


ENTERED

15 August 1997

Job No 483

The Manager
Building Services
Tauranga District Council
Private Bag
TAURANGA

TAURANGA DISTRICT COUNCIL		
FILE No. P1580 - 1798 - 1		
REC. 19 AUG 1997		
NAME	DATE	SIGN.
T. Wymard		
B.B.C.L.		✓
TO FILE P1580-1798-1		

Attention: Mr John Turner

Dear Sirs

R SMITH RESIDENCE, 179B Dickson Road, PAPAMOA.

Omitted Brace No 1 (BR5/0.9m) to Top Floor of Residence at Stairwell Exterior Wall.

Further to your request, I confirm I have been engaged by Mr Phil Smith, to advise on the omitted Brace No 1 (namely BR5-0.9m long), located on the stairwell exterior wall, on the top storey of the above residence.

The wall detailed as containing the No 1 Brace is less than 2.0m from the wall containing Brace No 2, therefore I have instructed that an alternate Brace No 1, be installed in the same wall line as Brace 2. This brace shall be a BR5- 1.2 metres long.

Please find attached calculations, showing total bracing to this top storey.

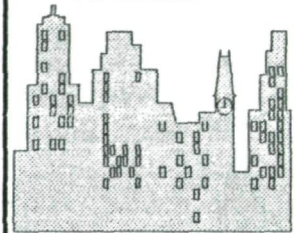
Yours Faithfully



Ms S D Hardie
NZCE, BE, MIPENZ Reg No:10260

STRUCTURAL AND
ENVIRONMENTAL
ENGINEERING
SOLUTIONS

by
SANDRA D HARDIE
BE MIPENZ



PO Box 2508 TAURANGA

Ph (07) 571-8278
Fax (07) 533-3107

	Client:	P SMITH RESIDENCE	Job No	483
	Project:	179B Dickson Road, PAPAMOA	Calc page	
	BRACING SCHEDULE		Calc by	SDH
#NAME?				

Structure Details

Location of storey	Upper of two	▼	Roof weight	Light	▼
Building height to apex	5.6 m		Cladding weight	Light	▼
Roof height above eaves	3.2 m		Room in roof space	No	▼
Stud height	2.4 m		Gross building plan area (GPA)	64.8 m	
Average roof pitch	21.0 deg				
Building length (BL)	9.0 m				
Building width (BW)	7.2 m				

Notes:

- 1) When the average roof pitch is over 25 deg, use the eaves length and width to determine BL and BW
- 2) For heavy roofs use the roof plan at eaves to determine GPA

Wind and Earthquake Parameters

Region	R1	▼
Terrain	Coastal	▼
Exposure	Sheltered	▼
Topography	Gentle	▼
Earthquake zone	B	▼

Therefore design for 'Medium' wind zone and Zone 'B' Earthquake

Bracing Units Required

WIND		EARTHQUAKE	
Wind Along =	64 BUs/m	Earthquake along/across=	3.0 BUs/m ²
Wind Across =	81 BUs/m	Plus allowance for roof space	0.0 BUs/m ²
		Total per m ²	3.0 BUs/m ²
Total Wind Load			
W ALONG * BW	461 BU	E * GPA =	194 BU
W ACROSS * BL	729 BU		

Client: P SMITH RESIDENCE
Project: 179B Dickson Road, PAPAMOA

Job No 483
Calc page

Bracing Line	Wall Type (E / I)	Total Wall Length	Individual Brace sections			Brace Type selected
			name	Height	length	

Bracing Calculations						
min bracing req'd	Wind			Earthquake		
	Per metre	Units	Total	Per metre	Units	Total

ACROSS BUILDING (Perpendicular to Ridge)

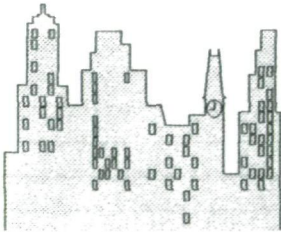
6 e	7.2	6	2.4	1.2	BR5 1.2<x<2.4	100	115	138	138	85	102	102
7 l	7.2	7	2.4	2	Gib 3 >1.2	70	65	130	130	60	120	120
8 l	7.2	8	2.4	1.2	BR5 1.2<x<2.4	70	115	138	138	85	102	102
9 l	7.2	9	2.4	3	Gib 3 >1.2	70	65	195	195	60	180	180
10 l	7.2	10	2.4	1.2	BR5 1.2<x<2.4	70	115	138	138	85	102	102
11 e	7.2	11	2.4	1.2	BR5 1.2<x<2.4	100	115	138	138	85	102	102

Total Brace Units Achieved across building 877 708
From Sheet A Totals Required 729 194

ALONG BUILDING (Parallel to Ridge)

1 e	9	1	2.4	1.2	BR5 1.2<x<2.4	100	115	138		85	102	
		2	2.4	1.2	BR5 1.2<x<2.4		115	138		85	102	
		3	2.4	1.2	BR5 1.2<x<2.4		115	138	414	85	102	306
4 l	9	4	2.4	0.9	BR9 0.6<x<1.2	70	110	99	99	95	86	86
5 e	9	5	2.4	1.2	BR5 1.2<x<2.4	100	115	138	138	85	102	102

Total Brace Units Achieved along building 651 494
From Sheet A Totals Required 461 194



