CODE COMPLIANCE CERTIFICATE

Section 95 Building Act 2004 [Form 7 – Building (forms) Regulations 2004]

Consent No(s): 090806, 090806A

The Building			
Street address of building:	86 Emerald Glen Rd, Paekakariki	**Building name:**	N/A
Current, Lawfully established, use:	Detached dwelling	**Location of building within site/block number:**	South/east corner, access directly from road
		Intended life of the building if 50 years or less:	-
Level/unit number:	-	**Year first constructed:**	1974
Legal description of land where building is located:	LOT 5 DP 33688 CT 10C/639		

The Owner			
Name of owner:	Sheffield Family Trust	**Street address /registered office:**	86 Emerald Glen Rd, Paekakariki
Contact person:	Sheffield Family Trust	**Phone numbers:**	
Mailing address:	86 Emerald Glen Road, RAUMATI	**Landline:**	04 299 9841
		Mobile:	027 525 2952
		Daytime:	-
Email address:	martin.sheffield@xtra.co.nz	**After hours:**	04 299 9841
Website:	N/A	**Facsimile number:**	-

First point of contact for communications with the Kapiti Coast District Council:

As above.

Building Work

Building Consent No(s):	090806, 090806A	**Issued by:**	Kapiti Coast District Council

Code Compliance

The building consent authority named below is satisfied, on reasonable grounds, that:

(a) the building work complies with the building consent.

Michelle Salmon
Building Inspections Team Leader
On behalf of **Kapiti Coast District Council** Date: 8/04/2024

KAPITI COAST DISTRICT COUNCIL

Code Compliance Certificate

Section 95, Building Act 2004

The Owner

Sheffield Martin Llewellyn & Sheffield Maree Eileen	No.	060434
86 Emerald Glen Road	Issue date	11/05/06
RAUMATI BEACH	Application date	27/04/06

The Building

Street Address	86 Emerald Glen Rd, Paekakariki
Valuation No.	1540002800
Legal Description	LOT 5 DP 33688 CT 10C/639
Intended Use	Residential
Intended Life	Indefinite, but not less than 50 years
Current Use	Residential Dwelling
Proposal	Installation of Metro LTD Trend Inbuilt Woodfire
Estimated Value	$2,400

Code Compliance

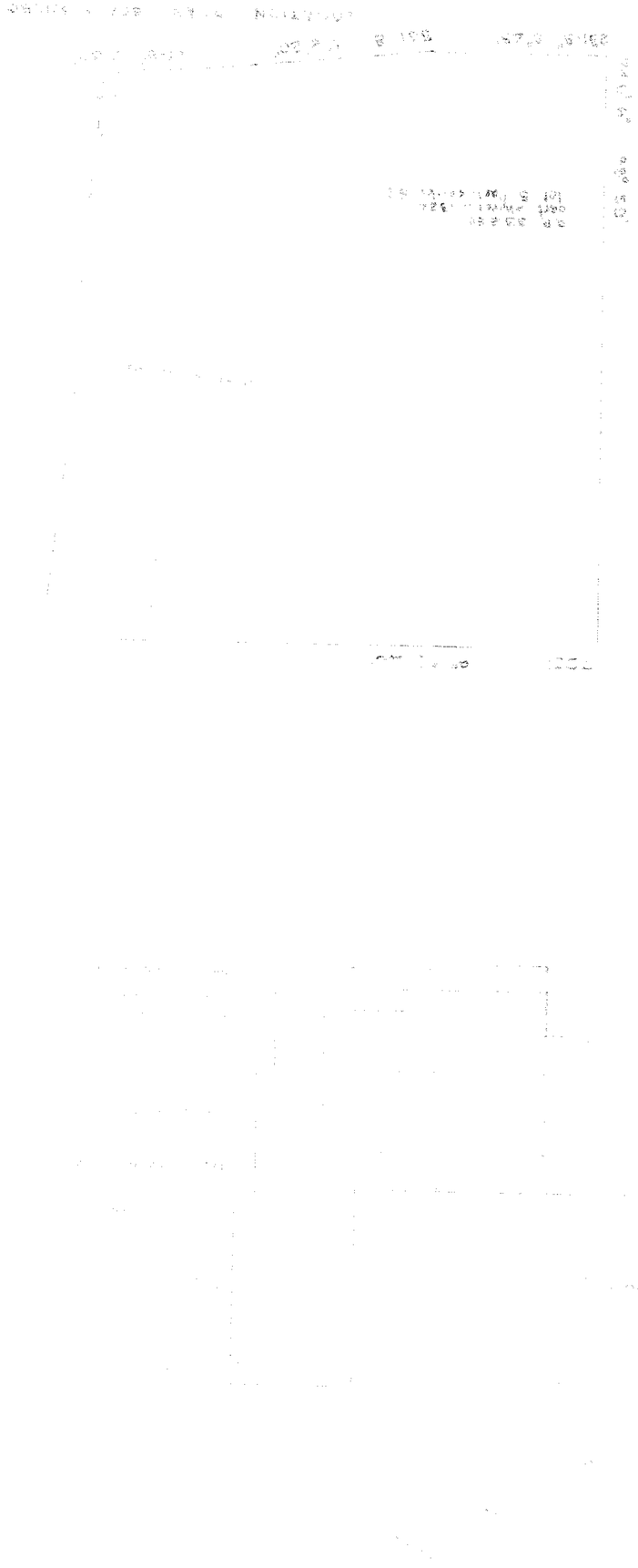
The building consent authority named below is satisfied, on reasonable grounds, that –

a) The building work complies with the building consent; and

b) The property owner must follow and carry out the manufacturers prescribed maintenance procedures.

Signed for and on behalf of the Kapiti Coast District Council:

Name: **Date:** 15 MAY 2006



SITE CHECK SHEET

BC001072

Applicant : M & M SHEFFIELD Phone: 042999841

Site Address : 86 EMERALD GLEN RD, PAEKAKARIKI

Legal Desciption : LOT 5 DP 33688 CT 10C/639

Project : NEW IMPLEMENT SHED

WORK CANNOT PROCEED PAST EACH STEP UNTIL THAT STEP HAS BEEN INSPECTED, APPROVED AND THIS FORM SIGNED BY THE RELEVANT INSPECTOR

FOUNDATIONS

Date: 4/9/2000 Officer: R/C Builder/Contractor/Owner: .....

Approved building consent documents on site: YES / NO

SITING:

Front yard	☐ Left hand side yard	☐ Conforms with approved plan	YES / NO
Rear yard	☐ Right hand side yard	☐ If no, has new site plan been requested	YES / NO

Minimum floor level	☐ Footing size	☐ Foundation wall reinforcing	☐
Pile hole size	☑ Footing reinforcing	☐ Foundation wall size	☐
Anchor pile size	☐ Subfloor vents	☐ Specific design	YES/NO
Pile hole spacing	☐ Steps/stairs	☐ If yes, has Engineer inspected	YES/NO

Has a **Site Instruction** been issued? Yes/No Instruction No: .....

Is a reinspection required? Yes/No Proposed date of follow up inspection .....

Labels in place? Yes/No Producer Statement Yes/No/NA

COMMENTS

Post holes to be cleared of loose material prior to concrete pour. Owner Doug O/K.

COSTING SHEET

Application No: 000072
Date: 7-6-00
Site Address: 86 Emerald Glen

ADMIN = $40 per hour
PLAN VETTING = $60 per hour
INSPECTIONS = $50
DIGITAL SCANNING = $22.50

TECHNICAL CONSULTANTS = Cost + 10%

CLASSIFICATION		$	PLAN VETTING				TOT $	CONSULTANT $			TOT $	INSPECTIONS					TOT	SET FEE	PIM	CC C	DIG SCAN	TOT
			Pl	D	Bld	EH		DP				Site	Pl	D	Bld	EH					Y/N	
1.	Fire Places, Signs, Minor Plumbing and Drainage	0 - 1,500 / 0																30	Nil	Nil		
2.	Sheds/Parapool Carports	1501 - 4,000																70	Nil	Nil		
3.	Garages, Conservatories, Swim Pool, etc	4,001 - 10,000		1	4		75		2		30	1			2		150	100	50	30	~~330~~	$435.00
4.	House Additions	4,001 - 10,000																120	50	30		
5.	House Additions	10,000 - 40,000																150	50	30		
6.	House Additions	40,001 - 70,000																200	100	30		
7.	Dwellings	70,001-100,000																250	100	30		
8.	Dwellings	100,001-150,000																320	100	30		
9.	Dwellings	150,001-200,000																420	100	30		
10.	Dwellings	200,001-250,000																520	100	30		
11.	Dwellings	250,001-300,000																650	100	30		
12.	Dwellings	300,000 +																700	100	30		
13.	Commercial/ Industrial	0-10,000																120	50	30		
14.	Commercial/ Industrial	10,001-50,000																200	50	30		
15.	Commercial/ Industrial	50,001-100,000																300	150	30		
16.	Commercial/ Industrial	100,001-150,000																400	150	30		
17.	Commercial/ Industrial	150,001-200,000																550	150	30		
18.	Commercial/ Industrial	200,001-250,000 +																750	150	30		

CONSENT DATA INPUT REQUIREMENTS

REQUIRED INSPECTIONS	STANDARD ADDENDA			
14 ✓	32	✓	21	
1 ✓	2	✓	22	
17	3		23	
7	4		24	
16	5		25	
2	6		26	
3	7		27	
18	8		28	
4	8A		29	
8	9	✓	30	
5	10		31	
10	11		33	
12	12		34	
6 ✓	13		35	
9	14		36	
11	15		37	
13	16		38	
15	17			
	18			
	19			
	20			

STANDARD CONDITIONS
1
2
3

NON STANDARD ADDENDA

FOR COUNCIL USE:

DEPARTMENT	REQUIREMENTS	Yes	No	COMMENTS	CHECKED/DATE STAMP
Town Planning	Zoning Confirms				1-8.00 DATE ACH MANAGER PLANNING
	Dispensation				
	Planning Consent				
	Special Floor Level				
Plumbing					
Drainage					KAPITI COAST DISTRICT COUNCIL PLANS APPROVED PLUMBING AND DRAINAGE CONSENT MAY BE ISSUED. DATE: 1/8/2000 OFFICER
Stormwater	To Channel				
	To Drain				
	Confined to Lot	✓			
Building					APPROVED Consent may be issued DATE 15.8.00 Kapiti Coast District Council
Structural	Specific Design				
	Foundation				
	Structure				
	Roof				
Subdivisional Engineer					
	Earthworks Bylaw Conditions				
Environmental Health					
Site- Foopath & Entrance Conditions				Ground	
New Rural type entry/Reg. EXISTING Kerb Good..				Clay, o/k.	27/7/2000

NOTES:

KAPITICOAST DISTRICT COUNCIL

175 Rimu Road
Private Bag 601
Paraparaumu
Phone: [04] 9045700
Fax: [04] 9045830

RECEIVED
26 JUL 2000
BY: L. Lee

Porirua City Council

5 Hagley Street
P O Box 50218
Porirua City
Phone: [04] 237 5089
Fax: [04] 237 1439

APPLICATION FOR BUILDING CONSENT

Section 33, Building Act 1991

To: Kapiti Coast District Council/Porirua City Council (delete one)
[Tick each applicable box and attach relevant documents in duplicate]

App. No. 00/072

ANTICIPATED COMMENCEMENT DATE: 1/9/00 ***FINISH DATE:*** 1/11/00

Prop ID _____ Owner ID _____ Applicant ID _____

PART A : GENERAL

[Complete Part A in all Cases – Refer over for Part B, C and D, sign and date]

APPLICANT

Owner Name: MARTIN & MAREE SHEFFIELD

Mailing Address: 86 EMERALD GLEN RD
RAUMATI SOUTH

Contact Name: MAREE SHEFFIELD

Phone: _____ **wk** 04-299 9841 **hm**

Cellphone No: _____

Fax: 04-299 9841

*Under section 33 of the Building Act 1991, the applicant must be the owner of the land on which building work is contemplated or a person who or which has agreed in writing, whether conditionally or unconditionally, to purchase the land or any leasehold estate or interest in the land, or to take a lease of the land, while the agreement remains in force.

FOR COUNCIL USE

Received: 26/7/00.

Application Fee: $ 145.00

Receipt No: 842442

Balance of Fees: $ Chq Eftpos M+M. Sheffied

Receipt No: _____

Date: ___/___/___

NOTE: Balance of fees are payable on consent approval

PROJECT

New or Relocated Building ✓

Alterations or Additions

Accessory Building or Fire

Building demolition or Removal

Intended use, e.g Dwelling, Carport, Garage etc

IMPLEMENT SHED

Being stage 1 of an intended 1 stages.

Estimated value (inclusive of GST)

$ 6,000

Intended life: (of building)

Indefinite but not less than 50 years ☐

Specified as 10 years

PROJECT LOCATION

Street Address (if any) 86 EMERALD GLEN ROAD, RAUMATI

Legal description
(as shown on certificate of title rates notice, if any)

Lot 5 DP 33688

Valuation No. 15400-02800

This application is for:

☑ Building Consent only, in accordance with Project Information Memorandum

☐ Both Building Consent and a project Information Memorandum

PART B : BUILDING DETAILS

(Complete Part B in all cases)

This application is accompanied by *(tick each applicable box, attach relevant documents in duplicate):*

- ☑ The drawings, specifications and other documents according to which the building is proposed to be constructed to comply with the provisions of the building code, with supporting documents, if any, including:
  - ☐ Building certificates
  - ☐ Producer statements
  - ☐ References to accreditation certificates issued by the Building Industry Authority
  - ☐ References to determinations issued by the Building Industry Authority
- ☐ Proposed procedures, if any, for inspection during construction

PART C : PROJECT DETAILS

(Complete Part C only if you have not applied separately for a project information memorandum)

- ☑ Location, in relation to legal boundaries, and external dimensions of new, relocated, or altered buildings
- ☑ New provisions to be made for vehicular access, including parking
- ☐ Provisions to be made in building over or adjacent to any road or public place
- ☑ New provisions to be made for disposing of stormwater and wastewater
- ☐ Precautions to be taken where building work is to take place over existing drains or sewers or in close proximity to wells or watermains
- ☐ New connections to public utilities
- ☐ Provisions to be made in any demolition work for the protection of the public, suppression of dust, disposal of debris, disconnection from public utilities and suppression of noise
- ☐ Any cultural heritage significance of the building or building site, including whether it is on a marae

PART D : KEY PERSONNEL

Designer(s): VERSATILE BUILDINGS

Building Certifier(s): ~~[illegible]~~ GANG-NAIL GROUP LTD, CHRISTCHURCH

Builder/s CRAIG McARA

Registered Drainlayer: N/A REG NO:

Craftsman Plumber: N/A REG NO:

Other: MICHAEL ALEXANDER

PLEASE NOTE

The information provided in support of this application is public and as such is freely available on request. However under Section 27(3) of the Building Act 1991 you may for security and/or copyright reasons request the plans and specifications pertaining to this application be marked as confidential by completing the following section

CONFIDENTIALITY

Plans and Specifications

I/We **require that** my/our:

1. ☐ plans
2. ☐ specifications

be treated as confidential in order to protect either:

3. ☐ the security of the building; and/or
4. ☐ copyright

Signed:

SIZE OF BUILDING	
Floor area m²	54
No of Stories	1
No of Units	1

Signed for and on behalf of the Applicant:

Name:

Position: Date: 25/7/00

FOR OFFICE USE ONLY

FEES		APPLICATION DEPOSIT	$145.00
Building	$435.—		
Sewer Connection	$	RECEIPT NO 842442	DATE 26.7.00
Water Connection	$		
Vehicle Crossing	$	INVOICE NO 48082	DATE 17·8·00
Damage Deposit	$400.—		
Structural Checking	$	RECEIPT NO 950219	DATE 31/8/00
Building Research Levy	$		
Development Levy	$	FEES PAID BY:	
BIA Levy	$		
Compliance Schedule	$		
Digital Storage Fee	$22.50	BUILDING CONSENT NUMBER 001072	DATE ISSUED 31/8/00
Certificate of Title Charge	$		
Photocopying	$		
SUBTOTAL	$857.50	AUTHORISATION FOR REFUND OF DEPOSITS	
Less Deposit Paid	$145.00	Deposit held =	$
TOTAL	$712.50	Cost to Repair Damage Caused During Construction =	$
GST INCLUDED	$	Total Balance to be Refunded	
		Authority Number:	
		Authorised:	DATE:

Received with thanks by 13/01
KAPITI COAST DISTRICT COUNCIL

26-07-00 12:17 Receipt no.842442

COPY *COPY* *COPY*
DR BC001072
BUILDING CONSENT 145.00-
MARTIN & MAREE SHEFFIELD::86 EMERALD GL
CQ EFT
MARTIN & MAREE SHEFF 145.00
VBK

Building Consent

Section 35, Building Act 1991

Application

M & M SHEFFIELD	No.	001072
86 EMERALD GLEN ROAD	Issue date	31/08/00
RAUMATI SOUTH	Application date	7/08/00
	Overseer	BOB OLIVER

Project

Description	New Construction
	Being Stage 1 of an intended 1 Stages
	IMPLEMENT SHED
Intended Life	Indefinite, but not less than 50 years
Intended Use	STORAGE
Estimated Value	$6,000
Location	86 EMERALD GLEN RD, RAUMATI SOUTH
Legal Description	LOT 5 DP 33688 CT 10C/639
Valuation No.	1540002800

Charges

The Council's charges paid on uplifting this Building Consent, in accordance with the attached details are:

	$	857.50
Building Research Levy	$	0.00
Building Industry Authority Levy	$	0.00
Total	$	857.50

This building consent is a consent under the Building Act 1991 to undertake building work in accordance with the attached plans and specifications so as to comply with the provisions of the building code. It is not a consent under the Resource Management Act and does not affect any duty or responsibility under any other Act nor permit any breach of any other Act.

Signed for and on behalf of the Council:

Name: _____ **Date:** 31/8/00

Addenda to Application

Application

M & M SHEFFIELD 86 EMERALD GLEN ROAD RAUMATI SOUTH	No.	001072 17/08/00
	Overseer	BOB OLIVER

Project

Description	New Construction Being Stage 1 of an intended 1 Stages IMPLEMENT SHED
Intended Life	Indefinite, but not less than 50 years
Intended Use	STORAGE
Estimated Value	$6,000
Location	86 EMERALD GLEN RD, RAUMATI SOUTH
Legal Description	LOT 5 DP 33688 CT 10C/639
Valuation No.	1540002800

Builder: CRAIG MCARA

General Requirements

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

1. INITIAL INSPECTION - PREVIOUSLY COMPLETED
2. FOUNDATION INSPECTION
3. FINAL INSPECTION BUILDING

b) To arrange for any of the above required inspections by the District Inspector, please contact the building inspectorate on (04) 298 5139 between the hours of 8.00am and 4.30pm.

2	Addenda to Application 001072

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 6 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. Note and comply with endorsements on approved plans.

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

OWNER/BUILDER/
AUTHORISED PERSON _____ **Date:** 31.8.2000

KAPITICOAST
DISTRICT COUNCIL

Project Information Memorandum

Section 31, Building Act 1991

Application

M & M SHEFFIELD	No.	001072
86 EMERALD GLEN ROAD	Issue date	17/08/00
RAUMATI SOUTH	Application date	7/08/00
	Overseer	BOB OLIVER

Project

Description	New Construction
	Being Stage 1 of an intended 1 Stages
	IMPLEMENT SHED
Intended Life	Indefinite, but not less than 50 years
Intended Use	STORAGE
Estimated Value	$6,000
Location	86 EMERALD GLEN RD, RAUMATI SOUTH
Legal Description	LOT 5 DP 33688 CT 10C/639
Valuation No.	1540002800

This project information memorandum is confirmation that the proposed building work may be undertaken, subject to the provisions of the Building Act 1991, and any requirements of the building consent.

This project information memorandum includes:

___ Information identifying relevant special features of the land concerned

___ Details of relevant utility systems

___ Details of authorisations which have been granted

Signed for and on behalf of the Council:

Name: [signature] **Date:** 17 AUG 2000

BC001072

PROJECT INFORMATION MEMORANDUM

Planning Requirements

Applicant :	M & M SHEFFIELD
Mailing Address :	86 EMERALD GLEN RAUMATI SOUTH
Site Address :	86 EMERALD GLEN RD, PAEKAKARIKI
Legal Desciption :	LOT 5 DP 33688 CT 10C/639
Project :	NEW IMPLEMENT SHED

Proposed Use :	STORAGE
Zone :	
Use permitted :	Permitted activity
Resource Consent granted :	None listed
Designations on property :	None listed
Easements :	None listed
Site subject to inundation :	Not known to be
Coastal building line restriction :	N/A
Relocatable zone :	N/A
Minimum floor level (50 year event) :	N/A
Recommended minimum :	
Floor level (100 year event) :	N/A
Yard and height requirements :	Comply
Tree/building preservation :	None listed

Other comments

Note: Minimum floor levels must use Mean Sea Level Wellington Datum 1953. Certification that the floor level complies with the minimum floor level will be required from a registered surveyor prior to foundation inspection.

SPECIAL FEATURES OF THE LAND

Potential erosion :	X
Potential avulsion :	X
Potential subsidence :	X
Potential slippage :	X
Potential alluvion :	X
Potential inundation :	X
Presence of hazardous contaminents :	X

Other feature(s) or characteristic(s) likely to be relevant to the design or construction of the proposed buildings and not apparent from the District Scheme or District Plan :

PLUMBING AND DRAINAGE

Sewer available / connected :	Not available
Water available / connected :	Not Available
Site plan of existing services (if any) :	Not supplied
Location of sewer lateral :	None
Location and size of water toby :	None
Location of easments (if any) :	Easement for gas pipeline (check)
Location of public drains (if any) :	N/A
Stormwater disposal to :	Soak pit

References
Prior C/T 535/80

Transfer No.
N/C. Order No. 943624

SEARCH COPY
Date: 21 JUL 2000

Land and Deeds 69

REGISTER

10C/639

CERTIFICATE OF TITLE UNDER LAND TRANSFER ACT

This Certificate dated the 24th day of October one thousand nine hundred and seventy-two under the seal of the District Land Registrar of the Land Registration District of WELLINGTON

WITNESSETH that REWA FARMS LIMITED at Wellington

is seised of an estate in fee-simple (subject to such reservations, restrictions, encumbrances, liens, and interests as are notified by memorial underwritten or endorsed hereon) in the land hereinafter described, delineated with bold black lines on the plan hereon, be the several admeasurements a little more or less, that is to say: All that parcel of land containing 11 ACRES 27 PERCHES more or less situated in Block II Paekakariki Survey District being part Whareroa 1B and 2A Blocks and being also Lot 5 on Deposited Plan 33688

DISTRICT LAND REGISTRAR W.N.Z.

Assistant Land Registrar

1. K.753534 Pipeline Easement Certificate under Section 70 of the Petroleum Act 1937 - 16.8.1968 at 11 o'c.

A.L.R.

Mortgage 695728 to Eric Spensley Thomson and William Page in shares - 25.1.1966 at 9.05 o'c.
DISCHARGED 5.11.1972

A.L.R.

Caveat 904001 by Lionel Kingston
WITHDRAWN 2.1972 at 2.15 o'c.
30.11.1972

A.L.R.

Transfer 949764 to Lionel Kingston Warren of Lower Hutt Company Director - 30.11.1972 at 10.34 a.m.

A.L.R.

DISCHARGED
Mortgage 949765 to Rewa Farms Limited 30.11.1972 at 10.35 a.m.

A.L.R.

Variation of Pipeline Easement 753534 - 19.10.1973 at 9/00 a.m.

A.L.R.

339033-1
27/9/1979

Mortgage A029161 to Olphert & Bornholdt Holdings Limited - 25.3.1974 at 1.46 p.m.

A.L.R.

339033-2
27/9/1979

Mortgage A046432 to The W.R. Williams Memorial for the Missions to Seamen Trust Board - 5.7.1974 at 2.02 p.m.

A.L.R.

No. A046433 Memorandum of Priority making Mortgages A046432 and A029161 first and second mortgages respectively - 5.7.1974 at 2.03 p.m.

A.L.R.

Scale: 1 inch = 10chains

4.5198 ha

No. 10C/639

Transmission 320014.1 to Julian May Warren of Paraparaumu, Widow as Executrix - 2.3.1979 at 11.22 a.m.

A.L.R.

Transfer 320014.2 to Julian May Warren abovenamed - 2.3.1979 at 11.22 a.m.

A.L.R.

Transfer 339033.3 to Bruce John Redmayne of Paraparaumu, Farmer and Mary Florence Redmayne his wife - 27.9.1979 at 9.55 a.m.

A.L.R.

Mortgage 339033.4 to Hollings Nominees Limited - 27/9/1979 at 9.55 a.m.

A.L.R.

Transfer 457845.2 to Alexander Turnbull Wood, Electronic Data Processing Officer, Dorothy Wood, Accounts Clerk and Keith Andrew Wood, Customs Officer all of Wellington as tenants in common in equal shares - 17.11.1981 at 2.03 p.m.

A.L.R.

Mortgage 457845.3 to Allied Mortgage Nominees Limited - 17.11.1981 at 2.03 p.m.

A.L.R.

Mortgage 457845.4 to Allied Mortgage Nominees Limited - 17.11.1981 at 2.03 p.m.

A.L.R.

Mortgage 465486.1 to Marac Finance Limited - 18.12.1981 at 11.56 a.m.

A.L.R.

Transfer 507070.4 to Thomas James Harris of Mangaweka, Farmer and Deborah Victoria Harris his wife - 29.7.1982 at 2.12 p.m.

A.L.R.

Transfer 512665.4 to Thomas James Harris of Mangaweka, Farmer and Deborah Victoria Harris his wife - 26-8-1982 at 2.42 p.m.

A.L.R.

909868.1 Transfer grant of Gas Supply Rights (in gross) over the part herein marked "W" on DP 61420 in favour of Natural Gas Corporation of New Zealand Limited - 17.3.1988 at 3.00 p.m.

A.L.R.

B.437054.3 Transfer to Martin Llewellyn Sheffield, Economist and Maree Eileen Sheffield, Married Woman both of Auckland - 2.6.1995 at 1.20 p.m.

A.L.R.

B.437054.4 Mortgage to The National Bank of New Zealand Limited - 2.6.1995 at 1.20 p.m.

A.L.R.

[redacted]

GROUP LTD

PRODUCER STATEMENT - DESIGN
GANG-NAIL GROUP LIMITED

CH8000
GANG-NAIL DESIGN

The building design CH8000 has been compiled using sound and widely accepted engineering principles and in accordance with NZS4203:1992 and NZS3603:1993 as verification methods and acceptable solutions of the approved documents issued by the Building Industry Authority to satisfy the requirements of Clause B1:Structure of the Building Regulations 1992.

As independent design professionals covered by a current policy of Professional Indemnity Insurance to a minimum value of $200,000
I BELIEVE ON REASONABLE GROUNDS that subject to:

1. The verification of all design assumptions detailed in the drawings and
2. All proprietary products meeting the performance specification requirements,

the drawings, specifications and other documents according to which the building is proposed to be constructed, comply with the relevant provisions of the Building Code.

Stephen Anthony COLL

T.M. IPENZ, MNZIOB

for GANG-NAIL GROUP LIMITED
20 KOTZIKAS PLACE
CHRISTCHURCH
NEW ZEALAND

Date: 6 March, 2000

GANG-NAIL® LUMBERLOK® BOWMAC®

PROPOSED FARM BUILDING

BAY WIDTH: (3.0 3.6 4.2 4.5) NUMBER OF BAYS: 3

TOTAL BUILDING LENGTH:	9.0
BUILDING DEPTH:	6.0 (6.0 7.0 8.0 9.0 other)
RAFTER SIZE:	(150x50 200x50 250x50)
PURLIN SIZE:	(150x50 200x50)
POLE SIZE:	150 SED
WIND ZONE:	(HIGH) VERY HIGH
SNOW ZONE:	MED. HEAVY
Notes:	

SPECIFICATIONS

Item Description	Basic Sizes (refer to details)	Notes
Poles	**150** SED H4 for building heights 3.0m, 3.6m, 4.2m, 4.8m	
Girts	150x50mm r/sawn H1 @ 1370mm max centers	
Centre & Side Column	*As pole sizing above*	
Pole embedment	1.2m for heights 3.0m 1.5 for heights 3.6m, 4.2m, 4.8m	
Foundation	10 Mpa concrete	400x400mmx depth above

RAFTERS (CENTRAL POLE) H1 rough sawn

Building depth	6.0m	7.0m	8.0m	9.0m
3.0m,3.6m bay width rafter size:	~~Ends only:150x50~~	200x50	250x50	250x50
4.2m,4.5m bay width rafter size:	Ends only:200x50	200x50	250x50	250x50

RAFTERS (CLEAR SPAN) RAFTERS -

Building depth	6.0m	7.0m	8.0m	9.0m
3.0m,3.6m bay width rafter size:	2/ 200x50	2/ 200x50	2/ 250x50	2/ 250x50
4.2m,4.5m bay width rafter size:	2/ 200x50	2/ 200x50	2/ 250x50	2/ 250x50

PURLINS

Bay width (span)	3.0m	3.6m	4.2m	4.5m
Purlin size:	150x50 r/s	150x50 r/s	200x50 r/s	200x50 r/s
Purlin Centers	1200mm	1200mm	1200mm	1200mm

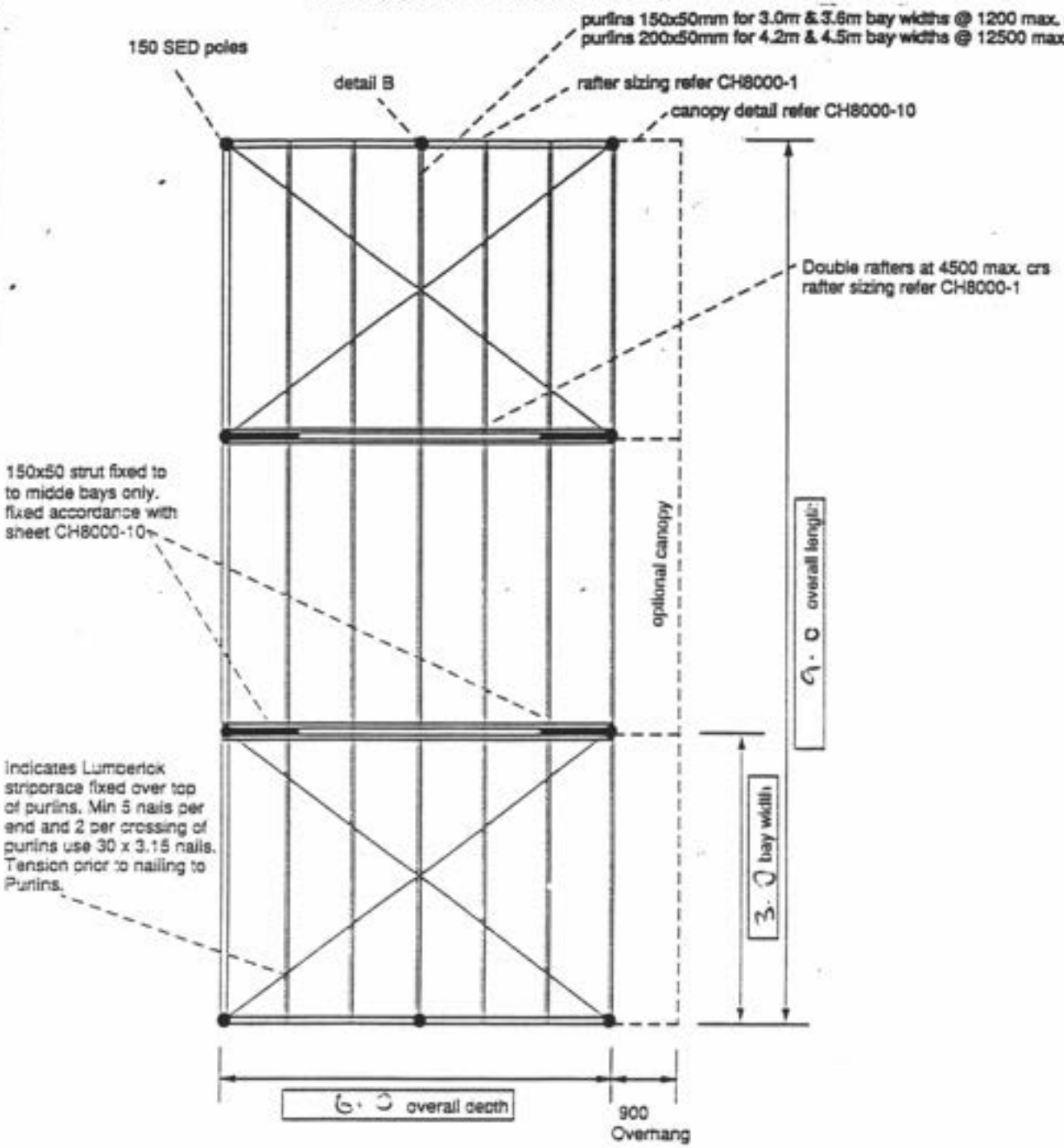
LOAD DETAILS

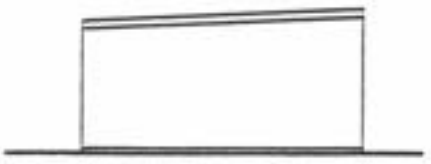
These drawings have been prepared using the above design loads.
It is the responsibility of the user to ensure that the design data and loads are still correct at the time of construction.

PRODUCT SPECIFICATION

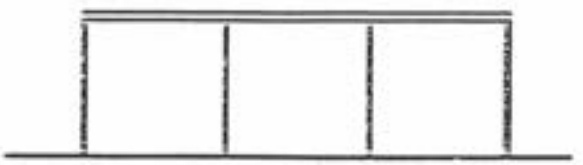
These details have been designed using specific Gang-Nail, Lumberlok and Bowmac products and the performance of the buildings is reliant on the correct choice of product.

COPYRIGHT





SIDE ELEVATION nts



FRONT ELEVATION nts

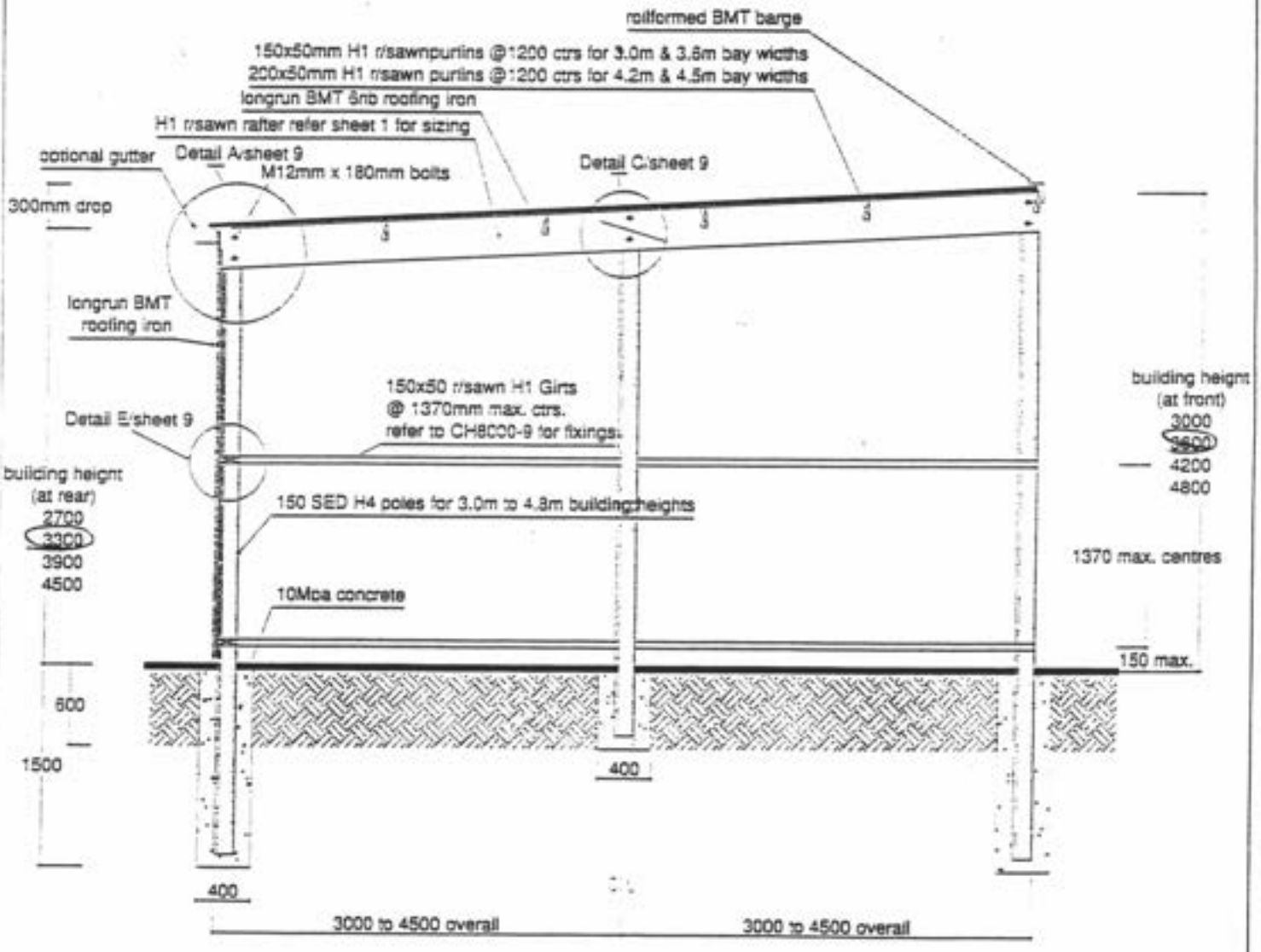
Notes:
1. Design assumes soil conditions have a min. soil stress of 100 kPa.
2. Building assumed to be fully clad on side and rear walls. Front of building across the overhang section fully open.

VERSATILE BUILDINGS
HEAD OFFICE: 118 WATERLOO ROAD
PH: (03) 349-6700 FAX: (03) 349-6702

VERSATILE FARM BUILDINGS
Plan Layout - 3 bay

SCALE: n.t.s. DATE: Feb '00
DRAWN: B.O'Connor FILE: CH8000-4

SHEET: 4
OF: 12



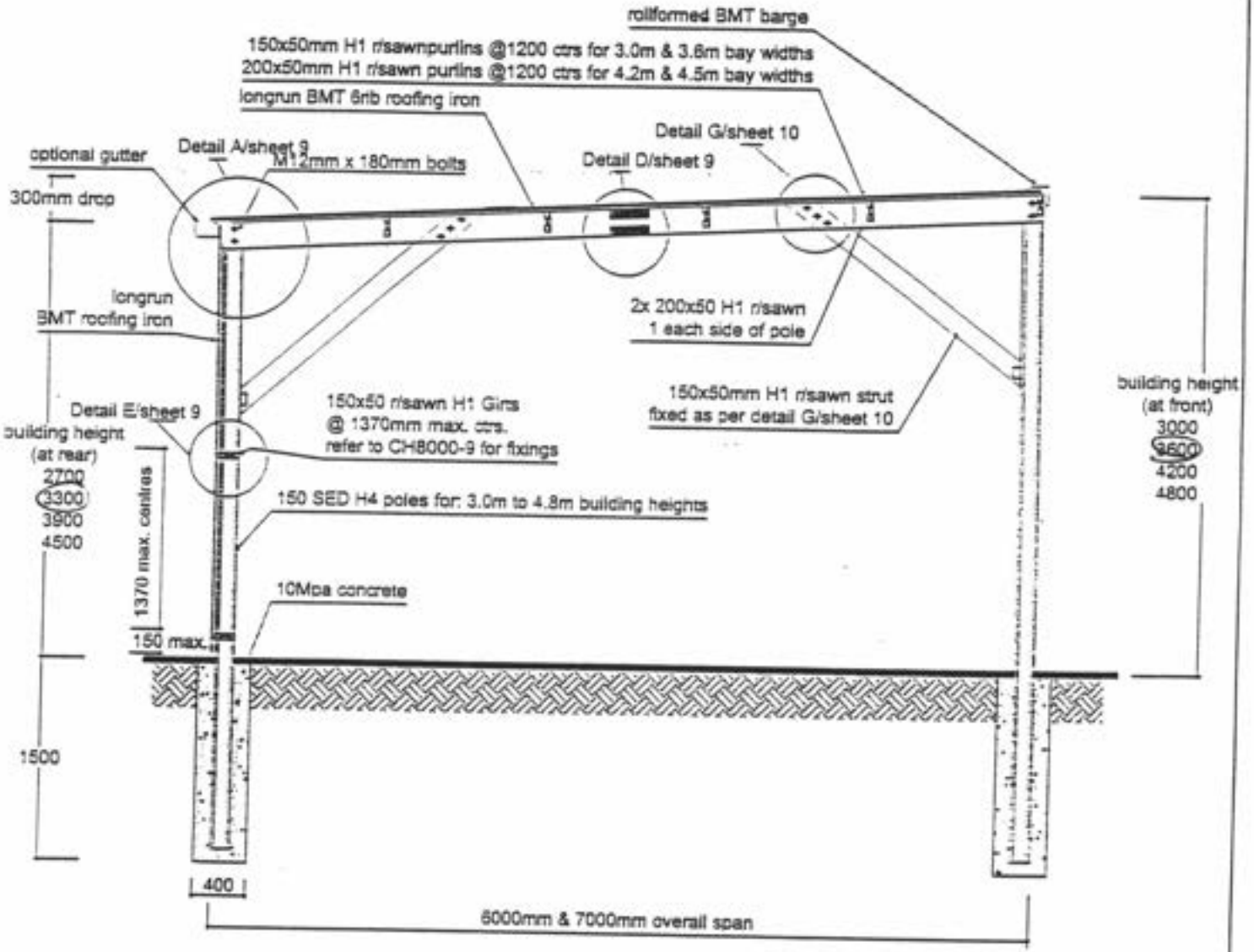
Cross Section - End wall

VERSATILE BUILDINGS
HEAD OFFICE: 112 WATERLOO ROAD
PH: (03) 348-6700 FAX: (03) 348-6702

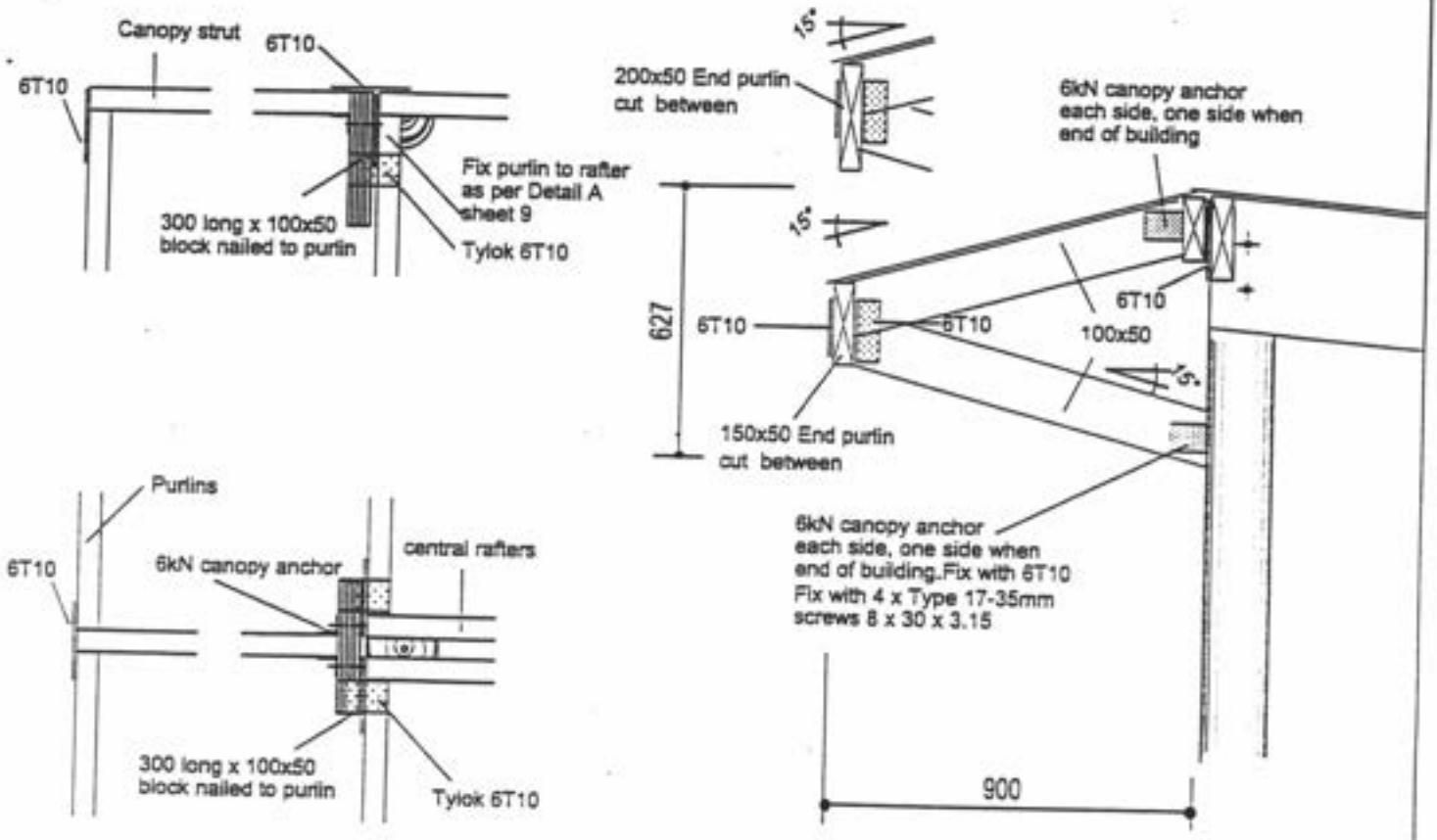
TITLE: VERSATILE FARM BUILDINGS
Cross Section - end wall (all bldg. depths 6-9m)

SCALE: 1:50 DATE: Feb '00
DRAWN: B.O'Connor FILE: CH8000-6

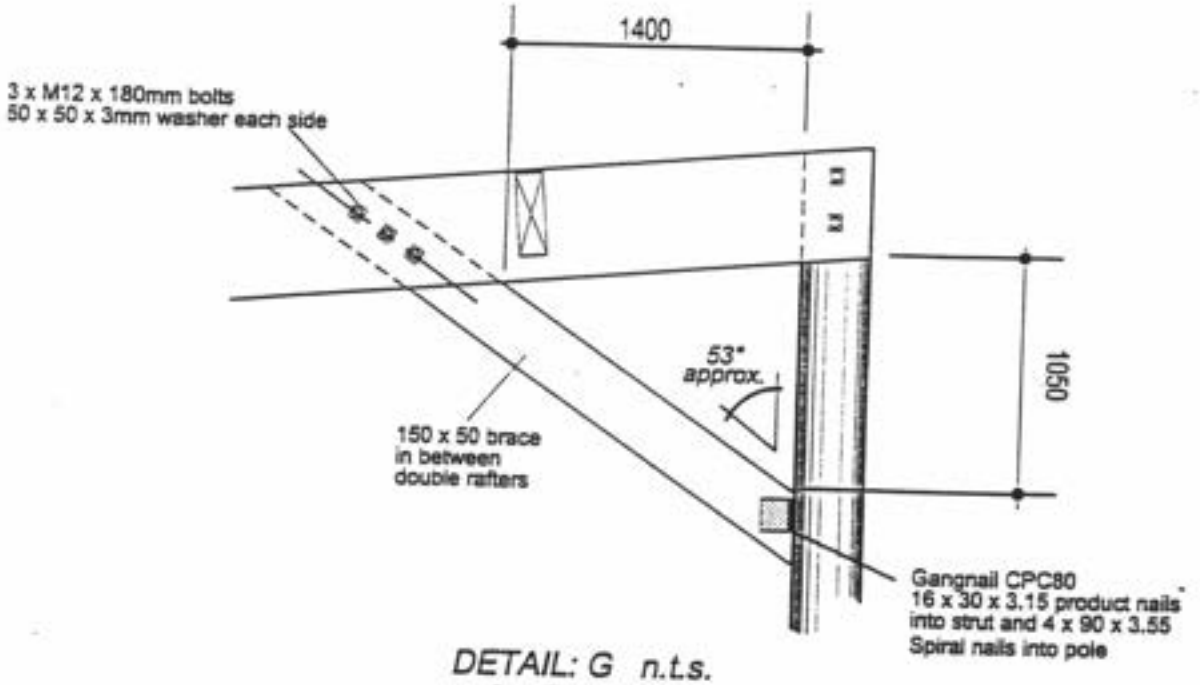
SHEET: 6 of 12



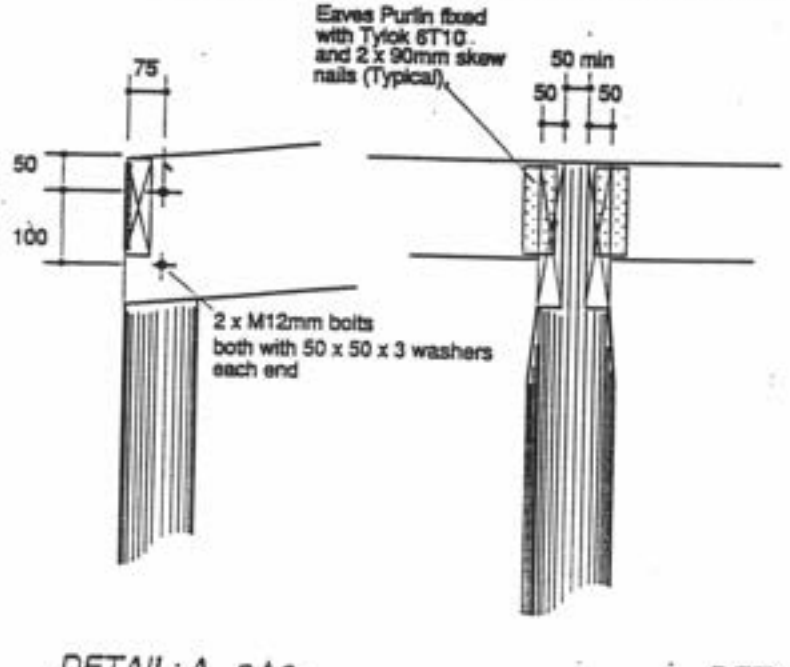
Cross Section - Middle rafters



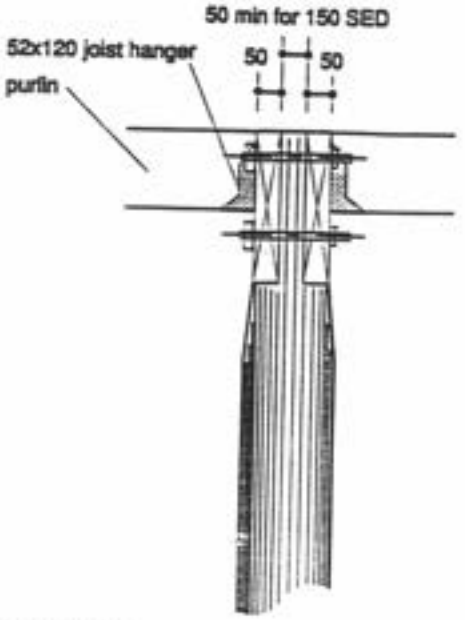
DETAIL: F n.t.s.
Front Canopy Details



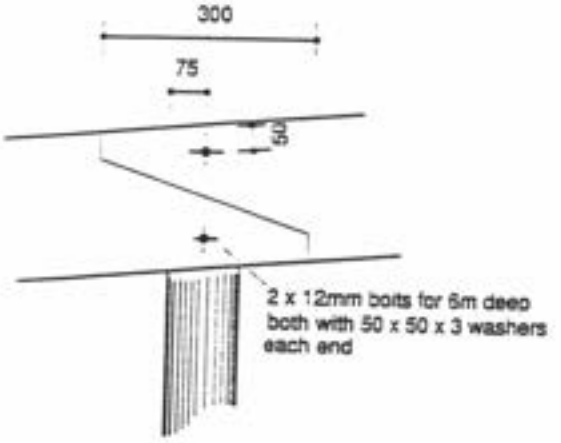
DETAIL: G n.t.s.
Strut Fixing Details



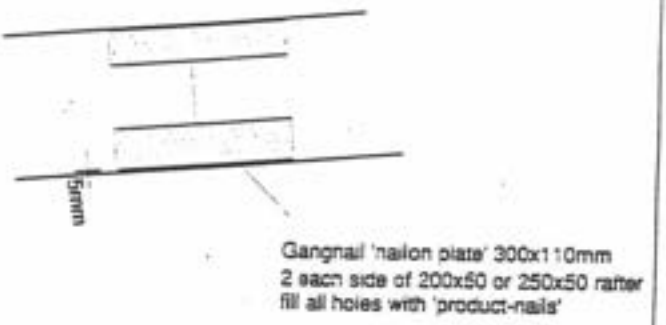
DETAIL: A n.t.s.
Front/Rear Rafter Pole Connection



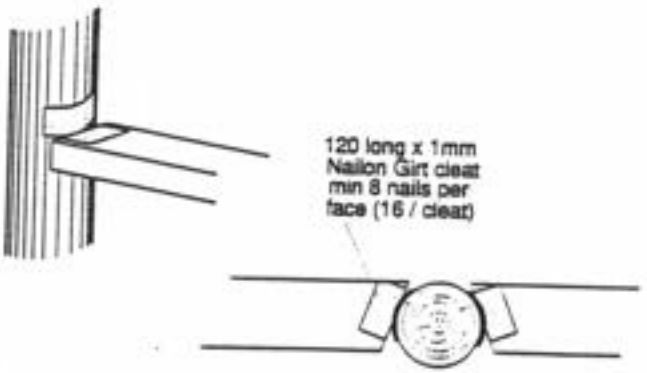
DETAIL: B n.t.s.
Rafter Pole Connection



DETAIL: C n.t.s.
Central pole rafter joint



DETAIL: D n.t.s.
Main rafter splice



DETAIL: E n.t.s.
Girt/Pole connection

SOAK PIT DIMENSIONS

LENGTH = 8000 mm
WIDTH = 500 mm
DEPTH = 750 mm

STORM WATER DISPOSAL
= RUN OFF FED TO SOAK PIT LOCATED IN FARM PADDOCK

APPROVED BY PLANNING
AC Hawkins
Officer
07/08/00

Building not approved for Human habitation.

APPROVED BY BUILDING
AC Hawkins
Officer
15/08/00

9000

6000

FARM BUILDING

COMPACTED PUMICE DRIVE

10 000

BOUNDARY

EMERALD GLEN ROAD

EXISTING FARM GATE

NEW CURB & CHANNEL

× 104·81
× 106·02
× 106·45
× 107·67
× 106·02
× 106·84

SCALE
1 : 100

ML. & ME. SHEFFIELD
86 EMERALD GLEN ROAD RAUMATI SOUTH LOT 5 DP33686 11 JULY 2000

SHEFFIELD

4
DP 33688

APPROVED
BY BUILDING
AC Hawkins
Officer

NIMT RAILWAY

EMERALD GLEN ROAD

Stream Bed

Stream Bed

ML 1928
PT WHAREROA

CENTRELINE OF 200mm GAS PIPELINE

CENTRELINE OF 300mm GAS PIPELINE

existing farm gate

EXISTING HOUSE

GRAVEL DRIVE

EXISTING GARAGE

SHEFFIELD

Scale:
1:500 AT A1

ML & ME SHEFFIELD
86 EMERALD GLEN ROAD
PAKUMATI SOUTH

LOT 5
DP 33688

Site Plan

Proposed
Implement Shed
Location

4 July 2000

FOR COUNCIL USE:

DEPARTMENT	TICK FOR REFERRAL	COMMENTS	APPROVING OFFICER/ DATE
Resource Consents (refer PIM Sheet)			
Plumbing and Drainage			
Building			
Fire Design			
Compliance Schedule			
Structural			
Hazardous Substances			
Environmental Health			
Site- Foopath & Entrance Conditions		Ground	

NOTES:

KAPITI COAST DISTRICT COUNCIL

Building Consent No. 060434

Building Project. Install of Metro Ltd trend inbuilt woodfire.

86 Emerald Glen Rd, Raumati.

CONSENT DATA INPUT REQUIREMENTS

REQUIRED INSPECTIONS

1		Foundation inspection	32		Lapse and cancellation after 12mths of consent	21		Minimum FFL to comply with NZS3604
3		Sub-Floor inspection, suspended floor	2		Engineer design specific components	22		Deck and stair balustrades with greater drop than 1 m
7	*	Pre-concrete slab inspection of plumbing	3		foundations to solid bearing of 200mm	23		Installation of solid fuel appliance (wood burner) comply and secured
2		Pre-Slab inspection, concrete floor	4		NZS3604 as accept. solution in terms of NZ Bld Code	23A		Second hand wood burner - certified
16		Pre-Block-Fill inspection	5		Not approved as Habitable BUILDING	24		Chimney to be cleaned prior to fitting of new unit
23		Pre-Wrap inspection	6		Not approved as Habitable ROOM	24A		Section F7 requires fitting of smoke detectors
24		Post-Wrap inspection	7		Fit proprietary Head, Jamb, Sill flashings & air seals to ext joinery	25		Contractor to leave site clean and clear
25		Post-Clad inspection	8		As in V H Wind Zone, ext load bearing walls, extra fixing for roof	26		Sewer and water services to be disconnected and capped
18		Substrate inspection – solid plaster	8A		As in Very High Wind Zone, extra fixings for roof	27		Provide from contractor roof warranty
19		Brick Veneer inspection	8B		All glazing, constr. system to comply with V H Wind and CCZ	28		Contractor warranty covering roof, fascia and gutter system
8	*	Prelining inspection of plumbing	9		Note and comply with all endorsements on approved plans	29		Provide from contractor texture coating warranty
4		Prelining inspection, moisture test, check bracing	10		Names and Reg'n of plumber and drain layer req'd	30		To comply with food hygiene regulations 1974
5		Post-lining inspection, linings, fixed as per brace design	11		Concealed soil and TV pipes and gas flues only allowed in ducts or minimum framed	31		As in CCZ, all fixings need to be stainless steel
10	*	Water test on sewer drains	12		Hot & Cold water pipes tested to 1500kPa	33		Approval only given for relocation purposes
15	*	Completion inspection	13		Roof storm water to be connected to existing	34		If cladding to have pre-finished colour coating, to be appropriate for coastal conditions
			14		Copper water pipes not permitted	38		Window sashes on upper levels less than 760mm above floor to have stays fixed
	* =	plumbing inspections	15		Owner/builder to ensure prop foundation height will allow satisfactory connection	39		Construction of playground to comply with NZS 5828
			16		Drainlayer to discuss septic tank, etc	40		Fencing, gates, doors directly leading to swimming pool to comply Pool act 1987
		STANDARD CONSENT CONDITIONS	17		Owner's responsibility to arrange septic tank design	41		~~Owner's legal responsibility to provide locking lid for spa pool~~
37			18		Roof stormwater to be disposed inside property boundary	42		Intended appraised/approved Polystyrene Texture Coating system to be advised
72			19		Roof stormwater to be piped to kerb	43		Textured systems should be applied by licensed, trained applicators - supply warranty
80			20		Tempering valve to be installed on HW cylinder	44		Exterior cladding system to be completed and inspected prior to internal lining.

