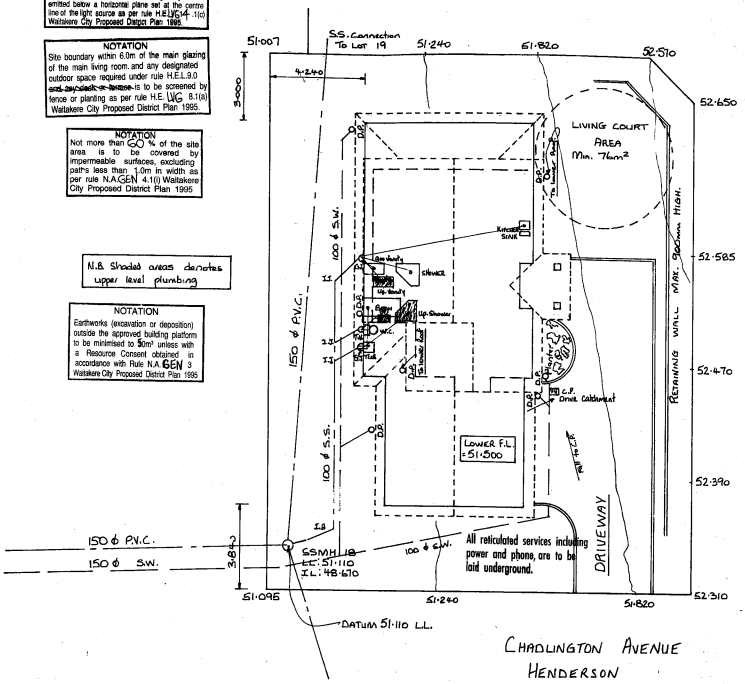
NOTATION
Any artificial outdoor lighting must not have more than 10 lux spill (horizontal and vertical) of light as measured at the site boundary of any adjoining site and must be shielded so that light rays are emitted below a horizontal plane set at the centre line of the light source as per rule H.E.I.9.4 (1)(c) Waitakere City Proposed District Plan 1995.

NOTATION
Site boundary within 6.0m of the main glazing of the main living room, and any designated outdoor space required under rule H.E.I.9.0 ~~and any plastic or furniture~~ is to be screened by fence or planting as per rule H.E.I.9.6 8.1(a) Waitakere City Proposed District Plan 1995.

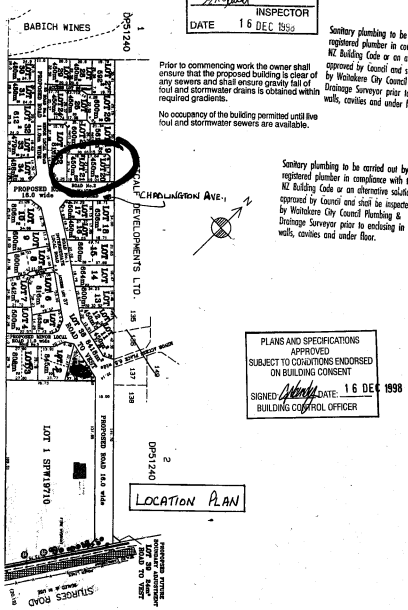
NOTATION
Not more than 60 % of the site area is to be covered by impermeable surfaces, excluding paths less than 1.0m in width as per rule N.A.GEN 4.1(i) Waitakere City Proposed District Plan 1995

N.B Shaded areas denotes upper level plumbing

NOTATION
Earthworks (excavation or deposition) outside the approved building platform to be minimised to 50m² unless with a Resource Consent obtained in accordance with Rule N.A.GEN 3 Waitakere City Proposed District Plan 1995



CHADLINGTON AVENUE
HENDERSON



APPROVED
PLUMBING & DRAINAGE
INSPECTOR
DATE 16 DEC 1998

Prior to commencing work the owner shall ensure that the proposed building is clear of any sewers and shall ensure gravity fall of foul and stormwater drains is obtained within required gradients.

No occupancy of the building permitted until live foul and stormwater sewers are available.

Stormwater / sanitary drainage sh carried out by a registered drainla compliance with the NZ Building Co an alternative solution approved by C

Sanitary plumbing to be carried out b registered plumber in compliance with NZ Building Code or an alternative solu approved by Council and shall be inspect by Waitakere City Council Plumbing & Drainage Surveyor prior to enclosing in walls, cavities and under floor.

Sanitary plumbing to be carried out by a registered plumber in compliance with the NZ Building Code or an alternative solution approved by Council and shall be inspected by Waitakere City Council Plumbing & Drainage Surveyor prior to enclosing in walls, cavities and under floor.

PLANS AND SPECIFICATIONS APPROVED
SUBJECT TO CONDITIONS ENDORSED ON BUILDING CONSENT
SIGNED ... DATE: 16 DEC 1998
BUILDING CONTROL OFFICER

Lot 20
D.P. No 190735
AREA : 450m²
Cover : 119·26m² (Lower F. Area)
450m²
= 26·5% (O.K.)

Excavation :
within EAVES = 9m³ (approx.)
outside EAVES = 18m³ (approx.)

SITE & DRAINAGE PLAN
Proposed new house at:
LOT 20 D.P. 190735
CHADLINGTON AVE., HENDERSON
Date 19:98
Scale 1:100
FOR MR & MRS T. FRAY
Drawn by:
GOULD DEVELOPMENTS
Ph. Mdo. 025-714-921
1/6 16 sht No. 1.

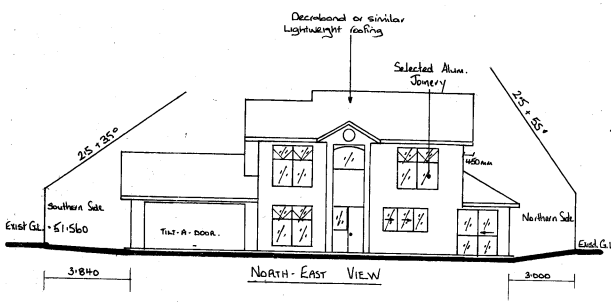
A2 - 14.8X

ELEVATIONS

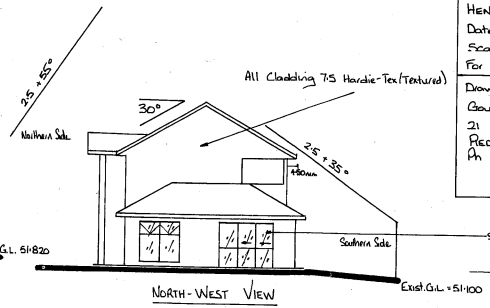
Proposed new house at:
Lot 20 . D.P. 190735
CHADLINGTON AVE.,
HENDERSON
Dated 19:98
Scale 1:100
For Mr & Mrs FRAY

Drawn By:
GOULD DEVELOPMENTS
21 VISTA MOTU
RED BEACH.
Ph 025-714-921

Sht No. 2.



NORTH-EAST VIEW



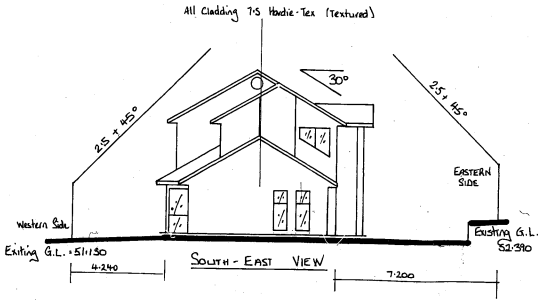
NORTH-WEST VIEW

NOTATION
FFL to be a minimum of 150mm above permanent paving or 225 above unprotected ground / 100mm above permanent paving or 150mm above unprotected ground for brick veneer.

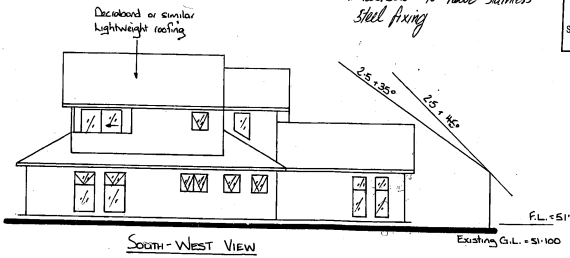
HARDITEX is to be installed in strict accordance with manufacturer's instructions.

Baresheets to have stainless steel fixing

PLANS AND SPECIFICATIONS APPROVED
SUBJECT TO CONDITIONS ENDORSED ON BUILDING CONSENT
SIGNED: [signature] DATE: 16 DEC 1998
BUILDING CONTROL OFFICER



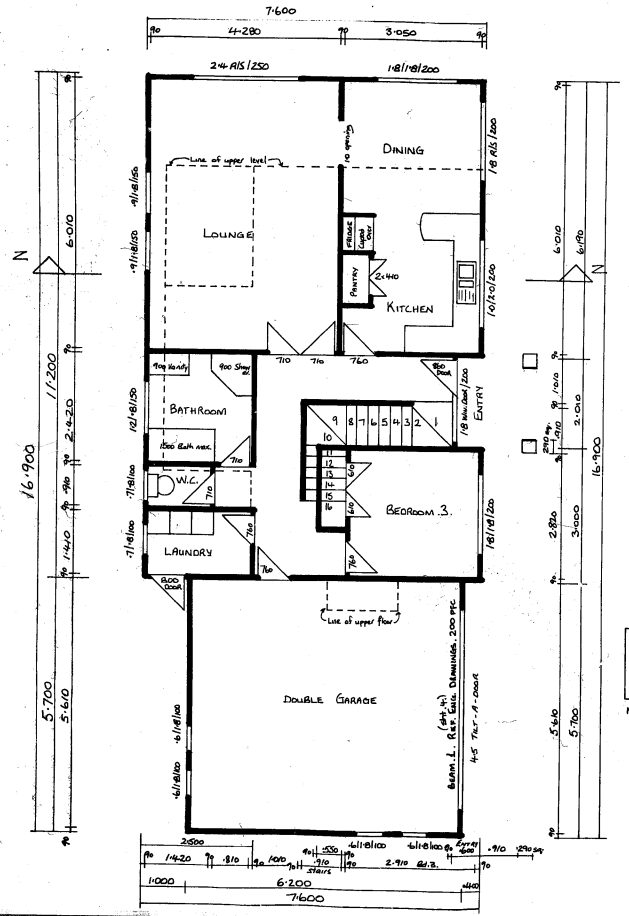
SOUTH-EAST VIEW



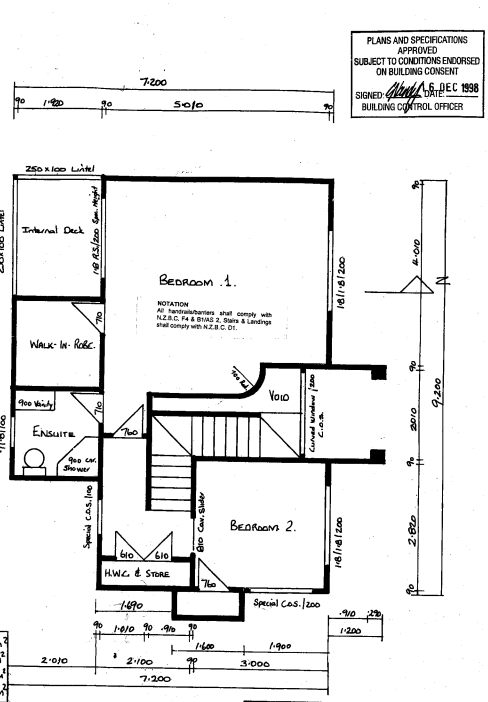
SOUTH-WEST VIEW

2/6 16

A2 - 14.8X



NOTATION
The floor surfaces of any space containing sanitary fixtures shall be impervious in accordance with N.Z.B.C E3/31. Glazing in Bathrooms shall comply with N.Z.S. 4223, part 3, tables 3, D4.



PLANS AND SPECIFICATIONS APPROVED
SUBJECT TO CONDITIONS ENDORSED ON BUILDING CONSENT
SIGNED: _____ DATE: 16 DEC 1998
BUILDING CONTROL OFFICER

AREA = Ground Level = 119·26m²
Level 1 = 51·84m²
Upper Deck = 5·44m²
TOTAL = 176·54m²

Notes: All works to comply with NZS3604 and all Council Bylaws.
Any discrepencies to be reported to owner for clarification.
Approved Insulation only to be used.
Roof R.B. plane brace diagonal (Steel Galv. strap).
Windows 1018/200
Denotes:- 1000mm high
1800mm wide
2+200x350 Lintel

Final Truss Design and Layout by Truss Manufacturer. All further bracing to roof to be notified by Truss Manufacturer.

STAIR DETAIL
Total Rise 2718mm
Tread Depth 250mm
Riser Height 170mm
Nosing 15mm
Stair Pitch 34·2°

FLOOR PLAN Ground level & level 1

Proposed new house at:
LOT 20 D.P. 190735
CHADLINGTON AVE.,
HENDERSON
Dated: '9·98
Scale: 1:50
For: MR & MRS T. FRAY

Drawn by:
GOULD DEVELOPMENTS
Mobile 025·714·921

sht No 3.

3/6

16

2 3 4 1 5 10 4

A2 - 14.8X

0000 0016 0001

09 March 2000 **Building Consents**

08:05:45 **For Property Id : 306693**

Waitakere City Council
Te Taiao o Waitakere

Legal Desc LOT 20 DP 190735
Property Address 6 CHADLINGTON AVE/HENDERSON
Owner's Name TERRY FRAY

Unauthorised work exists? No

0000 0016 0002

WAITAKERE CITY COUNCIL
PRIVATE BAG 93109 HENDERSON
WAITAKERE CITY
PH 836-8000

APPLICATION FOR BUILDING CONSENT
(Attach all relevant documents in duplicate)

APPLICATION NUMBER 98/5456

PART A
Complete in all cases

OWNER	CONTACT (if not owner)
Name: Mr & Mrs T Fray.	Contact Name/Company: G.P. Gould.
Postal Address: 2/9 Wyoming Ave Murrays Bay	Postal Address: 21 Vista Motu. Red Beach.
Phone Number: (09) 479-3716	Phone Number: 09-4267243 025-714-921
Fax Number:	Fax Number:

PROJECT LOCATION	LEGAL DESCRIPTION
Number: 6	Valuation Number:
Street: Chadlington Ave	Lot: 20 DP: 190735
Locality: Henderson	

PROJECT

Proposed Work: New House

Estimated Value: $ 135,000 (GST Incl) No. of Dwelling Units: 1

Floor area of proposed work: 176m² No. of Storeys:

Intended Life: Indefinite but not less than 50 Years ☑ or specified as ..... Years.

New Building ☑ Relocated building ☐ Additions/Alterations ☐ Demolition ☐

Stages: All ☑ or stage No. ..... of an intended ..... Stages

Do high-tension electricity transmission lines cross the property? Yes/No

Will any second-hand materials be used? Yes/No

OFFICE USE ONLY

CHARGES	CATEGORY 6C
The Council's charges payable on the making of this application are:	Plan Processing Fee: B1
$ ..... Receipt No:	Planning Check Fee: PL 3
Date: ..... Pd.	PIM Fee: B9
This application will not be processed until the Application Fee is paid	TOTAL $573.00

0000 00 16 0003

☐ Application for Building Consent only, in accordance with Project Information Memorandum No.....

☑ Application for Building Consent and Project Information Memorandum.

PART B: PROJECT DETAILS

(Complete Part B only if you have NOT applied separately for a project information memorandum).

The project involves the following matters, cross each applicable box, if any, and attach relevant information in duplicate.

☑ Location in relation to legal boundaries, and external dimensions of new, relocated, or altered buildings.

☐ 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 and disconnection from public utilities, and suppression of noise.

☐ Details of any cultural heritage significance of the building or building site, including whether it is on a marae.

PART C: BUILDING DETAILS
Complete Part C in all cases

This application is accompanied by (cross 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 New Zealand 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.

0000 00 16 0004

PART D

Complete as far as possible in all cases
(Give names, addresses and relevant registration numbers if known)

DESIGNER
Name: Gould Developments
Address: 21 Vista Motu, Red Beach.

BUILDER
Name: G.P. Gould.
Address: as above

ENGINEER
Name: Manukau Consultants. Reg. No.
Address:

DRAINLAYER
Name: Oliver Drainage (Whangaparaoa.) Reg. No.
Address:

PLUMBER
Name: Mark Watkins Plumbing (Orewa) Reg. No.
Address:

GASFITTER
Name: Reg. No.
Address:

ELECTRICIAN
Name: Coast Electrical (Red Beach) Reg. No.
Address:

CERTIFIER
Name: Reg. No.
Address:
Certifying:

If more than number allowed for please provide details on a separate sheet.

PART E: COMPLIANCE SCHEDULE DETAILS

E1: SYSTEMS NECESSITATING A COMPLIANCE SCHEDULE
(complete Part E1 for all new buildings and alterations, except single residential dwellings)

The building will contain the following (cross each applicable box and attach proposed inspection, maintenance, and reporting procedures):

- ☐ Automatic sprinkler systems or other systems of automatic fire protection.
- ☐ Automatic doors which form part of any fire wall and which are designed to close shut and remain shut on an alarm of fire.
- ☐ Emergency warning systems for fire or any other dangers.
- ☐ Emergency lighting systems.
- ☐ Escape route pressurisation systems.
- ☐ Riser mains for fire service use.
- ☐ Any automatic back-flow preventer connected to a potable water supply.
- ☐ Lifts, escalators or travelators or other similar systems.
- ☐ Mechanical ventilation or air conditioning system serving all or a major part of the building.
- ☐ Any other mechanical, electrical, hydraulic or electronic system whose proper operation is necessary for compliance with the building code.
- ☐ Building maintenance units for providing access to the exterior and interior walls of buildings.
- ☐ Such signs as are required by the building code in respect of the above mentioned systems.
- ☑ None of the above.

E2: OTHER SYSTEMS AND FEATURES TO BE INCLUDED IN THE COMPLIANCE SCHEDULE
Complete Part E2 only if the building contains one or more of the systems listed in Part E1

The building will contain the following (cross each applicable box and attach proposed inspection, maintenance, and reporting procedures):

- ☐ Means of escape from fire.
- ☐ Safety barriers.
- ☐ Means of access and facilities for the use by persons with disabilities which meet the requirements of section 25 of the Disabled Persons Community Welfare Act 1975.
- ☐ Hand-held hoses for fire fighting
- ☐ Such signs as are required by the New Zealand Building Code or Section 25 of the Disabled Persons Community Welfare Act 1975.

The information collected in this form is required under provisions of the Building Act 1991 to process this application for Building Consent.
This information forms part of the Council's record relating to the property and will be held for at least the life of the building to which it relates. The information is freely available upon request to any person who so wishes to inspect Council's record except for these plans marked confidential pursuant to S.27 of the Building Act 1991.
Personal information relating to the applicant/owner, the project and the property contained in this form will be used as part of statistical information produced by Council which is provided to Valuation NZ and Statistics New Zealand and is also available , for a fee, to any person upon request from the council.

Signed by me for and on behalf of owner:

Position: Builder

Date 11-12-98

0000 00 16 0006

BUILDING CONSENT NO: ABA 98005456

Section 35, Building Act 1991

ISSUED BY: WAITAKERE CITY COUNCIL

(Insert a cross in each applicable box. Attach relevant documents).

APPLICANT	PROJECT
Name: FRAY, TERRY Mailing Address: C/- G P GOULD 21 VISTA MOTU RED BEACH 1461	All [x] Proposed Work : DWELLING
PROJECT LOCATION	Intended Use(s) in detail:
Street Address: 6 CHADLINGTON AVE, HENDERSON, WAITAKERE CITY	Unknown
LEGAL DESCRIPTION	Intended Life:
Property Number: 306693 Valuation Roll No: Legal Description: LOT 20 DP 190735	Indefinite, but not less than 50 years Estimated Value: $135000
	Signed for and on behalf of the Council: Name: SJ HEKE Position: Clerk - Building Consents Date: 18/01/1999

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 does not affect any duty or responsibility under any other Act nor permit any breach of any other Act.

This building consent is issued subject to the conditions specified in the attached 1 pages headed "Conditions of Building Consent No "98005456

CONDITIONS OF BUILDING CONSENT ABA 98005456

The above Building Consent has been approved today subject to the following conditions:-

1. To notations on plans.

2. The applicant shall take all steps necessary to avoid damaging the street, footpath or verge area and shall reinstate any damage to those areas to the satisfaction of Council.

3. Where one is not already constructed, the owner shall construct to a standard satisfactory to Council a vehicle crossing between the carriageway and the owner's land.

   When excavating for the crossing the owner shall take all steps necessary to avoid damaging Council's watermain, which is generally located in the berm area with 450mm minimum cover. Where more than 250mm is being excavated the depth and location of the watermain should be confirmed by hand digging prior to commencement of excavation. (For further information please contact Council on phone 836-8045). In the event of any damage to the watermain the cost of any repairs will be charged to the owner.

