DRYFLEX P.U.M.P.

ATLAS TILE ADHESIVES

RLA TILE ADHESIVES

SOLUTIONS FOR INDUSTRY

Characteristics:

- Dryflex P.U.M.P is a blue, water based polyurethane modified, flexible waterproofing membrane.
- Dryflex P.U.M.P is fast drying and UV stable
- Dryflex P.U.M.P can be recoated after 4-6 hours @20°C depending on amount of coats applied.
- Dryflex P.U.M.P doesn't require the use of any reinforcement.
- Dryflex P.U.M.P is ideal for waterproofing of Shower Recesses, bathrooms and Laundries and light foot trafficable roofs.
- Dry flex P.U.M.P can be used for internal or external waterproofing applications.
- Dryflex P.U.M.P can be used over concrete, render, rendered brickwork, block work, Fibre-cement, Gyprock, and particle board surfaces.
- Dryflex P.U.M.P is easy to clean in water.
- RLA/Atlas cement based Tile Adhesives can be applied over Dryflex P.U.M.P

Preparation:

- All new concrete surfaces must be allowed to cure for at least 6 weeks and have a wood float finish. Steel trowelled finished slabs must be chemically or mechanically abraded prior to commencing waterproofing.
- All rendered surfaces must be allowed to cure for at least 7 days prior to commencing waterproofing. Ensure all rendered surfaces have a wood float finish.
- The maximum variation in the plane must not exceed 5mm in 3 meters for floors and 4mm in 2 meters for walls.
- Fibre Cement sheet when used as an underlay or wall / floor material must be a minimum of 6mm in thickness. All FC Sheets should be fixed in accordance with the manufacturer's instructions and the relevant standards.
- Compressed Fibre-Cement sheets when used as a floor substrate must be 15mm thick, and when used a wall substrate must 9mm thick and must be installed in accordance with the manufacturer's instructions and the relevant standards.
- Gypsum –plasterboard sheets when used as a wall substrate must be a minimum of 10mm thick, and installed in accordance with the manufacturer's instructions and the relevant standards.
- All screw / nail heads must be sealed with epoxy, and all sheet joints must be covered with a 50mm wide polyethylene / polypropylene tape.
- Ensure all metal surfaces are rust free.
- Small hairline cracks may be filled with the first application of Dryflex P.U.M.P. Cracks larger than 2mm or structural shrinkage cracks must be firstly filled with a flexible silicone / PU type sealant, and then a 50mm wide polypropylene/ polyethylene tape placed over the crack prior to the application of Dryflex P.U.M.P.
- Ensure all surfaces are sound, dry and free from excessive movement, oil, dust, grease, wax, curing compounds, release agents, paint and any other loose contaminating materials. Also remove any protrusions from the surface that may pierce the membrane.
- All surfaces must be primed with Uniprime prior to the application of Dryflex P.U.M.P to the substrate. Except for metal surfaces which should be primed with a Zinc Chromate / etching primer.
- When applying the Uniprime it is recommended to firstly pour some primer in a section then spread the primer using a broom, brush or roller. Then continue this method of application until the entire area is primed. **Note:** This method of application ensures a thorough coat of the primer on the surface.
- Allow the primer to dry for approximately 5-10 minutes at 20°C prior to commencing waterproofing.

Mixing:

- Dryflex P.U.M.P is a one part premixed product that does not require mixing.

Application:

- Ensure the surface has been appropriately prepared in accordance with RLA/Atlas instructions
- Apply silicone sealer to joints
- Apply the first coat of Dryflex P.U.M.P to the primed surface using a thick brush or a roller.
- Re-apply a second coat of Dryflex P.U.M.P at 90° to the first coat to ensuring complete coverage is achieved and no air bubbles exist.
- A third coat may be required if imperfections are present in the membrane.
- Conduct a final inspection on the surface of the membrane prior to commencing tiling to ensure no pinholes exist.
- Once the waterproofing is completed do not disturb the area for at least 24 hours at 20°C.
- Dryflex P.U.M.P requires to be applied at a minimum thickness of 0.75mm of dry film

Don't just buy another product buy a SOLUTION

Clean Up:

- Excess Dryflex P.U.M.P, tools and other equipment can be cleaned up using water while the membrane is still wet.

Coverage:

- The coverage of Dryflex P.U.M.P will vary depending upon the substrate, size and type of application and site conditions. As a guide it will cover approximately 1.5L/m² for 2 coats at approx. 1 mm thick dry film.

Packaging / Shelf Life:

- Dryflex P.U.M.P is available in 15lt pails.
- A pail of Dryflex P.U.M.P, when stored in a cool, dry environment, and is stored above ground level, will have a shelf life of approximately 12 months.

Handy Tips:

- Do not apply Dryflex P.U.M.P in temperatures above 40°C and below 5°C.
- Dryflex P.U.M.P cannot be used in areas where negative hydrostatic pressure is evident.
- Dryflex P.U.M.P. cannot be used in areas of permanent water immersion like swimming pools / spas etc.
- Ensure that Dryflex P.U.M.P is totally dry and the surface is without pinholes before applying any top coat over it.
- For applications / situations not mentioned in these instructions please contact your nearest RLA/Atlas office.
- Dryflex P.U.M.P is classified as a non-hazardous product.
- For a full MSDS on this product please contact your nearest RLA/Atlas office.

Technical Data:

Properties	Results
Appearance	Blue Paste
Density	1.25 +/- 0.05
Re-coat Time	4 - 6 Hours @ 20°C
Drying Time @ 20°C	Approx 12 Hours
Full cure @ 20oC	3 days
Dry film thickness	0.75 - 1 mm

RLA POLYMERS

www.rlapolymers.com.au

TECHNICAL ENQUIRIES TOLL FREE No.1800 752 679

Victoria
215 Colchester Road
Kilsyth VIC 3137
Ph: 613 9728 1644
Fax: 613 9728 6009

New South Wales
363 Wentworth Ave
Penale Hill NSW 2145
Ph: (02) 9636 7444
Fax: (02) 9636 7688

Queensland
25 Computer Road
Yatala QLD 4207
Ph: 617 3807 4022
Fax: 617 3807 4755

New Zealand
67 Dalgety Dr
MANUKAU CITY Auckland
Ph: 649 267 2772
Fax: 649 268 0305

Malaysia
No.5 Lebuhraya Petal
Pandamaran PORT KLANG 42000
Ph: 603 3166 1039
Fax: 603 3166 1037

Russell Brook

From: Support@dvcs.co.nz
Sent: Tuesday, 12 April 2011 12:44 p.m.
To: Russell Brook
Subject: 125 Nikau Palm Road BC090214

Hi Russell

Sorry for the delay busy working out of town.
I would like to apply for an extension to the building consent till the end of the year the reason is that I am undertaking most of the work myself and this extends the time needed to complete.

I have a new address it is all correspondence to be sent there

18 Stellin Street
Avalon
Lower Hutt

Same contact number 0212441643

Consent number BC090214
125 Nikau Palm road

Any queries call

Regards Tom Roulston

OK to extend
CCC 8 months

RBrook 12/4/11

Done! Angie 12/4/11
Letter sent to owner & agent.

Kāpiti Coast
DISTRICT COUNCIL
Me Huri Whakamuri, Ka Titiro Whakamua

02 March 2016

Tom Roulston
125 Nikau Palm Road,
Paraparaumu

Building Consent: 090214

Dear Sir/Madam

Building Consent granted subject to a waiver or modification of the building code

Description: Excavation of site & construction of New Dwelling
Location: 125 Nikau Palm Road, Paraparaumu
Legal Description: LOT 4 DP 82049

We recently issued you with an amendment to building consent relating to the above building project. The consent was granted subject to a modification of the building code.

The modification granted was with respect to the external cladding complying with clause B2.3.1 from 01/06/2010 instead of from the time of issue of the code of compliance certificate.
This modification applies only to building work carried out under the above building consent.

Please keep this letter with your building consent documentation.

Yours sincerely

Russell Brook
Team Leader – Site Inspections

Kāpiti Coast
DISTRICT COUNCIL
Me Huri Whakamuri, Ka Titiro Whakamua

02 March 2016

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125 Nikau Palm Road,
Paraparaumu

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Please keep this letter with your building consent documentation.

Yours sincerely

Russell Brook
Team Leader – Site Inspections

Kāpiti Coast
DISTRICT COUNCIL

Statement of Compliance with the NZ Building Code

Consent No: 090214

ISSUED BY: **Kapiti Coast District Council**

PROJECT

Site Address: 125 Nikau Palm Road, Paraparaumu
Legal Description: LOT 4 DP 82049
Work Description: Excavation of site & construction of New Dwelling
Building Category: R3

OWNER

Name(s): Tom Roulston
Address: 28 Stellin Street,Avalon,LOWER HUTT

[P] Application for CCC received and accepted
[P] Confirm all required inspections completed and documented in GoGet
[NA] If inspection(s) have been missed, have they been compensated for?
[NA] If supervision was required for any inspection - did it occur?
[P] Work in accordance with approved consent and approved amendments
[NA] Have any notices to fix been uplifted?
[P] Supporting documentation required in building consent addenda received
[P] Quality assurance documentation
[NA] Restricted building work
[NA] Additional information required and received
[NA] Compliance schedule issued
[NA] Earthquake prone building
[NA] Swimming Pool details updated
[P] Approve to issue Code Compliance Certificate if all fees paid
[NA] Approve to issue Certificate for Public Use if all fees paid
[NA] Approve to issue Certificate of Acceptance if all fees paid
[NA] Supervision review

NOTES:
Inspections Prepaid:
Inspections Done:

On review of the documentation and inspection notes it can be considered on reasonable grounds that all work has been completed in compliance with the building consent.

Signed: RBrook
Name: Russell Brook
Position: Building Officer

Date: 2 March 2016

GoGet Inspection Audit Report

Consent No: **090214**
Applicant: **Architecture DM**
Site Address: **125 Nikau Palm Road, Paraparaumu**
Work Type: **Excavation of site & construction of New Dwelling**

Inspection Type: **Final Inspection**
Inspection Outcome: **Pass**
Inspected By: **Craig Watson**
Inspection Date: **26 February 2016 2:58 p.m.**
Duration: **30 minutes**

Inspection Element	Status
Exterior	Pass
Inspection notes	Pass
Drawings	Pass
Additional information/plan	N/A
Sub-floor ventilation	N/A
Roof fixings	Pass
Spouting and down-pipes **to 2 x 22,000litre tanks**	Pass
Deck structure	Pass
Flashings - roof	Pass
Penetrations - flashings	Pass
Barriers **Glass balustrade**	Pass
Gully dishes	Pass
Stormwater and site drainage **To tanks**	Pass
Handrails	Pass
Wastes to gully	Pass
Fixings - durability	Pass
Steps/stairs	Pass
Terminal vents/AAVs	Pass
Cladding painted/sealed	Pass
Flashings - windows/doors	Pass
Cladding ground clearance	Pass
Road crossing complete	N/A
Final check complete	Pass
Interior	Pass
Inspection notes	Pass
Drawings	Pass
Additional information/plan	N/A
Service areas-floors/walls **All sealed.**	Pass
Stair design	Pass
Handrails	Pass
Balustrades	Pass
Lightings	Pass
Laundering	Pass

Cooking facilities	Pass
Smoke detectors **Hardwired.**	Pass
Food storage/preparation	Pass
Ventilation	Pass
Insulation and clearance	Pass
HWC flues	Pass
HWC restraint	Pass
Tempering valve	Pass
Glazing - human impact	Pass
Hot water temp **42 degree**	Pass
Solid fuel heater	Pass
Water supply tank	Pass
Trap seals and AAVS	Pass
Cistern flushing	Pass
WC pan connection	Pass
Septic tank	Pass
Window labels	Pass
Road crossing complete	N/A
Final check complete	Pass
Intertenancy/commercial	N/A

Taken at 2:21 PM on Friday 26/02/2016

Taken at 2:21 PM on Friday 26/02/2016

Taken at 2:23 PM on Friday 26/02/2016

Taken at 2:24 PM on Friday 26/02/2016

Taken at 2:28 PM on Friday 26/02/2016

Taken at 2:29 PM on Friday 26/02/2016

Taken at 2:30 PM on Friday 26/02/2016

KAPITI COAST DISTRICT COUNCIL

INSTALLERS CHECKSHEET

NOTE: Please have this form completed by the installer and ready for our Building Inspector to collect when doing the final inspection

INSTALLERS NAME: (Please Print) BC Number 090214

Tom Roulston

Address: 125 Nikau Palm Road Ph: 04 2970066

FREESTANDING FIRE OR INBUILT FIRE INSTALLED AT:

Address: 125 Nikau Palm Road

For: Tom Roulston

The following requirements under NZS 7421:1990 or AS/NZ 2918:2001 have been met and the solid fuel burning domestic appliance type and model SCANDIA CUISINE Has been installed in accordance with the manufacturer's installation instructions.

Please TICK (Where applicable) the following:

- ☐ The Chimney has been Cleaned
- ☐ The Chimney is in a sound condition
- ☐ The Chimney is of pumice and correct dimensions to comply with BRANZ zero clearance certificates
- ☐ The Chimney is ventilated to manufacturer's requirements
- ☐ The appliance is restrained against seismic activity (freestanding & fireplace heaters)
- ☐ The Inbuilt heating appliance has been approved by BRANZ as complying with their zero clearance certificate
- ☐ The hearth is an approved type according to the manufacturer's requirements
- ☐ The hearth is restrained against seismic activity
- ☐ The fire-surround at its connection to the fire place is fully insulated with approved material [see BRANZ Building Information Bulletin 248 (1986)]
- ☐ The ash hearth is of correct dimensions according to the installation instructions

Signed: **Date:** / /

Prepared for

SCANDIA STOVES AND STOVES PTY LTD

THERMAL CLEARANCE TESTING OF THE CUISINE TOP FIRED BAKERS OVEN MKII SOLID FUEL COOKING APPLIANCE TESTED WITH A HAWKWIND TRIPLE SKIN FLUE KIT

Test Report No: HCMG/05/008
July 2005
CONFIDENTIAL - CLIENT USE ONLY

by
S Marland

INITIAL DISTRIBUTION

Scandia Stoves and Spares Pty Ltd Lot 1 Melbourne Crescent SEYMOUR VIC 3660	**Copy No**
Mr Ray Cassar	**1**
HRL Technology Pty Ltd	
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THERMAL CLEARANCE TESTING OF THE CUISINE TOP FIRED BAKERS OVEN MKII SOLID FUEL COOKING APPLIANCE TESTED WITH A HAWKWIND TRIPLE SKIN FLUE KIT

Report

The appliance and flue system were installed into a standard Clearance Test enclosure and tested in two positions in a manner conforming to joint Australian/New Zealand Standard 2918:2001, Appendix B. A minimum 950mm deep x 1100mm wide x 12mm thick floor protector (cement fibre sheet) should be used under and in front of the appliance base when installing the appliance (see joint AS/NZS 2918:2001 3.3.2). The floor protector should extend 300mm in front of the appliance base. The Thermal conductivity of the floor protector is 0.8 m^2.K/W for 4mm sheets.

The Cuisine top fired bakers oven mkII solid fuel cooking appliance, when installed with a Hawkwind triple skin flue system, conforms to the requirements of joint AS/NZS 2918:2001, Appendix B, with respect to rear wall, side wall, floor and ceiling surface temperatures, when tested in the positions described in this report and using *Pinus radiata* firewood as the fuel type.

TEST POSITIONS

The appliance and flue combinations were tested at the following clearances:

Position A (Parallel)

100mm from rear wall to the edge of the appliance rear panel.
300mm from side wall to the edge of the appliance side panel.

Position B (Corner)

200mm from walls when measured from the rear corners of the appliance (45° to both walls).

Refer to Appendix 1 of this report for clearance diagrams.

Investigation: S. Marland

Report: S. Marland

Checked by: A. Wells

Signed: ..... Approved: .....

S. Marland
Technical Officer

B. Ham
Manager, Gippsland

1. INTRODUCTION

HRL Technology Pty Ltd was requested to assess the Cuisine top fired bakers oven mkII solid fuel cooking appliance, in conjunction with a Hawkwind triple flue system. Clearance testing was performed according to joint AS/NZS 2918:2001, Appendix B.

This report provides details of the safety clearance tests performed at the Solid Fuel Heater Testing and Research Laboratory of HRL Technology Pty Ltd. The testing was conducted from the 14th to the 21st of July 2005, by Mr S Marland. The testing was commissioned by Scandia Stoves and Spares Pty Ltd and the test results remain the property of this company.

The appliance was tested using *Pinus radiata* as firewood. No testing was undertaken with coal or briquettes.

2. DETAILS OF APPLIANCE

The test results reported below apply only to the appliance/flue system tested. The details of the appliance given in this section include features which may affect safety clearances. Any change in the construction or design of this model of the appliance or flue could invalidate this report.

Appendix 2 gives test appliance construction details.

3. INSTALLATION OF THE APPLIANCE

The appliance/flue combination was installed in two test positions at clearances specified by the manufacturer after preliminary testing. Floor thermocouples were positioned according to joint AS/NZS 2918:2001, Appendix B.

3.1 Floor Protector

A floor protector was installed beneath and in front of the appliance. The floor protector (cement fibre or similar) must be installed so that its leading edge is a minimum of 300mm in front of the appliance base. The floor protector must be a minimum of 1100mm wide x 950mm deep x 12mm thick. The floor protector consisted of 12mm thick cement fibre sheet with a thermal resistance value of $0.8m^2.K/W$ for 4mm sheets.

3.2 Flue System

The flue system used throughout testing was a Hawkwind Triple flue kit which was manufactured by S.V. Metals Pty Ltd. This flue system has not been tested to joint AS/NZS 2918:2001, Appendix F by HRL Technology Pty Ltd. Appendix 3 shows details of the flue system.

The flue height was 4.6 metres ± 0.3 metres from the floor protector.

4. CLEARANCES

4.1 Position A

The appliance was installed into the test enclosure with a rear wall clearance of 100mm and a side wall clearance of 300mm. Clearance measurements were taken from the appliance rear and side panels respectively (see Appendix 1).

4.2 Position B

The appliance was installed into the test enclosure in a corner position (45° to both side walls) with a clearance of 200mm to the side walls when measured from the appliance rear corners (see Appendix 1).

5. PROCEDURE

All clearance testing took place from July 14th to July 21st 2005. The floor thermocouples were installed into positions as per joint AS/NZS 2918:2001, Appendix B. Other thermocouple positions were determined by monitoring surface temperatures during trial burn cycles. Hot sites were located with the aid of a Linear Laboratories C-600E infra-red pyrometer.

All thermocouple tips were stapled onto the test surfaces, with black tape over the first 100 mm to facilitate consistent and accurate recording of temperatures. Thermocouple positions are shown in Tables 1 and 2.

5.1 High Fire Test

The appliance was fully fired in accordance with Section B9.1 of the joint Standard. The level of fuel was maintained between 50-75% of the full volume level of the fuel chamber during the High Fire test.

The average fuel load for initiating the High Fire tests was 6.6kg with an average refuelling rate of 1.1kg/10 minutes.

During High Fire testing it was found that the highest surface temperatures caused through the operation of the appliance occurred when the primary air control was fully open.

5.2 Flash Fire Test

Immediately after the High Fire test was completed, sufficient embers were removed to bring the fire bed to a level of 15-25% of the fuel chamber volume. The appliance was then fired in accordance with Section B9.2 of the joint Standard. The average fuel load for initiating the Flash Fire tests was 10.4kg. Highest temperature rises were achieved by fully opening the primary air control and leaving the main door 30mm ajar from the door catch

5.3 Fuel

The appliance was fired using a standard firewood fuel of *Pinus radiata* with an average moisture content of 13.4%. Each firewood piece was 300mm x 100 mm x 40 mm.

6. RESULTS

6.1 Uncertainty of Measurement Statement

(a) The uncertainty of distance measurement for determining clearance distances was not greater than ± 2 mm.

(b) The uncertainty of temperature measurement during the entire test period was ± 2°C at the 95% confidence level.

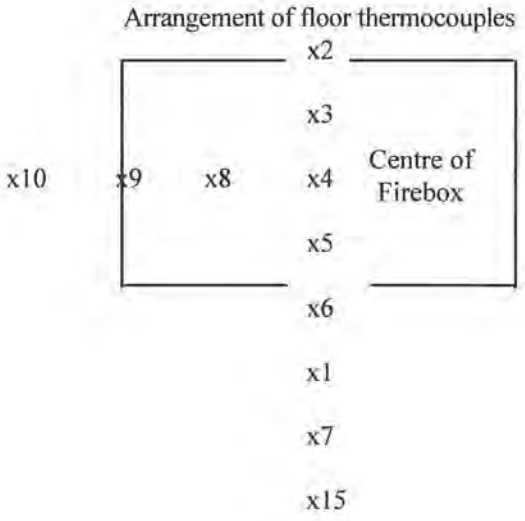
6.2 Test Enclosure Temperatures

Table 3 shows the ambient temperature range during testing. Tables 4 and 5 show the maximum temperature rise above ambient for each test surface.

7. CONCLUSION

The Cuisine top fired bakers oven mkII solid fuel cooking appliance, when installed with a hawkwind flue system, conforms to the requirements of Australian/New Zealand Standard 2918:2001, with respect to floor, ceiling, side wall and rear wall surface temperatures, when tested in the test positions described earlier in this report in accordance with Appendix B of the joint Standard.

Table 1: Position A



Thermocouple	Channel No
1	1
2	2
3	3
4	4
5	5
6	6
7	7
8	8
9	9
10	10
15	15

Thermocouple	Channel No
11 Ceiling, inside wooden ceiling rim, to front of appliance	11
12 Ceiling, 25 mm from wooden ceiling rim, to front of appliance	12
13 Ceiling, inside wooden ceiling rim, to LHS of appliance	13
14 Ceiling, 25 mm from wooden ceiling rim, to LHS of appliance	14
16 Side wall, 490 mm from corner, 1020mm above floor	16
17 Side wall, 580mm from corner, 1000mm above floor	17
18 Rear wall, 530mm from corner, 1090mm above floor	18
19 Rear wall, 580mm from corner, 880mm above floor	19
20 Ambient temperature	20

Table 2: Position B

Thermocouple	Channel No
11 Ceiling, inside wooden ceiling rim, to RHS of appliance	11
12 Ceiling, 25 mm from wooden ceiling rim, to RHS of appliance	12
13 Ceiling, inside wooden ceiling rim, to LHS of appliance	13
14 Ceiling, 25 mm from wooden ceiling rim, to LHS of appliance	14
16 RHS wall, 590mm from corner, 1000mm above floor	16
17 RHS wall, 750mm from corner, 1180mm above floor	17
18 LHS wall, 550mm from corner, 1160mm above floor	18
19 LHS wall, 730mm from corner, 1060mm above floor	19
20 Ambient temperature	20

Table 3: Ambient Temperature Range ℃

Position	High Fire	Flash Fire
A	24.4 – 32.3	27.8 – 31.4
B	17.4 – 31.4	29.3 – 31.9

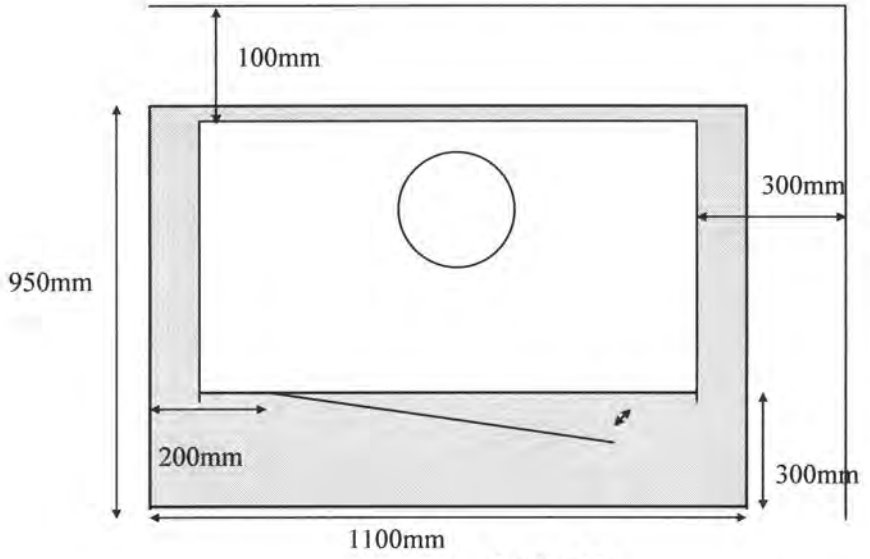
Table 4: Maximum Temperature Rise - Position A

Position	Thermocouple Number	High Fire Test (°C)	Thermocouple Number	Flash Fire Test (°C)
Floor	6	59.2	5	77.2
Ceiling	12	26.1	13	27.4
Rear Wall	19	46.5	19	48.3
Side Wall	17	52.0	17	47.0

Table 5: Maximum Temperature Rise - Position B

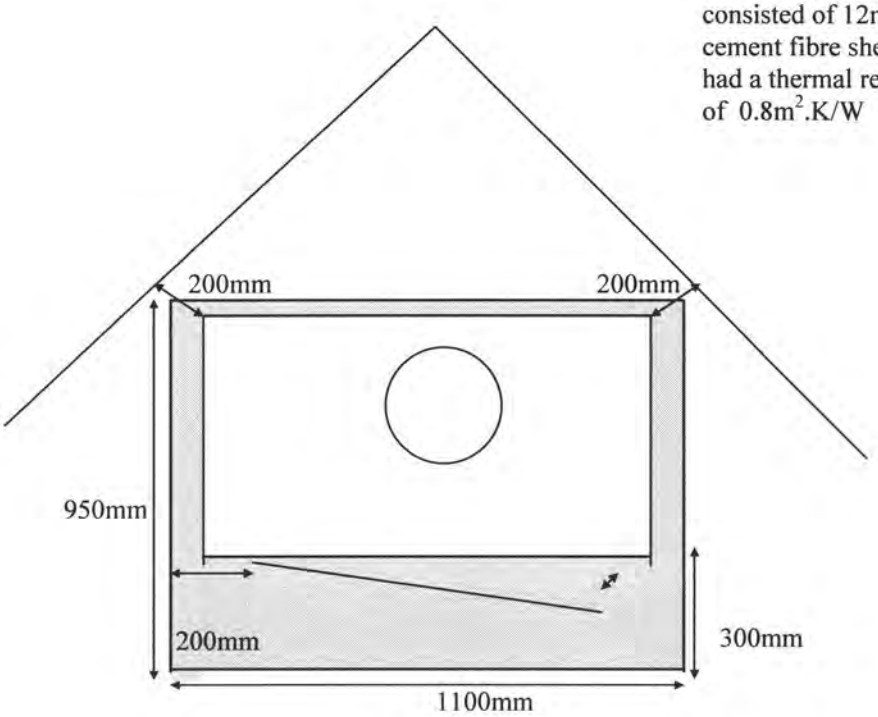
Position	Thermocouple Number	High Fire Test (°C)	Thermocouple Number	Flash Fire Test (°C)
Ceiling	13	19.7	13	21.3
RHS Wall	16	62.0	16	60.2
LHS Wall	18	61.1	18	59.8

APPENDIX 1:
MINIMUM CLEARANCES FOR THE CUISINE TOP FIRED BAKERS OVEN MKII SOLID FUEL COOKING APPLIANCE INSTALLED WITH A HAWKWIND THRIPLE SKIN FLUE KIT



Position A

The floor protector consisted of 12mm thick cement fibre sheet which had a thermal resistance of $0.8m^2.K/W$



Position B

APPENDIX 2:
SOLID FUEL BURNING APPLIANCE CONSTRUCTION DETAILS

Appliance Model Name:	Cuisine Top Fired Bakers Oven mkII		
Manufacturer:	Scandia Stoves and spares Pty Ltd		
Serial Number:	Prototype		
Overall Height (to top of top plate):	940mm		
Overall Width (not including top plate):	670mm		
Overall Depth (not including top plate):	540mm		
Top Plate Width:	690mm		
Top Plate Depth:	508mm		
Top Plate Thickness:	25mm		
Appliance Base:	Height: 50mm	Width: 50mm	Depth: 50mm
Appliance Pedestal:	Height: 285mm	Width: 470mm	Depth: 380mm
Firebox Description:	Height: 350mm	Width: 470mm	Depth: 380mm
Firebox Material Type/ Seam Fully Welded:	Cast Iron		
Firebrick Size:	Height: 120mm Thickness: 30mm	Width: 350mm No of: 2.5	
Main Door Opening:	Height: 225mm	Width: 470mm	
Door: **Door Glass:**	Height: 375mm Height: 164mm	Width: 500mm Width: 338mm	Depth: 20mm
Primary Air:	2 Ports at 60mm diameter located in base of door.		
Secondary/Tertiary Air:	4 holes at 5mm diameter, 2 in each side of firebox		
Baffle Plate:	None		
Flue Dimensions:	138mm OD		
Spigot Dimensions:	151mm OD	147mm ID	
Spigot to Rear of Appliance:	50mm		
Rear Internal/External Heat Shield:	40mm, rear shield was 670mm x 1050mm		
Side Internal/External Heat Shield:	12mm		
Heat Shield Material Type:	1.2mm sheetmetal		
Fan Location/Speeds:	No fan fitted		
Grate:	☐ Yes	√ No	
Diagrams:	Over the page		
Signed: ..... **Date:**			

APPENDIX 3:
HAWKWIND TRIPLE SKIN FLUE KIT

PROUDLY AUSTRALIAN OWNED
SCANDIA
STOVES & HEATERS

The Cuisine

Cast Iron Top Fire Baker's Oven

LIMITED WARRANTY 5 YEAR

Adaptability is one of many attributes of the Cuisine. The thermal properties of cast iron firebox combined with its generous size result in a significant heat output

Other features of this solid cast iron oven include being able to heat domestic hot water and the ability to be installed in a kitchen or living area.

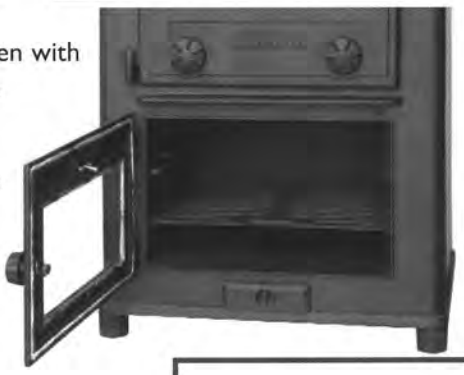
A wetback option is available for the heating of domestic hot water.

Fuel

Seasoned and dry wood, or coal all burn effectively and efficiently. Fuel consumption and cooker output will vary according to the calorific value and quantity of fuel used.

Flue

Approved 140mm flue connected to top of cooker. Minimum length 3.6m.



Features:

- Solid Cast Iron Durability
- Five Year Warranty
- Large Cast Iron Oven with Temperature Gauge
- Large Firebox
- Cast Iron Hot Plate
- Ashpan
- High Heat Output
- Domestic Hot Water Boiler (optional) with (3/4") tappings on back of cooker
- Overnight Burning
- Simple Controls
- Efficiency and Economy
- Thermal clearance testing to AS/NZS 2918:2001 (Appendix B)

The Cuisine Specifications

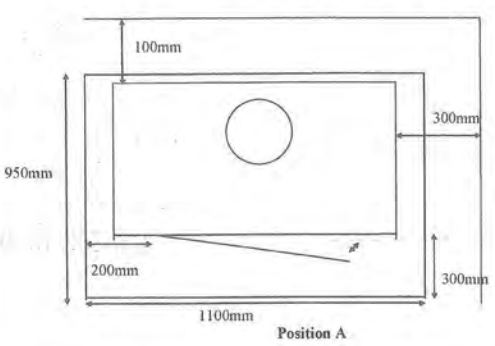
Clearances from combustible surfaces:

Sides	Rear	Rear with Splashback
300mm	225mm	100mm

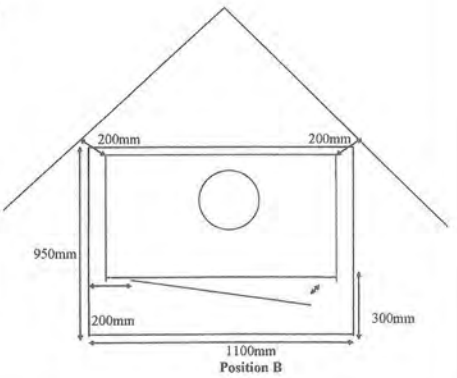
Dimensions: Overall

Height	925mm
Depth	565mm
Width	705mm
Oven Size	465w x 285h x 380d
Firebox Size	385w x 330h x 335d
Firebox Door Opening	205h x 385w
Weight	248Kg

The floor protector must consist of 12mm thick cement fibre sheet or similar.



Position A



Position B

Scandia – a family business with a strong Australian Heritage

The Scandia story dates back to shortly after the Second World War when Mr Vic Cassar was manufacturing and repairing solid fuel stoves which he sold in the markets of Melbourne.

In 1961 he rented three small factories around Fitzroy where he continued to make and repair stoves. By 1972 the business had outgrown these factories and he decided to decentralise to Seymour, taking with him his two sons and a number of skilled tradesmen.

The Seymour complex consisted of a manufacturing and assembly plant, a foundry (shown below) and a vitreous enamelling plant. Stoves were produced for several decades from sheet steel and pig iron to the completed product.

Over the years however, the lack of skilled workers in the hot and physically demanding jobs of the foundry and the enamelling plant saw the closure of these divisions and the eventual sourcing of high-quality castings from China and Taiwan.

In the early 1980s, one of Vic's sons Ray and son-in-law Jeff gradually took over the running of the company continuing to manufacture and assemble solid fuel cookers.

In the late 1990s Ray's sons Ben, Vic and Jake commenced with the company working in the spare parts store, stove building and the steel fabrication divisions.

In recent times Vic has moved on leaving Jake and Ben to run the company. Due to Scandia's pursuit of supplying first-class products they have now set up a factory in China to specifically produce their products using premium materials.

Jake and Ben continually travel to the factory to oversee the production and inspect every shipment of cookers and heaters ensuring superior quality which is guaranteed with a Five Year Warranty.

Three generations of stove builders have made Scandia Australia's leading supplier of quality and reliable solid fuel stoves backed by the largest range of spare parts for most makes and models of combustion heaters and cookers.

PROUDLY AUSTRALIAN OWNED
SCANDIA
STOVES & HEATERS

Scandia Stoves & Spares Pty Ltd
ABN 75 104 878 588 ACN 104 878 588

Lot 1 Melbourne Crescent, Seymour VIC 3660

Postal Address:
PO Box 372, Seymour VIC 3660 Australia

Ph: 03 5792 2388 Fax: 03 5792 2021
Email: info@scandiastoves.com.au
Website: *www.scandiastoves.com.au*

Scandia have established an enviable reputation in the manufacture and supply of quality replacement parts for an extensive range of combustion stoves and heaters covering models over the last eighty years.

Dealer Stamp

Fireworx/Fires By Design Ltd
1048 Fergusson Dr, Upper Hutt
Ph: 04 526 2001 Fax: 04 526 2051
email: fireworx@xtra.co.nz

GIB® Wall Bracing Calculation Sheet A

lower of two V85A

GIB® EzyBrace™
GIB® Bracing Systems, 2006

Job Details

Name	ROLSTON	
Street and Number	125 NIKAU PALM RD, PARAPARAUMU	
Lot and DP Number	LOT 4 DP 82049	
City/Town/District	KAPITI COAST	
Designer and date	Dean Robb	1601/2009
Company Name	Architecture DM	

Building Specification

Location of Storey	lower
Floor Loading	2 kPa
Foundation Type	slab
Building Height to Apex (m)	8
Roof Height above Eaves (m)	2
Stud Height (m)	2.7
Cladding Weight (top or single)	light
Cladding Weight (lower)	heavy
Cladding Weight (subfloor)	light
Roof Weight	light
Roof Pitch (degrees)	0-25
Room in Roof Space	no
Building Length (m)	22.2
Building Width (m)	11
Gross Building Plan Area (m2)	193.7

not applicable (slab)

Building Location

Wind Zone	***Very High***	**Earthquake Zone**
Region	R2	A
Terrain	Inland	
Exposure	Exposed	
Topography	Moderate	

Bracing Units required for Wind

per m	subfloor	walls
W along	n/a	215 BUs/m
W across	n/a	202 BUs/m
Totals	subfloor	walls
W along	n/a	2365 BUs
W across	n/a	4484 BUs

Bracing Units required for Earthquake

per m2	subfloor	walls
E	n/a	13.5 BUs/m2
Totals	subfloor	walls
E along	n/a	2615 BUs
E across	n/a	2615 BUs

GIB® Wall Bracing Calculation Sheet B — lower of two — V85A

GIB® EzyBrace ™ *GIB® Bracing Systems, 2006*

Along									
Wall or Bracing Line		*Bracing Elements provided*						*Wind*	*Earthq.*
1	2	3	4	5	7	8	6	9W	10EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Supplier	Bracing Type	Element Length L (m)	Element Height H (m)	Angle to Bracing line (degrees)	BUs Achieved	BUs Achieved
A	enter	1	NZS 4229	MASONAR	6	2.7		3320	3320
		2							
line totals		3							
W	3320	4							
EQ	3320	5							
B	enter	1	GIB®	GS1a	2.5	2.7		167	144
		2	GIB®	GS1a		2.7			
line totals		3							
W	167	4							
EQ	144	5							
C	enter	1	GIB®	BL1	0.9	2.7		100	92
		2	GIB®	BL1	0.6	2.7		67	61
line totals		3	GIB®	GS1a	1.8	2.7		104	88
W	271	4							
EQ	241	5							
D	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
E	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
F	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
G	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
H	enter	1							
		2							
line totals		3							
W		4							
EQ		5							

							Wind	Earthq.
Totals Achieved							3757	3706
							OK	*OK*
Totals Required (from Sheet A)							2365	2615

GIB® Bracing Systems, 2006

For full construction details see literature GIB® Bracing Systems, 2006

Supplier	System	Minimum Length (m)	BUs W/m	BUs EQ/m
	none			
GIB®	GS1a	1.8	65	55
		2.4	75	65
GIB®	GS2	1.2	70	60
		1.8	80	70
		2.4	90	80
GIB®	BL1	0.4	120	115
		0.6	125	115
GIB®	BL1a	1.8	130	115
GIB®	BLP	0.6	145	135
		0.9	145	145
GIB®	BLG	0.6	145	130
		1.2	150	130
NZS 4229	MASONAR	6	622.5	622.5
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			

GIB® Wall Bracing Calculation Sheet B — lower of two — V85A

GIB® EzyBrace ™ *GIB® Bracing Systems, 2006*

Across									
Wall or Bracing Line		*Bracing Elements provided*						*Wind*	*Earthq.*
1	2	3	4	5	7	8	6	9W	10EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Supplier	Bracing Type	Element Length L (m)	Element Height H (m)	Angle to Bracing line (degrees)	BUs Achieved	BUs Achieved
M	enter	1	GIB®	GS1a	2.8	2.7		187	162
		2	GIB®	BL1	1.5	2.7		167	153
line totals		3							
W	353	4							
EQ	315	5							
N	enter	1	GIB®	BL1	1.5	2.7		167	153
		2							
line totals		3							
W	167	4							
EQ	153	5							
O	enter	1	GIB®	GS2	1.8	2.7		128	112
		2	GIB®	GS1a	2.4	2.7		160	139
line totals		3							
W	288	4							
EQ	251	5							
P	enter	1	GIB®	GS1a	2	2.7		116	98
		2	GIB®	GS1a	2.4	2.7		160	139
line totals		3							
W	276	4							
EQ	236	5							
Q	enter	1	GIB®	GS1a	2	2.7		116	98
		2	NZS 4229	MASONAR	6	2.7		3320	3320
line totals		3							
W	3436	4							
EQ	3418	5							
R	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
S	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
T	enter	1							
		2							
line totals		3							
W		4							
EQ		5							

							Wind	Earthq.
Totals Achieved							4519	4373
							OK	*OK*
Totals Required (from Sheet A)							4484	2615

GIB® Bracing Systems, 2006

For full construction details see literature GIB® Bracing Systems, 2006

Supplier	System	Minimum Length (m)	BUs W/m	BUs EQ/m
	none			
GIB®	GS1a	1.8	65	55
		2.4	75	65
GIB®	GS2	1.2	70	60
		1.8	80	70
		2.4	90	80
GIB®	BL1	0.4	120	115
		0.6	125	115
GIB®	BL1a	1.8	130	115
GIB®	BLP	0.6	145	135
		0.9	145	145
GIB®	BLG	0.6	145	130
		1.2	150	130
NZS 4229	MASONAR	6	622.5	622.5
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			

GIB® Wall Bracing Calculation Sheet B — upper of two — V85A

GIB® EzyBrace ™ *GIB® Bracing Systems, 2006*

Across									
Wall or Bracing Line		*Bracing Elements provided*						*Wind*	*Earthq.*
1	2	3	4	5	7	8	6	9W	10EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Supplier	Bracing Type	Element Length L (m)	Element Height H (m)	Angle to Bracing line (degrees)	BUs Achieved	BUs Achieved
M	enter	1	GIB®	GS1a	2.8	2.7		187	162
		2							
line totals		3							
W	187	4							
EQ	162	5							
N	enter	1	GIB®	GS1a	3.7	2.7		247	214
		2	GIB®	BL1	1.4	2.7		156	143
line totals		3							
W	402	4							
EQ	357	5							
O	enter	1	GIB®	GS1a	4	2.7		267	231
		2	GIB®	GS1a	2.8	2.7		187	162
line totals		3	GIB®	BL1	1	2.7		111	102
W	564	4							
EQ	495	5							
P	enter	1	GIB®	GS1a	3	2.7		200	173
		2							
line totals		3							
W	200	4							
EQ	173	5							
Q	enter	1	GIB®	BL1	1	2.7		111	102
		2	GIB®	GS1a	3	2.7		200	173
line totals		3							
W	311	4							
EQ	276	5							
R	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
S	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
T	enter	1							
		2							
line totals		3							
W		4							
EQ		5							

							Wind	Earthq.
Totals Achieved							1664	1463
							OK	*OK*
Totals Required (from Sheet A)							1654	1247

GIB® Bracing Systems, 2006

For full construction details see literature GIB® Bracing Systems, 2006

Supplier	System	Minimum Length (m)	BUs W/m	BUs EQ/m
	none			
GIB®	GS1a	1.8	65	55
		2.4	75	65
GIB®	GS2	1.2	70	60
		1.8	80	70
		2.4	90	80
GIB®	BL1	0.4	120	115
		0.6	125	115
GIB®	BL1a	1.8	130	115
GIB®	BLP	0.6	145	135
		0.9	145	145
GIB®	BLG	0.6	145	130
		1.2	150	130
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			

GIB® Wall Bracing Calculation Sheet A

upper of two V85A

GIB® EzyBrace™
GIB® Bracing Systems, 2006

Job Details

Name	ROLSTON	
Street and Number	125 NIKAU PALM RD, PARAPARAUMU	
Lot and DP Number	LOT 4 DP 82049	
City/Town/District	KAPITI COAST	
Designer and date	Dean Robb	1601/2009
Company Name	Architecture DM	

Building Specification

Location of Storey	upper	
Floor Loading	2 kPa	
Foundation Type	slab	
Building Height to Apex (m)	8	
Roof Height above Eaves (m)	2	
Stud Height (m)	2.7	
Cladding Weight (top or single)	light	
Cladding Weight (lower)	heavy	
Cladding Weight (subfloor)	light	*not applicable (slab)*
Roof Weight	light	
Roof Pitch (degrees)	0-25	
Room in Roof Space	no	
Building Length (m)	22.2	
Building Width (m)	11	
Gross Building Plan Area (m2)	201.2	

Building Location

Wind Zone	***Very High***	**Earthquake Zone**
Region	R2	A
Terrain	Inland	
Exposure	Exposed	
Topography	Moderate	

Bracing Units required for Wind

per m	subfloor	walls
W along	n/a	87 BUs/m
W across	n/a	75 BUs/m

Totals	subfloor	walls
W along	n/a	957 BUs
W across	n/a	1654 BUs

Bracing Units required for Earthquake

per m2	subfloor	walls
E	n/a	6.2 BUs/m2

Totals	subfloor	walls
E along	n/a	1247 BUs
E across	n/a	1247 BUs

ROLSTON

Dean Robb

GIB® Wall Bracing Calculation Sheet B — upper of two — V85A

GIB® EzyBrace ™ — *GIB® Bracing Systems, 2006*

Along								Wind	Earthq.
Wall or Bracing Line		*Bracing Elements provided*						9W	10EQ
1	2	3	4	5	7	8	6		
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Supplier	Bracing Type	Element Length L (m)	Element Height H (m)	Angle to Bracing line (degrees)	BUs Achieved	BUs Achieved
A	enter	1	GIB®	GS1a	4.8	2.7		320	277
		2	GIB®	GS1a	2.2	2.7		127	108
line totals		3	GIB®	BL1	1.2	2.7		133	123
W	580	4							
EQ	508	5							
B	enter	1	GIB®	GS2	2.2	2.7		156	137
		2	GIB®	GS1a	3.6	2.7		240	208
line totals		3							
W	396	4							
EQ	345	5							
C	enter	1	GIB®	BL1	1.4	2.7		156	143
		2	GIB®	BL1	1.4	2.7		156	143
line totals		3							
W	311	4							
EQ	286	5							
D	enter	1	GIB®	GS1a	2	2.7		116	98
		2							
line totals		3							
W	116	4							
EQ	98	5							
E	enter	1	GIB®	GS1a	3.6	2.7		240	208
		2							
line totals		3							
W	240	4							
EQ	208	5							
F	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
G	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
H	enter	1							
		2							
line totals		3							
W		4							
EQ		5							

	Wind	Earthq.
Totals Achieved	1644	1444
	OK	*OK*
Totals Required (from Sheet A)	957	1247

ROLSTON

Dean Robb

GIB® Wall Bracing Calculation Sheet B — upper of two — V85A

GIB® EzyBrace ™ — *GIB® Bracing Systems, 2006*

Along								Wind	Earthq.
Wall or Bracing Line		*Bracing Elements provided*						9W	10EQ
1	2	3	4	5	7	8	6		
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Supplier	Bracing Type	Element Length L (m)	Element Height H (m)	Angle to Bracing line (degrees)	BUs Achieved	BUs Achieved
A	enter	1	GIB®	GS1a	4.8	2.7		320	277
		2	GIB®	GS1a	2.2	2.7		127	108
line totals		3	GIB®	BL1	1.2	2.7		133	123
W	580	4							
EQ	508	5							
B	enter	1	GIB®	GS2	2.2	2.7		156	137
		2	GIB®	GS1a	3.6	2.7		240	208
line totals		3							
W	396	4							
EQ	345	5							
C	enter	1	GIB®	BL1	1.4	2.7		156	143
		2	GIB®	BL1	1.4	2.7		156	143
line totals		3							
W	311	4							
EQ	286	5							
D	enter	1	GIB®	GS1a	2	2.7		116	98
		2							
line totals		3							
W	116	4							
EQ	98	5							
E	enter	1	GIB®	GS1a	3.6	2.7		240	208
		2							
line totals		3							
W	240	4							
EQ	208	5							
F	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
G	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
H	enter	1							
		2							
line totals		3							
W		4							
EQ		5							

	Wind	Earthq.
Totals Achieved	1644	1444
	OK	*OK*
Totals Required (from Sheet A)	957	1247

GIB® Bracing Systems, 2006

For full construction details see literature GIB® Bracing Systems, 2006

Supplier	System	Minimum Length (m)	BUs W/m	BUs EQ/m
	none			
GIB®	GS1a	1.8	65	55
		2.4	75	65
GIB®	GS2	1.2	70	60
		1.8	80	70
		2.4	90	80
GIB®	BL1	0.4	120	115
		0.6	125	115
GIB®	BL1a	1.8	130	115
GIB®	BLP	0.6	145	135
		0.9	145	145
GIB®	BLG	0.6	145	130
		1.2	150	130
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			

GIB® Wall Bracing Calculation Sheet B — upper of two — V85A

GIB® EzyBrace ™ *GIB® Bracing Systems, 2006*

Across									
Wall or Bracing Line		*Bracing Elements provided*						*Wind*	*Earthq.*
1	2	3	4	5	7	8	6	9W	10EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Supplier	Bracing Type	Element Length L (m)	Element Height H (m)	Angle to Bracing line (degrees)	BUs Achieved	BUs Achieved
M	enter	1	GIB®	GS1a	2.8	2.7		187	162
		2							
line totals		3							
W	187	4							
EQ	162	5							
N	enter	1	GIB®	GS1a	3.7	2.7		247	214
		2	GIB®	BL1	1.4	2.7		156	143
line totals		3							
W	402	4							
EQ	357	5							
O	enter	1	GIB®	GS1a	4	2.7		267	231
		2	GIB®	GS1a	2.8	2.7		187	162
line totals		3	GIB®	BL1	1	2.7		111	102
W	564	4							
EQ	495	5							
P	enter	1	GIB®	GS1a	3	2.7		200	173
		2							
line totals		3							
W	200	4							
EQ	173	5							
Q	enter	1	GIB®	BL1	1	2.7		111	102
		2	GIB®	GS1a	3	2.7		200	173
line totals		3							
W	311	4							
EQ	276	5							
R	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
S	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
T	enter	1							
		2							
line totals		3							
W		4							
EQ		5							

								Wind	Earthq.
Totals Achieved								1664	1463
								OK	*OK*
Totals Required (from Sheet A)								1654	1247

GIB® Bracing Systems, 2006

For full construction details see literature GIB® Bracing Systems, 2006

Supplier	System	Minimum Length (m)	BUs W/m	BUs EQ/m
	none			
GIB®	GS1a	1.8	65	55
		2.4	75	65
GIB®	GS2	1.2	70	60
		1.8	80	70
		2.4	90	80
GIB®	BL1	0.4	120	115
		0.6	125	115
GIB®	BL1a	1.8	130	115
GIB®	BLP	0.6	145	135
		0.9	145	145
GIB®	BLG	0.6	145	130
		1.2	150	130
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			

KCDC CODE COMPLIANCE REVIEW CHECK SHEET

00061

Criteria: All building work except for minor works or major projects. *Refer BI-WI-024*

Address:	Date:
New Dwelling **125 Nikau Palm Road** **PARAPARAUMU**	BC No:

application for code compliance certificate (Form 278) completed	Y	N

Confirm all required inspections have been completed and passed: Answer: Yes *or* No

If inspections have been missed, what supporting info and method of verification has been provided to compensate for missed inspection. (Describe): ----------

---

Work in accordance with approved consent and approved amendments		Yes	No
If no, has NTF been issued:	N/A	Yes	No
Have items of non compliance been resolved and NTF uplifted.	N/A	Yes	No

Note: If work is not in accordance with consent, (and approved amendments) or NTF matters have not been resolved, suspend application for Code Compliance Certificate

Supporting documentation required in building consent addenda *(Accept in accordance with KCDC Policy 002) Form completed during BC Approval process*

Tick (√) indicates yes, N/A indicates considered - but not applicable	Req'd	Supplied	Accept
copy of electrical certificate	✓	✓	
copy of gas certificate If applicable	✓		
an "as-built" drainage plan	✓	✓	
plumbing (Form 125) for pressure test and installation piped services	✓	✓	
drainage (Form 126) for stormwater installation	✓	✓	
drainage (Form 127) for private sewer installation	✓	✓	
a Construction Review (PS4) statement for Structural engineering	✓	✓	
a Construction Review (PS4) statement for Fire engineering			
a Construction Review (PS4) statement for Geo-technical engineering			
Roof cladding warranty	✓	✓	
Solar water heating technical specifications			
wall cladding/texture coating installation applicator warranty			
a copy of the lift certificate			
a certificate from the ~~fire alarm~~ Septic Tank installer	✓	✓	
a certificate from the sprinkler installer			
a copy of wet-area membrane installers warranty			
A copy of deck membrane manufacturer's installers warranty/guarantee			
FPIS (verifier) Fire Systems Certification			
Installers Checksheet Wood burner	✓	✓	

KCDC Building Consent Authority
Building Consent Documentation Filed

00062

BC No.	090214
Street Address.	**New Dwelling** **125 Nikau Palm Road** **PARAPARAUMU**

Tick indicates document(s) included in this Building Consent

Building Consent Application,	✓
Application checksheet,	✓
Costing schedule,	✓
Plans and specifications,	✓
Invoice and receipt,	✓
Processing records/checksheets,	✓
Inspection page printouts	✓
Building consent and memorandum,	✓
Inspection reports,	
Application for CCC,	
Code of Compliance Certificate.	
Producer statements and supporting documentation,	
Peer review documents,	
Fire design documents,	
Requests for further information and other correspondence,	
Amendments,	
Supplementary information,	
Energy work certificates,	
Notices to Fix.	

This form comprises part of the Building Consent documentation and indicates the contents of the Building Consent File. Refer KCDC Policy 029.

If specified supporting documentation has not been provided, what alternative information or verification method has been provided to compensate. (describe):

Compliance Schedule

Is a new or amended compliance schedule required?	Y	N
If "Y" Has it been issued? (Refer note below)	Y	N

If the new/ revised compliance schedule has not been issued, what action has been taken to ensure it will be issued? Outline:

Note: If the draft/ revised compliance schedule has not been issued, the Code Compliance Certificate cannot be issued. Suspend issuing CCC until this matter is addressed.

Suspended

Building consent requirements.

Are there any item specified in the building consent or PIM that have not been completed.

Outline: ---

Are there any development impact fees to be paid outstanding? Yes / No *(if yes, CCC cannot be issued)*

Approve to issue Code Compliance Certificate if all other outstanding fees are paid. YES / NO

Building officer:

Signature: .....

Date: ...../...../.....

Name: .....

Co- reviewer:

Signature: .....

Date: ...../...../.....

Name: .....

COMPUTER FREEHOLD REGISTER UNDER LAND TRANSFER ACT 1952

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**WN48D/201**
Land Registration District	**Wellington**
Date Issued	26 July 1996

Prior References
WN45B/819

Estate	Fee Simple
Area	2.2730 hectares more or less
Legal Description	Lot 4 Deposited Plan 82049

Proprietors
Thomas Sinclair Roulston and Olga Roulston

Interests

516880 Subject to reservations as to coal, gold and silver

Appurtenant hereto are water supply rights specified in Easement Certificate B400853.7

B531004.4 Consent Notice pursuant to Section 221 Resource Management Act 1991 imposing ongoing conditions - 26.7.1996 at 12.34 pm

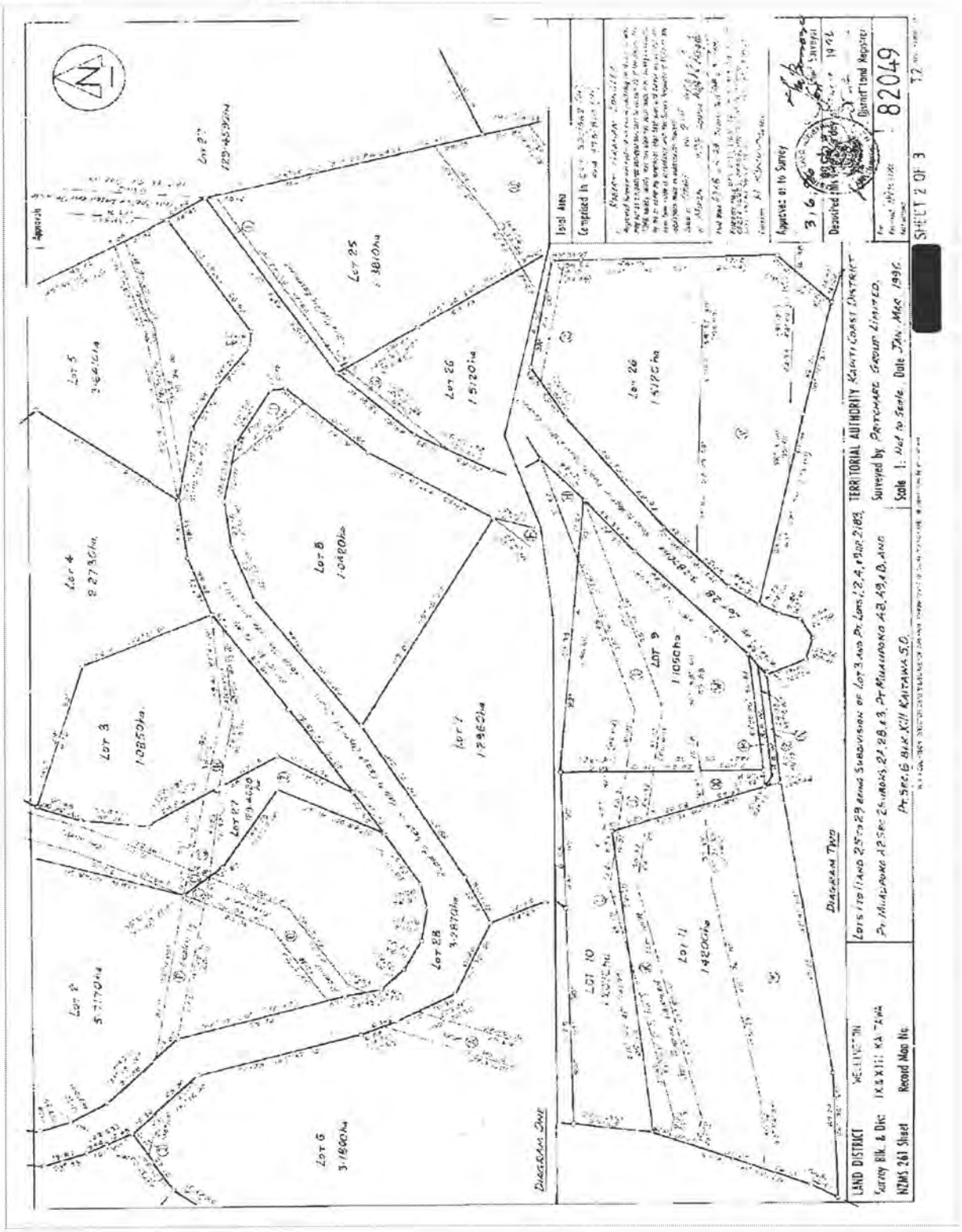
Land Covenant in Transfer B531004.12 - 26.7.1996 at 12.34 pm

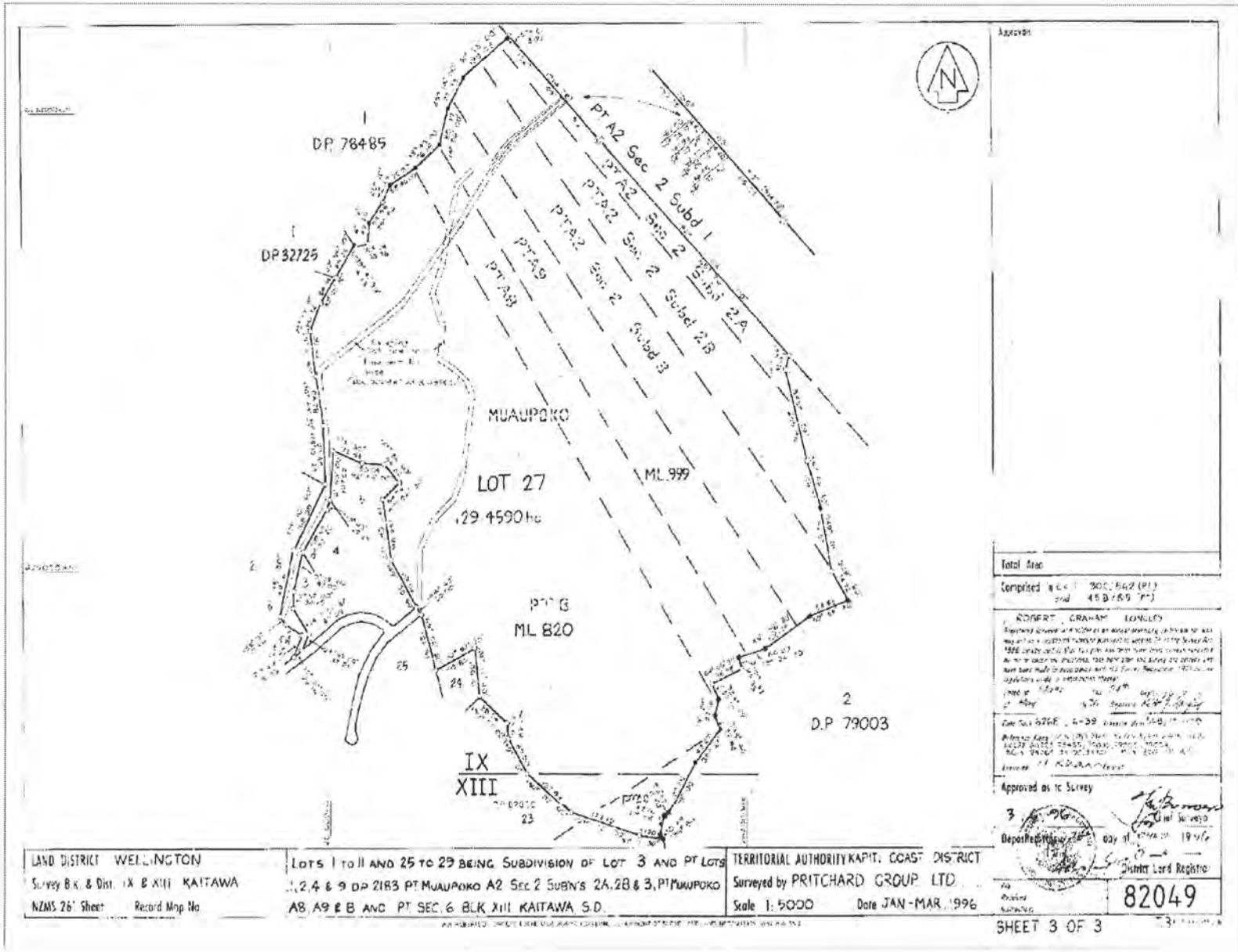
Land Covenant in Transfer B727216.2 - 11.6.1999 at 9.59 am

Subject to an electricity and telecommunications right (in gross) over part marked L on DP 87177 in favour of Transpower New Zealand Limited created by Transfer B800861.3 - 6.9.2000 at 3.55 pm

8294552.1 Mortgage to Westpac New Zealand Limited - 25.9.2009 at 12:42 pm

Identifier **WN48D/201**





KCDC Building Consent Authority

Building Consent AMENDMENTS Documentation Filed

BC No.	BC 090214A
Street Address.	123 Nikau Palm Rd
	Paraparaumu

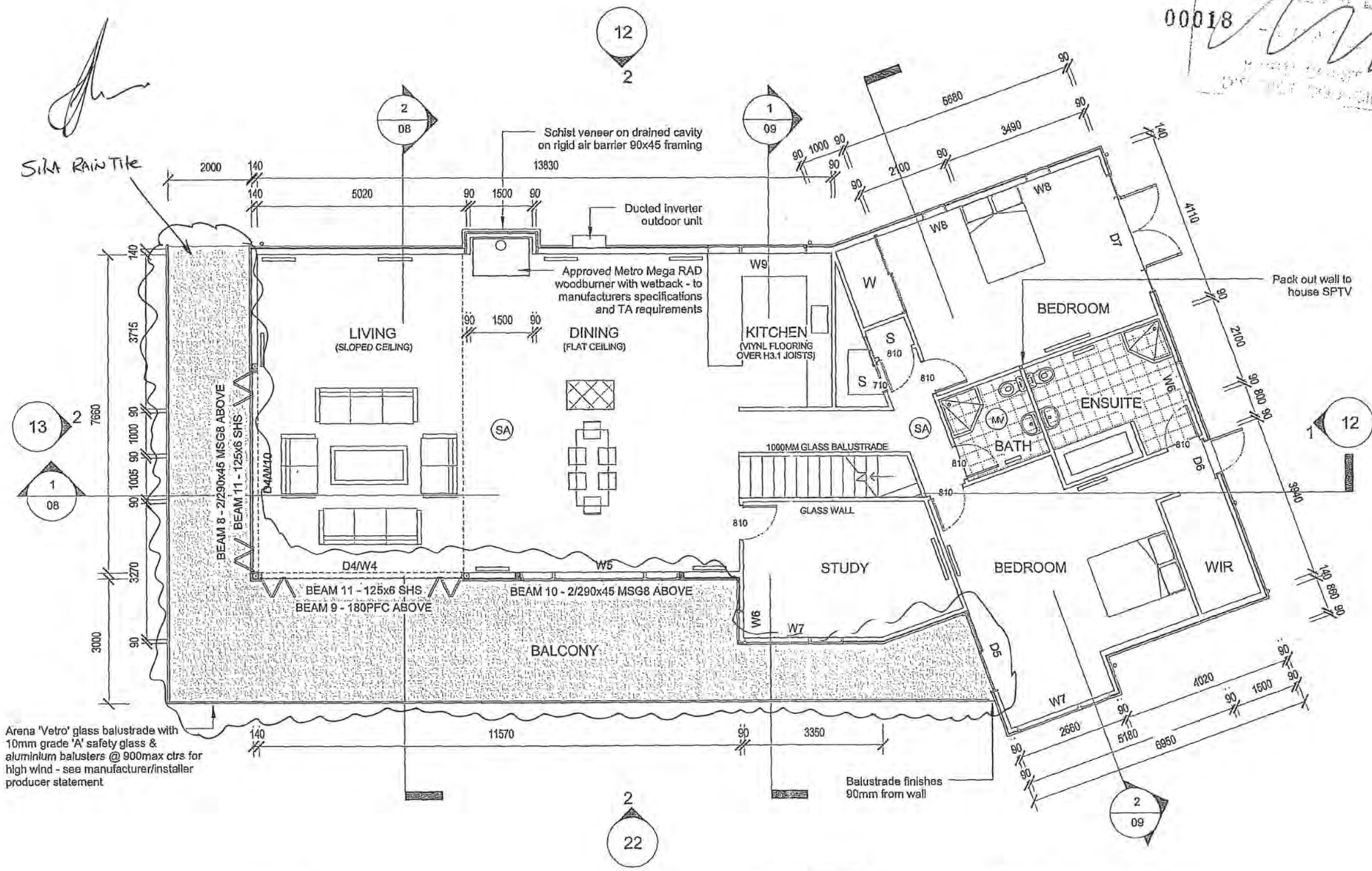
Tick indicates document(s) included in this Building Consent

Amendment Consent Application,	✓
Costing schedule,	✓
Amended Plans and specifications,	✓
Invoice and receipt,	✓
Processing records/checksheets,	✓
Inspection page printouts 1-8 (M) 25-26 28-31	✓
Amended Building consent and memorandum,	
Producer statements and supporting documentation,	
Peer review documents,	
Fire design documents,	
Requests for further information and other correspondence,	
Supplementary information,	

This form comprises part of the Building Consent documentation and indicates the contents of the Building Consent File. Refer KCDC Policy 029.

