

17

23
9

BUILDING CONSENT

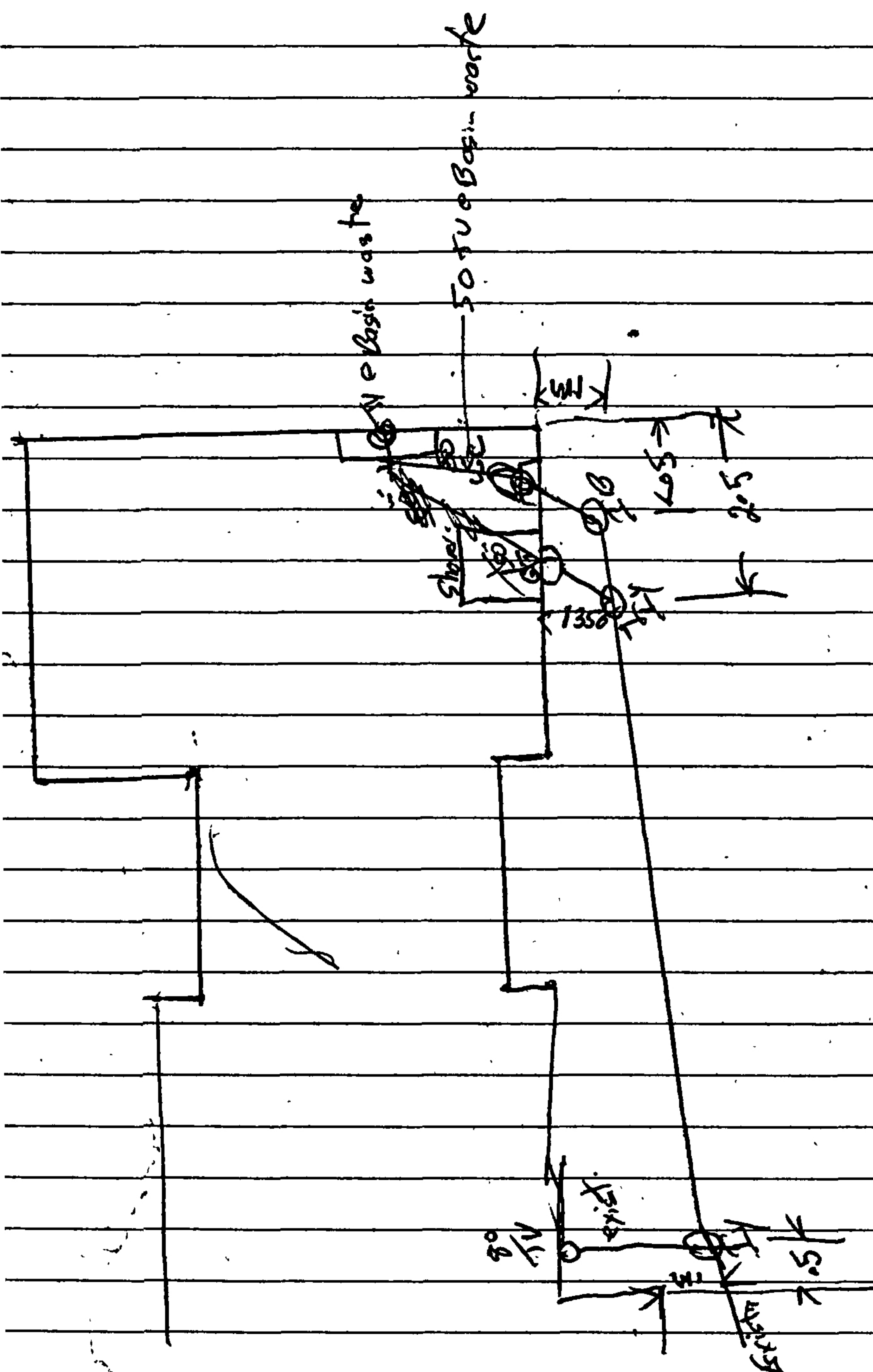
109991P

PROPERTY ID

098607

 109991P

16 Beach Rd. Urenui
BC N/10999,



707397

A Producer Statement (PS3) will be required from the installer/applicator for the installation/application of the following item/s:

WATER PROOF MEMBRANES
TO WET AREAS

NPDC OFFICE COPY
This Building Consent is approved under the Building Act and is limited to new work only as shown on these plans and related specifications

Approved: [Signature] Date: 29/7/10
BC10/109091
2-7-CO

SHEET	REV	CONTENTS
1/8	~	SITE PLAN
2/8	~	PLUMBING & FOUNDATION PLAN
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ALTERATIONS
FOR :
THE BEACH ROAD TRUST
16 BEACH ROAD
URENUI

NPDC Approved
29 JUL 2010

RAD
RIGHT ANGLE DESIGN

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GENERAL

- Contractors are required to comply with the Building act 2004 & the health & safety in employment act 1992 incl all current amendments.
- No building is to commence until a building consent has been issued by the NPDC.
- The builder is to work from the approved consent document only.
- All dimensions are in millimeters.
- Figured dimensions have preference over scaling.
- L 190x90 = Denotes Lintel Size.

REINFORCING

- Mild steel plain & deformed to comply with AS/NZS 4671 Steel Reinforcing Materials.
- All plain bars to be Grade 300. All Deformed to be grade 300.
- HRC mesh to comply with AS 4671.

FIXINGS & FASTENINGS

- Materials & Protection for all Fixings Fastenings shall comply with Section 4 of NZS 3604.
- Standard ordinary bolts to comply with As 1111. High strength bolts to comply with AS 1252.
- Fix bottom plates to concrete with Hilti HSA M12 x 150 stud anchors or equivalent fixing c/w 50x50x3 sqr washers.

CARPENTRY

- All construction to comply with NZS 3604 1999 ammendment 2 & the NZ Building Code. Very Wind & Earthquake A.
- All materials to comply with NZS 3602: 2002.
- All timber treatment to comply with NZS 3602 2003.
- All timber sized in accordance with NZS 3604 VSG8 / MSG8 tables.
- All Exterior framing to be H1.2 min & Interior framing to H1.2 unless otherwise noted.

FOUNDATIONS & SLAB

- All concrete work to conform to NZS 3109.
- Extend foundations to a minimum of 300mm into good ground or as otherwise shown or specified on Engineering drawings.
- All concrete to be high grade to conform to NZS 3109.
- Concrete to have a minimum compressive strength after 28 days of:
 - 17.5 MPa for unreinforced concrete.
 - 20 MPa for reinforced concrete.
- Minimum concrete cover to steel:
 - 75mm when concrete placed on or against ground.
 - 50mm in all other situations where concrete is placed in formwork
 - 30mm from top of slab to mesh in an enclosed area.
 - 50mm from top of any exposed slab.
- Floor: 100mm Conc' slab: 665 mesh, 0.25 polythene dpc on 25mm sand blinding on 150mm compacted hardfill.

- Sawcuts & Control Free Joints: As Per Engineers specifications

- Sawcuts to be carried out with 48 hrs of placement of slab.

EXTERIOR WALLS

- 90x45 H1.2 framing at 450crs where noted on plans. Top Pate to be Double 140x35.
- Exterior cladding - Graphex by Plaster Systems Limited on drain cavity system on Tekton Building wrap.

INTERIOR

- 90x45 H1.2 framing at 600 crs Nogs to be at 800 crs max. Top Pate to be Double 90x45.
- All walls to be lined with 10mm Gib-Bd unless otherwise noted. All wet area linings to be:
 - Walls: 10mm Gib Aqualine.
 - Shower Walls: 9mm Villaboard
 - Ceilings: 13mm Gib Aqualine
- 55mm Gib cove to flat ceilings.
- All Ceilings 13mm Gib Ultra Board F4 grade finish.
- 60x12 MDF skirting.
- Interior doors: Flush Hollow Core P/Q, 1980mm high throughout.
- 93x19mm pine jambs, 40x12 MDF architraves.
- Internal Door Handles to be owner selected.
- Smoke detectors to be installed as per NZBC F7.
- Tiled shower floor and walls to Ensuite: Water proof membrane system to be Davco K10 plus, Branz Appraisal Certificate No.372 (2000).

WINDOW JOINERY

- Aluminium Joinery: All Double Glazed. 2050 head heights unless otherwise noted. P/Q liners, condensation drainers, Obscure glass to Bathroom & Ensuite. Grade A Safety Glass to Bathroom & Ensuite NZS 4223: 308.1 (b) Table 3.D4
- Aluminium Joinery to comply with: NZS 4223 / NZS 3504 / NZS 4211.
- Manufacturer to verify all measurements on site before fabrication.

ROOF:

- Gangnail trusses at 900 crs max at 25° roof pitch
- Onduline Roofing to match existing fixed and installed as per manufacturers Specifications .
- Ex 200x25 H3.2 Fascias to match existing c/w Deep quad gutter.
- Colorsteel Down pipes to match existing.
- Roof Bracing to comply with NZS 3604 Table 10.1.
- All Fixings to comply with NZS 3604 Very High Wind Zone:
 - Trusses- As per Table: 10.12.
 - Rafters- As per Table:10.2.
 - Purlins- As per Table:10.9.
 - Truss fixings: 2/100x3.75 skewed nails + 4 wire dogs or 2/ Lumberlok CT200's.
 - Purlin fixings: 2/100x3.75 skewed nails + 1 wire dog or 2/80x10 gauge Lumberlok Purlin screw (Blue).

INSULATION:

- All insulation to comply with NZS 4214: Thermal resistances. NZS 4218: Energy Efficiency & NZBC clause H1 incl all recent amendments.
- NZS 4218: Scheduled Method Compliance
 - Climate Zone 2
 - Roof R-Value: 2.9min
 - Wall R-Value: 1.9min
 - Floor R-Value: 1.3min
 - Glazing R-Value 0.26min
 - (All Double Glazed Units)
- Insulation: Walls: R2.2 fibreglass min Ceiling: R3.2 fibreglass min

HEATING:

- Rheems 135 litre mains pressure Hot Water Cylinder c/w Aquatherm SHT water reticulation pipe system fitted with Safe Temp Tempering Valve. Compliance to documents B1, B2, E2, G9, & G12

PLUMBING & DRAINAGE:

- All plumbing and Drainage shall be carried out in accordance with the NZ building Code. Plumbing and drainage indicated on these plans are schematic only and the Plumber / Drainlayer shall be responsible for all works and to be carried out to local Territorial Authorities requirements.
- Water supplies and foul water shall comply with Approved documents G12 of the NZ Building Code.
- Foul water shall comply with Compliance Document clause G13 of the NZBC
- Conceal all pipework & combine all vents wherever possible.
- All penetration through concrete or blockwork to be drilled by Plumber / Drainlayer as required.
- Install a back vent or air admittance valve (aav) where the developed length of discharge pipes exceeds 3.5m from a trapped waste or the developed length of a branch drain exceeds 10m.
- Polyethylene Water Supply Main: Size 32Ø outside 25Ø inside.
- Aquatherm SHT water reticulation pipe system fitted with Safe Temp Tempering Valve.
- Polyethylene Water Main: Size 32Ø outside 25Ø inside.

ELECTRICAL:

- New Zealand Electrical codes of Practice ECP50 & ECP51 are exceptable solutions for Electrical installation in Residential dwellings.
- All fittings to be owner select & to be compliant.
- Positions of electrical fittings to be determined upon walk through Registered Electrician.

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RIGHT ANGLE DESIGN

project:

THE BEACH ROAD TRUST

16 BEACH ROAD

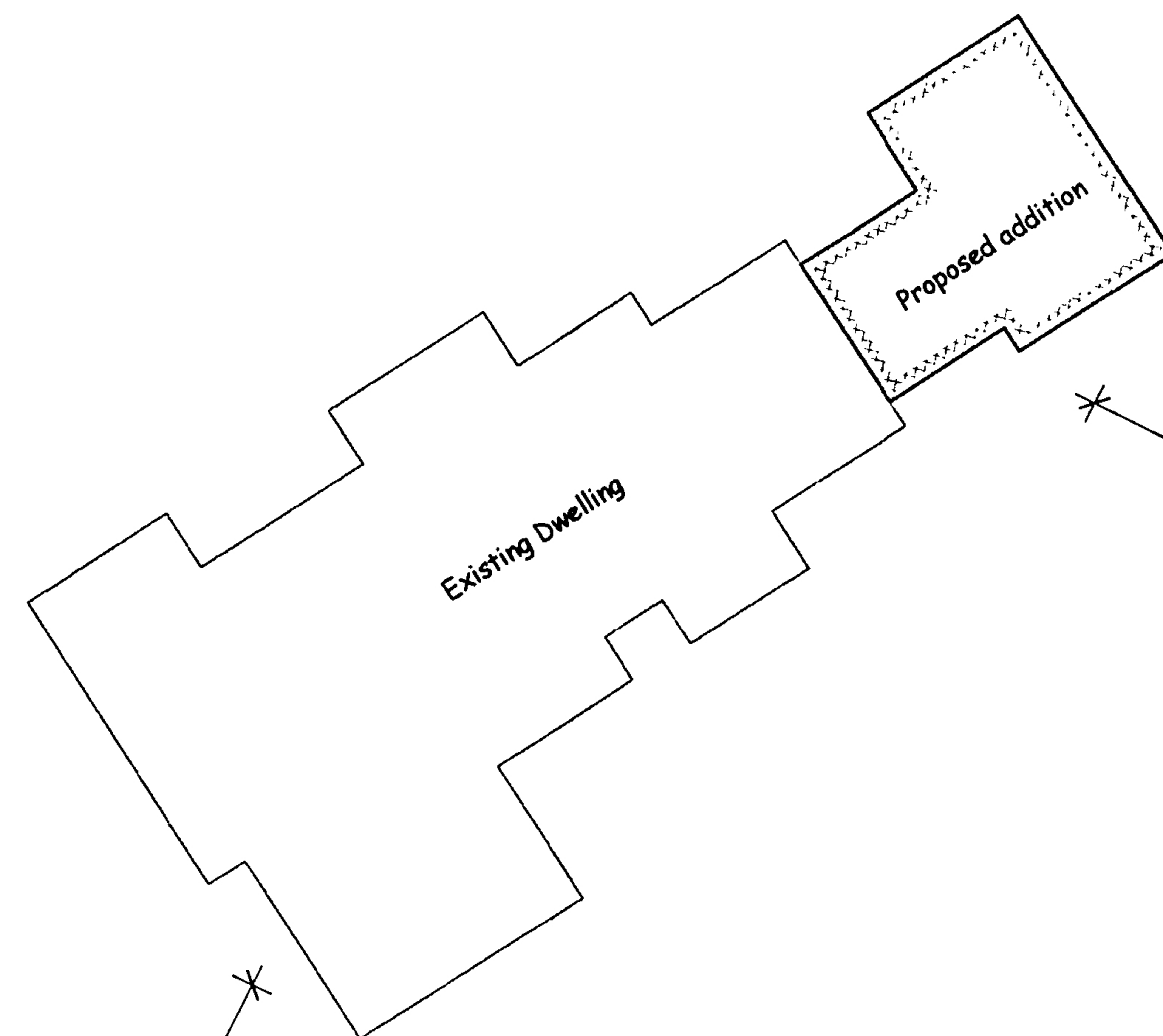
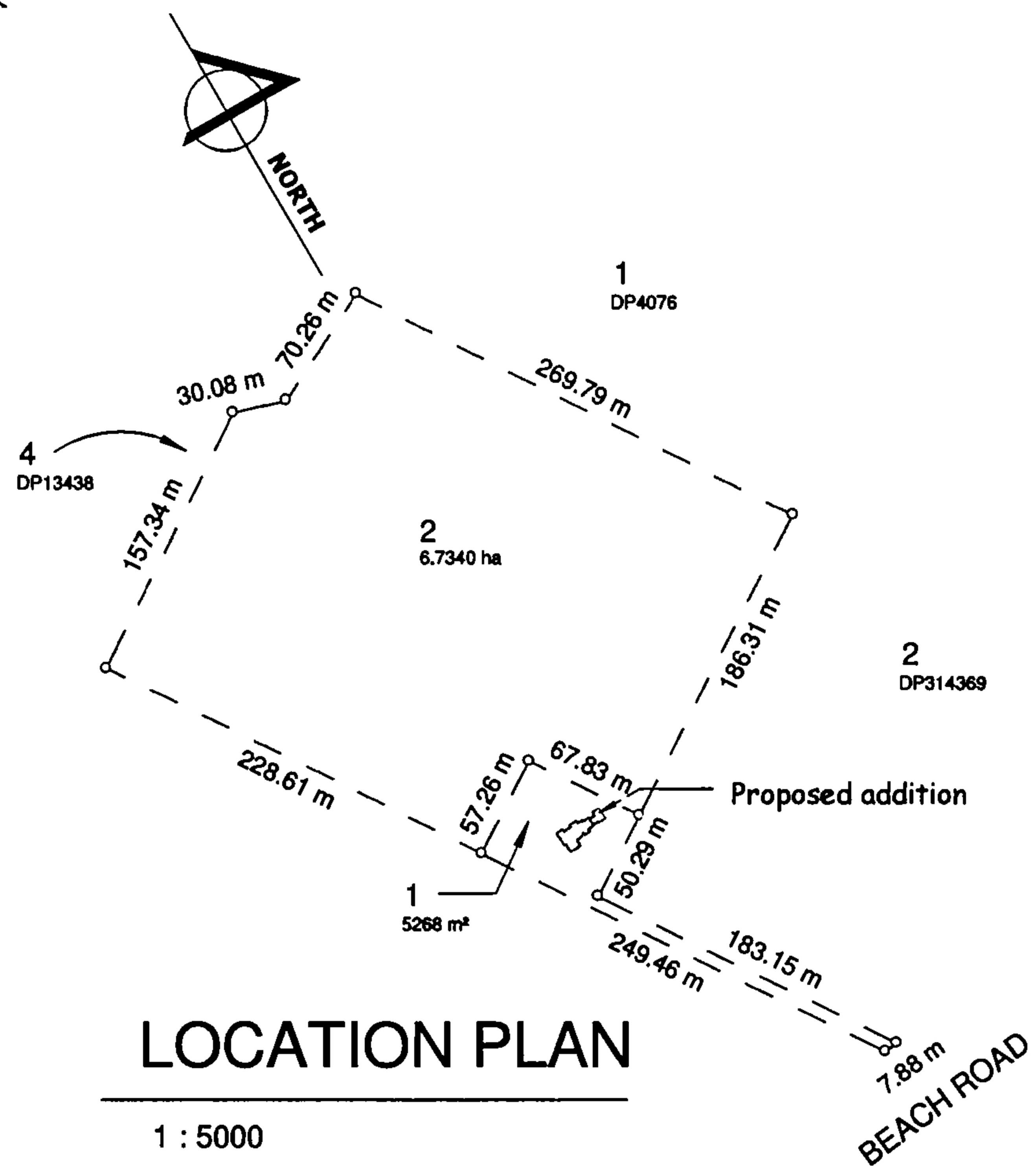
URENUI

drawings:

SPECIFICATION

1 : 100 0

scale: sht: rev:



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29 JUL 2010

project:
THE BEACH ROAD TRUST
16 BEACH ROAD
URENUI

drawings:
SITE PLAN

As indicated 1 A
scale: sh: rev:

Revision: A 08-07-10 - Amended Site & DP

CHECK ALL DIMENSIONS DO NOT SCALE IF IN DOUBT ASK

NOTES

1. All plumbing and Drainage shall be carried out in accordance with the NZ building Code. Plumbing and drainage indicated on these plans are schematic only and the Plumber / Drainlayer shall be responsible for all works and to be carried out to local Territorial Authorities requirements.
2. Water supplies and foul water shall comply with Approved documents G12 and G13 of the NZ Building Code.
3. Conceal all pipework & combine all vents wherever possible.
4. All penetration through concrete or blockwork to be drilled by Plumber / Drainlayer as required.
5. Install a back vent or air admittance valve (aav) where the developed length of discharge pipes exceeds 3.5m from a trapped waste or the developed length of a branch drain exceeds 10m.

WASTE PIPE & DISCHARGE UNITS

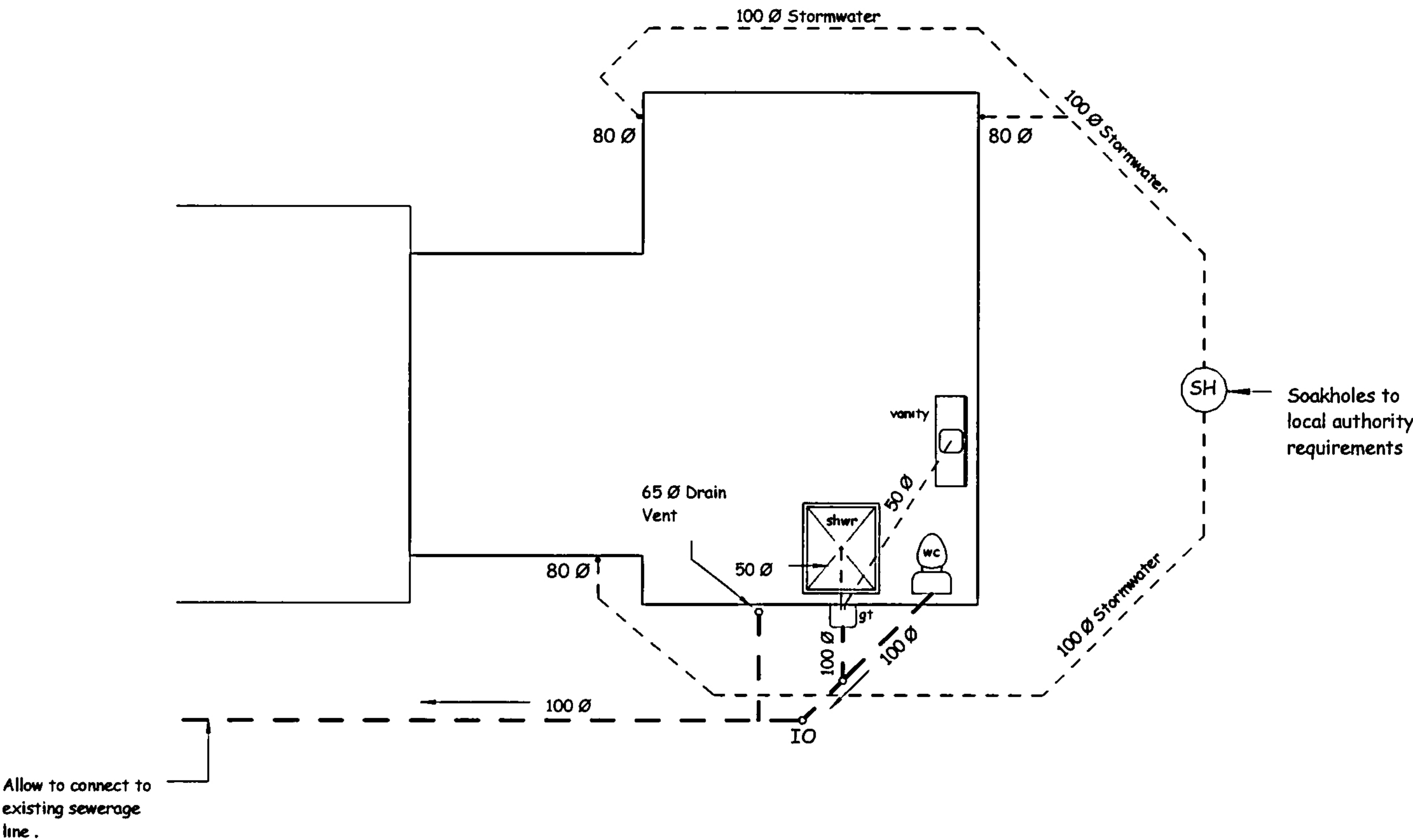
- 32 dia - Hand Basin (1 DU)
40 dia - Kitchen Sink (4 DU)
- Tub (5 DU)
- Shower (2 DU)
- Bath (4 DU)
- Washing Machine (5 DU)
80 dia - WC Pan (4 DU)

WASTE PIPE MINIMUM GRADIENTS

- 32 dia - 1:20 min gradient (1 DU)
40 dia - 1:40 min gradient (4 DU)
50 dia - 1:40 min gradient (8 DU)
80 dia - 1:60 min gradient (16 Du)
100 dia -1:60 min gradient (115 Du)

DRAIN PIPE MINIMUM GRADIENTS

- 100 dia -1:120 min gradient (104 Du)

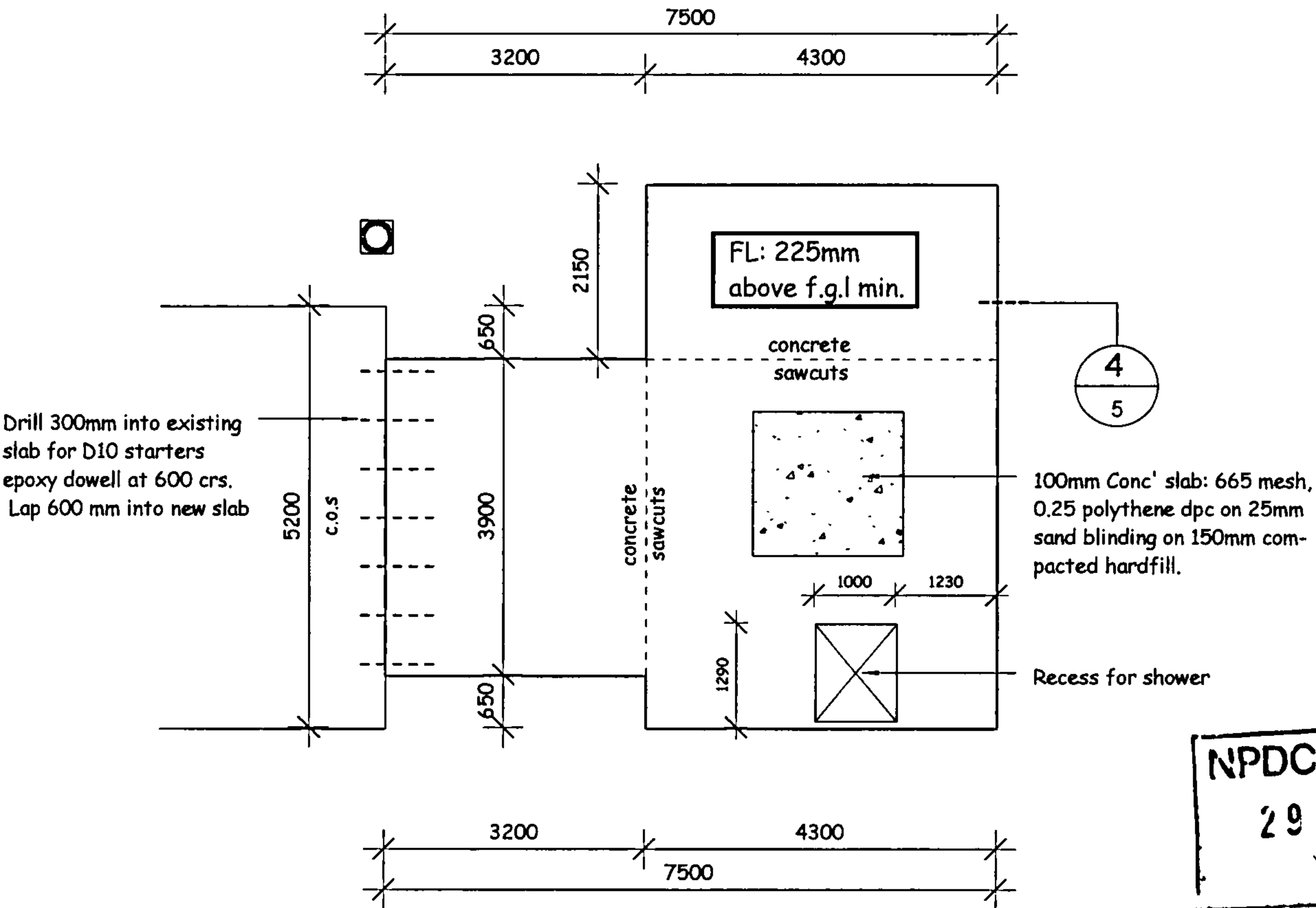


PLUMBING & DRAINAGE PLAN

1 : 100

NOTES

1. All Concrete work shall conform to NZS 3109.
2. Extend foundations to a minimum of 300mm into good ground or as otherwise shown on drawings.
3. Concrete shall have a minimum compressive strength of 20 MPa at 28 days.
4. Place floor slab on 0.25mm Polythene, 25mm sand blinding and 150mm compacted hardfill.
5. Sawcuts to slab to be 5mm wide x 25mm deep.
6. Refer to Section 4 NZS 3604 for protection required for fixings and fastenings.



