



Producer Statement

PS1 - Design

6 July 2026

DISCLAIMER

WARNING No representation or warranty is given that your particular application of these products complies with relevant building codes or that the fasteners provided or used are appropriate for your application. Therefore consult with professionals and local building officials before beginning work: (i) to ensure compliance with relevant building codes for your application and for your proposed use of fasteners; (ii) to ensure the integrity of the structural components in connection with which these products are to be used; (iii) to identify appropriate safety gear that is to be used during installation such as a safety harness when working above ground; (iv) to ensure that the work area is free from utilities, services and hazards; and, (v) to clarify any instructions or warnings that may not be clear. Work in a safe manner wearing protective gear such as gloves, eyewear, headwear, footwear and clothing. When using tools always comply with operation manuals and instructions. Metal and glass may have sharp edges and could fragment or splinter during or as a result of handling or cutting. Do not use these products in connection with any substance that is or may be harmful or corrosive to the products. Inspect and maintain these products and the structural components that they are used in connection with on a regular basis using professionals when appropriate. This report has been prepared for certain standard residential applications. Obtain professional advice for any non-standard or non-residential application.

P & P CONSULTING ENGINEERS LTD

Civil and Structural Engineering

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Ref: 17/094/ds
06 July 2026

PEAK ALUMINIUM BALUSTRADE

DESIGN CALCULATIONS SUMMARY

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Based on testing, Peak Aluminium balustrade and Peak Handrail systems as indicated on attached drawings are suitable for Occupancy types A & C3 as per AS/NZS 1170.1:2002. The Peak Aluminium Handrail is suitable for use in private stairways. Attachment of the Peak Aluminium Handrail to a supporting structure is such that it: - may be classified as a minor projection, on the basis that the handrail projects no more than 100 mm into the path, - provides continuity for the length of the stair flight or ramp, where a straight length of handrail satisfies these requirements, - may be positioned to have the same slope as the pitch line, - may be positioned between 900 mm and 1000 mm above the pitch line, - may be readily grasped by an adult hand, - may be installed in a manner to avoid the likelihood of personal injury, - provides a flat or convex upper surface, arrised or radiused edges.	
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Refer summary sketch drawing ENG 01.

Notes:

1. Any parts of the structure which are not covered by the specific design included with these calculations must comply either with the New Zealand Building Code or specific design as detailed by others. Any exceptions to this should be referred back to this Design Office.
2. The above calculations include structural work for which a Building Consent must be obtained prior to building. It is the Owner's responsibility to obtain all necessary consents.
3. The strength and stiffness of the substrate other than designed herein must be confirmed at the time of installation.
4. This design is for panels and accessories as supplied by Peak Aluminium Balustrade system.



association of
consulting and
engineering



PRODUCER STATEMENT – PS1 DESIGN

BUILDING CODE CLAUSE(S): B1, F2, F4

JOB NUMBER: 17/094/ds

ISSUED BY: P & P CONSULTING ENGINEERS LTD
(Engineering Design Firm)

TO: PEAK PRODUCTS CORPORATION
(Owner/Developer)

TO BE SUPPLIED TO: VARIOUS COUNCIL
(Building Consent Authority)

IN RESPECT OF: PEAK ALUMINIUM BALUSTRADE SYSTEM AND PEAK ALUMINIUM HANDRAIL SYSTEM
(Description of Building Work)

AT: VARIOUS
(Address, Town/City)

LEGAL DESCRIPTION: N/A ☐

We have been engaged by the owner/developer referred to above to provide (Extent of Engagement):
STRUCTURAL DESIGN

in respect of the requirements of the Clause(s) of the Building Code specified above for Part only, as specified in the Schedule, of the proposed building work.

The design carried out by us has been prepared in accordance with:

- ☒ Compliance documents issued by the Ministry of Business, Innovation & Employment (Verification method/acceptable solution) B1/VM1 and/or;
- ☐ Alternative solution as per the attached Schedule.

The proposed building work covered by this producer statement is described on the drawings specified in the Schedule, together with the specification, and other documents set out in the Schedule.

On behalf of the Engineering Design Firm, and subject to:

- Site verification of the following design assumptions: REFER TO NOTES AT THE END OF DESIGN SUMMARY
- All proprietary products meeting their performance specification requirements;

I believe on reasonable grounds that:

- the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the Schedule, will comply with the relevant provisions of the Building Code and that;
- the persons who have undertaken the design have the necessary competency to do so.

I recommend the Choose one level of **construction monitoring**.

I, (Name of Engineering Design Professional) PARMIL PRAKASH, am:

- ☐ CPEng number 251801 and hold the following qualifications BE(Civil), CPEng

The Engineering Design Firm holds a current policy of Professional Indemnity Insurance no less than \$200,000
The Engineering Design Firm is not a member of ACE New Zealand.

SIGNED BY (Name of Engineering Design Professional): PARMIL PRAKASH
(Signature below):

ON BEHALF OF (Engineering Design Firm): P & P CONSULTING ENGINEERS LTD

Date: 06/07/2026

Note: This statement has been prepared solely for the Building Consent Authority named above and shall not be relied upon by any other person or entity. Any liability in relation to this statement accrues to the Engineering Design Firm only. As a condition of reliance on this statement, the Building Consent Authority accepts that the total maximum amount of liability of any kind arising from this statement and all other statements provided to the Building Consent Authority in relation to this building work, whether in tort or otherwise, is limited to the sum of \$200,000.

This form is to accompany **Form 2 of the Building (Forms) Regulations 2004** for the application of a Building Consent.

SCHEDULE to PS1

Please include an itemised list of all referenced documents, drawings, or other supporting materials in relation to this producer statement below:

The proposed building work covered by this producer statement is described on the drawings titled:

PEAK ALUMINIUM BALUSTRADE SYSTEM

and numbered:

17/094, ENG01

P & P CONSULTING ENGINEERS LTD

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06/07/2026

Ref: 17/094

TO WHOM IT MAY CONCERN

Dear Sir/Madam,

B2 COMPLIANCE

Producer Statement for Design-PS1 for Clause B2 of the Building Code – Structural Durability.

We are not able to provide this because there is no effective verification method for B2 contained within the Building Code.

However we can confirm that for the structural elements shown on our documentation:

Timber

Timber treatment has been selected in accordance with Table 1A of B2/AS1.

Concrete

Concrete cover have been selected in accordance with NZS3101:2006, Part 1 Section 3.

Mild Steel

Steel protection has been specified in accordance with the “Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings” AS/NZS2312. We Note that this is on a time to first maintenance basis.

We trust this provides the information that you are seeking.

Yours faithfully,



Mr P Prakash
Director
P & P Consulting Engineers Limited

PEAK BALUSTRADE SYSTEM

2

ASSESSMENT OF THE BALUSTRADE SYSTEM

2. TEST LOADS & RESULTS

Peak Aluminium balustrade system and Peak Aluminium Handrail system had been tested by Acronem Consulting Ltd in Australia.

