

PLEASE NOTE

- Although your Consent documentation states 2-3 full working days' notice is required, it may not always be possible to carry out the inspection within the time frame you require.
- If an inspection of the building works is not carried out in accordance with the Inspection Schedule it could affect the issue of the Code Compliance Certificate.

**To book inspections ring WDC on
03 311 8906**

All inspections are subject to a separate charge.

All re-inspections will be charged and recorded separately even if other inspections are carried out on the same day.

Using engineers & other professionals

If an engineer has been engaged to carry out various site inspections you will need to provide copies of his/her site notices to us and a producer statement, a PS4 from the engineer confirming the building elements designed and inspected by the engineer were completed in accordance with the approved design.

Confirmation of installation of products

We require producer statements, warranties & installation certificates from various installers as a way of confirming products have been installed in accordance with the manufacturer's recommendations. These are commonly required for exterior claddings, wet area tanking, membrane roofing/decking and effluent fields. Energy certificates such as electrical and gas certificates need to be provided too. You will need to provide these to us prior to the issue of the Code Compliance Certificate.

Applying for a Code Compliance Certificate (CCC)

When you are satisfied your project is complete please book a final inspection. The owner or their agent is also required to complete a separate application for the Code Compliance Certificate (Form 6) as soon as possible after the building work is completed. The application form to apply can be downloaded via the link below or call 03 311 8906 for further information.

<https://www.waimakariri.govt.nz/consents-and-licences/forms-a-to-z#building>

You should have this form ready for when the building Inspector arrives on site to carry out the final inspection, or email it to ccc@wmk.govt.nz. Please note all outstanding monies must be paid prior to the issue of the CCC.

Grant or refuse a CCC

We are required to make a decision to grant or refuse a CCC if you do not formally apply for a CCC within two years of the granting of the building consent. The date your consent was granted is the date at the bottom of the building consent form. If you do not apply for a CCC or arrange an extension with us within the two year period we may carry out an inspection of the building work. An additional fee applies for this work.

Lapsing of your consent

Your building consent will lapse if building work has not commenced within 12 months after the date of issue of the building consent. The issue date is deemed to be the day you paid for the consent. In saying this we understand things don't always run smoothly so you can apply for a time extension which we may agree to. A fee applies for this.

Site Inspection Sheet

Application

Barry C Walsh, Carol S Walsh C/- Loula Hire Limited 43 King Street Rangiora 7400	No.	BC240953
	Issue date	24 September 2024
	Overseer	John Blanken

Project

Description	4610
	BC - Marquee, 01 Standard Building Consent(20 W Processing Days)
Intended Life	5 days
Intended Use	Marquee
Estimated Value	\$800.00
Location	71 Davis Road CUST
Legal Description	LOT 1 DP 570321 4.113800 Ha
Valuation No.	2158007013

This inspection sheet and all the approved plans and specifications relating to this building consent are to be available on site during construction. If the documentation required for a particular inspection is not available, this will mean automatic failure of the building inspection and will necessitate re booking the inspection at the applicant's expense.

Work cannot proceed past each step until that step has been inspected and approved.

All inspections listed below are to be inspected by a WDC Building Inspector, an Engineer may also need to be engaged to inspect engineer requirements, this will be noted below.

BC240953
MF-Marquee Final -

Please give at least 2-3 full working days' notice for the next required inspection, please be advised that it may not always be possible to carry out the inspection within the time frame you require.

Form 5

Building consent

BC240953

Section 51, Building Act 2004

The building

Street address of building: 71 Davis Road CUST

Legal description of land where building is located: LOT 1 DP 570321 4.113800 Ha

Valuation number: 2158007013

Building name:

Location of building within site/block number:

Level/unit number: 1

The owner

Name of owner: Barry C Walsh and Carol S Walsh

Contact person:

Mailing address: 199 Johns Road Rangiora 7400

Street address/registered office:

Phone number:

Landline: 033125363

Mobile: 021522119

Daytime:

After hours: 033125363

Facsimile number:

Email address: Planb10@me.com

Website:

First point of contact for communications with the council/building consent authority:

Loula Hire Limited

Building work

The following building work is authorised by this building consent:

MARQUEE

Primary Specified Intended Use: Commercial

Description of Intended Use: Marquee

This building consent is issued under section 51 of the Building Act 2004. This building consent does not relieve the owner of the building (or proposed building) of any duty or responsibility under any other Act relating to or affecting the building (or proposed building).

This building consent also does not permit the construction, alteration, demolition, or removal of the building (or proposed building) if that construction, alteration, demolition, or removal would be in breach of any other Act.

This building consent is subject to the following conditions:

- The Building Act 2004, Section 90, states that agents authorised by the building consent authority (the Council) for the purposes of this section are entitled, at all times during normal working hours or while building work is being done, to inspect:
 - (a) land on which building work is being or is proposed to be carried out; and
 - (b) building work that has been or is being carried out on or off the building site; and
 - (c) any building.

Compliance schedule

A Compliance Schedule is not required for this building.

Attachments

Copies of the following documents are attached to this building consent:

Consented Plans

Consented Specifications

Inspection List

Form 6 Application for Code Compliance



Diana Firth | Building Consent Administration Officer

Building Unit

Building Unit: 03 311 8906

On behalf of: Waimakariri District Council

Date: 24 September 2024

Advice notes

Building consent

BC240953

Advice Notes as at 24/09/2024

Project description

Street address of building:	71 Davis Road CUST
Legal description where work is located:	LOT 1 DP 570321 4.113800 Ha
Description of consent:	MARQUEE

Advice Notes

This building consent is issued with the following advice notes listed below. Please read and follow the guidance given. Failure to do so may create difficulties in obtaining a code compliance certificate.

All inspections listed must be requested and carried out in accordance with the attached schedule (list) of inspection types. It is advisable to request bookings at least 2-3 full working days' in advance, please be advised that it may not always be possible to carry out the inspection within the time frame you require. It is the owner's responsibility to ensure all necessary inspections are carried out. Please contact the building consent authority if you are unsure what requires inspection - do not cover or enclose any building work without prior inspection.

Please note that the consent fees allow for a single inspection of construction stages of the project as specified in the inspection schedule. Any extra inspections required will be invoiced and must be paid for before a code compliance certificate is issued.

Comply with the endorsements on the plan.

The duplicate copy of the approved consent documents and inspection schedule must remain on site during construction.

WorkSafe New Zealand to be notified prior to any disturbance of asbestos or hazardous materials on site during demolition or construction.

Your consent is issued subject to manufacturers technical information about their products, installation and maintenance is to be as this technical information requires.

A Building Consent lapses and is of no effect if the building work to which it relates does not commence within 12 months after the date of issue of the building consent or any further period that the Building Consent Authority may allow. (Time extensions to commence building work after 12 months must be submitted to the Building Consent Authority in writing stating the reason for the request, prior to the lapse date of the consent.

A Building Consent is not completed until it has been issued with a Code Compliance Certificate. The owner is required to complete a separate application for a Code Compliance Certificate as soon as practicable after the building work is completed. In any event no later than two (2) years after the granting of the Building Consent. Council is required to decide whether or not a Code Compliance Certificate can be issued. If your project will not be completed within two years you will need to apply for a time extension*. *fees apply.

BUILDING UNIT

Form 6 Application for Code Compliance Certificate

Under The Building Act 2004, Section 92

Please submit the Application for Code Compliance Certificate, when work has been completed, by emailing to: **ccc@wmk.govt.nz**

Office use only - Date Form 6 received:

1. The Building Consent

Building consent number(s) (BC):

Issued by:

Site address: (number/street/road/township)

2. The Owner - All details must be the legal owner's

PLEASE NOTE - This section is only required to be completed if the owner details have changed from the building consent.

No change to details

Name of owner: (include preferred form of address, e.g. Mr, Mrs, Ms, Miss, Dr, if an individual)

Contact person: (not required if the owner is an individual. Must have a New Zealand address)

Mailing address:

Street address/Registered office: (if different than above)

Phone number:

Landline:

Mobile:

Daytime:

After hours:

Fax:

Email:

Website:

As the owner, where you have given authorisation for an Agent to act on your behalf, please confirm if you require a copy of Code Compliance Certificate correspondence: Yes No

The following evidence of ownership is attached to this application - **not required if details have not changed from the building consent:**

Copy of Record of Title OR Council to provide (additional charge of \$15)

(Current within 1 month of being issued and must include a deposited plan [diagram]. Where the Record of Title is not current, Council will provide this [additional charge of \$15 applies]).

Signed copy of Sales and Purchase Agreement (If Record of Title is not issued)

Other document showing full name of legal owner(s) (e.g. Rates Invoice)

3. Agent - Only required when the application is being made on behalf of the owner

PLEASE NOTE - Authorisation is required from the owner of the property

Name of agent:

Contact person: (not required if the applicant is an individual)

Mailing address:

Street address/Registered office: (if different than above)

Phone number:

Landline:

Mobile:

Daytime:

After hours:

Fax:

Email:

Website:

Relationship to owner: (state details of the authorisation from the owner to make the application on the owner's behalf)

PLEASE NOTE - The Agent will be the first point of contact for communications with the Council/Building Consent Authority regarding this application.

4. Application

The following field must be completed when submitting the Code Compliance Certificate application:

All building work carried out under the Building Consent specified in this form was completed on:

Restricted building work

Did the building work include any restricted building work? Yes No

The Licensed Building Practitioner(s) who carried out or supervised the restricted building work is/are as follows:

Licence class	Name	Licensed building practitioner number (or registration number if treated as being licensed under section 291 of the Building Act 2004)	Particular work carried out or supervised
Foundations			
Carpentry			
Exterior Plasterer			
Bricklayer			
Blocklayer			
Roofer			

Key personnel

Builder

Name:

Reg. No.:

Address:

Phone No.:

Email:

Designer(s)

Name:

Reg. No.:

Address:

Phone No.:

Email:

Certifying drainlayer

Name:

Reg. No.:

Address:

Phone No.:

Email:

Certifying plumber

Name:

Reg. No.:

Address:

Phone No.:

Email:

Certifying gasfitter

Name:

Reg. No.:

Address:

Phone No.:

Email:

Registered electrician

Name:

Reg. No.:

Address:

Phone No.:

Email:

Structural engineer

Name:

Reg. No.:

Address:

Phone No.:

Email:

Specified systems

The following specified systems are contained on the compliance schedule for the building and, in the opinion of the personnel who installed them, are capable of performing to the performance standards set out in the Building Consent. Tick appropriate specified systems below:

There are no specified systems in the building

- SS1 Automatic systems for fire suppression
- SS2 Emergency warning systems
- SS3/1 Automatic door
- SS3/2 Access controlled doors
- SS3/3 Interfaced fire or smoke doors or windows
- SS4 Emergency lighting systems
- SS5 Escape route pressurisation systems
- SS6 Riser mains
- SS7 Automatic back-flow prevention
- SS8/1 Passenger carrying lifts
- SS8/2 Service lifts
- SS8/3 Escalator and moving walks
- SS9 Mechanical ventilation or air conditioning systems
- SS10 Building maintenance units
- SS11 Laboratory fume cupboards

- SS12/1 Audio loops
- SS12/2 FM Radio and infrared beam transmission systems
- SS13/1 Mechanical smoke control
- SS13/2 Natural smoke control
- SS13/3 Smoke curtains
- SS14/1 Emergency power systems
- SS14/2 Signs for SS1-13
- SS15/1 Spoken information to facilitate evacuation
- SS15/2 Final exits
- SS15/3 Fire separations
- SS15/4 Signs for facilitating evacuation
- SS15/5 Smoke separations
- SS16 Cable cars

I request that you issue a Code Compliance Certificate for this work under section 95 of the Building Act 2004.

The Code Compliance Certificate should be sent to: Owner Agent

I wish to receive my certificate in the following format:

PLEASE NOTE - *If hard copy, please confirm if you wish to pick it up from the Council or have it posted.*

Hard copy: (post) OR (pick-up) OR Email

Terms of trade

I/We understand that:

Fees associated with the Building Consent shall be paid for i.e. development contributions, amendments, additional inspections, and extensions prior to the issue of Code Compliance Certificate.

All other accounts shall be paid by the 20th day of the month following the month in which the invoice is issued.

I/We agree to pay according to these terms for any goods or services you supply to us. Failure to meet these Terms of Trade may result in any credit arrangement being withdrawn with any balance becoming payable within seven days. Should failure to meet the terms of trade result in debt recovery and/or legal proceedings, any costs whatsoever incurred in the collection of the debt including debt collector's fees and commissions and legal costs, charges and expenses on a solicitor and own client basis will be added to the account and will be payable by me/us.

Application authorisation

By entering your name in the box below you are giving your authority for this application to proceed under Section 92 of the Building Act 2004.

Name: _____ Date: _____

I am the: Owner Agent on behalf of, and with the authority of the owner

5. Attachments

The following documents are attached to this application: *(Where applicable)*

Other documents from personnel that carried out the work

Memoranda (records of building work) from licensed building practitioner(s) stating what restricted building work they carried out or supervised

Certificates that relate to the energy work *(e.g. gas and electricity)*

Evidence that the specified systems are capable of performing to the performance standards set out in the building consent

Proof of potability of drinking water from private well, and/or rain water catchment, supply

(Refer to New Zealand Drinking Water Standards 2005)

Important information

All the relevant information on this form is required to be provided under the *Building Act 2004* and/or *Resource Management Act 1991* for the Waimakariri District Council to assess your application. Under these Acts this information has to be made available to members of the public if requested. The information contained in this application may be made available to other units of the Council. You have the right to access the personal information held about you by the Council which can be readily retrieved. You can also request that the Council correct any personal information it holds about you.

Code compliance certificate

A Building Consent is not completed until it has been issued with a Code Compliance Certificate. The owner is required to complete a separate application for a Code Compliance Certificate as soon as practicable after the building work is completed. In any event no later than two (2) years after the granting of the Building Consent, the Council is required to decide whether or not a Code Compliance Certificate can be issued. If your project will not be completed within two years, you may request an extension which will need to be agreed to by Council (fees apply), refer to [building application forms and fact sheets](#).

Inspections

During the process of construction, inspections will be necessary to confirm all work complies with your approved Building Consent documentation. Please phone the Council Building Unit on 03 311 8906 at least **48 hours in advance** of requiring an inspection. Bookings are subject to demand and availability of inspectors, **please be advised that it is not always possible to carry out an inspection within 48 hours**.

The inspections required will be set out in the Building Consent documentation issued by the Council. Failure to have a prescribed inspection carried out may put the issue of the Code Compliance Certificate at risk.

All inspections including re-inspections are subjected to a separate charge, even if carried out on the same day.

Agency

The owner may authorise an agent to submit an application on their behalf.

The Agent will be the first point of contact for all communications with the Council/Building Consent Authority regarding the application for a Code Compliance Certificate under *Section 92 of the Building Act 2004*. They will receive all correspondence and must be authorised by the owner. All amendments require new authorisation.

The owner can elect to receive a copy of correspondence regarding this Code Compliance Certificate in "The owner" section of this application form, or by notifying Council during the Code Compliance Certificate process.

Fees

All work for the issue of a Code Compliance Certificate will be invoiced and needs to be paid in full as described in *Section 95 of the Building Act 2004* before the Code Compliance Certificate can be issued, refer to [building services fees and charges](#).

Notice to fix

If a Notice to Fix is issued, it will state the building work that must be carried out and will set a timeframe in which this work must be completed. Once the work listed has been completed a further inspection needs to be booked by phoning the Council Building Unit on 03 311 8906.

BUILDING UNIT

Form 2 Application for a Building Consent To Erect a Marquee, Amendments and Exemptions

Under The Building Act 2004, Section 45 and Schedule 1, Part 1, Clause 2

Please submit the Application to Erect a Marquee by emailing to: **buildinginfo@wmk.govt.nz**

BC No.: _____

1. The Project

Site Address (street/road/township): *for structures that do not have a street address, state the nearest street intersection and the distance and direction from that intersection*

Legal description of the land where the building is located: *(state legal description as at the date of application and, if the land is proposed to be subdivided, include details of relevant lot numbers and subdivision consent)*

Lot:	DP:	Valuation Number:
Marquee area:	Number of people:	Hours of operation:
Date of erection:	Date of function:	Date of dismantling:
Tick if available:	Fire extinguishers	Exit signs
	Emergency lighting	Peg protection
Marquee to be erected by: (person)		

2. The Owner - all details must be the legal owner's

Name of owner: *(include preferred form of address, e.g. Mr, Mrs, Ms, Miss, Dr, if an individual)*

Contact person: *(not required if the owner is an individual. Must have a New Zealand address)*

Mailing address:

Street address/Registered office: *(if different than above)*

Phone number:

Landline:	Mobile:	Daytime:	After hours:	Fax:
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Email: Website:

As the owner, where you have given authorisation for an Agent to act on your behalf, please confirm if you require a copy of Building Consent correspondence and associated Inspection Notices following the formally received notification. Yes No

The following evidence of ownership is attached to this application:

Copy of Record of Title OR Council to provide *(additional charge of \$15)*
(Current within 1 month of being issued and must include a deposited plan [diagram]. Where the Record of Title is not current, Council will provide this [additional charge of \$15 applies])

Signed copy of Sales and Purchase Agreement *(If Record of Title is not issued)*

OR other document showing full name of legal owner(s) of the building *(e.g. Rates Invoice)*

3. Applicant - only required when the applicant is not the owner or the agent e.g. leasee/tenant

PLEASE NOTE - Authorisation is required from the owner of the property.

Name of applicant: *(e.g. leasee/tenant)*

Contact person: *(not required if the applicant is an individual)*

Mailing address:

Street address/Registered office: *(if different than above)*

Phone number:

Landline:

Mobile:

Daytime:

After hours:

Fax:

Email:

Website:

Relationship to owner: *(state details of the authorisation from the owner to make the application on the owner's behalf)*

4. Agent – only required when the application is being made on behalf of the owner

PLEASE NOTE - Authorisation is required from the owner of the property.

Name of agent:

Contact person: *(not required if the applicant is an individual)*

Mailing address:

Street address/Registered office: *(if different than above)*

Phone number:

Landline:

Mobile:

Daytime:

After hours:

Fax:

Email:

Website:

Relationship to owner: *(state details of the authorisation from the owner to make the application on the owner's behalf)*

PLEASE NOTE - The Agent will be the first point of contact for communications with the Council/Building Consent Authority regarding this application/building work

5. Application

I request that the following (please select one) be issued for the building work described in this Application:

Building Consent

Amendment to Building Consent

Please Note: Amendments must be authorised by the owner

Exemption from the need for B/C

(Refer to Building Act 2004 Schedule 1, Part 1, Clause 2)

I wish to receive my approved documentation in the following format:

PLEASE NOTE - If hard copy, please confirm if you wish to pick it up from the Council or have it posted.

Electronically via Sharefile Transfer Portal (You must be set up and registered for this option)

Hard copy: (onsite - this is an additional charge) (post) OR (pick-up)

PLEASE NOTE - One set of "Onsite" hard copy consented documents must be available at all times for inspections.

All consent related invoices/refunds to be billed and sent to:

Owner

Applicant

Agent

Or other (If other, please complete below)

Company name: (if applicable)

Contact person:

Mailing address:

Phone number:

Landline:

Mobile:

Daytime:

After hours:

Fax:

Email:

Website:

PLEASE NOTE - Any refunds are to the receipted name unless written authorisation has been received from the receipted person or company.

Terms of trade

I/We understand that:

Building Consents shall be paid for when the consent is collected/uploaded or if the consent is not collected/uploaded within three months after the date of consent being granted, the work done to date portion i.e. admin and processing costs of the account will be due and payable. The balance of the invoice will be payable when the consent is collected/uploaded.

All other accounts shall be paid by the 20th day of the month following the month in which the invoice is issued.

I/We agree to pay according to these terms for any goods or services you supply to us. Failure to meet these Terms of Trade may result in any credit arrangement being withdrawn with any balance becoming payable within seven days. Should failure to meet the terms of trade result in debt recovery and/or legal proceedings, any costs whatsoever incurred in the collection of the debt including debt collector's fees and commissions and legal costs, charges and expenses on a solicitor and own client basis will be added to the account and will be payable by me/us.

Application authorisation

By entering your name in the box below you are giving your authority for this application to proceed under Section 45 of the Building Act 2004.

Name:

Date:

I am the:

Owner

Applicant on behalf of, and with the authority of the owner

Agent on behalf of, and with the authority of the owner

6. Marquee Site plan

PLEASE NOTE - *The information contained in this application may be made available to other units of the Council.*

Please draw

1. Site plan – indicating proximity to other buildings on site
2. Floor plan layout – (a) seating / tables / bar (b) exit point(s)

7. Compliance calculations

Notes for guidance

Acceptable solutions can be calculated using the information below:

Total floor area of the marquee: sq. m

Calculate the Occupancy Density

(see table 1)

Total number of persons:

 	X	=	
area (m ²)			total no. of persons
			(see table 1 for calculation)

Calculate the Exits

Total meters of exit width:

90	X	7mm	=	
no. of Persons		7mm of width per persons		total meters of exit width (not less than 850mm)

PLEASE NOTE - See Table 3 for number of exits required

Where two escape routes are required, each escape route shall be sized for the required total width i.e.: where a total of x metres of exit width is required, two exits of x metres shall be provided. Where more than one means of escape is required, the minimum distance between the two routes shall be 8 metres. Exitways must be evenly distributed around the perimeter of the marquee to avoid excess travel distances. The minimum width of any escape route is 850mm.

Calculate the Safety Features required

*Exit signs must be illuminated when the marquee is used during the hours of darkness (see table 2). Note your requirements on page 1.

Number of Exits provided

(see table 3)

Number of Sanitary Fixtures provided

(see table 4)

Purpose/Event Activities (Describe)

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance
with the Building Act 2004, clause 49 and the Building
Regulations 1992, Clause 3
BC240953 23/09/2024 johnb

Table 1	Persons Per m2
Bar standing area:	2.0
Loose seating + tables:	1.3
Loose seating + tables:	0.9
Dining tables + chairs:	0.9
Fixed seating:	# of seats provided

Table 2 - Total Occupant Load Protection Required	
Up to 50:	Exit signage
50-100:	Exit signage
101-250	Illuminated* exit signage
251-500	Illuminated* exit signage
501-1,000	Emergency lighting* throughout
1,001-2,000	Emergency lighting* throughout
Over 2,000	Emergency lighting* throughout

Table 3	Persons Per m2
Up to 500 persons:	2 means of escape
501-1,000 persons:	3 means of escape
1,001-2,000 persons:	4 means of escape
No exitway shall be less than 850mm in width	

Table 4 - Number of Sanitary Fixtures Required:	
Up to 50 persons:	1 fixture
Up to 80 persons:	2 fixtures
Plus one for every additional 50 or part thereof	
Number of Accessible (Disabled) Fixtures Required:	
Up to 300 persons:	1 fixture
Up to 600 persons:	2 fixtures
Up to 1,000 persons:	3 fixtures

8. Attachments

The following documents are attached to this application:

- Site Plan (including distances to boundaries & north point)
- PS1 & Engineer's Calculations (PS1 must be less than 18 months old)
- Flammability Test Report

Office use only

Further information required? Yes No

Date/time received:

Officer:

Date/time vetted/accepted:

Officer:

Office use only

Amount paid: \$

Date:

Officer:

Fee paid on application

Deposit invoice sent

Date payment processed:

Receipt:

Officer:

Important information

All the relevant information on this form is required to be provided under the *Building Act 2004* and/or *Resource Management Act 1991* for the Waimakariri District Council to assess your application. Under these Acts this information has to be made available to members of the public if requested. The information contained in this application may be made available to other units of the Council. You have the right to access the personal information held about you by the Council which can be readily retrieved. You can also request that the Council correct any personal information it holds about you.

Application information

a. Building Consent (BC):

A Building Consent will be processed within a maximum allowable time of 20 working days provided all the information required has been supplied. Processing time is stopped whenever further information is required and starts again when the correct information is received.

Once the Building Consent has been granted, you will receive notification, which will include an invoice for the fees payable.

Once the fees are paid in full, your Building Consent will be issued. Work must not start until the Building Consent is issued.

A Building Consent lapses and is of no effect if the building work to which it relates does not commence within 12 months after the date of issue of the Building Consent or any further period that the Building Consent Authority may allow. You may request an extension which will need to be agreed to by Council (fees apply), refer to [building application forms and fact sheets](#).

b. If the applicant does not own the land, they must provide written approval from the owner to submit this application.

Fees

The application for a Building Consent must be accompanied by the fees as described in *Section 45 of the Building Act 2004*. Any additional work to process the Building Consent will be invoiced and needs to be paid in full before the Building Consent can be granted, refer to [building services fees and charges](#).

Inspections

During the process of construction, inspections will be necessary to confirm all work complies with your approved Building Consent documentation. Please phone the Council Building Unit on 03 311 8906 at least **48 hours in advance** of requiring an inspection to ensure that this can be arranged. Bookings are subject to demand and the availability of Inspectors, **please be advised that it is not always possible to carry out an inspection within 48 hours.**

The inspections required will be set out in the Building Consent documentation issued by the Council. Failure to have a prescribed inspection carried out may put the issue of the Code Compliance Certificate at risk.

All inspections including re-inspections are subjected to a separate charge, even if carried out on the same day.

Code compliance certificate

A Building Consent is not completed until it has been issued with a Code Compliance Certificate. The owner is required to complete a separate application for a Code Compliance Certificate as soon as practicable after the building work is completed. In any event no later than two (2) years after the granting of the Building Consent, Council is required to decide whether or not a Code Compliance Certificate can be issued. If your project will not be completed within two years, you may request an extension which will need to be agreed to by Council (fees apply), refer to [building application forms and fact sheets](#).

