



BelAire<sup>®</sup>  
DESIGNER FENCING

## Aurora PS1

...make it your own!

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Structural Design Report, Job 666515  
BelAire Designer Fencing – Extra high wind zone, various  
locations. December 2023



# PRODUCER STATEMENT – PS1 DESIGN

**BUILDING CODE CLAUSE(S):** B1 | **JOB NUMBER:** 666515

**ISSUED BY:** STRATUM CONSULTANTS LTD  
*(Engineering Design Firm)*

**TO:** BELAIRE DESIGNER FENCING LTD  
*(Owner/Developer)*

**TO BE SUPPLIED TO:** NZ TERRITORIAL AUTHORITIES  
*(Building Consent Authority)*

**IN RESPECT OF:** DESIGN OF SPECIFIC ELEMENTS FOR NOTATED FENCING SYSTEM  
*(Description of Building Work)*

**AT:** VARIOUS LOCATIONS ACROSS NZ  
*(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 REVIEW OF FENCING SYSTEM POSTS, HORIZONTAL MEMBERS, INFILL, FIXINGS in respect of the requirements of the Clause(s) of the Building Code specified above for All , 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)* NZBC B1 / VM1 / VM 4 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: Ground conditions to NZS 3604 Good Ground classification .
- 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)* STEPHEN BOS , am:

- CPEng number 154367 and hold the following qualifications BE (hons), CPEng, CMEngNZ, NZCE (civil)

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):* STEPHEN BOS  
*(Signature below):*

**ON BEHALF OF** *(Engineering Design Firm):*

STRATUM CONSULTANTS LTD

Date: 19/12/2023

**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:

DESIGN VERIFICATION OF MEMBERS AND LAYOUT WITH LOADING CONDITIONS TO NZS 1170.1 - TABLE 3.3 TYPE A -DOMESTIC AND RESIDENTIAL ACTIVITIES.  
SINGLE UNIT DWELLING ONLY

## GUIDANCE ON USE OF PRODUCER STATEMENTS

Information on the use of Producer Statements and Construction Monitoring Guidelines can be found on the Engineering New Zealand website

<https://www.engineeringnz.org/engineer-tools/engineering-documents/producer-statements/>

Producer statements were first introduced with the Building Act 1991. The producer statements were developed by a combined task committee consisting of members of the New Zealand Institute of Architects (NZIA), Institution of Professional Engineers New Zealand (now Engineering New Zealand), Association of Consulting and Engineering New Zealand (ACE NZ) in consultation with the Building Officials Institute of New Zealand (BOINZ). The original suite of producer statements has been revised at the date of this form to ensure standard use within the industry.

The producer statement system is intended to provide Building Consent Authorities (BCAs) with part of the reasonable grounds necessary for the issue of a Building Consent or a Code Compliance Certificate, without necessarily having to duplicate review of design or construction monitoring undertaken by others.

**PS1 DESIGN** Intended for use by a suitably qualified independent engineering design professional in circumstances where the BCA accepts a producer statement for establishing reasonable grounds to issue a Building Consent;

**PS2 DESIGN REVIEW** Intended for use by a suitably qualified independent engineering design review professional where the BCA accepts an independent design professional's review as the basis for establishing reasonable grounds to issue a Building Consent;

**PS3 CONSTRUCTION** Forms commonly used as a certificate of completion of building work are Schedule 6 of NZS 3910:2013 or Schedules E1/E2 of NZIA's SCC 2011<sup>2</sup>

**PS4 CONSTRUCTION REVIEW** Intended for use by a suitably qualified independent engineering construction monitoring professional who either undertakes or supervises construction monitoring of the building works where the BCA requests a producer statement prior to issuing a Code Compliance Certificate.

This must be accompanied by a statement of completion of building work (Schedule 6).

The following guidelines are provided by ACE New Zealand and Engineering New Zealand to interpret the Producer Statement.

### Competence of Engineering Professional

This statement is made by an engineering firm that has undertaken a contract of services for the services named, and is signed by a person authorised by that firm to verify the processes within the firm and competence of its personnel.

The person signing the Producer Statement on behalf of the engineering firm will have a professional qualification and proven current competence through registration on a national competence-based register such as a Chartered Professional Engineer (CPEng).

Membership of a professional body, such as Engineering New Zealand provides additional assurance of the designer's standing within the profession. If the engineering firm is a member of ACE New Zealand, this provides additional assurance about the standing of the firm.

Persons or firms meeting these criteria satisfy the term "suitably qualified independent engineering professional".

### Professional Indemnity Insurance

As part of membership requirements, ACE New Zealand requires all member firms to hold Professional Indemnity Insurance to a minimum level.

The PI Insurance minimum stated on the front of this form reflects standard practice for the relationship between the BCA and the engineering firm.

### Professional Services during Construction Phase

There are several levels of service that an engineering firm may provide during the construction phase of a project (CM1-CM5 for engineers<sup>3</sup>). The building Consent Authority is encouraged to require that the service to be provided by the engineering firm is appropriate for the project concerned.

### Requirement to provide Producer Statement PS4

Building Consent Authorities should ensure that the applicant is aware of any requirement for producer statements for the construction phase of building work at the time the building consent is issued as no design professional should be expected to provide a producer statement unless such a requirement forms part of the Design Firm's engagement.

### Refer Also:

- 1 Conditions of Contract for Building & Civil Engineering Construction NZS 3910: 2013
- 2 NZIA Standard Conditions of Contract SCC 2011
- 3 Guideline on the Briefing & Engagement for Consulting Engineering Services (ACE New Zealand/Engineering New Zealand 2004)
- 4 PN01 Guidelines on Producer Statements

[www.acenz.org.nz](http://www.acenz.org.nz)  
[www.engineeringnz.org](http://www.engineeringnz.org)

APPLICATIONS								
THE NEW ZEALAND BUILDING CODE (AS/NZS 1170.1:2002) DESIGNATES DIFFERENT OCCUPANCY TYPES AND SPECIFIES THE LOAD RATINGS THAT THE SYSTEM MUST BE CAPABLE OF WITHSTANDING. THE SYSTEM COMPRISES OF THE PANEL, POST, FIXINGS AND THE STRUCTURE THAT THE BALUSTRADE IS BEING ATTACHED TO. THESE ARE SUMMARISED IN THE BELOW TABLE. REFER TO THE DRAWINGS ON PAGES S02-S03 FOR MORE DETAILS. (AS/NZS 1170.1:2002 TABLE 3.3 OCCUPANCY REFERENCE).								
SETTING	APPLICATION	OCCUPANCY TYPE	DESIGN LOAD	FENCE HEIGHT	POST CENTERS	POST	FIXING OPTIONS	DETAILS
SINGLE DWELLING RESIDENTIAL	IN GROUND	A	0.35kN/m	1.2m	1.6m	ALU 60 SHS x 2.0mm 6063-T5 STEEL 60 SHS x 2.0mm	Base Plate / Side Mount Ground plant	S02
	IN GROUND	A	0.35kN/m	1.5m	1.6m	ALU 65 SHS x 3.0mm 6063-T5 STEEL 65 SHS x 3.0mm	Base Plate / Side Mount Ground plant	S02
	IN GROUND	A	0.35kN/m	1.8m	1.6m	ALU 75 SHS x 3.0mm 6063-T5 STEEL 75 SHS x 3.0mm	Base Plate / Side Mount Ground plant	S02