FOUNDATION PLAN

1 : 100

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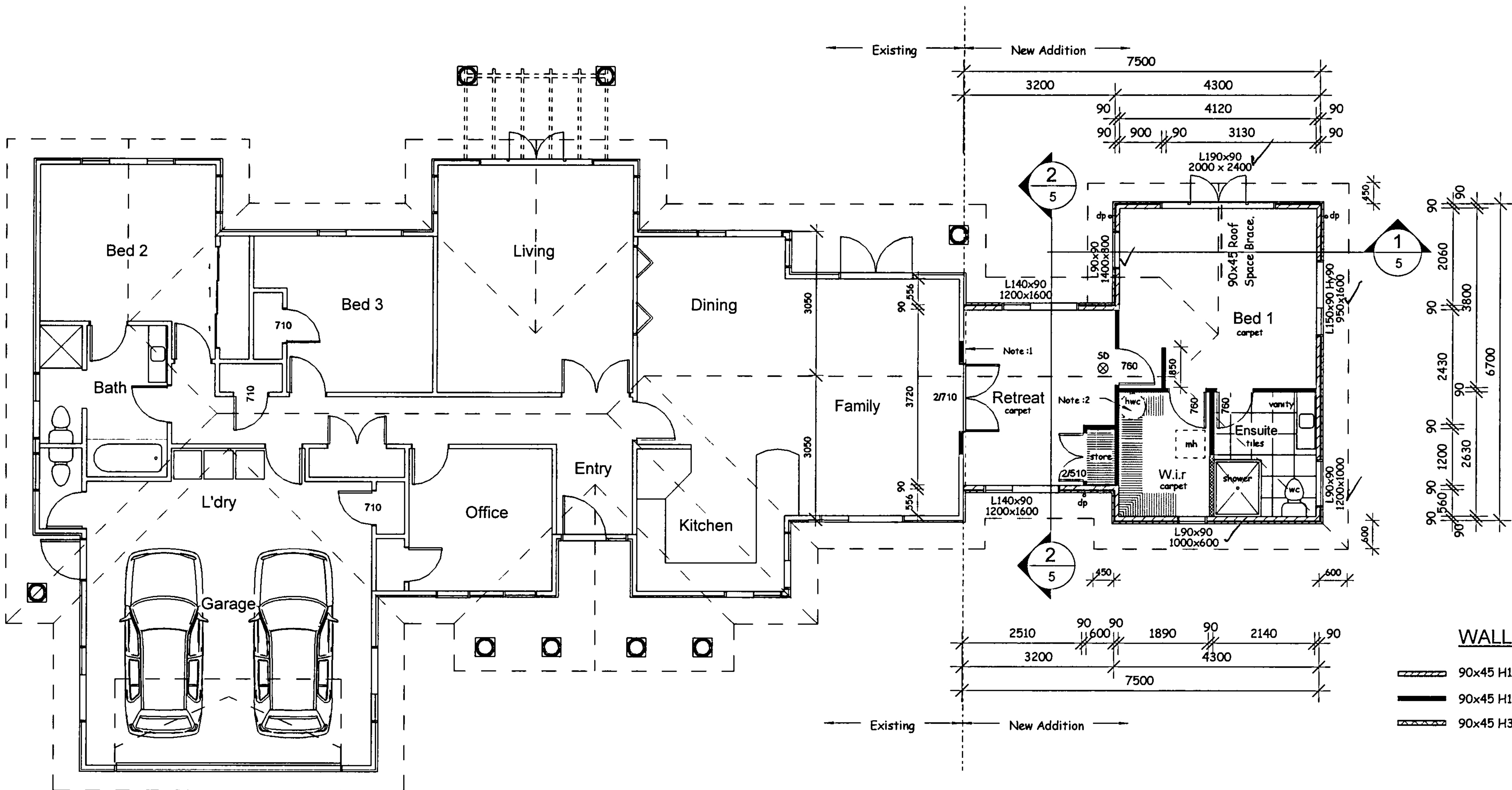
R.A.D.
RIGHT ANGLE DESIGN

project:
THE BEACH ROAD TRUST
16 BEACH ROAD
URENUI

drawings:
PLUMBING &
FOUNDATION PLAN
1 : 100 2

scale: sht: rev:

- Notes:
1. Remove existing Insulclad cladding & 1400x2400 window and replace with 2/710 double doors frame up as required, make good existing framing. Gib-bd lining both sides.
 2. Rheems 135 litre mains pressure Hot Water Cylinder in roof space
 3. 9mm Villa board wall substrate for tiled shower



PROPOSED FLOOR PLAN

1 : 100 AREA = 40 SQR M

WALL LEGEND

- 90x45 H1.2 framing at 450 crs max (Exterior)
- 90x45 H1.2 framing at 600 crs max (Internal)
- 90x45 H3.2 framing at 600 crs max (Internal wet areas)

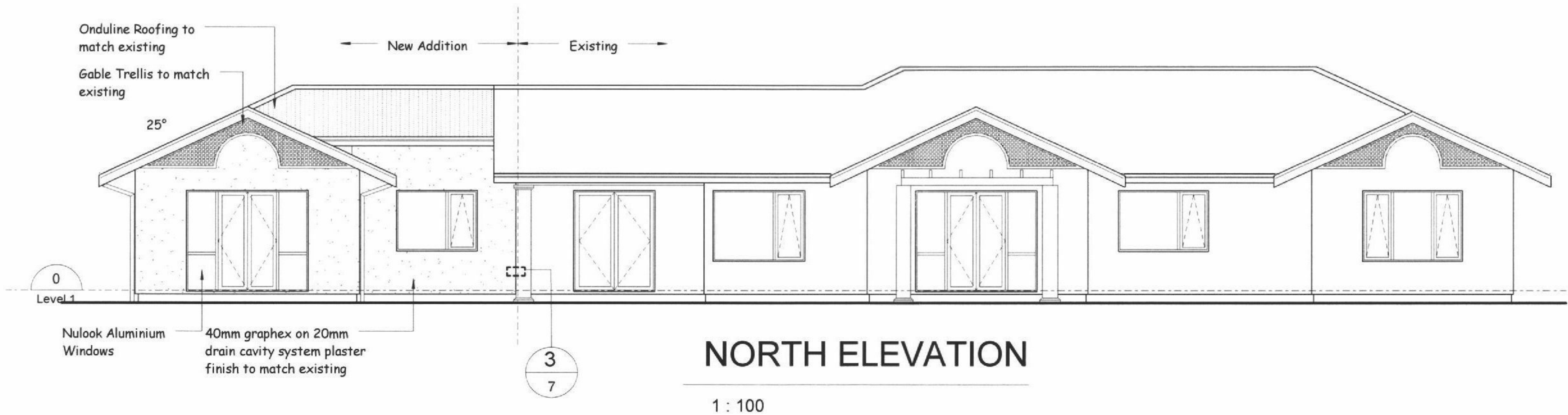
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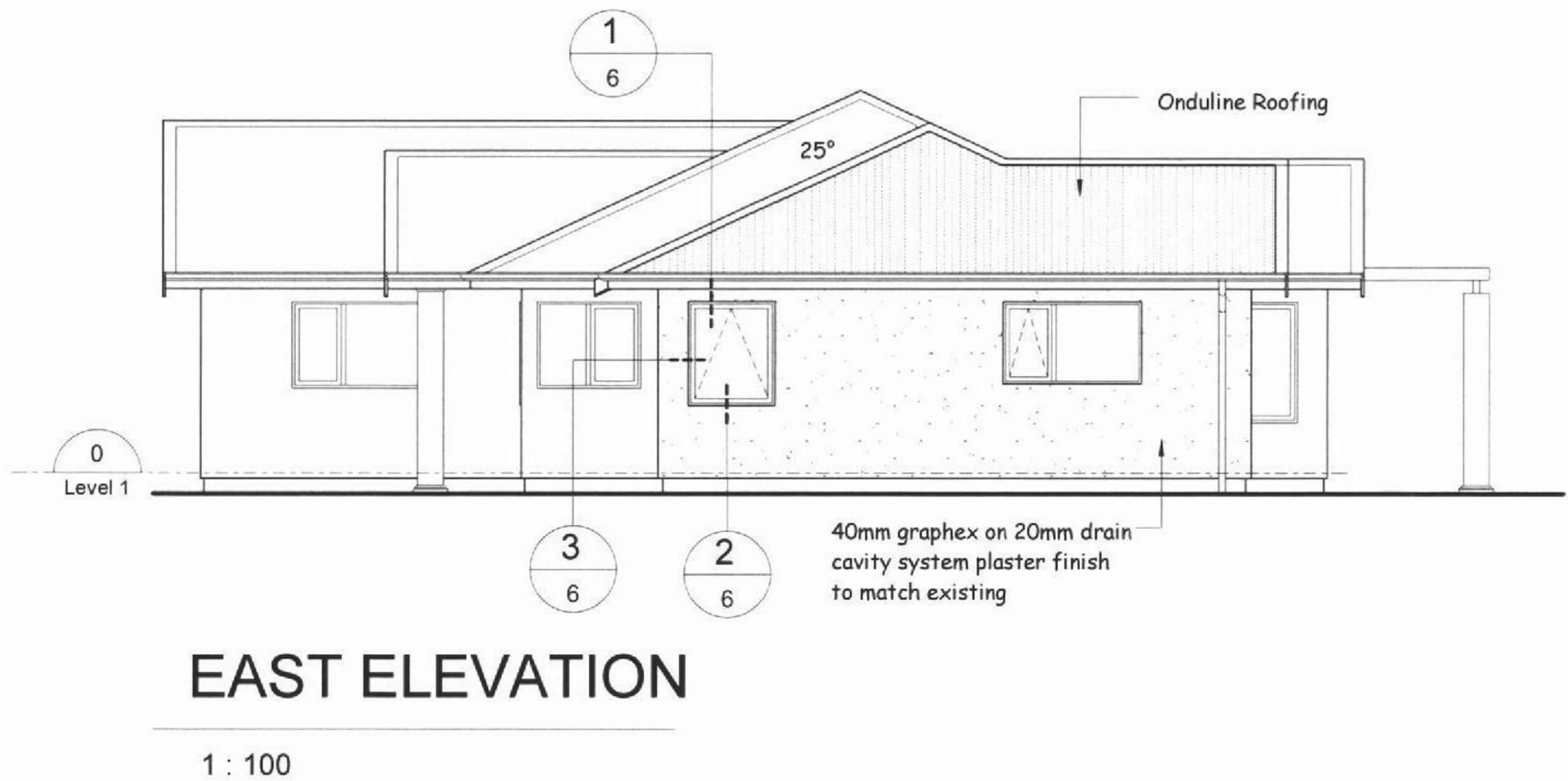
project:
THE BEACH ROAD TRUST
16 BEACH ROAD
URENUI

drawings:
PROPOSED FLOOR
PLAN
1 : 100 3

scale: sht: rev:



RISK MATRIX		
Wind Zone :	VH	2
No Stories :	Low	0
Roof Wall Intersection :	V High	6
Eave Width :	Med	1
Envelope Complexity :	Low	0
Deck design :	Low	0
Worst case	Total	9



ENERGY EFFICIENCY

To comply with NZBC clause H1

NZS4218: Schedule Method Compliance

Climate Zone : 2

Roof R-Value: 2.9 min (R3.2 Pink Batts specified)

Wall R-Value: 2.0 min (R2.2 Pink Batts specified)

Floor R-Value : 1.3 min

Glazing R-Value: 0.26 min (All Double Glazed)

Total Glazing %: 20.5%

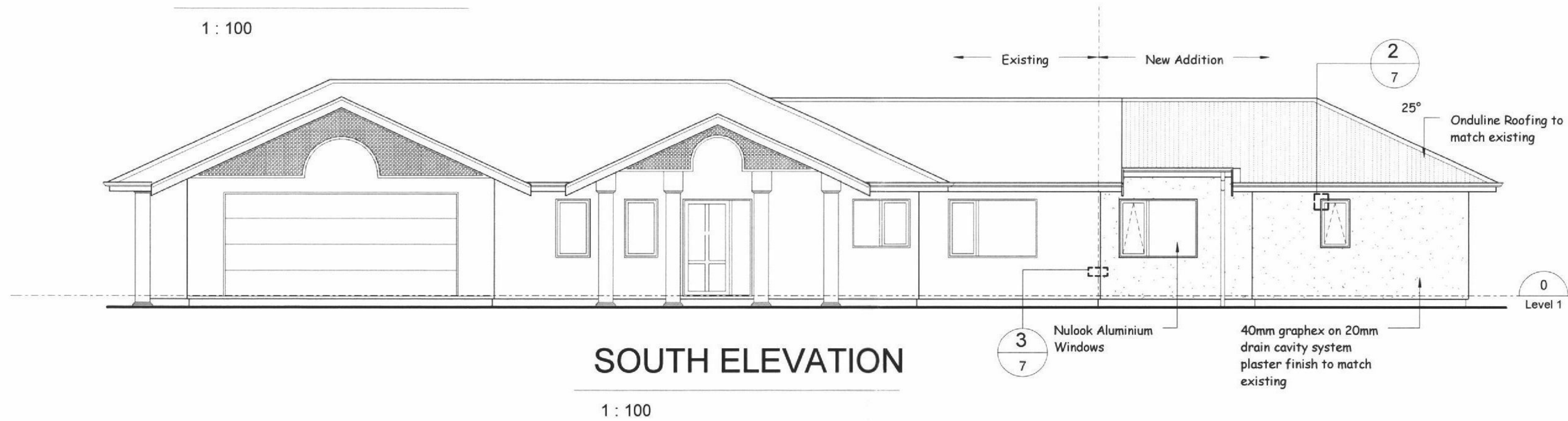
E, S, W Glazing %: 14.0%

Total Glazing over 30%: NO

E, S & W over 30%: NO

Total over 50%: NO

Heat Loss -: Reference (145) Actual (117)



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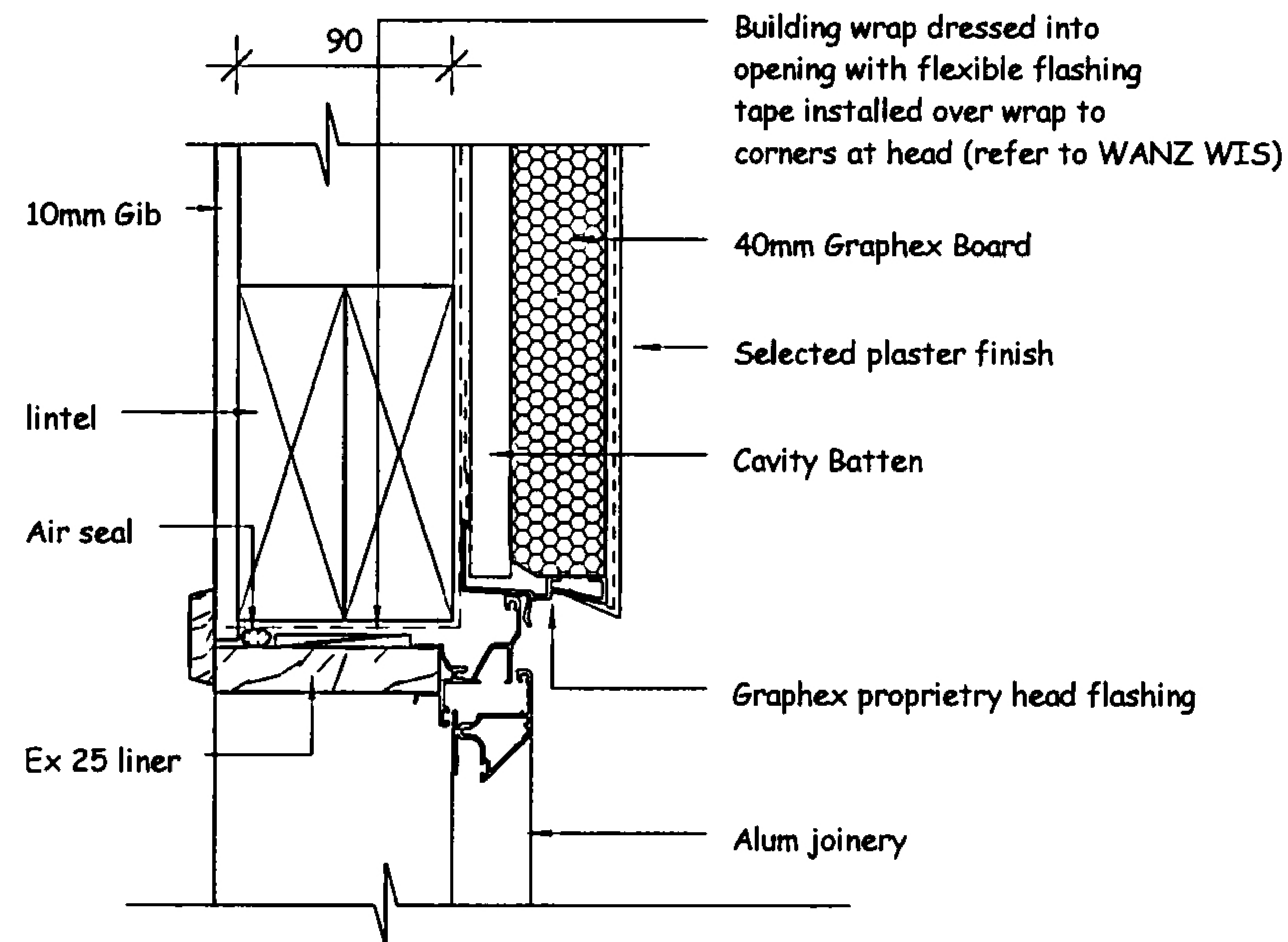
URENUI

drawings:

ELEVATIONS

1 : 100 4

scale: sht: rev:

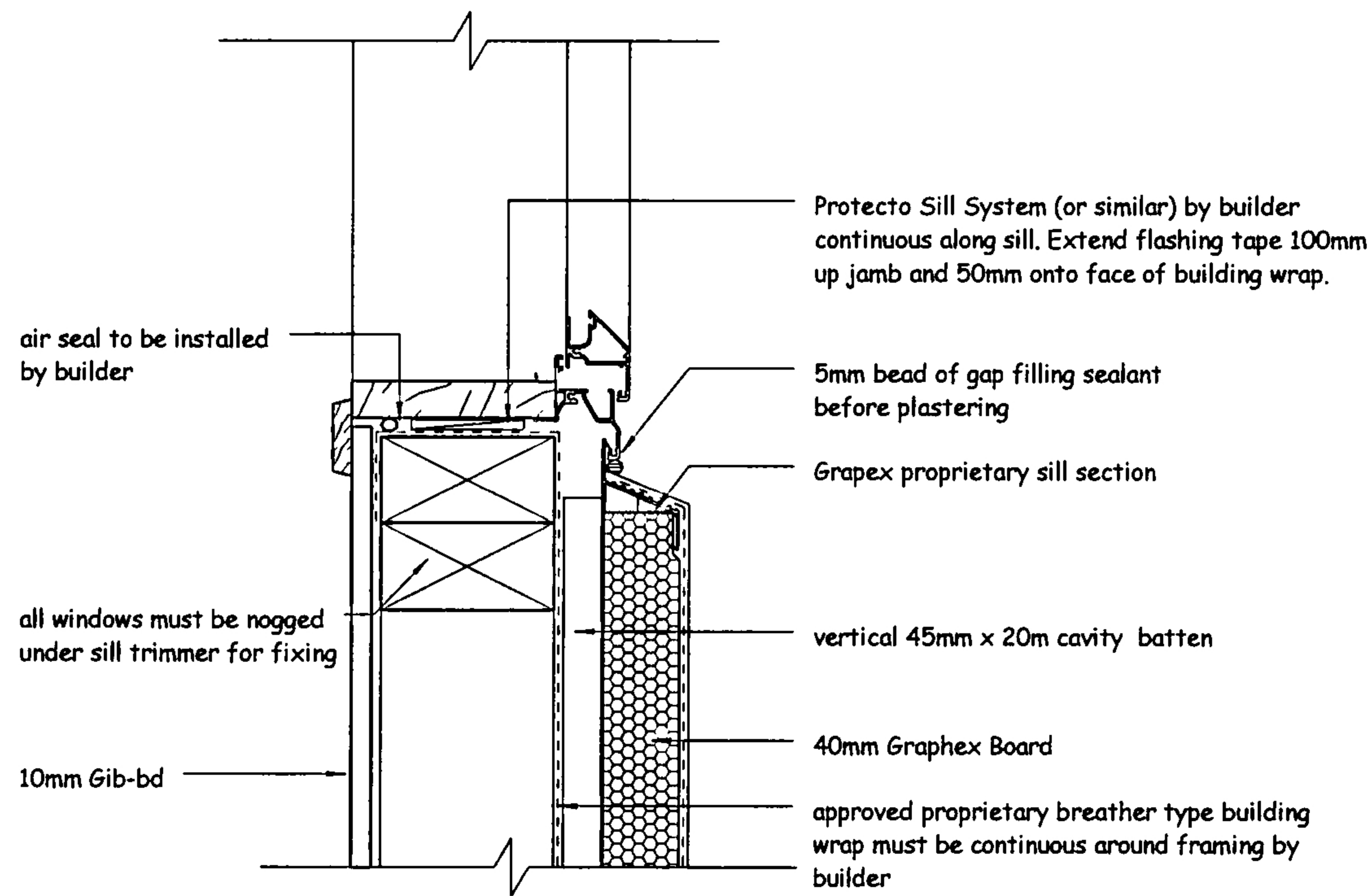


Window Head (Graphex)

1

4

1 : 5



Window Sill (Graphex)

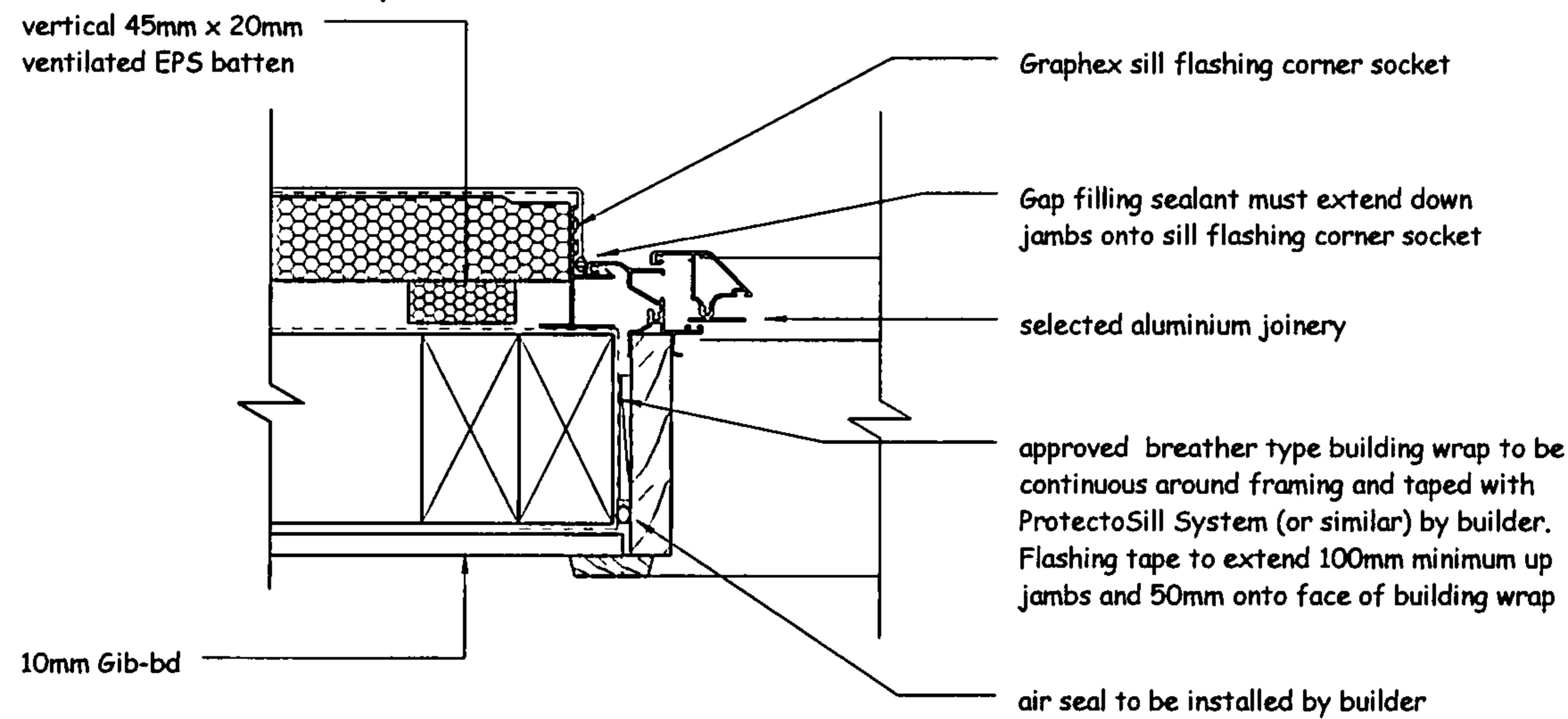
2

4

1 : 5



Note: A 5°sloped sill trimmer must be used if the back of the glazing pocket is positioned back past the line of frame



Window Jamb (Graphex)

3

4

1 : 5



Jambs & Head flashing must be sealed or PVC welded where they intersect

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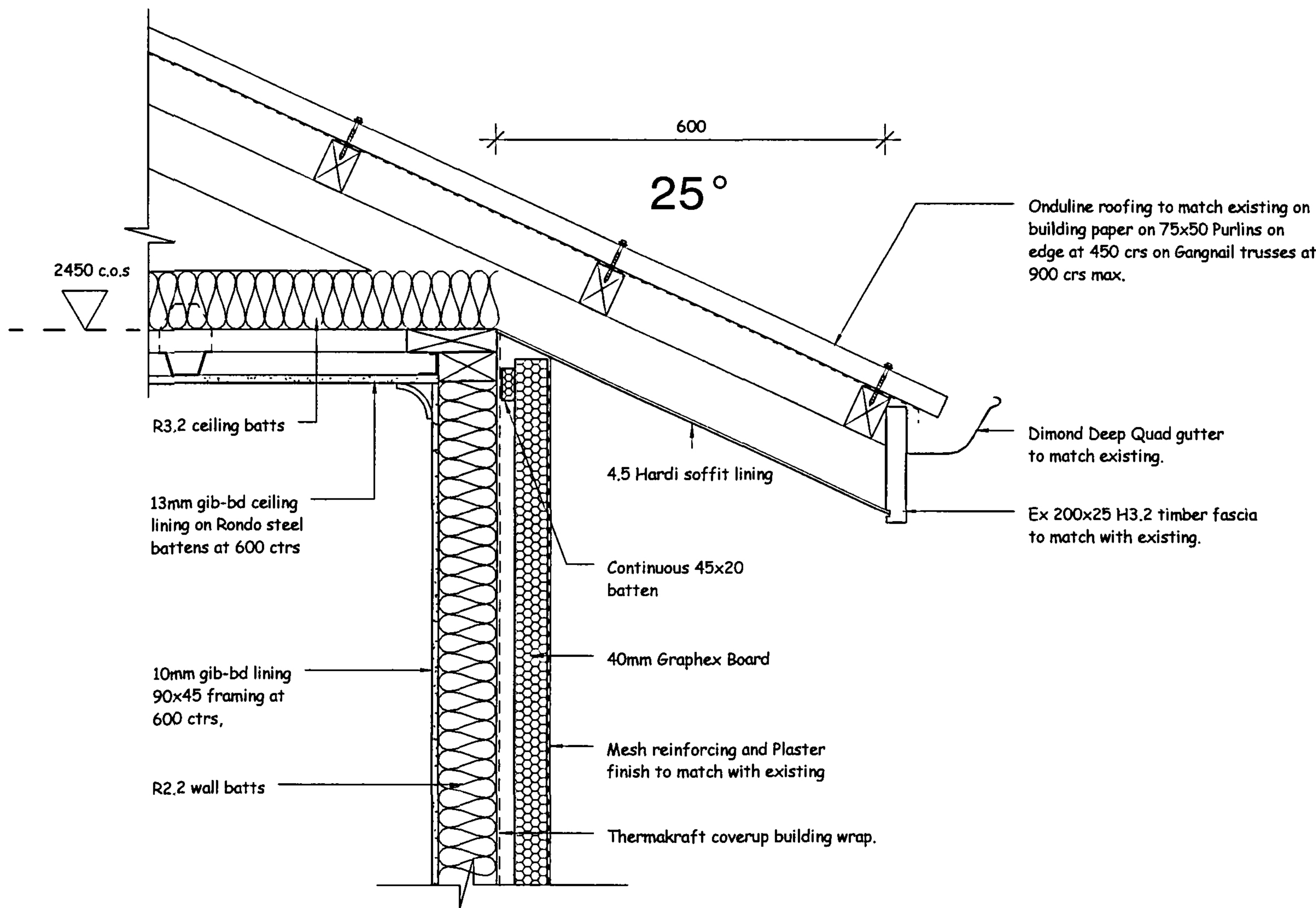
29 JUL 2010