STRUCTURAL & ENVIRONMENTAL ENGINEERING SOLUTIONS

by SANDRA D HARDIE BE MIPENZ

PO Box 2508, TAURANGA. Phone 07 571 8278 Fax 07 533 3107

FACSIMILIE

To: TDC
Attention: Building Services - MR JOHN TURNER
Phone/Fax: 07 578 5395
From: **Ms Sandra Hardie**
SUBJECT: SMITH RESIDENCE, 17B DICKSON RD.
PARNARA

REMARKS: ☐ Urgent ☐ For your review ☐ Reply ASAP ☐ Please comment

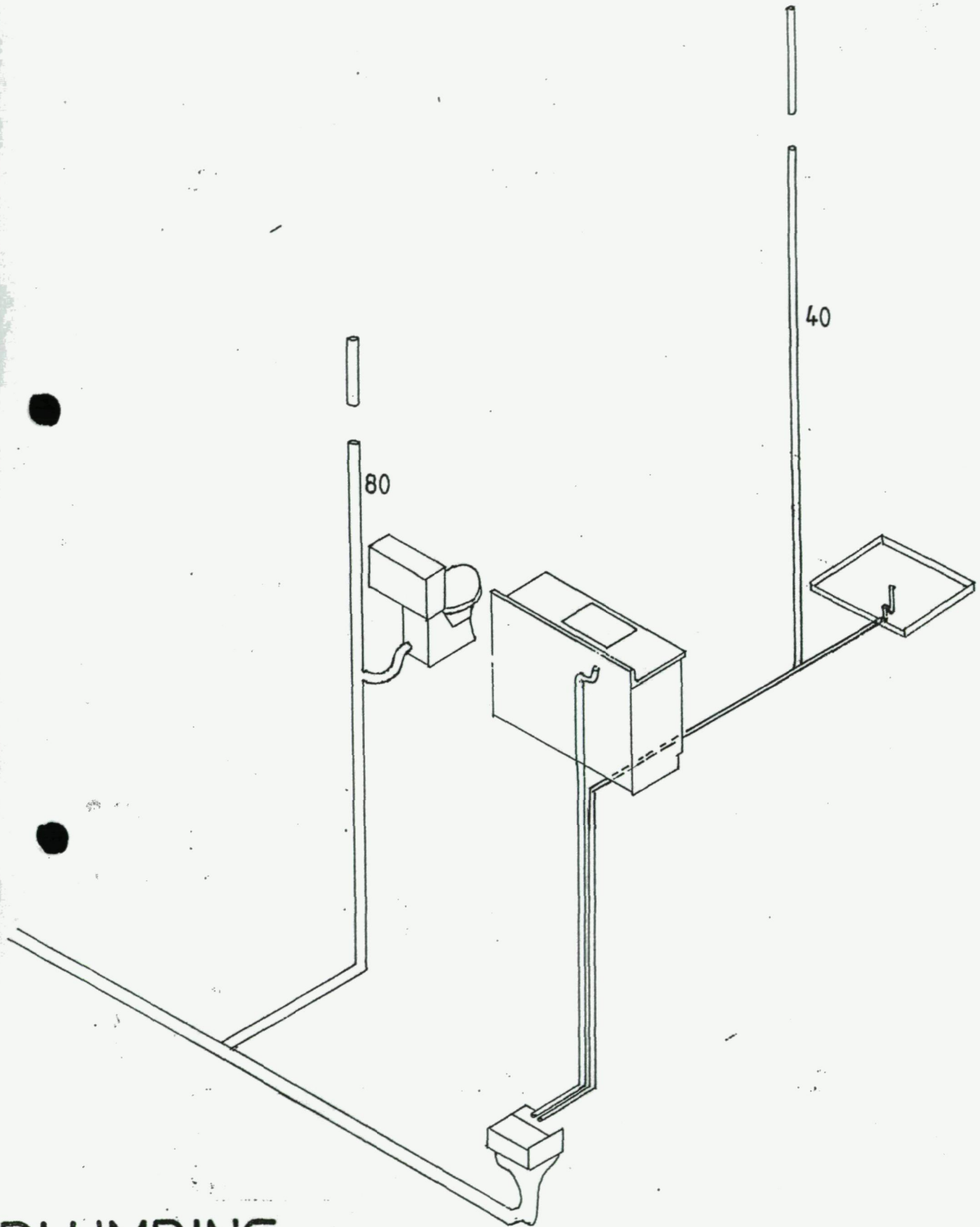
John

Let's files (3 pages)

