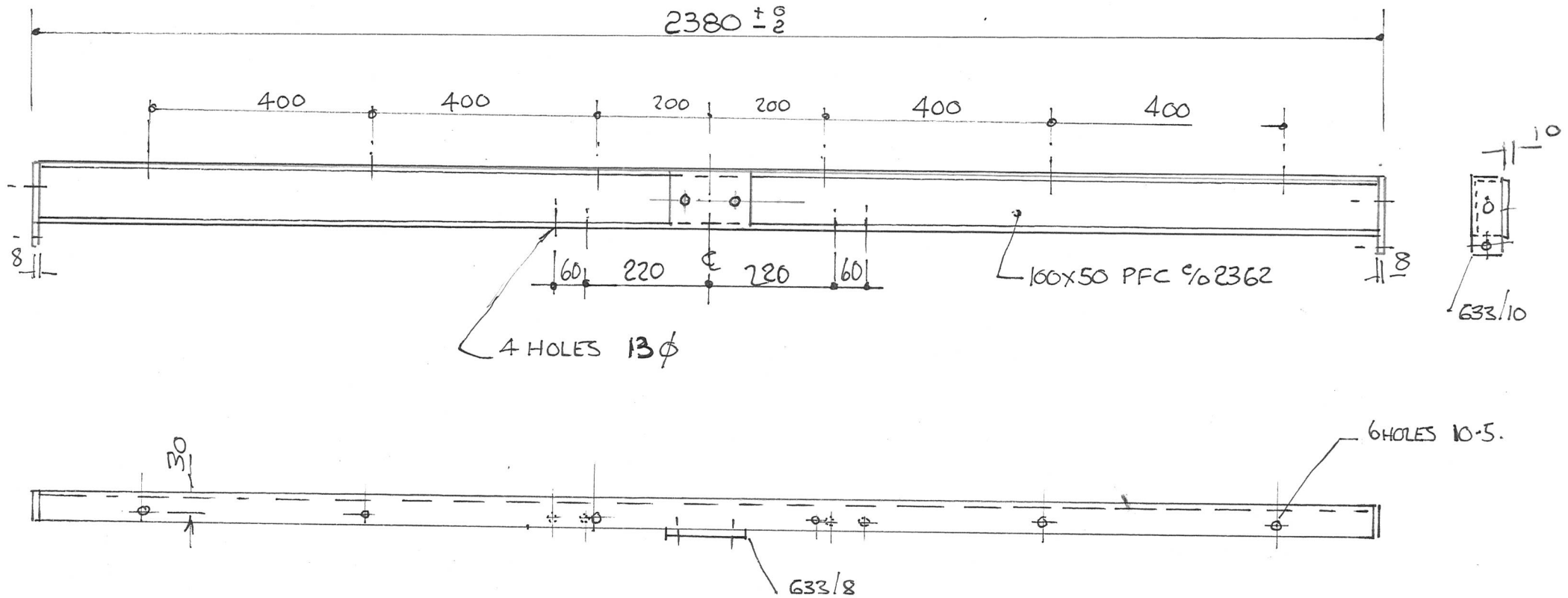
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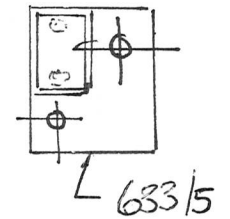
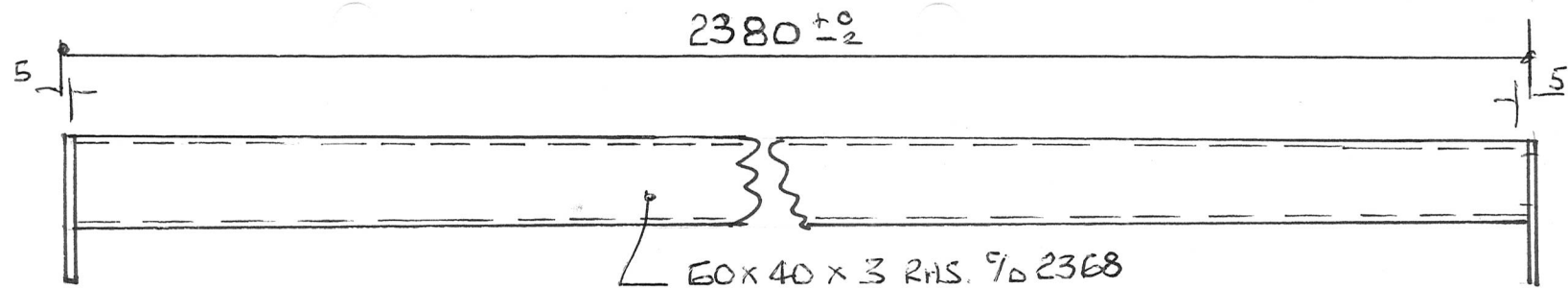
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633.

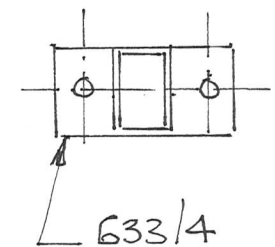
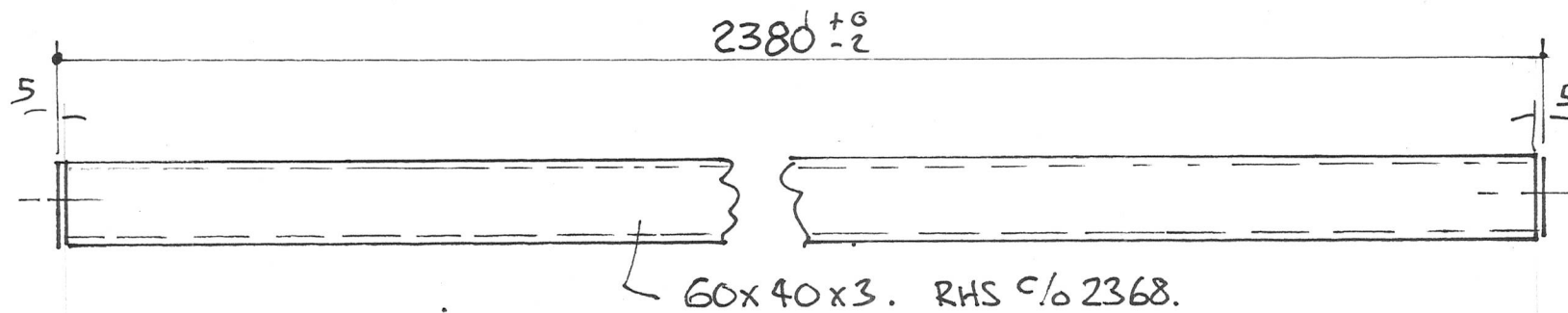
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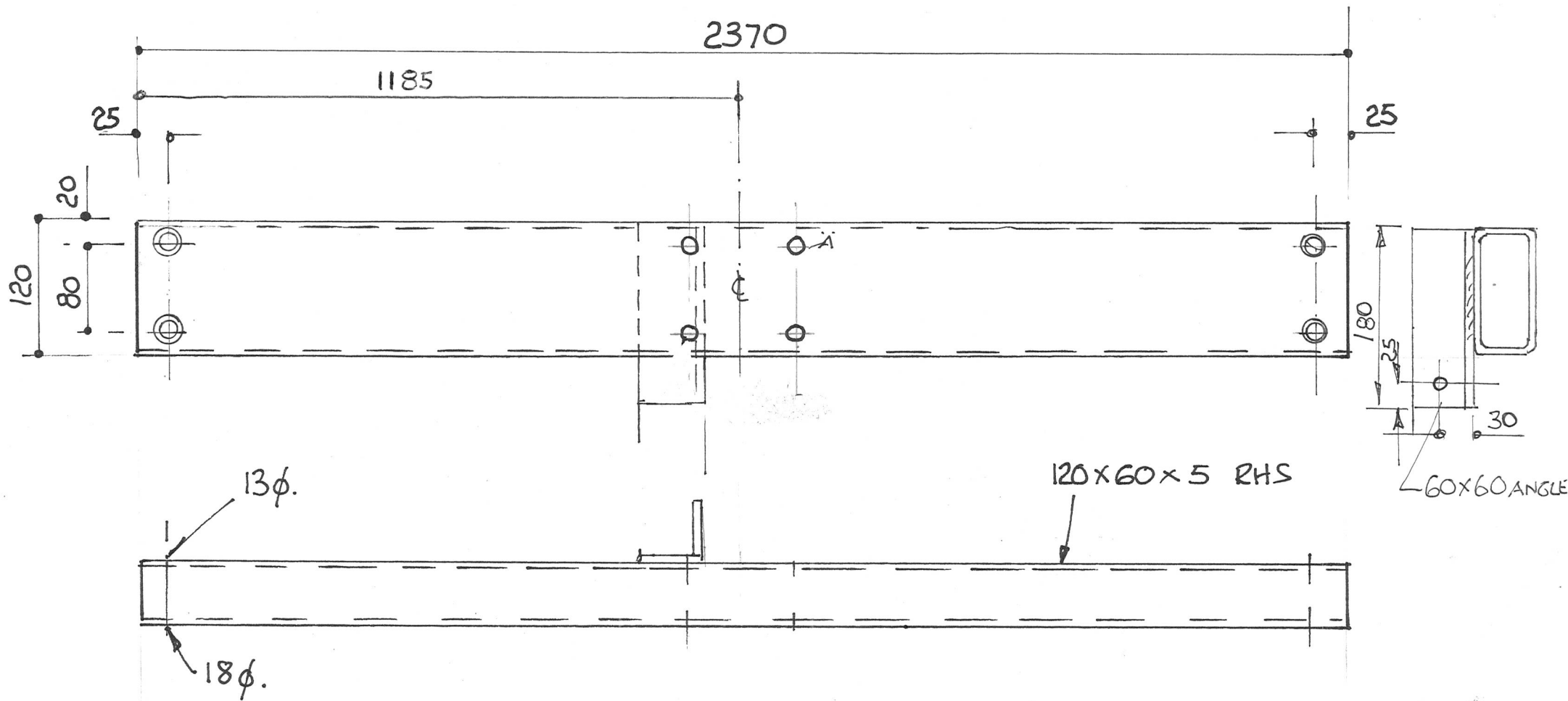
REAR CROSS CHANNEL



ROOF BEAM



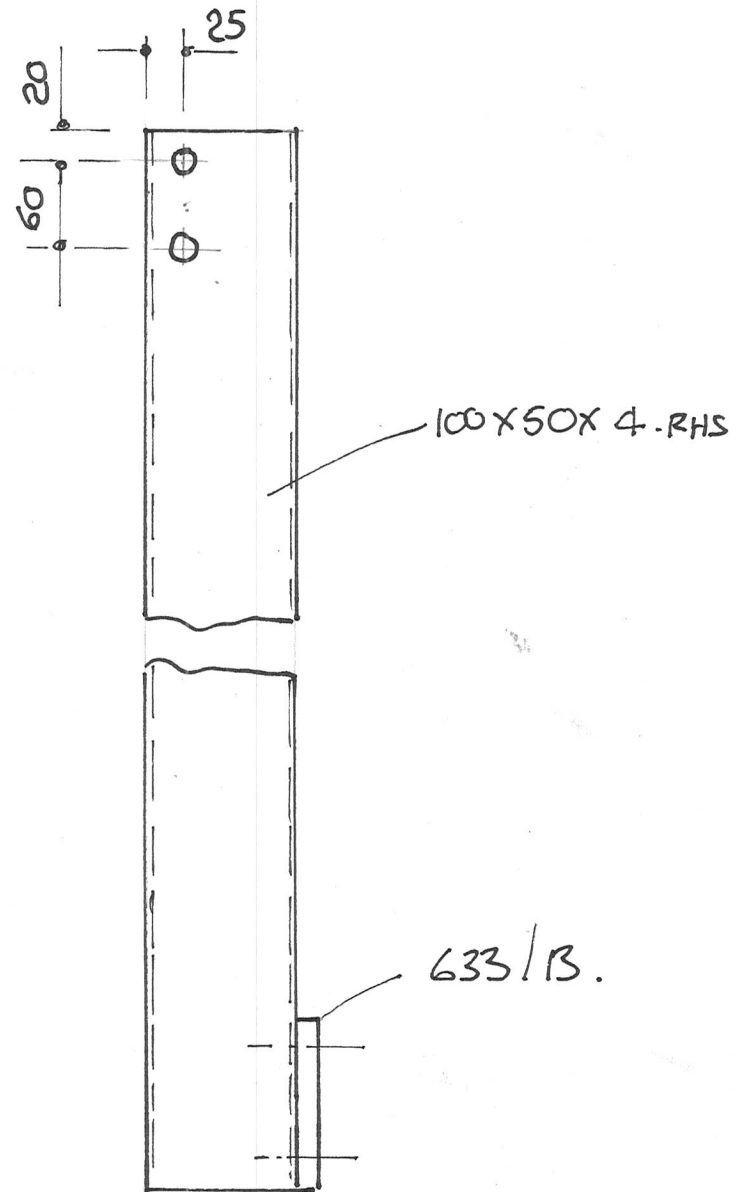
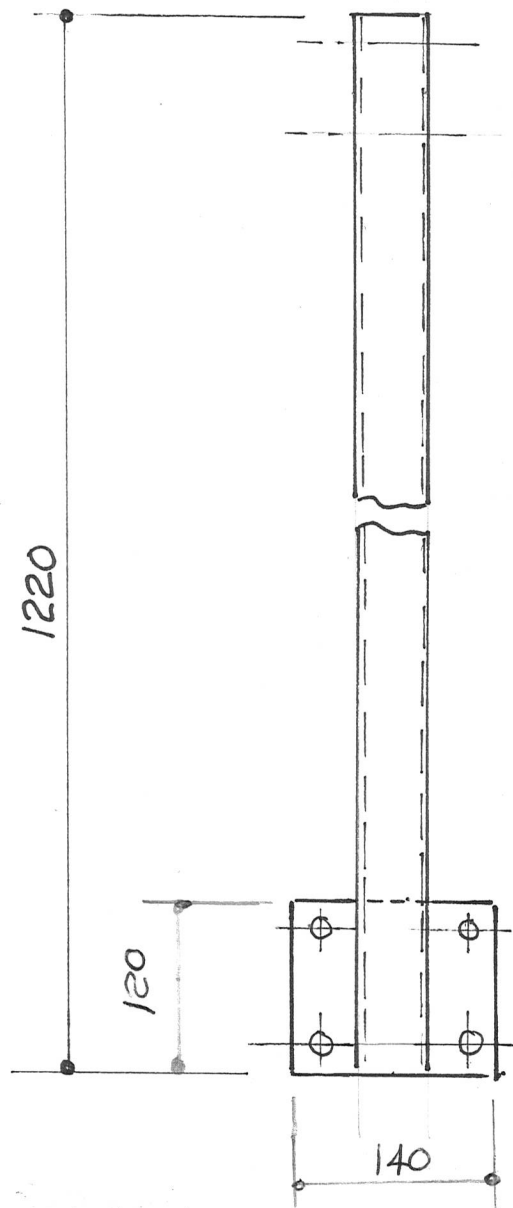
ROOF BEAM



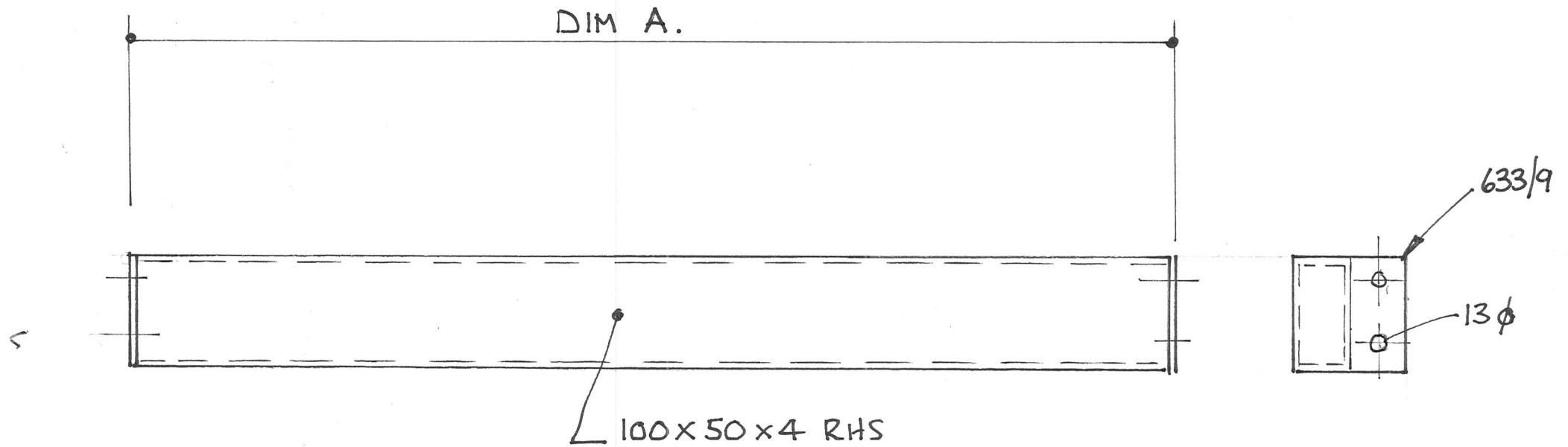
NOTES

- ① ONLY FRONT BEAMS NEED CENTRE HOLES 'A'
- ② ONLY MID TIE BEAMS NEED 60x60 ANGLE

FRONT / MID TIE BEAM.



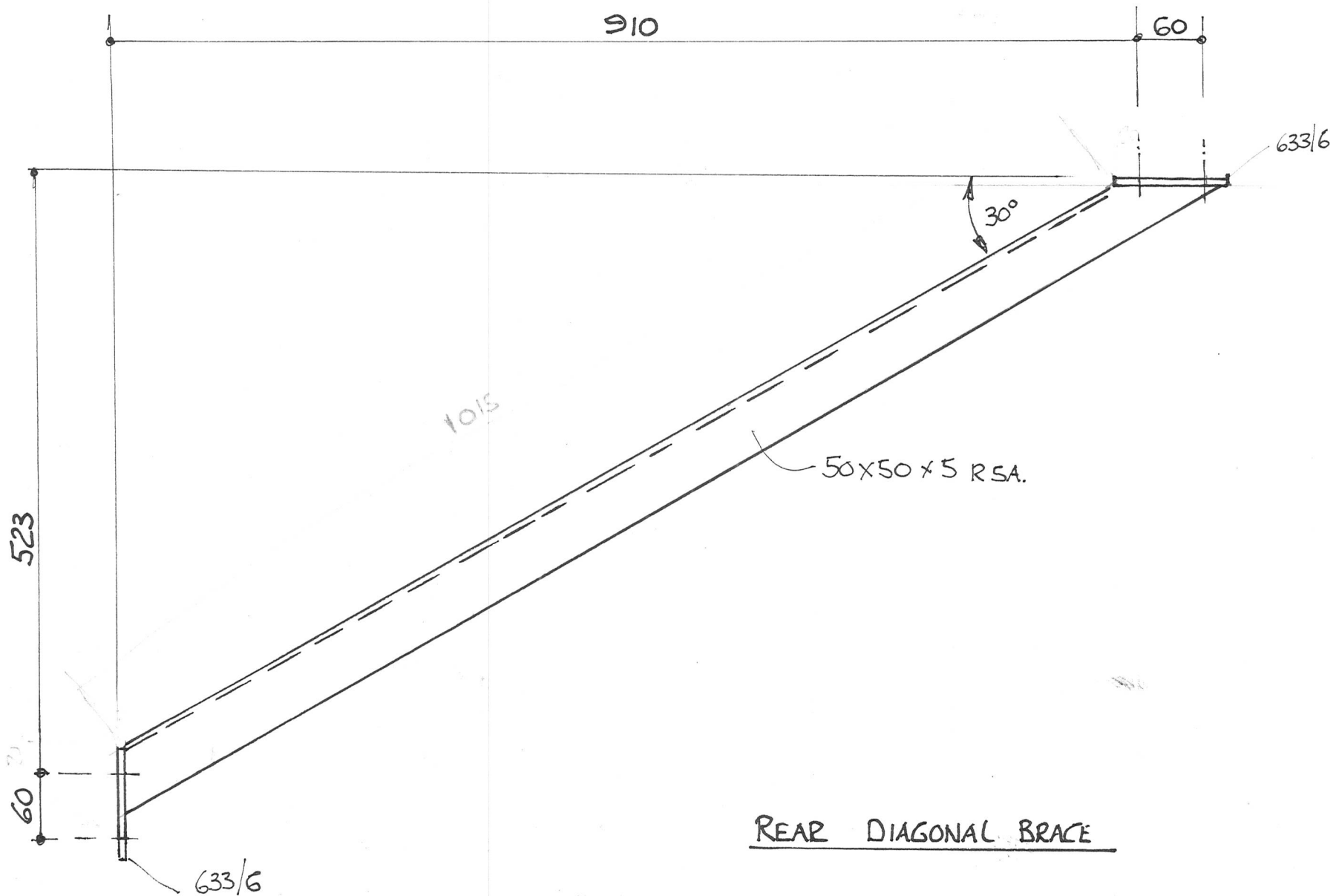
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CRUSH BARRIER RAIL

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 OFF DIM A = 1175^{+0}_{-9}

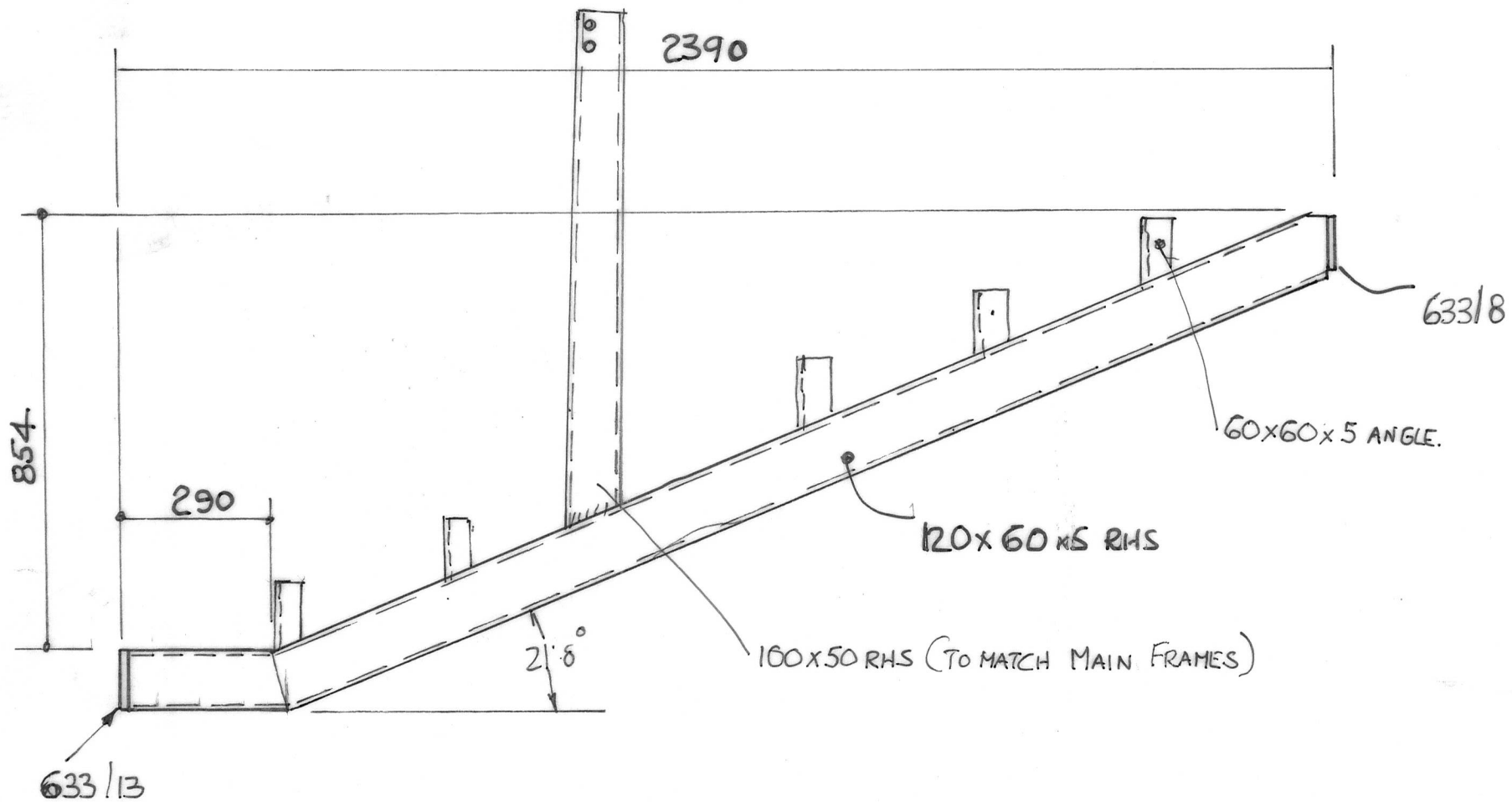
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REAR DIAGONAL BRACE