The glass and support spigot was tested to comply with the following domestic load cases taken from AS/NZS 1170.1:2002:

Occupancy Type	Refer Table 3.3 of AS/NZS 1170:	Maximum Design Loads		
A, C3 (Residential Only)	Domestic Barriers for One or More Dwellings including Balcony Edges (NOT subject to Over Crowding)	0.75 kN/m (75 kg/m)	0.6 kN (60 kg) Anywhere	1 kPa (100 kg/m ²) Infill

We have reviewed the test results and confirm that the balustrade system as indicated on attached drawings comply with the above load requirements.

Full test results are available from Peak Products.

3. FIXINGS

3.1 Anchors

Max. BM at base of post = $0.75 \text{ kN/m} \times 1.5 \times 1.8 = 2.0 \text{ kNm}$ (1.8 m post spacing)

Fixing lever arm = 78 mm to top fixing and 72 mm for side fixing.

Hence the maximum tensile load to the fixing is:

$$= 2.0 / (2 \times 0.072)$$

$$= 13.9 \text{ kN} \text{ (12.8 kN for top fix)}$$

Anchor Types

M8 Chemset Anchors to Concrete

Capacity = 21×0.87 (90 mm embedment, 20 MPa concrete)
= 18.3 kN
Hence, OK

M8 S/S Bolts to Steel Members

Capacity = 16 kN
Hence, OK

M8 bolts to timber

Capacity is controlled by bearing washers

$$\text{Req. Area} = 13.9 / 0.7 \times 1.3 \times 5.3 \text{ MPa}$$

$$2882 \text{ mm}^2$$

Hence use 60 x 60 mm x 3 mm thick washer (side fixed) or Use 50 x 50 for top fixed

Note: Use M10 anchors for side fixed option

M10 Epoxied Rods

Embedment depth = $F / (\pi \times d \times f)$, where F = design load, d = bolt dia., f = characteristic resistance in wood

As per Hilti load test, f = 4 Mpa

$$\text{Hence, Embedment depth} = 16.6 / (\pi \times 10 \times 4) = 130 \text{ mm (or 110 mm for M12 rods)}$$

Minimum Depth = 10 x dia = 100 mm

Hence use M10 threaded rods with 130 mm embedment using Hilti HIT-RE 500 epoxy

M10 Coach Screws:

$$\text{Required Length} = 12.8 / 0.8 \times 0.7 \times 107 \text{ N/mm} = 213 \text{ mm (say 215 mm)}$$

Use M10 coachscrews, 215 mm embedment

3.2 Timber Boundary Joists

Minimum timber size = 190 mm deep

For side fixes, the tension forces along top edge of joists each side of post = $2.0/0.19 \times 1/2 = 5.3$ kN

Hence either use 6 kN Lumberlok straps or CPC40 cleats top & bottom both side.

For Top Fixing: Can use 2/140 x 45

4. SUMMARY

In summary, the panel & fixings tested conform to the following:

LOADS:

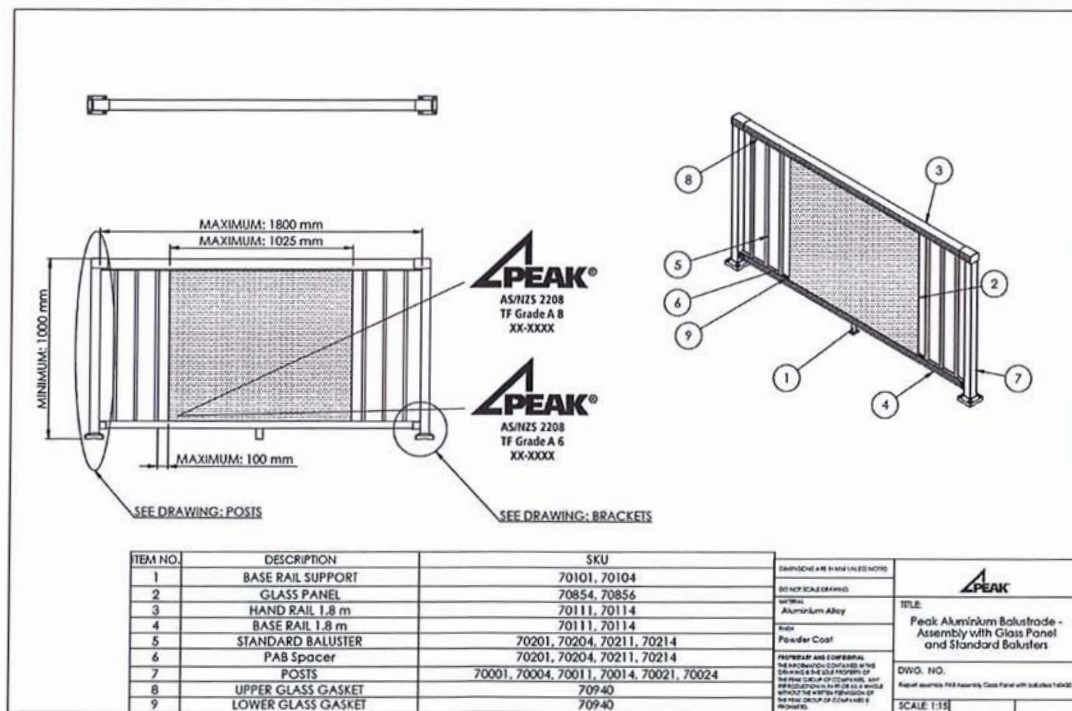
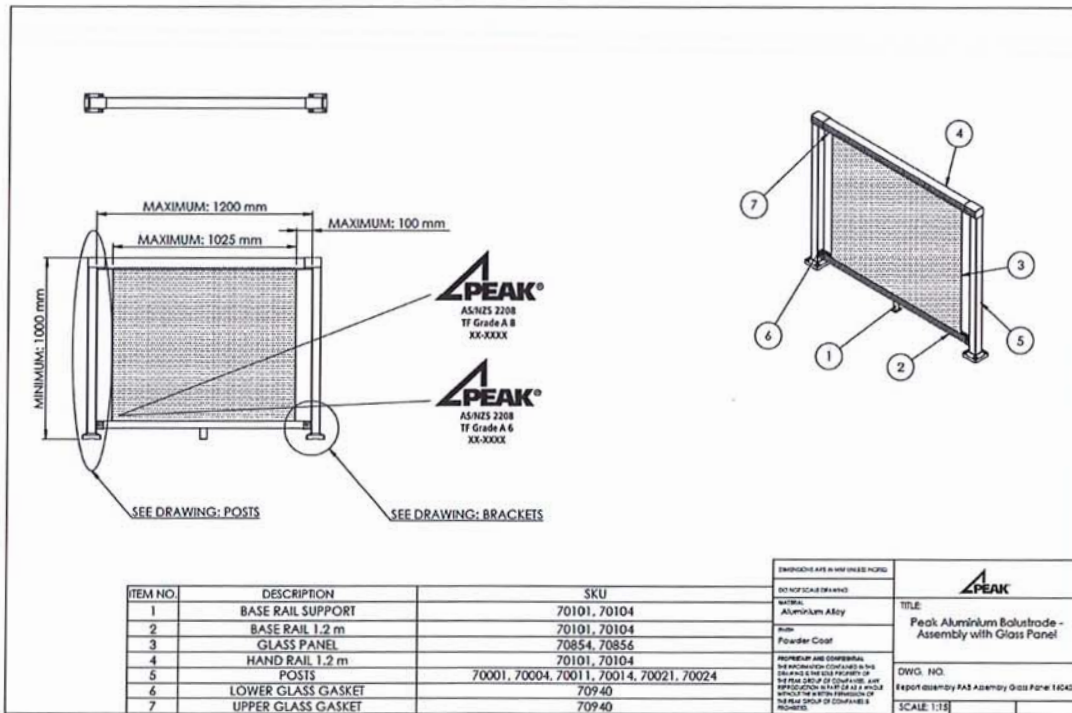
Live Load: For Domestic Occupancy types A and C3 (residential only) of AS/NZS 1170:2002, Table 3.3