FASTENERS AND CORROSION ZONES			
NEW ZEALAND'S COASTAL CLIMATE MEANS THAT ATTENTION MUST BE PAID TO THE PROXIMITY TO SALT WATER WHEN CHOOSING WHAT FASTENERS TO USE. THE TABLE BELOW IS A GUIDE TO WHERE HOT DIP GALVANISED FASTENERS CAN BE USED, WHILE IT MAY SEEM COUNTER INTUITIVE THAT SHELTERED INSTALLATIONS REQUIRE STAINLESS STEEL FITTINGS EVEN WITHIN 5KM OF THE AREA, IT IS BECAUSE REGULAR EXPOSURE TO RAINFALL CLEANS THE FASTENERS AND PROLONGS THEIR LIFE.			
ENVIRONMENT	CORROSION CLASSIFICATION	EXPOSED	SHELTERED
WITHIN 500m OF BREAKING SURF OR 50m OF CALM SALT WATER	C4	ALL FIXINGS 304 STAINLESS STEEL	ALL FIXINGS 304 STAINLESS STEEL
WITHIN 20KM OF SALT WATER ON WEST OR SOUTH COAST OF SOUTH ISLAND OR WITHIN 5KM OF SALT WATER ELSEWHERE	C3	ALL FIXINGS HOT DIP GALVANISED OR 304 STAINLESS STEEL	ALL FIXINGS 304 STAINLESS STEEL
MORE THAN 20KM OF SALT WATER ON WEST OR SOUTH COAST OF SOUTH ISLAND OR MORE THAN 5KM OF SALT WATER ELSEWHERE	C2	ALL FIXINGS HOT DIP GALVANISED OR 304 STAINLESS STEEL	ALL FIXINGS HOT DIP GALVANISED OR 304 STAINLESS STEEL
NOTE 1: WHILE HOT DIP GALVANISED FIXINGS ARE ACCEPTABLE IN INLAND LOCATIONS IT IS SAFER TO USE 304 STAINLESS STEEL.			
NOTE 2: THE TABLE ABOVE IS ONLY A GUIDE. PLEASE REFER TO SNZ TS 3404:2018, FIGURES 1 TO 7 FOR SPECIFIC CORROSION MAPS FOR FURTHER GUIDANCE.			

INSPECTION AND MAINTENANCE SCHEDULE	
THIS SCHEDULE OF ONGOING MAINTENANCE OF STRUCTURAL ELEMENTS SHALL BE INCLUDED WITH THE O&M MANUALS AND PROVIDED TO THE OWNER/BODY CORPORATE AND BUILDING MANAGERS.	
TIMEFRAME	INSPECTION / MAINTENANCE
1/2 YEARLY	WASH DOWN ALL EXPOSED METALWORK INCLUDING PANELS, POSTS AND FIXINGS
10 YEARLY	CHECK PANELS, POSTS AND FIXINGS FOR SIGNS OF CORROSION. REPAIR PROTECTIVE COATINGS OR REPLACE AS REQUIRED.
FOLLOWING SEISMIC SHAKING > SLS1 EVENT	INSPECT AND REPAIR AS PER THE 10 YEARLY REQUIREMENTS.