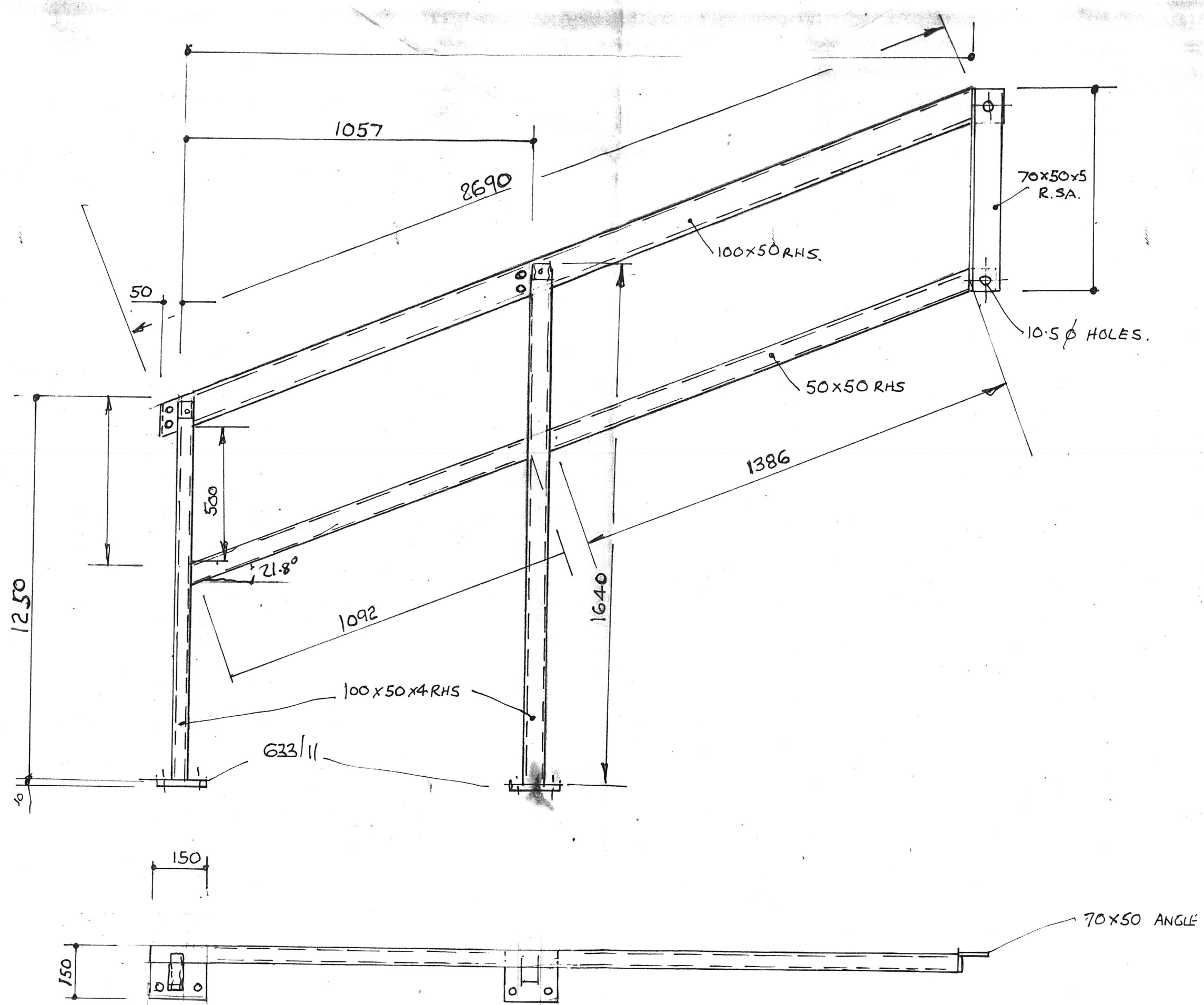
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OFF OPP. HAND

639



GANGWAY MID TREAD SUPPORT

2 OFF





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Project No:	21/45268	Sheet No:	1a
Made By:	AB	Revision:	
Date:	Jul-21	Checked By:	HJ

Project: SPECTATOR TERRACE, WEALDSTONE FC

Flat roof load

		<u>SLS</u>				<u>ULS</u>
Cladding	=	0.15	kN/m ²	x	1.4	= 0.21 kN/m ²
Imposed Load	=	0.60	kN/m ²	x	1.6	= 0.96 kN/m ²
TOTAL	=	0.75	kN/m²			1.17 kN/m²

Floor load

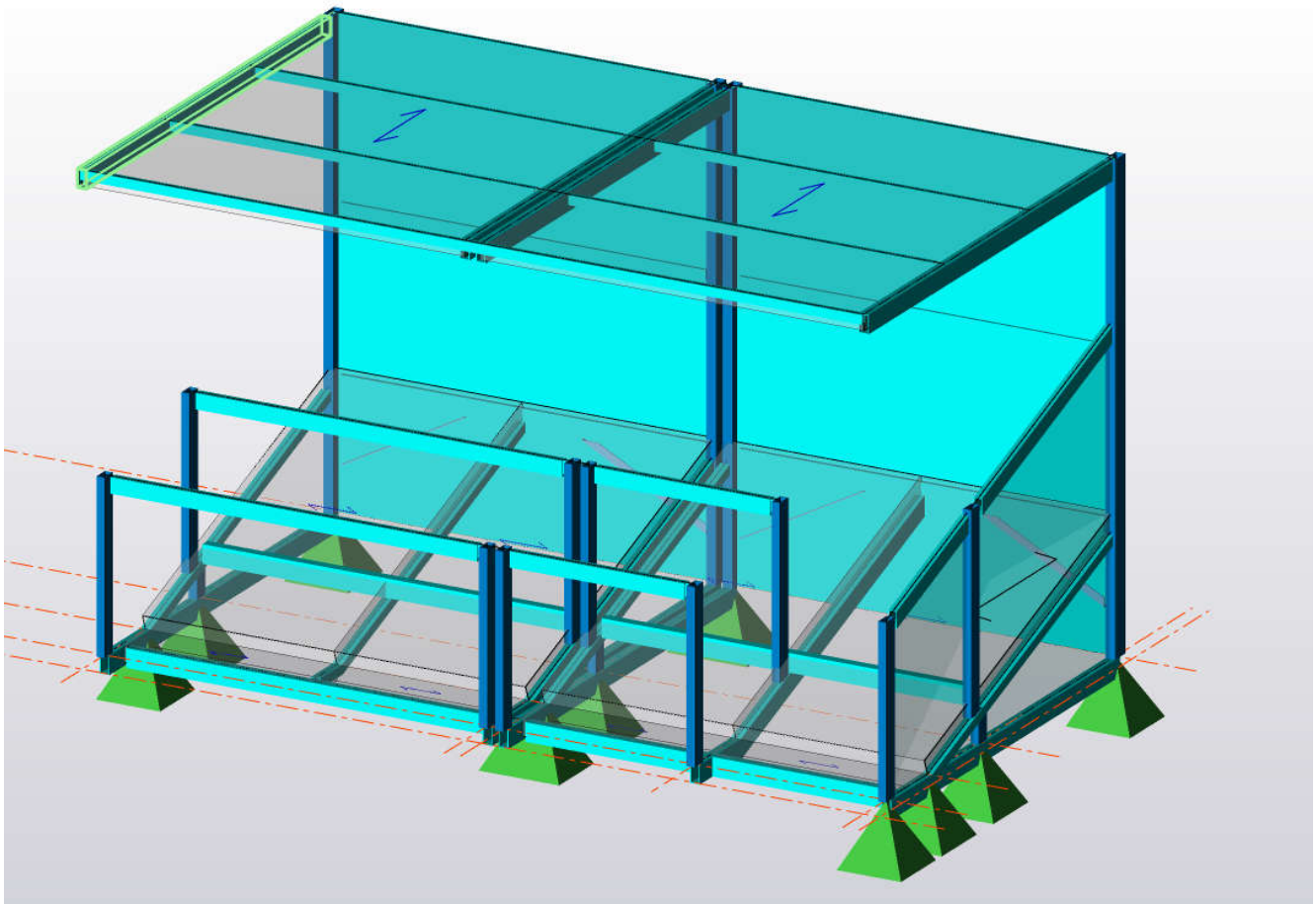
		<u>SLS</u>				<u>ULS</u>
Dead (6mm OP Aluminium Tread)	=	0.75	kN/m ²	x	1.4	= 1.05 kN/m ²
Imposed Load	=	5.00	kN/m ²	x	1.6	= 8.00 kN/m ²
TOTAL	=	5.75	kN/m²			9.05 kN/m²

Horizontal load (Parapet)

		<u>SLS</u>				<u>ULS</u>
Imposed Load	=	3.00	kN/m	x	1.6	= 4.80 kN/m
TOTAL	=	3.00	kN/m			4.80 kN/m

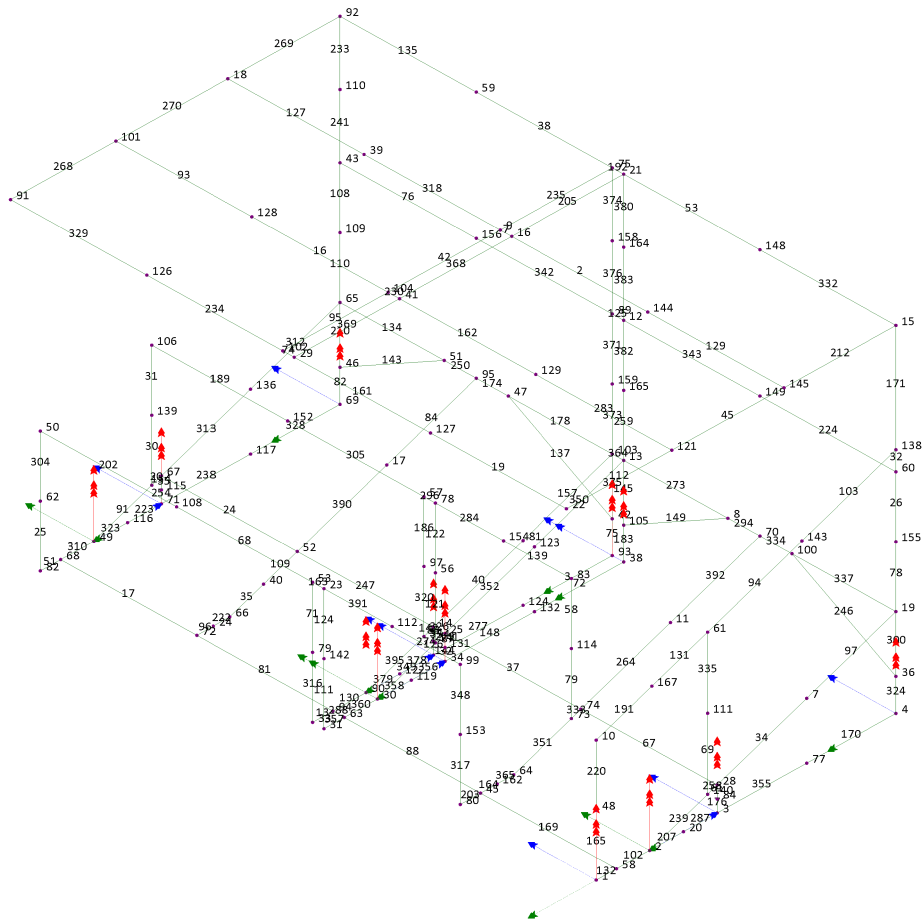
Wind load

Included automatically in Tekla Structural Designer



For Results see Tekla Structural Designer

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
	Structure STEEL FRAME				Sheet no. Page 1/16	
	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021



Structure

Analysis**Nodes**

First-order linear

No.	Coordinates [m]			F_x	F_y	F_z	M_x	M_y	M_z
	X	Y	Z	DOF	DOF	DOF	DOF	DOF	DOF
1	0.000	0.000	0.000	Fixed	Fixed	Fixed	Free	Free	Fixed
2	0.467	0.000	0.000	Fixed	Fixed	Fixed	Free	Free	Fixed
3	1.057	0.000	0.000	Fixed	Fixed	Fixed	Free	Free	Fixed
4	2.620	0.000	0.000	Fixed	Fixed	Fixed	Free	Free	Fixed
7	1.839	0.000	0.510	Free	Free	Free	Free	Free	Free
8	2.620	1.470	0.800	Free	Free	Free	Free	Free	Free
9	1.640	2.480	3.050	Free	Free	Free	Free	Free	Free
10	0.000	0.000	1.100	Free	Free	Free	Free	Free	Free
11	1.839	1.190	0.510	Free	Free	Free	Free	Free	Free
12	2.620	2.380	1.900	Free	Free	Free	Free	Free	Free
13	2.620	2.380	0.800	Free	Free	Free	Free	Free	Free
14	1.057	2.480	0.219	Free	Free	Free	Free	Free	Free

	Project				Job Ref.	
	SPECTATOR TERRACE, WEALDSTONE				21/45268	
	Structure				Sheet no.	
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No.	Coordinates [m]			F _x DOF	F _y DOF	F _z DOF	M _x DOF	M _y DOF	M _z DOF
	X	Y	Z						
15	2.620	0.000	3.050	Free	Free	Free	Free	Free	Free
16	1.640	2.380	3.050	Free	Free	Free	Free	Free	Free
17	1.839	3.670	0.510	Free	Free	Free	Free	Free	Free
18	1.640	4.860	3.050	Free	Free	Free	Free	Free	Free
19	2.620	0.000	0.800	Free	Free	Free	Free	Free	Free
20	0.762	0.000	0.000	Free	Free	Free	Free	Free	Free
21	2.620	2.380	3.050	Free	Free	Free	Free	Free	Free
22	-0.260	0.000	3.050	Free	Free	Free	Free	Free	Free
23	0.000	2.380	1.100	Free	Free	Free	Free	Free	Free
24	0.322	3.670	0.000	Free	Free	Free	Free	Free	Free
25	1.057	2.380	0.219	Free	Free	Free	Free	Free	Free
28	1.057	0.000	0.219	Free	Free	Free	Free	Free	Free
29	-0.260	2.380	3.050	Free	Free	Free	Free	Free	Free
30	0.467	2.380	0.000	Fixed	Fixed	Fixed	Free	Free	Fixed
31	0.000	2.380	0.000	Free	Free	Free	Free	Free	Free
32	1.057	2.480	0.000	Fixed	Fixed	Fixed	Free	Free	Fixed
33	0.000	2.480	0.000	Free	Free	Free	Free	Free	Free
34	1.057	2.380	0.000	Fixed	Fixed	Fixed	Free	Free	Fixed
35	0.973	4.860	0.188	Free	Free	Free	Free	Free	Free
36	2.620	0.000	0.291	Free	Free	Free	Free	Free	Free
38	2.620	2.380	0.000	Fixed	Fixed	Fixed	Free	Free	Fixed
39	1.640	3.670	3.050	Free	Free	Free	Free	Free	Free
40	0.762	3.670	0.110	Free	Free	Free	Free	Free	Free
41	0.660	2.380	3.050	Free	Free	Free	Free	Free	Free
42	2.620	2.480	0.291	Free	Free	Free	Free	Free	Free
43	2.620	4.860	1.900	Free	Free	Free	Free	Free	Free
45	0.177	1.190	0.000	Free	Free	Free	Free	Free	Free
46	2.620	4.860	0.291	Free	Free	Free	Free	Free	Free
47	2.620	3.390	0.800	Free	Free	Free	Free	Free	Free
48	0.000	0.000	0.550	Free	Free	Free	Free	Free	Free
49	0.467	4.860	0.000	Fixed	Fixed	Fixed	Free	Free	Fixed
50	0.000	4.860	1.100	Free	Free	Free	Free	Free	Free
51	2.620	3.950	0.800	Free	Free	Free	Free	Free	Free
52	1.057	3.670	0.219	Free	Free	Free	Free	Free	Free
53	0.000	2.480	1.100	Free	Free	Free	Free	Free	Free
54	0.973	2.480	0.188	Free	Free	Free	Free	Free	Free
56	0.973	2.380	0.738	Free	Free	Free	Free	Free	Free
57	0.973	2.480	1.288	Free	Free	Free	Free	Free	Free
58	0.177	0.000	0.000	Free	Free	Free	Free	Free	Free
59	2.620	3.670	3.050	Free	Free	Free	Free	Free	Free
60	2.620	0.000	1.900	Free	Free	Free	Free	Free	Free
61	0.973	0.000	1.462	Free	Free	Free	Free	Free	Free
62	0.000	4.860	0.550	Free	Free	Free	Free	Free	Free
63	0.177	2.380	0.000	Free	Free	Free	Free	Free	Free
64	0.467	1.190	0.000	Free	Free	Free	Free	Free	Free
65	2.620	4.860	0.800	Free	Free	Free	Free	Free	Free
66	0.467	3.670	0.000	Free	Free	Free	Free	Free	Free
67	1.057	4.860	0.219	Free	Free	Free	Free	Free	Free
68	0.177	4.860	0.000	Free	Free	Free	Free	Free	Free
69	2.620	4.860	0.000	Fixed	Fixed	Fixed	Free	Free	Fixed

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No.	Coordinates [m]			F _x	F _y	F _z	M _x	M _y	M _z
	X	Y	Z	DOF	DOF	DOF	DOF	DOF	DOF
70	2.620	1.190	0.800	Free	Free	Free	Free	Free	Free
71	1.057	4.860	0.000	Fixed	Fixed	Fixed	Free	Free	Fixed
72	0.177	3.670	0.000	Free	Free	Free	Free	Free	Free
73	0.973	1.190	0.188	Free	Free	Free	Free	Free	Free
74	1.057	1.190	0.219	Free	Free	Free	Free	Free	Free
75	2.620	2.480	3.050	Free	Free	Free	Free	Free	Free
77	1.839	0.000	0.000	Free	Free	Free	Free	Free	Free
78	0.973	2.380	1.288	Free	Free	Free	Free	Free	Free
79	0.000	2.480	0.550	Free	Free	Free	Free	Free	Free
80	0.000	1.190	0.000	Free	Free	Free	Free	Free	Free
81	1.839	2.480	0.510	Free	Free	Free	Free	Free	Free
82	0.000	4.860	0.000	Free	Free	Free	Free	Free	Free
83	0.973	1.190	1.288	Free	Free	Free	Free	Free	Free
84	1.057	0.000	0.110	Free	Free	Free	Free	Free	Free
87	0.973	2.380	0.188	Free	Free	Free	Free	Free	Free
89	2.620	2.480	1.900	Free	Free	Free	Free	Free	Free
90	0.467	2.480	0.000	Fixed	Fixed	Fixed	Free	Free	Fixed
91	-0.260	4.860	3.050	Free	Free	Free	Free	Free	Free
92	2.620	4.860	3.050	Free	Free	Free	Free	Free	Free
93	2.620	2.480	0.000	Fixed	Fixed	Fixed	Free	Free	Fixed
94	0.177	2.480	0.000	Free	Free	Free	Free	Free	Free
95	2.620	3.670	0.800	Free	Free	Free	Free	Free	Free
97	0.973	2.480	0.738	Free	Free	Free	Free	Free	Free
99	0.000	1.190	1.100	Free	Free	Free	Free	Free	Free
100	2.620	0.910	0.800	Free	Free	Free	Free	Free	Free
101	0.660	4.860	3.050	Free	Free	Free	Free	Free	Free
102	-0.260	2.480	3.050	Free	Free	Free	Free	Free	Free
103	2.620	2.480	0.800	Free	Free	Free	Free	Free	Free
104	0.660	2.480	3.050	Free	Free	Free	Free	Free	Free
105	2.620	2.380	0.291	Free	Free	Free	Free	Free	Free
106	0.973	4.860	1.288	Free	Free	Free	Free	Free	Free
108	0.000	3.670	1.100	Free	Free	Free	Free	Free	Free
109	2.620	4.860	1.350	Free	Free	Free	Free	Free	Free
110	2.620	4.860	2.475	Free	Free	Free	Free	Free	Free
111	0.973	0.000	0.825	Free	Free	Free	Free	Free	Free
112	0.000	1.785	1.100	Free	Free	Free	Free	Free	Free
114	0.973	1.190	0.738	Free	Free	Free	Free	Free	Free
115	1.057	4.860	0.110	Free	Free	Free	Free	Free	Free
116	0.762	4.860	0.000	Free	Free	Free	Free	Free	Free
117	1.839	4.860	0.000	Free	Free	Free	Free	Free	Free
119	0.762	2.380	0.000	Free	Free	Free	Free	Free	Free
121	0.660	0.000	3.050	Free	Free	Free	Free	Free	Free
122	0.762	2.480	0.000	Free	Free	Free	Free	Free	Free
123	1.839	2.380	0.510	Free	Free	Free	Free	Free	Free
124	1.839	2.480	0.000	Free	Free	Free	Free	Free	Free
126	-0.260	3.670	3.050	Free	Free	Free	Free	Free	Free
127	-0.260	1.190	3.050	Free	Free	Free	Free	Free	Free
128	0.660	3.670	3.050	Free	Free	Free	Free	Free	Free
129	0.660	1.190	3.050	Free	Free	Free	Free	Free	Free
131	1.057	2.380	0.110	Free	Free	Free	Free	Free	Free

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No.	Coordinates [m]			F_x	F_y	F_z	M_x	M_y	M_z
	X	Y	Z	DOF	DOF	DOF	DOF	DOF	DOF
132	1.839	2.380	0.000	Free	Free	Free	Free	Free	Free
136	1.839	4.860	0.510	Free	Free	Free	Free	Free	Free
138	2.620	0.000	2.074	Free	Free	Free	Free	Free	Free
139	0.973	4.860	0.738	Free	Free	Free	Free	Free	Free
140	0.973	0.000	0.188	Free	Free	Free	Free	Free	Free
141	1.057	2.480	0.110	Free	Free	Free	Free	Free	Free
142	0.000	2.380	0.550	Free	Free	Free	Free	Free	Free
143	1.797	0.000	1.768	Free	Free	Free	Free	Free	Free
144	1.640	1.190	3.050	Free	Free	Free	Free	Free	Free
145	1.640	0.000	3.050	Free	Free	Free	Free	Free	Free
148	2.620	1.190	3.050	Free	Free	Free	Free	Free	Free
149	2.620	1.190	1.900	Free	Free	Free	Free	Free	Free
152	0.973	3.670	1.288	Free	Free	Free	Free	Free	Free
153	0.000	1.190	0.550	Free	Free	Free	Free	Free	Free
154	0.973	1.785	1.288	Free	Free	Free	Free	Free	Free
155	2.620	0.000	1.350	Free	Free	Free	Free	Free	Free
156	2.620	3.670	1.900	Free	Free	Free	Free	Free	Free
158	2.620	2.480	2.475	Free	Free	Free	Free	Free	Free
159	2.620	2.480	1.350	Free	Free	Free	Free	Free	Free
162	0.322	1.190	0.000	Free	Free	Free	Free	Free	Free
164	2.620	2.380	2.475	Free	Free	Free	Free	Free	Free
165	2.620	2.380	1.350	Free	Free	Free	Free	Free	Free
167	0.487	0.000	1.281	Free	Free	Free	Free	Free	Free

Node Support Details

No.	Direction	Type	Stiffness [%]
1	Trans. Major X	Fixed	
	Trans. Minor Y	Fixed	
	Axial Z	Fixed	
	Rot. Major	Release	
	Rot. Minor	Release	
	Rot. Torsional	Fixed	
2	Trans. Major X	Fixed	
	Trans. Minor Y	Fixed	
	Axial Z	Fixed	
	Rot. Major	Release	
	Rot. Minor	Release	
	Rot. Torsional	Fixed	
3	Trans. Major X	Fixed	
	Trans. Minor Y	Fixed	
	Axial Z	Fixed	
	Rot. Major	Release	
	Rot. Minor	Release	
	Rot. Torsional	Fixed	
4	Trans. Major X	Fixed	
	Trans. Minor Y	Fixed	
	Axial Z	Fixed	
	Rot. Major	Release	
	Rot. Minor	Release	
	Rot. Torsional	Fixed	