Agency

The owner may authorise an agent to submit an application on their behalf.

The Agent will be the first point of contact for all communications with the Council/Building Consent Authority regarding this application under *Section 45* and if authorised, the application for a Code Compliance Certificate under *Section 92 of the Building Act 2004*. They will receive all correspondence and must be authorised by the Owner.

The owner can elect to receive a copy of correspondence regarding this Building Consent and associated Inspection Notices in "The owner" section of this application form, or by notifying Council during the Building Consent and/or Code Compliance Certificate process.

Exemptions – Schedule 1 of the Building Act 2004

A Building Consent is not required for the following building work:

Building work in connection with any tent or marquee, or any similar lightweight structure (for example, a stall, booth, or compartment used at fairs, exhibitions, or markets) that:

- a) does not exceed 100 square meters in floor area; and
- b) is to be, or has been, used for a period of not more than one month.



RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD
Search Copy



R.W. Muir
 Registrar-General
 of Land

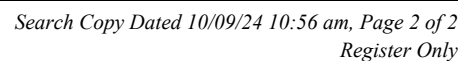
Identifier **1030127**
Land Registration District **Canterbury**
Date Issued 25 February 2022

Prior References
 894480

Estate Fee Simple
Area 4.1138 hectares more or less
Legal Description Lot 1 Deposited Plan 570321
Registered Owners
 Barry Christopher Walsh and Carol Sheila Walsh

Interests

Appurtenant hereto is a right to convey water created by Transfer 250980.1 - 7.11.1979 at 9:13 am
 Land Covenant in Transfer A19905.3 - 20.10.1992 at 11:56 am
 12376734.2 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 25.2.2022 at 4:53 pm
 Subject to a right (in gross) to convey telecommunications over parts marked A, B & H on DP 570321 in favour of Chorus New Zealand Limited created by Easement Instrument 12376734.4 - 25.2.2022 at 4:53 pm
 The easement created by Easement Instrument 12376734.4 is subject to Section 243(a) Resource Management Act 1991
 Subject to a right (in gross) to convey electricity over parts marked A, B & H on DP 570321 in favour of Mainpower New Zealand Limited created by Easement Instrument 12376734.5 - 25.2.2022 at 4:53 pm
 The easement created by Easement Instrument 12376734.5 is subject to Section 243(a) Resource Management Act 1991
 Subject to a right of way and a right to convey telecommunications over part marked A & B, a right to convey water over parts marked A, B & D, a right to convey electricity over parts marked A, B & H, all on DP 570321 created by Easement Instrument 12376734.6 - 25.2.2022 at 4:53 pm
 The easements created by Easement Instrument 12376734.6 are subject to Section 243(a) Resource Management Act 1991
 Land Covenant in Covenant Instrument 12376734.7 - 25.2.2022 at 4:53 pm
 Land Covenant in Covenant Instrument 12579350.1 - 25.10.2022 at 3:50 pm (Limited as to duration)
 12584160.3 Mortgage to ANZ Bank New Zealand Limited - 22.11.2022 at 2:16 pm



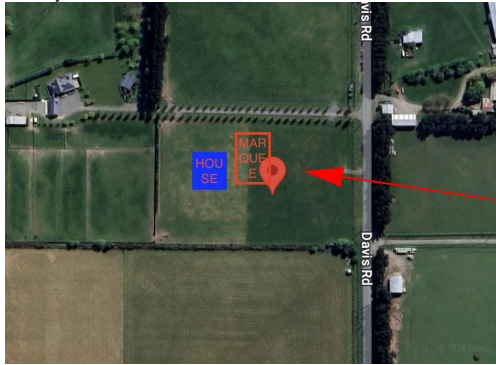
From: [Danni Fuller](#)
To: [Diana Firth](#)
Subject: Re: VETTING REQUEST FOR FURTHER INFORMATION BC240953 BARRY C WALSH & CAROL S WALSH 71 DAVIS ROAD CUST
Date: Tuesday, 10 September 2024 11:52:10 AM
Attachments: [image001.png](#)
[image003.png](#)
[image004.png](#)
[Screen Shot 2024-09-10 at 11.47.22 AM.png](#)
[0.png](#)

Caution: [THIS EMAIL IS FROM AN EXTERNAL SOURCE] DO NOT CLICK links or attachments unless you recognise the sender email address and know the content is safe.

Hi Diana,

Please find attached aerial view. There is a newly built house not yet on the google maps. This is not to size but identifies the marquee placement.

Thank you.



WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance
with the Building Act 2004, clause 49 and the Building
Regulations 1992, Clause 3
BC240953 23/09/2024 johnb

On Tue, 10 Sept 2024 at 11:44, Diana Firth <diana.firth@wmk.govt.nz> wrote:



Hi James

I have attached an aerial view if you can put on the marquee location that would be great. (Or a similar map)

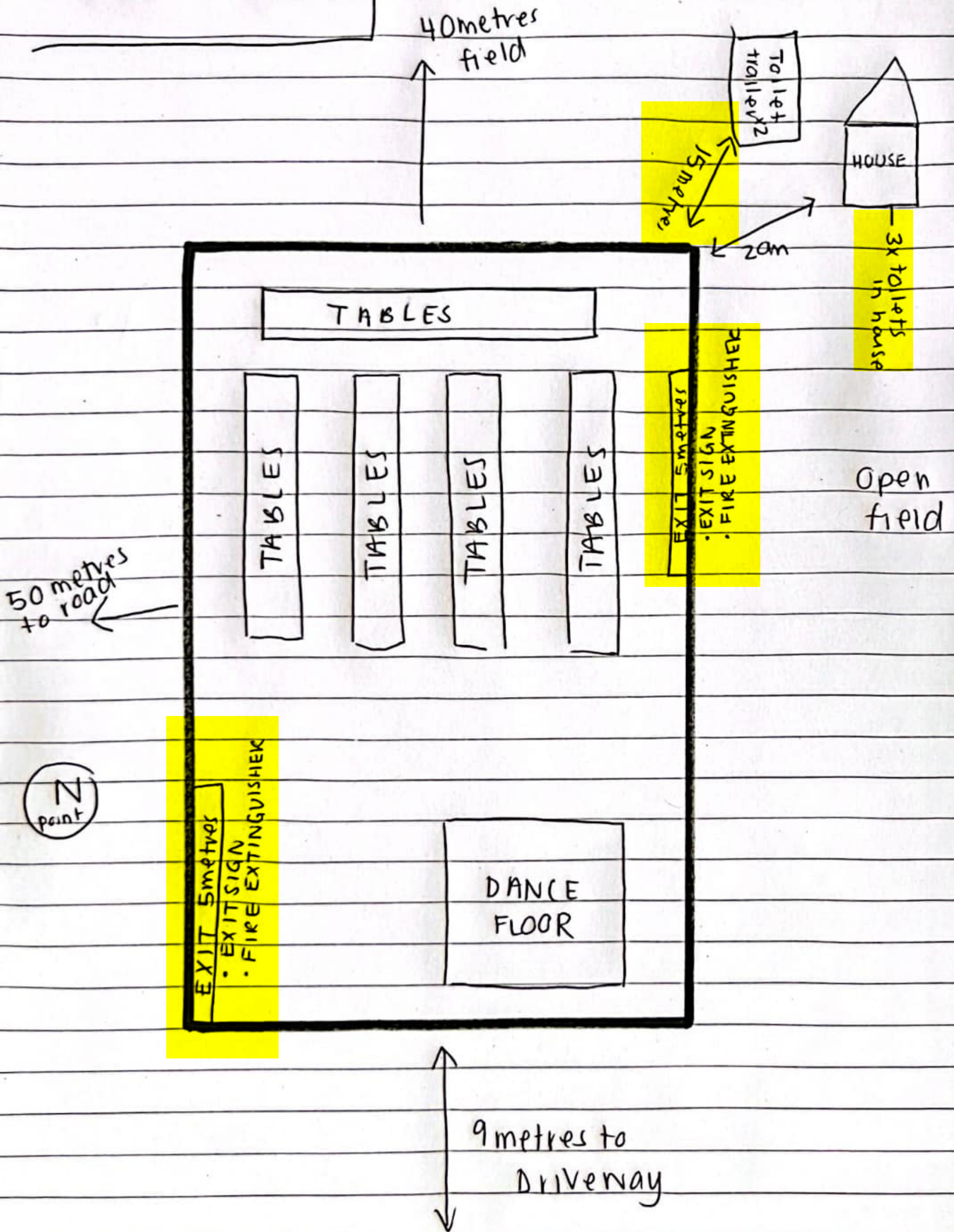
Kind Regards

Diana Firth | Building Consent Administration Officer
Building Unit

Building Unit: 03 311 8906
Phone: 0800 965 468 (0800 WMK GOV)
DDI: +64 3 260 3514



71 DAVIS ROAD FLOOR PLAN



STAND ALONE EMERGENCY ALARM



The FlameStop Stand Alone Emergency Alarm is ideal for construction sites, temporary sites such as large marquees, camp sites and the like. It is commonly used where installation of a permanent emergency system is not required, practical or cost effective.

The unit is powered by a 9V battery and activates a sounder and bright red strobe when activated by a simple push button. The bright red moulded ABS plastic enclosure is tough and durable while being easily identifiable in an emergency.

The unit is fast to install and doesn't require any wiring (unless you wish to interconnect multiple units together). You can interconnect a maximum of up to 25 units together if you choose for larger sites and premises using just a 2 wire cable.



- Quick to Install
- Push Button Activated
- Inbuilt Strobe
- 9V Battery Operated
- Interconnect up to 25 units together (2 core cable required)
- Loud 110dB Output
- 1kg in Weight
- Bright Red ABS Plastic Enclosure



IDEAL FOR CONSTRUCTION SITES

WAIMAKARIRI DISTRICT COUNCIL
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BC240953 23/09/2024 johnb

PART NUMBER: PEASA

STAND ALONE EMERGENCY ALARM

W165 X D110 X H280MM

- 9V battery not included

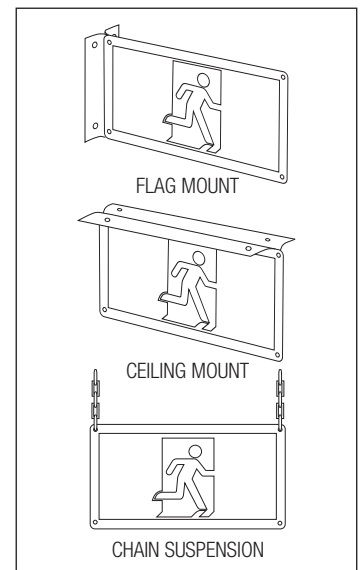
Product Data Sheet - Exit EX

2021 V2

ecoglo
VISIBLY BETTER



SIGN FLAT ON WALL



Ecoglo passive photoluminescent signs are designed to be used in and about buildings to identify escape routes to meet NZBC Clause F8 'Signs'.

SIGN DEFINITION

Exit straight on from here.

COMPLIANCE

F8/AS1 requires photoluminescent (PL) signs to be charged with 100 lux illumination. Ecoglo passive PL 'Exit' signs can be used to meet F8/AS1, or can be used in alternative solutions.

Note: For buildings where the fire safety design has been carried out using C/VM2, sometimes the specific design may not be compatible with passive photoluminescent signage.

We recommend using Ecoglo Hybrid signs in those situations.

PERFORMANCE

For indoor use, this sign is ideal in well lit occupied spaces of small - medium buildings such as schools, early childcare centres, and factory or warehouse units. If there is doubt whether the charging light is suitable, we recommend using an Ecoglo Hybrid internally illuminated photoluminescent sign instead.

For outdoor use, this sign can be used for all buildings including locations set back up to 3 metres inside a canopy.

Note: When installed in locations exposed to UV radiation, the outdoor coated version should be used to protect the printing on the sign.

Operating Temperature Range: -20°C to +40°C*

* For controlled environment (constant temperature) rooms below 0°C contact Ecoglo.

UV Resistance - Loss of luminance after 1000 hrs ASTM G-155 Cycle 1 exposure: <10%: Pass

Salt Spray Resistance - ASTM B117: Pass

Washability - ASTM D4828: Pass

Rate of Burning - ASTM D635: Pass

Surface Flammability - ASTM E162: Pass

Toxicity - Bombardier Toxic Gas Generation Test SMP800-C: Pass

Radioactivity - ASTM D3648: Pass

High Temperature Curing: Pass

COMPOSITION

The high visibility flat panel is manufactured from 5005 0.9mm aluminium sheet. Custom made photoluminescent pigments are embedded in thermoset polyester carriers to integrally bond the active ingredients onto the aluminium sheet following curing at high temperature.



INSTALLATION

Standard signs and outdoor signs are supplied with fixers for mounting flat on a wall. Brackets for ceiling or flag mounting are also available.

ORDERING

The sign is available in 2 sizes with maximum viewing distances of 16 and 24 metres.

PRODUCT CODE	PRODUCT	SIGN SIZE	MAXIMUM VIEWING DISTANCE
Standard Signs			
S20-EX2313-16m	Exit	230mm x 133mm	16 metres
S20-EX2916-24m	Exit	290mm x 162mm	24 metres
Outdoor Coated Signs			
S20-EX2313C-16m	Exit	230mm x 133mm	16 metres
S20-EX2916C-24m	Exit	290mm x 162mm	24 metres
Mounting Brackets			
BR1-230	Ceiling Mount Bracket for S20-EX2313-16m signs		
BR1-290	Ceiling Mount Bracket for S20-EX2916-24m signs		
BR1-133	Flag Mount Bracket for S20-EX2313C-16m signs		
BR1-162	Flag Mount Bracket for S20-EX2916C-24m signs		

Chain suspension is also available.

WAIMAKARIRI DISTRICT COUNCIL
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BC240953 23/09/2024 johnb

Contact

Ecoglo International Limited

77 Kingsley St, Sydenham 8023

PO Box 7698, Sydenham 8240, Christchurch, New Zealand

Phone: 03 348 3781 **Fax:** 03 343 6821

Email: info@ecoglo.com **Web:** www.ecoglo.co.nz

WEDDING & EVENT HIRE

- WIND EVACUATION PLAN

Loula Hire to monitor wind forecasts and alert hirer of any strong wind warnings.

Nominated 'person in charge' to monitor wind conditions on site.

If wind more the 50km, marquee to be completely closed up.

If wind more than 80km, marquee to be evacuated by all guests. Loula team will be on site to secure marquee.

Evacuate marquee at nearest exit point, and assemble on the main driveway near house.

Do not re enter the marquee.

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BC240953 23/09/2024 johnb

FIRE ACTION NOTICE

IF YOU DISCOVER A FIRE

WARN OTHER BUILDING OCCUPANTS

**OPERATE THE NEAREST FIRE ALARM & DIAL
111 FROM A SAFE PHONE – ASK FOR FIRE
FIREFIGHTING EQUIPMENT IS LOCATED AT THE
MARKED EXITS BELOW FIRE ALARM.**

WHEN WARNED OF A FIRE IN THIS BUILDING

**THE EMERGENCY ALARM WILL SOUND AND
ALERT YOU OF A FIRE
YOU MUST LEAVE THE BUILDING IMMEDIATELY
USING THE NEAREST EXIT**

**EXITS ARE LOCATED AT THE ENDS OF
MARQUEE**

**ASSEMBLE AT THE DRIVEWAY, LEADING TO
THE ROAD.**

***IF YOU REQUIRE ASSISTANCE TO EVACUATE,
PLEASE ALERT STAFF.***

CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)

For

BAYTEX

At

SHORT TERM EVENT SITE

STRUCTURAL CALCULATIONS

Project No. **5196-3**

Issue No. **11**

Prepared by: Maurizio Sirena

31 August 2024

Signed by: Jamie Macredie BE PGDip(Fire) CMEngNZ CPEng IntPE

Approved by: Graham Rundle BE CMEngNZ

ISSUE NUMBER	DATE OF ISSUE	EXPIRATION OF PSI	PURPOSE OF ISSUE
0 [Job 5196]	October 2014	October 2015	Original Calculations
1	October 2015	October 2016	PSI renewal
2	August 2018	August 2019	PSI renewal (note: superseded)
3	21/01/2019	21/01/2020	Documentation correction
4	15/10/2019	15/10/2020	PSI Renewal
5	10/09/2020	30/09/2021	PSI Renewal
6 [job 21112]	15/02/2020	14/02/2022	Knee brace option – Fitting leg tube
7	23/07/2021	23/07/2021	Documentation correction
8	13/09/2021	13/09/2022	PSI Renewal
9	9 September 2022	9 September 2023	PSI Renewal
10	31 August 2023	31 August 2024	PSI Renewal
11	31 August 2024	31 August 2025	PSI Renewal

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WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance
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BC240953 23/09/2024 johnb



adding 'engineuity' to building projects

Consulting Professional Engineers

Redco NZ Ltd
Redco House
470 Otumotai Road
TAURANGA 3110
Telephone: 07 571 7070
Facsimile: 07 571 7080
Email: red@redco.co.nz
www.redco.co.nz





New Zealand
Institute of Architects
Incorporated



Building Code Clause(s) **B1**

PRODUCER STATEMENT – PS1 – DESIGN

(Guidance on use of Producer Statements (formerly page 2) is available at www.engineeringnz.org)

ISSUED BY: Redco NZ Ltd
(Design Firm)

TO: Baytex a Division of Structurflex
(Owner/Developer)

TO BE SUPPLIED TO: Territorial Authority
(Building Consent Authority)

IN RESPECT OF: Baytex Clipframe Marquee - 10m span (Redco Project No. 5196/21112)
(Description of Building Work)

AT: Short Term Event Sites
(Address)

Town/City: (Address) **LOT** **DP** **SO**

We have been engaged by the owner/developer referred to above to provide:

Structural Engineering
(Extent of Engagement)

services in respect of the requirements of Clause(s) **B1** of the Building Code for:

☐ All or ☒ Part only (as specified in the attachment to this statement), 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 **B1/VM1, VM4 & AS1** or
(verification method/acceptable solution)

☐ Alternative solution as per the attached schedule

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

Baytex 10m Series Clipframe Marquee on 2.4m Legs and numbered as appended to this document;
together with the specification, and other documents set out in the schedule attached to this statement.

On behalf of the Design Firm, and subject to:

- (i) Site verification of the following design assumptions refer to "Summary & Recommendations"
- (ii) All proprietary products meeting their performance specification requirements;

I believe on reasonable grounds that a) the building, if constructed in accordance with the drawings, specifications, and other documents provided or listed in the attached schedule, will comply with the relevant provisions of the Building Code and that b), the persons who have undertaken the design have the necessary competency to do so. I also recommend the following level of construction monitoring/observation:

☒ CM1 ☐ CM2 ☐ CM3 ☐ CM4 ☐ CM5 (Engineering Categories) or ☐ as per agreement with owner/developer (Architectural)

I, J C Macredie am: ☒ CPEng 160766 # ☐ Reg Arch #
(Name of Design Professional)

I am a member of: ☒ Engineering New Zealand ☐ NZIA and hold the following qualifications: BE PGDip(Fire) CMEngNZ CPEng IntPE

The Design Firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than \$200,000*.

The Design Firm is a member of ACENZ: ☐

SIGNED BY: J C Macredie (Signature) *J C Macredie*
(Name of Design Professional)

ON BEHALF OF: Redco NZ Ltd Date: 31/08/2024
(Design Firm)

Note: This statement shall only be relied upon by the Building Consent Authority named above. Liability under this statement accrues to the Design Firm only. The total maximum amount of damages payable arising from this statement and all other statements provided to the Building Consent Authority in relation to this building work, whether in contract, tort or otherwise (including negligence), 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.
THIS FORM AND ITS CONDITIONS ARE COPYRIGHT TO ACENZ, ENGINEERING NEW ZEALAND AND NZIA



Client: **BAYTEX**

13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**

CONSTRUCTION MONITORING

LEVEL	REVIEW COMMENT	
CM1	Monitor the outputs from another party's quality assurance programme against the requirements of the plans and specifications. Visit the works at a frequency agreed with the client to review important materials of construction critical work procedures and/or completed plant or components. Be available to advise the constructor on the technical interpretation of the plans and specifications. <i>This is a secondary service where another party, for example Council, is engaged to provide a higher level of construction monitoring. Where CM1 is selected, Redco do not expect to monitor the work or to provide a Producer Statement – Construction Review (PS4), but are available for technical queries.</i>	✓
CM2	Review, preferable at the earliest opportunity, a sample of each important work procedure, material of construction and component for compliance with the requirements of the plans and specifications and review a representative sample of each important completed work prior to enclosure or completion is appropriate. Be available to provide the constructor with technical interpretation of the plans and specification. <i>This level of service is appropriate for smaller projects being carried out by a Competent Constructor. When CM2 is nominated, Redco expect to monitor principal structural components of the work as identified within the Inspection Schedule.</i>	
CM3	Review, to an extent agreed with the client, random samples of important work procedures, for compliance with the requirements of the plans and specifications and review important completed work prior to enclosure or on completion as appropriate. Be available to provide the constructor with technical interpretation of the plans and specifications. <i>This level of service is appropriate for medium sized projects being carried out by a Competent Constructor. When CM3 is nominated, Redco expect to monitor principal structural components of the work as identified within the Inspection Schedule.</i>	
CM4	Review, at a frequency agreed with the client, regular samples of work procedures, materials of construction and components for compliance with the requirements of the plans and specifications and review the majority of completed work prior to the enclosure or on completion as appropriate. <i>This level of service is appropriate for larger projects. When CM4 is nominated, Redco expect to monitor the works at least twice weekly, plus principal structural components of the work as identified within the Inspection Schedule.</i>	
CM5	Maintain personnel on site to constantly review work. <i>This level of service is appropriate for significant projects where compliance is critical. When CM5 is nominated, Redco expect to monitor the work daily.</i>	

NOTES

1. For earthworks and foundations Redco will only test the soils to verify the bearing capacity used in our design. Sites subject to fill material and where a geotechnical investigation was deemed necessary must be inspected and certified by a Category 1 or 2 Geotechnical Engineer.
2. For reinforced concrete or masonry construction, e.g. foundation, retaining walls, floor slabs, tilt-up panels, block walls etc., we would typically expect to inspect the works after installation of the reinforcing, but prior to placement of concrete. We reserve the right to request concrete delivery tickets, and/ or site testing results if and as appropriate. For larger projects we may be required to monitor placement of the concrete.
3. For beams, columns, lintels and other super-structure elements we would typically expect to monitor the works after installation, erection and principal connections have been completed but prior to linings, coverings or claddings are fixed.

***Where we are unable to monitor a particular item of works which has been cast, concealed or otherwise completed prior to our attendance and review, we may request that the item is uncovered to enable its review. Redco will not include any item of construction within our PS4 which has not been reviewed and approved by us. Please note that we are required by most Councils to submit photographic evidence and/ or site records to corroborate and support our Producer Statement PS4, together with a Producer Statement - Construction (PS3) which is to be provided to us by the Contractor(s).**

Please note that it is a legal requirement for all consent documents to be held on site during the Works, and an offence for a Consultant to knowingly monitor and approve un-consented Works. Our Engineers are instructed to review the consent documents upon arrival. Where we are requested to monitor Works without Building Consent approval, we will leave the site and all time incurred will remain chargeable.

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance
with the Building Act 2004, clause 49 and the Building
Regulations 1992, Clause 3
BC240953 23/09/2024 johnb



CALCULATIONS

Page 4 of 48

Client: **BAYTEX**

13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**

INSPECTION SCHEDULE

BUILDING CONSENT DOCUMENTS MUST BE REVIEWED ON SITE

DATE REVIEWED

BC NUMBER

[Date]

[BC Number]

ELEMENT(S) TO BE REVIEWED PRIOR TO ISSUANCE OF A PS4

DATE REVIEWED

PASS/ FAIL

NONE – Redco do not expect to monitor the work or to provide a PS4



Client: **BAYTEX**

13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**

ORIGINAL CALCULATIONS

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Client: **BAYTEX**

13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**

Summary and recommendations

CLIPFRAME 10m span x 10m – 100m length in 5 metre increments with 2.4m leg

Configuration	Wind speed	Requirements
Freestanding with pegs	0-50 kph	<p><u>Soil type A – Loose Sand</u> Not permitted</p> <p><u>Soil type B, C and D</u> 2 – 850 long x 25 diameter pegs each portal foot. 4 – 850 long x 25 diameter pegs each braced bay. 4 – 850 long x 25 diameter pegs each portal foot when one end only open.</p>
Freestanding with weights	0-50kph	<p><u>On hard surface or Soil type A,C and D</u></p> <p>1 – 0.55m x 0.55m x 0.5m concrete blocks each portal foot (350kg). 2 – 0.55m x 0.55m x 0.5m concrete blocks each braced bay (700kg). 2 – 0.55m x 0.55m x 0.5m concrete blocks each portal foot when one end only open (700kg).</p>
Guyed with pegs	50-80kph	<p><u>Soil type A – Loose Sand</u> Not permitted</p> <p><u>Soil type B, C and D</u> 2 – 850 long x 25 diameter pegs each portal foot. 2 – 850 long x 25 diameter pegs each guy rope.</p>
	>80kph	Marquee to be dismantled

- The structure may be used in a freestanding configuration for a regional wind speed of up to 50 kph.
- For wind speeds exceeding 50 kph the structure has to have guy ropes attached as per above table. In addition all openings in the marquee must be zipped shut, except to allow patrons access to and egress from the marquee.
- For wind speeds exceeding 80 kph the marquee is not to be occupied and it is recommended that the marquee be dismantled.