No.	Date	Drawn	Approved	Issue/Revision
0	DEC 23	MB	-	FOR CONSENT

**BELAIRE DESIGNER FENCING**



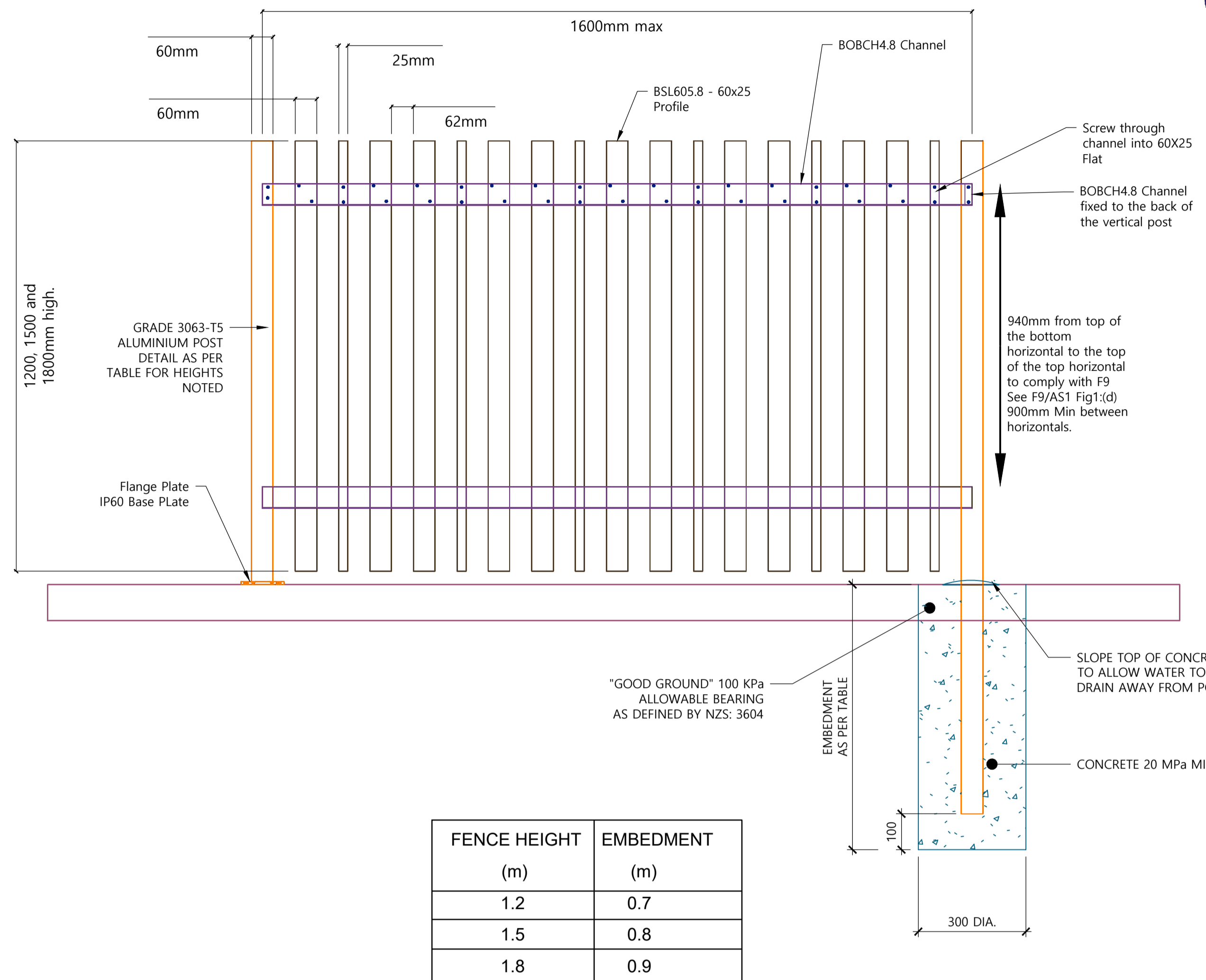
STANDARD NOTES

Drawing No. 670101-STR-D001	
Sheet No. 01	Issue A
A1 SCALE: NTS	



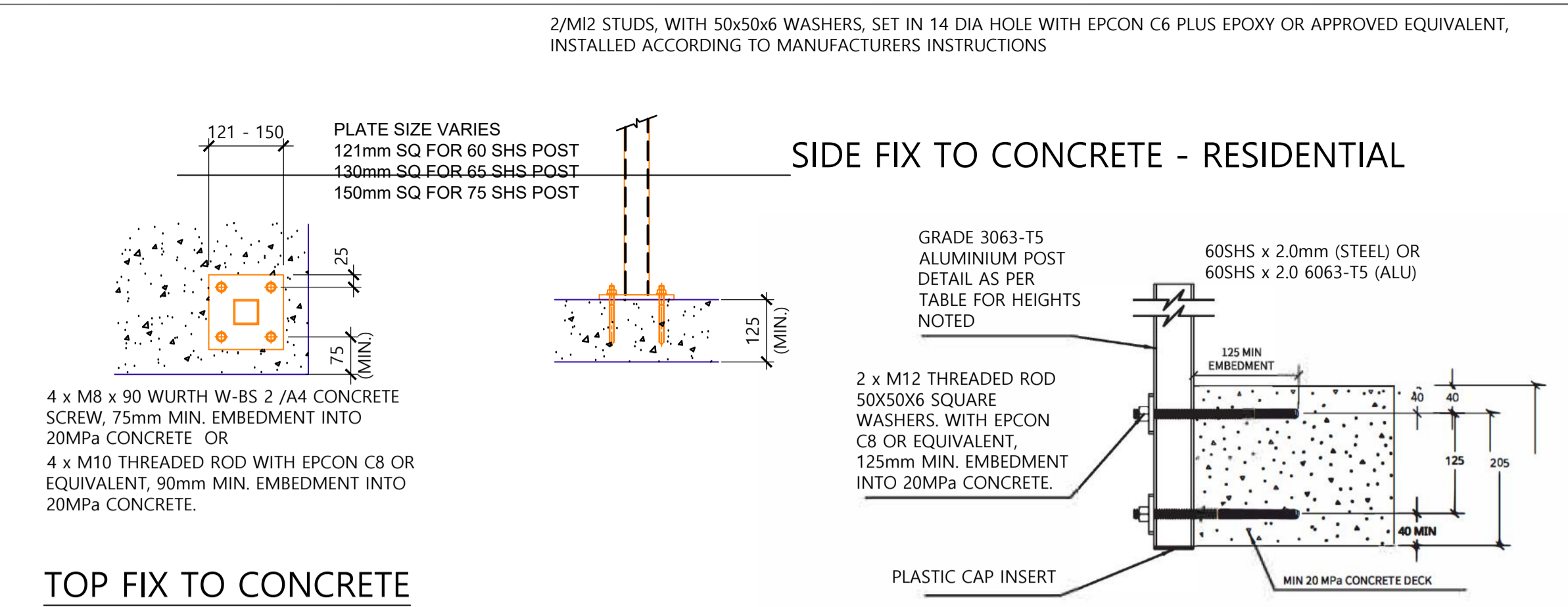
OFFICE: TAURANGA CONTACT: 07 571 4500

# DETAILED DESIGN

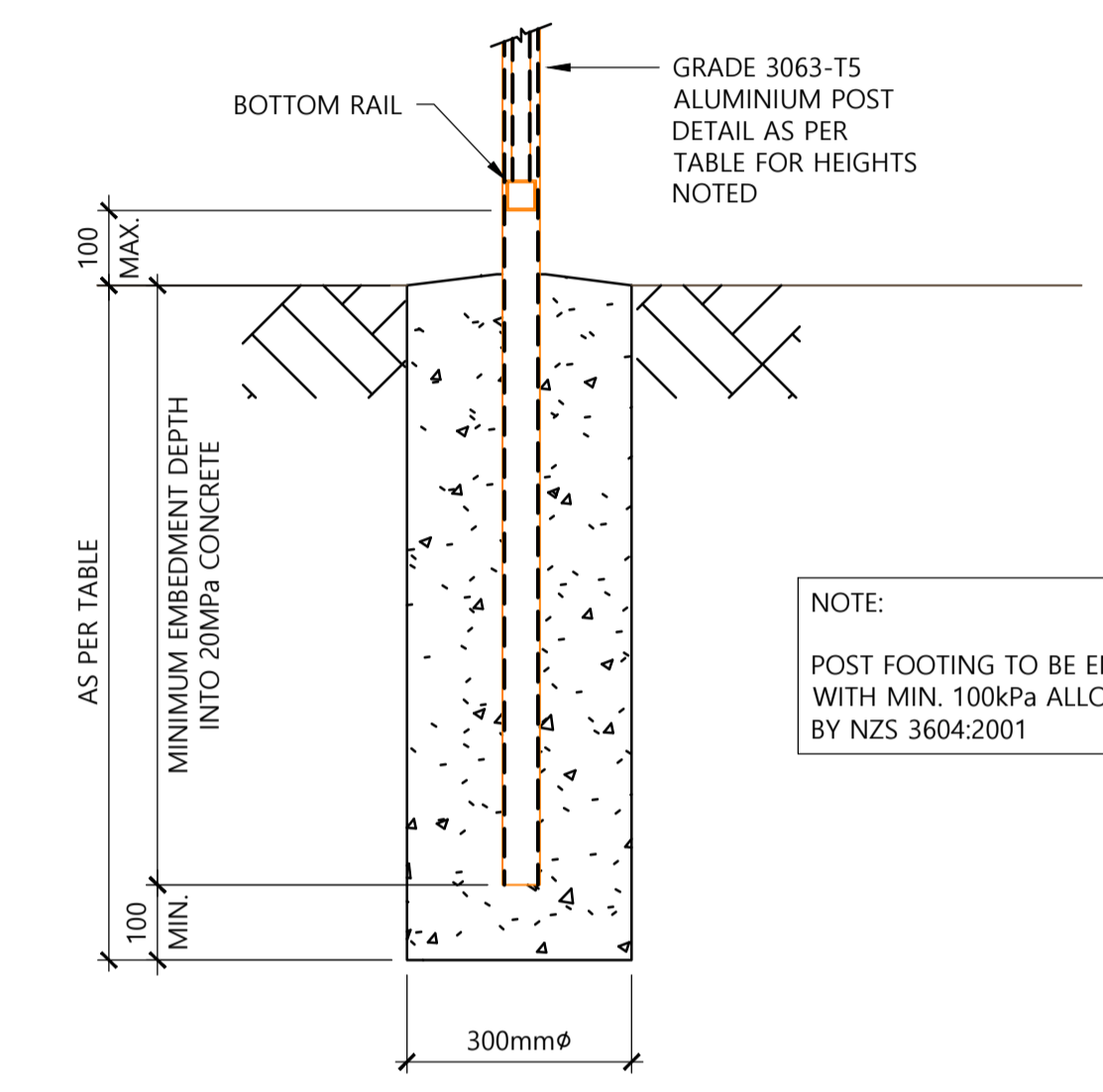


FENCE HEIGHT (m)	EMBEDMENT (m)
1.2	0.7
1.5	0.8
1.8	0.9

**SIDE FIX TO TIMBER DECKING - RESIDENTIAL**  
REFER NZS 3604  
FOR ALL DETAILS