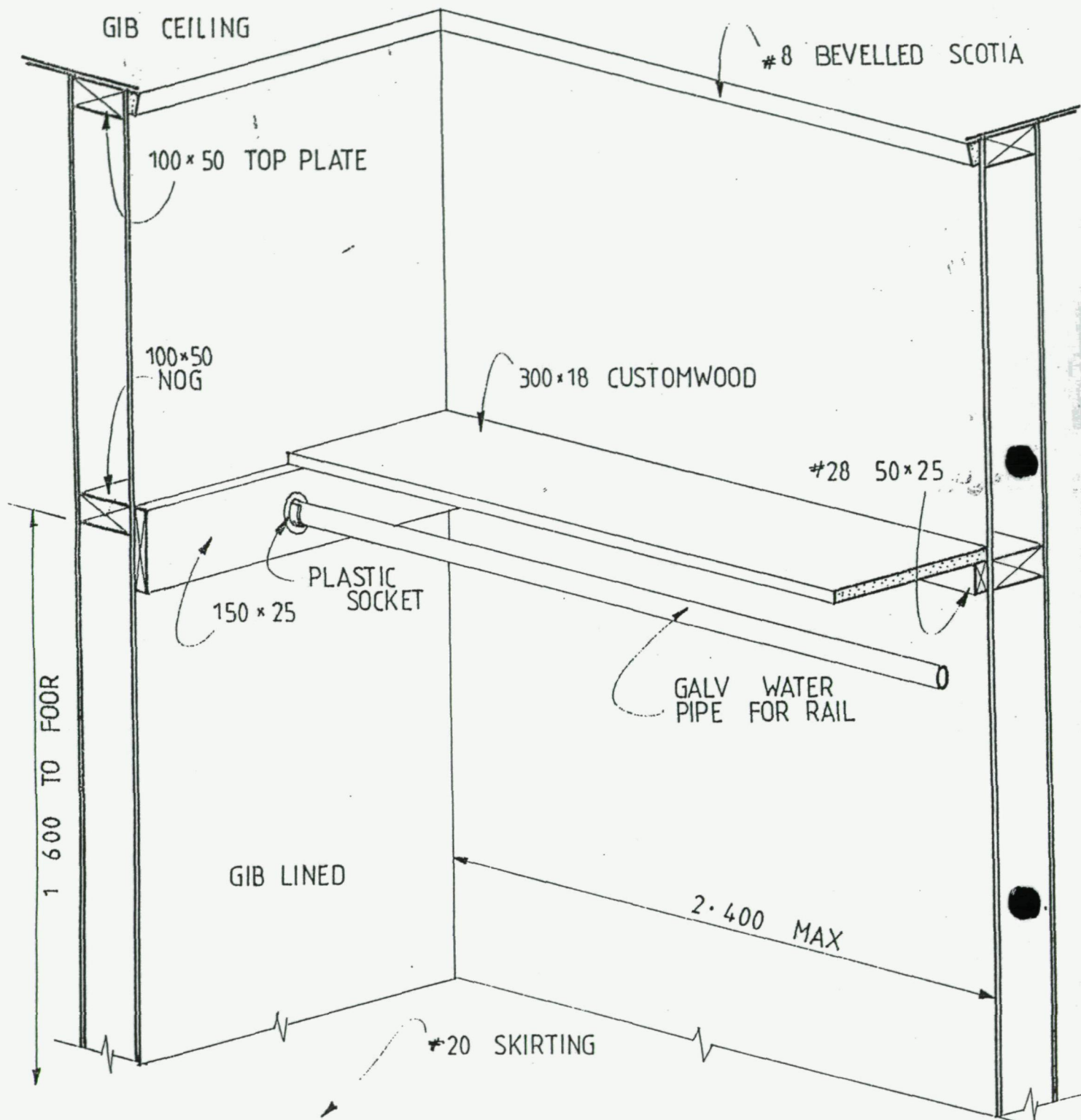
With mail signed.