RIGHT ANGLE DESIGN

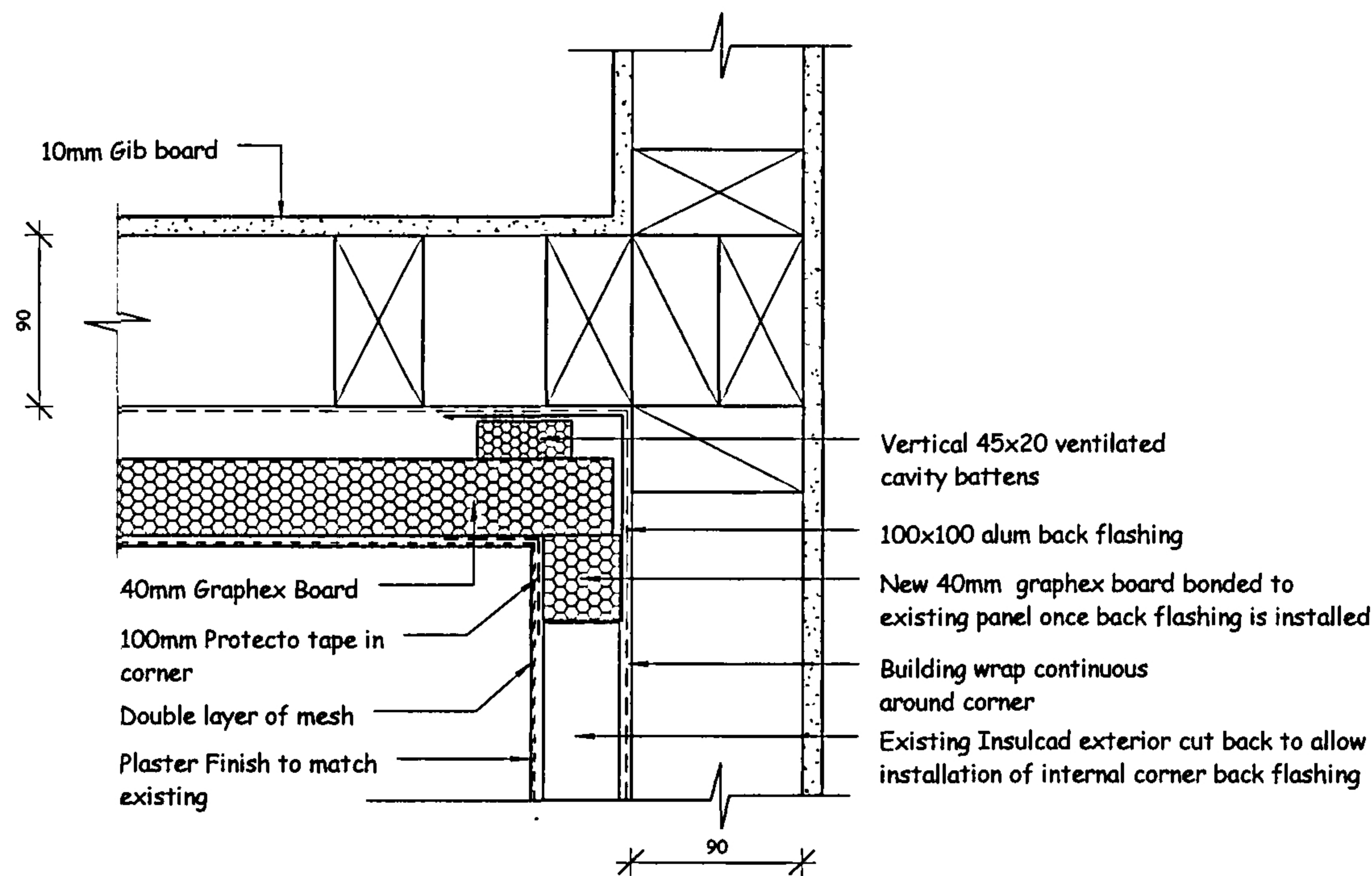
project:
THE BEACH ROAD TRUST
16 BEACH ROAD
URENUI

drawings:
DETAILS

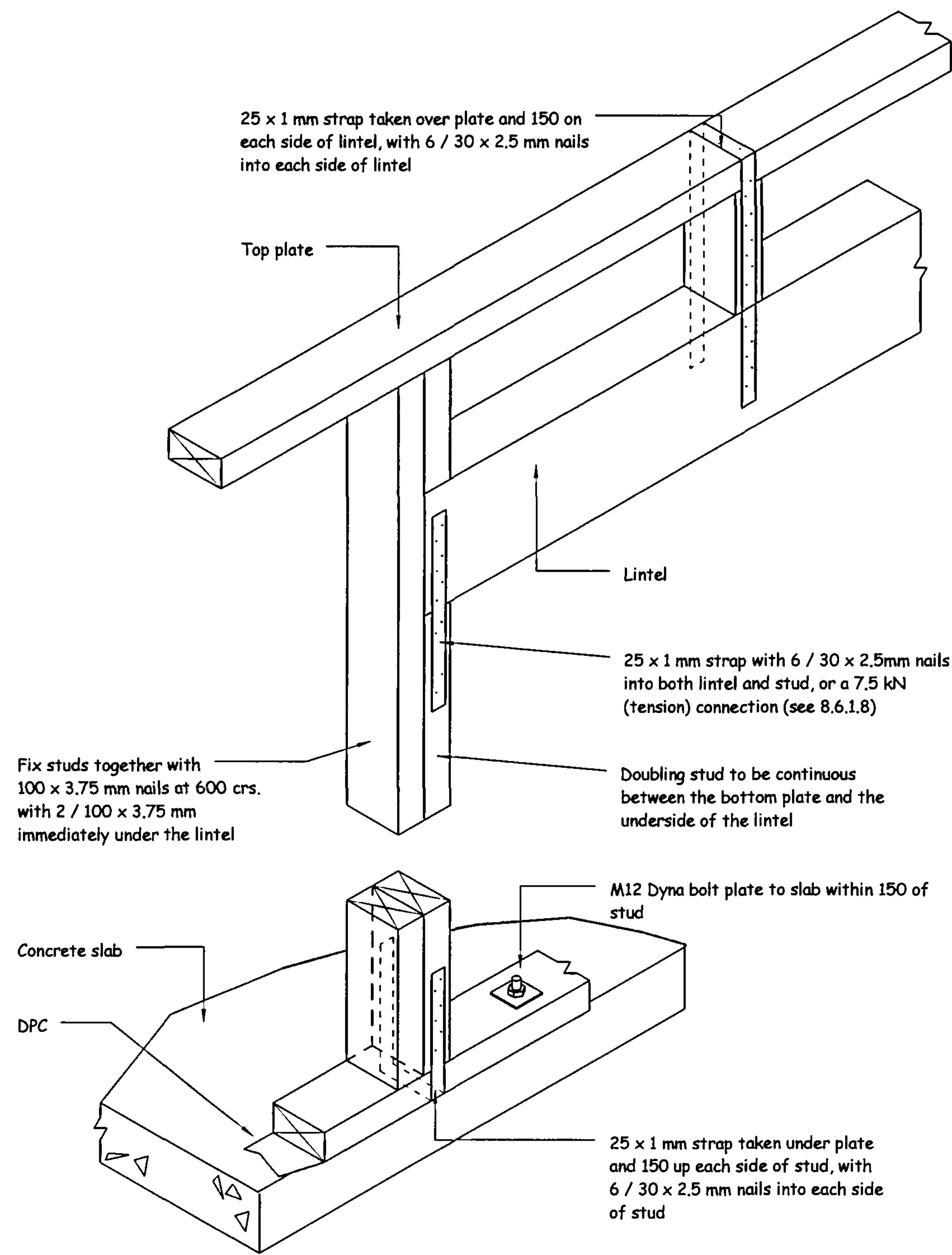
1 : 5 scale: 6 sht: rev:



1
5
Eaves (Graphex)
1 : 10



3
4
Internal Corner at Existing
1 : 5



2
4
Lintel Fixing Detail
1 : 10

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RIGHT ANGLE DESIGN

project:
THE BEACH ROAD TRUST
16 BEACH ROAD
URENUI

drawings:
DETAILS

As indicated 7
scale: sht: rev:

BRACING NOTES

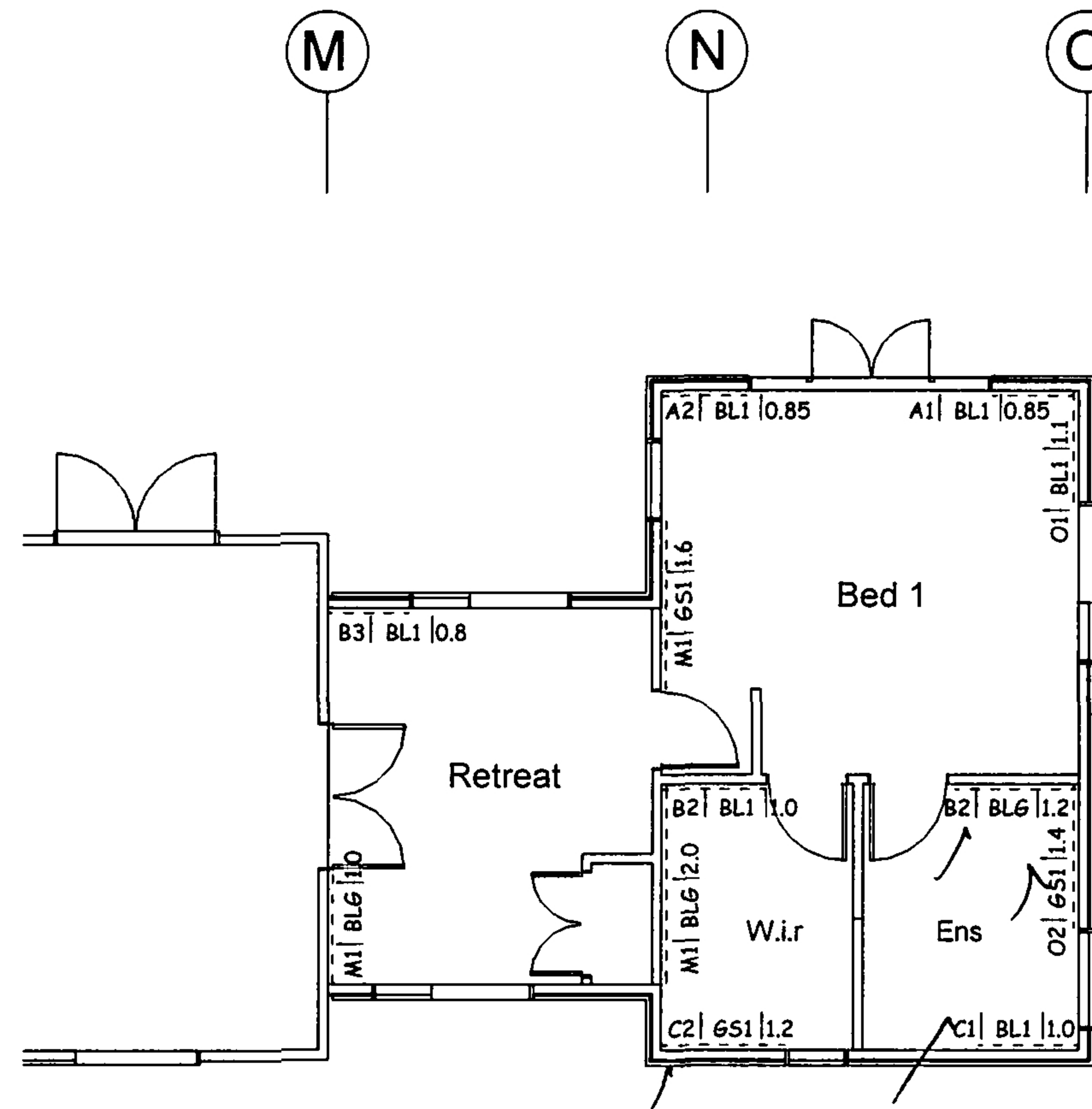
BS1 : 10mm GIB standard Plasterboard.
one face fixed Horizontal or Vertical.
Diagonal Brace Required: **N/A**
0.4m min: (60 BU's per m Wind) (55 BU's per m Eq)
1.2m min: (70 BU's per m Wind) (55 BU's per m Eq)

BS2 : 10mm GIB Standard Plasterboard.
both sides fixed Horizontal or Vertical.
Diagonal Brace Required: **N/A**
0.6m min: (75 BU's per m Wind) (70 BU's per m Eq)
1.8m min: (90 BU's per m Wind) (80 BU's per m Eq)

BL1: Gib Braceline Fixed one side.
fixed Horizontal or Vertical.
Diagonal Brace Required: **N/A**
Hold downs Required: **YES**
0.4m min: (120 BU's per m Wind) (100 BU's per m Eq)
1.2m min: (135 BU's per m Wind) (100 BU's per m Eq)

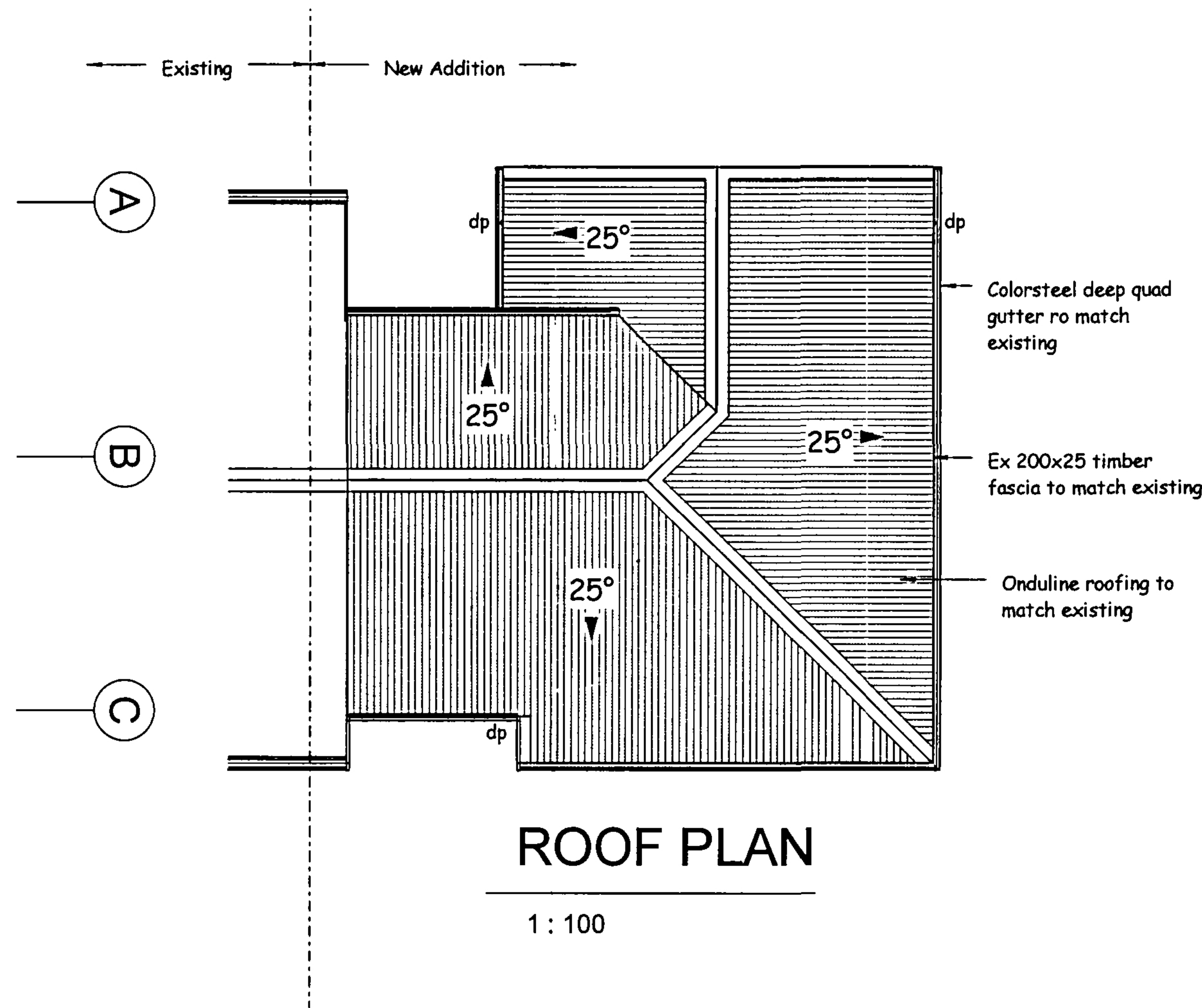
BLP: Gib Braceline Fixed one side.
fixed Horizontal or Vertical. 7.5mm D-D Plywood otherside
Diagonal Brace Required: **NO**
Hold downs Required: **YES**
0.4m min: (135 BU's per m Wind) (135 BU's per m Eq)
0.9m min: (150 BU's per m Wind) (150 BU's per m Eq)

