North Byron Parklands

Technical Paper

S

Temporary Structure Prescriptions

MARK NORRIS & ASSOCIATES
Building Development & Environmental Consultants

P.O. Box 5038, East Lismore, 2480
Ph: (02) 66 212 445
Fax: (02) 66 212 884
Email: admin@marknorris.com.au
Mobile: 0416 016 921

Temporary Structures Assessment

North Byron Parklands

A project of Billinudgel Property Pty Ltd (Billinudgel Property Trust)

Tweed Valley Way and Jones Road, Yelgun

Lot 403 and Part Lots 402, 404 - DP 755687
Lot 1 DP 1145020
Part Lot 46 DP 755687
Part Lot 10 DP 875112
Part Lot 2 DP 848618
Part Lot 30 DP 880376
Part Lot 102 DP 1001878
Part Lot 12 DP 848618

14 July 2010

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DISCLAIMER

Usage Note: This report has been prepared for the exclusive use of North Byron Parklands only, and is not to be used for any other purpose or event or by any other person or corporation.

No reliance should be placed on information contained within this report other than for the purpose of any approval for Proposed North Byron Parklands.

1.0 Outline

This report is prepared in respect of a concurrent Concept Plan and Project Application Environmental Assessment Report (EA) for the North Byron Parklands (Parklands) project. This assessment has been prepared on behalf of Billinudgel Property Trust (Billinudgel Property Pty Ltd), in respect to the erection and use of Temporary Structures within the proposed Parklands cultural event site as a Place of Assembly.

Details provided within this report and appendices account for approval being sought for the erection and use of temporary structures, being integral to the proposed event site, and documentation has been prepared to account for the requirements under Clause 5 of the *State Environmental Planning Policy – (Temporary Structures) 2007,* and *Schedule 1* of the *Environmental Planning and Assessment Regulation 2000.*

In respect to the requirements of *Schedule 1* of the *Environmental Planning and Assessment Regulation 2000,* for the erection and use of temporary structures with stage and patron viewing, together with the use of any other temporary structures described in the project application prepared by SJ Connolly CPP Pty Ltd, which may be considered at any time as an *Entertainment Venue,* details are provided within this assessment for consideration with the proposed application for the cultural event site to account for fire safety and other considerations as required under the Performance Provisions of Part B1 and the Deemed-to-Satisfy provisions of NSW Part H102 of the *Building Code of Australia 2010*.

It is proposed that Disabled Viewing Platforms will be provide within each temporary structure (see typical to Appendix A) and that monitoring the number of persons deemed to be accommodated within each temporary structure at any one time will be undertaken by the Event Security Services and under the coordination of the Fire Safety Officers for the structures use, where necessary.

The period of approval proposed for the use of any temporary structure is to account for the erection, use and removal of that temporary structure within the cultural events site involving proposed music, arts, food, leisure and technology activities for which application is sought.

1.1 Exclusions

This report should not be construed to infer that an assessment for compliance with the following has been undertaken:

a) structural design documentation

b) the requirements of the WorkCover Authority

c) those provisions of Building Code of Australia 2009 not relevant to Temporary Structures; and

d) Disability Discrimination Act 1992

2. NSW PART H102 – TEMPORARY STRUCTURES

The following provides an assessment of the likely maximum sized temporary structure proposed for the cultural events site for which approval is sought, which may be considered an Entertainment Venue as detailed to Table 1, under the performance requirements of Part B1 and Deemed-to-Satisfy and NSW H102 of the Building Code of Australia 2010.

Table 1

Maximum Temporary Structure (typical arrangement)	Estimated Patron Area	Ratio m²/persons (Maximum Capacity)	Deemed No. of Persons
Appendix A1a - 45m x 90m Tent (15m extension to 45x75 tent)	3,375m²	Proposed 0.5 for 3,375m²	6,750
Appendix A1b – 45m x 60m with tiered seating	2,025m²	All seated - proposed 1p/seat (includes seating to central floor area) Central floor area standing only – proposed 0.5 for 45m²	2,184 1,000
Appendix B1 - 11m x 30m two storey Hocker	per floor level 330m²	Proposed 1.0 for 330m² /floor level	330 per floor level
Appendix C1 – 50m x 60m Hocker	3,000m²	Proposed 1.2 for 3,000m²	3,600

2.1 H102.1 – Application of Part

It should be noted that the intention of this Part is applied to temporary structures used as Entertainment Venues, defined as "*a building used as a cinema, theatre, concert hall or an indoor sports stadium*" as provided under the Environmental Planning and Assessment Act 1979, and although the current definitions are likely to exempt structures from such criteria and do not form part of this application, details are provided to demonstrate compliance with the requirements in the event that they may be applied at any time subject to any change in definition of use.

2.2 H102.2 - Exits - Exclusions

Exits as nominated in Appendix A1a, A1b, B1 and C1 have been provided for patrons and no exclusion is sought for the participants with exits provided to the back of house areas of each Temporary Structure and stage structure (Appendix D), as provided under the Provisions of this Clause.

2.3 H102.3 – Locations of Exits

The temporary tent structures are provided with open side walls as detailed to Appendix A1a to suit the event organisation, with the temporary marquee structures likely to be partially enclosed and provided with exit numbers and widths as detailed to Appendix B1 and C1 and proposed as one aggregate exit, as detailed in Table 2, to the perimeter of the temporary structure.

In respect to any temporary structures proposed as an Entertainment Venue to be provided with tiered seating, and closed external side walls to those tiered seating areas only, exits to be provided as detailed to Appendix A1b to suit that internal configuration and accounting for the requirements of Table H102.4 of the Building Code of Australia NSW provisions

Exits from the typical temporary stage including side of stage vicinity areas structure are as detailed to Appendix A1b and D.

It should be noted that all exits will be configured to account for the Building Code of Australia requirements that no point within the temporary structures will be more than 20 metres from a point where travel in two different directions is provided to an exit, with the maximum travel distance to any exit not to exceed 40 metres.

2.4 H102.4 - Exits to be Provided

It is considered that the number of exits required as aggregate exits and the aggregate width of those exits for each temporary structure, based on the maximum deemed number of persons each structure can accommodate, will satisfy the requirements of Table H102.4 – Number of Exits and Widths, NSW Provisions of the Building Code of Australia, as detailed in Table 2.

Tiered seating is proposed to be serviced by exits discharging directly to the open space as detailed to Appendix A1b. any variation to this will account for the number of exits and widths for the Deemed Number of Persons in accordance with Table H102.4.

Table 2

Temporary Structure	No. of Exits required	Aggregate Width of Exits (m)
Appendix A1a - 45m x 90m Tent (15m extension to 45 x 75 tent)	18	65
Appendix A1b – 45m x 60m with tiered seating	5 standing only 5 central floor area seated only	9 9
Appendix B1 - 11m x 30m two storey Hocker	3	3.0
Appendix C1 – 50m x 60m Hocker	11	35.0
Note: Appendix B1 proposed with 2 exits, accounts for a maximum of 200 persons and will require 3 exits of 4.5m aggregate exit width should it be intended to increase to 330 person capacity as provided by Table 1.		

2.5 H102.5 – Vertical Clearances for Exits

Access to and through all exits within all temporary structures satisfies the 2 metre minimum unobstructed height all round, with a minimum clearance of 2.4 metres proposed above each Exit.

2.6 H102.6 – Curtains Across Exits

No curtains or flaps are proposed to be provided across any exit as detailed to Appendix A1a, A1b, B1 and C1 and in the event that an exit is required to be provided with a curtained exit ie: to restrict access, such exit will be maintained by security personnel conversant with emergency evacuation procedures to ensure egress is not obstructed or impeded.

2.7 H102.7 – Curtains and Blinds

All curtains will be selected to satisfy the provisions AS 1530.2 – see Appendix E for typical stage curtains selected and used within the event industry.

2.8 H102.8 – Fabrics

External wall and roof fabrics of each proposed temporary structure have been tested under AS 1530.2 to ensure that no fabric used in the construction of that temporary structure has a Flammability Index of no more than 6, or as provided by this part. (See Appendix A8, B20 and C6).

2.9 H102.9 – Guardrails

Seating proposed within any temporary structure detailed as typical with Appendix A1b and proposed to be stepped platforms will be provided with rigid Guardrails from the front of the first riser to the back and along the full width of the rear of that platform to the sides.

2.10 H102.10 – Seating

Seating proposed within any temporary structure as part of this application and as typically detailed to Appendix A1b, will satisfy the NSW provisions of H101.11.1, H101.11.2, H101.11.3(b), H101.11.5(a), (c), H101.11.6(a), H101.11.8(a), (b), (c) and (d).

2.11 H102.11 – Sanitary Accommodation

Determinations of sanitary facilities for male, female and disabled persons under the Provisions of Table F2.3 of the Building Code of Australia for the proposed temporary structure as a single auditorium is detailed to Table 3.

Table 3

▪ Appendix A1a – Estimated Patrons: (based on 6,750p ie: 3,375 males, 3,375 females)	▪ Male	W.C.s 8 Urinals 34 Hand basins 23
	▪ Female	W.C.s 45 Hand basins 23
	▪ Disabled	W.C.s (Unisex) 1 Hand basins 1
▪ Appendix A1b – Estimated Patrons accounting for proposed tiered seating 1,352p and central floor standing 1,000p: (total based on 2,352p ie: 1,176 males, 1,176 females)	▪ Male	W.C.s 4 Urinals 12 Hand basins 8
	▪ Female	W.C.s 25 Hand basins 8
	▪ Disabled	W.C.s (Unisex) 1 Hand basins 1
▪ Appendix B1 – Estimated Patrons: (based on 660p ie: 330 males 330 females, ie: 330p/floor level)	▪ Male	W.C.s 6 Urinals 3 Hand basins 2
	▪ Female	W.C.s 8 Hand basins 2
	▪ Disabled	W.C.s (Unisex) 1 Hand basins 1
Appendix C1 – Estimated Patrons: (based on 3,600p ie: 1,800 males, 1,800 females)	▪ Male	W.C.s 5 Urinals 18 Hand basins 12
	▪ Female	W.C.s 26 Hand basins 12
	▪ Disabled	W.C.s (Unisex) 1 Hand basins 1

2.12 H102.12 – Projection Suites

No projection suite is proposed for any temporary structure under this application, with visuals provided by video projection ancillary to any stage performances under the control of the event production.

2.13 H102.13 – Fireplaces and Heating

Fireplaces or other form of heating is not proposed to be provided within any temporary structures that is determined as an Entertainment Venue. It should be noted that any heating to any temporary structure not used as an entertainment venue will be selected to satisfy the standards applicable to that installation.

2.14 H102.14 – Electrical Services

It is proposed that generators will be provided to the whole of the event site to service the stage and lighting requirements outside and within the Temporary Structure.

Certification in respect to the supply and installation of the electrical services to satisfy the requirements of the Local Supply Authority, AS 3002 and where applicable AS/NZS 3000, will be submitted prior to the issue of the Occupation Certificate as required by the Environmental Planning and Assessment Act.

It should be noted that the Provisions of NSW H101.19.1(a) is satisfied and H101.19.3(b) is not applicable in respect to the proposed event site.

2.15 H102.15 – Artificial Lighting

All lighting will be controlled from restricted production area and it is considered that the provisions of H101.20.1(a) and H101.20.1(b) are satisfied.

It is confirmed that lighting within any temporary structure will not utilise time delayed lamps such as mercury vapour type, and H101.20.2 is not applicable.

H102.15.1 – Emergency Lighting Levels

Generator powered emergency evacuation lighting will be provided to satisfy the Provisions of H102.15, and will be sited to provide a minimum of 0.2 lux at floor levels (Appendices A1a, A1b, B1 and C1).

H102.15.2 – Emergency Lighting Power Supply

It is proposed that emergency lighting will be provided by lights selected and maintained to AS 2293.1 – 2005, to operate as maintained units in conjunction with the generator powered system for the event. Alternatively, lighting units without battery backup will be provided with a charging system via a backup generator for all lighting circuits, which will be fed into an automatic transfer switch to provide a power system should the main generator power supply fail.

2.16 H102.16 – Exit Signs

Exit and directional exit signage is to be installed and maintained to AS 2293.1 – 2005, and provided with battery back up on a generator mains powered system and are located above each exit as an aggregate exit and as detailed in Appendix A1a, A1b, B1 and C1, to satisfy the NSW Provisions of Part E4.5, with all required exit signage visible from all paths of travel to the required exits and in coordination with the emergency evacuation procedures for the event.

2.17 H102.17 – Fire Fighting Services

Portable Extinguishers, which have been selected and located to satisfy the provisions of Table E1.6 of the Building Code of Australia, and a certificate of maintenance under AS 1851.1 – 1995, will be provided.

Fire fighting services will be provided to the event site to ensure adequate protection is afforded as determined on the advice of the NSW Rural Fire Services as the Statutory Authority for the proposed event site.

As the event site is not serviced by a reticulated water supply, fire fighting services will be provided to each temporary structure with a floor area of more than 500m^2, with on-site reservoirs of 10,000 litres selectively located and within proximity to those structures.

This together with the distribution of portable fire extinguishers in selected locations to service each temporary structure, in conjunction with implementation of the recommendations by the Statutory Authority, will provide suitable fire fighting services.

3. Building Code of Australia Part B1-Structural Provisions

All structural elements of the proposed temporary structures are designed and certified to accord with the applicable requirements of AS/NZS 1170 – 2002, for dead and live loads and load combinations as well as wind loads and AS 4100 – 1998 material and forms of construction where applicable, certifying that the temporary structure is structurally adequate and capable of supporting the proposed loads applicable for the proposed use (Appendices A2 to A7, B19, C2, C3, C5).

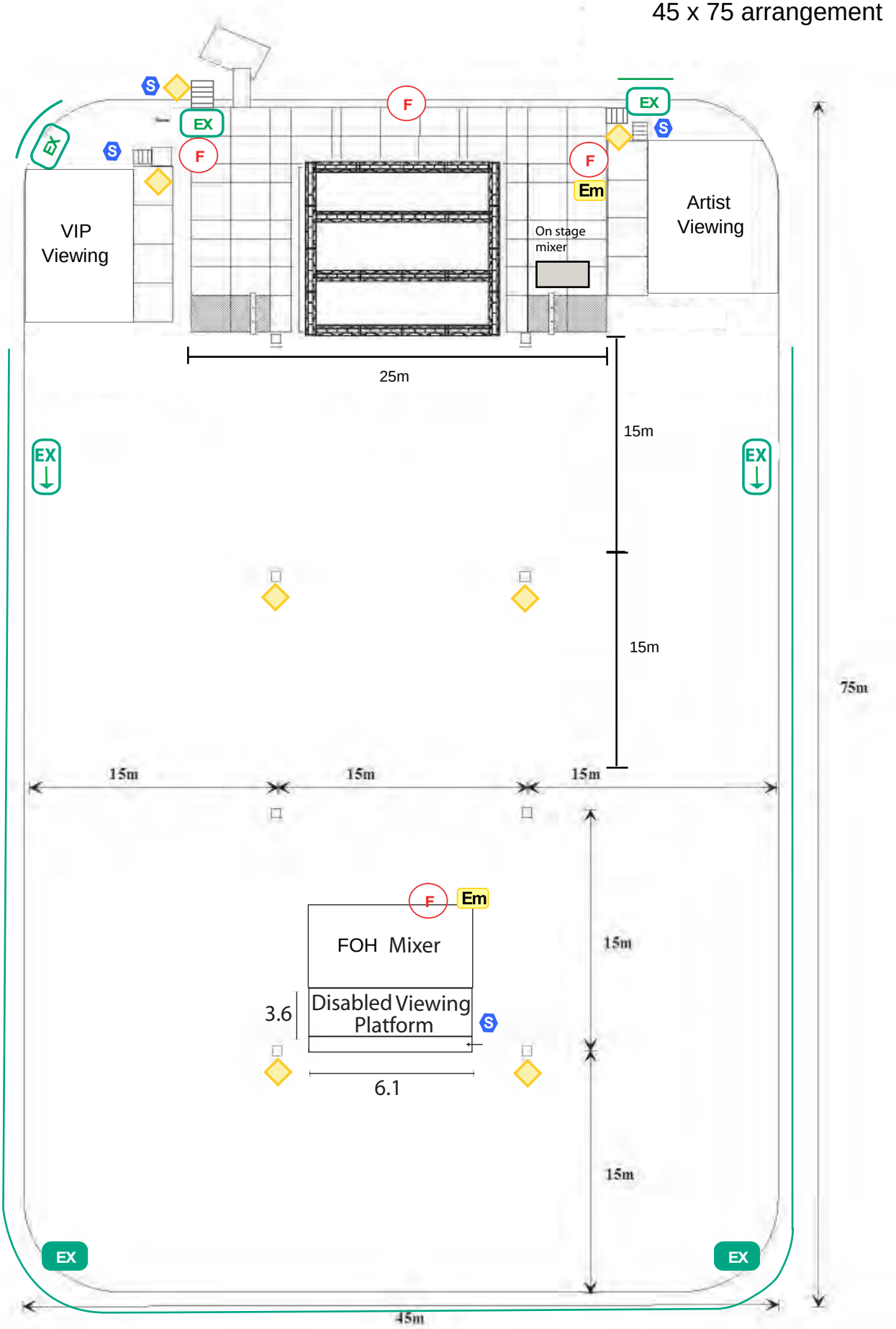
A Geotechnical Engineering Certificate for the event site has been prepared addressing the adequacy of the ground on which the structure is to be erected, and its ability to sustain the temporary structures.

A Structural Engineering Certificate for the erection of the Temporary Structures will be provided for each event prior to the issue of the Occupation Certificate for the use of that structure.

Appendix A1

Temporary Tent Structure

45 x 75 arrangement



Key

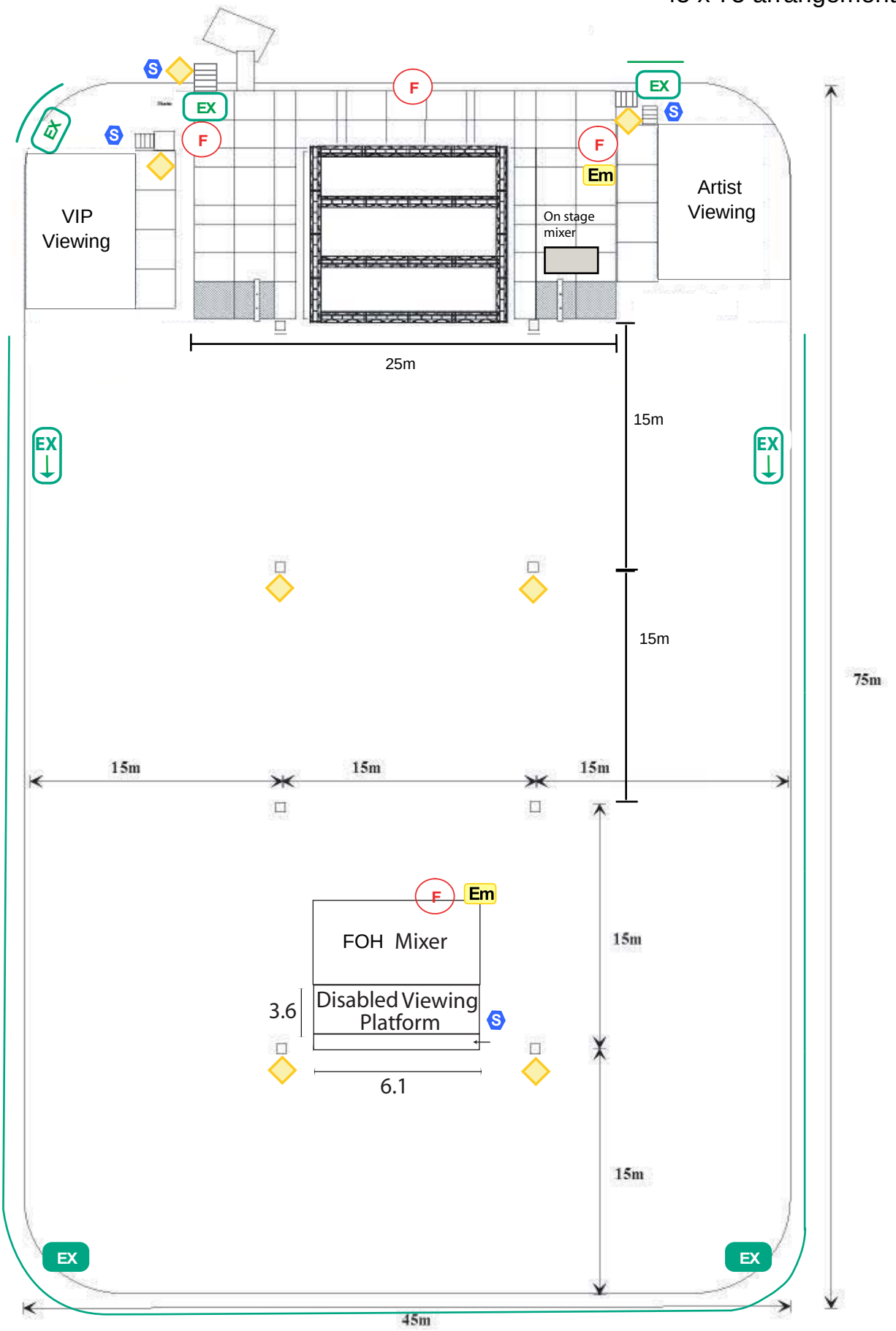
- EX — Exit Sign
- EX — Jumbo Exit Sign
- EX → — Directional Exit Sign
- Aggregate Exit
- F — Portable Fire Extinguishers
- Emergency Lights
- Em — Essential Fire Safety Schedule & Emergency Evacuation Plan
- S — Security

Not to Scale

Appendix A1a

Temporary Tent Structure

45 x 75 arrangement



Key

- EX — Exit Sign
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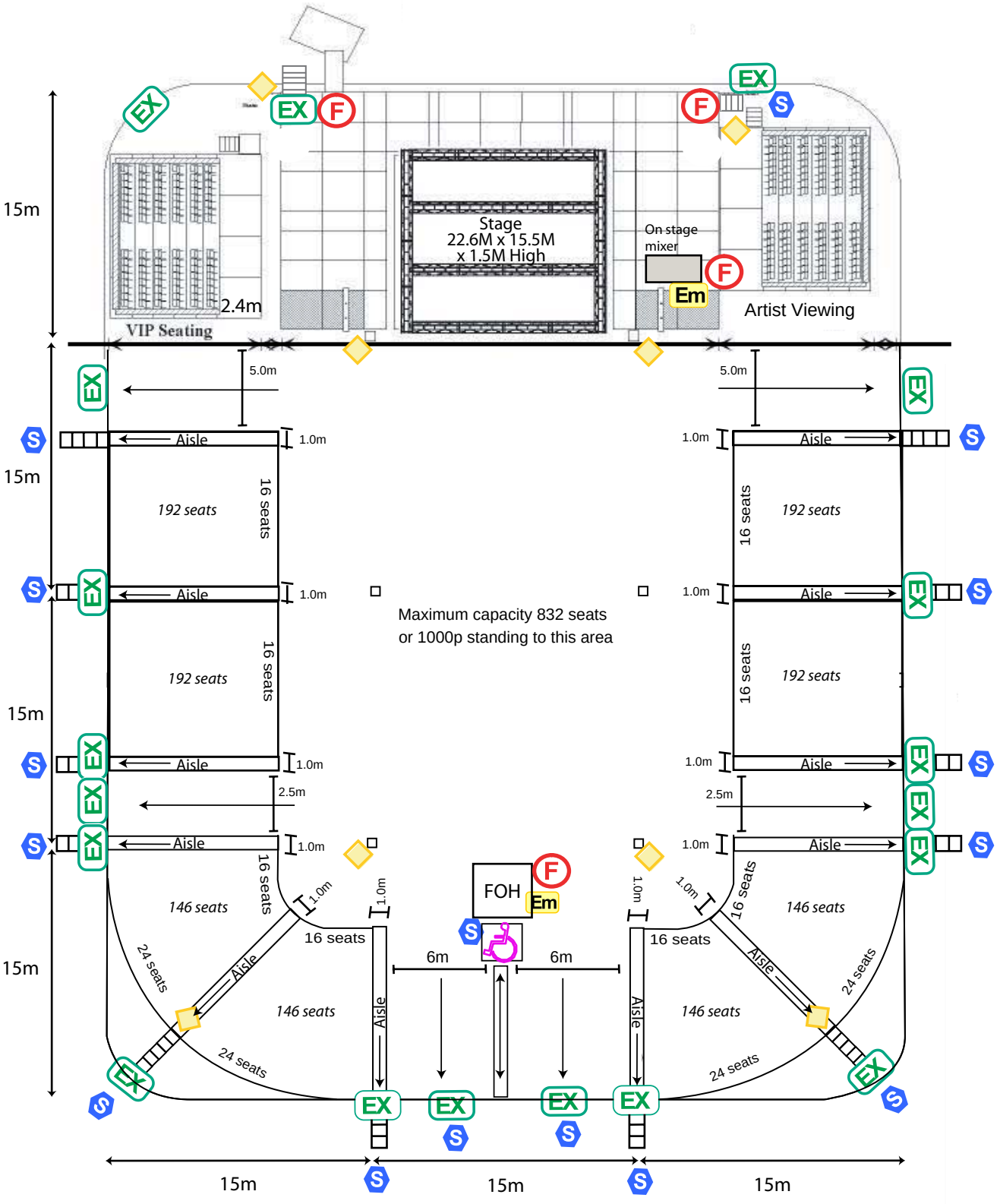
- EX → — Directional Exit Sign
- Aggregate Exit
- F — Portable Fire Extinguishers
- Emergency Lights
- Em — Essential Fire Safety Schedule & Emergency Evacuation Plan
- S — Security

Not to Scale

Appendix A1b

Temporary Tent Structure with
Tiered Seating
45 x 60 Arrangement



DESIGN PROJECT GROUP Pty Ltd
CONSULTING ENGINEERS A.C.N. 006777920
215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0801
Fax: (03) 9388 2121

PROC: E1(A1)
JUNE 1984

COMPUTATIONS

PROJECT NO: 01164B
DATE: July 05

PROJECT TITLE 45m x 45m Square Tent with Round Corners
(with Extensions to 45m x 90m, 45m x 105m,
45m x 120m and 45m x 135m, 45m x 60m, 45m x 30m)
all without Quarter Poles
for
Janlin Big Tent Hire

REFERENCES AS1170
AS4100

ENGINEER

David J. Wills
MIEAust CPEng
Chartered Professional Engineer
Membership No. 181147
The Institution of Engineers, Australia

Signature: David J. Wills

Date: July 05

DESIGN PROJECT GROUP PTY LTD
CONSULTING ENGINEERS A.C.N. 064150917 (Inc. in Vic.)
215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0801
Fax: (03) 9388 2121

Computations

Job No. 011645 Sheet No. .....

Eng. ..... Date. .....

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Checked .....

Date .....

45m x 90m, 105, 120, 135m **SQUARE TENT** ROUND CORNERS

THIS TENT DOES NOT HAVE QUARTER POLES, IT RELIES ON THE HEAVY CURVATURE OF THE PANELS BETWEEN THE CENTRE POLES TO RUN WATER OFF AND CREATE A VERY TAUT ROOF TO WITHSTAND WINDS

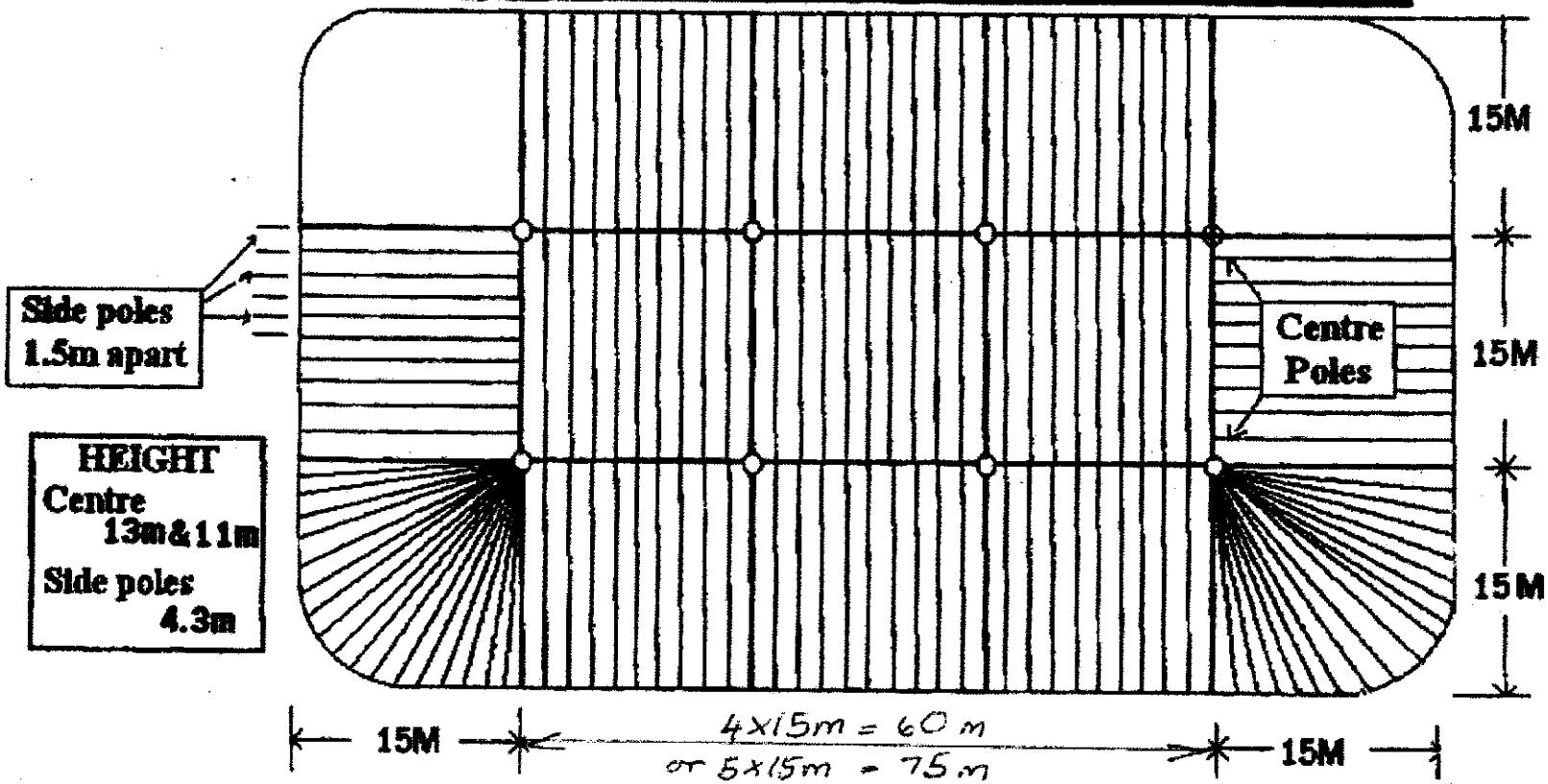


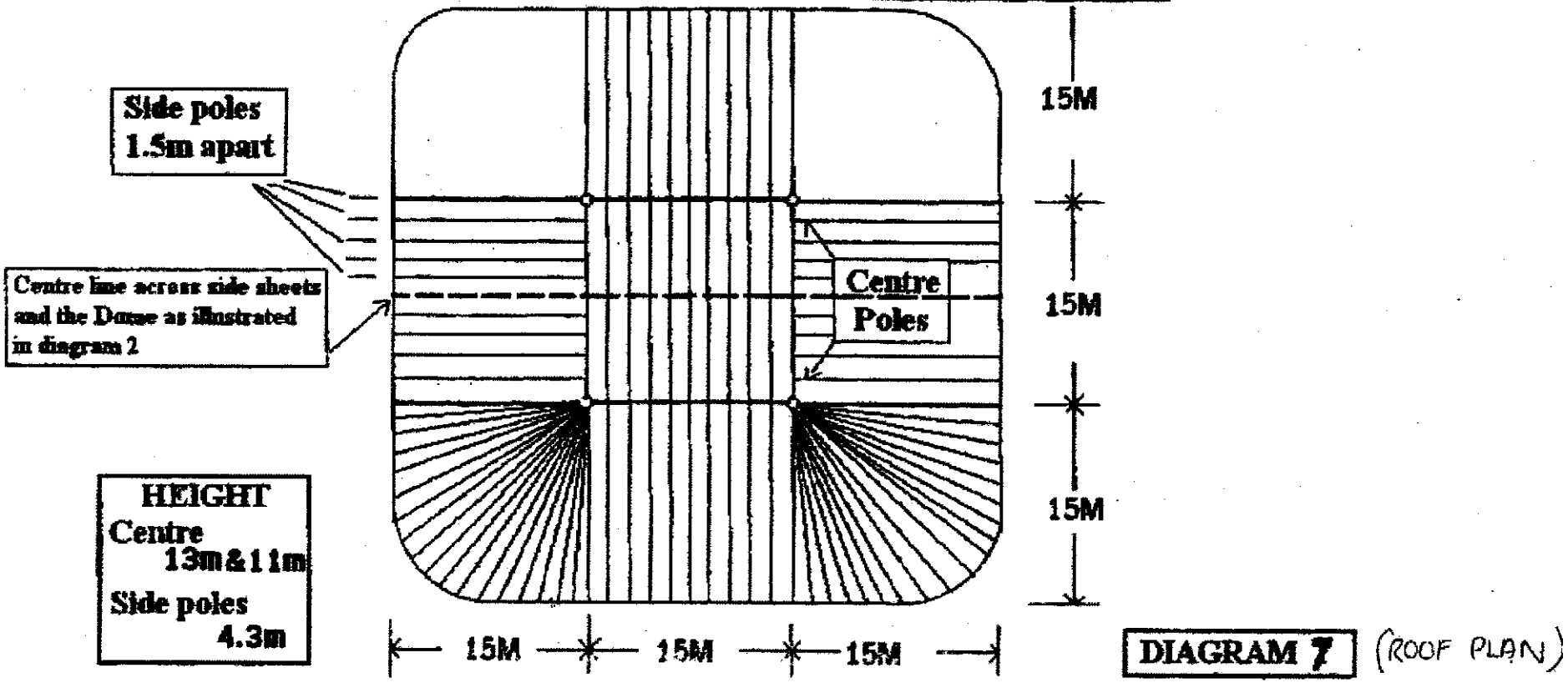
DIAGRAM 4 (ROOF PLAN)

NOTE:- TENT TO BE EVACUATED UNDER THE FOLLOWING CONDITIONS
(1) TERRAIN CATEGORY 3 and 4 :- WHEN WIND SPEED REACHES 25 m/sec (49 knots)
(2) TERRAIN CATEGORY 1 and 2 :- WHEN WIND SPEED REACHES 21 m/sec (41 knots)

1913

45m x 45m SQUARE TENT ROUND CORNERS

THIS TENT DOES NOT HAVE QUARTER POLES, IT RELIES ON THE HEAVY CURVATURE OF THE PANELS BETWEEN THE CENTRE POLES TO RUN WATER OFF AND CREATE A VERY TAUT ROOF TO WITHSTAND WINDS



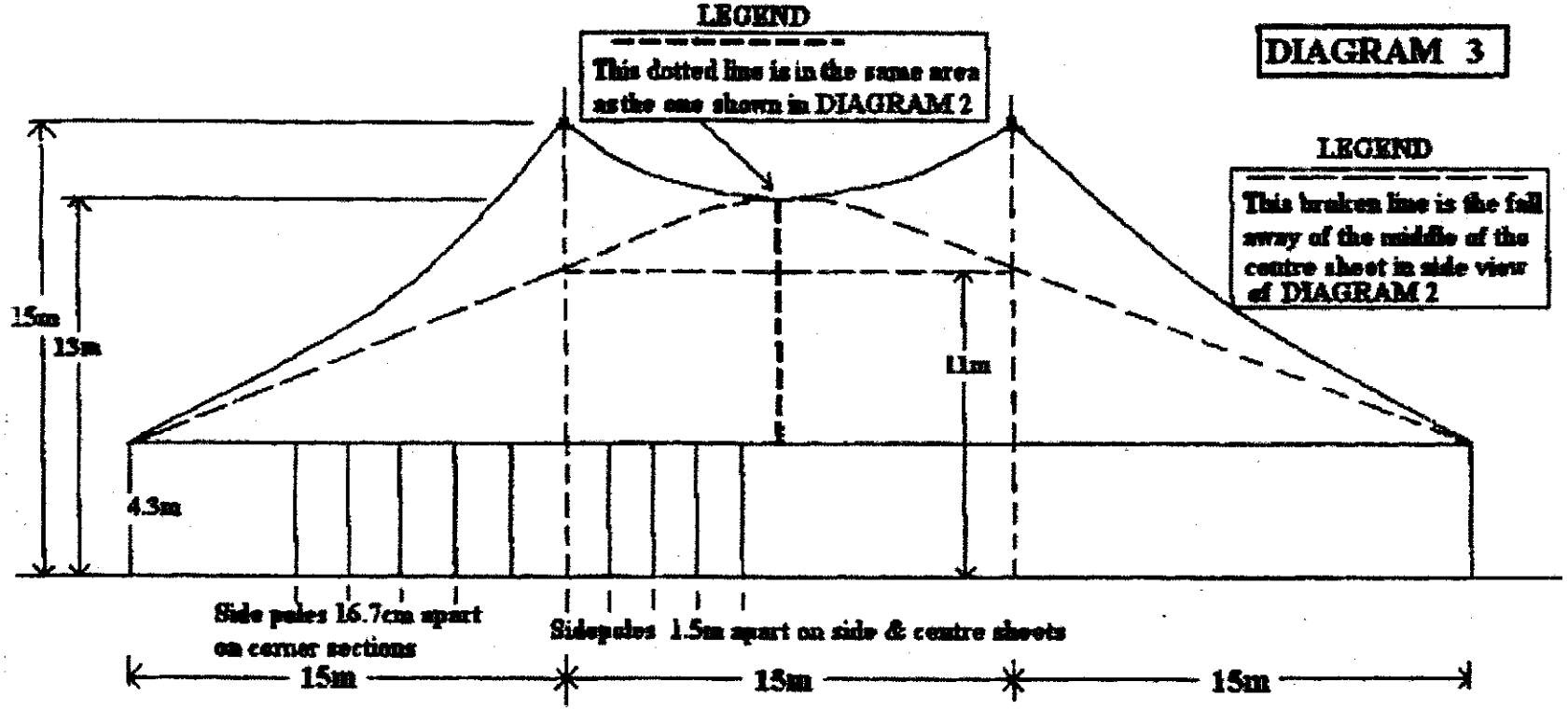
HEIGHT
Centre 13m & 11m
Side poles 4.3m

DIAGRAM 7 (ROOF PLAN)

NOTE :- TENT TO BE EVACUATED UNDER THE FOLLOWING CONDITIONS
(1) TERRAIN CATEGORY 3 AND 4 :- WHEN WIND SPEED REACHED 25m/sec (49kt
(2) TERRAIN CATEGORY 1 AND 2 :- WHEN WIND SPEED REACHES 21m/sec (41

(N)

END VIEW 45M X 45M TENT No QUARTER POLES

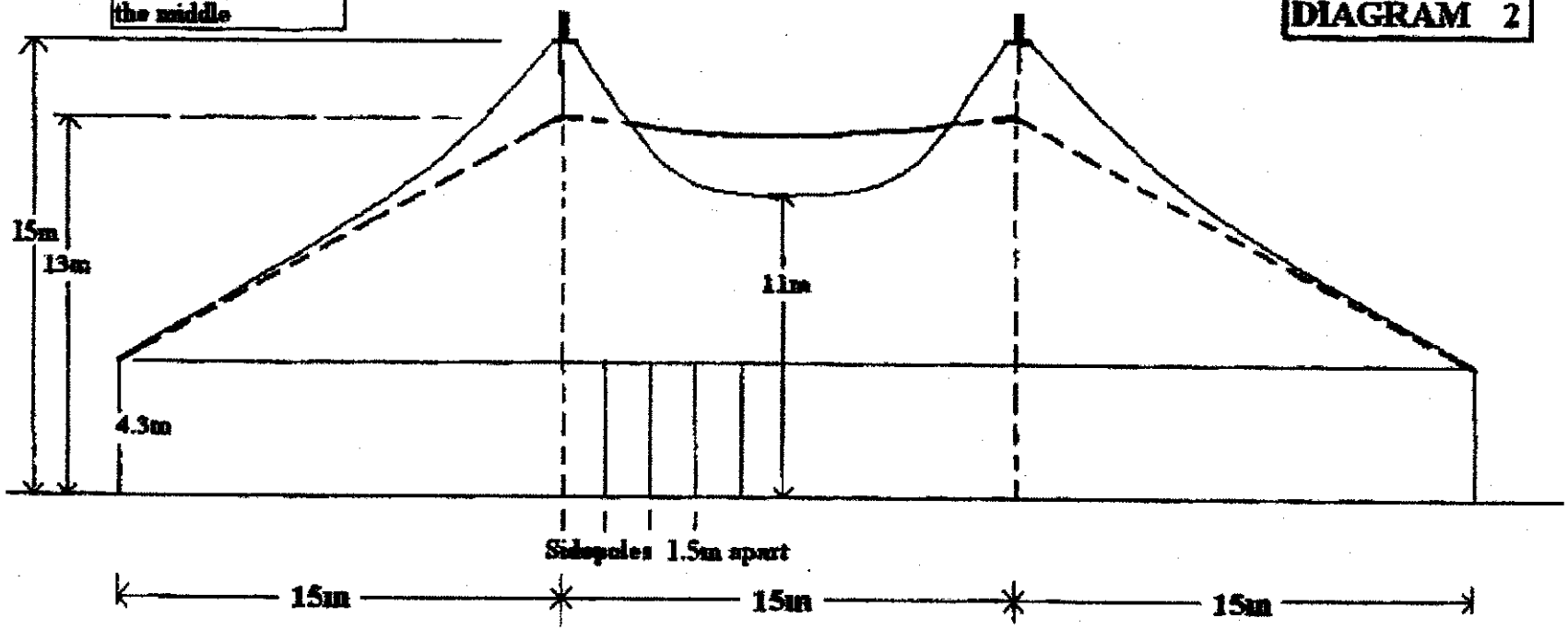


LEGEND

This is the outline of the sheet through the middle

SIDE VIEW 45M X 45M TENT No QUARTER POLES

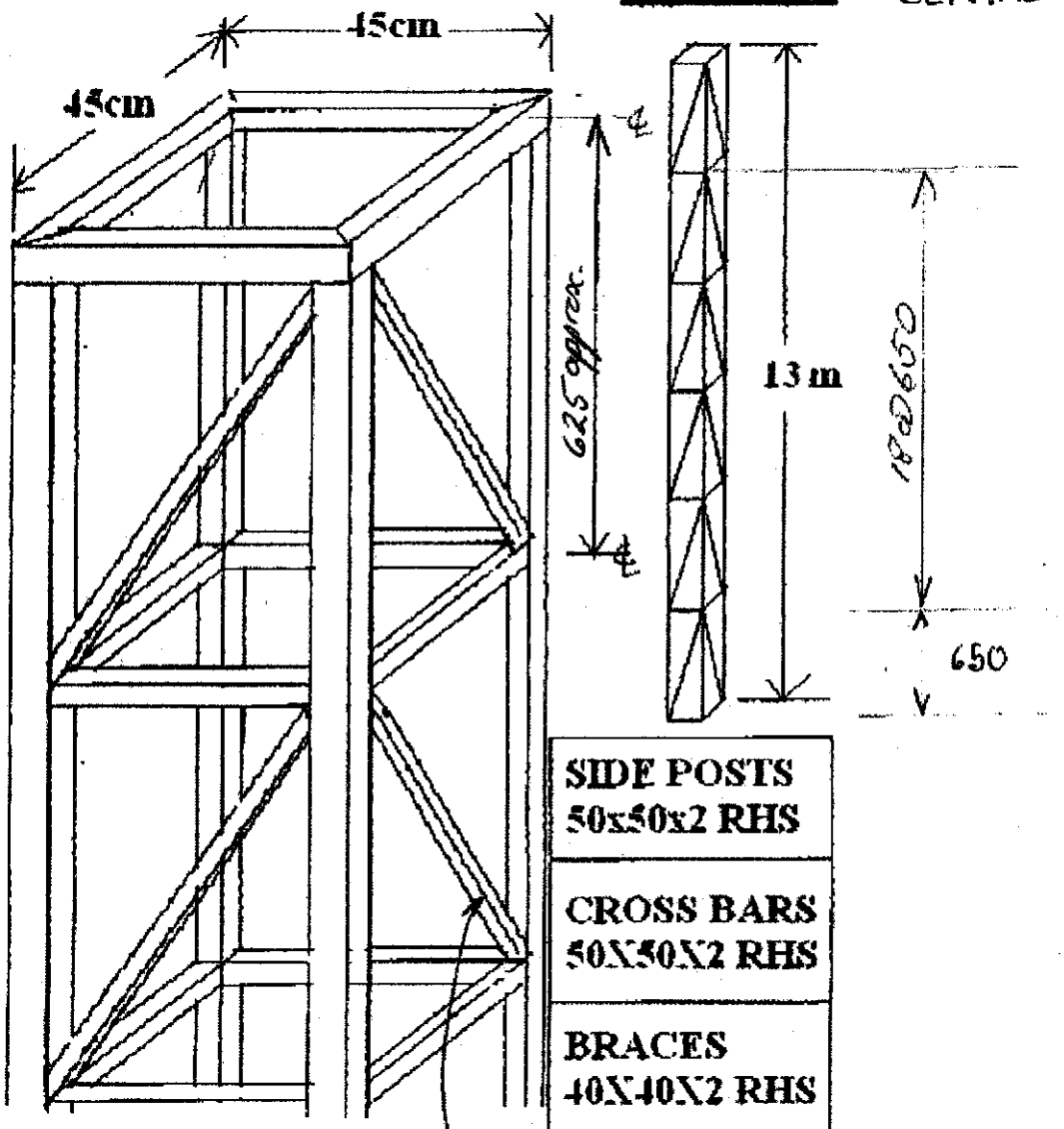
DIAGRAM 2



16.5m TRUSSE CENTRE POLE
Base 13metre
Top Extends 3.5metre

DIAGRAM 5

LOWER SECTION CENTRE POST

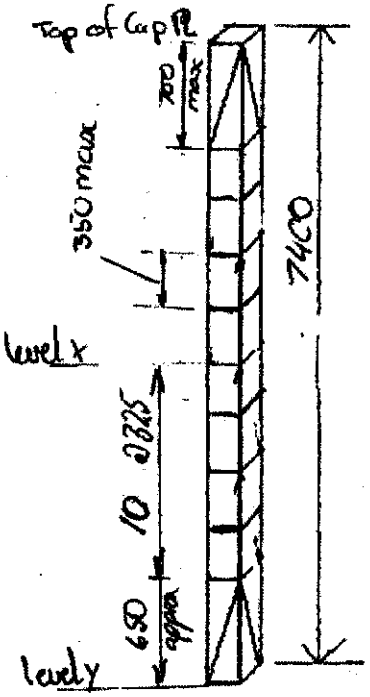


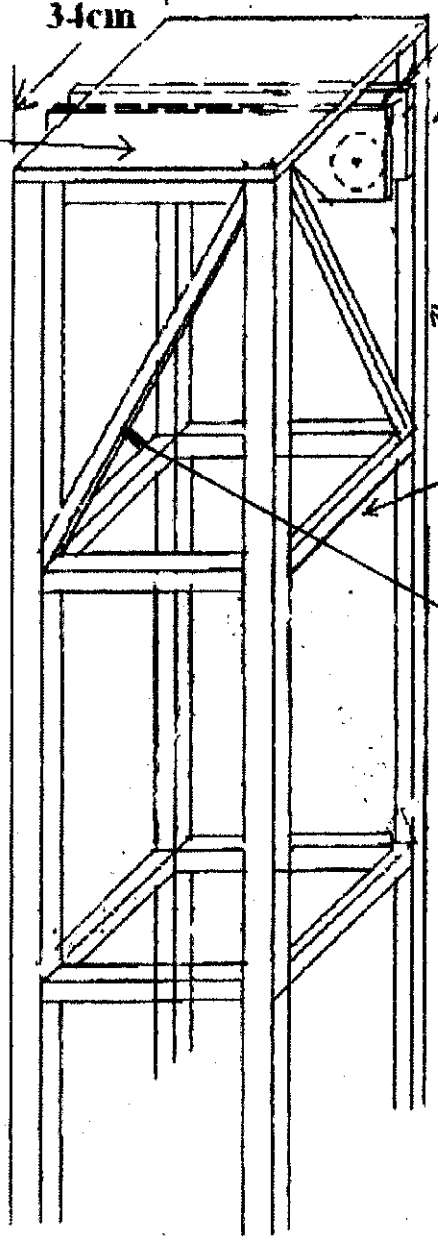
SIDE POSTS 50x50x2 RHS
CROSS BARS 50X50X2 RHS
BRACES 40X40X2 RHS

Diagonal braces on all 4 sides

UPPER SECTION CENTRE POST

DIAGRAM 6





20 mm plate to support pulley side plates with gusset attached

2 x 100 x 10 plates to support pulley

PULLEY
One pulley on each side to take tent pull up cable

500kg lifting capacity (SWL)

SIDE POSTS
50x50x2 RHS

CROSS BARS
50X50X2 RHS

BRACES
40X40X2 RHS

Note:- Diagonal Braces on all 4 side

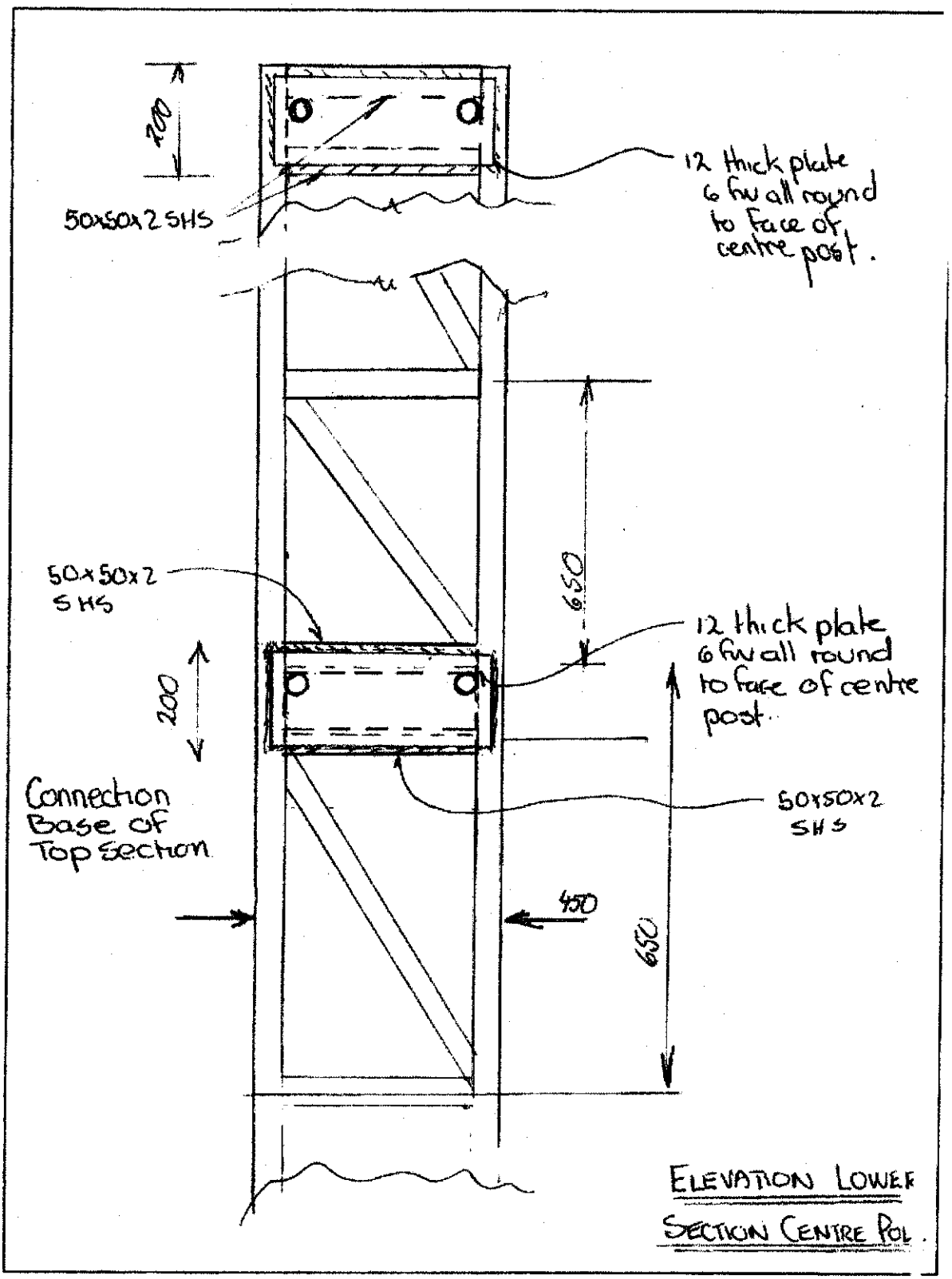
NOT TO SCALE

DESIGN PROJECT GROUP PTY LTD
CONSULTING ENGINEERS A.C.N. 064150917 (Inc. in Vic.)
215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0801
Fax: (03) 9388 2121

Computations

Job No. 011643 Sheet No. 7

Eng. DMV Date. July 05



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Fax: (03) 9388 2121

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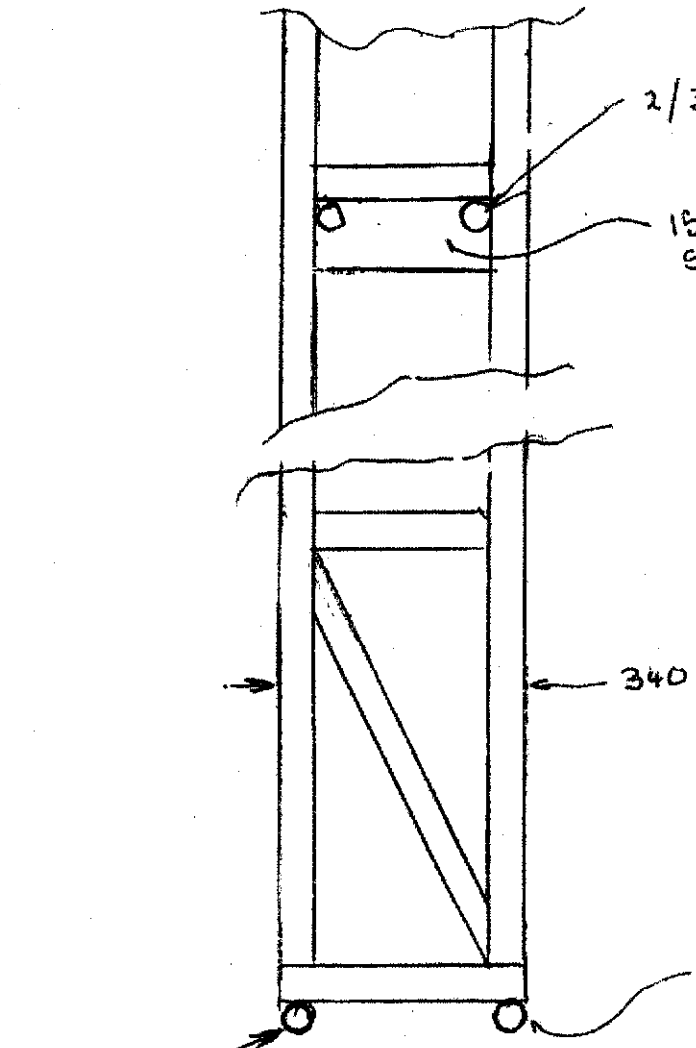
Job No. 01164B Sheet No. 8

Eng. DMW Date. July 05



Note:- 25 dia MS pins for connection to base section

ELEVATION UPPER SECTION OF CENTRE POLE

Checked .....

Date .....

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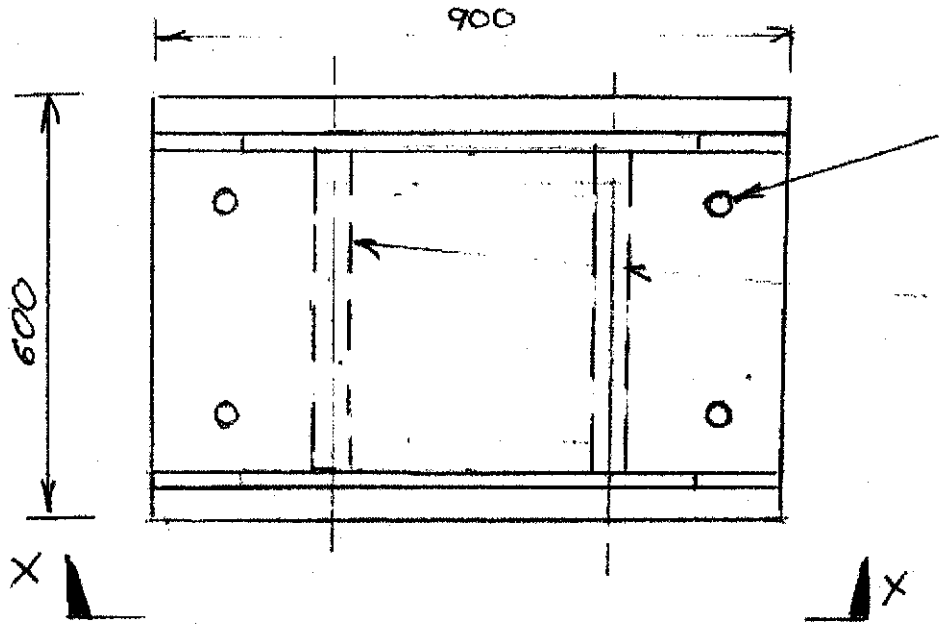
Telephone: (03) 9388 0801
Fax: (03) 9388 2121

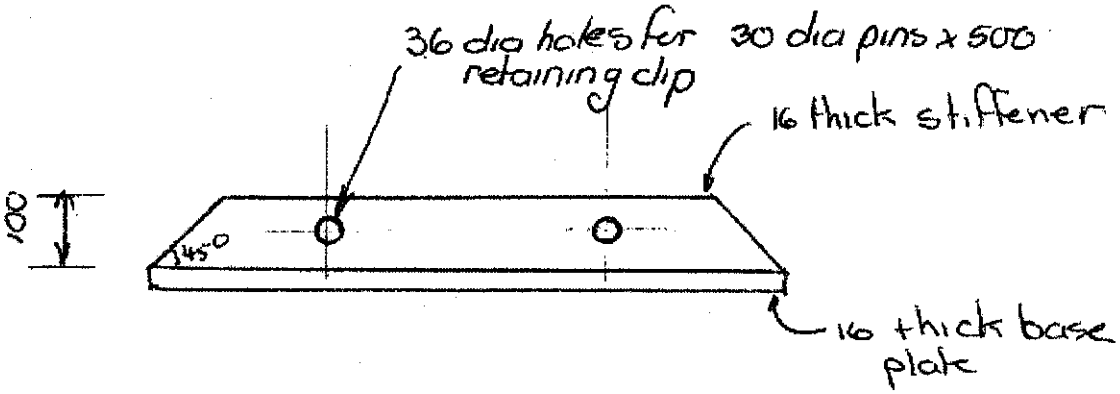
Computations

Job No. 0164B Sheet No. 9

Eng. DM Date. July 05



PLAN OF BASE PLATE



SECTION X - X

Checked .....