NON STANDARD ADDENDA

_____

_____

_____

_____

FOR OFFICE USE ONLY

FEES		
Building Fee	$121.00	APPLICATION FEE $ $121.00
Sewer Connection	$	RECEIPT NO 163594 DATE
Water Connection	$	
Vehicle Crossing	$	INVOICE NO 23410. DATE
Damage Deposit	$	
Structural Checking	$	RECEIPT NO DATE
Building Research Levy	$	
Development Levy	$	FEES PAID BY: Heating Centre.
DBH Levy	$	
Compliance Schedule	$	
Digital Storage Fee	$	BUILDING CONSENT NUMBER 060434 DATE ISSUED 27/4
Certificate of Title Charge	$	
Photocopying	$	
SUBTOTAL	$121.00	AUTHORISATION FOR REFUND OF DEPOSIT
Less Fee Paid	$	Deposit held = $
TOTAL	$ /	Cost to Repair Damage Caused During Construction = $
GST INCLUDED	$	Total Balance to be Refunded
	Paid	Authority Number:
		Authorised: DATE:

```
GST 51-860-608

Received with thanks by                    49/01
KAPITI COAST DISTRICT COUNCIL

27-04-06  15:12      Receipt no.163594

*COPY*  *COPY*  *COPY*
DR  BC060434                          121.00-
THE HEATING CENTRE
The Heating Centre::PO Box 298:Paraparа
DR  BC060435                          121.00-
THE HEATING CENTRE
The Heating Centre::PO Box 298:Paraparа
DR  BC060437                          121.00-
THE HEATING CENTRE
The Heating Centre::PO Box 298:Paraparа
DR  BC060438                          121.00-
THE HEATING CENTRE
The Heating Centre::PO Box 298:Paraparа
CQ  N
THE HEATING CENTRE L                  484.00
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KAPITI COAST DISTRICT COUNCIL

SITE CHECK SHEET

NAME:.....

ADDRESS:..... LOT:..... DP:.....

PROJECT:..... CONSENT NO: 060434

WORK CANNOT PROCEED PAST EACH STEP UNTIL THAT STEP HAS BEEN INSPECTED, APPROVED AND THIS FORM SIGNED BY THE RELEVANT INSPECTOR. WORK APPROVED BY A CERTIFIER REQUIRES A BUILDING CERTIFICATE SUPPLIED BY THE CERTIFIER.

COMPONENT TO BE INSPECTED	INSPECTION REQUIRED (TICK)	INSPECTION CHECK	INSPECTION RECHECK	COMMENTS AND/OR RECTIFICATION NOTICE NO	OK TO PROCEED YES/NO	ADDITION INSPECT YES/NO	DATE, SIGNATURE
FREESTANDING FIRES							
Seismic fixing							
Hearth							
Flue							
Flashing							
Smoke Alarms							
INBUILT FIRES							
Chimney & Flue			✓				4/5/2006
Seismic fixing							
Smoke Alarms			2 new required	Door	Y/N		8/5/2006
SWIMMING POOLS							
Fencing							
Gates – Door							
Water Supply							
Backwash disposal							

BUILDING COMPONENTS DEEMED COMPLETED

CERTIFIER	SIGNATURE	DATE	CERTIFIER	SIGNATURE	DATE
Building			Services		
Plumbing			Resource Management		
Drainage			Air Conditioning		
EHO					
Lifts					
Compliance Schedule					

WORK IS NOW DEEMED TO BE COMPLETED. A CODE COMPLIANCE CERTIFICATE WILL BE ISSUED WHERE REQUIRED BY THE BUILDING ACT.

CODE COMPLIANCE CERTIFICATE NUMBER: .....

..... Signature

..... Designation

10/4/2006 Date

WHEN THE PROJECT IS COMPLETED THIS INSPECTION SHEET WILL BE ATTACHED TO THE RELEVANT PROPERTY FILE HELD AT THE COUNCIL OFFICE

86 Emerald Glen Road

Building consent 060434

Section 51, Building Act 2004

The building

Street address of building: 86 Emerald Glen Rd, Paekakariki

Legal description of land where building is located: LOT 5 DP 33688 CT 10C/639

Valuation number: 1540002800

Building name:

Location of building within site/block number:

Level/unit number:

The owner

Name of owner: Mr & Mrs Sheffield

Contact person: Tina Maarhuis

Mailing address: 86 Emerald Green Road, Raumati

Street address/registered office:

Phone number: Landline: 299 9841 Mobile:

Daytime: After hours:

Facsimile number:

Email address:

Website:

First point of contact for communications with the council/building consent authority:
Full Name: The Heating Centre

Mailing Address: PO Box 298, Paraparaumu

Phones:: 298 6556

Building work

The following building work is authorised by this building consent:

Installation of Metro LTD Trend Inbuilt Woodfire

Residential

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:

Signature

Customer Service Officer

Position

On behalf of: KAPITI COAST DISTRICT COUNCIL

Date: 27/04/06

27 April 2006

Mr & Mrs Sheffield
86 Emerald Green Road
Raumati

Dear Sir/Madam

Approval of Building Consent: 060434

Description:	Installation of Metro LTD Trend Inbuilt Woodfire
Location:	86 Emerald Glen Rd, Paekakariki
Legal Description:	LOT 5 DP 33688 CT 10C/639

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

The Heating Centre PO Box 298 Paraparaumu	No.	060434

Project

Description	Domestic Fireplaces Being Stage 1 of an intended 1 Stages Installation of Metro LTD Trend Inbuilt Woodfire
Intended Life	Indefinite, but not less than 50 years
Intended Use	Residential
Estimated Value	$2,400
Location	86 Emerald Glen Rd, Paekakariki
Legal Description	LOT 5 DP 33688 CT 10C/639
Valuation No.	1540002800

Contractor: The Heating Centre 3 Ihakara Street, Paraparaumu : 298 6556

General Requirements

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

1. Chimney Inspection
2. Completion inspection

b) To arrange for any of the above required inspections by the District Inspector, please contact the building inspectorate on (04) 298 5139 between the hours of 8.00am and 4.30pm.

2	Addenda to Application 060434

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. Installation of solid fuel appliances must comply with manufactures specifications and be secured against seismic movement ie EARTHQUAKES.
3. Chimney to be cleaned prior to inspection before new unit is installed.
4. Section F7 of the New Zealand Building Code requires the installation of an approved smoke alarm system for detection and warning of fire. Alarms are to be of a type which include a reset and test buttons.

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:**

Retain on-site for inspector

KAPITICOAST
DISTRICT COUNCIL

BC Number: 000434

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

INSTALLER'S NAME: (Please print)
The Heating Centre

Address: 3 Ihakara St, Pkm **Ph:** 298-6556

FREE STANDING FIRE OR INBUILT FIRE INSTALLED AT:

Address: 8b Emerald Glen Rd, Paumati

For: MR + MRS SHEFFIELD

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 Metro Ltd Trend Inbuilt 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 of correct dimensions to comply with BRANZ zero clearance certificates
- ☑ The chimney is ventilated to manufacturer's requirements
- ☑ The appliance is restrained against seismic activity (free standing and 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 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 installation instructions.

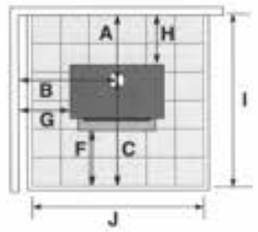
Signature: [signature] **Date:** 3-5-06

FREESTANDING SPEC SHEET

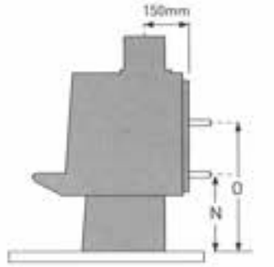
Clearance Reductions

AS/NZS 2918:2001 allows for a reduction in minimum clearances as detailed in tables 3.1 and 3.2 of the standard which your Metro retailer will be able to advise you on. Pioneer has also tested certain model Metros with "side extensions" fitted to the Pioneer double flue mounted shield, to achieve a reduction in clearances, details are;

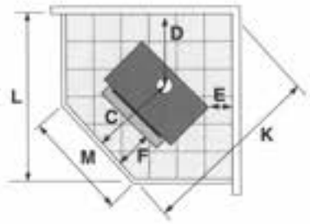
- The LTD Pioneer Ped and LTD Pioneer Trad installed with a "Pioneer double flue mounted shield with side extensions fitted" can have side clearances B and G reduced by 80mm if installed into an alcove which does not project forward on the Metro.
- The ECO Aspire Ped, ECO Xtreme Ped and ECO Aspire Trad installed with a "Pioneer double flue mounted shield with side extensions fitted" reduces minimum corner clearance E from 170mm to 110mm. In this situation use the LTD Metro equivalent for measurements E, D, K & L. (i.e. use LTD Aspire Ped chart for ECO Aspire Ped for E, D, K & L).
- The LTD Wee Rad, LTD Pioneer Ped and LTD Pioneer Trad rear clearance (H) and overall floor protector depth (I) can reduce by 50mm providing a wetback is not fitted and therefore maintenance access is not required.



Model	WIDTH	DEPTH	HEIGHT
ECO & LTD Wee Rad	607	530	665
ECO & LTD Rad	750	575	745
LTD Mega Rad	750	675	745
ECO & LTD Pioneer Ped	590	530	665
ECO & LTD Xtreme Ped	670	575	715
ECO & LTD Aspire Ped	670	575	715
LTD Mega Ped	670	675	715
ECO Tiny Trad	490	530	665
ECO & LTD Pioneer Trad	590	530	665
ECO & LTD Aspire Trad	670	575	715



Both wetback connections are 140mm left of the flue centre, facing the Metro/wall.



Metro Installation Clearances & Specifications

Minimum clearances shown are in mm, with a Pioneer double flue mounted shield fitted.
Metro woodfires are tested to comply with AS/NZS2918:2001 if installed as detailed below.

Model	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
ECO Wee Rad	260	525	580	385	80	200	220	110	840	825	1125	950	425	295	485
ECO Rad (DV)	250	575	625	435	80	200	200	100	875	905	1240	1065	505	338	528
ECO Pioneer Ped	260	595	580	385	85	200	300	110	840	825	1120	950	425	295	485
ECO Xtreme Ped (DV)	230	585	625	495	170	200	250	80	855	905	1325	1120	505	325	515
ECO Aspire Ped (DV)	230	585	625	495	170	200	250	80	855	905	1325	1120	505	325	515
ECO Tiny Trad	210	430	580	290	25	200	185	60	790	650	990	875	250	295	485
ECO Pioneer Trad	260	595	580	385	85	200	300	110	840	825	1120	950	425	295	485
ECO Aspire Trad (DV)	230	585	625	495	170	200	250	80	855	905	1325	1120	505	325	515
LTD Wee Rad	250	555	580	400	80	200	250	100*	830*	825	1145	950	425	295	485
LTD Rad	250	575	625	455	80	200	200	100	875	905	1265	1065	505	353	543
LTD Mega Rad	270	675	725	500	125	200	300	120	995	905	1425	1175	505	353	543
LTD Pioneer Ped	250	595	580	400	85	200	300	100*	830*	825	1145	950	425	295	485
LTD Xtreme Ped	250	575	625	455	110	200	240	100	875	905	1265	1065	505	340	530
LTD Aspire Ped	250	575	625	455	110	200	240	100	875	905	1265	1065	505	340	530
LTD Mega Ped	270	610	725	465	130	200	275	120	995	905	1400	1140	505	340	530
LTD Pioneer Trad	250	595	580	400	85	200	300	100*	830*	825	1145	950	425	295	485
LTD Xtreme Trad	250	575	625	455	110	200	240	100	875	905	1265	1065	505	340	530
LTD Aspire Trad	250	575	625	455	110	200	240	100	875	905	1265	1065	505	340	530

Floor Protectors

Freestanding Metro woodfires do not require an insulating floor protector, as they are tested and comply with the minimum floor protector requirements of AS/NZS 2918:2001. Note:

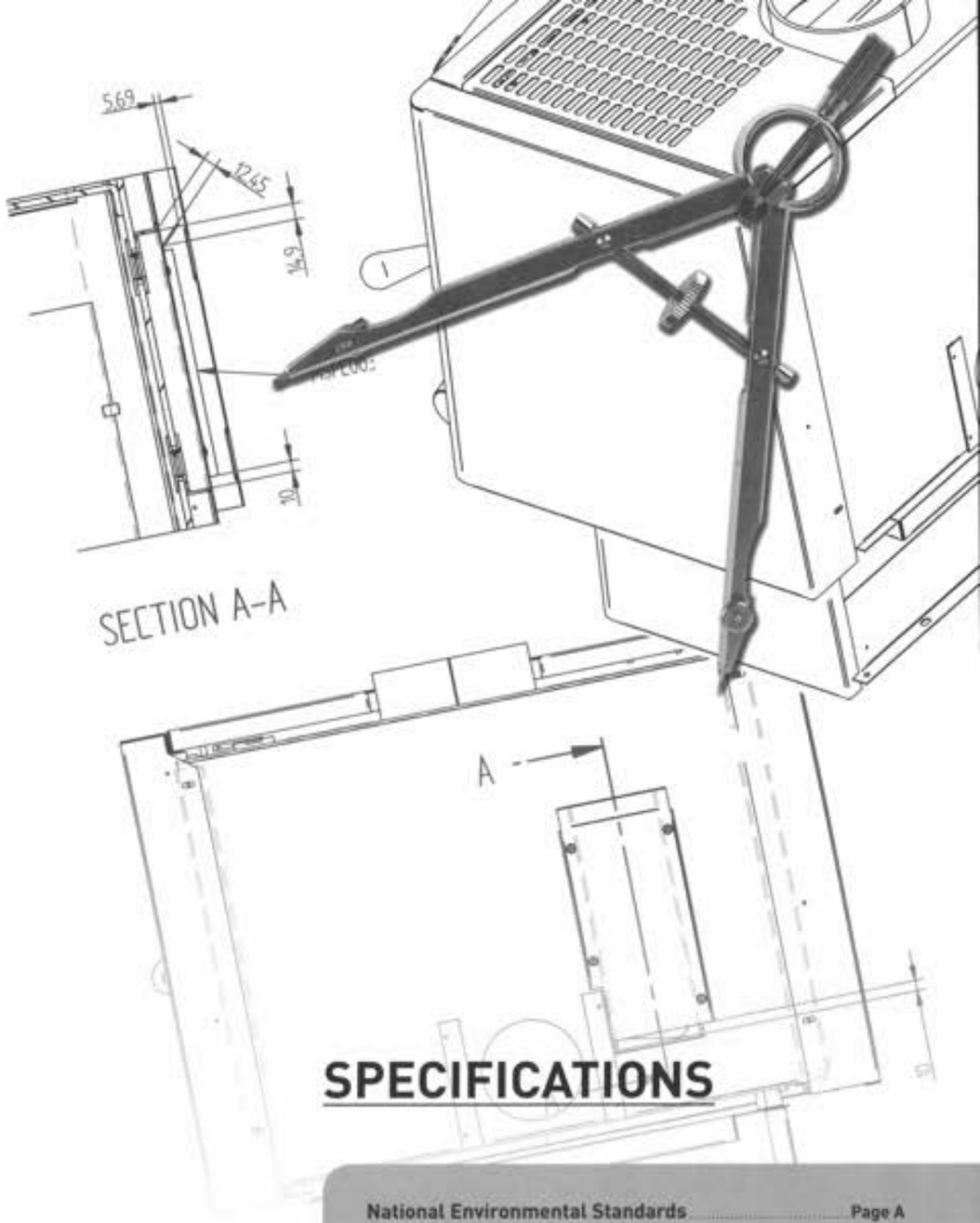
- The minimum floor protector sizes are specified in the clearance chart above.
- A floor protector can include ceramic tiles with grouted joints, a sheet of toughened glass, panel steel or any other non combustible material laid directly onto a wooden floor.
- If being installed onto a concrete or non combustible floor, no floor protector is required.

Flue Systems

All Metro freestanding woodfires should be installed with the energy efficient Metro ECO Flue System which comes complete with detailed installation instructions. All Metro ECO Flue Systems include Metro's vertical discharge cowl which improves draft and performance.

PIONEER
MANUFACTURING LIMITED
P.O. Box 11, Inglewood
New Zealand
Phone 06-756 6520
Fax 06-756 6540
Email info@metrofires.co.nz
Website www.metrofires.co.nz

2006 Technical Bulletin



SPECIFICATIONS

METRO

NATIONAL ENVIRONMENTAL STANDARDS

National Environmental Standards came into effect throughout New Zealand on the 1st September 2005, imposing a minimum 65% efficiency and maximum 1.5gm emission requirements on all woodfires installed on properties with a land area of less than two hectares. Properties of two hectares or more are exempt from this National Environmental Standard. In practical terms this effectively creates two distinct woodfire markets, and as a consequence Metro are manufacturing a range of product for each;

ECO METROS – Designed for properties less than two hectares, ECO Metro woodfires surpass the requirements of the National Environmental Standard with all ECO Metro woodfires achieving emission levels of under 1 gram. Utilising technically advanced combustion technology ECO Metros have a more complex firebox design which operate at higher combustion temperatures, but offer shorter burn times than their LTD Metro equivalents.

LTD METROS – Designed for properties two hectares or more, LTD Metros offer a larger model range at very competitive prices, while retaining features like overnight burning and genuine wetbacks while still meeting internationally accepted efficiency and emission standards.

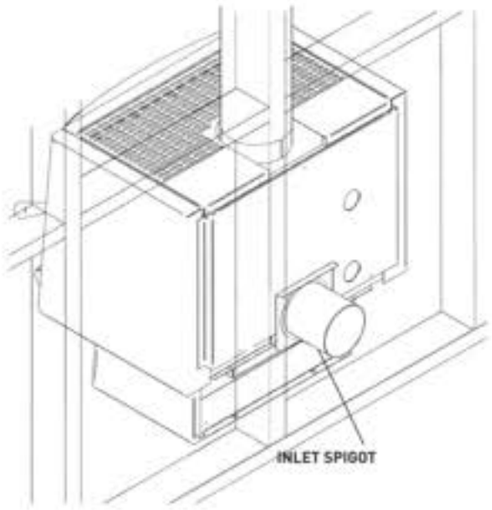
Note – Environment Canterbury have imposed emission requirements for Christchurch of 1gram/65% which is more stringent and takes precedence over the new national standard, while some other councils within New Zealand have imposed or are considering adopting bylaws relating to environmental issues. If you are in doubt talk to your local Metro retailer. All ECO and LTD Metros are detailed below detailing their tested emission and efficiency ratings.

ECO Models	Emissions	Efficiency	LTD Models	Emissions	Efficiency
ECO Wee Rad	0.88gms	71%	LTD Wee Rad	2.3gms	71%
ECO Rad (DV)	0.89gms	68.2%	LTD Rad	3.3gms	63%
			LTD Mega Rad	2.0gms	65.6%
ECO Pioneer Ped	0.88gms	70.4%	LTD Pioneer Ped	2.3gms	71%
ECO Xtreme Ped (DV)	0.86gms	69.4%	LTD Xtreme Ped	3.3gms	63%
ECO Aspire Ped (DV)	0.65gms	70.4%	LTD Aspire Ped	3.3gms	63%
			LTD Mega Ped	2.0gms	65.6%
			LTD Pioneer R/Outlet	2.3gms	71%
ECO Tiny Trad	0.72gms	78%	LTD Pioneer Trad	2.3gms	71%
ECO Pioneer Trad	0.88gms	70.4%	LTD Xtreme Trad	3.3gms	63%
ECO Aspire Trad (DV)	0.65gms	70.4%	LTD Aspire Trad	3.3gms	63%
ECO Insert	0.91gms	65%	LTD Compact Insert	2.3gms	58%
			LTD Hi Output Insert	2.3gms	58%

DIRECT VENT ECO METROS

New to the Metro range for 2006 are the larger ECO Metros which incorporate the very latest Direct Vent (DV) technology. These "DV" Metros offer two significant advantages;

- All air consumed during combustion enters the appliance near the bottom/rear of the firebox, this enables both the primary and secondary air supply to be pre-heated to very high temperatures before entering the firebox. This air supply is ducted over the rear face of the firebox, then through preheating tubes fitted into the firebox's secondary burn chamber, resulting in emission and efficiency levels detailed in the chart above, that were previously unattainable.
- Metros with the "DV" technology also offer the option of connecting the air supply to outside the home. laboratory testing confirms a typical woodfire producing 10kW's of heat at 67% efficiency consumes 8.4 litres of air per second burning fuel with a 17% moisture content, equating to around one "roomful" of air every hour. By connecting the air supply to outside the home the Metro consumes air drawn in from outside the home rather than using the heated air from within the home, saving fuel and further increasing the overall efficiency of the Metro.



There are three Direct Vent kits available – DV WALL KIT ducts through an outside wall, DV FLOOR KIT ducts through the floor directly behind the Metro and the DV CEILING KIT ducts into the wall cavity and up into the ceiling cavity.

INSERT SPEC SHEET

Pre Installation

Metro fireplace inserts are tested to/comply with AS/NZS 2918:2001 incorporating appendix "E" when installed in accordance with the installation and operation manual supplied with every Metro woodfire. Prior to installing your Metro fireplace insert into a masonry chimney, it is important that certain clearances and other requirements are complied with as detailed below :-

Chimney – The masonry chimney must be swept and checked for: -

- Cracks and general overall condition, with repairs carried out if necessary by a suitably qualified person.
- Cavity dimensions to ensure the fireplace insert will fit, it is usually necessary to remove the fire bricks from the lower masonry chimney cavity.
- The base of the masonry chimney cavity on which the Metro fireplace insert will rest must be level, if it is not, it should be levelled using mortar.
- If an ash removal door exists in the base of the chimney it should be sealed shut to prevent air entering the cavity.

Mantle – If a timber or combustible mantleshelf exists above the fireplace insert opening, it should be a minimum distance above the top of the Metro's fascia, minimum distances are:-

- Metro LTD Hi Output fireplace insert = 460mm
- Metro LTD Compact fireplace insert = 400mm
- Metro ECO fireplace insert = 270mm

If less than the above minimum specified, a deflector or heat shield will be required to be fitted under the mantle.

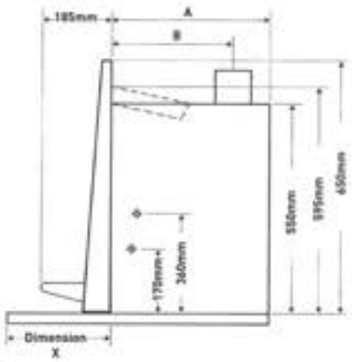
Floor Protector Requirements

Metro fireplace inserts are designed to be installed direct onto a concrete base. An insulated floor protector is required to project in front of the Metro and must extend a minimum of 200mm to each side of the door opening making the minimum floor protector width 825mm. The minimum floor protector projection forward of the Metro is dependant on the height of the fireplace insert above the combustible floor. The following schedule of floor protector projections is measured from behind the Metro fascia being the total floor protector depth as shown in the diagram below. Note, the heights specified above the combustible floor can be achieved by the thickness of the floor protector, raising the fireplace insert or a combination of these two.

Dimension X	0mm	10mm	15mm	20mm	25mm	30mm	35mm	40mm	41mm	45mm	50mm+
LTD Compact	439mm	439mm	425mm	417mm	403mm	392mm	381mm	367mm	N/A	356mm	350mm
LTD Hi Output	455mm	455mm	455mm	436mm	424mm	408mm	396mm	366mm	350mm	350mm	350mm
ECO	Only 300mm minimum projection is required irrespective of the height of the floor protector.										

Fascia Model	Base width	Body Width
LTD & ECO Trend Fascia	810mm	810mm
LTD & ECO Trad Fascia	900mm	810mm

Firebox Model	A	B	Width
LTD Compact	410mm	315mm	560mm
LTD Hi Output	500mm	405mm	560mm
ECO	500mm	405mm	560mm



Flue Systems

All Metro woodfires should be installed with the Metro ECO Flue System which comes complete with detailed installation instructions. All Metro ECO Flue Systems include Metro's vertical discharge cowl which improves draft and performance.

Vented Zero Clearance Cabinet

The function of the Metro "Vented Zero Clearance Cabinet (VZCC) is to enable the Metro LTD Hi Output and ECO Insert Fireplace to be installed into a timber framed wall. The VZCC therefore replaces the more traditional masonry chimney at a fraction of the cost. Detailed instructions for the VZCC are available from your Metro retailer.

The wall opening cavity size required:

Width of opening
- 700mm suggested
- 800mm maximum
- 690mm minimum

Height of opening
- 685mm suggested
- 690mm maximum
- 685mm minimum

Depth of opening
- 575mm minimum

FACSIMILE TRANSMISSION

DATE 25 November 1998

ATTENTION Ken Smith

COMPANY Kapiti Coast District Council

FULL FAX NO. (04) 297 2563

CITY Paraparaumu.

FROM Maree Sheffield
SHEFFIELD GARDEN DESIGN AND CONSULTING

FAX NO. (04) 298-9841

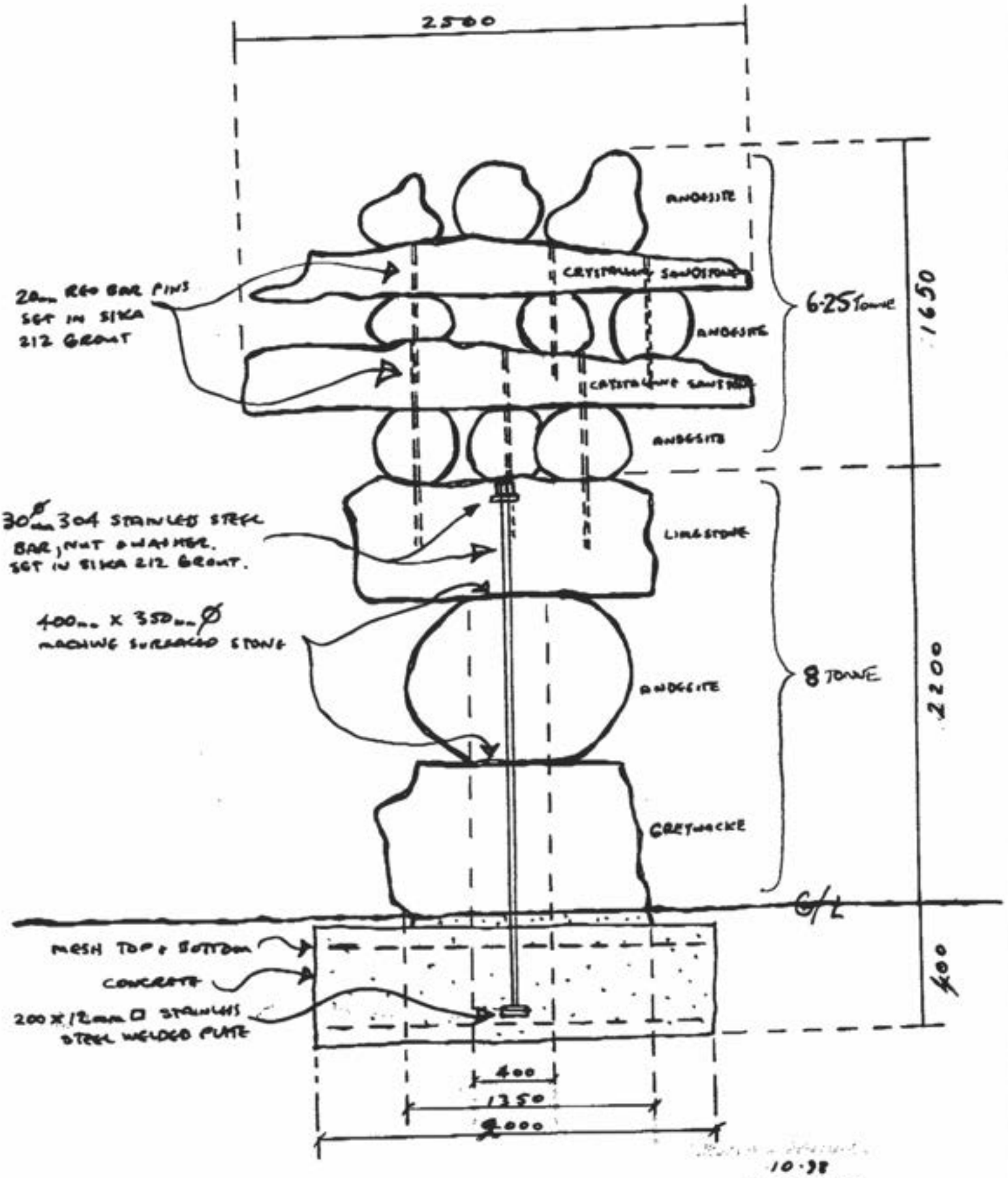
TOTAL PAGES (including this page) 2.

IF YOU DO NOT RECEIVE ALL PAGES PLEASE PHONE (04) 298-9841

Client Ref: Chris Booth Store Sculpture.

MESSAGE

SHEFFIELD
GARDEN DESIGN & CONSULTING
Maree Sheffield
CERT. LAND. DES. N.Z.I.H.
36 Emerald Glen Road
P O Box 490
Paraparaumu
Ph/Fax 04-298 9841



10.98
CHRIS BOOTH
SCALE 1:25.

'SAND STRATA'

FACSIMILE TRANSMISSION

DATE 25 November 1998

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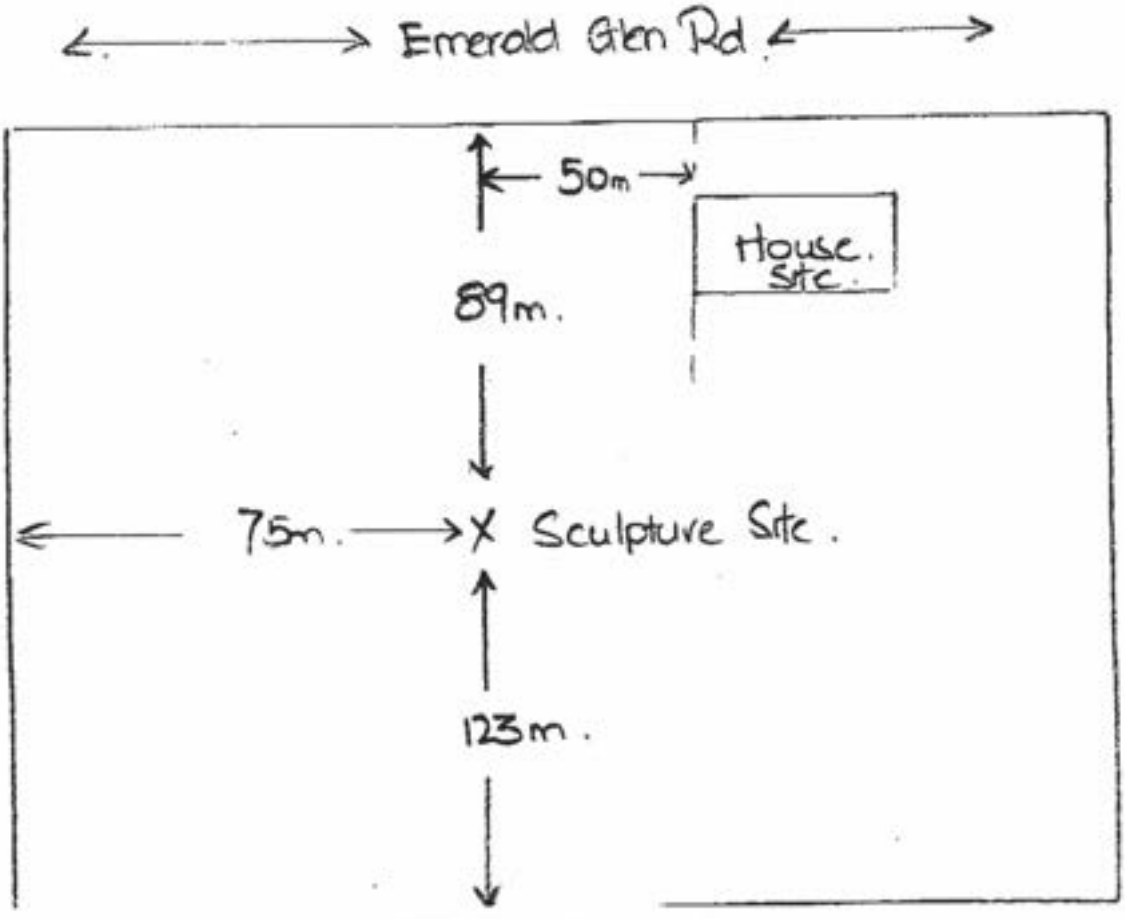
MESSAGE



HUTT COUNTY COUNCIL

Valuation No. ..... **Date Received:** .....

Application for Building Permit

APPROVED - Permit may be issued
No. 113
Inspector

To: The Building Inspector,
P.O. Box 8012, Govt. Blds.,
WELLINGTON.

I (the undersigned), PILGRIM & COOPER LTD (Full Name)
of P.O. BOX 83 PARAPARAUMU (Address)

hereby make application for permission to **ERECT** ~~ADD~~ ~~ALTER~~ ~~REINSTATE~~ 81 RESIDENCE
with a floor area of 2100 sq. ft. as prescribed herein and set out in the plans and specifications attached hereto, in premises at:

No. — EMERALD GLEN ~~Street~~ or Road ..... Township
Lot No. 5 D.P. 33688 PART WHAREROA 1 B2A, PAKUHANGA S.D. Riding
The owner of the premises is L. K. WARREN (Name)
417 Cuba St Lower Hutt (Address)
Previous owner (If Section has been recently transferred) /

Estimated value of: Building only — — $ 30500:00
Plumbing and Drainage — $ 2500:00
Total $ 33,000:00

Signature of Applicant p.p. Pilgrim & Cooper Ltd (As Builder or Owner) 12/11/73 (Date)

Builder's Name and Address: (If not the applicant) 3538 2164

FOR OFFICE USE ONLY

Receipt No. 3537 Road Deposit No. ..... A/c. No. 4070

Fees:

Building Permit	$ 80 :	HL 16.50	Date 12.12.73
24/1 Kerb Crossing	$ 53 :		Permit No. 63983
Road Deposit	$ 30 :		Date Issued 28.2.74
	$ 163 :		

TOWN PLANNING DISTRICT ..... Operative / Undisclosed
Conforms/Non-Conforming.
Checked by District Engineer. 19-12-73 (Date) AE (Initials)
Remarks: .....

C 1 W 4855p H.14

HUTT COUNTY COUNCIL

Valuation No. ______________ Date Received ______________

Application for Plumbing and Drainage Permit

To: The County Health Inspector,
P.O. Box 8012, Govt. Blds.,
WELLINGTON.

I, the undersigned PILGRIM & COOPER LTD (full name)

of P.O. BOX 83 PARAPARAUMU. (address)

hereby make application for permission to have the work prescribed herein set out in the plans attached hereto carried out in the premises situated at—

No. ______ EMERALD GLEN Street ROAD ______ Township

Lot 5 D.P. 33638 - PART WHAREROA, 1B2A, PAEKAKARIKA S.D. Riding

The owner of the premises is MR L.H. WARREN (Name)

of 417 Cuba St Lower Hutt. (Address)

I hereby nominate these Registered Tradesmen to carry out the said work:

B. C. McGrath Ltd (Registered Plumber)

of Jarvis Road Paraparaumu (Address)

Coastal Contracts (Registered Drainlayer)

of C/B. Raleigh, Building - Waikanae. (Address)

Type of water supply Pump by stream 9 Capacity of storage tanks 400 gals. 9.2000

Description of Work: Cross out any of the following which do not apply:
Install bath, basin, sink, tubs, shower, W.C. hot/cold water supply.
Drainage to grease trap/septic tank/sewer/field drain/soak pit.
Stormwater drainage to street/channel/soak pit.

APPROVED - Permit may be issued
26 11 73
Health Inspector
Hutt County Council

Other Work ______________

Value of Proposed Work (including Materials):

Estimated cost of:

(a) Plumbing $ 2000 : 00

(b) Drainage $ 500 : 00

TOTAL $ 2500 : 00.

Signature of Applicant [signature] for Pilgrim & Cooper Date 12/11/73

For Office Use Only

Fees:

Plumbing ... ... $ 24 :

Drainage ... ... $ 10 :

Sewer connection ... $ ______ :

Total ... ... $ 34 :

Acct. No. 4070

Date 12.12.73

Permit No. 29478-9

Date Issued 23.5.74

Receipt No. 3537.

Remarks: ______________

C. B. W. Ltd 9795a

S P E C I F I C A T I O N S

FOR

THE ERECTION OF A RESIDENCE

FOR

MR & MRS L.K.WARREN.

EMERALD GLEN ROAD

McKAYS CROSSING

5029

PRELIMINARY AND GENERAL

ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH THIS SPECIFICATION TOGETHER WITH ALL RELEVANT PLANS AND DETAILS AND COMPLY WITH LOCAL BODY BY-LAWS AND THE REQUIREMENTS OF ANY LENDING INSTITUTION WHICH MAY BE THE MORTGAGEE, ANY REQUIREMENTS OR STIPULATIONS MADE AFTER THE SIGNING OF THE CONTRACT SHALL CONSITIUTE AN EXTRA OR CREDIT AS THE CASE MAY BE.

1-1 CONTRACT DOCUMENTS

Are complement and comprises this specification, and the General Conditions of Contract together with accompanying drawings.

1-2 CONDITIONS OF CONTRACT

The usual conditions of Contract shall apply and are to be read with and applied to all Trades included in and forming part of this Contract.

1-3 INSURANCE

The Contractor shall insure his workmen against all claims under the Worker's Compensation Act and shall insure the building against fire under a Builders Risk Policy to the full value of the building for the period of construction and up to the date on which the house is to be handed over to the owner. The Builders responsibility shall cease at that date.

1-4 SITE LOT...5.... DP.3[illegible]8

1-5 COMMENCEMENT OF WORK

The work will be commenced within a reasonable time after the Building Agreement documents have been signed and the certificate of the Solicitor acting for the owner returned to the office of the Builder.

1-6 SUB-CONTRACTORS

Sub-Contractors work is the responsibility of the Contractor. Their work must be given protection by the Contractor, and any damage suffered by the lack of protection must be repaired at the expense of the Contractor.

1-7 DAMAGE BY SUB-CONTRACTORS

Damage caused by Sub-Contractors to the Contractor's or other Sub Contractors work, shall be repaired by the Sub Contractor concerned at his own expense, or an allowance shall be made to the Contractor or Sub-Contractor for repairing the damage to the satisfaction of the Contractor and the Builder.

1-8 SETTING OUT WORK

The Contractor will be required to make good at his own expense any errors which may occur in the setting out of all work. Figured dimensions are to be taken in preference to scale.

1-9 ACCOMMODATION

The Contractor shall provide shelter at all times for workmens personal effects etc. in a building other than the residence, in accordance with the requirements of the Department of Labour.

1-10 LATRINES

The Contractor shall provide temporary closets for the workmens use, maintain same in scrupulously clean condition, and remove at the completion of work.

1-11 STORAGE OF MATERIALS

Timber shall be suitably stacked to avoid warping and adequate protection must be given to all materials to keep them of a standard equal to that when bought

1-12 COMPLETION OF WORK

In this Specification and also on the Drawings, although it may not be expressly mentioned or shown each and every item class, detail or particular of work indicated, described or implied shall mean unless set forth the providing and finishing of same, complete in every detail, and including all appurtenances, in order to leave the work in good order and complete. Any work that is deemed unstisfactory shall be removed and made good.

1-13 CLEARING UP

At the completion of the contract, remove all rubbish caused by the operation of any Trade. Remove all temporary roads and deposits of concrete and gravel, fill in truck tracks and generally leave the whole Site clean.

Leave all floors broom clean, clean all glass inside and out and remove all paint marks and putty marks. Replace all cracked and broken glass.

Leave the house clean and fit for immediate occupation.

1-14 MAINTENANCE

The Contractor shall maintain the work carried out for a period of thirty days after completion of the Contract. During that period the Contractor shall make good all defects in any part of any Trade to the satisfaction of the Owner.

1-15 BY-LAWS

The Contractor shall comply and conform in all respects the Local By-Laws and Regulations.

1-16 PERMITS AND FEES

The Contractor shall obtain all permits from, and pay all fees demanded by Local Authorities before the commencement of the work. This clause shall not apply for the arrangement and payment for the inspection and valuation by the lending institution in respect of progress payments.

NOTE - CROSSING FEES - UPGRADING RIGHTS OF WAY

The Contractor shall pay necessary deposits or fees for sealing, vehicle crossings etc. as required by the Local Authority only to allow permits to be uplifted. All such amounts are the liability of the Owner and such amounts as required charged as an extra.

1-17 LEVELS

The Contract price is for the levels shown of the plan and to a depth of 12" unless otherwise shown. Any extra foundation work shall be an extra payable by the owner and charged as an extra at cost of materials and labour plus 10%.

1-18 P.C. (PRIME COST) SUMS

Where P.C.Sums are mentioned, should the sum not be wholly expended the balance shall be refunded to the Owner. Alternatively, should the P.C.Sums be exceeded, the balance shall be an extra payable by the Owner to the Builder.

1-19 VARIATIONS

Any variation from the original Contract must be by written agreement between the Employer and Contractor signed by the owner. The written agreement shall state the character and cost of all such variations or extensions and shall be agreed upon prior to being carried out.

1-20 PLANS AND SPECIFICATIONS

The Contractor shall finish the work according to the true intent and meaning of the drawings and the specifications taken together whether the same may or may not be particularly shown on the drawings or described in the specification; provided the same is to be reasonably inferred therefrom. Any work deemed to be unsatisfactory shall be removed and made good at the expense of the Contractor.

1-21 TEMPORARY SERVICES

The Contractor shall supply temporary water and power supply until such time as permanent supplied are connected.

1-22 SUBSTITUTION OF MATERIALS

In the event of any of the materials or articles mentioned in the plans and specifications being unavailable when they may from time to time be required by the Builder, the Builder shall with approval of the owner in writing be entitled to supply an equivalent substitute material or article and the owner shall not reasonably or arbitrarily withhold his approval so as to cause unnecessary or unreasonable delay in the completion of the house, and any variation in price caused by the use of such substitute materials or articles shall be credited by the Builder, or paid for as an extra by the owner as the case may be.

EXCAVATOR

2-1 EXCAVATOR For excavator and bulldozer all P.C. Sum....$.50.00
Excavate the ground for all footings, piles etc. to suit foundations as shown on the plan provided to the depth necessary to obtain a solid foundation, but in any case to minimum of 12" x 12". Chip off all vegetation over the building area and deposit it where directed on the section.
(Excavate for a septic tank and effluent overflow trenches where applicable.)

CONCRETOR

3-1 CONCRETE

The concrete for all work throughout, unless specified otherwise, shall be composed to 6 parts aggregate to 1 part cement. All concrete is to have a minimum crushing strength of 2.000 lbs. per sq. inch in 28 days. To comply with N.Z. 9.38 table 1.

Note: This includes precast house piles. All concrete shall be mixed in a power driven batch mixer for a minimum of 1¼ minutes after all ingredients have been added. Only sufficient water shall be added to make a workable but stiff mix.

3-2 CEMENT

Cement shall be New Zealand manufactured ordinary Portland cement conforming to N.Z.S. 1844 and shall be carefully handled and stored away from moisture of any sort.

3-3 STEEL

Used for reinforcing shall comply to New Zealand specification No. 197 3A 1968. Hook all ends of all rods with standard U hooks having an internal radius of at least four times the diameter of the bar. All laps to be at least 40 diamerters. Bend all rods not less than 2 feet around all angles. Well tie all laps at intersections with 16 gauge black iron binding wire. Steel fabric to comply with N.Z.S.S 1051.

3-4 INSPECTION

No concrete or other foundation material shall be placed until after excavations have been inspected and approved by the Lending Institute and by the Borough Council Inspectors.

3-5 SHUTTERING

All shuttering shall be securely fixed in position before the concreting is commenced. The positions of all the forms shall be checked to ensure that the finished structure shall conform to the required lines and levels. The responsibility for the design and stability of the shuttering shall rest with the Contractor. The removal of the shuttering props or any of the supports used while casting the concrete is the entire responsibility of the Contractor.

3-6 FILLING

Where required, fill in porch floors, concrete hearth slabs etc. to within 4" with fine clean rubble, bluestone or some other hard substance. Filling should be consolidated.

3-7 SLAB FLOORS
4" floor slab reinforced withH.R.C. 665 laid continuous through construction joints maximum pour 15'0" sq. Top surface screeded trowelled flat and steel floated smooth.

Garage floor slab laid as above and falls of 1" formed at door openings.

3-8 FILL UNDER SLAB

Underground floor slab place and compact to 6" no fines metal with crushed run ¼" to top face to make polythene moisture barrier.

3-9 VAPOUR BARRIER (Not garage)

Polythene Sheeting minimum 0.005 laid flat over crusher run. Lap all joints 6" minimum and seal with jointing tape. Seal all holes punctured in polythene and leave completely sealed envelope for concrete slab. Polythene to be laid over a blinding layer of sand 2" thick.

3-10 FOUNDATIONS

All continuous foundations under external walls to be the dimensions shown on plans. Foundations to be not less than 4 12" above adjacent ground. All foundations to rest on solid approved bearing and shall extend not less than 12" below adjacent ground. Foundation walls shall be horizontal top and bottom throughout and shall be stepped to keep same. Concrete foundation walls to be not less than 10" thick on single storeyed buildings, ~~or alternatively 12" thick for 2 storeyed buildings~~, width of footings to Local County ByLaws, 11 INCHES

Note: This includes basement garages. All foundation walls to rest on a 12" x 6" concrete foundation. Foundation walls under 3' in height shall be reinforced with two ½" rods in the footings and not less than one ½" rod at the top. Where foundation walls exceed 3 feet in height, the reinforcement shall be supplemented with No. 665 welded wire mesh centrally placed in the wall. Provision shall be made for 3/8 diameter dowl pins 12" long for holding down the sleeper plate. Where required, reinforcement to basement retaining walls etc. to be as shown in the plans. GARAGE WALLS SHALL HAVE STARTER ½" Ø MESH AT 32"C C

3-11 PILES

Piles shall extend not less than 12" above adjacent ground. All piles to rest on solid bearing and shall extend not less than 12" below adjacent ground. Piles shall not be less than 12" below adjacent ground. Piles shall be not less than 8" x 8" to base and 6" x 6" at top. Precast piles to be set in 12" x 6" concrete pad. Piles shall be spaced at 4'6" centre in rows and not more than 7' between rows for 5" x 2" floor joints. These piles shall be the full required length, no jack studs being used. If, because of height over 3'6" jack studs are necessary, they are to be used with level solplate. Minimum length of piles to be 12" above adjacent ground, Jack studs to be firmly secured. Sleeper plates to be secured to pile with No. 8 gauge galv. wire.

3-12 VENTILATORS

Provide base ventilation of ½ square inch free air space for every square foot floor area, as near as possible to 2" below bottom of floor joists. Vents to be 2'0" from corners and not exceeding 6' apart. Generally 12" x 6" vents at 4'6" centres or 12" x 9" vents at 6' centres will provide necessary air spaces.

3-13 PORCH FLOORS, STEPS AND TERRACES

Porch floors and entrance steps shall be minimum thickness of 3" made with an even fall to drain stormwater. All porch floors and terraces to be reinforced centrally with 665 welded wire mesh. Steps to have 12" treads and 6½" risers. Provide for necessary upstand in porch floors and terraces so as to maintain the 6½ rise.

3-14 CHIMNEY FOUNDATION

a) Base for chimney to be constructed in reinforced concrete and finished at floor level. Chimney footings to be 8" thick concrete made 6" wider than chimneys reinforced with ½" mild steel rods at 12" centres both ways. All reinforcing is to be carried into foundation walls. ~~Hearth to be 4" thick reinforced with No.665 welded wire mesh carried down into foundation walls.~~

b) ~~No allowance for any fireplace footings.~~

3-15 CURING AND PROTECTION

All exposed concrete shall be protected from premature drying out and all freshly placed concrete shall be protected against rain.

3-16 REMOVAL OF FORM WORK

Side boxing shall not be removed until the sixth day, and plates must not be bolted down nor wall be subject to any vibration until the fourteenth day. Cut back all boxing ties in both back and front faces of walls. Any honey cone patches to be checked for loose stones then filled in with 1.3 mortar and bagged smooth.

BRICKLAYER

4-1 MATERIALS

Water as for concretor. Cement as for concretor. Sand shall be clean, sharp, hard, fresh water or washed sand free from all impurities and foreign substances, such as shale, loam or organic matter. Cement plasticiser shall be Mortaflex Grade 1 used in accordance with manufacturers instructions. Exposed exterior bricks shall be approved sound throughout.

4-2 DESCRIPTION OF BRICK MATERIAL

White Hartone 16"x6" with white struck joints

Allow P.C. £300.0.0 to cover cost of covering exterior face of chimney with selected stonework.

4-3 MORTAR

Mortar shall be composed of one part Portland cement and three parts sand, with the addition of Mortaflex plasticiser. Mortar shall be mixed only in such quantities as can be used within one hour after mixing. One batch shall be mixed with part of another batch and mortar which has attained its initial set shall not be retempered or reused. All joists shall be raked back at least ½" whether or not they are too pointed. All pointing shall be described fully on plans.

4-4 BRICKWORK

All brickwork shall be made up in a first class manner and shall be properly co-ordinated with work or other trades. The work shall be maintained level around the building as far as is practical, but where it is necessary to run up part of the work in advance of the remainder, the courses shall be raked back. Toothing will not be permitted. All angles at intersections shall be properly bonded not more than ⅜" thick. All bricks to be well wetted and allowed partially to be dried out before using. All concrete stone to be kept dry and away from damp ground until using.

4-5 WALL TIES

Brick veneer walls to be secured to wall framing with approved No 8 galvanised wire ties. They shall be built in at every fourth course and angles opening at end walls. Provide two ties to each square yard and bend them well into brickwork and secure to alternative studs with two No.10 gauge staples. Generally there will be a cavity of 1½" between brick walls and framing, giving a wall thickness over studs, cavity and brickwork of 10".

4-6 VERMIN PROOFING

As exterior veneer walls are erected, nail to vermin plates strips of approved galvanised iron vermin proofing, give slight fall to brickwork and securely bend in mortar of brick course.

4-7 SILLS

Sill tiles shall be 8"x8" with ¼" round front edges. Brick

sills to be brought up under wooden sills. Junction of brick and wooden sills to be filled with Hydroseal and over pointed with cement mortar.

4-8 CLEAN BRICKS

During the construction, and at completion, clean down all exposed brickwork with a weak mariatic acid solution, and leave free from stains and all defects.

4-9 FIRE PLACE SURROUND, included in P.C. Sum for brickwork

Allow the P.C.Sum of $..... for the construction, purchase of a selected fire surround, fire back and hearth, and install same.

4-10 COLONIAL GRATE

Supply and fix in position a 14" Colonial Fire Grate or as selected by owner

BLOCKLAYER

5-1 MATERIALS

Water as for concretor. Cement as for concretor. Sand shall be clean, sharp, hard, fresh water or washed sand, free from all impurities and foreign substances, such as shale, loan, or organic matter. Exposed exterior blocks shall be approved sound Vibrapac blocks to the shapes and sizes specified on the plan. All concrete blocks on exterior walls to be water proofed quality.

