General Notes

G01	The Design and Details shown in these Drawings are applicable to this Project only.
G02	These Drawings shall be read in conjunction with all Architectural Drawings, other Consultants' Drawings, Specifications and such other Written Instructions as may be issued during the course of the Project. Any discrepancy shall be referred to the Engineer before proceeding with the work.
G03	All Materials and Workmanship shall be in accordance with the relevant and current SAA Codes and Authorities Except where varied by the Project Specifications.
G04	The Structure must be maintained in a stable condition and no part must be overloaded during construction. Temporary bracing must be designed and provided by the contractor(s) to keep the building works and excavations stable at all times.
G05	The Issuer of these Designs reserves the right to alter Specifications and Designs as it may see fit without prior notification or penalty.
G06	Unless specified otherwise, Structural Wall means a Steel Reinforced Concrete Wall with a minimum of 20 MPa concrete compressive strength.
G07	Connections may require on-site drilling by the contractor(s).

Foundation Notes

F01	Foundations have been designed assuming an allowable bearing capacity of 100 kPa.
F02	The Owner is advised to obtain a Geotechnical Report and/or Site Foundation Report to confirm F01 above.
F03	Footings shall be located centrally under walls and columns unless noted otherwise.
F04	Footings shall be an industrial floor slab of adequate strength, or pad footings founded a minimum of 400 mm into Natural Ground. Do not Found Footings in uncontrolled fill.
F05	Engineer to be contacted if Foundation Conditions vary from F01 above.

Steelwork Notes

S01	All Workmanship and Materials shall be in accordance with AS 4100 and AS 1554 except where varied by the Project documentation.
S02	Bolting Categories are identified on the Structural Drawings as follows: 4.6/S Commercial Bolts of Grade 4.6 to AS 1111 Snug Tightened 8.8/S High Strength Structural Bolts of Grade 8.8 to AS 1252 Snug Tightened
S03	Unless noted otherwise, all M16 fasteners shall be Category 8.8/S. Standard Fixings for C100, C150, C200 and C250 Sections are M12 bolts. Standard Fixings for C300 and C350 Sections are M16 bolts. No Connection shall have less than 2 bolts.
S04	All metal cladding should comply with AS/NZS 4680 G550, AZ150 (550 MPa minimum yield stress, 150 g/m2 minimum coating mass).
S05	Steelwork intended to be concrete encased shall be unpainted. Encasing concrete shall be Grade N25 unless noted otherwise providing a cover adequate to suit fire rating or exposure conditions. Concrete Encasement shall be centrally reinforced with 5 mm wire to AS 4671 or 6 mm Structural Grade Bars to AS 4671 at 150 mm pitch.
S06	Unless noted otherwise, all steel shall comply with the relevant Australian Standard.

Steel Grades

300 PLUS	Universal Beams & Columns, Parallel Flange Channels, Large Angles to AS/NZS 3679.1
250	Flats, Small Angles, Taper Flange Beams & Columns to AS/NZS 3679.1
300	Welded Sections to AS/NZS 3679.2
250	Hot Rolled Plates, Floor Plates & Slabs to AS/NZS 3678
250	Hollow Sections to AS 1163. Circular Sections less than 165mm Outside Diameter. Sections other than the above
G450-G550	Cold Form AS 4600. Unless noted otherwise, all purlins, plates & brackets are G450.
G500	Slab mesh and deformed reinforcement bars.

Australian Standard™ & Australian/New Zealand Standard™ Adopted

AS 1111.1	ISO Metric Hexagon Bolts and Screws – Product Grade C Part 1: Bolts
AS/NZS 1163	Cold-formed Structural Steel Hollow Sections
AS/NZS 1170.0	Structural Design Actions - Part 0: General Principles
AS/NZS 1170.1	Structural Design Actions - Part 1: Permanent, Imposed & Other Actions
AS/NZS 1170.4	Structural Design Actions - Part 4: Earthquake Actions in Australia
AS 1252	Structural Assemblies
AS/NZS 1554	Structural Steel Welding
AS 1657	Fixed Platforms, Walkways, Stairways & Ladders: Design, Construction and Installation
AS/NZS 3678	Structural Steel: Hot-rolled Plates, Floorplates & Slabs
AS/NZS 3679	Structural Steel: Hot-rolled Bars & Sections
AS 4100	Steel Structures
AS/NZS 4600	Cold-formed Steel Structures
AS/NZS 4671	Steel Reinforcing Materials
AS/NZS 4680	Hot-dip Galvanized (Zinc) Coatings on Fabricated Ferrous Articles

Design Notes & Structural Members

Dimensions	4864 x 10000 x 3000
Building Class	7B
Design Load	3.0 kPa
Concentrated Load	4.5 kN
Floor Location	Indoor
Posts	100x100x2 Grade C450L0
Bearers	C15012
Joists	C15012
Footings	On Slab
Slab	Existing by others
Max Joist Spacing	600 mm
All Plates & Brackets	3.0 mm G450
Technical Data	Page 27

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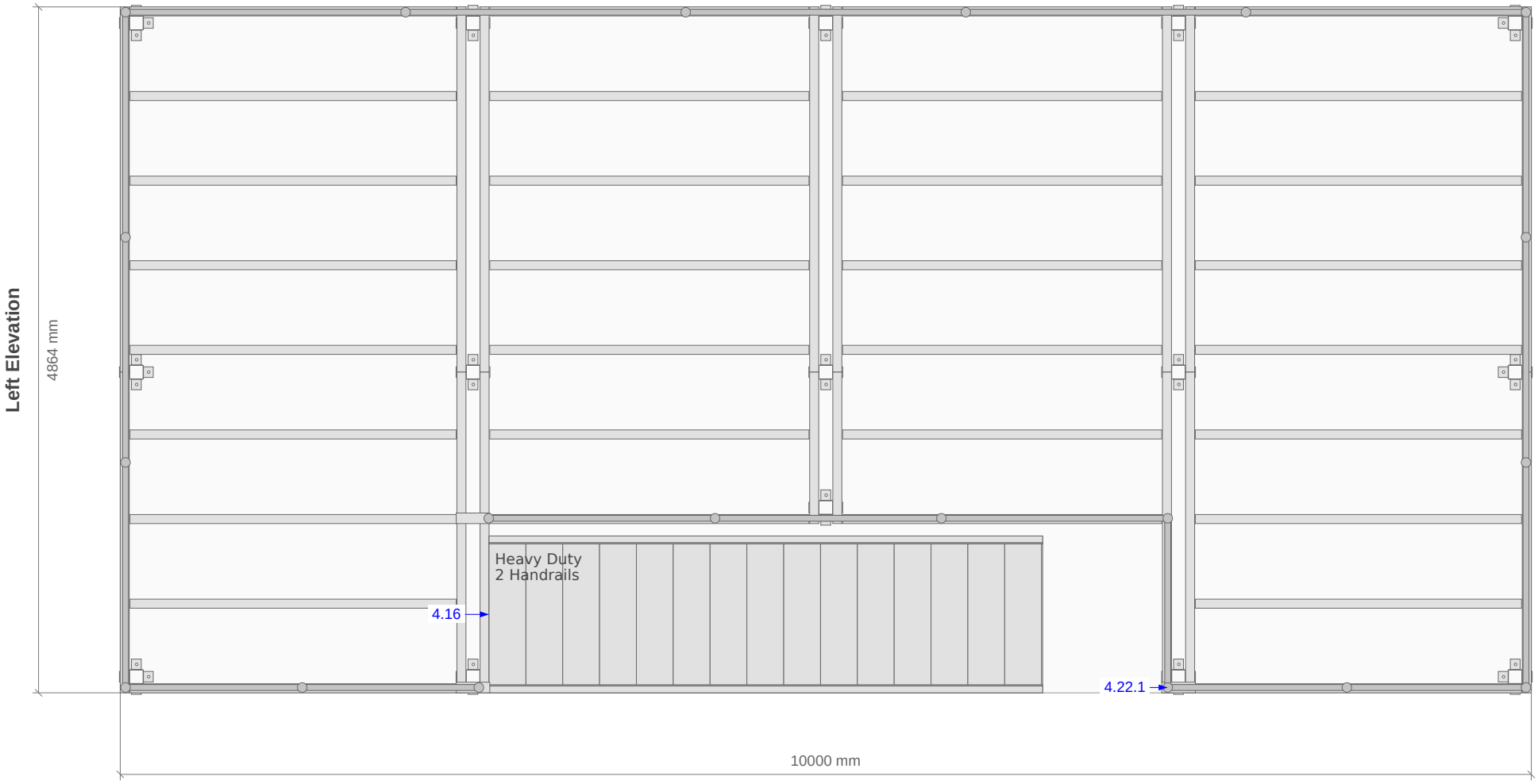
PROJECT: Example 4864 x 10000 x 3000 3.0 kPa Mezzanine Floor	PROJECT NUMBER: 6462				
CLIENT: Example Customer	DRAWN BY: dm3 Solutions				
ADDRESS: Example Street, Suburb WA 6000	DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 1 of 27

3.0 kPa Mezzanine Floor: General Arrangement



Front Elevation

Fix to Manufacturer Specifications

Stairs: 3923 mm · 15 treads

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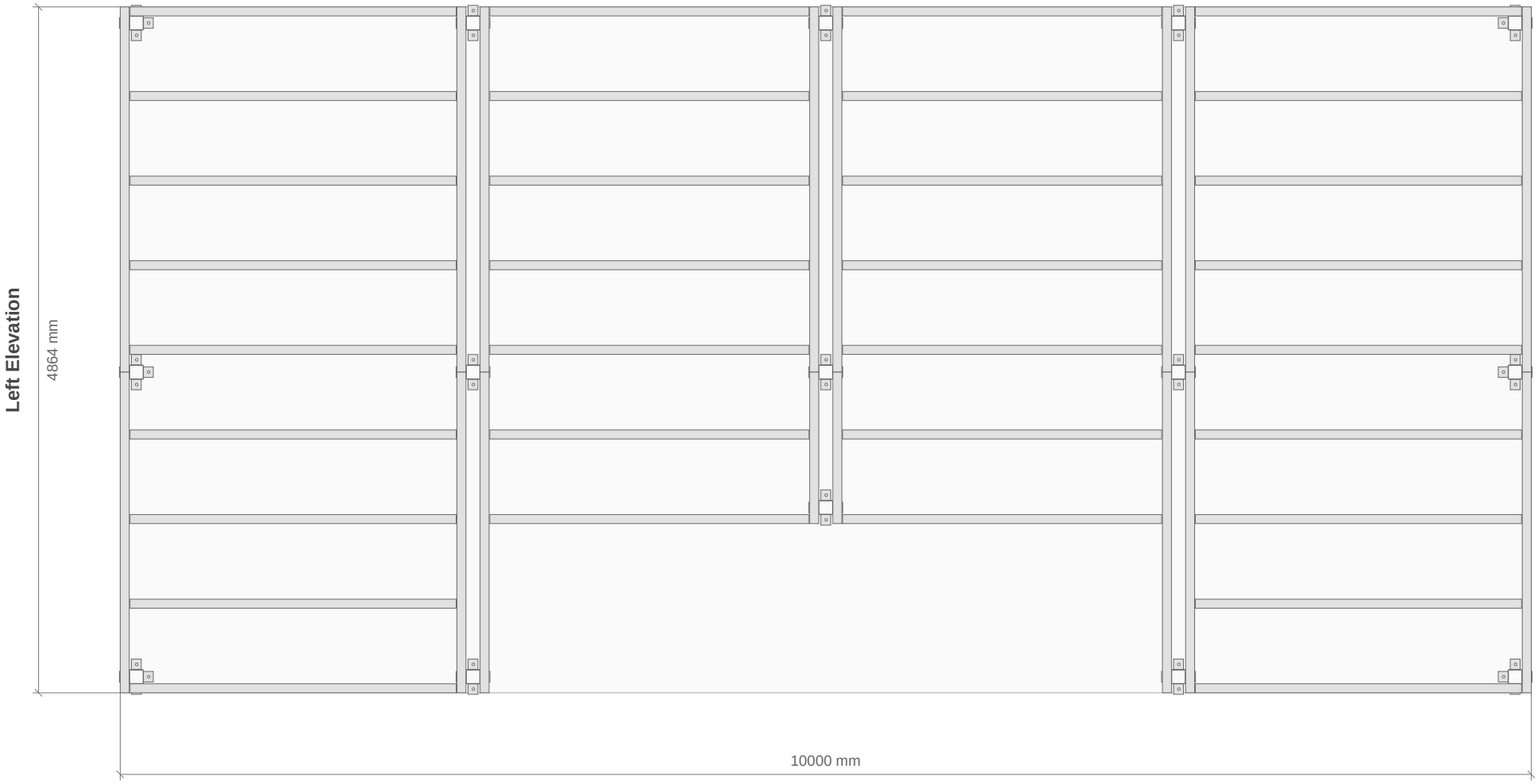
PROJECT: Example 4864 x 10000 x 3000 3.0 kPa Mezzanine Floor	PROJECT NUMBER: 6462				
CLIENT: Example Customer	DRAWN BY: dm3 Solutions				
ADDRESS: Example Street, Suburb WA 6000	DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 2 of 27



