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Lot 41  
DP 412125

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STDC - Planning Approved  
24/06/2021

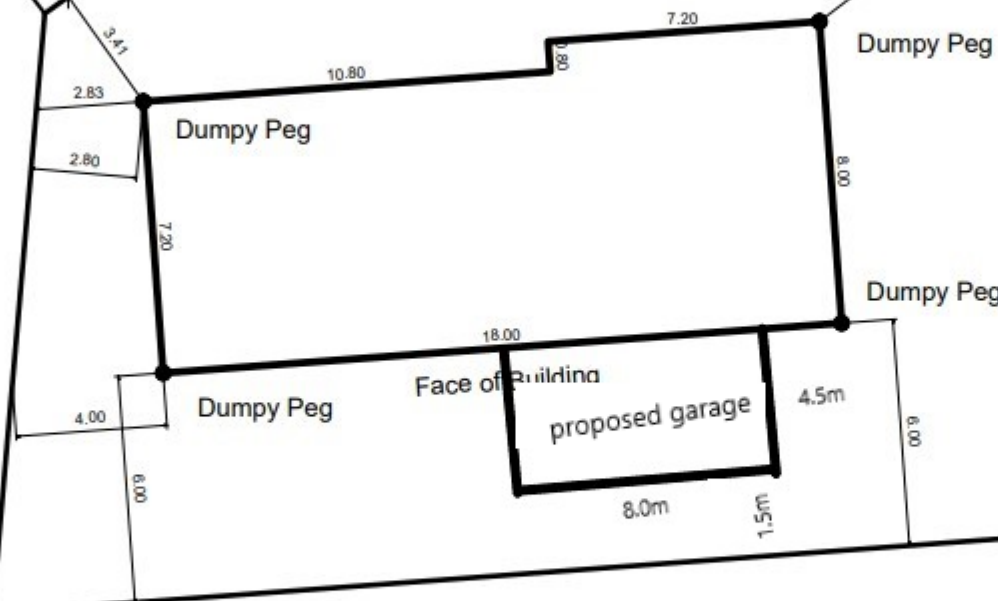
Lot 40  
DP 412125

Lot 42  
DP 412125

County Drive

Lot 39  
DP 412125

Lot 43  
DP 412125



**BOUNDARY DEFINITIONS IN URBAN LOCATIONS**  
In all cases where a building is to be sited closer than two metres from any site boundary it will be a requirement when the first building inspection takes place, for the Building Official to either:

1. Sight survey pegs and to have the boundaries identified to enable the measurement from the boundary to the proposed building footprint; or
2. To provide a Registered Surveyor's certification that the proposed building footprint is correctly sited in accordance with the approved Building Consent plans.



79 Princes Street  
PO Box 66, Hawera 4610  
info@juffermans.co.nz

www.juffermans.co.nz

Client: Hamish Scott  
Site Address: 27 County Drive Hawera

Drawing Title:

BUILDING LOCATION SETOUT DIAGRAM

Territorial Authority:	STDC	Job No:	20166
Comprised in:	445017	A3 Scale:	1:200
Drawing No:	01	Date:	22/10/2020
		Rev:	-


Design has been based on the following site specific and/or building specific items:

- Building Importance Level = “1”
- Design Life for structural elements = 50 years
- Design Wind Speed = 37.3m/s (for design of the Building)(Wind Zone = “High”) - in accordance with AS/NZS1170.2:2011
- Earthquake Zone = “1” in accordance with NZS3604:2011
- Corrosion Zone = “C” in accordance with NZS3604:2011

Design Assumptions:  
Kiwispans part and House part are designed as separate structures and deflections kept low to not transfer the loads to the other part.

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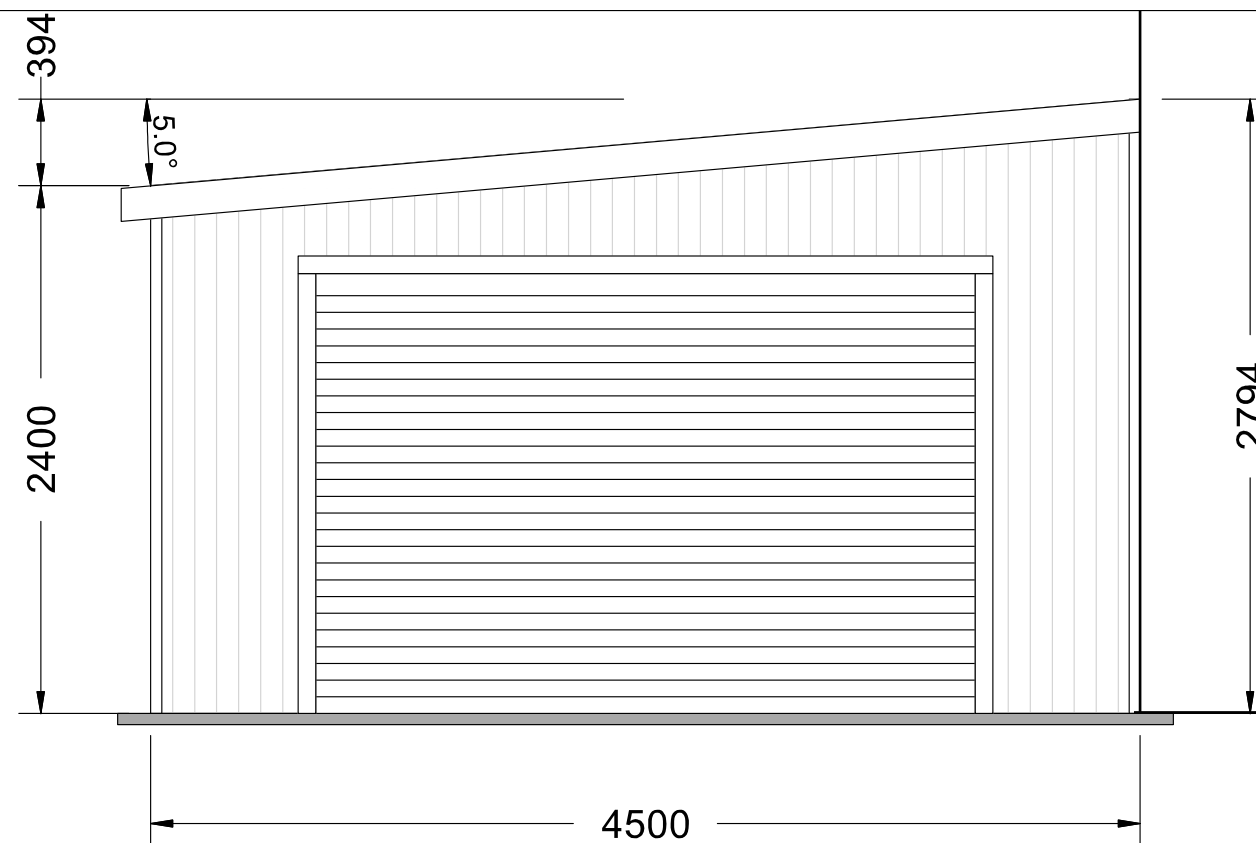
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## Member Schedule Summary

End Column (EC):	<del>C15012</del> Single C15019
End Rafter (ER):	<del>C15012</del> Single C15019
Internal Column (IC):	C20019 Single
Internal Rafter (IR):	C20019 Single
End Wall Mullion (EWM):	NA
Knee Brace (KB):	NA
Apex Brace (AB):	NA
End Roller Door Post:	C15019 Single
Eave Purlin (EP):	TH100075
Open Bay Column:	C20019
End Wall Girt (EWG):	TH100075 (Max Spacing: 1200, Over Lap: 15%)
Side Wall Girt (SWG):	TH100075 (Max Spacing: 1450, Over Lap: 15%)
Roof Purlins (RP):	TH100075 (Max Spacing: 1450, Over Lap: 15%)
Wall Cladding Type:	Slimclad 0.40
Roof Cladding Type:	Trimrib 0.40
Wall Colour:	Endura, TBC
Roof Colour:	Endura, TBC
Barge Colour:	Endura, TBC
Gutter Colour:	Endura, TBC
Downpipe Colour:	Endura, TBC

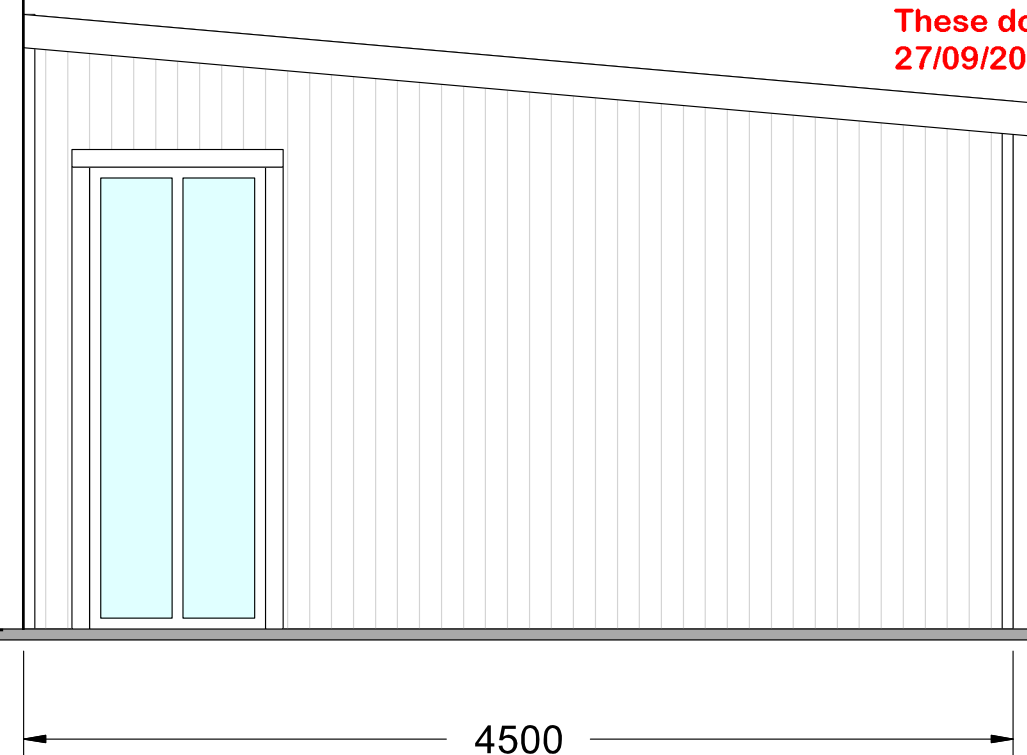
- This specific design, engineering calculations and connection details are the exclusive property of KiwiSpan 2017 Ltd and is licensed to the client for use on this project.
- The contractor shall verify all dimensions on site prior to commencing construction.
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## FRONT ELEVATION

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Existing House



## REAR ELEVATION

*End Elevations*

Scale: 1:34

Original Size:  
**A3**

Customer Name: Arthur Brown Construction  
Site Address: 27 County Drive

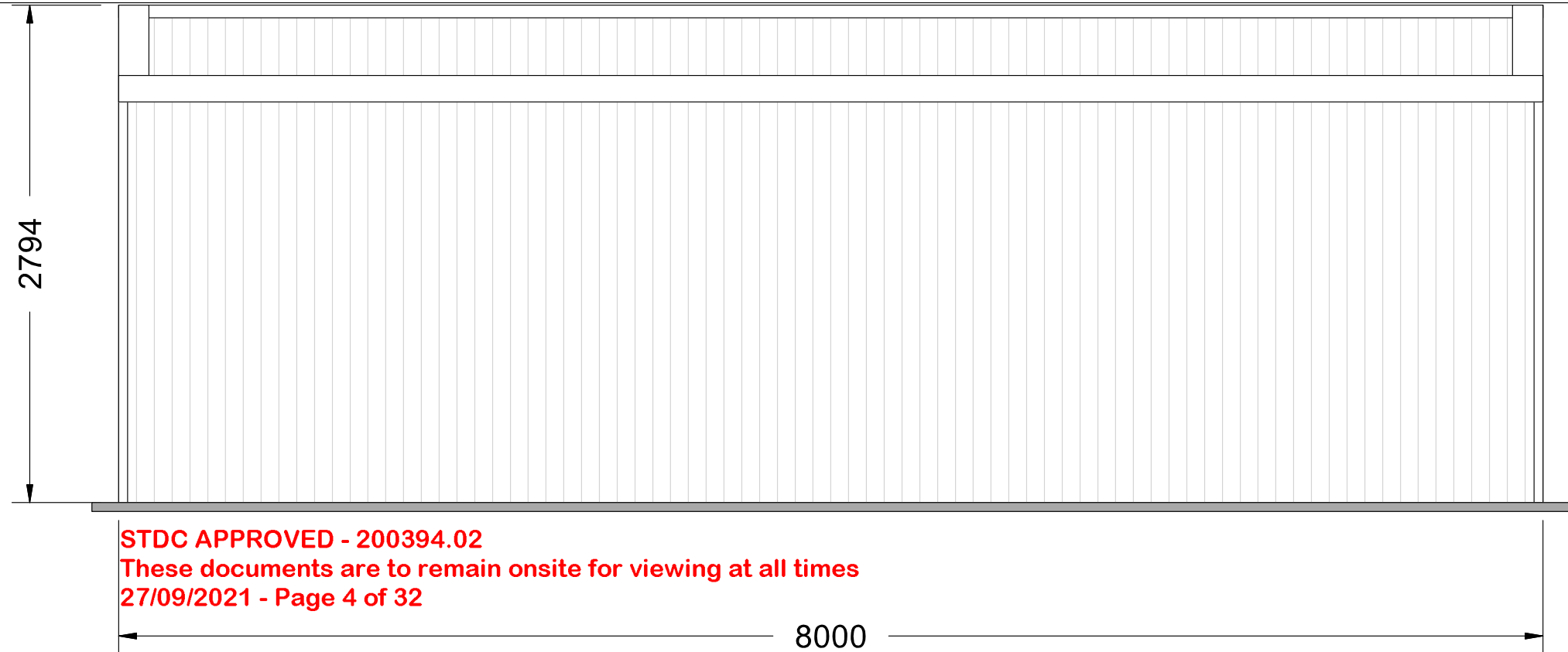
Job Number:  
SZI210316103515

Date: 1/06/2021

Page Number:  
2 of 9

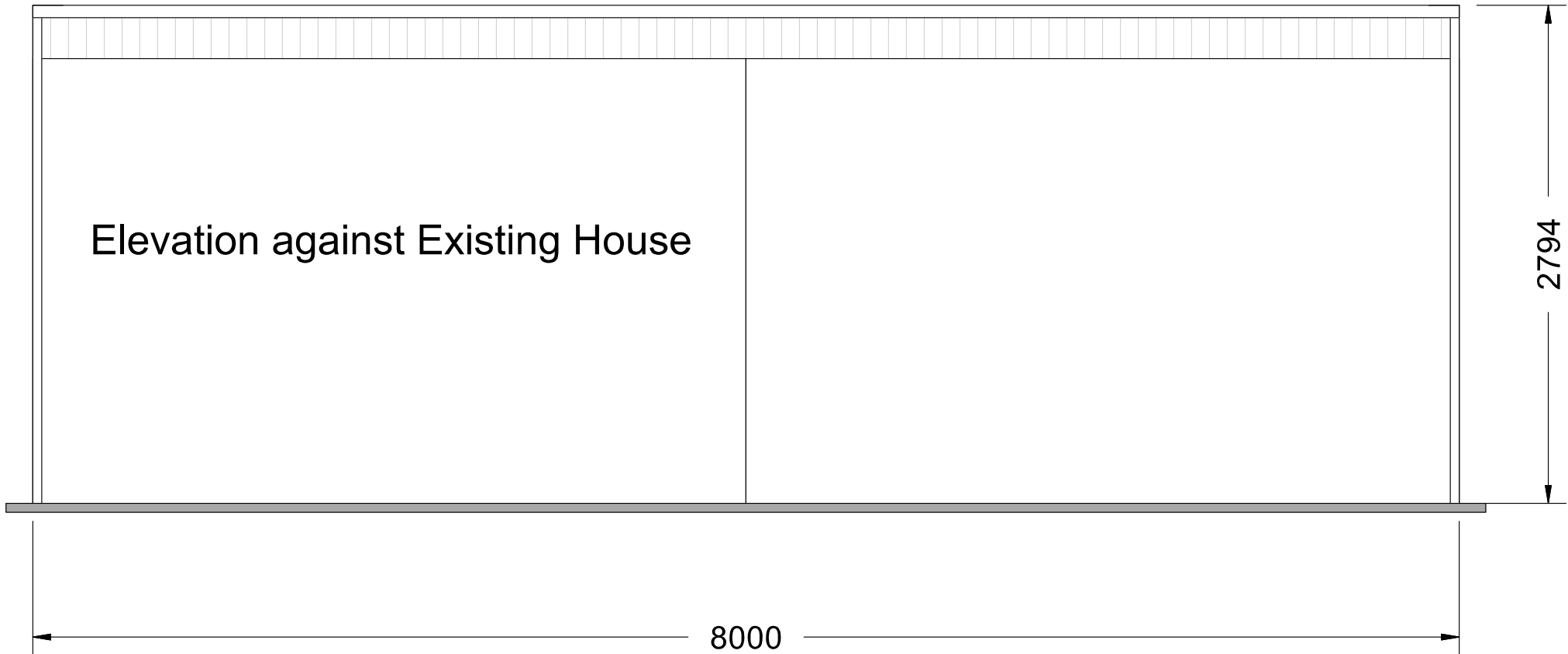






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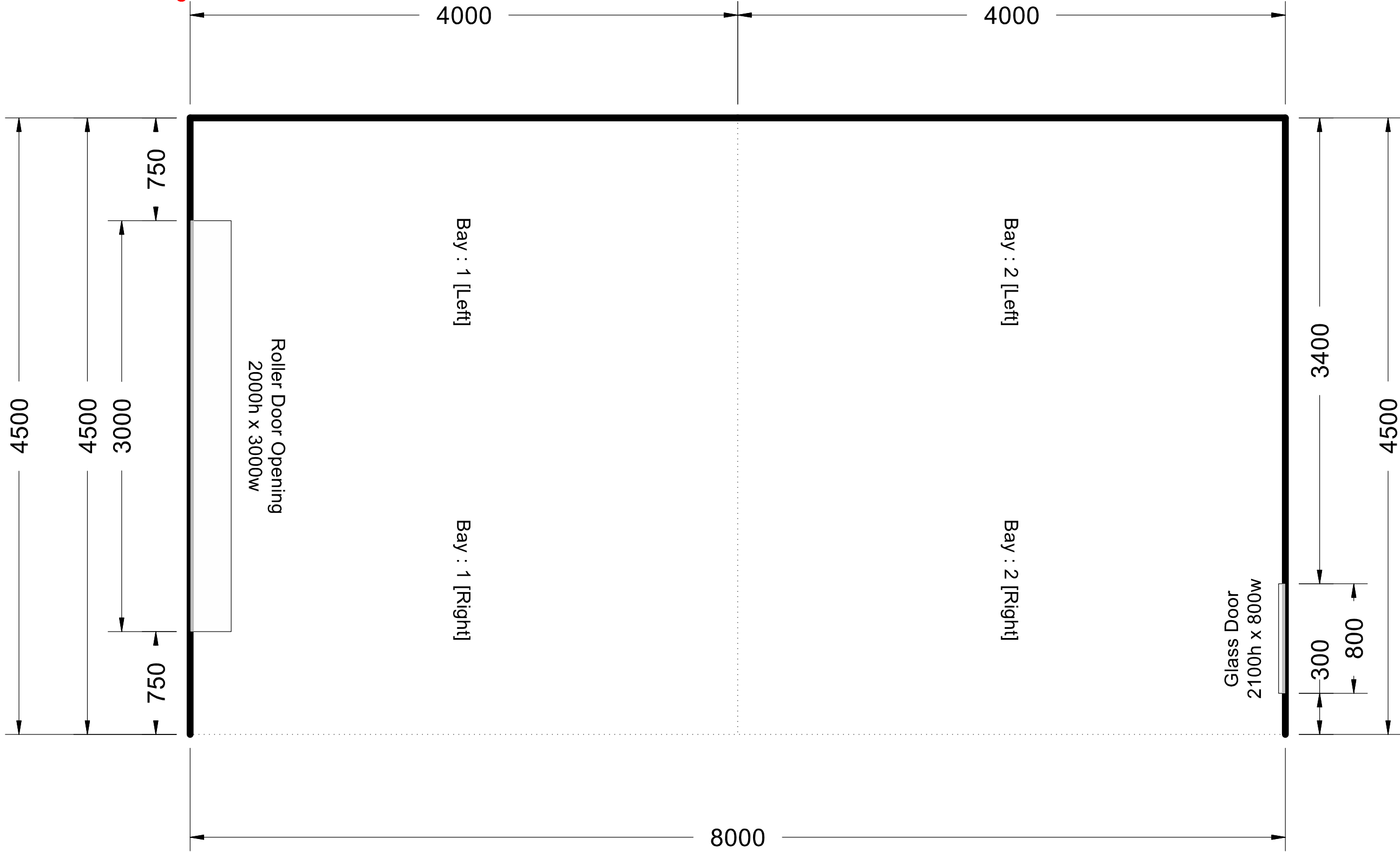
# LEFT ELEVATION