Wind Load: VERY HIGH as per NZS 3604

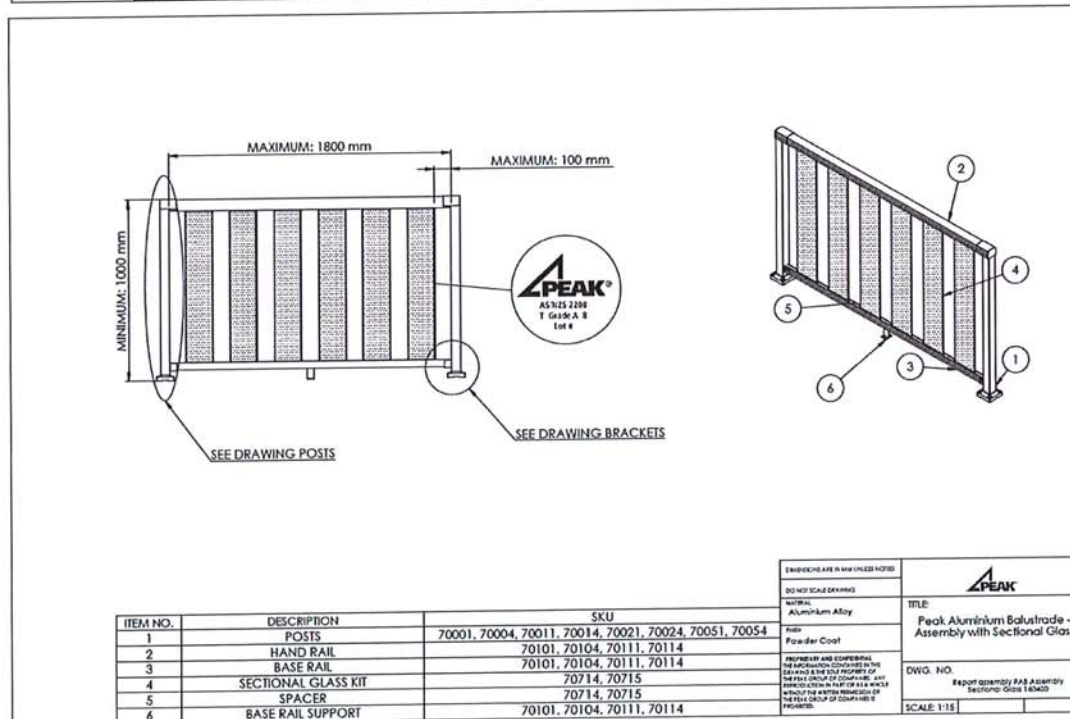
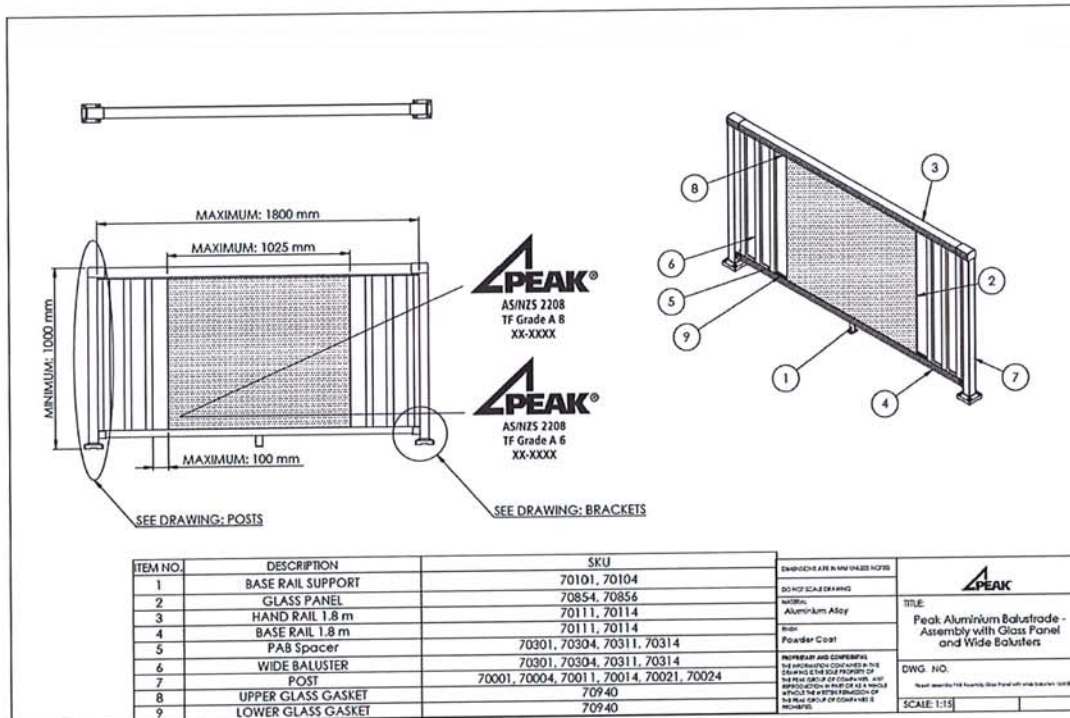
FIXINGS:

Refer to attached summary drawing.