5-2 MORTAR

Mortar shall be composed of one part Portland cement and four parts of sand, with the addition of Onoda NN water proofer. Mortar shall be mixed only in such quantities as can be used within one hour after mixing. One batch shall be mixed with part of another batch and mortar which has attained its initial set shall not be retempered or reused. No joint on which a mortar bed is made shall be less than 1½" each way. For practical purposes the above proportions can be mixed as follows:

4 buckets sand (2gals)
1 " cement (2gals)
5% Onoda N.N. ie 1-1/5 pints.

5-3 BLOCKWORK

All blockwork shall be made up in a first class manner and shall be properly co-ordinated with work of other trades. The work shall be maintained level around the building as far as is practical, but where it is necessary to run up part of the work in advance of the remainder, the courses shall be raked back. Toothing will not be permitted. All angles at intersections shall be properly bonded not more than ⅝" thick. All concrete blocks to be kept dry and away from damp ground until using.

5-4 REINFORCING

Horizontal reinforcing shall be at the top hand. 2 rods ½" dia grouted in place in a knock in bond beam. Each rod to be turned down into end blocks. In the event of walls being over 10'0" in height, they are to be reinforced in addition with a centrally placed wall beam as shown in the plans. Vertical reinforcing to be ½" dia rods spaced at every other block of 32" centres. Each rod to be bonded in placed with mortar as the wall is constructed. Vertical reinforcing to each opening and every corner shall be 2 rods ⅝" dia.

5-5 CONTROL JOINTS

Allow for a control joint at every 12'0" of wall. Construct as shown on plans.

5-6 CLEAN BLOCKS

During the construction, and at completion, clean down all exposed blockwork and leave free from stains and all defects.

CARPENTER & JOINER

6-1 GENERAL

Frame erect and fit all carpenter and joiners work.

Leave all parts in good working order and make good to all shrinkages and other defects.

6-2 TIMBER

All timber up to and including flooring and all exterior timbers shall be heart quality or timber pressuretreated by an approved process. All timbers shall be graded according to New Zealand standard before being built in, and any delivered unseasoned shall be fillet stacked until required. All joinery, dressed and finishing timbers, and all pre-built components shall be stacked under cover from weather at all times prior to erection on the site. All exposed finishing timbers shall be dressed and sanded. Prime all external timbers before fixing.

All timbers shall be true to grade, comply with N.Z.S.S. - 1900 Chapter 9:1 fabricated straight, level, plumb and well spiked together to make a good sound structure in accordance with N.Z.S.S. code of Building Part 1X.

6-3 SCHEDULE OF MATERIALS

Designation	Size	Grade	Remarks
Stringers	4 x 3	B.A. HtRimu or No.1 Treated Radiata	6'6" Max c.c
Wall plates	4 x 2	No.1 Treated Radiata	
Floor joists	5 x 2	" " "	18" centres Spanning 7'0"
	6 x 2	" " "	18" centres Spanning 9'0"
Studs ext.	4 x 2	B.A.R. or T No 1	18" centres
Jack Studs Ext.		Treated Radiata or B.A.P.T.Indigenous	Max 20" centres.
Studs Int.	4 x 2 & 3 x 2	B.A.P.T.Indigenous	18" centres
Nogging	4 x 2 & 3 x 2	B.A.P.T.Indigenous	3 rows Gib.Bd 5 rows HardBd Lami-wall etc
Plates	4 x 2 & 3 x 2	B.A.P.T.Indigenous	
Braces Int.	4 x 1	B.A.P.T.Indigenous	Dia. checked in.
Braces Ext	6 x 1	B.A.P.T.Indigenous	" "
Ceiling joists	4 x 2	B.A.P.T.Indigenous	Max 20" c.c.
Rafters (Iron roof)	4 x 2	B.A.P.T.Indigenous	Max 36" cents for span up t 7'6"
Rafters (Tile roof)	4 x 2	B.A.P.T.Indigenous	Max 18" cents for span up t 7'6"
Purlins	3 x 2	B.A.P.T.Indigenous	Max 30" c.c.
Ridges & Hips	6 x 1	B.A.P.T.Indigenous	
Under Purlins	4 x 2	B.A.P.T.Indigenous	
Roof Struts	4 x 2	B.A.P.T.Indigenous	4'6" centres

Collar ties	6 x 1	B.A.P.T.Indigenous
Valley	6 x 1½	B.A.P.T.Indigenous
Valley Boards	6 x 1	B.A.P.T.Indigenous
Fascia board	6 x 1	D.A.H.R. or white pine or Huttloc
Weatherboards	6 x 1	D.A.Ht.M.P.T.M. Or Huttloc
Scribers	2 x ½"	D.A.Totara or White pine treated
Particle Board	8' x 3' 8' x 4' 12' x 6'	H.D.Particle Board.
Facings Ext.	4 x 1	D.A.H.R. or P.T.Indig timber
Skirting	3 x 1	D.A.Rimu G.F.
Sillboards	1"	D.A.Rimu
Aprons	¾" Quad	D.A.Rimu
Cornices	1¼" Scotia	D.A.Rimu

Interior finishing work not specially mentioned to be D.A.Rimu

Exterior finishing not specially mentioned to be D.A.H. Rimu or approved treated.

6-4 FLOOR JOISTS

Floor joists shall be gauged down on sleepers to uniform level and shall be well spiked. Allow 12" laps at passings to every third peir well spiked together. Trim for all openings etc. Max. spacing 18". Double joists under bearing partitions.

6-5 STUDS

Studs shall be cut squarely on top and bottom and shall be securely nailed to plates with two 4" spikes to each end. Max. spacing 18" c.c. Window opening studs to be 4' x 2" to openings not greater than 4'6", increased inthickness in the proportion of 1" for every 4'6".

6-6 BEAM SCHEDULE

To openings up to 3'2"	4 x 2 on flat
To openings from 3'2" to 4'6"	4 x 3 on flat
To openings from 4'6" to 6'0"	4 x 4
To openings from 6'0" to 7'6"	5 x 4
To openings from 7'6" to 9'0"	6 x 4
To openings from 9'0" to 11'0"	8 x 4

6 -7 CEILING RUNNERS.

When ceiling joists span over 7' and up to 12' - one runner.

When ceiling joists span over 12' - one runner for every 7' of span.

4" x 2" up to 8' of span

8" x 2" up to 12' of span

10" x 2" up to 15' of span

12" x 2" up to 18' of span

6-8 TRIMMERS

Bottom trimmers 4" x 2" or to window openings exceeding 9ft to be not less than 4" x 3".

6-9 FLOORING

Lay Particle Board or approved H.D.T.Flooring grade sheet close nailed and machine sanded at completion.

6-10 CEILINGS

a) To be lined with 2'0" x 1'0" Pinex plain tiles stapled to 2 x 1 battens fixed at 12" centres. Use not less than 5 large staples per tile as specified by Manufacturer. All battens must be properly dry before fixing. ENTRY, [illegible] DINING - DEN

b) Plain Pinex and Softboard V jointed. PASAGE, & BEDROOMS

c) Gib.Board securely fixed to ceiling joists. Stop all holes and joints with plaster of paris and trowel to a smooth even finish.

d) TEMPERED HARDBOARD TO SERVICE AREA

e) ½" CHIPBOARD TO [illegible] CEILING

6-11 INSULATION

a) To inside face of all exterior stud walls fit 2½" thick R9 Friction fit fibreglass bats. Cutting bats by sharp knife to neat friction fit where required.

b) To underside of all rafters on ceiling joists fit 2½" thick type R9 fibreglass, all friction fit.

c) ~~Fit double~~
Fit single sided sizalation to internal face of exterior walls.

6-12 VAPOUR BARRIER

Fix 0.005 clear polythene sheet to inside face of all external stud walls and underside of rafters and joists at ceiling line staple at 12" crs. by use of purpose made gun to ensure complete envelope. Cut round window frame after 6" crs all round. Leave ready ceiling and wall to receive internal linings.

6-13 DAMP COURSE

Fix 3ply damp course between concrete and brick and all work adjacent.

6-14 FRAMING

~~Erect floors with 5" x 2" floor joists at 18" centres gauged and hooked and set level with 3" trimmer joists apley cheeked~~ ½", ~~" x 3" sleeper and wall plates set on edge at not more~~ than 7'0" centres with halved joints. Frame walls and partitions with full length plates with halved joints,

studs at 18" centres. Check in flush braces at approx. 45° two braces to each wall. Check lintel into studs ½" Fix three rows of nogging to each lined wall and elsewhere as required for fixing. Frame ceiling with 4" x 2" x 18" centres, nog round walls for cornice, and at 3' centres.

~~Note: Where treated Radiata is used for joists size must be 6" x 2"~~

Frame for roof as shown on drawings with rafters birds-mouthed over wall plates and extended to take fascia and form eaves spaced maximum 18" to take tiles and maximum 36" to take iron. Form hips and valleys and set 3" x 2" purlins at maximum 30" Centres. Provide under purlins, struts and collar ties as required for strong well braced roof. Where pitch of roof is 10° or less purlins must not be more than 18" centres with double purlins at end laps of iron.

Form level soffits as on drawings, line under witt flat asbestos sheets housed into fascia board and with mould at walls. RAFTERS ARE AT 2'3" CENTRES, EXCEPT OVER LOUNGE, WITH 6x2 AT 2'3" EXPOSED DRESSED RAFTERS; SEE DETAIL ON PLAN

6-15 EXTERIOR SHEATHING

Unless otherwise specified and shown on drawings use weather-board bevel-back finish Huttloc Woodwork not mentioned on the above schedule will be found in the Addendum to the specification or shown on the Drawings.

6-16 PRIMING

All abutting surfaces of exterior timber shall receive a good coat of first quality primer before being fixed.

6-17 WALL LINING

All walls to be lined with 3/8" flush jointed gibraltar board sheets. All sheets to be nailed with 1¼" galv. flat head nails on joints every 6" and intermediate studs. All stopping to be done with good quality plaster of paris by skilled tradesmen. All back porches to be lined with flat fibrolite. Kitchen, bathroom, W.C. laundry linings to be 3/16" Pinex hardboard, or gib. board and lining paper.

6-18 FEATURE WALL LINING

Allow P.C. Sum of $100.00 for selected Panelling [illegible]

6-19 SHOWER LINING

Shower to be lined with...SERITINE..... Colour to owner's choice. All external and internal angles to be extruded plastic mouldings.

6-20 SPLASH BOARDS TO BE P.V.C.

Fit 6" x 1" Heart Timber splash boards behind bath and laundry tubs, set in white lead putty caulking or selastic. Prime back of board with PWD read lead.

7-1 JOINERY

All joinery to be constructed in accordance with the best methods of Woodwork joinery using mortice and tenon, dovetail tongue and groove, mitre or other approved methods and to be as per N.Z.S.S. 496 No 2 1966.

7-2 FRAMES AND SASHES

a) Frames and heads to be out of 1½" or 2" material and sill to be out of 6" x 2". Sashes to be tenoned and assembled in an approved manner with waterproof glue and finished not less than 1-5/8" thick, to be rebated for glass, properly fitted and to have ⅜" grooves at sides, bottom and top. All exterior joinery to be primed on exterior surfaces, and to be sealed with an approved sealer on all interior surfaces where varnish finish is specified, within 2 days of fixing. Sashes to be hung as shown on plan.

b) Wooden sashes to be:

1. Whitco
2. Top hung
3. Other

7-3 EXTERIOR DOORS

Each exterior door shall be 6'6" x 2'10" or 2'8" x 2" solid framed D.A.Ht.Rimu doors hung with three 4" loose pin galv. butts in 2" solid rebated and throated frames with 3" weathered and grooved sills.

a) Framed ledge glass top TO GARAGE
b) 3 panel glazed in OBS glass.
c) Full Panel glazed in OBS glass. ENTRY
d) 8 panel solid wood door (Vestibule type)
e) 4 panel solid wood door.
f) Sliding Aluminium doors. 5 PAIR OF
g) Sliding timber doors.
h) Flush Panel Wooden. MAINS DOOR TO LAUNDRY

7-4 INTERIOR DOORS

a) Shall be stock flush hollow core of approved made, hung with one and half pair 4" loose pin a B.S. Butts in 1½" solid jambs or 1" jamb linings with ½" stops planted on. Doors to wardrobes, linen and coats shall be 6'0" by 2'0" and all others shall be 6'6" x 2'6". SEE SEPERATE DOOR SCHEDULE

b) Type: (1) Slice cut Rimu
(2) Slice cut Mangaeo
(3) Slice cut Sapele
(4) No.1 Rimu
(5) Paint quality
(6)

c) Cabin doors.

d) Feature doors. LOUNGE TO DINING
TO CONSIST OF 4/12" WIDE F.P DOORS ON RAIL TRACK

7-5 GARAGE DOORS

a) Tiltadoors 3 OFF = P.C. SUM $100.

b) Parker Roll a door

c) Sliding

7-6 HOT WATER CUPBOARD

Is to be

a) Front only as shown on the plan with slats provided.

b) two sided cupboard with slats provided

c) Three sided cupboard with slats provided

7-7 WARDROBES, COAT CUPBOARD ETC. (Same finish as 7-4)

Frame wardrobes, linen, coats etc. as shown with linings and doors as previously specified ¾" shelves in linen cupboard Provide and fix 12 x 1 hat shelf and ¾" coat hanger rod.

7-8 INTERIOR FINISHING

Fix 1" full length sill board to all windows.

Fix 1½" wood scotia cornices to all ceilings.

Fix ½" quarter round beadings to internal angles of fittings.

FOR RECESSED SHADING

BUT DOWN DRESSED 4x2 PLATE AND FIXED 4x2 PLATE OVERHANGING 1½ CARRY GIBRALTER BOARD DOWN ¼" PAST.

7-9 HARDWARE

Hardware to be installed by the contractor.

P.C.Sum of $.300....

7-10 BATHROOM

Provide Bathroom Cabinet in Bathroom. Frame door out of 2" x 1" timber, and fix 24oz glass mirror at 3/16" plywood back. Finish around cabinet with quarter round beads.

7-11 MANTEL PIECES

Provide timber mantel shelf, firmly secured. Finish against walls as required with quarter round beads.

7-12 ACCESS DOOR IN CEILING

In laundry, or where directed, provide 24" x 24" access door to roof, neatly finished.

7-13 ACCESS DOOR TO BASEMENT

N/A In highest part of base, provide base door and frame for access.

7-14 GABLE FINISHING

Finish eaves and gable ends as indicated on plan. Line gables with ~~asbestos~~ with double ply underlay fitted horizontally. → VERTICAL SHIPLAP BOARDING

7-15 WINDOWS

a) Provide and fix windows as detailed with rebated and grooved D.A. Ht Matai, Rimu or Totara frames, rebated cap as detailed and sashes out of D.A. Ht.Totara or Redwood, solid rebated and moulded with tenoned and pinned joints. Run water groove round sashes. Hinge each opening a sash with 3" galv. butts.

b) Crittall Steel

c) Aluminium

7-16 KITCHEN FITTINGS

a) to be of builders standard design or as shown on plan. Provide toe space 3" deep to all fittings. All shelving to be cut of 1" material. Dresser top to have formica top.

b) Finish 1. Paint
2. Clear
3. Sapele
4. Other

LATER TO DETAIL

ALLOW P.C SUM $500.00

c) Special cupboard door/draw handles.

7-17 SINK TOP

a) Provide and install sink top where shown on plans. Sink top to be formica or stainless steel covered in colour of owner's choice with stainless steel bowl.

b) Special for specials see seperate detail.

7-18 VANITY UNIT

P.C.Sum of $.[illegible]

7-19 STAIRS

a) Internal

N/A

b) External

7-20 BAILASTRADES

a) Internal

N/A

b) External

PLUMBING . SEE ALSO ADENDUM

8-1 GENERAL

All work shall be carried out in accordance with the drawings, specifications, Local Authority and Public Health regulations 1959. All materials shall be the best of their respective kinds. Approved N.Z. manufactured materials are to be used wherever possible. All other materials are to be British Manufacture. Water pipes and tubes shall be set out in straight runs of even gradients, avoiding all places where air locks are likely to occur. Use easy bends and unless unavoidable, elbow fittings are not to be used. Copper tubing is to be secured in position by copper straps. All piping including water, waste and vents shall be concealed.

8-2 FLASHING

Flash as necessary to render building watertight. All flashings shall accurately fit the work and shall be machine bent and cut in as long lengths as possible with all joints well lapped and soldered, beaded edges, and filed with 2" flat head galv. nails at 5" centres.

8-3 ROOFS

Fix caps at each Apex of Galv. roofs. Flash and over flash all vents, chimneys and other upstands through roof. Line all valleys with 24 gauge galv. iron.

8-4 SPOUTING AND DOWNPIPES

a) Fix 5" x 24 gauge quarter round galv. iron spouting to drain to outlets with 4" lapped, rivetted and soldered joints and all necessary stop-ends, mitred returns and outlets. Support spouting on 1" x 18 galv. double clip brackets at not less than 3'0" centres, fixed with 1" x 8 gauge galv. iron seamed and welted with slipper and joints, angles and shoes, strapped to walls with 24 gauge galv. iron straps fixed with galv. screws.

b) P.V.C. Plastic fixed to manufacturers recommendations.

8-5 VENTS AND SOIL STACK

Vent pipes shall be 3" x ¼" cast iron for the first 6'0" above ground level with 3" 24 gauge seamed copper extension or 3" Fibrolite carried to the height demanded by the Local Authority

Secure cast iron pipes to walls with brass screws.

Fix wire cage.

8-6 WASTES

Join W.C. pans to drain above the level of the floor with a spun yard ring sealed with mastic or other approved material which will provide a non rigid gas tight joint. Fit lavatory basin with 1¼" Chromium Plated brass traps and waste pipes to floor level with an approved floor flange. Bath and wash tub wastes shall be 1½" dia. Sink wastes shall not be less than 1½" dia.

Wastes and traps may be P.V.C. Plastic, Polypropylene depending on Local Council requirements.

8-7 COLD WATER SUPPLY

Lay cold water supply from supply point in ¾" copper pipe or P.V.C. Plastic buried not less than 12". Take ¾" copper branches to bath, ½" to basin, sink, each compartment, of wash tubs, W.C. Flushing cisterns and to one exterior hose tap. Connect to "Ajax" valve and to H.W. cylinder with ¾" copper pipe.

8-8 WASHING TUB

Supply and fit one 22" utilty Stainless Steel tub where indicated in the plan.

8-9 BATHROOM FITTINGS

Fit 5'6" pressed steel porcelain enamelled standard square type bath and 22" x 16" porcelain basin complete with cast iron cantilever brackets. Fit ebonite plugs C.P. chains and C.P. gratings to all fittings.

8-10 SHOWER BASE

If shown on plan, supply one 36" x 30" Stainless Steel shower base or alternative size as required.

8-11 HOT WATER

Provide and fix 40 gallon electric hot water cylinder of approved type and manufacture, complete with lagging and g.i. casing. Connect lagged copper expansion pipe. ½" dia copper sludge pipe with screwed brass cap through external walls, and ¾" copper branch to bath, ½" copper branches to sink, tub and basin and shower if provided for in plan.

8-12 TAPS

All taps should be chromium plated brass.

12-1 PAINTER

The Sub-Contractor shall pay attention to that selection of the General Conditions dealing with relations with other trades.

12-2 GENERAL

All material shall be the best of its kind and all work shall be performed by skilled tradesmen. Protect all work against damage and adjacent surfaces to be kept clean. Colours are to be selected by the Owner. Pick out as required and leave work in perfect condition at completion.

12-3 WORKMANSHIP

All work shall be of the highest standard and shall be performed by Tradesmen. Paint shall not be applied to damp surfaces, and external painting shall not be done during frosty or other unsuitable weather. All care should be taken not to stain or mar any existing finish and all work to be left clean and clear.

12-4 PREPARATION OF SURFACES

No painting, enamelling, distmpering or similar finishing work shall be done on concrete, plaster, or similar surfaces unless and until such surfaces are in a suitable condition to receive the finish.

12-5 EXTERIOR WORK

Prime all exterior woodwork with white and read lead primer, include for all laps, butts, tops and bottoms of sashes, doors etc. and spoutings and downpipes, flashings etc. Stop with 1st quality undercoat and paint all glazing putties. Finish with a first quality finishing gloss. Fibrolite soffit and porch walls to be given 2 coats of P.V.A. plastic paint or other approved cement paint. Original cost provides for two colours.

12-6 INTERIOR WORK

Prime or seal surfaces in Kitchen, Laundry, Bathroom and W.C. undercoat and enamel with approved brand ready mixed glossy enamel applied as recommended by the manufacturers. Paint ceilings of all other rooms with ready mixed approved paint matt finish. Prime interior woodwork to windows, undercoat and enamel with approved brand of ready mixed semi-gloss enamel. Stop all skirtings and doors with plastic wood and varnish two coats of ready mixed pale clear varnish of approved brand. Two colours only are provided for in kitchen. Kitchen cupboard doors to be suitable for paint or varnish finish inside and out.

Gib: If Gibraltor board ceilings used, fix and stop suitable for roller paint finish.

12-7 PAPERHANGER

Paper all walls not otherwise specified with papers P.C. value of $..[illegible]. per standard roll to be selected by the Owner. Wallpaper adhesive shall be Polycell. Hang papers plumb and in full lengths and widths with butt joints. All wardrobes to be painted inside.

12-8 FINISH

In all cases, prior to the applications of a finishing coat the recommendations of the manufacturer of the finishing coat shall be strictly adhered to, notwithstanding that the general term "paint" has been used, and a minimum number of coats has been specified.

GLAZIER

7A - 1 GLAZING

All glass shall be of approved British manufacture, and shall be cut with allowance for expansion and bedded, sprigged and back puttied. Glaze casements with panes under 3½ sq. ft. in 18 oz sheet glass ordinary glazing quality. Panes from 3½ sq.ft. to 7 sq.ft. in 24 oz sheet glass ordinary glazing quality, and panes over 7 sq.ft. glazed with 32 oz sheet glass selected glazing quality. Glaze all bathroom and W.C.Sashes with white translucent glass. Glass louvres with 3/16th cast plate glass. Glaze front door and side lights and glazed back doors with the selected obscured glass.

Fix glass mirror best silvering quality in bathroom cabinet door.

7A - 2 OTHER MIRRORS

10-9 The Sub-Contractor shall supply at the point of entry strong shackle insulator fixing for the attachment of aerial services. For underground service the method approved for the time being by the supply Authority is to be applied in strict conformity with relevant regulations.

10-10 AERIAL AND EARTH POINT

Install radio aerial and earth. Connection point and Television aerial connection with 12 feet spare aerial flex at roof peak.

PLASTERER

11-1 MATERIALS Cement: Shall be Portland as specified for Concretor.

Sand : Shall be clean, sharp, fresh water washed mixed sand free from all organic matter and screened to a uniform grade.

Adhesion Agent: Shall be "Cemstik" liquid type, used in strict accordance with manufacturers instructions,

11-2 WORKMANSHIP

Carry out all work in a first class manner in accordance with best trade practice. Check all surfaces, hack as required, clean and damp down. Scratch between coats for key. Protect all work, keep wet, allow adequate time between coats and finish all work true to line and face. Properly mix all plaster and use immediately, no retempering will be allowed. Cut off all wire ties supporting formwork ½" back from the exposed concrete face.

11-3 EXTERNAL WALLS

External faces of concrete base wall and chimney shall be finished as follows.

Render and straighten with 3 to 1 sand and cement compost not less than ½" thick in smooth and fair finish.

Finish should be hand textured in 3 and 1 sand and cement roughly 3/16" thick.

Where required all base ventilators to be supplied by this Contractor.

11-4 PORCHES, STEPS AND TERRACE.

All surfaces of these floor and steps shall be thoroughly cleaned packed and well soaked with water. Render and straighten with 2½ to 1 sand and cement compost, not less than ¾" thick and finish with a wood float to a perfectly smooth straight and even surface, form small cove in all internal angles.

11-5 REPAIRS

All damaged or broken plaster work shall be repaired after the other tradesmen have finished their work and the whole of this work on completion shall be left waterproof and in perfect order, without cracks, blisters, or marks of any kind, in clean condition and uniform in colour. All drummy plaster shall be removed and repaired at sub-contractors expense.

PLUMBING

1. Supply and fit pump, and lead water from creek to 2000 gal holding tank, this to supply W.C's and Laundry, allow P.C.Sum of $150 for pump and motor.

2. Allow P.C.Sum of $250 for pressure system to lead water from 4000 gal precast tank for rainwater.

3. Allow P.C.Sum $330 for 2000 gal and $430 for 4000 gal. precast tank delivered and installed on site.

4. Instal 2/ 40 gal. and one 5 gal. underbench circulators as detailed on plan.

5. Pipe and supply taps for automatic washing machine and install vent for dryer.

6. Tub shall be S.S. with cupboard under and supplied by joiner, together with formica sink top.

7. Showers, 2 off, S.S. 3' x 3' each, mixer taps.

8. Bath, shall be coloured 5'6" and selected by owner.

9. Instal two toilets complete withL.L. Flashers.

10. Instal wall basin at second shower by laundry.

DRAINLAYER

9-1 GENERAL

Provide and fix all materials for the installation of the complete sanitary and stormwater drainage system.

9-2 SANITARY FITTINGS

Fix white glazed earthenware W.C. Pan and fit with double flap polished seat, with brass hinges and rubber buffers and "Low down" plastic flushing cistern of approved manufacture.

9-3 SEWER CONDITIONS

Arrange with the Local Authority to lay a sewer connection, and pay all charges for same. Drains shall be laid in straight lines and to even gradients, properly cleaned out as the work proceeds. Fix 4" C.I.W. gulley traps to take wastes and 4" bends to take soil pipe, terminal vent etc. Gully traps shall have concrete kerbs and C.I. gratings. All work to be done to Local Authorities' standards.

9-4 STORMWATER DRAINS

Fix 4" R.W.P. 2nds, bend to each downpipe and connect as required by the Local Authority

The whole of the drainage work shall be carried out in accordance with the By-Laws of the Local Authority, and to the satisfaction of its inspectors.

10-1 ELECTRICIAN

All installations shall be made in a sound, safe, practical and workmanlike manner in conformity with modern practice, in accordance with the Wiring Regulations, 1961, and to the satisfaction of the Local Authority. All switches and plugs shall be flush type and all cables shall be C.M.A. brand or similar approved.

All cutting, drilling and fitting necessary to the Electrical installation is to be included in this work, but no work or other trades shall be cut into so that it may cause damage or injury to structural or finished work.

All work is to be protected from the weather in an approved manner and against possible injury during the progress of work.

All exposed screw-heads on fittings are to be of finish and pattern to match their surroundings.

All switches (flush type) power sockets, (flush type) and other fittings shall be of first quality standard, placed as shown or directed. All switches to be P.D.L. rocker type.

10-2 SWITCHBOARD

This is to be neatly boxed in with door front as required by the Electrical Supply Authorities and it to be placed in back porch or wall recessed between studs.

10-3 EARTHING OF NEUTRAL

The neutral at the switchboard is to be bonded to the water system

10-4 MAINS

Install service mains to switchboard as directed.

10-5 LIGHTS

Provide in each room, light points complete with lamps and shades at positions to be arranged and provide 100 watt lamps in living and dining room and 60 watt lamps to all other points. Provide light point at front porch and light point at back porch. Allow for ..... lighting points.

10-6 POWER POINTS

Provide power points at positions arranged 4'6" above floor in kitchen and 12" above floor elsewhere. Allow for ..... 10 amp 3 pin flush type power sockets.

10-7 COOKER

Provide and fix electric cooker P.C.Sum.$..... Install cooker to instructions and control switch within easy reach of cooker.

10-8 HOT WATER

Provide and connect element and thermostat to hot water cylinder provided by Plumber.

ELECTRICIAN (Addendum)

1. Underfloor heating to all rooms, allow for "Tolleys" wiring, include laundry and bathroom.

2. Allow for 28 light fittings.

3. Allow for 23 heating points.

4. Allow for 3 outside lights with bell fitting.

5. Sub main in garage.

6. Shaving plug to bathroom.

7. Wire and supply Expel Air fan at Kitchen.

8. Allow to wire pump for creek supply and also pressure pump.

9. Allow to wire for electric eye level range, and allow P.C.Sum of $339.00 for the supply of this item.

10. Allow P.C.Sum of $200.00 for the installation of mains.

11. Fit panel switch to light in pantry.

12. Supply E & T for water heaters, 3 off.

FOR COUNCIL USE:

DEPARTMENT	TICK FOR REFERRAL	COMMENTS	APPROVING OFFICER/ DATE
Site Inspection	✓	Refer to Form 241 for completion of site Inspection & sign off this form when completed.	GARETH McC 2/10/09
Resource Consents (refer PIM Sheet)	✓		2/12/09
Plumbing and Drainage	✓		15/10/09
Building	✓		2/12/09
Fire Design			
Compliance Schedule			
Environmental Health			
Other.....			

NOTES:

KAPITI COAST DISTRICT COUNCIL

Building Co	090806.
Building Pre	**Adds & Alts**
Location (Si	**86 Emerald Glen Road**
Building Category	**RAUMATI**

...tegory **0 1 2 3**

RECEIVED
- 8 OCT 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**	Taken by James Applicant	8/10/09.
Payment taken and receipted (details entered inside this cover sheet) by CSO **CS-WI-008**	Jeanette	8/10/09.
Data entered and invoiced by CSO **CS-WI-008**	Angie	8/10/09.
Pages numbered by CSO **CS-WI-008**	—	
BC Application and documentation scanned, checked & status update by CSO **CS-WI-009**	Angie	9/10/09
BC Application signed over to BC **CS-WI-009**	Angie	9/10/09.
Application reviewed by Technical Officers who sign off at back of this form **AP-WI-026 & AP-WI-009**	SimonCopp Jaime Shedlock	15/10/09 11/11/09
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**	Angie	3/12/09
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**		

KCDC Form 123 ver. 2

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

KCDC Form 123 ver. 2

FOR OFFICE USE ONLY

FEES		APPLICATION FEE	$
Building Fee	$1274.00		$1583.45
Sewer Connection	$	RECEIPT NO	DATE
Water Connection	$		
Vehicle Crossing	$	INVOICE NO	DATE
Damage Deposit	$	88390	8/10/09
Code Compliance Administration	$	RECEIPT NO	DATE
Building Research Levy	$85.00	318741	8/10/09.
Development Levy	$	FEES PAID BY:	
DBH Levy	$167.45	ML & ME Sheffield	
Compliance Schedule	$		
Digital Storage Fee	$37.00	BUILDING CONSENT NUMBER	DATE ISSUED
Certificate of Title Charge	$	090806	8/10/09.
Photocopying	$	AUTHORISATION FOR REFUND OF DEPOSIT	
SUBTOTAL	$	Deposit held =	$
Less Fee Paid	$	Cost to Repair Damage Caused During Construction =	$
TOTAL	$1583.45	Total Balance to be Refunded	
GST INCLUDED	$	Authority Number:	
		Authorised:	DATE:

KCDC Form 123 ver. 2

KAPITI COAST DISTRICT COUNCIL

Site Inspection Report - New BC Applications

BC Application number: 090806 Lot 5 DP 33684

Site Address: 86 EMERALD GLEN

Building Project: ADDS + ALTS

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	RUBBISH FENCING.	
Check ground conditions OK?	Yes / No		
Check ~~flpath~~, ~~kerb~~ & channel, grass berm, note existence/damage.	Yes / No	GOOD CONDITION	
Vehicle entrance crossing installed (describe condition)	Yes / No	GOOD CONDITION	
Photos taken? (Save & link to NCS)	Yes / No		
Dogs on property?	Yes / No	2	
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 MC Signature.....

Date Inspected: 12/10/09

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

Consent No: **090806**
Applicant: **Sheffield Family Trust**
Site Address: **86 Emerald Glen Rd, Paekakariki**
Work Type: **Adds & Alts**

Inspection Type: **Final Inspection**
Inspection Outcome: **Fail**
Inspected By: **Anthony Wilson**
Inspection Date: **10 November 2023 3:09 p.m.**
Duration: **60 minutes**

Inspection Element	Status
Exterior	Pass
non compliance discussed onsite	N/A
Other	N/A
Interior	Fail
Tempering valve **Fitted to two cylinders, one at each end of roof space**	Pass
Hot water temp **55 for both cylinder supplies**	Pass
non compliance discussed onsite	N/A
Final check complete **Install lagging to copper hot water pipes off cylinder to tempering valves, please provide photos.** **Also require Gas safety certificate and electrical safety certificate, for work associated with this consent.**	Fail
Other	N/A
Other	N/A

Taken at 2:35 PM on Friday 10/11/2023

Taken at 2:36 PM on Friday 10/11/2023

Cylinder at north end
Taken at 2:37 PM on Friday 10/11/2023

Taken at 2:37 PM on Friday 10/11/2023

Cylinder at south end
Taken at 2:38 PM on Friday 10/11/2023

Taken at 2:38 PM on Friday 10/11/2023

Guest ensuite at South end
Taken at 2:53 PM on Friday 10/11/2023 Status: Pass

Garage
Taken at 2:53 PM on Friday 10/11/2023

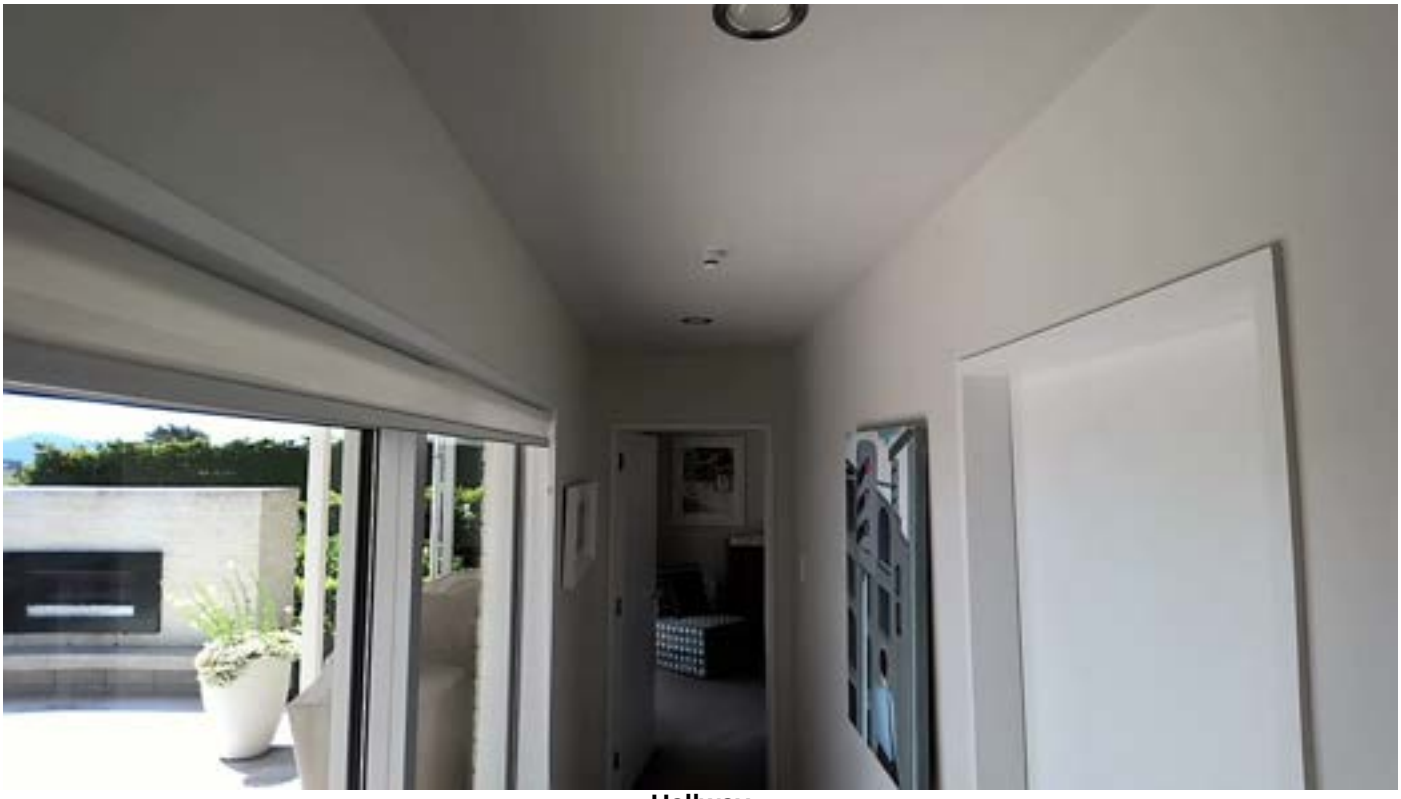
Link of garage to house
Taken at 2:54 PM on Friday 10/11/2023

Main bathroom
Taken at 2:55 PM on Friday 10/11/2023

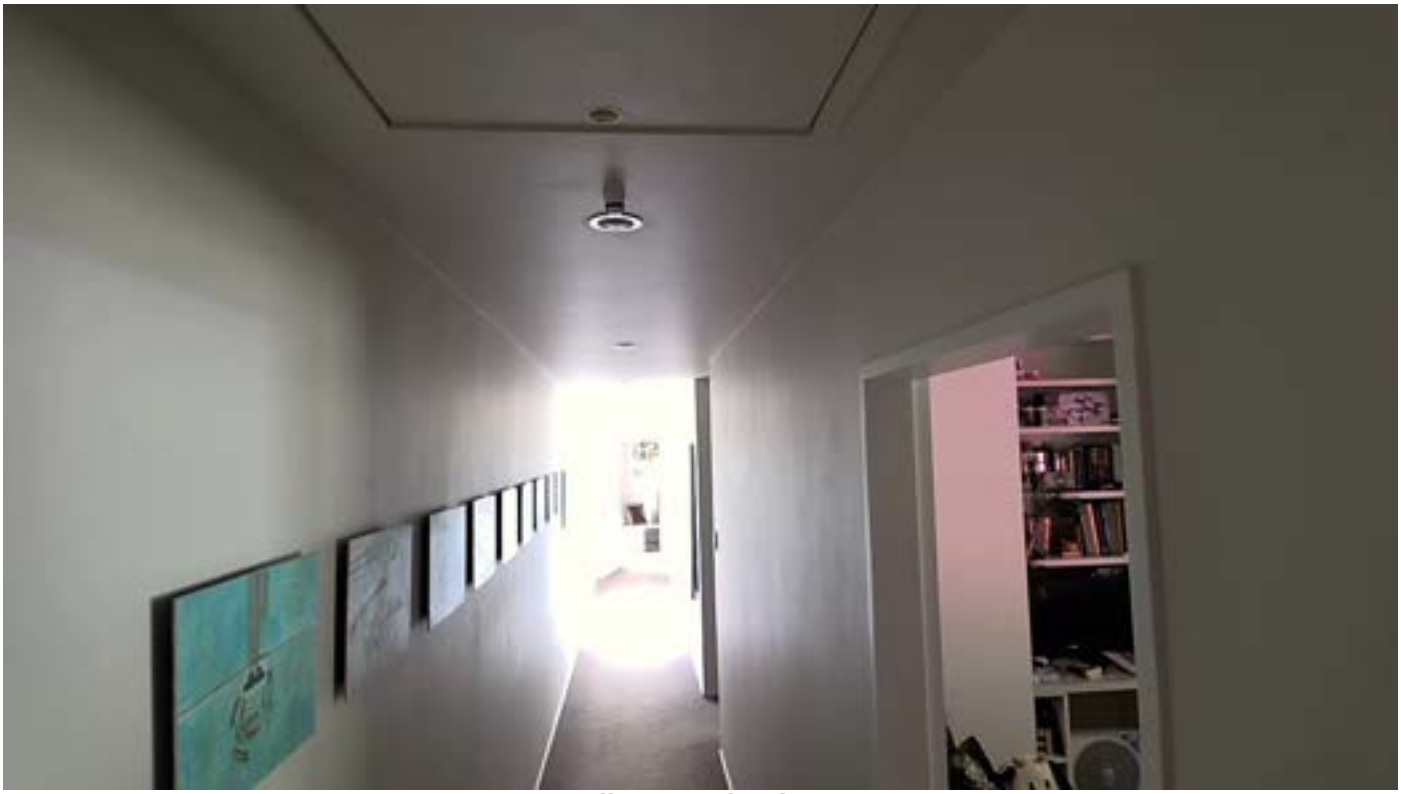
Main bathroom
Taken at 2:55 PM on Friday 10/11/2023

Main bathroom shower
Taken at 2:56 PM on Friday 10/11/2023

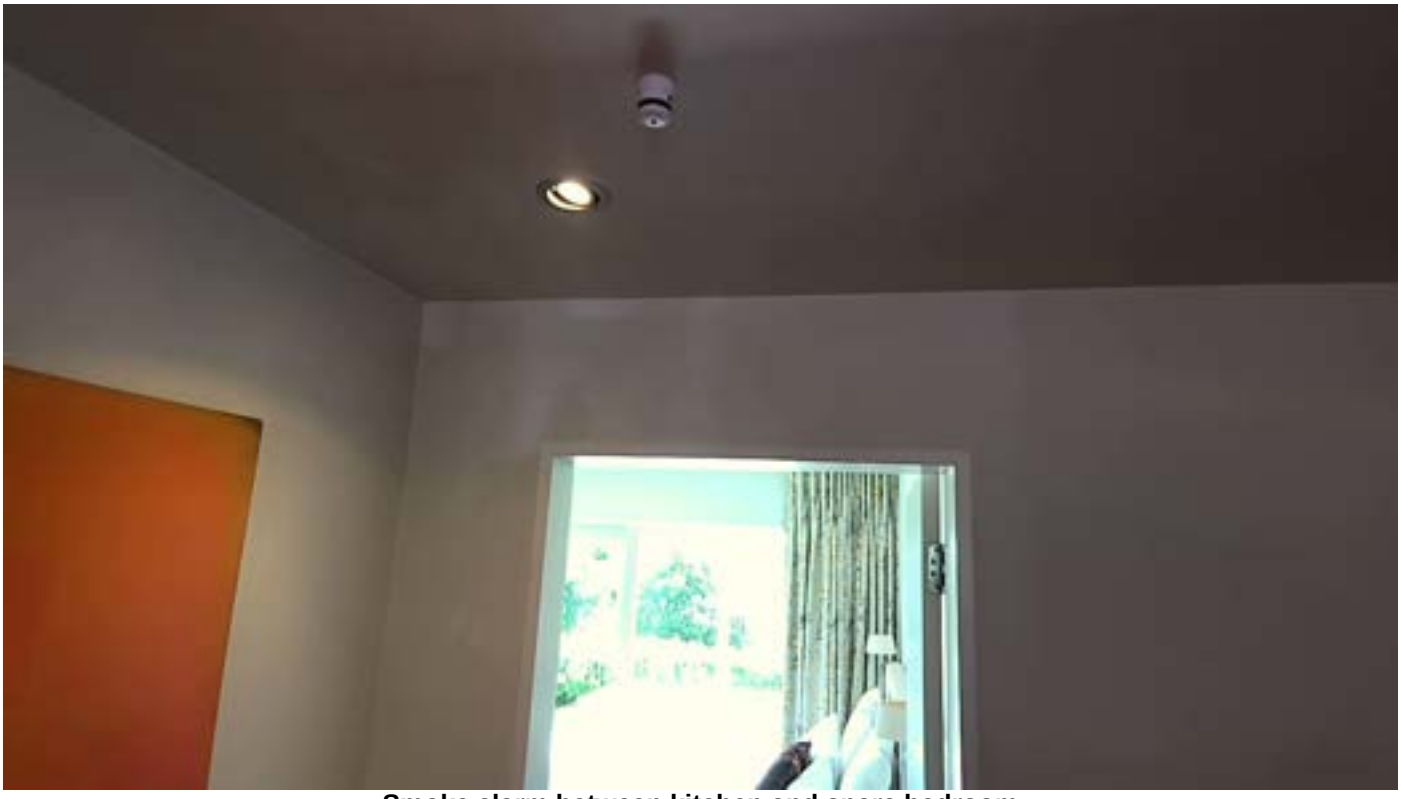
WC off hall
Taken at 2:56 PM on Friday 10/11/2023



Hallway
Taken at 2:56 PM on Friday 10/11/2023



Hallway smoke alarm
Taken at 2:57 PM on Friday 10/11/2023



Smoke alarm between kitchen and spare bedroom
Taken at 2:58 PM on Friday 10/11/2023

Flue
Taken at 2:59 PM on Friday 10/11/2023

Kapiti Coast District Council
175 Rimu Road
Private Bag 60601
Paraparaumu 5254
Phone (04) 296 4700

SITE NOTICE

Consent No: **090806**
Applicant: **Sheffield Family Trust**
Site Address: **86 Emerald Glen Rd, Paekakariki**
Work Type: **Adds & Alts**
Building Category: **R2**

Inspection Type: **Final Inspection**
Inspection Outcome: **Fail**
Inspected By: **Anthony Wilson**
Inspection Date: **10 November 2023**

Failed Items

Interior

Final check complete	**Install lagging to copper hot water pipes off cylinder to tempering valves, please provide photos. Also require Gas safety certificate and electrical safety certificate, for work associated with this consent.**

Passed Items

Exterior

Interior

Tempering valve	**Fitted to two cylinders, one at each end of roof space**
Hot water temp	**55 for both cylinder supplies**

GoGet Inspection Audit Report

Consent No: **090806**
Applicant: **Sheffield Family Trust**
Site Address: **86 Emerald Glen Rd, Paekakariki**
Work Type: **Adds & Alts**

Inspection Type: **Final Inspection**
Inspection Outcome: **Pass**
Inspected By: **Anthony Wilson**
Inspection Date: **7 February 2024 7:49 a.m.**
Duration: **30 minutes**

Inspection Element	Status
Interior	Pass
Final check complete	Pass
lagging installed to copper hot water pipes off cylinder to tempering valves. Gas safety certificate and electrical safety certificate (CoV) have been supplied.	
Other	N/A

Kapiti Coast District Council
175 Rimu Road
Private Bag 60601
Paraparaumu 5254
Phone (04) 296 4700

SITE NOTICE

Consent No: **090806**
Applicant: **Sheffield Family Trust**
Site Address: **86 Emerald Glen Rd, Paekakariki**
Work Type: **Adds & Alts**
Building Category: **R2**

Inspection Type: **Final Inspection**
Inspection Outcome: **Pass**
Inspected By: **Anthony Wilson**
Inspection Date: **7 February 2024**

Passed Items

Interior

Final check complete	**lagging installed to copper hot water pipes off cylinder to tempering valves.** **Gas safety certificate and electrical safety certificate (CoV) have been supplied.**

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 090806

Section 51, Building Act 2004

The building

Street address of building: 86 Emerald Glen Rd, Paekakariki

Legal description of land where building is located: LOT 5 DP 33688 CT 10C/639

Valuation number: 1540002800

Building name:

Location of building within site/block number: South/east corner, access directly from road

Level/unit number:

The owner

Name of owner: Sheffield Family Trust

Contact person: ML Sheffield, ME Sheffield, Harkness & Peterson Tr

Mailing address: 86 Emerald Glen Road, RAUMATI

Street address/registered office:

Phone number: Landline: 299 9841 Mobile: 0275 252952

Daytime: After hours: 299 9841

Facsimile number:

Email address: martin.sheffield@xtra.co.nz

Website:

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

Building work

The following building work is authorised by this building consent:

Adds & Alts

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:

Angela Smith

Signature

CSO

Position

On behalf of: KAPITI COAST DISTRICT COUNCIL

Date: 2/12/09

3 December 2009

Sheffield Family Trust
86 Emerald Glen Road
RAUMATI

Dear Sir/Madam

Approval of Building Consent: 090806

Description:	Adds & Alts
Location:	86 Emerald Glen Rd, Paekakariki
Legal Description:	LOT 5 DP 33688 CT 10C/639

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

Sheffield Family Trust 86 Emerald Glen Road RAUMATI	No.	090806

Project

Description	Dwellings - Alterations & additions Being Stage 1 of an intended 1 Stages Adds & Alts
Intended Life	Indefinite, but not less than 50 years
Intended Use	Rural Dwelling
Estimated Value	$85,000
Location	86 Emerald Glen Rd, Paekakariki
Legal Description	LOT 5 DP 33688 CT 10C/639
Valuation No.	1540002800

Builder: Duncan Construction Ltd 22 Menin Rd, Raumati South : 0274 431758

Designer: Architecture Robinson Crimp L1, 1 Marion St, Wellington : 04 801 8230 / Fax 04 801 8930

Plumber: A M Plumbing Ltd 26 Addington Rd, R D 1, Te Horo : 0274 729111 / 06 364 8528

Contractor: John O`Hagan - ISP Consulting Engineers 14 Laings Road, Lower Hutt : 04 566 8004 / Fax 04 566 8037

General Requirements

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

1. Pre-slab
2. Pre-slab
3. Drainage
4. Pre Wrap
5. Pre Clad
6. Weathertightness
7. Preline
8. Preline
9. Postline
10. Brick Veneer
11. 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 8am and 5pm.

2	Addenda to Application 090806

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. NZS3604 is an Acceptable Solution in terms of the New Zealand Building Code and is a recommended reference document for timber framed buildings.
5. Note and comply with endorsements on approved plans.
6. Both hot and cold water pipes are to be tested to 1500 KPA pressure.
7. Minimum heights of finished concrete slab-on-ground floors above adjoining finished ground level to comply with the current NZS3604.
8. 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
9. The conditions required by the Certifier of a second hand wood burner are to be taken as conditions of this Consent, along with requirements of the current NZS7421.
10. 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:**

COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**WN10C/639**
Land Registration District	**Wellington**
Date Issued	24 October 1972

Prior References
WN535/80

Estate	Fee Simple
Area	4.5198 hectares more or less
Legal Description	Lot 5 Deposited Plan 33688

Proprietors
Martin Llewellyn Sheffield, Maree Eileen Sheffield and Harkness & Peterson Trustees Limited

Interests

K753534 Pipeline Certificate pursuant to Section 70 of the Petroleum Act 1937 - 16.8.1968 at 11.00 am and varied 19.10.1973 at 9.00 am

Subject to gas supply rights (in gross) over part marked W on DP 61420 in favour of Natural Gas Corporation of New Zealand Limited created by Transfer 909868.1 - 17.3.1988 at 3.00 pm

7456741.3 Mortgage to ANZ National Bank Limited - 27.8.2007 at 9:15 am

ISP CONSULTING ENGINEERS LTD

Civil & Structural
Seismic Risk Analysis
Building Compliance

Lower Hutt Office
Tel: 04 566 8004
Fax: 04 566 8037
Level 1, 14 Laings Rd
ISP Building
P.O. Box 30 535
Lower Hutt 5010

Paraparaumu Office
Tel: 04 902 5750
Level 1, Office 24
Kayel Building
Raumati Beach
P.O. Box 537
Paraparaumu 5254

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