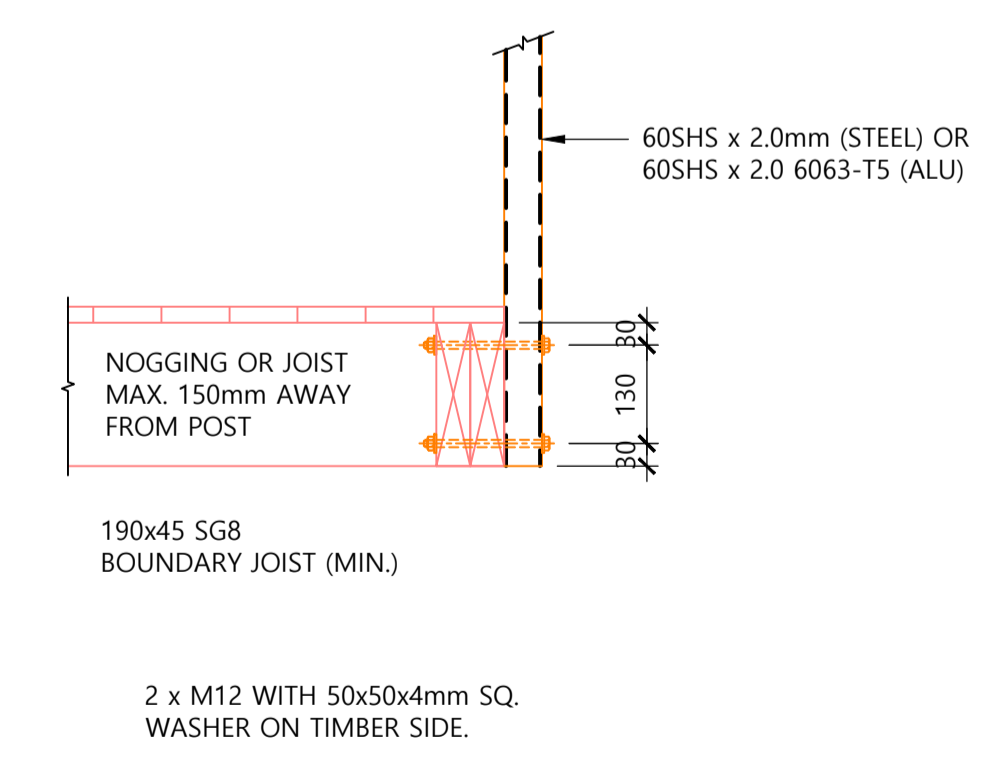


**TOP FIX TO CONCRETE**  
SCALE 1:10 (A1)  
SCALE 1:20 (A3)

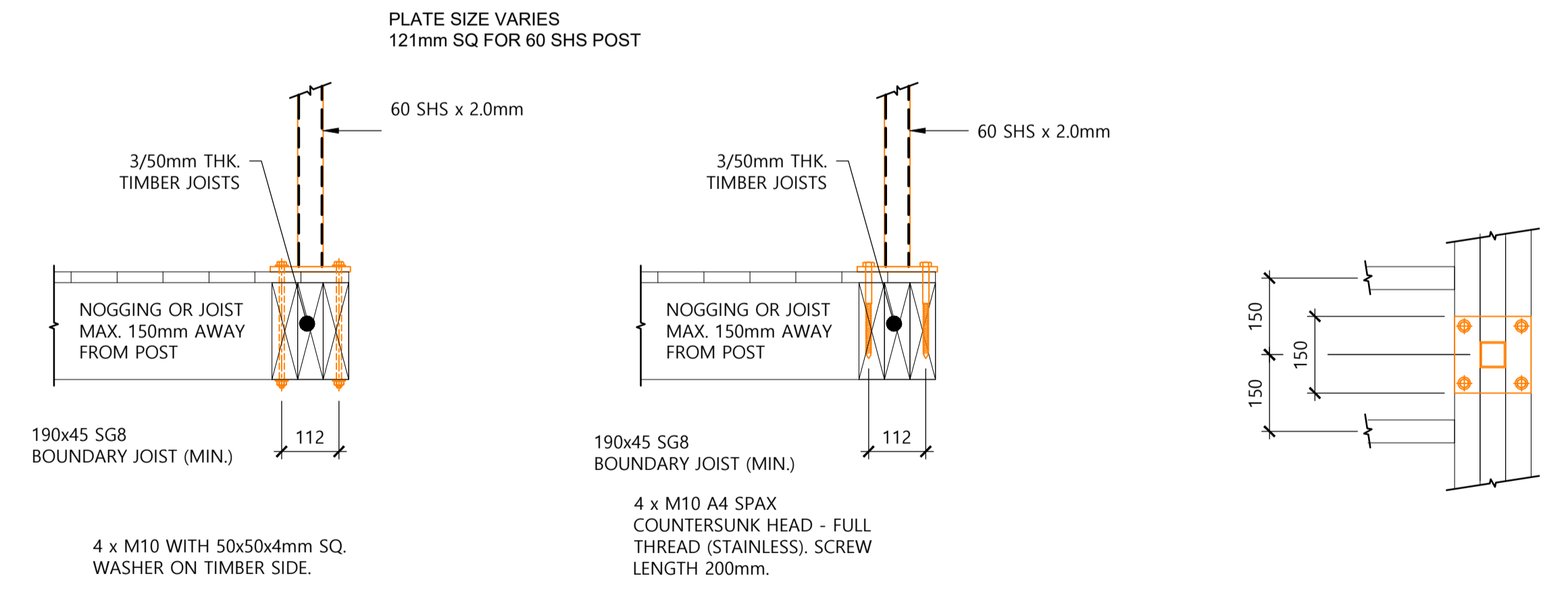


**CONCRETED IN GROUND - RESIDENTIAL**  
SCALE 1:10 (A1)  
SCALE 1:20 (A3)

FENCE HEIGHT (m)	EMBEDMENT (m)
1.2	0.7
1.5	0.8
1.8	0.9



**SIDE FIX TO TIMBER DECK - RESIDENTIAL**  
SCALE 1:10 (A1)  
SCALE 1:20 (A3)



**TOP FIX TO TIMBER DECK - RESIDENTIAL**  
SCALE 1:10 (A1)  
SCALE 1:20 (A3)

No.	Date	Drawn	Approved	Issue/Revision
0	DEC 23	MB	-	FOR CONSENT
B	DEC 23	MB	SB	NOTATION REVISED