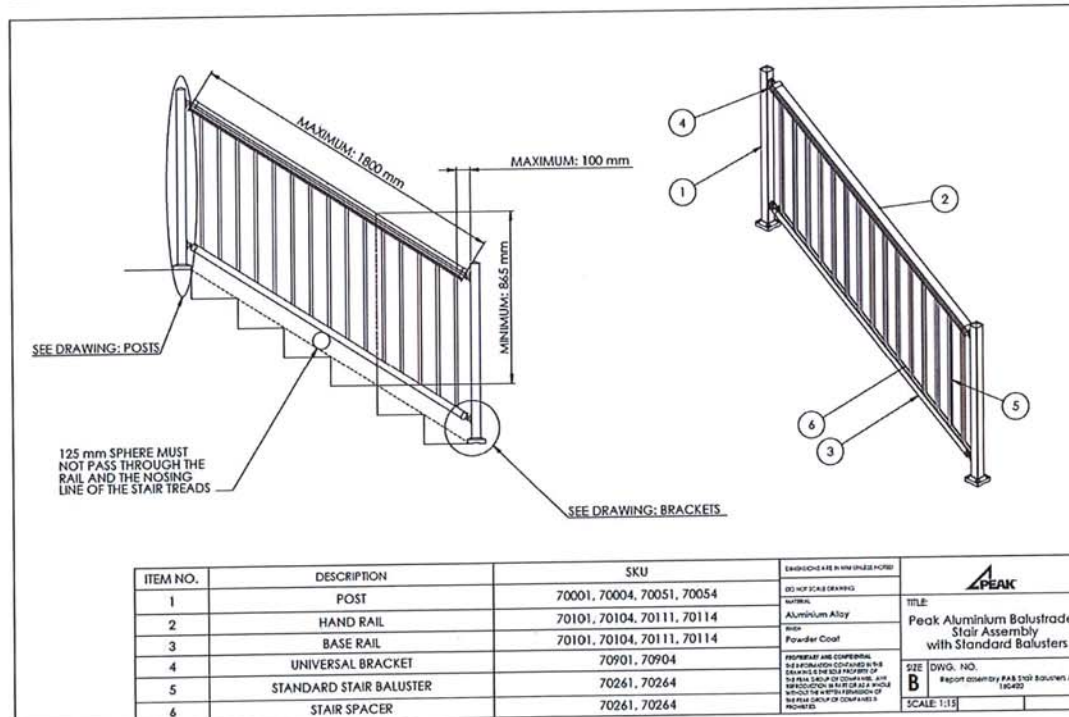
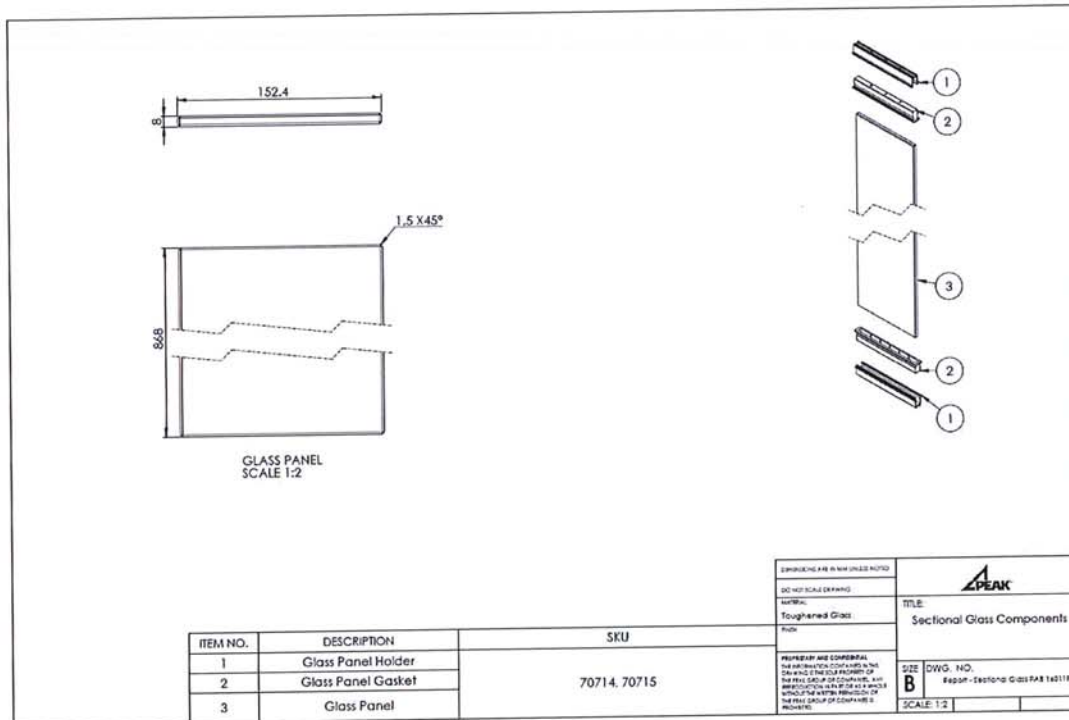
October 12, 2018