Structural Calculations

For

Alterations & additions

86 Emerald Glen Road

Raumati

These calculations are in accordance with:

NZS1170:2002 Structural Design Loads
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

Engineer:	**Initials:**
John O'Hagan	JOH
Hugh Falkner	HAF

Preamble:

Calculations include:
Determination of specific site wind speed, design of specific lintel beams and bracing

Date:
12 February 2008

Job No.
22432

IPENZ ENGINEERS NEW ZEALAND

ACENZ

Building Code Clause(s) B1

J22432

PRODUCER STATEMENT - PS1 - DESIGN

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

ISSUED: **ISP Consulting Engineers Ltd**

TO: **Martin & Maree Sheffield**

(Owner / Developer)

TO BE SUPPLIED TO: **Kapiti Coast District Council**

(Building Consent Authority)

IN RESPECT OF: **Alterations & additions**

(Description of Building Work)

AT: **86 Emerald Glen Road**

(Address)

LOT 10 DP 33688

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.
Specific beams and bracing only

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

The proposed Building work covered by this producer statement is decribed on the drawings calculations titled: **86 Emerald Glen Road, Raumati** and numbered **22432 / S1**

On behalf of the Design Firm, and subject to:

(i) Site verification of the following design assumptions: NONE

(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

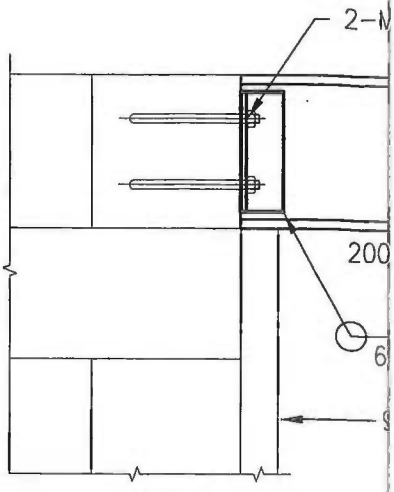
The design firm issuing this statement holds a current policy of Professional Indemnity Insurance no less than $ 200,000*.
The Design Firm is a member of ACENZ

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

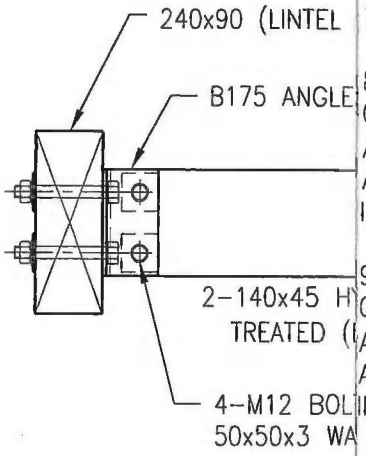
Date: 13 February 2008 (Signature).....

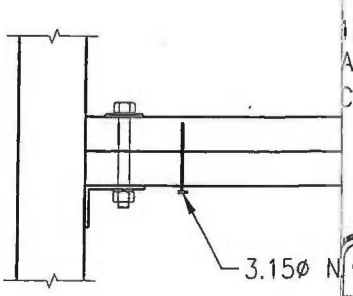
Note: this statement shall only be relied upon by the Building Consent Authority named above. Liability under this statement accrues to the Design Firm only. The total maximum amount of damages payable arising from this statement and all other statements provide to the Building Consent Authority in relation 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.

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



LINTEL 1 – MASONR
CONNECTION D
SCALE 1:10





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

2. ALL WELDS TO BE 6 FILLET WELDS ALL ROUND UNLESS NOTED OTHERWISE.

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

4. ALL PLATES TO BE 10 THICK UNLESS NOTED OTHERWISE.

5. STEEL GRADES:
   - PLATES 250MPa
   - HOT ROLLED SECTIONS 300MPa

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

7. ALL TIMBER TO BE MSG8

8. ALL INTERNAL STRUCTURAL STEEL TO HAVE ONE COAT IN ACCORDANCE WITH SYSTEM DESIGNATION AS/NZS 2312/ALK1 BEFORE DELIVERY TO SITE. ANY AREAS DAMAGED TO BE MADE GOOD UPON INSTALLATION.

9. 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.

10. ALL WELD ELECTRODES ARE E48XX OR W50X

11. ENGINEER TO INSPECT ALL STEEL CONNECTIONS PRIOR TO CLOSING IN.

12. ENGINEER REQUIRES 24 HOURS NOTICE BEFORE ANY VISIT.
CONTACT JOHN O'HAGAN ON 566 8004.

CLIENT	Martin & Maree Sheffield
PROJECT	86 Emerald Glen Road Raumati, Kapiti Coast
DATE	FEB 2008
SCALE	AS SHOWN
DRAWN	MW
DWG No.	S1
JOB No	22432

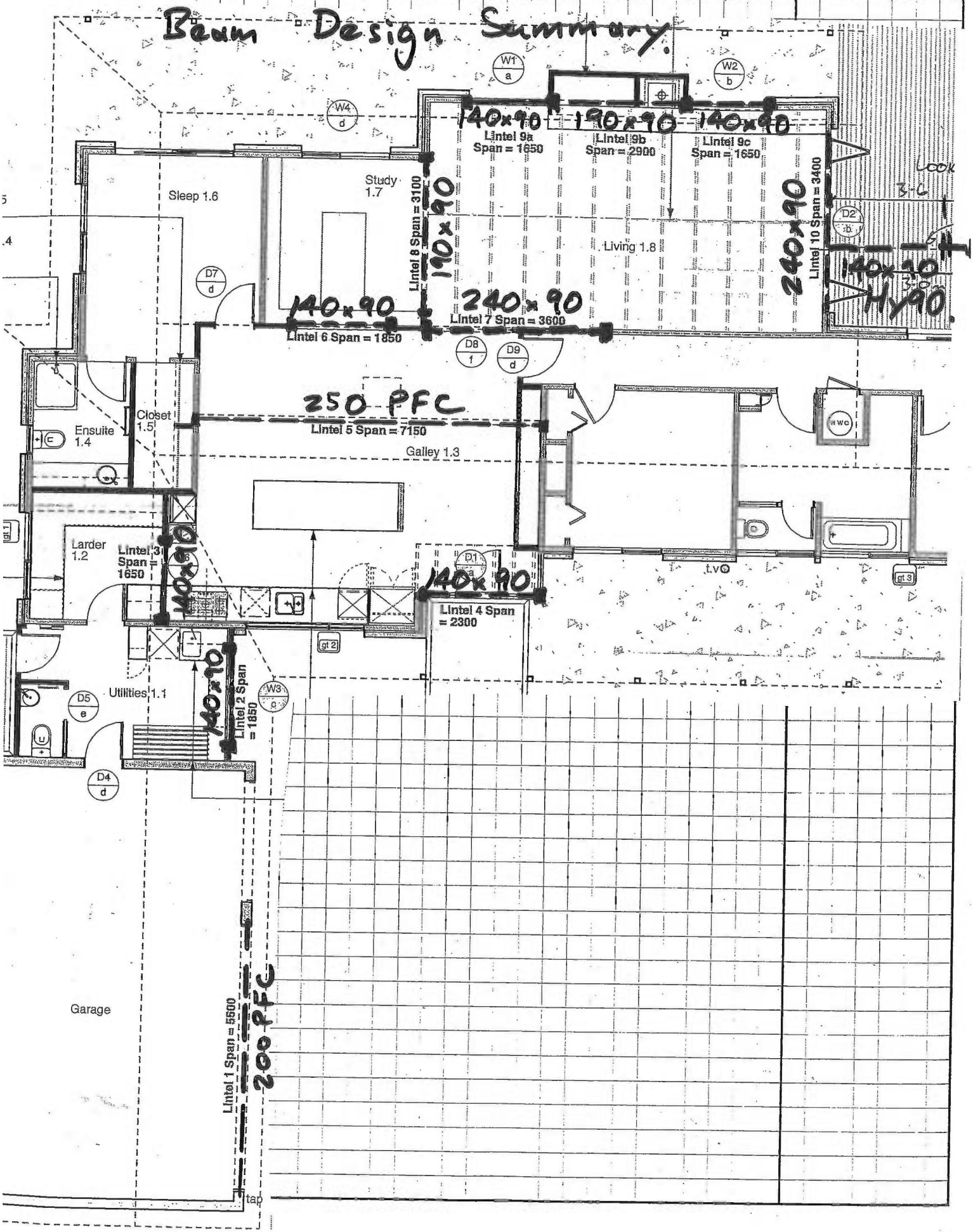
F14-06/02

Date	Eng:	Job No.	Sheet No.
11/2/08	HAF	22432	3

Project: Sheffield House
86 Emerald Glen Rd.

CALCULATIONS

Beam Design Summary.



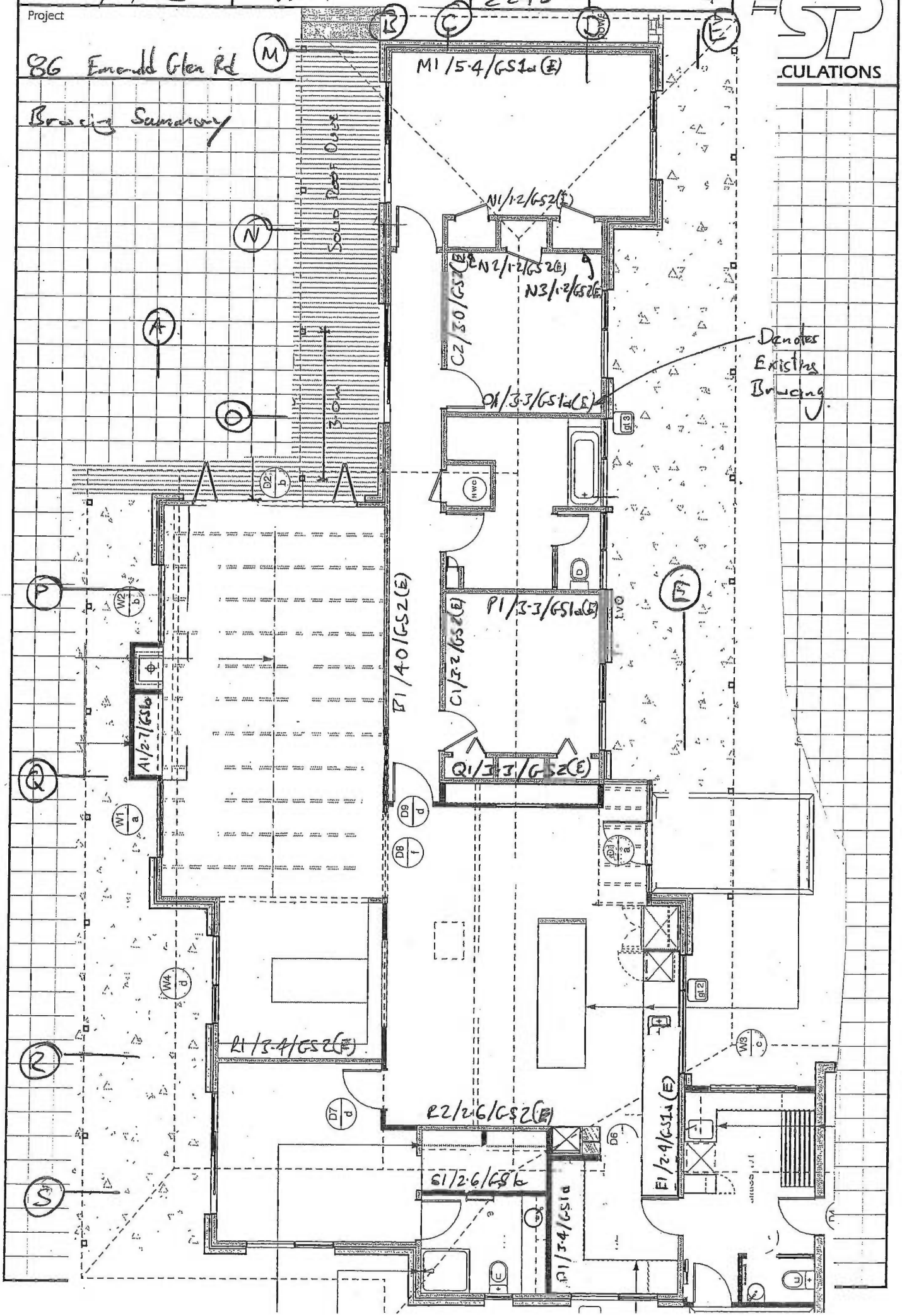
F14-06/02

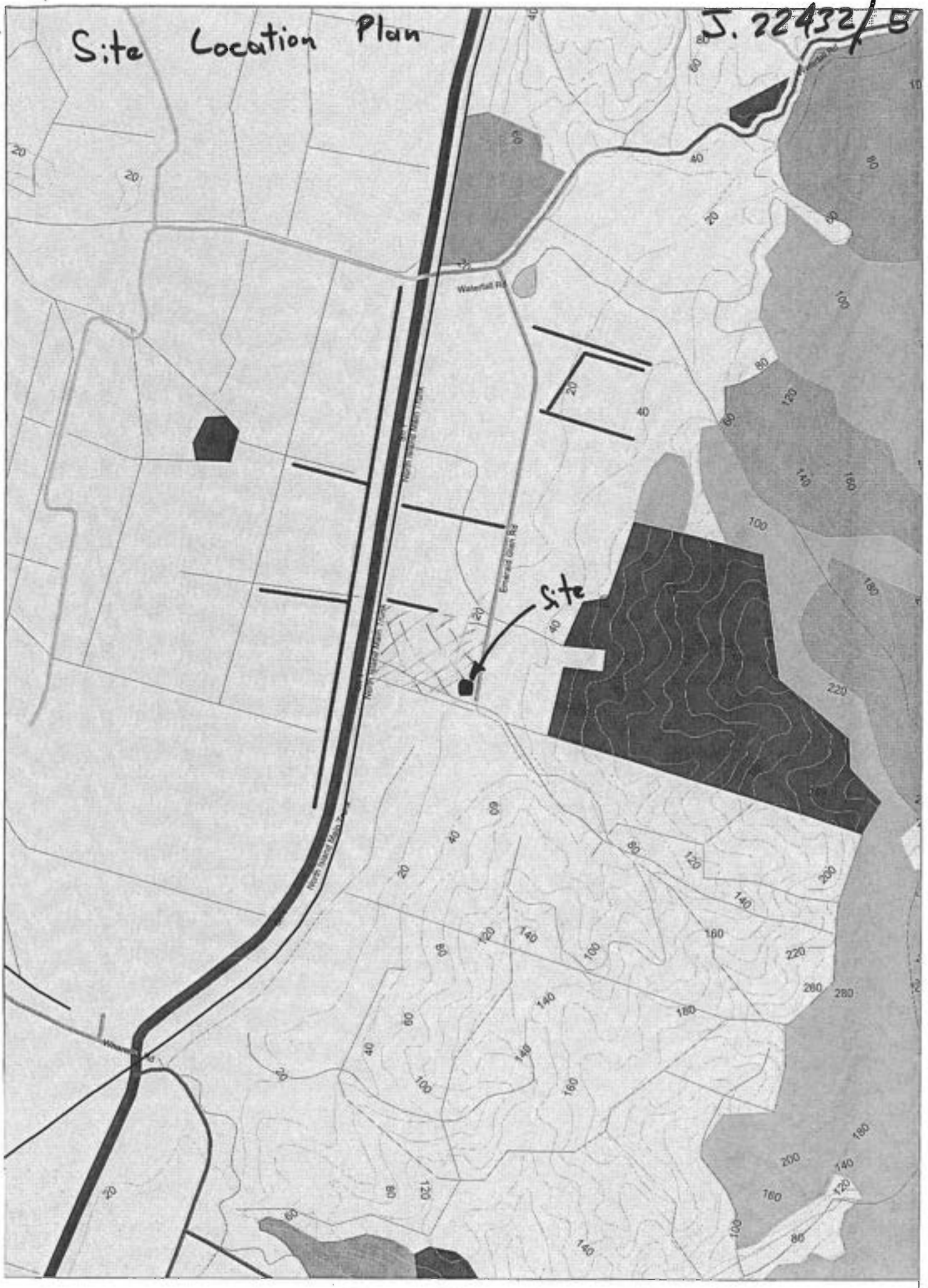
Date	Eng.	Job No.	Sheet No.
12/2/08	MAF	22432	4

Project

86 Emerald Glen Rd

Bracing Summary





QuickMap
Custom Software Ltd

0 200 400 600 800 1000 1200

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 11/02/2008 10:06

Date: 11-Feb-08 Eng: HAF Job Number: 22432 Sheet No:
Project: Sheffield House
86 Emerald Green

CALCULATIONS

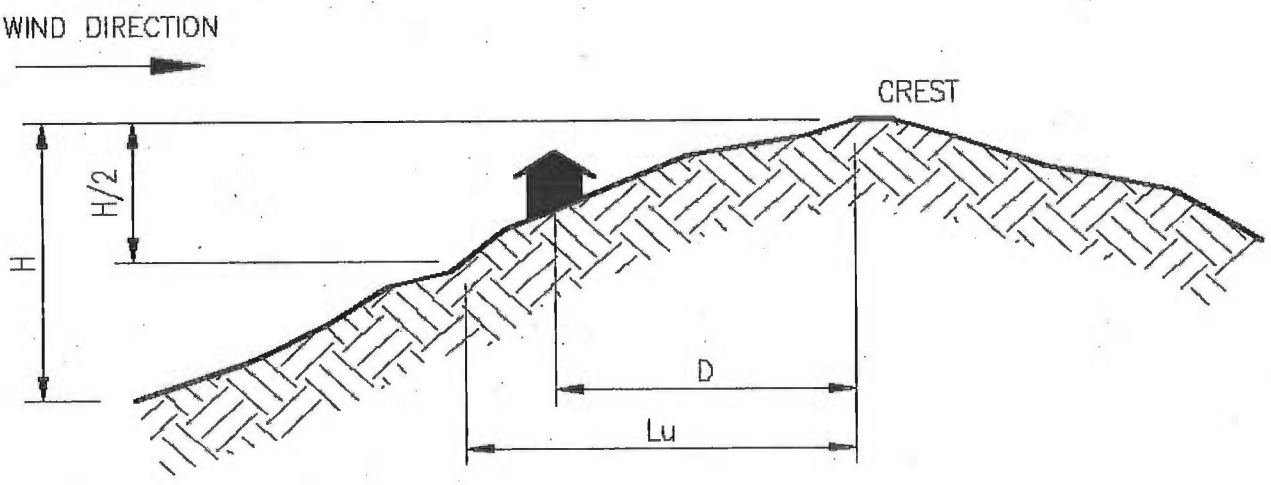
Site Wind Speed

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

Terrain Factor = 2. Open Terrain
Building Height= 5m Gives $M_{(zcat)}$ = 0.91

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 = 280 m (Rise height)
Lu = 500 m (distance from mid rise to crest)
D = 800 m (building distance from crest)
z = 5 m (building height)
M_{lee} = 1
Elevation = 20 m

Slope $[(H/2)/L_u]$ = 0.28
L_1 = 180 m
L_2 = 720 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 0.91 x 1.00 x 1.00 = **46.41 m/s**

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

F14-06/02

Date	Eng.	Job No.	Sheet No.
11/2/08	MAF	22432	7

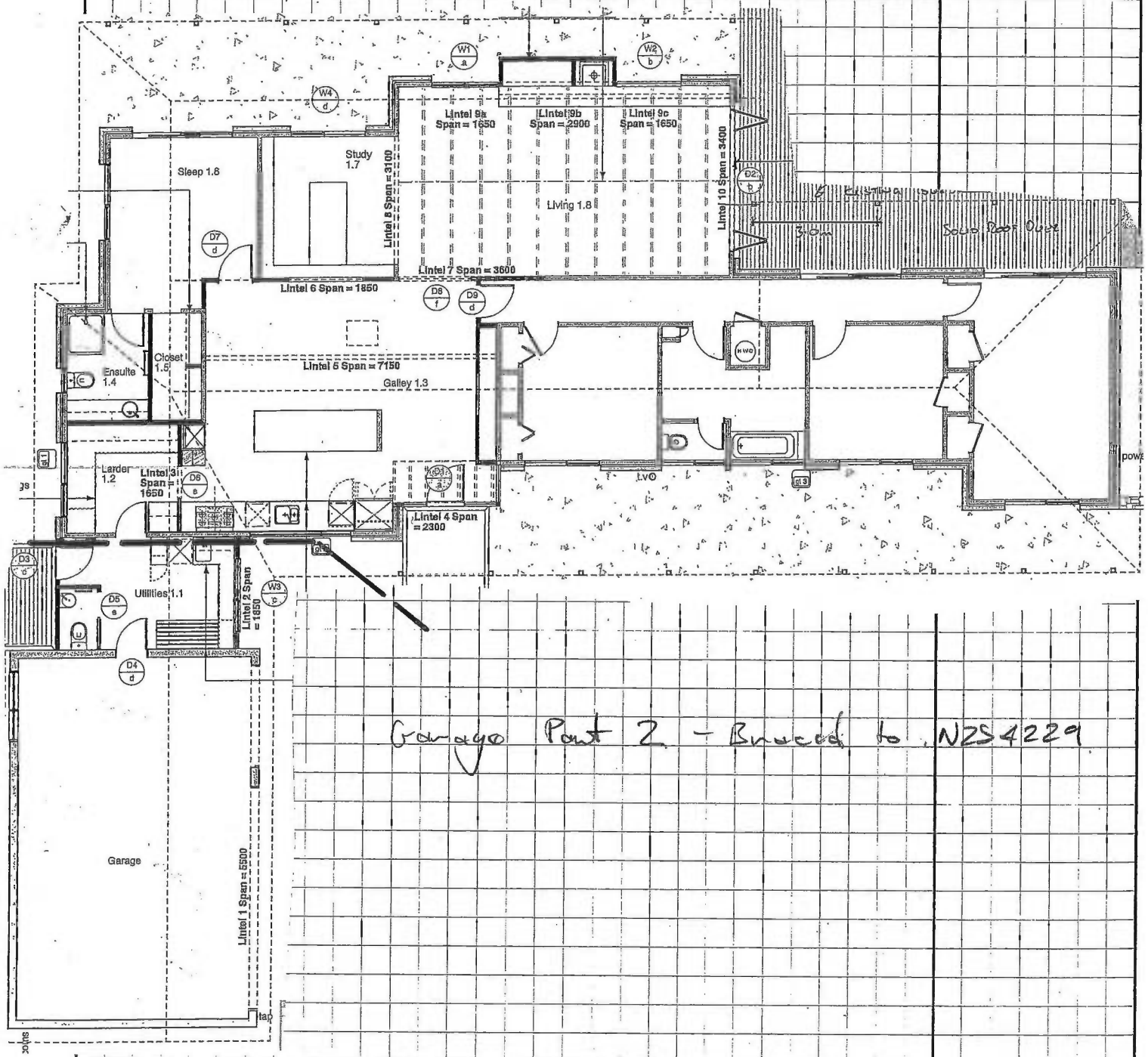
Project

86 Emerald Glen Rd

CALCULATIONS

Bracing Scheme

House Part 1 - Braced to NZS 3604



Garage Part 2 - Braced to NZS 4229

J. 22432/ 8

GIB® Wall Bracing Calculation Sheet A — single storey

GIB® EzyBrace™
GIB® Bracing Systems, 2006

Job Details

Name	Sheffield House	
Street and Number	86 Emerald Glen Road	
Lot and DP Number	Lot 5 DP33688	
City/Town/District	Kapiti Coast	
Designer and date	HAF J22432	12-Feb-08
Company Name	ISP Consulting Engineers Ltd	

Building Specification

Location of Storey	single	
Floor Loading	2 kPa	
Foundation Type	slab	
Building Height to Apex (m)	5	
Roof Height above Eaves (m)	2	
Stud Height (m)	2.4	
Cladding Weight (top or single)	heavy	
Cladding Weight (lower)	light	*not applicable (single storey building)*
Cladding Weight (subfloor)	light	*not applicable (slab)*
Roof Weight	light	
Roof Pitch (degrees)	0-25	
Room in Roof Space	no	
Building Length (m)	26.5	
Building Width (m)	12	
Gross Building Plan Area (m2)	215	

Building Location

Wind Zone	***Very High***	**Earthquake Zone**	
Region	R2	A	
Terrain	Coastal		
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	81 BUs/m
W across	n/a	69 BUs/m
Totals	subfloor	walls
W along	n/a	972 BUs
W across	n/a	1829 BUs

Bracing Units required for Earthquake

per m2	subfloor	walls
E	n/a	5.2 BUs/m2
Totals	subfloor	walls
E along	n/a	1118 BUs
E across	n/a	1118 BUs

GIB® Wall Bracing Calculation Sheet B — single storey

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	2.7	2.4		203	176
		2							
line totals		3							
W	203	4							
EQ	176	5							
B	enter	1	GIB®	GS2	4	2.4		360	320
		2							
line totals		3							
W	360	4							
EQ	320	5							
C	enter	1	GIB®	GS2	3.2	2.4		288	256
		2	GIB®	GS2	3	2.4		270	240
line totals		3							
W	558	4							
EQ	496	5							
D	enter	1	GIB®	GS1a	3.4	2.4		255	221
		2							
line totals		3							
W	255	4							
EQ	221	5							
E	enter	1	GIB®	GS1a	2.4	2.4		180	156
		2							
line totals		3							
W	180	4							
EQ	156	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								1556	1369
								OK	*OK*
Totals Required (from sheet A)								972	1118

GIB® Wall Bracing Calculation Sheet B — single storey

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	5.4	2.4		405	351
		2							
line totals		3							
W	405	4							
EQ	351	5							
N	enter	1	GIB®	GS2	1.2	2.4		84	72
		2	GIB®	GS2	1.2	2.4		84	72
line totals		3	GIB®	GS2	1.2	2.4		84	72
W	252	4							
EQ	216	5							
O	enter	1	GIB®	GS1a	3.3	2.4		248	215
		2							
line totals		3							
W	248	4							
EQ	215	5							
P	enter	1	GIB®	GS1a	3.3	2.4		248	215
		2							
line totals		3							
W	248	4							
EQ	215	5							
Q	enter	1	GIB®	GS2	3.3	2.4		297	264
		2							
line totals		3							
W	297	4							
EQ	264	5							
R	enter	1	GIB®	GS2	3.4	2.4		306	272
		2	GIB®	GS2	2.6	2.4		234	208
line totals		3							
W	540	4							
EQ	480	5							
S	enter	1	GIB®	GS1a	2.6	2.4		195	169
		2							
line totals		3							
W	195	4							
EQ	169	5							
T	enter	1							
		2							
line totals		3							
W		4							
EQ		5							
								Wind	Earthq.
Totals Achieved								2184	1909
								OK	*OK*
Totals Required (from sheet A)								1829	1118

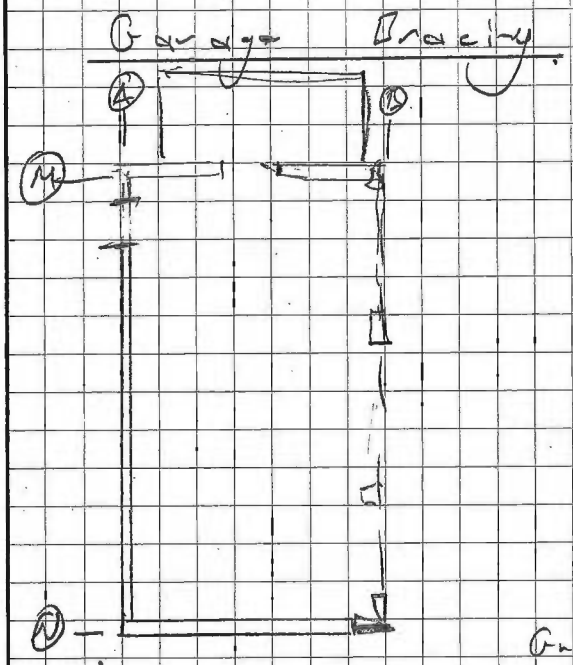
F14-06/02

Date 11/11/2/08	Eng. MAF	Job No. 22432	Sheet No. 11

Project

86 Emerald Glen Rd

CALCULATIONS



NZS 4229. Design.

Bracing Required $-(6.2 \times 12)$

Eq $(20 \times 1.4) \times 6.2 \times 12 = 2083$ Ru

Wind $= A_{long} - 9.3 \times 6 = 560$ Ru

$A_{cross} = 80 \times 12 = 960$ Ru

Bracing Provided.

Grid A – 6m @ 2.4 = 3700 Ru > 2083 OKAY

Grid M – 2 x 2.4 @ 2.4 = 2 x 875 = 1750

Grid N – 6 @ 2.4 = 3700.

5450 > 2083

OKAY

By inspection existing diaphragms transfer load to grid A bracing line.

Utilities Room → $2 \times 6 = 12 m^2 \times 9 Ru/m^2 \times 1.5$ = 162 Ru. Eq

(NZS 3604 Ru/m^2 / kN/m^2)

Utilities ceiling diaphragm transfers Loads to grid (M) by inspection OKAY

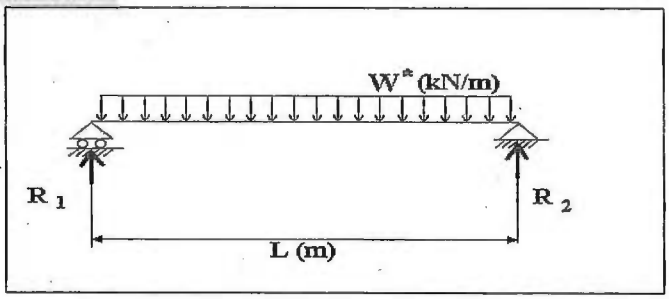
AS/NZS1170 BEAM LOAD CALCULATION SHEET

Steel Roof Beam Subjected To Wind Load

12

Job Name: Sheffield House
86 Emerald Glen Road
Job No. 22432

Date: 11-Feb-08
Engineer HAF
Beam No. L1



L = 5.5 m
Trib Width = 3.4 m

LOADING

Uniformly Distributed Loads **Amount**

1. Dead Beam Self Weight 0.23 kN/m
Roof 0.3 kPa x Trib Width 1.02 kN/m
kN/m
Total Dead Load **G = 1.25 kN/m**

Qf = 1.8/A + 0.12 > 0.25kPa ψ_a = 0.99

2. Roof Live Load 0.25 kPa x Trib Width x ψ_a **Q = 0.84 kN/m**

3. Site Wind Speed

$V_{(z)}$ = 46.41 m/s

	Upward Wind Loads	**Downward Wind Loads**
$q_{(z)} = 0.5(\delta_{air})V_{(z)}^2 x10^{-3}$ =	1.29 kPa	1.29 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) = -1.16 kPa	p_e(max) = 0.39 kPa
K_p = 1.00		
Internal Pressures	C_{pi}(max) = 0.3	C_{pi}(min) = -0.3
$p_i = C_{pi}q_z$	pi(max) = 0.39 kPa	pi(min) = -0.39 kPa
Combined Pressures		
Note: $K_c > 0.8/K_a$	K_c = 0.9	K_c = 0.8
$p_z = (p_e - p_i)K_c$	p_z(max) = -1.40 kPa	p_z(min) = 0.62 kPa
	W_u(max) = **-4.75 kN/m**	W_u(min) = **2.11 kN/m**

Load Combinations - Ultimate Limit States

	1.2 G + 1.6 Q = 2.85 kN/m
Note: Roof Qu = 0.00 kN/m	**1.2G + Qu + Wu = 3.61 kN/m**
	0.9G + Wu = -3.62 kN/m
W* = 3.62 kN/m	**M* = 13.69 kN/m**

Profile Channel Section **Section** 200PFC **$Le_{(m)}$ =** 1

ϕM_b = 54.8 OKAY
I_{xx} = 19.10 x10⁶mm⁴

Load Combinations - Serviceability Limit States

G + 0.7Q = 1.84 kN/m
0.71x Wind ult = 3.37 kN/m

	1kN Load	**Long Term (G) Ws =** 1.25 kN/m	**Short Ws =** 3.37 kN/m
Deflection =	0.9mm	3.9mm	10.5mm
		Span/ 1412	Span/ 523
Limit	2.0mm	Span/ 500	Span/ 300
	OKAY	OKAY	OKAY

Reactions	**G**	**Q**	**$Wind_{down}$**	**$Wind_{up}$**	**Ult_{down}**	**Ult_{up}**
	3.43 kN	**2.32 kN**	**5.80 kN**	**-13.05 kN**	**9.92 kN**	**-9.96 kN**

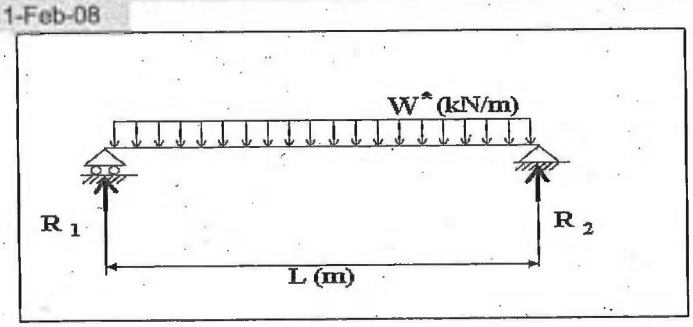
AS/NZS1170 BEAM LOAD CALCULATION SHEET

Timber Roof Beam Calculation Sheet

13

Job Name: Sheffield House
86 Emerald Glen Road
Job No. 22432

Date: 11-Feb-08
Engineer HAF
Beam No. L2



L = 1.9 m
Trib Width = 3.1 m

LOADING

Uniformly Distributed Loads

				Amount
1. Dead	Beam Self Weight			0.06 kN/m
	Roof	0.3 kPa x Trib Width		0.93 kN/m
				kN/m
	Total Dead Load		**G =**	**0.99 kN/m**
		Qf = 1.8/A + 0.12 > 0.25kPa	ψ_a = 1.00	
2. Roof Live Load		0.43 kPa x Trib Width x ψ_a	**Q =**	**1.32 kN/m**

3. Site Wind Speed

$V_{(z)}$ = 46.41 m/s

	Upward Wind Loads	Downward Wind Loads
$q_{(z)} = 0.5(\rho_{air})V_{(z)}^2 x10^{-3}$ =	1.29 kPa	1.29 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) = -0.9	Cpe(max) = 0.3
	p_e(min) = -1.16 kPa	p_e(max) = 0.39 kPa

Internal Pressures

$p_i = C_{pi}q_z$

	C_{pi}(max) = 0.0	C_{pi}(min) = -0.3
	pi(max) = 0.00 kPa	pi(min) = -0.39 kPa

Combined Pressures

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

	K_c = 0.9	K_c = 0.8
	p_z(max) = -1.05 kPa	p_z(min) = 0.62 kPa
	W_u(max) = **-3.25 kN/m**	W_u(min) = **1.92 kN/m**

Load Combinations - Ultimate Limit State

Note: Roof Qu = 0.00 kN/m

1.2 G + 1.5 Q = 3.17 kN/m
1.2G + Qu + Wu = 3.11 kN/m
0.9G + Wu = -2.35 kN/m
M* = 1.43 kNm

W* = 3.17 kN/m

Beam Type MSG8/VSG8 **Size** 150x100 f_b = 14 Z = 0.30

ø.k_1=0.8 k_4,k_5 =1

ϕM_b =ø.k_1.k_4.k_5.f_b.Z = 2.77 kNm OKAY
EI = 168.30

Load Combinations - Serviceability Limit States

G + 0.7Q = 1.91
0.71x Wind ult = 2.30
Short Ws = 2.30 kN/m

	1kN Load	Long Term (G) Ws = 0.99 kN/m	
Deflection =	0.8mm	2.0mm	2.3mm
		Span/ 952	Span/ 818
Limit	2.0mm	Span/ 500	Span/ 300
	OKAY	OKAY	OKAY

Reactions	**G**	**Q**	**$Wind_{down}$**	**$Wind_{up}$**	**Ult_{down}**	**Ult_{up}**
	0.94 kN	**1.25 kN**	**1.83 kN**	**-3.08 kN**	**3.01 kN**	**-2.24 kN**

AS/NZS1170 BEAM LOAD CALCULATION SHEET

Timber Roof Beam Calculation Sheet

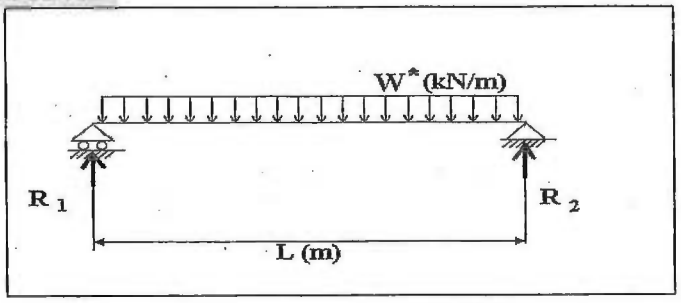
14

Job Name: Sheffield House
86 Emerald Glen Road

Job No. 22432

Date: 11-Feb-08

Engineer HAF
Beam No. L3



L = 1.7 m
Trib Width = 2 m

LOADING

Uniformly Distributed Loads — **Amount**

1. Dead Beam Self Weight 0.06 kN/m
Roof 0.3 kPa x Trib Width 0.60 kN/m
kN/m
Total Dead Load **G = 0.66 kN/m**

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

2. Roof Live Load 0.65 kPa x Trib Width x ψ_a **Q = 1.30 kN/m**

3. Site Wind Speed

$V_{(z)}$ = 46.41 m/s

	Upward Wind Loads	**Downward Wind Loads**
$q_{(z)} = 0.5(\rho_{air})V_{(z)}^2 x10^{-3}$ =	1.29 kPa	1.29 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) = -1.16 kPa	p_e(max) = 0.39 kPa
K_p = 1.00		
Internal Pressures	C_{pi}(max) = 0.0	C_{pi}(min) = -0.3
$p_i = C_{pi}q_z$	pi(max) = 0.00 kPa	pi(min) = -0.39 kPa
Combined Pressures		
Note: $K_c > 0.8/K_a$	K_c = 0.9	K_c = 0.8
$p_z = (p_e - p_i)K_c$	p_z(max) = -1.05 kPa	p_z(min) = 0.62 kPa
	W_u(max) = **-2.09 kN/m**	W_u(min) = **1.24 kN/m**

Load Combinations - Ultimate Limit State

Note: Roof Qu = 0.00 kN/m

1.2 G + 1.5 Q = 2.74 kN/m
1.2G + Qu + Wu = 2.03 kN/m
0.9G + Wu = -1.50 kN/m
M* = 0.99 kNm

W* = 2.74 kN/m

Beam Type MSG8/VSG8 **Size** 150x100 f_b = 14 Z = 0.30

ø.k_1=0.8 $k_4.k_5$ =1

ϕM_b =ø.$k_1.k_4.k_5.f_b.Z$ = 2.77 kNm OKAY
EI = 168.30

Load Combinations - Serviceability Limit States

G + 0.7Q = 1.57
0.71x Wind ult = 1.49
Short Ws = 1.57 kN/m

	1kN Load	**Long Term (G) Ws =** 0.66 kN/m	
Deflection =	0.6mm	0.9mm	1.0mm
		Span/ 1995	Span/ 1677
Limit	2.0mm	Span/ 500	Span/ 300
	OKAY	OKAY	OKAY

Reactions	**G**	**Q**	**$Wind_{down}$**	**$Wind_{up}$**	**Ult_{down}**	**Ult_{up}**
	0.56 kN	**1.10 kN**	**1.05 kN**	**-1.78 kN**	**2.33 kN**	**-1.28 kN**

AS/NZS1170 BEAM LOAD CALCULATION SHEET

Timber Roof Beam Calculation Sheet

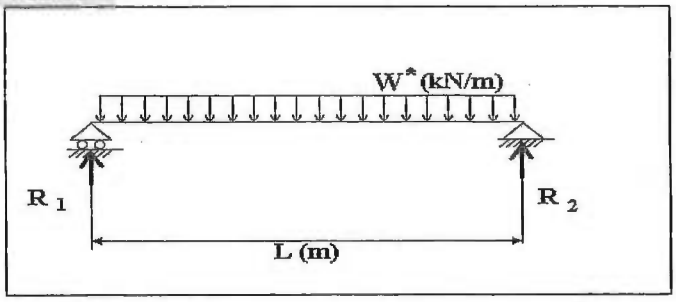
15

Job Name: Sheffield House
86 Emerald Glen Road

Job No. 22432

Date: 11-Feb-08

Engineer HAF
Beam No. L4



L = 2.3 m
Trib Width = 2.9 m

LOADING

Uniformly Distributed Loads — **Amount**

1. Dead Beam Self Weight 0.06 kN/m
Roof 0.3 kPa x Trib Width 0.87 kN/m
kN/m
Total Dead Load **G = 0.93 kN/m**

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

2. Roof Live Load 0.39 kPa x Trib Width x ψ_a **Q = 1.13 kN/m**

3. Site Wind Speed

$V_{(z)}$ = 46.41 m/s

	Upward Wind Loads	**Downward Wind Loads**
$q_{(z)} = 0.5(\rho_{air})V_{(z)}^2 x10^{-3}$ =	1.29 kPa	1.29 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) = -1.16 kPa	p_e(max) = 0.39 kPa
K_p = 1.00		
Internal Pressures	C_{pi}(max) = 0.3	C_{pi}(min) = -0.3
$p_i = C_{pi}q_z$	pi(max) = 0.39 kPa	pi(min) = -0.39 kPa
Combined Pressures		
Note: $K_c > 0.8/K_a$	K_c = 0.9	K_c = 0.8
$p_z = (p_e - p_i)K_c$	p_z(max) = -1.40 kPa	p_z(min) = 0.62 kPa
	W_u(max) = **-4.05 kN/m**	W_u(min) = **1.80 kN/m**

Load Combinations - Ultimate Limit State

Note: Roof Qu = 0.00 kN/m

1.2 G + 1.5 Q = 2.81 kN/m
1.2G + Qu + Wu = 2.91 kN/m
0.9G + Wu = -3.21 kN/m

W* = 3.21 kN/m **M* = 2.12 kNm**

Beam Type MSG8/VSG8 **Size** 150x100 f_b = 14 Z = 0.30

ø.k_1=0.8 k_4,k_5 =1 **ϕM_b =ø.k_1.k_4.k_5.f_b.Z = 2.77 kNm** OKAY
EI = 168.30

Load Combinations - Serviceability Limit States

G + 0.7Q = 1.72
0.71x Wind ult = 2.87

	1kN Load	**Long Term (G) Ws =** 0.93 kN/m	**Short Ws =** 2.87 kN/m
Deflection =	1.5mm	4.0mm	6.2mm
		Span/ 572	Span/ 370
Limit	2.0mm	Span/ 500	Span/ 300
	OKAY	OKAY	OKAY

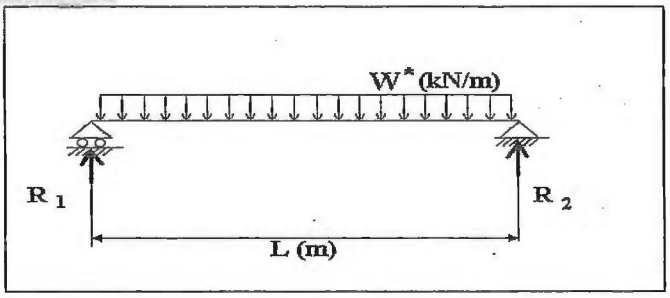
Reactions	**G**	**Q**	**$Wind_{down}$**	**$Wind_{up}$**	**Ult_{down}**	**Ult_{up}**
	1.07 kN	**1.30 kN**	**2.07 kN**	**-4.65 kN**	**3.35 kN**	**-3.69 kN**

AS/NZS1170 BEAM LOAD CALCULATION SHEET

Steel Roof Beam Subjected To Wind Load

Job Name: Sheffield House
86 Emerald Glen Road
Job No. 22432

Date: 11-Feb-08
Engineer HAF
Beam No. L5



L = 7.2 m
Trib Width = 3.1 m

LOADING

Uniformly Distributed Loads **Amount**

1. Dead Beam Self Weight 0.36 kN/m
Roof 0.3 kPa x Trib Width 0.93 kN/m
kN/m
Total Dead Load **G = 1.29 kN/m**

Qf = 1.8/A + 0.12 > 0.25kPa ψ_a = 0.94

2. Roof Live Load 0.25 kPa x Trib Width x ψ_a **Q = 0.72 kN/m**

3. Site Wind Speed

$V_{(z)}$ = 46.41 m/s

	Upward Wind Loads	Downward Wind Loads
$q_{(z)} = 0.5(\rho_{air})V_{(z)}^2 x10^{-3}$ =	1.29 kPa	1.29 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) =	-0.9	
Cpe(max) =		0.3
p_e(min) =	-1.16 kPa	
p_e(max) =		0.39 kPa

Internal Pressures

$p_i = C_{pi}q_z$

C_{pi}(max) =	0.0	
C_{pi}(min) =		-0.3
pi(max) =	0.00 kPa	
pi(min) =		-0.39 kPa

Combined Pressures

Note: $K_c > 0.8/K_a$

$p_z = (p_e - p_i)K_c$

K_c =	0.9	
K_c =		0.8
p_z(max) =	-1.05 kPa	
p_z(min) =		0.62 kPa
W_u(max) =	**-3.25 kN/m**	
W_u(min) =		**1.92 kN/m**

Load Combinations - Ultimate Limit States

	1.2 G + 1.6 Q = **2.70 kN/m**
Note: Roof Qu = 0.00 kN/m	**1.2G + Qu + Wu =** **3.46 kN/m**
	0.9G + Wu = **-2.09 kN/m**
W* = 3.46 kN/m	**M* =** **22.45 kN/m**

Profile Channel Section **Section** 250PFC $Le_{(m)}$ = 1

ϕM_b = 108.0 OKAY
I_{xx} = 45.10 $x10^6 mm^4$

Load Combinations - Serviceability Limit States

G + 0.7Q =	1.79 kN/m
0.71x Wind ult =	2.30 kN/m

	1kN Load	Long Term (G) Ws = 1.29 kN/m	Short Ws = 2.30 kN/m
Deflection =	0.9mm	5.0mm	8.9mm
		Span/ 1444	Span/ 806
Limit	2.0mm	Span/ 500	Span/ 300
	OKAY	OKAY	OKAY

Reactions	G	Q	$Wind_{down}$	$Wind_{up}$	Ult_{down}	Ult_{up}
	4.63 kN	**2.61 kN**	**6.92 kN**	**-11.68 kN**	**12.47 kN**	**-7.52 kN**

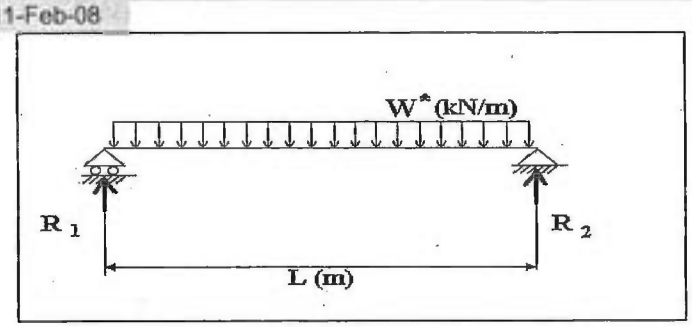
AS/NZS1170 BEAM LOAD CALCULATION SHEET

Timber Roof Beam Calculation Sheet

17

Job Name: Sheffield House
86 Emerald Glen Road
Job No. 22432

Date: 11-Feb-08
Engineer HAF
Beam No. L6



L = 1.9 m
Trib Width = 3 m

LOADING

Uniformly Distributed Loads **Amount**

1. Dead Beam Self Weight 0.06 kN/m
Roof 0.3 kPa x Trib Width 0.90 kN/m
kN/m
Total Dead Load **G = 0.96 kN/m**

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

2. Roof Live Load 0.44 kPa x Trib Width x ψ_a **Q = 1.31 kN/m**

3. Site Wind Speed

$V_{(z)}$ = 46.41 m/s

	Upward Wind Loads	**Downward Wind Loads**
$q_{(z)} = 0.5(\rho_{air})V_{(z)}^2 x10^{-3}$ =	1.29 kPa	1.29 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) = -1.16 kPa	p_e(max) = 0.39 kPa
K_p = 1.00		
Internal Pressures	C_{pi}(max) = 0.0	C_{pi}(min) = -0.3
$p_i = C_{pi}q_z$	pi(max) = 0.00 kPa	pi(min) = -0.39 kPa
Combined Pressures		
Note: $K_c > 0.8/K_a$	K_c = 0.9	K_c = 0.8
$p_z = (p_e - p_i)K_c$	p_z(max) = -1.05 kPa	p_z(min) = 0.62 kPa
	W_u(max) = **-3.14 kN/m**	W_u(min) = **1.86 kN/m**

Load Combinations - Ultimate Limit State

Note: Roof Qu = 0.00 kN/m

1.2 G + 1.5 Q = 3.11 kN/m
1.2G + Qu + Wu = 3.01 kN/m
0.9G + Wu = -2.28 kN/m
M* = 1.40 kNm

W* = 3.11 kN/m

Beam Type MSG8/VSG8 **Size** 150x100 f_b = 14 Z = 0.30

ø.k_1=0.8 $k_4.k_5$ =1

ϕM_b =ø.$k_1.k_4.k_5.f_b.Z$ = 2.77 kNm OKAY
EI = 168.30

Load Combinations - Serviceability Limit States

G + 0.7Q = 1.87
0.71x Wind ult = 2.23

	1kN Load	**Long Term (G) Ws =** 0.96 kN/m	**Short Ws =** 2.23 kN/m
Deflection =	0.8mm	1.9mm	2.2mm
		Span/ 982	Span/ 845
Limit	2.0mm	Span/ 500	Span/ 300
	OKAY	OKAY	OKAY

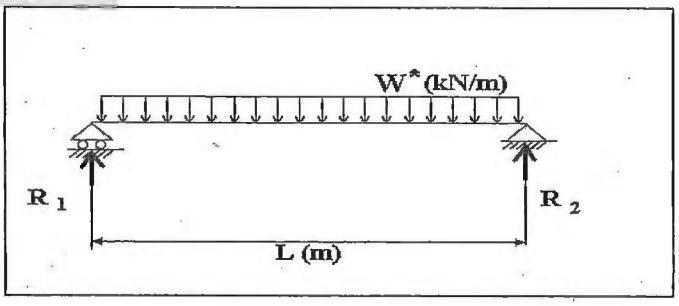
Reactions	**G**	**Q**	**$Wind_{down}$**	**$Wind_{up}$**	**Ult_{down}**	**Ult_{up}**
	0.91 kN	**1.24 kN**	**1.77 kN**	**-2.98 kN**	**2.96 kN**	**-2.16 kN**

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

18

Job Name: Sheffield House, 86 Emerald Glen Road **Job No.** 22432

Date: 11-Feb-08 **Engineer** HAF **Beam No.** L7



L = 3.7 m
Trib Width = 3.5 m

LOADING

Uniformly Distributed Loads **Amount**

1. Dead	Beam Self Weight		0.10 kN/m
	Roof	0.3 kPa x Trib Width	1.05 kN/m
			kN/m
	Total Dead Load	**G =**	**1.15 kN/m**

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

2. Roof Live Load 0.26 kPa x Trib Width x ψ_a **Q = 0.91 kN/m**

3. Site Wind Speed

$V_{(z)}$ = 46.41 m/s

	Upward Wind Loads	**Downward Wind Loads**
$q_{(z)} = 0.5(\rho_{air})V_{(z)}^2 x10^{-3}$ =	1.29 kPa	1.29 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) =	-0.9	Cpe(max) = 0.3
p_e(min) =	-1.16 kPa	p_e(max) = 0.39 kPa

Internal Pressures $p_i = C_{pi}q_z$

C_{pi}(max) =	0.0	C_{pi}(min) = -0.3
pi(max) =	0.00 kPa	pi(min) = -0.39 kPa

Combined Pressures

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

K_c =	0.9	K_c= 0.8
p_z(max) =	-1.05 kPa	p_z(min) = 0.62 kPa
W_u(max) =	**-3.66 kN/m**	W_u(min) = **2.17 kN/m**

Load Combinations - Ultimate Limit State

Note: Roof Qu = 0.00 kN/m	**1.2 G + 1.5 Q = 2.74 kN/m**
	1.2G + Qu + Wu = 3.55 kN/m
	0.9G + Wu = -2.63 kN/m
W* = 3.55 kN/m	**M* = 6.08 kNm**

Beam Type MSG8/VSG8 **Size** 250x100 f_b = 14 Z = 0.87

ø.k_1=0.8 k_4,k_5 =1 **ϕM_b =ø.k_1.k_4.k_5.f_b.Z = 8.00 kNm** OKAY

EI = 826.85

Load Combinations - Serviceability Limit States

	1kN Load	**Long Term (G) Ws =**	1.15 kN/m	G + 0.7Q =	1.79
				0.71x Wind ult =	2.60
Deflection =	1.3mm		6.8mm	**Short Ws =**	2.60 kN/m
			Span/ 545		7.7mm
					Span/ 482
Limit	2.0mm		Span/ 500		Span/ 300
	OKAY		OKAY		OKAY

Reactions	**G**	**Q**	**$Wind_{down}$**	**$Wind_{up}$**	**Ult_{down}**	**Ult_{up}**
	2.13 kN	**1.68 kN**	**4.02 kN**	**-6.78 kN**	**6.57 kN**	**-4.86 kN**

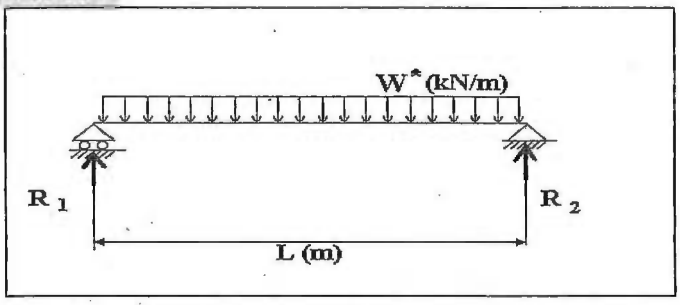
AS/NZS1170 BEAM LOAD CALCULATION SHEET

Timber Roof Beam Calculation Sheet

19

Job Name: Sheffield House, 86 Emerald Glen Road **Job No.** 22432

Date: 11-Feb-08 **Engineer** HAF **Beam No.** L8



L = 3.2 m

Trib Width = 1.2 m

LOADING

Uniformly Distributed Loads **Amount**

1. Dead Beam Self Weight 0.08 kN/m

Roof 0.3 kPa x Trib Width 0.36 kN/m

kN/m

Total Dead Load **G = 0.44 kN/m**

$Q_f = 1.8/A + 0.12 > 0.25kPa$ $\psi_a =$ 1.00

2. Roof Live Load 0.59 kPa x Trib Width x ψ_a **Q = 0.71 kN/m**

3. Site Wind Speed

$V_{(z)}$ = **46.41** m/s

	Upward Wind Loads	Downward Wind Loads
$q_{(z)} = 0.5(\delta_{air})V_{(z)}^2 x10^{-3}$ =	1.29 kPa	1.29 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) =	-0.9	Cpe(max) = 0.3
p_e(min) =	-1.16 kPa	p_e(max) = 0.39 kPa

Internal Pressures $p_i = C_{pi}q_z$

C_{pi}(max) =	0.6	C_{pi}(min) = -0.3
pi(max) =	0.78 kPa	pi(min) = -0.39 kPa

Combined Pressures

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

K_c =	0.9	K_c= 0.8
p_z(max) =	-1.74 kPa	p_z(min) = 0.62 kPa
W_u(max) =	**-2.09 kN/m**	W_u(min) = **0.74 kN/m**

Load Combinations - Ultimate Limit State

Note: Roof Qu = 0.00 kN/m

1.2 G + 1.5 Q = 1.59 kN/m

1.2G + Qu + Wu = 1.27 kN/m

0.9G + Wu = -1.70 kN/m

W* = 1.70 kN/m **M* = 2.17 kNm**

Beam Type MSG8/VSG8 **Size** 200x100 f_b = 14 Z = 0.55

ø.k_1=0.8 k_4,k_5 =1 **$\phi M_b = ø.k_1.k_4.k_5.f_b.Z$ = 5.05 kNm** OKAY

EI = 414.08

Load Combinations - Serviceability Limit States

G + 0.7Q = 0.93

0.71x Wind ult = 1.49

	1kN Load	Long Term (G) Ws = 0.44 kN/m	Short Ws = 1.49 kN/m
Deflection =	1.6mm	2.9mm	4.9mm
		Span/ 1103	Span/ 653
Limit	2.0mm	Span/ 500	Span/ 300
	OKAY	OKAY	OKAY

Reactions	G	Q	$Wind_{down}$	$Wind_{up}$	Ult_{down}	Ult_{up}
	0.70 kN	**1.13 kN**	**1.19 kN**	**-3.35 kN**	**2.54 kN**	**-2.72 kN**

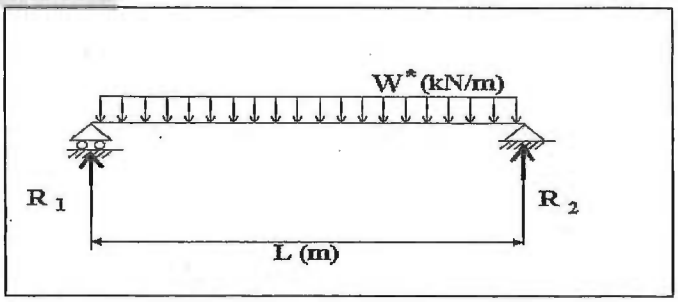
AS/NZS1170 BEAM LOAD CALCULATION SHEET
Timber Roof Beam Calculation Sheet

20

Job Name: Sheffield House, 86 Emerald Glen Road **Job No.** 22432

Date: 11-Feb-08 **Engineer** HAF

Beam No. L9a & c



L = 1.7 m

Trib Width = 2.6 m

LOADING

Uniformly Distributed Loads **Amount**

1. Dead Beam Self Weight 0.06 kN/m

Roof 0.3 kPa x Trib Width 0.78 kN/m

kN/m

Total Dead Load **G = 0.84 kN/m**

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

2. Roof Live Load 0.53 kPa x Trib Width x ψ_a **Q = 1.37 kN/m**

3. Site Wind Speed

$V_{(z)}$ = 46.41 m/s **Upward Wind Loads** **Downward Wind Loads**

$q_{(z)} = 0.5(\delta_{air})V_{(z)}^2 x10^{-3}$ = 1.29 kPa 1.29 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) = -1.16 kPa p_e(max) = 0.39 kPa

K_p = 1.00

Internal Pressures C_{pi}(max) = 0.0 C_{pi}(min) = -0.3

$p_i = C_{pi}q_z$ pi(max) = 0.00 kPa pi(min) = -0.39 kPa

Combined Pressures

Note: $K_c > 0.8/K_a$ K_c = 0.9 K_c= 0.8

$p_z = (p_e - p_i)K_c$ p_z(max) = -1.05 kPa p_z(min) = 0.62 kPa

W_u(max) = **-2.72 kN/m** W_u(min) = **1.61 kN/m**

Load Combinations - Ultimate Limit State

1.2 G + 1.5 Q = 3.06 kN/m

Note: Roof Qu = 0.00 kN/m **1.2G + Qu + Wu = 2.62 kN/m**

0.9G + Wu = -1.97 kN/m

W* = 3.06 kN/m **M* = 1.11 kNm**

Beam Type MSG8/VSG8 **Size** 150x100 f_b = 14 Z = 0.30

ø.k_1=0.8 $k_4.k_5$ =1 **ϕM_b =ø.$k_1.k_4.k_5.f_b.Z$ = 2.77 kNm** OKAY

EI = 168.30

Load Combinations - Serviceability Limit States

G + 0.7Q = 1.80

0.71x Wind ult = 1.93

1kN Load **Long Term (G) Ws =** 0.84 kN/m **Short Ws =** 1.93 kN/m

Deflection = 0.6mm 1.1mm 1.2mm

Span/ 1567 Span/ 1361

Limit 2.0mm Span/ 500 Span/ 300

OKAY OKAY OKAY

Reactions	**G**	**Q**	**$Wind_{down}$**	**$Wind_{up}$**	**Ult_{down}**	**Ult_{up}**
	0.71 kN	**1.17 kN**	**1.37 kN**	**-2.31 kN**	**2.60 kN**	**-1.67 kN**

AS/NZS1170 BEAM LOAD CALCULATION SHEET

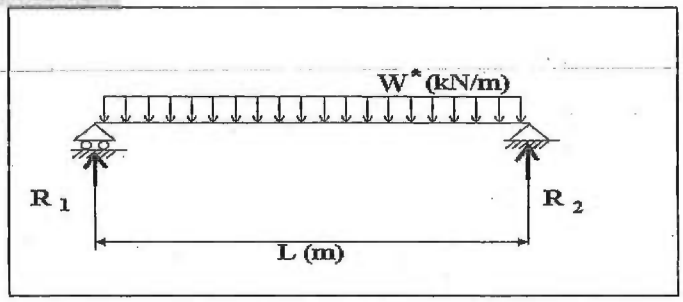
Timber Roof Beam Calculation Sheet

21

Job Name: Sheffield House, 86 Emerald Glen Road **Job No.** 22432

Date: 11-Feb-08 **Engineer** HAF

Beam No. L9b



L = 3 m

Trib Width = 2.6 m

LOADING

Uniformly Distributed Loads **Amount**

1. Dead Beam Self Weight 0.08 kN/m

Roof 0.3 kPa x Trib Width 0.78 kN/m

kN/m

Total Dead Load **G = 0.86 kN/m**

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

2. Roof Live Load 0.35 kPa x Trib Width x ψ_a **Q = 0.91 kN/m**

3. Site Wind Speed

$V_{(z)}$ = 46.41 m/s

	Upward Wind Loads	**Downward Wind Loads**
$q_{(z)} = 0.5(\delta_{air})V_{(z)}^2 x10^{-3}$ =	1.29 kPa	1.29 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) = -1.16 kPa	p_e(max) = 0.39 kPa
K_p = 1.00		
Internal Pressures	C_{pi}(max) = 0.0	C_{pi}(min) = -0.3
$p_i = C_{pi}q_z$	pi(max) = 0.00 kPa	pi(min) = -0.39 kPa
Combined Pressures		
Note: $K_c > 0.8/K_a$	K_c = 0.9	K_c = 0.8
$p_z = (p_e - p_i)K_c$	p_z(max) = -1.05 kPa	p_z(min) = 0.62 kPa
	W_u(max) = **-2.72 kN/m**	W_u(min) = **1.61 kN/m**

Load Combinations - Ultimate Limit State

Note: Roof Qu = 0.00 kN/m

1.2 G + 1.5 Q = 2.40 kN/m

1.2G + Qu + Wu = 2.64 kN/m

0.9G + Wu = -1.95 kN/m

W* = 2.64 kN/m **M* = 2.98 kNm**

Beam Type MSG8/VSG8 **Size** 200x100 f_b = 14 Z = 0.55

ø.k_1=0.8 $k_4.k_5$ =1 **ϕM_b =ø.$k_1.k_4.k_5.f_b.Z$ = 5.05 kNm** OKAY

EI = 414.08

Load Combinations - Serviceability Limit States

G + 0.7Q = 1.50

0.71x Wind ult = 1.93

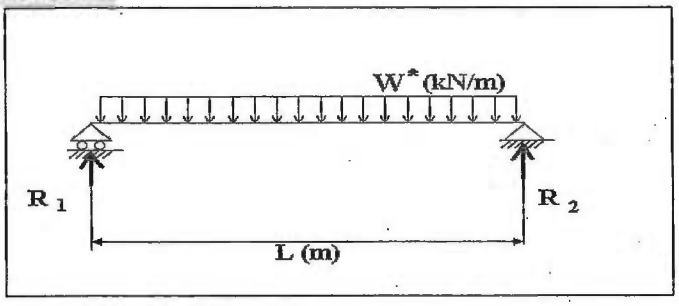
	1kN Load	**Long Term (G) Ws =** 0.86 kN/m	**Short Ws =** 1.93 kN/m
Deflection =	1.4mm	4.4mm	4.9mm
		Span/ 685	Span/ 610
Limit	2.0mm	Span/ 500	Span/ 300
	OKAY	OKAY	OKAY

Reactions	**G**	**Q**	**$Wind_{down}$**	**$Wind_{up}$**	**Ult_{down}**	**Ult_{up}**
	1.29 kN	**1.37 kN**	**2.42 kN**	**-4.08 kN**	**3.97 kN**	**-2.92 kN**

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

22

Job Name: Shelfield House
86 Emerald Glen Road
Job No. 22432
Date: 11-Feb-08
Engineer HAF
Beam No. L10



L = 3.5 m
Trib Width = 1.2 m

LOADING

Uniformly Distributed Loads **Amount**

1. Dead	Beam Self Weight			0.10 kN/m
	Roof	0.3 kPa x Trib Width		0.36 kN/m
				kN/m
	Total Dead Load		**G =**	**0.46 kN/m**

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

2. Roof Live Load 0.55 kPa x Trib Width x ψ_a **Q = 0.66 kN/m**

3. Site Wind Speed

$V_{(z)}$ = 46.41 m/s

	Upward Wind Loads	**Downward Wind Loads**
$q_{(z)} = 0.5(\rho_{air})V_{(z)}^2 x10^{-3}$ =	1.29 kPa	1.29 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) = -1.16 kPa	p_e(max) = 0.39 kPa
K_p = 1.00		
Internal Pressures	C_{pi}(max) = 0.3	C_{pi}(min) = -0.3
$p_i = C_{pi}q_z$	pi(max) = 0.39 kPa	pi(min) = -0.39 kPa
Combined Pressures		
Note: $K_c > 0.8/K_a$	K_c = 0.9	K_c = 0.8
$p_z = (p_e - p_i)K_c$	p_z(max) = -1.40 kPa	p_z(min) = 0.62 kPa
	W_u(max) = **-1.67 kN/m**	W_u(min) = **0.74 kN/m**

Load Combinations - Ultimate Limit State

Note: Roof Qu = 0.00 kN/m	**1.2 G + 1.5 Q = 1.54 kN/m**
	1.2G + Qu + Wu = 1.30 kN/m
	0.9G + Wu = -1.26 kN/m
W* = 1.54 kN/m	**M* = 2.36 kNm**

Beam Type MSG8/VSG8 **Size** 250x100 f_b = 14 Z = 0.87

ø.k_1=0.8 $k_4.k_5$ =1 **$\phi M_b = \phi.k_1.k_4.k_5.f_b.Z$ = 8.00 kNm** OKAY
EI = 826.85

Load Combinations - Serviceability Limit States

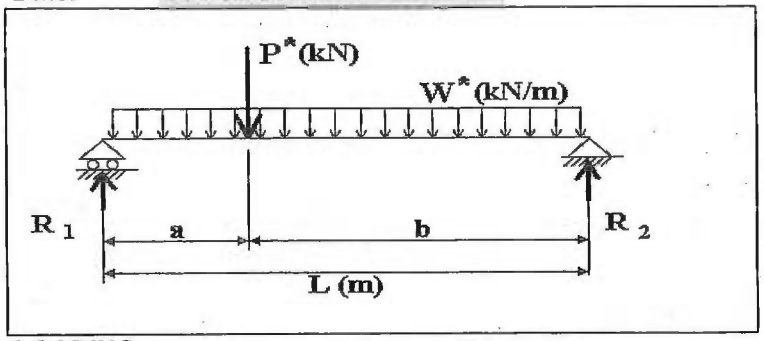
			G + 0.7Q =	0.92
			0.71x Wind ult =	1.19
	1kN Load	**Long Term (G) Ws =** 0.46 kN/m	**Short Ws =**	1.19 kN/m
Deflection =	1.1mm	2.2mm		2.8mm
		Span/ 1607		Span/ 1246
Limit	2.0mm	Span/ 500		Span/ 300
	OKAY	OKAY		OKAY

Reactions	**G**	**Q**	**$Wind_{down}$**	**$Wind_{up}$**	**Ult_{down}**	**Ult_{up}**
	0.81 kN	**1.15 kN**	**1.30 kN**	**-2.93 kN**	**2.70 kN**	**-2.21 kN**

(See Beam sheet for point Load Check)

AS/NZS 1170 TIMBER BEAM CALCULATION SHEET - MSG8

Job Name: Sheffield House, 86 Emerald Glen Road — **Job No.** 22432
Sheet No.
Date: 11-Feb-08 — **Engineer** HAF
Beam No. Bm L10



L = 3.5 m
a = 1.2 m
b = 2.3 m

LOADING

1/. Uniformly Distributed Load

			Amount	kN/m
Dead	Self Weight		0.11	
	Roof	0.3kPa x 1.2m	0.36	
	Total Dead Load		**G =**	**0.47 kN/m**
Live	Roof (Ψ_c = 0 for Q_f)	0.25kPa x 1.2	0.30	
	Floor			
	Total Live Load		**Q =**	**0.30 kN/m**

W* = 1.2 G + 1.5 Q = 1.01 kN/m
W_s = G + 0.4 Q_f = 0.47 kN/m

2/. Point Load

			Amount	kN
Dead	Lintel 11		0.60	
	Lintel 11-Wind Ajustment	(2.7kN -2.36kN)/1.2	0.28	
	Total Dead Point Load		**G =**	**0.88 kN**
Live	Lintel 11		1.09	
	Total Live Point Load		**Q =**	**1.09 kN**

Le (m) 0.5

P* = 1.2 G + 1.5 Q = 2.70 kN
P_s = G + 0.4 Q_f = 1.32 kN

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

M* = 3.68 kNm

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

D/B = 3

Section 240x90 (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 = 7.78 kNm

Serviceability Deflection — okay

(Under Ws + Ps) — **EIxx =** 826.85 x10^{9}Nmm^2

(k_2=2) Δ = 4.7mm — Under 1 kN Point Load Δ = 1.1 mm

=Span/ 746

Reaction	Dead	Live	Ultimate
R1	1.40kN	1.24kN	3.54kN
R2	1.12kN	0.90kN	2.70kN

AS/NZS1170 BEAM LOAD CALCULATION SHEET

Timber Roof Beam Calculation Sheet

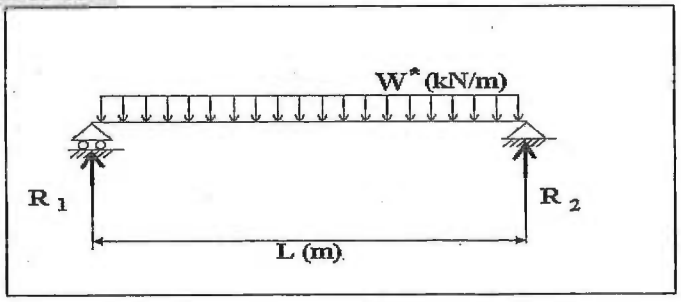
24

Job Name: Sheffield House
86 Emerald Glen Road

Job No. 22432

Date: 11-Feb-08

Engineer HAF
Beam No. L11



L = 3.6 m
Trib Width = 0.9 m

LOADING

Uniformly Distributed Loads — **Amount**

1. Dead Beam Self Weight — 0.06 kN/m
Roof — 0.3 kPa x Trib Width — 0.27 kN/m
kN/m
Total Dead Load — **G = 0.33 kN/m**

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

2. Roof Live Load — 0.68 kPa x Trib Width x ψ_a — **Q = 0.61 kN/m**

3. Site Wind Speed

$V_{(z)}$ = 46.41 m/s

	Upward Wind Loads	**Downward Wind Loads**
$q_{(z)} = 0.5(\rho_{air})V_{(z)}^2 x10^{-3}$ =	1.29 kPa	1.29 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) = -1.16 kPa	p_e(max) = 0.39 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) = 0.78 kPa	pi(min) = -0.39 kPa
Combined Pressures		
Note: $K_c > 0.8/K_a$	K_c = 0.9	K_c = 0.8
$p_z = (p_e - p_i)K_c$	p_z(max) = -1.74 kPa	p_z(min) = 0.62 kPa
	W_u(max) = **-1.57 kN/m**	W_u(min) = **0.56 kN/m**

Load Combinations - Ultimate Limit State

Note: Roof Qu = 0.00 kN/m

1.2 G + 1.5 Q = 1.31 kN/m
1.2G + Qu + Wu = 0.96 kN/m
0.9G + Wu = -1.27 kN/m
M* = 2.12 kNm

W* = 1.31 kN/m

Beam Type hySPAN **Size** hy90 150x90 f_b = 35 Z = 0.34

ø.k_1=0.8 k_4,k_5 =1

ϕM_b =ø.k_1.k_4.k_5.f_b.Z = 8.51 kNm OKAY
EI = 240.47

Load Combinations - Serviceability Limit States

G + 0.7Q = 0.76
0.71x Wind ult = 1.11
Short Ws = 1.11 kN/m

	1kN Load	**Long Term (G) Ws =** 0.33 kN/m	
Deflection =	4.0mm	6.0mm	10.1mm
		Span/ 596	Span/ 355
Limit		Span/ 500	Span/ 300
	Not critical	OKAY	OKAY

Reactions	**G**	**Q**	**$Wind_{down}$**	**$Wind_{up}$**	**Ult_{down}**	**Ult_{up}**
	0.60 kN	**1.09 kN**	**1.00 kN**	**-2.83 kN**	**2.36 kN**	**-2.29 kN**

F14-06/02

Date 11/2/08	Eng. MAP	Job No. 22432	Sheet No. 25

Project: 86 Emerald Glen Rd

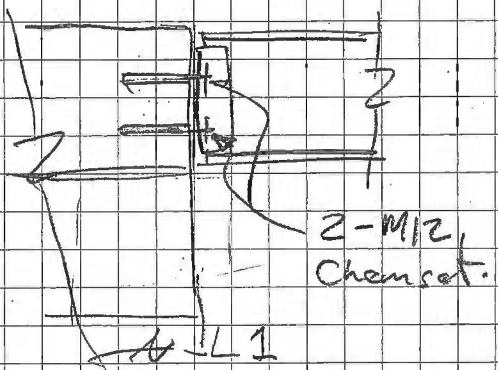
ISP CALCULATIONS

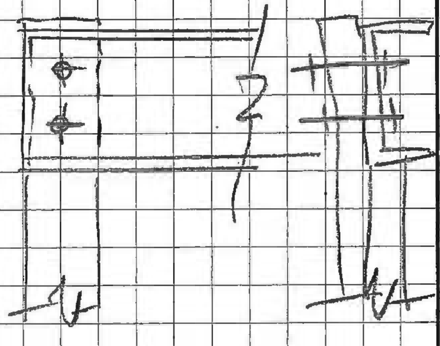
Steel Beam Connections – L1 & L5

℄	P^*_{up}	P^*_{dn}
L1	-9.96	9.92
L5	-7.86	12.02

Use 2-M12 Bolts. $b = 45$ & $b_e = 90$

$\phi Q_n = 0.7 \times 1 \times 1 \times 2 \times 10.45 = 14.56$ kN.
(φ, k_{12}, k_{13}, n, Q_{sk})

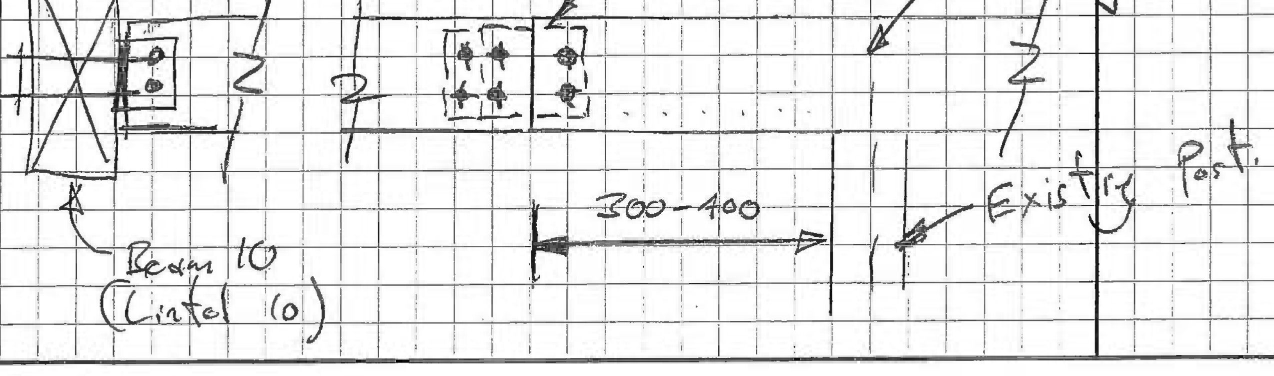




Check 2-90x45 Posts (MSCs)

$L_e < 2.8$m $N^* = 20.3$ kN OK ✓

Beam 11 Connections
(Lintel 11).



F14-06/02

Date	Eng.	Job No.	Sheet No.
12/2/08	MAF	22432.	26

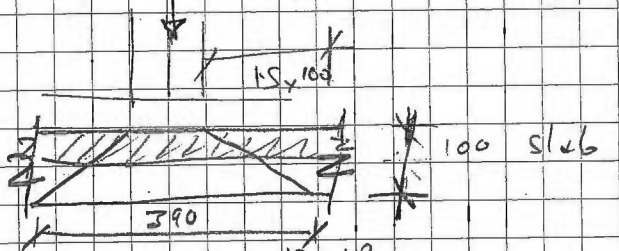
Project

86 Emerald Cl

CALCULATIONS

Check L5 Point Load on slab

$P^* = 12.02$ kN



Assume $q_a = 150$ kPa.

$$q_b = \frac{12.02}{.302} = 79 \text{ kPa.} < 150 \quad \text{OKAY}$$

ISP CONSULTING ENGINEERS LTD

Civil & Structural
Seismic Risk Analysis
Building Compliance

Lower Hutt Office
Tel: 04 566 8004
Fax: 04 566 8037
Level 1, 14 Laings Rd
ISP Building
P.O. Box 30 535
Lower Hutt 5010

Paraparaumu Office
Tel: 04 902 5750
Level 1, Office 24
Kayel Building
Raumati Beach
P.O. Box 537
Paraparaumu 5254

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

Structural Calculations

For

Garage modification

86 Emerald Glen Road

Raumati

These calculations are in accordance with:

NZS1170:2002 Structural Design Loads
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

Engineer:
John O'Hagan
Hugh Falkner

Initials:
JOH
HAF

Preamble:

Calculations include:
Determination of specific site wind speed, design of specific lintel beams and bracing

Date:
25 September 2009

Job No.
22432

IPENZ ENGINEERS NEW ZEALAND

ACENZ

Building Code Clause(s) B1

J22432

PRODUCER STATEMENT - PS1 - DESIGN

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

ISSUED: **ISP Consulting Engineers Ltd**

TO: **Martin & Maree Sheffield**

(Owner / Developer)

TO BE SUPPLIED TO: **Kapiti Coast District Council**

(Building Consent Authority)

IN RESPECT OF: **Garage Modifications**

(Description of Building Work)

AT: **86 Emerald Glen Road**

(Address)

LOT 10 DP 33688

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.
Specific Lintel and bracing only

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

The proposed Building work covered by this producer statement is decribed on the drawings calculations titled: **86 Emerald Glen Road, Raumati** and numbered **22432 / S1**

On behalf of the Design Firm, and subject to:

(i) Site verification of the following design assumptions: NONE

(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 $ 200,000*.
The Design Firm is a member of ACENZ

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

Date: 25 September 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.

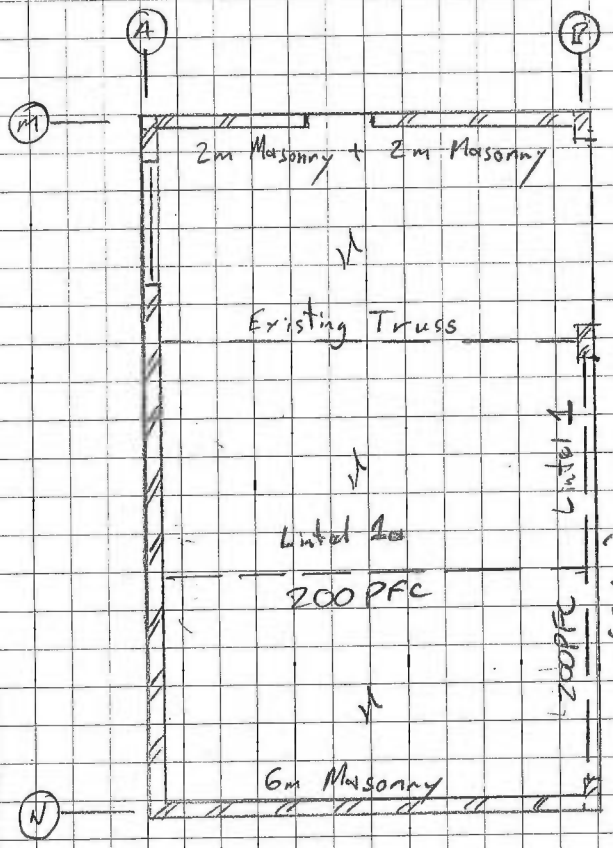
F14-06/02

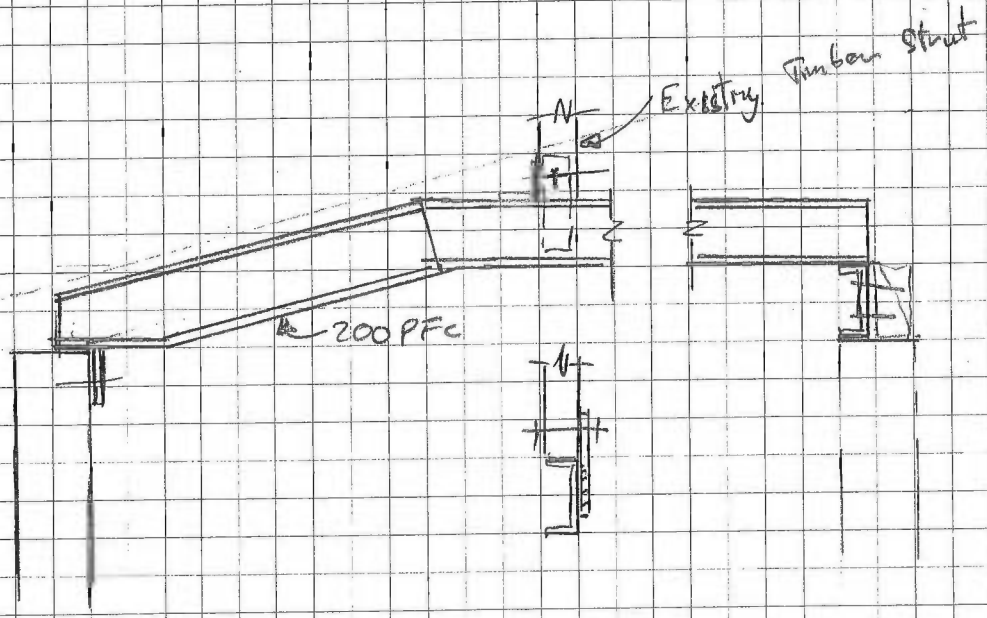
Date	Eng.	Job No.	Sheet No.
4/5/09	HAF	22432	3

Project: 86 Emerald Glen Rd

CALCULATIONS

Garage Design Summary





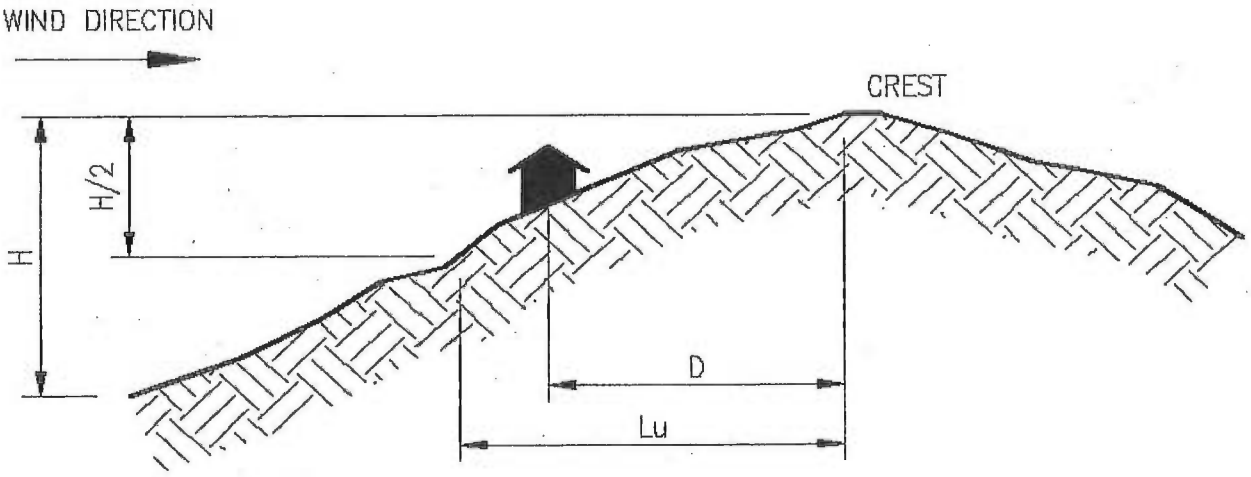
Site Wind Speed

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

Terrain Factor = 2. Open Terrain
Building Height= 5m
Gives $M_{(zcat)}$ = 0.91

M_s=0.85 for buildings in normal built-up areas.
Refer to AS1170.2 Clause 4.3.1

Hill Shape Multiplier M_h



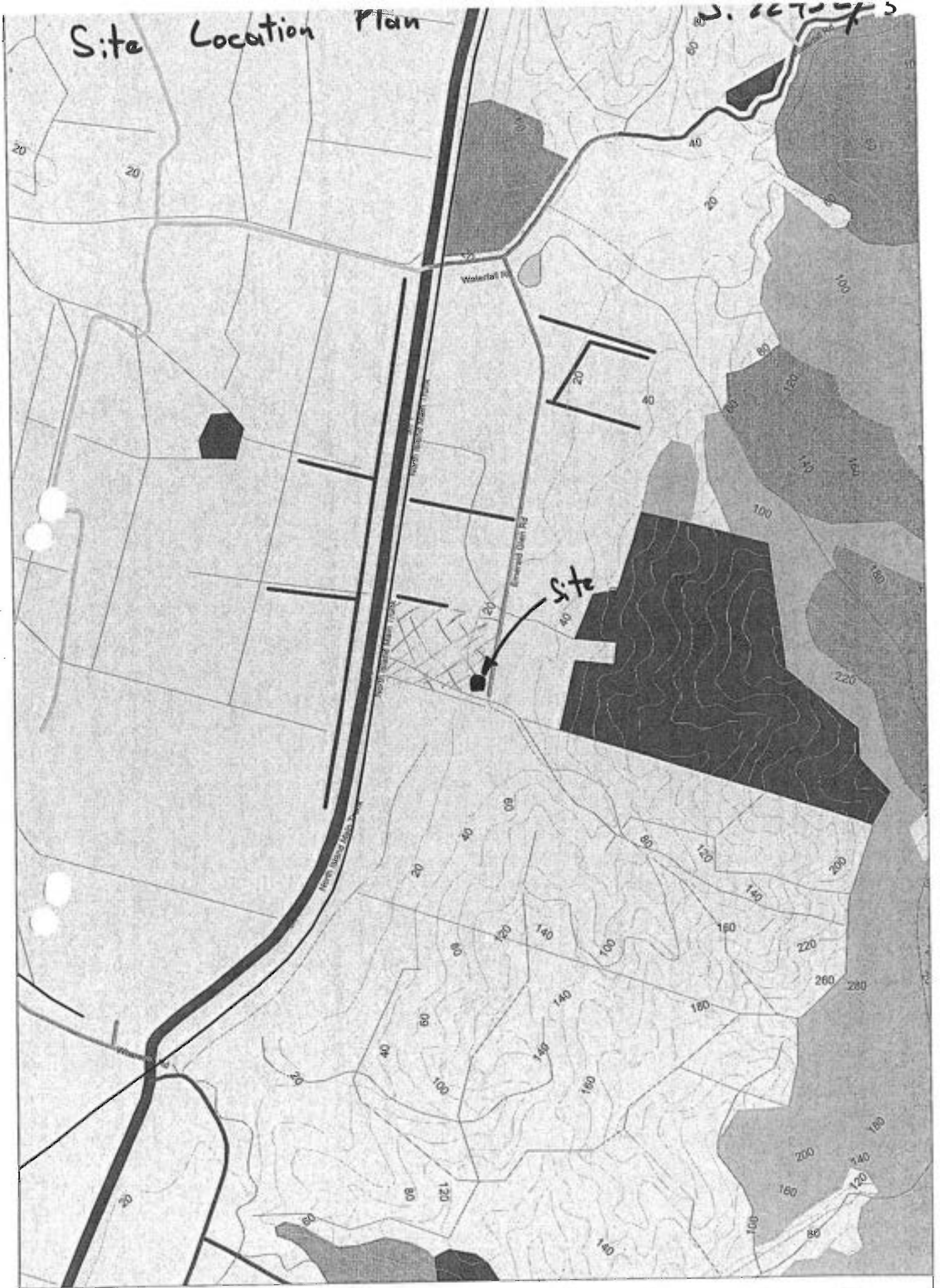
If $(H/2)/L_u < 0.05$ $M_h = 1$
If $0.05 < (H/2)/L_u < 0.45$ $M_h = 1+(H/(3.5(z+L_1)x(1-D/L_2)$
If $(H/2)/L_u > 0.45$ $M_h = 1+0.71(1-D/L_2)$

H = 280 m (Rise height)
Lu = 500 m (distance from mid rise to crest)
D = 800 m (building distance from crest)
z = 5 m (building height)
M_{lee} = 1
Elevation = 20 m

Slope $[(H/2)/L_u]$ = 0.28
L_1 = 180 m
L_2 = 720 m
M_h = 1.00
M_{lee} = 1.00
M_s = 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 0.91 x 1.00 x 1.00 = **46.41 m/s**

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



QuickMap
Custom Software Ltd

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 11/02/2008 10:06

F14-06/02

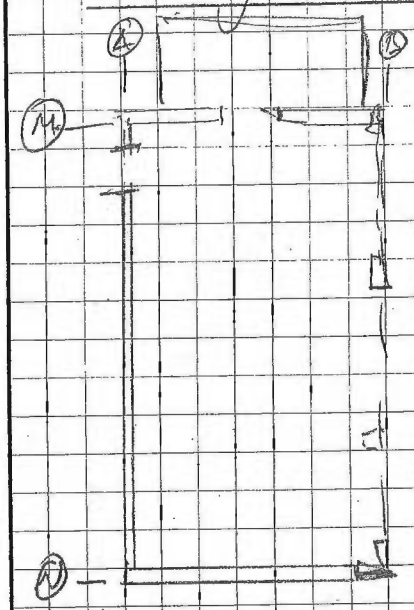
Date 4/5/09	Eng. MAF	Job No. 22432	Sheet No. 6

Project

86 Emerald Glen Rd

CALCULATIONS

Garage Bracing Check NZS 4229 Design



Bracing Required. (6.2 x 12)

Eq (20 x 14) x 6.2 x 12 = 2083 Bu

Wind = Blong = 93 x 6 = 560 Bu

Across = 80 x 12 = 960 Bu

Bracing Provided.

Grid A - 6m at 2.4 = 3700 Bu > 2083 OKAY

Grid M - 2x2.4 at 2.4 = 2x875 = 1750

Grid N - 6 at 2.4 = 3705.

5450 > 2083 OKAY

By inspection existing diaphragms transfer load to grid A bracing line.

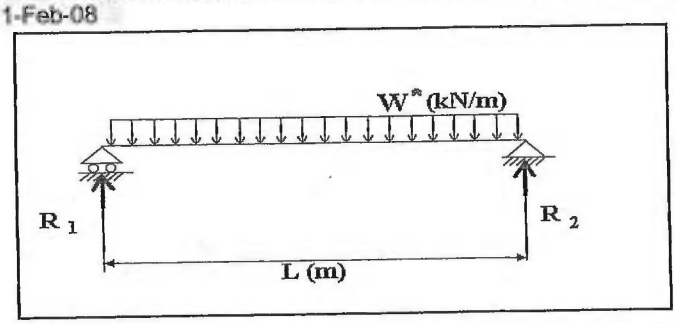
Utilities Room → 2 x 6 = 12m² x 9 Bu/m² x 1.5 (NZS 3604 Eq) = 162 Bu.

Utilities ceiling diaphragm transfers loads to grid (M) by inspection OKAY

AS/NZS1170 BEAM LOAD CALCULATION SHEET
Steel Roof Beam Subjected To Wind Load

Job Name: Sheffield House
86 Emerald Glen Road
Job No. 22432

Date: 11-Feb-08
Engineer HAF
Beam No. L1a



L = 6 m
Trib Width = 3 m

LOADING
Uniformly Distributed Loads

			Amount
1. Dead	Beam Self Weight		0.23 kN/m
	Roof	0.3 kPa x Trib Width	0.90 kN/m
			kN/m
	Total Dead Load	**G =**	**1.13 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 =**	**0.75 kN/m**

3. Site Wind Speed
$V_{(z)}$ = **46.41** **m/s**

	Upward Wind Loads	**Downward Wind Loads**
$q_{(z)} = 0.5(\delta_{air})V_{(z)}^2 x10^{-3}$ =	1.29 kPa	1.29 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) = -1.16 kPa	p_e(max) = 0.39 kPa
K_p = 1.00		
Internal Pressures	C_{pi}(max) = 0.3	C_{pi}(min) = -0.3
$p_i = C_{pi}q_z$	pi(max) = 0.39 kPa	pi(min) = -0.39 kPa
Combined Pressures		
Note: $K_c > 0.8/K_a$	K_c = 0.9	K_c= 0.8
$p_z = (p_e - p_i)K_c$	p_z(max) = -1.40 kPa	p_z(min) = 0.62 kPa
	W_u(max) = **-4.19 kN/m**	W_u(min) = **1.86 kN/m**

Load Combinations - Ultimate Limit States

Note: Roof Qu = 0.00 kN/m	**1.2 G + 1.6 Q =** **2.55 kN/m**
	1.2G + Qu + Wu = **3.22 kN/m**
	0.9G + Wu = **-3.17 kN/m**
	M* = **14.47 kN/m**

W* = 3.22 kN/m

Profile Channel Section **Section** 200PFC $Le_{(m)}$ = 6

ϕM_b = 20.3 OKAY
I_{xx} = 19.10 $x10^6 mm^4$

Load Combinations - Serviceability Limit States

G + 0.7Q = 1.65 kN/m
0.71x Wind ult = 2.97 kN/m

	1kN Load	**Long Term (G) Ws =** 1.13 kN/m	**Short Ws =** 2.97 kN/m
Deflection =	1.2mm	5.0mm	13.1mm
		Span/ 1203	Span/ 457
Limit	2.0mm	Span/ 500	Span/ 300
	OKAY	OKAY	OKAY

Reactions	**G**	**Q**	**$Wind_{down}$**	**$Wind_{up}$**	**Ult_{down}**	**Ult_{up}**
	3.39 kN	**2.25 kN**	**5.58 kN**	**-12.56 kN**	**9.65 kN**	**-9.51 kN**

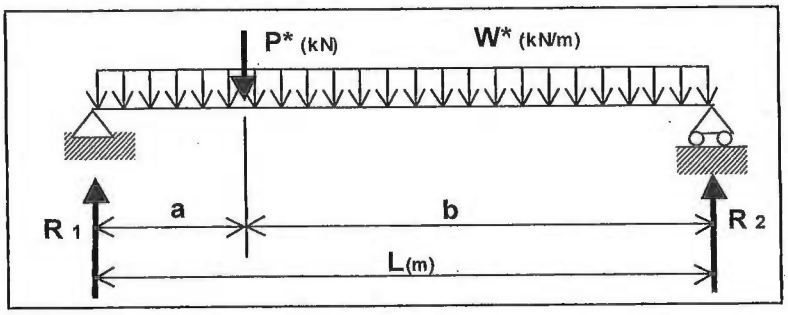
AS/NZS 1170 STEEL BEAM CALCULATION SHEET

Job Name: Sheffield House
86 Emerald Glen

Job No. 22432
Sheet No.

Date: 25-Sep-09

Engineer HAF
Beam No. L1



L = 5.6 m
a = 2.8 m
b = 2.8 m

LOADING

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

Dead Self Weight 0.23

Total Dead Load **G = 0.23 kN/m**

Live Roof (Ψ_c = 0 for Q_f)
Floor

Total Live Load **Q = 0.00 kN/m**

W* = 1.2 G + 1.5 Q = 0.27 kN/m
W_s = G + 0.4 Q_f = 0.23 kN/m

2/. Point Load — **Amount kN**

Dead L1a 3.39
Wind Ajustment (9.65 - 7.44)/1.2 1.85

Total Dead Point Load **G = 5.24 kN**

Live 2.25

Total Live Point Load **Q = 2.25 kN**

Le (m) 5.5

P* = 1.2 G + 1.5 Q = 9.66 kN
P_s = G + 0.4 Q_f = 6.14 kN

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

M* = 14.61 kNm
ϕM_b = 21.8 kNm
okay

Profile Channel Section

All Steel is Grade 300

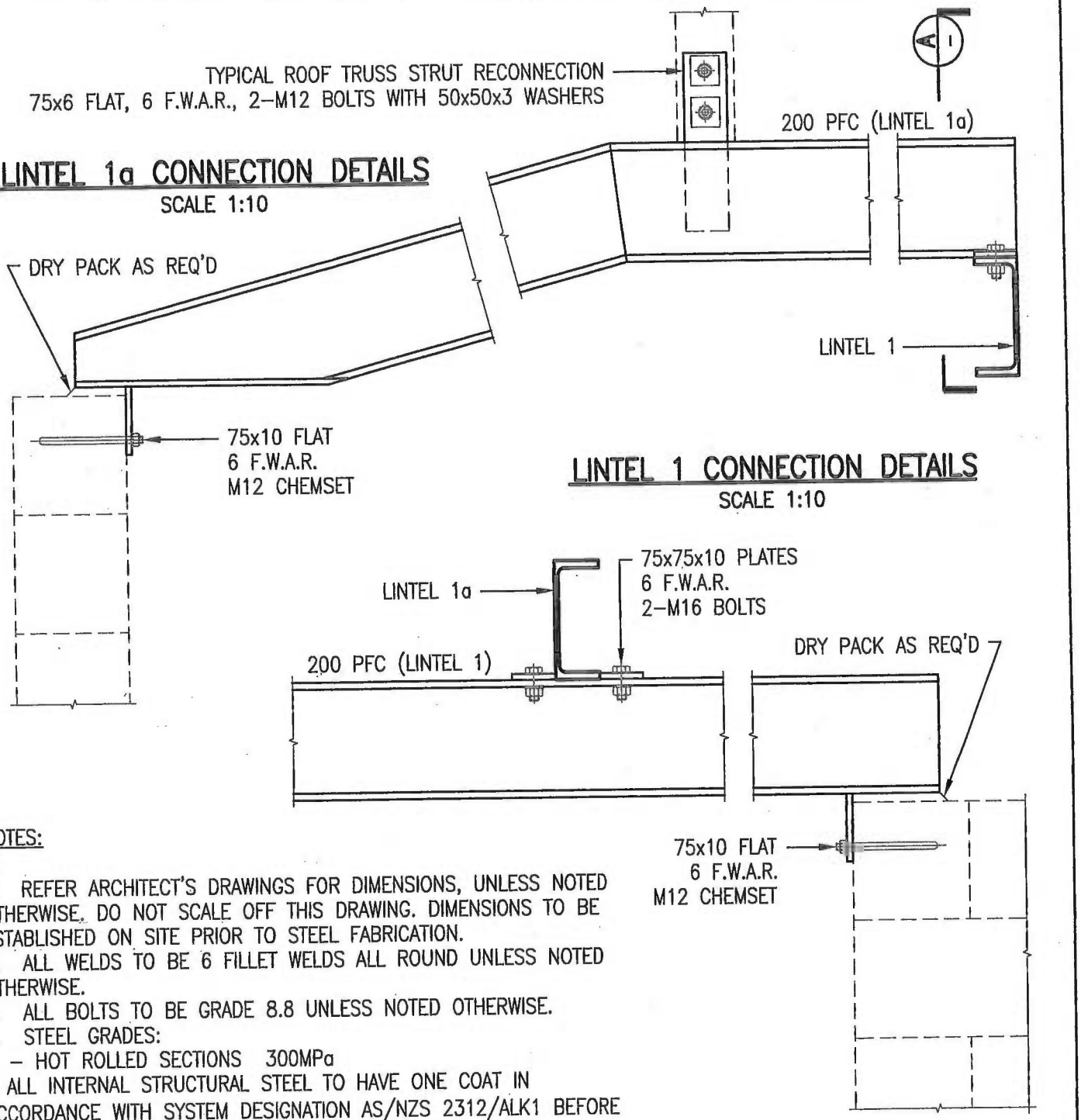
Section 200PFC

Ixx = 19.10 x10^6mm^4

Serviceability Deflection

(Under W_s + P_s) Δ = 6.6 mm
=Span/ 842
(Under 1 kN Point Load) Δ = 1.0 mm

Reaction	Unfactored Dead & Live	Ultimate 1.2G+1.5Q	SLS G+0.4Q
R1	G=3.26kN Q=1.13kN	5.60kN	3.71kN
R2	G=3.26kN Q=1.13kN	5.60kN	3.71kN



NOTES:

1. REFER ARCHITECT'S DRAWINGS FOR DIMENSIONS, UNLESS NOTED OTHERWISE. DO NOT SCALE OFF THIS DRAWING. DIMENSIONS TO BE ESTABLISHED ON SITE PRIOR TO STEEL FABRICATION.