06/03/2000
10:56:18

Building Consents

Field Sheet for 98005456

Use Reverse for any conditions to be included with interim CCC, and incorrect owner/ address details

Waitakere City Council
Te Taiao o Waitakere

Property : **6 CHADLINGTON AVE, HENDERSON, WAITAKERE CITY NO** **Issued: 18/01/1999**
Location Descr :
Legal Descr : LOT 20 DP 190735
Contact Person : **FRAY, TERRY**
Contact Person 2 :
Mailing Address : 9B WYOMING AVE, MURRAYS BAY, AUCKLAND
Description : new dwelling

Date	Event ID	Description	Officer	Status	PASSED	FAILED	Last of This Type Of Insp	INVOIC	Int. CCC	LETTER
28/01/1999	5	Footing	WALKER	Completed (Signed Off)						
		PM - gRAHAM 025 71[illegible]21								
		PASSED. OK TO POUR FOOTING. OK TO POUR 2 PADS NORTHERN SIDE OF DWELLING.								
11/02/1999	6	Bond Beam	WALKER	Completed (Signed Off)						
		AM, Graham, PH: 025 714 921, Subdivision on RHS of sturges rd past Brittany Es tate								
		PASSED. OK TO POUR BLOCK INFILL. COMPACTION CERTIFICATE REQUIRED ENGINEER								
10/05/1999	7	Pre-Floor P&D Concrete only	TODD	Completed (Signed Off)						
		Early Pm Appointment ... contact Graeme Gould on 025 714921.								
		PASSED. PLUMBER: MURRAY FISHER.								
11/05/1999	8	Pre-Floor Bldg Concrete only	VANDY	Completed (Signed Off)						
		PASSED.								
17/06/1999	10	Pre-line Building	VANDY	Completed (Signed Off)						
		PM appointment. Graham Gould 025 714921								
		PASSED. LAST OF THIS INSPECTION.								
17/06/1999	9	Pre-line Plumbing	MELLOR	Completed (Signed Off)						
		Pm appointment. Graham Gould 025 714921								
		PASSED. COPPER. SECURE WATER PIPES NEUTRAL SILICONE. PLUMBER; MURRAY FISH 025 938 266.								

Field Surveyors Response

Plumber

Drainlayer

Comments

bcsheet.rpt

06/03/2000
10:58:18

Building Consents

Field Sheet for 98005456

Waitakere City Council
Te Taiao o Waitakere

Use Reverse for any conditions to be included with interim CCC, and incorrect owner/ address details

Property : **6 CHADLINGTON AVE, HENDERSON, WAITAKERE CITY NO** **Issued: 18/01/1999**
Location Descr :
Legal Descr : LOT 20 DP 190735
Contact Person : **FRAY, TERRY**
Contact Person 2 :
Mailing Address : 9B WYOMING AVE, MURRAYS BAY, AUCKLAND
Description : new dwelling

Date	Event ID	Description	Officer	Status
07/07/1999	11	Gibnail AM gibnail ph 025 714 921 Graeme PASSED. LAST OF THIS INSPECTION.	VANDY	Completed (Signed Off)
20/07/1999	12	Drainage Test PASSED. DRAINLAYER: GRAHAM KENNARD. AS BUILT RECEIVED.	MELLOR	Completed (Signed Off)
20/07/1999	13	Certificate Received AS BUILT DRAINAGE PLAN RECEIVED. DRAINLAYER: GRAEME KENNARD 14083.	MELLOR	Completed (Signed Off)
01/03/2000	14	Final CCC Building PM Graham Gould Ph 025714921 PASSED. OK FINAL. L.O.T.I.	WALKER	Completed (Signed Off)
01/03/2000	15	Final CCC P&D Pm - Graham Gould Ph 025714921 PASSED. L.O.T.I.	LAZONBY	Completed (Signed Off)

Field Surveyors Response

PASSED	FAILED	Last of This Type Of Insp	INVOIC	Int. CCC	LETTER

Plumber

Drainlayer

Comments

06/03/2000
10:58:18

Building Consents

Field Sheet for 98005456

Use Reverse for any conditions to be included with interim CCC, and incorrect owner/ address details

Waitakere City Council
Te Taiao o Waitakere

Property : **6 CHADLINGTON AVE, HENDERSON, WAITAKERE CITY NO** **Issued: 18/01/1999**
Location Descr :
Legal Descr :
Contact Person : **FRAY, TERRY**
Contact Person 2 :
Mailing Address : 9B WYOMING AVE, MURRAYS BAY, AUCKLAND
Description : new dwelling

Date	Event ID	Description	Officer	Status

CCC Checklist

As-Built Received N/A/Yes	Eng/SURV Cert N/A/Yes	Cylinder Check N/A/Yes	Resource Consent Conditions N/A/Yes
		Subdivision Conditions Yes/No	

Field Surveyors Response

PASSED	FAILED	Last of This Type Of Insp	INVOIC	Int. CCC	LETTER

Plumber

Drainlayer

Comments

Surveyors Name (PRINT)

Date:

Signed:

29/02/2000
12:30:53

Building Consents
Field Sheet for 98005456

220 ✓
221 ✓
ENTERED

Waitakere City Council
Te Taiao o Waitakere

Use Reverse for any conditions to be included with interim CCC, and incorrect owner/ address details

Property : **6 CHADLINGTON AVE, HENDERSON, WAITAKERE CITY NO** **Issued: 18/01/1999**
Location Descr :
Legal Descr : LOT 20 DP 190735
Contact Person : **FRAY, TERRY**
Contact Person 2 :
Mailing Address : 9B WYOMING AVE, MURRAYS BAY, AUCKLAND
Description : new dwelling

Date	Event ID	Description	Officer	Status
07/07/1999	11	Gibnail AM gibnail ph 025 714 921 Graeme PASSED. LAST OF THIS INSPECTION.	VANDY	Completed (Signed Off)
20/07/1999	12	Drainage Test PASSED. DRAINLAYER: GRAHAM KENNARD. AS BUILT RECEIVED.	MELLOR	Completed (Signed Off)
20/07/1999	13	Certificate Received AS BUILT DRAINAGE PLAN RECEIVED. DRAINLAYER: GRAEME KENNARD 14083.	MELLOR	Completed (Signed Off)
01/03/2000	14	FINAL CCC BUILDING PM Graham Gould Ph 025714921	BUILDING AREA 2,	Outstanding
01/03/2000	15	FINAL CCC P&D Pm - Graham Gould Ph 025714921	PLUMBING & DRAINAGE AREA 2	Outstanding

Field Surveyors Response

PASSED	FAILED	Last of This Type Of Insp	INVOIC	Int. CCC	LETTER	
						Plumber
9	4					Drainlayer
						Comments

CCC Checklist

As-Built Received N/A/Yes	Eng/SURV Cert N/A/Yes	Cylinder Check N/A/Yes	Resource Consent Conditions N/A/Yes
		Subdivision Conditions Yes/No	

Surveyors Name (PRINT) Mike
Date: 1/3.
Signed:

29/02/2000
12:30:53

Building Consents

Field Sheet for 98005456

Waitakere City Council
Te Taiao o Waitakere

Use Reverse for any conditions to be included with interim CCC, and incorrect owner/ address details

Property : **6 CHADLINGTON AVE, HENDERSON, WAITAKERE CITY NO** **Issued: 18/01/1999**
Location Descr :
Legal Descr : LOT 20 DP 190735
Contact Person : **FRAY, TERRY**
Contact Person 2 :
Mailing Address : 9B WYOMING AVE, MURRAYS BAY, AUCKLAND
Description : new dwelling

Date	Event ID	Description	Officer	Status	Field Surveyors Response: PASSED	FAILED	Last of This Type Of Insp	INVOICE	Int. CCC	LETTER
28/01/1999	5	Footing PM - gRAHAM 025 714921 PASSED. OK TO POUR FOOTING. OK TO POUR 2 PADS NORTHERN SIDE OF DWELLING.	WALKER	Completed (Signed Off)						
11/02/1999	6	Bond Beam AM, Graham, PH: 025 714 921, Subdivision on RHS of sturges rd past Brittany Es tate PASSED. OK TO POUR BLOCK INFILL. COMPACTION CERTIFICATE REQUIRED ENGINEER	WALKER	Completed (Signed Off)						
10/05/1999	7	Pre-Floor P&D Concrete only Early Pm Appointment ... contact Graeme Gould on 025 714921. PASSED. PLUMBER: MURRAY FISHER.	TODD	Completed (Signed Off)						
11/05/1999	8	Pre-Floor Bldg Concrete only PASSED.	VANDY	Completed (Signed Off)						
17/06/1999	10	Pre-line Building PM appointment. Graham Gould 025 714921 PASSED. LAST OF THIS INSPECTION.	VANDY	Completed (Signed Off)						
17/06/1999	9	Pre-line Plumbing Pm appointment. Graham Gould 025 714921 PASSED. COPPER. SECURE WATER PIPES NEUTRAL SILICONE. PLUMBER; MURRAY FISH 025 938 266.	MELLOR	Completed (Signed Off)						

Plumber

Drainlayer

Comments

29/02/2000
12:31:05

Building Consents

Field Sheet for 98005456

ENTERED

Waitakere City Council
Te Taiao o Waitakere

Use Reverse for any conditions to be included with interim CCC, and incorrect owner/ address details

Property : 6 CHADLINGTON AVE, HENDERSON, WAITAKERE CITY NO — Issued: 18/01/1999
Location Descr :
Legal Descr : LOT 20 DP 190735 graham gould.
Contact Person : FRAY, TERRY
Contact Person 2 : 42 Marellen. drive Red Beach.
Mailing Address : ~~9B WYOMING AVE, MURRAYS BAY, AUCKLAND~~
Description : new dwelling

Date	Event ID	Description	Officer	Status
07/07/1999	11	Gibnail AM gibnail ph 025 714 921 Graeme PASSED. LAST OF THIS INSPECTION.	VANDY	Completed (Signed Off)
20/07/1999	12	Drainage Test PASSED. DRAINLAYER: GRAHAM KENNARD. AS BUILT RECEIVED.	MELLOR	Completed (Signed Off)
20/07/1999	13	Certificate Received AS BUILT DRAINAGE PLAN RECEIVED. DRAINLAYER: GRAEME KENNARD 14083.	MELLOR	Completed (Signed Off)
01/03/2000	14	FINAL CCC BUILDING PM Graham Gould Ph 025714921	BUILDING AREA 2,	Outstanding
01/03/2000	15	FINAL CCC P&D Pm - Graham Gould Ph 025714921	PLUMBING & DRAINAGE AREA 2	Outstanding

Field Surveyors Response

PASSED	FAILED	Last of This Type Of Insp	INVOIC	Int. CCC	LETTER	Plumber / Drainlayer / Comments
						~~Seal toilet pipe interior wall downstairs. Cert. comp... request ...~~
yes		yes				
						ok final

CCC Checklist

As-Built Received N/A/Yes	Eng/SURV Cert N/A/Yes	Cylinder Check N/A/Yes	Resource Consent Conditions N/A/Yes

Subdivision Conditions Yes/No

Surveyors Name (PRINT) Keith Wall

Date: 1/3/2000

Signed: KW

0000 0016 0013

29/02/2000
12:31:05

Building Consents

Field Sheet for 980054[illegible]

Waitakere City Council
Te Taiao o Waitakere

Use Reverse for any conditions to be included with interim CCC, and incorrect owner/ address details

Property : **6 CHADLINGTON AVE, HENDERSON, WAITAKERE CITY NO** **Issued: 18/01/1999**
Location Descr :
Legal Descr : LOT 20 DP 190735
Contact Person : **FRAY, TERRY**
Contact Person 2 :
Mailing Address : 9B WYOMING AVE, MURRAYS BAY, AUCKLAND
Description : new dwelling

Date	Event ID	Description	Officer	Status
28/01/1999	5	Footing PM - gRAHAM 025 714921 PASSED. OK TO POUR FOOTING. OK TO POUR 2 PADS NORTHERN SIDE OF DWELLING.	WALKER	Completed (Signed Off)
11/02/1999	6	Bond Beam AM, Graham, PH: 025 714 921, Subdivision on RHS of sturges rd past Brittany Es tate PASSED. OK TO POUR BLOCK INFILL. COMPACTION CERTIFICATE REQUIRED ENGINEER	WALKER	Completed (Signed Off)
10/05/1999	7	Pre-Floor P&D Concrete only Early Pm Appointment ... contact Graeme Gould on 025 714921. PASSED. PLUMBER: MURRAY FISHER.	TODD	Completed (Signed Off)
11/05/1999	8	Pre-Floor Bldg Concrete only PASSED.	VANDY	Completed (Signed Off)
17/06/1999	10	Pre-line Building PM appointment. Graham Gould 025 714921 PASSED. LAST OF THIS INSPECTION.	VANDY	Completed (Signed Off)
17/06/1999	9	Pre-line Plumbing Pm appointment. Graham Gould 025 714921 PASSED. COPPER. SECURE WATER PIPES NEUTRAL SILICONE. PLUMBER; MURRAY FISH 025 938 266.	MELLOR	Completed (Signed Off)

Field Surveyors Response

PASSED	FAILED	Last of This Type Of Insp	INVOIC	Int. CCC	LETTER

Plumber
Drainlayer
Comments

bcsheet.rpt

0000 0016 0015

COPY

CODE COMPLIANCE CERTIFICATE NO: ABA 98005456

Section 43(3), Building Act 1991

ISSUED BY: WAITAKERE CITY COUNCIL

BUILDING CONSENT NO: ABA 98005456

(Insert a cross in each applicable box. Attach relevant documents).

PROJECT	PROJECT LOCATION
All [X]	Name: FRAY, TERRY
Intended Use(s) in detail:	Street Address: 6 CHADLINGTON AVE, HENDERSON, WAITAKERE CITY
Unknown	Mailing Address: C/- G P GOULD 21 VISTA MOTU RED BEACH 1461
Proposed Work:	
DWELLING	
Intended Life:	**LEGAL DESCRIPTION**
Indefinite, but not less than 50 years	Property Number: 306693
	Valuation Roll No: 33090 52400
	Legal Description: LOT 20 DP 190735

This is:

[X] A final code compliance issued in respect of all of the building work under the above building consent.

[ ] An interim code compliance certificate in respect of part only, as specified in the attached particulars, of the building work under the above consent.

[ ] This certicate is issued subject to the conditions specified in the attached ...page(s) headed "Scope and Conditions of Code Compliance Certificate No. ABA 98005456(being this certificate)

Signed for and on behalf of the Council

Name:

Position: Building/Plumbing and Drainage Surveyor Date: 06/03/2000

0000 00 16 00 16

PROJECT INFORMATION MEMORANDUM NO: ABA 98005456

Section 31, Building Act 1991
ISSUED BY: WAITAKERE CITY COUNCIL

APPLICANT	PROJECT
Name: FRAY, TERRY Mailing Address: C/- G P GOULD 21 VISTA MOTU RED BEACH 1461	Proposed Work: DWELLING Intended Use(s) in detail: Unknown Intended Life: Indefinite, but not less than 50 years This is: [X] Confirmation that the proposed building work may be undertaken, subject to the provisions of the Building Act 1991, Resource Management Act 1991 and any requirements of the Building Consent. Not yet applied for [ ] No: attached [ ] Not yet issued [X] [ ] Notification that the proposed building work may not be undertaken because a necessary authorisation has been refused.
PROJECT LOCATION Street Address: 6 CHADLINGTON AVE, HENDERSON, WAITAKERE CITY	
LEGAL DESCRIPTION Property Number: 306693 Valuation Roll Number: Legal Description: LOT 20 DP 190735	

This project information memorandum includes (cross each applicable box, attach relevant document, and send a copy to any relevant network utility operators and organisations having the power to classify land and buildings):

- [ ] Information identifying relevant special features of the land concerned.
- [ ] Information about the land or buildings concerned notified to the Council by any statutory organisation having the power to classify land or buildings.
- [ ] Details of relevant utility systems.
- [ ] Details of authorisations which have been granted.
- [ ] Notification of any other authorisations which must be obtained before the proposed building work may be undertaken.
- [ ] Details of authorisations which have been refused.

Signed for and on behalf of the Council:

Name: Angie Bledin

Position: Clerk - Building Consents

Date: 23/12/1998

0000 0016 0017

WAITAKERE CITY COUNCIL

PROJECT INFORMATION MEMORANDUM

PIM NO: 98005456 **SITE ADDRESS:** 6 Chadlington Avenue, Henderson.

LEGAL DESCRIPTION: Lot 20 DP 190735

PLANNING

Proposed District Plan Controls:

Natural Area: General

Natural Landscape Elements: Nil

Human Environment: Living

Heritage, Designation or Scheduled Site Notation: Nil

Road Hierarchy: local

Natural Hazards Classification: No known hazards.

Impact on Waahi Tapu?: Unable to be ascertained

Archaeological Site?: " " " "

Operative District Plan Controls:

Zoning: Rural 3 (Waitemata)

Site Identified Stability sensitive: ~~YES~~/(NO)

Site Identified Flood Sensitive: ~~YES~~/(NO)

Land/Building Classification by Statutory Organisation: Nil

Miscellaneous:

Land Use Consent Required: ~~YES/NO/ALREADY GRANTED/BEING PROCESSED/~~ UNABLE TO BE ASCERTAINED

Vehicle Crossing/Street Damage Deposit: REQUIRED/~~NOT REQUIRED~~

If a vehicle crossing is required or the value of work requires a street damage deposit, pursuant to Waitakere City Council Bylaw No. 22 you are required to complete an application in the prescribed form for a vehicle crossing and street damage deposit with your application for building consent.

Any Other Requirements: Refer General Natural Area - Rule 3.1(b) - earthworks outside an approved building platform. Please read and ensure that the proposed earthworks comply in terms of volume/plan area/height of fill, depth of cut/proximity to site boundaries. All earthworks to comply with Appendix 3.0 - Erosion/Sediment Control Measures. (Copies attached to site plan.)

BUILDING

High-tension electricity transmission lines clearance required: YES/(NO)

If yes Power New Zealand / Electrix

Hazard Register: .....

NO KNOWN HAZARDS

.....

.....

PLUMBING

Existing foulwater drains: YES/NO

Existing stormwater drains: YES/NO

Sanitary Sewer: YES/~~NO~~

Stormwater Sewer: YES/NO

If no state any disposal requirements: .....

.....

.....

Auckland Regional Council Sewer clearance required: YES/NO

Auckland Regional Council Bulk Watermain clearance required: YES/NO

HEALTH/DANGEROUS GOODS

Hazardous contaminants present (if known): YES/NO

If yes, state any requirements: .....

DRAINAGE ENGINEER

Requirements for building over or adjacent to Council sewer: YES/NO

If yes: See attached sheet

DEVELOPMENT ENGINEER

Subdivision requirements: .....

.....

.....

MISCELLANEOUS REQUIREMENTS

.....

.....