Date .....

10

JANLIN BIG TENT HIRE

JANLIN CIRCUSES PTY LTD
ACN 069 720 225
12 BYLOSS ST
CHESTER HILL
NSW 2162

DESIGN PROJECT GROUP

Att David Wills

Dear David,

I have enclosed four sheets of diagrams of a 45m x 75m tent that does not have quarter poles in it.

(1) This tent relies on the curvatures of the roof panels to keep it taut and thereby resist movement in the wind. The large amount of panels directly linked to their own side pole create a very tight roof.

(2) As the diagram (4) shows the centre sheet panels start at one side of the tent and continue up over the dome and down to the other edge of the tent which distributes the strain evenly.

(3) The panels are welded together incorporating a sleeve through which a webbing strap is inserted and attached at each end to a side pole plate, this gives strength to keep the panels taut.

(4) In the centre sheets the panels are 1.5m wide, 10 panels in each centre sheet.

(5) The corner sheets have panels 1.67m wide including the rounded corners, 16 panels in each corner quarter sheet.

(6) The lacings that join the sections together have a 10mm cable through the seams and these are attached to the bale rings at the top of the tent.

(7) The ridge created at the top also has a 10mm cable through a sleeve to with stand the pressure of the panels pulling down across the middle of the centre dome sheets.

(8) Bale rings are 100cm diameter at the base and taper upwards to a 90cm diameter top ring where the pull up cables are attached.

(9) Guy straps are 50mm wide tie down webbing with ratchets that are rated at 2500 kg.

(10) The fastening points (pegs) are positioned 4.3m out from the edge of the tent.

(11) Centre poles are truss frames as per diagram. Side poles are 4.3m x 75mm x 1.6mm wall thickness.

DESIGN

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Computations

Job No. 01164B Sheet No. 11

Eng. [signature] Date. July 05

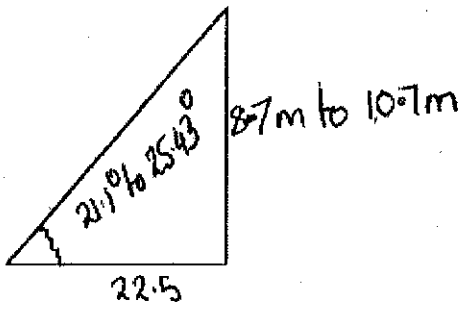
MARQUEES

WIND LOADING

From AS 1170

Vp = 41m/sec from West

TERRAIN CATEGORIES 3 AND 4



Vz = VMzcat.Ms Mt Mi

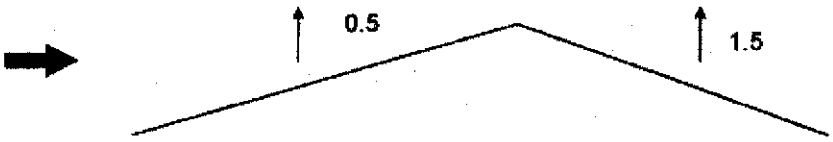
= 41 x 0.75 x 1 x 0.8

= 24.6 m/sec

qz = $0.6 \times 24.6^2 \times 10^{-3}$

= 0.363 kPa

Worst case when sides are up and blocked underneath



Average = 1

Therefore wind load on roof = 1 x 0.363 kPa

= 0.363 kPa

TERRAIN CATEGORY 2 and 1

Wind Load = $(0.91 / 0.75)^2 \times 0.363 = 0.5285$ kPa

Checked .....

Date .....

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Job No. 01164B Sheet No. 12
Eng. [illegible] Date. July 05

3.2.4 Terrain Category.

Terrain, over which the approach wind flows towards a structure, shall be assessed on the basis of the following category descriptions.

(a) Category 1 - exposed open terrain with few or no obstructions and water surfaces at servicability wind speeds (V_s) only.

(b) Category 2 - open terrain, grassland with few well scattered obstructions having heights generally from 1.5 m to 10.0 m and water surfaces at wind speeds (V_u) and (V_p).

(c) Category 3 - terrain with numerous closely spaced obstructions having the size of domestic houses (3.0 m to 5.0 m high).

(d) Category 4 - terrain with numerous large, high (10.0 m to 30.0 m) and closely spaced obstructions such as large city centres and well-developed industrial complexes.

Selection of terrain category shall be made with due regard to the permanence of the obstructions which constitute the surface roughness, in particular vegetation in tropical cyclonic regions shall not be relied upon to maintain a wooded terrain roughness.

Checked .....
Date .....

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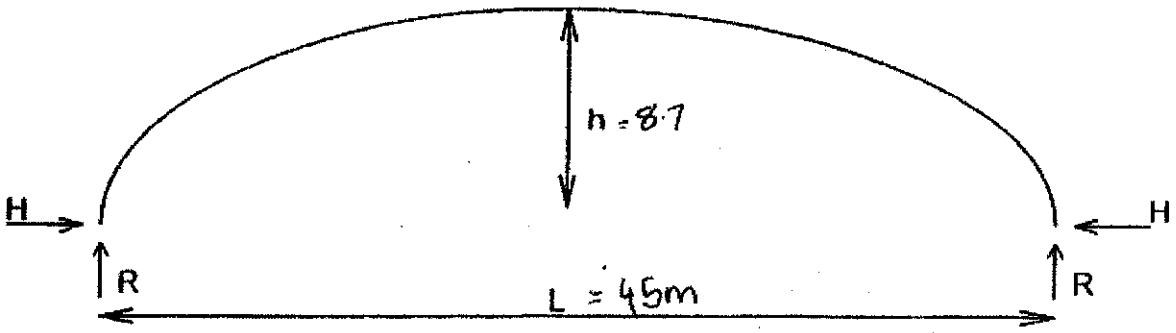
Job No. 01164B Sheet No. 13

Eng. MW Date. July 05

PVC COVERING



$$H = 0.363 \times \frac{45^2}{8 \times 8.7} = 10.56 \text{ kN/m}$$

$$R = 0.363 \times \frac{45}{2} = 8.167 \text{ kN/m}$$

$$T_{max} = H(1 + 16\theta^2)^{1/2}$$

$$= 13.35 \text{ kN/m}$$

$$\theta = \frac{8.7}{45.0}$$

$$\text{Capacity of PVC} = \frac{2.4 \text{ KN} \times \frac{1000}{50}}{3} \text{ factor of safety} = 16 \text{ KN}$$

Not critical Case

Checked .....

Date .....

14

Caractéristiques techniques	Technical data	Technische Daten	Précontraint® 702	
Fil	Yarn	Garn	1100 Dtex PES HT	TERSUISSE
Poids au m²	Weight sqm	Gewicht m²	520 g/m²	EN ISO 2286-2
Largeur	Width	Breite	180 cm	
Résistance rupture (chaîne/trame)	Tensile strength (warp/weft)	Reißkraft (Kette/Schuss)	280/280 daN/5cm	EN ISO 1421
Résistance déchirure (chaîne/trame)	Tear strength (warp/weft)	Weiterreißkraft (Kette/Schuss)	30/28 daN	DIN 53.363
Adhérence	Adhesion	Haftung	10 daN/5 cm	EN ISO 2411
Opacité	Blackout	Opak	> 98%	
Finition	Finish (Varnish)	Behandlung (Schlusslack)	Vernis BIFACE	
Réaction au feu	Flame retardancy	Brennverhalten	NFP 92-507 M2 - NFPA 701 Test 2 - BSFM F1B DIN 4102-1 B1 - BS 7837 - AS/NZS 1530.3 - SIS 650082 JMTAC - UNE 23.727 - M2	
Températures maximum d'utilisation	Temperature extremes (while handling)	Maximale Anwendungs-temperaturen	-30°C / +70°C	
Système d'assurance qualité	Quality Insurance	Qualitätssicherung	ISO 9001	

Les caractéristiques techniques indiquées sont des valeurs moyennes

Technical data are average values

Die angegebenen technischen Daten sind Mittelwerte

Technique d'extraction Précontraint® FERRARI	Précontraint® FERRARI sealing technology	Beschichtungstechnik Précontraint® FERRARI
Stabilité dimensionnelle exceptionnelle	Exceptional dimensional stability	Außerordentliche Filialenstabilität
Durabilité supérieure	Longer durability	Höhere Haltbarkeit
Excellente soudabilité	Excellent welding	Sehr gute Verschweißbarkeit
Opacité spéciale chapiteaux	Special blackout for big tops	Spezielle Opak-Textilien für Zirkuszelte

TEXYLOOP®

PRECONTRAINT 702

FERRARI

FERRARI SA
BP 34
F 38352 LA TOUR DU PIN cedex
FRANCE
Tél. + 33 (0)4 74 97 41 58
Fax + 33 (0)4 74 97 67 20
www.ferrari-textiles.com

Alternative Covering

15

Senator™
High Performance Australian PVC

PRODUCT SPECIFICATION

PRODUCT: **SENATOR™ PVC 650 T/S**

DESCRIPTION:	SENATOR 650 T/S is a heavy duty, PVC Coated Tent & Tarpaulin fabric. The base fabric is a high quality, high tenacity polyester fabric in a tearstop construction. The product is also proudly 100% Australian Made for Australian conditions.
WEIGHT:	650gsm Nominal
CONSTRUCTION:	Woven Denier Polyester 9 x 8.5 with Tearstop in both directions.
WIDTH:	205cm
TENSILE STRENGTH: (AS 2001.2.3)	WARP – 3320N WEFT – 2650N ← conservatively use 2·4 KN/0·050 M OR
TONGUE TEAR: (BS 3424.5)	WARP – 650N WEFT – 650N
FLEX CRACKING: (AS 1441.6)	400,000 Cycles
COATING ADHESION:	90 N.
COLD CRACK TEMP:	-30°C
SPECIAL FEATURES:	Flame Retardent tested to AS1530 parts 2 and 3 Test report available, UV Treated, Antifungicide, Acryllic Lacquer Coated.
Stock Colours:	As Required

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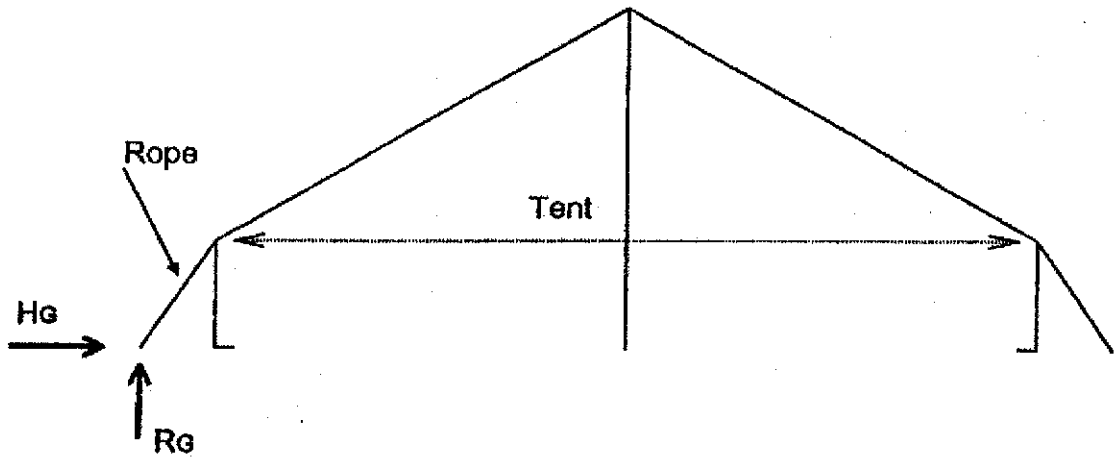
Computations

Job No. 01164B Sheet No. 16

Eng. DW Date July 95

ROPE CAPACITY



R_G = 8.167 KN/M

$H_G \approx 0.363 \times \frac{53.6^2}{8 \times 13}$ = 10.03 KN/M

$T_{max} = H(1 + 16\theta^2)^{1/2}$ $\quad \theta = \frac{13}{53.6}$

= 13.975 KN/M

∴ Load per rope = 13.975 x 1.5 = 21 KN

Use 50 mm tie down webbing 2500kg rating

Capacity = $\frac{24.5}{3}$ factor of safety = 8.17KN

Critical

Allowable wind speed Terrain Categ 3 and 4 = 25.5 m/sec

Allowable wind speed Terrain Categ 2 and 1 = 21.0 m/sec.

Checked .....

Date .....

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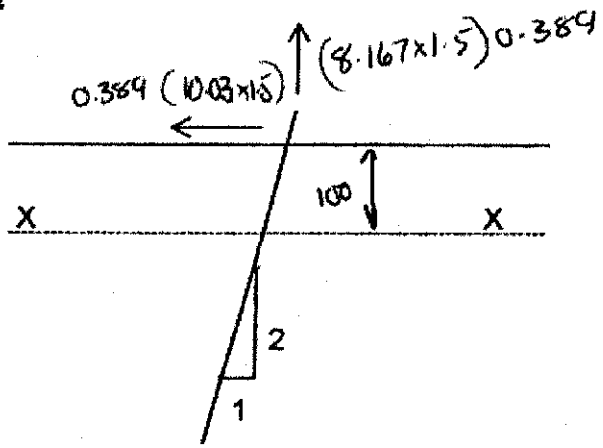
Computations

Job No. 011648 Sheet No. 17

Eng. RAW Date July 2005

PEGS



wind speed adjustment

Moment in peg about X - X

$= (10.03 \times 1.5 \times 0.1 + 8.167 \times 1.5 \times 0.05) \times 0.389$

$= (2.117) \times 0.389$

Use 35mm dia axle

$$f_b = \frac{2.117 \times 10^6 \times 0.389}{0.0982 \times 35^3} = 196 < 262 \times 1.33 \text{ MPa}$$

Note:- Depth of peg to be determined on site by experience and testing

Checked .....

Date .....

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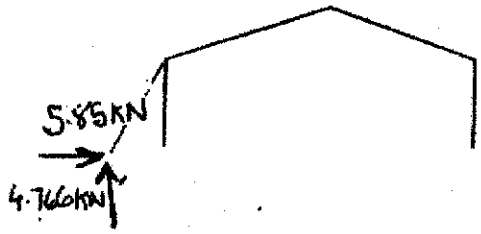
Job No. 01164B Sheet No. 18

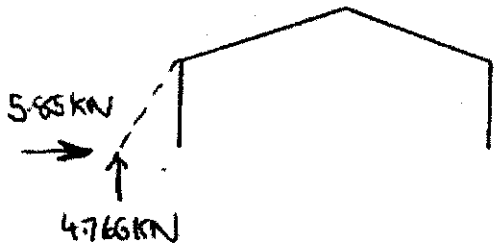
Eng. DMW Date. July 05

PEG LOADS (with sides of tent up)

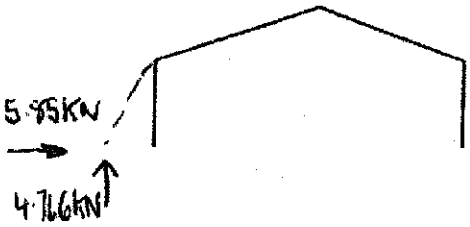
Terrain Category 3 & 4



Terrain Category 2



Terrain Category 1



Checked .....

Date .....

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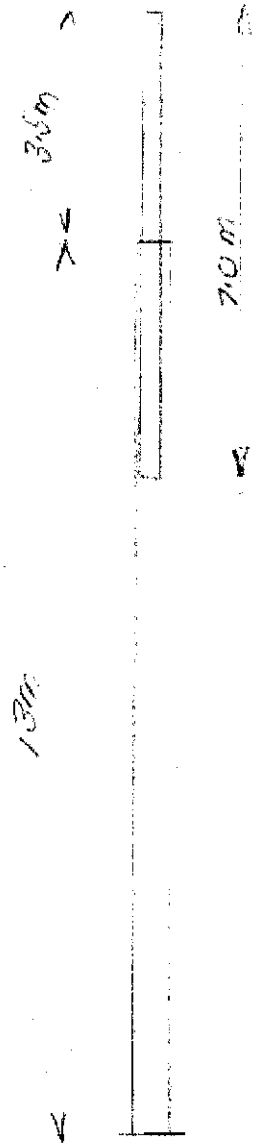
Computations

Job No. 01164B Sheet No. 19

Eng. DNV Date July 2005

CENTRE POLES



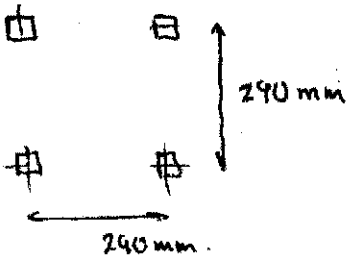
Side member 50×50×2

$A = 374\ mm$

$r = 19.5\ mm$

$I = 0.141 \times 10^6\ mm^4$

$Z = 5.66 \times 10^3\ mm^3$



Combined Section

$$r = \sqrt{\frac{I}{A}} = \sqrt{\frac{I_{2+4\times374\times145^2}}{4\times374}}$$

$$= 145$$

$$\frac{L}{r} = \frac{16500}{145} = 114\ mm$$

$\Rightarrow$ Fac = 76 MPa

$\Rightarrow$ Pall = $76 \times 374 \times 4 = 113\ KN$

Actual Load

$$= 0.01 \times \frac{45}{3} \times 15 \times \frac{1}{0.825} = 2.5\ KN$$

OK

Checked .....

Date .....

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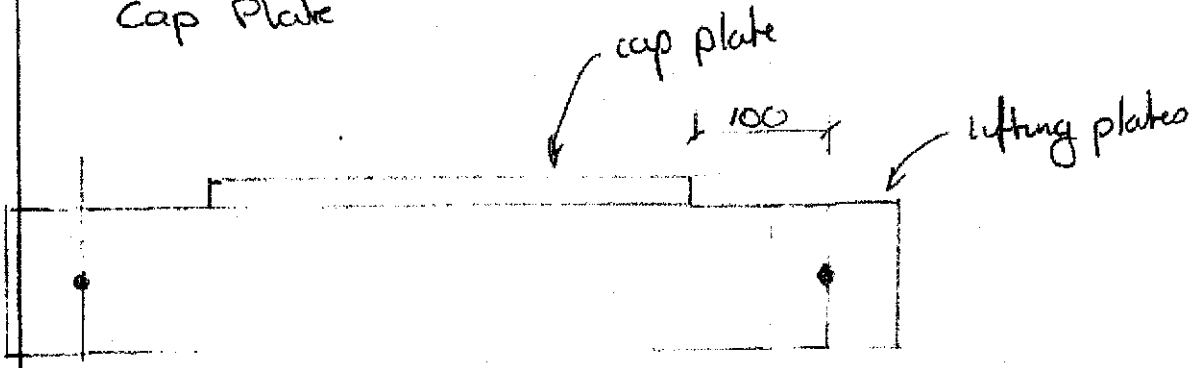
Computations

Job No. DW643 Sh. 20

Eng. DMW Date July 05

Cap Plate



Elevation

500kg

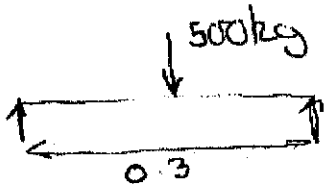
$M = 500 \times \frac{9.8}{1000} \times 0.1 = 0.49 \text{ kNm}$

2 plates Try 100 x 10

$f_b = \frac{0.49}{\frac{1}{6} \times 10 \times 100^2} \times \frac{1}{2} = 14.7 \text{ MPa}$

Allow for impact ⇒ 29 MPa OK.

Cap Plate



$M = \frac{500 \times 9.8}{1000} \times \frac{0.3}{4}$

$= 0.3675 \text{ kNm}$

$f_b = \frac{0.3675}{\frac{1}{6} \times 50 \times 16^2} = 172.3 \text{ MPa}$

Use 20mm plate

$\Rightarrow f_b = 110 \text{ MPa}$

Allow for impact ⇒ 165 MPa OK

Checked .....

Date .....

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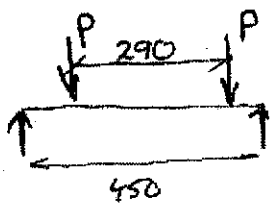
Computations

Job No. 01164B Sheet No. 21

Eng. SMV Date. July 05

Check Splice



$P = 2.5\,kN$

$M = 2.5 \times 0.08$

$= 0.20\,kNm$

25 dia pin

$f_b = \frac{0.20}{0.0982 \times 25^3} = 130\,MPa < 175\,MPa$ OK

$\Delta n = \frac{2.5 \times 10 \times 450^3}{6 \times 2 \times 10^5 \times \frac{\pi \times 25^4}{64}} \left[\frac{3}{4} \times \frac{80}{450} - \left(\frac{80}{450}\right)^3 \right]$

$= 9.900 \left[0.1333 - 0.0056 \right]$

$= 1.32\,mm$ OK

Checked .....

Date .....

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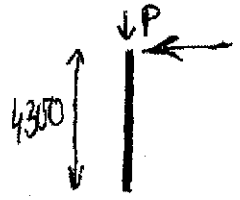
Job No. 01164B Sheet No. 21

Eng. DM Date July 05

SIDE POLES



75mm dia x 1.6 thick

$$\text{Area} = \pi \times \frac{75^2}{4} - \pi \times \frac{71.8^2}{4}$$

$$= 368.95\,mm^2$$

$$r = \frac{1}{4}\sqrt{75^2 + 71.8^2} = 25.96$$

$$\frac{L}{r} = 165.6 \Rightarrow F_{ac} = 30MPa$$

$$\Rightarrow P_{allowable} = 11kN.$$

$$P_{actual} = 0.01 \times \left(1.5 \times \frac{4.5}{2} + 4.3 \times 1.5\right) = 0.402kN$$

OK.

Checked .....

Date .....

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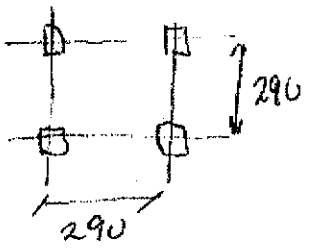
Computations
Job No. 01164B Sheet No. 23
Eng. PMC Date July 05

CENTRE POLE CAPACITY

From page 19 Capacity of Centre Pole = 113 kN (axial)
Load from Tent = 2.5 kN
Axial Capacity = 110 kN

$M_{cap} = 0.6 \times 350 \times Z$

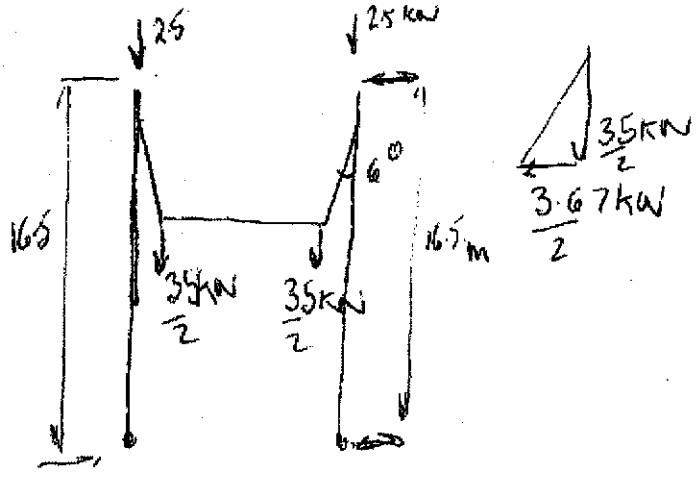


$I = 4 \times 344 \times 145^2$

$\Rightarrow Z = \frac{4 \times 344 \times 145^2}{145}$

$= 199.52 \times 10^3 mm^3$

$\therefore M_{cap} = 199.5 \times 0.6 \times \frac{350}{1000} = 42 kNm$



$M = 1.835 \times 16.5/4 + 35 \times 0.45$

$= 23.3 kNM$

Checked .....
Date .....

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Computations
Job No. 01164B Sheet No. 24
Eng. DMJ Date. July 05

Vertical Component from Cable

$\frac{23.3}{16.5} = 1.412$ KN

45°

Total Column Load = 1.412 + 17.6 + 2.5 + ½ self wt 8 = 30 kN

= 30 kN

Combined Stress = $\frac{30}{110} + \frac{23.3}{42}$

= 0.83 < 1.0

OK

Summary

:- Max. addition load / per centre pole 1.75 tonne
with max lift angle to post = 60°

Top Cables to be cable of taking 200 kg in addition to other loads (including anchor point)

Base plate to bear on ground cable of taking 4 tonne. max tonne vertical load

Checked .....

Date .....

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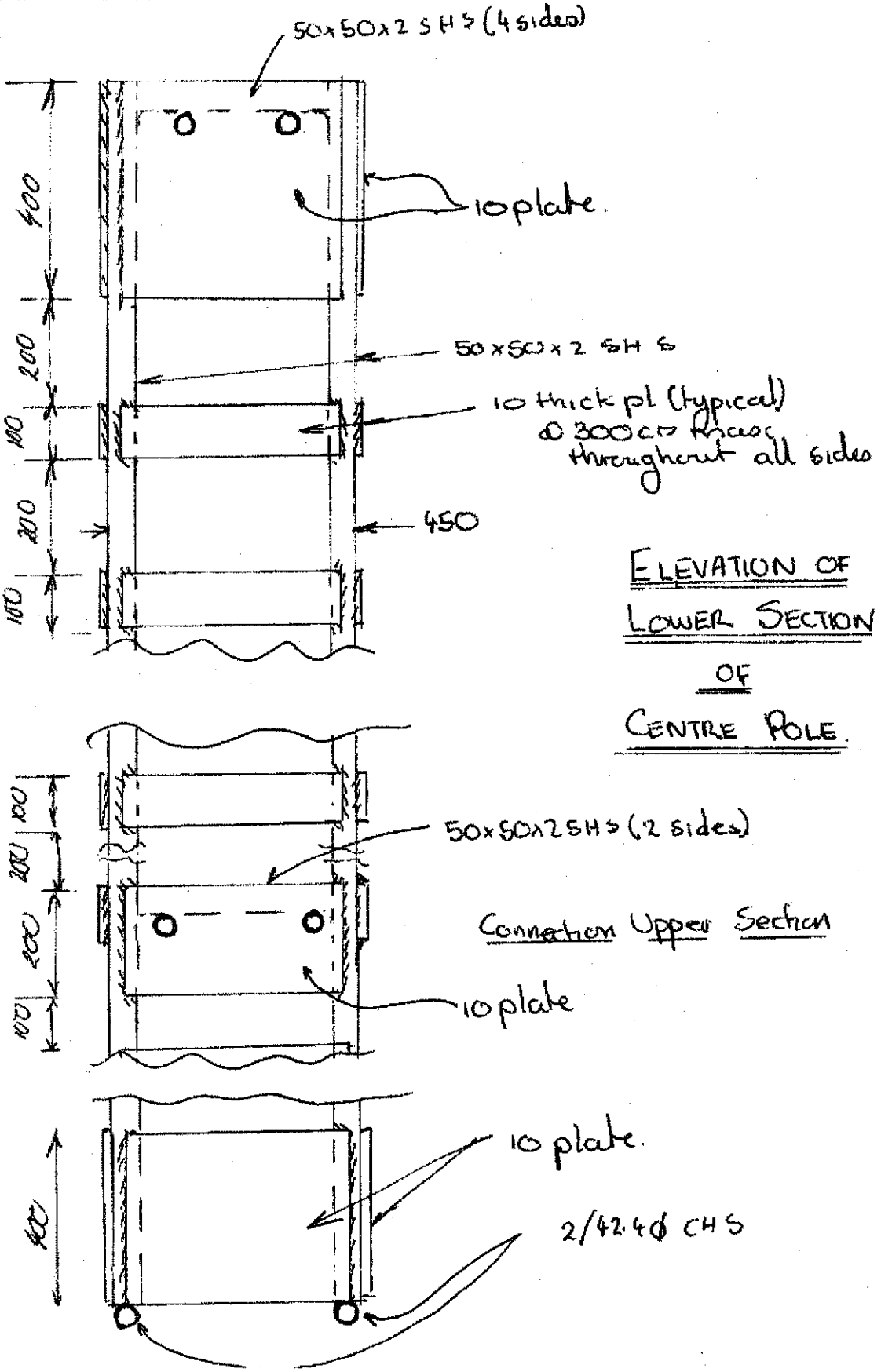
Computations

Job No. 01164B Sheet No. 25

Eng. PW Date. July 05

ALTERNATIVE CENTRE POLE



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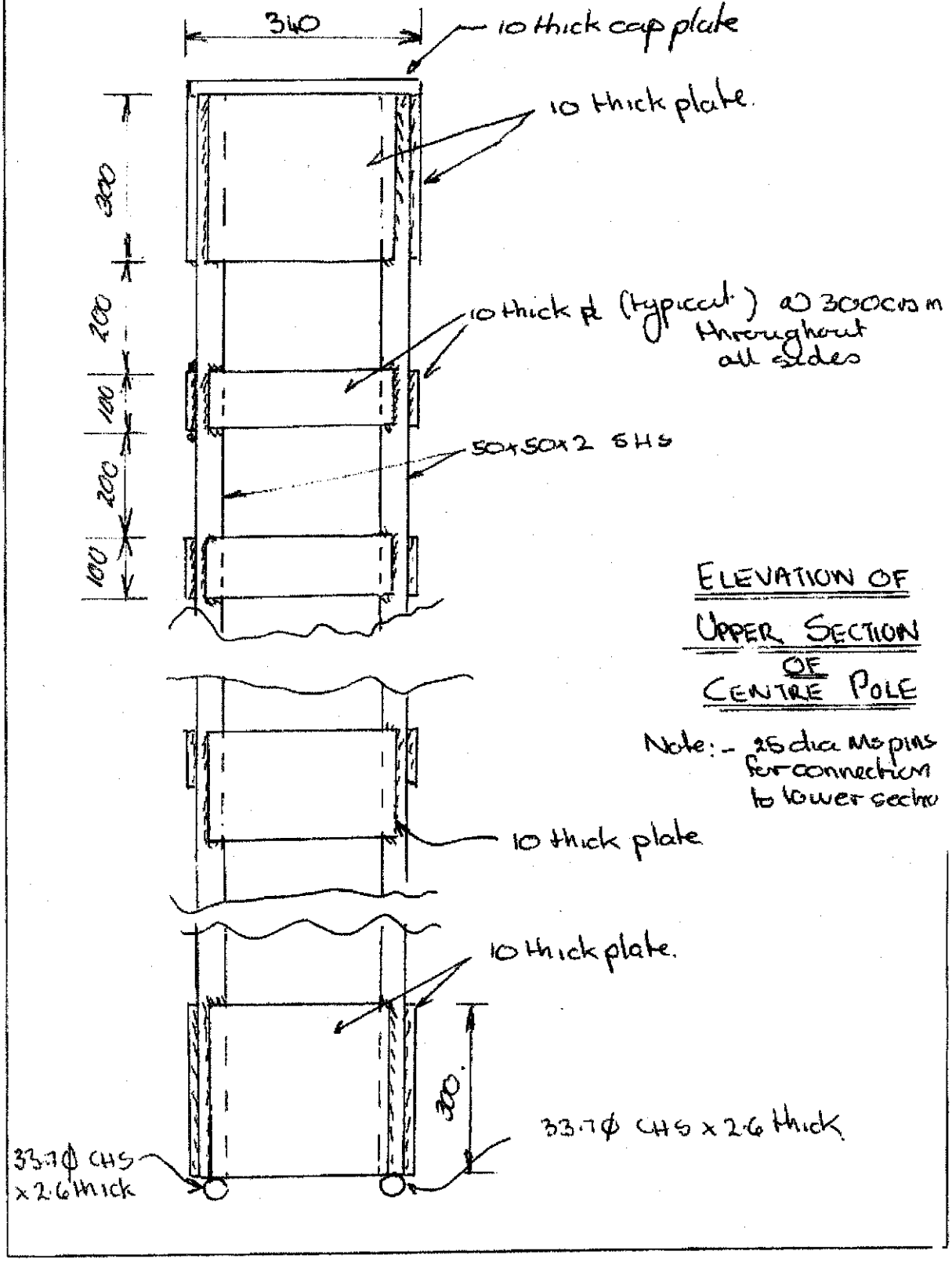
Computations

Job No. D1164B Sheet No. 26

Eng. SMN Date. July 05

ALTERNATIVE CENTRE POLE



ELEVATION OF UPPER SECTION OF CENTRE POLE

Note:- 25 dia M8 pins for connection to lower sectn

Checked .....

Date .....

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Computations

Job No. 01164B Sheet No. 27

Eng. DMW Date. July 05

Design of Battens

Centre to Centre of Battens

$50 r_i = 50 \times 19.5 = 975$

or $0.6 \times \frac{16500}{145} \times 19.5 = 1331$

Min^m ht intermediate battens $\geq 2 \times 50 = 100$m

Max^m ht of end battens = 400

Checked .....

Date .....

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PROC: E1(A1)
JUNE 1994

COMPUTATIONS

PROJECT NO: 08474
DATE: Dec' 2008

PROJECT TITLE

20m x 30m Tent no Quarter Poles
&
20m dia Round Tent
no Quarter Poles
for
Janlin Circuses PL

REFERENCES

AS1170
AS4100

ENGINEER

David J. Wills
MIEAust CPEng
Chartered Professional Engineer
Membership No. 1...747
The Institution of Engineers, Australia

Signature: David J. Wills

Date: Dec. 2008

PROC E1

DESIGN

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CONSULTING ENGINEERS (Inc. in Vic.)
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Computations
Job No. 08474 Sheet No .....
Eng JDW Date Dec 04

TABLE OF CONTENTS

Note:- (1) For Terrain category 3 & 4 tents to be evacuated when wind speed reaches 34.5 m/sec

(2) For Terrain category 1 & 2 tents to be evacuated when wind speed reaches 28.4 m/sec.

Checked .....
Date .....

(1)

JANLIN CIRCUSES Pty Ltd

Trading as
BURTONS CIRCUS
LENNON BROS CIRCUS
STARDUST CIRCUS

ABN 29 069 720 225

12 Byloss St
Chester Hill 2162
Fax 0417 655935
0418 238881

18th Dec 2008

DESIGN PROJECT GROUP
Att David Wills

Dear David,

I have enclosed 7 sheets of diagrams and information for a 20m x 30m tent that has 2centre poles and no quarter poles in it and can be erected as a 20m round top or a 20m x 30m tent.

(1) This tent relies on the curvatures of the roof panels to keep it taut, thereby resisting movement in the wind.

(2) The panels are welded together with a 125mm overlapping at each seam.

(3) The round end section panels are evenly spaced 1570 at the outside edge and taper up to the cupola above. The centre sheet sections have panels that are 1666 wide

(4) The round tent is constructed in 2 sections with lacings to join them together. Another section is added to increase the length to 30m

(5) The outside edge and the top edge of the tent is reinforced to withstand the pressure applied to it.

(6) The seam between the 2 centre poles has a 12mm wire cable through the ridge

(7) Guy straps are 50mm wide tie down straps with ratchets rated at 2000kg.

(8) The fastening points (pegs) are positioned 3500 from the edge of the tent.

(9) Centre poles are 12.3m tall and are a trusse type pole as per diagram.

(10). Side poles are 3500 long x 40N/B x 2mm wall thickness

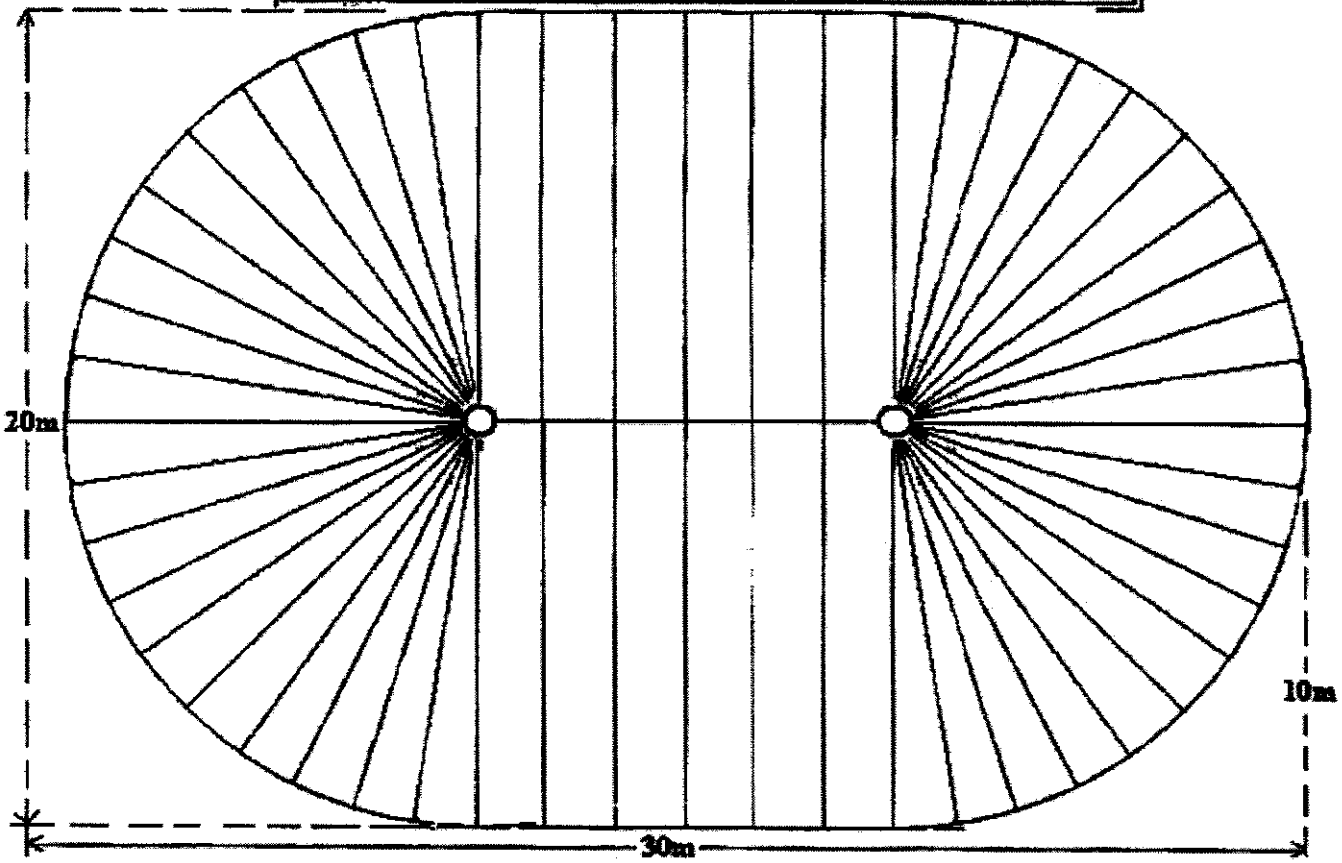
(11) The material being used is Ferrari 702 Preconstraint.

Thanking you.

Lindsay Lennon

(2)

Top View 20m x 30m Tent no Quarter Poles



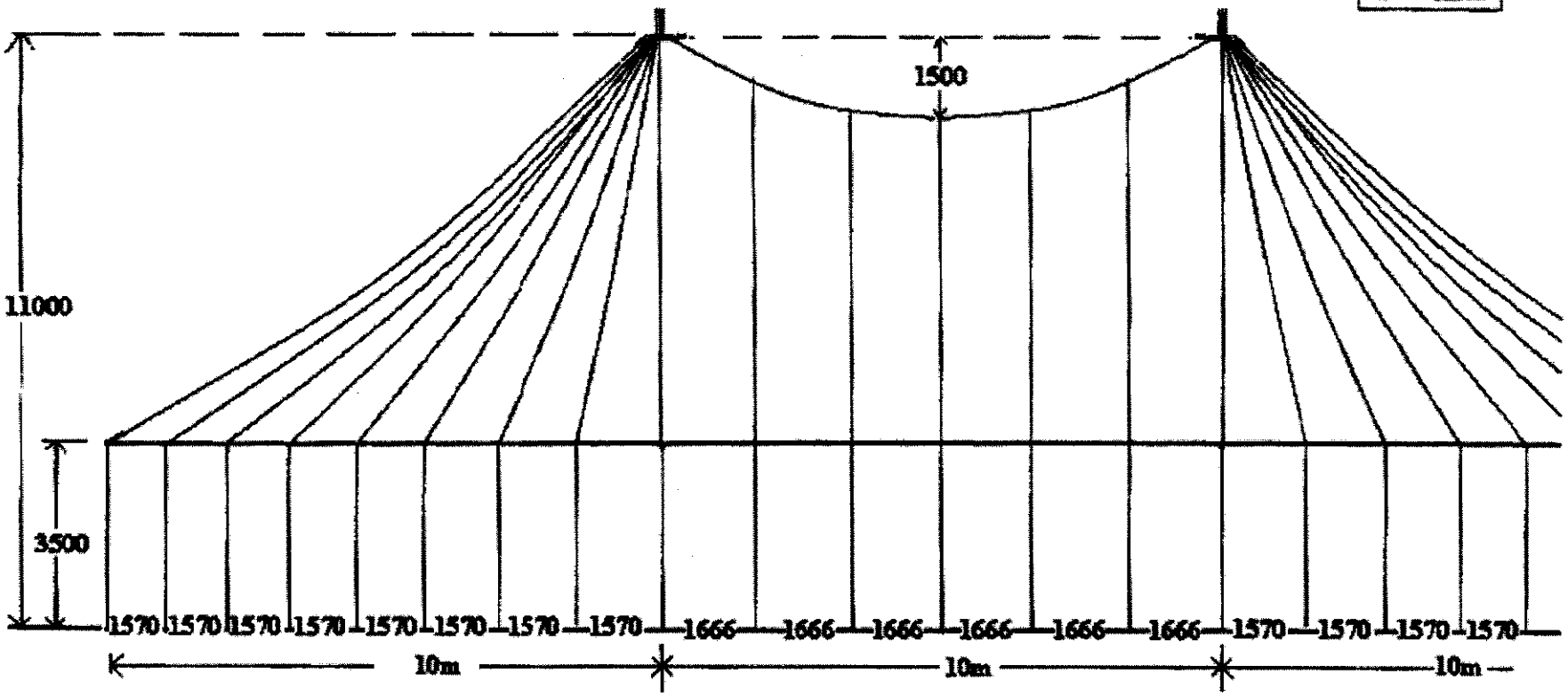
NOT TO SCALE

(2)

(3)

Side View 20m x 30m Tent no Quarter Poles

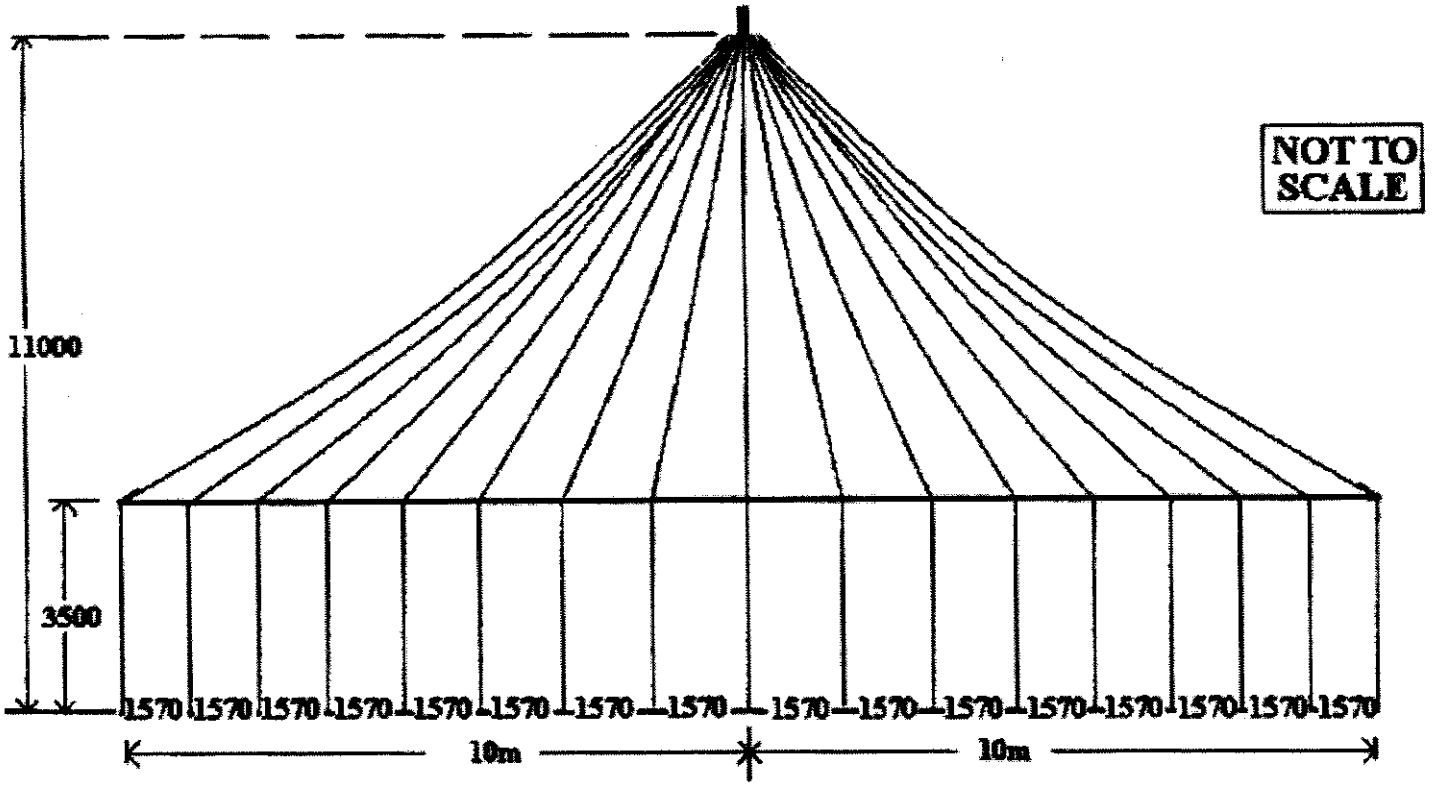
NOT TO SCALE



(2)

(4)

End View 20m x 30m Tent no Quarter Poles

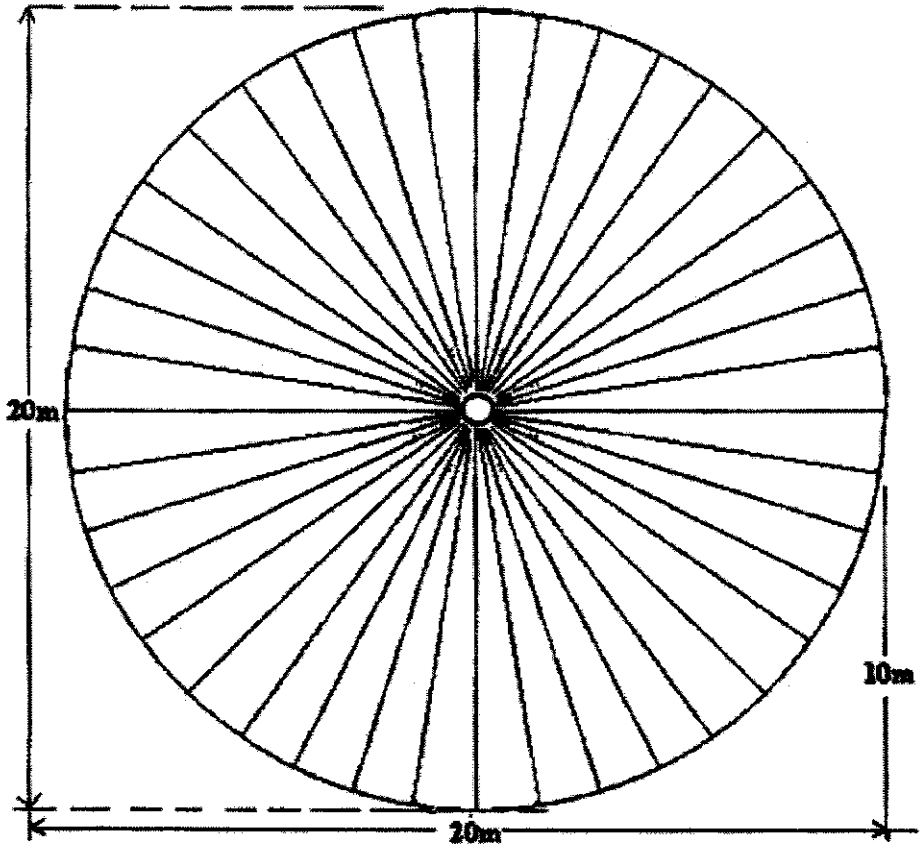


(4)

1945

(5)

Top View 20m RoundTent no Quarter Poles

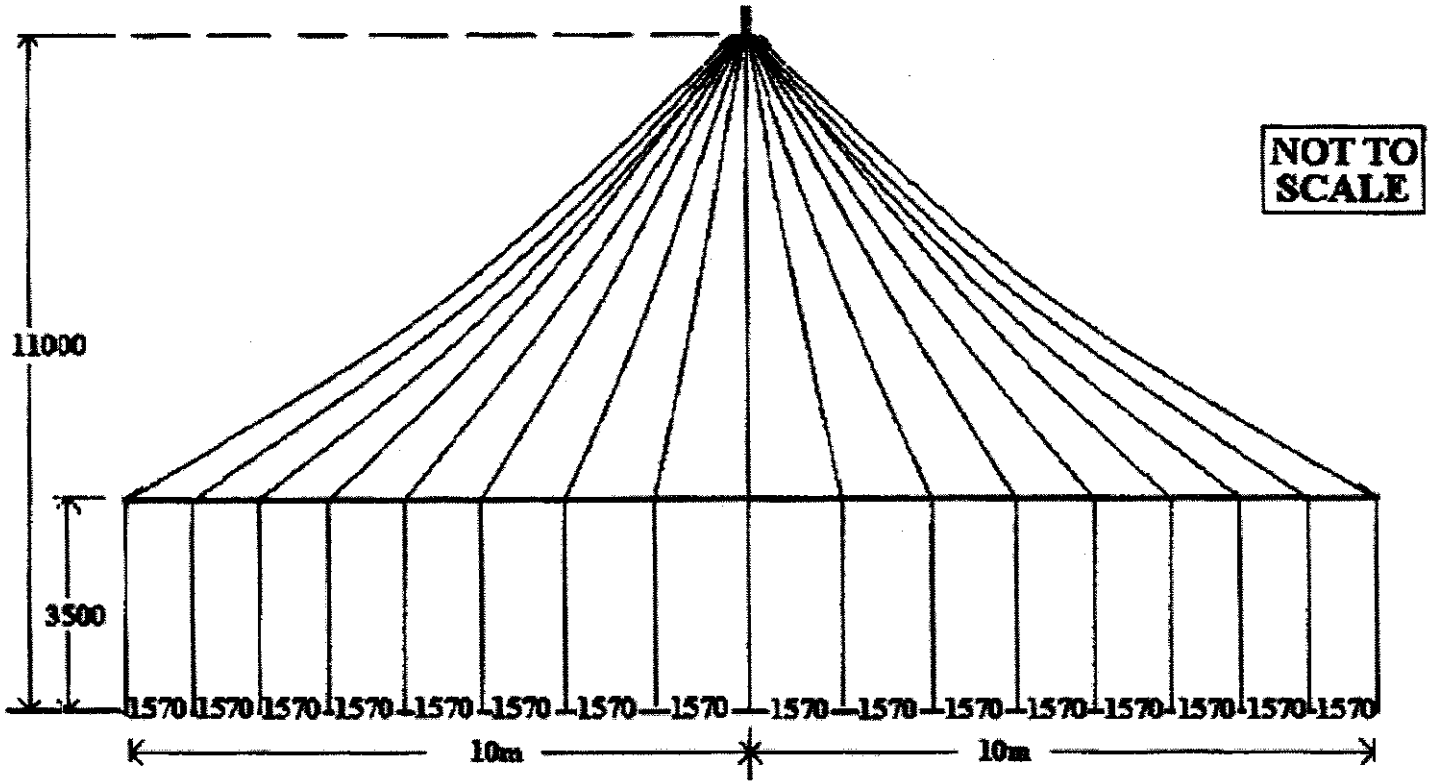


NOT TO SCALE

(5)

(6)

Side View 20m Tent no Quarter Poles

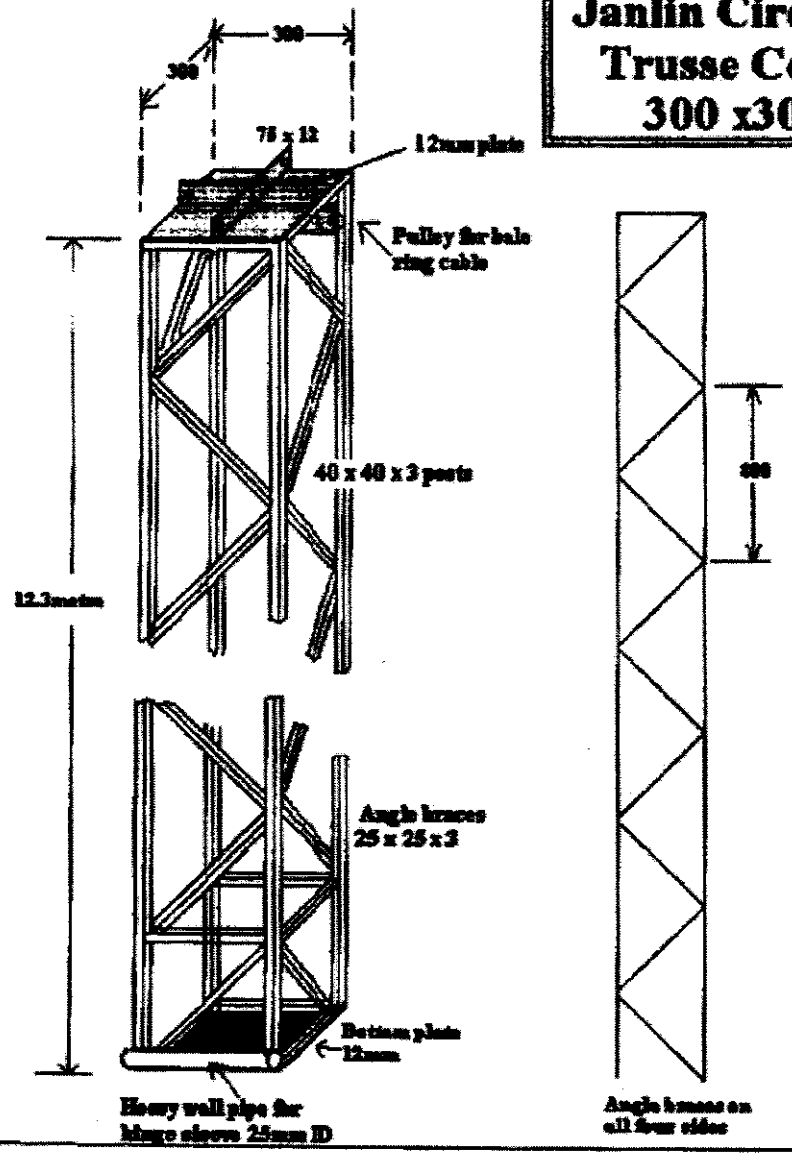


(6)

(7)

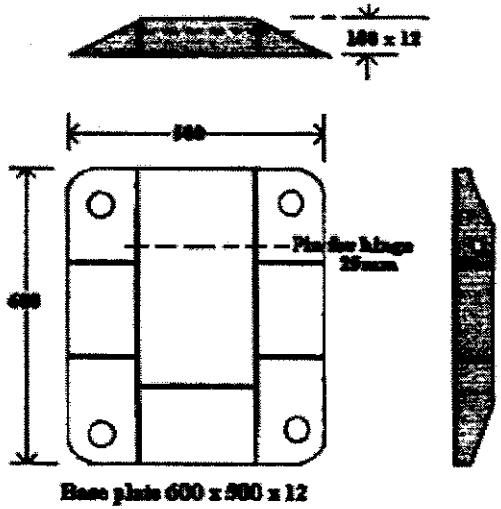
Janlin Circuses Pty Ltd
Trusse Centre Pole
300 x300 x 12.3m

Not to scale



Side Pole
40 N/B x 2mm wall thickness

Base Plate



(1)

1948

DESIGN

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Telephone: (03) 9388 0801
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Computations

Job No. 08474 Sheet No. 8

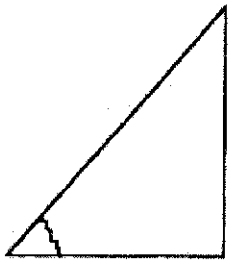
Eng. DW Date. Dec 09

MARQUEES

WIND LOADING

From AS 1170

Vp = 41m/sec from West



TERRAIN CATEGORIES 3 AND 4

Vz = VMzcat.Ms Mt Mi

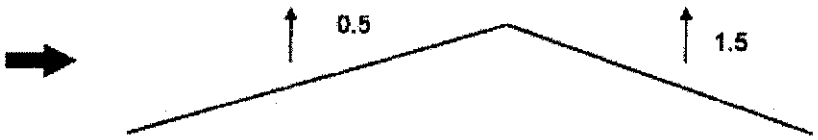
= 41 x 0.75 x 1 x 0.8

= 24.6 m/sec

$qz = 0.6 \times 24.6^2 \times 10^{-3}$

= 0.363 kPa

Worst case when sides are up and blocked underneath



Average = 1

Therefore wind load on roof = 1 x 0.363 kPa

= 0.363 kPa

TERRAIN CATEGORY 2 & 1

Wind Load = (0.91 / 0.75)^2 x 0.363 = 0.5285 kPa

Checked .....