Elevation against Existing House

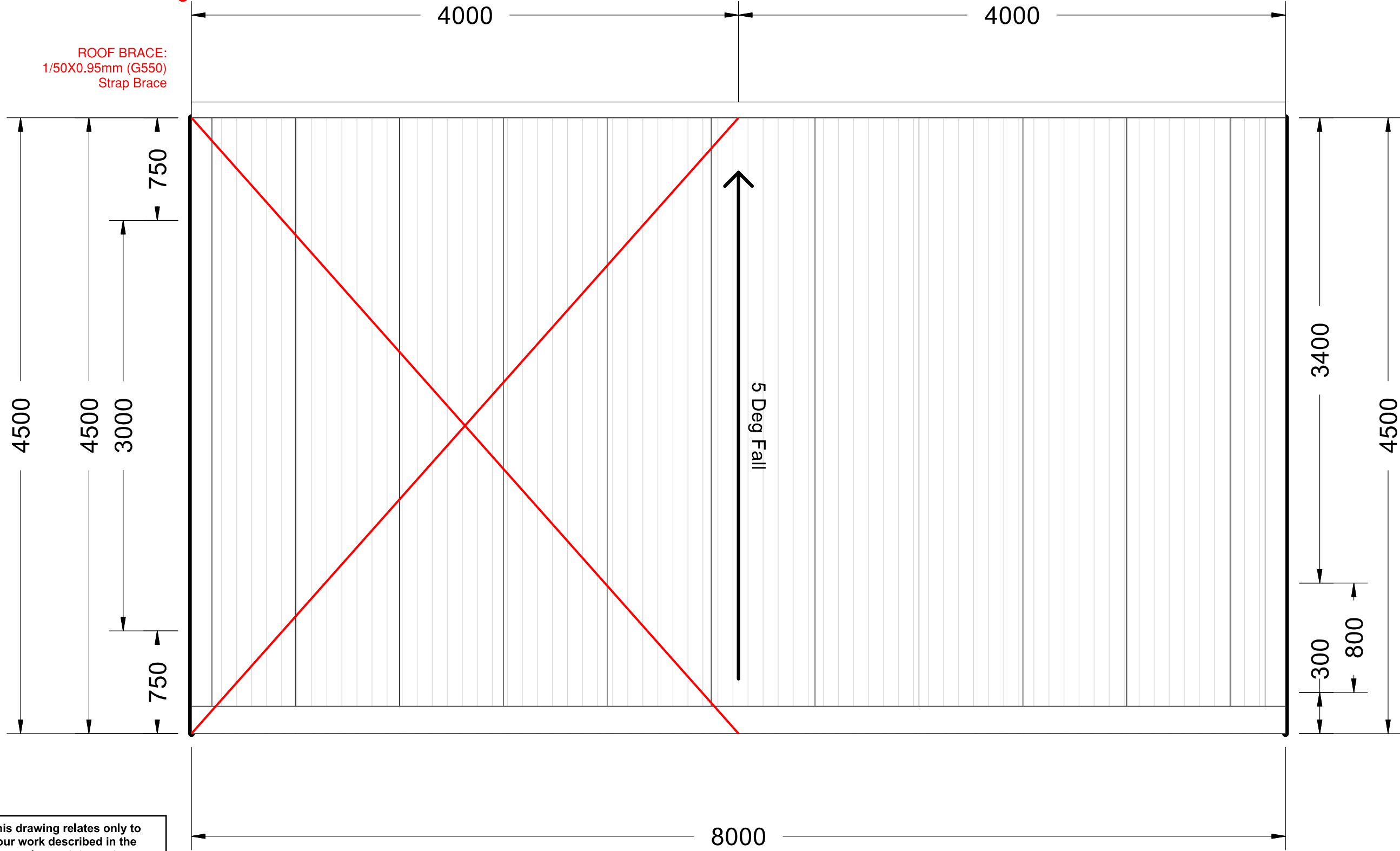
# RIGHT ELEVATION

		Side Elevations	Job Number: SZI210316103515	
	Scale: 1:33		Date: 1/06/2021	
	Original Size: A3	Customer Name: Arthur Brown Construction Site Address: 27 County Drive	Page Number: 3 of 9	




FLOOR PLAN

		<i>Floor Plan</i> (Unlined Building)	Job Number: SZI210316103515	
	Scale: 1:30		Date: 1/06/2021	
	Original Size: A3	Customer Name: Arthur Brown Construction Site Address: 27 County Drive	Page Number: 4 of 9	



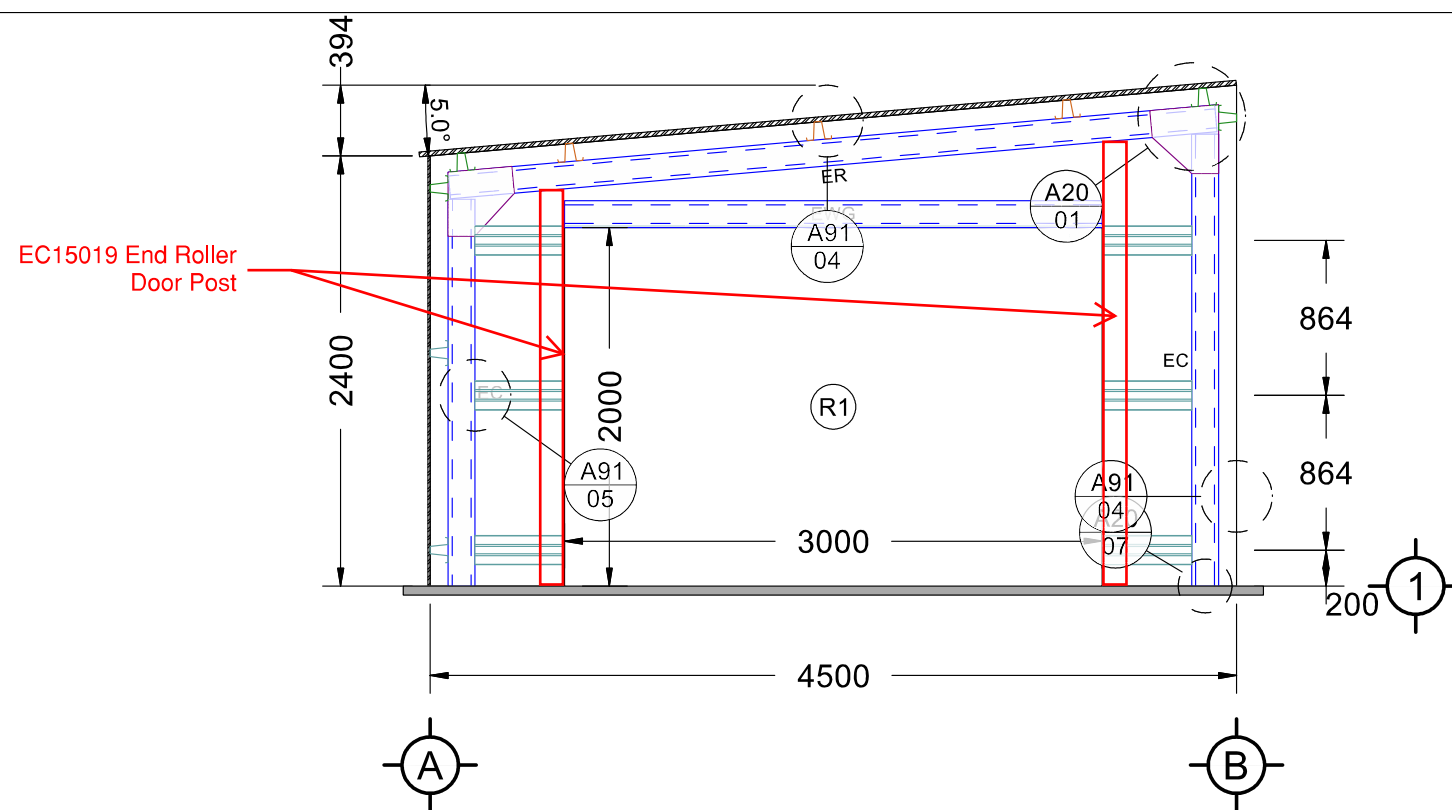
# Roof Elevation

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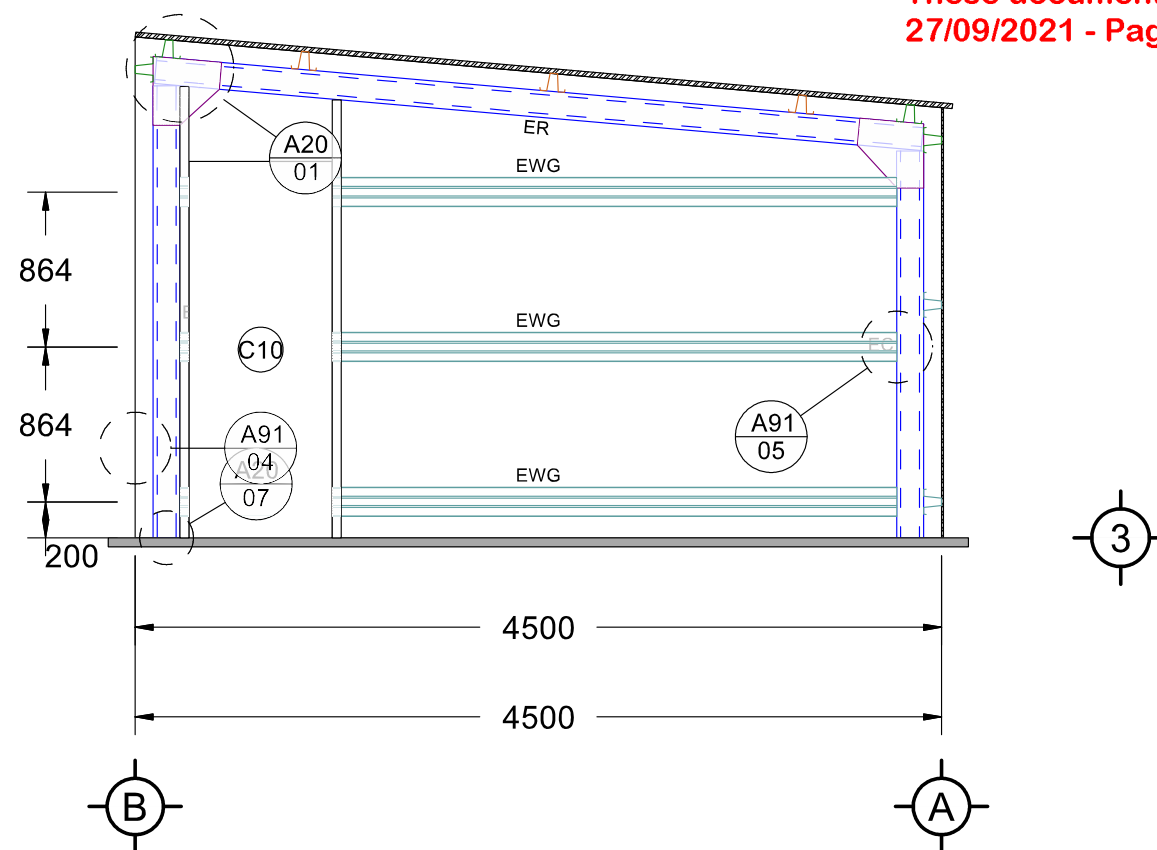
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	Scale: 1:30		Date: 1/06/2021	
	Original Size: A3	Customer Name: Arthur Brown Construction Site Address: 27 County Drive	Page Number: 5 of 9	



FRONT ELEVATION

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REAR ELEVATION

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End Frame Elevations

Scale: 1:42

Original Size:  
A3

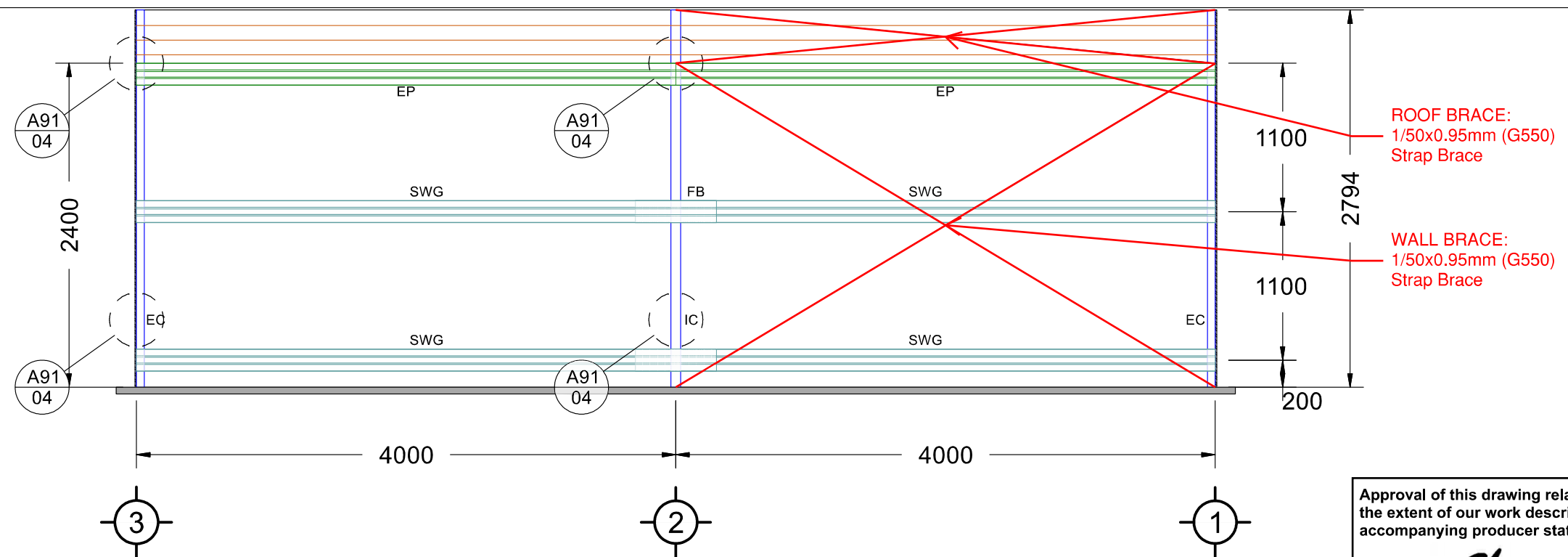
Customer Name: Arthur Brown Construction  
Site Address: 27 County Drive

Job Number:  
SZI210316103515

Date: 1/06/2021


Page Number:  
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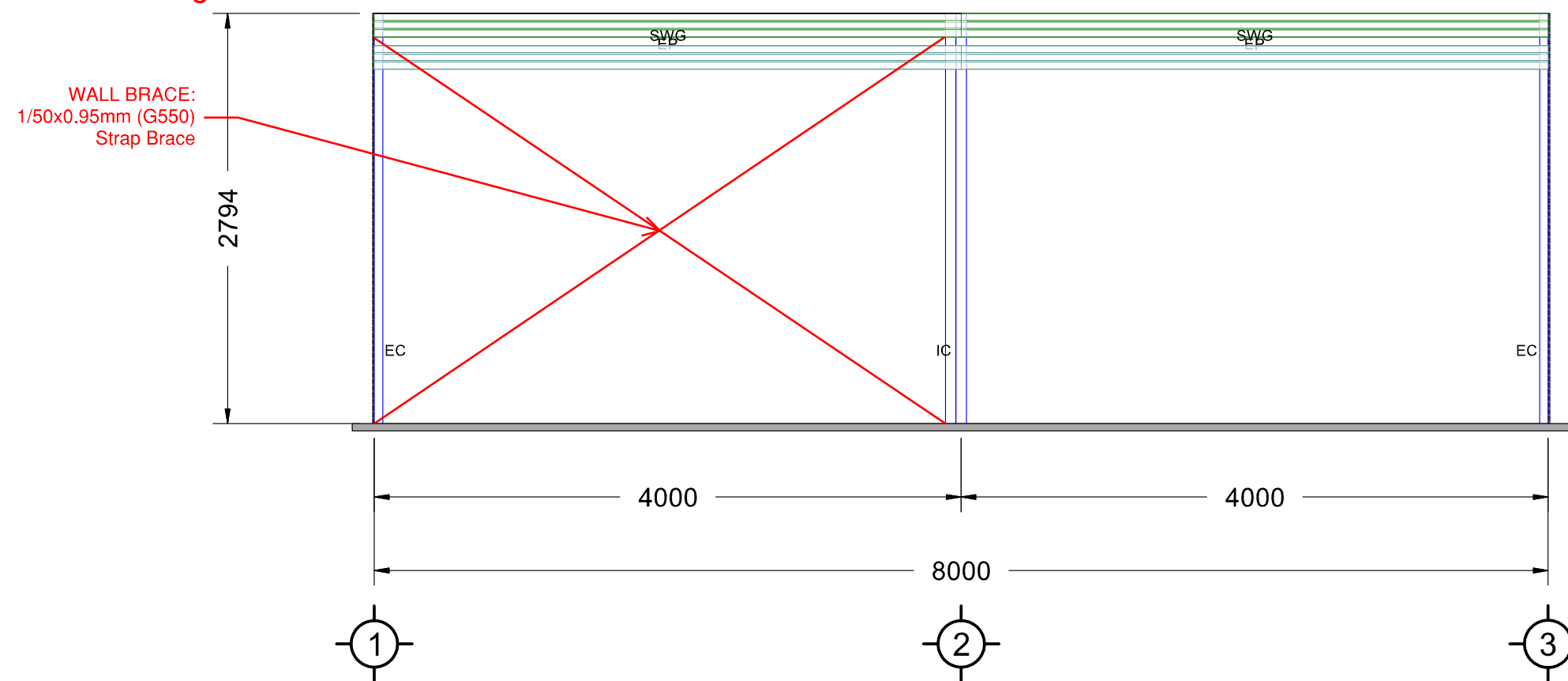
LEFT ELEVATION