2. ALL WELDS TO BE 6 FILLET WELDS ALL ROUND UNLESS NOTED OTHERWISE.
3. ALL BOLTS TO BE GRADE 8.8 UNLESS NOTED OTHERWISE.
4. STEEL GRADES:
   – HOT ROLLED SECTIONS 300MPa

5 ALL INTERNAL STRUCTURAL STEEL TO HAVE ONE COAT IN ACCORDANCE WITH SYSTEM DESIGNATION AS/NZS 2312/ALK1 BEFORE DELIVERY TO SITE. ANY AREAS DAMAGED TO BE MADE GOOD UPON INSTALLATION.

6. ALL WELD ELECTRODES ARE E48XX OR W50X
7. ENGINEER TO INSPECT ALL STEEL CONNECTIONS PRIOR TO CLOSING IN.
8. ENGINEER REQUIRES 24 HOURS NOTICE BEFORE ANY VISIT. CONTACT JOHN O'HAGAN ON 566 8004.

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

CLIENT Martin & Maree Sheffield	DATE May 2009	DWG No. S1
PROJECT 86 Emerald Glen Road Raumati, Kapiti Coast	SCALE 1:10	
	DRAWN dlg	JOB No 22432

Surface texture and abnormal surface porosity will affect either the spreading rate or the coverage achieved. Allowance for this should be made in the quotation.

This specification should be read in conjunction with the manufacturers recommendations contained in the relevant technical data sheets.

Site Assistance

Resene Representatives will visit specific job sites as required to assist with advice on adequacy of preparation; special mixing requirements; standard of application etc. However this should not be regarded as 'supervision', but simply 'site assistance'.

Maggie Bruce
Thorndon Quay
Architectural Representative

Andy Provan
Head Office, Lower Hutt
Technical Services Manager

contract documentation: revision one

of work to be done and materials to be used in carrying out the works shown on the accompanying drawings

architectureRobinsonCrimp

sheffield house

86 emerald glen road, raumati, kapiti coast

(project address)

---

revision one scope of works summary

- existing roof cladding, roof underlay, eave flashings and all gutters and downpipes to be replaced
- client to confirm eave and soffit painting prior to installation of gutters and downpipes
- increase opening of garage doors and installation of lintel 1 and new garage doors (refer to structural engineers docs.)
- existing stormwater lines to connect to new water tanks (by others)

revision one technical specification attachment

• 1120	project
• 1232	interpretation & definitions
• 1233	referenced documents
• 1234	documentation
• 1237	warranties
• 1237wa	warranty agreement
• 1240	establishment
• 1250	temporary works and services
• 1260	project management
• 1270	construction
• 2110	demolition minor
• 3410	structural steelwork
• 4160t	thermakraft wraps, underlays and dpc
• 4331d	dimond profiled metal roofing
• 4391	rainwater systems
• 4505	garage doors
• addenda 1	resenes specification for steelwork
• e2/as1	figure 45

revision one drawing attachment (revision clouds in red)

• 1.01	existing floor plan & demolitions
• 2.01	proposed floor plan
• 2.03	proposed roof plan
• 3.01	proposed elevations
• 3.02	proposed elevations
• 6.01	electrical plan

project reference: 194SHE07

date: april 2009

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1220 PROJECT

1. GENERAL

This general section describes the project including:
- A description of the work
- Site description, features and restrictions

1.1 READ ALL SECTIONS TOGETHER

Read all general sections together with all other sections.

Description of the work

1.2 SCOPE OF THE WORK

Re-roofing, replacement of gutters and downpipes, new H2O storage tanks (by others) and new garage opening and new garage doors

Site description

1.3 SITE

The site consists of: **Existing house**

1.4 LEGAL DESCRIPTION

Lot 5 DP 33688

Site features and restrictions

1.5 SITE ACCESS

Access to the site is limited to: **Existing driveway and courtyard**

1.7 WORKING AREA

Limited to the following designated working areas on the site:
Work areas limited to within and directly adjacent to the house and garage

1.8 EXISTING BUILDINGS

Existing buildings consist of: **House and garage**

1232 INTERPRETATION & DEFINITIONS

1. GENERAL

This general section relates to interpretation and definitions that are used in this specification.

1.1 INTERPRETATIONS

Required:	Required by the documents, or by a statutory authority.
Proprietary:	Identifiable by naming the manufacturer, supplier, installer, trade name, brand name, catalogue or reference number.
Provide and fix:	"Provide" or "fix" or "supply" or "fix" if used separately mean provide and fix unless explicitly stated otherwise.
Review:	Review by the contract administrator is for general compliance only. Review does not remove the need for the contractor to comply with the stated requirements, details and specifications of the manufacturers and suppliers of individual components, materials and finishes. Neither can the review be construed as authorising departures from the contract documents.

1.2 PERSONNEL

Owner:	The person defined as "owner" in the New Zealand Building Code.
Principal:	The person defined as "principal" in the conditions of contract.
Contractor:	The person contracted by the principal to carry out the contract.

Contract administrator:
The person appointed by the principal to administer the contract on the principal's behalf. It includes the architect, engineer, designer, project manager or other person so appointed. Where no person has been appointed by the Principal, it means the Principal or the Principal's representative.

1.3 ABBREVIATIONS

The following abbreviations are used throughout the specification:

AAMA	American Architectural Manufacturers Association
AS	Australian Standard
AS/NZS	Joint Australian/New Zealand Standard
ASTM	American Society for Testing and Materials
AWCINZ	Association of Wall and Ceiling Industries of New Zealand Inc
BRANZ	Building Research Association of New Zealand
BS	British Standard
CSIRO	Commonwealth Scientific and Industrial Research Organisation
HERA	Heavy Engineering Research Association
MPNZA	Master Painters New Zealand Association Inc
NZBC	New Zealand Building Code
NZS	New Zealand Standard
NZS/AS	Joint New Zealand/Australian Standard
TNZ	Transit New Zealand

1.4 DEFINED WORDS

Words defined in the conditions of contract, New Zealand Standards, or other reference documents, to have the same interpretation and meaning when used in their lower case, title case or upper case form in the specification text.

1.5 WORDS IMPORTING PLURAL AND SINGULAR

Where the context requires, words importing singular only, also include plural and vice versa.

1233 REFERENCED DOCUMENTS

1. GENERAL

This general section relates to other documents referred to in this specification.

1.1 REFERENCED DOCUMENTS

Throughout this specification, reference is made to various New Zealand Building Code (NZBC) acceptable solutions and verification methods for criteria and/or methods used to establish compliance with the Building Act.

Reference is also made to various Standards produced by Standards New Zealand (NZS, AS/NZS, NZS/AS), Transit New Zealand specifications (TNZ) to overseas standards and to listed Acts, Regulations and various industry codes of practice and practice guides. The latest edition (including amendments and provisional editions) at the date of this specification applies unless stated otherwise.

It is the responsibility of the contractor to be familiar with the materials and expert in the techniques quoted in these publications.

Documents cited both directly and within other cited publications are deemed to form part of this specification. However, this specification takes precedence in the event of it being at variance with the cited documents, with the resolution of any variance being confirmed by the Contract administrator in writing and then notified to the Building Consent Authority for consent prior to any work proceeding.

1.2 DOCUMENTS REFERRED TO

Documents referred to in the GENERAL sections are:

NZBC F4/AS1	Safety from falling, 2.0 Construction site barriers
NZBC F5/AS1	Construction and demolition hazards, 1.0 Work-site barriers
NZS 6803	Acoustics - Construction Noise
Building Act 2004	
Building Regulations 1992	
Health and Safety in Employment Act 1992	
Health and Safety in Employment Regulations 1995	
New Zealand Building Code 1992	
Historic Places Trust Act 1993	
Resource Management Act 1991	
Smoke Free Environments Act 1990	
OSH	Approved code of practice for the safe erection and use of scaffolding
OSH	Guidelines for the provision of facilities and general safety in the construction industry

1234 DOCUMENTATION

1. GENERAL

This general section relates to documentation required by the Territorial Authority/Building Consent Authority for compliance with the New Zealand Building Code. It also includes documentation relating to:
- Substitutions
- Manufacturers documents

Building Consent Authority documentation

1.1 BUILDING CONSENT

Obtain the original or copies of the building consent forms and documents from the owner and keep them on site. Liaise with the Building Consent Authority for all notices to be given and all inspections required during construction to ensure compliance. Return the consent form and documents to the owner on completion.

1.2 BUILDING CONSENT COMPLIANCE

It is an offence under the Building Act 2004 to carry out any work not in accordance with the building consent.
- The resolution of matters concerning building code compliance to be referred to the contract administrator for a direction in writing and then to the Building Consent Authority for consent.
- Where any alteration is requested by the territorial authority or any other authority, do not undertake such alteration until the matter has been referred to the contract administrator for direction.

1.3 PROJECT PERSONNEL

Provide names and contact detail of the contractor's key personnel and tradespersons who are involved with the project. Provide the names in the form required in the GENERAL section of the specification. Review the list once a month and reissue it if changes have been made.

1.4 KEY PERSONNEL

Provide names and contact detail of key personnel. Provide names, registrations numbers (where appropriate) and contact detail of key personnel that are required by the Building Consent Authority as part of the application for the Code Compliance Certificate.

Include the following as applicable:
- Registered drainlayer (if applicable)
- Registered plumber
- Registered electrician
- Roofer

1.5 PRODUCER STATEMENTS

When producer statements verifying construction are required, provide copies to both the Building Consent Authority and the contract administrator. Provide producer statements in the form required by the Building Consent Authority.

1.6 DOCUMENTATION REQUIRED FOR CODE COMPLIANCE

Review the issued Building Consent for details of documents and information that will be required by the Principal for the application for a Code Compliance Certificate. Obtain such required documents from the relevant parties for delivery to the contract administrator after the final inspection has been carried out by the Building Consent Authority

Substitutions

1.7 PROPOSED SUBSTITUTIONS

A substitution may be proposed where specified products are not reasonably available. A substitution may also be proposed by the Contractor where the Contractor considers a proposed substitution to be an alternative to the specified product. Except where a

specified product is not available, the Contract administrator is not bound to accept any substitutions. Where branded work sections are included in this specification, substitution of those products or systems will not be allowed.

1.8 NOTIFICATION OF SUBSTITUTIONS

Notify proposed substitution of specified products. Notification to include but not be limited to:

- Product identification
- Manufacturer's name, address, telephone and facsimile numbers, website and email address
- Detailed comparison between the properties and characteristics of the specified product and the proposed substitution
- Statement of NZBC compliance, including durability
- Details of manufacturer warranties

plus an assessment of

- Any changes required to the programme including any extension of time required
- Any consequential effects of the proposed substitution
- Allowance for time and cost for re-design and documentation (if applicable)
- Allowance for time and cost for obtaining an amendment to the Building Consent (if applicable)
- Any change in cost associated with the proposed substitution

and if requested

- All current manufacturer's literature on the product
- Accreditations and appraisals available
- Reference standards
- Product limitations
- Samples
- List of existing installations in the vicinity of the project

1.9 ACCEPTANCE OF SUBSTITUTIONS

The Contract administrator must advise of acceptance of substitutions in writing.

Amendment to issued Building Consent

1.10 CONTRACTOR AMENDMENTS TO BUILDING CONSENT

Where the contactor has sought acceptance of a substitution or a variation which is for the contractor's own convenience and the substitution or variation requires an amendment to the Building Consent, the contractor must apply for and obtain the required amendment.

The contractor must:

- Obtain approval for substitutions from the Contract administrator.
- Prepare and provide to the Building Consent Authority all documentation required for the amendment.
- Pay all fees and other costs associated with this amendment.
- Where the amendment affects other approved plans, also amend those plans.

1.11 PRINCIPALS AMENDMENTS TO BUILDING CONSENT

Where the principal is proposing a substitution or a variation which requires an amendment to the Building Consent, the contractor must provide to the principal information that the contractor has that is required for the amendment.

The principal will:

- Prepare and provide to the Building Consent Authority all documentation required for the amendment.
- Pay all fees and other costs associated with this amendment.
- Where the amendment affects other approved plans, also amend those plans.

Manufacturer's documents

1.12 BRANDED WORK SECTIONS
Branded sections may be included in this specification relating to specific products and systems to be installed as part of the contract works. Where branded sections are included, substitutions to the branded products and systems will not be allowed.

1.13 MANUFACTURER'S AND SUPPLIER'S REQUIREMENTS
Manufacturers and supplier's requirements, instructions, specifications or details mean those issued by them for their particular material, product or component and are the latest edition.

1.14 MANUFACTURER'S AND SUPPLIER'S DOCUMENTS
Refer to individual sections for a detailed list of manufacturer's and supplier's documents relating to work on this project. Retain current copies of the documents listed, and all other relevant manufacturer's technical literature, on site. Make this information available to all personnel and ensure they are familiar with requirements for handling, storing, preparing for, fixing and finishing all products before commencing work. Provide a copy of all listed manufacturer's literature to the Contract administrator.

1.15 ONGOING MAINTENANCE REQUIREMENTS
Refer to individual sections for details of manufacturer's and supplier's requirements for ongoing maintenance necessary to ensure continuing compliance with the durability requirements of the NZBC. Provide a copy of literature detailing ongoing maintenance and inspection requirements to the Contract administrator.

Shop drawings

1.16 PROVIDE SHOP DRAWINGS FOR REVIEW
Unless addressed elsewhere in this specification provide shop drawings for review by the contract administrator. Do not proceed with manufacture of the items until the Contract administrator gives a direction to proceed.

As built drawings

1.17 PROVIDE AS BUILT DRAWINGS
Unless addressed elsewhere in this specification provide as built drawings required as built drawings including those required by the Building Consent Authority.

1237 WARRANTIES

1. GENERAL

This general section refers to the requirements for warranties as listed, either in this work section or in specific work sections. It includes: -

- Warranties for parts of the work required by the Principal in a required form
- Installer/applicator warranties for parts of the work in the installer/applicator's standard form
- Manufacturer/supplier warranties provided with products, appliances and the like in the suppliers standard form
- Guarantees provided by contractors in the contractor's standard form

Warranties

1.1 PROVIDE WARRANTIES

Provide executed warranties in favour of the principal in respect of, but not limited to, materials, components, service, application, installation and finishing called for in that specified section of work. The terms and conditions of the warranty in no case negate the minimum remedies available under common law as if no warranty had been offered. Failure to provide the warranty does not reduce liability under the terms of the warranty called for in that specified section of work.

Where installer/applicator warranties are included in a branded section of this specification they shall be provided in lieu of the warranties that are otherwise required.

Where installer/applicator warranties are available they may be provided in lieu of the warranties that are otherwise required provided these warranties are subject to similar conditions and periods as those listed in the SCHEDULE OF WARRANTIES.

- Conform to the WARRANTY AGREEMENT form included in the specification/conditions of contract.
- Commence warranties from the date of practical completion of the contract works (unless otherwise stated).
- Maintain their effectiveness for the times stated.
- Provide executed warranties no later than the date of the Contractor's Completion Statement.

1.2 WEATHERTIGHTNESS AND WATERTIGHTNESS WARRANTY

A warranty is required from the contractor for a minimum period of 2 years, covering the weathertightness of the complete building envelope and the watertightness of all liquid supply and disposal systems and fittings. This general warranty is in addition to any specific warranties required.

1.3 SCHEDULE OF WARRANTIES

The following is a summary of the warranties and warranty periods called for in work sections.

2 years	**Weathertightness and watertightness**
5 years	**Profiled metal roofing**
1 year	**Electrical general**

Refer also to:

- WARRANTIES – INSTALLER/APPLICATOR for other installer/applicator warranties.
- WARRANTIES – MANUFACTURER/SUPPLIER for other materials and product warranties.

1.4 WARRANTIES – INSTALLER/APPLICATOR

Where installer/applicator warranties are offered covering execution and materials of proprietary products or complete installations, provide such warranties to the contract administrator. These warranties may be provided in lieu of the warranties that are otherwise required provided that these warranties are subject to similar conditions and periods as list in the SCHEDULE OF WARRANTIES.

Where installer/applicator warranties are included in a branded section of this specification, they shall be provided in lieu of the warranties that are otherwise required.

Provide warranties in favour of the principal. The terms and conditions of such warranties in no case negate the minimum remedies available under common law as if no warranty had been offered. Failure to provide the warranty does not reduce liability for execution and materials for that part of the work.

- Conform to the installer/applicator standard form. Where the installer/applicator does not have a standard form, use the WARRANTY AGREEMENT included in the contract documents.
- Commence the warranties from the date normally applicable for the work.
- Maintain their effectiveness for the times stated.
- Provide warranties no later than the date of the Contractor's Completion Statement.

1.5 WARRANTIES – MANUFACTURER/SUPPLIER

Where warranties are offered covering materials, equipment, appliances or proprietary products, provide all such warranties to the contract administrator.

Provide warranties in favour of the principal. The terms and conditions of such warranties in no case negate the minimum remedies available under common law as if no warranty had been offered. Failure to provide the warranty does not reduce liability for execution and materials for that part of the work.

- Conform to the manufacturer/suppliers standard form.
- Commence the warranties from the date normally applicable.
- Maintain their effectiveness for the times stated.
- Provide warranties no later than the date of the Contractor's Completion Statement.

Guarantees - Contractor

1.6 MASTER BUILD SERVICES LTD GUARANTEE

Provide a Master Build New Homes or Alterations & Additions Guarantee including all costs in the contract price and covering loss of deposit, completion, inspection, execution and material defects under the terms of the guarantee offered by Master Build Services Ltd. Execute with all three signatories: owner, registered master builder and Master Build Services Ltd, before commencing the contract works.

1.7 CBANZ GUARANTEE

Provide a Certified Builders HomeFirst Builders Guarantee. Complete the guarantee application. Before commencing the contract works, execute with the signatures of the owner and the Certified Builder, and forward to CBA Guarantee Ltd along with a copy of the Building Consent, payment schedule and the fee payable.

1237WA WARRANTY AGREEMENT

Contract for: Alterations & Additions to 86 Emerald Glen Rd, Raumati, Kapiti Coast
(the contract works)

Contractor:
(the contractor)

Principal: Mark and Maree Sheffield
(the principal)

Warrantor:
(name of contractor or subcontractor)

Warranted works:
(the warranted works)

Warranty period:_____ years from the date of practical completion of the contract works.

The principal has entered into a contract (the contract) with the contractor for carrying out the contract works. The warranted works are part of the contract works.

The contractor has agreed to arrange for the provision of a warranty in respect of the warranted works for the warranty period on the terms set out in this warranty.

The warrantor has agreed to provide a warranty in respect of the warranted works for the warranty period on the terms set out in this warranty.

1. IT IS HEREBY AGREED

The warrantor warrants to the principal that the warranted work performed shall be as required in the contract. If not specified the work shall be of good trade practice with materials and fittings of merchantable quality.

This warranty shall be in addition to and shall not derogate from any manufacturer's warranty or any warranty implied by law, attaching to any part of the warranted works.

1.1 WARRANTOR'S OBLIGATIONS

The warrantor agrees that if the warrantor is advised by the principal in writing of any defect in the warranted works within the warranty period for which the warrantor is liable under the terms of this warranty, the warrantor will promptly take steps to remedy the defect.

1.2 REMEDIAL WORK

Any remedial work which the warrantor is liable to undertake under this warranty shall be carried out:

- to the standard required by the contract; and
- in a prompt and timely manner; and
- without unnecessary inconvenience to any occupants; and
- at the warrantor's cost; and
- subject to reasonable access being provided to the warrantor for the purpose of carrying out the remedial work.

1.3 REPAIR AND/OR COMPENSATION

Where the cost of replacement of work and/or materials is out of all proportion to the consequences of the defect, or where the defect may not be reasonably capable of rectification without substantial expense which is out of all proportion to the cost of the contract works, the warrantor may:

- where the defect is reasonably rectified by repair rather than by replacement, the warrantor's obligation under this warranty shall be only to repair or otherwise make good the defect or
- propose reasonable monetary compensation in lieu of remedying the defect or

- propose a combination of both repair and compensation.

The principal must consider the warrantor's reasonable proposals and the parties must endeavour in good faith to reach agreement. Where agreement cannot be reached the dispute shall be resolved in accordance with the disputes clause in this warranty.

1.4 FAILURE BY WARRANTOR TO PERFORM REMEDIAL WORK

If the warrantor fails to promptly, adequately and satisfactorily carry out the remedial work or to propose acceptable repair/compensation, the principal may then arrange for the remedial work to be carried out by others.

The principal must first give the warrantor 10 working days notice to carry out and complete the remedial work. If the warrantor does not this within the time, the principal must then advise the warrantor in writing that the work will be carried out by others.

In such event the warrantor is not released from obligations under this warranty, which continues in full force and effect, except in respect of the defect remedied by the principal or by another person contracted by the principal. The reasonable cost of the remedial work carried out by such other persons including all reasonable costs of the principal is to be paid to the principal by the warrantor on demand.

1.5 EXCLUSIONS

The principal agrees that the warrantor is not liable for any defect or damage caused by:

- wilful act or negligence of the principal or any person other than the warrantor; or
- fire, explosion, earthquake, war, subsidence, slips, faulty materials or workmanship other than caused by the defect in the warranted work; or
- any force of nature which the warrantor could not reasonably foresee; or
- any neglect or unnecessary delay by the principal in giving notice to the warrantor of a defect in the warranted works becoming apparent; or
- design faults, errors or discrepancies, unless the warrantor undertook the design of the part of the warranted works the subject of the defect; or
- unintended use of the warranted works by the principal or any occupant thereof; or
- failure by the principal or any occupant thereof to maintain the warranted works in accordance with good practice and any manufacturer's stated or recommended instructions or requirements.

1.6 ASSIGNMENT

The principal may assign the benefit of this warranty to any person.

1.7 DISPUTES

Any dispute between the principal and the warrantor arising out of this warranty is to be referred to arbitration before a sole arbitrator. If within 15 working days of notice of dispute, the principal and the warrantor cannot agree on a single arbitrator, either party may request the president of the Arbitrators & Mediators Institute of New Zealand to appoint an arbitrator.

1.8 NOTICES

Notices given to the warrantor are deemed to have been effectively served on the warrantor if given in accordance with the contract.

EXECUTED BY

Signed by the warrantor: .....

on this: .....day of .....200.....

(And where required to be executed as a deed) signed in the presence of:

Witness signature: .....

Name: .....
(print)

Address: .....

(print)

Occupation: .....

(print)

Signed by the principal: .....

on this: .....day of .....200.....

(And where required to be executed as a deed) signed in the presence of:

Witness signature: .....

Name: .....

(print)

Address: .....

(print)

Occupation: .....

(print)

NOTE – Where the warrantor is not the contractor the warranty agreement must be executed by the warrantor and the principal in the manner required for execution of a deed.

Any of these parties which are a company must execute the warranty by having it signed, under the name of the company, by two or more directors. If there is only one director, it is sufficient if the warranty agreement is signed under the name of the company by that director, but the signature must be witnessed by another person.

The witness must not only sign but must also add his or her occupation and address. Alternatively, companies may execute under power of attorney. Any party which is a body corporate (other than a company) must execute by affixing its seal, which must be attested in the manner provided for in the rules of, or applicable to, the body corporate.

In the case of a party who is an individual, the party must sign and the signature must be witnessed by another person. The witness must not only sign but must also add his or her occupation and address.

1240 ESTABLISHMENT

1. GENERAL

This general section relates to site establishment including: -
- Notices and approvals
- Inspections
- Site preparation
- Signage
- Temporary construction

Notices and approvals

1.1 STATUTORY OBLIGATIONS
Comply with all statutory obligations and regulations of regulatory bodies controlling the execution of the works.

1.2 BUILDING CONSENT AUTHORITY AND NETWORK UTILITY APPROVALS
Attend on Building Consent Authority officers, statutory and network utility inspectors, as necessary to obtain approvals (in addition to building consent approval) for and the satisfactory completion of, the works.

1.3 NOTIFY NETWORK UTILITY OPERATORS
Notify all network utility operators of proposed works before commencing site operations. Ascertain location of services or confirm that none exist in the vicinity of the works. Take all necessary precautions to avoid damage to existing services.

Inspections

1.4 CARRY OUT INSPECTIONS
To be completed by local territorial authority and structural engineer as dircted by building contractor

Site preparation

1.5 SITE AND SOIL SURVEYS
Carry out all investigations necessary and peruse all information available to determine ground conditions and likely ground performance both on the site and adjacent to it. Also refer to the territorial authority project information memorandum (PIM).

Signage

1.6 SITE SIGN
Obtain approval for, provide and erect a timber framed sign board ~ mm x ~ mm fully painted and displaying:
- Title of contract
- Principal's name
- Contractor's name
- Consultants as listed in GENERAL - PROJECT PERSONNEL
- If the contractor wishes, names of contractor and subcontractors.

Temporary construction

1.10 HOARDINGS, GANTRIES, LIGHTING
Provide temporary fencing, hoardings, planked footways, guard rails, gantries and lighting as necessary to protect the public and others, for the proper execution of the works and to meet the requirements of territorial or other authority.

1250 TEMPORARY WORKS & SERVICES

1. GENERAL

This general section relates to temporary works and services required for the construction of the contract works. It includes:

- Temporary works and services including temporary fencing and hoardings
- Scaffolding and shoring
- General care and protection

Temporary works

1.1 COMPLY WITH NEW ZEALAND BUILDING CODE

Refer to New Zealand Building Code clauses and approved document paragraphs for the criteria and/or methods that must be used in this section to establish compliance with the code.

1.2 COSTS RELATING TO TEMPORARY WORKS

Pay all rates/fees in respect of temporary works.

1.3 MAINTENANCE OF TEMPORARY WORKS

Maintain alter, adapt and move temporary works and services as necessary. Clear away when no longer required and make good.

1.4 SAFEGUARD THE SITE, THE WORKS AND MATERIALS

Take all precautions to prevent unauthorised access, including access outside working hours, to the site, the works and adjoining property. Safeguard the site, the works, materials and plant from damage and theft.

1.8 PROVIDE SEDIMENT AND SILT RUN OFF PROTECTION

Provide appropriate measures to prevent or minimise sediment generation and silt run off. Comply with territorial and other authority requirements relating to carrying out earthworks.

Prevent silt run off by:

- exposing only as much ground as required at any time
- providing run off channels, contour drains or earth bunds to divert clean water away from the site on to stable sealed or grassed ground
- capture silt by the use of silt fences, vegetation buffer strips, sediment ponds or earth bunds.

Provide sediment control by:

- earth bunds constructed across the slope to control and detain run off
- silt fences constructed using filter fabric stretched between posts at a maximum of 1 metre spacing.

Pump water from trenches and other areas of the site using methods to prevent sediment entering any drain or watercourse. Filter dirty water before discharging into drainage system.

Temporary services

1.9 WATER

Provide clean, fresh water for the works and make arrangements for distributing about the site.

1.10 ELECTRICITY

Nominate the person to install and be responsible for the complete temporary electrical installation. The name and designation of the person responsible is to be displayed prominently and close to the main switch or circuit breaker.

Inspect and overhaul the installation at such intervals as are prescribed by the network utility operator but not exceeding three monthly intervals.

1.11 TELEPHONE
Provide on site temporary telephone facilities.

Scaffolding and shoring

1.14 GENERAL SCAFFOLDING
Provide as necessary general scaffolding for the efficient execution of the works. Placement, erection and structure to be by certified suppliers/erectors and approved by the Labour Department OSH inspectors before being used. Comply with the OSH publication: "Approved code of practice for the safe erection and use of scaffolding."

Care and protection

1.15 PROTECT EXISTING BUILDINGS
Protect existing buildings and other designated features which are to remain in position during the execution of the works.

1.16 PROTECT EXISTING TREES
Protect existing trees, fences, gates, walls, gardens and other designated site features which are to remain in position during the execution of the works.

Construct a temporary fence at the outer edge of the drip line of trees to be protected. Comply with territorial authority requirements.

1.17 EXISTING SITE SERVICES
Make good all damage to existing roads, footpaths, grounds, sewers or other services, caused in carrying out the contract works.

1.20 TEMPORARY STORAGE
Provide temporary storage areas and protective covers and screens. Fillet stack and protect all framing and structural members from moisture and contamination. Completely protect finishing materials from the weather and damage and store in accordance with the manufacturer's requirements. Protect fabricated elements from the weather and damage, and store in accordance with suppliers' requirements.

1.22 PERIODIC SITE CLEANING
Carry out periodic site cleaning during the contract period. Place waste material in appropriate storage pending removal from the site.

1.24 PERIODIC RUBBISH REMOVAL
Maintain on site appropriate means for the storage and removal of construction waste material. Where required or appropriate provide for the separate storage of recyclable waste and other materials requiring special disposal. Keep food waste separate from construction waste.

1260 PROJECT MANAGEMENT

1. **GENERAL**

This general section relates to project management requirements including:
- Meetings
- Cost control
- Communicating and recording
- Programming
- Health and safety

Meetings

1.1 SITE MEETINGS

Meetings to normally be held: Fortnightly

The following persons to attend:
- Principal
- Contractor
- Architect (tbc)
- Engineer
- Subcontractors when needed (contractor to inform them).

Meeting place:	**86 Emerald Glen Road, Raumati, Kapiti Coast**
Time:	**TBC**
Day:	**TBC**

1.2 MINUTES

The principal is to keep full minutes of all site meetings and arrange distribution to all those involved within 3 working days.

Communicating and recording

1.5 MEANS OF COMMUNICATION

Communications between the parties on shall be as follows

Directions:	In writing delivered by email with a copy by post or hand
Meeting minutes:	In writing by email
RFI's:	(Requests for information) by email or in writing to the contract administrator

1.6 RECORDS

Ensure all records specified are kept, held and collated on site in a form that makes the information easily accessible when it is needed. Distribute copies as and when necessary to those persons entitled under the contract to that information.

1.7 PROGRESS PHOTOGRAPHS

Take digital photographs from positions agreed with the contract administrator at specified frequency and provide copies to the contract administrator.

Frequency:	Monthly
Copies required:	1 set colour prints not less than postcard size
	1 electronic copy delivered on disk or by email

Programming

1.8 CONTRACT PROGRAMME

Include the proposed sequence of all significant on-site and off-site activities, including any intermediate key dates mentioned in the contract. Identify the critical path. Provide a tabulated schedule of information for each activity in order of:

- brief description
- duration in suitable time unit

- earliest start and latest finish time
- total float
- key dates for the supply of information or materials by others.

Identify the dates by which particular information, material or plant need to be supplied or arranged by the contract administrator. Also identify any constraints which may have been imposed by the programme.

Supply copies of the programme to the following:
- Architect 1
- Owner 1

Monitor the contract programme by:
- recording progress regularly on the site chart
- informing the contract administrator promptly of any circumstances affecting any part of the programme structure and timing
- reviewing the programme once a month making alterations as needed and agreed to and re-issuing the required copies.

1.9 WORKING HOURS
Work on site is not restricted. Comply with territorial authority consent conditions and noise and nuisance controls.

1.10 WORKING HOURS RESTRICTIONS
To comply with local territorial authority regulations

Work outside these hours may be permitted, but 24 hours notice is required in writing to the contract administrator before proceeding. Obtain any necessary permits and permission for such work.

Health and safety

1.11 HEALTH AND SAFETY
Refer to the requirements of the Health and Safety in Employment Act 1992. Comply with all relevant New Zealand safety legislation.

Take all practical steps to make the site and the contract works safe and to provide and maintain a safe working environment. Ensure that all those working on or visiting the site are aware of the rules governing site safety, are properly supervised and are not unnecessarily exposed to hazards.

Identify any significant hazards.

Maintain proper procedures for dealing with any emergencies that may arise. Immediately investigate accidents, identify their cause and maintain a register of accidents and serious harm. Provide a copy of any report which the contractor is required to make to a public authority on any accident which is associated with carrying out the contract works and results in serious harm to any person.

Refer to individual work sections for detailed requirements on this project.

1.12 SUSPENSION OF HAZARDOUS WORK
On the request of the contract administrator, acting on reasonable grounds, suspend any identified hazardous activities and proceed to eliminate, isolate or minimise them in order to comply with the Act, without prejudice to any other rights of the principal under the contract.