Date .....

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Job No. 08474 Sheet No. 9

Eng. ONJ Date. Dec 08

3.2.4 Terrain Category.

Terrain, over which the approach wind flows towards a structure, shall be assessed on the basis of the following category descriptions.

(a) Category 1 - exposed open terrain with few or no obstructions and water surfaces at servicability wind speeds (V_s) only.

(b) Category 2 - open terrain, grassland with few well scattered obstructions having heights generally from 1.5 m to 10.0 m and water surfaces at wind speeds (V_u) and (V_p).

(c) Category 3 - terrain with numerous closely spaced obstructions having the size of domestic houses (3.0 m to 5.0 m high).

(d) Category 4 - terrain with numerous large, high (10.0 m to 30.0 m) and closely spaced obstructions such as large city centres and well-developed industrial complexes.

Selection of terrain category shall be made with due regard to the permanence of the obstructions which constitute the surface roughness, in particular vegetation in tropical cyclonic regions shall not be relied upon to maintain a wooded terrain roughness.

Checked .....

Date .....

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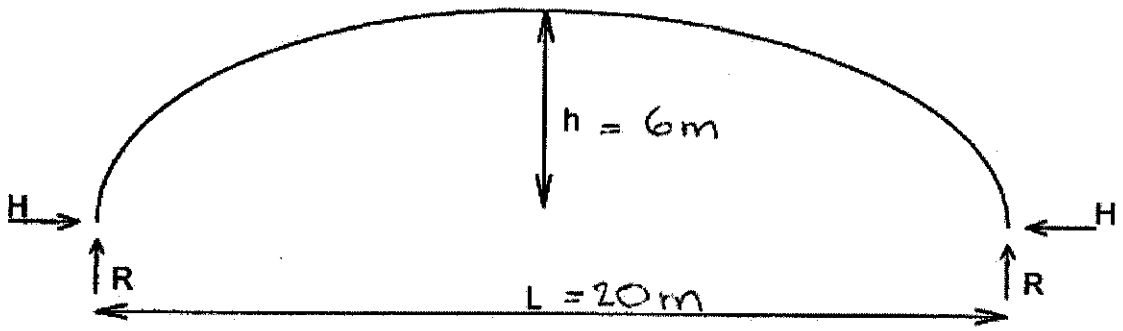
Job No. 0847A Sheet No. 10

Eng. ONV Date. Dec '08

PVC COVERING



Terrain Categ 3 & 4

$$H = 0.363 \times \frac{20^2}{8 \times 6} = 3.025 \text{ KN/m}$$

$$R = 0.363 \times \frac{20}{2} = 3.63 \text{ KN/M}$$

$$T_{max} = H(1 + 16\theta^2)^{1/2}$$

$$= 4.725 \text{ KN/m}$$

$$\theta = \frac{6}{20}$$

$$\text{Capacity of PVC} = \frac{2.4/0.050}{6} \text{ factor of safety} = 8 \text{ KN/m} \quad \text{OK}$$

Terrain Category 1 & 2

$$T_{max} = 4.725 \times \frac{0.5246}{0.363} = 6.88 \text{ KN/m} < 8 \text{ KN/m OK}$$

Checked .....

Date .....

97208A (11)

Caractéristiques techniques	Technical data	Technische Daten	Précontraint® 702	
Fil	Yarn	Garn	1100 Dtex PES HT	TERSUISSE
Poids au m²	Weight sqm	Gewicht m²	[illegible] g/m²	EN ISO 2286-2
Largeur	Width	Breite	180 cm	
Résistance rupture (chaîne/trame)	Tensile strength (warp/weft)	Reisskraft (Kette/Schuss)	280/280 daN/5cm	EN ISO 1421
Résistance déchirure (chaîne/trame)	Tear strength (warp/weft)	Weiterreisskraft (Kette/Schuss)	30/28 daN	DIN 53.363
Adhérence	Adhesion	Haftung	10 daN/5 cm	EN ISO 2411
Opacité	Blackout	Opak	> [illegible]%	
Finition	Finish (Varnish)	Behandlung (Schlusslack)	Vernis BIFACE	
Réaction au feu	Flame retardancy	Brennverhalten	NFP 92-507 M2 - NFPA 701 Test 2 - CSFM T19 DIN 4102-1 B1 - BS 7837 - AS/NZS 1530.3 - SIS 650082 SITAC - UNE 23.727 - M2	
Températures maximum d'utilisation	Temperature extremes (while handling)	Maximale Anwendungs-temperaturen	-30°C / +70°C	
Système d'assurance qualité	Quality insurance	Qualitätssicherung	ISO 9001	
Les caractéristiques techniques indiquées sont des valeurs moyennes	Technical data are average values	Die angegebenen technischen Daten sind Mittelwerte		

conservatively use 2.40 kN/50

Technique d'enduction Précontraint® FERRARI	Précontraint® FERRARI coating technology	Beschichtungstechnik Précontraint® FERRARI
Stabilité dimensionnelle exceptionnelle	Exceptional dimensional stability	Aussergewöhnliche Flächenstabilität
Durabilité supérieure	Longer durability	Höhere Haltbarkeit
Excellente soudabilité	Excellent welding	Sehr gute Verschweissbarkeit
Opacité spéciale stores	Special blackout for big tops	Spezielle Opak-Textilien für Zirkuszelte

TEXYLOOP® Membranes et textiles composites 100% recyclables

PRECONTRAINT GARANTIE FERRARI

PRECONTRAINT® 702

FERRARI

FERRARI SA
BP 54
F 38352 LA TOUR DU PIN cedex
FRANCE
Tél. + 33 (0)4 74 97 41 33
Fax + 33 (0)4 74 97 67 20
www.ferrari-textiles.com

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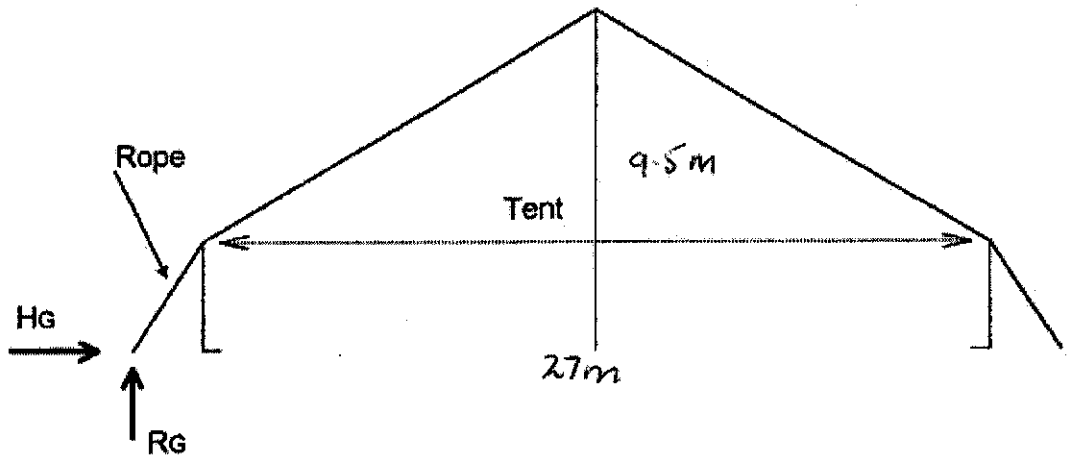
Computations

Job No. 08474 Sheet No. 12

Eng. SNV Date. Dec 08

ROPE CAPACITY



Terrain Category 3 & 4

RG = 3.63 KN/M

$H_G \approx 0.363 \times \frac{27^2}{8 \times 9.5}$ = 3.48 KN/M

$T_{max} = H(1 + 16\theta^2)^{1/2}$ $\quad \theta = \frac{9.5}{27}$

= 6.00 KN/M

∴ Load per rope = 6 x 1.57 = 9.42 KN

Use 20 KN rope

Capacity = $\frac{20}{3}$ factor of safety = 6.67 KN

Reduce wind speed to 34.5m/sec ⇒ Load per rope 6.67 KN

Terrain Category 1 & 2

Wind speed = 28.4 m/sec

Checked .....

Date .....

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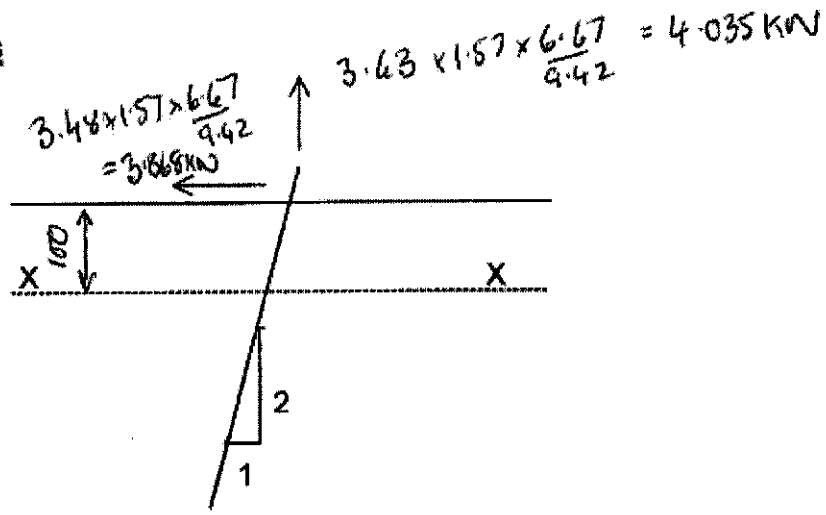
Job No. 08474 Sheet No. 13

Eng. DW Date Dec 08

PEGS



Moment in peg about X - X

= 3.868 x 0.1 + 0.05 x 4.035

= 0.5886 kNm

$$f_b = \frac{0.5886 \times 10^6}{0.0982 \times 35^3} = 140 < 262 \times 1.33 \text{ MPa}$$

Note:- Depth of peg to be determined on site by experience and testing

Checked .....

Date .....

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Job No. 05974 Sheet No. 14

Eng. DMV Date. Dec 08

LOADS (with sides of tent up)

Terrain Category 3 & 4

Terrain Category 2 & 1

Checked .....

Date .....

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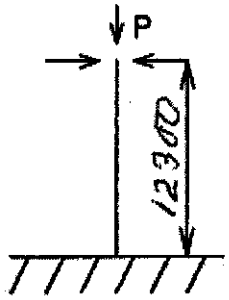
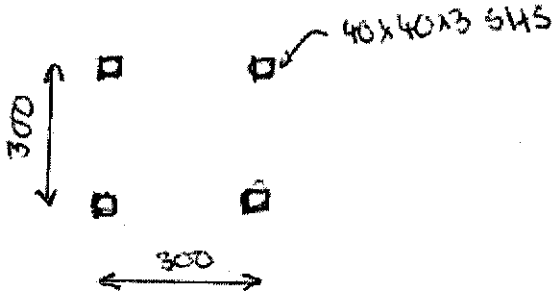
Computations

Job No. 0847 Sheet No. 15

Eng. JW Date. Dec 08

CENTRE POLE





40x40x3 SHS Area = 421 mm²

r = 14.9

Latticed Strut

$\therefore r = \sqrt{\frac{I}{A}} = \sqrt{\frac{4 \times 421 \times 1302^2}{4 \times 421}} = 130$

$\frac{L}{r_y} = \frac{12300}{130} = 94.6 \Rightarrow f_{ac} = 81 MPa$

$P_{all} = \frac{421 \times 4 \times 81}{1000} = 136 kN$ OK.

Max load $= \frac{30m}{2} \times 20m \times 1.5 \times \frac{850}{1000} \times \frac{9.8}{1000}$

$= 3.75 kN$ OK

Checked .....

Date .....

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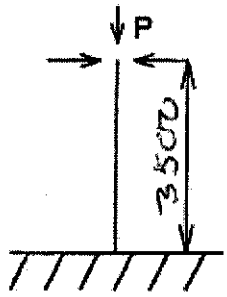
Computations

Job No. 0847 Sheet No. 16

Eng. JW Date. Dec 08

SIDE POLE



40NB x 2mm thick.

$$\text{Area} = \frac{\pi \times 44^2}{4} - \frac{\pi \times 40^2}{4} = 263.89\,mm^2$$

$$r = \frac{1}{4}\sqrt{44^2 + 40^2} = 14.86$$

$$\frac{L}{r} = 235.5 \qquad Fac = 17\,MPa$$

$$\therefore P_{all} = \frac{17 \times 263.89}{1000} = 1.42\,KN$$

$$P_{actual} = 1157 \times 116 \times 10 \times 850 \times \frac{1}{1000} \times \frac{9.4}{1000}$$

$$= 0.13\,KN \quad OK$$

Checked .....

Date .....

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CONSULTING ENGINEERS A.C.N. 0006777920
215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0801
Fax: (03) 9388 2121

PROC: E8(C1)
JUN 2006

DPG Job No.: 08474

Building Act 1993
BUILDING REGULATIONS 2006

REGULATION 1507: CERTIFICATE OF COMPLIANCE - DESIGN

To
Relevant building surveyor: .....
Postal address: .....**Post Code:** .....

From
Building practitioner: ***David Wills*** **Category/Class:** ***Civil Engineer***
Postal address: ***215 Albert Street Brunswick*** **Post Code:** ***3056***

Property Details
Number: ..... **Street/Road:** ..... **City/Suburb/Town:** .....
Lot/s: ..... **LP/PS:** ..... **Volume:** ..... **Folio:** .....
Crown Allotment: ..... **Section:** ..... **Parish:** ..... **County:** .....
Municipal District: .....

Compliance
I did/~~did not~~* prepare the design and I certify that the part of the design described as: 20m x 30m Tent no Quarter Poles & 20m dia Round Tent no Quarter Poles for Jantin Circuses PL

complies with the following provisions of the Regulations**: ***Section B of the Building Code of Australia and the relevant Codes referred therein.***
** Includes BCA and relevant Australian Standards

Design Documents
Drawing Nos.: N.A.....
..... **Prepared by:** ..... **Date:**.....
Specifications: N.A ..... **Prepared by:** ..... **Date:**.....
Computations: Project No. 08474 sheet 1 to 16.....
..... **Prepared by:** Design Project Group PL **Date:** Dec 2008
Test reports: NA.....
..... **Prepared by:** ..... **Date:**.....
Other documents: NA.....
..... **Prepared by:** ..... **Date:**.....
Reference drawings: NA.....
..... **Prepared by:** ..... **Date:**.....

Signature
Signed Building Practitioner: David J. Wills **Registration No.:** ***EC 1043***
Date: 23/12/2008

Note: - (1) For Terrain Category 3 & 4 tents to be evacuated at wind speed 34.5m/sec
(2) For Terrain Category 1 & 2 tent to be evacuated at wind speed 28.4 m/sec
(3) See p.14 for peg loads

David J. Wills
MIEAust CPEng
Chartered Professional Engineer
Membership No. 181147
The Institution of Engineers, Australia

PROC: E8

Appendix A4

DESIGN PROJECT GROUP Pty Ltd
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215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0801
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PROC: E1(A1)
JUNE 1994

COMPUTATIONS

PROJECT NO: 06180
DATE: March 2006

PROJECT TITLE 27m x 45m Square End Tent
(Alternative Combinations
18m x 27m, 27m x 27m & 27m x 36m)
for Janlin Bigtent Hire

ARCHITECT N/A

REFERENCES AS1170
AS4100

ENGINEER

David J. Wills
MIEAust CPEng
Chartered Professional Engineer
Membership No. 181147
The Institution of Engineers, Australia

Signature: David J. Wills

Date: March 2006

PROC E1

DESIGN
DESIGN PROJECT GROUP PTY LTD
CONSULTING ENGINEERS (Inc. in Vic.)
215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0801
Fax: (03) 9388 2121
ABN 13 006 777 920

Computations
Job No. 06/80 Sheet No .....
Eng DW Date March 06

TABLE OF CONTENTS

Note:- ① For Terrain Category 3 and 4 tent to be evacuated when wind speed reaches 34 m/sec (66 knots

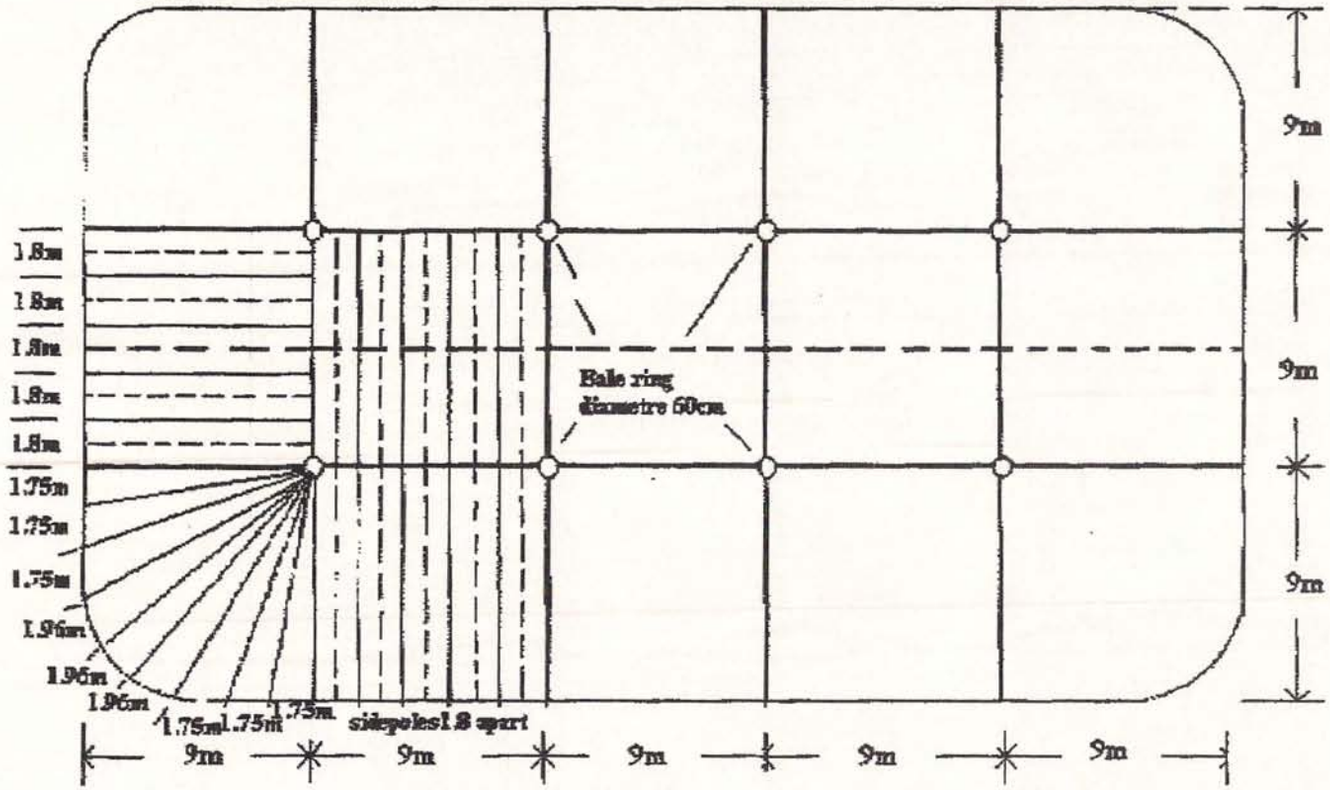
② For Terrain Category 2 and 1 tent to be evacuated when wind speed reaches 28 m/sec (54.5 knots)

Checked .....
Date .....

27m x 45m Square End Tent ROUND CORNERS

THIS TENT DOES NOT HAVE QUARTER POLES. IT RELIES ON THE HEAVY CURVATURE OF THE PANELSBETWEEN THE CENTRE POLES TO RUN WATER OFF AND CREATE A VERY TAUT ROOF TO WITHSTAND WINDS

Not to scale



Alternative lengths 4x9 bays = 36m
3x9 bays = 27m

Note: (1) Guy straps rated @ 2500kg
(2) Pegs to be 35mm truck axles (H.T. steel)
(3) Pegs located 4m out from edge of tent
(4) Side poles - 75dia x 1.6 thk M.S.

(1)

18m x 27m Square End Tent ROUND CORNERS

THIS TENT DOES NOT HAVE QUARTER POLES. IT RELIES ON THE HEAVY CRVATURE OF THE PANELS BETWEEN THE CENTER POLES TO RUN WATER OFF AND CREATE A VERY TAUT ROOF TO WITHSTAND WINDS

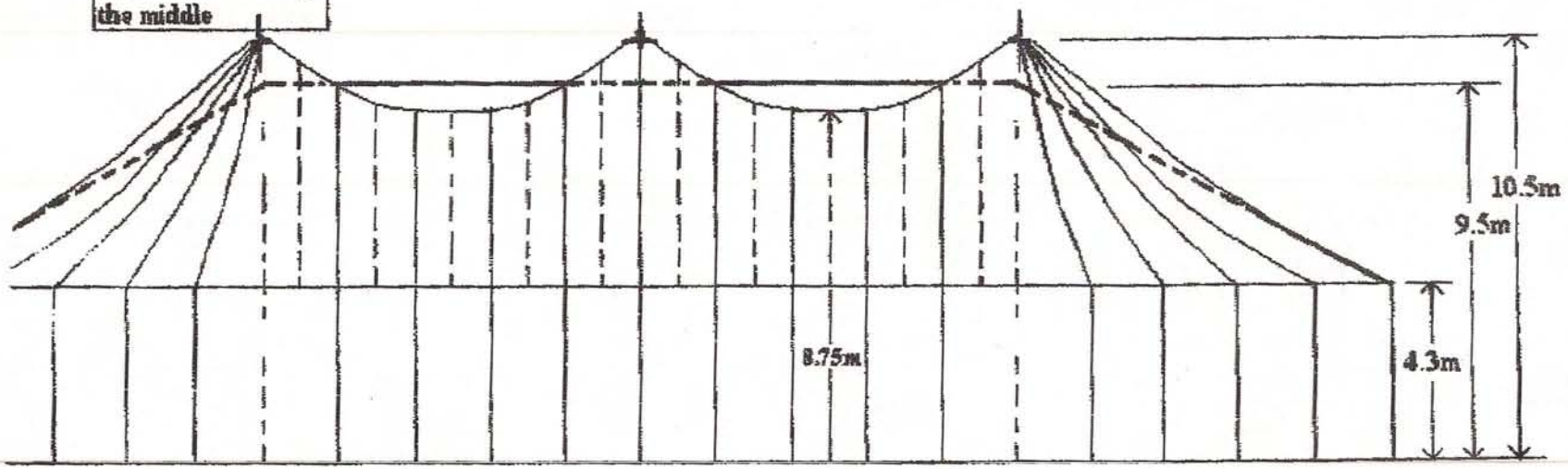
Not to scale

See Notes on page 1

LEGEND

This is the outline of the sheet through the middle

SIDE VIEW 27m wide TENT No QUARTER POLES



No. of bays varies (see plan)

(3)

LEGEND
This is the outline of the sheet across the middle
END VIEW 27m WIDE TENT no QUARTER POLES
1.5m
8.75m
Bale ring size 60cm
Bale ring size 60cm
9.5m
Sidepoles 1.75m
Sidepoles 1.8m apart
9m
9m
9m
4.3m

(7)

Bale rings for 27m x 36m tent

Not to scale

Bale rings made from 20mm solid rod with angle braces made from same

The chains are fastened to loops on the side of the bale rings and to a central link then shackled to the pull up cable that goes through the top of the centre pole

(5)

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Computations
Job No. 06180 Sheet No. 7
Eng. GNN Date March 06

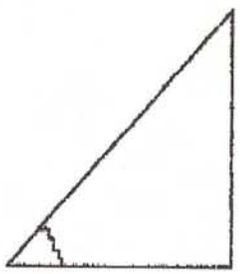
MARQUEES

WIND LOADING

From AS 1170

Vp = 41m/sec from West

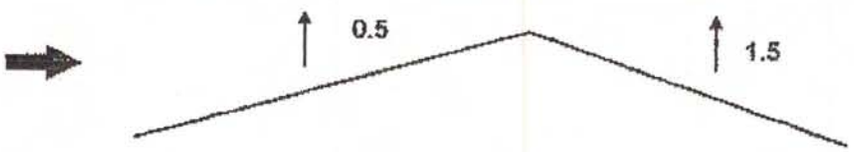
TERRAIN CATEGORIES 3 AND 4



Vz = VMzcat.Ms Mt Mi
= 41 x 0.75 x 1 x 0.8
= 24.6 m/sec

qz = $0.6 \times 24.6^2 \times 10^{-3}$
= 0.363 kPa

Worst case when sides are up and blocked underneath



Average = 1

Therefore wind load on roof = 1 x 0.363 kPa
= 0.363 kPa

TERRAIN CATEGORY 2 & 1

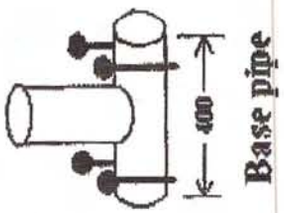
Wind Load = $(0.91 / 0.75)^2 \times 0.363 = 0.5285$ kPa

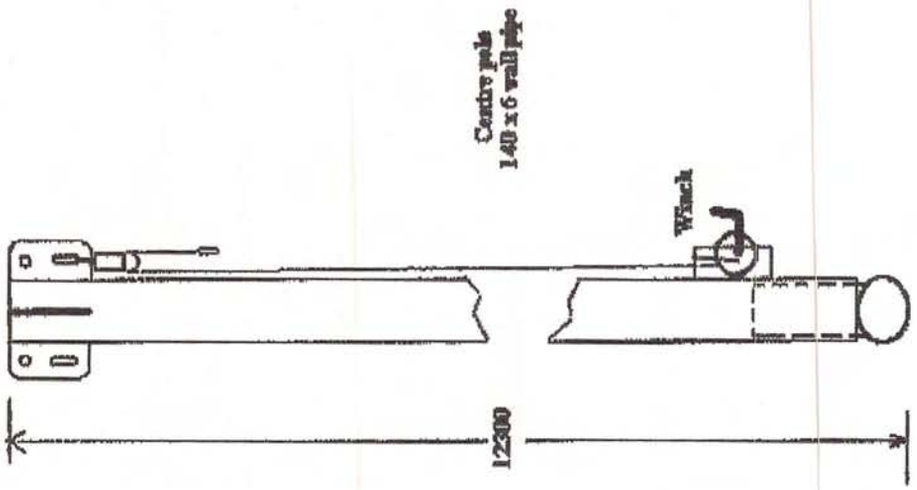
Checked .....
Date .....

1967

(6)

NOT TO SCALE





Centre pole
for 18m x 27m tent
or 27m x 27m tent
or 27m x 36m tent
or 27m x 45m tent

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Computations
Job No. 06180 Sheet No. 8
Eng. SJN Date. March 06

3.2.4 Terrain Category.

Terrain, over which the approach wind flows towards a structure, shall be assessed on the basis of the following category descriptions.

(a) Category 1 - exposed open terrain with few or no obstructions and water surfaces at servicability wind speeds (V_s) only.

(b) Category 2 - open terrain, grassland with few well scattered obstructions having heights generally from 1.5 m to 10.0 m and water surfaces at wind speeds (V_u) and (V_p).

(c) Category 3 - terrain with numerous closely spaced obstructions having the size of domestic houses (3.0 m to 5.0 m high).

(d) Category 4 - terrain with numerous large, high (10.0 m to 30.0 m) and closely spaced obstructions such as large city centres and well-developed industrial complexes.

Selection of terrain category shall be made with due regard to the permanence of the obstructions which constitute the surface roughness, in particular vegetation in tropical cyclonic regions shall not be relied upon to maintain a wooded terrain roughness.

Checked .....
Date .....

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CONSULTING ENGINEERS A.C.N. 006777920
215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0801
Fax: (03) 9388 2121

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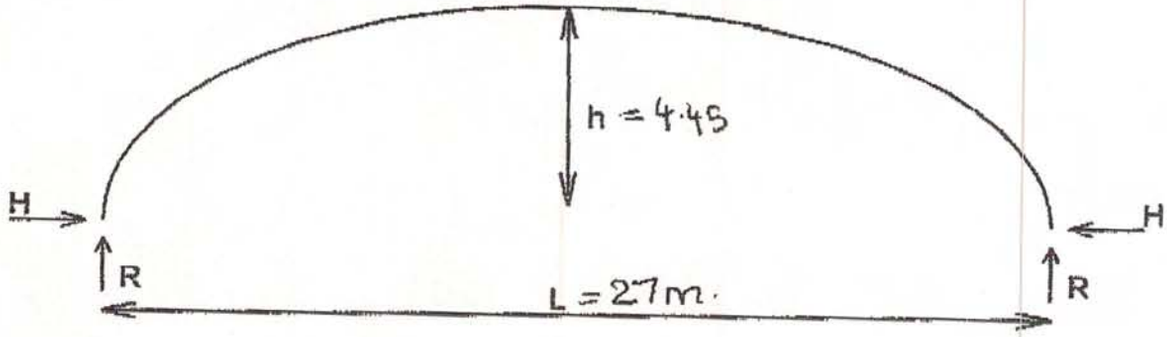
Job No. 06180 Sheet No. 9

Eng. GN Date. March 06

PVC COVERING



$$H = 0.363 \times \frac{27^2}{8 \times 4.45} = 7.433 \text{ KN/m}.$$

$$R = 0.363 \times \frac{27}{2} = 4.90 \text{ KN/m}$$

$$T_{max} = H(1 + 16\theta^2)^{1/2}$$

$$= 8.903 \text{KN/M (Terrain Categ 3\&4)} \qquad \theta = \frac{4.45}{27}$$

$$\text{Capacity of PVC} = \frac{2.65 \times 1/0.050}{4 \text{ factor of safety}} = 13.25 \text{KN/m}$$

(For terrain category 1 & 2 Tmax = 12.962 KN/m.
∴ OK)

Checked .....

Date .....

(10)

Senator™
High Performance Australian PVC

PRODUCT SPECIFICATION

PRODUCT: **SENATOR™ PVC 650 T/CD**

DESCRIPTION:	SENATOR 650 T/CD is a heavy duty, PVC Coated Tent & Tarpaulin fabric. The base fabric is a high quality, high tenacity polyester fabric in a tearstop construction. The product is also proudly 100% Australian Made for Australian conditions.
WEIGHT:	700gsm Nominal
CONSTRUCTION:	Woven Denier Polyester 9 x 8.5 with Tearstop in both directions.
WIDTH:	205cm
TENSILE STRENGTH: (AS 2001.2.3)	WARP – 3320N WEFT – 2650N
TONGUE TEAR: (BS 3424.5)	WARP – 650N WEFT – 650N
FLEX CRACKING: (AS [illegible])	400,000 Cycles
COATING ADHESION:	90 N.
COLD CRACK TEMP:	-30°C
SPECIAL FEATURES:	**Flame Retardent** tested to AS1530 parts 2 and 3 Test report available, **UV Treated, Antifungicide. Acrylic Lacquer Coated.**
Stock Colours:	As Required

21.

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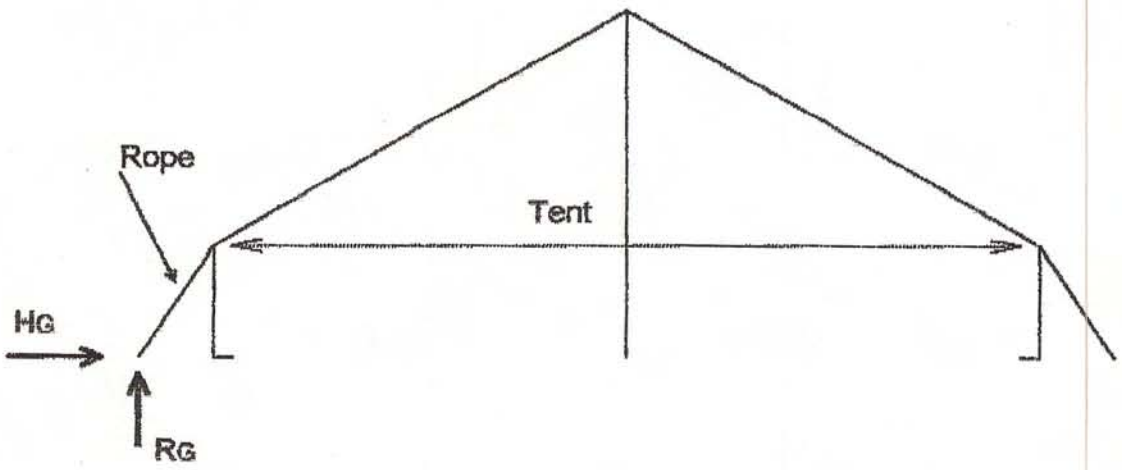
Job No. 06180 Sheet No. 11

Eng. DJN Date. March 06

ROPE CAPACITY



R_G = 4.9 KN/M

$H_G \approx 0.363 \times \frac{35^2}{8 \times 8.75}$ = 6.35 KN/M

$T_{max} = H(1 + 16\theta^2)^{1/2}$ $\theta = \frac{8.75}{35}$

= 8.98 KN/M

∴ Load per rope = 8.98 x 1.8 = 16.2 KN
(Terrain Categ 3 & 4)

Use 2500 kg straps

{ Terrain Categ 1 & 2
Load per rope = 23.58 KN OK }

Checked .....
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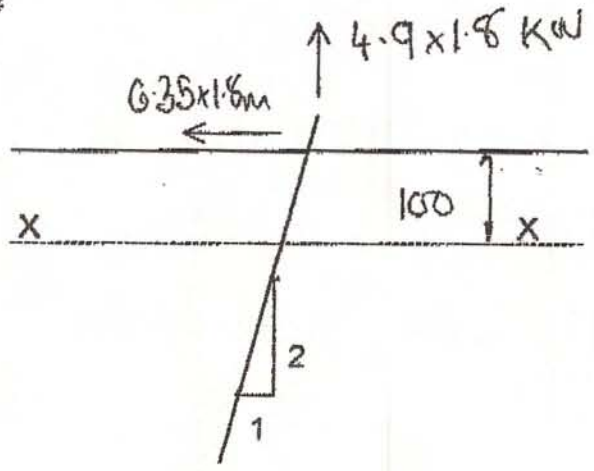
Job No. 06180 Sheet No. 12
Eng. DW Date. March 06

PEGS



Moment in peg about X - X

$= 6.35 \times 1.8 \times 0.100 + 4.9 \times 1.8 \times 0.05$

$= 1.575$ KN m

$$f_b = \frac{1.575 \times 10^6}{0.0982 \times 35^3} = 374 \text{ kPa} < 262 \times 1.33 \text{ MPa}$$

Note:- Depth of peg to be determined on site by experience and testing

Reduce Wind Load Terrain Category 3 & 4 to 34 m/sec
$q_z = 0.25$ kPa $\therefore f_b = .257$ MPa OK

Reduce Wind Load Terrain Category 2 & 1 to 28 m/sec
$q_z = 0.243$ kPa OK

Checked .....
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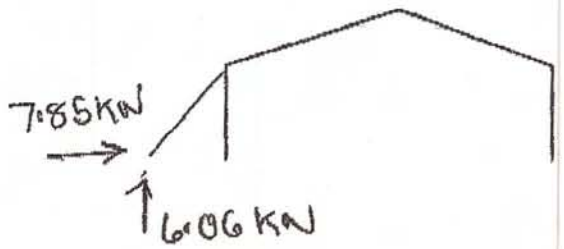
Job No. 06180 Sheet No. 13

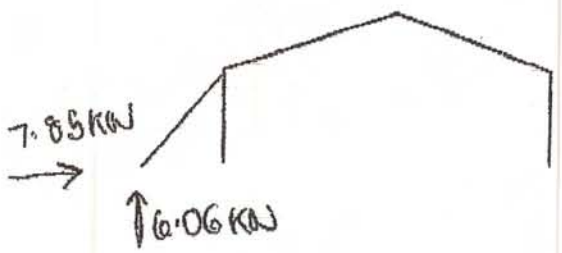
Eng. DW Date. March 06

LOADS (with sides of tent up)

Terrain Category 3 & 4



Terrain Category 2 & 1



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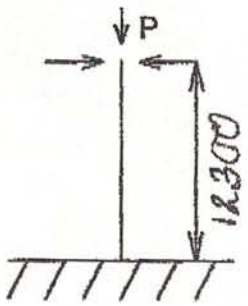
Job No. 06180 Sheet No. 14

Eng. ONJ Date. March '06

CENTRE POLE



$P = 700\,g(sqm) \times \frac{1}{1000} \times \frac{9.8}{1000} \times 9 \times 9 \times 1.414$

$= 0.786\,KN$

140 dia x 5 thick CHS

Area $= 2120\,mm^2$

$r = 47.7$

Effective Length $= 10.3\,m$

$\frac{L}{r} = \frac{10.3 \times 0.85 \times 1000}{47.7} = 183$

Fac $= 13\,MPa$

$P_{cap} = 27.56\,KN$ OK

Checked .....

Date .....

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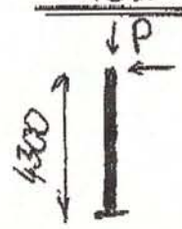
Job No. 06180 Sheet No. 15

Eng. DW Date. March 06

SIDE POLE (76 dia x 1.6 Thick)



Axial Capacity = ?

$$r_x = r_y = \frac{1}{4}\sqrt{76^2 + 72.8^2} = 26.3$$

$$\frac{L}{r_y} = \frac{4300}{26.3} = 163 \Rightarrow F_{ac} = 30\ MPa$$

$$\text{Axial Capacity} = 30\left(\frac{\pi \times 76^2}{4} - \frac{\pi \times 72.8^2}{4}\right)$$

$$= 11.22\ KN.$$

$$P_{actual} = 700 \times \frac{1}{1000} \times \frac{9.8}{1000} \times (1.414 \times 1.8 \times 1.9 + 1.8 \times 4.3)$$

$$= 0.01\ KN \quad OK.$$

Checked .....

Date .....

Appendix A5

DESIGN PROJECT GROUP Pty Ltd
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Telephone: (03) 9388 0801
Fax: (03) 9388 2121

PROC: E1(A1)
JUNE 1994

COMPUTATIONS

PROJECT NO: 962620
DATE: March 2000

PROJECT TITLE 25.8m Diameter x 6.12m Long
Pole and Peg Marquee
for
Jamlin Circuses Pty Ltd

ARCHITECT N/A

REFERENCES AS1170
AS 4100
AS 3900

ENGINEER David Wills
Registered Building Practitioner EC1043

Signature: David J. Wills

Date: March 2000

David J. Wills
MIEAust CPEng
Chartered Professional Engineer
Membership No. 181147
The Institution of Engineers, Australia
I E Aust

DESIGN PROJECT GROUP PTY LTD
CONSULTING ENGINEERS A.C.N. 054150917 (Inc. In Vic.)
215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0801
Fax: (03) 9388 2121

Computations
Job No. 96220 Sheet No. .....
Eng. DNW Date. .....

TABLE OF CONTENTS

Checked .....
Date .....

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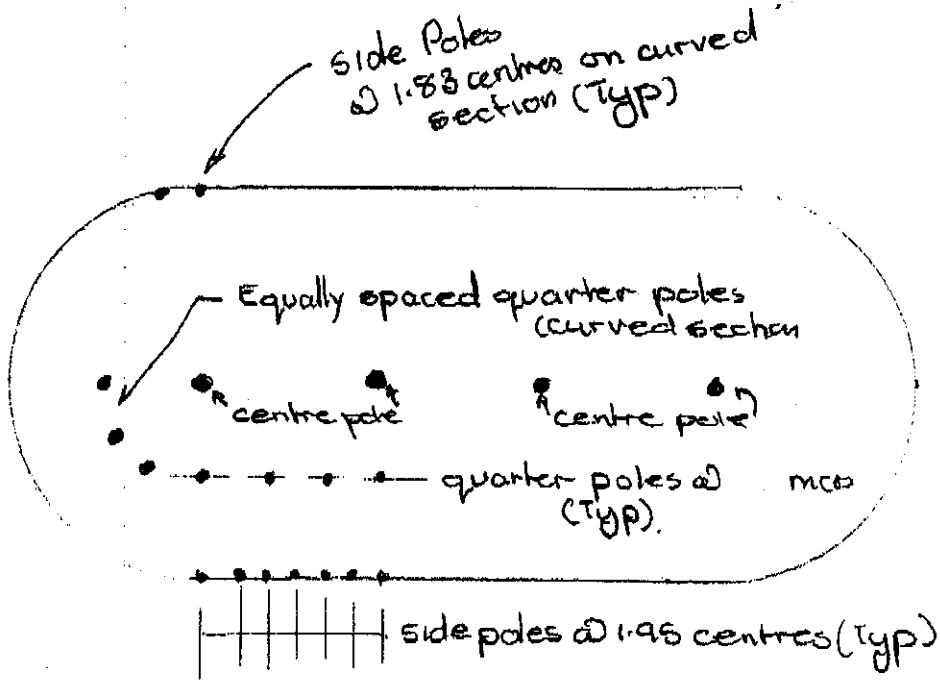
CONSULTING ENGINEERS A.C.N. 054150917 (Inc. in Vic.)
215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0801
Fax: (03) 9388 2121

Computations
Job No. 96262D Sheet No. 1 *
Eng. DM Date. March 2000



Plan

Note:- When wind speed exceeds 30knots (15.4m/sec.) the tent must be evacuated.

Checked .....
Date .....

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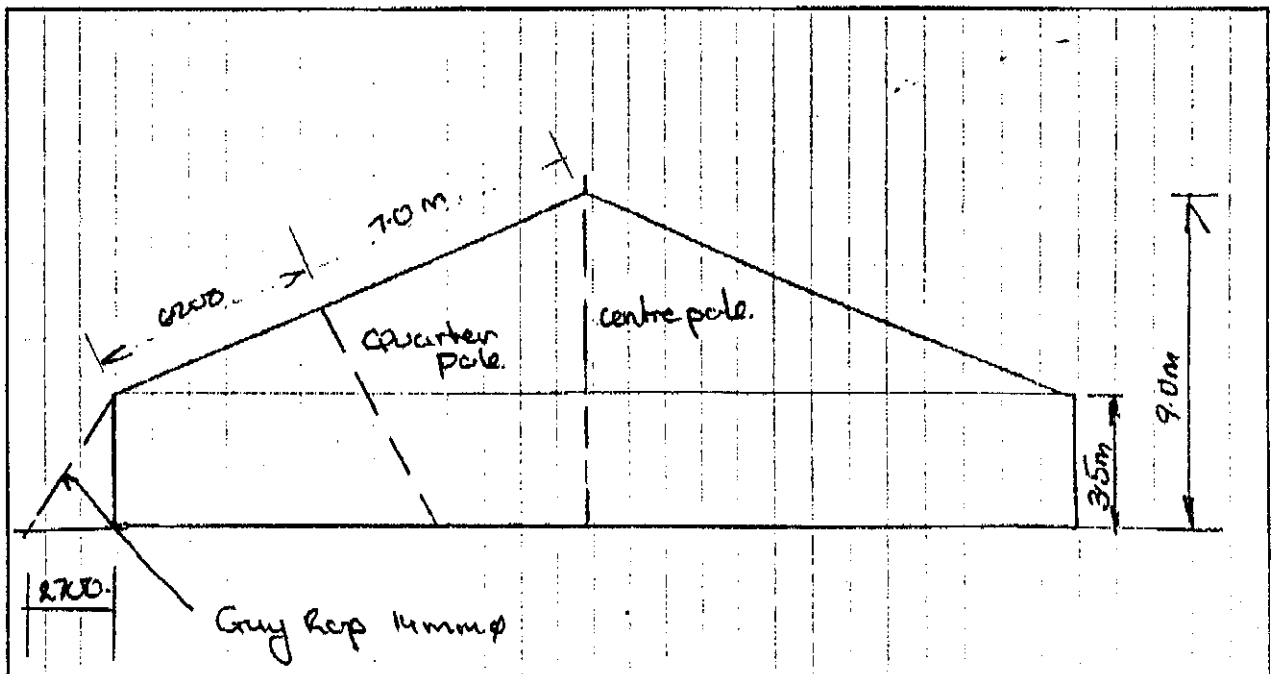
Computations

Job No. 96262D Sheet No. 2

Eng. OW Date. Feb 2000



Elevation

Centre Pole	140 dia x 5 mm wall (baseplate 140φ pipe x 400 long)
Quarter Pole	dia x . mm wall (baseplate 100 dia 6 thk)
Side Pole	50 dia x 2. mm wall (baseplate 55 dia 3 thk

Checked .....

Date .....

DESIGN

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Computations
Job No. 9626D Sheet No. 3
Eng. BW Date. Feb 2000

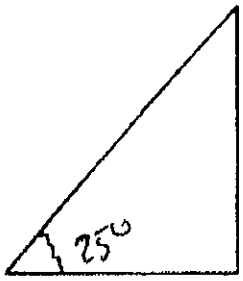
MARQUEES

WIND LOADING

From AS 1170

Vp = 41m/sec from West

TERRAIN CATEGORIES 3 AND 4



Vz = VMzcat.Ms Mt Mi

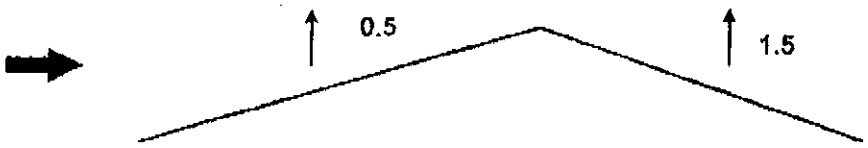
= 41 x 0.75 x 1 x 0.8

= 24.6 m/sec

$qz = 0.6 \times 24.6^2 \times 10^{-3}$

= 0.363 kPa

Worst case when sides are up and blocked underneath



Average = 1

Therefore wind load on roof = 1 x 0.363 kPa

= 0.363 kPa

TERRAIN CATEGORY 2

Wind Load = $(0.91 / 0.75)^2 \times 0.363 = 0.5285$ kPa

TERRAIN CATEGORY 1

Wind Load = $(1.05 / 0.75)^2 \times 0.363 = 0.7115$ kPa

Checked .....
Date .....

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215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0801
Fax: (03) 9388 2121

Computations

Job No. 962620 Sheet No. 4

Eng. DW Date Feb 2000

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Terrain, over which the approach wind flows towards a structure, shall be assessed on the basis of the following category descriptions.

(a) Category 1 - exposed open terrain with few or no obstructions and water surfaces at servicability wind speeds (V_s) only.

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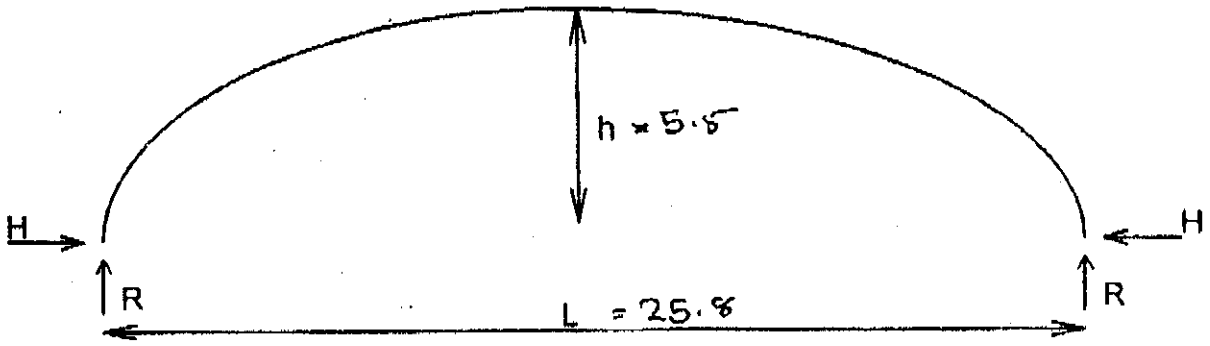
CONSULTING ENGINEERS A.C.N. 006777920
215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0801
Fax: (03) 9388 2121

Computations
Job No. 962620 Sheet No. 5
Eng. DW Date. Feb 2020

PVC COVERING



$$H = 0.363 \times \frac{25.8^2}{8 \times 5.5} = 5.49\ KN/m$$

$$R = 0.363 \times \frac{25.8}{2} = 4.68\ KN$$

$$T_{max} = H(1 + 16\theta^2)^{1/2} = 7.21\ KN \qquad \theta = \frac{5.5}{25.8}$$

$$\text{Capacity of PVC} = \frac{2.4 \times \frac{1}{0.050}}{6\ \text{factor of safety}} = 8KN$$ OK Terrain Categ 3 & 4

Terrain Categ 2 allowable wind speed
$= \left(\sqrt{\frac{8}{7.21} \times \frac{0.363}{0.5285}}\right) \times 41 = 35.17 m/sec$

Terrain Categ 1 allowable wind speed
$= \left(\sqrt{\frac{8}{7.21} \times \frac{0.363}{0.715}}\right) \times 41 = 30.84 m/sec.$

Checked .....
Date .....

(6)

BIRKMYRE

PVC 650 TEAR PROOF

Width: 188 cm
Base Cloth: 1100Dtex Polyester 9x9
Weave: Tear Stop
Weight: 625 gm/mt² (min.)
625 - 700 gm/mt² (typical value)
Finish: Fire Retardent P.V.C. coated
with maximum U.V. absorbers
Tensile Strength: 2600 N/5cm warp
(AS2001.2.3) 2400 N/5cm weft
Tongue Tear: 640 N warp
(BS3424.7B) 550 N weft
Coating Adhesion: 90 N/5cm (min.)
Flex Cracking Resistance: 400,000 cycles (min.)
Cold Crack Temp.: Minus 20°C
Roll Lengths: 45mt/roll

Colours: (In order of appearance)
Red R134 — Light Blue N250 — Emerald G198
Yellow C77 — Orange R83 — Royal N198
White W7 — Olive G183 — Green G161
Cherry R102 — Blue N38 — Brown B297
Black Z

1983

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215 Albert Street, Brunswick 3056
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Fax: (03) 9388 2121

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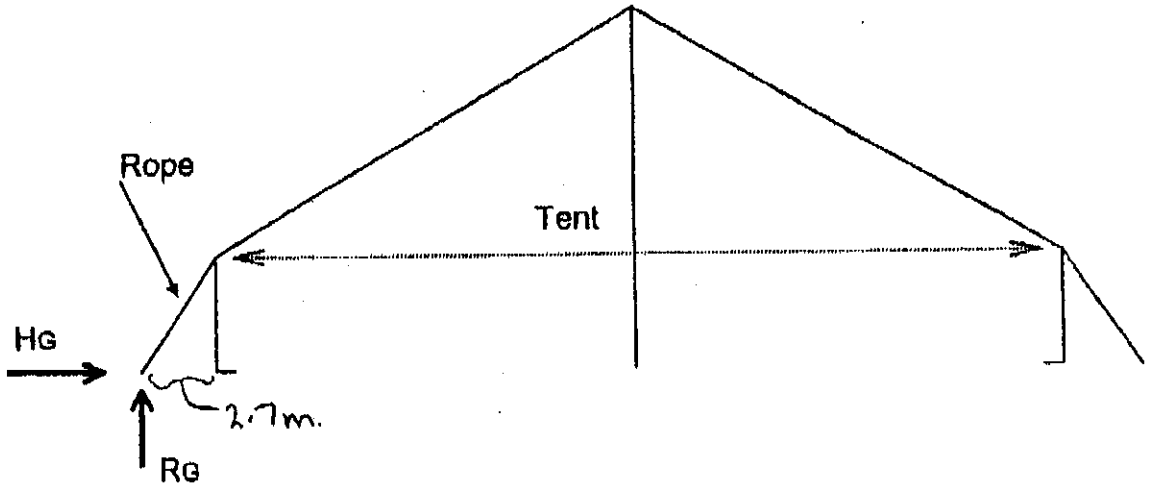
Job No. 967620 Sheet No. 17
Eng. DW Date. Feb 2000

ROPE CAPACITY



R_G = 4.68 KN/M

$H_G \approx 0.363 \times \frac{31.2^2}{8 \times 9}$ = 491 KN/M

$T_{max} = H(1 + 16\theta^2)^{1/2}$ $\theta = \frac{9}{31.2}$

= 7.497 KN/M

∴ Load per rope = 7.497 x 1.95 = 1462 KN

Use 14mm ø rope silver

Capacity = $\frac{21.1}{3}$ factor of safety = 7.0 KN

Allowable wind speed = $\left(\sqrt{\frac{7}{1462}}\right) \times 41$ = 28.37 m/sec

Terrain Category 2 = $28.37 \times \sqrt{\frac{0.363}{0.6258}}$ = 23.51 m/sec.

Terrain Category 1 = $28.37 \times \sqrt{0.268/0.7115}$ = 20.26 m/sec

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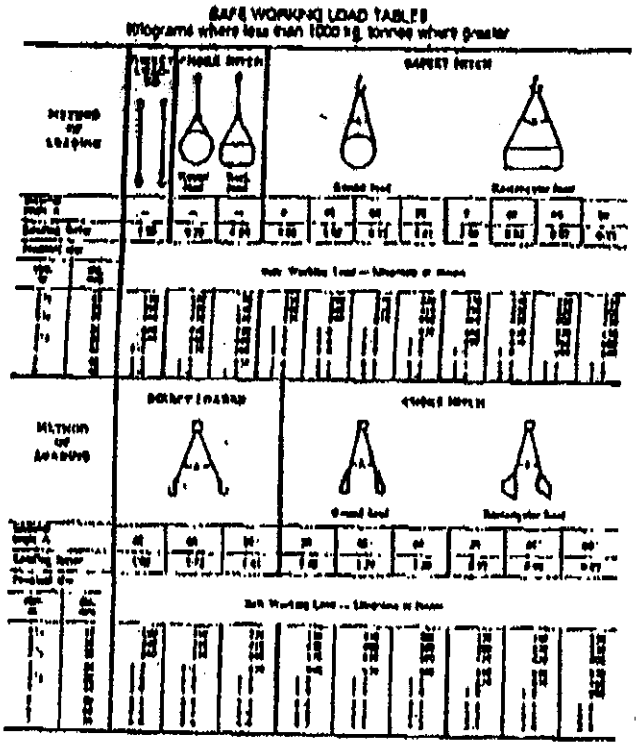
Date .....

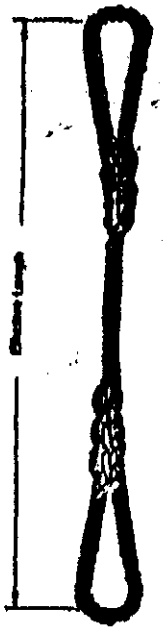
FIBRE-ROPE SLINGS

(OF NATURAL OR SYNTHETIC ROPE)

AS 1380 - 1972



A. SINGLE-PART WITH SOFT EYES



B. ENDLESS

The following rules should always be observed in estimating the safe working load of any rope.

(1) For use as lifelines, slings and general lifting gear in medium factories and workshops for moderate work (but not handling hot materials or liquids injurious to human life and limb or the rope itself) and where not subject to rough usage, the factor of safety shall be at least six (6).

(2) For use as tackles, ship's purchases, lashings, slings, shifters and general lifting gear in heavy industries where rope is subject to rough usage, the factor of safety shall be at least seven (7).

When supporting personnel the factor of safety shall be at least 10 with a minimum size of rope to be used 19 mm dia. (2½" circ.).

COMPARISON ROPE TABLE FOR LAID ROPES

Size of Rope		Sisal or Manila		Polypropylene Fibre or Multi Filament		Polyethylene Monofilament		Nylon (Polyamide) Multi Filament		Polyester Multi Filament		Silverplume (Polyethylene-Polypropylene Blend)	
Diameter mm	Circumference Inch	Approximate Breaking Force		Approximate Breaking Force		Approximate Breaking Force		Approximate Breaking Force		Approximate Breaking Force		Approximate Breaking Force	
		kN	TonF	kN	TonF	kN	TonF	kN	TonF	kN	TonF	kN	TonF
3	⅛			1.5	15	1.0	.10	1.8	.18	1.7	.17		
4	¼	1.4	.14	2.4	.24	2.0	.20	3.7	.37	3.7	.37		
5	⅜	1.7	.17	3.3	.33	2.8	.28	3.9	.39	3.8	.38		
6	¼	2.6	.26	4.5	.45	3.9	.39	5.5	.55	5.3	.53	4.8	.48
7	9/32	3.4	.34	6.3	.63	5.3	.53	7.6	.76	7.1	.71		
8	5/16	4.7	.47	8.5	.83	7.1	.66	10.0	1.0	9.3	.93	7.7	.77
9	11/32	5.2	.52	10.6	1.06	8.8	.86	12.5	1.25	11.6	1.16		
10	3/8	6.2	.62	12.8	1.28	10.7	1.07	15.3	1.53	14.0	1.4	11.4	1.14
12	7/16	8.3	.83	18.3	1.83	15.0	1.5	22.0	2.2	20.0	2.0	15.9	1.59
14	1/2	12.6	1.26	25.0	2.5	20.9	2.0	31.0	3.1	27.4	2.74	21.1	2.11
16	5/8	16.0	1.6	30.0	3.0	27.4	2.74	38.8	3.88	36.0	3.6	26.8	2.68
18	11/16	21.0	2.1	38.8	3.94	33.8	3.38	49.1	4.91	45.0	4.5	32.7	3.27
20	3/4	26.2	2.62	49.6	4.96	41.8	4.18	62.3	6.23	55.0	5.5	38.6	3.86
22	7/8	32.4	3.24	58.8	5.88	49.8	4.98	74.7	7.47	67.0	6.7	45.0	4.5
24	1	39.8	3.98	68.7	6.87	58.8	5.88	99.8	9.98	80.0	8.0	53.9	5.39
26	1¼	53.0	5.3	84.6	8.46	73.7	7.37	120	12.0	106	10.6	72.6	7.26
32	4	66.0	6.6	120	12.0	102	10.20	154	15.4	134	13.4	95.0	9.5
36	1½	84.7	8.47	153	15.2	128	12.8	189	18.9	160	16.0	120	12.0
40	5	103	10.3	184	18.4	153	15.3	234	23.4	204	20.4	147	14.7
48	6	149	14.9	259	25.9	219	21.9	329	32.9	288	28.8		
56	7	196	19.5	349	34.8	296	29.6	443	44.3	386	38.6		
64	8	251	25.1	446	44.6	378	37.8	561	56.1	496	49.6		
72	9	314	31.4	558	55.8	470	47.0	697	69.7	621	62.1		
80	10	385	38.5	697	69.7	568	56.8	839	83.9	765	76.6		

NOTE: The approximate Breaking Force given in this Table must in no way be construed as a safe working load of the rope.