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	SPECTATOR TERRACE, WEALDSTONE				21/45268	
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No.	Direction	Type	Stiffness [%]
30	Trans. Major X	Fixed	
	Trans. Minor Y	Fixed	
	Axial Z	Fixed	
	Rot. Major	Release	
	Rot. Minor	Release	
	Rot. Torsional	Fixed	
32	Trans. Major X	Fixed	
	Trans. Minor Y	Fixed	
	Axial Z	Fixed	
	Rot. Major	Release	
	Rot. Minor	Release	
	Rot. Torsional	Fixed	
34	Trans. Major X	Fixed	
	Trans. Minor Y	Fixed	
	Axial Z	Fixed	
	Rot. Major	Release	
	Rot. Minor	Release	
	Rot. Torsional	Fixed	
38	Trans. Major X	Fixed	
	Trans. Minor Y	Fixed	
	Axial Z	Fixed	
	Rot. Major	Release	
	Rot. Minor	Release	
	Rot. Torsional	Fixed	
49	Trans. Major X	Fixed	
	Trans. Minor Y	Fixed	
	Axial Z	Fixed	
	Rot. Major	Release	
	Rot. Minor	Release	
	Rot. Torsional	Fixed	
69	Trans. Major X	Fixed	
	Trans. Minor Y	Fixed	
	Axial Z	Fixed	
	Rot. Major	Release	
	Rot. Minor	Release	
	Rot. Torsional	Fixed	
71	Trans. Major X	Fixed	
	Trans. Minor Y	Fixed	
	Axial Z	Fixed	
	Rot. Major	Release	
	Rot. Minor	Release	
	Rot. Torsional	Fixed	
90	Trans. Major X	Fixed	
	Trans. Minor Y	Fixed	
	Axial Z	Fixed	
	Rot. Major	Release	
	Rot. Minor	Release	
	Rot. Torsional	Fixed	

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No.	Direction	Type	Stiffness [%]
93	Trans. Major X	Fixed	
	Trans. Minor Y	Fixed	
	Axial Z	Fixed	
	Rot. Major	Release	
	Rot. Minor	Release	
	Rot. Torsional	Fixed	

Elements

No.	Node 1	Node 2	Section	Grade	F _x DOF	M _x DOF	M _y DOF	M _z DOF	F _y DOF	M _y DOF	M _x DOF	F _z DOF
2	144	16	RHS 60x40x3.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
3	124	93	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
7	16	9	RHS 60x40x3.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Free	Free
13	33	94	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
16	104	128	RHS 60x40x3.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
17	72	68	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
19	22	127	RHS 60x40x3.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
20	35	67	SHS 60x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
24	52	67	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
25	82	62	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
26	155	60	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
30	35	139	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
31	139	106	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
32	60	138	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
34	28	7	SHS 60x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
35	66	40	SHS 60x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
37	74	25	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
38	75	59	RHS 60x40x3.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
40	14	81	SHS 60x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
42	9	104	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
45	145	121	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
51	82	68	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
53	148	21	RHS 60x40x3.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
58	114	83	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
61	84	28	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
67	28	74	RHS 120x60x5.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
68	53	108	RHS 100x50x4.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
69	140	111	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
71	79	53	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
72	132	38	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
74	29	102	RHS 60x40x3.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Free	Free
75	93	42	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
76	156	43	RHS 60x40x3.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
78	19	155	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
79	73	114	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
81	94	72	RHS 120x60x5.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
82	69	46	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
83	141	14	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
84	17	95	SHS 60x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
88	45	63	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
91	49	35	SHS 60x60x5.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed

	Project SPECTATOR TERRACE, WEALDSTONE					Job Ref. 21/45268	
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No.	Node 1	Node 2	Section	Grade	F _x DOF	M _x DOF	M _y DOF	M _z DOF	F _y DOF	M _x DOF	M _y DOF	M _z DOF
93	128	101	RHS 60x40x3.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
94	61	143	RHS 100x50x4.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
95	104	102	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
96	72	24	SHS 60x60x5.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
97	7	19	SHS 60x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
102	58	2	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
103	143	138	RHS 100x50x4.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
108	109	43	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
109	40	52	SHS 60x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
110	65	109	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
111	31	142	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
112	121	22	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
121	87	56	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
122	56	78	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
124	142	23	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
125	12	89	RHS 60x40x3.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Free	Free
126	32	141	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
127	39	18	RHS 60x40x3.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
129	145	144	RHS 60x40x3.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
130	94	90	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
131	167	61	RHS 100x50x4.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
132	1	58	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
134	51	65	PFC 100x50x10	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
135	59	92	RHS 60x40x3.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
137	42	47	RSA 50x50x5	S275	Fixed	Free	Free	Free	Fixed	Fixed	Free	Free
139	83	154	RHS 100x50x4.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
142	54	14	SHS 60x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
143	46	51	RSA 50x50x5	S275	Fixed	Free	Free	Free	Fixed	Fixed	Free	Free
144	34	131	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
145	105	13	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
148	34	132	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
149	105	8	RSA 50x50x5	S275	Fixed	Free	Free	Free	Fixed	Fixed	Free	Free
154	115	67	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
157	81	103	SHS 60x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
161	127	29	RHS 60x40x3.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
162	129	41	RHS 60x40x3.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
163	23	53	RHS 100x50x4.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Free	Free
164	45	162	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
165	1	48	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
169	58	45	RHS 120x60x5.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
170	77	4	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
171	138	15	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
174	47	95	PFC 100x50x10	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
176	3	84	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
178	103	47	PFC 100x50x10	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
183	38	105	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
186	97	57	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
189	152	106	RHS 100x50x4.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
191	10	167	RHS 100x50x4.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
192	21	75	RHS 60x40x3.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Free	Free

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No.	Node 1	Node 2	Section	Grade	F _x DOF	M _x DOF	M _y DOF	M _z DOF	F _y DOF	M _x DOF	M _y DOF	M _z DOF
202	108	50	RHS 100x50x4.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
203	80	45	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
205	21	16	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
207	2	20	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
210	46	65	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
212	15	145	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
220	48	10	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
222	24	66	SHS 60x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
223	116	71	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
224	60	149	RHS 60x40x3.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
230	41	104	RHS 60x40x3.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Free	Free
233	110	92	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
234	102	126	RHS 60x40x3.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
235	75	9	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
238	71	117	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
239	2	140	SHS 60x60x5.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
241	43	110	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
246	36	100	RSA 50x50x5	S275	Fixed	Free	Free	Free	Fixed	Fixed	Free	Free
247	14	52	RHS 120x60x5.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
250	95	51	PFC 100x50x10	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
254	71	115	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
258	140	28	SHS 60x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
259	13	165	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
264	74	11	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
268	101	91	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
269	92	18	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
270	18	101	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
273	8	13	PFC 100x50x10	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
274	99	112	RHS 100x50x4.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
277	32	124	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
279	131	25	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
283	121	129	RHS 60x40x3.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
284	154	78	RHS 100x50x4.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
287	20	3	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
288	63	94	RHS 120x60x5.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Free	Free
294	70	8	PFC 100x50x10	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
296	78	57	RHS 100x50x4.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Free	Free
300	36	19	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
304	62	50	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
305	57	152	RHS 100x50x4.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
310	68	49	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
312	136	65	SHS 60x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
313	67	136	SHS 60x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
316	33	79	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
317	80	153	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
318	9	39	RHS 60x40x3.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
320	54	97	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
323	49	116	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
324	4	36	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
326	25	14	RHS 120x60x5.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Free	Free

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No.	Node 1	Node 2	Section	Grade	F _x DOF	M _x DOF	M _y DOF	M _z DOF	F _y DOF	M _y DOF	M _z DOF	M _x DOF
328	117	69	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
329	126	91	RHS 60x40x3.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
332	15	148	RHS 60x40x3.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
333	73	74	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
334	100	70	PFC 100x50x10	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
335	111	61	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
337	19	100	PFC 100x50x10	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
342	89	156	RHS 60x40x3.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
343	149	12	RHS 60x40x3.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
348	153	99	RHS 100x50x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
349	30	87	SHS 60x60x5.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed
350	123	13	SHS 60x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
351	64	73	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
352	25	123	SHS 60x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
354	87	25	SHS 60x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
355	3	77	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
356	119	34	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
357	31	63	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
358	30	119	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
360	63	30	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
364	13	103	PFC 100x50x10	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Free	Free
365	162	64	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
368	16	41	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
369	41	29	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
371	159	89	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
373	103	159	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
374	158	75	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
375	42	103	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
376	89	158	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
378	122	32	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
379	90	122	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
380	164	21	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
382	165	12	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
383	12	164	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
390	52	17	SHS 60x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed
391	112	23	RHS 100x50x4.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
392	11	70	RHS 120x60x5.0	S275	Fixed	Fixed	Fixed	Fixed	Fixed	Fixed	Free	Free
395	90	54	SHS 60x60x5.0	S275	Fixed	Fixed	Free	Free	Fixed	Fixed	Fixed	Fixed

Element-Member

No.	Node 1	Node 2	Member	Construction	Material	Section	Grade
2	144	16	SB 2/1/#19-2/2/#20	Non-composite beam	Steel	RHS 60x40x3.0	S275
3	124	93	SB Base/A/3-Base/C/3	Non-composite beam	Steel	RHS 120x60x5.0	S275
7	16	9	SB 2/2/#20-2/3/#20	Non-composite beam	Steel	RHS 60x40x3.0	S275
13	33	94	SB Base/A/3-Base/C/3	Non-composite beam	Steel	RHS 120x60x5.0	S275

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No.	Node 1	Node 2	Member	Construction	Material	Section	Grade
16	104	128	SB 2/3/#22-2/4/#116	Non-composite beam	Steel	RHS 60x40x3.0	S275
17	72	68	SB Base/3/#24-Base/4/#117	Non-composite beam	Steel	RHS 120x60x5.0	S275
19	22	127	SB 2/1/E-2/E/2	Non-composite beam	Steel	RHS 60x40x3.0	S275
20	35	67	SB Base/D/4-Base.0.1/C/4	Non-composite beam	Steel	SHS 60x60x5.0	S275
24	52	67	SB Base.0.1/B/3-Base.0.1/B/4	Non-composite beam	Steel	RHS 120x60x5.0	S275
25	82	62	SC 4/A	Non-composite column	Steel	RHS 100x50x5.0	S275
26	155	60	SC 1/C	Non-composite column	Steel	RHS 120x60x5.0	S275
30	35	139	SC %63	Non-composite column	Steel	RHS 100x50x5.0	S275
31	139	106	SC %63	Non-composite column	Steel	RHS 100x50x5.0	S275
32	60	138	SC 1/C	Non-composite column	Steel	RHS 120x60x5.0	S275
34	28	7	SB Base/1/D-Base.0.1/1/C	Non-composite beam	Steel	SHS 60x60x5.0	S275
35	66	40	SB Base/%60-Base/C/#119	Non-composite beam	Steel	SHS 60x60x5.0	S275
37	74	25	SB Base.0.1/1/B-Base.0.1/B/2	Non-composite beam	Steel	RHS 120x60x5.0	S275
38	75	59	SB 2/C/3-2/C/4	Non-composite beam	Steel	RHS 60x40x3.0	S275
40	14	81	SB Base/D/3-Base.0.1/C/3	Non-composite beam	Steel	SHS 60x60x5.0	S275
42	9	104	SB 2/C/3-2/E/3	Non-composite beam	Steel	RHS 120x60x5.0	S275
45	145	121	SB 2/1/C-2/1/E	Non-composite beam	Steel	RHS 120x60x5.0	S275
51	82	68	SB Base/A/4-Base/C/4	Non-composite beam	Steel	RHS 120x60x5.0	S275
53	148	21	SB 2/1/C-2/C/2	Non-composite beam	Steel	RHS 60x40x3.0	S275
58	114	83	SC %57	Non-composite column	Steel	RHS 100x50x5.0	S275
61	84	28	SC 1/B	Non-composite column	Steel	RHS 100x50x5.0	S275
67	28	74	SB Base.0.1/1/B-Base.0.1/B/2	Non-composite beam	Steel	RHS 120x60x5.0	S275
68	53	108	SB 1/A/3-1/A/4	Non-composite beam	Steel	RHS 100x50x4.0	S275
69	140	111	SC #159/#315	Non-composite column	Steel	RHS 100x50x5.0	S275
71	79	53	SC A/3	Non-composite column	Steel	RHS 100x50x5.0	S275
72	132	38	SB Base/A/2-Base/C/2	Non-composite beam	Steel	RHS 120x60x5.0	S275
74	29	102	SB 2/E/2-2/E/3	Non-composite beam	Steel	RHS 60x40x3.0	S275
75	93	42	SC C/3	Non-composite column	Steel	RHS 120x60x5.0	S275

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No.	Node 1	Node 2	Member	Construction	Material	Section	Grade
76	156	43	SB 1.1/C/3-1.1/C/4	Non-composite beam	Steel	RHS 60x40x3.0	S275
78	19	155	SC 1/C	Non-composite column	Steel	RHS 120x60x5.0	S275
79	73	114	SC %57	Non-composite column	Steel	RHS 100x50x5.0	S275
81	94	72	SB Base/3/#24-Base/4/#117	Non-composite beam	Steel	RHS 120x60x5.0	S275
82	69	46	SC C/4	Non-composite column	Steel	RHS 120x60x5.0	S275
83	141	14	SC B/3	Non-composite column	Steel	RHS 100x50x5.0	S275
84	17	95	SB Base/%60-Base/C/#119	Non-composite beam	Steel	SHS 60x60x5.0	S275
88	45	63	SB Base/1/#23-Base/2/#24	Non-composite beam	Steel	RHS 120x60x5.0	S275
91	49	35	SB Base/D/4-Base.0.1/C/4	Non-composite beam	Steel	SHS 60x60x5.0	S275
93	128	101	SB 2/3/#22-2/4/#116	Non-composite beam	Steel	RHS 60x40x3.0	S275
94	61	143	SB FRM 1/%83-FRM 1/C/#314	Non-composite beam	Steel	RHS 100x50x4.0	S275
95	104	102	SB 2/C/3-2/E/3	Non-composite beam	Steel	RHS 120x60x5.0	S275
96	72	24	SB Base/%60-Base/C/#119	Non-composite beam	Steel	SHS 60x60x5.0	S275
97	7	19	SB Base/1/D-Base.0.1/1/C	Non-composite beam	Steel	SHS 60x60x5.0	S275
102	58	2	SB Base/1/A-Base/1/C	Non-composite beam	Steel	RHS 120x60x5.0	S275
103	143	138	SB FRM 1/%83-FRM 1/C/#314	Non-composite beam	Steel	RHS 100x50x4.0	S275
108	109	43	SC C/4	Non-composite column	Steel	RHS 120x60x5.0	S275
109	40	52	SB Base/%60-Base/C/#119	Non-composite beam	Steel	SHS 60x60x5.0	S275
110	65	109	SC C/4	Non-composite column	Steel	RHS 120x60x5.0	S275
111	31	142	SC A/2	Non-composite column	Steel	RHS 100x50x5.0	S275
112	121	22	SB 2/1/C-2/1/E	Non-composite beam	Steel	RHS 120x60x5.0	S275
121	87	56	SC %47	Non-composite column	Steel	RHS 100x50x5.0	S275
122	56	78	SC %47	Non-composite column	Steel	RHS 100x50x5.0	S275
124	142	23	SC A/2	Non-composite column	Steel	RHS 100x50x5.0	S275
125	12	89	SB 1.1/C/2-1.1/C/3	Non-composite beam	Steel	RHS 60x40x3.0	S275
126	32	141	SC B/3	Non-composite column	Steel	RHS 100x50x5.0	S275
127	39	18	SB 2/3/#20-2/4/#115	Non-composite beam	Steel	RHS 60x40x3.0	S275
129	145	144	SB 2/1/#19-2/2/#20	Non-composite beam	Steel	RHS 60x40x3.0	S275

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No.	Node 1	Node 2	Member	Construction	Material	Section	Grade
130	94	90	SB Base/A/3-Base/C/3	Non-composite beam	Steel	RHS 120x60x5.0	S275
131	167	61	SB 1/1/A-FRM 1/%83	Non-composite beam	Steel	RHS 100x50x4.0	S275
132	1	58	SB Base/1/A-Base/1/C	Non-composite beam	Steel	RHS 120x60x5.0	S275
134	51	65	SB Base.1/C/3-Base.1/C/4	Non-composite beam	Steel	PFC 100x50x10	S275
135	59	92	SB 2/C/3-2/C/4	Non-composite beam	Steel	RHS 60x40x3.0	S275
137	42	47	SBR FRM 3/C/#157-Base.1/C/#158	Steel brace	Steel	RSA 50x50x5	S275
139	83	154	SB /%50-FRM 7/%48	Non-composite beam	Steel	RHS 100x50x4.0	S275
142	54	14	SB Base/D/3-Base.0.1/C/3	Non-composite beam	Steel	SHS 60x60x5.0	S275
143	46	51	SBR FRM 4/C/#155-Base.1/C/#156	Steel brace	Steel	RSA 50x50x5	S275
144	34	131	SC B/2	Non-composite column	Steel	RHS 100x50x5.0	S275
145	105	13	SC C/2	Non-composite column	Steel	RHS 120x60x5.0	S275
148	34	132	SB Base/A/2-Base/C/2	Non-composite beam	Steel	RHS 120x60x5.0	S275
149	105	8	SBR /%7-Base.1/C/#30	Steel brace	Steel	RSA 50x50x5	S275
154	115	67	SC B/4	Non-composite column	Steel	RHS 100x50x5.0	S275
157	81	103	SB Base/D/3-Base.0.1/C/3	Non-composite beam	Steel	SHS 60x60x5.0	S275
161	127	29	SB 2/1/E-2/E/2	Non-composite beam	Steel	RHS 60x40x3.0	S275
162	129	41	SB 2/1/#21-2/2/#22	Non-composite beam	Steel	RHS 60x40x3.0	S275
163	23	53	SB 1/A/2-1/A/3	Non-composite beam	Steel	RHS 100x50x4.0	S275
164	45	162	SB Base/A/#37-Base/#37/C	Non-composite beam	Steel	RHS 120x60x5.0	S275
165	1	48	SC 1/A	Non-composite column	Steel	RHS 100x50x5.0	S275
169	58	45	SB Base/1/#23-Base/2/#24	Non-composite beam	Steel	RHS 120x60x5.0	S275
170	77	4	SB Base/1/A-Base/1/C	Non-composite beam	Steel	RHS 120x60x5.0	S275
171	138	15	SC 1/C	Non-composite column	Steel	RHS 120x60x5.0	S275
174	47	95	SB Base.1/C/3-Base.1/C/4	Non-composite beam	Steel	PFC 100x50x10	S275
176	3	84	SC 1/B	Non-composite column	Steel	RHS 100x50x5.0	S275
178	103	47	SB Base.1/C/3-Base.1/C/4	Non-composite beam	Steel	PFC 100x50x10	S275
183	38	105	SC C/2	Non-composite column	Steel	RHS 120x60x5.0	S275
186	97	57	SC %61	Non-composite column	Steel	RHS 100x50x5.0	S275
189	152	106	SB FRM 3/%62-/59	Non-composite beam	Steel	RHS 100x50x4.0	S275

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No.	Node 1	Node 2	Member	Construction	Material	Section	Grade
191	10	167	SB 1/1/A-FRM 1/%83	Non-composite beam	Steel	RHS 100x50x4.0	S275
192	21	75	SB 2/C/2-2/C/3	Non-composite beam	Steel	RHS 60x40x3.0	S275
202	108	50	SB 1/A/3-1/A/4	Non-composite beam	Steel	RHS 100x50x4.0	S275
203	80	45	SB Base/A/#37-Base/#37/C	Non-composite beam	Steel	RHS 120x60x5.0	S275
205	21	16	SB 2/C/2-2/E/2	Non-composite beam	Steel	RHS 120x60x5.0	S275
207	2	20	SB Base/1/A-Base/1/C	Non-composite beam	Steel	RHS 120x60x5.0	S275
210	46	65	SC C/4	Non-composite column	Steel	RHS 120x60x5.0	S275
212	15	145	SB 2/1/C-2/1/E	Non-composite beam	Steel	RHS 120x60x5.0	S275
220	48	10	SC 1/A	Non-composite column	Steel	RHS 100x50x5.0	S275
222	24	66	SB Base/%60-Base/C/#119	Non-composite beam	Steel	SHS 60x60x5.0	S275
223	116	71	SB Base/A/4-Base/C/4	Non-composite beam	Steel	RHS 120x60x5.0	S275
224	60	149	SB 1.1/1/C-1.1/C/2	Non-composite beam	Steel	RHS 60x40x3.0	S275
230	41	104	SB 2/2/#22-2/3/#22	Non-composite beam	Steel	RHS 60x40x3.0	S275
233	110	92	SC C/4	Non-composite column	Steel	RHS 120x60x5.0	S275
234	102	126	SB 2/E/3-2/E/4	Non-composite beam	Steel	RHS 60x40x3.0	S275
235	75	9	SB 2/C/3-2/E/3	Non-composite beam	Steel	RHS 120x60x5.0	S275
238	71	117	SB Base/A/4-Base/C/4	Non-composite beam	Steel	RHS 120x60x5.0	S275
239	2	140	SB Base/1/D-Base.0.1/1/C	Non-composite beam	Steel	SHS 60x60x5.0	S275
241	43	110	SC C/4	Non-composite column	Steel	RHS 120x60x5.0	S275
246	36	100	SBR FRM 1/C/#28-Base.1/C/#29	Steel brace	Steel	RSA 50x50x5	S275
247	14	52	SB Base.0.1/B/3-Base.0.1/B/4	Non-composite beam	Steel	RHS 120x60x5.0	S275
250	95	51	SB Base.1/C/3-Base.1/C/4	Non-composite beam	Steel	PFC 100x50x10	S275
254	71	115	SC B/4	Non-composite column	Steel	RHS 100x50x5.0	S275
258	140	28	SB Base/1/D-Base.0.1/1/C	Non-composite beam	Steel	SHS 60x60x5.0	S275
259	13	165	SC C/2	Non-composite column	Steel	RHS 120x60x5.0	S275
264	74	11	SB Base/A/#37-Base/#37/C	Non-composite beam	Steel	RHS 120x60x5.0	S275
268	101	91	SB 2/C/4-2/E/4	Non-composite beam	Steel	RHS 120x60x5.0	S275
269	92	18	SB 2/C/4-2/E/4	Non-composite beam	Steel	RHS 120x60x5.0	S275
270	18	101	SB 2/C/4-2/E/4	Non-composite beam	Steel	RHS 120x60x5.0	S275