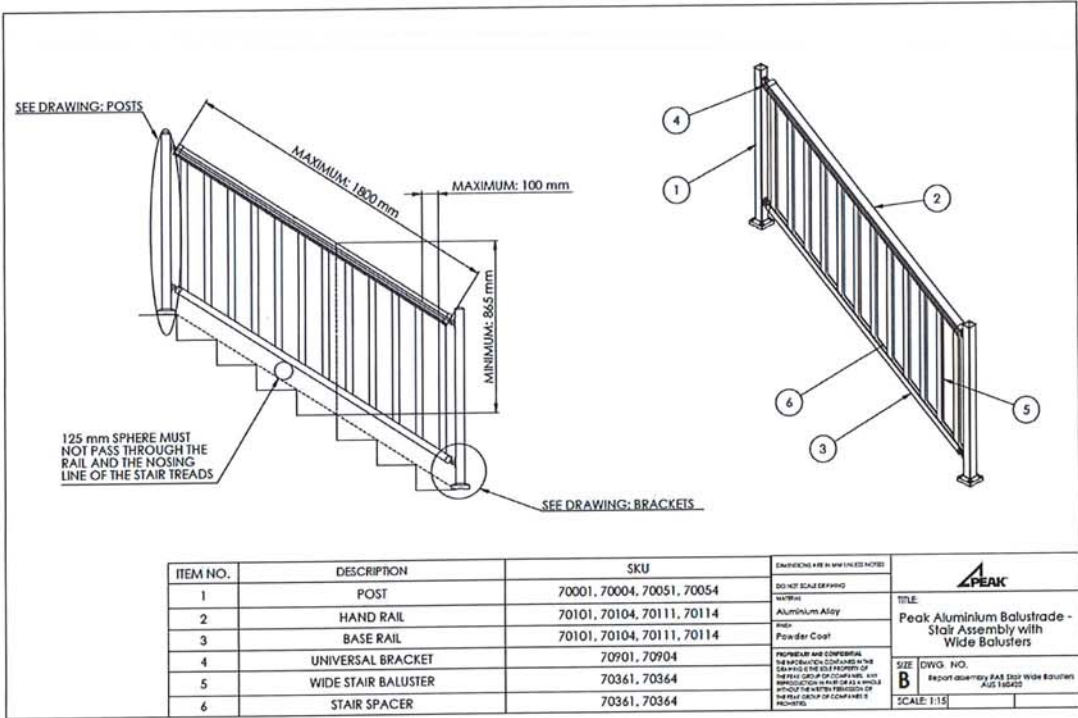
October 12, 2018



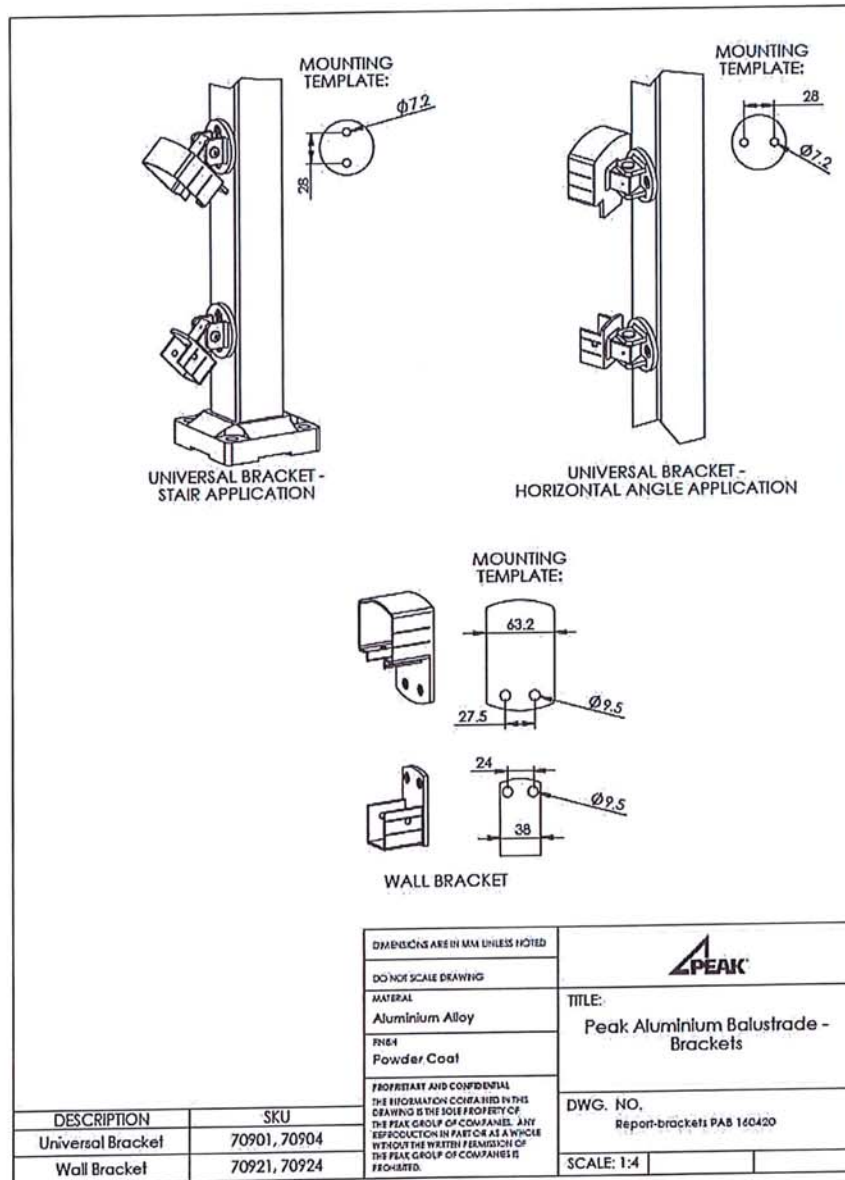
October 12, 2018



October 12, 2018



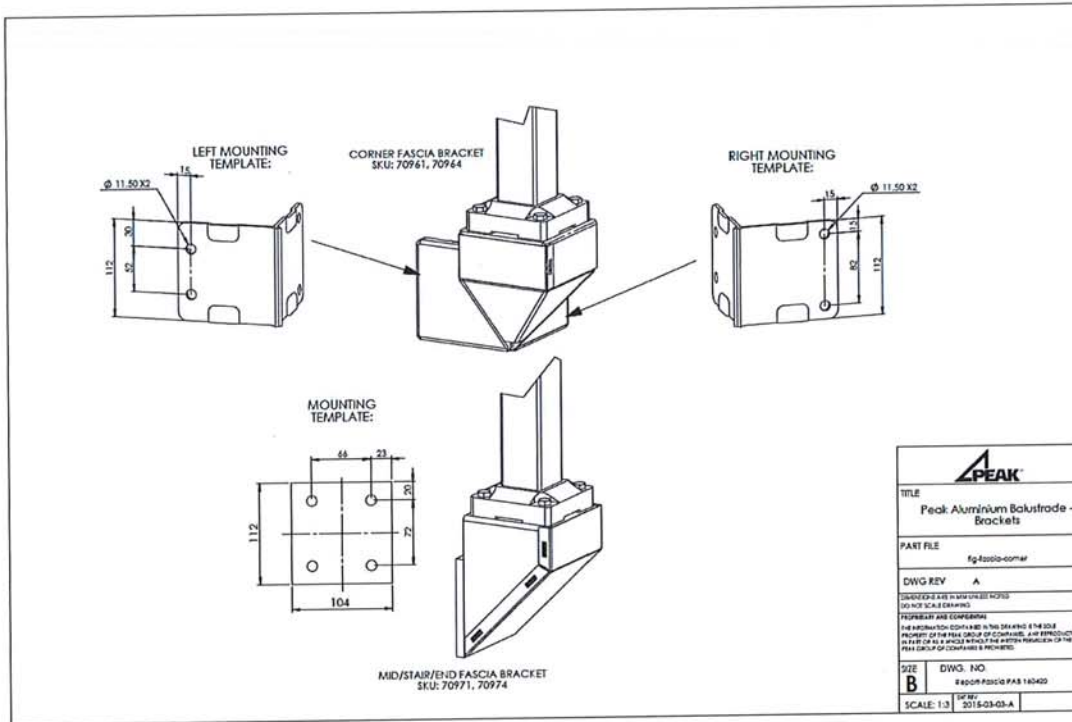
October 12, 2018



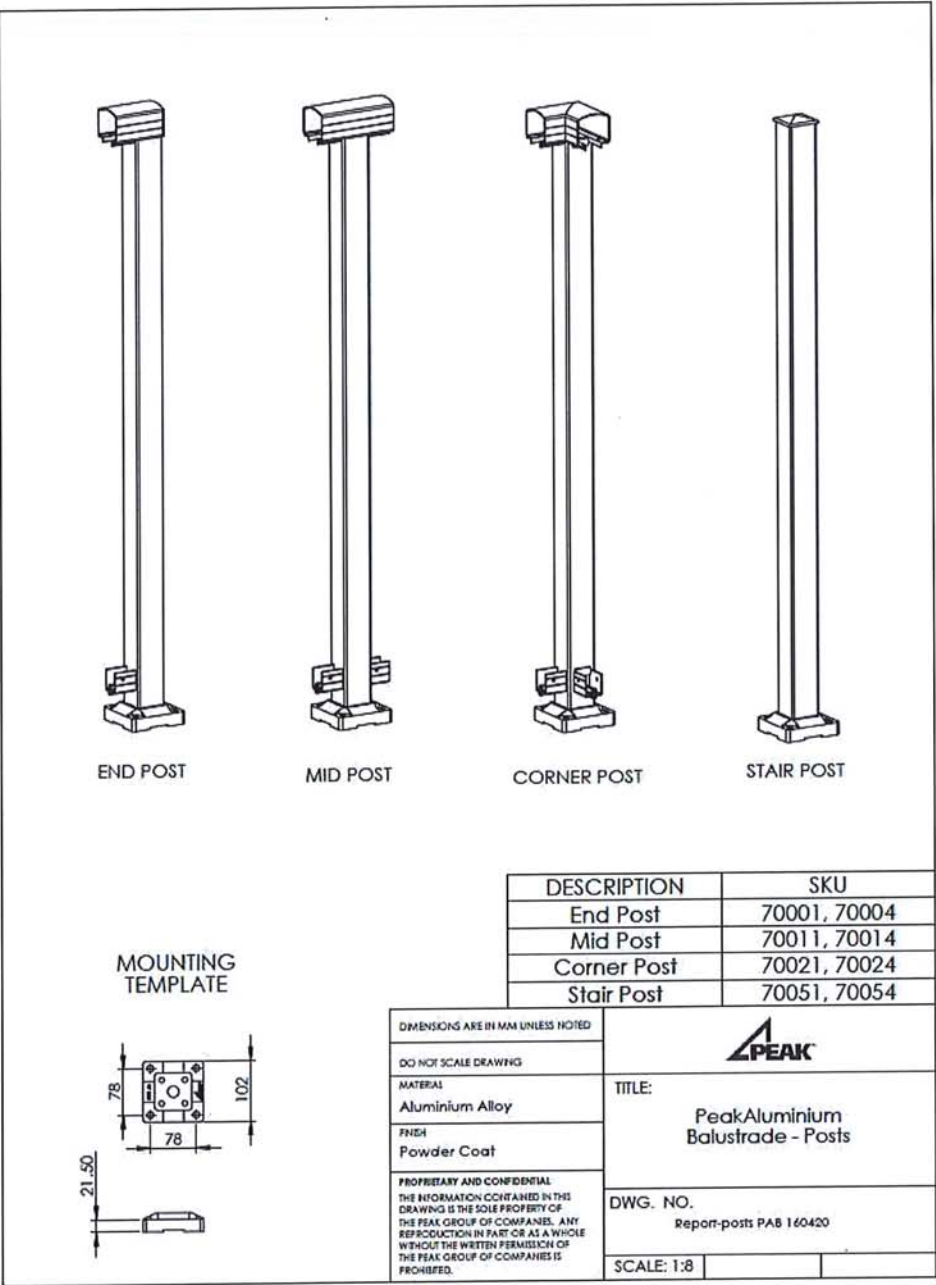
FIXING TO WALL