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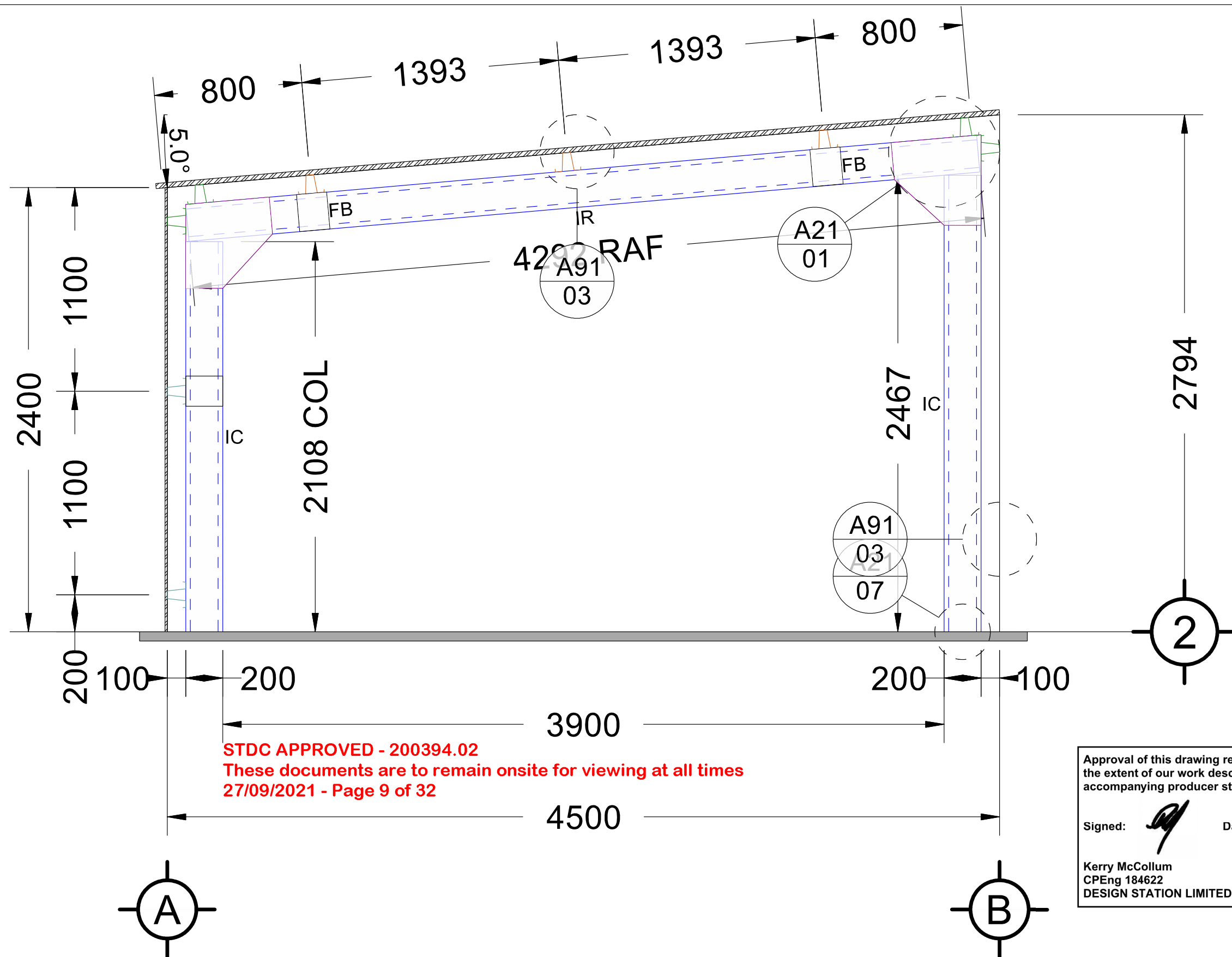
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RIGHT ELEVATION

		Side Frame Elevations		Job Number: SZI210316103515	
Scale: 1:41				Date: 1/06/2021	
Original Size: A3		Customer Name: Arthur Brown Construction Site Address: 27 County Drive		Page Number: 7 of 9	



# INTERMEDIATE ELEVATION

		<i>Cross Section (2)</i>		Job Number: SZI210316103515	
Scale: 1:22				Date: 1/06/2021	
Original Size: A3		Customer Name: Arthur Brown Construction Site Address: 27 County Drive		Page Number: 8 of 9	

•Foundation ground improvements for Ribraft: RED JACKET, Ref: CAL-4104-01, Date: 25 November 2020.

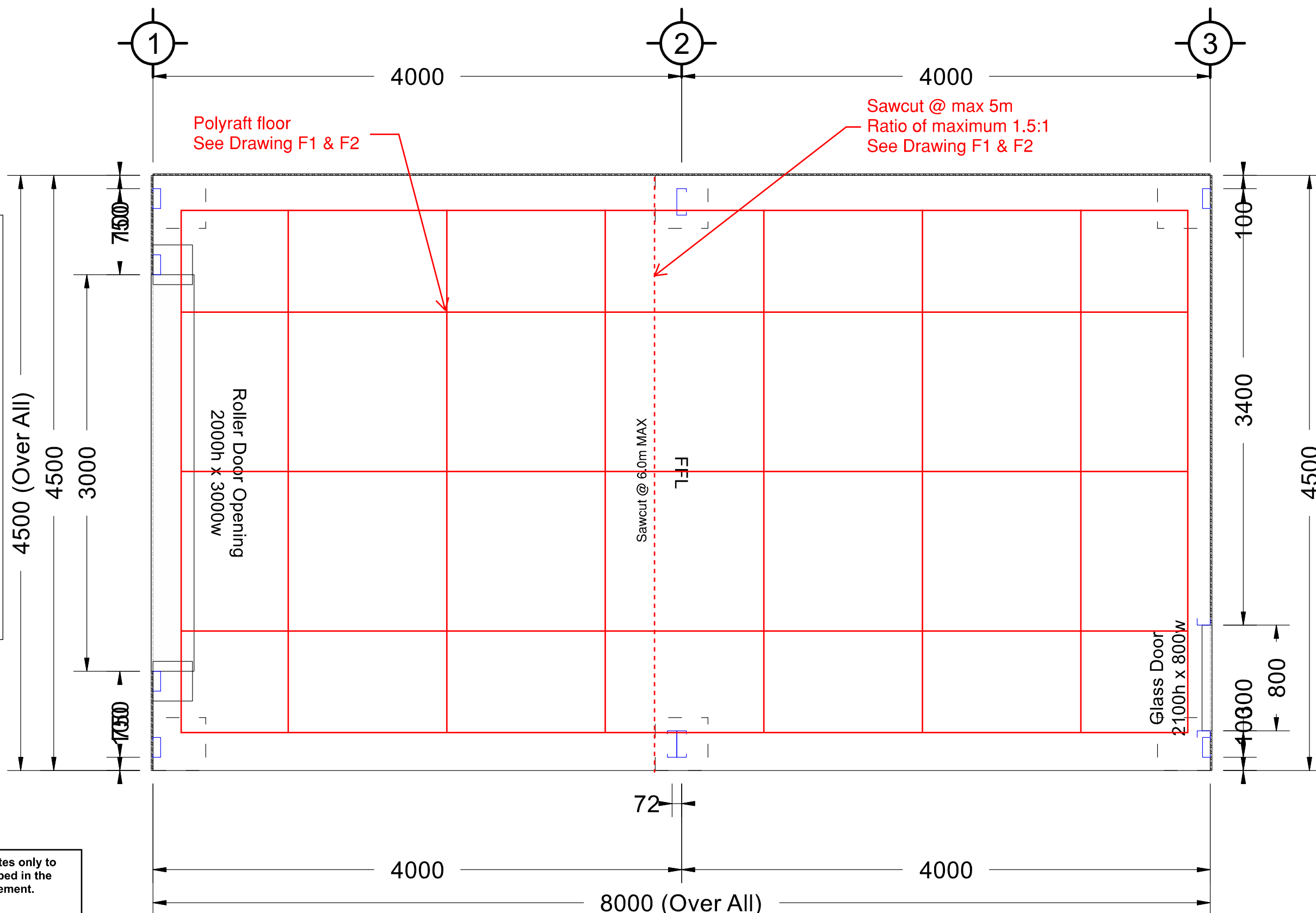
The following specification is recommended:  
 •1. Use 300mm thick hardfill raft.  
 •2. Proof roll subgrade before laying AP65. Compacted AP65 Hardfill. Compact in 150mm layers. Top with crusher fines to produce smooth surface for damp proof membrane. Extend hardfill 1000mm beyond building footprint.  
 •3. Suitably qualified engineer to inspect cleared subgrade and final compaction.

•Following from recommendations in above Geotech Report the foundations have been designed for an ultimate foundation bearing capacity of 135kPa at subgrade.  
 •Earthworks and Inspections as per above Report.  
 •The PS1 does not cover the suitability of the site, stability, sub-soil conditions, or any other Geotechnical information that may affect the foundation design.

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# FOUNDATION PLAN

Foundation Plan

Scale: 1:31

Original Size:  
 A3

Customer Name: Arthur Brown Construction  
 Site Address: 27 County Drive

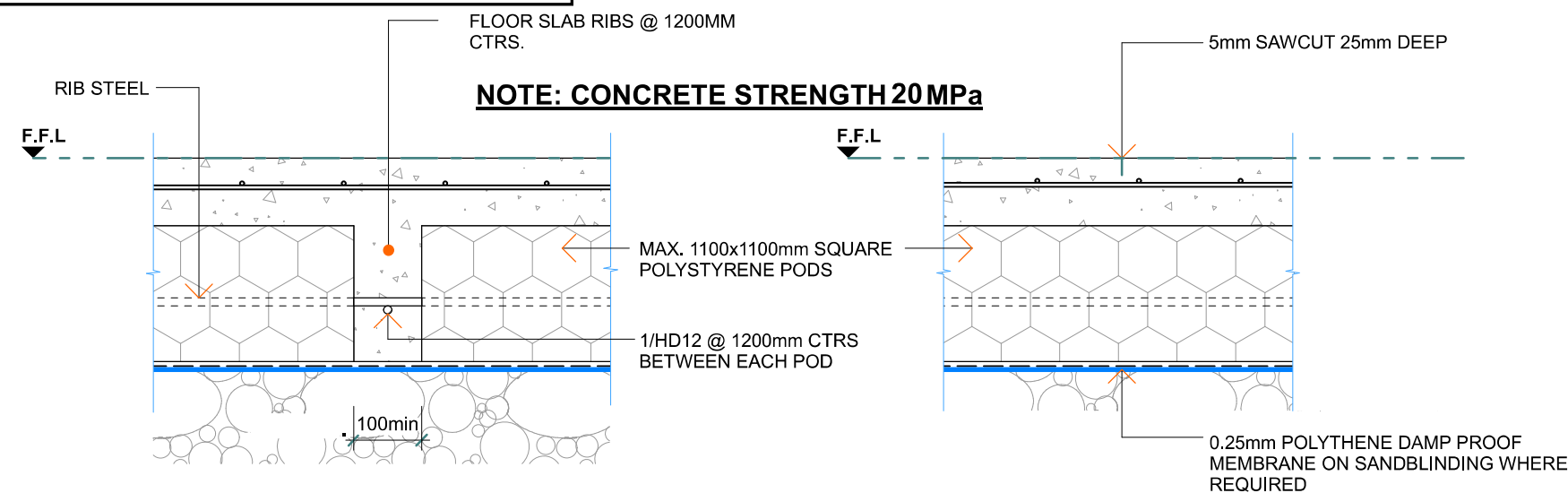
Job Number:  
 SZ1210316103515

Date: 1/06/2021

Page Number:  
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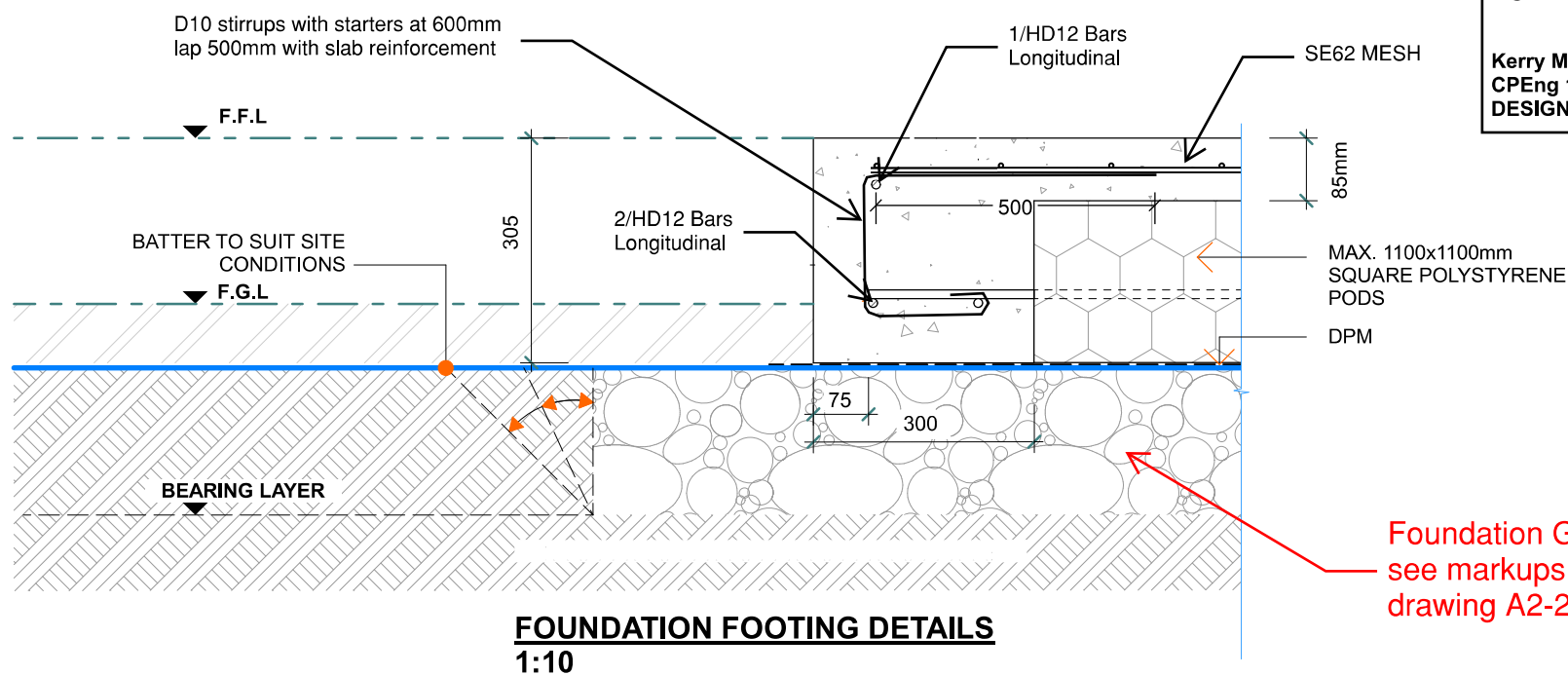
Foundation Notes:  
See Foundation Plan.




**TYPICAL RIB DETAIL**  
**1:10**

**TYPICAL SAW CUT DETAIL**  
**1:10**

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**CONCRETE NOTES:**

1. All construction detailing shall comply with NZS 3604:2011, unless modified within the structural drawings.
2. Consolidate the base of all excavations for foundations by compacting plate, rollers or other appropriate methods
3. Any fill material shall be fit for purpose, placed and compacted in layers of no greater than 150mm to a maximum fill depth of 600mm unless modified within the structural drawings.
4. All concrete and workmanship shall comply with, NZS 3109 concrete construction.
5. Concrete shall have a minimum 28 day strength of 20MPa unless the site is within a seaspray zone where 25MPa concrete strength shall be adopted.
6. Higher strength concrete may be required for industrial and commercial use buildings, refer to the engineer.
7. Reinforcing bars are denoted by the following:-
  - D - grade 300E, Deformed bar
  - H - grade 500E, Deformed bar
  - R - grade 300E, Plain bar
  - HR -grade 500E, Plain bar
8. Reinforcing cover shall be as follows:
  - Concrete Cast against natural ground 75mm
  - Concrete Cast against formwork in ground or against DPM 50mm
  - Internal cover for bars & mesh for
    - T = 85mm, provide 30mm cover
9. Reinforcing and mesh shall be supported on plastic 'chairs' or 'spacers' to maintain the required cover.
10. Slab reinforcement  
SE62 MESH
11. DPM shall consist of a single layer of polyethylene not less than 0.25mm thick. Lap joints shall be not less than 150mm wide, sealed with pressure sensitive plastic tape not less than 50mm wide
12. Curing of the concrete slab must take place immediately after finishing the slab by ponding or continuous sprinkling of water for a minimum period of 7 days. Buildings may be constructed on the slab within 7 days with due care not to overtighten fixing anchors.
13. Shrinkage control joints, free joints, construction joints and saw cuts shall be located as shown on the drawings.
14. Sawcuts are to coincide with major changes of plan and placed at a maximum spacing of 5m. Sawcuts shall be placed to create slab panels with length:width ratios of no greater than 1.5:1 Sawcuts are to be made no later than 24 hours following the slab pour. Sawcuts shall be 5mm wide x 0.25 slab thickness unless noted otherwise. Shrinkage control joints shall be placed over 100mm wide internal ribs wherever possible.
15. A free joint (or use of a propriety dowel joint system) shall be provided at a maximum of 30m spacing.
16. Polyraft floor in accordance with Firth Ribraft manual unless noted otherwise

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Ribrafft Details

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**A3**

Arthur Brown Construction  
27 County Drive

drawing no.

**F1**

date:

page no.



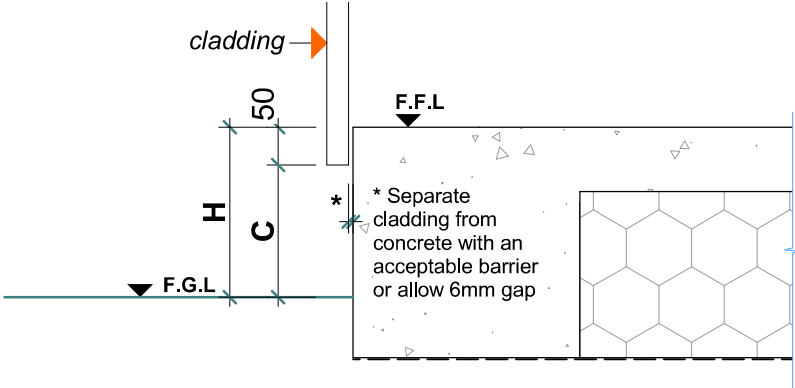


Foundation Notes:  
See Foundation Plan.