Soil types:

Soil type A – Loose Sand

Soil type B – Medium to stiff clays

Soil type C – Moderately compact sand and gravel

Soil type D – Compact sand and gravel

Notes:

All structures are considered to be temporary structures.

The marquee erector shall determine the applicable wind speed for each specific location.

If the marquee is to be erected on an exposed hilltop (>30m) the wind speed limitation should be reduced by 50%.

Alternatively a wind anemometer may be used to ensure the actual site wind speeds don't exceed the limitations above.

All openings must be zipped shut for wind speeds exceeding 50kph.

The marquee is not designed to support any live loads, snow loads or loads from decoration/lighting.

850mm long pegs must achieve an uplift capacity of 400kg.

To avoid ponding the fabric must be stretched tightly.

Weights to be in direct contact with hard surface or sand or gravel to achieve assumed friction.

Client: **BAYTEX**

13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**Project No. **5196-3****BAYTEX SERIES 11 CLIPFRAME MARQUEE 10M SPAN – 3M LEG****Background**

Baytex Manufacturing Co Limited produce a range of aluminium framed marquees which are used for events throughout New Zealand and Australia. There is now a requirement to obtain a Building Consent for marquees erected as temporary structures for one day or multi-day events. The First Schedule of the Building Act 2004 exempts the following Marquees.

Exemption (f) and (fa) of Schedule 1

A Building Consent is not required for the following building work:

- (f) the construction, alteration or removal of any tent or marquee that has a floor area not exceeding **50** square metres if the tent or marquee is to be, or has been, used for **public** assembly for not more than **one month**.
- (fa) the construction, alteration or removal of any tent or marquee that has a floor area not exceeding **100** square metres if the tent or marquee is to be, or has been, used for **private** assembly for not more than **one month**.

While the structures were originally designed by testing and by the experience of the manufacturer, more recently the structures have undergone full structural analysis. There are a range of marquees in use around the country which have not undergone the formal design process. It is the intention of this report to quantify the erection and usage requirements for the 10m span range of marquees and to provide easily measured guidelines, which can be monitored by both the event organiser and the Local Authority.

The Loadings Code AS/NZS 1170.2:2002 has no provision for structures of this type, which are used for very short periods of time. As many of the structures are presently in use around the country it was decided to determine the limitations for use of the existing structure in a free standing state (no guy ropes attached) and to provide requirements for securing the structure when these limitations are exceeded. The limitations are given in terms of a site wind speed, which are not dependent on either the terrain or the location of the marquee. They can therefore be easily obtained or measured by both the event organiser and the local Authority and appropriate action taken if the limits are exceeded.

Discussion

Baytex Aluminium Framed 10m span clipframe marquees are a lightweight free standing structure. They are easy and quick to erect and dismantle. The 10m span marquees begin at 10m in length and continue in 5m increments up to 100m. The end bays can be either hipped or gable ends. The rafters are constructed from 128mm deep channel tube aluminium tubes and the columns from 65mm diameter aluminium tubes. The sections are joined at the knee and apex with steel connections and secured in place with a spring button. The frames are spaced at 5.0m centres and connected at the knees using an aluminium tube. Small aluminium braces are connected to the eaves tube and leg tube to provide additional rigidity along the wall lines. Steel base plates are inserted into each leg and secured to the ground with steel 850mm long x 25mm diameter pegs. The roof of the marquee is manufactured from PVC and slides into holders on the rafter. The walls, also manufactured from PVC are hung from the eaves tube and roof sections. Additional bracing in the way of guy ropes is also often used for the erection, if the marquee is to be in position for a length of time or if high winds are expected.

Bracing for the structure under wind loading for the majority of events is achieved by portal frame action in the framed direction. Bracing in the longitudinal direction is achieved by portal frame action, portals are formed by the columns, eaves tubes and knee braces. The roof is braced back to the walls by the hip members forming compression struts or by 5mm galvanised wire tensile bracing on the gable frame condition. In stronger wind conditions, guy ropes are attached to the knees of the structure and staked to the ground.

Client: **BAYTEX**

13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**

Bracing for the structure under wind loading for the majority of events is achieved by portal action in the frame direction. Bracing in the longitudinal direction is achieved by rigid moment frame walls. The roof is braced back to the walls by the hip members forming compression struts or by 5mm galvanised wire tensile bracing on the gable frame condition. Additional bracing in the way of guy ropes is also often used for the erection, if the marquee is to be in position for a length of time or if high winds are expected.

In stronger wind conditions, the guy ropes are attached to the knees of the structure and staked to the ground.

Results

For all lengths of the 10m span marquee the portal action achieved by the main frames will withstand a site wind speed of approximately 16m/s, (58kph, 32knots). When this wind speed is exceeded guy ropes are to be used to secure the structure. With guy ropes in position, the structure will withstand site wind speeds of approximately 22.5m/s (81kph, 44knots).

Analysis has shown that due to the light weight nature of the marquees, subjected to wind speeds of 13m/s, uplift forces on the portal feet of up to 1.1kN, (110kg), are experienced.

Field testing undertaken by Baytex has shown the pull out load a 850mm long x 25mm diameter peg can resist is approximately 10kN (1000kg), in a good soil condition.

In theory this figure is unable to be proven and in most soil types, considerably less than 10kN can be proven. In practice this figure will also vary considerably depending on the soil type which the peg has been driven into. The highest values will be achieved in stiff clay and the lowest values in loosely compacted sand or gravel. Due to the variance in the theoretical and practical value achieved for the pullout resistance of these pegs, it is very difficult to designate a safe field practice to adopt. This responsibility needs to be taken by the marquee erector, and the number of pegs per foot should depend on the type of soil the peg is to be driven into. In general stiff silty clays should have at least two pegs per foot and sands and gravels should have the full four pegs per foot. If the soil is clearly very loose the marquee should be dismantled if high winds are expected.

It is intended that the event organiser/erector of the marquee, would be responsible for checking the weather forecast and monitoring the site wind speed to gauge whether marquee should be guyed or dismantled.

Redco NZ Ltd



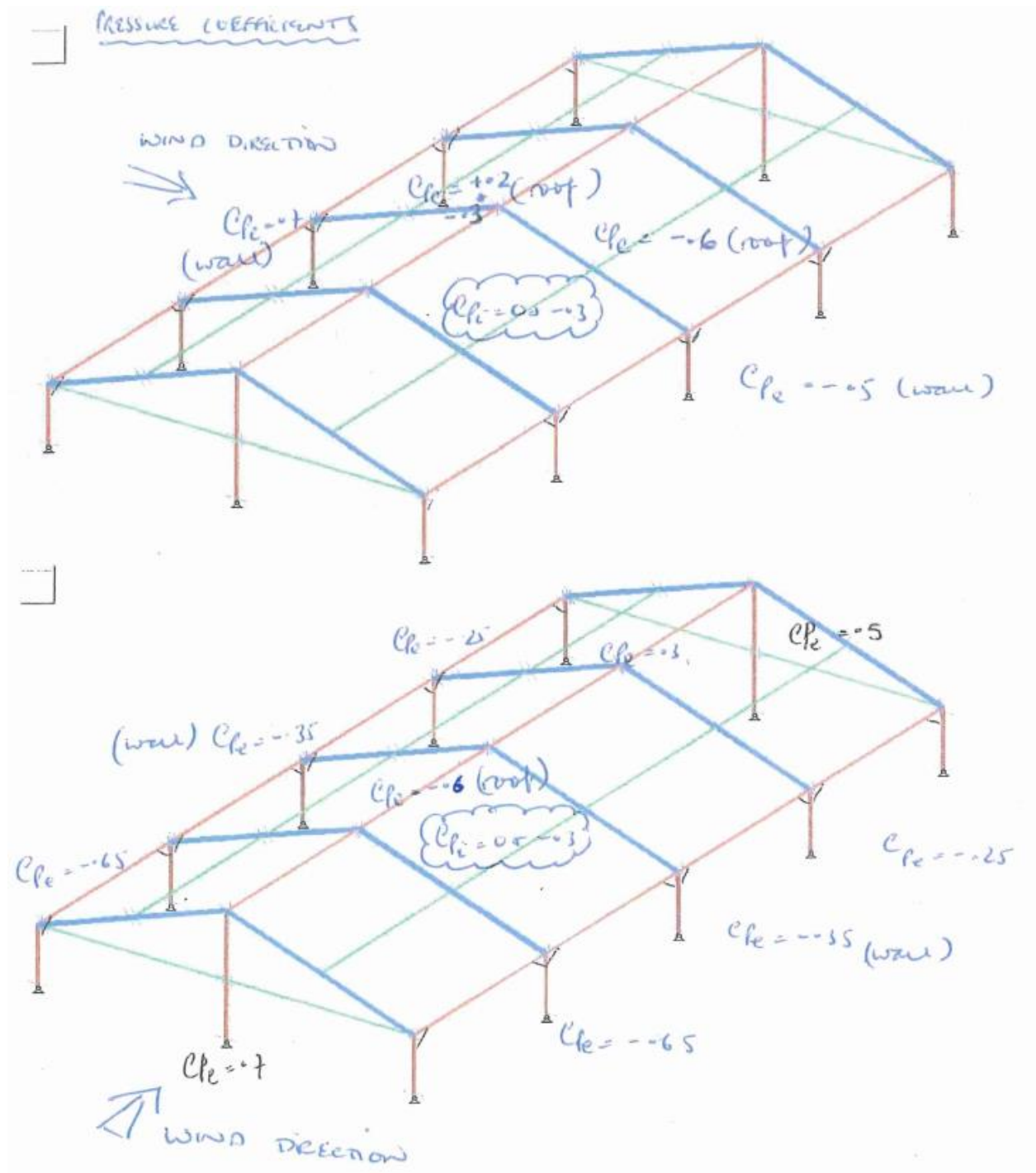
Graham N. RUNDLE BE MIPENZ
November 2012

Client: **BAYTEX**

13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**

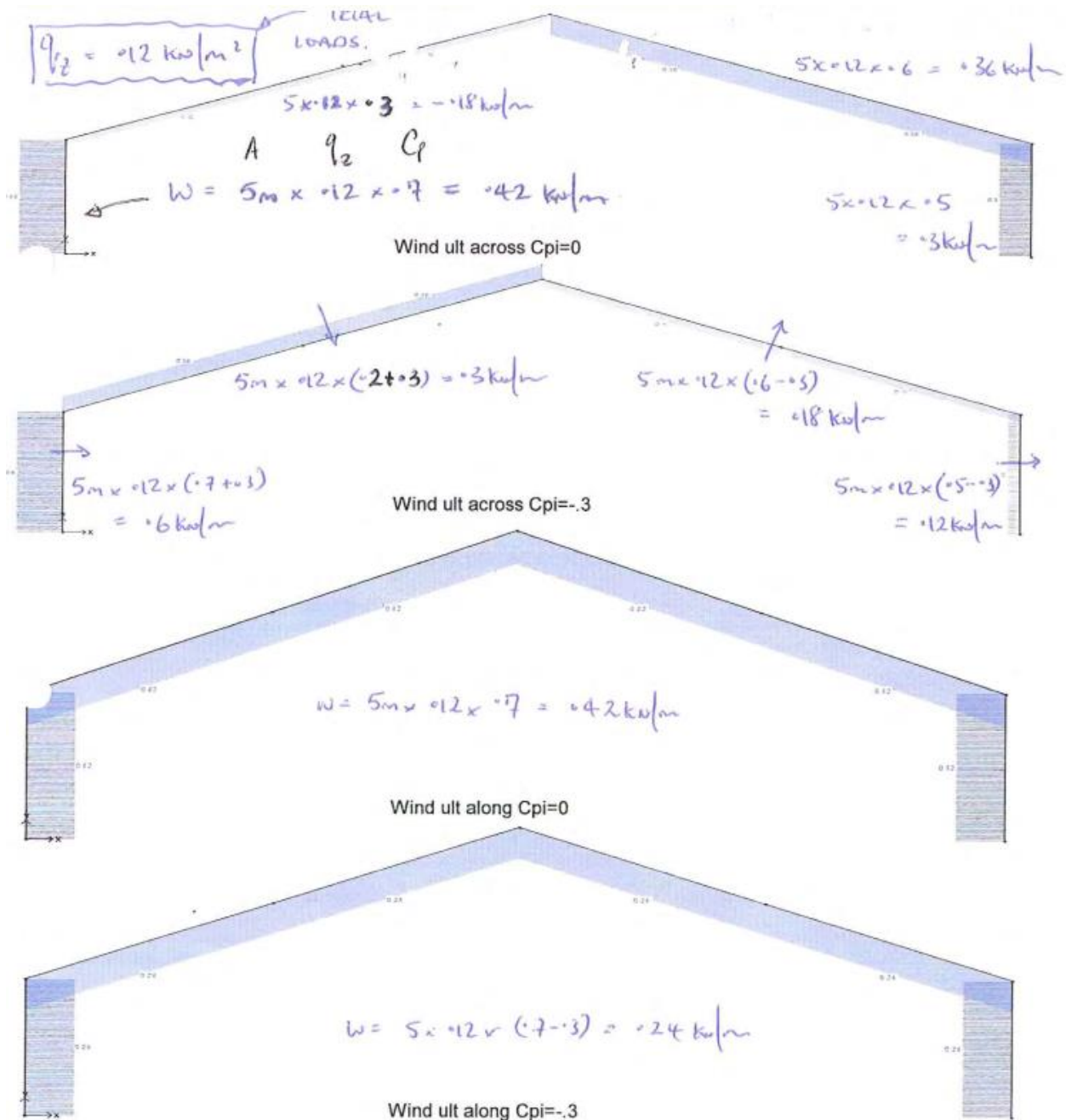


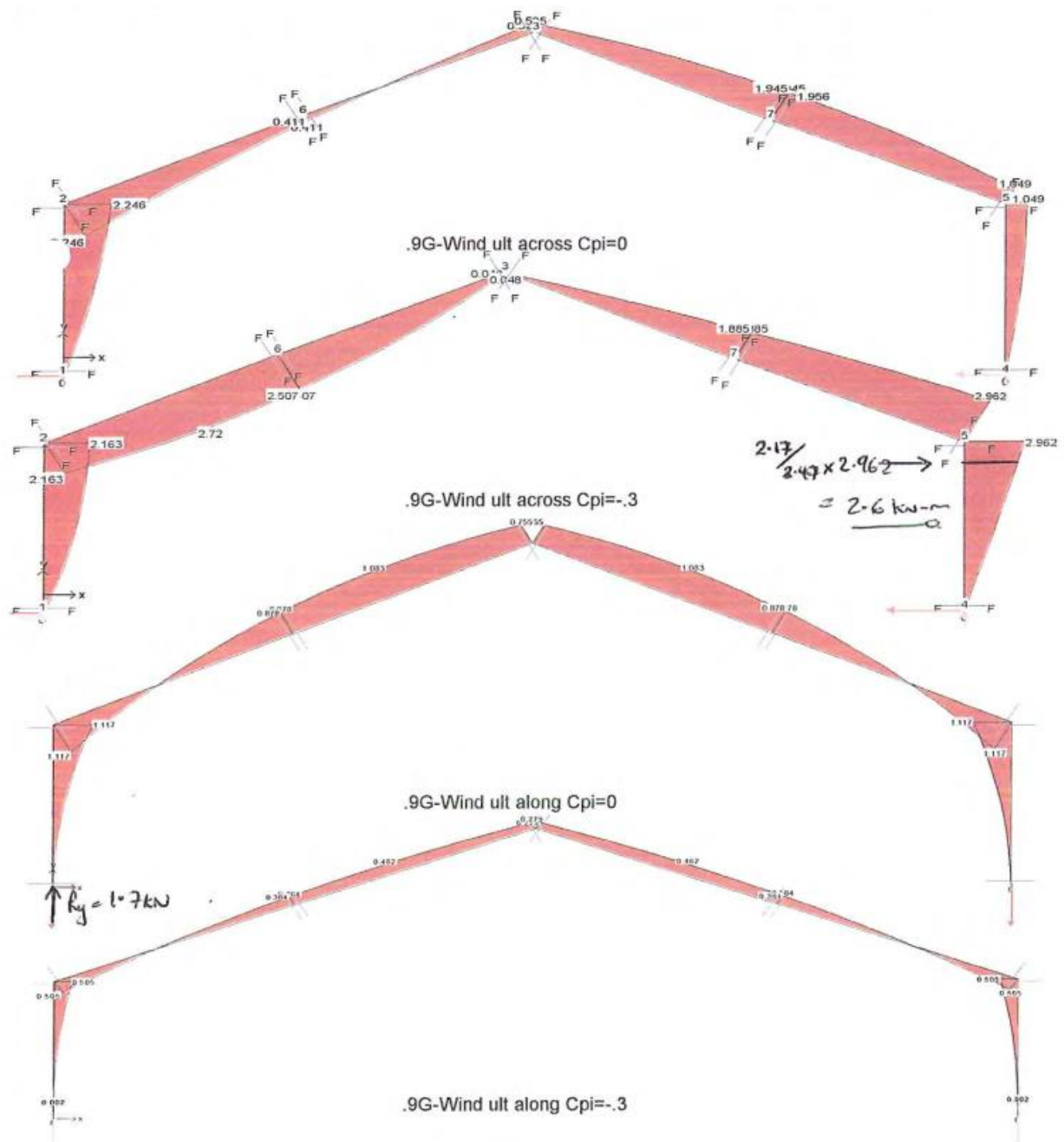
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Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

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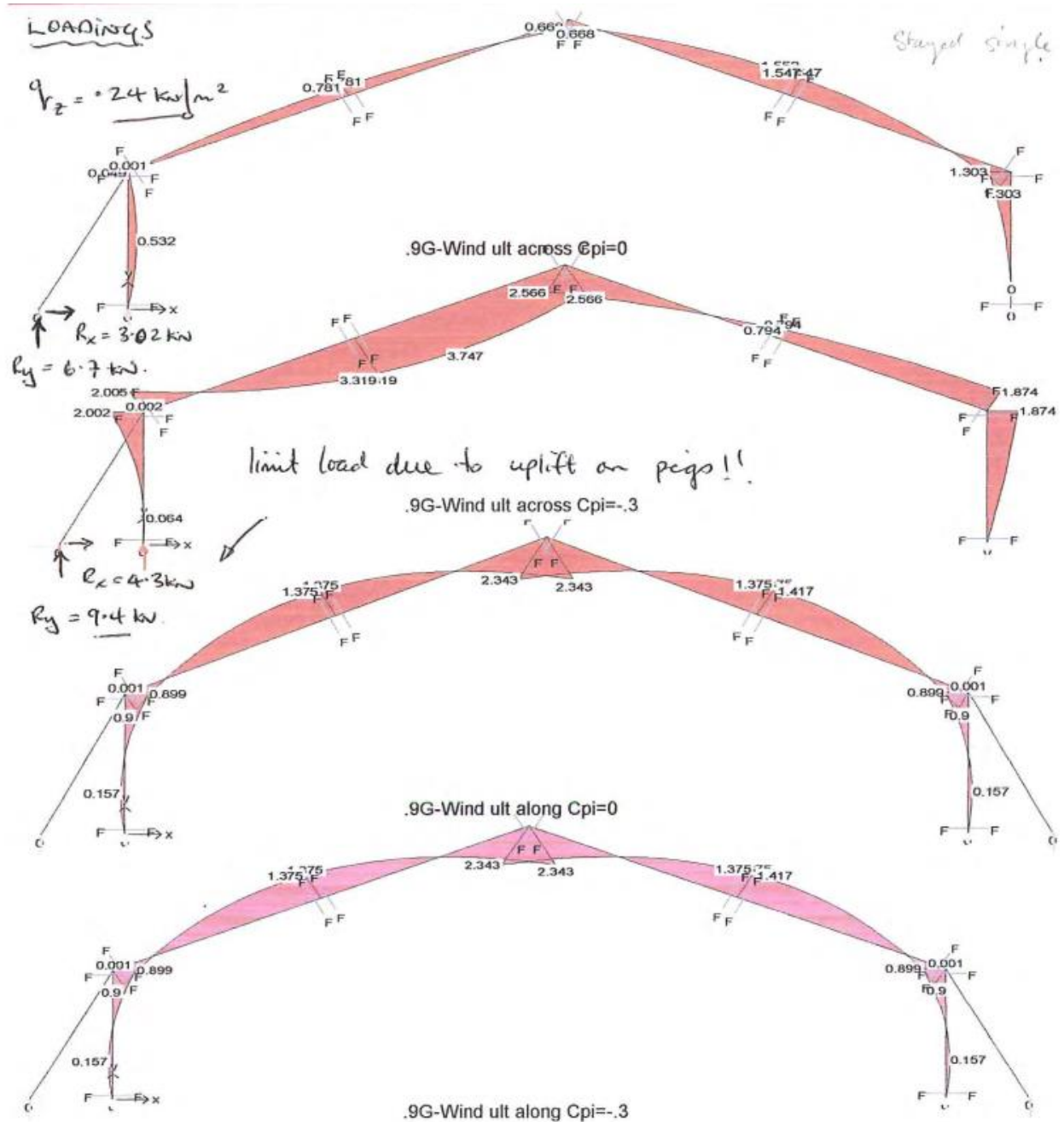
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Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**

NZS 1664 Aluminium Structures Part 1: Limit State Design
For 127 * 50 Extrusion Alloy 6061 T6

Table 3.3D Formulas for Buckling Constants

$$\begin{aligned} B_p &= F_{cy}(1+(F_{cy}/21.7)^{0.33}) \\ &= 328.15 \\ D_p &= B_p(B_p/E)^{0.5}/10 \\ &= 2.25 \\ B_c &= F_{cy}(1+(F_{cy}/15510)^{0.5}) \\ &= 287.70 \\ D_c &= B_c(B_c/E)^{0.5}/10 \\ &= 1.84 \\ C_c &= 0.41B_c/D_c \\ &= 63.95 \end{aligned}$$

$$\phi_y = 0.95$$

$$\phi_b = 0.85$$

$$\phi_c = 0.85$$

$$F_{cy} = 255 \text{ MPa}$$

$$E = 70000 \text{ MPa}$$

$$k_1 = 0.35$$

$$k_2 = 2.27$$

Table 3.4A

Table 3.4A

Table 3.4A

Table 3.3A

Table 3.3A

Table 3.3D

Table 3.3D

3.4.8 Compression in Columns, axial, gross section

$$\begin{aligned} 3.4.8.2 \quad k &= 1 \\ L_x &= 5028 \\ L_y &= 5028 \\ \lambda &= (k L / r) (1 / \pi) (F_{cy} / E)^{0.5} = 5.37 \end{aligned}$$

$$D_c^* = \pi D_c (E / F_{cy})^{0.5} = 96.0$$

$$S1^* = (B_c - F_{cy} / k_c) / D_c^* = 0.6$$

$$S2^* = C_c / \pi (F_{cy} / E)^{0.5} = 1.2$$

$$\phi_{cc} = 1 - 0.21 \lambda \leq 0.95 \text{ for } \lambda \leq 1.2 = 0.95$$

$$= 0.14 \lambda + 0.58 \leq 0.95 \text{ for } \lambda > 1.2$$

$$\begin{aligned} \text{For } \lambda < S1^* \\ \phi_{FL} &= \phi_{cc} F_{cy} / k_c = 216 \text{ MPa} \end{aligned}$$

$$\begin{aligned} \text{For } S1^* < \lambda < S2^* \\ \phi_{FL} &= \phi_{cc} (B_c - D_c^* I) = -216 \text{ MPa} \end{aligned}$$

$$\begin{aligned} \text{For } \lambda \geq S2^* \\ \phi_{FL} &= (\phi_{cc} / I_2) F_{cy} = 8 \text{ MPa} \\ \phi_{FLags} &= 8 \text{ MPa} \end{aligned}$$

$$b = 50 \text{ mm}$$

$$t = 3 \text{ mm}$$

$$I_x = 2.31 \text{E}+06 \text{ mm}^4$$

$$I_y = 4.29 \text{E}+05 \text{ mm}^4$$

$$A = 1310 \text{ mm}^2$$

$$r_y = 42 \text{ mm}$$

$$r_x = 18 \text{ mm}$$

$$J = 229000 \text{ mm}^4$$

$$y_t = 59.6 \text{ mm}$$

$$y_b = 67.8 \text{ mm}$$

$$S_{ct} = 33827 \text{ mm}^3$$

$$S_{cb} = 17159 \text{ mm}^3$$

$$S_{cx} = 33827 \text{ mm}^3$$

$$S_{cy} = 17159 \text{ mm}^3$$

$$k_c = 1.120$$

Table 3.4B

3.4.10.1 Compression in Components of Columns (gross section)

Flat plates with both edges supported

$$b/t = 16.7$$

$$\begin{aligned} \text{Table 3.4B} \quad S1 &= ((B_p - (\phi_y F_{cy} / \phi_c k_c)) / 1.6 D_p) = 20.5 \\ S2 &= ((k_1 B_p / 1.6 D_p) = 31.9 \end{aligned}$$

$$\begin{aligned} \text{For } b/t < S1^* \\ \phi_{FL} &= \phi_y F_{cy} / k_c = 216 \text{ MPa} \end{aligned}$$

$$\begin{aligned} \text{For } S1^* < b/t < S2^* \\ \phi_{FL} &= \phi_c (B_p - 1.6 D_p (b/t)) = 228 \text{ MPa} \end{aligned}$$

$$\begin{aligned} \text{For } b/t \geq S2^* \\ \phi_{FL} &= \phi_c k_2 (B_p E)^{0.5} / (1.6 b/t) = 347 \text{ MPa} \\ \phi_{FLcgs} &= 216 \text{ MPa} \end{aligned}$$

$$\phi_{FL} = \min(\phi_{FLags}, \phi_{FLcgs}) = 8 \text{ MPa}$$

$$\phi_N = \phi_{FL} A$$

$$= 11 \text{ kN}$$

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3.4.15 Compression in beams (extreme fibre gross section)

