

20240930  
6<sup>th</sup> December 2024

Shed World/Tilmac

Attention: Manager

Dear Manager

**RE: Proposed Shed 11 Slaughter Yards Lane, Gulgong ( Anderson )**

We certify that we have checked the structural design of the proposed farm shed as shown on the following drawings:

Drawing No.	Description	Revision
	Proposed Shed – 11 Slaughter Yards Lane, GULGONG – Engineering Schedule	
	Proposed Shed – 11 Slaughter Yards Lane, GULGONG – End Elevations	6/12/2024
	Proposed Shed – 11 Slaughter Yards Lane, GULGONG – Side Elevations	6/12/2024
	Proposed Shed – 11 Slaughter Yards Lane, GULGONG – Floor Plan	6/12/2024
	Proposed Shed – 11 Slaughter Yards Lane, GULGONG – End Frame Elevations	6/12/2024
	Proposed Shed – 11 Slaughter Yards Lane, GULGONG – Side Frame Elevations	6/12/2024
	Proposed Shed – 11 Slaughter Yards Lane, GULGONG – Section	6/12/2024
	Proposed Shed – 11 Slaughter Yards Lane, GULGONG – Section	6/12/2024
	Proposed Shed – 11 Slaughter Yards Lane, GULGONG – Slab Plan	6/12/2024
	Proposed Shed – 11 Slaughter Yards Lane, GULGONG – Slab Details	6/12/2024
	Proposed Shed – 11 Slaughter Yards Lane, GULGONG – Connection Details	6/12/2024
	Proposed Shed – 11 Slaughter Yards Lane, GULGONG – Connection Details	6/12/2024

This review has been carried out in accordance with the following SAI Codes of Practice:

- NCC:2022 Building Code of Australia, Volume 2
- AS/NZS 1170.0:2002 Structural Design Actions – General Principles
- AS/NZS 1170.1:2002 Structural Design Actions – Permanent, Imposed and Other Actions
- AS/NZS 1170.2:2021 Structural Design Actions – Wind Actions
- AS 1562.1:2018 Design and Installation of Sheet Roof and Wall Cladding, Part 1: Metal
- AS 2870:2011 Residential Slabs and Footings
- AS 3600:2018 Concrete Structures
- AS 4100:2020 Steel Structures
- AS/NZS 4600:2018 Cold-formed Steel Structures
- CCAA T48 Guide to Industrial Floors and Pavements

Calare Civil Pty Ltd

ABN 41 053 957 303  
170 Hargrave Street  
Bathurst NSW 2795

Tel: 02 6332 3343  
Fax: 02 6331 8710  
Email: bathurst@calare-civil.com.au  
Web: www.calare-civil.com.au

C:\Users\Adminat\CalareCivil\AppData\Local\Microsoft\Windows\INetCache\Content.Outlook\ZISS28GH\20240930-L02-cert-cmb - 20241206.docx

Accordingly, the structure noted and as detailed on the Tilmac drawings referred to below would be sufficient to carry the relevant loads specified in AS/NZS 1170, SAI Structural Design Actions Code (Parts 0, 1 and 2), subject to rectification of the following items:

- Purlins = TH96100 @ 840 cts (lap 15% over rafter);
- Girts (side walls) = TH96100 @ 925 cts (lap 15% over columns);
- Girts (end walls) = TH96100 @ 925 cts (lap 15% over columns);
- End Wall Columns (at 4.00m nom. cts.) = C20024 (fly bracing at mid height);
- Typical Portal Frame = C20024 (fly bracing and connections as per Tilmac drawings);
- Clad End Portal Frame = C20015 (connections as per Tilmac drawings);
- Pier Only Footings = 450mm diam x 1800mm deep (reinforce with 4N16 longitudinal bars + R6-250 ties, 50mm cover).

Furthermore, the structure has been designed in accordance with the Deemed-to-Satisfy structural provisions of the NCC-2022 Volume 2, as outlined in parts H1D3(3), H1D4(1a), H1D6(5), and H1D7(2).

Note the following design criteria have been adopted:

- Design based on an enclosed building with openings (as defined in AS/NZS 1170.2), no additional cladding is to be added without reference to the engineer;
- Structure Importance level 1 (farm structure), in accordance with the BCA;
- Super-imposed dead load to roof = 0.20kPa, and live load to roof = 0.25kPa;
- Live load to slab = 5.0 kPa or a maximum vehicle weight not exceeding 3.0 tonne;
- Wind region A0 (non-cyclonic), with a terrain category of 2.0 (open terrain) in accordance with AS/NZS 1170.2, and a regional wind speed of  $V_{R,100} = 41\text{m/s}$  ( $M_s = 1.00$ ,  $M_t = 1.00$ , and  $M_d, M_{z,cat}$  in accordance with AS/NZS 1170.2);
- Site is to be prepared in accordance with H1D3 of the NCC2022, Part 3.2 of the ABCB Housing Provisions and AS 3798 with subgrade compacted to 95% std;
- Assumed site reactivity classification = M (in accordance with AS 2870);
- Soil bearing pressure = 200kPa; and
- These drawings are to be read in conjunction with Tilmac's standard details, as documented on drawing numbers TS-001-00 to TS-001-08 (inclusive), copy attached.

This certification shall not be construed as relieving any other party of their responsibilities, liabilities or contractual obligations.

We trust that this information meets your requirements. Please do not hesitate to contact the undersigned should you require any further information.

Yours Faithfully,  
CALARE CIVIL PTY LTD

Chris Beuzeville  
BE MIE Aust.

## ENGINEERING SCHEDULE



Any Shed, Any Size

Job Number: 3407080920\_REV1

Customer: NICKY ANDERSON

Site Address: 11 SLAUGHTER YARDS LANE, GULGONG, NSW, 2852

Main Building: Gable - Span: 8000mm, Length: 24000mm, Height: 4000mm, Roof Pitch: 10°  
The length being comprised of 6 bays, the largest bay is 4m bays.

Left LeanTo: NA

Right LeanTo: NA

Front Garaport: NA

Back Garaport: NA

### DESIGN CRITERIA

Building Class:	Class_10a	Wind Region:	A
Design Wind Speed:	45 m/s	Terrain Category:	2
Ultimate Wind Speed:	45 m/s	Shielding:	No Shielding
		Topography:	Flat
		Importance Level:	1 Farm Shed

### INTERNAL PORTALS

Column:	C20024
Rafter:	C20024
Knee Brace:	NA
Apex Brace:	NA

### END PORTALS

Column:	C20015
Rafter:	C20015
Knee Brace:	NA
Apex Brace:	NA
End Wall Mullion:	C20024

### LEFT LEAN TO PORTALS

Internal Column:	NA
Internal Rafter:	NA
End Column:	NA
End Rafter:	NA

### RIGHT LEANTO PORTALS

Internal Column:	NA
Internal Rafter:	NA
End Column:	NA
End Rafter:	NA

### PURLINS AND GIRTS

Eave Purlin:	C15015						
Side Wall Girts:	TH96100	Max Spacing:	1000	Actual:	925	Overlap:	15%
Front End Wall Girts:	TH96100	Max Spacing:	1000	Actual:	925	Overlap:	15%
Back End Wall Girts:	TH96100	Max Spacing:	1000	Actual:	925	Overlap:	15%
Roof Purlins:	TH96100	Max Spacing:	900	Actual:	837	Overlap:	15%

### GENERAL NOTES

Wall Cladding: Corrugated 0.42 BMT , Colour: SLATE GREY

Roof Cladding: Corrugated 0.42 BMT , Colour: SLATE GREY

All roof and wall cladding to be installed as per manufacturers guidelines.