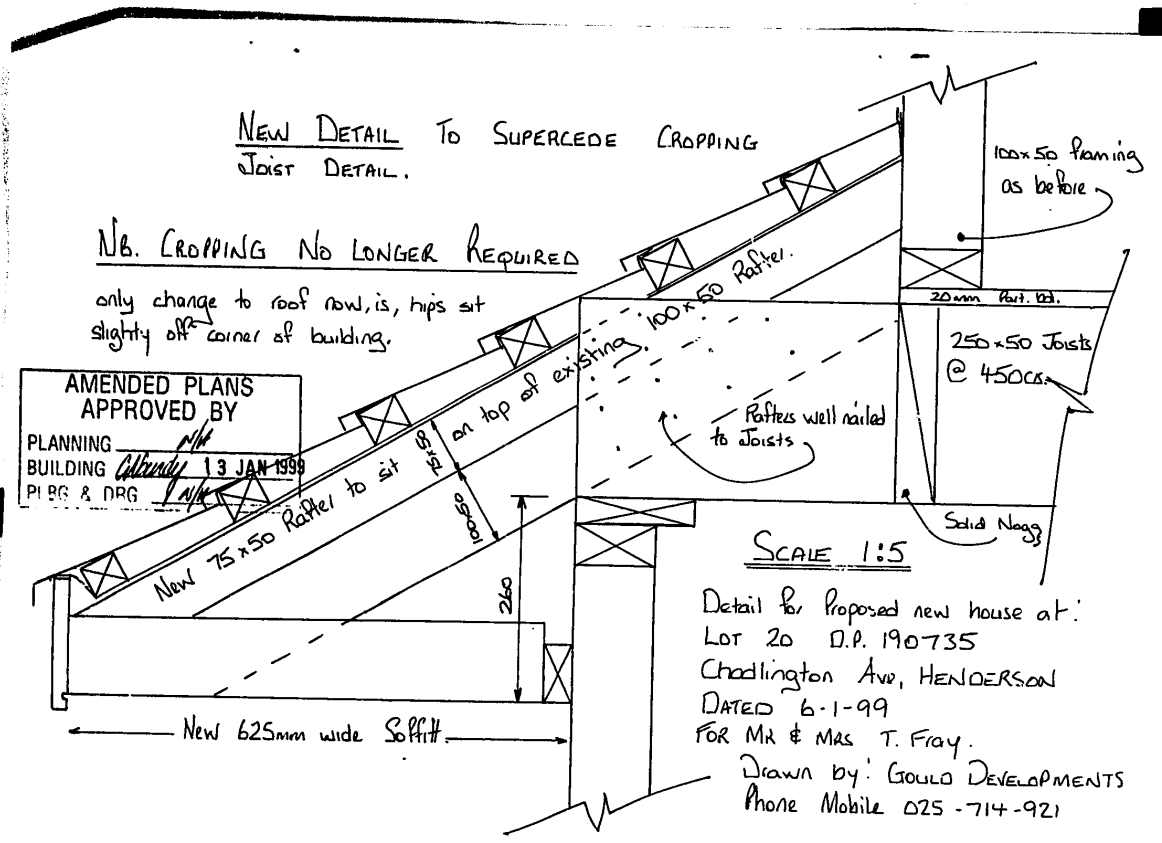
0000 0016 0020

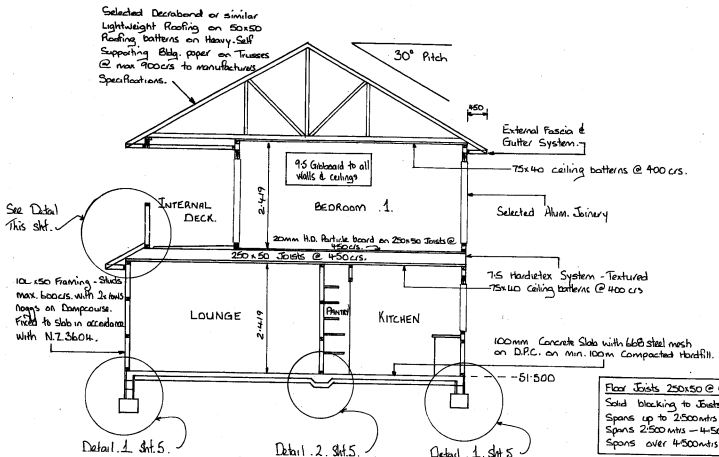
NO AS BUILT

DRAINAGE PROVIDED

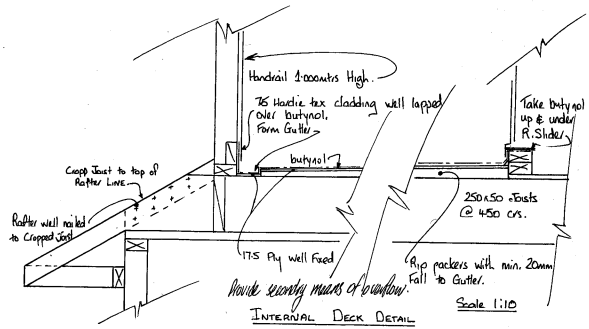
AT TIME OF

MICROFILMING


NEW DETAIL TO SUPERCEDE CROPPING JOIST DETAIL.
NB. CROPPING NO LONGER REQUIRED
only change to roof now, is, hips sit slightly off corner of building.
AMENDED PLANS APPROVED BY
PLANNING N/A
BUILDING 13 JAN 1999
PLBG & DRG N/A
100x50 framing as before
100x50 Rafter.
20mm Part. Bd.
250x50 Joists @ 450cs.
Rafters well nailed to Joists
Solid Nogg
New 75x50 Rafter to sit on top of existing
150
260
New 625mm wide Soffit
SCALE 1:5
Detail for Proposed new house at:
LOT 20 D.P. 190735
Chadlington Ave, HENDERSON
DATED 6-1-99
FOR MR & MRS T. Fray.
Drawn by: GOULD DEVELOPMENTS
Phone Mobile 025-714-921



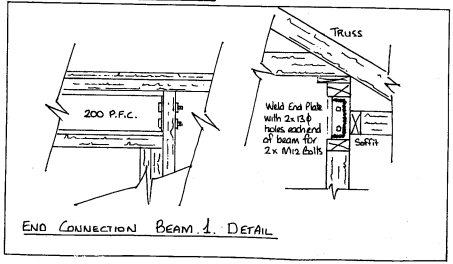
SECTION Z-Z



INTERNAL DECK DETAIL

Floor Joists 250x50 @ 450 c/s
Solid blocking to Joists as Follows:-
Spans up to 2.500mtrs 1 x row mid-point.
Spans 2.500 mtrs - 4.500mtrs 2x rows evenly spaced.
Spans over 4.500mtrs 3x rows evenly spaced.

PLANS AND SPECIFICATIONS APPROVED
SUBJECT TO CONDITIONS ENDORSED ON BUILDING CONSENT
SIGNED: _____ DATE: 16 DEC 1998
BUILDING CONTROL OFFICER



END CONNECTION BEAM 1. DETAIL

SECTION Z-Z & DECK DETAIL

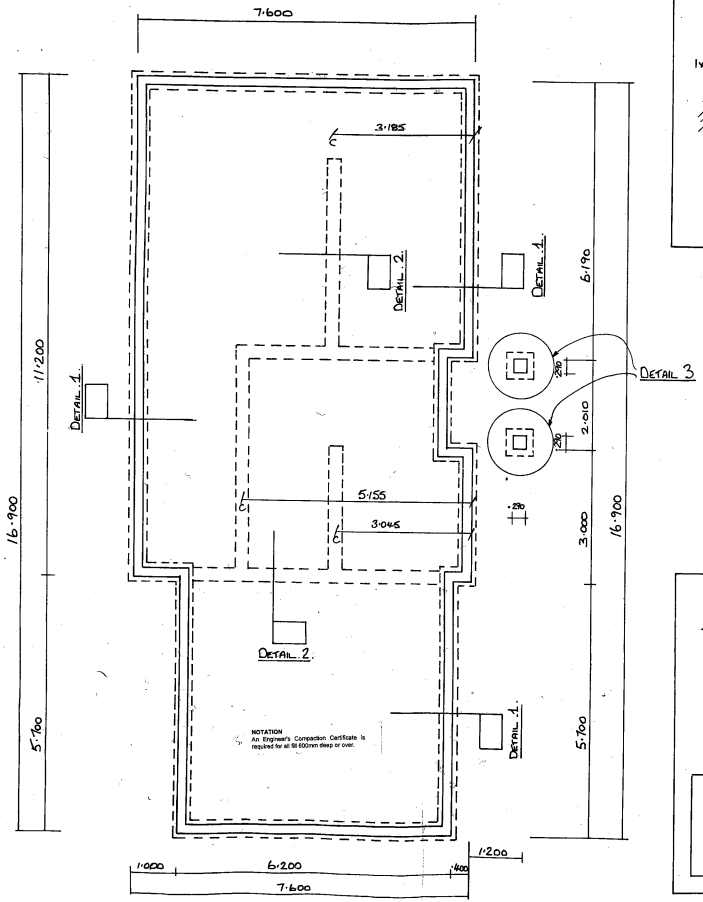
Proposed new house at:
Lot 20 D.P. 190735
CHADLINGTON AVE., HENDERSON
DATE: 9-98
Scale: 1:50
For: Mr. & Mrs. T. FRAY

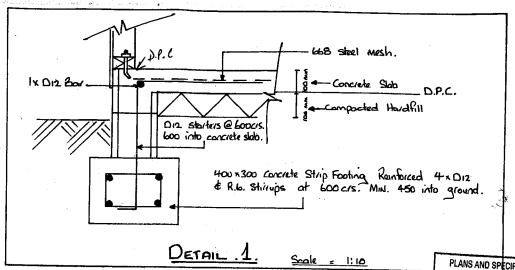
Drawn by:
GOULD DEVELOPMENTS
Mobile 025-714-921

sht. No. 4.

4/6 16

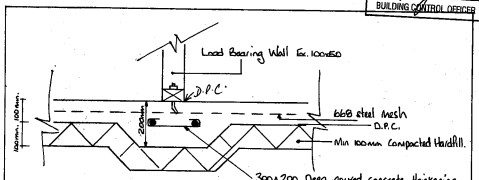
A2 - 14.8X



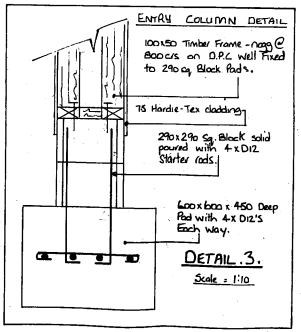


DETAIL .1. Scale = 1:10

PLANS AND SPECIFICATIONS APPROVED SUBJECT TO CONDITIONS ENDORSED ON BUILDING CONSENT
SIGNED ... DATE 16 DEC 1998
BUILDING CONTROL OFFICER



DETAIL .2. Scale = 1:10



DETAIL .3. Scale = 1:10

FOUNDATION PLAN & DETAILS

Proposed new house at:
Lot 20. D.P. 190735
CHADLINGTON AVE.,
HENDERSON.
DATE: 9-98
Scale: 1:50
For: MR. & MRS. T. FRAY

Drawn by
GOULD DEVELOPMENTS
21 VISTA MOTU
RED BEACH
Ph 09-42-67243
Mobile 025-714-921

sht. No .5.

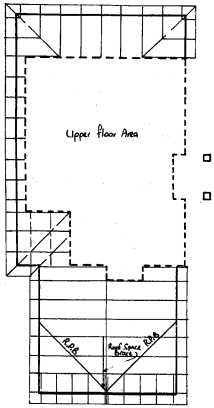
5/16 16

A2 - 14.8X

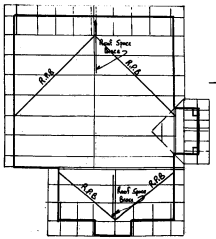
TRUSS LAYOUT

Scale = 1:100

note:- Final Truss Design & Layout by TRUSS MANUFACTURER. All Further Bracing to be notified by TRUSS MANUFACTURER.



LOWER ROOF

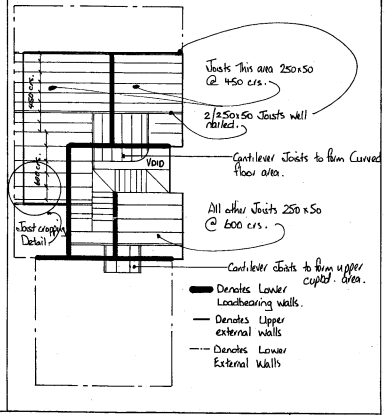


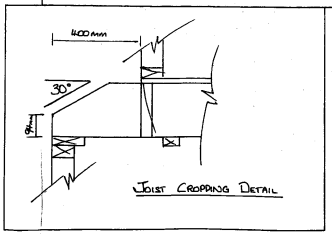
UPPER ROOF

NOTATION
Provide solid blocking to floor joists:-
For spans up to 3500 one row at mid-point
For spans 3500 to 4500 two rows evenly spaced
For spans over 4500 three rows evenly spaced

JOIST LAYOUT

All Joists 250x50 at c/s. Shown.

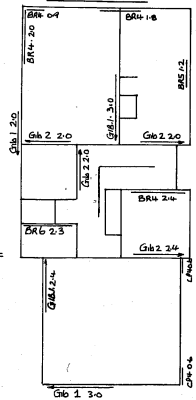




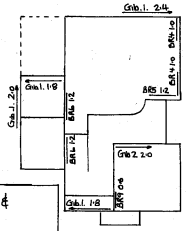
JOIST CROPPING DETAIL

BRACING LEGEND

LOWER LEVEL



UPPER LEVEL



TRUSS LAYOUT - JOIST LAYOUT & BRACING LEGEND.

Proposed new house at:
LOT 20. D.P. 190735
CHADLINGTON AVE.,
HENDERSON
DATED 19:98
Scale: 1:100
FOR MR & MRS T. FRAY

Drawn by:
GOULD DEVELOPMENTS
Ph. mob. 025-714-921

Sht No. 6.

PLANS AND SPECIFICATIONS APPROVED SUBJECT TO CONDITIONS ENDORSED ON BUILDING CONSENT
SIGNED: [signature] DATE 16 DEC 1998
BUILDING CONTROL OFFICER

6/6 16

A2 - 14.8X

AMENDED PLANS - UNISSUED CONSENTS

1 July 1997 Sus

ABA No 98005456 Date Received 6 JAN 1999

Amendment requested/not requested.

To	Date In	Date Out	Handed on to	Paused/Finished	Time
178 Technical Adviser					
180 Clerk-Building Consents	6/1	7/1	Bld	F	—
101/181 Building	7/1/99	13 JAN 1999	120	F	10
102/182 Plumbing & Drainage					
103/183 Design Engineer					
104/184 Drainage					
105/185 E.H.O.					
111/191 Planning					
120/200 Final Check & Document Preparation	13 JAN 1999	14/1	Doc Prep	F	5
			Total Time		15
			Processing Fee at $60.00 per hour		$ 15

CONDITIONS:

23 December 1998

Building Consent Application ABA 98005456

1. Please provide an engineer's design calculation for the 'joist cropping detail' supporting the upper external wall.

Enquires regarding these requests should be directed to the staff listed below:

Item: 1 Contact: Glen Vandy Ext: 8652

* Further information as requested above.

23 December 1998

Waitakere City Council
Te Taiao o Waitakere

Waitakere City Council
Civic Centre
6 Waipareira Ave
Waitakere City

Private Bag 93109
Henderson
Waitakere City

Telephone
09 836 8000

Facsimile
09 836 8001

DX CX 10250 Auckland Mail Centre

Email: info@waitakere.govt.nz

T FRAY
C/- G P GOULD
21 VISTA MOTU
RED BEACH 1461

Our Reference: Building Consent Application Number ABA98005456

6 CHADLINGTON AVE, HENDERSON, WAITAKERE CITY 1008

Dear Sir/Madam

Your application for building consent has been suspended because further information is required (in duplicate), as indicated on the attached sheet/s. Processing of your application will recommence upon receipt of the required information.

To Enable Council to provide an effective service would you please respond to this request as soon as possible, but no later than one month from the date of this letter. If no reply has been received within this period the application may be cancelled without further reference.

Yours faithfully

MARINA CHAMBERLAIN
CLERK - BUILDING CONSENTS

23 December 1998

Building Consent Application ABA 98005456

1. Please provide an engineer's design calculation for the 'joist cropping detail' supporting the upper external wall.

Enquires regarding these requests should be directed to the staff listed below:

Item: 1 Contact: Glen Vandy Ext: 8652

Building Consent Application No: 985456

1. Please provide an engineers design calculation for the 'dost capping detail' supporting the upper external wall

Enquiries regarding these requests should be directed to the staff listed below:

Item/s:	1	Contact:	Glen V	Extension:	8652
Item/s:		Contact:		Extension:	
Item/s:		Contact:		Extension:	

STRUCTURAL CHECK REPORT

1 July 97

RESIDENTIAL OR MINOR BUILDING WORKS
BUILDING SURVEYORS PROCESSING SHEET

ABA NO : 98005456

CALCULATIONS AND PRODUCER STATEMENT CHECK

Each of the items must be checked and the box ticked:

1. Site not stability sensitive ☑
2. Calculations provided ☑
3. Producer Statement (see note) ☑
4. Producer Statement signed by a Registered Engineer ☑
5. Calculations cover all work on drawings requiring design ☐

Note : If a producer statement is not offered by Council cannot request one.

I recommend that the application be **approved** subject to the following conditions:

Signed by : CN Building Surveyor Date : 16 DEC 1998

STRUCTURAL CALCULATIONS

FOR

PROPOSED NEW HOUSE
AT
LOT 20, DP _____
HENDERSON

FOR

MR & MRS T. FRAY

Project No. 34025148

NOVEMBER 1998

MANUKAU CONSULTANTS LIMITED

Project: NEW HOUSE FOR MR & MRS. T. GRAY. LOT 20 HENDERSON

Subject: STRUCTURAL DESIGN **Project No:** 3402 5148

Designed: IN LING NG. **Date:** NOV. 1998

Checked: JUSTIN DE SILVA **Page:** A

DESIGN NOTES

1. This design does not include any assessment of site conditions regarding ground stability and/or soil strength. It has therefore been assumed for the purpose of the design that the site is stable and that the soils have a safe bearing capacity of 100 kPa. Compliance with Section 3 of NZS 3604:1990 must be verified on site by others after excavation and prior to the placing of concrete for any foundations. All footings are to be founded at least 450mm below original ground level on a stable slope unless noted otherwise.

OR

~~This design has been based on the geotechnical investigation report by others. A copy of this report is attached in this appendix.~~

2. All dimensions must be checked on site prior to construction and fabrication. If there are any variations to the dimensions assumed in this design it has to be referred back to this design office.

3. Any parts of the structure which are not covered by the specific design included with these calculations must comply with either the New Zealand Building Code, NZS 3604 Code of Practice for Light Timber Frame Buildings not requiring Specific Design, or specific design as detailed by others. Any exceptions to this should be referred back to this design office.

4. All materials and proprietary items are to be covered by supplier's producer statements.

5. The structural design has been carried out in accordance with:

   - NZS 4203:1992
   - ~~NZS 3101:1995~~
   - NZS 3603:1993
   - NZS 3404:1997
   - ~~NZS 4230:1990~~

6. The design floor live loads used are 1.5 kPa or 1.8 kN.
   2.0 kPa for Deck.

Project: GOULD DEVELOPMENTS — Project No: 3402 5148
Subject: LOT 20 DP HENDERSON — Date: 27/11/98
Designed: In Ling Ng. — Checked: Justin — Page: 1

MANUKAU CONSULTANTS LIMITED

(For M_1 & M_{T3} T. Frag)

GARAGE LINTEL. Span = 4.7 m.

Roof $G = 0.3$ kPa (Light) $\times\left(\frac{6.2}{2}+0.5\right)$ + 0.25 (S.W.) = 1.33 kN/m

$Q = 0.25$ kPa. $\times$ 3.6 = 0.9 kN/m.

$W = 1.2G + 1.6Q$ = 3.0 kN

$M^* = W\frac{l^2}{8}$ = 8.3 kNm.

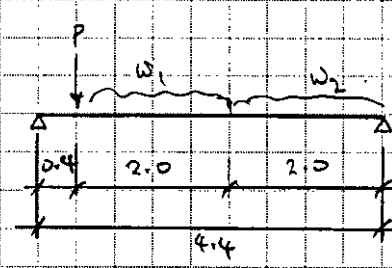
180 PFC ϕM_b = 45 kNm > M^* O.K.
(l_e = 1.0 m)

Deflection $\Delta_G = \frac{5wl^4}{384EI}$ = 3 mm. < $\frac{l}{400}$ O.K.

$I = 14.1 \times 10^6$ mm^4

BEAMS OVER LOUNGE

Edge Beam.



$P(G) = 0.3 \times 4.1 \times 1.85$ = 2.3 kN

$P(Q) = 0.25 \times 4.1 \times 1.85$ = 1.9 kN

$w_1(G)$ = 0.5 (floor) $\times \frac{0.45}{2}$ + 0.1 (Chimney) + 0.3 (roof) $\times$ 1.0 = 0.51 kN/m.

$w_1(Q)$ = 2.0 (LL) $\times$ 0.225 = 0.45 kN/m. (Deck 2 kPa)

$w_2(G)$ = 0.4 (floor) $\times$ 0.225 + 0.3 (wall) $\times$ 4.0 + 0.3 (roof) $\times$ 1.0 = 1.59 kN/m

$w_2(Q)$ = 1.5 $\times$ 0.225 = 0.34 kN/m.

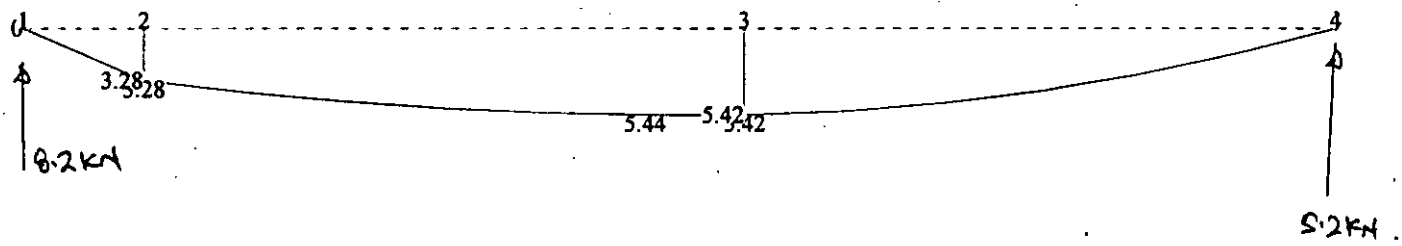
From multiframe,

$1.2G + 1.6Q$ M^* = 5.5 kNm (max)

2/250 x 90 ϕM_b = 10.6 kNm > M^* O.K.

Deflection $\Delta_{G+0.7Q}$ = 2 (K2) $\times$ 6.35 + 0.7 $\times$ 3.12 = 14.9 mm

USE 3/250 x 90 $\Delta = 14.9 \times \frac{2}{3}$ = 9.9 mm < $\frac{l}{400}$ = 11 mm O.K.



Max. $\Delta_G = 6.35$ mm.

" $\Delta_Q = 3.12$ mm

EDGE BEAM OVER LOUNGE

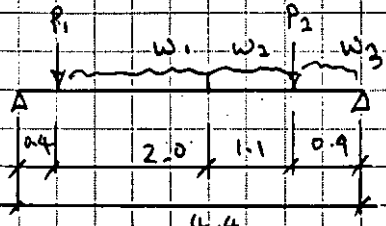
(LOT 20)

Plot View - Static Case: '1.2G + 1.6Q' Mz' (kN-m) (file: Henderson.mfd)

Project: | Project No: 3402 5148
Subject: LOT 20 | Date: 30/4/98
Designed: Initial | Checked: Justin | Page: 3

MANUKAU CONSULTANTS LIMITED

Internal Beam over Lounge



$P_1(G) = 2.3$ KN.

$P_1(Q) = 1.9$ KN

$P_2(G) = (0.4 + 0.2) \times \frac{3.5}{2} \times \frac{1.5}{2} = 1.8$ KN. (floor + walls)

$P_2(Q) = 1.5 \times 1.31 = 2.0$ KN.