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PROJECT: Example 4864 x 10000 x 3000 3.0 kPa Mezzanine Floor		PROJECT NUMBER: 6462			
CLIENT: Example Customer		DRAWN BY: dm3 Solutions	Powered by dm3Solutions.com		
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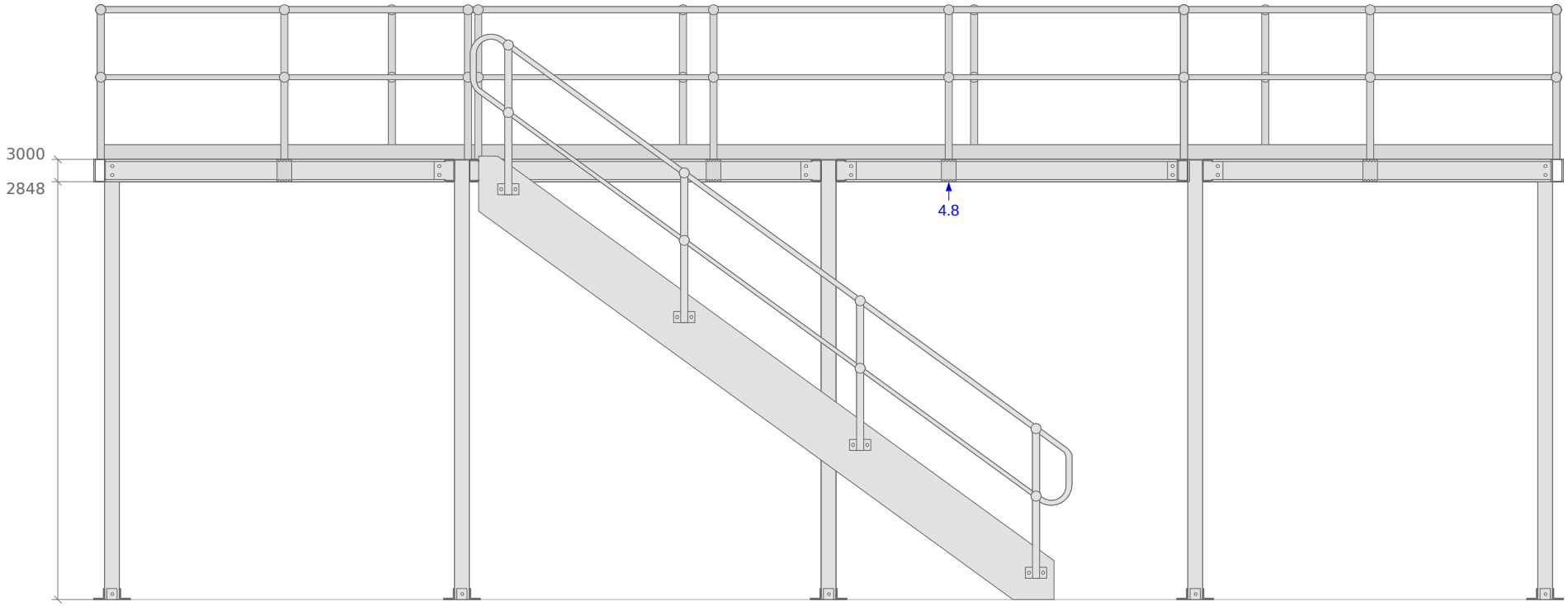
Front Elevation



Clearance under Joists: 2848 mm

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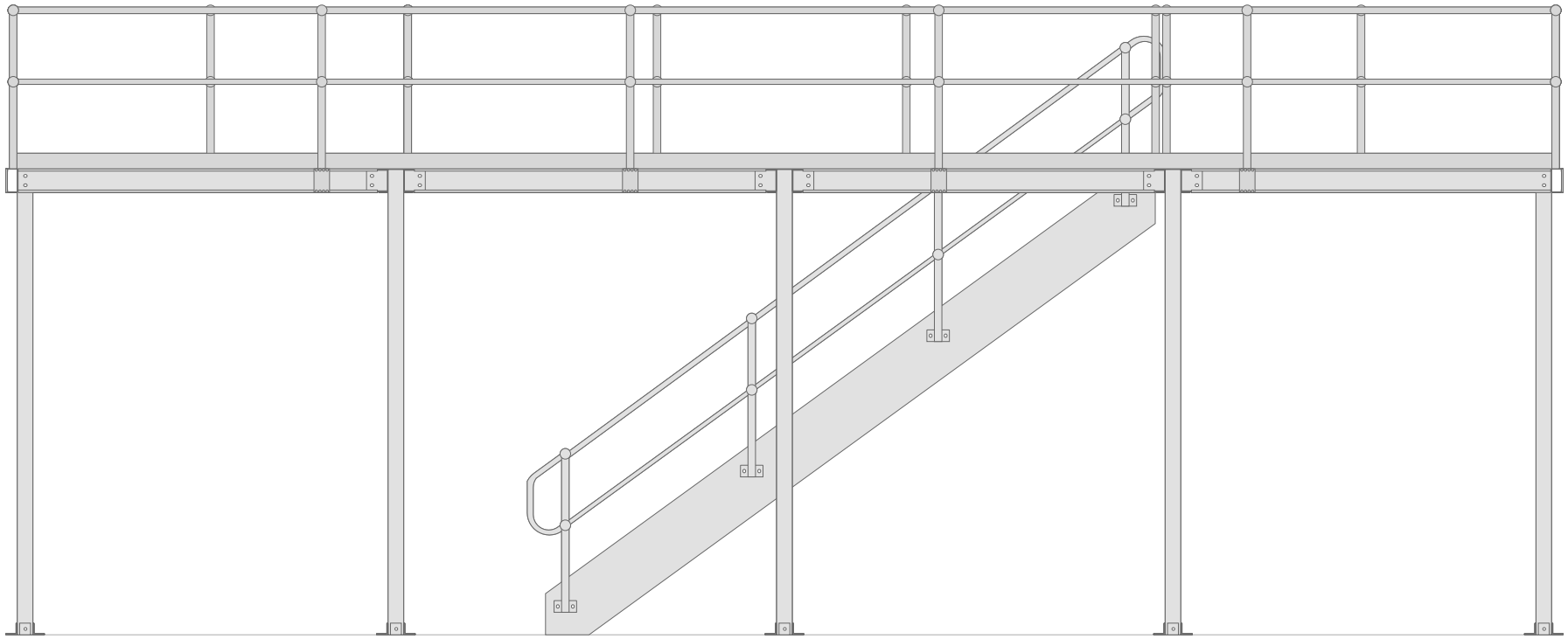
ADDRESS: Example Street, Suburb WA 6000	DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 4 of 27

Back Elevation



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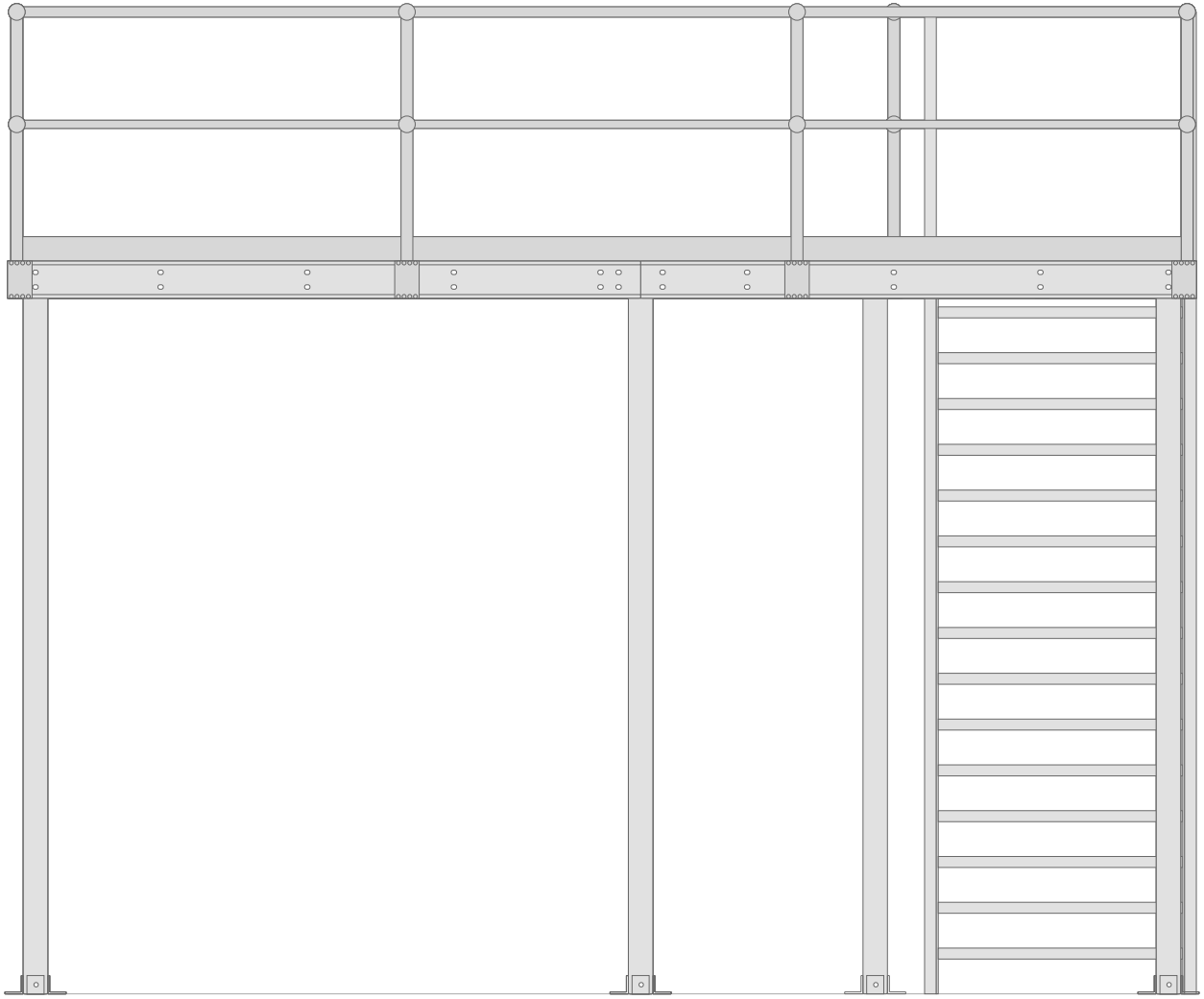
CLIENT: Example Customer	DRAWN BY: dm3 Solutions				
ADDRESS: Example Street, Suburb WA 6000	DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 5 of 27

Left Elevation



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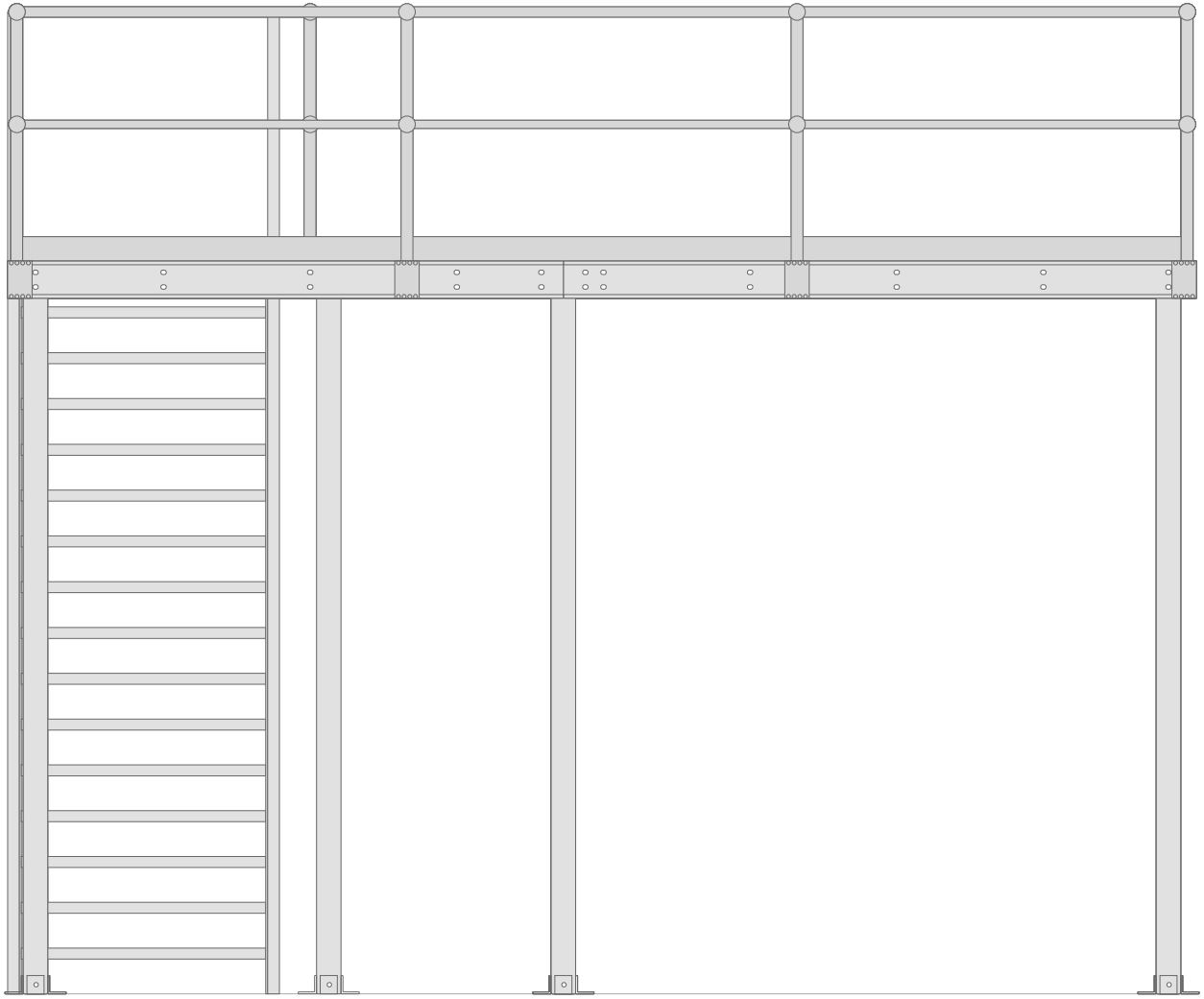
CLIENT: Example Customer		DRAWN BY: dm3 Solutions	Powered by dm3Solutions.com		
ADDRESS: Example Street, Suburb WA 6000		DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 6 of 27