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No.	Node 1	Node 2	Member	Construction	Material	Section	Grade
273	8	13	SB Base.1/1/C-Base.1/C/2	Non-composite beam	Steel	PFC 100x50x10	S275
274	99	112	SB 1/A/#37-1/A/2	Non-composite beam	Steel	RHS 100x50x4.0	S275
277	32	124	SB Base/A/3-Base/C/3	Non-composite beam	Steel	RHS 120x60x5.0	S275
279	131	25	SC B/2	Non-composite column	Steel	RHS 100x50x5.0	S275
283	121	129	SB 2/1/#21-2/2/#22	Non-composite beam	Steel	RHS 60x40x3.0	S275
284	154	78	SB /%50-FRM 7/%48	Non-composite beam	Steel	RHS 100x50x4.0	S275
287	20	3	SB Base/1/A-Base/1/C	Non-composite beam	Steel	RHS 120x60x5.0	S275
288	63	94	SB Base/2/#24-Base/3/#24	Non-composite beam	Steel	RHS 120x60x5.0	S275
294	70	8	SB Base.1/1/C-Base.1/C/2	Non-composite beam	Steel	PFC 100x50x10	S275
296	78	57	SB FRM 7/%48-FRM 3/%62	Non-composite beam	Steel	RHS 100x50x4.0	S275
300	36	19	SC 1/C	Non-composite column	Steel	RHS 120x60x5.0	S275
304	62	50	SC 4/A	Non-composite column	Steel	RHS 100x50x5.0	S275
305	57	152	SB FRM 3/%62-/59	Non-composite beam	Steel	RHS 100x50x4.0	S275
310	68	49	SB Base/A/4-Base/C/4	Non-composite beam	Steel	RHS 120x60x5.0	S275
312	136	65	SB Base/D/4-Base.0.1/C/4	Non-composite beam	Steel	SHS 60x60x5.0	S275
313	67	136	SB Base/D/4-Base.0.1/C/4	Non-composite beam	Steel	SHS 60x60x5.0	S275
316	33	79	SC A/3	Non-composite column	Steel	RHS 100x50x5.0	S275
317	80	153	SC A/#37	Non-composite column	Steel	RHS 100x50x5.0	S275
318	9	39	SB 2/3/#20-2/4/#115	Non-composite beam	Steel	RHS 60x40x3.0	S275
320	54	97	SC %61	Non-composite column	Steel	RHS 100x50x5.0	S275
323	49	116	SB Base/A/4-Base/C/4	Non-composite beam	Steel	RHS 120x60x5.0	S275
324	4	36	SC 1/C	Non-composite column	Steel	RHS 120x60x5.0	S275
326	25	14	SB Base.0.1/B/2-Base.0.1/B/3	Non-composite beam	Steel	RHS 120x60x5.0	S275
328	117	69	SB Base/A/4-Base/C/4	Non-composite beam	Steel	RHS 120x60x5.0	S275
329	126	91	SB 2/E/3-2/E/4	Non-composite beam	Steel	RHS 60x40x3.0	S275
332	15	148	SB 2/1/C-2/C/2	Non-composite beam	Steel	RHS 60x40x3.0	S275
333	73	74	SB Base/A/#37-Base/#37/C	Non-composite beam	Steel	RHS 120x60x5.0	S275
334	100	70	SB Base.1/1/C-Base.1/C/2	Non-composite beam	Steel	PFC 100x50x10	S275

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No.	Node 1	Node 2	Member	Construction	Material	Section	Grade
335	111	61	SC #159/#315	Non-composite column	Steel	RHS 100x50x5.0	S275
337	19	100	SB Base.1/1/C-Base.1/C/2	Non-composite beam	Steel	PFC 100x50x10	S275
342	89	156	SB 1.1/C/3-1.1/C/4	Non-composite beam	Steel	RHS 60x40x3.0	S275
343	149	12	SB 1.1/1/C-1.1/C/2	Non-composite beam	Steel	RHS 60x40x3.0	S275
348	153	99	SC A/#37	Non-composite column	Steel	RHS 100x50x5.0	S275
349	30	87	SB Base/D/2-Base.0.1/C/2	Non-composite beam	Steel	SHS 60x60x5.0	S275
350	123	13	SB Base/D/2-Base.0.1/C/2	Non-composite beam	Steel	SHS 60x60x5.0	S275
351	64	73	SB Base/A/#37-Base/#37/C	Non-composite beam	Steel	RHS 120x60x5.0	S275
352	25	123	SB Base/D/2-Base.0.1/C/2	Non-composite beam	Steel	SHS 60x60x5.0	S275
354	87	25	SB Base/D/2-Base.0.1/C/2	Non-composite beam	Steel	SHS 60x60x5.0	S275
355	3	77	SB Base/1/A-Base/1/C	Non-composite beam	Steel	RHS 120x60x5.0	S275
356	119	34	SB Base/A/2-Base/C/2	Non-composite beam	Steel	RHS 120x60x5.0	S275
357	31	63	SB Base/A/2-Base/C/2	Non-composite beam	Steel	RHS 120x60x5.0	S275
358	30	119	SB Base/A/2-Base/C/2	Non-composite beam	Steel	RHS 120x60x5.0	S275
360	63	30	SB Base/A/2-Base/C/2	Non-composite beam	Steel	RHS 120x60x5.0	S275
364	13	103	SB Base.1/C/2-Base.1/C/3	Non-composite beam	Steel	PFC 100x50x10	S275
365	162	64	SB Base/A/#37-Base/#37/C	Non-composite beam	Steel	RHS 120x60x5.0	S275
368	16	41	SB 2/C/2-2/E/2	Non-composite beam	Steel	RHS 120x60x5.0	S275
369	41	29	SB 2/C/2-2/E/2	Non-composite beam	Steel	RHS 120x60x5.0	S275
371	159	89	SC C/3	Non-composite column	Steel	RHS 120x60x5.0	S275
373	103	159	SC C/3	Non-composite column	Steel	RHS 120x60x5.0	S275
374	158	75	SC C/3	Non-composite column	Steel	RHS 120x60x5.0	S275
375	42	103	SC C/3	Non-composite column	Steel	RHS 120x60x5.0	S275
376	89	158	SC C/3	Non-composite column	Steel	RHS 120x60x5.0	S275
378	122	32	SB Base/A/3-Base/C/3	Non-composite beam	Steel	RHS 120x60x5.0	S275
379	90	122	SB Base/A/3-Base/C/3	Non-composite beam	Steel	RHS 120x60x5.0	S275
380	164	21	SC C/2	Non-composite column	Steel	RHS 120x60x5.0	S275
382	165	12	SC C/2	Non-composite column	Steel	RHS 120x60x5.0	S275

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No.	Node 1	Node 2	Member	Construction	Material	Section	Grade
383	12	164	SC C/2	Non-composite column	Steel	RHS 120x60x5.0	S275
390	52	17	SB Base/%60-Base/C/#119	Non-composite beam	Steel	SHS 60x60x5.0	S275
391	112	23	SB 1/A/#37-1/A/2	Non-composite beam	Steel	RHS 100x50x4.0	S275
392	11	70	SB Base/A/#37-Base/#37/C	Non-composite beam	Steel	RHS 120x60x5.0	S275
395	90	54	SB Base/D/3-Base.0.1/C/3	Non-composite beam	Steel	SHS 60x60x5.0	S275

Element Properties

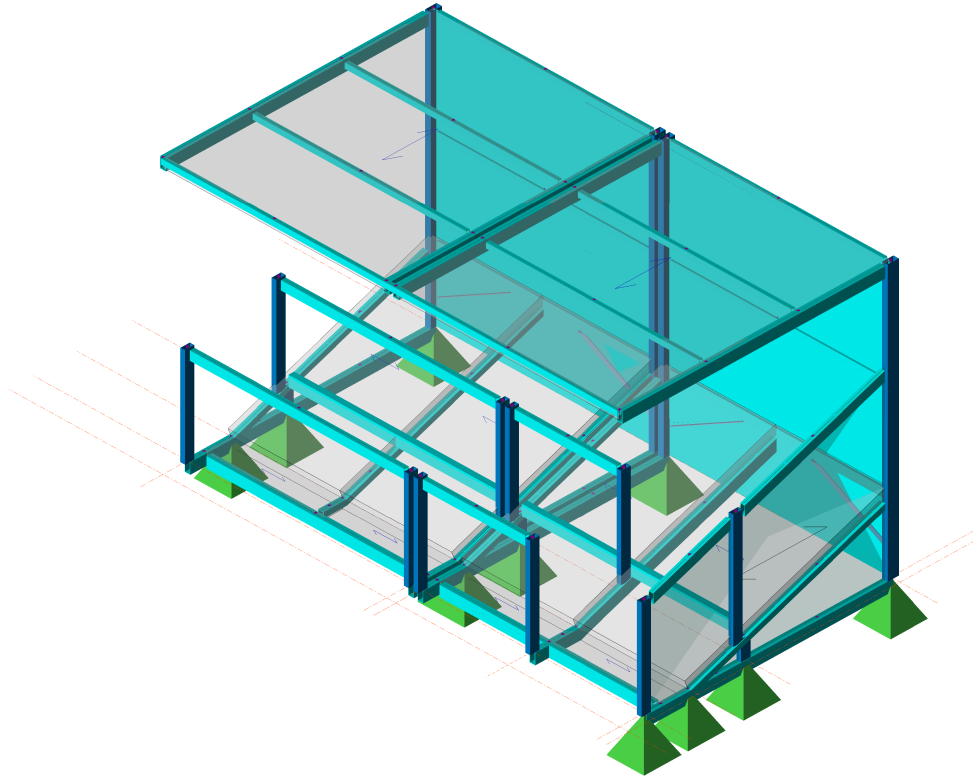
Section Properties

Section	Material	I _t [cm ⁴]	I _{major} [cm ⁴]	I _{minor} [cm ⁴]	A [mm ²]	A _{major} [mm ²]	A _{minor} [mm ²]
PFC 100x50x10	S275	2.495	207.7	32.3	1300	765	500
RHS 60x40x3.0	S275	29.225	26.5	13.9	554	222	333
RHS 100x50x4.0	S275	112.778	139.6	46.2	1119	373	746
RHS 100x50x5.0	S275	134.743	166.5	54.3	1373	458	915
RHS 120x60x5.0	S275	241.798	299.2	98.8	1673	558	1115
RSA 50x50x5	S275	0.396	11.1	11.1	483	0	0
SHS 60x60x5.0	S275	86.397	53.3	53.3	1073	537	537

Modification Factors

Material	Type	E	G	I _t	I _{major}	I _{minor}	A	A _{major}	A _{minor}	t
Steel	Beam Non-Composite	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-
	Column Non-Composite	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-
	Brace	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	-

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ANDREEA BLIDAR	28/07/2021	DAVID SMITH	28/07/2021	DAVID SMITH	28/07/2021	



Structure

Structure**Action Codes**

General Loading BS 6399-1 (1996)
 Wind Loading BS 6399-2 (1997)
 Snow Loading BS 6399-3 (1988)
 Seismic Loading ASCE7 (2010)
 Combinations See material codes (0)

Resistance Codes

Steel Design BS 5950-1 (2000)
 Concrete Design BS 8110-1 (1997)
 Composite Design BS 5950-3.1 (2010)
 Timber Design BS 5268-2 (2002)
 Masonry Design BS 5628-1 + BS 5628-2 (2005)
 Foundation Design BS-8004 (1986)
 Seismic Design and Detailing ASCE7 (2010)

Combinations

Name	Class	Active	Strength	Service
1 $Cb_1-1.4D+1.6I+1.6RI$	Gravity	•	•	•
2 $Cb_{1.1}-1.4D+1.6I+1.6RI+NHF_{Dir1+}$	Lateral	•	•	•
3 $Cb_{1.2}-1.4D+1.6I+1.6RI+NHF_{Dir1-}$	Lateral	•	•	•
4 $Cb_{1.3}-1.4D+1.6I+1.6RI+NHF_{Dir2+}$	Lateral	•	•	•

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Name	Class	Active	Strength	Service
5 Cb _{1,4} -1.4D+1.6I+1.6RI+NHF _{Dir2} -	Lateral	•	•	•
6 Cb _{3,1} -1.2D+1.2I+1.2RI+1.2W	Lateral	•	•	•
7 Cb _{3,2} -1.2D+1.2I+1.2RI+1.2W	Lateral	•	•	•
8 Cb _{3,3} -1.2D+1.2I+1.2RI+1.2W	Lateral	•	•	•
9 Cb _{3,4} -1.2D+1.2I+1.2RI+1.2W	Lateral	•	•	•
10 Cb _{3,5} -1.2D+1.2I+1.2RI+1.2W	Lateral	•	•	•
11 Cb _{3,6} -1.2D+1.2I+1.2RI+1.2W	Lateral	•	•	•
12 Cb _{3,7} -1.2D+1.2I+1.2RI+1.2W	Lateral	•	•	•
13 Cb _{3,8} -1.2D+1.2I+1.2RI+1.2W	Lateral	•	•	•
14 Cb _{3,9} -1.2D+1.2I+1.2RI+1.2W	Lateral	•	•	•
15 Cb _{3,10} -1.2D+1.2I+1.2RI+1.2W	Lateral	•	•	•
16 Cb _{3,11} -1.2D+1.2I+1.2RI+1.2W	Lateral	•	•	•
17 Cb _{3,12} -1.2D+1.2I+1.2RI+1.2W	Lateral	•	•	•
18 Cb _{3,13} -1.2D+1.2I+1.2RI+1.2W	Lateral	•	•	•
19 Cb _{3,14} -1.2D+1.2I+1.2RI+1.2W	Lateral	•	•	•
20 Cb _{3,15} -1.2D+1.2I+1.2RI+1.2W	Lateral	•	•	•
21 Cb _{3,16} -1.2D+1.2I+1.2RI+1.2W	Lateral	•	•	•
22 Cb _{3,17} -1.2D+1.2I+1.2RI+1.2W	Lateral	•	•	•
23 Cb _{5,1} -D+1.4W	Lateral	•	•	•
24 Cb _{5,2} -D+1.4W	Lateral	•	•	•
25 Cb _{5,3} -D+1.4W	Lateral	•	•	•
26 Cb _{5,4} -D+1.4W	Lateral	•	•	•
27 Cb _{5,5} -D+1.4W	Lateral	•	•	•
28 Cb _{5,6} -D+1.4W	Lateral	•	•	•
29 Cb _{5,7} -D+1.4W	Lateral	•	•	•
30 Cb _{5,8} -D+1.4W	Lateral	•	•	•
31 Cb _{5,9} -D+1.4W	Lateral	•	•	•
32 Cb _{5,10} -D+1.4W	Lateral	•	•	•
33 Cb _{5,11} -D+1.4W	Lateral	•	•	•
34 Cb _{5,12} -D+1.4W	Lateral	•	•	•
35 Cb _{5,13} -D+1.4W	Lateral	•	•	•
36 Cb _{5,14} -D+1.4W	Lateral	•	•	•
37 Cb _{5,15} -D+1.4W	Lateral	•	•	•
38 Cb _{5,16} -D+1.4W	Lateral	•	•	•
39 Cb _{5,17} -D+1.4W	Lateral	•	•	•

1 Cb₁-1.4D+1.6I+1.6RI

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.400	1.000
2 Slab self weight	1.400	1.000
3 Dead	1.400	1.000
4 Services	1.400	1.000
5 Imposed	1.600	1.000

2 Cb_{1,1}-1.4D+1.6I+1.6RI+NHF_{Dir1+}

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.400	1.000
2 Slab self weight	1.400	1.000
3 Dead	1.400	1.000
4 Services	1.400	1.000

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Loadcase Title	Strength	Service
5 Imposed	1.600	1.000

3 Cb_{1,2}-1.4D+1.6I+1.6RI+NHF_{Dir1-}

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.400	1.000
2 Slab self weight	1.400	1.000
3 Dead	1.400	1.000
4 Services	1.400	1.000
5 Imposed	1.600	1.000

4 Cb_{1,3}-1.4D+1.6I+1.6RI+NHF_{Dir2+}

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.400	1.000
2 Slab self weight	1.400	1.000
3 Dead	1.400	1.000
4 Services	1.400	1.000
5 Imposed	1.600	1.000

5 Cb_{1,4}-1.4D+1.6I+1.6RI+NHF_{Dir2-}

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.400	1.000
2 Slab self weight	1.400	1.000
3 Dead	1.400	1.000
4 Services	1.400	1.000
5 Imposed	1.600	1.000

6 Cb_{3,1}-1.2D+1.2I+1.2RI+1.2W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.200	1.000
2 Slab self weight	1.200	1.000
3 Dead	1.200	1.000
4 Services	1.200	1.000
5 Imposed	1.200	0.800
6 Wind 0,Cpi -0.3,+Cpe	1.200	0.800

7 Cb_{3,2}-1.2D+1.2I+1.2RI+1.2W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.200	1.000
2 Slab self weight	1.200	1.000
3 Dead	1.200	1.000
4 Services	1.200	1.000
5 Imposed	1.200	0.800
7 Wind 0,Cpi -0.3,-Cpe	1.200	0.800

8 Cb_{3,3}-1.2D+1.2I+1.2RI+1.2W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.200	1.000
2 Slab self weight	1.200	1.000
3 Dead	1.200	1.000
4 Services	1.200	1.000
5 Imposed	1.200	0.800
8 Wind 0,Cpi 0.2,+Cpe	1.200	0.800

9 Cb_{3,4}-1.2D+1.2I+1.2RI+1.2W

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Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.200	1.000
2 Slab self weight	1.200	1.000
3 Dead	1.200	1.000
4 Services	1.200	1.000
5 Imposed	1.200	0.800
9 Wind 0,Cpi 0.2,-Cpe	1.200	0.800

10 Cb_{3,5}-1.2D+1.2I+1.2RI+1.2W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.200	1.000
2 Slab self weight	1.200	1.000
3 Dead	1.200	1.000
4 Services	1.200	1.000
5 Imposed	1.200	0.800
10 Wind 90,Cpi -0.3,+Cpe	1.200	0.800

11 Cb_{3,6}-1.2D+1.2I+1.2RI+1.2W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.200	1.000
2 Slab self weight	1.200	1.000
3 Dead	1.200	1.000
4 Services	1.200	1.000
5 Imposed	1.200	0.800
11 Wind 90,Cpi -0.3,-Cpe	1.200	0.800

12 Cb_{3,7}-1.2D+1.2I+1.2RI+1.2W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.200	1.000
2 Slab self weight	1.200	1.000
3 Dead	1.200	1.000
4 Services	1.200	1.000
5 Imposed	1.200	0.800
12 Wind 90,Cpi 0.2,+Cpe	1.200	0.800

13 Cb_{3,8}-1.2D+1.2I+1.2RI+1.2W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.200	1.000
2 Slab self weight	1.200	1.000
3 Dead	1.200	1.000
4 Services	1.200	1.000
5 Imposed	1.200	0.800
13 Wind 90,Cpi 0.2,-Cpe	1.200	0.800

14 Cb_{3,9}-1.2D+1.2I+1.2RI+1.2W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.200	1.000
2 Slab self weight	1.200	1.000
3 Dead	1.200	1.000
4 Services	1.200	1.000
5 Imposed	1.200	0.800
14 Wind 180,Cpi -0.3,+Cpe	1.200	0.800

15 Cb_{3,10}-1.2D+1.2I+1.2RI+1.2W

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
	Structure STEEL FRAME				Sheet no. Page 5/17	
	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.200	1.000
2 Slab self weight	1.200	1.000
3 Dead	1.200	1.000
4 Services	1.200	1.000
5 Imposed	1.200	0.800
15 Wind 180,Cpi -0.3,-Cpe	1.200	0.800

16 Cb_{3.11}-1.2D+1.2I+1.2RI+1.2W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.200	1.000
2 Slab self weight	1.200	1.000
3 Dead	1.200	1.000
4 Services	1.200	1.000
5 Imposed	1.200	0.800
16 Wind 180,Cpi 0.2,+Cpe	1.200	0.800

17 Cb_{3.12}-1.2D+1.2I+1.2RI+1.2W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.200	1.000
2 Slab self weight	1.200	1.000
3 Dead	1.200	1.000
4 Services	1.200	1.000
5 Imposed	1.200	0.800
17 Wind 180,Cpi 0.2,-Cpe	1.200	0.800

18 Cb_{3.13}-1.2D+1.2I+1.2RI+1.2W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.200	1.000
2 Slab self weight	1.200	1.000
3 Dead	1.200	1.000
4 Services	1.200	1.000
5 Imposed	1.200	0.800
18 Wind 270,Cpi -0.3,+Cpe	1.200	0.800

19 Cb_{3.14}-1.2D+1.2I+1.2RI+1.2W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.200	1.000
2 Slab self weight	1.200	1.000
3 Dead	1.200	1.000
4 Services	1.200	1.000
5 Imposed	1.200	0.800
19 Wind 270,Cpi -0.3,-Cpe	1.200	0.800

20 Cb_{3.15}-1.2D+1.2I+1.2RI+1.2W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.200	1.000
2 Slab self weight	1.200	1.000
3 Dead	1.200	1.000
4 Services	1.200	1.000
5 Imposed	1.200	0.800
20 Wind 270,Cpi 0.2,+Cpe	1.200	0.800

21 Cb_{3.16}-1.2D+1.2I+1.2RI+1.2W

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
	Structure STEEL FRAME				Sheet no. Page 6/17	
	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.200	1.000
2 Slab self weight	1.200	1.000
3 Dead	1.200	1.000
4 Services	1.200	1.000
5 Imposed	1.200	0.800
21 Wind 270,Cpi 0.2,-Cpe	1.200	0.800

22 Cb_{3,17}-1.2D+1.2I+1.2RI+1.2W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.200	1.000
2 Slab self weight	1.200	1.000
3 Dead	1.200	1.000
4 Services	1.200	1.000
5 Imposed	1.200	0.800
22 Wind 0	1.200	0.800

23 Cb_{5,1}-D+1.4W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.000	1.000
2 Slab self weight	1.000	1.000
3 Dead	1.000	1.000
4 Services	1.000	1.000
6 Wind 0,Cpi -0.3,+Cpe	1.400	1.000

24 Cb_{5,2}-D+1.4W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.000	1.000
2 Slab self weight	1.000	1.000
3 Dead	1.000	1.000
4 Services	1.000	1.000
7 Wind 0,Cpi -0.3,-Cpe	1.400	1.000

25 Cb_{5,3}-D+1.4W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.000	1.000
2 Slab self weight	1.000	1.000
3 Dead	1.000	1.000
4 Services	1.000	1.000
8 Wind 0,Cpi 0.2,+Cpe	1.400	1.000

26 Cb_{5,4}-D+1.4W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.000	1.000
2 Slab self weight	1.000	1.000
3 Dead	1.000	1.000
4 Services	1.000	1.000
9 Wind 0,Cpi 0.2,-Cpe	1.400	1.000

27 Cb_{5,5}-D+1.4W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.000	1.000
2 Slab self weight	1.000	1.000
3 Dead	1.000	1.000
4 Services	1.000	1.000

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
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Loadcase Title	Strength	Service
10 Wind 90,Cpi -0.3,+Cpe	1.400	1.000

28 Cb_{5,6}-D+1.4W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.000	1.000
2 Slab self weight	1.000	1.000
3 Dead	1.000	1.000
4 Services	1.000	1.000
11 Wind 90,Cpi -0.3,-Cpe	1.400	1.000

29 Cb_{5,7}-D+1.4W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.000	1.000
2 Slab self weight	1.000	1.000
3 Dead	1.000	1.000
4 Services	1.000	1.000
12 Wind 90,Cpi 0.2,+Cpe	1.400	1.000

30 Cb_{5,8}-D+1.4W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.000	1.000
2 Slab self weight	1.000	1.000
3 Dead	1.000	1.000
4 Services	1.000	1.000
13 Wind 90,Cpi 0.2,-Cpe	1.400	1.000

31 Cb_{5,9}-D+1.4W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.000	1.000
2 Slab self weight	1.000	1.000
3 Dead	1.000	1.000
4 Services	1.000	1.000
14 Wind 180,Cpi -0.3,+Cpe	1.400	1.000

32 Cb_{5,10}-D+1.4W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.000	1.000
2 Slab self weight	1.000	1.000
3 Dead	1.000	1.000
4 Services	1.000	1.000
15 Wind 180,Cpi -0.3,-Cpe	1.400	1.000

33 Cb_{5,11}-D+1.4W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.000	1.000
2 Slab self weight	1.000	1.000
3 Dead	1.000	1.000
4 Services	1.000	1.000
16 Wind 180,Cpi 0.2,+Cpe	1.400	1.000

34 Cb_{5,12}-D+1.4W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.000	1.000
2 Slab self weight	1.000	1.000
3 Dead	1.000	1.000

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	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021

Loadcase Title	Strength	Service
4 Services	1.000	1.000
17 Wind 180,Cpi 0.2,-Cpe	1.400	1.000

35 Cb_{5.13}-D+1.4W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.000	1.000
2 Slab self weight	1.000	1.000
3 Dead	1.000	1.000
4 Services	1.000	1.000
18 Wind 270,Cpi -0.3,+Cpe	1.400	1.000

36 Cb_{5.14}-D+1.4W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.000	1.000
2 Slab self weight	1.000	1.000
3 Dead	1.000	1.000
4 Services	1.000	1.000
19 Wind 270,Cpi -0.3,-Cpe	1.400	1.000

37 Cb_{5.15}-D+1.4W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.000	1.000
2 Slab self weight	1.000	1.000
3 Dead	1.000	1.000
4 Services	1.000	1.000
20 Wind 270,Cpi 0.2,+Cpe	1.400	1.000

38 Cb_{5.16}-D+1.4W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.000	1.000
2 Slab self weight	1.000	1.000
3 Dead	1.000	1.000
4 Services	1.000	1.000
21 Wind 270,Cpi 0.2,-Cpe	1.400	1.000

39 Cb_{5.17}-D+1.4W

Loadcase Title	Strength	Service
1 Self weight - excluding slabs	1.000	1.000
2 Slab self weight	1.000	1.000
3 Dead	1.000	1.000
4 Services	1.000	1.000
22 Wind 0	1.400	1.000