$w_1(G) = 0.45 \times 0.45$ (floor) $+ 0.3 \times 3$ (wall) $= 1.10$ KN/m

$w_1(Q) = 1.75 \times 0.45 = 0.79$ KN/m.

$w_2(G) = 0.4 \times 0.45 = 0.18$ KN/m.

$w_2(Q) = 1.5 \times 0.45 = 0.68$ KN/m

$w_3(G) = 0.4 \times 1.5/2 = 0.3$ KN/m.

$w_3(Q) = 1.5 \times 0.75 = 1.13$ KN/m

From Multiframe,

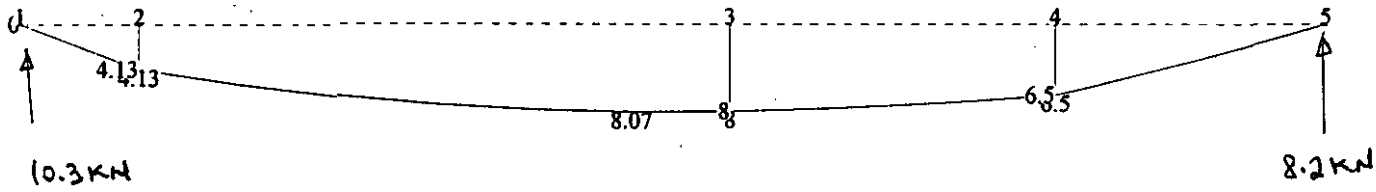
max. $M^* = 8.1$ KNm $(1.2G + 1.6Q)$

2/250×60 $\phi M_b = 2 \times 5.28 = 10.6$ KNm $> M^*$ O.K.

Deflection $\Delta_{G+0.7Q} = 2 \times 5.85 + 0.7 \times 7.38$

$= 16.9$ mm for 2/250×50

USE 3/250×50 $\Delta = 16.9 \times \frac{2}{3} = 11.2$ mm $\simeq \frac{l}{400}$ close enough.



Max. Δ_G = 5.85mm

" Δ_Q = 7.38mm.

INTERNAL BEAM OVER LOUNGE

(LOT 20)

Plot View - Static Case: '1.2G + 1.6Q' Mz' (kN-m) (file : Henderson 2 .mfd)

Project: | Project No: 3402518

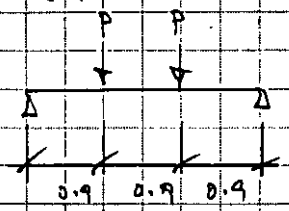
Subject: LOT 20 | Date: 30/11/98

Designed: Inling | Checked: Jinling | Page: 4

MANUKAU CONSULTANTS LIMITED

ROOF

Lintel (internal deck) Span = 2.7 m



P(G) = 0.3 × 4.1 × 0.9 = 1.11 kN.

P(Q) = 0.25 × 4.1 × 0.9 = 0.92 kN

∴ P^* = 1.2G + 1.6Q = 2.8 kN.

M^* = $P^* \times \frac{l}{3}$ = 2.5 kNm.

200 × 100 No.1 Framing R.P. ϕM_b = 6.7 kNm > M^* O.K.

Deflection $\Delta_G = \frac{23 \overset{K2}{(2 \times 1110)} \times 2700^3}{648 \times 8000 \times \frac{94 \times 194^3}{12}}$

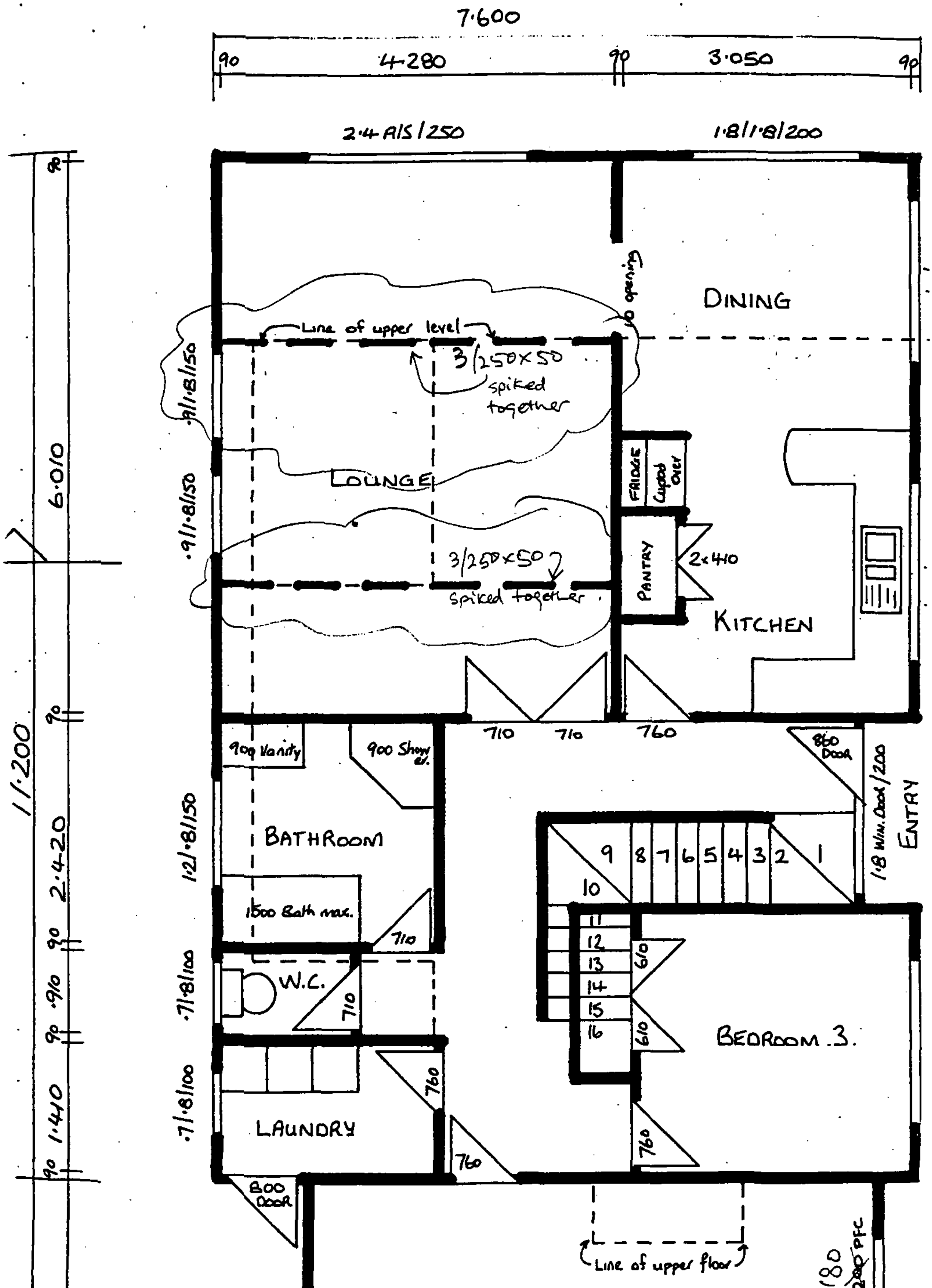
= 3.4 mm < $\frac{l}{400}$ = 6.8 mm O.K.

ROOF

LINTEL - BEDROOM 2 Span = 1.9 m (less than above)

Roof truss span = 5.2 m (< above = 7.2 m)

∴ USE 2/200 × 50 O.K.


7·600
90
4·280
90
3·050
90
2·4 A/S/250
1·8/1·8/200
DINING
Line of upper level
3/250x50
spiked together
LOUNGE
3/250x50
spiked together
FRIDGE
Cupbd over
PANTRY
2x410
KITCHEN
710
710
760
860 DOOR
1·8 Win. Door/200
ENTRY
900 Vanity
900 Shower
BATHROOM
1500 Bath max.
710
W.C.
710
LAUNDRY
760
760
800 DOOR
9 8 7 6 5 4 3 2 1
10
11
12
13
14
15
16
610
610
760
BEDROOM 3.
Line of upper floor
180
PFC
6·010
11·200
2·420
1·440
·9/1·8/150
·9/1·8/150
1·2/·8/150
·7/·8/100
·7/·8/100
·910
90
90
90
90
90
10 opening

LEVEL 1 BRACING.

LOT 20 DP

Alternative Bracing

Please Photocopy

Wall Bracing Calculation Sheet B

Along

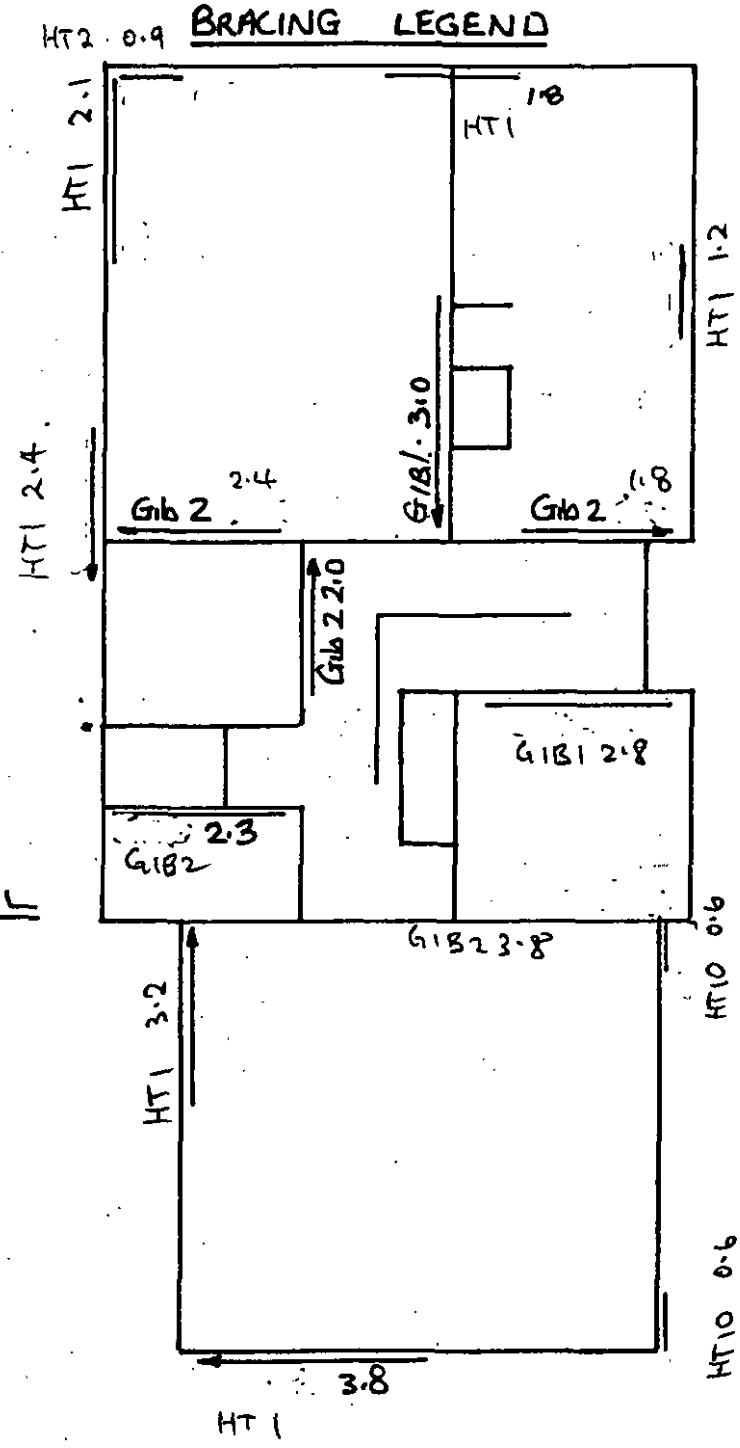
Wall or Bracing Line		Bracing Elements Provided			Wind		Earthquake	
1	2	3	4	5	6 W	7 W	6 E	7 E
Line Label	Minimum BUs Required	Bracing Element No.	Bracing Type	Length Element (m) L	Rating BU/m W	BUs Achieved (BU/m x L) W	Rating BU/m E	BUs Achieved (BU/m x L) E
A	169	1	HT1	2.1	100	210		
		2	HT1	2.4	100	240		
		3	HT1	3.2	100	320		
B	70	1	GIB1	3.0	75	225		
	70	2	GIB2	2.0	75	150		
C								
D	169	1	HT1	1.2	100	120		
		2	HT10	0.6	93	56		
		3	HT10	0.6	93	56		
E								
Totals Achieved					W	1377	E	
From Sheet A Totals Required					W	731	E	476
Wreq/Ereq = 1.535								

***If Wreq/Ereq is 1 or less complete E column only**
If Wreq/Ereq is 1.5 or more complete W column only
Otherwise complete both W and E

Across

Wall or Bracing Line		Bracing Elements Provided			Wind		Earthquake	
1	2	3	4	5	6 W	7 W	6 E	7 E
Line Label	Minimum BUs Required	Bracing Element No.	Bracing Type	Length Element (m) L	Rating BU/m W	BUs Achieved (BU/m x L) W	Rating BU/m E	BUs Achieved (BU/m x L) E
M	76	1	HT2	1.0	100	100		
		2	HT1	1.8	100	180		
N	70	1	GIB2	2.4	80	192		
	70	2	GIB2	1.8	75	135		
	70	3	GIB1	2.8	75	210		
O	70	1	GIB2	2.3	75	173		
	70	2	GIB2	3.8	80	304		
P	76	1	HT1	3.8	100	380		
Q								
Totals Achieved					W	1674	E	
From Sheet A Totals Required					W	1530	E	
Wreq/Ereq = 3.214								

GIB



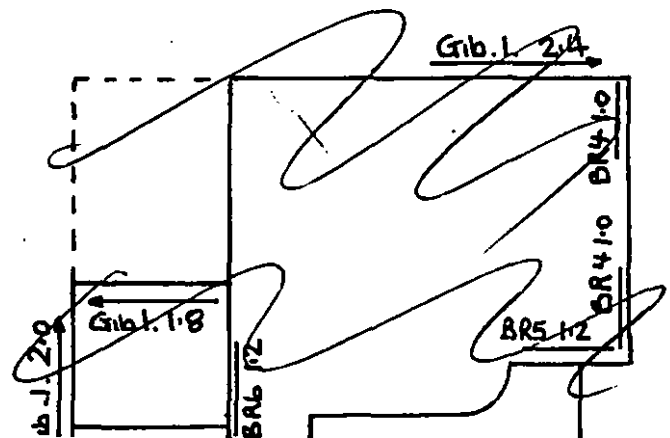
LOWER LEVEL

(LEVEL 1)

LOT 20

Curved

UPPER LEVEL



LEVEL 1. BRACING SHT. 1.

Please Photocopy

Wall Bracing Calculation Sheet A

Job Details

box 1

Name MR & MRS. T. FRAY

Street and Number 6 CHADLINGTON

Lot and DP Number LOT 20 DP.

City/Town/District Henderson

Location of Storey: ~~single/upper of two/lower of two~~ OWER OF TWO

Building height to apex	7.4 m	Roof weight	light/~~heavy~~
Roof height above eaves	2.4 m	Cladding weight	light/~~heavy~~
Stud height	2.4 m	Room in roof space	~~y~~/n
Average roof pitch	30°		
Building length BL =	17.8 m	Gross Building	
Building width BW =	8.5 m	Plan Area,	GPA = 119 m2

Note: *When the average roof pitch is over 25 degrees, use the eaves length and width to determine BL and BW.*

Note: *For heavy roofs use the roof plan at eaves level to determine GPA.*

Wind Zone

box 2

Region:		Terrain:		Exposure:		Topography:	
R1	0 ___	Inland	0 ___	Sheltered	0 ✓	Gentle	0 ✓
R2	1 ✓	Coastal	1 ___	Exposed	1 ___	Moderate	1 ___
						Extreme	3 ___

Total points ___

Wind zone: ___ Low (0) ___ Very high (3)

✓ Medium (1) ___ Specific Design (4)

___ High (2)

Earthquake zone

box 3

From figure EQ1 select Earthquake Zone:	A	B	(C)

BUs required Wind

box 4

From Table W1A/W1B

W along = 86 BUs/m

W across = 86 BUs/m

Total wind load,

W ALONG:
W along x BW = 731 BUs

W ACROSS
W across x BL = 1530 BUs

BUs required Earthquake

box 5

From Table EQ1

E = 4 BUs/m2

Note: For a room in the roof space use E+1

Total earthquake load,

EQ ALONG and EQ ACROSS:

E x GPA BUs = 476 BUs

LEVEL 1. BRACING SHT. 2.

Please Photocopy

Wall Bracing Calculation Sheet B

Along

Wall or Bracing Line		Bracing Elements Provided			Wind		Earthquake	
1	2	3	4	5	6 W	7 W	6 E	7 E
Line Label	Minimum BUs Required	Bracing Element No.	Bracing Type	Length Element (m) L	Rating BU/m W	BUs Achieved (BU/m x L) W	Rating BU/m E	BUs Achieved (BU/m x L) E
A	169	1	BR4	2.0	100	200		
		2	Gib 1	2.0	55	110		
		3	Gib 1	2.4	75	180		
B	100	1	Gib 1	3.0	75	225		
	100	2	Gib 2	2.0	75	150		
C								
D	169	1	BR5	1.2	115	138		
		2	CP4	0.6	97	58		
		3	CP4	0.6	97	58		
E								
Totals Achieved					W	1119	E	
From Sheet A Totals Required					W	731	E	476
Wreq/Ereq = 1.535								

***If Wreq/Ereq is 1 or less complete E column only**
If Wreq/Ereq is 1.5 or more complete W column only
Otherwise complete both W and E

Across

Wall or Bracing Line		Bracing Elements Provided			Wind		Earthquake	
1	2	3	4	5	6 W	7 W	6 E	7 E
Line Label	Minimum BUs Required	Bracing Element No.	Bracing Type	Length Element (m) L	Rating BU/m W	BUs Achieved (BU/m x L) W	Rating BU/m E	BUs Achieved (BU/m x L) E
M	76	1	BR4	0.9	100	90		
		2	BR4	1.8	100	180		
N	100	1	Gib 2	2.0	75	150		
	100	2	Gib 2	2.0	75	150		
	100	3	BR4	2.4	100	240		
O	100	1	BR6	2.3	150	345		
	100	2	Gib 2	2.4	80	192		
P	76	1	Gib 1	3.0	75	225		
Q								
Totals Achieved					W	1572	E	
From Sheet A Totals Required					W	1530	E	476
Wreq/Ereq = 3.214								

LEVEL 2. BRACING SHT 3

Please Photocopy

Wall Bracing Calculation Sheet A

Job Details

box 1

Name MR & MRS T. FRAY

Street and Number

Lot and DP Number LOT 20 D.P.

City/Town/District

Location of Storey: single/upper of two/lower of two

Building height to apex	7.4 m	Roof weight	light/~~heavy~~
Roof height above eaves	2.4 m	Cladding weight	light/~~heavy~~
Stud height	2.4 m	Room in roof space	✓/n
Average roof pitch	30°		
Building length BL =	10.1 m	Gross Building	
Building width BW =	8.1 m	Plan Area,	GPA = 51 m2

Note: *When the average roof pitch is over 25 degrees, use the eaves length and width to determine BL and BW.*

Note: *For heavy roofs use the roof plan at eaves level to determine GPA.*

Wind Zone

box 2

Region:	Terrain:	Exposure:	Topography:
R1 0	Inland 0 ✓	Sheltered 0 ✓	Gentle 0 ✓
R2 1 ✓	Coastal 1	Exposed 1	Moderate 1
			Extreme 3

Total points 1

Wind zone: ___ Low (0) ___ Very high (3)

✓ Medium (1) ___ Specific Design (4)

___ High (2)

Earthquake zone

box 3

From figure EQ1 select Earthquake Zone:	A	B	C

BUs required Wind

box 4

From Table W1A/W1B

W along = 54 BUs/m

W across = 54 BUs/m

Total wind load,

W ALONG:
W along x BW = 437 BUs

W ACROSS
W across x BL = 545 BUs

BUs required Earthquake

box 5

From Table EQ1

E = 2 BUs/m2

Note: For a room in the roof space use E+1

Total earthquake load,

EQ ALONG and EQ ACROSS:

E x GPA BUs = 102 BUs

GIB

LEVEL 2 BRACING SHT. 4.

Please Photocopy

Wall Bracing Calculation Sheet B

Along

Wall or Bracing Line		Bracing Elements Provided			Wind		Earthquake	
1	2	3	4	5	6 W	7 W	6 E	7 E
Line Label	Minimum BUs Required	Bracing Element No.	Bracing Type	Length Element (m) L	Rating BU/m W	BUs Achieved (BU/m x L) W	Rating BU/m E	BUs Achieved (BU/m x L) E
A	92	1	Gib 1	2.0	55	110		
		2	BR6	1.2	150	180		
		3	BR6	1.2	150	180		
B	70	1	BR9	0.6	110	66		
C	92	1	BR4	1.0	100	100		
		2	BR4	1.0	100	100		
D								
E								
Totals Achieved					W	736	E	
From Sheet A	Totals Required				W	437	E	102
Wreq/Ereq =	4.284							

***If Wreq/Ereq is 1 or less complete E column only**
If Wreq/Ereq is 1.5 or more complete W column only
Otherwise complete both W and E

Across

Wall or Bracing Line		Bracing Elements Provided			Wind		Earthquake	
1	2	3	4	5	6 W	7 W	6 E	7 E
Line Label	Minimum BUs Required	Bracing Element No.	Bracing Type	Length Element (m) L	Rating BU/m W	BUs Achieved (BU/m x L) W	Rating BU/m E	BUs Achieved (BU/m x L) E
M	72	1	Gib 1	2.4	75	180		
N	70	1	BR5	1.2	115	138		
	70	2	Gib 1	1.8	55	99		
O	70	1	Gib 2	2.0	75	150		
P	72	1	Gib 1	1.8	55	99		
Q								
Totals Achieved					W	666	E	
From Sheet A	Totals Required				W	545	E	102
Wreq/Ereq =	5.343							

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SPECIFICATION

FOR

OWNER

_____

_____

_____

BUILDER

_____

_____

SPECIFICATION

For the erection of .....

at.....

for.....