PRELINE PLUMBING INSPECTION REQUIRED

WATER PIPES TESTED TO 1500KPA



LEVEL 2

1 : 100

RECEIVED
11 JAN 2010
KAPITI COAST DISTRICT COUNCIL

(SA) = SMOKE ALARM

(MV) = MECHANICAL VENTILATION

= ALUMINIUM FARAL LINEAL 80 RADIATORS

= HI-COP 3.61 FUJITSU LOW PROFILE DUCTED INVERTER EMBEDDED IN CEILING

= 2/90x45 MSG8 UNDERSTUDS

= 125x6 SHS COLUMNS

RECEIVED
00018

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

REVISIONS:

Rev:	Description:	Date:

GENERAL NOTES:

Check and confirm all dimensions prior to commencing any work on-site.
Use stated dimensions in preference to scaled.
If in doubt ASK.
Drawings at a larger scale take precedence over those drawn at a smaller scale.
Site measure all openings/spaces for items manufactured off-site.
Notes on one plan and not necessarily on other drawings are applicable to all drawings.
Any conflicts on the documents are to be notified to the designer prior commencing work.

IF IT ISN'T DIMENSIONED - DO NOT SCAL

UPPER FLOOR PLAN

06

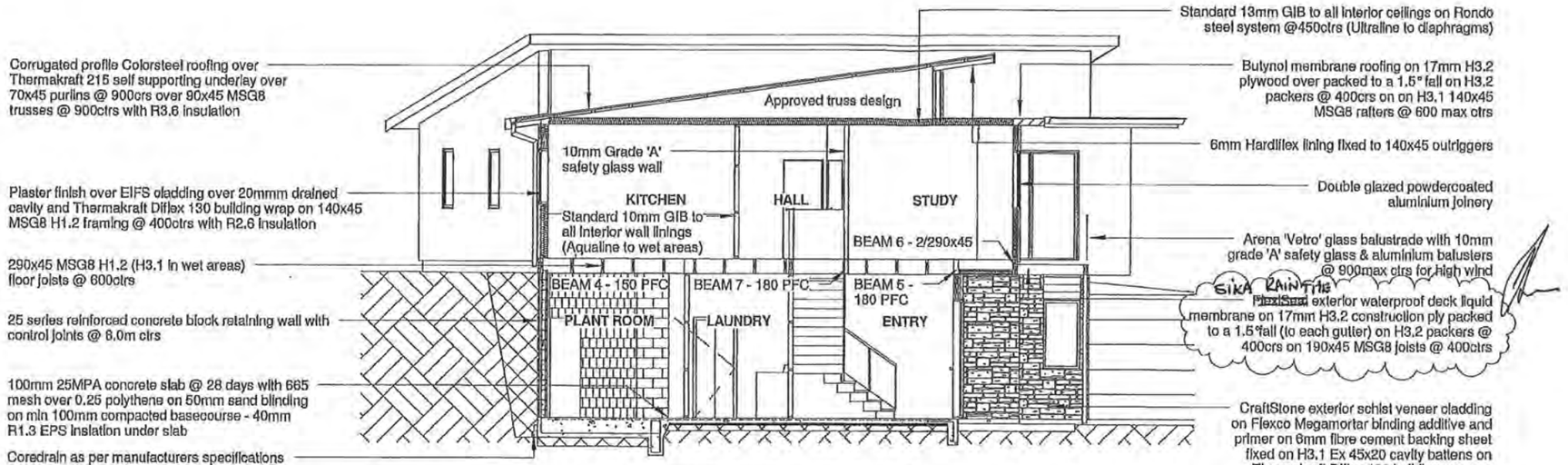
DATE: ~~26 MAR 2009~~ 11 Jan 2010
SCALE: 1:100 @
JOB NUMBER: NA
DRAWN BY: S JOHNSON
DESIGN BY: Designer

ARCHITECTURE DM

17 GEAR ST
PETONE

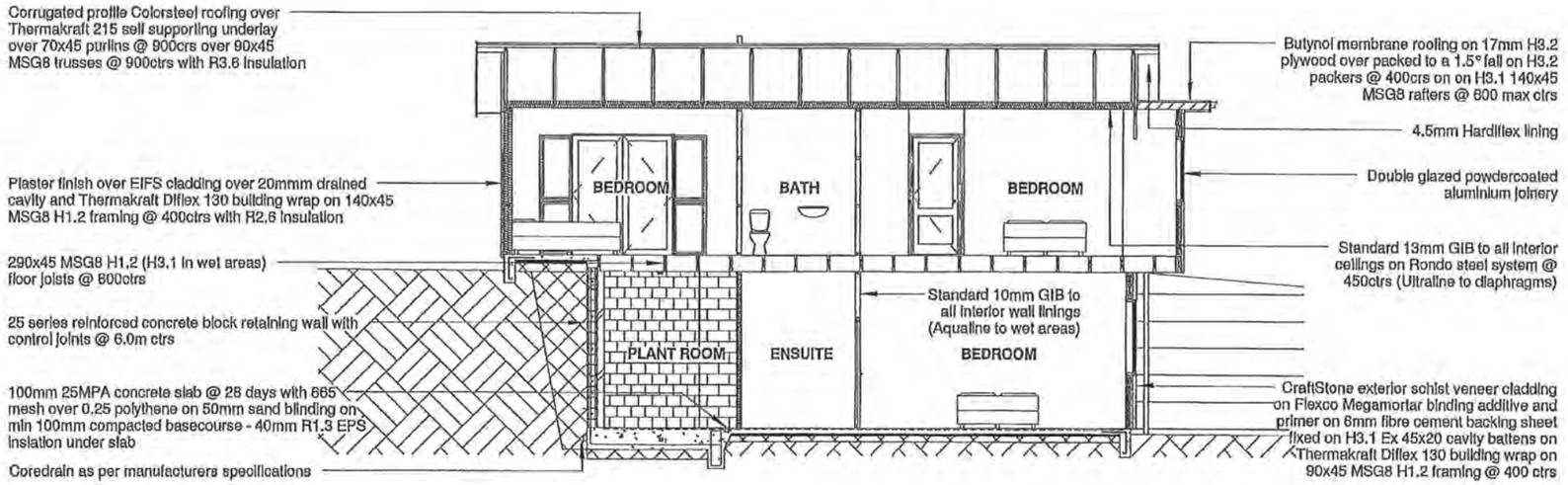
P (04) 568 8468
F (04) 568 8468
M 027 452 4670
E dean@architecturedm.co.r

A D N Z
ARCHITECTURAL DESIGNERS N



Section 3

1:100



Section 4

1:100

NOTE: All beams are engineered design - please refer to engineers documentation for all calculations and connection/fixing details

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

REVISIONS:

Rev:	Description:	Date:
	- Canterlevered joist size altered - Balcony membrane changed	

GENERAL NOTES:

Check and confirm all dimensions prior to commencing any work on-site.
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IF IT ISN'T DIMENSIONED - DO NOT SCALE!

SECTIONS

09

DATE: ~~5 MAY 2009~~ 11-Jan 2010
SCALE: 1:100 @A3
JOB NUMBER: NA
DRAWN BY: S JOHNSON
DESIGN BY: Designer

ARCHITECTURE DM

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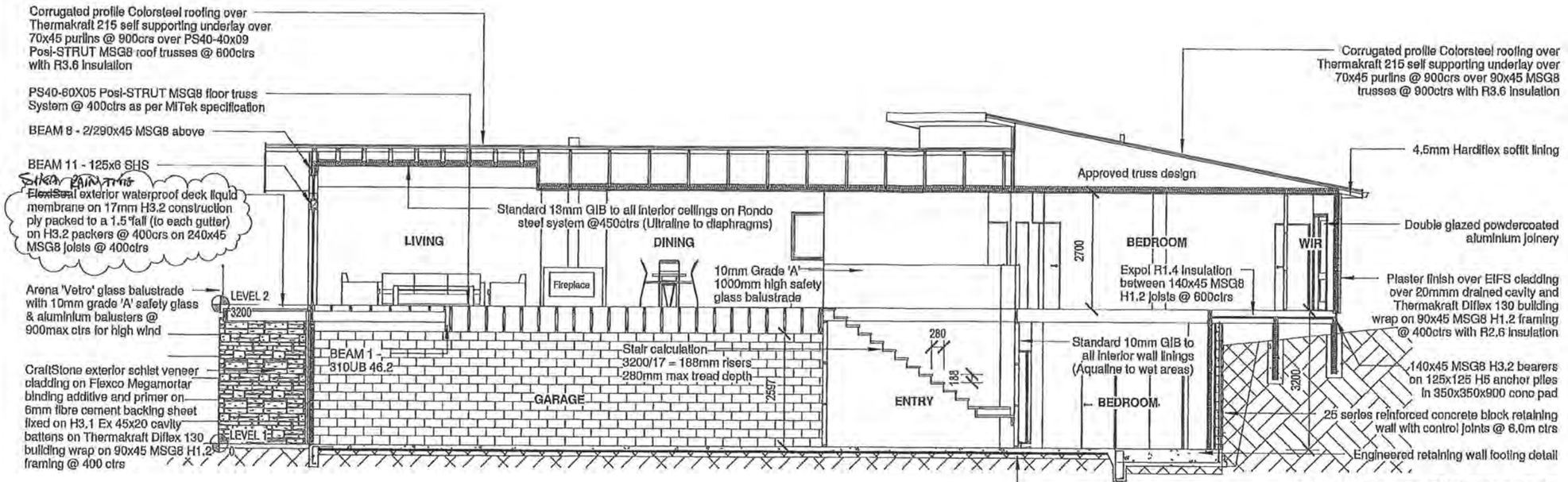
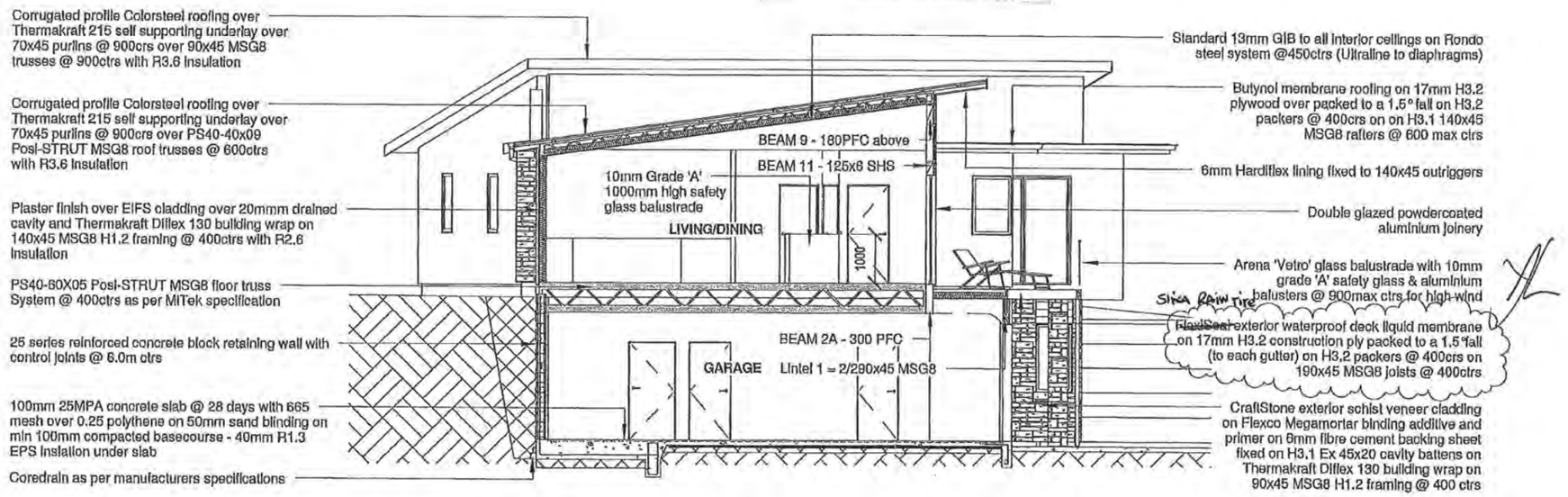
E dean@architecturedm.co.nz



Section 1

1 : 100



Section 2

1 : 100

NOTE: All beams are engineered design - please refer to engineers documentation for all calculations and connection/fixing details

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

REVISIONS:

Rev:	Description:	Date:
-	Canterlevered joist size altered Balcony membrane changed	

GENERAL NOTES:

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SECTIONS

08

DATE: ~~5 MAY 2009~~ 11-Jan 2010
SCALE: 1 : 100 @A3
JOB NUMBER: NA
DRAWN BY: S JOHNSON
DESIGN BY: Designer

ARCHITECTURE DM

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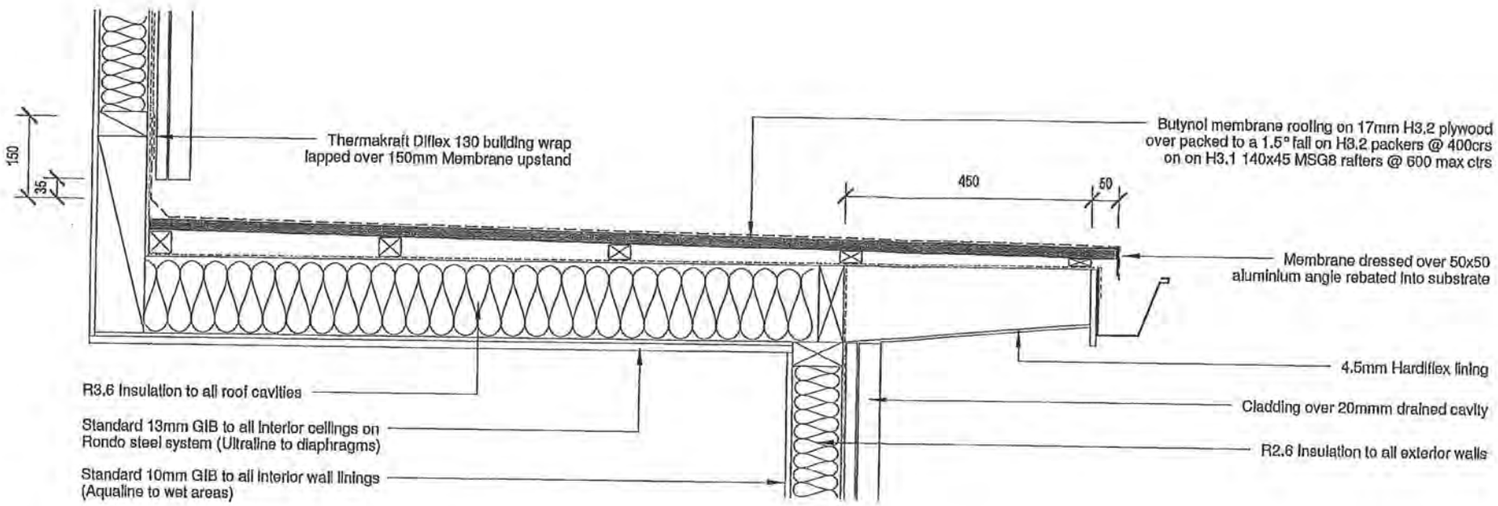
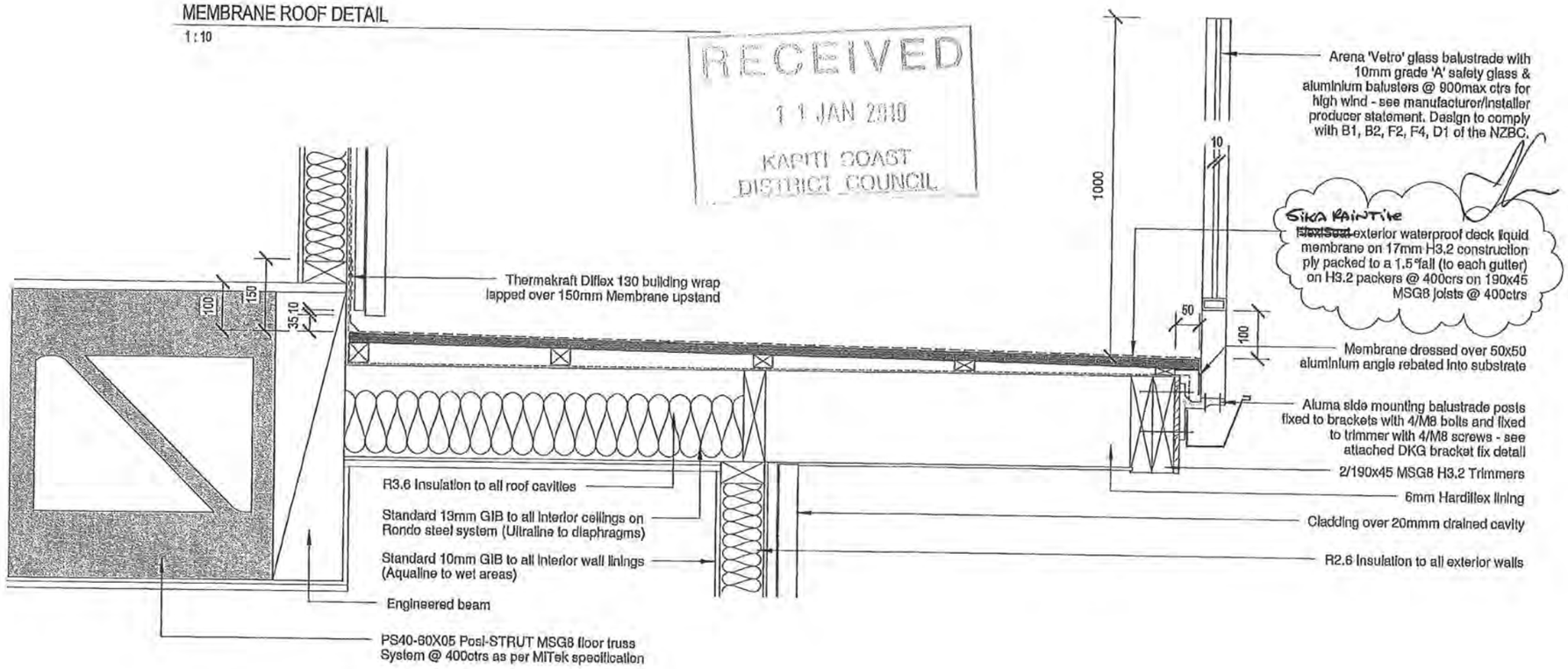
A D | N Z
ARCHITECTURAL DESIGNERS NZ INC



MEMBRANE ROOF DETAIL

1 : 10



MEMBRANE DECK DETAIL

1 : 10

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

REVISIONS:

Rev:	Description:	Date:
	- Canterlevered joist size altered - Balcony membrane changed	

GENERAL NOTES:

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CONSTRUCTION DETAILS

19

DATE:	~~5 MAY 2009~~ 11 Jan - 2010
SCALE:	1:10 @A3
JOB NUMBER:	NA
DRAWN BY:	S JOHNSON
DESIGN BY:	Designer

ARCHITECTURE DM

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E dean@architecturedm.co.nz

Form Printed: 23 February 2016

FOR COUNCIL USE:

Department	✓ For Referral	Comments	Approving Officer / Date
Planning			
Plumbing and Drainage			
Building	✓		26.02.2016
Fire Design			
Compliance Schedule			
Structural			
Hazardous Substances			
Environmental Health			
Other……..			
NOTES:			

NO PIM
Len Smith 25/2/2016

Kāpiti Coast DISTRICT COUNCIL
Me Huri Whakamuri, Ka Titiro Whakamua

AMENDED BUILDING CONSENT APPLICATION COVERSHEET (Green Folder)

125 Nikau Palm Rd, Paraparaumu

Building Consent No.	090214B.
Building Project	Durability modification

CONSENT DATA INPUT REQUIREMENTS

✓	Required Inspections	✓	Required Inspections	✓	Required Inspections	✓	Required Inspections
	Foundation/Piles		Drainage		Pre-lining (Plumbing)		Final (Dwelling)
	Block		Pre-Wrap		Wet areas - membrane		Retaining Wall
	Pre-Slab (Plumbing)		Pre-Clad		Post Lining		
	Pre-Slab (Building)		Weathertightness		Brick Veneer		
	Sub-Floor		Pre-lining (Building)		Retaining Wall		

Office use	✓		Office use	✓	
32		Lapse and cancellation after 12mths of consent	23A		Second hand wood burner certified
2		Engineer design specific components	25		Contractor to leave site clean and clear
3		Foundations to solid bearing of 200mm	30		To comply with Food Hygiene Regulations 1974
4		NZS3604 as acceptable solution in terms of NZ Building Code	31		As in CCZ, all fixings need to be stainless steel
6		Not approved as Habitable Room	33		Approval only given for relocation purposes
9		Note and comply with all endorsements on approved plans	34		If cladding to have pre-finished colour coating, to be appropriate for coastal conditions
10		Names and Registration of plumber and drain-layer required	38		Window sashes on upper levels less than 760mm above floor to have stays fixed
11		Concealed soil and TV pipes and gas flues only allowed in ducts or minimum framed	39		Construction of playground to comply with NZS5828
12		Hot & Cold water pipes tested to 1500kPa	40		Fencing, gates, doors directly leading to swimming pool to comply with Pool Act 1987
13		Roof stormwater to be connected to existing	43		Textured systems should be applied by licensed, trained applicators – supply warranty
15		Owner/builder to ensure prop foundation height will allow satisfactory connection	44		Exterior cladding system to be completed and inspected prior to internal lining
21		Minimum FFL to comply with NZS3604			
23		Installation of solid fuel appliance (wood burner) comply and secured			

Act Ref	✓	Standard Consent Conditions	Comment
37		Resource Consent has not yet been obtained	
72 73		Land subject to natural hazard	
75-80		Construction on two or more allotments	

Non-Standard Addenda

Yes/No		Compliance Schedule
Yes/No		Office - please see additional consent data comments on next page

OGST 51-860-608

Received with thanks by 50/01
KAPITI COAST DISTRICT COUNCIL

23-02-16 10:14 Receipt no.526725

COPY *COPY* *COPY*
DR BC090214B
ARCHITECTURE DM 219.00-
Architecture DM::17 Gear Street:PETONE:
CQ EFT
Architecture DM 219.00

APPROVED
BY
BUILDING
Leon
Smith
26/02/2016

RECEIVED
22 FEB 2016
BY: SM

checked on 9/02/2010
00001

DURABILITY MODIFICATION

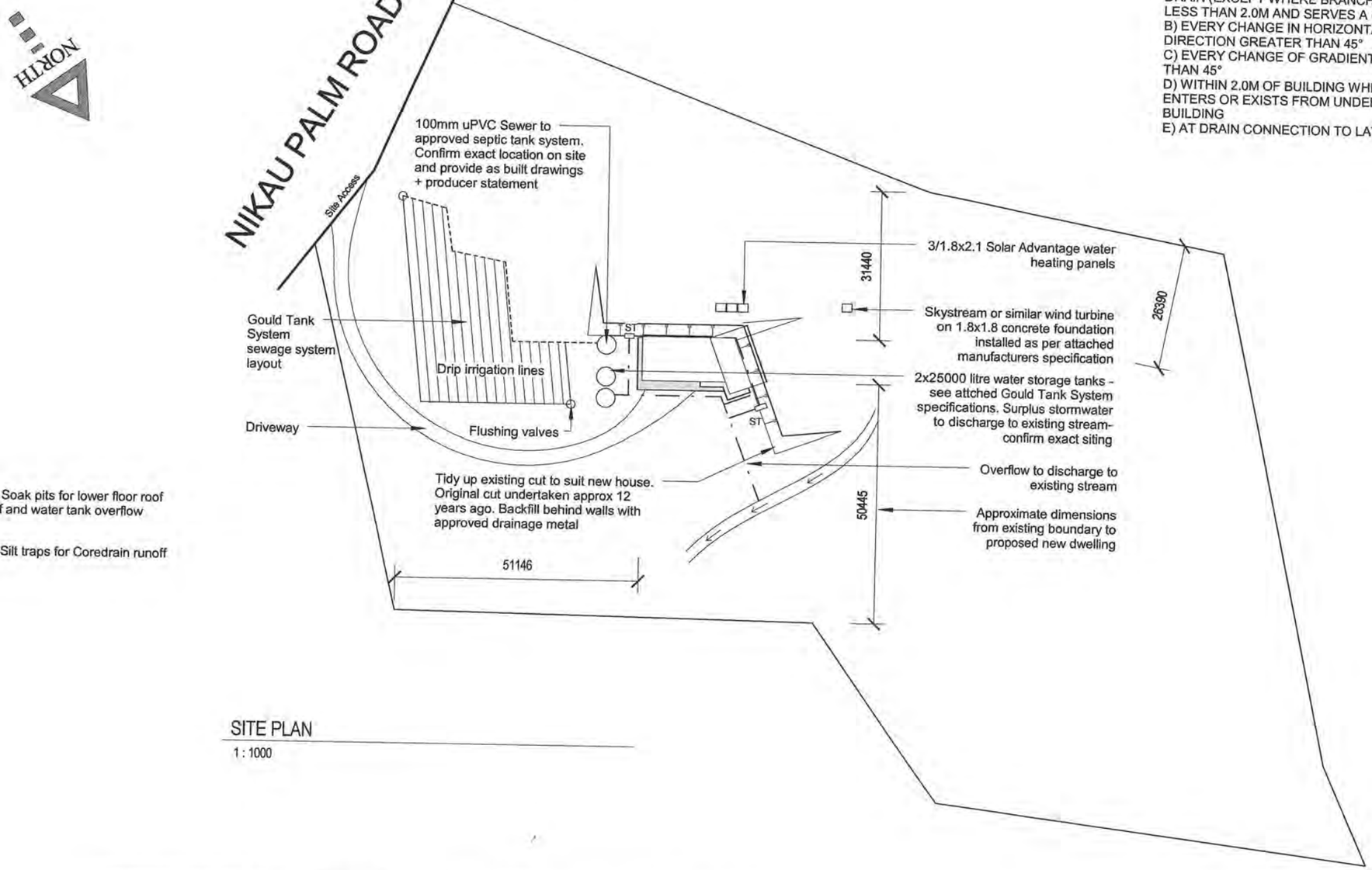
Kāpiti Coast
DISTRICT COUNCIL
Me Huri Whakamuri, Ka Titiro Whakamua

Address of Property:	
125 Nikau Palm Road. Paraparaumu	
Building Consent Number:	
BC 090214	
Request:	
Due to the time delay in my application for a Code of Compliance Certificate, I would like to amend the above Building Consent in relation to a modification of durability clause B2.3.1 of the Building Code.	
The commencement date for durability is to be backdated to:	Date 1/6/10
Signature:	
Name: (please print) Thomas Roulston	
Signed:	Date

The back dating of the commencement of the date for durability to ~~1st Oct~~ 1st June 2010 is agreeable to both parties.
After going through the inspection records online.

Glenn Smith
25th. 2. 2016

PLUMBING + DRAINAGE NOTES:
-ALL PLUMBING AND DRAINAGE TO COMPLY WITH AS/NZS 3500 PART 2.2
-ALL STORMWATER AND SEWER PIPES TO BE 110dia PVC @ GRADIENT 1:100MIN.
-PLUMBING INFORMATION SHOWN FOR BUILDING CONSENT ONLY
-DRAINLAYER IS TO PROVIDE AS-BUILT DOCUMENTATION TO T.A. ON COMPLETION.
-INSPECTION POINTS TO BE PROVIDED AT THE FOLLOWING LOCATIONS:
A) AT EVERY DRAIN JUNCTION TO ANOTHER DRAIN (EXCEPT WHERE BRANCH DRAIN IS LESS THAN 2.0M AND SERVES A G.T. ONLY)
B) EVERY CHANGE IN HORIZONTAL DIRECTION GREATER THAN 45°
C) EVERY CHANGE OF GRADIENT GREATER THAN 45°
D) WITHIN 2.0M OF BUILDING WHERE A DRAIN ENTERS OR EXISTS FROM UNDER A BUILDING
E) AT DRAIN CONNECTION TO LATERAL



SP = Soak pits for lower floor roof runoff and water tank overflow

ST = Silt traps for Coredrain runoff

SITE PLAN
1 : 1000

LEGAL DESCRIPTION	COUNCIL	AREAS	ZONES
ADDRESS: 125 NIKAU PALM RD CITY: PARPARAUMU LOT 4 DP 82049	Zone: RURAL Setbacks: Compliant Height Restriction: Compliant Recession Plane: Compliant Site Coverage: Compliant	Allowed Coverage: 35% Site Area: 22730m² Footprint area: 193.7m² Coverage: 0.85%	Wind Zone: HIGH Wind Region: R2 Corrosion Zone: 1 Earthquake Zone: A

LOWER FLOOR AREA = 193.7M2
UPPER FLOOR AREA = 201.2M2
TOTAL FLOOR AREA = 394.9M2
BALCONY AREA = 66.7M2

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

REVISIONS:

Rev:	Description:	Date:

GENERAL NOTES:

Check and confirm all dimensions prior to commencing any work on-site.
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IF IT ISN'T DIMENSIONED - DO NOT SCALE

SITE PLAN

02

DATE:	26 MAR 2009
SCALE:	1 : 1000 @A3
JOB NUMBER:	NA
DRAWN BY:	S JOHNSON
DESIGN BY:	Designer

ARCHITECTURE DM

17 GEAR ST
PETONE

P (04) 568 8468
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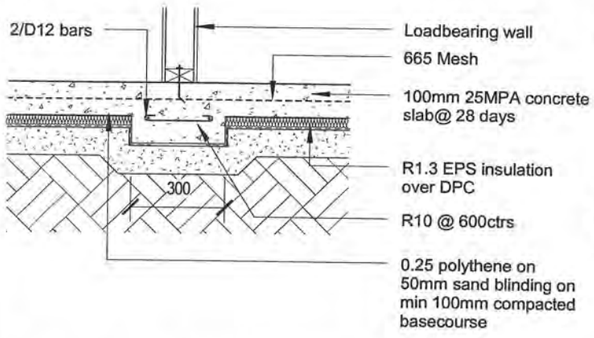
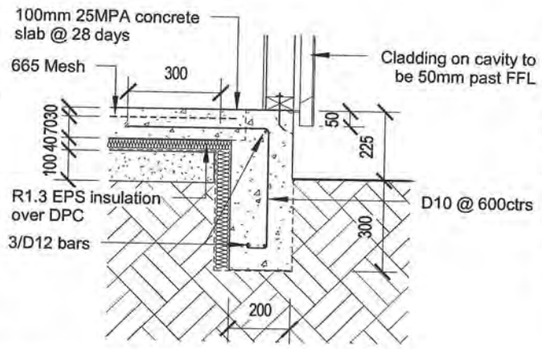
M 027 452 4670
E dean@architecturedm.co.nz

A D | N Z
ARCHITECTURAL DESIGNERS NZ INC



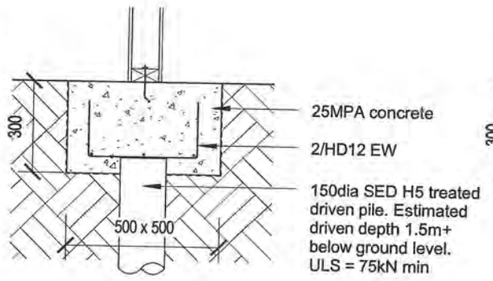
INTERNAL LOADBEARING FOOTING DETAIL

1 : 20



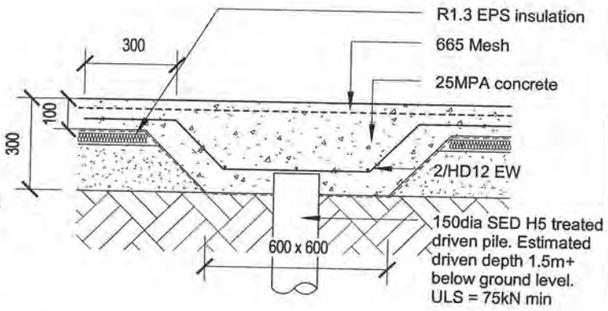
EXTERNAL WALL FOOTING DETAIL

1 : 20



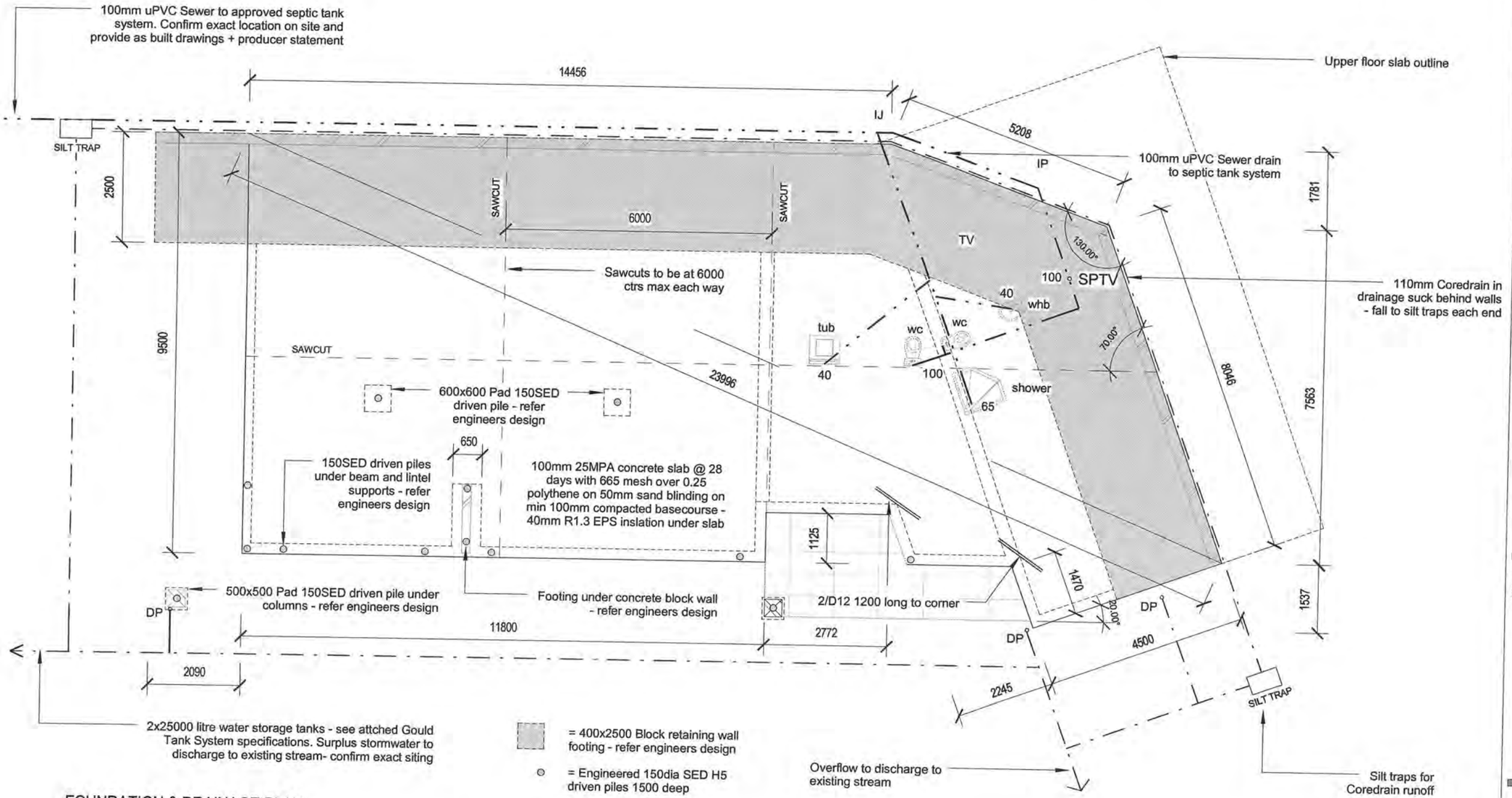
TYPICAL ENGINERED PILE CAP DETAIL

1 : 20



TYPICAL ENGINERED INTERNAL PAD DETAIL

1 : 20



FOUNDATION & DRAINAGE PLAN

1 : 100

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

REVISIONS:

Rev:	Description:	Date:

GENERAL NOTES:

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IF IT ISN'T DIMENSIONED - **DO NOT SCALE**

FOUNDATION & DRAINAGE PLAN

03

DATE:	26 MAR 2009
SCALE:	As indicated @A3
JOB NUMBER:	NA
DRAWN BY:	S JOHNSON
DESIGN BY:	Designer

ARCHITECTURE DM

17 GEAR ST
PETONE

P (04) 568 8468
F (04) 568 8468
M 027 452 4670
E dean@architecturedm.co.nz

KAPITI COAST DISTRICT COUNCIL
APPLICATION FOR A CONNECTION TO COUNCIL WATER SUPPLY

.....Ralston..... (full name)
PLEASE PRINT

.....
(postal address) hereby apply for an "ORDINARY" service to be laid from the Kapiti Coast District Council water supply to the premises owned by me at:

PROPERTY ADDRESS in full .....25 Akatea Palm Rd.....
(if different from above)

Lot .....4..... DP .....S 20499.....

Fees payable (on application)

Inspection $
Connection $_____
Total $ N/C

Note: All dwelling units to pay full inspection fees. The connection fee to be divided equally between dwelling unit situated the same lot sharing a common lot.

.....
Owners signature

.....
Date

THIS PART TO BE COMPLETED BY PLUMBER

I, ...T.B.A..... (full name)
of ..... (address) being a Licensed Craftsman Plumber apply for permission to connect the above premises to the Kapiti Coast District Council water supply. I agree to comply in every respect with the Kapiti Coast District Council Water Supply Bylaw.

NB: Connection NOT permitted until permit obtained.

(Signature) _____ (Craftsman Licence No) _____ (Date) _____

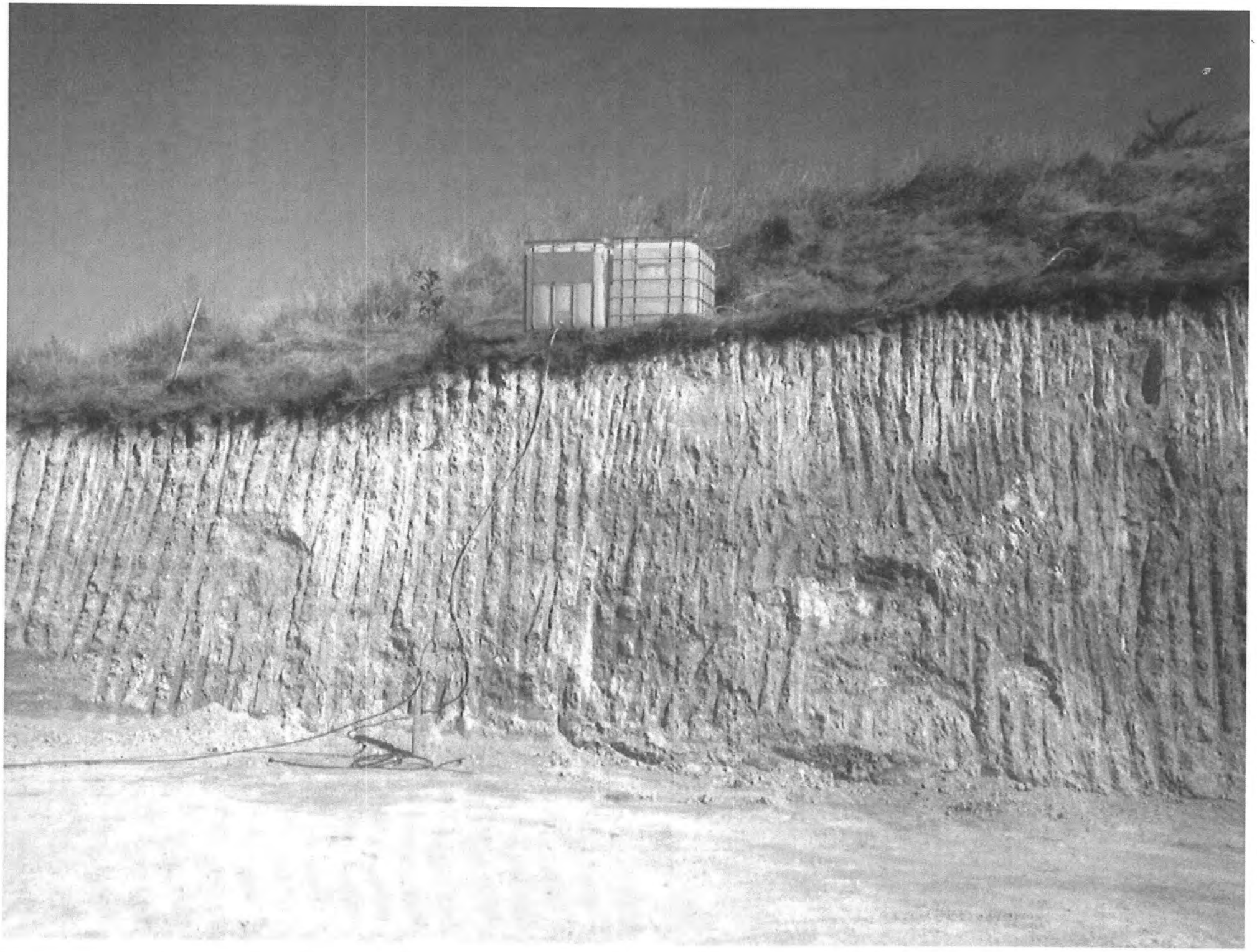
1. Existing Water Supply .....
2. Pressure: High/Low
3. E/W cylinder type new duty
4. Approximate age of water piping .....
5. If premises have swimming pool, what capacity?
   .....
6. State precisely how it is proposed to make the new connection

To be retained/dismantled
"Header Tank"/Pressure Reducing Valve
Exhaust pipe/pressure relief valve
Copper/PVC/Alkathene .....
Filter Plant Yes/No

.....
.....
.....

OFFICE USE ONLY

BUILDING CONSENT NO 090214	PLUMBERS PRODUCER STATEMENT TO BE PROVIDED
Date Issued	Connection Recorded



KAPITI COAST DISTRICT COUNCIL

Site Inspection Report - New BC Applications

BC Application number 090214 Lot 4 DP 82049

Site Address: 125 NIKAU PLACE

Building Project: NEW DWELLING

Check NCS status is currently "To Site Inspection"

Item to be checked	Decision	Record any relevant information	Action required
Contours match application?	(Yes) / No		
Datum point identified?	Yes / (No)		
Boundaries identified?	(Yes) / No	SURVEY PEGS WITH RURAL FENCES.	
Check ground conditions OK?	(Yes) / No	LEVEL SITE. COMPACTED GROUND HARD AS. ENGINEER INVOLVED.	
Check f/~~path~~, ~~kerb &~~ channel, grass berm, note existence/damage.	(Yes) / No	GOOD CONDITION.	
Vehicle entrance crossing installed (describe condition)	(Yes) / No	RURAL. GOOD CONDITION	
Photos taken? (Save & link to NCS)	(Yes) / No	- IN HANDS FILE	
Dogs on property?	Yes / (No)		
Is there a requirement for further foundation investigation e.g. Engineers design	Yes / (No)		Referred to Approvals T/L Yes / No

Record all decisions in accordance with KCDC Policy 007. Circle Yes or No in each case.

Note: if there is a requirement for further information or some areas which do not appear to comply refer file to Team Leader Consent Approvals for action.

Inspecting Officer: Name... GARETH M Signature.....

Date Inspected: 2/4/09

Unless further foundation information required, change NCS status to "To Plumbing & Drainage" and place file in P&D shelf area for Approvals. If further information is required, then Status change to "To [illegible]" and hand to Team Leader Consent Approvals for action.

FOR COUNCIL USE:

DEPARTMENT	TICK FOR REFERRAL	COMMENTS	APPROVING OFFICER/ DATE
Resource Consents (refer PIM Sheet)	✓		
Plumbing and Drainage	✓		11/5/2009
Building	✓	Stuart Nepia 11-05-09	
Fire Design			
Compliance Schedule			
Environmental Health			
Site- Foopath & Entrance Conditions	Ground		

NOTES:

SEE SITE NOTES

KAPITI COAST DISTRICT COUNCIL

Building Consent N	090214
Building Project	**New Dwelling**
Location (Site Add	**125 Nikau Palm Road PARAPARAUMU**
Building Category	0 1 2 3

RECEIVED
- 1 APR 2009
KAPITI COAST DISTRICT COUNCIL

Application workflow checklist	**Name & Signature** Note # A signature confirms that the application contains sufficient information to enable compliance with the building code to be assessed	**Date**
# **Note:** Checked, date stamped and initialled by TO/BCO. Select and circle appropriate category above & identify allocation to appropriate technical groups and if required to go to "site inspection" **AP-WI-001**	JPalmer	1/4/09
Payment taken and receipted (details entered inside this cover sheet) by CSO **CS-WI-008**		
Data entered and invoiced by CSO **CS-WI-008**	Angie	1/04/09
Pages numbered by CSO **CS-WI-008**		
BC Application and documentation scanned, checked & status update by CSO **CS-WI-009**	Sarah & Angie	1/04/09
BC Application signed over to BC **CS-WI-009**	Angie	1/04/09
Application reviewed by Technical Officers who sign off at back of this form **AP-WI-026 & AP-WI-009**	Simon Cope 4/5/09 Stuart Nepia 11 05 09	
Once Technical review complete, passed to CS for Plan Production and Invoicing **AP-WI-009**		
CSO checks data entry input, including required inspections **CS-WI-012**		
BC, plans and other appropriate paperwork produced by CSO **CS-WI-012**	Sarah K	12.5.09
BC, Approved plans and appropriate paperwork sent to applicant or agent with receipt by CSO **CS-WI-012**		
Inspection envelope prepared by CSO with endorsed plans and other appropriate paperwork and filed to cabinet. **CS-WI-012**		

CONSENT DATA INPUT REQUIREMENTS

REQUIRED INSPECTIONS							
✓	Foundation/Piles	32	✓	Lapse and cancellation after 12mths of consent	23	✓	Installation of solid fuel appliance (wood burner) comply and secured
✓	Block	2		✓ Engineer design specific components	23A		✓ Second hand wood burner certified
✓	Pre-Slab (Plumbing)	3		✓ Foundations to solid bearing of 200mm	25	✓	Contractor to leave site clean and clear
✓	Pre-Slab (Building)	4		NZS3604 as acceptable solution in terms of NZ Building Code	30		To comply with Food Hygiene Regulations 1974
	Sub-Floor	6		Not approved as Habitable Room	31		As in CCZ, all fixings need to be stainless steel
✓	Drainage	9		✓ Note and comply with all endorsements on approved plans	33		Approval only given for relocation purposes
✓	Pre-Wrap	10		✓ Names and Registration of plumber and drain-layer required	34		If cladding to have pre-finished colour coating, to be appropriate for coastal conditions
✓	Pre-Clad	11		✓ Concealed soil and TV pipes and gas flues only allowed in ducts or minimum framed	38	✓	Window sashes on upper levels less than 760mm above floor to have stays fixed
✓	Weathertightness	12		✓ Hot & Cold water pipes tested to 1500kPa	39		Construction of playground to comply with NZS5828
✓	Pre-lining (Building)	13		Roof stormwater to be connected to existing	40		Fencing, gates, doors directly leading to swimming pool to comply with Pool Act 1987
✓	Pre-lining (Plumbing)	14		Copper water pipes not permitted	43	✓	Textured systems should be applied by licensed, trained applicators – supply warranty
	Wet areas - membrane	15		Owner/builder to ensure prop foundation height will allow satisfactory connection	44	✓	Exterior cladding system to be completed and inspected prior to internal lining
✓	Post Lining	21	✓	Minimum FFL to comply with NZS3604			
	Brick Veneer						
	Retaining Wall						
✓	Final (Dwelling)						
	Final (Commercial &Multi-resd)						

STANDARD CONSENT CONDITIONS		
	37	
	72	
	80	

NON-STANDARD ADDENDA

FOR OFFICE USE ONLY

FEES		APPLICATION FEE $ $4277.00.
Building Fee	$ 3350.00	RECEIPT NO DATE
Sewer Connection	$	
Water Connection	$	INVOICE NO 78491 DATE 1/04/09.
Vehicle Crossing	$	
Damage Deposit	$	RECEIPT NO 294927 DATE 1/04/09.
Code Compliance Administration	$	~~294880~~
Building Research Levy	$	FEES PAID BY: Roulston family Trust
Development Levy	$	
DBH Levy	$	
Compliance Schedule	$	BUILDING CONSENT NUMBER 090214 DATE ISSUED 1/04/09
Digital Storage Fee	$ 36.00	
Certificate of Title Charge	$	AUTHORISATION FOR REFUND OF DEPOSIT
Photocopying	$	Deposit held = $
SUBTOTAL	$	Cost to Repair Damage Caused During Construction = $
Less Fee Paid	$	Total Balance to be Refunded
TOTAL	$4277.00	Authority Number:
GST INCLUDED	$	Authorised: DATE:

GST 51-860-608

Received with thanks by 10/01
KAPITI COAST DISTRICT COUNCIL

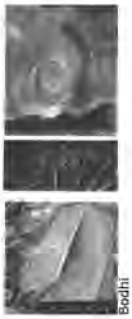
1-04-09 13:20 Receipt no.294927

COPY *COPY* *COPY*
DR BC090214
ARCHITECTURE DM 4,277.00-
Architecture DM::17 Gear Street:PETONE:
GL 99742999 Roulston T 455.00-
CQ W
Roulston Family Trus 4,732.00

Kapiti Coast District Council
Private Bag 601
Paraparaumu 5254

Tel. (04) 296 4700
Fax (04) 296 4830
or 0800 486 486

E: kapiti.council@kapiticoast.govt.nz
W: www.kapiticoast.govt.nz



Building consent 090214

Section 51, Building Act 2004

The building

Street address of building: 125 Nikau Palm Road, Paraparaumu

Legal description of land where building is located: LOT 4 DP 82049

Valuation number: 1515007804

Building name:

Location of building within site/block number:

Level/unit number:

The owner

Name of owner: Tom Roulston

Contact person:

Mailing address: 28 Stellin Street, Avalon, LOWER HUTT

Street address/registered office:

Phone number: Landline: Mobile: 0212441643

Daytime: After hours:

Facsimile number:

Email address: tom@dvcs.co.nz

Website:

First point of contact for communications with the council/building consent authority:
Full Name: Architecture DM

Mailing Address: 17 Gear Street, PETONE

Phones:: 04 5688468

Fax: 04 5688468

Building work

The following building work is authorised by this building consent:

Excavation of site & construction of New Dwelling

Rural Dwelling

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

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

Compliance schedule

A compliance schedule is not required for the building.

Attachments

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

David Kendrick

Signature

Customer Services

Position

On behalf of: KAPITI COAST DISTRICT COUNCIL

Date: 12/05/09

12 May 2009

Tom Roulston
28 Stellin Street
Avalon
LOWER HUTT

Dear Sir/Madam

Approval of Building Consent: 090214

Description:	Excavation of site & construction of New Dwelling
Location:	125 Nikau Palm Road, Paraparaumu
Legal Description:	LOT 4 DP 82049

I am pleased to inform you that the above building consent application has been approved. The building consent documents have been issued and are enclosed.

Before starting any work please read ALL the building consent documents carefully and in full so that you as the owner understand the conditions under which the consent has been issued.

As the owner you are also responsible for the following:

- ensuring that building work starts within 12 months of the approval of the building consent and that work progresses at a reasonable pace.
- ensuring that all required inspections are completed and that a Code Compliance Certificate is obtained once the work has been completed – please be aware that before a Code Compliance Certificate is issued, the building work must comply with the Building Act 2004 and the Building Code as at the date of final inspection.
- that no work with noisy equipment is to be carried out before 7.30 a.m. or after 6 p.m. Monday to Saturday. During the week there may be workers on site from 6.30 a.m. quietly preparing for work. Work with noisy equipment is not permitted on Sundays and public holidays.
- ensuring that no damage occurs to public property, for example footpaths or retaining structures. Should damage occur you will be required to pay for any repairs.
- ensuring that if you wish to make any changes to the approved building consent, then an amendment to the building consent will need to be lodged with us.

If you have any questions regarding your building consent or your responsibilities, please contact Kapiti Coast District Council on (04) 9045 617.

Addenda to Application

Application

Architecture DM 17 Gear Street PETONE	No.	090214

Project

Description	New (& prebuilt) House, Unit, Bach, Crib, Town House etc. Being Stage 1 of an intended 1 Stages Excavation of site & construction of New Dwelling
Intended Life	Indefinite, but not less than 50 years
Intended Use	Rural Dwelling
Estimated Value	$300,000
Location	125 Nikau Palm Road, Paraparaumu
Legal Description	LOT 4 DP 82049
Valuation No.	1515007804

Designer: Architecture DM 17 Gear Street, Petone : 04 568 8468

Contractor: ISP Consulting Engineers Level 1, 14 Lainos Rd, Lower Hutt

General Requirements

a) The District Inspector is to be given 24 hours' notice before carrying out the following inspections:

1. Foundations
2. Block
3. Pre-slab
4. Pre-slab
5. Drainage
6. Pre Wrap
7. Pre Clad
8. Weathertightness
9. Preline
10. Preline
11. Postline
12. Final Inspection

b) To arrange for any of the above required inspections by Building Control Team, please contact the Call Centre on (04) 296 4700 between the hours of 7.30am and 5.30pm.

2 Addenda to Application 090214

1. LAPSE AND CANCELLATION OF BUILDING CONSENT. A building consent shall lapse and be of no effect if the building work concerned has not been commenced within 12 calendar months after the date of issue. Or within such further period as the territorial authority allows.
2. The inspection of all specific design components of the building is the responsibility of the Design Engineer who is also required to supply a written report to Council.
3. All foundations are to be to solid bearing minimum of 300mm
4. Note and comply with endorsements on approved plans.
5. Names and registration numbers of plumber and drainlayer are required before work commences.
6. Concealed soil and TV pipes and gas flues are only permitted built into ducts or minimum 150mm framed walls or with the Phillips top plate connecting bracket.
7. Both hot and cold water pipes are to be tested to 1500 KPA pressure.
8. Minimum heights of finished concrete slab-on-ground floors above adjoining finished ground level to comply with the current NZS3604.
9. Seismic restraint to be provided to appliance and flue as per the manufacturer`s recommendations, NZBC, C.1 and Acceptable Solutions 9.1.2 and 9.2.2
10. Contractor to leave site clear of all demolition materials and in a tidy state.
11. Restrictor stays, limiting sash opening to max 100mm must be fitted wherever sill height is less than 760mm and the difference in levels are 1 metre or greater. Refer F4.NZBC
12. Textured Systems should be applied by licensed, trained applicators only. Supply copy of warranty to Certifier.
13. Exterior cladding system to be previously completed and inspected by Council's Inspector prior to any subsequent prelining inspection/approval being granted for the fixing of internal linings.

I have read the foregoing addenda to application, and the Owner/Builder/Authorised Person hereby agrees to comply with them.

OWNER/BUILDER/
AUTHORISED PERSON **Date:**

Sheet Number	Sheet Name
01	COVER PAGE
02	SITE PLAN
03	FOUNDATION & DRAINAGE PLAN
04	LOWER FLOOR PLAN
05	UPPER FLOORING PLAN
06	UPPER FLOOR PLAN
07	BRACING PLANS
08	SECTIONS
09	SECTIONS
10	ROOF FRAMING PLAN
11	ROOFING PLAN

Sheet Number	Sheet Name
12	ELEVATIONS
13	ELEVATIONS
14	CONSTRUCTION DETAILS
15	CONSTRUCTION DETAILS
16	CONSTRUCTION DETAILS
17	CONSTRUCTION DETAILS
18	CONSTRUCTION DETAILS
19	CONSTRUCTION DETAILS
20	CONSTRUCTION DETAILS
21	DOOR SCHEDULE
22	WINDOW SCHEDULE

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

REVISIONS:

Rev:	Description:	Date:

GENERAL NOTES:

Check and confirm all dimensions prior to commencing any work on-site.
Use stated dimensions in preference to scaled.
If in doubt ASK.
Drawings at a larger scale take precedence over those drawn at a smaller scale.
Site measure all openings/spaces for items manufactured off-site.
Notes on one plan and not necessarily on other drawings are applicable to all drawings.
Any conflicts on the documents are to be notified to the designer prior to commencing work.