Regards

Sandra



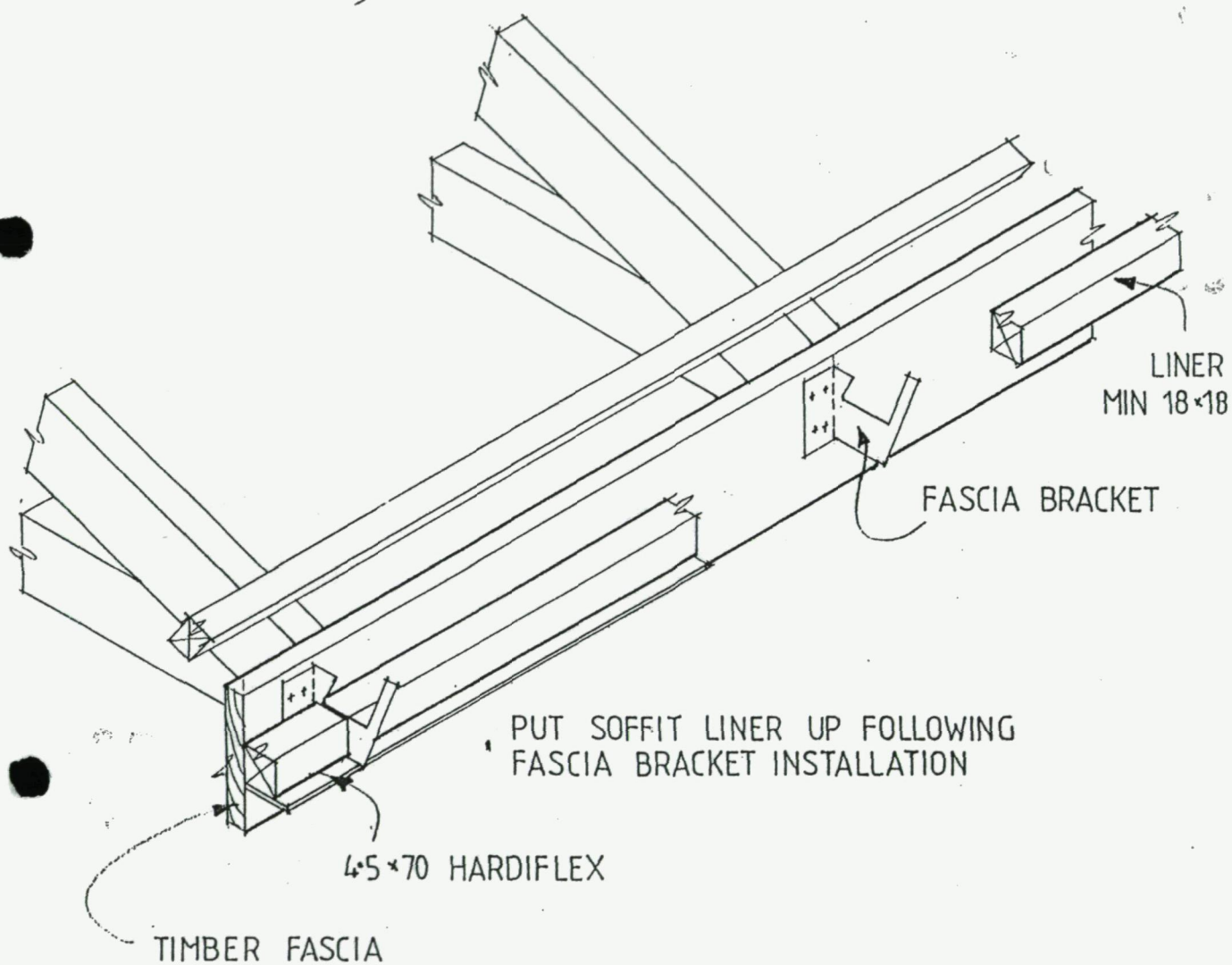
PLUMBING
SCHEMATIC



56

Fenn's Design ph. 65 833
 Finest Quality Homes Fax 66 950

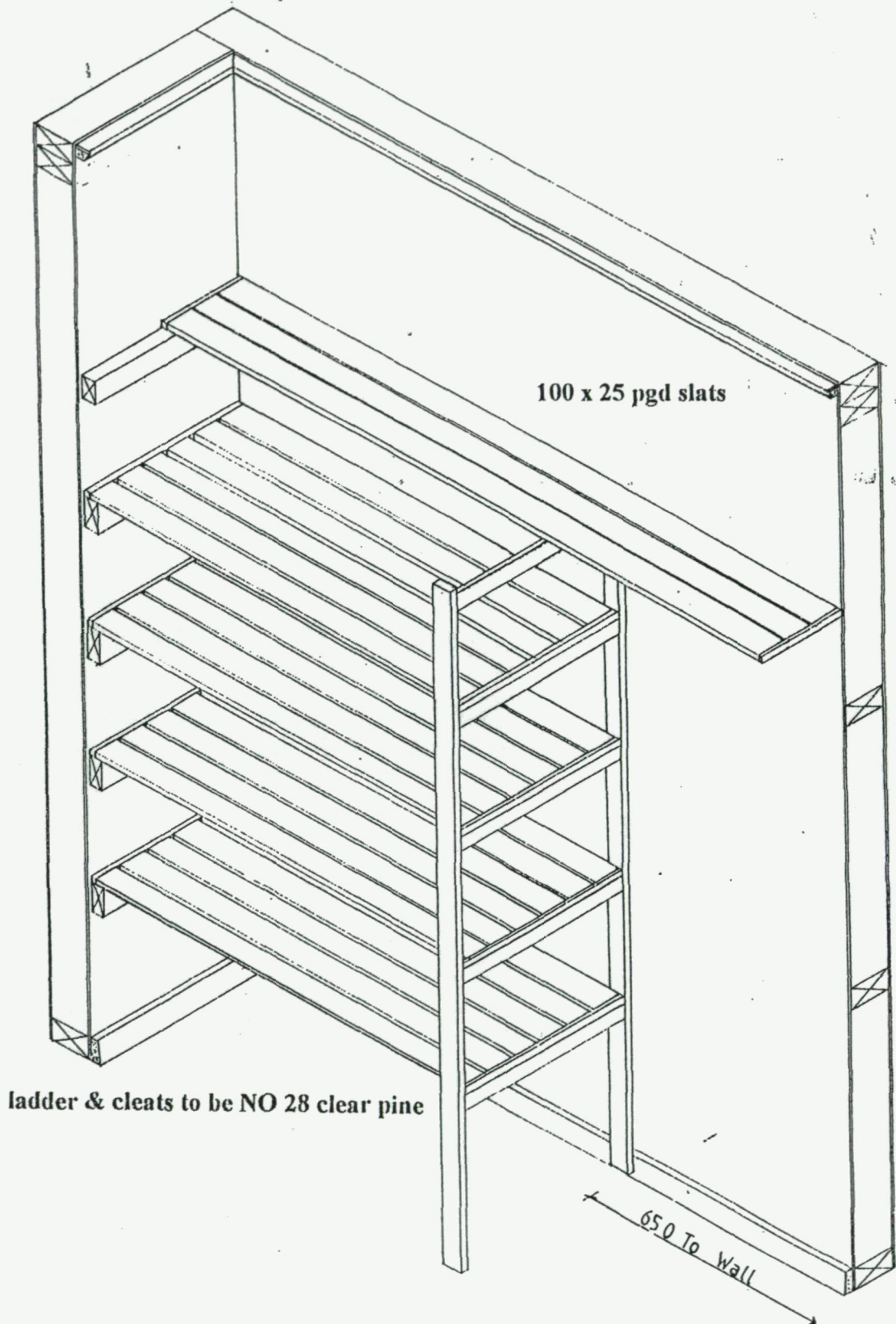
DETAIL I1
 STANDARD
 WARDROBE DETAIL



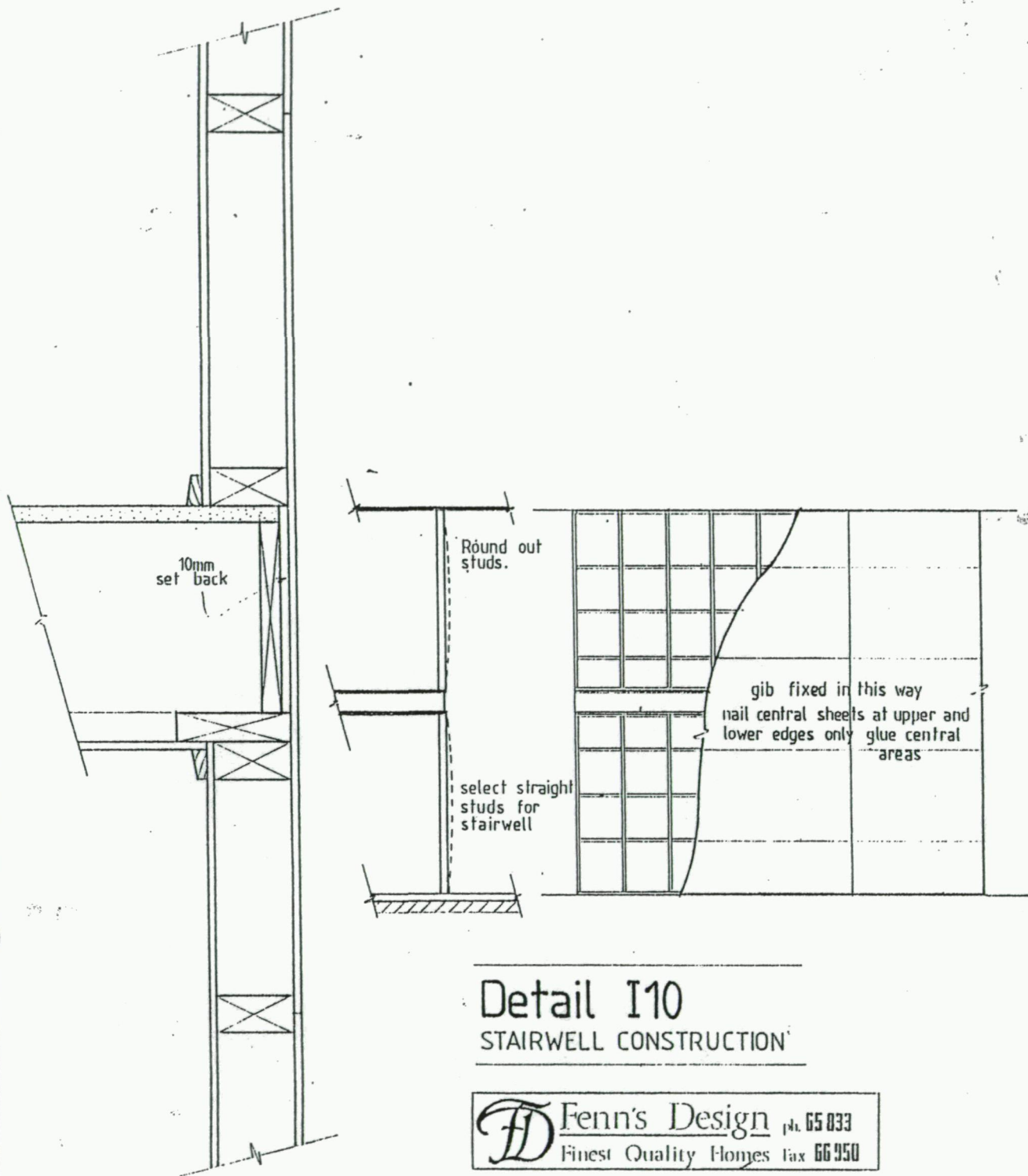
Detail R18

TAYLORS FASCIA
WITHOUT SOFFIT





STANDARD
HOT WATER
CUPBOARD DETAIL



Wall Bracing Calculation Sheet A

Job Details

box 1

Name MR P. SMITH

Street and Number _____

Lot and DP Number _____

City/Town/District _____

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

Building height to apex 5.756 m Roof weight light/heavy

Roof height above eaves 3.26 m Cladding weight light/heavy

Stud height 2.4 m Room in roof space y/n

Average roof pitch 45°

Building length BL = 10.3 m Gross Building

Building width BW = 8.1 m Plan Area, GPA = 77 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: 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 = 76 BUs/m

W across = 93 BUs/m

Total wind load,

W ALONG:

W along x BW = 615 BUs

W ACROSS

W across x BL = 957 BUs

BUs required Earthquake

box 5

From Table EQ1

E = 3.0 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 = 231 BUs

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	94	1	BR5	1.2	115	138	85	102
B	94	2	G1B3	2.4	65	156	60	144
C	94	3	G1B3	2.4	65	156	60	144
		4	G1B3	1.6	65	105	60	96
D	94	5	BR5	1.2	115	138	85	102
E								
Totals Achieved					W	693	E	588
From Sheet A Totals Required					W	615	E	231
Wreq/Ereq =								

*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	6	BR5	1.2	115	138	85	102
			BR6	1.2	150	180	110	132
N	72	7	G1B3	2.4	65	156	60	144
		8	G1B3	2.8	65	182	60	168
O	72	9	G1B3	2.4	65	156	60	144
P	72	10	BR9	9.0	95	85	110	99
		11	BR9	9.0	95	85	110	99
Q								
Totals Achieved					W	982	E	888
From Sheet A Totals Required					W	957	E	231
Wreq/Ereq =								

Wall Bracing Calculation Sheet A

Job Details

box 1

Name MP SMITH

Street and Number _____

Lot and DP Number _____

City/Town/District _____

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

Building height to apex 5.756 m Roof weight light/heavy

Roof height above eaves 3.26 m Cladding weight light/heavy

Stud height 2.4 m Room in roof space y/n

Average roof pitch 45°

Building length BL = 10.3 m Gross Building _____

Building width BW = 8.1 m Plan Area, _____ GPA 46 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: R1 0 ✓ Terrain: Inland 0 Exposure: Sheltered 0 ✓ Topography: 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 = 64 BUs/m

W across 81 BUs/m

Total wind load,

W ALONG:

W along x BW = 519 BUs

W ACROSS

W across x BL = 834 BUs

BUs required Earthquake

box 5

From Table EQ1

E = 3.0 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 = 138 BUs

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	BU/s Achieved (BU/m x L) W	Rating BU/m E	BU/s Achieved (BU/m x L) E
A	20	1	BR9	600	95	57	110	66
B	94	2	BR5	1.2	115	138	85	102
C	94	3	BR5	1.2	115	138	85	102
D	94	4	BR9	900	95	85	110	99
E	94	5	BR5	1.2	115	138	85	102
Totals Achieved					W	556	E	471
From Sheet A Totals Required					W	519	E	138
Wreq/Ereq =								

*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	BU/s Achieved (BU/m x L) W	Rating BU/m E	BU/s Achieved (BU/m x L) E
M	56	6	BR5	1.2	115	138	85	102
N	72	7	BR3	2.0	65	130	60	120
O	72	8	BR5	1.2	115	138	85	102
P	72	9	BR3	3.0	65	195	60	180
Q	72	10	BR5	1.2	115	138	85	102
Totals Achieved					W	877	E	708
From Sheet A Totals Required					W	834	E	138
Wreq/Ereq =								

double top plate

dimond ceiling battens @ 400 ctrs.
& perimeter channel req. on site in lgths.

9.4 gibboard ceiling
required on site in lgths.
75mm R2.0 insulfluf

50mm R1.6 rocwool

9.5 mm gibboard linings

19mm paint quality liners

55mm gibcove to all rooms except
garage & cupboards which are to have NO 24
customwood bevel cornice
NO 2 customwood skirting to all rooms

double top plate

dimond ceiling battens @ 400 ctrs.
& perimeter channel req. on site in lgths.

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55mm gibcove to all rooms except
garage & cupboards which are to have NO 24
customwood bevel cornice
NO 2 customwood skirting to all rooms

STEEL:
up to 600 high = D10 @ 800ctr.
600-1000 high = D12 @ 800ctr.
1000 - 1400 high = D12 @ 600ctr.

compacted fill
1 x D12 rod
polythene 25micro underlay

75 x 50 H 1 N02 for concrete slab perimeter box

17.5 m.p.a. concrete floor 100mm
668 mesh 30mm top cover

no 5 preprimed mould
trifold lintels
305 smooth hardiplank

75 x 40 merch. ribbon

100 x 40 sprockets

4.5 x 600 hardie soffit

exterier cladding over building paper

powdercoated aluminium joinery

90 x 35 laser framing

20mm particle board on 200x50 joist at 450ctr.
boundary joist 200x25

exterior cladding over building paper

powdercoated aluminium joinery

90 x 35 laser framing

APPROVED

These plans are approved in accordance with
The NZ Building Code.