This is the specification referred to in an "Agreement" (1) between

..... as Owner, and

..... as Builder,

dated ..... and if not mentioned the Agreement (1) takes notice of the following completion and penalty clauses.
Time for completion ..... weeks from acceptance of tender.
Liquidated damages for delayed completion shall be $..... per week. Extensions to the contract period for extra work or for contingencies beyond the control of the contractor to be as agreed between the parties at the time and added to the time for completion.(2)

PAYMENTS & RETENTIONS:

Payment in the form of progress payments at not less than one month intervals will be made on value of work carried out less 10 % retention as required by the Wages Protection and Contractors' Liens Act, 1939. Retentions to be held until 31 days after completion of the contract after which a sum of 5% is to be held if maintenance has not been carried out as under clause P. & G. No. 10 Maintenance.

ARBITRATION:

If dispute or difference should arise between the Owner and Contractor the Contract shall be subject to arbitration under the Arbitration Act 1908.

Foot Notes:
(1) The Agreement referred to and a suitable form of contract (Conditions of Contract) shall be provided by the Owner ..... or Contractor ..... and is to be completed by all parties before the site work is commenced.

(2) All additions and deletions made in this Specification before signing of the Agreement shall be dated not later than the date of the Agreement. Any subsequent additions, omissions or variations to the contract shall be authorised in writing and an agreed price stated.

INDEX

IT IS IMPORTANT TO READ 'LIMITATIONS' AND 'GUIDANCE' PRINTED BELOW. CURRENT COPIES OF THE NEW ZEALAND STANDARDS MENTIONED, PARTICULARLY IN CLAUSE 1 OF 'PRELIMINARY AND GENERAL' (PAGE 2) CAN BE PURCHASED FROM MAKING PLANS AND SHOULD BE KEPT ON SITE.

LIMITATIONS

The full title of the current Light Timber Frame Code (NZS 3604:1981) is given on the cover but otherwise referred to simply as NZS 3604.

NZS 3604 provides for so many variables, via techniques and materials and its greater engineering approach,that a short standard specification of this type has to be limited to a "Guidance Only Format."

To use THIS specification for building permit application purposes, and for accurate pricing, it becomes more important than before to DELETE non-applicable clauses and to ADD new or more appropriate clauses according to the owner's,designer's and builder's greater freedom of choice.

The necessity to delete and to add will increase the more the proposed new house is to differ from the normal 2.4m stud, single storey type.

PROVISION FOR VARIATION NO.1.

Cost of Variation Order No.1. $ ..... Signatures: .....

Date: .....

PROVISION FOR VARIATION NO.2.

Cost of Variation Order No.2. $ ..... Signatures: .....

Date: .....

PROVISION FOR VARIATION NO.3.

Cost of Variation Order No.3. $ ..... Signatures: .....

Date: .....

PROVISION FOR VARIATION NO.4.

Cost of Variation Order No.4. $ ..... Signatures: .....

Date: .....

PROVISION FOR VARIATION NO.5.

Cost of Variation Order No.5. $ ..... Signatures: .....

Date: .....

PROVISION FOR VARIATION NO.6.

Cost of Variation Order No.6. $ ..... Signatures: .....

Date: .....

PROVISION FOR VARIATION NO.7.

Cost of Variation Order No.7. $ ..... Signatures: .....

Date: .....

PRELIMINARY & GENERAL

1. SCOPE:
This specification conforming with the attached Agreement and Conditions of Contract describes the work to be done and the materials to be used in the construction of the house shown on the attached drawings. All work shall accord with relevant clauses of Schedule 1 of the Building Regulations 1992 as follows.

CONTRACTOR: Meet B1 in accord with NZS 3604. Meet B2. E1. E2. E3. F4. G4. G5.and NZS.....NZS.....NZS.....
(Designer to select according to materials used).

DESIGNER. window manufacturer/installer meet BW. E2, E3, G4 and G7 in accord with NZS 4211 and care in location and installation.

PLUMBER working with DRAINLAYER: Meet B2, E1, G1, G2, G3, G10, G12 and G13 using a clearly detailed 'Acceptable Solution' based on As.3500.

REGISTERED ELECTRICIAN: Meet B2,G1, G2, G3, G4, G5, G7, G9 and G10 in accord with Electrical Safety Regulations and associated Codes of Practice.

2. PROVIDE & FIX:
The words "provide" and "fix" shall be construed to mean "provide" and "fix" where mentioned separately unless otherwise mentioned.

3. INSURANCE / INDEMNITIES:
The Contractor to have all his employees covered against accident by an Employers Liability Policy and to take out insurance against fire and theft of materials off-site for a sum sufficient to cover the full amount of the Contract Sum,both policies to remain in force until the building is taken over by the Owner; the fire insurance to be in the joint names of the Owner and Contractor.

The Conditions of Contract shall be approved, or include "Special Conditions of Contract" issued by Master Build Services Ltd of by private insurance as necessary to effect a formal indemnity agreement.

4. INTERPRETATION:
Work or materials shown on the drawings or specified and not shown, must be supplied as though both shown and specified. Materials shown but not specified must be of the kinds commonly employed for the service they are intended to perform. All figured dimensions shall be taken in preference to scale. The Contractor shall be held responsible for the setting out of work and shall make good at his own expense any errors that occur through his lack of checking or faulty workmanship.

5. STABILITY:
The Contractor shall carefully brace and support all parts of his work against damage by wind and protect work from the elements as necessary during construction.

6. PROTECTION OF PROPERTY:
The Contractor shall protect adjoining properties during the contract and shall make good all damage at his own expense.

7. DAMAGE:
The Contractor shall make good at his own expense and to the satisfaction of controlling authorities, any damage done to the footpaths, kerbs,drainage etc., or other property under control of such authorities.
Each trade shall take care to prevent damage or disfigurement of the work of other trades and will be responsible for cost of restoring same.

8. MAINTENANCE:
Period to be a minimum of thirty days or to a time agreed on by both parties and entered into the Agreement after the Owners have taken possession. Any defects in materials, workmanship or any part or parts that require replacing or adjusting, which have been included in the Contract, shall be adjusted at the Contractor's expense. Issue of a Code Compliance Certificate will not cancel the need for the Contractor to remedy matters listed in the maintenance schedule.

9. MATERIALS:
Ant materials herein specified that are not procurable at the time they are required, thus tending to retard the progress of the Contract, may be substituted with other similar materials, providing that the substituted materials conform to the NZBC and with permission of the Owner. The Contractor is first to the Owner of any change proposed and at the completion of the Contract will adjust any difference in cost.

10. CONTINGENCIES:
Provision is to be made by the Builder and Owner to meet any contingencies that may arise due to the fluctuation in the price of various materials or labour. Should there be either a rise or fall in the price of labour or materials, from the date that the tender is submitted until final payment, an adjustment to the Contract Price, is to be made accordingly provided that the Contract Price has been affected by such rise or fall in prices. The sum of $ ..... is allowed in the Contract Price as a Contingency Fund. The Owner will expect the Builder to submit proof of any increases claimed for by way of invoices or labour costs.

11. VISIT SITE:
Tenderers shall visit the site and ascertain the nature and extent of the work and the rights and interests that may be interfered with and any other matter that may influence the making up of a tender or the carrying out of the Contract in its entirety. The levels shown on the drawings are approximately correct but tenderers shall varify as no claims for extra will be allowed on the basis of incorrect levels shown.

12. WORKMANSHIP:
All work shall be carried out in accordance with the best trade practice, in strict conformity with the drawings and specification and to the satisfaction of the Owner. All defective or damaged work shall be removed and made good to the satisfaction of the Owner.

13. CLEANING:
The Contractor, at the conclusion of the Contract, shall have all ceilings, walls and woodwork carefully dusted and wiped down, windows washed and glass free from scratches, floors brushed and wiped down and the entire building left in a perfectly clean condition for occupation.

3. WORKMANSHIP:
All work shall be carried out in accordance with good trade practice. Surfaces shall be clean and properly prepared before coating and work shall be in accordance with Code of Practice NZS 2239 "Painting of Building."

4. COLOUR SCHEME:
The Owner will select from standard colour charts,colours he will require and Contractor is to allow for picking out sashes,doors,porches or any other reasonable colour change required.

5. STOPPING:
After priming,all nail holes or joints are to be stopped and cleaned off before undercoating for painted work and for varnished work,holes etc. are to e stopped with matching putty after first coat of sealer.

6. PAINTING OF EXTERNAL WOODWORK:
After priming all external woodwork and adjacent metal work such as flashings, spouting and downpipes is to be given one good coat of undercoat followed by finished coat of high gloss paint. Priming coat before painting shall be well brushed in and all faces shall be covered,ends of laps and tops and sides of sashes,doors etc.

7. PAINTING OF INTERIOR SURFACES:
Refer to plan or separate instructions to accompany this specification. Wallboard and ceilings as required to be given one coat of sealer and finished with two coats of approved paint finishing flat or semi-gloss as required. Where full gloss is required such as kitchen and bathroom finishing coat shall be full gloss enamel.

8. VARNISHING:
Where varnishing is required such as doors,architraves and skirtings give one coat of approved P.V.A. sealer followed by two coats of clear varnish finishing egg-shell gloss and lightly sanding between coats.

9. CONCRETE:
To concrete base walls or concrete block work apply two coats of exterior quality P.V.A. paint of an approved type finishing semi-gloss.

10. ROOF:
Roof - if corrugated iron prime all laps before fixing. For corrugated iron or galvanised trough section roofing after fixing prime roof with calcium plumbate galv. iron primer and then apply one good coat of approved roof paint.

11. PAPERHANGING:
All rooms to be papered shall have paper hung to a value of $ ..... per roll. Walls shall be properly prepared by sizing, paper hung straight and true with butt joints, and paste used shall have a fungicide incorporated.

12. GLAZIER:
Glaze all sashes, glass doors or screens with appropriate weight glass properly fixed and puttied or headed into rebates. Where required glazing shall be selected obscure patterned glass

13. MIRROR:
Provide a 6mm plate glass mirror and mount on bathroom cabinet door with mirror clips.

14. COMPLETION:
The Painter and Glazier is to do all that is required of their trades to leave the work complete and all must be left clean including all glass at completion.

8. METER BOX:
Provide and install recessed meter box where shown on plan. Confer with Carpenter for trimming same.

9. MAIN SWITCHBOARD:
Provide and install in recess main switchboard complete with all necessary control and auxiliary equipment.

10. ELECTRIC STOVE:
Allow the P.C. sum of $..... for the supply only of the stove. Provide and fix a 30-amp flush switch for th stove and sufficient cable for connection and allow for installation.

11. WATER HEATER:
Allow for the permanent connection of the water heater to the electrical system. Provide and install 3 K/W element and thermostat to ..... litre hot water cylinder provided by the Plumber. Refer clause 3 of this section.

12. POWER POINTS:
All wall plugs shall be 230v. 10 amp,3 pin flush type. Generally install plugs 300mm above floor or 225mm above bench top. Points to washer/dryer space and refrigerator 1200mm from floor. The exact position of all power points shall be determined on the job by the Owner.

13. LIGHTS:
All lights to be first quality,plastic batten holder shall reinforced. All roses and holders not covered by fittings shall be white.

14. LIGHT SWITCHES:
Light switches shall be 10 amp,all insulated P.D.L. micro-gap type or equivalent. Where indicates fit flush type with plain bakelite flush plate. Fix switches generally 1200mm above floor.

15. SPECIAL FITTINGS:
Allow the sum of $ ..... for fittings to be selected by Owner.

16. LIGHT POINTS:
Allow for installing a total of ..... outlets in the building.

17. POWER POINTS:
Allow for installing a total of ..... power points in the building.

PAINTER AND GLAZIER

1. PRELIMINARY AND GENERAL:
Note all clauses under Preliminary and General of this specification which shall apply to this section of the work.

2. MATERIALS:
Generally all materials shall be of N.Z. manufacture of approved brands and of the paint selected respective coats shall be of the same brand.

EXCAVATOR

1. PRELIMINARY & GENERAL:
Note where Preliminary and General clauses apply to this trade.

2. ALLOWANCE IN TENDERING:
Allow for foundation depths as shown on drawings (450mm below ground level as if in expansive clay). Any variations from dimensions shown to be adjusted in terms of Clause ..... of the General Conditions of Contract.

3. SETTING OUT:
Set out the work as shown or implied on the drawings. Check accuracy in terms of position,levels and square.

4. CLEAR SITE:
Remove vegetation,trees,roots and 150mm top soil* within area to be covered by the building,driveway,paths,terrace and steps. Do not remove any other trees without Owner's consent.

*Note: Alternatively with consent of Owner and Territorial Authority,leave topsoil in place where excavation would other wise cause ponding under timber ground floors (see Clause 3.4.1. of N.Z.S. 3604).
Deposit top soil in heap as directed and avoid covering with subsoil subsequently excavated.

5. LEVELLING AND BULK EXCAVATION:
Excavate for all site levelling,foundation walls and/or piles,underground services and subsoil drains etc. to correct levels, to firm bearing or to obtain sufficient frictional resistance* to satisfy Local Building Authority.

*Note: Item 5 allows for driven timber piles to NZS 3605.

6. FOUNDATION TRENCHES:
Take out trenches straight, level and to proper width and keep free of water and loose material.Concrete shall not be placed until excavations approved. If, other than under item 2 of this section,trenches are dug too deeply then such excess depth shall be filled with concrete, as specified for foundations, at the contractor's expense.

7. HARDFILL:
Use only approved fill not less than 100mm thick and well compacted under concrete ground floors and where otherwise specified. Blind surface of fill with not less than 5mm of sand.

8. SITE DRAINAGE:
Take out land drainage trenches to adequate depth and falls to prevent dampness under the building. Provide for field drains (or perforated plastic drainage pipe) bedded on scoria. Back fill with clean graded scoria from 50mm to fine.

9. HOUSEHOLD DRAINAGE:
See Drainlayer Section.

10. BACKFILL AND TOPSOIL:
Backfill and well consolidate in 100mm layers to foundation walls,pile footings and service trenches. Spread previously excavated top soil as directed. Do not damage any waterproof coatings or polythene protecting foundation walls from ground water entry.

CONCRETE & REINFORCING

1. PRELIMINARY & GENERAL:
Note all clauses under Preliminary and General of this specification which shall apply to this section of the work.

2. EXTENT OF WORK:
Comprises the setting out,boxing and placing of concrete in the foundations,floor slabs,walls,beams and bands and any other concrete work shown in the drawings.

3. MATERIALS:
Concrete which shall be ordinary grade and comply with requirements of NZSS 1900 Chapter 9.3 Builders mix may be used if agreed by Owner,providing the minimum crushing strength is 17.5 MPa at 28 days standard cure is unaffected.

4. FORMWORK:
Formwork shall be so constructed that the concrete thickness and shapes required are obtained as detailed without removal causing damage. Times of removal of formwork,methods of construction and pouring and curing of concrete shall be as set down in NZSS 1900 Chapter 9.3.

5. CONCRETE FOUNDATION WALLS:
Foundation footings,walls and reinforcing shall be to the sizes shown on drawings in accordance with Table 4 and relevant clauses of NZS 3604,supporting single storey, 2 or 3 storey as appropriate. Such walls shall finish not less than 225mm above finished ground level but not measure more than 2m above bottom of footings.
NOTE: A full (2.4m) storey concrete (or concrete masonry) foundation wall is outside the scope of NZS 3604 but is permissible either by:
a) Construction to NZS 1900 Chapter 6.2 (1964) "Masonry" for example using concrete block masonry or reinforced brickwork;
or
b) Specific Design using concrete or masonry.
It is then permissible to erect one or more storeys to NZS 3604 on top of such foundation walls.
Reinforcing steel shall be lapped at least 40 rod diameters for plain rods and not less 30 diameters for deformed bars in concrete. (See Concrete Blocklayers for other laps).

6. CONCRETE PILES:
Ordinary concrete piles to NZS 3604 shall for this project be precast piles embedded into insitu footings. All other concrete piles, i.e. anchor piles, braced piles and cantilever piles shall be formed insitu where indicated on drawings, reinforced and to depths in accord with NZS 3604.

7. CONCRETE FOTINGS FOR EMBEDDED TIMBER PILES:
The minimum plan dimensions of square or circular footings, thickness of pile footings and embedment of the respective timber piles into such footings shall accord with NZS 3604 for ordinary, anchor, braced and cantilever piles with any ends cut on site uppermost and brush treated according to Timber Preservation Council requirements.

8. CONCRETE SLAB-ON-GROUND FLOORS:
Floors having foundation walls that support only one storey need not be reinforced providing that shrinkage control joints are provided at 3m spacings for 75mm thick slabs or 4m spacings for 100mm thick slabs. In all other cases concrete slab-on-ground floors and porches shall not be less than 100mm thick on well compacted granular fill and reinforced with a layer of 668 welded reinforcing mesh lapped 225mm at joins (or 665

6. PAINTING:
All fibrous plaster or plasterglass sheets and other products shall be painted strictly in accordance with the specification outlined below:

SYSTEM	FIRST COAT	SECOND COAT	THIRD COAT
No. 1	Vanish based Pigmented Sealer	Primer Undercoat	Full Gloss
No. 2	Varnish based Pigment Sealer	Semi Gloss	Semi Gloss
No. 3	Vanish based Pigment Sealer	Alkyd Flat	Alkyd Flat
No. 4	Varnish based Pigment Sealer	P.V.A. Plastic	P.V.A. Plastic

Allow overnight drying between coats except for system No.4 where one or two hours drying time,according to manufacturers' instructions may be allowed between second and third coats.
N.B. The fibrous plasterer will not accept responsibility for the effect of glancing light on fibrous plaster with a gloss paint finish.

ELECTRICIAN

1. PRELIMINARY AND GENERAL:
Read and note all clauses under Preliminary and General of this specification where they apply to this trade.

2. TEMPORARY POWER:
Liaise with Contractor/Builder at start of construction to inspect temporary supply, meter, pole and earthing and repair if necessary.

3. SCOPE OF WORK:
All fittings, appliances, installations and works to be electrically safe in accord with the Electrical Safety Regulations and associated Codes of Practice. Ensure the work is connected and tested and Owner provided with an Energy Work Certificate (to then provide to the Territorial Authority).

4. MATERIALS AND WORKMANSHIP:
All materials used under this contract shall be of approved British or New Zealnd Standard Specification. Allow for all materials necessary to complete the contract whether specified or not. All work shall be carried out by a Registered Electrician in accordance with regulations and best trade practice and in a manner which will cause minimum inconvenience to other workmen and the work as a whole. Do all cutting away,drilling etc. and with timber cut the minimum only away for the entry of cables.

5. CO-OPERATION:
Co-operate with the Building Contractor and sub-contractors in all phases of work. Give ample notice to enable the Contractor to arrange the necessary void,chase data etc.

6. COMPLETION AND CONNECTION OF POWER:
Leave work complete,pay all charges and arrange for all inspections and tests and for the connection of power to works. It is the responsibility of the Electrical Contractor to ensure that no delay is occasioned to the job once the contract is completed.

7. NETWORK UTILITY OPERATOR:
Arrange with the Network Utility Operator ,allow for and pay all fees for the connection of an underground,or overhead,supply to the residence.

6. CONCRETE FLOORS (MAIN - See Plan):
Co-operate with Concretor and allow for plastering of main floor. Float up to true level and steel float finish to remove pattern. Do not over-trowel. A hard dense finish is required.

7. PORCH AND STEPS AND TERRACE (If shown):
Plaster up in one operation. One coat 12mm thick to terraces and porch slabs,12mm thick to verticals and sides etc. Wood float up then give light sweeps with steel float to remove blemishes.

8. COMPLETION AND CURING:
Leave all work complete and clear away all plaster droppings. Keep work damp and maintain all finished to completion.

9. EXTERIOR PLASTER ON METAL LATH OR WIRE MESH:
Such back grounds and plaster shall be erected according to Appendix G of NZS 3604,either rigid or non-rigid backings, and plastered according to NZS 4251.

FIBROUS PLASTERER

1. PRELIMINARY AND GENERAL:
Read and note all clauses under Preliminary and General of this specification where they apply to this trade.

2. WORK INCLUDED:
The manufacture and application of fibrous plaster or plasterglass sheet to wall or ceiling surfaces as specified. The manufacture and application of cornices or other decorative fibrous plaster items as specified.