Wind Data

General

Method
BS6399 : Part2 : 1997 - Standard Effective Gust Wind Speeds
Wind speed and ground roughness databases derived from data, © BRE Ltd.
Altitude databases derived from data, © NASA 2006

Site Details

Grid Reference	TQ098868
Altitude	51 m
Air Density	1.226 kg/m ³

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Site Ground Level -1.000 m
 Orientation of North relative to TSD axes Unknown
 Topography not considered for Altitude factor
 Shelter effect from obstructions is not included
 Basic Wind Speed, V_b 20.0 m/s
 Probability Factor, S_p 1.000
 Seasonal Factor, S_s 1.000
 Site is in country, nearest distance to sea = 79.0 km

Intermediate Factors

Height above ground 3.074 m
 Biggest Effective Height, H_e 3.074 m
 Biggest Altitude factor, S_a 1.051
 Terrain and Building Factor, S_b 1.375
 Height above ground 4.050 m
 Biggest Effective Height, H_e 4.050 m
 Biggest Altitude factor, S_a 1.051
 Terrain and Building Factor, S_b 1.438

Building Directions

0°

Direction Factor, S_d 1.000
 Height above ground 3.074 m
 Effective wind speed, V_e 28.9 m/s
 Design Dynamic Pressure, q 0.512 kN/m²
 Height above ground 4.050 m
 Effective wind speed, V_e 30.2 m/s
 Design Dynamic Pressure, q 0.560 kN/m²

90°

Direction Factor, S_d 1.000
 Height above ground 3.074 m
 Effective wind speed, V_e 28.9 m/s
 Design Dynamic Pressure, q 0.512 kN/m²
 Height above ground 4.050 m
 Effective wind speed, V_e 30.2 m/s
 Design Dynamic Pressure, q 0.560 kN/m²

180°

Direction Factor, S_d 1.000
 Height above ground 3.074 m
 Effective wind speed, V_e 28.9 m/s
 Design Dynamic Pressure, q 0.512 kN/m²
 Height above ground 4.050 m
 Effective wind speed, V_e 30.2 m/s
 Design Dynamic Pressure, q 0.560 kN/m²

270°

Direction Factor, S_d 1.000
 Height above ground 3.074 m
 Effective wind speed, V_e 28.9 m/s
 Design Dynamic Pressure, q 0.512 kN/m²
 Height above ground 4.050 m
 Effective wind speed, V_e 30.2 m/s
 Design Dynamic Pressure, q 0.560 kN/m²

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Generated Loadcases

6 Wind 0,Cpi -0.3,+Cpe

Wall Zone Loads

Reference	Zone	Nett Pressure [kN/m ²]	Area [m ²]	Applied Load [kN]
WI 1	L	-0.112	7	-0.8
WI 2	L	-0.112	7	-0.8
WI 3	A	-0.512	1	-0.5
	B	-0.256	3	-0.8

Average Wall Loads

Windward 0.000 kN/m²Leeward -0.112 kN/m²Left -0.320 kN/m²Right 0.000 kN/m²

Lateral Loads by Level

Level	Total [kN]		Centre [m]	
	X	Y	X	Y
St. Base (Base)	0.8	-1.0	1.912	-1.570
St. 2 (2)	0.8	-0.3	1.067	-2.547
Total	1.6	-1.3	-	-

Total Loads

X 1.6 kN

Y -1.3 kN

Z 0.0 kN

7 Wind 0,Cpi -0.3,-Cpe

Wall Zone Loads

Reference	Zone	Nett Pressure [kN/m ²]	Area [m ²]	Applied Load [kN]
WI 1	L	-0.112	7	-0.8
WI 2	L	-0.112	7	-0.8
WI 3	A	-0.512	1	-0.5
	B	-0.256	3	-0.8

Average Wall Loads

Windward 0.000 kN/m²Leeward -0.112 kN/m²Left -0.320 kN/m²Right 0.000 kN/m²

Lateral Loads by Level

Level	Total [kN]		Centre [m]	
	X	Y	X	Y
St. Base (Base)	0.8	-1.0	1.912	-1.570
St. 2 (2)	0.8	-0.3	1.067	-2.547
Total	1.6	-1.3	-	-

Total Loads

X 1.6 kN

Y -1.3 kN

Z 0.0 kN

8 Wind 0,Cpi 0.2,+Cpe

Wall Zone Loads

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
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Reference	Zone	Nett Pressure [kN/m ²]	Area [m ²]	Applied Load [kN]
WI 1	L	-0.392	7	-2.8
WI 2	L	-0.392	7	-2.8
WI 3	A	-0.768	1	-0.8
	B	-0.512	3	-1.6

Average Wall Loads

Windward 0.000 kN/m²
 Leeward -0.392 kN/m²
 Left -0.576 kN/m²
 Right 0.000 kN/m²

Lateral Loads by Level

Level	Total [kN]		Centre [m]	
	X	Y	X	Y
St. Base (Base)	2.8	-1.8	1.451	-2.335
St. 2 (2)	2.8	-0.6	0.576	-2.617
Total	5.7	-2.4	-	-

Total Loads

X 5.7 kN
 Y -2.4 kN
 Z 0.0 kN

9 Wind 0,Cpi 0.2,-Cpe

Wall Zone Loads

Reference	Zone	Nett Pressure [kN/m ²]	Area [m ²]	Applied Load [kN]
WI 1	L	-0.392	7	-2.8
WI 2	L	-0.392	7	-2.8
WI 3	A	-0.768	1	-0.8
	B	-0.512	3	-1.6

Average Wall Loads

Windward 0.000 kN/m²
 Leeward -0.392 kN/m²
 Left -0.576 kN/m²
 Right 0.000 kN/m²

Lateral Loads by Level

Level	Total [kN]		Centre [m]	
	X	Y	X	Y
St. Base (Base)	2.8	-1.8	1.451	-2.335
St. 2 (2)	2.8	-0.6	0.576	-2.617
Total	5.7	-2.4	-	-

Total Loads

X 5.7 kN
 Y -2.4 kN
 Z 0.0 kN

10 Wind 90,Cpi -0.3,+Cpe

Wall Zone Loads

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
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Reference	Zone	Nett Pressure [kN/m ²]	Area [m ²]	Applied Load [kN]
WI 1	A	-0.560	2	-0.9
	B	-0.280	6	-1.6
WI 2	A	-0.560	2	-0.9
	B	-0.280	6	-1.6
WI 3	W	0.589	4	2.4

Average Wall Loads

Windward 0.589 kN/m²
 Leeward 0.000 kN/m²
 Left -0.341 kN/m²
 Right 0.000 kN/m²

Lateral Loads by Level

Level	Total [kN]		Centre [m]	
	X	Y	X	Y
St. Base (Base)	2.5	1.8	-0.579	-0.801
St. 2 (2)	2.5	0.7	-0.465	-1.757
Total	5.0	2.4	-	-

Total Loads

X 5.0 kN
 Y 2.4 kN
 Z 0.0 kN

11 Wind 90,Cpi -0.3,-Cpe

Wall Zone Loads

Reference	Zone	Nett Pressure [kN/m ²]	Area [m ²]	Applied Load [kN]
WI 1	A	-0.560	2	-0.9
	B	-0.280	6	-1.6
WI 2	A	-0.560	2	-0.9
	B	-0.280	6	-1.6
WI 3	W	0.589	4	2.4

Average Wall Loads

Windward 0.589 kN/m²
 Leeward 0.000 kN/m²
 Left -0.341 kN/m²
 Right 0.000 kN/m²

Lateral Loads by Level

Level	Total [kN]		Centre [m]	
	X	Y	X	Y
St. Base (Base)	2.5	1.8	-0.579	-0.801
St. 2 (2)	2.5	0.7	-0.465	-1.757
Total	5.0	2.4	-	-

Total Loads

X 5.0 kN
 Y 2.4 kN
 Z 0.0 kN

12 Wind 90,Cpi 0.2,+Cpe

Wall Zone Loads

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
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Reference	Zone	Nett Pressure [kN/m ²]	Area [m ²]	Applied Load [kN]
WI 1	A	-0.840	2	-1.3
	B	-0.560	6	-3.2
WI 2	A	-0.840	2	-1.3
	B	-0.560	6	-3.2
WI 3	W	0.333	4	1.4

Average Wall Loads

Windward 0.333 kN/m²
 Leeward 0.000 kN/m²
 Left -0.621 kN/m²
 Right 0.000 kN/m²

Lateral Loads by Level

Level	Total [kN]		Centre [m]	
	X	Y	X	Y
St. Base (Base)	4.5	1.0	-0.430	-1.917
St. 2 (2)	4.5	0.4	-0.181	-2.204
Total	9.0	1.4	-	-

Total Loads

X 9.0 kN
 Y 1.4 kN
 Z 0.0 kN

13 Wind 90,Cpi 0.2,-Cpe

Wall Zone Loads

Reference	Zone	Nett Pressure [kN/m ²]	Area [m ²]	Applied Load [kN]
WI 1	A	-0.840	2	-1.3
	B	-0.560	6	-3.2
WI 2	A	-0.840	2	-1.3
	B	-0.560	6	-3.2
WI 3	W	0.333	4	1.4

Average Wall Loads

Windward 0.333 kN/m²
 Leeward 0.000 kN/m²
 Left -0.621 kN/m²
 Right 0.000 kN/m²

Lateral Loads by Level

Level	Total [kN]		Centre [m]	
	X	Y	X	Y
St. Base (Base)	4.5	1.0	-0.430	-1.917
St. 2 (2)	4.5	0.4	-0.181	-2.204
Total	9.0	1.4	-	-

Total Loads

X 9.0 kN
 Y 1.4 kN
 Z 0.0 kN

14 Wind 180,Cpi -0.3,+Cpe

Wall Zone Loads

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Reference	Zone	Nett Pressure [kN/m ²]	Area [m ²]	Applied Load [kN]
WI 1	W	0.644	7	4.7
WI 2	W	0.644	7	4.7
WI 3	A	-0.512	2	-0.8
	B	-0.256	3	-0.7

Average Wall Loads

Windward 0.644 kN/m²
 Leeward 0.000 kN/m²
 Left 0.000 kN/m²
 Right -0.354 kN/m²

Lateral Loads by Level

Level	Total [kN]		Centre [m]	
	X	Y	X	Y
St. Base (Base)	-4.7	-1.1	-0.444	-1.962
St. 2 (2)	-4.7	-0.4	-0.200	-2.258
Total	-9.3	-1.5	-	-

Total Loads

X -9.3 kN
 Y -1.5 kN
 Z 0.0 kN

15 Wind 180,Cpi -0.3,-Cpe

Wall Zone Loads

Reference	Zone	Nett Pressure [kN/m ²]	Area [m ²]	Applied Load [kN]
WI 1	W	0.644	7	4.7
WI 2	W	0.644	7	4.7
WI 3	A	-0.512	2	-0.8
	B	-0.256	3	-0.7

Average Wall Loads

Windward 0.644 kN/m²
 Leeward 0.000 kN/m²
 Left 0.000 kN/m²
 Right -0.354 kN/m²

Lateral Loads by Level

Level	Total [kN]		Centre [m]	
	X	Y	X	Y
St. Base (Base)	-4.7	-1.1	-0.444	-1.962
St. 2 (2)	-4.7	-0.4	-0.200	-2.258
Total	-9.3	-1.5	-	-

Total Loads

X -9.3 kN
 Y -1.5 kN
 Z 0.0 kN

16 Wind 180,Cpi 0.2,+Cpe

Wall Zone Loads

Reference	Zone	Nett Pressure [kN/m ²]	Area [m ²]	Applied Load [kN]
WI 1	W	0.364	7	2.6

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Reference	Zone	Nett Pressure [kN/m ²]	Area [m ²]	Applied Load [kN]
WI 2	W	0.364	7	2.6
WI 3	A	-0.768	2	-1.2
	B	-0.512	3	-1.3

Average Wall Loads

Windward 0.364 kN/m²
 Leeward 0.000 kN/m²
 Left 0.000 kN/m²
 Right -0.610 kN/m²

Lateral Loads by Level

Level	Total [kN]		Centre [m]	
	X	Y	X	Y
St. Base (Base)	-2.6	-1.8	-0.639	-0.919
St. 2 (2)	-2.6	-0.7	-0.493	-1.861
Total	-5.3	-2.5	-	-

Total Loads

X -5.3 kN
 Y -2.5 kN
 Z 0.0 kN

17 Wind 180,Cpi 0.2,-Cpe

Wall Zone Loads

Reference	Zone	Nett Pressure [kN/m ²]	Area [m ²]	Applied Load [kN]
WI 1	W	0.364	7	2.6
WI 2	W	0.364	7	2.6
WI 3	A	-0.768	2	-1.2
	B	-0.512	3	-1.3

Average Wall Loads

Windward 0.364 kN/m²
 Leeward 0.000 kN/m²
 Left 0.000 kN/m²
 Right -0.610 kN/m²

Lateral Loads by Level

Level	Total [kN]		Centre [m]	
	X	Y	X	Y
St. Base (Base)	-2.6	-1.8	-0.639	-0.919
St. 2 (2)	-2.6	-0.7	-0.493	-1.861
Total	-5.3	-2.5	-	-

Total Loads

X -5.3 kN
 Y -2.5 kN
 Z 0.0 kN

18 Wind 270,Cpi -0.3,+Cpe

Wall Zone Loads

Reference	Zone	Nett Pressure [kN/m ²]	Area [m ²]	Applied Load [kN]
WI 1	A	-0.560	2	-0.9
	B	-0.280	6	-1.6

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
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Reference	Zone	Nett Pressure [kN/m ²]	Area [m ²]	Applied Load [kN]
WI 2	A	-0.560	2	-0.9
	B	-0.280	6	-1.6
WI 3	L	-0.102	4	-0.4

Average Wall Loads

Windward 0.000 kN/m²Leeward -0.102 kN/m²Left 0.000 kN/m²Right -0.341 kN/m²

Lateral Loads by Level

Level	Total [kN]		Centre [m]	
	X	Y	X	Y
St. Base (Base)	2.5	-0.3	0.344	-2.736
St. 2 (2)	2.5	-0.1	0.122	-2.658
Total	5.0	-0.4	-	-

Total Loads

X 5.0 kN

Y -0.4 kN

Z 0.0 kN

19 Wind 270,Cpi -0.3,-Cpe

Wall Zone Loads

Reference	Zone	Nett Pressure [kN/m ²]	Area [m ²]	Applied Load [kN]
WI 1	A	-0.560	2	-0.9
	B	-0.280	6	-1.6
WI 2	A	-0.560	2	-0.9
	B	-0.280	6	-1.6
WI 3	L	-0.102	4	-0.4

Average Wall Loads

Windward 0.000 kN/m²Leeward -0.102 kN/m²Left 0.000 kN/m²Right -0.341 kN/m²

Lateral Loads by Level

Level	Total [kN]		Centre [m]	
	X	Y	X	Y
St. Base (Base)	2.5	-0.3	0.344	-2.736
St. 2 (2)	2.5	-0.1	0.122	-2.658
Total	5.0	-0.4	-	-

Total Loads

X 5.0 kN

Y -0.4 kN

Z 0.0 kN

20 Wind 270,Cpi 0.2,+Cpe

Wall Zone Loads

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
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Reference	Zone	Nett Pressure [kN/m ²]	Area [m ²]	Applied Load [kN]
WI 1	A	-0.840	2	-1.3
	B	-0.560	6	-3.2
WI 2	A	-0.840	2	-1.3
	B	-0.560	6	-3.2
WI 3	L	-0.358	4	-1.5

Average Wall Loads

Windward 0.000 kN/m²
 Leeward -0.358 kN/m²
 Left 0.000 kN/m²
 Right -0.621 kN/m²

Lateral Loads by Level

Level	Total [kN]		Centre [m]	
	X	Y	X	Y
St. Base (Base)	4.5	-1.1	0.655	-2.713
St. 2 (2)	4.5	-0.4	0.233	-2.629
Total	9.0	-1.5	-	-

Total Loads

X 9.0 kN
 Y -1.5 kN
 Z 0.0 kN

21 Wind 270,Cpi 0.2,-Cpe

Wall Zone Loads

Reference	Zone	Nett Pressure [kN/m ²]	Area [m ²]	Applied Load [kN]
WI 1	A	-0.840	2	-1.3
	B	-0.560	6	-3.2
WI 2	A	-0.840	2	-1.3
	B	-0.560	6	-3.2
WI 3	L	-0.358	4	-1.5

Average Wall Loads

Windward 0.000 kN/m²
 Leeward -0.358 kN/m²
 Left 0.000 kN/m²
 Right -0.621 kN/m²

Lateral Loads by Level

Level	Total [kN]		Centre [m]	
	X	Y	X	Y
St. Base (Base)	4.5	-1.1	0.655	-2.713
St. 2 (2)	4.5	-0.4	0.233	-2.629
Total	9.0	-1.5	-	-

Total Loads

X 9.0 kN
 Y -1.5 kN
 Z 0.0 kN

Snow Data

No snow data found.

	Project				Job Ref.	
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	ANDREEA BLIDAR	28/07/2021	DAVID SMITH	28/07/2021	DAVID SMITH	28/07/2021

Structure

Loadcase Summary

1 Self weight - excluding slabs

Load Type	Force [kN]		
	X	Y	Z
Member Loads	0.0	0.0	10.7
Nodal Loads	0.0	0.0	0.2
Total NHF Dir1	0.0	0.0	0.0
Total NHF Dir2	0.0	0.0	0.0
Decomposable Loads	0.0	0.0	0.0
1 Way Decomp Results	0.0	0.0	0.0
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	0.0	0.0	10.8
Total Load on Structure	0.0	0.0	10.8
Total Reaction	0.0	0.0	10.8

2 Slab self weight

Load Type	Force [kN]		
	X	Y	Z
Member Loads	0.0	0.0	0.0
Nodal Loads	0.0	0.0	0.0
Total NHF Dir1	0.0	0.0	0.0
Total NHF Dir2	0.0	0.0	0.0
Decomposable Loads	0.0	0.0	0.0
1 Way Decomp Results	0.0	0.0	0.0
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	0.0	0.0	0.0
Total Load on Structure	0.0	0.0	0.0
Total Reaction	0.0	0.0	0.0

3 Dead

Load Type	Force [kN]		
	X	Y	Z
Member Loads	0.0	0.0	0.0
Nodal Loads	0.0	0.0	0.0
Total NHF Dir1	0.0	0.0	0.0
Total NHF Dir2	0.0	0.0	0.0
Decomposable Loads	0.0	0.0	11.3
1 Way Decomp Results	0.0	0.0	11.3
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	0.0	0.0	11.3
Total Load on Structure	0.0	0.0	11.3
Total Reaction	0.0	0.0	11.3

4 Services

Load Type	Force [kN]		
	X	Y	Z
Member Loads	0.0	0.0	0.0
Nodal Loads	0.0	0.0	0.0
Total NHF Dir1	0.0	0.0	0.0
Total NHF Dir2	0.0	0.0	0.0
Decomposable Loads	0.0	0.0	0.0
1 Way Decomp Results	0.0	0.0	0.0

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
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Load Type	Force [kN]		
	X	Y	Z
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	0.0	0.0	0.0
Total Load on Structure	0.0	0.0	0.0
Total Reaction	0.0	0.0	0.0

5 Imposed

Load Type	Force [kN]		
	X	Y	Z
Member Loads	-21.4	-4.2	0.0
Nodal Loads	0.0	0.0	0.0
Total NHF Dir1	0.2	0.0	0.0
Total NHF Dir2	0.0	0.2	0.0
Decomposable Loads	0.0	0.0	73.2
1 Way Decomp Results	0.0	0.0	73.2
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	-21.4	-4.2	73.2
Total Load on Structure	-21.4	-4.2	73.2
Total Reaction	21.4	4.2	73.2

6 Wind 0,Cpi -0.3,+Cpe

Load Type	Force [kN]		
	X	Y	Z
Member Loads	0.0	0.0	0.0
Nodal Loads	0.0	0.0	0.0
Total NHF Dir1	0.0	0.0	0.0
Total NHF Dir2	0.0	0.0	0.0
Decomposable Loads	1.6	-1.3	0.0
1 Way Decomp Results	0.0	0.0	0.0
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	1.6	-1.3	0.0
Total Load on Structure	1.6	-1.3	0.0
Total Reaction	-1.6	1.3	0.0

7 Wind 0,Cpi -0.3,-Cpe

Load Type	Force [kN]		
	X	Y	Z
Member Loads	0.0	0.0	0.0
Nodal Loads	0.0	0.0	0.0
Total NHF Dir1	0.0	0.0	0.0
Total NHF Dir2	0.0	0.0	0.0
Decomposable Loads	1.6	-1.3	0.0
1 Way Decomp Results	0.0	0.0	0.0
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	1.6	-1.3	0.0
Total Load on Structure	1.6	-1.3	0.0
Total Reaction	-1.6	1.3	0.0

8 Wind 0,Cpi 0.2,+Cpe

Load Type	Force [kN]		
	X	Y	Z
Member Loads	0.0	0.0	0.0
Nodal Loads	0.0	0.0	0.0

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	ANDREEA BLIDAR	28/07/2021	DAVID SMITH	28/07/2021	DAVID SMITH	28/07/2021

Load Type	Force [kN]		
	X	Y	Z
Total NHF Dir1	0.0	0.0	0.0
Total NHF Dir2	0.0	0.0	0.0
Decomposable Loads	5.7	-2.4	0.0
1 Way Decomp Results	0.0	0.0	0.0
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	5.7	-2.4	0.0
Total Load on Structure	5.7	-2.4	0.0
Total Reaction	-5.7	2.4	0.0

9 Wind 0,Cpi 0.2,-Cpe

Load Type	Force [kN]		
	X	Y	Z
Member Loads	0.0	0.0	0.0
Nodal Loads	0.0	0.0	0.0
Total NHF Dir1	0.0	0.0	0.0
Total NHF Dir2	0.0	0.0	0.0
Decomposable Loads	5.7	-2.4	0.0
1 Way Decomp Results	0.0	0.0	0.0
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	5.7	-2.4	0.0
Total Load on Structure	5.7	-2.4	0.0
Total Reaction	-5.7	2.4	0.0

10 Wind 90,Cpi -0.3,+Cpe

Load Type	Force [kN]		
	X	Y	Z
Member Loads	0.0	0.0	0.0
Nodal Loads	0.0	0.0	0.0
Total NHF Dir1	0.0	0.0	0.0
Total NHF Dir2	0.0	0.0	0.0
Decomposable Loads	5.0	2.4	0.0
1 Way Decomp Results	0.0	0.0	0.0
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	5.0	2.4	0.0
Total Load on Structure	5.0	2.4	0.0
Total Reaction	-5.0	-2.4	0.0

11 Wind 90,Cpi -0.3,-Cpe

Load Type	Force [kN]		
	X	Y	Z
Member Loads	0.0	0.0	0.0
Nodal Loads	0.0	0.0	0.0
Total NHF Dir1	0.0	0.0	0.0
Total NHF Dir2	0.0	0.0	0.0
Decomposable Loads	5.0	2.4	0.0
1 Way Decomp Results	0.0	0.0	0.0
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	5.0	2.4	0.0
Total Load on Structure	5.0	2.4	0.0
Total Reaction	-5.0	-2.4	0.0

12 Wind 90,Cpi 0.2,+Cpe

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	ANDREEA BLIDAR	28/07/2021	DAVID SMITH	28/07/2021	DAVID SMITH	28/07/2021

Load Type	Force [kN]		
	X	Y	Z
Member Loads	0.0	0.0	0.0
Nodal Loads	0.0	0.0	0.0
Total NHF Dir1	0.0	0.0	0.0
Total NHF Dir2	0.0	0.0	0.0
Decomposable Loads	9.0	1.4	0.0
1 Way Decomp Results	0.0	0.0	0.0
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	9.0	1.4	0.0
Total Load on Structure	9.0	1.4	0.0
Total Reaction	-9.0	-1.4	0.0

13 Wind 90,Cpi 0.2,-Cpe

Load Type	Force [kN]		
	X	Y	Z
Member Loads	0.0	0.0	0.0
Nodal Loads	0.0	0.0	0.0
Total NHF Dir1	0.0	0.0	0.0
Total NHF Dir2	0.0	0.0	0.0
Decomposable Loads	9.0	1.4	0.0
1 Way Decomp Results	0.0	0.0	0.0
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	9.0	1.4	0.0
Total Load on Structure	9.0	1.4	0.0
Total Reaction	-9.0	-1.4	0.0