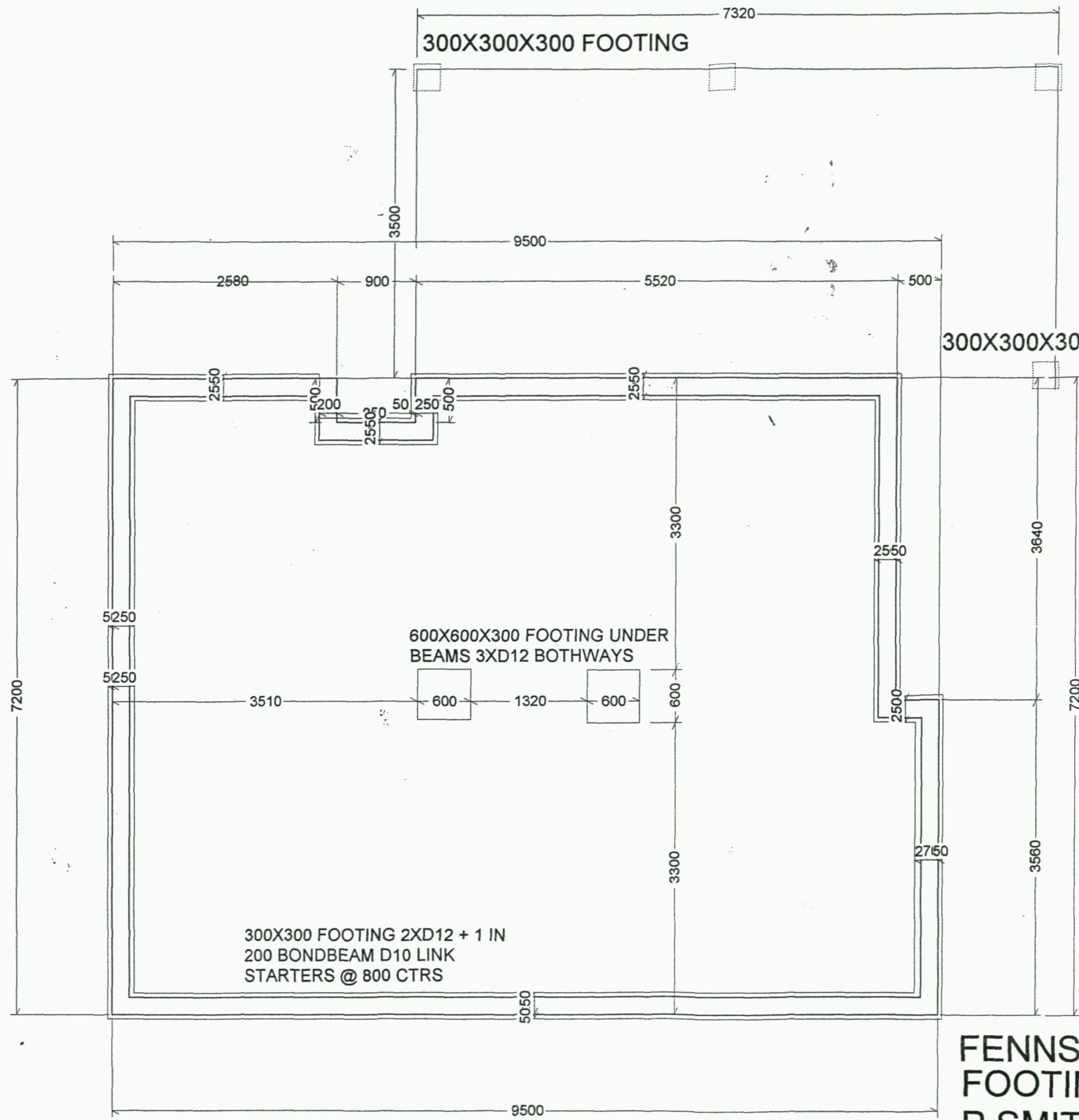
These plans must remain on site.

TAJRANGA DISTRICT COUNCIL

hardieplank nails
50 mm x 2.8 mm galv.