3. MATERIALS AND WORKMANSHIP:
All fibrous plaster or plasterglass sheets and other products shall be manufactured and fixed,strictly in accordance to NZS 4221 or with the Code of Practice of the New Zealand Fibrous Plaster Manufacturers' Assn. The whole of the labour required for the erection,fixing,wadding and stopping shall be that of competent fibrous plaster tradesmen. Admixtures,release agents and stopping materials shall not be of a deleterious nature nor used in quantities sufficient to impair the properties of the sheet when used with or without decoration.

4. FRAMING:
All noggings,trimming,straightening and packing of studs or joists,necessary for the fixing of fibrous plaster products shall be provided and completed by the Builder before the commencement of such work. Timber framing shall comply with NZSS 3631 (framing grades) and shall be pre-dried to an equilibrium moisture content not exceeding 15-16%. The surface to which fibrous plaster is fixed must be clean,straight and dry.

5. CEILING DIAPHRAGMS:
Fix all ceilings serving as structural ceiling diaphragms under terms NZS 3604 (obtain methods of fixing and size limitations from manufacturer). Check that each wall under or connected to has bracing for a diaphragm.

mesh if cast in more than15mm max. dimension in one operation.) Reinforced slab-on-ground porches may be cast separately from foundation walls but shall be securely anchored to them with R6 bars at 600mm c/cs lapped not less than 300mm with the slab reinforcing.
Where floor slabs occur in rooms for habitation they shall have 0.25mm thick polythene sheet under, either welded into one continuous sheet or joints lapped not less than 150mm and sealed with a self adhesive tape to manufacturers' specification. The Contractor shall not use any other vapour barrier without approval in writing and shall protect from punctures and tears before and during placement of concrete. Any damage done to the vapour barrier during provision of underslab or in the slab services shall also be made good before placing concrete.

9. SUSPENDED CONCRETE FLOORS:
Precast, prestressed suspended concrete floor deckings shall be those manufactured by .....
All junctions with external walls shall include adequate tying in as per manufacturer's details, and where there is brick veneer above provide for a solid minimum 50mm deep step detail treated with a bitumen water proofing compound to ensure freedom from rainwater entry. All insitu concrete placed over units and at ends to be of strength at standard 28 days cure prescribed by the manufacturer. Where metal trough sections supporting concrete floors are shown erect sections and place concrete all as details and instructions provided by.....

10. BUILD-IN BOLTS ETC:
Provide in concrete for openings for vents or as required by other trades and for holding down bolts in accordance with NZS 3604. Timber grounds where required for fixing door frames etc. shall be heart totara dovetailed and where required water bars shall be of brass or galvanised iron. Powder powered tool fixings can be used where appropriate.

11. PATHS:
Where shown on drawings paths shall be laid not less than 75mm thick reinforced with 668 mesh. The surface shall be graded evenly to provide suitable drainage and left with a uniform finish using a wooden float.

12. COMPLETION:
Leave all clean and tidy at finish and made good any defective work.

CONCRETE BLOCKLAYER

1. PRELIMINARY & GENERAL:
Read and note all clauses under Preliminary and General of this specification where they apply to this trade.

2. EXTENT OF WORK:
Refer to drawings for layout and extent of work. Build the whole of the reinforced and unreinforced 200mm concrete blockwork. Build in as the work proceeds all reinforcing steel,bolts and all other lugs, conduits,sleeves and opening for vents etc.,required for the work of other trades. Keep surface clean and free from mortar,perpends true and faces true to line and vertical. Blocks are to be kept dry before laying.
Reject all blocks not complying with NZS 3102P. Reinforced masonry foundation walls not exceeding 2m in height from the underside of the footings shall be to NZS 3604 or to NZS 1900 Chapter 6.2 "Masonry" (specify preference). Where exceeding 2m in height construct in accord with Chapter 6.2.

3. BOND:
Blocks shall be laid in stretcher or stack bond as shown. All joints shall be full and struck to provide a fair faced finish to both faces. Complete bond shall be secured between the blocks and motar. Ensure that bond is not broken by making adjustments to blocks after mortar has taken set.

4. MORTAR:
The mortar for all blockwork shall be composed and mixed according to the relevant NZS clauses; water shall be drinking quality; sand shall comply to NZS 1900 Chapter 6.2 for grout filling of masonry cavities and NZS 3103 "Sands for Mortar,Plaster & External Renderings" for mortars.
All cement shall comply with NZSS 3122 and shall be properly stored at the site and adequately protected from dampness.

5. MINIMUM REINFORCING STEEL REQUIREMENTS:
Minimum reinforcing steel requirements in concrete masonry on this contract shall be relative to the height of the masonry,according with the following:
a) Where shown less than 2m in height from underside of footings to top of foundation wall - to NZS 3604.
b) Where exceeding (a) above,where a full 2.4m or higher storey height is shown,be:
(i) to NZS 1900 Chapter 6.2.
or
(ii) to Specific Design; and work in this category shall only be erected by a "Registered Mason."

6. JOINTS TO BLOCKWORK:
All blockwork joints shall be neatly tooled with a 10mm rod jointer to form a neat concave recess to a good line, level and of consistant depth of approximately 6mm.

7. WATERPROOFING:
The Contractor shall ensure all blockwork above and below ground prevents the entry of water into the inside of the building. The Contractor shall provide warranties and prices for waterproofing from a number of manufacturers or their approved applicators and the type and price for the work shall be agreed. Internal strapping and lining as necessary to comply with insulation shall not proceed until evidence that the blockwork is free from leakage is demonstrated.

8. WEEP HOLES:
Provide weep holes in concrete blockwork at least 50mm below all bottom plates and bellow finished ground level,and below intermediate floor level,at approximately 800mm intervals.Drill or rake out weep holes to base of mortar bedding so as not to entrap any rain that might enter the walls.

BRICKLAYER

1. PRELIMINARY AND GENERAL:
Read and all clauses under Preliminary and General of this specification where they apply to this trade.

2. RELEVANT SPECIFICATION:
All work shall be in accordance with the requirements of NZS 3694 and NZS 1900 Chapter 6.2 as appropriate.

6. FITTINGS:
The plan shows the layout of the system. Additional fittings that are normally required such as inspection points and inspection bends,etc that may be required but are not specifically shown must be allowed for by the Drainlayer to comply with the NZBC.

7. JOINTING AND BEDDING OF PIPES:
The pipes are to be jointed or caulked with lead in a proper manner and each and every junction or change of direction is to have removable cover plates foe inspection.

8. FALL IN DRAINS:
The whole of the soil and stormwater drains are to be laid to a regular and even fall.

9. GULLY TRAPS:
Supply all gully traps and securely bed and build up with 5:1 concrete surround,150mm above finished ground levels. Form large and deep dishings and finish the surface with blue metal,dust and cement,one to one and steel trowel smooth. AA gully traps are to be fitted with large cast iron gratings and also a grating or perforated plate above the wastes discharging into it.

10. SEWER AND STORMWATER CONNECTIONS:
Arrange for the Territorial Authority to connect drain to sewer and stormwater where provided and pay all charges in connection therewith.

11. COMPLETION:
Properly backfill all trenches,consolidate as filling proceeds and leave area in a tidy state.

SOLID PLASTERER

1. PRELIMINARY AND GENERAL:
Read and note all clauses under Preliminary and General of this Specification where they apply to this trade.

2. WORK INCLUDED:
The solid plastering of all interior floors,if on plan,and the front and back porches,slabs and steps,also terrace if shown.

3. MATERIALS:

Cement	- shall be as specified under "Concretor"
Sand	- shall be to NZS 3103 Sands for Mortars,Plaster and External Renderings.
Hydrated Lime	- shall be mill hydrated of an approved brand.
Bonding Agents	- If used shall be in accordance with maker's instructions.

4. WORKMANSHIP:
All to be best trade practice and generally where plastering is required by drawings it shall mean finishing to 12mm thickness with a mix of one part cement to three parts sand with 10% of hydrated lime added and finished to a straight and even surface with a wood float.

5. FOUNDATIONS:
Concrete foundation walls shall be prepared by removing projections making good any defects and finishing with a dash coat of 1 to 3 cement and sand applied to give a regular and satisfactory coverage.

.... Bidet ....
Vitreous china

.... Sink/s and top ..... with single or double drainer.
As per plan with laminated top/stainless steel/or tiled or mosaic top.Height .....mm.

.... Laundry tub ..... mm x ..... mm single or twin tub combination.
Stainless steel/Porcelain enamelled,on stand, with cupboard below. Height .....mm.

8. TAPS,FAUCETS AND VALVES:
Consult with owner on choice of brands and fixing of all taps,faucets and mixing valves. Provide and fix all other water supply fittings as necessary.

9. WASTES AND VENTS:
Provide all necessary traps,waste pipes,soil stakes,back vents and terminal vents. Provide cleaning eyes to all waste pipes at junctions and all necessary overflow pipes.

10. OTHER MEANS OF HEATING WATER:
Consult with owner on choice and fitting of free standing fireplace with wet-back/or stove with wet-back/or solar water heating panels to supplement hot water heating system.

DRAINLAYER

1. PRELIMINARY & GENERAL:
Read and note all clauses under Preliminary and General of this contract where they apply to this trade.

2. EXTENT OF WORK:
Work in this section of the contract comprises all surface and foul water drainage up to above ground level to connect to Plumber's work. Include all uPVC drainage pipes and specials,fittings,construction of manholes,all gully traps and connections for terminal vents,soil and waste pipes. The Drainlayer shall confer with the Plumber and shall arrange with the Contractor before the foundations are laid to fix the exact position of all connections of wastes and drains.

3. CONNECTION TO EXISTING DRAINAGE:
The Drainlayer is responsible for verifying the position and depth of the connection and commence laying his drains from this point.

4. DRAIN TRENCHES:
The excavation of trenches for drains shall be accurately made with base clean and true to grade so that no unnecessary filling is required. Adequate width shall be allowed in accordance with depth of drain to enable laying and jointing to be carried out. Trenches shall be kept firm and dry and shall be opened up only in lengths that can be protected,utilised and refilled within a reasonable time.

5. LAYING OF DRAINS:
All drains to be adequately supported by supported by firm trench bottom with additional excavation to avoid sockets etc bearing on ground. Backfill to be in 150mm layers and foot tamped only. If drains are to be concrete encased, pre-wrap with polythene to allow movement after concreting.

3. MATERIALS:
(a) Bricks: Bricks for external veneers and foundation walls shall be of the colour and type selected and shall comply with NZS 366 Clay Building Bricks Grade A or B. All fair face brickwork shall be laid with their best face outwards.

(b) Cement: Shall be ordinary Portland Cement and at the time of use shall comply with NZSS 3122 Portland Cement.

(c) Plasticizers: Plasticizers shall be used in accordance with the manufacturer's instructions and no other additives are to be used in conjunction with these materials. On no account will further additions be made at the time of retempering mortars.

(d) Water: Water shall be drinking quality.

(e) Sand for Mortar: Sand used shall be Mercer No. 1 sand and/or shall comply with the relevant clauses of NZS 3103,Sands for Mortar, Plaster and External Renderings.

4. PREPARATION OF MORTAR:
Mortar shall be prepared by mixing in an approved mixer. Measurement of materials shall be by volume using suitable containers. Mortar shall be mixed until a homogenous mass is obtained but for not less than 5 minutes. All mortar whether on the boards or left in the mixer shall be used within 90 minutes. Mortar not used in this time shall be discarded.

5. BRICKLAYING:
Bricks shall be laid in stretcher bond true to line level and plumb and in accordance with the best trade practice. All work shall be laid from the lowest corner and no corner shall be raised more than 900mm above wall line. Corners shall be racked back. On no account will toothing be permitted. All joints will be completely filled with mortar and the bricks shall be disturbed as little as possible after initial positioning. Joints shall, unless otherwise specified, be not more than 9.5mm thick and shall be tooled as directed as work proceeds. Where tapestry bricks are used care shall be taken to use a tool slightly smaller than joint width to prevent pushing mortar into the brick striations.

6. BRICK FOUNDATION WALLS:
Note where the following are shown on drawings and construct accordingly:
(a) Reinforced clay brick masonry foundation walls not exceeding 2m in height, minimum width 130mm supporting single storey only; 190mm if supporting 2 storey or brick veneer and wall plate - all per NZS 3604.

(b) Reinforced clay brick masonry foundation walls exceeding 2m in height to NZS 1900 Chapter 6.2 or to be built by a "Registered Mason" to Specific Design.

(c) System A and System B continuous single - wythe clay masonry foundation walls, supporting single storey only - strictly in accord with Fig. 15 of NZS 3604 with extra width of concrete beam and step detail for masonry veneer.
Contractor to consult owner on size and position of access door.

7. MASONRY VENEER:
(a) Building Paper.
Run ordinary black bituminous breather type building paper to NZS 2295 (or fire resistant breather type) horizontally and well secure to outside face of framing from bearer to top plate. Repair tears and holes before constructing veneer.

(b) Clay Brick Veneer.
Construct brick veneer with approved face fixed ties at correct spacings in accordance with Appendix F of NZS 3604 and with materials and workmanship to NZS 1900 Chapter 6.2.

A cavity of not less than 40mm and not more than 75mm shall be maintained between building paper and veneer. Where necessary weep holes shall be left every third joint for the discharge of water as under Concrete Blocklayer. Keep the cavity and upstand clean, free from mortar protrusions and droppings. Keep pipes or electrical wire, junction boxes etc. out of the cavity. Build in the required number of subfloor vents to provide not less than 3500mm square of ventilation per 1m square of floor area. Keep top of vents below bottom of bearers. Thoroughly clean down the face of work on completion and leave free of mortar stains and efflorescence.

(c) Vermin Proofing.
Secure galvanized wire mesh to bottom plates, slope downwards and across cavity and embed each length of mesh at least 25mm in mortar joints. Vermin proof dividing wall and wherever else necessary.

(d) Sills.
Sills to be brick on edge, brought to underside of wooden sills or aluminium joinery. Junction between to be filled with a suitable sealant as recommended by the Joinery Manufacturer and overpointed with cement mortar.

(e) Split Stone or Concrete Block Veneer.
Cement composite bricks for external veneer and foundation wall shall be..... ..... of the colour and type selected and shall be manufactured in accordance with NZS 4210 "Specification for Concrete Masonry Units." Construction shall accord with all earlier relevant clauses of this section.

CARPENTER AND JOINER

1. PRELIMINARY AND GENERAL:
Read and note all clauses of the Preliminary and General which apply to all of this section.

2. EXTENT OF WORK:
The work of this section shall include all labour, materials, equipment necessary to carry out and complete the carpentry as shown, or as further required by this specification. Together with any other items of work reasonably inferred as part of this section.

3. ATTENDANCE AND PROTECTION:
Attend upon all other trades providing all blockings, fixings, trims, nogging as necessary for the full completion of their respective works and making good after all trades.

4. MATERIALS AND WORKMANSHIP:
All material used shall be the best of their respective class and type specified. Any materials which in the opinion of the Owner, Loan Body or Local Authority are not up to standard, to be removed immediately from the site. All work shall be carried out in a workmanlike manner in accordance with best trade practice and as or where especially specified. Any work that is intended or implied but nor specifically shown, mentioned or specified as necessary for the proper completion of the building shall be included. All work shall comply with the relevant NZS requirements, particularly NZS 3604.

5. TIMBER:
All timber used shall conform to NZS 3602 requirements, "Code of practice for specifying timber and wood - based products for use in building." Timbers shown in the Schedule of Timbers to be treated with an approved preservative process in plants licensed by the Timber Preservation Council.

B.4. Provision for wet-back, e.g. from free-standing fireplace or stove, or solar water heating; supplementary to main method of water heating. OR
B.5. Water heating for space (room) heating as well as serving sanitary fittings.

(c) Proximity of sanitary fittings to Hot Water Cylinder will normally be in order of most frequent use; e.g. kitchen sink, bath or lavatory basin, bath/shower, tub and washing machine.

(d) Cold and hot water supply to ALL fittings is assumed to be by 12mm nominal bore pipes with temperature-compensating mixer valve to shower to reduce severe temperature changes when taps are turned on or off elsewhere in house. This practice is now common in many areas having reasonable water pressure. Check if permitted and satisfactory in your area and discuss alternative methods of reducing shower temperature fluctuations (by pipe sizing and positioning) with plumber.

5. COLD WATER SUPPLY:
Tap off from mains service pipe in .....mm COPPER/POLYBUTYLENE/U.P.V.C. or TYPE 3 or TYPE 5 POLYTHYLENE (polythene). Run pipe not less than 450mm below finished ground level to house with entry through or under the wall foundation. Supply and fix a water meter, box and cover when required by Local Authority.

Provide ..... mm ..... pipe to hose taps at front and rear of building and to all fittings including hot water cylinder and washing machine. All branches to be as short, straight and at as even gradient as possible with easybends used throughout (NOT ELBOW FITTINGS). Use only approved connections throughout. All pipes are to be adequately supported, well secured and where possible concealed. When using any form of plastic piping, plumber to discuss, and provide, means of ELECTRICAL EARTHING with electrician.

6. HOT WATER SUPPLY:
Supply one (1) pressure electrical hot-water cylinder of ..... litre capacity of approved make and type and install and connect all pipes to the approval of the Local Authority. Provide ..... mm POLYBUTYLENE hot water supply pipes and branches to all fittings including washing machine.

7. SANITARY FITTINGS ETC.
Provide P.C. sum of $ ..... for the following. Carefully note dimensions and install where shown on plan and to owners approval (Specification should preferably include the number of each required size, brand, colour, material and where necessary height).

.... Bath/s mm x mm ....
Vitreous China/Porcelain enamelled pressed steel

.... W.C./s ....
Vitreous china complete with ..... double flap plastic seat

.... W.C. Cistern/s ....
P.V.C. complete with ..... P.V.C. flush pipe or chrome plated flush pipe.

.... Basin/s (on wall brackets) (on pedestal) (or in vanity)
..... mm x mm
Vitreous china/Porcelain enamel/acrylic

.... Shower tray/s (or Shub Tub) ....
Stainless Steel/Porcelain/enamel/Acrylic.G.R.P.

PLUMBER

1. PRELIMINARY & GENERAL:
Read and note all clauses in the Preliminary and General of this specification which shall apply to all work in this section. (ALSO SEE ROOFING CONTRACTOR)

2. GENERAL:
Inclusive of roof flashings, provision of roof drainage and other general flashing requirements in this section shall mean that all shall be of the quality expected of work customarily done by plumbers. All other work shall be co-ordinated with DRAINLAYER and comply with Clauses B2, E1, G1, G2, G3, G4, G10, G12 and G13 of the NZBC using a clearly detailed 'Acceptable Solution' eg, a single stack system based on AS.3500.

3. FLASHINGS:
Wherever possible use flashings that are readily available but purpose-made by the roof cladding manufacturer to suit the roofing material and profile selected. Otherwise provide flashings as recommended but not supplied by cladding manufacturer and adequately secure Flash wherever needed to make and keep watertight. Prime and topcoat both surfaces at laps with galvanised steel.

Flashings to each window head and door shall be provided in one piece,each 150mm longer than the head it is to protect.

4. SPOUTING AND DOWNPIPES:
Spouting shall be that manufactured by the roof cladding manufacturer,or standard 125mm quadrant type galvanised steel,or approved white P.V.C. Provide and fix as recommended with even fall to downpipes. Provide all necessary stopped ends,mitred returns and outlets and ensure all joints in metal spouting are adequately soldered or welded,or for P.V.C. are made with solvent cement except where joints provide for thermal movement. Connect outlets to 80mm diameter downpipes fixed at not more than 1200mm centres. Downpipes to discharge stormwater into soakaways or street channel,NOT into foulwater drainage system UNLESS permitted by Local Authority.

NOTES AND ASSUMPTIONS RELEVANT TO CLAUSES 5 - 10.

Very careful consideration needs to be given to the design of household plumbing an dselection from a wide range of materials available in supply pipe for both hot and cold water services; and from a similarly wide range of materials for sanitary fittings and waste pipes from them. Every effort should be made to consult with manufacturers and plumbers BEFORE completing this specification in order to attain plumbing to suit indivdual circumstances. Local Authority plumbing inspectors can advise on such matters as water pressure and volume obtainable from mains and materials approved. The following is offered for guidance to help in the completion of the plumbing specification similar to the clauses given but other clauses might also be necessary if choice differs from the assumptions made.

(a) Cold water can be obtained from a Local Authority mains normally providing adequate water pressure and volume;so avoiding the need for a cold water supply tank in or on the roof.

(b) Water heating is to be mainly by means of a low-pressure thermal storage electric warer heater;with cold water feed into Hot Water Cylinder through a pressure-reducing valve and separate non-return valve. Alternatives include:

B.1. Use of a break-pressure tank installed above Hot Water Cylinder. OR

B.2. A mains pressure water heater;with check valve (gate valve) between two (2) stop valves OR

B.3. Provision for gas water heater or heaters. OR

6. DAMP PROOFING:
All timber to be protected from dampness with 3-ply bituminous felt or other approved damp proofing material when in contact with concrete or brickwork,except as provided for under Clause 2.1.4 of NZS 3604.

7. PRIMING:
All exterior finishing timber, all timbers in contact with concrete blockwork and all external faces,rebate,etc of all doors,windows,frames and all woodwork of sashes,shall be primedbefore fixing unless otherwise specified in Painter.

8. CLEANING:
The Contractor at the conclusion of the contract shall have allceilings,walls and woodwork carefully dusted and wiped down. Windows washed and glass free from scratches and paint. Floors brushed and the entire building and site left in a clean condition for occupation.