14 Wind 180,Cpi -0.3,+Cpe

Load Type	Force [kN]		
	X	Y	Z
Member Loads	0.0	0.0	0.0
Nodal Loads	0.0	0.0	0.0
Total NHF Dir1	0.0	0.0	0.0
Total NHF Dir2	0.0	0.0	0.0
Decomposable Loads	-9.3	-1.5	0.0
1 Way Decomp Results	0.0	0.0	0.0
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	-9.3	-1.5	0.0
Total Load on Structure	-9.3	-1.5	0.0
Total Reaction	9.3	1.5	0.0

15 Wind 180,Cpi -0.3,-Cpe

Load Type	Force [kN]		
	X	Y	Z
Member Loads	0.0	0.0	0.0
Nodal Loads	0.0	0.0	0.0
Total NHF Dir1	0.0	0.0	0.0
Total NHF Dir2	0.0	0.0	0.0
Decomposable Loads	-9.3	-1.5	0.0
1 Way Decomp Results	0.0	0.0	0.0
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	-9.3	-1.5	0.0
Total Load on Structure	-9.3	-1.5	0.0

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Load Type	Force [kN]		
	X	Y	Z
Total Reaction	9.3	1.5	0.0

16 Wind 180,Cpi 0.2,+Cpe

Load Type	Force [kN]		
	X	Y	Z
Member Loads	0.0	0.0	0.0
Nodal Loads	0.0	0.0	0.0
Total NHF Dir1	0.0	0.0	0.0
Total NHF Dir2	0.0	0.0	0.0
Decomposable Loads	-5.3	-2.5	0.0
1 Way Decomp Results	0.0	0.0	0.0
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	-5.3	-2.5	0.0
Total Load on Structure	-5.3	-2.5	0.0
Total Reaction	5.3	2.5	0.0

17 Wind 180,Cpi 0.2,-Cpe

Load Type	Force [kN]		
	X	Y	Z
Member Loads	0.0	0.0	0.0
Nodal Loads	0.0	0.0	0.0
Total NHF Dir1	0.0	0.0	0.0
Total NHF Dir2	0.0	0.0	0.0
Decomposable Loads	-5.3	-2.5	0.0
1 Way Decomp Results	0.0	0.0	0.0
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	-5.3	-2.5	0.0
Total Load on Structure	-5.3	-2.5	0.0
Total Reaction	5.3	2.5	0.0

18 Wind 270,Cpi -0.3,+Cpe

Load Type	Force [kN]		
	X	Y	Z
Member Loads	0.0	0.0	0.0
Nodal Loads	0.0	0.0	0.0
Total NHF Dir1	0.0	0.0	0.0
Total NHF Dir2	0.0	0.0	0.0
Decomposable Loads	5.0	-0.4	0.0
1 Way Decomp Results	0.0	0.0	0.0
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	5.0	-0.4	0.0
Total Load on Structure	5.0	-0.4	0.0
Total Reaction	-5.0	0.4	0.0

19 Wind 270,Cpi -0.3,-Cpe

Load Type	Force [kN]		
	X	Y	Z
Member Loads	0.0	0.0	0.0
Nodal Loads	0.0	0.0	0.0
Total NHF Dir1	0.0	0.0	0.0
Total NHF Dir2	0.0	0.0	0.0
Decomposable Loads	5.0	-0.4	0.0

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Load Type	Force [kN]		
	X	Y	Z
1 Way Decomp Results	0.0	0.0	0.0
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	5.0	-0.4	0.0
Total Load on Structure	5.0	-0.4	0.0
Total Reaction	-5.0	0.4	0.0

20 Wind 270,Cpi 0.2,+Cpe

Load Type	Force [kN]		
	X	Y	Z
Member Loads	0.0	0.0	0.0
Nodal Loads	0.0	0.0	0.0
Total NHF Dir1	0.0	0.0	0.0
Total NHF Dir2	0.0	0.0	0.0
Decomposable Loads	9.0	-1.5	0.0
1 Way Decomp Results	0.0	0.0	0.0
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	9.0	-1.5	0.0
Total Load on Structure	9.0	-1.5	0.0
Total Reaction	-9.0	1.5	0.0

21 Wind 270,Cpi 0.2,-Cpe

Load Type	Force [kN]		
	X	Y	Z
Member Loads	0.0	0.0	0.0
Nodal Loads	0.0	0.0	0.0
Total NHF Dir1	0.0	0.0	0.0
Total NHF Dir2	0.0	0.0	0.0
Decomposable Loads	9.0	-1.5	0.0
1 Way Decomp Results	0.0	0.0	0.0
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	9.0	-1.5	0.0
Total Load on Structure	9.0	-1.5	0.0
Total Reaction	-9.0	1.5	0.0

22 Wind 0

Load Type	Force [kN]		
	X	Y	Z
Member Loads	10.3	0.0	-8.1
Nodal Loads	0.0	0.0	0.0
Total NHF Dir1	0.0	0.0	0.0
Total NHF Dir2	0.0	0.0	0.0
Decomposable Loads	0.0	0.0	0.0
1 Way Decomp Results	0.0	0.0	0.0
2 Way Decomp Results	0.0	0.0	0.0
Total User Applied Load	10.3	0.0	-8.1
Total Load on Structure	10.3	0.0	-8.1
Total Reaction	-10.3	0.0	-8.1

Analysis

Sway

First-order linear

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
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	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021

Ref.	Combination Dir 1	Stack Dir 1	$\lambda_{Dir 1}$	Combination Dir 2	Stack Dir 2	$\lambda_{Dir 2}$	Combination Dir 1/2	Twist	Status
SC A/2	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	2924.540	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	91.494	1 Cb ₁ - 1.4D+1.6I+1.6RI	1.001	Pass
SC A/3	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	2641.425	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	91.466	1 Cb ₁ - 1.4D+1.6I+1.6RI	1.001	Pass
SC %57	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	2569.663	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	82.040	1 Cb ₁ - 1.4D+1.6I+1.6RI	1.000	Pass
SC 4/A	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	2494.627	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	91.333	1 Cb ₁ - 1.4D+1.6I+1.6RI	1.001	Pass
SC A/#37	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	2286.749	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	89.417	1 Cb ₁ - 1.4D+1.6I+1.6RI	1.001	Pass
SC %47	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	1690.405	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	80.313	1 Cb ₁ - 1.4D+1.6I+1.6RI	1.000	Pass
SC %61	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	1542.236	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	80.292	1 Cb ₁ - 1.4D+1.6I+1.6RI	1.000	Pass
SC %63	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	1463.692	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	80.081	1 Cb ₁ - 1.4D+1.6I+1.6RI	1.000	Pass
SC 1/B	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	1096.145	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	59.570	1 Cb ₁ - 1.4D+1.6I+1.6RI	1.000	Pass
SC B/2	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	1096.145	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	61.391	1 Cb ₁ - 1.4D+1.6I+1.6RI	1.000	Pass
SC B/3	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	1096.145	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	61.434	1 Cb ₁ - 1.4D+1.6I+1.6RI	1.000	Pass
SC B/4	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	1096.145	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	61.979	1 Cb ₁ - 1.4D+1.6I+1.6RI	1.000	Pass
SC #159/#315	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	177.730	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	35.062	23 Cb _{5,1} -D+1.4W	1.000	Pass
SC 1/A	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	152.213	1 Cb ₁ - 1.4D+1.6I+1.6RI	1	32.490	23 Cb _{5,1} -D+1.4W	1.000	Pass
SC 1/C	1 Cb ₁ - 1.4D+1.6I+1.6RI	3	83.978	1 Cb ₁ - 1.4D+1.6I+1.6RI	3	15.825	1 Cb ₁ - 1.4D+1.6I+1.6RI	1.000	Pass
SC C/2	1 Cb ₁ - 1.4D+1.6I+1.6RI	3	42.959	1 Cb ₁ - 1.4D+1.6I+1.6RI	3	15.823	1 Cb ₁ - 1.4D+1.6I+1.6RI	1.000	Pass
SC C/3	1 Cb ₁ - 1.4D+1.6I+1.6RI	3	42.617	1 Cb ₁ - 1.4D+1.6I+1.6RI	3	15.823	1 Cb ₁ - 1.4D+1.6I+1.6RI	1.000	Pass
SC C/4	1 Cb ₁ - 1.4D+1.6I+1.6RI	3	41.837	1 Cb ₁ - 1.4D+1.6I+1.6RI	3	15.822	1 Cb ₁ - 1.4D+1.6I+1.6RI	1.000	Pass

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Steel**Beam Design**

Beam Design Summary

Static

Member Reference	Group Ref.	Span	Section	Grade	Length [m]	No. Connectors	Utilization	Status
SB Base/1/A-Base/1/C	SBR1	1	RHS 120x60x5.0	S275	0.467		0.216	Pass
SB Base/1/A-Base/1/C	SBR1	2	RHS 120x60x5.0	S275	0.590		0.205	Pass
SB Base/1/A-Base/1/C	SBR1	3	RHS 120x60x5.0	S275	1.563		0.205	Pass
SB Base/1/D-Base.0.1/1/C	SBR2	1	SHS 60x60x5.0	S275	0.629		0.350	Pass
SB Base/1/D-Base.0.1/1/C	SBR2	2	SHS 60x60x5.0	S275	1.667		0.350	Pass
SB Base/A/2-Base/C/2	SBR1	1	RHS 120x60x5.0	S275	0.467		0.398	Pass
SB Base/A/2-Base/C/2	SBR1	2	RHS 120x60x5.0	S275	0.590		0.345	Pass
SB Base/A/2-Base/C/2	SBR1	3	RHS 120x60x5.0	S275	1.563		0.345	Pass
SB 2/1/C-2/1/E	SBR3	1	RHS 120x60x5.0	S275	2.880		0.679	Pass
SB 2/C/4-2/E/4	SBR3	1	RHS 120x60x5.0	S275	2.880		0.649	Pass
SB Base/D/2-Base.0.1/C/2	SBR2	1	SHS 60x60x5.0	S275	0.629		0.470	Pass
SB Base/D/2-Base.0.1/C/2	SBR2	2	SHS 60x60x5.0	S275	1.667		0.470	Pass
SB 2/C/2-2/E/2	SBR3	1	RHS 120x60x5.0	S275	2.880		0.639	Pass
SB 2/1/#21-2/2/#22	SBR5	1	RHS 60x40x3.0	S275	2.380		0.666	Pass
SB 2/1/C-2/C/2	SBR5	1	RHS 60x40x3.0	S275	2.380		0.344	Pass
SB 2/1/#19-2/2/#20	SBR5	1	RHS 60x40x3.0	S275	2.380		0.687	Pass
SB 1/A/#37-1/A/2	SBR16	1	RHS 100x50x4.0	S275	1.190		0.144	Pass
SB 1.1/1/C-1.1/C/2	SBR5	1	RHS 60x40x3.0	S275	2.380		0.028	Pass
SB /%50-FRM 7/%48	SBR18	1	RHS 100x50x4.0	S275	1.190		0.144	Pass
SB Base.0.1/1/B-Base.0.1/B/2	SBR5	1	RHS 120x60x5.0	S275	2.380		0.422	Pass
SB Base.1/1/C-Base.1/C/2	SBR5	1	PFC 100x50x10	S275	2.380		0.283	Pass
SB 2/C/3-2/E/3	SBR3	1	RHS 120x60x5.0	S275	2.880		0.639	Pass
SB 2/C/3-2/C/4	SBR5	1	RHS 60x40x3.0	S275	2.380		0.344	Pass
SB Base/1/#23-Base/2/#24	SBR5	1	RHS 120x60x5.0	S275	2.380		0.456	Pass
SB Base/A/#37-Base/#37/C	SBR10	1	RHS 120x60x5.0	S275	0.177		0.210	Pass
SB Base/A/#37-Base/#37/C	SBR10	2	RHS 120x60x5.0	S275	0.290		0.205	Pass

	Project				Job Ref.	
	SPECTATOR TERRACE, WEALDSTONE				21/45268	
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	STEEL FRAME				Page 2/4	
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Member Reference	Group Ref.	Span	Section	Grade	Length [m]	No. Connectors	Utilization	Status
SB Base/A/#37-Base/#37/C	SBR10	3	RHS 120x60x5.0	S275	0.629		0.197	Pass
SB Base/A/#37-Base/#37/C	SBR10	4	RHS 120x60x5.0	S275	1.667		0.197	Pass
SB Base.1/C/3-Base.1/C/4	SBR5	1	PFC 100x50x10	S275	2.380		0.184	Pass
SB Base/A/4-Base/C/4	SBR1	1	RHS 120x60x5.0	S275	0.467		0.532	Pass
SB Base/A/4-Base/C/4	SBR1	2	RHS 120x60x5.0	S275	0.590		0.440	Pass
SB Base/A/4-Base/C/4	SBR1	3	RHS 120x60x5.0	S275	1.563		0.440	Pass
SB 1.1/C/3-1.1/C/4	SBR5	1	RHS 60x40x3.0	S275	2.380		0.028	Pass
SB 2/E/3-2/E/4	SBR5	1	RHS 60x40x3.0	S275	2.380		0.323	Pass
SB 2/3/#22-2/4/#116	SBR5	1	RHS 60x40x3.0	S275	2.380		0.666	Pass
SB 2/3/#20-2/4/#115	SBR5	1	RHS 60x40x3.0	S275	2.380		0.687	Pass
SB Base/A/3-Base/C/3	SBR1	1	RHS 120x60x5.0	S275	0.467		0.440	Pass
SB Base/A/3-Base/C/3	SBR1	2	RHS 120x60x5.0	S275	0.590		0.369	Pass
SB Base/A/3-Base/C/3	SBR1	3	RHS 120x60x5.0	S275	1.563		0.369	Pass
SB Base/D/3-Base.0.1/C/3	SBR2	1	SHS 60x60x5.0	S275	0.629		0.650	Pass
SB Base/D/3-Base.0.1/C/3	SBR2	2	SHS 60x60x5.0	S275	1.667		0.650	Pass
SB Base.0.1/B/3-Base.0.1/B/4	SBR5	1	RHS 120x60x5.0	S275	2.380		0.647	Pass
SB FRM 3/%62-/%59	SBR11	1	RHS 100x50x4.0	S275	2.380		0.576	Pass
SB Base/D/4-Base.0.1/C/4	SBR2	1	SHS 60x60x5.0	S275	0.629		0.723	Pass
SB Base/D/4-Base.0.1/C/4	SBR2	2	SHS 60x60x5.0	S275	1.667		0.723	Pass
SB Base/3/#24-Base/4/#117	SBR5	1	RHS 120x60x5.0	S275	2.380		0.251	Pass
SB Base/%60-Base/C/#119	SBR12	1	SHS 60x60x5.0	S275	0.290		0.159	Pass
SB Base/%60-Base/C/#119	SBR12	2	SHS 60x60x5.0	S275	0.629		0.160	Pass
SB Base/%60-Base/C/#119	SBR12	3	SHS 60x60x5.0	S275	1.667		0.736	Pass
SB 1/A/3-1/A/4	SBR5	1	RHS 100x50x4.0	S275	2.380		0.576	Pass
SB 2/1/E-2/E/2	SBR5	1	RHS 60x40x3.0	S275	2.380		0.323	Pass
SB 2/E/2-2/E/3	SBR15	1	RHS 60x40x3.0	S275	0.100		0.000	Pass
SB 2/2/#22-2/3/#22	SBR15	1	RHS 60x40x3.0	S275	0.100		0.000	Pass
SB 2/2/#20-2/3/#20	SBR15	1	RHS 60x40x3.0	S275	0.100		0.000	Pass

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Member Reference	Group Ref.	Span	Section	Grade	Length [m]	No. Connectors	Utilization	Status
SB 2/C/2-2/C/3	SBR14	1	RHS 60x40x3.0	S275	0.100		0.000	Pass
SB 1/A/2-1/A/3	SBR17	1	RHS 100x50x4.0	S275	0.100		0.000	Pass
SB FRM 7/%48-FRM 3/%62	SBR19	1	RHS 100x50x4.0	S275	0.100		0.002	Pass
SB Base/2/#24-Base/3/#24	SBR20	1	RHS 120x60x5.0	S275	0.100		0.001	Pass
SB Base.0.1/B/2-Base.0.1/B/3	SBR21	1	RHS 120x60x5.0	S275	0.100		0.027	Pass
SB Base.1/C/2-Base.1/C/3	SBR14	1	PFC 100x50x10	S275	0.100		0.000	Pass
SB 1.1/C/2-1.1/C/3	SBR14	1	RHS 60x40x3.0	S275	0.100		0.007	Pass
SB 1/1/A-FRM 1/%83	SBR24	1	RHS 100x50x4.0	S275	1.038		0.065	Pass
SB FRM 1/%83-FRM 1/C/#314	SBR25	1	RHS 100x50x4.0	S275	1.757		0.177	Pass

Column Design

Column Design Summary

Static

Member Reference	Group Ref.	Stack	Section	Grade	Length [m]	Utilization	Status
SC 1/A	SCR1	1	RHS 100x50x5.0	S275	1.100	0.307	Pass
SC 1/C	SCR3	1	RHS 120x60x5.0	S275	0.800	0.461	Pass
SC 1/C	SCR3	2	RHS 120x60x5.0	S275	1.100	0.461	Pass
SC 1/C	SCR3	3	RHS 120x60x5.0	S275	1.150	0.461	Pass
SC A/2	SCR1	1	RHS 100x50x5.0	S275	1.100	0.326	Pass
SC 1/B	SCR7	1	RHS 100x50x5.0	S275	0.219	0.366	Pass
SC C/2	SCR8	1	RHS 120x60x5.0	S275	0.800	0.447	Pass
SC C/2	SCR8	2	RHS 120x60x5.0	S275	1.100	0.447	Pass
SC C/2	SCR8	3	RHS 120x60x5.0	S275	1.150	0.420	Pass
SC %47	SCR1	1	RHS 100x50x5.0	S275	1.100	0.328	Pass
SC B/2	SCR7	1	RHS 100x50x5.0	S275	0.219	0.137	Pass
SC A/#37	SCR6	1	RHS 100x50x5.0	S275	1.100	0.292	Pass
SC %57	SCR5	1	RHS 100x50x5.0	S275	1.100	0.286	Pass
SC C/4	SCR3	1	RHS 120x60x5.0	S275	0.800	0.455	Pass
SC C/4	SCR3	2	RHS 120x60x5.0	S275	1.100	0.455	Pass
SC C/4	SCR3	3	RHS 120x60x5.0	S275	1.150	0.425	Pass
SC C/3	SCR3	1	RHS 120x60x5.0	S275	0.800	0.483	Pass
SC C/3	SCR3	2	RHS 120x60x5.0	S275	1.100	0.483	Pass
SC C/3	SCR3	3	RHS 120x60x5.0	S275	1.150	0.415	Pass
SC A/3	SCR1	1	RHS 100x50x5.0	S275	1.100	0.466	Pass
SC B/3	SCR7	1	RHS 100x50x5.0	S275	0.219	0.286	Pass
SC B/4	SCR7	1	RHS 100x50x5.0	S275	0.219	0.190	Pass
SC %61	SCR1	1	RHS 100x50x5.0	S275	1.100	0.467	Pass
SC %63	SCR1	1	RHS 100x50x5.0	S275	1.100	0.528	Pass
SC 4/A	SCR1	1	RHS 100x50x5.0	S275	1.100	0.525	Pass

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Member Reference	Group Ref.	Stack	Section	Grade	Length [m]	Utilization	Status
SC #159/#315	SCR10	1	RHS 100x50x5.0	S275	1.274	0.472	Pass

Brace Design

Brace Design Summary

Static

Member Reference	Group Ref.	Span	Section	Grade	Length [m]	Utilization	Status
SBR /%7-Base.1/C/#30	SBrR1	1	RSA 50x50x5	S275	1.043	0.070	Pass
SBR FRM 1/C/#28-Base.1/C/#29	SBrR1	1	RSA 50x50x5	S275	1.043	0.240	Pass
SBR FRM 4/C/#155-Base.1/C/#156	SBrR1	1	RSA 50x50x5	S275	1.043	0.062	Pass
SBR FRM 3/C/#157-Base.1/C/#158	SBrR1	1	RSA 50x50x5	S275	1.043	0.235	Pass

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Steel**Beam Design**

Beam Group Design Summary

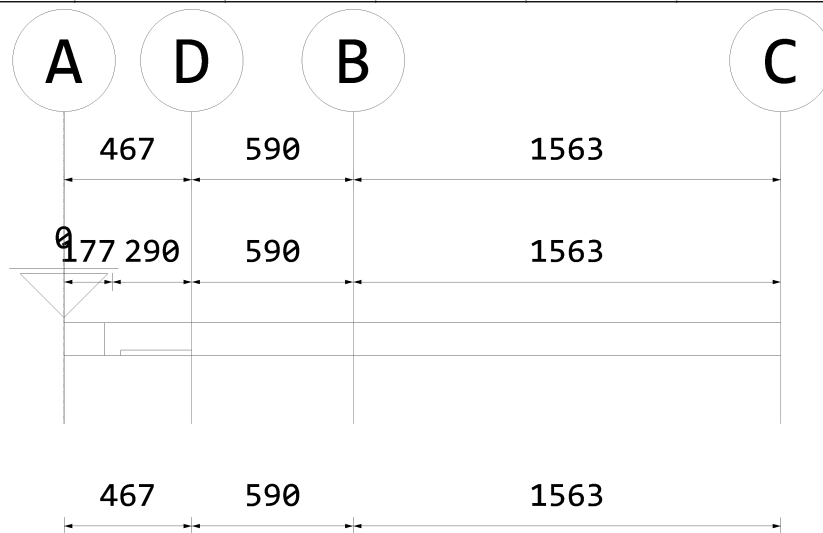
Static

Reference	No. in Group	Critical Member	Spans	Critical Span	Section	Grade	Max. UR	Status
SBR1	4	SB Base/A/4-Base/C/4	3	1	RHS 120x60x5.0	S275	0.532	Pass
SBR2	4	SB Base/D/4-Base.0.1/C/4	2	1	SHS 60x60x5.0	S275	0.723	Pass
SBR3	4	SB 2/1/C-2/1/E	1	1	RHS 120x60x5.0	S275	0.679	Pass
SBR5	17	SB 2/1/#19-2/2/#20	1	1	RHS 60x40x3.0	S275	0.687	Pass
SBR14	3	SB 1.1/C/2-1.1/C/3	1	1	RHS 60x40x3.0	S275	0.007	Pass
SBR15	3	SB 2/E/2-2/E/3	1	1	RHS 60x40x3.0	S275	0.000	Pass

Reference	Spans	Critical Span	Section	Grade	Max. UR	Status
SB Base/A/#37-Base/#37/C	4	1	RHS 120x60x5.0	S275	0.210	Pass
SB FRM 3/%62-/59	1	1	RHS 100x50x4.0	S275	0.576	Pass
SB Base/%60-Base/C/#119	3	3	SHS 60x60x5.0	S275	0.736	Pass
SB 1/A/#37-1/A/2	1	1	RHS 100x50x4.0	S275	0.144	Pass
SB 1/A/2-1/A/3	1	1	RHS 100x50x4.0	S275	0.000	Pass
SB /%50-FRM 7/%48	1	1	RHS 100x50x4.0	S275	0.144	Pass
SB FRM 7/%48-FRM 3/%62	1	1	RHS 100x50x4.0	S275	0.002	Pass
SB Base/2/#24-Base/3/#24	1	1	RHS 120x60x5.0	S275	0.001	Pass
SB Base.0.1/B/2-Base.0.1/B/3	1	1	RHS 120x60x5.0	S275	0.027	Pass
SB 1/1/A-FRM 1/%83	1	1	RHS 100x50x4.0	S275	0.065	Pass
SB FRM 1/%83-FRM 1/C/#314	1	1	RHS 100x50x4.0	S275	0.177	Pass

SB Base/A/4-Base/C/4

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St. Base (Base) Base (Base) Base (Base) Base (Base): 3
RHS 120x60x5.0 S275 RHS 120x60x5.0 S275 RHS 120x60x5.0 S275 RHS 120x60x5.0 S275
SB Base/A/4-Base/C/4