BLG: Gib Braceline Fixed one side.
10mm standard fixed other side fixed Horizontal or Vertical.
Diagonal Brace Required: **NO**
Hold downs Required: **YES**
0.6m min: (145 BU's per m Wind) (135 BU's per m Eq)
1.2m min: (150 BU's per m Wind) (135 BU's per m Eq)



BRACING PLAN

1 : 100



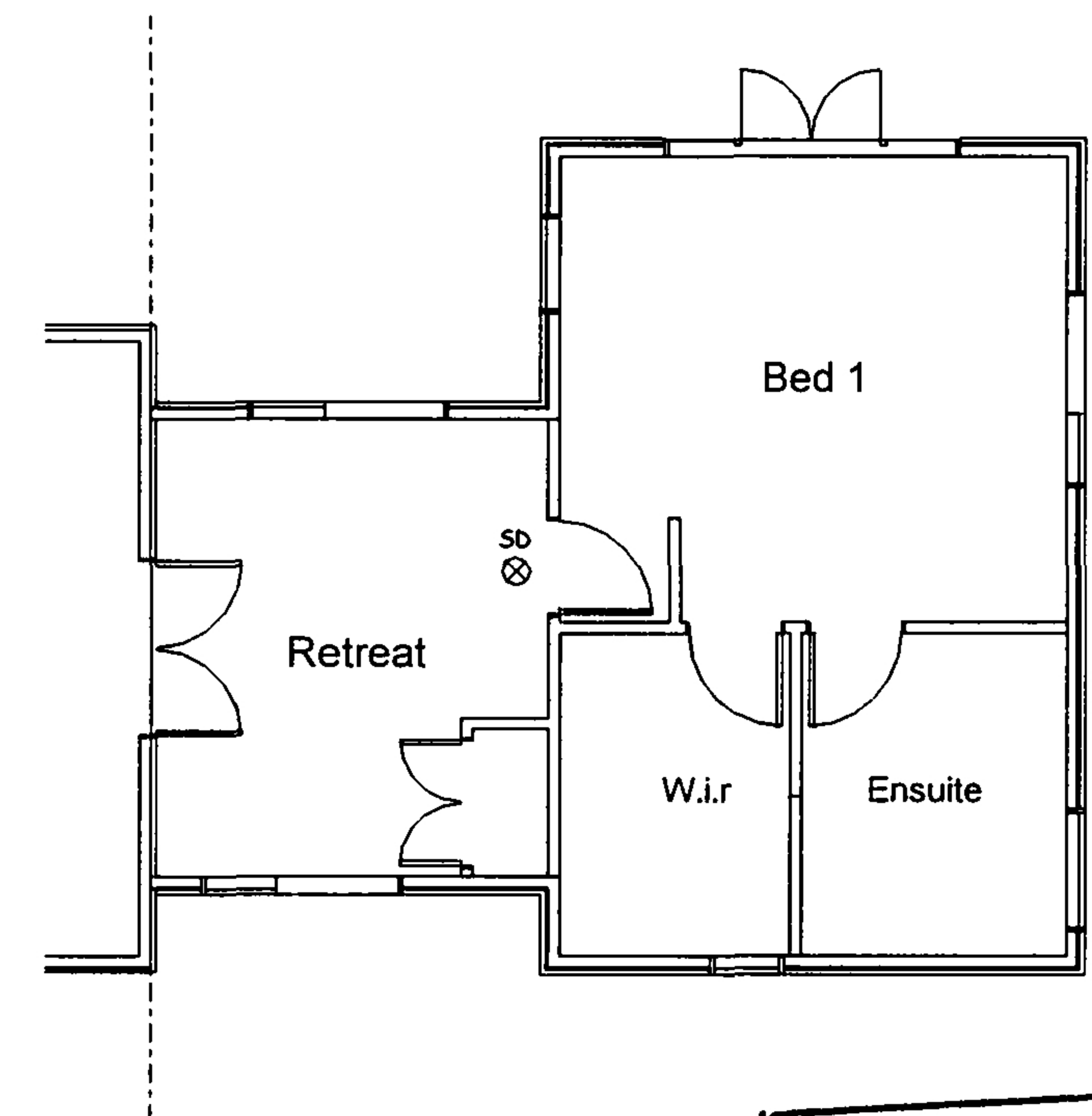
ROOF PLAN

1 : 100

CHECK ALL DIMENSIONS DO NOT SCALE IF IN DOUBT ASK

	Fan		Rangehood
	Smoke Detector		Oven
	Fan/Light/Heater		Microwave
	Switch		TV coax
	Security Lights		Internal Wall mounted light
	Recessed downlight (CA type)		External Wall mounted light
	Exterior light		Heated towel rail
	Batten Lights		Shaver point
	Low voltage halogen (CA type)		Residual Current Device
	Phone		Computer
	Power outlet		Meter board
	Double Power outlet		Distribution board
	Hobs		

ELECTRICAL LEGEND



ELECTRICAL PLAN

1 : 100

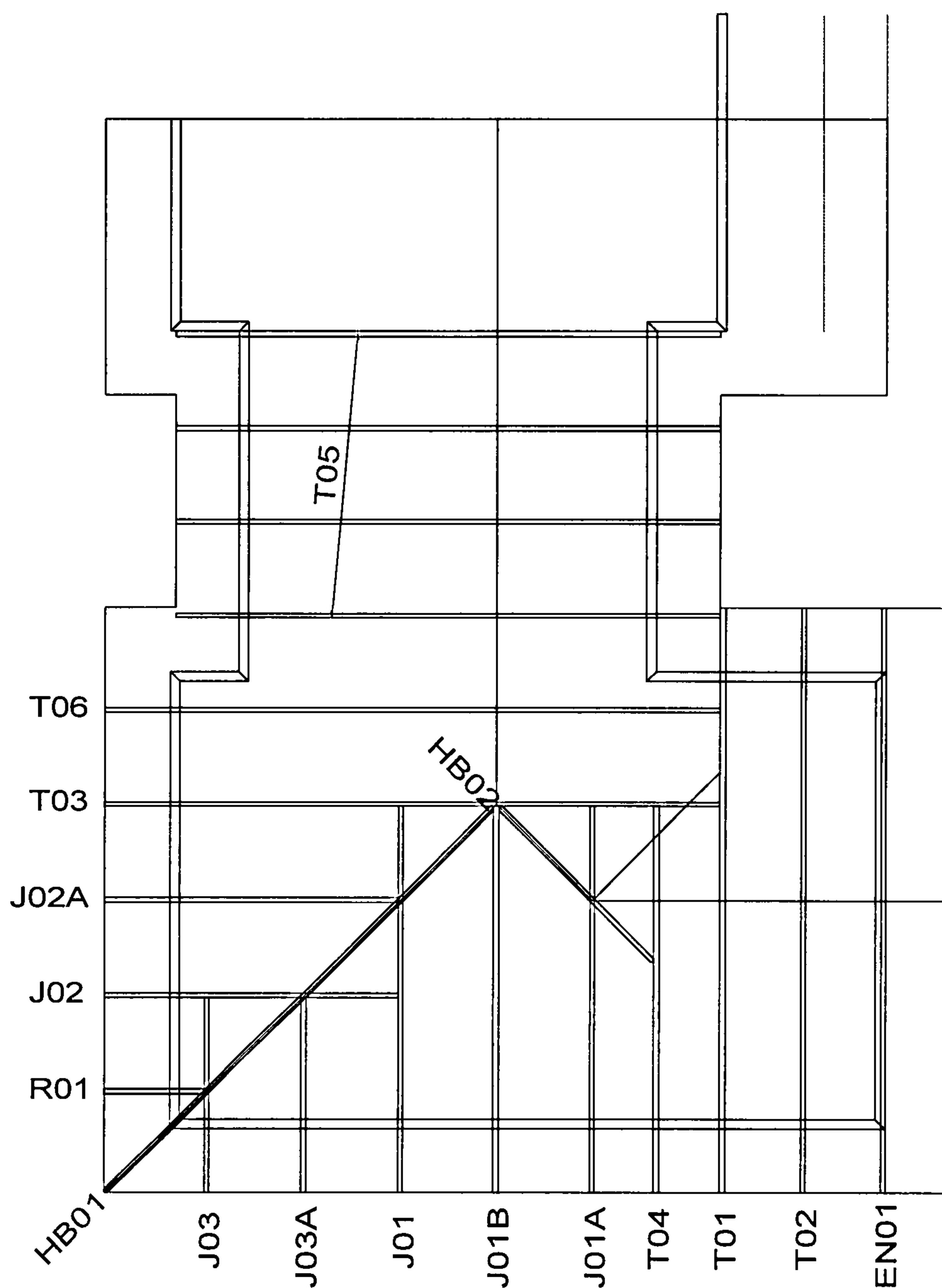
Approved
29 JUL 2010

RAD
RIGHT ANGLE DESIGN

project:
THE BEACH ROAD TRUST
16 BEACH ROAD
URENUI

drawings:
BRACING - ROOF &
ELECTRICAL PLAN
1 : 100 8

scale: sht: rev:

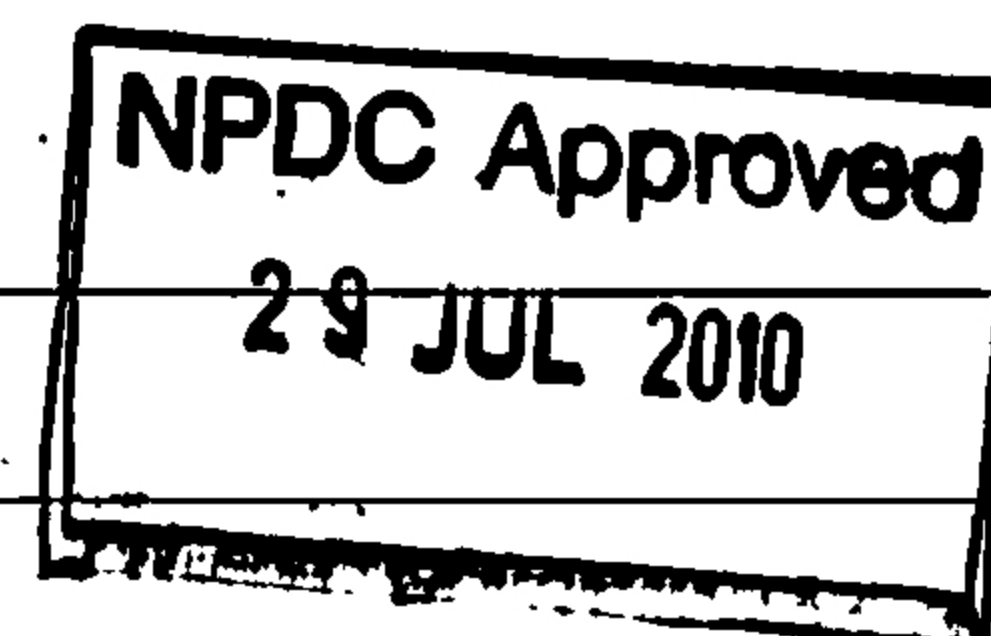


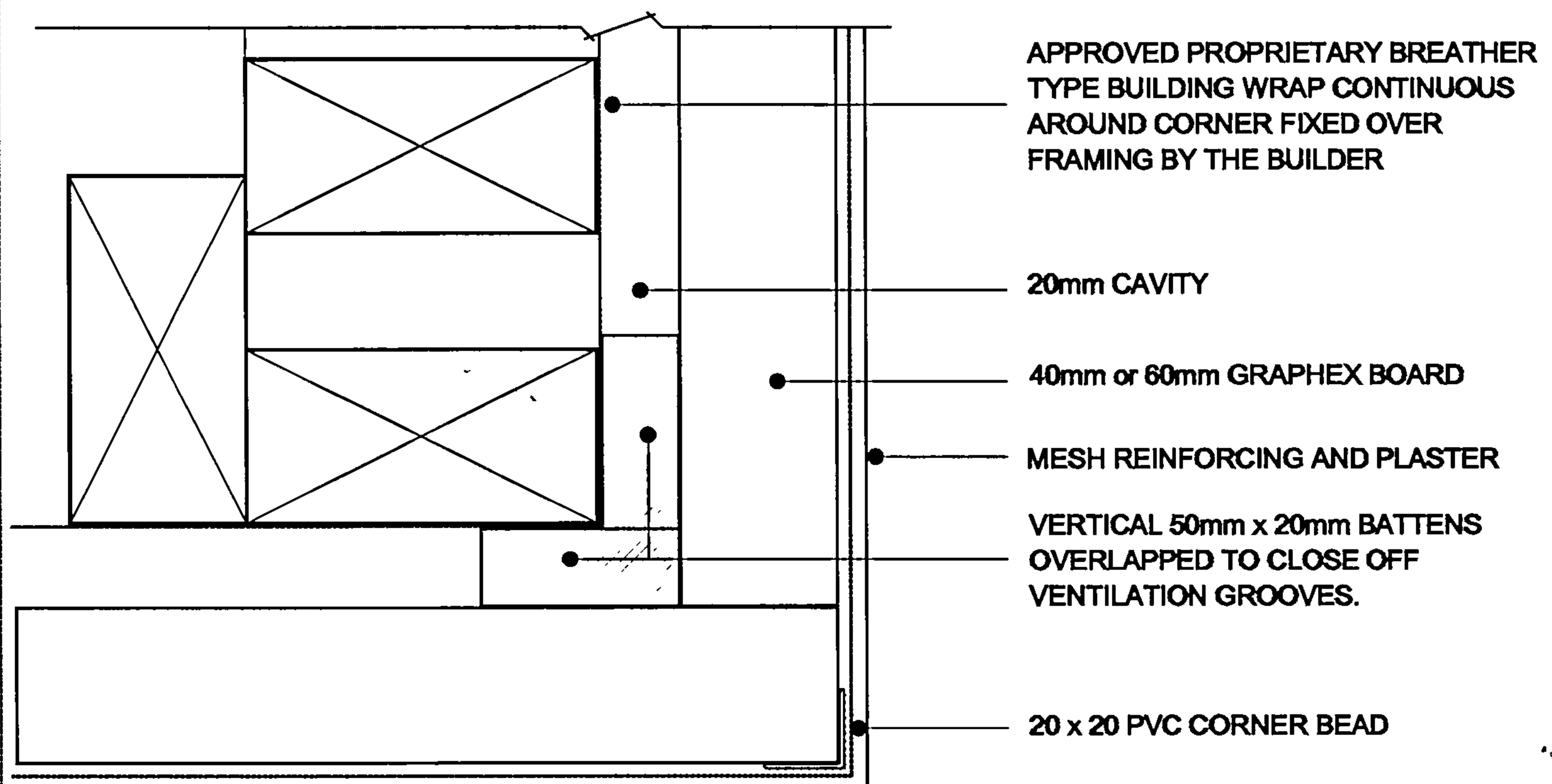
Job Details:

Snow Zone:	0.000 ()	Snow Altitude:	0 m
Wind Area:	Very High	Design Wind Speed:	50.0 m/s
TC Restraints:	1200 mm	BC Restraints:	400 mm
Roof Material:	Light	Ceiling Material:	Standard
Roof Live Load:	0.250 kPa	Snow Load:	0.000 kPa
Roof Pitch:	25.000 deg	Truss Centres:	900 mm

Timber Co Ltd

7 Sunley St P O Box 871 New Plymouth	Name: A CLIENT Address: BEACH RD URENUI	ADDITION	
Telephone: Phone : 06 7534393 Fax: Fax : 06 7534394	Telephone:	Job: BEACH	Building Consent No.:



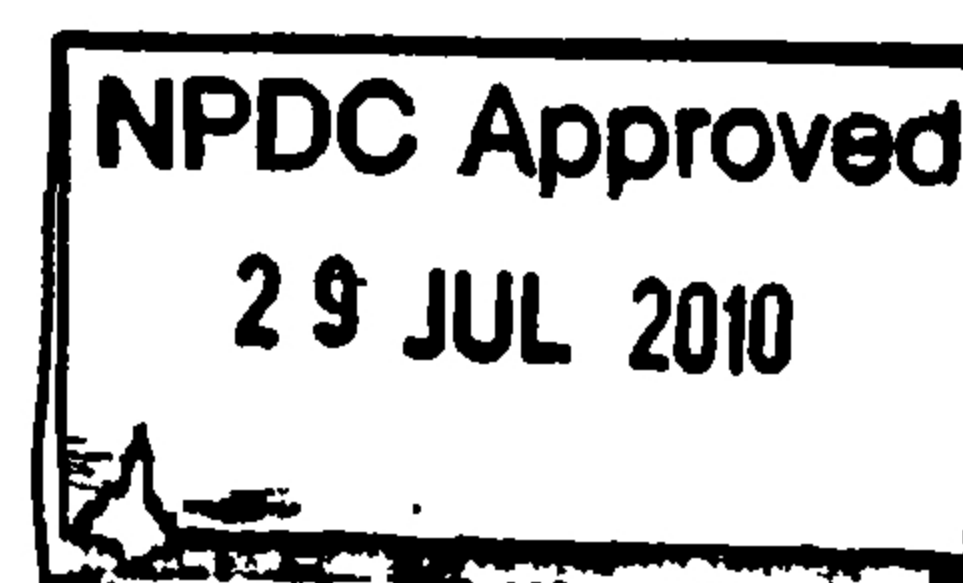
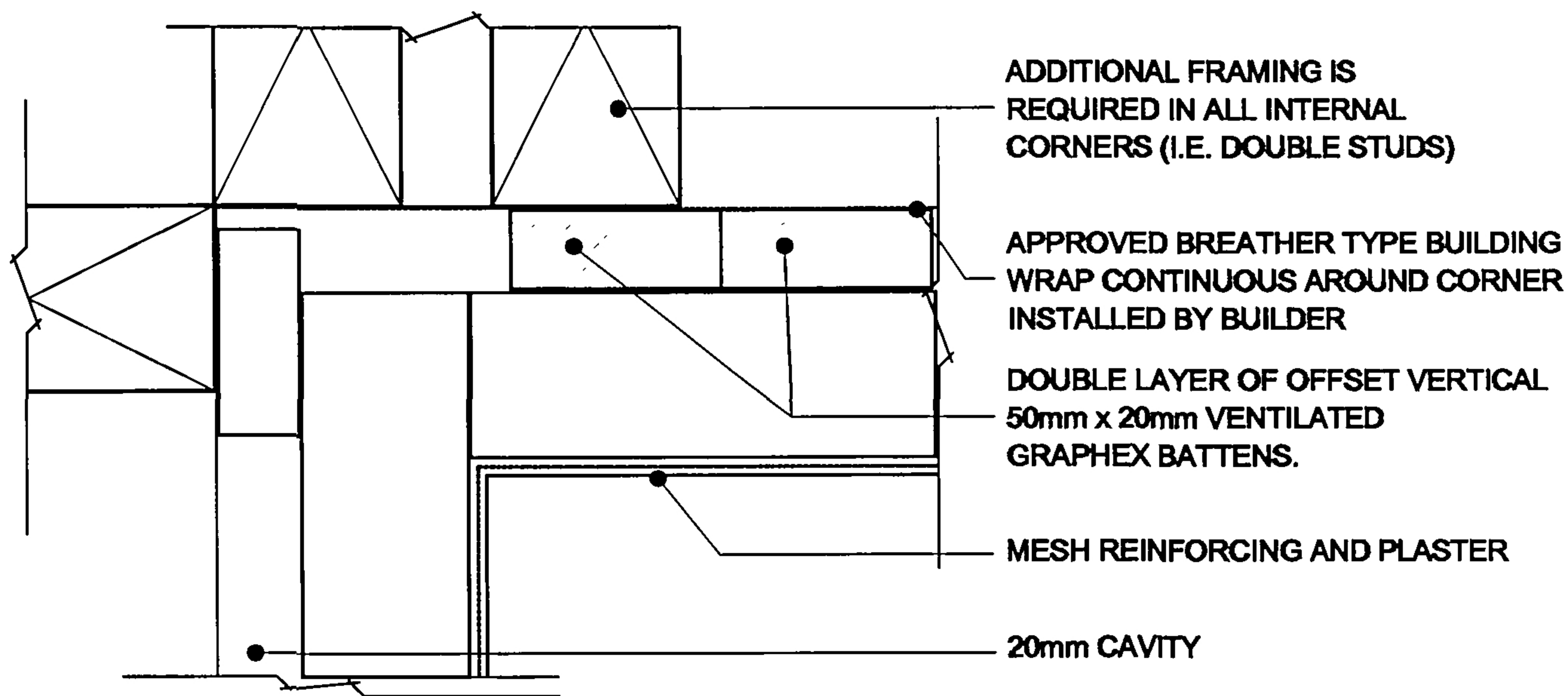


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29 JUL 2010

12 EXTERNAL SQUARE CORNER

PSL NUPLEX

OCTOBER 2009



13 INTERNAL SQUARE CORNER

PSL NUPLEX

OCTOBER 2009

Bed 1 Lintel

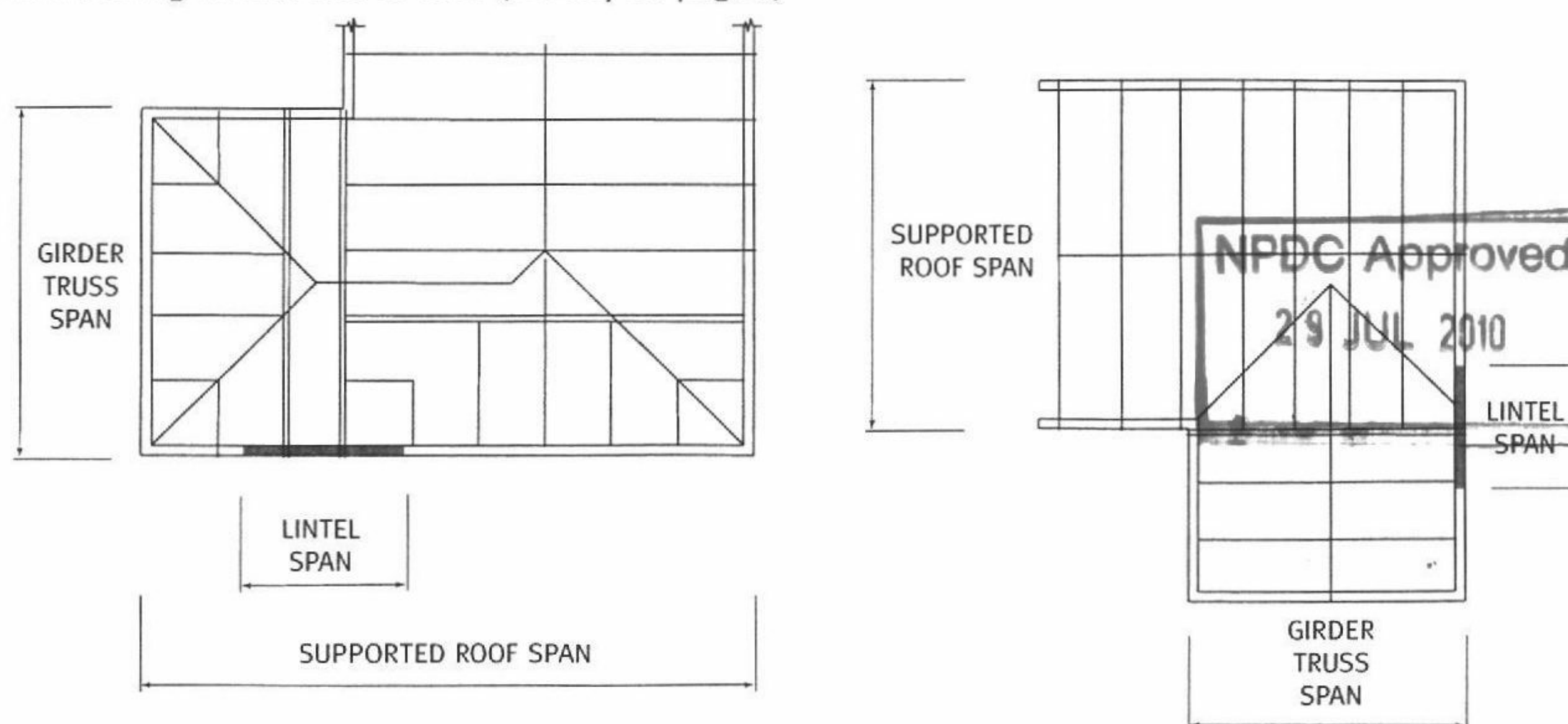
Supporting girder truss (light roof)

Note: maximum roof slope 30°

Hy90 Section D x B (mm)	Supported roof span (m)	Girder truss span (m)								
		5.0 *	6.0	7.0	8.0	9.0	10.0	11.0	12.0	13.0
		Maximum lintel span (m)								
150 x 90 Bed 1	2	2.6	2.5	2.4	2.3	2.2	2.1	2.0	2.0	1.9
	4	2.2	2.1	2.0	1.9	1.8	1.7	1.7	1.6	1.6
	* 6	2.0 *	1.8	1.7	1.6	1.6	1.5	1.4	1.4	1.3
	8	1.8	1.6	1.5	1.5	1.4	1.3	1.3	1.2	1.2
	10	1.6	1.5	1.4	1.3	1.3	1.2	1.1	1.1	1.1
200 x 90	2	3.3	3.2	3.1	3.0	2.9	2.8	2.8	2.7	2.7
	4	3.0	2.9	2.8	2.7	2.6	2.5	2.4	2.3	2.3
	6	2.8	2.6	2.5	2.4	2.3	2.2	2.1	2.0	2.0
	8	2.6	2.4	2.3	2.1	2.0	2.0	1.9	1.8	1.8
	10	2.4	2.2	2.1	2.0	1.9	1.8	1.7	1.7	1.6
240 x 90	2	3.9	3.7	3.6	3.5	3.4	3.3	3.2	3.2	3.1
	4	3.5	3.4	3.2	3.1	3.0	3.0	2.9	2.8	2.8
	6	3.2	3.1	3.0	2.9	2.8	2.7	2.6	2.5	2.5
	8	3.0	2.9	2.8	2.7	2.6	2.5	2.4	2.3	2.2
	10	2.9	2.7	2.6	2.5	2.4	2.3	2.2	2.1	2.1
300 x 90	2	4.6	4.4	4.3	4.2	4.1	4.0	3.9	3.8	3.7
	4	4.2	4.1	3.9	3.8	3.7	3.6	3.5	3.4	3.3
	6	3.9	3.8	3.6	3.5	3.4	3.3	3.2	3.1	3.1
	8	3.7	3.5	3.4	3.3	3.2	3.1	3.0	2.9	2.8
	10	3.5	3.4	3.2	3.1	3.0	2.9	2.8	2.7	2.6
360 x 90	2	5.3	5.1	4.9	4.8	4.7	4.6	4.5	4.4	4.3
	4	4.9	4.7	4.6	4.4	4.3	4.2	4.1	4.0	3.9
	6	4.6	4.4	4.2	4.1	4.0	3.9	3.8	3.7	3.6
	8	4.4	4.2	4.0	3.9	3.8	3.7	3.6	3.5	3.4
	10	4.1	4.0	3.8	3.7	3.6	3.5	3.4	3.3	3.2
400 x 90	2	5.7	5.5	5.4	5.2	5.1	5.0	4.9	4.8	4.7
	4	5.3	5.1	5.0	4.8	4.7	4.6	4.5	4.4	4.3
	6	5.0	4.8	4.7	4.5	4.4	4.3	4.2	4.1	4.0
	8	4.8	4.6	4.4	4.3	4.1	4.0	3.9	3.8	3.7
	10	4.6	4.4	4.2	4.0	3.9	3.8	3.7	3.6	3.5

6

Minimum bearing at each end of lintel (see key on page 7)



WALL BRACING CALCULATION SHEET A

JOB DETAILS

Name	BEACH ROAD TRUST
Street and number	16 BEACH ROAD
Lot and DP number	LOT 3 DP 13438
City/Town/District	URENUI
Bracing prepared by	R.A.D
Franchisee	

BUILDING DETAILS

Location of storey	Single		Roof weight	Light	
Building height to apex	4.1	m	Cladding weight	Light	
Roof height above eaves	1.7	m	Room in roof space	No	
Stud height	2.4	m			
Average roof pitch	25	degrees	Gross building plan area	40	m ²
Building length BL	7.5	m			
Building width BW	6.7	m			

Note: When 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

Determine Wind Zone by application of NZS 3604 Figures 2.3 and 2.4 and Tables 2.4 and 2.5.