MINIMUM CLEARANCE DIMENSIONS		
BUILDING & FGL TYPE	H	C
Unlined Building- Unpaved ground	125	75
Lined Building- Paved surface	150	100
Habitable Building- Paved surface	150	100
Lined Building- Unpaved ground	225	175
Habitable Building- Unpaved ground	225	175

(Measurements in mm)

THICKENING	
COLUMN	*L
150	300
200	350
250	400
300	450
350	500
400	550



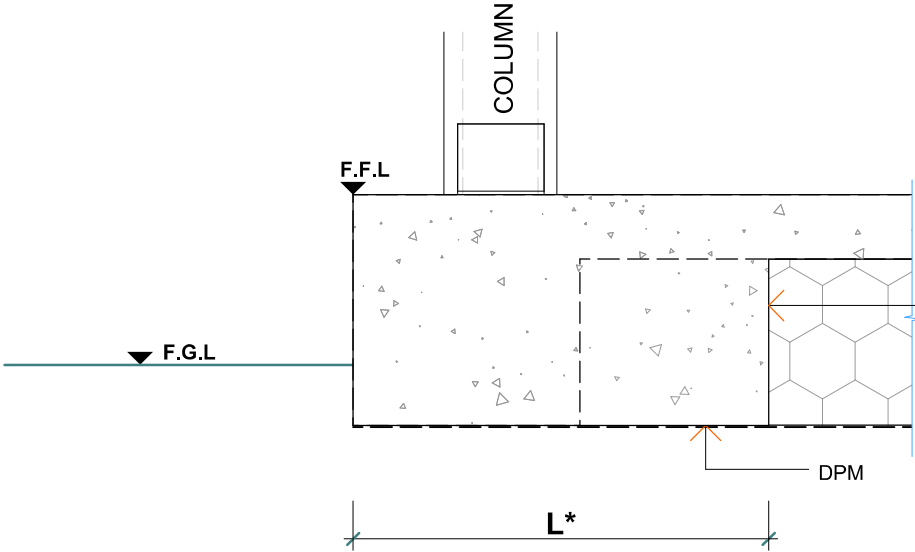
GROUND CLEARANCE DETAILS

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COLUMN FOUNDATION DETAILS

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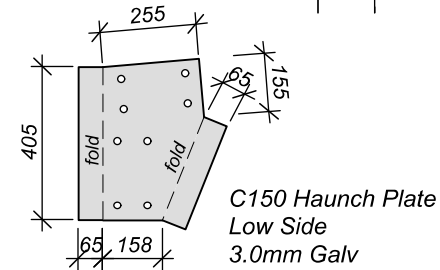
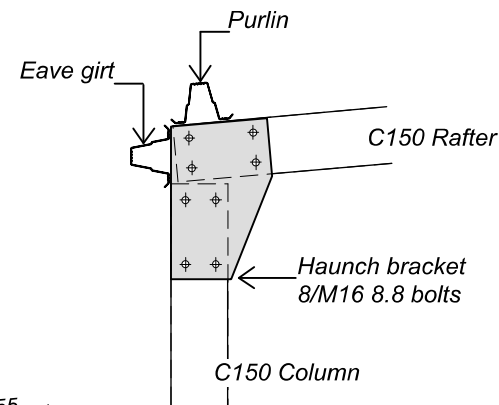
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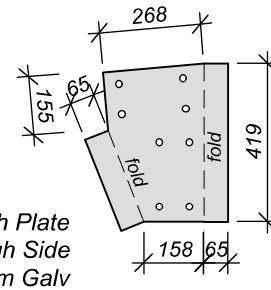
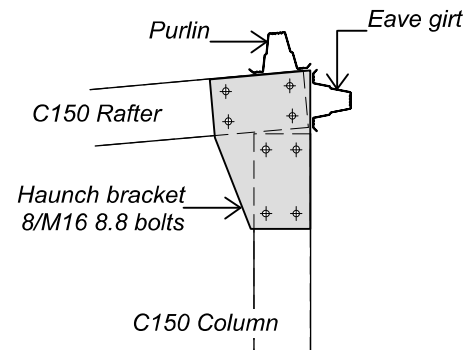


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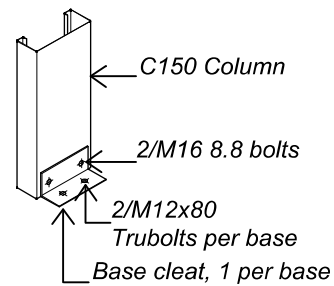
Arthur Brown Construction  
27 County Drive



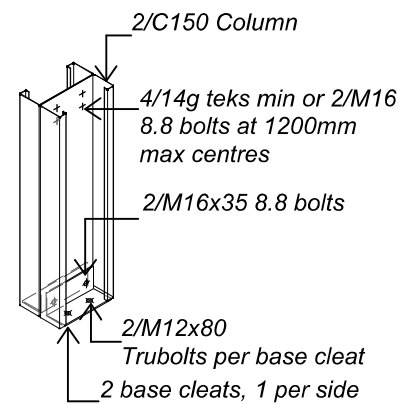
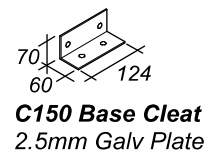
**LOW SIDE HAUNCH BRACKET AND CONNECTION (Detail 01)**



**HIGH SIDE HAUNCH BRACKET AND CONNECTION (Detail 02)**



**BASE CLEAT AND CONNECTION SINGLE COLUMN (Detail 07)**



**BASE CLEAT AND CONNECTION DOUBLE OPEN COLUMN (Detail 08)**

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**NOTES:**

Cold formed C-sections shall comply with AS 4203:1992 and AS/NZS 1252:1996. Buildings may be constructed on concrete floor slab within 7 days with due care not to over tighten fixing anchors. Structure to be maintained in a stable condition with due care not to overstress any part during construction. All dimensions are in millimeters unless otherwise stated. Tek screws and 8.8 bolts to be installed as per manufactures instructions. 8.8 bolts to be fully tensioned by snug tightening then fully tensioned another 1/3 turn rotation of nut. Fly bracing fixed to closest girt/purlin from Eave Purlin, then every second row thereafter. Roof and wall cladding to be fixed as per manufactures instructions. Engineering responsibility only covers items shown in these drawings.

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**BRACKET CONNECTIONS**  
**- C150 Monopitch**

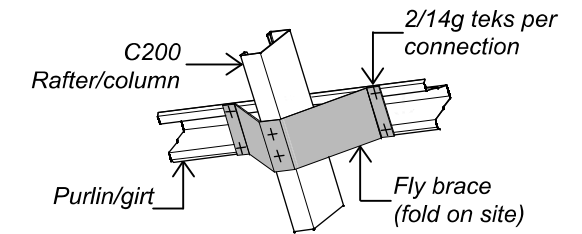
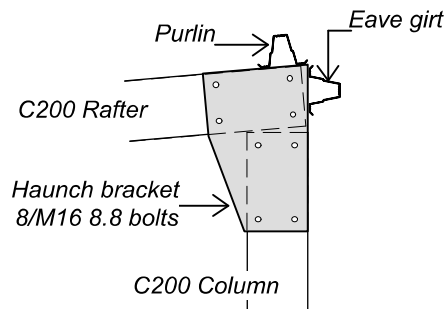
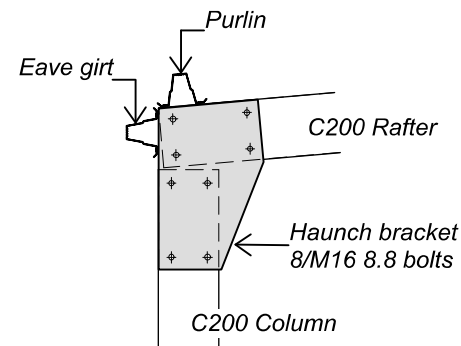
Customer : Arthur Brown Construction  
 Site Address : 27 County Drive

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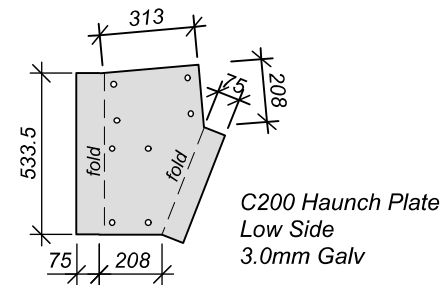
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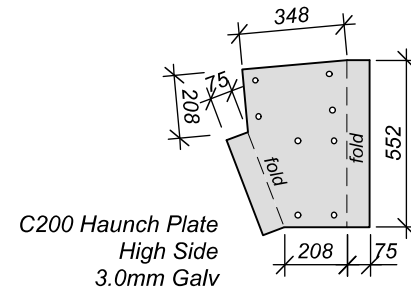




**FLY BRACE CONNECTION (Detail 04)**




**LOW SIDE HAUNCH BRACKET AND CONNECTION (Detail 01)**



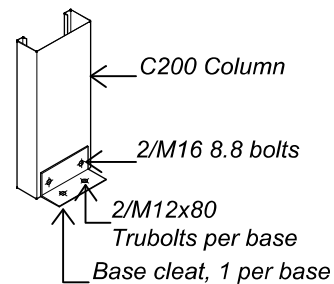
**HIGH SIDE HAUNCH BRACKET AND CONNECTION (Detail 02)**

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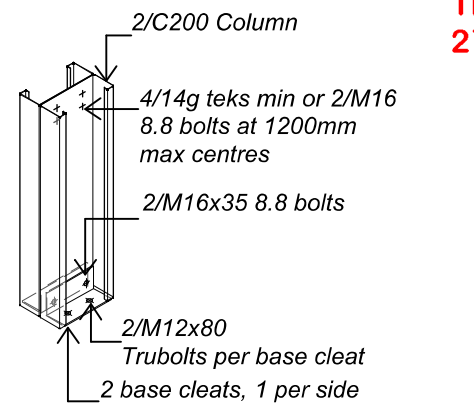
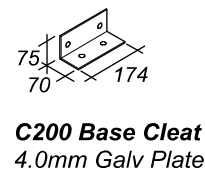
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**BASE CLEAT AND CONNECTION SINGLE COLUMN (Detail 07)**



**BASE CLEAT AND CONNECTION DOUBLE OPEN COLUMN (Detail 08)**

**NOTES:**  
Cold formed C-sections shall comply with AS 4203:1992 and AS/NZS 1252:1996. Buildings may be constructed on concrete floor slab within 7 days with due care not to over tighten fixing anchors. Structure to be maintained in a stable condition with due care not to overstress any part during construction. All dimensions are in millimeters unless otherwise stated. Tek screws and 8.8 bolts to be installed as per manufactures instructions. 8.8 bolts to be fully tensioned by snug tightening then fully tensioned another 1/3 turn rotation of nut. Fly bracing fixed to closest girt/purlin from Eave Purlin, then every second row thereafter. Roof and wall cladding to be fixed as per manufactures instructions. Engineering responsibility only covers items shown in these drawings.

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## BRACKET CONNECTIONS - C200 Monopitch

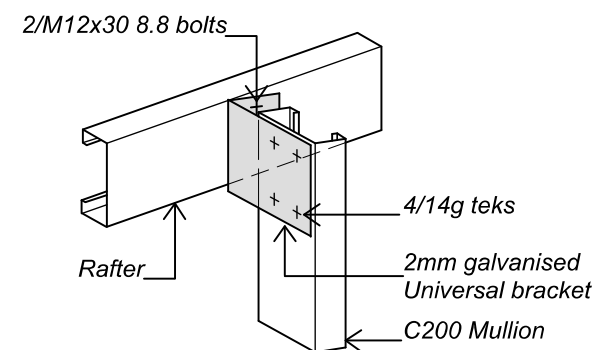
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Site Address : 27 County Drive

drawing no.  
A21

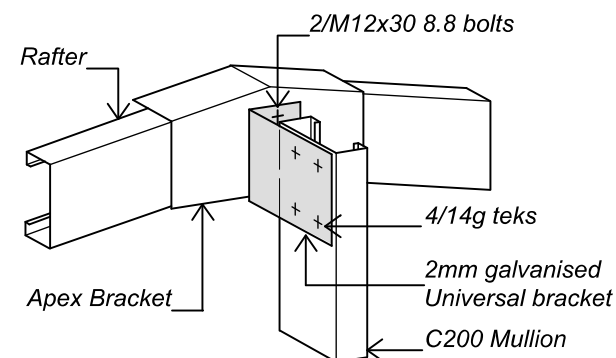
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page no.

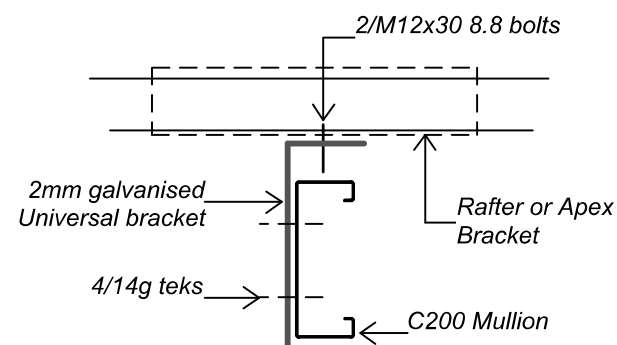
**KIWISPAN**



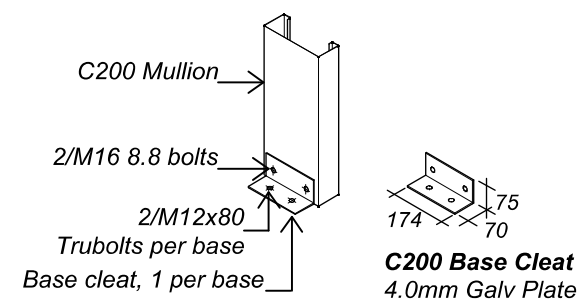
**MULLION/RAFTER CONNECTION**



**MULLION/APEX CONNECTION**




**MULLION TOP CONNECTION (Detail 2b)**



**MULLION BASE (Detail 2a)**

**C200 MULLION (Detail 2)**

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original size  
**A3**

## MULLION CONNECTIONS

Customer : Arthur Brown Construction  
Site Address : 27 County Drive


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**A41**

date:

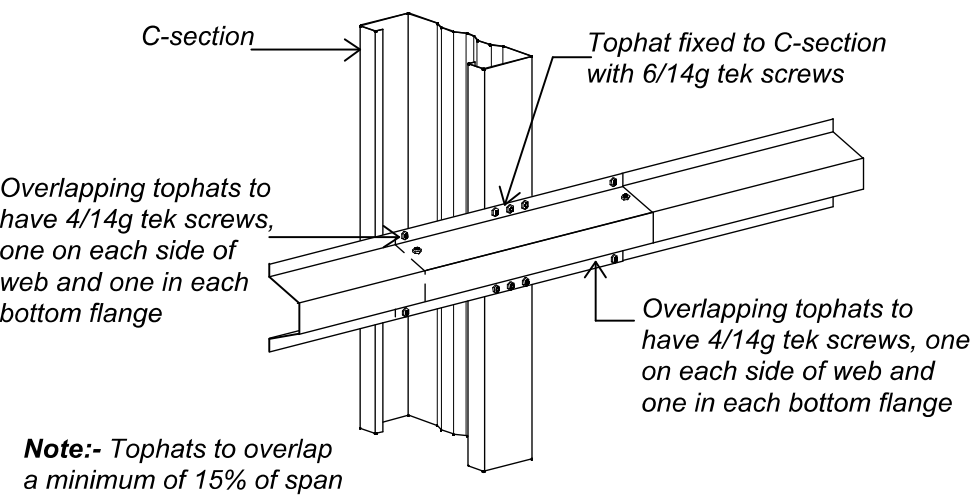
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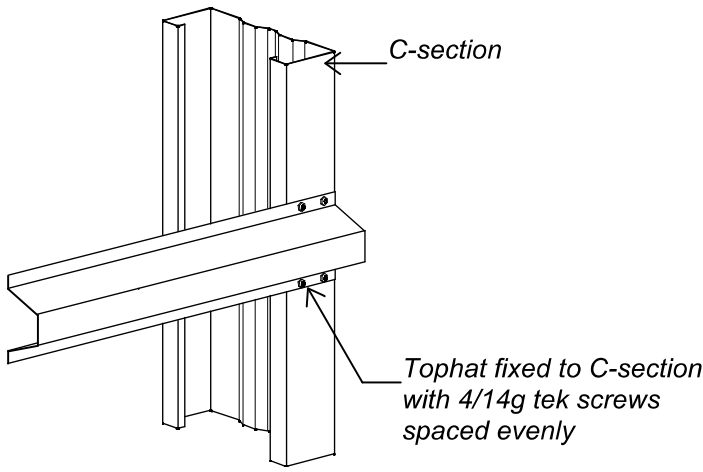
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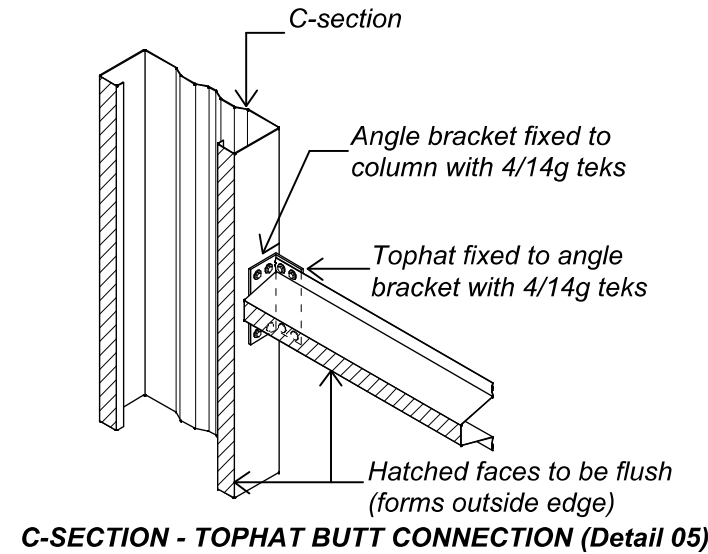
Kerry McCollum  
CPEng 184622  
DESIGN STATION LIMITED



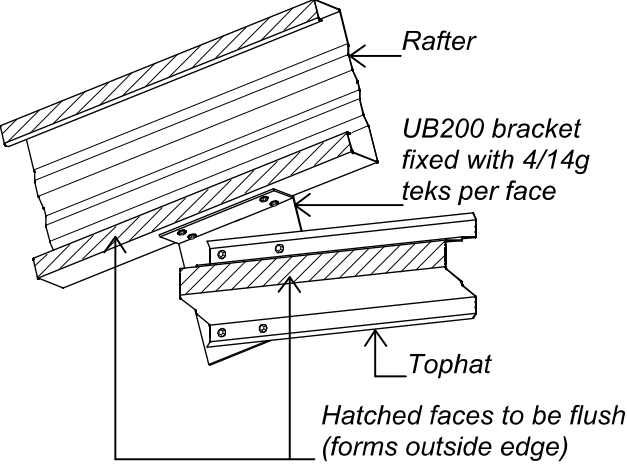
SINGLE C-SECTION - LAPPED TOPHAT (Detail 03)



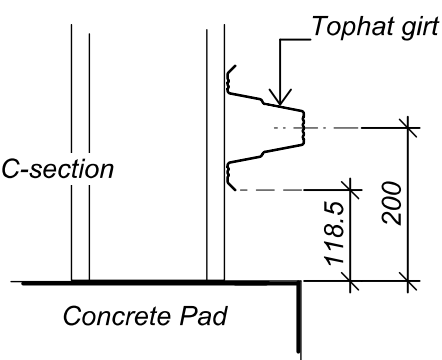
SINGLE C-SECTION - SINGLE TOPHAT (Detail 04)



C-SECTION - TOPHAT BUTT CONNECTION (Detail 05)