**BELAIRE DESIGNER FENCING**



TYPICAL SAFETY FENCE DETAILS  
RESIDENTIAL

Drawing No. 670101-STR-D001	
Sheet No. 02	Issue B
A1 SCALE: 1:10	

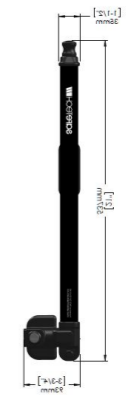
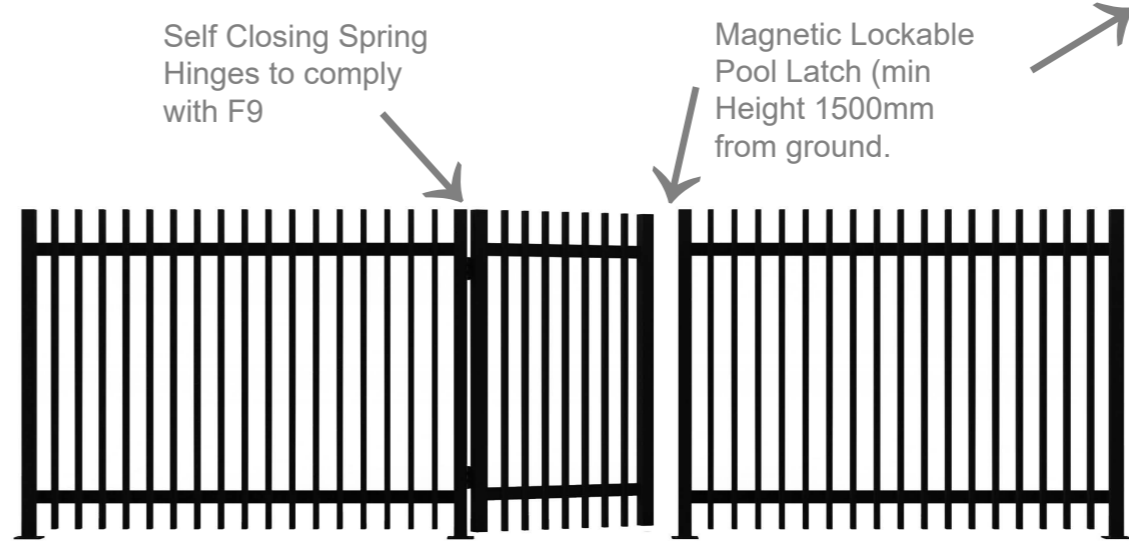
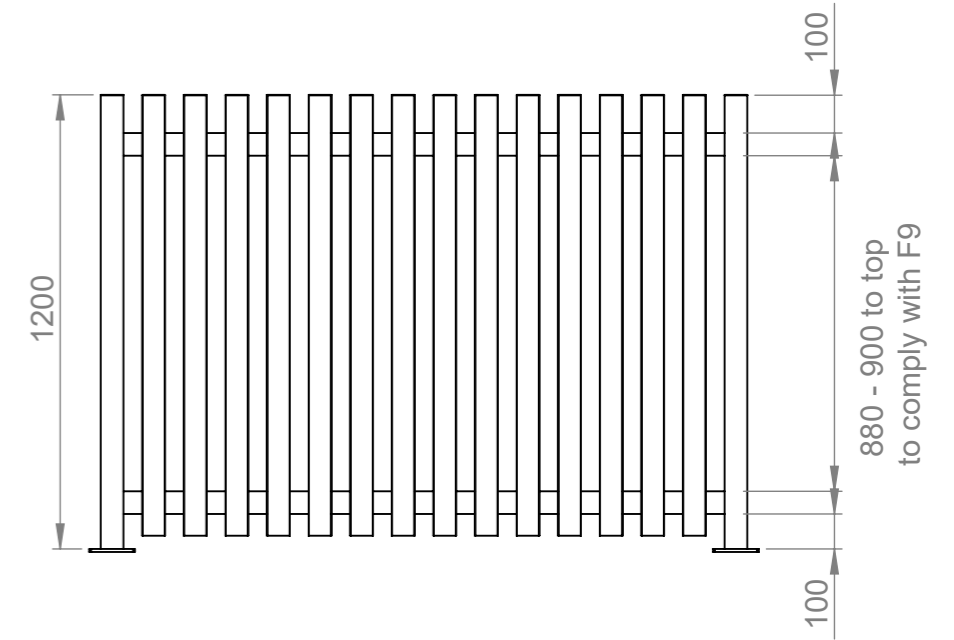
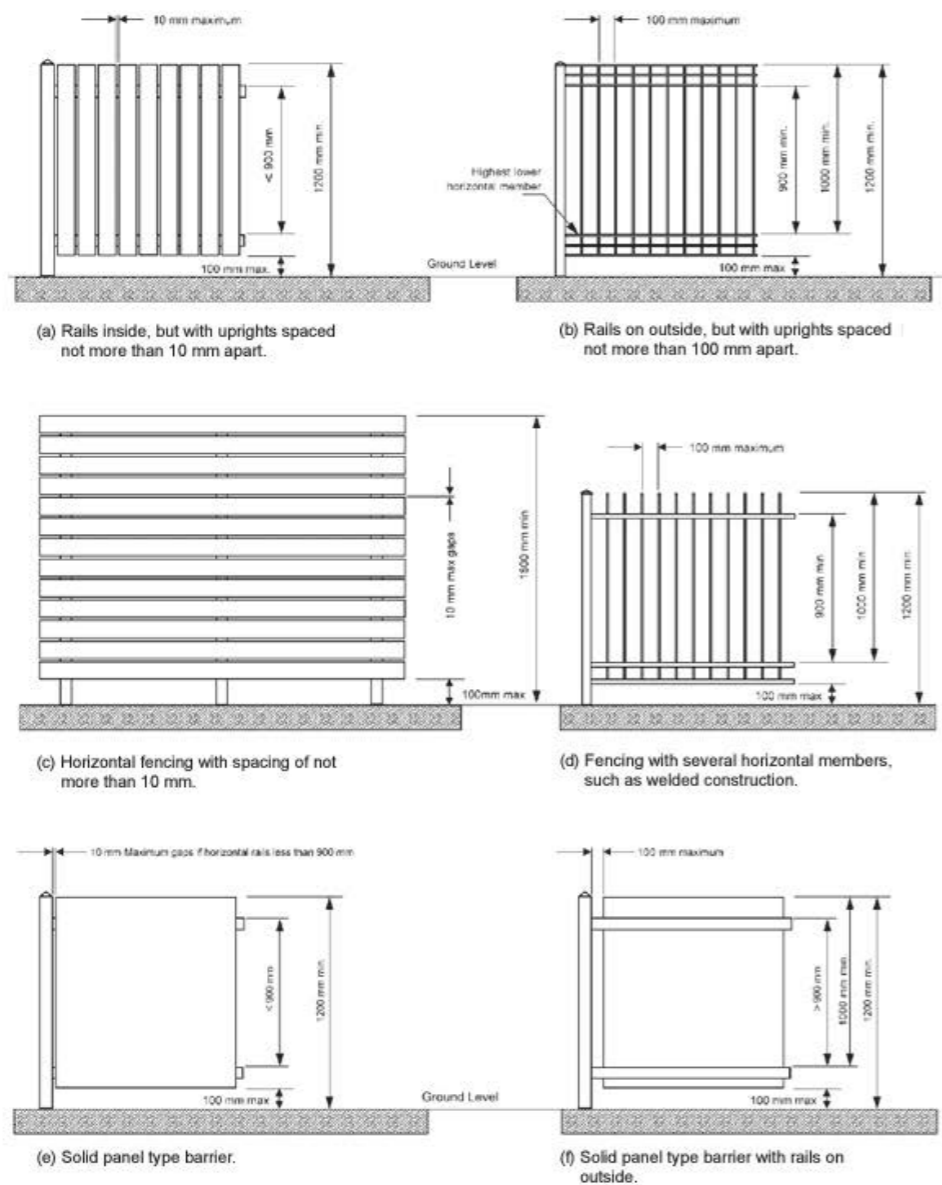