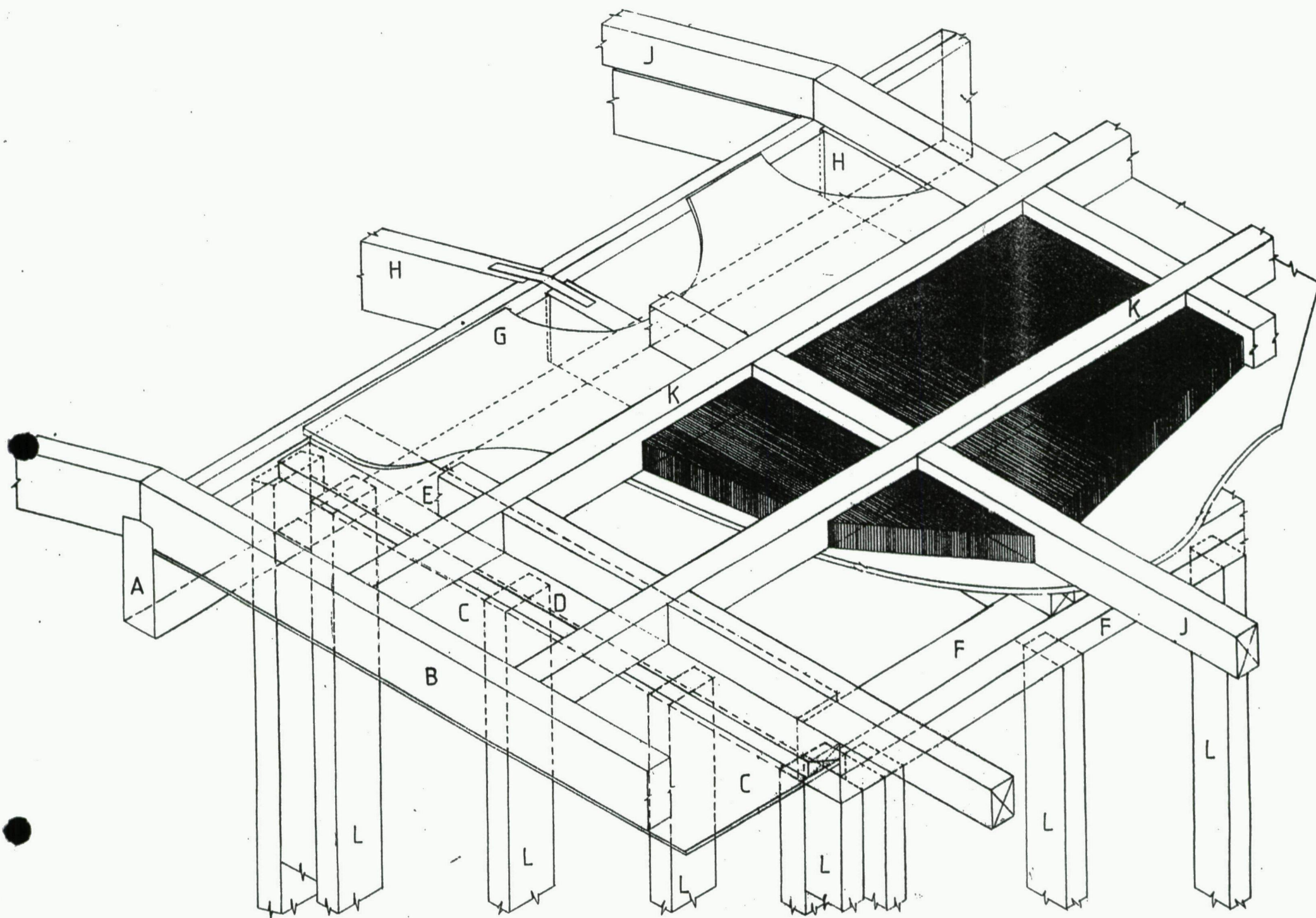
headflashings to all
windows & doors
D.P C 90 mm malthiod
stud anchor @ 1400 centres
1 x D12 rod
200 bond beam filled with
17.5 m.p.a concrete
10mm link starters @ 800ctr.
2 D12 rods
300 x 300 footings

DETAIL X 9

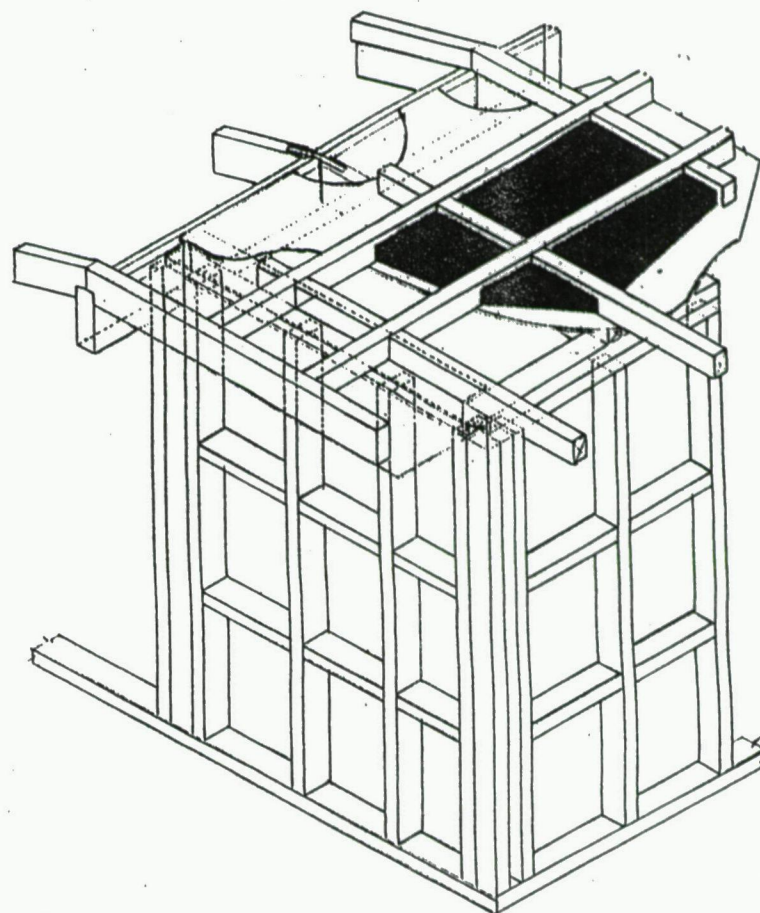


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TAURANGA DISTRICT COUNCIL

FENNS DESIGN
FOOTING DETAIL SCALE 1-50
P SMITH 179 DICKSON ROAD



- A = ridge beam
 B = 100 x 50 fly rafter
 C = 4.5mm hardieflex soffit
 D = 75 x 25
 E = raking plate
 F = 100 x 50 frame double top plate
 G = gibboard ceiling
 H = rafters
 I = insulation
 J = 75 x 50
 K = 75 x 50
 L = 100 x 50 frame studs @ 600 ctrs.



FENNS BUILDERS LTD
 AND ARCHITECTURAL
 SERVICES
 Ph 576 5833 fax 576 6950

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 The NZ Building Code.
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TAURANGA DISTRICT COUNCIL