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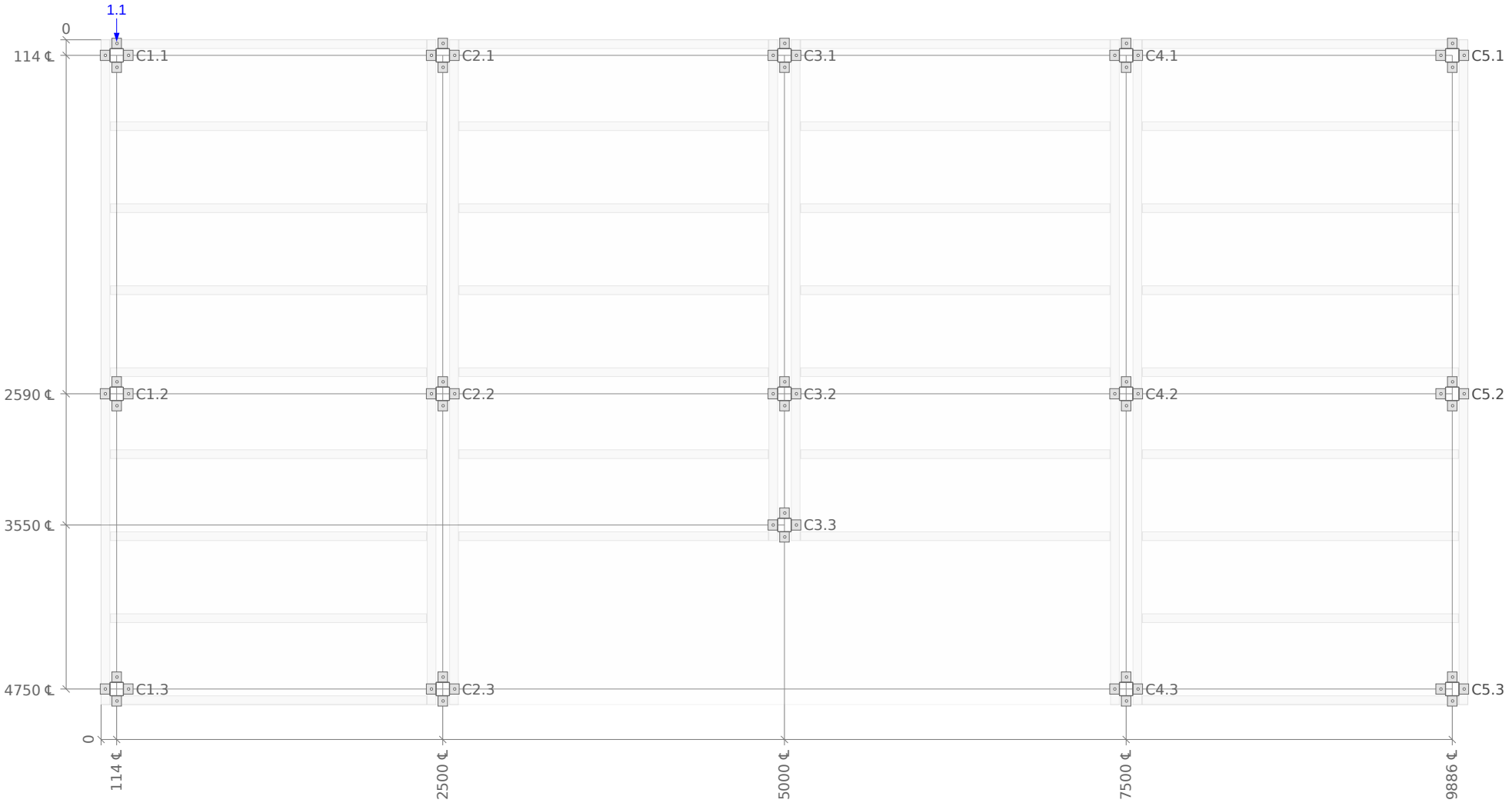
PROJECT: Example 4864 x 10000 x 3000 3.0 kPa Mezzanine Floor		PROJECT NUMBER: 6462			
CLIENT: Example Customer		DRAWN BY: dm3 Solutions	Powered by dm3Solutions.com		
ADDRESS: Example Street, Suburb WA 6000		DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 7 of 27



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PROJECT: Example 4864 x 10000 x 3000 3.0 kPa Mezzanine Floor		PROJECT NUMBER: 6462	© 2022 dm3 Solutions. The Information contained herein is Proprietary, Confidential and the Sole Property of dm3 Solutions. Reproduction in part or in whole is Prohibited without written approval. Unless specified otherwise, dimensions are in millimetres & drawings are not to scale. Powered by dm3Solutions.com		
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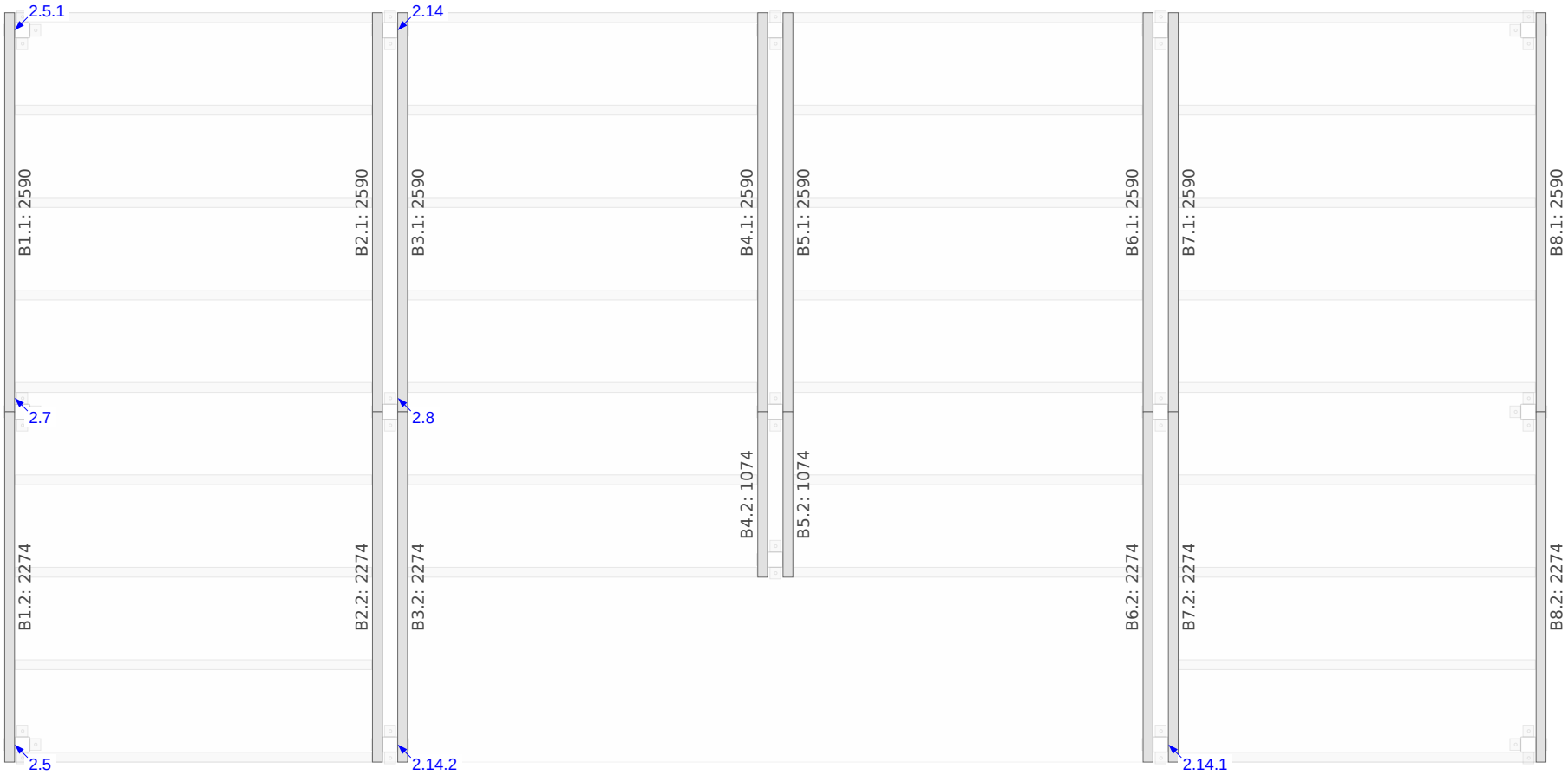
ADDRESS: Example Street, Suburb WA 6000	DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 8 of 27



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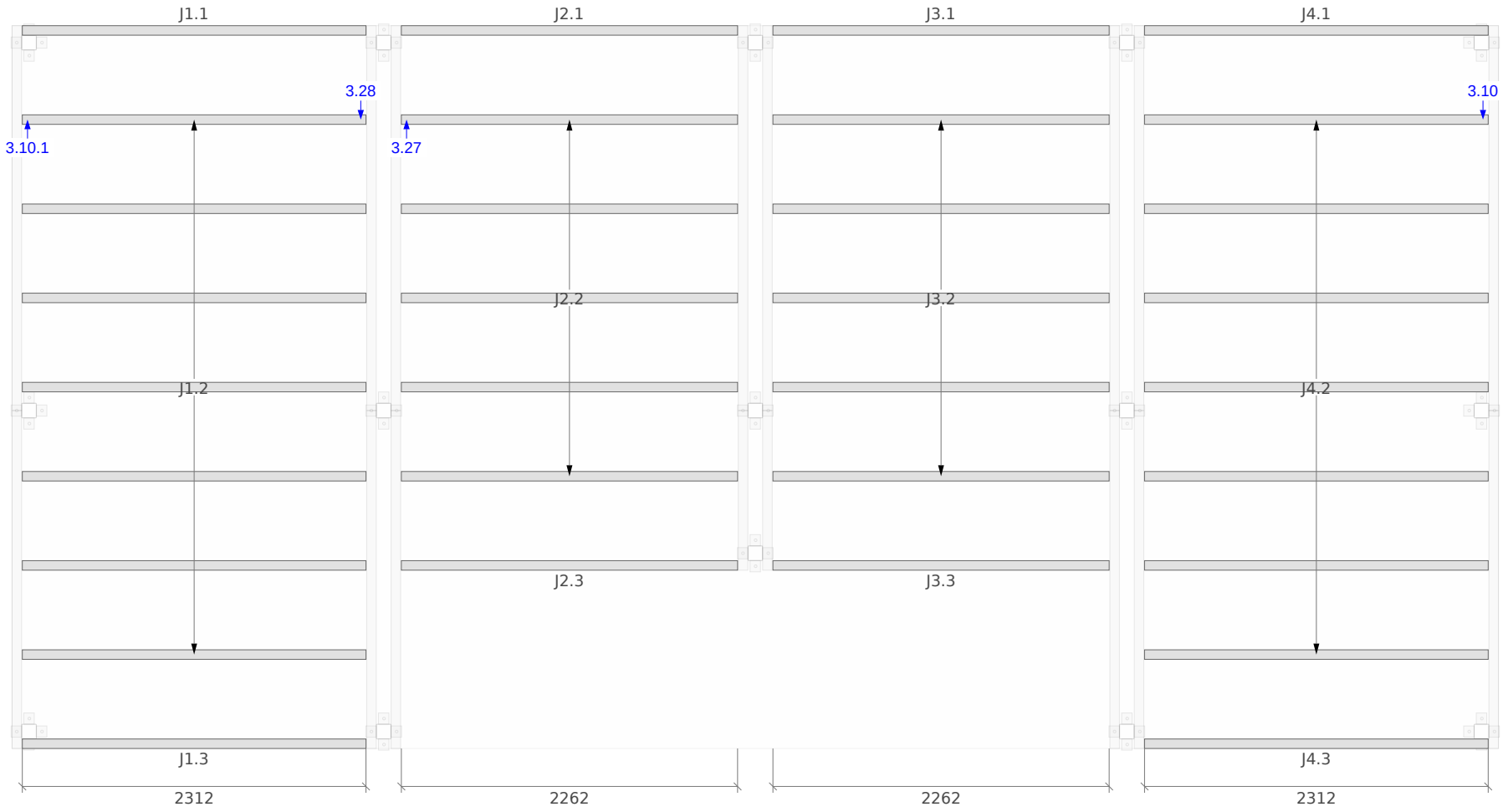
CLIENT: Example Customer		DRAWN BY: dm3 Solutions			
ADDRESS: Example Street, Suburb WA 6000		DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 9 of 27