Rectangular tubes and box sections

$$L_b S_c / (0.5(I_y J)^{0.5}) = 1085$$

$$L_b = 5028\text{mm}$$

$$S1 = (B_c - (f_y F_{yc} / f_b)) / 1.6 D_c^2 = 0.84$$

$$S2 = (C_c / 1.6)^2 = 1598$$

$$\text{For } L_b S_c / (0.5(I_y J)^{0.5}) < S1$$

$$\phi FL = \phi_y F_{cy} = 242 \text{ MPa}$$

$$\text{For } S1 < L_b S_c / (0.5(I_y J)^{0.5}) < S2$$

$$\phi FL = \phi_b (B_c - 1.6 D_c (L_b S_c / 0.5(I_y J)^{0.5,0.5})) = 162 \text{ MPa}$$

$$\text{For } L_b S_c / (0.5(I_y J)^{0.5}) > S2$$

$$\phi FL = \phi_b p_2 E / (2.56 (L_b S_c / 0.5(I_y J)^{0.5})) = 211 \text{ MPa}$$

$$\phi FL_{bgs} = 162 \text{ MPa}$$

$$\phi M = \phi FL S_c$$

$$= 5.5 \text{ kNm}$$

3.4.17 Compression in components of Beams

Flat Plates with both edges supported

$$b/t = 16.7$$

$$S1 = [B_p - (\phi_y F_{cy} / \phi_b)] / 1.6 D_p = 12.0$$

$$S2 = k_1 B_p / 1.6 D_p = 31.9$$

$$\text{For } b/t < S1$$

$$\phi FL = \phi_y F_{cy} = 242 \text{ MPa}$$

$$\text{For } S1 < L_b S_c / (0.5(I_y J)^{0.5}) < S2$$

$$\phi FL = \phi_b (B_p - 1.6 D_p (b/t)) = 228 \text{ MPa}$$

$$\text{For } L_b S_c / (0.5(I_y J)^{0.5}) > S2$$

$$\phi FL = \phi_b k_2 (B_p E)^{0.5} / (1.6(b/t)) = 347 \text{ MPa}$$

$$\phi FL_{bc} = 228 \text{ MPa}$$

$$\phi FL = \text{Min}(\phi FL_{bgs}, \phi FL_{bc}) = 162 \text{ MPa}$$

$$\phi M = \phi FL S_c$$

$$= 5.5 \text{ kNm}$$

4.1 Combined Axial Load and Bending

$$f_a = N^* / A = 0.0 \text{ MPa}$$

$$F_a = \phi FL_{axial} = 8 \text{ MPa}$$

$$N^* = 0.00 \text{ kN}$$

$$A = 1316 \text{ mm}^2$$

$$f_{bx} = M^* x / z_x = 157 \text{ MPa}$$

$$F_{bx} = \phi FL_{flexure} = 162 \text{ MPa}$$

$$M^* x = 5.31 \text{ kNm}$$

$$z_x = 33827 \text{ mm}^3$$

$$f_{by} = M^* y / z_y = 0 \text{ MPa}$$

$$M^* y = 0.00 \text{ kNm}$$

$$z_y = 17159 \text{ mm}^3$$

$$F_{by} = 162 \text{ MPa}$$

$$f_a / F_a + f_{bx} / F_{bx} + f_{by} / F_{by} = 0.97$$

OK

Fbx for S

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NZS 1664 Aluminium Structures Part 1: Limit State Design
For 65 * 3.5 Tube SHS Alloy 6061 T6

Table 3.3D Formulas for Buckling Constants

$$B_p = F_{cy}(1 + (F_{cy})^{0.33}/21.7) = 328.15$$

$$D_p = B_p(B_p/E)^{0.5}/10 = 2.25$$

$$B_c = F_{cy}(1 + (F_{cy}/15510)^{0.5}) = 287.70$$

$$D_c = B_c(B_c/E)^{0.5}/10 = 1.84$$

$$C_c = 0.41B_c/D_c = 63.95$$

$$\phi_y = 0.95$$

$$\phi_b = 0.85$$

$$\phi_c = 0.85$$

$$F_{cy} = 255 \text{ MPa}$$

$$E = 70000 \text{ MPa}$$

$$k_1 = 0.35$$

$$k_2 = 2.27$$

Table 3.4A

Table 3.4A

Table 3.4A

Table 3.3A

Table 3.3A

Table 3.3D

Table 3.3D

3.4.8 Compression in Columns, axial, gross section

3.4.8.2 $k = 1$
 $L_x = 2400$
 $L_y = 2400$
 $\lambda = (k L / r) (1 / \pi)(F_{cy} / E)^{0.5} = 2.12$

$$D_c^* = \pi D_c(E/F_{cy})^{0.5} = 96.0$$

$$S1^* = (B_c - F_{cy}/k_c) / D_c^* = 0.6$$

$$S2^* = C_c / \pi (F_{cy} / E)^{0.5} = 1.2$$

$$\phi_{cc} = 1 - 0.21 \lambda \leq 0.95 \text{ for } \lambda \leq 1.2 = 0.88$$

$$= 0.14 \lambda + 0.58 \leq 0.95 \text{ for } \lambda > 1.2$$

For $\lambda < S1^*$
 $\phi_{FL} = \phi_{cc} F_{cy} / k_c = 200 \text{ MPa}$

For $S1^* < \lambda < S2^*$
 $\phi_{FL} = \phi_{cc} (B_c - D_c^* I) = 74 \text{ MPa}$

For $\lambda \geq S2^*$
 $\phi_{FL} = (\phi_{cc} / I_2) F_{cy} = 50 \text{ MPa}$

$$\phi_{FLags} = 50 \text{ MPa}$$

$$b = 65 \text{ mm}$$

$$t = 3.5 \text{ mm}$$

$$I_x = 3.21 \text{E}+05 \text{ mm}^4$$

$$I_y = 3.21 \text{E}+05 \text{ mm}^4$$

$$A = 676 \text{ mm}^2$$

$$r_y = 22 \text{ mm}$$

$$r_x = 22$$

$$J = 641000 \text{ mm}^4$$

$$y_t = 32.5 \text{ mm}$$

$$y_b = 32.5 \text{ mm}$$

$$S_{ct} = I_x/y_t$$

$$= 9867 \text{ mm}^3$$

$$S_{cb} = I_x/y_b$$

$$= 9867 \text{ mm}^3$$

$$S_{cx} = 9867 \text{ mm}^3$$

$$S_{cy} = 9867 \text{ mm}^3$$

$$k_c = 1.120$$

Table 3.4B

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Table 3.3d Round Tubes Buckling Constants

$$B_{tb} = 1.5 F_{cy}(1 + F_{cy}^{0.2}/12.8) \\ = 473.02$$

$$D_{tb} = B_{tb}(B_{tb}/E)^{0.33}/2.7 \\ = 33.677$$

$$C_{tb} = ((B_{tb} - B_t)/(D_{tb} - D_t))^2 \\ = 51.865$$

$$B_t = F_{cy}(1 + F_{cy}^{0.2}/12.8) \\ = 315.3$$

$$D_t = B_t(B_t/E)^{0.33}/4.5 \\ = 11.8$$

3.4.13 **Compression in Beams**
Round or oval Tubes

$$R_b/t_w = 9.4$$

$$1.17 \phi_y F_{cy} = 283 \text{ MPa}$$

$$S_1 = ((B_{tb} - 1.17 F_{cy} \phi_y / \phi_b) / D_{tb})^2 \\ = 17.17$$

$$\phi_b (B_{tb} - D_{tb}(R_b/t_w)^{0.5}) = 314 \text{ MPa}$$

$$S_2 = ((B_{tb} - \phi_c B_t / \phi_b) / (D_{tb} - \phi_c D_t / \phi_b))^2 \\ = 51.9$$

$$\phi M = f FL z \\ = 2.8 \text{ kNm}$$

3.4.11 **Compression in Components of Columns**

$$R_m/t_w = 8.9$$

$$\phi_y F_{cy} / k_c = 216 \text{ MPa}$$

$$S_1 = ((B_t - (f_y F_{cy} / f_{ckc}) / D_t)^2 \\ = 26.7$$

$$\phi_c (B_t - D_t (R_m/t_w)^{0.5}) = 238 \text{ MPa}$$

$$S_2 =$$

$$\phi_{cp} \pi^2 E / (16 R_m/t_w)(1 + (R_m/t_w)^{0.5}/35)^2 = 3489 \text{ MPa}$$

$$\phi N = \phi FL A \\ = 146.2 \text{ kN}$$

$$R_m = 31.25$$

$$R_b = 33$$

$$t_w = 3.5$$

$$\phi FL = 283 \text{ MPa}$$

$$R_m = 31.25$$

$$F_{cy} = 255 \text{ MPa}$$

$$\phi_{cp} = 0.85$$

$$\phi FL = 216 \text{ MPa}$$

4.1 **Combined Axial Load and Bending**

$$f_a = N^*/A = 1.1 \text{ MPa}$$

$$F_a = \phi FL_{axial} = 50 \text{ MPa}$$

$$N^* = 0.77 \text{ kN}$$

$$A = 676 \text{ mm}^2$$

$$f_{bx} = M^*_x/z_x = 264 \text{ MPa}$$

$$F_{bx} = \phi FL_{flexure} = 283 \text{ MPa}$$

$$M^*_x = 2.60 \text{ kNm}$$

$$z_x = 9867 \text{ mm}^3$$

$$f_{by} = M^*_y/z_y = 0 \text{ MPa}$$

$$M^*_y = 0.00 \text{ kNm}$$

$$z_y = 9867 \text{ mm}^3$$

$$F_{by} = 283 \text{ MPa}$$

$$f_a/F_a + f_{bx}/F_{bx} + f_{by}/F_{by} = 1.0$$

OK

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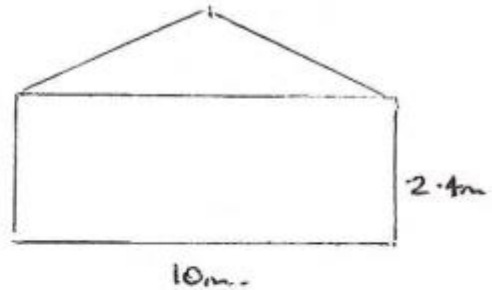
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LONGITUDINAL LOADING

$C_{pe} \quad q_e$

$$P = 1.2 \times 0.12 \text{ kN/m}^2 \times 2\frac{1}{2} \times 10\frac{1}{2}$$

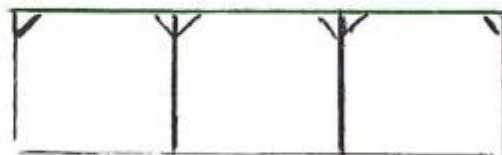
$$= 0.86 \text{ kN}$$



$$M^u = 0.86 \text{ kN} \times 2.4$$

$$= 2.1 \text{ kN-m}$$

P. →



$$M_u = 2.79 \text{ kN-m/column}$$

⇒ OK

⇒ Portal action achieved by angle struts ok

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EVALUATE MAX WIND SPEED MARQUEE CAN WITHSTAND

$$P = 0.12 \text{ kPa.}$$

UNSTAYED

$$V_{(z,B)} = V_z M_d M_{(z,cat)} M_s M_t$$

$$M_{(z,cat)} = 0.91 \quad z = 4.2 \quad cat = 2.0$$

$$M_s = 1.0$$

$$M_t = E M_{lee} M_h \quad M_{lee} = 1.0, M_h = 1.0$$

$$= 1.0 \times 1.0 \times 1.0 \quad + E = 1.0$$

$$= 1.0$$

$$M_d = 1.0.$$

late max height above sea level $\leq 500m$ specific
" hill shape multiplier = 1.0 } design above
this req.

$$\Rightarrow P = 0.6 V_{(z,B)}^2 C_{fig} C_{dyn}$$

$$C_{fig} = 0.95 \quad \leftarrow \text{see calc's.}$$

$$C_{dyn} = 1.0$$

$$k_a = 1.0$$

$$k_r = 0.95$$

$$k_p = 1.0$$

$$k_e = 1.0.$$

$$V_{(z,B)} = \sqrt{\frac{P}{0.6 \times 0.95}}$$

$$= \sqrt{\frac{120}{(0.6 \times 0.95)}} = 14.05 \text{ m/s.}$$

$$\Rightarrow V_z = \frac{V_{(z,B)}}{M_d M_{(z,cat)} M_s M_t} = \frac{14.05 \text{ m/s}}{0.91 \times 1.0} = 15.4 \text{ m/s.}$$

$$\Rightarrow V_z = 16 \text{ m/s or } 58 \text{ km/hr or } 32 \text{ knots.}$$

Generally
marquees are
positioned in
sheltered areas
& not exposed
hill tops.

Design loads
should be
reduced if
positioned on
hill top.

$V_z = 16 \text{ m/s}$
or 58 km/h
or 32 knots

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EVALUATE MAX WIND SPEED MARQUEE CAN WITHSTAND

$$P = 0.24 \text{ kPa.}$$

STAYED

$$V_{(z, cat)} = V_z M_d M_{(z, cat)} M_s M_t$$

$$M_{(z, cat)} = 0.91 \quad z = 4.2 \quad cat = 2.0$$

$$M_s = 1.0$$

$$M_t = E M_{lee} M_h \quad M_{lee} = 1.0, M_h = 1.0$$

$$= 1.0 \times 1.0 \times 1.0 \quad + E = 1.0$$

$$= 1.0$$

$$M_d = 1.0.$$

Note max height above sea level $\leq 500m$ specific
" hill shape multiplier = 1.0 } design above this req.

$$\Rightarrow P = 0.6 V_{(z, B)}^2 C_{fig} C_{dyn}$$

$$C_{fig} = 0.95$$

$$C_{dyn} = 1.0$$

$$k_a = 1.0$$

$$k_z = 0.95$$

$$k_p = 1.0$$

$$k_e = 1.0.$$

$$V_{(z, B)} = \sqrt{\frac{P}{0.6 \times 0.95}}$$

$$= \sqrt{\frac{240}{(0.6 \times 0.95)}} = 20.5 \text{ m/s.}$$

$$\Rightarrow V_z = \frac{V_{(z, B)}}{M_d M_{(z, cat)} M_s M_t} = \frac{20.5 \text{ m/s}}{0.91 \times 1.0} = 22.5 \text{ m/s.}$$

$$\Rightarrow V_z = 22.5 \text{ m/s or } 81 \text{ km/hr or } 44 \text{ knots.}$$

Generally marquees are positioned in sheltered areas & not exposed hill tops.

Design loads should be reduced if positioned on hill top.

$$V_z = 22.5 \text{ m/s}$$

$$\text{or } 81 \text{ km/hr}$$

$$\text{or } 44 \text{ knots}$$

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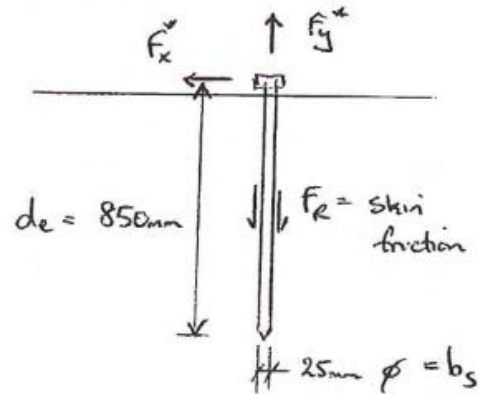
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DESIGN DRIVEN STAKES TO RESIST UPLIFT

need to evaluate the different ultimate skin frictions for the various types of soils



DRIVEN STAKES

UPLIFT RESISTANCE

$$\phi_e F_R = (\phi_e C_{adh}) \pi b_s d_e \geq F_y^*$$

$$\Rightarrow \text{No. of stakes reqd} = n_s = \frac{F_y^*}{(\phi_e C_{adh}) \pi b_s d_e}$$

$$\Rightarrow n_s = \frac{F_y^*}{(\phi_e C_{adh}) \pi \times 0.025 \times 0.80}$$

$$n_s = 17 \left(\frac{F_y^*}{C_{adh}} \right)$$

LATERAL RESISTANCE

$$P = \frac{\sigma_n b d_e^2}{(2.37 d_e + 2.64 h)}$$

Note: for ultimate capacity of "temporary structure", determine P_{ult} after soil yields where stake flicks out of soil - i.e. deformation is not important

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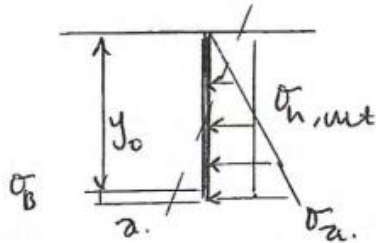
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⇒ centre of rotation O adjusts until $y_0 \rightarrow de + a \rightarrow 0$.

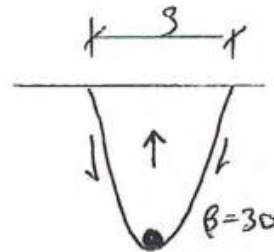
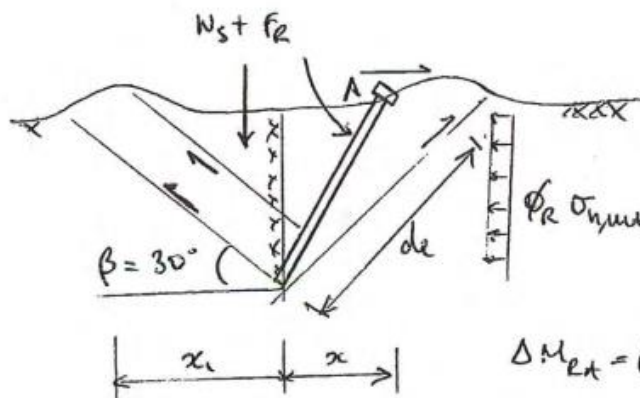
⇒

$$P_u = \bar{\sigma}_{h,ult} bde \quad (\text{clays})$$

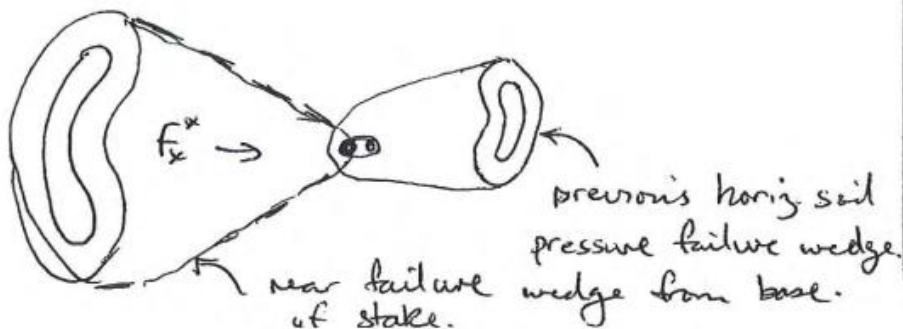
$$+ \sigma_{h,ult} = \sigma_a/2 \quad (\text{sande}).$$



For post yield of soil, additional restoring moment on stake is provided by vertical soil weight & cohesion of wedge above stake, as it rotates
 ⇒ ($y \rightarrow de$)



$$\Delta M_{Rt} = (W_s + F_R) de \sin \theta$$



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$$\Rightarrow \phi_R P_u = -0.1875 (\phi_R \bar{\sigma}_{h,ult}).$$

$$\lambda_2 \geq \frac{F_x^*}{(\phi_R P_u)} = 53.3 \times \left(\frac{F_x^*}{\phi_R \bar{\sigma}_{h,ult}} \right)$$

TYPICAL SOIL PROPERTIES

Soil Type	Description	C_{adh} (kPa)	$\phi_R \bar{\sigma}_{h,ult}$ (kPa)	K (kPa/m)	ϕ°	k_s	δ	γ
A	LOOSE SAND.	36	111	5000	25°	2.46	20°	16
B	MEDIUM TO STIFF CLAYS.	80	250	-	-	-	-	-
C	MODERATELY COMPACT SAND & GRAVEL.	82	152	10,000	30°	3.00	25°	18
D	COMPACT SAND & GRAVEL.	114	169	15,000	30°	3.00	25°	20

$$k_s = k_p = \tan^2(45^\circ + \phi/2).$$

$$\delta = \phi - 5^\circ$$

$$C_{adh} = \alpha C_u \quad (\text{clays})$$

$$C_{adh} = \frac{\alpha F_c}{\pi b d e} + \alpha C_u + k (b/2) \tan \delta \quad (\text{sands}).$$

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$$\phi_R \bar{q}_{h_{int}} = \phi_R q_{Cu} \text{ (clays) include 3D wedge effect.}$$

$$3k_p (\delta \alpha \frac{1}{2}) \alpha \quad \alpha = 2.5 \text{ (driven)}$$

$$\phi_R \bar{q}_h = \underline{2.81 k_p \delta} \text{ Sands.}$$

± HORIZONTAL
UPLIFT RESISTANCE OF SINGLE STAKE

SOIL TYPE (A) - LOOSE SAND

$$F_y = \phi_R F_R = (0.8)(36)(\pi)(0.025)(0.8) = \underline{1.81 \text{ kN}}$$

$$F_x = \phi_R P_u = 0.01875(111)(0.8) = \underline{1.7 \text{ kN.}}$$

SOIL TYPE (B) - MEDIUM TO STIFF CLAYS

$$\phi F_y = \phi_R F_R = (0.8)(80)(\pi)(0.025)(0.8) = \underline{4.02 \text{ kN}}$$

$$\phi F_x = \phi_R P_u = 0.01875(250)(0.8) = \underline{3.75 \text{ kN.}}$$

SOIL TYPE (C) - MODERATELY COMPACT SAND & GRAVEL

$$\phi F_y = \phi_R F_R = (0.8)(82)(\pi)(0.025)(0.8) = \underline{4.12 \text{ kN.}}$$

$$\phi F_x = \phi_R P_u = 0.01875(152)(0.8) = \underline{2.28 \text{ kN.}}$$

SOIL TYPE (D) - COMPACT SAND & GRAVEL

$$\phi F_y = \phi_R F_R = (0.8)(114)(\pi)(0.025)(0.8) = \underline{5.73 \text{ kN}}$$

$$\phi F_x = \phi_R P_u = 0.01875(169)(0.8) = \underline{2.54 \text{ kN}}$$

LOOSE SAND

$$\phi F_y = 1.8 \text{ kN}$$

$$\phi F_x = 1.7 \text{ kN}$$

MEDIUM-STIFF CLAYS

$$\phi F_y = 4.0 \text{ kN}$$

$$\phi F_x = 3.75 \text{ kN}$$

MODERATELY COMPACT SAND & GRAVEL

$$\phi F_y = 4.1 \text{ kN}$$

$$\phi F_x = 2.25 \text{ kN}$$

COMPACT SAND & GRAVEL

$$\phi F_y = 5.75 \text{ kN}$$

$$\phi F_x = 2.55 \text{ kN}$$

Client: **BAYTEX**

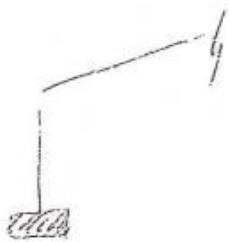
13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

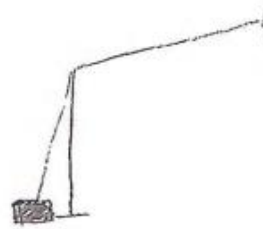
Project No. **5196-3**

HOLDING DOWN WITH BALLAST

BALLAST UNDER COLUMN OR DIRECTLY
NEXT TO COLUMN WITH GUY ROPE



OR



FOR SITE WIND SPEEDS OF UP TO 16m/s

(58 kph, 32 knots)