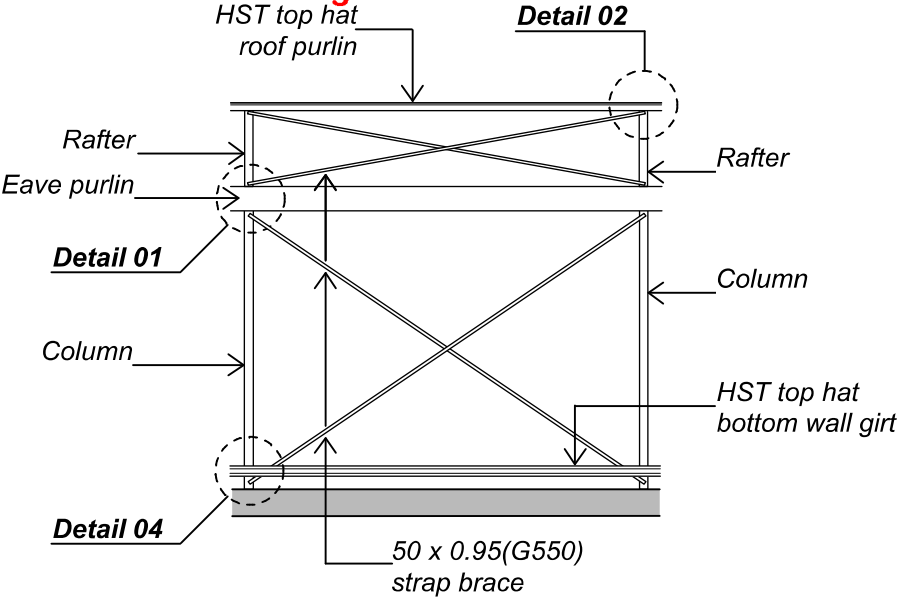


RAFTER/GIRT CONNECTION (Detail 06)

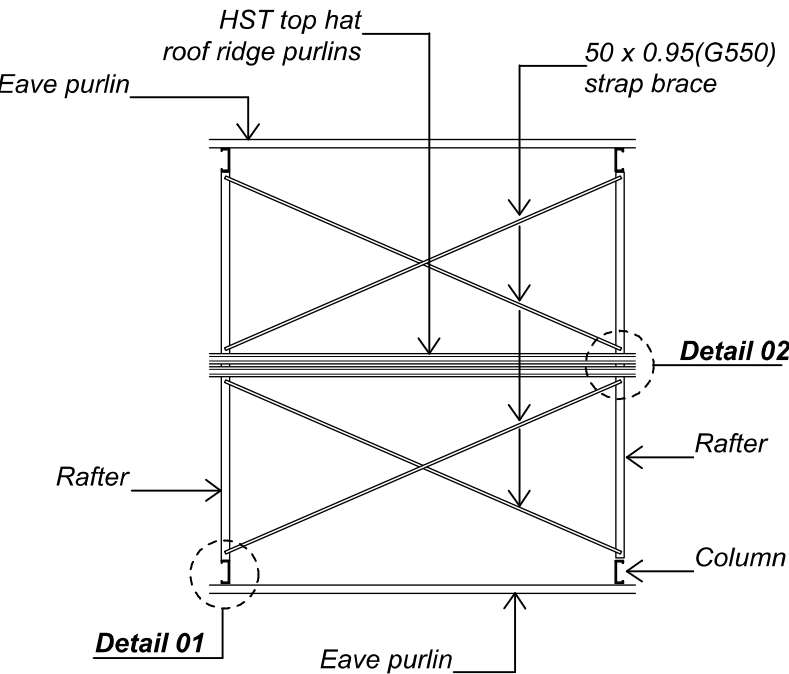


GIRT LOCATION (Detail 07)  
Typical distance to first tophat girt from Finished Floor Level

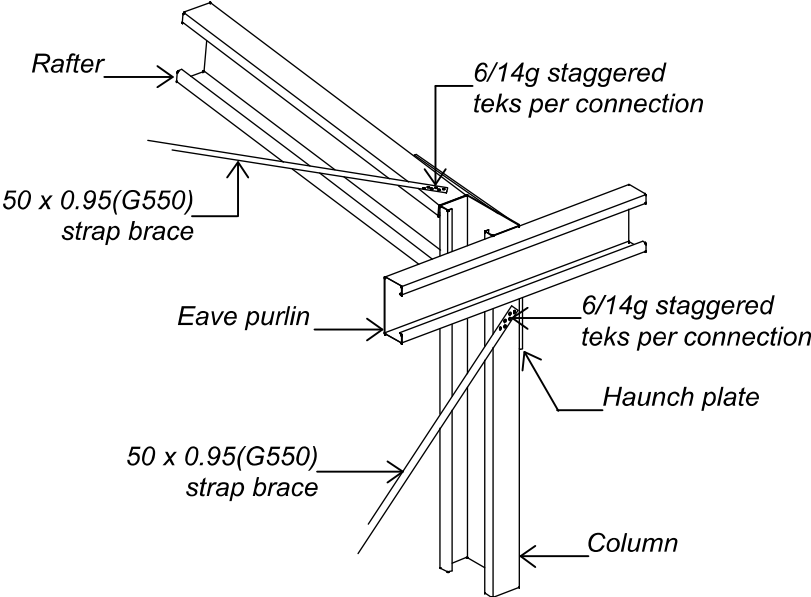
© copyright KiwiSpan 2017 Ltd



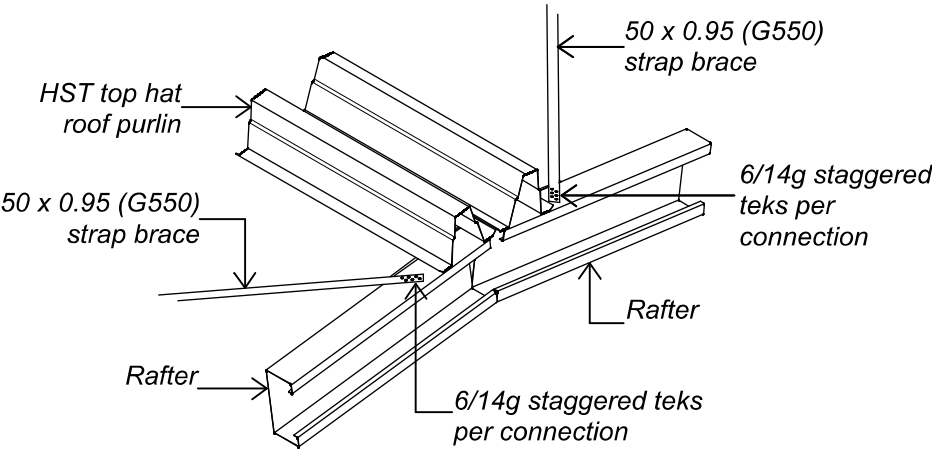
**WALL BRACE CONNECTIONS** Note: Additional wall girts removed for clarity



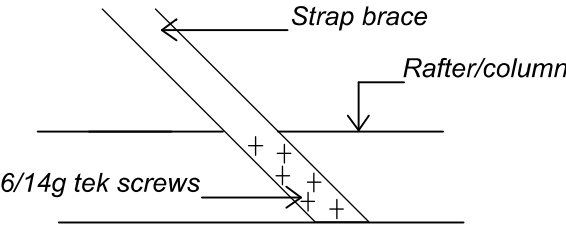
**ROOF BRACE CONNECTIONS** Note: Additional roof purlins removed for clarity



**BRACE CONNECTION TO COLUMN AND RAFTER (Detail 01)**




**BRACE CONNECTION TO RAFTERS AT APEX (Detail 02)**

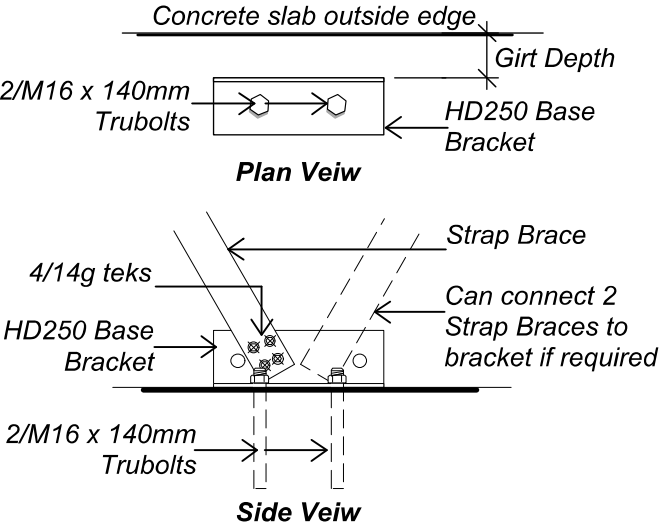


**STAGGERED TEK PATTEN (Detail 03)**

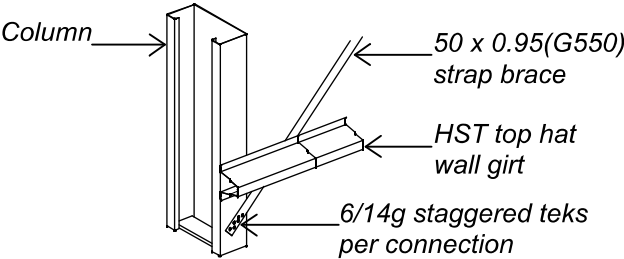
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**BRACE BRACKET DETAIL (Detail 05)**



**BRACE CONNECTION TO FOOT OF COLUMN (Detail 04)**

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file no.  
B2  
231019  
original size  
A3

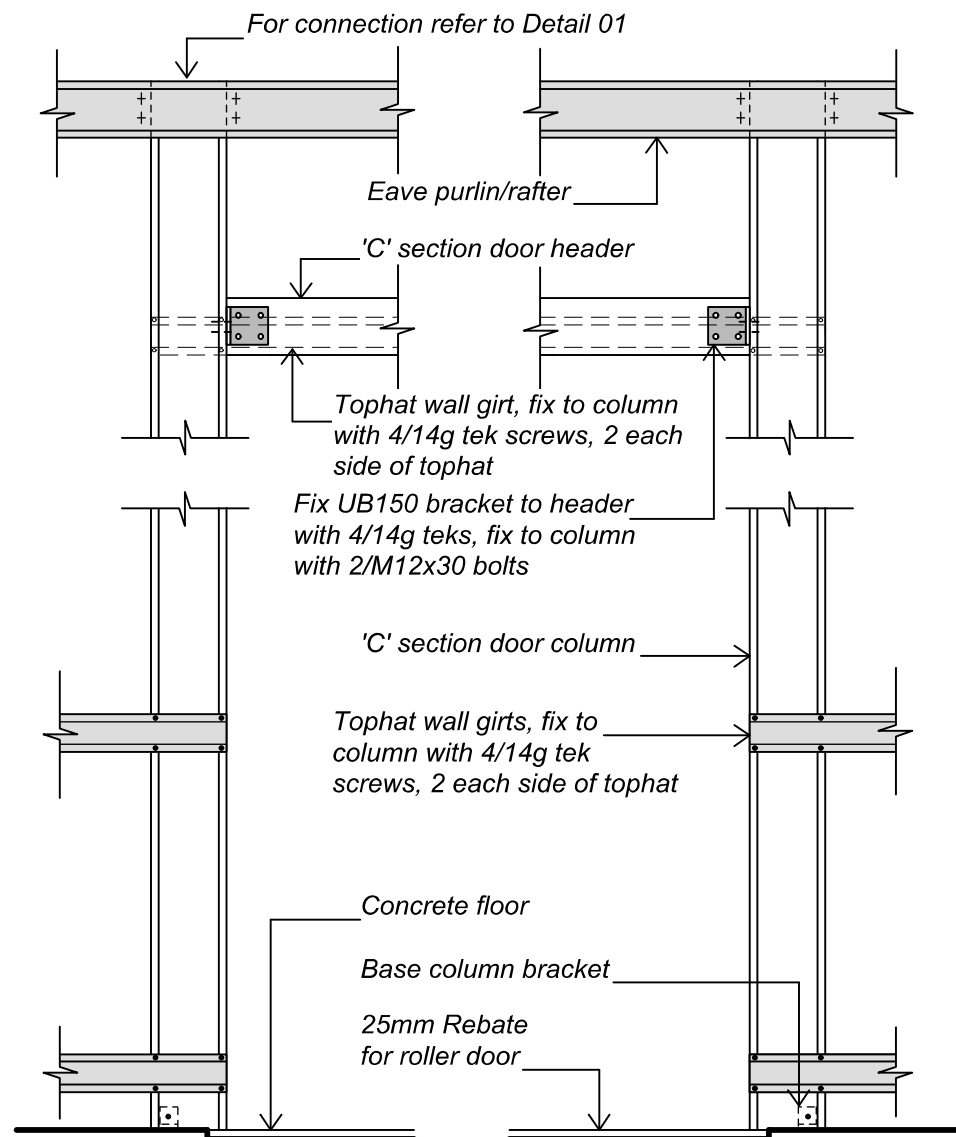
**STRAP BRACE CONNECTION**  
**(50 x 0.95mm G550 STRAP BRACING)**

Arthur Brown Construction  
27 County Drive

drawing no.  
B2  
date:  
page no.



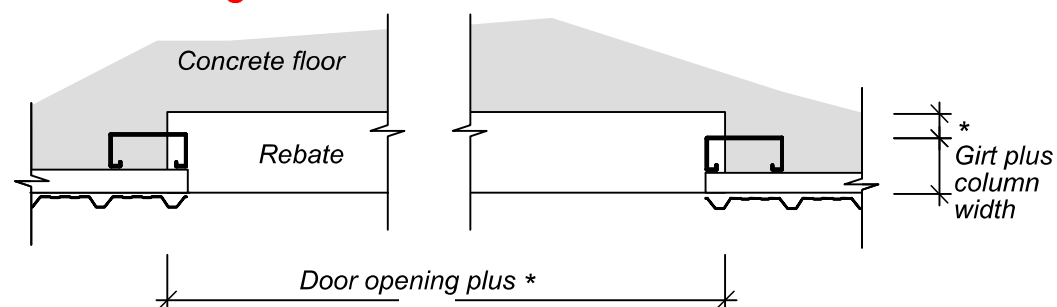




**ELEVATION VIEW**

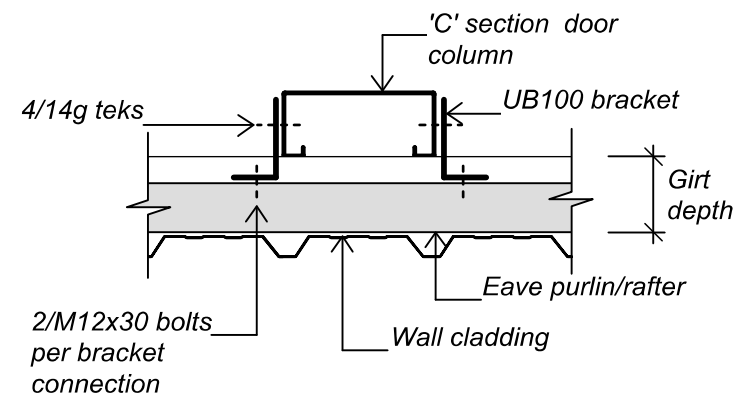
**STDC APPROVED - 200394.02**

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27/09/2021 - Page 18 of 32**

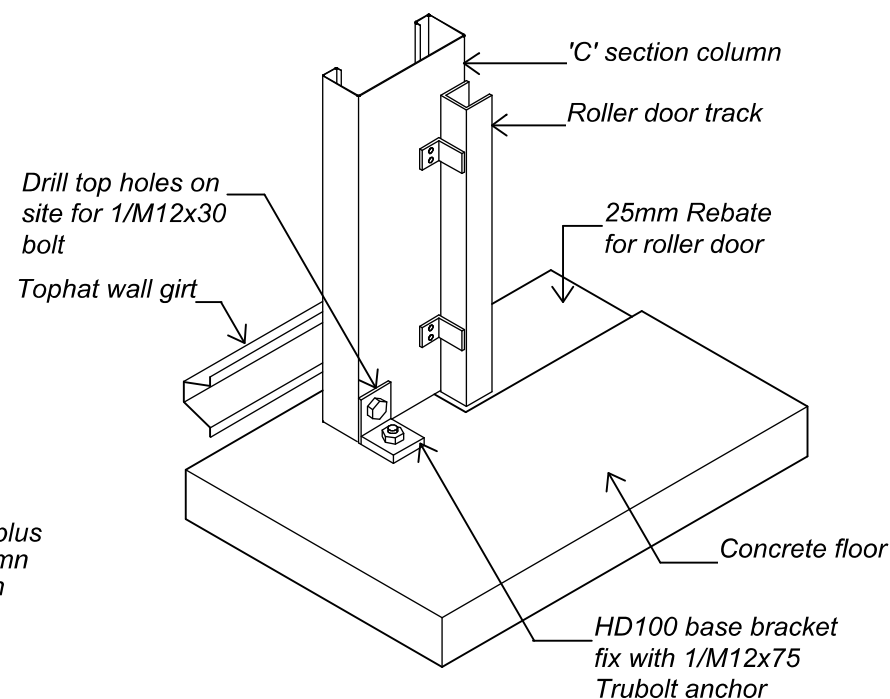
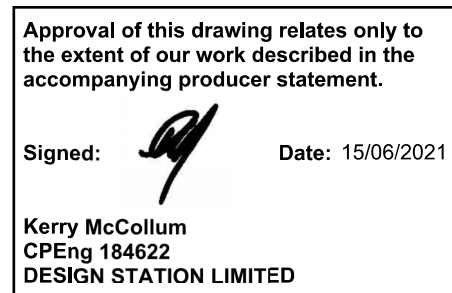


**PLAN VIEW**

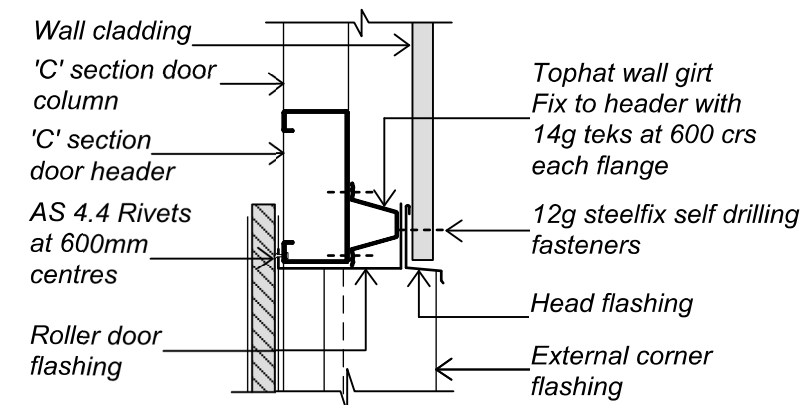
\* - as per manufacturers specifications



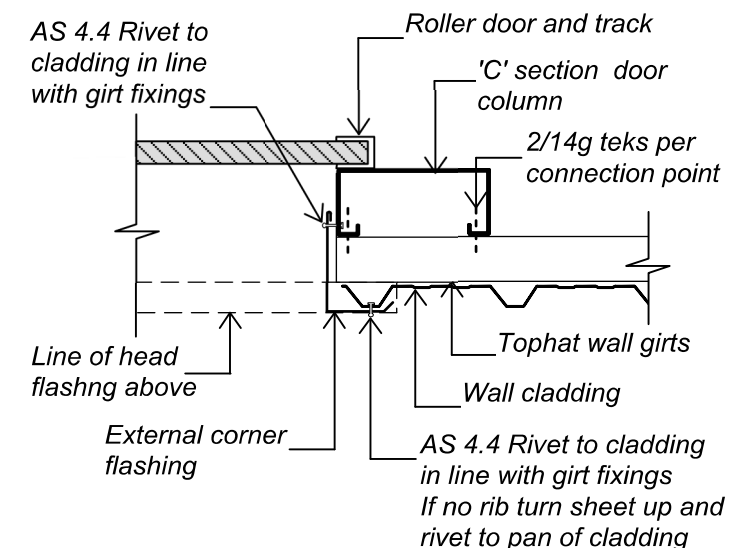
**EAVE PURLIN/RAFTER FIXING (Detail 01)**



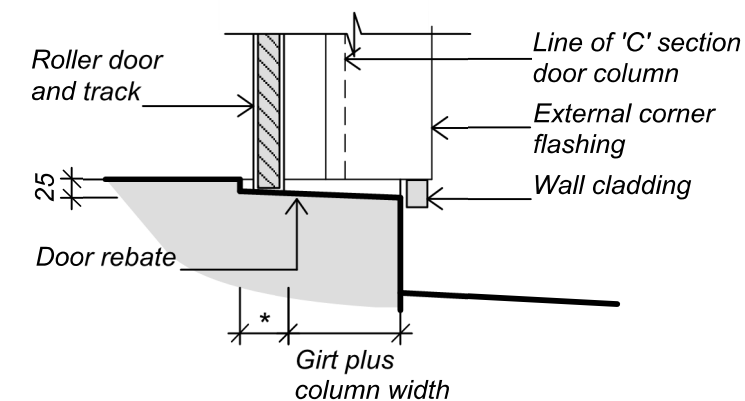
**ROLLER DOOR BASE BRACKET (Detail 02)**



**ROLLER DOOR HEAD (Detail 03)**



**ROLLER DOOR JAMB (Detail 04)**



**ROLLER DOOR REBATE (Detail 05)**

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file no.  
B30

231019

original size  
**A3**

## C150 ROLLER DOOR COLUMN AND FLASHING DETAILS

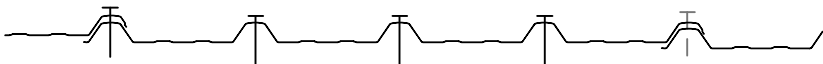
Customer : Arthur Brown Construction  
Site Address : 27 County Drive

drawing no.  
**B30**

date:

page no.