OFFICE: TAURANGA CONTACT: 07 571 4500

HORIZONTAL BAR SPACING TO COMPLY WITH REQUIREMENTS OF NZBC F9 - FIGURE 1 (AS SHOWN TO THE RIGHT) Or As per : Acceptable Solutions F9/AS1 and F9/AS2

F9/AS1 RESIDENTIAL POOL BARRIERS

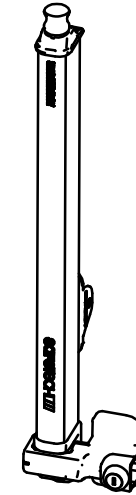
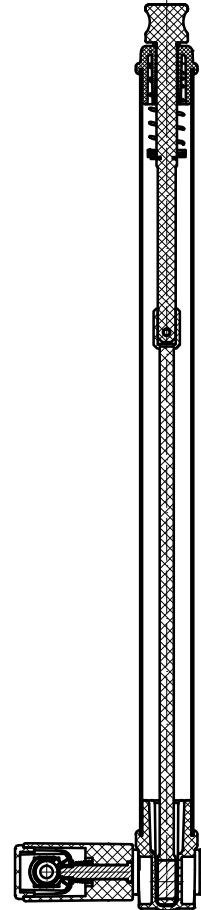
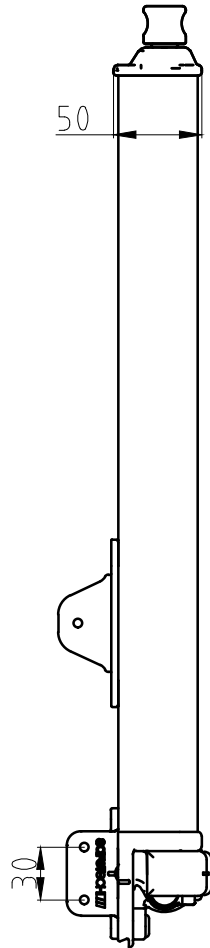
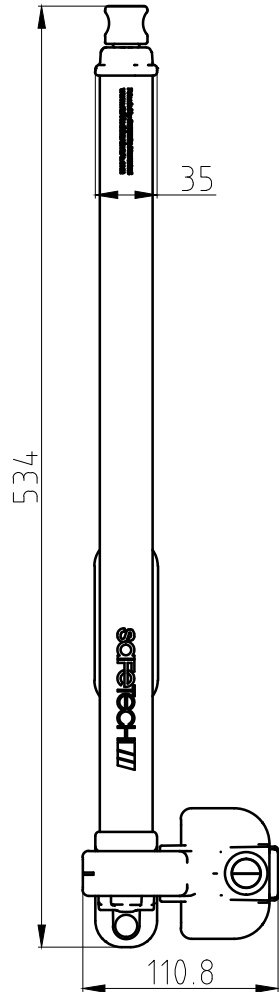
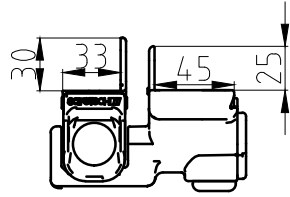
Figure 1: Acceptable pool barriers Paragraphs 2.1.4, 2.1.5



2 WAITANE PLACE. ONEKAWA, NAPIER

DESCRIPTION: **Aurora Channel Placement**

<b>TOLERANCES</b> 0 ANGLE $\pm 0.5^\circ$ UNLESS OTHERWISE STATED	THE INFORMATION CONTAINED IN THIS DRAWING IS PROPRIETARY TO STORETECH AND SHALL NOT BE REPRODUCED OR DISCLOSED IN WHOLE OR IN PART OR USED FOR ANY DESIGN OR MANUFACTURE EXCEPT WHEN SUCH USER POSSESSES DIRECT WRITTEN AUTHORIZATION FROM STORETECH LTD.	DRAWN BY:	DATE: 3/07/2024	<b>NOTES:</b> - 1800, 1500 (150mm from top and bottom channel. - 1200, 950 (100mm from top and bottom channel. - All Panel Designs have the same channel placement in reference to the post.	MATERIAL:	PHASE:	DESCRIPTION: <b>Aurora Channel Placement</b>				
		CHECKED BY:	3RD ANGLE PROJECTION		FINISH:	PROCESS:	SCALE: 1:20	SHEET: A3	SHEET: 3 of 5	PART NUMBER:	REVISION:
		DIMENSIONS ARE MILLIMETERS UNLESS OTHERWISE STATED. DO NOT SCALE DRAWING.			WEIGHT:	TYPE:					