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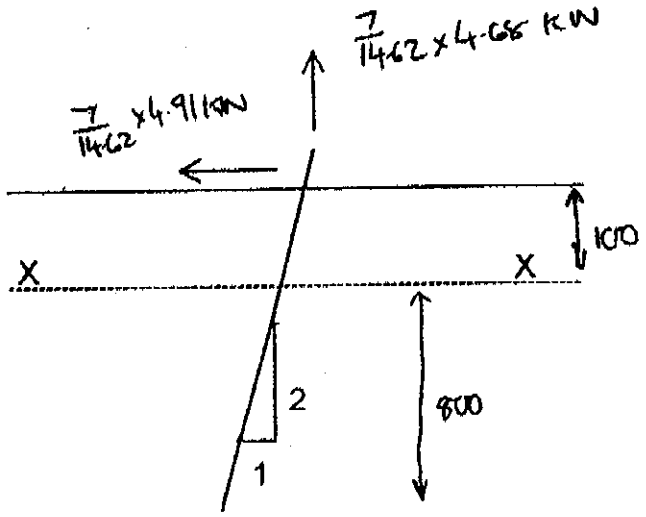
215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0801
Fax: (03) 9388 2121

Computations
Job No. 962620 Sheet No. 9
Eng. PW Date. Feb 2000

PEGS



Moment in peg about X - X

$= 0.05 \times \frac{7}{14.62} \times 4.68 + 0.1 \times \frac{7}{14.62} \times 4.91$

$= 0.347$

Using 35mm ϕ (HS steel peg)

$f_b = \frac{0.347 \times 10^6}{0.0982 \times 35^3} = 82.6 MPa, < 262 \times 1.33 \text{ MPa}$

Note:- Depth of peg to be determined on site by experience and testing

Checked .....
Date .....

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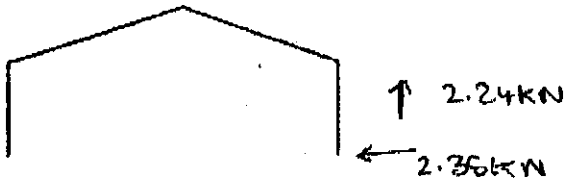
Computations

Job No. 962620 Sheet No. 10

Eng. GNW Date. Feb 2000

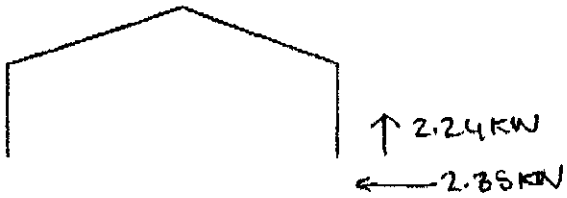
LOADS (with sides of tent up)

Terrain Category 3 & 4



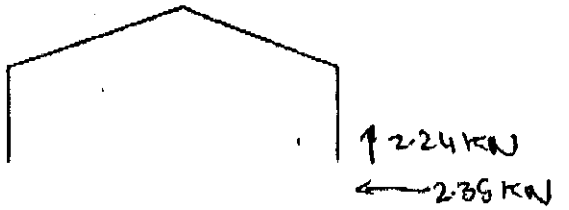
Allowable wind speed = 25.37 m/sec

Terrain Category 2



Allowable wind speed = 23.61 m/sec

Terrain Category 1



Allowable wind speed = 20.26 m/sec

Checked .....

Date .....

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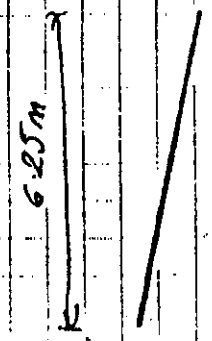
Computations
Job No. 9x262D Sheet No. 11*
Eng. JMW Date. Feb 2001

QUARTER POLE DESIGN



100 mm dia x 6mm thick base plate.

100 dia x 2.8

$A = \frac{\pi}{4}(75^2 - 71.8^2) = 368 mm^2$

$r_x = \frac{1}{4}\sqrt{75^2 + 71.8^2} = 25.9$

$\frac{L}{r} = \frac{6250}{25.9} = 240.7$

$\Rightarrow F_{ac} = 15 MPa$

Area supported $= \frac{12.9}{2} \times 4 = 25.8 m^2$

Mass PVC $= 0.01 \times 25.8 = 0.258 kN$

From Safe Load tables capacity of 75 dia x 1.6 mm CHS
$= 5.53 kN$

Base plate bearing pressure $= \frac{0.258 \times 10^3}{\pi \times \frac{100^2}{4}} = 0.033 kPa$

OK

Checked .....
Date .....

DESIGN

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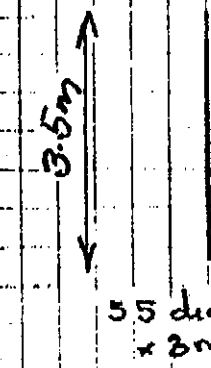
Computations
Job No. 96262D Sheet No. 12
Eng. RNW Date. Feb 2000

SIDE POLE DESIGN



Joined with 6mm ϕ bolts

50 ϕ x 2.6

$A = \frac{\pi}{4}(50^2 - 46^2) = 3016 mm^2$

$r_x = \frac{1}{4}\sqrt{50^2 + 46^2} = 16.98$

$\frac{L}{r} = \frac{3500}{16.98} = 206$

$F_{sc} = 20 MPa$

Area supported = $\frac{12.9}{2 \times 2} \times 1.95 - \frac{12.6}{2} m^2$

Mass PVC = $0.01 \times \frac{12.6}{2} = 0.125 kN = 0.063k$

From safe load tables capacity of 50 ϕ x 2.0mm

C.H.S = 6.0 kN

allow for wa

Base plate bearing pressure = $\frac{0.063 \times 10^3 \times 2}{\pi \times \frac{55^2}{4}}$

= 0.052 kPa O.K.

Checked .....

Date .....

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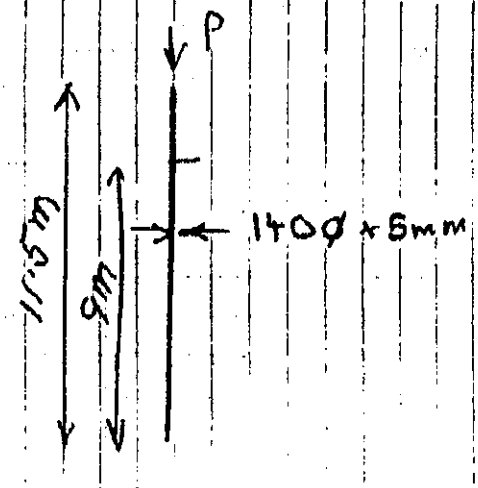
Computations

Job No. 960620 Sheet No. 13

Eng. RNW Date. Feb 20

CENTRE POST DESIGN



$A = 2120\ mm^2$

$r = 47.7\ mm$

effective length 9m

$P_{comp} = 50.3\ kN$

$M_{comp} = 8.92\ kNm$

Base plate 140ϕ x 400 long

$P \approx 3\ kN$ OK.

JTM

Checked .....

Date .....

1990

AP

Appendix A6

DESIGN

DESIGN PROJECT GROUP Pty Ltd
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215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0601
Fax: (03) 9388 2121

PROC: E1(A1)
JUNE 1994

COMPUTATIONS

PROJECT NO: 972084
DATE: Feb 2000

PROJECT TITLE

Cupola Style 4-Pole Big Top
36m dia
for
Jarlun Circuses Pty Ltd

ARCHITECT

REFERENCES

AS1170
AS4100
AS3900

ENGINEER I David Wills
Registered Building Practitioner EC-1043

Signature: David J. Wills

Date: Feb 2000

David J. Wills
MIEAust CPEng
Chartered Professional Engineer
Membership No. 181147
The Institution of Engineers, Australia

We, Ken Brown and Associates confirm that we have checked the calculations and reviewed the details shown on this drawing for compliance with the relevant Australian Standards and the Building Act.

Ken Brown RPEQ 1514

PROC E1

1992

AAA

DESIGN

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Fax: (03) 9388 2121

Computations

Job No. 97206A Sheet No. .....

Eng. GNV Date. .....

TABLE OF CONTENTS

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Ken Brown RPEQ 1514

Checked .....

Date .....

1993

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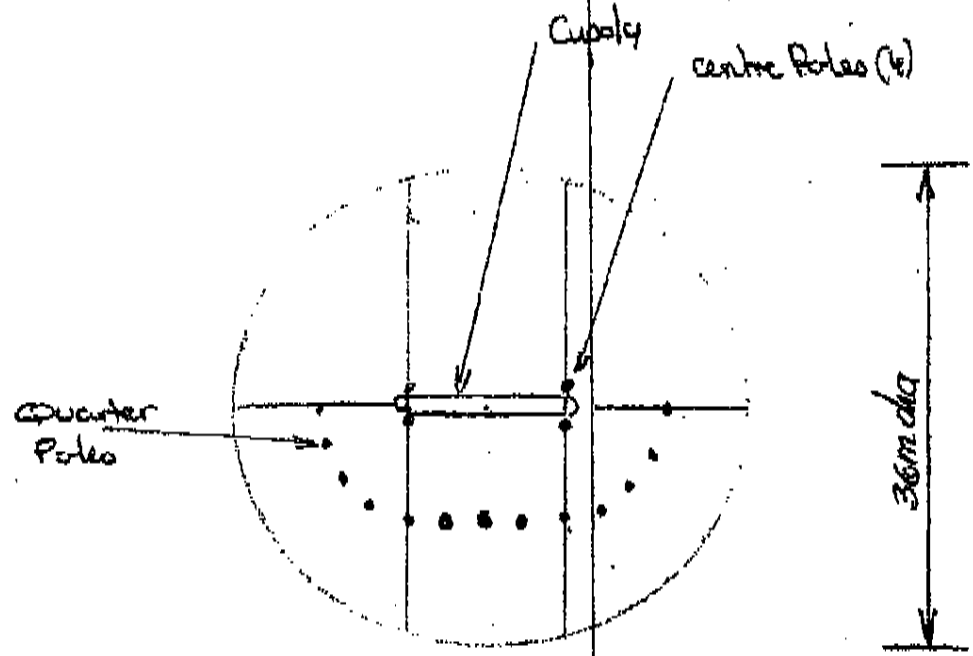
Computations

Job No. 972064 Sheet No. 1

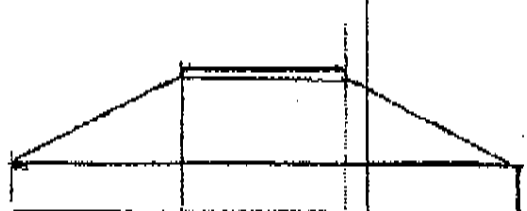
Eng. GW Date. Feb 2000



Roof Plan

Note:- The tent should be evacuated under the following conditions

(1) Terrain Category 3 when wind speed reaches 32.7 m/sec (60 km/h
(2) " " 2 " " " " 27 m/sec (53 km/h
(3) " " 1 " " " " 23 m/sec (45 km/h



Elevation

We, Ken Brown and Associates confirm that we have checked the calculations and reviewed the details shown on this drawing for compliance with the relevant Australian Standards and the Building Act.

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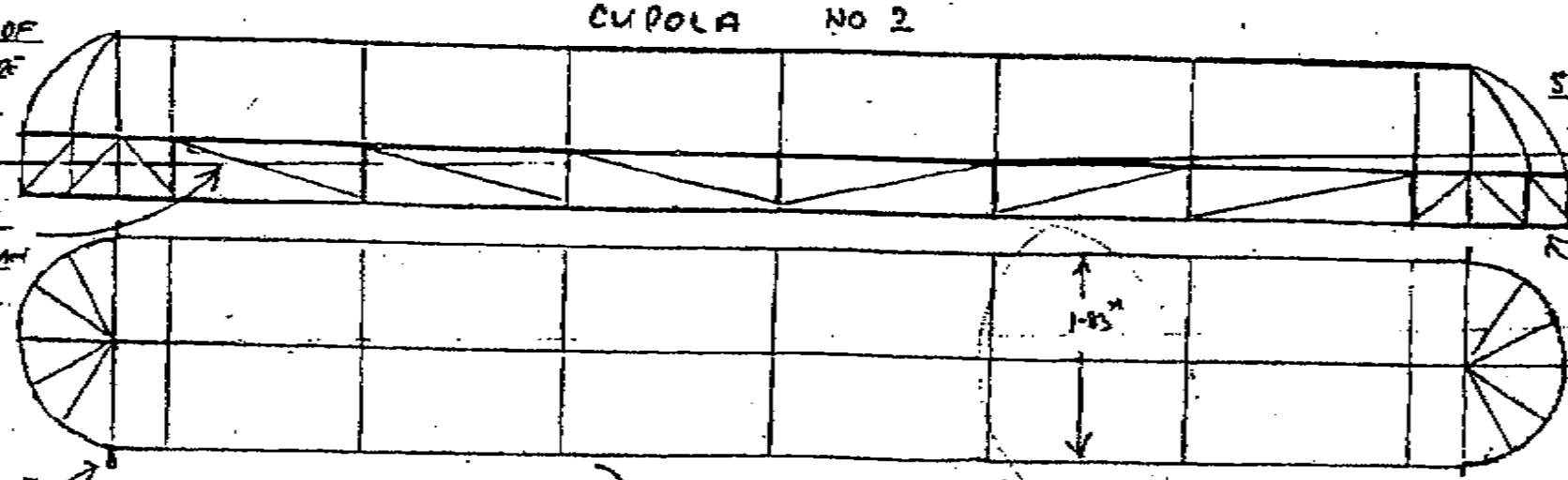
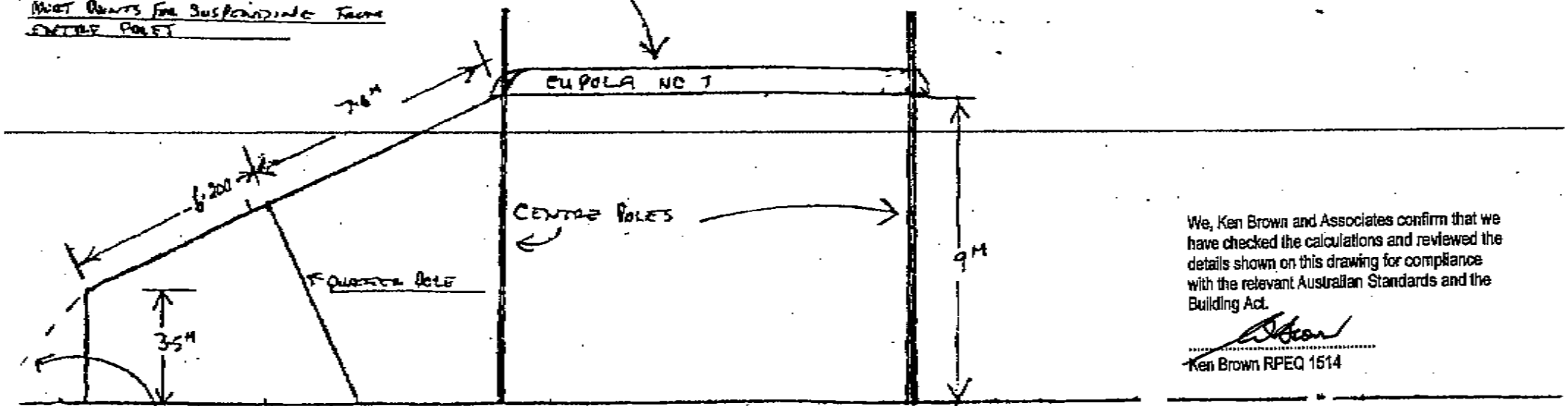
CUPOLA NO 2





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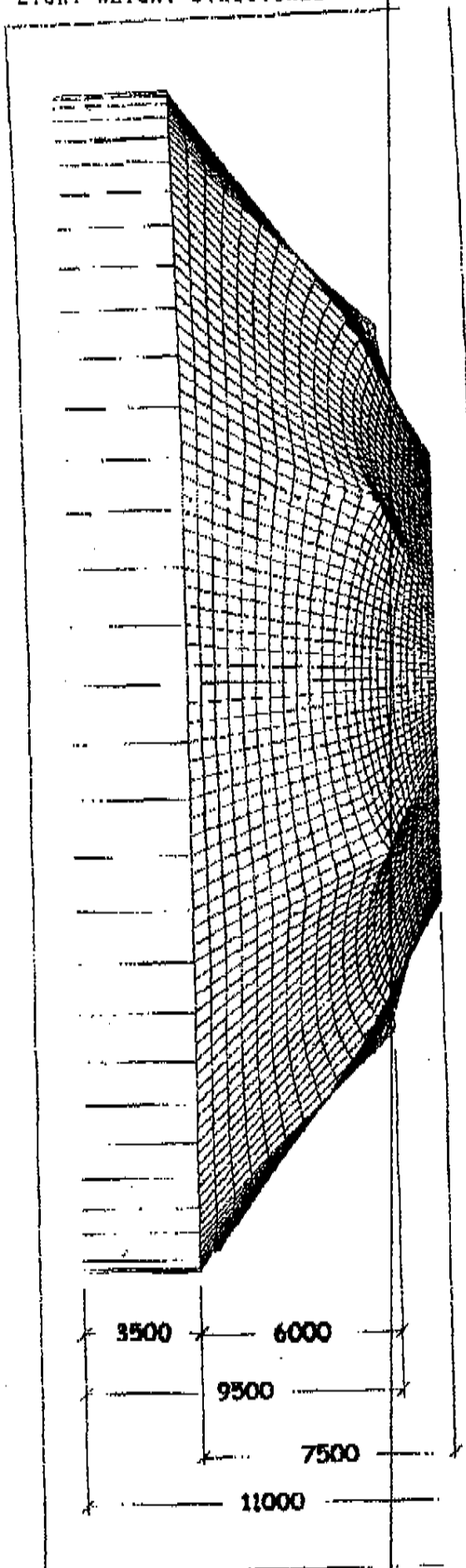
CUM STRAPS 3 TONNE CAPACITY

CENTRE POLES (OFF) 11.5M LONG
DIAM 140MM x 5MM WALL

QUARTER POLES
DIAM. 100MM x 2.6MM WALL

SIDE POLES
DIAM 50MM x 1.6MM WALL

12M 12M



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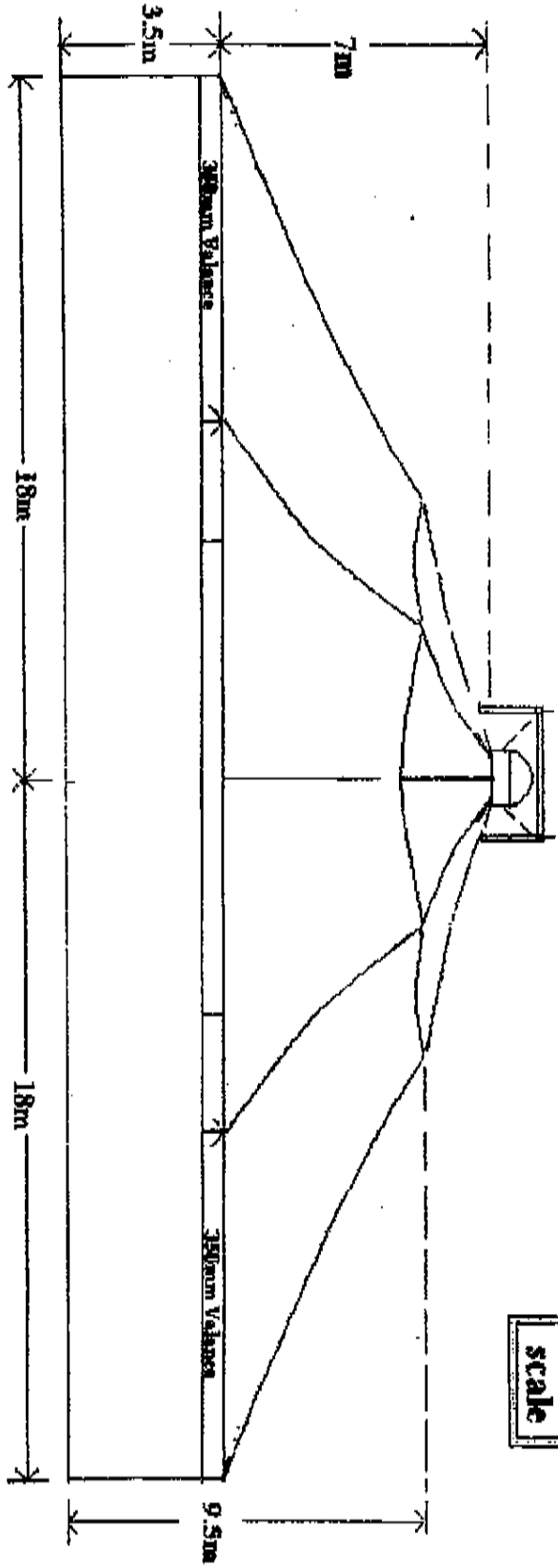
1996



END VIEW 36m TENT 8 QUARTER POLES

Not to scale

We, Ken Brown and Associates confirm that we have checked the calculations and reviewed the details shown on this drawing for compliance with the relevant Australian Standards and the Building Act.

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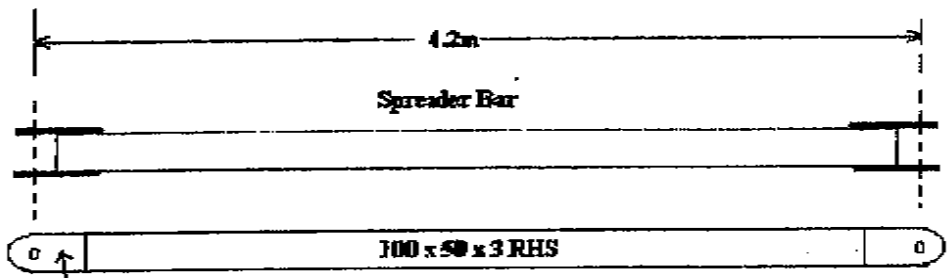
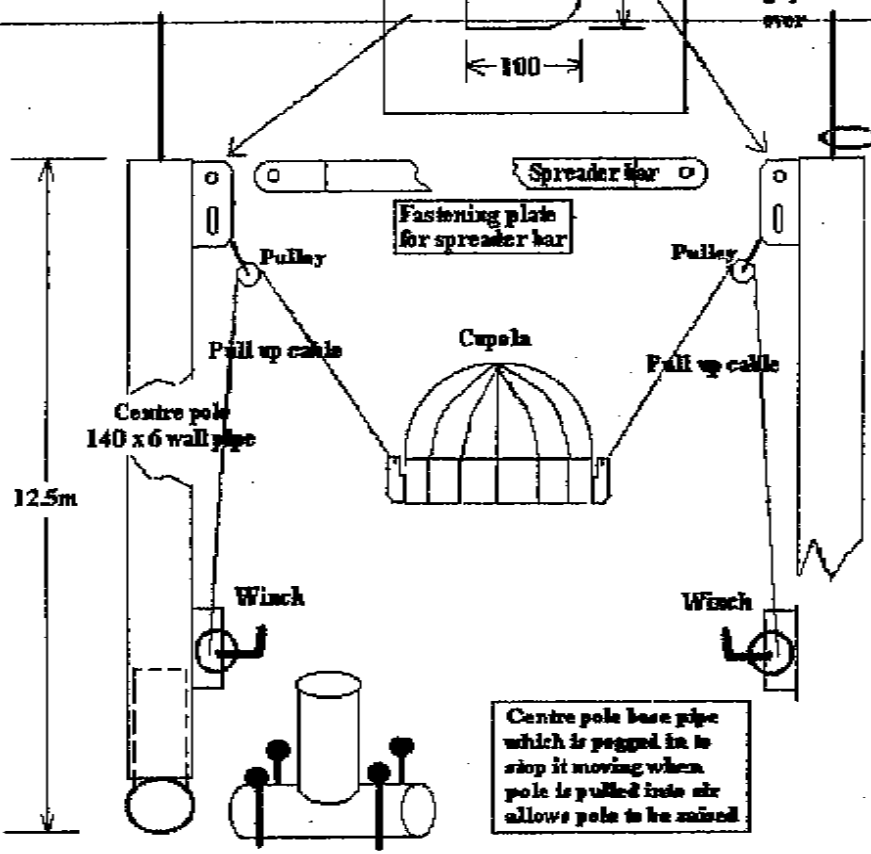
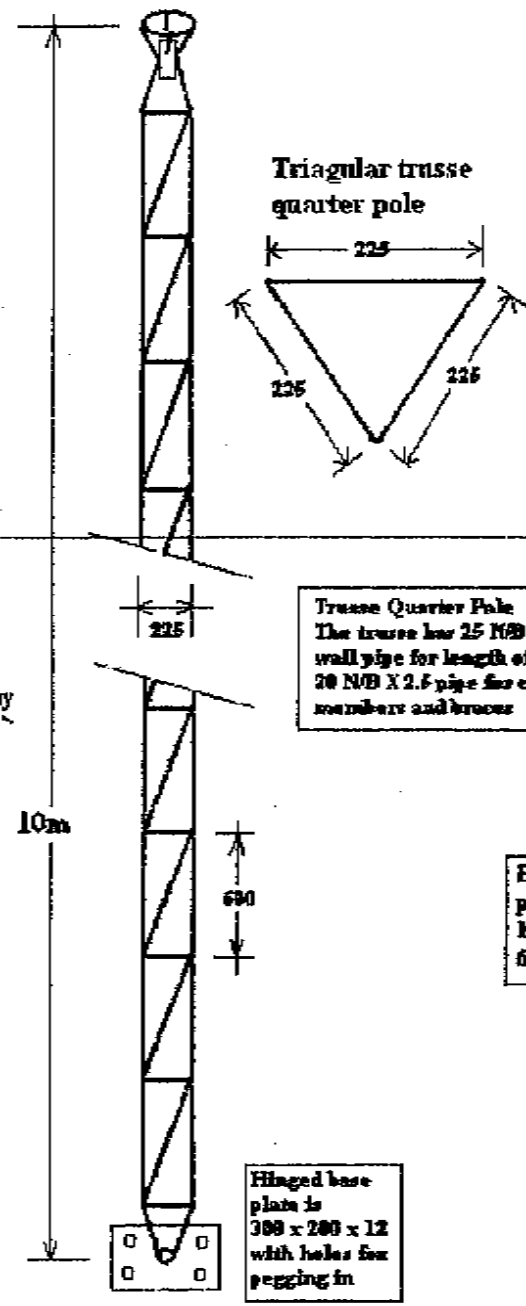
1997







Truss Quarter Pole
The truss bar 25 N/B x 2.5mm wall pipe for length of pole and 20 N/B X 2.5 pipe for cross members and braces

Pipe quarter pole
100 N/B x 6mm wall

Side pole
40 N/B
x 2mm wall
3500 long

We, Ken Brown and Associates confirm that we have checked the calculations and reviewed the details shown on this drawing for compliance with the relevant Australian Standards and the Building Act.

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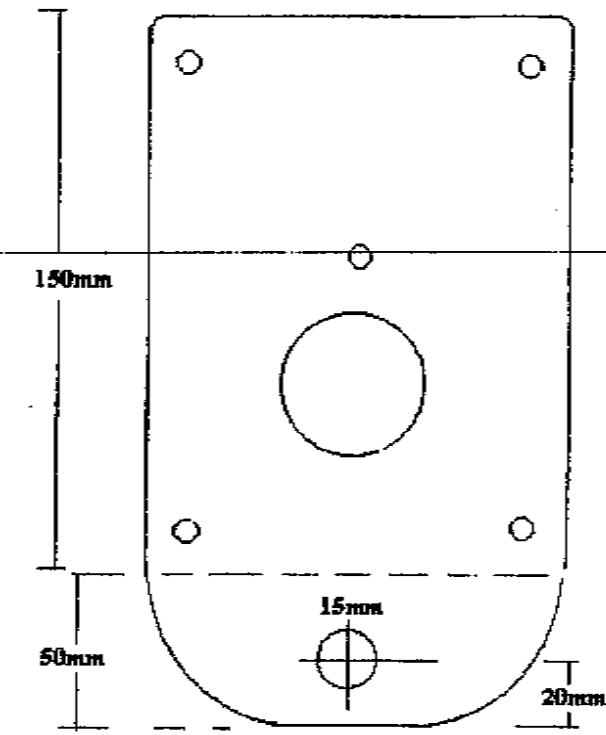
1998

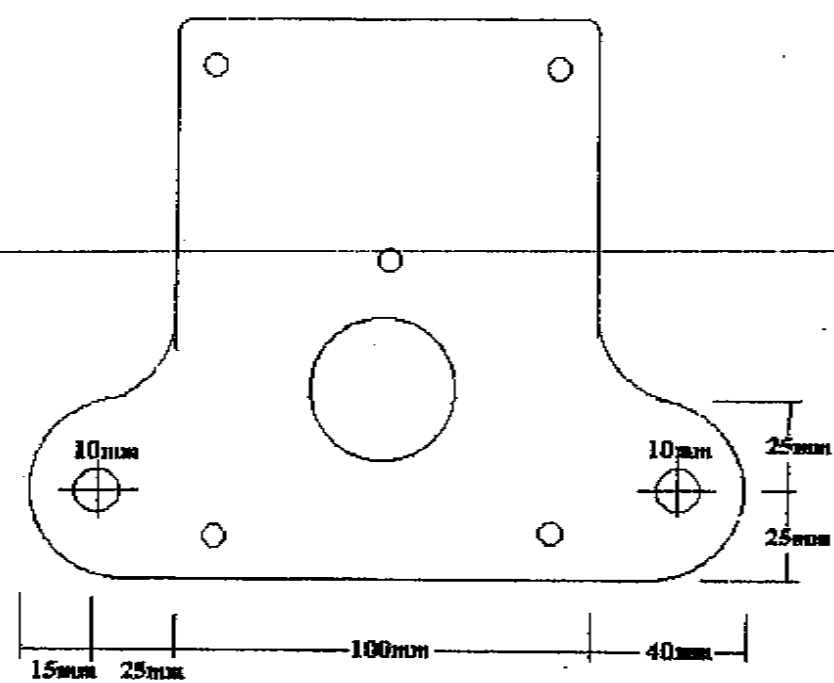
4
A

SIDE POLE PLATES

Top plate



Bottom plate



Stardust Circus

12 Byloss St Chester Hill 2162

0418 238881 Lindsay Lennon

We, Ken Brown and Associates confirm that we have checked the calculations and reviewed the details shown on this drawing for compliance with the relevant Australian Standards and the Building Act.

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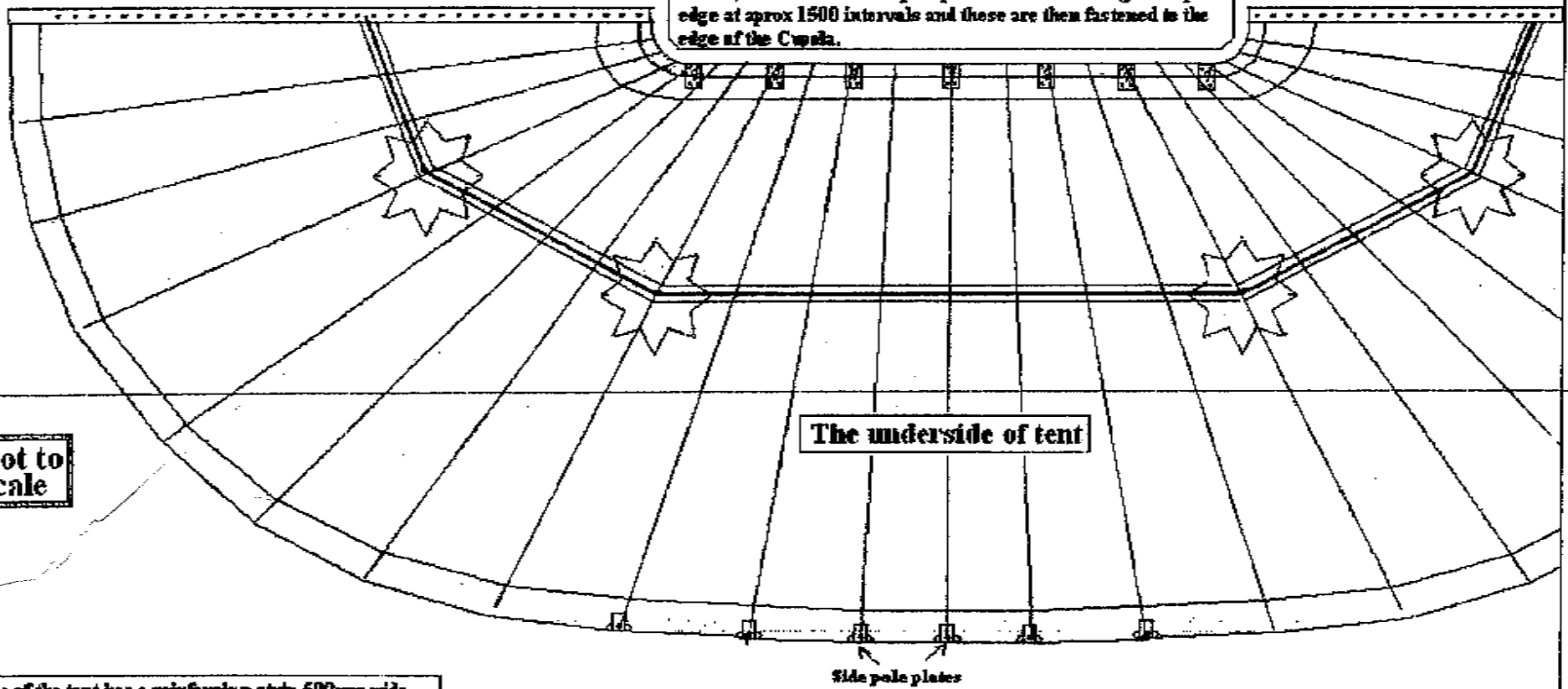
1999

(6)

Lacing strip with loops of rope 20cm apart thread through corresponding strip from the other section of tent

The top edge of the tent is reinforced with a 900 wide strip of material, plus another 2 layers of material close to the edge. Plates, similar to the side pole plates are bolted along the top edge at aprox 1500 intervals and these are then fastened to the edge of the Cupola.



Not to scale

The edge of the tent has a reinforcing strip 500mm wide welded on to help distribute the strain.

The panels are welded together with a 50mm overlap.

The outer edge where the side plate are bolted have 2 pieces of webbing sewn in to reinforce the main pulling points

The side pole plates are bolted in with 5 seperate bolts.

A cable is attached between each plate to create a strong rimrope situation.

A stormband reinforcement sleeve is welded on the underneath of the tent between the quarter poles.

A webbing tie down strap is inserted into the sleeve and fastened to a steel plate that is bolted into the reinforced quarter pole position creating a strong storm band.

We, Ken Brown and Associates confirm that we have checked the calculations and reviewed the details shown on this drawing for compliance with the relevant Australian Standards and the Building Act.

Ken Brown RPEQ 1514

The tent is constructed in 2 pieces and has a heavily reinforced lacing at each end which secured them together.

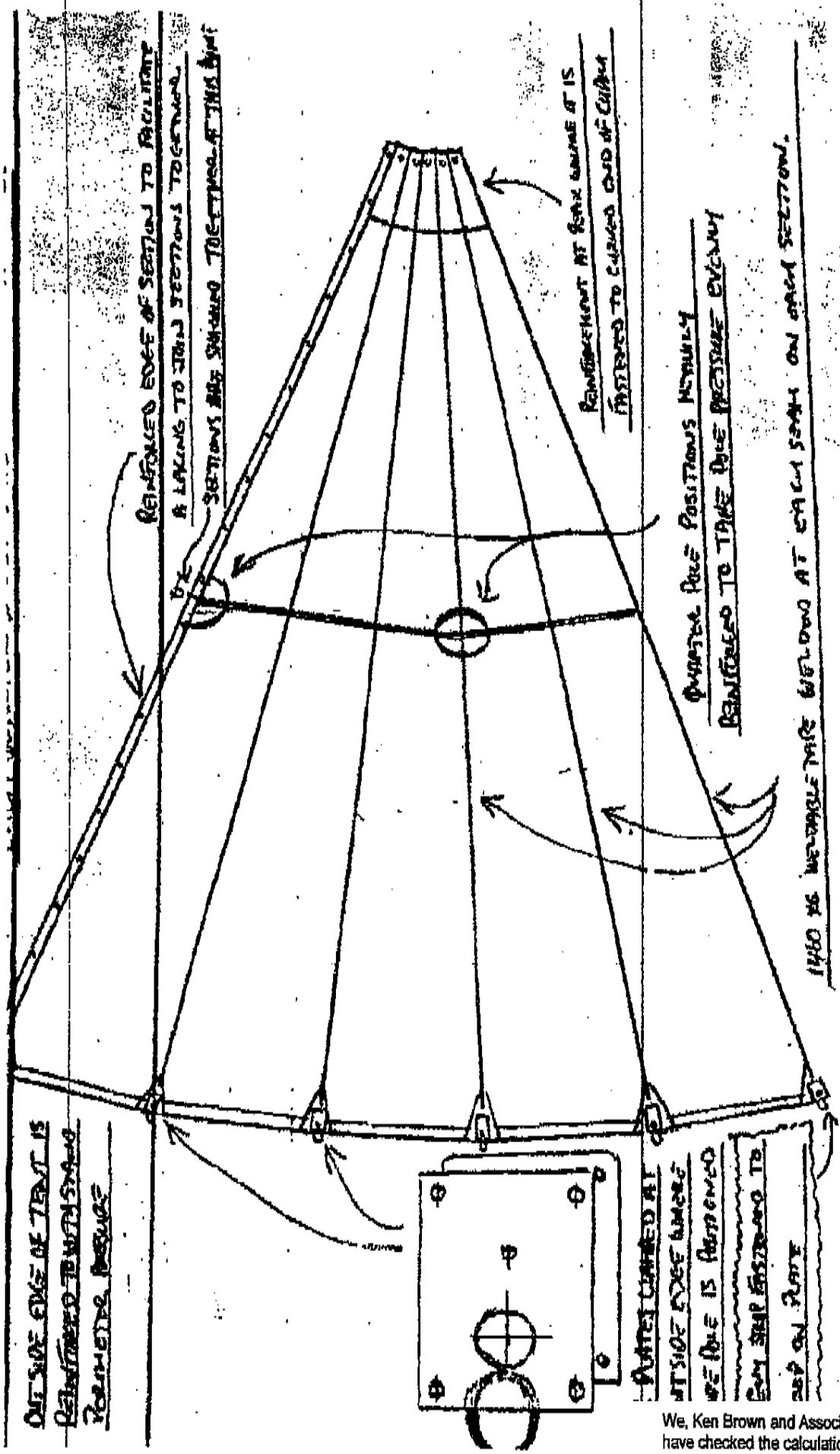
The guy straps at the outside edge of the tent are tie down webbing with a 300kg rating.

Ratchets with straps connecting to pegs are then attached to the guy straps and tighten out the tent.

Centre poles are held in place by Main Guys that are attached to ratchet chain blocks to keep them in place and secure.

Winches are used to pull the tent up by means of cables running through pulleys at top of the centre poles and down to the Cupola.

2000



We, Ken Brown and Associates confirm that we have checked the calculations and reviewed the details shown on this drawing for compliance with the relevant Australian Standards and the Building Act.

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2002

(4)

DESIGN

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Computations
Job No. 97206A Sheet No. 4
Eng. GNV Date. Nov-97

WIND LOADING

From AS1170

V_p = 41 m/sec from West

Terrain Categorys 3 and 4

$V_z = V M_{z,cat} M_s M_t M_i$

$= 41 \times 0.75 \times 1 \times 0.8$ ← Less than 6 months use.

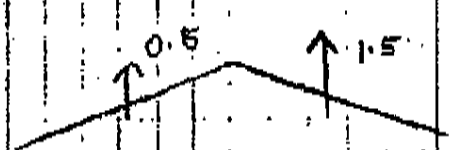
$= 24.6$ m/sec.

$q_z = 0.6 \times 24.6^2 \times 10^{-3}$

$= 0.363$ kPa

31°

Worst Case when sides are up and blocked underneath



Average = 1

Wind Load on roof = 1.0×0.363 kPa

$= 0.363$ kPa

Terrain Category 2

Wind Load = $\left(\frac{0.91}{0.75}\right)^2 \times 0.363 = 0.5285$ kPa

Terrain Category 1 = $\left(\frac{1.05}{0.75}\right)^2 \times 0.363 = 0.7115$ kPa

We, Ken Brown and Associates confirm that we have checked the calculations and reviewed the details shown on this drawing for compliance with the relevant Australian Standards and the Building Act.

Ken Brown RPEQ 1514

2003

DESIGN

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Computations
Job No. 99206A Sheet No. 5
Eng. GW Date. Nov 3

3.2.4 Terrain category. Terrain, over which the approach wind flows towards a structure, shall be assessed on the basis of the following category descriptions

(a) Category 1—exposed open terrain with few or no obstructions and water surfaces

(b) Category 2—open terrain, grassland with few well scattered obstructions having heights generally from 1.5 m to 10.0 m

(c) Category 3—terrain with numerous closely spaced obstructions having the size of domestic houses (3.0 m to 5.0 m high).

(d) Category 4—terrain with numerous large, high (10.0 m to 30.0 m high) and closely spaced obstructions such as large city centres and well-developed industrial complexes.

Selection of terrain category shall be made with due regard to the permanence of the obstructions which constitute the surface roughness, in particular vegetation in tropical cyclonic regions shall not be relied upon to maintain a wooded terrain roughness.

We, Ken Brown and Associates confirm that we have checked the calculations and reviewed the details shown on this drawing for compliance with the relevant Australian Standards and the Building Act.

Ken Brown RPEQ 1514

(6)

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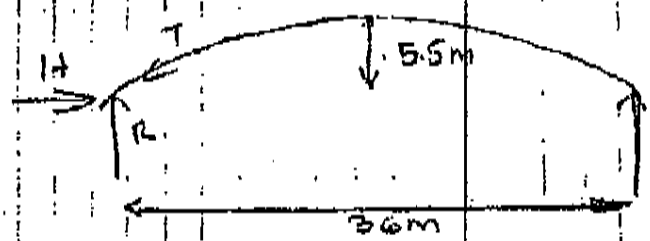
Computations
Job No. 9720GA Sheet No. 6
Eng. BBN Date. Nov'97

PVC Covering



$H = \frac{0.363 \times 36^2}{8 \times 5.5} = 10.692$ KN/m

$R = 0.363 \times \frac{36}{2} = 6.53$ KN

$T_{max} = H(1 + 16\theta^2)^{1/2}$ $\theta = \frac{5.5}{36}$

$= 12.53$ KN (Tensile load on fabric per m)

Capacity of Tearstrip $= \frac{2.4}{0.050} \times \frac{1}{6}$ ← factor of safety

$= 8.0$ KN

Allowable wind speed $\left(\sqrt{\frac{8}{12.53} \times \frac{0.363 \times 10^3}{0.6}}\right)^{\frac{1}{0.75+0.8}} = 32.70$ m/sec *

Terrain Categ 2 allowable wind speed

$= \left(\sqrt{\frac{8}{12.53} \times \frac{0.363}{0.5285}}\right)^{41} = 27.15$ m/sec *

Terrain Categ 1 allowable wind speed

$= \left(\sqrt{\frac{8}{12.53} \times \frac{0.363}{0.7115}}\right)^{41} = 23.40$ m/sec *

We, Ken Brown and Associates confirm that we have checked the calculations and reviewed the details shown on this drawing for compliance with the relevant Australian Standards and the Building Act.

Ken Brown RPEQ 1514

2004

(7)

BIRKMYRE

PVC 650 TEAR PROOF

Width: 188 cm
Base Cloth: 1100Dtex Polyester 9x9
Weave: Tear Stop
Weight: 625 gm/mt² (min.)
625 - 700 gm/mt² (typical value)
Finish: Fire Retardent P.V.C. coated
with maximum U.V. absorbers
Tensile Strength: 2600 N/5cm warp
(AS2001.2.3) 2400 N/5cm weft
Tongue Tear: 640 N warp
(BS3424.7B) 550 N weft
Coating Adhesion: 80 N/5cm (min.)
Flex Cracking Resistance: 400,000 cycles (min.)
Cold Crack Temp.: Minus 20°C
Roll Lengths: 45mt/roll

Colours: (In order of appearance)
Red R134 — Light Blue N250 — Emerald G198
Yellow C77 — Orange R83 — Royal N198
White W7 — Olive G163 — Green G161
Cherry R102 — Blue N38 — Brown B297
Black 2

We, Ken Brown and Associates confirm that we have checked the calculations and reviewed the details shown on this drawing for compliance with the relevant Australian Standards and the Building Act.

.....
Ken Brown RPEQ 1514

2005

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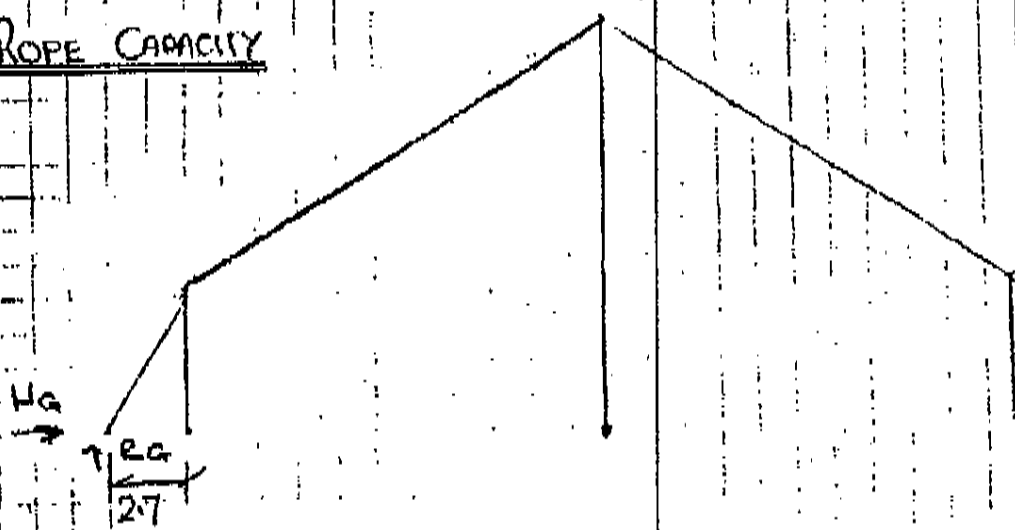
215 Albert Street, Brunswick 3056
Telephone: (03) 388 0801
Fax: (03) 388 2121

Computations
Job No. 9NORA Sheet No. 8
Eng. KBN Date. Nov'07

ROPE CAPACITY



$R_a = 6.53$ KN/m

$H_a = 0.363 \times \frac{41.4^2}{8 \times 9} = 8.64$ KN/m

$T_{max} = H(1 + 16\theta^2)^{\frac{1}{2}}$ $\quad \theta = \frac{9}{41.4}$

$= 11.45$ KN/m

∴ Load per rope = $11.45 \times 1.95 = 22.33$ KN

Use 3 tonne (30 KN) capacity straps

Terrain Categ 2 Load per rope = $\frac{0.525}{0.363} \times 22.33 = 32.31$ KN
OK for velocity up to $\sqrt{\frac{30}{32.51}} \times 41 = 39.38$ m/sec

Terrain Categ 1 Load per rope = $\frac{0.715}{0.363} \times 22.33 = 43.98$ KN
OK for velocity up to $\sqrt{\frac{30}{43.98}} \times 41 = 33.86$ m/sec

We, Ken Brown and Associates confirm that we have checked the calculations and reviewed the details shown on this drawing for compliance with the relevant Australian Standards and the Building Act.

Ken Brown RPEQ 1514

2006

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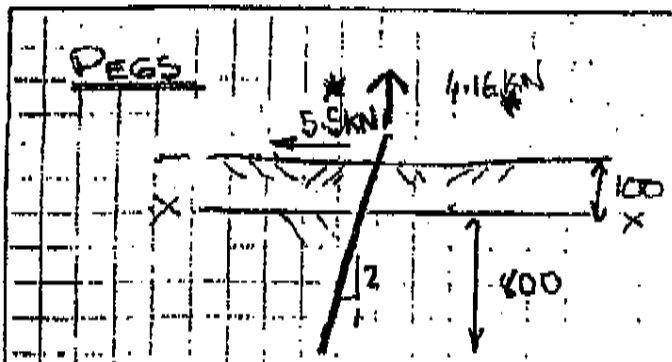
CONSULTING ENGINEERS A.C.N. 054150917 (Inc. in Vic.)
215 Albert Street, Brunswick 3056
Telephone: (03) 388 0801
Fax: (03) 388 2121

Computations
Job No. 972044 Sheet No. 9
Eng. DIW Date. Nov-5



* PVC critical
p.6 of calcs

Moment in peg = 0.05 x 4.16 + 0.1 x 5.5 = 0.758 kNm

smallest peg 35 mm ϕ (HS steel) $f_b = \frac{0.758 \times 10^6}{0.0982 \times 35^3} = 180\ MPa < 210\ MPa$ ok

NOTE:- Depth of peg to be determined on site by experience and testing

Loads (with sides of marquee up.)

Terrain Category 3 & 4
Allowable wind speed = 32.7 m/sec
↑ 4.16 kN ← 5.5 kN

Terrain Category 2
Allowable wind speed = 27.15 m/sec
↑ 4.16 kN ← 5.5 kN

Terrain Category 1
Allowable wind speed = 23.4 m/sec
↑ 4.16 kN ← 5.5 kN

We, Ken Brown and Associates confirm that we have checked the calculations and reviewed the details shown on this drawing for compliance with the relevant Australian Standards and the Building Act.

Ken Brown RPEQ 1514

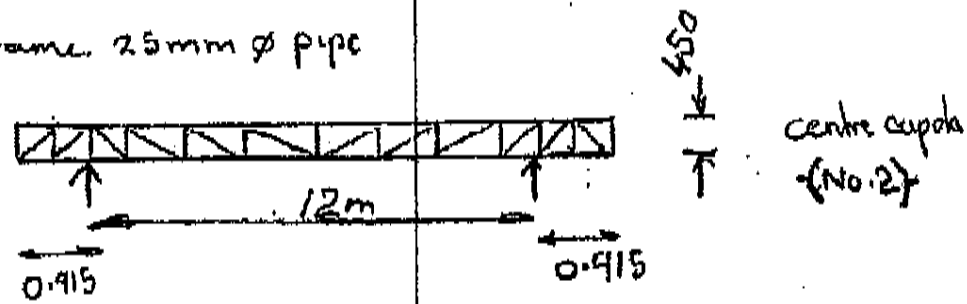
2007

DESIGN
DESIGN PROJECT GROUP PTY LTD
CONSULTING ENGINEERS A.C.N. 054160917 (Inc. in Vic.)
215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0801
Fax: (03) 9388 2121

Computations
Job No. 97208A Sheet No. 10
Eng. KMW Date. Nov 97

CUPOLA DESIGN

Top Frame 25mm ø pipe

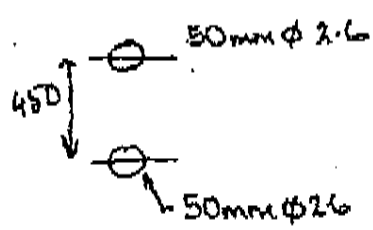


Truss chords 50mm ø pipe x 2.6 thick
Braces 35mm ø pipe

Self wt of cupola ? (½ cupola)

Top Chord	3.5 kg/m
Bott Chord	3.5
Web members	5.0
Top frame	6.0
	20.0 kg/m ≈ 0.2 kN/m

Wt of canvas /m = 0.01 x 10 = 0.1 kN/m



$I = 367 \times 450^2 = 78,367,500$
$Z = 348300$
$r_x = 16.78$ mm
} Truss Properties

Truss

Moment = $0.3 \times \frac{12^2}{8} = 5.4$ kN m ∴ Chord Force = $\frac{5.4}{0.45} = 12$ kN

Allowable chord force $\frac{L}{r_{xx}} = \frac{2000}{16.78} = 119$ Pall = 19.2 kN OK

Diagonal Force = $1.8 \times \frac{2.05}{0.45} = 8.2$ kN (T) OK. $0.45 \left[\frac{2.05}{2}\right]$

Vert Strut max force = 1.8 kN OK.

Δ Truss = $\frac{5}{384} \times \frac{0.3 \times 12000^4}{2 \times 10^5 \times 78367800} = 5.16$ mm OK

We, Ken Brown and Associates confirm that we have checked the calculations and reviewed the details shown on this drawing for compliance with the relevant Australian Standards and the Building Act.

Ken Brown RPEQ 1514

2008

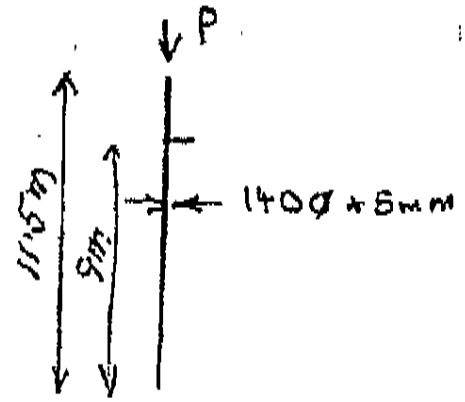
DESIGN PROJECT GROUP PTY LTD
CONSULTING ENGINEERS A.C.N. 084150917 (Inc. In Vic.)
215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0801
Fax: (03) 9388 2121

Computations

Job No. 9720sA Sheet No. 11

Eng. GMW Date. Nov 07

CENTRE POST DESIGN



Base plate 140ϕ x 400 long

$A = 2120\ mm^2$

$r = 47.7\ mm$

effective length 9m

$P_{comp} = 50.3\ kN$

$M_{comp} = 8.92\ kNm$

$P_{adj} = 0.3(6 + 6.6) = 3.75\ kN.$

OK

We, Ken Brown and Associates confirm that we have checked the calculations and reviewed the details shown on this drawing for compliance with the relevant Australian Standards and the Building Act.

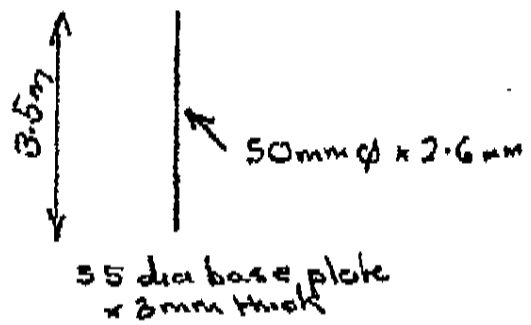
Ken Brown RPEQ 1514

2009

DESIGN PROJECT GROUP PTY LTD
CONSULTING ENGINEERS A.C.N. 054150917 (Inc. in Vic.)
215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0801
Fax: (03) 9388 2121

Computations
Job No. 9720 Sheet No. 12
Eng. SRW Date. Nov 07

SIDE POLE DESIGN



Joined with 6mm ϕ bolts

50 ϕ x 2.6

$A = \frac{\pi}{4}(50^2 - 44.8^2) = 381\ mm^2$

$r_x = \frac{1}{4}\sqrt{50^2 + 44.8^2} = 16.7\%$

$\frac{L}{r} = \frac{2500}{16.78} = 208$

$F_{cc} = 25\ MPa$

Area supported = $\frac{18}{2 \times 2} \times 1.95 = 8.775\ m^2$

Mass PVC = $0.01 \times \frac{8.775}{2} = 0.05\ kN$

From safe load tables capacity of 50ϕ x 2.6mm
C+S = 7.74 kN

allow for walls

Base plate bearing pressure = $\frac{0.05 \times 10^3 \times 2}{\pi \times \frac{55^2}{4}}$

= 0.042 kPa OK

We, Ken Brown and Associates confirm that we have checked the calculations and reviewed the details shown on this drawing for compliance with the relevant Australian Standards and the Building Act.

Ken Brown RPEQ 1514

2010

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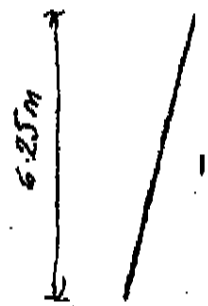
DESIGN PROJECT GROUP PTY LTD
CONSULTING ENGINEERS A.C.N. 054 169 917 (Ins. in Vic.)
215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0601
Fax: (03) 9388 2121

Computations
Job No. 9720/6A Sheet No. 13
Eng. SMW Date. Nov 05

Quarter Pole Design



100 mm dia x 6 mm thick base plate.