0.9G + W along
UPLIFT = 1.72N
LATERAL FORCE = 0.9N

0.9G + W across
LATERAL FORCE = 1.22N
UPLIFT = 0.92N

REQUIRED BALLAST TO RESIST UPLIFT

= 1702g

REQUIRED BALLAST TO RESIST LATERAL FORCE
ON HARD SURFACE (I.E. CONCRETE)

$$\mu \times (B - \text{UPLIFT}) \geq 1.2 \quad \Rightarrow \quad B = \frac{1.2}{\mu} + \text{UPLIFT}$$

$$B = \frac{1.2}{0.5} + 0.9 = 3.32N$$

SAY

3502g

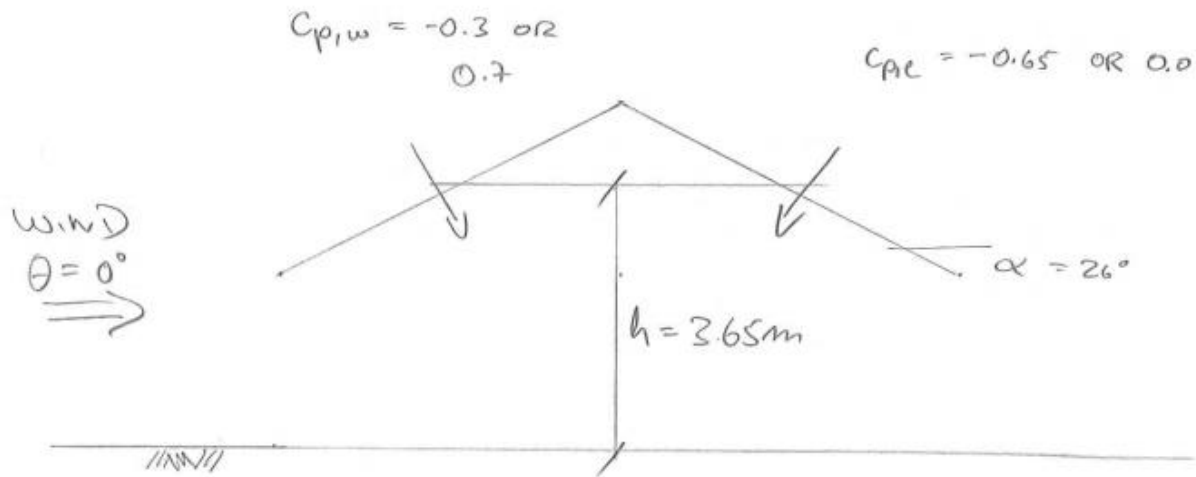
Client: **BAYTEX**

13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**

FREE ROOF PRESSURE COEFFICIENTS
WHEN ERECTED WITHOUT WALL CLADDING



WIND
 $\theta = 90^\circ$

$$C_{p,w} = -0.3 \text{ or } 0.4$$

$$C_{p,e} = -0.4 \text{ or } 0$$

Client: **BAYTEX**

13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**

Building is a light aluminium framed structure to be designed to withstand loadings in accordance to AS/NZS 1170:2002

Dead:	Roof:	Roofing	0.01 KPa
		Framing	0.05 KPa
		Ceiling	0.00 KPa
		$q_{G \text{ roof}} =$	0.06 KPa

Wind: $V_{(des)} = V_R M_d (M_{(z,cat)} M_s M_t)$ (Eq 2.2)
 $= 17.29 \text{ m/s}$

$V_R \text{ Ultimate} = 19.0 \text{ m/s}$

$P_{(z)} = 0.6 V_{d(z)}^2 \times 10^{-3}$ (Eq 2.4)
Ultimate $P_{(z)} = 0.18 \text{ kPa}$

$M_{(z,cat)} = 0.91$	$z = 4.200 \text{ m}$	Category 2
$M_s = 1.0$		Table 4.3
$M_t = 1.00$	$M_h = 1.00$	Table 4.4
$M_d = 1.0$	$M_{lee} = 1.0$	4.4.3
	Elevation = 500 m	

Pressure coefficients:

Across	Up-wind, roof C_{pe}	-0.3	0.7
	Down-wind, roof C_{pe}	-0.65	0
Along	C_{pe}	-0.3	0.4

$P_W = (K_a K_l C_{pe}) q_{(z)}$

Roof slope, $\alpha = 40 \text{ deg.}$	$b = 10.00 \text{ m}$
$d/b = 0.50$	$d = 5.000 \text{ m}$
$h/d = 0.92$	$h = 4.600 \text{ m}$
$K_a = 0.9$	Table 5.4
$K_l = 1.0$	Table 5.6

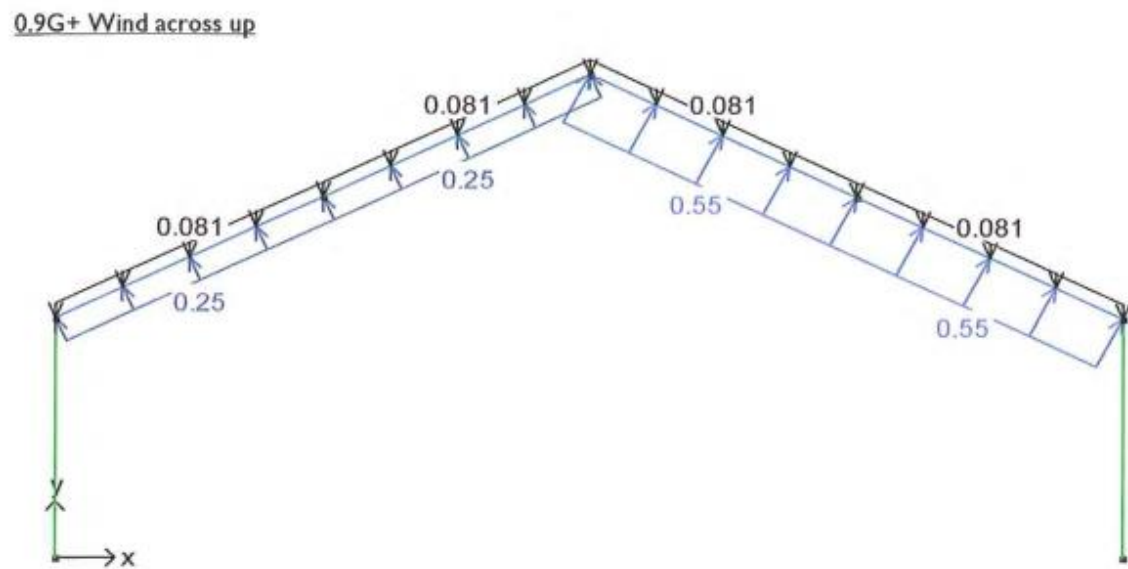
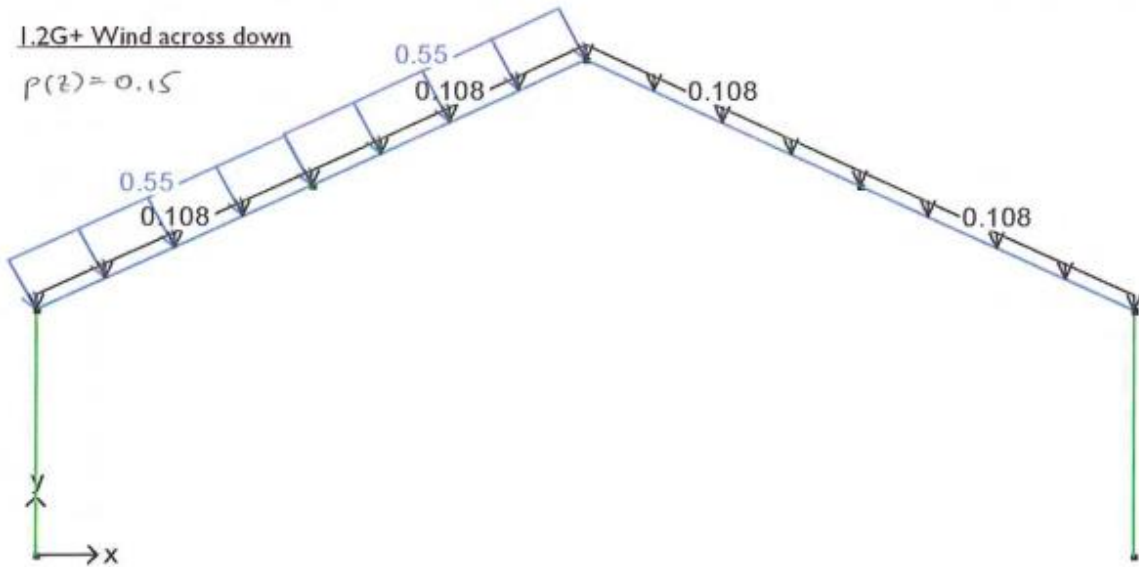
Across	Roof:	$P_{WBC} =$	-0.05 kPa	0.11 kPa
	Roof:	$P_{WCD} =$	-0.10 kPa	0.00 kPa
Along	Roof:	$P_{WBD} =$	-0.05 kPa	0.06 kPa

Client: **BAYTEX**

13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**



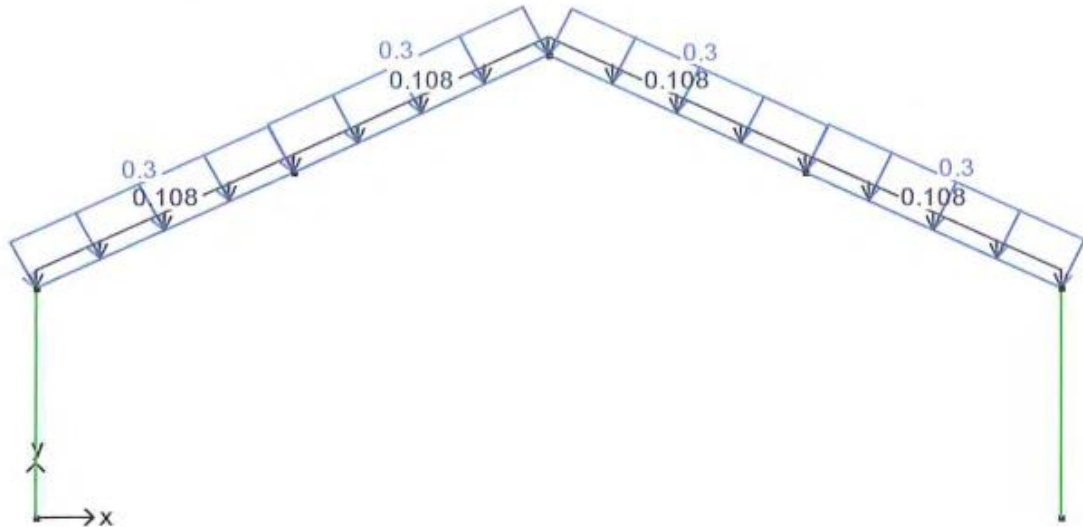
Client: **BAYTEX**

13 September 2021

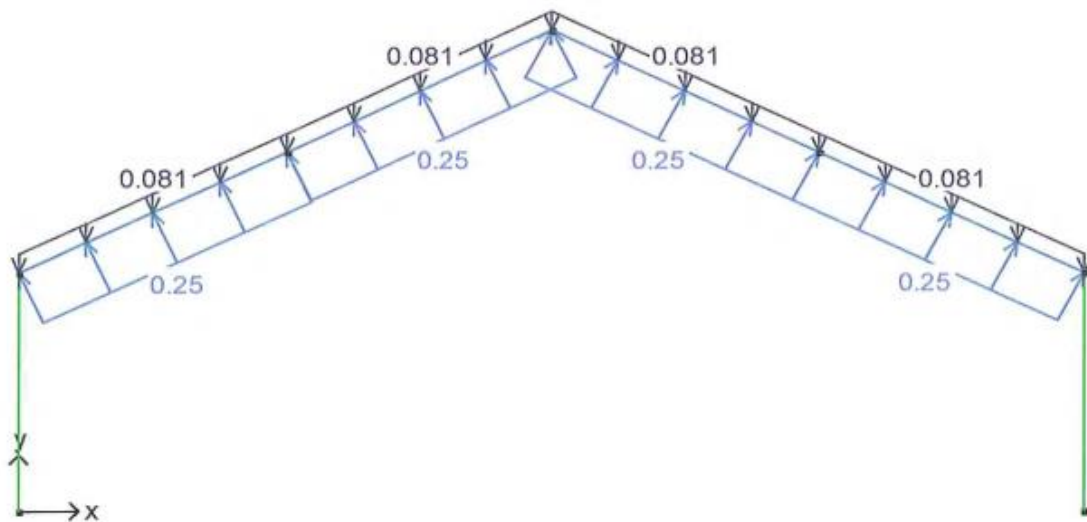
Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**

1.2G+ Wind along down



0.9G+ Wind along up

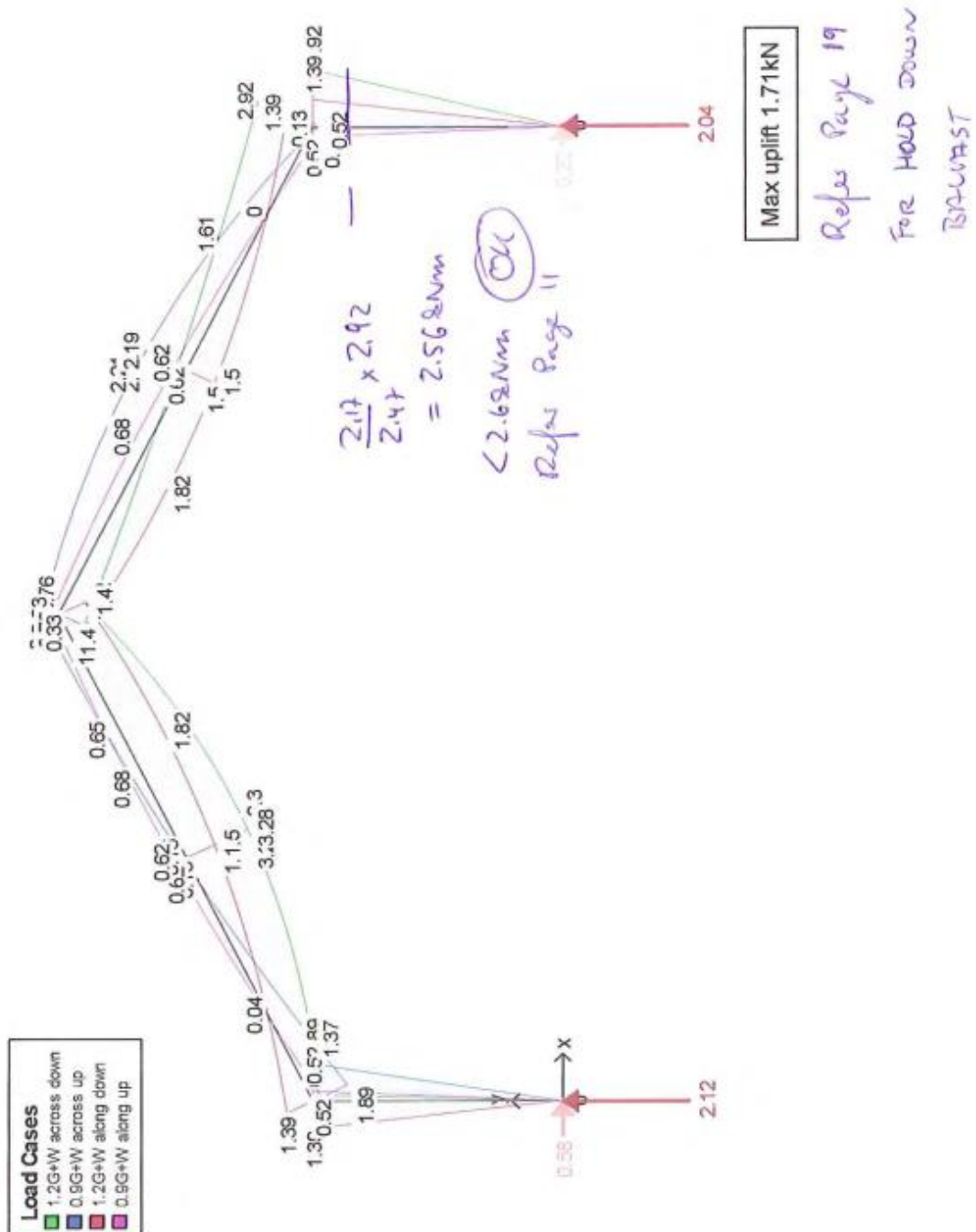


Client: **BAYTEX**

13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**



Client: **BAYTEX**

13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**

Building is a light aluminium framed structure to be designed to withstand loadings in accordance to AS/NZS 1170:2002

Dead:	Roof:	Roofing	0.01 KPa
		Framing	0.05 KPa
		Ceiling	0.00 KPa
		q_{G roof} =	0.06 KPa

WITH GUY ROPES ATTACHED

Wind: $V_{(des)} = V_R M_d (M_{(z,cat)} M_s M_t)$ (Eq 2.2)
 $= 23.30 \text{ m/s}$

$V_R \text{ Ultimate} = 25.6 \text{ m/s}$ $\hat{=} 92.2 \text{ km/h}$

$P(z) = 0.6 V_{d(z)}^2 \times 10^{-3}$ (Eq 2.4)

Ultimate $p_{(z)} = 0.33 \text{ kPa}$

$M_{(z,cat)} = 0.91$

$z = 4.200 \text{ m}$

Category 2

$M_s = 1.0$

Table 4.3

$M_t = 1.00$

$M_h = 1.00$

Table 4.4

$M_d = 1.0$

$M_{lee} = 1.0$

4.4.3

Elevation = 500 m

Pressure coefficients:

Across	Up-wind, roof $C_{pe} =$	-0.3	0.7
	Down-wind, roof $C_{pe} =$	-0.65	0
Along	$C_{pe} =$	-0.3	0.4

$P_W = (K_a K_l C_{pe}) q_{(z)}$

Roof slope, $\alpha = 40 \text{ deg.}$

$b = 10.00 \text{ m}$

$d/b = 0.50$

$d = 5.000 \text{ m}$

$h/d = 0.92$

$h = 4.600 \text{ m}$

$K_s = 0.867$

Table 5.4

$K_l = 1.0$

Table 5.6

Across	Roof:	$P_{WBC} =$	-0.08 kPa	0.198 kPa
	Roof:	$P_{WCD} =$	-0.18 kPa	0.00 kPa
	Roof:	$P_{WBD} =$	-0.08 kPa	0.11 kPa

Client: **BAYTEX**

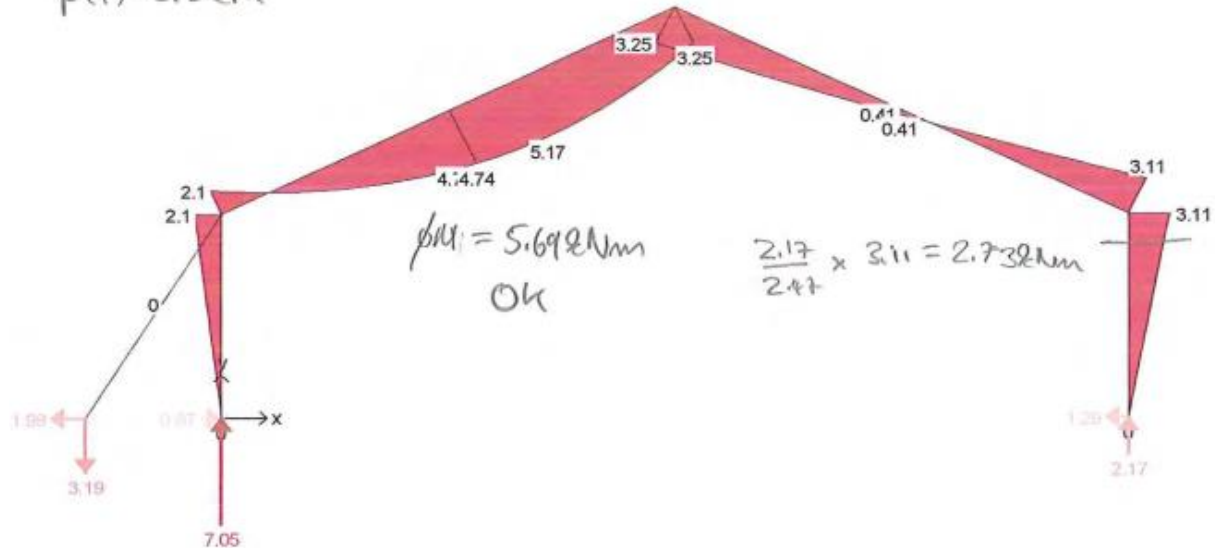
13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

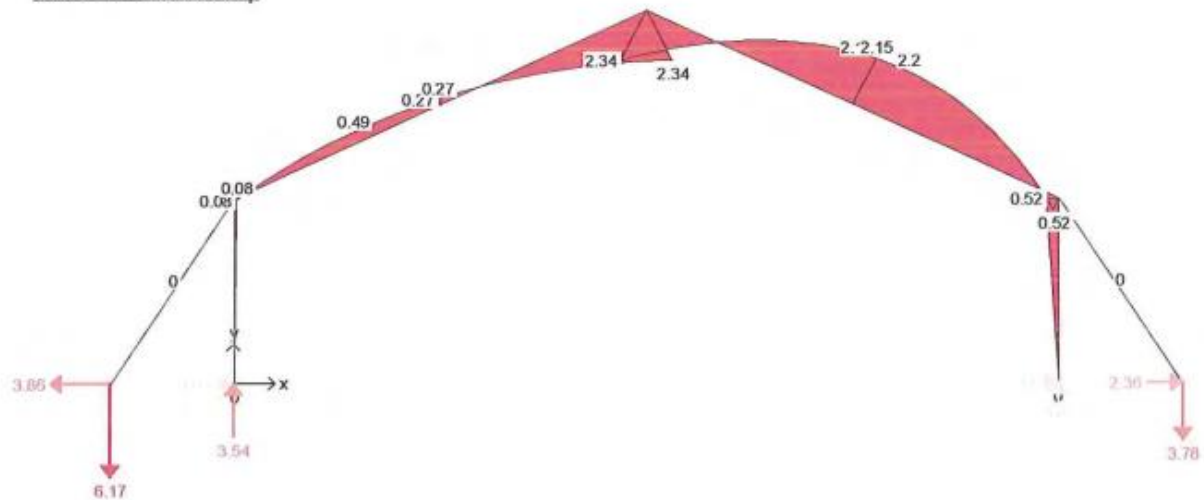
Project No. **5196-3**

1.2G+ Wind across down

$$p(z) = 0.32 P_a$$



0.9G+ Wind across up



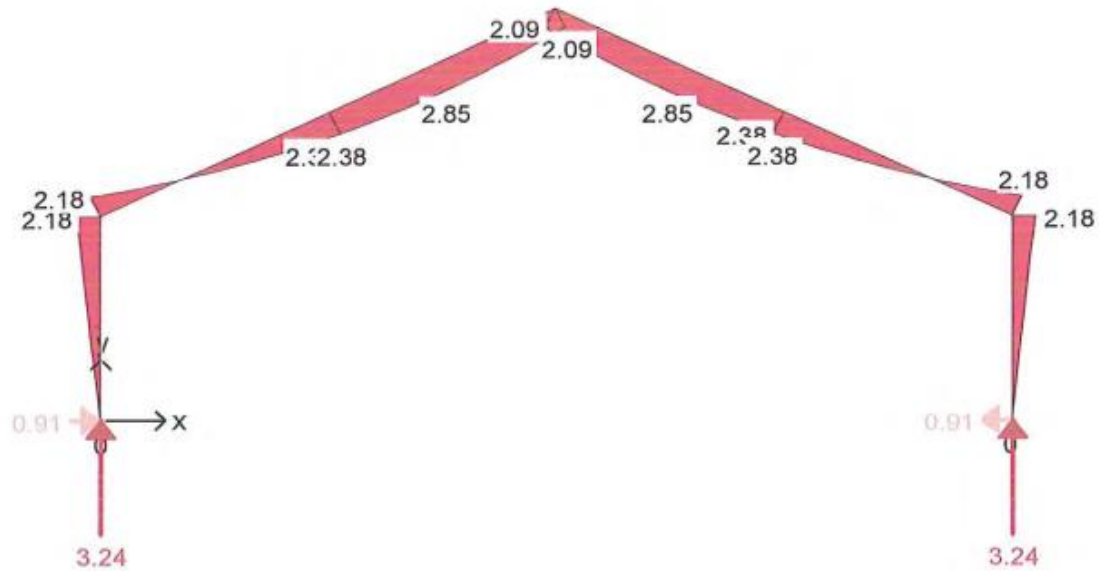
Client: **BAYTEX**

13 September 2021

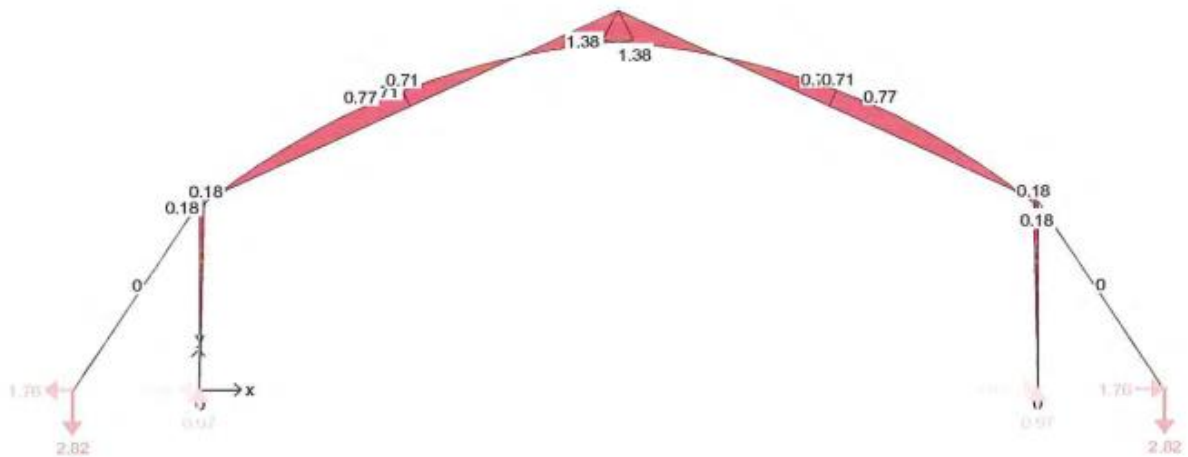
Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**

1.2G+ Wind along down



0.9G+ Wind along up



Client: **BAYTEX**

13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**

NZS 1664 Aluminium Structures Part 1: Limit State Design
For 65 * 3.5 Tube SHS Alloy 6061 T6