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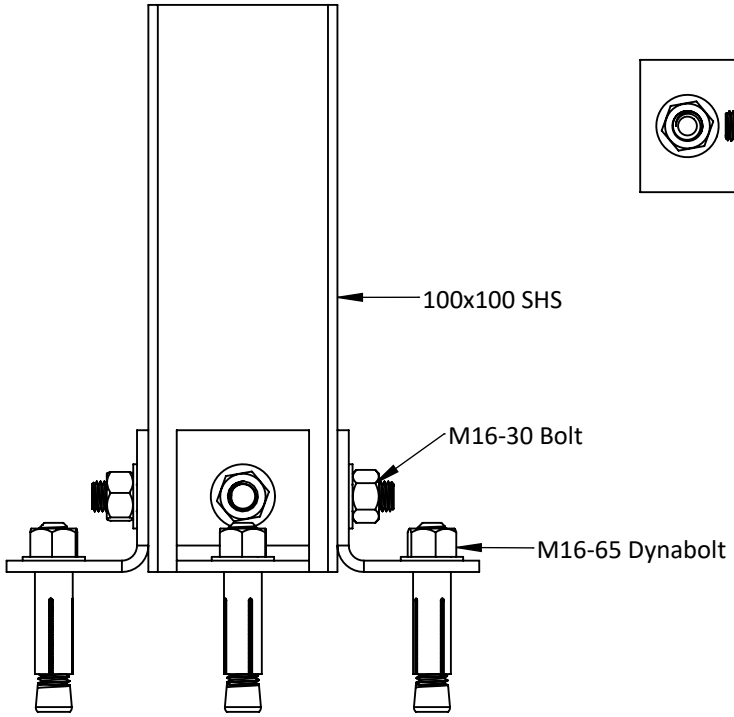
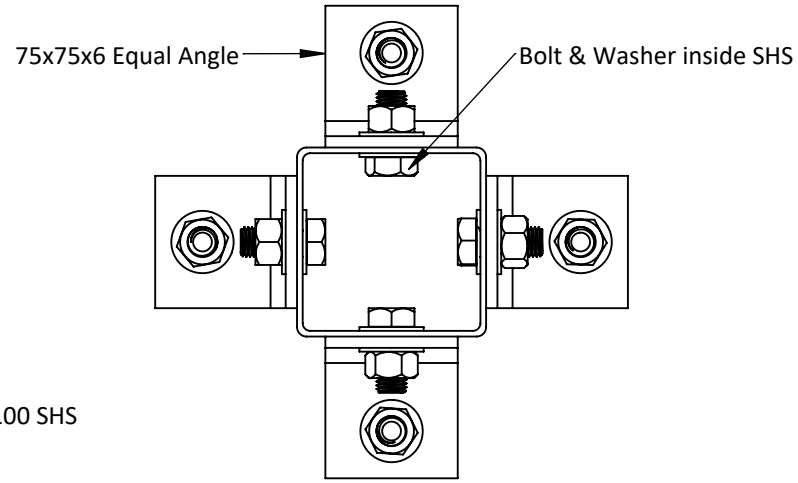
CLIENT: Example Customer		DRAWN BY: dm3 Solutions			
ADDRESS: Example Street, Suburb WA 6000	DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 10 of 27

« Detail 1.1: 100 SHS with EA Brackets Fixed with Bolts and Masonry Sleeve Anchors

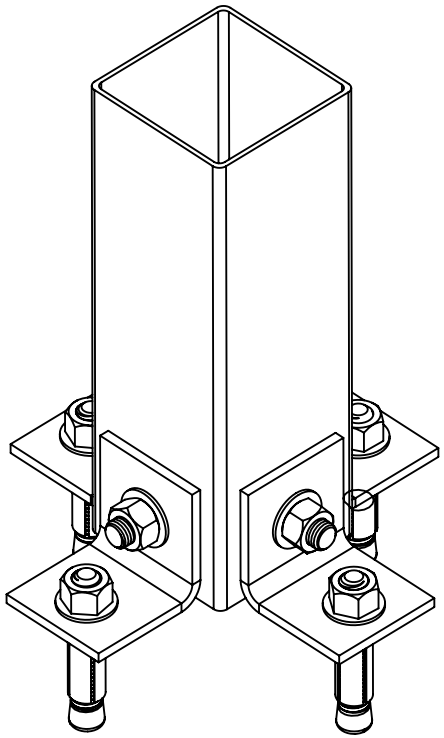
Video: Scan or Right-Click



ELEVATION



PLAN



ISOMETRIC

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	CLIENT: Example Customer	DRAWN BY: dm3 Solutions	Powered by dm3Solutions.com			
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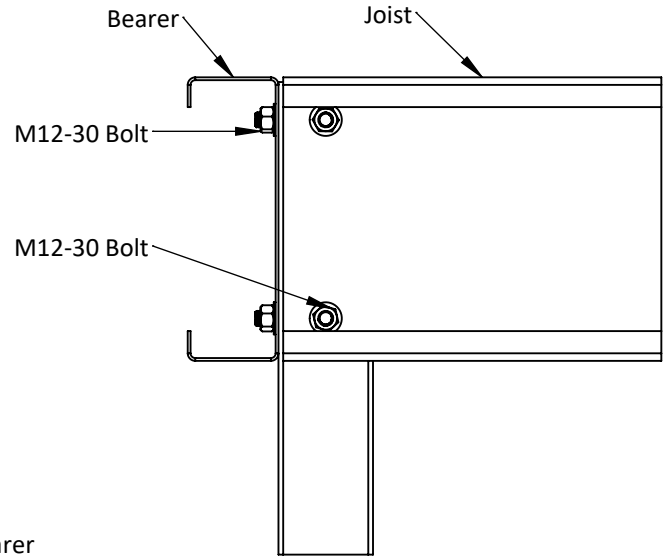
Video: Scan or Right-Click



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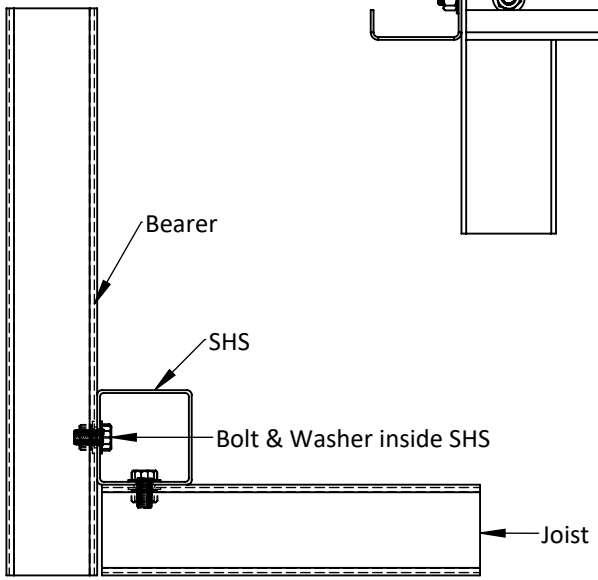

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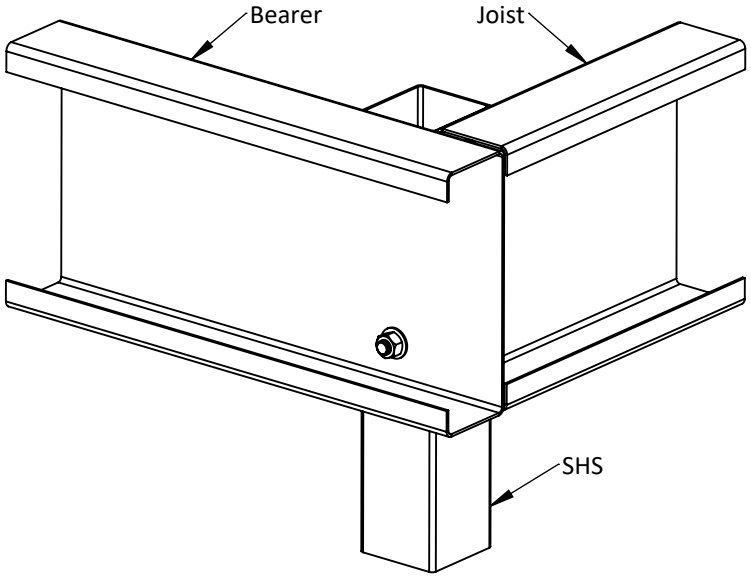

ISOMETRIC

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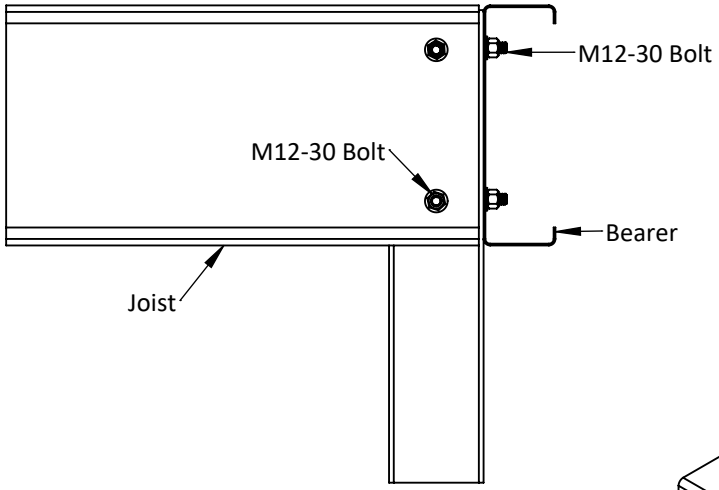
	ADDRESS: Example Street, Suburb WA 6000	DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 12 of 27

Video: Scan or Right-Click



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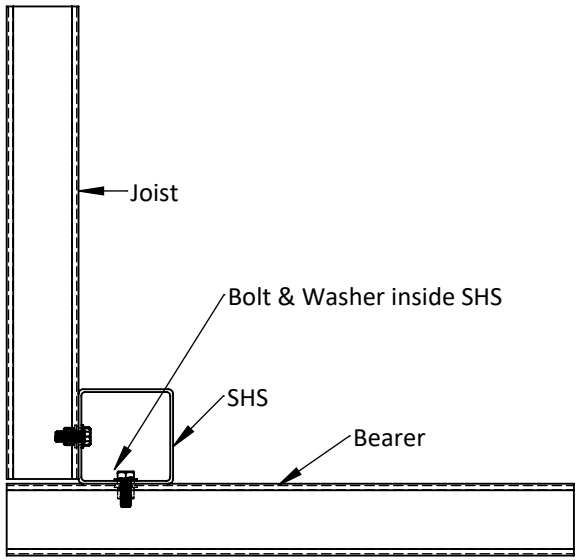

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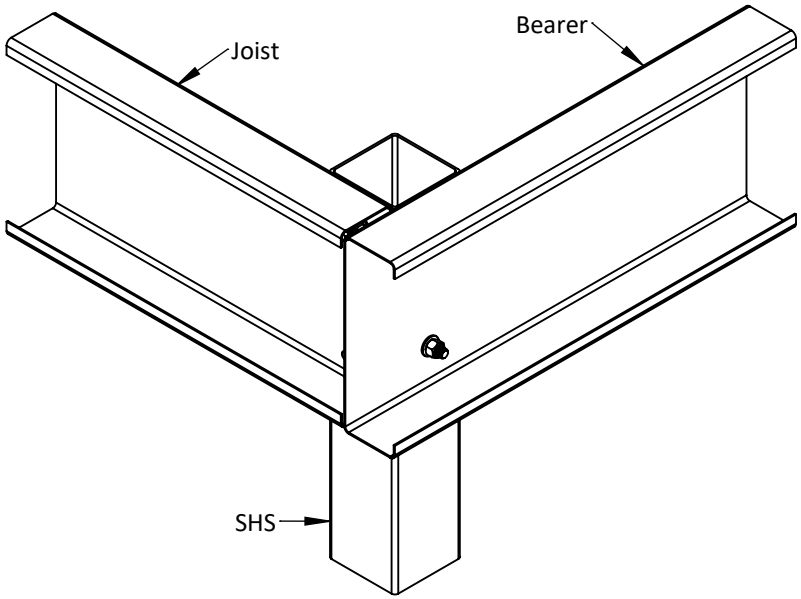

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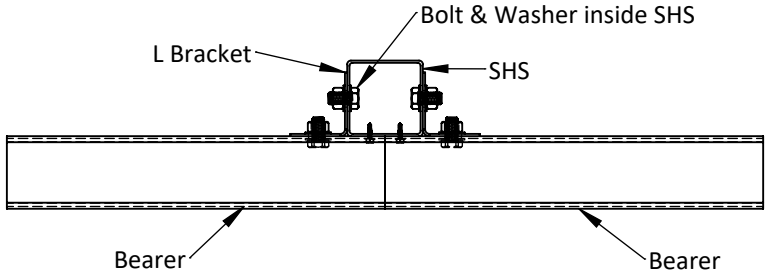

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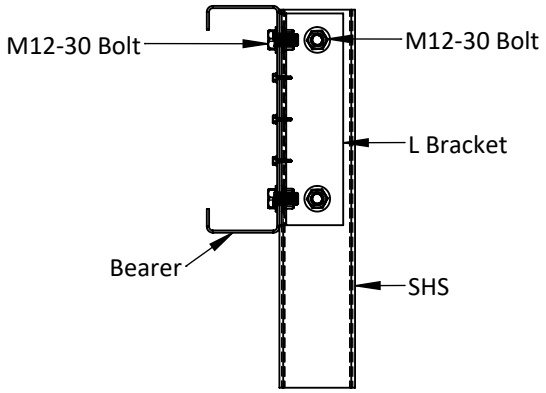
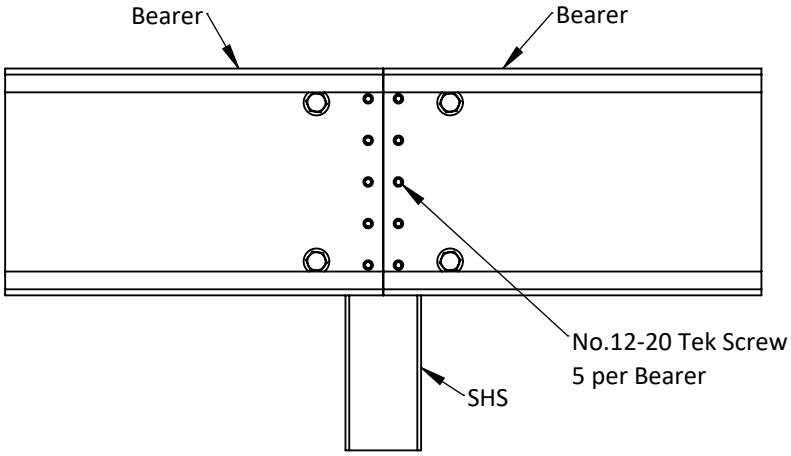
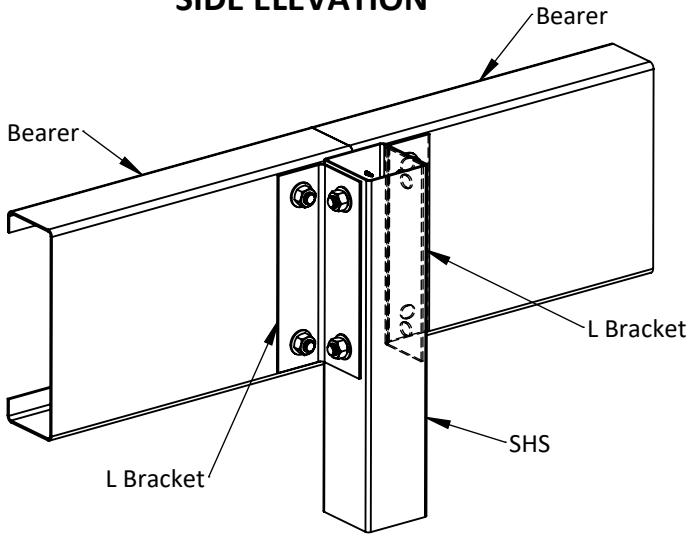