100 dia x 1.6

$A = \frac{\pi}{4}(100^2 - 96.8^2) = 495\ mm$

$r_x = \frac{1}{4}\sqrt{100^2 + 96.8^2} = 34.79$

$\frac{L}{r} = \frac{6250}{34.79} = 179.6$

$\Rightarrow F_{ac} = 25\ MPa$

Area supported $= \frac{18}{2} \times 1.95 = 17.55\ m^2$

Mass PVC $= 0.01 \times 17.55 = 0.1755\ kN$

$F_{ac} = \frac{0.1755 \times 1000}{495} = 0.36\ MPa$ O.K

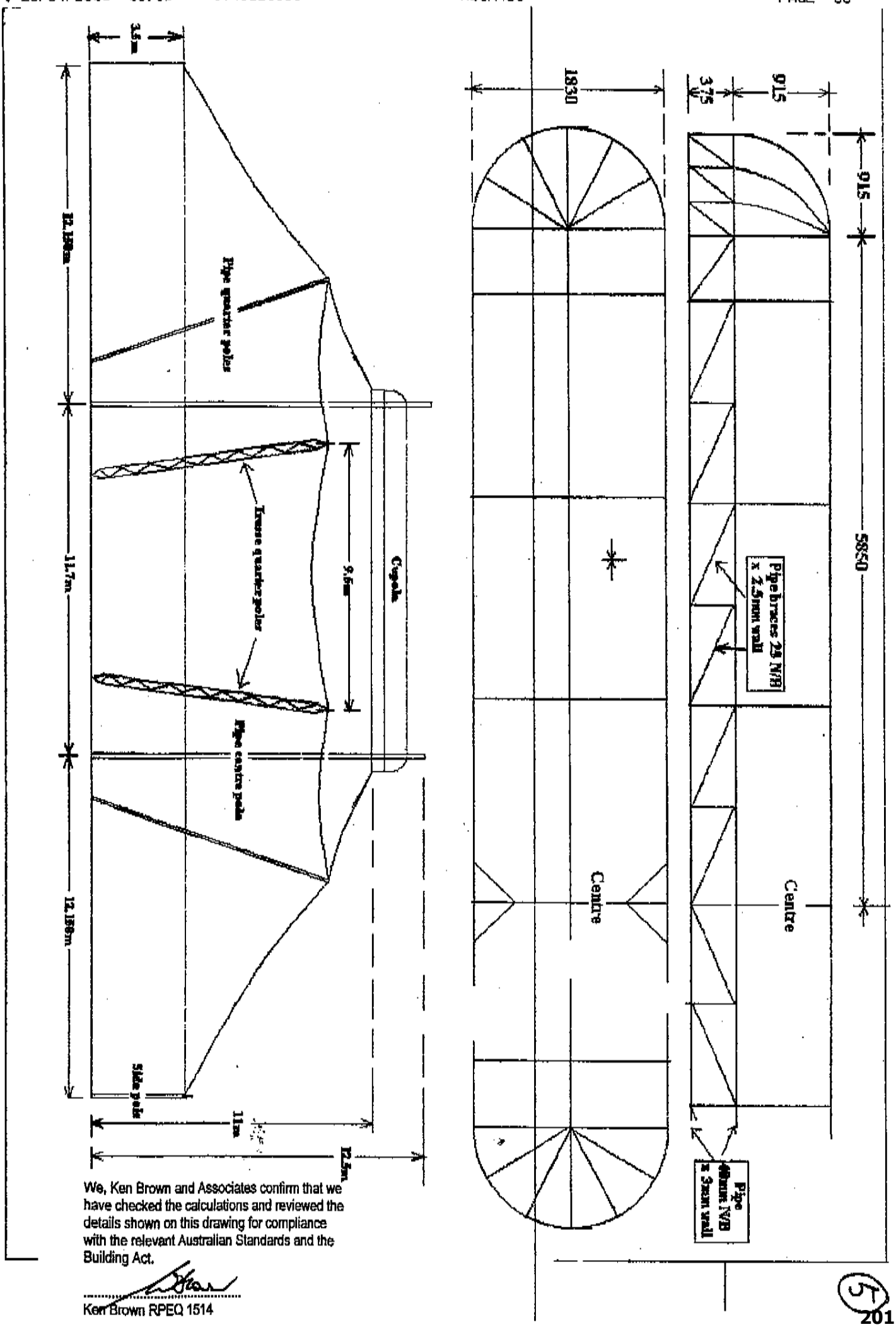
Base plate bearing pressure $= \frac{0.1755 \times 10^3}{\pi \times 100^2 / 4} = 0.022\ KPa$

OK

We, Ken Brown and Associates confirm that we have checked the calculations and reviewed the details shown on this drawing for compliance with the relevant Australian Standards and the Building Act.

Ken Brown RPEQ 1514

2011

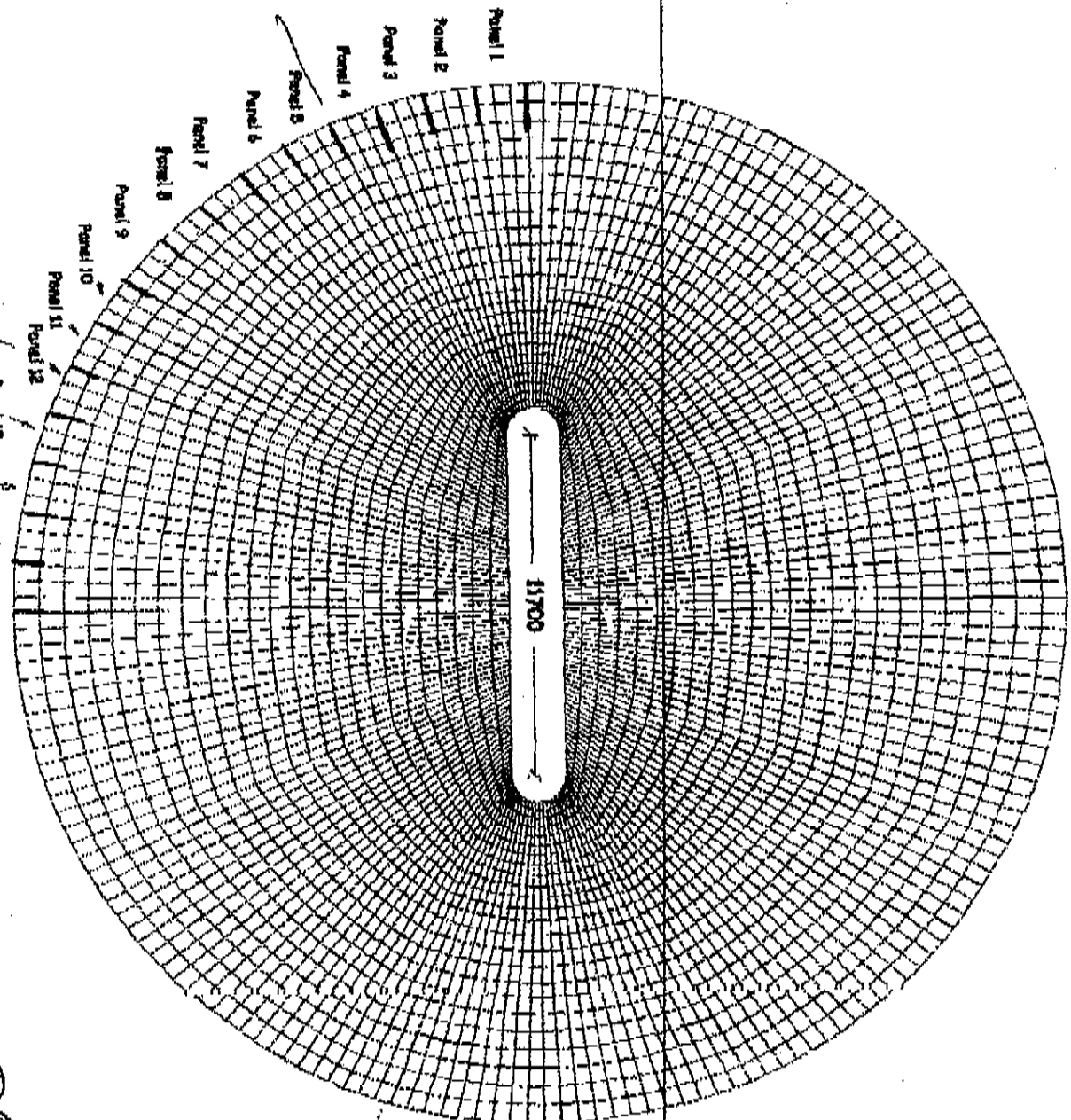


We, Ken Brown and Associates confirm that we have checked the calculations and reviewed the details shown on this drawing for compliance with the relevant Australian Standards and the Building Act.

Ken Brown RPEQ 1514

5

2012



We, Ken Brown and Associates confirm that we have checked the calculations and reviewed the details shown on this drawing for compliance with the relevant Australian Standards and the Building Act.

Ken Brown RPEQ 1514

DESIGN PROJECT GROUP Pty Ltd
CONSULTING ENGINEERS A.C.N. 008777920
215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0801
Fax: (03) 9388 2121

COMPUTATIONS

PROJECT NO: 03289
DATE: Oct '03

PROJECT TITLE 20m x 26·66m. Square End Tent with Round Corners for Janlin Circuses

ARCHITECT N/A.

REFERENCES AS1170
AS4100

ENGINEER

David J. Wills
MIEAust CPEng
Chartered Professional Engineer
Membership No. 181147
The Institution of Engineers, Australia
I E Aust

Signature: David J. Wills

Date: October '03

PROC E1

(1)

JANLIN CIRCUSES PTY LTD

ABN 29 069 720 225 12 Byloss St
Chester Hill 2162
Fax 0417655935
04180238881
3 Oct. 2003

DESIGN PROJECT GROUP

Att David Wills

Dear David,

I have enclosed three sheets of diagrams of a 20m x 26 m tent that does not have quarter poles in it.

(1) This tent relies on the curvatures of the roof panels to keep it taut thereby resisting movement in the wind.

(1a) The panels are directly linked in line across the tent and connected to side poles at the edge and tensioned by tie down straps and ratchets to pegs.

(2) The panels are welded together by overlapping the two panels by 50mm and and sandwiching a weldable webbing 48mm wide for a length off 1metre from edges of tent, into this seam.

(3) In the centre sheets the panels are 1.665m wide, 4 panels in each centre sheet.

(4) The corner sheets have 8 panels 1.75m wide at the outside, including the rounded corners, these all taper away to the peak.

(5) The tent is constructed in three sections which lace together, allowing it to be configured in three different layouts, 20m x 26.66m, 20m x 20m and 20m x 13.32m

(6) The ridge created through the top of dome has a webbing strip welded through it to withstand the pressure of the side and end panels pulling against it.

(7) The peak where the centre pole goes through is reinforced to withstand the strain placed on it.

(8) Guy straps are 2000kg x 50mm wide tie down straps with ratchets rated at 2500kg.

(9) The fastening points (pegs) are positioned 3m from the edge of the tent.

(10) Centre poles are 125 nominal bore x 5mm wall thickness

(11) Side poles are 3m x 75mm x 1.6 wall thickness.

(12) The height of the peaks are 11metres.

Thanking you

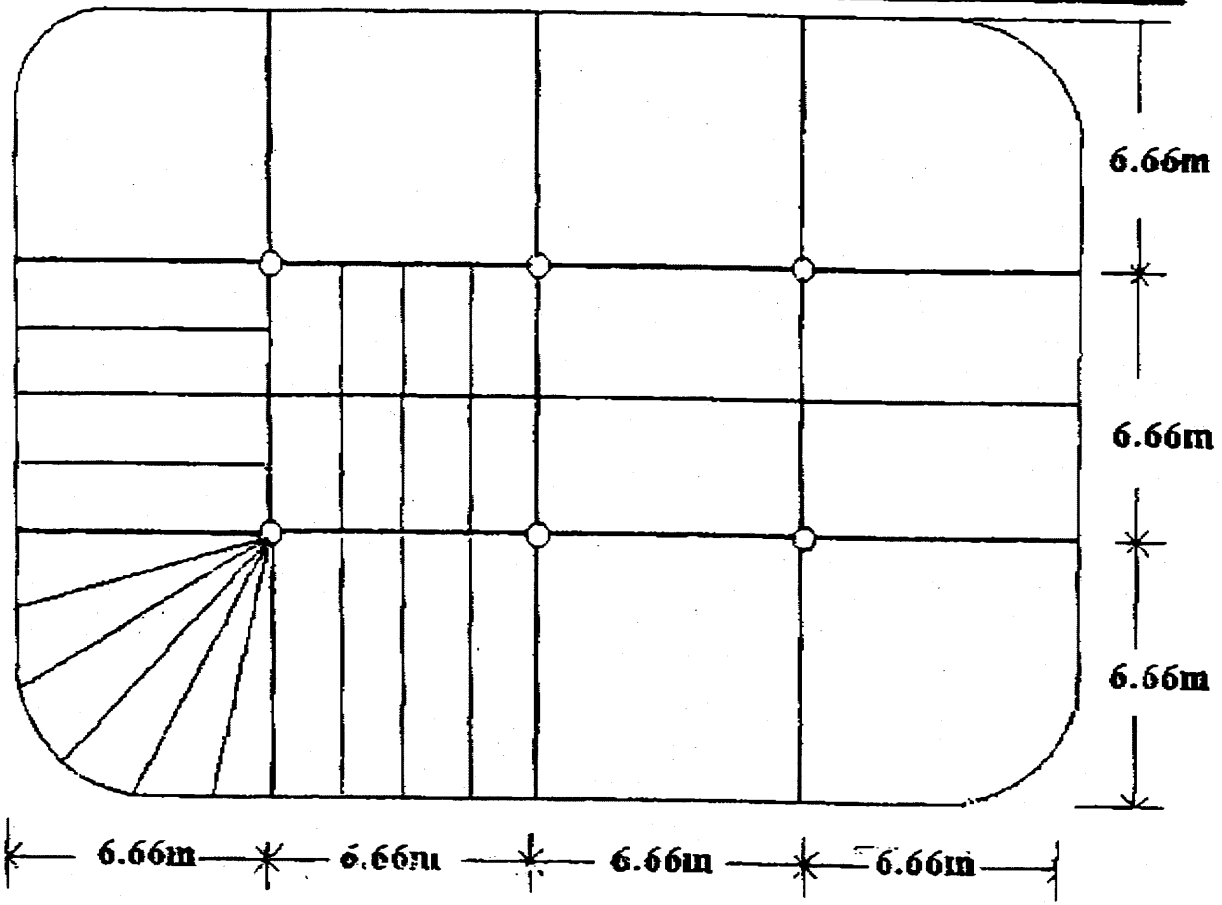
Lindsay Lennon

Note:- Tents have been designed for a wind speed of 41m/sec (80 knots) - subject to tie down being sufficient for tent. DWills

20m x 26.66m Square End Tent ROUND CORNERS

THIS TENT DOES NOT HAVE QUARTER POLES, IT RELIES ON THE HEAVY CURVATURE OF THE PANELS BETWEEN THE CENTRE POLES TO RUN WATER OFF AND CREATE A VERY TAUT ROOF TO WITHSTAND WINDS

Not to scale



(3)

SIDE VIEW 20M X 26.66M TENT No QUARTER POLES
LEGEND
This is the outline of the sheet through the middle
3.5m
8m
8m
6.66m
6.66m
6.66m

SIDE VIEW 20M X 20M TENT No QUARTER POLES
Not to scale
LEGEND
This is the outline of the sheet through the middle
6.66m
2.5m

3m
6.66m
6.66m
6.66m
END VIEW 20m x 26.66m TENT No QUARTER POLES
LEGEND
This is the outline of the sheet through the middle

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CONSULTING ENGINEERS A.C.N. 006777920
215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0801
Fax: (03) 9388 2121

Computations

Job No. 03284 Sheet No. 6

Eng. QW Date. Oct 03

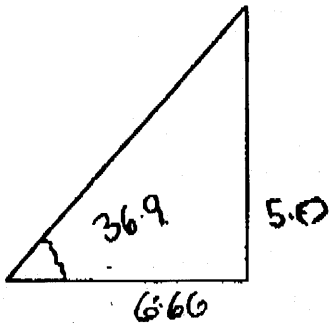
MARQUEES

WIND LOADING

From AS 1170

Vp = 41m/sec from West

TERRAIN CATEGORIES 3 AND 4



Vz = VMzcat.Ms Mt Mi

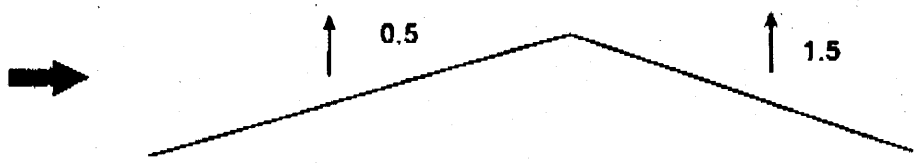
= 41 x 0.75 x 1 x 0.8

= 24.6 m/sec

qz = $0.6 \times 24.6^2 \times 10^{-3}$

= 0.363 kPa

Worst case when sides are up and blocked underneath



Average = 1

Therefore wind load on roof = 1 x 0.363 kPa

= 0.363 kPa

TERRAIN CATEGORY 2 ¢ \

Wind Load = $(0.91 / 0.75)^2 \times 0.363 = 0.5285$ kPa

Checked .....

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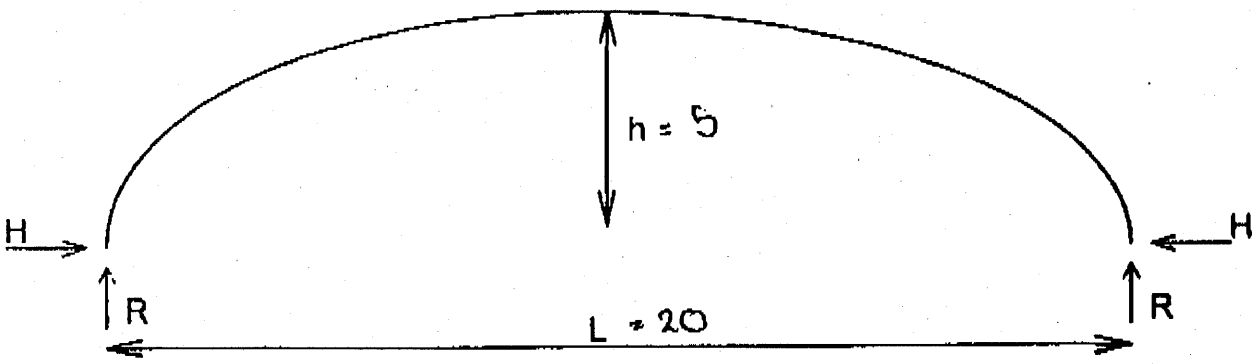
CONSULTING ENGINEERS A.C.N. 006777920
215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0801
Fax: (03) 9388 2121

Computations

Job No. 03269 Sheet No. 7

Eng. GW Date. Oct'03

PVC COVERING



$$H = 0.363 \times \frac{20^2}{8 \times 5} = 3.63 \text{ kN/m}$$

$$R = 0.363 \times \frac{20}{2} = 3.63 \text{ kN/m}$$

$$T_{max} = H(1 + 16\,\theta^2)^{1/2}$$

$$\theta = \frac{5}{20}$$

$= 5.134 \text{kN/m}$ (Terrain Categ 3 & 4)

Capacity of PVC $= \frac{2.8 \times 6.05}{6}$ factor of safety $= 9.33 \text{ kN/m}$ OK.

(Terrain Category 2) :- $T = \frac{5.134 \times 0.5285}{0.363} = 7.475 \text{kN}$

∴ OK

Checked .....

Date .....

Caractéristiques techniques	Technical data	Technische Daten	Précontraint® 702	
Fil	Yarn	Garn	1100 Dtex PES HT	TERSUISSE
Poids au m²	Weight sqm	Gewicht m²	830 g/m²	*NF EN ISO 2286-2*
Largeur	Width	Breite	180 cm	
Résistance rupture (chaîne/trame)	Tensile strength (warp/weft)	Reisskraft (Kette/Schuss)	280/280 daN/5cm	*NF EN ISO 1421*
Résistance déchirure (chaîne/trame)	Tear strength (warp/weft)	Weiterreisskraft (Kette/Schuss)	30/28 daN	*DIN 53.363*
Adhérence	Adhesion	Haftung	10 daN/5 cm	*NFG 37.107*
Opacité	Blackout	Opak	> 99%	
Finition	Finish (Varnish)	Behandlung (Schlusslack)	Vernis BIFACE	
Réaction au feu	Flame retardancy	Brennverhalten	M2 *NFP 92.503/NF EN 14115* BS 7837 - UNE 23727/90 B1 *DIN 4102* - NFPA 701 *LS2* California State Fire Marshal T19	
Températures maximum d'utilisation	Temperature extremes (while handling)	Maximale Anwendungs-temperaturen	-30°C / +70°C	
Système d'assurance qualité	Quality insurance	Qualitätssicherung	ISO 9002	
Les caractéristiques techniques indiquées sont des valeurs moyennes	Technical data are average values	Die angegebenen technischen Daten sind Mittelwerte		

Technique d'enduction Précontraint® FERRARI	Précontraint® FERRARI coating technology	Beschichtungstechnik Précontraint® FERRARI
Stabilité dimensionnelle exceptionnelle	Exceptional dimensional stability	Ausserordentliche Flächenstabilität
Durabilité supérieure	Longer durability	Höhere Haltbarkeit
Excellente soudabilité	Excellent welding	Sehr gute Verschweissbarkeit
Opacité spéciale chapiteaux	Special blackout for big tops	Spezielle Opak-Textilien für Zirkuszelte

PRECONTRAINT FERRARI

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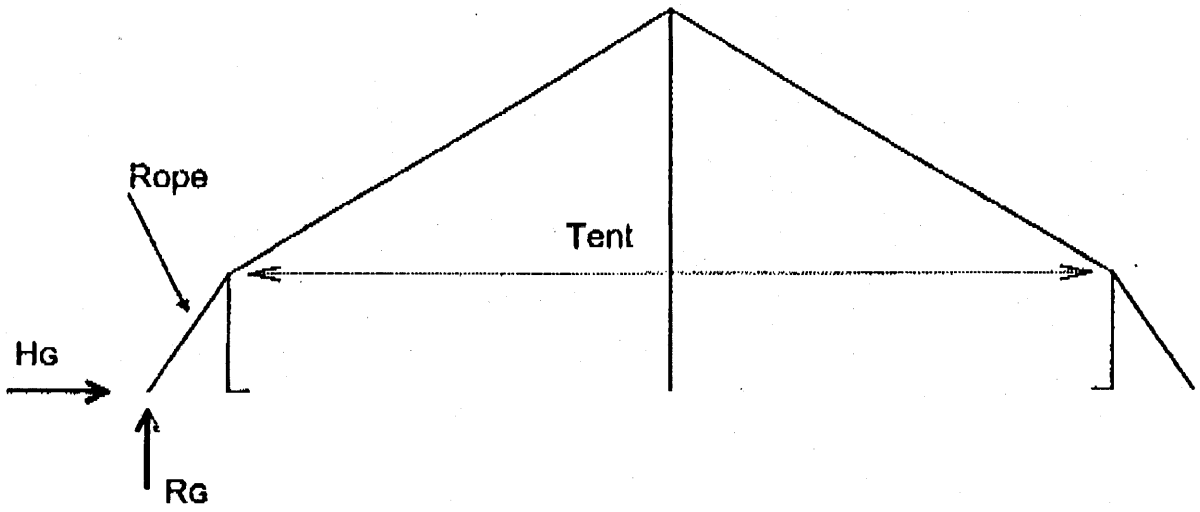
CONSULTING ENGINEERS A.C.N 006777920
215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0801
Fax: (03) 9388 2121

Computations

Job No. 03286 Sheet No. 9

Eng. DW Date Oct 03

ROPE CAPACITY



R_G = 3.63 KN/M

$H_G \approx 0.363 \times \frac{26^2}{8 \times 8.5}$ = 3.61 KN/M

$T_{max} = H(1 + 16\theta^2)^{1/2}$ $\theta = \frac{8.5}{26}$

= 5.94 KN/M

∴ Load per rope = 5.94 x 1.665 = 9.89 KN
(Terrain Catg 3)

Use 2000kg capacity straps

Capacity = 19.6 KN OK.

(Terrain Category 1 & 2 load per Rope = 14.394 kN OK)

Checked .....

Date .....

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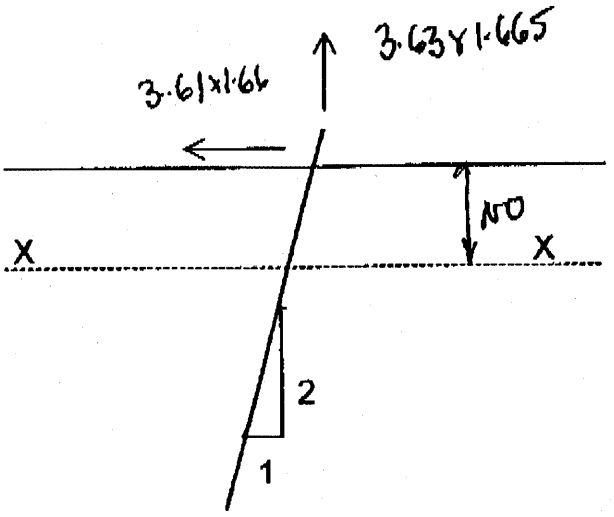
215 Albert Street, Brunswick 3056
Telephone: (03) 9388 0801
Fax: (03) 9388 2121

Computations

Job No. 03264 Sheet No. 10

Eng. DM Date. Oct 03

PEGS



Moment in peg about X - X

= $3.61 \times 1.66 \times 0.1 + 3.63 \times 1.665 \times 0.05$

= 0.9015 KN M

35mm dia high tensile truck axles

$f_b = \frac{0.9015 \times 10^6}{0.0982 \times 35^3}$ = 2.14MPa < 262 x 1.33 MPa

(Terrain Category 3)

Note:- Depth of peg to be determined on site by experience and testing

(Terrain Category 1 & 2 f_b = 3.11 MPa < 262 x 1.33 MPa

∴ OK)

Checked ..

Date

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CONSULTING ENGINEERS A.C.N. 006777920
215 Albert Street, Brunswick 3056
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Fax: (03) 9388 2121

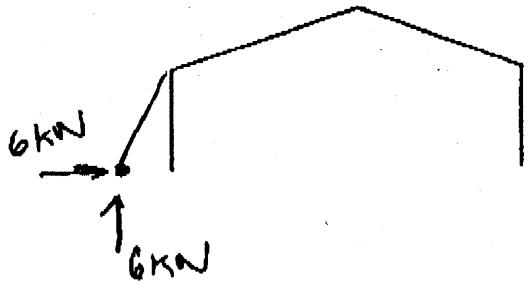
Computations

Job No. 03244 Sheet No. 11

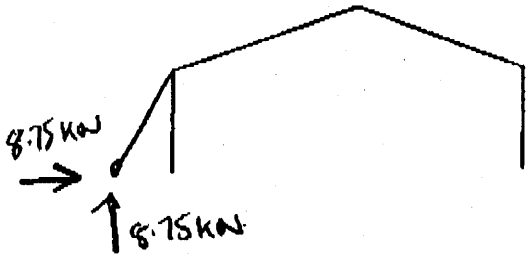
Eng. DJN Date. Oct 03

LOADS (with sides of tent up)

Terrain Category 3 & 4



Terrain Category 2 & 1



Checked .....

Date .....

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215 Albert Street, Brunswick 3056
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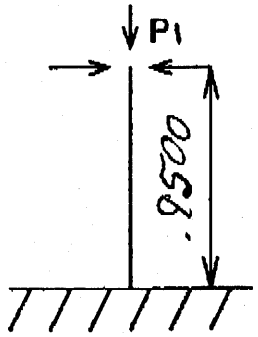
Fax: (03) 9388 2121

Computations

Job No. 03244 Sheet No. 12.

Eng. BM Date. Oct 03

CENTRE POLE



125 nominal bore 5mm thick CHS

Area = 2042 mm² $Z = 64 \times 10^3$ mm³

$r_y = 45.99$ mm

$\frac{L}{r_y} = \frac{9500}{45.99} = 206.6$

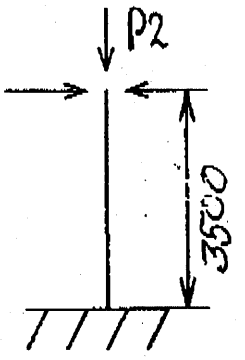
$\Rightarrow$ Fac = 20 MPa

Allowable axial load = 40 KN

P1 actual = $0.01 \times 6.66 \times 6.66 \times 1.3$

= 0.6 KN OK

SIDE POLE



75 mm x 1.6 thick CHS

Area = 385 mm² $Z = 7.53 \times 10^3$ mm³

$r_y = 27$ mm

$\frac{L}{r_y} = \frac{3500}{27} = 129.62$

$\Rightarrow$ Fac = 50 MPa

Allowable axial load = 19.25 KN

P2 actual = $0.01 \times 1.3 \times \frac{6.66}{2} \times 1.66 \times 1.3$

= 0.093 KN OK.

Checked .....

Date .....

Certificate of Test

QUOTE No.: HF07ANF4225

REPORT No.: FNF1182

TEST FOR FLAMMABILITY OF MATERIALS IN ACCORDANCE WITH AS 1530.2-1993

TRADE NAME: **FERRARI 702S BLOCKOUT FABRIC 8103**

SPONSOR: Innova International Pty Ltd
36-40 Sunmore Close
MOORABBIN EAST VIC

DESCRIPTION OF SAMPLE: The sponsor described the specimen as a PVC coated polyester fabric with carbon interlayer.

Nominal total thickness: 0.65 mm
Nominal mass: 830 g/m²
Colour: white

TEST PROCEDURE: Six (6) samples were tested in accordance with Australian Standard 1530 Part 2 - Test for Flammability of Materials - 1993.

RESULTS: The following were obtained for the specimen:

	Maximum Flame Height	Time for Flame to Reach Top (t)	Area Under Curve (°C.min)
Mean	3.3	n/a	3.8
Coefficient of Variance (%)	12.87	n/a	14.94

From which the following indices were obtained:

SPREAD Factor	SPEED Factor	HEAT Factor	FLAMMABILITY INDEX
1	n/a	1	2

These test results relate only to the behaviour of the test specimens of the material under the particular conditions of test, and are not intended to be the sole criterion for assessing the potential fire hazard for the material in use.

DATE OF TEST: **20 October 2004**

Issued on the 20th day of October 2004 without alterations or additions.

Janelle Sinclair
Testing Officer

Garry E Collins
Manager, Fire Testing and Assessments

This laboratory is accredited (Accreditation No. 3532) by the National Association of Testing Authorities, Australia. The tests reported herein have been performed in accordance with its terms of accreditation.

CSIRO Manufacturing & Infrastructure Technology
14 Julius Avenue, Riverside Corporate Park, North Ryde NSW 2113 AUSTRALIA
Telephone: 61 2 9490 5444 Facsimile: 61 2 9490 5555

AWTA TEXTILE TESTING

Australian Wool Testing Authority Ltd – trading as AWTA Textile Testing
A.B.N. 43 006 014 106
26 Robertson Street, Kensington, Victoria 3031
P.O. Box 240, North Melbourne, Victoria 3051
Phone (03) 9371 2126 Fax (03) 9371 2102

TEST REPORT

CLIENT : JANLIN CIRCUSES PTY LTD
12 BYLOSS STREET
CHESTER HILL NSW 2162

TEST NUMBER : 7-520467-BN
DATE : 17/07/2003

SAMPLE DESCRIPTION Clients Ref: Valmex FR 900 Duo Opaque Type 11
PVC Coated Fabric
Colour: Black/White
Approx mass: 1030g/m2

AS 1530.2-1993 Test for Flammability of Materials

DATE TESTED: 17/07/2003

Flammability Index: 6 Range 0 - 100 for most material

		Length	Width	
Spread Factor: Range 0 - 40		5	5	
Heat Factor: Range 0 - upward		1	1	
Maximum height (d)	mean	5.1	5.4	
	cv	7.4	6.9	%
Time (t)	mean	N/A	N/A	s
	cv	N/A	N/A	%
Heat (a)	mean	1.7	1.6	degC min
	cv	15.6	12.9	%
No of specimens tested		6	6	

These test results Relate only to the behaviour of the test specimens of the material under the Particular conditions of the test, and they are not intended to be the Sole criterion for assessing the potential fire hazard of the material in use

1278925 1

This Laboratory is accredited by the National Association of Testing Authorities, Australia, for:
- Chemical Testing of Textiles & Related Products — Accreditation No. 983
- Mechanical Testing of Textiles & Related Products — Accreditation No. 985
- Heat & Temperature Measurement — Accreditation No. 1356

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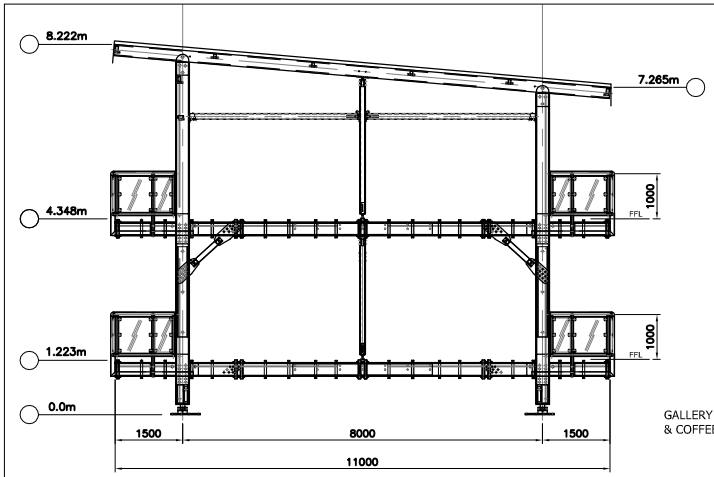
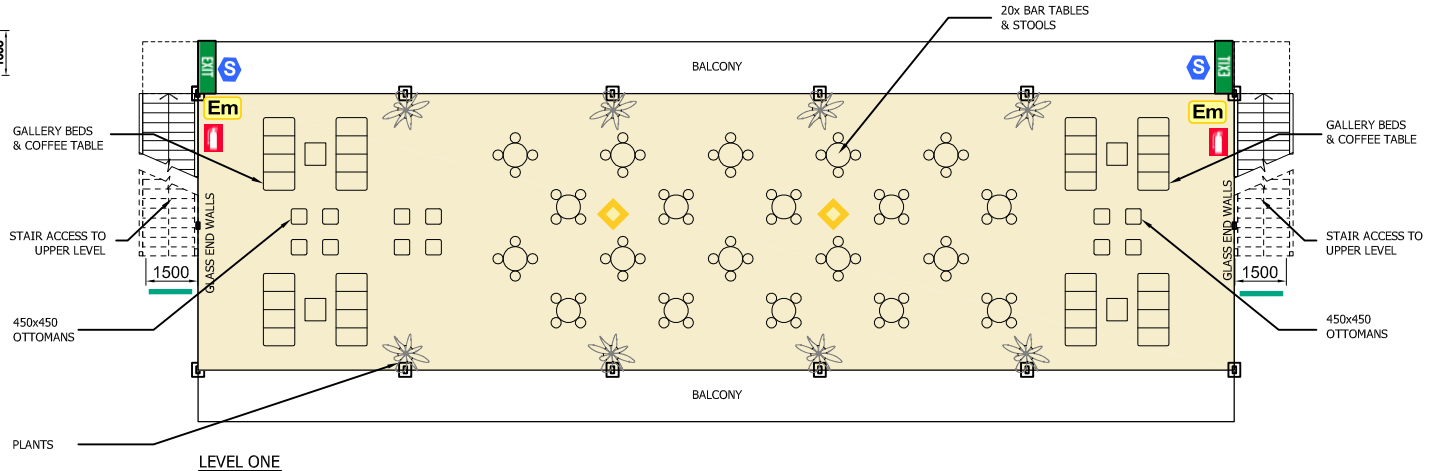
APPROVED LABORATORY

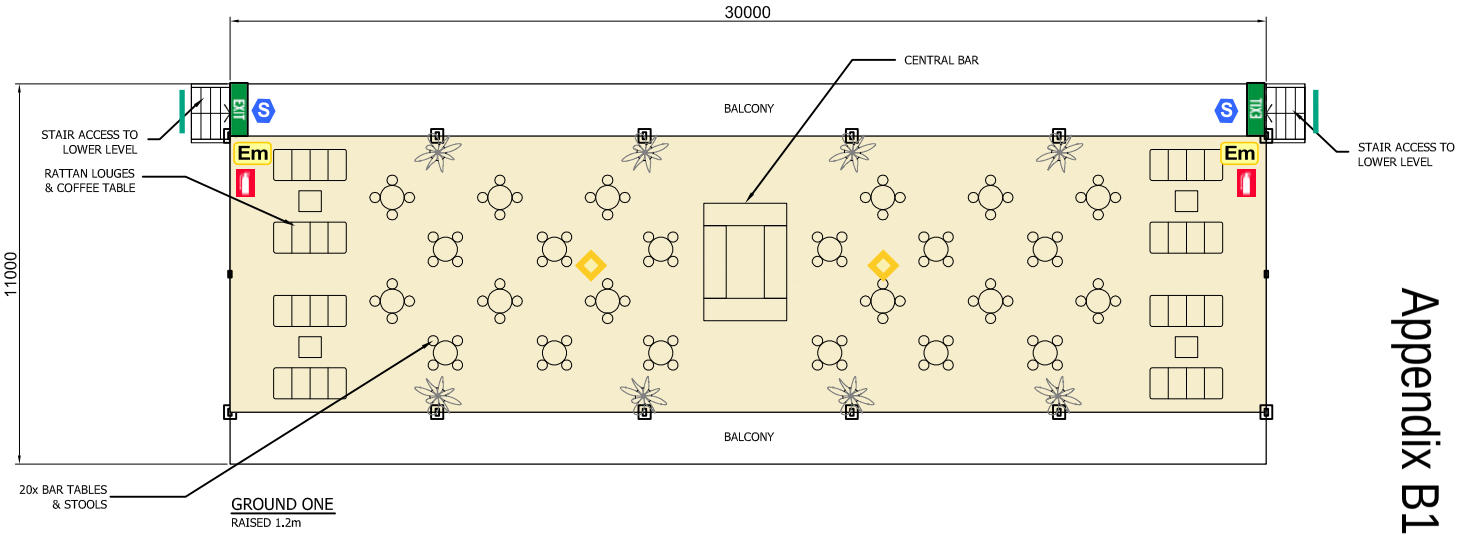
MANAGING DIRECTOR



END ELEVATION



LEVEL ONE



GROUND ONE
RAISED 1.2m

Appendix B1

PRELIMINARY

2029

No	Revision	Drawn	Checked	Approved	Date
A	CLIENT ISSUE	JM	GY		1-02-10

Note: * Indicates signatures on original issue of drawing or last revision of drawing

Exit Sign
Directional Exit Sign
Aggregate Exit
Security
Portable Fire Extinguishers
Emergency Lights
Em Essential Fire Safety Schedule & Emergency Evacuation Plan

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26-38 Belmore Road, Punchbowl NSW 2196
T 02 9533 9400 F 02 9533 9611
E pages@tig.com.au
ACN: 098 883 642
www.pages.id.au

Scale	AS SHOWN
	DO NOT SCALE
Cad	J.MANCERA
Checked	G.YALLOP
Approved	
Date	1-02-10

This Drawing must not be used for Construction unless signed as Approved

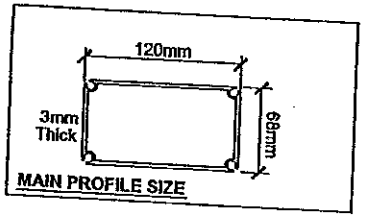
Client / Project: North Byron Parklands

Title: 11m x 30m 2 STOREY STRUCTURE

Original Size: A3 | Drawing No: 10-01-119648-A01 | Rev: A

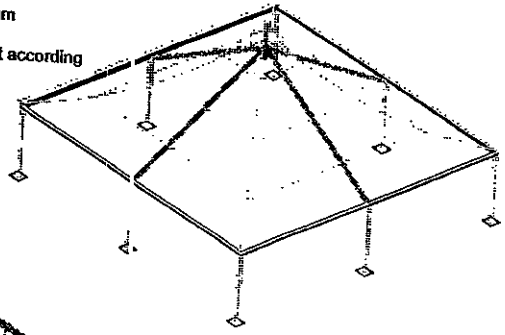
Cad File No: C:\A-PROJECT\PAGES EVENT EQUIPMENT\PROJECTS\2010\10-01-119648\DWGS\10-01-119648-A01.DWG

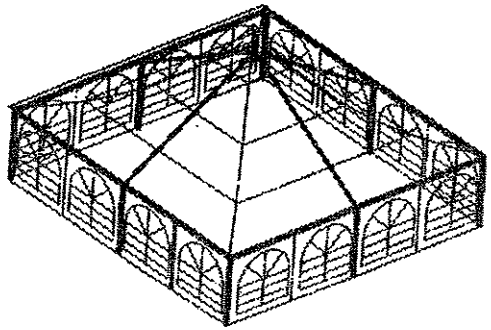
Plot Date:

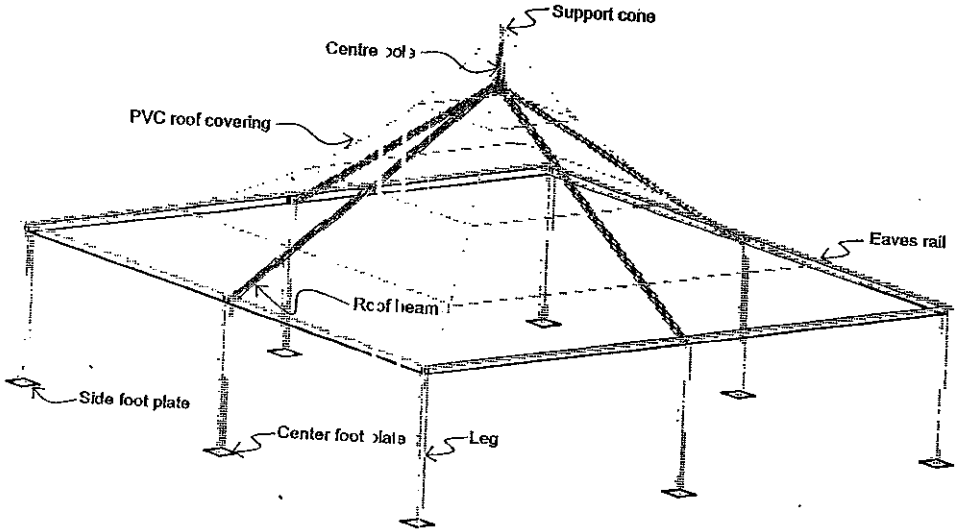


Material Specifications
Aluminium(framework):Hard pressed extruded aluminium
steel(connections):European - hot dipped galvanised
PVC covering: White - High glooss PVC flame retardant according
4102 B1/B2

Frame Specifications
Span width: 10m
Eave height: 2.5m
Ridge height (internal): 6.45m
Bay spacing: 5m
Longest component: 5.22m
Wind loading: 80km per hr/0.3kn*

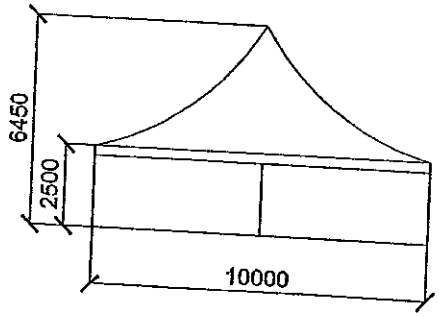


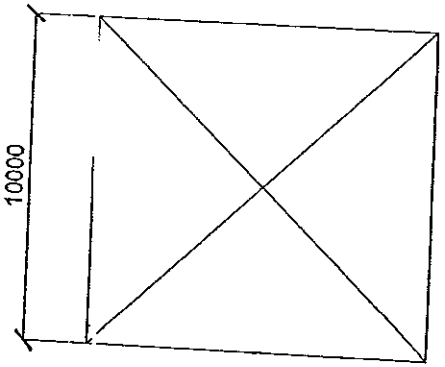




Optional Accessories
PVC window walls
Single & double door units
Decorative linings
Rain gutters for joing structure

NAME OF PART	SIZE(mm)	QUANTITY	MATERIAL
Leg	20(x68x2460	8 pcs	Alu alloy
Roof Beam	20(x68x5220	4 pcs	Alu alloy
Eaves Rail	20(x68x4900	8 pcs	Alu alloy
Foot Plate		8 pcs	Alu alloy





Appendix B2

PRELIMINARY

No	Revision	Drawn	Checked	Date
A	ISSUED FOR INFORMATION	JM	SN	24/11/05

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E pages@ej.com.au
www.pages.id.au

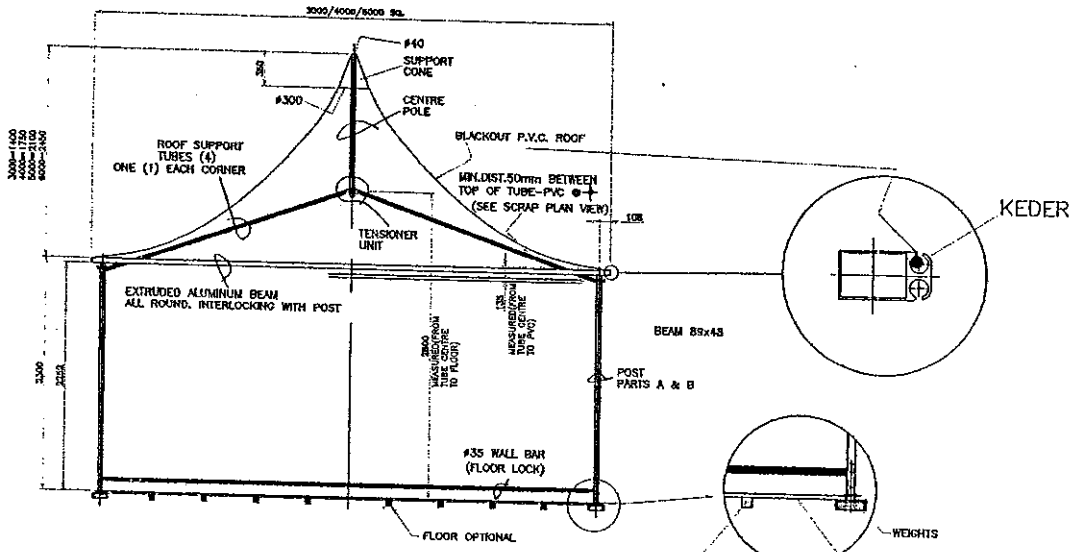
Scale	AS SHOWN
Drawn	J.Mancera
Checked	S.Nercessian
Approved	
Date	24/11/05

DO NOT SCALE

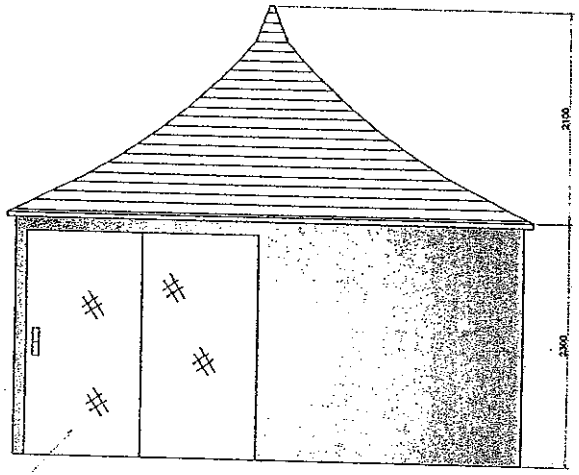
Client
Project 10M X 10M Pagoda Tent
Title
Original Size A3
Drawing No: 10M X 10M Pagoda Tent
Rev: A

2030

Appendix B2



3m, 4m, 5m, 6m PROFILES
PAGODA CROSS-SECTION



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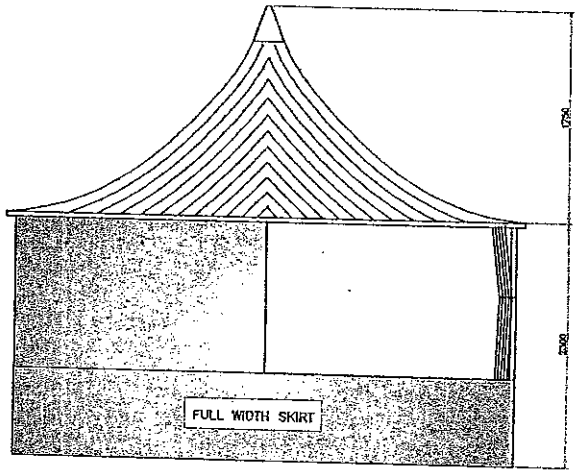

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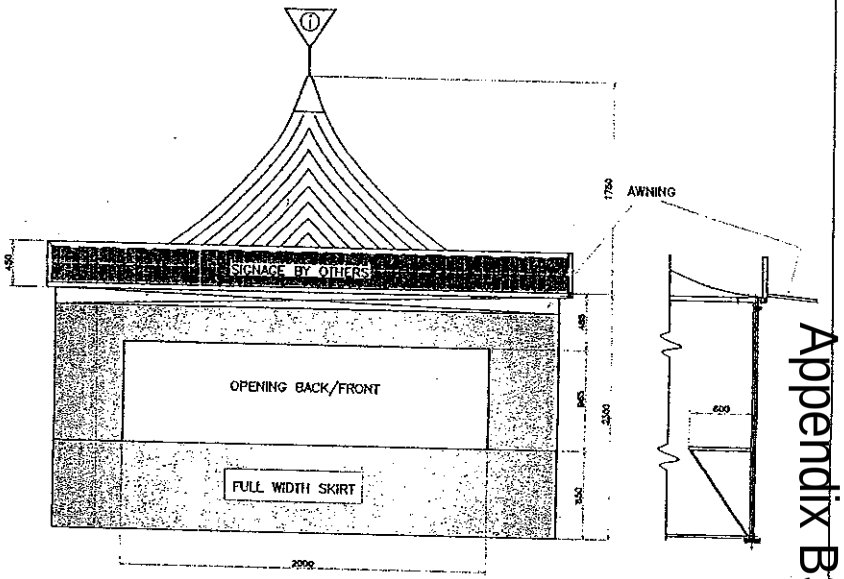


ELEVATION

Appendix B3

INFORMATION

2031

No	Revision	Drawn	Checked	Approved	Date
A	ISSUED FOR INFORMATION	SN	SN		

Cad File No: G:\Hurricane Structures TIMMS-PAGODAS\PAGODA_3m-4m-5m-6m.dwg Plot Date: 21 January, 2005 - 11:51 AM

HURRICANE structures
Sydney, AUSTRALIA
Pagoa Hire Centre (NSW) Pty Ltd
26-28 Belmore Road, Penshurst NSW 2196
T 02 9533 9400 F 02 9533 9611
E sharkpc@optusnet.com.au
ACN 088 482 230

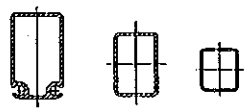
Scale	AS SHOWN
Cad	S.NERCESSIAN
Checked	S.NERCESSIAN
Approved	
Date	JUNE 2005

DO NOT SCALE

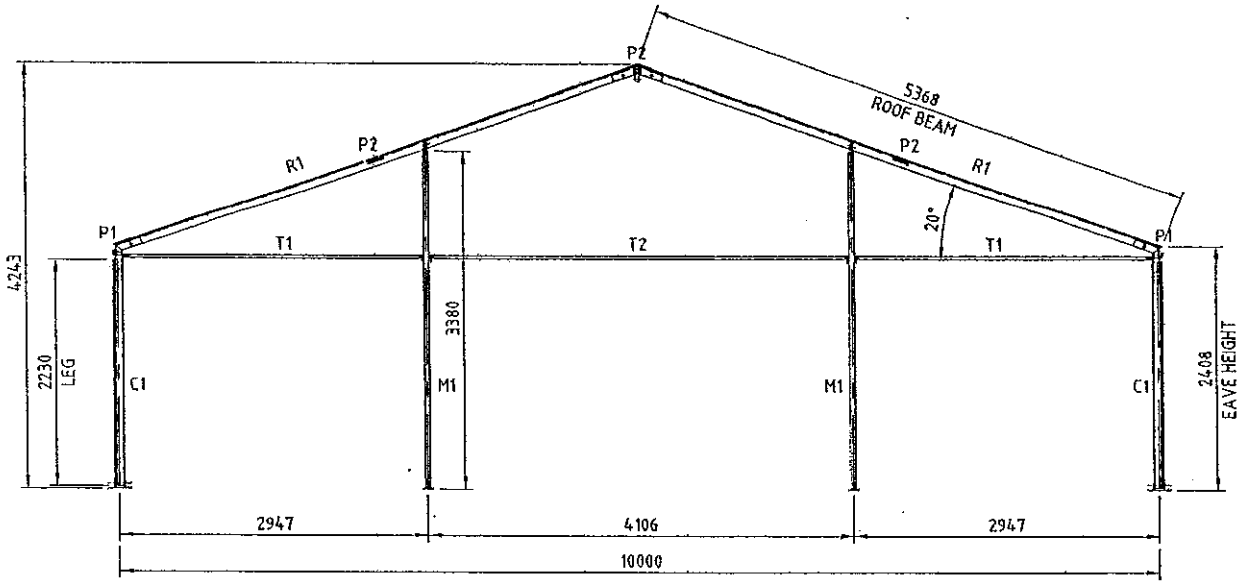
Title
PAGADA - 3m, 4m, 5m, 6m
GENERAL ARRANGEMENT

Original Size A3 | Drawing No: PAGODA_3m-4m-5m-6m | Rev: A

FRAMING MEMBER SCHEDULE		
MARK	SIZE	REMARKS
C1	89x48	PROFILE PHC-015
M1	89x48	PROFILE PHC-015
R1	89x48	PROFILE PHC-015
P1	60x40	PROFILE PHC-003
P2	40x35	PROFILE PHC-008
T1	35ϕ x 2	STEEL TUBE
T2	35ϕ x 2	STEEL TUBE



PHC-002 PHC-003 PHC-008



Appendix B4

INFORMATION

2032

No	Revision	Note: * indicates signature on original issue of drawing or last revision of drawing	Drawn	Checked	Approved	Date
A	INFORMATION		SN	SN		

designer: Vaisaire + associates
structural: trevor vaisaire b.se. (tech) m.engg.sc m.p.e.a.i.e, ra.i.e., aust. cl-3
hydraulic: 25 darling st balmain n.s.w australia 2041 tel + fax: (02) 9555 8758
certifier: SRIV ENGINEERING PTY LTD
structural: william lyon b.e.m.engsc m.i.e.aust. e.p.eng cl-3
hydraulic: 14 weston av ourwee n.s.w australia 2229 tel + fax: (02) 9153 6872

HURRICANE structures
Sydney, AUSTRALIA
Pagan Hire Centre (NSW) Pty Ltd
28-36 Belatree Road, Punchbowl NSW 2196
T 02 9533 9400 F 02 9533 9611
E shands@bigpond.net.au

Scale	AS SHOWN
Drawn	SJMERCESSIAN
Approved	
Date	12/09/05
DO NOT SCALE	
Checked	SJMERCESSIAN

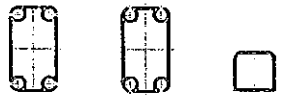
"This Drawing is not to be used for Construction unless signed as Approved"

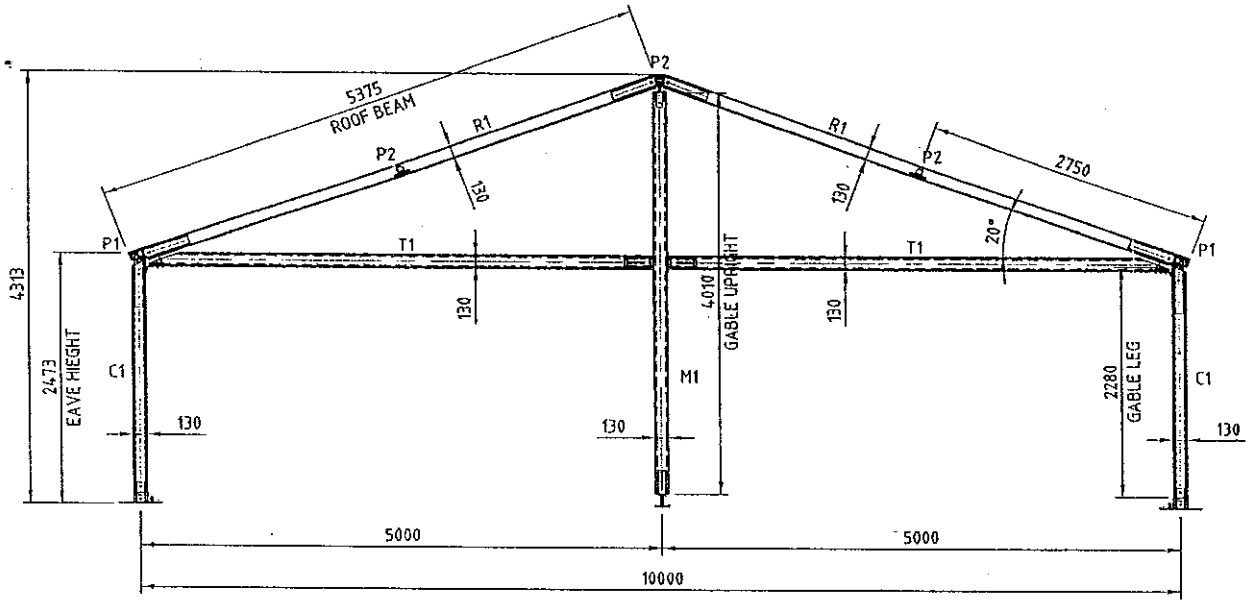
Title: 10m-HSP3 GABLE FRAME ON 2.4m LEGS AND 3m BAYS "P SERIES"