Table 3.3D Formulas for Buckling Constants

$$B_p = F_{cy}(1 + (F_{cy}/21.7)^{0.33})$$

$$= 328.15$$

$$D_p = B_p(B_p/E)^{0.5}/10$$

$$= 2.25$$

$$B_c = F_{cy}(1 + (F_{cy}/15510)^{0.5})$$

$$= 287.70$$

$$D_c = B_c(B_c/E)^{0.5}/10$$

$$= 1.84$$

$$C_c = 0.41B_c/D_c$$

$$= 63.95$$

$$\phi_y = 0.95$$

$$\phi_b = 0.85$$

$$\phi_c = 0.85$$

$$F_{cy} = 255 \text{ MPa}$$

$$E = 70000 \text{ MPa}$$

$$k_1 = 0.35$$

$$k_2 = 2.27$$

Table 3.4A

Table 3.4A

Table 3.4A

Table 3.3A

Table 3.3A

Table 3.3D

Table 3.3D

3.4.8 Compression in Columns, axial, gross section

3.4.8.2

$$k = 1$$

$$L_x = 2170$$

$$L_y = 2170$$

$$\lambda = (k L / r) (1 / \pi) (F_{cy} / E)^{0.5} = 1.92$$

$$D_c^* = \pi D_c (E / F_{cy})^{0.5} = 96.0$$

$$S1^* = (B_c - F_{cy}/k_c) / D_c^* = 0.6$$

$$S2^* = C_c / \pi (F_{cy} / E)^{0.5} = 1.2$$

$$\phi_{cc} = 1 - 0.21 \lambda \leq 0.95 \text{ for } \lambda \leq 1.2$$

$$= 0.14 \lambda + 0.58 \leq 0.95 \text{ for } \lambda > 1.2$$

$$= 0.85$$

For $\lambda < S1^*$

$$\phi_{FL} = \phi_{cc} F_{cy} / k_c = 193 \text{ MPa}$$

For $S1^* < \lambda < S2^*$

$$\phi_{FL} = \phi_{cc} (B_c - D_c^* I) = 88 \text{ MPa}$$

For $\lambda \geq S2^*$

$$\phi_{FL} = (\phi_{cc} / I_2) F_{cy} = 59 \text{ MPa}$$

$$\phi_{FLags} = 59 \text{ MPa}$$

$$b = 65 \text{ mm}$$

$$t = 3.5 \text{ mm}$$

$$I_x = 3.21 \text{E}+05 \text{ mm}^4$$

$$I_y = 3.21 \text{E}+05 \text{ mm}^4$$

$$A = 676 \text{ mm}^2$$

$$r_y = 22 \text{ mm}$$

$$r_x = 22$$

$$J = 641000 \text{ mm}^4$$

$$y_t = 32.5 \text{ mm}$$

$$y_b = 32.5 \text{ mm}$$

$$S_{ct} = I_x / y_t$$

$$= 9867 \text{ mm}^3$$

$$S_{cb} = I_x / y_b$$

$$= 9867 \text{ mm}^3$$

$$S_{cx} = 9867 \text{ mm}^3$$

$$S_{cy} = 9867 \text{ mm}^3$$

$$k_c = 1.120$$

Table 3.4B

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13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**

Table 3.3d Round Tubes Buckling Constants

$$\begin{aligned} B_{tb} &= 1.5 F_{cy}(1 + F_{cy}^{0.2}/12.8) \\ &= 473.02 \\ D_{tb} &= B_{tb}(B_{tb}/E)^{0.33}/2.7 \\ &= 33.677 \\ C_{tb} &= ((B_{tb} - B_t)/(D_{tb} - D_t))^2 \\ &= 51.865 \\ B_t &= F_{cy}(1 + F_{cy}^{0.2}/12.8) \\ &= 315.3 \\ D_t &= B_t(B_t/E)^{0.33}/4.5 \\ &= 11.8 \end{aligned}$$

3.4.13 **Compression in Beams**
Round or oval Tubes

$$\begin{aligned} R_b/tw &= 9.4 \\ 1.17 \phi_y F_{cy} &= 283 \text{ MPa} \\ S1 &= ((B_{tb} - 1.17 F_{cy} \phi_y / \phi_b) / D_{tb})^2 \\ &= 17.17 \\ \phi_b (B_{tb} - D_{tb}(R_b/t)^{0.5}) &= 314 \text{ MPa} \\ S2 &= ((B_{tb} - \phi_c B_t / \phi_b) / (D_{tb} - \phi_c D_t / \phi_b))^2 \\ &= 51.9 \\ \phi M &= f FL z \\ &= 2.8 \text{ kNm} \end{aligned}$$

3.4.11 **Compression in Components of Columns**

$$\begin{aligned} R_m/tw &= 8.9 \\ \phi_y F_{cy} / k_c &= 216 \text{ MPa} \\ S1 &= ((B_t - (f_y F_{cy} / f_{ckc}) / D_t)^2 \\ &= 26.7 \\ \phi_c (B_t - D_t (R_m/tw)^{0.5}) &= 238 \text{ MPa} \\ S2 &= \\ \phi_{cp} \pi^2 E / (16 R_m/tw)(1 + (R_m/tw)^{0.5}/35)^2 &= 3489 \text{ MPa} \\ \phi N &= \phi FL A \\ &= 146.2 \text{ kN} \end{aligned}$$

$R_m = 31.25$
 $R_b = 33$
 $tw = 3.5$
 $\phi FL = 283 \text{ MPa}$
 $R_m = 31.25$
 $F_{cy} = 255 \text{ MPa}$
 $\phi_{cp} = 0.85$
 $\phi FL = 216 \text{ MPa}$

4.1 **Combined Axial Load and Bending**

$$\begin{aligned} f_a &= N^*/A &= 3.2 \text{ MPa} & N^* = 2.17 \text{ kN} \\ F_a &= \phi FL_{axial} &= 59 \text{ MPa} & A = 676 \text{ mm}^2 \\ f_{bx} &= M^*/z_x &= 277 \text{ MPa} & M^*x = 2.73 \text{ kNm} \\ F_{bx} &= \phi FL_{flexure} &= 283 \text{ MPa} & z_x = 9867 \text{ mm}^3 \\ f_{by} &= M^*/z_y &= 0 \text{ MPa} & M^*y = 0.00 \text{ kNm} \\ & & & z_y = 9867 \text{ mm}^3 \\ & & & F_{by} = 283 \text{ MPa} \end{aligned}$$

$f_a/F_a + f_{bx}/F_{bx} + f_{by}/F_{by} = 1.0$

OK

Client: **BAYTEX**

13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**

Baytex 10m Clipframe Mk2
Alloy Extrusions

1 of 3 drawings for set

Checked	Issued	Date

Approved

Original Copy Red

Alloy Grade: 6061 T6
Yield Strength: 255MPa
Finish: Silver Anodised
Quality: 12 microns

No.	Date	Amendment
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Baytex
TEST MARKERS

Baytex Manufacturing
Company Ltd
100-102, The Arcade
P.O. Box 4370
Mt Maunganui
New Zealand

Phone: 64 7 579 0190
Fax: 64 7 579 0194
email: sales@baytex.co.nz

All Dry	3rd Angle Proj
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Scale	1:2
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400 Title	
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Baytex 10m Clipframe Mk2	
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Alloy Extrusions	
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Drawing Title	
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Properties of	
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Structural Extrusions	
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Sheet Name	
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Part No	
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Drawing No	
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Revision No	
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09.011.3	
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Date	
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23.11.2004	
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Drawn By	
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Spencer Tankard	
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Wod. 24 Nov 2004	
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8:55:10 AM	
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09.011.10 CF10Extrusions	
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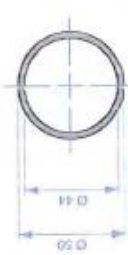
6500 x 3.5wall Alloy Tube

Area: 676.1599 sq mm
Perim: 385.7955 mm
xC: 20.00000 mm
yC: 189.0000 mm
Ixx: 320678.9 mm⁴
Iyy: 320678.9 mm⁴
Kxx: 21.77762 mm
Kyy: 21.77762 mm
Cxx: 32.50000 mm
Cyy: 32.50000 mm
Sxx: 9867.043 mm³
Syy: 9867.043 mm³



5000 x 3.0wall Alloy Tube

Area: 442.9201 sq mm
Perim: 294.8356 mm
xC: 20.00000 mm
yC: -9.000000 mm
Ixx: 122787.3 mm⁴
Iyy: 122787.3 mm⁴
Kxx: 16.64999 mm
Kyy: 16.64999 mm
Cxx: 25.00000 mm
Cyy: 25.00000 mm
Sxx: 4911.491 mm³
Syy: 4911.491 mm³



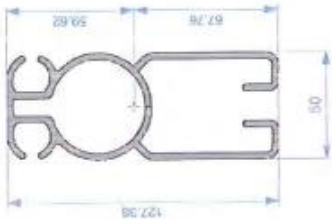
2500 x 1.5wall Alloy Tube

Area: 103.7878 sq mm
Perim: 148.0451 mm
xC: 20.00000 mm
yC: -154.0000 mm
Ixx: 7250.407 mm⁴
Iyy: 7250.407 mm⁴
Kxx: 8.358109 mm
Kyy: 8.358109 mm
Cxx: 12.50000 mm
Cyy: 12.50000 mm
Sxx: 590.0325 mm³
Syy: 590.0326 mm³



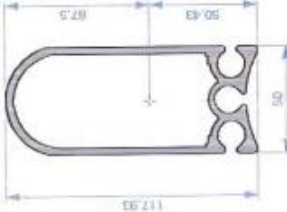
Channel Tube Extrusion

Cxx: 67.75599 mm
Cyy: 25.00000 mm
Sxx: 33627.48 mm³
Syy: 17159.14 mm³
Area: 1316.882 sq mm
Perim: 858.5298 mm
xC: -315.9182 mm
yC: -69.62401 mm
Ixx: 2292013 mm⁴
Iyy: 428978.5 mm⁴
Kxx: 41.71911 mm
Kyy: 18.04863 mm



AluRail Extrusion

Cxx: 67.49943 mm
Cyy: 24.99832 mm
Sxx: 27478.87 mm³
Syy: 17346.67 mm³
Area: 1189.925 sq mm
Perim: 674.6565 mm
xC: -282.0005 mm
yC: 152.3468 mm
Ixx: 1854808 mm⁴
Iyy: 433637.6 mm⁴
Kxx: 39.48113 mm
Kyy: 19.08990 mm

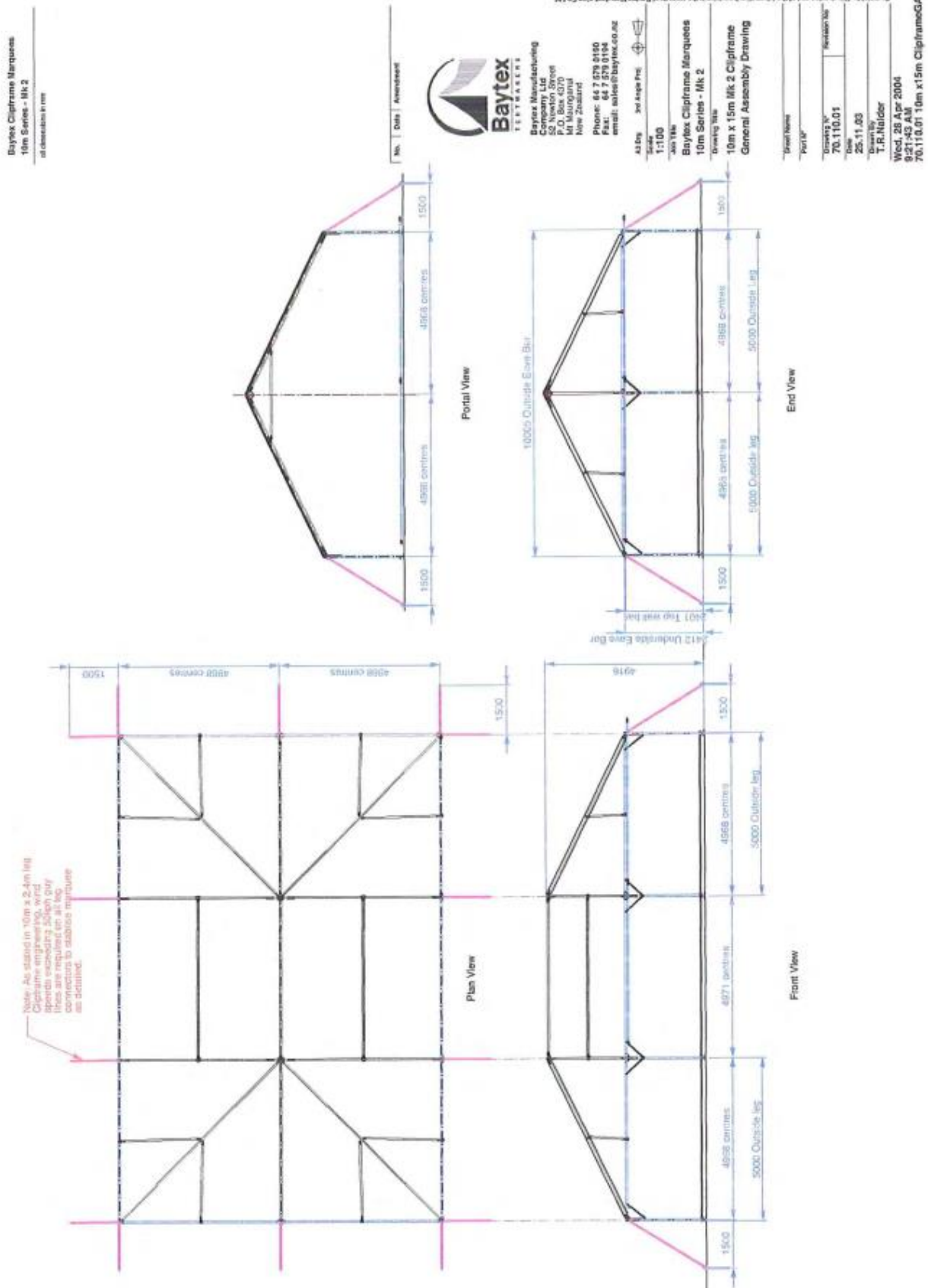


Client: **BAYTEX**

13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**

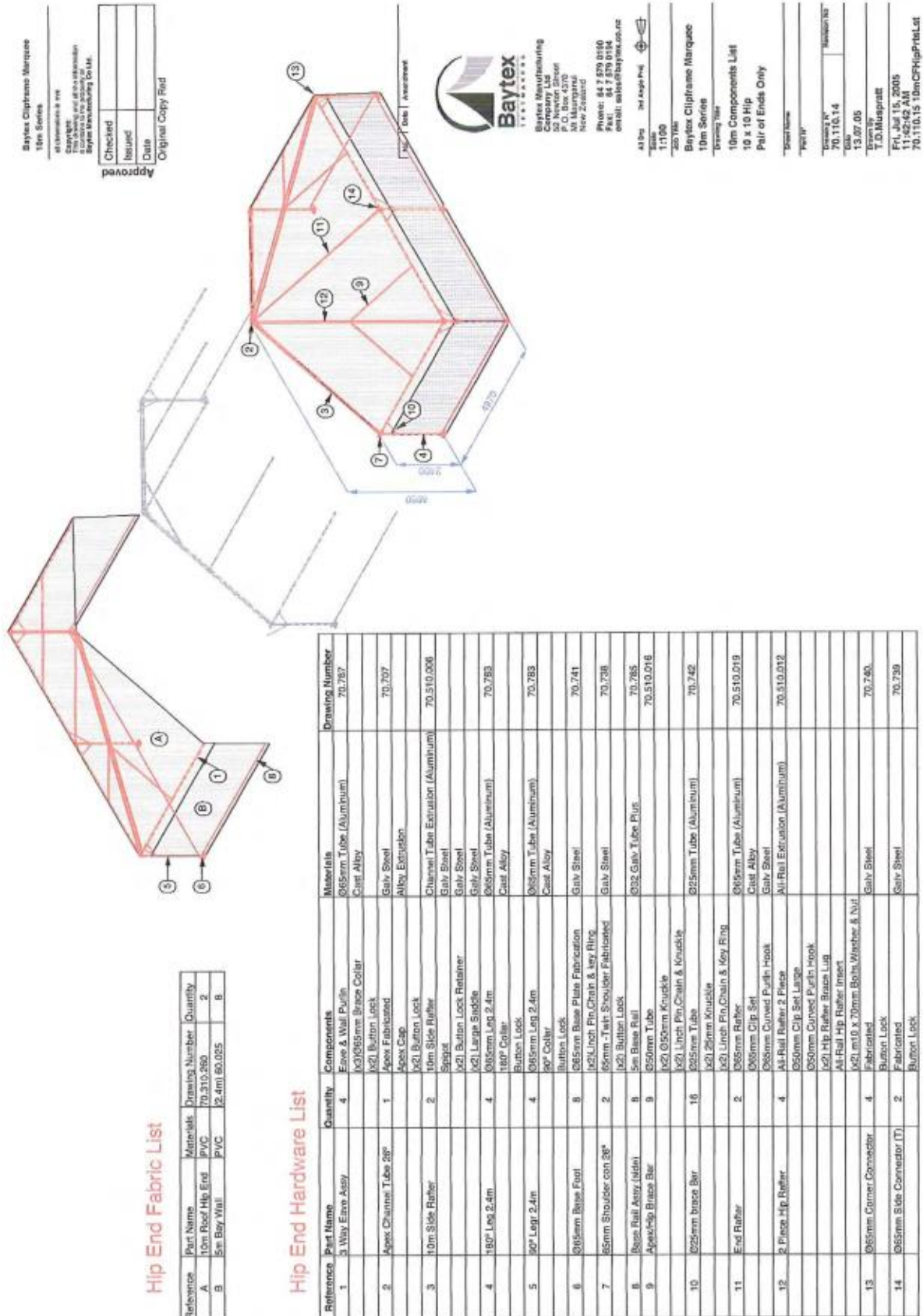


Client: **BAYTEX**

13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**



Client: **BAYTEX**

13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**

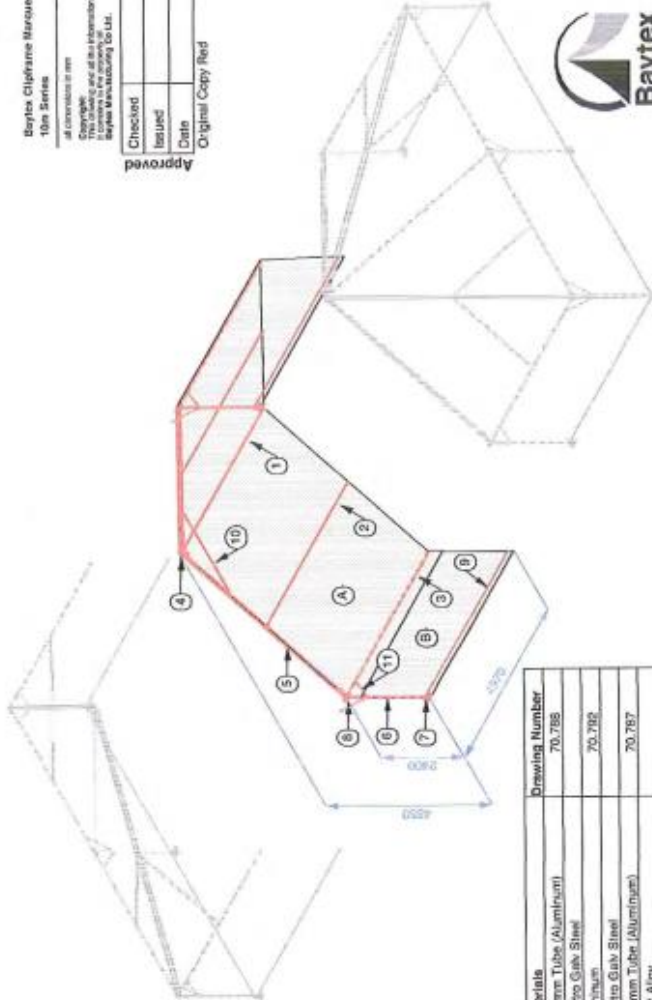
Baytex Clipframe Marquee
10m Series

all construction in mm

Checklist:
This drawing and all its information
Baytex Manufacturing Co Ltd.

Checked	Issued
Date	Original Copy Red

Approved



Baytex Manufacturing
Company Ltd
52 Newbold Street
P.O. Box 400
Mt Maunganui
New Zealand
Phone: 64 7 578 0198
Fax: 64 7 578 0194
email: sales@baytex.co.nz

As Shown 10m Span 2.4m Leg
Scale
1:100
Date
13/09/21
Baytex Clipframe Marquee
10m Series
Drawing Title
10m Components List
10 x 5 Mid Assembly Only

Sheet Name
Part 14
Drawing No
70.110.15
Revision No
12.07.05
Drawn by
T.D. Muspratt
Rev. Jul 15, 2005
11:44:38 AM
70.110.15 10mClipMidPart14.wht

Mid Fabric List

Reference	Part Name	Materials	Drawing Number	Quantity
A	10m Roof Mid	PVC	70.310.260	1
B	5m Bay Wall	PVC	(2.4m) 80.025	2

Mid Hardware List

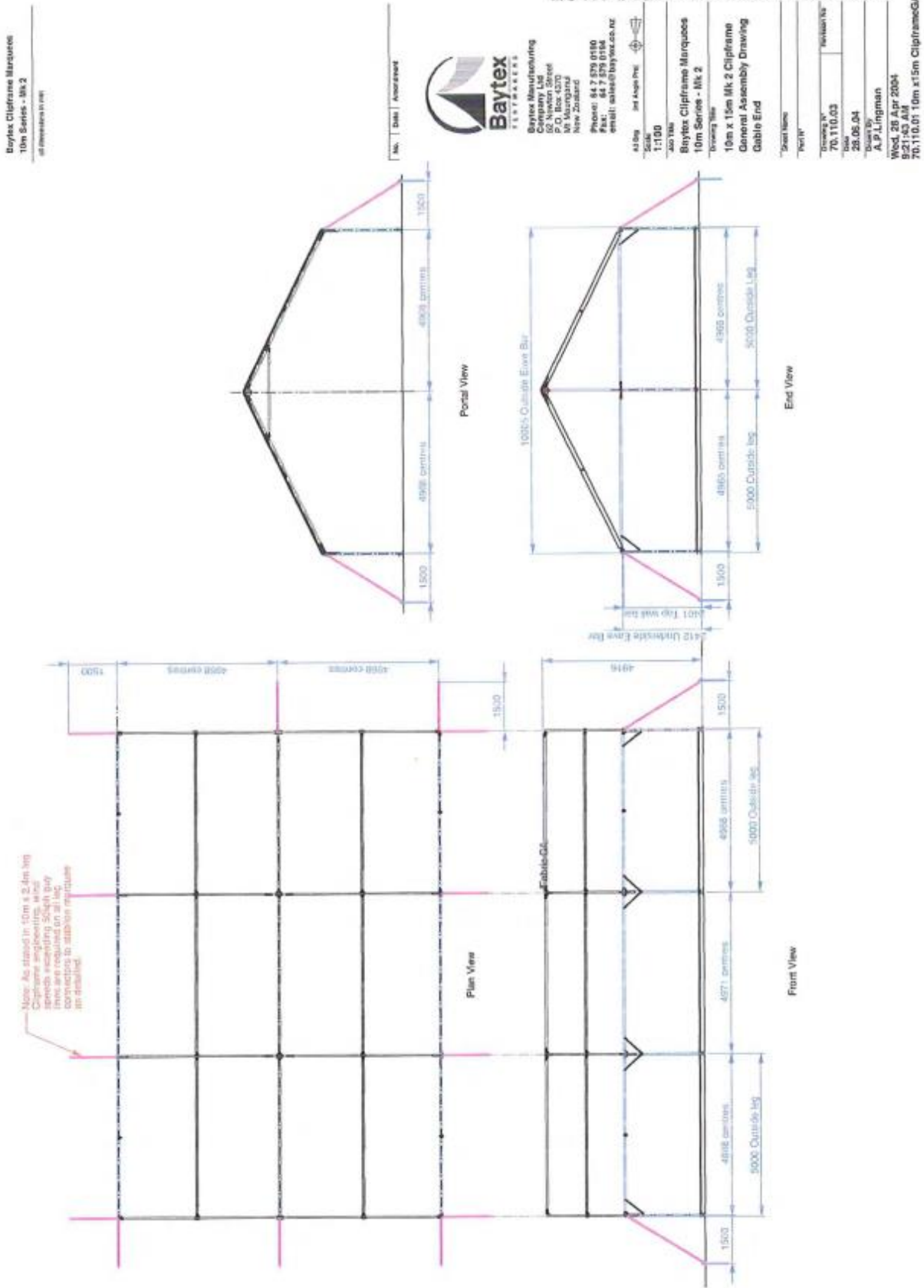
Reference	Part Name	Components	Quantity Per Mid	Materials	Drawing Number
1	Ridge Purfin Assy	Ø45 Intermediate Purfin Tube Ø50mm Curved & 65mm Straight Hooks	1	Ø65mm Tube (Aluminium) E-Zero Galv Steel	70.785
2	Intermediate Purfin Assy	Ø50 Intermediate Purfin Tube 50mm Curved & 50mm Straight Hooks	2	Aluminium	70.789
3	5mm 2 Way Assy	50mm Tube 1x2 Ø65mm Brace Collar	2	Electro Galv Steel Ø65mm Tube (Aluminium) Card Alloy	70.787
4	Apex Channel Tube 20°	1x21 Button Lock Apex Fabricated Apex Cap 1x21 Button Lock 10m Side Rafter	1	Galv Steel Alloy Extrusion	70.707
5	10m Side Rafter	Sopot 1x21 Button Lock Retainer 1x21 Large Saddle Ø50mm Leg 2.4m 180° Collar	2	Channel Tube Extrusion (Aluminium) Galv Steel Galv Steel Card Alloy	70.510.008 70.783
6	180° Leg 2.4m	Button Lock Ø65mm Base Plate Fabrication	2	Galv Steel	70.741
7	Ø65mm Base Foot	1x21 Linch Pin Chain & Key Ring 15mm Twin Shoulder Fabricated Button Lock	2	Galv Steel	70.741
8	15mm Shoulder 20° 28°	5m Base Rail Apex Base Bar	1	Galv Steel	70.785
9	Base Rail Assy (side)	Ø65mm Tube 1x21 Ø50mm Knuckle	2	Ø32 Galv Tube Plus	70.785 70.510.016
10	Apex Base Bar	1x21 Linch Pin Chain & Knuckle Ø25mm Tube	1	Ø25mm Tube (Aluminium)	70.742
11	Ø25mm brace Bar	1x21 Linch Pin Chain & Key Ring	4	5mm Galv wire Plastics coated to 7mm Galv	70.510.028
12	Brace Cables Assy (roof)	Brace Wire Set Every Fifth Bay Brace Wire 12mm Turnbuckle & 1x11 thimble Shackle	Every 5th Bay 4		