Restraints

Source	Distance / Length [m]	LTB Top / Sub-Beam	LTB Top Factor	LTB Btm / Sub-Beam	LTB Btm Factor	Strut Major / Sub-Beam	Strut Major Factor	Strut Minor / Sub-Beam	Strut Minor Factor
support	0.000	•		•		•		•	
sub-beam	0.177		1.000		1.000		1.000		1.000
member	0.177	•						•	
sub-beam	0.290		1.000		1.000		1.000		1.000
support	0.467	•		•		•		•	
sub-beam	0.590		1.000		1.000		1.000		1.000
support	1.057	•		•		•		•	
sub-beam	1.563		1.000		1.000		1.000		1.000
support	2.620	•		•		•		•	

Static

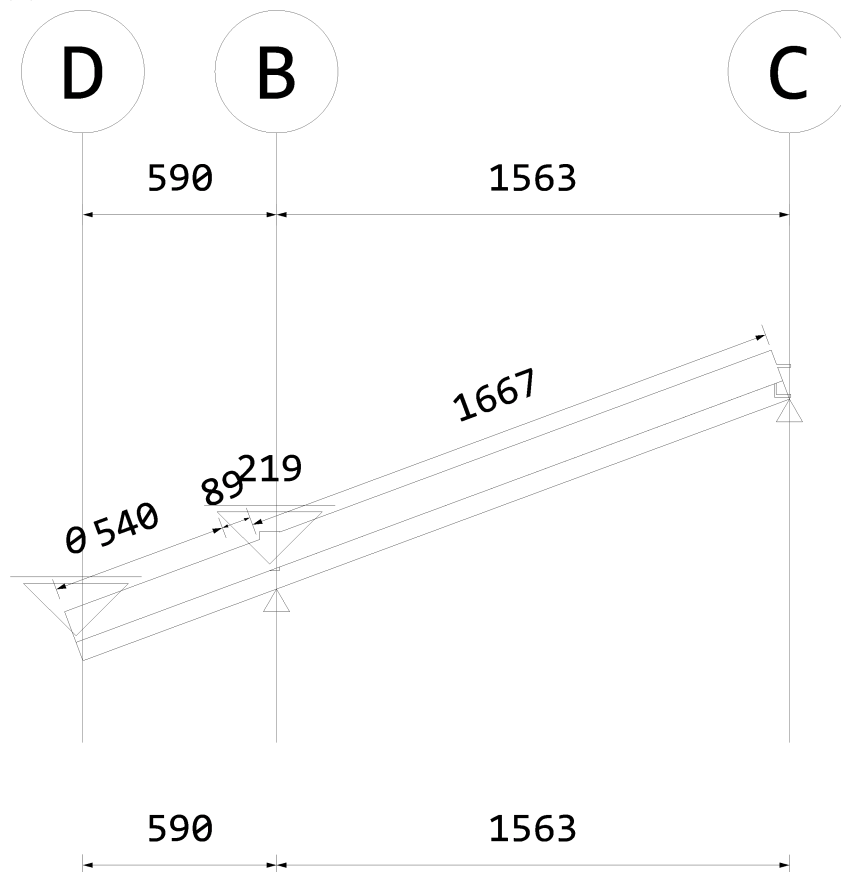
Summary RHS 120x60x5.0 (S275)

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Classification	1	Class 1 Plastic	-	-	-	Pass
Shear Major	3	17.0	184.0	kN	0.093	Pass
Shear Minor	-	No	Significant	Forces	-	Not required
Shear Web Buckling		21.000	70.000			Pass
Moment Major	3	-7.6	16.5	kNm	0.464	Pass
Moment Minor	-	No	Significant	Forces	-	Not required
Axial	3	-5.7	460.1	kN	0.012	Pass
Axial Bending Combined	3	-	-	-	0.440	Pass
Buckling Lateral Torsional	1	-	-	-	-	Not applicable
Buckling Compression	-	No	Significant	Forces	-	Not required

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Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Buckling Combined	-	No	Significant	Forces	-	Not required
Max. Self wt. deflection	1	0.0	-	mm	-	-
Deflection Slab	-	No	Loads	mm	-	Not required
Deflection Dead	1	0.0	1.9	mm	0.007	Pass
Deflection Imposed	1	1.4	2.6	mm	0.532	Pass
Deflection Wind	39	0.1	7.8	mm	0.017	Pass
Deflection Total	1	1.4	4.7	mm	0.307	Pass

SB Base/D/4-Base.0.1/C/4



1 2
 SHS 60x60x5.0 S275 SHS 60x60x5.0 S275
 SB Base/D/4-Base.0.1/C/4

Restraints

Source	Distance / Length [m]	LTB Top / Sub-Beam	LTB Top Factor	LTB Btm / Sub-Beam	LTB Btm Factor	Strut Major / Sub-Beam	Strut Major Factor	Strut Minor / Sub-Beam	Strut Minor Factor
support	0.000	•		•		•		•	
sub-beam	0.540		1.000		1.000		1.000		1.000

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Source	Distance / Length [m]	LTB Top / Sub-Beam	LTB Top Factor	LTB Btm / Sub-Beam	LTB Btm Factor	Strut Major / Sub-Beam	Strut Major Factor	Strut Minor / Sub-Beam	Strut Minor Factor
member	0.540					•			
sub-beam	0.089		1.000		1.000		1.000		1.000
support	0.629	•		•		•		•	
sub-beam	1.667		1.000		1.000		1.000		1.000
support	2.297	•		•		•		•	

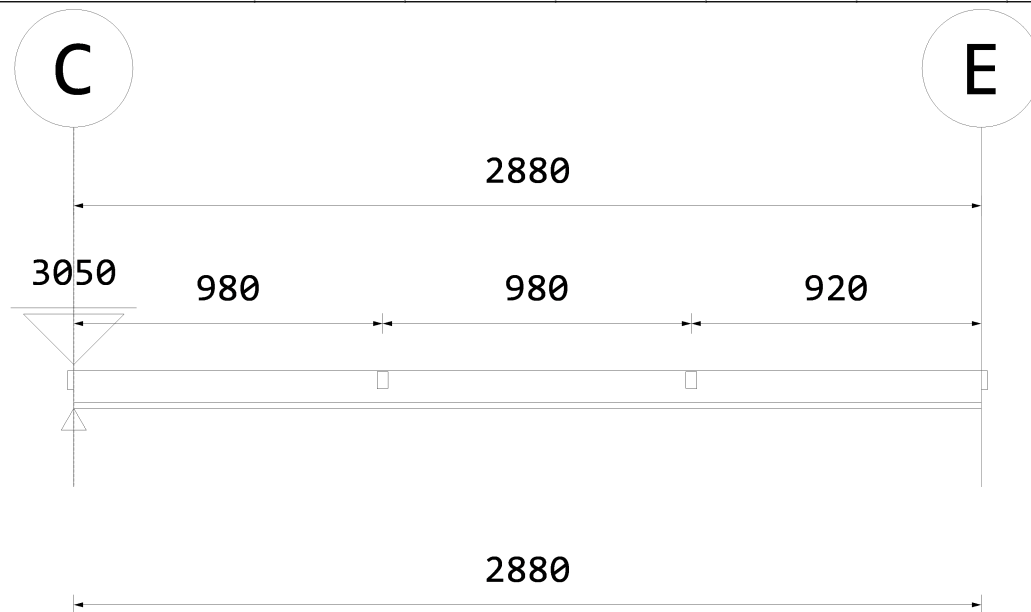
Static

SummarySHS 60x60x5.0(S275)

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Classification	1	Class 1 Plastic	-	-	-	Pass
Shear Major	3	5.5	88.5	kN	0.062	Pass
Shear Minor	-	No	Significant	Forces	-	Not required
Shear Web Buckling		9.000	70.000			Pass
Moment Major	2	-4.0	6.0	kNm	0.663	Pass
Moment Minor	5	0.4	6.0	kNm	0.064	Pass
Axial	14	18.5	295.1	kN	0.063	Pass
Axial Bending Combined	3	-	-	-	0.509	Pass
Buckling Lateral Torsional	1	-	-	-	-	Not applicable
Buckling Compression	14	16.4	229.9	kN	0.071	Pass
Buckling Combined	3	-	-	-	0.723	Pass
Max. Self wt. deflection	1	0.0	-	mm	-	-
Deflection Slab	-	No	Loads	mm	-	Not required
Deflection Dead	1	0.2	3.3	mm	0.053	Pass
Deflection Imposed	1	1.0	4.6	mm	0.213	Pass
Deflection Wind	39	0.0	3.1	mm	0.004	Pass
Deflection Total	1	1.2	8.3	mm	0.143	Pass

SB 2/1/C-2/1/E

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
	Structure STEEL FRAME				Sheet no. Page 5/22	
	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021



St. 2 (2): SB 2/1/C-2/1/E - 1
RHS 120x60x5.0 S275

Restraints

Source	Distance / Length [m]	LTB Top / Sub-Beam	LTB Top Factor	LTB Btm / Sub-Beam	LTB Btm Factor	Strut Major / Sub-Beam	Strut Major Factor	Strut Minor / Sub-Beam	Strut Minor Factor
support	0.000	•		•		•		•	
sub-beam	0.980		1.000		1.000		1.000		1.000
member	0.980	•						•	
sub-beam	0.980		1.000		1.000		1.000		1.000
member	1.960	•						•	
sub-beam	0.920		1.000		1.000		1.000		1.000
support	2.880	•		•		•		•	

Static

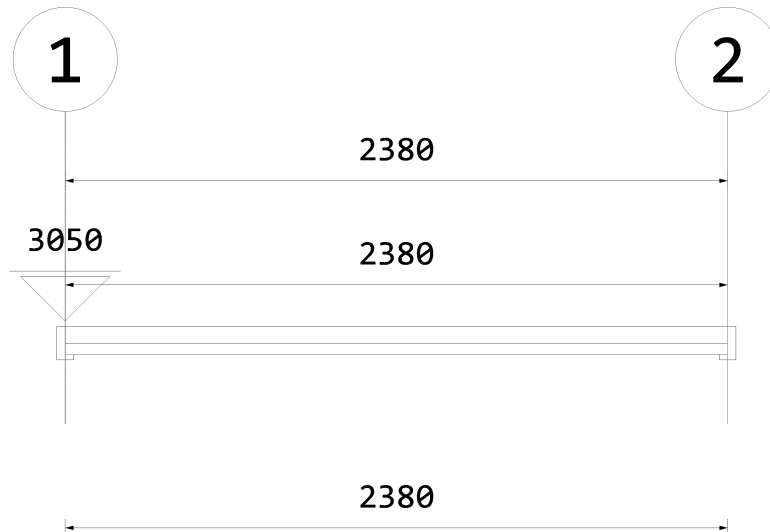
SummaryRHS 120x60x5.0(S275)

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Classification	1	Class 1 Plastic	-	-	-	Pass
Shear Major	2	4.1	184.0	kN	0.022	Pass
Shear Minor	-	No	Significant	Forces	-	Not required
Shear Web Buckling		21.000	70.000			Pass
Moment Major	3	-7.1	16.5	kNm	0.433	Pass
Moment Minor	4	-0.2	10.6	kNm	0.014	Pass
Axial	-	No	Significant	Forces	-	Not required
Axial Bending Combined	3	-	-	-	0.228	Pass
Buckling Lateral Torsional	1	-	-	-	-	Not applicable
Buckling Compression	-	No	Significant	Forces	-	Not required

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
	Structure STEEL FRAME				Sheet no. Page 6/22	
	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Buckling Combined	-	No	Significant	Forces	-	Not required
Max. Self wt. deflection	1	3.1	-	mm	-	-
Deflection Slab	-	No	Loads	mm	-	Not required
Deflection Dead	1	2.7	11.5	mm	0.236	Pass
Deflection Imposed	1	10.9	16.0	mm	0.679	Pass
Deflection Wind	39	-10.5	16.0	mm	0.656	Pass
Deflection Total	1	16.6	28.8	mm	0.578	Pass

SB 2/1/#19-2/2/#20



St. 2 (2): SB 2/1/#19-2/2/#20 - 1
RHS 60x40x3.0 S275

Restraints

Source	Distance / Length [m]	LTB Top / Sub-Beam	LTB Top Factor	LTB Btm / Sub-Beam	LTB Btm Factor	Strut Major / Sub-Beam	Strut Major Factor	Strut Minor / Sub-Beam	Strut Minor Factor
support	0.000	•		•		•		•	
sub-beam	2.380		1.000		1.000		1.000		1.000
support	2.380	•		•		•		•	

Static

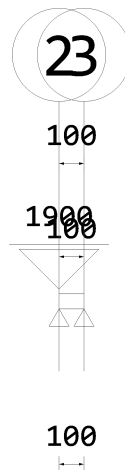
SummaryRHS 60x40x3.0(S275)

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Classification	1	Class 1 Plastic	-	-	-	Pass
Shear Major	1	1.4	54.9	kN	0.026	Pass
Shear Minor	-	No	Significant	Forces	-	Not required
Shear Web Buckling		17.000	70.000			Pass
Moment Major	1	0.9	2.9	kNm	0.293	Pass
Moment Minor	-	No	Significant	Forces	-	Not required
Axial	-	No	Significant	Forces	-	Not required
Axial Bending Combined	-	No	Significant	Forces	-	Not required

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
	Structure STEEL FRAME				Sheet no. Page 7/22	
	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Buckling Lateral Torsional	1	-	-	-	-	Not applicable
Buckling Compression	-	No	Significant	Forces	-	Not required
Buckling Combined	-	No	Significant	Forces	-	Not required
Max. Self wt. deflection	1	0.3	-	mm	-	-
Deflection Slab	-	No	Loads	mm	-	Not required
Deflection Dead	1	1.1	4.8	mm	0.239	Pass
Deflection Imposed	1	4.5	6.6	mm	0.687	Pass
Deflection Wind	-	No	Loads	mm	-	Not required
Deflection Total	1	6.0	11.9	mm	0.505	Pass

SB 1.1/C/2-1.1/C/3



St. 1.1 (1.1): SB 1.1/C/2-1.1/C/3 - 1 RHS 60x40x3.0 S275

Restraints

Source	Distance / Length [m]	LTB Top / Sub-Beam	LTB Top Factor	LTB Btm / Sub-Beam	LTB Btm Factor	Strut Major / Sub-Beam	Strut Major Factor	Strut Minor / Sub-Beam	Strut Minor Factor
support	0.000	•		•		•		•	
sub-beam	0.100		1.000		1.000		1.000		1.000
support	0.100	•		•		•		•	

Static

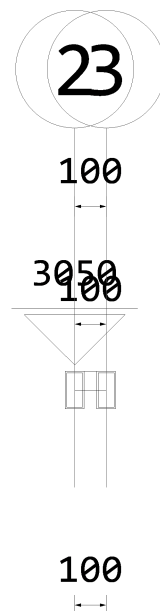
SummaryRHS 60x40x3.0(S275)

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Classification	27	Class 1 Plastic	-	-	-	Pass
Shear Major	-	No	Significant	Forces	-	Not required
Shear Minor	-	No	Significant	Forces	-	Not required
Shear Web Buckling		17.000	70.000			Pass
Moment Major	-	No	Significant	Forces	-	Not required
Moment Minor	-	No	Significant	Forces	-	Not required
Axial	4	-1.0	152.4	kN	0.007	Pass
Axial Bending Combined	-	No	Significant	Forces	-	Not required

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
	Structure STEEL FRAME				Sheet no. Page 8/22	
	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Buckling Lateral Torsional	-	No	Significant	Forces	-	Not required
Buckling Compression	-	No	Significant	Forces	-	Not required
Buckling Combined	-	No	Significant	Forces	-	Not required
Max. Self wt. deflection	1	0.0	-	mm	-	-
Deflection Slab	-	No	Loads	mm	-	Not required
Deflection Dead	-	No	Loads	mm	-	Not required
Deflection Imposed	-	No	Loads	mm	-	Not required
Deflection Wind	-	No	Loads	mm	-	Not required
Deflection Total	1	0.0	0.5	mm	0.000	Pass

SB 2/E/2-2/E/3



St. 2 (2): SB 2/E/2-2/E/3 - 1
RHS 60x40x3.0 S275

Restraints

Source	Distance / Length [m]	LTB Top / Sub-Beam	LTB Top Factor	LTB Btm / Sub-Beam	LTB Btm Factor	Strut Major / Sub-Beam	Strut Major Factor	Strut Minor / Sub-Beam	Strut Minor Factor
support	0.000	•		•		•		•	
sub-beam	0.100		1.000		1.000		1.000		1.000
support	0.100	•		•		•		•	

Static

SummaryRHS 60x40x3.0(S275)

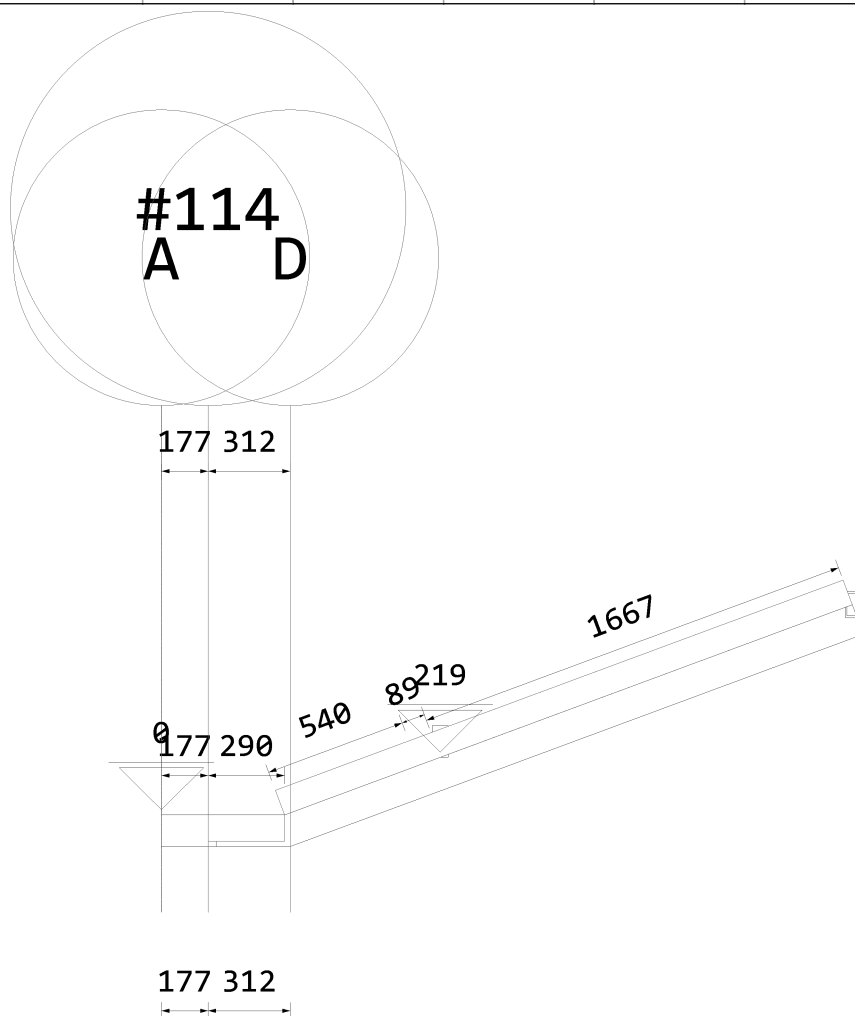
Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Classification	27	Class 1 Plastic	-	-	-	Pass
Shear Major	-	No	Significant	Forces	-	Not required
Shear Minor	-	No	Significant	Forces	-	Not required

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
	Structure STEEL FRAME				Sheet no. Page 9/22	
	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Shear Web Buckling		17.000	70.000			Pass
Moment Major	-	No	Significant	Forces	-	Not required
Moment Minor	-	No	Significant	Forces	-	Not required
Axial	-	No	Significant	Forces	-	Not required
Axial Bending Combined	-	No	Significant	Forces	-	Not required
Buckling Lateral Torsional	-	No	Significant	Forces	-	Not required
Buckling Compression	-	No	Significant	Forces	-	Not required
Buckling Combined	-	No	Significant	Forces	-	Not required
Max. Self wt. deflection	1	0.0	-	mm	-	-
Deflection Slab	-	No	Loads	mm	-	Not required
Deflection Dead	-	No	Loads	mm	-	Not required
Deflection Imposed	-	No	Loads	mm	-	Not required
Deflection Wind	-	No	Loads	mm	-	Not required
Deflection Total	1	0.0	0.5	mm	0.000	Pass

SB Base/A/#37-Base/#37/C

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
	Structure STEEL FRAME				Sheet no. Page 10/22	
	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021



1 2 3 4
 RHBS200x50x6 S275 RHBS200x50x6 S275 RHBS200x50x6 S275 RHBS200x50x6 S275
 SB Base/A/#37-Base/#37/C

Restraints

Source	Distance / Length [m]	LTB Top / Sub-Beam	LTB Top Factor	LTB Btm / Sub-Beam	LTB Btm Factor	Strut Major / Sub-Beam	Strut Major Factor	Strut Minor / Sub-Beam	Strut Minor Factor
support	0.000	•		•		•		•	
sub-beam	0.177		1.000		1.000		1.000		1.000
support	0.177	•		•		•		•	
sub-beam	0.290		1.000		1.000		1.000		1.000
support	0.467	•		•		•		•	
sub-beam	0.540		1.000		1.000		1.000		1.000
member	1.007					•			
sub-beam	0.089		1.000		1.000		1.000		1.000
support	1.096	•		•		•		•	

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
	Structure STEEL FRAME				Sheet no. Page 11/22	
	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021

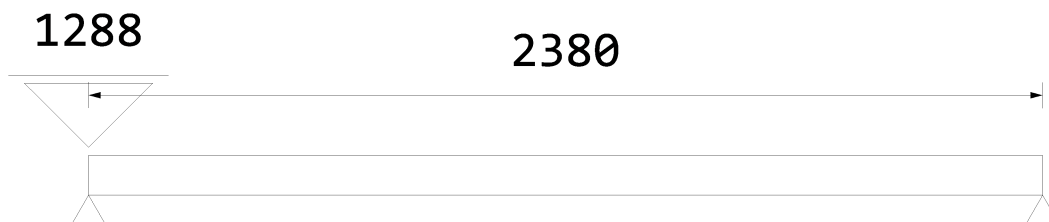
Source	Distance / Length [m]	LTB Top / Sub-Beam	LTB Top Factor	LTB Btm / Sub-Beam	LTB Btm Factor	Strut Major / Sub-Beam	Strut Major Factor	Strut Minor / Sub-Beam	Strut Minor Factor
sub-beam	1.667		1.000		1.000		1.000		1.000
support	2.764	•		•		•		•	

Static

SummaryRHS 120x60x5.0(S275)

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Classification	1	Class 1 Plastic	-	-	-	Pass
Shear Major	3	10.3	184.0	kN	0.056	Pass
Shear Minor	5	1.9	92.0	kN	0.021	Pass
Shear Web Buckling		21.000	70.000			Pass
Moment Major	3	-3.5	16.5	kNm	0.210	Pass
Moment Minor	5	1.1	10.6	kNm	0.106	Pass
Axial	2	-4.0	460.1	kN	0.009	Pass
Axial Bending Combined	3	-	-	-	0.197	Pass
Buckling Lateral Torsional	1	-	-	-	-	Not applicable
Buckling Compression	3	2.4	378.0	kN	0.006	Pass
Buckling Combined	5	-	-	-	0.197	Pass
Max. Self wt. deflection	1	0.0	-	mm	-	-
Deflection Slab	-	No	Loads	mm	-	Not required
Deflection Dead	1	0.2	3.3	mm	0.047	Pass
Deflection Imposed	1	0.1	1.0	mm	0.148	Pass
Deflection Wind	39	0.0	8.3	mm	0.001	Pass
Deflection Total	1	0.8	8.3	mm	0.095	Pass

SB FRM 3/%62-/%59



SB FRM 3/%62-/%59 - 1
RHS 100x50x4.0 S275

Restraints

Source	Distance / Length [m]	LTB Top / Sub-Beam	LTB Top Factor	LTB Btm / Sub-Beam	LTB Btm Factor	Strut Major / Sub-Beam	Strut Major Factor	Strut Minor / Sub-Beam	Strut Minor Factor
support	0.000	•		•		•		•	
sub-beam	2.380		1.000		1.000		1.000		1.000
support	2.380	•		•		•		•	

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
	Structure STEEL FRAME				Sheet no. Page 12/22	
	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021