1.13 SITE SAFETY PERSON
Appoint a suitably qualified site safety person to co-ordinate site safety and to attend all site meetings.

1.14 HEALTH AND SAFETY PLAN

Prepare and submit to the contract administrator before commencing work on site a health and safety plan. Include in that plan all people on site and the general public, as well as the following items and any other necessary item:

- identification of existing and potential construction hazards and risks
- safety procedures to eliminate, isolate or minimise construction hazards
- the equipment to be used to minimise the hazards
- the maintenance of a register of hazards for the site
- the name and qualifications of the site safety person
- emergency procedures
- first aid facilities and safety equipment
- the methodology for notifying, recording and investigating accidents and injuries.

Keep a copy of the plan in the site office

1.15 COMPLY WITH SITE SAFETY PLAN

Carry out all construction operations in accordance with the submitted health and safety plan.

1.16 INFORM EMPLOYEES OF HAZARDS

Inform employees and others on the site of:

- hazards they may be exposed to while working
- hazards they may create while working which could harm others
- how these hazards may be minimised
- emergency procedures
- the location of first aid facilities and safety equipment.

1.17 HEALTH AND SAFETY REGULATIONS, CODES AND GUIDES

Comply with:

- Relevant New Zealand safety legislation including "Health and Safety in Employment Regulations 1995".
- OSH publications including "Guidelines for the provision of facilities for general safety in the construction industry".
- Relevant codes of practice, guides, guidelines and standards.

Until further regulations are made under the Health and Safety in Employment Act 1992 to cover them, the enactments repealed by the Act continue in force until revoked.

1.18 EXPLOSIVES

Do not use explosives except with the written approval of the territorial authority/office of OSH. Comply with their safety requirements and use construction blasters holding a current certificate of competence issued under the Health and Safety in Employment Regulations 1995.

1.19 POWDER-ACTUATED FASTENING TOOLS

Powder-actuated fastening tools to be used only by workers holding current certificates of competence in their name, issued under the requirements of the Health and Safety in Employment Regulations 1995.

1.20 SMOKE FREE REQUIREMENTS

Do not smoke on site except in a designated location, in accordance with the Smoke Free Environments Act 1990. This location to be determined by the contractor with the agreement of the contract administrator.

1.21 RESTRICTIONS

Do not:

- light rubbish fires on the site
- bring dogs on to or near the site
- bring radios/audio players on to the site.

1270 CONSTRUCTION

1. GENERAL

This GENERAL section relates to common requirements for construction issues including: -

- Quality assurance
- Noise and nuisance
- Set out
- Common execution requirements
- Common materials requirements
- Supply of spare materials
- Common requirements for samples and tests
- Final presentation and cleaning
- Commissioning

Quality control and assurance

1.1 QUALITY ASSURANCE

Carry out and record regular checks of material quality and accuracy, including:

- Concrete quality and finish.
- Dimensional accuracy of structural column locations (following completion of foundations).
- All perimeter columns and frames for plumb.
- Levels of all floors relative to the site datum.
- Framing timber moisture content.

Where any material, quality or dimension falls outside specified or required tolerances, obtain written direction from the contract administrator. Where building consent approval is affected, confirm remedial action with the Building Consent Authority.

Provide all materials, plant, attendances, supervision, inspections and programming to ensure the required quality standards are met by all project personnel.

Noise and nuisance

1.2 LIMIT CONSTRUCTION NOISE

Minimise the effects of noise generation by including in the planning of the work such factors as placing of plant, programming the sequence of operations and other management functions. Limit construction noise to comply with the requirements of NZS 6803, the requirements of the Resource Management Act sections 326, 327 and 328 and the Health and Safety in Employment Regulations clause 11.

1.3 ACCEPTABLE NOISE LEVELS

Refer to NZS 6803 Tables 2 and 3 for the upper limits of construction work noise in residential and industrial areas over the various time periods, particularly 0730 to 1800 hours. Note also the allowed adjustments and exemptions in Section 6. Do not exceed these limits.

1.4 PROVIDE INFORMATION TO NEIGHBOURS

Provide information to neighbours of any noise generation from the site liable to constitute a problem. Explain to them the means being used to minimise excessive noise and establish with them the timings most suitable for the noise generating work to be carried on.

Discuss with any complainant the measures being used to minimise noise. Where possible modify these measures to accommodate particular circumstances. Finally, determine the sound level at the location under discussion using methods and observation reporting as laid down in NZS 6803. If the noise level is above the upper limits of tables 2 and 3, cease the noise generating operation and remedy the problem.

1.6 INCONVENIENCE TO OTHERS
When the works are to be carried out in or around occupied premises, ascertain the nature and times of occupation and use. Carry out the works in a manner to minimise inconvenience, nuisance and danger to occupants and users.

1.7 DIRT AND DROPPINGS
Remove dirt and droppings deposited on public or private thoroughfares from vehicles servicing the site to the satisfaction of the appropriate authorities and the contract administrator.

1.8 DAMAGE AND NUISANCE
Take all precautions to prevent damage and nuisance from water, fire, smoke, dust, rubbish and all other causes resulting from the construction works.

Set-out and tolerances

1.10 SET-OUT AND DATUM
Set out the work to conform with the drawings. Establish a permanent site datum to confirm the proposed building ground floor level and its relationship to all other existing and new building levels.

1.13 USE OF SET-OUT INSTRUMENTS
Permit without charge, the use of instruments already on site for checking, setting out and levels.

1.14 CHECK DIMENSIONS
Check all dimensions both on drawings and site, particularly the correlation between components and work in place. Take all dimensions on drawings to be between structural elements before linings or finishes, unless clearly stated otherwise.

1.15 TOLERANCES
All work to be level, plumb, and true to line and face. Unless otherwise specified in specific work sections of this specification, tolerances for structural work shall comply with the following:

Structural steelwork:	To NZS 3404 Part 1 Steel structures standard Section 14.4 Tolerances (after fabrication) Section 15.3 Tolerances (erection)
Timber framing:	To NZS 3604 Timber framed buildings Clause 2.2 Tolerances Table 2.1 Timber framing tolerances

Refer to work sections for tolerance requirements for finishes

Execution

1.16 EXAMINE PREVIOUS WORK
Before commencing any part of the work carefully examine the previous work on which it may depend. Report in writing to the contract administrator defects that may affect the quality of the proposed work and obtain instructions. Commencing work on any part means that previous work is accepted as being satisfactory for work of the required standard.

1.17 WORKER QUALIFICATIONS
All work to be level, plumb, and true to line and face. Employ only experienced workers familiar with the materials and techniques specified.

1.18 MINIMISE DELAYS DUE TO WEATHER
Use appropriate techniques and methods to prevent damage and minimise delays due to weather.

Materials

1.19 NEW PRODUCTS AND MATERIALS
Materials and products to be new unless stated otherwise, of the specified, and complying with all cited documents.

1.20 COMPATIBILITY OF MATERIALS AND FINISHES
Ensure all parts of a construction or finish are compatible and their individual use approved by the manufacturers and suppliers of other parts of the system. Source all parts of a system from a single manufacturer or supplier.

1.21 STORING PRODUCTS AND MATERIALS
Take delivery of and store products, materials and components in accordance with codes of practice and the product manufacturer's or supplier's stated requirements. Maintain the proper condition of any protective packaging, wrappings or supports during delivery, unloading and storage.

1.22 HANDLING PRODUCTS AND MATERIALS
Handle products, materials and components in accordance with codes of practice and the manufacturer's or supplier's stated guidelines. Avoid distortion and any contact with potentially damaging surfaces or conditions.

1.23 SUBSTRATE CONDITIONS
Ensure substrate conditions are within the manufacturer's or supplier's stated guidelines both before and during the installation of any material, product or system. Obtain written instructions on the necessary action to rectify unsatisfactory conditions.

1.24 INSTALLING PRODUCTS AND MATERIALS
Install in accordance with the manufacturer's or supplier's technical literature. Ensure that all installers are familiar with the required substrate conditions and the manufacturer's or supplier's specified preparation, fixing and finishing techniques.

1.25 COMPLY WITH STANDARDS
Comply with the relevant and/or cited Standard for any material or component. Obtain certificates of compliance when requested by the contract administrator.

1.26 CONDITION OF MATERIALS AND COMPONENTS
To be in perfect condition when incorporated into the work.

1.27 INCOMPATIBLE MATERIALS AND METALS
Separate incompatible materials and metals with separation layers, sleeves or gaskets of plastic film, bituminous felt or mastic or paint coatings, installed so that none are visible on exposed surfaces.

Samples and tests

1.28 SAMPLES AND PROTOTYPES
Where specified in the work sections, submit samples, prepare sample panels, and construct prototypes for review as to appearance, form and conformance with the drawings and specifications. Submit all information required to assist the review process, including technical data, manufacturer's literature, independent appraisals and producer statements.

Timing for the provision and review of samples, sample panels and prototypes to be included in the contract programme. Allow a minimum of 10 working days for each review. Proceed only after instructions to proceed have been issued in writing by the contract administrator.

In situ work may be incorporated in the finished work if so confirmed, otherwise allow to remove completely and replace.

1.29 CONTROL STANDARD
Obtain the contract administrator's confirmation of material, component and work samples which then become the quality control standard. Remove from the site any

rejected samples. Retain confirmed samples with care on site for comparison throughout the contract. Remove from the site when no longer required.

Spares

1.30 SPARES
Collect, protect and store safely all spare materials required under the contract. Give the contract administrator an inventory of all spares.

Final presentation and cleaning

1.31 REMOVE TEMPORARY PROTECTION
Remove all temporary markings, coverings, labels and protective wrappings unless instructed otherwise.

1.32 REPLACE DAMAGED MATERIALS
Replace all materials or component damaged during the works to the standard of and integral with the original.

1.33 COMPLETE ALL SERVICES
Ensure all services are complete and operational, with all temporary labelling removed, required labelling fixed and service instructions provided.

1.34 CLEANING BY CONTRACTOR
Clear the contract works of all construction materials, waste, dirt and debris. Clean the contract works including:

- Wipe all surfaces to remove construction dust
- Clean out service ducts and accessible concealed spaces
- Clean out all gutters and rainwater heads
- Wipe dust from both sides of glass. Take particular care when removing paint or cementitious materials to not damage the glass.
- Remove adhesive residue left by labels and other temporary protection/markings
- Clean out the interior of all cabinetry
- Wash down external concrete including driveways and concrete masonry. Take care when waterblasting to not cause damage to the surface or allow water to enter the building.
- Remove rubbish and building material from the area immediately adjacent to the contract works

Commissioning

1.36 MOVING PARTS
Adjust, ease and lubricate all doors, windows, drawers, hardware, appliances, controls and all moving parts to give easy and efficient operation.

1.37 TESTS AND CERTIFICATION
Plumbing and electrical

1.38 SECURITY AT COMPLETION
Remove any temporary lock cylinders and complete final keying prior to handing over keys to the principal on completion of the works. Leave the works secure with all accesses locked. Account for all keys/cards/codes and hand to the principal along with an itemised schedule, retaining a duplicate schedule signed by the principal as a receipt.

2110 DEMOLITION MINOR

1. GENERAL

This section relates to the demolition of existing buildings and structures in whole or in part, to the extent necessary to carry out the new work.

1.1 DOCUMENTS

Documents referred to in this section are:

NZS 6803	Acoustics - Construction noise
OSH	Approved code of practice for demolition
OSH	Guidelines for the management and removal of asbestos

Health and Safety in Employment Act 1992

1.2 QUALIFICATION

Carry out demolition only under the supervision of a suitably experienced person and using only experienced operators and drivers. Use only experienced, certified, construction blasters for explosives demolition.

1.3 NOISE

Refer to NZS 6803, tables 2 and 3 for the allowable upper limits of construction work noise in residential, commercial and industrial areas over the various time periods. Use silenced and noise insulated plant to ensure compliance with these requirements.

1.4 NUISANCE

Take all precautions necessary to minimise nuisance caused by dust, dirt, rubbish and water.

1.5 HEALTH AND SAFETY IN EMPLOYMENT

Comply with the Health and Safety in Employment Act 1992 in general and the OSH publication: Approved code of practice for demolition, clause 1.2, A summary of the Health and Safety in Employment Act 1992.

1.6 BUILDING CONSENT REQUIREMENTS

Demolition work to be carried out to building consent requirements

1.7 INSPECTIONS

Inspection of the demolition work to take place at each of the stages as scheduled in the building consent. Confirm a written programme to facilitate these inspections, including notification when each stage of the work is ready for inspection. Allow 48 hours advanced notice for the inspections.

Obtain and pay for any required inspections which are additional to the building consent.

1.8 SURVEY

Before commencing work, carry out a thorough survey and examination of all buildings or structures to be demolished in order to ensure the extent, sequence, technique and method of demolition proposed can be safely and efficiently carried out.

Take photographs of the works, adjacent buildings and sites, before commencing work. Provide a set of these photographs as a record of existing condition.

1.9 SERVICES

Before commencing demolition, arrange with all utility network operators to disconnect services and remove fittings and equipment. Pay all fees and charges for this work.

1.10 MATERIAL

Material from the demolition becomes the property of the contractor except where expressly provided otherwise. Remove redundant materials from the site as work proceeds.

1.11 SALVAGE

Designated items remain the property of the owner.

1.12 BURNING OF MATERIALS
Burning of materials is not permitted on site.

2. PRODUCTS

2.1 ELEMENTS FOR SALVAGE OR RE-USE
Carefully dismantle, remove and store on site where directed. Protect from damage and weather until required.

3. EXECUTION

3.1 DEMOLITION GENERALLY
Comply with the requirements of the OSH publication: Approved code of practice for demolition. Submit a written demolition plan to the requirements of clause 4.8, Demolition plan (method statement).

3.2 ADJOINING PROPERTY
Support and protect adjoining property. Survey adjoining properties and take all precautionary measures necessary to avoid damage or nuisance. Copy of the survey results to be sent to adjoining property owners.

3.3 PROTECT
Protect retained parts of existing buildings, the site and site structures, trees and shrubs. Take care in the cutting away and stripping out to reduce the amount of making good.

3.4 SUPPORT
Support and brace the existing structure during the cutting of new openings or the replacement of structural parts. Prevent debris from overloading any part of the structure. Do not remove supports until the new work is strong enough to support the existing structure. Ensure all work remains structurally stable and sound.

3.5 TEMPORARY SCREENS
Erect approved screens wherever penetration of weather, dust and dirt needs to be prevented. Adjust screens as work proceeds.

3.6 SITE SAFETY
Prevent access by unauthorised persons. Illuminate and protect all holes, unsafe buildings and other hazards. Leave site and buildings safe at the close of each day's work.

3.7 FLAMMABLE OR EXPLOSIVE CONDITIONS
Prevent fire or explosion and arrange to alert the appropriate authority where any danger exists.

3.8 DEMOLISH
Demolish buildings and structures down to the existing finished ground level. Do not remove support to adjacent properties or buildings.

3.10 DEMOLITION, ASBESTOS
Where demolition work includes contact with or removal of material containing asbestos, comply with the OSH publication: Guidelines for the management and removal of asbestos.

3.11 DIG OUT
Dig out foundations, footings, basements, floor slabs, paths, drains, cesspits and manholes that are part of or service the demolished building. Do not backfill the resulting voids.

3.12 SALVAGE
Carefully dismantle and store safely all salvage items where directed; for removal, use on the site, or until completion of the works.

3.13 REINSTATE AND MAKE GOOD
Reinstate and make good demolition damage to adjoining properties, existing work, services, or property.

3.14 TAKE AWAY
Take away from the site all plant and equipment, temporary access works and demolished materials and elements. Leave the site completely clean and tidy.

4. SELECTIONS

4.1 ELEMENTS FOR SALVAGE OR RE-USE

Item	Action
Nil	

3410 STRUCTURAL STEELWORK

1. GENERAL

This section relates to the fabrication, erection and specialist coating of structural steelwork of a general nature.

1.1 DOCUMENTS

Documents referred to in this section are:

NZBC F5/AS1	Construction and demolition hazards
AS/NZS 1111	ISO metric hexagon commercial bolts and screws
AS/NZS 1252	High-strength steel bolts with associated nuts and washers for structural engineering
AS/NZS 1554.1	Structural steel welding - Welding of steel structures
AS/NZS 2312	Guide to the protection of iron and steel against atmospheric corrosion
NZS 3404.1	Steel structures Standard - Steel structures Standard
AS 3828	Guidelines for the erection of building steelwork
AS/NZS 4680	Hot-dip galvanized (zinc) coatings on fabricated ferrous articles
HERA	Report R4-99 "HERA specification for the fabrication, erection and surface treatment of structural steelwork".

1.3 QUALIFICATIONS

Welders to be qualified, experienced competent workers, familiar with the materials and the techniques specified.

1.4 SHOP DRAWINGS

Supply 1 set of shop and erection drawings to the owner for review prior to fabrication.

1.5 SHOP DRAWINGS REVIEW

Shop drawings review indicates the design concept has been reviewed without the need for further modification. This does not relieve the contractor of any responsibility for the correctness of the shop drawings, site dimensions, or for ensuring the work is performed in compliance with the drawings and specifications.

1.6 VERIFY DETAILS AND DIMENSIONS

Refer to drawings to ensure all required details and fixings are provided for in the structural steelwork. Verify dimensions against site measurements prior to fabrication.

1.7 TEST WELDING

Non-destructive weld examination with method, extent and standards of acceptance to AS/NZS 1554.1, Section 7 and Table D1of NZS 3404 part 1.

2. PRODUCTS

2.1 STRUCTURAL STEEL

All steel Grade 300, except RHS sections Grade 350, unless noted otherwise on the drawings. Test and stress relieve for brittle fracture when required by NZS 3404.1, section 17, Testing of structures or elements.

2.2 WELDING

Electrodes to comply with and be selected for the grade of steel being welded as required by AS/NZS 1554.1. Welding wire as required by the wire manufacturer for the materials to be joined and the welding position. Welding flux: dry and used from sealed containers. Material for arc stud welding to comply with AS/NZS 1554.1.

2.3 BOLTS, NUTS AND WASHERS

To AS/NZS 1111 and AS/NZS 1252. Hot-dip galvanize all bolts, nuts and washers forming a permanent part of any structure subject to a protective coating, to AS/NZS 4680.

3. EXECUTION

3.1 SURFACE FINISH
Grind off all burrs and sharp arrises.

3.2 TOLERANCES
Discard material showing visual defects affecting its structural integrity. Structural elements to comply with NZS 3404.1, section 14.4, Tolerances (straightness, full contact splices, length and struts not prepared for full contact). Comply with the required tolerances laid down for holding down bolts, columns, beams and other members in HERA Report R4-99, sections 2.5, 4.5 and 5.6.

3.3 CUTTING
To NZS 3404.1, clause 14.3.3, Cutting and HERA Report R4-99, sections 1.5 and 4.6. Hand cut only where machine cutting is not possible.

3.4 CONSTRUCT
Construct the steel structure as detailed and to NZS 34041.1, section14, Fabrication and section 15, Erection.

3.5 WELDING
To NZS 3404.1, clause 14.3.4 Welding and AS/NZS 1554.1. Comply with AS/NZS 1554.1 for guidance on welding inspection and quality control.

3.6 WELDING NEAR TOUCHING STEELWORK
Shop weld together touching or near-touching steelwork all round with 5 mm (one pass) continuous fillet welds unless denoted otherwise on the drawings.

3.7 HOLING
To NZS 3404.1, clause 14.3.5 Holing, for sizes, alignment, finishing and punching of holes.

3.8 BOLTING
Bolting to comply with NZS 3404, clause 14.3.6, Bolting.

3.9 THREADS EXCLUDED FROM SHEAR PLANE
Select length of bolts such that the threaded portion does not occur within the shear plane between joined parts.

3.10 START ERECTION
Start erection only when the holding down bolts and anchorages have achieved sufficient strength. Carry out the erection of the structural steel to the requirements of AS 3828. Comply with NZBC F5 and NZS 3404.1, section 15, Erection. Provide temporary bracing as required to achieve stability during erection.

3.11 BASE PLATES
Enlargement or site cutting of holes not permitted. Bending or displacement of holding down bolts not permitted.

3.12 COLUMNS
Plumb columns using sawn steel packs and wedges not larger than necessary for the purpose. The column base must not be raised by more than 25 mm. Fill space beneath the base plate with cement-sand grout, containing a non-shrink additive, the grout having a minimum compressive strength of 30MPa at 28 days. Alternately use a dry pack of 1:2 cement with the sand mortar hammered in tight to ensure complete filling of space.

3.13 INSPECTION
Inspect all stages of fabrication and construction of the structure to NZS 3404.1, sections 14, Fabrication and 15 Erection.

3.14 ENCASED STEELWORK
Clean the steelwork to be encased in concrete to remove all loose mill scale, rust, dirt and other matter affecting bond with concrete. .Achieve this by wire brushing and the use of suitable solvents.

3.15 BRUSHING AND POWER TOOL CLEANING

Remove oil and grease by the use of solvents. Scrape and power wire brush to a minimum class 2 finish to AS 1627.2. Clean to bright metal, but avoid producing a polished surface. Check that no burrs or sharp arrises remain which may prevent the full coating thickness being attained.

3.16 ABRASIVE BLASTING

Remove oil and grease by the use of solvents. Abrasive blast clean to a class $2^1/_2$ finish to AS 1627.4. Clean to bright metal, but avoid producing a polished surface. Select grit type and equipment such that the cleaned surface profile between peaks and valleys does not exceed one third of the dry film thickness. Check that no burrs or sharp arrises remain which may prevent the full coating thickness being attained.

3.17 PRIMING GENERALLY

Coat steelwork, unless specifically noted otherwise, with the specified priming paint, including patch priming on site after erection.

3.18 STEELWORK BEING GALVANIZED

Clean sections thoroughly and apply zinc coating by the hot-dip process to the requirements of AS/NZS 4680. Average zinc coating to be not less than the following:

Structural steelwork	Average coating	Minimum coating
≤ 1.5 mm	45 microns	35 microns
> 1.5 mm - ≤ 3 mm	55 microns	45 microns
> 3 mm - ≤ 6 mm	70 microns	55 microns
> 6 mm	85 microns	70 microns

3.19 STEELWORK BEING ZINC OR ALUMINIUM SPRAYED

To AS/NZS 2312 with clear seal finish

- Abrasive blast clean to AS 1627.4, class $2^1/_2$, minimum profile 10 microns
- Apply spray coating before discoloration and within 4 hours
- Steel temperature 3°C minimum above dew point and less than 150°C.

Finished dry film thickness to NZS 2312, table 6.1 for the specified classification with a minimum adhesion of 10 MPa. Sealed coating to have a uniform appearance with coating defects not exceeding 1 mm diameter and not exceeding 0.5 mm height.

3.20 UNPAINTED SURFACES

Do not paint:

- faying face of high strength friction grip bolted joints
- areas for site welding, keeping 75 mm clear all round
- surfaces being embedded in concrete.

Where steel is only partly encased then extend priming 25 mm maximum into the concrete encasement area.

3.21 PATCH PRIMING

Clean areas of damaged priming and areas left clear for site jointing to a standard comparable with that specified for shop cleaning. Wash off chemical deposits from welding fumes. Apply priming coats to the same standard as shop primers, ensuring thorough coating of bolts, nuts and connection areas. Reprime if more than 4 weeks elapse before the final coating system is applied.

3.22 COATING SYSTEMS

Apply all coatings in accordance with the coating manufacturer's requirements. Apply coatings to steel within 4 hours of cleaning and before condensation or light rusting can occur. Ensure steel is dry and atmospheric conditions warm and dry, with an air temperature of greater than 12°C and relative humidity less than 85%.

3.23 TOUCH-UP

Touch up primer. Apply protective coatings as specified.

4. SELECTIONS

4.3 PRIMER AND PROTECTIVE COATINGS
Brand/type: **Refer to ARC Specification Addenda 1: Specification for steelwork**

4.4 SHOP PRIMING
Dry film build: **75 microns**

4160T THERMAKRAFT WRAPS, UNDERLAYS AND DPC

1. GENERAL

This section relates to the application of **Thermakraft** Industries (NZ) Ltd, DPC, DPM, underfloor foil insulation, wall wraps and roofing underlays.

Documents

1.2 DOCUMENTS REFERRED TO

Documents referred to in this section are:

NZBC E2/AS1	External moisture
AS 1530	Methods for fire tests on building materials, components and structures
NZS 2295	Pliable, permeable building underlays
AS/NZS 2904	Damp-proof courses and flashings
NZS 3604	Timber framed buildings
NZS 4200	Pliable building membranes and underlays
AS/NZS 4347	Damp-proof courses and flashings - Methods of test
AS/NZS 4534	Zinc and zinc/aluminium-alloy coatings on steel wire

BRANZ Appraisal Certificate No. 356
Thermakraft Cover-up™ breather-type building membrane

BRANZ Appraisal Certificate No. 329
Thermakraft Supercourse 500™ damp-proof course and concealed Flashing

BRANZ Appraisal Certificate No 584
Thermakraft Watergate Breather/Absorbent type wall wrap

BRANZ Appraisal Certificate No. 560
Thermakraft MirraBlack damp proof course

BRANZ Appraisal Certificate No. 549, **Thermakraft Diflex 130** Building Wrap

BRANZ Appraisal Certificate No. 614, **Thermakraft Aluband™ /Aluminium** window sealing tape and **Aluband™** corner moulded piece system

NZMRM NZ Metal Roof and Wall Cladding - Code of Practice

Documents listed above and cited in the clauses that follow are part of this specification. However this specification takes precedence in the event of it being at variance with the cited document.

1.3 MANUFACTURER'S DOCUMENTS

Thermakraft documents relating to work in this section are:
Thermakraft product manual and technical data sheets.

Copies of the above literature are available from:

Web:	www.thermakraft.co.nz
Telephone:	0800 806 595

1.4 MANUFACTURER'S WARRANTY

Warrant this work under normal environmental and use conditions against failure of materials and execution. Thermakraft Industries Ltd warrant performance of products if design and installation complies with relevant technical literature, NZBC, and recognised industry Codes of Practice.

1.5 ABBREVIATIONS

The following abbreviations are used in this specification.

NZMRM	New Zealand Metal Roofing Manufacturers Inc.
NASH	National Association of Steel Framed Buildings

1.6 INTERPRETATION

Wall underlay used in this specification has the same meaning as building wraps in NZS 3604 and NZBC E2/AS1.

Requirements

1.7 NO SUBSTITUTIONS
Substitutions are not permitted to any specified materials, or associated products, components or accessories.

1.8 INSTALLATION SKILL LEVELS
Installers to be experienced in the installation of **Thermakraft** products and familiar with **Thermakraft** Industries technical literature and the NZMRM NZ Metal Roof and Wall Cladding - Code of Practice.

2. PRODUCTS

Materials

DPC

2.4 EMBOSSED POLYETHYLENE
Supercourse 500, hi-impact polyethylene film to AS/NZS2904 and embossed on both sides. Thickness 500 microns minimum, manufactured for use as a damp-proof course and concealed flashings around doors and windows and to BRANZ Appraisal Certificate No. 329.

Roofing underlay

2.17 BITUMINOUS SELF-SUPPORTING ROOFING UNDERLAY
Thermakraft 215™, bituminous self-supporting roofing underlay to NZS 2295 and AS/NZS 4200 heavy duty classification.

2.27 GUTTER AND UNDER FLASHINGS
Thermakraft 215™, bituminous breather type building paper cut to width for use under valley, apron flashing and internal gutters.

Soffit liner cut to width from **Thermakraft 210™** bituminous breather type building paper. Refer to SELECTIONS.

2.28 TAPE
Thermakraft tapes to compliment the underlay. Pressure sensitive aluminium foil tapes for joining foil insulation and vapour barriers. **Thermakraft Aluband™ / Aluminium Window Flashing** tape can be used to repair damaged bituminous building papers.

3. EXECUTION

Conditions

3.1 GENERAL REQUIREMENTS
Design application and installation of **Thermakraft** Building products to NZBC E2/AS1, BRANZ Appraisals, **Thermakraft** Technical Literature and Industry Codes of Practice.

3.2 STORAGE
Store building underlays and accessory materials, under conditions that ensure no deterioration or damage. Store rolls in an upright position on a smooth floor and protected from sunlight, UV radiation and moisture.

3.3 INSPECTION
Before starting work, check that the building construction phase will allow work of the required standard. Carry out remedial work identified before laying underlay.

Application - DPC/ DPM

3.4 DPC TO LOSP TREATED TIMBER
Lay Supercourse 500 / MirraBlack DPC under LOSP or CCA treated bottom plate of all timber framed walls on concrete, in a single layer with 50 mm overlaps at joints to provide a waterproof barrier.

3.5 DPC TO TIMBER / STEEL
Lay DPC under the bottom plate of all timber / steel framed walls on concrete, in a single layer with 50 mm overlaps at joints to provide a waterproof barrier. Refer to SELECTIONS for type.

3.6 DPC TO MASONRY AND BRICK VENEER
Lay DPC along based of cavity and fix top edge to studs with galvanized clouts. Turn DPC out over concrete rebate under bottom course of veneer.

Application - Roofing underlay

3.12 BUILDING PAPER ROOF UNDERLAY
Lay vertically over purlins on wire netting with a 150 mm side lap. Fix securely to purlins with galvanized fixing clips. Lay underlay to avoid excessive dishing between purlins. When used vertically limit individual runs to 10 metres for bituminous based papers, 7 metres for fire retardant underlays and **CoverTek™** in 20 metres.

Lay horizontally across the rafter/trusses starting at the gutter line with succeeding sheets in true alignment and lapping 150 mm. Scribe around and fit neatly to all penetrations. Avoid prolong exposure by installing the roof immediately. Installation to comply with NZBC E2/AS1 clause 8.1.5.1.

3.13 GUTTER AND UNDER FLASHINGS
Lay **Thermakraft 215™** bituminous breather type building paper cut to width by manufacturer for use as an underlay to valley, apron flashings, and internal gutters. Lap under flashings with adjoining underlays. Fix **Thermakraft 210™** bituminous breather type building paper soffit liner from top plate down 150 mm past ribbon plate.

Completion

3.14 CLEAN UP
Clean up as the work proceeds.

3.15 LEAVE
Leave work to the standard required by following procedures.

3.16 REMOVE
Remove debris, unused materials and elements from the site.

4. SELECTIONS

4.1 DPC
Type: **Supercourse 500™**

4.6 ROOFING UNDERLAYS
Type: **Thermakraft 215™** bituminous self-supporting breather type building paper

4.11 GUTTER AND UNDER FLASHINGS
Type: Gutter flashing underlay 300mm wide

4311D DIMOND PROFILED METAL ROOFING

1. **GENERAL**

This section relates to the supply and fixing of **Dimond** profiled roofing complete with accessories

Documents

1.2 DOCUMENTS REFERRED TO

Documents referred to in this section are:

AS/NZS 1170.2	Structural design actions - Wind actions
AS 1397	Steel sheet and strip - hot-dipped, zinc-coated or aluminium/zinc-coated
NZS 2295	Pliable, permeable building underlays
AS 3566	Self-drilling screws for the building and construction industries -
NZS 3604	Timber framed buildings
AS/NZS 4200.1	Pliable building membranes and underlays - Materials
AS/NZS 4200.2	Pliable building membranes and underlays - Installation requirements
AS/NZS 4534	Zinc and zinc/aluminium-alloy coatings on steel wire
AS/NZS 4389	Safety Mesh
NZMRM	NZ Metal roof and wall cladding - Code of practice

Documents listed above and cited in the clauses that follow are part of this specification. However, this specification takes precedence in the event of it being at variance with the cited document.

1.3 MANUFACTURER'S DOCUMENTS

Manufacturer's and supplier's documents relating to work in this section are:
Dimond Roofing and Cladding Systems Manual, September 2001

Copies of the above literature are available from **Dimond**

Web:	www.dimond.co.nz (Architects and specifiers section)
Telephone:	0800 DIMOND (0800 346 663)

1.4 ABBREVIATIONS

The following abbreviations are used throughout this part of the specification:

BMT	Base metal thickness
MRM	New Zealand Metal Roofing Manufacturers Inc
MS	Modified silicone

Requirements

1.5 NO SUBSTITUTIONS

Substitutions are not permitted to any specified system, or associated components and products.

1.6 QUALIFICATIONS

Roofers to be Dimond Certified Commercial Installer, or experienced, competent roofers familiar with **Dimond** products.

Carry out work with experienced, competent installers familiar with the products being used and with appropriate qualifications such as the National Certificate in Metal Roofing and Cladding.

Warranties

1.7 WARRANTY - INSTALLER/APPLICATOR

Warrant this work under normal environmental and use conditions against weatherproofing failure.

Period:	5 years from the date of completion of the roof
Form:	Roofing installers standard form

Include a copy of the **Dimond** maintenance requirements with the warranty.
Refer to the general section WARRANTIES - INSTALLER/APPLICATOR for additional requirements.

Provide one bound copy of all relevant **Dimond** maintenance information on completion of the roofing work.

1.8 WARRANTY - MANUFACTURER/SUPPLIER
Warrant this work under normal environmental and use conditions against materials failure.

15 years	For failure of coating adhesion
15 years	For weatherproofing by material penetration
Form:	**Dimond** standard form

Performance

1.9 FIXINGS, WIND
Design and use the fixings appropriate for the wind zone (R) and topographical classification (T) of this site and building height; as required by NZS 3604 and the wind loads on various wall areas as given by AS/NZS 1170.2. Allow for specific loadings at corners and the periphery of the roof, where localised pressure factors apply.

1.10 CO-ORDINATE
Co-ordinate to ensure substrate and preparatory work is complete and other work programmed in the order required for access and completion of the roof. Ensure that all necessary members are positioned so that flashings can be fastened at both edges through the roof profile or cladding to the primary structure.

1.11 PERFORMANCE
Accept responsibility for the weather-tight performance of the completed roofing system, including penetrations through the roof and junctions with walls and parapets.

2. PRODUCTS

Materials

2.3 UNDERLAY
Breather type kraft paper laminates to NZS 2295.

2.11 FLASHINGS GENERALLY
Formable grade 0.55 BMT for galvanized, aluminium/zinc-coated and pre-painted steel, and 0.90 for aluminium to the same standards as the profiled sheets, notched where across profile or provided with a soft edge.

2.12 FLASHINGS TO VERGE, RIDGE AND HIP
Supplied by the roofing manufacturer to match or to suit the roofing.

Components

2.13 FASTENERS GENERALLY
Minimum Class 4 durability and not less than the roofing material being fixed. Screw fasteners to be head stamped identifying the manufacturer and class.

2.14 FIXING CLIPS
Galvanized steel (powder coated for aluminium) to suit the material and profile of the rigid sheet and location as required by the roofing manufacturer. Fix to steel with 16 mm x 10 gauge galvanized wafer head self-drilling screws and to timber with 50 mm long x 4.5 mm galvanized spiral rolled flat head nails.

2.15 FIXING SCREWS
To AS 3566. Screws appropriate to the roofing material and the supporting structure, as required by the roofing manufacturer and with a minimum Class 4 durability and not less than the material being fixed.

2.16 RIVETS
Sealed aluminium, minimum diameter 4 mm.

Accessories

2.17 SEALANT
Neutral curing MS sealant or polymer sealant as required by the roofing manufacturer and used as directed.

2.18 CLOSURE STRIPS
Non-bituminous compressible, profiled foam strips to fit the sheet profile.

2.19 LAP SEALING TAPE
Closed cell self adhesive nitrile tape.

3. EXECUTION

Conditions

3.1 INSPECTION
Inspect the roof framing and supporting structure to ensure that it is complete and fully braced ready for roofing and free from any misalignments or protrusions that could damage the roofing.