IF IT ISN'T DIMENSIONED - **DO NOT SCALE**

COVER PAGE

01

DATE:	26 MAR 2009
SCALE:	@A3
JOB NUMBER:	NA
DRAWN BY:	S JOHNSON
DESIGN BY:	Designer

ARCHITECTURE DM

17 GEAR ST
PETONE

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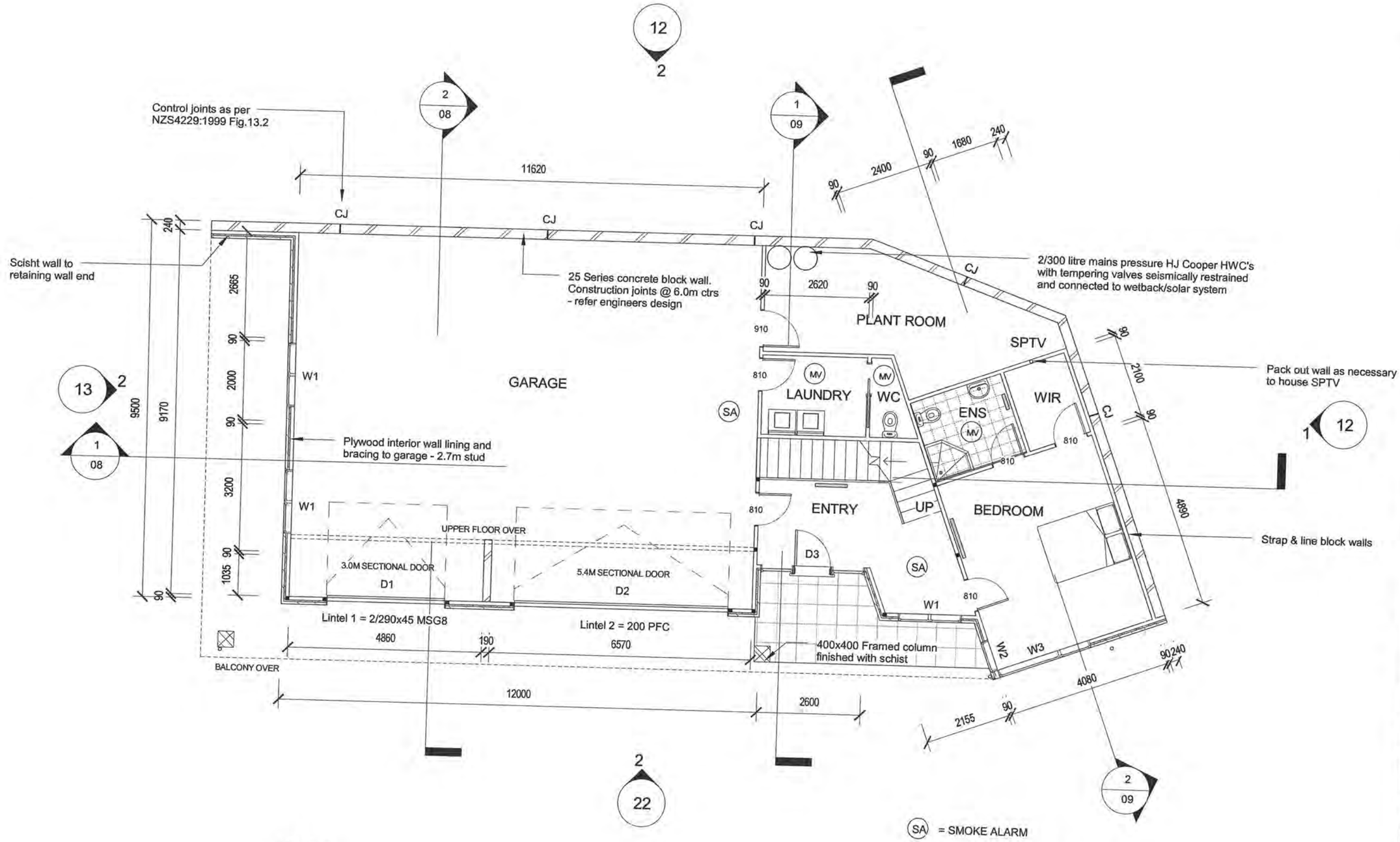
F (04) 568 8468
M 027 452 4670
E dean@architecturedm.co.nz

A D | N Z
ARCHITECTURAL DESIGNERS NZ INC



LEVEL 1

1 : 100

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

REVISIONS:

Rev:	Description:	Date:

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LOWER FLOOR PLAN

04

DATE:	26 MAR 2009
SCALE:	1 : 100 @A3
JOB NUMBER:	NA
DRAWN BY:	S JOHNSON
DESIGN BY:	Designer

ARCHITECTURE DM

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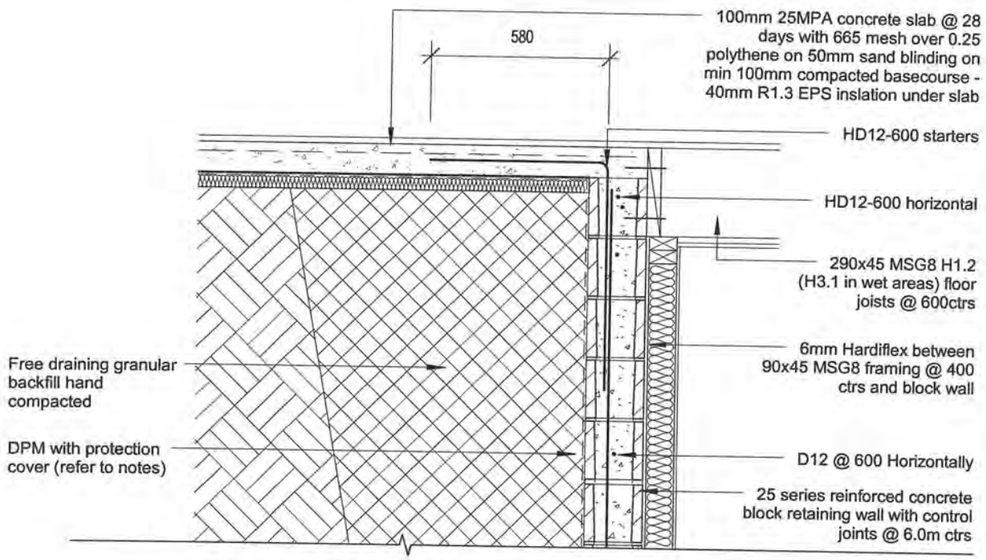
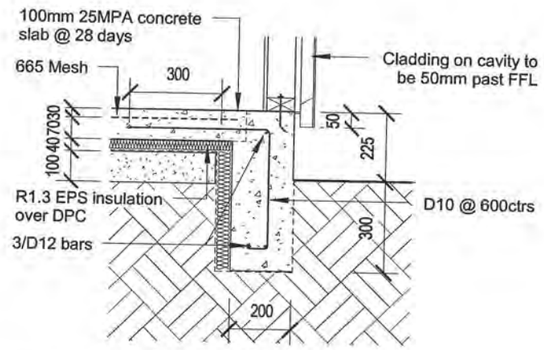
E dean@architecturedm.co.nz



LEVEL 2 SLAB TO FOUNDATION WALL DETAIL

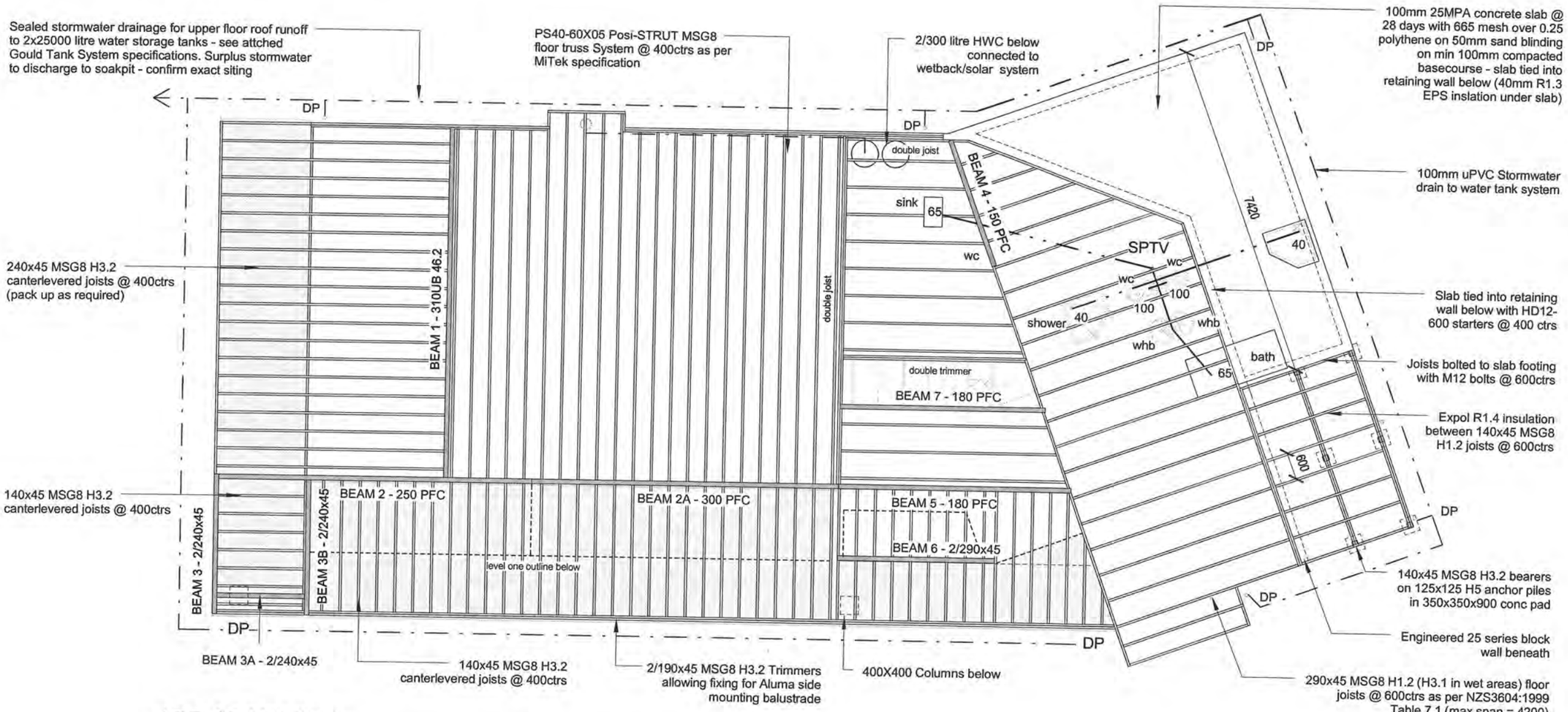
1 : 20



CONCRETE SLAB FOOTING DETAIL

1 : 20

NOTE: All beams are engineered design - please refer to engineers documentation for all calculations and connection/fixing details



LEVEL 2 FLOORING PLAN

1 : 100

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

REVISIONS:

Rev:	Description:	Date:

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UPPER FLOORING PLAN

05

DATE:	26 MAR 2009
SCALE:	As indicated @A3
JOB NUMBER:	NA
DRAWN BY:	S JOHNSON
DESIGN BY:	Designer

ARCHITECTURE DM

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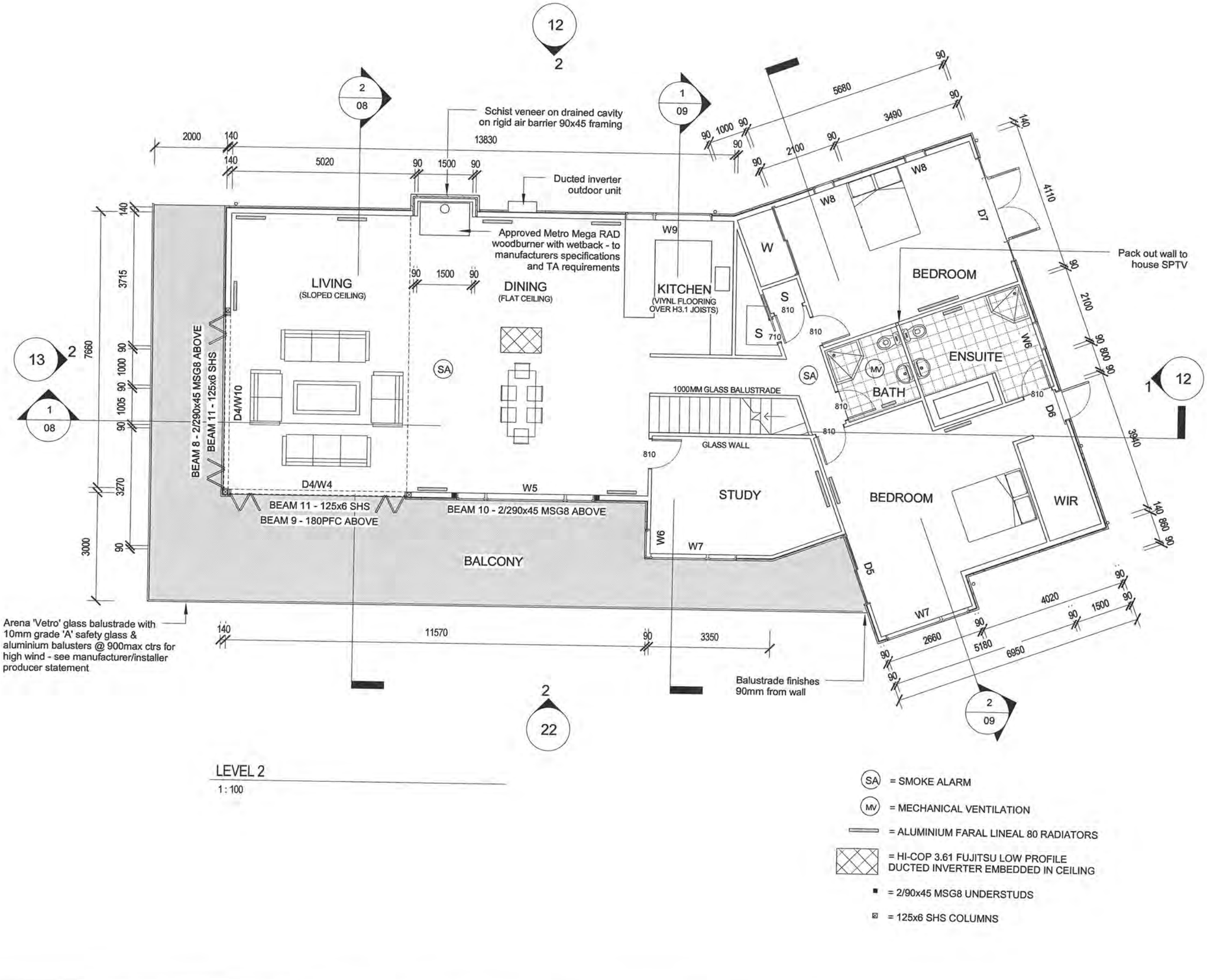

LEVEL 2

1 : 100

SA = SMOKE ALARM

MV = MECHANICAL VENTILATION

= ALUMINIUM FARAL LINEAL 80 RADIATORS

= HI-COP 3.61 FUJITSU LOW PROFILE DUCTED INVERTER EMBEDDED IN CEILING

= 2/90x45 MSG8 UNDERSTUDS

= 125x6 SHS COLUMNS

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

REVISIONS:

Rev:	Description:	Date:

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UPPER FLOOR PLAN

06

DATE:	26 MAR 2009
SCALE:	1 : 100 @A3
JOB NUMBER:	NA
DRAWN BY:	S JOHNSON
DESIGN BY:	Designer

ARCHITECTURE DM

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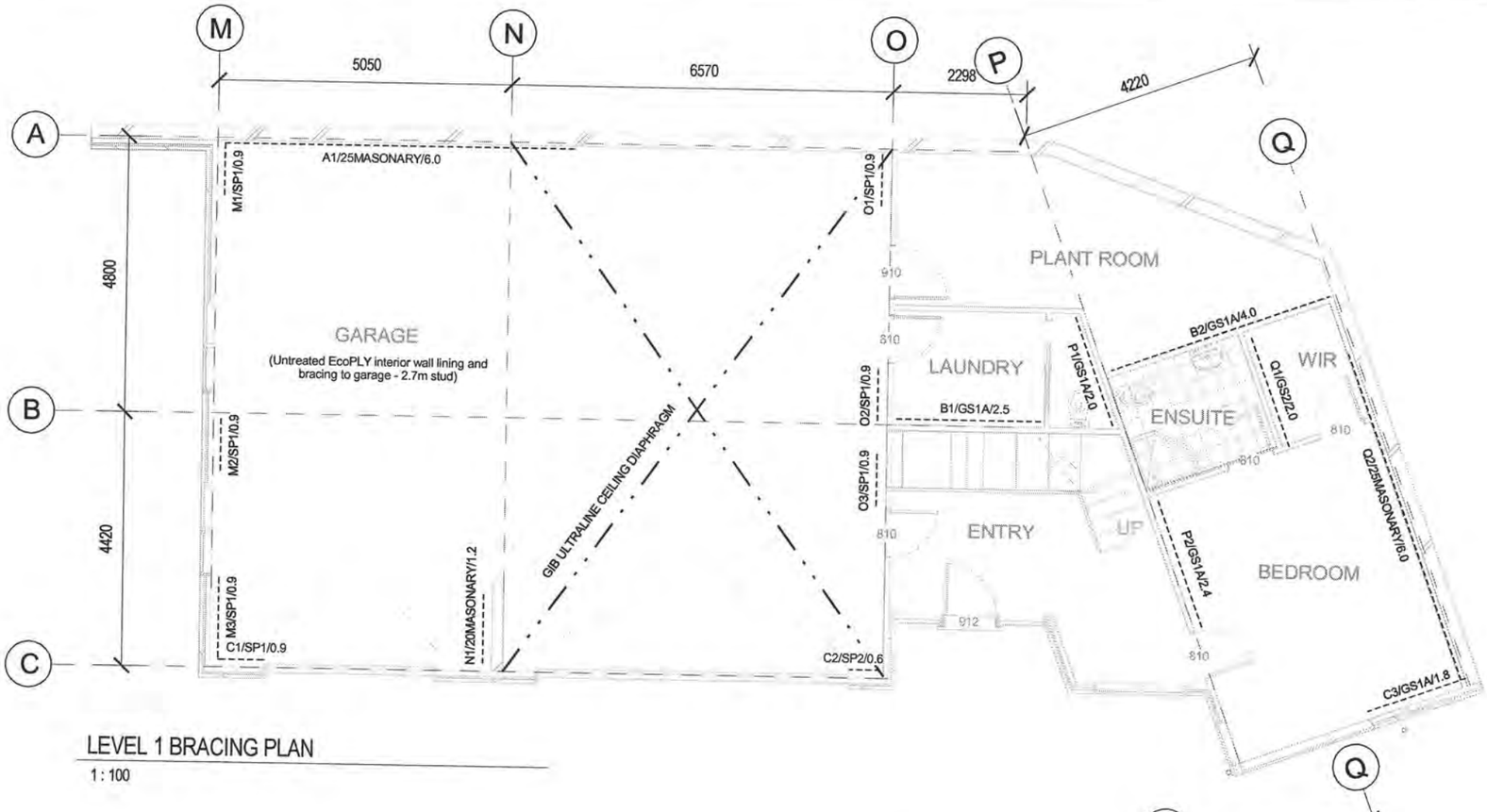

LEVEL 1 BRACING PLAN

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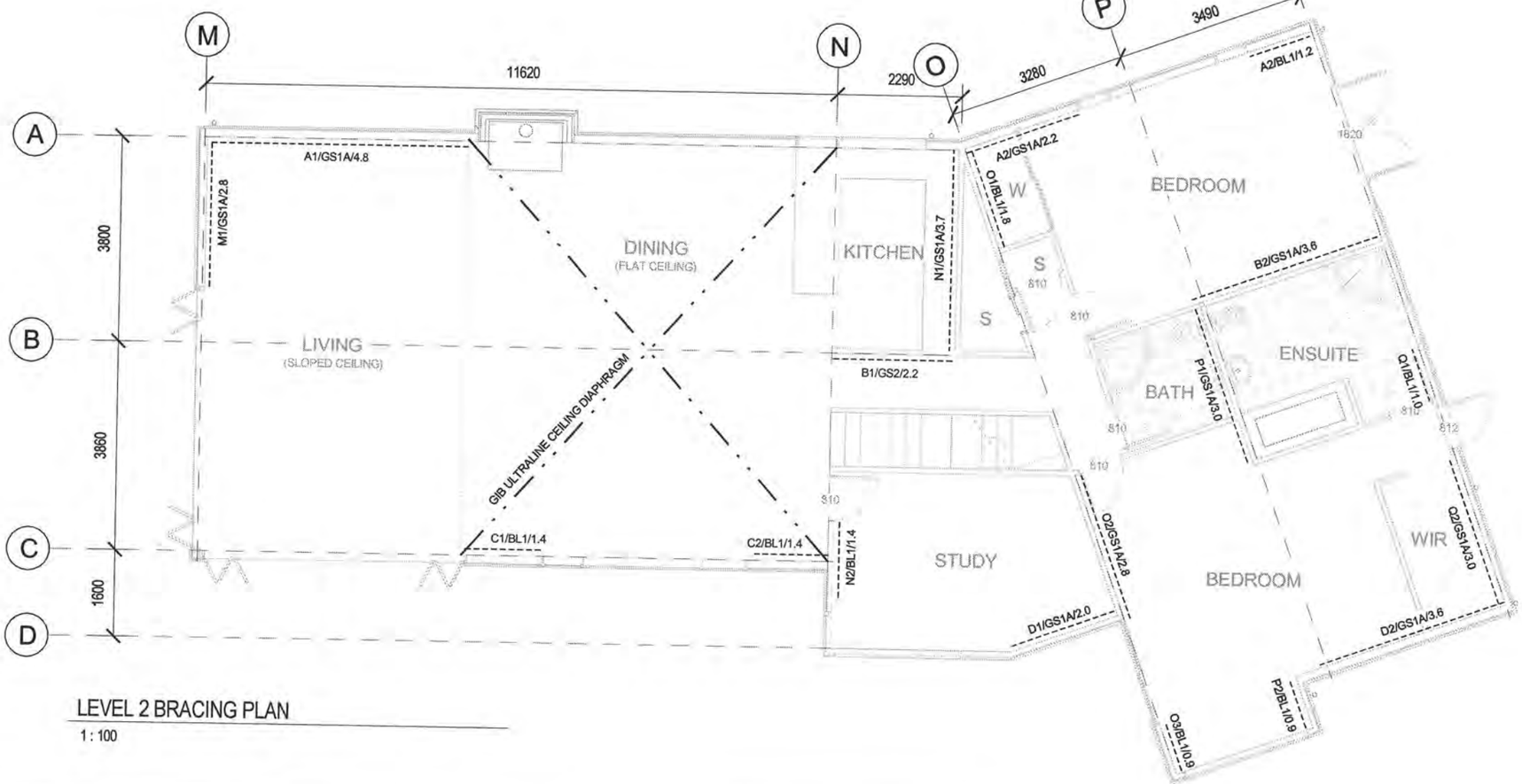

LEVEL 2 BRACING PLAN

1 : 100

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

REVISIONS:

Rev:	Description:	Date:

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BRACING PLANS

07

DATE:	26 MAR 2009
SCALE:	1 : 100 @A3
JOB NUMBER:	NA
DRAWN BY:	S JOHNSON
DESIGN BY:	Designer

ARCHITECTURE DM

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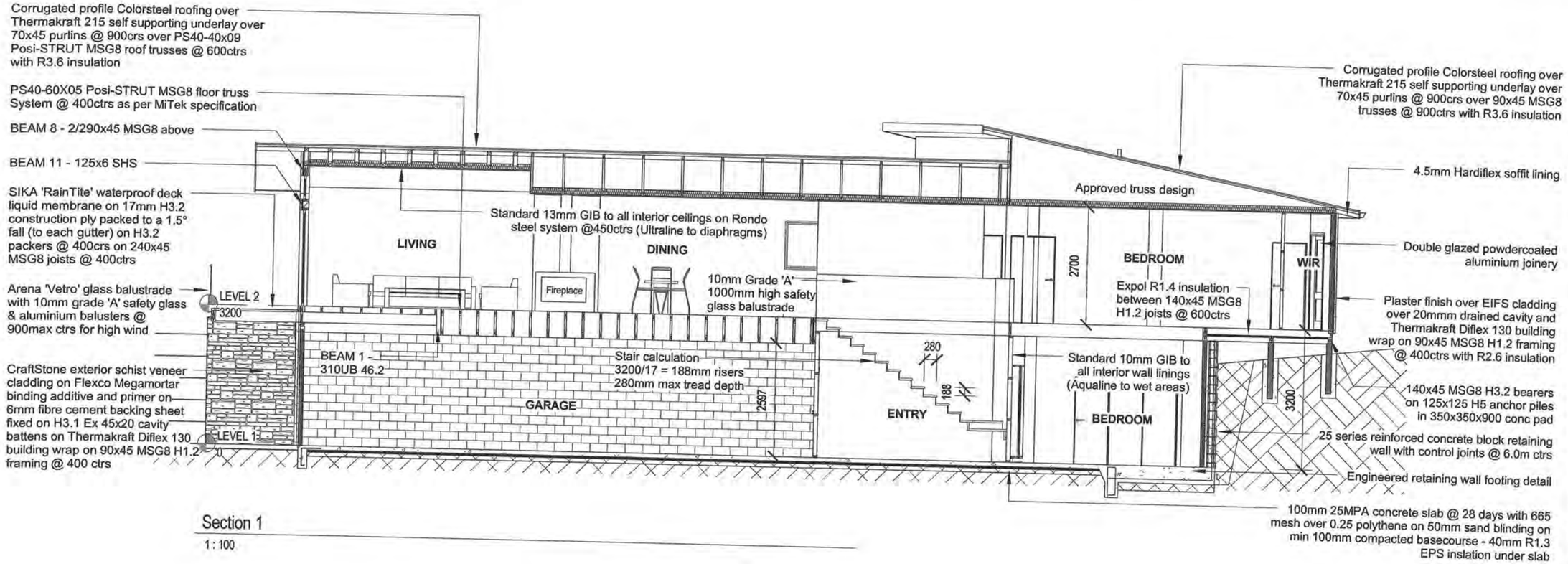

Section 1

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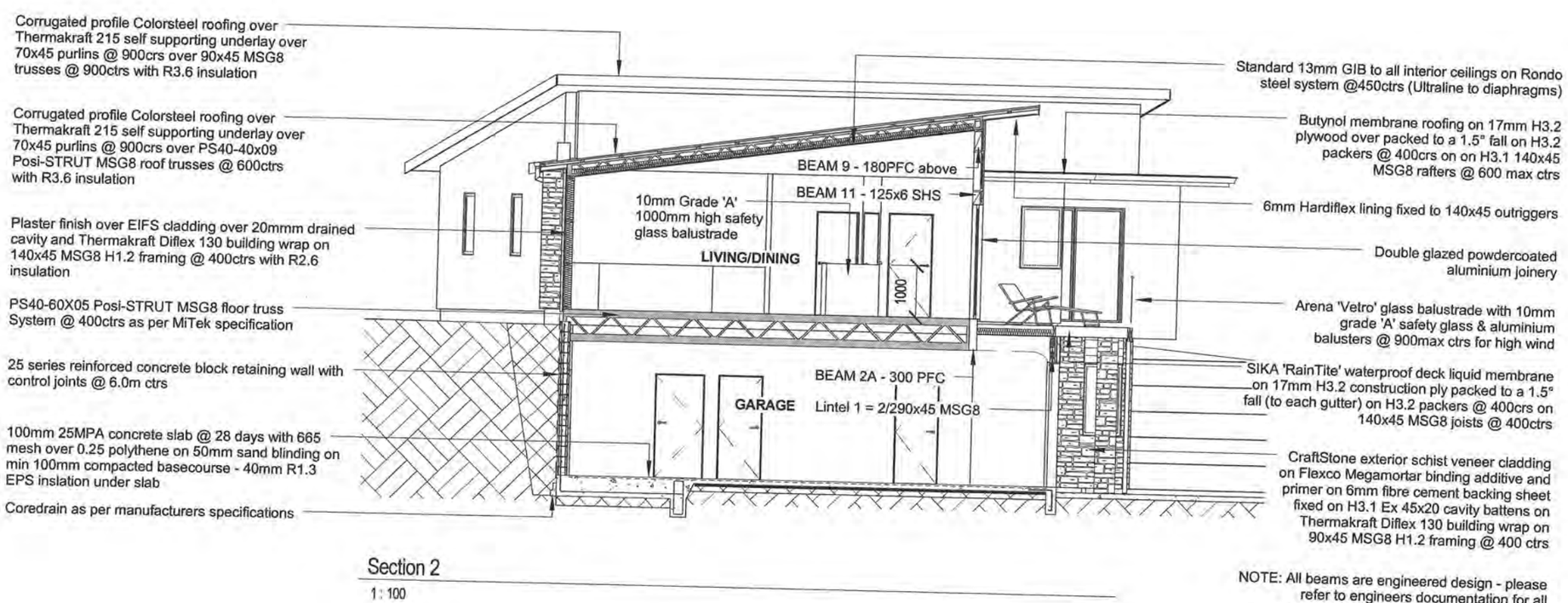

Section 2

1 : 100

NOTE: All beams are engineered design - please refer to engineers documentation for all calculations and connection/fixing details

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

REVISIONS:

Rev:	Description:	Date:

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SECTIONS

08

DATE:	26 MAR 2009
SCALE:	1 : 100 @A3
JOB NUMBER:	NA
DRAWN BY:	S JOHNSON
DESIGN BY:	Designer

ARCHITECTURE DM

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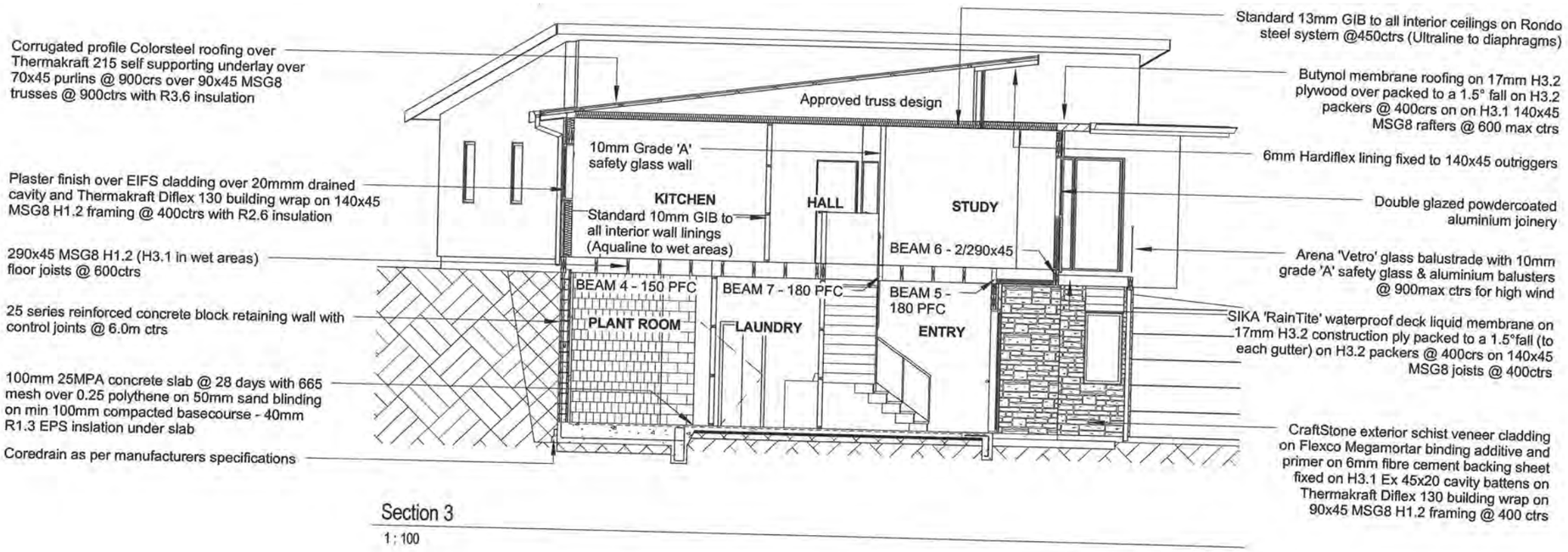
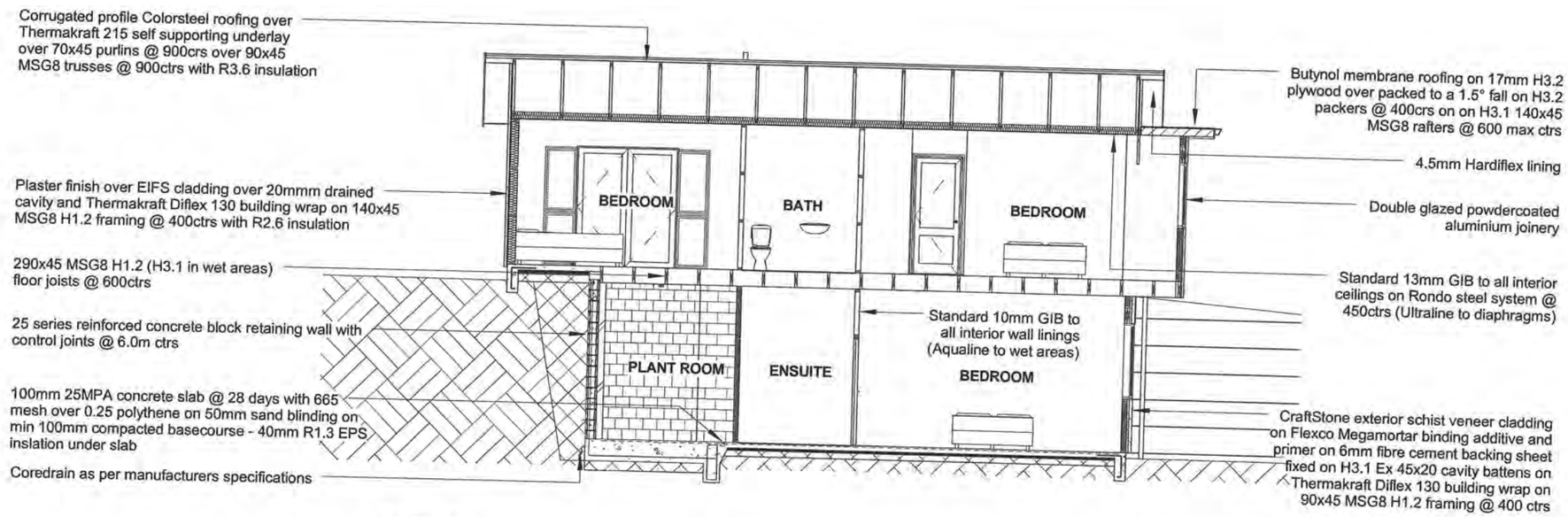


Section 3

1 ; 100



Section 4

1 : 100

NOTE: All beams are engineered design - please refer to engineers documentation for all calculations and connection/fixing details

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

REVISIONS:

Rev:	Description:	Date:

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SECTIONS

09

DATE:	26 MAR 2009
SCALE:	1 : 100 @A3
JOB NUMBER:	NA
DRAWN BY:	S JOHNSON
DESIGN BY:	Designer

ARCHITECTURE DM

17 GEAR ST
PETONE

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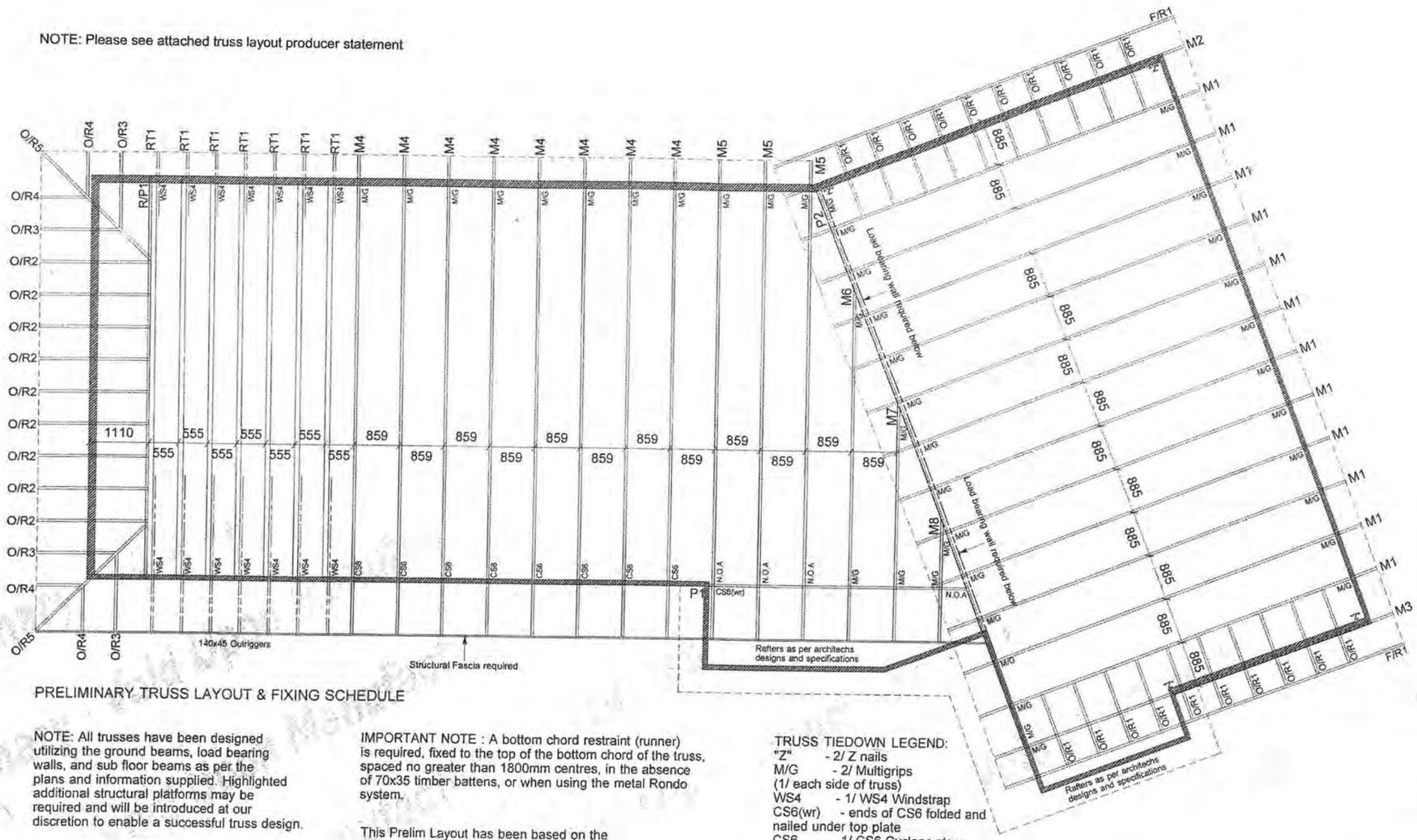
NOTE: Please see attached truss layout producer statement



PRELIMINARY TRUSS LAYOUT & FIXING SCHEDULE

NOTE: All trusses have been designed utilizing the ground beams, load bearing walls, and sub floor beams as per the plans and information supplied. Highlighted additional structural platforms may be required and will be introduced at our discretion to enable a successful truss design.

IMPORTANT NOTE : A bottom chord restraint (runner) is required, fixed to the top of the bottom chord of the truss, spaced no greater than 1800mm centres, in the absence of 70x35 timber battens, or when using the metal Rondo system.

This Prelim Layout has been based on the limited set of drawings supplied.

TRUSS TIEDOWN LEGEND:
"Z" - 2/ Z nails
M/G - 2/ Multigrips (1/ each side of truss)
WS4 - 1/ WS4 Windstrap
CS6(wr) - ends of CS6 folded and nailed under top plate
CS6 - 1/ CS6 Cyclone strap
N.O.A. - 2/ Nail On Angles
NOTE: Remaining trusses without fixings, require a minimum of 2 skew nails.

ROOF FRAMING PLAN

NTS

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

REVISIONS:

Rev:	Description:	Date:

GENERAL NOTES:

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IF IT ISN'T DIMENSIONED - DO NOT SCALE

ROOF FRAMING PLAN

10

DATE:	26 MAR 2009
SCALE:	NTS @A3
JOB NUMBER:	NA
DRAWN BY:	S JOHNSON
DESIGN BY:	Designer

ARCHITECTURE DM

17 GEAR ST
PETONE

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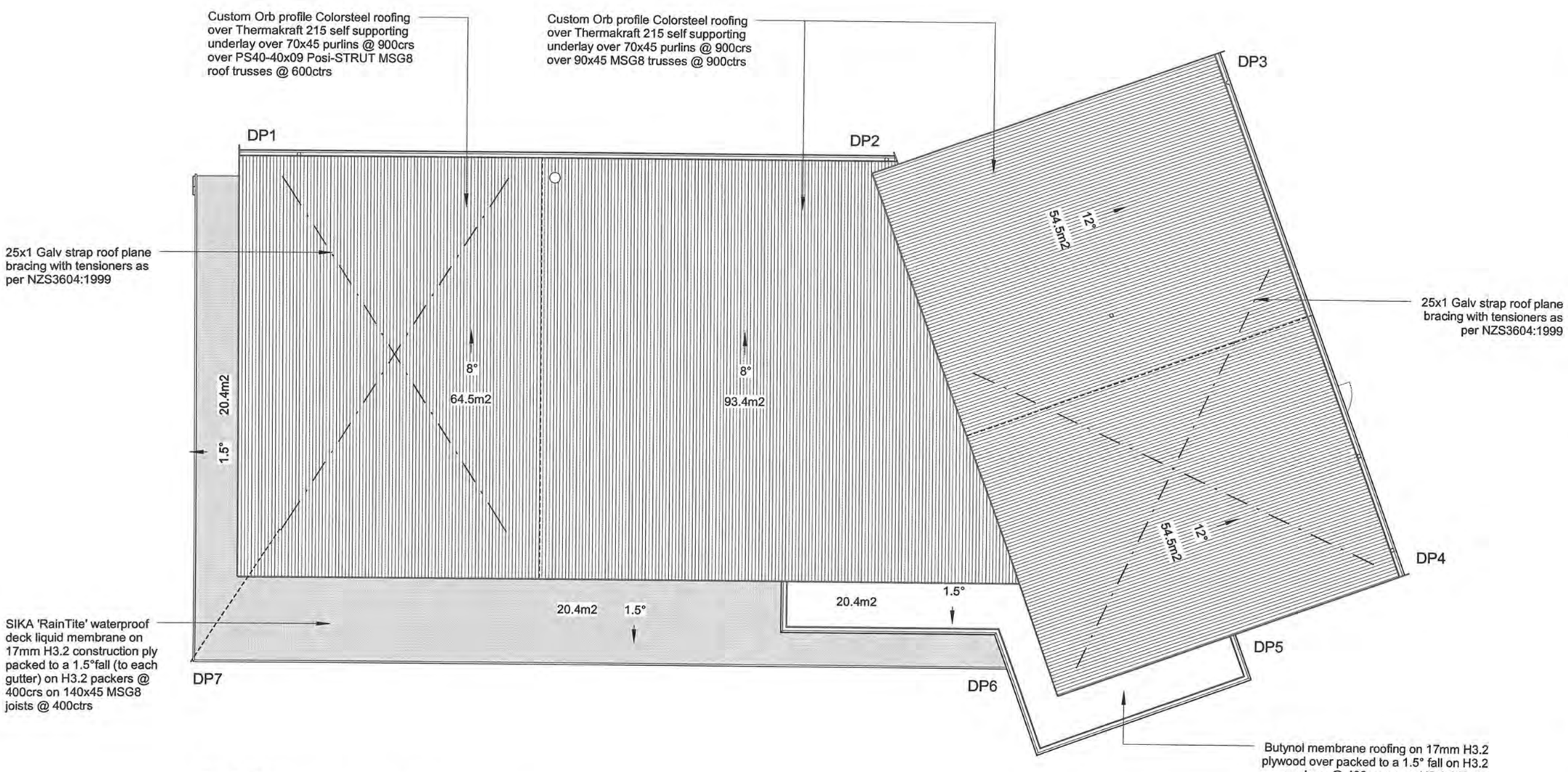
E dean@architecturedm.co.nz



ROOFING PLAN

1 : 100

New Roof:
Steel & Tube Colorsteel Corrugated Profile Endura 0.4mm BMT Roofing. Thermakraft 215 self supporting kraft paper type building underlay.

Roofing fixed to purlins with 12g x 50mm TEK screws as defined by manufacturers recommended fixing pattern for high wind.

New continuous spouting fixed to H3.1 cedar fascia.

Roof to comply with NZBC E2/AS1 Section 8.4 Profiled Metal Roof Cladding

Fix purlins to rafters with the following MiTek fixings for very high wind:

Use Type D 2.70kN fixings on Main & Periphery Roof Areas = Two 90 x 3.15 PD Nails + One Lumberlok Wire Dog *or* Two Lumberlok Blue Screws

Downpipes are to comply with E1/AS1. Table 5

DP1 = 100mm dia (64.5m2 roof area @ 8° max)
DP2 = 100mm dia (93.4m2 roof area @ 8° max)
DP3 = 100mm dia (54.5m2 roof area @ 12° max)
DP4 = 100mm dia (54.5m2 roof area @ 12° max)
DP5 = 65mm dia (20.4m2 roof area @ 1.5° max)
DP6 = 65mm dia (44.4m2 deck area @ 1.5° max)
DP7 = 65mm dia (22.0m2 deck area @ 1.5° max)

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

REVISIONS:

Rev:	Description:	Date:

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ROOFING PLAN

11

DATE:	26 MAR 2009
SCALE:	1 : 100 @A3
JOB NUMBER:	NA
DRAWN BY:	S JOHNSON
DESIGN BY:	Designer

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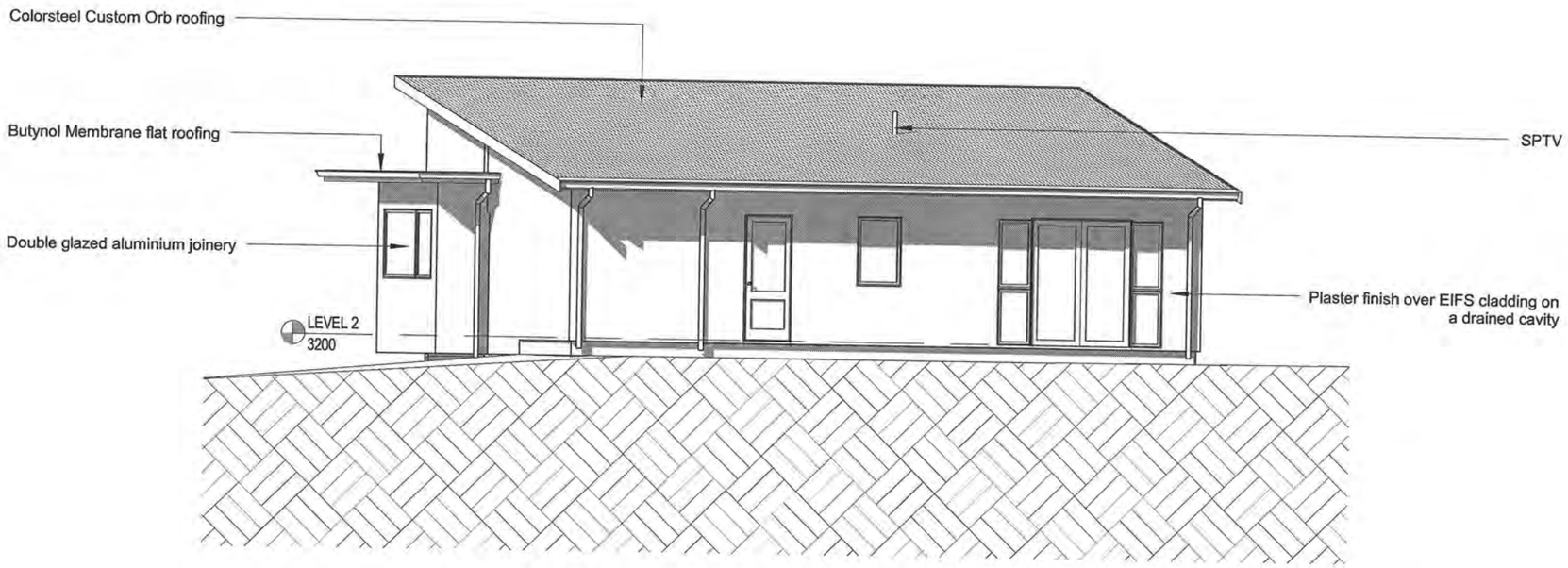
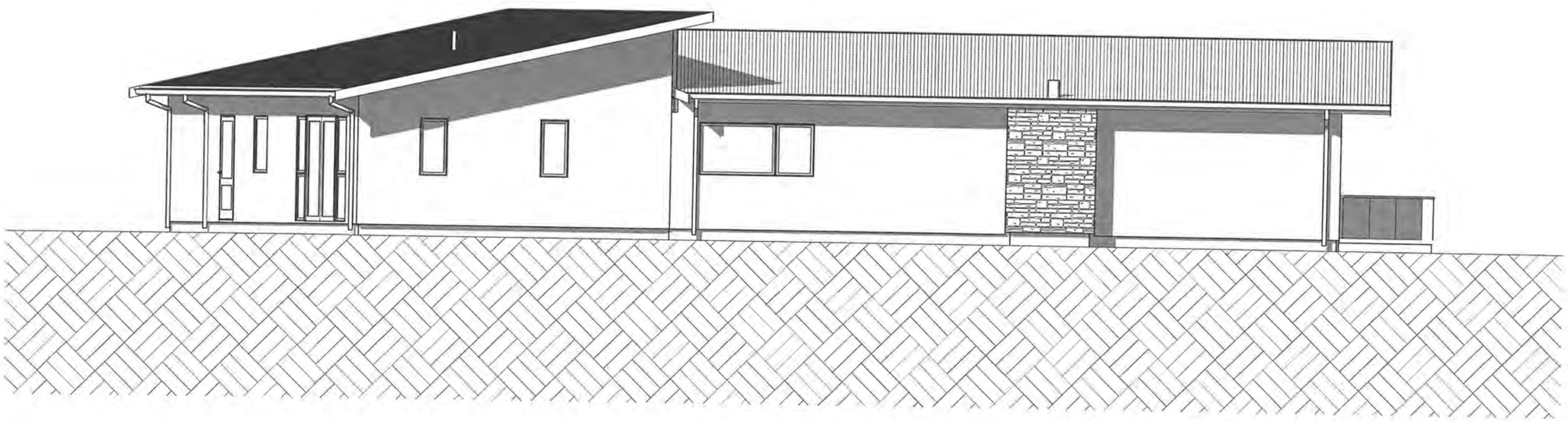


WEST ELEVATION

1 : 100



SOUTH ELEVATION

1 : 100

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

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ELEVATIONS

12

DATE:	26 MAR 2009
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DRAWN BY:	S JOHNSON
DESIGN BY:	Designer

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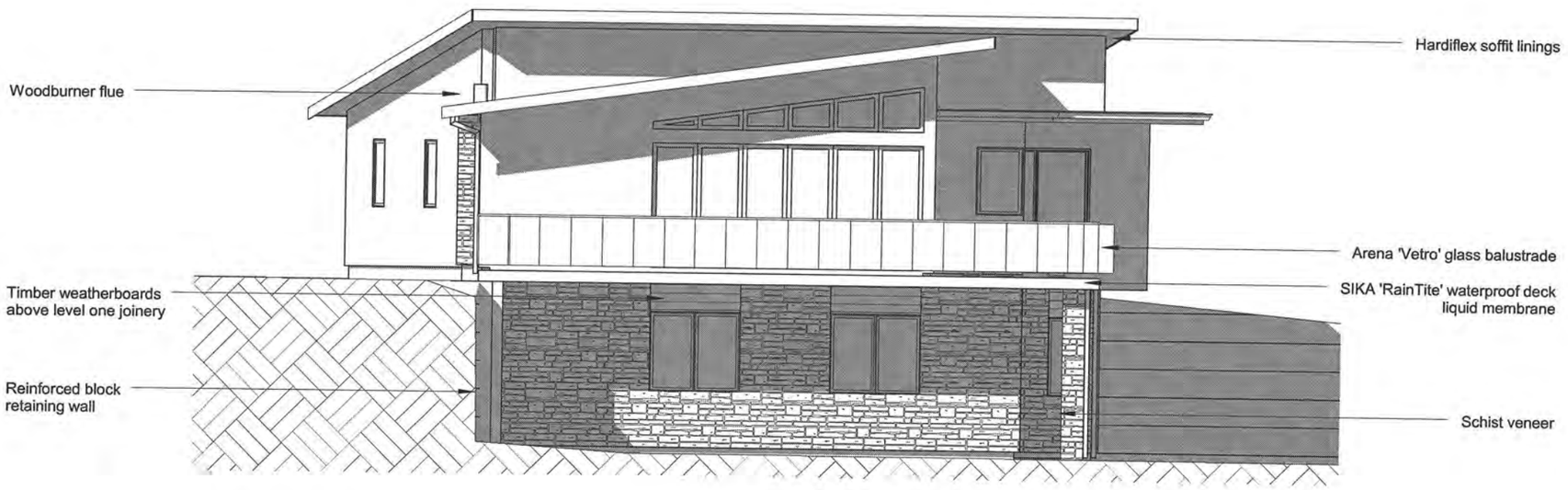
NORTH ELEVATION

1 : 100



EAST ELEVATION

1 : 100

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

REVISIONS:

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ELEVATIONS

13

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DRAWN BY:	S JOHNSON
DESIGN BY:	Designer

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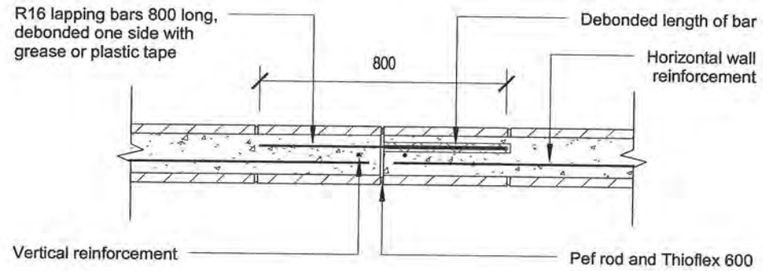
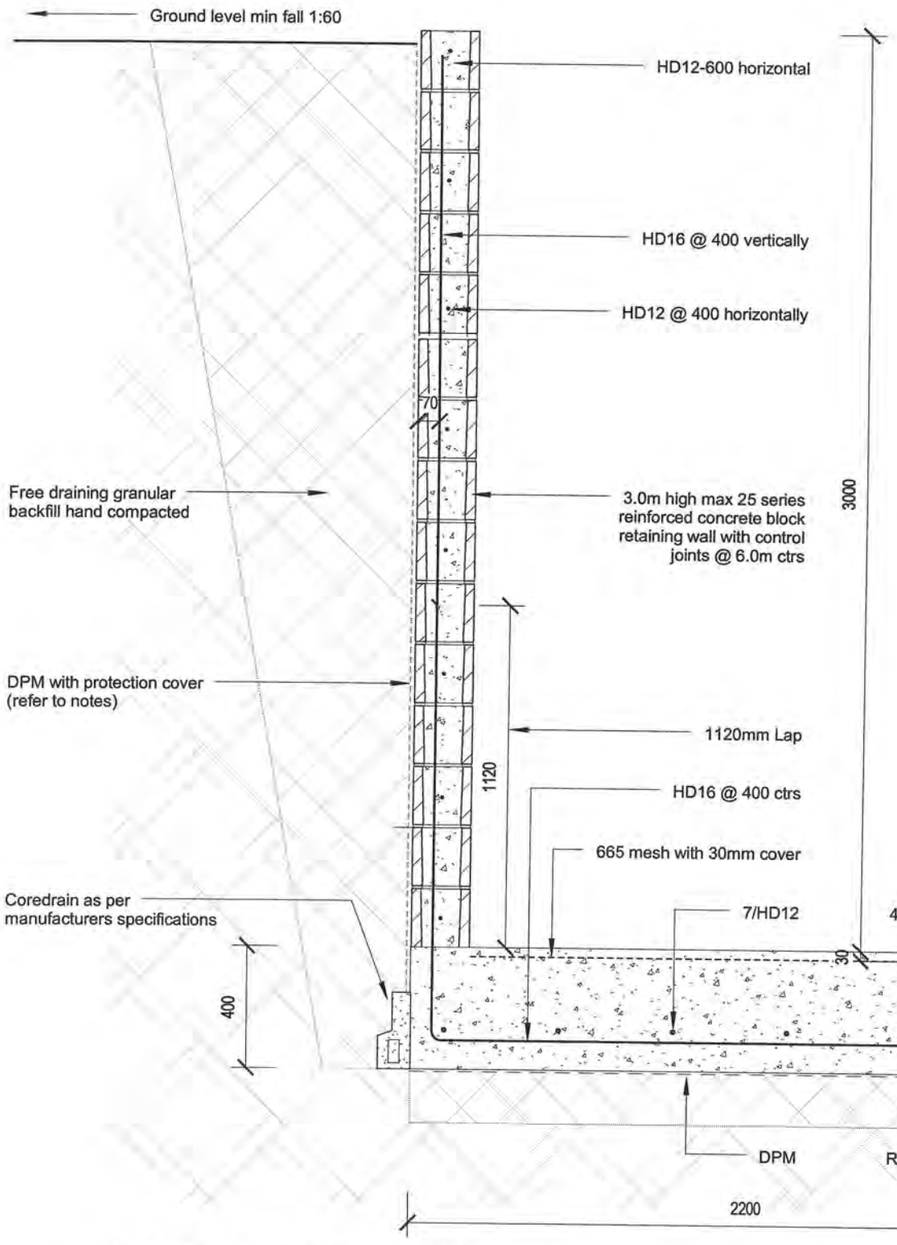


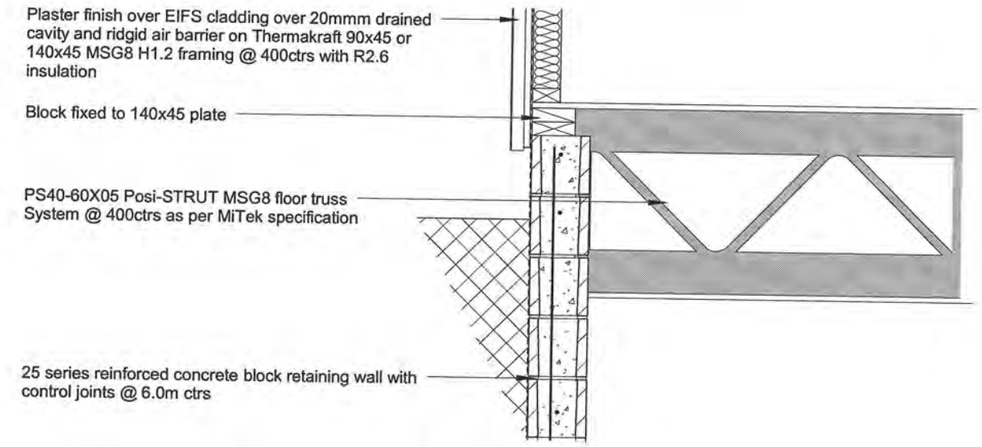
CONTROL JOINT DETAIL

1 : 20



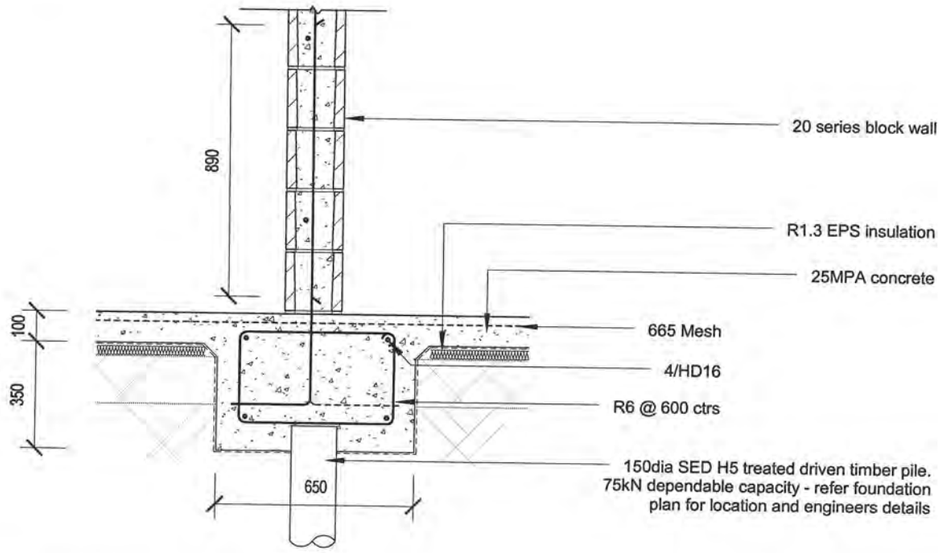
ENGINEERED RETAINING WALL DETAIL

1 : 20



Posi-STRUT SUPPORT DETAIL

1 : 20



ENGINEERED BLOCK WALL FOOTING DETAIL

1 : 20

NOTES:
1. Solid grout fill all cores - 17.5MPA
2. Seal block work with 3 coats Mulseal+
3. 100mm 25MPA concrete slab @ 28 days with 665 mesh over 0.25 polythene on 50mm sand blinding on min 100mm compacted basecourse

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

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CONSTRUCTION DETAILS

14

DATE:	26 MAR 2009
SCALE:	1 : 20 @A3
JOB NUMBER:	NA
DRAWN BY:	S JOHNSON
DESIGN BY:	Designer

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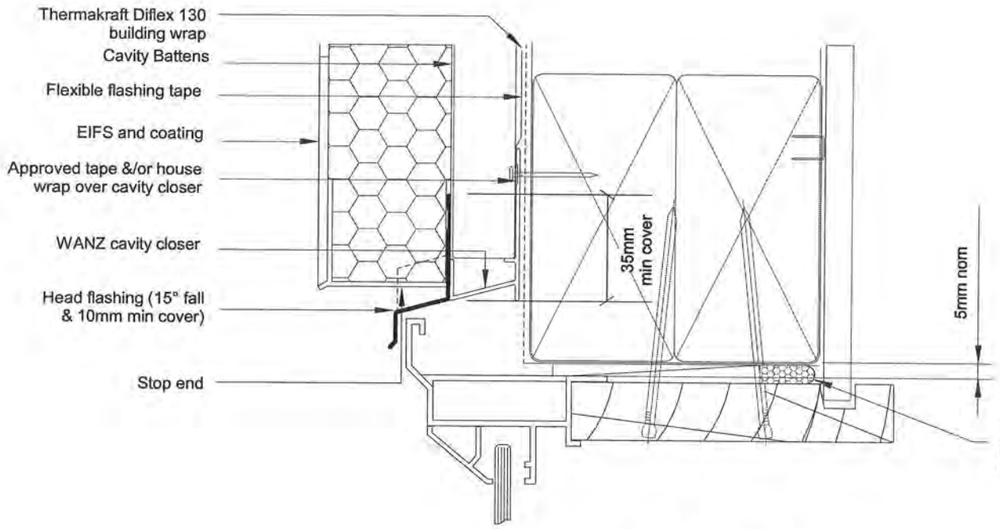
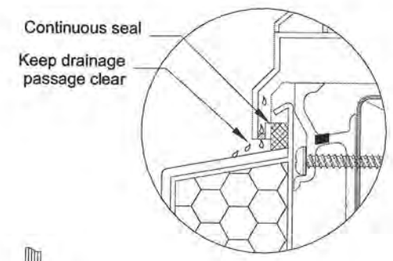
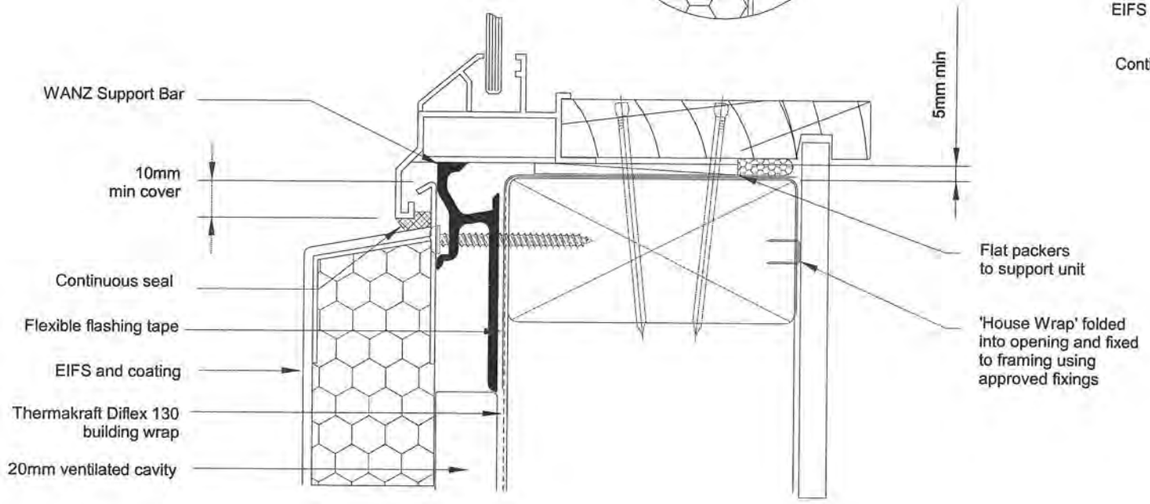


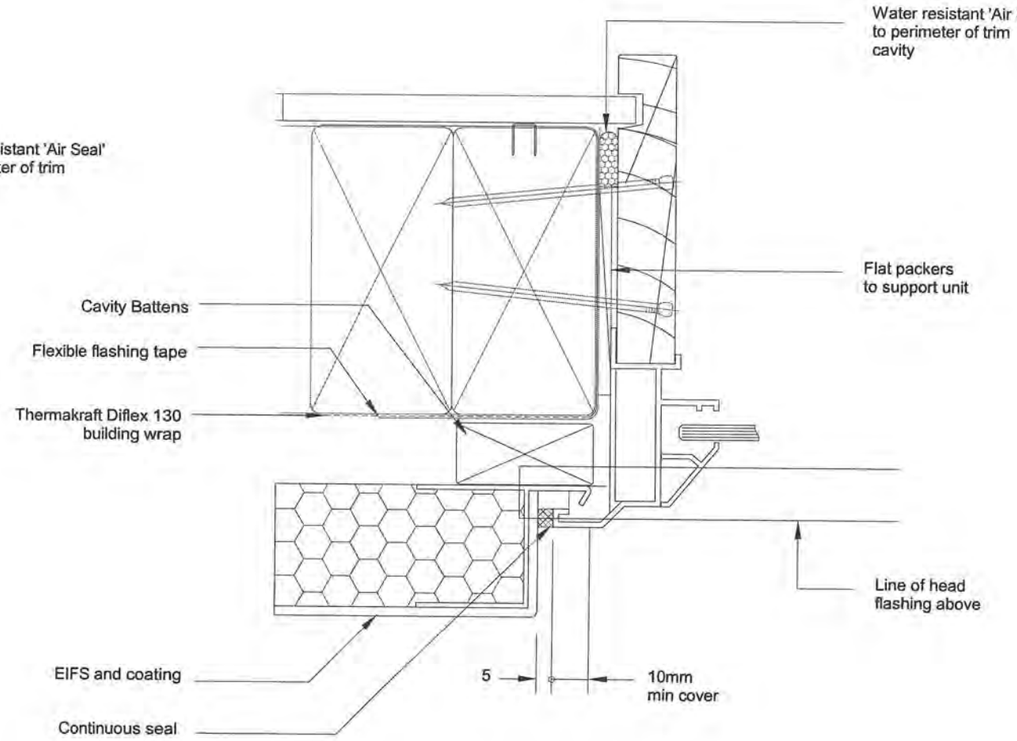
HEAD DETAIL

NOTE:
Sill sealing method for flange end type drainage systems





SILL DETAIL



JAMB DETAIL

PLASTER WINDOW DETAILS
1 : 2

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

REVISIONS:

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CONSTRUCTION DETAILS

15

DATE:	26 MAR 2009
SCALE:	1 : 2 @A3
JOB NUMBER:	NA
DRAWN BY:	S JOHNSON
DESIGN BY:	Designer

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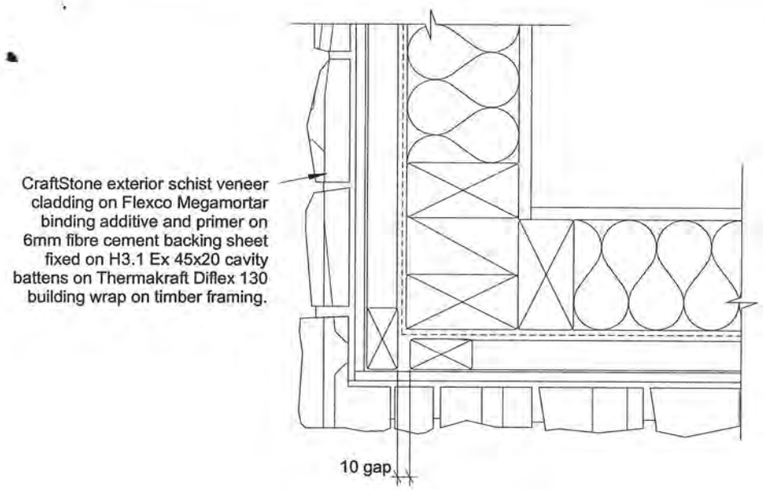
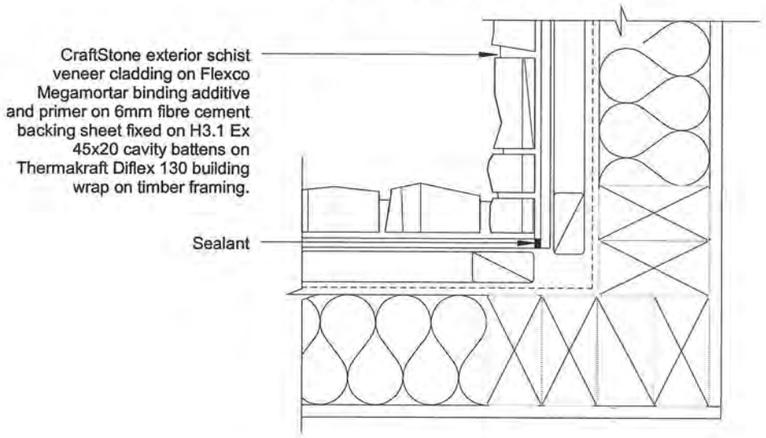
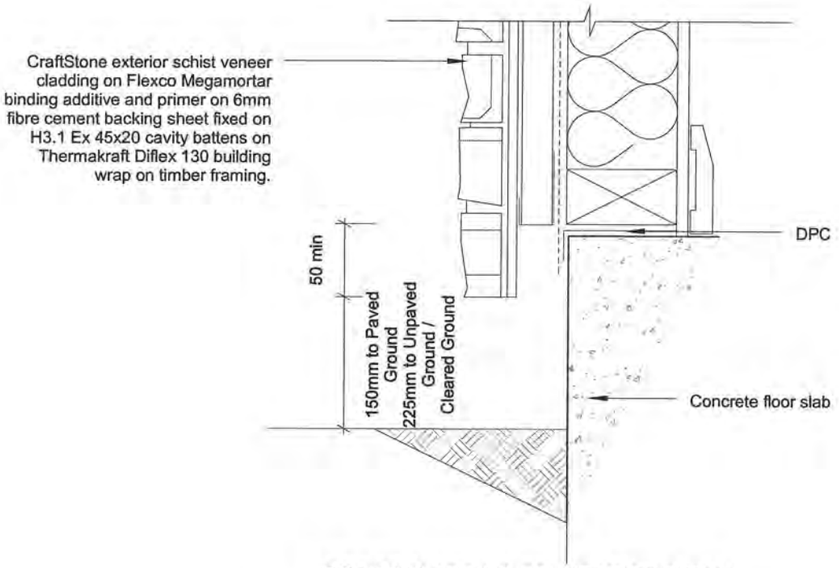


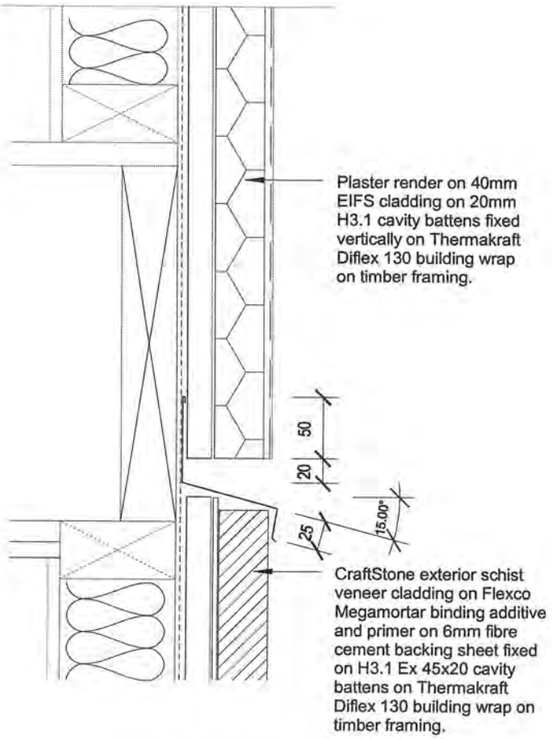
SCHIST EXTERNAL CORNER DETAIL



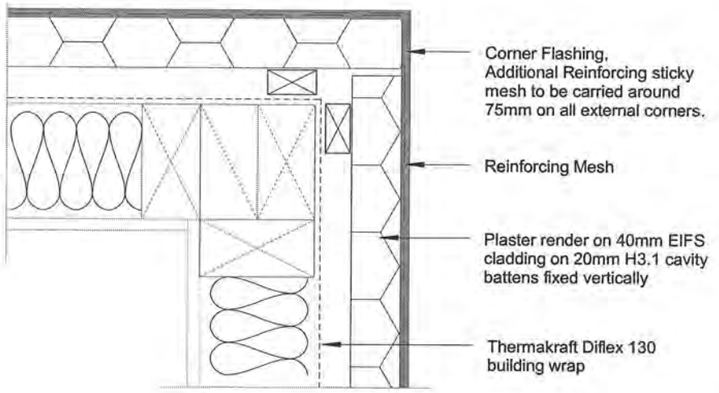
SCHIST INTERNAL CORNER DETAIL



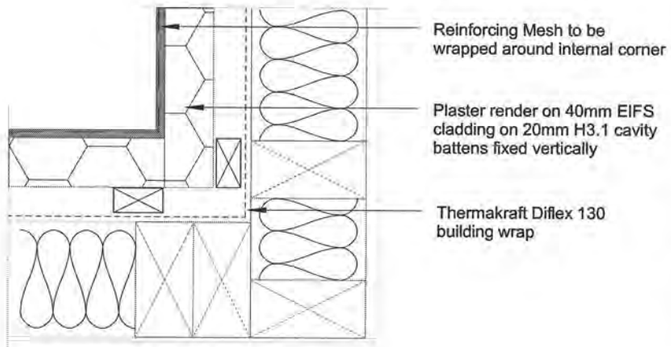
SCHIST CLADDING FOUNDATION DETAIL



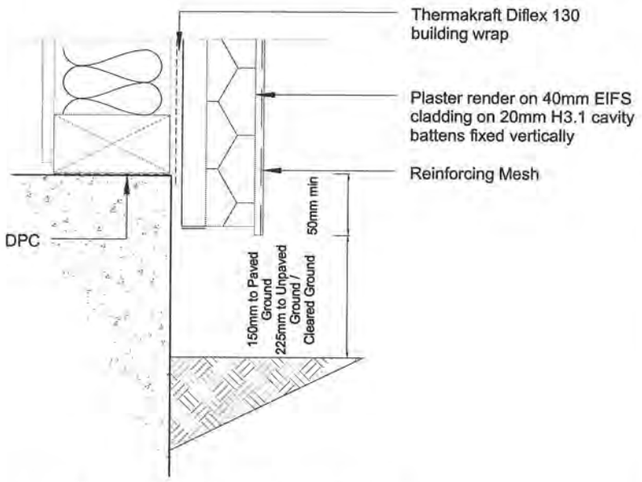
CLADDING JUNCTION DETAIL



EIFS EXTERNAL CORNER DETAIL



EIFS INTERNAL CORNER DETAIL



EIFS CLADDING FOUNDATION DETAIL

CLADDING DETAILS

1 : 5

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

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CONSTRUCTION DETAILS

17

DATE:	26 MAR 2009
SCALE:	1 : 5 @A3
JOB NUMBER:	NA
DRAWN BY:	S JOHNSON
DESIGN BY:	Designer

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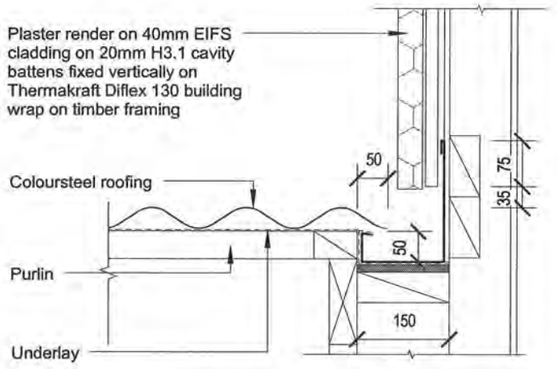
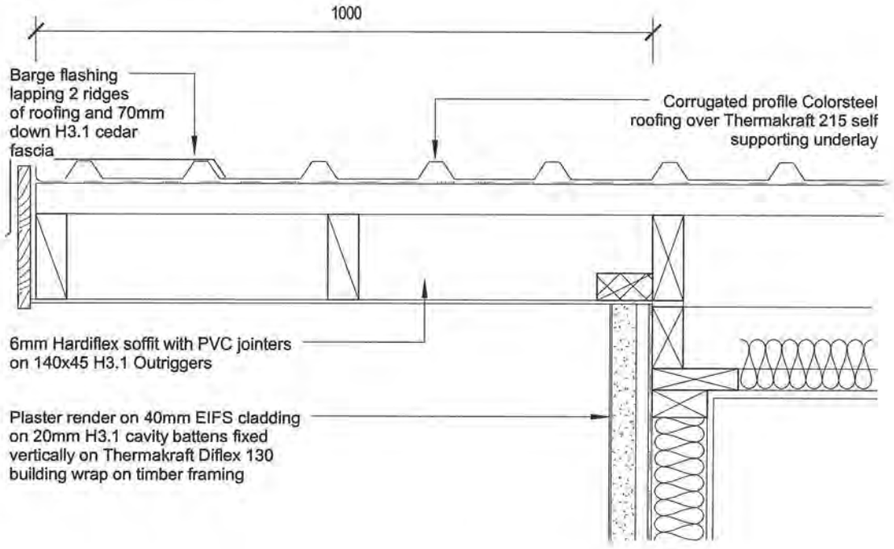
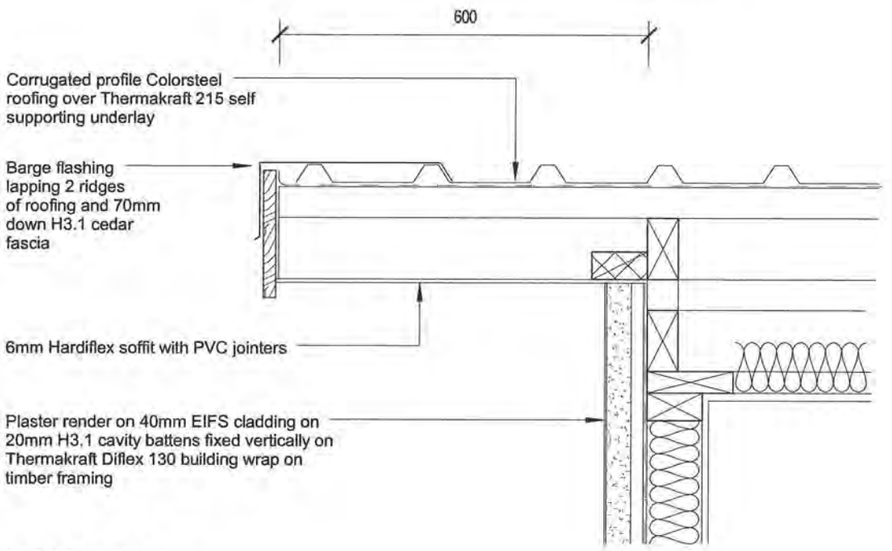


(as shown in E2/AS1 fig.50)

HIDDEN GUTTER DETAIL

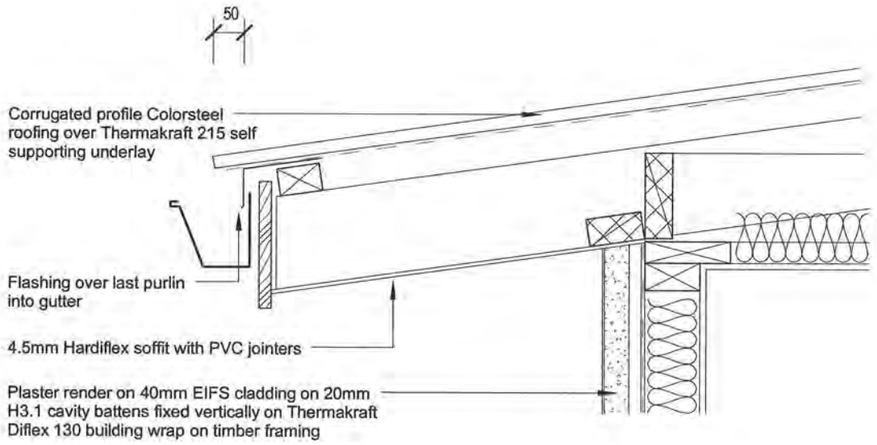
1 : 10

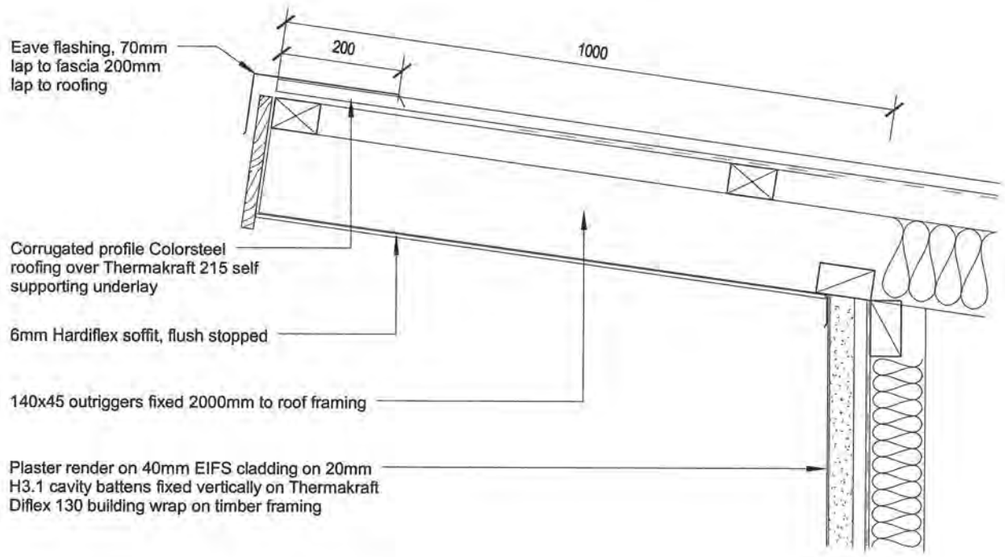


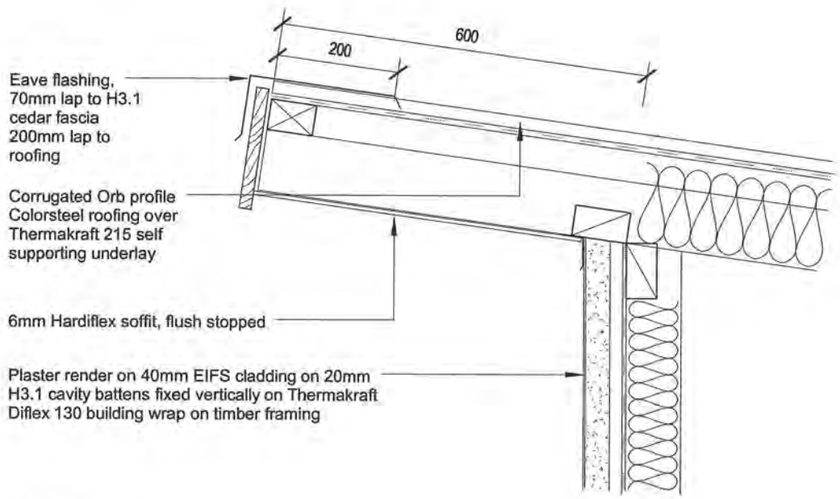


BARGE DETAILS

1 : 10







EAVE DETAILS

1 : 10

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

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18

DATE:	26 MAR 2009
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DESIGN BY:	Designer

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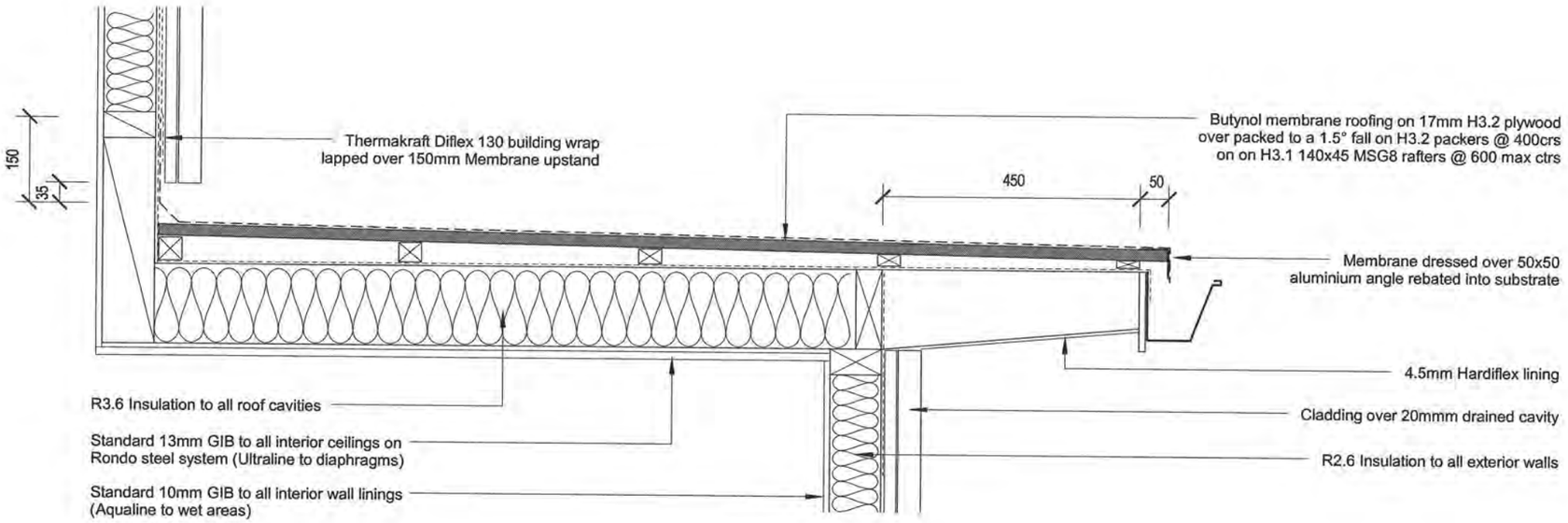
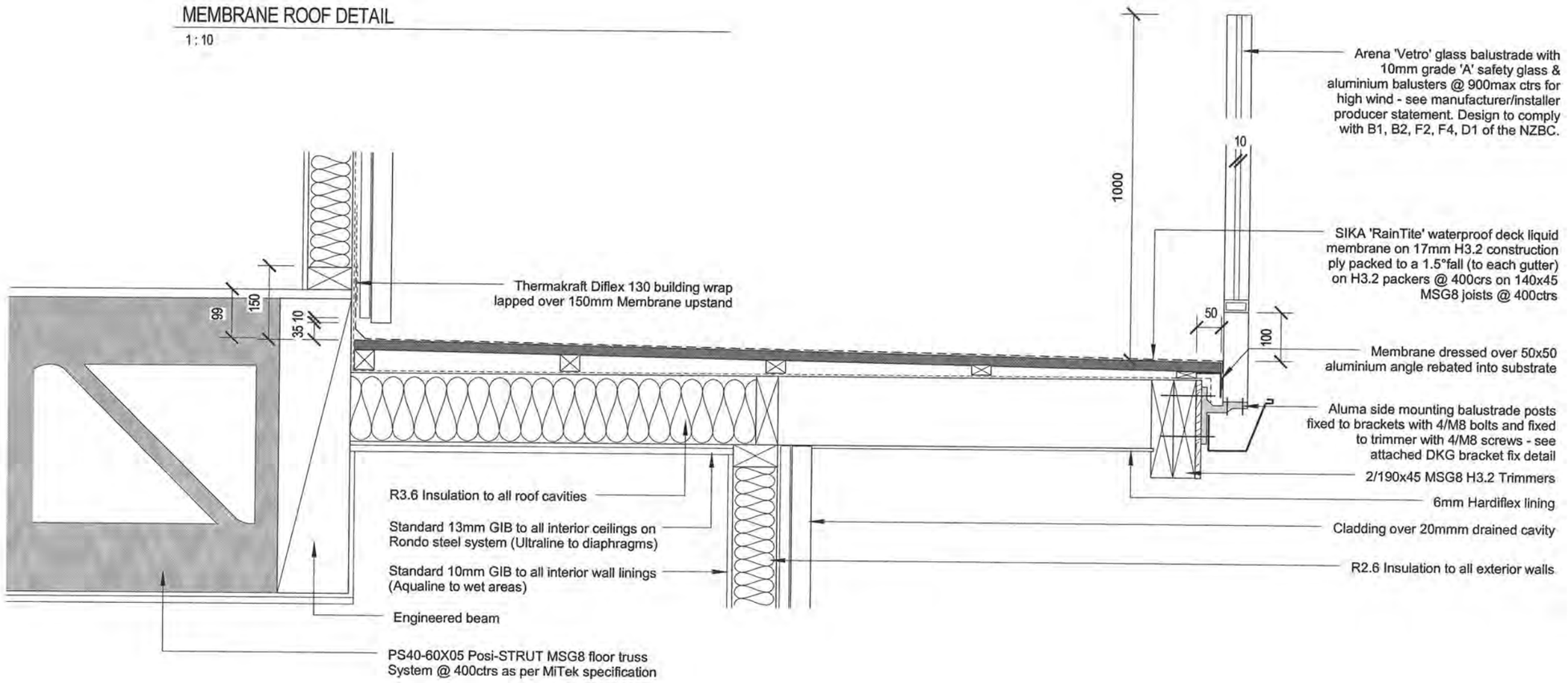


MEMBRANE ROOF DETAIL

1 : 10



MEMBRANE DECK DETAIL

1 : 10

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
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CONSTRUCTION DETAILS

19

DATE:	26 MAR 2009
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DESIGN BY:	Designer

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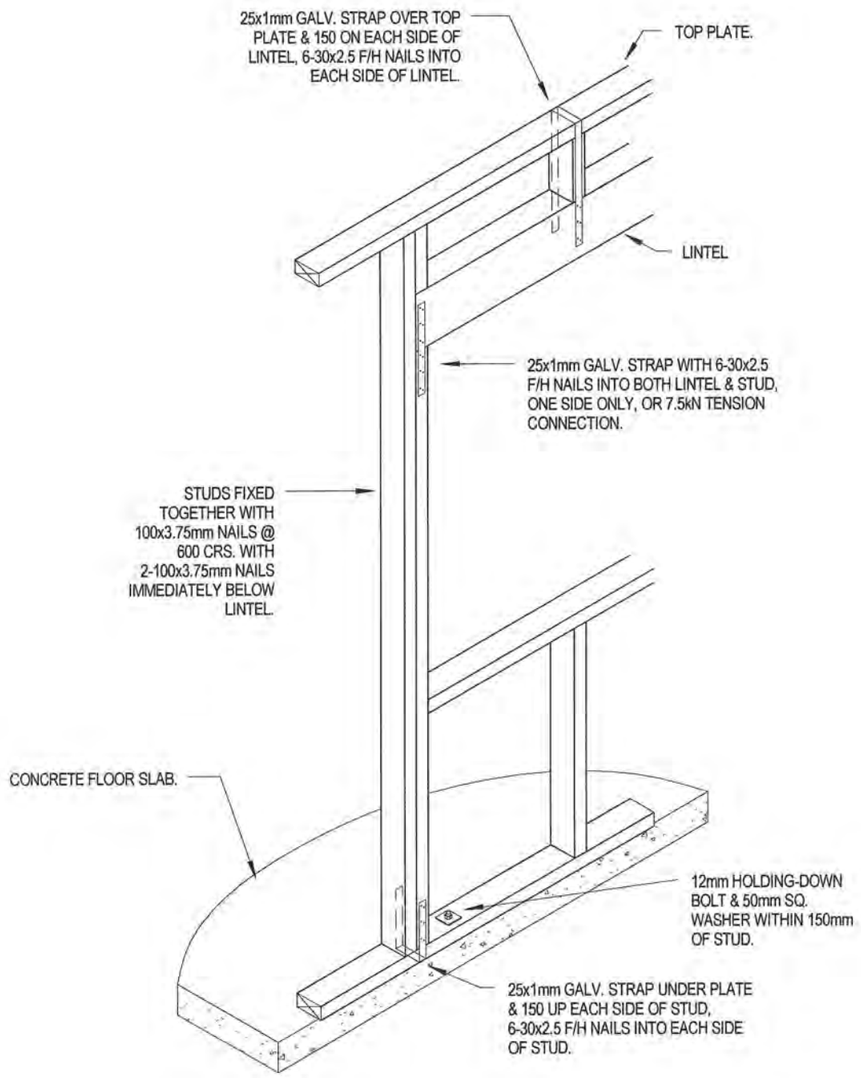
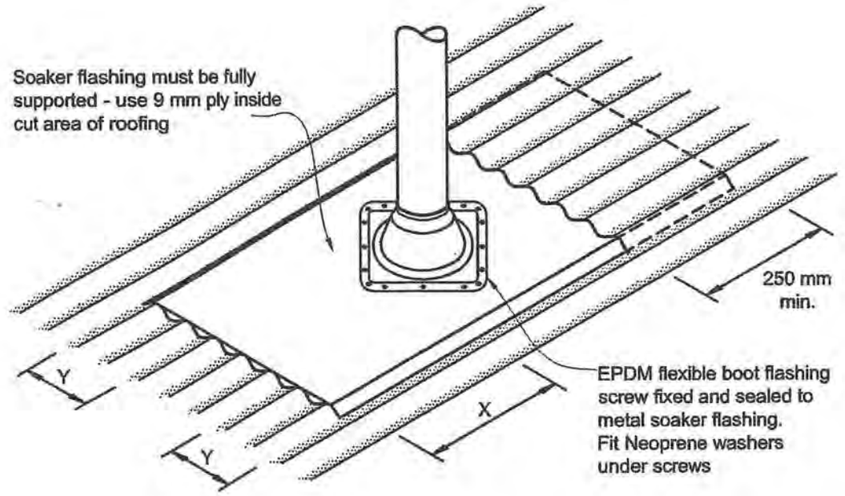
TYPICAL FIXINGS:

EXT. BOTTOM PLATE TO SLAB: M12 RAGBOLTS @ 1200CRS. PLACE D.P.C UNDER PLATES.
TOP PLATE TO STUD: 2- 100 x 3.75 SKEWED NAILS AND 3 WIRE DOGS, OR 6.7kN ALTERNATE FIXING.
TRUSS TO TOP PLATE: 16kN "LUMBERLOK TRUSS TO TOP PLATE FIXING."
75 x 50 PURLINS TO TRUSSES: 2- 100 x 3.75mm NAILS AND EITHER OF 1 WIRE DOG OR 1- 100mm x 14g TYPE 17 SCREW TO AS 3566. TO MAIN ROOF AREAS
AND
2-100 x 3.75mm SKEWED NAILS EITHER OF 2 WIRE DOG OR 2- 100mm x 14g TYPE 17 SCREW TO AS 3566, TO PERIPHERY OF ROOF, AS SHOWN IN FIG. 10.16, NZS. 3604, 1999.



LINTEL FIXING DETAIL

NTS



X = 200mm minimum
Y = Two crests, finish in next trough

ROOF PENETRATION DETAIL

NTS

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

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CONSTRUCTION DETAILS

20

DATE:	26 MAR 2009
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DESIGN BY:	Designer

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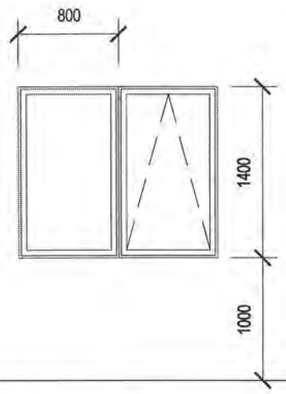
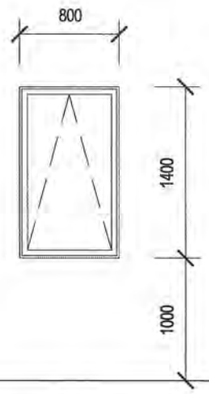
2/190X45 MSG8 LINTELS



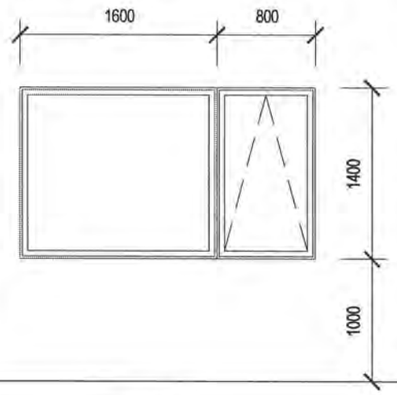
W1
ALUMINIUM POWDERED
COATED WINDOW
- DOUBLE SAFETY GLAZING

2/140X45 MSG8 LINTELS



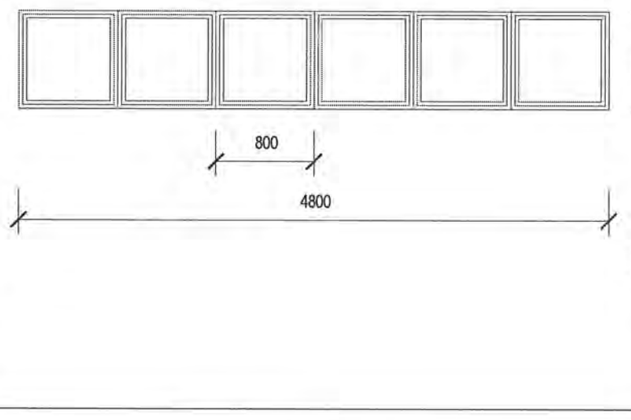
W2
ALUMINIUM POWDERED
COATED WINDOW
- DOUBLE GLAZING

2/240X45 MSG8 LINTELS



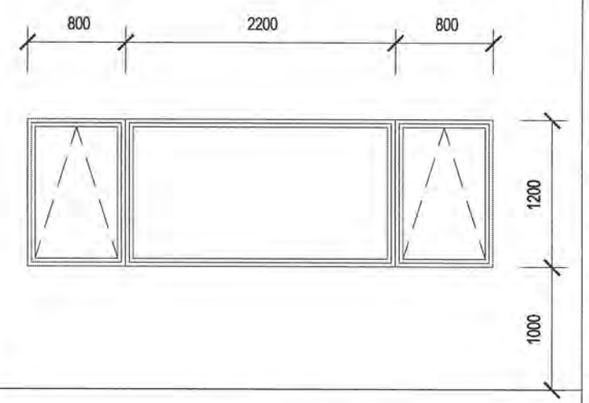
W3
ALUMINIUM POWDERED
COATED WINDOW
- DOUBLE SAFETY GLAZING

ENGINEERED LINTEL



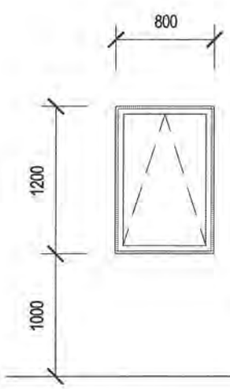
W4
ALUMINIUM POWDERED
COATED WINDOWS
- DOUBLE GLAZING

ENGINEERED LINTEL



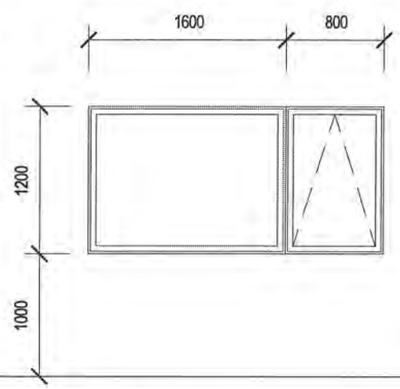
W5
ALUMINIUM POWDERED
COATED WINDOWS
- DOUBLE SAFETY GLAZING

2/90X45 MSG8 LINTELS



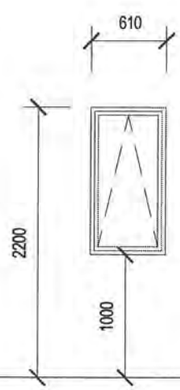
W6
ALUMINIUM POWDERED
COATED WINDOW
- DOUBLE SAFETY GLAZING

2/190X45 MSG8 LINTELS



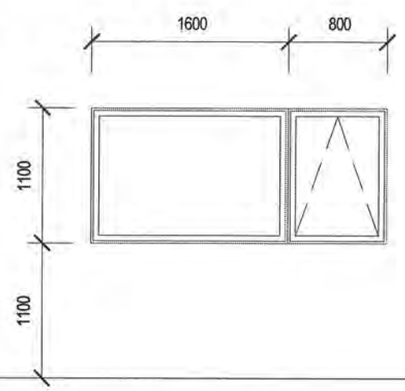
W7
ALUMINIUM POWDERED
COATED WINDOW
- DOUBLE SAFETY GLAZING

2/90X45 MSG8 LINTELS



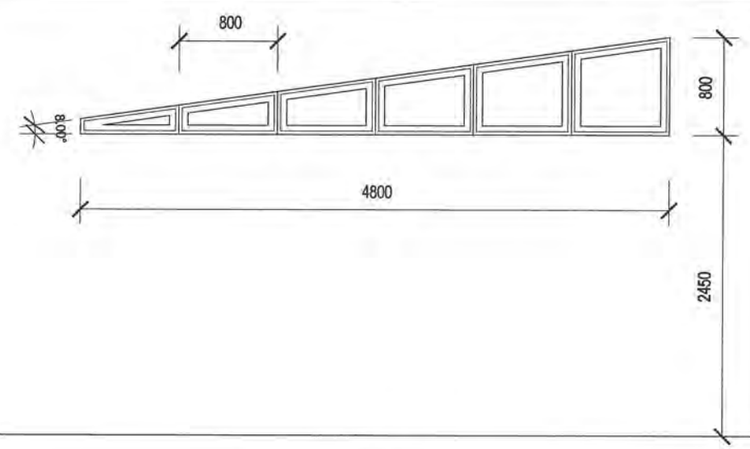
W8
ALUMINIUM POWDERED
COATED WINDOW
- DOUBLE SAFETY GLAZING

2/190X45 MSG8 LINTELS



W9
ALUMINIUM POWDERED
COATED WINDOW
- DOUBLE SAFETY GLAZING

ENGINEERED LINTEL



W10
ALUMINIUM POWDERED
COATED WINDOW
- DOUBLE GLAZING

WINDOW SCHEDULE

1 : 50

ROULSTON RESIDENCE

125 NIKAU PALM ROAD
PARAPARAUMU

REVISIONS:

Rev:	Description:	Date:

GENERAL NOTES:

Check and confirm all dimensions prior to commencing any work on-site.
Use stated dimensions in preference to scaled.
If in doubt ASK.
Drawings at a larger scale take precedence over those drawn at a smaller scale.
Site measure all openings/spaces for items manufactured off-site.
Notes on one plan and not necessarily on other drawings are applicable to all drawings.
Any conflicts on the documents are to be notified to the designer prior to commencing work.

IF IT ISN'T DIMENSIONED - **DO NOT SCALE**

WINDOW SCHEDULE

22

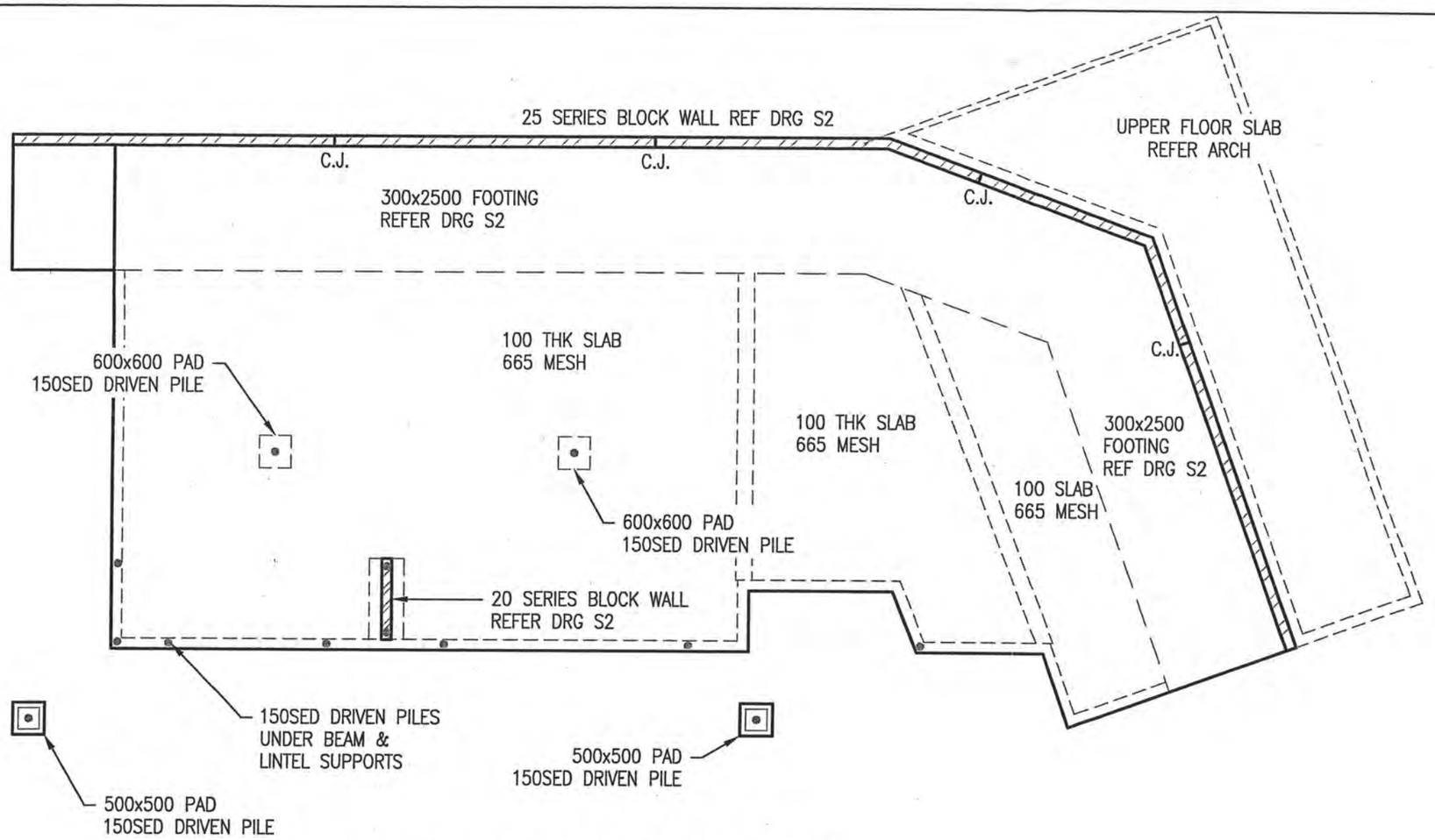
DATE:	26 MAR 2009
SCALE:	1 : 50 @A3
JOB NUMBER:	NA
DRAWN BY:	S JOHNSON
DESIGN BY:	Designer

ARCHITECTURE DM

17 GEAR ST
PETONE

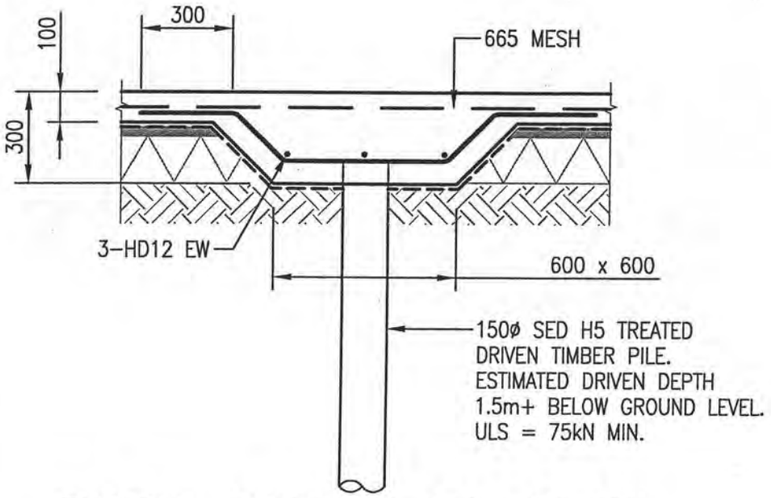
P (04) 568 8468
F (04) 568 8468
M 027 452 4670
E dean@architecturedm.co.nz

A D | N Z
ARCHITECTURAL DESIGNERS NZ INC



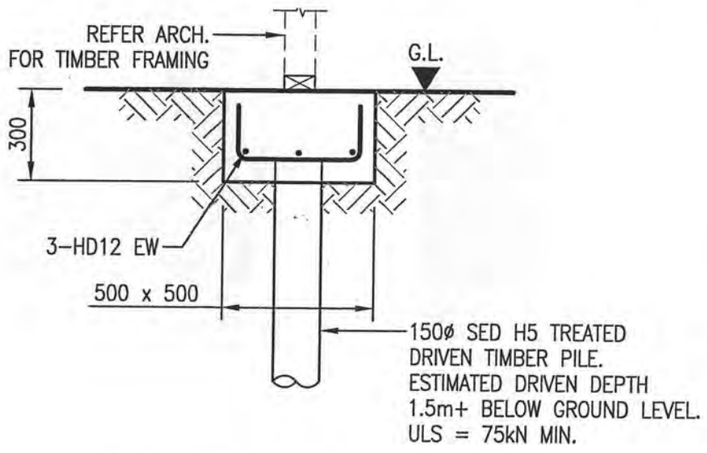
FOUNDATION & SLAB PLAN

SCALE 1:100



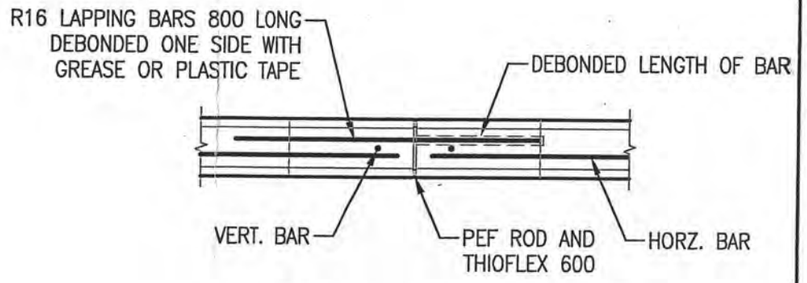
TYPICAL INTERNAL PAD DETAIL

SCALE 1:10



TYPICAL PILE CAP DETAIL

SCALE 1:20



CONTROL JOINT DETAIL

SCALE 1:20

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Paraparaumu Office
Tel: (04) 902 5750

1. REFER ARCHITECT'S DRAWINGS FOR DIMENSIONS, UNLESS NOTED OTHERWISE AND FOR DETAILS OF ALL SERVICES TO BE CAST IN SLAB. DO NOT SCALE OFF THESE DRAWINGS.

2. ALL CONCRETE WORK SHALL COMPLY WITH THE REQUIREMENTS OF NZS 3109:1997.

3. ALL MASONRY WORK SHALL COMPLY WITH THE REQUIREMENTS OF NZS 4210:2004.

4. CONCRETE SHALL BE:
   - SLABS & FOOTINGS N25 (25 MPa)
   - BLOCK FILL N17.5 (17.5MPa)

5. MAXIMUM SLUMP TO BE 100mm UNLESS NOTED OTHERWISE.

6. CONCRETE FINISHES SHALL BE:
   - SLABS – U3
   - EXPOSED FOOTING – F4

7. ALL REINFORCEMENT SHALL COMPLY WITH AS/NZS 4671:2001 (HD BARS SHALL NOT BE REBENT).

8. ENGINEER TO INSPECT PRIOR TO POURING CONCRETE. ENGINEER REQUIRES 24 HOURS NOTICE BEFORE ANY VISIT.

CLIENT	ROULSTON RESIDENCE
PROJECT	NIKAU PALM RD PARAPARARIMU
DATE	11/3/09
SCALE	AS SHOWN
DRAWN	GSH
DWG No.	S1
JOB No	23040

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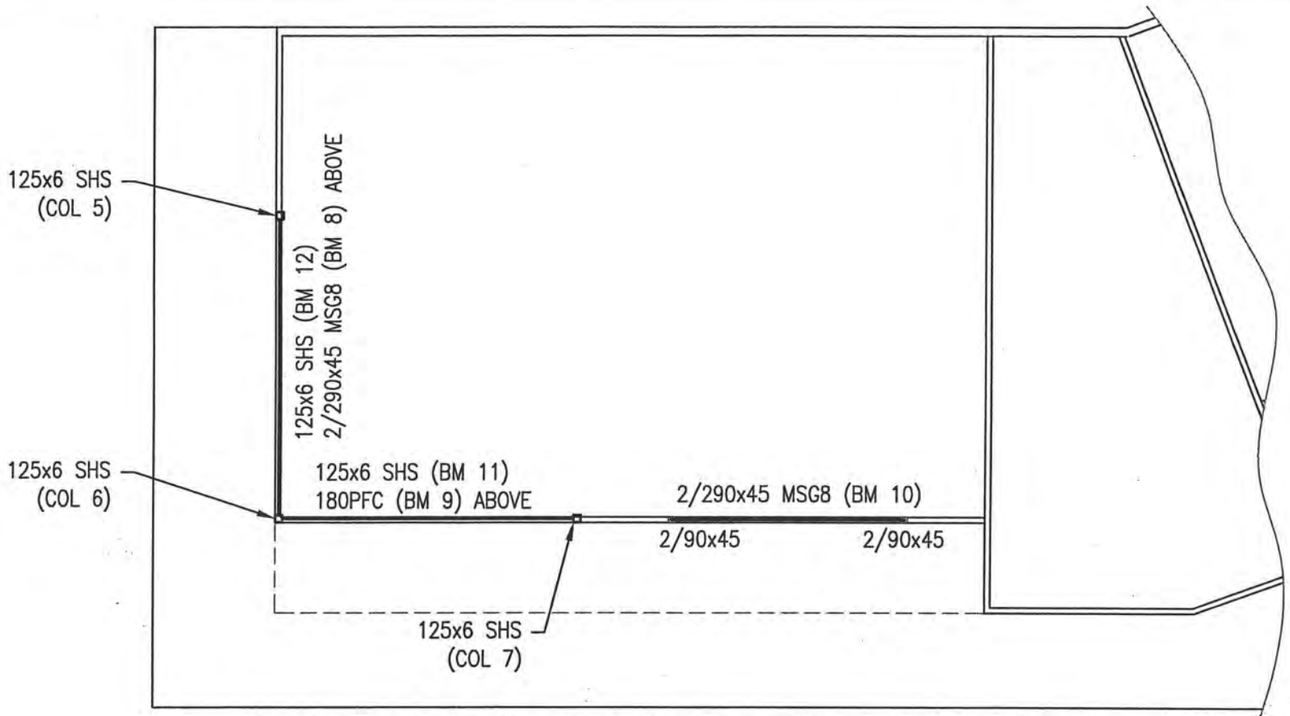
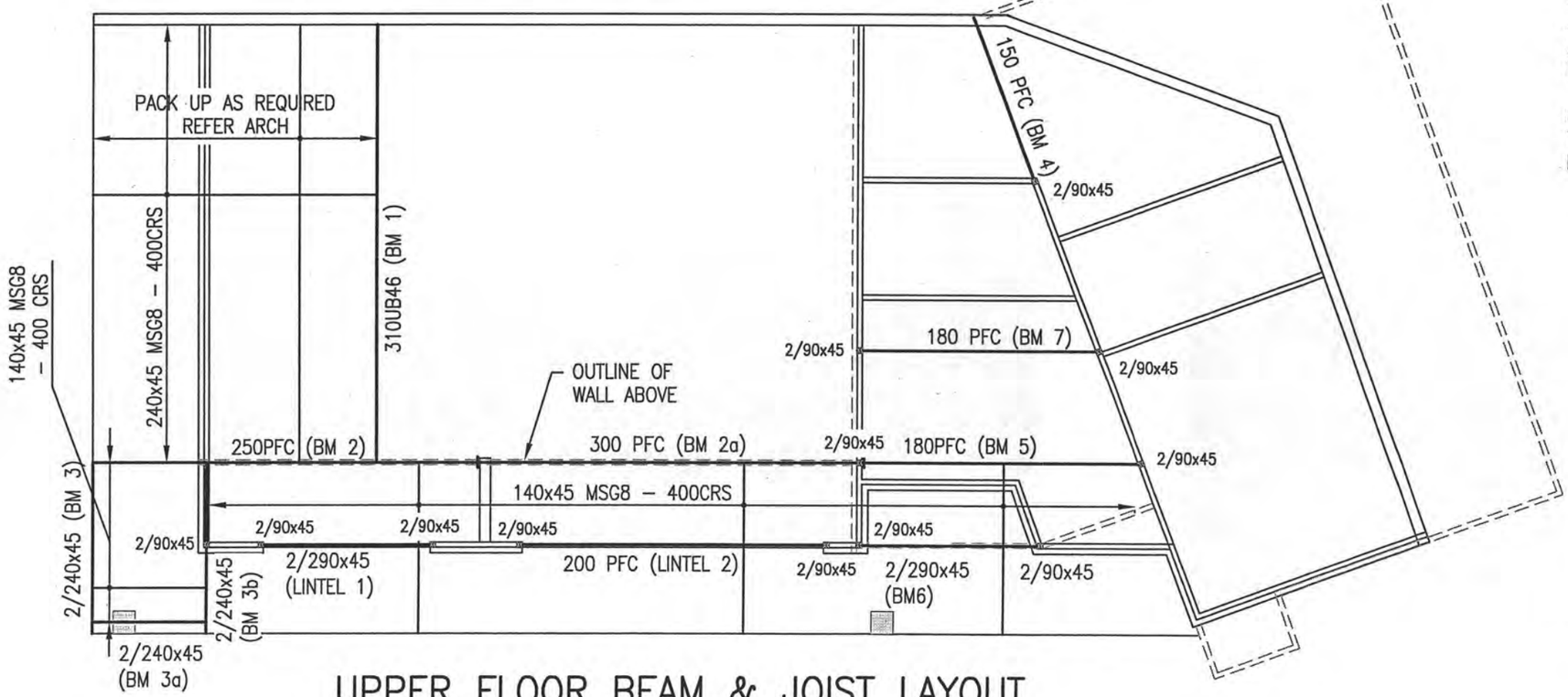


UPPER LEVEL LINTEL & COLUMN LAYOUT

SCALE 1:100



UPPER FLOOR BEAM & JOIST LAYOUT

SCALE 1:100

1. REFER ARCHITECT'S DRAWINGS FOR DIMENSIONS, UNLESS NOTED OTHERWISE. DO NOT SCALE OFF THESE DRAWINGS. DIMENSIONS TO BE CONFIRMED ON SITE PRIOR TO STEEL FABRICATION.

2. ALL BOLTS TO BE GRADE 8.8 UNLESS NOTED OTHERWISE.

3. STEEL GRADES:
   - PLATES 250MPa
   - HOT ROLLED SECTIONS 300MPa
   - HOLLOW SECTIONS 350MPa

4. ALL WELD ELECTRODES ARE E48XX OR W50X.

5. ALL BOLTED TIMBER CONNECTIONS TO HAVE 50x50x3 WASHERS.

6. ALL INTERNAL STRUCTURAL STEEL TO BE PAINTED IN ACCORDANCE WITH SYSTEM DESIGNATION AS/NZS 2312/AKL1 BEFORE DELIVERY TO SITE. ANY AREAS DAMAGED TO BE MADE GOOD UPON INSTALLATION.

7. ALL EXTERNAL STRUCTURAL STEEL TO BE HOT DIP GALVANISED IN ACCORDANCE WITH SYSTEM DESIGNATION AS/NZS 2312/HDG600.
ANY AREAS DAMAGED TO BE MADE GOOD UPON INSTALLATION.