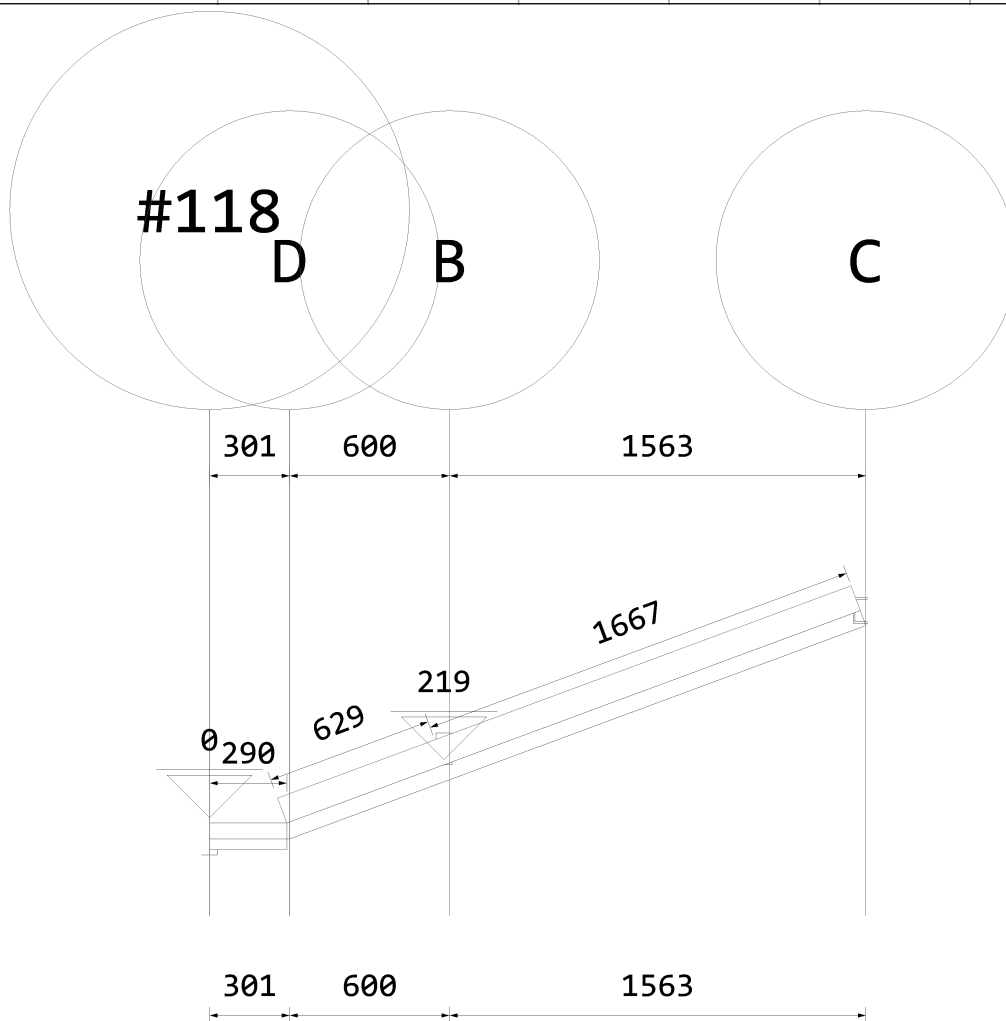
Static

SummaryRHS 100x50x4.0(S275)

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Classification	1	Class 1 Plastic	-	-	-	Pass
Shear Major	-	No	Significant	Forces	-	Not required
Shear Minor	1	-5.7	61.5	kN	0.093	Pass
Shear Web Buckling		22.000	70.000			Pass
Moment Major	-	No	Significant	Forces	-	Not required
Moment Minor	1	-3.4	5.9	kNm	0.576	Pass
Axial	-	No	Significant	Forces	-	Not required
Axial Bending Combined	-	No	Significant	Forces	-	Not required
Buckling Lateral Torsional	-	No	Significant	Forces	-	Not required
Buckling Compression	-	No	Significant	Forces	-	Not required
Buckling Combined	-	No	Significant	Forces	-	Not required
Max. Self wt. deflection	1	0.1	-	mm	-	-
Deflection Slab	-	No	Loads	mm	-	Not required
Deflection Dead	-	No	Loads	mm	-	Not required
Deflection Imposed	-	No	Loads	mm	-	Not required
Deflection Wind	-	No	Loads	mm	-	Not required
Deflection Total	1	0.1	11.9	mm	0.011	Pass

SB Base/%60-Base/C/#119

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
	Structure STEEL FRAME				Sheet no. Page 13/22	
	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021



1 2 3
SHS 60x60x60x5.0 S275 S275
SB Base/%60-Base/C/#119

Restraints

Source	Distance / Length [m]	LTB Top / Sub-Beam	LTB Top Factor	LTB Btm / Sub-Beam	LTB Btm Factor	Strut Major / Sub-Beam	Strut Major Factor	Strut Minor / Sub-Beam	Strut Minor Factor
support	0.000	•		•		•		•	
sub-beam	0.290		1.000		1.000		1.000		1.000
support	0.290	•		•		•		•	
sub-beam	0.629		1.000		1.000		1.000		1.000
support	0.919	•		•		•		•	
sub-beam	1.667		1.000		1.000		1.000		1.000
support	2.587	•		•		•		•	

Static

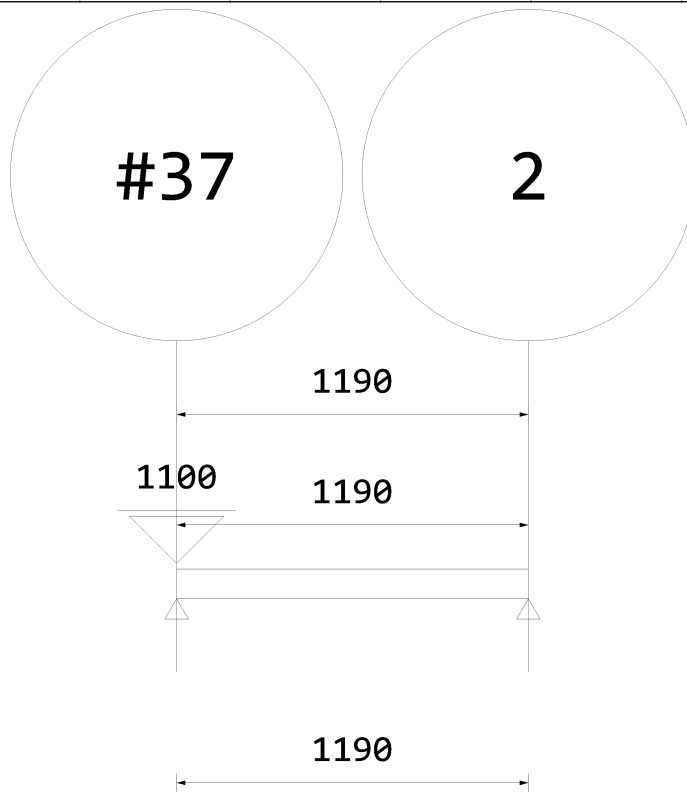
	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
	Structure STEEL FRAME				Sheet no. Page 14/22	
	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021

SummarySHS 60x60x5.0(S275)

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Classification	1	Class 1 Plastic	-	-	-	Pass
Shear Major	3	9.7	88.5	kN	0.110	Pass
Shear Minor	-	No	Significant	Forces	-	Not required
Shear Web Buckling		9.000	70.000			Pass
Moment Major	2	2.6	6.0	kNm	0.432	Pass
Moment Minor	5	0.4	6.0	kNm	0.060	Pass
Axial	2	-3.2	295.1	kN	0.011	Pass
Axial Bending Combined	10	-	-	-	0.257	Pass
Buckling Lateral Torsional	1	-	-	-	-	Not applicable
Buckling Compression	3	3.1	229.9	kN	0.014	Pass
Buckling Combined	5	-	-	-	0.416	Pass
Max. Self wt. deflection	1	0.1	-	mm	-	-
Deflection Slab	-	No	Loads	mm	-	Not required
Deflection Dead	1	0.5	3.3	mm	0.162	Pass
Deflection Imposed	1	3.4	4.6	mm	0.736	Pass
Deflection Wind	39	0.0	8.3	mm	0.002	Pass
Deflection Total	1	4.0	8.3	mm	0.481	Pass

SB 1/A/#37-1/A/2

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
	Structure STEEL FRAME				Sheet no. Page 15/22	
	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021



St. 1 (1): SB 1/A/#37-1/A/2 - 1
RHS 100x50x4.0 S275

Restraints

Source	Distance / Length [m]	LTB Top / Sub-Beam	LTB Top Factor	LTB Btm / Sub-Beam	LTB Btm Factor	Strut Major / Sub-Beam	Strut Major Factor	Strut Minor / Sub-Beam	Strut Minor Factor
support	0.000	•		•		•		•	
sub-beam	1.190		1.000		1.000		1.000		1.000
support	1.190	•		•		•		•	

Static

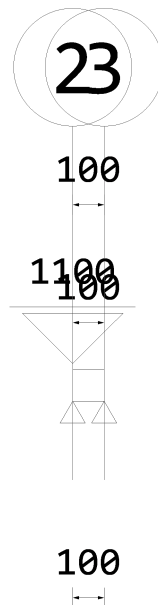
SummaryRHS 100x50x4.0(S275)

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Classification	1	Class 1 Plastic	-	-	-	Pass
Shear Major	-	No	Significant	Forces	-	Not required
Shear Minor	1	-2.9	61.5	kN	0.046	Pass
Shear Web Buckling		22.000	70.000			Pass
Moment Major	-	No	Significant	Forces	-	Not required
Moment Minor	1	-0.8	5.9	kNm	0.144	Pass
Axial	5	0.7	307.7	kN	0.002	Pass
Axial Bending Combined	5	-	-	-	0.144	Pass
Buckling Lateral Torsional	-	No	Significant	Forces	-	Not required

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
	Structure STEEL FRAME				Sheet no. Page 16/22	
	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Buckling Compression	5	0.7	269.9	kN	0.002	Pass
Buckling Combined	5	-	-	-	0.140	Pass
Max. Self wt. deflection	1	0.0	-	mm	-	-
Deflection Slab	-	No	Loads	mm	-	Not required
Deflection Dead	-	No	Loads	mm	-	Not required
Deflection Imposed	-	No	Loads	mm	-	Not required
Deflection Wind	-	No	Loads	mm	-	Not required
Deflection Total	1	0.0	6.0	mm	0.001	Pass

SB 1/A/2-1/A/3



St. 1 (1): SB 1/A/2-1/A/3 - 1
RHS 100x50x4.0 S275

Restraints

Source	Distance / Length [m]	LTB Top / Sub-Beam	LTB Top Factor	LTB Btm / Sub-Beam	LTB Btm Factor	Strut Major / Sub-Beam	Strut Major Factor	Strut Minor / Sub-Beam	Strut Minor Factor
support	0.000	•		•		•		•	
sub-beam	0.100		1.000		1.000		1.000		1.000
support	0.100	•		•		•		•	

Static

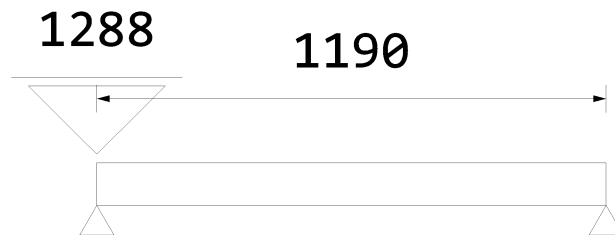
SummaryRHS 100x50x4.0(S275)

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Classification	1	Class 1 Plastic	-	-	-	Pass
Shear Major	-	No	Significant	Forces	-	Not required
Shear Minor	-	No	Significant	Forces	-	Not required
Shear Web Buckling		22.000	70.000			Pass

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
	Structure STEEL FRAME				Sheet no. Page 17/22	
	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Moment Major	-	No	Significant	Forces	-	Not required
Moment Minor	-	No	Significant	Forces	-	Not required
Axial	-	No	Significant	Forces	-	Not required
Axial Bending Combined	-	No	Significant	Forces	-	Not required
Buckling Lateral Torsional	-	No	Significant	Forces	-	Not required
Buckling Compression	-	No	Significant	Forces	-	Not required
Buckling Combined	-	No	Significant	Forces	-	Not required
Max. Self wt. deflection	1	0.0	-	mm	-	-
Deflection Slab	-	No	Loads	mm	-	Not required
Deflection Dead	-	No	Loads	mm	-	Not required
Deflection Imposed	-	No	Loads	mm	-	Not required
Deflection Wind	-	No	Loads	mm	-	Not required
Deflection Total	1	0.0	0.5	mm	0.000	Pass

SB /%50-FRM 7/%48



SB /%50-FRM 7/%48 - 1
RHS 100x50x4.0 S275

Restraints

Source	Distance / Length [m]	LTB Top / Sub-Beam	LTB Top Factor	LTB Btm / Sub-Beam	LTB Btm Factor	Strut Major / Sub-Beam	Strut Major Factor	Strut Minor / Sub-Beam	Strut Minor Factor
support	0.000	•		•		•		•	
sub-beam	1.190		1.000		1.000		1.000		1.000
support	1.190	•		•		•		•	

Static

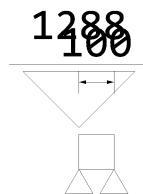
SummaryRHS 100x50x4.0(S275)

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Classification	1	Class 1 Plastic	-	-	-	Pass
Shear Major	-	No	Significant	Forces	-	Not required
Shear Minor	1	-2.9	61.5	kN	0.046	Pass
Shear Web Buckling		22.000	70.000			Pass
Moment Major	-	No	Significant	Forces	-	Not required
Moment Minor	1	-0.8	5.9	kNm	0.144	Pass
Axial	5	0.8	307.7	kN	0.003	Pass
Axial Bending Combined	5	-	-	-	0.144	Pass

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
	Structure STEEL FRAME				Sheet no. Page 18/22	
	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Buckling Lateral Torsional	-	No	Significant	Forces	-	Not required
Buckling Compression	5	0.8	269.9	kN	0.003	Pass
Buckling Combined	5	-	-	-	0.141	Pass
Max. Self wt. deflection	1	0.0	-	mm	-	-
Deflection Slab	-	No	Loads	mm	-	Not required
Deflection Dead	-	No	Loads	mm	-	Not required
Deflection Imposed	-	No	Loads	mm	-	Not required
Deflection Wind	-	No	Loads	mm	-	Not required
Deflection Total	1	0.0	6.0	mm	0.001	Pass

SB FRM 7/%48-FRM 3/%62



SB FRM 7/%48-FRM 3/%62 - 1
RHS 100x50x4.0 S275

Restraints

Source	Distance / Length [m]	LTB Top / Sub-Beam	LTB Top Factor	LTB Btm / Sub-Beam	LTB Btm Factor	Strut Major / Sub-Beam	Strut Major Factor	Strut Minor / Sub-Beam	Strut Minor Factor
support	0.000	•		•		•		•	
sub-beam	0.100		1.000		1.000		1.000		1.000
support	0.100	•		•		•		•	

Static

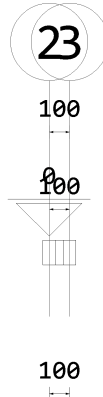
SummaryRHS 100x50x4.0(S275)

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Classification	1	Class 1 Plastic	-	-	-	Pass
Shear Major	-	No	Significant	Forces	-	Not required
Shear Minor	-	No	Significant	Forces	-	Not required
Shear Web Buckling		22.000	70.000			Pass
Moment Major	-	No	Significant	Forces	-	Not required
Moment Minor	-	No	Significant	Forces	-	Not required
Axial	5	0.5	307.7	kN	0.002	Pass
Axial Bending Combined	-	No	Significant	Forces	-	Not required
Buckling Lateral Torsional	-	No	Significant	Forces	-	Not required
Buckling Compression	5	0.5	307.7	kN	0.002	Pass
Buckling Combined	-	No	Significant	Forces	-	Not required
Max. Self wt. deflection	1	0.0	-	mm	-	-
Deflection Slab	-	No	Loads	mm	-	Not required
Deflection Dead	-	No	Loads	mm	-	Not required
Deflection Imposed	-	No	Loads	mm	-	Not required

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
	Structure STEEL FRAME				Sheet no. Page 19/22	
	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Deflection Wind	-	No	Loads	mm	-	Not required
Deflection Total	1	0.0	0.5	mm	0.000	Pass

SB Base/2/#24-Base/3/#24



St. Base (Base): SB Base/2/#24-Base/3/#24 - 1
RHS 120x60x5.0 S275

Restraints

Source	Distance / Length [m]	LTB Top / Sub-Beam	LTB Top Factor	LTB Btm / Sub-Beam	LTB Btm Factor	Strut Major / Sub-Beam	Strut Major Factor	Strut Minor / Sub-Beam	Strut Minor Factor
support	0.000	•		•		•		•	
sub-beam	0.100		1.000		1.000		1.000		1.000
support	0.100	•		•		•		•	

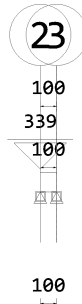
Static

SummaryRHS 120x60x5.0(S275)

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Classification	27	Class 1 Plastic	-	-	-	Pass
Shear Major	-	No	Significant	Forces	-	Not required
Shear Minor	-	No	Significant	Forces	-	Not required
Shear Web Buckling		21.000	70.000			Pass
Moment Major	-	No	Significant	Forces	-	Not required
Moment Minor	-	No	Significant	Forces	-	Not required
Axial	5	-0.6	460.1	kN	0.001	Pass
Axial Bending Combined	-	No	Significant	Forces	-	Not required
Buckling Lateral Torsional	-	No	Significant	Forces	-	Not required
Buckling Compression	-	No	Significant	Forces	-	Not required
Buckling Combined	-	No	Significant	Forces	-	Not required
Max. Self wt. deflection	1	0.0	-	mm	-	-
Deflection Slab	-	No	Loads	mm	-	Not required
Deflection Dead	-	No	Loads	mm	-	Not required
Deflection Imposed	-	No	Loads	mm	-	Not required
Deflection Wind	-	No	Loads	mm	-	Not required
Deflection Total	1	0.0	0.5	mm	0.000	Pass

SB Base.0.1/B/2-Base.0.1/B/3

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
	Structure STEEL FRAME				Sheet no. Page 20/22	
	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021



St. Base.0.1 (Base.0.1): SB Base.0.1/B/2-Base.0.1/B/3 - 1
RHS 120x60x5.0 S275

Restraints

Source	Distance / Length [m]	LTB Top / Sub-Beam	LTB Top Factor	LTB Btm / Sub-Beam	LTB Btm Factor	Strut Major / Sub-Beam	Strut Major Factor	Strut Minor / Sub-Beam	Strut Minor Factor
support	0.000	•		•		•		•	
sub-beam	0.100		1.000		1.000		1.000		1.000
support	0.100	•		•		•		•	

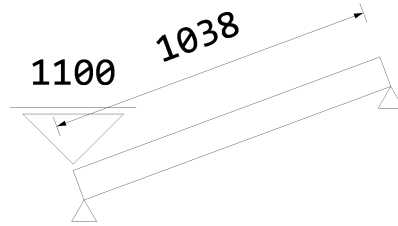
Static

SummaryRHS 120x60x5.0(S275)

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Classification	27	Class 1 Plastic	-	-	-	Pass
Shear Major	-	No	Significant	Forces	-	Not required
Shear Minor	-	No	Significant	Forces	-	Not required
Shear Web Buckling		21.000	70.000			Pass
Moment Major	-	No	Significant	Forces	-	Not required
Moment Minor	-	No	Significant	Forces	-	Not required
Axial	5	-12.5	460.1	kN	0.027	Pass
Axial Bending Combined	-	No	Significant	Forces	-	Not required
Buckling Lateral Torsional	-	No	Significant	Forces	-	Not required
Buckling Compression	27	3.1	460.1	kN	0.007	Pass
Buckling Combined	-	No	Significant	Forces	-	Not required
Max. Self wt. deflection	1	0.0	-	mm	-	-
Deflection Slab	-	No	Loads	mm	-	Not required
Deflection Dead	-	No	Loads	mm	-	Not required
Deflection Imposed	-	No	Loads	mm	-	Not required
Deflection Wind	-	No	Loads	mm	-	Not required
Deflection Total	1	0.0	0.5	mm	0.000	Pass

SB 1/1/A-FRM 1/%83

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
	Structure STEEL FRAME				Sheet no. Page 21/22	
	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021



FRM 1: SB 1/1/A-FRM 1/%83 - 1 RHS 100x50x4.0 S275

Restraints

Source	Distance / Length [m]	LTB Top / Sub-Beam	LTB Top Factor	LTB Btm / Sub-Beam	LTB Btm Factor	Strut Major / Sub-Beam	Strut Major Factor	Strut Minor / Sub-Beam	Strut Minor Factor
support	0.000	•		•		•		•	
sub-beam	1.038		1.000		1.000		1.000		1.000
support	1.038	•		•		•		•	

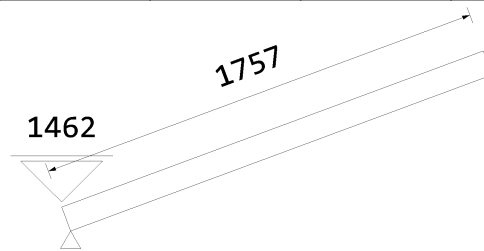
Static

SummaryRHS 100x50x4.0(S275)

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Classification	1	Class 1 Plastic	-	-	-	Pass
Shear Major	-	No	Significant	Forces	-	Not required
Shear Minor	1	1.2	61.5	kN	0.020	Pass
Shear Web Buckling		22.000	70.000			Pass
Moment Major	-	No	Significant	Forces	-	Not required
Moment Minor	1	0.3	5.9	kNm	0.055	Pass
Axial	14	3.5	307.7	kN	0.011	Pass
Axial Bending Combined	3	-	-	-	0.055	Pass
Buckling Lateral Torsional	-	No	Significant	Forces	-	Not required
Buckling Compression	14	3.5	279.7	kN	0.012	Pass
Buckling Combined	3	-	-	-	0.065	Pass
Max. Self wt. deflection	1	0.0	-	mm	-	-
Deflection Slab	-	No	Loads	mm	-	Not required
Deflection Dead	-	No	Loads	mm	-	Not required
Deflection Imposed	-	No	Loads	mm	-	Not required
Deflection Wind	-	No	Loads	mm	-	Not required
Deflection Total	1	0.0	5.2	mm	0.001	Pass

SB FRM 1/%83-FRM 1/C/#314

	Project SPECTATOR TERRACE, WEALDSTONE				Job Ref. 21/45268	
	Structure STEEL FRAME				Sheet no. Page 22/22	
	Calc. by ANDREEA BLIDAR	Date 28/07/2021	Chk'd by DAVID SMITH	Date 28/07/2021	App'd by DAVID SMITH	Date 28/07/2021



FRM 1: SB FRM 1/%83-FRM 1/C/#314 - 1 RHS 100x50x4.0 S275

Restraints

Source	Distance / Length [m]	LTB Top / Sub-Beam	LTB Top Factor	LTB Btm / Sub-Beam	LTB Btm Factor	Strut Major / Sub-Beam	Strut Major Factor	Strut Minor / Sub-Beam	Strut Minor Factor
support	0.000	•		•		•		•	
sub-beam	1.757		1.000		1.000		1.000		1.000
support	1.757	•		•		•		•	

Static

SummaryRHS 100x50x4.0(S275)

Design Condition	#	Design Value	Design Capacity	Units	U.R.	Status
Classification	1	Class 1 Plastic	-	-	-	Pass
Shear Major	-	No	Significant	Forces	-	Not required
Shear Minor	1	2.1	61.5	kN	0.034	Pass
Shear Web Buckling		22.000	70.000			Pass
Moment Major	-	No	Significant	Forces	-	Not required
Moment Minor	1	0.9	5.9	kNm	0.157	Pass
Axial	14	5.3	307.7	kN	0.017	Pass
Axial Bending Combined	3	-	-	-	0.157	Pass
Buckling Lateral Torsional	-	No	Significant	Forces	-	Not required
Buckling Compression	14	5.3	211.1	kN	0.025	Pass
Buckling Combined	3	-	-	-	0.177	Pass
Max. Self wt. deflection	1	0.0	-	mm	-	-
Deflection Slab	-	No	Loads	mm	-	Not required
Deflection Dead	-	No	Loads	mm	-	Not required
Deflection Imposed	-	No	Loads	mm	-	Not required
Deflection Wind	-	No	Loads	mm	-	Not required
Deflection Total	1	0.0	8.8	mm	0.004	Pass