Substrate	Fasteners	Minimum Embedment	Minimum Edge Distance
Concrete	2 x Ramset® Ankascrew™ anchor, M6 x 50mm	39mm	40mm
Timber	2 x M6 Coach Screw or 2 x 14g Type 17 Screw	40mm	30mm

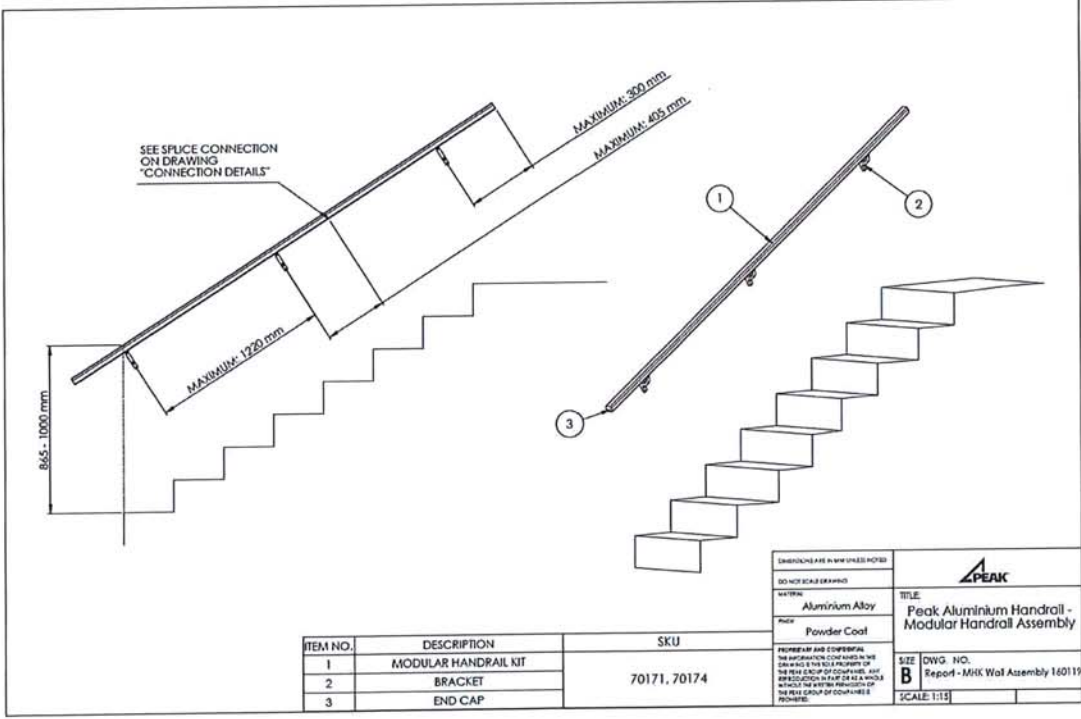
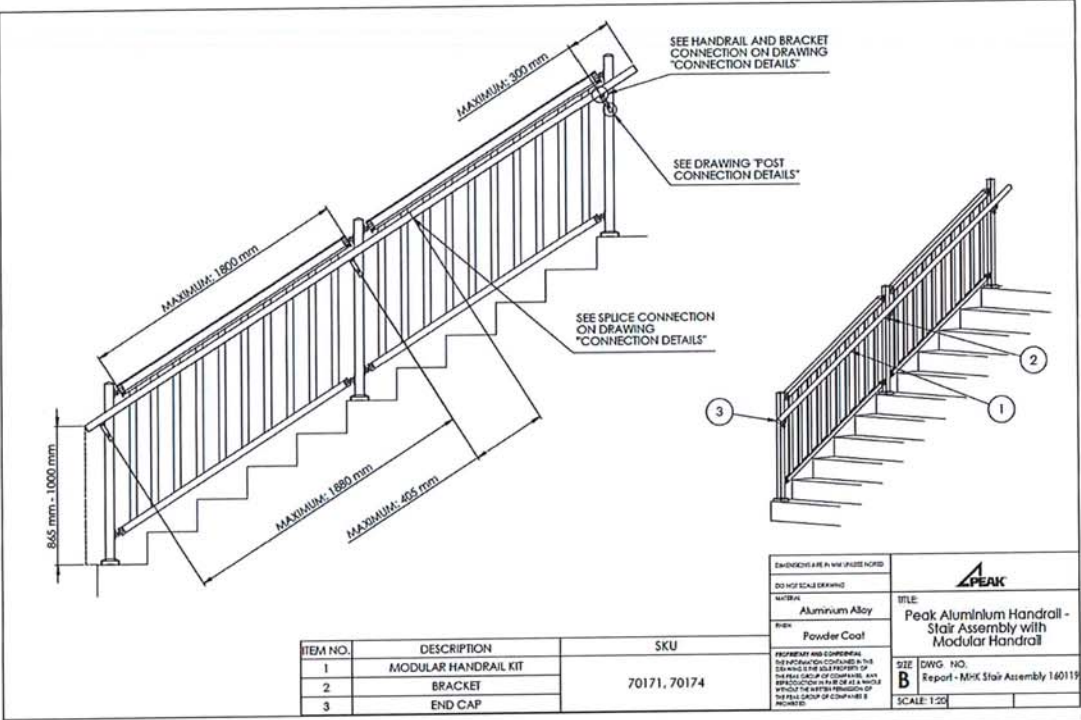
October 12, 2018