Please refer to Standard Engineering Drawings and to be used in conjunction with TS-001-01 / - / TS-001-08.

For further Connection, Fixing, Bracing and Slab Details.

These plans do not define boundaries.

Do not scale from drawing, if in doubt ask.

All dimension & levels to be confirmed prior to construction.

Roof and Wall Cladding to comply with H1D7 NCC 2022.

All plumbing & Drainage to comply with AS/NZS 3500.3.

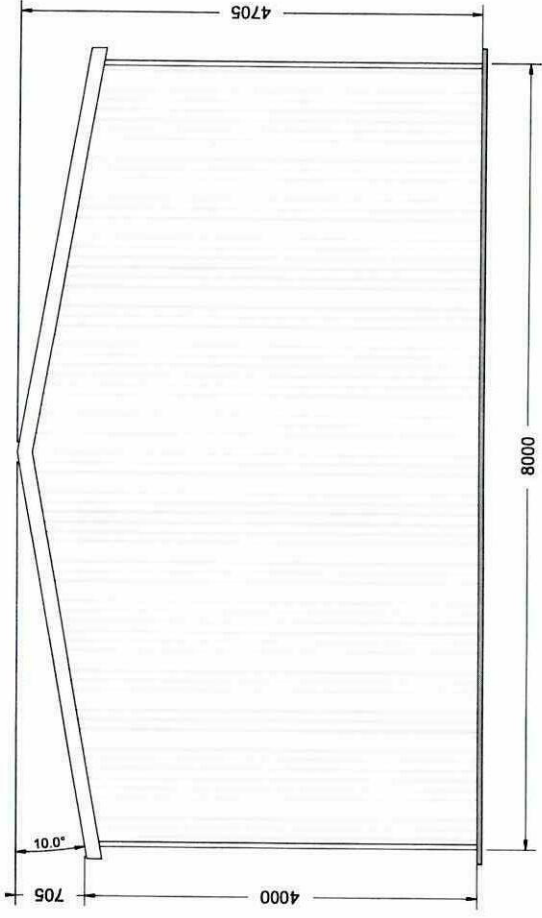
**CALARE**   
CONSULTING ENGINEERS  
179 RAMBON STREET, BATHURST, N.S.W. 2795 Tel: (02) 63223463 Fax: (02) 63220210  
**APPROVED FOR CONSTRUCTION**

Mr. Chris Beuzeville

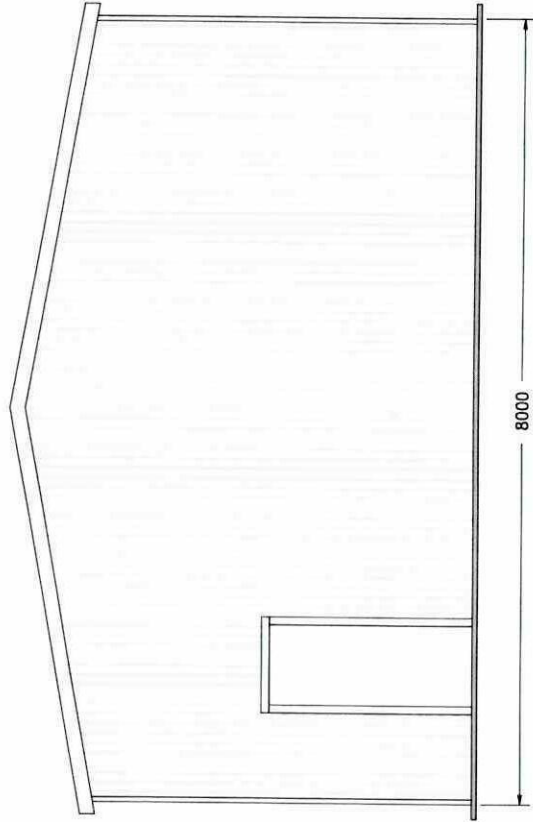
B.E. (Civ) MIEAust  
Engineers Australia Membership Number 1001881 (Structural College) and RPEQ 08586

Date: 06/12/2024

Please refer to the attached letter dated: 06/12/2024



FRONT ELEVATION



REAR ELEVATION

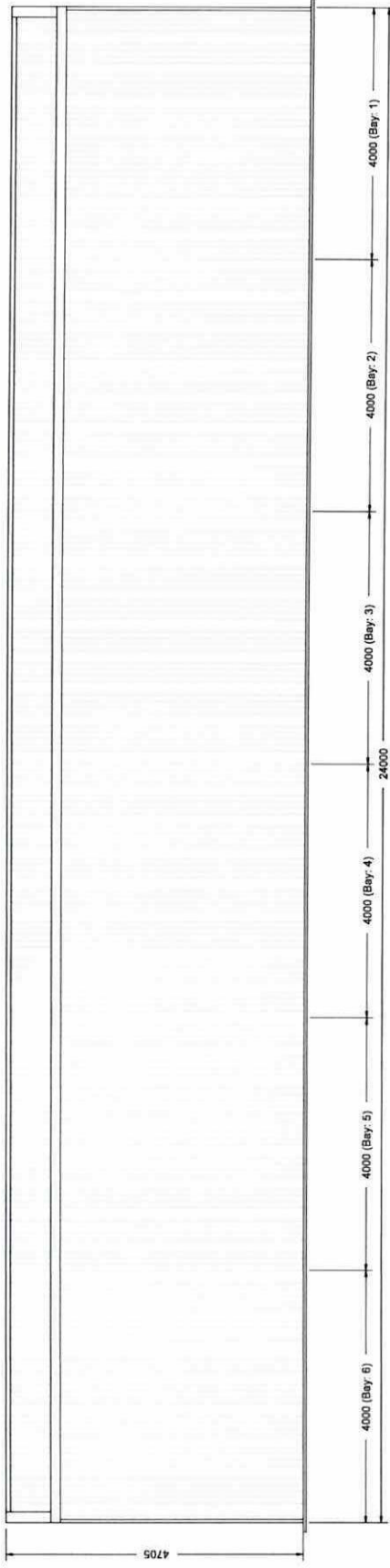
**CALARE CIVIL**  
 CONSULTING ENGINEERS  
 TRANSPORT ENGINEERING  
**APPROVED FOR CONSTRUCTION**  
 Mr. Chris Beauzaville  
 B.E. (Civil) (NSW)  
 Engineer Authority Membership Number: 100166 (Structural Category) and 109161 (Roads)  
 - Date: 06/12/2024