8. ENGINEER TO INSPECT ALL STEEL CONNECTIONS PRIOR TO CLOSING IN. ENGINEER REQUIRES 24 HOURS NOTICE BEFORE ANY VISIT.

CLIENT	ROULSTON RESIDENCE
PROJECT	NIKAU PALM RD PARAPARARIMU
DATE 11/3/09	DWG No. S2
SCALE AS SHOWN	
DRAWN GSH	JOB No 23040

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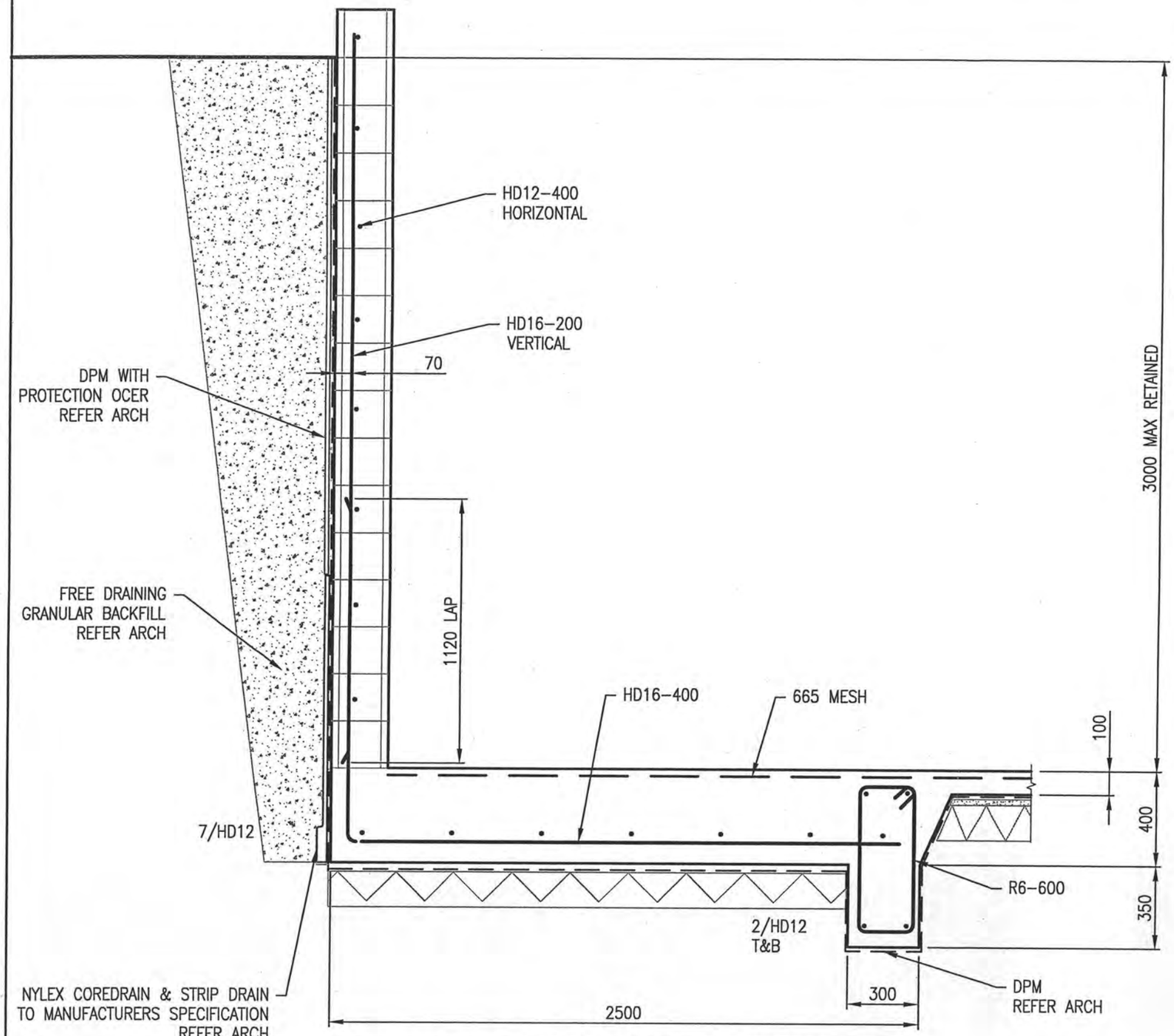
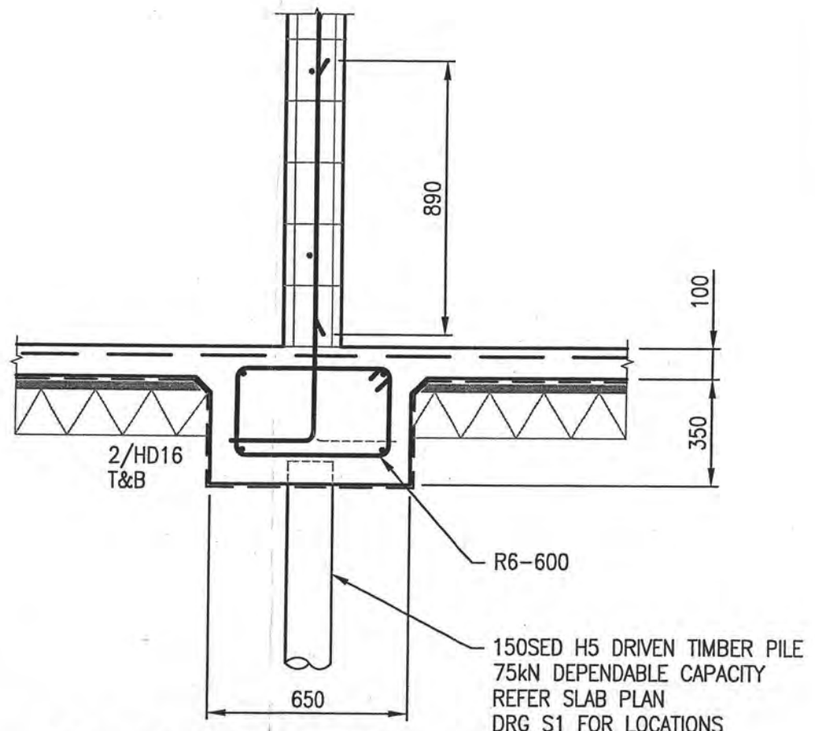


25 SERIES BLOCK RETAINING WALL UP TO 3.2m MAXIMUM RETAINED

SCALE 1:20



20 SERIES BLOCK WALL FOOTING DETAIL

SCALE 1:20

CLIENT	ROULSTON RESIDENCE
PROJECT	NIKAU PALM RD PARAPARARIMU
DATE	11/3/09
SCALE	AS SHOWN
DRAWN	GSH
DWG No.	S3
JOB No	23040

12/03/2009 11:33:01 a.m., A3, 1:1

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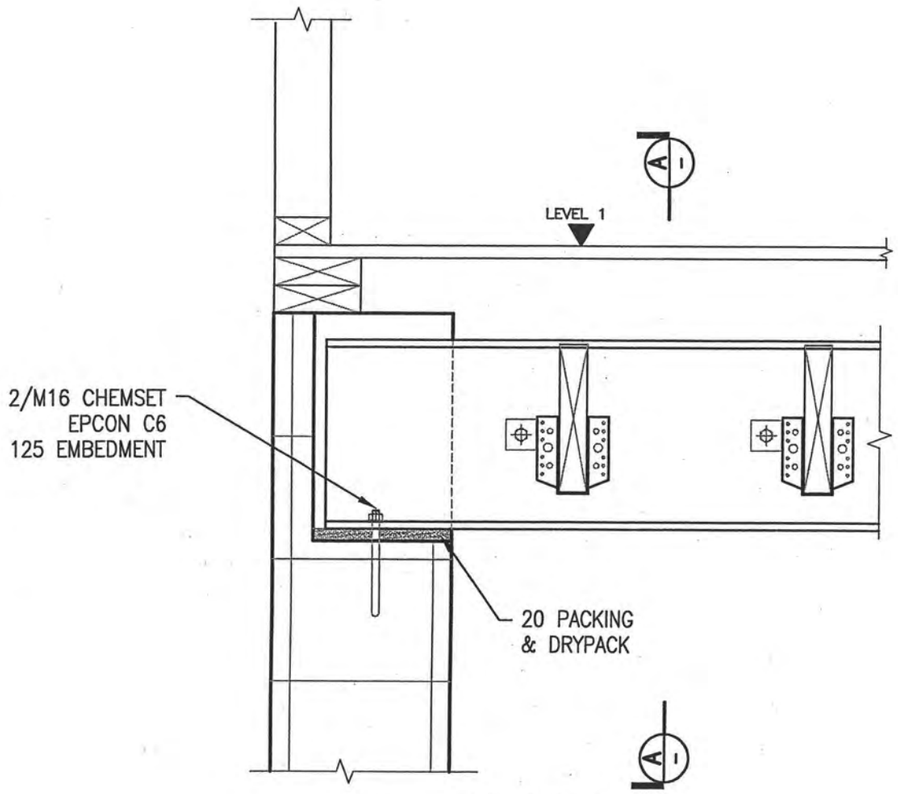
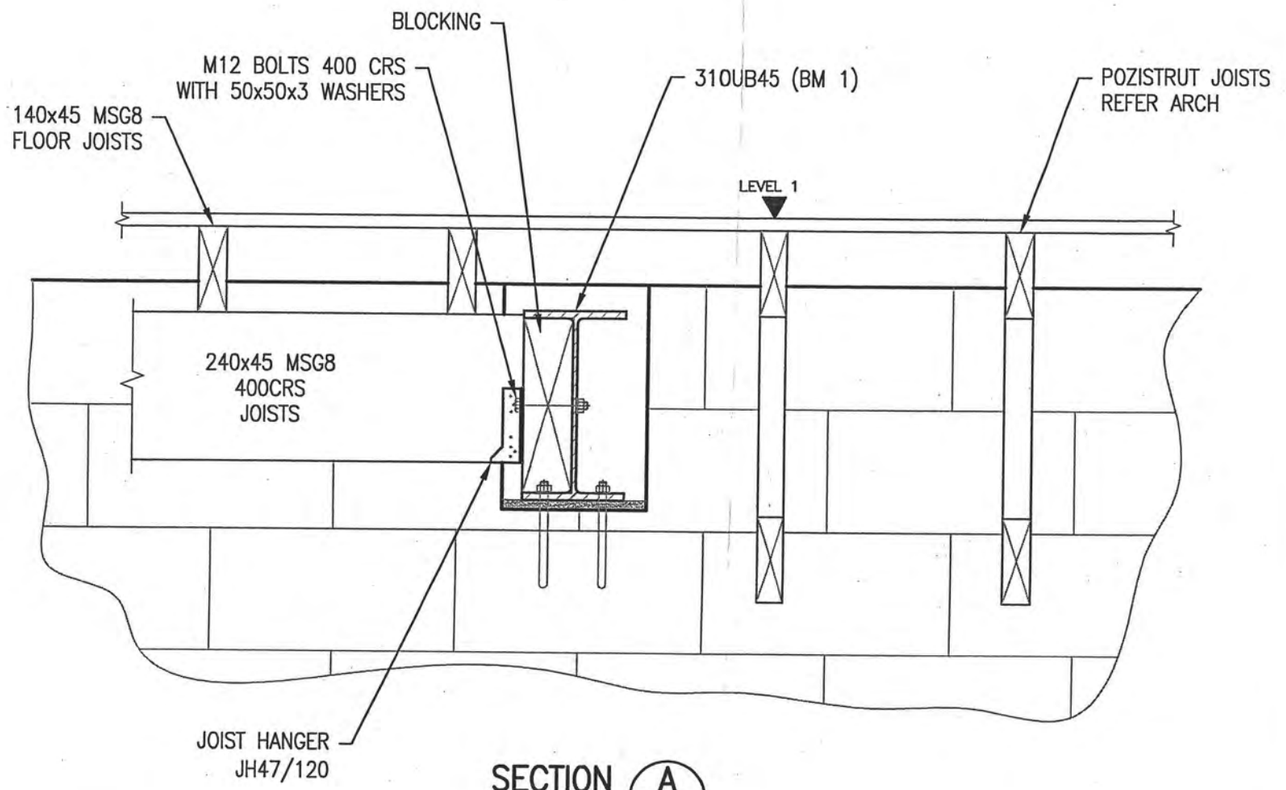


ELEVATION



SECTION A

BEAM 1 TO BLOCK WALL CONNECTION DETAIL

CLIENT	ROULSTON RESIDENCE
PROJECT	NIKAU PALM RD PARAPARARIMU
DATE	11/3/09
SCALE	AS SHOWN
DRAWN	GSH
DWG No.	S4
JOB No	23040

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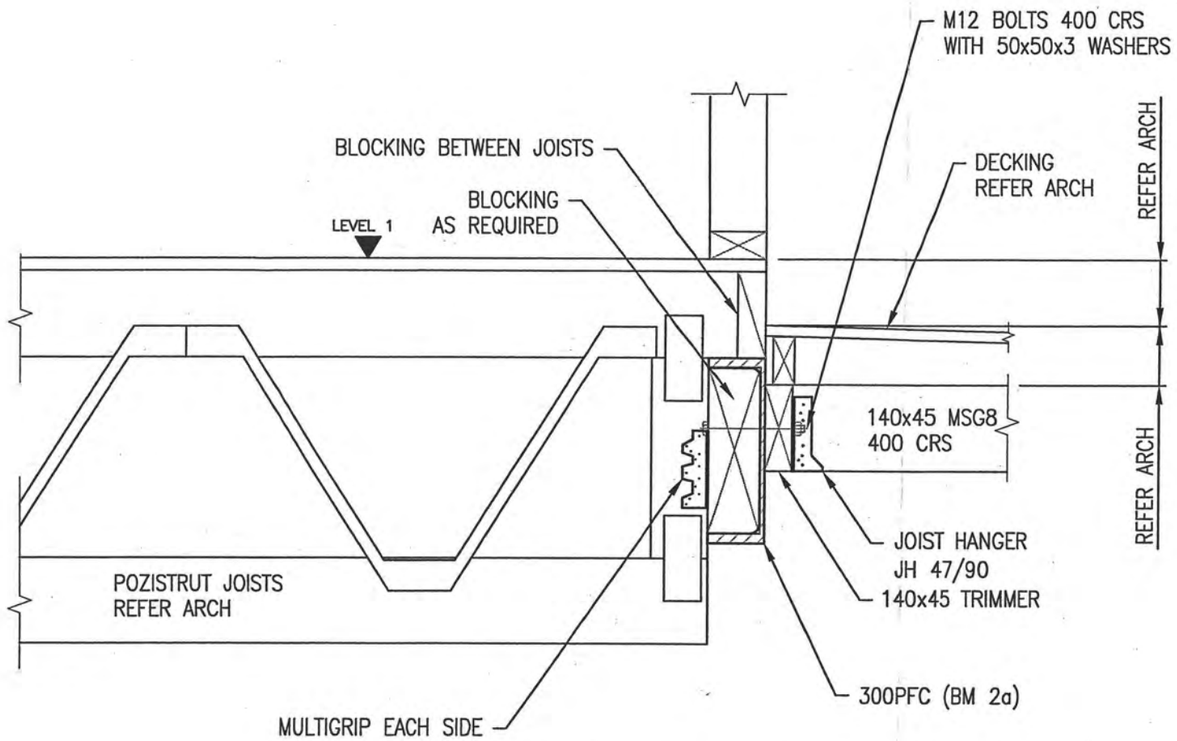

BEAM 2a TO FLOOR JOIST CONNECTION DETAIL

SCALE 1:10

CLIENT	ROULSTON RESIDENCE
PROJECT	NIKAU PALM RD PARAPARARIMU
DATE	11/3/09
SCALE	AS SHOWN
DRAWN	GSH
DWG No.	S5
JOB No	23040

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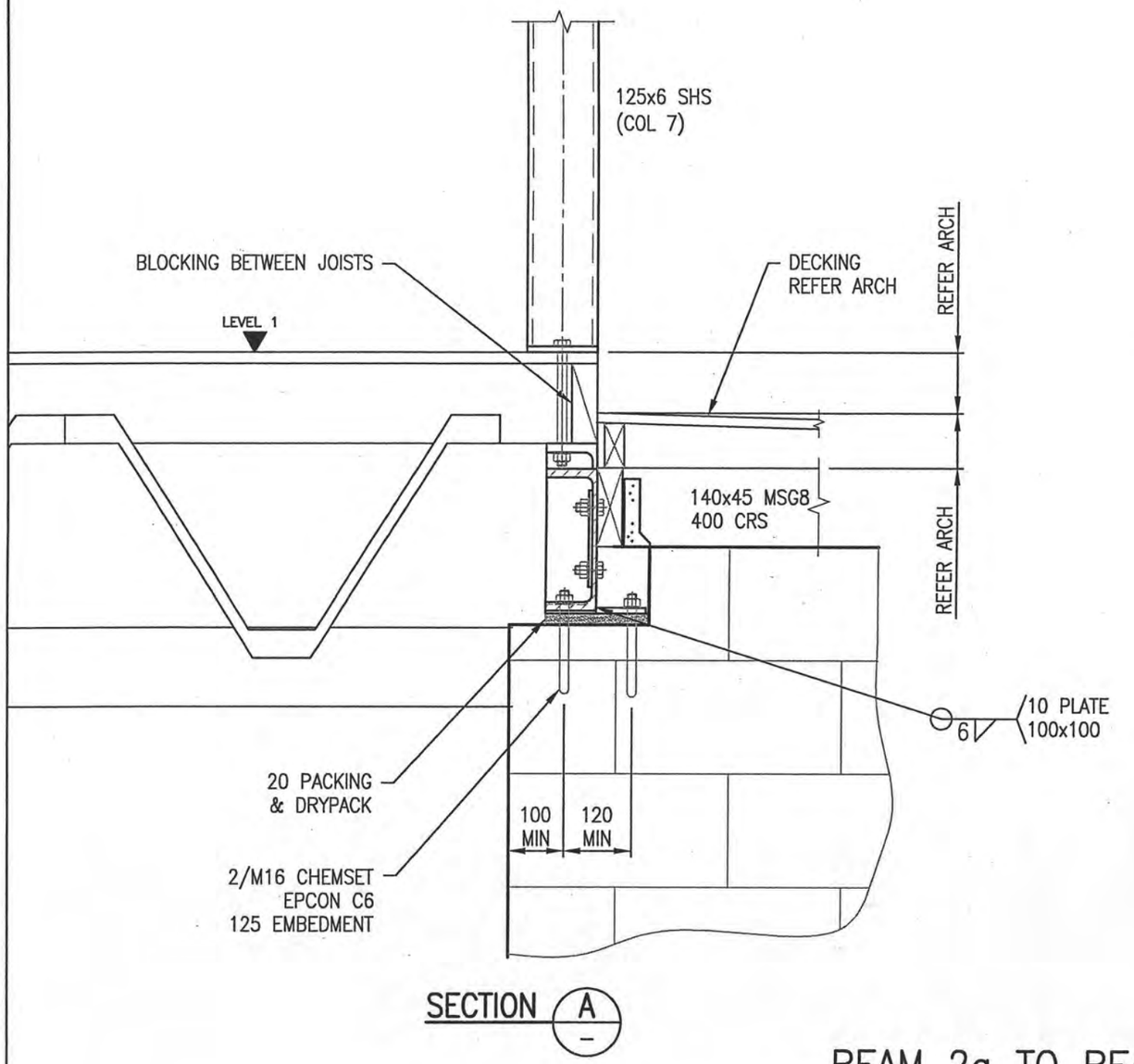
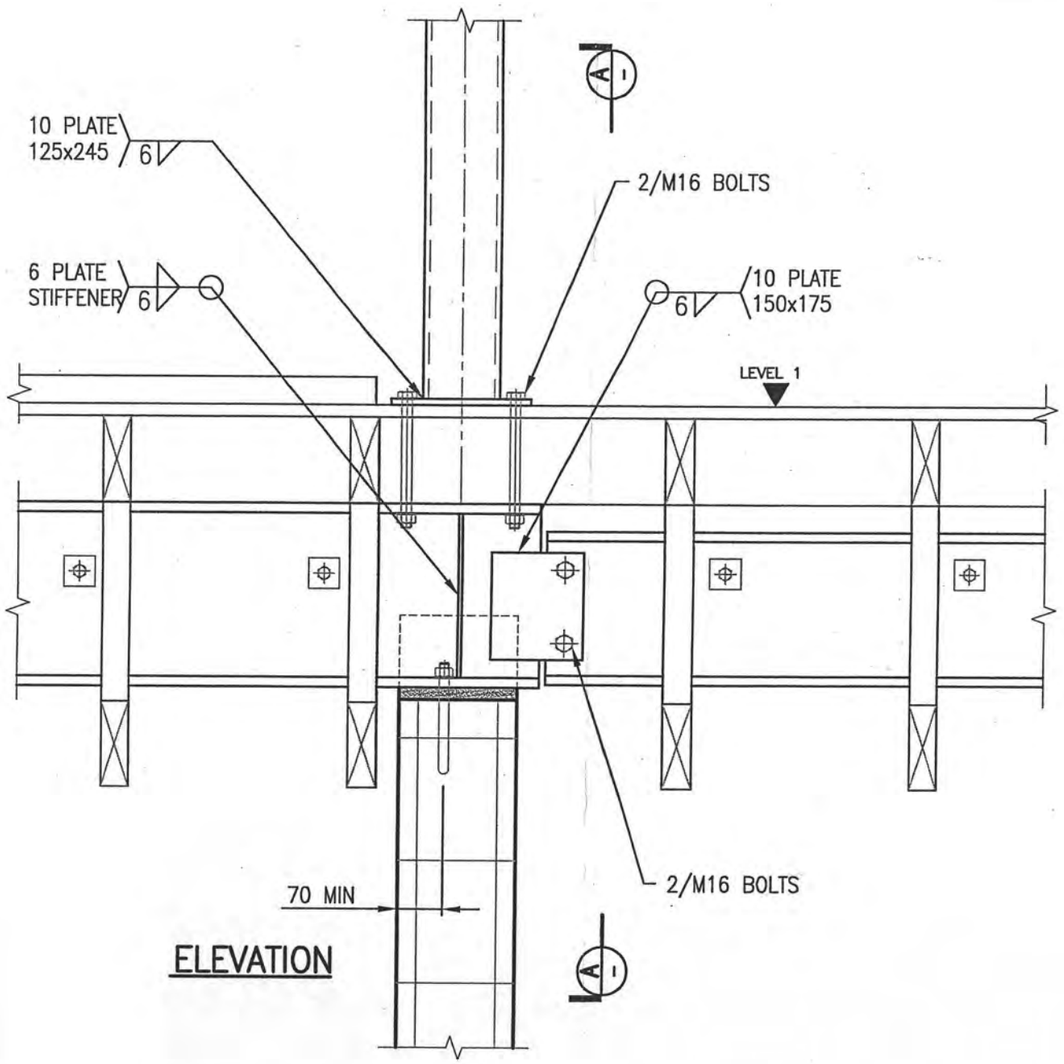


SECTION A



ELEVATION

BEAM 2a TO BEAM 2 & BLOCK WALL
COLUMN 7 TO BEAM 2a CONNECTION DETAIL

SCALE 1:10

CLIENT	ROULSTON RESIDENCE
PROJECT	NIKAU PALM RD PARAPARARIMU
DATE	11/3/09
SCALE	AS SHOWN
DRAWN	GSH
DWG No.	S6
JOB No	23040

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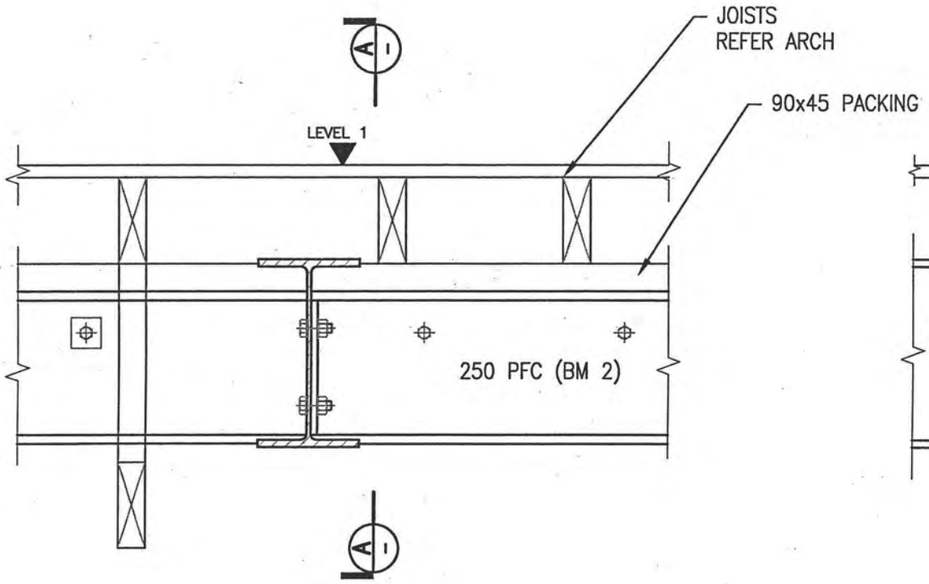
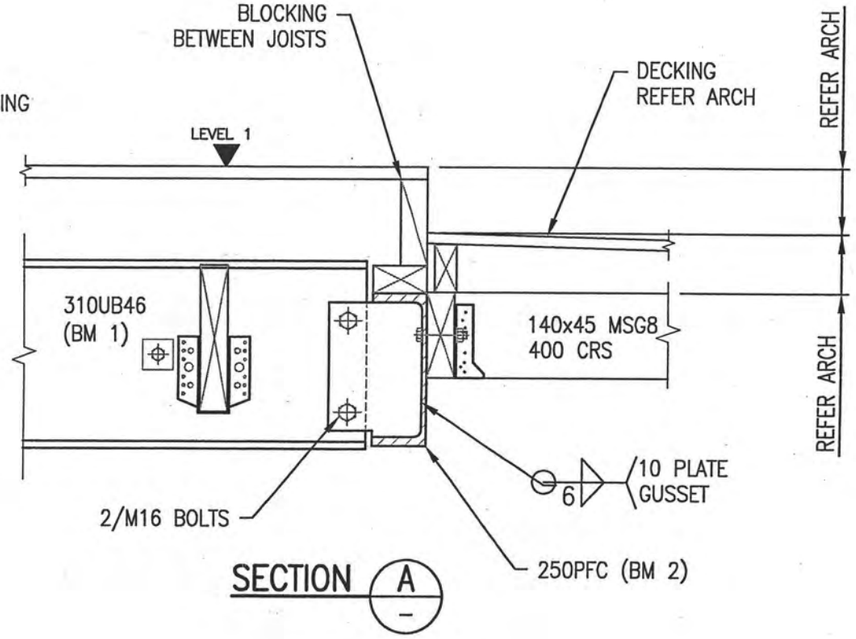


ELEVATION



SECTION A

BEAM 1 TO BEAM 2 CONNECTION DETAIL

SCALE 1:10

CLIENT	ROULSTON RESIDENCE
PROJECT	NIKAU PALM RD PARAPARARIMU
DATE	11/3/09
SCALE	AS SHOWN
DRAWN	GSH
DWG No.	S7
JOB No	23040

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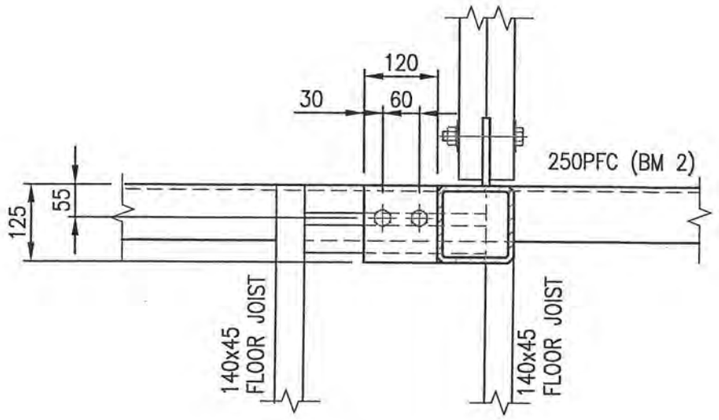
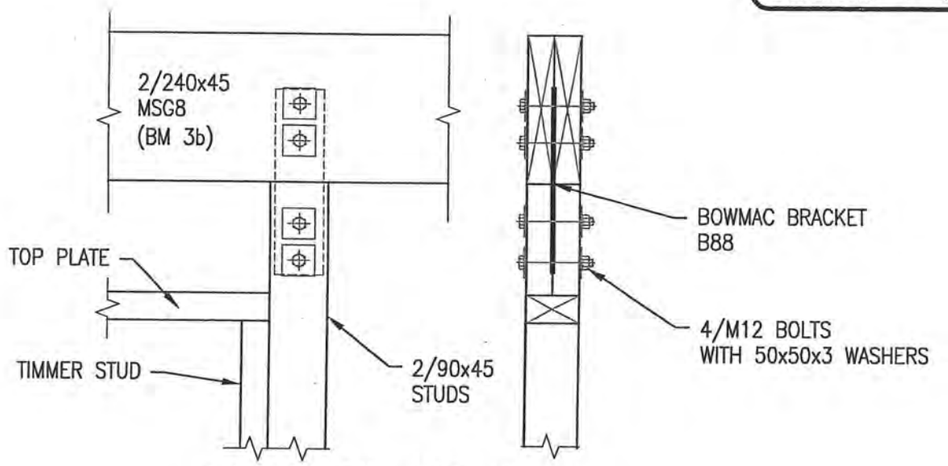
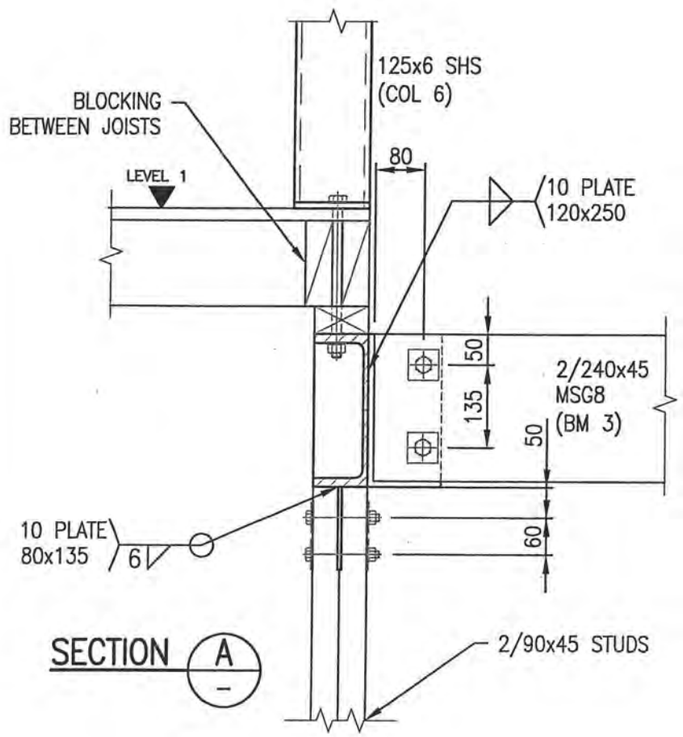




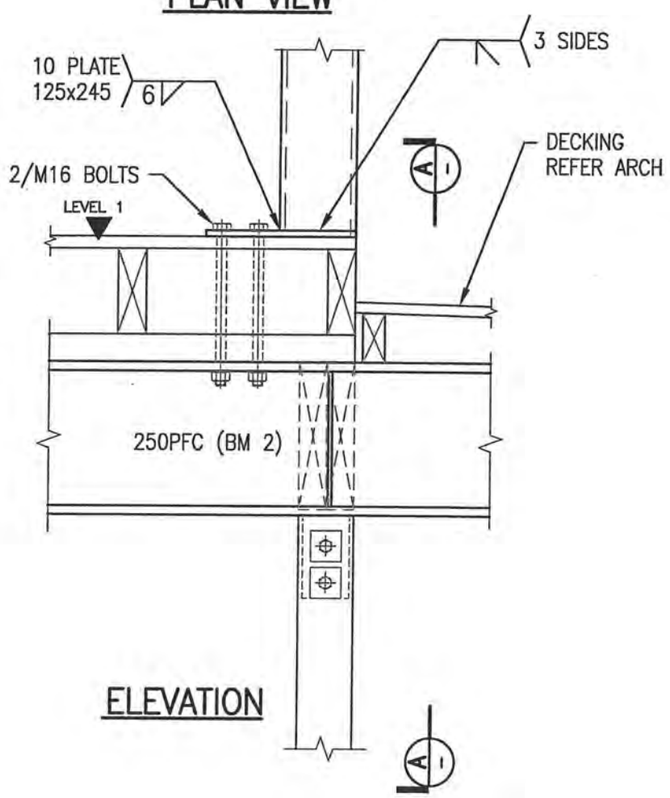
BEAM 3b TO WALL CONNECTION DETAIL

SCALE 1:10

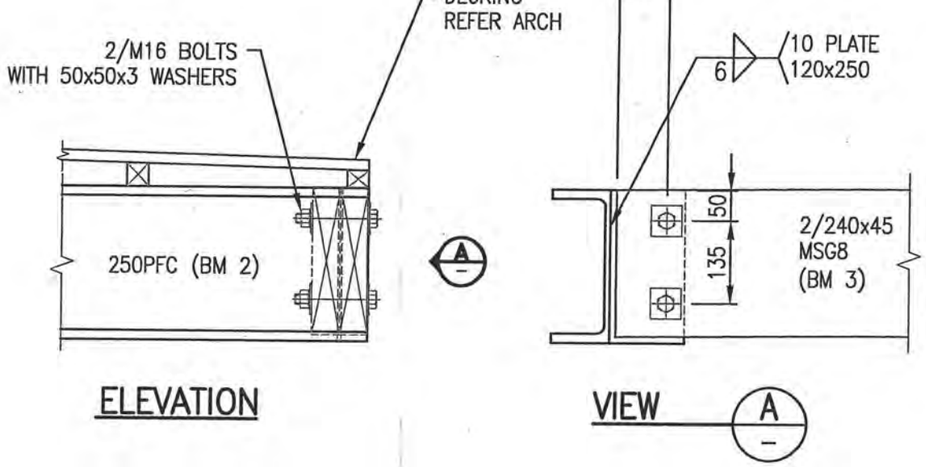
PLAN VIEW



SECTION A



ELEVATION A



ELEVATION

VIEW A

BEAM 2 TO BEAM 3 CONNECTION DETAIL

SCALE 1:10

BEAM 2 & COLUMN 6 TO WALL CONNECTION DETAILS

CLIENT	ROULSTON RESIDENCE
PROJECT	NIKAU PALM RD PARAPARARIMU
DATE	11/3/09
SCALE	AS SHOWN
DRAWN	GSH
DWG No.	S8
JOB No	23040

12/03/2009 11:33:04 a.m., A3, 1:1

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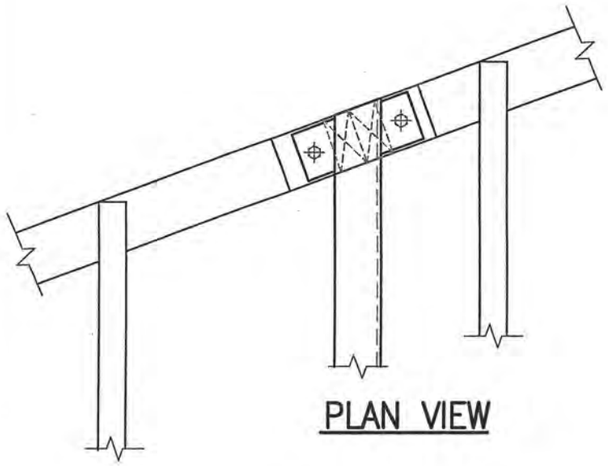
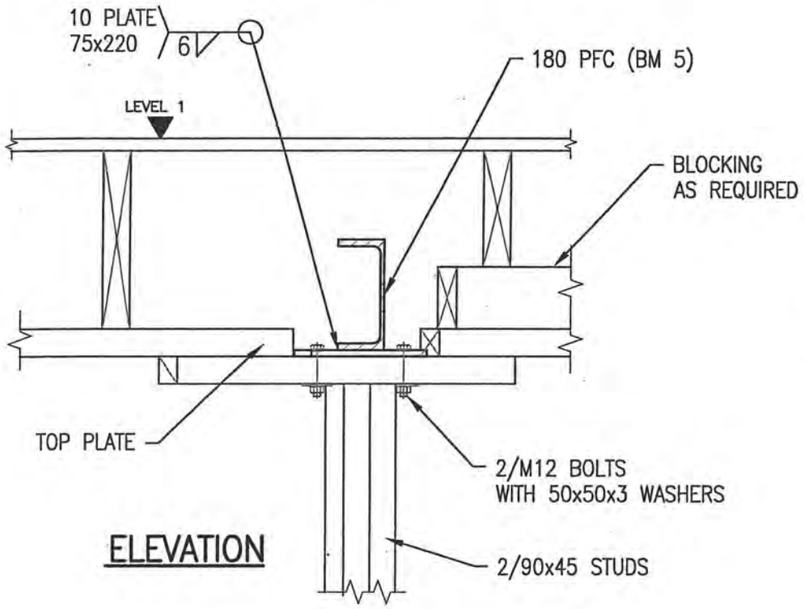


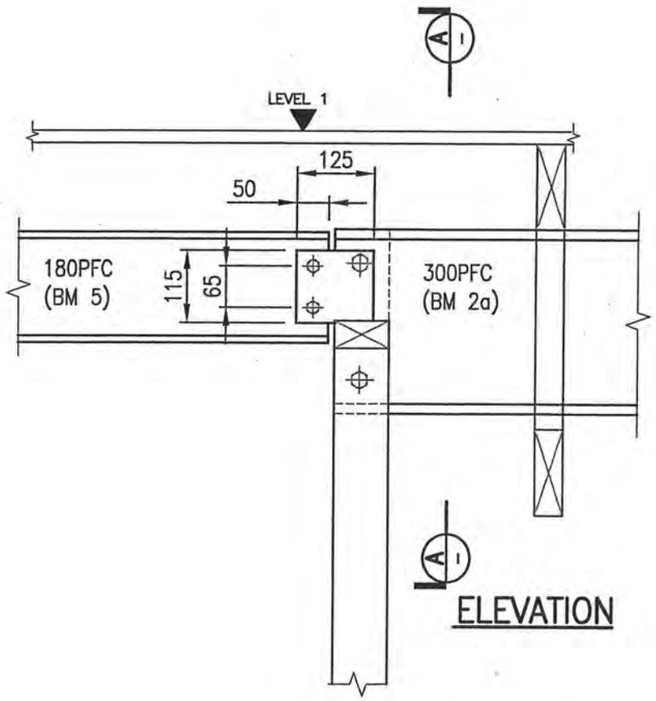
PLAN VIEW



ELEVATION

BEAM 5 TO WALL CONNECTION DETAIL

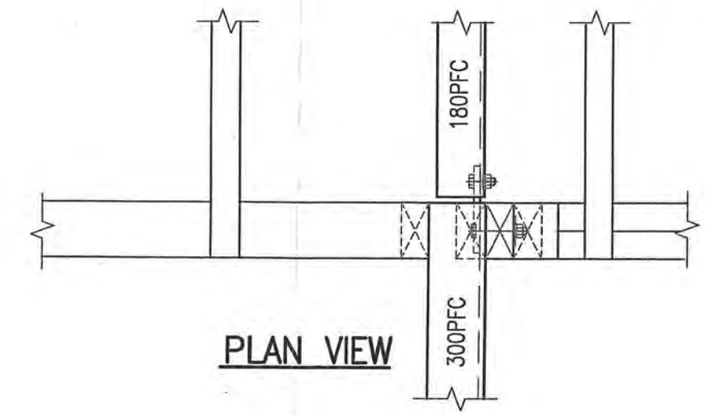
SCALE 1:10



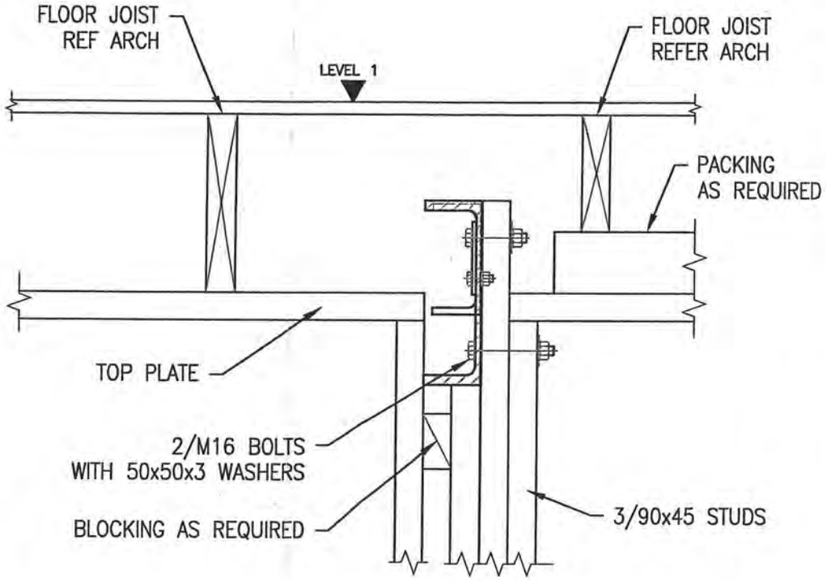
ELEVATION

BEAM 2a TO BEAM 5 & WALL CONNECTION DETAIL

SCALE 1:10



PLAN VIEW



SECTION A

CLIENT	ROULSTON RESIDENCE
PROJECT	NIKAU PALM RD PARAPARARIMU
DATE	11/3/09
SCALE	AS SHOWN
DRAWN	GSH
DWG No.	S9
JOB No	23040

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Paraparaumu Office
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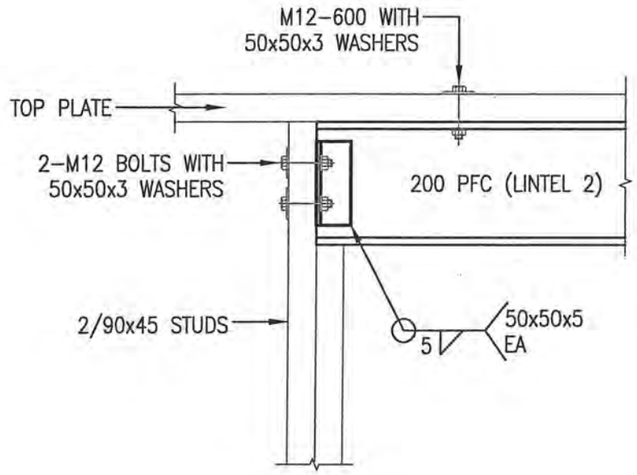
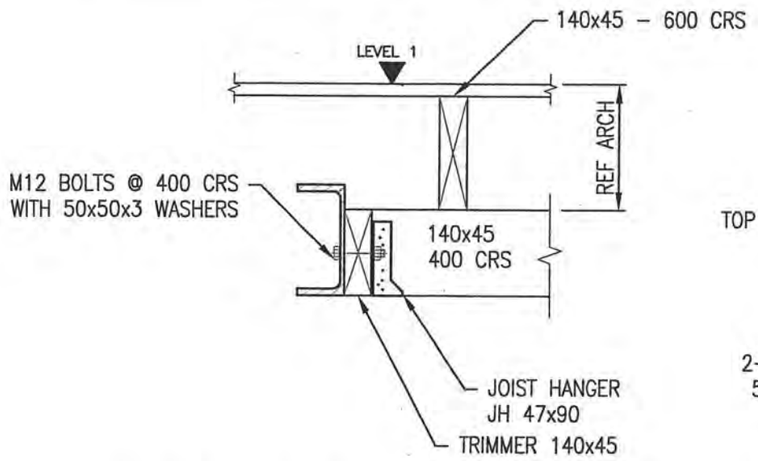
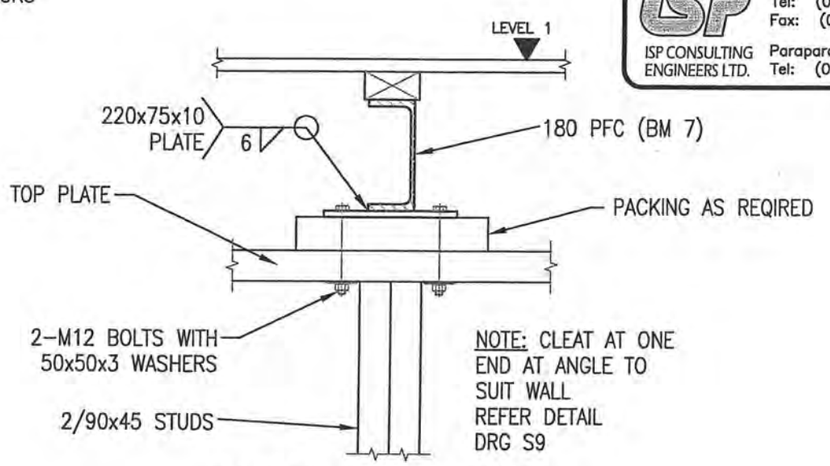


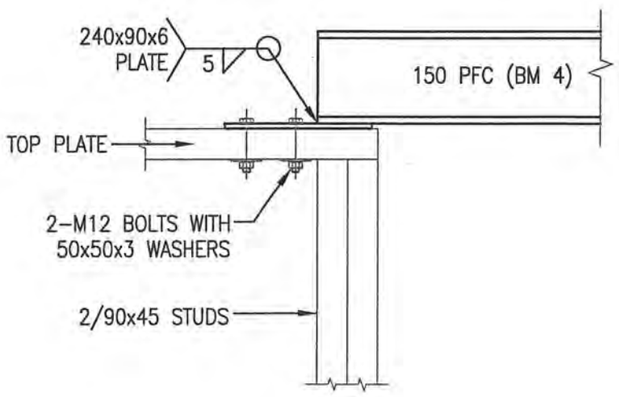
LINTEL 2 TO WALL CONNECTION DETAIL
SCALE 1:10



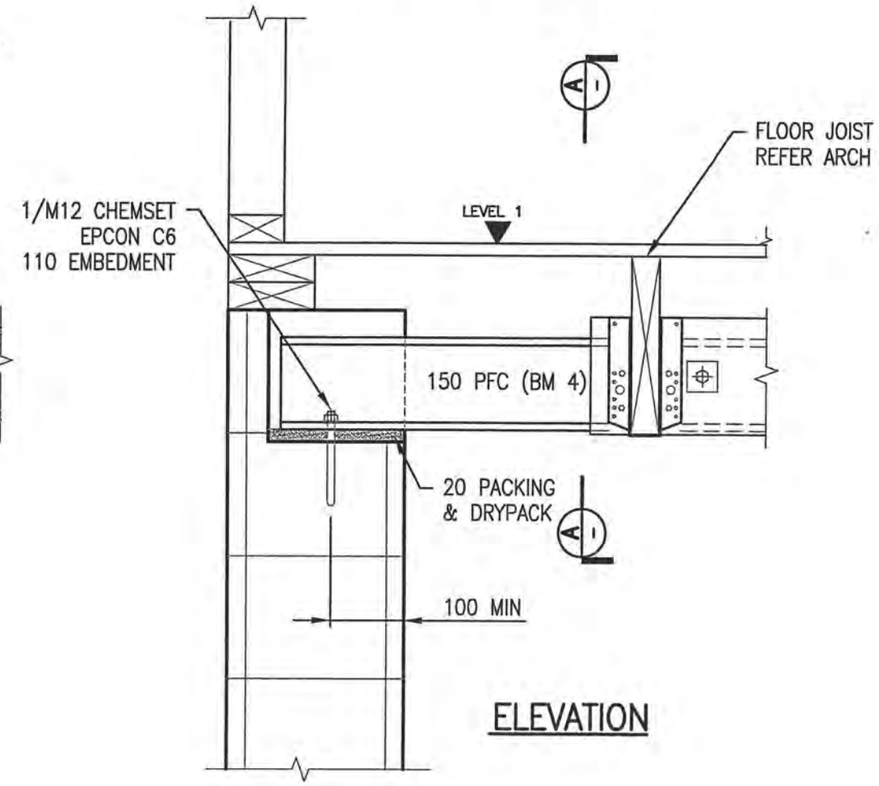
BEAM 5 TO DECK JOISTS CONNECTION DETAIL
SCALE 1:10



BEAM 7 TO WALL CONNECTION DETAIL
SCALE 1:10

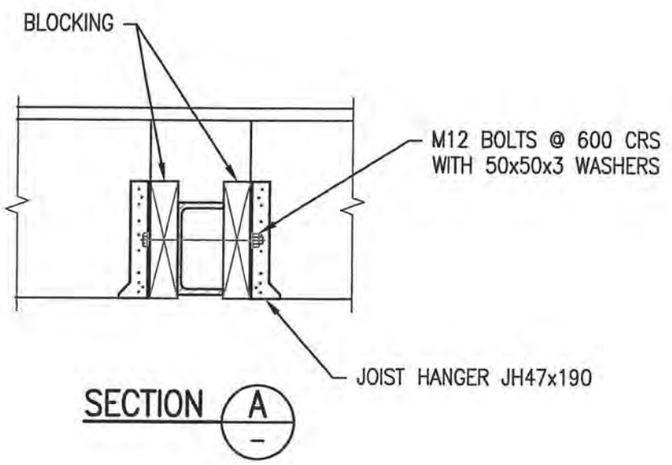


BEAM 4 TO WALL CONNECTION DETAIL
SCALE 1:10



ELEVATION

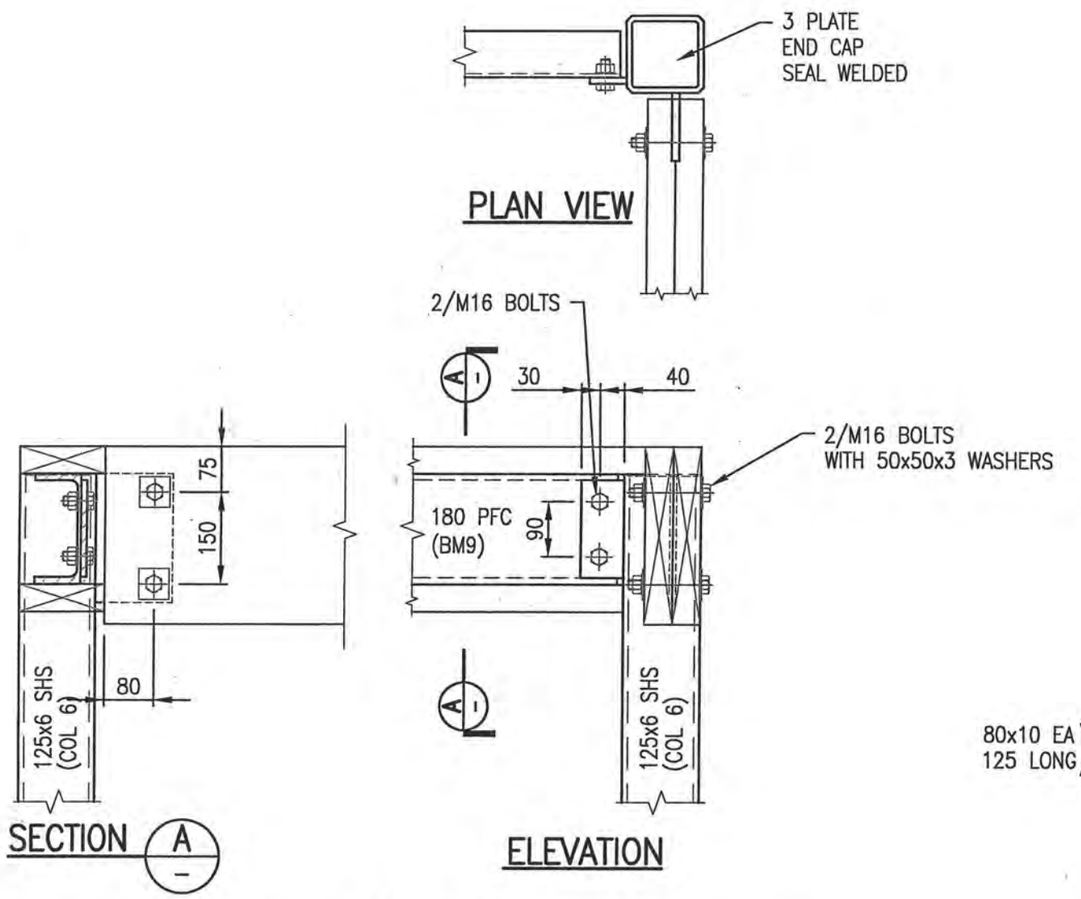
BEAM 4 TO BLOCK WALL & JOISTS CONNECTION DETAIL
SCALE 1:10



SECTION A-A

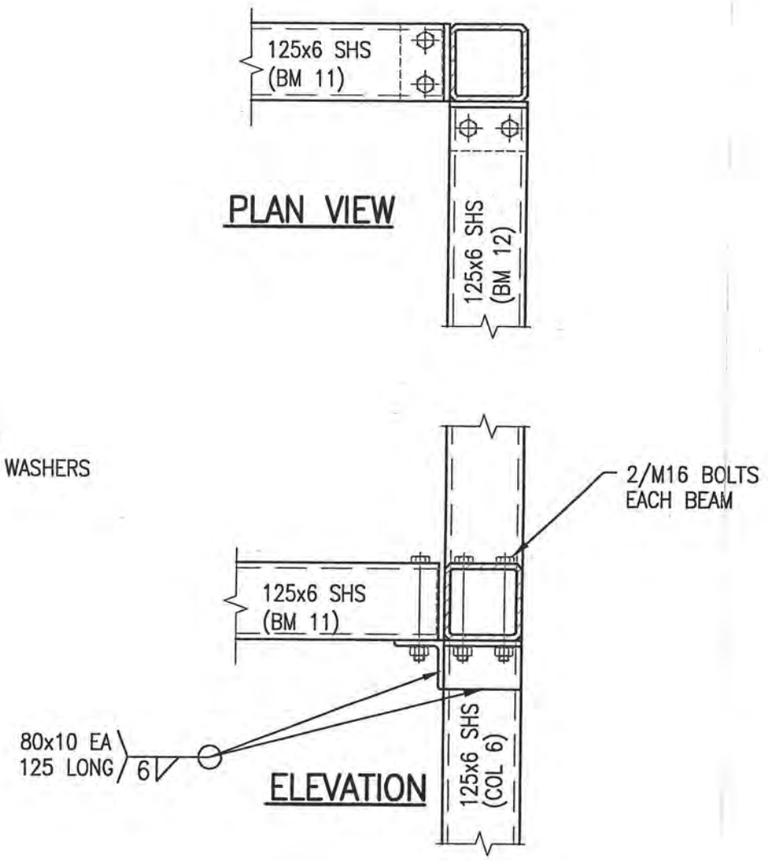
CLIENT	ROULSTON RESIDENCE
PROJECT	NIKAU PALM RD PARAPARARIMU
DATE	11/3/09
SCALE	AS SHOWN
DRAWN	GSH
DWG No.	S10
JOB No	23040

ISP CONSULTING ENGINEERS LTD.
Lower Hutt Office
Tel: (04) 566-8004
Fax: (04) 566-8037
Paraparaumu Office
Tel: (04) 902 5750



BEAM 8 & BEAM 9 TO COLUMN 6 CONNECTION DETAIL

SCALE 1:10



BEAM 11 & BEAM 12 TO COLUMN 6 CONNECTION DETAIL

SCALE 1:10

NOTE:

- FOR COLUMN 6 BASE PLATE DETAILS REFER DRG S8
- FOR COLUMN 7 BASE PALTE DETAILS REFER DRG S6
- BEAM 9 & BEAM 11 TO COLUMN 7 CONNECTION SIMILAR

CLIENT	ROULSTON RESIDENCE
PROJECT	NIKAU PALM RD PARAPARARIMU
DATE	11/3/09
SCALE	AS SHOWN
DRAWN	GSH
DWG No.	S11
JOB No	23040

12/03/2009 11:41:17 a.m., A3, 1:1

IPENZ ENGINEERS NEW ZEALAND

ACENZ

Building Code Clause(s) **B1**

J23040

PRODUCER STATEMENT - PS1 - DESIGN

(Guidance notes on the use of this form are printed on the reverse side*)

ISSUED: ISP Consulting Engineers Ltd

TO: **Tom Roulston**
(Owner / Developer)

TO BE SUPPLIED TO: Hutt City Council
(Building Consent Authority)

IN RESPECT OF: **Engineering Calculations**
(Description of Building Work)

AT:
(Address)

LOT.....DP.....

We have been engaged by the owner/developer referred to above to provide **structural design services and construction monitoring of specifically design elements** in respect of the requirements of Clause B1 (B2 of specifically designed elements) of the building code for

☐ All ☑

Part only as specified of building work outside NZS3604 scope:
-Scala penetrometer tests
-Foundation design calculations and construction details outside
-Structural beam design calculations and connection details
-Reinforced masonry retaining wall design and construction details.

The design carried out by us has been prepared in accordance with Compliance Documents issued by Department of Building & Housing B1, VM1 & VM4

The proposed Building work covered by this producer statement is decribed on the drawings and Calculations titled ...125 Nikau Palm ...and numbered ...SK1-SK11 and pages 1 – 72.

On behalf of the Design Firm, and subject to:

(i) Site verification of the following design assumptions: Bearing capacity of excavated foundations to satisfy the requirements of NZS3604:1999 and to be confirmed on site by an engineer.

(ii) All proprietary products meeting their performance specifications requirements;

I Believe on reasonable grounds the building, if constructed in accordance with the drawings, specifications, and other documents provided will comply with the relevant provisions of the building code.

I, John O'Hagan am CPEng #179947

I am a member of: IPENZ and hold the following qualifications: BE(Hons), NZCE(Civil), MIPENZ, CPEng

The design firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than $ 500,000*.
The Design Firm is a member of ACENZ

SIGNED BY John O'Hagan ON BEHALF OF ISP Consulting Engineers Ltd

Date: 12 March 2009

(Signature).....

Note: this statement shall only be relied upon by the Building Consent Authority named above. Liability under this statement accrues to the Design Firm only. The total maximum amount of damages payable arising from this statement and all other statements provide to the Building Consent Authority in relation to this building work, whether in contract, tort or otherwise (including negligence), is limited to the sum of $200,000*.
This form is to accompany Form 2 of the Building (Forms) Regulations 2004 for the application of a Building Consent.

ARENA
BALUSTRADES

SPECIFIERS GUIDE

PAGE 2.26.1
ISSUE NO. 03

PRODUCER STATEMENT - DESIGN

TO: WHOM IT MAY CONCERN

IN RESPECT OF: THE ARENA BALUSTRADING SYSTEM

STYLE: ARENA VETRO / DKG BRACKET FIX

as supplied by Unex Systems, the design of the balustrading system has been prepared in accordance with the approved documents issued by the Building Industry Authority; and with reference to AS/NZS 1664 Aluminium Structures Standard;
and where applicable the established principles of structural design. The design of the load carrying members and their connections have been verified by load testing where applicable.

I BELIEVE ON REASONABLE GROUNDS that subject to all proprietary products (aluminium, fixings etc.) meeting their performance specifications requirements, and the general arrangement, post spacings and fixings are in accordance with the current Arena Fabricators Manual, the design of the balustrade complies with Section B1 Structures of the New Zealand Building Code.

This statement covers the design of the balustrade and its immediate fixings to the structure, but excludes the design of the supporting structure.

Signature: A.H. Thomas Date: 19/12/03.

A.H. Thomas Registered Engineer No 3058

Site Address: 125 NIKAU PALM ROAD PARAPARAUMU

Name of Fabricator: ALTEC GROUP LIMITED

Signature of Fabricator:

Date of Supply: TBA

THIS STATEMENT MUST BE COMPLETELY FILLED IN TO BE VALID

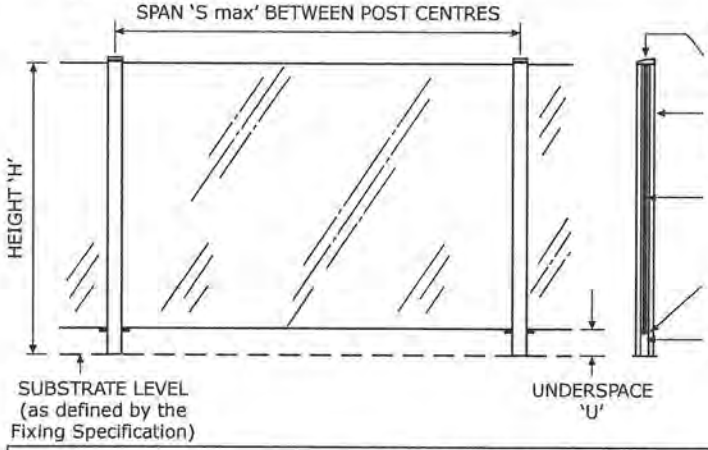
'VETRO' - STYLE SPECIFICATION 3.151.1

This specification details the members to be used, glass thicknesses required and the maximum spacing for the various posts for this style. A separate specification must be referred to for fixing to the substrate (refer to Chapter 4). Post spacing must not exceed the lesser of the spacing from both Chapter 3 and Chapter 4. NOTE: For the Vetro Style we recommend always using 4 Substrate fixings per baseplate to give lateral stability to the post, even if 2 fixings is structurally adequate.

(1) Glass shall be GRADE A SAFETY GLASS, TOUGHENED in accordance with AS/NZS 2208, with a minimum thickness as determined from the Table below. Glass shall be supported and glazed in accordance with NZS 4223. All exposed edges to be Flat Polished.

(2) Fabrication and Installation to be in accordance with ASSEMBLY SPECIFICATION 5.161.1, the INSTALLATION INSTRUCTIONS in Chapter 9, and all other relevant portions of the ARENA FABRICATORS MANUAL.

(3) APR2 posts should only be used for "top Fixed" situations. APS and APE may be used for "top fixed" or "side fixed" situations.



The balustrade shall be fabricated from the following items:
ACPR POST CAP
POSTS: APR2 or APS for in-line posts, APQ2 at 90° corners. See also Note 3.
TOUGHENED GLASS PANELS. See table below
BRACKET: EKM
INFILL: AIR

MAXIMUM POST CENTRES 'S max' (metres)

ALWAYS TAKE THE LESSER OF THE VALUE BELOW AND THE VALUE FROM THE FIXING SPECIFICATION

HEIGHT (Note 3)	Post Type (Note 2)	Toughened Glass Thickness	Line No.	LOADING CLASS (Note 1)																		
				A1								A2	R									
				Design Wind Speed (Note 4)									Design Wind Speed (Note 4)									
													M			H			VH			
				50	52	54	56	58	60	62	64	N/A	38	40	42	44	46	48	50	52	54	56
1.0	APR2 or APS	8	1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
		10	2	1.19	1.19	1.19	1.19	1.11	1.04	0.97	0.91	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.49	1.38	1.28	1.19
		12	3	1.19	1.19	1.19	1.19	1.11	1.04	0.97	0.91	1.80	1.80	1.80	1.80	1.80	1.80	1.76	1.62	1.49	1.38	1.28	1.19
	APE	12	4	1.39	1.39	1.39	1.38	1.29	1.20	1.13	1.06	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.74	1.60	1.49	1.38
		15	5	1.39	1.39	1.39	1.38	1.29	1.20	1.13	1.06	2.40	2.40	2.40	2.40	2.24	2.05	1.88	1.74	1.60	1.49	1.38
1.1	APR2 or APS	8	6	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.06	0.98
		10	7	1.08	1.08	1.06	0.98	0.91	0.85	0.80	0.75	1.50	1.50	1.50	1.50	1.50	1.50	1.45	1.34	1.23	1.14	1.06	0.98
		12	8	1.08	1.08	1.06	0.98	0.91	0.85	0.80	0.75	1.80	1.80	1.80	1.80	1.75	1.59	1.45	1.34	1.23	1.14	1.06	0.98
	APE	12	9	1.26	1.26	1.23	1.14	1.06	1.00	0.93	0.88	1.80	1.80	1.80	1.80	1.80	1.80	1.70	1.56	1.44	1.32	1.23	1.14
		15	10	1.26	1.26	1.23	1.14	1.06	1.00	0.93	0.88	2.40	2.40	2.24	2.04	1.85	1.70	1.56	1.44	1.32	1.23	1.14
1.2	APR2 or APS	8	11	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.04	0.96	0.89	0.82
		10	12	0.97	0.96	0.89	0.82	0.77	0.72	0.67	0.63	1.50	1.50	1.50	1.47	1.34	1.22	1.12	1.04	0.96	0.89	0.82
		12	13	0.97	0.96	0.89	0.82	0.77	0.72	0.67	0.63	1.80	1.79	1.62	1.47	1.34	1.22	1.12	1.04	0.96	0.89	0.82
	APE	12	14	1.16	1.11	1.03	0.96	0.90	0.84	0.78	0.74	1.80	1.80	1.80	1.71	1.56	1.42	1.31	1.20	1.11	1.03	0.96
		15	15	1.16	1.11	1.03	0.96	0.90	0.84	0.78	0.74	2.40	2.09	1.88	1.71	1.56	1.42	1.31	1.20	1.11	1.03	0.96

(1) LOADING CLASS: Refer to Page 2.9.3 of this MANUAL for the scope of the Loading Class designations.
(2) POST TYPES: Refer to Chapter 1 for details.
(3) HEIGHT 'H': is the overall height of the balustrade above the substrate level shown. Interpolate for Heights between those shown.
(4) DESIGN WIND SPEED: in m/s, Refer to Pages 3.8.1 to 3.8.6 for details of applicable wind codes and the methods for determining the Design Wind Speed for any particular site.

Specifications subject to change without notice

GLASS THICKNESS REQUIREMENTS

The following is a summary of the requirements of NZS 4223 in its current edition, as it relates to the use of Toughened Glass in Arena proprietary balustrades. NZS 4223 should be refered to for a full guide, and for subsequent amendments. Arena Balustrades are not designed for use with laminated glass.

TABLE 1 - MAXIMUM GLASS HEIGHT (mm) FOR DIFFERENT TOUGHENED GLASS THICKNESSES FOR THE ARENA 'PANORAMA' AND 'METROPOLIS' STYLES
NOTE: post spacing must not exceed the given style and fixing specifications see Chapters 3 & 4

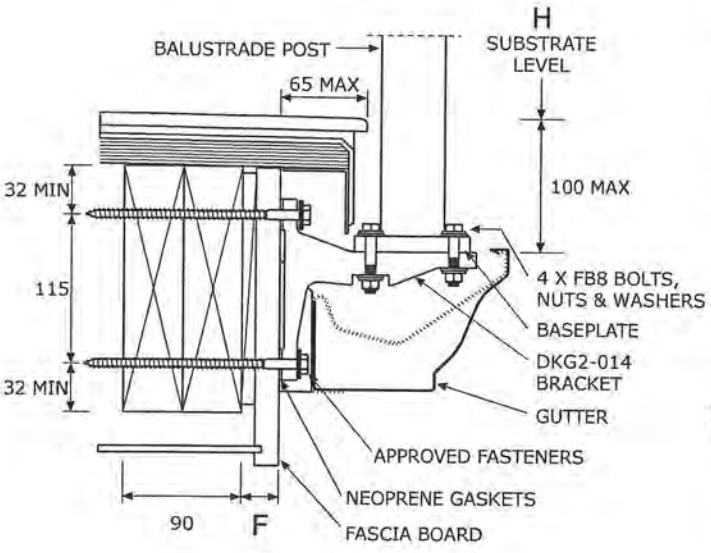
LOADING CLASS	GLASS THICKNESS mm	DESIGN WIND SPEED															
		40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70
A1	10	670	670	670	670	670	670	670	670	670	670	670	670	670	670	670	670
	12	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1010	990	960
	15	1280	1280	1280	1280	1280	1280	1280	1280	1280	1280	1270	1250	1230	1220	1180	1150
A2	10	670	670	670	670	670	670	670	670	670	670	670	670	670	670	670	670
	12	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1030	1010	990	960
	15	1380	1380	1380	1380	1380	1380	1370	1340	1320	1300	1270	1250	1230	1220	1180	1150
R	8	800	800	800	800	800	800	800	800	800	800	780	760	720	710	690	680
	10	1000	1000	1000	1000	1000	1000	1000	990	970	960	940	920	890	860	840	820
	12	1200	1200	1200	1200	1200	1180	1160	1140	1120	1100	1080	1060	1040	1010	990	960
	15	1500	1500	1490	1460	1430	1400	1370	1340	1320	1300	1270	1250	1230	1220	1180	1150

TABLE 2 - MAXIMUM POST SPACING (MITRES) FOR DIFFERENT TOUGHENED GLASS THICKNESSES FOR THE ARENA 'VETRO' STYLE
NOTE: post spacing must not exceed the given style and fixing specifications see Chapters 3 & 4

LOADING CLASS	GLASS THICKNESS mm	DESIGN WIND SPEED															
		40	42	44	46	48	50	52	54	56	58	60	62	64	66	68	70
A1	10	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
	12	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50
	15	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00	2.00
A2	8	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
	10	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.48
	12	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.77
	15	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.35	2.30	2.25	2.18
R	8	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10	1.10
	10	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.50	1.48
	12	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.80	1.77
	15	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.35	2.30	2.25	2.18

DRY TIMBER DKG2 FIXING, SCREWS 90mm EDGE JOIST - SPECIFICATION 4.17.9

This specification for fixing ALUMA BALUSTRADES to certain timber substrates where a face gutter is also required. It applies to balustrade styles using VPH2 or DPE posts only. A separate specification must be referred to for the required balustrade style.



(1) The DKG2-014 brackets are required to be installed before the gutter and drip edge.

(2) The VPH2 or DPE balustrade posts are attached to the BSMF or BEMF baseplate as illustrated on page 7.3.1 of chapter 7. The baseplate is attached to the DKG2-014 bracket using four stainless steel M8 bolts, nuts and washers. The DKG2-014 bracket attaches to the structural timber using four M8 x 165mm stainless steel coach screws as illustrated. There must be a polymer FWP8-22G washer between the stainless steel washers and the aluminium componentry. Insert a thin Neoprene gaskets between the DKG2 bracket and the substrate to enhance water-proofing. Fasteners should be only those supplied by Unex Systems.

(3) The threaded portion of the coach screws must be engaged with the structural timber framing by a minimum of 90mm. This will obtain if the dimension 'F' on the diagram (i.e. the distance from the back of the bracket to the face of the timber joist) is within the limits shown in the Table.

Where this does not occur the post spacing must be reduced by the proportion of the thread engagement to 90mm

(4) The screw holes must be sealed as shown in figure 19 of E2/AS1. Check the suitability of screw protrusion beyond the timber framing.

(5) Washers to be fitted under screw and bolt heads shall be as follows

- For 8mm fasteners - 22mm O.D. S/S washer (Part No. FW8-22) with a polymer washer (Part No. FWP8-22G) between the S/S and the aluminium.

MAXIMUM POST CENTRES 'S max' (metres)

ALWAYS TAKE THE LESSER OF THE VALUE BELOW AND THE VALUE FROM THE STYLE SPECIFICATION

'H' Height (Note 3)	Post Type	Fasteners - Qty and Type (Note 2)	'F' (See diagram)	Line No.	LOADING CLASS (Note 1)																			
					A1								A2	R										
					Design Wind Speed (Note 4)									Design Wind Speed (Note 4)										
					50	52	54	56	58	60	62	64	N/A	M 38	40	42	H 44	46	48	VH 50	52	54	56
1.0	VPH2	4 x FC8-165	14-60	1	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.87	N/A	1.70	1.70	1.70	1.70	1.68	1.54	1.42	1.31	1.22	1.13
	DPE	4 x FC8-165	14-60	2	1.07	1.07	1.07	1.07	1.06	0.99	0.92	0.87	N/A	2.01	2.01	2.01	1.84	1.68	1.54	1.42	1.32	1.22	1.13
1.1	VPH2	4 x FC8-165	14-60	3	0.73	0.73	0.73	0.73	0.73	0.73	0.73	0.73	N/A	1.45	1.45	1.45	1.45	1.41	1.29	1.19	1.10	1.02	0.95
	DPE	4 x FC8-165	14-60	4	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.87	N/A	1.72	1.72	1.72	1.72	1.68	1.54	1.42	1.32	1.22	1.13

(1) LOADING CLASS: Refer to Page 2.9.3 of this MANUAL for the scope of the Loading Class designations.
(2) FASTENER DESIGNATIONS: beginning with 'F' are part numbers for fasteners supplied by UNEX eg. FC8-165: FC = Coach Screw Stainless Steel. 8 = 8mm diameter, 165 = length in mm; 4 x FC8-165 fasteners may be substituted with 4 x M8 bolts (Grade 70 Stainless Steel); Substitution with other fasteners is not permitted.
(3) HEIGHT 'H': is the overall height of the balustrade above the substrate level shown. Interpolate for Heights between those shown.
(4) DESIGN WIND SPEED: in m/s, Refer to Pages 3.8.1 to 3.8.6 for details of applicable wind codes and the methods for determining the Design Wind Speed for any particular site.