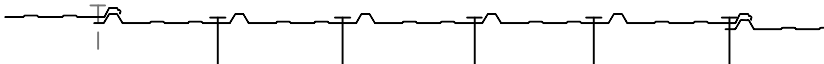





**End of Sheet Fixing Pattern** - Fixing to end purlin, 4 per purlin:  
every rib



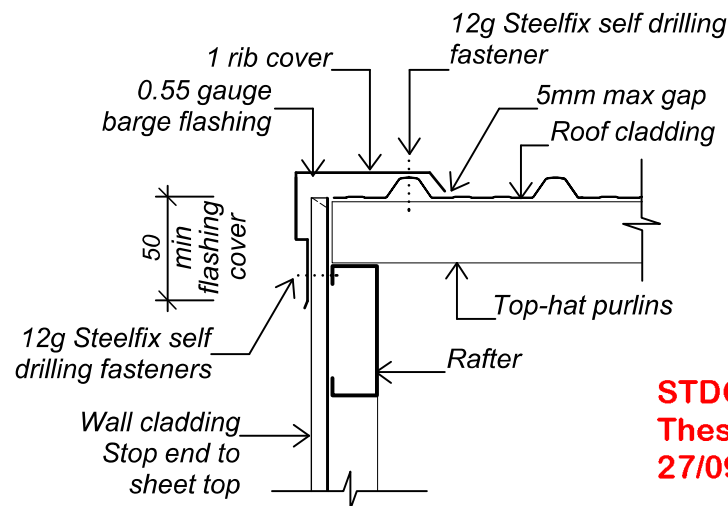
**Mid Sheet Fixing Pattern** - 4 per purlin: every rib  
**Fixing** - 12g Steelfix self drilling fasteners  
**Purlin Spacing** - End span 960mm max, intermediate span 1450mm max  
**ROOF SHEET FIXING - TRIMRIB 0.40BMT**



**Fixing Pattern** - In pan beside rib - 5 per girt: every pan  
**Fixing** - 12g Steelfix self drilling fasteners  
**Girt Spacing** - 1450mm max  
**WALL SHEET FIXING - SLIMCLAD 0.40BMT**

	file no. B41	ROOF AND WALL FIXING High and Very High Wind Zone	drawing no. B41	
	231019		date:	
	original size A3	Customer : Site Address : Arthur Brown Construction 27 County Drive	page no.	

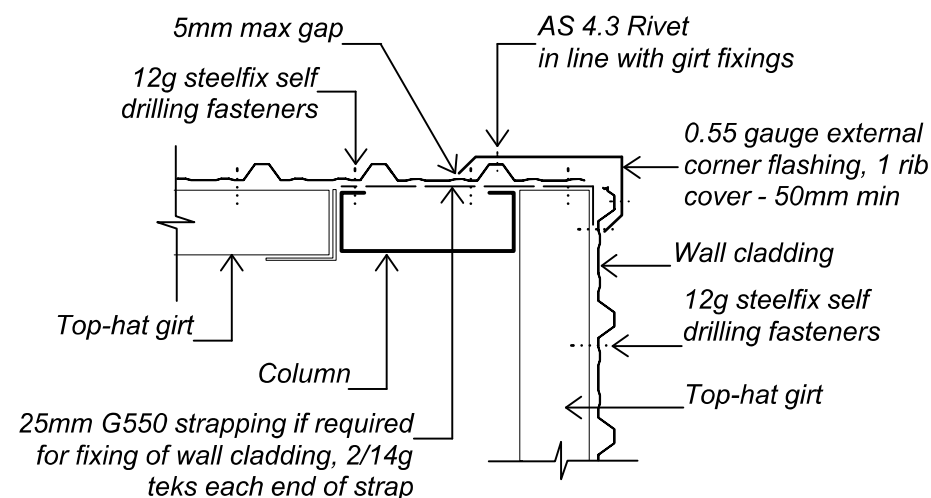




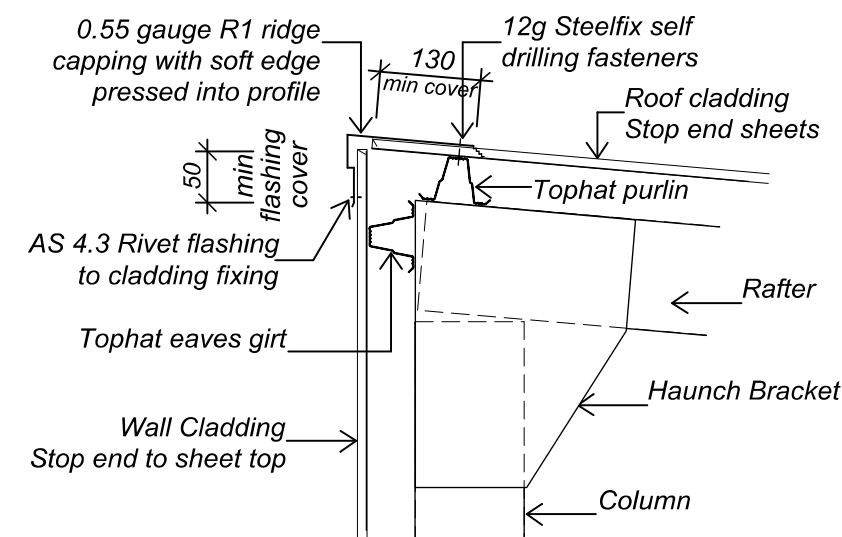
**STDC APPROVED - 200394.02**

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27/09/2021 - Page 20 of 32**

**BARGE FLASHING (Detail 02)**

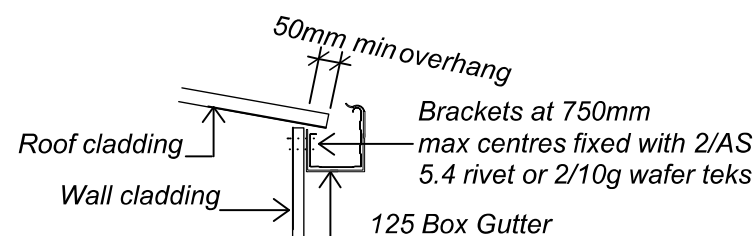


**CLAD WALL CORNER FLASHING (Detail 05)**



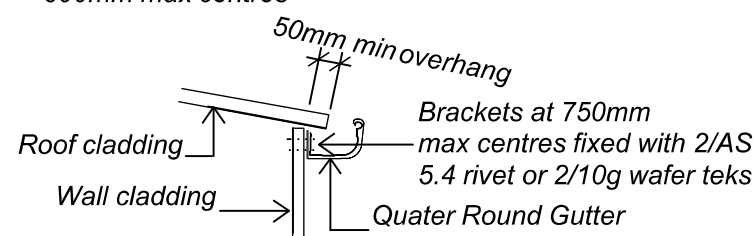
**Note:- 200mm denotes min flashing cover over roof cladding**

**APEX FLASHING (Detail 06)**



**GUTTER VERGE (Detail 07)**

**Note:- For Snow Loading fix brackets and snow straps at 600mm max centres**

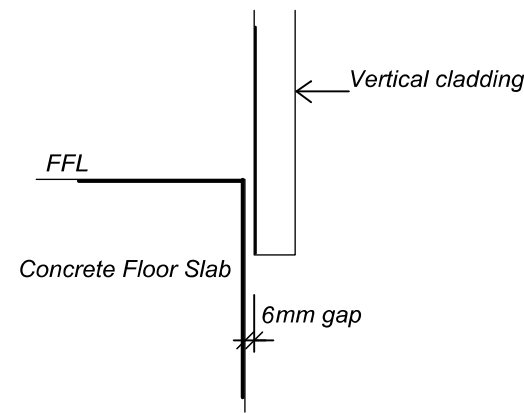


**GUTTER VERGE (Detail 07)**

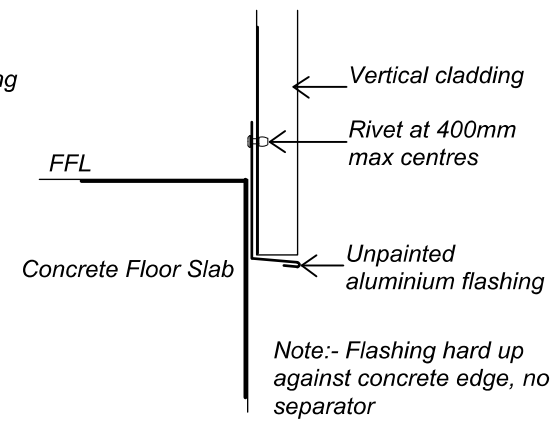
**Note:- For Snow Loading fix brackets and snow straps at 600mm max centres**

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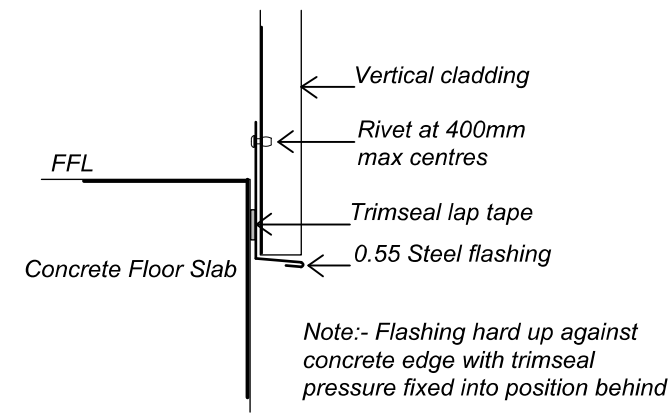
	file no. B71	<b>FLASHING AND FIXING DETAILS - LOW, MEDIUM AND HIGH WIND ZONES</b>	drawing no. <b>B71</b>	
	231019		date:	
	original size <b>A3</b>	Customer : Arthur Brown Construction Site Address : 27 County Drive	page no.	



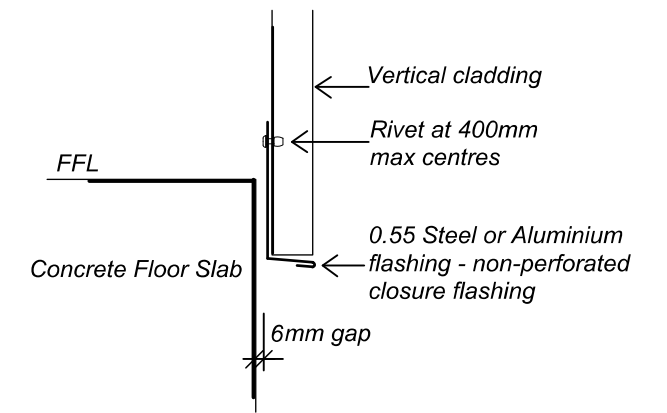
**6mm GAP (Detail 01)**



**ALUMINIUM FLASHING ONLY (Detail 02)**



**0.55 STEEL FLASHING AND TRIMSEAL (Detail 03)**



**0.55 STEEL FLASHING FOR LINED AND HABITABLE BUILDINGS (Detail 04)**

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**27/09/2021 - Page 21 of 32**

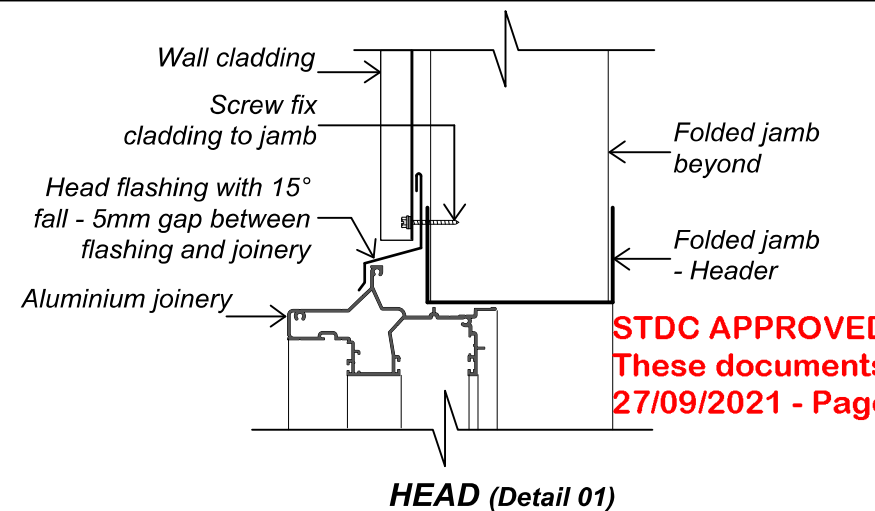
**Note:-**

- Unlined Buildings - All Details

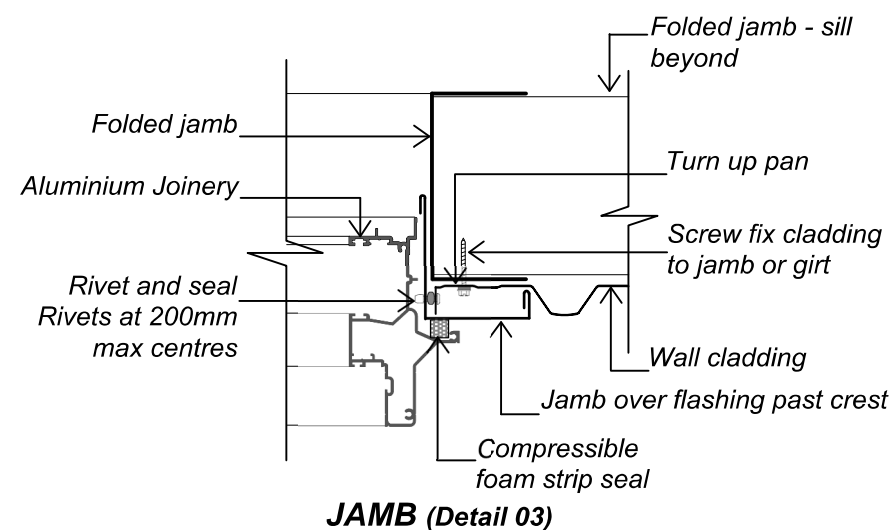
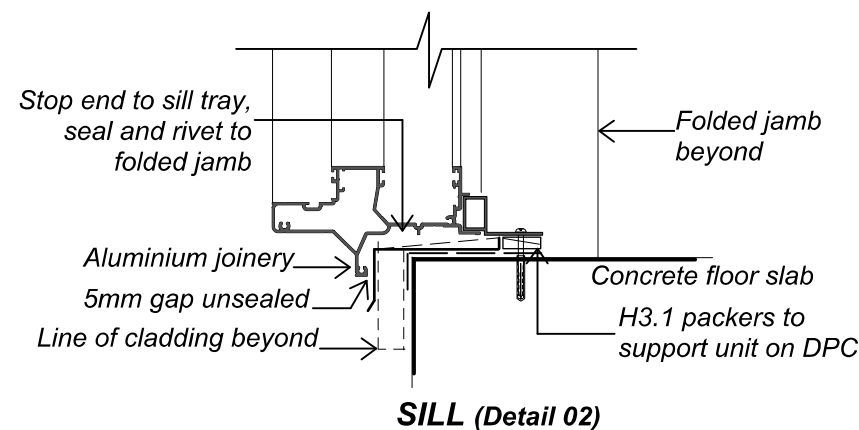
- Lined Building - Detail 04

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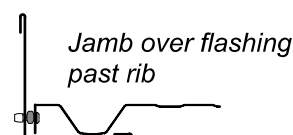
	file no. B80	Acceptable Cladding Base Barrier	drawing no. A5	
	231019		date:	
	original size A3	Customer : Arthur Brown Construction Site Address : 27 County Drive	page no.	



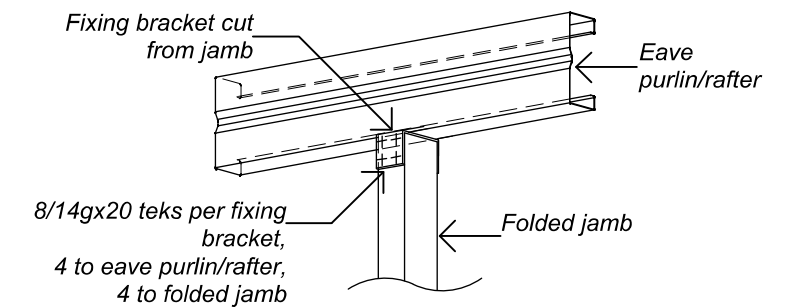
**STDC APPROVED - 200394.02**  
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**27/09/2021 - Page 22 of 32**



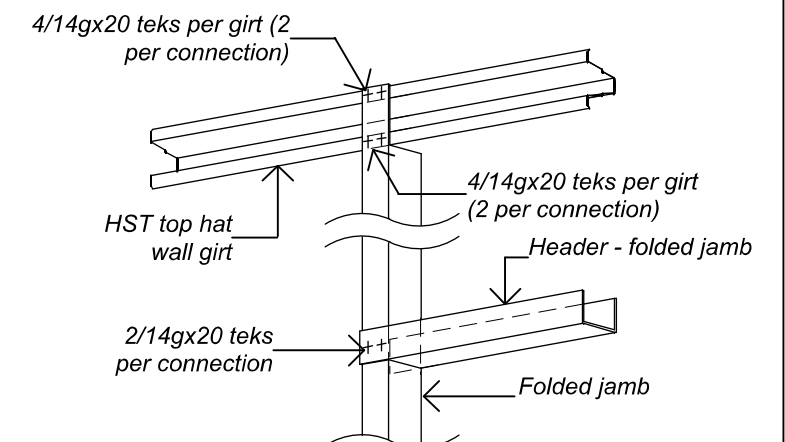
**JAMB (Detail 03)**



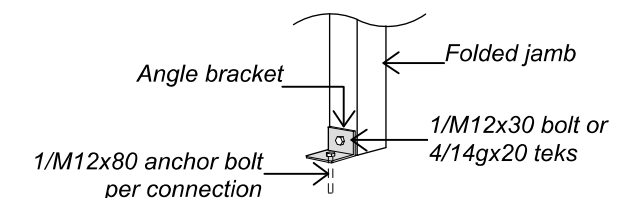
**ALTERNATIVE JAMB FLASHING**



**DOOR JAMB TO EAVE PURLIN/RAFTER CONNECTION (Detail 04)**




**DOOR HEADER FIXING/WINDOW JAMB TO GIRT CONNECTION (Detail 05)**



**FOLDED JAMB TO FLOOR CONNECTION (Detail 06)**

Approval of this drawing relates only to the extent of our work described in the accompanying producer statement.