Client: **BAYTEX**

13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**

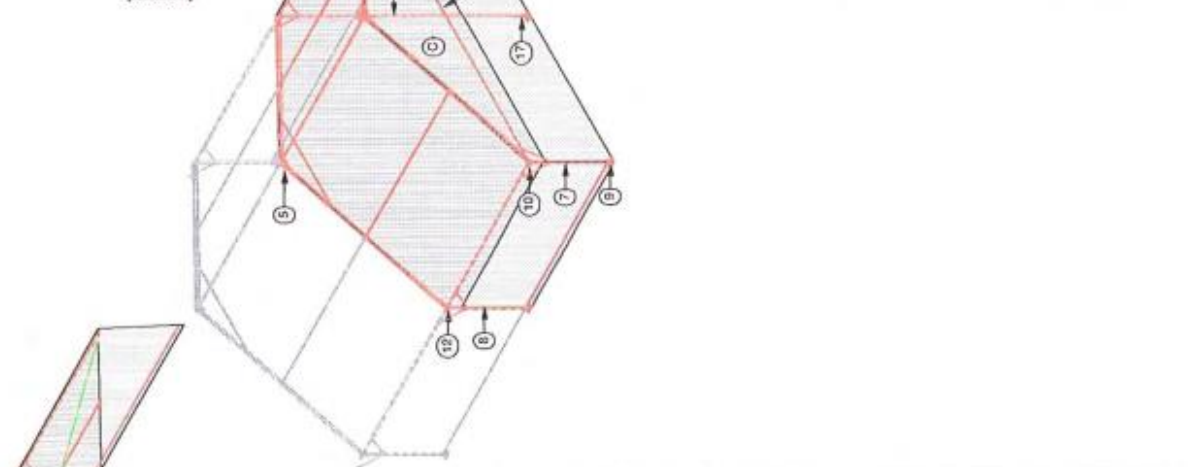


Client: **BAYTEX**

13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. **5196-3**



Gable End Fabric List

Reference	Part Name	Materials	Drawing Number	Quantity
A	10m Roof Mid	PVC	70.310.260	2
B	5m Side Wall	PVC	(2.4m) 80.025	6
C	10m Gable Infill	PVC	70.310.260	2

Gable End Hardware List

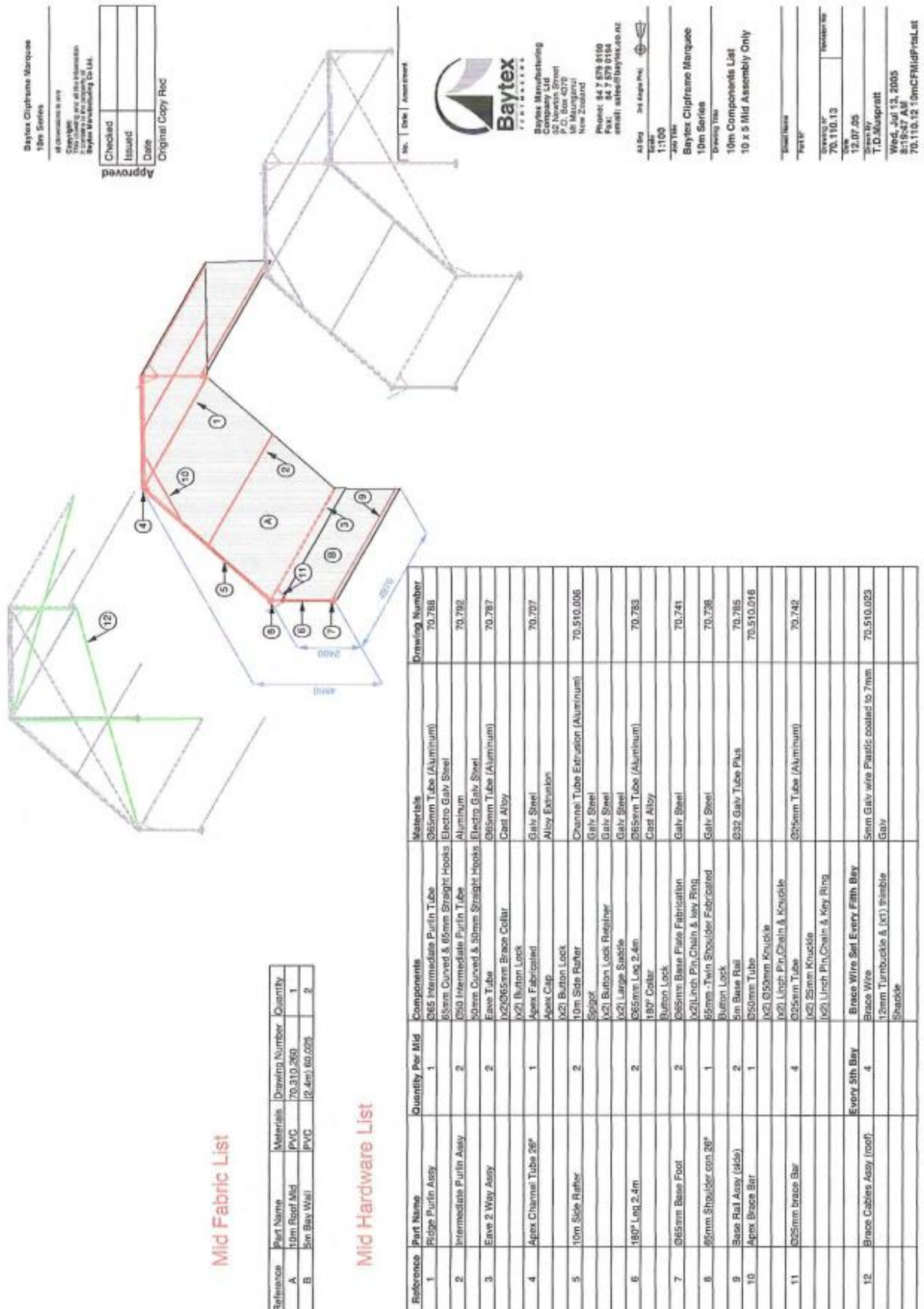
Reference	Part Name	Components	Quantity	Materials	Drawing Number
1	10m Ridge Purlin	2x5 Intermediate Purlin Tube	2	Stainless Tube (Aluminium)	70.110
2	2m Intermediate Purlin	2x5 Intermediate Purlin Tube	4	Stainless Tube (Aluminium)	70.240
3	2m 2-Way Even Gable	2x5 Intermediate Purlin Tube	4	Stainless Tube (Aluminium)	70.240
4	2x5 Apex G.T. 20°	2x5 Apex Gable	2	Stainless Tube (Aluminium)	70.240
5	2x5 Apex G.T. 20°	2x5 Apex Gable	2	Stainless Tube (Aluminium)	70.240
6	10m Side Rafter	2x5 Intermediate Purlin Tube	2	Stainless Tube (Aluminium)	70.240
7	2x5 Leg 2.4m	2x5 Intermediate Purlin Tube	4	Stainless Tube (Aluminium)	70.240
8	10m 2-Way Even Gable	2x5 Intermediate Purlin Tube	4	Stainless Tube (Aluminium)	70.240
9	2x5 Leg 2.4m	2x5 Intermediate Purlin Tube	4	Stainless Tube (Aluminium)	70.240
10	2x5 Leg 2.4m	2x5 Intermediate Purlin Tube	4	Stainless Tube (Aluminium)	70.240
11	2x5 Leg 2.4m	2x5 Intermediate Purlin Tube	4	Stainless Tube (Aluminium)	70.240
12	2x5 Leg 2.4m	2x5 Intermediate Purlin Tube	4	Stainless Tube (Aluminium)	70.240
13	2x5 Leg 2.4m	2x5 Intermediate Purlin Tube	4	Stainless Tube (Aluminium)	70.240
14	2x5 Leg 2.4m	2x5 Intermediate Purlin Tube	4	Stainless Tube (Aluminium)	70.240
15	2x5 Leg 2.4m	2x5 Intermediate Purlin Tube	4	Stainless Tube (Aluminium)	70.240
16	2x5 Leg 2.4m	2x5 Intermediate Purlin Tube	4	Stainless Tube (Aluminium)	70.240
17	2x5 Leg 2.4m	2x5 Intermediate Purlin Tube	4	Stainless Tube (Aluminium)	70.240
18	2x5 Leg 2.4m	2x5 Intermediate Purlin Tube	4	Stainless Tube (Aluminium)	70.240
19	2x5 Leg 2.4m	2x5 Intermediate Purlin Tube	4	Stainless Tube (Aluminium)	70.240

Client: **BAYTEX**

13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

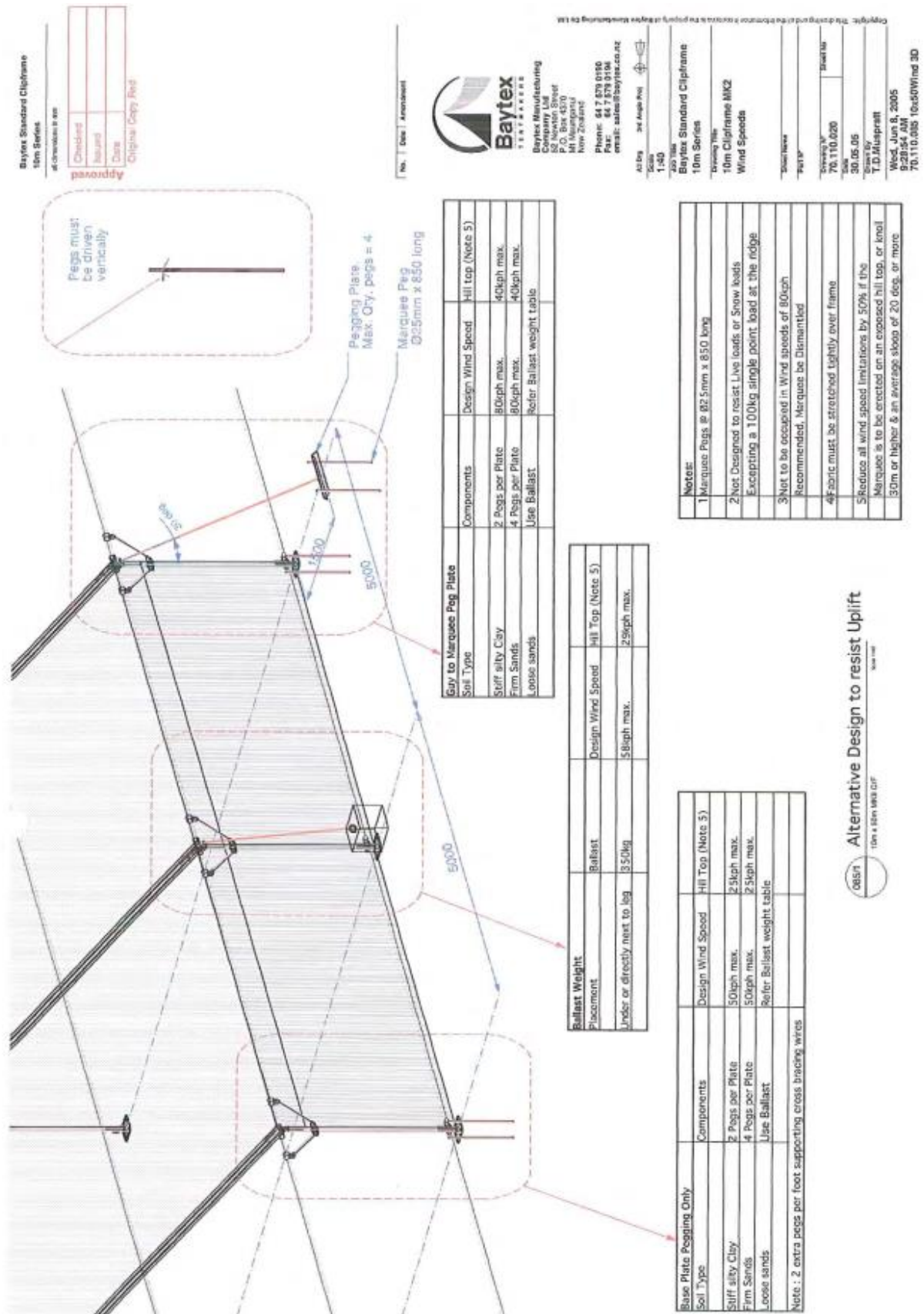
Project No. **5196-3**

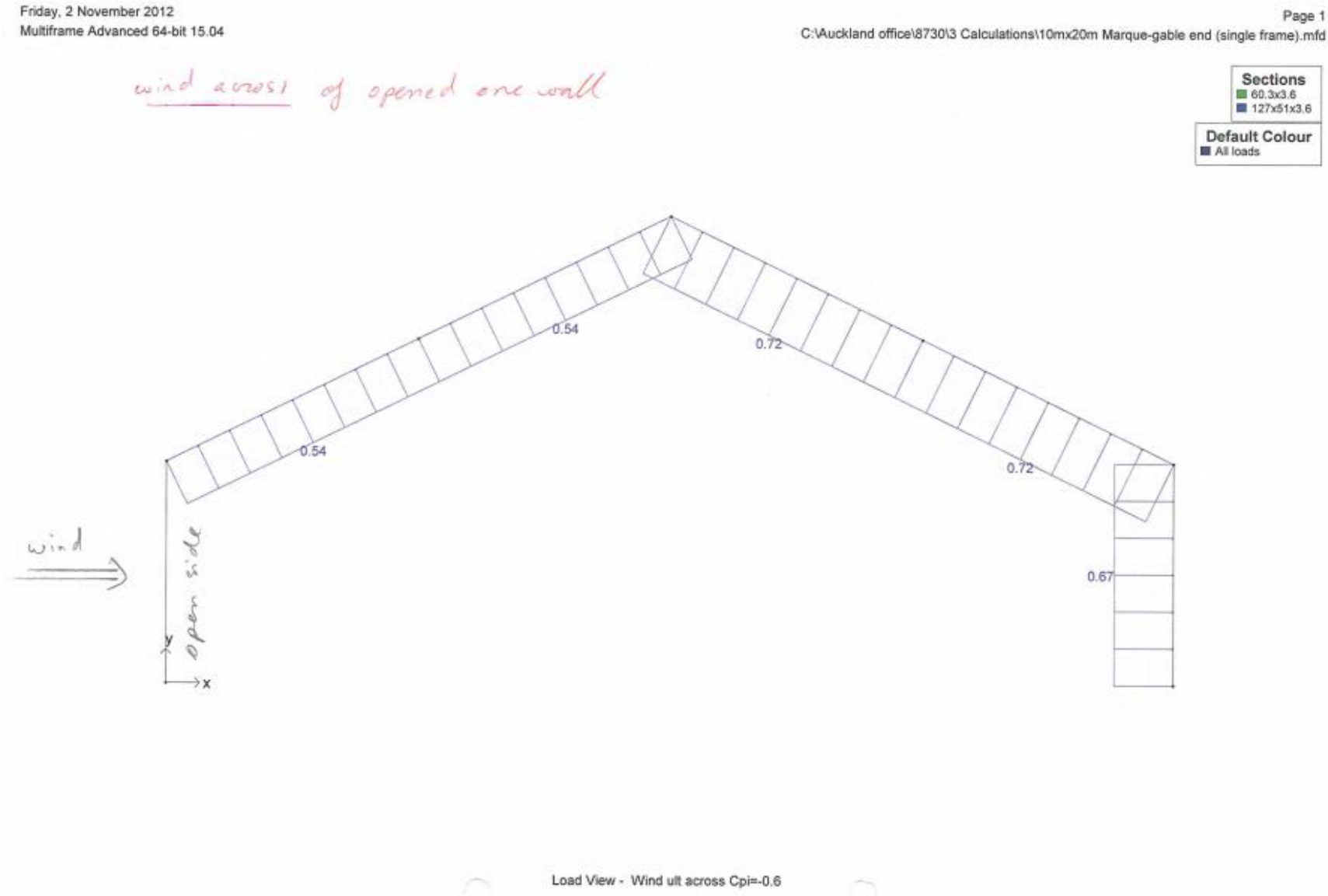


Client: **BAYTEX**

13 September 2021

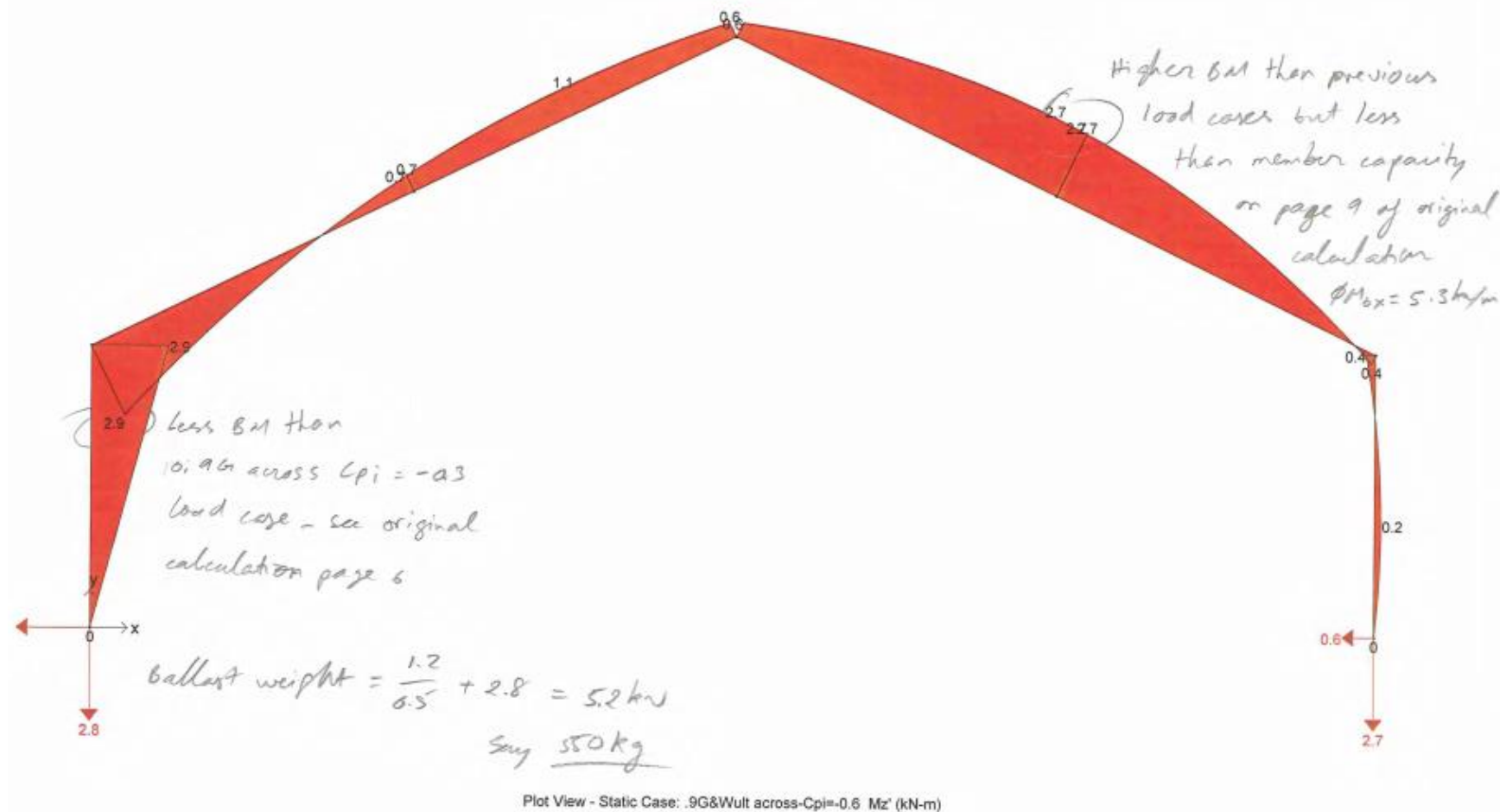
Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

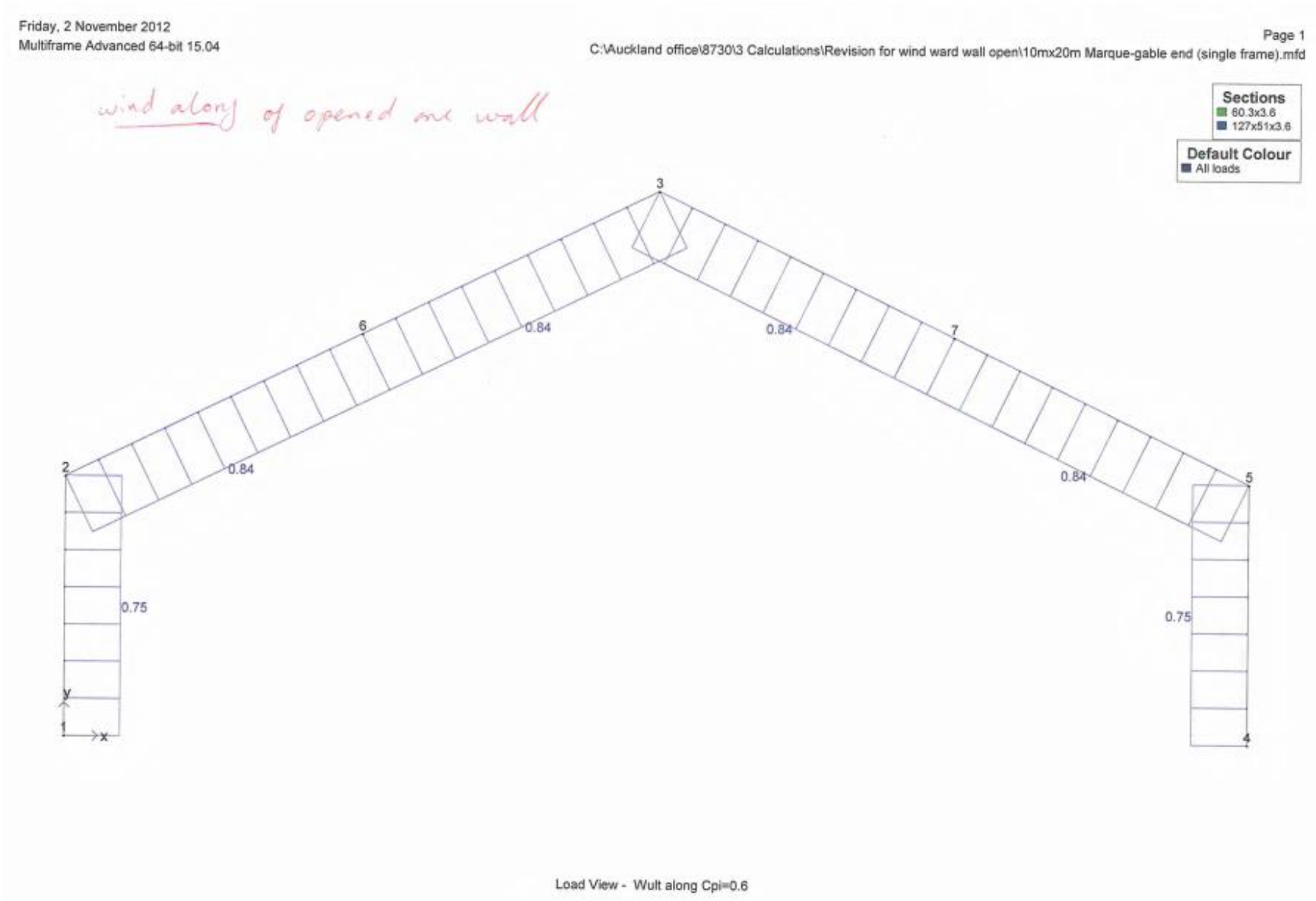
Project No. **5196-3**



Friday, 2 November 2012
Multiframe Advanced 64-bit 15.04

Page 1
C:\Auckland office\8730\3 Calculations\10mx20m Marque-gable end (single frame).mfd