Please refer to the attached letter dated: 06/12/2024

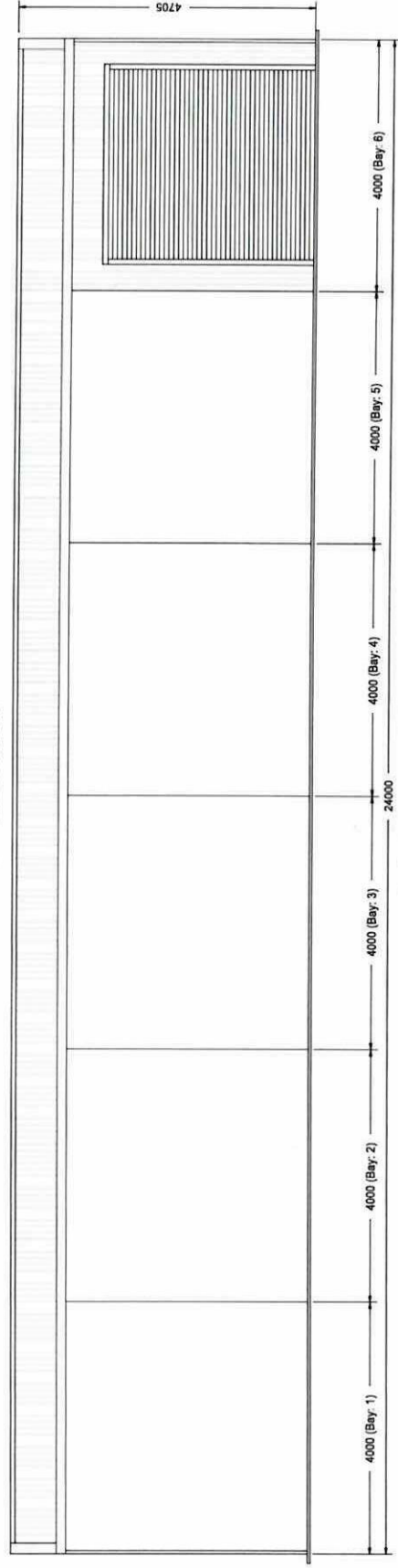
CLIENT: NICKY ANDERSON  
 SITE ADDRESS: 11 SLAUGHTER YARDS LANE, GULGONG, NSW, 2852  
 PHONE:  
 EMAIL:

DRAWING TITLE: End Elevations  
 SCALE: 1:52.106  
 DATE: 06-12-2024  
 Job Number: 3407080920\_REV1





LEFT ELEVATION



RIGHT ELEVATION

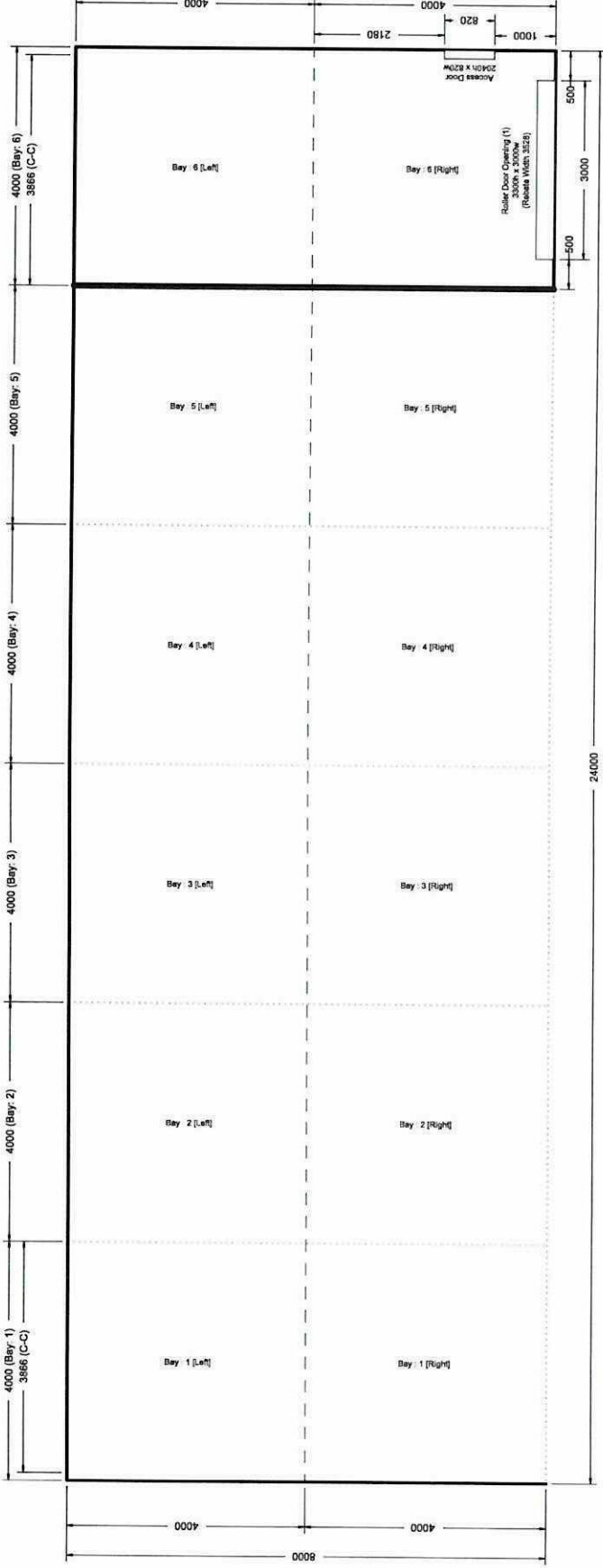
**CALARE CIVIL**  
 CONSULTING ENGINEERS  
 17/18001 STREET, LINDSEY, NSW 1570  
 AUSTRALIA  
**APPROVED FOR CONSTRUCTION**  
 Mr. Chris Beuzsivillo  
 Engineer (Structural) (No. 100388) (Professional Seal and EPSC 06/04)  
 Date: 06/12/2024

Please refer to the attached matter details: **UB712/2024**

DRAWING TITLE: Side Elevations  
 SCALE: 1:74.387  
 DATE: 06-12-2024  
 Job Number: 3407060920\_REV1

CLIENT: NICKY ANDERSON  
 SITE ADDRESS: 11 SLAUGHTER YARDS LANE, GULGONG, NSW, 2852  
 PHONE:  
 EMAIL:



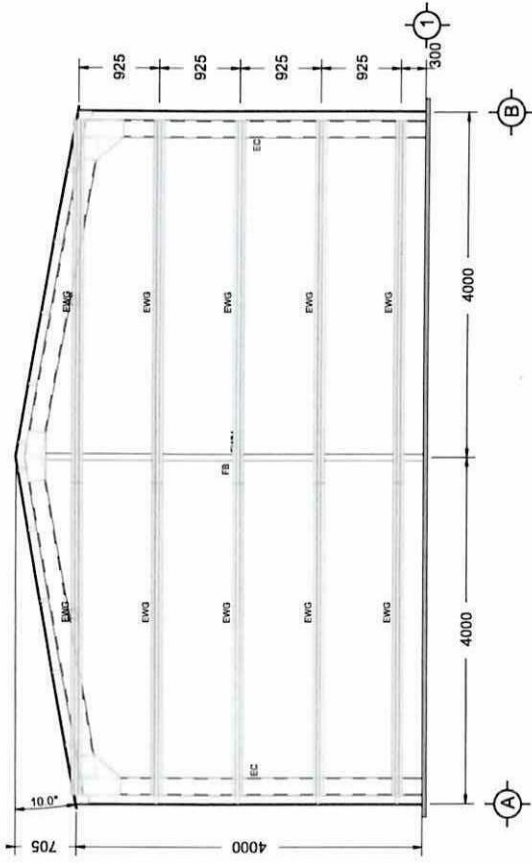


PLAN ELEVATION

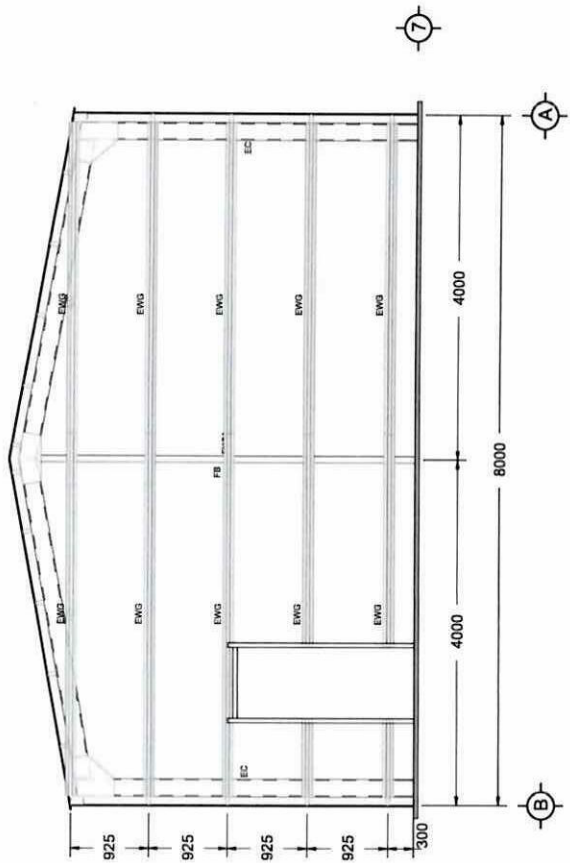
**CALARE CIVIL**  
 CONSULTING ENGINEERS  
 77A PARADE STREET, BUNMELBA, S.A. 7407, SOUTH AUSTRALIA  
**APPROVED FOR CONSTRUCTION**  
 Mr. Chris Beitzoville  
 B.E., Civil Engineer  
 Engineers Australia Membership Number: 100188 | Structural College and IPCEI 18886  
 Date: 06/12/2024  
 Please refer to the attached folder dated: 06/12/2024

CLIENT: NICKY ANDERSON  
 SITE ADDRESS: 11 SLAUGHTER YARDS LANE, GULGONG, NSW, 2852  
 PHONE:  
 EMAIL:  
 DRAWING TITLE: Plan Elevation  
 SCALE: 1:77,226  
 DATE: 06-12-2024  
 Job Number: 3407080920\_REV1





FRONT ELEVATION



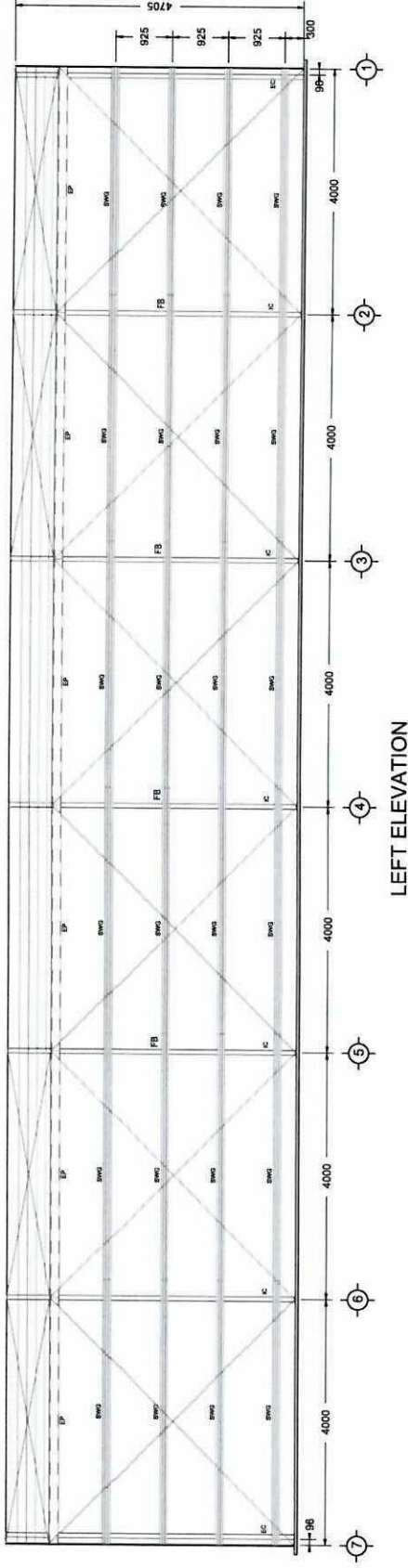
REAR ELEVATION

**CALAREHVI**  
 CONSULTING ENGINEERS  
 APPROVED FOR CONSTRUCTION  
 Mr. Chris Beauzeville  
 E. 10th Street, Suite 101  
 Englewood, Colorado 80110  
 Date: 06/12/2024  
 Please refer to the attached letter cover. 06/12/2024