SIDE ELEVATION



FRONT ELEVATION



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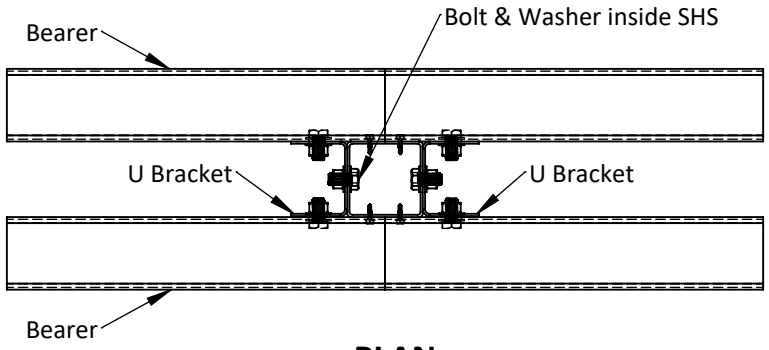
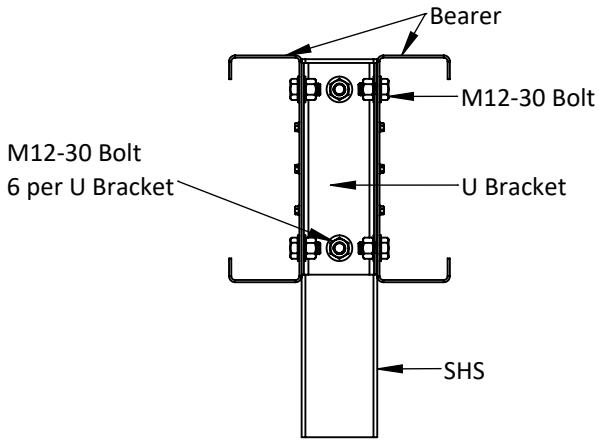


PLAN



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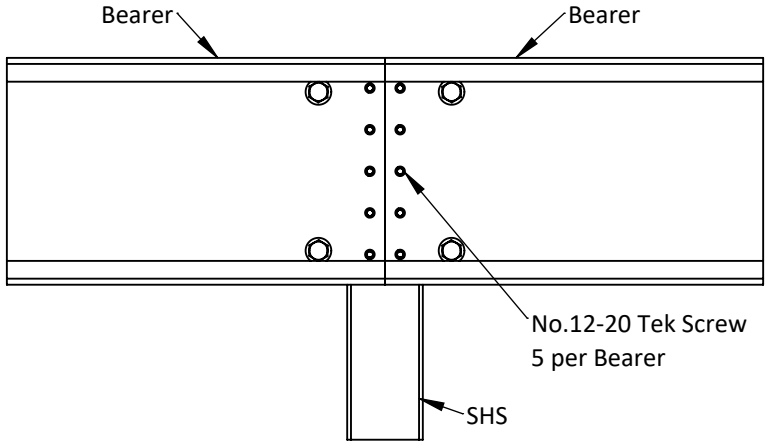

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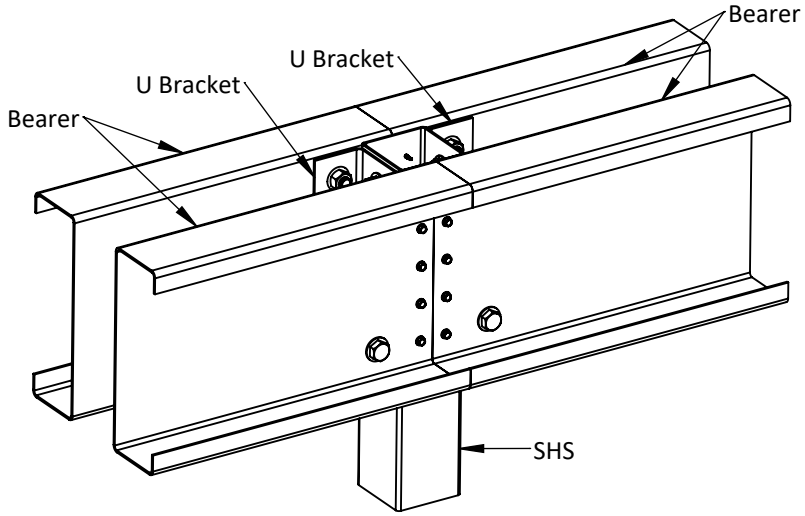

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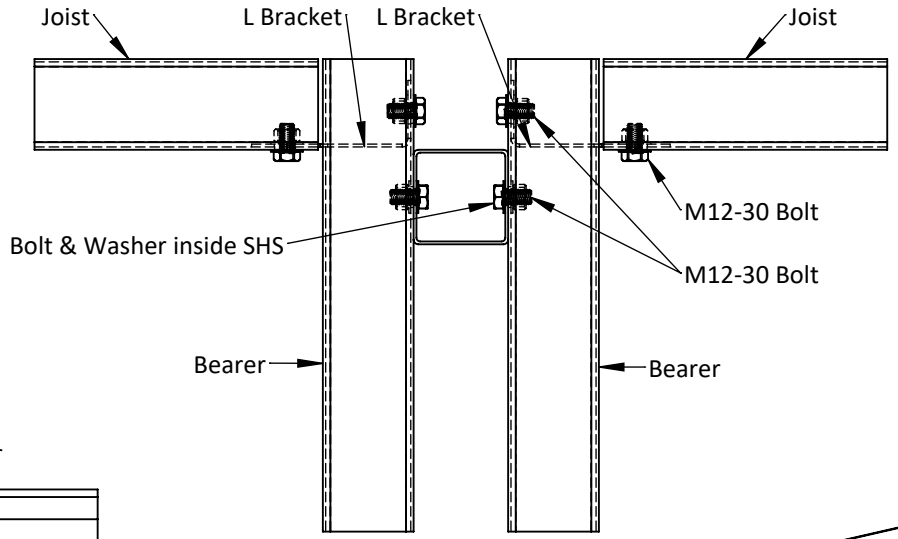

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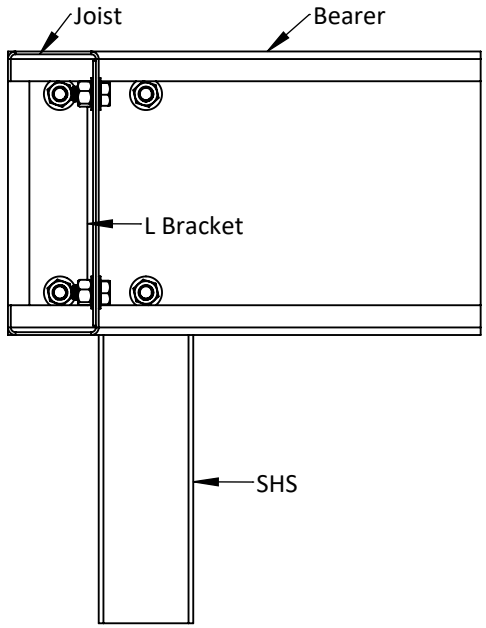

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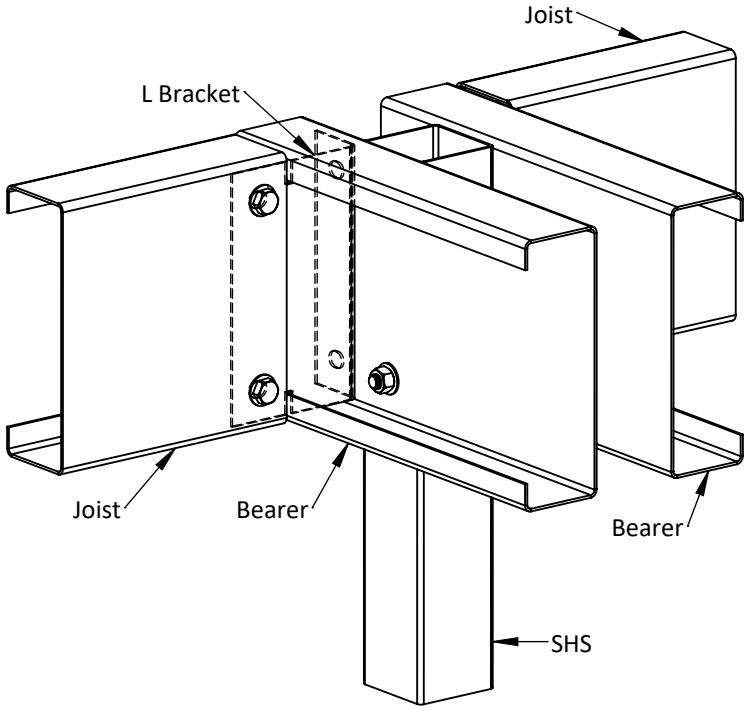

ISOMETRIC

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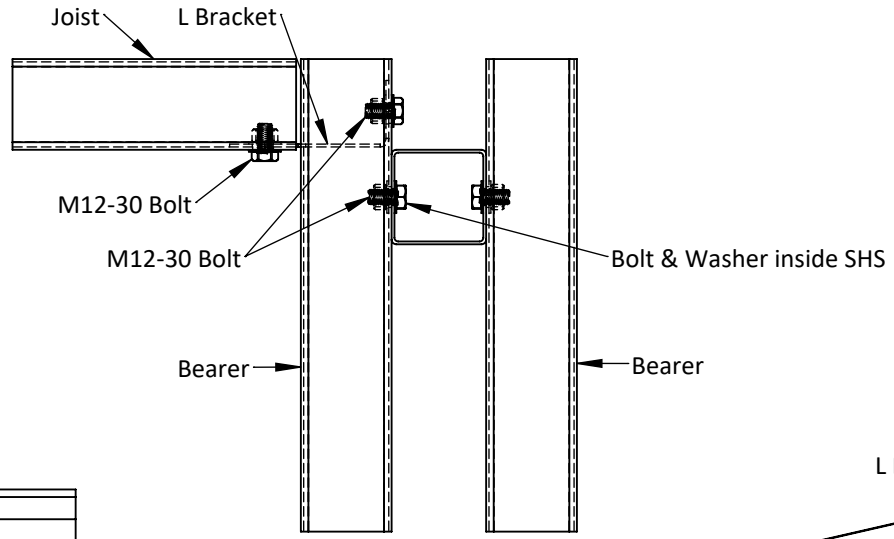
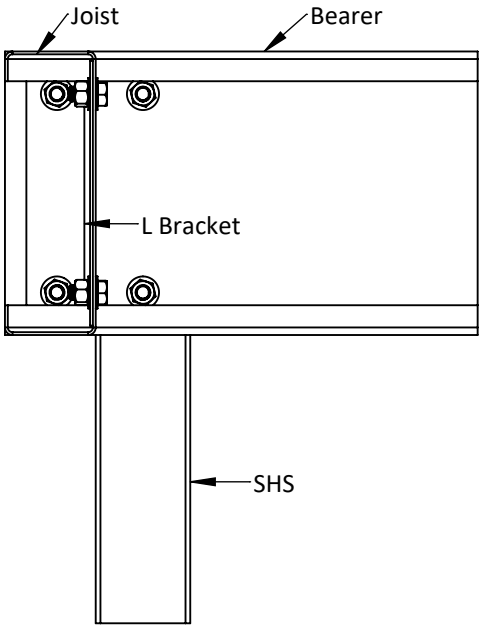
	ADDRESS: Example Street, Suburb WA 6000	DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 16 of 27

Video: Scan or Right-Click



PLAN



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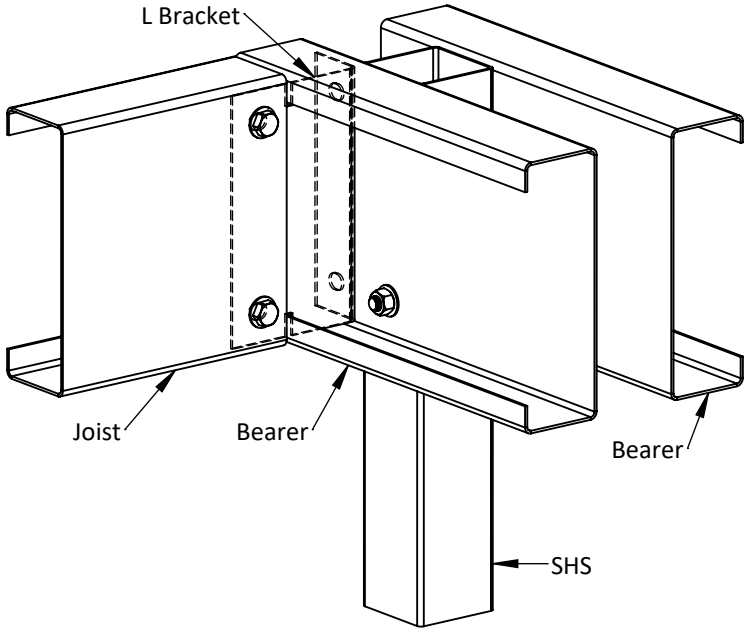