9. FASTENING AND FABRICATION:
(a) The Contractor should especially note that all aspects of fastening and fabrication of timber framing members and wood-based products on this contract shall accord with the following clauses of NZS 3604:
Clause 2.5.1 - General
Clause 2.5.2 - Adhesives for timber & wood-based products.
Clause 2.5.3 - AND APPENDIX A - for nailing and use of wire dogs.
Clause 2.5.4 - for bolting and screwing.

(b) Reference shall also be made to Appendix A of NZS 3604 for the proper fixing of sheet lining and cladding materials for walls and ceilings that are not wood-based e.g. Gibralter Board,fibrous plaster or wood cellulous sheeting; especially where such materials are used as diaphragms and for wall bracing.

(c) Mild steel structural components used in sub-floor spaces,exposed to the weather or in position where condensation or dampness will occur shall be hot dipped galvanised after forming and shall provide the necessary "capacities" called for by NZS 3604 dependent on function and location.

(d) In all other cases, select and use connectors according to manufacturers' literature conforming to NZS 3604 requirements.

10. INSULATION:
All roofs,walls and floors are to be insulated in accordance with NZS 4214 and NZS 4218P. (See B.R.A.N.Z. Paper C1 - A construction guide to home insulation).* No insulation material shall be used that does not comply with NZS 1430. All insulation materials are to be installed in accordance with manufacturer's recommendations.

11. MOISTURE CONTROL:
Where a vapour barrier is required in the form of foil or polythene film,this barrier shall be fixed according to B.R.A.N.Z. Bulletins Nos. 215 and 217. Foil or polythene film shall not be used as a substitute for building paper. Building paper shall be properly fixed to bottom plates,especially in veneer construction,to prevent entry of subfloor air into stud cavities. Brick veneer cavities shall be closed off at and by means of soffits so as not to connect with roof cavities.There should be no unsealed openings for service pipes and wiring etc. There should be no discharge from cooking extractors or clothes driers into any wall,roof or floor cavity. Linings shall not be fixed until moisture content of framing has been tested and approved.
A proper solvent based paint or varnish finish must be used for plasterboard (Gibralter board or fibrous plaster) linings to "wet" rooms,such as kitchens,bathrooms and laundry. Water based emulsion paints must not be used.

SCHEDULE OF TIMBERS (For Guidance Only)

LOCATION		SIZE mm x mm	GRADE & TREATMENT For Alternatives refer to NZS 3602 or BRANZ Bulletins 130 & 175	REMARKS
SUBFLOOR FRAMING			ALL subfloor framing No. 1 Radiata Pine* Pressure Treated to Commodity Specification C7 of T.P.A. Specification eg, Tanality or similar	
Wall Plates		100 x 50		Bolted or dowelled
	min	75 x 50		For 75mm wide studs only.
Bearers supporting jackstuds		100 x 100		
on piles	min	100 x 75		Can be 2/100x50's
Subfloor jackstuds	min	100 x 75		
Stud in subfloor wall	min	100 x 50		At 600 c/c's
Ditto where doubled under bearer		2/100 x 50		
Top plate to jackstuds or timber stud subfloor wall		100 x 100		
Stringer to side of foundation wall		125 x 50		Fixed with M12 bolts at 1M spacing for single storey only.
Subfloor braces	min	100 x 75		Not exceeding 3M Fixed with M12 bolts (or appropriate nail plates).
GROUND FLOOR FRAMING				
Floor joists for max. 1.5KPa loading		150 x 50	)	Treated No. 1 Radiata Pine to C8 of 600c/cs. Up to 2.0 Max. span where T.P.A. Specification eg, Tanalith or continuous over 2 or more spans. See plan Boron Type treatments (or other sizes and spans. (Along subfloor bracing lines, at right angles to joists and mid point of any span exceeding 2.5M and under load bearing walls).
Herringbone strutting		40 x 40	)	
Solid Blocking		150 x 50	)	
Boundary joists		150 x 25		At outer ends of floor joists.

Aluminium cladding,valleys and flashing 0.7mm
Galvanised steel cladding,spouting,downpipes and overflows 0.6mm
Copper flashings,gutters and sumps 0.6mm
Lead flashings to small diameter vent pipe with PVC flashing cone 1.7mm
Other lead flashings and soakers 2mm

7. UNPAINTED GALVANISED STEEL ROOFING:
Areas which are inaccessible for maintenance such as laps in the roofing cladding and between cladding and metal flashings and cappings shall be primed and top coated on both surfaces before fixing.

8. FACTORY PREFINISHED MATERAIL:
Treat all such material with great care and obtain matching colour for making good minor damage and covering fixings made through the face of the claddings

9. CAPPINGS AND OVERFLASHINGS (ALSO SEE PLUMBER):
Adequately and neatly secure all ridgings,cappings and overflashings wherever needed to make and keep roof watertight. As much as possible use only materials compatible with the roof cladding. If dissimilar metals are used keep from making contact. Sealants shall not be used except where approved. Remove all traces of flux after welding,soldering or brazing. Do not leave swarf,broken rivets,screws,nails or waste metal on roof,nor in gutters or spouting.

10. BIRD PROOFING:
Where indicated bird proof eaves with purpose-made foam plastic impregnated with bitumen.

11. SPOUTING AND DOWNPIPES - SEE PLUMBER:

12. GUARANTEES:
On completion of all roofing thoroughly clean down and furnish owner with written guarantees to watertightness and security of the roof cladding. Guarantees to be signed by the approved FIXER/FIXERS and run for a period of three (3) years from the date of completion of te building contract.

ROOFING CONTRACTOR

1. PRELIMINARY & GENERAL:
Read and note all clauses under Preliminary and General of this specification where they apply to this trade. (Also see Plumber).

2. ROOF FRAMING AND WALLS:
Roof framing shall provide adequate support and fixings for purlins (roofing battens). No member shall be overloaded by landing heavy,localised,stacks of cladding on them prior to fixing,and temporary braces as might be necessary shall be provided in walls below to sustain such loading until roof cladding is complete and wall linings subsequently fixed.
In roof types (B) and (C) of timber schedule,the size of purlins if not shown or stated shall be such as to accommodate the required thickness of thermal insulation to comply with the bylaws;advise and agree with owner.

3. ROOFING UNDERLAY:
Underlay shall be breather type building paper to NZS 2295. Run horizontally with upper sheets lapped 75mm over lower sheets and with bottom edges turned over fascia into gutters. Such underlay shall be provided under all metal roofs and be adequately supported unless self-supporting type.
Where other roof claddings are specified and where at less than 13.5 degree pitch undertake all work in accord with a method approved in writing from the cladding manufacturer for the particular job.

4. PREPARATION WORK:
Provide all gutters,valleys and underflashings before cladding commences. Except where stated,valleys shall be of 0.6mm galvanised steel at least 400mm wide with folded edges and with lower end finishing well into spouting. Use 0.7mm aluminium valley for aluminium roofing. For profile metal roofing set out purlins to give reduced span at eaves and between top purlin and ridge as recommended. For tiled roofs provide anti-ponding boards at eaves as shown to support building paper. Allow tiles to adequately project into spouting and set out so that when laid there is a full height course of tiles both at eaves and ridge.
Ensure all egdes of roof cladding are adequately supported around projections such as pipes,ducting and roof lights.

5. SARKING TO ROOFS,DECKS AND GUTTERS:
Profiled metal roofing shall not be laid at less than 5 degree pitch except where shown and only when adequately supported by hit-and-miss type sarking or full sheet sarking so as to prevent ponding.
Sarking for roofs,decks and gutters that are to be covered by Nuralite or Butynol shall be of material and fixed in a manner approved by the manufacturer.

6. ROOF CLADDING MATERIALS AND COMPONENTS:
Roof cladding shall be .....
(nominated colour and type), manufactured by .....
Materials selected shall be set out and fixed by approved FIXERS and shall accord with the manufacturers' specification and in all cases with NZS Specification or others where appropriate ie,
NZS 3604: 1979 Wood cellulose flat sheets.
NZS 3403:1978Hot-dippedgalvanisedcorrugatedsteelsheetsforbuilding purposes.
NZS 4206: 1973 Concrete interlocking roofing tiles.
NZS 4217: 1980 Pressed Metal Tiles Roofs.
BS 4300/6: 1969 NS31 sheet and strip (Part 6 is one of a series covering wrought aluminium and aluminium alloys).
Thickness of materials unless otherwise specified shall not be less than the following:

SCHEDULE OF TIMBERS (For Guidance Only)

LOCATION	SIZE mm x mm	GRADE & TREATMENT For Alternatives refer to NZS 3602 or BRANZ Bulletins 130 & 175	REMARKS
FLOOR DECKING			
Refer to plans for type and location.			
a) T&G strip dressed	100 x 22		Dressing A. Heart Rimu or Matai Dry
b) Particle board over supports or	2400 x 1200 x 20		High Density Joins between sheets made on 50 x 50mm blocking between joists.
WALL FRAMING			
Bottom plates	100 x 50	No. 1 treated Radiata Pine	Long lengths
	min 75 x 75		
Studs	100 x 50	No. 1 or No. 2 or Building Radiata Pine	
	75 x 50	as appropriate Treated	600 c/cs.
Top plates	100 x 50	PLUS 150 x 40 ALL No. 1 Treated	Where supporting upper floors, heavy roofs and where ceiling battens
	100 x 50	Radiata Pine	necessary.
	75 x 50		
Trimming Studs*	100 x 50	Treated No. 1 Radiata Pine	Up to max 3m span of lintel in single storey, top storey or non load brg. wall only.

* See Remarks column for greater spans or in other locations refer to Table 15 of NZS 3604 and use doubling studs as necessary.

Lintels (generally) dependent on span	2/ 100 x 50 up to 2/ 200 x 50	Treated No. 1 Radiata Pine	Select built-up lintels from Table 16 NZS 3604
Sill and Head Trimmers	same width as studs, thickness per span as follows:	Treated No. 1 Radiata Pine	Head Trimmers shall be used instead of lintels only in non load bearing walls.

LOCATION	SIZE mm x mm	GRADE & TREATMENT For Alternatives refer to NZS 3602 or BRANZ Bulletins 130 & 175	REMARKS
Span 2M.....40mm 2.4M.....50 3M.....75 3.6M.....100 or (2/50nm)			
Dwangs (or noggings)	50 x 50 75 x 40	Treated No. 1 Radiata Pine	Min 2 rows for 2.4 high studs except where a greater or lesser number indicated by lining or cladding manufacturer.
Bracing	100 x 25	Treated No. 1 Radiata Pine	(Continuous let-in brace)
(No dog legs permitted)	75 x 40	Treated No. 1 Radiata Pine	(Cut between braces in diagonally opposing pairs). (Delete both above if using continuous steel strip of steel angle).

ROOF FRAMING: To pitch and style shown on plan Note 1) Individual requirements and options permissible under NZS 3604 preclude meaningful scheduling here. Designer and Builder shall refer to NZS 3604 and dimensions drawings to satisfaction of Local Building Council. 2) All timbers as relevant in (a) (b) or (c) below shall be treated No. 1 Radiata Pine or shall be Douglas Fir. Exposed ends of Douglas Fir rafters in Type c roofs shall be capped.

(a) Trusses - To approved size and dimensions as shown on plans and manufactured by .....

or

(b) Framed (couple-close) Roofs

or

(c) Monopitch, skillion and exposed rafter roofs) as fully detailed on drawings in accord with NZS 3604. NOTE. Purlins (roof battens) on edge or on flat shall be sufficient to accommodate the thickness of thermal insulation materialnecessary to comply with by-laws, advise and agree with owner.

ROOF BRACES:				
Roof space braces	min	100 x 50)	Treated No. 1 Radiata Pine	(Alternative - specify opposing pairs of continuous steel strip braces instead of 100 x 25 roof plane braces.)
Roof plane braces		100 x 25)		
Ceiling plane braces		100 x 50)		
ROOF SARKING				
Hit and Miss diagonal sarking		75 x 25	Treated No. 1 Radiata Pine or Douglas Fir.	60 degrees to ridge, if used delete roof plane braces above.
Sheet Sarking (eg, 6mm plywood or 6mm particle board)				Again, omit roof plane braces.

(c) ties having the prescribed bracing values.
Fibrous Plaster: (See Fibrous Plasterer Section.)

26 WARDROBES:
To be lined full height. Provide inside each with 300 x 25mm full width shelf at 1.7m from floor and 20mm galvanised pipe coat rail at 75mm below shelf. Provide cupboards over wardrobe where required.

27 LINEN & COAT CUPBOARDS:
Lined full height inside and to have 25mm shelving. Full depth for linen at approximately 400mm c.c. Coat cupboard to have hat shelf at 1800mm from floor and coat hooks to side and rear.

28 KITCHEN CUPBOARDS:
Construct cupboards and dresser unit to sizes shown on plans, with doors and shelves to Owners approval.

29. SINK TOP:
Provide for standard sink top. Unit to have standard 450 x 300mm stainless steel sink. Fix on unit either indicated on plan or to Owner's final approval. Units to be generally 900mm high and 500mm in depth, 100mm toe space. Provide flush cupboard doors to front and shelving to approval. Timber used in doors to be approved by Owner.

30. HOT WATER CUPBOARD:
To be constructed where shown and fitted with slat shelving above cylinder spaced at 15mm apart. Provide two flush doors with thermostat boxed in.

31. ARCHITRAVES, SKIRTINGS ETC:
Finish all windows internally, door openings and wherever required with 50 x 12mm rounded or splayed architraves.
Finish at junction of floor and wall with 75 x 12mm skirtings neatly mitred at angles and scribed to floor.
Supply and fix heads, half rounds and where required scotia mould at ceiling junction and all trim as required to complete the work.

32. BATHROOM:
Provide and fix in bathroom one toilet cabinet 550 x 400mm recessed into wall with mirrored door. Bath to be built in and supported with 75 x 50mm framing on edge. Fix bath panels as agreed by Owner. Allow for toe space All wall linings other Gib. Board to be fixed to manufacturer's specification. Provide for all sanitary fittings shown on plan and given under "Plumber".

33. METER RECESS:
Provide recess for Electric Meter Board where directed to the satisfaction of the Local Electric Supply Authority.

34. MANHOLE:
Provide manhole in ceiling 500 x 500mm where directed by Electrician.

35. HARDWARE:
Allow the P.C. sum of $ ..... for the supply of all hardware required. Door handles, Locks, window fittings, door and drawer pulls, stops, angles, vents, towel rails ect. Allow to take delivery and fix. The supply of hinges and butts for all doors and windows is not included in the P.C. sum.

36. INTERNAL WOOD STAIRS:
Consult with Owner on construction of internal wooden stairs.

of the NZS 3604 should be fixed in accordance with all requirements thereof. It is important to appreciate that reference is made to NZS 3602 wherein advice is given on width of timber weatherboard and finishing. Should the owner specify overwide boards and any finish other than paint and not adequately maintain, the responsibility for any resultant poor performance should not be apportioned to the "Contractor".

NOTE 2. Reference is made to wood cellulose flat sheets in NZS 3604 and should be taken to include such sheets that can be purchased with various finishes already applied, e.g. aggregate finish or imitation stone work and brick finishes, as well as where sheets are used as a base for in situ finishes.

(b) Other exterior wall coverings shown on the drawings shall be .....
fixed in accord with.....
and finished with .....

23. EXTERIOR JOINERY:
All windows shall be to NZS 4211 to suit location.

(a) Aluminium Joinery
Provide P.C. sum of $ ..... for windows and glazed doors to size, type and location shown on plan. Obtain joinery from ..... complete with glazing, frictional restraints and catches, and fix plumb both ways and in correct alignment and flash all in accord with manufacturer's instructions. Sliding patio doors shall be safety glazed and fixed to timber sub frames as per Code. NOTE: Owner should check with manufacturer regarding manner or type of safety glazing (also in shower screens). Also seek advice on satisfying the need for simple secure means of maintaining a little ventilation at night or when house is empty. Options can include substituting double spur catches for single, fixing security fasteners or provision of small sliding panes, or louvre or grill at high level.

(b) Timber Joinery
Unless otherwise specified sashes and frames shall be finger-jointed radiata pine treated to the requirements of the Timber Preservation Authority, primed before leaving the factory, and to sizes and types shown on plan. Fix window frames plumb both ways to wall framing at not more than 750mm intervals with full width folding wedges, or to heart Totara dovetailed grounds in masonry walls. Cut all facings and scribers to fit neatly and fix quadrant under external sills. Provide and fix standard galvanised steel flashings unless otherwise specified.
Hang all sashes as required with suitable hinges or frictional restraints and fix stays and catches as supplied under P.C. sum (see Hardware).

24. DOORS & FRAMES (TIMBER):
External door frames shall be of 40mm full width material rebated, and internal shall be 40mm rebated or 25mm material with 12mm planted stops. Doors shall comply wit NZSS 1158, where external shall be framed, ledged and braced or timber or glass pane as shown on drawings. all properly constructed with stiles and rails out of 50mm material. Internal doors shall not be under 40mm hollow-core faced with plywood or hardboard with clashing strips fixed to lock stiles. All timber core material shall be treated and doors shall be of approved manufacture. Doors over 1400mm in height shall be hung on one and one half pairs of 100 x 70mm antique butt hinges.

25. CEILINGS:
(a) Gibraltar Board: Fix painting quality 9.5mm Gib. Board to joists and rafters with 30mm flat head galvanised clouts, with nails punched and stopped and all joints flushed up to a true even smooth surface. In particular fix all ceilings serving as structural ceiling diaphragms under terms of NZS 3604. (See Winstone (Auck.) Ltd. taped joint system). Check that each wall under or connected to has adequate bracing for a diaphragm.

(b) Pinex: First quality tiles or planks as directed by owner to be fixed to manufacturer's specification. In particular note where dragon ties have been specified on drawings and refer to NZS 3604 for their proper fixing. Also check that each wall relative to the dragon

LOCATION	SIZE mm x mm	GRADE & TREATMENT For Alternatives refer to NZS 3602 or BRANZ Bulletins 130 & 173	REMARKS
ROOF TILE BATTENS (or purlins)	75 x 50	Treated No. 1 Radiata Pine or Douglas Fir.	Light roof, on flat at 900 c/cs.
	75 x 50		Heavy Roof, on edge at 900 c/cs.
Dragon Ties	100 x 40	Treated No. 1 Radiata Pine	As required.
Eaves Framing	75 x 40	Treated No. 1 Radiata Pine	
Barge & Eaves Boards	150 x 25	Treated No. 1 Radiata Pine	
up to	225 x 25		
Ceiling Battens	75 x 40		or as required by manuf. of ceiling lining.
WEATHERBOARD: Dressing A Heart Rimu or Treated A Rimu or Matai or imported Cedar. Horizontal or Vertical Finishing grade. Weatherside or Hardiplanks. (Delete that which is not applicable).			
INTERNAL DOORS			
Jambs	25mm	(Dressing A Rimu	
Architraves	75 x 12mm	(	
Skirtings	75 x 12mm	(or by agreement	
Sill Board	25mm	(	
Aprons	25mm	(	
ALL OTHER INTERNAL FINISHING TIMBERS NOT SPECIFICALLY MENTIONED TO BE DRESSED A RIMU			
Window Jambs	150 x 40mm	D.A.H. Rimu	
Window Sills	150 x 65mm	D.A.H. Rimu or Matai or Cedar	
Mullions	75 x 65mm	D.A.H. Rimu or Matai or Cedar	
Cornices	40mm	D.A.H. Rimu or Matai or Cedar	
Facings ext.	75 x 25mm	D.A.H. Rimu or Matai or Cedar	
Door Sills	150 x 200 x 65 with 12mm Steel Weather Bar		
Sashes	50 x 12mm	Totara or Heart Rimu	

12. SUB-FLOOR FRAMING:
(a) Driven Timber Piles shall be included in this section of the work and all driving,testing,sizes and spacing of piles shall accord with Appendix C & D of NZS 3604 and drawings.
(b) Bearers shall be 100 x 100mm,supported at 1.3m centres along length and spacing between bearers to be max. 2.5m except where spacing and size of joists and bearers are shown differently in plan. Jack studs to be securely fixed to foundation piles and wall plates or bearers as shown. Brace with 100 x 75mm as required. Floor joists shall be gauged over plates to uniform levels. Joists shall be 150 x 50mm. Laps not less than 150mm spiked. Nail plates may be used in place of lapping. Provide double joists under all load bearing walls.
(c) Plates shall be 100 x 50mm dowelled or bolted to foundation walls.

13. GENERAL FRAMING:
All framing to be 100 x 50mm stud with 50mm wide studs to all openings not exceeding 3m span where supporting only one storey. Top and bottom plates to be same size as studs in long lengths.,halved or nail plated at wall junctions and jointed over studs. All studs at 600mm c.c. Provide two (2) rows of dwangs to full height each wall unless otherwise stated on drawings.

14. WALL BRACING:
Provide all wall bracing as shown on drawings and wall bracing calculation sheets as is intended to satisfy the Local Building Authority. Keep strictly to the "Type",Lengths and Locations shown on plan and elevations except that Type 1 can be substituted for Type 3 and Type 2 can be substituted for Type 4.