CALCULATIONS

Page 46 of 48

Client: **BAYTEX**

13 September 2021

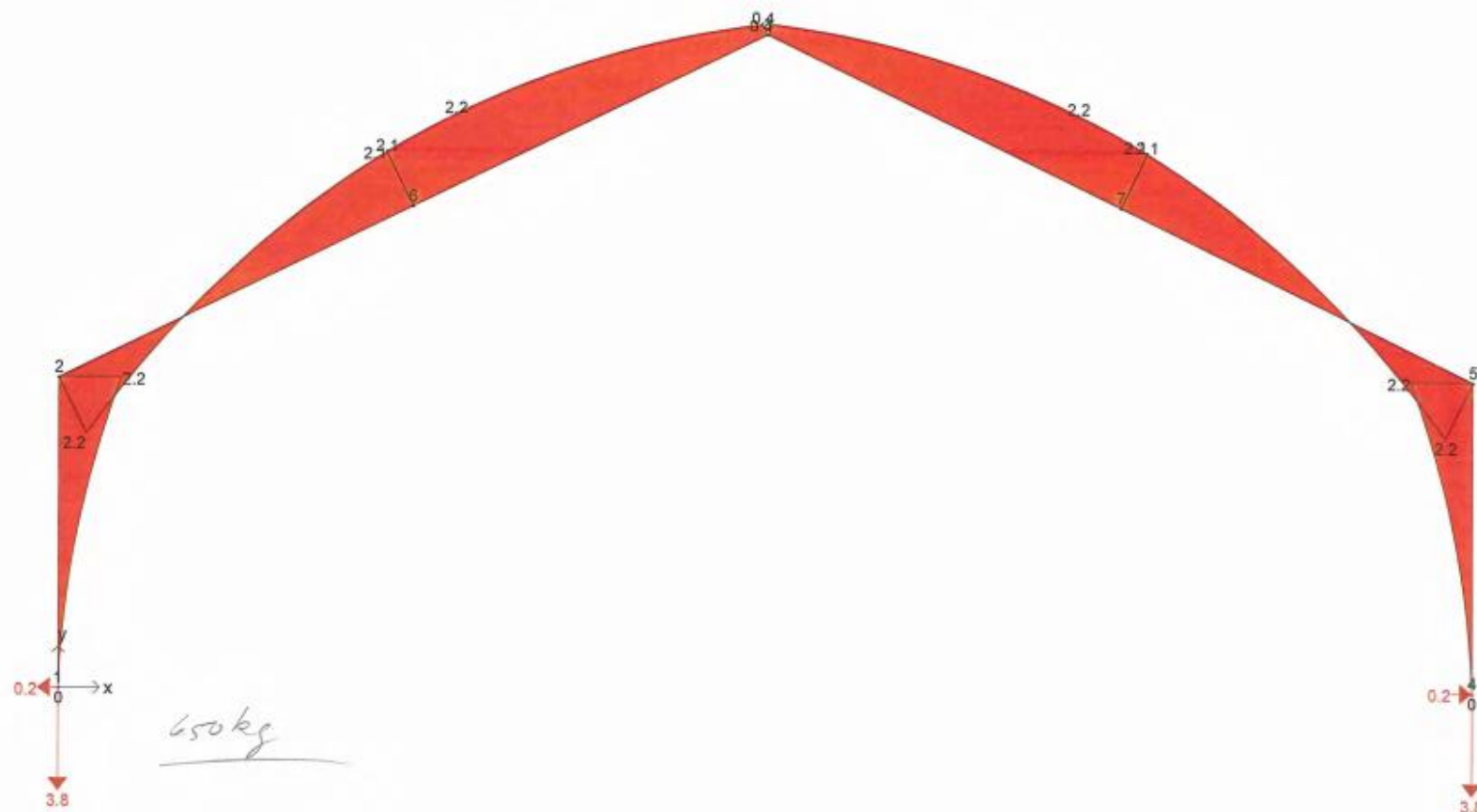
Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

Project No. 5196-3

Page 1

C:\Auckland office\8730\3 Calculations\Revision for wind ward wall open\10mx20m Marque-gable end (single frame).mfd

Friday, 2 November 2012
Multiframe Advanced 64-bit 15.04



Client: **BAYTEX**

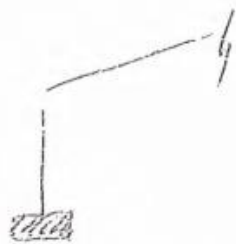
13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**

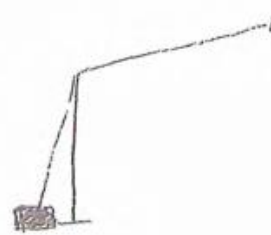
Project No. **5196-3**

HOLDING DOWN WITH BALLAST

BALLAST UNDER COLUMN OR DIRECTLY
NEXT TO COLUMN WITH GUY ROPE



OR



FOR SITE WIND SPEEDS OF UP TO 16m/s

(58 kph, 32 knots)

$$\begin{aligned} 0.9G + W_{\text{along}} &= 3.8 \text{ kN} \\ \text{UPLIFT} &= 1.78 \text{ N} \\ \text{LATERAL FORCE} &= 0.2 \text{ N} \times 0.2 \end{aligned}$$

$$\begin{aligned} 0.9G + W_{\text{AROSS}} &= 1.2 \text{ N} \\ \text{LATERAL FORCE} &= 1.2 \text{ N} \\ \text{UPLIFT} &= 0.92 \text{ N} \end{aligned}$$

REQUIRED BALLAST TO RESIST UPLIFT

$$= \frac{1.78}{3.80} \text{ kg}$$

REQUIRED BALLAST TO RESIST LATERAL FORCE
ON HARD SURFACE (I.E. CONCRETE)

$$\mu \times (B - \text{UPLIFT}) \geq 1.2 \quad \Rightarrow \quad B = \frac{1.2}{\mu} + \text{UPLIFT}$$

$$B = \frac{1.2}{0.5} + \frac{3.8 \text{ kN}}{9.8} = 3.32 \text{ N}$$

SAY

$$\boxed{350 \text{ kg}}$$

650 kg

Client: **BAYTEX**

13 September 2021

Project: **CLIPFRAME MARQUEE - 10M SPAN (2.4M LEGS)**Project No. **5196-3**

B2 - DURABILITY

In accordance with the guidance provided by Engineering New Zealand, we are not always able to provide a Producer Statement for durability because compliance needs to be shown on a material-by-material basis using a variety of compliance methods, and not all materials used have a clear compliance path.

THESE TENTS & MARQUEES ARE DESIGNED AND CERTIFIED FOR SHORT TERM EVENTS ONLY AND A DURABILITY STATEMENT IS NOT INCLUDED WITHIN THIS PSI.

However, the Owner must regularly inspect the tent during both erection and dismantling, to ensure that all components are properly maintained and are fit for purpose.

Any component found to be significantly dented, buckled, torn, or otherwise damaged must be immediately replaced or repaired.

Site Location:	Date:
Description of Job:	Safety Plan Discussed
	Visual check for hazards completed?
	Equipment checked before starting?
PPE Required <input type="checkbox"/> Hi Viz Gear <input type="checkbox"/> Hard Hats <input type="checkbox"/> Safety Footwear <input type="checkbox"/> Gloves <input type="checkbox"/> Safety Glasses	PPE Available for all staff?

Notes:

HAZARD IDENTIFICATION			ON SITE	HAZARD MANAGEMENT	
No.	Description	Risk/potential Harm	✓/x	Controls / Actions to Eliminate, Isolate or Minimise	
				Generic (erase where not applicable)	Other
1	Working With Others	Injury		Hi Viz / Cordon Of Areas / Communication	
2	Falling Objects	Injury		Segregate Works / Hard Hats / No Moving Under Suspended Load	
3	Underground Services (Power / Gas / Telecom / Water)	Electrocution, Burns, Asphyxiation		Service Plans / Site Mark Up / Spotter Person/ Test Pits	
4	Overhead Services (Power / Telecom)	Electrocution, Burns		Spotter Person / Cables Tagged / Isolated Cables	
5	Long Hours	Fatigue, Injury		Regular Breaks / Labour Staff / Roster	
6	Uneven Surfaces	Injury		Signs / Barriers And Cones / Flouro Paint	
7	Working At Heights	Injury		Certified Ewps / Harness / Trained Staff	
8	Moving Vehicles/Plant Within Work Site	Crashes, Injuries, Overturning		Safety Vests / Safety Boots / Rops & Seatbelt / Beacons	
9	Dust	Eye Damage, Asphyxiation		Safety Glasses Or Goggles / Dust Masks	
10	Chemical Use / Fumes	Inhalation, Burns, Asphyxiation		Gloves / Glasses / Masks / Ventilation / Fans	
11	Sun Exposure	Sunburn, Eye Strain, Melanoma		Sunhats / Sunglasses / Sunblock / Full Length Clothing / Fluids	
12	Noise	Hearing Loss		Ear Muffs / Ear Plugs	
13	Overhanging Vegetation / Trees	Plant Damage, Injury		Spotter Person	
14	Unstable Banks / Slopes	Falls, Slips, Injury		Barriers / Cones / Signs / Safety Zones	
15	Vehicle / Plant Operation	Injuries, Damages		Trained Operators Only	
16	Loading / Unloading Machinery	Damages, Injuries		Trained Operators Only / Safe Loading Techniques	
17	Lifting Equipment	Chains Breaking, Load Failures		Certified Chains / Safe Chain Use / Training	
18	Manual Handling	Injury, Strains, Sprains		Mechanical Aids / Team Lifts / Know Your Limits / Technique	
19	Loading/Unloading	Injury		Caution / Check Load Stability & Pinch Points / Gloves / Cones	
20					
21					
22					

WAIMAKARIRI DISTRICT COUNCIL
Plans and specifications APPROVED in accordance
with the Building Act 2004, clause 49 and the Building
Regulations 1992, Clause 3
BC240953 23/09/2024 johnb

MARQUEE SITE SAFETY CHECK SHEET

1. KEY PERSONNEL

Item	Detail (List personnel names)
1.1	Supervisor is:
1.2	First aiders are:

2. EMERGENCY INFORMATION

Item	Detail (List fleet no. or office location)
1	Emergency procedures located:
2	Emergency evacuation point is:
3	First aid kits located:
4	Fire extinguishers located:
5	Accident/incident reporting forms located:
6	Who to report hazards to:
7	Who to report accidents/incidents to:

3. SITE INFORMATION

Item	Detail
1	Safe parking area is:
2	Material storage area is:

4. OTHER HEALTH AND SAFETY ISSUES

5. STAFF PRESENT AT SAFETY MEETING

NAME	SIGNATURE	NAME	SIGNATURE

6. TEMP CASUAL STAFF INDUCTED ON SITE

NAME	SIGNATURE	NAME	SIGNATURE

7. OTHER PEOPLE INDUCTED ON SITE

NAME	SIGNATURE	NAME	SIGNATURE

LOULA HIRE LTD

SCCH FORM - Site Completion and Customer Handover Checklist

Customer:

Customer contact signing this form:

Date:

Site:

Senior Rigger:

Number of structures:

Capacity designed for:

The structure(s) in use:

Type:

Size:

Confirmation that the works have been carried out in accordance with the APEX BPG, consent including exemption for consent and the client instructions.

YES / NO

Confirmation that checklist C2 from the APEX BPG has been completed.

YES / NO

If the answers to either of the above is No, or there is still agreed work to be completed, please list details below:

Details:

Wind rating as built:

Evac Scheme required:

If yes, confirmation that appropriate scheme is in place.

YES/ NO

In the event of a weather event, please take the following actions:

If the winds are forecast to be above _____ the structure(s) are to be vacated immediately.

If the winds are forecast to be above _____ but below _____ the marquee can be occupied but must be secured with all structure walls down, installed and appropriately anchored.

If snow falls, the inside of the structure needs to be heated to at least 12°C to ensure snow does not settle on the roof.

Weather forecasting. This has been discussed and the client understands its obligations to monitor the weather and ensure the structures are secured accordingly.

The client will ensure that **when the site or structure(s) are unattended the structure(s) are closed up**, all side walls installed and secure as instructed as built without first contacting the hirer or installer. Only the hirer or approved installer can allow for the customer to make adjustments.

The customer acknowledges that any increase in the capacity noted above may have an impact on the compliance requirements for the structure(s) use.

Fire and evacuation procedures have been fully explained and briefed to the client. This includes the safe operation of any specialised equipment.

Electrical equipment supplied by the Hirer have been briefed to the customer including safe operation.

Other hire items supplied by the hirer have been supplied ready for use with any specific instructions for use having been briefed or instructions provided to the customer.

Emergency and after hours contact details:

Name:

Number:

Signed by:

The Customer: (name)

Signature:

The Hirer/Installer: (name)

Signature:

LOULA HIRE LTD

MINIMUM CHECKLIST FOR ASSEMBLED STRUCTURES

1	All aspects of the final structure are at a safe distance from power lines & other hazards
2	Anchorage are suitable for the purpose and soil condition and are holding fast
3	Bracing wires/bars on roof and walls are in place and adequately tensioned ^{1.}
4	All ropes, including wire ropes, ratchet stops are sound
5	Fabric is tensioned and not prone to ponding
6	Emergency exits are in place, operating correctly and are without obstruction (Minimum of two for tents holding 50 or more people)
7	Escape routes are clear of obstruction
8	Exposed ropes and stakes adjacent to exits and entrances are marked and/or roped off
9	Exposed pegs have adequate peg protection covers
10	All locking pins and bolts are in place and secure
11	All structural supports are sound without cracks or significant dents and not overstressed
12	Eaves connection joints are securely locked home
13	No unrepaired tears in fabric are present
14	Flooring is evenly laid and there are no tripping points
15	Carpet and other floor covering are securely fixed so as to minimise the risk of tripping
16	Roof lining does not drop significantly below eaves
17	All timber uprights and ridges are free from splits that are likely to cause failure. ^{2.}
18	Walls are securely pegged and/or secured
19	A pole tent has a full complement of side uprights, anchor stakes, pulley blocks & guy ropes
20	The main upright(s) is/are independently guyed where appropriate.
21	Suspended weights are evenly distributed and do not overload the structure; no excessive weights suspended from roof beams, ridges etc.
22	Flame retardant labelling is in place on every panel
23	Final all-round visual check to satisfy that tent is erected securely



SUPERIOR HOLDING POWER,
LIGHTWEIGHT, DURABLE & REUSABLE.
INCREASE YOUR PRODUCTIVITY

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Increase your productivity with the screw in, screw out reusable earth anchors. Lightweight aircraft-quality cast aluminium 356 alloy.

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LOAD CAPACITY
Pullout strength
with flight fully
embedded



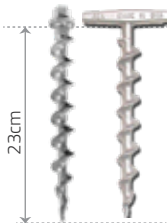
SOIL CLASS

- 1** hardpan/ashphalt/clay
- 2** Cohesive soil
- 3** Medium density soil
- 4** Loose med-to-fine sand
- 5** Loose fine uncompacted sand

	PE9 PE9T 23cm (9")	PE10 25cm (10")	PE14-STD 37cm (14")	PE18 PE18-33 PE18SQ 46cm (18")	PE26 PE26-33 66cm (26")	PE36 91cm (36")	PE46 Hex PE46 Guy 1.2m (46")
1	1.78 kN (181 kg)	4.45 kN (454 kg)	11.1 kN (1311 kg)	7.56 kN (771 kg)	20.0 kN (2039 kg)	37.4 kN (3814 kg)	62.3 kN (6351 kg)
2	0.89 kN (91 kg)	3.11 kN (317 kg)	7.56 kN (771 kg)	7.56 kN (771 kg)	13.8 kN (1407 kg)	26.9 kN (2743 kg)	42.3 kN (4312 kg)
3	0.44 kN (45 kg)	1.56 kN (159 kg)	2.67 kN (272 kg)	2.67 kN (272 kg)	4.89 kN (498 kg)	9.34 kN (952 kg)	14.7 kN (1498 kg)
4	0.44 kN less than (45 kg)	0.89 kN (91 kg)	1.56 kN (159 kg)	1.56 kN (159 kg)	2.80 kN (285 kg)	4.45 kN (453 kg)	8.90 kN (907 kg)
5	0.44 kN less than (45 kg)	0.44 kN (45 kg)	0.89 kN (91 kg)	0.89 kN (91 kg)	1.60 kN (163 kg)	1.56 kN (159 kg)	4.89 kN (498 kg)

PE9

20mm hex head
32mm flange
16mm neck diameter
29mm flight diameter



PE9T

10cm handle
13mm neck diameter
29mm flight diameter

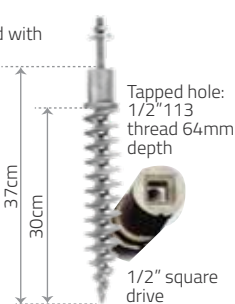
PE10

26mm hex head
5cm flange
26mm neck diameter
45mm flight diameter
0.5kg



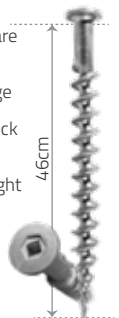
PE14-STD

15cm steel stud with washer & nut
5cm flange
36mm neck diameter
58mm flight diameter
0.85kg



PE18SQ

1/2" square drive
5cm flange
26mm neck diameter
45mm flight diameter
.6kg



PE18

26mm hex head
5cm flange
26mm neck diameter
45mm flight diameter
0.7kg



PE26

26mm hex head
5cm flange
26mm neck diameter
45mm flight diameter
0.7kg



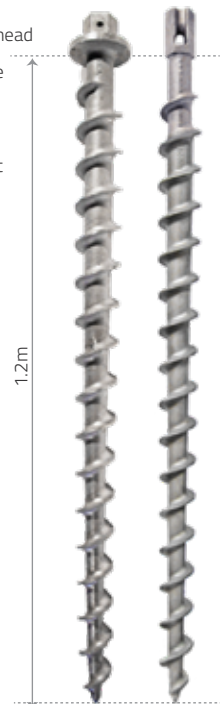
PE36 Hex

51mm hex head
10cm flange
45mm neck diameter
77mm flight diameter
4.0kg



PE46 Hex

51mm hex head
10cm flange
45mm neck diameter
77mm flight diameter
4.8kg



PE46 Guy

51mm hex head
45mm neck diameter
77mm flight diameter
4.6kg



Base Plate: 7mm plate = 39mm hole / 13mm plate = 42mm hole

PE18-33

26mm hex head
5cm flange
26mm neck diameter
33mm flight diameter
0.7kg



PE26-33

26mm hex head
5cm flange
26mm neck diameter
33mm flight diameter
0.7kg



Base Plate: 7mm plate = 30mm hole



New Zealand

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PO Box 4370, Mount Maunganui
New Zealand

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info@baytex.co.nz
www.baytex.co.nz

Australia

tel 1800 766 661
info@baytex.com.au
www.baytex.com.au

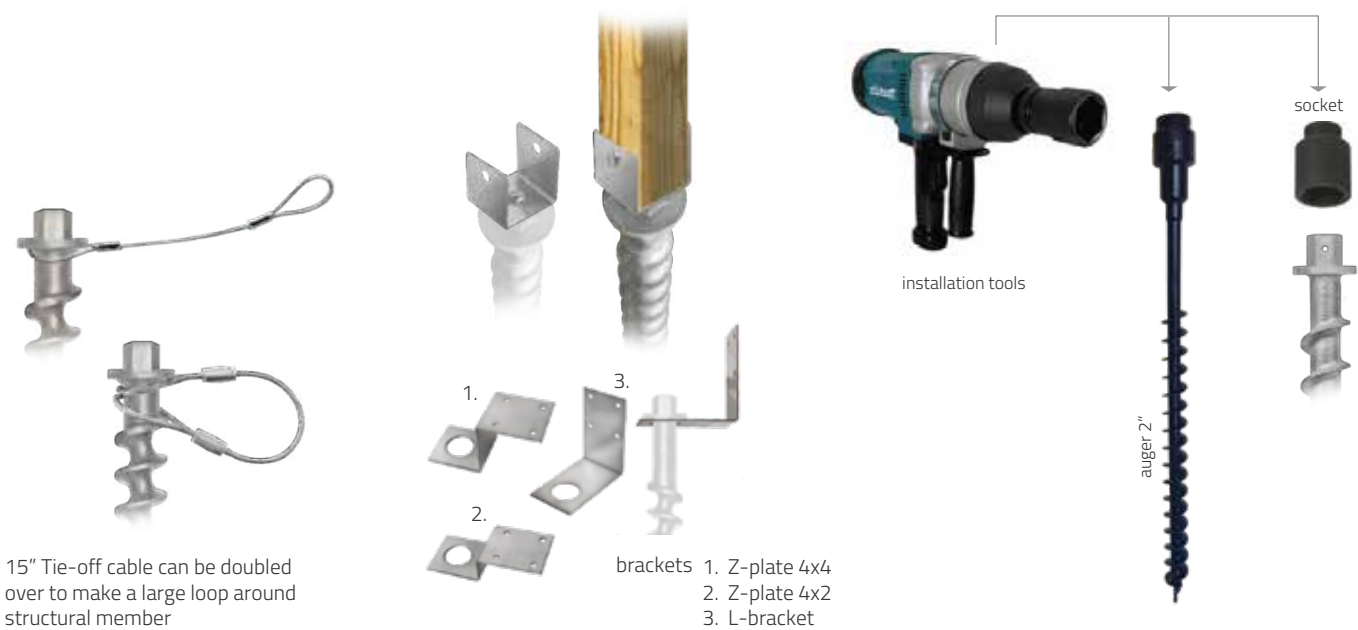


accessories sold separately

accessories for PE9-PE26



accessories for PE36-PE46



Baytex Earth Anchors

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**No. 1117294.7**

(Please quote this number in all correspondence)

CLIENT:
W Wiggins Ltd.
PO Box 483
Christchurch

SAMPLE RECEIVED FROM:
W Wiggins Ltd.

Date: 19.11.15

Attn: Mark Evans

SAMPLE DESCRIPTION:
One Genclear F/R, 150cm x 0.70mm.

Client Order No.: Mark

Client Reference:

1/2

AS/NZS 1530.3 – 1999 Methods for Fire Tests on Building Materials, Components and Structures
Part 3: Simultaneous Determination of Ignitability, Flame Propagation,
Heat Release and Smoke Release

Face Tested: Face

	Standard Error	Mean	
Ignition Time	0.12	3.05 min.	
Flame Propagation Time	2.6	33.0 sec.	
Heat Release Integral	5.4	133.8 kJ/m ²	
Smoke Release, log d	0.0141	0.1926	
Optical Density, d		1.5623/metre	
Number of Specimens Ignited		6	
Number of Specimens Tested		6	
Regulatory Indices:			
Ignitability Index		17	Range 0-20
Spread of Flame Index		8	Range 0-10
Heat Evolved Index		5	Range 0-10
Smoke Developed Index		8	Range 0-10

This test was carried out by a subcontracted laboratory.

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"THIS REPORT APPLIES ONLY TO THE SAMPLES TESTED"

Except where the sample is drawn independently by NZWTA Ltd. NZWTA Ltd makes no warranty, implied or otherwise as to the source of the tested sample. The above test results are not certified due to the adoption of modified and/or non-standard procedures designed to provide THE CLIENT WITH GUIDANCE INFORMATION ONLY. Except where precluded by law, no responsibility can be accepted by NZWTA Ltd for any claim which may arise from any person acting on information contained herein.

L A Greer
Signatory


C Judan
Signatory

03/12/2015

New Zealand Wool Testing Authority Ltd

Cnr Bridge & Lever Streets, PO Box 12065

Ahuriri, Napier 4144, New Zealand

T +64 6 835 1086, F +64 6 835 6473 Email: testing@nzwta.co.nz

**No. 1117294.7**

(Please quote this number in all correspondence)

CLIENT:
W Wiggins Ltd.
PO Box 483
Christchurch

SAMPLE RECEIVED FROM:
W Wiggins Ltd.

Date: 19.11.15

Attn: Mark Evans

SAMPLE DESCRIPTION:
One Genclear F/R, 150cm x 0.70mm.

Client Order No.: Mark

Client Reference:

2/2

The reaction of thin unsupported flexible materials to flame impingement can be assessed in accordance with AS 1530.2. Where the materials of thickness less than 2mm that are sufficiently flexible to be bent by hand around a mandrel of 2mm diameter or less are subjected to the test described herein, they should also be subjected to the test in AS 1530.2.

Specimens tended to flash before ignition. Ignition was based on the occurrence of a single flash of flame, which lasted longer than 10 seconds.

The specimens were mounted to simulate use in an unsupported or free hanging mode. The results may be significantly different when mounted to simulate a wall cladding or upholstery application.

To allow free movement of sample during testing all corners were folded away from the clamps.

Each test specimen was sandwiched between two layers of galvanised welded square mesh made from wire of nominal diameter 0.8mm and nominal spacing 12mm in both directions, stapled through at four points, each 100mm from the centre of the sample and the assembly clamped in four places.

These results only apply to the specimen mounted, as described in this report. The result of this fire test may be used to directly assess fire hazard, but it should be recognised that a single test method will not provide a full assessment of fire hazard under all fire conditions.

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Except where the sample is drawn independently by NZWTA Ltd. NZWTA Ltd makes no warranty, implied or otherwise as to the source of the tested sample. The above test results are not certified due to the adoption of modified and/or non-standard procedures designed to provide THE CLIENT WITH GUIDANCE INFORMATION ONLY. Except where precluded by law, no responsibility can be accepted by NZWTA Ltd for any claim which may arise from any person acting on information contained herein.

L A Greer
Signatory


C Judan
Signatory

03/12/2015

New Zealand Wool Testing Authority Ltd

Cnr Bridge & Lever Streets, PO Box 12065

Ahuriri, Napier 4144, New Zealand

T +64 6 835 1086, F +64 6 835 6473 Email: testing@nzwta.co.nz