Original Size: A3 | Drawing No: 10M3-2.4_P3-INFO1 | Rev: A

Cad File No: C:\Windows Structures TMMS\STRUCTURES\10M3-2.4_P3.dwg
Plot Date: 13 January, 2006 - 10:58 AM

FRAMING MEMBER SCHEDULE		
MARK	SIZE	REMARKS
C1	130x70	PROFILE PHC-004
M1	130x70	PROFILE PHC-006
R1	130x70	PROFILE PHC-004
T1	130x70	PROFILE PHC-004
P1	130x70	PROFILE PHC-006
P2	60x60	PROFILE PHC-014





Appendix B5

INFORMATION

2033

A	INFORMATION	SN	SN		
No	Revision Note: * Indicates signature on original issue of drawing or last revision of drawing	Drawn	Checked	Approved	Date

design: TREVOR JOHN AND ASSOCIATES PTY LTD
trevor g john
civil eng
building practioner
367 glen osmond road
south australia 5064
tel: 08 379 6962 fax:08 336 1762

certifier: SRIV ENGINEERING PTY LTD
structural
william t ryan
b.e.m.eng.sc
m.i.e.aust. n.p.eng
civil
hydraulic
14 preston av zanvea
n.s.w australia 2289
tel + fax: (02) 8153 6672

HURRICANE Structures
Sydney, AUSTRALIA
Pegas Hire Centre (NSW) Pty Ltd
26-38 Belmore Road, Punchbowl NSW 2196
T 02 9533 9400 F 02 9533 9611
E hkards@bigpond.net.au

Scale	AS SHOWN
Cad	S.NERCESSIAN
Approved	
Date	JUNE 2005
	DO NOT SCALE
Checked	S.NERCESSIAN

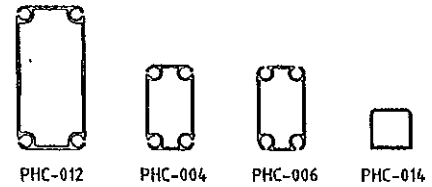
Title: 10m-HS5 GABLE FRAME ON 2.4m LEGS AND 5m BAYS

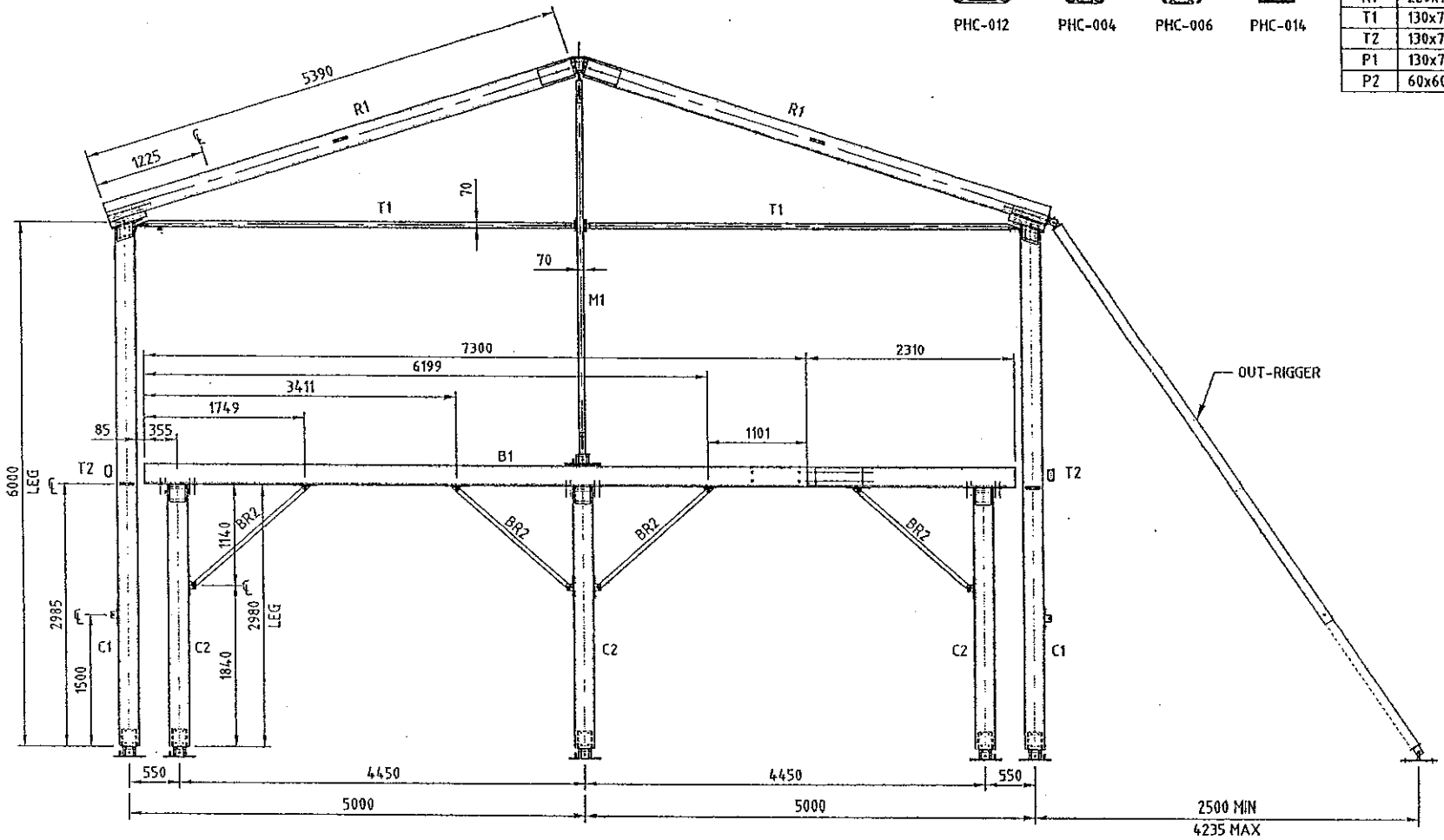
Original Size	Drawing No:	Rev:
A3	10M5-2.4-INFO1	A

Cad File No: C:\Hurricane Structures\10MHS-STRUCTURES\10M5-2.4.dwg
Plot Date: 31 January, 2006 - 10:16 AM

PANELS REQUIRED FOR 10m x 5m BAY INCLUDE:
(x2) PANNEL "I"
(x2) PANEL "O"

FRAMING MEMBER SCHEDULE		
MARK	SIZE	REMARKS
C1	220x100	PROFILE PHC-012
C2	220x100	PROFILE PHC-012
B1	220x100	PROFILE PHC-012
M1	130x70	PROFILE PHC-004
R1	220x100	PROFILE PHC-012
T1	130x70	PROFILE PHC-006
T2	130x70	PROFILE PHC-006
P1	130x70	PROFILE PHC-004
P2	60x60	PROFILE PHC-014





GABLE FRAME - MEZZANINE FLOOR

Appendix B6

INFORMATION

2034

No	Revision	SN	Checked	Approved	Date
A	INFORMATION	SN	SN		

designer: vaisala + associates
structural: trevor vaisala b.e.(civ), m.eng.sc, n.p.e.i.3, m.i.e. aust
civil:
hydraulic: 25 darling st balmain n.s.w. australia 2041 ph + fax: (02) 9555 8258

certifier: SNV ENGINEERING PTY LTD
structural: william i ngoo b.e.(civil), m.i.e.aust. c.p.eng
civil:
hydraulic: 14 beeston av menora n.s.w. australia 2209 tel + fax: (02) 9153 6672

HURRICANE Structures
Sydney, AUSTRALIA
Pagas Hire Centre (NSW) Pty Ltd
26-38 Belmore Road, Peakhurst NSW 2196
T 02 9533 9400 F 02 9533 9611
E charris@hpgpond.net.au

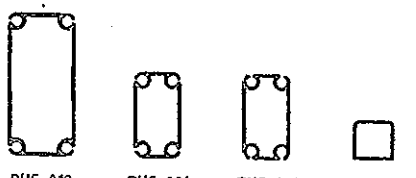
Scale	AS SHOWN	DO NOT SCALE	
Cad	S.INERCESSIAN	Checked	S.INERCESSIAN
Approved			
Date	JUNE 2005		

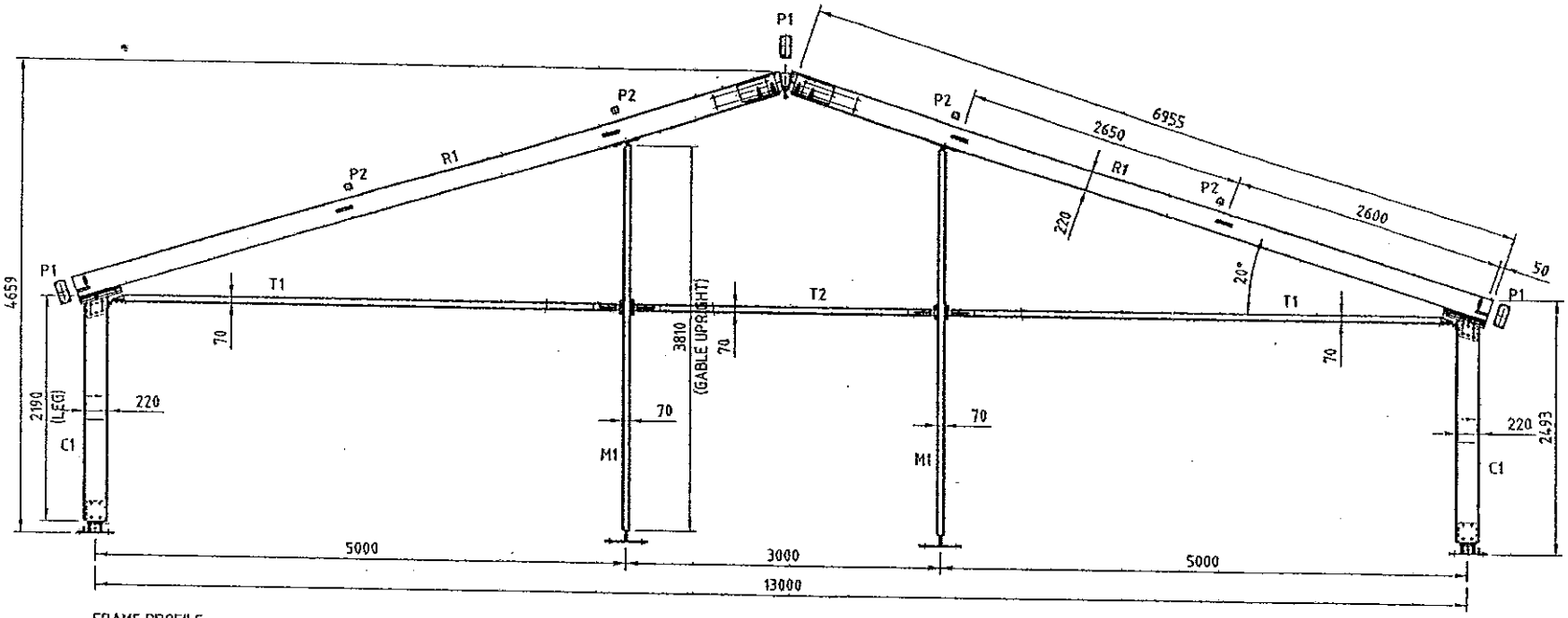
This Drawing must not be used for Construction before signed as Approved

Title: 10m-HS5-DBL GABLE FRAME ON 6.0m LEGS & 5m BAYS - MEZZANINE LEVEL

Original Size: A3
Drawing No: 10M5-6-DBL-INFO1
Rev: A

FRAMING MEMBER SCHEDULE		
MARK	SIZE	REMARKS
C1	220x100	PROFILE PHC-012
M1	130x70	PROFILE PHC-004
M2	130x70	PROFILE PHC-004
R1	220x100	PROFILE PHC-012
T1	130x70	PROFILE PHC-006
T2	130x70	PROFILE PHC-006
P1	130x70	PROFILE PHC-004
P2	60x60	PROFILE PHC-014





FRAME PROFILE

Appendix B7

INFORMATION

A	INFORMATION	SN	SN		
No	Revision	Drawn	Checked	Approved	Date

design: TREVOR JOHN AND ASSOCIATES PTY LTD
trevor g john
civil eng
building practioner
367 glen osmond road
south australia 5064
tel: 08 373 6962 fax: 08 338 1782

certifier: SRIV ENGINEERING PTY LTD
structural
william i ryan
b.e.m.eng.sc
m.i.e.aust. c.p. eng
civil
hydraulic
14 weston av hurstville
n.s.w australia 2220
tel. + fax: (02) 9153 6872

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Sydney AUSTRALIA
Pages Iffla Centre (NSW) Pty Ltd
26-34 Belmore Road, Peakhurst NSW 2210
T 02 9533 9400 F 02 9533 9611
E shanks@bigpond.net.au

Scale: AS SHOWN | DO NOT SCALE
Cad: SJHERCESSIAN | Checked: SJHERCESSIAN
Approved:
Date: JUNE 2005
This Drawing must not be used for Construction purposes unless signed as Approved

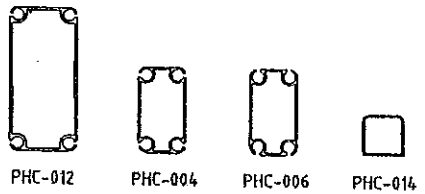
Title: 13m PORTAL FRAME WITH 2.4m LEGS AND 5m BAYS

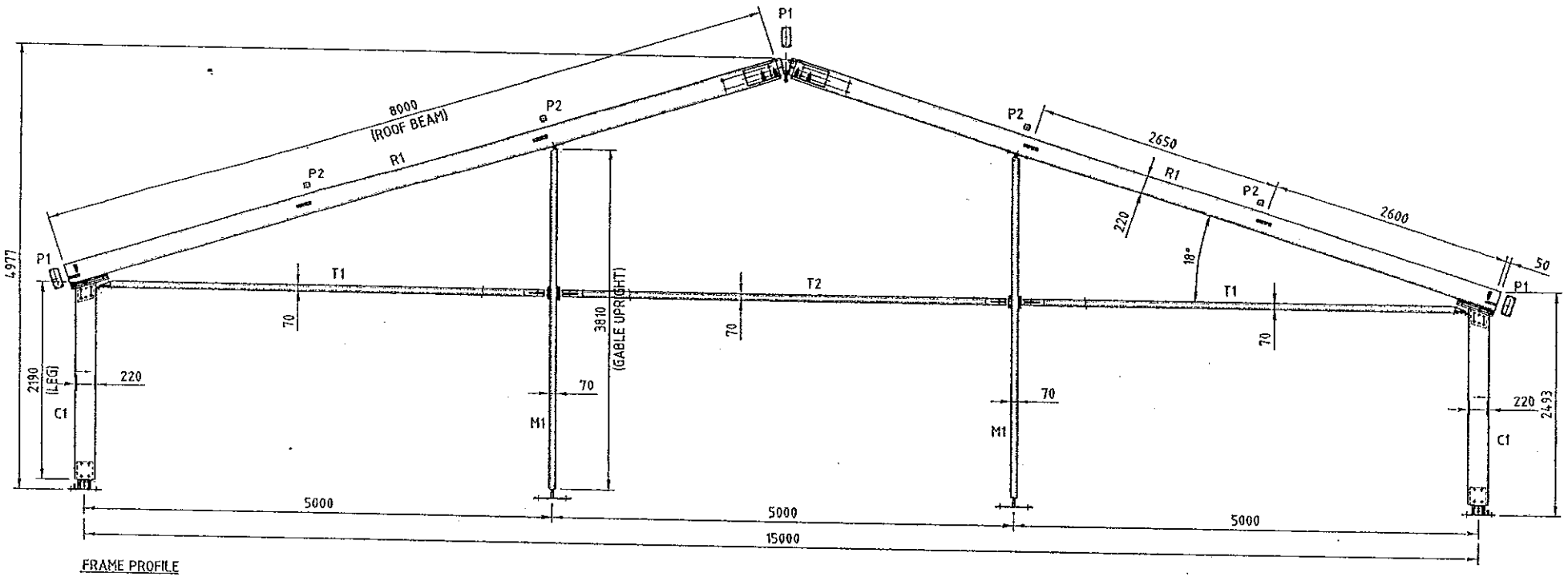
Original Size: A3 | Drawing No: 13M5-2.4 | Rev: A

Cad File No: C:\Hurricane Structures Pty Ltd\STRUCTURES 13M5-2.4.dwg
Plot Date: 08 November 2005 - 6.51 PM

2035

FRAMING MEMBER SCHEDULE		
MARK	SIZE	REMARKS
C1	220x100	PROFILE PHC-012
M1	130x70	PROFILE PHC-004
M2	130x70	PROFILE PHC-004
R1	220x100	PROFILE PHC-012
T1	130x70	PROFILE PHC-006
T2	130x70	PROFILE PHC-006
P1	130x70	PROFILE PHC-004
P2	60x60	PROFILE PHC-014





FRAME PROFILE

Appendix B8

INFORMATION

2036

No	Revision	SN	RM	Drawn	Checked	Approved	Date
A	INFORMATION						

Cad File No: C:\Hurricane Structures TEMP\STRUCTUREA 15M5-2.4.dwg
Plot Date: 31 January, 2006 - 10:17 AM

design: TREVOR JOHN AND ASSOCIATES PTY LTD
trevor g john
civil eng
building practitioner
367 glen osmond road
south australia 5064
tel: 08 339 6862 fax:08 336 1782

certifier: SRIV ENGINEERING PTY LTD
structural: william f ryan b.e.,m.eng.sc m.i.e.aust., c.p.eng
civil:
hydraulic: 14 weston av netara s.a.w australia 2289 tel + fax: (03) 9153 8672

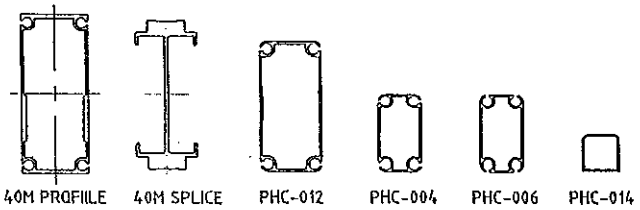
HURRICANE Structures
Sydney, AUSTRALIA.
Pagan Hire Centre (NSW) Pty Ltd
26-38 Belmore Road, Punchbowl NSW 2196
T 02 9533 5400 F 02 9533 9411
E sheds@bigpond.net.au

Scale	AS SHOWN	DO NOT SCALE
Des	S.NERCESSIAN	Checked R.MAKIN
Approved		
Date	JUNE 2005	

Title drawing shall not be used for Construction unless signed as Approved

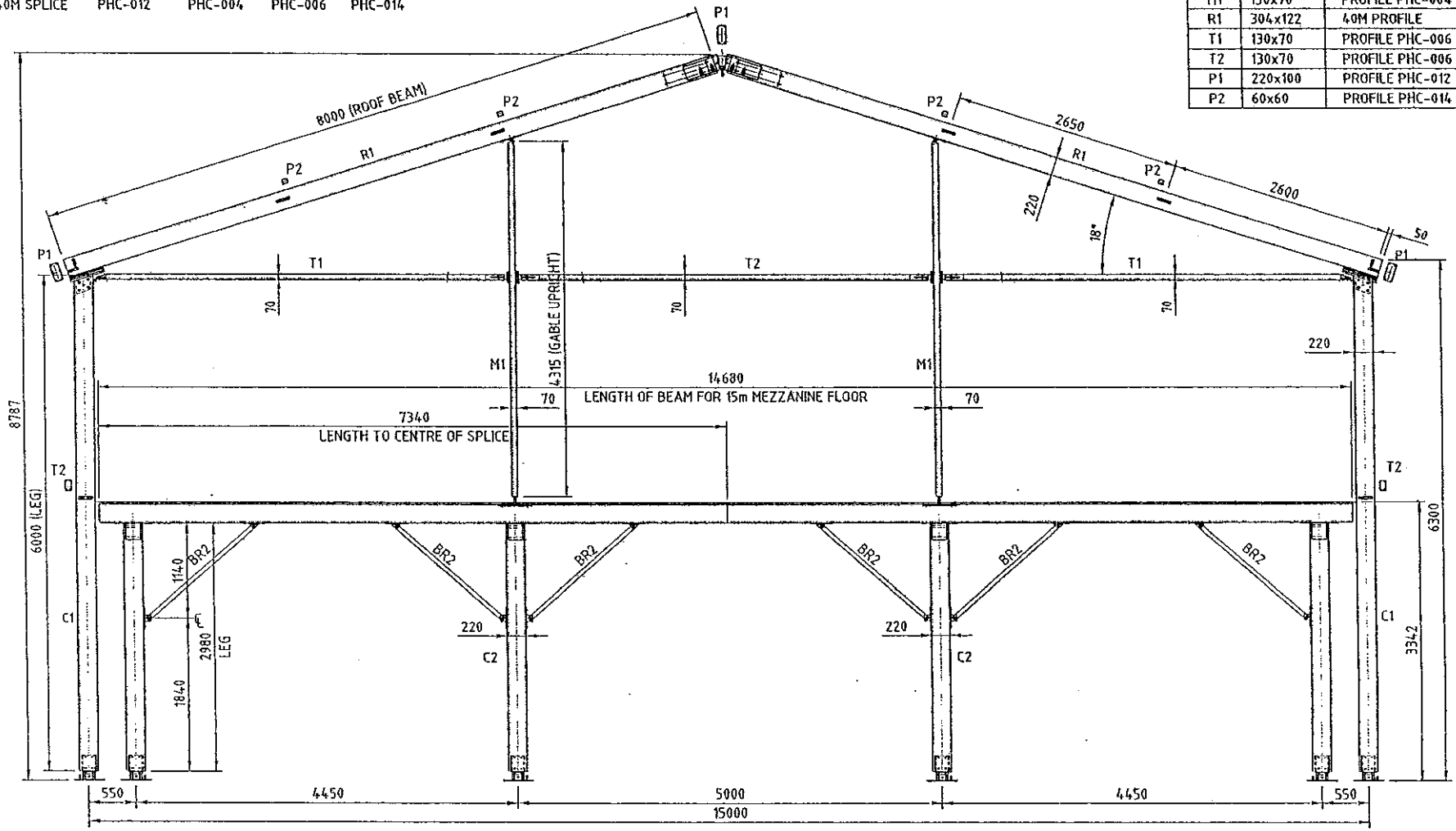
Title: 15m PORTAL FRAME WITH 2.4m LEGS AND 5m BAYS

Original Size: A3 | Drawing No: 15M5-2.4 | Rev: A



PANELS REQUIRED FOR 15m x 5m BAY INCLUDE:
(x4) PANNEL "I"
(x2) PANEL "O"

FRAMING MEMBER SCHEDULE		
MARK	SIZE	REMARKS
C1	304x122	40M PROFILE
C2	220x100	PROFILE PHC-012
B1	220x100	PROFILE PHC-012
M1	130x70	PROFILE PHC-004
R1	304x122	40M PROFILE
T1	130x70	PROFILE PHC-006
T2	130x70	PROFILE PHC-006
P1	220x100	PROFILE PHC-012
P2	60x60	PROFILE PHC-014



15m FRAME PROFILE - MEZZANINE LEVEL

INFORMATION

No	Revision (Note: * indicates signature on original issue of drawing or last revision of drawing)	Drawn	Checked	Approved	Date
A	INFORMATION	SN	SN		

design: valaire + associates — structural: trevor valaire b.sc. (tech) m.eng.sc m.i.e.a.u.s, m.i.e. aust — civil — hydraulic: 25 darling st balmain n.s.w australia 2041 tel + fax: (02) 9555 6758

certifier: SRIV ENGINEERING PTY LTD — structural: william tryon b.e.,m.eng.sc m.i.e.aust. c.p.eng — civil — hydraulic: 14 weston av penrose n.s.w australia 2209 tel + fax: (02) 9150 6672

HURRICANE STRUCTURES — Sydney, AUSTRALIA

Pagan Hire Centre (NSW) Pty Ltd
26-30 Belmore Road, Punchbowl NSW 2196
T 02 9533 9400 F 02 9533 9611
E shaning@bpond.net.au

Scale: AS SHOWN — DO NOT SCALE
Cad: SJNERCESSIAN — Checked: SJNERCESSIAN
Approved:
Date: JUNE 2005

Title: 15m PORTAL FRAME WITH 6.0m LEGS AND 5m BAYS - MEZZANINE LEVEL

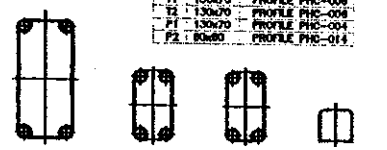
Original Size: A3 — Drawing No: 15M5-6-DBL — Rev: A

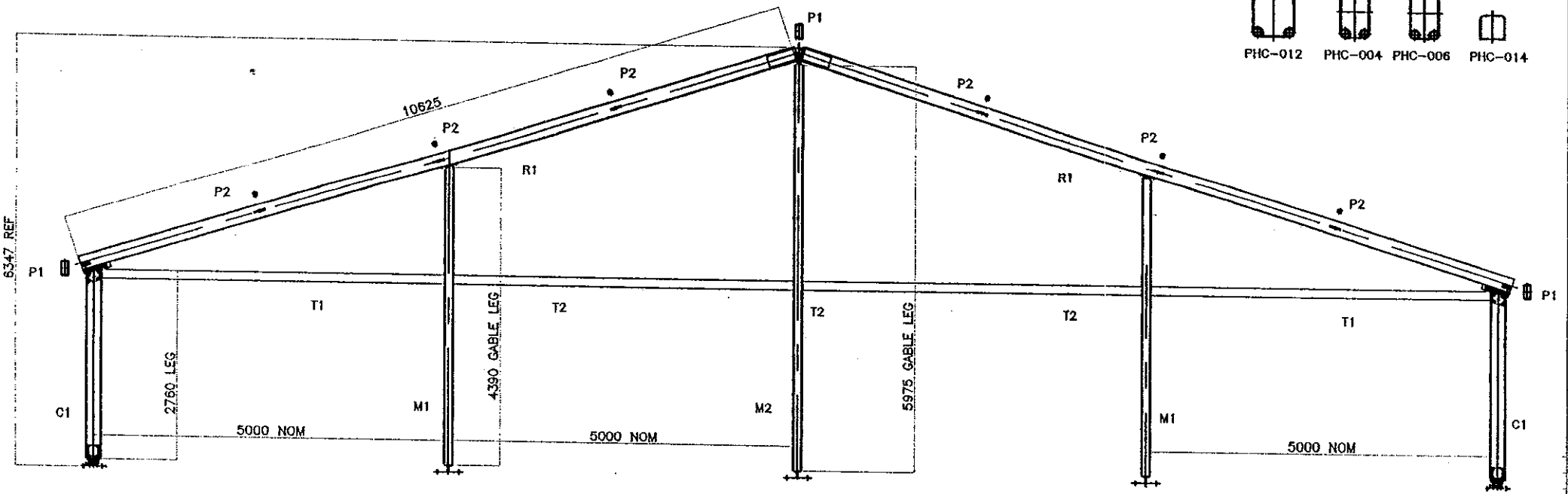
Cad File No: G:\Hurricane Structures 15M5-6-STRUCTURES\ 15M5-6-DBL.dwg — Plot Date: 31 January, 2006 - 1:04 PM

2037

Appendix B9

FRAMING MEMBER SCHEDULE		
MARK	SIZE	REMARKS
C1	220x100	PROFILE PHC-012
M1	130x70	PROFILE PHC-004
M2	130x70	PROFILE PHC-004
R1	220x100	PROFILE PHC-012
T1	150x70	PROFILE PHC-006
T2	130x70	PROFILE PHC-004
F1	130x70	PROFILE PHC-004
P2	80x80	PROFILE PHC-014





INFORMATION

Appendix B10

No	Revision	Drawn	Checked	Approved	Date

Cancellation

THIRD ANGLE PROJECTION

HURRICANE Structures
Sydney, AUSTRALIA

Pagas Hire Centre (NSW) Pty Ltd
26-38 Belmore Road, Punchbowl NSW 2196
T 02 9533 1400 F 02 9533 9611
E shaning@bigpond.net.au

ITEM	LOC	DESCRIPTION	MATERIAL	REQD

Scale:	AS SHOWN
Dsn:	S.NERCESSIAN
Checked:	S.NERCESSIAN
Date:	2005
Job No:	

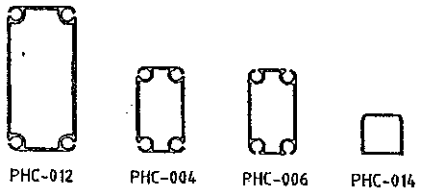
DO NOT SCALE
Design Approval
Signed:
Date:

Title: 20m WITH 5m GABLE UPRIGHT

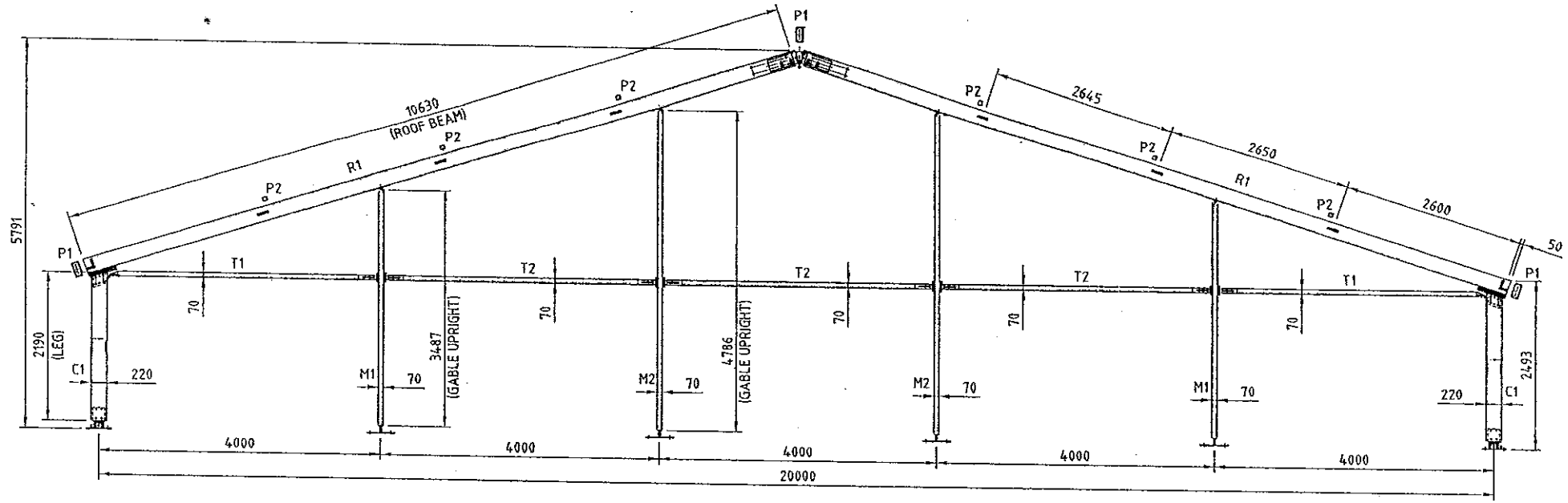
Original Size: A3 | Drawing No: 20m ASSY-5m | Rev: 0

2038

Cad File No: C:\Hurricane Structures TIMMS-STRUCTURES\5.20m ASSY.-5m SECT.dwg
Plot Date: 31 January, 2008 - 1:59 PM



FRAMING MEMBER SCHEDULE		
MARK	SIZE	REMARKS
C1	220x100	PROFILE PHC-012
M1	130x70	PROFILE PHC-004
M2	130x70	PROFILE PHC-004
R1	220x100	PROFILE PHC-012
T1	130x70	PROFILE PHC-006
T2	130x70	PROFILE PHC-006
P1	130x70	PROFILE PHC-004
P2	60x60	PROFILE PHC-014



FRAME PROFILE

Appendix B11

INFORMATION

2039

No	Revision	Drawn	Checked	Approved	Date
A	INFORMATION	SN	SN		

Cad File No: C:\Hurricane Structures TMNS-STRUCTURES\20M5-2.4.dwg

Plot Date: 31 January, 2006 - 10:16 AM

design: TREVOR JOHN AND ASSOCIATES PTY LTD
trevor g john
civil eng
building practioner
367 glen osmond road
south australia 5064
tel: 08 379 8882 fax:08 338 1782

certifier: SRIV ENGINEERING PTY LTD
structural
william f lyon
b.e.in eng.se
m.i.e.aust. c.p.eng
civil
hydraulic
14 yeadon ry narrabeen
n.s.w australia 2209
tel + fax: (02) 9153 6872

HURRICANE structures
Sydney, AUSTRALIA

Pagee Hire Centre (NSW) Pty Ltd
28-38 Belmore Road, Punchbowl NSW 2196
T 02 9533 5400 F 02 9533 5611
E sharks@tpgpond.net.au
ACN 095 872 301

Scale	AS SHOWN
Cad	S.NERCESSIAN
Approved	
Date	JUNE 2005

DO NOT SCALE

Checked S.NERCESSIAN

Title Drawing cannot be used for Construction unless signed as Approved

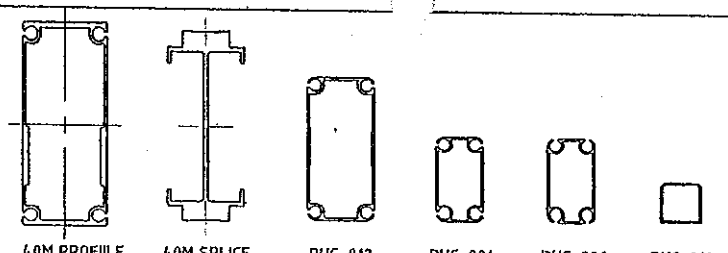
Title: 20m PORTAL FRAME WITH 2.4m LEGS AND 5m BAYS

Original Size: A3

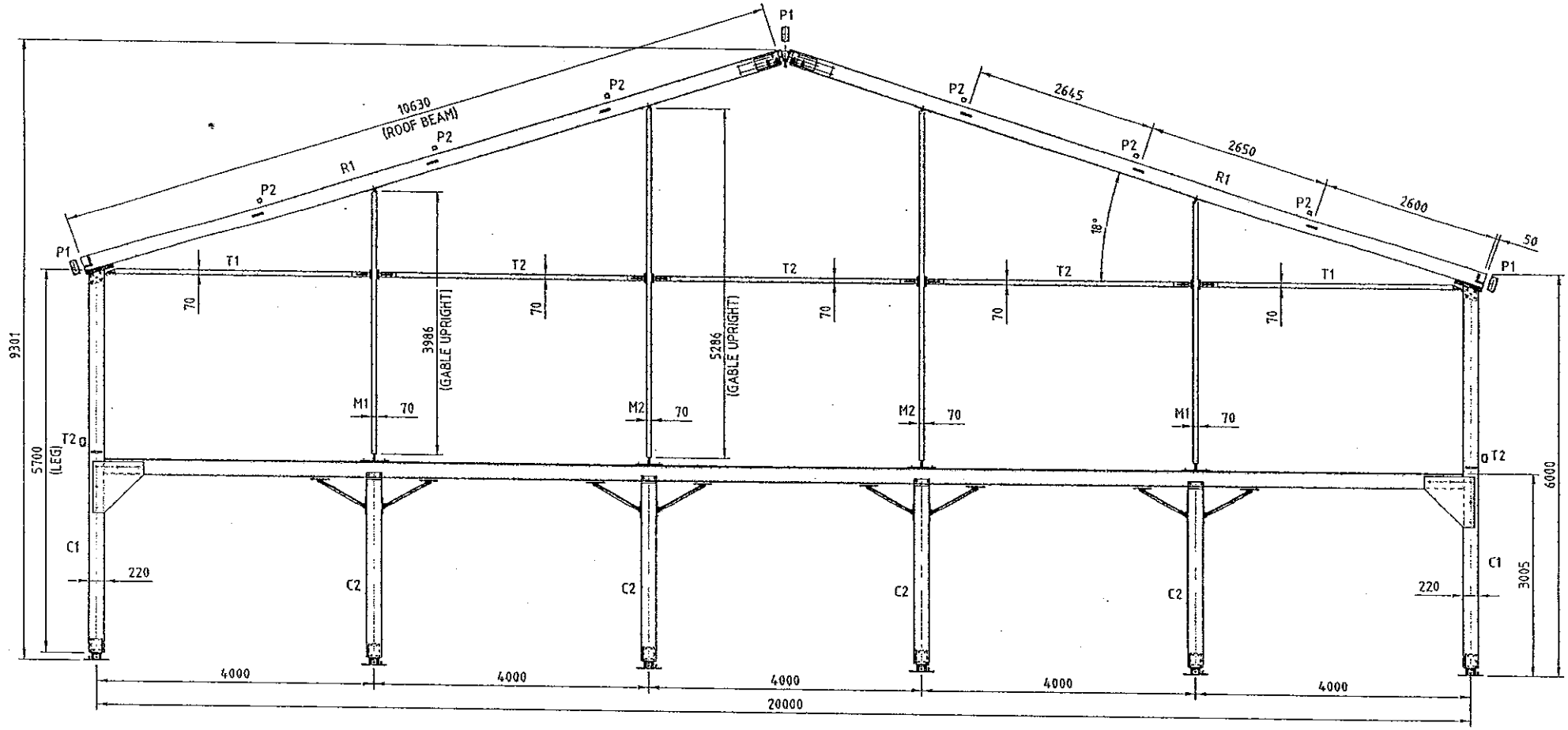
Drawing No: 20M5-2.4

Rev: A

NOTE:
OUT-RIGGER PROP REQUIRED FOR SUPPORT.



FRAMING MEMBER SCHEDULE		
MARK	SIZE	REMARKS
C1	304 x 122	40M PROFILE
M1	130x70	PROFILE PHC-004
M2	130x70	PROFILE PHC-004
R1	304 x 122	40M PROFILE
T1	130x70	PROFILE PHC-006
T2	130x70	PROFILE PHC-006
P1	130x70	PROFILE PHC-004
P2	60x60	PROFILE PHC-014



20m FRAME PROFILE – MEZZANINE LEVEL

Appendix B12

INFORMATION

No	Revision	Drawn	Checked	Approved	Date
A	INFORMATION	SN	SN		

designer: valaire + associates
structural: trevor valaire b.ae, (hons) m.engg.sc a.p.e.r.c.s, m.i.e. aust
civil:
hydraulic: 25 chifley st balmain n.s.w australia 2041 tel + fax: (02) 9555 8256

certifier: SRIV ENGINEERING PTY LTD
structural: william lyng b.a.sc.eng.sc m.i.e.aust, c.p.eng
civil:
hydraulic: 14 weston av strathfield n.s.w australia 2209 tel + fax: (02) 9168 0672

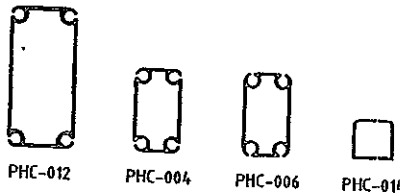
HURRICANE structures
Sydney, AUSTRALIA
Pagee Hire Centre (NSW) Pty Ltd
26-28 Bellmore Road, Punchbowl NSW 2196
T 02 9533 9400 F 02 9533 9611
E shamin@bigpondnet.au

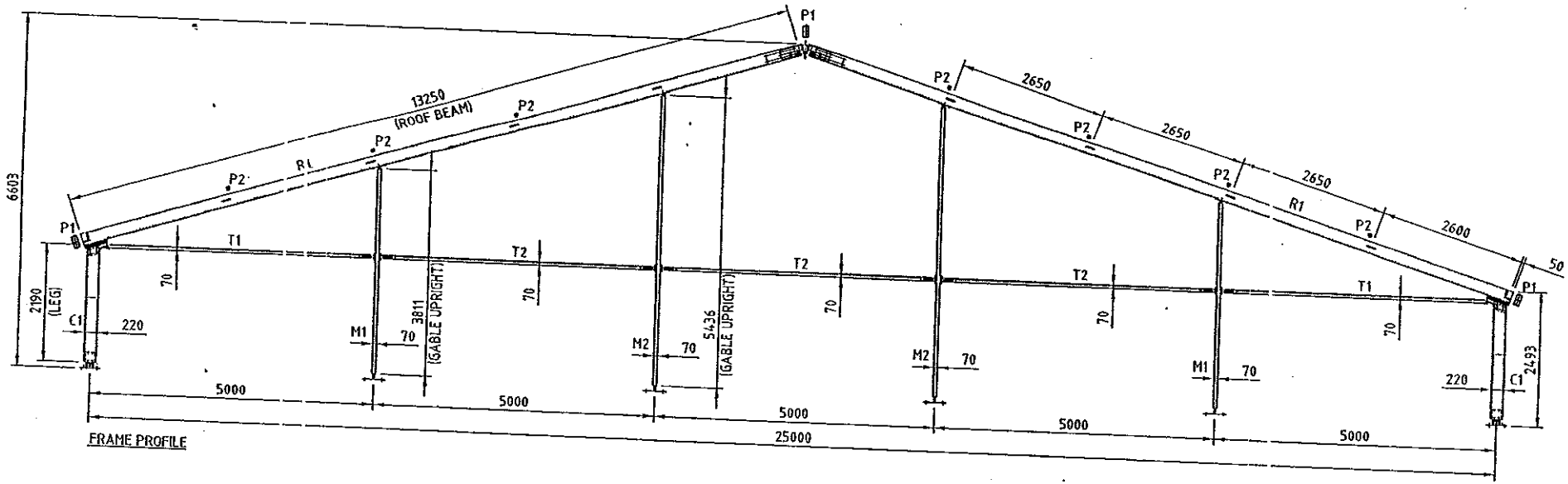
Scale: AS SHOWN — DO NOT SCALE
Drawn: S.NERCESSIAN
Checked: S.NERCESSIAN
Approved:
Date: JUNE 2005

Title: 20m PORTAL FRAME WITH 6.0m LEGS AND 5m BAYS - MEZZANINE LEVEL

Original Size: A3
Drawing No: 20M5-6-DBL
Rev: A

FRAMING MEMBER SCHEDULE		
MARK	SIZE	REMARKS
C1	220x100	PROFILE PHC-012
M1	130x70	PROFILE PHC-004
M2	130x70	PROFILE PHC-004
R1	220x100	PROFILE PHC-012
T1	130x70	PROFILE PHC-006
T2	130x70	PROFILE PHC-006
P1	130x70	PROFILE PHC-004
P2	60x60	PROFILE PHC-014





FRAME PROFILE

Appendix B13

INFORMATION

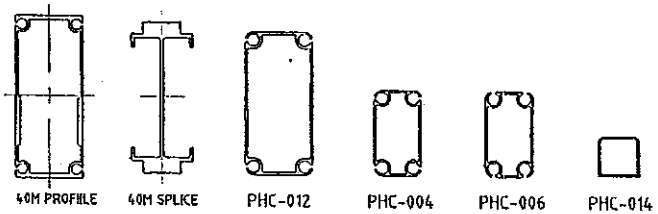
25m PORTAL FRAME WITH 2.4m LEGS AND 5m BAYS

Drawing No: 25M5-2.4

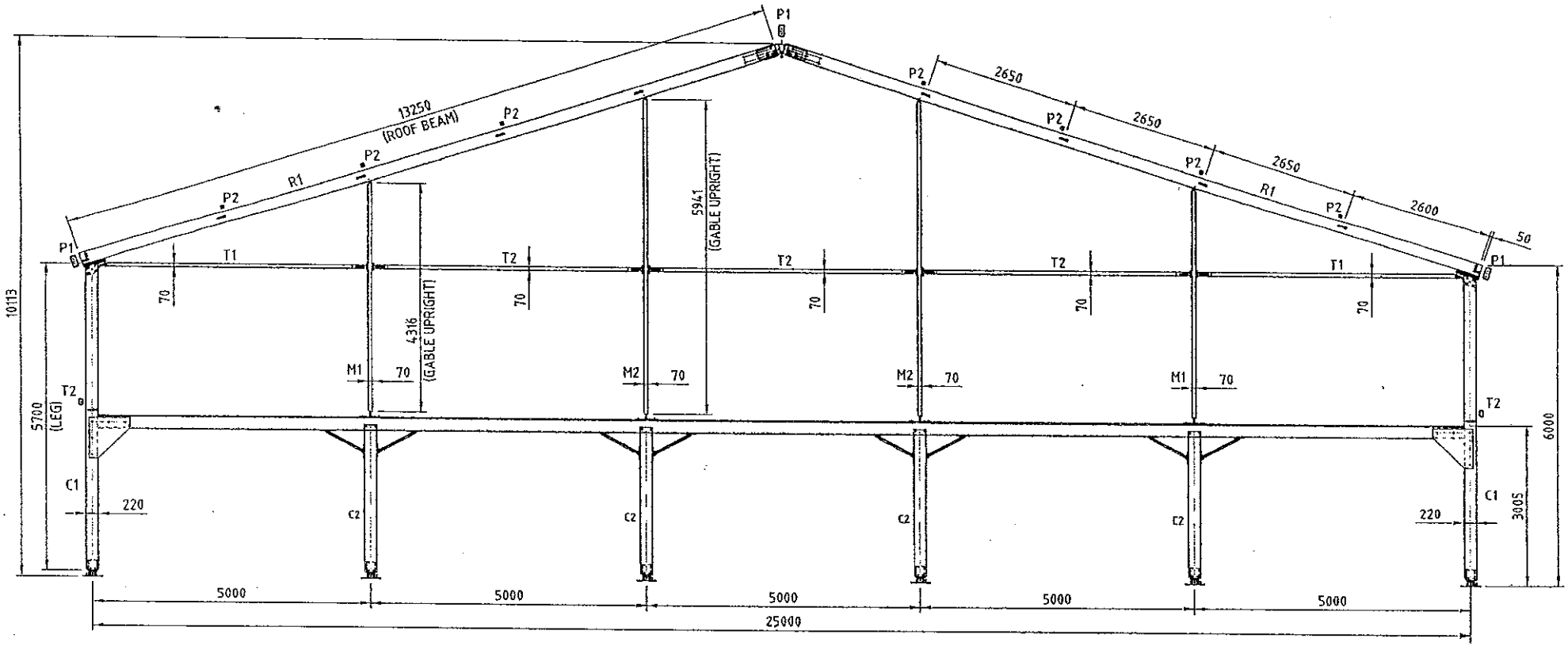
Rev: A

2041

NOTE:
OUT-RIGGER PROP REQUIRED FOR SUPPORT.



FRAMING MEMBER SCHEDULE		
MARK	SIZE	REMARKS
C1	304 x 122	40M PROFILE
M1	130x70	PROFILE PHC-004
M2	130x70	PROFILE PHC-004
R1	304 x 122	40M PROFILE
T1	130x70	PROFILE PHC-006
T2	130x70	PROFILE PHC-006
P1	130x70	PROFILE PHC-004
P2	60x60	PROFILE PHC-014



25m FRAME PROFILE - MEZZANINE LEVEL

Appendix B14

INFORMATION

No	Revision	Drawn	Checked	Approved	Date
A	INFORMATION	SN	SN		

design: vidale + associates
certifier: SRV ENGINEERING PTY LTD

structural: trevor vidale b.so., (hons) m.eng.sc m.p.e.i.a, m.i.e. aust
civil: hydraulic: 25 darling st balmain n.s.w australia 2041 tel + fax: (02) 9555 4755

structural: william lyon b.e.m.eng.sc m.i.e aust. c.p.eng
civil: hydraulic: 14 weston av penrith n.s.w australia 2209 tel + fax: (02) 9133 0672

HURRICANE structures
sydney, AUSTRALIA
Regos Hire Centre (NSW) Pty Ltd
26-36 Belmore Road, Punchbowl NSW 2196
T 02 9533 8400 F 02 9533 8611
E sheerin@bigpond.net.au

Scale	AS SHOWN
Cad	S.NERCESSIAN
Checked	S.NERCESSIAN
Approved	
Date	JUNE 2005

DO NOT SCALE

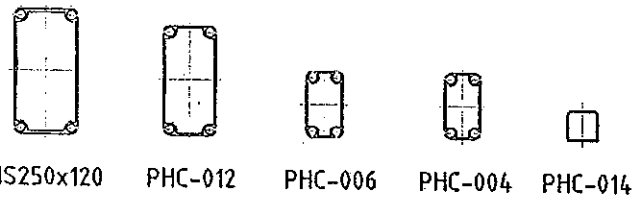
TCR Drawing must not be used for Construction unless signed as Approved

Title: 25m PORTAL FRAME WITH 6.0m LEGS AND 5m BAYS - MEZZANINE LEVEL

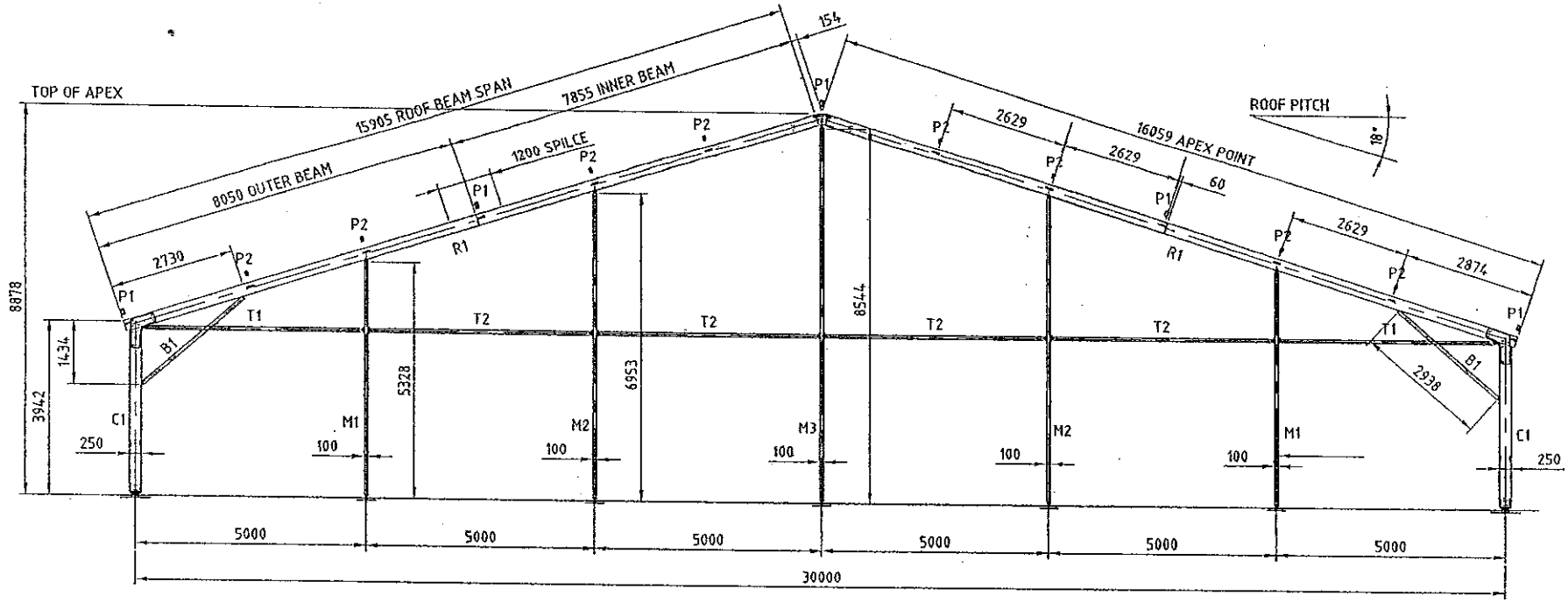
Original Size: A3 | Drawing No: 25M5-6-DBL | Rev: A

Cad File No: C:\Hurricane Structures TM\HS-STRUCTURES\25M5-6-DBL.dwg
Plot Date: 31 January, 2006 - 12:23 PM

2042



FRAMING MEMBER SCHEDULE		
MARK	SIZE	REMARKS
C1	250 x 120	HS250 x 120
R1	250 x 120	HS250 x 120
M1	220 x 100	PHC-012
M2	220 x 100	PHC-012
M3	220 x 120	PHC-012
B1	ϕ76.5 x 4 CHS	STEEL BRACE
P1	130 x 70	PHC-004
P2	60 x 60 x 2.8	PHC-014
T1	130 x 70	PHC-006
T2	130 x 70	PHC-006
WB1	ϕ10 WIRE ROPE	WIRE BRACE



30m GABLE END
SCALE 1:100

Appendix B15

INFORMATION

2043

No	Revision	Drawn	Checked	Approved	Date

0 1 2 3 4 5m
(1:100 for A3 Size Plot)

HURRICANE Structures
Sydney, AUSTRALIA
Hurricane Structures Pty Ltd
28-38 Belmore Road, Punchbowl NSW 2196
T 02 9543 3833 F 02 9533 0611
E shanik@bigpond.net.au

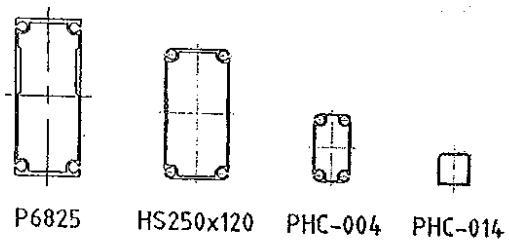
Scale	AS SHOWN
Drawn	SJHERCESSIAN
Checked	SJHERCESSIAN
Approved	
Date	8/05/05

DO NOT SCALE

This Drawing must not be used for Construction unless signed as Approved

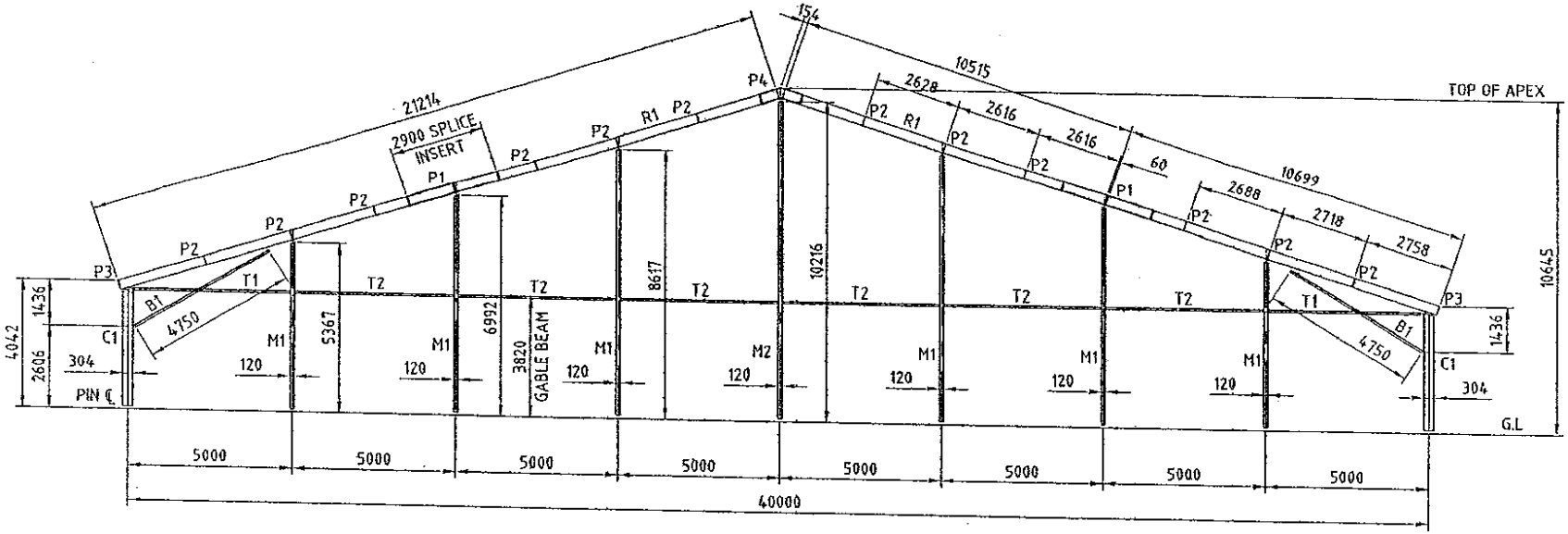
Title: 30m PORTAL FRAME

Original Size: A3 | Drawing No: HS30M-001 | Rev: A



FRAMING MEMBER SCHEDULE

MARK	SIZE	REMARKS
C1	304 x 122	P6825
R1	304 x 122	P6825
M1	250 x 120	HS250x120
M2	304 x 122	P6825
B1	ø76.5 x 4 CHS	STEEL TUBE
P1	80 x 80 x 4 SHS	PURLIN
P2	60 x 60 x 2.8	PHC-014
P3	130 x 70	PHC-004
P4	130 x 70	PHC-004
T1	130 x 70	PHC-004
T2	130 x 70	PHC-004
WB1	ø10 WIRE ROPE	WIRE BRACE



40m GABLE PROFILE
SCALE N.T.S.