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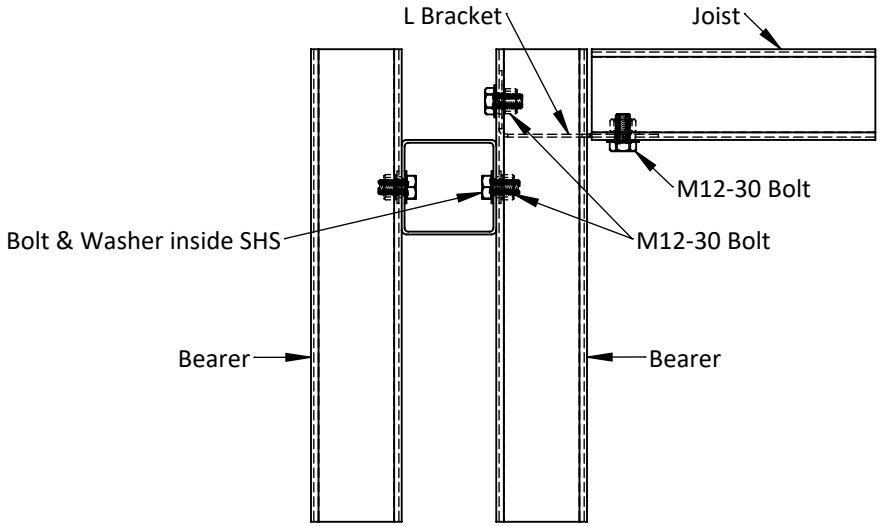
	ADDRESS: Example Street, Suburb WA 6000	DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 17 of 27

Video: Scan or Right-Click



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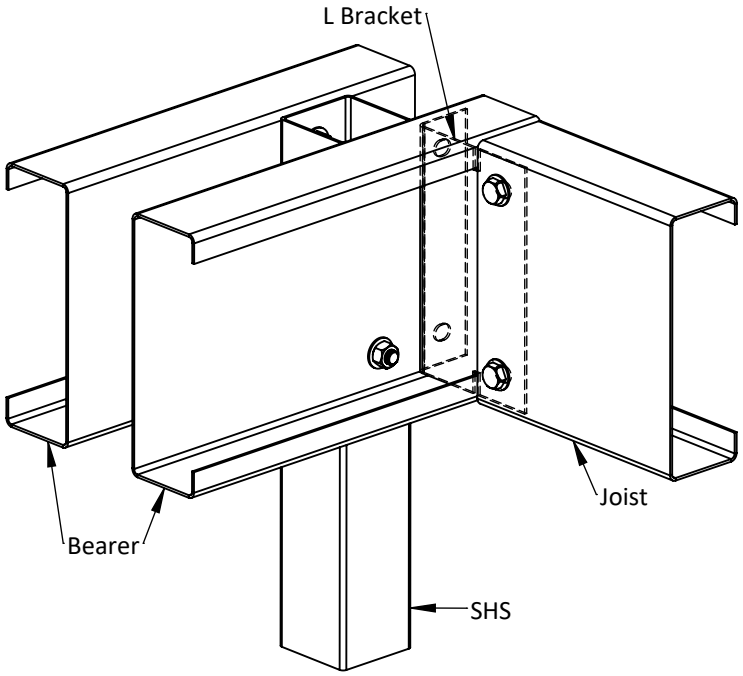

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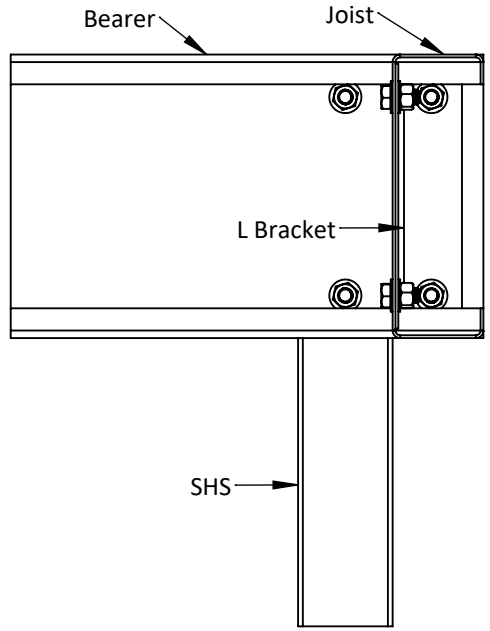

ELEVATION

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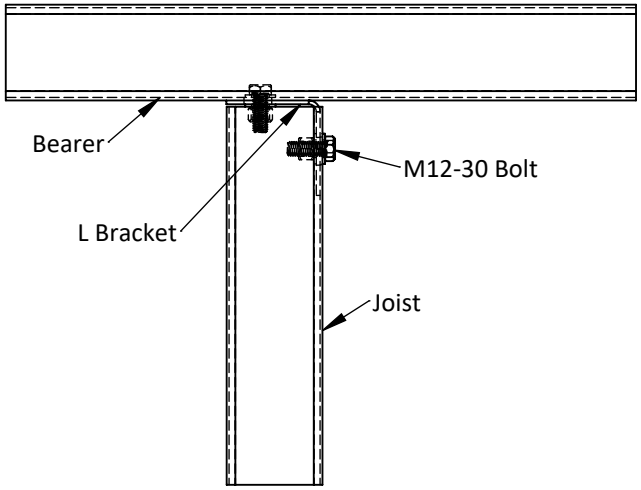
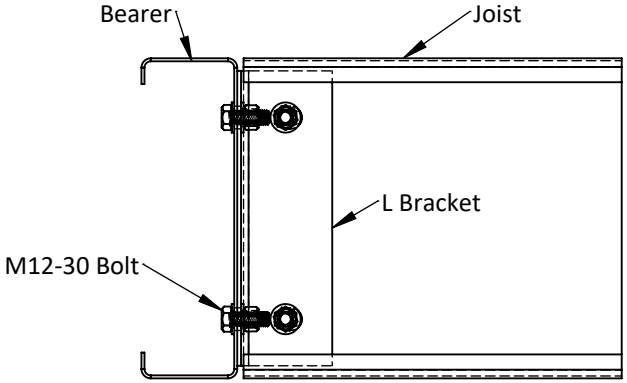
	CLIENT: Example Customer	DRAWN BY: dm3 Solutions				
	ADDRESS: Example Street, Suburb WA 6000	DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 18 of 27

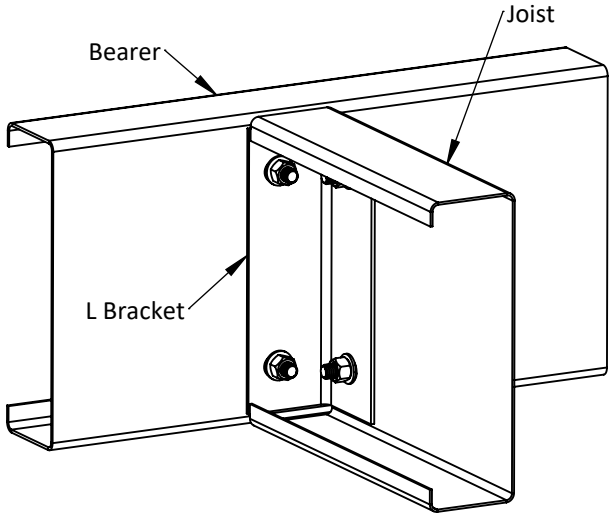
Video: Scan or Right-Click



PLAN



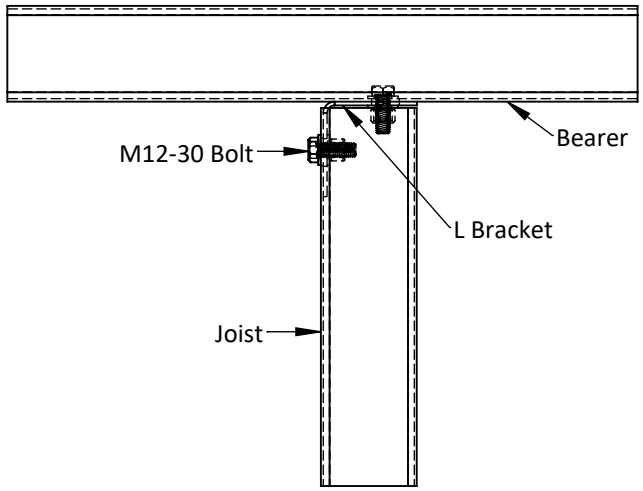
ELEVATION



ISOMETRIC

Your Logo Here	PROJECT: Example 4864 x 10000 x 3000 3.0 kPa Mezzanine Floor	PROJECT NUMBER: 6462					
	CLIENT: Example Customer	DRAWN BY: dm3 Solutions	Powered by dm3Solutions.com			
	ADDRESS: Example Street, Suburb WA 6000	DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 19 of 27

Video: Scan or Right-Click



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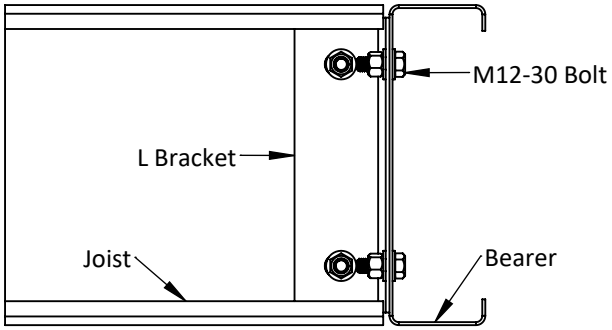

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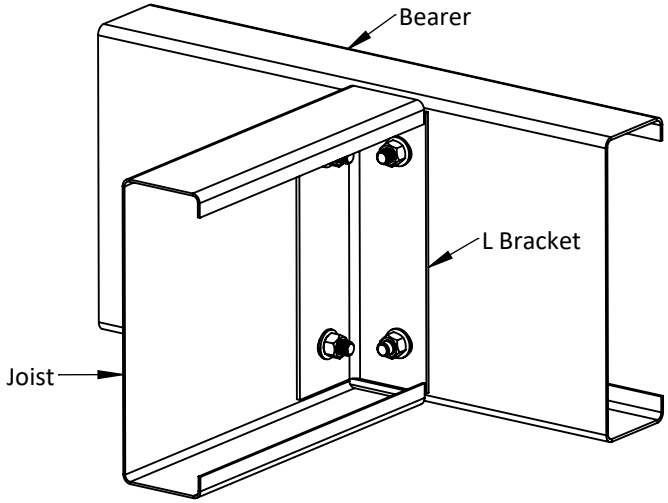
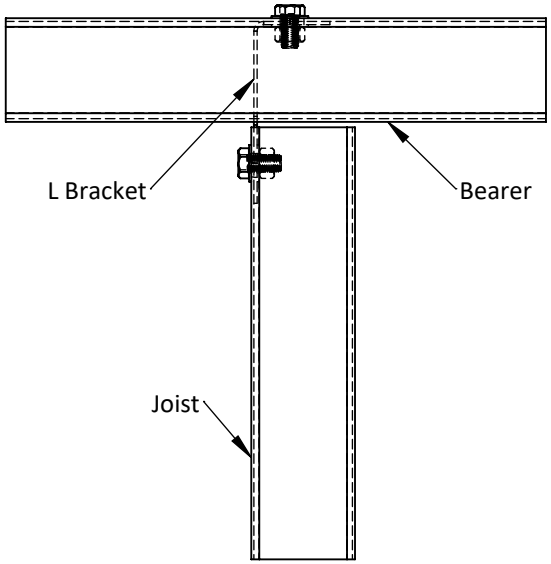


ISOMETRIC

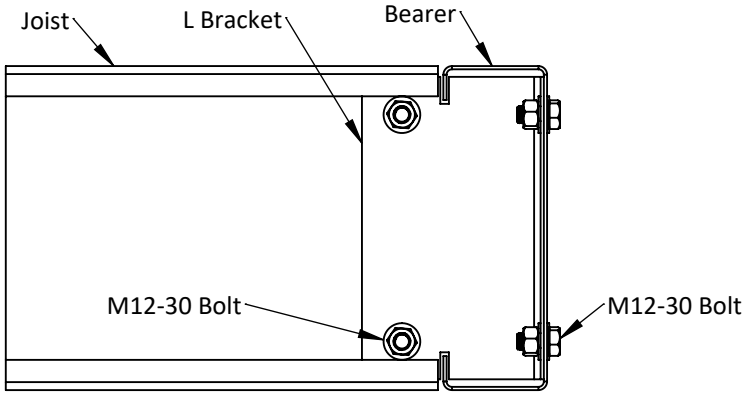
Your Logo Here

PROJECT: Example 4864 x 10000 x 3000 3.0 kPa Mezzanine Floor	PROJECT NUMBER: 6462				
CLIENT: Example Customer	DRAWN BY: dm3 Solutions				
ADDRESS: Example Street, Suburb WA 6000	DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 20 of 27