Specifications subject to change without notice

PRENAIL FRAMES & TRUSSES
Nicolaus St.. UPPER HUTT Ph (04) 528-0599 Fax (04) 527-3930

Date: 12-03-2009

PRELIMINARY PRODUCER STATEMENT

94353

Truss Design Criteria For Building Consent Application

CLIENT Name: *Tom Roulston*

SITE Details:

Address : *125 Nikau Palm Road*
Paraparaumu
City:
Post Code: State:

Nominal Design Criteria:

Building importance: Residential
Roofing: Corrugated iron
Ceiling: 13mm Gib-board
Top chord purlins: 900 mm

BC restraints: 600 mm
Standard truss spacing: 900 mm
Standard roof pitch: 8.00 deg.
Ult. design wind speed: 44 m/s (wind classification = High)

Max. eaves height: 3 m
Max. ridge height: 12 m

Int pressure coeff. up: 0.2
Structural Fascia: Required

Design Roof Snow Load: 0 Pa
(incl. probability factor)
Location: Region N1 - lower Nth Island
Altitude Above Sea Level: 100 m
Building Exposure Factor: Sheltered

The truss designs for this project have been determined using computer software provided by the Technical Division within Pryda. These designs are in accordance with sound and widely accepted engineering principles and comply with the following New Zealand Standards:

AS/NZS1170.0 - 2002 Structural Design Actions Part 0: General Principles
AS/NZS1170.1 - 2002 Structural Design Actions Part 1: Permanent, imposed and other actions
AS/NZS1170.2 - 2002 Structural Design Actions Part 2: Wind actions
AS/NZS1170.3 - 2003 Structural Design Actions Part 3: Snow and ice actions
NZS3603: 1993 Timber Structures Standard
AS1649: 2001 Timber- Methods of test for mechanical fasteners and connectors
Basic working loads and characteristic strengths.

All trusses are to be manufactured in accordance with the fabrication specifications provided by Pryda, and installed connected and braced in accordance with the recommendations given in - : AS4440:2004 "Installation of nailplated timber roof trusses" and any other supplementary details that may be provided.

We confirm that the proposed trusses for this project will be manufactured in accordance with the fabrication specifications provided by Pryda Truss Systems. This is a preliminary producer statement only. A final certificate will be provided upon completion of manufacture.

This preliminary and future certificates will be void should any other manufacturer construct the proposed trusses.

Name: Damian
Signed:
Position: Detailer
Date: 12 . 3 . 09

Producer Statement - PS1- Design

ISSUED BY: MiTek New Zealand Ltd

TO BE SUPPLIED TO: Building Consent Authorities in New Zealand

IN RESPECT OF: Posi-STRUT Design Manual, June 2008

AT: Various Locations in New Zealand

MiTek New Zealand Ltd has provided engineering design services in respect of the requirements of Clause B1 of the NZ Building Code for

☐ All ☒ Part only as specified – Posi-STRUT trusses

of the proposed building work.

The selection charts within this design manual have been prepared in accordance with **Compliance Documents and Verification Method B1/VM1** of the NZ Building Code and in accordance with sound and widely accepted engineering principles.

On behalf of MiTek New Zealand Ltd, and subject to:

1. The verification of the design assumptions within this manual
2. All proprietary products meeting their performance specification requirements;

I believe on reasonable grounds that the use of Posi-STRUT trusses in the building if constructed in accordance with the drawings, specifications and other documents provided, will comply with the relevant provisions of the Building Code.

MiTek New Zealand Ltd holds a current policy of Professional Indemnity Insurance of not less than $500,000.

On behalf of MiTek New Zealand Ltd Date: June 2008

In Ling Ng

.....

In Ling Ng
Technical Services Manager
BE (Hons), CPEng, IntPE
MIPENZ (ID: 146585)

MiTek New Zealand Ltd.
AUCKLAND: 40 Neales Road, East Tamaki 2013 PO Box 58-014, Greenmount 2141 Ph: 09-274 7109 Fax: 09-274 7100
CHRISTCHURCH: 14 Pilkington Way, Wigram 8042 PO Box 8387, Riccarton 8440 Ph: 03-348 8691 Fax: 03-348 0314

Design Loads

Refer also to NZS 3604, NZS 4203 and AS/NZS 1170

Posi-STRUT trusses supporting load-bearing walls are not covered by these selection charts and require special design.

Dead loads

Heavy Roof Rafter	0.65 kPa
Light Roof Rafter	0.25 kPa
Light Roof Purlin	0.20 kPa
Ceiling	0.20 kPa
Floor (1.5 kPa LL) + ceiling	0.40 kPa
Floor (3.0 kPa LL) + ceiling	0.50 kPa

Live loads

	Distributed	Conc.
Roof, maintenance	0.25 kPa	1.0 kN
Floor, domestic	1.5 kPa	1.8 kN
Floor, office	3.0 kPa	2.7 kN
Floor, public use	3.0 kPa	2.7 kN

Wind loads

	Design Wind Speed	q_u
Low	32 m/s	0.61 kPa
Medium	37 m/s	0.82 kPa
High	44 m/s	1.16 kPa
Very High	50 m/s	1.50 kPa

Combined pressure coefficients C_p = 1.2 max.

Snow loads

0.5 kPa and 1.0 kPa
Special design is required for higher snow loads.

Deflection Criteria

Refer also to BRANZ guidelines.

Floors

Span/600	10mm maximum under live load only. Short term load. (for liveliness control)
Span/600	15mm maximum under permanent long term load. (G+0.4Q, including creep)

Rafters

Span/400	15mm maximum under permanent long term load
Span/333	under wind load (with ceiling)
Span/167	under wind load (without ceiling)

Purlins

Span/400	15mm maximum under long term load
Span/167	under wind load

Cantilevers

Span/300	8mm maximum under dead and live load

Design Strength

Trusses are designed to the Limit State Design provisions of NZS 4203 and NZS 3603.

Timber stresses

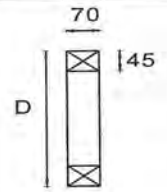
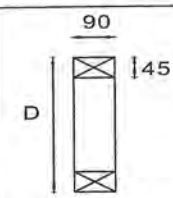
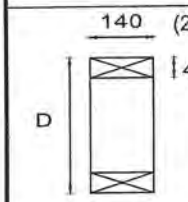
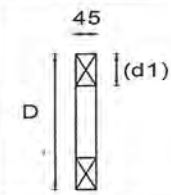
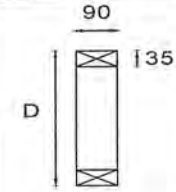
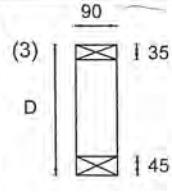
Timber properties to Table 2.3 NZS 3603:1993 Amendment 4

Timber Grade	Bending Strength f_b (MPa)	Compression Strength f_c (MPa)	Tension Strength f_t (MPa)	Modulus of Elasticity E (GPa)
MSG8	14.0	18.0	6.0	8.0
MSG10	20.0	20.0	8.0	10.0
MSG12	28.0	25.0	14.0	12.0

Modification factors

K_1	Load Case
0.6	Dead load only
0.8	Dead load and floor live load
0.8	Dead load and snow load
1.0	Dead load and roof live load
1.0	Dead load and wind load

Floor Trusses

Maximum Span (m) at Spacing = S **Domestic Floor - 1.5 kPa Live Load**								
	Truss Code	D mm	Machine Stress Graded MSG8 Spacing "S" mm			Machine Stress Graded MSG10 (1) Spacing "S" mm		
			400	450	600	400	450	600
	PS20-21x07	217	3.3	3.2	2.8	4.2	3.9	3.3
	PS25-25x07	249	3.9	3.7	3.1	4.5	4.3	3.7
	PS30-30x07	303	4.4	4.2	3.6	5.2	4.9	4.2
	PS40-40x07	413	5.3	4.9	4.3	6.2	5.8	5.0
	PS20-21x09	217	4.1	3.8	3.2	4.6	4.4	**3.8**
	PS25-25x09	249	4.5	4.2	3.6	5.1	4.9	4.2
	PS30-30x09	303	5.1	4.8	4.1	5.8	5.5	4.8
	PS40-40x09	413	6.1	5.6	4.9	7.1	6.7	5.6
	PS20-21x14	217	**4.9**	**4.7**	**4.1**	**5.3**	**5.1**	**4.1**
	PS25-25x14	249	5.5	5.2	4.5	5.9	5.7	5.1
	PS30-30x14	303	6.3	5.9	5.1	6.7	6.5	6.0
	PS40-40x14	413	7.6	7.1	6.0	7.9	7.6	**7.1**
		D/(d1)						
	PS40-45x05	463/(70)	5.5	5.1	4.5	6.4	6.0	5.2
	PS40-50x05	503/(90)	6.4	6.0	5.2	7.3	7.0	6.0
	PS40-60x05	603/(140)	8.3	7.8	6.8	9.0	8.7	**7.8**
	PS20-19x09	197	3.3	3.2	2.5	4.0	3.8	3.2
	PS25-23x09	229	3.8	3.6	3.1	4.4	4.2	3.6
	PS30-28x09	283	4.4	4.1	3.6	5.1	4.8	4.1
	PS40-39x09	393	5.3	4.7	4.0	6.1	5.7	4.8
	PS25-24x09	239	4.4	4.1	3.2	4.8	4.6	4.1
	PS30-29x09	293	5.0	4.6	3.9	5.6	5.4	4.5

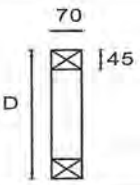
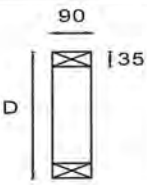
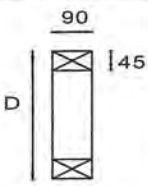
(1) When specifying check the availability of MSG10 timber.

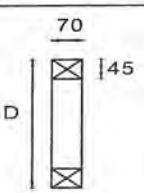
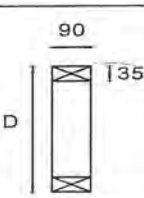
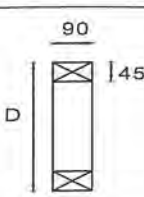
(2) 140mm wide trusses may not be available from all fabricators.

(3) These sizes are useful to match solid timber joist sizes.

(4) Spans in bold and shaded indicate double webs (DW) are required at ends (see page 21).

Rafter Trusses

Maximum Span (m) at Spacing = S **Light Roof - Low/Medium Wind - Grade MSG8**										
	Truss Code	D mm	With Ceiling Spacing "S" mm				Without Ceiling Spacing "S" mm			
			600	900	1200	1800	900	1200	1800	2400
	PS20-21x07	217	5.2	4.5	3.8	3.2	5.3	4.6	3.7	3.3
	PS25-25x07	249	5.6	4.9	4.3	3.4	5.8	5.0	4.1	3.4
	PS30-30x07	303	6.3	5.6	4.8	3.8	6.5	5.6	4.5	4.0
	PS40-40x07	413	7.6	6.7	5.7	4.6	7.7	6.7	5.5	4.8
	PS20-19x09	197	5.0	4.4	3.8	3.1	5.2	4.5	3.6	3.2
	PS25-23x09	229	5.5	4.8	4.2	3.3	5.6	4.9	4.0	3.3
	PS30-28x09	283	6.2	5.5	4.8	3.9	6.4	5.6	4.5	3.9
	PS40-39x09	393	7.5	6.6	5.7	4.5	7.6	6.8	5.4	4.8
	PS20-21x09	217	5.5	5.0	4.4	3.6	5.7	5.2	4.3	3.7
	PS25-25x09	249	6.0	5.4	4.8	3.9	6.2	5.7	4.7	4.0
	PS30-30x09	303	6.7	6.1	5.5	4.4	6.9	6.4	5.3	4.6
	PS40-40x09	413	8.0	7.3	6.4	5.3	8.2	7.6	6.3	5.5

Maximum Span (m) at Spacing = S **Light Roof - High/Very High Wind - Grade MSG8**										
	Truss Code	D mm	With Ceiling Spacing "S" mm				Without Ceiling Spacing "S" mm			
			600	900	1200	1800	900	1200	1800	2400
	PS20-21x07	217	5.0	4.1	3.4	2.8	3.6	3.2	2.2	1.9
	PS25-25x07	249	5.5	4.4	3.8	3.1	3.9	3.4	2.7	2.0
	PS30-30x07	303	6.2	5.0	4.3	3.3	4.4	3.8	3.0	2.0
	PS40-40x07	413	7.2	5.7	5.0	4.1	5.3	4.5	3.8	2.7
	PS20-19x09	197	4.9	3.9	3.3	2.2	3.7	3.1	2.0	1.3
	PS25-23x09	229	5.4	4.3	3.7	2.7	4.1	3.3	2.1	1.3
	PS30-28x09	283	6.1	4.9	4.2	3.1	4.7	3.9	2.5	1.9
	PS40-39x09	393	7.1	5.5	4.7	2.5	5.3	4.8	3.9	2.6
	PS20-21x09	217	5.5	4.7	4.0	3.2	4.4	3.9	3.0	2.2
	PS25-25x09	249	6.0	5.1	4.4	3.4	4.8	4.1	3.2	2.6
	PS30-30x09	303	6.7	5.7	4.9	3.9	5.4	4.7	3.7	2.9
	PS40-40x09	413	8.0	6.9	5.9	4.2	6.4	5.4	4.2	3.9

(1) Spans in bold and shaded indicate double webs (DW) are required at ends (see page 21).

ARCHITECTURE DM

22/01/2009

Risk Matrix

Project No 125 NIKAU PALM ROAD, PARAPARAUMU

Building Face North

Risk Item	Selection	Description	Score
Wind Zone	H	High wind zone	1
Storeys	H	2 storey	2
Roof/Wall Intersection	VH	Roof ends finishing within the boundaries formed by the exterior walls (e.g. lower ends of aprons, chimneys, dormers etc)	5
Eaves Width	M	451 - 600mm for single storey, or over 600mm for two storey	1
Envelope Complexity	M	Moderately complex, angular or curved shapes (e.g. Y or arrowhead) with no more than two cladding types	1
Deck Design	VH	Enclosed deck, exposed in plan or cantilevered at second floor level or above	6
Total Risk Factor			**16**

Building Face South

Risk Item	Selection	Description	Score
Wind Zone	H	High wind zone	1
Storeys	H	2 storey	2
Roof/Wall Intersection	VH	Roof ends finishing within the boundaries formed by the exterior walls (e.g. lower ends of aprons, chimneys, dormers etc)	5
Eaves Width	M	451 - 600mm for single storey, or over 600mm for two storey	1
Envelope Complexity	L	Simple rectangular, L, T or boomerang shape with single cladding type	0
Deck Design	L	None, timber slat deck or porch at ground level	0
Total Risk Factor			**9**

Building Face East

Risk Item	Selection	Description	Score
Wind Zone	H	High wind zone	1
Storeys	H	2 storey	2
Roof/Wall Intersection	L	Fully protected (e.g. hip & gable with eaves)	0
Eaves Width	M	451 - 600mm for single storey, or over 600mm for two storey	1
Envelope Complexity	M	Moderately complex, angular or curved shapes (e.g. Y or arrowhead) with no more than two cladding types	1
Deck Design	VH	Enclosed deck, exposed in plan or cantilevered at second floor level or above	6
Total Risk Factor			**11**

Building Face West

Risk Item	Selection	Description	Score
Wind Zone	H	High wind zone	1
Storeys	H	2 storey	2
Roof/Wall Intersection	L	Fully protected (e.g. hip & gable with eaves)	0
Eaves Width	M	451 - 600mm for single storey, or over 600mm for two storey	1
Envelope Complexity	L	Simple rectangular, L, T or boomerang shape with single cladding type	0
Deck Design	L	None, timber slat deck or porch at ground level	0
Total Risk Factor			**4**

NOTE: *Highest score is 16 so all claddings are to be on a cavity system in accordance with E2/AS1*

GIB® Wall Bracing Calculation Sheet A

upper of two V85A

GIB® EzyBrace™
GIB® Bracing Systems, 2006

Job Details

Name	ROLSTON	
Street and Number	125 NIKAU PALM RD, PARAPARAUMU	
Lot and DP Number	LOT 4 DP 82049	
City/Town/District	KAPITI COAST	
Designer and date	Dean Robb	1601/2009
Company Name	Architecture DM	

Building Specification

Location of Storey	upper
Floor Loading	2 kPa
Foundation Type	slab
Building Height to Apex (m)	8
Roof Height above Eaves (m)	2
Stud Height (m)	2.7
Cladding Weight (top or single)	light
Cladding Weight (lower)	heavy
Cladding Weight (subfloor)	light
Roof Weight	light
Roof Pitch (degrees)	0-25
Room in Roof Space	no
Building Length (m)	22.2
Building Width (m)	11
Gross Building Plan Area (m2)	201.2

not applicable (slab)

Building Location

Wind Zone	***High***	**Earthquake Zone**
Region	R2	A
Terrain	Inland	
Exposure	Exposed	
Topography	Gentle	*Enter at least 'moderate' in a Lee Zone*

Bracing Units required for Wind

per m	subfloor	walls
W along	n/a	69 BUs/m
W across	n/a	59 BUs/m
Totals	subfloor	walls
W along	n/a	754 BUs
W across	n/a	1299 BUs

Bracing Units required for Earthquake

per m2	subfloor	walls
E	n/a	6.2 BUs/m2
Totals	subfloor	walls
E along	n/a	1247 BUs
E across	n/a	1247 BUs

GIB® Wall Bracing Calculation Sheet B — upper of two — V85A

GIB® EzyBrace ™ *GIB® Bracing Systems, 2006*

Along									
Wall or Bracing Line		*Bracing Elements provided*						*Wind*	*Earthq.*
1	2	3	4	5	7	8	6	9W	10EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Supplier	Bracing Type	Element Length L (m)	Element Height H (m)	Angle to Bracing line (degrees)	BUs Achieved	BUs Achieved
A	enter	1	GIB®	GS1a	4.8	2.7		320	277
		2	GIB®	GS1a	2.2	2.7		127	108
line totals		3	GIB®	BL1	1.2	2.7		133	123
W	580	4							
EQ	508	5							
B	enter	1	GIB®	GS2	2.2	2.7		156	137
		2	GIB®	GS1a	3.6	2.7		240	208
line totals		3							
W	396	4							
EQ	345	5							
C	enter	1	GIB®	BL1	1.4	2.7		156	143
		2	GIB®	BL1	1.4	2.7		156	143
line totals		3							
W	311	4							
EQ	286	5							
D	enter	1	GIB®	GS1a	2	2.7		116	98
		2							
line totals		3							
W	116	4							
EQ	98	5							
E	enter	1	GIB®	GS1a	3.6	2.7		240	208
		2							
line totals		3							
W	240	4							
EQ	208	5							
F	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
G	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
H	enter	1							
		2							
line totals		3							
W		4							
EQ		5							

								Wind	Earthq.
Totals Achieved								1644	1444
								OK	*OK*
Totals Required (from Sheet A)								754	1247

GIB® Bracing Systems, 2006

For full construction details see literature GIB® Bracing Systems, 2006

Supplier	System	Minimum Length (m)	BUs W/m	BUs EQ/m
	none			
GIB®	GS1a	1.8	65	55
		2.4	75	65
GIB®	GS2	1.2	70	60
		1.8	80	70
		2.4	90	80
GIB®	BL1	0.4	120	115
		0.6	125	115
GIB®	BL1a	1.8	130	115
GIB®	BLP	0.6	145	135
		0.9	145	145
GIB®	BLG	0.6	145	130
		1.2	150	130
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			

GIB® Wall Bracing Calculation Sheet B — upper of two — V85A

GIB® EzyBrace ™ *GIB® Bracing Systems, 2006*

Across									
Wall or Bracing Line		*Bracing Elements provided*						*Wind*	*Earthq.*
1	2	3	4	5	7	8	6	9W	10EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Supplier	Bracing Type	Element Length L (m)	Element Height H (m)	Angle to Bracing line (degrees)	BUs Achieved	BUs Achieved
M	enter	1	GIB®	GS1a	2.8	2.7		187	162
		2							
line totals		3							
W	187	4							
EQ	162	5							
N	enter	1	GIB®	GS1a	3.7	2.7		247	214
		2	GIB®	BL1	1.4	2.7		156	143
line totals		3							
W	402	4							
EQ	357	5							
O	enter	1	GIB®	BL1	1.8	2.7		200	184
		2	GIB®	GS1a	2.8	2.7		187	162
line totals		3	GIB®	BL1	0.9	2.7		100	92
W	487	4							
EQ	438	5							
P	enter	1	GIB®	GS1a	3	2.7		200	173
		2	GIB®	BL1	0.9	2.7		100	92
line totals		3							
W	300	4							
EQ	265	5							
Q	enter	1	GIB®	BL1	1	2.7		111	102
		2	GIB®	GS1a	3	2.7		200	173
line totals		3							
W	311	4							
EQ	276	5							
R	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
S	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
T	enter	1							
		2							
line totals		3							
W		4							
EQ		5							

								Wind	Earthq.
Totals Achieved								1687	1497
								OK	*OK*
Totals Required (from Sheet A)								1299	1247

GIB® Bracing Systems, 2006

For full construction details see literature GIB® Bracing Systems, 2006

Supplier	System	Minimum Length (m)	BUs W/m	BUs EQ/m
	none			
GIB®	GS1a	1.8	65	55
		2.4	75	65
GIB®	GS2	1.2	70	60
		1.8	80	70
		2.4	90	80
GIB®	BL1	0.4	120	115
		0.6	125	115
GIB®	BL1a	1.8	130	115
GIB®	BLP	0.6	145	135
		0.9	145	145
GIB®	BLG	0.6	145	130
		1.2	150	130
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			

GIB® Wall Bracing Calculation Sheet A

lower of two V85A

GIB® EzyBrace™
GIB® Bracing Systems, 2006

Job Details

Name	ROLSTON	
Street and Number	125 NIKAU PALM RD, PARAPARAUMU	
Lot and DP Number	LOT 4 DP 82049	
City/Town/District	KAPITI COAST	
Designer and date	Dean Robb	1601/2009
Company Name	Architecture DM	

Building Specification

Location of Storey	lower	
Floor Loading	2 kPa	
Foundation Type	slab	
Building Height to Apex (m)	8	
Roof Height above Eaves (m)	2	
Stud Height (m)	2.7	
Cladding Weight (top or single)	light	
Cladding Weight (lower)	heavy	
Cladding Weight (subfloor)	light	*not applicable (slab)*
Roof Weight	light	
Roof Pitch (degrees)	0-25	
Room in Roof Space	no	
Building Length (m)	22.2	
Building Width (m)	11	
Gross Building Plan Area (m2)	193.7	

Building Location

Wind Zone	***High***	**Earthquake Zone**
Region	R2	A
Terrain	Inland	
Exposure	Exposed	
Topography	Gentle	*Enter at least 'moderate' in a Lee Zone*

Bracing Units required for Wind

per m	subfloor	walls
W along	n/a	168 BUs/m
W across	n/a	159 BUs/m
Totals	subfloor	walls
W along	n/a	1848 BUs
W across	n/a	3530 BUs

Bracing Units required for Earthquake

per m2	subfloor	walls
E	n/a	13.5 BUs/m2
Totals	subfloor	walls
E along	n/a	2615 BUs
E across	n/a	2615 BUs

GIB® Wall Bracing Calculation Sheet B — lower of two — V85A

GIB® EzyBrace ™ *GIB® Bracing Systems, 2006*

Along									
Wall or Bracing Line		*Bracing Elements provided*						*Wind*	*Earthq.*
1	2	3	4	5	7	8	6	9W	10EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Supplier	Bracing Type	Element Length L (m)	Element Height H (m)	Angle to Bracing line (degrees)	BUs Achieved	BUs Achieved
A	enter	1	NZS 4229	MASONAR	6	2.7		3440	3440
		2							
line totals		3							
W	3440	4							
EQ	3440	5							
B	enter	1	GIB®	GS1a	2.5	2.7		167	144
		2	GIB®	GS1a		2.7			
line totals		3							
W	167	4							
EQ	144	5							
C	enter	1	EcoPLY	SP1	0.9	2.7		80	92
		2	EcoPLY	SP2	0.6	2.7		48	56
line totals		3	GIB®	GS1a	1.8	2.7		104	88
W	232	4							
EQ	236	5							
D	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
E	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
F	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
G	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
H	enter	1							
		2							
line totals		3							
W		4							
EQ		5							

	Wind	Earthq.
Totals Achieved	3839	3820
	OK	*OK*
Totals Required (from Sheet A)	1848	2615

GIB® Bracing Systems, 2006

For full construction details see literature GIB® Bracing Systems, 2006

Supplier	System	Minimum Length (m)	BUs W/m	BUs EQ/m
	none			
GIB®	GS1a	1.8	65	55
		2.4	75	65
GIB®	GS2	1.2	70	60
		1.8	80	70
		2.4	90	80
GIB®	BL1	0.4	120	115
		0.6	125	115
GIB®	BL1a	1.8	130	115
GIB®	BLP	0.6	145	135
		0.9	145	145
GIB®	BLG	0.6	145	130
		1.2	150	130
NZS 4229	MASONAR	6	645	645
EcoPLY	SP1	0.9	100	115
EcoPLY	SP2	0.6	90	105
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			

GIB® Wall Bracing Calculation Sheet B — lower of two — V85A

GIB® EzyBrace ™ *GIB® Bracing Systems, 2006*

Across									
Wall or Bracing Line		*Bracing Elements provided*						*Wind*	*Earthq.*
1	2	3	4	5	7	8	6	9W	10EQ
Line Label	Minimum BUs Req/Ach	Bracing Element No.	Supplier	Bracing Type	Element Length L (m)	Element Height H (m)	Angle to Bracing line (degrees)	BUs Achieved	BUs Achieved
M	enter	1	EcoPLY	SP1	0.9	2.7		80	92
		2	EcoPLY	SP1	0.9	2.7		80	92
line totals		3	EcoPLY	SP1	0.9	2.7		80	92
W	240	4							
EQ	276	5							
N	enter	1	NZS 4229	20 Block	1.2	3		235	235
		2							
line totals		3							
W	235	4							
EQ	235	5							
O	enter	1	EcoPLY	SP1	0.9	2.7		80	92
		2	EcoPLY	SP1	0.9	2.7		80	92
line totals		3	EcoPLY	SP1	0.9	2.7		80	92
W	240	4							
EQ	276	5							
P	enter	1	GIB®	GS1a	2	2.7		116	98
		2	GIB®	GS1a	2.4	2.7		160	139
line totals		3							
W	276	4							
EQ	236	5							
Q	enter	1	GIB®	GS1a	2	2.7		116	98
		2	NZS 4229	25 Block	6	2.7		3440	3440
line totals		3							
W	3556	4							
EQ	3538	5							
R	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
S	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
T	enter	1							
		2							
line totals		3							
W		4							
EQ		5							

								Wind	Earthq.
Totals Achieved								4546	4561
								OK	*OK*
Totals Required (from Sheet A)								3530	2615

GIB® Bracing Systems, 2006

For full construction details see literature GIB® Bracing Systems, 2006

Supplier	System	Minimum Length (m)	BUs W/m	BUs EQ/m
	none			
GIB®	GS1a	1.8	65	55
		2.4	75	65
GIB®	GS2	1.2	70	60
		1.8	80	70
		2.4	90	80
GIB®	BL1	0.4	120	115
		0.6	125	115
GIB®	BL1a	1.8	130	115
GIB®	BLP	0.6	145	135
		0.9	145	145
GIB®	BLG	0.6	145	130
		1.2	150	130
NZS 4229	25 Block	6	645	645
NZS 4229	20 Block	1.2	245	245
EcoPLY	SP1	0.9	100	115
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			
Custom	Custom			

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Electrical
Seismic Risk Analysis
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Building Compliance

Lower Hutt Office
Tel: 04 566 8004
Fax: 04 566 8037
Level 1, 14 Laings Rd
P.O. Box 30 535
Lower Hutt

Paraparaumu Office
Tel: 0800 477 546
P.O. Box 537
Coastlands Parade
Paraparaumu

Email:email@isp.co.nz
Web: www.isp.co.nz

Structural Calculations

For

125 Nikau Palm road, Proposed Residence Paraparaumu

These calculations are in accordance with:

AS/NZS 1170:2002 Structural Design Actions
NZS3101:1995 Design of Concrete Structures
NZS3404:1998 Design of Steel Structures
NZS3603:1993 Design of Timber Structures
NZS3604:1999 Timber Framed Buildings
NZS4229:1989 Design of Masonry Structures Not Requiring Specific Design
NZS4230:2004 Design of Reinforced Concrete Masonry Structures

Engineer:	**Initials:**
Stuart Preston	SP
Michael Younghusband	M.Y.

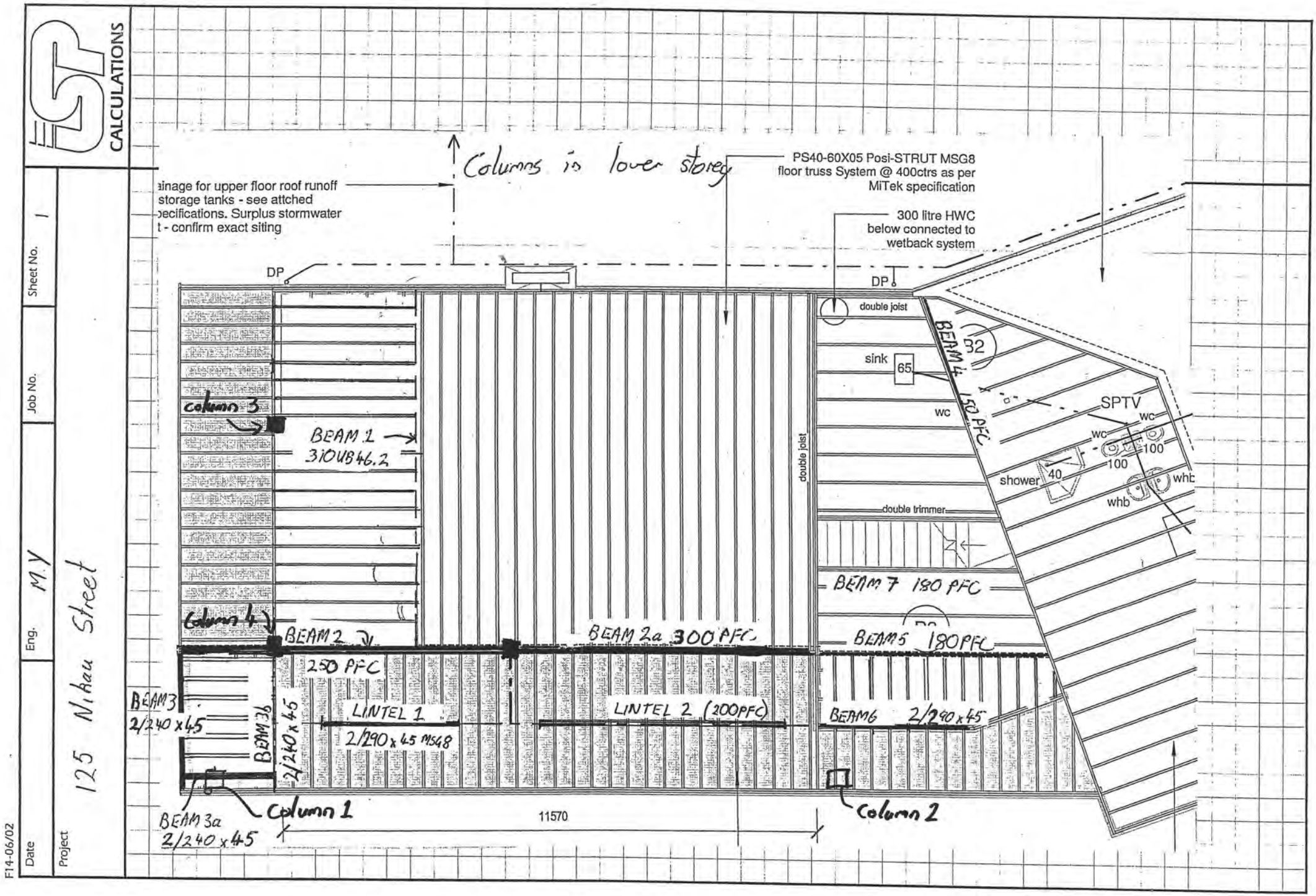
Preamble:
Design of a proposed house outside the scope of NZS3604, including:

- Scala Penetrometer soil tests
- Specific foundation design and construction details
- Structural beam design calculations and end connection details
- Reinforced masonry retaining wall design calculations and construction details.

Date:
9 March 2009

Job No.
23040

ISO 9001


CALCULATIONS
Sheet No. 1
Job No.
Eng. M.Y
Project 125 Nikau Street
Date
F14-06/02
Columns in lower storey
ainage for upper floor roof runoff
storage tanks - see attched
pecifications. Surplus stormwater
t - confirm exact siting
PS40-60X05 Posi-STRUT MSG8
floor truss System @ 400ctrs as per
MiTek specification
300 litre HWC
below connected to
wetback system
DP
DP
double joist
BEAM 4 150 PFC
B2
sink
65
wc
SPTV
wc
wc
100
100
shower
40
whb
whb
double joist
double trimmer
Column 3
BEAM 1
310UB46.2
Column 4
BEAM 2
BEAM 2a 300 PFC
BEAM 7 180 PFC
BEAM5 180PFC
250 PFC
BEAM3
2/240 x45
BEAM3a
2/240 x45
BEAM3b
2/240 x45
LINTEL 1
2/290 x 45 MS48
LINTEL 2 (200PFC)
BEAM6 2/240 x45
Column 1
Column 2
11570

ESP CALCULATIONS

Sheet No. 2

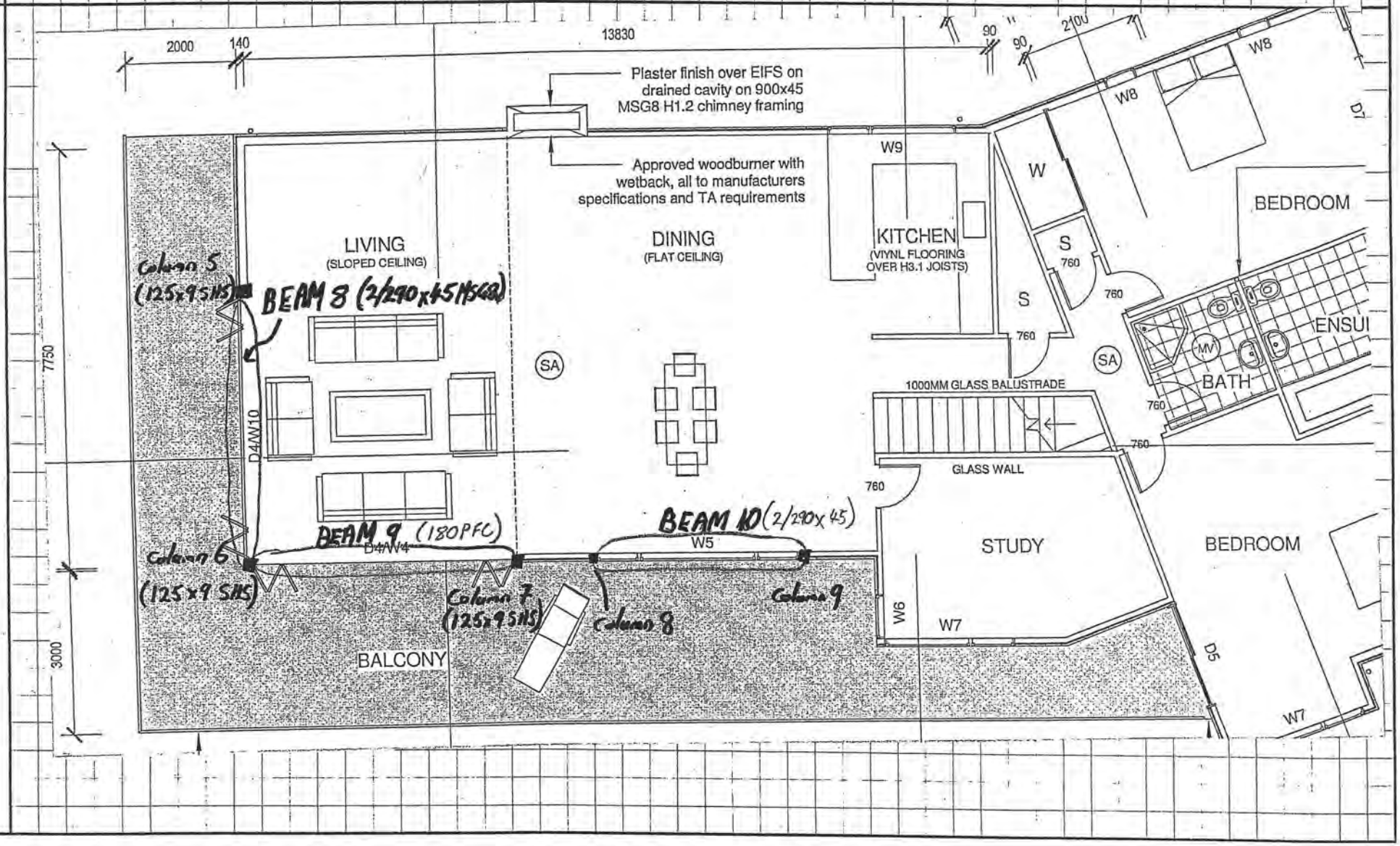
Job No.

Eng. M.Y.

Project 125 Nikau Street

Date

F14-06/02

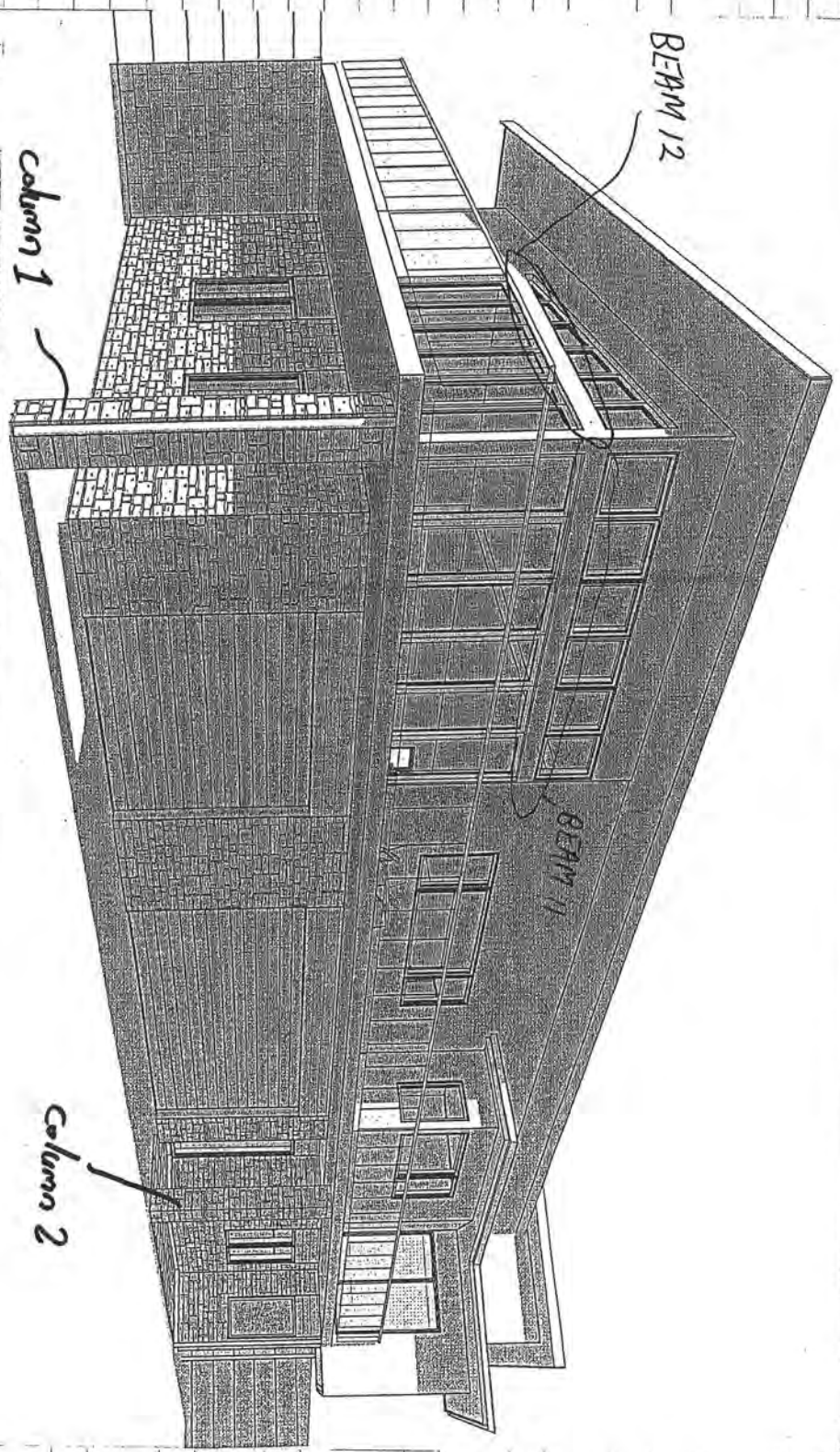


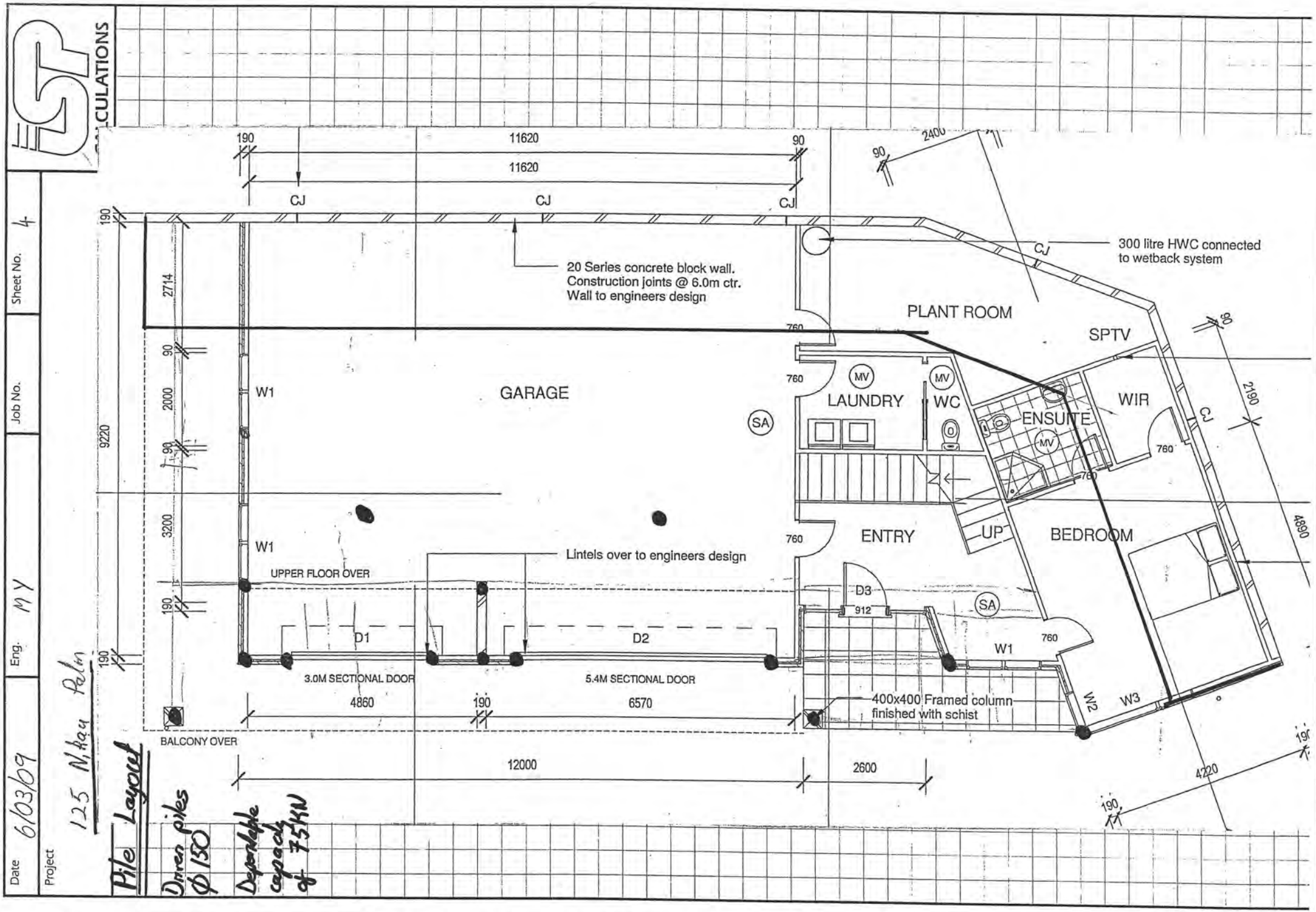
F14-06/02

Date	Eng. M Y	Job No. 23040	Sheet No. 3

Project
125 Nikau Palm Road

CALCULATIONS




ESP
CULATIONS
Sheet No. 4
Job No.
Eng. MY
Date 6/03/09
Project 125 Mkay Palm
F14-06/02
Pile Layout
Dimen piles
ϕ 150
Dependable
capacity
of 75kN
190
11620
11620
90
CJ
CJ
CJ
2400
90
CJ
300 litre HWC connected
to wetback system
20 Series concrete block wall.
Construction joints @ 6.0m ctr.
Wall to engineers design
PLANT ROOM
SPTV
760
MV
MV
LAUNDRY
WC
ENSUITE
WIR
2190
CJ
760
760
GARAGE
W1
SA
2714
90
2000
90
9220
3200
W1
Lintels over to engineers design
UPPER FLOOR OVER
ENTRY
UP
BEDROOM
4890
760
D3
912
SA
190
D1
D2
W1
760
3.0M SECTIONAL DOOR
5.4M SECTIONAL DOOR
4860
190
6570
400x400 Framed column
finished with schist
W2
W3
BALCONY OVER
12000
2600
4220
190
190

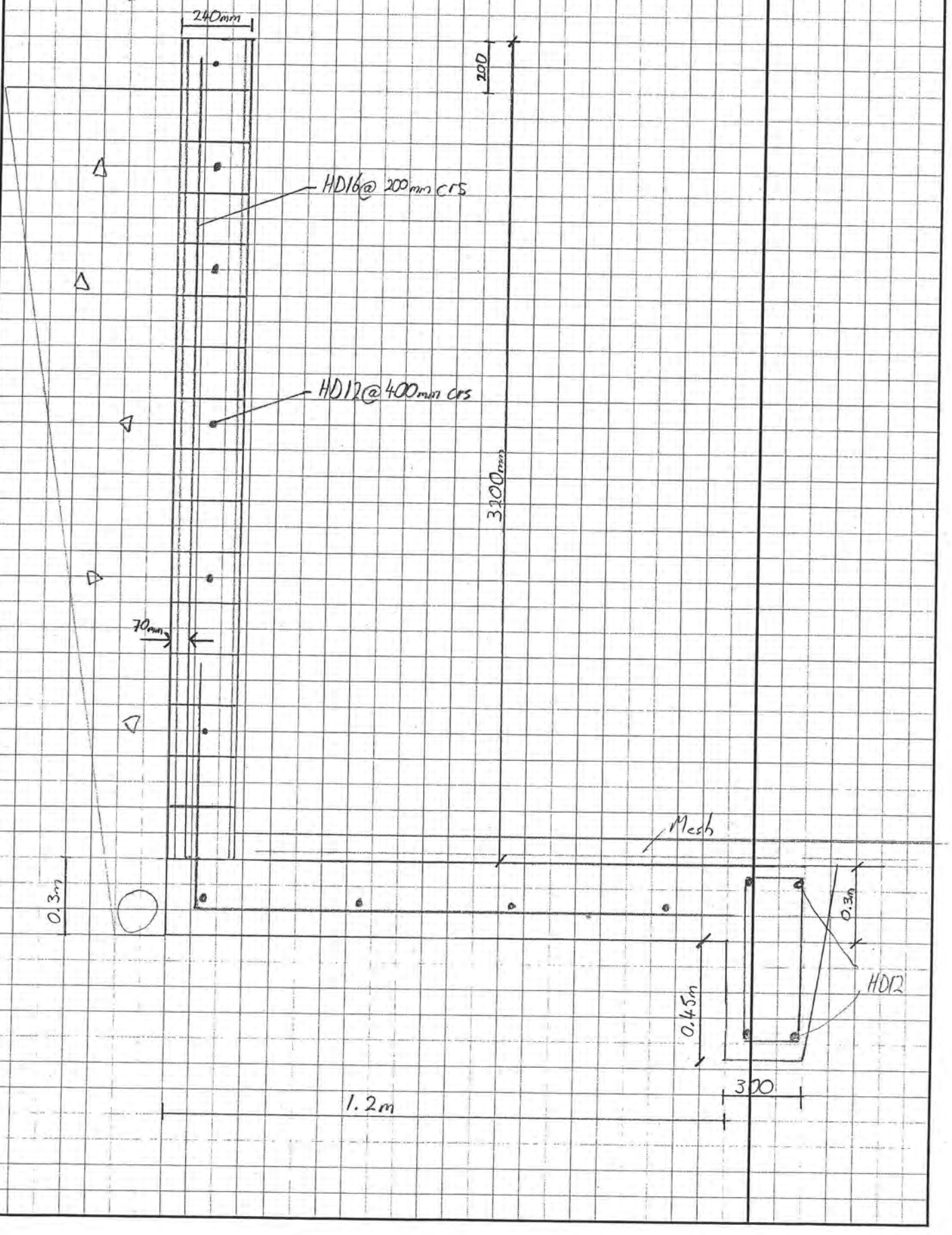
F14-06/02

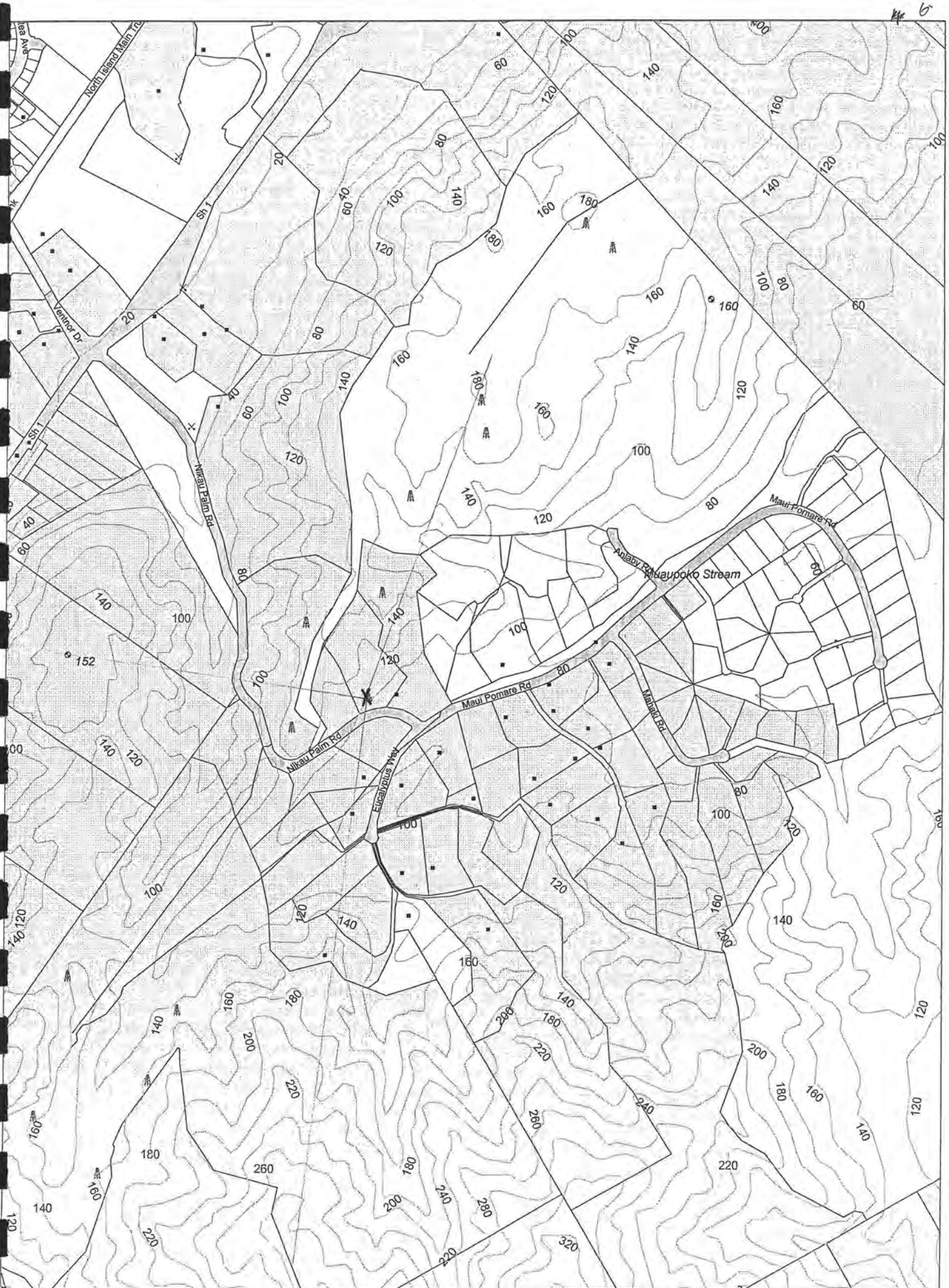
Date	Eng.	Job No.	Sheet No.
27/02/09	M.Y		5

Project: 125 Nikau Palm Road

CALCULATIONS

Retaining Wall





QuickMap
Custom Software Ltd

0 200 400 600 800 1000 1200m

Any person wishing to rely on the information shown on this map must independently verify the information

Scale 1:10000 Topographical and Cadastral map derived from LINZ data. Printed 24/02/2009 15:55

Date: 24-Feb-09 Eng: M.Y. Job Number: 23046 Sheet No:

Project: 125 Nikau street
Wind from North direction

CALCULATIONS

Site Wind Speed

$V_{(z)} = V_r \times M_d \times (M_{(zcat)} \times M_s \times M_t)$ V_{r500} = 51 m/s M_d = 1 M_s = 1

Terrain Factor = 3. Obstructions 3-5m

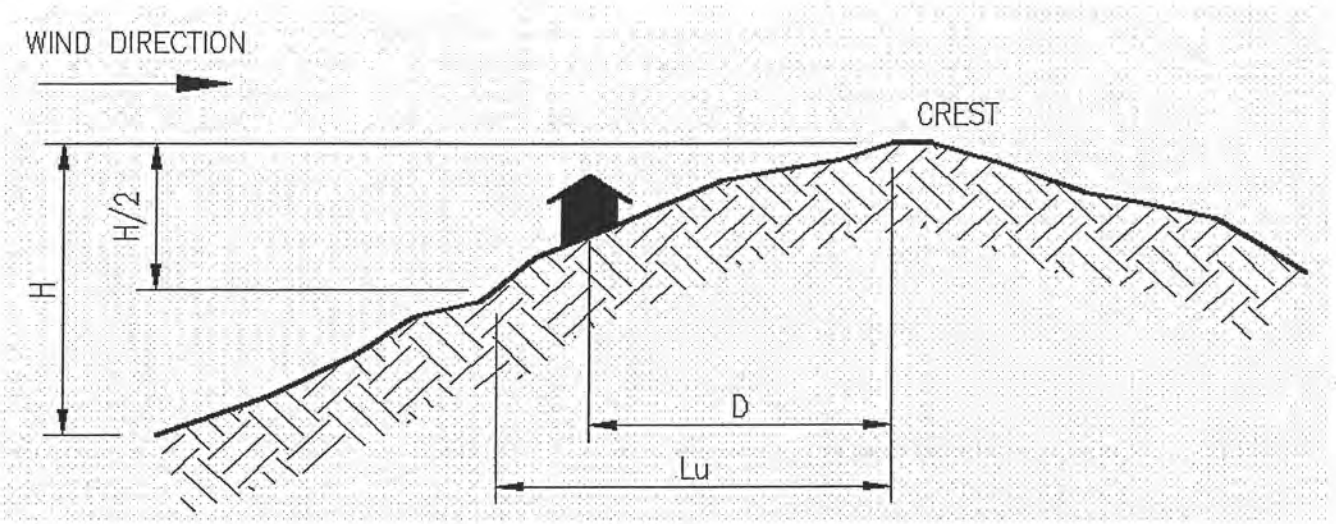
Building Height= 7m

Gives $M_{(zcat)}$ = 0.83

M_s=0.85 for buildings in normal built-up areas.

Refer to AS1170.2 Clause 4.3.1

Hill Shape Multiplier M_h



If $(H/2)/L_u < 0.05$ $M_h = 1$

If $0.05 < (H/2)/L_u < 0.45$ $M_h = 1+(H/(3.5(z+L_1)x(1-D/L_2)$

If $(H/2)/L_u > 0.45$ $M_h = 1+0.71(1-D/L_2)$

H = 140 m (Rise height)

Lu = 400 m (distance from mid rise to crest)

D = 1000 m (building distance from crest)

z = 7 m (building height)

M_{lee} = 1

Elevation = 120 m

Slope $[(H/2)/L_u]$ = 0.18

L_1 = 144 m

L_2 = 576 m

M_h = 1.00

M_{lee} = 1.00

M_e = greater of 1 or (Elevation - 500) x 0.00015 = 1.00

$M_t = M_h \times M_{lee} \times M_e$ = 1.00

$V_{(z)}$ = 51.00 x 1.00 x 0.83 x 1.00 x 1.00 = **42.33** **m/s**

NZS 3604:1999 Wind Speed Zone: **High Wind Speed**

Date: 24-Feb-09 Eng: M.Y. Job Number: 23046 Sheet No:

Project: 125 Nikau street ?

Wind from West direction ?

CALCULATIONS

Site Wind Speed

$V_{(z)} = V_r \times M_d \times (M_{(zcat)} \times M_s \times M_t)$ V_{r500} = 51 m/s M_d = 1 M_s = 1

Terrain Factor = 3. Obstructions 3-5m

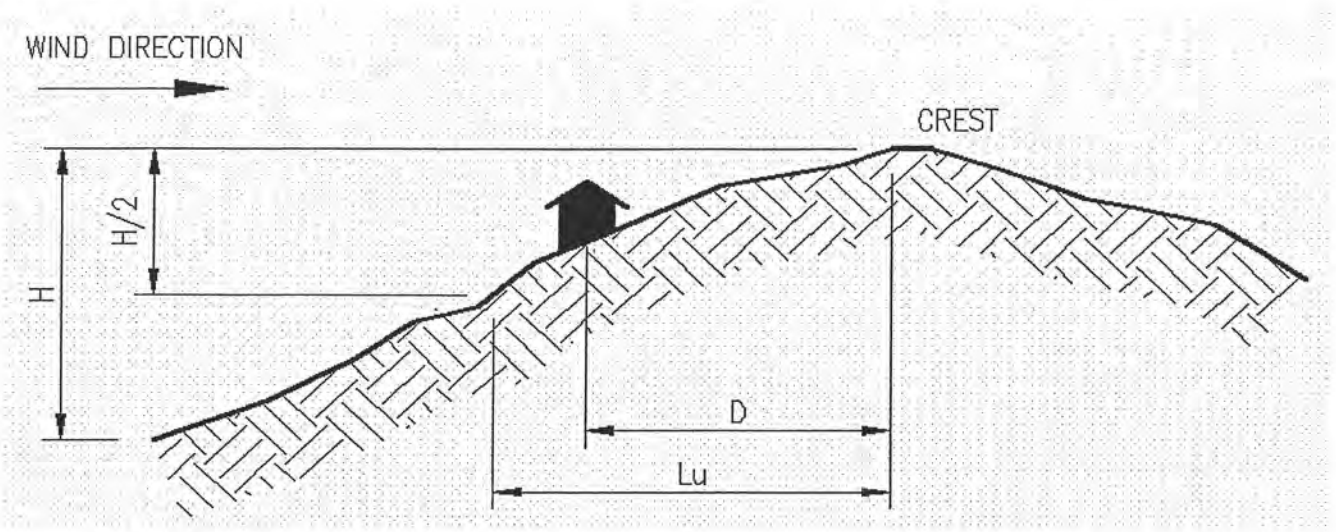
Building Height= 7m

Gives $M_{(zcat)}$ = 0.83

M_s=0.85 for buildings in normal built-up areas.

Refer to AS1170.2 Clause 4.3.1

Hill Shape Multiplier M_h



If $(H/2)/L_u < 0.05$ $M_h = 1$

If $0.05 < (H/2)/L_u < 0.45$ $M_h = 1+(H/(3.5(z+L_1)x(1-D/L_2)$

If $(H/2)/L_u > 0.45$ $M_h = 1+0.71(1-D/L_2)$

H = 80 m (Rise height)

Lu = 450 m (distance from mid rise to crest)

D = 700 m (building distance from crest)

z = 7 m (building height)

M_{lee} = 1

Elevation = 80 m

Slope $[(H/2)/L_u]$ = 0.09

L_1 = 162 m

L_2 = 648 m

M_h = 1.00

M_{lee} = 1.00

M_e = greater of 1 or (Elevation - 500) x 0.00015 = 1.00

$M_t = M_h \times M_{lee} \times M_e$ = 1.00

$V_{(z)}$ = 51.00 x 1.00 x 0.83 x 1.00 x 1.00 = **42.33** **m/s**

NZS 3604:1999 Wind Speed Zone: **High Wind Speed**

F14-06/02

Date 26/02/09	Eng. M.Y.	Job No.	Sheet No.
Project 125 Nikau Palm			

CALCULATIONS

Lintel 1

length : 3.1m

loads : Deck
Floor

See spreadsheet, Lintel 1

Lintel 2

length : 5.4m

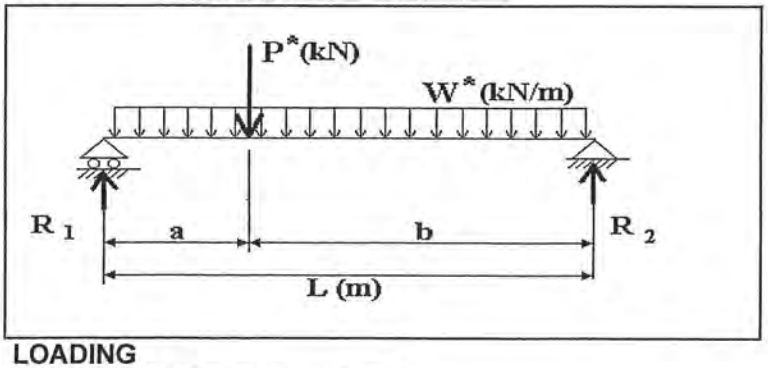
loads : Deck
Floor

See spreadsheet

AS/NZS 1170 TIMBER BEAM CALCULATION SHEET - MSG8

Job Name: 125 Nikau palm
Job No. 23040
Sheet No.