2044

No	Revision	Drawn	Checked	Approved	Date
A	INFORMATION	SN	SN		

design: valaitis + associates
structural: trevor valaitis b.com. (tech) ms engineering m.i.e.a. m.i.s. aust
civil:
hydraulic: 25 darling st balmain n.s.w. australia 2041 tel + fax: (02) 9555 4756

certifier: SRV ENGINEERING PTY LTD
structural: william tyson b.e. m.eng sc m.i.e.aust, c.p.eng
civil:
hydraulic: 14 wardoo av ramsgate n.s.w. australia 2209 tel + fax: (02) 9153 6462

HURRICANE structures
Sydney, AUSTRALIA

Pagoo Hire Centre (NSW) Pty Ltd
26-28 Belmore Road, Punchbowl NSW 2196
T 02 9533 9400 F 02 9533 9611
E ahendry@bigpond.net.au

Scale: AS SHOWN — DO NOT SCALE
Cad: SUNERGESSIAN — Checked: SUNERGESSIAN
Approved:
Date: JUNE 2005

INFORMATION

Title: 40m PORTAL FRAME WITH 4.0m LEGS AND 5m BAYS

Original Size: A3 — Drawing No: 40M5-4 — Rev: A

AWTA PRODUCT TESTING

Australian Wool Testing Authority Ltd - trading as AWTA Product Testing
A.B.N. 43 006 014 106
1st Floor, 191 Racecourse Road, Flemington, Victoria 3031
P.O. Box 240, North Melbourne, Victoria 3051
Phone (03) 9371 2400 Fax (03) 9371 2499

TEST REPORT

CLIENT : BAYTEX MANUFACTURING LTD
52 NEWTON STREET
MT MAUNGANUI SOUTH

NEW ZEALAND

TEST NUMBER : 7-565828-BO
ISSUE DATE : 15/04/2009
PRINT DATE : 16/04/2009
ORDER NUMBER : 29211

ORDER NUMBER : 29211

SAMPLE DESCRIPTION Clients Ref: "Silkline FR 300d Lining Fabric"
Woven fabric
Colour: White
End Use: Interior linings for marquees

THESE RESULTS MUST BE CONSIDERED IN CONJUNCTION
WITH THE COMMENTS ON THE FOLLOWING PAGE(S)

Material Specification provided by client:
Nominal composition: 100% Inherently flame retardant polyester
Nominal mass: 185g/m2
Nominal thickness: 330mu

AS/NZS 1530.3 - 1999 Simultaneous determination of Ignitability, Flame Propagation, Heat Release and Smoke Release

RESULTS: Face tested: Face

Date tested: 06/04/2009

	Mean		Standard Error
Ignition time	Nil	min	Nil
Flame propagation time	Nil	s	Nil
Heat release integral	Nil	kJ/m2	Nil
Smoke release, log d	Nil		Nil
Optical density, d	Nil	/m	

Number of specimens ignited: 0

Number of specimens tested: 6

REGULATORY INDICES:		
Ignitability Index	0	Range 0-20
Spread of Flame Index	0	Range 0-10
Heat Evolved Index	0	Range 0-10
Smoke Developed Index	0-1	Range 0-10

Comments:

These results only apply to the specimen mounted, as described in this report.

The results of this fire test may be used to directly assess fire hazard, but it should be recognized that a single test method will not provide a full assessment of fire hazard under all fire conditions.

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.

NATA

This Laboratory is accredited by the National Association of Testing Authorities, Australia, for:
-Chemical Testing of Textiles & Related Products : Accreditation No. 983
-Mechanical Testing of Textiles & Related Products : Accreditation No. 985
-Heat & Temperature Measurement : Accreditation No. 1356

This document is issued in accordance with NATA's accreditation requirements. Samples, and their identifying descriptions have been provided by the client unless otherwise stated. AWTA Ltd makes no warranty, implied or otherwise, as to the source of the tested samples. The above test results relate only to the sample or samples tested. This document shall not be reproduced except in full and shall be rendered void if ammended or altered. This document, the names AWTA Product Testing and AWTA Ltd may be used in advertising providing the content and format of the advertisement have been approved in advance by the Managing Director of AWTA Ltd.

AWTA LIMITED

APPROVED SIGNATORY

MICHAEL A. JACKSON B.Sc.(Hons)
MANAGING DIRECTOR

AWTA PRODUCT TESTING

Australian Wool Testing Authority Ltd - trading as AWTA Product Testing
A.B.N. 43 006 014 106
1st Floor, 191 Racecourse Road, Flemington, Victoria 3031
P.O. Box 240, North Melbourne, Victoria 3051
Phone (03) 9371 2400 Fax (03) 9371 2499

TEST REPORT

CLIENT : BAYTEX MANUFACTURING LTD
52 NEWTON STREET
MT MAUNGANUI SOUTH

NEW ZEALAND

TEST NUMBER : 7-565828-BO
ISSUE DATE : 15/04/2009
PRINT DATE : 16/04/2009
ORDER NUMBER : 29211

ORDER NUMBER : 29211

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 and the assembly clamped in four places.

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

Smoke Developed Index is reported as 0-1 due to the inability of the smoke measurement equipment to resolve an index of zero.

Ignition is initiated by a pilot flame that is held near, but does not touch the specimen. A material that does not ignite during the standard test may ignite if contacted with a pilot flame during the test.

AS 1530.2-1993 Test for Flammability of Materials

DATE TESTED: Flammability Index: 1 Range 0 - 100 for most material

14/04/2009

		Length	Width	
Spread Factor: Range 0 - 40		0	0	
Heat Factor: Range 0 - upward		1	1	
		Length	Width	
Maximum height (d)	mean	0.5	0.5	
	cv	0.0	0.0	%
Time (t)	mean	N/A	N/A	s
	cv	N/A	N/A	%
Heat (a)	mean	1.5	1.5	degC min
	cv	0	0	%
No of specimens tested		6	6	

These test results relate only to the behaviour of the test specimens of the material under the particular conditions of the test, and they are not intended to be the sole criterion for assessing the potential fire hazard of the material in use

NATA

This Laboratory is accredited by the National Association of Testing Authorities, Australia, for:
-Chemical Testing of Textiles & Related Products : Accreditation No. 983
-Mechanical Testing of Textiles & Related Products : Accreditation No. 985
-Heat & Temperature Measurement : Accreditation No. 1356

AWTA LIMITED

0204/11/06

APPROVED SIGNATORY

MICHAEL A. JACKSON B Sc (Hons)
MANAGING DIRECTOR

2046

AWTA TEXTILE TESTING

26 Robertson Street, Kensington, Victoria 3031
P.O. Box 240 North Melbourne, Victoria 3051
Phone (03) 9371 2126 Telex AA35301 Fax (03) 9376 3469
Australian Wool Testing Authority Ltd – A.C.N. 006 014 106
trading as AWTA Textile Testing

TEST REPORT*

CLIENT : JANDS ELECTRONICS PTY LTD
LOCKED BAG 15
MASCOT NSW 2020

TEST NUMBER : 7-467324-BN
DATE : 21.03.97

SAMPLE DESCRIPTION CLIENTS REF: JANDS FILLED CLOTH – "LENO" / SHARKSTOOTH
WOVEN CURTAIN FABRIC
COLOUR: WHITE

THESE RESULTS MUST BE CONSIDERED IN CONJUNCTION
WITH THE COMMENTS ON THE FOLLOWING PAGE(S)

MATERIAL SPECIFICATION PROVIDED BY CLIENT:
NOMINAL COMPOSITION: 100% COTTON, FR TREATED
NOMINAL THICKNESS: 0.4mm
NOMINAL MASS: 140g/m2

AS 1530.3.1989 SIMULTANEOUS DETERMINATION OF IGNITABILITY, FLAME
AMDT NO 1 APR 92 PROPAGATION, HEAT RELEASE AND SMOKE RELEASE

RESULTS:

	MEAN		STANDARD ERROR
IGNITION TIME	NIL	min	NIL
FLAME PROPAGATION TIME	NIL	s	NIL
HEAT RELEASE INTEGRAL	NIL	kJ/m2	NIL
SMOKE RELEASE, LOG D	-1.5888		0.0655
OPTICAL DENSITY, D	0.0271	/m	

NUMBER OF SPECIMENS IGNITED: 0
NUMBER OF SPECIMENS TESTED: 6

REGULATORY INDICES:		
IGNITABILITY INDEX	0	RANGE 0-20
SPREAD OF FLAME INDEX	0	RANGE 0-10
HEAT EVOLVED INDEX	0	RANGE 0-10
SMOKE DEVELOPED INDEX	2	RANGE 0-10

73779 1

(CONTINUED NEXT PAGE)

CHARGES *

TESTING	$540.00
TOTAL	$540.00

0204/1/96

This Laboratory is registered by the National Association of Testing Authorities, Australia, for:
- Chemical Testing of Textiles & Related Products : Registration No. 983
- Mechanical Testing of Textiles & Related Products : Registration No. 985
- Heat & Temperature Measurement : Registration No. 1356

* The above tests have been performed in accordance with NATA's terms of registration. Samples and their identifying descriptions are normally submitted by the client unless otherwise stated. AWTA Textile Testing makes no warranty, implied or otherwise, as to the source of the tested sample. The above tests relate only to the sample tested. This document shall not be reproduced except in full and shall be rendered void if amended or altered. This document, the name AWTA Textile Testing or AWTA Ltd may not be used in any form of advertising without the prior written consent of the Managing Director of AWTA Ltd.

AUTHORISED SIGNATORY

D.J. WARD B.Sc., M.A.I.A.S.
MANAGING DIRECTOR

AWTA TEXTILE TESTING

26 Robertson Street, Kensington, Victoria 3031
P.O. Box 240 North Melbourne, Victoria 3051
Phone (03) 9371 2126 Telex AA35301 Fax (03) 9376 3469
Australian Wool Testing Authority Ltd – A.C.N. 006 014 106
trading as AWTA Textile Testing

TEST REPORT*

CLIENT : JANDS ELECTRONICS PTY LTD
LOCKED BAG 15
MASCOT NSW 2020

TEST NUMBER : 7-467291-BN
DATE : 19.03.97

SAMPLE DESCRIPTION CLIENTS REF: JANDS FILLED CLOTH - "LENO" / SHARKSTOOTH
ONE SAMPLE OF WHITE WOVEN FABRIC
NOMINALLY:100% COTTON 140gsm WEIGHT
0.4mm THICKNESS FR TREATED
ENDUSE: THEATRE CURTAINS

AS 1530.2-1993 TEST FOR FLAMMABILITY OF MATERIALS

DATE TESTED:
18.03.97

FLAMMABILITY INDEX: 3 RANGE 0 - 100 FOR MOST MATERIALS

		LENGTH	WIDTH
SPREAD FACTOR: RANGE 0 - 40		1	2
HEAT FACTOR: RANGE 0 - UPWARD		1	1
MAXIMUM HEIGHT (D)	MEAN	3.3	4.1
	CV	8.4	9.2 %
TIME (T)	MEAN	N/A	N/A s
	CV	N/A	N/A %
HEAT (A)	MEAN	2.2	2.3 deg/min
	CV	19	17.8 %
NO OF SPECIMENS TESTED		6	6

THESE TEST RESULTS RELATE ONLY TO THE BEHAVIOUR OF THE TEST SPECIMENS OF THE MATERIAL UNDER THE PARTICULAR CONDITIONS OF THE TEST, AND THEY ARE NOT INTENDED TO BE THE SOLE CRITERION FOR ASSESSING THE POTENTIAL FIRE HAZARD OF THE MATERIAL IN USE.

DRYCLEANED SPECIMENS WERE TREATED 6 TIMES PRIOR TO TESTING IN WHITE SPIRIT SOLVENT

73780 2

CHARGES *	
TESTING	$314.00
TOTAL	$314.00

0204/1/96

This Laboratory is registered by the National Association of Testing Authorities, Australia, for:
- Chemical Testing of Textiles & Related Products : Registration No. 983
- Mechanical Testing of Textiles & Related Products : Registration No. 985
- Heat & Temperature Measurement : Registration No. 1356

* The above tests have been performed in accordance with NATA's terms of registration. Samples and their identifying descriptions are normally submitted by the client unless otherwise stated. AWTA Textile Testing makes no warranty, implied or otherwise, as to the source of the tested sample. The above tests relate only to the sample tested. This document shall not be reproduced except in full and shall be rendered void if amended or altered. This document, the name AWTA Textile Testing or AWTA Ltd may not be used in any form of advertising without the prior written consent of the Managing Director of AWTA Ltd.

AUTHORISED SIGNATORY

D.J. WARD B.Sc., M.A.I.A.S.
MANAGING DIRECTOR

NKCENF2114

Certificate of Test

REPORT NO. FNF1013

TEST FOR FLAMMABILITY OF MATERIALS

TRADE NAME: SAFECOAT F.R.F.T

SPONSOR: Senator Paints Australasia Pty Ltd
3673 Pacific Highway
SLACKS CREEK QLD
AUSTRALIA

DESCRIPTION OF TEST SPECIMEN: The sponsor described the specimen as 100% cotton fabric soaked in 'Safe Coat FRFT' flame retardant chemical and allowed to dry
Nominal total mass 200 g/m²
Colours: white

TEST PROCEDURE: Six samples were tested in accordance with Australian Standard 1530.2-1993, Test for Flammability of Materials.

RESULTS: The following were obtained for the specimen:

	Maximum Flame Height (D)	Time for Flame to Reach Top (t)	Area Under Curve (A)
Mean	1.1	N/A	0.4
Coefficient of Variance (%)	19	N/A	16

From which the following indices were obtained

SPREAD Factor	SPEED Factor	HEAT Factor	FLAMMABILITY INDEX
0	0	0	0

The results only apply to the material in the new and clean condition. Cleaning operations may subsequently affect the fire performance of this material.

These test results relate only to the behaviour of the test specimens of the material under the particular conditions of test, and are not intended to be the sole criterion for assessing the potential fire hazard for the material in use.

DATE OF TEST: 19 September 1996

Issued on the 26th day of September 1996 without alterations or additions.

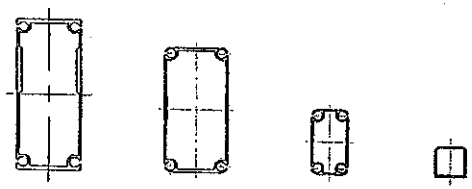
Z Trojko
Testing Officer

G.E Collins
Manager Fire Testing/Assessments

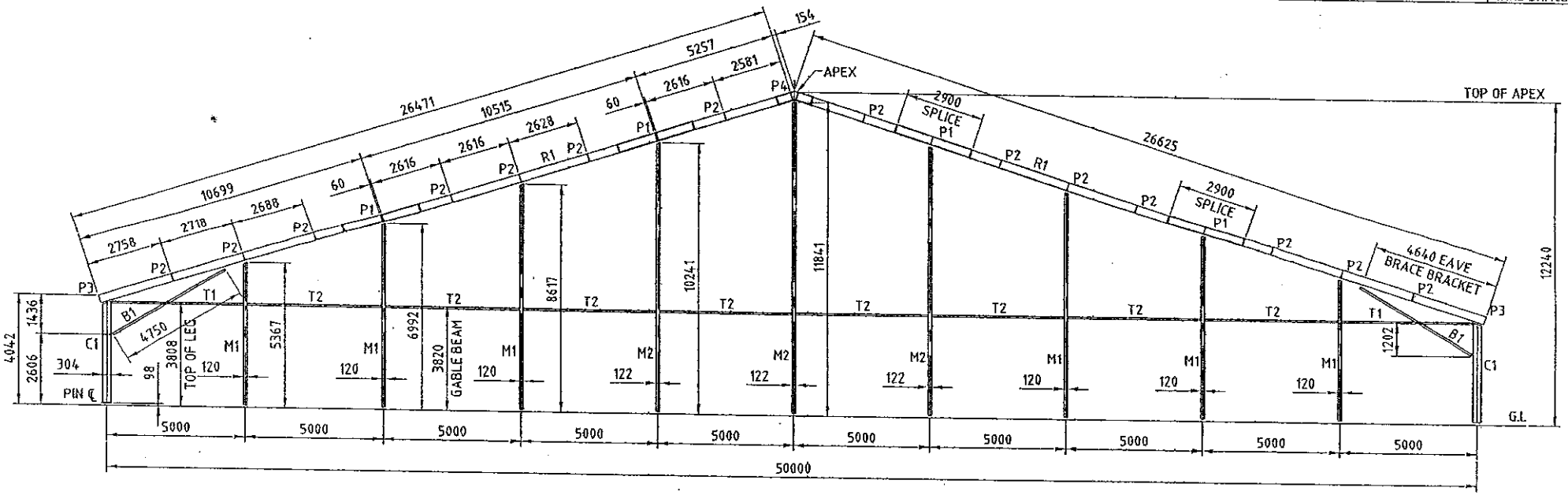
This laboratory is registered by the National Association of Testing Laboratories, Australia. The tests reported herein have been performed in accordance with the terms of registration.

Division of Building, Construction and Engineering
PO Box 310 NORTH RYDE NSW 2113 Telephone (02) 934 1444 Fax (02) 934 3555

CSIRO



FRAMING MEMBER SCHEDULE		
MARK	SIZE	REMARKS
C1	334 x 122	P6825
R1	334 x 122	P6825
M1	250 x 120	HS250x120
M2	334 x 122	P6825
B1	ø76.5 x 4 CHS	STEEL TUBE
P1	80 x 80 x 4 SHS	PURLIN
P2	60 x 60 x 2.8	PHC-014
P3	130 x 70	PHC-004
P4	130 x 70	PHC-004
T1	130 x 70	PHC-004
T2	130 x 70	PHC-004
WB1	ø10 WIRE ROPE	WIRE BRACE



50m GABLE PROFILE
SCALE N.T.S.

Appendix B17

INFORMATION

No	Revision	Drawn	Checked	Approved	Date
A	INFORMATION	SN	SN		

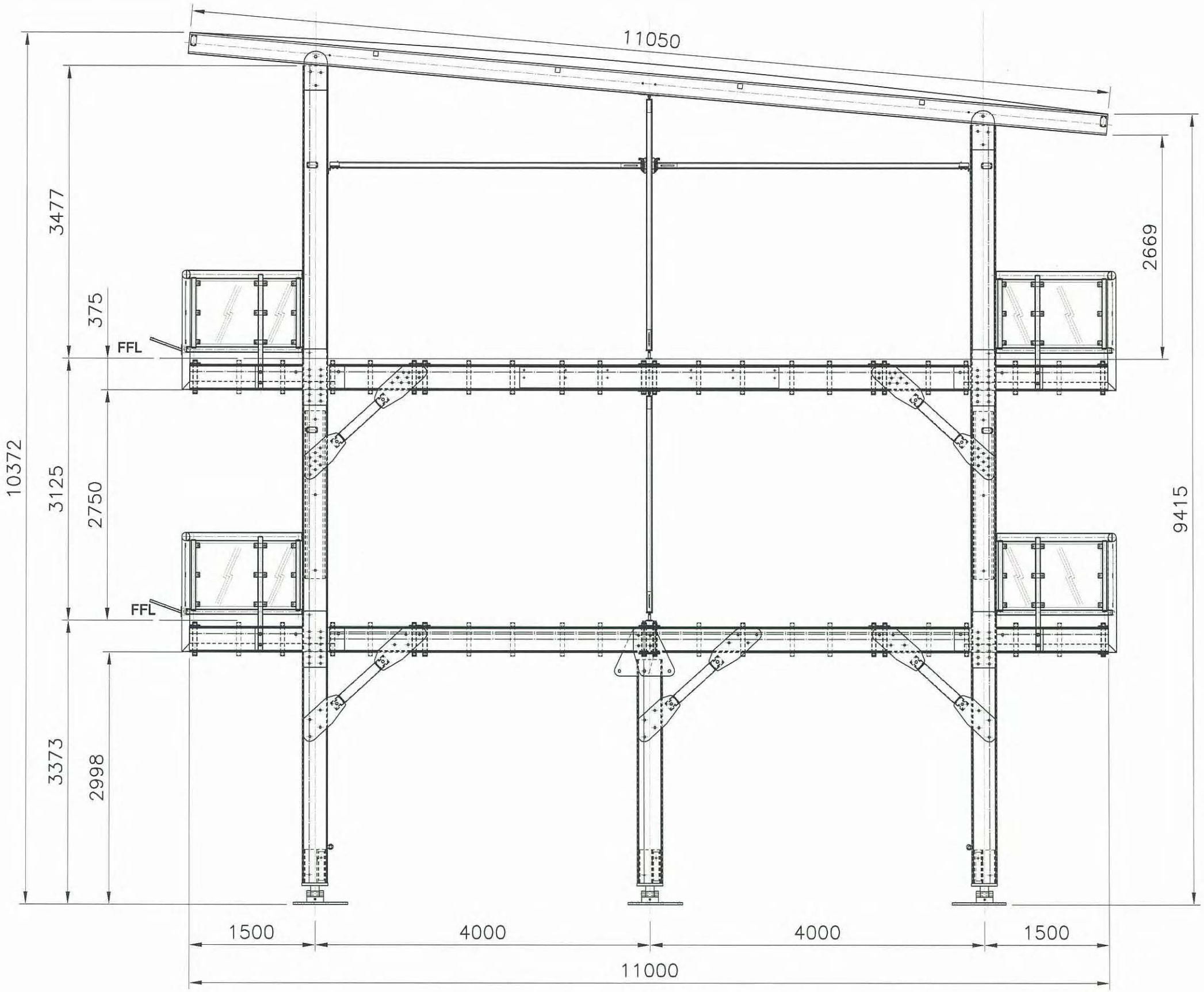
HURRICANE STRUCTURES
Sydney, AUSTRALIA
Pagee Hire Centre (NSW) Pty Ltd
28-38 Belmore Road, Punchbowl NSW 2196
T 02 9533 9400 F 02 9533 9611
E hstruc@bigpond.net.au

Scale: AS SHOWN | DO NOT SCALE
Cad: SJNERCESSIAN | Checked: SJNERCESSIAN
Approved:
Date: 2005

Title: 50m PORTAL FRAME

Original Size: A3 | Drawing No: HS50M-001 | Rev: A

2050



Appendix B18

INFORMATION

No	Revision	Drawn	Checked	Approved	Date
B	DIMS ADDED	GJN			13/11/09
A	INFORMATION				23-06-09

Notes: * Indicates signatures on original issue of drawing or last revision of drawing

Cad File No:

Plot Date:

design: valaire + associates
structural: trevor valaire, b.sc. (tech) m.eng.sc, n.p.e.r.3, m.i.e. aust
civil:
hydraulic: 25 darling st balmain, n.s.w australia 2041, tel + fax: (02) 9555 8756

certifier: SRIV ENGINEERING PTY LTD
structural: william l ryan, b.e.m.eng.sc, m.i.e.aust. c.p.eng
civil:
hydraulic: 14 weston av narwee, n.s.w australia 2209, tel + fax: (02) 9153 6672

HURRICANE Structures
Sydney, AUSTRALIA

Pages Hire Centre (NSW) Pty Ltd
26-38 Belmore Road, Punchbowl NSW 2196
T 02 9533 9400 F 02 9533 9611
E shantn@bigpond.net.au
ACN: 050 073 351

Scale 1:50 | DO NOT SCALE
Cad | Checked ATTILA BOROS
Approved
Date 23-06-09
This Drawing must not be used for Construction unless signed as Approved

Title: **PAGES TRIPLE STOREY STRUCTURE - END FRAME**

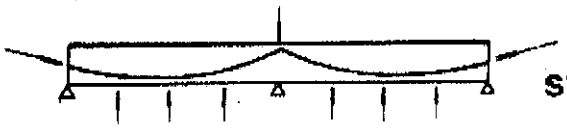
Original Size: A3 | Drawing No: PAGES-A01 SHEET 2 | Rev: B

2051

C:\A-PROJECT\PAGES EVENT EQUIPMENT\Projects\MISCELL\ATTILA\DWGS\V8'S\triple storey\2story_recover.dwg

Appendix B19

valaire + associates



structural engineers

25 darling st balmain
australia 2041
ph + fax (02) 555 8756

A.B.N. 66-001-920-976
20/08/03
Pages Event Hire,
26-38 Belmore Rd.,
Punchbowl. N.S.W.,2196

TO WHOM IT MAY CONCERN

Valaire and Associates have been associated with Pages Event Hire for some years and during this time have been involved in the structural analysis of many of their projects.

In more recent times we have been undertaking the structural design of tents of their own manufacture and are at present designing tents in 30, 40 and 50 m span configurations.

The most significant challenge in the design of these tents when compared with those of European origin is the much more onerous wind loading conditions experienced in Australia as evidenced in the load requirements of our codes compared with european codes. In Australia the climate varies from fully tropical to sub-tropical with the commensurate high wind velocities which reach cyclonic conditions in many locations. The other significant wind loading condition in the Australian context is that of exposure with much more of our structures exposed to more demanding terrain than that experienced in Europe. Many of our locations are next to the oceans, large fetches of water and flat undeveloped plains and this coupled with the higher wind velocities place vastly higher demands on these lightweight structures than their European counterparts.

Valaire and Associates Engineers are Post Graduate qualified structural engineers and are Chartered Members of the Australian Institution of Engineers.

All of our design is in accordance with the following Australian Standards:

A.S. 1170.0 General Principles of Design
A.S. 1170.0 Permanent, imposed and other actions.
A.S. 1170.0 Wind Loading.
A.S. 1664.1 Aluminium Structures Part 1 Limit State Design.
A.S. 4100 Steel Structures.

Yours Faithfully

T. Valaire.

Trevor Valaire.

Certificate of Test

QUOTE No.: HF07ANF4225

REPORT No.: FNF1182

TEST FOR FLAMMABILITY OF MATERIALS IN ACCORDANCE WITH AS 1530.2-1993

TRADE NAME: **FERRARI 702S BLOCKOUT FABRIC 8103**

SPONSOR: Innova International Pty Ltd
36-40 Sunmore Close
MOORABBIN EAST VIC

DESCRIPTION OF SAMPLE: The sponsor described the specimen as a PVC coated polyester fabric with carbon interlayer.

Nominal total thickness: 0.65 mm
Nominal mass: 830 g/m²
Colour: white

TEST PROCEDURE: Six (6) samples were tested in accordance with Australian Standard 1530 Part 2 - Test for Flammability of Materials - 1993.

RESULTS: The following were obtained for the specimen:

	Maximum Flame Height	Time for Flame to Reach Top (t)	Area Under Curve (°C.min)
Mean	3.3	n/a	3.8
Coefficient of Variance (%)	12.87	n/a	14.94

From which the following indices were obtained:

SPREAD Factor	SPEED Factor	HEAT Factor	FLAMMABILITY INDEX
1	n/a	1	2

These test results relate only to the behaviour of the test specimens of the material under the particular conditions of test, and are not intended to be the sole criterion for assessing the potential fire hazard for the material in use.

DATE OF TEST: **20 October 2004**

Issued on the 20th day of October 2004 without alterations or additions.

Janelle Sinclair
Testing Officer

Garry E Collins
Manager, Fire Testing and Assessments

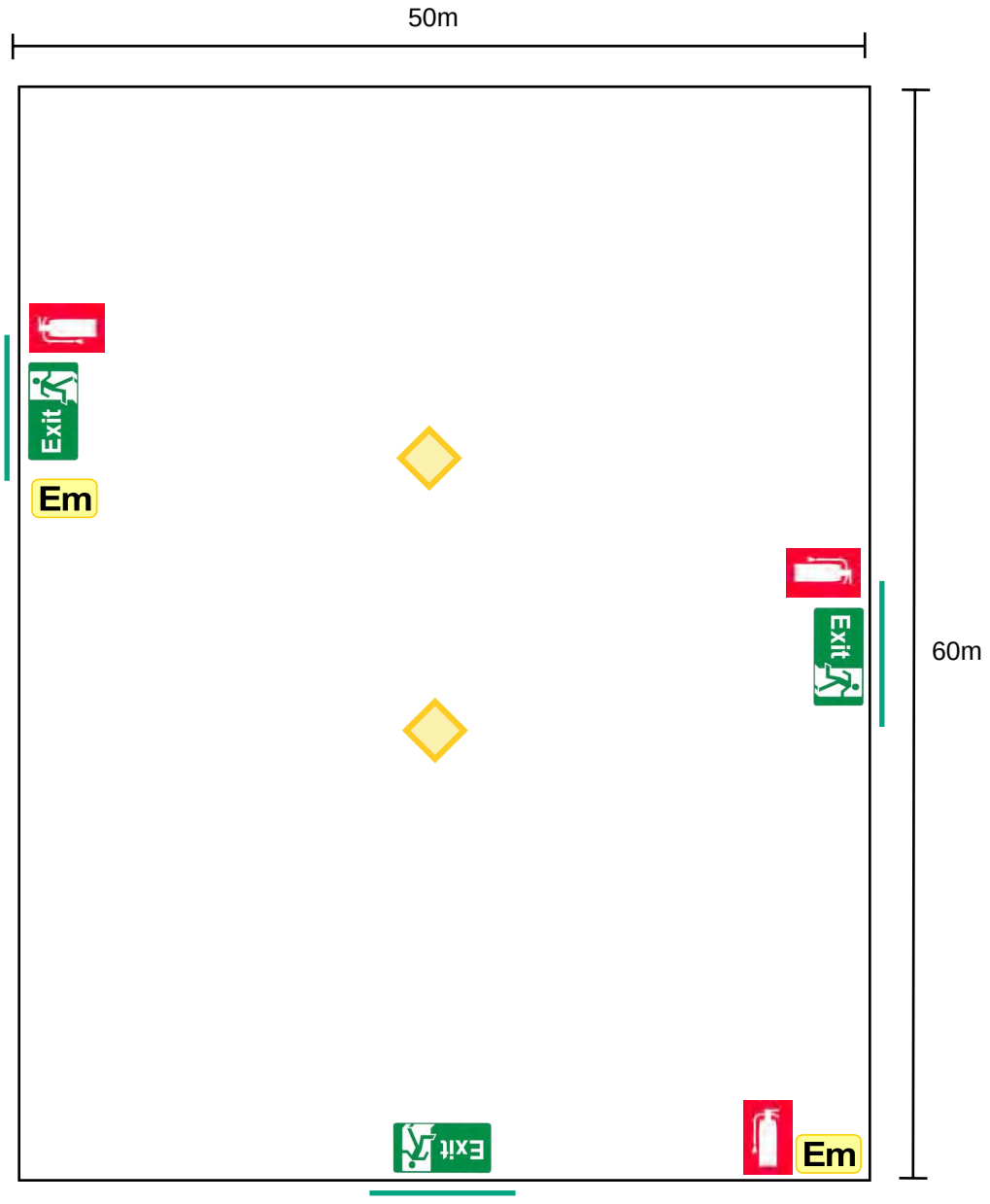
This laboratory is accredited (Accreditation No. 3532) by the National Association of Testing Authorities, Australia. The tests reported herein have been performed in accordance with its terms of accreditation.

CSIRO Manufacturing & Infrastructure Technology
14 Julius Avenue, Riverside Corporate Park, North Ryde NSW 2113 AUSTRALIA
Telephone: 61 2 9490 5444 Facsimile: 61 2 9490 5555

Appendix C1

Temporary Hocker Structure

50 x 60 arrangement



Key

Exit Sign	Portable Fire Extinguishers
Directional Exit Sign	Emergency Lights
Aggregate Exit	Em Essential Fire Safety Schedule & Emergency Evacuation Plan
Security	

2054

Not to Scale

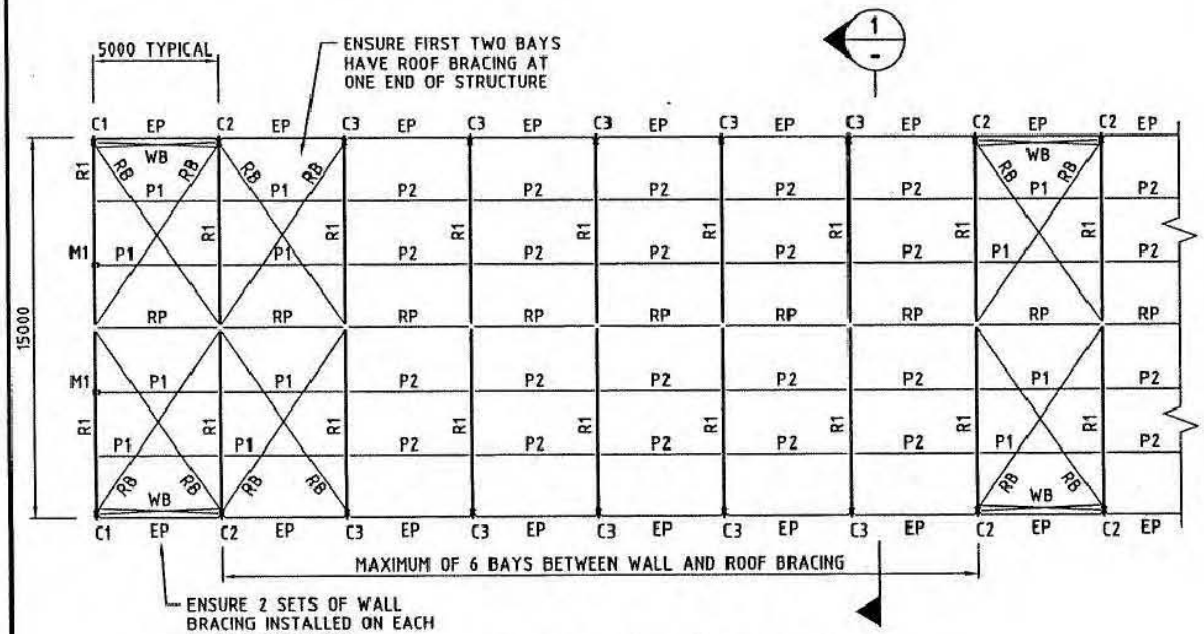
GENERAL NOTES

1. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL CONSULTANTS DRAWINGS AS APPLICABLE AND THE SPECIFICATION.
2. ALL SET OUT DIMENSIONS SHALL BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF WORK. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING FROM THE DRAWING. REFER TO ENGINEER FOR DECISION IF ANY DISCREPANCIES EXIST.
3. WORK AS DETAILED ON THE DRAWINGS SHALL NOT BE VARIED WITHOUT THE PRIOR WRITTEN CONSENT OF THE ENGINEER.
4. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CURRENT SAA STANDARDS AND CODES OF PRACTICE (EXCEPT AS VARIED BY THE CONTRACT DOCUMENTS) AND OF THE BY-LAWS OF THE LOCAL AUTHORITY.
5. THE CONTRACTOR SHALL MAINTAIN THE STRUCTURE IN A STABLE CONDITION DURING CONSTRUCTION. NO STRUCTURAL ELEMENTS SHALL BE OVERSTRESSED BY CONSTRUCTION LOADINGS.
6. THE STRUCTURE HAS BEEN DESIGNED FOR THE FOLLOWING LOADS IN ACCORDANCE WITH AS/NZS1170:2002
   LOADING CODES:-
   WIND LOAD
   REGION A
   TERRAIN CATEGORY 2.0
   M_s=1.0 M_t=1.0 $M_{z,cat}$=0.91
   MAX. DESIGN WIND SPEED V_d=29.12m/s
   LIVE LOAD
   ROOF RAFTERS
   - RIDGE 1.4kN
7. THE STRUCTURE HAS BEEN ASSUMED TO BE FULLY ENCLOSED WHEN SUBJECTED TO DESIGN WIND LOADS

MEMBER SCHEDULE

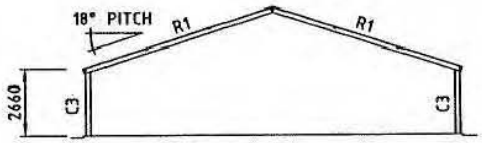
C1, C2, C3	202×122×4.0 RHS ALUMINIUM COLUMN
M1	200×120×3.0 RHS ALUMINIUM MULLION
M2	120×80×3.0 RHS ALUMINIUM MULLION
R1	200×120×3.0 RHS ALUMINIUM RAFTER
RP	120×80×3.0 RHS ALUMINIUM RIDGE PURLIN
EP	120×80×3.0 RHS ALUMINIUM EAVES PURLIN
P1	60×3.0 SHS ALUMINIUM PURLIN IN BRACED BAYS
P2	60×2.0 SHS ALUMINIUM PURLIN IN UNBRACED BAYS
WB	8mmϕ GRADE 1570 STEEL WIRE ROPE WALL BRACE
RB	8mmϕ GRADE 1570 STEEL WIRE ROPE ROOF BRACE

NOTE:
1. ALL MEMBERS & COMPONENTS ARE PROPRIETARY ITEMS MANUFACTURED AND SIPPLIED BY 'H-LINE STRUCTURES' FOR 20m SPAN 'F' SERIES TENT STRUCTURE
2. ALL MEMBERS TO BE INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS SPEC.
3. ALL ALUMINIUM ALLOY COMPONENTS SHALL BE EQUIVALENT TO 6351-T5 GRADE OR 6061-T6 GRADE



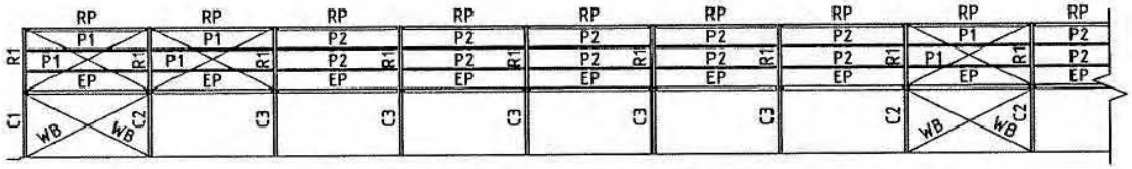
TYPICAL ROOF FRAMING LAYOUT

SCALE 1:200



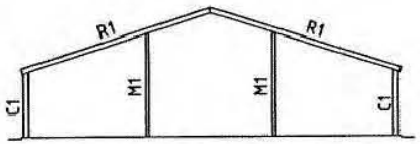
SECTION 1

SCALE 1:200



TYPICAL SIDE ELEVATION

SCALE 1:200



END ELEVATION

SCALE 1:200

BASEPLATE POSITION.	VERTICAL FORCE. (kN).	HORIZONTAL SHEAR FORCE. (kN).
C1	7.5, -9.5	13.2
C2	18.2, -19.1	13.8
C3	14.2, -15.1	11.5
M1	7.6, -6.0	9.8

(REQUIRED WHEREVER WALL BRACING INSTALLED).

NOTE: +ve DOWNWARDS, -ve UPLIFT.

excel EQUIPMENT HIRE EVENTS
Kehoe Myers
CONSULTING ENGINEERS
PTY LTD
Civil & Structural
A.C.N. 011 061 582
124 Russell Street
Toowoomba, Q 4350
Phone 07 4632 8100
Fax 07 4638 5795

Title: 15m SPAN 'F SERIES' H-LINE STRUCTURES TEMPORARY TENT FOR EXCEL EVENTS, 320 THYNNE RD, MORNINGSIDE QLD 4173

Date: 19/3/07	Issue: A	Drawing: SF15	Project No.: S056-081
Design: BJ	Drawn: SF	Checked: JP	Approved: J.PIKRAMENOS

S056-081

Building (Interim) Regulations 2005
S.R No. 51/2005

Form 11

Form 11

Regulation 1507 (a)
Building Act 1993

Building (Interim) Regulations 2005

CERTIFICATE OF COMPLIANCE – DESIGN

To

BUILDING COMMISSION – VICTORIA

From

Ioannis (John) Pikramenos of
Kehoe Myers Consulting Engineers Pty Ltd
124 Russell Street
TOOWOOMBA QLD 4350

Category: Civil Engineer

Property Details

Various locations for Proprietor, Excel Events (320 Thynne Road, Morningside, QLD, 4170)

Compliance

I did not prepare the design and I certify that the part of the design described as the Structural Aluminium and Steel wall, roof and bracing elements of the Temporary Tent Structures 15m and 20m Span Type '**F Series**' by **H-Line Structures** complies with the following provisions of the Regulations. The footings are excluded from this Certification.

AS/NZS 1170 Parts 0, 1 & 2 – 2002
AS/NZS 1664.1 – 1997
AS 4100 – 1998

Design Documents

Drawing Nos: S056-081/SF15 Prepared by Kehoe Myers Consulting Engineers
S056-081/SF20 Prepared by Kehoe Myers Consulting Engineers

Computations: S056-081/ Pg I, 1 to 45 Prepared by Kehoe Myers Consulting Engineers

Signature:

Registration No: EC 23503

Name of building practitioner: Ioannis (John) Pikramenos

Date 20 March 2007

PROJECT No: S056-081/P12

Form 15 - Compliance Certificate – Engineering Design

Standard Building Regulation S23

I certify that the item/s described below, if installed or carried out in accordance with the information contained in this certificate, including any referenced documentation, will comply with the Standard Building Regulation.

Project Description	PROPOSED 15m and 20m SPAN 'F SERIES' H-LINE STRUCTURES TEMPORARY TENT STRUCTURE
i) Site address	Not Applicable
ii) Proprietor	EXCEL EVENTS
iii) Proprietors address	320 Thynne Road, Morningside, QLD 4170

Description of component/s certified

Structural Steel and Aluminium Wall & Roof Framing and Bracing Elements

Basis of Certification

AS/NZS 1170 Parts 0, 1 & 2 – 2002
AS/NZS 1664.1 – 1997
AS 4100 - 1998

Referenced documentation

Kehoe Myers Consulting Engineers
Drawing No S056-081/SF15 Issue 'A'
S056-081/SF20 Issue 'A'

Competent Person Details

Name John Pikramenos

Name of corporation or firm
Kehoe Myers Consulting Engineers Pty Ltd

Relevant qualifications and experience
B.Eng MIE Aust. CPEng NPER

Postal address 124 Russell Street Toowoomba 4350
Phone 07 4632 8100 Fax 07 4638 5795

Registration/ details NPER No 409287 REPQ No 5105

Signature of competent person

Date: 20/03/2007

S056-081

Building (Interim) Regulations 2005
S.R No. 51/2005

Form 11

Form 11

Regulation 1507 (a)
Building Act 1993

Building (Interim) Regulations 2005

CERTIFICATE OF COMPLIANCE – DESIGN

To

BUILDING COMMISSION – VICTORIA

From

Ioannis (John) Pikramenos of
Kehoe Myers Consulting Engineers Pty Ltd
124 Russell Street
TOOWOOMBA QLD 4350

Category: Civil Engineer

Property Details

Various locations for Proprietor, Excel Events (320 Thynne Road, Morningside, QLD, 4170)

Compliance

I did not prepare the design and I certify that the part of the design described as the Structural Aluminium and Steel wall, roof and bracing elements of the Temporary Tent Structures 15m and 20m Span Type **'F Series'** by **H-Line Structures** complies with the following provisions of the Regulations. The footings are excluded from this Certification.

AS/NZS 1170 Parts 0, 1 & 2 – 2002
AS/NZS 1664.1 – 1997
AS 4100 – 1998

Design Documents

Drawing Nos:	S056-081/SF15	Prepared by Kehoe Myers Consulting Engineers
	S056-081/SF20	Prepared by Kehoe Myers Consulting Engineers
Computations:	S056-081/ Pg I, 1 to 45	Prepared by Kehoe Myers Consulting Engineers

Signature:

Registration No: EC 23503

Name of building practitioner: Ioannis (John) Pikramenos

Date 20 March 2007

124 Russell Street, Toowoomba Q 4350 **Phone: 07 4632 8100** **Fax: 07 4638 5795**
Email: kmce@kehoemyers.com.au www.kehoemyers.com.au
Kehoe Myers Consulting Engineers Pty Ltd ACN: 011 061 582 ABN: 26 011 061 582
Directors: **T.M. Kehoe** BEng MIE Aust CPEng RPEQ LGE **C.J. Myers** BEng MIE Aust CPEng RPEQ **J. Pikramenos** BEng MIE Aust CPEng RPEQ

PROJECT No: S056-081/P12

Form 15 - Compliance Certificate – Engineering Design

Standard Building Regulation S23

I certify that the item/s described below, if installed or carried out in accordance with the information contained in this certificate, including any referenced documentation, will comply with the Standard Building Regulation.

Project Description	PROPOSED 15m and 20m SPAN 'F SERIES' H-LINE STRUCTURES TEMPORARY TENT STRUCTURE
i) Site address	Not Applicable
ii) Proprietor	EXCEL EVENTS
iii) Proprietors address	320 Thynne Road, Morningside, QLD 4170

Description of component/s certified

Structural Steel and Aluminium Wall & Roof Framing and Bracing Elements

Basis of Certification

AS/NZS 1170 Parts 0, 1 & 2 – 2002
AS/NZS 1664.1 – 1997
AS 4100 - 1998

Referenced documentation

Kehoe Myers Consulting Engineers
Drawing No S056-081/SF15 Issue 'A'
S056-081/SF20 Issue 'A'

Competent Person Details

Name John Pikramenos

Name of corporation or firm
Kehoe Myers Consulting Engineers Pty Ltd

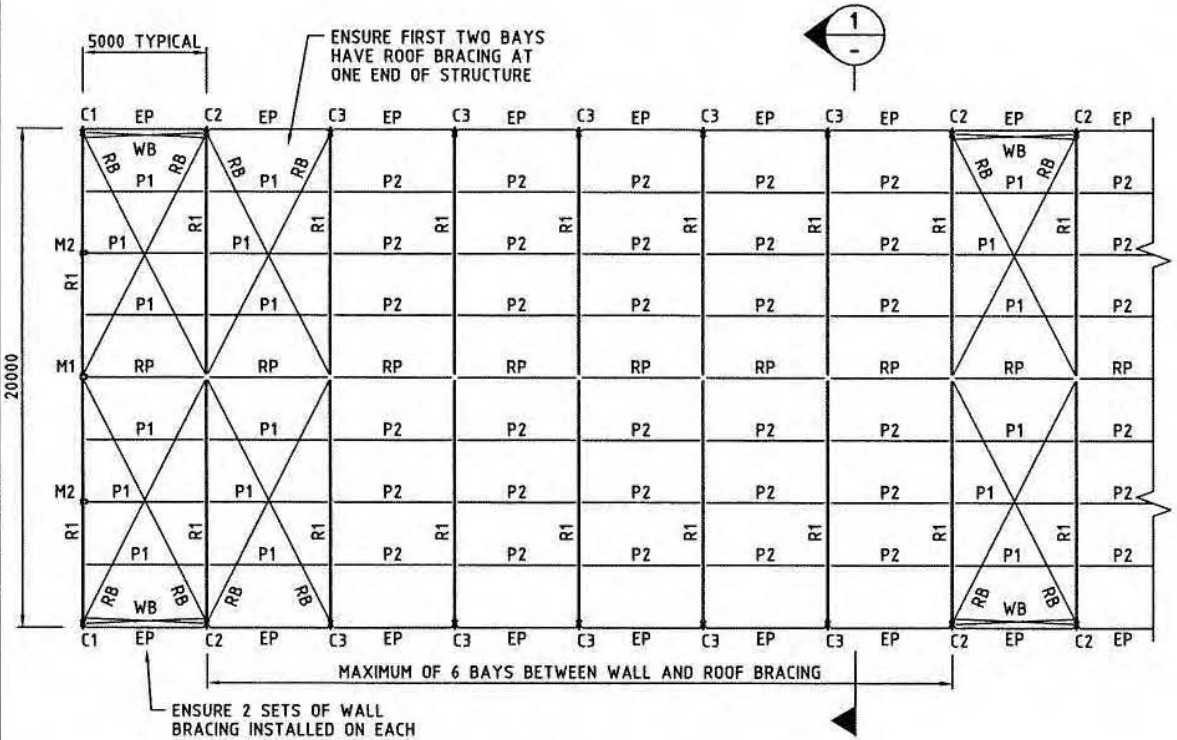
Relevant qualifications and experience
B.Eng MIE Aust. CPEng NPER

Postal address 124 Russell Street Toowoomba 4350
Phone 07 4632 8100 Fax 07 4638 5795

Registration/ details NPER No 409287 REPQ No 5105

Signature of competent person

Date: 20/03/2007



TYPICAL ROOF FRAMING LAYOUT

SCALE 1:200

MEMBER SCHEDULE	
C1, C2, C3	202×122×4.0 RHS ALUMINIUM COLUMN
M1	200×120×3.0 RHS ALUMINIUM MULLION
M2	120×80×3.0 RHS ALUMINIUM MULLION
R1	200×120×3.0 RHS ALUMINIUM RAFTER
RP	120×80×3.0 RHS ALUMINIUM RIDGE PURLIN
EP	120×80×3.0 RHS ALUMINIUM EAVES PURLIN
P1	60×3.0 SHS ALUMINIUM PURLIN IN BRACED BAYS
P2	60×2.0 SHS ALUMINIUM PURLIN IN UNBRACED BAYS
WB	8mmΦ GRADE 1570 STEEL WIRE ROPE WALL BRACE
RB	8mmΦ GRADE 1570 STEEL WIRE ROPE ROOF BRACE

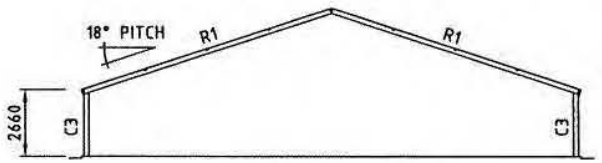
NOTE:
1. ALL MEMBERS & COMPONENTS ARE PROPRIETARY ITEMS MANUFACTURED AND SIPPLIED BY 'H-LINE STRUCTURES' FOR 20m SPAN 'F' SERIES TENT STRUCTURE
2. ALL MEMBERS TO BE INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS SPEC.
3. ALL ALUMINIUM ALLOY COMPONENTS SHALL BE EQUIVALENT TO 6351-T5 GRADE OR 6061-T6 GRADE

GENERAL NOTES

1. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL CONSULTANTS DRAWINGS AS APPLICABLE AND THE SPECIFICATION.
2. ALL SET OUT DIMENSIONS SHALL BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF WORK. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING FROM THE DRAWING. REFER TO ENGINEER FOR DECISION IF ANY DISCREPANCIES EXIST.
3. WORK AS DETAILED ON THE DRAWINGS SHALL NOT BE VARIED WITHOUT THE PRIOR WRITTEN CONSENT OF THE ENGINEER.
4. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CURRENT SAA STANDARDS AND CODES OF PRACTICE (EXCEPT AS VARIED BY THE CONTRACT DOCUMENTS) AND OF THE BY-LAWS OF THE LOCAL AUTHORITY.
5. THE CONTRACTOR SHALL MAINTAIN THE STRUCTURE IN A STABLE CONDITION DURING CONSTRUCTION. NO STRUCTURAL ELEMENTS SHALL BE OVERSTRESSED BY CONSTRUCTION LOADINGS.
6. THE STRUCTURE HAS BEEN DESIGNED FOR THE FOLLOWING LOADS IN ACCORDANCE WITH AS/NZS1170.2002 LOADING CODES:-

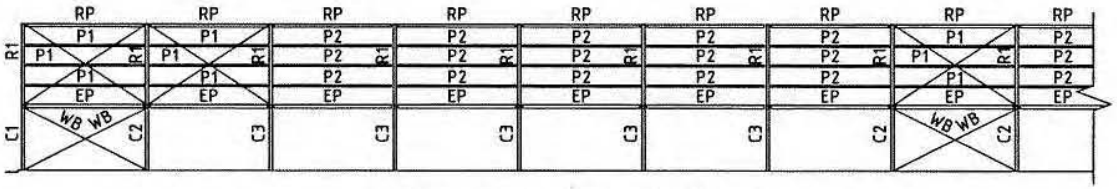
   WIND LOAD
   REGION A
   TERRAIN CATEGORY 2.0
   M_d=1.0 M_{f1}=1.0 M_{f1}=1.0 $M_{z,cat}$=0.91
   MAX. DESIGN WIND SPEED V_d=29.12m/s

   LIVE LOAD
   ROOF RAFTERS
   - RIDGE 1.4kN
7. THE STRUCTURE HAS BEEN ASSUMED TO BE FULLY ENCLOSED WHEN SUBJECTED TO DESIGN WIND LOADS



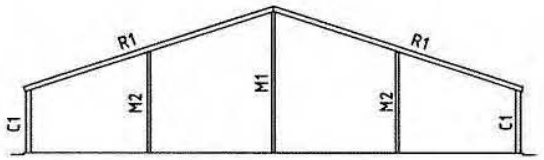
SECTION 1

SCALE 1:200



TYPICAL SIDE ELEVATION

SCALE 1:200



END ELEVATION

SCALE 1:200

BASEPLATE POSITION.	VERTICAL FORCE. (kN).	HORIZONTAL SHEAR FORCE. (kN).
C1	5.5, -4.4	7.7
C2	12.6, -9.1	8.6
C3	9.8, -6.3	6.8
M1, M2	5.5, -3.2	5.8

(REQUIRED WHEREVER WALL BRACING INSTALLED).

NOTE: +ve DOWNWARDS, -ve UPLIFT.

EXCEL EVENTS EQUIPMENT HIRE

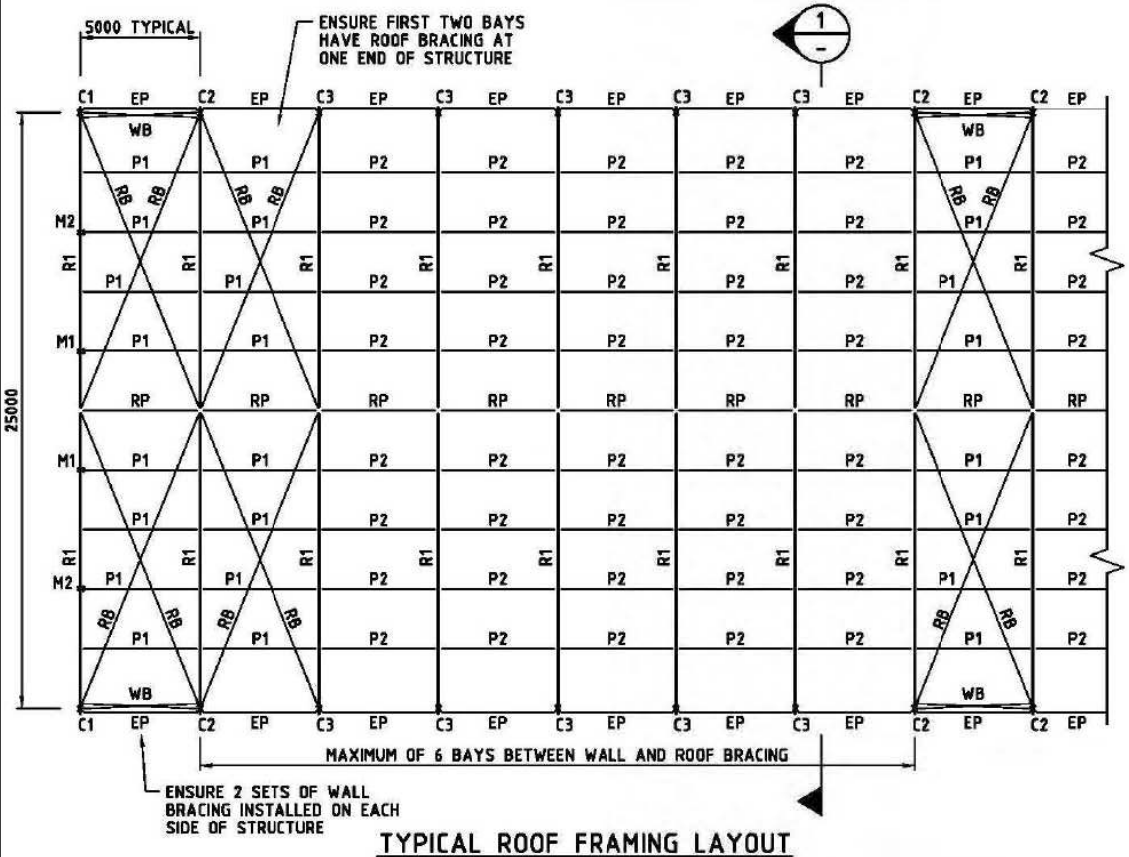
Kehoe Myers CONSULTING ENGINEERS PTY LTD
Civil & Structural
A.C.N. 011 061 582

124 Russell Street
Toowoomba, Q 4350
Phone 07 4632 8100
Fax 07 4638 5795

Title: 20m SPAN 'F SERIES' H-LINE STRUCTURES TEMPORARY TENT FOR EXCEL EVENTS, 320 THYNNE RD, MORNINGSIDE QLD 4173

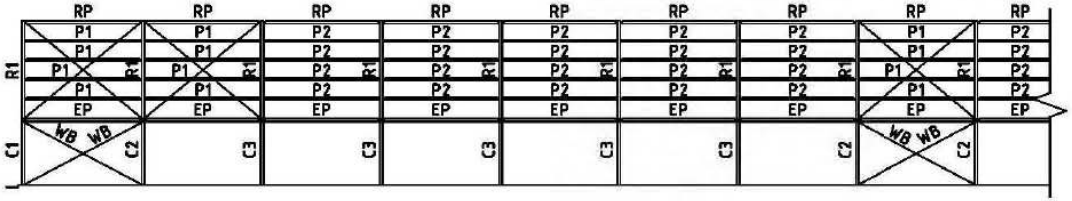
Date: 19/3/07	Issue: A	Drawing: SF20	Project No.: S056-081
Design: BJ	Drawn: SF	Checked: JP	Approved: J.PIKRAMENOS

2060



TYPICAL ROOF FRAMING LAYOUT

SCALE 1:200



TYPICAL SIDE ELEVATION

SCALE 1:200

BASEPLATE POSITION.	VERTICAL FORCE. (kN).	HORIZONTAL SHEAR FORCE. (kN).
C1	4.8, -2.3	5.2
C2	10.9, -4.5	8.1
C3	8.8, -2.4	7.1
M1, M2	4.2, -1.0	3.7

(REQUIRED WHEREVER WALL BRACING INSTALLED).

NOTE: +ve DOWNWARDS, -ve UPLIFT.