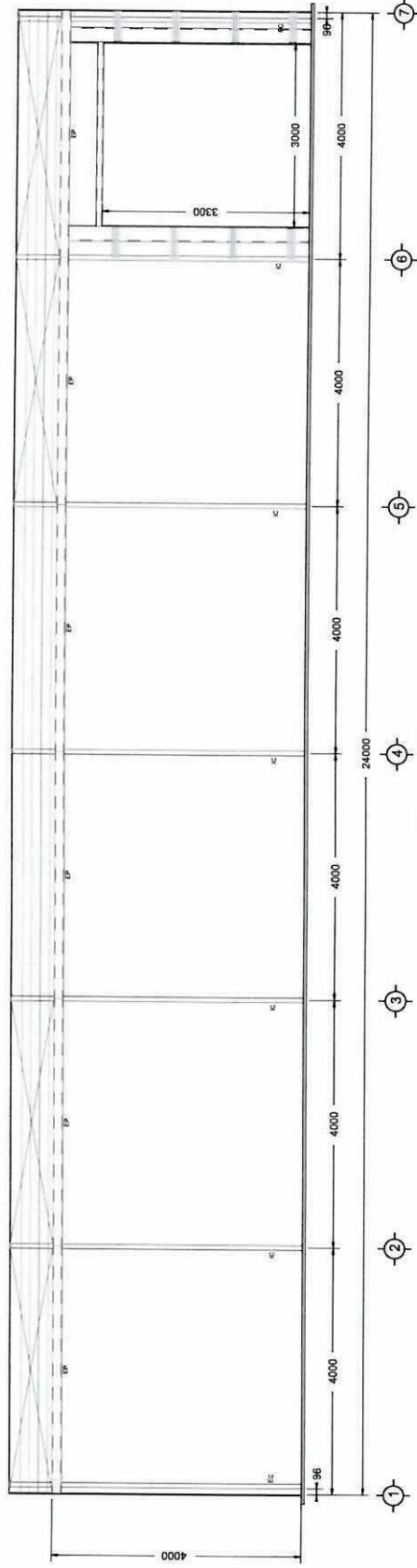
DRAWING TITLE: End Frame Elevations  
 SCALE: 1:50  
 DATE: 06-12-2024  
 Job Number: 3407080920\_REV1

CLIENT: NICKY ANDERSON  
 SITE ADDRESS: 11 SLAUGHTER YARDS LANE, GULGONG, NSW, 2852  
 PHONE:  
 EMAIL:





LEFT ELEVATION



RIGHT ELEVATION

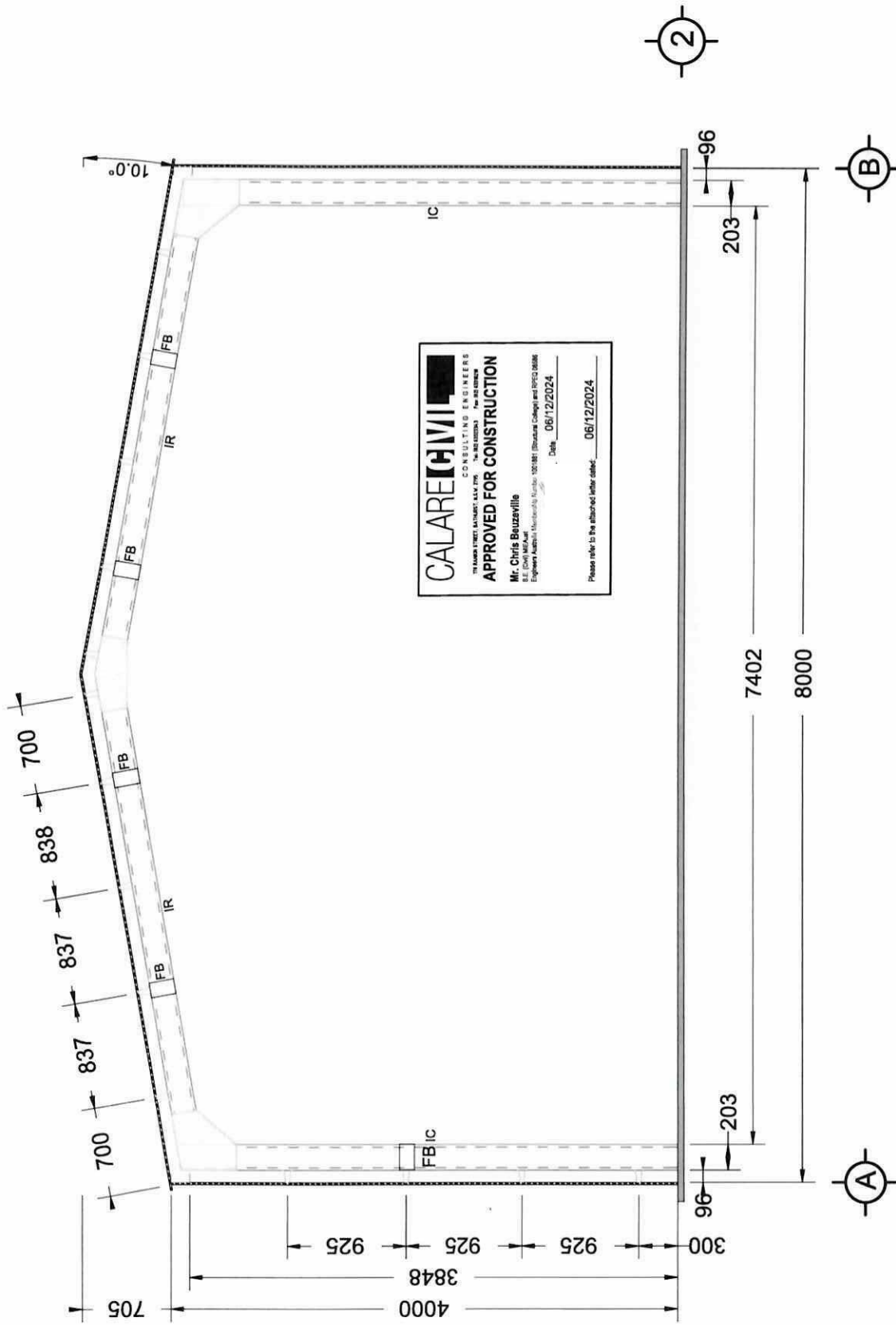
**CALARE CIVIL**  
 CONSULTING ENGINEERS  
 111 LAMB STREET SUITE 604 7TH FLOOR SYDNEY NSW 2000  
**APPROVED FOR CONSTRUCTION**  
 Mr. Chris Beazzayville  
 B.E. (Civil) M.A.S.T.E.  
 Engineers Australia Membership Number 1001481 (Structural) and RPCC 38586  
 Date: 06/12/2024  
 Please refer to the attached letterhead. 06/12/2024

DRAWING TITLE: Side Frame Elevations  
 SCALE: 1:77.226  
 DATE: 06-12-2024  
 Job Number: 3407080920\_REV1

CLIENT: NICKY ANDERSON  
 SITE ADDRESS: 11 SLAUGHTER YARDS LANE, GULGONG, NSW, 2852  
 PHONE:  
 EMAIL:





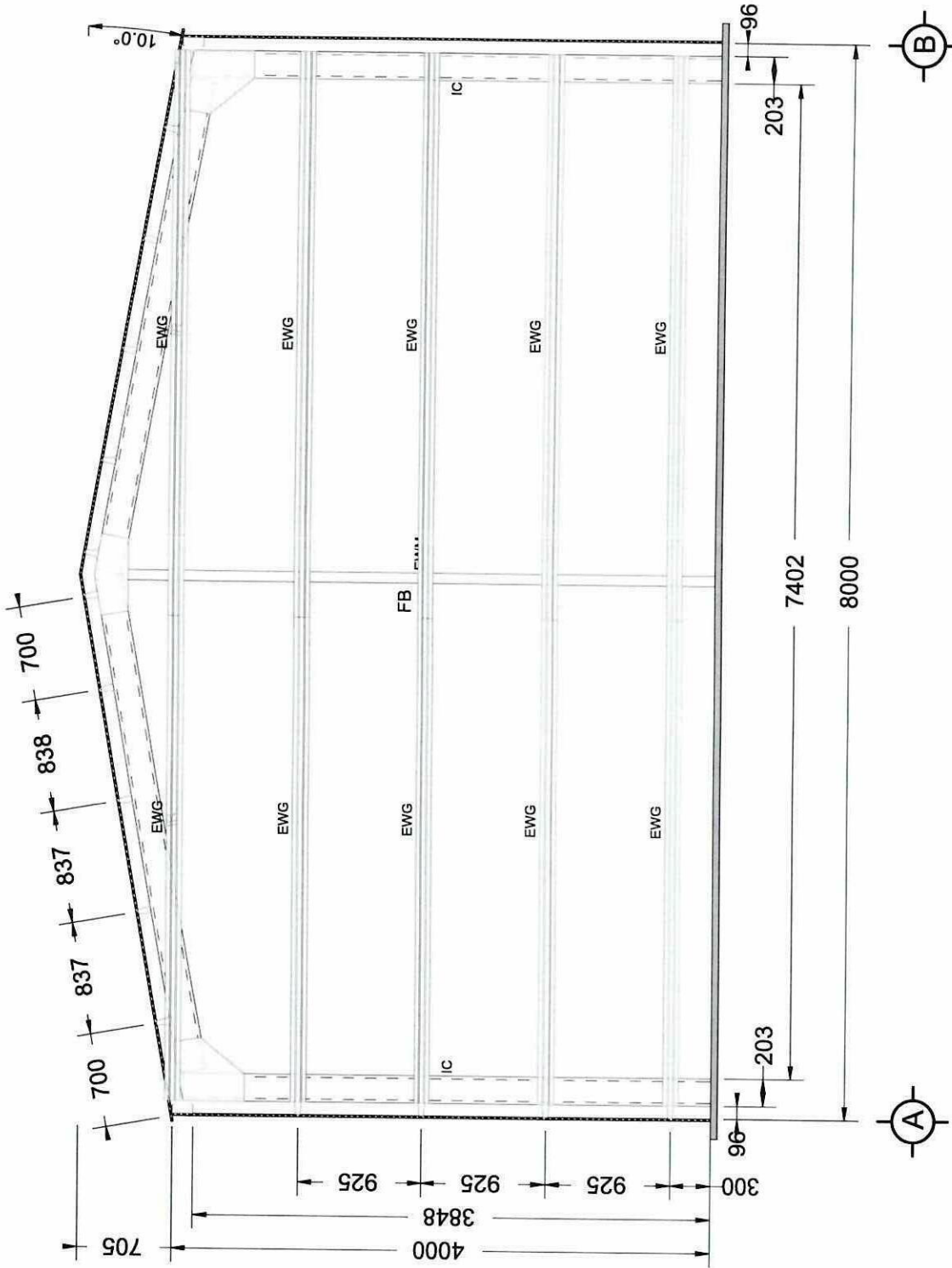


**CALARE CIVIL**  
 CONSULTING ENGINEERS  
 79 PARK STREET MURUMBidgee NSW 2882  
 APPROVED FOR CONSTRUCTION  
 Mr. Chris Reutzeville  
 B.E. (Civil) MURUMBidgee  
 Engineers Australia Membership Number: 1001887 (Structural) College and Ref No: 28886  
 Date: 06/12/2024  
 Please refer to the attached letter dated: 06/12/2024

# INTERMEDIATE ELEVATION

CLIENT: NICKY ANDERSON  
 SITE ADDRESS: 11 SLAUGHTER YARDS LANE, GULGONG, NSW, 2852  
 PHONE:  
 EMAIL:  
 DRAWING TITLE: Cross Section  
 SCALE: 1:32.331  
 DATE: 06-12-2024  
 Job Number: 3407080920\_REV1





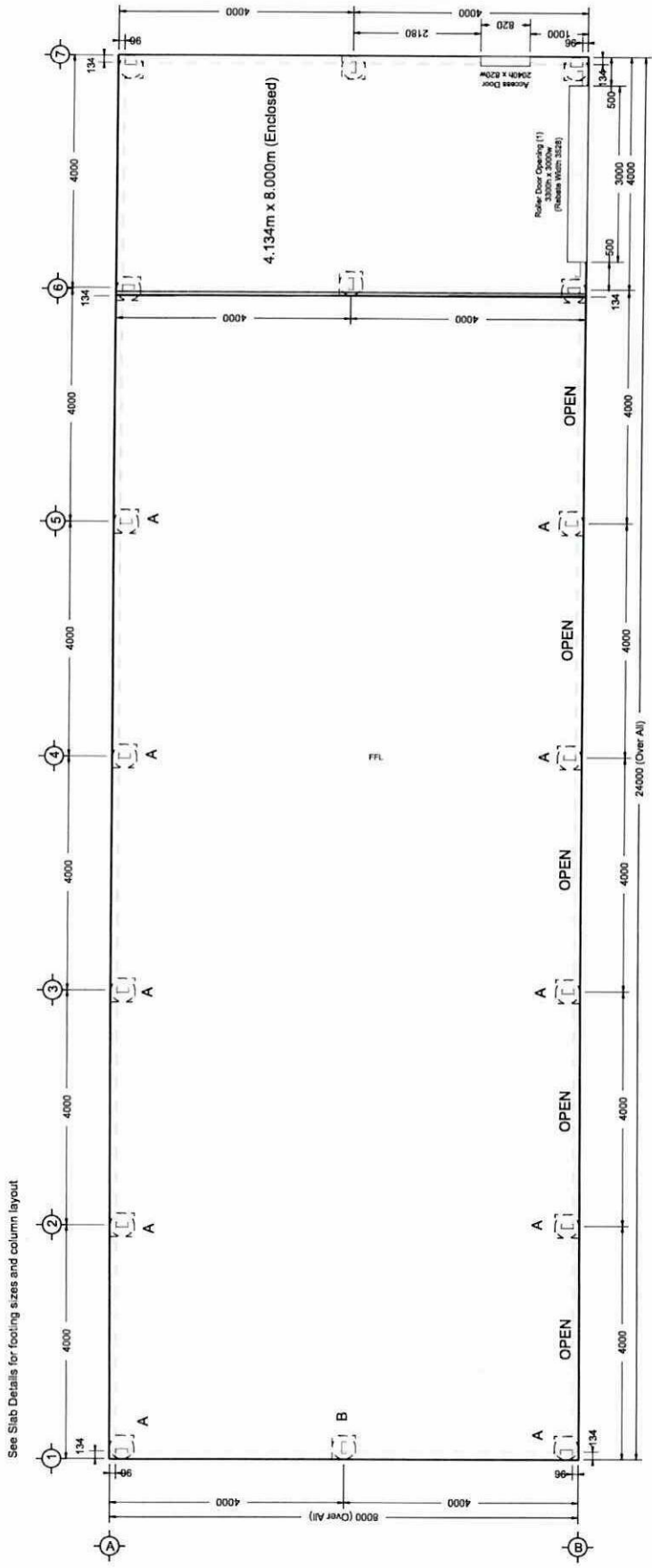
**CALARE GMI**  
 CONSULTING ENGINEERS  
 17 HANCOCK STREET BALMORAL NSW 1586  
 14-90 020243 Fax 90 020244  
**APPROVED FOR CONSTRUCTION**  
 Mr. Chris Beuzayville  
 BE, CIVIL, M.Eng. (Structural) (NSW) (1991) (1992) (1993) (1994) (1995) (1996) (1997) (1998) (1999) (2000) (2001) (2002) (2003) (2004) (2005) (2006) (2007) (2008) (2009) (2010) (2011) (2012) (2013) (2014) (2015) (2016) (2017) (2018) (2019) (2020) (2021) (2022) (2023) (2024)  
 Date: 06/12/2024  
 Please refer to the attached below table: 06/12/2024