Video: Scan or Right-Click



PLAN



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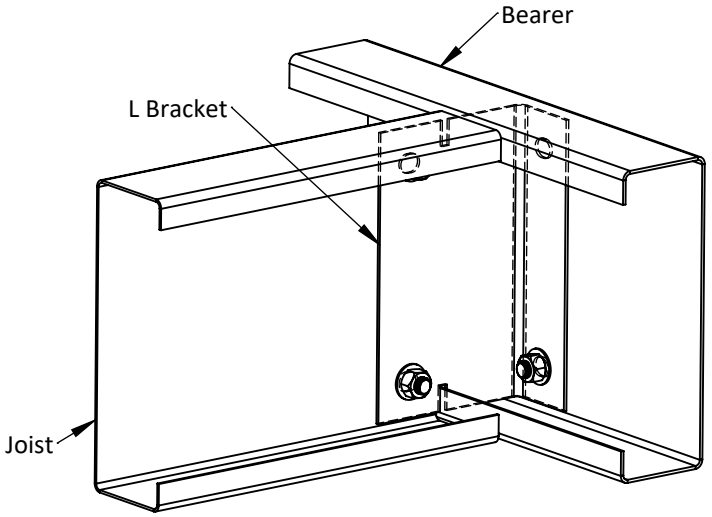

ISOMETRIC

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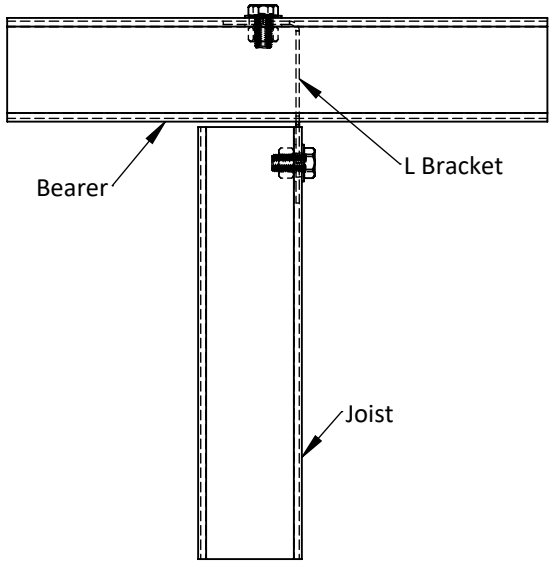
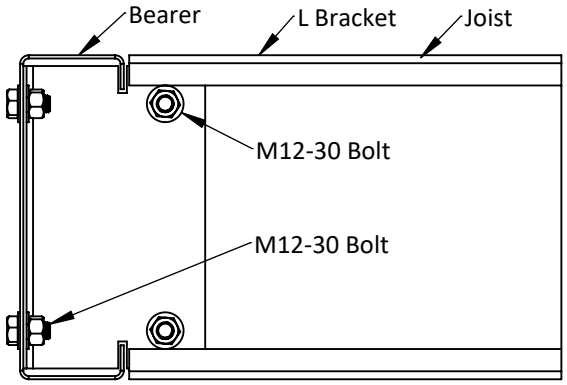
	CLIENT: Example Customer	DRAWN BY: dm3 Solutions	Powered by dm3Solutions.com			
	ADDRESS: Example Street, Suburb WA 6000	DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 21 of 27

Video: Scan or Right-Click



PLAN



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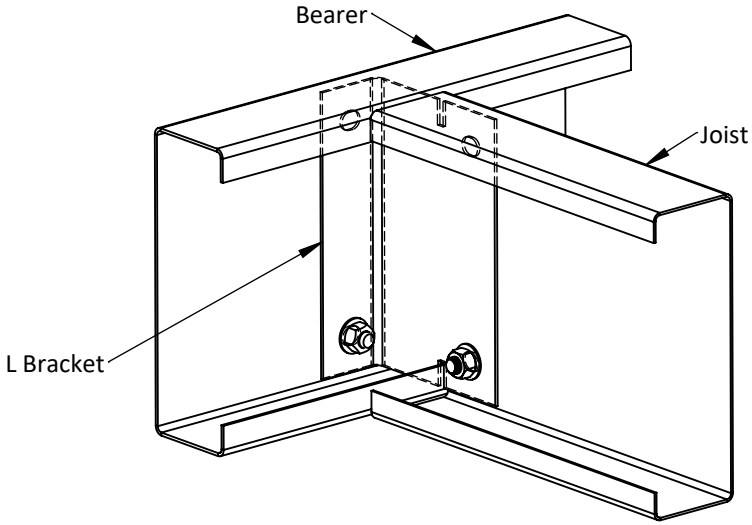
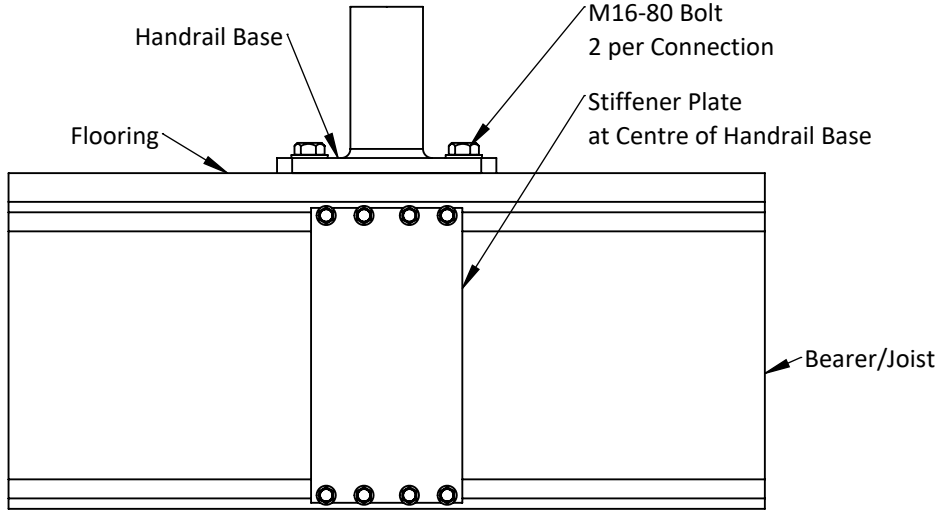


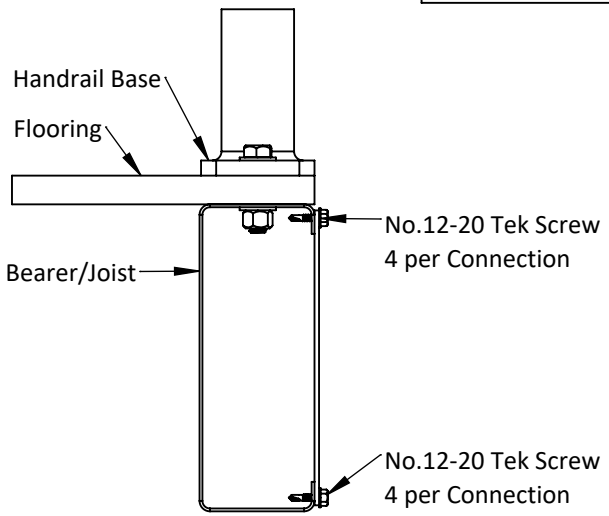
ISOMETRIC

Your Logo Here	PROJECT: Example 4864 x 10000 x 3000 3.0 kPa Mezzanine Floor	PROJECT NUMBER: 6462					
	CLIENT: Example Customer	DRAWN BY: dm3 Solutions				
	ADDRESS: Example Street, Suburb WA 6000	DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 22 of 27

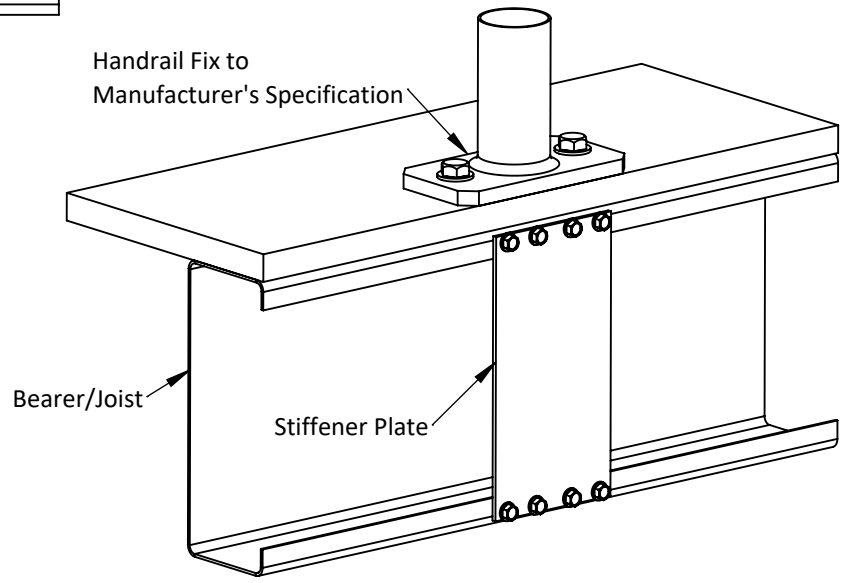
Video: Scan or Right-Click



FRONT ELEVATION



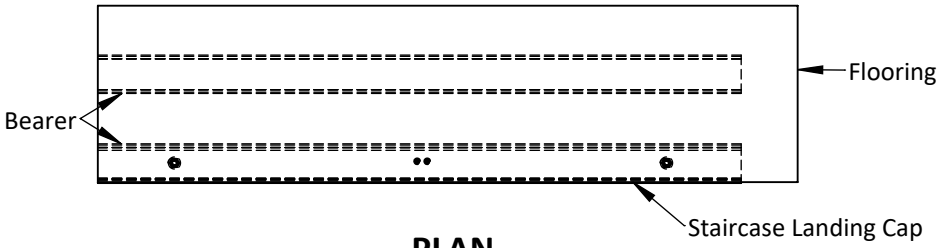
SIDE ELEVATION



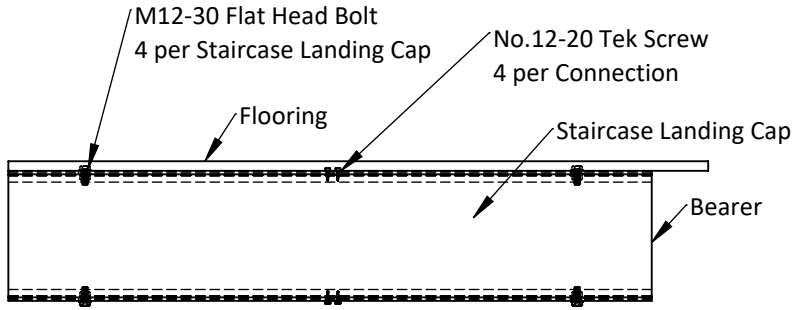
ISOMETRIC

Your Logo Here	PROJECT: Example 4864 x 10000 x 3000 3.0 kPa Mezzanine Floor	PROJECT NUMBER: 6462					
	CLIENT: Example Customer	DRAWN BY: dm3 Solutions	Powered by dm3Solutions.com				
	ADDRESS: Example Street, Suburb WA 6000	DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 23 of 27