3.2 STORAGE
Take delivery of and accept packs of roofing undamaged on delivery. Reject all damaged material. Store on a level firm base with packs well ventilated and completely protected from weather and damage. Do not allow moisture to build up between sheets. If sheet packs become wet, fillet or cross stack to allow air movement between sheets.

3.3 HANDLING
Avoid distortion and contact with damaging substances, including cement. Do not drag sheets across each other and other materials. Protect edges and surface finishes from damage. Use soft, flat sole shoes when fixing and for all other work on the roof.

3.4 SEPARATION
Isolate dissimilar materials in close proximity as necessary by painting the surfaces or fitting separator strips of compatible materials. Place isolators between metals and treated timber and cement based materials. Do not use unpainted lead sheet or copper in contact with or allow water run-off onto galvanized or aluminium/zinc coated steel.

Application

3.7 LAY ROOF UNDERLAY
Fit and lap roofing underlay/foil over the netting/mesh. Lay underlay/foil horizontally or vertically with a 150 mm side lap, oversailing the spouting and/or gutters by 20 mm.

3.9 SET-OUT
Carefully set out with consideration of the position of side laps to take account of the prevailing wind and line of sight. Ensure all sheets are square and oversailing the gutter true to line. Check during fixing to eliminate creep or spread and string lines along purlin centres to keep fastenings in line.

3.10 END LAPS
End laps are not permitted, except where specifically detailed.

3.11 THERMAL MOVEMENT
For sheet lengths more than 18 metres, make provision for thermal expansion where required

3.12 FIXING GENERALLY
Install and fix in accordance with the NZMRM NZ Metal roof and wall cladding - Code of practice recommendations, and to the roofing manufacturer's required fixing patterns and details for each area of the building roofing. Use only screws as required by the roofing manufacturer. Paint colour matched fixings and accessories before installation.

3.14 MARKING AND CUTTING
Cut only by shearing tools. Do not use black lead pencils for marking aluminium/zinc coated products.

3.15 FIX SHEETS
Fix sheets in place using the fastening system required by the roofing manufacturer for specified profiles, making due allowance for dynamic local wind pressures on the building and thermal movement in the sheet.

3.16 STOP ENDS AND DOWNTURNS
Form stop-ends at the upper end of sheets. Form downturns at the gutter line where the roof pitch is less than 8 degrees. Form using the required tools.

3.17 FLASHINGS
Flash roof to parapets, walls and penetrations to detail. Flashings to be installed on timber framing with a moisture content of less than 25%. Where no detail is provided flash to NZ Metal roof and wall cladding - Code of practice recommendations and the roofing manufacturer's requirements. Cut accurately and fix using sealant and rivets to detail and to the roofing manufacturer's requirements to form a weatherproof cover. For highly visible flashings, plan joints/junction to take account of the aesthetic requirements.

3.18 SEPARATION
Separate metal sheeting from CCA treated timber with building paper or other suitable isolation material.

3.19 USE OF SEALANTS
Select and use sealants only as recommended by the roofing manufacturer. Apply sealant in two narrow beads transversely across flashing intersections, close to the two edges. Avoid exposing sealant on outside surfaces.

3.20 FLASHING PENETRATIONS
Flash all penetrations through the roof. Fit pipe flashings with a proprietary collar flashing, with other penetrations flashed as detailed and to provide a weathertight installation. Ensure that flashings are set to avoid any ponding of water.

Completion

3.21 REPLACE
Replace damaged or marked elements.

3.22 LEAVE
Leave this work complete with all necessary flashings, undercloaks, valleys, ridges and hips all properly installed as the work proceeds so the finished roof is completely weathertight.

3.23 REMOVE
Remove trade rubbish and unused materials from the roof and surrounds daily during the work. Sweep down at the end of each day, and clean out spoutings, gutters and rainwater pipes on completion of the roof. Remove debris, unused materials and elements from the site.

4. SELECTIONS

4.2 ROOFING UNDERLAYS

Brand/type: Refer to specification chapter 4160t thermakraft wraps, underlays and dpc

Roofing

4.5 DIMOND TROUGH SECTION ROOFING

Profile: LT7
BMT/material: 0.55 mm steel
Coating system: Colorsteel Maxx
Dimond colour: Client to select

Accessories

4.11 FLASHINGS - GENERALLY

Material/thickness: Proprietary eave flashings to match

4391 RAINWATER SYSTEMS

1. GENERAL

This section relates to rainwater disposal systems including spouting and downpipes:
- PVC

Documents

1.2 DOCUMENTS REFERRED TO

Documents referred to in this section are:

NZBC E1/AS1	Surface water
AS 1273	Unplasticised PVC (uPVC) downpipe and fittings for rainwater
MRM	NZ Metal roof and wall cladding - Code of practice

Documents listed above and cited in the clauses that follow are part of this specification. However this specification takes precedence in the event of it being at variance with the cited document.

1.3 MANUFACTURER'S DOCUMENTS

Manufacturer's and supplier's documents relating to work in this section are:
Marley New Zealand

Copies of the above literature are available from
Telephone: 0800 627 539

1.4 ABBREVIATIONS AND TERMS

The following abbreviations are used throughout this part of the specification:

BMT	Base metal thickness
MRM	New Zealand Metal Roofing Manufacturers Inc
Spouting	Roof gutter bracketed off the roof edge or fascia.
Gutter	Internal gutter or gutter formed as integral part of the roof fabric.

Requirements

1.5 QUALIFICATIONS

Work to be carried out by tradesmen experienced, competent and familiar with the materials and techniques specified.

Warranties

1.6 WARRANTY

Warrant this work under normal environmental and use conditions against:

3 years:	For weatherproofing by substandard workmanship:
From:	Commence the warranty from the date of completion of installation
Form:	Installers standard warranty form

Refer to the general section WARRANTIES for details of when completed warranty must be submitted.

1.7 WARRANTY - MATERIAL

Warrant this work under normal environmental and use conditions:

10 Years	For failure of coating adhesion
10 Years	For weatherproofing by material penetration

Form: Manufacturer's standard warranty form
From: Commence the warranty from the date of completion of installation

Refer to the general section WARRANTIES for details of when completed warranty must be submitted.

Performance

1.8 TEST
Test the completed rainwater disposal system with water to ensure spoutings are laid to correct falls, that both spouting and downpipes are unobstructed and that no ponding occurs in spoutings.

2. PRODUCTS

Materials - uPVC

2.1 uPVC SPOUTING
Rainwater system to AS 1273, profile, jointing, brackets, rainwater heads and fittings brand matched and complete to the manufacturer's requirements. Refer to SELECTIONS for type.

2.2 uPVC DOWNPIPES
To suit the spouting system, pipes solvent cement jointed and complete with stand-off brackets, galvanized screws and accessories, brand matched and complete to the manufacturer's specifications. Refer to SELECTIONS for type.

Components

2.9 FASTENERS GENERALLY
Minimum Class 4 durability and not less than the roofing material being fixed.

2.10 RIVETS
Sealed aluminium, minimum diameter 4 mm.

2.11 SEALANT
MS Polymer sealant.

3. EXECUTION

Conditions

3.1 HANDLE AND STORE
Handle and store downpipes, spouting and accessories to avoid damage. Store on site under cover, on a clean level area, stacked to eliminate movement and away from work in progress. Avoid exposure to sunlight if strippable film is still on the product.

3.2 SUBSTRATE
Check that fascias, barges or cladding are level and true to line and face and will allow work of the required standard without distortion to the product alignment. Do not proceed until they are up to standard.

3.3 THERMAL MOVEMENT
Make adequate provision in the fixing and jointing of the spouting for thermal movement in the length of the spouting. Provide an expansion joint in spouting over 18 metres in length for steel gutter.

3.4 CORROSION
Separate metals subject to electrolytic action from each other and from treated timber, concrete and other lime substances by space, painting of surfaces, taping, or separator strips. Do not allow copper downpipes to discharge onto lower galvanized or zinc aluminium coated steel roofs.

Application - uPVC

3.5 INSTALL uPVC SPOUTINGS
From high points fix brackets true-to-line to give a fall of 1 mm every 2 metres to outlets. Allowing for necessary expansion, fit expansion joiners, assemble and fit spouting to brackets complete with all accessories solvent welded or rubber sealed.

3.6 INSTALL uPVC DOWNPIPES
Assemble downpipes, solvent welded complete, fit to outlets, galvanized screw fix with pipe clips to rigidly stand 25 mm off the wall, plumb and discharging into the stormwater gully or pipe inlet to the downpipe manufacturer's required practice.

Completion

3.23 REPLACE
Replace damaged or marked elements.

3.24 LEAVE
Leave the whole of this work discharging completely and freely into the stormwater system and free of all debris. Leave work to the standard required by following procedures.

3.25 REMOVE
Remove debris, unused materials and elements from the site.

4. SELECTIONS

4.1 SPOUTING

Brand:	Marley
Profile/size:	Stormcloud 78mmhx123mmd
Material:	uPVC
Colour:	White

4.3 DOWNPIPES

Brand:	Marley
Profile/size:	Round 80mm (Code RP80)
Material:	uPVC
Colour:	White

4505 GARAGE DOORS

1. GENERAL

This section relates to the manufacture, supply and installation of garage door systems including required opening/operating systems.

Related work

1.1 RELATED SECTIONS

Refer to GLAZING for glazing not forming part of the proprietary garage door.
Refer to PAINTING AND PAPERHANGING for painting not forming part of the proprietary garage door.
Refer to ELECTRICAL for power supply to opening system

1.2 DOCUMENTS REFERRED TO

Documents referred to in this section are:

AS/NZS 1170	Structural design actions
NZS 1170.5	Structural design actions - Earthquake actions - New Zealand
NZS 3604	Timber framed buildings
AS/NZS 4505	Domestic garage doors

Documents listed above and cited in the clauses that follow are part of this specification. However, this specification takes precedence in the event of it being at variance with the cited document.

1.3 MANUFACTURER'S DOCUMENTS

Manufacturer's and supplier's documents relating to work in this section are:
Wellington Garage Door Co Ltd

Copies of the above literature are available from
Telephone: Kevin Philpott (04) 499 4455

Performance

1.4 LOADS

Garage doors complete with hinges, roller assemblies and fasteners to comply with wind and seismic load performance requirements to NZS 3604, table 5.1, Determination of building wind zone, AS/NZS 1170 and NZS 1170.5.

1.5 RESPONSIBILITY FOR PERFORMANCE

Accept responsibility for the structural and weather-tight performance of the completed garage door installation.

2. PRODUCTS

2.1 GARAGE DOOR

Manufactured to AS/NZS 4505 complete with a compliance label stating manufacturer, serial number, wind and seismic classification and testing/certification details

2.2 MOTORISED DOOR OPENER

To be included and compatible with door size and weight

3. EXECUTION

3.1 PREPARATION FOR INSTALLATION

Check that the trimmed and lined openings are formed and constructed to suit the required door units. Do not proceed until openings are properly formed.

3.2 MANUFACTURERS REQUIREMENT FOR INSTALLATION

Install door, track and operating equipment complete with all specified and necessary accessories and hardware to the manufacturer's requirements.

3.3 START UP
Carry out start up procedures and verify proper performance of the doors.

3.4 ADJUSTMENT
Lubricate bearings and sliding parts and adjust doors to operate easily, free of warp, twist or distortion with a weather tight fit round the entire perimeter.

3.5 DEMONSTRATION
Carry out start up procedures and verify proper performance of the door. Demonstrate the operation of the door to the principal/principal's representative. Set security features to principal's requirements. Reset security features at practical completion of the contract works.

3.6 OPERATING INSTRUCTIONS AND MAINTENANCE PROCEDURES
Provide operating instructions for the garage doors and associated opening equipment. Provide a list of all components requiring regular maintenance.

Completion

3.7 ENSURE
Ensure all elements are free of marks or blemishes, with all moving parts working fully and freely.

3.8 REPLACE
Replace damaged, cracked or marked elements.

3.9 LEAVE
Leave work to the standard required by following procedures.

3.10 REMOVE
Remove all debris, unused materials and elements from the site.

4. SELECTIONS

4.1 WIND ZONE
Building wind zone: **High (as determined from table 5.1 of NZS 3604)**

4.2 SECTIONAL OVERHEAD DOOR **(Major and Minor Doors)**

Location:	**Garage**
Brand:	**Wellington Garage Door Co Ltd**
Type:	**Summit Horizontal Cedar (client to confirm cedar board size)**
Face panels:	**Timber**
Finish:	**Stain finish. Refer to ARC Specification Addenda 2 for details**

4.3 GARAGE DOOR CONTROLLERS
Number of remotes: **x4 (x2 sets for each door)**
Location of internal control buttons: **Refer to ARC drawing 6.01 for details**
Number of internal control buttons: **x2 (one for each door)**

architectureRobinsonCrimp

addenda 1

specification for steelwork (resenes spec.)

architecture Robinson Crimp Ltd
Level 1, 1 Marion Street
PO Box 27 574 Marion Square
Wellington, New Zealand
Telephone: 64 4 801 8230
Facsimile: 64 4 801 8930
admin@architecturerobinsoncrimp.com
www.architecturerobinsoncrimp.com

Resene

the paint the professionals use

Coatings Specification

Contract:	**INTERIOR PAINTING**
Building:	**SHEFFIELD HOUSE- PRIVATE RESIDENCE**
Location:	**86 EMERALD GLEN, RAUMATI ROAD**
Owner/Agent:	**ARCHITECTURE ROBINSON CRIMP- LAUREN STAFF**
Specification:	**A24-02-08** **Date: 7/2/08**
Writer:	**Maggie Bruce**

SCOPE
The work involved and intended in this Contract to be carried out at the location detailed above comprises the following:

Prepare surfaces and apply Resene paint in accordance with this specification.

GUARANTEE
The Contractor guarantees this work under normal conditions of use against failure of:
Materials: According to 1(v) Durability of Paint Systems in the
Resene Paints One-Line Specifications and Product Data Manual.

The Contractor is to guarantee their work against all defects that may occur within three months from the completion of the contract and will be required to make good such defects at their own cost.

INSURANCE
The Contractor shall provide adequate Public Liability insurance.

1.0 NEW MILD STEEL LINTEL (interior- non visible)

Condition:Prefabrication primer is in reasonable condition with a few areas of mechanical damage.

Note: *This specification assumes the steelwork has been preprimed with a prefabrication primer.*

PREPARATION FOR PAINTING:

1.1 Thoroughly wash down with a 25% solution of Resene Roof Wash & Paint Cleaner and water to remove all salts, dirt, grease, stains, dust and any other contaminants. Rinse thoroughly with clean water. Allow to dry. **Data Sheet D88**

1.2 Where and if necessary, thoroughly wire brush to remove as much rust as possible. Power tools may be used if available but care will be needed not to cause damage. In areas where there is under film corrosion the surface paint should be scraped away to allow better access to the rust. Thoroughly sand old paint to provide a good key for adhesion. Wash clean & allow to dry.

Note 1: The performance of the subsequent paint system will be dependent on the thoroughness of this preparation stage.

1.3 Ensure edges of damaged paint are sound and immediately spot prime bare steel with Resene Rust Arrest. Allow 24 hours dry. **Data Sheet RA30A**

PAINTING:

1.4 Apply a full coat of Resene Rust Arrest at the spreading rate of 11 square metres per litre. Allow 24 hours dry.

ISP CONSULTING ENGINEERS LTD

Civil & Structural
Seismic Risk Analysis
Building Compliance

Lower Hutt Office
Tel: 04 566 8004
Fax: 04 566 8037
Level 1, 14 Laings Rd
ISP Building
P.O. Box 30 535
Lower Hutt 5010

Paraparaumu Office
Tel: 04 902 5750
Level 1, Office 24
Kayel Building
Raumati Beach
P.O. Box 537
Paraparaumu 5254

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

Additional Structural Calculations

For

Alterations & additions

86 Emerald Glen Road

Raumati

These calculations are in accordance with:

NZS1170:2002 Structural Design Loads
NZS3101:1995 Design of Concrete 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:**
John O'Hagan	JOH
Hugh Falkner	HAF

Preamble:

Calculations for 1.2m long 2.4m high masonry feature wall in kitchen

Date:
1 December 2009

Job No.
22432

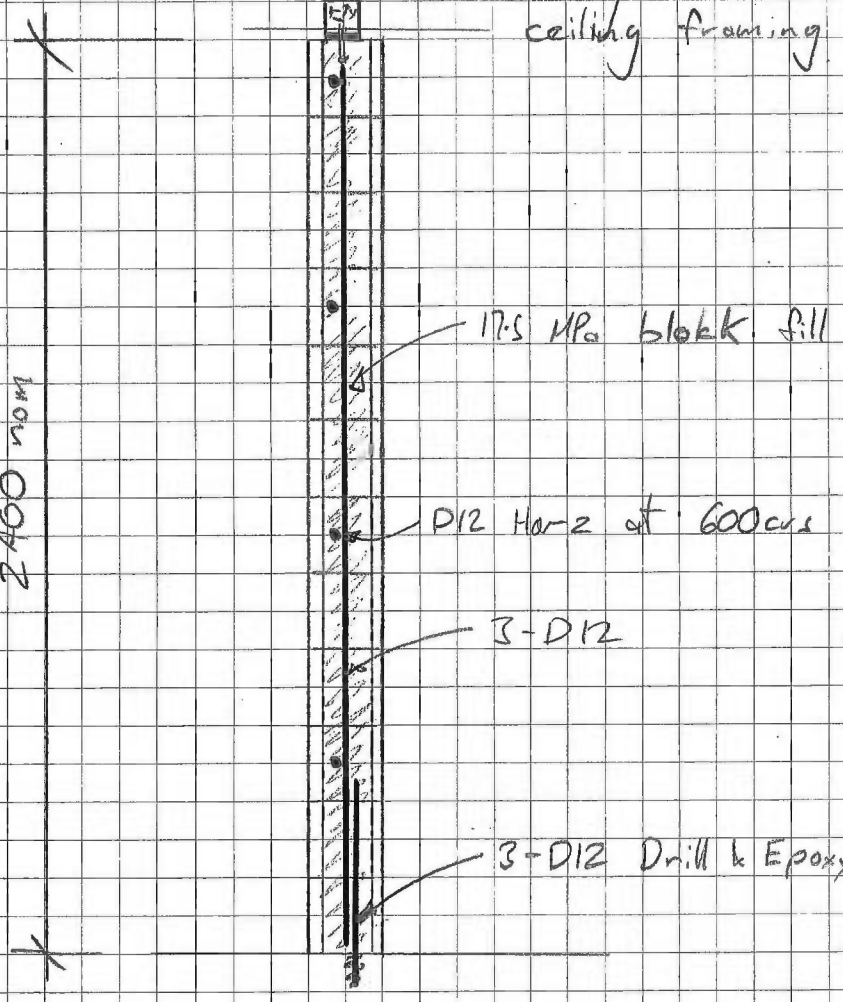
ISO 9001

F14-06/02

Date	Eng.	Job No.	Sheet No.
20/11/09	HAF	22432	Sk1

Project: 86 Emerald Glen

CALCULATIONS

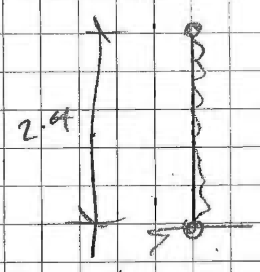


1200 Long Kitchen Wall

F14-06/02

Date 20/11/09	Eng. HAF	Job No. 22432	Sheet No. F1	CALCULATIONS
Project 86 Emerald Glen.				

Masonry Wall in kitchen. (By inspection Along OKAY)



$t \times \gamma \times$ ← (Cd μ=1)

$W^* = .19 \times 22 \times 1.2 = 5.0\,kN/m.$

$M^* = \frac{WL^2}{8} = \frac{5 \times 2.4^2}{8} = 3.6\,kNm$

Across wt

$\phi M_p = (4.2 \times 1.2) \times 0.095 = 0.48\,kNm.$

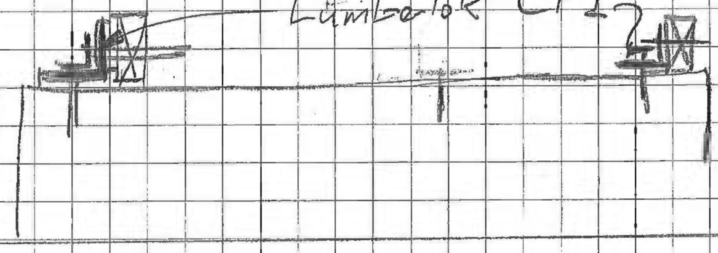
Need Reinforcement → 3-D12

$\phi M_b = 0.85 A_s f_y \left(d - \frac{A_s f_y}{0.85 b f'_c}\right) = 7.85\,kNm$ OKAY

$V^* = 5 \times 1.2 = 6\,kN$

By inspection II-D12 drill and epoxyed into slab OKAY

Fixing to ceiling Framing critical



pair give 35kN
× 0.7
24.5 kN
OKAY

Consider additional Bracing Load

Extra weight = $(.19 \times 22 \times 1.2^2) = 6.0\,kN$

Extra $V^* = 6 \times 0.39 = 2.34\,kN$ or **47 BU**

$\mu = 3$ ↗

From Bracing sheets 1118 required + 47 = 1165 BU
(Along) 1369 Provide > 1165 OKAY

Processing Check Sheet
for
Project Information Memorandum (PIM)

Property Address: 86 EMERALD GLEN ROAD
Legal Description: Lot: 5 **DP:** 33685
Building Project: Adds & Alts
Building Consent/PIM Number: BC090806
Zone: Rural

Items to check	Yes	No	Action reqd	Actioned	Date & Signature
Certificate of Title		✓			
Easements		✓			
Section 221		✓	Include copy of S221		
Section 72		✓	Advise Approvals Team of S72 reqd		
Existing Resource Consent		✓	Include copy		
District Plan features		✓			
Designations		✓			
Heritage register		✓			
Flood hazards		✓			
Min floor level reqd		✓	Advise F.F.level		
Other hazards		✓			
EQ faults		✓			
Services		✓			
ECO sites		✓			
Yards		✓	Neighbours approval for one yard encroachment		
HIRB		✓			
Maximum height		✓			
Site coverage		✓			
Earthworks		✓			
Permeable surface area		✓			
Onsite parking		✓			
DIF fees		✓	Calculate fees		
Recourse Consent reqd		✓	Apply Section 37		

Decision: *(delete items that don't apply)*
Application complies and PIM can be issued.
PIM can be issued subject to section 37 Certificate
PIM is refused

14/11/09

RECEIVED
- 8 OCT 2009
KAPITI COAST
DISTRICT COUNCIL

KAPITI COAST
DISTRICT COUNCIL

Project Information Memorandum No. 090806P

Building Project..

Adds & Alts
86 Emerald Glen Road
RAUMATI

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

BC090806P

11 November 2009

Sheffield Family Trust
86 Emerald Glen Road
RAUMATI

Re: Adds & Alts for Sheffield Family Trust at South/east corner, access directly from road

I am pleased to advise that the Project Information Memorandum (PIM) component of your Building Consent application, BC090806P, has been completed.

Your proposed building project meets all the requirements of Council's District Plan which means that once you have received your Building Consent you may proceed with construction.

Council's Customer Service group is currently holding the PIM documents so that they can be forwarded to you once your Building Consent is completed however if you require them to be sent earlier please contact our Customer Service staff on 04 2964700.

Yours Sincerely

Tina Pritchard
Compliance Officer

COPY

PROJECT INFORMATION MEMORANDUM

Section 34, Building Act 2004

Building Consent Number:	**BC090806P**
Applicant Name:	**Sheffield Family Trust**
Applicant Address:	**86 Emerald Glen Road**
	RAUMATI
Application Date:	**2009-10-08**
Pim Decision Issued:	**2009-11-11**
Project:	**Adds & Alts**
Intended Use:	**09**
Estimated Value:	**85000**
Legal:	**LOT 5 DP 33688 CT 10C/639**
Location:	**86 Emerald Glen Rd, Paekakariki**
Valuation No:	**1540002800**

This project information memorandum is confirmation that the proposed building work may be undertaken, subject to the provisions of the Building Act 2004, and any requirements of the building consent.

This project information memorandum includes:

___ Information identifying special features of the land concerned
___ Details of relevant utility systems
___ Details of authorisations which have been granted

Signed for and on behalf of the Council:

Name: Angela Smith **Date:** 3/12/09

Plumbing & Drainage

Sewer available / connected:	Not available
Water available / connected:	Not available
Site plan of existing services: (if any)	Not supplied
Location of sewer lateral:	none
Location and size of water toby:	none
Location of easements: (if any)	
Location of public drains: (if any)	N/A
Stormwater disposal to:	Water tank
Plumbing and drainage notes:	The owner will need to check the potability of the water supply feeding the house on a regular basis.Some form of secondary treatment may be required to maintain a consistently potable water supply
Rain Water System:	Yes
Rain Water Size:	?
Grey Water System:	No
Grey Water Manufacturer:	

COMPUTER FREEHOLD REGISTER
UNDER LAND TRANSFER ACT 1952

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**WN10C/639**
Land Registration District	**Wellington**
Date Issued	24 October 1972

Prior References
WN535/80

Estate	Fee Simple
Area	4.5198 hectares more or less
Legal Description	Lot 5 Deposited Plan 33688

Proprietors
Martin Llewellyn Sheffield, Maree Eileen Sheffield and Harkness & Peterson Trustees Limited

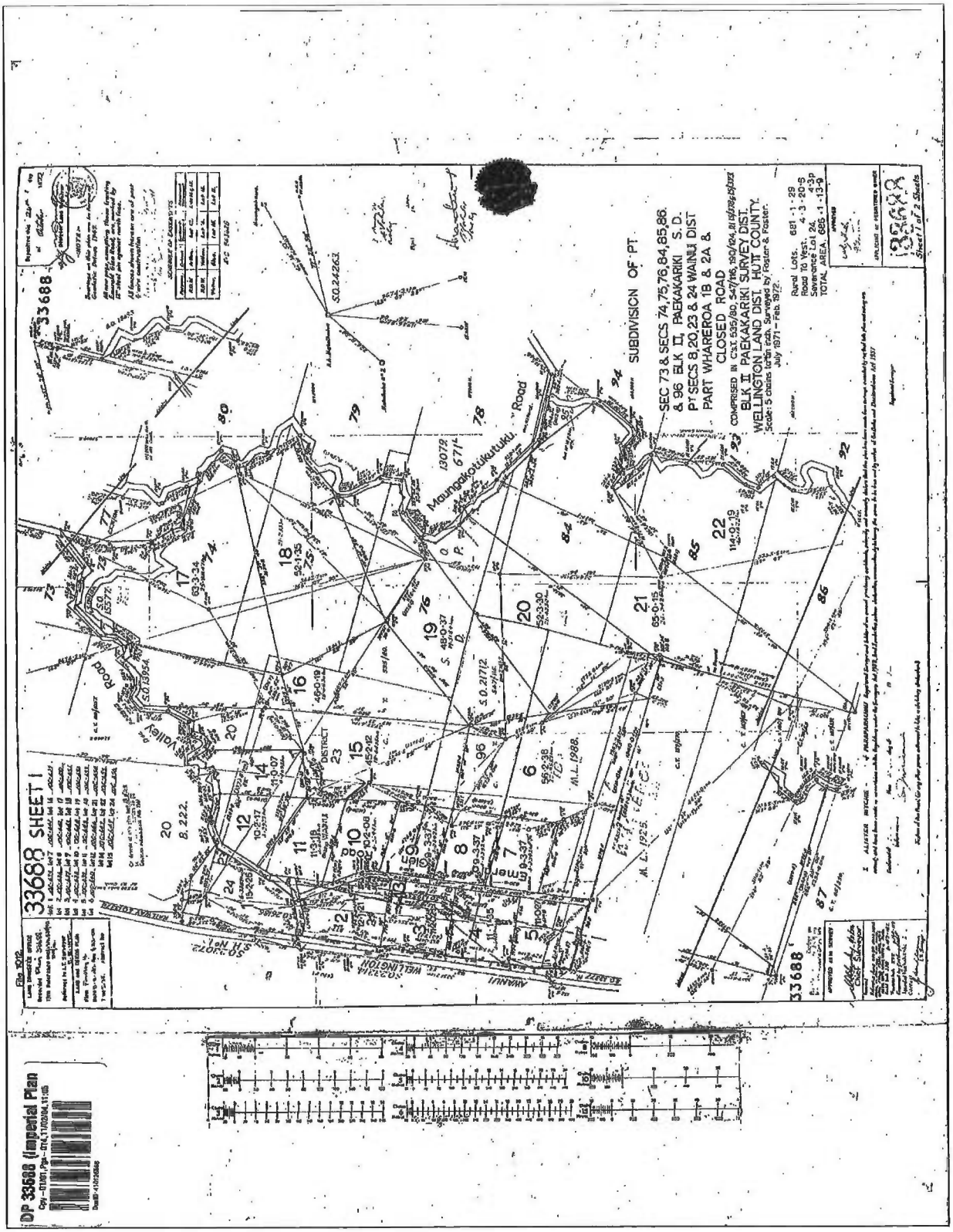
Interests

K753534 Pipeline Certificate pursuant to Section 70 of the Petroleum Act 1937 - 16.8.1968 at 11.00 am and varied 19.10.1973 at 9.00 am

Subject to gas supply rights (in gross) over part marked W on DP 61420 in favour of Natural Gas Corporation of New Zealand Limited created by Transfer 909868.1 - 17.3.1988 at 3.00 pm

7456741.3 Mortgage to ANZ National Bank Limited - 27.8.2007 at 9:15 am

Identifier **WN10C/639**



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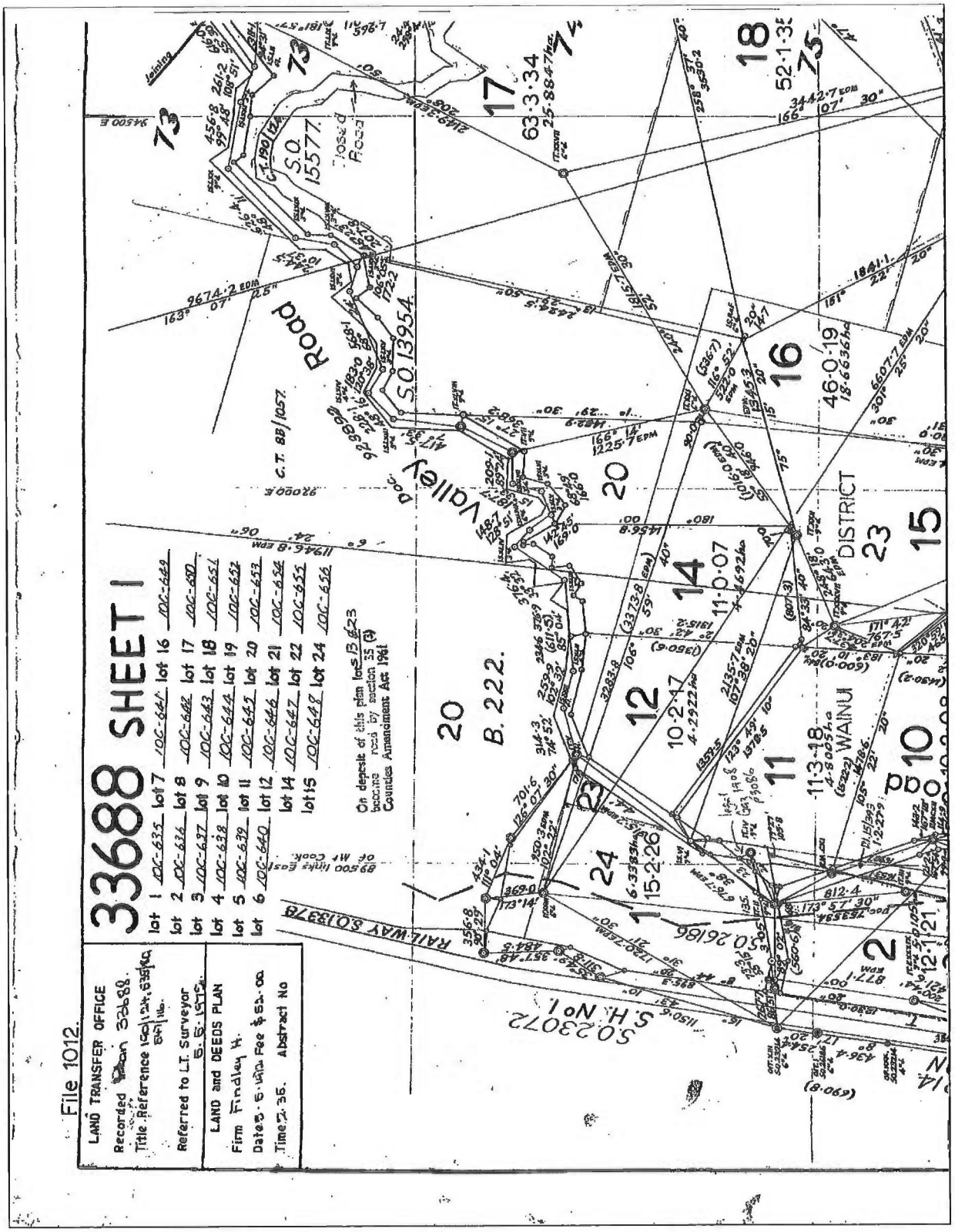

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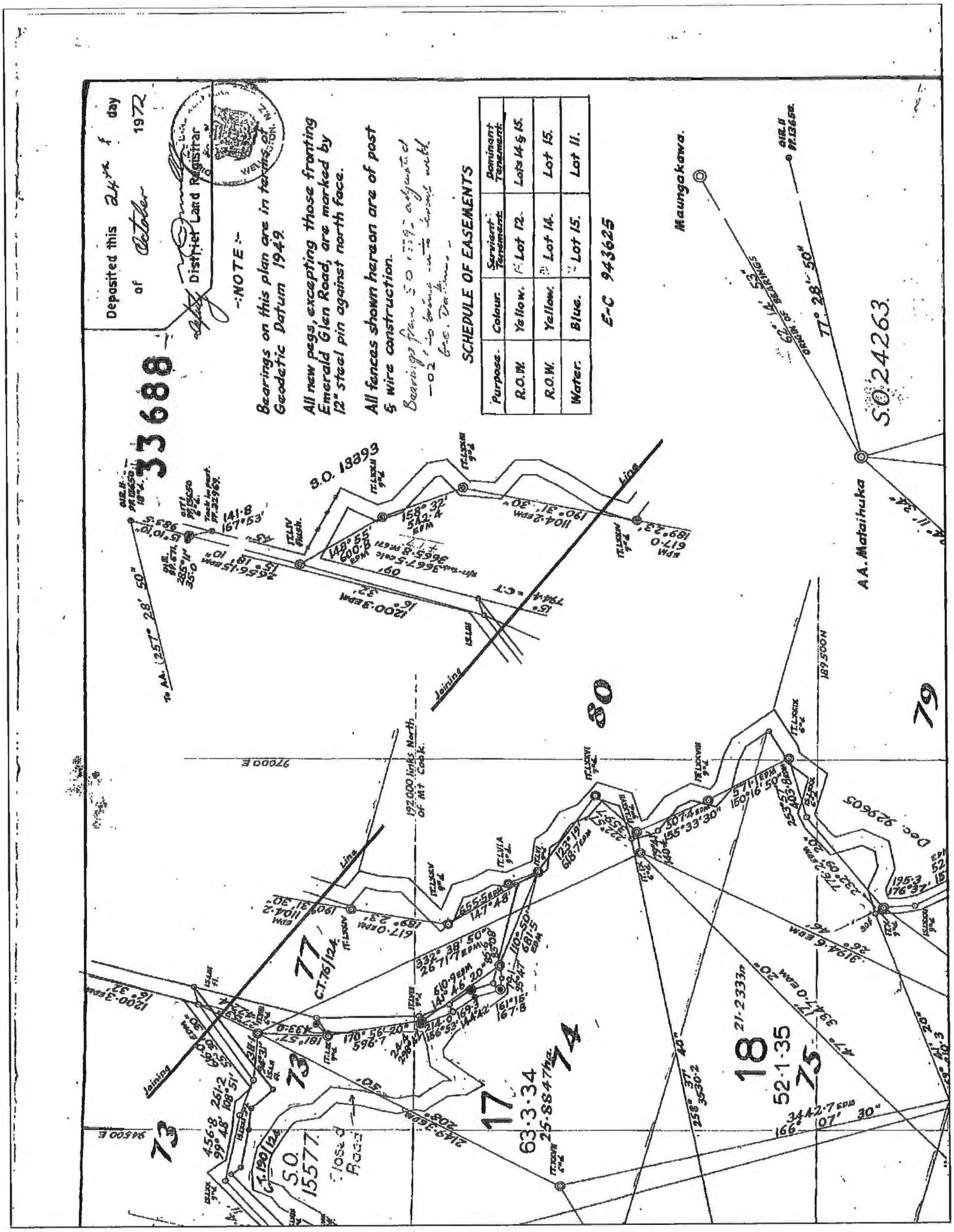

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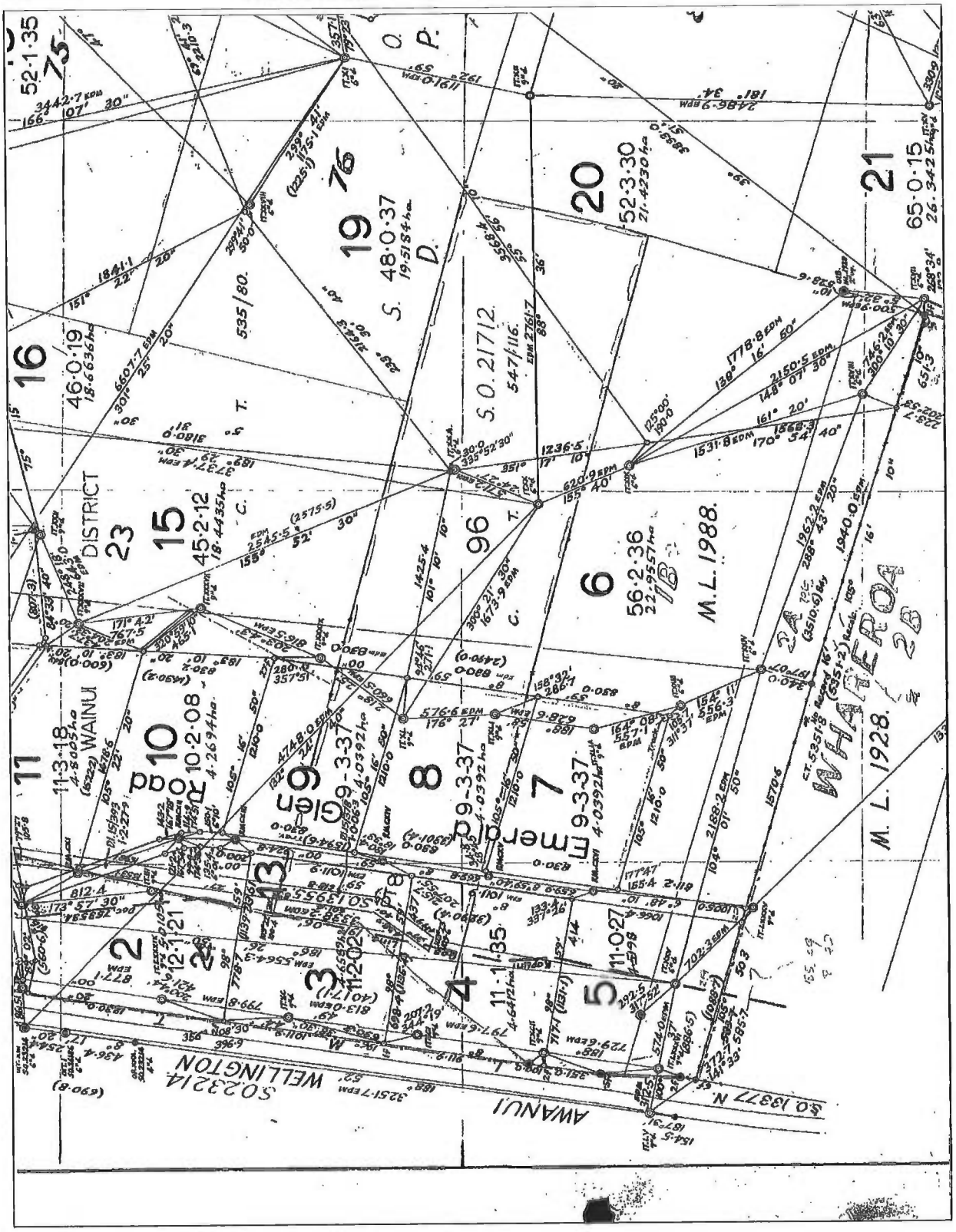

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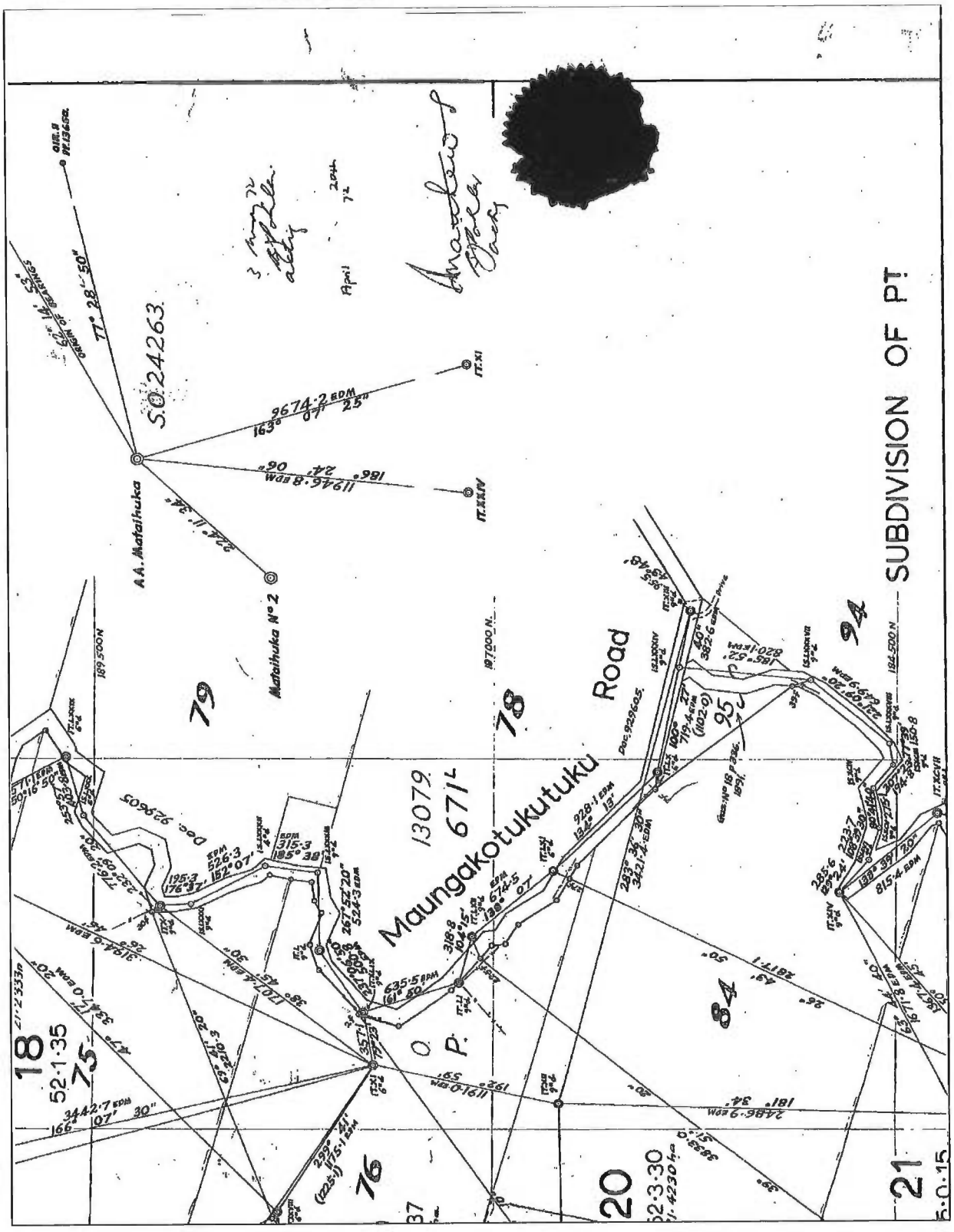

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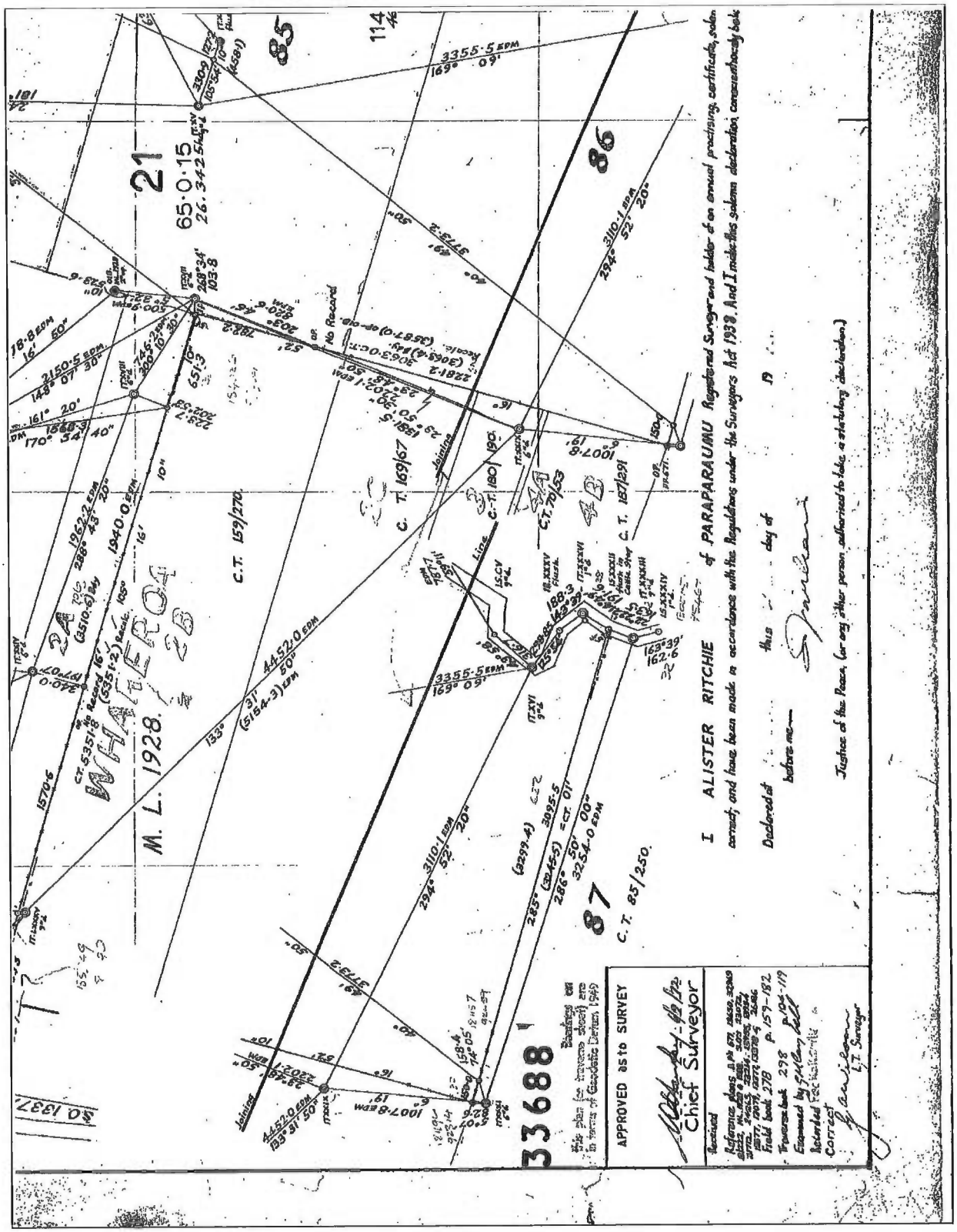
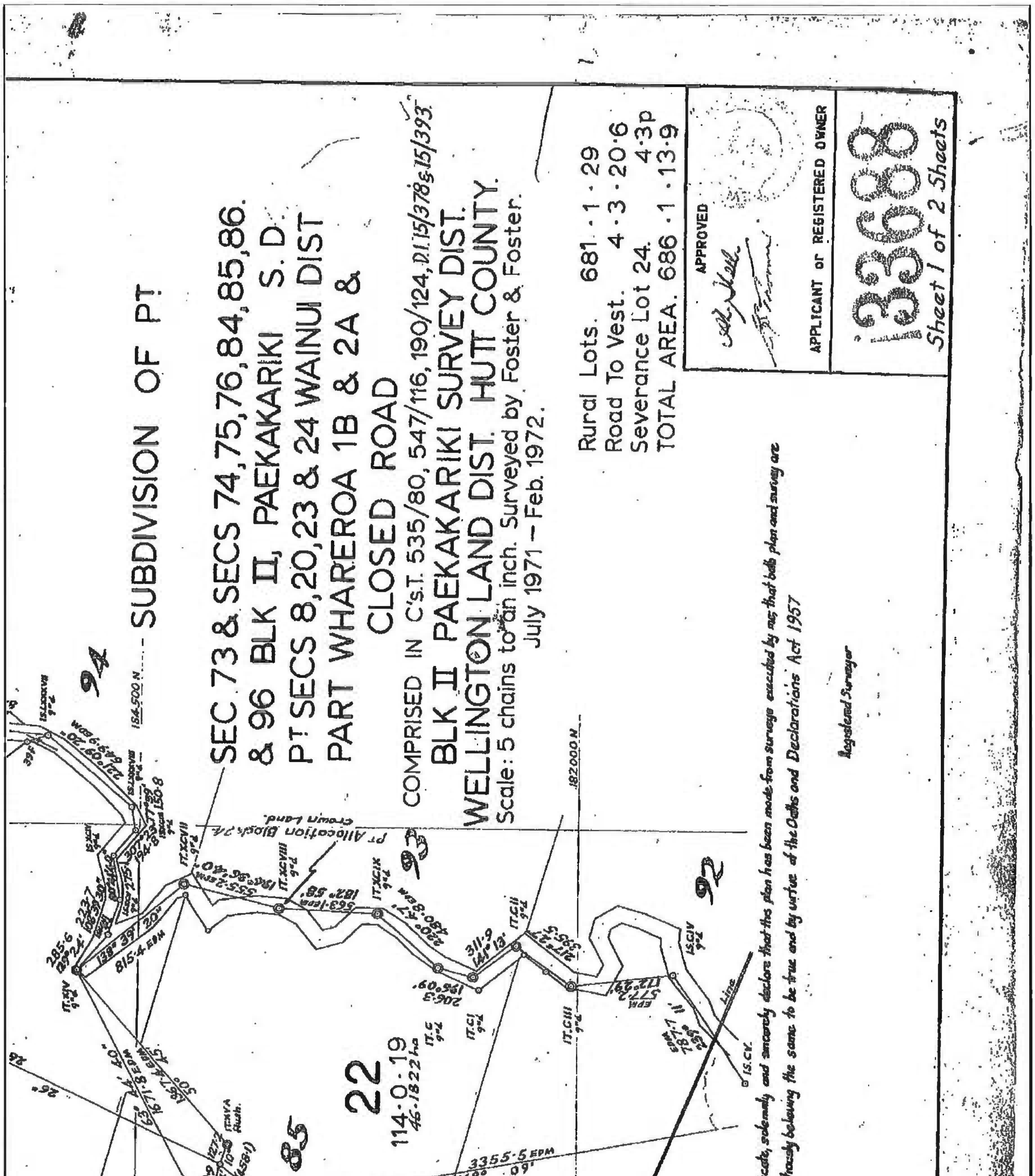
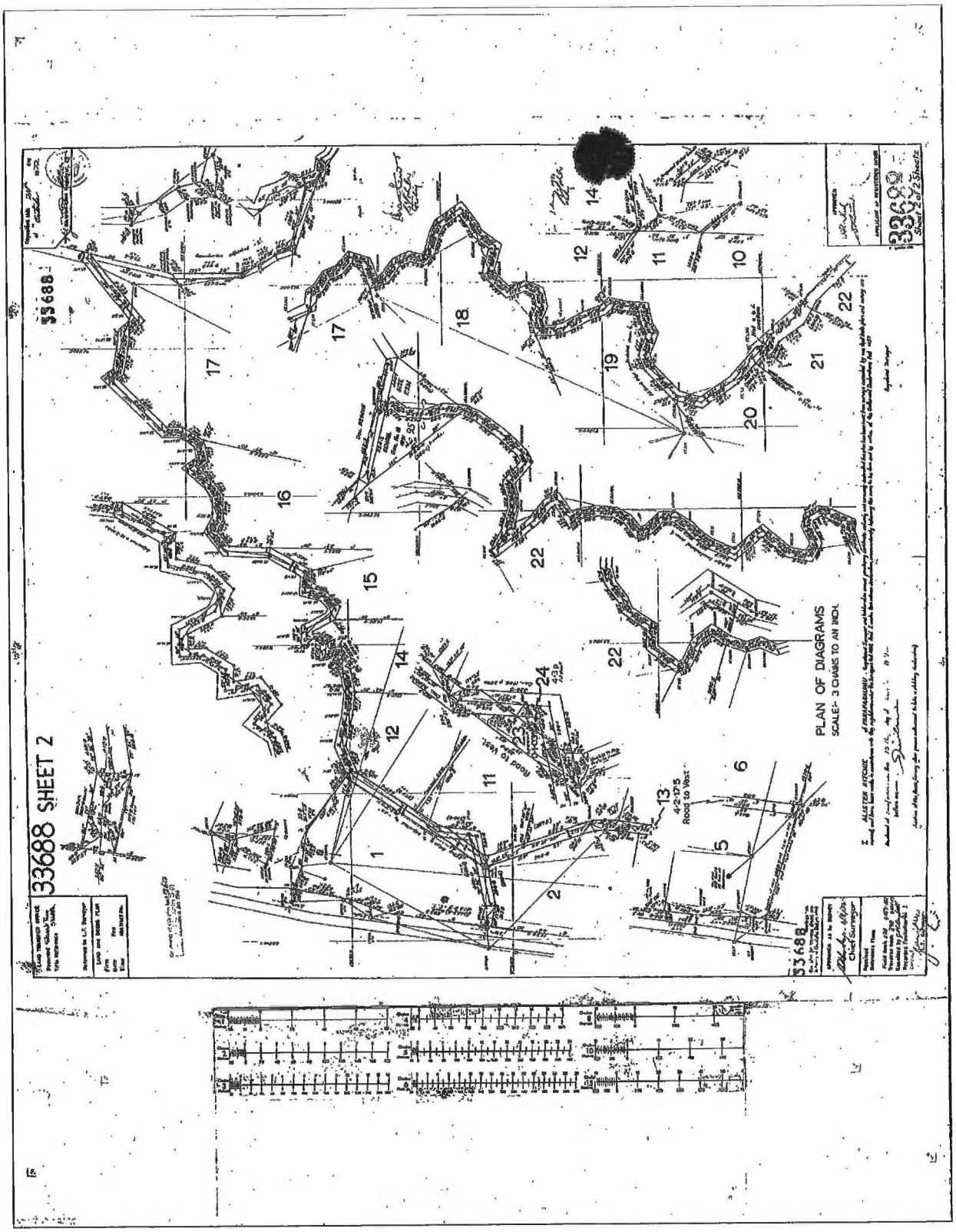
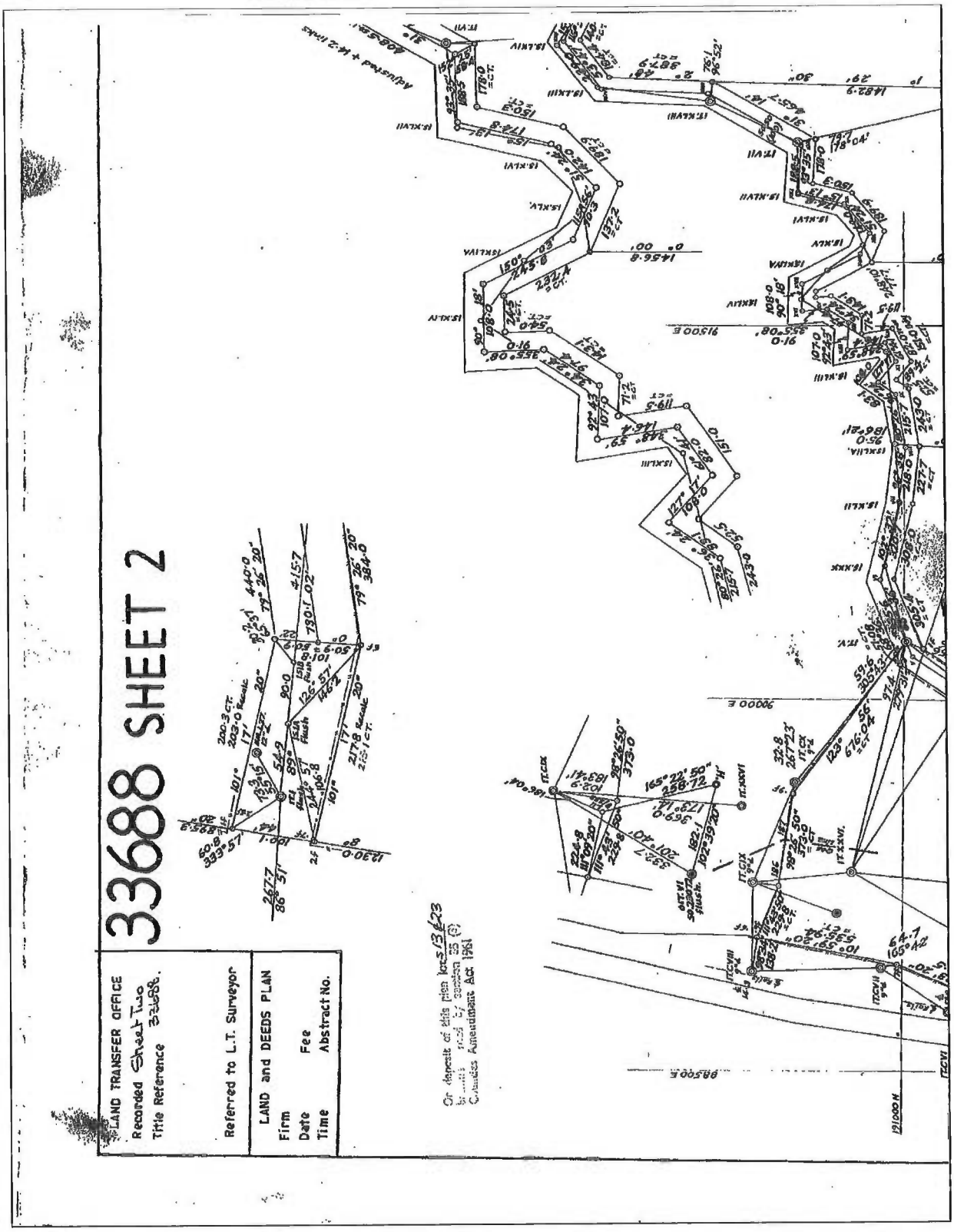


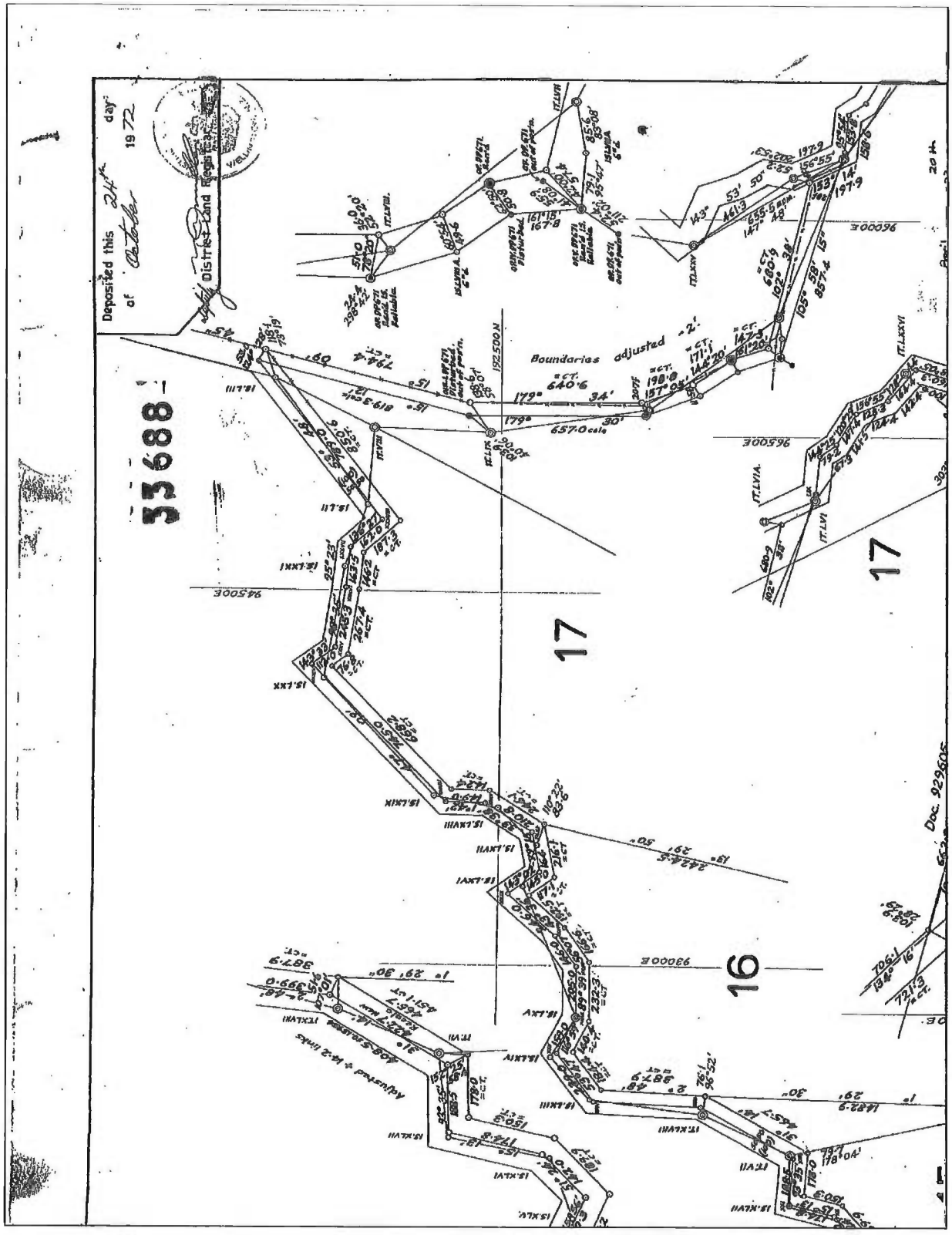

SUBDIVISION OF PT
SEC 73 & SECS 74,75,76,84,85,86.
& 96 BLK II, PAEKAKARIKI S. D.
PT SECS 8,20,23 & 24 WAINUI DIST
PART WHAREROA 1B & 2A &
CLOSED ROAD
COMPRISED IN C's.T. 535/80, 547/116, 190/124, D.I.15/378 & 15/393.
BLK II PAEKAKARIKI SURVEY DIST.
WELLINGTON LAND DIST. HUTT COUNTY.
Scale: 5 chains to an inch. Surveyed by Foster & Foster.
July 1971 – Feb. 1972.
Rural Lots. 681 · 1 · 29
Road To Vest. 4 · 3 · 20·6
Severance Lot 24. 4·3p
TOTAL AREA. 686 · 1 · 13·9
APPROVED
APPLICANT or REGISTERED OWNER
33688
Sheet 1 of 2 Sheets
Registered Surveyor
22
114·0·19
21
5·0·15
94
93
92
85
86
Pt Allocation Block 24.
Crown Land.
3355·5 EDM
169° 09'

Identifier **WN10C/639**




33688 SHEET 2
LAND TRANSFER OFFICE
Recorded Sheet Two
Title Reference 33688.
Referred to L.T. Surveyor
LAND and DEEDS PLAN
Firm
Date
Time
Fee
Abstract No.

Identifier **WN10C/639**



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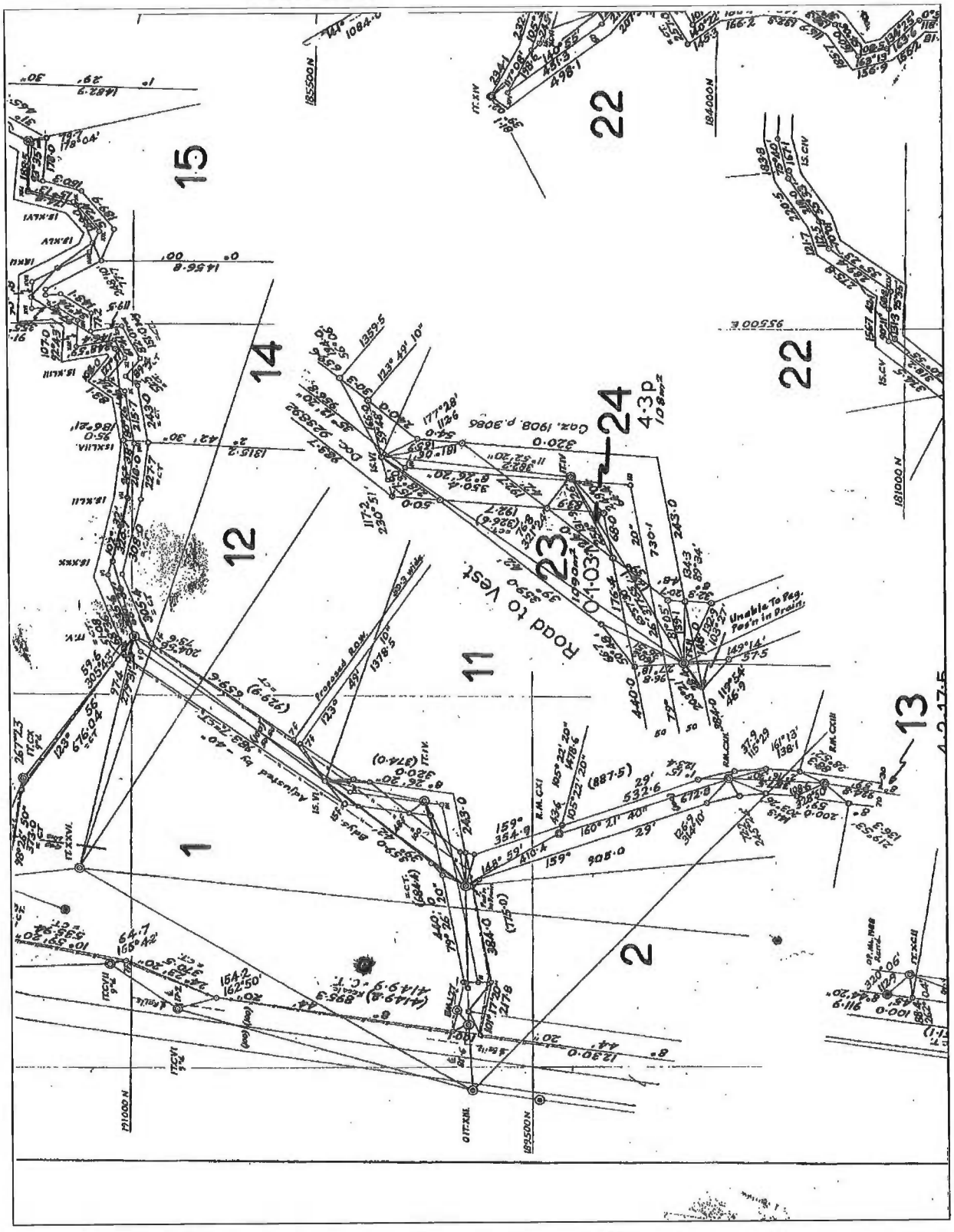

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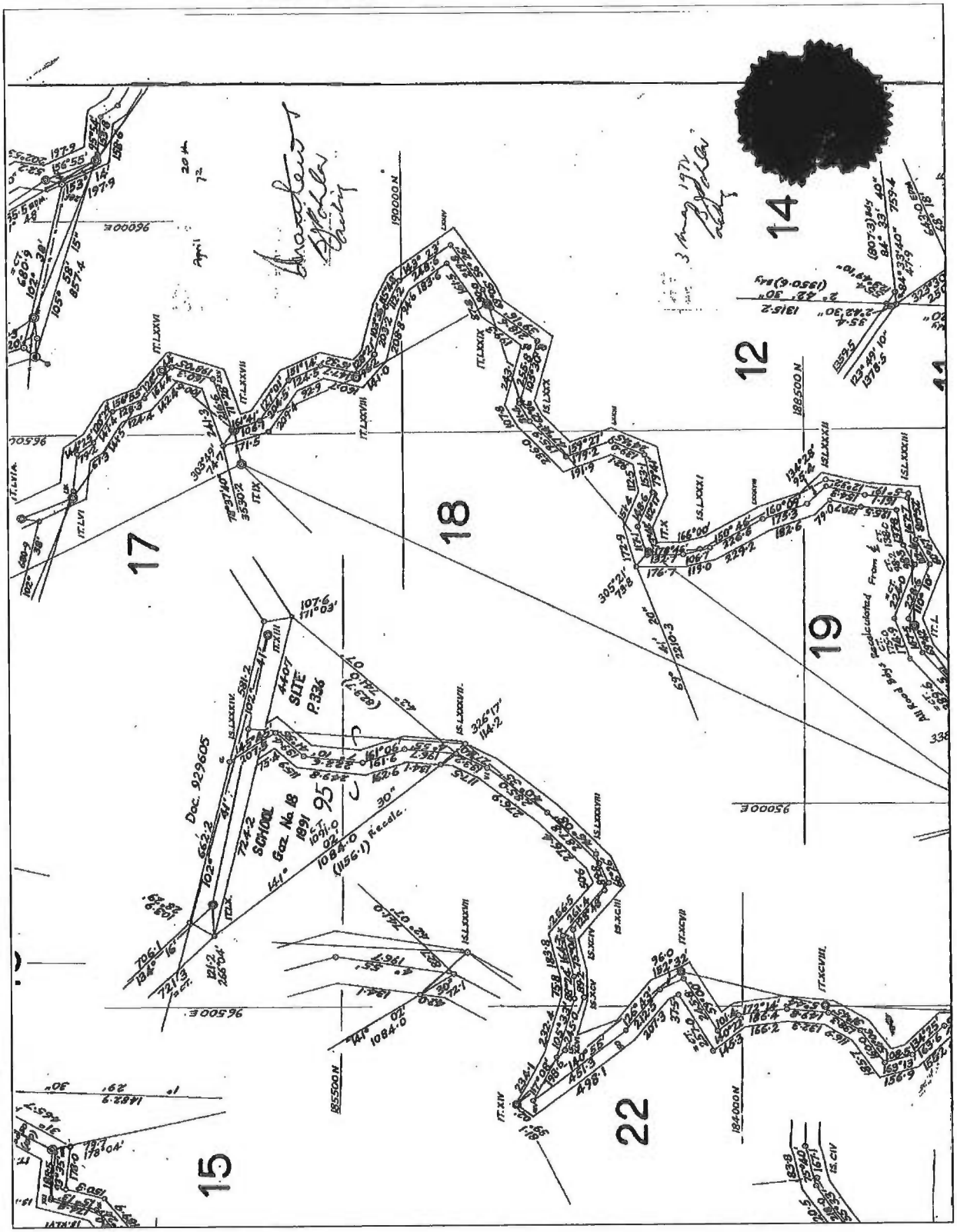

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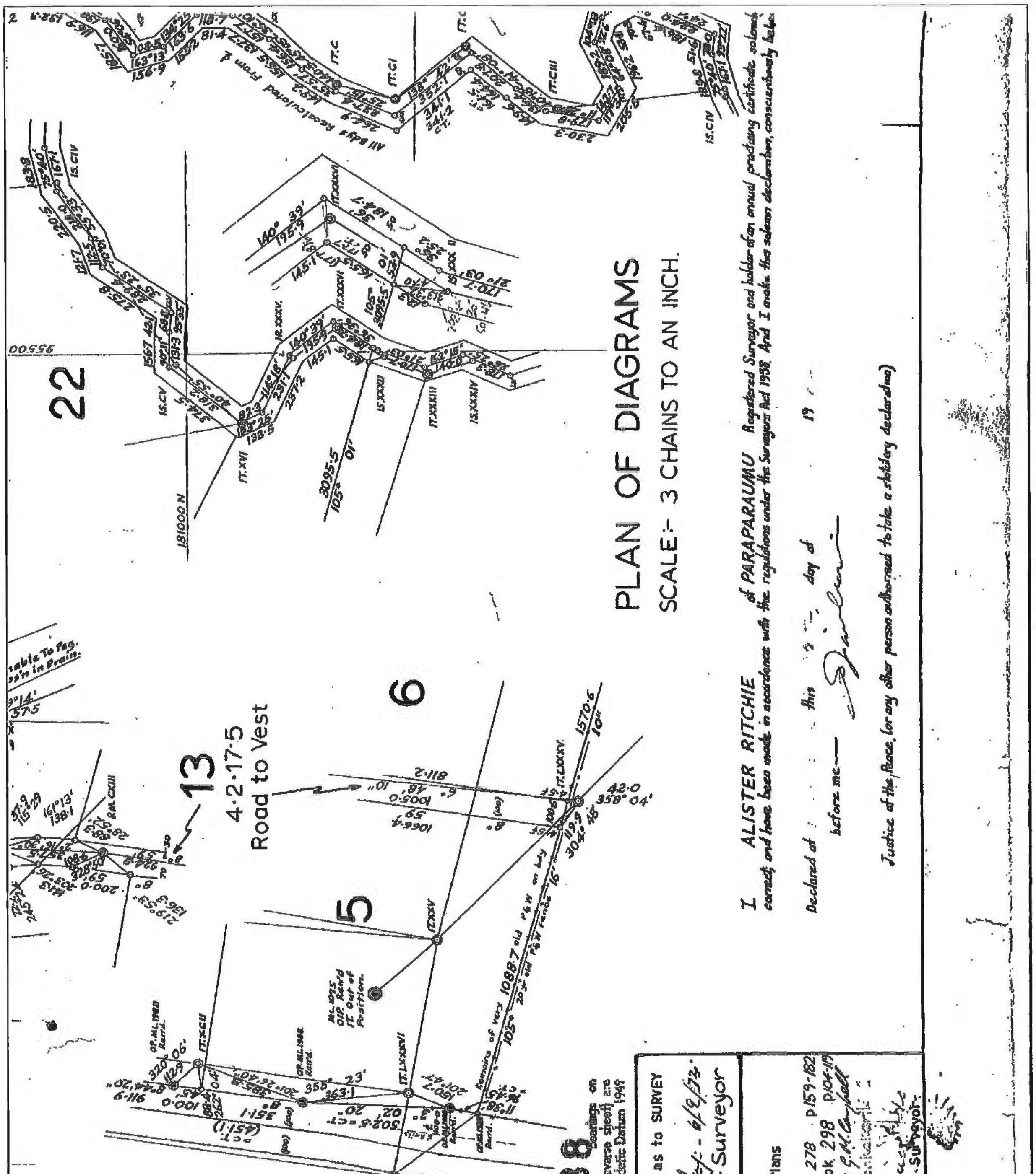
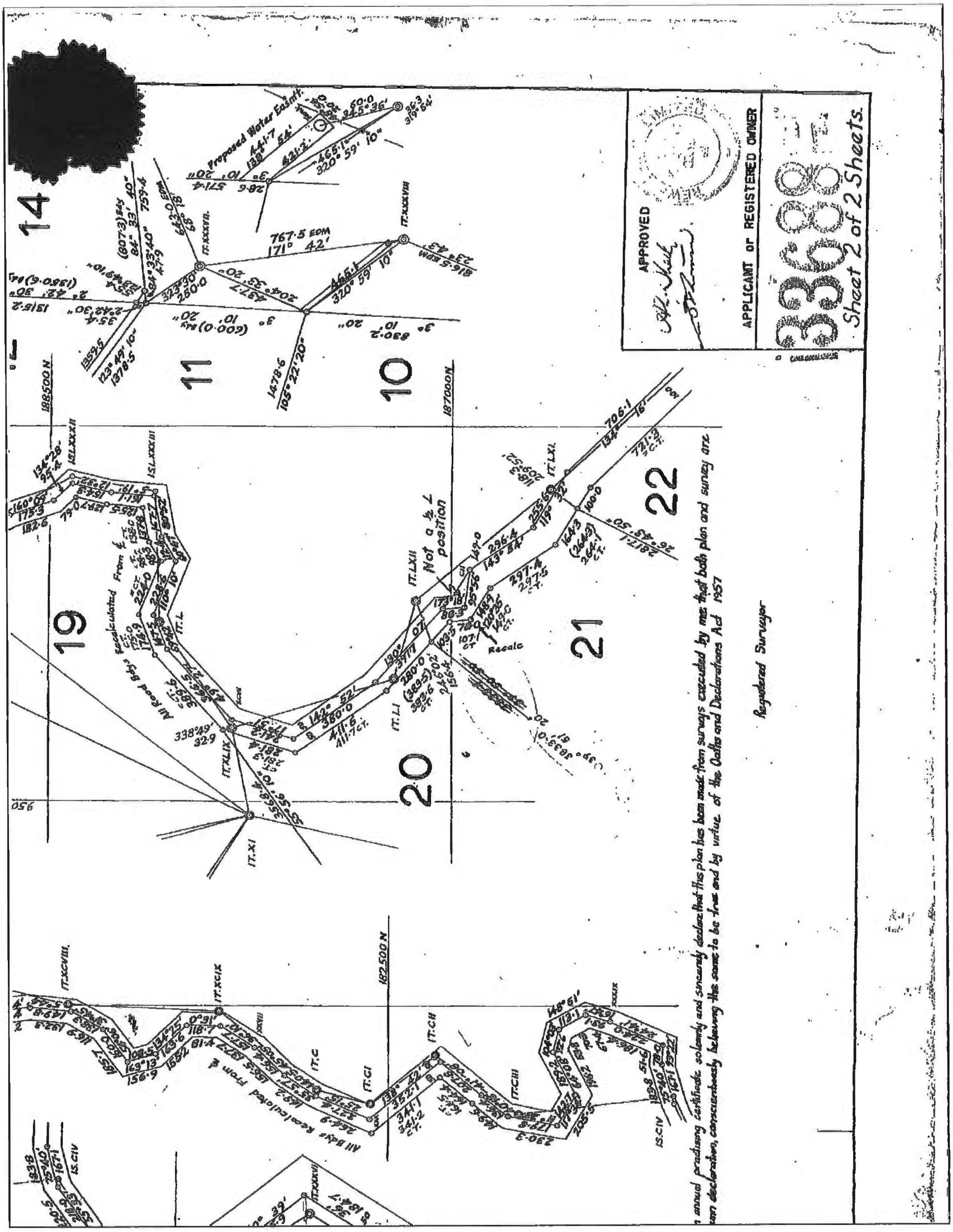
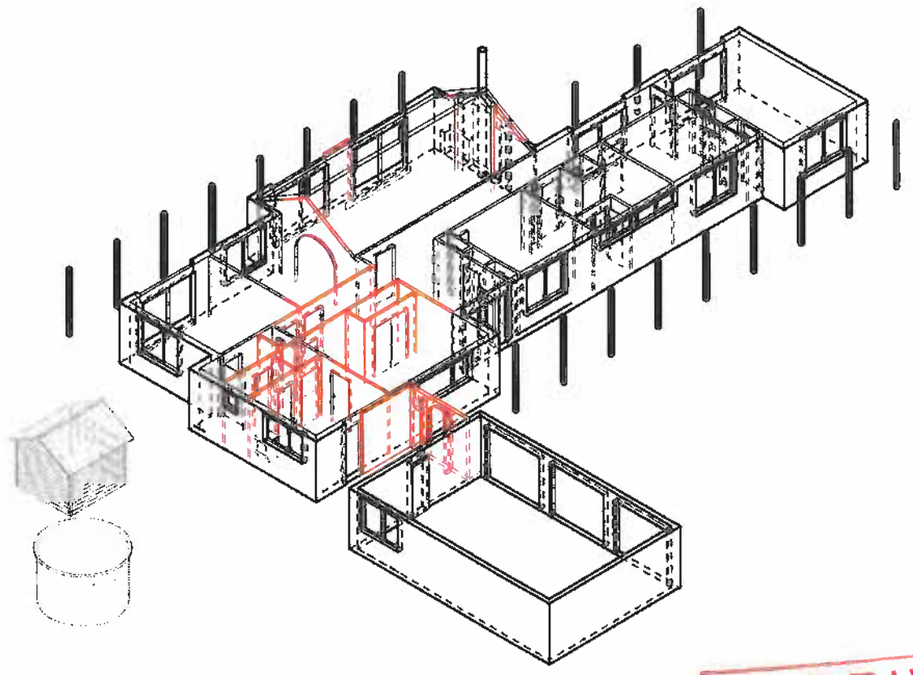
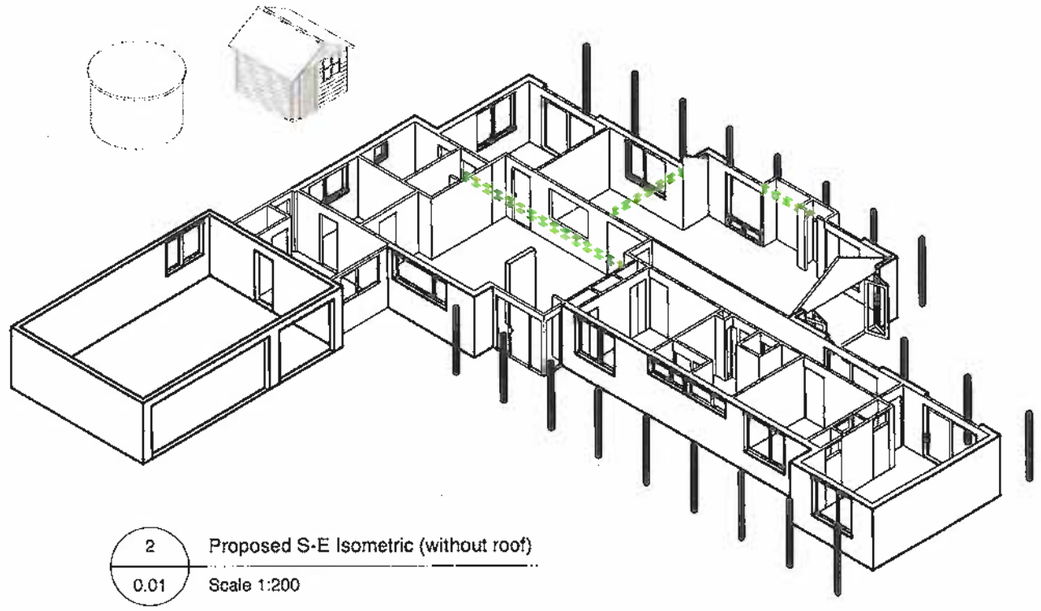



APPROVED
APPLICANT or REGISTERED OWNER
3368
Sheet 2 of 2 Sheets
Proposed Water Easmt.
Not a ℄ position
All Road Bdys Recalculated From ℄
Registered Surveyor
14
11
10
19
20
21
22
188500 N
187000 N
182500 N



1 / 0.01 Existing S-W Isometric (without roof)

Scale 1:200



2 / 0.01 Proposed S-E Isometric (without roof)

Scale 1:200

Drawing Schedule

0.01	Drawing Schedule
1.01	Existing Floor Plan / Demolitions
1.02	Existing North & South Elevations
1.03	Existing East & West Elevations
2.00	Foundation Plan
2.01	Proposed Floor Plan
2.02	Proposed Living Ceiling Plan
2.03	Proposed Roof Plan
3.01	Proposed North & South Elevations
3.02	Proposed East & West Elevations
5.01	Plumbing & Drainage Plan
6.01	Lighting & Electrical Plan
7.01	Galley Plan
7.02	Galley 1.3 Section A - A
7.03	Galley 1.3 Section B - B
7.04	Larder 1.2 / Galley Section C - C
7.05	Utilities 1.1 / Larder 1.2 Section D - D
7.06	Utilities 1.1 / Larder 1.2 Section E - E
7.07	Galley 1.3 Island Sections
7.08	Galley 1.3 Island St.st frame & block wall
7.09	Utilities 1.1 / Galley 1.3 Sections
7.10	Galley 1.3 Sections
7.11	Utilities Section + Elevation
7.12	Drawer Schedule
7.13	Living 1.8 Firebox & Joinery
7.14	Closet 1.5 Sections
7.15	Ensuite 1.4 Sections
7.16	Tile Schedule
8.01	Window & Door Schedule
8.02	Interior Door Joinery Schedule
8.03	Head, Sill & Jamb Details
8.04	Head, Sill & Jamb Details (Existing Brick Veneer)

Sheffield House

Martin & Maree Sheffield

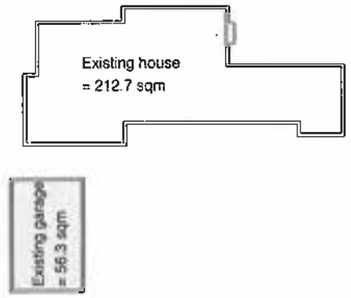
86 Emerald Glen Road,
Raumati, Kapiti Coast

architectureRobinsonCrimp
Level 1, 1 Marion Street
PO Box 27-574 Marion Sq.
Wellington, New Zealand
T: 64 4 801 8230
F: 64 4 801 8930
E: arc@clear.net.nz

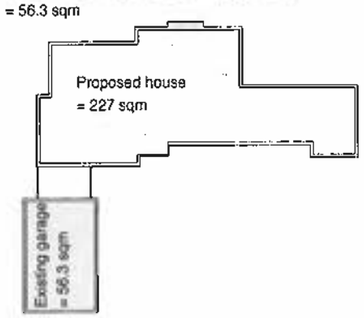
Critical Data:

Lot 5. DP 33688

Area of Existing House excluding eaves
= 212.7 sqm
Area of Existing Garage excluding eaves
= 56.3 sqm



Area of Proposed House excluding eaves
= 227 sqm
Area of Existing Garage excluding eaves
= 56.3 sqm



D	28/2/08	Contract Documentation handover to client
C	11/12/07	Client Meeting
B	10/12/07	Structural Engineer Draft Set
A	30/11/07	Galley Draft 2.

Sheffield House
86 Emerald Glen Road,
Raumati, Kapiti Coast

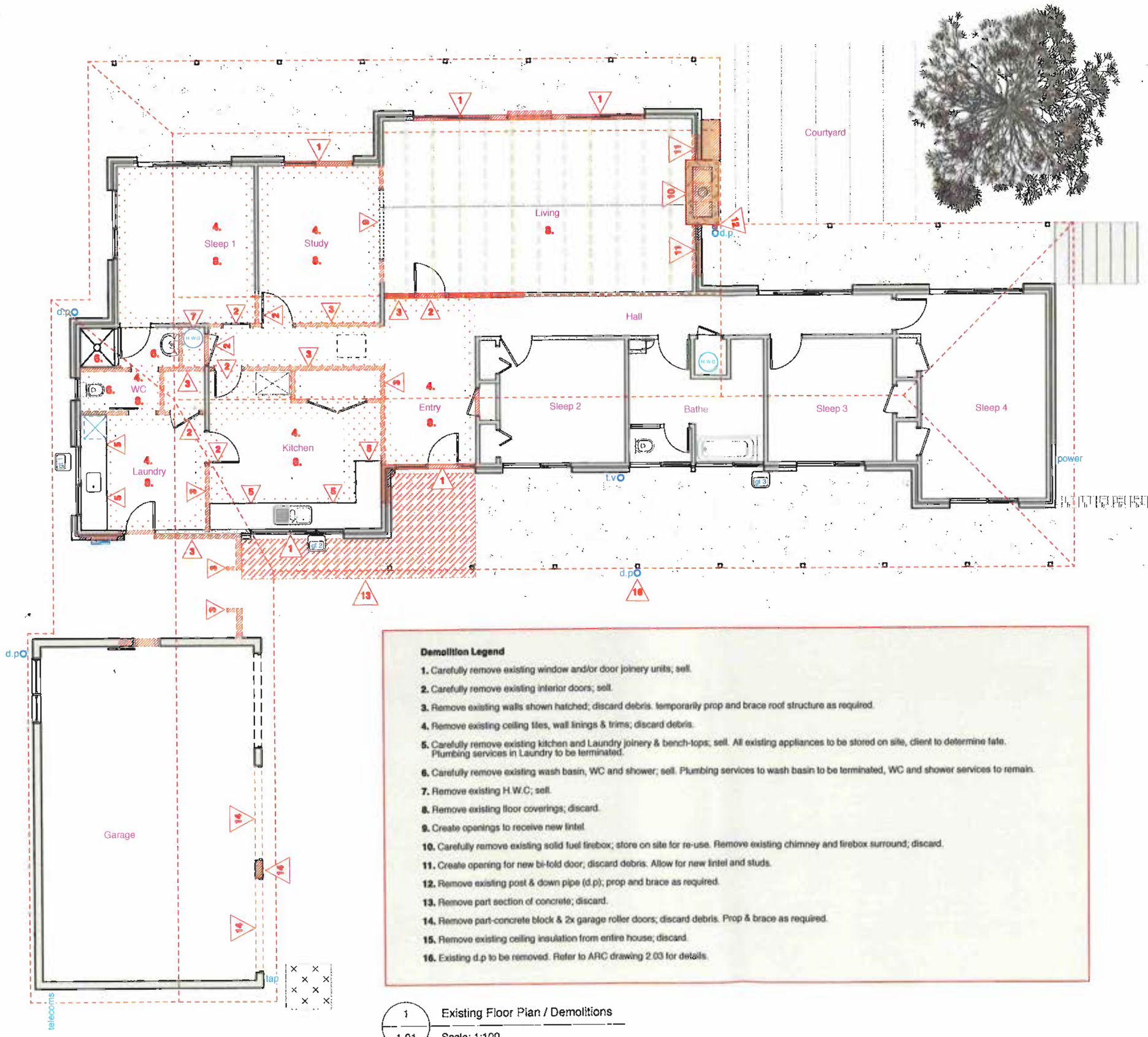
Drawing Schedule

194SHE07 / 0.01

of 1

Drawn By: LS Checked By: GC

Document Issue:D
ARC File Name: 080124_CD_SHE



Demolition Legend

1. Carefully remove existing window and/or door joinery units; sell.
2. Carefully remove existing interior doors; sell.
3. Remove existing walls shown hatched; discard debris. temporarily prop and brace roof structure as required.
4. Remove existing ceiling tiles, wall linings & trims; discard debris.
5. Carefully remove existing kitchen and Laundry joinery & bench-tops; sell. All existing appliances to be stored on site, client to determine fate. Plumbing services in Laundry to be terminated.
6. Carefully remove existing wash basin, WC and shower; sell. Plumbing services to wash basin to be terminated, WC and shower services to remain.
7. Remove existing H.W.C; sell.
8. Remove existing floor coverings; discard.
9. Create openings to receive new lintel.
10. Carefully remove existing solid fuel firebox; store on site for re-use. Remove existing chimney and firebox surround; discard.
11. Create opening for new bi-fold door; discard debris. Allow for new lintel and studs.
12. Remove existing post & down pipe (d.p); prop and brace as required.
13. Remove part section of concrete; discard.
14. Remove part-concrete block & 2x garage roller doors; discard debris. Prop & brace as required.
15. Remove existing ceiling insulation from entire house; discard.
16. Existing d.p to be removed. Refer to ARC drawing 2.03 for details.

1 / 1.01 Existing Floor Plan / Demolitions

Scale: 1:100

architectureRobinsonCrimp
Level 1, 1 Marion Street
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Wellington, New Zealand
T: 64 4 801 8230
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E: arc@clear.net.nz

General Demolition Notes:

1. All salvaged units for selling to be inspected for quality before stock piled.

2. All existing timber framing to be inspected for borer/dry rot etc. and listed accordingly by building contractor for remedial work as required.

3. Allow to protect existing floor coverings etc in areas not affected by proposed works as required.

4. Inconvenience to others: Carry out the works with minimum inconvenience, nuisance and danger to occupants, users and neighbours.

5. Damage & Nuisance: Take all precautions to prevent damage & Nuisance from water, fire, smoke, dust, rubbish and all other causes resulting from the construction works.

6. Refer to Specification and to individual work sections for detailed requirements on this project.

C	28/2/08	Contract Documentation handover to client
B	11/12/07	Client Meeting
A	10/12/07	Structural Engineer Draft Set

Sheffield House
86 Emerald Glen Road,
Raumati, Kapiti Coast

Existing Floor Plan

194SHE07 / 1.01

of 1

Drawn By: LS Checked By: GC

Document Issue: C
ARC File Name: 080131_CD_SHE

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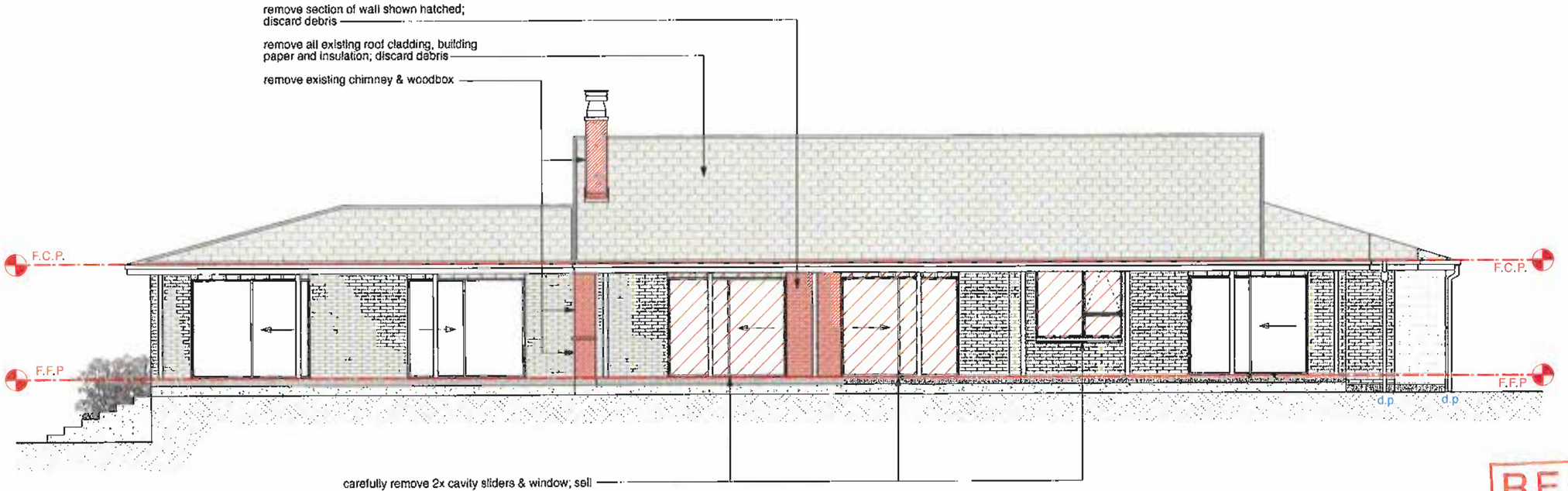
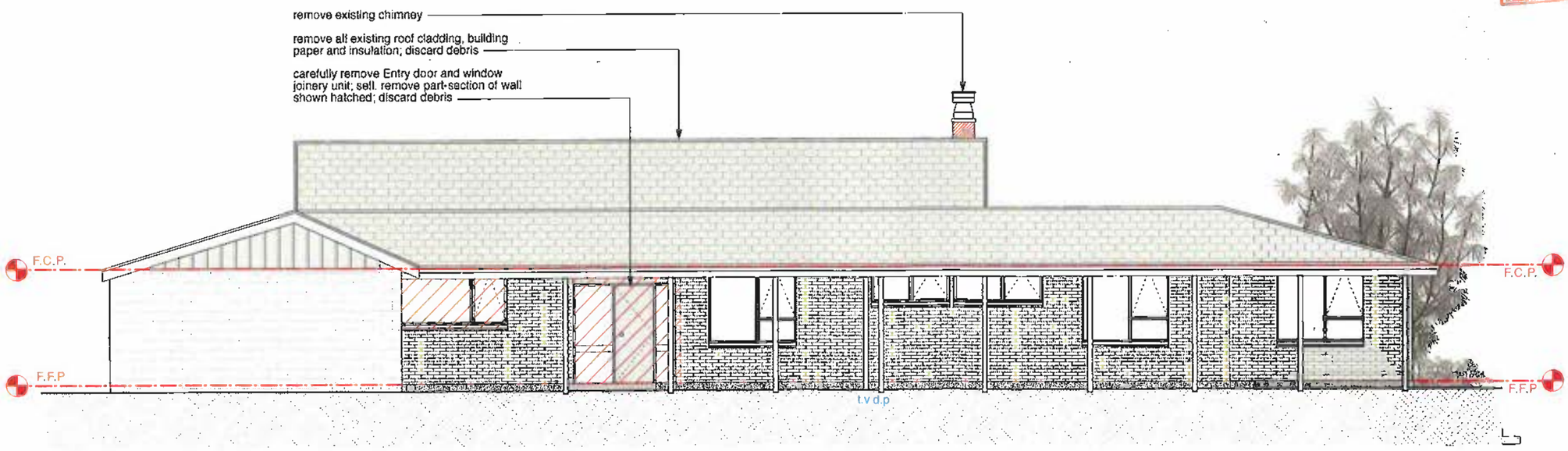


1 / 1.02 Existing West Elevation
Scale: 1:100



2 / 1.02 Existing East Elevation
Scale: 1:100

C	28/2/08	Contract Documentation handover to client
B	11/12/07	Client Meeting
A	10/12/07	Structural Engineer Draft Set

Sheffield House
86 Emerald Glen Road,
Raumati, Kapiti Coast

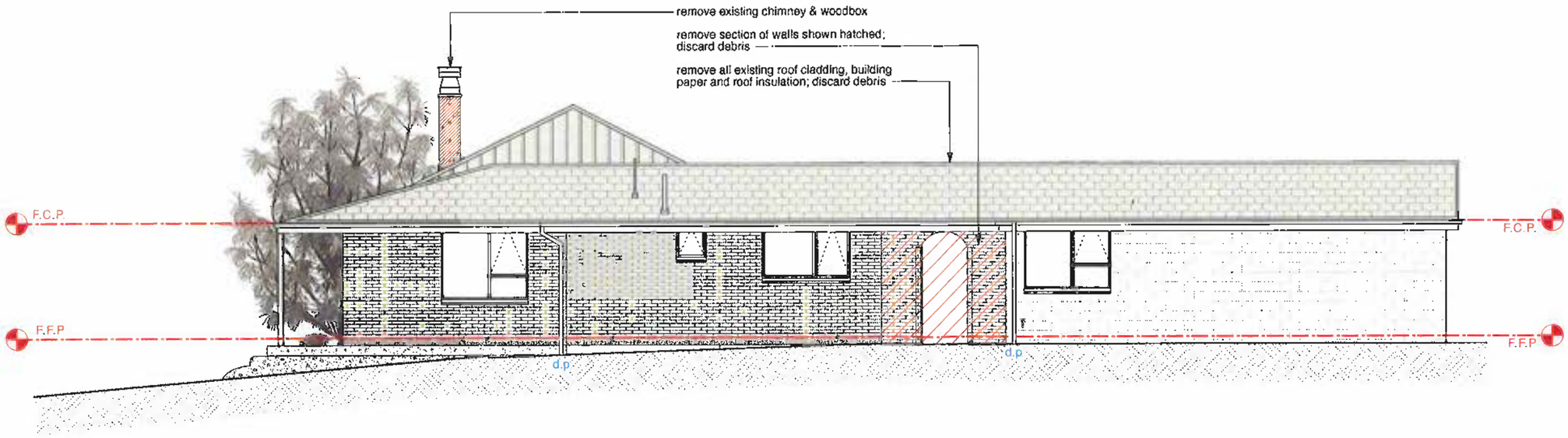
Existing North & South Elevations

194SHE07 / 1.02

of 1

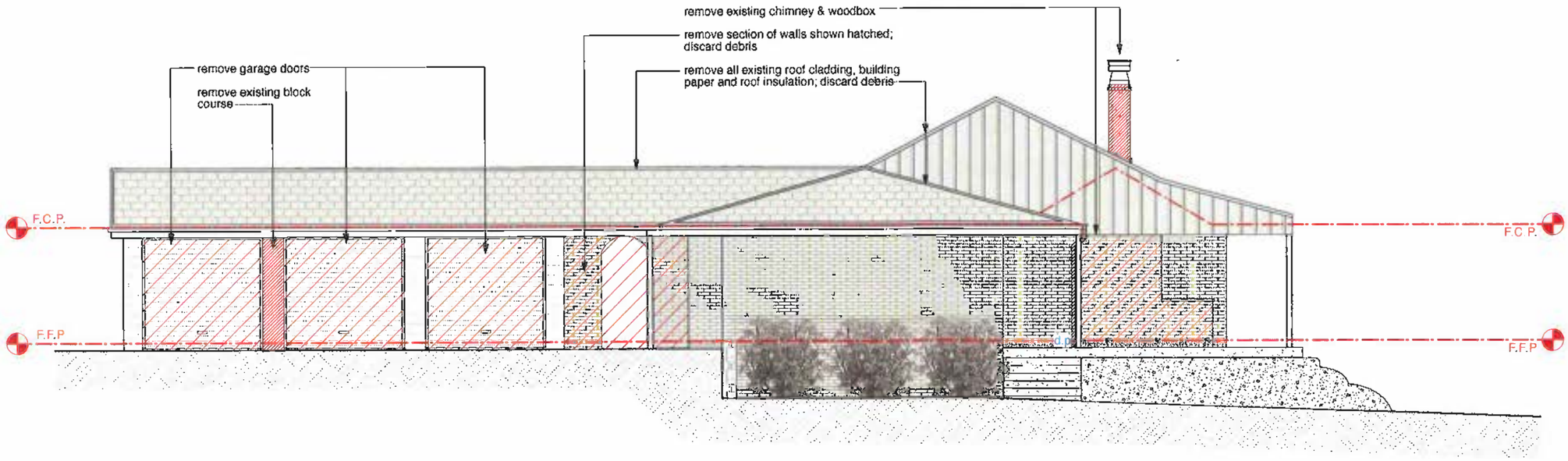
Drawn By: LS Checked By: GC

Document Issue:C
ARC File Name: 080131_CD_SHE



1 / 1.03 Existing South Elevation

Scale: 1:100



2 / 1.03 Existing West Elevation

Scale: 1:100

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C	28/2/08	Contract Documentation handover to client
B	11/12/07	Client Meeting
A	10/12/07	Structural Engineer Draft Set

Sheffield House
86 Emerald Glen Road,
Raumati, Kapiti Coast

Existing East & West Elevation

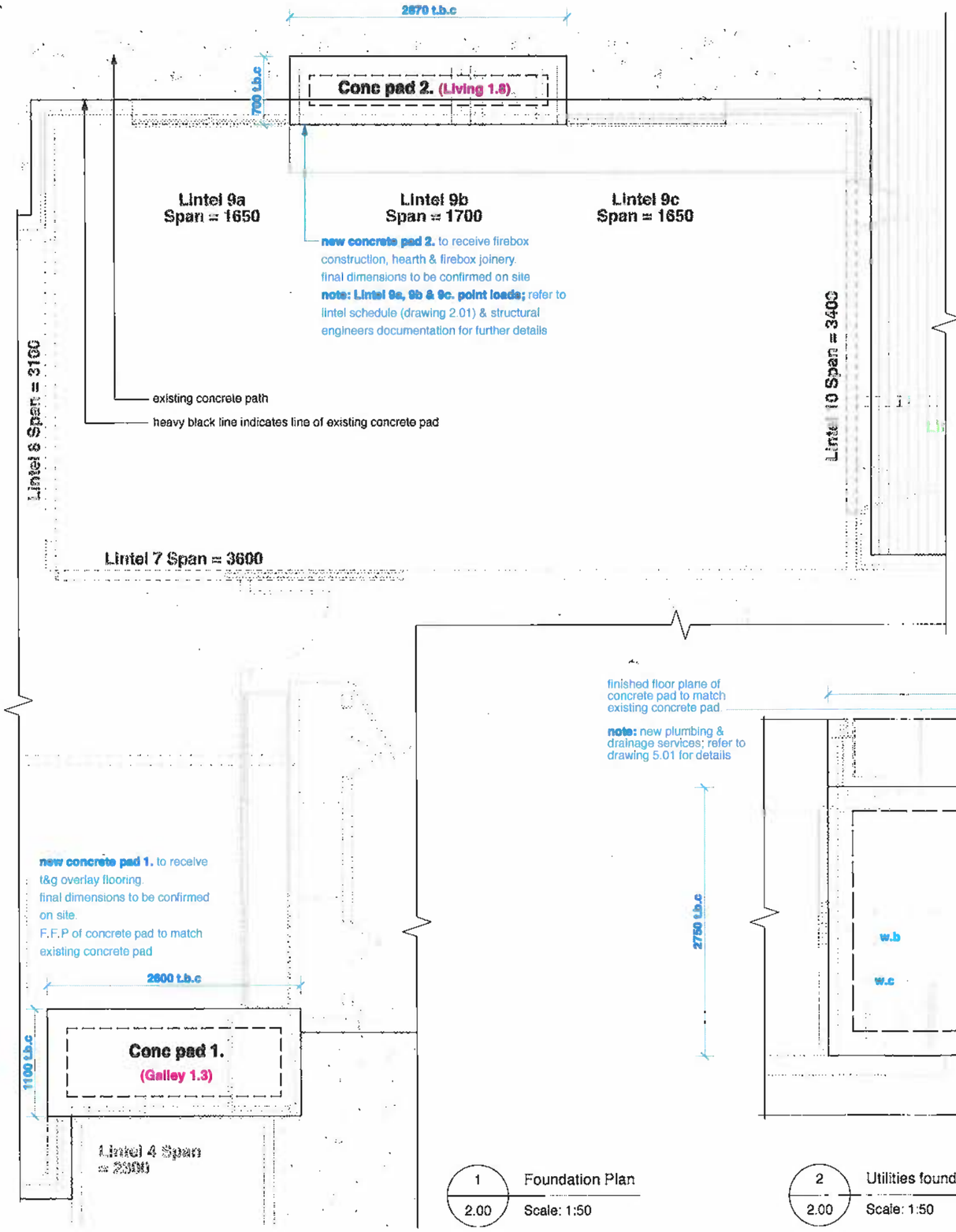
194SHE07 / 1.03

of 1

Drawn By: LS Checked By: GC

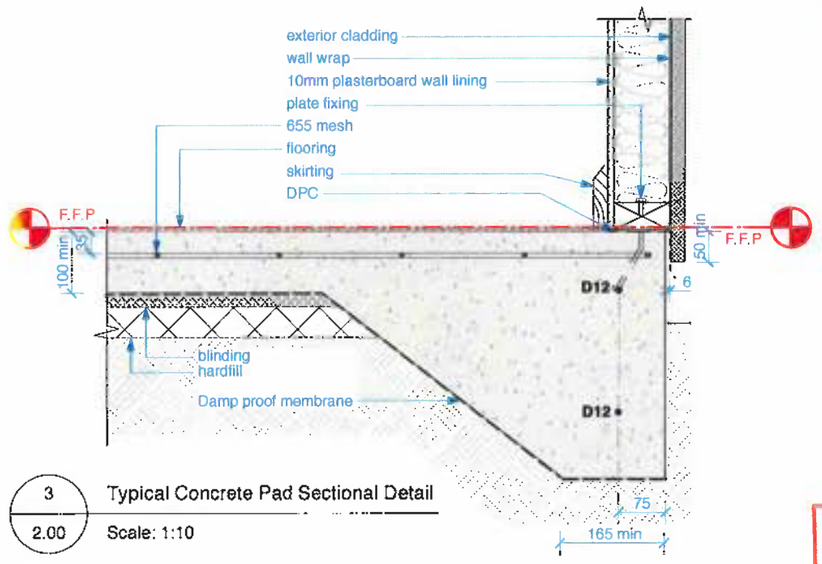
Document Issue:C
ARC File Name: 080131_CD_SHE

Plate fixing



1 / 2.00 Foundation Plan
Scale: 1:50

2 / 2.00 Utilities foundation Plan
Scale: 1:50



3 / 2.00 Typical Concrete Pad Sectional Detail
Scale: 1:10

architectureRobinsonCrimp
Level 1, 1 Marion Street
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E: arc@clear.net.nz

Notes:

All Concrete footing pads to comply with NZS3604 Table: 6.1

A	28/2/09	Contract Documentation handover to client

Sheffield House
86 Emerald Glen Road,
Raumati, Kapiti Coast

Foundation Plan

194SHE07 / 2.00

of 1

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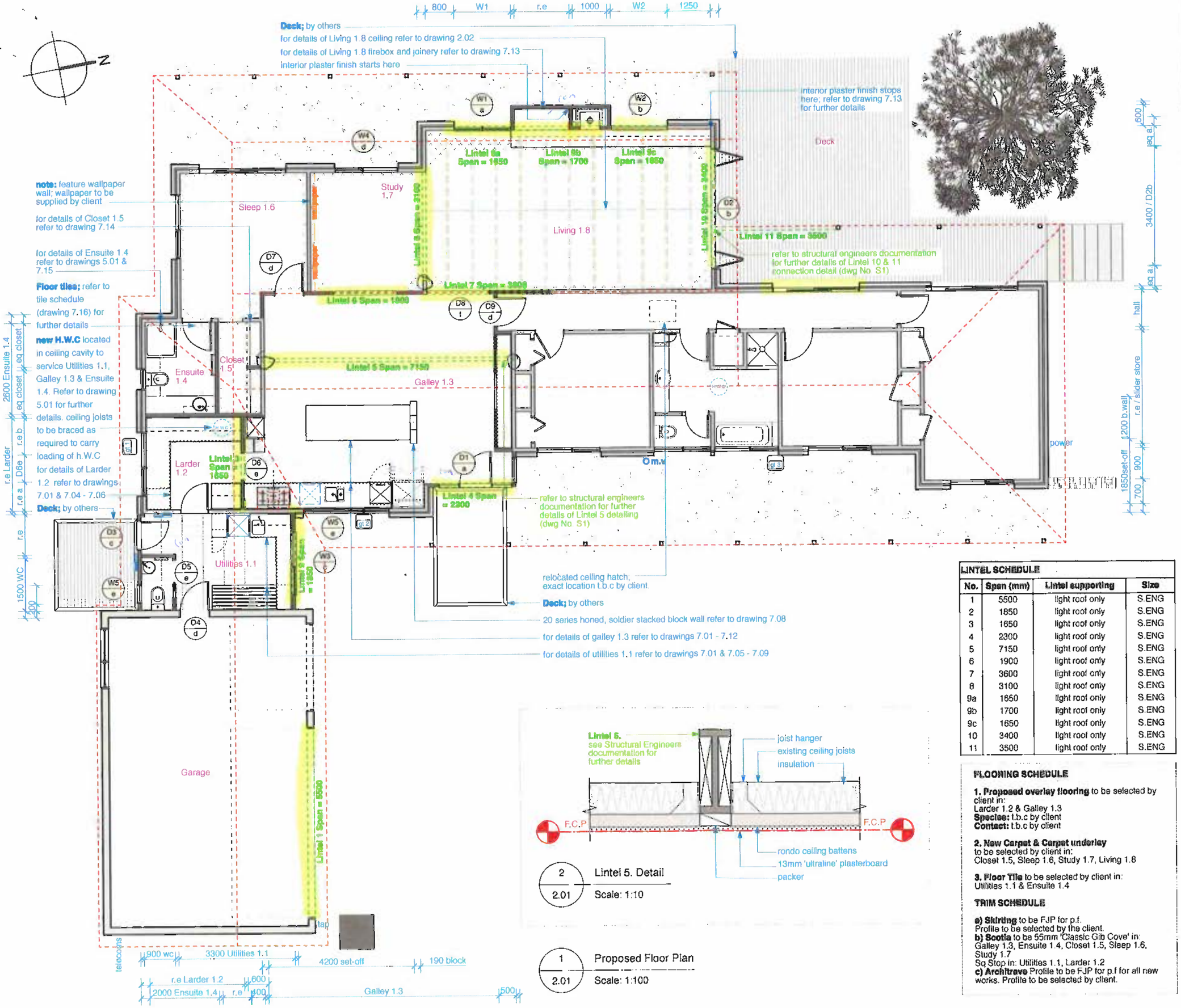
Document Issue: A
ARC File Name: 080131_CD_SHE



2 / 2.01 Lintel 5. Detail
Scale: 1:10

1 / 2.01 Proposed Floor Plan
Scale: 1:100

LINTEL SCHEDULE

No.	Span (mm)	Lintel supporting	Size
1	5500	light roof only	S.ENG
2	1850	light roof only	S.ENG
3	1650	light roof only	S.ENG
4	2300	light roof only	S.ENG
5	7150	light roof only	S.ENG
6	1900	light roof only	S.ENG
7	3600	light roof only	S.ENG
8	3100	light roof only	S.ENG
9a	1650	light roof only	S.ENG
9b	1700	light roof only	S.ENG
9c	1650	light roof only	S.ENG
10	3400	light roof only	S.ENG
11	3500	light roof only	S.ENG

FLOORING SCHEDULE

1. Proposed overlay flooring to be selected by client in:
Larder 1.2 & Galley 1.3
Species: t.b.c by client
Contact: t.b.c by client

2. New Carpet & Carpet underlay to be selected by client in:
Closet 1.5, Sleep 1.6, Study 1.7, Living 1.8

3. Floor Tile to be selected by client in:
Utilities 1.1 & Ensuite 1.4

TRIM SCHEDULE

a) Skirting to be FJP for p.f.
Profile to be selected by the client.
b) Scotia to be 55mm 'Classic Gib Cove' in:
Galley 1.3, Ensuite 1.4, Closet 1.5, Sleep 1.6, Study 1.7
Sq Stop in: Utilities 1.1, Larder 1.2
c) Architrave Profile to be FJP for p.f for all new works. Profile to be selected by client.

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Wellington, New Zealand
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Notes:
All dimensions to be confirmed on site prior to proceeding with works.
1. Structural Engineering refer to documentation for further details. Job No. 22432
Contact: John O'Hegan @ ISP Consulting Engineers Ltd; 04 569 8004
Refer to ARC Specification Addenda 1 for Resene mild steel paint specification
2. Wrap / Insulation
Building wrap for new works; Refer to ARC Specification Chapter 4102 'Wraps, underlays & DPC for further details.
Wall Insulation for new works to be; Pink Batts R3 (90mm thickness)
Ceiling Insulation to be *Tasman Insulation* Pink Batts Pads R3.2 (135mm thickness)
Contact: Kevin Gardon @ *Tasman Insulation New Zealand*; 04 232 1539.
3. WB Cladding for new works to be Herman Pacific Western Red Cedar WB H3.2.
Profile: CP837 (band sawn face)
Finish: stain **Colour:** *Resene* 'Hackett Black'
Refer to ARC Specification Addenda 2: 'Specification for timber stain' for further details.
Contact: Kyle Deane @ *Herman Pacific Ltd*; 09 426 5475; 021 771 857
4. Wall Linings: for all interior wall linings refer to structural engineers specification for all bracing and wall lining types. Refer to ARC Specification Chapter 5101G
5. Plastering and gib stopping to be completed to a grade 4 finish.
6. heat pump; t.b.c by client.

C	28/2/08	Contract Documentation handover to client
B	11/12/07	Client Meeting
A	10/12/07	Structural Engineer Draft Set

Sheffield House
86 Emerald Glen Road,
Raumati, Kapiti Coast

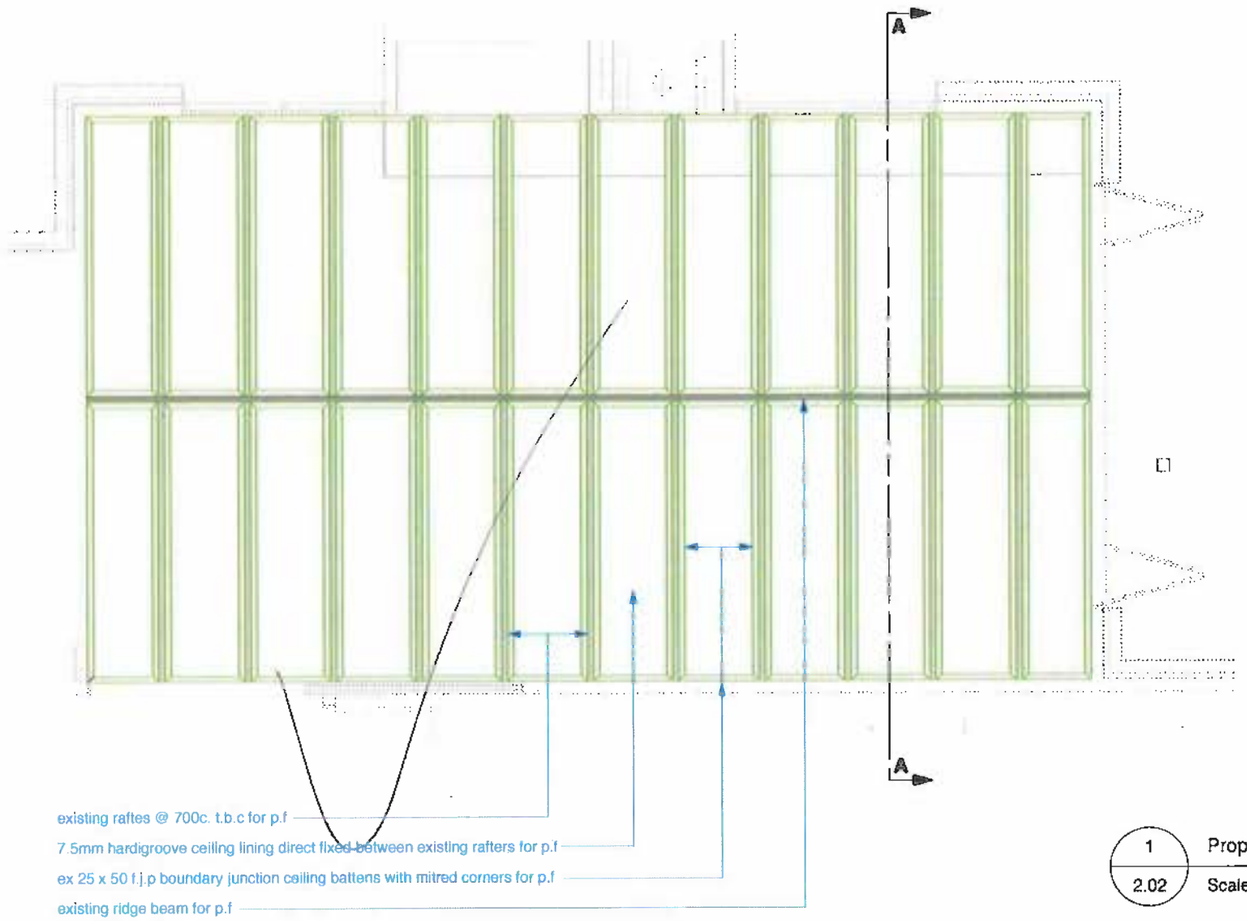
Proposed Floor Plan

194SHE07 / 2.01

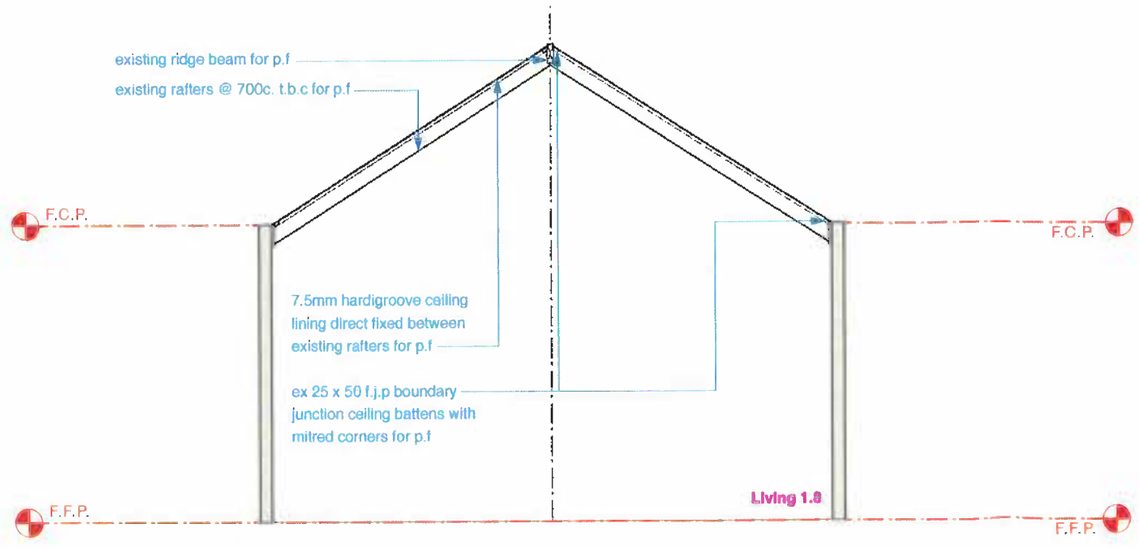
of 1

Drawn By: LS | Checked By: GC

Document Issue: C
ARC File Name: 071219_CD_SHE



1 / 2.02 Proposed Living 1.8 Ceiling Plan
Scale: 1:50



2 / 2.02 Proposed Living 1.8 Ceiling Plan
Scale: 1:50

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Living 1.8 Ceiling Plan Notes:

1. Living 1.8 Ceiling lining to be 7.5 mm direct fixed Hardigroove fibrecement board for p.f. between existing rafters.

Colour: to be confirmed by ARC/client.

2. Boundary junctions ceiling battens to be ex 25 x 50mm f.j.p for p.f as shown.

Colour: to be confirmed by ARC/client.

For Resenes; **Contact; Maggie Bruce @ *Resene Paints Ltd*; (04) 473 8420; 027 292 2406**

B	28/2/08	Contract Documentation handover to client
A	11/12/07	Client Meeting

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Ceiling Plan

194SHE07 / 2.02

of 1

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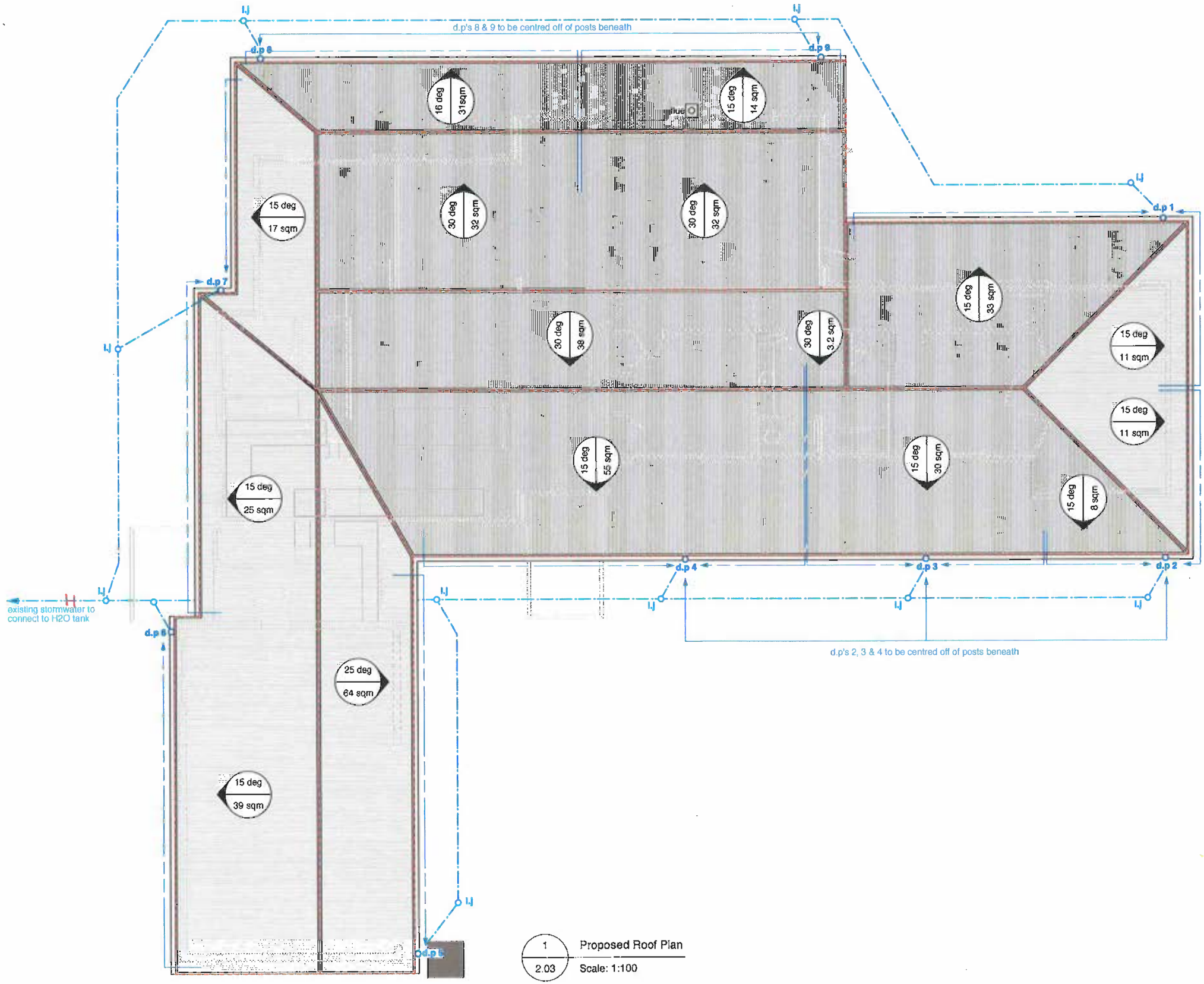

1 / 2.03 Proposed Roof Plan
Scale: 1:100

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Notes:

Plumber to confirm all Stormwater lines existing and proposed to comply with current **AS/NZS 3500.3:2003 Pt 3 Stormwater Drainage**

1. Roof Cladding

a) Roof Cladding
Profile: Standard 'Corrugate' **BMT:** 0.55mm
Coating: Colourteel Maxx **Colour:** 'Bone White'
note: all roof flashings to match roof colour.
Refer to ARC Specification Chapter 4301D 'Dimond Roofing'
Contact: Glyn Williams @ *Dimond*; 08 526 0242

2. Stormwater Collection

a) New or replacement Down Pipes to receive the following sqm of roof:

D.P. 1-	33 + 11	= 44 sqm [extg]
D.P. 2-	11 + 8	= 20 sqm
D.P. 3-	3.2 + 30	= 34 sqm
D.P. 4-	38 + 55	= 93 sqm
D.P. 5-		= 64 sqm [extg]
D.P. 6-		= 40 sqm [extg]
D.P. 7-	25 + 17	= 42 sqm [extg]
D.P. 8-	31 + 32	= 63 sqm
D.P. 9-	14 + 32	= 46 sqm

c) Refer to ARC Specification Chapter 7401 'Rainwater Systems.

d) Spouting to be Marley Rainwater Solutions
Profile & Components: to be 'Stormcloud' Spouting

e) Down pipes to be Marley Rainwater Solutions
Profile & Components: 80mm diameter (round).
Contact: Marley; 0800 627 539

f) Refer to proposed elevations 3.01 - 3.02 for downpipe locations.

g) all new / replaced d.p.s to connect to existing stormwater lines (exact placement t.b.c & upgrade if required) and to connect to new H2O tank.

B	28/2/08	Contract Documentation handover to client
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Roof Plan

194SHE07 / 2.03

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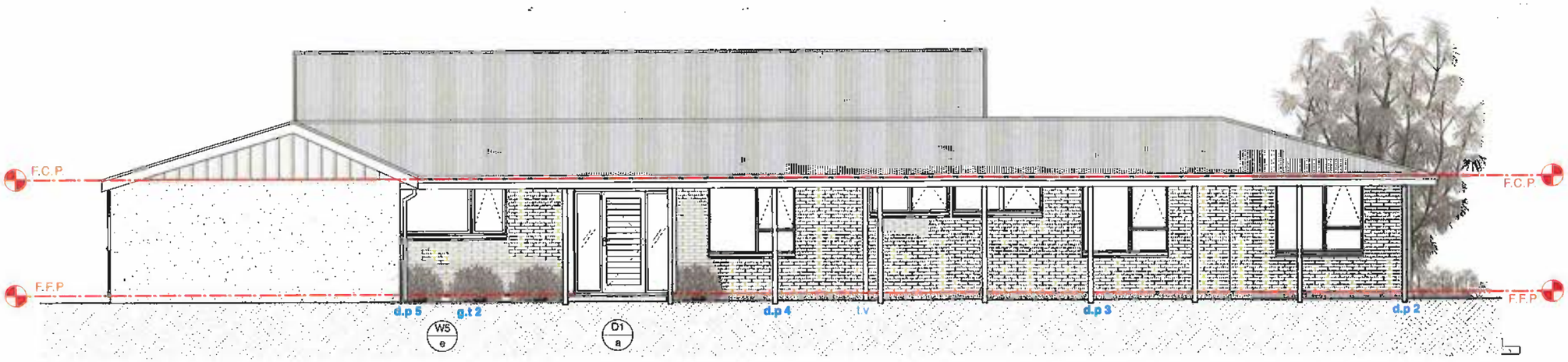
1 / 3.01 Proposed West Elevation

Scale: 1:100



2 / 3.01 Proposed East Elevation

Scale: 1:100

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C	28/2/08	Contract Documentation handover to client
B	11/12/07	Client Meeting
A	10/12/07	Structural Engineer Draft Set

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Proposed North & South Elevation

194SHE07 / 3.01

of 1

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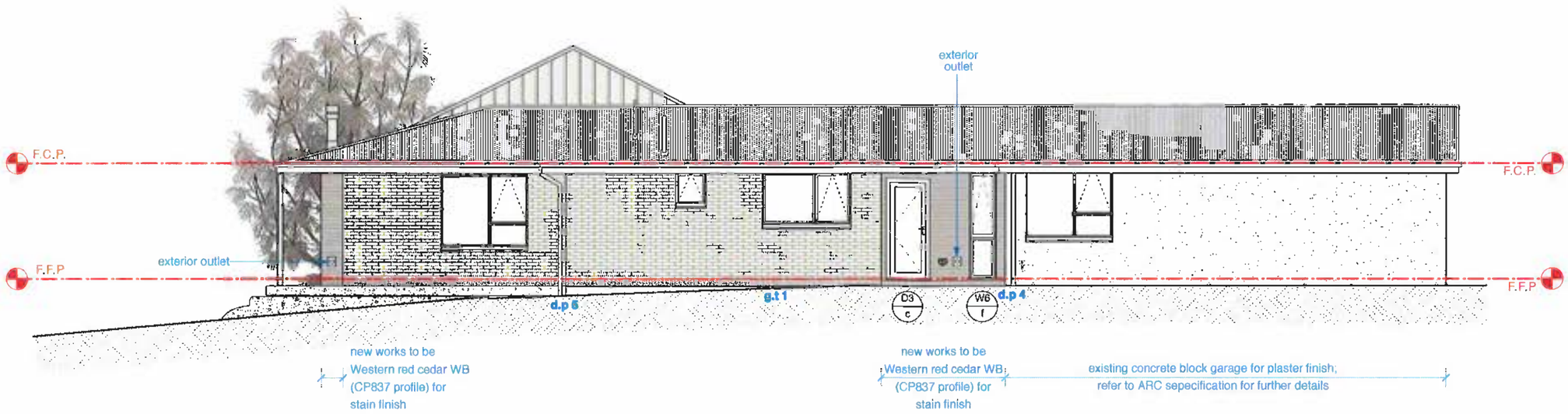
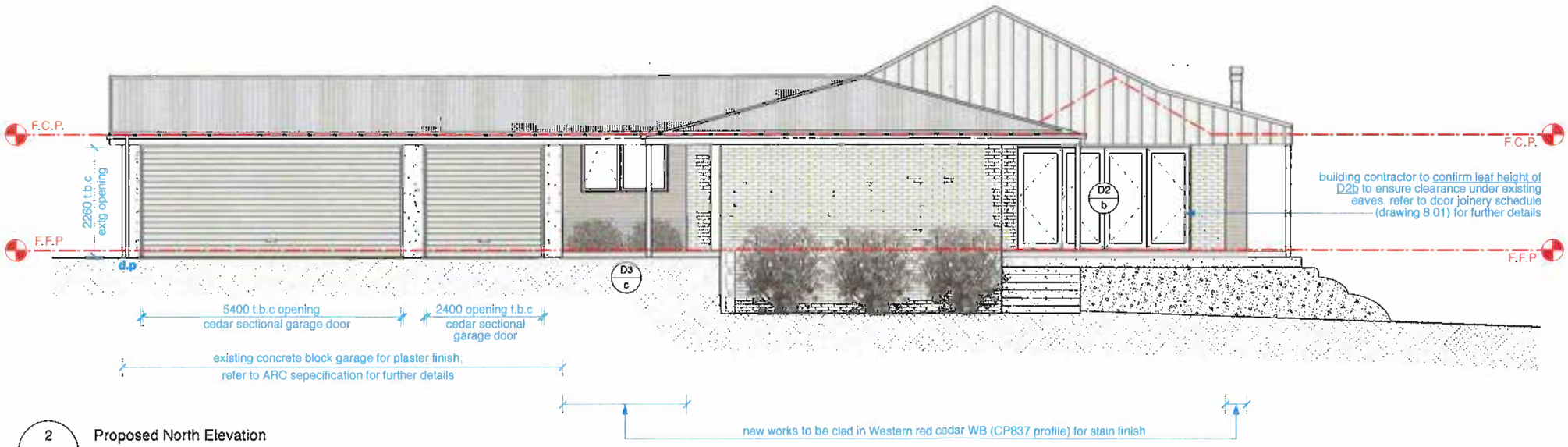


1 / 3.02 Proposed East Elevation
Scale: 1:100



2 / 3.02 Proposed North Elevation
Scale: 1:100

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Garage Door Notes:

2x garage doors to be 'Summit' horizontal cedar sectional tilt with automatic door system.
Cedar to be band saw on the face.
No. of remotes: 4
Refer to Electrical plan (drawing 6.01) for further details.
Finish: Resene Exterior Stain **Colour:** Hackett Black
Refer to ARC Specification Addenda 2, for timber stain specification.
Contact: Kevin Philpott @ Wellington Garage Door Co Ltd; 04 499 4455

D	26/2/08	Contract Documentation handover to client
C	30/1/08	To Doors2000 re: initail quote/feedback
B	11/12/07	Client Meeting
A	10/12/07	Structural Engineer Draft Set

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Proposed East & West Elevations

194SHE07 / 3.02

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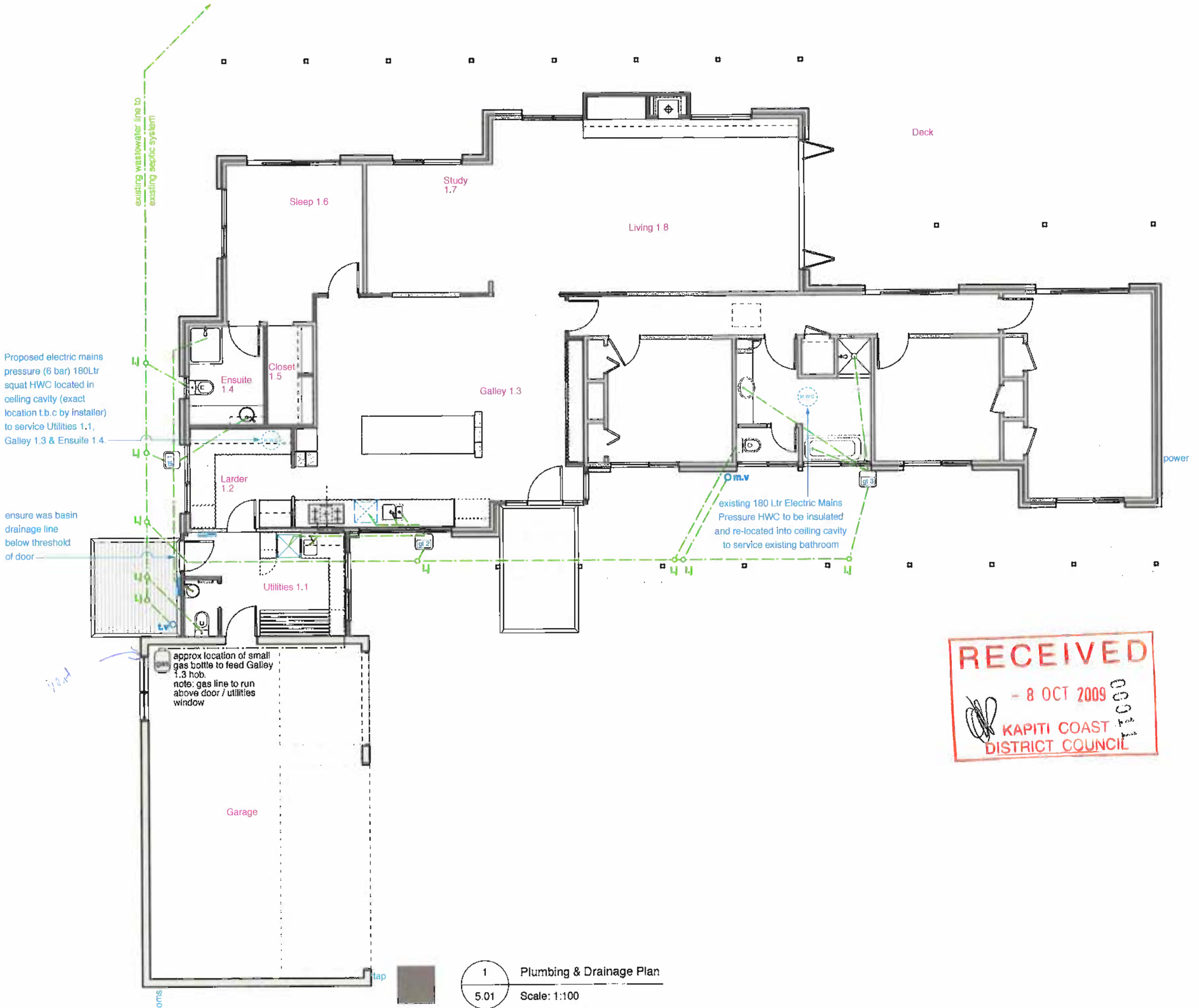

1 / 5.01 Plumbing & Drainage Plan
Scale: 1:100

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Notes

1. All proposed plumbing to comply with AS/NZS 3500 2.2003 (Pt 2 Sanitary Plumbing & Drainage)

2. Plumber to confirm all stormwater lines existing and proposed to comply with current **ASNZS 3500.3:2003 (Pt 3 Stormwater Drainage)**

3. Proposed Electric H.W.C to be 180L squat Mains pressure (6 Bar) Rheem model: 322 180 15 t.b.c (580 dia x 1166 H) to be located in ceiling cavity to service Utilities 1.2, Galley 1.3 & Ensuite 1.4.
Contact: Paul Watson @ Rheem NZ Ltd; 09 0200200; 021 437611

Minimum Discharge Pipe Sizes

Fixture Type	Minimum pipe size
WC	100 UVPC
Shower	40 UVPC
Wash Basin	40 UVPC
Dishwasher	40 UVPC
Galley Sink	40 UVPC
Washing Machine	40 UVPC