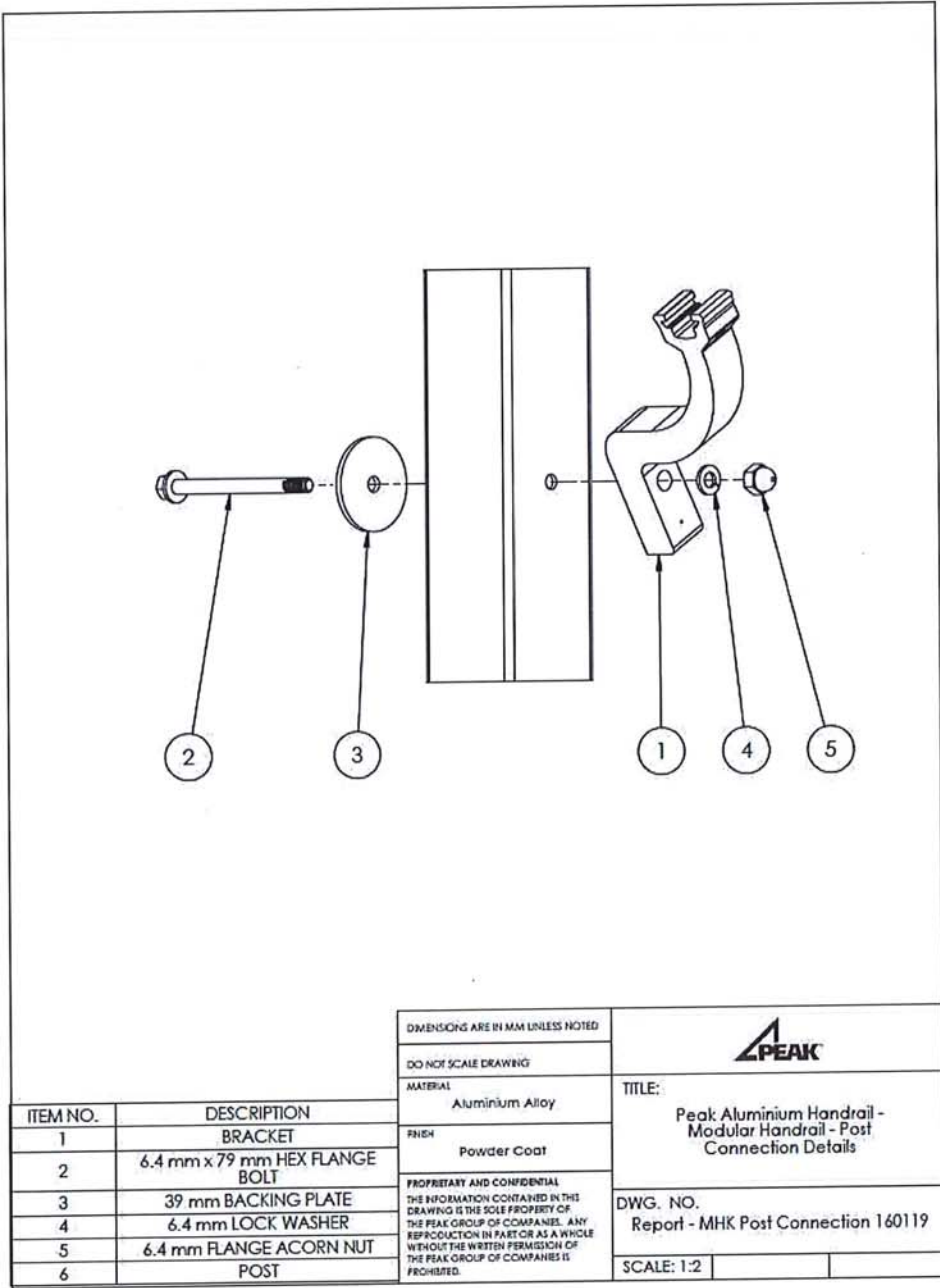
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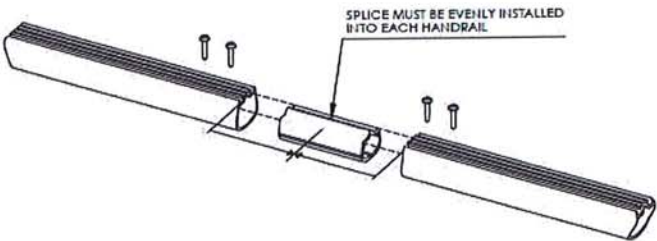
October 12, 2018