Date: 26-Feb-09
Engineer M.Y
Beam No. Lintel 1



L = 3.1 m
a = m
b = 3.1 m

LOADING

1/. Uniformly Distributed Load — **Amount** — **kN/m**

Dead	Self Weight		0.13	
	Deck	2.25m x .35kPa	0.79	
	Total Dead Load	**G =**	**0.92**	**kN/m**
Live	Roof (Ψ_c = 0 for Q_f)			
	Floor	2kPa x 2.25m	4.50	
	Total Live Load	**Q =**	**4.50**	**kN/m**

W* = 1.2 G + 1.5 Q = **7.85 kN/m**
W_s = G + 0.4 Q_f = **2.72 kN/m**

2/. Point Load — **Amount** — **kN**

Dead			
	Total Dead Point Load	**G =**	**0.00 kN**
Live			
	Total Live Point Load	**Q =**	**0.00 kN**

Le (m) 0.5

P* = 1.2 G + 1.5 Q = **0.00 kN**
P_s = G + 0.4 Q_f = **0.00 kN**

Bending Moment $M^* = W^* L^2/8 + P^* ab/L$

M* = **9.43 kNm**

Profile Gauged — **Z =** **1263.0 x10^3mm^3**

D/B = **3**

Section 290x90 — (dry, fb=14Mpa) — **Le/B =** **10**

All Timber is MSG8 or VSG8 **k_8 =** **1.00**

$\phi M_b = \phi k_1 k_8 f_b Z$ $\phi = k_1 = 0.8$ — **ϕM_b =** **11.32 kNm**

Serviceability Deflection — okay

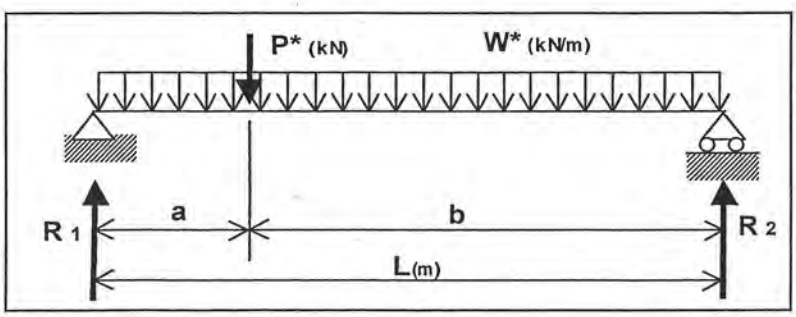
(Under Ws + Ps) — **EIxx =** **1449.91 x10^9Nmm^2**

(k_2=2) Δ = 4.5mm =Span/ 687 — **Under 1 kN Point Load Δ =** **0.4 mm**

Reaction	Dead	Live	Ultimate
R1	1.43kN	6.98kN	12.17kN
R2	1.43kN	6.98kN	12.17kN

AS/NZS 1170 STEEL BEAM CALCULATION SHEET

Job Name: 125 Nikau Palm **Job No.** 23040
Sheet No.
Date: 26-Feb-09 **Engineer** M.Y .
Beam No. lintel 2



L = 5.4 m
a = m
b = 5.4 m

LOADING

1/. Uniformly Distributed Load **Amount kN/m**

Dead	Self Weight		0.23
	floor (deck)	.35kPa x 2.25m	0.79
	Total Dead Load	**G =**	**1.02 kN/m**
Live	Roof (Ψ_c = 0 for Q_f)		
	Floor	2kPa x 2.25	4.50
	Total Live Load	**Q =**	**4.50 kN/m**

W* = 1.2 G + 1.5 Q = 7.97 kN/m
W_s = G + 0.4 Q_f = 2.82 kN/m

2/. Point Load **Amount kN**

Dead			
	Total Dead Point Load	**G =**	**0.00 kN**
Live			
	Total Live Point Load	**Q =**	**0.00 kN**

Le (m) 1

P* = 1.2 G + 1.5 Q = 0.00 kN
P_s = G + 0.4 Q_f = 0.00 kN

Bending Moment $M^* = W^* L^2/8 + P^* ab/L$

M* = 29.05 kNm

Profile Channel Section

All Steel is Grade 300

ϕM_b = 54.8 kNm ✓
okay

Section 200PFC

Ixx = 19.10 x10^6mm^4

Serviceability Deflection

(Under W_s + P_s) Δ = 8.2 mm ✓
=Span/ 662

(Under 1 kN Point Load) Δ = 0.9 mm ✓

Reaction	Dead	Live	Ultimate
R1	2.74kN	12.15kN	21.52kN
R2	2.74kN	12.15kN	21.52kN

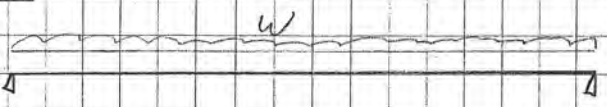
F14-06/02

Date 26/02/09	Eng. M.Y	Job No.	Sheet No. 12

Project: 125 Nikau Street

CALCULATIONS

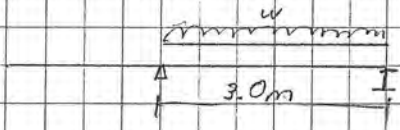
Beam 1



Loads

Floor (assuming loads are in most critical sections only)

Joists :



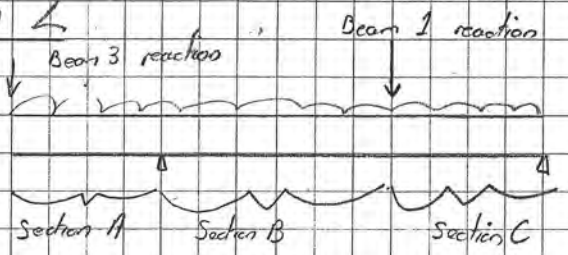
Dead : 0.3kPa x 0.75m = 0.225 KN/m

Live : 1.5kPa x 1.5m = 1.125 KN/m

M* = 52.2 ϕM_n = 172KNm - OK (Le = 2)

{USE 310 UB 46.2} See spreadsheet

Beam 2



Loads

Dead :- UDL:- Section A 0

Section B : 0.75m x 0.35 = 0.263 KN/m

Section C : 4.6m x 0.35 1.61 KN/m

- Point loads : Beam 3 reaction = 0.61 KN

Beam 1 reaction = 3.48 KN

Live :- UDL Section A : 0 KN/m

Section B : 0.75 x 2kPa = 1.5 KN/m

Section C : 3.85 x 1.5kPa + 0.75 x 2.0kPa = 7.28 kPa

- Point loads Beam 3 = 3.0 KN

Beam 1 = 10.8 KN

{Use 250 PFC} See Span Loads spreadsheet

M* = 40.31 ϕM_b = 61.0 KNm (Le = 4.0) OK

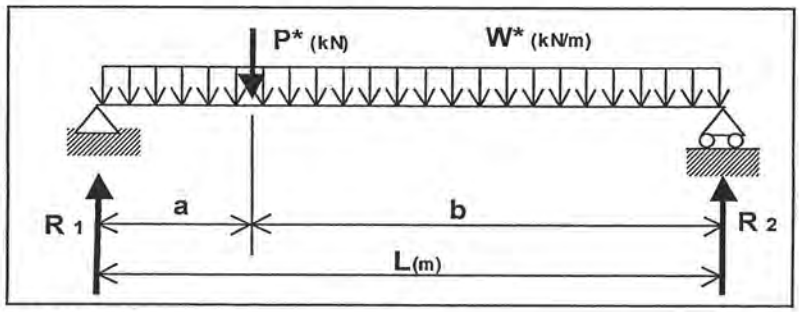
AS/NZS 1170 STEEL BEAM CALCULATION SHEET

Job Name: 125 Nikau Palm

Job No. 23040
Sheet No.

Date: 26-Feb-09

Engineer M.Y.
Beam No. Beam 1



L = 9.6 m
a = m
b = 9.6 m

LOADING

1/. Uniformly Distributed Load — **Amount kN/m**

Dead

Self Weight		0.46
floor (deck)	.35kPa x 1.5m	0.53

Total Dead Load **G = 0.99 kN/m**

Live

Roof (Ψ_c = 0 for Q_f)		
Floor	1.5kPa x1.5	2.25

Total Live Load **Q = 2.25 kN/m**

W* = 1.2 G + 1.5 Q = 4.56 kN/m
W_s = G + 0.4 Q_f = 1.89 kN/m

2/. Point Load — **Amount kN**

Dead

Total Dead Point Load **G = 0.00 kN**

Live

Total Live Point Load **Q = 0.00 kN**

Le (m) 2

P* = 1.2 G + 1.5 Q = 0.00 kN
P_s = G + 0.4 Q_f = 0.00 kN

Bending Moment $M^* = W^* L^2/8 + P^* ab/L$

M* = 52.52 kNm
ϕM_b = 172.0 kNm
okay

Profile Universal Beam

All Steel is Grade 300

Section 310UB46.2

Ixx = 99.50 x10^{6}mm^4

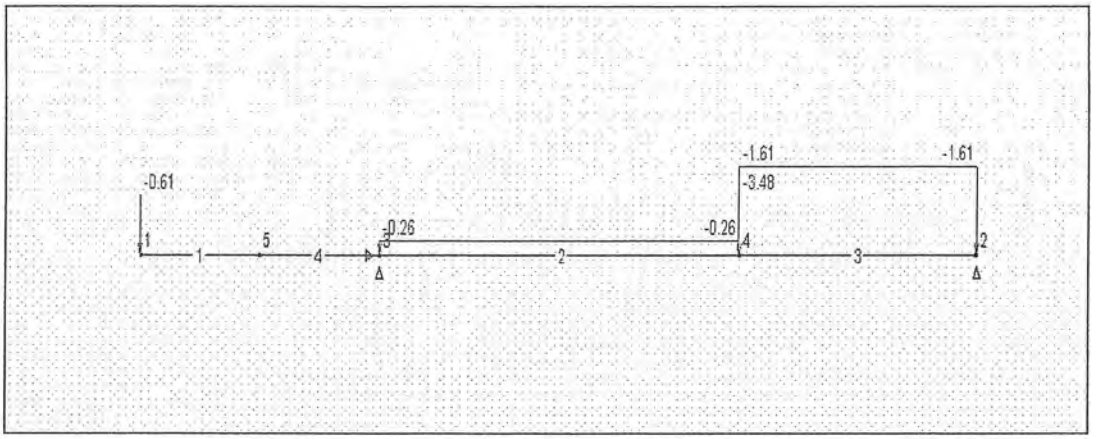
Serviceability Deflection

(Under W_s + P_s) Δ = 10.5 mm
=Span/ 915
(Under 1 kN Point Load) Δ = 0.9 mm

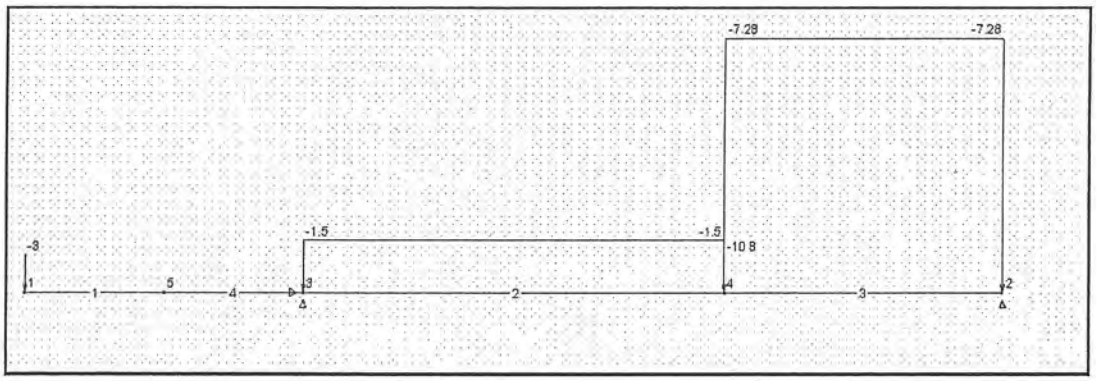
Reaction	Dead	Live	Ultimate
R1	4.74kN	10.80kN	21.89kN
R2	4.74kN	10.80kN	21.89kN

23040 Beam 2

Dead Loads

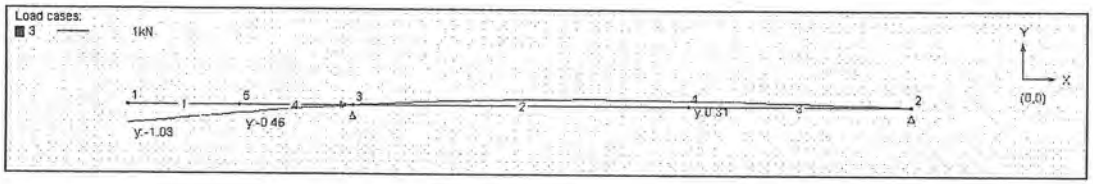


Live Loads

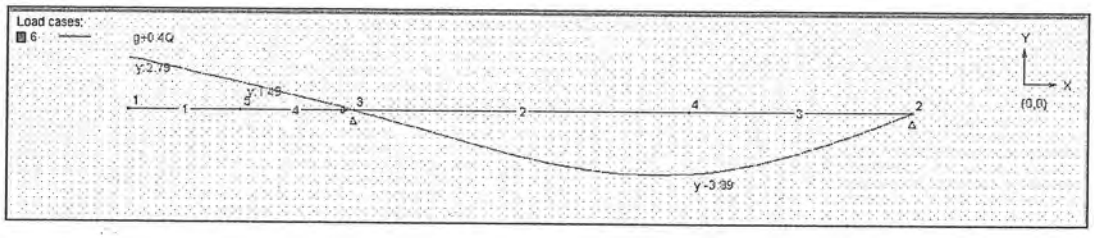


23040 Beam 2

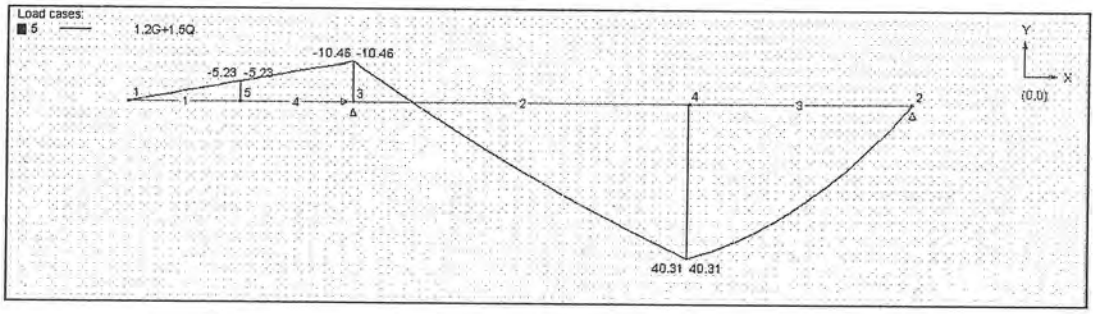
Deflections from 1kN



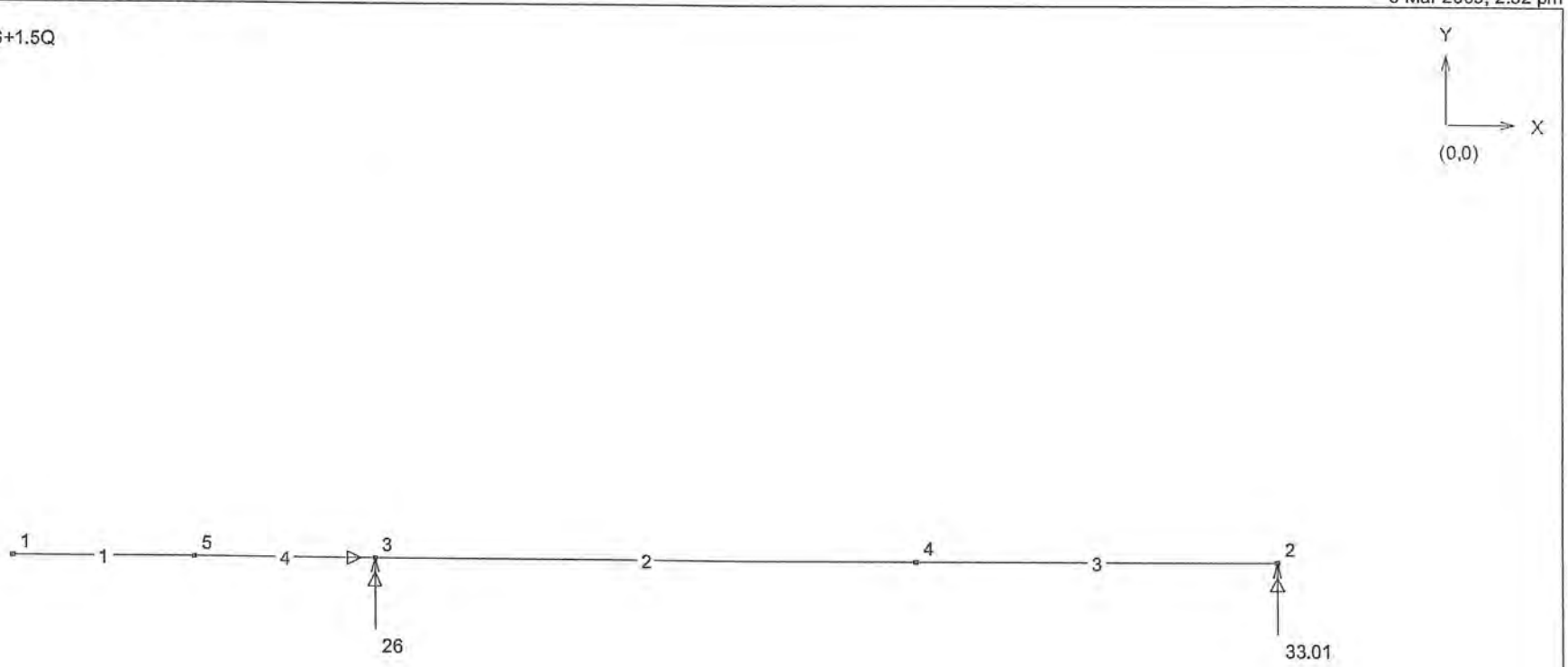
Deflections under service



Moments (1.2G+1.5Q)



Load cases:
■ 5 ——— 1.2G+1.5Q



Reactions
No general restraint

Materials:
■ 1 STEEL

Sections:
■ 1 250 PFC

Job: I:\JOBFILES\ISP\23000\23040\23040 Beam 2
Units - Len: m, Sec: mm, Mat: MPa, Dens: T/m^3, Temp: Celsius, Force: kN, Mom: kNm, Mass: T, Acc: m/sec^2, Trans: mm, Stress: MPa
Scales - Frame: 1:38, Load: None, Disp: None, Moment: None, Shear: None, Axial: None, Torsion: None

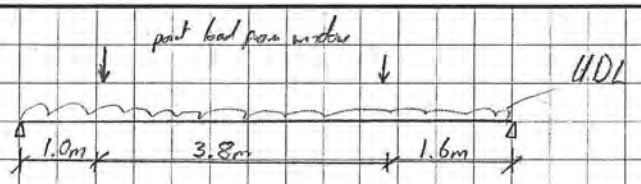
F14-06/02

Date 26/02/09	Eng. M.Y	Job No.	Sheet No. 6 of 17

Project: 125 Nikau Street

CALCULATIONS

Beam 2a



length = 6.5m

Loads
floor
Roof
Wall - point load

Roof load:

$G_{roof} = 0.35kPa \times 4.85m = 1.7kN/m$

Roof above window:

$G_{wall} = 0.208kN/m^2 \times 1.5m = 0.312kN/m$

Reactions from lintel above window:

$(1.7kN/m + 0.312kN/m) \times 3.8m/2 = \underline{3.823kN}$

Live load on roof

$Q_{roof} = 0.25kPa \times 4.85m = 1.21kN/m$

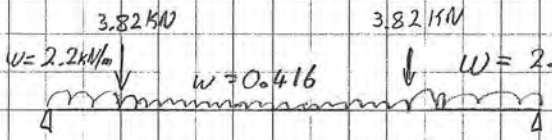
Reactions: $1.21kN/m \times 3.8/2 = \underline{2.3kN}$

Floor loads

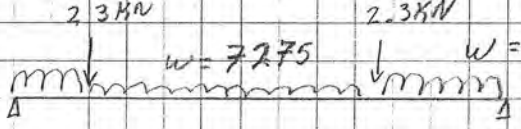
G: $0.35kPa \times 5.35m$ (floor & deck) $= 1.873kN/m$ (reactions = 2.3kN)

Q: $1.5kPa \times 3.85m + 2kPa \times 0.75m = 7.275kN/m$

G



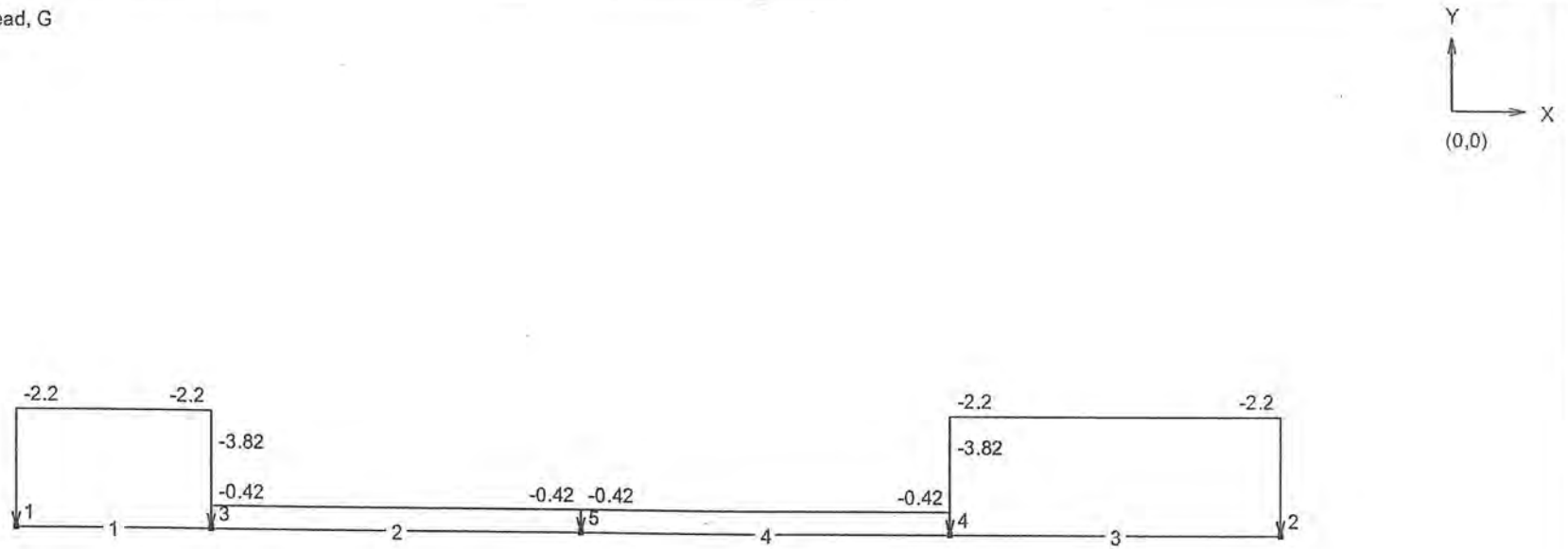
Q



See Spacegass model printouts

$\Rightarrow$ Use 300 PFC $M^* = 74.6$ $\phi M_b = 144kNm$ ($L_e = 1.0$) OK

Load cases:
■ 1 ——— dead, G



300PFC

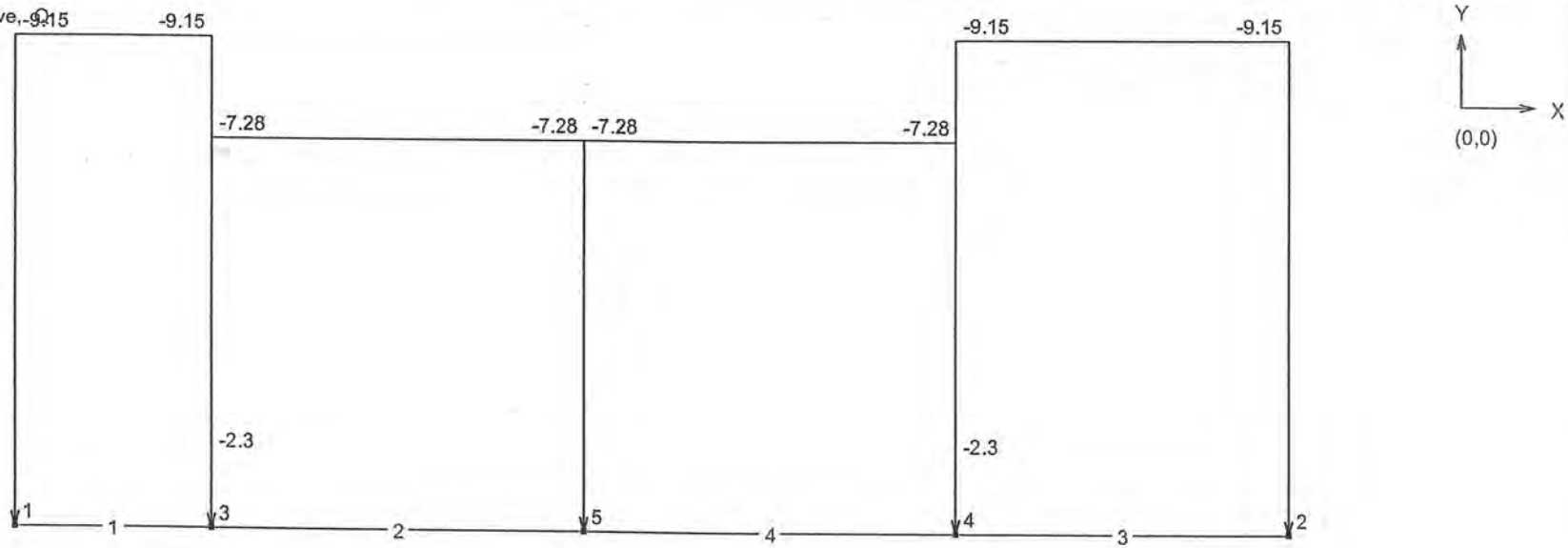
Beam 2a, dead

Materials:
■ 1 STEEL

Sections:
■ 1 250PFC

Job: I:\JOBFILES\ISP\23000\23040\23040 Beam 2a
Units - Len: m, Sec: mm, Mat: MPa, Dens: T/m^3, Temp: Celsius, Force: kN, Mom: kNm, Mass: T, Acc: m/sec^2, Trans: mm, Stress: MPa
Scales - Frame: 1:37, Load: 0.134218, Disp: None, Moment: None, Shear: None, Axial: None, Torsion: None

Load cases:
■ 2 Live



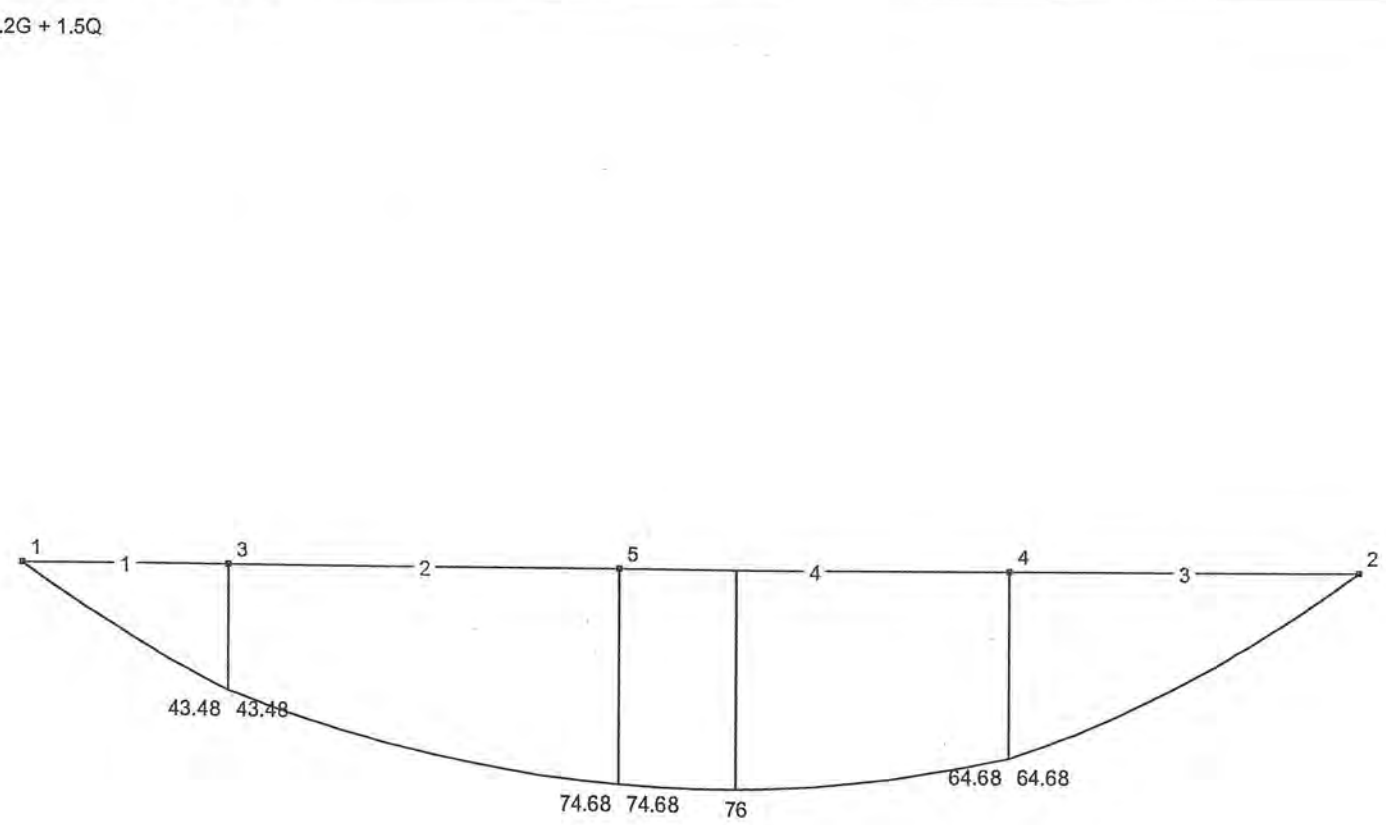
Beam 2a, live

Materials:
■ 1 STEEL

Sections:
300PFC
■ 1 ~~250~~ PFC

Job: I:\JOBFILES\ISP\23000\23040\23040 Beam 2a
Units - Len: m, Sec: mm, Mat: MPa, Dens: T/m^3, Temp: Celsius, Force: kN, Mom: kNm, Mass: T, Acc: m/sec^2, Trans: mm, Stress: MPa
Scales - Frame: 1:37, Load: 0.134218, Disp: None, Moment: None, Shear: None, Axial: None, Torsion: None

Load cases:
■ 5 —— 1.2G + 1.5Q



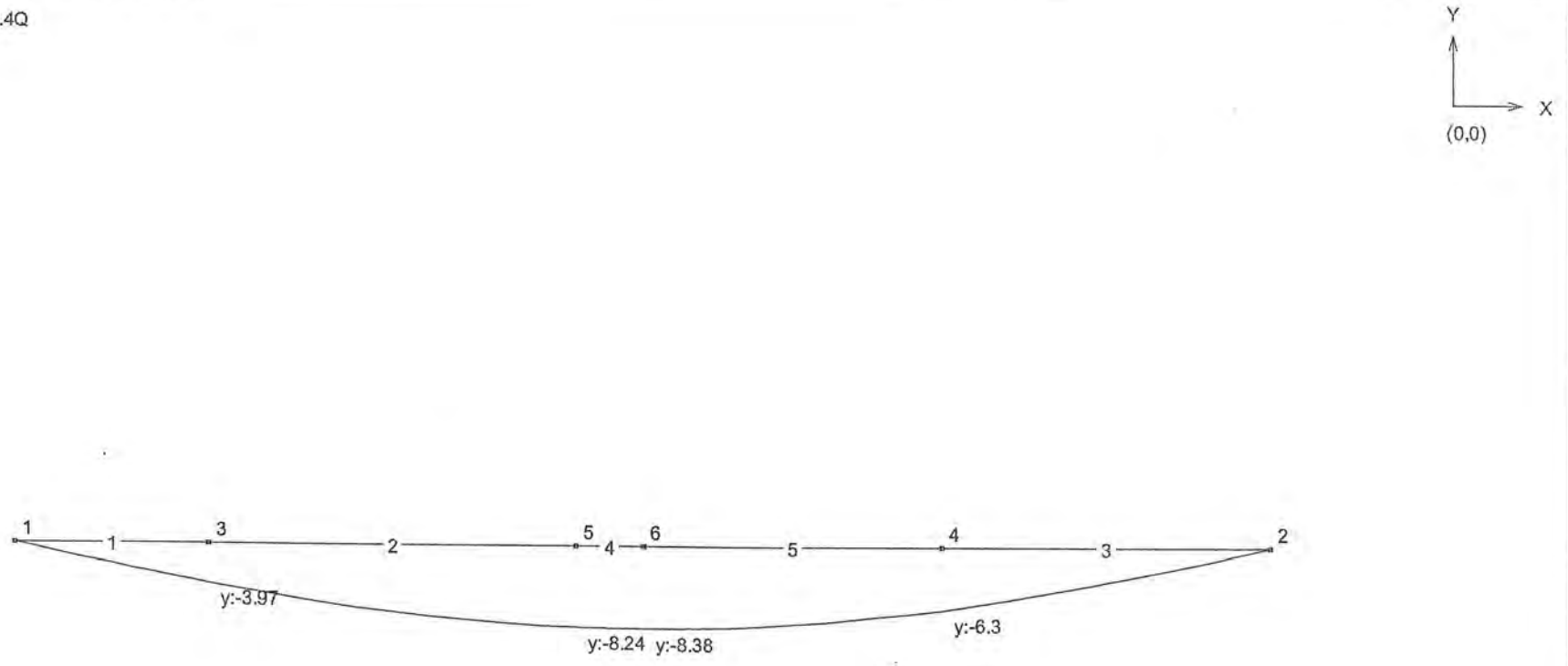
Beam 2a, moments

Materials:
■ 1 STEEL

Sections:
■ 1 250PFC

Job: I:\JOBFILES\ISP\23000\23040\23040 Beam 2a
Units - Len: m, Sec: mm, Mat: MPa, Dens: T/m^3, Temp: Celsius, Force: kN, Mom: kNm, Mass: T, Acc: m/sec^2, Trans: mm, Stress: MPa
Scales - Frame: 1:37, Load: None, Disp: None, Moment: 2.622604, Shear: None, Axial: None, Torsion: None

Load cases:
6 G + 0.4Q



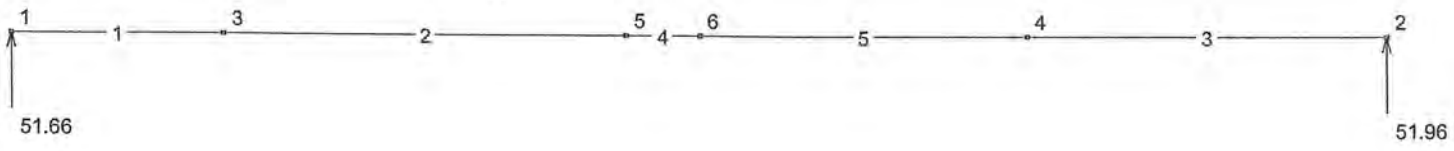
Deflections

Materials:
1 STEEL

Sections:
1 300 PFC

Job: I:\JOBFILES\ISP\23000\23040\23040 Beam 2a
Units - Len: m, Sec: mm, Mat: MPa, Dens: T/m^3, Temp: Celsius, Force: kN, Mom: kNm, Mass: T, Acc: m/sec^2, Trans: mm, Stress: MPa
Scales - Frame: 1:36, Load: None, Disp: 50, Moment: None, Shear: None, Axial: None, Torsion: None

Load cases:
■ 5 ——— 1.2G + 1.5Q



Beam 2a reactions

Materials:
■ 1 STEEL

Sections:
■ 1 300 PFC

Job: I:\JOBFILES\ISP\23000\23040\23040 Beam 2a
Units - Len: m, Sec: mm, Mat: MPa, Dens: T/m^3, Temp: Celsius, Force: kN, Mom: kNm, Mass: T, Acc: m/sec^2, Trans: mm, Stress: MPa
Scales - Frame: 1:36, Load: None, Disp: None, Moment: None, Shear: None, Axial: None, Torsion: None

F14-06/02

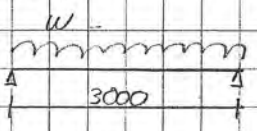
Date	Eng. M.Y	Job No.	Sheet No. 14 23

Project: 125 Nikau Palm street.

CALCULATIONS

Beam 3

trib area = 1m (Deck)



Reactions = 5.24

G: 0.3kPa x 1m = 0.3kN/m

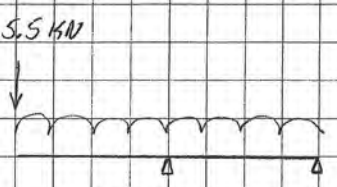
Q 2kPa x 1m = 2kN/m

1.2(0.3) + 1.5x2 = 3.36 KN/m

Mox moment = $\frac{wl^2}{8}$ = 3.78 KN/m

Use 2/240 x 45

Beam 3a



Loads

UDL's

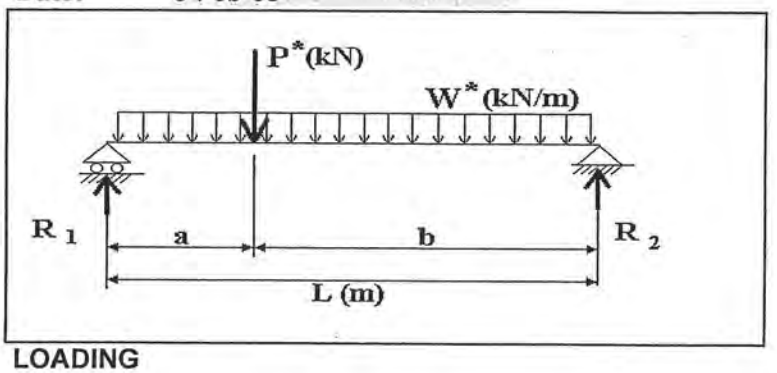
Dead: 0.35 x 0.4m = 0.140

live: 2kPa x 0.4m = 0.8 kN/m

AS/NZS 1170 TIMBER BEAM CALCULATION SHEET - MSG8

Job Name: 125 Nikau Palm
Job No. 23040
Sheet No.

Date: 3-Feb-09
Engineer M.Y
Beam No. Beam 3



L = 3 m
a = m
b = 3 m

LOADING

1/. Uniformly Distributed Load — **Amount** — **kN/m**

Dead	Self Weight		0.11
	deck	0.3kPa x 1m	0.30
	Total Dead Load	**G =**	**0.41 kN/m**
Live	Roof (Ψ_c = 0 for Q_f)		0.00
	Floor	2kPa x 1	2.00
	Total Live Load	**Q =**	**2.00 kN/m**

W* = 1.2 G + 1.5 Q = **3.49 kN/m**
W_s = G + 0.4 Q_f = **1.21 kN/m**

2/. Point Load — **Amount** — **kN**

Dead			
	Total Dead Point Load	**G =**	**0.00 kN**
Live			
	Total Live Point Load	**Q =**	**0.00 kN**

Le (m) 0.5

P* = 1.2 G + 1.5 Q = **0.00 kN**
P_s = G + 0.4 Q_f = **0.00 kN**

Bending Moment $M^* = W^* L^2/8 + P^* ab/L$

M* = **3.93 kNm**

Profile Gauged — **Z =** **868.5 x10^3mm^3**

D/B = **3**

Section 240x90 (wetted, fb=11.7MPa) **Le/B =** **10**

All Timber is MSG8 or VSG8 **k_8 =** **1.00**

$\phi M_b = \phi k_1 k_8 f_b Z$ $\phi = k_1 = 0.8$ — **ϕM_b =** **6.50 kNm** ✓

Serviceability Deflection — **okay**

(Under Ws + Ps)
(k_2=2) Δ = 3.1mm ✓
=Span/ 972

Elxx = **826.85 x10^9Nmm^2**
Under 1 kN Point Load Δ = **0.7 mm** ✓

Reaction	Dead	Live	Ultimate
R1	0.61kN	3.00kN	5.24kN
R2	0.61kN	3.00kN	5.24kN

F14-06/02

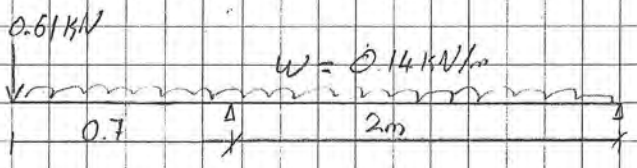
Date	Eng.	Job No.	Sheet No.
04/03/09	M.Y	23040	25

Project: 125 Nikau Palm

CALCULATIONS

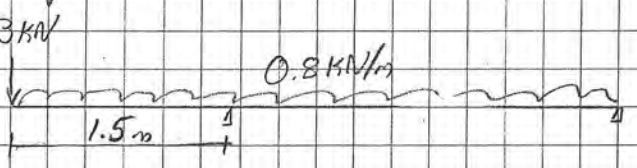
loading on Beam 3a

G: 0.6 kN point load; $w = 0.14$ kN/m



Pt load from beam 3.

Q: 3 kN point load; 0.8 kN/m



deflection limit at end $= \frac{700}{500} = 1.4$

$M^* = 4$ kNm $\phi M_n = 6.5$ kNm ($L_e = 2.0$m)

Use 2/240 x 45 $\Rightarrow$ deflection = 0.74mm OK

Beam 3b

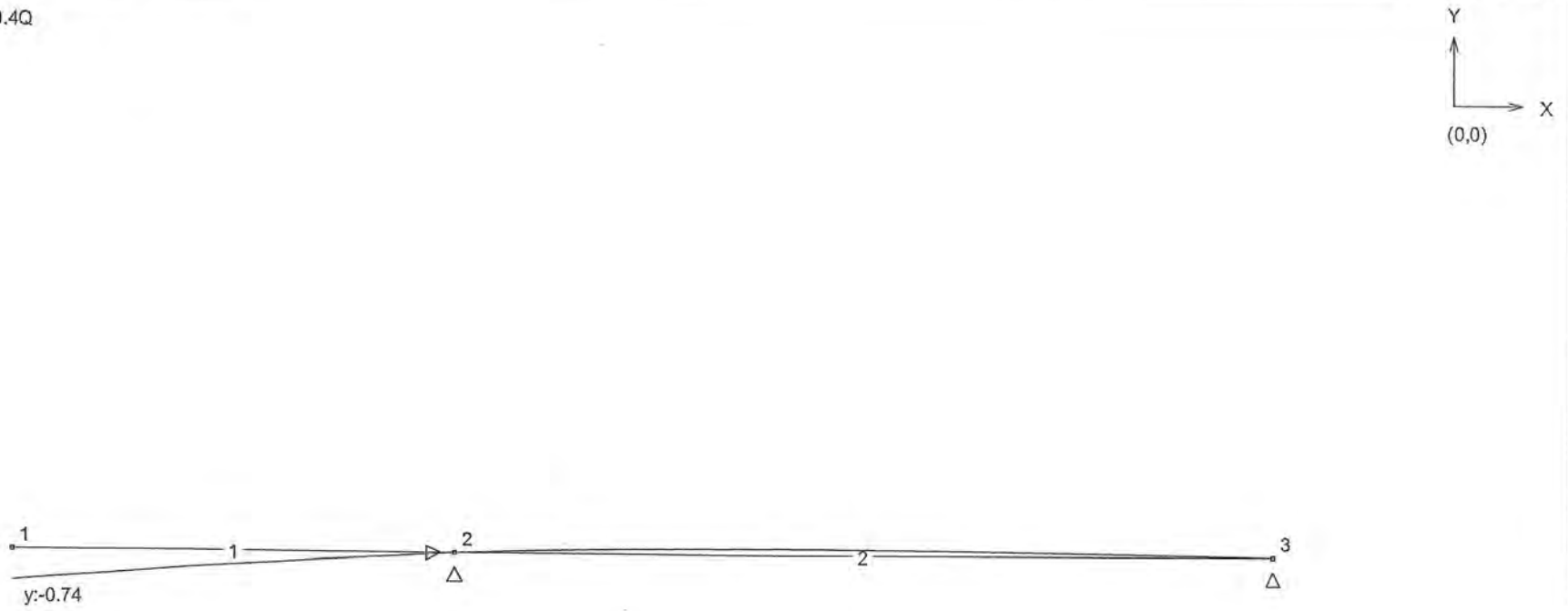
G: $0.3 \times 1.2\text{m} = 0.36$ kN/m

Q: $2.0 \times 1.2\text{m} = 2.4$ kN/m

$M^* = 3.95$ $\phi M_n = 6.24$ ($L_e = 3.0$m)

Now deflections under service loads are 1.19mm at end of cantilever which is quite high but there is a double joist around the perimeter of the deck which carries will spread the load so deflection. This will cause the deflections to be less than that calculated.

Load cases:
6 G + 0.4Q



Live loads,Q
No general restraint

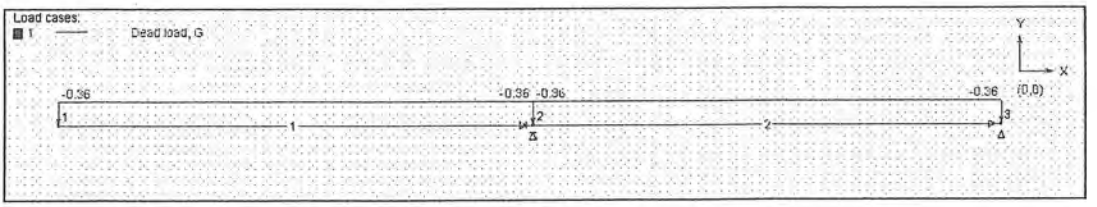
Materials:
1 MSG8

Sections:
1 240 x 90

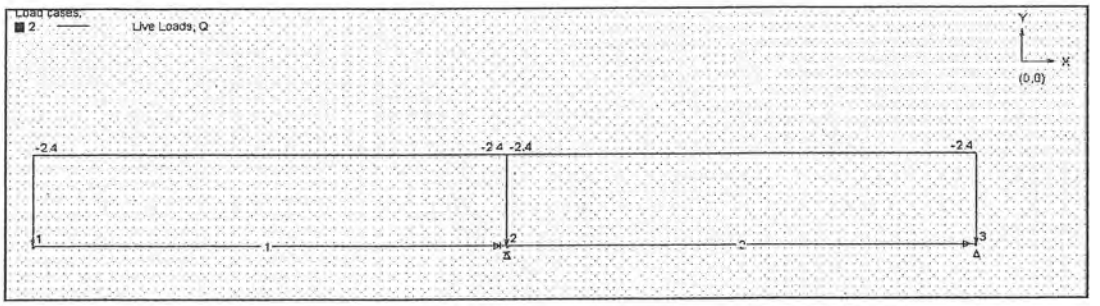
Job: I:\JOBFILES\ISP\23000\23040\Beam 3a
Units - Len: m, Sec: mm, Mat: MPa, Dens: T/m^3, Temp: Celsius, Force: kN, Mom: kNm, Mass: T, Acc: g's, Trans: mm, Stress: MPa
Scales - Frame: 1:11, Load: None, Disp: 65.91797, Moment: None, Shear: None, Axial: None, Torsion: None

Beam 3b

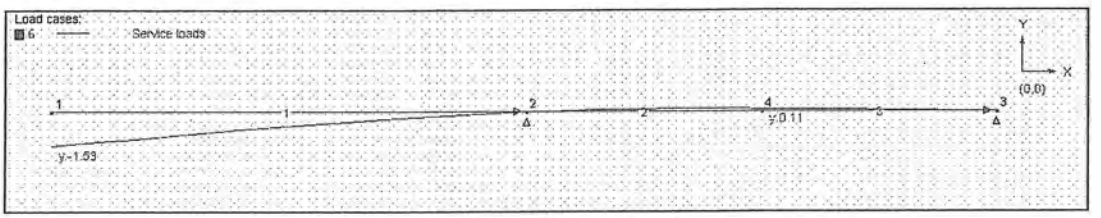
Dead loads



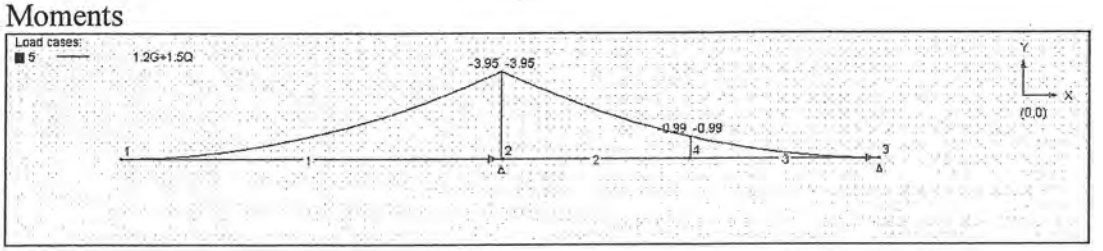
Live Load



Deflection



Moments



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Date	Eng.	Job No.	Sheet No.
26/02/09	M.Y		28

Project: 125 Nikau Road

CALCULATIONS

Beam 4

length = 3.0m

loads

Floor - trib width = 3.4m
Wall
Roof - trib width = 4.0m

See spreadsheet

=> {Use 150 PFC}

Beam 5

length = 5m

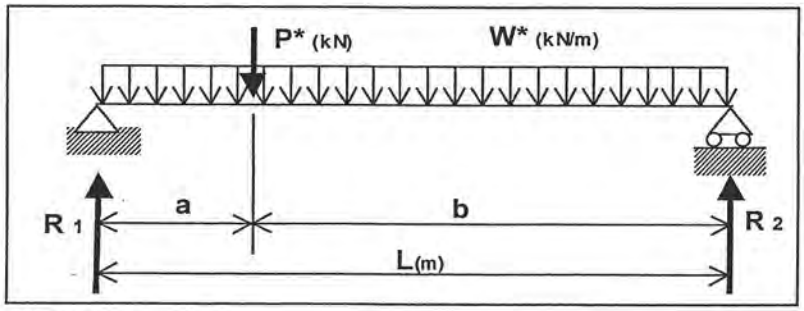
Floor - trib width = 0.75
Wall - 0.5kPa
Roof - 4.85m + 0.75m = 5.6m trib width (conservative)

See spreadsheet

Use 180 PFC

AS/NZS 1170 STEEL BEAM CALCULATION SHEET

Job Name: 125 Nikau street
Job No. 23040
Sheet No.
Date: 26-Feb-09
Engineer M.Y
Beam No. Beam 4



L = 3 m
a = m
b = 3 m

LOADING

1/. Uniformly Distributed Load — **Amount kN/m**

Dead	Self Weight		0.18
	floor	3.4m x 0.3kPa	1.02
	wall	0.5kN/m	0.50
	roof	4.0m x 0.35kPa	1.40
	Total Dead Load	**G =**	**3.10 kN/m**
Live	Roof (Ψ_c = 0 for Q_f)	4m x 0.25kPa	1.00
	Floor	3.4m x 1.5kPa	5.10
	Total Live Load	**Q =**	**6.10 kN/m**

W* = 1.2 G + 1.5 Q = 12.87 kN/m
W_s = G + 0.4 Q_f = 5.14 kN/m

2/. Point Load — **Amount kN**

Dead			
	Total Dead Point Load	**G =**	**0.00 kN**
Live			
	Total Live Point Load	**Q =**	**0.00 kN**

Le (m) 1

P* = 1.2 G + 1.5 Q = 0.00 kN
P_s = G + 0.4 Q_f = 0.00 kN

Bending Moment $M^* = W^* L^2/8 + P^* ab/L$

M* = 14.47 kNm
ϕM_b = 33.8 kNm ✓
okay

Profile Channel Section

All Steel is Grade 300

Section 150PFC

Ixx = 8.34 x10^6mm^4

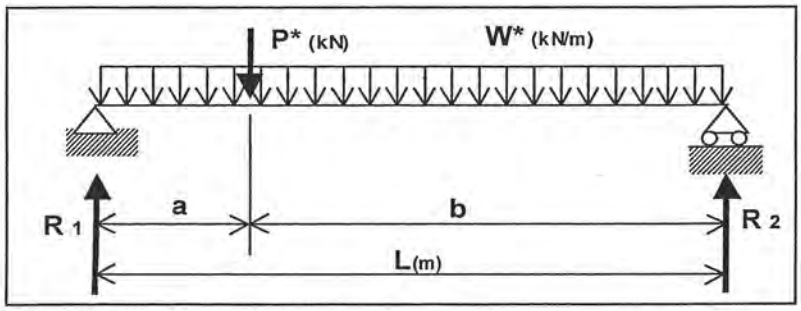
Serviceability Deflection

(Under W_s + P_s) Δ = 3.2 mm ✓
=Span/ 924
(Under 1 kN Point Load) Δ = 0.3 mm ✓

Reaction	Dead	Live	Ultimate
R1	4.65kN	9.15kN	19.30kN
R2	4.65kN	9.15kN	19.30kN

AS/NZS 1170 STEEL BEAM CALCULATION SHEET

Job Name: 125 Nikau street **Job No.** 23040
Sheet No.
Date: 26-Feb-09 **Engineer** M.Y
Beam No. Beam 5



L = 5 m
a = m
b = 5 m

LOADING

1/. Uniformly Distributed Load **Amount kN/m**

Dead	Self Weight		0.21
	floor	0.75m x 0.3kPa	0.23
	wall	0.5kN/m	0.50
	roof	5.6m x 0.35kPa	1.96
	Total Dead Load	**G =**	**2.89 kN/m**
Live	Roof (Ψ_c = 0 for Q_f)	5.6m x 0.25kPa	1.40
	Floor	0.75m x 1.5kPa	1.13
	Total Live Load	**Q =**	**2.53 kN/m**

W* = 1.2 G + 1.5 Q = 7.26 kN/m
W_s = G + 0.4 Q_f = 3.34 kN/m

2/. Point Load **Amount kN**

Dead	**Total Dead Point Load**	**G =**	**0.00 kN**
Live	**Total Live Point Load**	**Q =**	**0.00 kN**

Le (m) 1

P* = 1.2 G + 1.5 Q = 0.00 kN
P_s = G + 0.4 Q_f = 0.00 kN

Bending Moment $M^* = W^* L^2/8 + P^* ab/L$

M* = 22.69 kNm
ϕM_b = 45.1 kNm
okay

Profile Channel Section *All Steel is Grade 300*

Section 180PFC **Ixx = 14.10 x10^6mm^4**

Serviceability Deflection
(Under W_s + P_s) Δ = 9.7 mm
=Span/ 518
(Under 1 kN Point Load) Δ = 0.9 mm

Reaction	Dead	Live	Ultimate
R1	7.24kN	6.31kN	18.15kN
R2	7.24kN	6.31kN	18.15kN

F14-06/02

Date	Eng.	Job No.	Sheet No.
26/02/09	M.Y	23040	11431

Project: 125 Nikau Palm

CALCULATIONS

Beam 6

length = 3.3m

Dead Floor - Deck - 1.4m
- Inside - 1.0m
2.4m

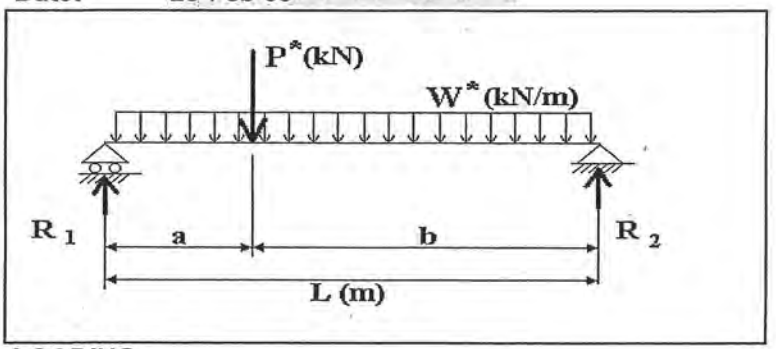
See spreadsheet

{Use 2/290 x 45}

AS/NZS 1170 TIMBER BEAM CALCULATION SHEET - MSG8

Job Name: 125 Nikau Palm **Job No.** 23040
Sheet No.

Date: 26-Feb-09 **Engineer** M.Y
Beam No. Beam 6



L = 3.3 m
a = m
b = 3.3 m

LOADING

1/. Uniformly Distributed Load **Amount** **kN/m**

Dead	Self Weight		0.13
	floor	2.4m x 0.3kPa	0.72
	Total Dead Load	**G =**	**0.85 kN/m**
Live	Roof (Ψ_c = 0 for Q_f)		
	Floor	2.4m x 1.5kPa	3.60
	Total Live Load	**Q =**	**3.60 kN/m**

W* = 1.2 G + 1.5 Q = 6.42 kN/m
W_s = G + 0.4 Q_f = 2.29 kN/m

2/. Point Load **Amount** **kN**

Dead			
	Total Dead Point Load	**G =**	**0.00 kN**
Live			
	Total Live Point Load	**Q =**	**0.00 kN**

Le (m) 0.5 **P* = 1.2 G + 1.5 Q = 0.00 kN**
P_s = G + 0.4 Q_f = 0.00 kN

Bending Moment $M^* = W^* L^2/8 + P^* ab/L$ **M* = 8.74 kNm**

Profile Gauged **Z = 1263.0 x10^3mm^3**

D/B = 3

Section 290x90 (dry, fb=14Mpa) **Le/B = 10**

All Timber is MSG8 or VSG8 **k_8 = 1.00**

$\phi M_b = \phi k_1 k_8 f_b Z$ $\phi = k_1 = 0.8$ **ϕM_b = 11.32 kNm**

Serviceability Deflection okay

(Under Ws + Ps) **EIxx = 1449.91 x10^9Nmm^2**

(k_2=2) Δ = 4.9mm **Under 1 kN Point Load Δ = 0.5 mm**

=Span/ 676

Reaction	Dead	Live	Ultimate
R1	1.41kN	5.94kN	10.60kN
R2	1.41kN	5.94kN	10.60kN

F14-06/02

Date	Eng.	Job No.	Sheet No.
27/02/09	M.Y	23040	33

Project: 125 Nikau Palm

CALCULATIONS

Beam 7

length 4.4m

Loads

Glass wall (10mm thick) - 0.11 KN/m x 2.4m = 0.264 KN/m
⇒ Use 0.3 KN/m

Floor 0.2m x 0.3 KPa

Try Timber

2/290/45 - 1KN pt load deflection too much

⇒ Try 150 PFC - 1KN pt load deflection too much

⇒ 180 PFC OK

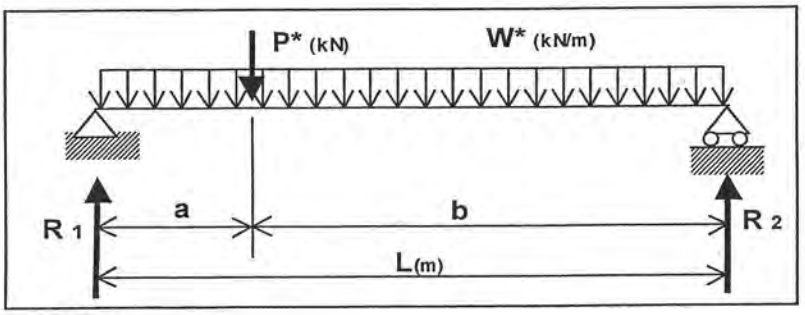
AS/NZS 1170 STEEL BEAM CALCULATION SHEET

Job Name: 125 Nikau Palm

Job No. 23040
Sheet No.

Date: 27-Feb-09

Engineer M.Y
Beam No. beam 7



L = 4.4 m
a = m
b = 4.4 m

LOADING

1/. Uniformly Distributed Load

			Amount	kN/m
Dead	Self Weight		0.21	
	Wall (Glass)	0.3kN/m	0.30	
	floor	.2m x 0.3	0.06	
	Total Dead Load		**G =**	**0.57 kN/m**
Live	Roof (Ψ_c = 0 for Q_f)			
	Floor	0.2mx 1.5	0.30	
	Total Live Load		**Q =**	**0.30 kN/m**

W* = 1.2 G + 1.5 Q = 1.13 kN/m
W_s = G + 0.4 Q_f = 0.69 kN/m

2/. Point Load

			Amount	kN
Dead				
	Total Dead Point Load		**G =**	**0.00 kN**
Live				
	Total Live Point Load		**Q =**	**0.00 kN**

Le (m) 5

P* = 1.2 G + 1.5 Q = 0.00 kN
P_s = G + 0.4 Q_f = 0.00 kN

Bending Moment $M^* = W^* L^2/8 + P^* ab/L$

M* = 2.74 kNm
ϕM_b = 20.0 kNm
okay

Profile Channel Section

All Steel is Grade 300

Section 180PFC

Ixx = 14.10 x10^6mm^4

Serviceability Deflection

(Under W_s + P_s) Δ = 1.2 mm
=Span/ 3690
(Under 1 kN Point Load) Δ = 0.6 mm

Reaction	Dead	Live	Ultimate
R1	1.25kN	0.66kN	2.49kN
R2	1.25kN	0.66kN	2.49kN

ESP CALCULATIONS

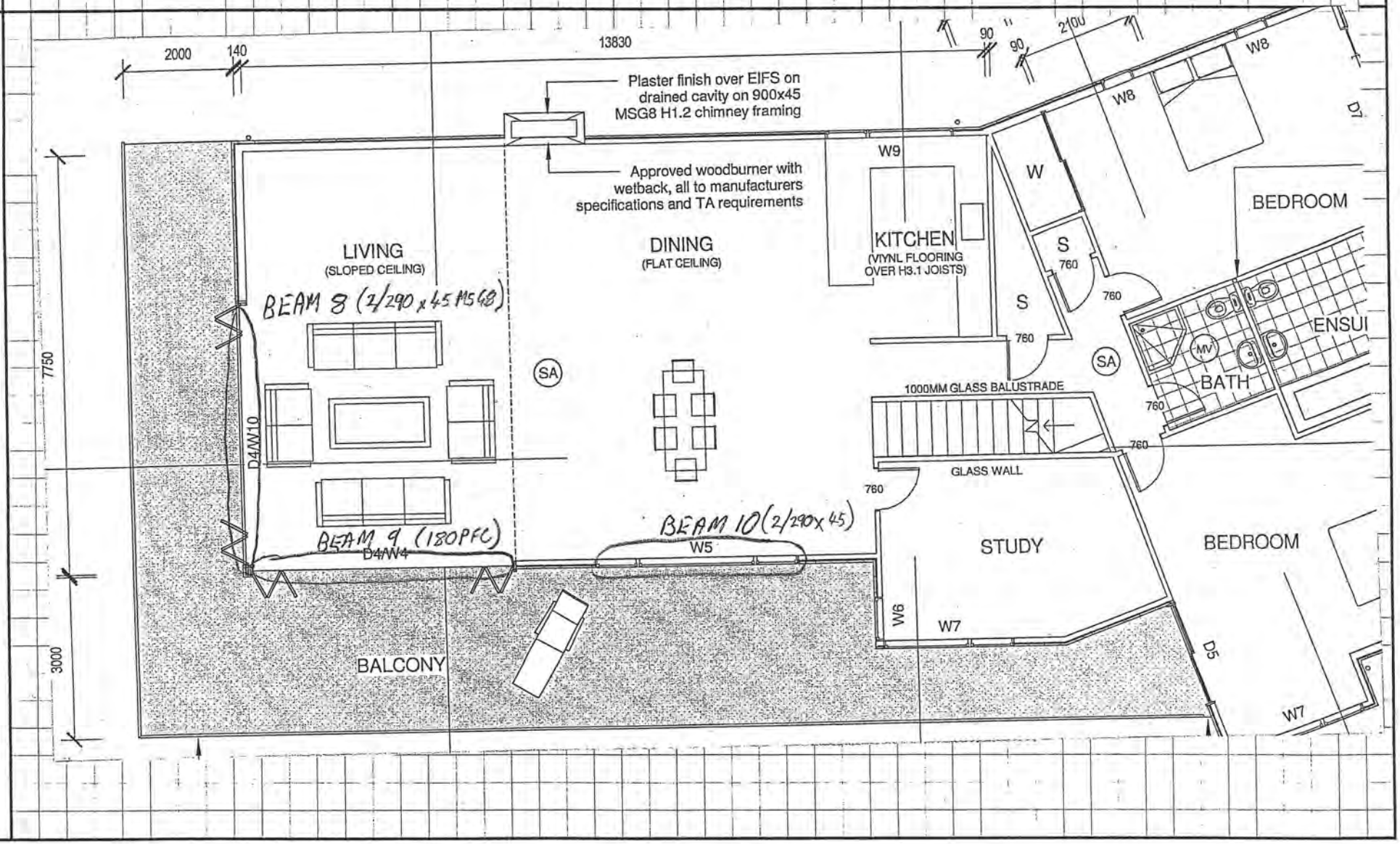
Sheet No. Bldg 35

Job No.