Laundry Tub/Sink	40 UVPC

Plumbing Legend

Line Type	
Wastewater Line	
Gas Line	

C	26/2/08	Contract Documentation handover to client
B	21/1/08	Emailed to Client
A	19/12/07	Emailed to Paul Watson @ Rheem

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Plumbing & Drainage Plan

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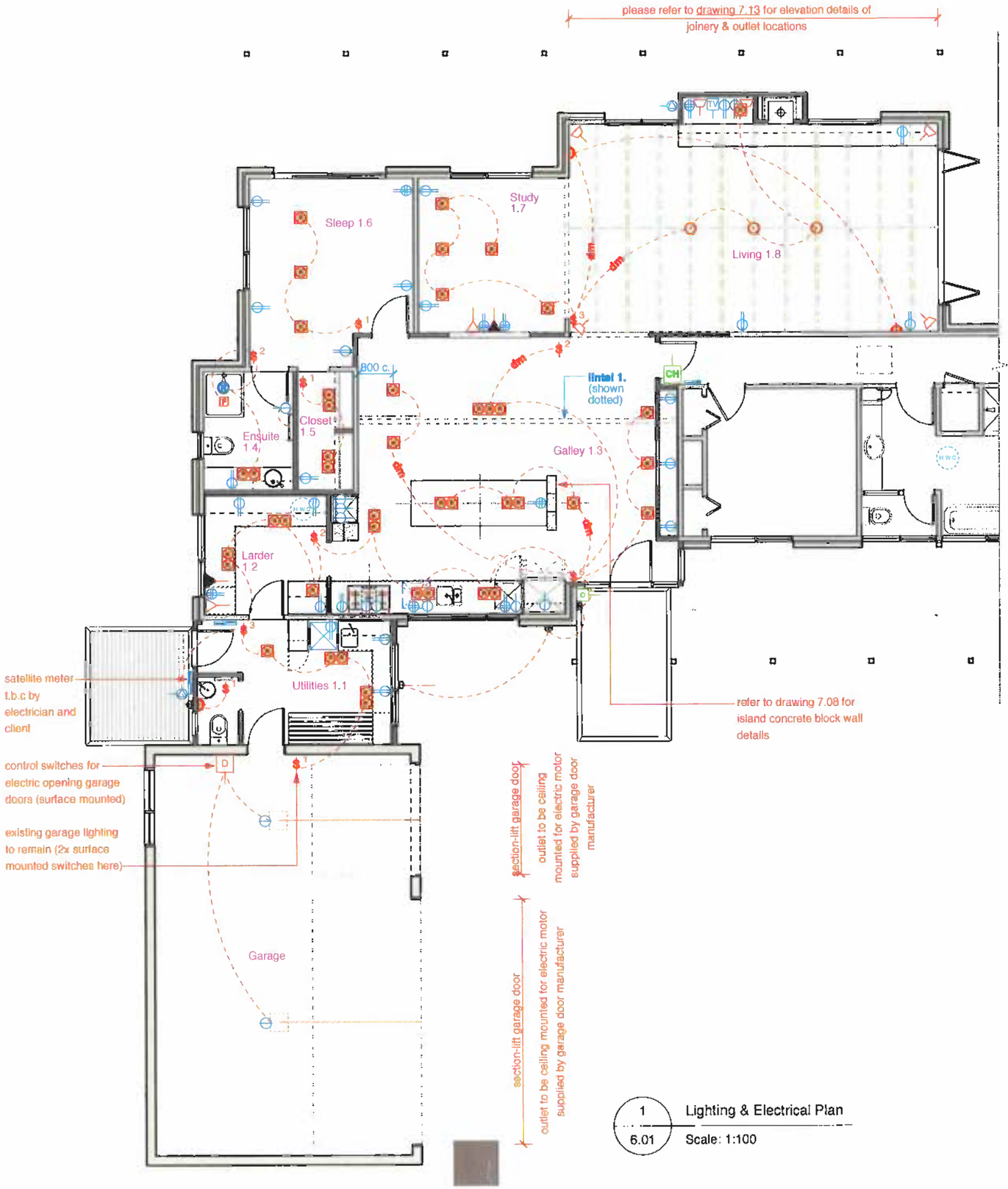
Use figured dimensions: Do not scale.
Contractor liable for all measurements on site.
Carry out all works in accordance with drawings and specifications.



1 / 6.01 Lighting & Electrical Plan
Scale: 1:100

Electrical Legend

Description	Description
$ 1	switch + number of switches
	Single outlet
	Double outlet
	Quad outlet
	Exterior outlet
	Telephone Jack
	Data
TV	TV Jack
	Sound Outlet
CH	Door bell chime
O	Door Bell Buzzer
	Single recessed halogen
	Double recessed halogen
	Triple recessed halogen
	Pendant
	Interior wall light
	Stair tread fitting
	Exterior flood light (high)
	Exterior wall light (low)
dim	Dimmer
EF	extractor fan
D	Garage door switch
	Meter Board
	Sub Board

moisture to ceiling cavity

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Notes:

1. Electrician to confirm Electrical Plan and layouts with ARC/client before proceeding.

2. All outlet sockets (unless otherwise specified) to be horizontal orientation and 200mm off FFP.

3. All switches to be Vertical orientation and 1220mm off FFP.

4. All bench-top outlets to be 80mm off horizontal surfaces or as shown on relevant sections.

5. All fittings to be PDL Electrical products refer to Electrical Addenda, in ARC specification for further details.

6. Client to supply all lighting products.

7. Main distribution board to remain in existing location.

8. Electrician to check capacity of existing cable and circuits for compliance to current standards. If acceptable reutilise existing circuits and cabling otherwise upgrade cable and circuits as required to meet cable load demand and current standards.

9. Outlet & switch cover plates on Galley 1.3 block wall to be silver.

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Lighting / Electrical Plan

194SHE07 / 6.01

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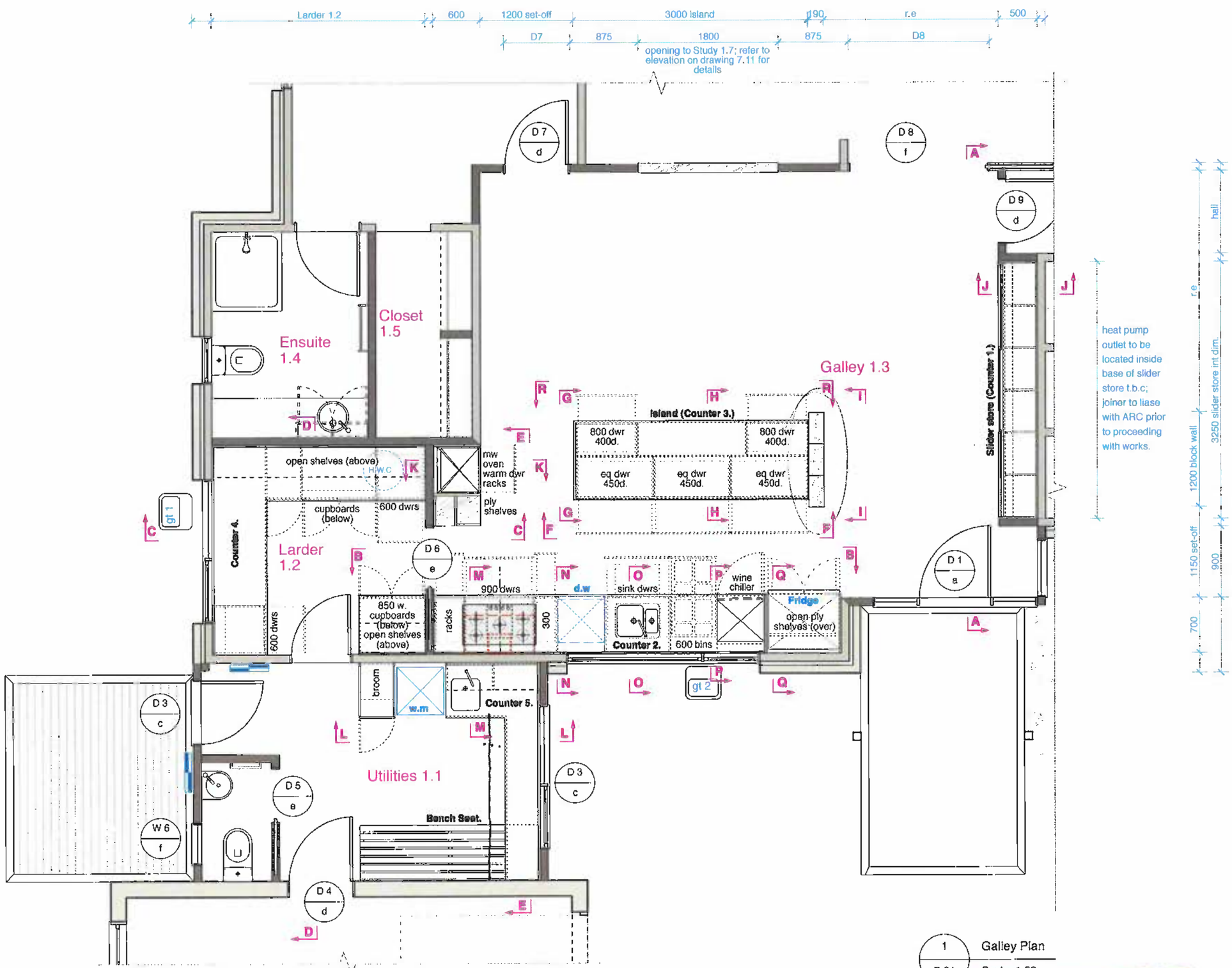

1 / 7.01 Galley Plan

Scale: 1:50

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Galley 1.3 Notes

All dimensions to be confirmed on site prior to fabrication. All Appliances to be supplied by client. Refer to drawing 7.02 for appliance schedule.

1. Galley 1.3 Counter (Counter 2.) to be 20mm Square nosed 1.2mm Stainless Steel with 80mm upstand. **Finish:** Satin No 4.
Refer to detail on drawing 7.12 for further details.
Contact: *Mercer*; 0800 263 7237
Sink to be *Reginox* 'Consort 60' for weld-into St.st bench.**Contact: *Reginox*; 07 863 4605**
or Denise Austin @ *Duratech*; 0800 473 446
Sink mixer to be surface mounted (supplied by client).

2. All MDF cupboard doors, exposed side panels, drawer fronts & hatch flaps to be 18mm and receive 2 pot satin mirotone lacquer p.f.
Colour: t.b.c by client/ARC
Finish: Satin
Shadow-line rails to be 18mm MDF and receive 2 pot satin mirotone lacquer p.f.
Colour: t.b.c by client/ARC
Finish: Satin
Refer to detail on drawing 7.12.
Contact: Maggie Bruce @ *Resene Paints Limited*; 04 473 8420; 027 292 2486
Contact: Andre @ *Spectrum Spray 2001 Ltd*; 04 387 9092

3. All cabinetry interiors to be white melamine.

4. Kick Plates to be Scilm R4000 Plain aluminium toe facing with flexible seals (120 mm h)
Product No. 7320443
Legs to be Scilm 250P R50 adjustable leg with nylon clip for mounting kickplate. **Product No. 7321516**
Quantity of legs to be determined on site.
Accessories to be determined on site: end caps (Scilm 1300) corners & junctions.
Contact: Peter Manser @ *The Laminex Group*; 04 568 4200; 021 284 6128; 0800 303 606

5. Drawers 1 - 34 to be *Sanco NZ Ltd* 'Blum' drawer system. See drawer schedule on Drawing **7.12** for specification and dimensions. **Contact: Moira Smith @ *Sanco NZ Ltd*; 09 820 5051; 021 1902193**

6. Handles to be *Hettich 'Pro Decor'* Aluminium extrusion for cutting to length.
Cat No. 045206 Contact: Kevin Doncliff; *Hettich International*; 027 444 6445; 0800 438 8424

7. Fridge Surround / Open Ply Shelves to be 28mm Keruing Container Ply. Plywood to be mitred, receive light sand, min arris & x2 coats satin polyurethane finish.
Contact: Craig Floyd @ *Plytech International*; 0800 900 905; 021 304 544

8. Pull-out bins; refer to drawer schedule (drawing 7.12) for details.

notes cont on dwg 7.02

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A	30/11/07	Galley Draft 2.

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Galley Plan

194SHE07 / 7.01

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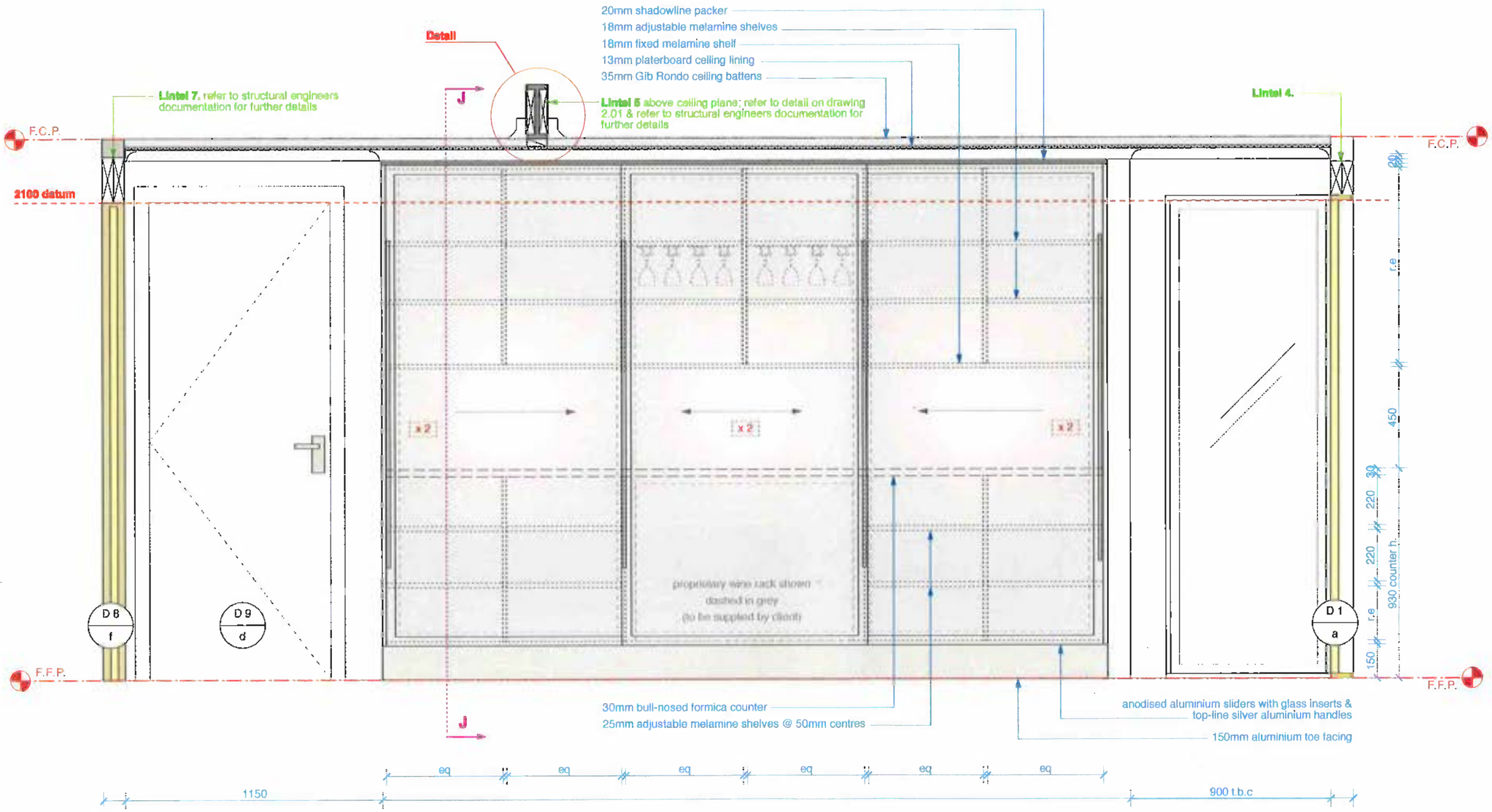

note: Joiner to confirm with ARC prior to fabrication if a heat pump grill is required in kickplate.
If required, joiner is to liase with ARC and nominated heat pump installer to assess the cabinetry and structure against the proposed system.

1 / 7.02 Galley Section A - A
Scale: 1:20

Appliance Schedule Note: Client to supply all appliances

	Appliance	Model	Product Dimensions (h x w x d)	Carcass dims (h x w x d) / Set-offs
Galley 1.3	Fridge Freezer	Existing GE: double door model t.b.c	900 x 750 x 1720 t.b.c	t.b.c
	Wine Chiller	GE: M57PWC monogram under bench	876h x 603d x 603d t.b.c	875-890h x 603 min w x 610 min d.
	Dishwasher	New Integrated Miele: G2243SCI	598w x 570d	>=845h x 600w x >=570d
	Gas Hob	New Miele: KM391G	56h x 930w x 514d	916w x 500d [refer to manual for further details]
	Extractor	Existing Miele: model t.b.c	900w x 500d t.b.c	
	Microwave Oven	New Miele: M8261	452.5h x 595w	450h x 560w x 500d [refer to manual for further details]
	Electric Oven	Existing Miele: H212 t.b.c	t.b.c	t.b.c
	Warming Drawer	New Unbranded: KWD1SS	140h x 597w x 525d	140h x 548w x 525d
Laundry Unit:	Washing Machine	t.b.c		
	Dryer	t.b.c		

note: refer to manufacturers latest installation instructions for full details

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9. Slider Store Notes

a) Central Counter 1. to be 30mm bull nosed formica.
Colour: Lava Dust t.b.c by client/ARC **Finish:** PEARL
Contact: ***The Laminex Group*; 04 568 4200**
b) Carcass interior, above counter adjustable shelves & vertical supports to be 18mm melamine
Colour: 'Silver Haze' t.b.c by client/ARC
Below counter shelves & vertical supports to be 25mm melamine. **Colour:** 'Silver Haze' t.b.c by client/ARC
c) Exposed side panels to be 18 mm mdf and receive 2 pot satin mirotone lacquer p.f.
Colour: t.b.c by client/ARC
Contact: t.b.c by client/ARC
Contact: Andre @ *Spectrum Spray 2001 Ltd*; 04 387 8082
d) Centre bay **6x glass hangers** to be *Southern Hospitality Ltd* glass hanger; Chrome plate 250mm
Code: T10211 to be fixed @ equal centres beneath the adjustable shelves as shown.
Contact: *Southern Hospitality Ltd*; 0800 503 335
e) Kick Plates to be Scilm R4000 Plain aluminium toe facing with flexible seals (150 mm h)
Legs to be Scilm 250P R50 adjustable leg with nylon clip for mounting kickplate. **Product No. 7321516**
Quantity of legs to be determined on site.
Accessories to be determined on site: end caps (Scilm 1300) corners & junctions.
Contact: Peter Meneer @ *The Laminex Group*; 04 568 4200; 021 264 6126; 0800 303 606
f) Sliding Doors to be *Hettich* 'AliFrost Aluminium Door Solutions'.
Profile Code: 55/43mm Box
Finish: Anodized aluminium
Insert: glass etchlite
Hardware: to be Sliding Door Fitting Top Line 22 for aluminium frame doors - load capacity max 50kg/door all inclusive top door runner set (3-door).
Order No. 013 433
Handles: to be Top Line 22 Sliding Door fitting aluminium silver anodised handles.
Length: 1450mm **Order No. 044 001**
Contact: Kevin Doncliff @ *Hettich International*; 027 444 6445; 0800 4388424

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Galley 1.3 Section A - A

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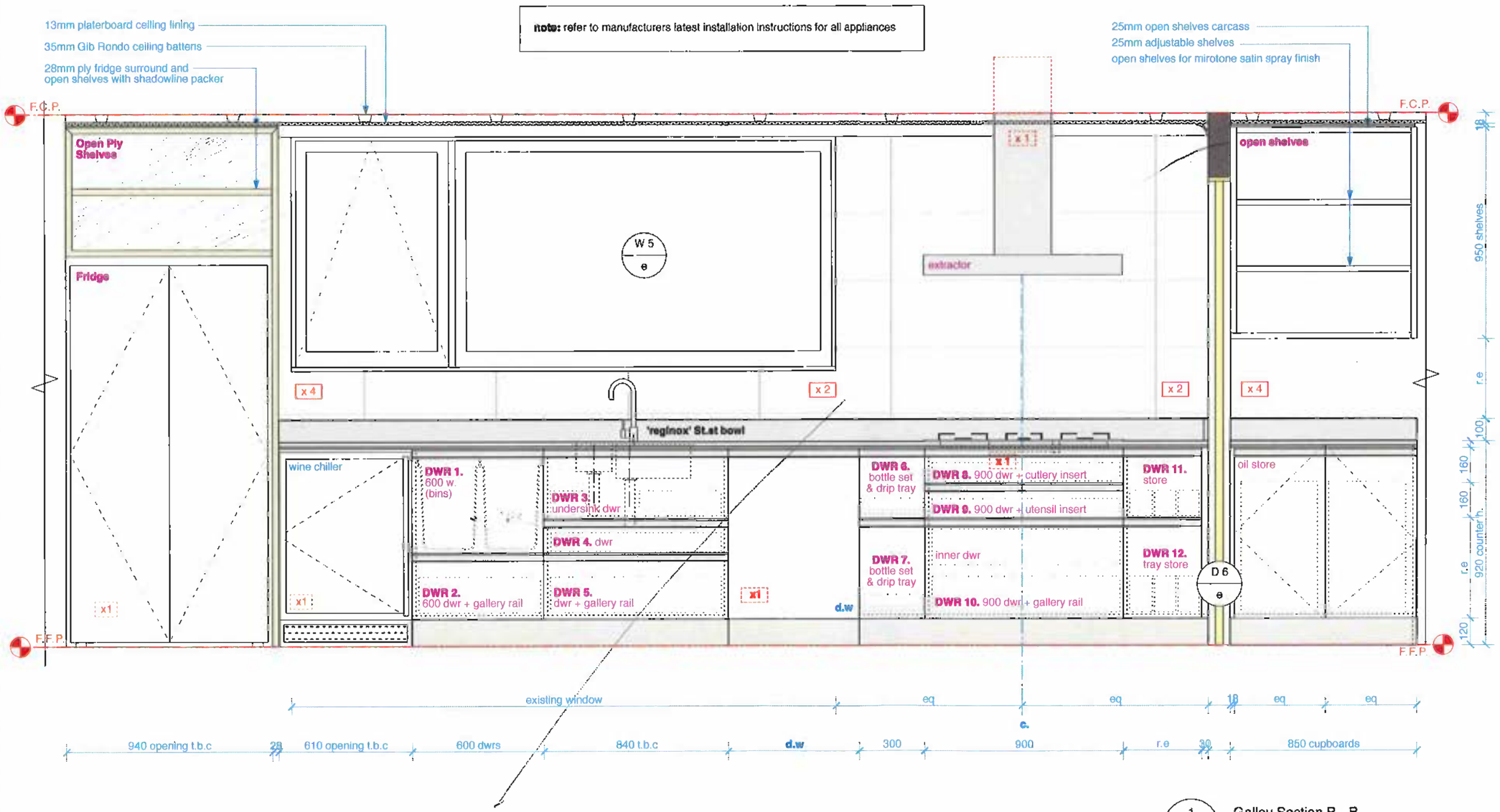

1 / 7.03 Galley Section B - B

Scale: 1:20

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Notes:

Wall Tiles to be supplied by the client.
Tiles to rest on St.st t.b.c upstand junction & be sealed with a clear anti-mould silicone bead.
To be confirmed on site prior to placing order.
Wall tile type: t.b.c by client/ARC
Grout colour: t.b.c by client/ARC
Refer to drawing 7.16 for full tile schedule including quantities.

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Galley 1.3 Section B - B

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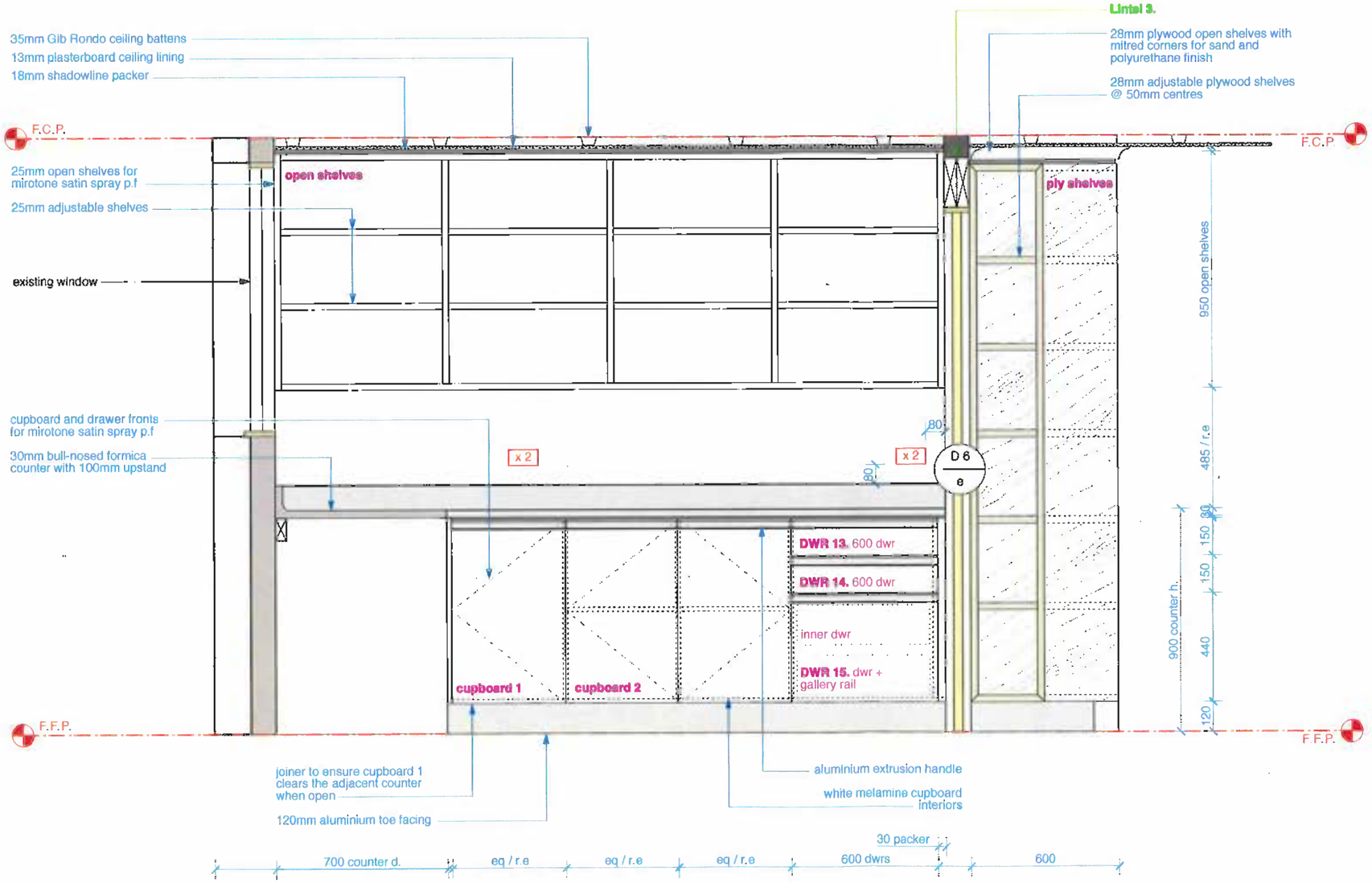

1 / 7.04 Galley Section C - C

Scale: 1:20

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Larder 1.2 Notes

All dimensions to be confirmed on site prior to fabrication.

1. Larder Counter (Counter 4.) to be 30mm bull nosed laminate with 100mm upstand.
Colour: t.b.c by client/ARC
Finish: t.b.c by client/ARC
Contact: Peter Menser @ *The Laminex Group*; 04 568 4200; 021 284 6128; 0800 303 606

2. All MDF cupboard doors, exposed side panels, drawer fronts & open shelves to receive 2 pot satin mirotone lacquer p.f.
Colour: t.b.c by client/ARC
Finish: Satin
Shadow-line rails to be 18mm MDF and receive 2 pot satin mirotone lacquer p.f.
Colour: t.b.c by client/ARC
Finish: Satin
Refer to detail on drawing 7.12.
Contact: Maggie Bruce @ *Resene Paints Limited*; 04 473 0420; 027 292 2466
Contact: Andre @ *Spectrum Spray 2001 Ltd*; 04 387 9092

3. All cabinetry & drawer interiors to be white melamine.

4. Kick Plates to be Scilm R4000 Plain aluminium toe facing with flexible seals (120 mm h)
Product No. 7320443
Legs to be Scilm 250P R50 adjustable leg with nylon clip for mounting kickplate. **Product No. 7321516**
Quantity of legs to be determined on site.
Accessories to be determined on site: end caps (Scilm 1300) corners & junctions.
Contact: Peter Menser @ *The Laminex Group*; 04 568 4200; 021 284 6128; 0800 303 606

5. Drawers 13 - 18 to be *Sanco NZ Ltd* 'Blum' drawer system. See drawer schedule on Drawing **7.12** for specification and dimensions. **Contact: Moira Smith@Sanco NZ Ltd; 09 020 5051; 021 1902193**

6. Handles to be *Hettich 'Pro Decor'* Aluminium extrusion for cutting to length.
Cat No. 046206 Contact: Kevin Doncliff; *Hettich International*; 027 444 6445; 0800 438 8424

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Larder 1.2 / Galley 1.3 Section C - C

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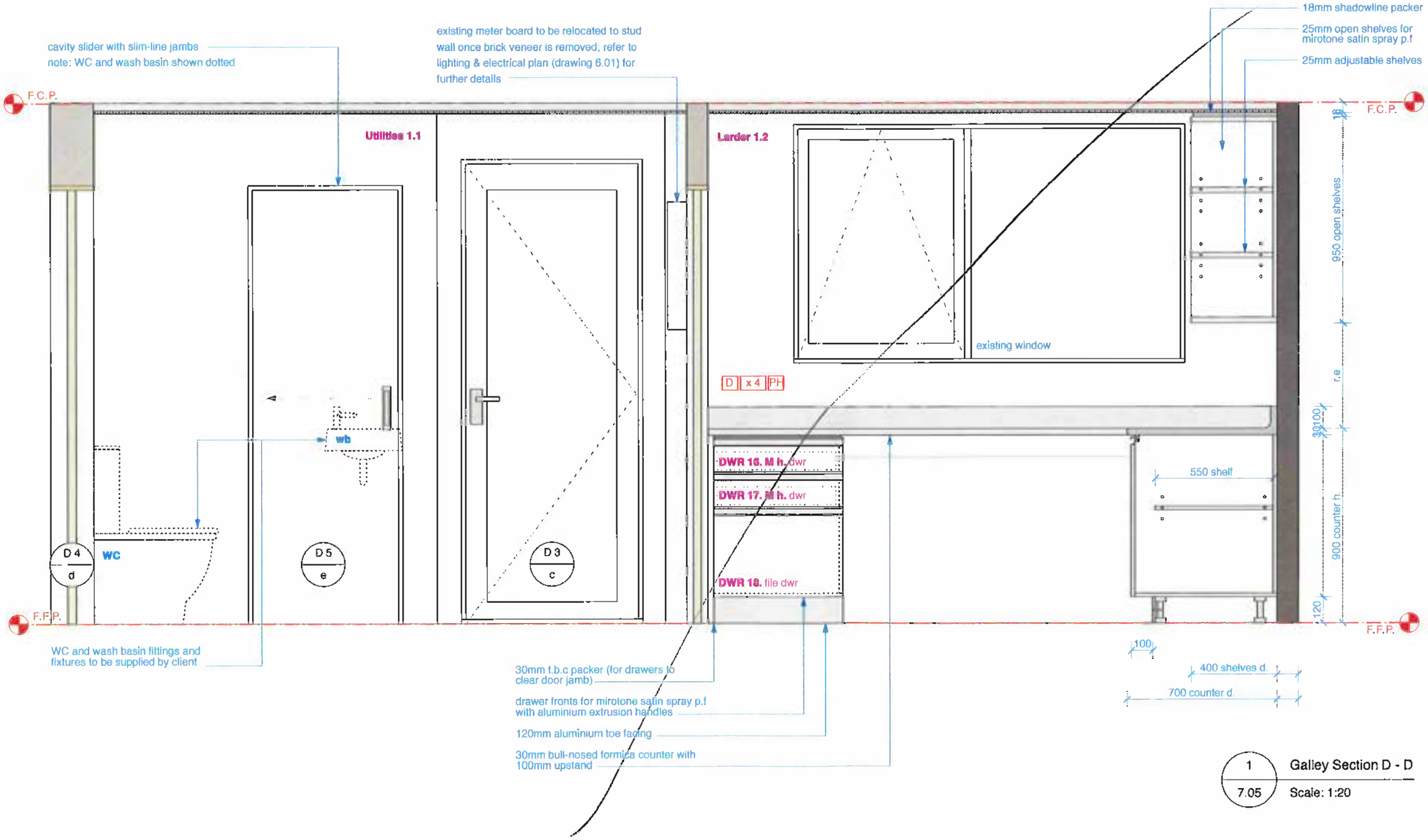

1/7.05 Galley Section D - D
Scale: 1:20

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Utilities 1.1 / Larder 1.2 Section D - D

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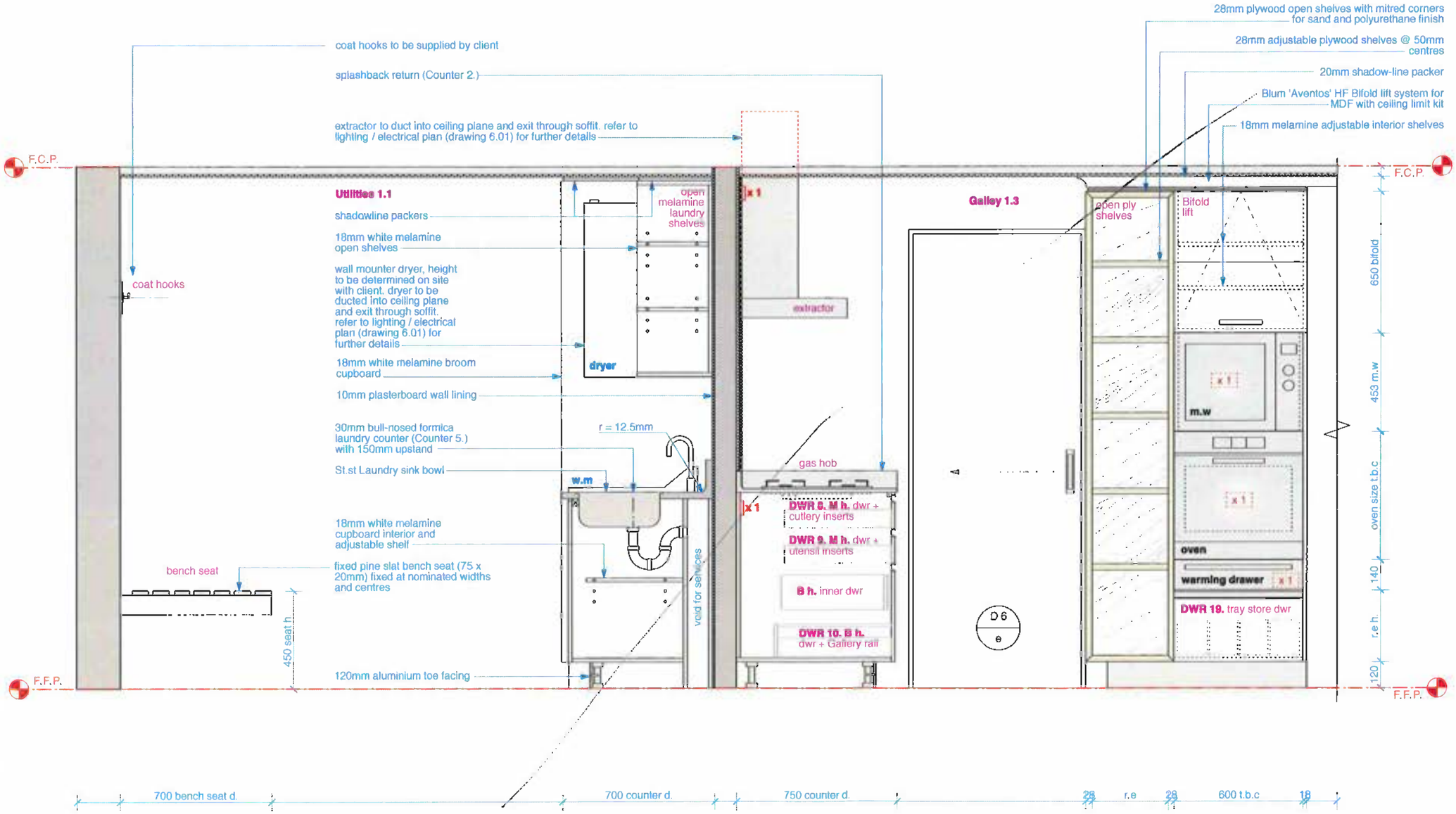

1 / 7.06 Galley Section E - E

Scale: 1:20

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Utilities 1.1 / Galley 1.3 Section E - E

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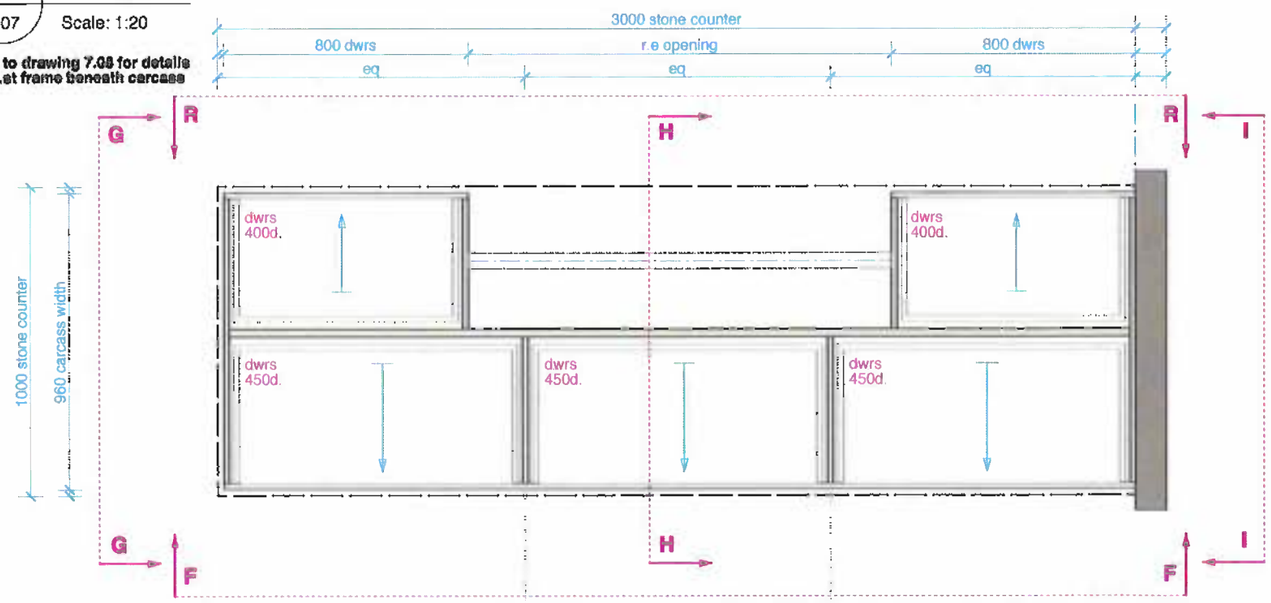
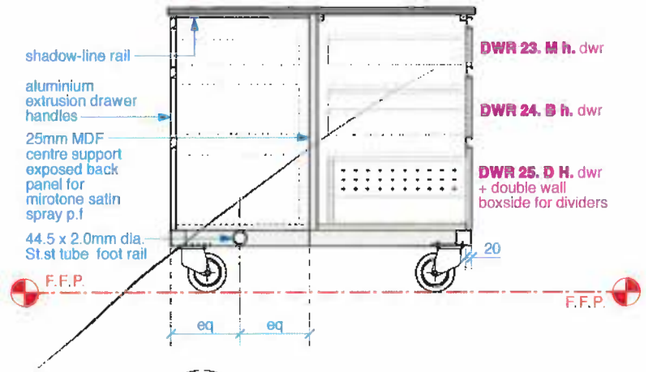
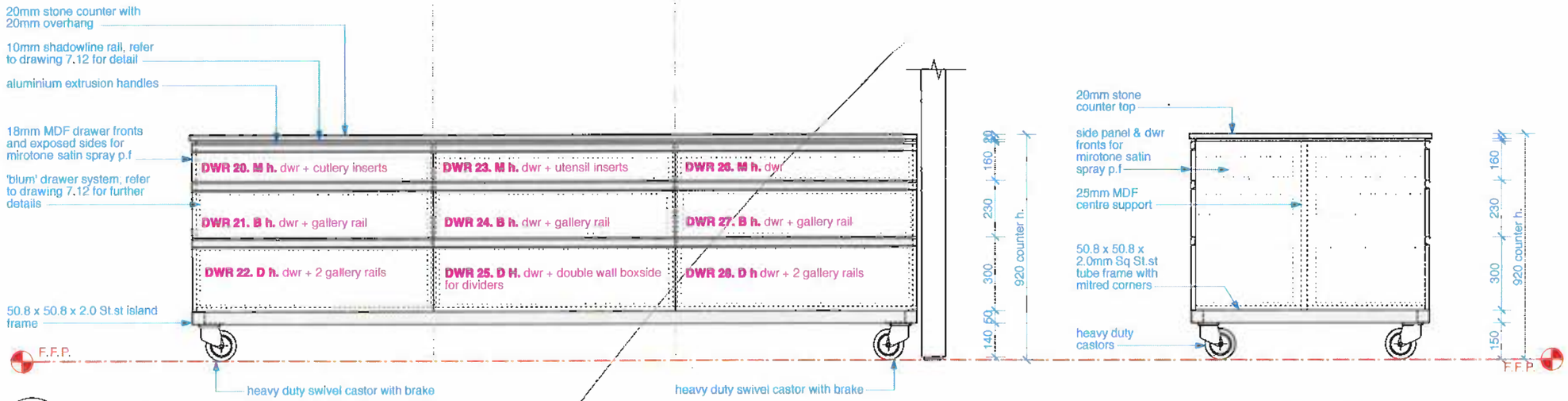
1 / 7.07 Galley Island
Scale: 1:20

refer to drawing 7.08 for details of St.st frame beneath carcass

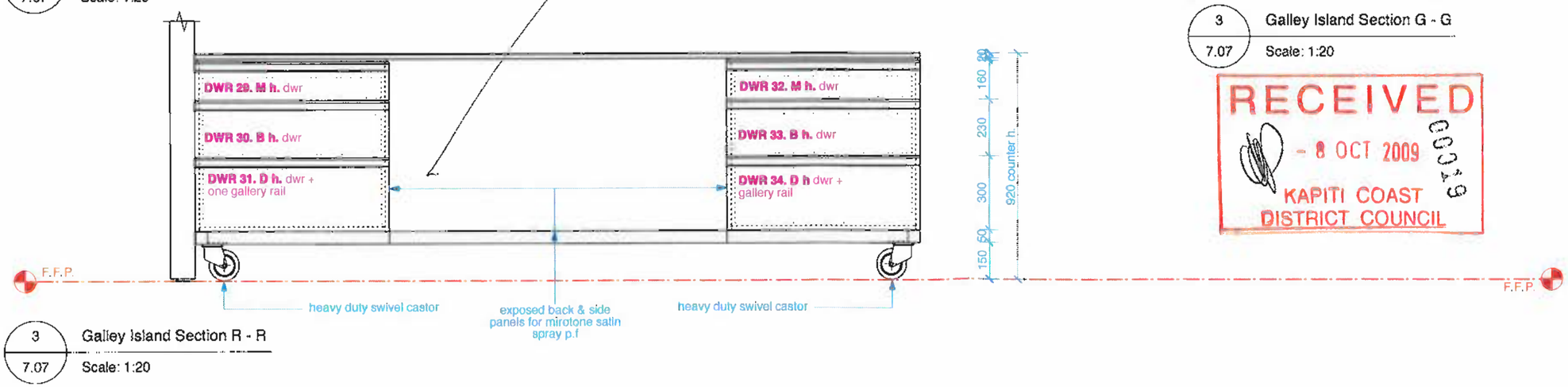




4 / 7.07 Galley Island Section H - H
Scale: 1:20



2 / 7.07 Galley Island Section F - F
Scale: 1:20



3 / 7.07 Galley Island Section R - R
Scale: 1:20

3 / 7.07 Galley Island Section G - G
Scale: 1:20

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Galley 1.3 Island Notes:

1. Island Counter 3. to be 3000 x 1000 x 20mm Caesar Stone Quartz Surfaces
Colour: 3730 Mangrove
Finish: Polished
Edge: Polished Pencil Arris Edge
Counter to have 20mm overhang from drawer fronts and side panels.
Contact: Mark Bramwell; *Branco Granite & Marble*; 04 9389107; 027 245 7949

2. Island Stainless steel (St.st) frame to be 50.8 x 50.8 x 2.0mm sq tube. **Finish:** brushed satin. Perimeter frame to receive mitred junctions, and all mitred junctions to have hidden welds. For butt junctions, spot weld only. Pre-drill frame @ 600c, 9mm dia, for fixing carcass to frame.
Foot rail to be 44.5 dia tube (round) with 1.5mm wall.
Finish: brushed satin. Butt junction to frame (50.8 x 50.8 x 2.0 sq tube) with hidden weld.
Rail length approx:
Contact: Mico Metals; 04 568 2308

3. Island Castors to be *Hafele* 'heavy duty swivel castors' with mounting plate.
Installed height = 150mm
Wheel dia = 125mm
Load bearing capacity per castor = approx 100kg.
Cat No. 670.03.221 (x2 with brake)
Cat No. 670.01.227 (x2 standard)
Contact; John Da Col; *Hafele*; 021 661 260

4. All MDF exposed side panels & drawer fronts to be MDF and receive 2 pot satin mirotone lacquer p.f.
Colour: t.b.c by client/ARC
Finish: Satin
Shadow-line rails to be 18mm MDF and receive 2 pot satin mirotone lacquer p.f.
Colour: t.b.c by client/ARC
Finish: Satin
Refer to detail on drawing 7.12.
Contact: Maggie Bruce @ *Resenes Paints Limited*; 04 473 8420; 027 202 2406
Contact: Andre @ *Spectrum Spray 2001 Ltd*; 04 387 9092

5. All cabinetry interiors to be white melamine.

6. Drawers 20 - 34 to be *Sanco NZ Ltd* 'Blum' drawer system. See drawer schedule on Drawing **7.12** for specification and dimensions. **Contact: Moira Smith@Sanco NZ Ltd; 09 020 5051; 021 1902193**

7. Handles to be *Hettich 'Pro Decor'* Aluminium extrusion for cutting to length.
Cat No. 045206 Contact: Kevin Doncliff; *Hettich International*; 027 444 8445; 0800 438 8424

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A	30/11/07	Galley Draft 2.

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Galley 1.3 Island

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- Use figured dimensions: Do not scale.
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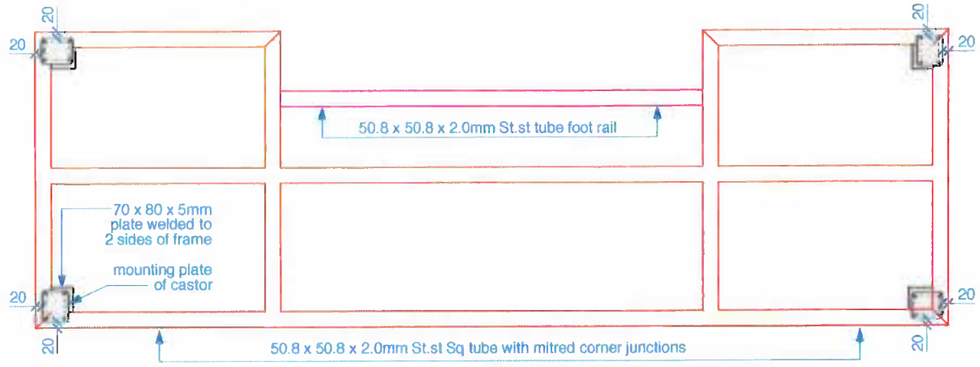
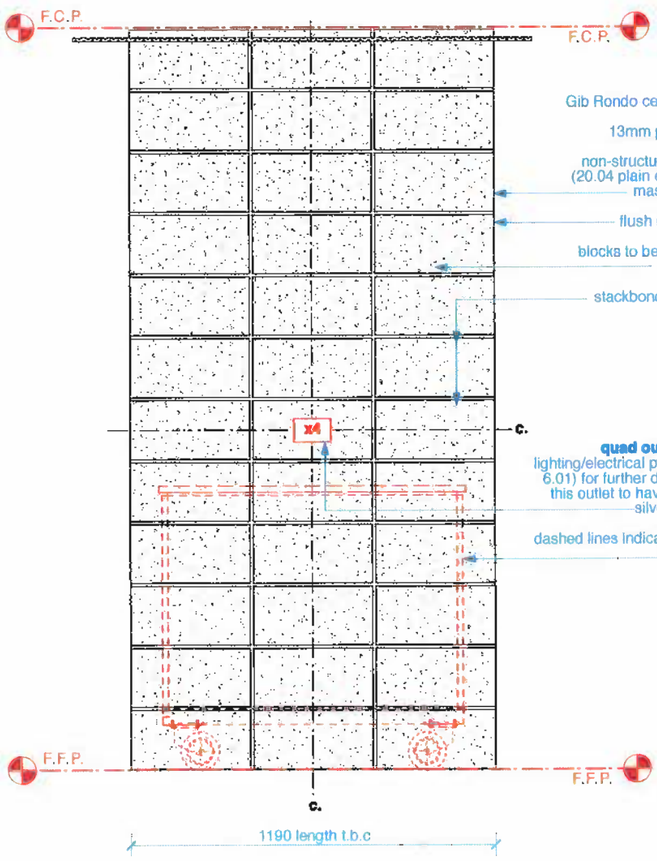


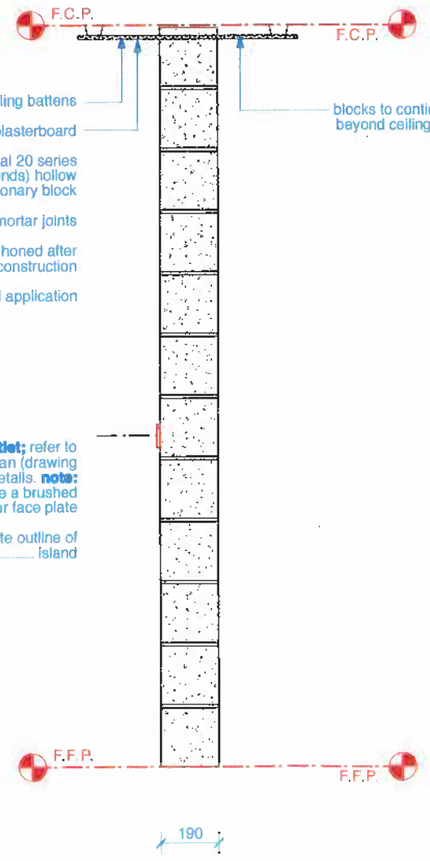
1 / 7.08 Island St.st Frame Plan

Scale: 1:20



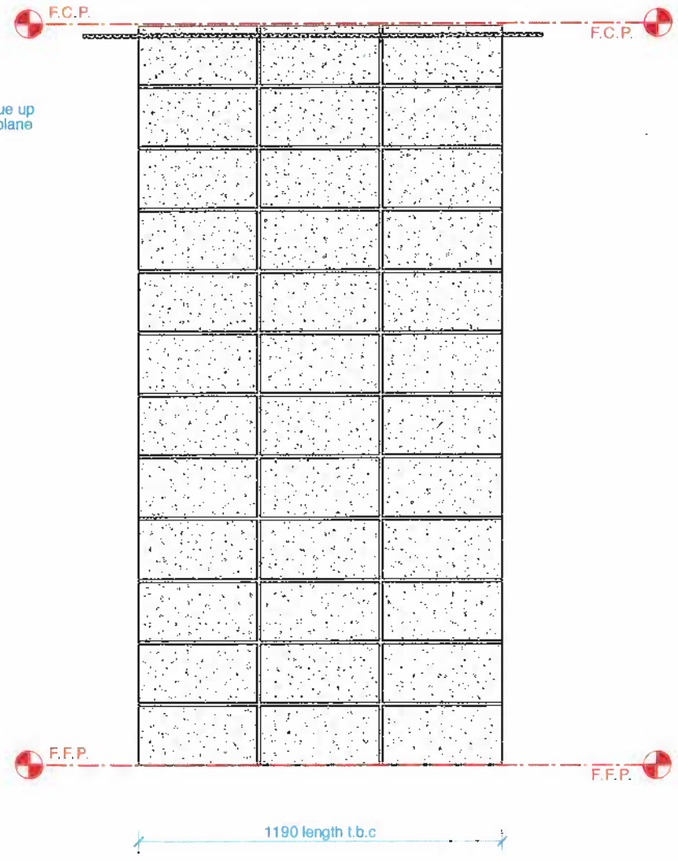
2 / 7.08 Galley 1.3 Block wall (island side)

Scale: 1:20



3 / 7.08 Galley 1.3 block wall end view

Scale: 1:20



4 / 7.08 Galley 1.3 block wall

Scale: 1:20

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Notes

Island concrete block wall to be *Firth* 'Hollow Masonry' 20.04 (plain ends) for 'stackbond' construction as shown. **note:** joints to be 'flush mortared' and conduit for switches and outlet to be inserted prior to pouring infill. refer to lighting/electrical plan (drawing 6.01) for further details
Contact: Bob Reihana @ *Firth*; 0274 569 673; 04 576 4617

Finishing: wall to be honed after erection.
Contact: Peter Houlaux @ *Construction system Ltd*; 0274421446

Sealants to be 'low sheen' Refer to ARC Specification for further details
Contact: Murray Foster @ Sika NZ Ltd; 027 4421 027; 0800745260

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Galley Island

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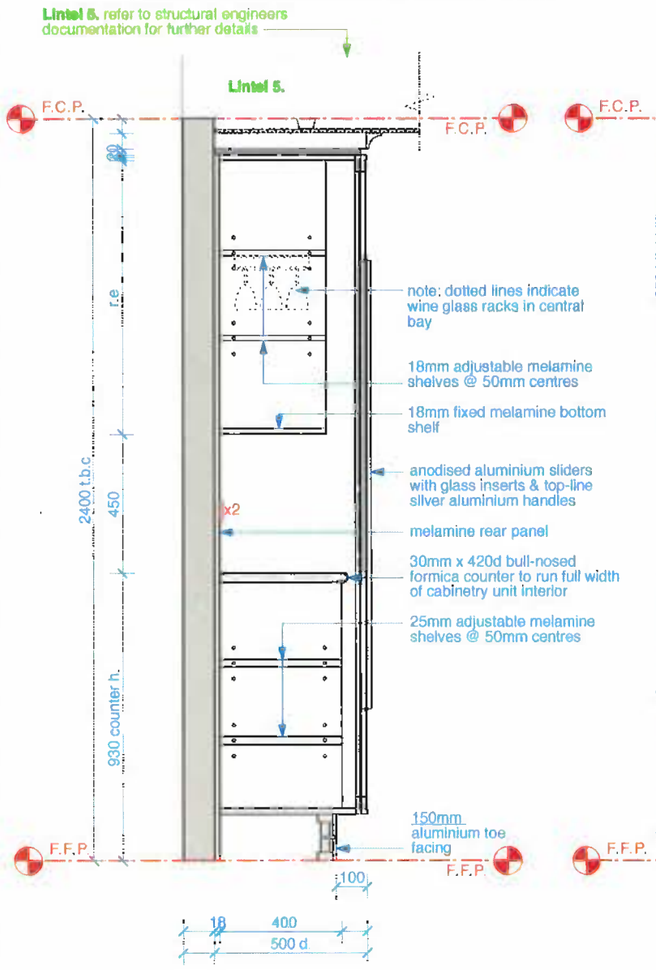
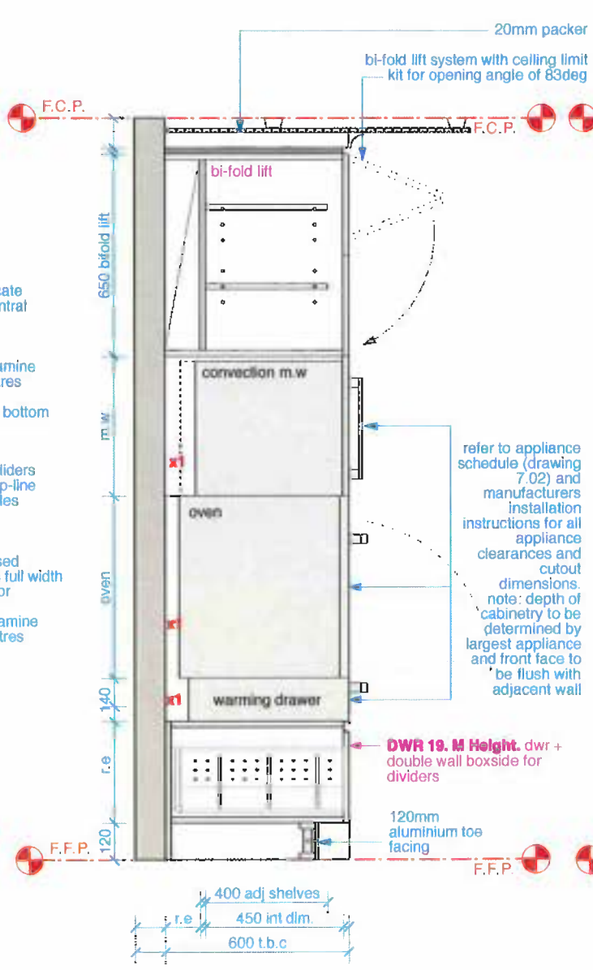
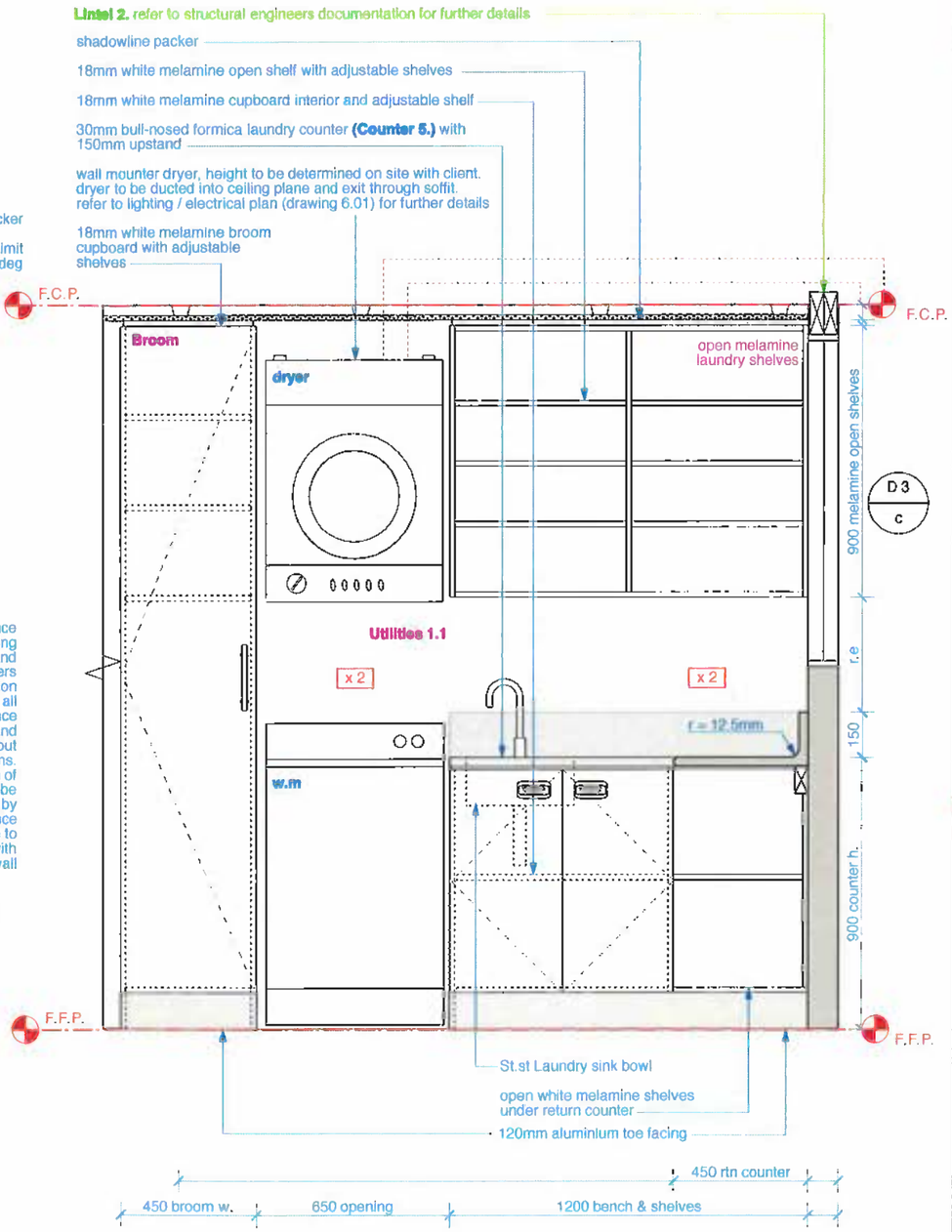
note: Joiner to confirm with ARC prior to fabrication
if a heat pump grill is required in kickplate.
If required, joiner is to liase with ARC and nominated heat pump installer
to assess the cabinetry and structure against the proposed system.



1 / 7.09 Section J - J
Scale: 1:20



2 / 7.09 Section K - K
Scale: 1:20



3 / 7.09 Section L - L
Scale: 1:20

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Utility 1.1 / Galley 1.3 Sections

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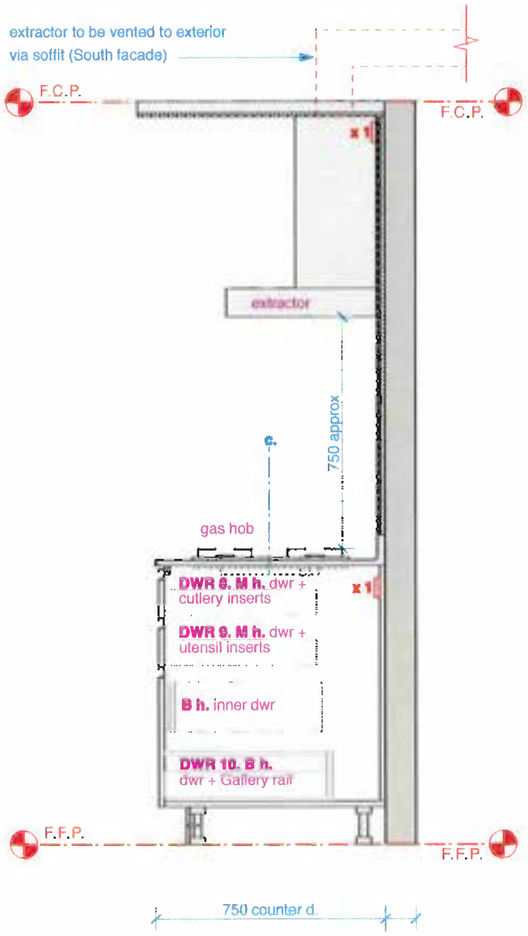
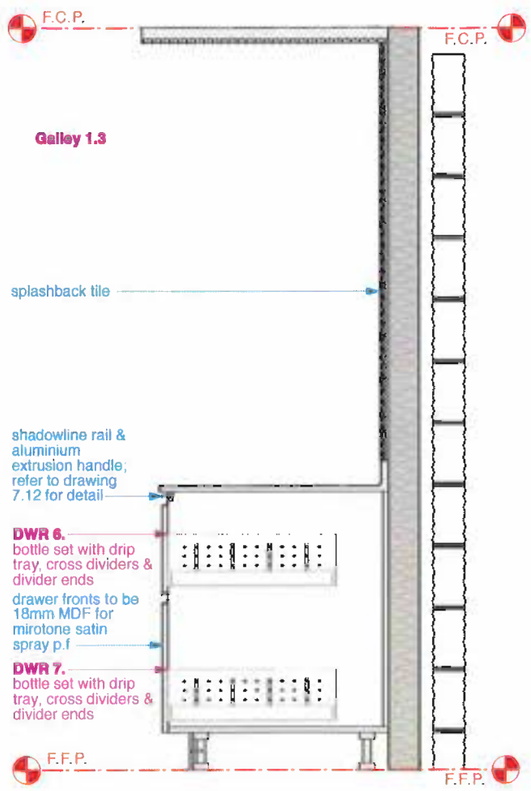
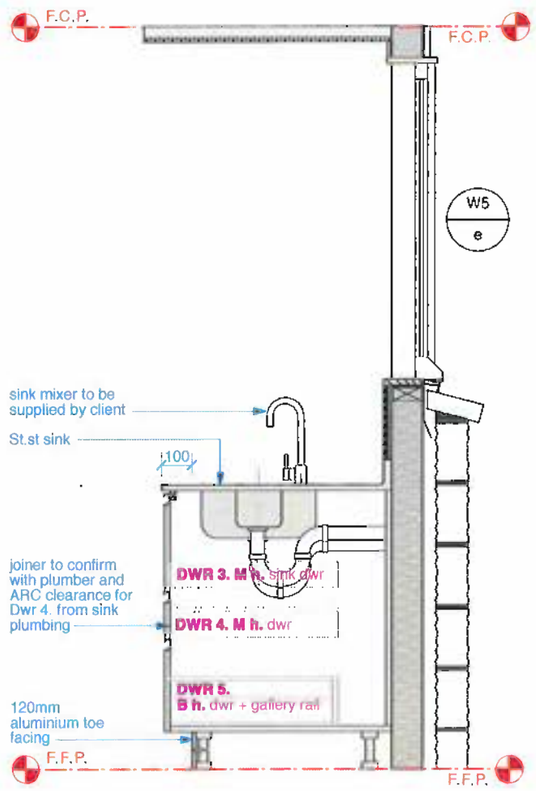


1 / 7.10 Section M - M
Scale: 1:20



2 / 7.10 Section N - N
Scale: 1:20



3 / 7.10 Section O - O
Scale: 1:20

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Galley 1.3 Sections

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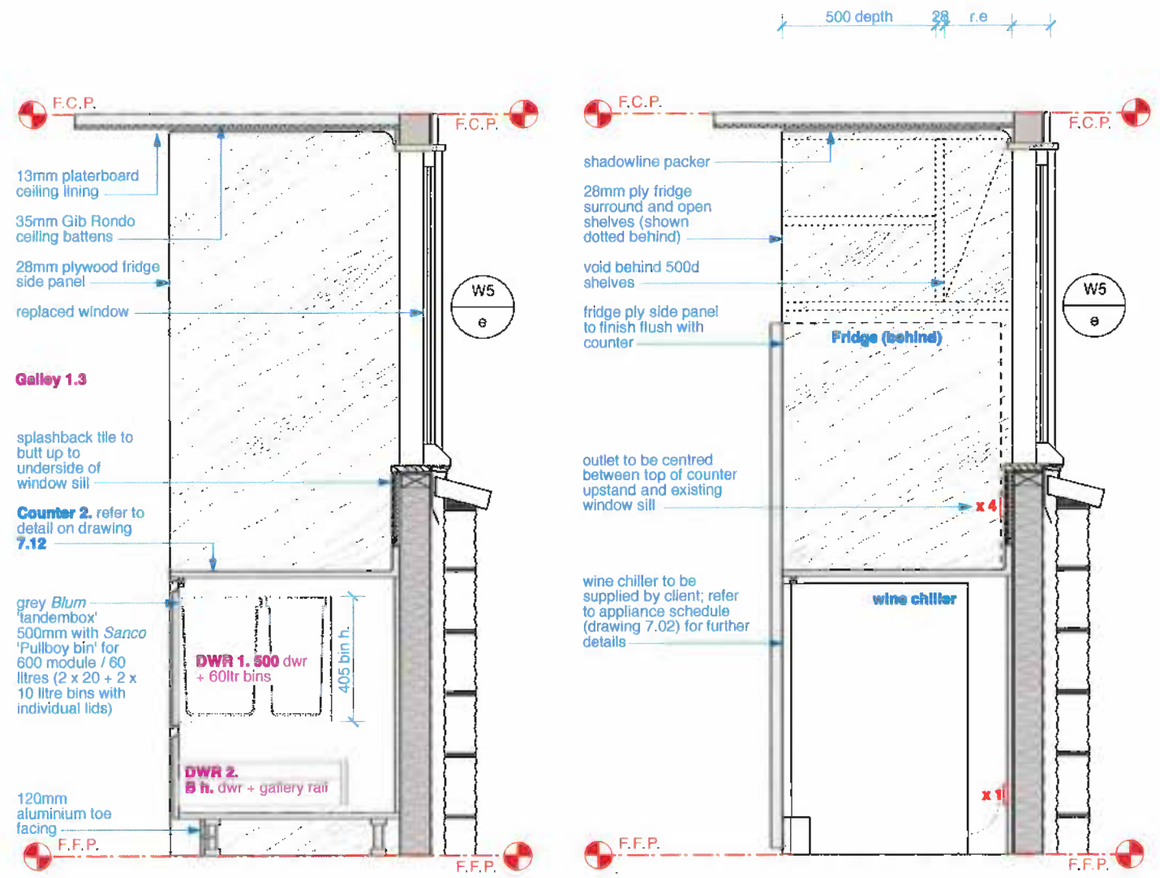
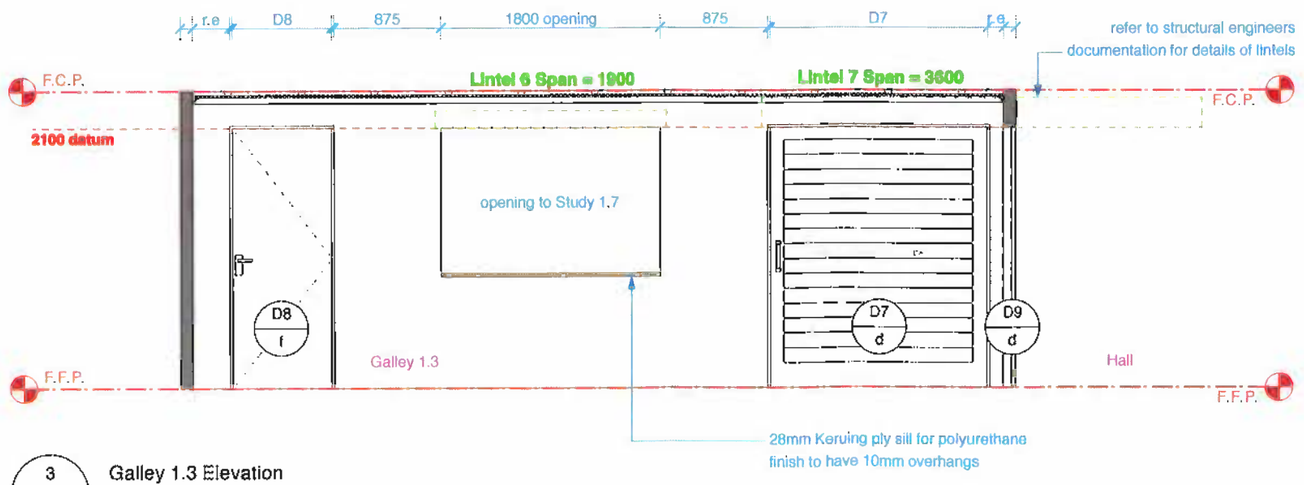


1 / 7.11 Section P - P
Scale: 1:20

2 / 7.11 Section Q - Q
Scale: 1:20



3 / 7.11 Galley 1.3 Elevation
Scale: 1:50

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Notes:

Plywood Sill on Galley 1.3 / Study 1.7 opening to be 28mm Keruing Container Ply.
Plywood to receive light sand, min arris & x2 coats satin polyurethane finish.
Contact: Craig Floyd @ *Plytech International*; 0800 800 805; 021 304 544

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Galley 1.3 Sections / Elevations

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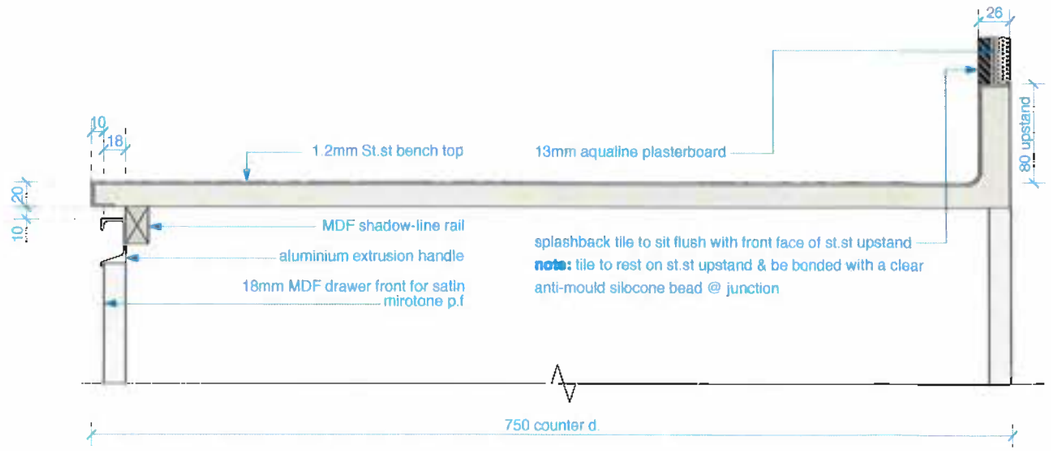
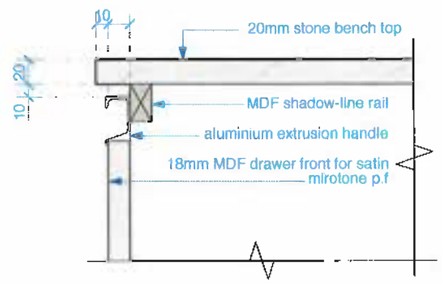
Blum Drawer Schedule

Note: All drawers for antislip mats

	No.	Tandembox Drawer Description	Blum Dwr h.	Cabinet front	dwr depth	Order no.	Blumotion Runner Capacity	Colour	Accessories	Order no.
Counter 1.	1	T/Box 500 bin drawer	M	600	500	TB50MG	30 kg	Grey	Pullboy Z bin for 600 Module (4 bins/60litres)	RBWZ601
	2	83 x 550 T/Box + Gallery rail complete drawer	B	600	550	TB55M+GG	30 kg	Grey		
	3	T/Box undersink (U shaped drawer + cross divider)		840 t.b.c	550	TBUSCDG55	30 kg	Grey		
	4	83 x 550 T/Box complete drawer	M	840 t.b.c	550	TB55MG	30 kg	Grey		
	5	83 x 550 T/Box + Gallery rail complete drawer	B	840 t.b.c	550	TB55M+GG	30 kg	Grey		
	6	83 x 550 T/Box + Boxsides complete drawer	M	300	550	TB55M+B56	30 kg	Grey	Drip trays: Z48TR55 + Cross Dividers: Z40GD1077 + Divider Ends:	
	7	83 x 550 T/Box + Boxsides complete drawer	M	300	550	TB55M+B56	30 kg	Grey	Z40C	
	8	83 x 550 T/Box complete drawer	M	900	550	TB55MG	30 kg	Grey	T/Box 900 wide dwr Cutlery Insert	Z5KC55X90
	9	83 x 550 T/Box complete drawer	M	900	550	TB55MG	30 kg	Grey	T/Box 900 wide dwr Utensil Insert	Z5KU55X90
	10	83 x 550 T/Box + Gallery rail complete drawer	B	900	550	TB55M+GG	30 kg	Grey	T/Box Inner Drawer M h. TB55MG+ front: TIDMG	
	11	83 x 500 T/Box + Boxsides complete drawer	D	370 t.b.c	500	TB50M+B56	30 kg	Grey	T/Box 900 wide dwr Cutlery Insert	Z46G50C
	12	83 x 500 T/Box + Boxsides complete drawer	D	370 t.b.c	500	TB50M+B56	30 kg	Grey	x2 Grey steel centre wall dividers @ 500 nom l.	Z46G50C
Larder 1.2	13	83 x 550 T/Box complete drawer	M	600	550	TB55MG	30 kg	Grey		
	14	83 x 550 T/Box complete drawer	M	600	550	TB55MG	30 kg	Grey		
	15	83 x 550 T/Box + Gallery rail complete drawer	B	600	550	TB55M+GG	30 kg	Grey	T/Box Inner Drawer M h. TB55MG+ front: TIDMG	
	16	83 x 550 T/Box complete drawer	M	600	550	TB55MG	30 kg	Grey		
	17	83 x 550 T/Box complete drawer	M	600	550	TB55MG	30 kg	Grey		
	18	83 x 550 T/Box complete drawer	M	600	550	TB55MG	30 kg	Grey	File drawer: Metafik Set (360mm)	Z32MF
	19	83 x 550 T/Box + Boxside complete drawer	M	600 t.b.c	550	TB55M+BSG	30 kg	Grey	x3 Grey steel Orga-line dividing wall @ 550 nom l.	Z46655C
Island	20	83 x 450 T/Box complete drawer	M	995 t.b.c	450	TB45MG	30 kg	Grey	T/Box 900 wide dwr Cutlery	Z5KC45X90
	21	83 x 450 T/Box complete drawer	B	995 t.b.c	450	TB45MG	30 kg	Grey		
	22	83 x 450 T/Box + 2 gallery rail complete drawer	D	995 t.b.c	450	TB45M+2GG	30 kg	Grey		
	23	83 x 450 T/Box complete drawer	M	995 t.b.c	450	TB45MG	30 kg	Grey	T/Box 900 wide dwr Utensil	Z5KU45X90
	24	83 x 450 T/Box complete drawer	B	995 t.b.c	450	TB45MG	30 kg	Grey		
	25	83 x 450 T/Box + 1 B/Sides complete drawer	D	995 t.b.c	450	TB45M+BSG	30 kg	Grey		
	26	83 x 450 T/Box complete drawer	M	995 t.b.c	450	TB45MG	30 kg	Grey		
	27	83 x 450 T/Box complete drawer	B	995 t.b.c	450	TB45MG	30 kg	Grey		
	28	83 x 450 T/Box + 2 gallery rail complete drawer	D	995 t.b.c	450	TB45M+2GG	30 kg	Grey		
Island	29	83 x 400 T/Box complete drawer	M	800	400	TB40MG	30 kg	Grey		
	30	83 x 400 T/Box complete drawer	B	800	400	TB40MG	30 kg	Grey		
	31	83 x 400 T/Box + 1 gallery rail complete drawer	D	800	400	TB40M+1GG	30 kg	Grey		
	32	83 x 400 T/Box complete drawer	M	800	400	TB40MG	30 kg	Grey		
	33	83 x 400 T/Box complete drawer	B	800	400	TB40MG	30 kg	Grey		
	34	83 x 400 T/Box + 1 gallery rail complete drawer	D	800	400	TB40M+1GG	30 kg	Grey		



1 / 7.12 Typical Counter 2. detail
Scale: 1:5



2 / 7.12 Typical Island Counter 3. detail
Scale: 1:5

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Notes

Drawers to be *Sanco NZ Ltd* 'Blum' drawer system.
Contact: Moira Smith @ *Sanco NZ Ltd*; 09 620 5051; 0508 800 440; 021 1902193

B	28/2/08	Contract Documentation handover to client
A	20/12/07	Draft Sent to Blum

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Drawer Schedule & Details

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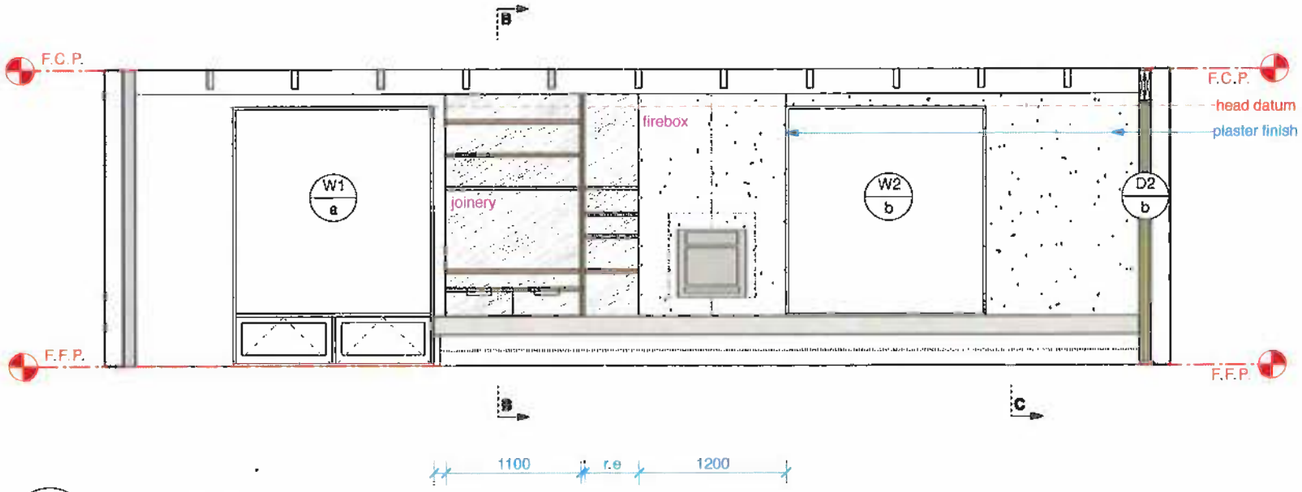
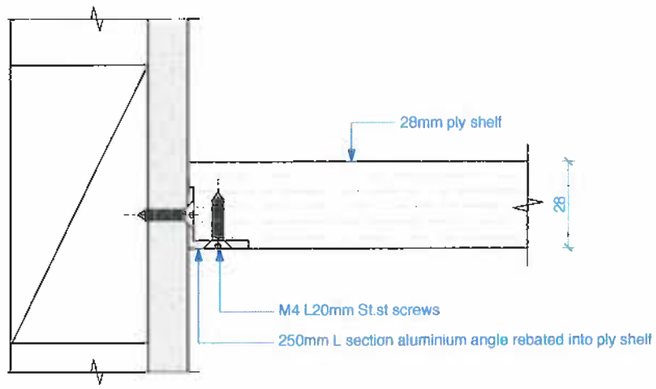
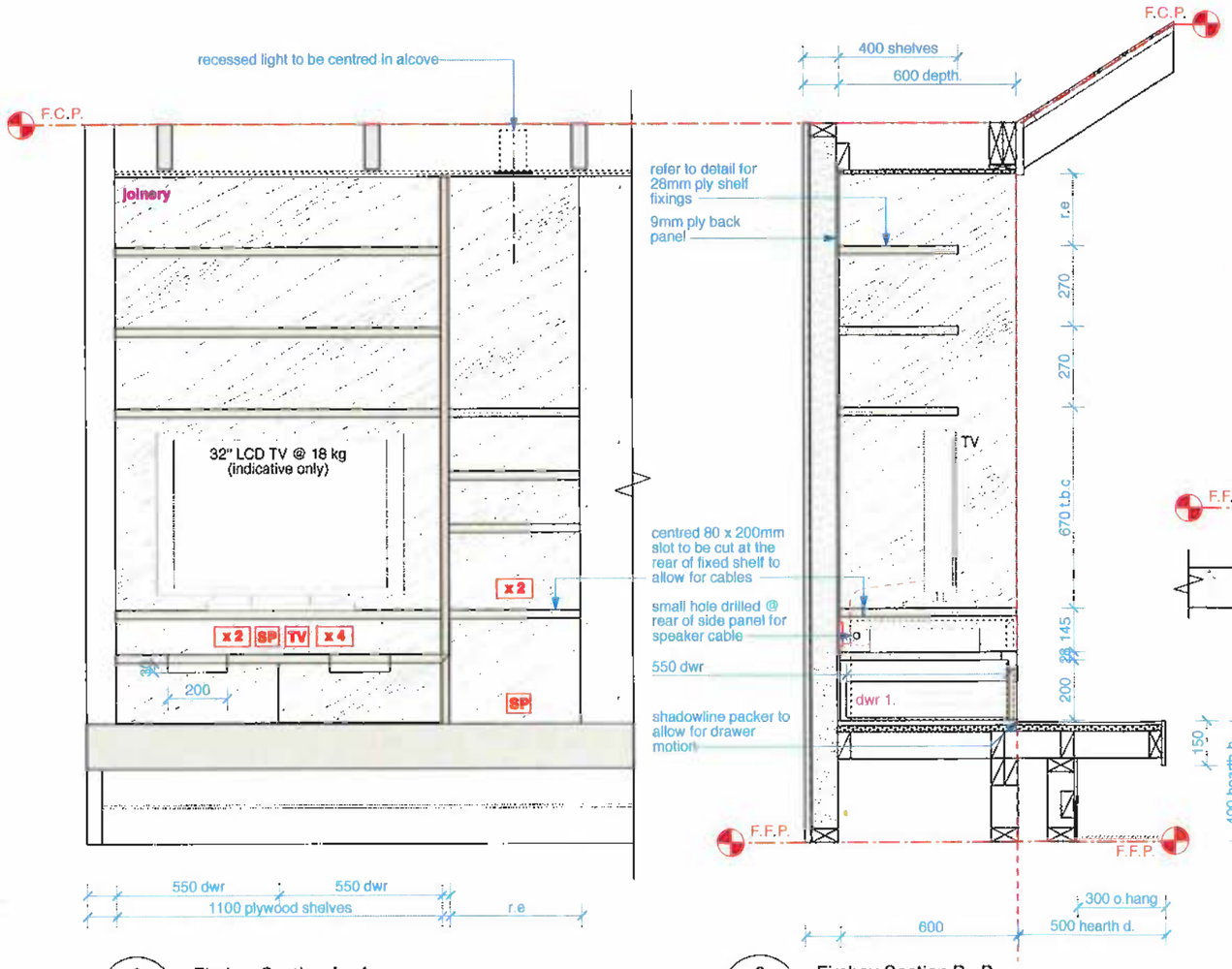


1 / 7.13 Firebox Section A - A
Scale: 1:50

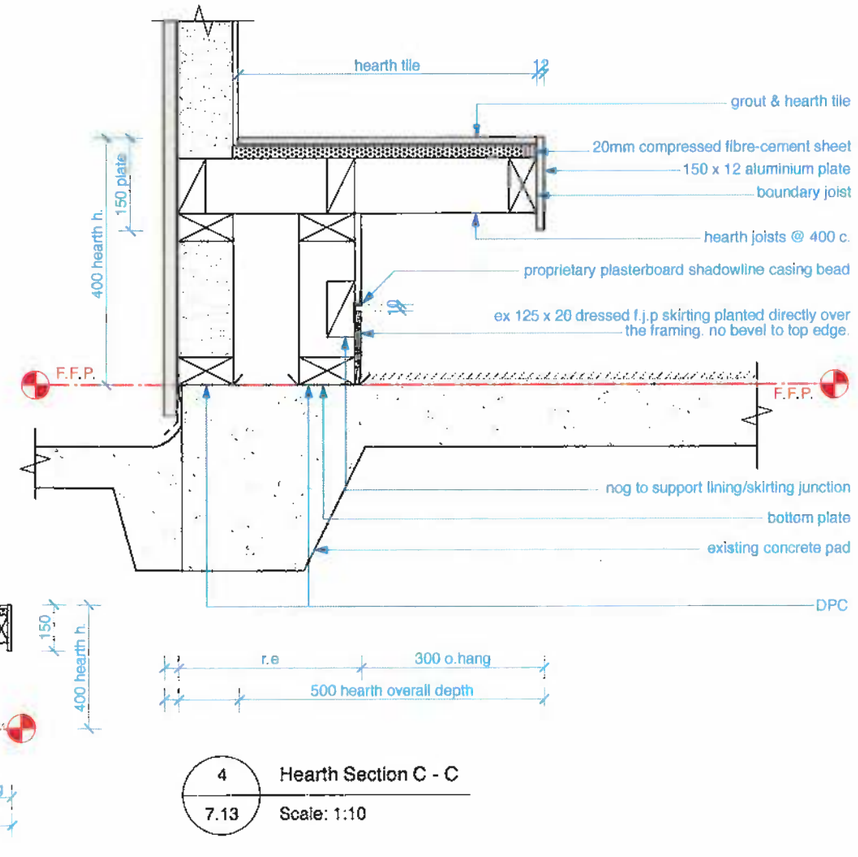


5 / 7.13 Shelf Fixing Detail
Scale: 1:2



2 / 7.13 Firebox Section A - A
Scale: 1:20

3 / 7.13 Firebox Section B - B
Scale: 1:20



4 / 7.13 Hearth Section C - C
Scale: 1:10

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Firebox Notes:

All dimensions to be confirmed on site before proceeding with works.

1. In-built *Metro* 'trend LTD high output' solid fuel burner to be checked and relocated.
Standard triple flue and *Metro* 'Vented Zero Clearance Cabinet' to be supplied by client as required.
All installation to comply with manufactures latest specifications.
Installation to comply with AS/NZS 2918
Contact: Tina @ *The Heating Centre*; 04 298 6556

2. Firebox surround to be clad in 10mm compressed fibre cement substrate to receive *Rockcote* 'Classico' acrylic hand plastered texture finish for p.f.
Colour: to be selected by client.
Contact: Maggie Bruce @ *Resene Paints Limited*; 04 473 8420; 027 292 2496

3. Hearth to be 20mm compressed fibre-cement sheet for tile.
Hearth Tile: to be selected & supplied by client.
Grout Colour: t.b.c by ARC
Front face of hearth: to be Aluminium Flat-bar 150x12mm 6063, T5 to be adheared to boundary joist.
Contact: Mico Metals; 04 568 2309

4. Plywood Shelves to be 28mm *Plytech* Multiply Keuring plywood to receive light sand with min arris with x2 coats satin polyurethane.
back panel to be 9mm AB Grade Meranti plywood to receive light sand with min arris & have stain mixed with x2 coats satin polyurethane to match Keruing finish.
Stain Colour t.b.c
Contact: Maggie Bruce @ *Resene Paints Limited*; 04 473 8420; 027 292 2496
Contact: Craig Floyd @ *Plytech International*; 0800 900 905; 021 394 544

5. Open Ply Shelves Fixing Angles to be eq angle aluminium 250mm length x 31.75mm flange x 31.75mm x 4.75mm wall thickness. To be predrilled with 6 x holes to receive M4 screws. See fixing detail on this page.
Contact: *Mico Metals*; (04) 566 2300; 0800 255 636

6. Drawer handles to be 200 x 30mm cut-outs centred on each drawer. Exposed edges to recieve sand and polyurethane finish.

7. All joints and junctions to be hidden fixings /adhesives only.

8. Drawer 1 & 2 to be 18mm 'Black' melamine.
Drawer runners to be *Hettich* over extension ball bearing slide 12,7mm installation width. Load capacity 45kg.
Article / Nominal length: KA 6532 / 450mm
Order no. 1 071 666
Contact: Kevin Doncliff; *Hettich International*; 0274 446 445

B	28/2/08	Contract Documentation handover to client
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Living 1.8 Firebox & Joinery

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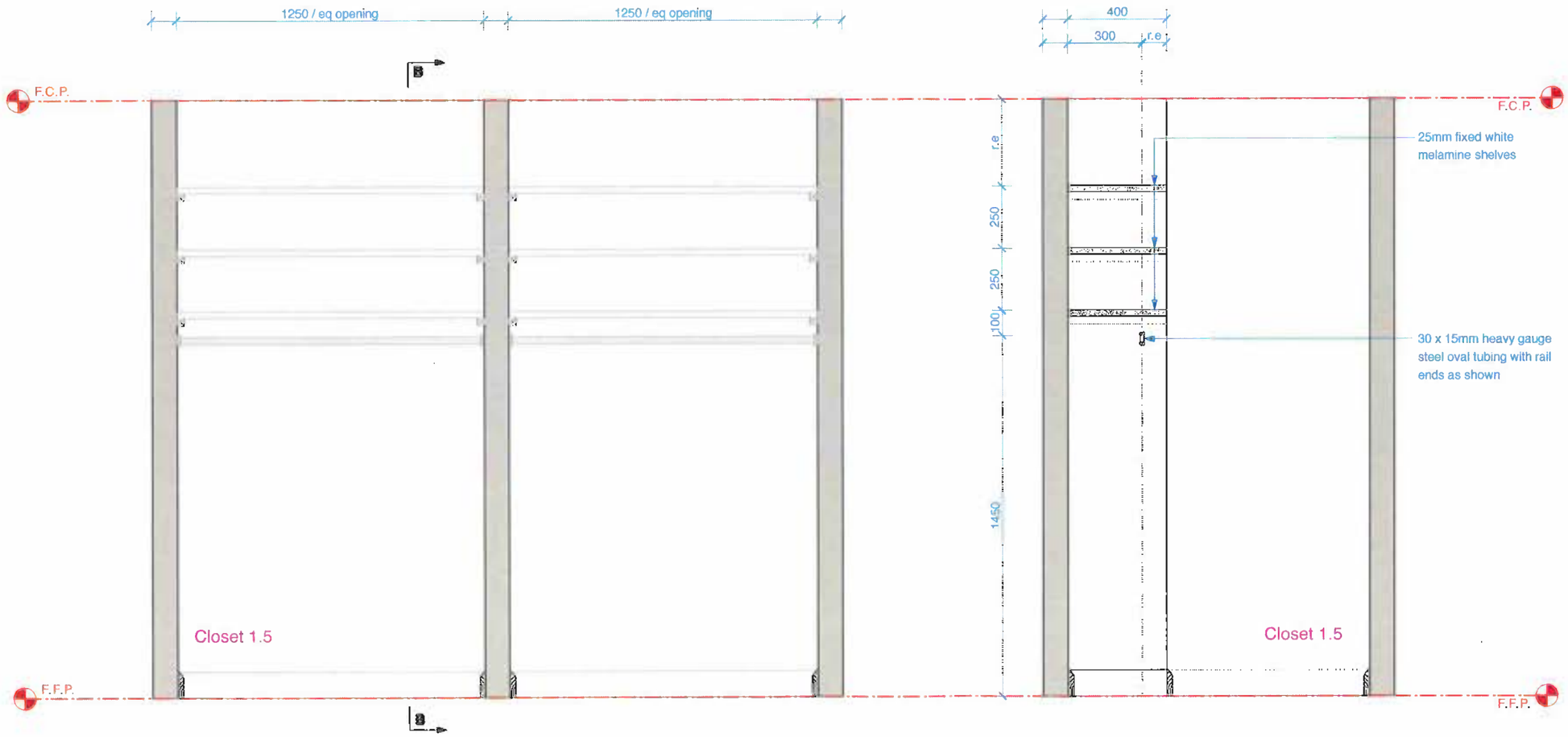

1 / 7.14 Closet 1.5 Section A - A
Scale: 1:20

2 / 7.14 Closet 1.5 Section B - B
Scale: 1:20

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Closet Notes:

1. Rails to be heavy gauge steel 30 x 15mm oval tubing
Product No. 7208116
with steel oval support brackets N.P as shown.
Product No. 7950009
Contact: *The Laminex Group* 0800 303 606

2. Open Melamine Fixed Shelving to be 25mm white melamine.

B	26/2/08	Contract Documentation handover to client
A	11/12/07	Client Meeting

Sheffield House
86 Emerald Glen Road,
Raumati, Kapiti Coast

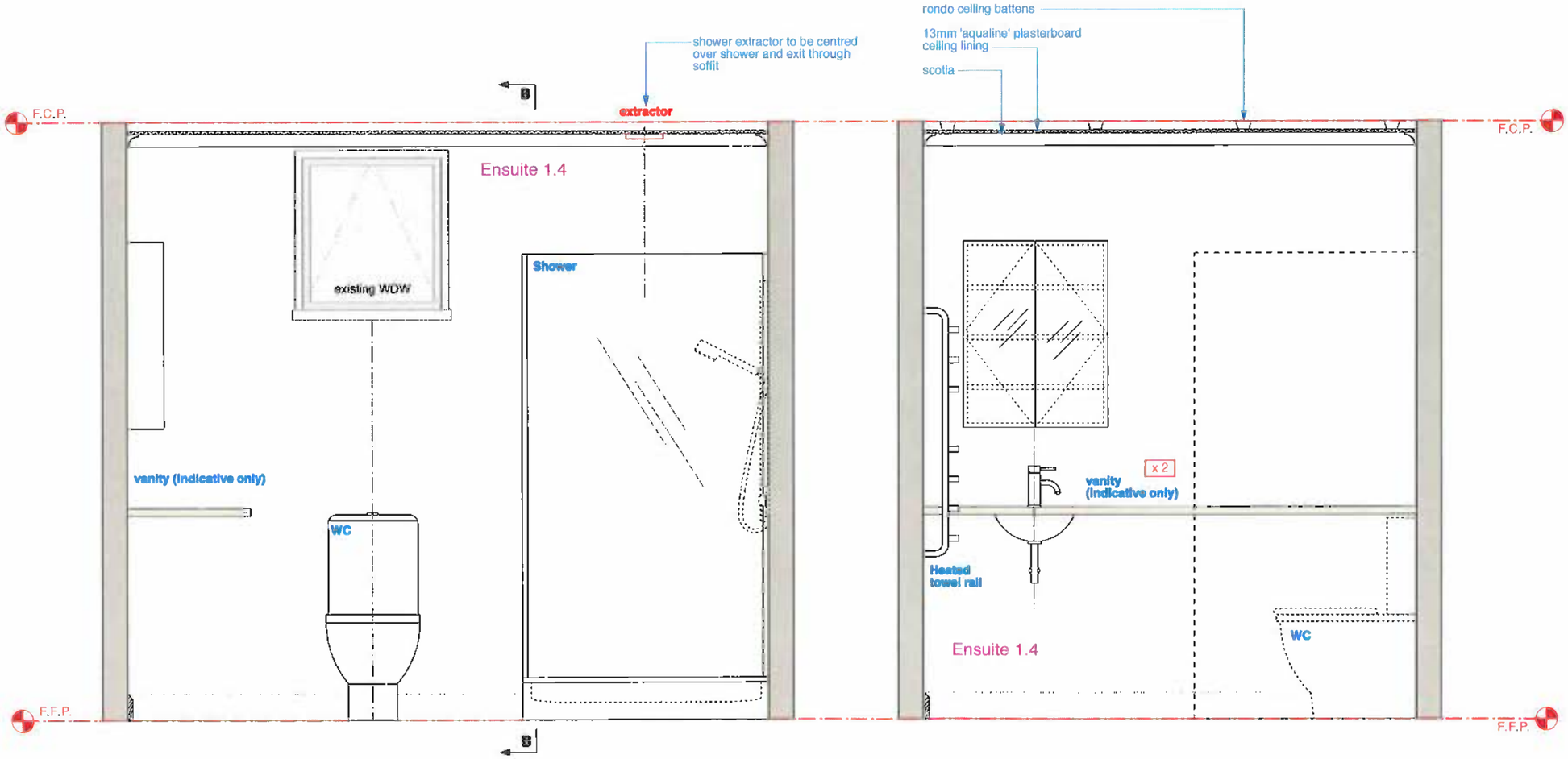
Closet 1.5 Sections

194SHE07 / 7.14

of 1

Drawn By: LS Checked By: GC

Document Issue: B
ARC File Name: 071220_CD_SHE



1 / 7.15 Ensuite 1.4 Section A - A
Scale: 1:20

2 / 7.15 Ensuite 1.4 Section B - B
Scale: 1:20

architecture RobinsonCrimp
Level 1, 1 Marion Street
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Notes:

All dimensions to be confirmed on site prior to proceeding with works.

All proposed plumbing to comply with AS/NZS 3500 2.2003 (Pt 2 Sanitary Plumbing & Drainage)

1. Shower to be proprietary to connect to existing waste. Shower to be selected and supplied by client.

2. Shower fittings to be selected and supplied by client.

3. WC to be 'S' trap to connect to existing waste. WC to be selected and supplied by client.

4. Wash basin, vanity and vanity fittings to be selected and supplied by client.

5. Lighting and electrical
a) double outlet to be fitted with RCD device.
b) Recessed halogens & heated towel rail to be supplied by client.
c) Shower Ventilation to be PDL In-line Exhaust fan. Vent to be centred over the shower and exit through the soffit. **Cat No: 6601** (150mm)
with in-line fan timer **Cat No: 6312.**
All parts to be confirmed on site by electrician.
Contact: PDL Electrical Products; 0800 852 888

6. Floor tiles; refer to drawing 7.16 for details.

A	28/2/08	Contract Documentation handover to client

Sheffield House
86 Emerald Glen Road,
Raumati, Kapiti Coast

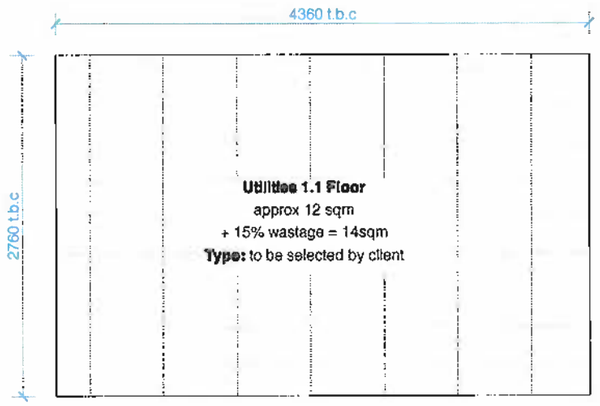
Ensuite 1.4 Sections

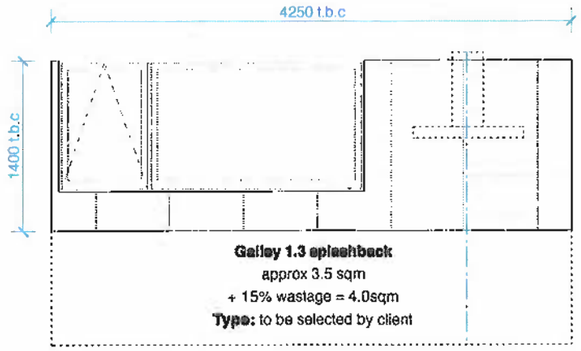
194SHE07 / 7.15

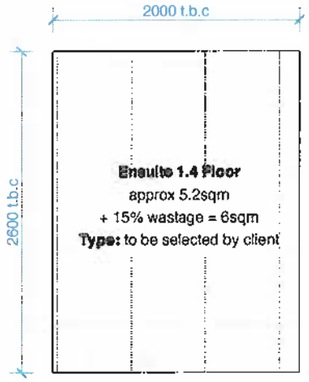
of 1

Drawn By: LS Checked By: GC

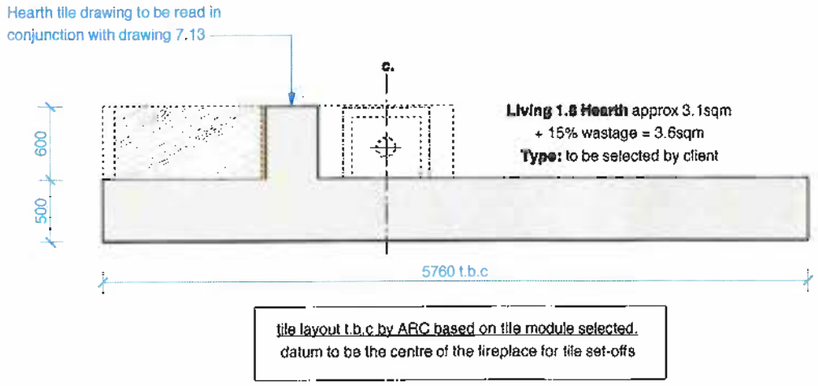
Document Issue: A
ARC File Name: 071219_CD_SHE







1
7.16
Tile Schedule
Scale: 1:50



tile layout t.b.c by ARC based on tile module selected.
datum to be the centre of the fireplace for tile set-offs

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Notes:

All calculated quantities shown are to be confirmed on site by tiler and building contractor before confirming order.

A	28/2/08	Contract Documentation handover to client

Sheffield House
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Tile Schedule

194SHE07 / 7.16

of 1

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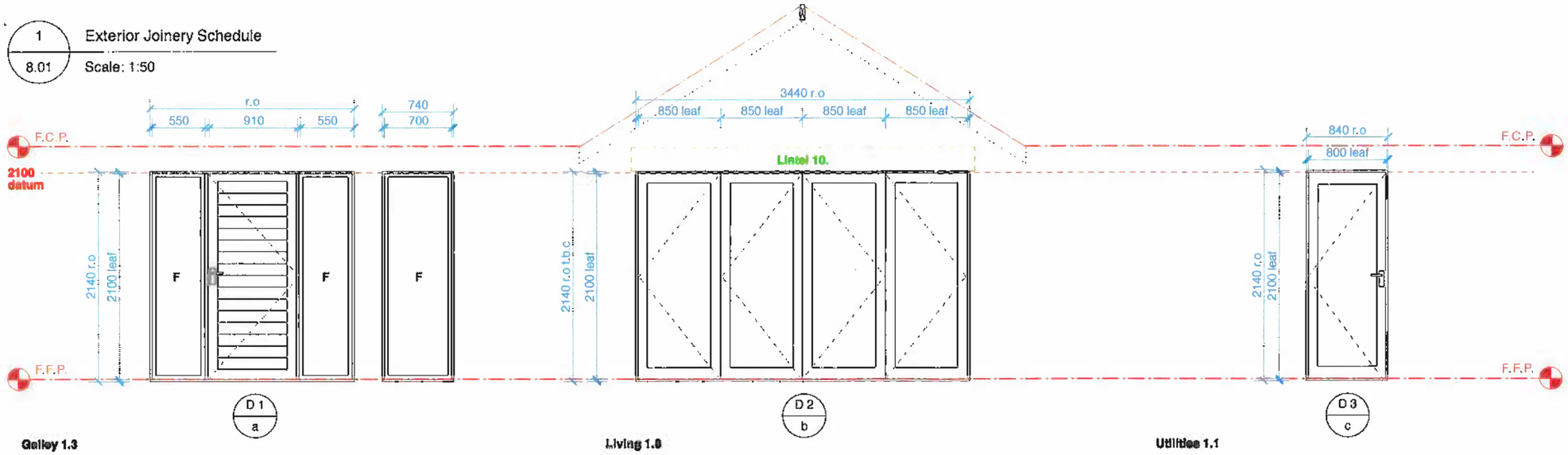
Document Issue: A
ARC File Name: 071219_CD_SHE

1 / 8.01 Exterior Joinery Schedule

Scale: 1:50



Galley 1.3

D1a

to be: **METRO SERIES Aluminium Joinery Square Beaded Frame**
Frame Type: Fixed / Hinged Door / Fixed
Exterior Finish: to be natural anodised.
Double Glazing: 1. inner pane to be laminated clear UV resistant
2. outer pane to be clear float
Glass weight for size
All glazing to comply with current building code NZS4223.

Refer to drawing **8.03** for Proprietary head, sill & Jamb details
Confirm door swing against Proposed Plans (Drawing 2.02)
Door as viewed from exterior.
Confirm all opening sizes and dimensions on site prior to fabrication.

Contact: Rod Allwood, *First Windows and Doors Wellington*, 04-237 5780

Door to be Solid 'Horizontal' Timber Door. **Door Species / Finish:** PQ Cedar
Contact: *The Renal Door Company*; 0800 808 066

Door Paint Spray Finish to be Enamel on all sides
Colour: *Resenes* 't.b.c' **Finish:** Semigloss **note:** door to be sprayed off-site before installation.
Contact: Andre @ *Spectrum Spray 2001 Ltd*; 04 387 9082
Contact: Maggie Bruce @ *Resene Paints Limited*; 04 473 0420; 027 292 2496

Hardware: to be selected & supplied by client.

Living 1.8

D2b

to be: **METRO SERIES Aluminium Joinery Square Beaded Frame**
Frame Type: Bi-fold (foldback) configuration
Finish: finish to be natural anodised.
Double Glazing: 1. inner pane to be laminated clear UV resistant
2. outer pane to be clear float
Glass weight for size
All glazing to comply with current building code NZS4223.
Hardware: to be 'Miro' - colour 'Silver Pearl Duralloy' 91556960

Refer to drawing **8.03** for Proprietary head, sill & Jamb details
Confirm door swing against Proposed Plan (Drawing 2.01) Door as viewed from exterior.
Confirm all opening sizes and dimensions on site prior to fabrication.

Contact: Rod Allwood, *First Windows and Doors Wellington*, 04-237 5780

note: building contractor to confirm leaf height of D2b to ensure clearance under existing eaves. refer to door joinery schedule (drawing 3.02) for further details

Utilities 1.1

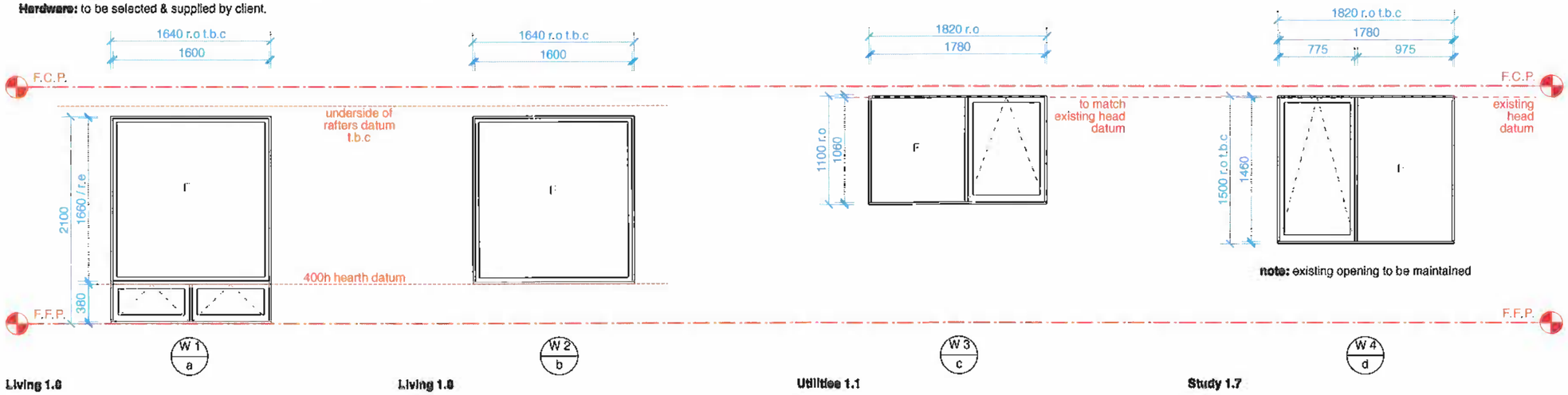
D3c

to be: **METRO SERIES Aluminium Joinery Square Beaded Frame**
Frame Type: Hinged Door / Fixed
Exterior Finish: to be natural anodised.
Glazing to be clear float, toughened Glass weight for size.
All glazing to comply with current building code NZS4223.
Hardware: to be 'Miro' - colour 'Silver Pearl Duralloy' 91556960

Refer to drawing **8.03** for Proprietary head, sill & Jamb details
Confirm door swing against Proposed Plans (Drawing 2.02)
Door as viewed from exterior.
Confirm all opening sizes and dimensions on site prior to fabrication.

Contact: Rod Allwood, *First Windows and Doors Wellington*, 04-237 5780

note: Door to be fitted with a *Raven* 'concealed door bottom seal' **RP8** in anodised satin.
Contact: Keith Mitchell @ *Raven Products Ltd*; 0800 472 836



Living 1.8

W1a

to be: **METRO SERIES Aluminium Joinery Square Beaded Frame**
Frame Type: Awning / Fixed
Finish: finish to be natural anodised.
Double Glazing: 1. inner pane to be laminated clear UV resistant
2. outer pane to be clear float
Glass weight for size
All glazing to comply with current building code NZS4223.
Hardware: to be 'Miro' - colour 'Silver Pearl Duralloy' 91556960

Refer to drawing **8.03** for Proprietary head, sill & Jamb details
Confirm door swing against Proposed Plan (Drawing 2.01)
Door as viewed from exterior.
Confirm all opening sizes and dimensions on site prior to fabrication.

Contact: Rod Allwood, *First Windows and Doors Wellington*, 04-237 5780

Living 1.8

W2b

to be: **METRO SERIES Aluminium Joinery Square Beaded Frame**
Frame Type: Fixed
Finish: finish to be natural anodised.
Double Glazing: 1. inner pane to be laminated clear UV resistant
2. outer pane to be clear float
Glass weight for size
All glazing to comply with current building code NZS4223.
Hardware: to be 'Miro' - colour 'Silver Pearl Duralloy' 91556960

Refer to drawing **8.03** for Proprietary head, sill & Jamb details
Confirm door swing against Proposed Plan (Drawing 2.01)
Door as viewed from exterior.
Confirm all opening sizes and dimensions on site prior to fabrication.

Contact: Rod Allwood, *First Windows and Doors Wellington*, 04-237 5780

Utilities 1.1

W3c

to be: **METRO SERIES Aluminium Joinery Square Beaded Frame**
Frame Type: Fixed
Finish: finish to be natural anodised.
Glazing: to be laminated clear UV resistant
Glass weight for size
All glazing to comply with current building code NZS4223.
Hardware: to be 'Miro' - colour 'Silver Pearl Duralloy' 91556960

Refer to drawing **8.03** for Proprietary head, sill & Jamb details
Confirm door swing against Proposed Plan (Drawing 2.01)
Door as viewed from exterior.
Confirm all opening sizes and dimensions on site prior to fabrication.

Contact: Rod Allwood, *First Windows and Doors Wellington*, 04-237 5780

Study 1.7

W4d

to be: **METRO SERIES Aluminium Joinery Square Beaded Frame**
Frame Type: Awning / Fixed
Finish: finish to be natural anodised.
Double Glazing: 1. inner pane to be laminated clear UV resistant
2. outer pane to be clear float
Glass weight for size
All glazing to comply with current building code NZS4223.
Hardware: to be 'Miro' - colour 'Silver Pearl Duralloy' 91556960

Refer to drawing **8.03** for Proprietary head, sill & Jamb details
Confirm door swing against Proposed Plan (Drawing 2.01)
Door as viewed from exterior.
Confirm all opening sizes and dimensions on site prior to fabrication.

Contact: Rod Allwood, *First Windows and Doors Wellington*, 04-237 5780

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PO Box 27-574 Marion Sq.
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F: 64 4 801 8930
E: arc@clear.net.nz

Notes:

All glazing to be clear glass and to be NZS4223 compliant.

Glass weight for size.

All exterior windows and doors as viewed from exterior. Confirm door swings against Proposed Plan (Drawing 2.01)

Confirm all opening sizes and dimensions on site prior to fabrication of windows and doors.

Refer to Drawings 8.03 for Head Sill and Jamb Details.

A	28/2/08	Contract Documentation handover to client

Sheffield House
86 Emerald Glen Road,
Raumati, Kapiti Coast

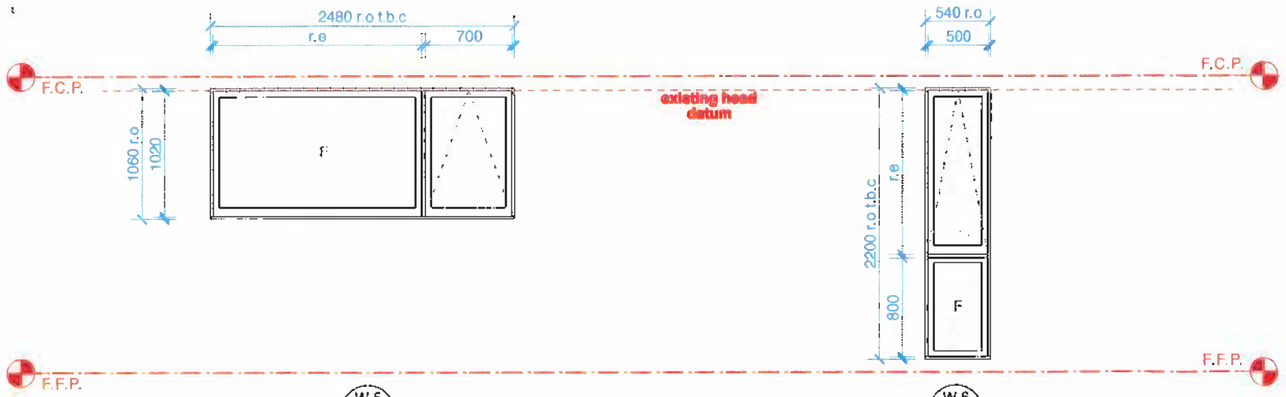
Window & Door Schedule

194SHE07 / 8.01

of 1

Drawn By: LS Checked By: GC

Document Issue: A
ARC File Name: 071219_CD_SHE



Galley 1.3

W6e

to be: **METRO SERIES Aluminium Joinery Square Beaded Frame**
Frame Type: Awning / Fixed
Finish: finish to be natural anodised.
Double Glazing: 1. inner pane to be laminated clear UV resistant
2. outer pane to be clear float
Glass weight for size
All glazing to comply with current building code NZS4223.
Hardware: to be 'Miro' - colour 'Silver Pearl Duralloy' 91556960

Refer to drawing **8.03** for Proprietary head, sill & Jamb details
Confirm openings against Proposed Plan (Drawing 2.01)
Door as viewed from exterior.
Confirm all opening sizes and dimensions on site prior to fabrication.

Contact: Rod Allwood, *First Windows and Doors Wellington*, 04-237 5760

Utilities 1.1

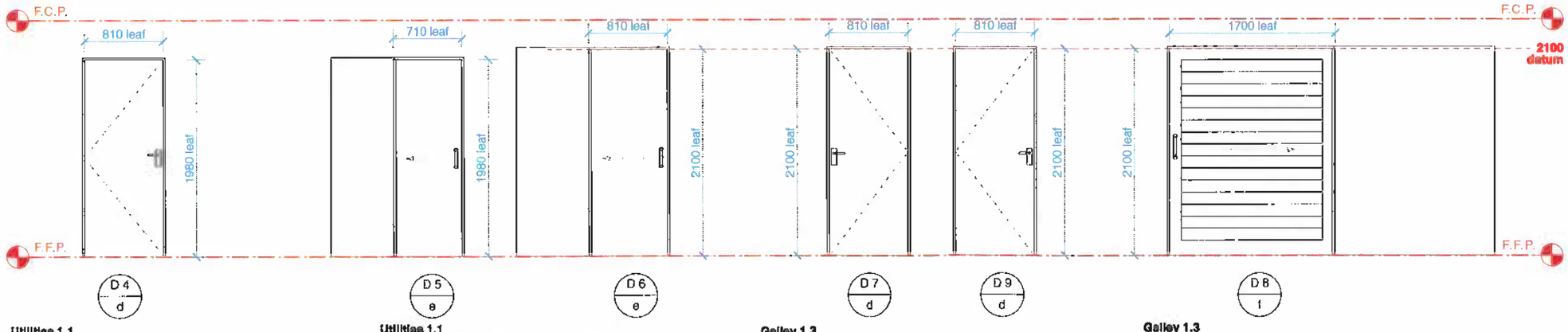
W6f

to be: **METRO SERIES Aluminium Joinery Square Beaded Frame**
Frame Type: Awning / Fixed
Finish: finish to be natural anodised.
Single Glazing: to be toughened clear etchlite
Glass weight for size
All glazing to comply with current building code NZS4223.
Hardware: to be 'Miro' - colour 'Silver Pearl Duralloy' 91556960

Refer to drawing **8.03** for Proprietary head, sill & Jamb details
Confirm openings against Proposed Plan (Drawing 2.01)
Door as viewed from exterior.
Confirm all opening sizes and dimensions on site prior to fabrication.

Contact: Rod Allwood, *First Windows and Doors Wellington*, 04-237 5760

1 / 8.02 Interior Door Joinery Schedule
Scale: 1:50



Utilities 1.1

D4d to be:

1. Door to be ***Plyco* 'Flush Panel'**
Composition: MDF (Solid Core) **Contact: PlaceMakers**

D4 size: 810(w) x 1980(h) x 38(d)mm

2. Paint Spray Finish to be *Resenes* 'Lustaglow'
Colour: *Resenes* 'Black White' N93-005-100 f.b.c
Finish: Satin
note: door to be sprayed off-site before installation.
Contact: Andre @ *Spectrum Spray 2001 Ltd*; 04 387 9082
Contact: Maggie Bruce @ *Resenes Paints Limited*; 04 473 8420; 027 292 2496

3. Frame to have slim-line jambs (to match existing) for p.f

4. Hardware to be supplied by client.

note: Door to be fitted with a *Raven* 'concealed door bottom seal' **RP0** in anodised satin.
Contact: Keith Mitchell @ *Raven Products Ltd*; 0800 472 836

Utilities 1.1
D5e to be: 38 x 710 x 1980mm (solidcore)

Larder 1.2
D6e to be: 38 x 810 x 2100mm (solidcore)

a) Interior sliding door gear to be Pre-Fabricated solidcore CS Cavity Slider **'Midway Slider'**
note: MDF rails to be replaced with 9mm construction ply.
Contact: Christopher Anderson @ *CS Cavity Sliders*; 04-473 9904; 021 74 0800

b) Paint Spray Finish to be *Resenes* 'Lustaglow'
Colour: *Resenes* 'Black White' N93-005-100
Contact: Maggie Bruce @ *Resenes Paints Limited*; 04 473 8420; 027 292 2496

c) Door to be sprayed off-site before installation.
Contact: Andre @ *Spectrum Spray 2001 Ltd*; 04 387 9082

d) Frame to have slim-line jambs (to match existing) for p.f

e) Recessed Handle: to be supplied by client.

f) Confirm sliding door direction against Proposed Plan (Drawing 2.02)

Galley 1.3

D7d & D9d to be:

1. Door to be ***Plyco* 'Flush Panel'**
Composition: MDF (Solid Core) **Contact: PlaceMakers**

D7 size: 710(w) x 2100(h) x 38(d)mm
D9 size: 810(w) x 2100(h) x 38(d)mm

2. Paint Spray Finish to be *Resenes* 'Lustaglow'
Colour: *Resenes* 'Black White' N93-005-100 f.b.c **Finish:** Satin
note: door to be sprayed off-site before installation.
Contact: Andre @ *Spectrum Spray 2001 Ltd*; 04 387 9082
Contact: Maggie Bruce @ *Resenes Paints Limited*; 04 473 8420; 027 292 2496

3. Frame to have slim-line jambs (to match existing) for p.f.

4. Hardware to be supplied by client.

Galley 1.3

D8f to be:

1. Door to be Solid 'Horizontal' Timber Door. **Door Species / Finish:** PQ Cedar
Contact: Bevan Percy @ *The Renal Door Company*; 0800 808 066

2. Interior sliding door gear to be CS Cavity Slider **'Timberform Slider'**
note: MDF rails to be replaced with 9mm construction ply.
Contact: Christopher Anderson @ *CS Cavity Sliders*; 04-473 9904; 021 74 0800

3. Paint Spray Finish to be Enamel including all sides / edges
Colour: *Resenes* 'Black White' N93-005-100 **Finish:** Satin **note:** door to be sprayed off-site before installation.
Contact: Andre @ *Spectrum Spray 2001 Ltd*; 04 387 9082
Contact: Maggie Bruce @ *Resenes Paints Limited*; 04 473 8420; 027 292 2496

4. Frame to have slim-line jambs (to match existing) for p.f.

5. Recessed Handles: to be *hallidays baillie* 'Flush Pull Large'
Product Code: **HB005** in Zinc aluminium Finish: Satin Chrome
+ Timber fixing kit Product Code: **HB004 Contact: Elizabeth Gallagher @ *hallidays baillie Limited*; 09 358 1172; 021 821 110**

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Notes

All glazing to be clear glass and to be NZS4223 compliant.

Glass weight for size.

All exterior windows and doors as viewed from exterior. Confirm door swings against Proposed Plan (Drawing 2.01)

Confirm all opening sizes and dimensions on site prior to fabrication of windows and doors.

A	28/2/08	Contract Documentation handover to client

Sheffield House
86 Emerald Glen Road,
Raumati, Kapiti Coast

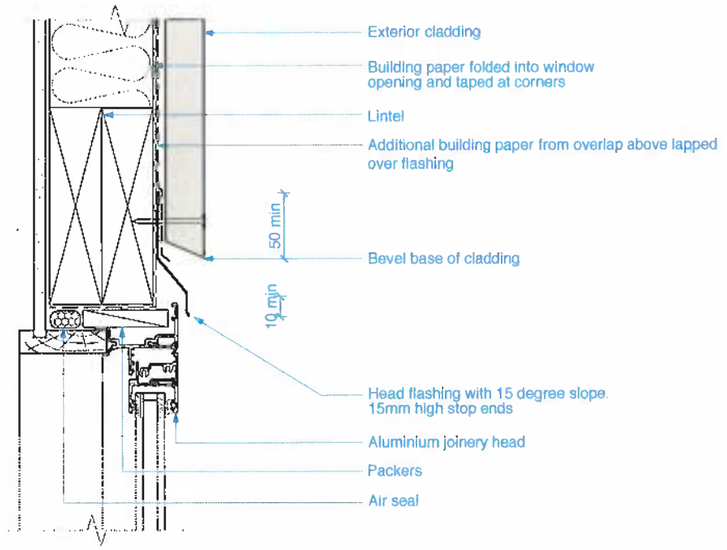
Window / Interior Door Joinery

194SHE07 / 8.02

of 1

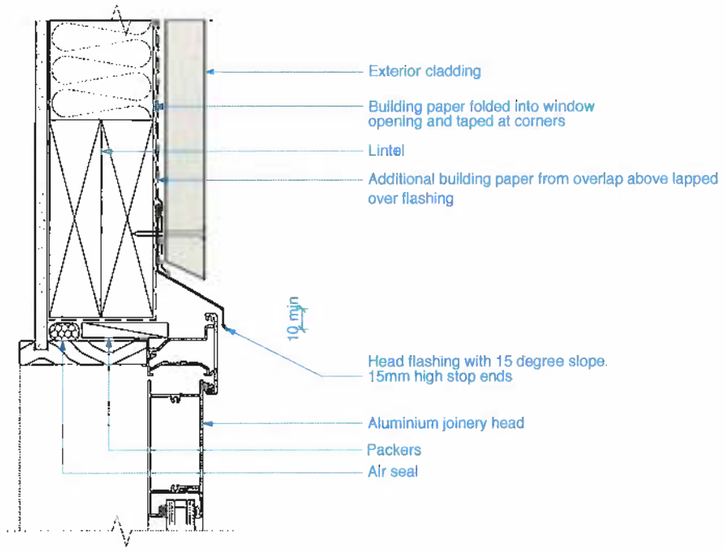
Drawn By: LS Checked By: GC

Document Issue: A
ARC File Name: 080130_CD_SHE



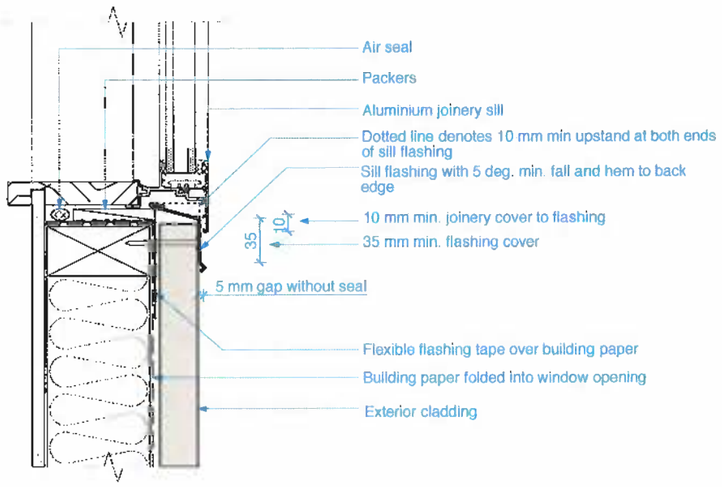
1 / 8.03 METRO Aluminium Window: Head Detail

Scale: 1:5



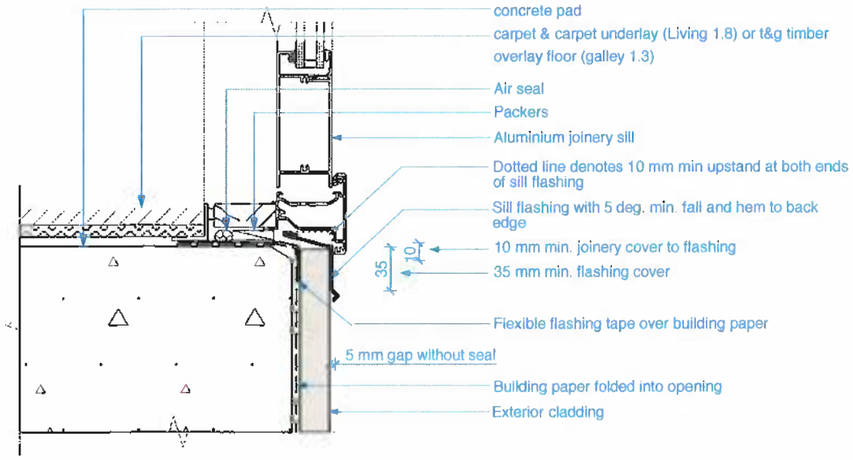
4 / 8.03 METRO Aluminium Door: Head Detail

Scale: 1:5



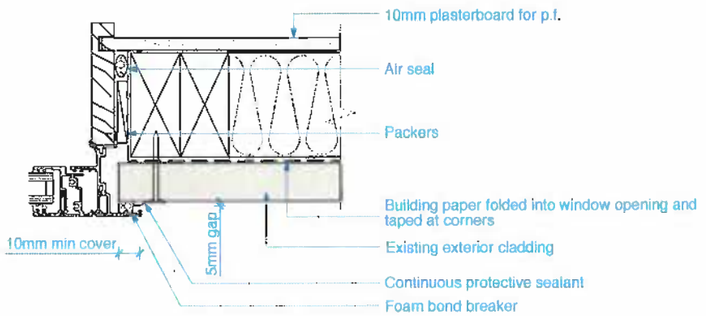
2 / 8.03 METRO Aluminium Window: Sill Detail

Scale: 1:5



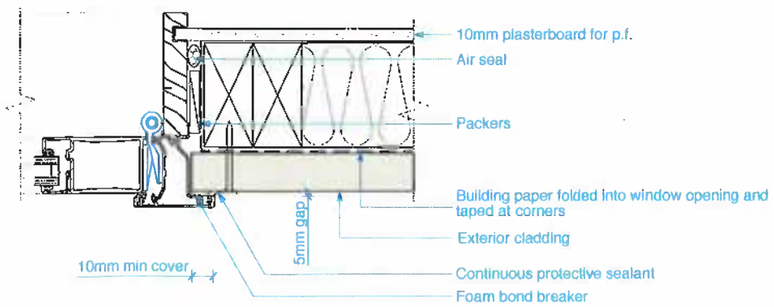
5 / 8.03 METRO Aluminium Door: Sill Detail

Scale: 1:5



3 / 8.03 METRO Aluminium Window: Jamb Detail

Scale: 1:5



6 / 8.03 METRO Aluminium Door: Jamb Detail

Scale: 1:5

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A	28/2/08	Contract Documentation handover to client

Sheffield House
86 Emerald Glen Road,
Raumati, Kapiti Coast

Head, Sill & Jamb Details

194SHE07 / 8.03

of 1

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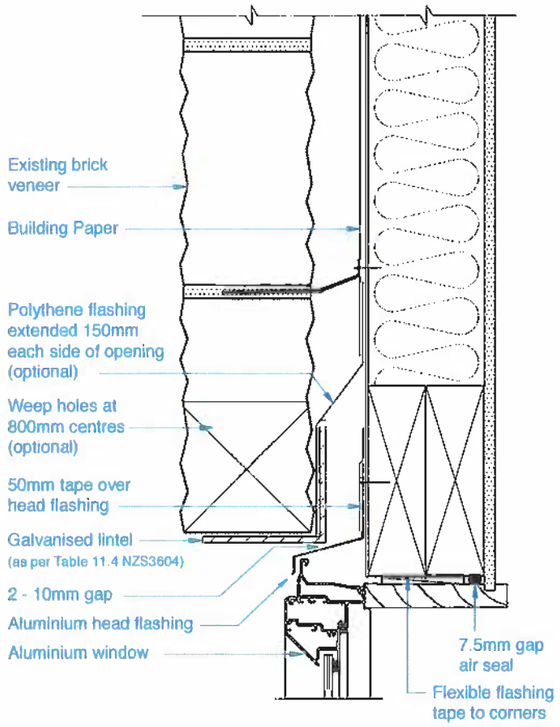
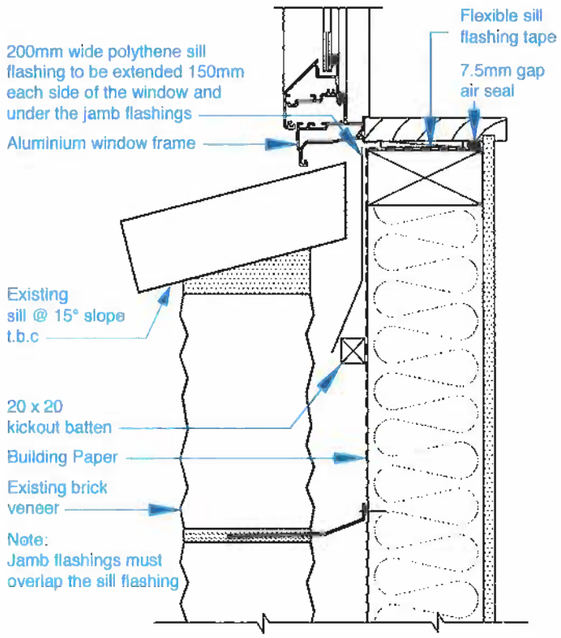
Document Issue: A
ARC File Name: 071219_CD_SHE



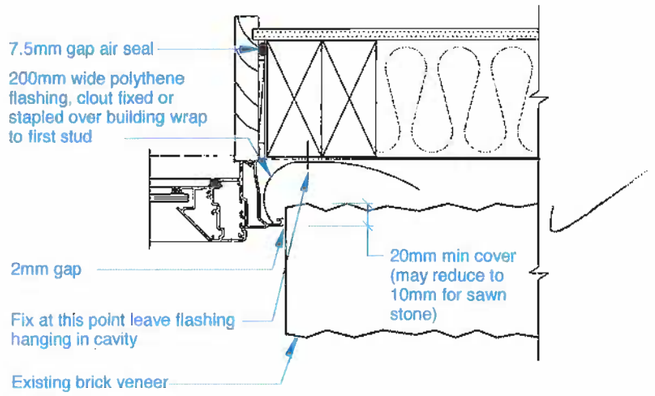
1 / 8.04 Existing Brick Veneer: Head Detail

Scale: 1:5



2 / 8.04 Existing Brick Veneer: Sill Detail

Scale: 1:5



Note:
Jamb flashings must overlap the sill flashing

3 / 8.04 Existing Brick Veneer: Jamb Detail

Scale: 1:5

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A	28/2/08	Contract Documentation handover to client

Sheffield House
86 Emerald Glen Road,
Raumati, Kapiti Coast

Head, Sill & Jamb (Brick Veneer)

194SHE07 / 8.04

of 1

Drawn By: LS Checked By: GC

Document Issue: A
ARC File Name: 071219_CD_SHE