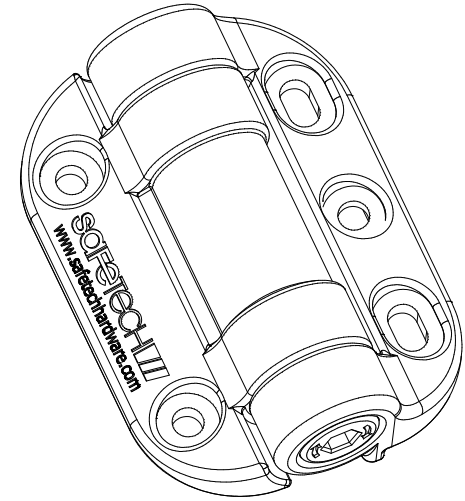
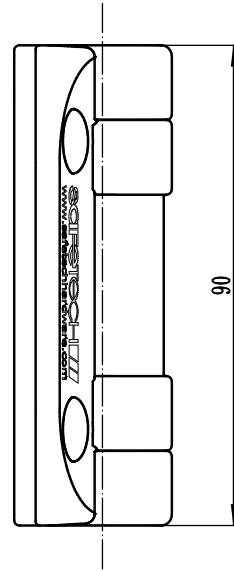
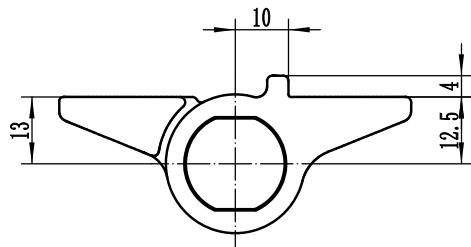
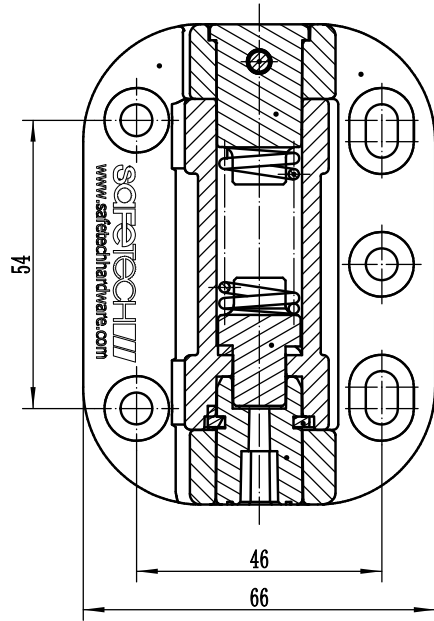
Product Code:

**SL-50H**

Description:

Magnetic Top Pull  
Latch - Trilatch



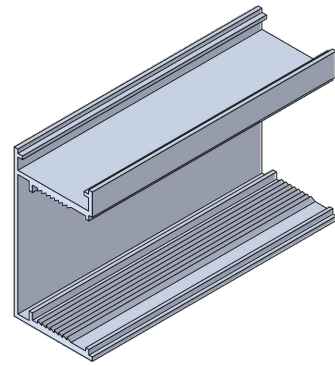
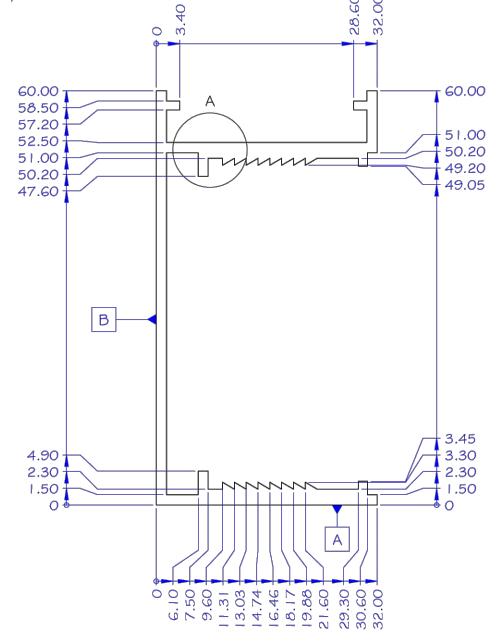
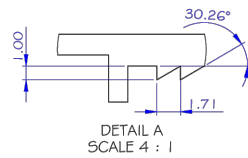


Product Code:

**SHG-90**

Description:

Adjustable Tension Hinge  
- Standard, No Legs

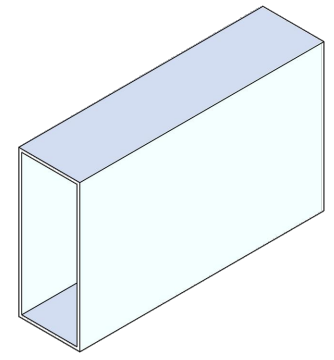


NOTE:  
Part shown extruded 100mm  
long for clarity

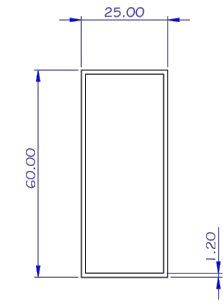


TOLERANCES O ±0.5mm ANGLE ±0.5° UNLESS OTHERWISE STATED	THE INFORMATION CONTAINED IN THIS DRAWING IS PROPRIETARY TO STORETECH AND SHALL NOT BE REPRODUCED OR DISCLOSED IN WHOLE OR IN PART OR USED FOR ANY DESIGN OR MANUFACTURE EXCEPT WHEN SUCH USER POSSESSES DIRECT WRITTEN AUTHORIZATION FROM STORETECH LTD.	DRAWN BY: MvB	DATE: 29/06/2021	NOTES: 3RD ANGLE PROJECTION	MATERIAL: 6063-T5	PHASE: 2 WAITANE PLACE, ONEKAWA, NAPIER	DESCRIPTION: 2 WAITANE PLACE, ONEKAWA, NAPIER	FINISH: Mill finish	PROCESS: Extruded	TYPE: Extruded	SCALE: 2:1	SHEET: A3	SHEET: 1 of 1	PART NUMBER: BOBCH4.B	REVISION: 1
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**INFORMATION ONLY**

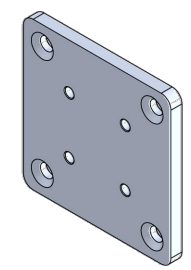
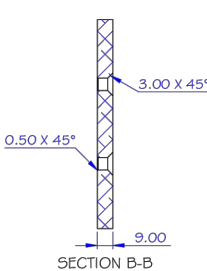
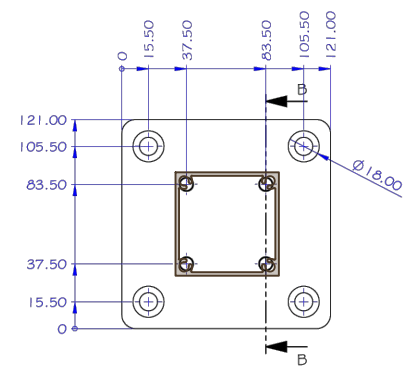
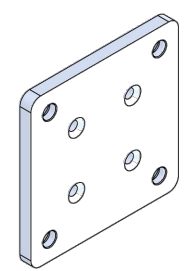
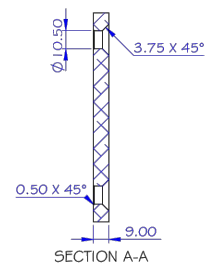
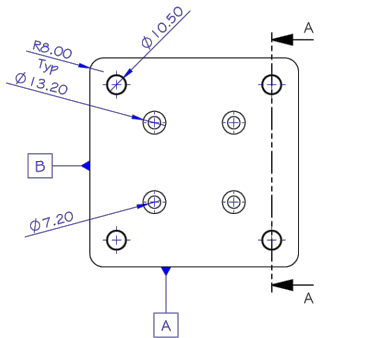