Eng. M.Y.

Date

Project 125 Nikau Street



F14-06/02

F14-06/02

Date	Eng.	Job No.	Sheet No.
25/02/09	M.Y	23040	36

Project: 125 Nikau Street

CALCULATIONS

Beam 9

length = 5.0m
trib width = 5.05m

See spreadsheet

⇒ 180 PFC

Beam 10

length = 3.6m
trib width = 5.05m

See spreadsheet

⇒ 2/290x45 MSG8

Beam 8

length = 4.75m
Trib width = 1.25m

See spreadsheet

⇒ 2/290x45 MSG8

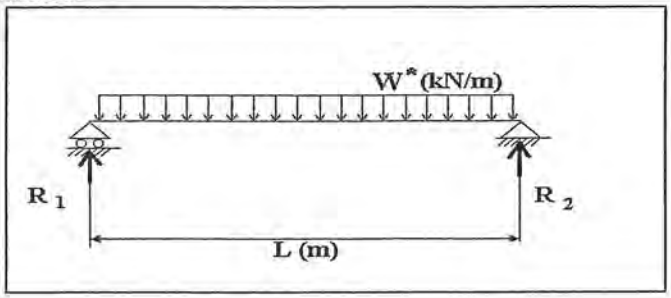
AS/NZS1170 BEAM LOAD CALCULATION SHEET

Timber Roof Beam Calculation Sheet

Job Name: 125 Nihau Palm road **Job No.** 23040

Date: 24-Feb-09 **Engineer** M.Y.

Beam No. Beam 8



L = 4.75 m

Trib Width = 1.25 m

LOADING

Uniformly Distributed Loads **Amount**

1. Dead	Beam Self Weight		0.12 kN/m
	Roof	0.3 kPa x Trib Width	0.38 kN/m
			kN/m
	Total Dead Load	**G =**	**0.50 kN/m**
	Qf = 1.8/A + 0.12 > 0.25kPa	ψ_a = 1.00	
2. Roof Live Load	0.42 kPa x Trib Width x ψ_a	**Q =**	**0.53 kN/m**

3. Site Wind Speed

$V_{(z)}$ = 42.33 m/s

	Upward Wind Loads	**Downward Wind Loads**
$q_{(z)} = 0.5(\rho_{air})V_{(z)}^2 x10^{-3}$ =	1.08 kPa	1.08 kPa

External Pressures

$p_e = C_{pe}K_aK_lK_pq_z$

K_a = 1.00

K_l = 2.00

K_p = 1.00

Cpe(min) =	-0.9	Cpe(max) = 0.3
p_e(min) =	-1.94 kPa	p_e(max) = 0.65 kPa

Internal Pressures $p_i = C_{pi}q_z$

C_{pi}(max) =	0.6	C_{pi}(min) = -0.3
pi(max) =	0.65 kPa	pi(min) = -0.32 kPa

Combined Pressures

Note: $K_c > 0.8/K_a$ $p_z = (p_e - p_i)K_c$

K_c =	0.95	K_c= 0.80
p_z(max) =	-2.45 kPa	p_z(min) = 0.77 kPa
W_u(max) =	**-3.06 kN/m**	W_u(min) = **0.97 kN/m**

Load Combinations - Ultimate Limit State

1.2 G + 1.5 Q = 1.39 kN/m

W_{medium} = 1.39 kN/m Note: Roof Qu = 0.00 kN/m **1.2G + Qu + Wu = 1.56 kN/m**

W_{short} = 2.62 kN/m **0.9G + Wu = -2.62 kN/m**

W* = 2.62 kN/m *Short term load critcal* **M* = 7.38 kNm**

Beam Type MSG8/VSG8 **Size** 290x90 f_b = 14 Z = 1.26

ø = **0.8** k_1= **1.0** k_4,k_5 =1 $\phi M_b = ø.k_1.k_4.k_5.f_b.Z$ = **14.55 kNm** OKAY

k_2= **2.0** **EI = 1449.91**

Load Combinations - Serviceability Limit States

G + 0.7Q = 0.87

0.71x Wind ult = 2.18

	1kN Load	**Long Term (G) Ws =** 0.50 kN/m	**Short Ws =** 2.18 kN/m
Deflection =	1.5mm	4.5mm	9.9mm
		Span/ 1046	Span/ 478
Limit	2.0mm	Span/ 500	Span/ 300
	OKAY	OKAY	OKAY

Reactions	**G**	**Q**	**$Wind_{down}$**	**$Wind_{up}$**	**Ult_{down}**	**Ult_{up}**
	1.18 kN	**1.26 kN**	**2.30 kN**	**-7.28 kN**	**3.71 kN**	**-6.22 kN**

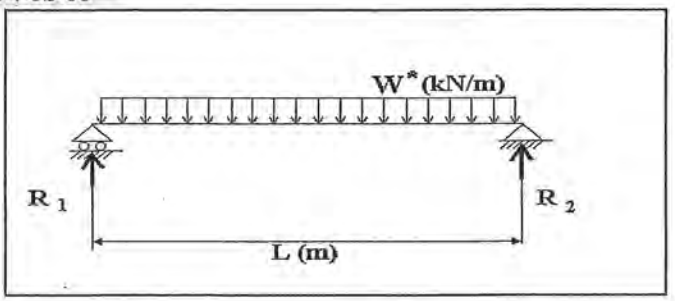
AS/NZS1170 BEAM LOAD CALCULATION SHEET

Steel Roof Beam Subjected To Wind Load

Job Name: 125 Nikau Palm Road **Job No.** 23040

Date: 25-Feb-09 **Engineer** M.Y

Beam No. Beam 9



L = 5 m

Trib Width = 5.05 m

LOADING

Uniformly Distributed Loads **Amount**

1. Dead Beam Self Weight 0.21 kN/m

Roof 0.3 kPa x Trib Width 1.52 kN/m

kN/m

Total Dead Load **G = 1.72 kN/m**

Qf = 1.8/A + 0.12 > 0.25kPa ψ_a = 0.90

2. Roof Live Load 0.25 kPa x Trib Width x ψ_a **Q = 1.13 kN/m**

3. Site Wind Speed

$V_{(z)}$ = **42.33** **m/s** **Upward Wind Loads** **Downward Wind Loads**

$q_{(z)} = 0.5(\delta_{air})V_{(z)}^2 x10^{-3}$ = 1.08 kPa 1.08 kPa

External Pressures

$p_e = C_{pe}K_aK_lK_pq_z$ Cpe(min) = -0.9 Cpe(max) = 0.3

K_a = 0.90

K_l = 1.00 p_e(min) = -0.87 kPa p_e(max) = 0.29 kPa

K_p = 1.00

Internal Pressures C_{pi}(max) = 0.6 C_{pi}(min) = -0.3

$p_i = C_{pi}q_z$ pi(max) = 0.65 kPa pi(min) = -0.32 kPa

Combined Pressures

Note: $K_c > 0.8/K_a$ K_c = 0.95 K_c= 0.89

$p_z = (p_e - p_i)K_c$ p_z(max) = -1.44 kPa p_z(min) = 0.54 kPa

W_u(max) = **-7.27 kN/m** W_u(min) = **2.75 kN/m**

Load Combinations - Ultimate Limit States **1.2 G + 1.5 Q = 3.77 kN/m**

Note: Roof Qu = 0.00 kN/m **1.2G + Qu + Wu = 4.82 kN/m**

0.9G + Wu = -5.72 kN/m

W* = 5.72 kN/m **M* = 17.88 kN/m**

Profile Channel Section **Section** 180PFC $Le_{(m)}$ = 1

ϕM_b = **45.1** OKAY

I_{xx} = 14.10 $x10^6 mm^4$

Load Combinations - Serviceability Limit States G + 0.7Q = 2.52 kN/m

0.71x Wind ult = 5.16 kN/m

	1kN Load	Long Term (G) Ws = 1.72 kN/m	Short Ws = 5.16 kN/m
Deflection =	0.9mm	5.0mm	14.9mm
		Span/ 1005	Span/ 336
Limit	2.0mm	Span/ 500	Span/ 300
	OKAY	OKAY	OKAY

Reactions	G	Q	$Wind_{down}$	$Wind_{up}$	Ult_{down}	Ult_{up}
	4.31 kN	**2.83 kN**	**6.88 kN**	**-18.18 kN**	**12.05 kN**	**-14.30 kN**

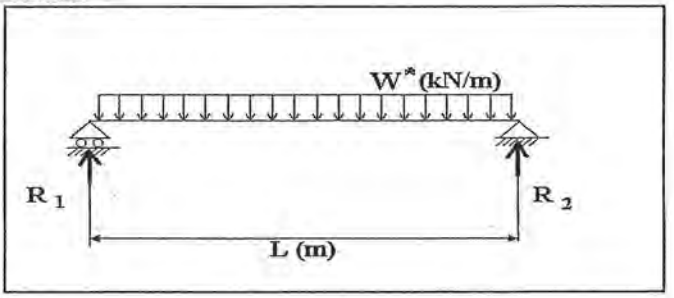
AS/NZS1170 BEAM LOAD CALCULATION SHEET

Timber Roof Beam Calculation Sheet

Job Name: 125 Nikau Palm road **Job No.** 23040

Date: 24-Feb-09 **Engineer** M.Y.

Beam No. Beam 10



L = 3.6 m

Trib Width = 5.053 m

LOADING

Uniformly Distributed Loads **Amount**

1. Dead Beam Self Weight 0.12 kN/m

Roof 0.3 kPa x Trib Width 1.52 kN/m

kN/m

Total Dead Load **G = 1.64 kN/m**

Qf = 1.8/A + 0.12 > 0.25kPa ψ_a = 1.00

2. Roof Live Load 0.25 kPa x Trib Width x ψ_a **Q = 1.26 kN/m**

3. Site Wind Speed

$V_{(z)}$ = 42.33 m/s **Upward Wind Loads** **Downward Wind Loads**

$q_{(z)} = 0.5(\rho_{air})V_{(z)}^2 x10^{-3}$ = 1.08 kPa 1.08 kPa

External Pressures

$p_e = C_{pe}K_aK_lK_pq_z$ Cpe(min) = -0.9 Cpe(max) = 0.3

K_a = 1.00

K_l = 1.00 p_e(min) = -0.97 kPa p_e(max) = 0.32 kPa

K_p = 1.00

Internal Pressures C_{pi}(max) = 0.6 C_{pi}(min) = -0.3

$p_i = C_{pi}q_z$ pi(max) = 0.65 kPa pi(min) = -0.32 kPa

Combined Pressures

Note: $K_c > 0.8/K_a$ K_c = 0.95 K_c= 0.80

$p_z = (p_e - p_i)K_c$ p_z(max) = -1.53 kPa p_z(min) = 0.52 kPa

W_u(max) = **-7.74 kN/m** W_u(min) = **2.61 kN/m**

Load Combinations - Ultimate Limit State **1.2 G + 1.5 Q = 3.86 kN/m**

W_{medium} = 3.86 kN/m Note: Roof Qu = 0.00 kN/m **1.2G + Qu + Wu = 4.57 kN/m**

W_{short} = 6.27 kN/m **0.9G + Wu = -6.27 kN/m**

W* = 6.27 kN/m *Short term load critcal* **M* = 10.15 kNm**

Beam Type MSG8/VSG8 **Size** 290x90 f_b = 14 Z = 1.26

ø = **0.8** k_1= **1.0** k_4,k_5 =1 **ϕM_b =ø.k_1.k_4.k_5.f_b.Z = 14.55 kNm** OKAY

k_2= **2.0** **EI = 1449.91**

Load Combinations - Serviceability Limit States

G + 0.7Q = 2.52

0.71x Wind ult = 5.50

1kN Load **Long Term (G) Ws =** 1.64 kN/m **Short Ws =** 5.50 kN/m

Deflection = 0.7mm 4.9mm 8.3mm

Span/ 729 Span/ 434

Limit 2.0mm Span/ 500 Span/ 300

OKAY OKAY OKAY

Reactions	**G**	**Q**	**$Wind_{down}$**	**$Wind_{up}$**	**Ult_{down}**	**Ult_{up}**
	2.95 kN	**2.27 kN**	**4.69 kN**	**-13.93 kN**	**8.23 kN**	**-11.28 kN**

Wind Loads for Beam 11 & 12

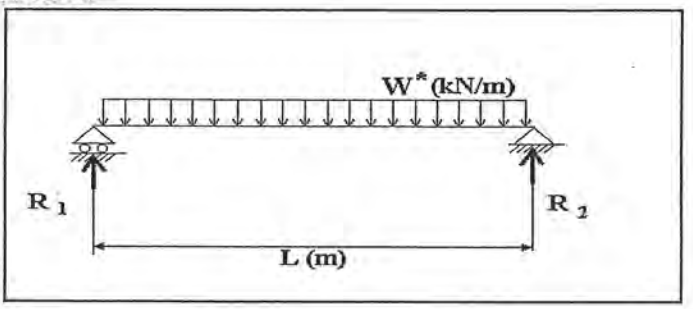
#6 40

AS/NZS1170 BEAM LOAD CALCULATION SHEET
Timber Roof Beam Calculation Sheet

Job Name: 125 Nikau Palm **Job No.** 23040

Date: 25-Feb-09 **Engineer** M.Y

Beam No. Beam 11



L = 5 m

Trib Width = 1.9 m

LOADING

3. Site Wind Speed

$V_{(z)}$ = **42.33** m/s

	Inward Wind Loads	Outward Wind Loads
$q_{(z)} = 0.5(\rho_{air})V_{(z)}^2 x10^{-3}$ =	1.08 kPa	1.08 kPa
External Pressures		
$p_e = C_{pe}K_aK_lK_pq_z$	Cpe(min) = 0.70	Cpe(max) = -0.5
K_a = 1.00		
K_l = 1.00	p_e(min) = 0.75 kPa	p_e(max) = -0.54 kPa
K_p = 1.00		
Internal Pressures	C_{pi}(max) = -0.30	C_{pi}(min) = 0.3
$p_i = C_{pi}q_z$	pi(max) = -0.32 kPa	pi(min) = 0.32 kPa
Combined Pressures		
	K_c = 1.0	K_c = 1.0
$p_z = (p_e - p_i)K_c$	p_z(max) = 1.08 kPa	p_z(min) = -0.86 kPa
	W_u(in) = **2.04 kN/m**	W_u(out) = **-1.63 kN/m**

look at Wind loads for model in Space Gas

Load Combinations - Ultimate Limit State

W* = 2.04 kN/m **M* = 6.38 kNm**

Beam Type MSG8/VSG8 **Size** 290x45 f_b = 14 Z = 0.63

ø = 0.8 k_1,k_4,k_5 =1 $\phi M_b = ø.k_1.k_4.k_5.f_b.Z$ = **7.27 kNm** OKAY

EI = 724.96

Load Combinations - Serviceability Limit States

1.5 x 0.6kN Load

Deflection = 3.2mm

Span/ 1547

Span/ 500

OKAY

0.71x Wind Ult

Short Ws = 1.45 kN/m

16.3mm

Span/ 307

Span/ 300

OKAY

Reactions **5.11 kN**

Find Loads from Wall face on beams 8 & 9

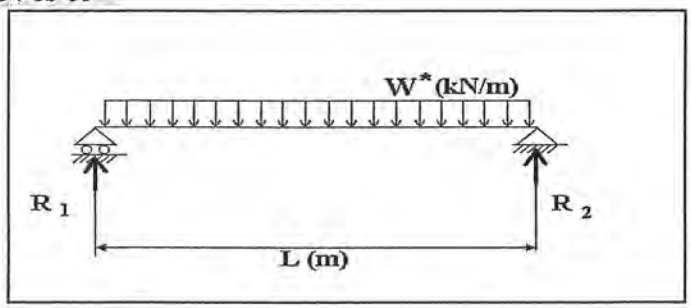
AS/NZS1170 BEAM LOAD CALCULATION SHEET

Timber Roof Beam Calculation Sheet

Job Name: 125 Nikau Palm **Job No.** 23040

Date: 25-Feb-09 **Engineer** M.Y

Beam No. Beam 11



L = 5 m

Trib Width = 0.75 m

LOADING

3. Site Wind Speed

$V_{(z)}$ = **42.33** m/s

	Inward Wind Loads	Outward Wind Loads
$q_{(z)} = 0.5(\rho_{air})V_{(z)}^2 x10^{-3}$ =	1.08 kPa	1.08 kPa

External Pressures

$p_e = C_{pe}K_aK_lK_pq_z$

K_a = 1.00

K_l = 1.00

K_p = 1.00

Cpe(min) =	0.70	Cpe(max) = -0.5
p_e(min) =	0.75 kPa	p_e(max) = -0.54 kPa

Internal Pressures

$p_i = C_{pi}q_z$

C_{pi}(max) =	-0.30	C_{pi}(min) = 0.3
pi(max) =	-0.32 kPa	pi(min) = 0.32 kPa

Combined Pressures

$p_z = (p_e - p_i)K_c$

K_c =	1.0	K_c= 1.0
p_z(max) =	1.08 kPa	p_z(min) = -0.86 kPa
W_u(in) =	**0.81 kN/m**	W_u(out) = **-0.65 kNm**

Look at Wind loads model in Space Gas

Load Combinations - Ultimate Limit State

W* = 0.81 kN/m **M* = 2.52 kNm**

Beam Type MSG8/VSG8 **Size** 290x45 f_b = 14 Z = 0.63

ø = 0.8 k_1, k_4, k_5 =1 **$\phi M_b = \phi.k_1.k_4.k_5.f_b.Z$ = 7.27 kNm** OKAY

EI = 724.96

Load Combinations - Serviceability Limit States

1.5 x 0.6kN Load

Deflection = 3.2mm

Span/ 1547

Span/ 500

OKAY

0.71x Wind Ult

Short Ws = 0.57 kN/m

6.4mm

Span/ 778

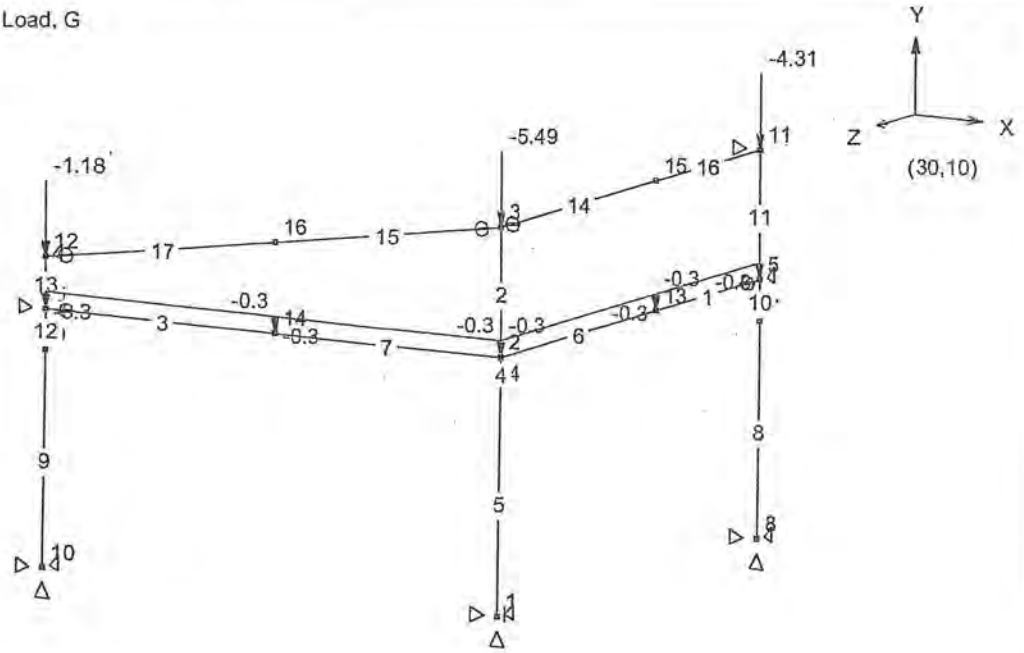
Span/ 300

OKAY

Reactions **2.02 kN**

SPACE GASS 10.60 - ISP CONSULTING ENGINEERS LTD 5 Mar 2009, 10:59 am

Load cases:
1 Dead Load, G



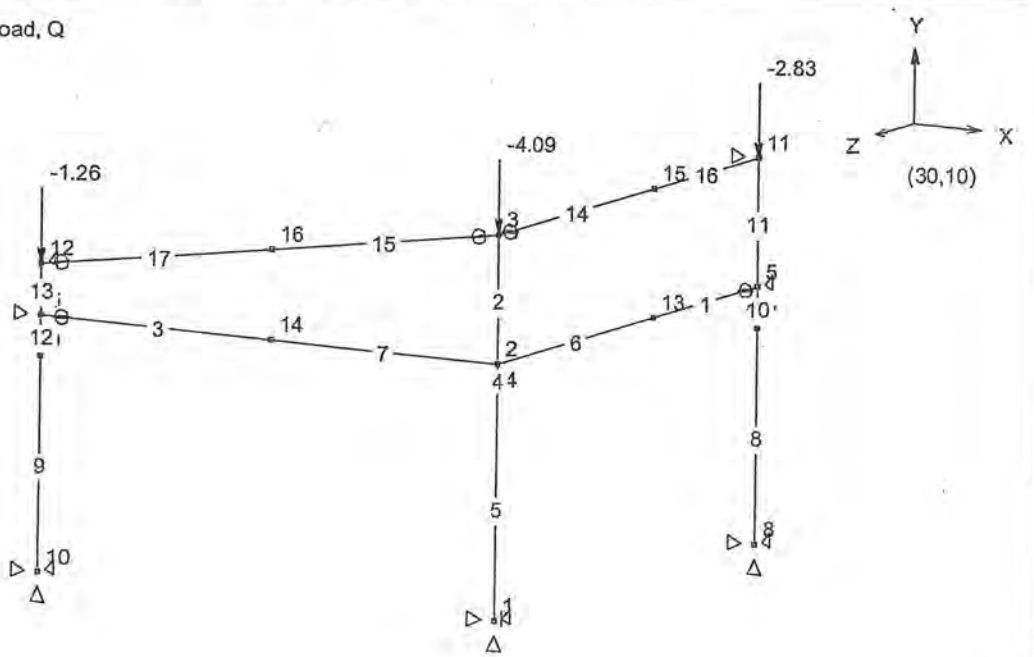
dead, G
No general restraint

Materials:
1 STEEL
2 MSG8

Sections:
1 125*9 SHS
2 125*6 SHS
3 180 PFC
4 290 x90

Job: I:\JOBFILES\ISP\23000\23040\23040 Column 1
Units - Len: m, Sec: mm, Mat: MPa, Dens: T/m^3, Temp: Celsius, Force: kN, Mom: kNm, Mass: T, Acc: g's, Trans: mm, Stress: MPa
Scales - Frame: 1:73, Load: 0.134218, Disp: None, Moment: None, Shear: None, Axial: None, Torsion: None

Load cases:
2 Live Load, Q



Live, Q
No general restraint

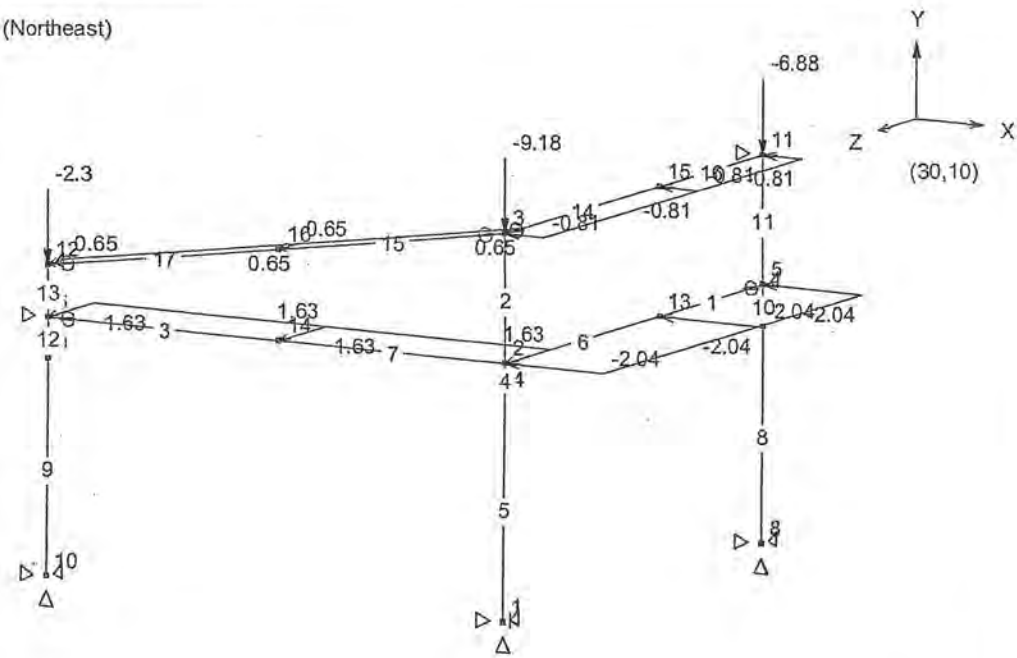
Materials:
1 STEEL
2 MSG8

Sections:
1 125*9 SHS
2 125*9 SHS
3 180 PFC
4 290 x90

Job: I:\JOBFILES\ISP\23000\23040\23040 Column 1
Units - Len: m, Sec: mm, Mat: MPa, Dens: T/m^3, Temp: Celsius, Force: kN, Mom: kNm, Mass: T, Acc: g's, Trans: mm, Stress: MPa
Scales - Frame: 1:73, Load: 0.134218, Disp: None, Moment: None, Shear: None, Axial: None, Torsion: None

SPACE GASS 10.60 - ISP CONSULTING ENGINEERS LTD 5 Mar 2009, 10:59 am

Load cases:
3 Wind (Northeast)



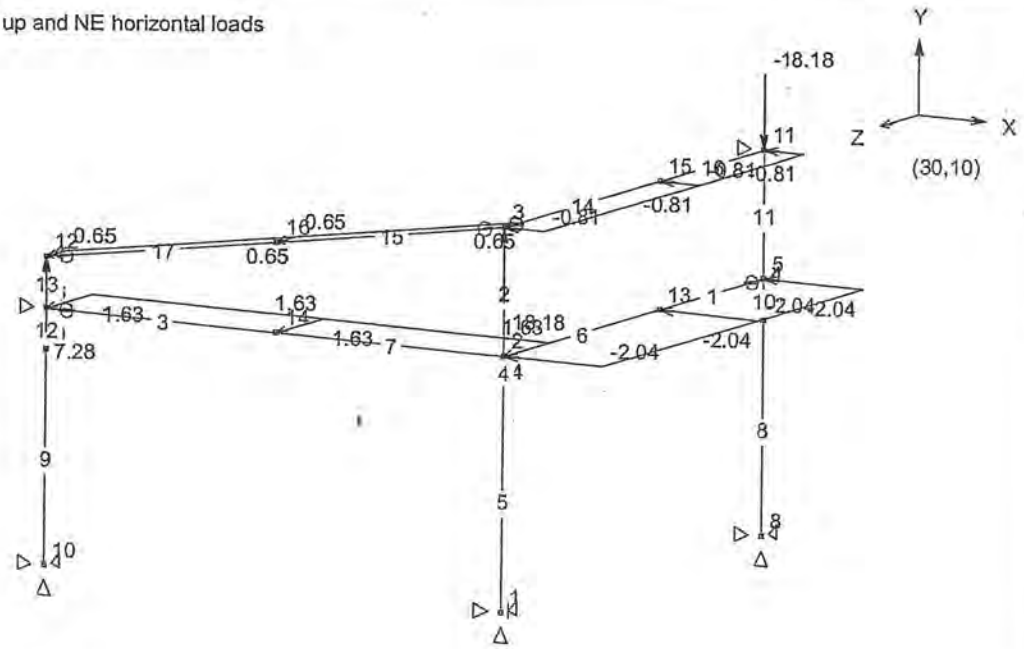
Wind northwest and downdard
No general restraint

Materials:
1 STEEL
2 MSG8

Sections:
1 125*6 SHS
2 125*6 SHS
3 180 PFC
4 290 x90

Job: I:\JOBFILES\ISP\23000\23040\23040 Column 1
Units - Len: m, Sec: mm, Mat: MPa, Dens: T/m^3, Temp: Celsius, Force: kN, Mom: kNm, Mass: T, Acc: g's, Trans: mm, Stress: MPa
Scales - Frame: 1:73, Load: 0.134218, Disp: None, Moment: None, Shear: None, Axial: None, Torsion: None

Load cases:
5 Wind up and NE horizontal loads



Wind, North east and upward
No general restraint

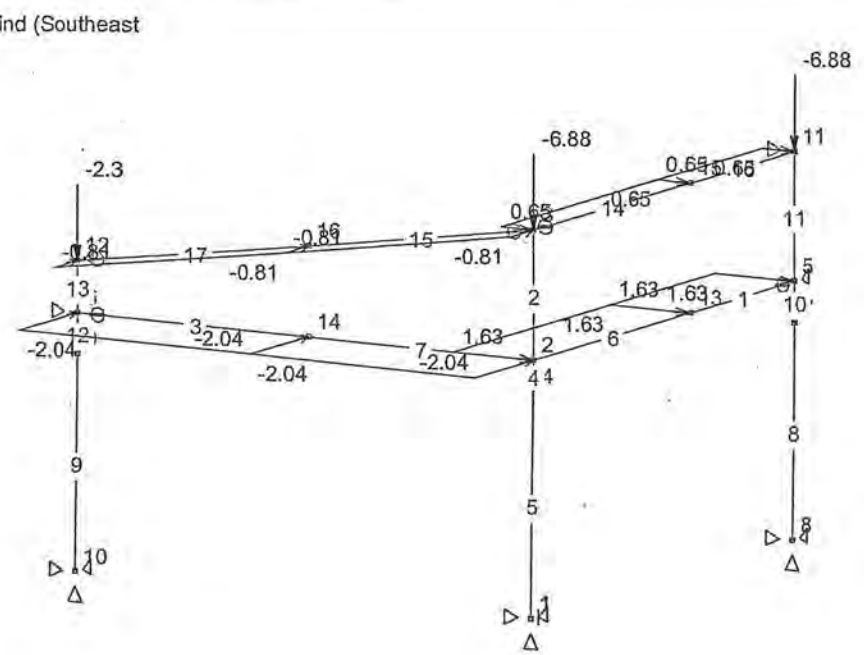
Materials:
1 STEEL
2 MSG8

Sections:
1 125*9 SHS
2 125*9 SHS
3 180 PFC
4 290 x90

Job: I:\JOBFILES\ISP\23000\23040\23040 Column 1
Units - Len: m, Sec: mm, Mat: MPa, Dens: T/m^3, Temp: Celsius, Force: kN, Mom: kNm, Mass: T, Acc: g's, Trans: mm, Stress: MPa
Scales - Frame: 1:73, Load: 0.134218, Disp: None, Moment: None, Shear: None, Axial: None, Torsion: None

SPACE GASS 10.60 - ISP CONSULTING ENGINEERS LTD 5 Mar 2009, 11:01 am

Load cases:
■ 4 ——— Wind (Southeast



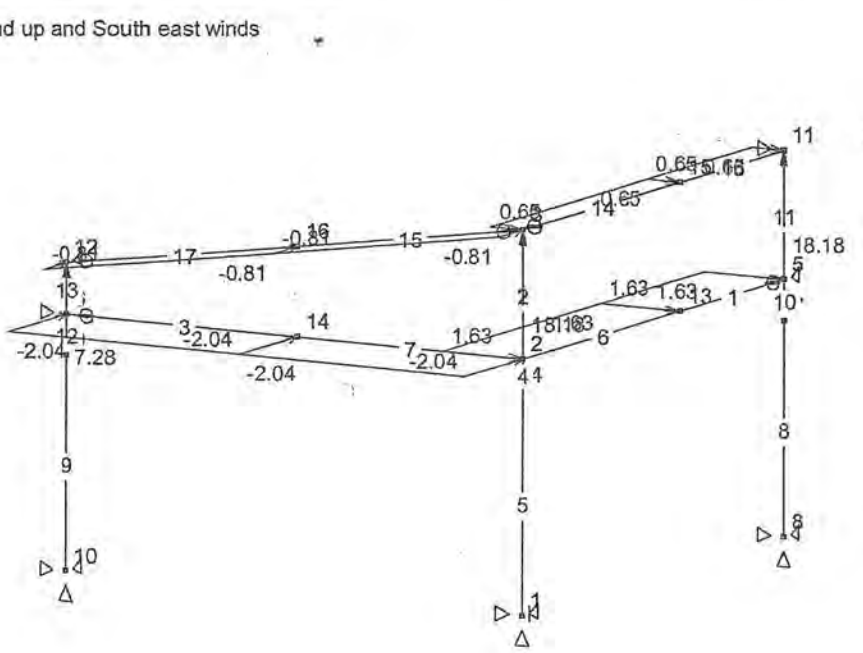
Sections:
■ 1 125*6 SHS
■ 2 125*6 SHS
■ 3 180 PFC
■ 4 290 x90

Materials:
■ 1 STEEL
■ 2 MSG8

Wind, south east and downward
No general restraint

Job: I:\JOBFILES\ISP\23000\23040\23040 Column 1
Units - Len: m, Sec: mm, Mat: MPa, Dens: T/m^3, Temp: Celsius, Force: kN, Mom: kNm, Mass: T, Acc: g's, Trans: mm, Stress: MPa
Scales - Frame: 1:73, Load: 0.134218, Disp: None, Moment: None, Shear: None, Axial: None, Torsion: None

Load cases:
■ 6 ——— Wind up and South east winds



Sections:
■ 1 125*6 SHS
■ 2 125*6 SHS
■ 3 180 PFC
■ 4 290 x90

Materials:
■ 1 STEEL
■ 2 MSG8

Wind, South east and upward
No general restraint

Job: I:\JOBFILES\ISP\23000\23040\23040 Column 1
Units - Len: m, Sec: mm, Mat: MPa, Dens: T/m^3, Temp: Celsius, Force: kN, Mom: kNm, Mass: T, Acc: g's, Trans: mm, Stress: MPa
Scales - Frame: 1:73, Load: 0.134218, Disp: None, Moment: None, Shear: None, Axial: None, Torsion: None

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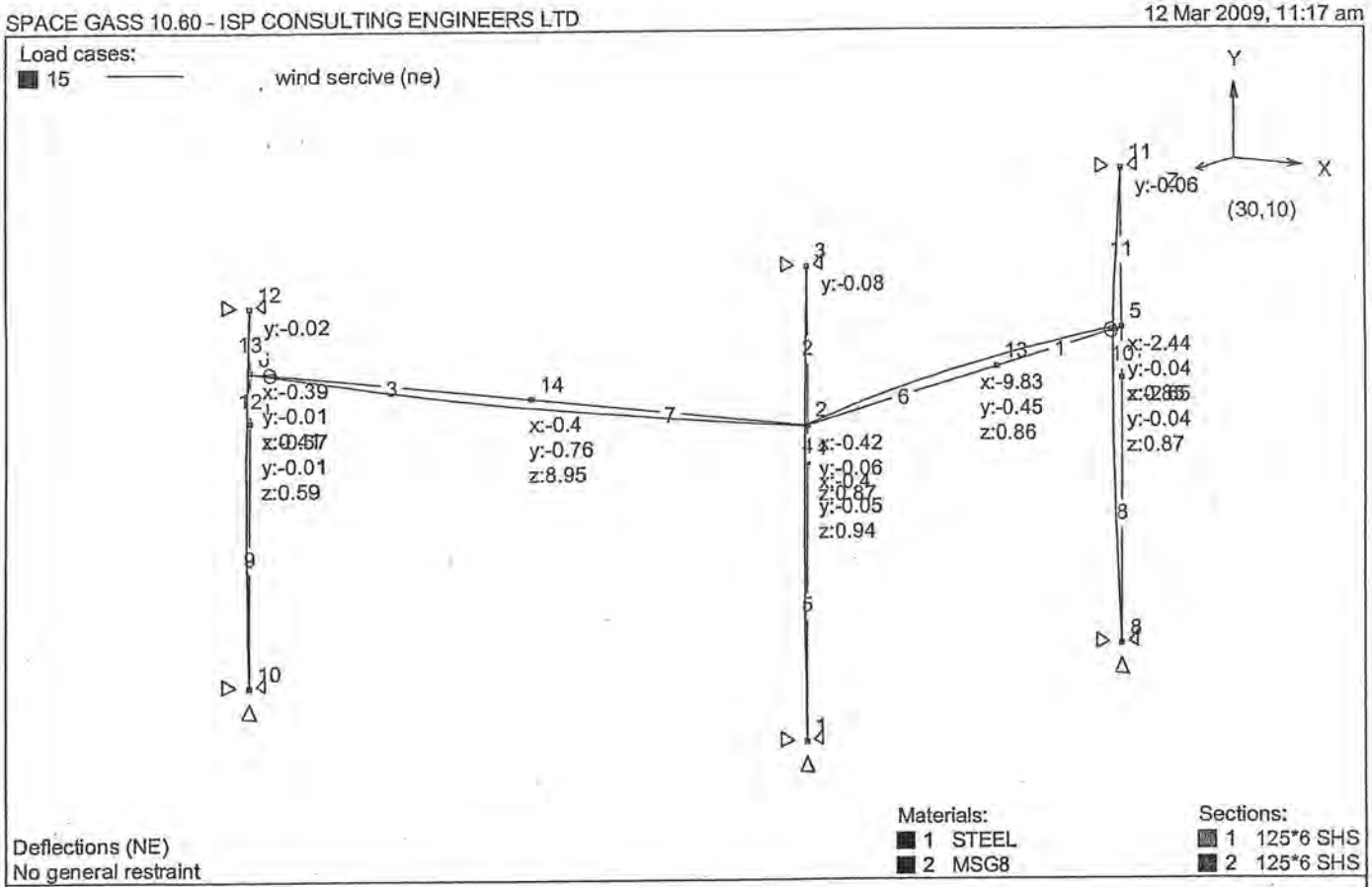
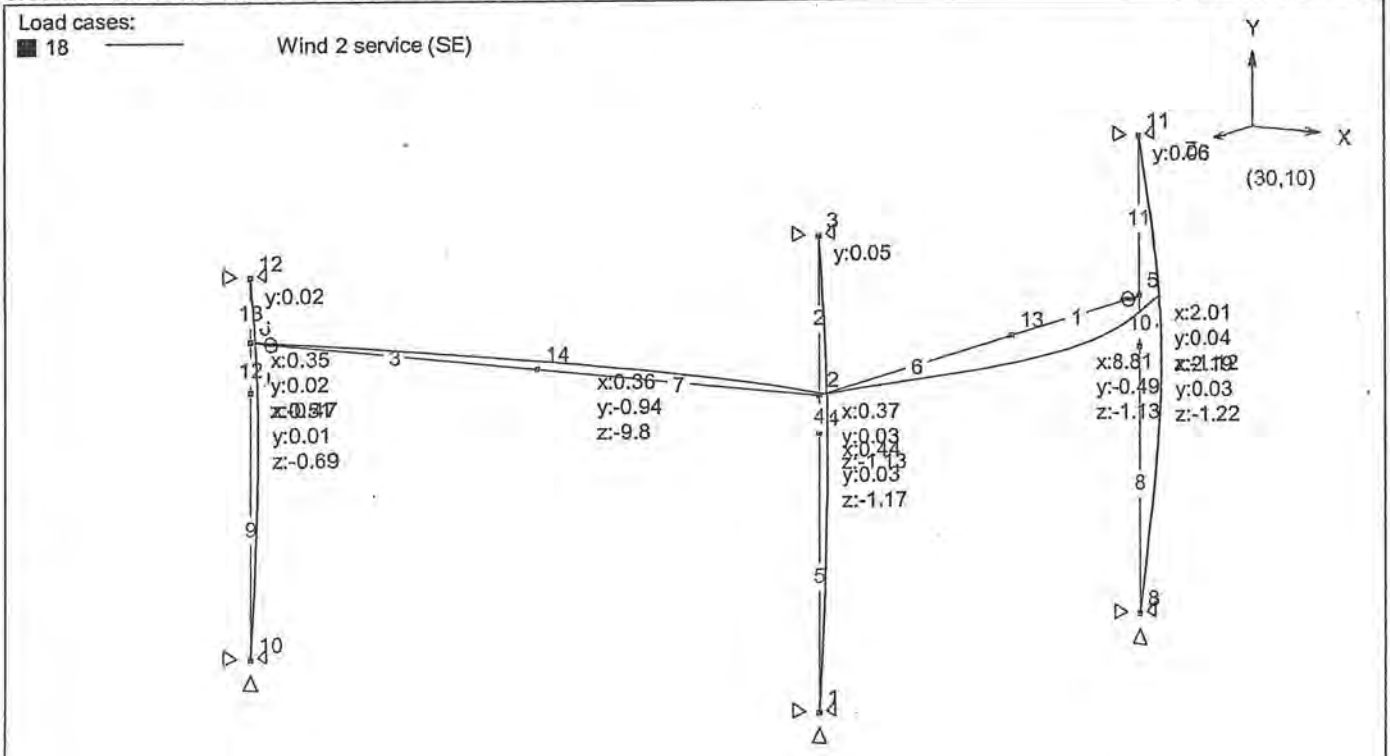


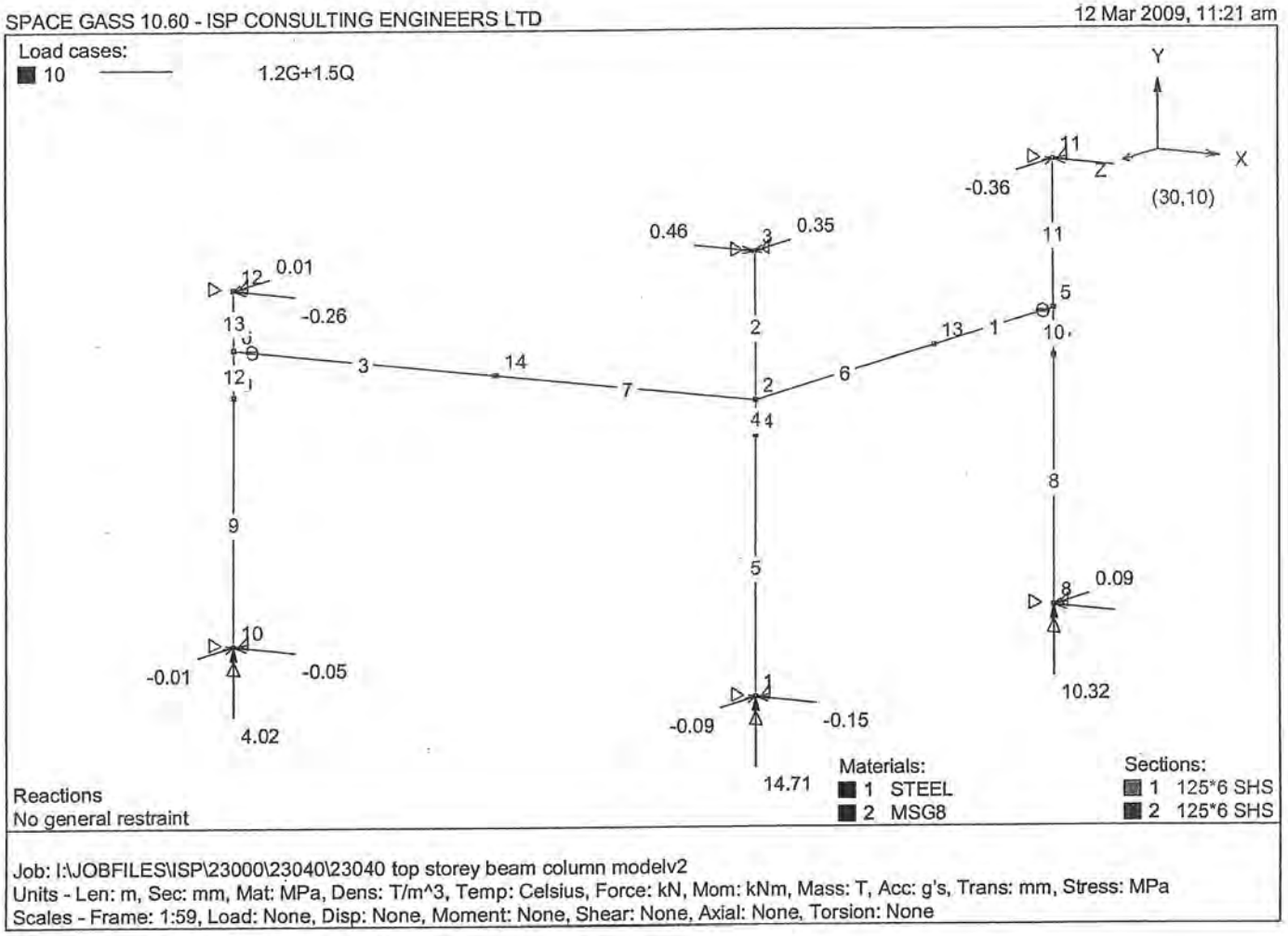
Job: I:\JOBFILES\ISP\23000\23040\23040 top storey beam column modelv2
Units - Len: m, Sec: mm, Mat: MPa, Dens: T/m^3, Temp: Celsius, Force: kN, Mom: kNm, Mass: T, Acc: g's, Trans: mm, Stress: MPa
Scales - Frame: 1:59, Load: None, Disp: 27.20082, Moment: None, Shear: None, Axial: None, Torsion: None

SPACE GASS 10.60 - ISP CONSULTING ENGINEERS LTD 12 Mar 2009, 11:18 am



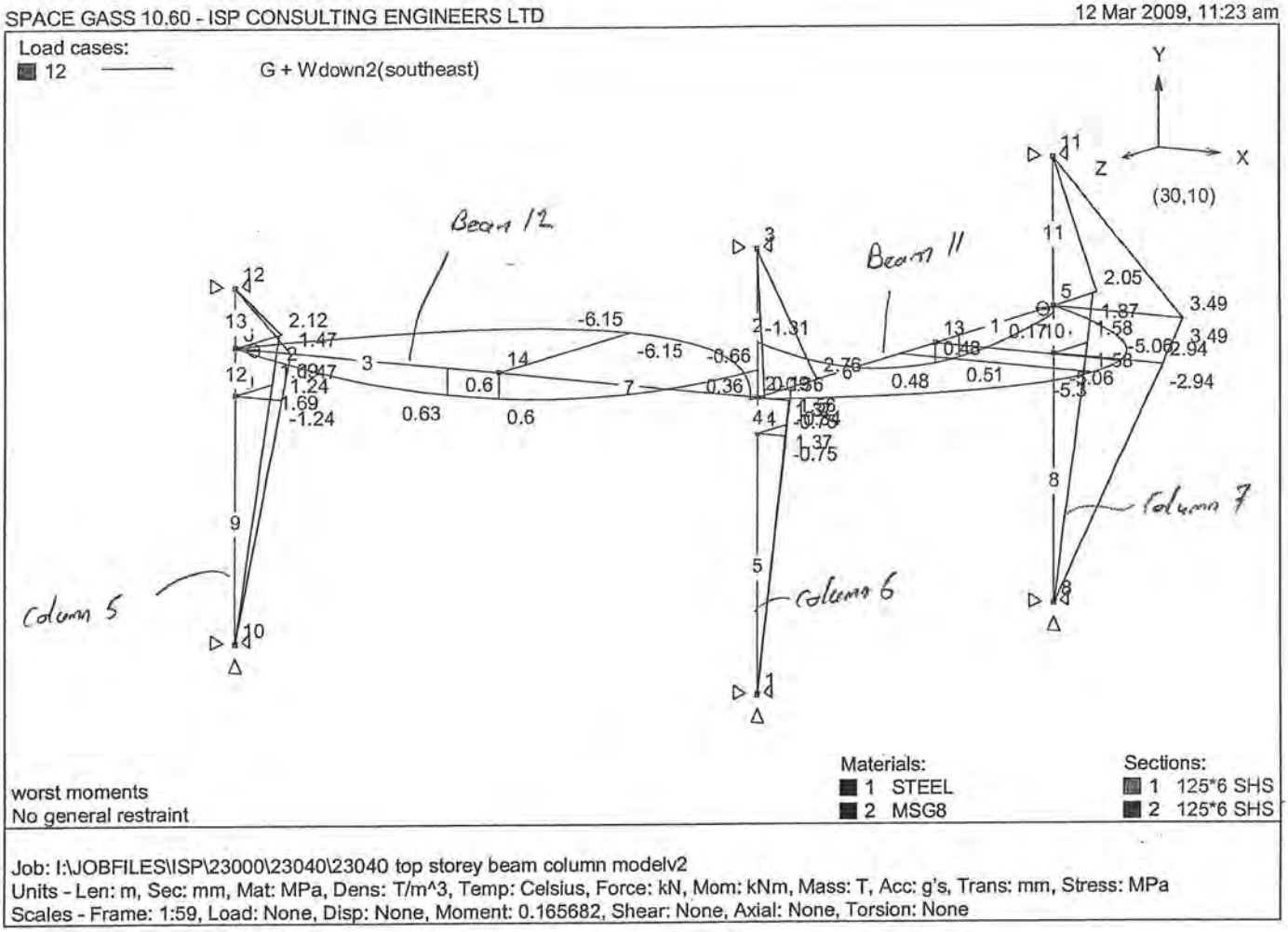
Job: I:\JOBFILES\ISP\23000\23040\23040 top storey beam column modelv2
Units - Len: m, Sec: mm, Mat: MPa, Dens: T/m^3, Temp: Celsius, Force: kN, Mom: kNm, Mass: T, Acc: g's, Trans: mm, Stress: MPa
Scales - Frame: 1:59, Load: None, Disp: 66.40825, Moment: None, Shear: None, Axial: None, Torsion: None

SPACE GASS 10.60 - ISP CONSULTING ENGINEERS LTD 12 Mar 2009, 11:21 am



Job: I:\JOBFILES\ISP\23000\23040\23040 top storey beam column modelv2
Units - Len: m, Sec: mm, Mat: MPa, Dens: T/m^3, Temp: Celsius, Force: kN, Mom: kNm, Mass: T, Acc: g's, Trans: mm, Stress: MPa
Scales - Frame: 1:59, Load: None, Disp: None, Moment: None, Shear: None, Axial: None, Torsion: None

SPACE GASS 10.60 - ISP CONSULTING ENGINEERS LTD 12 Mar 2009, 11:23 am



Job: I:\JOBFILES\ISP\23000\23040\23040 top storey beam column modelv2
Units - Len: m, Sec: mm, Mat: MPa, Dens: T/m^3, Temp: Celsius, Force: kN, Mom: kNm, Mass: T, Acc: g's, Trans: mm, Stress: MPa
Scales - Frame: 1:59, Load: None, Disp: None, Moment: 0.165682, Shear: None, Axial: None, Torsion: None

Summary of demands

	Demand	Moment capacity	
Beam 11	5.06 kNm	37.8 kNm (Le=5)	OK
Beam 12	6.15 kNm	37.8 kNm	OK
Column 5	2.12 kNm	kNm (Le=5)	OK
" 6	2.76 kNm	"	OK
" 7	3.49 kNm	"	OK

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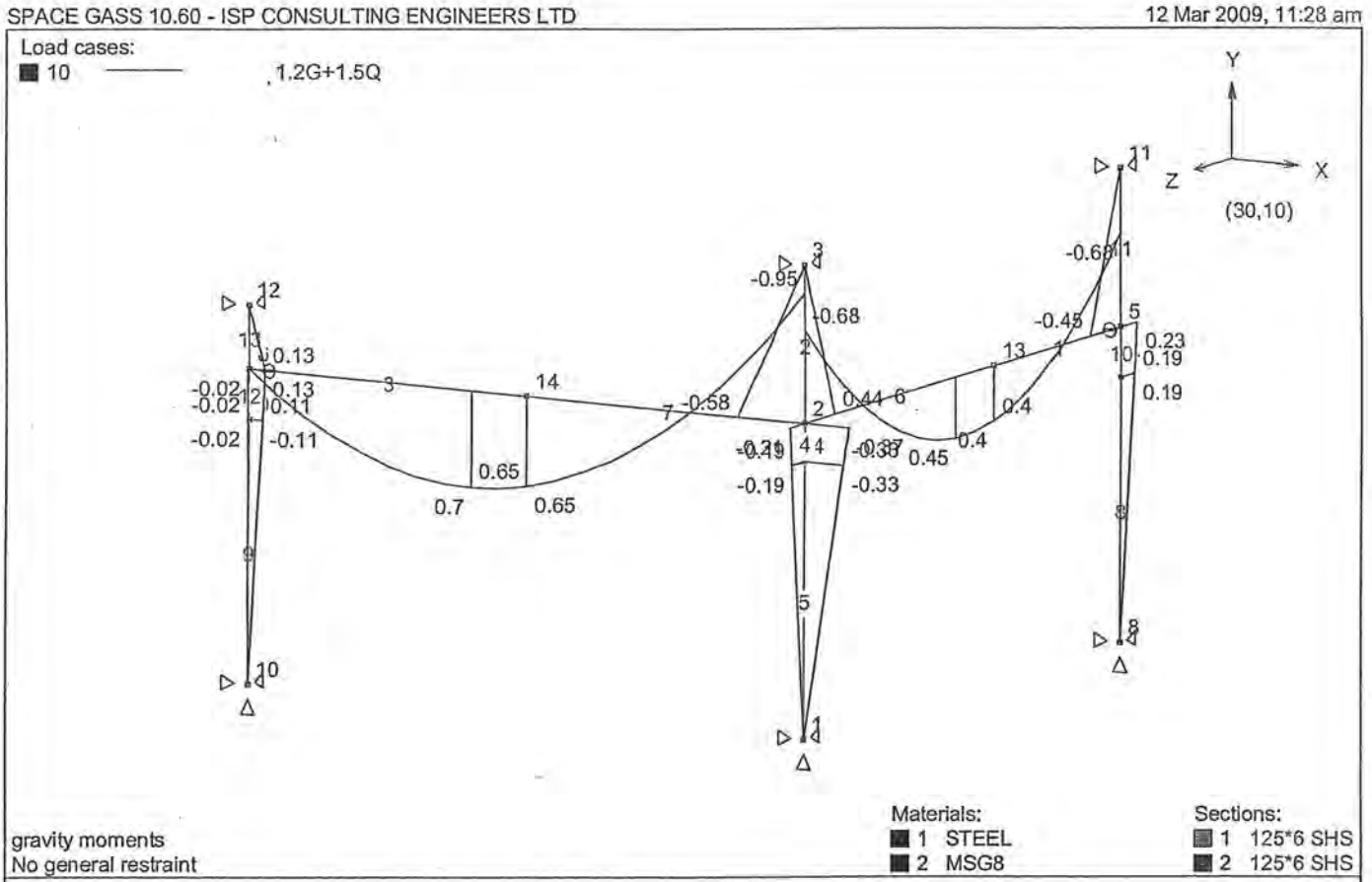
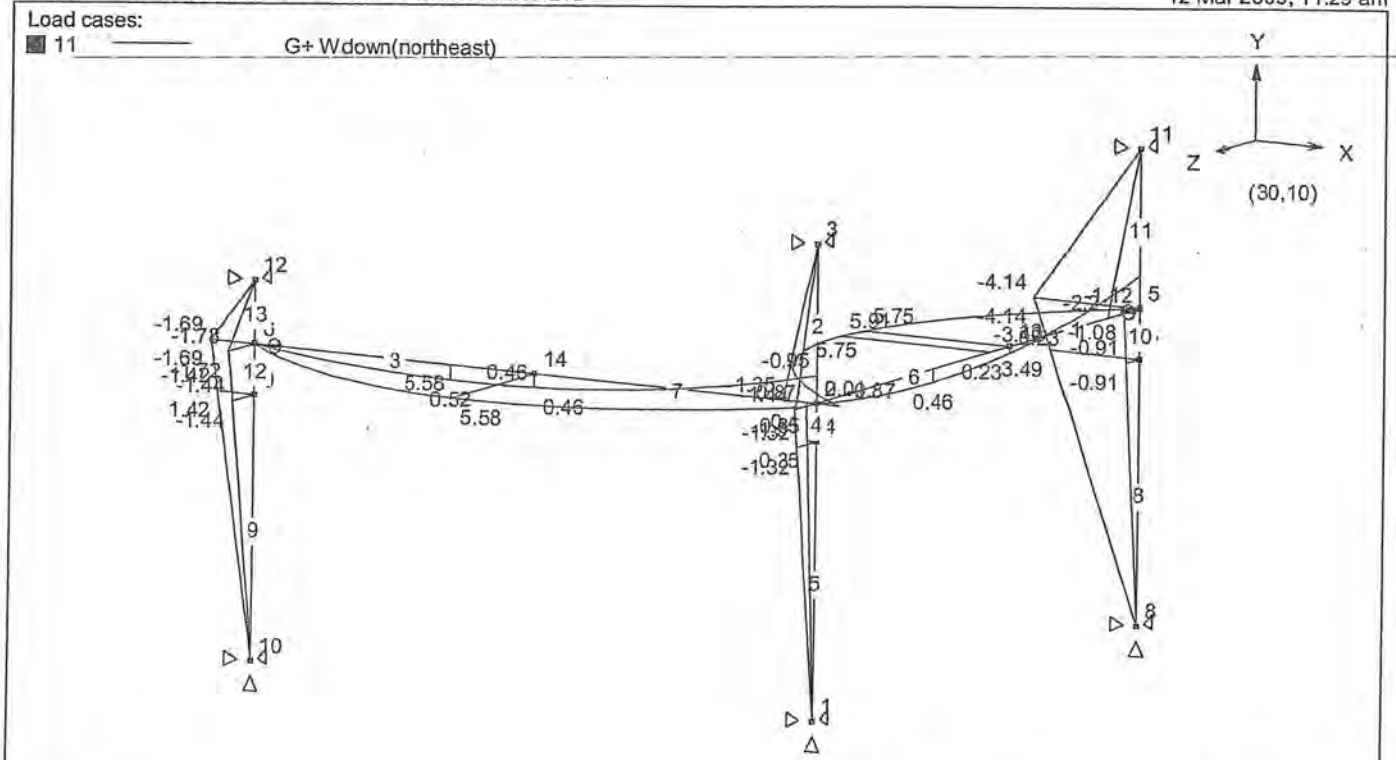


Job: I:\JOBFILES\ISP\23000\23040\23040 top storey beam column modelv2
Units - Len: m, Sec: mm, Mat: MPa, Dens: T/m^3, Temp: Celsius, Force: kN, Mom: kNm, Mass: T, Acc: g's, Trans: mm, Stress: MPa
Scales - Frame: 1:59, Load: None, Disp: None, Moment: 0.054291, Shear: None, Axial: None, Torsion: None

SPACE GASS 10.60 - ISP CONSULTING ENGINEERS LTD 12 Mar 2009, 11:29 am



Job: I:\JOBFILES\ISP\23000\23040\23040 top storey beam column modelv2
Units - Len: m, Sec: mm, Mat: MPa, Dens: T/m^3, Temp: Celsius, Force: kN, Mom: kNm, Mass: T, Acc: g's, Trans: mm, Stress: MPa
Scales - Frame: 1:59, Load: None, Disp: None, Moment: 0.258877, Shear: None, Axial: None, Torsion: None

F14-06/02

Date 6/03/09	Eng. M.Y	Job No. 23040	Sheet No. 49
Project 125 Nikau Palm			

CALCULATIONS

Column 3

Loads

G: pt load: 1.18 KN
UDL: Wall + internal flooring + decking

Q: pt load: 1.26 KN
UDL: Wall, internal & Decking loadings

From Column 5 (125x95 HS above) only

Ult down = 3.71
Ult up = -6.22

Note: does not include floor loads or wall loads

Design to NZS 3604

Column 4

Reactions from beam 8 & 9, through Column 6 to Column 4

G:
pt load: 5.5 KN Does not include floor or wall loads

Q pt load: 4.09 KN

From beam 8 & 9

Ult down = 15.76 KN
Ult up = -20.0 KN

Design to NZS 3604

Timber Axial Capacity

Job Name	125 Nikau Palm
Job Number	23040
Location	
Date	6/03/2009
Engineer	Column 1 & 2

Lx	2.7 m	**dx =**	90 mm	S2 = 30
Ly	0.8 m	**dy =**	90 mm	S3 = 9

Φ	0.8	**Load Duration**	
k1	0.8	Medium	
k4	1		
k8	0.351		
ft	3 MPa	**Type of Timber**	
fc	10 MPa	MSG6 wet	
A	8100 mm^2		

Euler Buckling

E	4.8 GPa		
Ixx	5.47E+06 mm^4	N_{exx} =	35.5 kN
Iyy	5.47E+06 mm^4	N_{eyy} =	404.6 kN

k8 Calculation

Seff	30		
k8 wet	0.381	**k8 wet**	0.351
k8 dry	0.420	**k8 dry**	0.324
S = 10-25	0.381	**S > 25**	0.351

Compression Load		**Tension Load**	
N* =	12.8 kN	**N* =**	6 kN
ΦNc =	18.2 kN	**ΦNt =**	15.6 kN
ΦNe =	35.5 kN		
	OKAY		OKAY

Rowbustness Check

Nr* =	12.8	**Mr* =**	0.38
ΦNr =	22.7	**ΦMr =**	0.73

Consider — Capacity = 108 %

Check is a 0.6kN load at 1m from end of the member in combination with long term axial load

Not an issue as there is a large box cladding around this member