LOW ☐	MEDIUM ☐	HIGH ☐	VERY HIGH ☒	SPECIAL ☐
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EARTHQUAKE ZONE

Select E/Q wind from Fig.2.2 NZS 3604

A ☒	B ☐	C ☐
------------------------------------	-------------------------	-------------------------

BU's required Wind

W along =	76	BU's
W across =	62	BU's

Total wind load,

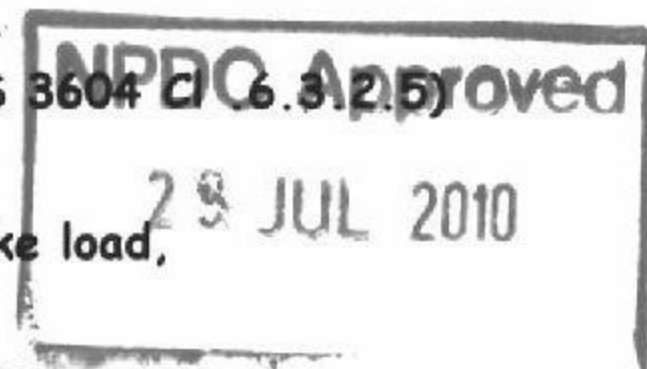
W along x BW =	509	BU's
W across x BL =	465	BU's

Earthquake B/U's 3.6 /m²

E + 3(See NZS 3604 Fig. 2.2) Approved

Total earthquake load,

EQ along and EQ across	
E x GPA BU's =	144 BU's



WALL BRACING CALCULATION SHEET B

ALONG

[illegible]

If Wind required > E/Q required complete the wind achieved only. If E/Q required > 1.25 Wind achieved complete the E/Q achieved column only. Otherwise complete both Wind and E/Q achieved columns.

WALL BRACING CALCULATION SHEET C

ACROSS

Wall or bracing line		Bracing elements provided			Test panel capacities			
Line Label	Min B/U's Required	Bracing Element No	Bracing Type	Length Element (m)	Rating BU/mxL (W)	B/U achieved (W)	Rating BU/mxL (E)	B/U Achieved (E)
M	117	M1	BLG [0.6]	1 x	145	145.000	135	135
				x				
				x				
				x				
				x				
N	233	N1	GS1 [1.2]	1.6 x	70	112.000	55	88
		N2	GS2 [1.8]	2 x	90	180.000	80	160
				x				
				x				
				x				
O	117	O1	BL1 [1.2]	1.1 x	135	148.500	100	110
		O2	GS1 [1.2]	1.4 x	70	98.000	55	77
				x				
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NPDC Approved
29 JUL 2010

If Wind required > E/Q required complete the wind achieved only. If E/Q required > 1.25 Wind achieved complete the E/Q achieved column only. Otherwise complete both Wind and E/Q achieved columns.

H1 2007 Compliance Report

Project Details

H1 Report created by:

RIGHT ANGLE DESIN

Project Name:

16 BEACH ROAD

Client:

K MARTIN

Lot No:

LOT 3

Comment:

Project Id:

19457

Report Date:

30/06/2010

Compliance Result

This building complies with H1 via the following methods:

the Schedule Method in NZS4218:2004 (Sept 2008 R-values)
the Calculation Method in NZS4218:2004 (Sept 2008 R-values)

Compliance Details

NZS4218:2004 Schedule Method Compliance

The use of the Schedule Method is permitted.

In order to comply the R-values for all the construction elements must be the same or larger than the permitted minimum R-values. This design complies with the NZS4218:2004 Schedule Method.

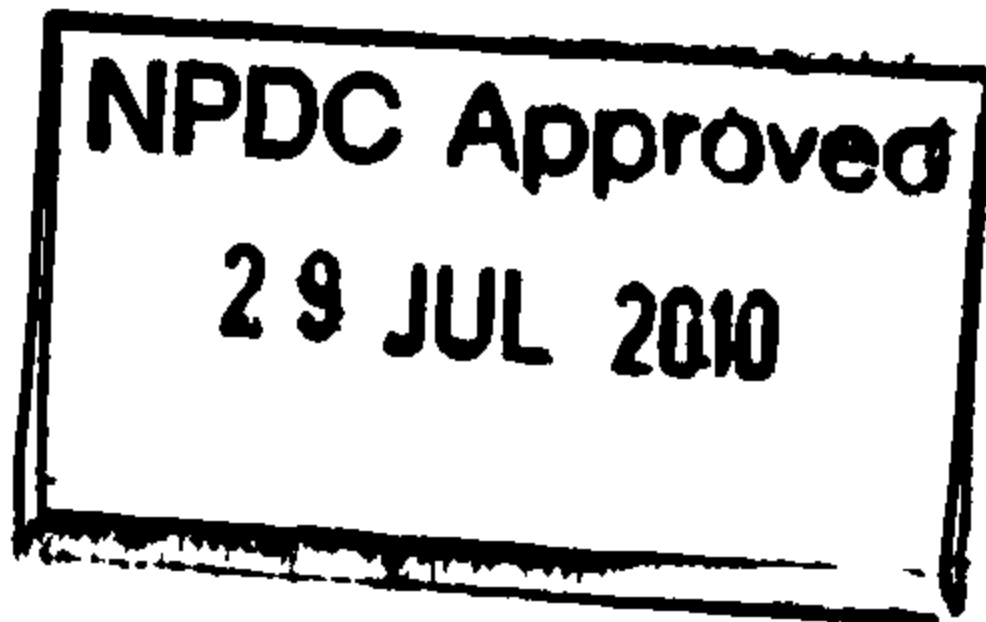
	Permitted minimum Option 1	Permitted minimum Option 2	Actual minimum
Floor R-value	<u>1.3</u>	<u> </u>	<u>1.3</u>
Wall R-value	<u>1.9</u>	<u> </u>	<u>2.3</u>
Roof R-value	<u>2.9</u>	<u> </u>	<u>3.5</u>
Glazing R-value	<u>0.26</u>	<u> </u>	<u>0.26</u>
Skylight R-value	<u>0.26</u>	<u> </u>	<u> </u>

NZS4218:2004 Calculation Method Compliance

The use of the Calculation Method is permitted.

In order to comply the Actual Heat Loss must be the same or smaller than the Reference Heat Loss AND all component R-values must be the same or larger than 60% of the R-values in the '60% Rule' table below. This design complies with the NZS4218:2004 Calculation Method.

<u>Heat Loss:</u>	Reference building	Actual building
	<u>145</u>	<u>117</u>
<u>Minimum R-values ("60% rule"):</u>	Permitted minimum	Actual minimum
Floor R-value	<u>0.8</u>	<u>1.3</u>
Wall R-value	<u>1.1</u>	<u>2.3</u>
Roof R-value	<u>1.7</u>	<u>3.5</u>
Glazing R-value	<u>0.15</u>	<u>0.26</u>
Skylight R-value	<u>0.15</u>	<u> </u>



The Reference building has the following areas and R-values

	Area	R-value
Floor	40	1.3
Wall	46.2	1.9
Roof	40	2.9
Glazing (30% of Total Wall)	19.8	0.26
Glazing (surplus of 30%)	0	0.31
Skylight	0	0.31

Design Details

Building Dimensions

Floor Area	40
Gross Wall Area	66
Net Wall Area	52.5
Wall (North) Area	10.9
Wall (East, South and West) Area	41.6
Gross Roof Area	40
Net Roof Area	40
Glazing Area	13.5
Window (North) Area	6.7
Window (East, South and West) Area	6.8
Skylight Area	0

Glazing Area Percentages

Total Glazing Percentage	20.5%
East, South and West Window Percentage	14%
Total over 30%	no
East, South and West over 30%	no
Total over 50%	no

Information required for BPI calculation

Living Floor Area	0	Note: This includes also internal floors.
Average Room Height	0	
Thermal Mass Level	Light weight	Suspended timber floor with timber framed walls or a heavily carpeted slab floor with timber framed walls.

Wall Construction Type

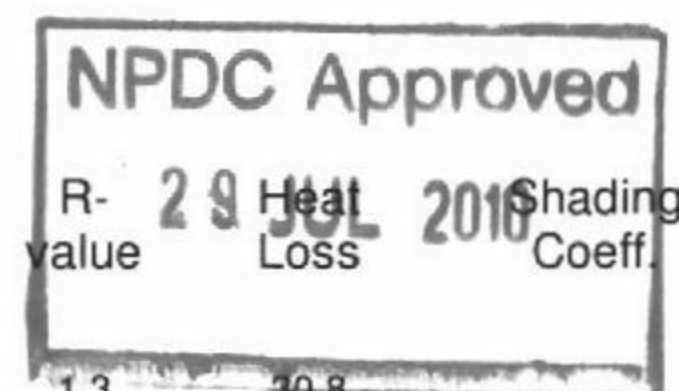
Solid Construction	non-solid
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Climate

Location	New Plymouth
Climate Zone	2

Heat Loss Details

	ID	Orientation	Width	Height	Gross Area	Net Area	R-value	Heat Loss	Shading Coeff.
<u>Floors</u>									
Floor 1	FLOOR 1				40	40	1.3	30.8	
<u>Walls</u>									



Wall 1	<u>N_Wall_1</u>	<u>North</u>	<u>3.2</u>	<u>2.4</u>	<u>7.7</u>	<u>5.8</u>	<u>2.3</u>	<u>2.5</u>	
Window 1-1	<u>win_1</u>		<u>1.6</u>	<u>1.2</u>		<u>1.9</u>	<u>0.26</u>	<u>7.4</u>	<u> </u>
Wall 2	<u>N_Wall_2</u>	<u>North</u>	<u>4.120</u>	<u>2.4</u>	<u>9.9</u>	<u>5.1</u>	<u>2.3</u>	<u>2.2</u>	
Window 2-1	<u>N_win_2</u>		<u>2.4</u>	<u>2.0</u>		<u>4.8</u>	<u>0.26</u>	<u>18.5</u>	<u> </u>
Wall 3	<u>E_Wall_1</u>	<u>East</u>	<u>6.520</u>	<u>2.4</u>	<u>15.6</u>	<u>12.5</u>	<u>2.3</u>	<u>5.4</u>	
Window 3-1	<u>E_win_1</u>		<u>1.0</u>	<u>1.2</u>		<u>1.2</u>	<u>0.26</u>	<u>4.6</u>	<u> </u>
Window 3-2	<u>E_win_2</u>		<u>2.06</u>	<u>0.95</u>		<u>2</u>	<u>0.26</u>	<u>7.5</u>	<u> </u>
Wall 4	<u>W_Wall_1</u>	<u>West</u>	<u>3.72</u>	<u>2.4</u>	<u>8.9</u>	<u>8.9</u>	<u>2.3</u>	<u>3.9</u>	
Wall 5	<u>W_Wall_2</u>	<u>West</u>	<u>2.06</u>	<u>2.4</u>	<u>4.9</u>	<u>3.8</u>	<u>2.3</u>	<u>1.7</u>	
Window 5-1	<u>W_win_1</u>		<u>0.8</u>	<u>1.4</u>		<u>1.1</u>	<u>0.26</u>	<u>4.3</u>	<u> </u>
Wall 6	<u>W_Wall_3</u>	<u>West</u>	<u>0.56</u>	<u>2.4</u>	<u>1.3</u>	<u>1.3</u>	<u>2.3</u>	<u>0.6</u>	
Wall 7	<u>S_Wall_1</u>	<u>South</u>	<u>3.2</u>	<u>2.4</u>	<u>7.7</u>	<u>5.8</u>	<u>2.3</u>	<u>2.5</u>	
Window 7-1	<u>S_win_1</u>		<u>1.6</u>	<u>1.2</u>		<u>1.9</u>	<u>0.26</u>	<u>7.4</u>	<u> </u>
Wall 8	<u>S_Wall_2</u>	<u>South</u>	<u>4.120</u>	<u>2.4</u>	<u>9.9</u>	<u>9.3</u>	<u>2.3</u>	<u>4</u>	
Window 8-1	<u>S_win_2</u>		<u>0.6</u>	<u>1.0</u>		<u>0.6</u>	<u>0.26</u>	<u>2.3</u>	<u> </u>
<u>Roofs</u>									
Roof 1	<u>ROOF 1</u>		<u>40</u>	<u>1</u>	<u>40</u>	<u>40</u>	<u>3.5</u>	<u>11.4</u>	
<u>Total Heat Loss</u>								<u>117</u>	

Note that the Shading Coefficient is only required for BPI calculations.

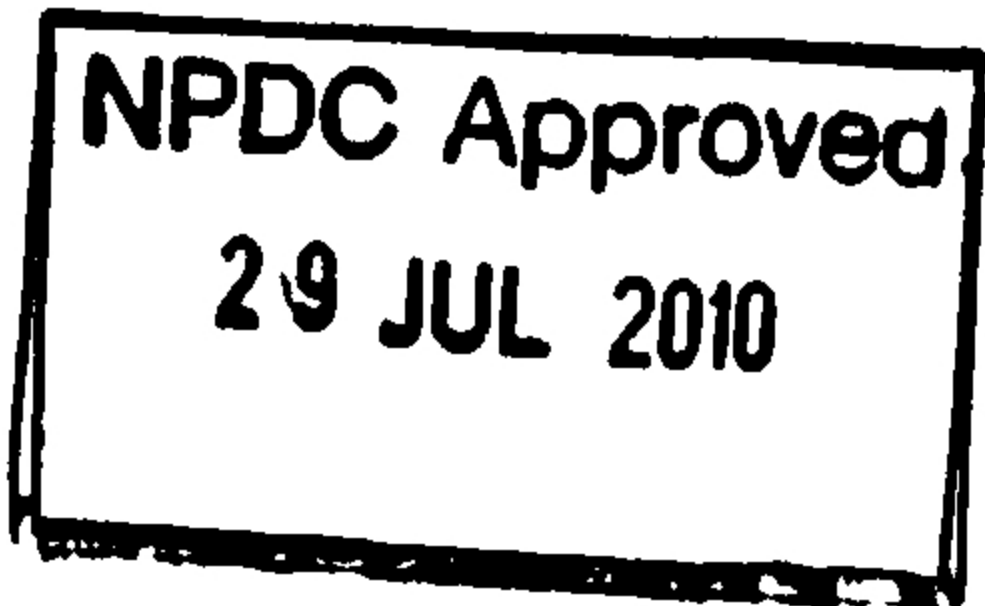
Compliance with Clause E3

This building complies with the R-value targets in NZBC Clause E3 .

Component	Minimum R-value	Project R-value
Framed wall constructions with cavities	1.5	<u> </u>
Single skin masonry wall without a cavity	0.6	<u> </u>
Solid timber wall no less than 60 mm thick	0.6	<u> </u>
Roof or ceilings	1.5	<u> </u>

Floor Construction Details

Wall Construction Details



Roof Construction Details

1 Timber framed roof, flat ceiling	
external surface 0.03	
Roofing	Onduline 
R-value: 0.04	
Roof space (still air) 0.11	
Pink®Batts® R3.2 Ceiling  3.2	
Timber Frame & Cavity	94mm rafters or joists @ 900mm, battens (covered with insulation) 
Frame Area: 5%	Cavity Area: 95%
Trusses and dwangs R-value: 0.78	Insulation 
Ceiling Lining Gypsum plasterboard 12mm 	
R-value: 0.05	
internal surface 0.09	
3.52 m²K/W.	

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 Print Report  Close Report

NPDC Approved
2.9 JUL 2010