NOTE:  
Part shown extruded 100mm  
long for clarity

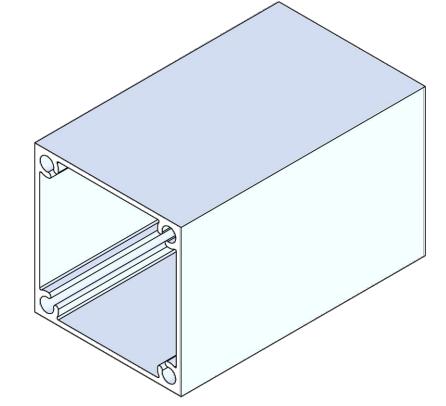
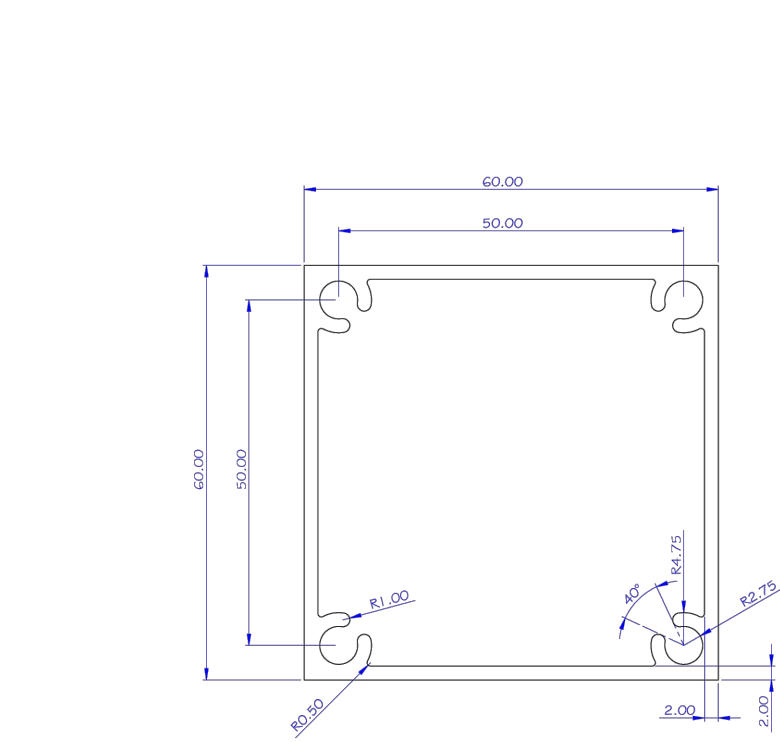


TOLERANCES O ±0.5mm ANGLE ±0.5° UNLESS OTHERWISE STATED	THE INFORMATION CONTAINED IN THIS DRAWING IS PROPRIETARY TO STORETECH AND SHALL NOT BE REPRODUCED OR DISCLOSED IN WHOLE OR IN PART OR USED FOR ANY DESIGN OR MANUFACTURE EXCEPT WHEN SUCH USER POSSESSES DIRECT WRITTEN AUTHORIZATION FROM STORETECH LTD.	DRAWN BY: MvB	DATE: 29/06/2021	NOTES: 3RD ANGLE PROJECTION	MATERIAL: 6063-T5	PHASE: 2 WAITANE PLACE, ONEKAWA, NAPIER	DESCRIPTION: 2 WAITANE PLACE, ONEKAWA, NAPIER	FINISH: Mill Finish	PROCESS: Extruded	TYPE: Extruded	SCALE: 1:1	SHEET: A3	SHEET: 1 of 1	PART NUMBER: BSL605.B	REVISION: 1
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BASE PLATE FOR 60x60 SHS SHOWN  
FOR 65x65 SHS OUTER PLATE DIMENSION TO BE 130 X 130mm.  
FOR 75x75 SHS OUTER PLATE DIMENSION TO BE 130 X 130mm.



TOLERANCES O ±0.5mm ANGLE ±0.5° UNLESS OTHERWISE STATED	THE INFORMATION CONTAINED IN THIS DRAWING IS PROPRIETARY TO STORETECH AND SHALL NOT BE REPRODUCED OR DISCLOSED IN WHOLE OR IN PART OR USED FOR ANY DESIGN OR MANUFACTURE EXCEPT WHEN SUCH USER POSSESSES DIRECT WRITTEN AUTHORIZATION FROM STORETECH LTD.	DRAWN BY: MvB	DATE: 24/06/2021	NOTES: 3RD ANGLE PROJECTION	MATERIAL: 6063-T6	PHASE: 2 WAITANE PLACE, ONEKAWA, NAPIER	DESCRIPTION: IP60 Base Plate	FINISH: Mill Finish	PROCESS: Machined	TYPE: Machined	SCALE: 1:2	SHEET: A3	SHEET: 1 of 1	PART NUMBER: IP60BP	REVISION: 1
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Note:  
Part drawn 100mm long for clarity.



TOLERANCES O ±0.5mm ANGLE ±0.5° UNLESS OTHERWISE STATED	THE INFORMATION CONTAINED IN THIS DRAWING IS PROPRIETARY TO STORETECH AND SHALL NOT BE REPRODUCED OR DISCLOSED IN WHOLE OR IN PART OR USED FOR ANY DESIGN OR MANUFACTURE EXCEPT WHEN SUCH USER POSSESSES DIRECT WRITTEN AUTHORIZATION FROM STORETECH LTD.	DRAWN BY: MvB	DATE: 24/06/2021	NOTES: 3RD ANGLE PROJECTION	MATERIAL: 6063-T5	PHASE: 2 WAITANE PLACE, ONEKAWA, NAPIER	DESCRIPTION: IP60	FINISH: Mill Finish	PROCESS: Extruded	TYPE: Extruded	SCALE: 2:1	SHEET: A3	SHEET: 1 of 1	PART NUMBER: IP60	REVISION: 1
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No.	Date	Drawn	Approved	Issue/Revision
0	27.09.23	MB	-	FOR CONSENT
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-
-	-	-	-	-

BELAIRE DESIGNER FENCING



TYPICAL SAFETY FENCE DETAILS  
COMMERCIAL

Drawing No. 670101-STR-D001	Issue A
Sheet No. 03	Issue A
A1 SCALE: 1:10	



OFFICE: TAURANGA CONTACT: 07 571 4500