# INTERMEDIATE ELEVATION

CLIENT: NICKY ANDERSON  
 SITE ADDRESS: 11 SLAUGHTER YARDS LANE, GULGONG, NSW, 2852  
 PHONE:  
 EMAIL:

DRAWING TITLE: Cross Section  
 SCALE: 1:32.340  
 DATE: 06-12-2024  
 Job Number: 3407080920\_REV1



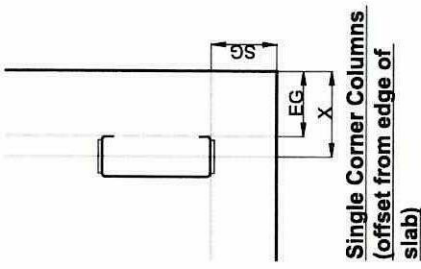
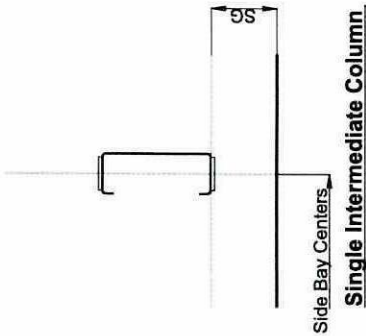
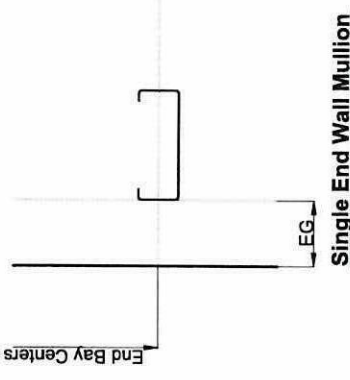


FLOOR PLAN

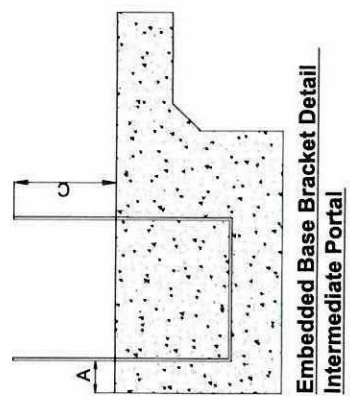
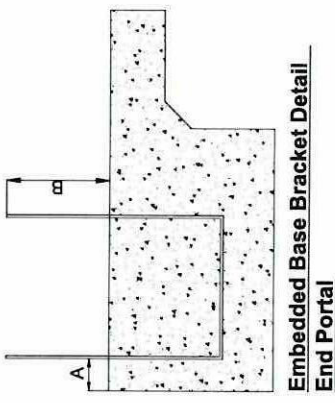
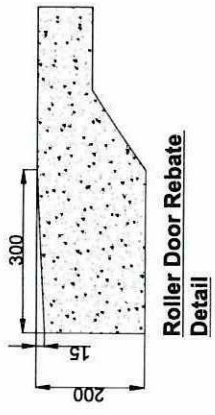
**CALARECHIVI**  
 CONSULTING ENGINEERS  
 171 ALBERT STREET, SUITE 2001, SYDNEY, NSW 1588  
 APPROVED FOR CONSTRUCTION  
 Mr. Chris Beckwith  
 B.E. (Civil) M.Eng. (Structural)  
 Engineers Australia Membership Number: 100181 (Structural) College and IPSC License  
 Date: 06/12/2024  
 Please refer to the attached letter dated: 06/12/2024

CLIENT: NICKY ANDERSON  
 SITE ADDRESS: 11 SLAUGHTER YARDS LANE, GULGONG, NSW, 2852  
 PHONE:  
 EMAIL:  
 DRAWING TITLE: Floor Plan  
 SCALE: 1:78.410  
 DATE: 06-12-2024  
 Job Number: 3407080920\_REV1





SG = 96  
EG = 96  
X = 134  
A = 91  
B = 130 (C20015)  
C = 130 (C20024)



**Slab Details**  
Slab Thickness: 100mm min with footings or piers cast with slab - SL72 Mesh  
Soil Class: M, Footing Size 450 dia x 450 Deep  
Diagonal Measurement: 25298mm (Main Building - Corner of slab to corner of slab)

**Pier Only Details**  
HOLD DOWN BOLTS  
4 x N16 LAPPED 500  
WITH BOLTS  
PLUS R6-250 TIES  
50mm MIN COVER

450

1800

500

300

DETAIL A 450

450

HOLD DOWN BOLTS  
AS SPECIFIED

1200

DETAIL B

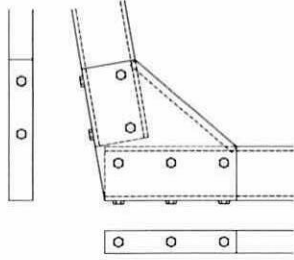
**CALARECHMI**  
CONSULTING ENGINEERS  
111 MARKET STREET, SYDNEY NSW 2000  
14-18 COLLEGE STREET, SYDNEY NSW 2000  
**APPROVED FOR CONSTRUCTION**  
Mr. Chris Beuzeville  
B.E. (Civil), M.Eng. (Structural), M.Eng. (Mechanical), M.Eng. (Structural) (NSW) 100191 (Structural) (NSW) 100192 (Mechanical) (NSW) 100193  
Date: 06/12/2024  
Please refer to the attached letter dated: 06/12/2024