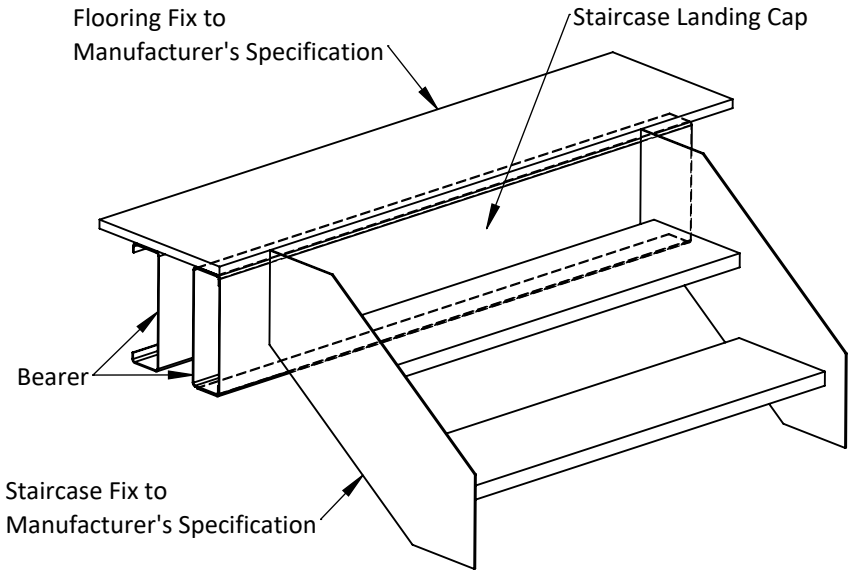
Video: Scan or Right-Click



PLAN



ELEVATION



ISOMETRIC

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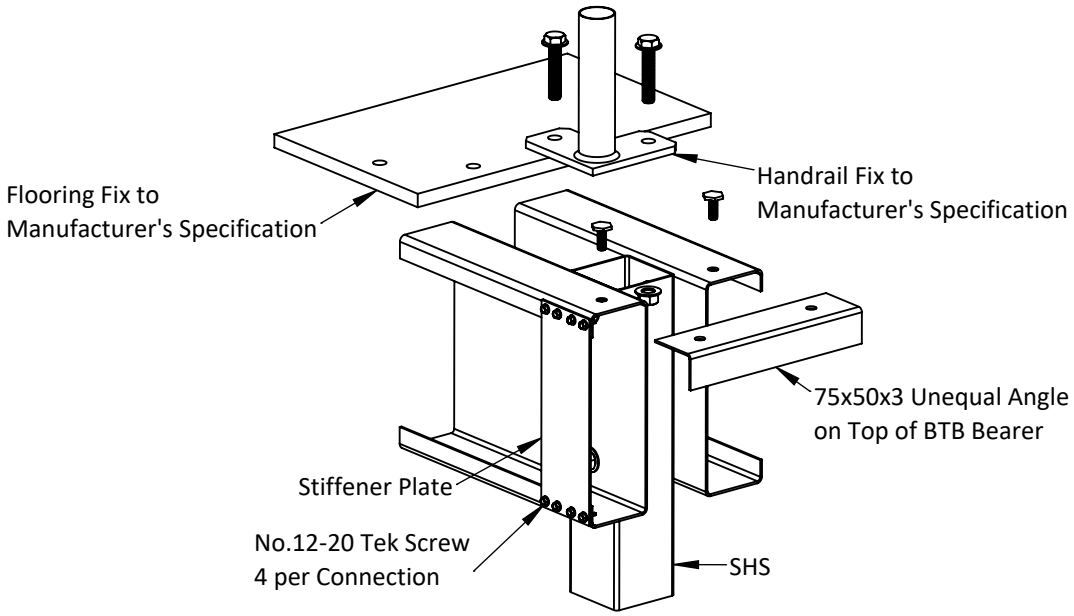
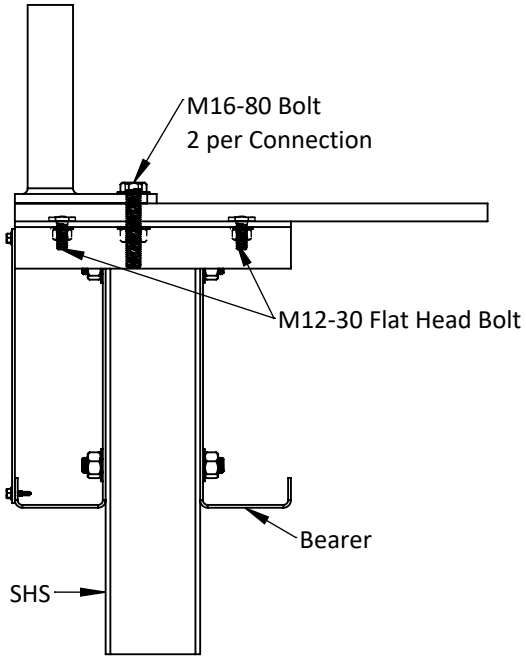
	CLIENT: Example Customer	DRAWN BY: dm3 Solutions	Powered by dm3Solutions.com				
	ADDRESS: Example Street, Suburb WA 6000	DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 24 of 27

« Detail 4.22.1: External Corner Handrail Upright Connection Detail

Video: Scan or Right-Click



EXPLODED VIEW



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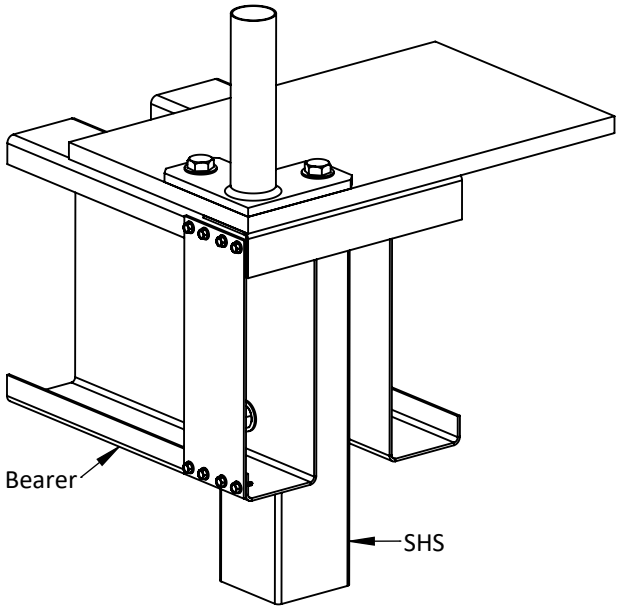
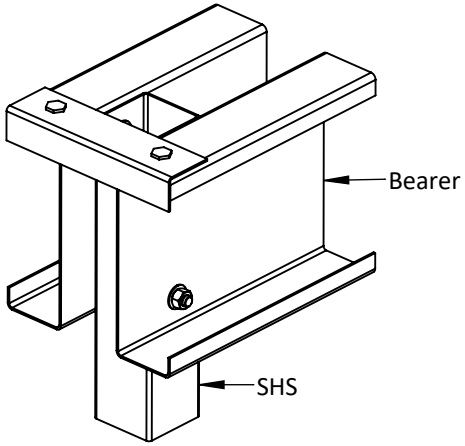


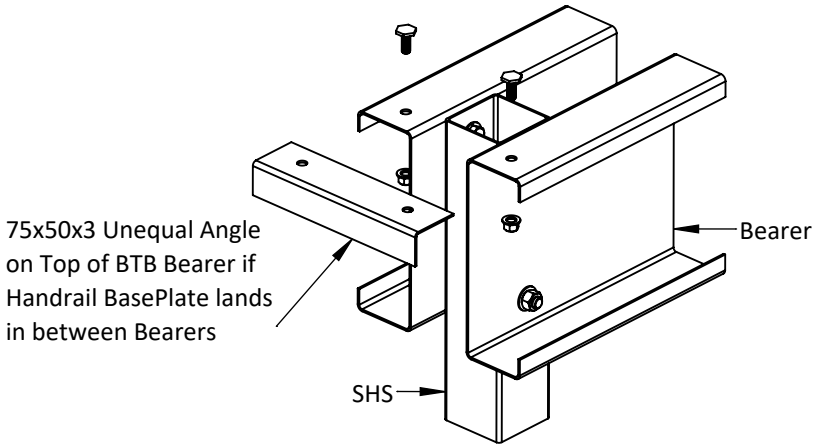
ISOMETRIC

Your Logo Here

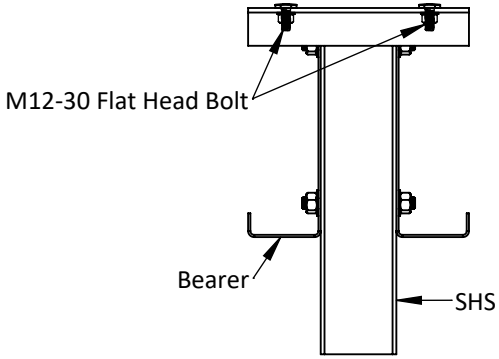
PROJECT: Example 4864 x 10000 x 3000 3.0 kPa Mezzanine Floor	PROJECT NUMBER: 6462				
CLIENT: Example Customer	DRAWN BY: dm3 Solutions	Powered by dm3Solutions.com			
ADDRESS: Example Street, Suburb WA 6000	DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 25 of 27



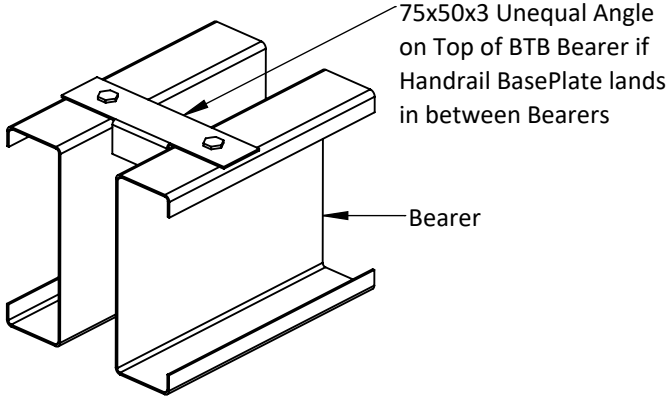
ISOMETRIC
(End Unequal Angle)



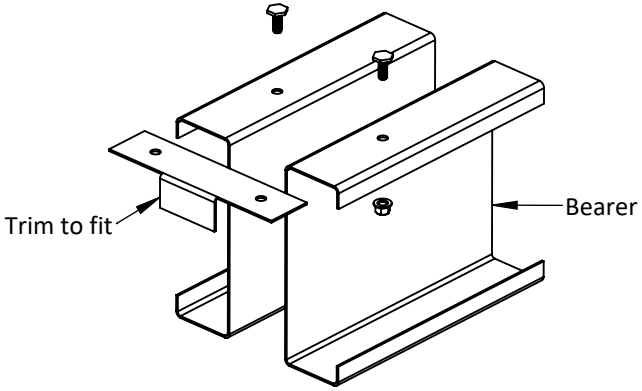
EXPLODED VIEW
(End Unequal Angle)



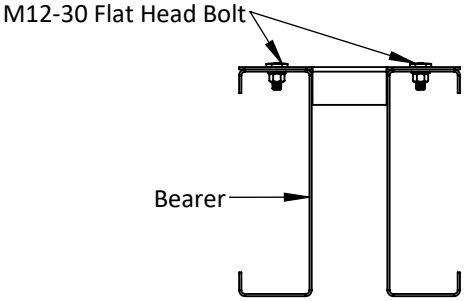
ELEVATION
(End Unequal Angle)



ISOMETRIC
(Internal Unequal Angle)



EXPLODED VIEW
(Internal Unequal Angle)



ELEVATION
(Internal Unequal Angle)

Your Logo Here	PROJECT: Example 4864 x 10000 x 3000 3.0 kPa Mezzanine Floor	PROJECT NUMBER: 6462					
	CLIENT: Example Customer	DRAWN BY: dm3 Solutions				
	ADDRESS: Example Street, Suburb WA 6000	DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 26 of 27

Technical Data

Dead Load	**0.3 kPa**
Live Load	**3.0 kPa**
UDL	**4.860 kPa**
Concentrated Load	**4.5 kN**
Total Floor Area	**42.6 m^2**
Lateral Load	**12.422 kN**

Joist Calculations

Joist · J1.2	**C15012**
Min Yield Stress · Grade · I_x	**500 MPa · G500 · 1.29 x 10^6mm^4** · Min = Minimum
Span · Load Width	**2242 mm · 600 mm**
Capacity · Concentrated	**6.021 kN/m**
Distributed	**2.916 kN/m**
Inward Capacity	**6.480 kN/m** · Lysaght® & Stramit® Span Tables
Deflection	**1.6 mm** · 7.5 mm Permitted
Vibration	**0.9 mm** · 2.0 mm Permitted

Bearer Calculations

Bearer · B1.1	**C15012**
Min Yield Stress · Grade · I_x	**500 MPa · G500 · 1.29 x 10^6mm^4**
Span · Load Width	**2386 mm · 1250 mm**
Capacity · Concentrated	**5.658 kN/m**
Distributed	**6.075 kN/m**
Inward Capacity	**6.480 kN/m** · Lysaght® & Stramit® Span Tables
Moment · ∅M Required	**4.323 kNm**
Member	**5.310 kNm** · L_{ex} 2386 · L_{ey} 600 · L_{ez} 600
Deflection	**4.3 mm** · 8.0 mm Permitted
Vibration	**1.1 mm** · 2.0 mm Permitted

Post Calculations

Post · C2.2	**100x100x2 Grade C450L0**
Min Yield Stress	**450 MPa**
Load Area · Height	**6.0 m^2 · 2995 mm**
Base Connection	**Fixed**
Compression · Required	**29.160 kN**
Member	**146.000 kN**
Raking Force · Required	**12.422 kN**
Per Post	**0.828 kN**
Moment · ∅M Required	**2.480 kNm**
Member	**7.630 kNm**
	Source: OneSteel® DuraGal® Hollow Sections

Maximum Member Calculations

Concentrated Load	**29.160 kN at C2.2**
Bearer · Deflection	**4.3 mm at B1.1**
Vibration	**1.1 mm at B1.1**
Joist · Deflection	**1.6 mm at J1.2**
Vibration	**0.9 mm at J1.1**

Connection Calculations

Connection Type	**Bearer to Post**
Components	**2 x M12 4.6/S Bolts**
Capacity Required	**7.247 kN**
Capacity	**30.2 kN** · 2 x M12 4.6/S Shear Capacity
Connection Type	**BTB Bearer to Post**
Components	**2 x M12 4.6/S Bolts**
Capacity Required	**7.247 kN**
Capacity	**30.2 kN** · 2 x M12 4.6/S Shear Capacity
Connection Type	**Bearer to Internal Post**
Components	**2 x M12 4.6/S Bolts · 1 x 3.0 mm Plate · 5 x No. 20 Tek Screws**
Capacity Required	**7.247 kN**
Capacity · Assemblies	**30.2 kN** · 2 x M12 4.6/S Shear Capacity
Capacity · Tek Screws	**28.6 kN** · 5 x Tek Screws Shear Capacity
Capacity	**58.8 kN**
Connection Type	**BTB Bearers to Internal Post**
Components	**1 x M12 4.6/S Bolts · 1 x 3.0 mm Plate · 5 x No. 20 Tek Screws**
Capacity Required	**7.247 kN per Bearer**
Capacity · Assemblies	**30.2 kN** · 2 x M12 4.6/S Shear Capacity
Capacity · Tek Screws	**28.6 kN** · 5 x Tek Screws Shear Capacity
Capacity	**58.8 kN**
1 x M12 4.6/S Bolt	**Web Bearing Capacity**
	24.883 kN · 1.5 mm Gauge C-Section Bearing
	31.519 kN · 1.9 mm Gauge C-Section Bearing
	39.813 kN · 2.4 mm Gauge C-Section Bearing
	Plate Bearing Capacity
	49.766 kN · 3.0 mm Gauge Plate
1 x M16 8.8/S Bolt	**Web Bearing Capacity**
	53.084 kN · 2.4 mm Gauge C-Section Bearing
	66.355 kN · 3.0 mm Gauge C-Section Bearing
	Plate Bearing Capacity
	66.355 kN · 3.0 mm Gauge Plate
Plates	**Tear Out Capacities**
Minimum · Top Bolt	**51.840 kN**
Minimum · Bottom Bolt	**77.760 kN**

Your Logo Here

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CLIENT: Example Customer	DRAWN BY: dm3 Solutions				
ADDRESS: Example Street, Suburb WA 6000	DRAWN DATE: 2022-09-28	ISSUE: 1	SIZE: A4	SCALE: NTS	DRAWING NUMBER 27 of 27