MEMBER SCHEDULE	
C1, C2, C3	202×122×4.0 RHS ALUMINIUM COLUMN
M1	200×120×3.0 RHS ALUMINIUM MULLION
M2	120×80×3.0 RHS ALUMINIUM MULLION
R1	202×122×4.0 RHS ALUMINIUM RAFTER
RP	120×80×3.0 RHS ALUMINIUM RIDGE PURLIN
EP	120×80×3.0 RHS ALUMINIUM EAVES PURLIN
P1	60×3.0 SHS ALUMINIUM PURLIN IN BRACED BAYS
P2	60×2.0 SHS ALUMINIUM PURLIN IN UNBRACED BAYS
WB	8mmφ GRADE 1570 STEEL WIRE ROPE WALL BRACE
RB	8mmφ GRADE 1570 STEEL WIRE ROPE ROOF BRACE

NOTE:
1. ALL MEMBERS & COMPONENTS ARE PROPRIETARY ITEMS MANUFACTURED AND SIPPLIED BY 'H-LINE STRUCTURES' FOR 25m SPAN 'F' SERIES TENT STRUCTURE
2. ALL MEMBERS TO BE INSTALLED STRICTLY IN ACCORDANCE WITH THE MANUFACTURERS SPEC.
3. ALL ALUMINIUM ALLOY COMPONENTS SHALL BE EQUIVALENT TO 6351-T5 GRADE OR 6061-T6 GRADE

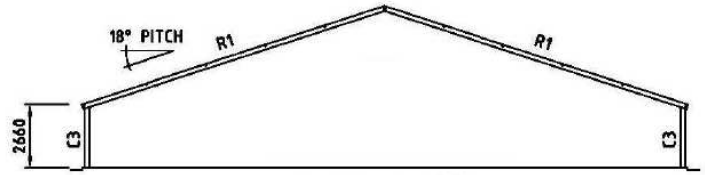
GENERAL NOTES

1. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL CONSULTANTS DRAWINGS AS APPLICABLE AND THE SPECIFICATION.
2. ALL SET OUT DIMENSIONS SHALL BE CONFIRMED ON SITE PRIOR TO COMMENCEMENT OF WORK. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING FROM THE DRAWING. REFER TO ENGINEER FOR DECISION IF ANY DISCREPANCIES EXIST.
3. WORK AS DETAILED ON THE DRAWINGS SHALL NOT BE VARIED WITHOUT THE PRIOR WRITTEN CONSENT OF THE ENGINEER.
4. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF CURRENT SAA STANDARDS AND CODES OF PRACTICE (EXCEPT AS VARIED BY THE CONTRACT DOCUMENTS) AND OF THE BY-LAWS OF THE LOCAL AUTHORITY.
5. THE CONTRACTOR SHALL MAINTAIN THE STRUCTURE IN A STABLE CONDITION DURING CONSTRUCTION. NO STRUCTURAL ELEMENTS SHALL BE OVERSTRESSED BY CONSTRUCTION LOADINGS.
6. THE STRUCTURE HAS BEEN DESIGNED FOR THE FOLLOWING LOADS IN ACCORDANCE WITH AS/NZS1170:2002 LOADING CODES:-

   WIND LOAD
   REGION B
   TERRAIN CATEGORY 4.0
   M_s=0.9 M_t=1.0 M_l=1.0 $M_{s,cat}$=0.75
   MAX. DESIGN WIND SPEED V_R=21.60m/s

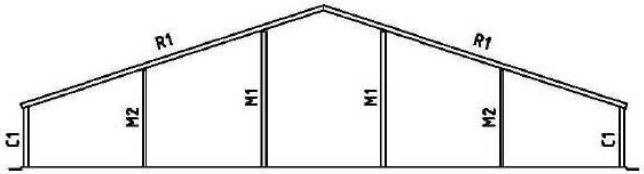
   LIVE LOAD
   ROOF RAFTERS
   - RIDGE 1.4kN

7. THE STRUCTURE HAS BEEN ASSUMED TO BE FULLY ENCLOSED WHEN SUBJECTED TO DESIGN WIND LOADS



SECTION 1/-

SCALE 1:200



END ELEVATION

SCALE 1:200

EXCEL EQUIPMENT HIRE EVENTS

Kehoe Myers CONSULTING ENGINEERS PTY LTD
Civil & Structural
A.C.N. 011 081 582

124 Russell Street
Toowoomba, Q 4350
Phone 07 4632 8100
Fax 07 4638 5795

Title: 25m SPAN 'F SERIES' STRUCTURES TEMPORARY TENT

Date: 31.05.06	Issue: A	Drawing: SF25	Project No. S056-081
Design: BJ	Drawn: SF	Checked: JP	Approved: J.PIKRAMENOS

Building Act 1975 s10 & s50 Building Regulation s46 & s48

Compliance Certificate for building Design or Specification

15

NOTE	**A Compliance Certificate states building work complies with the building assessment provisions.** **To be used for all classes of building and structures to certify a material, system, method of building or building element complies with the BCA or a provision of the QDC.** **RESTRICTION: A building certifier (class B) can only give a compliance certificate about whether building work complies with the BCA or a provision of the QDC. A building certifier (Class B) can not give a certificate regarding QDC boundary clearance and site cover provisions.**
1. Property description **This section need only be completed if details of street address and property description are applicable.** **EG. In the case of (standard/generic) pool design/shell manufacture and/or patio and carport systems this section may not be applicable.** The description must identify all land the subject of the application. The lot & plan details (eg. SP / RP) are shown on title documents or a rates notice. If the plan is not registered by title, provide previous lot and plan details.	Street address *(include no., street, suburb / locality & postcode)* Various Postcode Lot & plan details *(attach list if necessary)* In which local government area is the land situated?
2. Description of component/s certified Clearly describe the extent of work covered by this certificate.	Proposed 10 – 25m Span 'F Series' H-Line Structures Temporary Tent Structure Structural Steel and Aluminium Wall & Roof Framing and Bracing Elements
3. Basis of certification Detail the basis for giving the certificate and the extent to which tests, specifications, rules, standards, codes of practice and other publications, were relied upon.	AS/NZS 1170 Parts 0,1 & 2 – 2002 AS/NZS 1664.1 – 1997 AS 4100 – 1998

EXCEL EQUIPMENT HIRE EVENTS

LOCAL GOVERNMENT USE ONLY

Date received		Reference Number/s		Approved form 15 Version 1, 08/06

Form 15 continued

4. Reference documentation
Clearly identify any relevant documentation, e.g. numbered structural engineering plans.

Drawing No S056-081/SF10 Issue A, S056-081/SF15 Issue A, S056-081/SF20 Issue A
S056-081/SF25 Issue A

5. Building certifier reference number

Building certifier reference number

6. Competent person details
A competent person for building work, means a person who is assessed by the building certifier for the work as competent to practise in an aspect of the building and specification design, of the building work because of the individual's skill, experience and qualifications in the aspect. The competent person must also be registered or licensed under a law applying in the State to practice the aspect.

If no relevant law requires the individual to be licensed or registered to be able to give the help, the certifier must assess the individual as having appropriate experience, qualifications or skills to be able to give the help.

If the chief executive issues any guidelines for assessing a competent person, the building certifier must use the guidelines when assessing the person.

Name (*in full*)
John Pikramenos

Company name (*if applicable*)
Kehoe Mysers Consulting Engineers

Contact person

Phone no. *business hours*
46328100

Mobile no.

Fax no.
46385795

Email address
kmce@kehoemyers.com.au

Postal address
124 Russell Street
Toowoomba Postcode 4350

Licence or registration number (*if applicable*)
REPQ No 5105

7. Signature of competent person
This certificate must be signed by the individual assessed by the building certifier as competent.

I certify that the item/s described above, if installed or carried out under the certificate, including any referenced documentation, will comply with the *Building Act 1975*.

Signature

Date 4/5/07

EQUIPMENT HIRE EVENTS

Certificate of Test

QUOTE No.: HF07ANF4225

REPORT No.: FNF1182

TEST FOR FLAMMABILITY OF MATERIALS IN ACCORDANCE WITH AS 1530.2-1993

TRADE NAME: FERRARI 702S BLOCKOUT FABRIC 8103

SPONSOR: Innova International Pty Ltd
36-40 Sunmore Close
MOORABBIN EAST VIC

DESCRIPTION OF SAMPLE: The sponsor described the specimen as a PVC coated polyester fabric with carbon interlayer.

Nominal total thickness: 0.65 mm
Nominal mass: 830 g/m²
Colour: white

TEST PROCEDURE: Six (6) samples were tested in accordance with Australian Standard 1530 Part 2 - Test for Flammability of Materials - 1993.

RESULTS: The following were obtained for the specimen:

	Maximum Flame Height	Time for Flame to Reach Top (t)	Area Under Curve (°C.min)
Mean	3.3	n/a	3.8
Coefficient of Variance (%)	12.87	n/a	14.94

From which the following indices were obtained:

SPREAD Factor	SPEED Factor	HEAT Factor	FLAMMABILITY INDEX
1	n/a	1	2

These test results relate only to the behaviour of the test specimens of the material under the particular conditions of test, and are not intended to be the sole criterion for assessing the potential fire hazard for the material in use.

DATE OF TEST: 20 October 2004

Issued on the 20th day of October 2004 without alterations or additions.

Janelle Sinclair
Testing Officer

Garry E Collins
Manager, Fire Testing and Assessments

This laboratory is accredited (Accreditation No. 3632) by the National Association of Testing Authorities, Australia. The tests reported herein have been performed in accordance with its terms of accreditation.

CSIRO

CSIRO Manufacturing & Infrastructure Technology
14 Julius Avenue, Riverside Corporate Park, North Ryde NSW 2113 AUSTRALIA
Telephone: 61 2 9490 5444 Facsimile: 61 2 9490 5555

AWTA PRODUCT TESTING

Australian Wool Testing Authority Ltd - trading as AWTA Product Testing
A.B.N. 43 006 014 106
1st Floor, 191 Racecourse Road, Flemington, Victoria 3031
P.O. Box 240, North Melbourne, Victoria 3051
Phone (03) 9371 2400 Fax (03) 9371 2499

TEST REPORT

CLIENT : BAYTEX MANUFACTURING LTD
52 NEWTON STREET
MT MAUNGANUI SOUTH

NEW ZEALAND

TEST NUMBER : 7-565828-BO
ISSUE DATE : 15/04/2009
PRINT DATE : 16/04/2009
ORDER NUMBER : 29211

ORDER NUMBER : 29211

SAMPLE DESCRIPTION Clients Ref: "Silkline FR 300d Lining Fabric"
Woven fabric
Colour: White
End Use: Interior linings for marquees

THESE RESULTS MUST BE CONSIDERED IN CONJUNCTION
WITH THE COMMENTS ON THE FOLLOWING PAGE(S)

Material Specification provided by client:
Nominal composition: 100% Inherently flame retardant polyester
Nominal mass: 185g/m2
Nominal thickness: 330mu

AS/NZS 1530.3 - 1999 Simultaneous determination of Ignitability, Flame Propagation, Heat Release and Smoke Release

RESULTS: Face tested: Face

Date tested: 06/04/2009

	Mean		Standard Error
Ignition time	Nil	min	Nil
Flame propagation time	Nil	s	Nil
Heat release integral	Nil	kJ/m2	Nil
Smoke release, log d	Nil		Nil
Optical density, d	Nil	/m	

Number of specimens ignited: 0

Number of specimens tested: 6

REGULATORY INDICES:		
Ignitability Index	0	Range 0-20
Spread of Flame Index	0	Range 0-10
Heat Evolved Index	0	Range 0-10
Smoke Developed Index	0-1	Range 0-10

Comments:

These results only apply to the specimen mounted, as described in this report.

The results of this fire test may be used to directly assess fire hazard, but it should be recognized that a single test method will not provide a full assessment of fire hazard under all fire conditions.

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.

NATA

This Laboratory is accredited by the National Association of Testing Authorities, Australia, for:
-Chemical Testing of Textiles & Related Products : Accreditation No. 983
-Mechanical Testing of Textiles & Related Products : Accreditation No. 985
-Heat & Temperature Measurement : Accreditation No. 1356

This document is issued in accordance with NATA's accreditation requirements. Samples, and their identifying descriptions have been provided by the client unless otherwise stated. AWTA Ltd makes no warranty, implied or otherwise, as to the source of the tested samples. The above test results relate only to the sample or samples tested. This document shall not be reproduced except in full and shall be rendered void if ammended or altered. This document, the names AWTA Product Testing and AWTA Ltd may be used in advertising providing the content and format of the advertisement have been approved in advance by the Managing Director of AWTA Ltd.

AWTA LIMITED

APPROVED SIGNATORY

MICHAEL A. JACKSON B.Sc.(Hons)
MANAGING DIRECTOR

AWTA PRODUCT TESTING

Australian Wool Testing Authority Ltd - trading as AWTA Product Testing
A.B.N. 43 006 014 106
1st Floor, 191 Racecourse Road, Flemington, Victoria 3031
P.O. Box 240, North Melbourne, Victoria 3051
Phone (03) 9371 2400 Fax (03) 9371 2499

TEST REPORT

CLIENT : BAYTEX MANUFACTURING LTD
52 NEWTON STREET
MT MAUNGANUI SOUTH

NEW ZEALAND

TEST NUMBER : 7-565828-BO
ISSUE DATE : 15/04/2009
PRINT DATE : 16/04/2009
ORDER NUMBER : 29211

ORDER NUMBER : 29211

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 and the assembly clamped in four places.

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

Smoke Developed Index is reported as 0-1 due to the inability of the smoke measurement equipment to resolve an index of zero.

Ignition is initiated by a pilot flame that is held near, but does not touch the specimen. A material that does not ignite during the standard test may ignite if contacted with a pilot flame during the test.

AS 1530.2-1993 Test for Flammability of Materials

DATE TESTED: Flammability Index: 1 Range 0 - 100 for most material

14/04/2009

		Length	Width	
Spread Factor: Range 0 - 40		0	0	
Heat Factor: Range 0 - upward		1	1	
		Length	Width	
Maximum height (d)	mean	0.5	0.5	
	cv	0.0	0.0	%
Time (t)	mean	N/A	N/A	s
	cv	N/A	N/A	%
Heat (a)	mean	1.5	1.5	degC min
	cv	0	0	%
No of specimens tested		6	6	

These test results relate only to the behaviour of the test specimens of the material under the particular conditions of the test, and they are not intended to be the sole criterion for assessing the potential fire hazard of the material in use

NATA

This Laboratory is accredited by the National Association of Testing Authorities, Australia, for:
-Chemical Testing of Textiles & Related Products : Accreditation No. 983
-Mechanical Testing of Textiles & Related Products : Accreditation No. 985
-Heat & Temperature Measurement : Accreditation No. 1356

AWTA LIMITED

APPROVED SIGNATORY

MICHAEL A. JACKSON B Sc (Hons)
MANAGING DIRECTOR

AWTA TEXTILE TESTING

26 Robertson Street, Kensington, Victoria 3031
P.O. Box 240 North Melbourne, Victoria 3051
Phone (03) 9371 2126 Telex AA35301 Fax (03) 9376 3469
Australian Wool Testing Authority Ltd – A.C.N. 006 014 106
trading as AWTA Textile Testing

TEST REPORT*

CLIENT : JANDS ELECTRONICS PTY LTD
LOCKED BAG 15
MASCOT NSW 2020

TEST NUMBER : 7-467324-BN
DATE : 21.03.97

SAMPLE DESCRIPTION CLIENTS REF: JANDS FILLED CLOTH – "LENO" / SHARKSTOOTH
WOVEN CURTAIN FABRIC
COLOUR: WHITE

THESE RESULTS MUST BE CONSIDERED IN CONJUNCTION
WITH THE COMMENTS ON THE FOLLOWING PAGE(S)

MATERIAL SPECIFICATION PROVIDED BY CLIENT:
NOMINAL COMPOSITION: 100% COTTON, FR TREATED
NOMINAL THICKNESS: 0.4mm
NOMINAL MASS: 140g/m2

AS 1530.3.1989 AMDT NO 1 APR 92 RESULTS:

SIMULTANEOUS DETERMINATION OF IGNITABILITY, FLAME PROPAGATION, HEAT RELEASE AND SMOKE RELEASE

	MEAN		STANDARD ERROR
IGNITION TIME	NIL	min	NIL
FLAME PROPAGATION TIME	NIL	s	NIL
HEAT RELEASE INTEGRAL	NIL	kJ/m2	NIL
SMOKE RELEASE, LOG D	-1.5888		0.0655
OPTICAL DENSITY, D	0.0271	/m	

NUMBER OF SPECIMENS IGNITED: 0
NUMBER OF SPECIMENS TESTED: 6

REGULATORY INDICES:

IGNITABILITY INDEX	0	RANGE 0-20
SPREAD OF FLAME INDEX	0	RANGE 0-10
HEAT EVOLVED INDEX	0	RANGE 0-10
SMOKE DEVELOPED INDEX	2	RANGE 0-10

73779 1

(CONTINUED NEXT PAGE)

CHARGES *

TESTING	$540.00
TOTAL	$540.00

0204/1/96

AUTHORISED SIGNATORY

D.J. WARD B.Sc., M.A.I.A.S.
MANAGING DIRECTOR

AWTA TEXTILE TESTING

26 Robertson Street, Kensington, Victoria 3031
P.O. Box 240 North Melbourne, Victoria 3051
Phone (03) 9371 2126 Telex AA35301 Fax (03) 9376 3469
Australian Wool Testing Authority Ltd – A.C.N. 006 014 106
trading as AWTA Textile Testing

TEST REPORT*

CLIENT : JANDS ELECTRONICS PTY LTD
LOCKED BAG 15
MASCOT NSW 2020

TEST NUMBER : 7-467291-BN
DATE : 19.03.97

SAMPLE DESCRIPTION CLIENTS REF: JANDS FILLED CLOTH - "LENO" / SHARKSTOOTH
ONE SAMPLE OF WHITE WOVEN FABRIC
NOMINALLY:100% COTTON 140gsm WEIGHT
0.4mm THICKNESS FR TREATED
ENDUSE: THEATRE CURTAINS

AS 1530.2-1993 TEST FOR FLAMMABILITY OF MATERIALS

DATE TESTED: 18.03.97

FLAMMABILITY INDEX: 3 RANGE 0 - 100 FOR MOST MATERIALS

		LENGTH	WIDTH
SPREAD FACTOR: RANGE 0 - 40		1	2
HEAT FACTOR: RANGE 0 - UPWARD		1	1
MAXIMUM HEIGHT (D)	MEAN	3.3	4.1
	CV	8.4	9.2 %
TIME (T)	MEAN	N/A	N/A s
	CV	N/A	N/A %
HEAT (A)	MEAN	2.2	2.3 deg/min
	CV	19	17.8 %
NO OF SPECIMENS TESTED		6	6

THESE TEST RESULTS RELATE ONLY TO THE BEHAVIOUR OF THE TEST SPECIMENS OF THE MATERIAL UNDER THE PARTICULAR CONDITIONS OF THE TEST, AND THEY ARE NOT INTENDED TO BE THE SOLE CRITERION FOR ASSESSING THE POTENTIAL FIRE HAZARD OF THE MATERIAL IN USE.

DRYCLEANED SPECIMENS WERE TREATED 6 TIMES PRIOR TO TESTING IN WHITE SPIRIT SOLVENT

73780 2

CHARGES *	
TESTING	$314.00
TOTAL	$314.00

0204/1/96

This Laboratory is registered by the National Association of Testing Authorities, Australia, for:
- Chemical Testing of Textiles & Related Products : Registration No. 983
- Mechanical Testing of Textiles & Related Products : Registration No. 985
- Heat & Temperature Measurement : Registration No. 1356

* The above tests have been performed in accordance with NATA's terms of registration. Samples and their identifying descriptions are normally submitted by the client unless otherwise stated. AWTA Textile Testing makes no warranty, implied or otherwise, as to the source of the tested sample. The above tests relate only to the sample tested. This document shall not be reproduced except in full and shall be rendered void if amended or altered. This document, the name AWTA Textile Testing or AWTA Ltd may not be used in any form of advertising without the prior written consent of the Managing Director of AWTA Ltd.

AUTHORISED SIGNATORY

D.J. WARD B.Sc., M.A.I.A.S.
MANAGING DIRECTOR

NKCENF2114

Certificate of Test

REPORT NO. FNF1013

TEST FOR FLAMMABILITY OF MATERIALS

TRADE NAME: SAFECOAT F.R.F.T

SPONSOR: Senator Paints Australasia Pty Ltd
3673 Pacific Highway
SLACKS CREEK QLD
AUSTRALIA

DESCRIPTION OF TEST SPECIMEN: The sponsor described the specimen as 100% cotton fabric soaked in 'Safe Coat FRFT' flame retardant chemical and allowed to dry
Nominal total mass 200 g/m²
Colours: white

TEST PROCEDURE: Six samples were tested in accordance with Australian Standard 1530.2-1993, Test for Flammability of Materials.

RESULTS: The following were obtained for the specimen:

	Maximum Flame Height (D)	Time for Flame to Reach Top (t)	Area Under Curve (A)
Mean	1.1	N/A	0.4
Coefficient of Variance (%)	19	N/A	16

From which the following indices were obtained

SPREAD Factor	SPEED Factor	HEAT Factor	FLAMMABILITY INDEX
0	0	0	0

The results only apply to this material in the new and clean condition. Cleaning operations may subsequently affect the fire performance of this material.

These test results relate only to the behaviour of the test specimens of the material under the particular conditions of test, and are not intended to be the sole criterion for assessing the potential fire hazard for the material in use.

DATE OF TEST: 19 September 1996

Issued on the 26th day of September 1996 without alterations or additions.

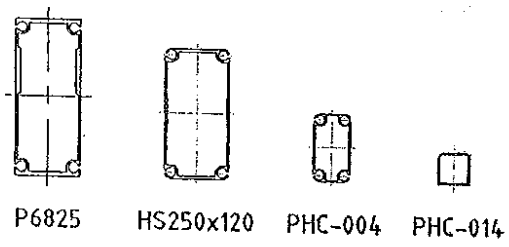
Z Trojko
Testing Officer

G.E Collins
Manager Fire Testing/Assessments

This laboratory is registered by the National Association of Testing Laboratories, Australia. The tests reported herein have been performed in accordance with the terms of registration.

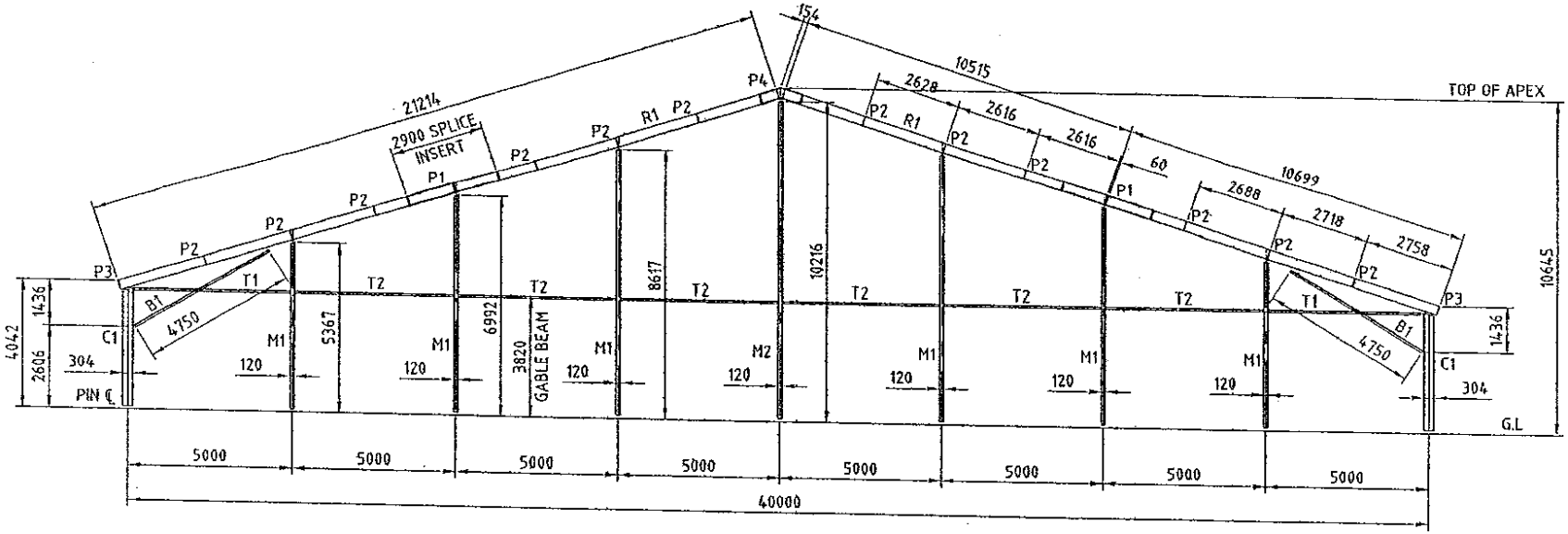
Division of Building, Construction and Engineering
PO Box 310 NORTH RYDE NSW 2113 Telephone (02) 934 1444 Fax (02) 934 3555

CSIRO



FRAMING MEMBER SCHEDULE

MARK	SIZE	REMARKS
C1	304 x 122	P6825
R1	304 x 122	P6825
M1	250 x 120	HS250x120
M2	304 x 122	P6825
B1	ø76.5 x 4 CHS	STEEL TUBE
P1	80 x 80 x 4 SHS	PURLIN
P2	60 x 60 x 2.8	PHC-014
P3	130 x 70	PHC-004
P4	130 x 70	PHC-004
T1	130 x 70	PHC-004
T2	130 x 70	PHC-004
WB1	ø10 WIRE ROPE	WIRE BRACE



40m GABLE PROFILE
SCALE N.T.S.

2070

No	Revision	Drawn	Checked	Approved	Date
A	INFORMATION	SN	SN		

design: valaitis + associates
certifier: SRV ENGINEERING PTY LTD

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HURRICANE structures
Sydney, AUSTRALIA

Pagoo Hire Centre (NSW) Pty Ltd
29-39 Belmore Road, Punchbowl NSW 2196
T 02 9533 9400 F 02 9533 9611
E ahenin@bigpond.net.au

Scale: AS SHOWN — DO NOT SCALE
Cad: SUNERCESSIAN — Checked: SUNERCESSIAN
Approved:
Date: JUNE 2005

INFORMATION

Title: 40m PORTAL FRAME WITH 4.0m LEGS AND 5m BAYS

Original Size: A3 — Drawing No: 40M5-4 — Rev: A

AWTA PRODUCT TESTING

Australian Wool Testing Authority Ltd - trading as AWTA Product Testing
A.B.N. 43 006 014 106
1st Floor, 191 Racecourse Road, Flemington, Victoria 3031
P.O. Box 240, North Melbourne, Victoria 3051
Phone (03) 9371 2400 Fax (03) 9371 2499

TEST REPORT

CLIENT : BAYTEX MANUFACTURING LTD
52 NEWTON STREET
MT MAUNGANUI SOUTH

NEW ZEALAND

TEST NUMBER : 7-565828-BO
ISSUE DATE : 15/04/2009
PRINT DATE : 16/04/2009
ORDER NUMBER : 29211

ORDER NUMBER : 29211

SAMPLE DESCRIPTION Clients Ref: "Silkline FR 300d Lining Fabric"
Woven fabric
Colour: White
End Use: Interior linings for marquees

THESE RESULTS MUST BE CONSIDERED IN CONJUNCTION
WITH THE COMMENTS ON THE FOLLOWING PAGE(S)

Material Specification provided by client:
Nominal composition: 100% Inherently flame retardant polyester
Nominal mass: 185g/m2
Nominal thickness: 330mu

AS/NZS 1530.3 - 1999 Simultaneous determination of Ignitability, Flame Propagation, Heat Release and Smoke Release

RESULTS: Face tested: Face

Date tested: 06/04/2009

	Mean		Standard Error
Ignition time	Nil	min	Nil
Flame propagation time	Nil	s	Nil
Heat release integral	Nil	kJ/m2	Nil
Smoke release, log d	Nil		Nil
Optical density, d	Nil	/m	

Number of specimens ignited: 0

Number of specimens tested: 6

REGULATORY INDICES:		
Ignitability Index	0	Range 0-20
Spread of Flame Index	0	Range 0-10
Heat Evolved Index	0	Range 0-10
Smoke Developed Index	0-1	Range 0-10

Comments:

These results only apply to the specimen mounted, as described in this report.

The results of this fire test may be used to directly assess fire hazard, but it should be recognized that a single test method will not provide a full assessment of fire hazard under all fire conditions.

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.

NATA

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-Chemical Testing of Textiles & Related Products : Accreditation No. 983
-Mechanical Testing of Textiles & Related Products : Accreditation No. 985
-Heat & Temperature Measurement : Accreditation No. 1356

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AWTA LIMITED

0204/11/06

APPROVED SIGNATORY

MICHAEL A. JACKSON B.Sc.(Hons)
MANAGING DIRECTOR

AWTA PRODUCT TESTING

Australian Wool Testing Authority Ltd - trading as AWTA Product Testing
A.B.N. 43 006 014 106
1st Floor, 191 Racecourse Road, Flemington, Victoria 3031
P.O. Box 240, North Melbourne, Victoria 3051
Phone (03) 9371 2400 Fax (03) 9371 2499

TEST REPORT

CLIENT : BAYTEX MANUFACTURING LTD
52 NEWTON STREET
MT MAUNGANUI SOUTH

NEW ZEALAND

TEST NUMBER : 7-565828-BO
ISSUE DATE : 15/04/2009
PRINT DATE : 16/04/2009
ORDER NUMBER : 29211

ORDER NUMBER : 29211

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 and the assembly clamped in four places.

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

Smoke Developed Index is reported as 0-1 due to the inability of the smoke measurement equipment to resolve an index of zero.

Ignition is initiated by a pilot flame that is held near, but does not touch the specimen. A material that does not ignite during the standard test may ignite if contacted with a pilot flame during the test.

AS 1530.2-1993 Test for Flammability of Materials

DATE TESTED: Flammability Index: 1 Range 0 - 100 for most material

14/04/2009

		Length	Width	
Spread Factor: Range 0 - 40		0	0	
Heat Factor: Range 0 - upward		1	1	
		Length	Width	
Maximum height (d)	mean	0.5	0.5	
	cv	0.0	0.0	%
Time (t)	mean	N/A	N/A	s
	cv	N/A	N/A	%
Heat (a)	mean	1.5	1.5	degC min
	cv	0	0	%
No of specimens tested		6	6	

These test results relate only to the behaviour of the test specimens of the material under the particular conditions of the test, and they are not intended to be the sole criterion for assessing the potential fire hazard of the material in use

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AWTA LIMITED

APPROVED SIGNATORY

MICHAEL A. JACKSON B Sc (Hons)
MANAGING DIRECTOR

0204/11/06

2072

AWTA TEXTILE TESTING

26 Robertson Street, Kensington, Victoria 3031
P.O. Box 240 North Melbourne, Victoria 3051
Phone (03) 9371 2126 Telex AA35301 Fax (03) 9376 3469
Australian Wool Testing Authority Ltd – A.C.N. 006 014 106
trading as AWTA Textile Testing

TEST REPORT*

CLIENT : JANDS ELECTRONICS PTY LTD
LOCKED BAG 15
MASCOT NSW 2020

TEST NUMBER : 7-467324-BN
DATE : 21.03.97

SAMPLE DESCRIPTION CLIENTS REF: JANDS FILLED CLOTH – "LENO" / SHARKSTOOTH
WOVEN CURTAIN FABRIC
COLOUR: WHITE

THESE RESULTS MUST BE CONSIDERED IN CONJUNCTION
WITH THE COMMENTS ON THE FOLLOWING PAGE(S)

MATERIAL SPECIFICATION PROVIDED BY CLIENT:
NOMINAL COMPOSITION: 100% COTTON, FR TREATED
NOMINAL THICKNESS: 0.4mm
NOMINAL MASS: 140g/m2

AS 1530.3.1989 SIMULTANEOUS DETERMINATION OF IGNITABILITY, FLAME
AMDT NO 1 APR 92 PROPAGATION, HEAT RELEASE AND SMOKE RELEASE

RESULTS:

	MEAN		STANDARD ERROR
IGNITION TIME	NIL	min	NIL
FLAME PROPAGATION TIME	NIL	s	NIL
HEAT RELEASE INTEGRAL	NIL	kJ/m2	NIL
SMOKE RELEASE, LOG D	-1.5888		0.0655
OPTICAL DENSITY, D	0.0271	/m	

NUMBER OF SPECIMENS IGNITED: 0
NUMBER OF SPECIMENS TESTED: 6

REGULATORY INDICES:		
IGNITABILITY INDEX	0	RANGE 0-20
SPREAD OF FLAME INDEX	0	RANGE 0-10
HEAT EVOLVED INDEX	0	RANGE 0-10
SMOKE DEVELOPED INDEX	2	RANGE 0-10

73779 1

(CONTINUED NEXT PAGE)

CHARGES *

TESTING	$540.00
TOTAL	$540.00

0204/1/96

AUTHORISED SIGNATORY

D.J. WARD B.Sc., M.A.I.A.S.
MANAGING DIRECTOR

AWTA TEXTILE TESTING

26 Robertson Street, Kensington, Victoria 3031
P.O. Box 240 North Melbourne, Victoria 3051
Phone (03) 9371 2126 Telex AA35301 Fax (03) 9376 3469
Australian Wool Testing Authority Ltd – A.C.N. 006 014 106
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TEST REPORT*

CLIENT : JANDS ELECTRONICS PTY LTD
LOCKED BAG 15
MASCOT NSW 2020

TEST NUMBER : 7-467291-BN
DATE : 19.03.97

SAMPLE DESCRIPTION CLIENTS REF: JANDS FILLED CLOTH - "LENO" / SHARKSTOOTH
ONE SAMPLE OF WHITE WOVEN FABRIC
NOMINALLY:100% COTTON 140gsm WEIGHT
0.4mm THICKNESS FR TREATED
ENDUSE: THEATRE CURTAINS

AS 1530.2-1993 TEST FOR FLAMMABILITY OF MATERIALS

DATE TESTED: 18.03.97

FLAMMABILITY INDEX: 3 RANGE 0 - 100 FOR MOST MATERIALS

		LENGTH	WIDTH
SPREAD FACTOR: RANGE 0 - 40		1	2
HEAT FACTOR: RANGE 0 - UPWARD		1	1
MAXIMUM HEIGHT (D)	MEAN	3.3	4.1
	CV	8.4	9.2 %
TIME (T)	MEAN	N/A	N/A s
	CV	N/A	N/A %
HEAT (A)	MEAN	2.2	2.3 deg/min
	CV	19	17.8 %
NO OF SPECIMENS TESTED		6	6

THESE TEST RESULTS RELATE ONLY TO THE BEHAVIOUR OF THE TEST SPECIMENS OF THE MATERIAL UNDER THE PARTICULAR CONDITIONS OF THE TEST, AND THEY ARE NOT INTENDED TO BE THE SOLE CRITERION FOR ASSESSING THE POTENTIAL FIRE HAZARD OF THE MATERIAL IN USE.

DRYCLEANED SPECIMENS WERE TREATED 6 TIMES PRIOR TO TESTING IN WHITE SPIRIT SOLVENT

73780 2

CHARGES *	
TESTING	$314.00
TOTAL	$314.00

0204/1/96

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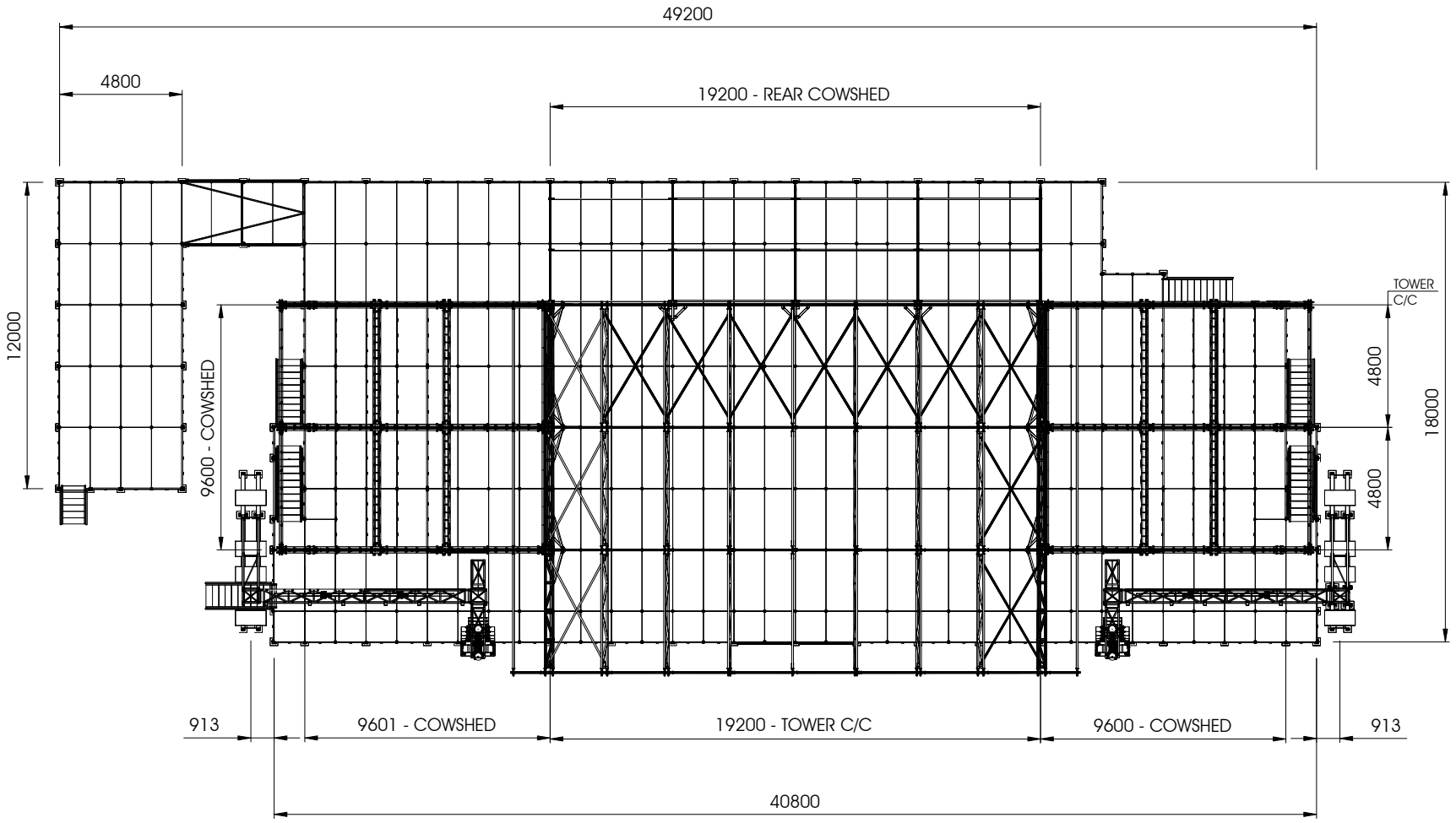
AUTHORISED SIGNATORY

D.J. WARD B.Sc., M.A.I.A.S.
MANAGING DIRECTOR

APPENDIX D

68-70 Burrows Road
Alexandria NSW 2015
Tel: +61 (0)2 9666 9566
Fax: +61 (0)2 9666 9599
Email: info@esg-australia.com
Web: www.esg-australia.com



Revisions	By
3 02.06.10 GENERAL REVSION	Drawn JD Ch'ked CB
2 26.03.10 GENERAL REVSION	Drawn MJD Ch'ked CB
1 22.03.10 GENERAL REVSION	Drawn JD Ch'ked CB

Important Notes

Project

NORTH BYRON PARKLANDS

Title

FESTIVAL STAGE
PLAN VIEW - GENERAL ASSEMBLY

Drawing Details

Scale	Paper Size
1:250	A4

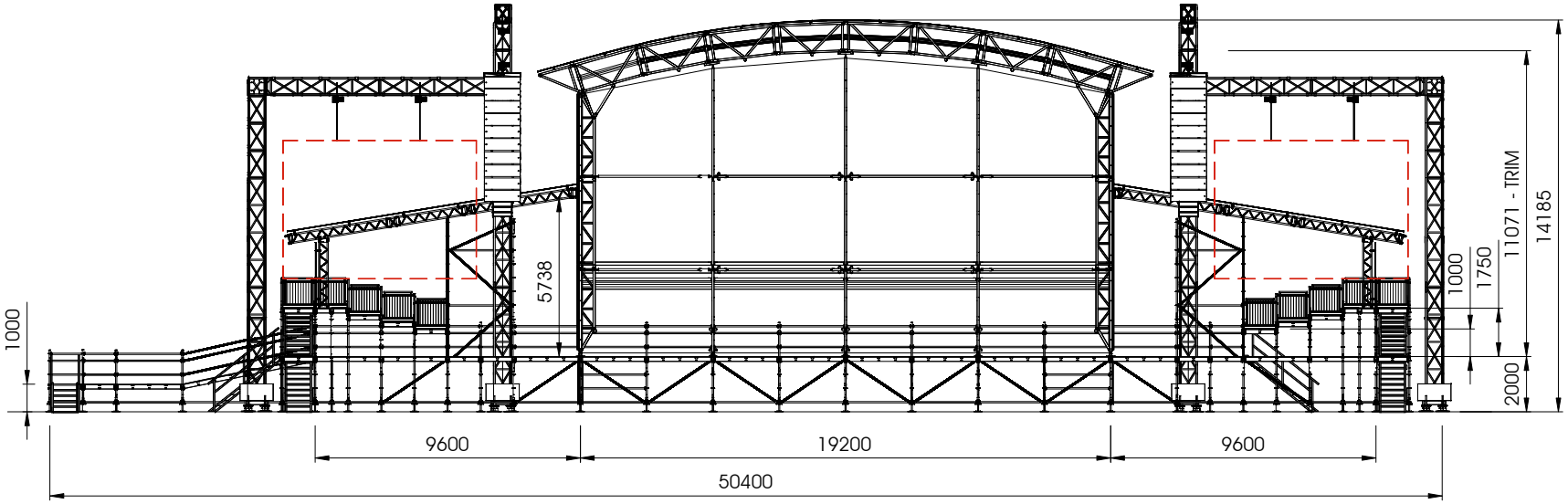
Issue status

QUOTATION
NOT TO BE USED FOR CONSTRUCTION

Drawing Number

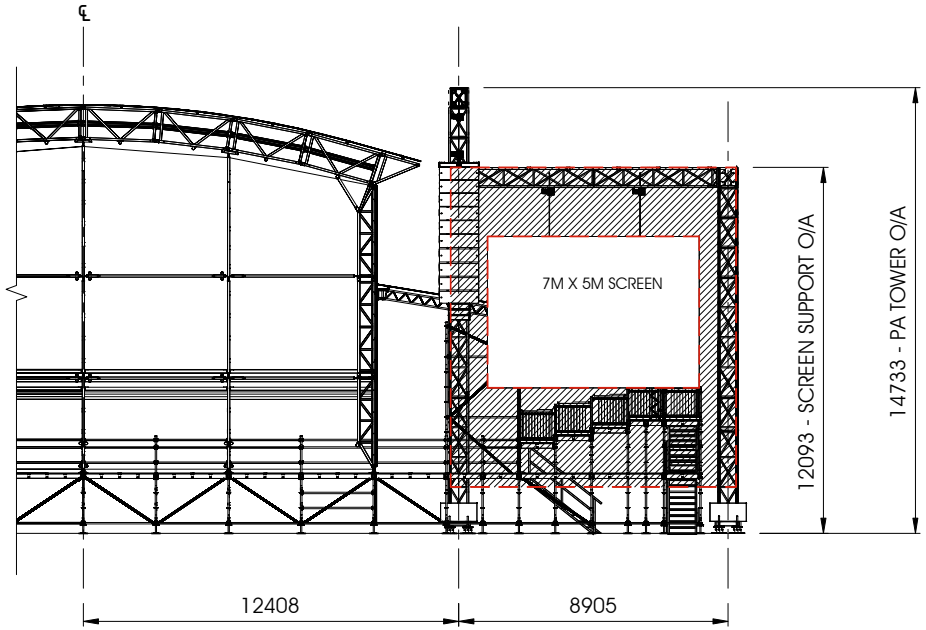
SM5159_FESTIVAL_01 **2075**

ESG Group
68-70 Burrows Road
Alexandria NSW 2015
Tel: +61 (0)2 9666 9566
Fax: +61 (0)2 9666 9599
Email: info@esg-australia.com
Web: www.esg-australia.com



FRONT ELEVATION - SCALE 1:250

SCREEN SUPPORT SCRIMS REMOVED FOR CLARITY



FRONT ELEVATION SCREEN SUPPORT DETAIL- SCALE 1:250

3	02.06.10	Drawn JD
GENERAL REVSION		Ch'ked CB
2	26.03.10	Drawn MJD
GENERAL REVSION		Ch'ked CB
1	22.03.10	Drawn JD
GENERAL REVSION		Ch'ked CB
Revisions		By

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Project
NORTH BYRON PARKLANDS

Title
FESTIVAL STAGE
FRONT ELEVATION

Drawing Details
Scale 1:250
Paper Size A4

Issue status
QUOTATION
NOT TO BE USED FOR CONSTRUCTION

Drawing Number
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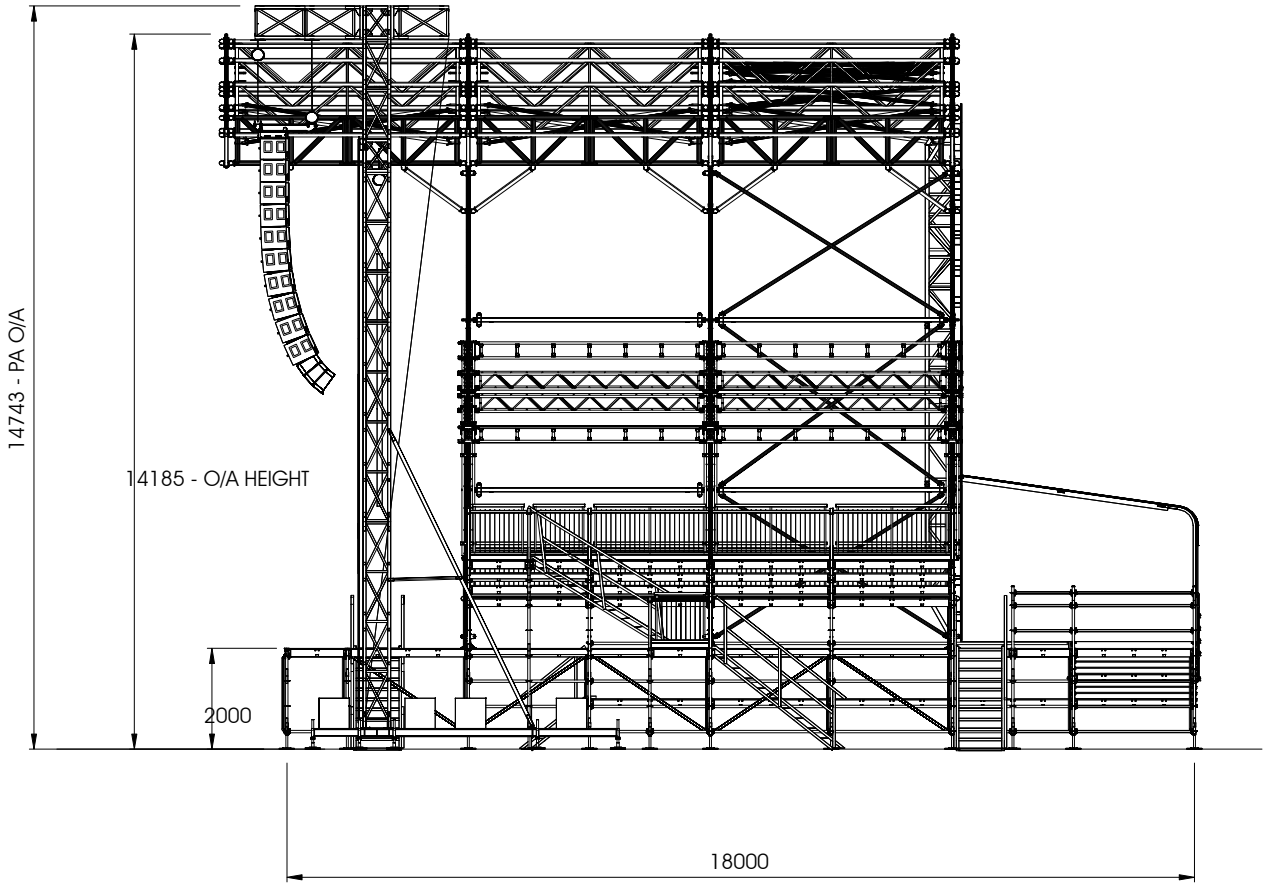

68-70 Burrows Road
Alexandria NSW 2015
Tel: +61 (0)2 9666 9566
Fax: +61 (0)2 9666 9599
Email: info@esg-australia.com
Web: www.esg-australia.com

Revisions	By
3 02.06.10 GENERAL REVSION	Drawn JD Ch'ked CB
2 26.03.10 GENERAL REVSION	Drawn MJD Ch'ked CB
1 22.03.10 GENERAL REVSION	Drawn JD Ch'ked CB

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Project

NORTH BYRON PARKLANDS

Title

FESTIVAL STAGE
PLAN VIEW - GENERAL ASSEMBLY

Drawing Details

Scale: 1:150
Paper Size: A4

Issue status

QUOTATION
NOT TO BE USED FOR CONSTRUCTION

Drawing Number

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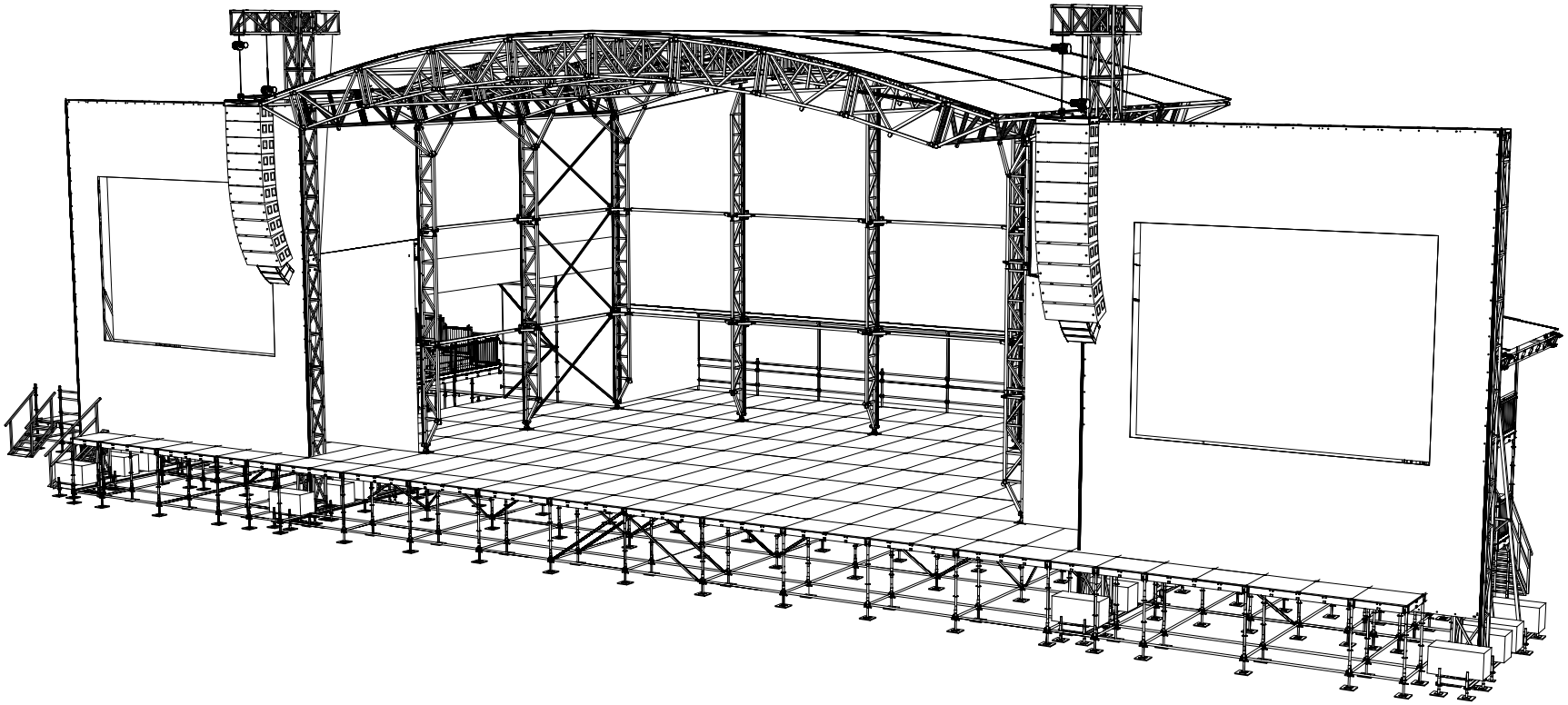

ESG Group
68-70 Burrows Road
Alexandria NSW 2015
Tel: +61 (0)2 9666 9566
Fax: +61 (0)2 9666 9599
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2 26.03.10 GENERAL REVSION	Drawn MJD Ch'ked CB
1 22.03.10 GENERAL REVSION	Drawn JD Ch'ked CB

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Project
NORTH BYRON
PARKLANDS

Title
FESTIVAL STAGE
PERSPECTIVE VIEW

Drawing Details
Scale: NTS
Paper Size: A4

Issue status
QUOTATION
NOT TO BE USED FOR CONSTRUCTION

Drawing Number
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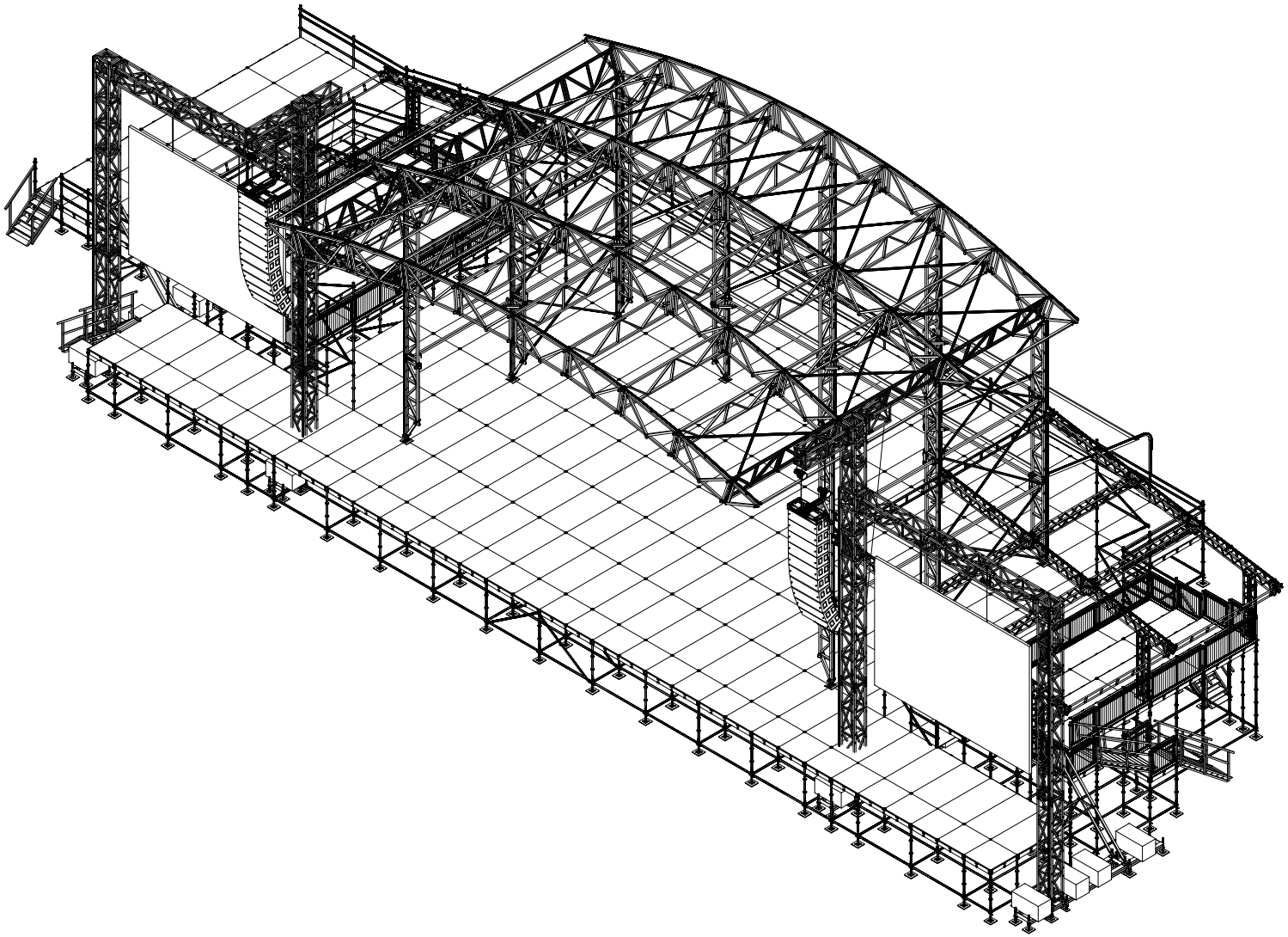

68-70 Burrows Road
Alexandria NSW 2015
Tel: +61 (0)2 9666 9566
Fax: +61 (0)2 9666 9599
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Web: www.esg-australia.com

Revisions	By
3 02.06.10 GENERAL REVSION	Drawn JD Ch'ked CB
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Project
NORTH BYRON
PARKLANDS

Title
FESTIVAL STAGE
ISOMETRIC VIEW

Drawing Details
Scale: NTS
Paper Size: A4

Issue status
QUOTATION
NOT TO BE USED FOR CONSTRUCTION

Drawing Number
SM5159_FESTIVAL_05 **2079**

Schedule of Essential Fire Safety Measures

North Byron Shire Parklands

The following is a list of Proposed Essential Services to be provided.

Essential Fire or Other Safety Measures	***Design Standard***	***Installation Standard***	***Maintenance Standard***
Emergency Lighting	As 2293.1 – 2005 Emergency Evacuation Lighting to Buildings	AS 2293.1 - 2005	AS 2293.2 Emergency Evacuation Lighting in Buildings – Inspection and Maintenance
Exit signs	AS 2293.1 - 2005 Emergency Evacuation Lighting	AS 2293.1 - 2005	AS 2293.2 Emergency Evacuation Lighting in Buildings – Inspections & Maintenance
Fire Blankets	AS 2444 -2001 Portable Fire Extinguishers and Fire Blankets	AS 2444 - 2001	AS 1851.1 Maintenance of Fire Protection Equipment – Fire Blankets
Portable Fire Extinguishers	AS 2444 - 2001 Portable Fire Extinguishers and Fire Blankets	AS 2444 - 2001	AS 1851.1 - Maintenance of Fire Protection Equipment - Portable Fire Extinguishers
Fire Fighting Services		'Fire fighting Services' as proposed	'Fire fighting Services' as proposed
Emergency Evacuation Plan		'Emergency Evacuation Plan & Risk Management Plan' as proposed	'Emergency Evacuation Plan & Risk Management Plan' as proposed