CLIENT: NICKY ANDERSON  
SITE ADDRESS: 11 SLAUGHTER YARDS LANE, GULGONG, NSW, 2852  
PHONE:  
EMAIL:

DRAWING TITLE: Slab Details  
SCALE: 1:56.427  
DATE: 06-12-2024  
Job Number: 3407080920\_REV1

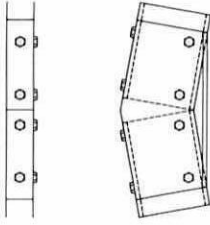


Column	C200
Rafter	C200
Bracket	UHB200
Bracket Material	G450 Min
Bracket Thickness	2.4mm Min
Bolts Type	M12 Grade 8.8 Min
Bolt Qty	10
Bracket Qty	1



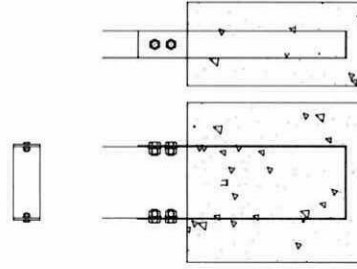
Single C200 Haunch Connection

Column	-
Rafter	C200
Bracket	UHB200
Bracket Material	G450 Min
Bracket Thickness	2.4mm Min
Bolts Type	M12 Grade 8.8 Min
Bolt Qty	8
Bracket Qty	1

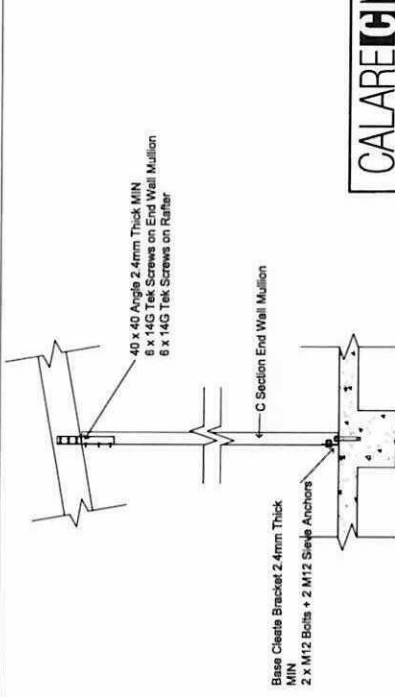


Single C200 Apex Connection

Column	C200
Bracket	BBEM2006
Bracket Material	G450 Min
Bracket Thickness	5mm Min
Bracket Qty	1
Bolts Type	M12 Grade 8.8 Min
Bolt Qty	4
Sieve Anchor Type	-
Sieve Anchor Qty	-



Single C200 Embedded Base Connection



End Wall Mullion Connection

**CALARE CIVIL**  
CONSULTING ENGINEERS  
15 MARSDEN STREET SUITE 401/201  
SYDNEY NSW 2000  
AUSTRALIA  
PH: 61 61 9550 6666  
WWW.CALARECIVIL.COM.AU

**APPROVED FOR CONSTRUCTION**

Mr. Chris Brazzaville  
B.E. (Civil) M.Eng.  
Engineer Australia Membership Number: 1001981 | Structural, Coastal and EPSC 2008

Date: 06/12/2024

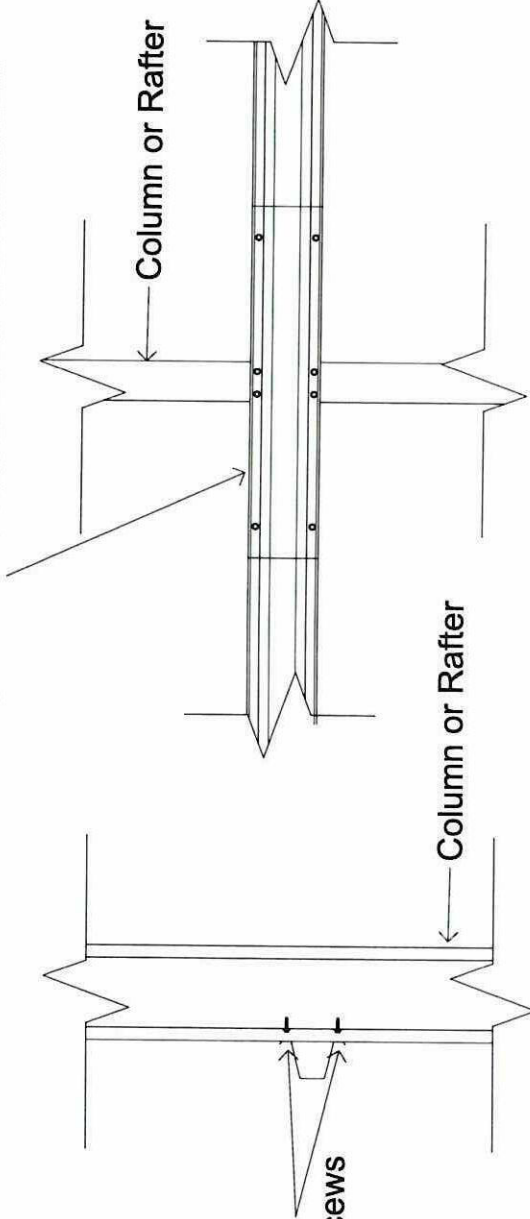
Please refer to the attached letter codes: 06/12/2024



CLIENT: NICKY ANDERSON  
SITE ADDRESS: 11 SLAUGHTER YARDS LANE, GULGONG, NSW, 2852  
PHONE:  
EMAIL:

DRAWING TITLE: Connection Details  
SCALE: NTS  
DATE: 06-12-2024  
Job Number: 3407080920\_REV1

Purlin or Girt  
 Fix to Column or Rafter with 4 x 14G Tek Screws MIN  
 Lap Each End with 2 x 14G Tek Screws MIN



Connect Purlin/Girt  
 With 4 x 14G Tek Screws

## Tophat Purlin/Girt Connection to Column/Rafter

**CALARE** **CHVI**  
 TRADING AS CALARE CONSULTING ENGINEERS  
 15/15000  
**APPROVED FOR CONSTRUCTION**  
 Mr. Chris Beuzenville  
 Employee Number: 330300101 (Signature) and 330300102 (Stamp)  
 Date: 06/12/2024  
 Please refer to the attached letter dated 06/12/2024

CLIENT: NICKY ANDERSON  
 SITE ADDRESS: 11 SLAUGHTER YARDS LANE, GULGONG, NSW, 2852  
 PHONE:  
 EMAIL:  
 DRAWING TITLE: Connection Details  
 SCALE: NTS  
 DATE: 06-12-2024  
 Job Number: 3407080920\_REV1