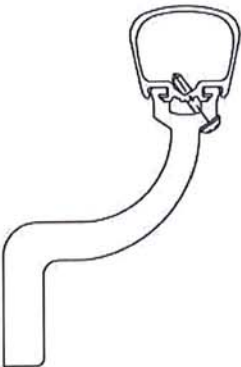
October 12, 2018



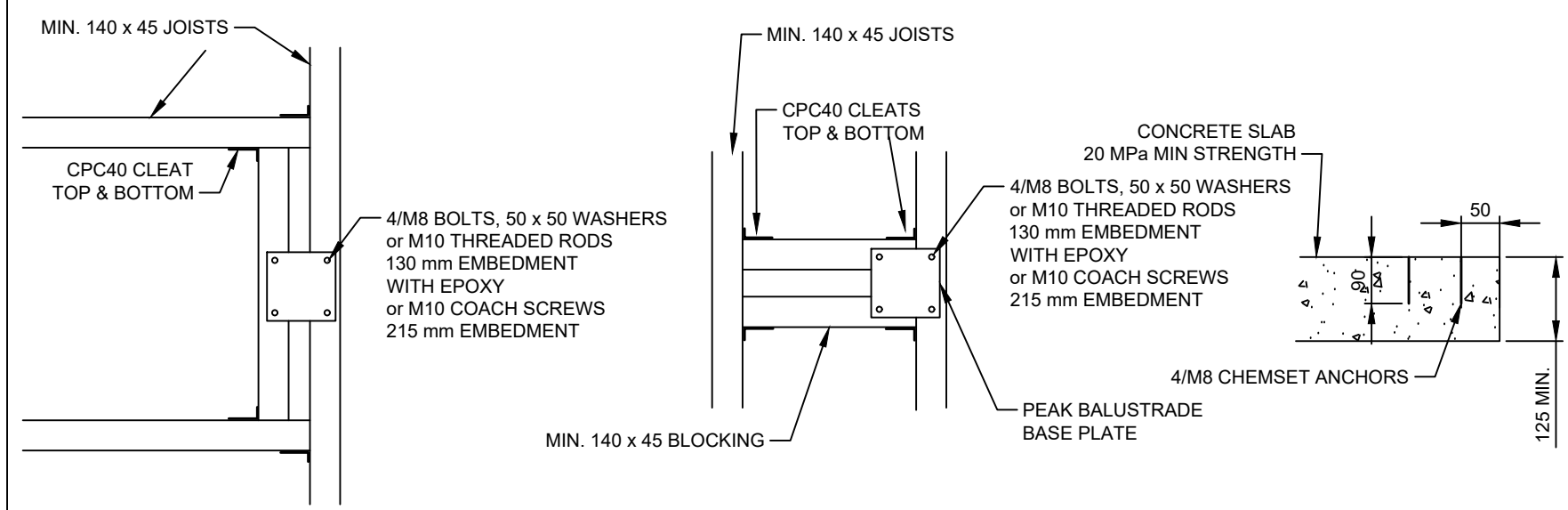
SPLICE CONNECTION



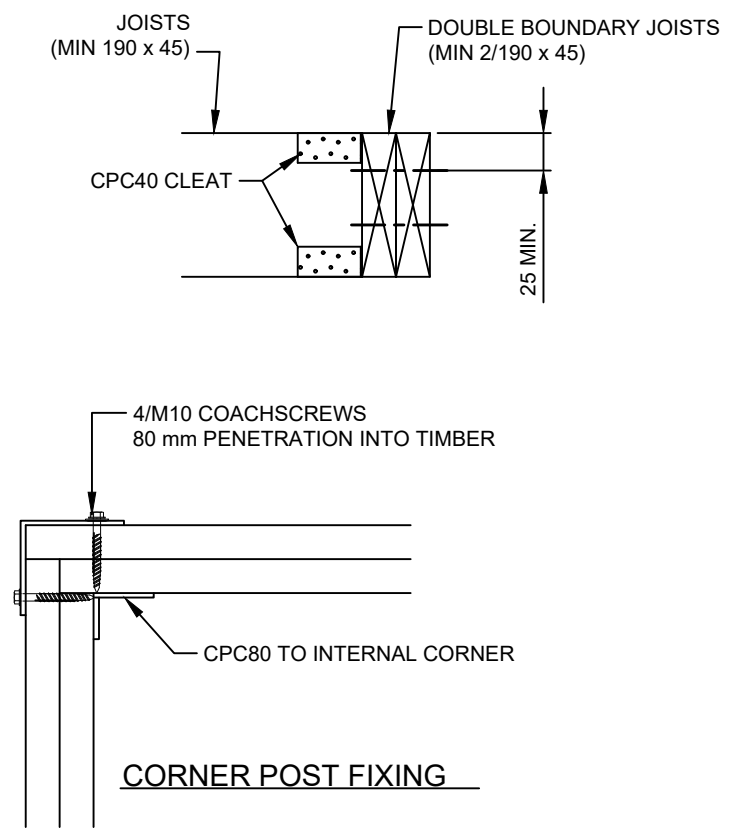
HANDRAIL AND BRACKET CONNECTION



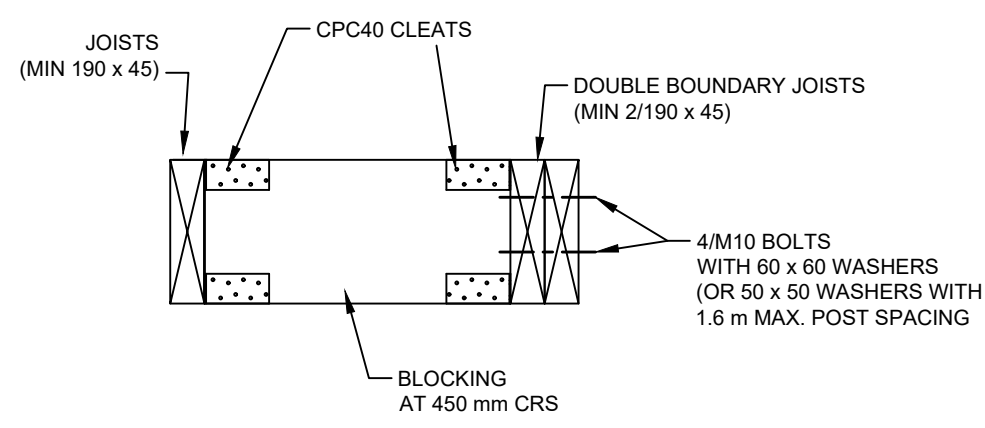
DIMENSIONS ARE IN MM UNLESS NOTED		
DO NOT SCALE DRAWING		
MATERIAL Aluminium Alloy	TITLE: Peak Aluminium Handrail - Modular Handrail Connection Details	
FINISH Powder Coat		
PROPRIETARY AND CONFIDENTIAL THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF THE PEAK GROUP OF COMPANIES. ANY REPRODUCTION IN PART OR AS A WHOLE WITHOUT THE WRITTEN PERMISSION OF THE PEAK GROUP OF COMPANIES IS PROHIBITED.	DWG. NO. Report - MHK Joint Connection 160119	
	SCALE: 1:2	



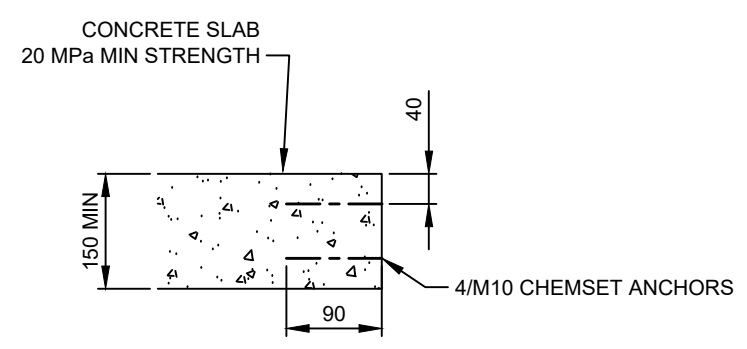
TOP MOUNTED POSTS FIXING



CORNER POST FIXING



SIDE MOUNTED POSTS FIXING



THE BALUSTRADE SYSTEM IS SUITABLE FOR THE FOLLOWING:

LIVE LOAD:

OCCUPANCY TYPE	REFER TABLE 3.3 OF AS/NZS 1170
A & C3	DOMESTIC & RESIDENTIAL BALCONY EDGES (NOT SUBJECT TO CROWD LOADINGS)

FIXINGS:

1. ALL ANCHORS MUST BE INSTALLED IN ACCORDANCE WITH MANUFACTURERS REQUIREMENTS.
2. ALL BOLTS & FIXINGS TO BE STAINLESS STEEL.
3. ALL BOLTS TO HAVE 50 x 50 x 3 mm WASHERS AGAINST TIMBER. Use 60 x 60 WASHERS FOR SIDE FIXED OPTION UNLESS POST SPACING IS LESS THAN 1.6 m

TIMBER

1. ALL TIMBER TO BE SG8 PINE.
2. ALL TIMBER TO BE TREATED H3.2.

WIND ZONE:

VERY HIGH AS DEFINED IN NZS3604 FOR SOLID GLASS INFILL PANELS
EXTRA HIGH FOR OTHER INFILL PANELS.

CAN USE FOLLOWING EPOXY:

HILTI HIT-RE 500, ARALDITE 2005, ARALDITE k-80, WEST SYSTEMS ADR310/ADH26, WEST SYSTEMS Z105/Z205, EAST 221 EPOXY.

REV A: 26-10-23

P & P CONSULTING ENGINEERS LTD Civil and Structural Engineering 6A Montel Avenue, Henderson ph: 836-1853	PEAK ALUMINIUM BALUSTRADE SYSTEM		Scales 1:10 (A3)		Project 17/094	
	BALUSTRADE FIXING DETAILS		Drawn PP	Date 28-04-20	Sheet ENG 01	