15. WALL LININGS:
Generally shall be of 9.5.mm Gibraltar Board and shall be fixed to external walls only after placement of thermal insulation (bulk insulants). (Specify if different i.e. if using Winstone Ltd. Specific Thermal Design - with Gib-foil only in walls and higher levels of insulation on battened ceiling on trusses). All nailed or fixed as per Appendix A of NZS 3604 or manufacturers' instructions and stopped to manufacturers' instructions; in particular where contributing to wall bracing.

16. ROOF CONSTRUCTION: (See Drawings and Schedule of Timbers for types).
(a) Trussed Roofs: Drawings showing clearly the type,pitch,span,spacing and overhangs of roof trusses and details of roof cladding shall be provided to the manufacturer .....
to allow him to comply with Clause 10.2.3 of NZS 3604. Thereafter,the Contractor shall match construction with the drawings and details provided by the truss manufacturer throughout all stages of fixing and bracing. The Contractor shall especially accord with the manufacturer's instructions for tying down where overhangs exceed 750mm. In all cases anchorage of all trusses to plate shall be not less than 2/100mm skew nails plus 2/4.9mm wire dogs.

(b) Framed Roofs: Roof to be framed up to pitch indicated on plans and to detail properly checked,bird mouthed and well fixed. Fix valley board, ridge etc. Fix both underpurlins and collar ties where shown and where rafters exceed 10 degrees pitch. Collar ties are to be at 1.8m centres or to every third set of rafters whichever is the closer.
Ceiling Joists to be generally 100 x 50mm spaced as required (refer to Plan) and to be well spiked to all plates. Provide adequate ceiling runners to spans of 2400mm and over.

(c) Monopitch,skillion and exposed rafter roofs: Construct as drawings in accord with NZS 2604.

17. PURLINS,EAVES,GABLE ENDS:

Size of framing,spacing,overhangs and sheathing type as shown on plan.

18. FASCIA BOARDS ETC:
Fix fascia,barge,frieze etc. to suit roofing selected (See ROOFING CONTRACTOR).

19. POST AND BEAMS:
Where within maximum permitted by NZS 3604 secure in equivalent manner and with equivalent materials as in Clauses 7.1,7.2 and 7.3 thereof. Owner to provide "specific design" for all other posts and beams and contractor to fix as per details given.

20. FLOORING:
Timber joisted ground floors shall be insulated with.....
(brand) type perforated aluminium foil carefully laid,lapped and drooped 100mm between joists and stapled on top side all per manufacturers instructions before laying flooring.
(a) Particle Board Flooring
Shall be 21mm High Density to NZS 3608. All aspects of handling,storage,sheet layout and fixing shall be to manufacturers' recommendations.
Nailing of pre-laid particle board floorings shall be done in two (2) stages to reduce the risk of floors squeaking. First secure at perimeter of floor,along the bottom plate positions for internal walls and sufficient elsewhere to hold the sheets flat during construction. Complete remainder of fixing to manufacturers' specification after the house has been totally "closed-in" and just prior to sanding. The Contractor shall be responsible for any damage done and for cost of repair or replacement of the flooring if not closed-in sufficiently early (normally within 2 months of laying) or if the floor is not otherwise adequately protected up to completion of the house.

Heads of fixings shall be punched to allow a reasonable depth of stopping,unless otherwise stated. Ceilings below particle board (or any other flooring) shall not be secured until all nailing above has been done.

OWNER TO SPECIFY ANY ALTERNATIVES TO 20(a) e.g.:

i) Particle board,laid only after closing in
ii) Tongue & Grooved (T&G) flooring,with or without secret nailing.
iii) Glue laminated timber flooring
iv) As (ii) and (iii) above but also forming ceiling to a room or number of rooms below.

(B) Finishing of Particle Board Flooring
Contractor to follow manufacturer's recommendations and sequence in sanding,sealing,stopping and application of coatings to provide a minimum 3 coat flat,smooth hard wearing polyurethane finish. Contractor should also follow manufacturer's recommendations for floor areas to be covered with vinyl flooring or carpeting as advised by owner and such finish of the particle board to be approved before either is laid.

OWNER TO AMEND 20 (b) if wishing to undertake all or part of finishing personally.

21. TIMBER TERRACES:
If shown on plan construct to detail or best trade practice. All nail fixing with galvanised nails, all bolt fixing with galvanised bolts,and all timber to be treated to the correct preservative retention as specified by The Timber Preservation Authority.

22. EXTERIOR WALL COVERINGS:
(a) Breather type building paper and masonry veneer shown on drawings shall be as given under "BRICKLAYER".
NOTE 1. Other exterior wall covering shown on the drawings and mentioned in Section8

98/1964

Waitakere City Council
Te Taiao o Waitakere

Civic Centre
6 Waipareira Ave
Waitakere City

Private Bag 93109
Henderson
Waitakere City

Telephone
09 836 8000
Facsimile
09 836 8001

Vehicle Crossing Application and Street Damage Deposit

INTRODUCTION

Council, under the local Government Act and Council Bylaw No.22, "Use of Public Roads" may grant permission for works using road reserve access subject to:

(a) Lodging of a Street Damage Deposit and payment of the relevant inspection fees for developments where the road reserve is to be used for site access, construction activity etc. and which has potential to damage the road reserve area.

(b) Each property constructing a vehicle crossing from road edge to boundary in compliance with Council's standards.

APPLICATION DETAILS

Applicant Name: Mr & Mrs T Fray

Applicant Address: 2/9 Wyoming Ave Murrays Bay

Contact Phone No. 479-3716

Mobile Phone No:

Facsimile No:

PROJECT LOCATION

Street number:

Street name: Chadlington Ave

Suburb: Henderson

Lot No: 20 DP No: 190735

PROJECT TYPE (Tick one or both)

☑ Vehicle crossing ☑ Building construction

VEHICLE CROSSING INFORMATION

(Complete only if crossing is to be constructed) (Tick as applicable)

I intend to build a vehicle crossing to the following grade:

Grade: ☐ Light Commercial ☐ Commercial ☑ Residential

Kerb & Channel: ☑ Road is kerbed ☐ Road is unkerbed

Property: ☑ Meets the road boundary ☐ Is on common accessway

Resource consent application: ☑ Has been made ☐ Not required

Grade: *For residential crossings serving 5 or more units. a light commercial crossing is required.*

FEE & DEPOSIT DETAILS

STREET DAMAGE DEPOSIT* (tick as applicable)

Work Value	Deposit
Under $5,000 inc GST	☐ Nil
$5,000 - $50,000 inc GST	☐ $500
over $50,000 inc GST	☑ $1,000

Deposit (refundable) covers work undertaken by Council eg extra inspections, reinstatement work

STREET DAMAGE INSPECTION FEES (tick if required)

Preliminary street inspection required *(optional)* ☐ $33.75 inc GST

(If not requested the applicant shall be deemed to have accepted that the road, footpath & berm is in good condition at commencement of works)

VEHICLE CROSSING INSPECTION FEES (tick if required)

Boxing check / pre-seal inspection ☑ $33.75 inc GST

(After boxing completed, scoria compacted, cut off drains and reinforcing are in place or metal shaped and compacted for sealed crossings)

FINAL INSPECTION (mandatory)

(A final inspection is required regardless of whether deposit is lodged. Any additional re-inspections required at either the boxing or final inspection shall be at the applicant's cost.)

Final Inspection ☑ $33.75 inc GST

(After construction joints cut, topsoiling & street damage reinstated)

Receipt no.

IMPORTANT: TO BOOK ALL INSPECTIONS

To book **all** street damage inspections, (including preliminary street inspections) and vehicle crossing inspections, please phone 836 8000 extn 8725 or 836 8045. A **minimum** of **ONE WORKING DAY'S** notice is required.

CONDITIONS

1. Council permission to use the road reserve for access is subject to the applicant taking all steps necessary to avoid damaging the street, footpath or berm and reinstating these areas to the satisfaction of Council.
2. That the applicant obtain a copy of Council's standard vehicle crossing specifications and undertake that a crossing will be installed to those standards, including requirements for visibility, drainage control, safety platform and surfacing, and will request the required inspections.
3. That where a vehicle crossing is non standard (see overleaf), Resource Consent application is made.
4. For proposed excavations greater than 250mm, the depth and location of services should be confirmed by hand digging prior to excavation. Any damage to services will be charged to the applicant.
5. In the event of the property changing ownership before the above works are completed, Council may refund all deposits to the current owner at the time of final clearance.

I agree to abide by the above conditions and those detailed overleaf.

Applicant Signature: G. Fray Date: 11-12-98

Street Damage and Vehicle Crossing Information Sheet

STREET DAMAGE DEPOSITS

If street damage becomes evident as a result of development works then Council shall give notice to the applicant to repair within a specified time. Should the repairs not be completed by the the specified date, then Council may utilise the deposit held to arrange completion of the works.

Street damage shall include uncompleted crossings and damage to surfaces, structures, underground services and trees within the road reserve boundaries. It also includes the depositing of any mud or debris on the road carriageway.

If a pre-start inspection is not requested it is deemed that the road, berm and footpath are in good condition at the commencement of works. Alternatively the applicant may produce clear, photographic or video evidence of pre-start damage and present this with the application.

VEHICLE CROSSINGS

The "vehicle crossing" is that part of the driveway that is built on the road reserve i.e. between the edge of the carriageway and the property boundary. Under the Local Government Act, each property owner is required to supply a vehicle crossing as a part of developing the site and Council is required to set standards for these crossings. A copy of the appropriate specifications for use in constructing vehicle crossings is available with this application at no charge.

Sites Requiring Standard Crossings

Most vehicle crossings are fairly straight forward. Where a crossing is generally flat with good visibility, all that is required is the application overleaf and bookings for the boxing and final checks at the appropriate times.

Sites Requiring Non Standard Crossings

Safe and convenient access is a benefit to both the property occupant and the general public. For sites which rise or fall steeply from the road or have restricted visibility, the construction of a crossing can be a difficult and critical part of the site development. Where any of the following characteristics occur, a full Resource Consent application is indicated:

Grade is steeper than 1 in 5

- Traffic visibility is limited (Design table is available on request)
- Maximum vehicle crossing profile (see attached to specifications) cannot be achieved
- A retaining wall is required as part of the vehicle crossing development
- Earthworks greater than 30 cubic metres are required
- Proposed layout includes crossing neighbours' frontage

If the proposed vehicle crossing has any of the above characteristics and a Resource Consent is not obtained, the matter may have to be remedied at a later date. This could involve considerable expense and may hinder later sale of the property. To keep delays to a minimum, it is advisable to make Resource Consent applications as early as possible. A copy of the Vehicle Crossing Application overleaf should be lodged with any Building Consent Application.

Construction Standards

Standard details are available for various types of construction. These include:

- Residential up to 4 units (kerbed road)*
- Residential (unkerbed roads)
- Light commercial (over 4 residential units, schools, halls, churches, public buildings)*
- Heavy commercial

** A supplementary design for high speed/volume roads is included with the specifications. Please ensure that you receive a copy of the specifications relevant to your site and usage.*

Should you require further clarification, phone 836 8000 extn 8725.

ABA NO 98005456 **BUILDING CONSENT PROCESSING SHEET** 1July 97

6 CHADLINGTON AVENUE

PLANNING CHECK

Is a Section 35 required ? ~~YES~~ (NO)

If yes : ☐ No building work to commence ☐ Specified building work to commnce

Approved by : ..... Resource Planner 21-12-98 Date

Approved by : ..... Building Control Officer 13 JAN 1999 Date

Approved by : ..... Plumbing/Drainage Surveyor 15 DEC 1998 Date

Approved by : ..... Environmental Health Officer ..... Date

Approved by : ..... Dangerous Goods Surveyor ..... Date

REMARKS

CONDITIONS (including 1 to 3 standard conditions)

BUILDING CHECK **INITIAL OR N/A**

Second-hand Building Materials Report Attached ..... N/A

Electricity Transmission Line Clearance Received ..... N/A

PIM DETAILS

- ☐ Information identifying special relevant features of the land.
- ☐ Information about the land or buildings concerned notified to the Council by any statutory organisation having the power to classify land or buildings.
- ☐ Details of relevant utility systems.
- ☐ Details of authorisations which have been granted.
- ☐ Notification of any authorisations which must be obtained before the proposed building work may be undertaken.
- ☐ Details of authorisations which have been refused.

REQUIRED INSPECTIONS

- [x] Footing
- [x] Bond Beam
- [ ] Tanking (Water Barriers)
- [ ] Pre-floor Bldg Concrete only
- [x] Pre-floor P&D Concrete only
- [ ] Plaster Exterior Cladding
- [x] Pre-line Bldg
- [x] Pre-line Plumbing
- [x] Gibnail
- [ ] Vehicle Crossing Boxing
- [x] Drainage Test
- [x] Final CCC Bldg
- [x] Final CCC P&D

CODE	FEE DESCRIPTION	$	c
101	Plan Processing Fee		
102	Planning Check Fee		
103	PIM Fee		
104	Inspection Fee	505	—
105	Code Compliance Certificate	26	—
106	Water Connection	350	—
107	Water Charge	—	—
108	Building Research Levy	135	—
109	Building Industry Authority Levy	87	75
110	Section 35 Certificate		
111	Design Check Fee		
112	Amended Plan Fee	15	—
113	Photocopying		
114	Resource Consent (Minor Addtn)		
115	Sewer Connection		
116	Re-lay Sewer		
117	Engineering Fee-Subdivision		
118	Reserve Contribution (Massey)		
119	Reserve Contribution (Waitakere)		
120	Reserve Contribution (New Lynn)		
121	Reserve Contribution (Henderson)		
122	Performance Bond		
123	Stormwater Upgrading		
124	Road Construction Deposit		
125	Stormwater Connection		
126	Engineering Fees-Development		
127	Memorandum Of Encumbrance		
128	Resource Bond		
129	Water Contribution		
130	Sewer Upgrading		
131	Planning Site Visist		
132	Consultancy Fees		
133	Fire Hydrants		
134	Pool Inspection Fee		
135	Plumbing Fee		
136	Drainage Fee		
137	Septic Tank Fee		
138	Oratia Stream		
139	Planning Resource Consent		
150	Extension of Building Consent		
151	Replacement Plans/Document		
152	Administration Fee		
153	Second-hand Building Insp		
154	Second-hand Materials Insp		
T	Time		
	TOTAL	$1118	75

FINAL CHECK

Initials .....

Date 14/1/99

Waitakere City Council
Te Taiao o Waitakere

Civic Centre
6 Waipareira Ave
Waitakere City

Private Bag 93109
Henderson
Waitakere City

Telephone
09 836 8080

TAX INVOICE

Building Consent Fees

GST Registration No
52-211-247

Date: 14/01/1999

FRAY, TERRY
C/- G P GOULD
21 VISTA MOTU
RED BEACH 1461

Customer No: 706258

Invoice No: 817590

Application No: ABA98005456

Owners Name:
Project Address: 6 CHADLINGTON AVE HENDERSON

Invoiced to Date: 573.00

Fee Code	Description	Amount
104	Inspection Fee	505.00
105	Code Compliance Certificate	26.00
106	Water Connection Fee	350.00
108	Building Research Levy	135.00
109	Bldg Industry Authority Levy	87.75
112	Amended Plan Fee	15.00

Processing of your building consent application is now complete and the building consent is ready for upliftment on payment of the amount shown.

This notice is not a Building Consent. No earthworks or construction work may be carried out to prior to the issue of the Building Consent and any consent required under the Resource Management Act.

This account includes a total GST content of 124.31

Total To Pay 1118.75

Remittance Advice:
Please detach and return with payment.

Waitakere City Council
Te Taiao o Waitakere

Civic Centre
6 Waipareira Ave
Waitakere City

Private Bag 93109
Henderson
Waitakere City

Telephone
09 836 8080

Invoice Date : 14/01/1999

Customer No : 706258

Name : FRAY, TERRY

Application : ABA98005456

Allocation Type : C

Customer Type : D

Ledger : BCON

Document Number : 817590

Total to Pay : $ 1118.75

Waitakere City Council
Te Tatao o Waitakere

Civic Centre
6 Waipareira Ave
Waitakere City

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Henderson
Waitakere City

Telephone
09 836 8080

TAX INVOICE

Vehicle Crossing / Street Damage Fees

GST Registration No
52-211-247

Date: 14/01/1999

FRAY, TERRY
C/- G P GOULD
21 VISTA MOTU
RED BEACH 1461

Customer No: 706258

Invoice No: 817566

Application No: VXG98001964

Owners Name:
Project Address: 6 CHADLINGTON AVE HENDERSON

Invoiced to Date: 0.00

Fee Code	Description	Amount
VCI	Veh. Xng Inspection	33.75
VDP	St Dmge Deposit (Refundable)	1000.00
VFI	Final Inspection	33.75

Deposits or bonds can only be refunded to the person named on this document unless written authorisation is provided.

Location: 6 CHADLINGTON AVE
HENDERSON

This account includes a total GST content of 7.50

Total To Pay 1067.50

Remittance Advice:
Please detach and return with payment.

Waitakere City Council
Te Tatao o Waitakere

Civic Centre
6 Waipareira Ave
Waitakere City

Private Bag 93109
Henderson
Waitakere City

Telephone
09 836 8080

Invoice Date : 14/01/1999

Customer No : 706258

Name : FRAY, TERRY

Application : VXG98001964

Allocation Type : C

Customer Type : D

Ledger : VXGD

Document Number : 817566

Total to Pay : $ 1067.50

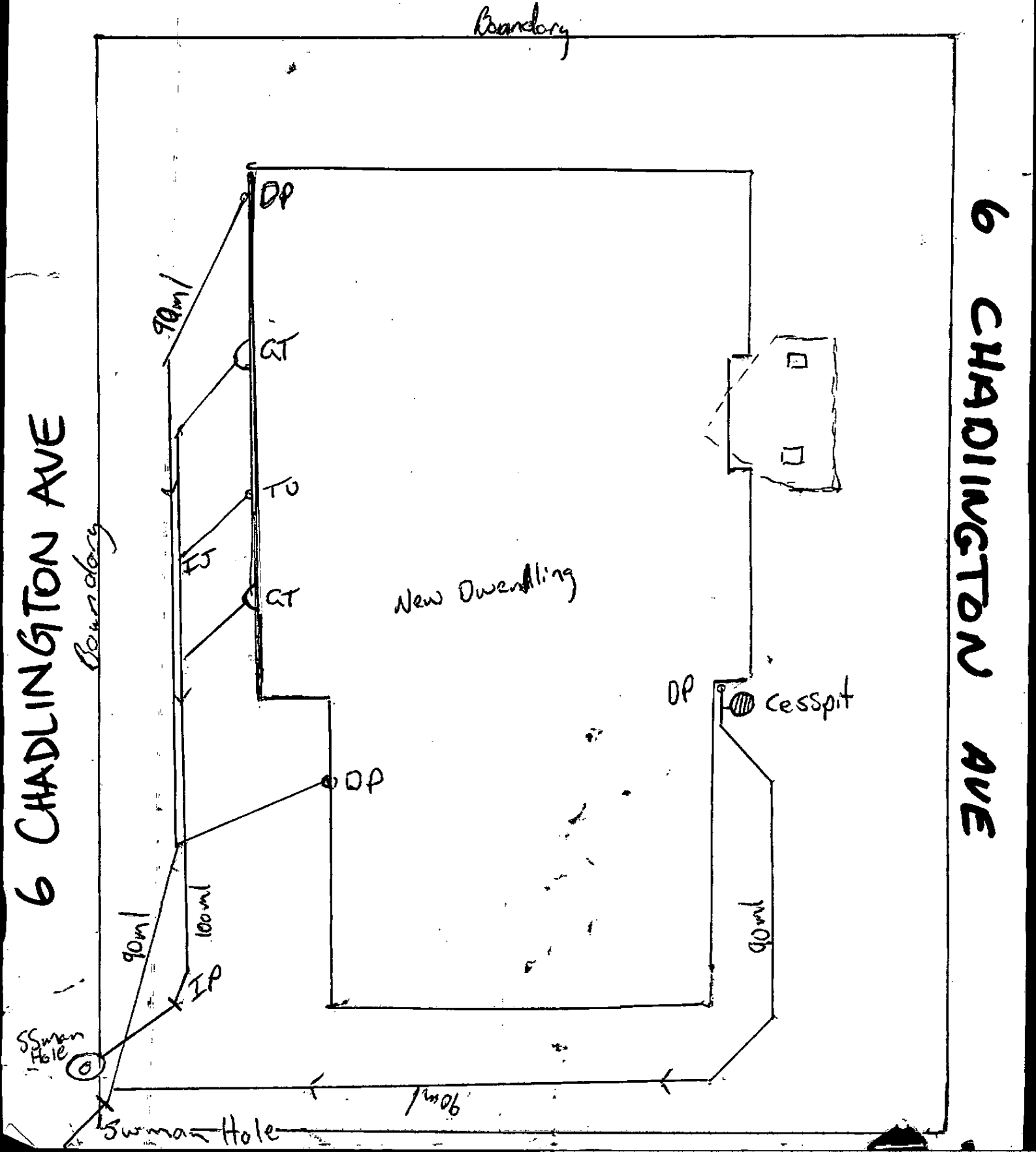
98/5456 ENTERED ID 306693

DRAINAGE PLAN CHADLINGTON AV	Street code: HENDERSON

LOT: 20 DP: 190735 STREET NO: 6 WARD

OWNER: G.P. GOULD DRAINLAYER: GRAEME KENNARD 14083

NOTE: Please provide figured measurements from a defined point of reference, in black ink



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