Signed:  Date: 15/06/2021

Kerry McCollum  
CPEng 184622  
DESIGN STATION LIMITED

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file no.  
C10

231019

original size  
**A3**

## RANCHSLIDER/ENTRANCE DOOR FLASHING AND FIXING DETAILS (UNLINED)

Customer : Arthur Brown Construction  
Site Address : 27 County Drive

drawing no.  
**C10**

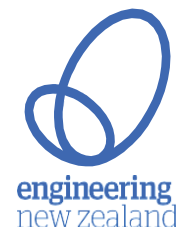
date:

page no.





# CERTIFICATE OF DESIGN WORK MEMORANDUM FROM LICENSED BUILDING PRACTITIONER



## Section 300 and Section 45, Building Act 2004

### The Building

Street address 27 County Drive

Suburb

Town/City HAWERA

Postcode

Building consent no.

### The Owner

Name(s) Arthur Brown Construction

Email hawera@arthurbrown.co.nz

Address 108 Wilson Street - Hawera

**STDC APPROVED - 200394.02**

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**27/09/2021 - Page 23 of 32**

Phone 06-2785199

## Basis for providing this memorandum

I am providing this memorandum in my role as the specialist designer who carried out or supervised specific Primary structure elements of restricted work (RBW) design work as described in this memorandum. Other designers will provide memoranda covering the remaining RBW design work. Refer to the attached PSI.

## Identification of restricted building work (RBW) design work

I, Andrew Fraser, carried out or supervised the following RBW design work:

### Primary structure: B1

Design work that is RBW	Description (as required) and reference to plans and specifications	Carried out or supervised
Foundations and subfloor framing	<input checked="" type="checkbox"/> Foundation ground improvements for rib raft floor as designed by others	Supervised
<del>Retaining walls</del>	<input type="checkbox"/>	.
<del>Beams</del>	<input type="checkbox"/>	.
<del>Portal</del>	<input type="checkbox"/>	.
<del>Bracing</del>	<input type="checkbox"/>	.
<del>Other (primary)</del>	<input type="checkbox"/>	.

Note: SED = Elements subject to Specific Engineering Design outside of the scope of NZS 3604:2011, unless otherwise noted

Initial: \_\_\_\_\_

Date: 25 November 2020

## Waivers and modifications

Are waivers or modifications of the Building Code required? No

If yes, please provide details of the waivers or modifications:

Building Code Clause	Waiver/modification required
NA	NA

## Issued by

Name	Andrew Fraser	Design entity/company	Red Jacket
Chartered status	CPEng	Chartered no.	96197
Email	info@redjacket.nz	Website	www.redjacket.nz
Phone (daytime)	06 759 0999	Phone (after hours)	
Mobile	027 257 9970		
Postal address	PO Box 904, New Plymouth, 4340		
Physical address	3 Davidson Street, New Plymouth		

## Declaration

I, Andrew Fraser, LBP state that I have applied the skills and care reasonably required of a competent professional in carrying out or supervising the RBW described in this memorandum and that based on this, I certify that the RBW described in this memorandum:

- Complies with the Building Code; or
- Complies with the Building Code subject to any waiver or modification or the Building Code described in this memorandum.

Signature:

Date: 25 November 2020

**RESIDENTIAL BUILDING  
27 COUNTY DRIVE  
HAWERA**

**STRUCTURAL CALCULATIONS**

File Ref. CAL-4104-01

REV.	DATE	ISSUED FOR
A	25/11/2020	Issued for Building Consent

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**27/09/2021 - Page 24 of 32**



Date: 25/11/2020	Job No. 4104
By: W ADLAM	Page No. 2 of 16

Job Name:  
27 COUNTY DRIVE HAWERA

File Ref.  
CAL-4104-01

## Scope of Work

Structural design for ground improvements to support the residential garage on ribraft floor foundation

## Basis of Design

- ☒ AS/NZS 1170 Loading Standard
- ☐ ~~NZS 3404 Steel Structures~~
- ☐ ~~NZS 3603 Timber Structures~~
- ☐ ~~NZS 3101 Concrete Structures~~
- ☐ ~~NZS 4320 Reinforced Concrete Masonry Structures~~
- ☒ NZS 3604 Timber-Framed Buildings
- ☒ B1/VM4
- ☐

## References

- Arch Drawings by Mannor Build 27 October 2020
-



Job Title 27 COUNTY DRIVE - HAWERA.

- RESIDENTIAL GARAGE IS TO BE LOCATED ON GROUND WHICH DOESN'T MEET NZS3604 'GOOD GROUND' REQUIREMENTS

- IT IS PROPOSED TO INSTALL 200mm THICK HARDFILL RAFT UNDER THE SLAB TO SUPPORT RIBRAFT SLAB AND REDUCE BEARING PRESSURE ON SUBGRADE.

### LOADS

GARAGE FLOOR

$$G = 2.5 \text{ kPa}$$

$$G_{SOL} = 0.5 \text{ kPa}$$

$$Q = 2.5 \text{ kPa} \times 13 \text{ kN}$$

- 13 kN point load will govern.

- ASSUME POINT LOAD WILL BEAR ON 2 x 1.0m OF RIBS  $A_k = 2 \times 0.1 = 0.2 \text{ m}^2$ .

- LOAD COMBINATIONS.

$$\begin{aligned} \text{ULS} &= 1.2G + 1.5Q = 1.2 \times 3 \text{ kPa} + 1.5 \times 13 \text{ kN} \\ &= 3.6 \text{ kPa} + 19.5 \text{ kN} \\ &= 23.1 \text{ kN} \end{aligned}$$

$$\therefore \frac{23.1}{0.2 \text{ m}^2} = q_{ULS} = 116 \text{ kPa} \text{ ULS.}$$

$$\begin{aligned} \text{SLS} &= G + 0.4Q = 3.6 + 0.4 \times 13 \\ &= 8.8 \text{ kN} \\ &\quad \underline{0.2} \end{aligned}$$

$$q_{SLS} = 44 \text{ kPa}$$



Job Title

27 COUNTY DRIVE, HAWERA.

### CURRENT SUBGRADE BEARING CAPACITY

FROM TST-4101-1 SCALA AVERAGE 75mm/blow.

REFER ALLOWABLE BEARING PRESSURE STOCKWELL  
NEXT PAGE.

$$q_{ult} = \frac{3 \times 45 \text{ kPa}}{2} = 68 \text{ kPa}.$$

TRY 300 THICK LAP65 RAFT WITH 100 THK  
RIB  $B = 0.1$

$$\frac{q}{q_{ult}} = 0.15 \quad \therefore q_{ult} \text{ AT SUBGRADE} = 110 \times 0.15 = 17.4 \text{ kPa} < q_{ult}.$$

$\therefore$  OK.

$$q_{ult} \text{ AT SUBGRADE} = 44 \times 0.15 = 6.6 \text{ kPa}.$$

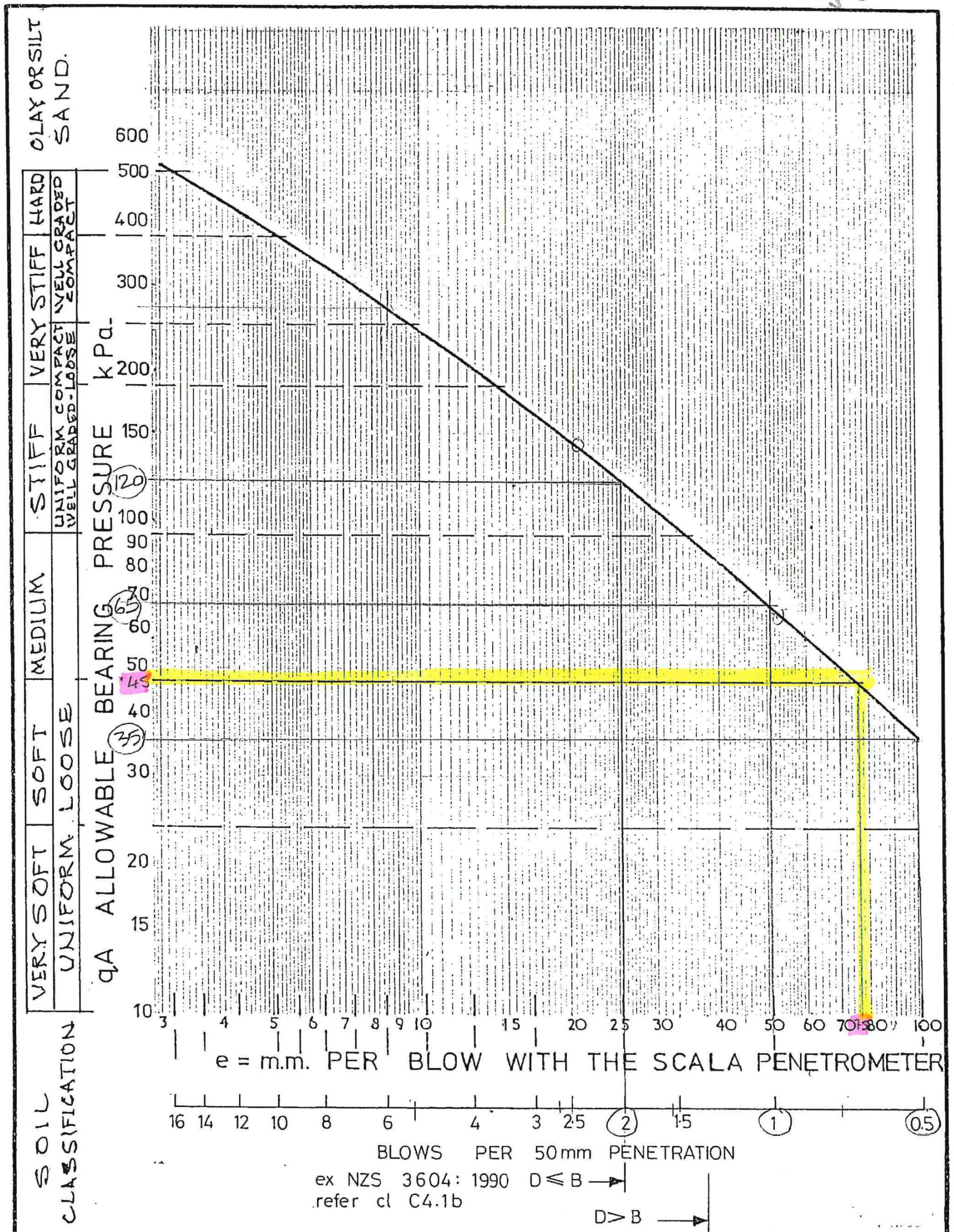
$\therefore$  OK.

USE 300 THK HARD FILL RAFT.

- REFER MARKED UP PLANS ATTACHED.

- SUITABLY QUALIFIED ENGINEER TO INSPECT  
CLEARED SUBGRADE AND FINAL COMPACTION.





**redjacket**  
Consulting Engineers

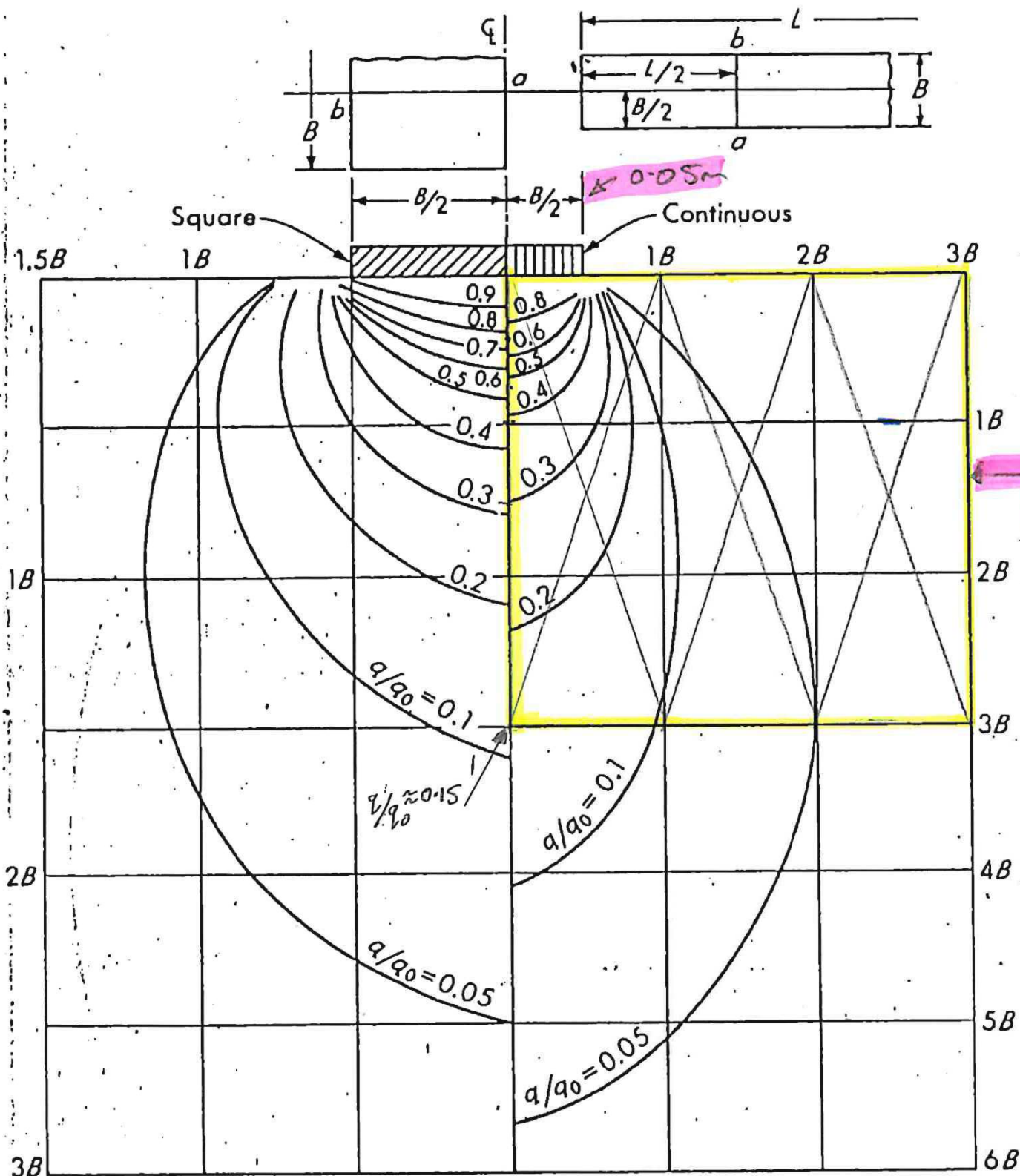
Determination of allowable  
bearing pressure under  
small structures

ref. N.Z. Engineering 15 June 1977  
M.J. Stockwell



P.34  
125mm/BLOW  
CBR 2/3.

# 156 FOUNDATION ANALYSIS



$\sim 20 \text{ kPa}$   
TYPE 100 kPa  
OR  $60 \text{ kN}/0.1 \text{ m}^2$   
 $= 600 \text{ kPa}$   
 $\frac{600}{28} = 21.4$   
 $\frac{21.4}{20} = 1.07$   
 $\frac{1.07}{3} = 0.36$   
 $3B = 1.0 \text{ m}$

300mm COMPACTED  
AP65 HARDFILL

Figure 5-6. Pressure isobars based on the Westergaard equation for square and long continuous footings of dimension  $B \times B$  or  $B \times L$ . Values for the continuous footings are at the point  $L/2$  from the end. Chart constructed from Fig. 5-5 ( $\mu = 0$ ). Applicable along line  $ab$  as shown.

$AB$  scale shown on the chart, and thus the chart includes only 160 of the 200 units used to establish the influence value.

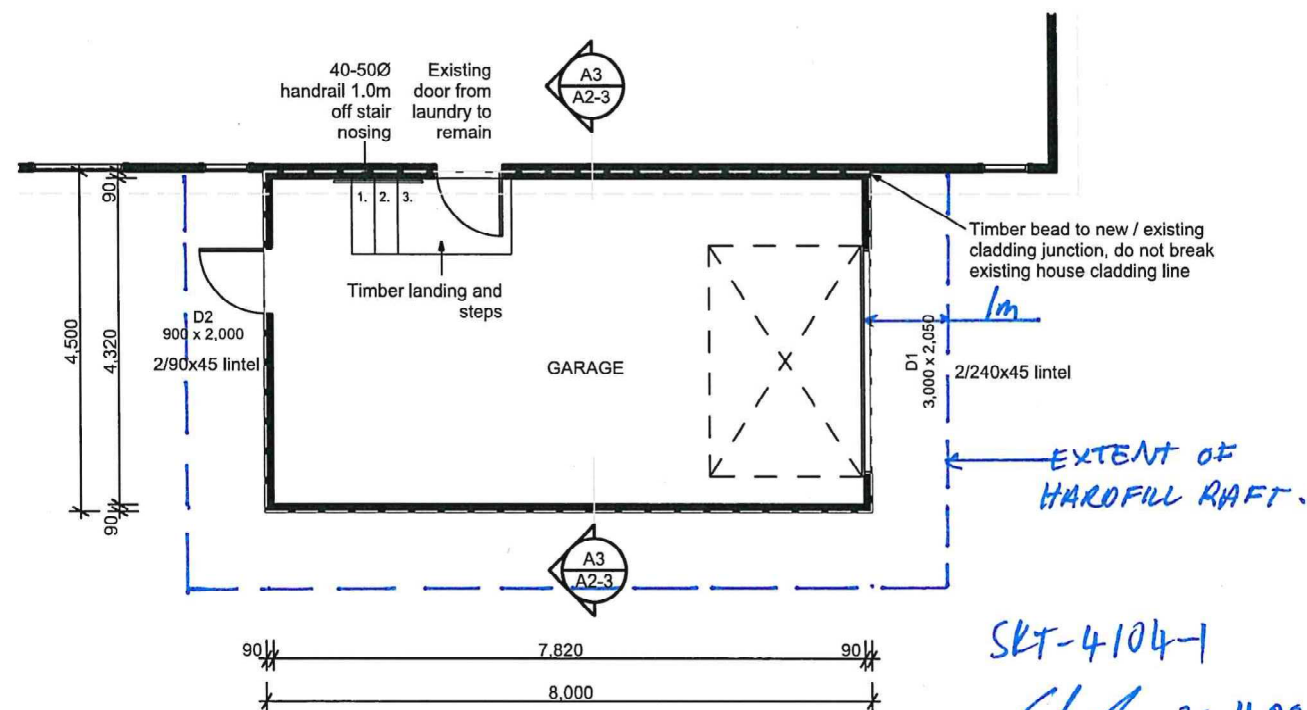
Figure 5-6 is a set of isobars prepared from Fig. 5-5 to obtain stresses at a point beneath continuous and square foundations. Figure 5-5 may be used for round contact areas.

A numerical procedure may be used to solve Eq. (5-8) on the computer in a similar manner to the Boussinesq equation.

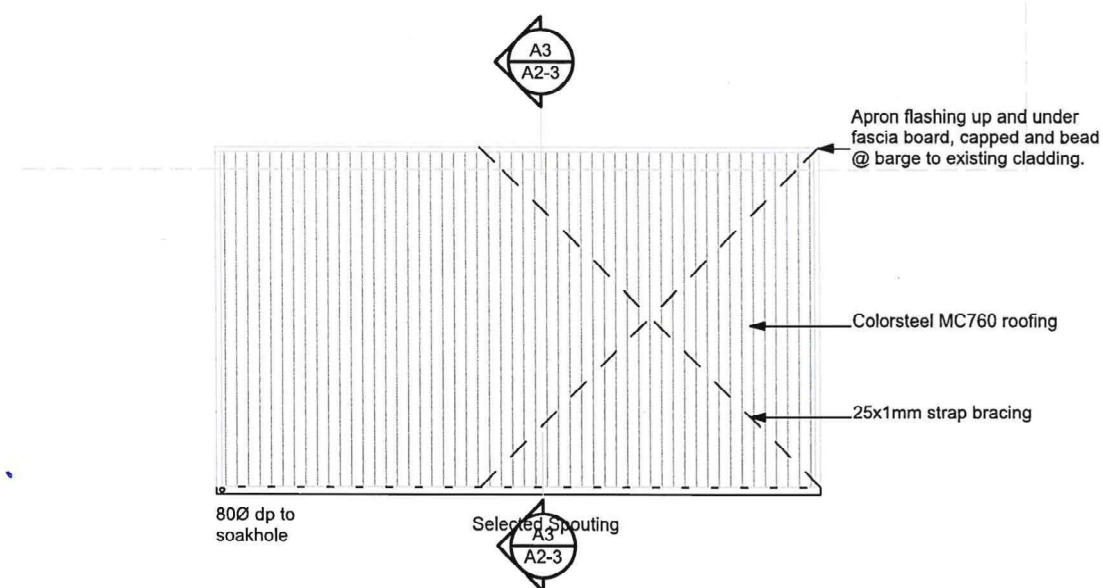
In comparing the Boussinesq and Westergaard methods for vertical stresses, one finds that

1. At small  $r/z$  (close to footing) the Boussinesq equation gives larger stress intensity.
2. At  $r/z$  about 1.8 both values are approximately equal.
3. At  $r/z$  greater than 1.8 the Westergaard equation gives larger stresses.

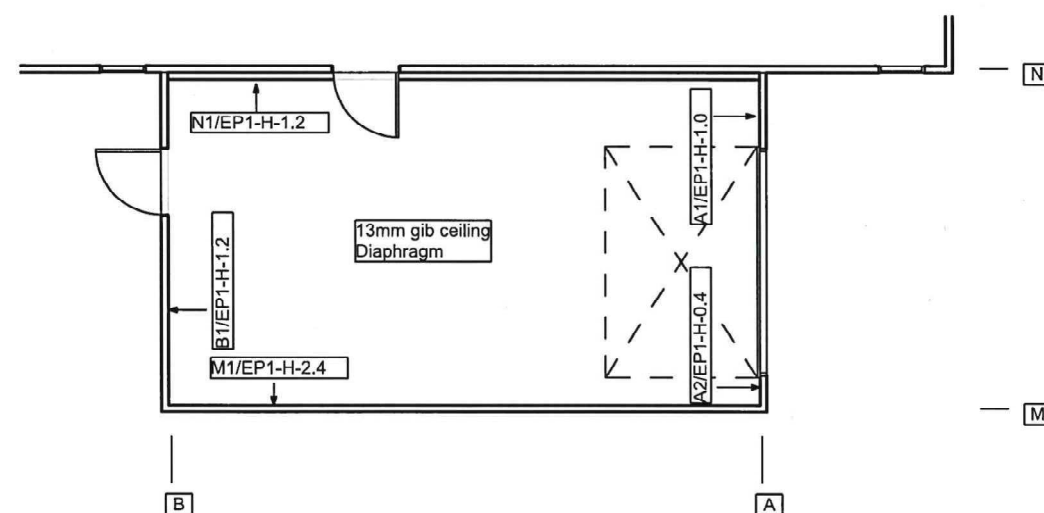




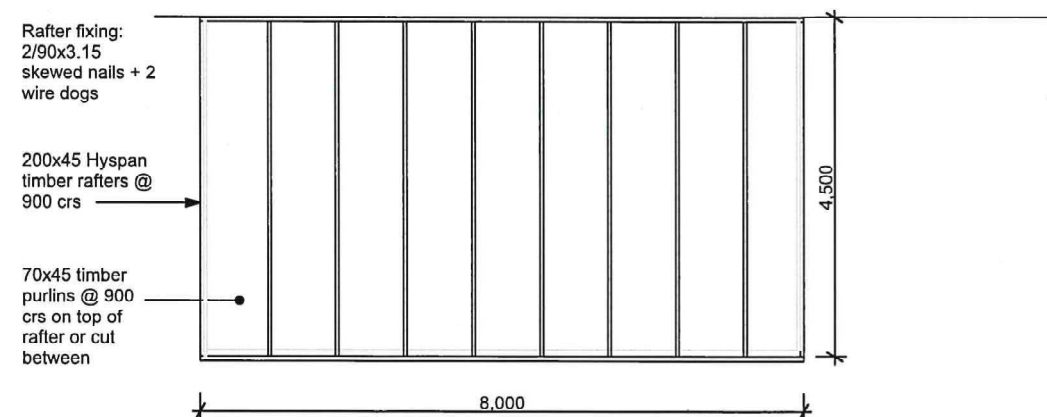
FLOOR PLAN  
Scale 1:100



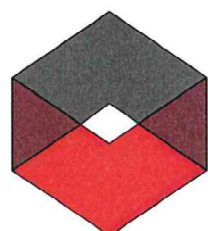
ROOF PLAN  
Scale 1:100



BRACING PLAN  
Scale 1:100



ROOF FRAMING PLAN  
Scale 1:100



**NEW PLYMOUTH**  
40 Ocean View Parade | New Plymouth  
t: + 64 6 757 5842  
FREECALL: 0800 MANORGROUP  
www.manorbuild.co.nz | e: sales@manorbuild.co.nz

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#Notes

client:  
**LOWE**

project:  
**RELOCATE PERMIT**

design by: Manor Build

scale: As Noted

date: 27/10/2020

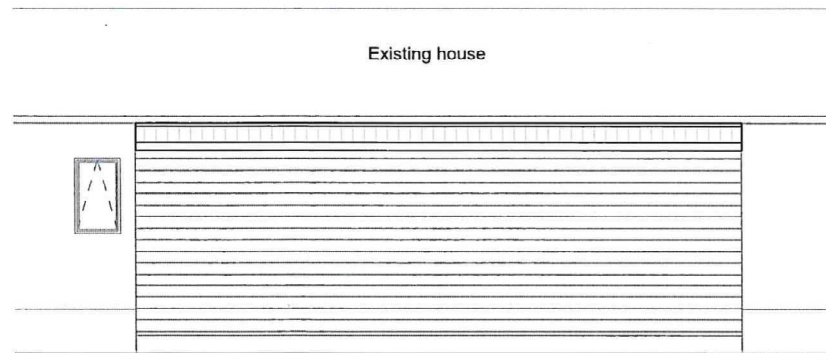
**PLANS**

job no:

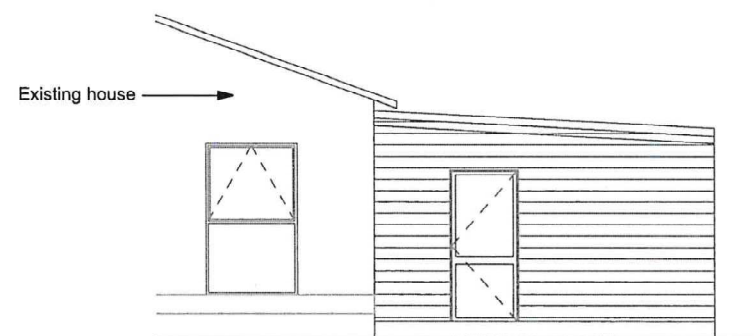
**MG181**

sheet no:

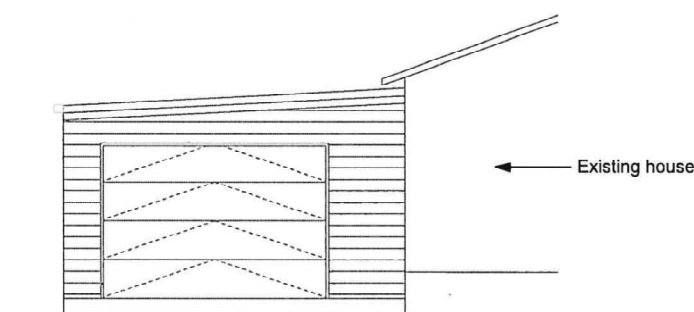
**A2-2**



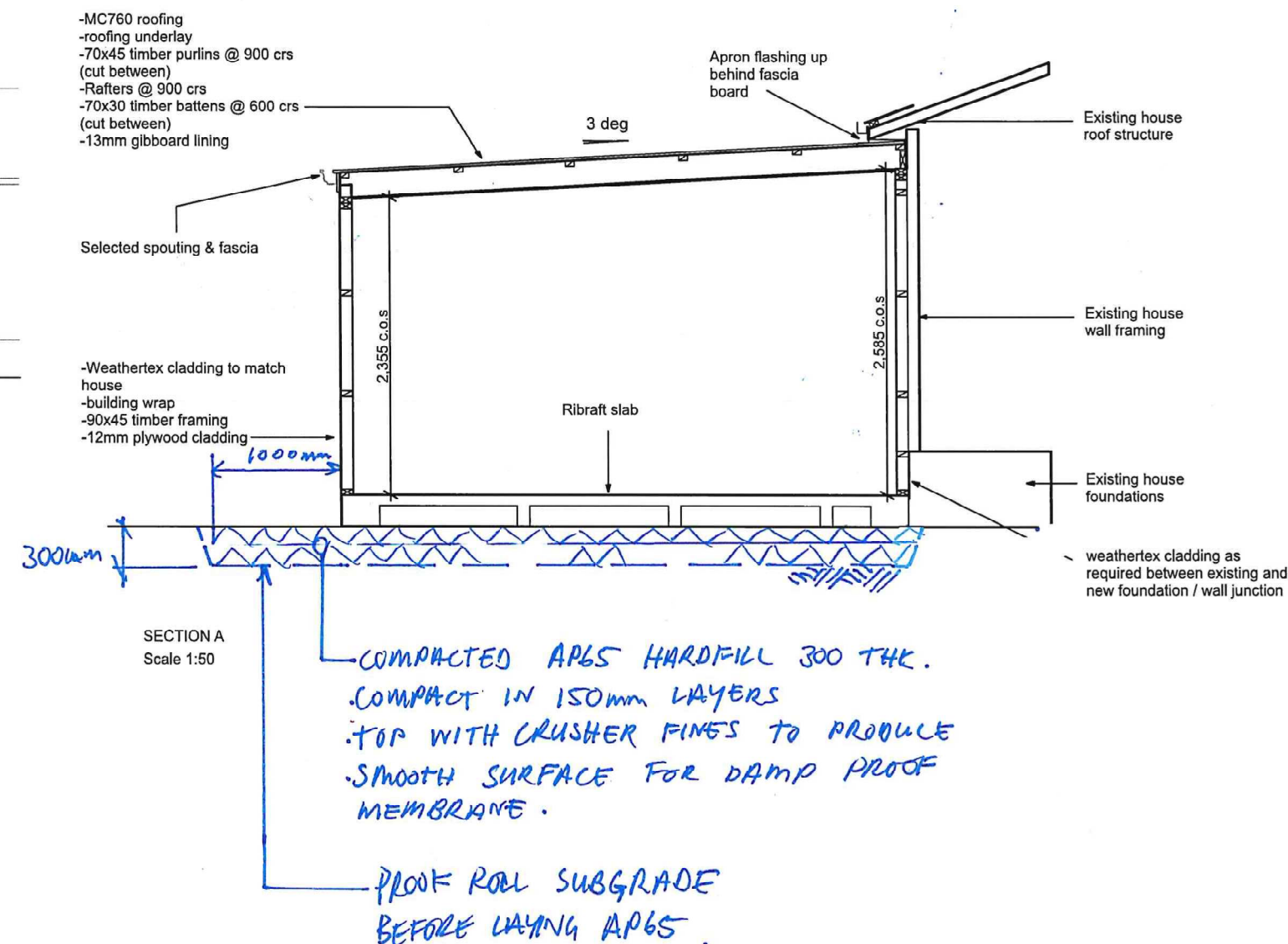
ELEVATION E1  
Scale 1:100



ELEVATION E2  
Scale 1:100



ELEVATION E3  
Scale 1:100



26.11.20 SKT-4104-1  
ghl



NEW PLYMOUTH  
40 Ocean View Parade | New Plymouth  
t: + 64 6 757 5842  
FREECALL: 0800 MANORGROUP  
www.manorbuild.co.nz | e: sales@manorbuild.co.nz

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#Notes

client:  
LOWE

project:  
RELOCATE PERMIT

design by: Manor Build

scale: As Noted

date: 27/10/2020

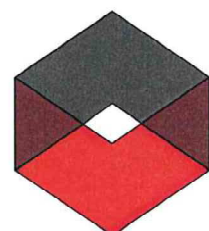
ELEVATIONS

job no:

MG181

sheet no:

A2-3



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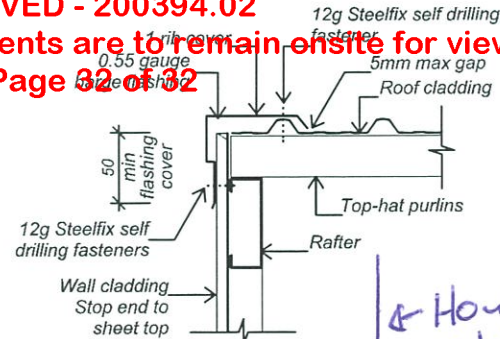
HOUSE NOT PART OF PERMIT



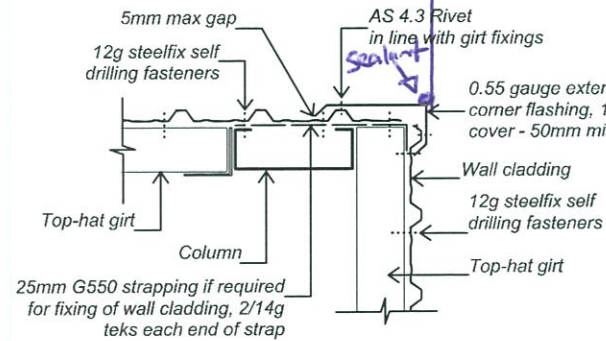
STDC APPROVED - 200394.02

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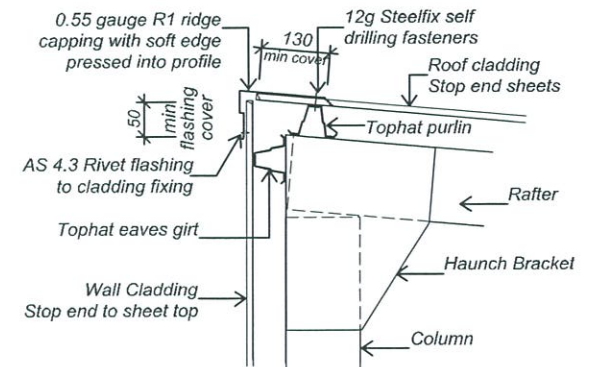
27/09/2021 - Page 32 of 32



**BARGE FLASHING (Detail 02)**

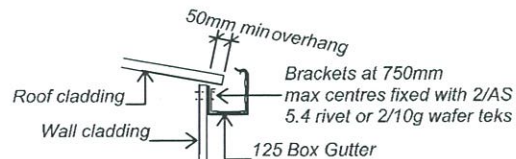


**CLAD WALL CORNER FLASHING (Detail 05)**



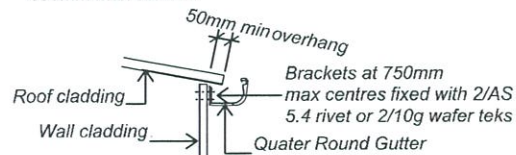
Note:- 200mm denotes min flashing cover over roof cladding

**APEX FLASHING (Detail 06)**



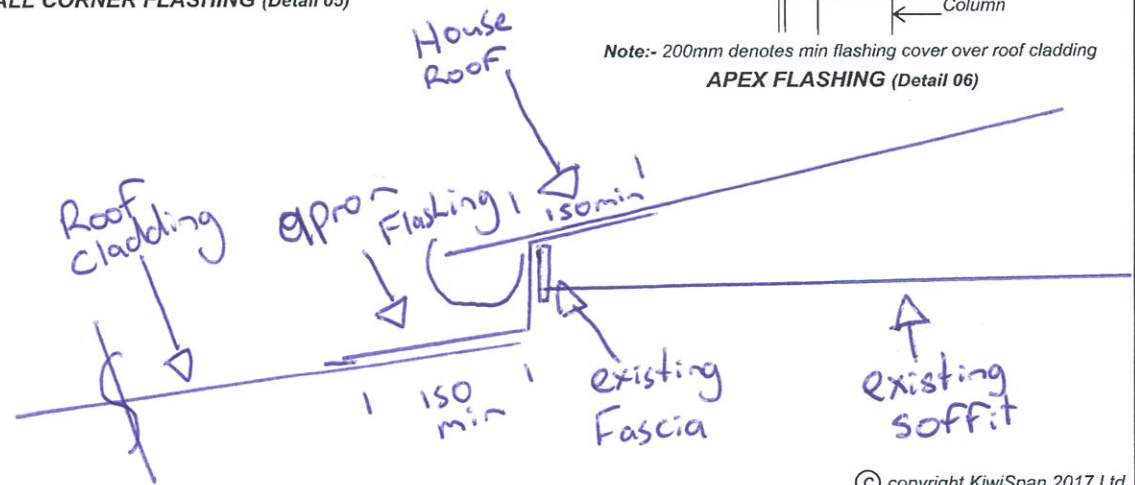
**GUTTER VERGE (Detail 07)**

Note:- For Snow Loading fix brackets and snow straps at 600mm max centres




**GUTTER VERGE (Detail 07)**

Note:- For Snow Loading fix brackets and snow straps at 600mm max centres



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	file no. B71 231019 original size A3	<b>FLASHING AND FIXING DETAILS</b> <b>- LOW, MEDIUM AND HIGH WIND ZONES</b> Customer : Arthur Brown Construction Site Address : 27 County Drive	drawing no. B71 date: page no.	
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